
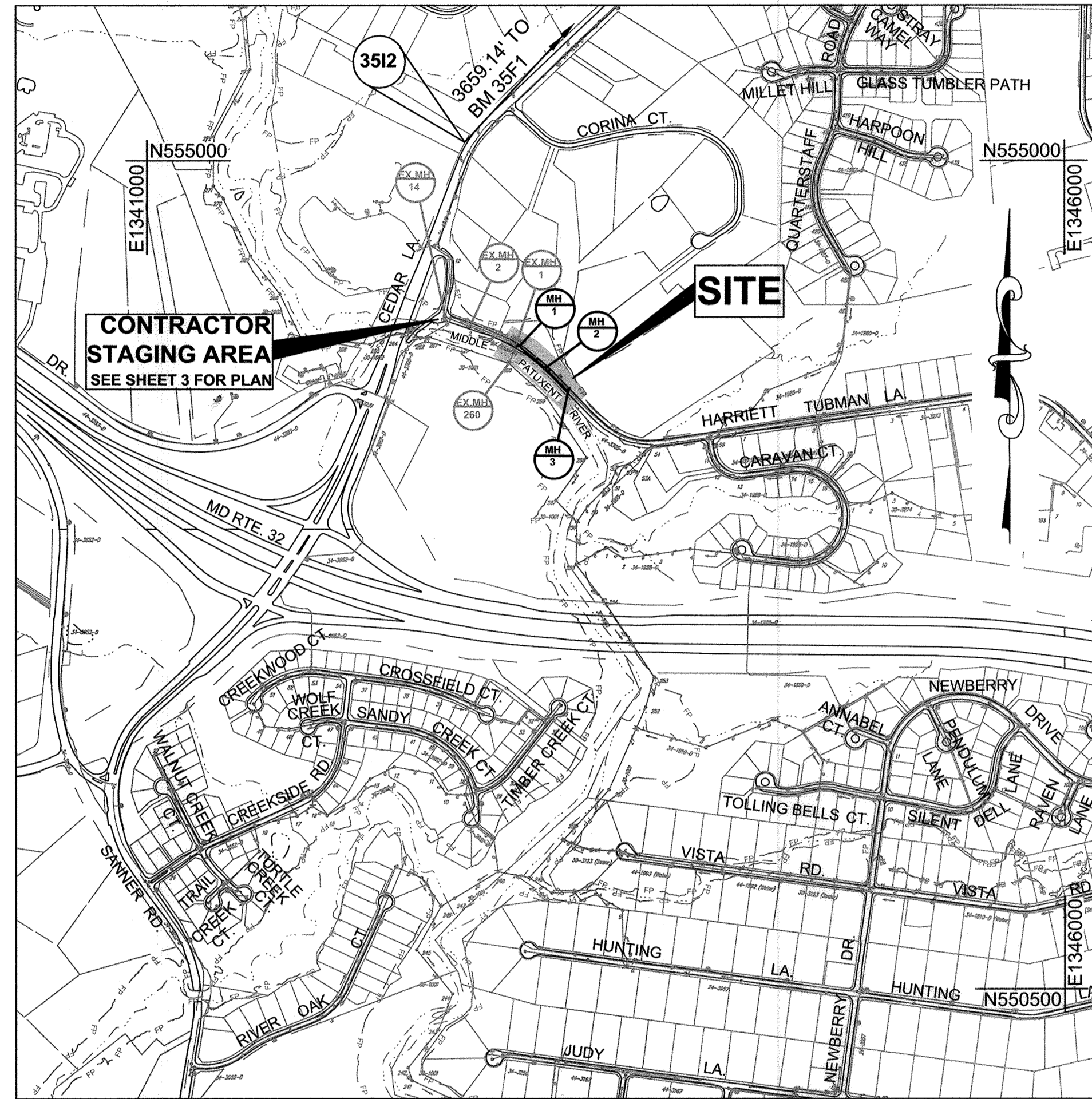


# HARRIET TUBMAN LANE SEWER EXTENSION CAPITAL PROJECT NO. S-6296 CONTRACT NO. 30-4997 HOWARD COUNTY, MARYLAND

## 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 05/19/2016 BY KCI TECHNOLOGIES, INC.
- HORIZONTAL AND VERTICAL SURVEY CONTROLS:  
THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD 83/07 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL POINTS 35F1 AND 35I2. ALL VERTICAL CONTROLS ARE BASED ON NAVD 88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE 35F1 AND 35I2.
- 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 UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS REQUIRED. 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 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.
- ALL EXISTING UTILITIES SHALL BE TEST PITTED / LOCATED AS NECESSARY AND IN ADVANCE OF THE PROPOSED CONSTRUCTION, IN ORDER TO PROPERLY MAKE ALL REQUIRED UTILITY CROSSINGS AND / OR CONNECTIONS. ANY DISCREPANCIES OR UTILITY CONFLICTS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER. 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 OR IN THE SPECIFICATIONS. LOCATIONS OF OTHER EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN NOTED 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  
BG&E (CONSTRUCTION SERVICES).....410-637-8713  
BG&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 / 410-224-9210
- 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 OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN COUNTY ROADS FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(a) OF THE HOWARD COUNTY CODE.
- THE CONTRACTOR SHALL PROVIDE SURVEY CONSTRUCTION STAKEOUT FOR ALL NECESSARY LINES. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY LINES, GRADES AND ELEVATIONS, AND CUT SHEETS SHALL BE PREPARED BASED ON THE LINES AND GRADES SHOWN ON THE CONTRACT DRAWINGS.
- SPOIL FROM TRENCHING OPERATIONS SHALL BE PLACED ON THE UPHILL SIDE OF THE TRENCH.
- THE CONTRACTOR SHALL USE THE AREA DESIGNATED ON THE PLANS AS THE 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. PRECONSTRUCTION CONTOURS SHALL BE RESTORED ONCE THE UTILITY HAS BEEN INSTALLED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING AND REPLACING THE EXISTING GUARDRAIL THAT IS DAMAGED OR REMOVED DURING CONSTRUCTION.



VICINITY MAP

SCALE: 1" = 600'

TYPE OF BUILDING: RESIDENTIAL/COMMERCIAL  
 NUMBER OF PARCELS: 1  
 NUMBER OF SEWER HOUSE CONNECTIONS: 1  
 NUMBER OF WATER HOUSE CONNECTIONS: NA  
 DRAINAGE AREA: MIDDLE PATUXENT

### CONTROL NOTE

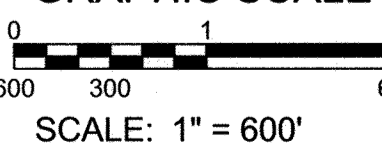
THE HORIZONTAL AND VERTICAL DATUM SHOWN HEREON ARE BASED ON GPS OBSERVATIONS FROM HOWARD COUNTY GEODETIC SURVEY CONTROL POINTS.

NAD83/91(HORIZONTAL)  
 NAVD 88 (VERTICAL)

35F1 N 557787.367 E 1345217.309 ELEV. 400.475  
 35I2 N 555100.776 E 1342733.049 ELEV. 329.782

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 1/16/2018.

### GRAPHIC SCALE



SCALE: 1" = 600'

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	SEWER PLAN & PROFILE
3	EROSION & SEDIMENT CONTROL PLAN AND DETAILS
4	EROSION & SEDIMENT CONTROL NOTES
5	TRAFFIC CONTROL PLAN

### BILL OF MATERIALS

ITEM	UNIT	ESTIMATE	AS-BUILT	MANUFACTURER
8" PVC SEWER	L.F.	366	366	NORTH AMERICAN
48" (4' DIA.) PRECAST MANHOLE	EA.	3	3	ATLANTIC PRECAST
48" (4' DIA.) MANHOLE RISER > 6'	V.F.	10	10	ATLANTIC PRECAST
8" PVC SHC	L.F.	19	19	NORTH AMERICAN
8" PVC CLEANOUT	V.F.	7	7	NORTH AMERICAN

NAME OF UTILITY CONTRACTOR: UTILITIES UNLIMITED

CHECKBOX	
AS-BUILT DATE	8/31/2017

SURVEY AND DRAFTING DIVISION

RESTORATION SCHEDULE		
LOCATION	DISTANCE	TYPE
HARRIET TUBMAN LANE	415'	MACADAM
	437'	

