

**GENERAL NOTES**

- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR EXPENSE.
- TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED ON AUGUST 2011 BY KCI TECHNOLOGIES, INC.
- HORIZONTAL AND VERTICAL SURVEY CONTROLS:  
THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD 83/2007 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 46EA & 0022. ALL VERTICAL CONTROLS ARE BASED ON NAVD 88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE REBAR & CAP.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12". CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED. IN THE EVENT THE CONTRACTOR'S WORK REQUIRED THE BRACING OF ADDITIONAL POLES AS SHOWN ON THE DRAWINGS, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONEY OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, 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.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. 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.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:  
AT&T.....1-800-252-1133  
B&E (CONSTRUCTION SERVICES).....410-637-8713  
B&E (EMERGENCY).....410-685-0123  
BUREAU OF UTILITIES (DPW).....410-313-4900  
COLONIAL PIPELINE CO.....410-795-1390  
MISS UTILITY.....1-800-257-7777  
STATE HIGHWAY ADMINISTRATION.....410-531-5533  
VERIZON.....1-800-743-0033
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410)313-7450 AT LEAST FIVE WORKING DAYS BEFORE ANY OPEN CUT OR BORING/JACKING OPERATION 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(g) OF THE HOWARD COUNTY CODE.
- THE CONTRACTOR SHALL PROVIDE SURVEY CONSTRUCTION STAKEOUT FOR ALL NECESSARY LINES, GRADES AND ELEVATION OF THE PROPOSED FACILITIES.
- THE CONTRACTOR SHALL PROVIDE STAGING/STORAGE AREA. THE WORK SHALL BE CONDUCTED UNDER STRICT ADHERENCE TO SECTION 308 - EROSION AND SEDIMENT CONTROL OF THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV.

**WATER MAIN NOTES**

- ALL WATER MAINS SHALL BE D.I.P. CLASS 54 UNLESS OTHERWISE NOTED.
- TOPS OF WATER MAIN SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- THE FOLLOWING NOTE IS ADDED TO HOWARD COUNTY STANDARD DETAIL W 2.22. BUTTRESS AND ANCHORAGE FOR VERTICAL BENDS, WHEN ANCHORING PVC PIPE, THE STRAPPING IN CONTACT WITH PIPE SURFACE SHALL BE 1-INCH WIDE BY 1/4-INCH THICK STEEL. THE REMAINING PORTION OF THE STRAP SHALL BE REINFORCING BAR SIZED IN ACCORDANCE WITH THE PERTINENT CHART SHOWN ON THE DETAIL.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANT SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1005 OF THE STANDARD DETAIL. ALL FIRE HYDRANT LEADS SHALL BE POLYVINYL CHLORIDE (PVC) PIPE MEETING THE REQUIREMENTS OF ANWA C900 DR14 AND CONSTRUCTION IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV-STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF UTILITIES HOWARD COUNTY, 15 DAYS PRIOR TO WATER MAIN SHUT DOWNS.
- FOR PVC WATER MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATION TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE ANWA STANDARD C900 FOR PVC PRESSURE PIPE SHALL BE SUBMITTED WITH THE PIPE MATERIAL CERTIFICATIONS OR SHOP DRAWINGS PRIOR TO APPROVAL OF THE MATERIAL FOR USE. THE TEST RECORDS SHALL BE FOR THE PIPE TO BE INSTALLED UNDER THIS CONTRACT. ALL PVC PIPE SHALL CONTAIN MARKINGS TO ALLOW CROSS REFERENCING OF THE PIPE SUPPLIED TO THE TEST RECORDS RECEIVED.
- TRACER WIRE AND CONTINUITY TEST STATIONS SHALL BE INSTALLED ON ALL DIP AND PVC WATER MAINS IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL.
- UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS SACRIFICIAL ANODES SHALL BE INSTALLED ON ALL VALVES AND METALLIC FITTINGS USED WITH PVC WATER MAINS IN ACCORDANCE WITH VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. SEVENTEEN (17) POUND MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSES. TWELVE (12) POUND ZINC ANODES SHALL BE INSTALLED ON ALL STAINLESS STEEL FITTINGS AND SADDLES USED WITH PVC MAINS. ALL "TEES" USED WITH PVC MAINS SHALL BE DUCTILE IRON.
- WATER MAINS SHALL BE FILLED WITH WATER AND BROUGHT TO 150 PSI. HYDROSTATIC TEST PRESSURE AT THE LOW POINT FOR 2 HOURS.

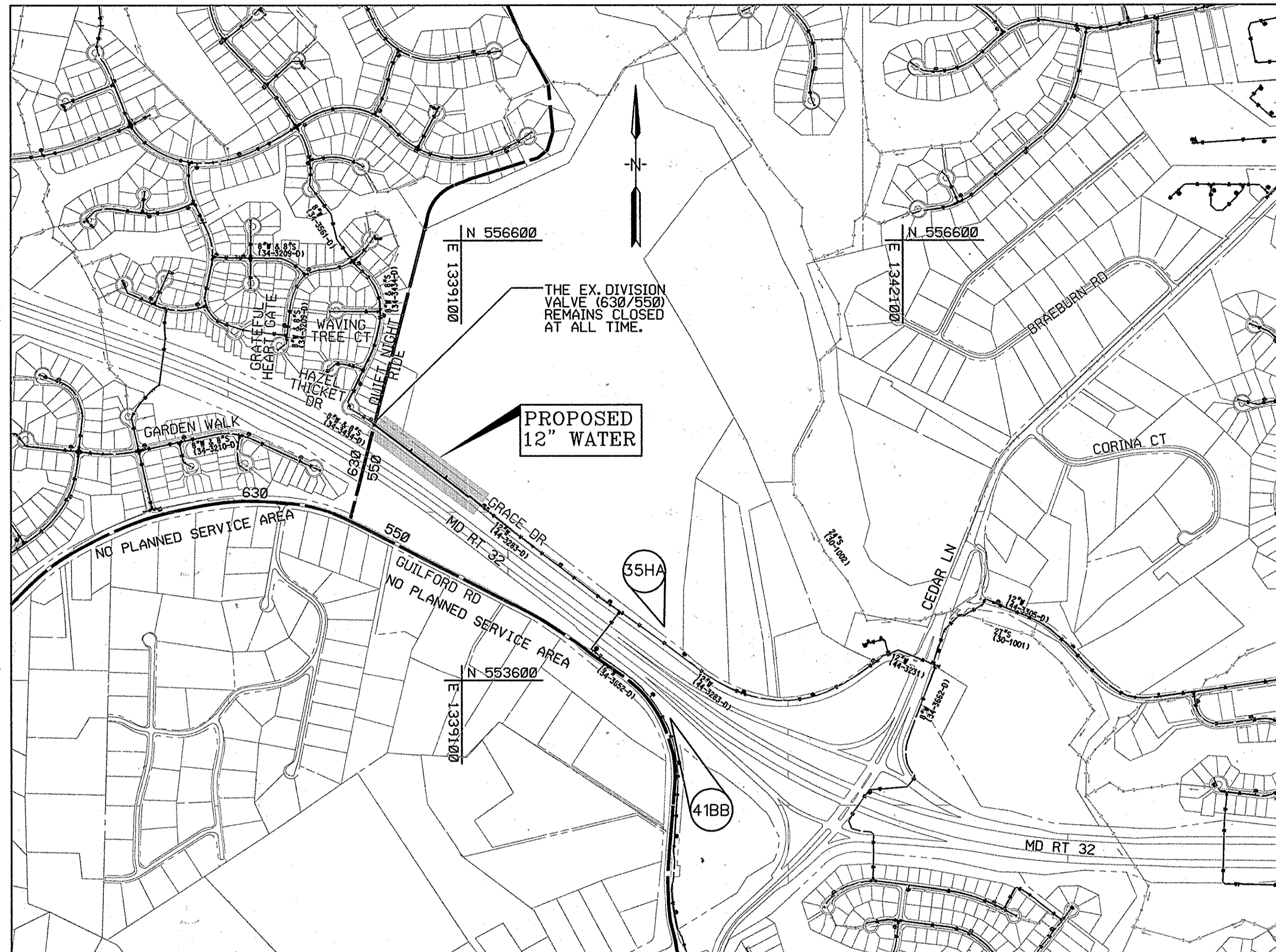
PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31363. EXPIRATION DATE: 1/16/2012.

