

**GENERAL NOTES**

**PART I - GENERAL**

1. Approximate locations 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.
2. Topographic field surveys were performed on June, 2001 by C.B. Miller & Associates, Inc.
3. The coordinates shown on the drawings are based on Maryland State Reference System NAD 83/91 as projected by Howard County Geodetic Control Stations No. 161A and No. 161B. (see vicinity map)
4. All vertical controls are based on NAVD88. Vertical controls provided on the drawings are 161A and 161B (see vicinity map).
5. All pipe elevations shown are invert elevations unless otherwise noted on the plans.
6. Clear all utilities by a minimum of 12 inches. Clear all poles by 5'-0" minimum or tunnel as required unless otherwise noted. The owner has contacted the utility companies and has made arrangements for bracing of poles as shown on the drawings. In the event the Contractor's work requires the bracing of additional poles, any cost incurred by the owner for the bracing of additional poles or damages shall be deducted from monies owed by the contractor. The Contractor shall coordinate with the utility companies to schedule the bracing of the poles.
7. For details not shown on the drawing, and for materials and construction methods, use Howard County Design Manual, Volume IV, Standard Specifications and Details for Construction (latest Edition). The Contractor shall have a copy of Volume IV on the job.
8. Where test pits have been made on existing utilities, they are noted by the symbol at the locations of the test pits. A note or notes containing the results of the test pits are 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.
9. The contractor shall notify the following utility companies or agencies at least five working days before starting work shown on these plans:

AT & T	1,800,252.1153
BGE(Construction Services)	410,850,4620
BGE(Emergency)	410,685,1400
Bureau of Utilities	410,315,4900
Colonial Pipeline Company	410,745,1390
Miss Utility	1,800,257,7777
Verizon	1,800,743,0033/410,224,9210
State Highway Administration	410,531,5533

10. 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.
11. The Contractor shall remove trees, stumps and roots along line of excavation. Payment for such removal shall be included in the unit price bid for the construction of the main.
12. The Contractor shall notify the Bureau of Highways, Howard County, at 410.315.7450 at least five working days before any open cutting or boring/jacking of any county road for laying water/sewer mains or house connections. The approval of these drawings will constitute compliance with DPM requirements per Section 10.114(a) of the Howard County Code.
13. Previous Howard County file numbers: WP-03-32, 9P-02-06 and F-70-60.
14. The existing dwelling unit (3150 Dunes Drive) located on the subject property shall be removed and the well and septic shall be abandoned.

**PART II - WATER**

1. All water mains to be D.I.P. Class 52 unless otherwise noted.
2. Tops of all water mains to have a minimum of 3'-6" of cover unless otherwise noted.
3. Valves adjacent to tees shall be strapped to tees.
4. All fittings shall be buttressed or anchored with concrete in accordance with the Standard Details unless otherwise provided for on the drawings.
5. Fire Hydrants shall be set to the bury line elevations shown on the drawings. All Fire Hydrants shall be restrained and buttressed with concrete in accordance with Standard Details. The soil around Fire Hydrant shall be compacted in accordance with Section 1000 and 1005 of the Standard Specifications.
6. The Contractor shall not operate any water main valves on the existing water system.
7. All water house connections shall be for inside meter settings unless otherwise noted on the plans or in specifications.

**PART III - SEWER**

1. All sewer mains shall be D.I.P. or P.V.C. unless otherwise noted.
2. All manholes shall be 4'-0" inside diameter unless otherwise noted.
3. Force mains shall be D.I.P. only.
4. Manholes shown with 12" and 16" walls are for brick manholes only.
5. Manholes designated N.T. in plan and profile shall have watertight frame & covers, Standard Detail G5.52. Where watertight manhole frame and cover is used, set top of frame 1'-6" above finished grade unless otherwise noted on the drawings.
6. House(s) with the symbol "C.N.S." indicates that cellar cannot be served.

