

# FINAL WATER AND SEWER CONSTRUCTION PLANS

for

## EMERSON SECTION 2, PHASE 3 LOTS 1-45 AND OPEN SPACE LOTS 46-50, A RESUBDIVISION OF PARCEL D4

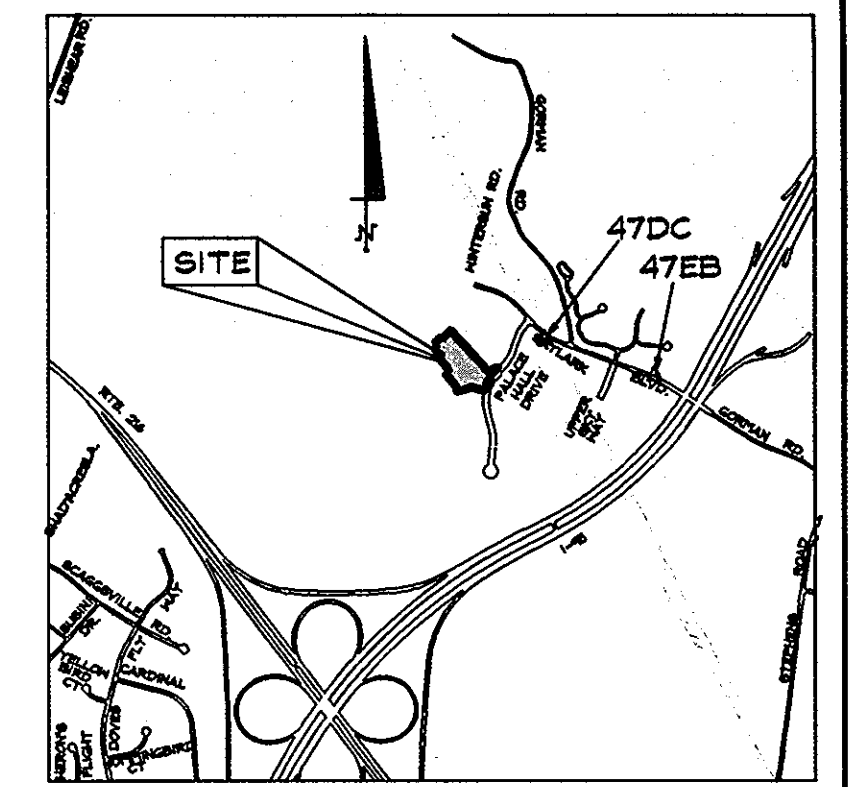
### CONTRACT NUMBER 24-4495-D

#### 6TH ELECTION DISTRICT HOWARD COUNTY, MD

#### BENCHMARK

#### DESCRIPTION

|              |              |
|--------------|--------------|
| BENCHMARK #1 |              |
| N.           | 536619.0157  |
| E.           | 135579.1226  |
| B.M.         | 47DC         |
| ELEV.        | 343.244      |
| BENCHMARK #2 |              |
| N.           | 536212.7456  |
| E.           | 1354833.6403 |
| B.M.         | 47EB         |
| ELEV.        | 354.296      |



#### GENERAL NOTES

- Approximate locations of existing mains are shown. The contractor shall take all necessary precautions to protect existing mains and services and maintain uninterrupted service. Any damage incurred shall be repaired immediately to the satisfaction of the Engineer at the contractor's expense.
- Topographic field surveys were performed on March, 2006 by Demario Design Consultants, Inc.
- 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. 47DC & 47EB.
- All vertical controls are based on NAVD '88.
- All pipe elevations shown are invert elevations unless otherwise noted on the plans.
- 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.
- 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.
- 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 pit or pits 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.
- The contractor shall notify the following utility companies or agencies at least five working days before starting work shown on these plans:
  - AT # T-1-800-252-1133
  - BGE (Construction Services): 410-850-4620
  - BGE (Emergency): 410-685-1400
  - Bureau of Utilities: 410-313-4900
  - Colonial Pipeline Company: 410-745-1390
  - 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.
- The 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.
- The contractor shall notify the Bureau of Highways, Howard County, at (410)-313-7450 at least five working days before open cutting or boring/jacking of any County road for laying water/sewer mains or house connections. The approval of these drawings will constitute compliance with DPW requirements per section 18.114(a) of the Howard County Code.

#### WATER GENERAL NOTES

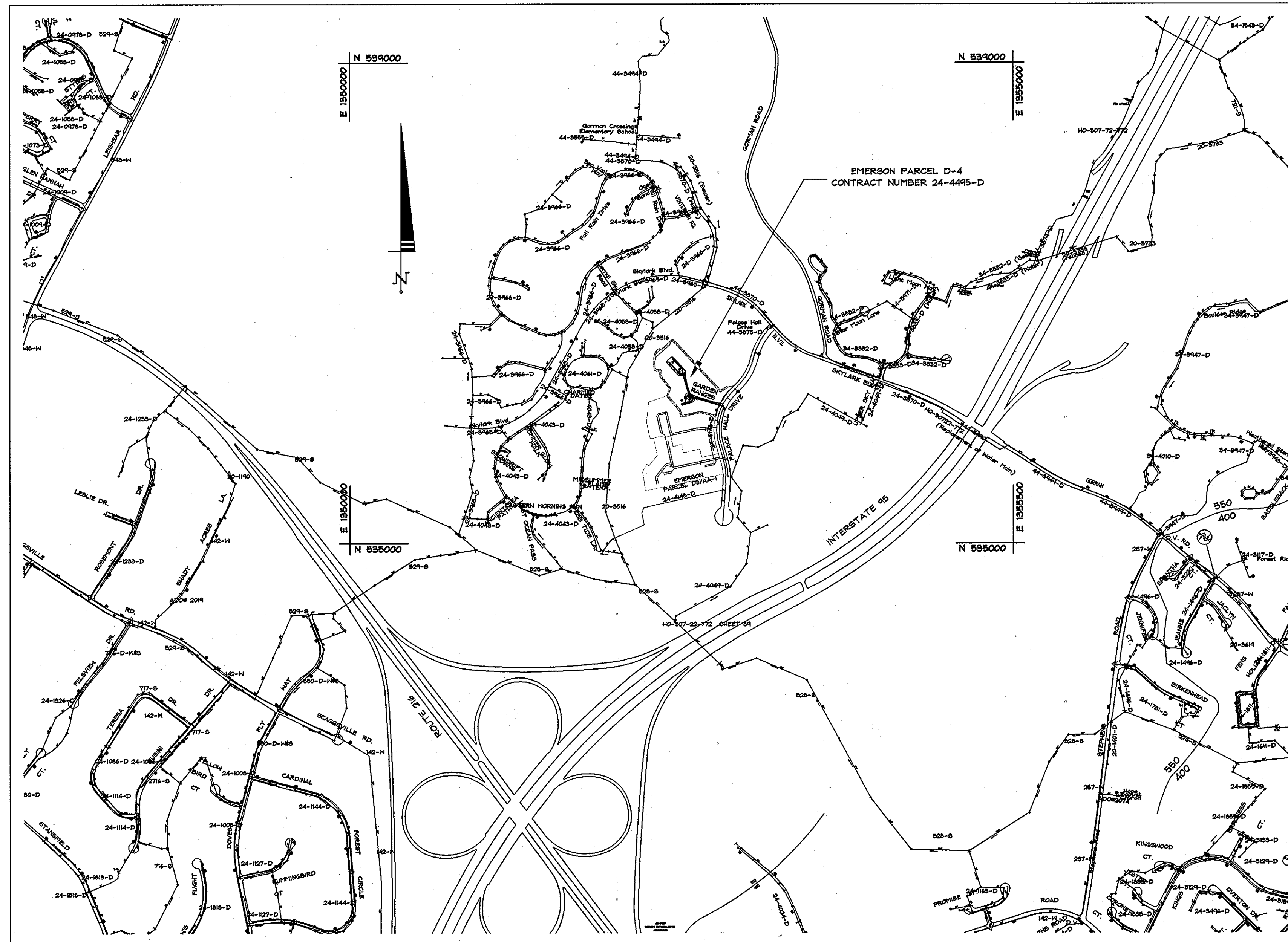
- All water mains to be D.I.P. Class 54 unless otherwise noted.
- Tops of all water mains to have a minimum of 3' - 6" of cover unless otherwise noted.
- Valves adjacent to tees shall be strapped to tees.
- All fittings shall be buttressed or anchored with concrete in accordance with the Standard Details unless provided on the drawings.
- 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 the Standard Details. The 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.
- For sprinkler system for all town homes or multi-family dwelling units should have a minimum of 1.5' connection with a 1" meter.

