

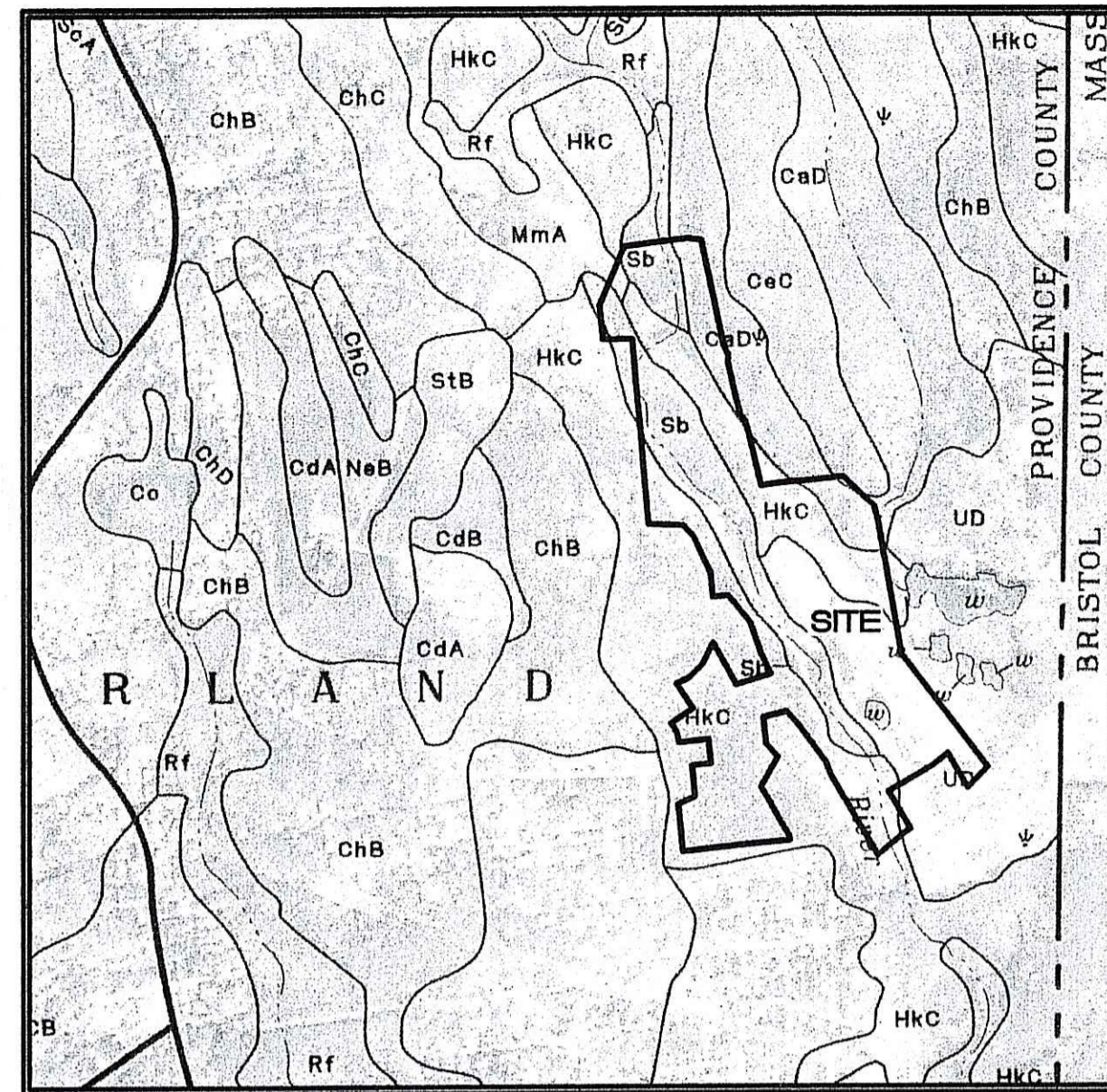
# CONSTRUCTION PLANS

## MILLERS BROOK EAST

### ASSESSOR'S PLAT 19, LOT 7

#### CURRAN ROAD CUMBERLAND, RHODE ISLAND

#### JUNE 2006



REFERENCE: SOIL SURVEY OF RHODE ISLAND MAP SHEET 18

**SOIL SURVEY MAP**  
SCALE: 1" = 100'

#### SOIL SURVEY DATA:

SYMBOL	NAME
CdD	CANTON-CHARLTON-ROCK OUTCROP COMPLEX, 15 TO 35 PERCENT SLOPES
CdC	CANTON AND CHARLTON FINE SANDY LOAMS, VERY ROCKY, 3 TO 15 PERCENT SLOPES
HkC	HINKLEY GRAVELLY SANDY LOAM, ROLLING
MmA	MERRIMAC SANDY LOAM, 0 TO 3 PERCENT SLOPES
Sb	SCARBORO MUCKY SANDY LOAM
UD	UDORTHERTS-URBAN LAND COMPLEX

**NOTE:**  
SOIL AREA'S ARE APPROXIMATE ONLY, AND BASED ON THE SOIL SURVEY OF RHODE ISLAND, BY THE UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, DATED 1977.

#### WELLS, WATERSHEDS, RESERVOIRS:

1. THERE ARE NO KNOWN PUBLIC WELLS WITHIN 1000 FEET OF THE PROPOSED SUBDIVISION.
2. THERE ARE NO KNOWN PRIVATE WELLS WITHIN 200 FEET OF THE SUBDIVISION OF LAND.
3. THE ENTIRE SUBDIVISION LIES WITHIN THE BLACKSTONE RIVER, CUMBERLAND AND PAWTUCKET WATERSHEDS.
4. THERE ARE NO KNOWN RESERVOIRS WITHIN THE PROPOSED SUBDIVISION.

#### OWNER/SUBDIVIDER/DEVELOPER

MACKLANDS REALTY, INC.  
573 MENDON ROAD  
SUITE #1  
CUMBERLAND, RHODE ISLAND 02864

#### PAWTUCKET WATER SUPPLY NOTE

THE ATTACHED DRAWING NUMBERS 1 TO 13 HAVE BEEN PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND HAVE BEEN THOROUGHLY CHECKED BY ME.

SIGNATURE \_\_\_\_\_ P.E.# 4398

#### INDEX:

SHEET	DESCRIPTION
1	COVER SHEET
2, 3, 4	CLUSTER SUBDIVISION PLANS
5	EXISTING CONDITIONS PLAN
6	KEY PLAN
7	SITE PLAN - 1
7A	SITE PLAN - 2
8	PLAN and PROFILE - KATIE LANE
9	PLAN and PROFILE - LOT 6 DRIVEWAY
10	CROSS SECTIONS - KATIE LANE
11	NOTES and DETAILS
12	DETAILS
13	DETAILS

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED MAY 19 2008 FILE # 06-0318  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Matthew D. Wenech*

JOHN P. CAITO  
PROFESSIONAL ENGINEER  
No. 4398

CIVIL ENGINEERS  
141 JAMES P. MURPHY HIGHWAY  
WEST WARWICK, RHODE ISLAND  
02895-3282  
401-615-8600  
fax: 401-615-8600

LAND PLANNERS  
**CAITO CORPORATION**

PROJECT NO: 144.801  
DATE: JUNE, 2006  
SCALE: AS SHOWN  
DESIGNED BY: D.T.  
DRAWN BY: D.T.  
CHECKED BY: J.P.C.

COVER SHEET  
MILLERS BROOK EAST  
ASSESSOR'S PLAT 19/ LOT 7  
CURRAN ROAD  
RHODE ISLAND  
PREPARED FOR  
MACKLANDS REALTY, INC.

