

ROUGH GRADING PLAN LEGEND

EXISTING CONTOURS	---
PROPOSED CONTOURS	—
SUPER SILT FENCE	SSF
TEMPORARY SWALE	A-2
LIMIT OF DISTURBANCE	LOD
STABILIZED CONSTRUCTION ENTRANCE	SC
TEMPORARY STONE OUTLET STRUCTURE	SCE

- ROUGH GRADING PLAN NOTES**
1. MAXIMUM ALLOWABLE CUT AND FILL SLOPES ARE 2:1.
 2. NO GRADING WITHIN PUBLIC SPACE AREAS IS REQUIRED UNDER THIS PLAN.
 3. ADDITIONAL EXCAVATION AND BACKFILL ASSOCIATED WITH CONTAMINATED SOIL REMOVAL ASSOCIATED WITH THE REQUIREMENTS OF THE VOLUNTARY CLEANUP ACTION PLAN FOR THIS PROJECT IS NOT SHOWN ON THIS PLAN.
 4. NO FILL SHALL BE PLACED ON EXISTING GROUND UNTIL IT HAS BEEN CLEARED OF WEEDS, DERBRIS, CONTAMINATED SOIL, TOPSOIL, AND OTHER DELETERIOUS MATERIAL. FILLS SHALL BE PLACED AND COMPACTED IN 8 INCH MAXIMUM LIFTS.
 5. ANY MATERIAL INCORPORATED INTO THE PERMANENT COMPACTED FILL AREAS SHALL BE TESTED AND APPROVED BY THE GEOTECHNICAL ENGINEER.
 6. ONCE DISTURBED, SLOPES (TEMPORARY OR PERMANENT) SHALL BE STABILIZED IF THEY WILL NOT BE WORKED WITHIN 14 DAYS. ALL SLOPES SHALL BE STABILIZED PRIOR TO ANY PREDICTED STORM EVENTS.
 7. STOCKPILES OF SOIL SHALL BE PROPERLY CONTAINED TO ELIMINATE OR REDUCE SEDIMENT TRANSPORT FROM THE PROJECT SITE TO SURROUNDING STREETS, DRAINAGE FACILITIES OR COURSES, AND ADJACENT PROPERTIES.

ROUGH GRADING EROSION CONTROL PLAN
SCALE 1" = 30'

SUGGESTED EROSION AND SEDIMENT CONTROL SEQUENCE OF CONSTRUCTION

1. NOTIFY THE DISTRICT DEPARTMENT OF ENVIRONMENT (DDOE) TO HOLD A PRE-CONSTRUCTION MEETING AT (202) 536- 2977. NOTIFY DDOE AT LEAST 72 HOURS BEFORE COMMENCING ANY DISTURBING ACTIVITY.
2. INSTALL SAFETY FENCE AROUND CONSTRUCTION AREA IF NECESSARY.
3. INSTALL SILT FENCES, AND INLET PROTECTIONS. NOTIFY DDOE SEDIMENT CONTROL INSPECTOR AND OBTAIN APPROVAL BEFORE PROCEEDING FURTHER.
4. PROVIDE SUMP PIT AND FILTER BAG AS NEEDED FOR TRENCHING AND EXCAVATION WORK.
5. BEGIN UTILITY CONSTRUCTION AND EXCAVATION CONTRACTOR SHALL NOT OPEN MORE THAN 500 LINEAR FEET OF TRENCH AT ANY ONE TIME.
6. SWEEP CLEAN CONSTRUCTION AREA BY THE END OF EACH DAY.
7. INSTALL PERMANENT SEEDING FOR STABILIZATION IN ALL OTHER DISTURBED AREAS. DURING WINTER.
8. BEGIN GRADING OF THE ROADS AS NECESSARY.
9. BEGIN PAVEMENT RESTORATION. PRIOR TO FINALIZING THE RESTORATION, REMOVE CURB INLET PROTECTION ONLY.
10. AFTER ALL FINAL PLANTING, SEEDING, AND OTHER PERMANENT STABILIZATION IS COMPLETE, CONSTRUCT CURB CUTS
11. AT THE END OF CONSTRUCTION, FINISH GRADE TO MAINTAIN SMOOTH SURFACE AND POSITIVE DRAINAGE. ONCE SURROUNDING STAGING AREAS ARE FULLY STABILIZED. REMOVE THE REMAINDER OF THE SEDIMENT AND EROSION CONTROL MEASURES.

STANDARD AND SPECIFICATIONS FOR DUST CONTROL

1. THE CONTRACTOR SHALL CONDUCT OPERATION AND MAINTAIN THE PROJECT SITE SO AS TO MINIMIZE THE CREATION AND DISPERSION OF DUST. DUST CONTROL SHALL BE USED THROUGH 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 MEASURE WILL GENERALLY CONSIST OF WATER APPLICATIONS THAT SHALL BE APPLIED A MINIMUM OF ONCE PER DAY DURING DRY WEATHER OR MORE OFTEN AS REQUIRED TO PREVENT DUST EMISSIONS.
5. THE WATER APPLICATION TO UNDISTURBED SOILS SURFACES, THE CONTRACTOR SHALL:
 - A. APPLY WATER WITH EQUIPMENT CONSISTING OF TANK, SPRAY BAR, PUMP WITH DISCHARGE PRESSURE GAUGE.
 - B. ARRANGE THE SPRAY BAR HEIGHT, NOZZLE SPACING, AND SPRAY PATTERN TO PROVIDE COMPLETE COVERAGE OF THE GROUND WITH WATER.
 - C. DISPERSE WATER THROUGH NOZZLES ON SPRAY BAR AT 20 PSI (137.8 KPA), MINIMUM . KEEP AREAS DAMP WITHOUT CREATING NUISANCE CONDITIONS SUCH AS PONDING.
6. FOR WATER APPLICATION SOIL SURFACE DURING DEMOLITION AND/OR EXCAVATION, THE CONTRACTOR SHALL:
 - A. APPLY WATER WITH EQUIPMENT CONSISTING OF TANK, PUMP WITH DISCHARGE PRESSURE GAUGE, HOSES AND MIST NOZZLES.
 - B. LOCATE THE 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 PONDING.
 - C. APPLY WATER SPRAY IN A MANNER TO PREVENT MOVEMENT OF SPRAY BEYOND THE SITE BOUNDARIES.