**BUILDABLE LOTS FRONT FRONTAGE CHART**

Lot #	Total frontage along Public R/W
1	15.40'
2	2.40'
3	2.40'
4	2.40'
5	2.40'
6	2.40'
7	2.40'
8	2.40'
9	2.40'
10	15.40'

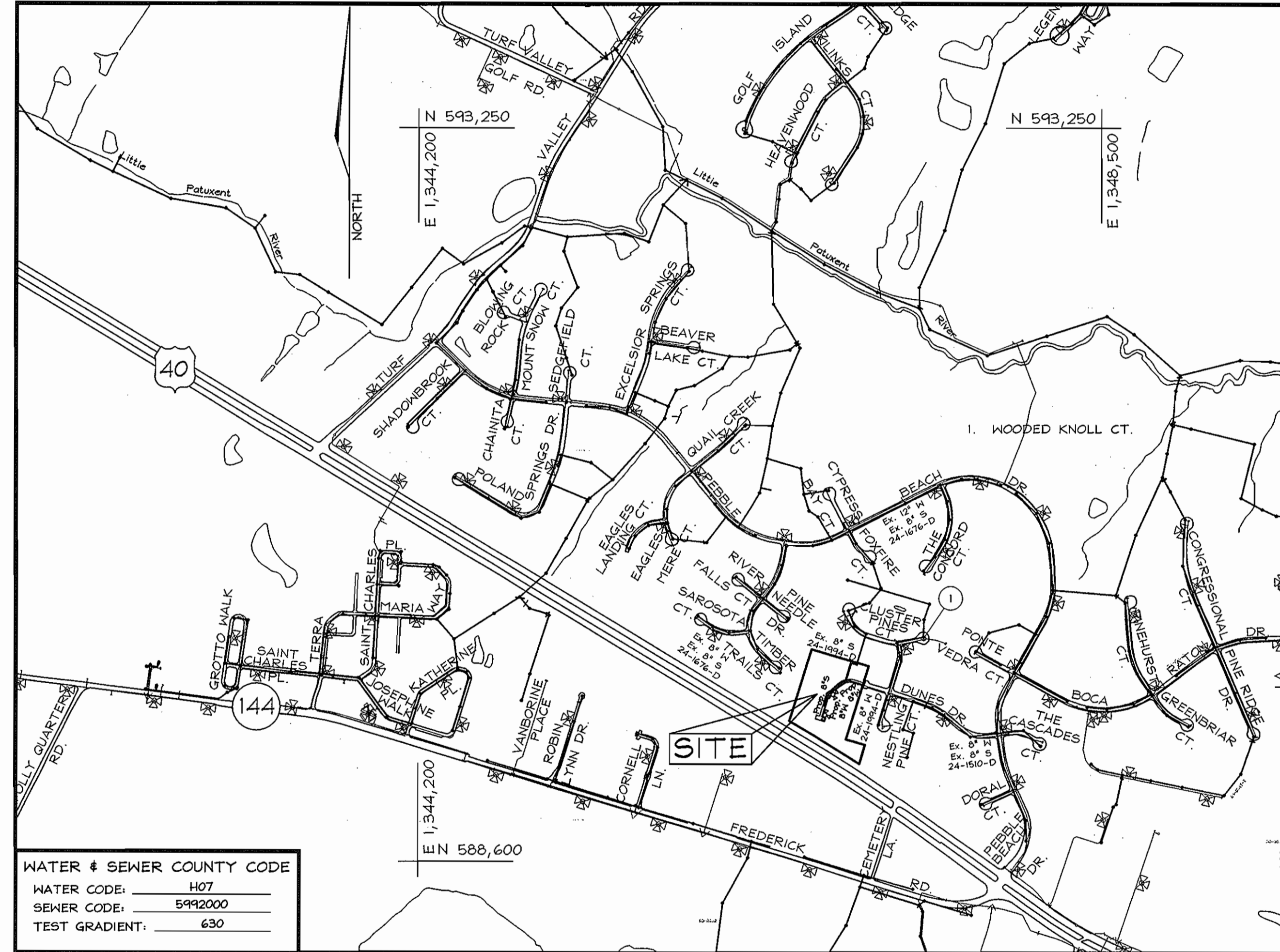
# PUBLIC WATER AND SEWER FINAL PLANS

## DUNES VISTAS

### LOTS 1 THRU 10 AND OPEN SPACE LOT 11

### HOWARD COUNTY, MARYLAND

### CONTRACT NO. 24-4435-D

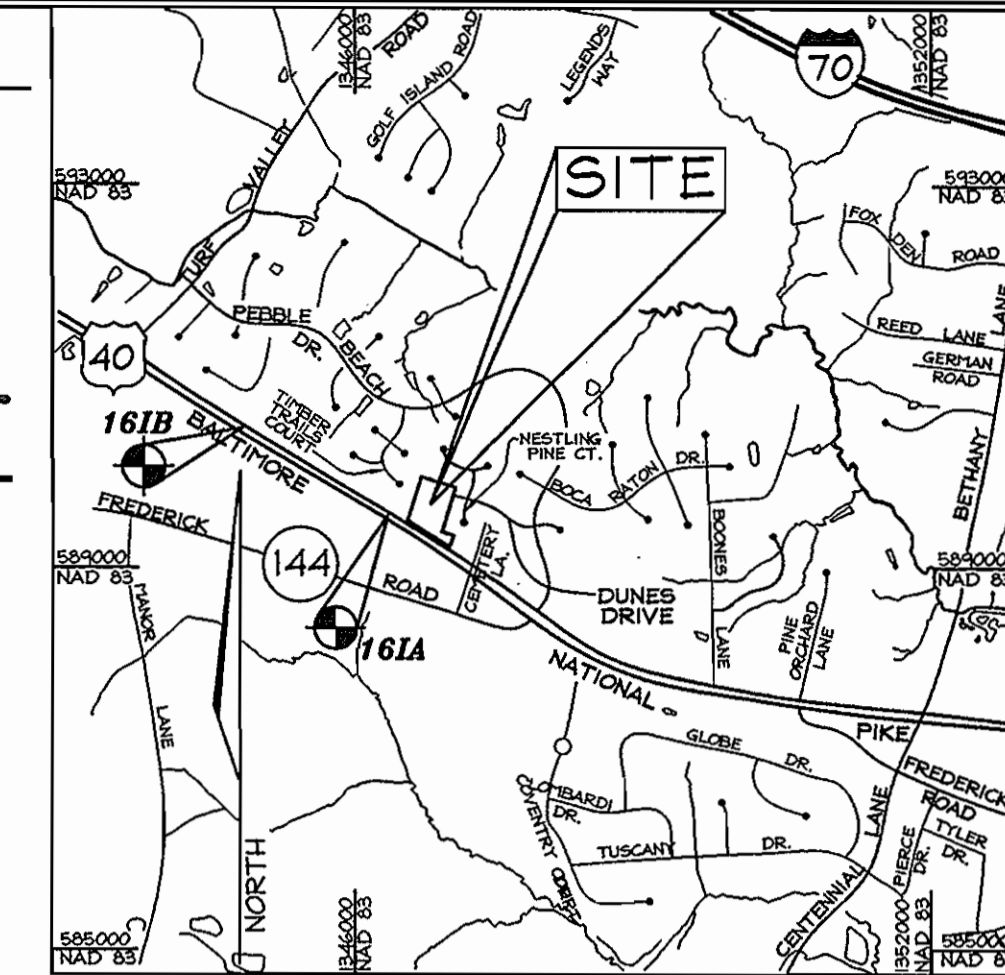


**LOCATION PLAN**  
SCALE: 1"=600'

TYPE OF BUILDING:	RESIDENTIAL
NO. OF LOTS/PARCELS:	11
NO. OF WATER HOUSE CONNECTIONS:	10
NO. OF SEWER HOUSE CONNECTIONS:	10
SEWER SHED:	LITTLE PATUXENT
TREATMENT PLANT:	PATUXENT

**LEGEND**

- Existing contours: - - - - - 552
- Proposed Contour: ———— 552.3
- Existing Spot Elevation: 352.3
- Proposed Spot Elevation: +82.53
- Direction of Flow: ————>
- Soils Line: - - - - -
- Limit of Disturbance: - - - - -
