

810 O STREET NW



25 MARCH 2016

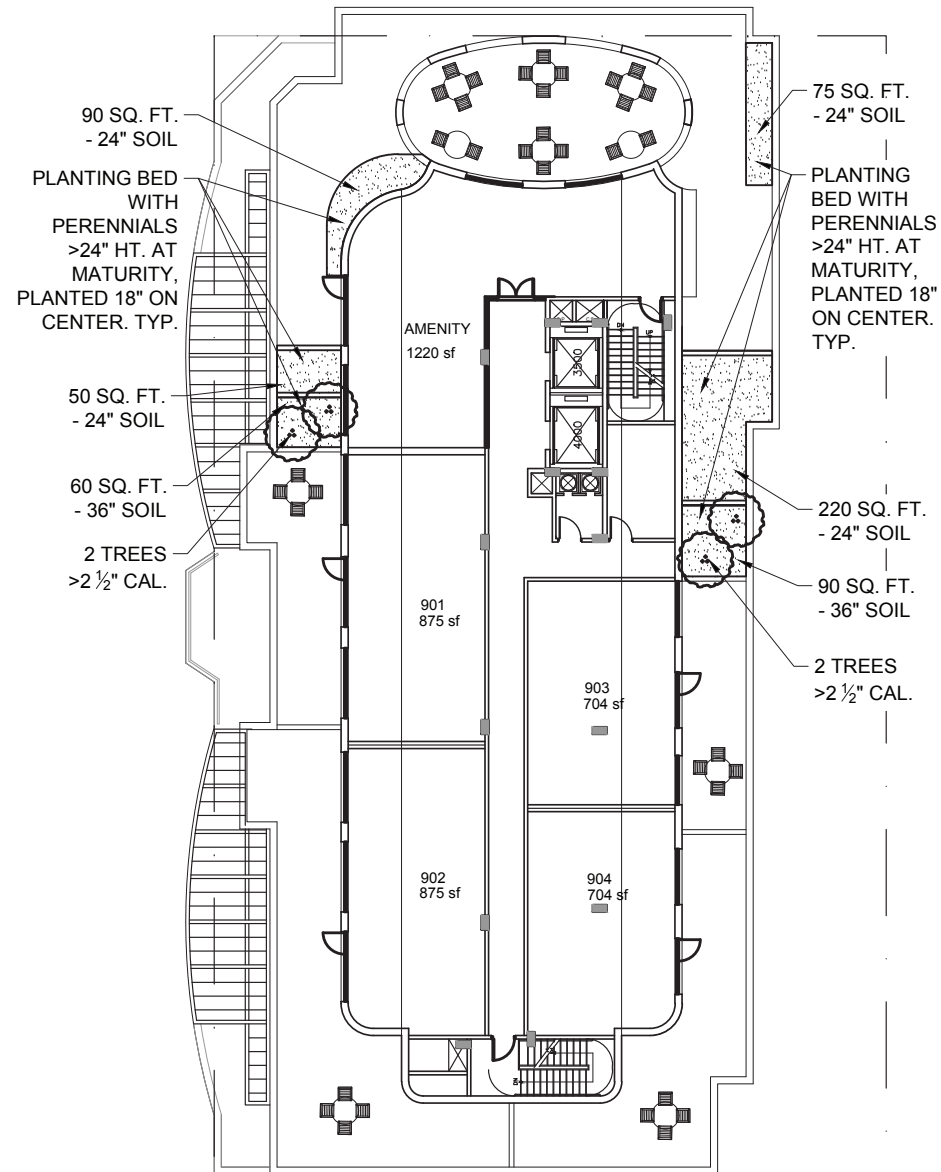
GROUND FLOOR & ROOF PLAN I01

ZONING COMMISSION
 District of Columbia
 CASE NO. 16-07
 EXHIBIT NO. 3A2
 Gensler



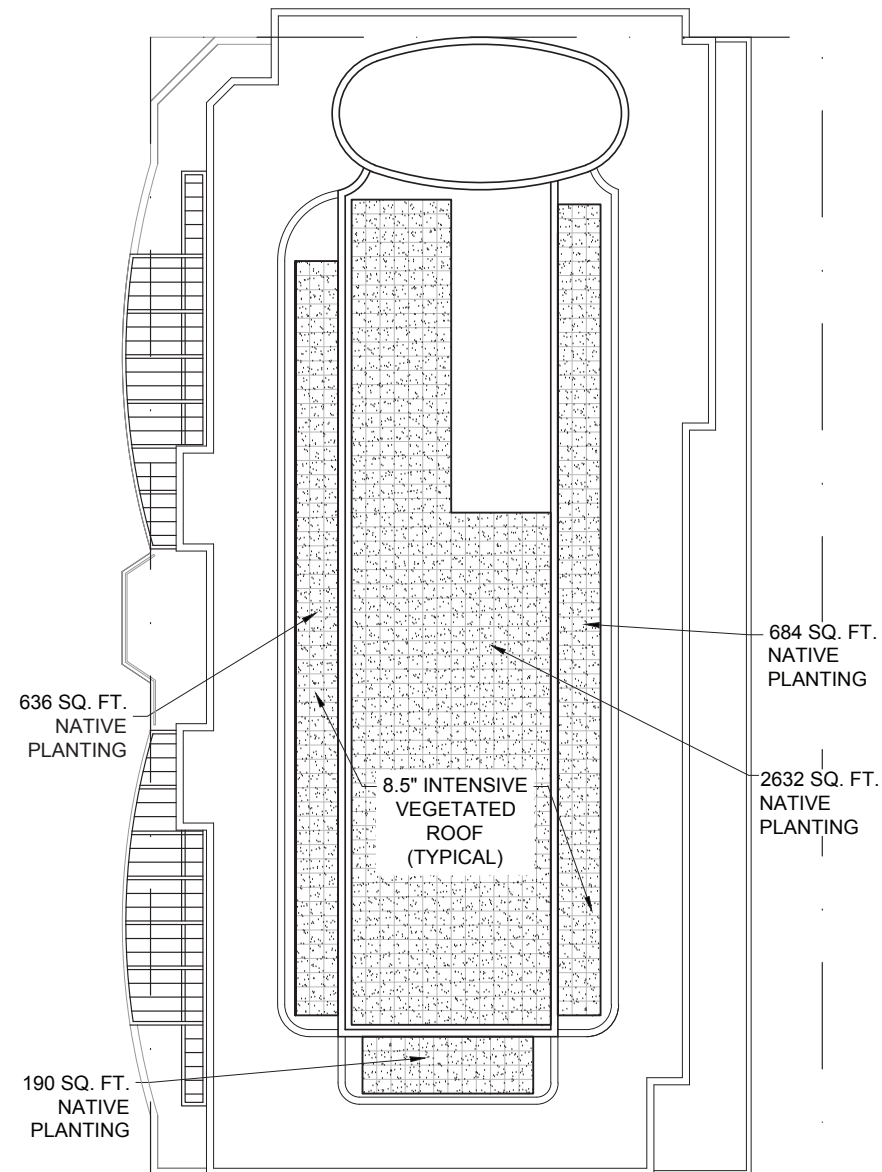
NOTE:

C-2-B ZONING DISTRICT
REQUIRES GREEN AREA
RATIO OF .3 - THE
LANDSCAPE ELEMENTS
SHOWN PROVIDE A GREEN
AREA RATIO OF .303



AMENITY TERRACE LANDSCAPE ELEMENTS:

- 585 SQ. FT. LANDSCAPED AREA WITH SOIL DEPTH >24"
- 150 PERENNIALS > 24" HT. AT MATURITY
- 4 NEW TREES >2 1/2" CALIPER



MECHANICAL ROOF LANDSCAPE ELEMENTS:

- 4,142 SQ. FT. INTENSIVE VEGETATED/GREEN ROOF (>8" PLANTING MEDIA)
- 4,142 SQ. FT. NATIVE PLANTING



Green Area Ratio Scoresheet

Address: **810 O Street, NW** Ward: **66** Lot: **39** Square: **39** Zoning District: **PUD - C-2-B**

Other / BZA Order: _____ enter sq ft of lot: **15,110** multipl: _____ SCORE: **0.303**

*Lot size (enter this value first) **

Landscape Elements		Square Ft.	Factor	Total
A Landscaped areas (select one of the following for each area)				
1	Landscaped areas with a soil depth of less than 24"	enter sq ft 0	0.3	-
2	Landscaped areas with a soil depth of 24" or greater	enter sq ft 585	0.6	351.0
3	Bioretention facilities	enter sq ft 0	0.4	-
B Plantings (credit for plants in landscaped areas from Section A)				
1	Groundcovers, or other plants less than 2' tall at maturity	enter sq ft 	0.2	-
2	Plants, not including grasses, 2' or taller at maturity - calculated at 9 sq ft per plant (typically planted no closer than 18" on center)	enter number of plants 150	1350 0.3	405.0
3	Tree canopy for all new trees 2.5" to 6" diameter or equivalent - calculated at 50 sq ft per tree	enter number of trees 4	200 0.5	100.0
4	Tree canopy for new trees 6" diameter or larger or equivalent - calculated at 250 sq ft per tree	enter number of trees 0	0 0.6	-
5	Tree canopy for preservation of existing tree 6" to 12" diameter or larger or equivalent - calculated at 250 sq ft per tree	enter number of trees 0	0 0.7	-
6	Tree canopy for preservation of existing tree 12" to 18" diameter or larger or equivalent - calculated at 600 sq ft per tree	enter number of trees 0	0 0.7	-
7	Tree canopy for preservation of all existing trees 18" to 24" dia. or equivalent - calculated at 1300 sq ft per tree	enter number of trees 0	0 0.7	-
8	Tree canopy for preservation of all existing trees 24" diameter or larger or equivalent - calculated at 2000 sq ft per tree	enter number of trees 0	0 0.8	-
9	Vegetated wall, plantings on a vertical surface	enter sq ft 0	0.6	-

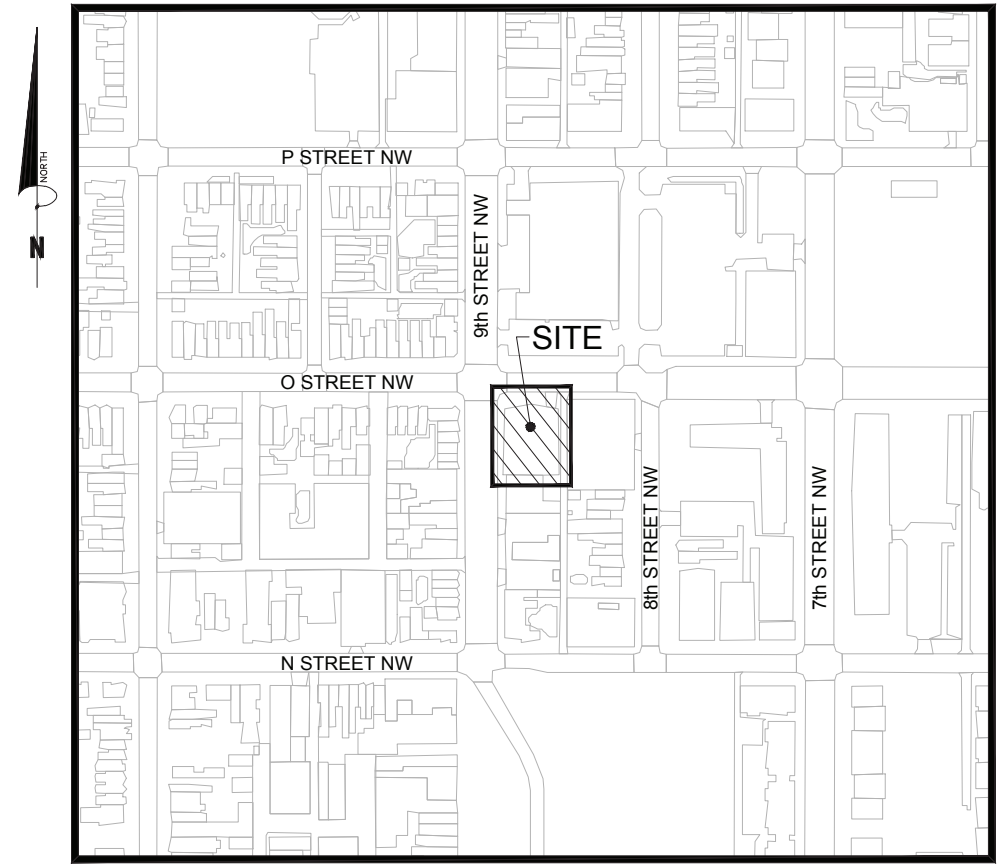
C Vegetated or "green" roofs			
1	Over at least 2" and less than 8" of growth medium	enter sq ft 0	0.6 -
2	Over at least 8" of growth medium	enter sq ft 4,142	0.8 3,313.6
D Permeable Paving***			
1	Permeable paving over at least 6" and less than 24" of soil or gravel	enter sq ft 0	0.4 -
2	Permeable paving over at least 24" of soil or gravel	enter sq ft 0	0.5 -
E Other			
1	Enhanced tree growth systems***	enter sq ft 0	0.4 -
2	Renewable energy generation	enter sq ft 0	0.5 -
3	Approved water features	enter sq ft 0	0.2 -
		sub-total of sq ft =	6,277
H Bonuses			
1	Native plant species	enter sq ft 4,142	0.1 414.2
2	Landscaping in food cultivation	enter sq ft 0	0.1 -
3	Harvested stormwater irrigation	enter sq ft 0	0.1 -
		Green Area Ratio numerator =	4,584
*** 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	-

DDOE/WPD 06/2014

810 O STREET NW SQUARE 399 LOT 66 WASHINGTON, DC

ABBREVIATIONS:

APPROX	APPROXIMATE	EX	EXISTING
ASPH	ASPHALT	FC	FACE OF CURB
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	FD	FLOOR DRAIN
AWWA	AMERICAN WATER WORKS ASSOCIATION	FF	FIRST FLOOR
BC	BACK OF CURB	FG	FINISH GRADE
BLDG	BUILDING	FH	FIRE HYDRANT
BM	BENCHMARK	FL	FLOW LINE
BOV	BLOW OFF VALVE	G	GAS
BRL	BUILDING RESTRICTION LINE	GR	GUARD RAIL OR GRATE INLET
BW	BOTTOM OF WALL	HC	HANDICAP
C&G	CURB AND GUTTER	HP	HIGH POINT
CB	CATCH BASIN	HR	HAND RAIL
CC	CONCRETE CURB	INV	INVERT
CIP	CAST IRON PIPE	IP	IRON PIPE
CL	CENTERLINE	IPS	IRON PIPE SET
CMP	CORRUGATED METAL PIPE	LP	LOW POINT
CO	CLEAN OUT	MH	MANHOLE
CONC	CONCRETE	O/H	OVERHEAD
DIP	DUCTILE IRON PIPE	PCC	PORTLAND CEMENT CONCRETE
DI	DROP INLET	PROP	PROPOSED
DOM	DOMESTIC	PVMT	PAVEMENT
EBL	EAST BOUND LANE	SAN	SANITARY
EG	EDGE OF GUTTER	SEW	SEWER
EL	ELEVATION	STD	STANDARD
ELEC	ELECTRIC	S/W	SIDEWALK
ELEV	ELEVATION	TC	TOP OF CURB
ENT	ENTRANCE	TEL	TELEPHONE
EP	EDGE OF PAVEMENT	TP	TEST PIT OR TREE PROTECTION
EQUIP	EQUIPMENT	TW	TOP OF WALL OR TAILWATER
ESMT	EASEMENT	UP	UTILITY POLE
EW	END WALL	UG	UNDERGROUND
		UGE	UNDERGROUND ELECTRIC
		UGT	UNDERGROUND TELEPHONE
		UGC	UNDERGROUND CABLE
		UD	UNDERDRAIN
		WL	WATER LINE
		WM	WATER METER



VICINITY MAP
SCALE: 1" = 300'

EXISTING	LEGEND	PROPOSED
	INDEX CONTOUR	
	INTERMEDIATE CONTOUR	
	EDGE OF PAVEMENT	
	CURB AND GUTTER TRANSITION	
	PROPOSED HEADER CURB	
	PROPERTY LINE	
	RIGHT-OF-WAY	
	EASEMENT	
	WATER LINE	
	WATER VALVE	
	WATER REDUCER	
	WATER METER	
	SANITARY SEWER	
	STORM SEWER	
	CABLE TV	
	ELECTRIC SERVICE-UNDERGROUND	
	ELECTRIC SERVICE-OVERHEAD	
	OVERHEAD TELEPHONE	
	TELEPHONE SERVICE	
	GAS LINE	
	SPOT ELEVATION	
	UTILITY POLE	
	GUY POLE	
	TRANSFORMER	
	SIGN	
	SANITARY SEWER IDENTIFIER	
	STORM DRAIN IDENTIFIER	
	FIRE HYDRANT	
	STREET LIGHT	
	TEST PIT LOCATION RECOMMENDED/REQUIRED	
	HANDICAP RAMP	
	TREE	
	CONCRETE SIDEWALK	

UTILITY CONTACTS:

SEWER/WATER:	DC WATER - (202) 787-4299 5000 OVERLOOK AVE. SW 5TH FLOOR WASHINGTON, DC 20032
ELECTRICITY:	PEPCO - FRED JOHNSON (202) 872-2833 701 9TH STREET NW, ROOM 6005 WASHINGTON, DC 20068
GAS:	WASHINGTON GAS CO. - VANN JONES (703) 750-5983 6801 INDUSTRIAL ROAD SPRINGFIELD, VA 22151
COMMUNICATIONS:	VERIZON COMMUNICATIONS - DIVINA YANCEY (301) 282-7736 FDC-1 13101 COLUMBIA PIKE CONDUIT GROUP - LOWER LEVEL SILVER SPRING, MD 20904

PROJECT NARRATIVE:

THIS PROJECT CONSISTS OF THE DEVELOPMENT OF A RESIDENTIAL BUILDING WITH LOWER LEVEL RETAIL ALONG WITH ASSOCIATED IMPROVEMENTS AT 810 O STREET NW. THE SITE WILL BE SERVICED BY NEW WATER, FIRE PROTECTION, STORM DRAIN, AND SANITARY SEWER. STORM WATER MANAGEMENT WILL BE MET WITH GREEN ROOF AND CISTERN FOR WATER REUSE.