DDOE SOIL EROSION AND SEDIMENT CONTROL PLAN GENERAL NOTES

1. FOLLOWING INITIAL LAND DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR INTERIM STABILIZATION MUST BE COMPLETED WITHIN SEVEN (7) CALENDAR DAYS FOR THE SURFACES OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND SLOPES GREATER THAN THREE (3) HORIZONTAL TO ONE (1) VERTICAL (3:1); AND FOURTEEN (14) DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. THESE REQUIREMENTS DO NOT APPLY TO AREAS SHOWN ON THE PLAN THAT ARE USED FOR MATERIAL STORAGE OTHER THAN STOCKPILING, OR FOR THOSE AREAS ON THE PLAN WHERE ACTUAL CONSTRUCTION ACTIVITIES ARE BEING PERFORMED. MAINTENANCE SHALL BE PERFORMED AS NECESSARY SO THAT STABILIZED AREAS CONTINUOUSLY MEET THE APPROPRIATE REQUIREMENTS OF THE DISTRICT OF COLUMBIA STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL (ESC). [21 DCMR § 542.9 (0)]
2. ESC MEASURES SHALL BE IN PLACE BEFORE AND DURING LAND DISTURBANCE. [21 DCMR § 543.6]
3. CONTACT DDOE INSPECTION (202) 535-2977 TO SCHEDULE A PRECONSTRUCTION MEETING AT LEAST THREE (3) BUSINESS DAYS BEFORE THE COMMENCEMENT OF A LAND-DISTURBING ACTIVITY. [21 DCMR § 503.7 (A)]
4. A COPY OF THE APPROVED PLAN SET WILL BE MAINTAINED AT THE CONSTRUCTION SITE FROM THE DATE THAT CONSTRUCTION ACTIVITIES BEGIN TO THE DATE OF FINAL STABILIZATION AND WILL BE AVAILABLE FOR DDOE INSPECTORS. [21 DCMR § 542.15]
5. ESC MEASURES SHALL BE IN PLACE TO STABILIZE AN EXPOSED AREA AS SOON AS PRACTICABLE AFTER CONSTRUCTION ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED BUT NO LATER THAN FOURTEEN (14) DAYS FOLLOWING CESSATION, EXCEPT THAT TEMPORARY OR PERMANENT STABILIZATION SHALL BE IN PLACE AT THE END OF EACH DAY OF UNDERGROUND UTILITY WORK THAT IS NOT CONTAINED WITHIN A LARGER DEVELOPMENT SITE. [21 DCMR § 543.7]
6. STOCKPILED MATERIAL BEING ACTIVELY USED DURING A PHASE OF CONSTRUCTION SHALL BE PROTECTED AGAINST EROSION BY ESTABLISHING AND MAINTAINING PERIMETER CONTROLS AROUND THE STOCKPILE. [21 DCMR § 543.16 (A)]
7. STOCKPILED MATERIAL NOT BEING ACTIVELY USED OR ADDED TO SHALL BE STABILIZED WITH MULCH, TEMPORARY VEGETATION, HYDRO-SEED OR PLASTIC WITHIN FIFTEEN (15) CALENDAR DAYS AFTER ITS LAST USE OR ADDITION. [21 DCMR § 543.16 (B)]
8. PROTECT BEST MANAGEMENT PRACTICES FROM SEDIMENTATION AND OTHER DAMAGE DURING CONSTRUCTION FOR PROPER POST CONSTRUCTION OPERATION. [21 DCMR § 543.5]
9. REQUEST A DDOE INSPECTOR'S APPROVAL AFTER THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. [21 DCMR § 542.12 (A)]
10. REQUEST A DDOE INSPECTOR'S APPROVAL AFTER FINAL STABILIZATION OF THE SITE AND BEFORE THE REMOVAL OF EROSION AND SEDIMENT CONTROLS. [21 DCMR § 542.12 (B)]
11. FINAL STABILIZATION MEANS THAT ALL LAND-DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND EITHER OF THE FOLLOWING TWO CRITERIA HAVE BEEN MET: (1) A UNIFORM (FOR EXAMPLE, EVENLY DISTRIBUTED, WITHOUT LARGE BARE AREAS) PERENNIAL VEGETATIVE COVER WITH A DENSITY OF SEVENTY PERCENT (70%) OF THE NATIVE BACKGROUND VEGETATIVE COVER FOR THE AREA HAS BEEN ESTABLISHED ON ALL UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES, OR (2) EQUIVALENT PERMANENT STABILIZATION MEASURES HAVE BEEN EMPLOYED (SUCH AS THE USE OF RIPRAP, GABIONS, OR GEOTEXTILES). [21 DCMR § 542.12 (B.1, B.2)]
12. FOLLOW THE REQUIREMENTS OF THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY APPROVED STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND MAINTAIN A LEGIBLE COPY OF THIS SWPPP ON SITE. [21 DCMR § 543.10 (B)]
13. POST A SIGN THAT NOTIFIES THE PUBLIC TO CONTACT DDOE IN THE EVENT OF EROSION OR OTHER POLLUTION. THE SIGN WILL BE PLACED AT EACH ENTRANCE TO THE SITE OR AS DIRECTED BY THE DDOE INSPECTOR. EACH SIGN WILL BE NO LESS THAN 18 X 24 INCHES IN SIZE AND MADE OF MATERIALS THAT WILL WITHSTAND WEATHER FOR THE DURATION OF THE PROJECT. LETTERING WILL BE AT LEAST 1 INCH IN HEIGHT AND EASILY READABLE BY THE PUBLIC FROM A DISTANCE OF TWELVE FEET (12 FT). THE SIGN MUST DIRECT THE PUBLIC, IN SUBSTANTIALLY THE FOLLOWING FORM: 'TO REPORT EROSION, RUNOFF, OR STORMWATER POLLUTION' AND WILL PROVIDE THE CONSTRUCTION SITE ADDRESS, DDOE'S TELEPHONE NUMBER (202-535-2977), DDOE'S E-MAIL ADDRESS (IEB.SCHEDULING@DC.GOV), AND THE 311 MOBILE APP HEADING ('CONSTRUCTION-EROSION RUNOFF'). [21 DCMR § 543.22] IF A SITE DISTURBS 5,000 SQUARE FEET OF LAND OR GREATER, THE ESC PLAN MUST CONTAIN THE FOLLOWING STATEMENT:
14. A RESPONSIBLE PERSON MUST BE PRESENT OR AVAILABLE WHILE THE SITE IS IN A LAND-DISTURBING PHASE. THE RESPONSIBLE PERSON IS CHARGED WITH BEING AVAILABLE TO (A) INSPECT THE SITE AND ITS ESC MEASURES AT LEAST ONCE BIWEEKLY AND AFTER A RAINFALL EVENT TO IDENTIFY AND REMEDY EACH POTENTIAL OR ACTUAL EROSION PROBLEM, (B) RESPOND TO EACH POTENTIAL OR ACTUAL EROSION PROBLEM IDENTIFIED BY CONSTRUCTION PERSONNEL, AND (C) SPEAK ON SITE WITH DDOE TO REMEDY EACH POTENTIAL OR ACTUAL EROSION PROBLEM. A RESPONSIBLE PERSON SHALL BE (A) LICENSED IN THE DISTRICT OF COLUMBIA AS A CIVIL OR GEOTECHNICAL ENGINEER, A LAND SURVEYOR, OR ARCHITECT; OR (B) CERTIFIED THROUGH A TRAINING PROGRAM THAT DDOE APPROVES, INCLUDING A COURSE ON EROSION CONTROL PROVIDED BY ANOTHER JURISDICTION OR PROFESSIONAL ASSOCIATION. DURING CONSTRUCTION, THE RESPONSIBLE PERSON SHALL KEEP ON SITE PROOF OF PROFESSIONAL LICENSING OR OF SUCCESSFUL COMPLETION OF A DDOE-APPROVED TRAINING PROGRAM. [21 DCMR § 547]