- Fire Hydrant: [Symbol]



**VICINITY MAP**  
SCALE: 1"=2000'

**BENCHMARKS**

Howard County Monument 161A	N 174,682.8211	E 410,366.3677	El.: 141.3280 (meters)
	N 589,504.3888	E 1,346,343.658	El.: 463.674 (feet)
Howard County Monument 161B	N 179,677.2258	E 409,881.8290	El.: 143.4319 (meters)
	N 590,475.281	E 1,344,753.967	El.: 470.576 (feet)

**SHEET INDEX**

DESCRIPTION	SHEET No.
Water and Sewer Cover Sheet	1 of 3
Water and Sewer Plan Sheet	2 of 3
Water and Sewer Profile Sheet	3 of 3

**QUANTITIES**

NAME OF UTILITY CONTRACTOR :				
SURVEY AND DRAFTING DIVISION AS-BUILT DATE :				
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER/SUPPLIER
MANHOLE	5 Ea.			
8" SEWER	399 L.F.			
4" SHC	131 L.F.			
8" WATER	397 L.F.			
1" MHC	158 L.F.			
FIRE HYDRANT 1/2" 6" Valve	2 Ea.			
8" CAP & BUTTRESS	1 Ea.			
1/8" HB	3 Ea.			
1/16" HB	1 Ea.			
1/32" HB	2 Ea.			

SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STANDARD SPECIFICATIONS AND WITH ROAD CONSTRUCTION PLANS F-07-60

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

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

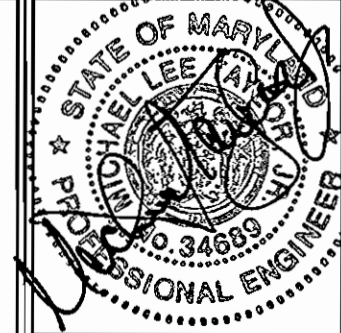
*[Signature]* 9/26/07  
DATE

*[Signature]* 9/26/07  
DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND

**FSH Associates**  
Engineers Planners Surveyors  
6339 Howard Lane ElkrIDGE, MD 21075  
Tel: 410-567-5200 Fax: 410-796-1562  
E-mail: info@fshri.com



DESIGN BY: MLT  
DRAWN BY: CED/HB  
CHECKED BY: ZTF  
DATE: Sept. 6, 2007

BY NO.	REVISION	DATE

**WATER AND SEWER COVER SHEET**

600' SCALE MAP NO.: 16 BLOCK NO.: 24

**OWNER/DEVELOPER**

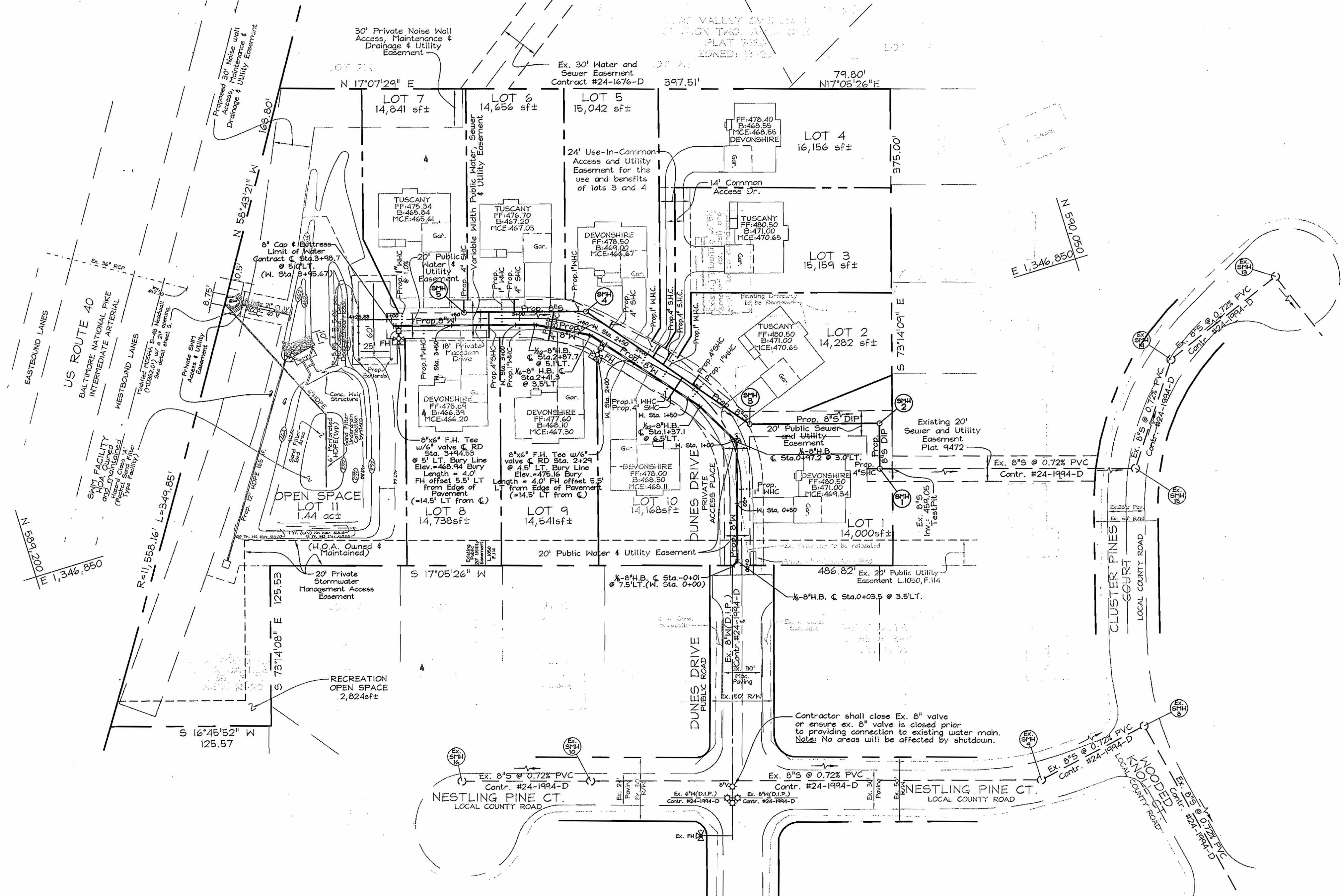
Dunes Vistas LLC  
C/O Bryan Boyde  
11807 Hollingford Court  
Clarksville, MD 21029  
(410) 792-2565