ENGINEER

CIVIL/LANDSCAPE ARCHITECT
BOWMAN CONSULTING GROUP DC PC
888 17TH STREET NW
SUITE 202
WASHINGTON, DC 20006
(202) 750-2473
ATTN: RYAN J BRANNAN, P.E.

CIVIL DRAWING LIST - PUD:

C0.01	COVER SHEET
C0.02	GENERAL NOTES
C1.01	EXISTING CONDITIONS PLAN
C1.02	EROSION AND SEDIMENT CONTROL PLAN - PHASE 1
C1.03	EROSION AND SEDIMENT CONTROL PLAN - PHASE 2
C1.04	SITE PLAN
C1.05	UTILITY PLAN
C1.06	GRADING PLAN
C5.01	EROSION AND SEDIMENT CONTROL NOTES
C5.02	EROSION AND SEDIMENT CONTROL DETAILS
C7.01	STORMWATER MANAGEMENT PLAN
C7.02	STORMWATER MANAGEMENT DETAILS



DEMOLITION NOTES:

1. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES FOR SHUTOFF, CAPPING AND CONTINUATION OF UTILITY SERVICES AS REQUIRED.
2. CONTRACTOR SHALL REMOVE AND TRANSPORT ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM ALL DEMOLITION OPERATIONS TO A LEGAL DISPOSAL OFF SITE.
3. REMOVAL OF ASPHALT AND CONCRETE PAVEMENT SHALL INCLUDE THE REMOVAL OF ALL SURFACE, BASE AND SUBBASE MATERIALS.
4. EXISTING CONDITIONS SHOWN HEREON WERE TAKEN FROM A SURVEY PREPARED BY VIKI, ENTITLED, "BOUNDARY AND TOPOGRAPHIC SURVEY, SQUARE 399, LOT 66, WASHINGTON, DC", DATED 5/28/15, AND FROM AVAILABLE UTILITY COMPANY RECORDS.
5. ALL UNDERGROUND UTILITY LOCATIONS, INCLUDING WATER, STORM DRAINAGE, SANITARY SEWER, ELECTRICAL, TELEPHONE AND GAS WERE TAKEN FROM AVAILABLE RECORDS AND FIELD VERIFIED WHERE POSSIBLE. THE LOCATION OF ALL UTILITIES SHOWN ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY AND DETERMINE THE EXACT LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO COMMENCING WORK. REPORT ANY DISCREPANCY TO THE ENGINEER. MARKING LOCATIONS OF EXISTING UTILITIES, CONTACT "MISS UTILITY" AT 1-800-257-7777, 48-HOURS PRIOR TO ANY EXCAVATION.
6. THE CONTRACTOR MUST HAND-DIG TEST PITS AT ALL UTILITY CROSSINGS TO DETERMINE THE EXACT LOCATION AND DEPTH OF ALL UTILITIES AS WELL IN DEMOLITION WORK AND PRIOR TO ORDERING PIPE MATERIALS AND STRUCTURE. UTILITIES FOUND DURING DEMOLITION OR CONSTRUCTION ACTIVITIES SHALL BE THE RESPONSIBILITY OF ANY CONTRACTOR ENGAGED IN EXCAVATION AT THIS SITE. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY UTILITY FINDINGS WHICH DEVIATE FROM THE CONDITIONS SHOWN.
7. ALL SEDIMENT AND EROSION CONTROL METHODS SHALL BE INSTALLED BEFORE THE START OF ANY EXCAVATION AND/OR DEMOLITION AS PER DISTRICT OF COLUMBIA EROSION AND CONTROL HANDBOOK. IF ANY ONSITE INSPECTION REVEALS FURTHER EROSION CONTROL MEASURES ARE NECESSARY, THE SAME SHALL BE PROVIDED. REFER TO SHEETS C1.03, C5.01 AND C5.02 SEDIMENTATION AND EROSION CONTROL PLANS, NOTES, AND DETAILS.
8. SEE SEDIMENTATION AND EROSION CONTROL PLAN FOR ALL EXISTING TREES TO REMAIN AND BE PROTECTED.
9. NOTE PROXIMITY OF ADJACENT STRUCTURES AND UTILITY LINES AND MAINTAIN CONTINUED SERVICE DURING CONSTRUCTION. COORDINATE WITH RESPECTIVE UTILITY COMPANIES AND ENGINEER SHOULD RELOCATION OF SERVICE BE REQUIRED.
10. EXISTING UTILITIES (STRUCTURES AND LINES) NOT REQUIRED FOR FUTURE SERVICE TO BE REMOVED TO FACILITATE CONSTRUCTION. UTILITIES TO BE CAPPED AS PER UTILITY PURVEYOR'S STANDARDS AND SPECIFICATIONS. COORDINATE REQUIREMENTS WITH UTILITY PURVEYOR'S.
11. REMOVAL OF ALL WALLS/RETAINING WALLS AND FENCES SHALL INCLUDE THE REMOVAL OF THEIR FOUNDATION UNLESS OTHERWISE INDICATED ON THESE DRAWINGS.
12. ALL EXISTING DC STREETLIGHT POLES THAT ARE BEING PERMANENTLY REMOVED MUST BE RETURNED IN GOOD CONDITION TO THE DISTRICT OF COLUMBIA WAREHOUSE AT 1735 15TH STREET NE OFF WEST VIRGINIA AVENUE CONTACT NUMBER 202-576-5258.
13. EXISTING WATER AND SEWER SERVICES NOT REQUIRED FOR FUTURE USE TO BE REMOVED TO EXTENT NECESSARY TO FACILITATE NEW CONSTRUCTION. REMAINDER OF SERVICE TO BE CAPPED AT MAIN AND EXISTING VALVES AND TEES TO BE REMOVED PER DC/WATER STANDARDS SPECIFICATIONS.COORDINATE REQUIREMENTS WITH DC WATER UTILITY INSPECTOR AT 202-787-4299. PAVEMENT TO BE REMOVED PER DISTRICT OF COLUMBIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.
14. CONTRACTOR TO BE RESPONSIBLE FOR LAYOUT, EXTENT AND DESIGN OF SHEETING, SHORING AND SUPPORT OF EXISTING UTILITIES AND ADJACENT STRUCTURES, SHORING, BRACING AND UNDERPINNING SHALL BE DESIGNED BY A STRUCTURAL ENGINEER, LICENSED IN THE DISTRICT OF COLUMBIA, HIRED BY THE CONTRACTOR AS NECESSARY TO ENSURE SUPPORT OF SURROUNDING STRUCTURES AND UTILITIES.
15. CONTRACTOR TO RELOCATE PARKING METERS IF REQUIRED AND AS DIRECTED BY D.C. BUREAU OF PARKING. COORDINATE REQUIREMENT WITH LARRY BROWN OF PARKING SERVICES AT 202-671-2291.
16. NOTIFY DC WATER AT (202) 787-4299 48 HOURS PRIOR TO START OF CONSTRUCTION.
17. UNLESS OTHERWISE SHOWN ON THESE DRAWINGS, EXISTING PAVEMENT ON O STREET NW AND 9TH STREET NW TO REMAIN. PROVIDE PRE-CONSTRUCTION VIDEO OF EXISTING PAVEMENT ON O STREET NW AND 9TH STREET NW EXISTING PAVEMENT THAT IS DISTURBED OR DAMAGED DURING CONSTRUCTION, SHALL BE REPLACED PER DISTRICT OF COLUMBIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS AT NO ADDITIONAL COST.
18. PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES VERIFY INVERT ELEVATION OF EXISTING UTILITIES. NOTIFY ENGINEER OF ANY DISCREPANCIES WITH INFORMATION SHOWN PRIOR TO ORDERING ANY STRUCTURES.
19. CONTACT 'MISS UTILITY' AT 1 800 257-7777 48 HOURS PRIOR TO CONSTRUCTION.
20. CONTACT DISTRICT OF COLUMBIA DEPARTMENT OF TRANSPORTATION-PUBLIC SPACE MAINTENANCE ADMINISTRATION 48 HOURS PRIOR TO START OF CONSTRUCTION AT (202) 645-6030 OR (202) 645-6031.
21. ALL PROPOSED UTILITY WORK TO BE PERFORMED UNDER THE INSPECTION OF DC WATER.
22. USE MANHOLE ENTRY SEALS WHERE REQUIRED.
23. CONTRACTOR TO PROVIDE A PRE AND POST TV VIDEO SEWER ON EXISTING SEWER AROUND THE SITE PER DC WATER STANDARDS AND SPECIFICATIONS.

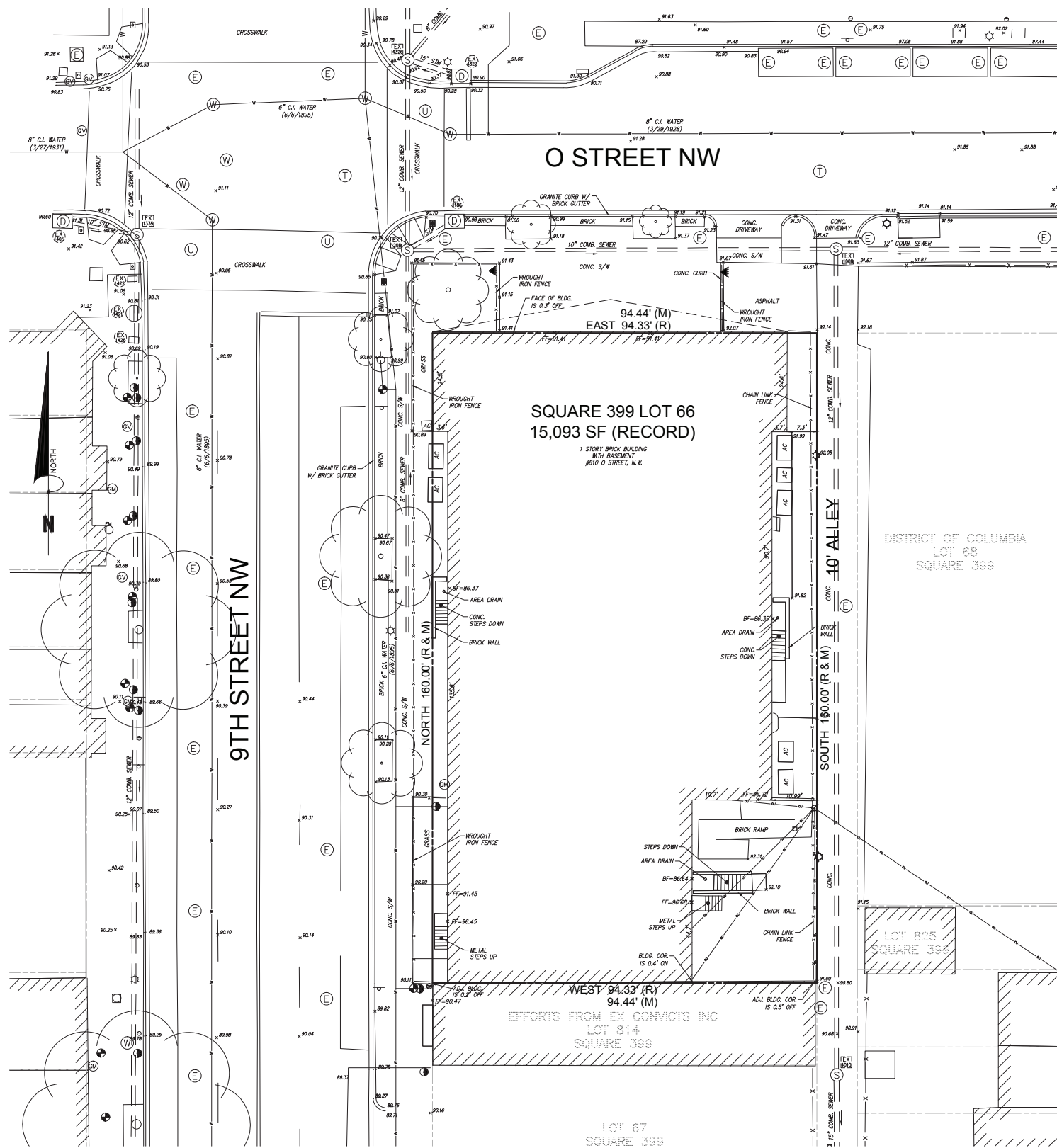
SITE NOTES:

1. WHERE NEW WORK MEETS EXISTING, NOTE FIELD LOCATION AND ELEVATIONS OF EXISTING FEATURES BEFORE BEGINNING CONSTRUCTION AND REPORT ANY DISCREPANCY TO THE ARCHITECT OR ENGINEER.
2. VERIFY LOCATION OF EXISTING UTILITIES BEFORE PROCEEDING WITH WORK. NOTIFY OWNER'S REPRESENTATIVE, DC WATER (202-787-4299) AND "MISS UTILITY" (1-800-257-7777) 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATIONS. HAND DIG TEST PITS AT ALL UTILITY CROSSINGS AND DETERMINE EXACT CLEARANCE OF ALL PROPOSED INSTALLATIONS WELL IN ADVANCE OF CONSTRUCTION. NOTIFY ENGINEER OF ANY CONFLICTS WITH PLAN ELEVATIONS.
3. WORK AND MATERIALS IN THE PUBLIC RIGHT-OF-WAY SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE APPLICABLE DISTRICT OF COLUMBIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS. ON-SITE WORK AND MATERIALS CODE.
4. ELEVATIONS SHOWN HEREON ARE BASED ON D.C. DATUM.
5. DIMENSIONS ARE TO FACE OF WALL AND CURB, EDGE OF WALK AND PAVEMENT, CENTERLINE OF COLUMN, PIPE AND UTILITY STRUCTURE. UNLESS OTHERWISE NOTED.
6. FRAMES AND COVERS OF EXISTING STRUCTURES TO BE ADJUSTED TO MATCH NEW FINISHED GRADES.
7. OMISSIONS AND/OR ADDITIONS OF UTILITIES FOUND DURING CONSTRUCTION SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OR ENGINEER IMMEDIATELY OF ANY INFORMATION CONCERNING FOUND UTILITY, NOT SHOWN ON PLANS.
8. EXISTING SURFACE CONDITIONS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED TO MATCH EXISTING CONDITIONS. CONTRACTOR TO COORDINATE EXTENT WITH ARCHITECT OR ENGINEER.
9. TEST PITS ARE REQUIRED AT ALL LOCATIONS WHERE PROPOSED UTILITIES CROSS EXISTING UTILITIES. THE ENGINEER IS TO BE NOTIFIED OF THIS INFORMATION.
10. IF A 1' MINIMUM VERTICAL CLEARANCE CAN NOT BE MAINTAINED AT UTILITY CROSSING, THE CONTRACTOR IS TO NOTIFY THE ENGINEER BEFORE PROCEEDING WITH WORK.
11. TRANSITION CURB, GUTTER, PAVING AND SIDEWALK TO MEET EXISTING IN LINE AND ON GRADE OR AS DIRECTED BY ENGINEER.
12. ALL DEBRIS AND EXCESS MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR AT AN APPROVED OFF-SITE LOCATION.
13. ALL ON-SITE WATER LINES TO HAVE A MINIMUM COVER OF 4'-0". WATER FITTINGS SHALL BE PROPERLY TIED AND ANCHORED, PER DC WATER STANDARDS AND SPECIFICATIONS.
14. WHERE PORTIONS OF EXISTING BITUMINOUS OR CONCRETE PAVING ARE TO BE REMOVED,THE EXISTING PAVEMENT SHALL BE SAW-CUT.
15. REMOVE FRAMES AND COVERS OF SEWER MANHOE/INEETS AND/OR WATER MAIN VALVE CASTINGS TO BE ABANDONED AND FILL TO GRADE.
16. ALL CURB SPOT SHOTS ARE TOP OF CURB, UNLESS OTHERWISE NOTED. 17. NOTIFY WASHINGTON GAS AT 202-750-4205 48 HOURS PRIOR TO ANY EXCAVATION IN THE VICINITY OF ANY TRANSMISSION MAIN. FOR FURTHER INFORMATION OR PROBLEMS, CONTACT MR. CHUCK WHITEY AT WASHINGTON GAS AT 703-750-4205.
17. PROVIDE A MINIMUM OF 5 FEET HORIZONTAL AND 1 FOOT VERTICAL CLEARANCE BETWEEN 12" DIAMETER AND SMALLER DISTRIBUTION EXISTING GAS FACILITIES AND PROPOSED FACILITIES.
18. PROVIDE A MINIMUM OF 5 FEET HORIZONTAL AND 2 FEET VERTICAL CLEARANCE BETWEEN 16" DIAMETER OR GREATER TRANSMISSION GAS FACILITIES AND PROPOSED FACILITIES.
19. ALL PROPOSED WORK TO BE CONSTRUCTED IN ACCORDANCE WITH LATEST STANDARDS AND SPECIFICATIONS OF THE DISTRICT OF COLUMBIA DEPARTMENT OF TRANSPORTATION AND WATER AND SEWER AUTHORITY.
20. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING SIDEWALK, CURB AND GUTTER TO REMAIN OR TO REPLACE SIDEWALK, CURB AND GUTTER DAMAGED DURING CONSTRUCTION.
21. EXISTING FULL DEPTH PAVEMENT SECTION, CURB AND GUTTER TO BE REMOVED AND REPLACED TO EXTENT NECESSARY TO FACILITATE CONSTRUCTION OF NEW UTILITIES. MATERIALS TO COMPLY WITH DISTRICT OF COLUMBIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

DC WATER STANDARD CONSTRUCTION NOTES:

