

**ENGINEERING PLAN
OF
MILLSTONE
A PORTION OF TAX PARCEL 44*8V,
A PORTION OF TAX PARCEL 44*8P AND TAX PARCEL 44*8D
HOLY NECK BOROUGH, SUFFOLK, VIRGINIA**

SHEET SCHEDULE:

| | |
|---------|---|
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| C-1.1 | OVERALL PLAN |
| C-1.2 | NOTES SHEET |
| C-1.3 | SCS SOILS MAP INFORMATION |
| C-2.0 | TOPOGRAPHIC SURVEY, DEMOLITION AND EROSION/SEDIMENT CONTROL INDEX SHEET |
| C-2.0A | PRE-DEVELOPEMENT DRAINAGE AREA MAP |
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| C-2.5 | TOPOGRAPHIC SURVEY, DEMOLITION AND EROSION/SEDIMENT CONTROL PLAN |
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| SL-11.4 | LIGHTING PLAN |
| SL-11.5 | LIGHTING PLAN |
| C000 | OVERALL MASTER PLAN |
| L100 | LANDSCAPE PLAN |
| L101 | LANDSCAPE PLAN |
| L102 | LANDSCAPE PLAN |
| L102a | LANDSCAPE PLAN |
| L103 | LANDSCAPE PLAN |
| L104 | LANDSCAPE PLAN |
| L105 | LANDSCAPE PLAN |
| L106 | LANDSCAPE PLAN |
| L107 | LANDSCAPE PLAN |
| L108 | LANDSCAPE PLAN |
| L200 | PLANT LIST AND DETAILS |
| R300 | RECREATION PLAN |
| R301 | RECREATION DETAILS |
| R302 | RECREATION DETAILS |

SITE STATISTICS

DEVELOPER: PMP, LLC
341 EDWIN DRIVE
VIRGINIA BEACH, VA 23462
CONTACT: RICHARD DUNCAN
(757)490-7000

EXISTING ZONING: RLM AND O&I

TAX PARCELS: A PORTION OF TAX MAP 44, PARCEL 8V
A PORTION OF TAX MAP 44, PARCEL 8P
TAX MAP 44, PARCEL 8D

SOURCE OF TITLE:
T.P. 44*8D
GRANTOR: ESPPER, LLC
GRANTEE: PMP, LLC
DATE/REF.: SEPT. 26, 2006/INST. #000196070

T.P. 44*8V
GRANTOR: ALICE I. ROUNTREE
GRANTEE: ART-RAY CORPORATION
DATE/REF.: OCT. 9, 1985/D.B. 155, PG. 693

T.P. 44*8P
GRANTOR: ALICE I. ROUNTREE
GRANTEE: ART-RAY CORPORATION
DATE/REF.: OCT. 9, 1985/D.B. 155, PG. 658

TOTAL AREA RLM: 31.9 ACS. (PORTION OF T.M. 44, PAR. 8V)
32.2 ACS. (PORTION OF T.M. 44, PAR. 8P)
40.7 ACS. (T.M. 44, PAR. 8D)
TOTAL RLM: 104.8 ACS.

TOTAL AREA O&I: 17.43 ACS.
GRAND TOTAL: 122.23 ACS.

BUILDING SETBACKS: FRONT - 30 FT.
REAR - 30 FT.
SIDE - 15 FT.

MINIMUM LOT SIZE: 15,000 SQ.FT.

MINIMUM LOT WIDTH: 100 FT.

MINIMUM LOT FRONTAGE: 80 FT.

| | | |
|-----------------|---------|-----|
| NUMBER OF LOTS: | PHASE 1 | 79 |
| | PHASE 2 | 83 |
| | TOTAL | 162 |

| | | |
|----------------------|----------|---|
| NUMBER OF FLAG LOTS: | ALLOWED | 8 |
| | PROVIDED | 4 |

LOT DENSITY: (162 LOTS/104 AC) = 1.56 UNITS PER ACRE

CRITICAL AREA: WETLANDS - 10.9 ACS.
RPA - 9.5 ACS.
TOTAL - 20.4 ACS.

RIGHT-OF-WAY DEDICATION (TURLINGTON ROAD) : 0.278 AC.

OPEN SPACE REQUIRED: 6.6 ACS. (7% OF GROSS ACREAGE)
ACTIVE OPEN SPACE - 4.6 ACS. (70% OF OPEN SPACE)
PASSIVE OPEN SPACE - 2.0 ACS. (30% OF OPEN SPACE)

OPEN SPACE PROVIDED: 18.0 ACS.
ACTIVE OPEN SPACE - 4.6 ACS.
PASSIVE OPEN SPACE - NON-WETLANDS: 4.0 ACS.
WETLANDS: 9.4 ACS.
TOTAL: 13.4 ACS.

