

QUANTITIES				
ITEM	ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	SUPPLIER
8" P.W.C.K.	1,122 LF			
4" P.W.C.K.	516 LF			
MANHOLES	7 EACH			
8" WATER	1,029 LF			
4" WATER	126 LF			
1 1/2" W.H.C.	102 LF			
1" W.H.C.	428 LF			
FIRE HYDRANTS	4 EACH			
12" x 8" T. 3. 4 V	1 EACH			
8" VALVE	1 EACH			
6" VALVE	4 EACH			
8" x 8" TEE	1 EACH			
8" x 6" TEE	4 EACH			
8" x 1/2" HD	1 EACH			
8" PLUG BUTTRESS	1 EACH			
6" PLUG BUTTRESS	1 EACH			
8" x 2" REDUCER	1 EACH			
8" SIDE METER VALVES	2 EACH			

NAME OF UTILITY CONTRACTOR:
SURVEY & DRAFTING DIVISION AS-BUILT DATE:

DEVELOPER'S CERTIFICATION

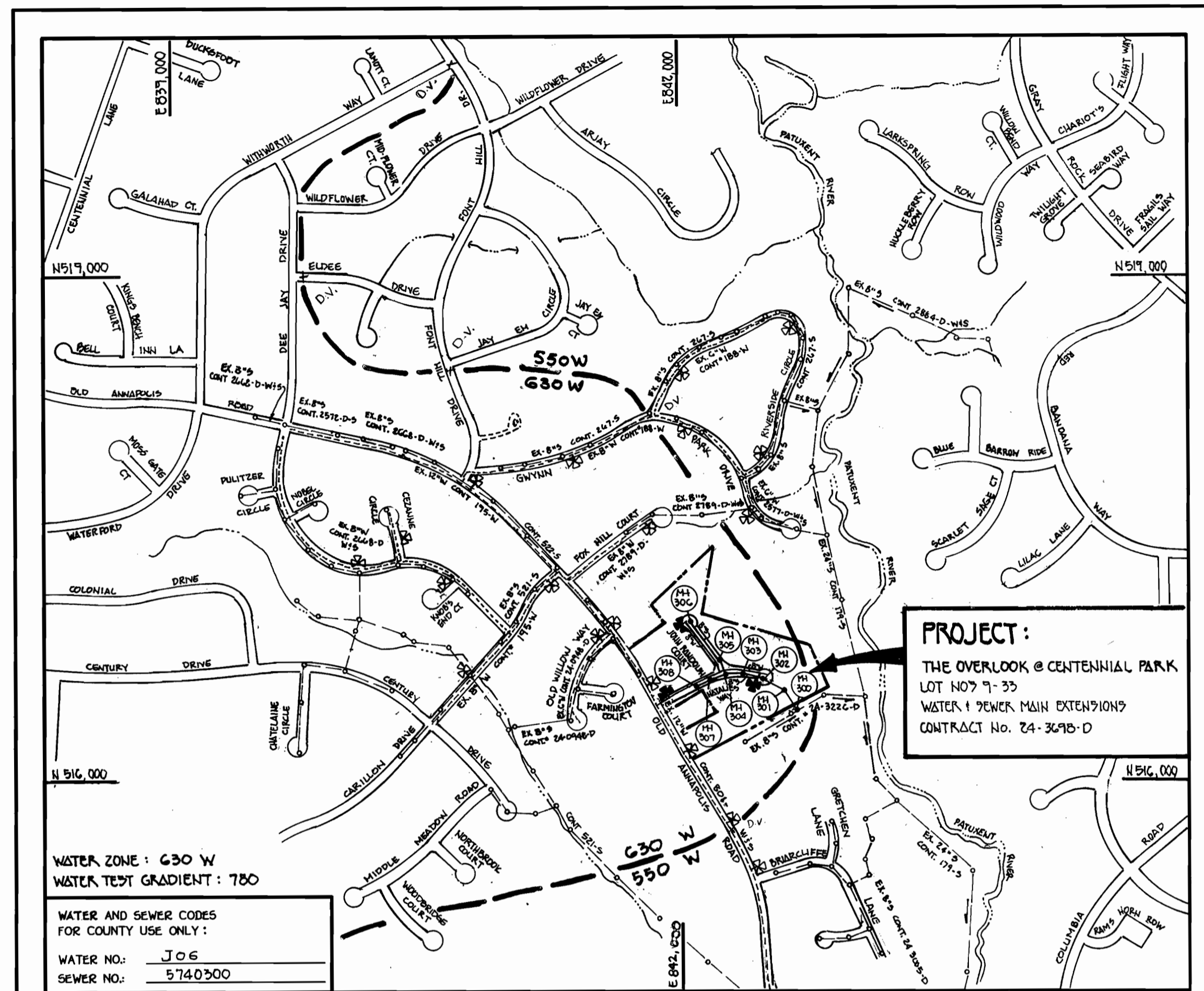
I/WE HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED 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 OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

M.H. Collins 10/26/98
SIGNATURE OF DEVELOPER DATE

ENGINEER'S CERTIFICATION

I HEREBY 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.

Paul W. Keidel 06/18/98
SIGNATURE OF ENGINEER DATE



WATER AND SEWER CODES FOR COUNTY USE ONLY: WATER NO: J06 SEWER NO: 5740300	TEST GRADIENT: 780	WATER ZONE: 630 W WATER TEST GRADIENT: 780
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TYPE OF BUILDING: SINGLE FAMILY RESIDENTIAL	NUMBER OF LOTS: 25 (23 BUILDABLE)
NO. OF WATER HOUSE CONNECTIONS: 20	NO. OF SEWER HOUSE CONNECTIONS: 22
DRAINAGE AREA: LITTLE PATENTMENT	TREATMENT PLANT: PATENTMENT W.W.T.P. (CITY OF BALTIMORE) VIA ROUTE 106 PUMP STATION

VICINITY MAP

SCALE: 1"=600'

- * THREE (3) OF THE BUILDABLE LOTS HAVE EX. WATER HOUSE CONNECTIONS PREVIOUSLY INSTALLED UNDER CONT. # 001-W15
- ** TWO (2) OF THE BUILDABLE LOTS HAVE EX. SEWER HOUSE CONNECTIONS PREVIOUSLY INSTALLED UNDER CONT. # 20-110-C