DRAWING NUMBER

**1**

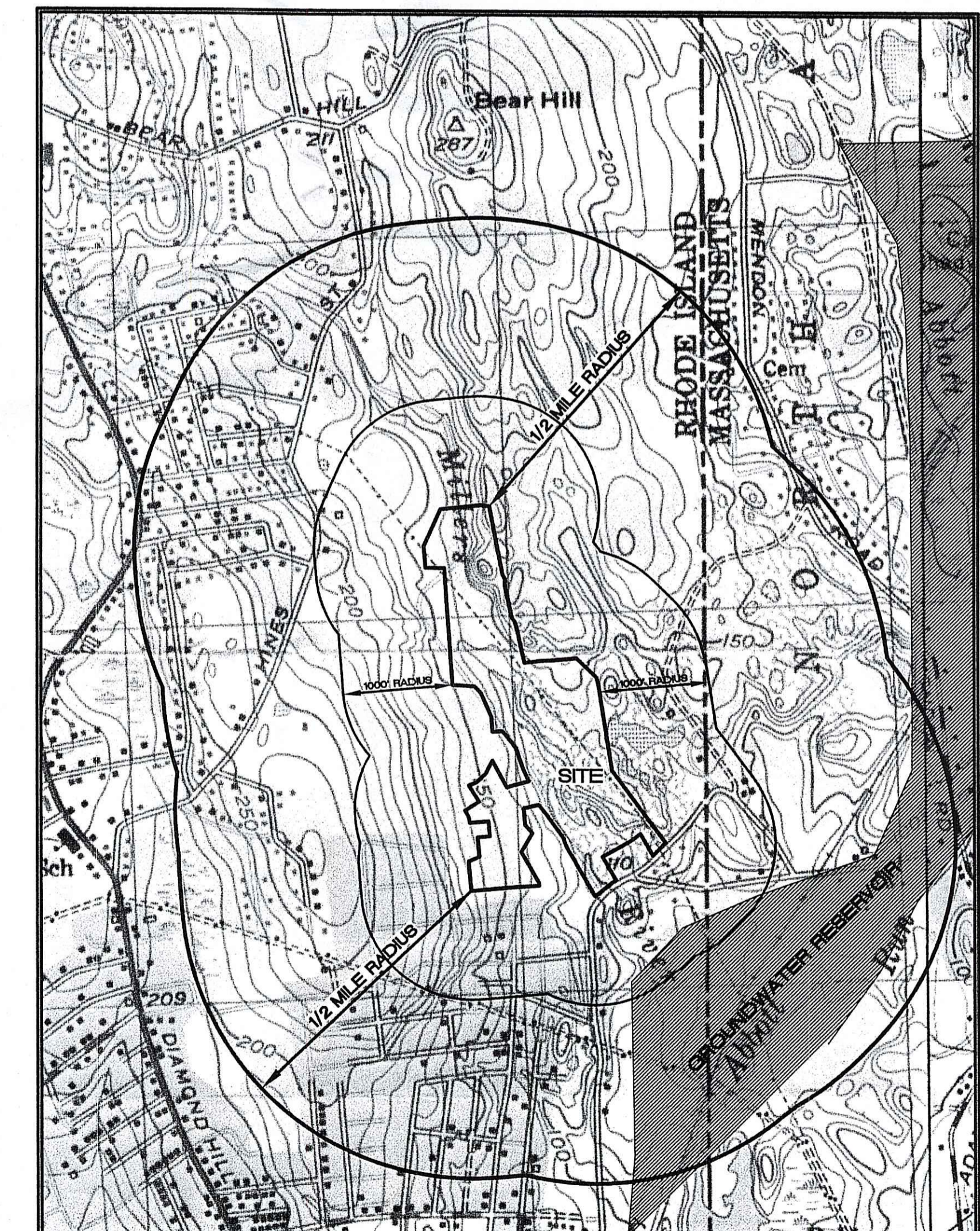
SHEET 1 OF 13



**LEGEND:**  
--- ZONE BOUNDARY  
R1 ZONE DESIGNATION

**AERIAL PHOTOGRAPH**  
SCALE: 1" = 200'

**REFERENCE:**  
AERIAL PHOTOGRAPH PROVIDED BY THE RHODE ISLAND GEOGRAPHIC INFORMATION SYSTEM (RIGIS). THIS IMAGE WAS CREATED FROM AERIAL PHOTOGRAPHY TAKEN IN APRIL OF 1997 FOR NATIONAL GRID-USA AND THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION.  
IMAGE FILE: 3432.sid and 3634V4.sid

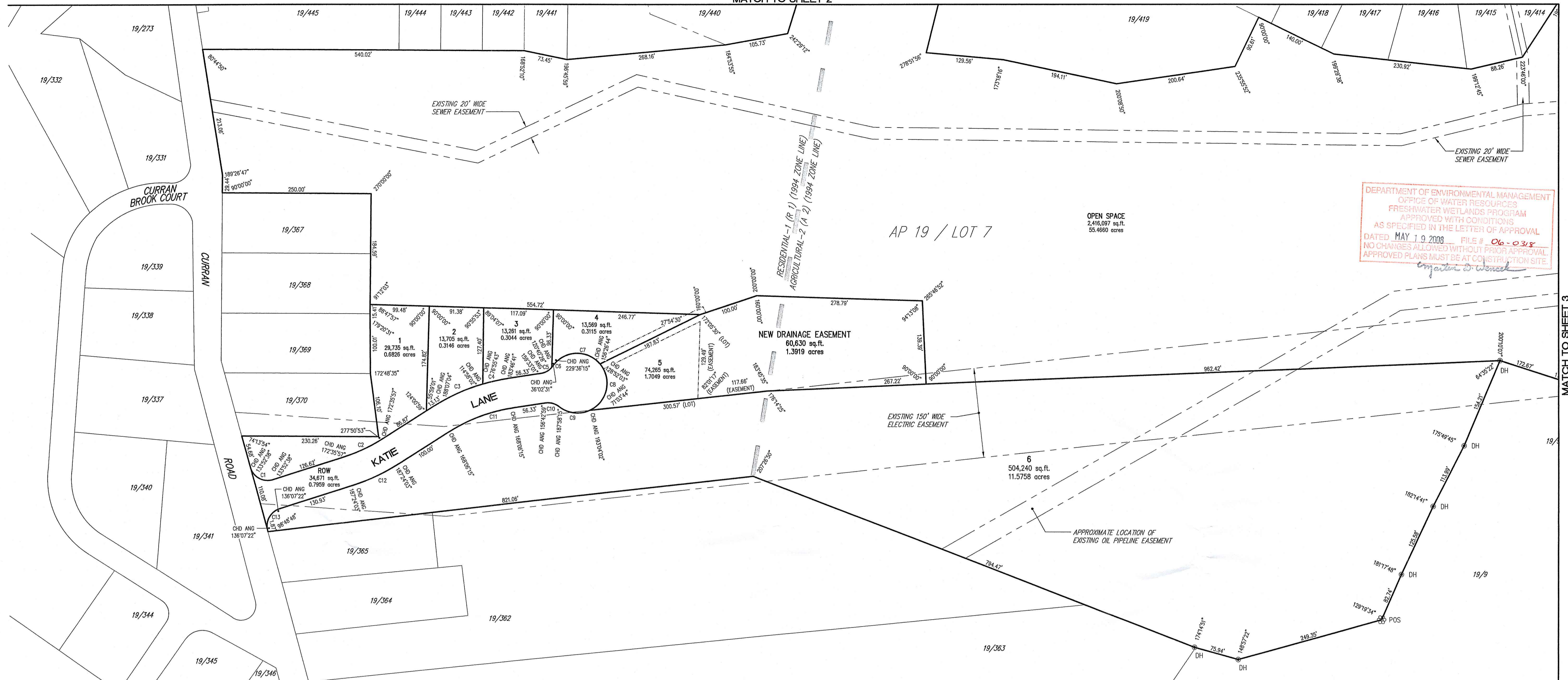


**ONE-HALF MILE RADIUS MAP**  
USGS PAWTUCKET, RI-MA MAP QUADRANGLE 1998  
SCALE: 1"=1000'

301-Egal\_CVR\_05-2006\_02\_05-2006.dwg (chkr: Z1009)