#### SEWER GENERAL NOTES

- All sewer mains shall be DIP 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 covers, Standard Detail G5.52. Where watertight frame and cover is used, set top of frame 1" - 6" above finished grade unless otherwise noted on the drawings.
- House(s) with the symbol "C.N.S." indicates that cellar cannot be served.
- All Sewer House Connections (SHC) designed at a grade of 5%.

#### SHEET INDEX

|   |                        |
|---|------------------------|
| 1 | COVER SHEET            |
| 2 | WATER AND SEWER PLAN   |
| 3 | WATER & SEWER PROFILES |



#### WATER AND SEWER CODES

WATER NO.: E-15  
SEWER NO.: 7390000  
TEST GRADIENT: 700  
ZONE: 550

#### VICINITY MAP

SCALE: 1"=600'

AS BUILT

DATE: 6-30-10

TYPE OF BUILDING: RESIDENTIAL  
DRAINAGE AREA: LITTLE PATUXENT  
TREATMENT PLANT: LITTLE PATUXENT  
WASTE WATER TREATMENT PLANT  
NUMBER OF BUILDABLE LOTS: 45  
NUMBER OF SHC: 45  
NUMBER OF WHC: 45

#### OWNER/DEVELOPER:

EMERSON LAND  
BUSINESS TRUST  
10275 LITTLE PATUXENT PKWY  
COLUMBIA, MD 21044  
410-992-6000

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE SPECIFICATIONS AND AS SHOWN ON F-07-161

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

NATURAL RESOURCES CONSERVATION SERVICE  
DATE

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

John R. Roberts 3/31/08  
HOWARD SOIL CONSERVATION DISTRICT  
DATE

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING  
HOWARD COUNTY, MARYLAND

**DeMario Design Consultants, Inc.**

192 East Main Street,  
Westminster, MD 21157  
Phone: (410) 386-0560  
Fax: (410) 386-0564  
eMail: dmc@demariodesign.com

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. 25420, Expiration Date: 7.20.08

DES. BY: JCO

DRN. BY: TPM

CHK. BY: JCO

DATE: 03-03-08

|     |                     |      |        |
|-----|---------------------|------|--------|
| NO. | REVISIONS           | DRN. | DATE   |
| 1   | CORRECT TITLE BLOCK | JCO  | 6.2.08 |

COVER SHEET

600 SCALE MAP NO.: 47 BLOCK NO.: 8

EMERSON

SECTION 2, PHASE 3, LOTS 1-45 AND OPEN SPACE LOTS 46-50, A RESUBDIVISION OF PARCEL D4  
6TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
CONTRACT NO. 24-4495-D

SCALE:

AS SHOWN

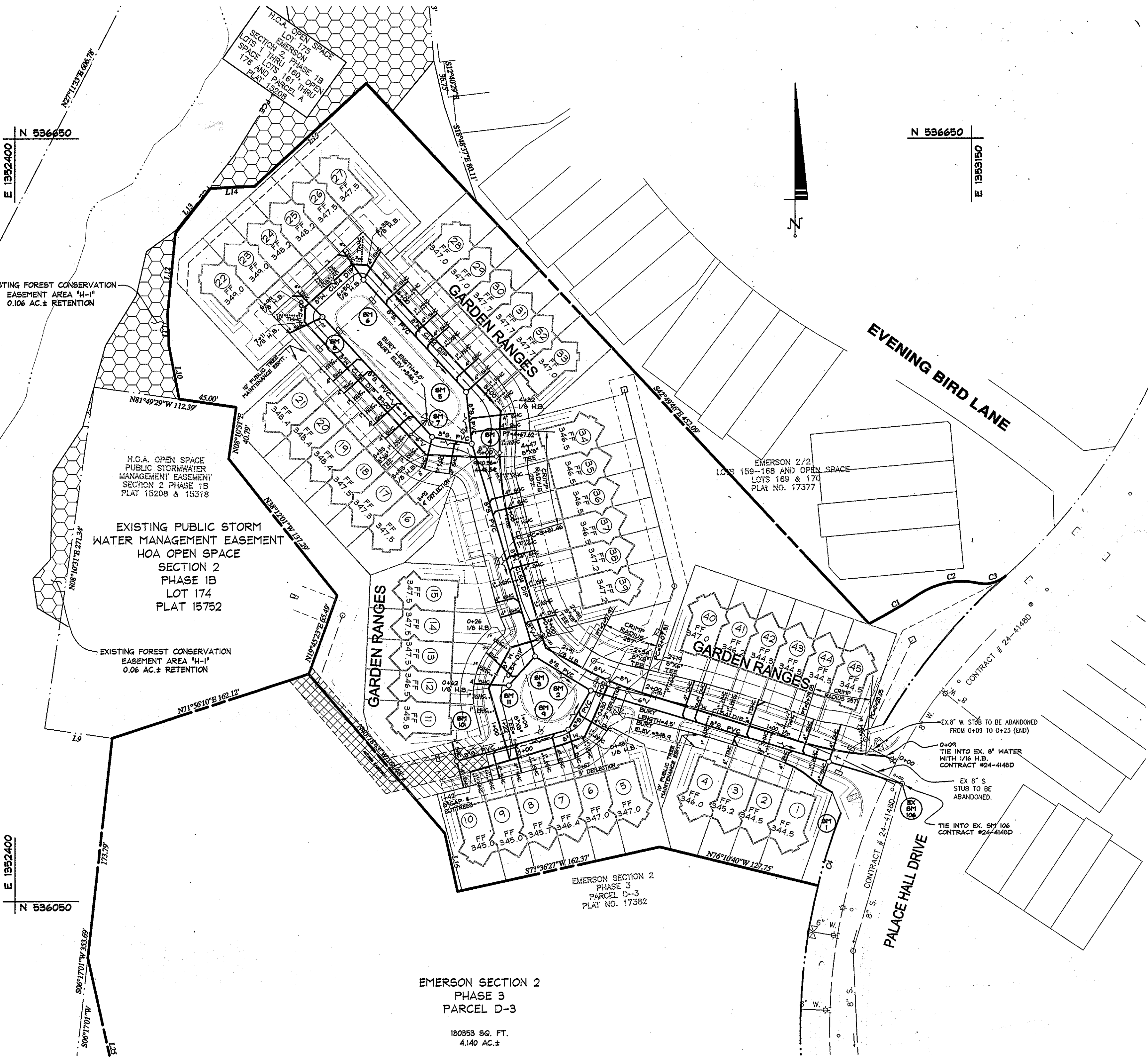
SHEET

1 OF 3

| BOUNDARY CURVE TABLE |         |         |           |             |            |         |
|----------------------|---------|---------|-----------|-------------|------------|---------|
| CURVE                | RADIUS  | LENGTH  | DELTA     | CHORD-BRG   | CHORD-DIST | TANGENT |
| C1                   | 440.00' | 45.64'  | 5°56'36"  | N59°19'27"E | 45.62'     | 22.84   |
| C2                   | 60.00'  | 48.02'  | 45°51'26" | S79°16'52"W | 46.75'     | 25.38   |
| C3                   | 25.00'  | 23.46'  | 53°46'17" | N75°20'05"E | 22.61'     | 12.68   |
| C4                   | 478.10' | 540.31' | 64°45'02" | S16°05'57"W | 512.01'    | 303.12  |
| C5                   | 534.38' | 117.11' | 12°33'22" | N09°59'53"W | 116.87'    | 58.79   |
| C6                   | 25.00'  | 5.85'   | 13°24'51" | N63°35'43"W | 5.84'      | 2.94    |
| C7                   | 39.00'  | 14.82'  | 21°46'17" | S59°25'00"E | 14.73'     | 7.50    |

| SEWER CONNECTION CHART |                 |            |           |             |        |            |           |
|------------------------|-----------------|------------|-----------|-------------|--------|------------|-----------|
| LOT NO.                | LOCATION        | INV @ MAIN | INV @ R/W | INV @ HOUSE | MCE    | FRONT FOOT | SHC GRADE |
| 1                      | SHC             | SM-1       | 335.33    | 336.33      | 336.33 | 339.33     | 36.7      |
| 2                      | SHC             | 0+32       | 335.49    | 336.04      | 336.49 | 339.49     | 24        |
| 3                      | TWIN DHC TYPE A | 0+76       | 337.88    | 338.33      | 339.28 | 341.78     | 24        |
| 4                      | TWIN DHC TYPE A | 0+76       | 337.88    | 338.33      | 339.28 | 341.78     | 35.2      |
| 5                      | DHC TYPE A      | 0+21       | 338.61    | 339.96      | 341.36 | 343.86     | 16.7      |
| 6                      | SHC             | SM-9       | 336.68    | 337.83      | 343.58 | 341.08     | 26        |
| 7                      | SHC             | 0+14       | 336.78    | 337.90      | 338.65 | 341.15     | 24        |
| 8                      | SHC             | 0+44       | 336.90    | 338.05      | 338.80 | 341.30     | 24        |
| 9                      | SHC             | 0+62       | 336.99    | 338.09      | 338.84 | 341.34     | 24        |
| 10                     | SHC             | SM-10      | 337.13    | 338.23      | 338.98 | 341.48     | 35.50     |
| 11                     | SHC             | SM-10      | 337.13    | 337.93      | 338.23 | 340.73     | 25        |
| 12                     | SHC             | SM-11      | 338.10    | 339.45      | 340.35 | 342.85     | 24.3      |
| 13                     | SHC             | 0+23       | 337.77    | 339.27      | 340.62 | 343.12     | 27        |
| 14                     | SHC             | 0+37       | 336.95    | 337.80      | 339.65 | 342.15     | 28.3      |
| 15                     | SHC             | 0+48       | 337.00    | 337.90      | 339.50 | 342.00     | 47.7      |
| 16                     | SHC             | 0+15       | 337.80    | 339.10      | 340.75 | 343.25     | 19.6      |
| 17                     | SHC             | SM-7       | 337.99    | 339.29      | 340.44 | 342.94     | 25.8      |
| 18                     | SHC             | 0+24       | 338.40    | 339.80      | 340.65 | 343.15     | 23.8      |
| 19                     | SHC             | 0+38       | 338.64    | 340.04      | 340.89 | 343.39     | 24        |
| 20                     | DHC TYPE A      | 0+72       | 339.21    | 340.61      | 341.46 | 343.96     | 24        |
| 21                     | DHC TYPE A      | 0+85       | 339.44    | 340.84      | 341.69 | 344.19     | 35.6      |
| 22                     | SHC             | SM-8       | 340.17    | 341.62      | 343.47 | 345.97     | 25.1      |
| 23                     | TWIN SHC        | SM-8       | 340.17    | 341.57      | 342.42 | 344.92     | 24        |
| 24                     | TWIN SHC        | SM-8       | 340.17    | 341.57      | 342.42 | 344.92     | 24.1      |
| 25                     | TWIN SHC        | SM-6       | 339.15    | 340.55      | 341.40 | 343.90     | 24        |
| 26                     | TWIN SHC        | SM-6       | 339.15    | 340.55      | 341.40 | 343.90     | 24        |
| 27                     | SHC             | SM-6       | 339.15    | 340.45      | 342.30 | 344.80     | 24        |
| 28                     | SHC             | 0+45       | 339.02    | 340.27      | 340.97 | 343.47     | 25.1      |
| 29                     | SHC             | 0+61       | 338.84    | 340.09      | 340.89 | 343.39     | 35.6      |
| 30                     | SHC             | 0+47       | 338.77    | 340.02      | 340.82 | 343.32     | 24        |
| 31                     | SHC             | 0+19       | 338.59    | 339.94      | 340.64 | 343.14     | 24        |
| 32                     | SHC             | SM-5       | 338.52    | 339.77      | 340.57 | 343.07     | 24        |
| 33                     | SHC             | 0+20       | 338.07    | 339.87      | 340.97 | 343.47     | 24        |
| 34                     | SHC             | 0+09       | 337.88    | 339.68      | 340.53 | 343.03     | 30.5      |
| 35                     | SHC             | 1+28       | 337.40    | 338.65      | 340.00 | 342.50     | 37        |
| 36                     | SHC             | 1+18       | 337.35    | 338.60      | 339.95 | 342.45     | 24        |
| 37                     | SHC             | 0+81       | 337.17    | 338.57      | 339.72 | 342.22     | 24        |
| 38                     | DHC TYPE A      | 0+72       | 336.98    | 338.10      | 339.45 | 341.95     | 24        |
| 39                     | DHC TYPE A      | 0+28       | 339.07    | 340.17      | 341.27 | 343.77     | 36.7      |
| 40                     | DHC TYPE A      | 1+21       | 338.11    | 339.66      | 340.71 | 343.21     | 35.7      |
| 41                     | DHC TYPE A      | 1+11       | 338.06    | 339.61      | 340.61 | 343.11     | 24        |
| 42                     | TWIN DHC TYPE A | 0+68       | 337.84    | 339.39      | 340.34 | 342.84     | 24        |
| 43                     | TWIN DHC TYPE A | 0+68       | 337.84    | 339.39      | 340.34 | 342.84     | 24        |
| 44                     | SHC             | 0+22       | 335.44    | 336.84      | 337.79 | 340.29     | 35.4      |
| 45                     | SHC             | SM-1       | 335.33    | 336.88      | 337.58 | 340.08     | 35.9      |