# GRACE DRIVE WATER MAIN LOOP HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

CAPITAL PROJECT No. W8301

CONTRACT No. 44-4762



**VICINITY MAP**

SCALE: 1"= 600'

DRAINAGE AREA: MIDDLE PATUXENT  
PRESSURE ZONE: 550  
WATER TEST GRADIENT: 550

HOWARD COUNTY GEODETIC SURVEY CONTROL  
THE HORIZONTAL AND VERTICAL DATUM BASED ON  
NAD83/91 (HORIZONTAL)  
NAVD 88 (VERTICAL)  
35HA N 553966.75  
E 1340476.95  
ELEV. 404.59'  
41BB N 553338.79  
E 1340517.44  
ELEV. 370.35'

**DEVELOPER'S CERTIFICATION**

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."  
*Ken Sidon* 11/27/2012  
BUREAU OF ENGINEERING  
DEPARTMENT OF PUBLIC WORKS

**HOWARD SOIL CONSERVATION DISTRICT CERTIFICATION:**

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE SPECIFICATIONS AND AS SHOWN ON THE DRAWINGS.  
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT (SCD).  
HOWARD SOIL CONSERVATION DISTRICT DATE

**ENGINEER'S DESIGN CERTIFICATION**

"I/WE CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."  
*Guithua Wang* 11/12/2012  
GUITHUA WANG  
KCI TECHNOLOGIES  
936 RIVERBROOK RD  
SPARKS, MARYLAND 21152

**INDEX OF SHEETS**

SHEET No.	DESCRIPTION
1	TITLE SHEET
2	12" WATER PLAN AND PROFILE
3	SEDIMENT CONTROL PLAN
4	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

**QUANTITIES**

ITEM	UNIT	ESTIMATE	AS-BUILT	MATERIAL SUPPLIER
12" WATER DR14 PVC	L.F.	944.907	907 LF	NATIONAL PIPE
VALVE 12"	EA	1	1 EA.	MUELLER
FIRE HYDRANT	EA	2	2 EA.	MUELLER
NAME OF UTILITY CONTRACTOR: HTI CONTRACTORS				
AS-BUILT DATE: 8/20/15				
12" WATER CESA Ductile L.F.	7	7 LF	GRIFFIN	

**RESTORATION SCHEDULE**

LOCATION	DISTANCE	TYPE
GRACE DRIVE	914'	MACADAM

**LEGEND**

	<b>PROPOSE</b>		<b>EXISTING</b>
	TRAVERSE POINT		DECIDUOUS TREE
	WATER MAIN		CONIFEROUS TREE
	LIMIT OF DISTURBANCE		EXISTING FIRE HYDRANT
			EXISTING VALVE
			EXISTING WATER MAIN
			EXISTING GAS MAIN
			EXISTING UNDERGROUND ELECTRIC
			EXISTING OVERHEAD SERVICE
			EXISTING SEWER MAIN

**AS-BUILT**  
DATE 9/10/2015

PLOTTED: 10/14/15 AM on Monday, November 12, 2015  
BY: Guithua Wang, Division: P042, W:\W-Solid Waste Emp. FILE: M:\2007\01071376.37\Drawings\0107137637\_SHEET 1.TITLE.DGN

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Jay L. ...* 12/10/15  
DIRECTOR OF PUBLIC WORKS DATE