STANDARDS AND SPECIFICATION FOR VEGETATIVE STABILIZATION

SECTION 1 – VEGETATIVE STABILIZATION METHODS AND MATERIAL

A. SITE PREPARATION

- A.1. INSTALL EROSION AND SEDIMENT CONTROL STRUCTURES (EITHER TEMPORARY OR PERMANENT) SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, WATERWAYS, OR SEDIMENT CONTROL BASINS.
- A.2. PERFORM ALL GRADING OPERATIONS AT RIGHT ANGLES TO THE SLOPE. FINAL GRADING AND SHAPING IS NOT USUALLY NECESSARY FOR TEMPORARY SEEDING.
- A.3. SCHEDULE REQUIRED SOIL TESTS TO DETERMINE SOIL AMENDMENT COMPOSITION AND APPLICATION RATES FOR SITES HAVING DISTURBED AREA OVER 5 ACRES.

B. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

- B.1. 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.
- B.2. FERTILIZERS SHALL BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY 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 FERTILIZER LAWS AND SHALL BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTEE OF THE PRODUCER.
- B.3. 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 TO SUCH FINENESS THAT AT LEAST 50% WILL PASS THROUGH A #100 MESH SIEVE AND 98 – 100% WILL PASS THROUGH A #20 MESH SIEVE.
- B.4. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 – 5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

C. SEEDBED PREPARATION

C.1. TEMPORARY SEEDING

- C.1.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 PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENEED, IT SHOULD NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPED AREAS (GREATER THAN 3: 1) SHOULD BE TRACKED LEAVING THE SURFACE IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
- C.1.b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
- C.1.c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 – 5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

C.2. PERMANENT SEEDING

- C.2.a. MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT:
 - C.2.a.1. SOIL PH SHALL BE BETWEEN 6.0 AND 7.0.
 - C.2.a.2. SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM).
 - C.2.a.3. THE SOIL SHALL CONTAIN LESS THAN 40% CLAY BUT ENOUGH FINE GRAINED MATERIAL (> 30% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS IF LOVEGRASS OR SERECIA LESPEDEZA IS TO BE REPLANTED, THEN A SANDY SOIL (< 30% SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - C.2.a.4. SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT.
 - C.2.a.5. SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
 - C.2.a.6. IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED IN ACCORDANCE WITH SECTION 38 STANDARD AND SPECIFICATION FOR TOPSOIL.
- C.2.b. AREAS PREVIOUSLY GRADED IN CONFORMANCE WITH THE DRAWINGS SHALL BE MAINTAINED IN A TRUE AND EVEN GRADE, THEN SCARIFIED OR OTHERWISE LOOSENEED TO A DEPTH OF 3 – 5" TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREA AND TO CREATE HORIZONTAL EROSION CHECK SLOTS TO PREVENT TOPSOIL FROM SLIDING DOWN A SLOPE.
- C.2.c. APPLY SOIL AMENDMENTS AS PER SOIL TEST OR AS INCLUDED ON THE PLANS.
- C.2.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 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 FRIABLE. SEEDBED LOOSENING MAY NOT BE NECESSARY ON NEWLY DISTURBED AREAS.

D. SEED SPECIFICATIONS

- D.1. 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 SHALL BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED SHALL HAVE BEEN TESTED WITHIN 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.

- D.2. INOCULANT – THE INOCULANT FOR TREATING LEGUME SEED IN 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 PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75–800 F. 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 CULTIPACKER SEEDER.

E.1. HYDROSEEDING:

- E.1.a. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES AMOUNTS WILL NOT EXCEED THE FOLLOWING:

NITROGEN; MAXIMUM OF 100 LBS. PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS); 200 LBS/AC; K2O (POTASSIUM); 200 LBS/AC.

- E.1.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 ANYONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
- E.1.c. SEED AND FERTILIZER SHALL BE MIXED ON SITE AND SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

E.2. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.

- E.2.a. SEED SPREAD DRY SHALL BE INCORPORATED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON THE TEMPORARY OR PERMANENT SEEDING SUMMARIES OR TABLES 42 OR 43. THE SEEDED AREA SHALL THEN BE ROLLED WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
- E.2.b. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
- E.2.c. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
- E.2.d. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
- E.2.e. 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)

- F.1. STRAW SHALL CONSIST OF THOROUGHLY THRESHED WHEAT, RYE OR OAT STRAW, REASONABLY BRIGHT IN COLOR, AND SHALL NOT BE MUSTY, MOLDY, 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.