| SEWER STRUCTURE SCHEDULE |                 |            |               |          |          |                         |
|--------------------------|-----------------|------------|---------------|----------|----------|-------------------------|
| STRUCTURE NO.            | TYPE            | DETAIL NO. | INV. IN       | INV. OUT | RIM ELEV | LOCATION                |
| SM-1                     | 4' DROP MANHOLE | G-5.12     | 335.16        | 330.66   | 341.85   | C STA. 0+54.50 5.96' L  |
| SM-2                     | 4' MANHOLE      | G-5.12     | 336.23/336.23 | 336.15   | 345.73   | C STA. 2+49.58 7.70' L  |
| SM-3                     | 4' MANHOLE      | G-5.12     | 336.59/336.59 | 336.49   | 345.33   | C STA. 2+96.69 12.54' L |
| SM-4                     | 4' MANHOLE      | G-5.12     | 337.56/337.56 | 337.46   | 345.66   | C STA. 6+58.06 6.18' L  |
| SM-5                     | 4' MANHOLE      | G-5.12     | 338.35        | 338.25   | 345.80   | C STA. 5+15.36 5.00' L  |
| SM-6                     | 4' MANHOLE      | G-5.12     | -             | 338.98   | 346.27   | C STA. 6+34.81 4.61' L  |
| SM-7                     | 4' MANHOLE      | G-5.12     | 337.82        | 337.72   | 346.33   | C STA. 8+27.11 5.57' L  |
| SM-8                     | 4' MANHOLE      | G-5.12     | -             | 340.00   | 347.12   | C STA. 6+91.02 7.17' L  |
| SM-9                     | 4' MANHOLE      | G-5.12     | 336.51        | 336.41   | 345.31   | C STA. 0+46.08 2.33' R  |
| SM-10                    | 4' MANHOLE      | G-5.12     | -             | 339.96   | 345.44   | C STA. 1+37.54 1.11' R  |
| SM-11                    | 4' MANHOLE      | G-5.12     | -             | 337.98   | 344.77   | C STA. 0+47.69 4.98' L  |



**DRAWING LEGEND**

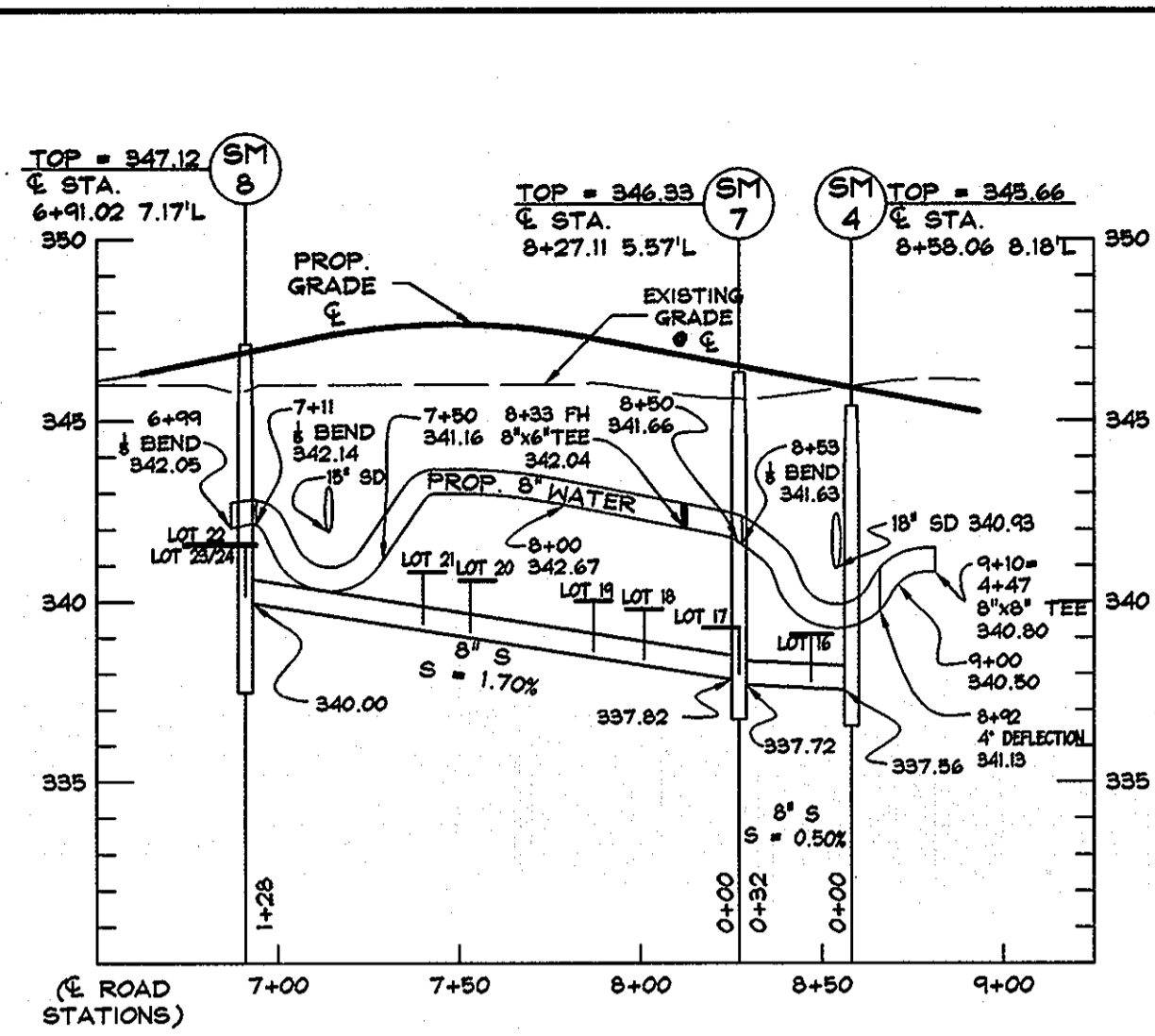
- BOUNDARY LINE
- EXISTING PROPERTY BOUNDARY
- EX. ROAD / EDGE OF PAVING
- EX. SEWER LINE & MANHOLES, CLEAN-OUTS
- EX. OVERHEAD ELECTRIC & UTILITY POLES
- PROP. CURB & GUTTER
- PROP. ROAD CENTERLINE
- PROP. 18" SD. PROPOSED STORM DRAIN W/ INLETS & MANHOLE
- PROP. 8" WATER PROPOSED WATER LINE
- PROP. 8" SEWER PROPOSED SEWER AND MANHOLES

WATER AND SEWER PLAN VIEW  
SCALE: 1"=50'