### LEGEND

EXISTING	PROPOSED
DECIDUOUS TREE	SEWER MAIN
CONIFEROUS TREE	SEWER MANHOLE
EXISTING UTILITY POLE	SILT FENCE
EXISTING FIRE HYDRANT	LIMIT OF DISTURBANCE
EXISTING VALVE	LIMIT OF DISTURBANCE AND SILT FENCE
EXISTING WATER MAIN	AT GRADE INLET PROTECTION
EXISTING SEWER MAIN	SOIL BORING
EXISTING STORM DRAIN	
EXISTING OVERHEAD WIRE	
EXISTING SEWER EASEMENT	
PROPERTY BOUNDARY	
MAJOR CONTOUR	
MINOR CONTOUR	
WETLAND LIMITS	
WETLAND BUFFER	
100 YR. FLOODPLAIN	
GUARD RAIL	
TRAVERSE POINT	

**AS-BUILT**  
 DATE: 8-31-2017

### SANITARY SEWER MAIN NOTES

- ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- FORCE MAINS SHALL BE D.I.P. ONLY.
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER. STANDARD DETAIL G5.52 WHERE WATERTIGHT MANHOLE FRAMES AND COVERS ARE USED. SET TOP FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT THE CELLAR CANNOT BE SERVED.
- DISTANCES SHOWN FOR THE SANITARY SEWER MANHOLES AND STRUCTURES IN PROFILE ARE ALONG THE CENTERLINE OF THE PIPE FROM CENTER OF MANHOLE OR STRUCTURE TO THE CENTER OF MANHOLE OR STRUCTURE. ESTIMATED QUANTITIES SHOWN ON THE BILL OF MATERIALS EXCLUDE DISTANCES WITHIN MANHOLE INTERIORS.

### OWNER'S/DEVELOPER'S CERTIFICATION

"I/WE CERTIFY THAT ALL CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO THE BEGINNING OF THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

*Silvan Choi* 6/12/2017  
 OWNERS / DEVELOPERS SIGNATURE DATE  
 Silvan Choi Project Manager  
 PRINTED NAME & TITLE

### DESIGN CERTIFICATION

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

*Guihua Wang* 8/09/2017  
 DESIGNER'S SIGNATURE DATE  
 GUIHUA WANG  
 PRINTED NAME  
 MD REGISTRATION NO. 31363  
 (P.E., R.L.S. OR R.L.A. (CIRCLE ONE))

### HOWARD SOIL CONSERVATION DISTRICT CERTIFICATION

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 8/17-19  
*Guihua Wang* 8/19/17  
 HOWARD SOIL CONSERVATION DISTRICT DATE

KCI TECHNOLOGIES PROJECT NO.: 13122677.41

User: kevin.johnson  
 Jun 09, 2017 10:37am  
 M:\2012\13122677.41\Drawings\G-001 Title.dwg

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
*Kevin Johnson* 6/15/17  
 DIRECTOR OF PUBLIC WORKS DATE  
*Monica B. Rutledge* 6/12/17  
 CHIEF, BUREAU OF ENGINEERING DATE  
*David S. ...* 6/15/17  
 CHIEF, BUREAU OF UTILITIES DATE  
*...* 6/12/17  
 CHIEF, UTILITY DESIGN DIVISION DATE

ENGINEERS  
 PLANNERS  
 SCIENTISTS  
 CONSTRUCTION MANAGERS  
**KCI**  
 TECHNOLOGIES  
 936 Ridgeway Road  
 Sparks, MD 21152  
 Phone: (410) 316-7800  
 Fax: (410) 316-7817  
 www.kci.com

STATE OF MARYLAND  
 GUIHUA WANG  
 PROFESSIONAL ENGINEER  
 No. 31363  
 6/09/2017

DES: KJ  
 DRN: KJ  
 CHK: GW  
 DATE: JUNE, 2017  
 BY: KCI  
 NO. AS-BUILT  
 REVISION

TITLE SHEET  
 DATE: 8-31-17  
 600' SCALE MAP NO. 35 BLOCK NO. 23

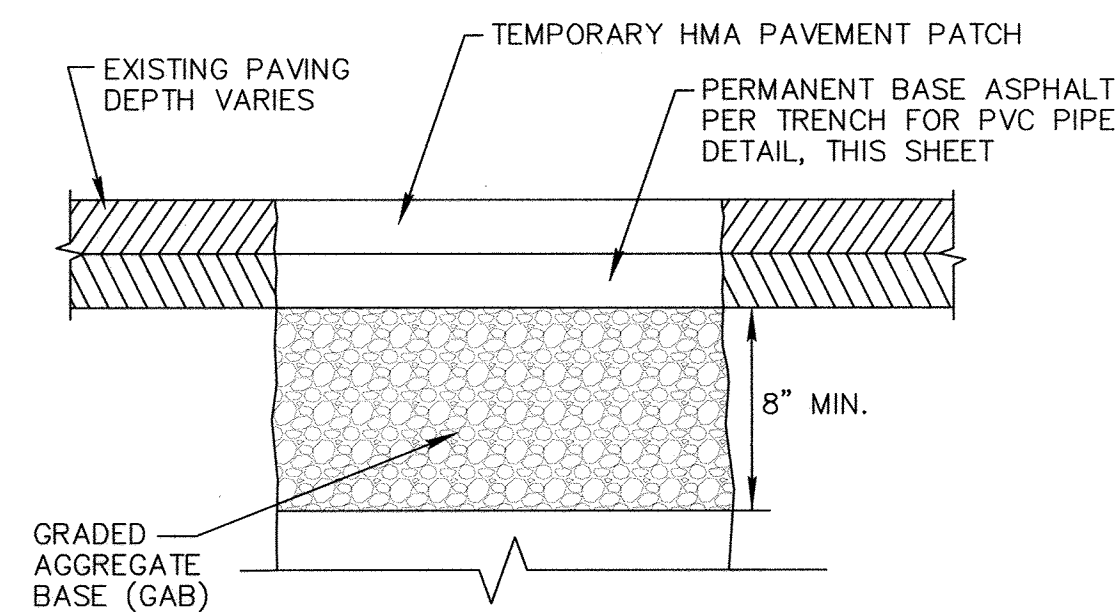
HARRIET TUBMAN LANE  
 SEWER EXTENSION  
 CAPITAL PROJECT No. S-6296  
 CONTRACT No. 30-4997  
 ELECTION DISTRICT NO. 5  
 HOWARD COUNTY, MARYLAND  
 SCALE AS SHOWN  
 SHEET 1 OF 5

KCI TECHNOLOGIES PROJECT NO.: 13122677.41

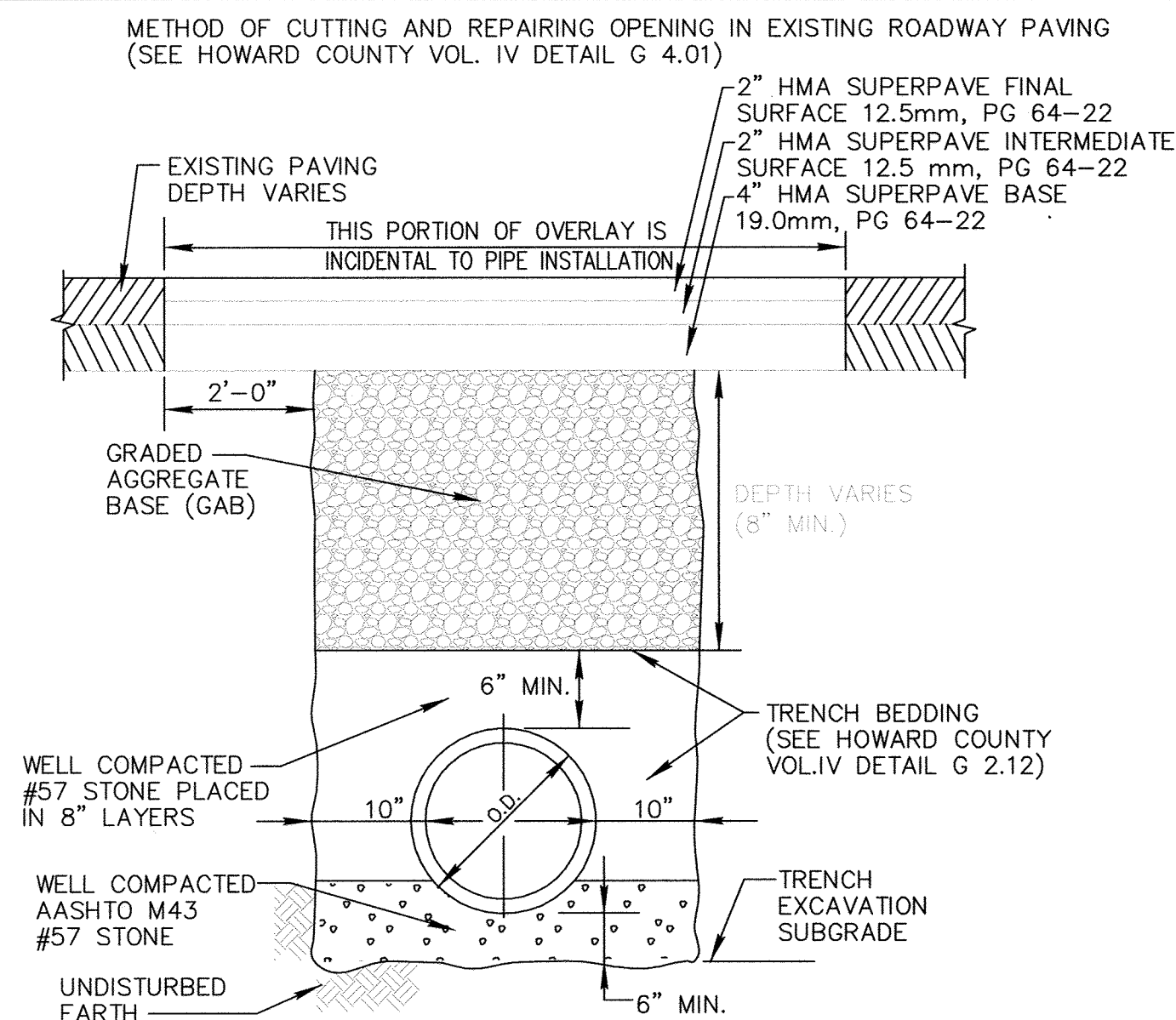
Jun 09, 2017, 10:37am User: Kevin Johnson  
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**MANHOLE STAKE-OUT SCHEDULE**