GENERAL NOTES

- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SUPPLY. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES.
- ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATUM.
- ALL PIPE ELEVATIONS ARE INVERT ELEVATIONS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM.
- 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 (1991 AMENDMENTS) THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB SITE.
- 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 VERIFIED BY THE CONTRACTOR TO HIS OWN SATISFACTION. ANY DAMAGE TO EXISTING FACILITIES DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
 - STATE HIGHWAY ADMINISTRATION - 531-5533
 - BALTIMORE GAS & ELECTRIC CO. - CONTRACTOR SERVICES - 850-4620
 - BALTIMORE GAS & ELECTRIC CO. - UNDER GROUND DAMAGE CONTROL - 797-9068
 - MISS UTILITY - 1-800-257-7777
 - COLONIAL PIPELINE CO. - 795-1390
 - BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS - 313-4900
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO 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 THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- 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.
- T.B. DENOTES TEST BORING.
- 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 COVERS, STANDARD DETAIL G 5.52.
- WHERE WATERTIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
- HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT THE CELLAR CANNOT BE SERVED.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING, UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
- MANHOLES LOCATED WITHIN THE PROPOSED ROADWAY SHALL HAVE STANDARD HEAVY TRAFFIC MANHOLE FRAMES AND COVERS, STANDARD DETAIL G5.51.
- WATER MAINS AND WATER HOUSE CONNECTION LINES MUST BE PLACED AS TO HAVE ONE (1) FOOT SEPARATION FROM THE SEWER MAIN OR SEWER HOUSE CONNECTION AS THEY PASS ABOUT IT.
- ALL WATER MAINS SHALL BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3-1/2" 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 THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATION SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE RESTRAINED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS (W11 AND W2.13). SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- ALL D.I.P. FITTINGS SHALL BE IN ACCORDANCE WITH AWWA SPECIFICATIONS C-153; DUCTILE IRON COMPACT FITTINGS, 3-INCH THROUGH 12-INCH FOR WATER AND OTHER LIQUIDS.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, # (410) 313-2450 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 10.114(D) OF THE HOWARD COUNTY CODE.
- SINGLE WATER HOUSE CONNECTIONS SHALL BE 1" IN SIZE. TWIN WATER HOUSE CONNECTIONS SHALL BE 1 1/2" IN SIZE UP TO THE "Y" BRANCH & 1" IN SIZE THEREAFTER. ALL METERS SHALL BE 3/4" IN SIZE.

CONTRACT No. 24 - 3698 -D

THE OVERLOOK AT CENTENNIAL PARK

LOT NOS. 9 - 33

**WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND**

F 78-152

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

Carol Simman 4/3/98
U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE DATE

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY HOWARD SOIL CONSERVATION DISTRICT.

APPROVED:
John K. Reardon 11/1/98
HOWARD SOIL CONSERVATION DISTRICT DATE

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY DESIGN MANUAL & STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS AS SHOWN ON THESE PLANS AND ON F - 78-152

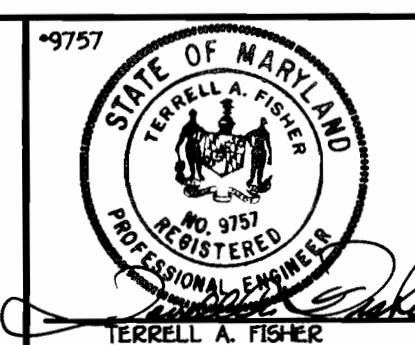
M.H. Collins 10/26/98
SIGNATURE OF DEVELOPER DATE

CONTRACT NO. 24-3698-D
THE OVERLOOK AT CENTENNIAL PARK
LOT NOS. 9 - 33
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Robert M. Benner 10-29-98
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
John M. DeMunn 4/5/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PKWY.
ELLSWORTH CITY, MARYLAND 21042
410-481-2955



DESIGNED BY: M.J.M.
DRAWN BY: L.M.A.
CHECKED BY: M.J.M.
DATE: SEPTEMBER, 1998

TITLE SHEET

600' SCALE MAP NO. 24 BLOCK NO. 21
F.C.C. WORK ORDER NO. 30561
FILE NAME: G:\Drawings\30561\W&S\Titlesheet.dwg

THE OVERLOOK AT CENTENNIAL PARK
LOT NOS. 9 - 33
CONTRACT NO. 24 - 3698 -D
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 1 of 4

NOTE:
THE INDICATED CONTOURS ARE BASED ON THE PROPOSED GRADING SHOWN ON F 90-152.
-8'-0" DENOTES DIRT FENCE (SEE DETAIL SHEET 4)