*Thomas R. ...* 11/20/12  
CHIEF, BUREAU OF ENGINEERING DATE

*Clayton ...* 11/27/12  
CHIEF, UTILITY DESIGN DIVISION DATE

ENGINEERS  
PLANNERS  
SCIENTISTS  
CONSTRUCTION MANAGERS

**KCI**  
TECHNOLOGIES

936 RIVERBROOK ROAD  
SPARKS, MARYLAND 21152  
TELEPHONE: (410) 316-7800  
FAX: (410) 316-7818  
www.kci.com

STATE OF MARYLAND  
GUITHUA WANG  
PROFESSIONAL ENGINEER  
NO. 31363  
11/12/2012

DES: CW				
DRN: CK				
CHK: TW				
DATE: AUGUST 2011	ccb	As-Built	9/10/15	
BY	NO.	REVISION	DATE	

**TITLE SHEET**

600' SCALE MAP NO. 35 BLOCK NO. 15 & 21

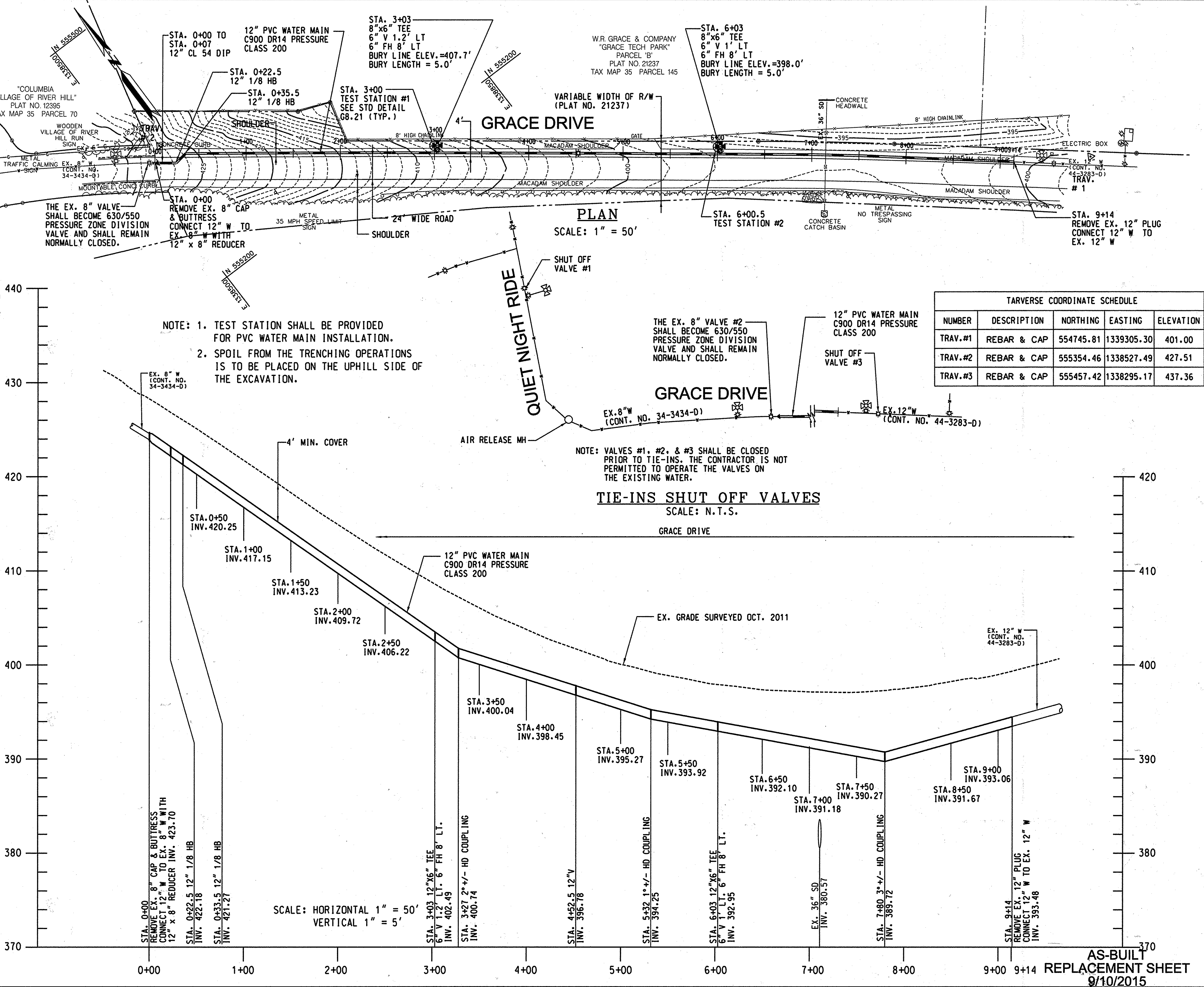
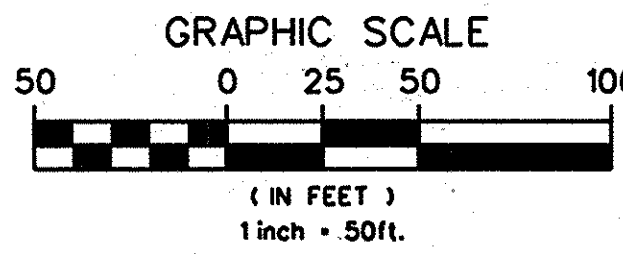
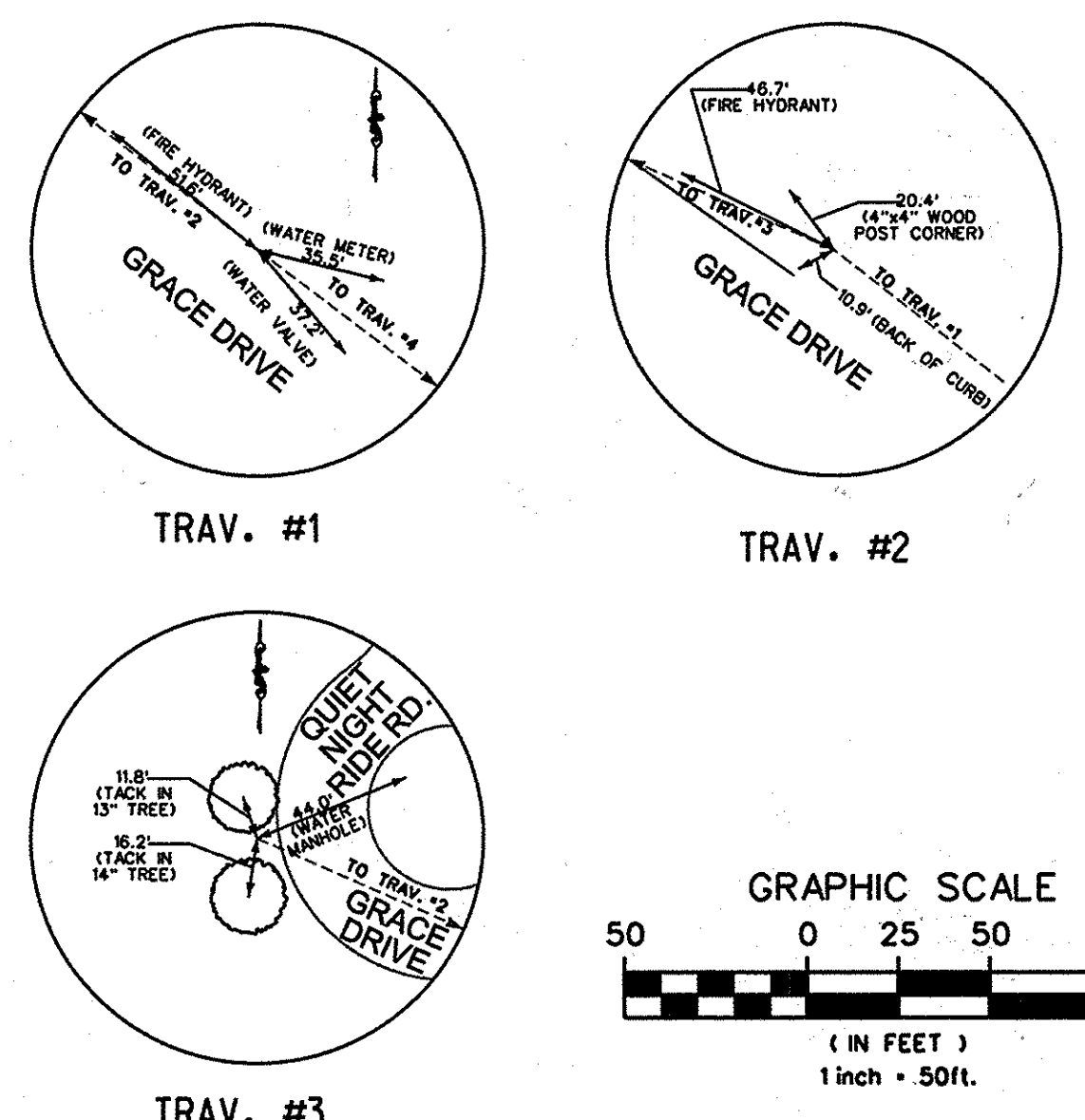
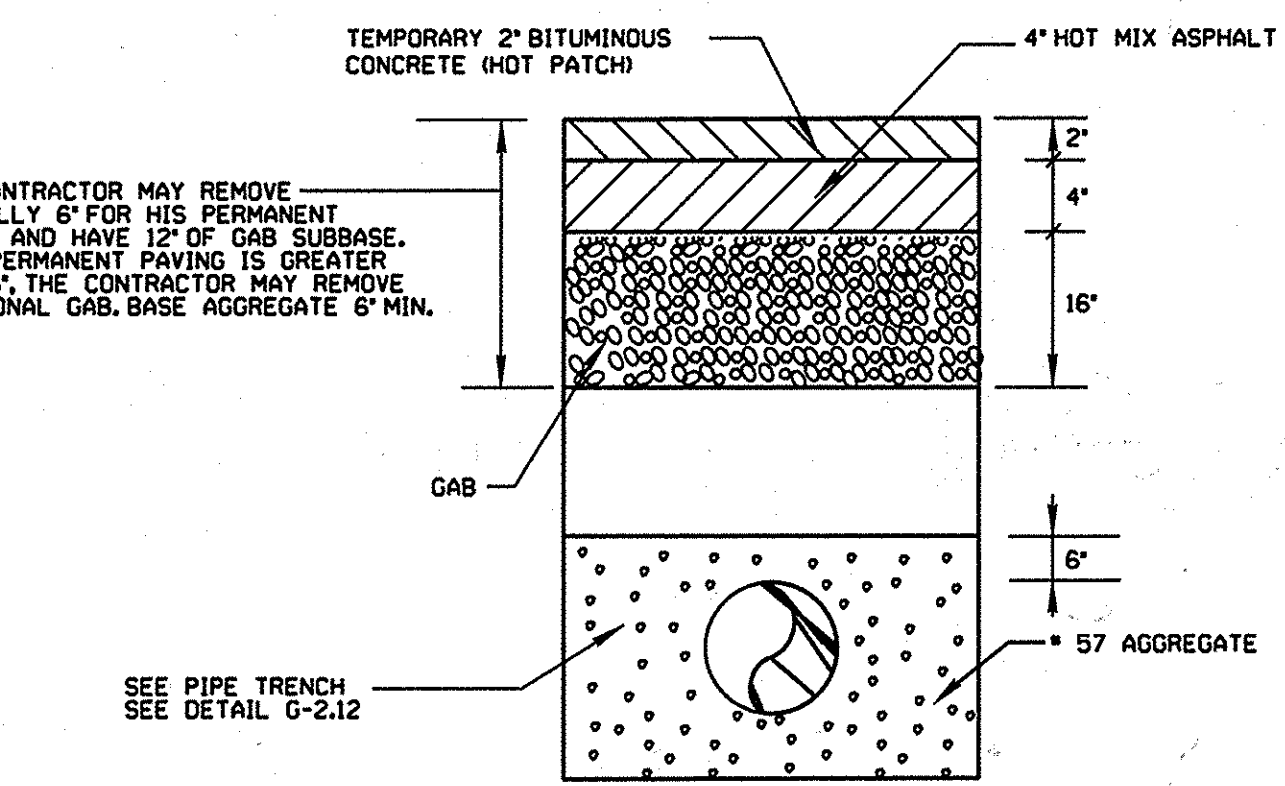
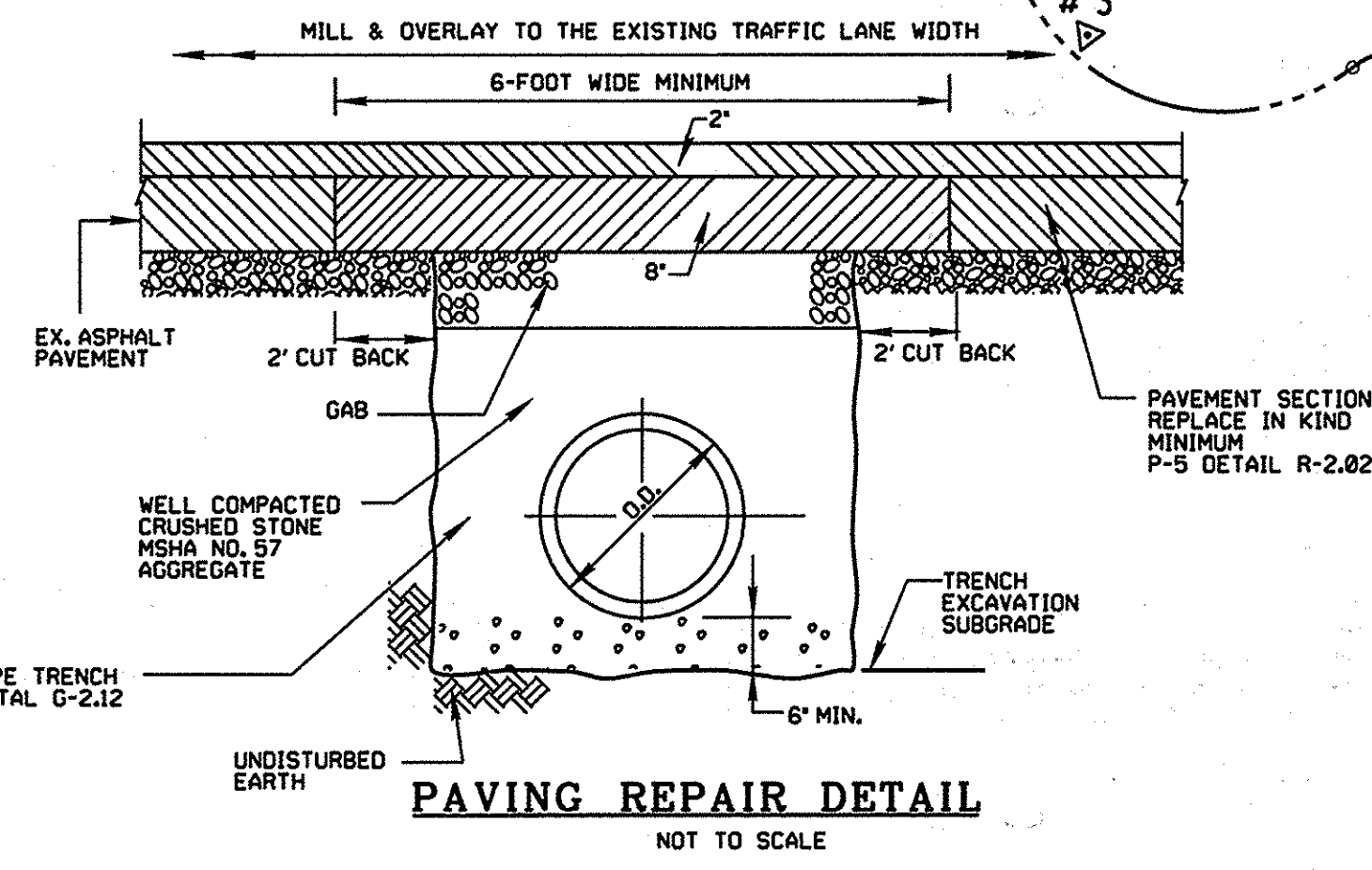
**GRACE DRIVE WATER MAIN LOOP**

