

# PARK AVENUE SEWER EXTENSION

HOWARD COUNTY, MD CAPITAL PROJECT NO. S-6289 CONTRACT NO. 10-4853

INDEX OF SHEETS							
SHEET SET NO.	DESCRIPTION						
1	TITLE SHEET						
2	PROP. 8" SEWER MAIN - PLAN & PROFILE						
3	EROSION & SEDIMENT CONTROL PLAN						
4	EROSION & SEDIMENT CONTROL NOTES & DETAILS						

		QUANTIT	IES	
NAME OF UTILITY CONTRACTOR: UTILY	MU 23/7	UNATTED		
SURVEY AND DRAFTING DIVISION AS-B	UILT DATE: 4	4-4-17		
		OUANTITY _		AS-BUILT KCI
ITEM	UNITS	QUANTITY ESTIMATED	QUANTITY	MANUFACTURER / SUPPLIER
8" DIP SEWER MAIN	L.F.	277	280 LF	U.S. PIRE
4" PVC SEWER MAIN	L.F.	30	30 /F	JM EAGLE
PRECAST MH HO. CO. STD. G-5.12	EA.	4	4 EA.	CONTRACTORS PRECAST GER
TYPE "A" DROP CONNECTION STD. S-1.32	EA.	1	1 EA	CONTRACTORS PRECAST CORP.
CONCRETE ANCHORS	EA.	4	4 EA	
WYE BRANCH	EA.	2	Ž EA	HARRINGTON CORP

NOTE:

1. QUANTITIES IN THIS TABLE ARE SOLELY FOR RECORD PURPOSES, CONTRACTOR SHALL NOT RELY ON THE QUANTITIES IN THE TABLE AND SHALL USE HIS/HER OWN TAKEOFF TO ESTABLISH MATERIALS AND QUANTITIES NEED FOR THIS PROJECT.

# I FGEND:

	<u>LEGENI</u>	<u>D:</u>	
(W) w w	EXIST. WATER MAIN / VALVE VAULT	**************************************	STREAM / WATERWAY EDGE
	EXIST. WATER HOUSE CONNECTION PROP. WATER MAIN	630E 550	WATER PRESSURE ZONE BOUNDARY
TWTW	TEMP. WATER MAIN EXIST. WATER MAIN TO BE ABANDONED	0	SHRUB
	EXIST. SEWER MAIN / MANHOLE EXIST. SEWER HOUSE CONNECTION	þ	PROP. VALVE
① — SD — SD — G — G — G — G — G — G — G — G — G —		<b>№</b>	PROP. FIRE HYDRANT
	EXIST. GAS SERVICE CONNECTION EXIST. ELECTRIC — UNDERGROUND	-0-	BGE POLE
—— 0/H —— 0/H —— —F0——F0——F0—	EXIST. ELECTRIC — OVERHEAD EXIST. FIBER OPTIC	-0-	STREET SIGN
Į.	EXIST. TELEPHONE — UNDERGROUND EXIST. TELEPHONE — OVERHEAD	<b>⊕</b> SB-##	BORING LOCATION
000	RIGHT OF WAY GUARDRAIL	<b>■</b> TP-##	TEST PIT LOCATION
	FENCE PROPERTY LINE	<b>®</b>	CONTINUITY TEST STATION
—— SF —— SF —— LOD ——		<b>S</b>	SANITARY MANHOLE ID
	ROAD CENTERLINE TRAVERSE	CIP	CURB INLET PROTECT
	EXIST. EASEMENT PROP. PUBLIC SEWER & UTILITY EASEMENT		

MAIN ST MAIN ST	N 584,800 005.175.	- ' ) -
OLD COLUMBIANT  OLD COLUMBIANT  OLD COLUMBIANT  TYPE OF BUILDINGS: RESIDENTIAL  DRAINAGE AREA: PATAPSCO	N 581,800	, , , , , ,

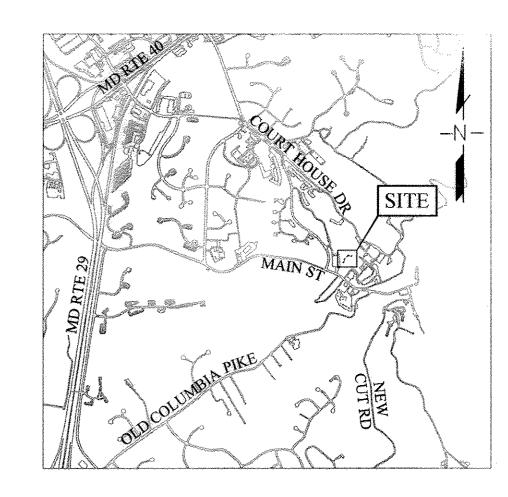
# LOCATION MAP

SCALE: 1"=600'