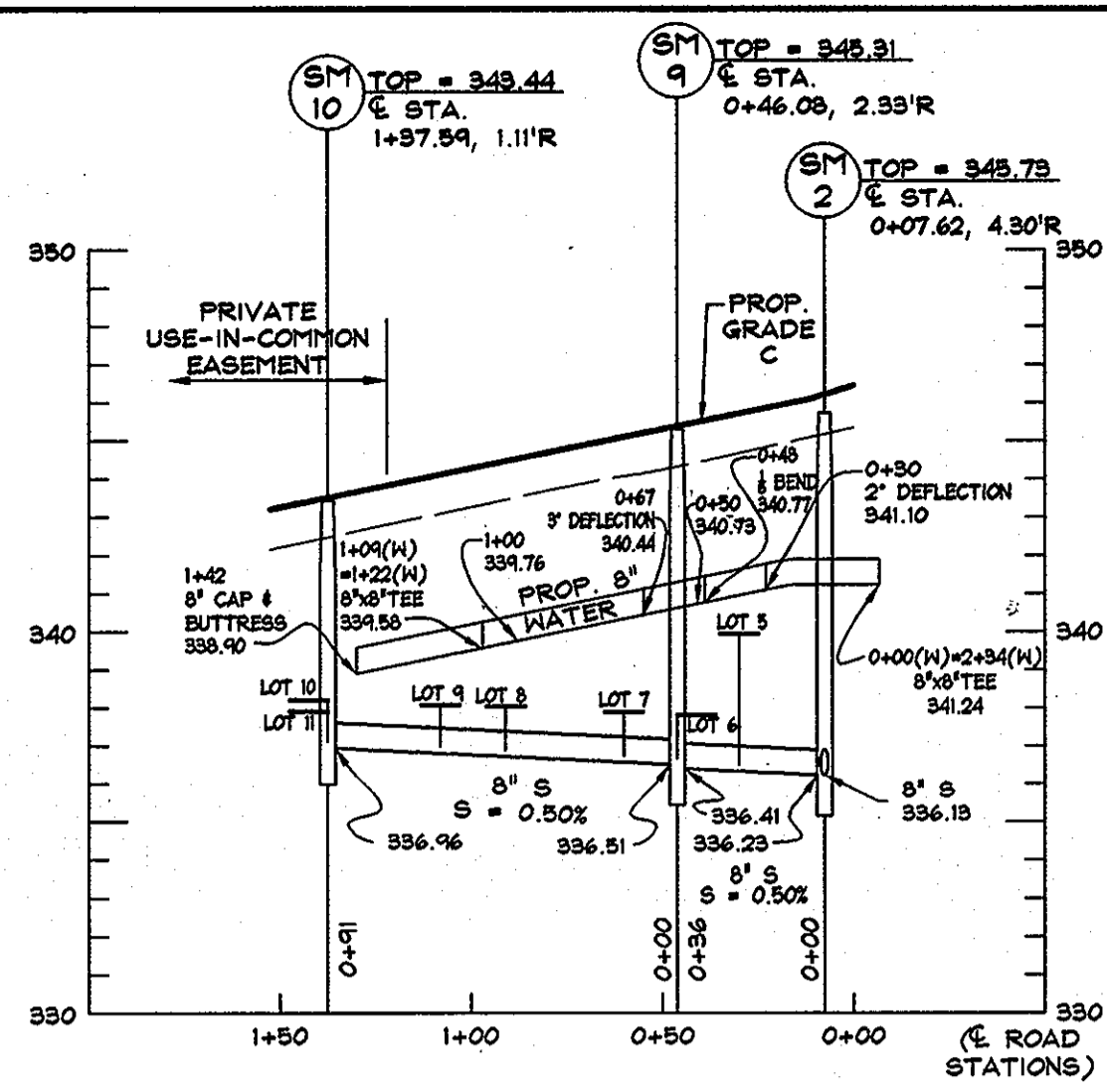
**AS BUILT**  
DATE: 0-30-10

OWNER/DEVELOPER:  
EMERSON LAND BUSINESS TRUST  
10275 LITTLE PATUXENT PKWY  
COLUMBIA, MD 21044  
410-992-6000

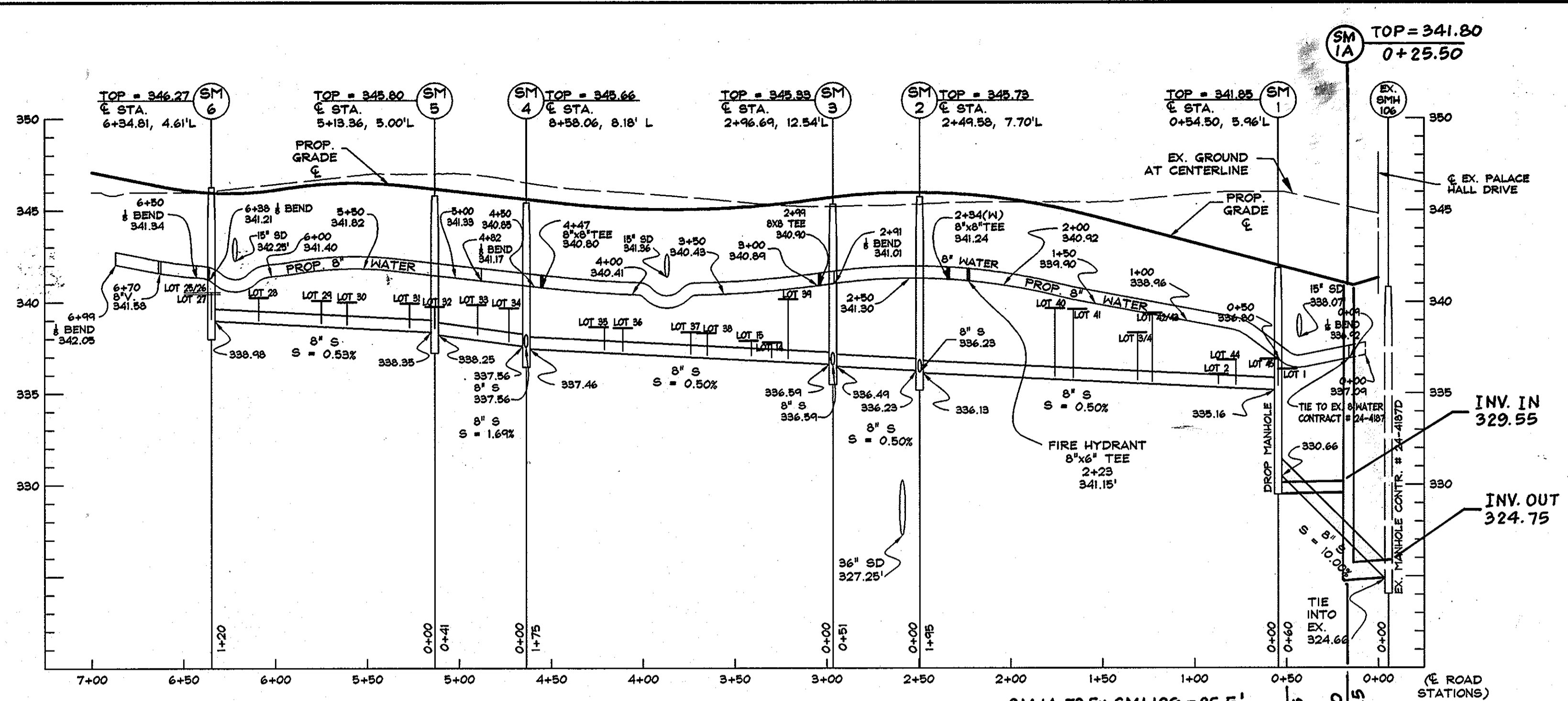
|   |  |   |  |   |   |
|---|--|---|--|---|---|
| DEPARTMENT OF PUBLIC WORKS<br>HOWARD COUNTY, MARYLAND<br><br><i>Stall C. Genn</i><br>CHIEF, BUREAU OF UTILITIES | DEPARTMENT OF PLANNING AND ZONING<br>HOWARD COUNTY, MARYLAND<br><br><i>Michael J. ...</i><br>CHIEF, DEVELOPMENT ENGINEERING DIVISION | <b>DeMario Design Consultants, Inc.</b><br>152 East Main Street, Westminister, MD 21157<br>Phone: (410) 386-0560<br>Fax: (410) 386-0564<br>eMail: ddc@demariodesign.com | DES. BY: JCO<br>DRN. BY: TPM<br>CHK. BY: JCO<br>DATE: 03-03-08 | WATER AND SEWER PLAN<br>CORRECT TITLE BLOCK 605 6-2-08<br>NO. REVISIONS DRN. DATE | EMERSON SECTION 2, PHASE 3, LOTS 1-45 AND OPEN SPACE LOTS 46-50, A RESUBDIVISION OF PARCEL D4 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 24-4495-D<br>SCALE: 1"=50'<br>SHEET 2 OF 3 |
|---|--|---|--|---|---|