CAPITAL PROJECT No. W8301  
CONTRACT No. 44-4762

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 1 OF 4

WATER MAIN STAKEOUT COORDINATE SCHEDULE			
STATION	FITTING	NORTHING	EASTING
0+00	8" x 12" REDUCER TIE-IN	555342.66	1338512.93
0+22.5	12" 1/8 HB	555329.00	1338530.84
0+35.5	12" 1/8 HB	555330.97	1338544.85
3+03	FH & V	555169.44	1338757.45
4+52.5	12" V	555078.33	1338875.98
6+03	FH & V	554986.28	1338995.04
9+14	TIE-IN TO 12" W	554790.61	1339237.10

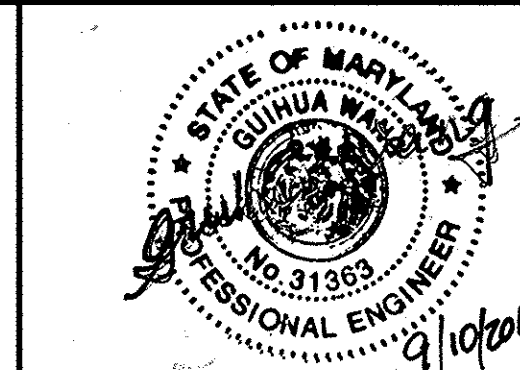


TRANSVERSE COORDINATE SCHEDULE				
NUMBER	DESCRIPTION	NORTHING	EASTING	ELEVATION
TRAV.#1	REBAR & CAP	554745.81	1339305.30	401.00
TRAV.#2	REBAR & CAP	555354.46	1338527.49	427.51
TRAV.#3	REBAR & CAP	555457.42	1338295.17	437.36