**DUNES VISTAS**  
LOTS 1 THRU 10 AND OPEN SPACE LOT 11 ZONED R-20  
3150 DUNES DRIVE  
CONTRACT NO. 24-4435-D  
TAX MAP 16 PARCEL 57  
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

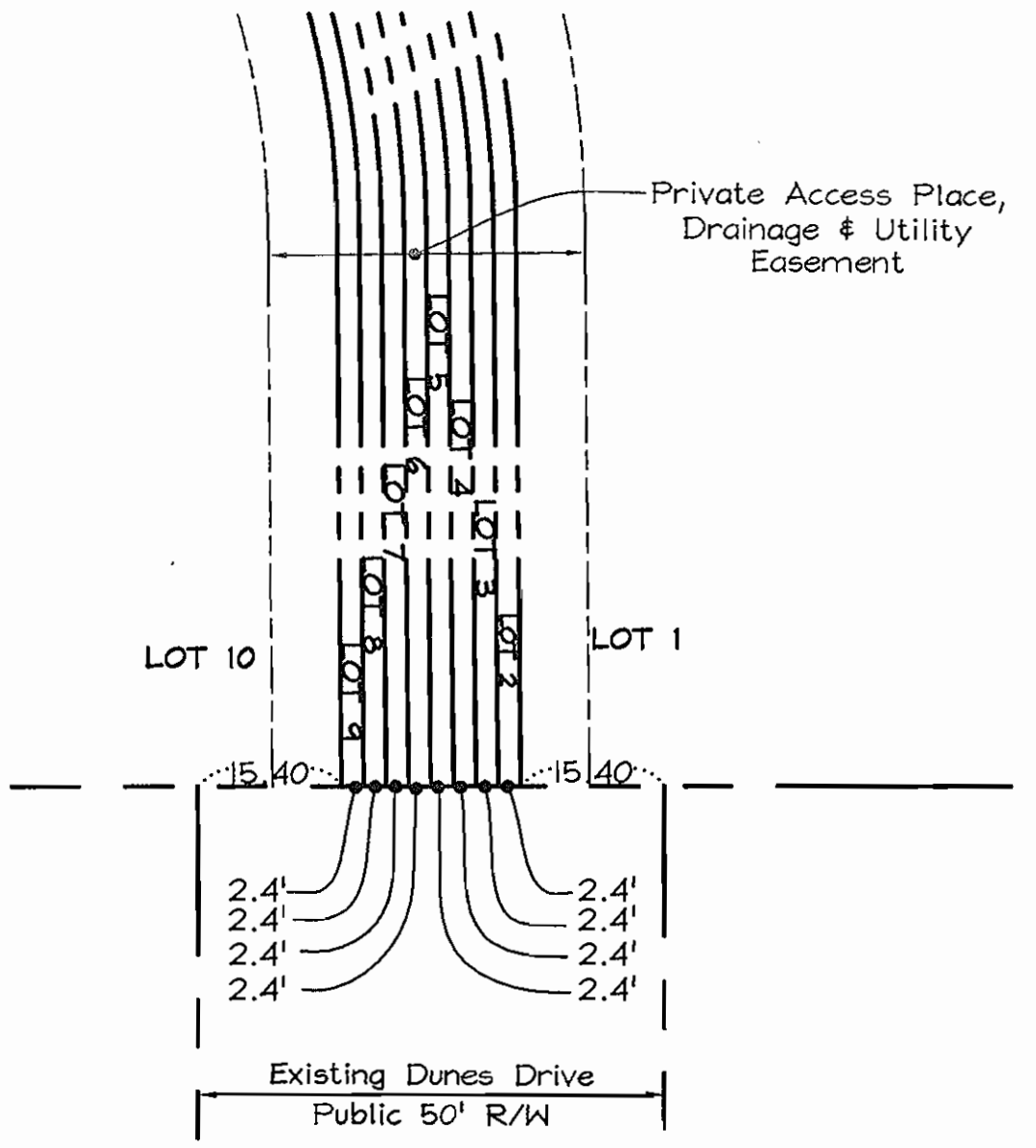
SCALE AS SHOWN  
SHEET NO. 1 OF 3

Maryland State Grid (NAD 83/91)