DESCRIPTION	NORTHING	EASTING
MH-1	553985.94	1343034.69
MH-2	553873.04	1343170.08
MH-3	553752.14	1343291.52
CO #7831	553766.70	1343306.23

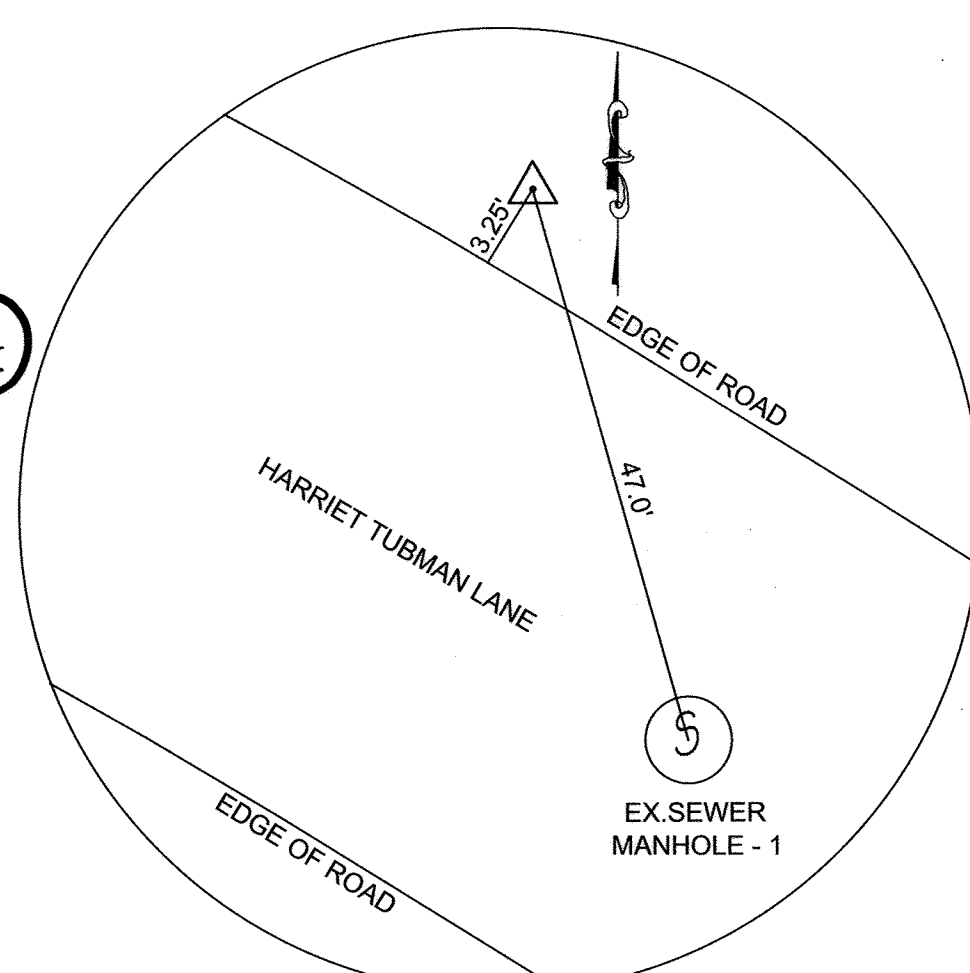
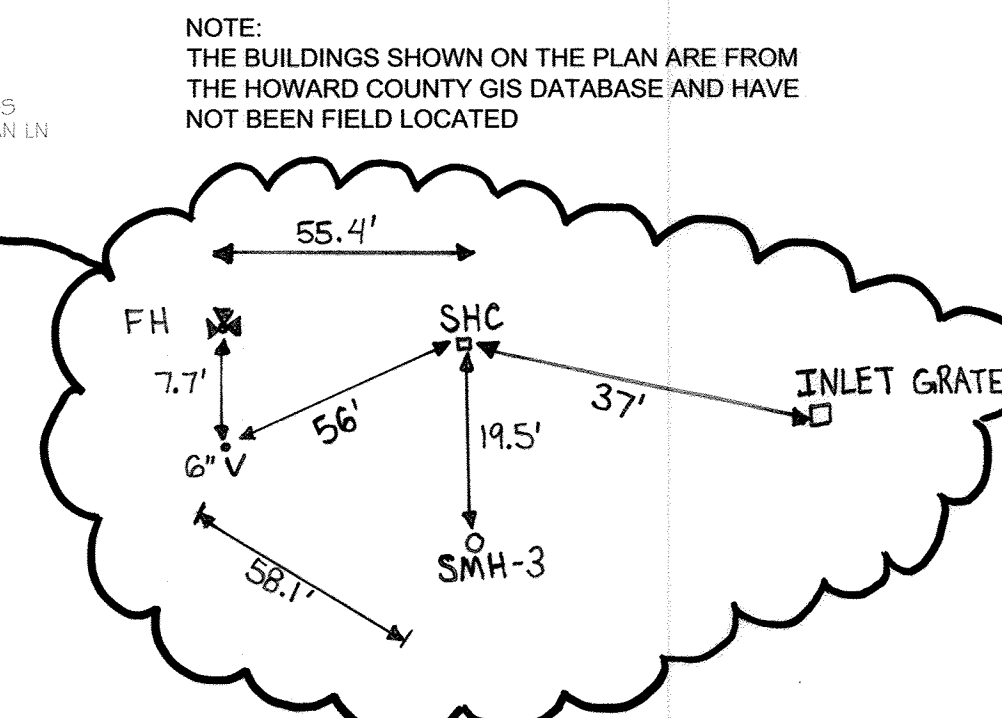
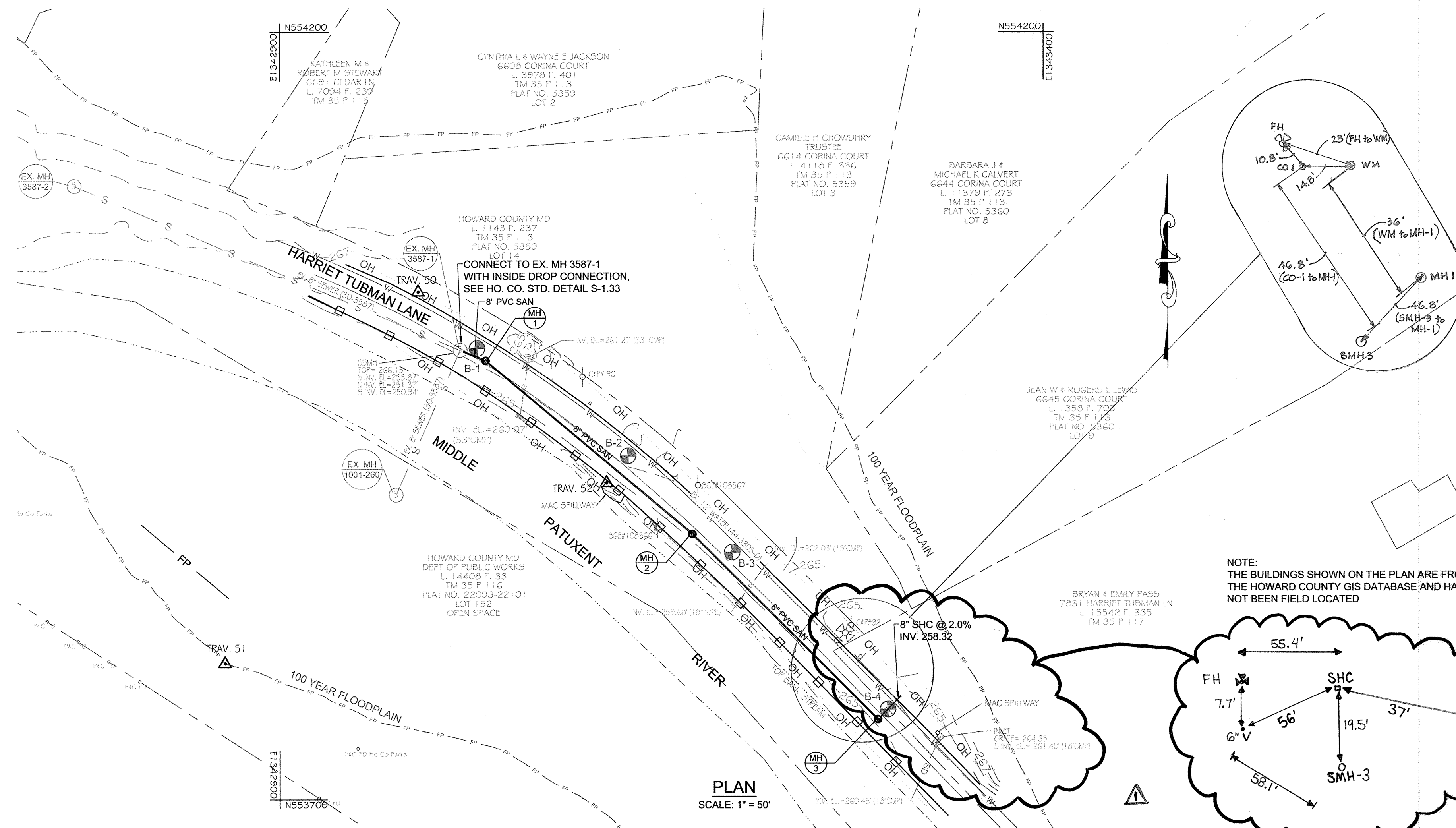