© 2006 JOHN P. CAITO CORPORATION

MAR 25 2008



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED MAY 19 2008 FILE # 06-038  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE.  
 Matthew D. Wenzel

**LOT AREA SUMMARY:**

LOT	AREA (S.F.)	AREA (AC.)
1	29,735	0.6826
2	13,705	0.3146
3	13,261	0.3044
4	13,569	0.3115
5	74,265	1.7049
6	504,240	11.5758
RIGHT-OF-WAY	34,671	0.7959
OPEN SPACE	2,416,097	55.4660
TOTAL	3,099,543	71.1557

**LAND USE DATA:**

ROADWAYS	600 LINEAR FEET
RIGHT OF WAY (ROW)	0.7959 ACRES
SIX (6) PROPOSED SUBDIVISION LOTS	14.8938 ACRES
ONE (1) OPEN SPACE LOT	55.4660 ACRES (80%)
TOTAL	71.1557 ACRES

**NOTES AND REFERENCES:**

- ALL PROPOSED LOTS ARE SERVED BY PUBLIC WATER AND PUBLIC SEWER AND ARE LOCATED WITHIN A WATERSHED OF THE BLACKSTONE RIVER, TOWN OF CUMBERLAND AND THE PAWTUCKET WATER SUPPLY BOARD.

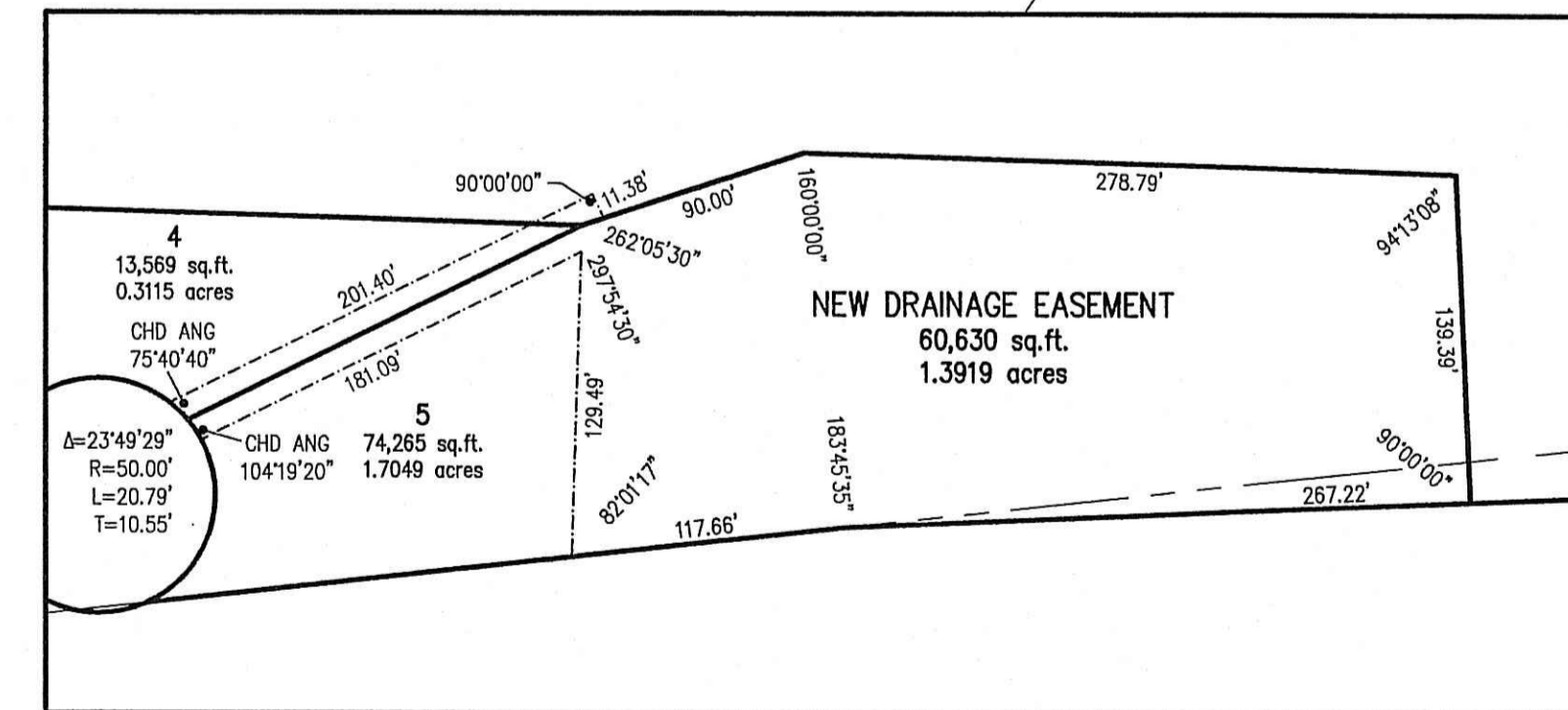
**CLUSTER SUBDIVISION DATA:**

PROJECT AREA: AP 19, LOT 7  
 TOTAL AREA OF PROPERTY: 71.1557 ACRES  
 TOTAL NUMBER OF LOTS: SIX (6) BUILDABLE LOTS  
 ONE (1) OPEN SPACE LOT

	AGRICULTURAL A-2	RESIDENTIAL R-1
MINIMUM LOT SIZE:		
ALLOWED	N/A	N/A
PROPOSED	504,240 SQ. FT.	13,261 SQ. FT.
MINIMUM LOT FRONTAGE:		
ALLOWED	N/A	N/A
PROPOSED	242 FT.	105 FT.
MINIMUM BUILDING SETBACKS:		
FRONT YARD	75 FT.	20 FT.
REAR YARD	30 FT.	25 FT.
SIDE YARD	20 FT.	10 FT.

**CURVE TABLE:**

CURVE	ANGLE	RADIUS	LENGTH	TANGENT
C1	92°14'45"	30.00	48.30	31.20
C2	14°48'05"	275.00	71.04	35.72
C3	16°14'09"	325.00	92.09	46.36
C4	7°33'23"	325.00	42.86	21.46
C5	40°53'58"	30.00	21.41	11.19
C6	5°40'05"	30.00	2.97	1.49
C7	104°52'34"	50.00	91.52	65.02
C8	105°44'59"	50.00	92.28	66.05
C9	62°30'33"	50.00	54.55	30.35
C10	46°34'03"	30.00	24.38	12.91
C11	23°47'31"	275.00	114.19	57.93
C12	14°48'05"	325.00	83.96	42.21
C13	87°45'15"	30.00	45.95	28.85



**NEW DRAINAGE EASEMENT DETAIL:**  
 SCALE: 1" = 80'

**CLUSTER SUBDIVISION PLAN**  
**MILLERS BROOK ESTATES - EAST**  
 ASSESSOR'S PLAT 19, LOT 7

SITUATED IN  
 CUMBERLAND, RHODE ISLAND

PREPARED FOR  
 MACKLANDS REALTY, INC.