SEWER HOUSE CONNECTION AS-BUILT LOCATION TABLE							
LOT NO.	OWNER	ADDRESS	LOCATION DIMENSION 1	LOCATION DIMENSION 2			
LOT 1	STAFFORD & NOBLE	3673 PARK AVENUE					
LOT 2	WALTERHOEFER	3674 PARK AVENUE	·				
LOT 3	COPEMAN	36.76 PARK AVENUE					

	SEWER M	ANHOLE SCHEDULE				Wy. danies - 19 - 19 - 19 - 19 - 19 - 19 - 19 - 1
NO.	TYPE	LOCA		TOP EL.	INV. IN	INV. OUT
SMH B	EX. MANHOLE	N 583,670.649'	E 1,368,921.769	178.41	175.43	175.33
SMH 1	PRECAST MH HO. CO. STD. G-5.12 - TYPE "A" DROP	N 583,681.144'	E 1,368,953.939'	190.46*	184.79	181.20
SMH 2	PRECAST MH HO. CO. STD. G-5.12	N 583,744.428'	E 1,368,971.299'	210.28*	204.21	204.11
SMH 3	PRECAST MH HO. CO. STD. G-5.12	N 583,807.743	E 1,369,039.268	230.67*	224.60	224.50
SMH 4	PRECAST MH HO. CO. STD. G-5.12	N 583,807.445'	E 1,369,123.732'	236.96*	230.67	230.33

\*APPROX. TOP ELEVATION, ADJUST TOP ELEVATION TO 12" ABOVE GRADE USING PRECAST GRADE RINGS (DETAIL G-5.50).



# VICINITY MAP

SCALE: 1"=2000'

# **GENERAL NOTES:**

PART I

1. APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.

2. TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED IN DECEMBER 2013 BY MERCADO CONSULTANTS, INC. 3. HORIZONTAL AND VERTICAL SURVEY CONTROLS:

THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD '83/'91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS:

SP, PN301, N 583587.525, E 1369480.774, ELEV. 241.565' SP, PN302, N 583784.798, E 1369319.649, ELEV. 255.846' SP, PN303, N 583842.881, E 1369101.523, ELEV. 238.983' SP, PN304, N 583693.320, E 1368972.083, ELEV. 200.311'

ALL VERTICAL CONTROLS ARE BASED ON NAVD '88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE ALUMINUM STAMPED DISCS.

4. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

5. CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED TO THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.

6. FOR DETAILS NOT SHOWN ON THE DRAWING, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.

7. NO TEST PITS HAVE BEEN PERFORMED FOR THIS PROJECT. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.

8. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON

1.800.252.1133 BGE (CONSTRUCTION SERVICES) 410.637.8713 410.685.0123 BGE (EMERGENCY) BUREAU OF UTILITIES 410.313.4900 COLONIAL PIPELINE COMPANY 410.795.1390 MISS UTILITY STATE HIGHWAY ADMINISTRATION 410.531.5533 1.800.743.0033 VERIZON MCI WORLDCOM 1.800.624.9675

9. TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATE! WITHIN THE CONSTRUCTION STRIP

ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.

10. THE CONTRACTOR SHALL REMOVE TREES, STUMPS, AND ROOTS ALONG THE LINE OF EXCAVATION. PAYMENT FOR SUBBLE REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE SEWER.

11. THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410)—313—7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(A) THE HOWARD COUNTY CODE.

# PART III - SEWER

1. ALL PROPOSED 8" SEWER MAINS SHALL BE DUCTILE IRON PIPE, THICKNESS CLASS 54, WITH RESTRAINED JOINTS USING MEGALUG, OR EQUAL, WEDGE ANCHORS, OR PIPE MANUFACTURER'S RESTRAINED JOINT PIPE. 4" SEWER SHC SHALL BE PVC, C900. UNLESS OTHERWISE NOTED.

ANCHORS, OR PIPE MANUFACTURER'S RESTRAINED JOINT PIPE. 4" SEWER SHC SHALL BE PVC, CS

2. ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.

3. FORCE MAINS SHALL BE D.I.P. ONLY.

4. MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
5. MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER, STANDARD DETAIL 6-5.52. WHERE WATERTIGHT MANHOLE

FRAMES AND COVERS ARE USED, SET TOP OF FRAME "-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.

6. HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT THE CELLAR CANNOT BE SERVED.

# SEQUENCE OF CONSTRUCTION

1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD.

2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THE EROSION AND SEDIMENT CONTROL PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.

3. WITHOUT DISRUPTING FLOW FROM THE EXISTING SEWER, CORE INTO EX. MH A FOR NEW SEWER. CONSTRUCT NEW SEWER FROM MH A TO MH 4.