**DETAIL: TEMPORARY PAVEMENT PATCH**  
NO SCALE

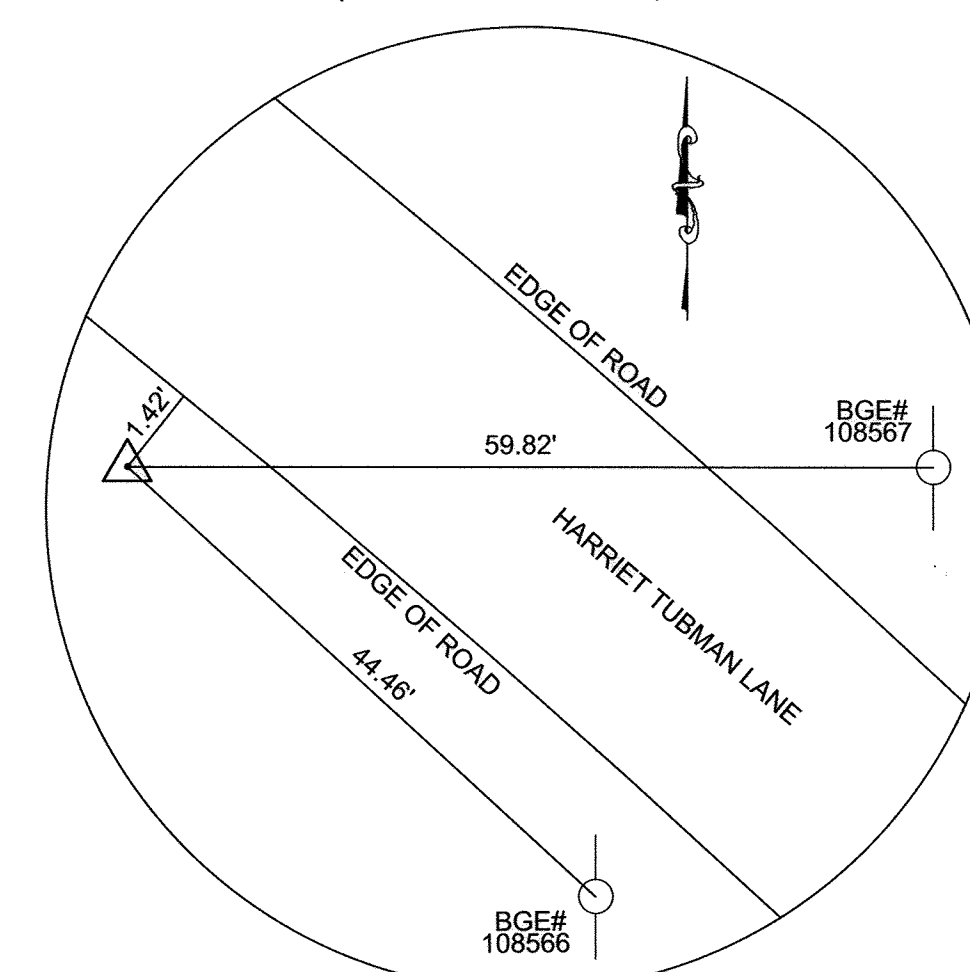


**DETAIL: TRENCH FOR PVC PIPE**  
NO SCALE  
\*BASED ON HOWARD COUNTY STANDARD DETAIL G.2.12

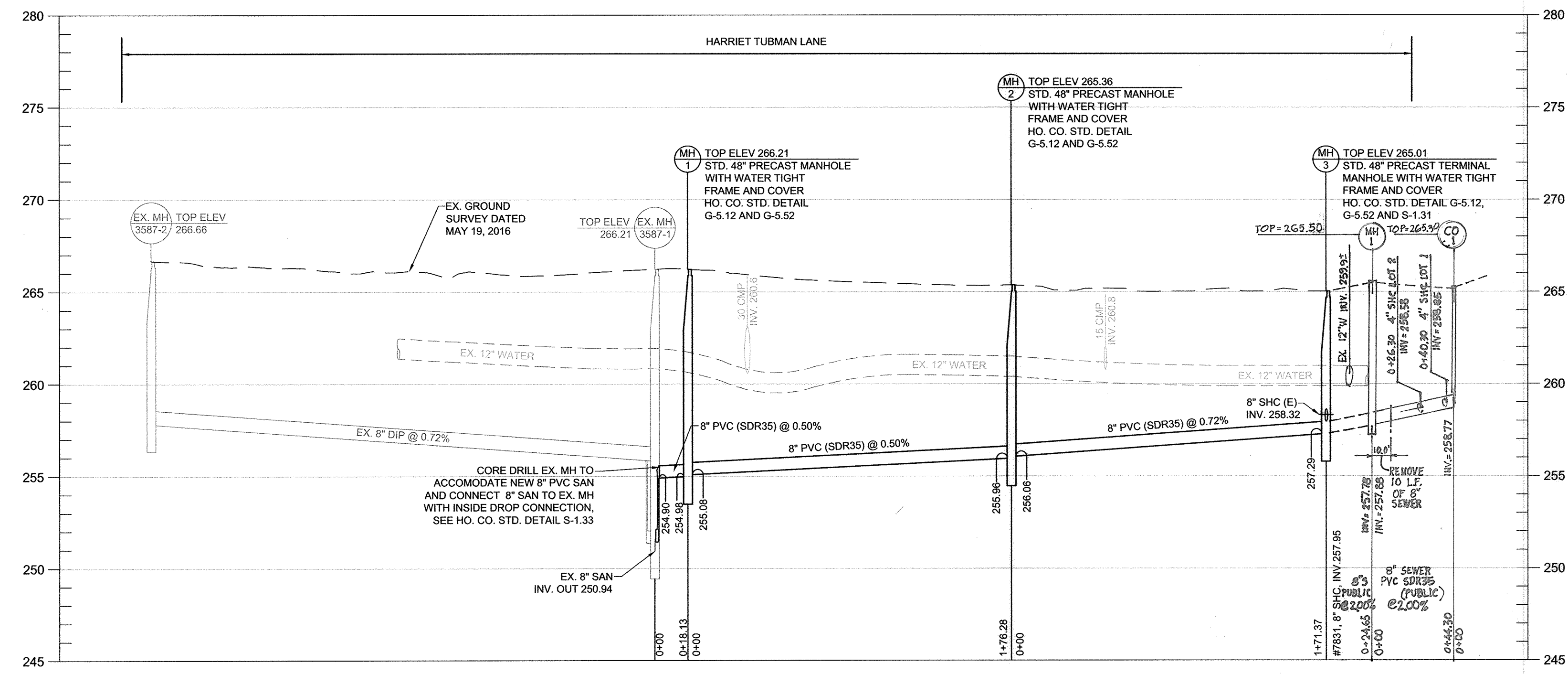
- NOTES:
- UTILITY CONSTRUCTION SECTION 1000
  - BACKFILLING SECTION 1000.03.07
  - MILL AND OVERLAY SHALL COVER THE PERMANENT TRENCH REPAIR. MILL AND OVERLAY THE ENTIRE LANE WIDTH, EXTEND THE MILL AND OVERLAY LIMIT 25' BEYOND BOTH EX. MANHOLE 1 AND MANHOLE 3.
  - THE CONTRACTOR SHALL FURNISH PERMANENT PAVEMENT MARKINGS IN ACCORDANCE WITH MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATION SECTION 550 AND SECTION 951. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR THIS ITEM, THE COST SHALL BE INCLUDED.