**GARDEN RANGES PROFILE**  
SCALE:  
HORIZONTAL: 1"=50'  
VERTICAL: 1"=5'



**GARDEN RANGES PROFILE**  
SCALE:  
HORIZONTAL: 1"=50'  
VERTICAL: 1"=5'



**GARDEN RANGES PROFILE**  
SCALE:  
HORIZONTAL: 1"=50'  
VERTICAL: 1"=5'

**WATER HOUSE CONNECTIONS AS-BUILTS**

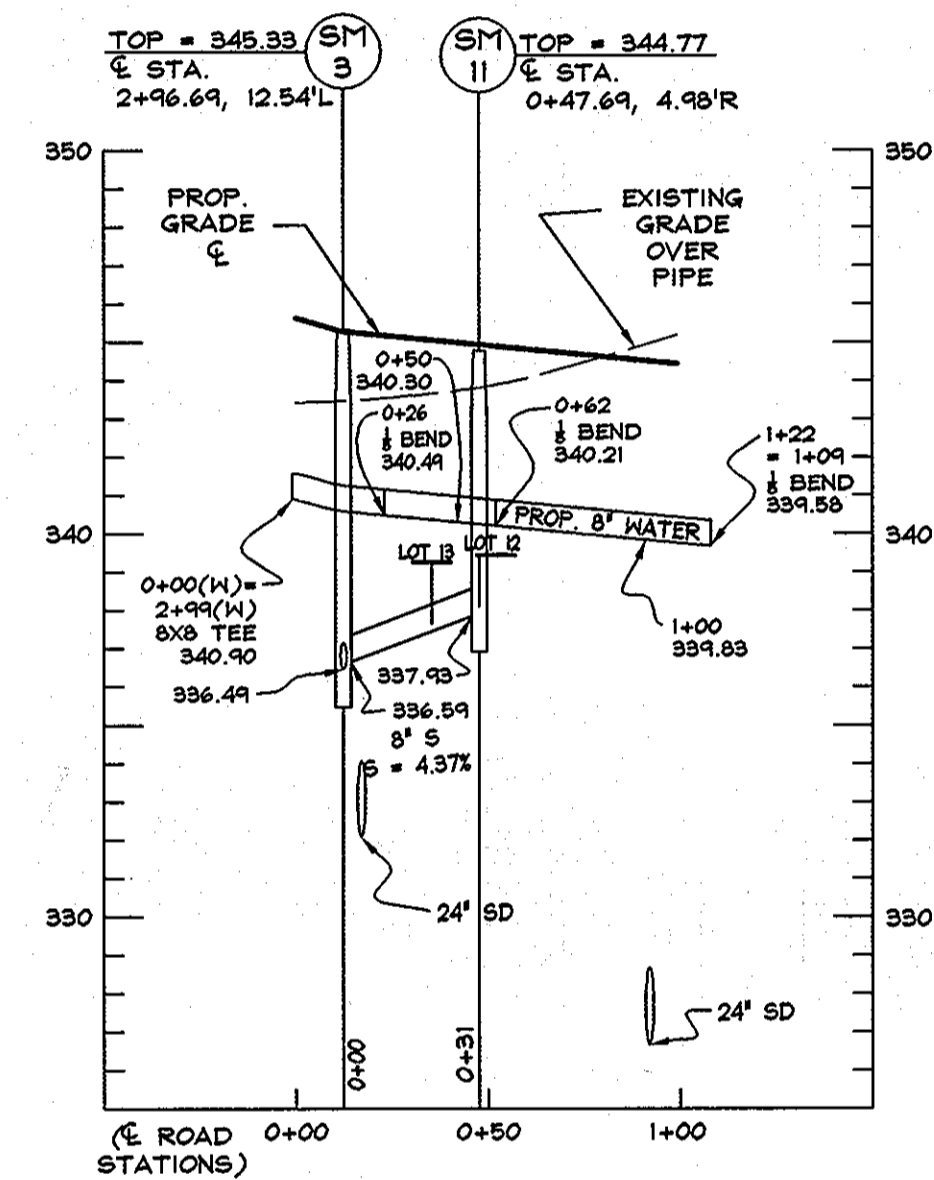
| LOT # | MEASUREMENT-1       | MEASUREMENT-2         | MEASUREMENT-3         |
|-------|---------------------|-----------------------|-----------------------|
| 1     | 29' TO LOT 2 SHC    | 20' TO SMH-1          | 10' TO LOT 1 SHC      |
| 2     | 8.5' TO LOT 3 WHC   | 12' TO LOT 2 SHC      | 40.15' TO LOT 44 WHC  |
| 3     | 18' TO LOT 3 SHC    | 8.5' TO LOT 2 WHC     | 40.5' TO LOT 43 WHC   |
| 4     | 41.5' TO LOT 41 WHC | 68.5' TO FIRE HYDRANT | 54' TO LOT 40 WHC     |
| 5     | 10' TO LOT 6 WHC    | 24.5' TO SMH-9        | 12' TO LOT 5 SHC      |
| 6     | 23' TO SMH-9        | 12.5' TO LOT 6 SHC    | 10' TO LOT 5 WHC      |
| 7     | 9.5' TO LOT 8 WHC   | 71' TO SMH-11         | 35' TO SMH-9          |
| 8     | 11' TO LOT 8 SHC    | 70' TO SMH-11         | 9.5' TO LOT 7 WHC     |
| 9     | 8.5' TO LOT 10 WHC  | 79' TO SMH-11         | 10' TO LOT 9 SHC      |
| 10    | 11' TO LOT 10 SHC   | 8.5' TO LOT 9 WHC     | 24.5' TO SMH-10       |
| 11    | 12' TO LOT 12 SHC   | 41.5' TO SMH-10       | 75.5' TO SMH-9        |
| 12    | 31' TO SMH-11       | 12' TO LOT 12 SHC     | 12' TO LOT 11 WHC     |
| 13    | 40' TO SMH-3        | 28.5' TO SMH-11       | 13' TO LOT 12 SHC     |
| 14    | 33' TO SMH-3        | 35' TO SMH-11         | 10.5' TO LOT 13 SHC   |
| 15    | 41.5' TO LOT 3B WHC | 12.5' TO LOT 15 SHC   | 22' TO INLET I-2      |
| 16    | 9.5' TO LOT 17 SHC  | 27.5' TO SMH-7        | 11' TO LOT 16 SHC     |
| 17    | 14.5' TO LOT 18 WHC | 27' TO SMH-7          | 16' TO LOT 17 SHC     |
| 18    | 10.5' TO LOT 18 SHC | 36.5' TO FIRE HYDRANT | 14.5' TO LOT 17 WHC   |
| 19    | 14.5' TO LOT 20 WHC | 51' TO FIRE HYDRANT   | 9.5' TO LOT 19 SHC    |
| 20    | 10.5' TO LOT 20 SHC | 14.5' TO LOT 19 WHC   | 61.5' TO FIRE HYDRANT |
| 21    | 40' TO LOT 22 SHC   | 10.5' TO LOT 21 SHC   | 42' TO SMH-B          |
| 22    | 4' TO LOT 23 WHC    | 41.5' TO SMH-B        | 19' TO LOT 22 SHC     |
| 23    | 4' TO LOT 22 WHC    | 19.5' TO LOT 23 SHC   | 42' TO SMH-B          |
| 24    | 15' TO LOT 25 WHC   | 40' TO SMH-6          | 35' TO SMH-B          |
| 25    | 11' TO LOT 25 SHC   | 15' TO LOT 24 WHC     | 32' TO SMH-6          |
| 26    | 4.5' TO LOT 27 WHC  | 37' TO SMH-6          | 18' TO LOT 26 SHC     |
| 27    | 18.5' TO LOT 27 SHC | 4.5' TO LOT 26 WHC    | 37.5' TO SMH-6        |
| 28    | 13.5' TO LOT 29 WHC | 10.5' TO LOT 28 SHC   | 43' TO SMH-6          |
| 29    | 91' TO FIRE HYDRANT | 13.5' TO LOT 28 WHC   | 54' TO SMH-6          |
| 30    | 14.5' TO LOT 31 WHC | 10' TO LOT 30 SHC     | 69.5' TO FIRE HYDRANT |
| 31    | 11' TO LOT 31 SHC   | 30' TO SMH-5          | 14.5' TO LOT 30 WHC   |
| 32    | 9.5' TO LOT 33 WHC  | 28.5' TO SMH-5        | 11' TO LOT 32 SHC     |
| 33    | 20.5' TO LOT 33 SHC | 49' TO SMH-4          | 9.5' TO LOT 32 WHC    |
| 34    | 23' TO LOT 35 WHC   | 34' TO SMH-4          | 13' TO LOT 34 SHC     |
| 35    | 15.5' TO LOT 35 SHC | 23' TO LOT 34 WHC     | 52' TO LOT 16 SHC     |
| 36    | 17.5' TO LOT 37 WHC | 16' TO INLET I-3      | 11.5' TO LOT 36 SHC   |
| 37    | 9.5' TO LOT 37 SHC  | 17.5' TO LOT 36 WHC   | 11.5' TO INLET I-3    |
| 38    | 10.5' TO LOT 39 WHC | 41.5' TO LOT 15 WHC   | 18' TO LOT 38 SHC     |
| 39    | 10.5' TO LOT 39 SHC | 43.5' TO SMH-3        | 10.5' TO LOT 38 WHC   |
| 40    | 19.5' TO LOT 40 SHC | 52.5' TO FIRE HYDRANT | 54' TO LOT 4 WHC      |
| 41    | 8.5' TO LOT 42 WHC  | 42' TO LOT 4 WHC      | 17.5' TO LOT 41 SHC   |
| 42    | 17' TO LOT 42 SHC   | 8.5' TO LOT 41 WHC    | 41.5' TO LOT 4 SHC    |
| 43    | 7' TO LOT 44 WHC    | 52.5' TO SMH-1        | 18' TO LOT 43 SHC     |
| 44    | 17' TO LOT 44 SHC   | 47' TO SMH-1          | 7' TO LOT 43 SHC      |
| 45    | 12' TO SDMH-6       | 35.5' TO SMH-1        | 16' TO LOT 45 SHC     |