PLOTTED: 06:49 AM on Thursday, September 24, 2015  
 BY: Division  
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DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works: *10/26/15*  
 Chief, Bureau of Utilities: *10/26/15*  
 Chief, Utility Design Division: *10/19/15*

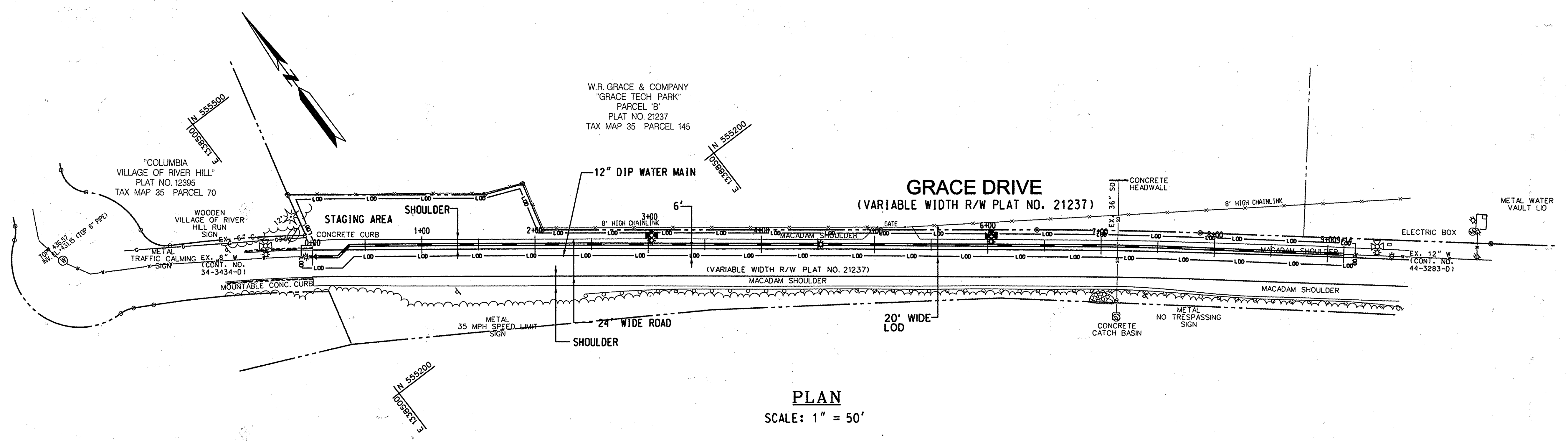
ENGINEERS  
 PLANNERS  
 SCIENTISTS  
 CONSTRUCTION MANAGERS  
**KCI TECHNOLOGIES**  
 936 RIDGEBROOK ROAD  
 SHARPS, MARYLAND 21152  
 TELEPHONE: (410) 316-7800  
 FAX: (410) 316-7818  
 www.kci.com



DES: GW	
DRN: CK	
CHK: TW	
DATE: AUGUST 2011	9/10/15
BY: K F J	NO.
REVISION	DATE

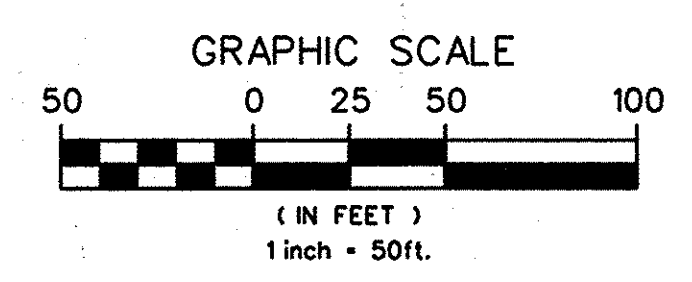
GRACE DRIVE  
 12" WATER MAIN  
 PLAN & PROFILE  
 AS-BUILT REPLACEMENT SHEET  
 BLOCK NO. 15 & 21

GRACE DRIVE WATER MAIN LOOP  
 CAPITAL PROJECT No. W8301  
 CONTRACT No. 44-4762  
 ELECTION DISTRICT NO. 5  
 HOWARD COUNTY, MARYLAND  
 SCALE AS SHOWN  
 SHEET 2 OF 4



**PLAN**  
SCALE: 1" = 50'

- NOTE: 1. SOIL INFORMATION IS BASED ON HOWARD COUNTY GIS SOIL MAP  
 M<sub>g</sub>B: MANOR - LOAM, 3 TO 8 PERCENT SLOPES  
 M<sub>g</sub>C: MANOR - LOAM, 8 TO 15 PERCENT SLOPES  
 M<sub>k</sub>F: MANOR - BRINKLOW COMPLEX, 25 TO 65 PERCENT SLOPES  
 G<sub>m</sub>B: GLENVILLE - SILT LOAM, 3 TO 8 PERCENT SLOPES  
 G<sub>g</sub>B: GLENELG - LOAM, 3 TO 8 PERCENT SLOPES
2. TOPSOIL SHALL BE PROVIDED IN ACCORDANCE WITH THE LATEST EDITION OF THE SHA STANDARD SPECIFICATION OF CONSTRUCTION AND MATERIALS, SECTION 920 - LANDSCAPING MATERIALS.
3. SPOIL FROM THE TRENCHING OPERATIONS IS TO BE PLACED ON THE UPHILL SIDE OF THE EXCAVATION.



**AS-BUILT  
REPLACEMENT SHEET  
9/10/2015**

PLOTTED: 06:52 AM on Thursday, September 24, 2015  
 BY: Division  
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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]*  
DIRECTOR OF PUBLIC WORKS  
DATE: 10/19/15

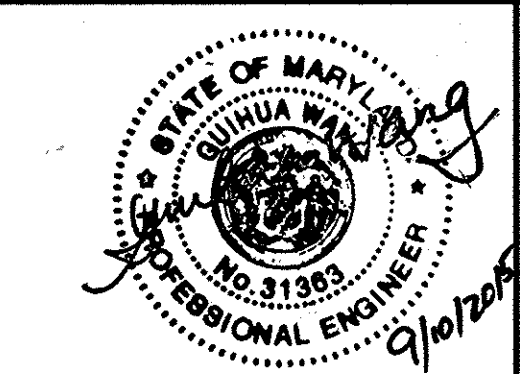
*[Signature]*  
CHIEF, BUREAU OF UTILITIES  
DATE: 10/19/15