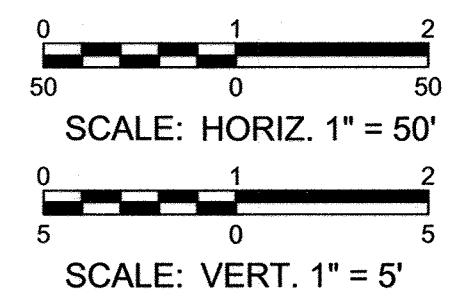
**TRAVERSE #50**  
N 554030.6206  
E 1342990.5165  
EL 266.18  
(NOT TO SCALE)



**TRAVERSE #52**  
N 553906.3035  
E 1343113.9071  
EL 263.95  
(NOT TO SCALE)



**PROFILE**  
SCALE: HORIZ. 1" = 50'  
VERT. 1" = 5'



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 1/16/2018.

**AS-BUILT**  
DATE 8-31-2017

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *James E. Butler* DATE: 6/15/17  
 Chief, Bureau of Engineering: *James E. Butler* DATE: 6/15/17  
 Chief, Utility Design Division: *S.C.* DATE: 6/15/17

**KCI TECHNOLOGIES**  
936 Ridgeway Road  
Sparks, MD 21152  
Phone: (410) 316-7800  
Fax: (410) 316-7817  
www.kci.com

STATE OF MARYLAND  
Professional Engineer  
No. 31363  
6/09/2017

DES: KJ			
DRN: KJ			
CHK: GW	WRA	AS-BUILT	4-4-19
DATE: JUNE, 2017	KCI	AS-BUILT	8-31-17
BY: NO.		REVISION	DATE

**SEWER PLAN & PROFILE**

600' SCALE MAP NO. 35 BLOCK NO. 23

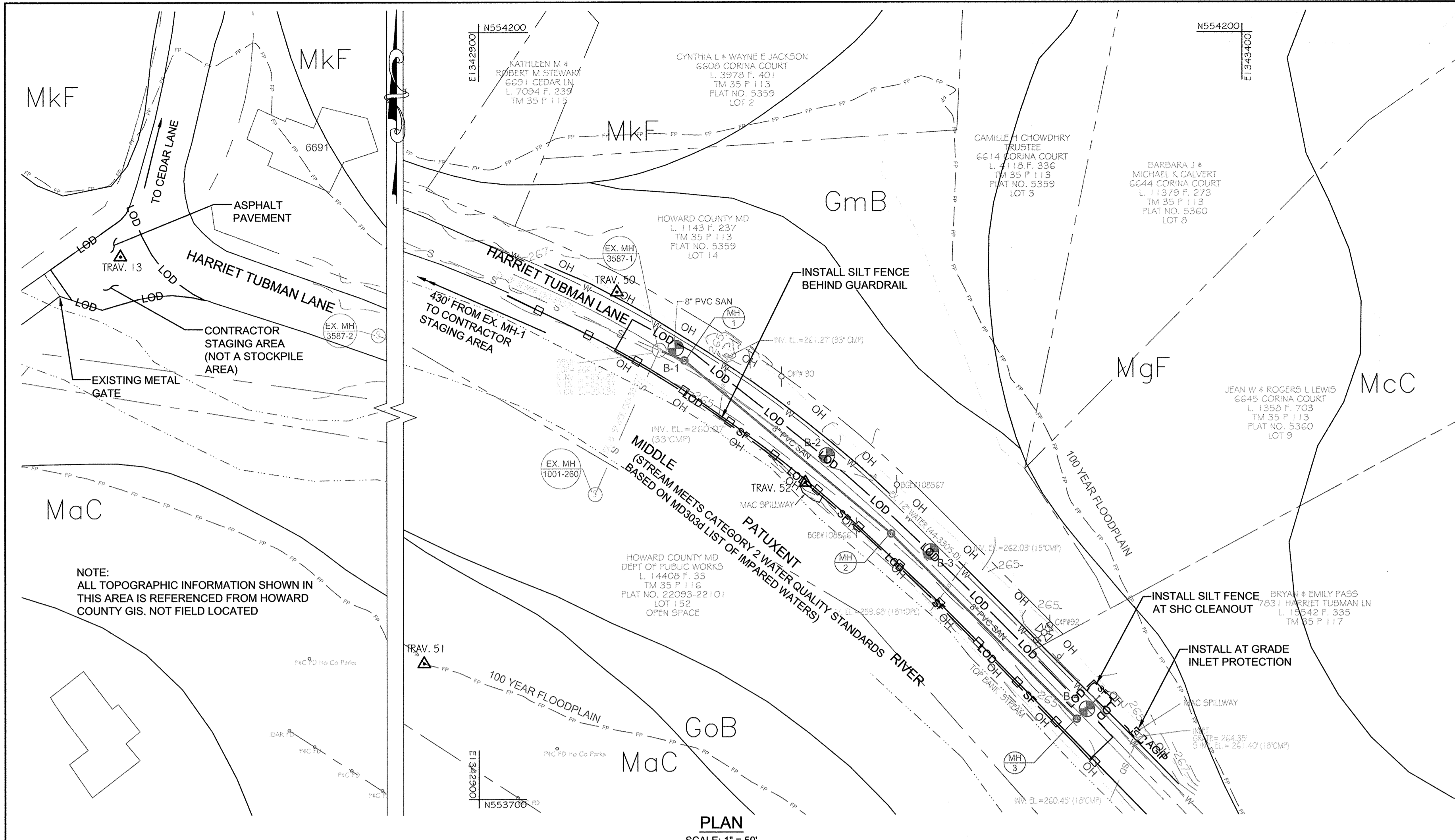
**HARRIET TUBMAN LANE SEWER EXTENSION**

CAPITAL PROJECT No. S-6296  
CONTRACT No. 30-4997

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN SHEET 2 OF 5

KCI TECHNOLOGIES PROJECT NO.: 13122677.41



HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

- 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. A minimum of 48 hour notice to CID must be given at the following stages:
a. Prior to the start of earth disturbance,
b. Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading,
c. Prior to the start of another phase of construction or opening of another grading unit,
d. Prior to the removal or modification of sediment control practices.
Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made. Other related state and federal permits shall be referenced, to ensure coordination and to avoid conflicts with this plan.
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.
3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.
4. 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 topsoil (Sec. B-4-2), permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization with mulch alone can only be applied between the fall and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with >15% of cut and/or fill. Stockpiles (Sec. B-4-8) in excess of 20 ft. must be benched with stable outfall. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).
5. 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 CID.
6. Site Analysis:
Total Area of Site: 0.28 Acres
Area Disturbed: 0.05 Acres
Area to be roofed or paved: 0.046 Acres
Area to be vegetatively stabilized: 0.004 Acres
Total Cut: 330 Cu. Yds.
Total Fill: 330 Cu. Yds.
Offsite waste/borrow area location: CONTRACTOR COORDINATE SITE WITH GRADING PERMIT
7. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
8. Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly; and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:
16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