**WATER VALVES AS-BUILTS**

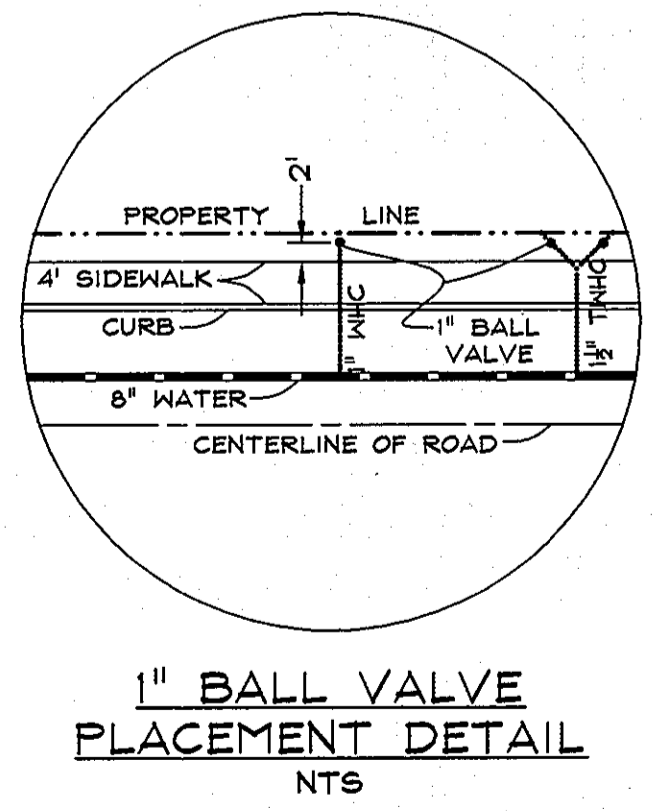
| VALVE SIZE | STATION       | MEASUREMENT-1          | MEASUREMENT-2        | MEASUREMENT-3               |
|------------|---------------|------------------------|----------------------|-----------------------------|
| 6"         | 2+19          | 21' TO FIRE HYDRANT    | 15' TO 8" VALVE-LEFT | 17.5' TO 8" VALVE-RIGHT     |
| 8"         | 2+34 LEFT     | 25' TO FIRE HYDRANT    | 15' TO SMH-2         | 15' TO 6" VALVE @ STA. 2+19 |
| 8"         | 2+34 RIGHT    | 15' TO SMH-2           | 3' TO 8" VALVE-LEFT  | 19.5' TO SDMH-4             |
| 8"         | 3+00 LEFT     | 3.5' TO 8" VALVE-RIGHT | 14.5' TO SMH-3       | 35' TO LOT 14 WHC           |
| 8"         | 3+00 RIGHT    | 3.5' TO 8" VALVE-LEFT  | 25' TO LOT 39 WHC    | 36' TO LOT 14 SHC           |
| 8"         | 6+75 (LOT 25) | 23.5' TO SMH-6         | 30.5' TO SMH-B       | 14.5' TO LOT 25 WHC         |
| 6"         | 8+33          | 20.5' TO FIRE HYDRANT  | 16.5' TO SMH-7       | 29' TO LOT 17 SHC           |
| 8"         | 9+00 LEFT     | 3.5' TO 8" VALVE-RIGHT | 22' TO SMH-4         | 39.5' TO LOT 16 SHC         |
| 8"         | 9+00 RIGHT    | 3.5' TO 8" VALVE-LEFT  | 23' TO SMH-4         | 25.5' TO LOT 34 SHC         |