4. TEST NEW SEWER.

5. INSTALL LATERALS TO #3673, #3674, AND #3676 PARK AVENUE.

6. CAP/PLUG EXISTING PRIVATE SEWER TO BE ABANDONED AT NEW LATERAL LOCATIONS AND MH A.

BLOCK NO. 7

7. RESTORE AND STABILIZE AREAS DISTURBED BY THE WORK.

8. REMOVE EROSION AND SEDIMENT CONTROLS.

DEPARTMENT OF PUBLIC WORKS

HOWARD COUNTY, MARYLAND

2/15-/17

DIRECTOR OF PUBLIC WORKS

DATE

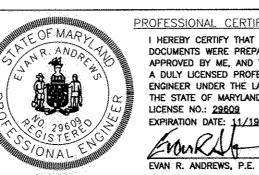
CHIEF, BUREAU OF ENGINEERING

CHIEF, BUREAU OF UTILITIES

DATE

CHIEF, UTILITY DESIGN DIVISION S.C. DATE

MICHAEL BAKER INTERNATIONAL, INC. 1304 Concourse Drive, Suite 200 Linthicum, MD 21090-1014 Phone: (410) 689-3400



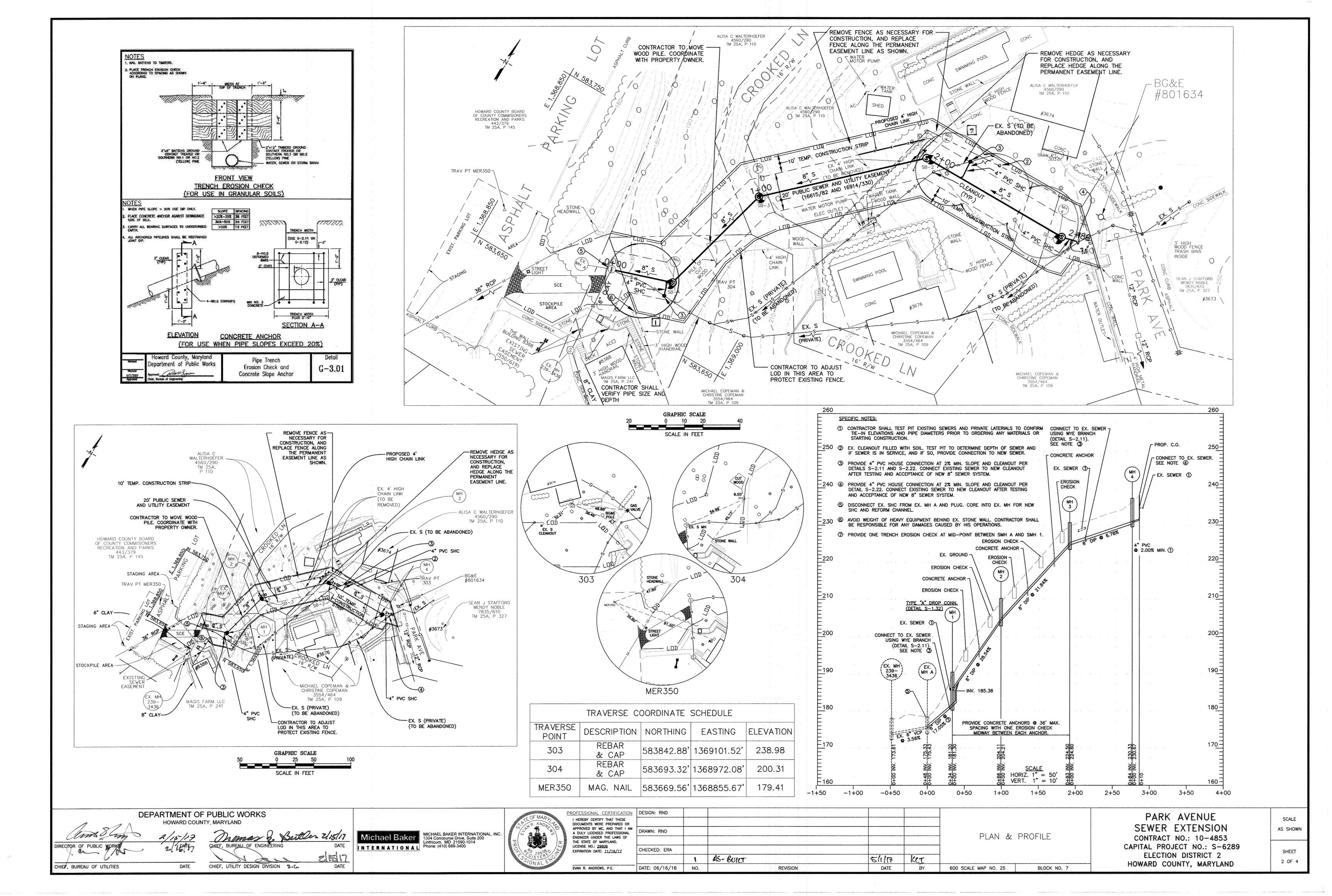
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SSIONAL CERTIFICATION	DESIGN: RND								
REBY CERTIFY THAT THESE UMENTS WERE PREPARED OR									
ROVED BY ME, AND THAT I AM ULY LICENSED PROFESSIONAL	DRAWN: RND							TITLE	SHEET
NEER UNDER THE LAWS OF STATE OF MARYLAND.								[	VIILLI
NSE NO.: <u>29609</u> RATION DATE: <u>11/19/17</u>	CHECKED: ERA								
100RN -213/17	:	. !	AS-BUILT			5/1/17	KCI		
	DATE: 06/16/16	NO.		REVISION	2	DATE	BY	600 SCALE MAP NO. 25	BLO