1. CONTACT: NOTIFY THE FOLLOWING DC WATER DEPARTMENTS PRIOR TO THE COMMENCEMENT OF UTILITY CONSTRUCTION:
 - a) CONSTRUCTION INSPECTION SECTION AT 202-787-4024 AT LEAST TWO WEEKS PRIOR TO THE COMMENCEMENT OF UTILITY CONSTRUCTION TO SCHEDULE PRE-CONSTRUCTION MEETING.
 - b) WATER SERVICES AT 202-612-3400 OR 3460 AT LEAST ONE WEEK PRIOR TO THE COMMENCEMENT OF UTILITY CONSTRUCTION.
 - c) SEWER SERVICES AT 202-264-3824 OR 3829 AT LEAST ONE WEEK PRIOR TO THE COMMENCEMENT OF UTILITY CONSTRUCTION.
2. STANDARDS: ALL CONSTRUCTION, MATERIALS, AND APPURTENANCES SHALL COMPLY WITH THE LATEST EDITIONS OF THE DC WATER PROJECT DESIGN MANUAL, STANDARD DETAILS & DESIGN GUIDELINES, AND SPECIFICATIONS.
3. LEAD SERVICE REPLACEMENT: IF THIS PROJECT INCLUDES THE REPLACEMENT OF A WATER MAIN THAT HAS EXISTING LEAD WATER SERVICE LATERALS, THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE DC WATER CONSTRUCTION INSPECTION SECTION AT 202-787-4024 AT LEAST 90 DAYS PRIOR TO CONSTRUCTION TO ALLOW ADEQUATE TIME TO INITIATE STANDARD LEAD SERVICE REPLACEMENT PROTOCOL. LATERAL REPLACEMENT INCLUDES THE FULL LENGTH OF PIPE IN PUBLIC SPACE.
4. OWNER RESPONSIBILITY: THE OWNER IS RESPONSIBLE FOR ALL WORK AND COSTS ASSOCIATED WITH EXCAVATION, INSTALLATION, AND RESTORATION OF PUBLIC SPACE TO PERFORM A WATER SEWER CONNECTION/ABANDONMENT. ONCE THE CONTRACTOR HAS OBTAINED A PUBLIC SPACE PERMIT HE/SHE MUST THEN CONTACT DC WATER PRIOR TO PERFORMING THE EXCAVATION TO INSTALL/INSPECT THE UTILITY WORK. THE OWNER SHALL BE HELD RESPONSIBLE FOR ALL DAMAGES TO EXISTING STRUCTURES AND UTILITIES CAUSED BY CONSTRUCTION ACTIVITY.
5. DC WATER RESPONSIBILITY: DC WATER IS RESPONSIBLE FOR INSTALLATION OF SMALL WATER SERVICE TAPS (2" DIAMETER AND LESS) TO THE PUBLIC MAIN, SMALL WATER SERVICE TAP REMOVALS FROM THE PUBLIC MAIN, FURNISHING & INSTALLING THE METER IN PUBLIC SPACE, AND INSPECTION OF WORK PERFORMED ON THE PUBLIC SYSTEMS.
6. MISS UTILITY: CONTACT MISS UTILITY AT 800-257-7777 48 HOURS BEFORE ANY DIGGING.
7. PLAN SET: A SET OF SIGNED & SEALED AND DC WATER STAMPED PLANS SHALL BE KEPT AT ALL TIMES AT THE JOB SITE ON WHICH ALL CHANGES OR VARIATIONS IN THE WORK, INCLUDING ALL EXISTING UTILITIES, ARE TO BE RECORDED AND/OR CORRECTED DAILY.
8. ABANDONMENTS: THE OWNER MUST PHYSICALLY DISCONNECT EXISTING WATER, SEWER, AND STORM LATERALS THAT ARE ARE TO BE ABANDONED AT THEIR CONNECTION TO THE PUBLIC MAIN.
9. UNMETERED WATER: THERE SHALL BE NO UNMETERED CONNECTIONS TO THE CITY'S WATER SYSTEM, INCLUDING CONNECTIONS BYPASSING METERS FOR TESTING ON-SITE PLUMBING OR FOR OBTAINING CONSTRUCTION WATER.
10. PRESSURE TESTING AGAINST VALVES: PRESSURE TESTING AGAINST VALVES WILL NOT BE ALLOWED.
11. WATER METER INSTALLATION: TO SCHEDULE THE INSTALLATION OF A DOMESTIC WATER-METER CONTACT PERMIT OPERATIONS AT 202-646-8600. DC WATER WILL FURNISH AND INSTALL THE METER AFTER THE CONNECTION TO THE MAIN HAS BEEN MADE AND THE METER PIT/VAULT HAS BEEN INSTALLED.
12. CROSS CONTAMINATION CONTROL: ASSE 1048 CERTIFIED BACKFLOW PREVENTION ARE REQUIRED ON ALL FIRE SERVICES AND ARE TO BE LOCATED INSIDE THE BUILDING (UNLESS AN EXTERNAL LOCATION IS NECESSARY OR REQUIRED BY DC WATER) WHERE IT IS SUPPLIED, OWNED, OPERATED, AND MAINTAINED BY THE OWNER. DC WATER DOES NOT FURNISH NOR INSTALL FIRE DOUBLE CHECK DETECTOR FIRE PROTECTION BACKFLOW PREVENTION ASSEMBLIES.
13. UTILITY SERVICE DISRUPTIONS: PHASE ALL UTILITY WORK TO MAINTAIN UTILITY SERVICES TO THE SURROUNDING AREA DURING ALL PHASES OF CONSTRUCTION. LIMIT REQUIRED UTILITY SHUT-DOWNS IN NUMBER AND DURATION. COORDINATE THESE SHUT DOWNS WITH DC WATER CONSTRUCTION INSPECTION STAFF.
14. WATER VALVE OPERATION: THE CONTRACTOR IS REQUIRED TO COORDINATE WITH DC WATER FOR ALL NECESSARY WATER MAIN SHUT DOWNS WITH ADEQUATE ADVANCED NOTICE. ONLY DC WATER EMPLOYEES MAY SHUT DOWN A PUBLIC WATER MAIN. A CERTIFIED PLUMBER IS ONLY AUTHORIZED TO TURN OFF VALVES INSIDE METER PITS.
15. WATER GATE VALVE LOCATION: LOCATE GATE VALVES FOR DOMESTIC AND FIRE SERVICES AS CLOSE TO THE PUBLIC WATER MAIN TEE AS POSSIBLE. HOWEVER, IF NECESSARY ADJUSTMENTS ARE REQUIRED DUE TO CONFLICTS, COORDINATE WITH A DC WATER INSPECTOR.
16. MATERIAL: THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING SHOP CUTS TO THE APPROPRIATE DC WATER OFFICE FOR APPROVAL OR OBTAINING A DC WATER APPROVAL STAMP FOR ALL WORK IN PUBLIC SPACE IN ADVANCE OF INSTALLATION. ONLY APPROVED MATERIALS MAY BE USED.
17. TEMPORARY CONDITIONS MINIMUM COVER: A NOMINAL FOUR FEET OF COVER IS REQUIRED FOR ALL WATER MAINS AT FINAL GRADE. COVER OF LESS THAN FOUR FEET REQUIRES DC WATER APPROVAL.
18. AS-BUILT: DEVELOPERS, CONTRACTORS AND/OR PLUMBERS MUST SUBMIT FINAL CONSTRUCTION AS-BUILT INFORMATION TO THE APPROPRIATE DC WATER INSPECTOR(S) FOR REVIEW AND APPROVAL. UPON COMPLETION OF INSTALLATION OF NEW SERVICES OR ABANDONMENT OF EXISTING SERVICES, WHEN THE FINAL AS-BUILT IS APPROVED THE DEPOSIT WILL BE RETURNED TO THE APPLICANT. SEE DC WATER AS-BUILT REQUIREMENTS FOR ADDITIONAL INFORMATION.
19. CONFLICTS: THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF PROPOSED UTILITIES. A MINIMUM OF ONE FOOT VERTICAL AND FIVE FEET HORIZONTAL CLEARANCE FROM OTHER UTILITIES SHALL BE MAINTAINED FROM ANY UTILITIES AND PUBLIC WATER AND SEWER MAINS.
20. FIRE HYDRANT USE: THE USE OF A FIRE HYDRANT AS A WATER SOURCE IS PROHIBITED UNLESS A PERMIT HAS BEEN OBTAINED FROM DC WATER FOR USE OF A SPECIFIC HYDRANT(S). DAILY OR EXTENDED USE PERMITS CAN BE OBTAINED FROM DC WATER PERMIT OPERATIONS DEPARTMENT 202-646-8600.
21. FIRE HYDRANT STATUS: THE CONTRACTOR SHALL NOTIFY FEMS AT 202-277-1889, PRIOR TO TAKING ANY FIRE HYDRANT OUT OF SERVICE OR RENDERING ANY HYDRANT INACCESSIBLE FOR ANY REASON. FEMS IS ALSO TO BE PROVIDED WITH THE LOCATION OF ANY NEW INSTALLATION OF PRIVATE FIRE HYDRANTS.
22. DC WATER SAFETY OFFICE: THE DC WATER SAFETY OFFICE CAN BE CONTACTED AT 202-787-4350.
23. SEWER BACKWATER PREVENTION: THE PLUMBING SYSTEM MUST BE IN COMPLIANCE WITH SECTION 715 OF THE 2006 INTERNATIONAL PLUMBING CODE WHICH STATES A BACKWATER VALVE IS REQUIRED FOR ALL PLUMBING FIXTURES BELOW THE ELEVATION OF THE MANHOLE COVER OF THE NEXT UPSTREAM MANHOLE IN THE PUBLIC SEWER.





SANITARY SEWER TABULATION

1008	TOP = 91.52 IN = 81.22 (10" SAN FR 1208) IN = 81.22 (12" SAN FR 4098) OUT = 81.09 (12" SAN TO 4010)
1208	TOP = 91.01 IN = (8" SAN FR SOUTH) IN = (12" SAN FR 4326) OUT = (12" SAN TO 1008)
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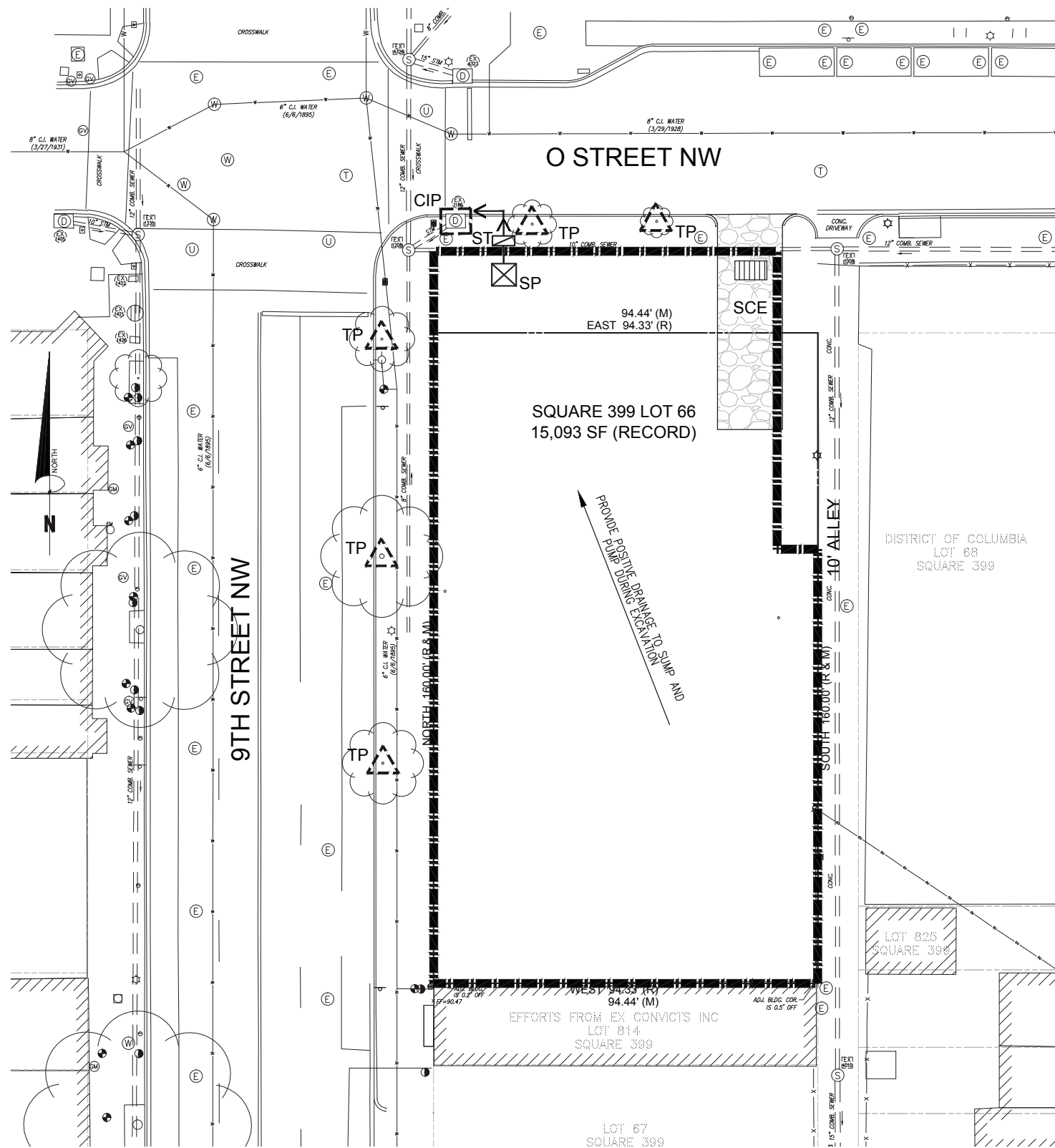
SURVEY NOTES

1. THE PROPERTY DELINEATED HEREON IS KNOWN FOR ASSESSMENT AND TAXATION PURPOSES AS LOT 66 IN SQUARE 399 AND IS ZONED C-2-A.
2. THE PROPERTY IS NOW IN THE NAME OF SCRIPTURE CHURCH OF CHRIST, INC., RECORDED IN INSTRUMENT NUMBER 25977, DATED JULY 2, 1979.
3. BOUNDARY INFORMATION AS SHOWN HEREON WAS OBTAINED FROM OFFICIAL CITY RECORDS AND VERIFIED IN THE FIELD INSOFAR AS POSSIBLE. PROPERTY LINE DIMENSIONS FROM OFFICIAL RECORDS MAY NOT NECESSARILY AGREE WITH ACTUAL MEASURE DIMENSIONS. ALL PROPERTY LINES IN THE DISTRICT OF COLUMBIA ARE SUBJECT TO CHANGE BY THE OFFICE OF THE SURVEYOR, D.C.
4. NORTH MERIDIAN INFORMATION AS SHOWN HEREON ARE BASED ON RECORD PLAT AS RECORDED IN SUBDIVISION BOOK 174 AT PAGE 41 IN THE OFFICE OF THE SURVEYOR OF THE DISTRICT OF COLUMBIA.
5. THE PLANIMETRICAL FEATURES AS SHOWN HEREON WERE COMPILED FROM CONVENTIONAL SURVEY METHODS.
6. THE SURVEYED PROPERTY AS SHOWN HEREON IS SUBJECT TO ALL COVENANTS AND RESTRICTIONS OF RECORD AND THOSE RECORDED HERewith. BOWMAN CONSULTING GROUP, LTD. WAS PROVIDED A COMMITMENT FOR TITLE INSURANCE FROM FIDELITY NATIONAL TITLE INSURANCE COMPANY, AND SCHEDULE B- PART II IS ADDRESSED IN THE TITLE COMMITMENT REVIEW.
7. THE PROPERTY SHOWN HEREON LIES IN ZONE "X" (UN-SHADED)(AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP FOR DISTRICT OF COLUMBIA, WASHINGTON, D.C., COMMUNITY-PANEL NUMBER 1100010017C, MAP REVISED SEPTEMBER 27, 2010.
8. THE LOCATION OF ALL VISIBLE BUILDINGS, STRUCTURES AND OTHER IMPROVEMENTS SITUATED ON THE SURVEYED PROPERTY, WHICH HAS BEEN CAREFULLY ESTABLISHED BY THE CLASSIFICATION AND SPECIFICATIONS FOR CADASTRAL SURVEYS ARE CORRECTLY SHOWN.
9. ALL EASEMENTS AND RIGHTS-OF-WAY APPARENT FROM A CAREFUL PHYSICAL INSPECTION OF THE SURVEYED PROPERTY, OR AS IDENTIFIED IN SCHEDULE B - PART II OF THE COMMITMENT FOR TITLE ARE CORRECTLY SHOWN UNLESS OTHERWISE NOTED.
10. THERE ARE NO VISIBLE ENCROACHMENTS ON ADJOINING PREMISES, STREETS OR EASEMENTS, BY VISIBLE BUILDINGS, STRUCTURES OR OTHER IMPROVEMENTS, NOR VISIBLE ENCROACHMENTS ON SAID PROPERTY BY VISIBLE STRUCTURES OR OTHER IMPROVEMENTS SITUATED ON ADJOINING PREMISES EXCEPT AS SHOWN.
11. O STREET, N.W. AND 9TH STREET, N.W. ARE MAINTAINED BY D.C. DEPARTMENT OF TRANSPORTATION.
12. THERE WAS NO EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS OBSERVED DURING THE SURVEY OF THIS PROPERTY.
13. THERE WAS NO EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL OBSERVED DURING THE SURVEY OF THIS PROPERTY.
14. THERE ARE NO STRIPED PARKING SPACES ON THE SURVEYED PROPERTY.