MANHOLE TABULATION CHART

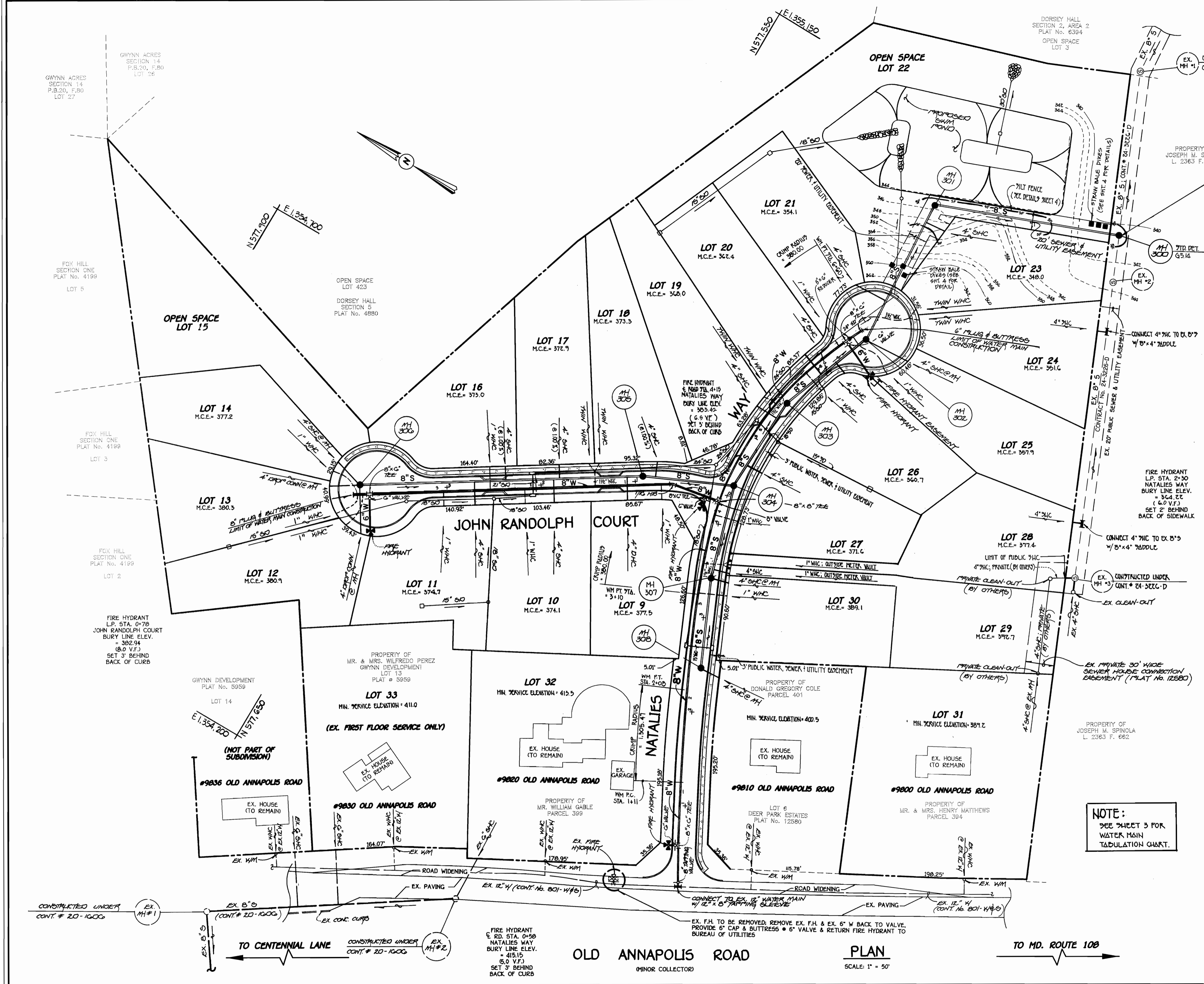
NO.	Road Station	DISTANCE	SLOPE	RIM ELEVATION
300				340.05
301				345.40
302	IN CUL-DE-SAC			368.14
303	5+52 NATALIES WAY	3' RT.	-8.00%	370.02
304	4+45 NATALIES WAY	3' RT.	-10.70%	380.34
305	0+92 JOHN RANDOLPH COURT	5' RT.	-1.70%	379.06
306	IN CUL-DE-SAC			382.87
307	3+43 NATALIES WAY	5' RT.	-11.40%	391.90
308	2+46 NATALIES WAY	5' RT.	-11.22%	403.01

* EX. MH RIM FLUSH W/ EXISTING / PROPOSED GROUND
** EX. MH RIM FLUSH W/ PROPOSED FINISHED PAVING

SHC INVERT @ PROPERTY LINE CHART

STATION	LOT	ELEVATION
MH 301 TO MH 302		
0+20 LT.	23	343.26
1+13 RT.	21	348.89
@ MH 302 LT.	25 (1/2 @ 1/2)	352.05
MH 302 TO MH 303		
0+40 LT.	26	355.05
0+60 RT.	20	357.25
MH 303 TO MH 304		
0+70 RT.	19	362.05
0+80 LT.	27	366.45
MH 304 TO MH 305		
0+85 RT.	18 (@ 1.00%)	368.28
MH 305 TO MH 306		
0+18 LT.	9 (DNC)	372.50
0+89 RT.	17 (@ 1.00%)	368.76
0+95 LT.	10	369.35
1+45 RT.	16 (@ 1.00%)	369.34
1+79 LT.	11	369.96
@ MH 306 LT.	12 (DROP CONNECTION @ MH)	375.56
@ MH 306 CT.	13 (DROP CONNECTION @ MH)	375.16
@ MH 306 RT.	14 (SHC @ MH)	371.17
EX. MH #2 TO EX. MH #3 (CONT. # 24-3226)		
@ EX. MH #3	31	382.08
EX. MH #1 TO EX. MH #2 (CONT. # 20-1000)		
1+43 LT.	33	405.40
@ EX. MH #2	32	406.34
MH 304 TO MH 307		
0+72 LT.	27	382.91
@ MH 307 LT.	30 (7HC @ MH)	383.71
@ MH 307 LT.	MH 307 TO 306	
@ MH 306 LT.	EX. LOT 6 (DEER PARK) 7HC @ MH	374.70
0+52 RT.	24	345.34
2+91 RT.	25	371.65