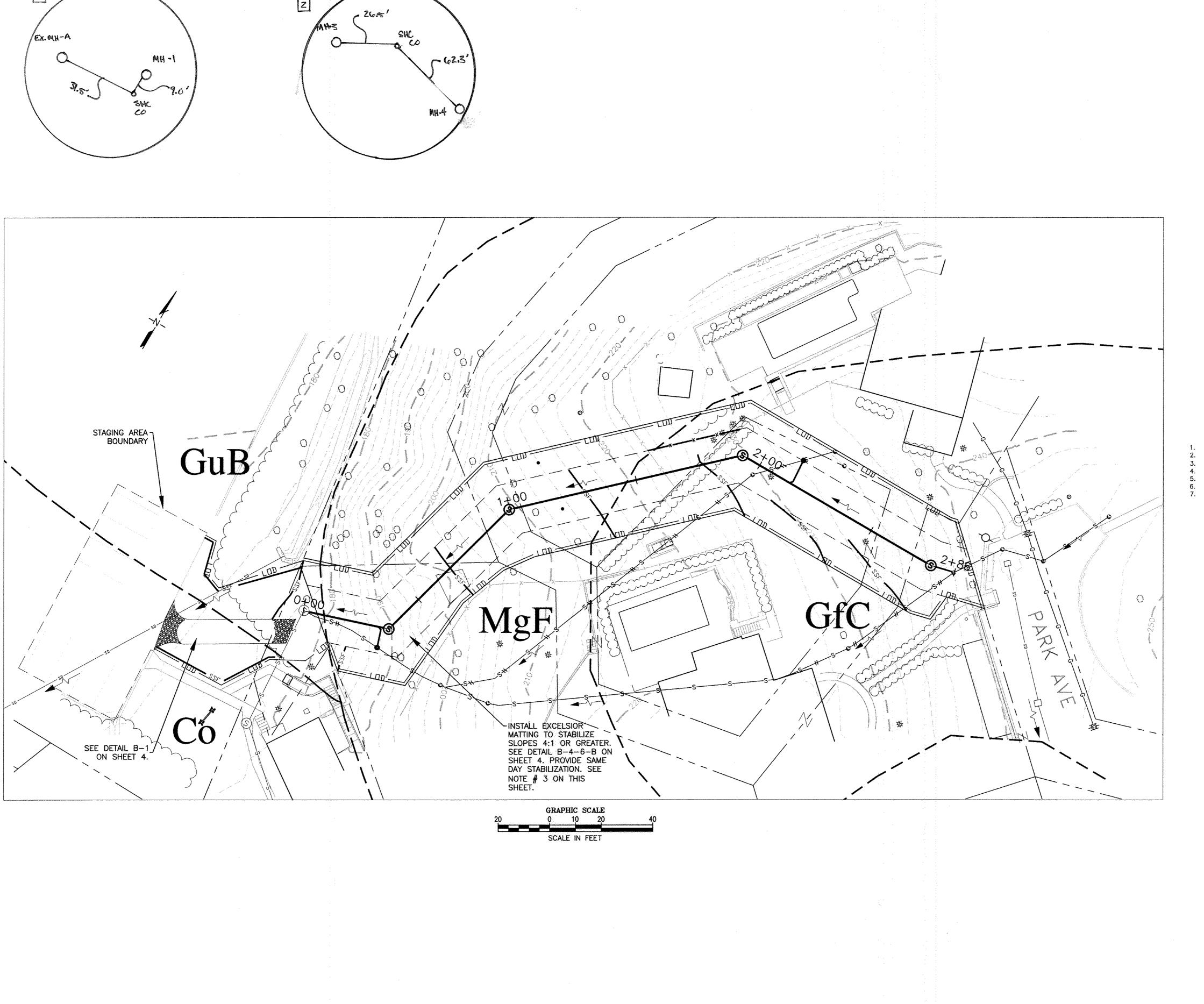
PARK AVENUE
SEWER EXTENSION
CONTRACT NO.: 10-4853
CAPITAL PROJECT NO.: S-6289
ELECTION DISTRICT 2
HOWARD COUNTY, MARYLAND

AS SHOWN
SHEET

SCALE

1 OF 4





# ADDITIONAL SEDIMENT CONTROL NOTES:

. SEE SHEET 4 FOR EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.