F.2. WOOD CELLULOSE FIBER MULCH (WCFM)

- F.2.a. WCFM SHALL CONSIST OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
- F.2.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.
- F.2.c. WCFM, INCLUDING DYE, SHALL CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
- F.2.d. WCFM MATERIALS SHALL BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, 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.
- F.2.e. WCFM MATERIAL SHALL CONTAIN NO ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
- F.2.f. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH TO APPROXIMATELY 10 MM., DIAMETER APPROXIMATELY 1 MM., PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6% MAXIMUM AND WATER HOLDING CAPACITY OF 90% MINIMUM.

G. MULCHING SEEDED AREAS – MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.

- G.1. IF GRADING IS COMPLETED OUTSIDE OF THE SEEDING SEASON, MULCH ALONE SHALL BE APPLIED AS PRESCRIBED IN THIS SECTION AND MAINTAINED UNTIL THE SEEDING SEASON RETURNS AND SEEDING CAN BE PERFORMED IN ACCORDANCE WITH THESE SPECIFICATIONS.
- G.2. 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 OF BETWEEN 1" AND 2". MULCH APPLIED SHALL ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. IF A MULCH ANCHORING TOOL IS TO BE USED, THE RATE SHOULD BE INCREASED TO 2.5 TONS/ACRE.
- G.3. WOOD CELLULOSE FIBER USED AS A MULCH SHALL BE APPLIED AT A NET DRY WEIGHT OF 1,500 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 UPON SIZE OF AREA AND EROSION HAZARD:

- H.1. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF TWO (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.
- H.2. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. THE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 POUNDS/ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
- H.3. APPLICATION OF LIQUID BINDERS SHOULD BE HEAVIER 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 DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH.

SECTION II – TEMPORARY SEEDING

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

SEED MIXTURE (HARDINESS ZONE 7A) FROM TABLE 43						
NO.	SPECIES	APPLICATION ON RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-10-10)	LIME RATE
1	RYE PLUS FOXTAIL MILLET	150	2/1-4/30 5/1-8/14 8/15-11/30	1/4" MIN	600 LB/AC	2 TONS/AC
	WEEPING LOVEGRASS	4	5/1-8/14	2" MIN	(34 LB/1000 SF)	(92 LB/1000 SF)

SECTION III: PERMANENT SEEDING

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

A. SEED MIXTURES – PERMANENT SEEDING

NO.	SPECIES	APPLICATION ON RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-10-10)			LIME RATE
					N	P205	K2O	
2	TALL FESCUE (ERN)	325	5/1-5/15	1/4" MIN	900 LB/AC (20 LB/1000 SF)	175 LB/AC (41 LB/1000 SF)	175 LB/AC (41 LB/1000 SF)	175 LB/AC (41 LB/1000 SF)
	PERENNIAL RYEGRASS (PER)	15	8/15-11/15	2" MIN	900 LB/AC (20 LB/1000 SF)	175 LB/AC (41 LB/1000 SF)	175 LB/AC (41 LB/1000 SF)	175 LB/AC (41 LB/1000 SF)

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

A. GENERAL SPECIFICATIONS

- A.1. CLASS OF TURFGRASS SOD SHALL BE MARYLAND OR VIRGINIA STATE CERTIFIED OR APPROVED. SOD LABELS SHALL BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
- A.2. SOD SHALL BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4", 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 5 PERCENT. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
- A.3. 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 PERCENT OF THE SECTION.
- A.4. SOD SHALL NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
- A.5. SOD SHALL BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD SHALL BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

B. SOD INSTALLATION

- B.1. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, THE SUBSOIL SHALL BE LIGHTLY IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD.
- B.2. THE FIRST ROW OF SOD SHALL BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND TIGHTLY WEDGED AGAINST EACH OTHER. LATERAL JOINTS SHALL BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS, WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
- B.3. WHEREVER POSSIBLE, SOD SHALL BE LAID WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. SOD SHALL BE ROLLED AND TAMPED, PEGGED OR OTHERWISE SECURED TO PREVENT SLIPPAGE ON SLOPES AND TO ENSURE SOLID CONTACT BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
- B.4. SOD SHALL BE WATERED IMMEDIATELY FOLLOWING ROLLING OR TAMPING WITH THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD SHALL BE COMPLETED WITHIN EIGHT HOURS.

C. SOD MAINTENANCE

- C.1. IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHALL BE PERFORMED DAILY OR AS OFTEN AS NECESSARY DURING THE FIRST WEEK AND IN SUFFICIENT QUANTITIES TO MAINTAIN MOIST SOIL TO A DEPTH OF 4". WATERING SHOULD BE DONE DURING THE HEAT OF THE DAY TO PREVENT WILTING.
- C.2. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
- C.3. THE FIRST MOWING OF SOD SHOULD NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF SHALL BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2" AND 3" UNLESS OTHERWISE SPECIFIED.

SECTION V – TURFGRASS ESTABLISHMENT

AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE. AREAS TO RECEIVE SEED SHALL BE TILLED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVELED AND RAKED TO PREPARE A PROPER SEEDBED. STONES AND DEBRIS OVER 1 1/2 INCHES IN DIAMETER SHALL BE REMOVED. THE RESULTING SEEDBED SHALL BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.

NOTE: CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY.

A. TURFGRASS MIXTURES

- A.1. KENTUCKY BLUEGRASS – FULL SUN MIXTURE – FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS/1000 SQUARE FEET. A MINIMUM OF THREE BLUEGRASS CULTIVARS SHOULD BE CHOSEN RANGING FROM A MINIMUM OF 10% TO A MAXIMUM OF 35% OF THE MIXTURE BY WEIGHT.
- A.2. KENTUCKY BLUEGRASS/PERENNIAL RYE – FULL SUN MIXTURE – FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE/1000 SQUARE FEET. A MINIMUM OF 3 KENTUCKY BLUEGRASS CULTIVARS MUST BE CHOSEN, WITH EACH CULTIVAR RANGING FROM 10% TO 35% OF THE MIXTURE BY WEIGHT.
- A.3. TALL FESCUE/KENTUCKY BLUEGRASS – FULL SUN MIXTURE – FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 95–100%. CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0–5%. SEEDING RATE: 5 TO 8 LB/1000 SF. ONE OR MORE CULTIVARS MAY BE BLENDED.
- A.4. KENTUCKY BLUEGRASS/FINE FESCUE – SHADE MIXTURE – FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 50–40% AND CERTIFIED FINE FESCUE 60–70%. SEEDING RATE: 1 1/2 – 3 LBS/1000 SQUARE FEET. A MINIMUM OF 3 KENTUCKY BLUEGRASS CULTIVARS MUST BE CHOSEN, WITH EACH CULTIVAR RANGING FROM A MINIMUM OF 10% TO A MAXIMUM OF 35% OF THE MIXTURE BY WEIGHT.