PREPARED BY

CIVIL ENGINEERS

JOHN P. CRANSTON  
**CAITO CORPORATION**  
 LAND PLANNERS  
 25 SHARPE DRIVE  
 CRANSTON, RHODE ISLAND  
 02920-4402  
 401-946-0300  
 fax: 401-944-6009

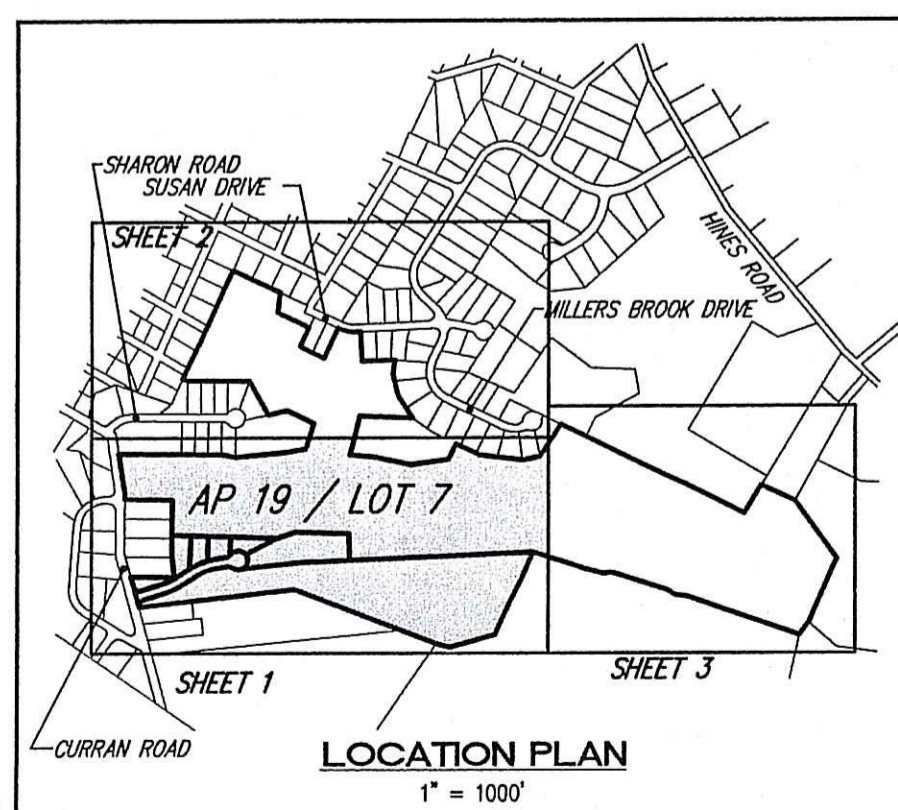
JUNE, 2006

SCALE: 1" = 80'



GRAPHIC SCALE

SHEET 1 OF 3





MATCH TO SHEET 1

MATCH TO SHEET 3

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED MAY 19 2008 FILE # 06-0318  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE SET CONSTRUCTION SITE.

*Matthew D. Wenzel*

**CLUSTER  
SUBDIVISION PLAN**  
MILLERS BROOK ESTATES - EAST  
ASSESSOR'S PLAT 19, LOT 7

SITUATED IN  
CUMBERLAND, RHODE ISLAND

PREPARED FOR  
MACKLANDS REALTY, INC.

PREPARED BY

CIVIL ENGINEERS  
**CAITO**  
CORPORATION  
LAND PLANNERS  
JOHN P. 25 SHARPE DRIVE  
CRANSTON, RHODE ISLAND  
02920-4402  
401-946-0300  
fax: 401-944-6009

JUNE, 2006

SCALE: 1" = 80'