CONTRACTOR SHALL INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO EARTH DISTURBANCE.

TEMPORARY SOIL STABILIZATION MATTING SLOPE (TSSMS) APPLICATION TO BE USED ON ALL 4:1 OR GREATER SLOPES. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES REQUIRED.

ONCE GRADING IS COMPLETE, AREA SHALL BE STABILIZED AND SEEDED.
 NO AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS RUNOFF IS DIRECTED TO AN APPROVED SEDIMENT CONTROL DEVICE.
 SPOIL FROM TRENCHING SHALL BE PLACED ON THE UPHILL SIDE OF THE TRENCHING OPERATION.

E&S LEGEND:

LIMIT OF DISTURBANCE

SOIL BOUNDARY

EX. MINOR CONTOUR

POOR OF OR SCE

SCE SCE

SSF SSF SUPER SILT FENCE (SSF)

EX. MAJOR CONTOUR

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

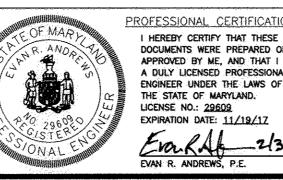
DATE CHIEF, BUREAU OF ENGINEERING

CHIEF, BUREAU OF UTILITIES

DATE

CHIEF, UTILITY DESIGN DIVISION \$ 6.00

MICHAEL BAKER INTERNATIONAL, INC. 1304 Concourse Drive, Suite 200 Linthicum, MD 21090-1014 Phone: (410) 689-3400



45-80KTS	6/1/13	kci

EROSION AND SEDIMENT
CONTROL PLAN

BLOCK NO. 7

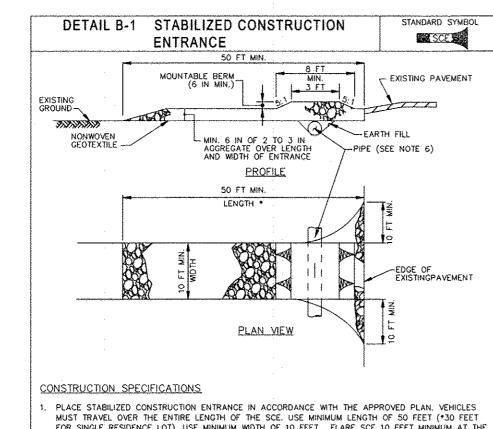
600 SCALE MAP NO. 25

PARK AVENUE
SEWER EXTENSION
CONTRACT NO.: 10-4853
CAPITAL PROJECT NO.: S-6289
ELECTION DISTRICT 2
HOWARD COUNTY, MARYLAND

SHEET 3 OF 4

SCALE

AS SHOWN



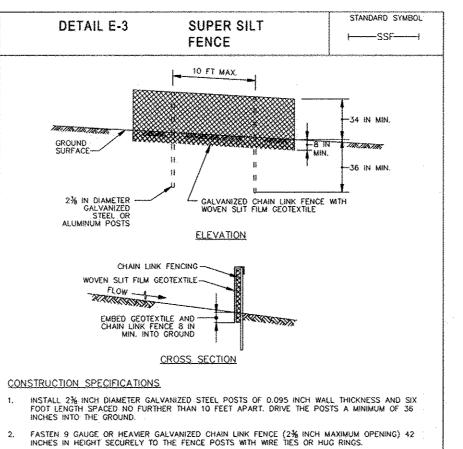
FOR SINGLE RESIDENCE LOT), USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE

PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN, WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT . PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.

. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.

MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL U.S. DEPARTMENT OF AGRICULTURE
JURAL RESOURCES CONSERVATION SERVICE MARYLAND DEPARTMENT OF ENVIRONMEN WATER MANAGEMENT ADMINISTRATION



FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION, EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.

WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.

PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT, REPLACE GEOTEXTILE IF TORN, IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

# STABILIZATION MATTING SLOPE APPLICATION ROLL EDGES (TYP.) ISOMETRIC VIEW CONSTRUCTION SPECIFICATIONS USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT. AND. BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VICETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM ONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT, STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY, "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG, "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH—SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING II ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN. UNROLL MATTING DOWNSLOPE, LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE, AVOID STRETCHING. THE MATTING. OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS, OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL U.S. DEPARTMENT OF AGRICULTURE RAL RESOURCES CONSERVATION SERVICE

TEMPORARY SOIL

STANDARD SYMBO

## SEQUENCE OF CONSTRUCTION:

STANDARD SEDIMENT CONTROL NOTES

ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.