NOTE: TURFGRASS VARIETIES SHOULD BE SELECTED FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MIMEO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND".

B. IDEAL TIMES OF SEEDING

MARCH 1 – APRIL 30, AUGUST 15 – OCTOBER 31

C. IRRIGATION

IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2" – 1" EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

D. REPAIRS AND MAINTENANCE

INSPECT ALL SEEDED AREAS FOR FAILURES AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDINGS WITHIN THE PLANTING SEASON.

- D.1. ONCE THE VEGETATION IS ESTABLISHED, THE SITE SHALL HAVE 95% GROUND COVER TO BE CONSIDERED ADEQUATELY STABILIZED.
- D.2. IF THE STAND PROVIDES LESS THAN 40% GROUND COVERAGE, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER, SEEDBED PREPARATION AND SEEDING RECOMMENDATIONS.
- D.3. IF THE STAND PROVIDES BETWEEN 40% AND 94% GROUND COVERAGE, OVERSEEDING AND FERTILIZING USING HALF OF THE RATES ORIGINALLY APPLIED MAY BE NECESSARY.
- D.4. MAINTENANCE FERTILIZER RATES FOR PERMANENT SEEDINGS ARE SHOWN IN TABLE 41.

STANDARD SYMBOLS	
EARTH DIKE	STANDARD SYMBOL A - 2/ B - 3
SPALE	STANDARD SYMBOL A - 2/ B - 3
PERIMETER DIKE/SPALE	STANDARD SYMBOL A - 2/ B - 3
PPE SLOPE DRAIN	STANDARD SYMBOL [Symbol]
ROCK OUTLET PROTECTION	STANDARD SYMBOL [Symbol]
STONE CHECK DAM	STANDARD SYMBOL [Symbol]
STONE OUTLET STRUCTURE	STANDARD SYMBOL [Symbol]
SILT FENCE	STANDARD SYMBOL [Symbol]
SUPER SILT FENCE	STANDARD SYMBOL [Symbol]
STRAP BALE DIKE	STANDARD SYMBOL [Symbol]

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STANDARD SYMBOLS	
STANDARD INLET PROTECTION	STANDARD SYMBOL [Symbol]
AT GRADE INLET PROTECTION	STANDARD SYMBOL [Symbol]
CURB INLET PROTECTION	STANDARD SYMBOL [Symbol]
STANDARD INLET PROTECTION	STANDARD SYMBOL [Symbol]
CARBON INFLOW PROTECTION	STANDARD SYMBOL [Symbol]
RP-RAP INFLOW PROTECTION	STANDARD SYMBOL [Symbol]
PUMP PIT	STANDARD SYMBOL [Symbol]
STABILIZED CONSTRUCTION ENTRANCE	STANDARD SYMBOL [Symbol]
PORTABLE PUMPING STATION	STANDARD SYMBOL [Symbol]
REMOVABLE PUMPING STATION	STANDARD SYMBOL [Symbol]