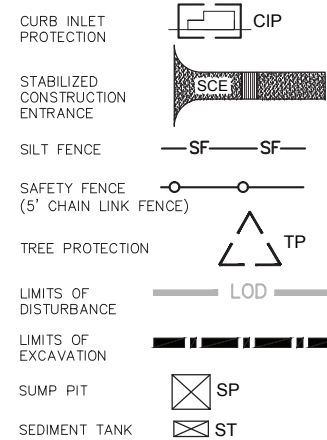
CURRENT DESCRIPTION OF SURVEYED PROPERTY

LOT NUMBERED SIXTY-SIX (66) IN SQUARE NUMBERED THREE HUNDRED AND NINETY-NINE (399) IN A SUBDIVISION MADE BY SCRIPTURE CHURCH, INC., AS PER PLAT RECORDED IN LIBER NO. 174 AT FOLIO 41 AT THE OFFICE OF THE SURVEYOR FOR THE DISTRICT OF COLUMBIA.





LEGEND



SEDIMENT AND EROSION CONTROL NARRATIVE:

INSTALL SEDIMENT AND EROSION CONTROL MEASURES INCLUDING SILT FENCE, INLET PROTECTION, TREE PROTECTION, AND STABILIZED CONSTRUCTION ENTRANCE AT SITE. FOLLOWING DISCONNECTION OF UTILITIES, CONCRETE ENTRANCE AND EXISTING CURB RAMPS. DURING DEMOLITION, DEBRIS WILL BE REMOVED FROM SITE BY TRUCK. CONTACT DC DEPARTMENT OF THE ENVIRONMENT, WATERSHED PROTECTION DIVISION AT 202-535-2250 TO SCHEDULE PRE-CONSTRUCTION MEETING.

AREA OF DISTURBANCE:

TOTAL SITE AREA: 15,093 SF (0.35 ACRES)
 AREA TO BE DISTURBED: 16,267 SF (0.35 ACRES)
 VOLUME OF EARTH TO BE REMOVED: ±14,460 CY (ASSUMING 24' OF 16,267 SF (LIMITS OF EXCAVATION))

CONSTRUCTION AND STABILIZATION SEQUENCE:

- CONTACT DC WATERSHED PROTECTION DIVISION AT 202-535-1364 TO SCHEDULE THE PRE-CONSTRUCTION MEETING PRIOR TO MOBILIZATION.
- INSTALL SEDIMENT AND EROSION CONTROL MEASURES AS NEEDED INCLUDING STABILIZED CONSTRUCTION ENTRANCE, WASH RACK, INLET PROTECTION, AND SILT FENCE AS INDICATED ON THIS SHEET. SEE SHEET C5.02 FOR SEDIMENT AND EROSION CONTROL DETAILS.
- SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AND APPROVED BY THE INSPECTOR PRIOR TO COMMENCING ANY OTHER LAND DISTURBING ACTIVITIES.
- DISCONNECT UTILITIES AND RAZE BUILDING TO SURFACE.
- AT THE COMPLETION OF THIS PHASE OF CONSTRUCTION, FOLLOWING SITE STABILIZATION AND UPON INSPECTOR'S APPROVAL, TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES CAN BE REMOVED.

DUST CONTROL NOTES:

- THE CONTRACTOR SHALL CONDUCT OPERATIONS AND MAINTAIN THE PROJECT SITE AS TO MINIMIZE THE CREATION AND DISPERSION OF DUST. DUST CONTROL SHALL BE USED THROUGHOUT THE WORK AT THE SITE.
- THE CONTRACTOR MUST PROVIDE CLEAN WATER, FREE FROM SALT, OIL AND OTHER DELETERIOUS MATERIAL TO BE USED FOR ON-SITE DUST CONTROL.
- THE CONTRACTOR SHALL SUPPLY WATER SPRAYING EQUIPMENT CAPABLE OF ACCESSING ALL WORK AREAS.
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 - FOR WATER APPLICATION TO UNDISTURBED SOIL SURFACES, THE CONTRACTOR SHALL:
 - APPLY WATER WITH EQUIPMENT CONSISTING OF TANK, SPRAY BAR, PUMP WITH DISCHARGE PRESSURE GAUGE;
 - ARRANGE SPRAY BAR HEIGHT, NOZZLE SPACING, AND SPRAY PATTERN TO PROVIDE COMPLETE COVERAGE OF GROUND WITH WATER;
 - DISPERSE WATER THROUGH NOZZLES ON SPRAY BAR AT 20 PSI (137.8 K PA) MINIMUM. KEEP AREAS DAMP WITHOUT CREATING NUISANCE CONDITIONS SUCH AS PONDING.
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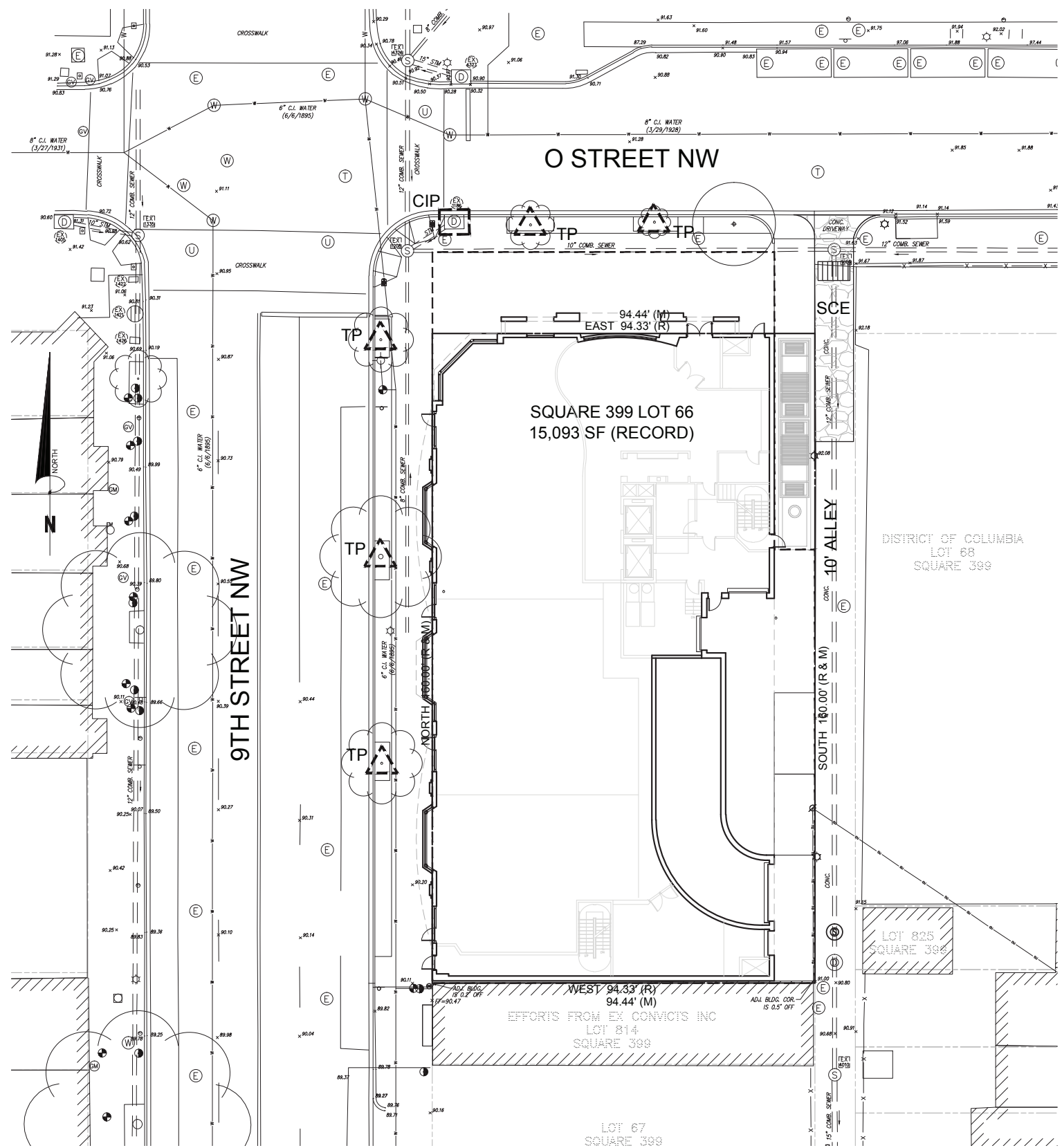
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- PROVIDE SILT FENCE AT THE PERIMETER OF DISTURBED AREA OR EXCAVATION TO REMAIN IN PLACE UNTIL SITE IS STABILIZED OR OTHERWISE APPROVED BY THE INSPECTOR.
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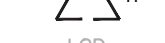




CONSTRUCTION DATES:

- THE PROPOSED WORK DUE TO COMMENCE IN THE FALL OF 2015 AND IS ANTICIPATED TO TAKE APPROXIMATELY 6 MONTHS.
- EXACT BEGINNING AND END OF CONSTRUCTION IS TO BE ESTABLISHED BY THE OWNER.





LEGEND

- CURB INLET PROTECTION  CIP
- STABILIZED CONSTRUCTION ENTRANCE  SCE
- SILT FENCE  SF
- SAFETY FENCE (5' CHAIN LINK FENCE)  Safety Fence
- TREE PROTECTION  TP
- LIMITS OF DISTURBANCE  LOD
- LIMITS OF EXCAVATION  Limits of Excavation
- SUMP PIT  SP
- SEDIMENT TANK  ST

SEDIMENT AND EROSION CONTROL NARRATIVE:

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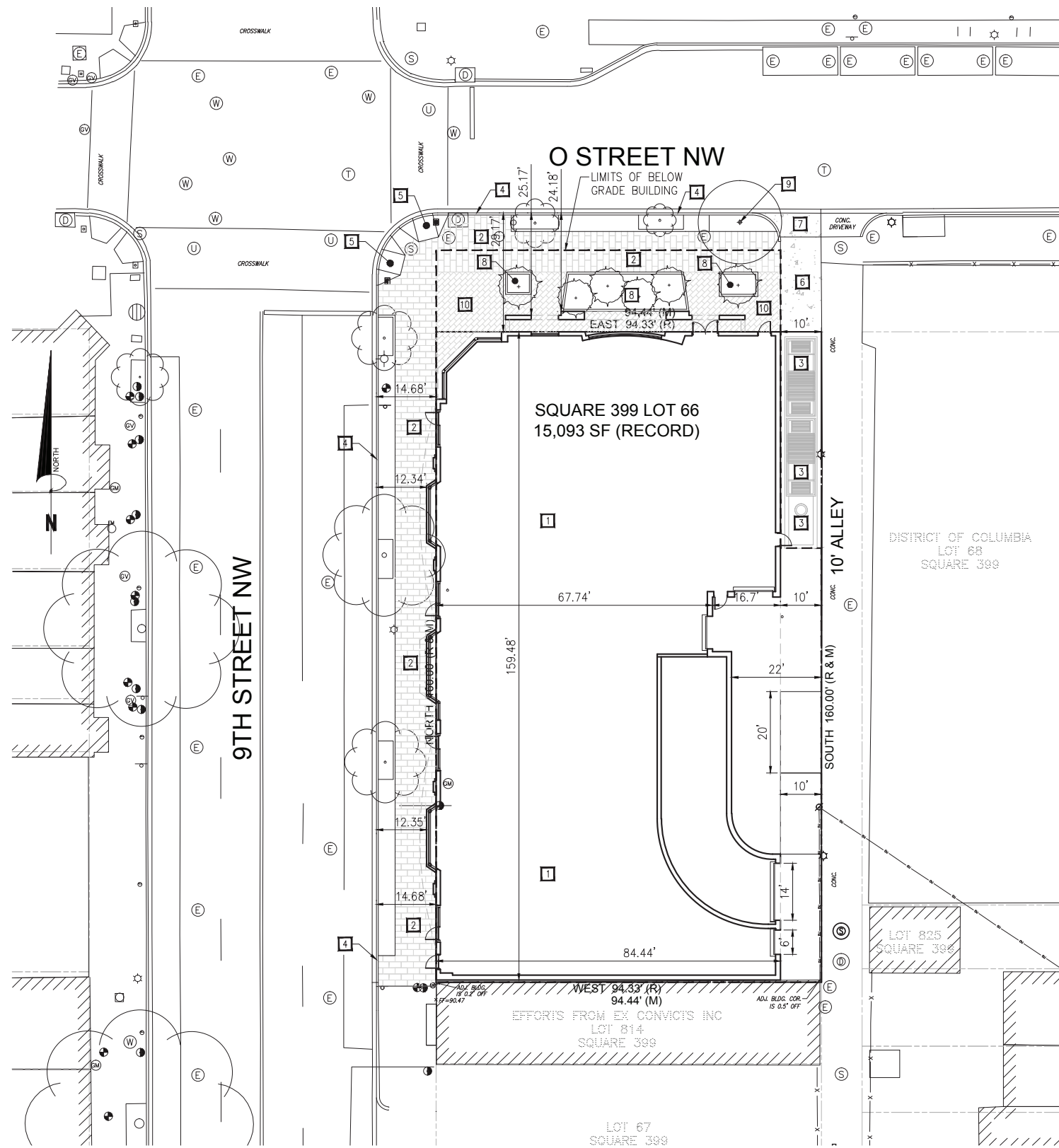
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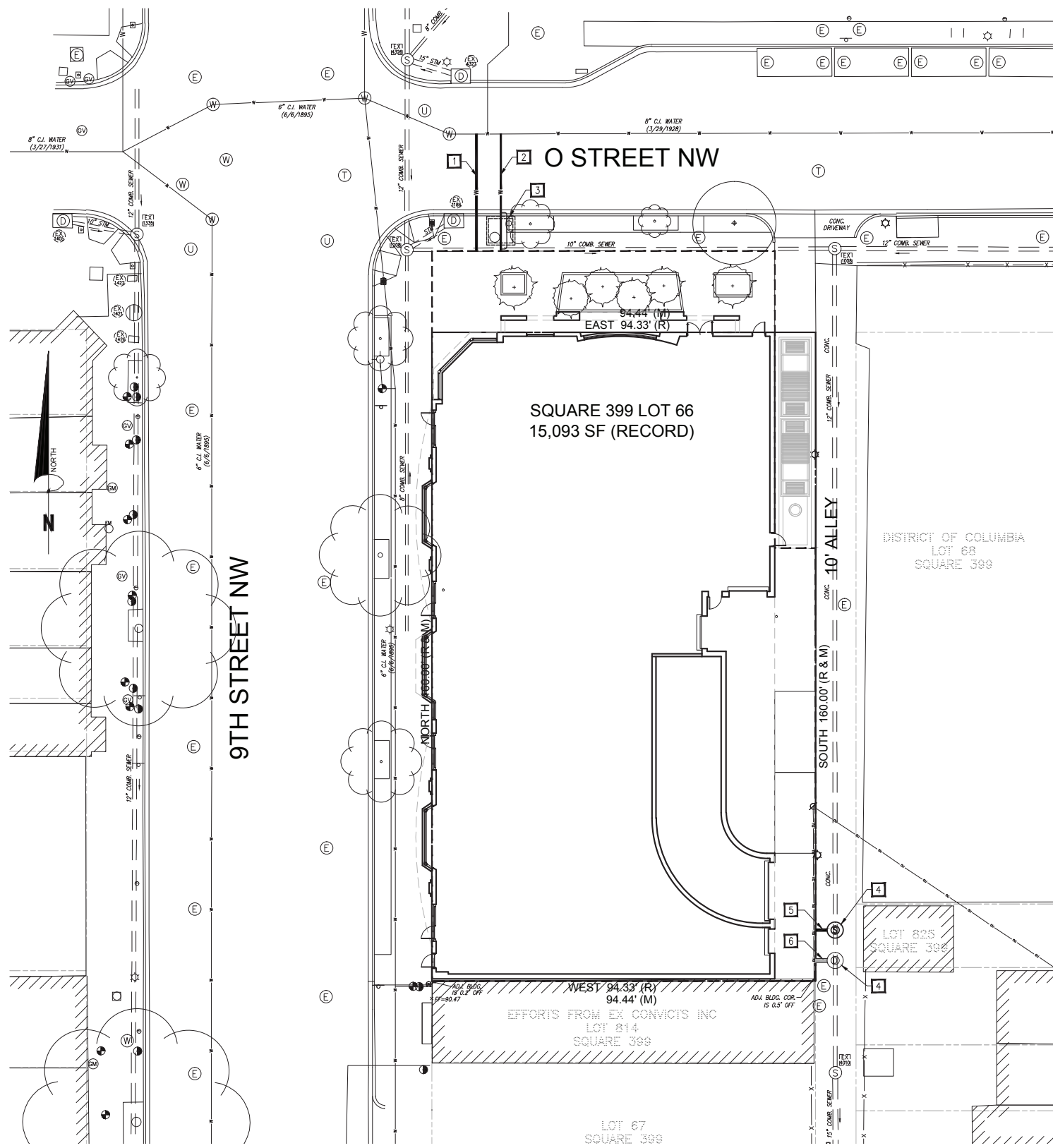




SITE KEYNOTES

- 1 NEW BUILDING. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS.
- 2 NEW CONCRETE SIDEWALK.
- 3 NEW ELECTRICAL VAULTS.
- 4 NEW GRANITE CURB AND CONCRETE GUTTER.
- 5 NEW ADA RAMP.
- 6 NEW CONCRETE ALLEY.
- 7 NEW CONCRETE ENTRANCE.
- 8 NEW LANDSCAPE AREA.
- 9 NEW STREET TREE.
- 10 NEW BRICK PAVERS.