) 3 CALENDAR DAYS TO ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER

ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND

SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND

RECOMMENDED SEEDING AND DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT

ALL SEDIMENT AND CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD

ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF

ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD

ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL

). TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE (3) PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED BY THE END OF EACH WORK DAY, WHICHEVER IS

A PROJECT IS TO BE THE SECUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT

OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES

MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSECIUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING

. ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.

RADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY

LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF OF ANY

A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY

SLOPES AND ALL SLOPES GREATER THAN 3:1.

B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

STABILIZATION SHALL BE COMPLETED WITHIN:

COUNTY SEDIMENT CONTROL INSPECTOR.

TOTAL AREA OF SITE: 1.71 ACRES
AREA DISTURBED: 0.22 ACRES
AREA TO BE ROOFED OR PAVED: 0 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 0.27 ACRES

OFFSITE WASTE/BORROW AREA LOCATION: N/A ACRES

CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE

- A. ALL SEDIMENT CONTROLS ARE TO BE INSTALLED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR. B. ALL SEEDING AND/OR STABILIZATION IS TO BE PERFORMED AT THE DIRECTION OF THE SEDIMENT CONTROL
- INSPECTOR. C. A STABILIZED CONSTRUCTION ENTRANCE IS TO BE PROVIDED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
- 1. OBTAIN GRADING PERMIT
- 2. PRE-CONSTRUCTION MEETING: NOTIFY THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS (1-410-313-3800) AT LEAST 48 HOURS BEFORE COMMENCING WORK. WORK MAY NOT COMMENCE UNTIL THE PERMITTEE OR THE RESPONSIBLE PERSONNEL HAVE MET ON SITE WITH THE SEDIMENT AND EROSION CONTROL INSPECTOR TO REVIEW THE APPROVED PLANS.
- 3. CONTRACTOR SHALL LOCATE AND PROCURE ALL STAGING AND STOCKPILING AREAS WHICH SHALL BE APPROVED BY THE PROJECT INSPECTOR.
- 4. CONDUCT TEST PIT OPERATIONS. PRESENT FINALIZED SCHEDULE OF WORK TO THE ENGINEER AND HOWARD COUNTY INSPECTIONS, LICENSES AND PERMITS DIVISION. 5. CLEAR AND GRUB THOSE AREAS FOR INSTALLATION OF SEDIMENT AND EROSION PERIMETER CONTROLS.
- 6. INSTALL AND STABILIZE PERIMETER CONTROLS. 7. CLEAR AND GRUB THE REMAINING AREAS WITHIN THE PERIMETER CONTROLS AS REQUIRED PER THE PLANS.
- OBTAIN APPROVAL FROM THE COUNTY SEDIMENT AND EROSION CONTROL INSPECTOR. 8. PERFORM THE FOLLOWING SEQUENCE FOR EACH DAY OF UTILITY CONSTRUCTION OPERATION:
- A INSTALL SUIT FENCE DOWNSTREAM OF AREA TO THE WORKED ON A DAILY BASIS.
- CLEAR AND GRUB AREA WHERE PIPELINE WILL BE INSTALLED. REMOVE AND SALVAGE TOPSOIL. EXCAVATE DITCH TO THE GRADE SPECIFIED ON THE PROFILE AND INSTALL SEWER MAIN AND APPURTENANCES.
- PLACE BACKFILL AND COMPACT. D. PLACE TOPSOIL, FINE GRADE, SEED AND APPLY MULCH TO DISTURBED AREA OR RESURFACE WITH BITUMINOUS
- PAVING AS APPROPRIATE. E. STREETS ARE TO BE SWEPT FREE OF DIRT AND DEBRIS.
- 9. DIRECT ALL WATER PUMPED DURING TRENCH DEWATERING OPERATIONS TO AN APPROVED PORTABLE SEDIMENT TANK. CLEAN OUT TANK WITH ONE-THIRD IS FILLED WITH SILT. HAUL SEDIMENT TO A COUNTY APPROVED SITE. 10. NO EXCAVATED MATERIAL SHALL BE PLACED IN THE DITCH ADJACENT TO THE EXISTING ROADWAY. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PREVENT THE DISTURBANCE OF EXISTING VEGETATED AREAS TO THE
- WORK OPERATIONS SHALL BE STABILIZED BY THE END OF THE WORK DAY. 11. STABILIZE THE TOP OF ALL TRENCHES BY THE END OF EACH WORK DAY. ALL EXCESS STOCKPILED SOIL REMAINING AFTER REFILLING OF THE TRENCH(S) SHALL BE REMOVED FROM THE SURFACE AND HAULED FROM THE SITE BY THE END OF THE WORKING DAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS

MAXIMUM EXTENT POSSIBLE. ANY EXISTING VEGETATED AREAS DISTURBED AS A RESULT OF THE CONTRACTOR'S

- FOR HIS OFF-SITE STOCKPILE AREAS. THE CONTRACTOR SHALL ALSO ADEQUATELY CLEAN ALL DIRT AND MUD OFF THE ROADWAYS BY THE END OF EACH WORKING DAY.
- 12. PERMANENTLY STABILIZE ANY REMAINING DISTURBED AREAS AS REQUIRED. 13. REMOVE ANY REMAINING SEDIMENT CONTROLS AFTER PRIOR APPROVAL FROM HOWARD COUNTY INSPECTIONS AND PERMITS DIVISIONS.