LEGEND
EXISTING
DECIDUOUS TREE
CONIFEROUS TREE
EXISTING UTILITY POLE
EXISTING FIRE HYDRANT
EXISTING VALVE
EXISTING WATER MAIN
EXISTING SEWER MAIN
SD EXISTING STORM DRAIN
OH EXISTING OVERHEAD WIRE
FP EXISTING SEWER EASEMENT
FP 100 YR. FLOODPLAIN
GUA GUARD RAIL
TRV TRVERSE POINT
265 MAJOR CONTOUR
MINOR CONTOUR

Maryland Department of the Environment Best Management Practices for Working in Nontidal Wetlands, the Nontidal Wetland Buffer, Waters of the State and the 100-Year Floodplain

- 1. No excess fill, construction material, or debris shall be stockpiled or stored in nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
2. Place materials in a location and manner that does not adversely impact surface or subsurface water flow into or out of nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
3. Do not use the excavated material as backfill if it contains waste metal products, unsightly debris, toxic material, or any other deleterious substance. If additional backfill is required, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance.
4. Place heavy equipment on mats or suitably operate the equipment to prevent damage to nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
5. Repair and maintain any serviceable structure or fill so there is no permanent loss of nontidal wetlands, nontidal wetland buffers, or waterways, or permanent modification of the 100-year floodplain in excess of that lost under the originally authorized structure or fill.
6. Rectify any nontidal wetlands, wetland buffers, waterways, or 100-year floodplain temporarily impacted by any construction.
7. All stabilization in the nontidal wetland and nontidal wetland buffer shall consist of the following species: Annual Ryegrass (Lolium multiflorum), Millet (Setaria italica), Barley (Hordeum sp.), Oats (Uniola sp.), and/or Rye (Secale cereale). These species will allow for the stabilization of the site while also allowing for the voluntary revegetation of natural wetland species. Other non-persistent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division. Kentucky 31 fescue shall not be utilized in wetland or buffer areas. The area should be seeded and mulched to reduce erosion after construction activities have been completed.
8. After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in temporarily impacted areas.
9. To protect aquatic species, in-stream work is prohibited as determined by the classification of the stream:
Use I waters: In-stream work shall not be conducted during the period March 1 through June 15, inclusive, during any year.
10. Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
11. Culverts shall be constructed and any riprap placed so as not to obstruct the movement of aquatic species, unless the purpose of the activity is to impound water.

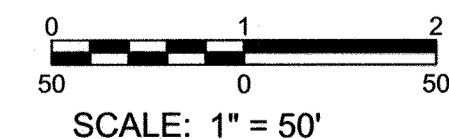
PROPOSED
SEWER MAIN
SEWER MANHOLE
SILT FENCE
LIMIT OF DISTURBANCE
LIMIT OF DISTURBANCE AND SILT FENCE
AT GRADE INLET PROTECTION
SOIL BORING
SOIL MAPPING UNIT
GMB GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, Kw=0.43
GOB GLENVILLE - CODORUS SILT LOAM, 0 TO 8 PERCENT SLOPES, Kw=0.43
MAC MANOR LOAM, 8 TO 15 PERCENT SLOPES, Kw=0.37
MCC MANOR LOAM, 15 TO 25 PERCENT SLOPES, VERY ROCKY, Kw=0.37
MGF MANOR-BANNERTOWN SANDY LOAMS, 25 TO 65 PERCENT SLOPES, Kw=0.24
MKF MANOR-BRINKLOW COMPLEX 25 TO 65 PERCENT SLOPES, VERY ROCKY, Kw=0.24

- SEQUENCE OF CONSTRUCTION
1. OBTAIN GRADING PERMIT.
2. LAYOUT ALIGNMENT AT SITE. (2 DAYS)
3. REQUEST PRE-CONSTRUCTION MEETING ON-SITE WITH REPRESENTATIVE OF HOWARD COUNTY DPW CONSTRUCTION INSPECTION DIVISION. (1 DAY)
4. THE CONTRACTOR SHALL INSTALL SEDIMENT CONTROL DEVICES AT THE DIRECTION OF THE HOWARD DPW CID INSPECTOR. (1 DAY)
5. EXCAVATE TRENCH TO THE GRADE SPECIFIED ON THE PROFILE, INSTALL SEWER MAIN AND BACKFILL AND STABILIZE TRENCH AND RESURFACE WITH BITUMINOUS PAVING AS APPROPRIATE (15 DAYS). TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO 3 LENGTHS OF PIPE OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER. AT THE END OF EACH WORK DAY, ALL VEGETATED AREAS DISTURBED DURING THE COURSE OF CONSTRUCTION SHALL BE TEMPORARILY STABILIZED IN ACCORDANCE WITH THE TEMPORARY SEEDING SUMMARY SHOWN ON SHEET 4 OF 5 AND THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, SECTION B-4-4. AT THE END OF EACH WORKING DAY ALL DISTURBED PAVING AREAS WITHIN THE EXISTING ROAD SHALL BE REPLACED WITH PERMANENT SUBGRADE AND BASE ASPHALT, THEN TEMPORARILY PATCHED, SEE TEMPORARY PAVING DETAIL ON SHEET 2 OF 5.
6. UPON COMPLETION OF PIPE INSTALLATION AND INSPECTOR'S APPROVAL, PERMANENTLY STABILIZE ALL DISTURBED VEGETATED AREAS IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION SHOWN ON SHEET 4 OF 5 AND THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, SECTION B-4-5. (1 DAY)
7. CLEAN UP CONSTRUCTION SITE. (1 DAY)
8. REMOVE SEDIMENT CONTROL DEVICES AFTER PERMISSION IS GRANTED BY THE HOWARD SCD INSPECTOR. (1 DAY)

DETAIL E-9-2 AT-GRADE INLET PROTECTION
DETAIL E-1 SILT FENCE
CONSTRUCTION SPECIFICATIONS
1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
3. PLACE CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
4. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

AS-BUILT
DATE 8-31-2017

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 1/16/2018.



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DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND
KCI TECHNOLOGIES
EROSION & SEDIMENT CONTROL PLAN AND DETAILS
HARRIET TUBMAN LANE SEWER EXTENSION
CAPITAL PROJECT No. S-6296 CONTRACT No. 30-4997
ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND
SCALE AS SHOWN SHEET 3 OF 5

B-4-2 STANDARDS AND SPECIFICATIONS

FOR

SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

Definition

The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose

To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies

Where vegetative stabilization is to be established.

Criteria

- A. Soil Preparation
1. Temporary Stabilization
a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment...
b. Apply fertilizer and lime as prescribed on the plans.
c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
2. Permanent Stabilization
a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
i. Soil pH between 6.0 and 7.0.
ii. Soluble salts less than 500 parts per million (ppm).
iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 20 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture.
iv. Soil contains 1.5 percent minimum organic matter by weight.
v. Soil contains sufficient pore space to permit adequate root penetration.
b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.
d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means.
B. Topsoiling
1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation.
2. Topsoil salvaged from an existing site may be used provided it meets the standards set forth in these specifications.
3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
c. The original soil to be vegetated contains material toxic to plant growth.
d. The soil is so acidic that treatment with limestone is not feasible.
4. Areas 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:
a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand.
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.
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.
C. Soil Amendments (Fertilizer and Lime Specifications)
1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more.
2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment.

- 3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide).
4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

B-4-3 STANDARDS AND SPECIFICATIONS

FOR

SEEDING AND MULCHING

Definition

The application of seed and mulch to establish vegetative cover.

Purpose

To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies

To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria

- A. Seeding
1. Specifications
a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subjected to re-testing by a recognized seed laboratory.
b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen.
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.
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 phytotoxic 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.
ii. Apply seed in two directions, perpendicular to each other.
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.
ii. Apply seed in two directions, perpendicular to each other.
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; P2O5 (phosphorous), 200 pounds per acre; K2O (potassium), 200 pounds per acre.
ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by 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.
b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
i. 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.
iv. WCFM material must not contain elements or compounds at concentration levels that will be phytotoxic.
v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.
2. Application
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.
c. 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.
3. Anchoring
a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water.
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.
ii. Wood cellulose fiber may be used for anchoring straw.
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.
iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations.

B-4-4 STANDARDS AND SPECIFICATIONS

FOR

TEMPORARY STABILIZATION

Definition

To stabilize disturbed soils with vegetation for up to 6 months.