E 1,346,550



PLAN VIEW  
SCALE: 1"=50'



FRONT FOOT DIMENSION ENLARGEMENT DETAIL  
SCALE: 1"=20'

**OWNER/DEVELOPER**

Dunes Vistas LLC  
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11807 Hollingford Court  
Clarksville, MD 21024  
(410) 792-2565

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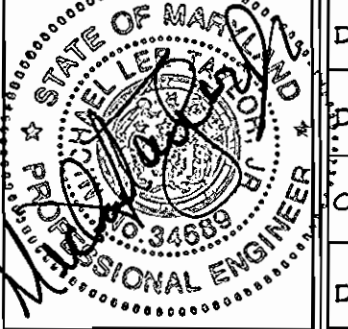
SCALE  
AS  
SHOWN

SHEET NO.  
2 OF 3

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
*M. O. Adair*  
CHIEF, BUREAU OF UTILITIES  
9-8-07  
DATE

DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND  
*M. P. ...*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
9/6/07  
DATE

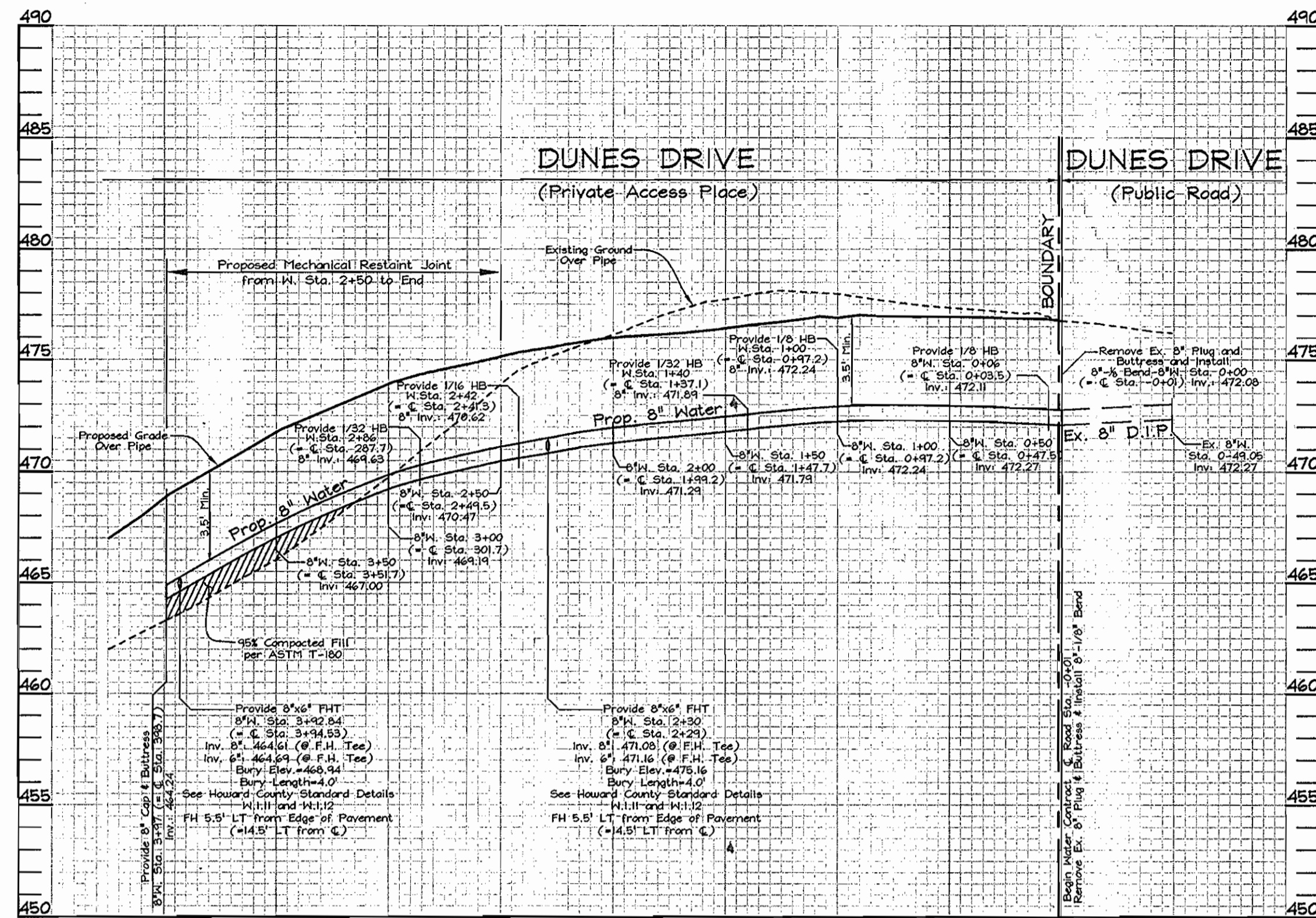
**FSH Associates**  
Engineers Planners Surveyors  
6339 Howard Lane Elkridge, MD 21075  
Tel: 410-567-5200 Fax: 410-796-1562  
E-mail: info@fshert.com