# STANDARDS AND SPECIFICATIONS

1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.

FOR STOCKPILE AREA:

- 2. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.
- 3. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE. 4. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
- 5. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
- 6. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
- 7. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.
- 8. IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.
- THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

# STANDARDS AND SPECIFICATIONS FOR SEEDING & MULCHING

### A. SEEDING

- 1. SPECIFICATIONS a. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
- b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN, THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS. c. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE 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 TO 80
- DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE. d. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
- 2. APPLICATION a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS. I. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1. PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES. II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER, APPLY HALF THE SEEDING RATE IN
- EACH DIRECTION, ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL b. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
- I. 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. II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
- c. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER). I. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS), 200 POUNDS PER ACRE; K20 (POTASSIUM), 200 POUNDS PER ACRE. II. 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.
- III. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION. IV. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.
- B. MULCHING 1. MULCH MATERIALS (IN ORDER OF PREFERENCE)
  - a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
  - b. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
  - WCFM IS TO 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. II. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS. III. WCFM MATERIALS ARE TO 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 MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
  - IV. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC. V. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY
  - 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PHI RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM. a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
  - b. WHEN STRAW MULCH IS USED. SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
- c. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER. ANCHORING
- a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE 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
- SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR. II. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY, IF USED ON

## STANDARDS AND SPECIFICATIONS FOR SEEDING & MULCHING (CONTINUED)

DETAIL B-4-6-B

- III. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
- IV. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000

## STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

- B. TOPSOILING 1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS 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
- 2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS. 3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
- . THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTI 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.
- 4 ARFAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN 5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:

FORMATION OF DEPRESSIONS OR WATER POCKETS.

- a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS. GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 11/2 INCHES IN DIAMETER.
- b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED. c. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
- 6. TOPSOIL APPLICATION a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL. b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO 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 MUST BE CORRECTED IN ORDER TO PREVENT THE
- c. TOPSOIL MUST NOT BE PLACED IF 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.

REVISION

TEMPORARY SEEDING NOTES:

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS

SEEDED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT.)

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30, AND FROM AUGUST 1 THRU OCTOBER 15, SEED WITH 2-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ. FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (0.07 LBS/1000 SQ, FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL PER ACRE (5 GAL/1000 SQ DT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FT OR HIGHER, USE 348 GAL PER ACRE SPREADER MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GAL PER ACRE (8 GAL/1000 SQ FT.) FOR ANCHORING.

# PERMANENT SEEDING NOTES:

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS OF BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

- 1) PREFERRED APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ FT.).
- 2) ACCEPTABLE APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ. FT.) BEFORE SEEDING, HARROW OR DISK INTO UPPER THREE

SEEDING: FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (0.5 LBS/1000 SQ FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY, OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT.) FOR ANCHORING.

<u>MAINTENANCE:</u> INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

### TEMPORARY SEEDING FOR SITE STABLIZATION

NO.	PLANT SPECIES	SEEDING RATE" (LB/AC)	SEEDING DATES 3/	SEEDING DEPTH <sup>2/</sup> (INCHES)	FERTILIZER RATE (10-20-20)	LIME RATE
	COOL-SEASON GRASSES	<del></del>				
	ANNUAL RYEGRASS (LOLIUM PERENNE SSP. MULTIFLORUM)	40	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	0.5		
	BARLEY (HORDEUM VULGARE)	96	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	1.0		
	OATS (avena sativa)	72	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	1.0		
	WHEAT (TRITICUM AESTIVUM)	120	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	1.0	436 LB/AC (10 LB./1000 SF)	2 TONS/AC (90 LB./1000 S
1	CEREAL RYE (SECALE CEREALE)	112	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	1.0		
	WARM-SEASON GRASSES					
	FOXTAIL MILLET (SETARIA ITALICA)	30	MAY 16 TO JUL. 31	0.5		
	PEARL MILLET (PENNISETUM GLAUCUM)	20	MAY 16 TO JUL. 31	0.5		