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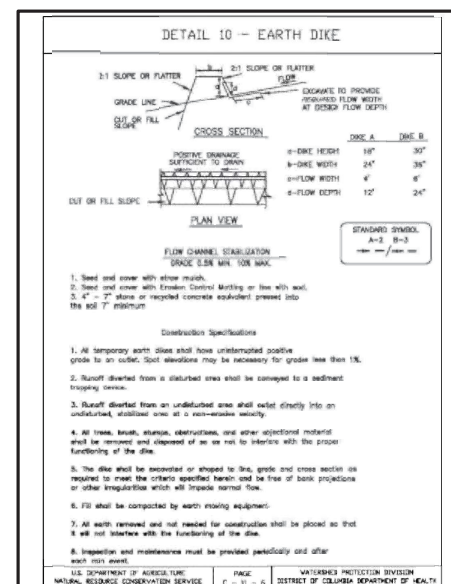
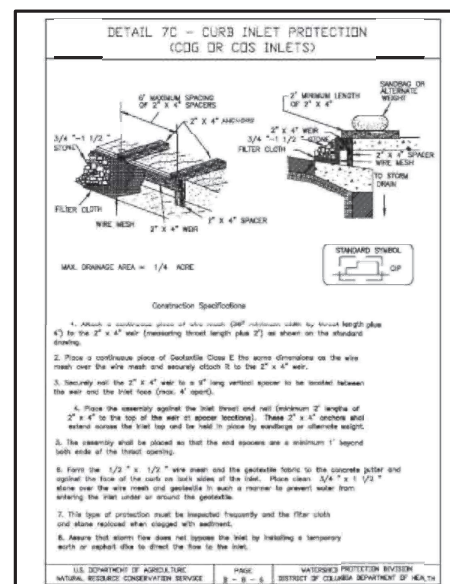
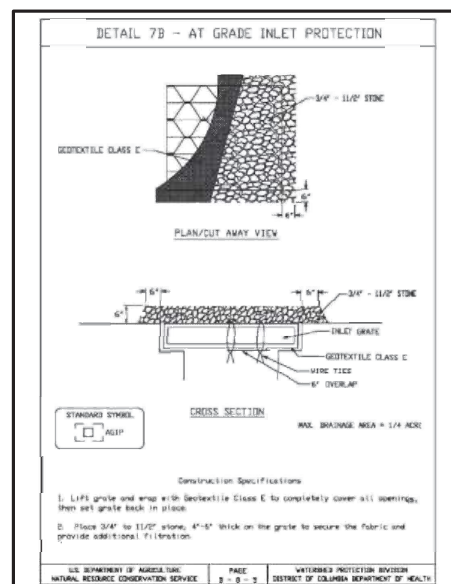
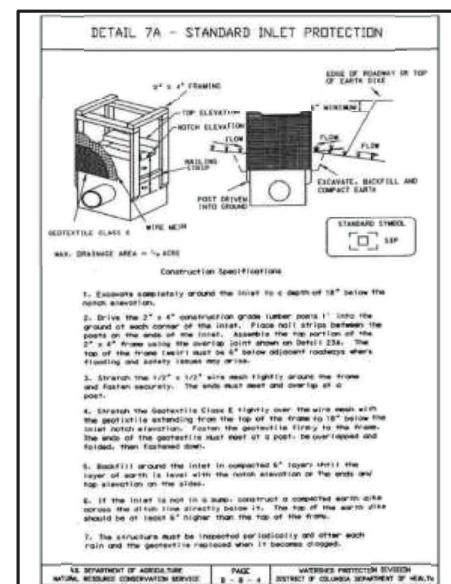
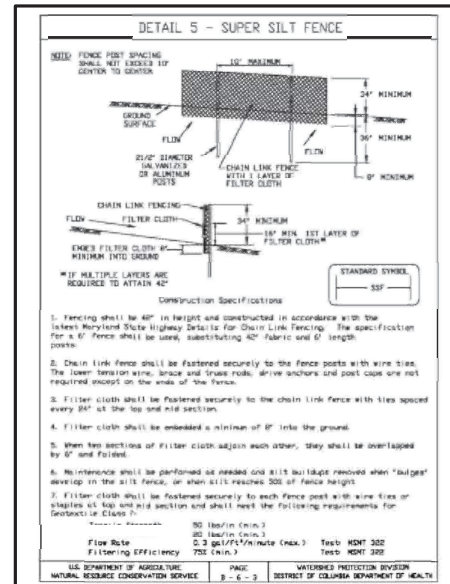
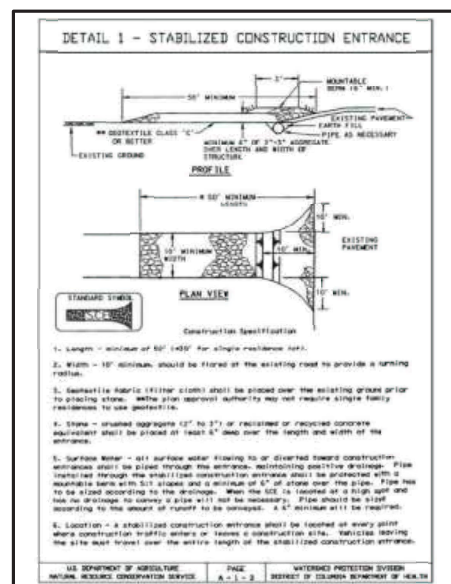
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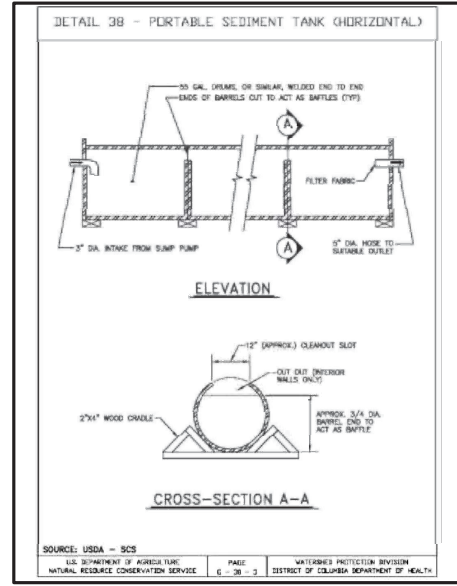
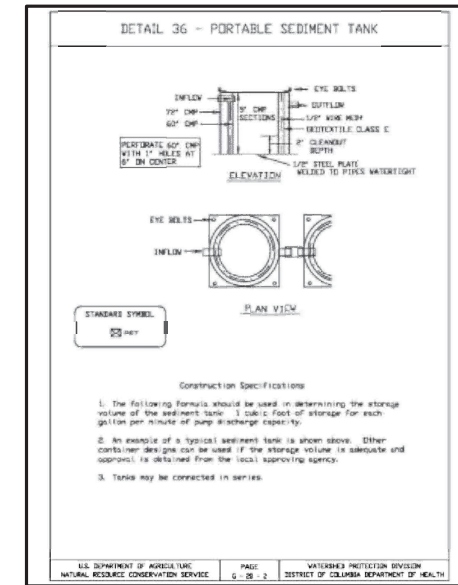
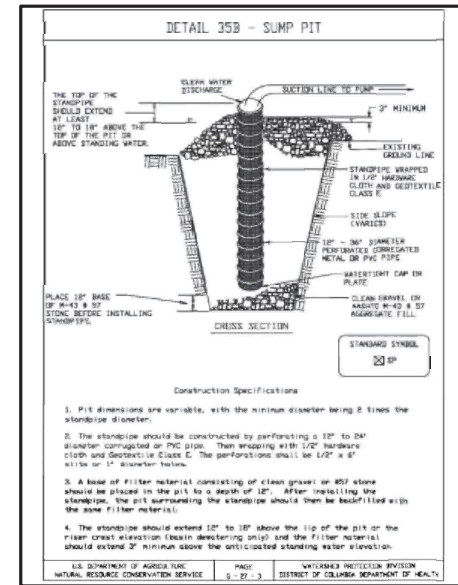
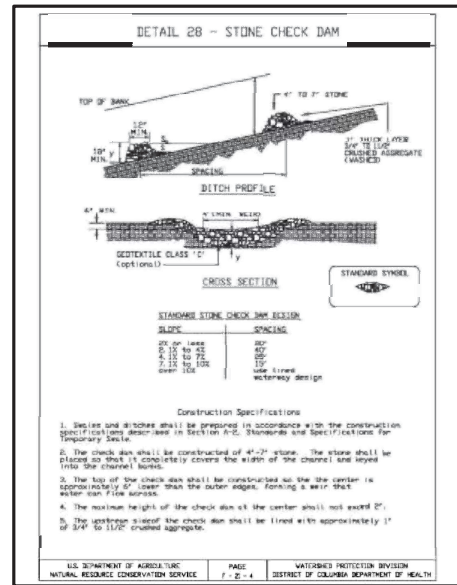
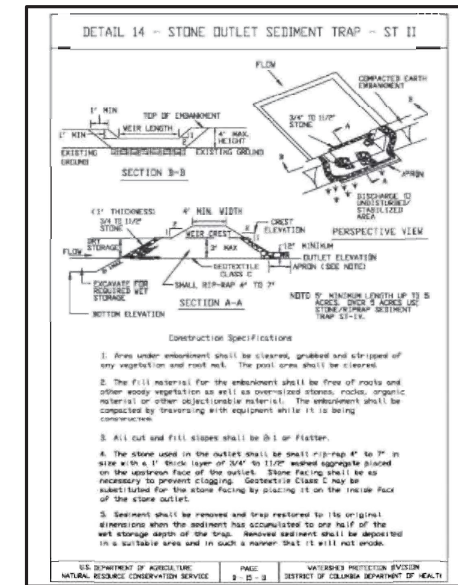
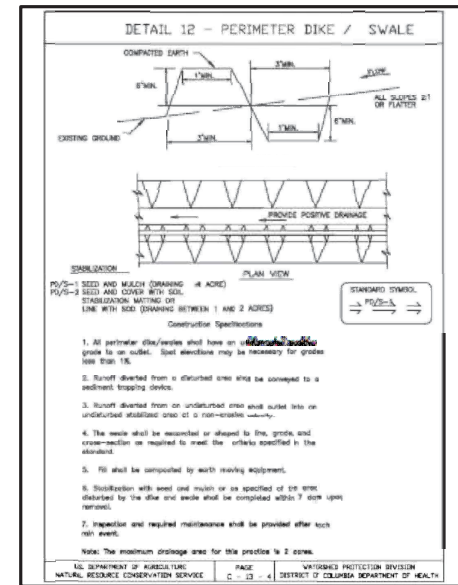
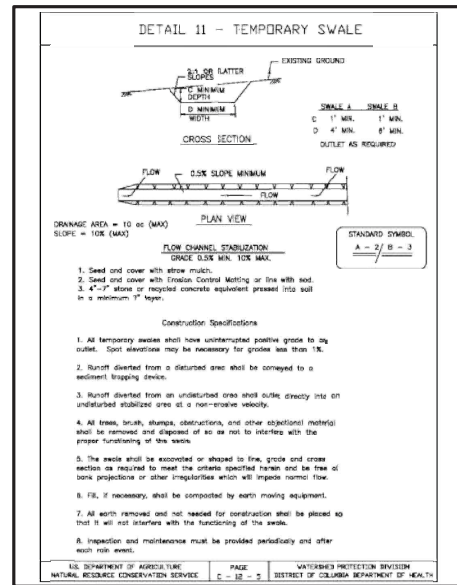
STANDARD SYMBOLS	
EROSION	STANDARD SYMBOL [Symbol]
GRADED SPALE	STANDARD SYMBOL [Symbol]
LINED WATERWAY	STANDARD SYMBOL [Symbol]
SUBSURFACE DRAIN	STANDARD SYMBOL [Symbol]