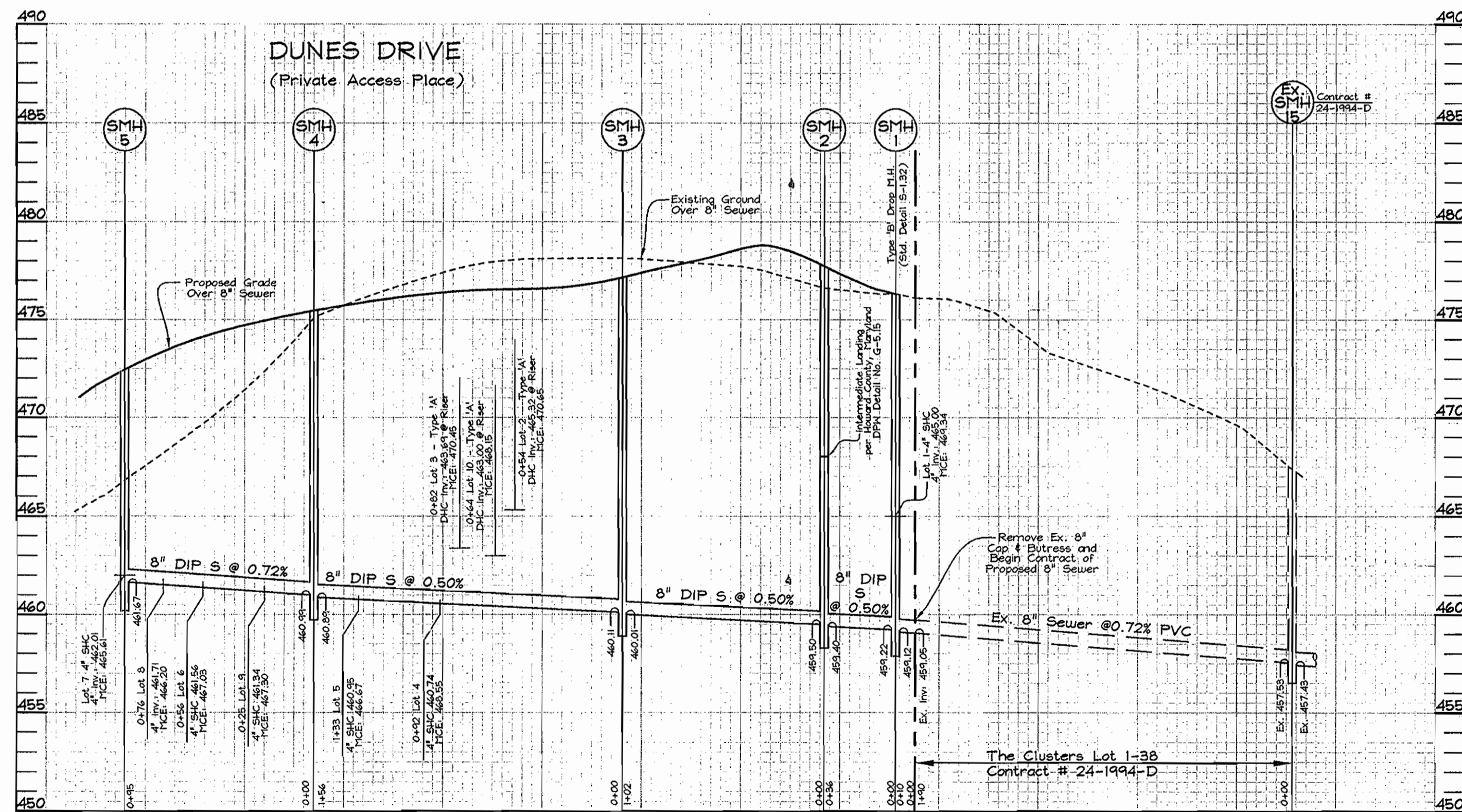
DESIGN BY: MLT  
DRAWN BY: CED/HIS  
CHECKED BY: ZYF  
DATE: Sept. 6, 2007