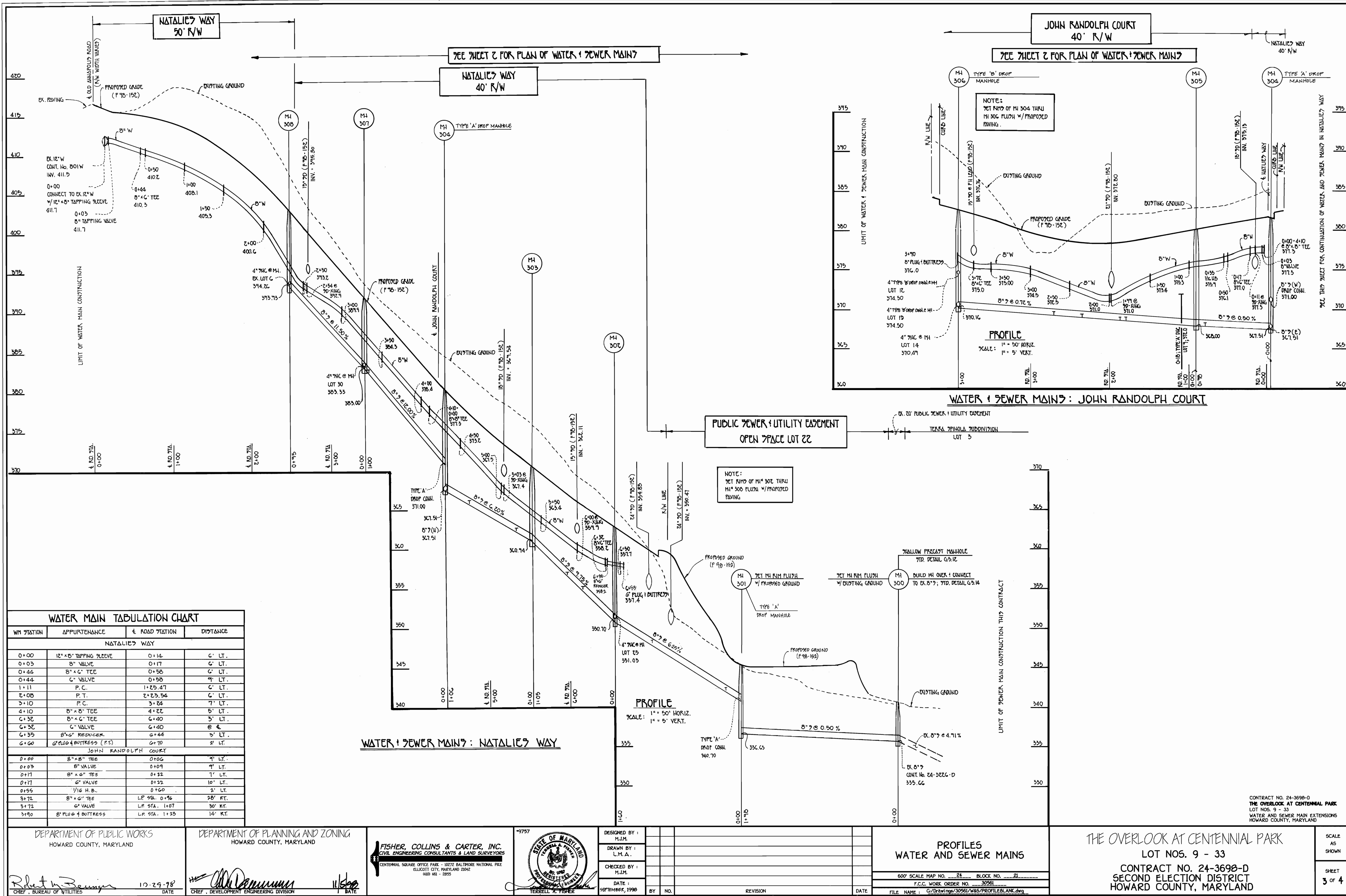
NOTE:
SEE SHEET 3 FOR WATER MAIN TABULATION CHART.



PLAN
SCALE: 1" = 50'

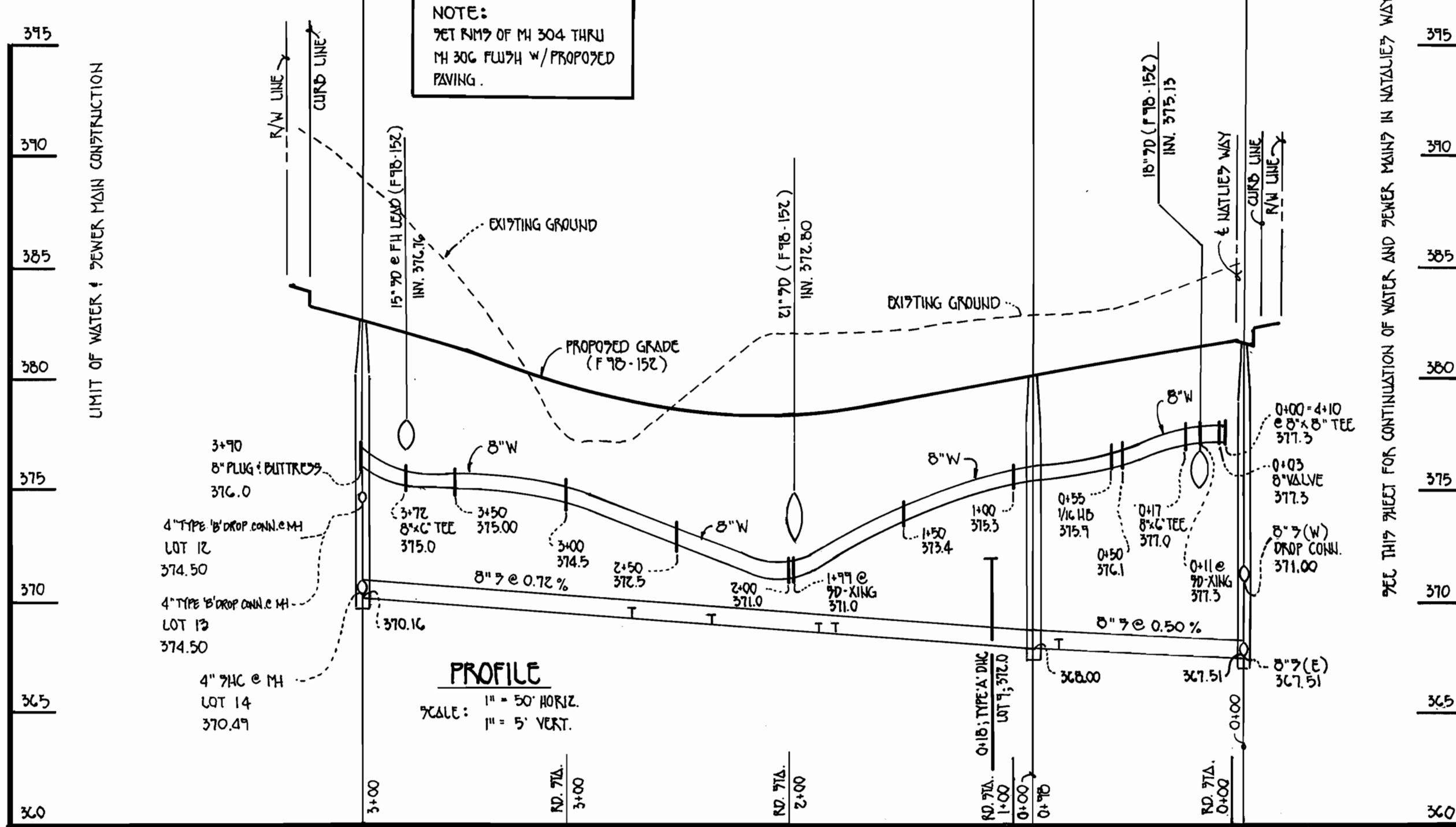
CONTRACT NO. 24-3675-D
THE OVERLOOK AT CENTENNIAL PARK
LOT NOS. 9-33
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Chief, Bureau of Utilities 10-29-98	DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND Chief, Development Engineering Division 11-30-98	FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTENNIAL SQUARE OFFICE PARK - 8072 BALTIMORE NATIONAL PIKE ELKTON CITY, MARYLAND 21828 (410) 461-2555	STATE OF MARYLAND TERRILL A. FISHER REGISTERED PROFESSIONAL ENGINEER No. 9757	DESIGNED BY: M.J.M. DRAWN BY: J.L.J.A.U. CHECKED BY: M.J.M. DATE: SEPTEMBER, 1998	WATER AND SEWER MAINS PLAN VIEW 600' SCALE MAP NO. 24 BLOCK NO. 21 F.C.C. WORK ORDER NO. 30951 FILE NAME: G:\Drawings\30951\W&S\PLANBASE.DWG	THE OVERLOOK AT CENTENNIAL PARK LOT NOS. 9 - 33 CONTRACT NO. 24-3675-D SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 2 OF 4
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SEE SHEET 2 FOR PLAN OF WATER & SEWER MAINS