*[Signature]*  
CHIEF, UTILITY DESIGN DIVISION  
DATE: 10/19/15

**KCI**  
TECHNOLOGIES

ENGINEERS  
PLANNERS  
SCIENTISTS  
CONSTRUCTION MANAGERS

936 RIDGEBROOK ROAD  
SPARKS, MARYLAND 21152  
TELEPHONE: (410) 316-7800  
FAX: (410) 316-7818  
www.kci.com



DES: GW			
DRN: CK			
CHK: TW			
DATE: AUGUST 2011	KFJ	AS-BUILT REPLACEMENT SHEET	9/10/15
BY: NO.		REVISION	DATE

**GRACE DRIVE  
SEDIMENT CONTROL PLAN**

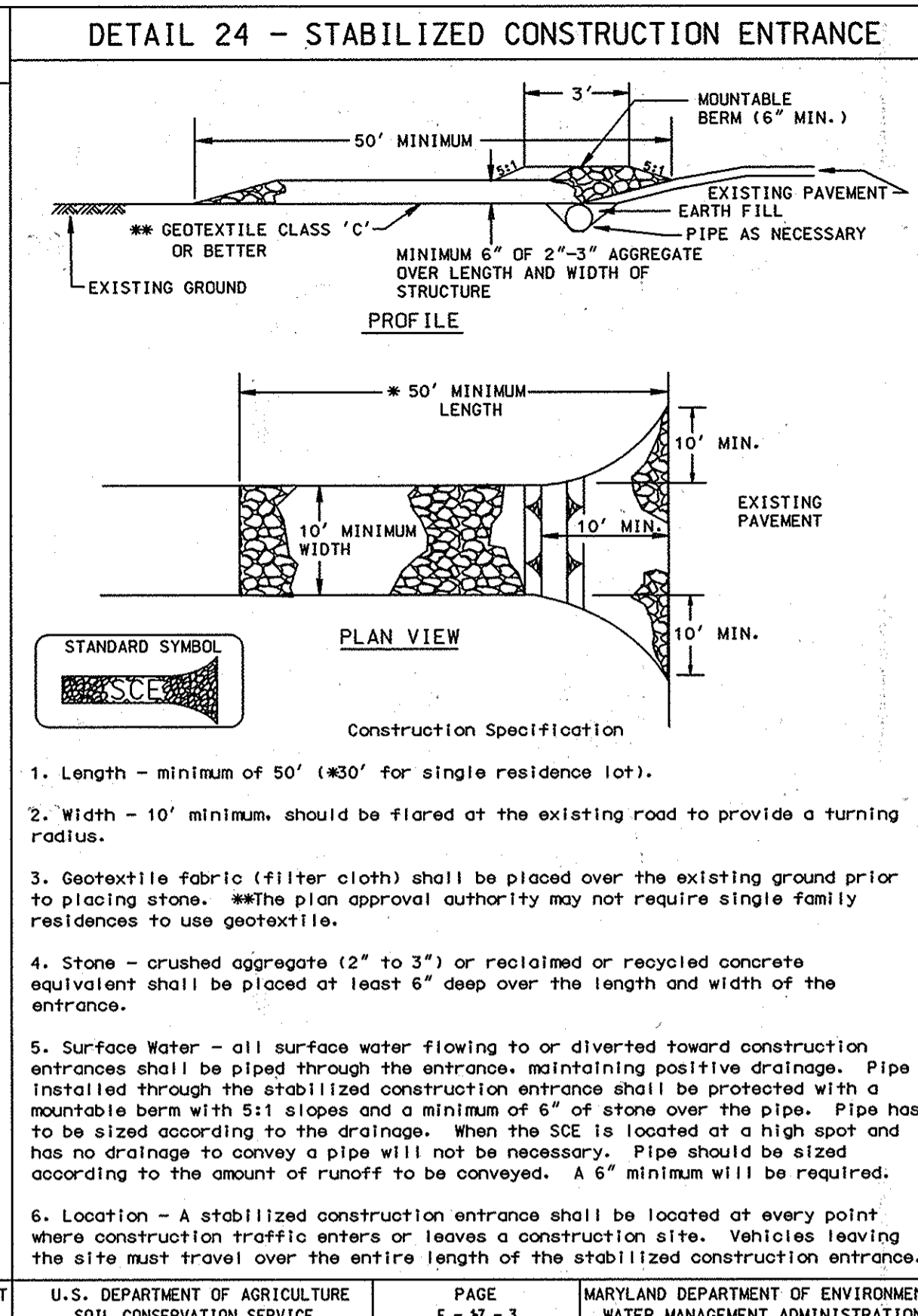
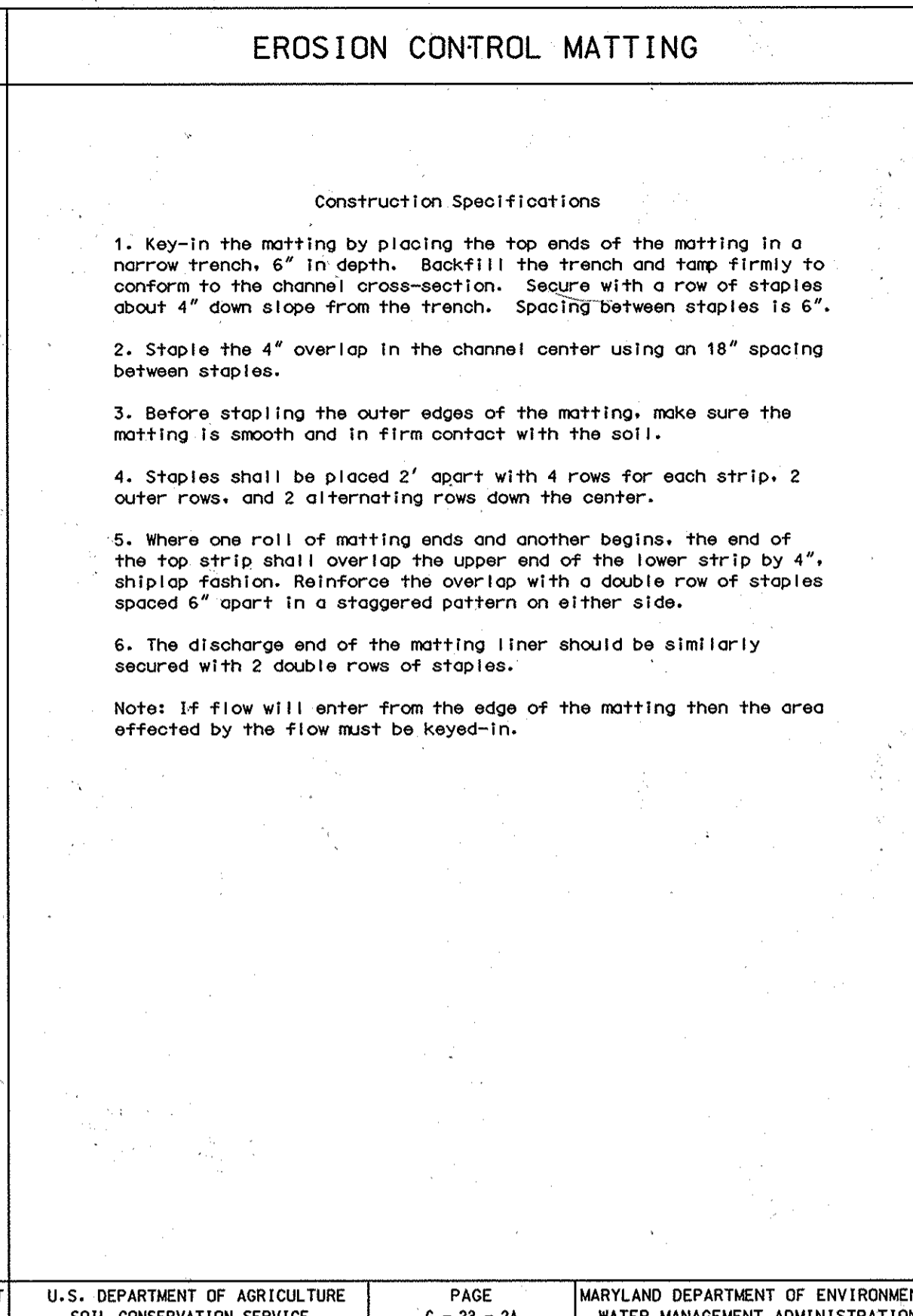
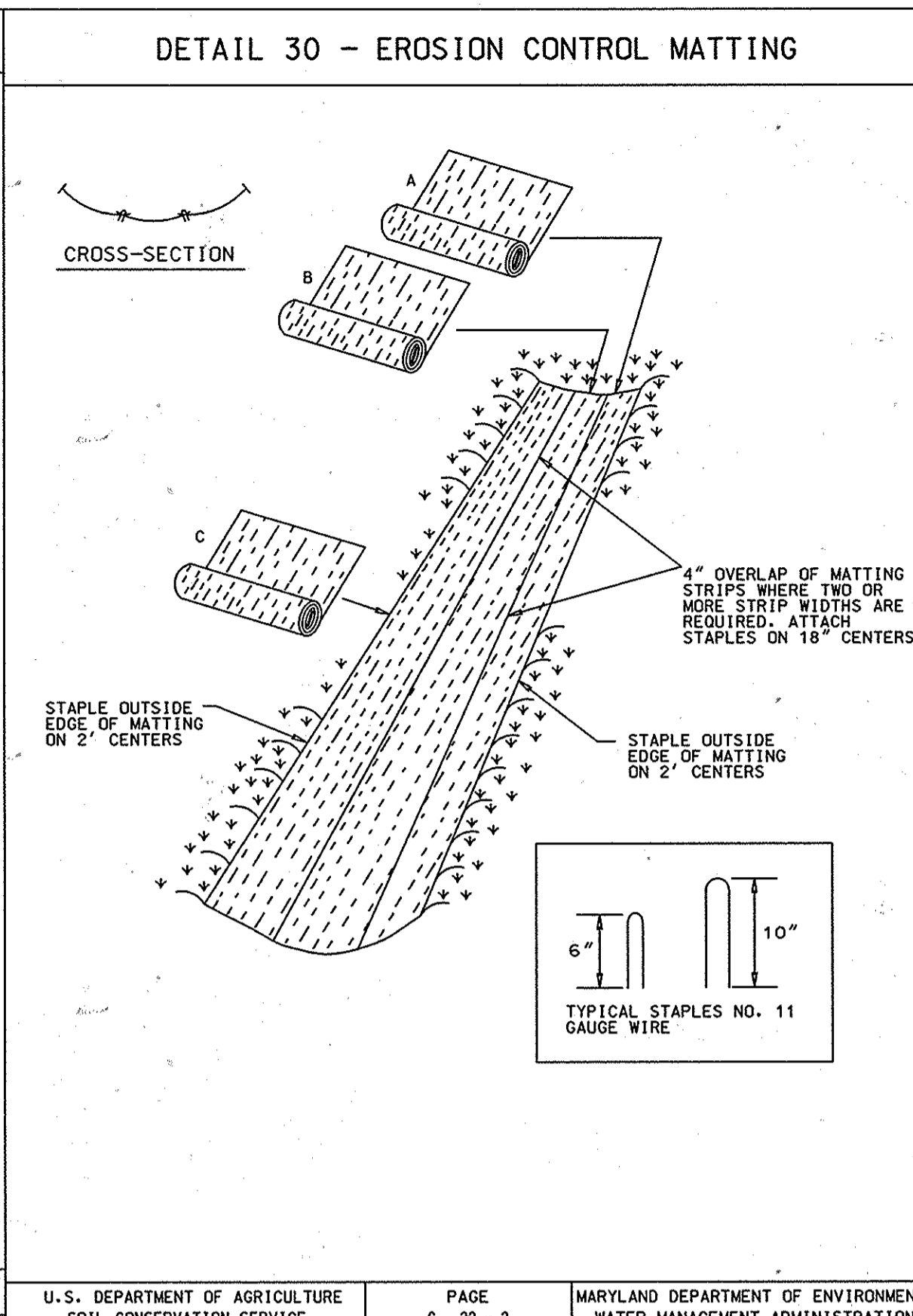
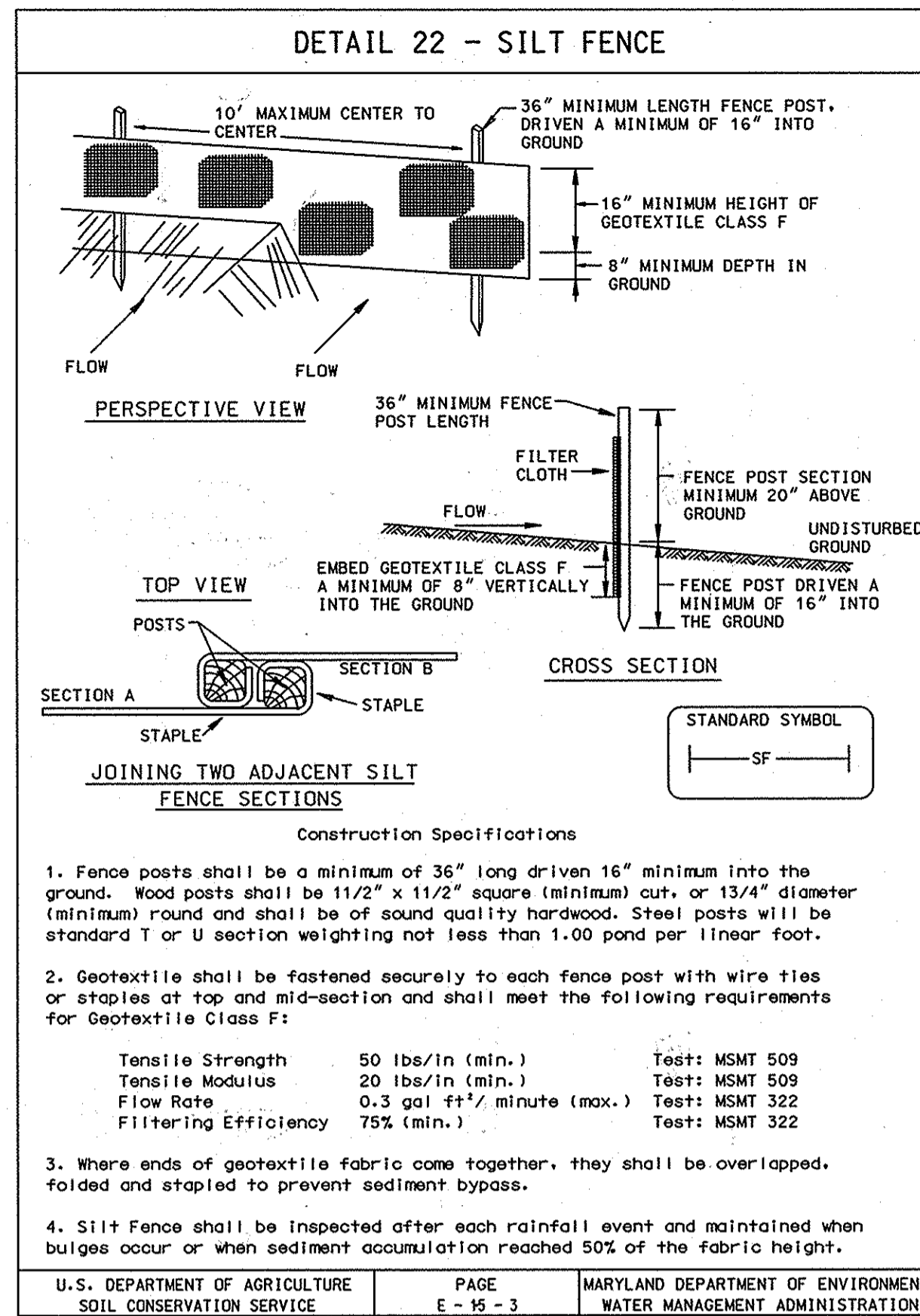
600' SCALE MAP NO. 35 BLOCK NO. 15 & 21