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UTILITY KEYNOTES

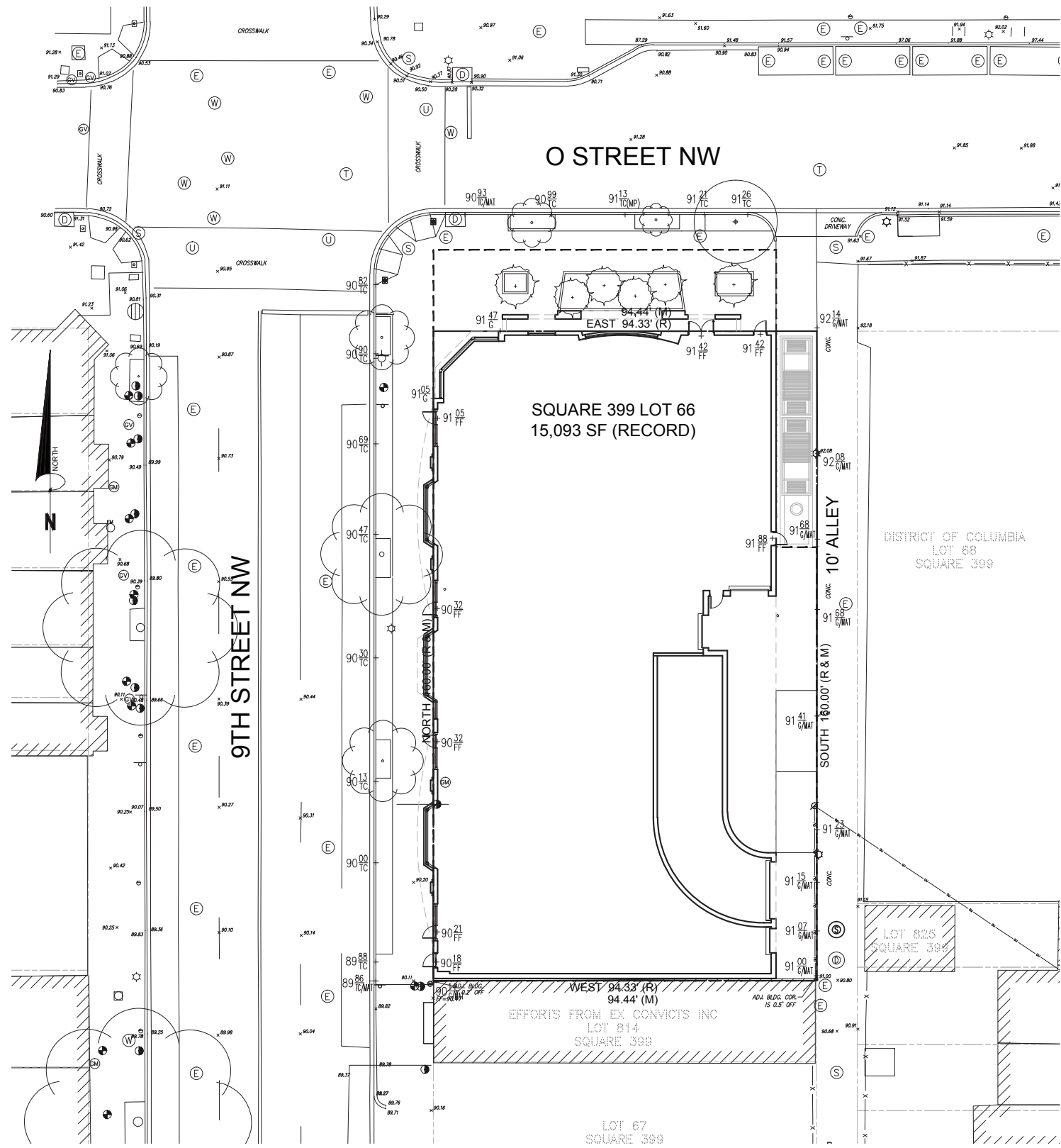
- 1 NEW 6" DIP FIRE SERVICE.
- 2 NEW 4" DIP DOMESTIC SERVICE.
- 3 NEW 4" WATER METER.
- 4 NEW DOGHOUSE MANHOLE.
- 5 NEW 8" PVC SANITARY LINE.
- 6 NEW 12" PVC STORM LINE.

WATER AND SEWER DEMAND

WATER:
260 GPD PER UNIT X 59 UNITS = 15,340 GPD
0.20 GPD PER SF X 6,294 SF RETAIL = 1,260 GPD
TOTAL = 16,600 GPD

SEWER:
16,600 GPD = 0.026 CFS





STANDARDS AND SPECIFICATIONS FOR DUST CONTROL

1. THE CONTRACTOR SHALL CONDUCT OPERATIONS AND MAINTAIN THE PROJECT SITE SO AS TO MINIMIZE THE CREATION AND DISPERSION OF DUST. DUST CONTROL SHALL BE USED THROUGHOUT THE WORK AT THE SITE.
2. THE CONTRACTOR MUST PROVIDE CLEAN WATER, FREE FROM SALT, OIL AND OTHER DELETERIOUS MATERIAL TO BE USED FOR ON-SITE DUST CONTROL.
3. THE CONTRACTOR SHALL SUPPLY WATER SPRAYING EQUIPMENT CAPABLE OF ACCESSING ALL WORK AREAS.
4. THE CONTRACTOR SHALL IMPLEMENT STRICT DUST CONTROL MEASURES DURING ACTIVE CONSTRUCTION PERIODS ON-SITE. THESE CONTROL MEASURES WILL GENERALLY CONSIST OF WATER APPLICATIONS THAT ARE APPLIED TO A MINIMUM OF ONCE PER DAY DURING DRY WEATHER OR MORE OFTEN AS REQUIRED TO PREVENT SOIL EMISSIONS.
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 - C. DISPERSE WATER THROUGH NOZZLES ON SPRAY BAR AT 20 PSI (137.6kPa), MINIMUM. KEEP AREAS DAMP WITHOUT CREATING NUISANCE CONDITIONS SUCH AS FONDING.
6. FOR WATER APPLICATION TO SOIL SURFACES DURING DEMOLITION AND/OR EXCAVATION, THE CONTRACTOR SHALL:
 - A. APPLY WATER WITH EQUIPMENT CONSISTING OF A TANK, PUMP WITH DISCHARGE GAUGE, HOSES AND MIST NOZZLES.
 - B. LOCATE TANK AND SPRAYING EQUIPMENT SO THAT THE ENTIRE EXCAVATION AREA CAN BE MISTED WITHOUT INTERFERING WITH DEMOLITION AND/OR EXCAVATION EQUIPMENT OR OPERATIONS. KEEP AREAS DAMP WITHOUT CREATING NUISANCE CONDITIONS SUCH AS FONDING.
 - C. APPLY WATER SPRAY IN A MANNER TO PREVENT MOVEMENT OF SPRAY BEYOND THE SITE BOUNDARIES.

DISTRICT OF COLUMBIA STANDARD SEDIMENT CONTROL NOTES

1. ALL SEDIMENT AND EROSION CONTROL METHODS SHALL BE INSTALLED BEFORE THE START OF AN EXCAVATION AND/OR CONSTRUCTION AS PER STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR THE DISTRICT OF COLUMBIA. IF AN ON-SITE INSPECTION REVEALS FURTHER EROSION CONTROL MEASURES ARE NECESSARY THE SAME SHALL BE PROVIDED.
2. ALL DEBRIS TO BE REMOVED FROM SITE.
3. ALLEY AND/OR STREETS SHALL BE SWEEP CLEAN AT ALL TIMES DURING EXCAVATION AND CONSTRUCTION.
4. ALL CATCH BASINS AND AREA DRAINS SHALL BE PROTECTED DURING EXCAVATION AND CONSTRUCTION.
5. IF ANY CATCH BASIN OR DRAIN BECOMES CLOGGED AS A RESULT OF EXCAVATION OR CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS CLEANING.
6. WHEN A SEDIMENT TRAP/SEDIMENT TANK HAS REACHED 6776 CAPACITY, CLEAN OUT OF SAME IS REQUIRED.
7. ANY STOCKPILING, REGARDLESS OF LOCATION ON THE SITE, SHALL BE STABILIZED WITHIN 20 DAYS AFTER IS ESTABLISHMENT AND FOR THE DURATION OF THE PROJECT.

37.0 STANDARDS AND SPECIFICATIONS FOR LAND GRADING

DEFINITION: RESHAPING OF THE EXISTING LAND SURFACE IN ACCORDANCE WITH A PLAN AS DETERMINED BY ENGINEERING SURVEY AND LAYOUT.

PURPOSE: THE PURPOSE OF A LAND GRADING SPECIFICATIONS IS TO PROVIDE FOR EROSION CONTROL AND VEGETATIVE ESTABLISHMENT ON THOSE AREAS WHERE THE EXISTING LAND SURFACE IS TO BE RESHAPED BY GRADING ACCORDING TO A PLAN.

DESIGN CRITERIA: THE GRADING PLAN SHOULD BE BASED UPON THE INCORPORATION OF BUILDING DESIGNS AND STREET LAYOUTS THAT FIT AND UTILIZE EXISTING TOPOGRAPHY AND DESIRABLE NATURAL SURROUNDINGS TO AVOID EXTREME GRADE MODIFICATIONS. INFORMATION SUBMITTED MUST PROVIDE SUFFICIENT TOPOGRAPHIC SURVEYS AND SOIL INVESTIGATIONS TO DETERMINE LIMITATIONS THAT MUST BE IMPOSED UPON THE GRADING OPERATION RELATED TO SOIL STABILITY, EFFECT ON ADJACENT PROPERTIES, AND DRAINAGE PATTERNS, MEASURES FOR DRAINAGE AND WATER REMOVAL, AND VEGETATIVE TREATMENT, ETC.

THE PLAN MUST SHOW EXISTING AND PROPOSED CONTOURS OF THE AREA(S) TO BE GRADED. THE PLAN SHALL ALSO INCLUDE PRACTICES FOR EROSION CONTROL, SLOPE STABILIZATION, SAFE DISPOSAL OF RUNOFF WATER AND DRAINAGE, SUCH AS WATERWAYS, LINED DITCHES, REVERSE SLOPE BENCHES (INCLUDE GRADE AND CROSS-SECTION), GRADE STABILIZATION STRUCTURES, RETAINING WALLS, AND SURFACE AND SUBSURFACE DRAINS. THE PLAN SHALL ALSO INCLUDE PHASING OF THESE PRACTICES. THE FOLLOWING SHALL BE INCORPORATED INTO THE PLAN:

1. PROVISIONS SHALL BE MADE TO SAFELY CONDUCT SURFACE RUNOFF TO STORM DRAINS, PROTECTED DRAINS OR TO STABILIZE WATER COURSES TO INSURE THAT SURFACE RUNOFF WILL NOT DAMAGE SLOPES OR OTHER GRADED AREAS.
2. CUT AND FILL SLOPES THAT ARE TO BE STABILIZED WITH GRASSES SHALL NOT BE STEEPER THAN 2:1. (WHERE THE SLOPE IS TO BE MOWED THE SLOPE SHOULD BE STEEPER THAN 3:1, 4:1 IS PREFERRED BECAUSE OF SAFETY FACTORS RELATED TO MOWING STEEP SLOPES.) SLOPES EXCEEDING 2:1 SHALL REQUIRE SPECIAL DESIGN AND STABILIZATION CONSIDERATIONS THAT SHALL BE ADEQUATELY SHOWN ON THE PLANS.
3. REVERSE BENCHES SHALL BE PROVIDED WHENEVER THE VERTICAL INTERVAL (HEIGHT) OF ANY 21 SLOPE EXCEEDS 20 FEET; FOR 3:1 SLOPE IS SHALL BE INCREASED TO 30 FEET AND FOR 4:1 TO 40 FEET. BENCHES SHALL BE LOCATED TO DIVIDE THE SLOPE FACE AS EQUALLY AS POSSIBLE AND SHALL CONVEY THE WATER TO A STABLE OUTLET. SOILS, SEEPS, ROCK OUTCROPS, ETC., SHALL ALSO BE TAKEN INTO CONSIDERATION WHEN DESIGNING BENCHES.
4. SURFACE WATER SHALL BE DIVERTED FROM THE FACE OF ALL CUT AND/OR FILL SLOPES BY THE USE OF EARTH DIKES, DITCHES, AND SWALES OR CONVERTED DOWNSLOPE BY THE USE OF A DESIGNED STRUCTURE, EXCEPT WHERE:
 - A. THE FACE OF THE SLOPE IS OR SHALL BE STABILIZED AND THE FACE OF ALL GRADED SLOPES SHALL BE PROTECTED FROM SURFACE RUNOFF UNTIL THEY ARE STABILIZED.

37.0 STANDARDS AND SPECIFICATIONS FOR LAND GRADING CONT.

- B. THE FACE OF THE SLOPE SHALL NOT BE SUBJECT TO ANY CONCENTRATE FLOWS OF SURFACE WATER SUCH AS FROM NATURAL DRAINAGEWAYS, GRADED SWALES, DOWNSPOUTS, ETC.
- C. THE FACE OF THE SLOPE WILL BE PROTECTED BY SPECIAL EROSION CONTROL MATERIALS TO INCLUDE, BUT NOT LIMITED TO: APPROVED VEGETATIVE STABILIZATION PRACTICES (SEE SECTION G), RIP-RAP OR OTHER APPROVED STABILIZATION METHODS.
5. CUT SLOPES OCCURRING IN RIFABLE ROCK SHALL BE SERRATED AS SHOWN IN DETAIL 70. SERRATED SLOPES ON THE FOLLOWING DIAGRAM. THESE SERRATIONS SHALL BE MADE WITH CONVENTIONAL EQUIPMENT AS THE EXCAVATION IS MADE EACH STEP OR SERRATION SHALL BE CONSTRUCTED ON THE CONTOUR AND WILL HAVE STEPS CUT AT NOMINAL 2-FOOT INTERVALS WITH NOMINAL 3-FOOT HORIZONTAL SHELVES. THESE STEPS WILL VARY DEPENDING ON THE SLOPE RATIO OR THE CUT SLOPE THE NOMINAL SLOPE IS 1.5:1. THESE STEPS WILL WEATHER AND ACT TO HOLD MOISTURE, LIME, FERTILIZER, AND SEED, THIS PRODUCING A MUCH QUICKER AND LONGER LIVED VEGETATIVE COVER AND BETTER SLOPE STABILIZATION. OVERLAND FLOW SHALL BE DIVERTED FROM THE TOP OF ALL SERRATED CUT SLOPES AND CARRIED TO A SUITABLE OUTLET.
6. SUBSURFACE DRAINAGE SHALL BE PROVIDED WHERE NECESSARY TO INTERCEPT SEEPAGE THAT WOULD OTHERWISE ADVERSELY AFFECT SLOPE STABILITY OR CREATE EXCESSIVELY WET SITE CONDITIONS.
7. SLOPES SHALL NOT BE CREATED SO CLOSE TO PROPERTY LINES AS TO ENDANGER ADJOINING PROPERTIES WITHOUT ADEQUATELY PROTECTING SUCH PROPERTIES AGAINST SEDIMENTATION, EROSION, SLURRING, SETTLEMENT, SUBSIDENCE OR OTHER RELATED DAMAGES.

8. FILL MATERIAL SHALL BE FREE OF SNOW, ICE, FROZEN MATERIALS, TRASH, BRICK, CLAY LUMPS, HAZARDOUS MATERIAL, BROKEN CONCRETE, TREE ROOTS, SOIL, ASHES, CONCRETE, GLASS, PLASTER, ORGANIC MATTER, BRUSH, LOGS, STUMPS, BUILDING DEBRIS, AND ANY OTHER FOREIGN MATERIAL IT SHOULD BE FREE OF STONES OVER 2 INCHES IN DIAMETER WHERE COMPACTED BY HAND OR MECHANICAL TAMERS OR OVER 8 INCHES IN DIAMETER WHERE COMPACTED BY ROLLERS OR OTHER EQUIPMENT. FROZEN MATERIAL SHALL BE PLACED IN THE FILL NOR SHALL THE FILL MATERIAL BE PLACED ON A FROZEN FOUNDATION.

9. STOCKPILES, BORROW AREAS, AND SPILL SHALL BE SHOWN ON THE PLANS AND SHALL BE SUBJECT TO THE PROVISIONS OF THIS STANDARD AND SPECIFICATION.

10. ALL DISTURBED AREAS SHALL BE STRUCTURALLY OR VEGETATIVELY IN COMPLIANCE WITH 42.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION.

38.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL

DEFINITION: PLACEMENT OF TOPSOIL OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE: TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES

- I. THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
- II. FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

II. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF THE TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED IN THE NRCS DISTRICT OF COLUMBIA SOIL SURVEY MANUAL.

- A. TOPSOIL SPECIFICATIONS – SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING: A TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE WATERSHED PROTECTION DIVISION. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOIL AND SHALL CONTAIN LESS THAN SIX BY VOLUME OF CONCRETE, STONES, SLAG, COALSH FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2 INCHES IN DIAMETER.
- B. TOPSOIL MUST BE FREE OF PLANT OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, AND OTHER POISONOUS PLANTS OR OTHERS AS SPECIFIED.
- C. WHERE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 LBS./1,000 SF) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.

III. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:

PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 42.0 VEGETATIVE STABILIZATION – SECTION I – VEGETATIVE STABILIZATION METHOD AND MATERIALS.

IV. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:

A. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:

- I. PH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A PH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE PH TO 6.5 OR HIGHER.
- II. ORGANIC CONTENT OF TOPSOIL SHALL NOT BE LESS THAN 1.5% BY WEIGHT.
- III. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.
- IV. NO SOD OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MINIMUM) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE WATERSHED PROTECTION AGENCY, MAY BE USED IN-LEU OF NATURAL TOPSOIL.

B. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 42.0 VEGETATIVE STABILIZATION – SECTION I – VEGETATIVE STABILIZATION METHOD AND MATERIALS.

V. TOPSOIL APPLICATION

II. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.

III. GRADES IN THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED SHALL BE MAINTAINED, ALBERT 4-8" HIGHER IN ELEVATION.

III. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4-8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

IV. TOPSOIL SHALL BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

38.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL CONT.