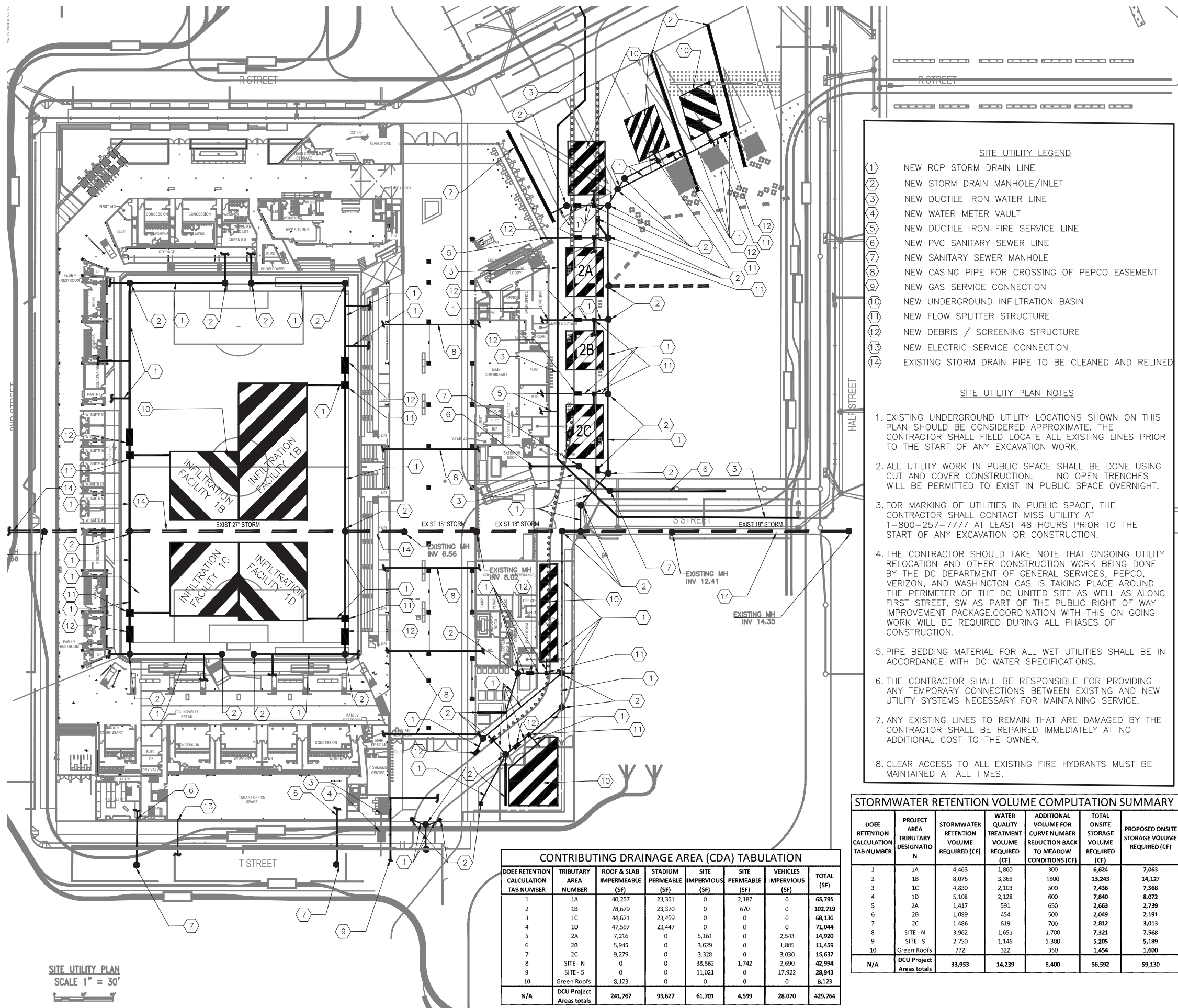
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- SITE UTILITY LEGEND**
- 1 NEW RCP STORM DRAIN LINE
 - 2 NEW STORM DRAIN MANHOLE/INLET
 - 3 NEW DUCTILE IRON WATER LINE
 - 4 NEW WATER METER VAULT
 - 5 NEW DUCTILE IRON FIRE SERVICE LINE
 - 6 NEW PVC SANITARY SEWER LINE
 - 7 NEW SANITARY SEWER MANHOLE
 - 8 NEW CASING PIPE FOR CROSSING OF PEPCO EASEMENT
 - 9 NEW GAS SERVICE CONNECTION
 - 10 NEW UNDERGROUND INFILTRATION BASIN
 - 11 NEW FLOW SPLITTER STRUCTURE
 - 12 NEW DEBRIS / SCREENING STRUCTURE
 - 13 NEW ELECTRIC SERVICE CONNECTION
 - 14 EXISTING STORM DRAIN PIPE TO BE CLEANED AND RELINED