**GRACE DRIVE WATER MAIN LOOP**

CAPITAL PROJECT No. W8301  
CONTRACT No. 44-4762

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 3 OF 4



### SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT.
- LAYOUT ALIGNMENT AT SITE. (10 DAYS)
- INSTALL SEDIMENT CONTROL DEVICES AT THE DIRECTION OF INSPECTOR.
- EXCAVATE DITCH TO THE GRADE SPECIFIED ON THE PROFILE. INSTALL WATER MAIN AND BACK FILL TRENCH AND STABILIZE IN KIND (30 DAYS) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO 25' OF PIPE LENGTH OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- SPOIL FROM THE TRENCHING OPERATIONS IS TO BE PLACED ON THE UPHILL SIDE OF THE EXCAVATION.
- CLEAN UP CONSTRUCTION SITE. (1 DAY)
- REMOVE SEDIMENT CONTROL DEVICES AFTER PERMISSION IS GRANTED BY THE SEDIMENT CONTROL INSPECTOR. (1 DAY)

### PERMANENT SEEDING NOTES

**LIME SOIL AMENDMENTS**

A. GROUND AGRICULTURAL LIMESTONE (100 POUNDS OF GROUND LIMESTONE IS EQUIVALENT TO 75 POUNDS OF HYDRATED LIME OR 50 POUNDS OF BURNT LIME). THE CONTRACTOR WILL SPECIFY WHAT MATERIAL HE IS USING. LIME SHALL CONTAIN NOT LESS THAN 85% OF TOTAL CARBONATES, 50% PASS 100 MESH, 90% PASS 20 MESH.

B. LIME SHALL BE APPLIED SEPARATELY AND PRIOR TO THE APPLICATION OF ANY FERTILIZER OR SEED AND ONLY ON SEEDBEDS THAT HAVE PREVIOUSLY BEEN PREPARED AS PER THE SPECIFICATIONS. LIME SHALL BE INCORPORATED WITHIN 24 HRS FOLLOWING ITS APPLICATION. LIME SHALL BE WORKED INTO A DEPTH OF SIX (6) INCHES AFTER WHICH THE SEEDBED SHALL AGAIN BE PROPERLY GRADED AND DRESSED TO A SMOOTH FINISH.

**LIMING PROCEDURES**

A. LIME SHALL BE SPREAD AT A RATE OF 1.5 TONS PER ACRE AND INCORPORATED IN A MANNER THAT ACHIEVES UNIFORM DISTRIBUTION.

**FERTILIZATION**

MUST USE A BLENDED FERTILIZER WITH A N-P-K RATIO ON THE ORDER OF 1-3-2 SUCH AS 5-25-10 BLEND. A MINIMUM OF 50% OF THE NITROGEN MUST BE A SLOW RELEASE SOURCE OF NITROGEN.

**SEED SELECTION & RATES**

SEED MIXTURE FOR SPRING OR FALL SEEDING SHALL BE AS FOLLOWS:

HOWARD COUNTY RECREATION AND PARKS RIPARIAN SEED MIX

%	BOANICAL NAME	COMMON NAME	TYPE	IND.
10%	AGROSTIS ALBA	REDTOP	N/A	FAW
10%	ANDROPOGON GERARDII	BIG BLUESTEM	WARM SEASON FAC	FAW
10%	ELYMUS RIPARIUS	RIVERBANK WILD RYE	COOL SEASON FACW	FAW
10%	ELYMUS VIRGINICUS	VIRGINIA WILD RYE	COOL SEASON FACW	FAW
45%	LOLIUM MULTIFLORUM	ANNUAL RYEGRASS	N/A	NI
18%	PANICUM VIRGATUM	SWITCHGRASS	WARM SEASON FAC	FAW
5%	CHAMAECRISTA FASCICULATE	PARTRIDGE PEA	LEGUME	

COMPLETE SEED MIX APPLIED AT A RATE OF 50 LBS/AC

SEED MIX FOR SUMMER SEEDING SHALL BE AS FOLLOWS:

50% LOLIUM MULTIFLORUM ANNUAL RYEGRASS  
50% SETARIA ITALICA FOXTAIL MILLET  
SEED AT 4.0 LBS. PER 1,000 SQ. FT.

**SCHEDULE**

SEED SHALL BE SOWED BETWEEN MARCH 15 TO MAY 15 OR AUGUST 15 TO OCTOBER 30.

### TEMPORARY SEEDING NOTES

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

**SEEDBED 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 15 THRU OCTOBER 15, SEED WITH 2-1/2 BUSHEL 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 KEEPING LOVEGRASS (.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 210 GAL PER ACRE (5 GAL/1000 SQ FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 6 FT OR HIGHER, USE 348 GAL PER ACRE (8 GAL/1000 SQ FT.) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

### STANDARD SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION. (410-313-1855).
- 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 THEREOF.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
  - 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1.
  - 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL (SEC. G20.0) FOR PERMANENT SEEDINGS, SOD, TEMPORARY SEEDING AND MULCHING. TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT 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 COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:**

TOTAL AREA OF SITE	0.41 ACRES	
AREA DISTURBED	0.065 ACRES	0.065 Δ
AREA TO BE ROOFED OR PAVED	0.065 ACRES	0.065 Δ
AREA TO BE VEGETATIVELY STABILIZED		
TOTAL CUT	N/A	CU. YDS.
TOTAL FILL	N/A	CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A	
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF THE DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 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 APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE (3) PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- CONTRACTOR SHALL PLACE EXCAVATED MATERIALS ON UPHILL SIDE OF TRENCH AND PLACE SILT FENCE ON DOWNHILL SIDE OF TRENCH.

**AS-BUILT**  
DATE 9/10/2015

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. 31363. EXPIRATION DATE: 1/16/2012.

PLOTTED: 09/07/15 BY: J. F. Filday, November 05, 2015  
BY: Collin Ward, Division: P042, W:\W\Solid Works Emp  
FILE: M:\2007\01071578\37\Drawings\0107157837\_SHEET 4\_SED.dgn

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Jan 9* 12/01/12  
DIRECTOR OF PUBLIC WORKS DATE

*Silva Chen* 12/11/12  
CHIEF, BUREAU OF UTILITIES DATE

*Thomas J. Scudlark* 11/20/12  
CHIEF, BUREAU OF ENGINEERING DATE

*Chad D. Lewis* 11/27/12  
CHIEF, UTILITY DESIGN DIVISION DATE

ENGINEERS  
PLANNERS  
SCIENTISTS  
CONSTRUCTION MANAGERS

**KCI** TECHNOLOGIES

936 RIDGEBROOK ROAD  
SPARKS, MARYLAND 21152  
TELEPHONE: (410) 316-7800  
FAX: (410) 316-7818  
www.kci.com

STATE OF MARYLAND  
JULIUS WANG  
PROFESSIONAL ENGINEER

*J. Wang* 11/16/12

DES:	GW			
DRN:	CK			
CHK:	TW			
DATE:	CCB	AS-BUILT	9/10/15	
AUGUST 2011	BY	NO.	REVISION	DATE

EROSION AND  
SEDIMENT CONTROL  
NOTES AND DETAILS

600' SCALE MAP NO. 35 BLOCK NO. 15 & 21

GRACE DRIVE WATER MAIN LOOP

CAPITAL PROJECT No. W8301  
CONTRACT No. 44-4762

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE  
AS SHOWN

SHEET  
4 OF 4