Purpose

To use fast growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

Criteria

- 1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths.
2. For sites having soil tests performed, use and show the recommended rates by the testing agency.
3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season.

Temporary Seeding Summary

Table with columns: No., Species, Application Rate (lb/ac), Seeding Dates, Seeding Depths, Fertilizer Rate (10-20-20), Lime Rate. Includes rows for ANNUAL RYEGRASS, BARLEY, OATS, FOXTAIL MILLET.

NOTES: 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.
Seeding rates listed above are for temporary seedings, when planted alone.
For sandy soils, plant seeds at twice the depth listed above.
The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

B-4-5 STANDARDS AND SPECIFICATIONS

FOR

PERMANENT STABILIZATION

Definition

To stabilize disturbed soils with permanent vegetation.

Purpose

To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for 6 months or more.

Criteria

- A. Seed Mixtures
1. General Use
a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found in Table B.2.
b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.

- c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/2 pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
2. Turfgrass Mixtures
a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
b. Select one or more of the species or mixtures listed below based on the site conditions or purpose.
i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management.
ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary.
iii. 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 medium shade.
iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns.

Notes: Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"

Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line

- c. Ideal Times of Seeding for Turf Grass Mixtures
Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)
Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b)
Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)
d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed.
e. If soil moisture is deficient, supply new seedlings with adequate water for plant growth 1/2 to 1 inch every 3 to 4 days depending on soil texture until they are firmly established.

Permanent Seeding Summary

Table with columns: No., Species, Application Rate (lb/ac), Seeding Dates, Seeding Depths, Fertilizer Rate (10-20-20), Lime Rate. Includes rows for TALL FESCUE PERENNIAL RYEGRASS, WHITE CLOVER.

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

1. General Specifications

- a. Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
b. Sod must be machine cut at a uniform soil thickness of 3/4 inch, plus or minus 1/4 inch, at the time of cutting.
c. Standard size sections of sod must 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.
d. Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
e. Sod must be harvested, delivered, and installed within a period of 36 hours.

2. Sod Installation

- a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other.
c. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints.
d. Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet.

3. Sod Maintenance

- a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches.
b. After the first week, sod watering is required as necessary to maintain adequate moisture content.
c. Do not mow until the sod is firmly rooted. No more than 1/2 of the grass leaf must be removed by the initial cutting or subsequent cuttings.

AS-BUILT DATE 8-31-2017

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 1/16/2018.

KCI TECHNOLOGIES PROJECT No.: 13122677.41

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DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS DATE 6/15/17 CHIEF, BUREAU OF UTILITIES DATE

CHIEF, BUREAU OF ENGINEERING DATE CHIEF, UTILITY DESIGN DIVISION DATE

KCI TECHNOLOGIES logo and contact information: 936 Ridgebrook Road, Sparks, MD 21152

Professional Engineer Seal for Kevin Jordan, License No. 31363, State of Maryland, expires 1/16/2018.

DES: KJ DRN: KJ CHK: GW DATE: JUNE, 2017 BY NO.

EROSION & SEDIMENT CONTROL NOTES

60' SCALE MAP NO. 35 BLOCK NO. 23

HARRIET TUBMAN LANE SEWER EXTENSION

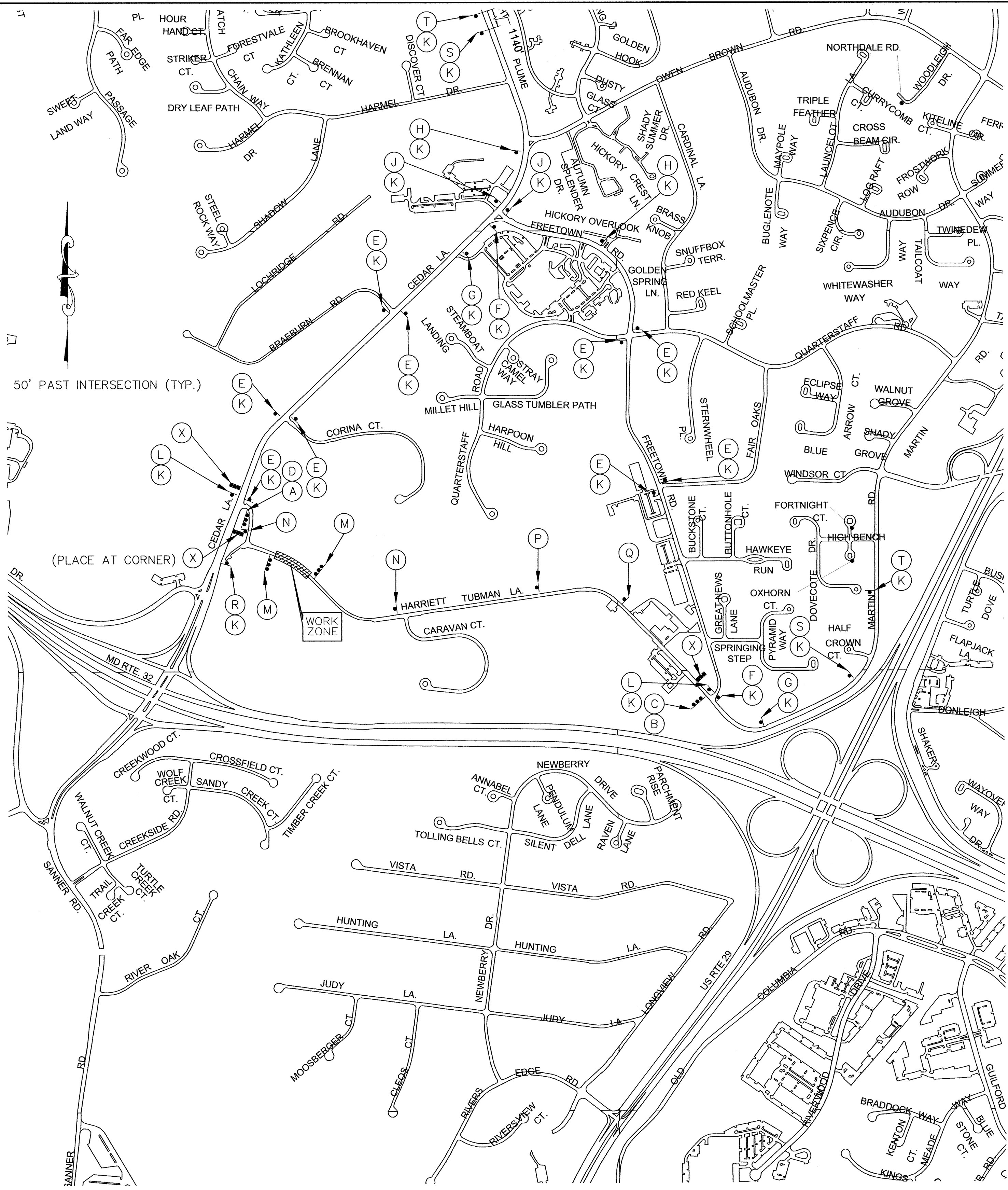
CAPITAL PROJECT No. S-6296 CONTRACT No. 30-4997

ELECTION DISTRICT NO. 5

HOWARD COUNTY, MARYLAND

SCALE AS SHOWN SHEET 4 of 5

KCI TECHNOLOGIES PROJECT NO.: 13122677.41



PLAN  
SCALE: 1" = 600'

**AS-BUILT**  
DATE 8-31-2017

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. 16303, Expiration Date 12/21/2018.

SEQUENCE OF CONSTRUCTION

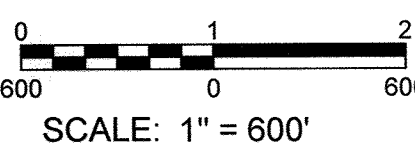
1. CONSTRUCT SEWER MAIN EXTENSION FROM EX. MH-1 TO MH-3 BY CLOSING HARRIET TUBMAN LANE AND DETOURING TRAFFIC AS SHOWN.