IMPERVIOUS AREAS:
EXISTING: 0 ACS.
PROPOSED: ROADWAY: 13.60 ACS.
162 UNITSx5,000 SQ.FT./UNIT: 18.60 ACS.
FUTURE O&I : 3.33 ACS.
SIDEWALK: 3.21 ACS.
TOTAL: 38.73 ACS. (35%)

CONNECTIVITY RATIO REQUIRED: GREATER THAN 1.40

CONNECTIVITY RATIO PROVIDED: LINKS/NODES=1.64
NUMBER OF LINKS: 23
NUMBER OF NODES: 14

DISTURBED AREA: 4,315,932 SQ.FT. (99.080 ACS.)

CONSTRUCTION SEQUENCE

- OBTAIN NECESSARY PERMITS
 - INSTALL EROSION CONTROL MEASURES
 - CLEARING/GRUBBING PROPOSED RIGHT-OF-WAYS
 - INSTALL ALL STORM PIPES AND OTHER UTILITIES AS NEEDED PRIOR TO ANY OTHER LAND DISTURBANCE
 - INLET AND OUTLET PROTECTION PROVIDED AT ALL CATCH BASINS, DROP INLETS AND PIPE OUTLETS. REGULAR MAINTENANCE AND INSPECTION OF ALL EROSION AND SEDIMENT CONTROL MEASURES. DEFICIENCIES SHALL BE CORRECTED IMMEDIATELY.
 - DEMOLITION*
 - ROUGH GRADING
 - UTILITIES*
 - CONCRETE/PAVEMENT WORK
 - FINAL GRADING
 - LANDSCAPING AND SEEDING
 - REMOVE ALL TEMPORARY EQUIPMENT, CONSTRUCTION MATERIALS AND DEBRIS FROM SITE.
- * CONTRACTOR SHALL COORDINATE SEWER SERVICE REMOVAL AND INSTALLATION WITH RPI PROPERTIES IN ORDER TO MINIMIZE ANY INCONVENIENCE. NEW SERVICE SHALL BE INSTALLED AND ACCEPTED BY THE CITY PRIOR TO DEMOLITION OF EXISTING SERVICES.

MILLSTONE REZONING (RZ 12-05) APPROVED BY CITY COUNCIL ON AUGUST 16, 2006 WITH THE FOLLOWING PROFFERS AS STATED IN ORDINANCE NUMBER 06-0-089:

- EACH BUILDING LOT SHALL CONTAIN A MINIMUM OF FIFTEEN THOUSAND (15,000) SQUARE FEET.
- EACH ONE (1) STORY RESIDENCE SHALL CONTAIN A MINIMUM OF SEVENTEEN HUNDRED AND FIFTY (1,750) SQUARE FEET OF LIVING AREA AND EACH RESIDENCE IN EXCESS OF ONE (1) STORY SHALL CONTAIN A MINIMUM OF TWO THOUSAND (2,000) SQUARE FEET OF LIVING AREA.
- ALL RESIDENCES SHALL BE CONSTRUCTED UPON A CRAWL SPACE WITH BRICK SKIRTING.
- ANY VINYL USED IN CONSTRUCTION SHALL BE A MINIMUM WIDTH OF SIX (6) INCHES AND SHALL BE BEADED OR OF BETTER QUALITY.
- NO LESS THAN SEVENTY PERCENT (70%) OF ALL HOMES SHALL HAVE FRONT FACADES WHICH CONSIST OF FIFTY PERCENT (50%) OR MORE OF BRICK MATERIAL, EXCLUSIVE OF GARAGES.
- ALL RESIDENCES SHALL HAVE TWO (2) CAR GARAGES AND DOUBLE PARKING PADS.
- ALL ROOFING MATERIAL SHALL BE GUARANTEED FOR TWENTY-FIVE (25) YEARS OR LONGER.
- THE MILLSTONE NEIGHBORHOOD WILL BE BUILT IN SUBSTANTIAL CONFORMITY TO THE CONCEPTUAL PLAN SUBMITTED WITH THIS REZONING APPLICATION.
- THE LEFT TURN LANE FROM CAROLINA ROAD TO TURLINGTON ROAD SHALL BE LENGTHENED TO TWO HUNDRED (200) FEET WITH TWO HUNDRED (200) FEET OF TAPER AND THE RIGHT TURN LANE ONTO TURLINGTON ROAD SHALL BE LENGTHENED TO ONE HUNDRED FIFTY (150) FEET WITH ONE HUNDRED FIFTY FEET OF TAPER. A ONE HUNDRED TWENTY FIVE (125) FEET RIGHT TURN LANE FROM TURLINGTON ROAD ONTO CAROLINA ROAD WILL BE CONSTRUCTED WITH SEVENTY FIVE (75) FEET OF TAPER.