SHEET 2 OF 3

MAR 25 2008

PROJECT NO.: 144.301

PLAN SET: SHEET 3 OF 13

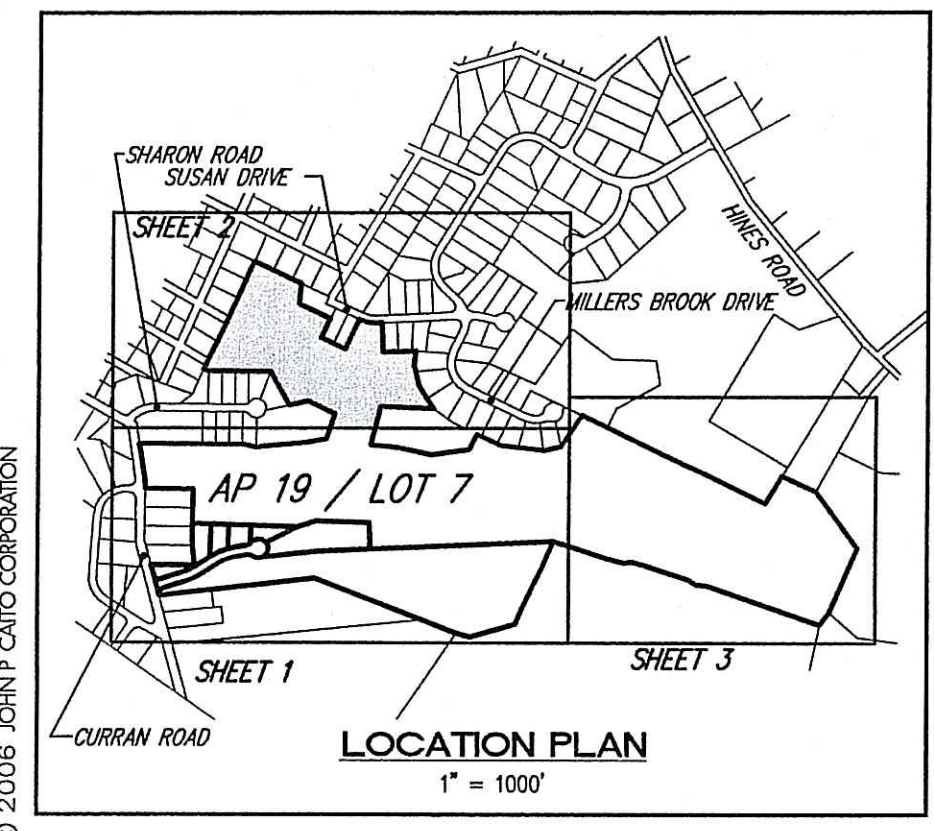
**STREET INDEX:**  
BRYANT STREET  
CURRAN ROAD  
ENGLAND STREET  
SUSAN DRIVE

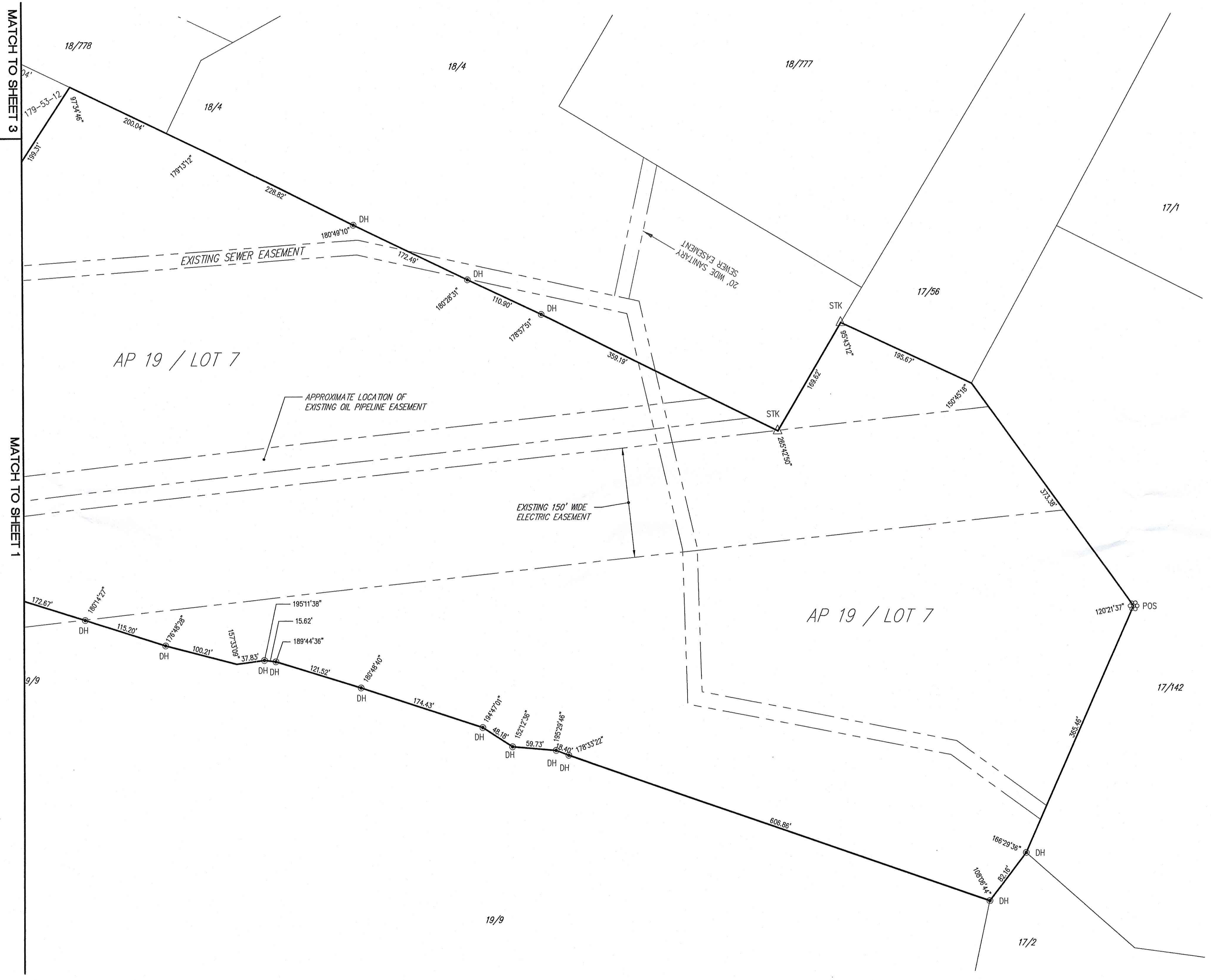
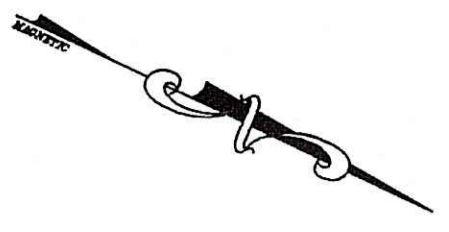
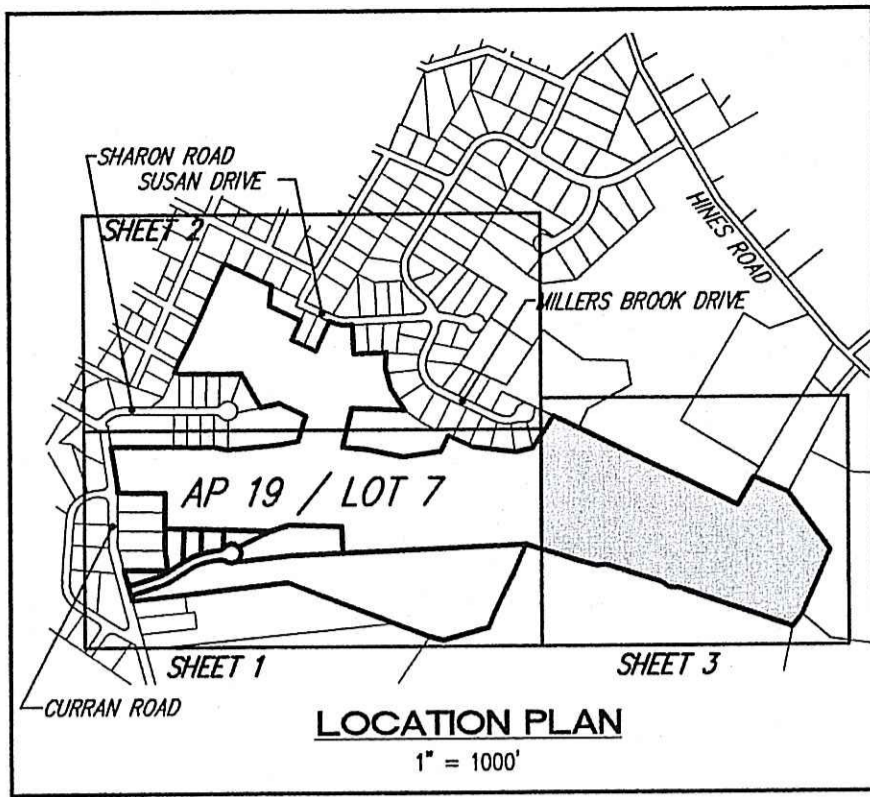
STEPHEN M. MURGO, Sr.  
No. 1663  
PROFESSIONAL  
LAND SURVEYOR

**CERTIFICATION:**

THIS SURVEY AND PLAN CONFORM TO A CLASS 1 STANDARD AS ADOPTED BY THE  
RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS

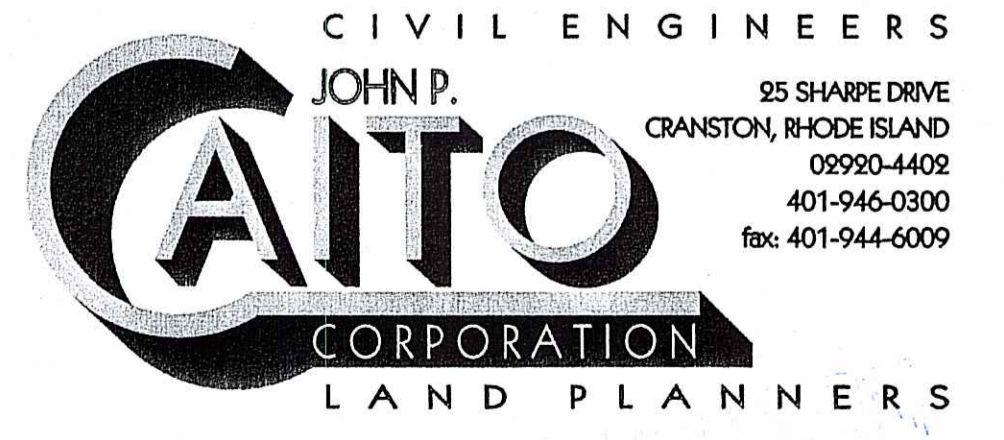
BY *Stephen M. Murgo, Sr.* 6/29/06  
REGISTERED PROFESSIONAL LAND SURVEYOR DATE





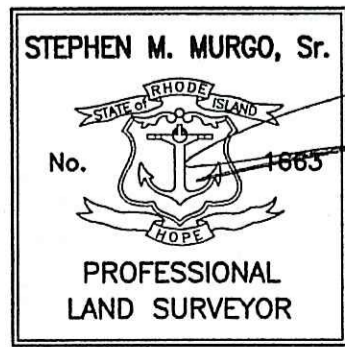
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED MAY 19 2008 FILE # 06-038  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.  
*Magister D. Wenzel*