SEE SHEET 2 FOR PLAN OF WATER & SEWER MAINS



WATER & SEWER MAINS: JOHN RANDOLPH COURT

PUBLIC SEWER & UTILITY EASEMENT
OPEN SPACE LOT 22

NOTE:
GET RIMP OF MH 302 THRU
MH 300 FLUSH W/ PROPOSED
PAVING.

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

WM STATION	APPURTENANCE	± ROAD STATION	DISTANCE
NATALIE'S WAY			
0+00	12" x 8" TAPPING PEEVE	0+14	6' LT.
0+03	8" VALVE	0+17	6' LT.
0+44	8" x C" TEE	0+58	6' LT.
0+44	C" VALVE	0+58	9' LT.
1+11	P.C.	1+25.47	6' LT.
2+05	P.T.	2+23.54	6' LT.
3+10	P.C.	3+24	7' LT.
4+10	8" x 8" TEE	4+22	5' LT.
6+32	8" x C" TEE	6+40	5' LT.
6+32	C" VALVE	6+40	0' LT.
6+35	8" x 6" REDUCER	6+44	3' LT.
6+60	8" PLUG & BUTTRESS (P.T.)	6+70	2' LT.
JOHN RANDOLPH COURT			
0+00	8" x 8" TEE	0+02	7' LT.
0+03	8" VALVE	0+09	7' LT.
0+11	8" x 6" TEE	0+22	7' LT.
0+17	8" VALVE	0+22	10' LT.
0+55	1/16 H.B.	0+60	2' LT.
3+72	8" x 6" TEE	L.P. 91A. 0+96	28' RT.
3+72	6" VALVE	L.P. 91A. 1+07	30' RT.
3+90	8" PLUG & BUTTRESS	L.P. 91A. 1+25	14' RT.

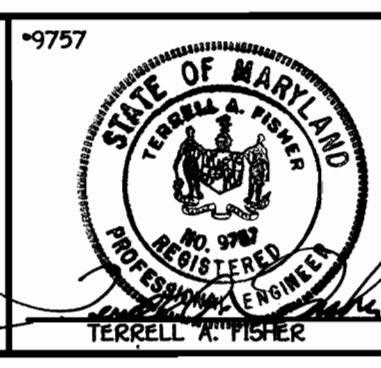
WATER & SEWER MAINS: NATALIE'S WAY

CONTRACT NO. 24-3698-D
THE OVERLOOK AT CENTENNIAL PARK
LOT NOS. 9 - 33
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Robert W. Berman
CHIEF, BUREAU OF UTILITIES
10-29-98
DATE

DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY, MARYLAND
[Signature]
CHIEF, DEVELOPMENT ENGINEERING DIVISION
11/5/98
DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
(410) 481-2855



DESIGNED BY: M.J.M.
DRAWN BY: L.M.A.
CHECKED BY: M.J.M.
DATE: SEPTEMBER, 1998

PROFILES
WATER AND SEWER MAINS
600' SCALE MAP NO. 24 BLOCK NO. 24
F.C.C. WORK ORDER NO. 30561
FILE NAME: G:\Drawings\30561\W&S\PROFILES\BLANK.dwg

THE OVERLOOK AT CENTENNIAL PARK
LOT NOS. 9 - 33
CONTRACT NO. 24-3698-D
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE AS SHOWN
SHEET 3 OF 4

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

SECTION 20 :

DEFINITION

Using vegetation as cover for barren soil to protect it from forces that cause erosion. Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas, and improving wildlife and visual resources.

CONDITIONS WHERE PRACTICE APPLIES

This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification shall establish vegetative cover for short duration (up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary soil stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dunes, cut and fill slopes and other areas at final grade, former stockpiles and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff. Infiltration evaporation, interception percolation and groundwater recharge. Vegetation over time will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone. Sediment control devices must remain in place during grading, seeded preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation
1. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
2. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
3. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed areas over 5 acres.