- SITE UTILITY PLAN NOTES**
1. EXISTING UNDERGROUND UTILITY LOCATIONS SHOWN ON THIS PLAN SHOULD BE CONSIDERED APPROXIMATE. THE CONTRACTOR SHALL FIELD LOCATE ALL EXISTING LINES PRIOR TO THE START OF ANY EXCAVATION WORK.
 2. ALL UTILITY WORK IN PUBLIC SPACE SHALL BE DONE USING CUT AND COVER CONSTRUCTION. NO OPEN TRENCHES WILL BE PERMITTED TO EXIST IN PUBLIC SPACE OVERNIGHT.
 3. FOR MARKING OF UTILITIES IN PUBLIC SPACE, THE CONTRACTOR SHALL CONTACT MISS UTILITY AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO THE START OF ANY EXCAVATION OR CONSTRUCTION.
 4. THE CONTRACTOR SHOULD TAKE NOTE THAT ONGOING UTILITY RELOCATION AND OTHER CONSTRUCTION WORK BEING DONE BY THE DC DEPARTMENT OF GENERAL SERVICES, PEPCO, VERIZON, AND WASHINGTON GAS IS TAKING PLACE AROUND THE PERIMETER OF THE DC UNITED SITE AS WELL AS ALONG FIRST STREET, SW AS PART OF THE PUBLIC RIGHT OF WAY IMPROVEMENT PACKAGE. COORDINATION WITH THIS ON GOING WORK WILL BE REQUIRED DURING ALL PHASES OF CONSTRUCTION.
 5. PIPE BEDDING MATERIAL FOR ALL WET UTILITIES SHALL BE IN ACCORDANCE WITH DC WATER SPECIFICATIONS.
 6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY TEMPORARY CONNECTIONS BETWEEN EXISTING AND NEW UTILITY SYSTEMS NECESSARY FOR MAINTAINING SERVICE.
 7. ANY EXISTING LINES TO REMAIN THAT ARE DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED IMMEDIATELY AT NO ADDITIONAL COST TO THE OWNER.
 8. CLEAR ACCESS TO ALL EXISTING FIRE HYDRANTS MUST BE MAINTAINED AT ALL TIMES.

STORMWATER RETENTION VOLUME COMPUTATION SUMMARY

DOEE RETENTION CALCULATION TAB NUMBER	PROJECT AREA TRIBUTARY DESIGNATION	STORMWATER RETENTION VOLUME REQUIRED (CF)	WATER QUALITY TREATMENT VOLUME REQUIRED (CF)	ADDITIONAL VOLUME FOR CURVE NUMBER REDUCTION BACK TO MEADOW CONDITIONS (CF)	TOTAL ONSITE STORAGE VOLUME REQUIRED (CF)	PROPOSED ONSITE STORAGE VOLUME REQUIRED (CF)
1	1A	4,463	1,860	300	6,624	7,063
2	1B	8,076	3,365	1800	13,243	14,127
3	1C	4,830	2,103	500	7,436	7,568
4	1D	5,108	2,128	600	7,840	8,072
5	2A	1,417	591	650	2,663	2,739
6	2B	1,089	454	500	2,049	2,191
7	2C	1,486	619	700	2,812	3,013
8	SITE - N	3,962	1,651	1,700	7,321	7,568
9	SITE - S	2,750	1,146	1,300	5,205	5,189
10	Green Roofs	772	322	350	1,454	1,600
N/A	DCU Project Areas totals	33,953	14,239	8,400	56,592	59,130

CONTRIBUTING DRAINAGE AREA (CDA) TABULATION

DOEE RETENTION CALCULATION TAB NUMBER	TRIBUTARY AREA NUMBER	ROOF & SLAB IMPERMEABLE (SF)	STADIUM PERMEABLE (SF)	SITE IMPERVIOUS (SF)	SITE PERMEABLE (SF)	VEHICLES IMPERVIOUS (SF)	TOTAL (SF)
1	1A	40,257	23,351	0	2,187	0	65,795
2	1B	78,679	23,370	0	670	0	102,719
3	1C	44,671	23,459	0	0	0	68,130
4	1D	47,597	23,447	0	0	0	71,044
5	2A	7,216	0	5,161	0	2,543	14,920
6	2B	5,945	0	3,629	0	1,885	11,459
7	2C	9,279	0	3,328	0	3,030	15,637
8	SITE - N	0	0	38,562	1,742	2,690	42,994
9	SITE - S	0	0	11,021	0	17,922	28,943
10	Green Roofs	8,123	0	0	0	0	8,123
N/A	DCU Project Areas totals	241,767	93,627	61,701	4,599	28,070	429,764

SITE UTILITY PLAN
SCALE 1" = 30'