- I. ALTERNATIVE FOR PERMANENT SEEDING –INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW.
- A. COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE TESTED TO THE PRESCRIBED AMENDMENTS AND FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
 - I. COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS THAT ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY EITHER THE STATE OF MARYLAND OR THE STATE OF VIRGINIA.
 - II. COMPOSTED SLUDGE SHALL CONTAIN AT LEAST 1.0% NITROGEN, 1.5% PHOSPHOROUS, AND 0.2% POTASSIUM, AND HAVE A PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS, THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO THE COMPOST PRIOR TO USE.
 - III. COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SF.
 - IV. COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4 LBS./1,000 SF AND 1/3 THE NORMAL LIME APPLICATION RATE. REFERENCES: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SODDING, MD-VA, PUB. #1, COOPERATIVE EXTENSIVE SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES, REVISED 1973.

42.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

SECTION I – VEGETATIVE STABILIZATION METHODS AND MATERIALS A SITE PREPARATION

- I. INSTALL EROSION AND SEDIMENT CONTROL STRUCTURES (EITHER TEMPORARY OR PERMANENT) SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, WATERWAYS, OR SEDIMENT CONTROL BASINS.
- II. PERFORM ALL GRADING OPERATIONS AT RIGHT ANGLES TO THE SLOPE FINAL GRADING AND SHAPING NOT USUALLY NECESSARY FOR TEMPORARY SEEDING.
- III. SCHEDULE REQUIRED SOIL TESTS TO DETERMINE SOIL AMENDMENT COMPOSITION AND APPLICATION RATES FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES.
- B. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
 - I. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OVER 5 ACRES. SOIL ANALYSIS MAY BE PERFORMED BY THE UNIVERSITY OF THE DISTRICT OF COLUMBIA OR A CERTIFIED COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
 - II. FERTILIZERS SHALL BE UNIFORM IN COMPOSITION, FINE FLOWING AND SUITABLE FOR ACCURATE APPLICATION AND APPROVED EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS SHALL ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE STATE FERTILIZED LAWS AND SHALL BEAR THE NAME OR TRADEMARK, AND WARRANT OF THE PRODUCER.
 - III. LIME MATERIALS SHALL BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED) WHICH CONTAINS AT LEAST 50% TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE SHALL BE GROUND 84 MESH FINENESS THAT AT LEAST 60% WILL PASS THROUGH #100 MESH SIEVE AND 96-100% WILL PASS THROUGH A #20 SIEVE.
 - IV. 90%PORCITE LIME AND FERTILIZER INTO THE TOP 3-5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

C. SEEDBED PREPARATION

- I. TEMPORARY SEEDING
 - A. SEEDBED PREPARATION SHALL CONSIST OF LOOSENING SOIL TO A DEPTH OF 3" TO 5" BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOW OR RIPPERS MOUNTED ON THE CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT SHOULD NOT BE ROLLED OR DRAGGED SMOOTH, BUT LEFT IN THE ROUGHENED CONDITION. SLOPED AREAS (GREATER 3:1) SHOULD BE TRACKED LEAVING THE SURFACE OF AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 - B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 - C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3-5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
- II. PERMANENT SEEDING
 - A. MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT:
 - I. SOIL PH SHALL BE BETWEEN 6.9 AND 7.0
 - II. SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM).
 - III. THE SOIL SHALL CONTAIN LESS THAN 49% CLAY BUT ENOUGH FINE GRAINED MATERIAL (30% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF CONCRETE, STONES, SLAG, COALSH FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2 INCHES IN DIAMETER.
 - IV. SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT.
 - B. AREAS PREVIOUSLY GRADED IN CONFORMANCE WITH THE DRAWINGS SHALL BE MAINTAINED WITH A TREE AND EVEN GRADE, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3-5" TO PERMIT BONDING OF THE TOPSOIL TO A SURFACE AREA AND TO CREATE HORIZONTAL EROSION CHECK SLOTS TO PREVENT TOPSOIL FROM SLIDING DOWN A SLOPE

C. APPLY SOIL AMENDMENTS AS PER SOIL TEST OR AS INCLUDED ON THE PLANS. D. MIX SOIL AMENDMENTS INTO THE TOP 3-5" OF TOPSOIL BY DISKING OR OTHER SUITABLE MEANS. LAWN AREAS SHOULD BE RAKED TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION, LOOSEN THE SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE. STEEP SLOPES (STEEPER THAN 3:1) SHOULD BE TRACKED BY A DOZER LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. THE TOP 1-3" OF SOIL SHOULD BE LOOSE AND FRAGILE. SEEDING LOOSENED MAY NOT BE NECESSARY ON NEWLY DISTURBED AREAS.

D. SEED SPECIFICATIONS

- I. ALL SEED MUST MEET THE REQUIREMENTS OF THE DISTRICT OF COLUMBIA DPW STANDARD AND SPECIFICATIONS FOR HIGHWAYS AND STRUCTURES AND SPECIFICATION 42.0 VEGETATIVE STABILIZATION. ALL SEED USED SHALL HAVE BEEN TESTED WITH THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON THIS JOB.

NOTE: SEED TAGS SHALL BE MADE AVAILABLE TO THE INSPECTOR TO VERIFY TYPE AND RATE OF SEED USED.

II. INOCULANT – THE INOCULANT FOR TREATING LEGUME SEED 94 THE SEED MIXTURES SHALL BE A PURE CULTURE OF NITROGEN-FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS SHALL NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANT AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WITH HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75-89F CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.

E. METHODS OF SEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER), BROADCAST OR DROP SEEDER, OR A CULTPACKER SEEDER.

I. HYDROSEEDING:

- A. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATIONS RATES AMOUNTS WILL NOT EXCEED THE FOLLOWING NITROGEN: MAXIMUM OF 100 LBS PER ACRE TOTAL OF SOLUBLE NITROGEN: P205 (PHOSPHOROUS): 208LBS/AC; K20 (POTASSIUM): 200 LBS/AC.
- B. LIME – USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.

C. SEED AND FERTILIZER SHALL BE MIXED ON-SITE AND SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

42.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION CONT.

- I. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
- A. SEE SPREAD DRY SHALL BE INCORPORATED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON THE TEMPORARY OR PERMANENT SEMBAG SUMMARIES OR TABLES 42 OR 43. THE SEED AREA SHALL THEN BE ROLLED WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
- B. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
- III. DRILL OR CULTPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
 - A. CULTPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1-INCH OF SOIL COVERING. SEEDS MUST BE FIRM AFTER PLANTING. B. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
 - F. MULCH SPECIFICATIONS (IN ORDER OF PREFERENCE)
 - I. STRAW SHALL CONSIST OF THOROUGHLY THRESHED WHEAT, RYE, OR OAT STRAW, REASONABLY BRIGHT IN COLOR, AND SHALL NOT BE MUSTY, MOLLY, CAKED, DECAYED, OR EXCESSIVELY DUSTY AND SHALL BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED BY THE NRCS SEED LAW.
 - NOTE: ONLY STERILE STRAW MULCH SHOULD BE USED IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
 - II. WOOD CELLULOSE FIBER MULCH (WCFM)
 - A. WCFM SHALL CONSIST OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM ORGANIC PHYSICAL STATE.
 - B. WCFM SHALL BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
 - C. WCFM, INCLUDING DYE, SHALL CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
 - D. WCFM MATERIALS SHALL BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN 94 UNIFORM SUSPENSION 94 WATER UNDER AGITATION AND WILL BLEND WITH SB, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL SHALL FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND SHALL COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
 - E. WCFM MATERIAL SHALL CONTAIN NO ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
 - F. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH APPROXIMATELY 16 MM, DIAMETER APPROXIMATELY 1 MM, PH RANGE OF 4.8 TO 8.5, ASH CONTENT OF 1.6% MAXIMUM, AND WATER HOLDING CAPACITY OF 98% MINIMUM.
 - G. MULCHING SEEDED AREAS – MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SOWING.

I. IF GRADING IS COMPLETED OUTSIDE OF THE SEEDING SEASON, MULCH ALONE SHALL BE APPLIED AS PRESCRIBED IN THIS SECTION AND MAINTAINED UNTIL THE 589th SEASON. RETURNS AND SEEDING CAN BE PERFORMED ACCORDANCE WITH THESE SPECIFICATIONS.

II. WHEN STRAW MULCH IS USED, IT SHALL BE SPREAD OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS/ACRE. MULCH SHALL BE APPLIED TO A UNIFORM LOOSE DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. IF A MULCH ANCHORING TOOL IS TO BE USED, THE RATE SHOULD BE INCREASED TO 25 TONS/ACRE.

III. WOOD CELLULOSE FIBER USED AS A MULCH SHALL BE APPLIED AT A NET DRY WEIGHT OF 1,560 LBS. PER ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LBS. OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

H. SECURING STRAW MULCH (MULCH ANCHORING): MULCH ANCHORING SHALL BE PERFORMED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING ON THE TYPE OF AREA AND EROSION HAZARD:

- I. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD BE USED ON THE CONTOUR IF POSSIBLE.
- II. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. THE FIBER SHALL BE APPLIED AT A NEW DRY WEIGHT OF 750 LBS/ACRE THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LBS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
- III. APPLICATION OF LIQUID BINDERS SHOULD BE ON CRESTS AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. THE REMAINDER OF AREA SHOULD APPEAR UNIFORM AFTER BINDER APPLICATION. SYNTHETIC BINDERS – SUCH AS ACRYLIC DU 1 (AGRO-TACK), DCA-7B, PEROSSET, TERRA TACK 1, TERRA TACK AR OR OTHER APPROVED EQUAL, MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH.
- IV. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

SECTION II – TEMPORARY SEEDING

VEGETATION – ANNUAL GRASS OR GRAM USED TO PROVIDE COVER ON DISTURBED AREAS FOR UP TO 12 MONTHS. FOR LONGER DURATION OF VEGETATIVE COVER, PERMANENT SING IS REQUIRED.

SEED MIXTURE (HARDINESS ZONE 7A)				FERTILIZER RATE	LIME RATE
NO.	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	(10-10-10)	
	RYE FESCUE FORTAL MILLET	150	2/1-4/30 5/1-8/30 8/15-11/30	1	2 tons/ac (92 lb/1000sf)
	WEEDING LOWGRASS	4	5/1-8/14	1/4	

SECTION III – PERMANENT SEEDING

SEEDING GRASS AND LEGUMES TO ESTABLISH GRASS COVER FOR A MINIMUM PERIOD OF ONE YEAR ON DISTURBED AREAS GENERALLY REQUIRING LOW MAINTENANCE.

SEED MIXTURE (HARDINESS ZONE 7A)				FERTILIZER RATE (10-20-20)			LIME RATE
NO.	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	N	P205	K20	
	TALL FESCUE (60%)	125	3/1-5/15	1/4" MIN	90 lb/ac (20 lb/1000 sf)	175 lb/ac (4 lb/1000 sf)	2 tons/ac (92 lb/1000 sf)
	PERENNIAL BLUEGRASS (10%)	15					
	KENTUCKY BLUEGRASS (30%)	10	8/15-11/15	2" MIN.			

A. SEED MIXTURES – PERMANENT SEEDING SUMMARY

SEED MIXTURE (HARDINESS ZONE 7A)				FERTILIZER RATE (10-20-20)			LIME RATE
NO.	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	N	P205	K20	
	TALL FESCUE (60%)	125	3/1-5/15	1/4" MIN	90 lb/ac (20 lb/1000 sf)	175 lb/ac (4 lb/1000 sf)	2 tons/ac (92 lb/1000 sf)
	PERENNIAL BLUEGRASS (10%)	15					
	KENTUCKY BLUEGRASS (30%)	10	8/15-11/15	2" MIN.			

B. LIME – USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.

C. SEED AND FERTILIZER SHALL BE MIXED ON-SITE AND SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

42.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION CONT.

SECTION IV – SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR BETTER).

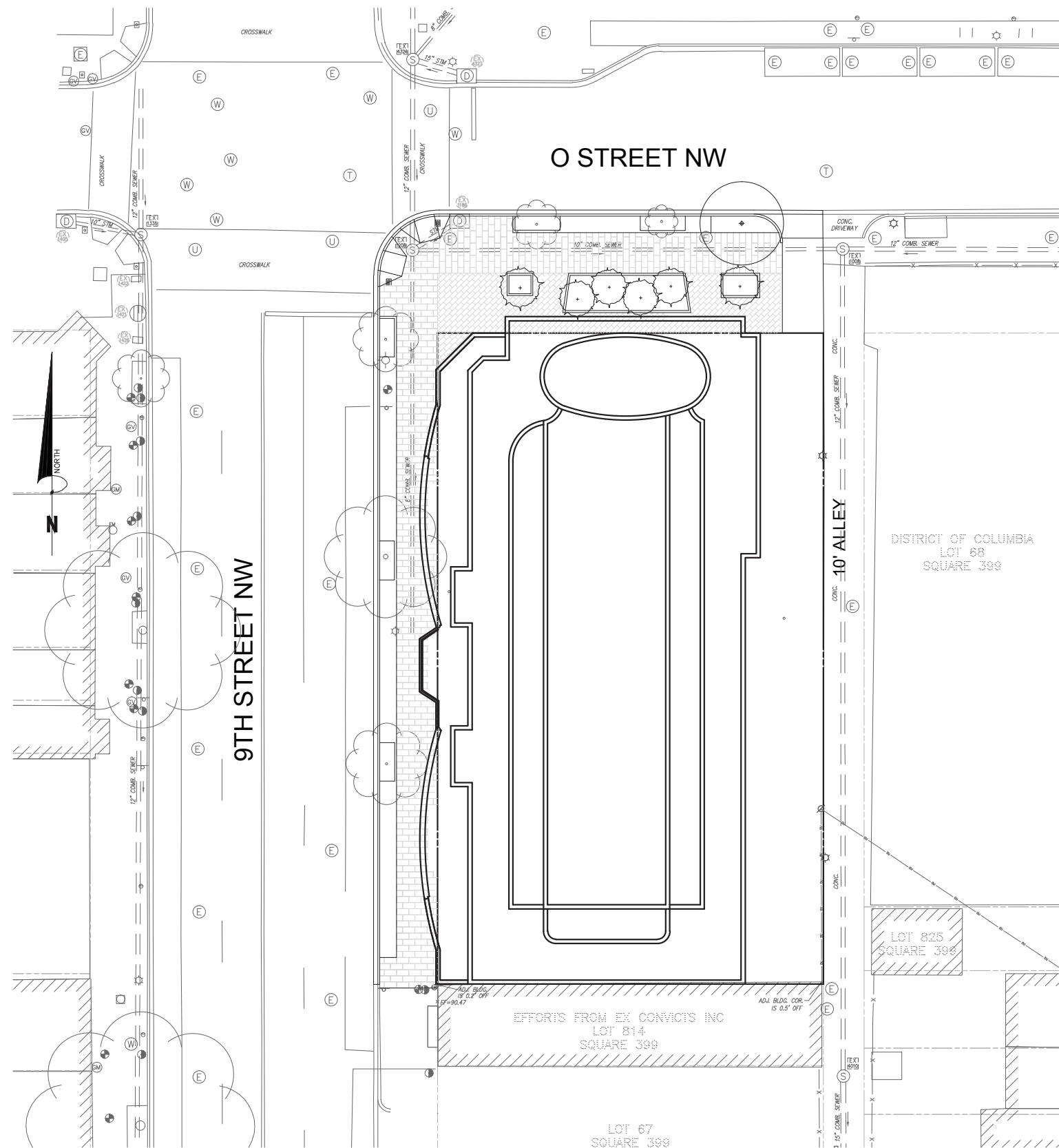
A. GENERAL SPECIFICATIONS

I. CLASS OF TURFGRASS SHALL BE MARYLAND OR VIRGINIA STATE CERTIFIED OR APPROVED. SOD LABELS SHALL BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.

II. SOD SHALL BE MACHINE CUT AT A UNIFORM SOD THICKNESS OF --", PLUS OR MINUS 1/4", AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS SHALL EXCLUDE TOP GROWTH AND THATCH. INDIVIDUAL PIECES OF SOD SHALL BE CUT TO THE SUPPLIERS WIDTH AND LENGTH. MAXIMUM ALLOWABLE DEVIATION FROM STANDARD WIDTHS AND LENGTHS SHALL BE SIX BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.