B. Soil Amendments (Fertilizer and Lime Specifications)
1. Soil tests must be performed to determine the exact rates and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analysis.
2. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval of the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state label and the same shall be used for the same area and material and quantity of the producer.
3. Lime materials shall be ground limestone (hydrated or burnt) lime may be substituted which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 90-100% will pass through a #20 mesh sieve.
4. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

C. Seeded Preparation
1. Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Seeded areas together with the application rate shall be marked on the plans and the same shall be used for the same area and material and quantity of the producer.
2. Apply fertilizer and lime as prescribed on the plans.
3. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

D. Permanent Seeding
1. Minimum soil conditions required for permanent vegetative establishment:
2. Soluble salts shall be less than 500 parts per million (ppm).
3. The soil shall contain less than 40% clay, but enough fine grained material to provide the capability of holding moderate amount of moisture. An exception is for lawns or areas to be planted, then a sandy soil (50% silt plus clay) would be acceptable.
4. Soil shall contain 1.5% minimum organic matter by weight.
5. Soil must contain sufficient pore space to permit adequate root penetration.
6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.

E. Methods of Seeding
1. Hydroseeding - Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a similar seeder.
2. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: Nitrogen 100 lbs/acre total of soluble nitrogen P2O5 (phosphorous) 200 lbs/acre K2O (potassium) 200 lbs/acre.
3. 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.
4. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.

F. Mulch Specifications (In order of preference)
1. Straw shall consist of thoroughly threshed, wet, or oat straw, reasonable bright in color, and shall not be musty, mold, colored, decayed or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
2. Wood Cellulose Fiber Mulch (WCFM)
a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of uniform spread.
c. WCFM, including dye, shall contain no germination or growth inhibiting factors.
d. WCFM material shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
e. WCFM material shall contain no elements or compounds at concentration levels that will be phytotoxic.
f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm; diameter approximately 1 mm; specific gravity of 1.0 to 1.5, ash content of 16% maximum and water holding capacity of 90% minimum.
3. Note: Other sterile straw mulch should be used in areas where one species of grass is desired.
4. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding in accordance with these specifications.
5. If grading is completed outside of the seeding season, mulch shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
6. when straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
7. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
8. Securing Straw Mulch Mulch Anchoring - Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods listed by preference, depending upon size of area and erosion hazard:
i. A mulch anchoring tool is a tractor driven implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas but is limited to flatter slopes where equipment can operate safely. If used on sloping areas, this practice should be used on the contour if possible.
ii. Wood cellulose fiber - The fiber binder shall be applied at a net weight of 950 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of bales. The remainder of area should be spread uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petroseal, Terra Tex II, Terra Tack AG or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSING AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (33-1859).
- 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 THEREIN.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-ESTABLISHMENT OF TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DICES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT CONTROL STRUCTURES 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 PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1996 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 50), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 50). 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 PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:
TOTAL AREA OF SITE 14,215 ACRES
AREA TO BE ROOFED OR PAVED 0.533 ACRES
AREA TO BE VEGETATIVELY STABILIZED 12,000 ACRES
TOTAL CUT 12,000 CYLOS.
TOTAL FILL 12,000 CYLOS.
SEE F-196-192

OFFSITE WASTE/BORROW AREA LOCATION
ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF 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 INITIAL PERMIT FILING AND BEFORE 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 PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

PERMANENT SEEDING NOTES

ALL DISTURBED AREAS SHALL BE STABILIZED AS FOLLOWS:

SEEDING PREPARATION
LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.

MULCHING
APPLY 1 TO 2 TONS PER ACRE (10 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 200 GALLONS PER ACRE (5 GAL./1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 6 FEET OR HIGHER USE 340 GALLONS PER ACRE (8 GAL./1,000 SQ.FT.) FOR ANCHORING.

SEEDING
FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 15 BARS/1 PER ACRE (2.3 LBS./1,000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THROUGH JULY 31, SEED WITH 60 LBS./ACRE (0.6 LBS./1,000 SQ.FT.) AND 60 LBS./ACRE (0.6 LBS./1,000 SQ.FT.) OF WEeping LOVEGRASS. DURING THE PERIOD OF OCTOBER 15 THROUGH FEBRUARY 28, PROJECT SITE BY OPTION (1) - USE 500 OZ. PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) - SEED WITH 100 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH TWO TONS/ACRE WELL ANCHORED STRAW. ALL SLOPES SHOULD BE HYDROSEEDED.

MULCHING
APPLY 1.5 TO 2 TONS PER ACRE (70 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHORING TOOL OR 210 GALLONS PER ACRE (5 GAL./1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 6 FEET OR HIGHER, USE 340 GALLONS PER ACRE (8 GAL./1,000 SQ.FT.) FOR ANCHORING.

SEEDING
FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 15 BARS/1 PER ACRE OF ANNUAL RYE (3.2 LBS./ACRE OF WEeping LOVEGRASS, 0.7 LBS./1,000 SQ.FT.) FOR THE PERIOD NOVEMBER 15 THRU FEBRUARY 28, PROJECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE 500.

MULCHING
APPLY 1.5 TO 2 TONS PER ACRE (70 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHORING TOOL OR 210 GALLONS PER ACRE (5 GAL./1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 6 FEET OR HIGHER, USE 340 GALLONS PER ACRE (8 GAL./1,000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1996 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

TEMPORARY SEEDING NOTES

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

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

MULCHING
APPLY 1.5 TO 2 TONS PER ACRE (70 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHORING TOOL OR 210 GALLONS PER ACRE (5 GAL./1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 6 FEET OR HIGHER, USE 340 GALLONS PER ACRE (8 GAL./1,000 SQ.FT.) FOR ANCHORING.