**CLUSTER  
SUBDIVISION PLAN**  
**MILLERS BROOK ESTATES - EAST**  
ASSESSOR'S PLAT 19, LOT 7  
SITUATED IN  
CUMBERLAND, RHODE ISLAND  
PREPARED FOR  
**MACKLANDS REALTY, INC.**  
PREPARED BY



JUNE, 2008  
SCALE: 1" = 80'  
GRAPHIC SCALE  
SHEET 3 OF 3

**STREET INDEX:**  
BRYANT STREET  
CURRAN ROAD  
ENGLAND STREET  
SUSAN DRIVE



**CERTIFICATION:**  
THIS SURVEY AND PLAN CONFORM TO A CLASS I STANDARD AS ADOPTED BY THE  
RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS  
BY *[Signature]* 6/29/08  
REGISTERED PROFESSIONAL LAND SURVEYOR DATE



REFERENCES:

1. MILLERS BROOK ESTATES RECORDED PLANS:

PLAT	SLIDE	DATE	DESCRIPTION
1011	940	02-07-95	PLAN OF LAND
1012	941	02-27-95	DIVISION OF LAND
1013	942	02-27-95	DIVISION OF LAND
1014	943	02-27-95	DIVISION OF LAND
1079	1004	01-17-97	SUBDIVISION PLAN - PHASE 1
1073	998	01-17-97	SUBDIVISION PLAN - PHASE 2
1074	999	01-17-97	SUBDIVISION PLAN - PHASE 2
1075	1000	01-17-97	SUBDIVISION PLAN - PHASE 2
1076	1001	01-17-97	SUBDIVISION PLAN - PHASE 2
1077	1002	01-17-97	SUBDIVISION PLAN - PHASE 2
1078	1003	01-17-97	SUBDIVISION PLAN - PHASE 2
1127	1050	03-06-98	SUBDIVISION PLAN - PHASE 3
1128	1051	03-06-98	SUBDIVISION PLAN - PHASE 3
1102	1025	08-28-97	SUBDIVISION PLAN - PHASE 4
1103	1026	08-28-97	SUBDIVISION PLAN - PHASE 4
1104	1027	08-28-97	SUBDIVISION PLAN - PHASE 4
1186	-	07-30-99	SUBDIVISION PLAN - PHASE 5
1192	-	10-28-99	SUBDIVISION PLAN - PHASE 6
1138	-	06-11-98	ADMINISTRATIVE SUBDIVISION PLAN, LOTS 23-33
1160	1080	12-03-98	ADMINISTRATIVE SUBDIVISION PLAN, LOTS 83 & 84
1185	-	07-30-99	ADMINISTRATIVE SUBDIVISION PLAN, LOTS 75 & 76
1182	-	07-01-99	ADMINISTRATIVE SUBDIVISION PLAN, LOTS 12 & 13
1192	-	10-28-99	ADMINISTRATIVE SUBDIVISION PLAN, LOTS 42-49, 51-54

2. STATE REGULATED FRESH WATER WETLANDS PREVIOUSLY VERIFIED FOR MILLERS BROOK ESTATES UNDER APPLICATION NUMBER 92-02250

NOTES:

- EXISTING TOPOGRAPHY CONDITIONS ARE TAKEN FROM THE PLAN ENTITLED: PRELIMINARY PLAN, CUMBERLAND, R.I., MILLERS BROOK ESTATES PREPARED BY: EARL R. MARSH ASSOCIATES DATED: MARCH, 1987, SCALE: 1"=100', AND AUGMENTED BY AN ON THE GROUND TOPOGRAPHIC SURVEY PERFORMED BY JOHN P. CAITO CORPORATION.
- PROPERTY LINE INFORMATION IS TAKEN FROM THE PLAN ENTITLED: CUMBERLAND, R.I., PLAN OF LAND OF MILLERS BROOK ESTATES PREPARED BY: EARL R. MARSH ASSOCIATES DATED: MARCH, 1987, SCALE: 1"=100', RECORDED ON PLAT CARD 1011, SLIDE 940 IN THE TOWN OF CUMBERLAND LAND EVIDENCE RECORDS ON FEBRUARY 07, 1995.
- THE SITE IS LOCATED IN ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOOD PLAN. REFERENCE IS MADE TO THE FOLLOWING MAP: "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, TOWN OF CUMBERLAND, RHODE ISLAND, PROVIDENCE COUNTY, PANEL 6 OF 7, COMMUNITY PANEL NUMBER 440016-0006-6, MAP REVISED: FEBRUARY 16, 1990, FEDERAL EMERGENCY MANAGEMENT AGENCY."
- STATE REGULATED FRESH WATER WETLANDS ARE VERIFIED BY THE RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT UNDER APPLICATION NUMBER 04-0342.
- BASE OF LEVELS: NGVD 29

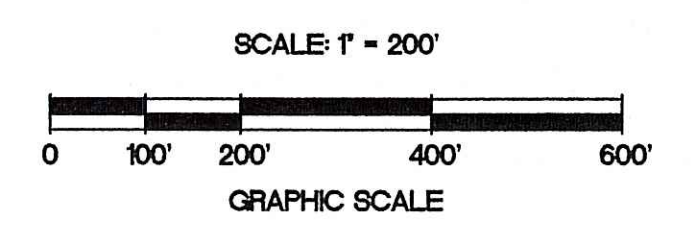
LEGEND:

- - - - - EXISTING CONTOUR
- ⊕ UTILITY POLE
- ⊗ EXISTING ELECTRIC TOWER
- — — — — EXISTING FENCE
- — — — — EDGE OF RIVER
- — — — — WETLAND EDGE FLAG
- — — — — 100-YEAR FLOOD LIMIT AREA
- — — — — 50' PERIMETER WETLAND
- — — — — 200' RIVERBANK WETLAND
- — — — — SUBJECT PROPERTY LINE
- — — — — EXISTING LOT LINES
- ⊙ EXISTING SEWER MANHOLE
- ⊙ DH DRILL HOLE
- ⊙ IR IRON ROD
- ⊙ BM BENCH MARK
- ⊙ L LEDGE
- — — — — ZONE LINE AND DESIGNATION

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED MAY 19 2008 FILE # 06-0318  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Emmanuel D. Wencel*

Kindly be advised that this  
Permit is not equivalent to a  
verification of the type or extent  
of freshwater wetlands on site.