1/ SEEDING RATES FOR THE WARM-SEASON GRASSES ARE IN POUNDS OF PURE LIVE SEED (PLS). ACTUAL PLANTING RATES SHALL BE ADJUSTED TO REFLECT PERCENT SEED GERMINATION AND PURITY, AS TESTED. ADJUSTMENTS ARE USUALLY NOT NEEDED FOR THE COOL-SEASON GRASSES. SEEDING RATES LISTED ABOVE ARE FOR TEMPORARY SEEDINGS, WHEN PLANTED ALONE. WHEN PLANTED AS A NURSE CROP WITH PERMANENT SEED MIXES, USE 1/3 OF THE SEEDING RATE LISTED

ABOVE FOR BARLEY, OATS, AND WHEAT, FOR SMALLER-SEEDED GRASSES (ANNUAL RYEGRASS, PEARL MILLET, FOXTAIL MILLET), DO NOT EXCEED MORE THAN 5% (BY WEIGHT) OF THE OVERALL PERMANENT SEEDING MIX. CEREAL RYE GENERALLY SHOULD NOT BE USED AS A NURSE CROP, UNLESS PLANTING WILL OCCUR IN VERY LATE FALL BEYOND THE SEEDING DATES FOR OTHER TEMPORARY SEEDINGS, CEREAL RYE HAS ALLELOPATHIC PROPERTIES THAT INHIBIT THE GERMINATION AND GROWTH OF OTHER PLANTS, IF IT MUST BE USED AS A NURSE CROP, SEED AT 1/3 OF

OATS ARE THE RECOMMENDED NURSE CROP FOR WARM-SEASON GRASSES.

- 2/ FOR SANDY SOILS, PLANT SEEDS AT TWICE THE DEPTH LISTED ABOVE.
- 3/ THE PLANTING DATES LISTED ARE AVERAGES FOR EACH ZONE AND MAY REQUIRE ADJUSTMENT TO REFLECT LOCAL CONDITIONS, ESPECIALLY NEAR THE BOUNDARIES OF THE ZONE.

# PERMANENT SEEDING FOR SITE STABLIZATION

	NESS ZONE (FROM FIGURE B.3): MIXTURE (FROM TABLE B.1): SE				LIME RATE			
WARM-	-SEASON/COOL-SEASON GRASS	MIXES					LIME KAIE	
NO.	PLANT SPECIES	SEEDING RATE <sup>17</sup> (LB/AC)	SEEDING DATES	SEEDING DEPTH (INCHES)	N	P <sub>2</sub> O <sub>5</sub>	K₂O	
	SWITCH GRASS (PANICUM VIRGATUM)	10	MAY 16 TO JUL. 31	14"-1/2"	45 LB/AC			
1	CREEPING RED FESCUE (FESTUCA RUBRA VAR. RUBRA)	15	MAR. 1 TO MAY 15; AUG. 1 TO OCT. 15	½"-½"		90 LB/AC (2 LB./1000 SF)		2 TONS/AC (90 LB./1000 SF)
	PARTRIDGE PEA (CHAMAECRISTA FASCICULATE)							

1/ SEEDING RATES: SEEDING RATES FOR THE WARM-SEASON GRASSES ARE IN POUNDS OF PURE LIVE SEED (PLS). ACTUAL PLANTING RATES MUST BE ADJUSTED TO REFLECT PERCENT SEED GERMINATION AND PURITY, AS TESTED. ADJUSTMENTS ARE USUALLY NOT NEEDED FOR THE COOL-SEASON GRASSES, LEGUMES, OR WILDFLOWERS. ALL LEGUME SEEDS MUST BE INOCULATED BEFORE PLANTING WITH THE APPROPRIATE RHIZOBIUM BACTERIA. WHEN FEASIBLE, HARD-SEEDED LEGUMES SHOULD BE SCARIFIED TO IMPROVE GERMINATION

BLOCK NO. 7

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DATE RECTOR OF PUBLIC WORKS

HIEF, BUREAU OF UTILITIES

CHIEF BUREAU OF ENGINEERING CHIEF, UTILITY DESIGN DIVISION 4.6.

MICHAEL BAKER INTERNATIONAL, INC Michael Baker INTERNATIONAL

1304 Concourse Drive, Suite 200
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PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE
DOCUMENTS WERE PREPARED OR
APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL
ENGINEER UNDER THE LAWS OF
THE STATE OF MARYLAND.
LICENSE NO.: 29609
EXPIRATION DATE: 11/19/17
Ever. R. Na 2/3/17
EVAN R. ANDREWS, P.E.
CAME IV MINITURE LAT.

DESIGN: RND DRAWN: RND CHECKED: ERA DATE: 06/16/16

		EROSION & SEDIMENT
		CONTROL NOTES & DETAILS

BY

600 SCALE MAP NO. 25

PARK AVENUE SEWER EXTENSION CONTRACT NO.: 10-4853 CAPITAL PROJECT NO.: S-6289 **ELECTION DISTRICT 2** HOWARD COUNTY, MARYLAND

SHEET 4 OF 4

SCALE

AS SHOWN