BY NO.	REVISION	DATE

**WATER AND SEWER  
PLAN SHEET**  
600' SCALE MAP NO.: 16 BLOCK NO.: 24



**WATER PROFILE**  
Scale: Horizontal - 1"=50'  
Vertical - 1"=5'



**SEWER PROFILE**  
Scale: Horizontal - 1"=50'  
Vertical - 1"=5'

SEWER HOUSE CONNECTION CHART					
Lot No.	Station	4" SHC Inv. @ 8" Sewer Main	SHC Inv. @ Easement Line*	MINIMUM CELLAR ELEVATION	ACTUAL CELLAR ELEVATION
FROM SMH 1 TO SMH 2					
Lot 1	@ MH 1	4" SHC Inv.: 465.00 @ MH 1	465.20	469.34	471.00
FROM SMH 3 TO SMH 4					
Lot 2	0+54 RT	4" DHC INV.: 465.32 **	465.50	470.65	471.00
Lot 3	0+82 RT	4" DHC INV.: 463.69	463.91	470.45	471.00
Lot 4	0+92 RT	4" SHC INV.: 460.74	460.96	468.55 (@ 1.76%)	468.55
Lot 5	1+33 RT	4" SHC INV.: 460.95	461.06	466.67	469.00
Lot 10	0+64 LT	4" DHC INV.: 463.00	463.43	468.11	468.50
FROM SMH 4 TO SMH 5					
Lot 6	0+56 RT	4" SHC INV.: 461.56	461.76	467.03	467.20
Lot 7***	@ SMH 5	4" SHC INV.: 462.01 @ MH 5	462.21	465.75 (@ 1.00%)	465.84
Lot 8	0+76 RT	4" SHC INV.: 461.71	462.11	466.20 (@ 1.00%)	466.39
Lot 9	0+25 LT	4" SHC INV.: 461.34	461.80	467.30	468.10

\* Note: All S.H.C.'s are on a 2.0% slope, from sewer main to easement line. All S.H.C.'s are on a 2.0% slope from easement line to rear B.R.L. (minimum cellar elevation), unless specified.  
\*\* Invert elevation @ Type 'A' Drop House Connection.  
\*\*\* Note: The minimum basement elevation for Lot 7 was calculated to the rear of the proposed dwelling, not to the rear of the B.R.L., and the M.C.E. was calculated at a 1.00% slope (as specified), not the standard 2.00% slope.

SEWER MANHOLE TABLE				
MH #	€ ROAD STATION # € OFFSET	TOP MH ELEVATION	REMARKS	TYPE OF M.H.
1	N 589,855.14 E 1,346,962.94	476.32±	Yard MH	TYPE 'B' DROP, S-1.32
2	N 589,865.52 E 1,346,928.47	477.74±	Yard MH	STD M.H. G-5.01
3	€ Sta. 1+25.07 @ 15' Rt.	477.30±	Dunes Drive	STD M.H. G-5.01
4	€ Sta. 2+51.47 @ 12.3' Rt.	475.46±	Dunes Drive	STD M.H. G-5.01
5	€ Sta. 3+43.32 @ 5.0' Rt.	472.45±	Dunes Drive	Terminal M.H. S-1.31

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CONTRACT NO. 24-4435-D

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SCALE AS SHOWN

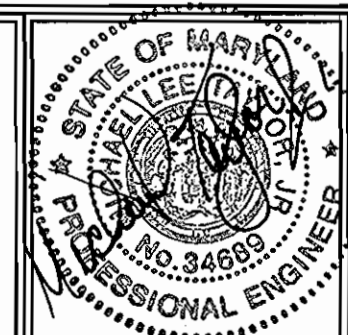
SHEET NO. 3 OF 3

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DEPARTMENT OF PLANNING & ZONING  
HOWARD COUNTY, MARYLAND

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DESIGN BY: MLT

DRAWN BY: CED/HS

CHECKED BY: ZYF

DATE: Sept. 6, 2007

BY	NO.	REVISION	DATE

**WATER AND SEWER PROFILE SHEET**

600' SCALE MAP NO.: 16 BLOCK NO.: 24

CHIEF, BUREAU OF UTILITIES  
DATE: 9/18/07

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 9/18/07