NO.	DATE	REVISION
1	3/27/08	ADDITIONAL LOT 6 TOPO, PETROLEUM PIPELINE EASEMENT

JOHN P. CAITO  
Professional Engineer  
No. 0988  
R.I. REG. 0988

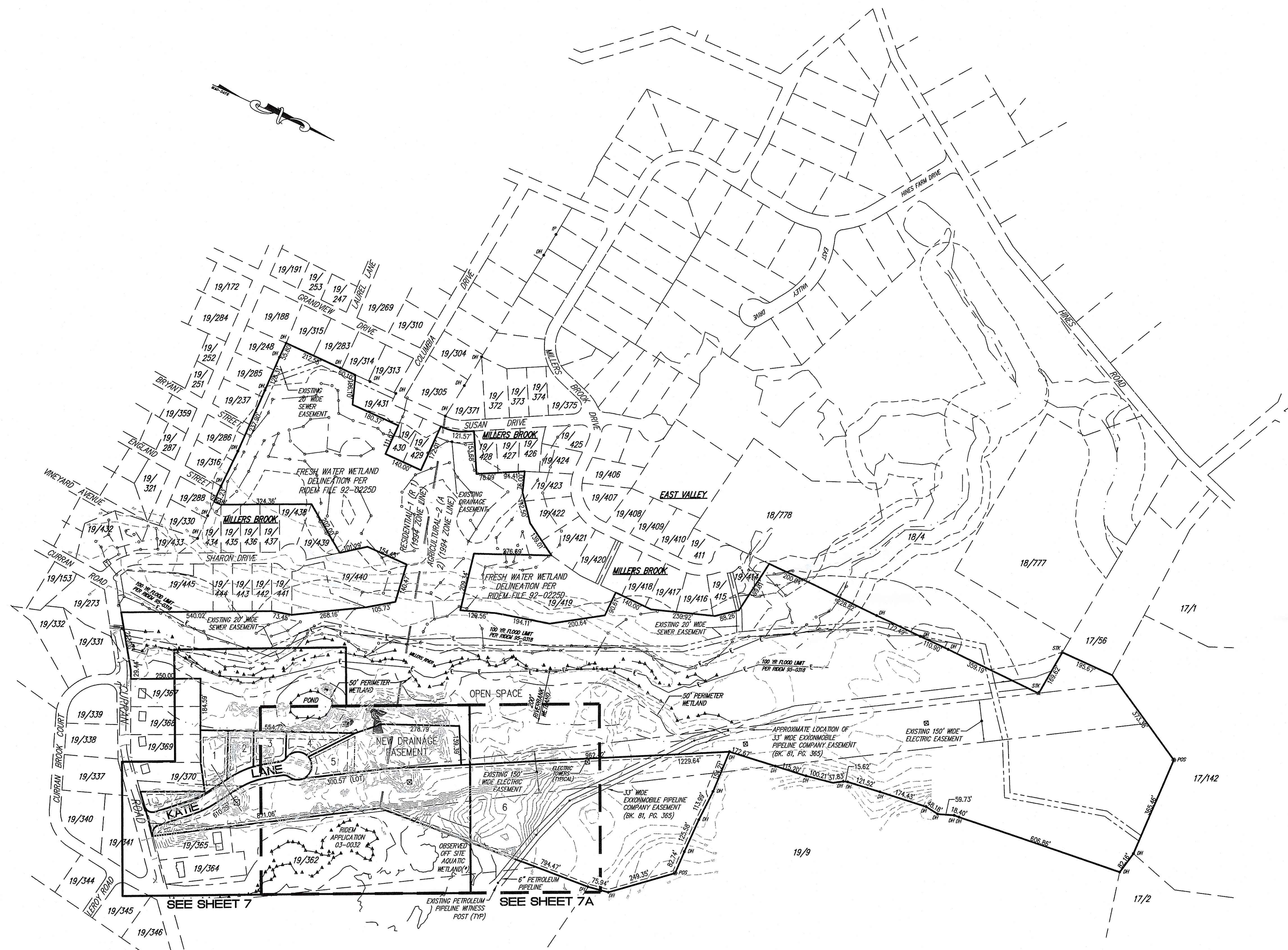
CIVIL ENGINEERS  
LAND PLANNERS  
**CAITO CORPORATION**  
141 JAMES P. MURPHY HIGHWAY  
WEST WARWICK, RHODE ISLAND  
02893-3888  
401-915-8800  
fax: 401-915-8806

PROJECT NO: 144.501  
DATE: JUNE, 2006  
SCALE: 1" = 200'  
DESIGNED BY: COMPLED  
DRAWN BY: D.T.  
CHECKED BY: J.P.C.

EXISTING CONDITIONS PLAN  
**MILLERS BROOK EAST**  
ASSESSOR'S PLAT 19/ LOT 7  
CURRAN ROAD  
PREPARED FOR  
**MACKLANDS REALTY, INC.**

DRAWING NUMBER  
**5**  
SHEET 5 OF 13

MAR 25 2008



- NOTES:**
- EXISTING TOPOGRAPHY CONDITIONS ARE TAKEN FROM THE PLAN ENTITLED: PRELIMINARY PLAN, CUMBERLAND, R.I., MILLERS BROOK ESTATES PREPARED BY: EARL R. MARSH ASSOCIATES DATED: MARCH, 1987, SCALE: 1"=100', AND AUGMENTED BY AN ON THE GROUND TOPOGRAPHIC SURVEY PERFORMED BY JOHN P. CATO CORPORATION.
  - PROPERTY LINE INFORMATION IS TAKEN FROM THE PLAN ENTITLED: CUMBERLAND, R.I., PLAN OF LAND OF MILLERS BROOK ESTATES PREPARED BY: EARL R. MARSH ASSOCIATES DATED: MARCH, 1987, SCALE: 1"=100'
  - THE SITE IS LOCATED IN ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 500 YEAR FLOOD PLAIN. REFERENCE IS MADE TO THE FOLLOWING MAP: "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, TOWN OF CUMBERLAND, RHODE ISLAND, PROVIDENCE COUNTY, PANEL 6 OF 7, COMMUNITY PANEL NUMBER 440016-0008-B, MAP REVISED: FEBRUARY 16, 1990, FEDERAL EMERGENCY MANAGEMENT AGENCY."
  - STATE REGULATED FRESH WATER WETLANDS ARE VERIFIED BY THE RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT UNDER APPLICATION NUMBER 04-0342.
  - BASE OF LEVELS: NGVD 29

**LEGEND:**

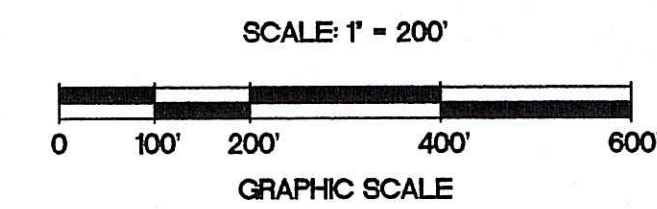
---	PROPERTY LINE
- - - -	ABUTTING PROPERTY LINE
---	EXISTING CONTOUR
⊗	EXISTING UTILITY POLE
⊠	EXISTING ELECTRIC TOWER
---	EXISTING FENCE
△-13	EDGE OF RIVER AND FLAG
△-19	WETLAND EDGE AND FLAG
---	100-YEAR FLOOD LIMIT AREA
---	50' PERIMETER WETLAND
---	200' RIVERBANK WETLAND
---	ZONE DESIGNATION
⊙	EXISTING SEWER MANHOLE
⊙	DRILL HOLE
⊙	IRON ROD
⊠	EXISTING ELECTRIC TOWER
⊙	BENCH MARK
---	LEDGE
---	EXISTING EASEMENT
---	EXISTING SANITARY SEWER
---	EXISTING WATER
---	EXISTING CATCH BASIN
---	EXISTING HYDRANT
---	PROPOSED CATCH BASIN
---	PROPOSED MANHOLE
---	PROPOSED HYDRANT
---	PROPOSED FLARED END AND RIPRAP
---	PROPOSED EASEMENT
---	PROPOSED SANITARY SEWER & SERVICE
---	PROPOSED WATER & SERVICE
---	PROPOSED STORM DRAIN
---	PROPOSED GRADE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED MAY 19 2008 FILE # 06-0328  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL.  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.

*Matthew D. Wencel*

Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

**OBSERVED OFF-SITE AQUATIC WETLAND:**  
(\*) AN OFF-SITE WETLAND WAS OBSERVED ON APRIL 25, 2007 BY THE GIFFORD DESIGN GROUP. THIS IS AN AQUATIC WETLAND, WITH A DEFINITIVE NON-TRANSITIONAL BIOLOGICAL EDGE LOCATED NO GREATER THAN TEN (10) FEET EAST OF THE PROPERTY. NO PART OF THE BIOLOGICAL WETLAND FALLS WITHIN THE SUBJECT PROPERTY. IT IS LIKELY THAT THIS AQUATIC WETLAND IS GREATER THAN ONE-QUARTER ACRE IN SIZE, AND HAS AN ASSOCIATED 50-FOOT PERIMETER WETLAND.