TRAFFIC CONTROL NOTES

1. ALL STANDARD REGULATORY AND WARNING SIGNS, BARRICADES, AND OTHER TRAFFIC CONTROL DEVICES USED FOR MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION).
2. ALL TEMPORARY TRAFFIC SIGNS SHALL BE INSTALLED IN ACCORDANCE TO MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, MSHA BOOK OF STANDARDS, AND NCHRP 350. ALL BARRICADES MUST MEET AND HAVE BEEN TESTED UNDER THE NCHRP 350 CRASH CRITERIA.
3. ALL TEMPORARY SIGNS SHOWN ON THIS PLAN SHALL BE PLACED SO THAT THEY DO NOT OBSTRUCT EXISTING TRAFFIC CONTROL DEVICES (MINIMUM 200' SPACING).
4. ANY CORRECTIONS, MODIFICATIONS, OR ADDITIONS TO THIS PLAN MUST BE APPROVED BY THE HOWARD COUNTY DEPT. OF PUBLIC WORKS TRAFFIC DIVISION.
5. MISS UTILITY MUST BE NOTIFIED PRIOR TO PLACEMENT OF SIGNING, IF MOUNTING ON POSTS.
6. SIGN INSTALLATION SHALL NOT LAST ANY LONGER THAN 15 MINUTES PER LOCATION. IF LONGER THAN 15 MINUTES APPROPRIATE TRAFFIC CONTROL AND PERMITS MUST BE USED.
7. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL TRAFFIC CONTROL DEVICES. AT ANYTIME THE CONTRACTOR DOES NOT MAKE NECESSARY REPAIRS WITHIN 24 HOURS OF NOTIFICATION, APPROPRIATE WORK TIME REDUCTION AND/OR FINES MAY BE APPLIED.
8. THE HOWARD COUNTY TRAFFIC ENGINEER SHALL DETERMINE EXACT PLACEMENT OF THE TYPE III BARRICADES.
9. ALL DRIVEWAY ENTRANCES MUST BE MAINTAINED AT ALL TIMES.
10. THE DAILY TRENCHING OPERATION SHALL NOT EXTEND MORE THAN 30 FEET IN ADVANCE OF THE PIPE LAYING OPERATION. THE ROADWAY SHALL BE OPENED TO TWO FULL LANES AT THE END OF EACH WORK DAY.
11. IT IS ESTIMATED THAT THE ROAD CLOSURE WILL BE IN EFFECT FOR FOURTEEN (14) DAYS.
12. VARIABLE MESSAGE SIGNS "X" TO BE INSTALLED 14 DAYS PRIOR TO APPROVAL DAY OF CLOSURE.
13. ALL SIGN LOCATIONS SHALL BE MARKED AND/OR APPROVED BY HOWARD COUNTY TRAFFIC (410-313-2430) PRIOR TO THE INSTALLATION OF ANY SIGNS.
14. ALL FLAGGERS SHALL BE CERTIFIED BY THE AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION.
15. ALL DETOUR SIGNS SHALL BE COVERED WITH OPAQUE MATERIAL UNTIL THE ROAD IS CLOSED.
16. ROADWAY CLOSURE NOTIFICATION:  
THE CONTRACTOR SHALL NOTIFY THE FOLLOWING AGENCIES AT LEAST 4 WEEKS IN ADVANCE:  
HOWARD COUNTY DPW - TRAFFIC DIVISION-410-313-2430  
HOWARD COUNTY PUBLIC SCHOOLS/TRANSPORTATION DIVISION-410-313-6728 (IF DURING SCHOOL TIMES)  
HOWARD COUNTY TRANSIT SERVICES-240-581-5800  
HOWARD COUNTY BUREAU OF ENVIRONMENTAL SERVICES-410-313-6470  
HOWARD COUNTY EMERGENCY COMMUNICATIONS/911 CENTER-410-313-2300

TRAFFIC SIGNS USAGE TABLE

	SIGN	SIZE	QUANTITY	TOTAL S.F.	REMARKS		SIGN	SIZE	QUANTITY	TOTAL S.F.	REMARKS
A	DETOUR	M4-10L 48"x18" (6 S.F.) BK/O	1	6.0	MOUNT ON TYPE III BARRICADE	P	ROAD CLOSED 1500 FT	W20-3(1) 48"x48" (16 S.F.) BK/O	1	16.0	
B	DETOUR	M4-10R 48"x18" (6 S.F.) BK/O	1	6.0	MOUNT ON TYPE III BARRICADE	Q	ROAD CLOSED 1/2 MILE	W20-3(1) 48"x48" (16 S.F.) BK/O	1	16.0	
C	ROAD CLOSED 0.8 MILES AHEAD LOCAL TRAFFIC ONLY	R11-3a 60"x30" (12.5 S.F.) BK/W	1	12.5	MOUNT ON TYPE III BARRICADE	R	DETOUR 500 FT	W20-2 48"x48" (16 S.F.) BK/O	1	16.0	
D	ROAD CLOSED AHEAD LOCAL TRAFFIC ONLY	R11-3a(MOD.) 60"x30" (12.5 S.F.) BK/W	1	12.5	MOUNT ON TYPE III BARRICADE	S	DETOUR 1500 FT	W20-2 48"x48" (16 S.F.) BK/O	2	32.0	
E	DETOUR	M4-9(MOD.) 30"x24" (5 S.F.) BK/O	9	45.0		T	DETOUR 1/2 MILE	W20-2 48"x48" (16 S.F.) BK/O	2	32.0	
F	DETOUR	M4-9R 30"x24" (5 S.F.) BK/O	2	10.0	SIGN MUST BE PLACED WITHIN 50' OF INTERSECTION WHEN LOCATED ON STATE HIGHWAY	V	ONE LANE ROAD 1500 FT	W20-3(1) 48"x48" (16 S.F.) BK/O	2	32.0	SIGN NOT SHOWN ON PLAN TO BE USED DURING FLAGGING OPERATION
G	DETOUR	M4-9R(MOD.) 30"x24" (5 S.F.) BK/O	2	10.0	SIGN MUST BE PLACED WITHIN 200' OF INTERSECTION WHEN LOCATED ON STATE HIGHWAY	W		W20-7a 48"x48" (16 S.F.) BK/O	2	32.0	SIGN NOT SHOWN ON PLAN TO BE USED DURING FLAGGING OPERATION
H	DETOUR	M4-9L(MOD.) 30"x24" (5 S.F.) BK/O	2	10.0	SIGN MUST BE PLACED WITHIN 200' OF INTERSECTION WHEN LOCATED ON STATE HIGHWAY	X	VARIABLE MESSAGE SIGN	V.M.S.	3		INSTALL 14 DAYS PRIOR TO APPROVAL DAY FOR CLOSURE. * SIGN TO DISPLAY THE FOLLOWING MESSAGES:  10 DAYS BEFORE CLOSURE: HARRIET TUBMAN LANE TO BE CLOSED XX-XX  FOR 3 DAYS STARTING WITH THE CLOSURE: HARRIET TUBMAN LANE CLOSED FOLLOW DETOUR
J	DETOUR	M4-9L 30"x24" (5 S.F.) BK/O	2	10.0	SIGN MUST BE PLACED WITHIN 50' OF INTERSECTION WHEN LOCATED ON STATE HIGHWAY						
K	HARRIET TUBMAN LA	M4-9(1) 30"x18" (3.75 S.F.) BK/W	24	90.0	MIN. 6 INCH LETTER SIZE. SIGN SHALL BE PLACED ABOVE ALL M4-9 SERIES SIGNS. WIDTH MAY NOT EXCEED 30 INCHES.						
L	END DETOUR	M4-8a(1) 36"x24" (6 S.F.) BK/O	2	12.0							
M	ROAD CLOSED	R11-2 48"x30" (10 S.F.) BK/W	2	20.0	MOUNT ON TYPE III BARRICADE (USE TWO TYPE III PER DIRECTION)						
N	ROAD CLOSED 800 FT	W20-3(1) 48"x48" (16 S.F.) BK/O	2	32.0							



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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*John P. Galt* 6/15/17  
DIRECTOR OF PUBLIC WORKS DATE

*Thomas P. Butler* 6/15/17  
CHIEF, BUREAU OF ENGINEERING DATE

*Charles Stang* 6/15/17  
CHIEF, BUREAU OF UTILITIES DATE

*John P. Galt* 6/15/17  
CHIEF, UTILITY DESIGN DIVISION DATE

ENGINEERS  
PLANNERS  
SCIENTISTS  
CONSTRUCTION MANAGERS

**KCI TECHNOLOGIES**

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www.kci.com



DES: AMH  
DRN: JN  
CHK: JFL  
DATE: JUNE, 2017

BY NO. REVISION DATE

TRAFFIC CONTROL PLAN

600' SCALE MAP NO. 35 BLOCK NO. 23

HARRIET TUBMAN LANE  
SEWER EXTENSION

CAPITAL PROJECT No. S-6296  
CONTRACT No. 30-4997

ELECTION DISTRICT NO. 5 HOWARD COUNTY, MARYLAND

SCALE  
AS SHOWN

SHEET  
5 OF 5