III. STANDARD SIZE SECTIONS OF SOD SHALL BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10% OF THEIR SECTION.

<p>DETAIL 1 - STABILIZED CONSTRUCTION ENTRANCE</p> <p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> LENGTH - MINIMUM OF 50' (30' FOR SINGLE RESIDENCE LOT). WIDTH - 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS. GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE. THE PLAN APPROVAL AUTHORITY MAY NOT REQUIRE SINGLE FAMILY RESIDENCES TO USE GEOTEXTILE. STONE - CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 4" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE. SURFACE WATER - ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" STONE OVER THE PIPE. WHEN THE SIZE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM WILL BE REQUIRED. THE MOUNTABLE BERM IS REQUIRED ON ALL SITES NOT LOCATED AT A HIGH SPOT. LOCATION - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE. <p>U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE</p>	<p>DETAIL 4 - SILT FENCE</p> <p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> FENCE POSTS SHALL BE A MINIMUM OF 36" LONG DRIVEN 16" MINIMUM INTO THE GROUND. WOOD POSTS SHALL BE 1 1/2" x 1 1/2" SQUARE (MIN.) CUT, OR 3/4" DIAMETER (MIN.) ROUND AND SHALL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE STANDARD I OR U SECTION WEIGHING NOT LESS THAN 1.00 POUND PER LINEAR FOOT. GEOTEXTILE SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F: <p>TENSILE STRENGTH 50 LB/IN (MIN.) TEST: ASTM D-4985 TENSILE MODULUS 20 LB/IN (MIN.) TEST: ASTM D-4985 FLOW RATE 0.3 GAL/FT²/MINUTE (MAX.) TEST: ASTM D-5141 FILTERING EFFICIENCY 70% (MIN.) TEST: ASTM D-5141</p> <ol style="list-style-type: none"> WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS. SILT FENCE SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND MAINTAINED WHEN BLUAGES OCCUR OR WHEN SEDIMENT ACCUMULATION REACHED 30% OF THE FABRIC HEIGHT. <p>U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE</p>	<p>DETAIL 6A - STANDARD INLET PROTECTION</p> <p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> EXCAVATE COMPLETELY AROUND THE INLET TO A DEPTH OF 18" BELOW THE NOTCH ELEVATION. DRIVE THE 2' x 4' CONSTRUCTION GRADE LAMBER POSTS 1" INTO THE GROUND AT EACH CORNER OF THE INLET. PLACE NAIL STRIPS BETWEEN THE POSTS ON THE ENDS OF THE INLET. ASSEMBLE THE TOP PORTION OF THE 2' x 4' FRAME USING THE OVERLAP JOINT SHOWN ON DETAIL 6A. THE TOP OF THE FRAME (WEIR) MUST BE 6" BELOW ADJACENT ROADWAYS WHERE FLOODING AND SAFETY ISSUES MAY ARISE. STRETCH THE 1/2" x 1/2" WIRE MESH TIGHTLY AROUND THE FRAME AND FASTEN SECURELY. THE ENDS MUST MEET AND OVERLAP AT A POINT. STRETCH THE GEOTEXTILE CLASS E TIGHTLY OVER THE WIRE MESH WITH THE GEOTEXTILE EXTENDING FROM THE TOP OF THE FRAME TO 18" BELOW THE INLET NOTCH ELEVATION. FASTEN THE GEOTEXTILE FIRMLY TO THE FRAME. THE ENDS OF THE GEOTEXTILE MUST MEET AT A POINT, BE OVERLAPPED AND FOLDED THIN FASTENING DOWN. BACKFILL AROUND THE INLET IN COMPACTING 6" LAYERS UNTIL THE LAYER OF EARTH IS LEVEL WITH THE NOTCH ELEVATION ON THE ENDS AND TOP ELEVATION ON THE SIDES. IF THE INLET IS NOT IN A SWAMP, CONSTRUCT A COMPACTED EARTH DIKE ACROSS THE DITCH LINE DIRECTLY BELOW IT. THE TOP OF THE EARTH DIKE SHOULD BE AT LEAST 6" HIGHER THAN THE TOP OF THE FRAME. THE STRUCTURE MUST BE INSPECTED PERIODICALLY AND AFTER EACH RAIN AND THE GEOTEXTILE REPLACED WHEN IT BECOMES CLOGGED. <p>U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE</p>	<p>DETAIL 6B - AT GRADE INLET PROTECTION</p> <p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> EXCAVATE AND WRAP WITH GEOTEXTILE CLASS E TO COMPLETELY COVER ALL OPENINGS. THEN SET GRADE BACK IN PLACE. PLACE 3/4" x 1 1/2" STONE, 4"-6" THICK ON THE GRATE TO SECURE THE FABRIC AND PROVIDE ADDITIONAL FILTRATION. <p>U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE</p>	<p>DETAIL 6C - CURB INLET PROTECTION (COG OR COS INLETS)</p> <p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> ATTACH A CONTINUOUS PIECE OF WIRE MESH (30" MINIMUM WIDTH BY THROAT LENGTH PLUS 4") TO THE TOP OF THE WEIR AT SPACER LOCATIONS. THESE 2' x 4" ANCHORS SHALL EXTEND ACROSS THE INLET PLATE AND BE HELD IN PLACE BY SANDBAGS OR ALTERNATE WEIGHT. PLACE A CONTINUOUS PIECE OF GEOTEXTILE CLASS E THE SAME DIMENSIONS AS THE WIRE MESH OVER THE WIRE MESH AND SECURELY ATTACH IT TO THE 2' x 4" WEIR. SECURELY NAIL THE 2' x 4" WEIR TO A 9" LONG VERTICAL SPACER TO BE LOCATED BETWEEN THE WEIR AND THE INLET FACE (MAX. 4" APART). PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL (MINIMUM 2" LENGTHS OF 2' x 4" TO THE TOP OF THE WEIR AT SPACER LOCATIONS). THESE 2' x 4" ANCHORS SHALL EXTEND ACROSS THE INLET PLATE AND BE HELD IN PLACE BY SANDBAGS OR ALTERNATE WEIGHT. THE ASSEMBLY SHALL BE PLACED SO THAT THE END SPACERS ARE A MINIMUM 1' BEYOND BOTH ENDS OF THE THROAT OPENING. FORM THE 1/2" x 1/2" WIRE MESH AND THE GEOTEXTILE FABRIC TO THE CONCRETE OUTER AND AGAINST THE FACE OF THE CURB ON BOTH SIDES OF THE INLET. PLACE CLEAN 1/4" x 1/2" STONE OVER THE WIRE MESH AND GEOTEXTILE IN SUCH A MANNER TO PREVENT WATER FROM ENTERING THE INLET UNDER OR AROUND THE GEOTEXTILE. THIS TYPE OF PROTECTION MUST BE INSPECTED FREQUENTLY AND THE FILTER CLOTH AND STONE REPLACED WHEN CLOGGED WITH SEDIMENT. ASSURE THAT THE STORM FLOW DOES NOT BYPASS THE INLET BY INSTALLING A TEMPORARY EARTH OR ASPHALT DIKE TO DIRECT THE FLOW TO THE INLET. <p>U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE</p>	<p>DETAIL 22 - SEDIMENT BASIN/TRAP BAFFLES</p> <p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> THE AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVELING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. THE TOTAL VOLUME AS MEASURED FROM THE BOTTOM TO RISER CREST ELEVATION SHALL BE 3600 CUBIC FEET PER ACRE OF DRAINAGE AREA (SEE TABLE 11). THE TOP OF EMBANKMENT MUST BE 2' ABOVE THE RISER CREST ELEVATION. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF OF THE WET STORAGE DEPTH OF THE TRAP (50% OF THE TRAP). THE SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT DROG. THE STRUCTURE SHALL BE INSPECTED PERIODICALLY AND AFTER EACH RAIN AND REPAIRS. <p>U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE</p>	<p>DETAIL 74 - TREE PROTECTION</p> <p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> THE FOLLOWING FORMULA SHOULD BE USED IN DETERMINING THE STORAGE VOLUME OF THE SEDIMENT TANK: 1 CUBIC FOOT OF STORAGE FOR EACH GALLON PER MINUTE OF PUMP DISCHARGE CAPACITY. AN EXAMPLE OF A TYPICAL SEDIMENT TANK IS SHOWN ABOVE. OTHER CONTAINER DESIGNS CAN BE USED IF THE STORAGE VOLUME IS ADEQUATE AND APPROVAL IS OBTAINED FROM THE LOCAL APPROVING AGENCY. TANKS MAY BE CONNECTED IN SERIES. <p>U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE</p>
<p>DETAIL 6D - MEDIAN INLET PROTECTION</p> <p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> FENCE POSTS SHALL BE 36" (MIN.) LONG DRIVEN 16" INTO THE GROUND AND SPACED 5' (MAX.) APART. WOOD POSTS SHALL BE 1 1/2" x 1 1/2" (MIN.) SQUARE CUT OR 1 3/4" (MIN.) DIAMETER ROUND AND SHALL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS SHALL BE STANDARD I OR U SECTION WEIGHING NOT LESS THAN 1.00 LBS/IN. FOOT. GEOTEXTILE CLASS F SHALL BE FASTENED SECURELY TO EACH POST WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION. WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER THEY SHALL BE OVERLAPPED, FOLDED AND STAPLED. MEDIAN INLET PROTECTION SHALL BE INSPECTED AFTER EACH RAIN AND MAINTAINED WHEN BLUAGES OCCUR IN THE FABRIC OR WHEN THE STONE GETS CLOGGED. STONE USED TO CONSTRUCT THE WEIR SHALL BE 4"-7" WITH A 1" THICK LAYER OF 3/4"-1 1/2" STONE ON THE UPSTREAM FACE. <p>U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE</p>	<p>DETAIL 6E - AT GRADE INLET GUARD</p> <p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> THE TOP MEASUREMENT OF 7-1/2" IS SET TO PROVIDE A 2" EXTENSION FOR OVERFLOW WHILE AVOIDING BLOCKAGE OF THE MANHOLE COVER. MAKE A WATERPROOF CONNECTION ALONG THE SIDES AND BOTTOM OF THE INLET GUARD WITH THE STREET AND CURB. <p>U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE</p>	<p>DETAIL 9 - EARTH DIKE</p> <p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> SEED AND COVER WITH STRAW MULCH. SEED AND COVER WITH SOIL STABILIZATION MATTING OR LINE WITH SOIL. 4"-7" STONE OR RECYCLED CONCRETE EQUIVALENT PRESSED INTO THE SOIL 7" MINIMUM. <p>U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE</p>	<p>DETAIL 11 - PERIMETER DIKE / SWALE</p> <p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> ALL PERIMETER DIKES/SWALES SHALL HAVE AN UNINTERRUPTED POSITIVE GRADE TO AN OUTLET. SPOT ELEVATIONS MAY BE NECESSARY FOR GRADES LESS THAN 1%. RUNOFF DIVERTED FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE. RUNOFF DIVERTED FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT A NON-EROSIVE VELOCITY. ALL TREES, BRUSH, STAMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE DIKE. THE DIKE SHALL BE EXCAVATED OR SHARPED TO LINE, GRADE, AND CROSS-SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDRE NORMAL FLOW. FILL SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT. ALL EARTH REMOVED AND NOT NEEDED FOR CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE DIKE. INSPECTION AND MAINTENANCE MUST BE PROVIDED PERIODICALLY AND AFTER EACH RAIN EVENT. NOTE: THE MAXIMUM DRAINAGE FOR THIS PRACTICE IS 2 ACRES. <p>U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE</p>	<p>DETAIL 12 - PIPE OUTLET SEDIMENT TRAP - ST I</p> <p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> THE AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVELING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. THE TOTAL VOLUME AS MEASURED FROM THE BOTTOM TO RISER CREST ELEVATION SHALL BE 3600 CUBIC FEET PER ACRE OF DRAINAGE AREA (SEE TABLE 11). THE TOP OF EMBANKMENT MUST BE 2' ABOVE THE RISER CREST ELEVATION. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF OF THE WET STORAGE DEPTH OF THE TRAP (50% OF THE TRAP). THE SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT DROG. THE STRUCTURE SHALL BE INSPECTED PERIODICALLY AND AFTER EACH RAIN AND REPAIRS. <p>U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE</p>	<p>DETAIL 34 - PORTABLE SEDIMENT TANK (HORIZONTAL)</p> <p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> THE FOLLOWING FORMULA SHOULD BE USED IN DETERMINING THE STORAGE VOLUME OF THE SEDIMENT TANK: 1 CUBIC FOOT OF STORAGE FOR EACH GALLON PER MINUTE OF PUMP DISCHARGE CAPACITY. AN EXAMPLE OF A TYPICAL SEDIMENT TANK IS SHOWN ABOVE. OTHER CONTAINER DESIGNS CAN BE USED IF THE STORAGE VOLUME IS ADEQUATE AND APPROVAL IS OBTAINED FROM THE LOCAL APPROVING AGENCY. TANKS MAY BE CONNECTED IN SERIES. <p>U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE</p>	
<p>PIPE OUTLET SEDIMENT TRAP - ST I</p> <p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE AVOIDED. ONCE CONSTRUCTED, THE TOP AND OUTSIDE FACE OF THE EMBANKMENT SHALL BE STABILIZED WITH SEED AND MULCH. POINTS OF CONCENTRATED INFLOW SHALL BE PROTECTED IN ACCORDANCE WITH GRADE STABILIZATION STRUCTURE CRITERIA. THE REMAINDER OF THE INTERIOR SLOPES SHOULD BE STABILIZED (ONE TIME) WITH SEED AND MULCH UPON TRAP COMPLETION AND MONITORED AND MAINTAINED EROSION FREE DURING THE LIFE OF THE TRAP. THE STRUCTURE SHALL BE REMOVED AND AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED. ALL OUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER. ALL PIPE CONNECTIONS SHALL BE WATERTIGHT. ABOVE THE WET STORAGE ELEVATION, THE RISER SHALL BE PERFORATED WITH 1/2" WIDE BY 6" LONG SLOTS OR 1" DIAMETER HOLES SPACED 4" VERTICALLY AND HORIZONTALLY. NO PERFORATIONS WILL BE ALLOWED WITHIN 6" OF THE HORIZONTAL BARRELS. THE RISER SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH (WIRE) THEN WRAPPED WITH GEOTEXTILE CLASS E. THE FILTER CLOTH SHALL EXTEND 4" ABOVE THE HIGHEST SLOT AND 4" BELOW THE LOWEST SLOT. WHERE ENDS OF FILTER CLOTH COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND FASTENED TO PREVENT CLOGGING. FILTER CLOTH SHALL BE REPLACED AS NECESSARY TO PREVENT CLOGGING. STRAPS OR CONNECTING BANDS SHALL BE USED TO HOLD THE FILTER CLOTH AND WIRE FABRIC IN PLACE. THEY SHALL BE PLACED AT THE TOP AND BOTTOM OF THE CLOTH. FILL MATERIAL AROUND THE PIPE SPILLWAY SHALL BE HAND COMPACTED IN 4" LAYERS. A MINIMUM OF 2" OF HAND-COMPACTED BARRELS SHALL BE PLACED OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT. THE RISER SHALL BE ANCHORED WITH EITHER A CONCRETE BASE OR STEEL PLATE BASE TO PREVENT FLOTTATION. CONCRETE BASES SHALL BE AT LEAST THREE TIMES THE RISER DIAMETER. 1/4" MINIMUM THICKNESS AND ATTACHED TO THE BOTTOM OF THE RISER BY A CONTINUOUS WELD TO FORM A WATERPROOF CONNECTION. THEN PLACE 2" OF STONE, GRAVEL OR TAMPED EARTH ON THE PLATE. ANTI SEEP COLLARS SHALL BE CONSTRUCTED IN ACCORDANCE WITH PLANS (REF. TABLE 18 AND DETAILS 17 AND 15). <p>U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE</p>	<p>DETAIL 13 - STONE OUTLET SEDIMENT TRAP - ST II</p> <p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS AND OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVELING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. ALL OUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER. THE STONE USED IN THE OUTLET SHALL BE SMALL RIP-RAP 4" TO 7" IN SIZE WITH A 1" THICK LAYER OF 3/4" TO 1 1/2" MINIMUM AGGREGATE PLACED ON THE UPSTREAM FACE OF THE OUTLET. STONE FACING SHALL BE AS NECESSARY TO PREVENT CLOGGING. GEOTEXTILE CLASS E MAY BE SUBSTITUTED FOR THE STONE FACING BY PLACING IT ON THE INSIDE FACE OF THE STONE OUTLET. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF OF THE WET STORAGE DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT DROG. <p>U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE</p>	<p>STONE OUTLET SEDIMENT TRAP - ST II</p> <p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> THE STRUCTURE SHALL BE INSPECTED PERIODICALLY AND AFTER EACH RAIN AND REPAIRS AS NEEDED. CONSTRUCTION OF TRAPS SHALL BE CARRIED OUT IN SUCH A MANNER THAT SEDIMENT POLLUTION IS AVOIDED. ONCE CONSTRUCTED, THE TOP AND OUTSIDE FACE OF THE EMBANKMENT SHALL BE STABILIZED WITH SEED AND MULCH. POINTS OF CONCENTRATED INFLOW SHALL BE PROTECTED IN ACCORDANCE WITH GRADE STABILIZATION STRUCTURE CRITERIA. THE REMAINDER OF THE INTERIOR SLOPES SHOULD BE STABILIZED (ONE TIME) WITH SEED AND MULCH UPON TRAP COMPLETION AND MONITORED AND MAINTAINED EROSION FREE DURING THE LIFE OF THE TRAP. THE STRUCTURE SHALL BE DEMATERED BY APPROVED METHODS, REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED. REFER TO SECTION G FOR SPECIFICATIONS CONCERNING TRAP DEMATERING. MINIMUM TRAP DEPTH SHALL BE MEASURED FROM THE WEIR ELEVATION. THE ELEVATION OF THE TOP OF ANY DIKE DIRECTING WATER INTO THE TRAP MUST EQUAL OR EXCEED THE ELEVATION OF THE TRAP EMBANKMENT. GEOTEXTILE CLASS E SHALL BE PLACED OVER THE BOTTOM AND SIDES OF THE OUTLET CHANNEL, PRIOR TO THE PLACEMENT OF STONE. SECTIONS OF FILTER CLOTH MUST OVERLAP AT LEAST 1" WITH THE SECTION NEAREST THE ENTRANCE PLACED ON TOP. THE FILTER CLOTH SHALL BE EMBEDDED AT LEAST 6" INTO EXISTING GROUND AT THE ENTRANCE OF THE OUTLET CHANNEL. OUTLET - AN OUTLET SHALL BE PROVIDED, INCLUDING A MEANS OF CONVEYING THE DISCHARGE IN AN EROSION FREE MANNER TO AN EXISTING STABLE CHANNEL. <p>U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE</p>	<p>DETAIL 14 - RIP-RAP OUTLET SEDIMENT TRAP - ST III</p> <p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> THE AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVELING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. MAXIMUM HEIGHT OF EMBANKMENT SHALL BE 4', MEASURED AT CENTERLINE OF EMBANKMENT. ALL OUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER. ELEVATION OF THE TOP OF ANY DIKE DIRECTING WATER INTO TRAP MUST EQUAL OR EXCEED THE HEIGHT OF TRAP EMBANKMENT. STORAGE AREA PROVIDED SHALL BE FROKED BY COMPUTING THE VOLUME MEASURED FROM TOP OF EXCAVATION (FOR STORAGE REQUIREMENTS SEE TABLE 12). FILTER CLOTH SHALL BE PLACED OVER THE BOTTOM AND SIDES OF THE OUTLET CHANNEL PRIOR TO PLACEMENT OF STONE. SECTION OF FABRIC MUST OVERLAP AT LEAST 1" WITH SECTION NEAREST THE ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST 6" INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL. OUTLET - AN OUTLET SHALL BE PROVIDED, WHICH INCLUDES A MEANS OF CONVEYING THE DISCHARGE IN AN EROSION FREE MANNER TO AN EXISTING STABLE CHANNEL. PROTECTION AGAINST SCOUR AT THE DISCHARGE END SHALL BE PROVIDED AS NECESSARY. OUTLET CHANNEL MUST HAVE POSITIVE DRAINAGE FROM THE TRAP. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/4 OF THE WET STORAGE DEPTH OF THE TRAP (150% OF THE TRAP). REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. THE STRUCTURE SHALL BE INSPECTED PERIODICALLY AND AFTER EACH RAIN AND REPAIRED AS NEEDED. CONSTRUCTION OF TRAPS SHALL BE CARRIED OUT IN SUCH A MANNER THAT SEDIMENT POLLUTION IS AVOIDED. ONCE CONSTRUCTED, THE TOP AND OUTSIDE FACE OF THE EMBANKMENT SHALL BE STABILIZED WITH SEED MULCH. POINTS OF CONCENTRATED INFLOW SHALL BE PROTECTED IN ACCORDANCE WITH GRADE STABILIZATION STRUCTURE CRITERIA. THE REMAINDER OF THE INTERIOR SLOPES SHOULD BE STABILIZED (ONE TIME) WITH SEED AND MULCH UPON TRAP COMPLETION AND MONITORED AND MAINTAINED EROSION FREE DURING THE LIFE OF THE TRAP. THE STRUCTURE SHALL BE DEMATERED BY APPROVED METHODS, REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED. <p>U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE</p>	<p>RIP-RAP OUTLET SEDIMENT TRAP - ST III</p> <p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> THE AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVELING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. MAXIMUM HEIGHT OF EMBANKMENT SHALL BE 4', MEASURED AT CENTERLINE OF EMBANKMENT. ALL OUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER. ELEVATION OF THE TOP OF ANY DIKE DIRECTING WATER INTO TRAP MUST EQUAL OR EXCEED THE HEIGHT OF TRAP EMBANKMENT. STORAGE AREA PROVIDED SHALL BE FROKED BY COMPUTING THE VOLUME MEASURED FROM TOP OF EXCAVATION (FOR STORAGE REQUIREMENTS SEE TABLE 12). FILTER CLOTH SHALL BE PLACED OVER THE BOTTOM AND SIDES OF THE OUTLET CHANNEL PRIOR TO PLACEMENT OF STONE. SECTION OF FABRIC MUST OVERLAP AT LEAST 1" WITH SECTION NEAREST THE ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST 6" INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL. OUTLET - AN OUTLET SHALL BE PROVIDED, WHICH INCLUDES A MEANS OF CONVEYING THE DISCHARGE IN AN EROSION FREE MANNER TO AN EXISTING STABLE CHANNEL. PROTECTION AGAINST SCOUR AT THE DISCHARGE END SHALL BE PROVIDED AS NECESSARY. OUTLET CHANNEL MUST HAVE POSITIVE DRAINAGE FROM THE TRAP. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/4 OF THE WET STORAGE DEPTH OF THE TRAP (150% OF THE TRAP). REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. THE STRUCTURE SHALL BE INSPECTED PERIODICALLY AND AFTER EACH RAIN AND REPAIRED AS NEEDED. CONSTRUCTION OF TRAPS SHALL BE CARRIED OUT IN SUCH A MANNER THAT SEDIMENT POLLUTION IS AVOIDED. ONCE CONSTRUCTED, THE TOP AND OUTSIDE FACE OF THE EMBANKMENT SHALL BE STABILIZED WITH SEED MULCH. POINTS OF CONCENTRATED INFLOW SHALL BE PROTECTED IN ACCORDANCE WITH GRADE STABILIZATION STRUCTURE CRITERIA. THE REMAINDER OF THE INTERIOR SLOPES SHOULD BE STABILIZED (ONE TIME) WITH SEED AND MULCH UPON TRAP COMPLETION AND MONITORED AND MAINTAINED EROSION FREE DURING THE LIFE OF THE TRAP. THE STRUCTURE SHALL BE DEMATERED BY APPROVED METHODS, REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED. <p>U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE</p>	<p>DETAIL 35 - PORTABLE SEDIMENT TANK (VERTICAL)</p> <p>CONSTRUCTION SPECIFICATIONS</p> <ol style="list-style-type: none"> THE FOLLOWING FORMULA SHOULD BE USED IN DETERMINING THE STORAGE VOLUME OF THE SEDIMENT TANK: 1 CUBIC FOOT OF STORAGE FOR EACH GALLON PER MINUTE OF PUMP DISCHARGE CAPACITY. AN EXAMPLE OF A TYPICAL SEDIMENT TANK IS SHOWN ABOVE. OTHER CONTAINER DESIGNS CAN BE USED IF THE STORAGE VOLUME IS ADEQUATE AND APPROVAL IS OBTAINED FROM THE LOCAL APPROVING AGENCY. TANKS MAY BE CONNECTED IN SERIES. <p>U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCE CONSERVATION SERVICE</p>	