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MULCHING
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REFER TO THE 1996 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

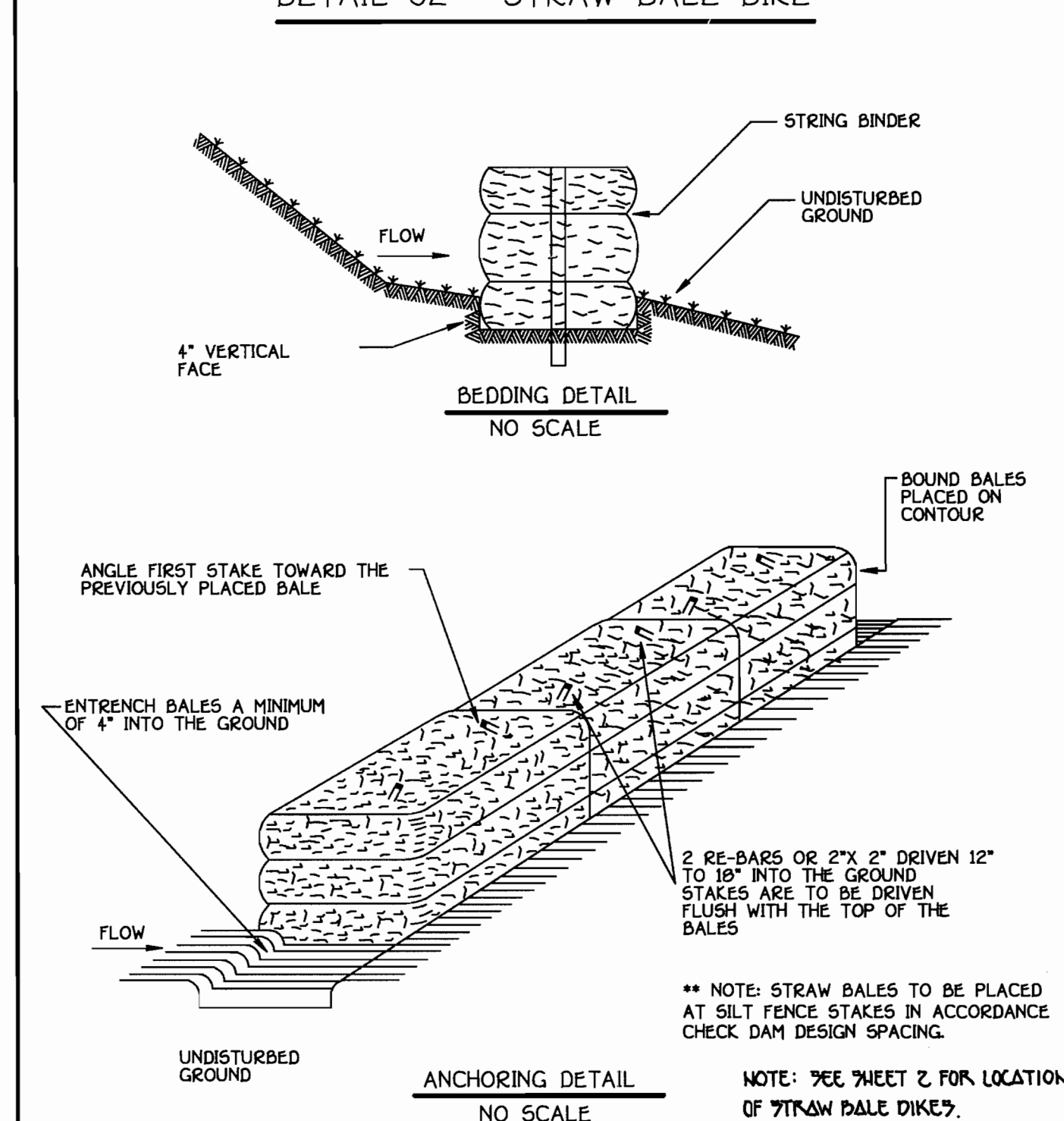
SEQUENCE OF CONSTRUCTION

- OBTAIN THE REQUIRED GRADING PERMIT.
- NOTIFY MISS UTILITY 48 HOURS BEFORE BEGINNING ANY WORK (E-900-277-7770). NOTIFY HOWARD COUNTY CONSTRUCTION/INSPECTION DIVISION 24 HOURS BEFORE STARTING ANY WORK (410)313-1870.
- INSTALL THE REQUIRED SEDIMENT AND EROSION CONTROL DEVICES AS INDICATED ON SHEETS 2 OF THIS CONTRACT (2 DAYS).
- CLEAR AND GRUB AS NECESSARY; ONLY AS REQUIRED FOR EXCAVATION AND INSTALLATION OF THE WATER AND SEWER MAINS, AND ONLY WITHIN THE DESIGNATED WATER, SEWER AND UTILITY EASEMENTS (1 DAY).
- NOTE: THE LENGTH OF OPEN WATER EXPOSURE SHOULD BE LIMITED TO 100 FEET OR LESS, UNLESS OTHERWISE SPECIFIED. STABILIZED WITHIN ONE (1) WORKING DAY, WHICHEVER IS SHORTER.
- CONSTRUCT THE WATER MAINSEWER MAIN AND APPURTENANCES (20 DAYS).
- STABILIZE SEED AND MULCH ALL DISTURBED AREAS IN ACCORDANCE WITH THE PERMITS AND SEEDING DATES SHOWN ON SHEETS 2 AND 3.
- FOLLOWING SUCCESSFUL STABILIZATION OF ALL DISTURBED AREAS, AND AFTER PERMISSION HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL EROSION AND SEDIMENT CONTROL DEVICES (2 DAYS).

SECTION 21 : STANDARD AND SPECIFICATIONS FOR TOPSOIL

- DEFINITION: PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.
- PURPOSE: TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.
- SPECIFICATIONS:
A. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY SILT LOAM, OR LOAMY SAND.
B. TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING SUBSOILS.
C. TOPSOIL SHALL CONTAIN LESS THAN 2% BY VOLUME OF CINDEES, GRAVEL, STICKS, SCOTTS, TRASH OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.
D. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" - 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4" AND SURFACE IRREGULARITIES. REPLACE TOPSOIL AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION".
E. TOPSOIL SHALL NOT BE PLACED DURING FROZEN, MUDDY, OR EXCESSIVELY WET CONDITIONS.
- APPLICATION:

DETAIL 32 - STRAW BALE DIKE

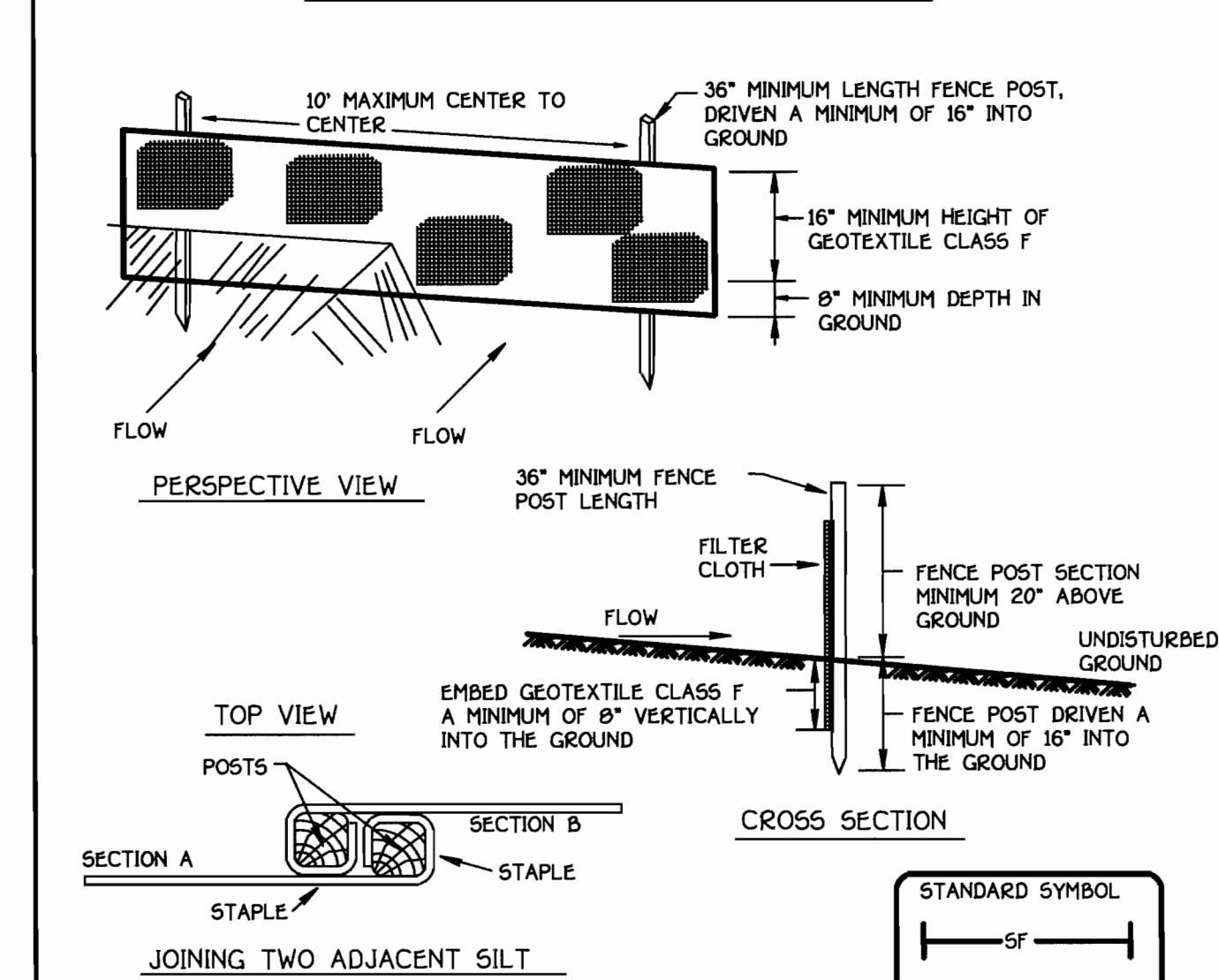


STRAW BALE DIKE

Construction Specifications

- Bales shall be placed at the toe of a slope, on the contour, and in a row with the ends of each bale tightly abutting the adjacent bales.
- Each bale shall be entrenched in the soil a minimum of 4" and placed so the bindings are horizontal.
- Bales shall be securely anchored in place by either two stakes or re-bars driven through the bale 12" to 18" into the ground. The first stake in each bale shall be driven toward the previously laid bale at an angle to force the bales together. Stakes shall be driven flush with the top of the bale.
- Straw bale dikes shall be inspected frequently and after each rain event and maintenance performed as necessary.
- All bales shall be removed when the site has been stabilized. The trench where the bales were located shall be graded flush and stabilized.

DETAIL 22 - SILT FENCE



Construction Specifications

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum cut), or 1 3/4" diameter (minimum round) and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:
Tensile Strength 50 lbs/in (min) Test: MSMT 509
Tensile Modulus 20 lbs/in (min) Test: MSMT 509
Flow Rate 0.3 gal ft / minute (max) Test: MSMT 322
Filtering Efficiency 75% (min) Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

SILT FENCE

Silt Fence Design Criteria

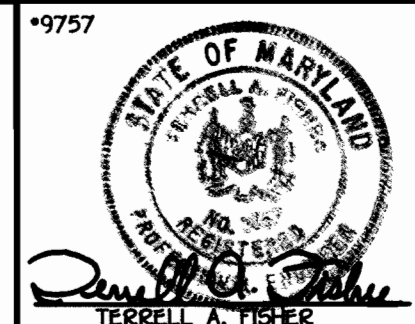
Slope Steepness	Silt Fence Length	
	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND

FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS



DESIGNED BY:	M.J.M.
DRAWN BY:	M.J.M.
CHECKED BY:	M.J.M.
DATE:	SEPTEMBER, 1978
BY:	NO.
REVISION:	
DATE:	
FILE NAME:	G:\Drawings\30561\W&S\DET32.dwg

NOTES AND DETAILS

600' SCALE MAP NO. 24-3678-B BLOCK NO. 21
F.C.C. WORK ORDER NO. 30561
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THE OVERLOOK AT CENTENNIAL PARK
LOT NOS. 9 - 33
CONTRACT NO. 24-3678 -D
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 4 OF 4

Robert W. Deason 10-27-78
DATE

DATE

CONTRACT NO. 24-3678-D
THE OVERLOOK AT CENTENNIAL PARK
LOT NOS. 9 - 33
WATER AND SEWER MAIN EXTENSIONS
HOWARD COUNTY, MARYLAND