WATER SYSTEM SUMMARY TABLE

SYSTEM ULTIMATE OWNER: CITY OF SUFFOLK
DETECTOR CHECK SIZES: NONE
WATER METER SIZES:
DOMESTIC WATER METERS: 5/8" (162)
WATER SERVICE LINE SIZE: 3/4" (161)
WATER SERVICE LINE SIZE: 1" (1)
REQUIRED FIRE FLOWS: 1,000 GPM

SANITARY SEWER SUMMARY TABLE

PUMP STATION NAME & NUMBER: MILLSTONE #145
SYSTEM ULTIMATE OWNER: CITY OF SUFFOLK
AVERAGE DAILY DESIGN FLOW (GPD):
INITIAL (MILLSTONE): 72,830 GPD
ULTIMATE (ENTIRE SERVICE AREA): 183,524 GPD
PEAK DAILY DESIGN FLOW (GPD):
INITIAL (MILLSTONE): 193,225 GPD
ULTIMATE (ENTIRE SERVICE AREA): 493,881 GPD

NAME OF FIRST DOWNSTREAM PUMP STATION: N/A
OWNER OF FIRST DOWNSTREAM PUMP STATION: N/A

PUMP STATION SUMMARY

PUMP STATION NAME & NUMBER: MILLSTONE #145
PUMP STATION OWNER: CITY OF SUFFOLK
AVERAGE DESIGN INFLOW (GPD):
INITIAL (MILLSTONE): 72,830 GPD
ULTIMATE (ENTIRE SERVICE AREA): 183,524 GPD
PEAK HOUR PUMP DESIGN FLOW (GPM @ TDH):
INITIAL (MILLSTONE): 200 GPM @ 112' TDH
ULTIMATE (ENTIRE SERVICE AREA): 416 GPM @ 122' TDH

TYPE OF PUMP AND DRIVE: FAIRBANKS MORSE 4",
D5433 MVK, 30 HP 250 FRAME,
1800 RPM MOTOR W/VFD,
10.825" DIA. IMPELLER (INITIAL CONDITION)
11.6875" DIA. IMPELLER (ULTIMATE CONDITION)

NUMBER OF PUMPS: 3 (2 INSTALLED AND 1 SPARE)
MOTOR HORSEPOWER: 30 HP
RELIABILITY CLASS: 1
METHOD OF CONTINUOUS OPERATION: EMERGENCY GENERATOR

SEWER INFRASTRUCTURE IS DESIGNED IN ACCORDANCE WITH THE HAMPTON ROADS REGIONAL TECHNICAL STANDARDS, PURSUANT TO THE REGIONAL CONSENT ORDER OF SEPTEMBER 2007.

A VSMP/VPDES PERMIT WILL BE REQUIRED FROM DCR FOR SITES OVER 2,500 SQUARE FEET THAT PRODUCE STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES.

PRELIMINARY SUBDIVISION
PS-03-07
APPROVED
MAY 15, 2007

WETLANDS DELINEATION VERIFIED BY THE U.S. ARMY CORPS OF ENGINEERS (PROJECT NO. 03-R0677) AND IS VALID UNTIL JULY 22, 2012. WETLANDS WERE DELINEATED BY MAP ENVIRONMENTAL AND LOCATED BY ART-RAY CORPORATION. SEE SHEET C-1.2 FOR COPY OF WETLANDS LETTER.