STORMWATER MANAGEMENT NARRATIVE:

CONCEPTUAL STORMWATER MANAGEMENT PROVIDED FOR PUD REVIEW ONLY. DURING FURTHER DEVELOPMENT OF THE PUD AND FORTHCOMING DEVELOPMENT OF THE FINAL SITE PLAN, STORMWATER MANAGEMENT DESIGN WILL BE ADVANCED TO REFLECT ADDITIONAL DETAILS. THE DESIGN CRITERIA FOR THE PROJECT INCLUDE:

- STORMWATER MANAGEMENT DESIGN WILL MEET OR EXCEED THE CURRENT STANDARDS OF THE DISTRICT OF COLUMBIA IN PLACE AT THE TIME OF PUD APPROVAL.
- THE STORMWATER RUNOFF WILL BE TREATED USING LOW IMPACT DEVELOPMENT BMP MEASURES.
- THE STORMWATER RUNOFF WILL BE TREATED USING A COMBINATION OF ON-SITE BMPs SUCH AS GREEN ROOF AND CISTERN FOR WATER REUSE.

NOTE: AT THE CONCEPT LEVEL, SIZE AND LOCATION OF SWM FACILITIES ARE NOT YET DETERMINED. ACTUAL DESIGN OF THE FACILITIES WILL BE PROVIDED DURING FINAL SITE PLAN.

SWM REQUIREMENTS:

THIS PROJECT FALLS WITHIN THE GUIDELINES OF A 'MAJOR LAND DISTURBANCE' THUS REQUIRING A STORMWATER RETENTION VOLUME (SWRV) BASED ON THE 1.2" STORM, PER THE 2013 SWM GUIDEBOOK FOR THE DISTRICT. IN ADDITION TO THE REQUIRED VOLUME RETENTION ON-SITE, THE DESIGNED SWM FACILITIES WILL PROVIDE 2-YR AND 15-YR STORM CONTROL FOR PEAK DISCHARGE TO THE PRE-PROJECT AND PRE-DEVELOPMENT RATE, RESPECTIVELY.

- TOTAL SITE DISTURBANCE = 15,093 sf
- SWRV REQUIRED = 1,434 cf

Site Information

Is Site an "AWDZ Site"?	No
Is Site Located in the MS4?	No
AWDZ only - Regulatory Rain Event for WQTV (inches)	NA

Indicate Post-Development Land Cover

Cover Type	Disturbed Public Right of Way Area (square feet)	Major Land Disturbing Area (square feet)
Natural Cover		
Compacted Cover		
Impervious Cover		15,093
BMP		
Site Total	0	15,093
Retention Standard for SWRV (inches)	0.0	1.2

SWRV and WQTV Summary

	Disturbed Public Right of Way	Site Development
Stormwater Retention Volume, SWRV (cubic feet)	0	1,434
Stormwater Retention Volume, SWRV (gallons)	0	10,725
Water Quality Treatment Volume, WQTV (cubic feet)	NA	NA
Water Quality Treatment Volume, WQTV (gallons)	NA	NA



GREEN ROOF SPECIFICATIONS AND MAINTENANCE:

Table 3.3 Typical Maintenance Activities Associated with Green Roofs

Schedule (following construction)	Activity
As needed or as required by manufacturer	<ul style="list-style-type: none"> Water to promote plant growth and survival. Inspect the green roof and replace any dead or dying vegetation.
Semi-annually	<ul style="list-style-type: none"> Inspect the waterproof membrane for leaks and cracks. Weed to remove invasive plants (do not dig or use pointed tools where there is potential to harm the root barrier or waterproof membrane). Inspect roof drains, scuppers, and gutters to ensure they are not overgrown and have not accumulated organic matter deposits. Remove any accumulated organic matter or debris. Inspect the green roof for dead, dying, or invasive vegetation. Plant replacement vegetation as needed.

Table 3.1 Extensive Green Roof Material Specifications

Material	Specification
Roof	Structural capacity must conform to ASTM E-2397-05, <i>Practice for Determination of Live Loads and Dead Loads Associated with Vegetative (Green) Roof Systems</i> . In addition, use standard test methods ASTM E2398-05 for <i>Water Capture and Media Retention of Geocomposite Drain Layers for Green (Vegetated) Roof Systems</i> and ASTM E 2399-05 for <i>Maximum Media Density for Dead Load Analysis</i> .
Leak Detection System	Optional system to detect and locate leaks in the waterproof membrane.
Waterproof Membrane	See Chapter 6 of Weiler and Scholz-Barth (2009) for waterproofing options that are designed to convey water horizontally across the roof surface to drains or gutter. This layer may sometimes act as a root barrier.
Root Barrier	Impermeable liner that impedes root penetration of the membrane.
Drainage Layer	Depth of the drainage layer is generally 0.25 to 1.5 inches thick for extensive designs. The drainage layer should consist of synthetic or inorganic materials (e.g., gravel, high density polyethylene (HDPE), etc.) that are capable of retaining water and providing efficient drainage. A wide range of prefabricated water cups or plastic modules can be used, as well as a traditional system of protected roof drains, conductors, and roof leaders. Designers should consult the material specifications as outlined in ASTM E2396 and E2398. Roof drains and emergency overflow must be designed in accordance with the District's construction code (DCMR, Title 12).
Filter Fabric	Generally needle-punched, non-woven, polypropylene geotextile, with the following qualities: <ul style="list-style-type: none"> Strong enough and adequate puncture resistance to withstand stresses of installing other layers of the green roof. Density as per ASTM D3776 ≥ 8 oz/yd². Puncture resistance as per ASTM D4833 ≥ 130 lb. These values can be reduced with submission of a Product Data Sheet and other documentation that demonstrates applicability for the intended use. Adequate tensile strength and tear resistance for long term performance. Allows a good flow of water to the drainage layer. Apparent Opening Size, as per ASTM D4751, of $\geq 0.06\text{mm} \leq 0.2\text{mm}$, with other values based on Product Data Sheet and other documentation as noted above. Allows at least fine roots to penetrate. Adequate resistance to soil borne chemicals or microbial growth both during construction and after completion since the fabric will be in contact with moisture and possibly fertilizer compounds.
Growth Media	70% to 80% lightweight inorganic materials and a maximum of 30% organic matter (e.g., well-aged compost). Media typically has a maximum water retention of approximately 30%. Material makeup and proof of maximum water retention of the growing media must be provided. Media must provide sufficient nutrients and water holding capacity to support the proposed plant materials. Determine acceptable saturated water permeability using ASTM E2396-05.
Plant Materials	<i>Sedum</i> , herbaceous plants, and perennial grasses that are shallow-rooted, low maintenance, and tolerant of direct sunlight, drought, wind, and frost. See ASTM E2400-06, <i>Guide for Selection, Installation and Maintenance of Plants for Green (Vegetated) Roof Systems</i> .

RAINWATER HARVESTING SPECIFICATIONS AND MAINTENANCE:

Table 3.7 Typical Maintenance Tasks for Rainwater Harvesting Systems

Responsible Person	Frequency	Activity
Owner	Four times a year	Inspect and clean prescreening devices and first flush diverters
	Twice a year	Keep gutters and downspouts free of leaves and other debris
	Once a year	<ul style="list-style-type: none"> Inspect and clean storage cistern lids, paying special attention to vents and screens on inflow and outflow spigots. Check mosquito screens and patch holes or gaps immediately Inspect condition of overflow pipes, overflow filter path, and/or secondary stormwater treatment practices
	Every third year	Clear overhanging vegetation and trees over roof surface
Qualified Third Party Inspector	According to Manufacturer	Inspect water quality devices
	As indicated in TRAM	Provide water quality analysis to DDOE
	Every third year	<ul style="list-style-type: none"> Inspect cistern for sediment buildup Check integrity of backflow preventer Inspect structural integrity of cistern, pump, pipe and electrical system Replace damaged or defective system components

Table 3.6 Design Specifications for Rainwater Harvesting Systems

Item	Specification
Gutters and Downspouts	Materials commonly used for gutters and downspouts include polyvinylchloride (PVC) pipe, vinyl, aluminum, and galvanized steel. Lead must not be used as gutter and downspout solder, since rainwater can dissolve the lead and contaminate the water supply. <ul style="list-style-type: none"> The length of gutters and downspouts is determined by the size and layout of the catchment and the location of the cisterns. Be sure to include needed bends and tees.
Pretreatment	At least one of the following (all rainwater to pass through pretreatment): <ul style="list-style-type: none"> First flush diverter Hydrodynamic separator Roof washer Leaf and mosquito screen (1 mm mesh size)
Cisterns	<ul style="list-style-type: none"> Materials used to construct cisterns must be structurally sound. Cisterns should be constructed in areas of the site where soils can support the load associated with stored water. Cisterns must be watertight and sealed using a water-safe, non-toxic substance. Cisterns must be opaque or otherwise shielded to prevent the growth of algae. The size of the rainwater harvesting system(s) is determined through design calculations.

Note: This table does not address indoor systems or pumps.





LEED 2009 for New Construction and Major Renovations

Project Checklist

Project Name

Date

20 Sustainable Sites Possible Points: 26

Y	?	N			
Y			Prereq 1	Construction Activity Pollution Prevention	
1			Credit 1	Site Selection	1
5			Credit 2	Development Density and Community Connectivity	5
			Credit 3	Brownfield Redevelopment	1
6			Credit 4.1	Alternative Transportation—Public Transportation Access	6
1			Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1
3			Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3
			Credit 4.4	Alternative Transportation—Parking Capacity	2
			Credit 5.1	Site Development—Protect or Restore Habitat	1
			Credit 5.2	Site Development—Maximize Open Space	1
1			Credit 6.1	Stormwater Design—Quantity Control	1
1			Credit 6.2	Stormwater Design—Quality Control	1
1			Credit 7.1	Heat Island Effect—Non-roof	1
1			Credit 7.2	Heat Island Effect—Roof	1
			Credit 8	Light Pollution Reduction	1

8 2 Water Efficiency Possible Points: 10

Y	?	N			
Y			Prereq 1	Water Use Reduction—20% Reduction	
4			Credit 1	Water Efficient Landscaping	2 to 4
	2		Credit 2	Innovative Wastewater Technologies	2
4			Credit 3	Water Use Reduction	2 to 4

12 2 Energy and Atmosphere Possible Points: 35

Y	?	N			
Y			Prereq 1	Fundamental Commissioning of Building Energy Systems	
Y			Prereq 2	Minimum Energy Performance	
Y			Prereq 3	Fundamental Refrigerant Management	
5	2		Credit 1	Optimize Energy Performance	1 to 19
			Credit 2	On-Site Renewable Energy	1 to 7
2			Credit 3	Enhanced Commissioning	2
2			Credit 4	Enhanced Refrigerant Management	2
1			Credit 5	Measurement and Verification	3
2			Credit 6	Green Power	2

7 1 Materials and Resources Possible Points: 14

Y	?	N			
Y			Prereq 1	Storage and Collection of Recyclables	
			Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3
			Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1
2			Credit 2	Construction Waste Management	1 to 2
			Credit 3	Materials Reuse	1 to 2

Materials and Resources, Continued

Y	?	N			
2			Credit 4	Recycled Content	1 to 2
2			Credit 5	Regional Materials	1 to 2
	1		Credit 6	Rapidly Renewable Materials	1
1			Credit 7	Certified Wood	1

11 Indoor Environmental Quality Possible Points: 15

Y	?	N			
Y			Prereq 1	Minimum Indoor Air Quality Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
1			Credit 1	Outdoor Air Delivery Monitoring	1
			Credit 2	Increased Ventilation	1
1			Credit 3.1	Construction IAQ Management Plan—During Construction	1
1			Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
1			Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1
1			Credit 4.2	Low-Emitting Materials—Paints and Coatings	1
1			Credit 4.3	Low-Emitting Materials—Flooring Systems	1
1			Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1
1			Credit 5	Indoor Chemical and Pollutant Source Control	1
1			Credit 6.1	Controllability of Systems—Lighting	1
1			Credit 6.2	Controllability of Systems—Thermal Comfort	1
			Credit 7.1	Thermal Comfort—Design	1
			Credit 7.2	Thermal Comfort—Verification	1
			Credit 8.1	Daylight and Views—Daylight	1
			Credit 8.2	Daylight and Views—Views	1

3 Innovation and Design Process Possible Points: 6

Y	?	N			
			Credit 1.1	Innovation in Design: Specific Title	1
1			Credit 1.2	Innovation in Design: Specific Title	1
1			Credit 1.3	Innovation in Design: Specific Title	1
			Credit 1.4	Innovation in Design: Specific Title	1
			Credit 1.5	Innovation in Design: Specific Title	1
1			Credit 2	LEED Accredited Professional	1

1 1 Regional Priority Credits Possible Points: 4

Y	?	N			
1			Credit 1.1	Regional Priority: Specific Credit	1
	1		Credit 1.2	Regional Priority: Specific Credit	1
			Credit 1.3	Regional Priority: Specific Credit	1
			Credit 1.4	Regional Priority: Specific Credit	1

62 6 Total Possible Points: 110

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110