**SEWER HOUSE CONNECTIONS AS-BUILTS**

| LOT # | MEASUREMENT-1       | MEASUREMENT-2       | MEASUREMENT-3       |
|-------|---------------------|---------------------|---------------------|
| 1     | 33' TO LOT 2 SHC    | 21' TO SMH-1        | 39' TO I-10         |
| 2     | 38' TO LOT 3 SHC    | 34' TO SMH-1        | 39' TO LOT 1 SHC    |
| 3     | 5.5' TO LOT 4 SHC   | 42.5' TO LOT 43 SHC | 38' TO LOT 2 SHC    |
| 4     | 93' TO FIRE HYDRANT | 41.5' TO LOT 42 SHC | 5.5' TO LOT 3 SHC   |
| 5     | 15' TO FIRE HYDRANT | 36' TO SMH-2        | 31' TO SMH-9        |
| 6     | 23' TO SMH-9        | 55.5' TO SMH-2      | 14' TO LOT 7 SHC    |
| 7     | 28' TO SMH-9        | 14' TO LOT 6 SHC    | 29.5' TO SDMH-3     |
| 8     | 18' TO LOT 9 SHC    | 36' TO SDMH-3       | 51' TO SMH-9        |
| 9     | 18' TO LOT 8 SHC    | 28.5' TO LOT 10 SHC | 36' TO SMH-10       |
| 10    | 28.5' TO LOT 9 SHC  | 22.5' TO SMH-10     | 32' TO INLET I-1    |
| 11    | 16' TO SMH-10       | 17' TO INLET I-1    | 64' TO SMH-11       |
| 12    | 26' TO LOT 13 SHC   | 28' TO SMH-11       | 65' TO SDMH-3       |
| 13    | 26' TO LOT 12 SHC   | 39' TO SMH-3        | 29.5' TO LOT 14 SHC |
| 14    | 29.5' TO LOT 13 SHC | 12' TO LOT 15 SHC   | 41.5' TO SMH-3      |
| 15    | 12' TO LOT 14 SHC   | 53' TO SMH-3        | 49' TO LOT 39 SHC   |
| 16    | 32.5' TO SMH-7      | 20' TO LOT 17 SHC   | 30.5' TO SMH-4      |
| 17    | 20' TO LOT 16 SHC   | 25.5' TO SMH-7      | 40' TO LOT 18 SHC   |
| 18    | 40' TO LOT 17 SHC   | 30' TO SMH-7        | 14' TO LOT 19 SHC   |
| 19    | 45' TO FIRE HYDRANT | 14' TO LOT 18 SHC   | 92' TO SMH-B        |
| 20    | 13' TO LOT 21 SHC   | 70' TO FIRE HYDRANT | 60.5' TO SMH-B      |
| 21    | 13' TO LOT 20 SHC   | 49.5' TO SMH-B      | 50' TO LOT 22 SHC   |
| 22    | 50' TO LOT 21 SHC   | 32' TO SMH-B        | 31.5' TO LOT 23 SHC |
| 23    | 31.5' TO LOT 22 SHC | 33' TO SMH-B        | 7' TO LOT 24 SHC    |
| 24    | 7' TO LOT 23 SHC    | 32.5' TO SMH-B      | 52' TO SMH-6        |
| 25    | 7.5' TO LOT 26 SHC  | 29.5' TO SMH-6      | 51' TO SMH-B        |
| 26    | 7.5' TO LOT 25 SHC  | 57' TO SMH-B        | 30.5' TO SMH-6      |
| 27    | 30.5' TO LOT 26 SHC | 28' TO SMH-6        | 32' TO LOT 28 SHC   |
| 28    | 32' TO LOT 27 SHC   | 36' TO SMH-6        | 34.5' TO LOT 29 SHC |
| 29    | 34.5' TO LOT 28 SHC | 13' TO LOT 30 SHC   | 67.5' TO SMH-5      |
| 30    | 13' TO LOT 29 SHC   | 56' TO SMH-5        | 35.5' TO LOT 31 SHC |
| 31    | 35.5' TO LOT 30 SHC | 31' TO SMH-5        | 12.5' TO LOT 32 SHC |
| 32    | 12.5' TO LOT 31 SHC | 27' TO SMH-5        | 41' TO LOT 33 SHC   |
| 33    | 41' TO LOT 32 SHC   | 11' TO LOT 34 SHC   | 43.5' TO SMH-5      |
| 34    | 11' TO LOT 33 SHC   | 50' TO SMH-5        | 38' TO SMH-4        |
| 35    | 51' TO LOT 34 SHC   | 54' TO SMH-4        | 10' TO LOT 36 SHC   |
| 36    | 10' TO LOT 35 SHC   | 63' TO SMH-4        | 38' TO LOT 37 SHC   |
| 37    | 37' TO LOT 36 SHC   | 9' TO LOT 38 SHC    | 53' TO LOT 15 SHC   |
| 38    | 9' TO LOT 37 SHC    | 48.5' TO LOT 15 SHC | 44' TO LOT 39 SHC   |
| 39    | 44' TO LOT 38 SHC   | 36.5' TO SMH-3      | 66' TO SMH-2        |
| 40    | 10' TO LOT 41 SHC   | 66' TO FIRE HYDRANT | 81.5' TO SMH-2      |
| 41    | 42' TO LOT 42 SHC   | 10' TO LOT 40 SHC   | 74' TO FIRE HYDRANT |
| 42    | 6' TO LOT 43 SHC    | 74' TO SMH-1        | 42' TO LOT 41 SHC   |
| 43    | 41' TO LOT 44 SHC   | 69' TO SMH-1        | 6' TO LOT 42 SHC    |
| 44    | 21.5' TO LOT 45 SHC | 37.5' TO I-10       | 41' TO LOT 43 SHC   |
| 45    | 21' TO I-10         | 21.5' TO LOT 44 SHC | 31' TO SMH-1        |



**GARDEN RANGES PROFILE**  
SCALE:  
HORIZONTAL: 1"=50'  
VERTICAL: 1"=5'



**AS BUILT**  
DATE: 6-30-10

**OWNER/DEVELOPER:**  
EMERSON LAND BUSINESS TRUST  
10275 LITTLE PATUXENT PKWY  
COLUMBIA, MD 21044  
410-992-6000

| DEPARTMENT OF PUBLIC WORKS<br>HOWARD COUNTY, MARYLAND<br><br><i>Steve C. G...</i><br>CHIEF, BUREAU OF UTILITIES. DATE: 8/1/08 | DEPARTMENT OF PLANNING AND ZONING<br>HOWARD COUNTY, MARYLAND<br><br><i>Mark...</i><br>CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 8/1/08 | <b>DeMario Design Consultants, Inc.</b><br>192 East Main Street<br>Westminster, MD 21157<br>Phone: (410) 388-0560<br>Fax: (410) 388-0564<br>eMail: dco@demariodesign.com<br>Professional Certification:<br>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. 25420 - Expiration Date: 7/20/08 | DES. BY: JCO<br>DRN. BY: TPM<br>CHK. BY: JCO<br>DATE: 03-03-08 | <table border="1"> <tr><th>NO.</th><th>REVISIONS</th><th>DRN.</th><th>DATE</th></tr> <tr><td>1</td><td>CORRECT TITLE BLOCK</td><td>SDS</td><td>6.2.06</td></tr> </table> | NO. | REVISIONS | DRN. | DATE | 1 | CORRECT TITLE BLOCK | SDS | 6.2.06 | <b>WATER AND SEWER PLAN</b><br>600 SCALE MAP NO.: 47 BLOCK NO.: 8 | <b>EMERSON</b><br>SECTION 2, PHASE 3, LOTS 1-45 AND OPEN SPACE LOTS 46-50, A RESUBDIVISION OF PARCEL D4<br>6th ELECTION DISTRICT<br>HOWARD COUNTY, MARYLAND<br>CONTRACT NO. 24-4495-D | SCALE: 1"=50'<br>SHEET 3 OF 3 |
|---|--|---|--|--|-----|-----------|------|------|---|---------------------|-----|--------|---|---|-------------------------------|
| NO.   | REVISIONS  | DRN.  | DATE   |  |     |           |      |      |   |                     |     |        |   |   |                               |
| 1   | CORRECT TITLE BLOCK  | SDS   | 6.2.06   |  |     |           |      |      |   |                     |     |        |   |   |                               |