WARNING - AS THE FIRST STEP IN CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND DETERMINING THE SIZE OF THE EXISTING WATER, SEWER, GAS, ELECTRICAL, TELEPHONE, STORM DRAINAGE AND LOCATING ALL OTHER UTILITIES WHICH COULD AFFECT THE PROPOSED CONNECTION. IF CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLANS, CONTACT THE ENGINEER BEFORE PROCEEDING

LEGEND

| EXISTING | PROPOSED | |
|----------|----------|---------------------------|
| | | BUILDING |
| | | ASPHALT |
| | | ASPHALT MILL AND OVERLAY |
| | | CONCRETE |
| | | PAVEMENT CUT |
| | | TO BE DEMOLISHED/REMOVED |
| | | CONCRETE CURB |
| | | CONCRETE CURB AND GUTTER |
| | | WATER METER |
| | | VALVES |
| | | AIR RELEASE VALVE |
| | | FIRE HYDRANT |
| | | WATER LINE |
| | | STORM DRAIN |
| | | STORM MANHOLE |
| | | DROP/CURB INLET |
| | | SANITARY SEWER |
| | | SANITARY SEWER FORCE MAIN |
| | | SANITARY MANHOLE |
| | | SANITARY CLEAN-OUT |
| | | OVERHEAD ELECTRIC |
| | | POWER POLE |
| | | COLONIAL STYLE LIGHT |
| | | STREET LIGHT |
| | | POWER POLE W/GUY WIRE |
| | | TELEPHONE PEDESTAL |
| | | SIGN |
| | | SPOT ELEVATION |
| | | TOP OF CURB/FLOW LINE |
| | | CONTOUR |
| | | TOP OF BANK |
| | | SWALE |
| | | TOE OF SLOPE |
| | | RIGHT-OF-WAY LINE |
| | | EASEMENT LINE |
| | | TREE LINE |
| | | TREE |
| | | FLOOD ZONE LINE |
| | | SILT FENCE |
| | | INLET PROTECTION |
| | | CONSTRUCTION ENTRANCE |
| | | SOIL BORING |
| | | TREE PROTECTION |
| | | DIVERSION DIKE |
| | | DIVERSION |
| | | WETLANDS |
| | | WETLANDS TO BE DISBURBED |
| | | ACTIVE OPEN SPACE |
| | | PASSIVE OPEN SPACE |

DRAINAGE LEGEND

| | |
|--|---------------------------------|
| | GRADING SCHEME (DRAIN TO FRONT) |
| | GRADING SCHEME (DRAIN TO REAR) |
| | GRADING SCHEME (FRONT AND REAR) |
| | DRAINAGE AREA IDENTIFICATION |
| | AREA IN ACRES |
| | RUNOFF COEFFICIENT |

Virginia Department of Environmental Quality
Office of Wastewater Engineering

Plans and Specifications PLT# _____
Addendum _____ Approved
Change Order _____ Conditionally Approved
O&M Manual _____
Other _____
Area Engineer _____ Date _____

APPROVAL BLOCK

DIRECTOR OF PLANNING _____ DATE _____

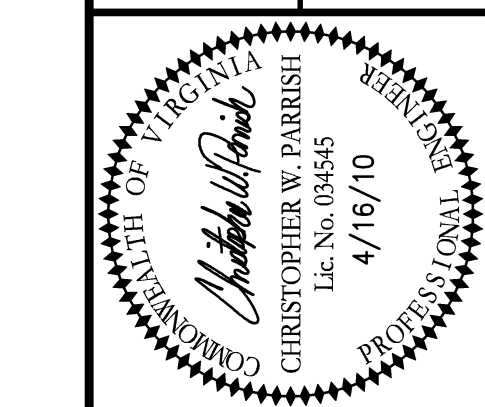
NOTIFY MISS UTILITIES AT 811 FOR LOCATION OF EXISTING UTILITIES

| REVISIONS | DATE | DESCRIPTION | BY |
|-----------|----------|----------------------------------|-----|
| 1 | 8/17/09 | PER CITY COMMENTS DATED 5/29/09 | EMH |
| 2 | 4/16/10 | PER CITY COMMENTS DATED 10/05/09 | EMH |
| 2 | 11/15/10 | LOT REVISIONS | EMH |

DATE: 9/30/08
SCALE: AS NOTED
F.B. 127 PG. 46

EMH: CWP
DESIGN: CWP
CHECKED: CWP

APPROVAL DATE: _____



ENGINEERING PLAN OF **MILLSTONE**
A PORTION OF TAX PARCEL 44*8V
A PORTION OF TAX PARCEL 44*8P AND TAX PARCEL 44*8D
HOLY NECK BOROUGH, SUFFOLK, VIRGINIA

COVER SHEET

ENGINEERING SURVEYING
1500 BREEZEPORT WAY, SUITE 400
SUFFOLK, VIRGINIA 23435
Office: 757.686.3345 Fax: 757.686.3348

C-1.0

SHEET: 1 of 88
2161.0-07