NO.	DATE	REVISION
1	5/16/07	DEM APPLICATION 03-0032, OBSERVED OFF-SITE WETLAND & NOTE
2	12/20/08	ADDITIONAL LOT 6 TOPO, PETROLEUM PIPELINE EASEMENT, SHEET 7A

JOHN P. CATO  
PROFESSIONAL ENGINEER  
No. 0399

CIVIL ENGINEERS  
141 JAMES P. ALBERRY HIGHWAY  
WEST WARWICK, RHODE ISLAND 02893-2988  
401-615-8600  
FAX: 401-615-8606

**Cato CORPORATION**  
LAND PLANNERS

PROJECT NO: 144.301  
DATE: JUNE, 2006  
SCALE: 1" = 200'  
DESIGNED BY: COMPILED  
DRAWN BY: S.G.T.  
CHECKED BY: J.P.C.

KEY PLAN  
**MILLERS BROOK EAST**  
ASSESSOR'S PLAT 19/ LOT 7  
CURRAN ROAD  
PREPARED FOR  
MACKLANDS REALTY, INC.

CUMBERLAND  
RHODE ISLAND

DRAWING NUMBER  
**6**  
SHEET 6 OF 13

MAR 25 2008

301-East\_Planimetry-SITE\_06-2006\_RL\_032008.dwg (DISK: Z-1009)

**LEGEND:**

[Symbol]	PROPERTY LINE
[Symbol]	ABUTTING PROPERTY LINE
[Symbol]	EXISTING CONTOUR
[Symbol]	EXISTING UTILITY POLE
[Symbol]	EXISTING ELECTRIC TOWER
[Symbol]	EXISTING FENCE
[Symbol]	EDGE OF RIVER AND FLAG
[Symbol]	WETLAND EDGE AND FLAG
[Symbol]	100-YEAR FLOOD LIMIT AREA
[Symbol]	50' PERIMETER WETLAND
[Symbol]	200' RIVERBANK WETLAND
[Symbol]	ZONE DESIGNATION
[Symbol]	EXISTING SEWER MANHOLE
[Symbol]	DRILL HOLE
[Symbol]	IRON ROD
[Symbol]	EXISTING ELECTRIC TOWER
[Symbol]	BENCH MARK
[Symbol]	LEDGE
[Symbol]	EXISTING EASEMENT
[Symbol]	EXISTING SANITARY SEWER
[Symbol]	EXISTING WATER
[Symbol]	EXISTING CATCH BASIN
[Symbol]	EXISTING HYDRANT
[Symbol]	PROPOSED CATCH BASIN
[Symbol]	PROPOSED MANHOLE
[Symbol]	PROPOSED HYDRANT
[Symbol]	PROPOSED FLARED END AND RIPRAP
[Symbol]	PROPOSED EASEMENT
[Symbol]	PROPOSED SANITARY SEWER & SERVICE
[Symbol]	PROPOSED WATER & SERVICE
[Symbol]	PROPOSED STORM DRAIN
[Symbol]	PROPOSED GRADE
[Symbol]	LIMIT OF WORK / EROSION CONTROLS

**CLUSTER SUBDIVISION DATA:**

PROJECT AREA: AP 19, LOT 7

TOTAL AREA OF PROPERTY: 71 ACRES ±

TOTAL NUMBER OF LOTS: SIX (6) BUILDABLE LOTS  
ONE (1) OPEN SPACE LOT

**LAND USE DATA:**

ROADWAYS	600 LINEAR FEET ±
RIGHT OF WAY (ROW)	0.8 ACRES ±
SIX (6) PROPOSED SUBDIVISION LOTS	14.48 ACRES ±
ONE (1) OPEN SPACE LOT	55.47 ACRES ± (80%)
TOTAL	71.15 ACRES ±

ZONE CLASSIFICATION:	AGRICULTURAL A-2	RESIDENTIAL R-1
MINIMUM LOT SIZE:		
ALLOWED	N/A	N/A
PROPOSED	504,235 SQ. FT.	13,261 SQ. FT.
MINIMUM LOT FRONTAGE:		
ALLOWED	N/A	N/A
PROPOSED	242 FT.	105 FT.
MINIMUM BUILDING SETBACKS:		
FRONT YARD	75 FT.	20 FT.
REAR YARD	30 FT.	25 FT.
SIDE YARD	20 FT.	10 FT.

**LOT AREA SUMMARY:**

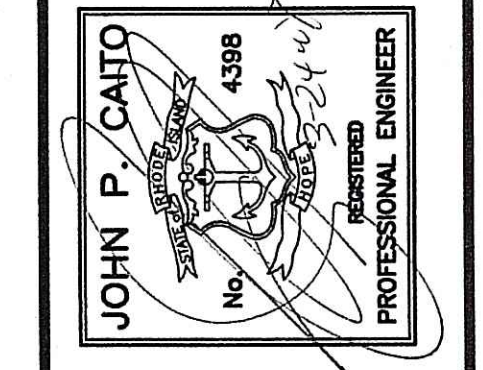
LOT	AREA (S.F.)	AREA (AC.)
1	29,735	0.68
2	13,704	0.31
3	13,261	0.30
4	13,576	0.31
5	74,263	1.70
6	504,235	11.58
RIGHT-OF-WAY	34,671	0.80
OPEN SPACE	2,416,098	55.47
TOTAL	3,099,543	71.15

**NOTES:**

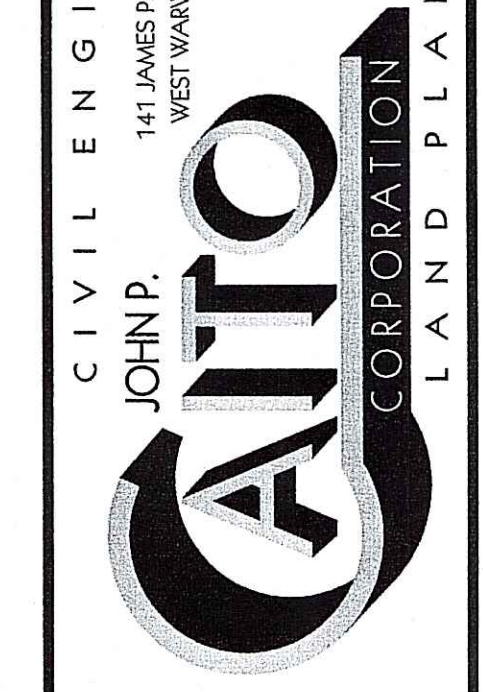
- ALL PROPOSED LOTS ARE SERVICED BY PUBLIC WATER AND PUBLIC SEWER AND ARE LOCATED WITHIN A WATERSHED OF BLACKSTONE RIVER AND THE PAWTUCKET WATER SUPPLY BOARD.
- THE PROJECT IS PROPOSED TO BE BUILT IN ONE PHASE.

**REVISION**

NO.	DATE	DESCRIPTION
1	1/8/07	LOT 6 DRIVEWAY/EMERGENCY SPILLWAY
2	1/26/07	RELOCATE LIGHT POLE AT CURRAN RD
3	5/16/07	WATER SERVICE NOTE/VALE RELOCATION
4	5/16/07	WATER MAIN CONNECTION NOTE
5	5/16/07	DEM APPLICATION 03-0032 OBSERVED
6	5/16/07	OFF-SITE WETLAND & NOTE
7	5/16/07	ADDITIONAL LOT 6 TOPIC REVISED
8	5/16/07	LOT 6 LAYOUT



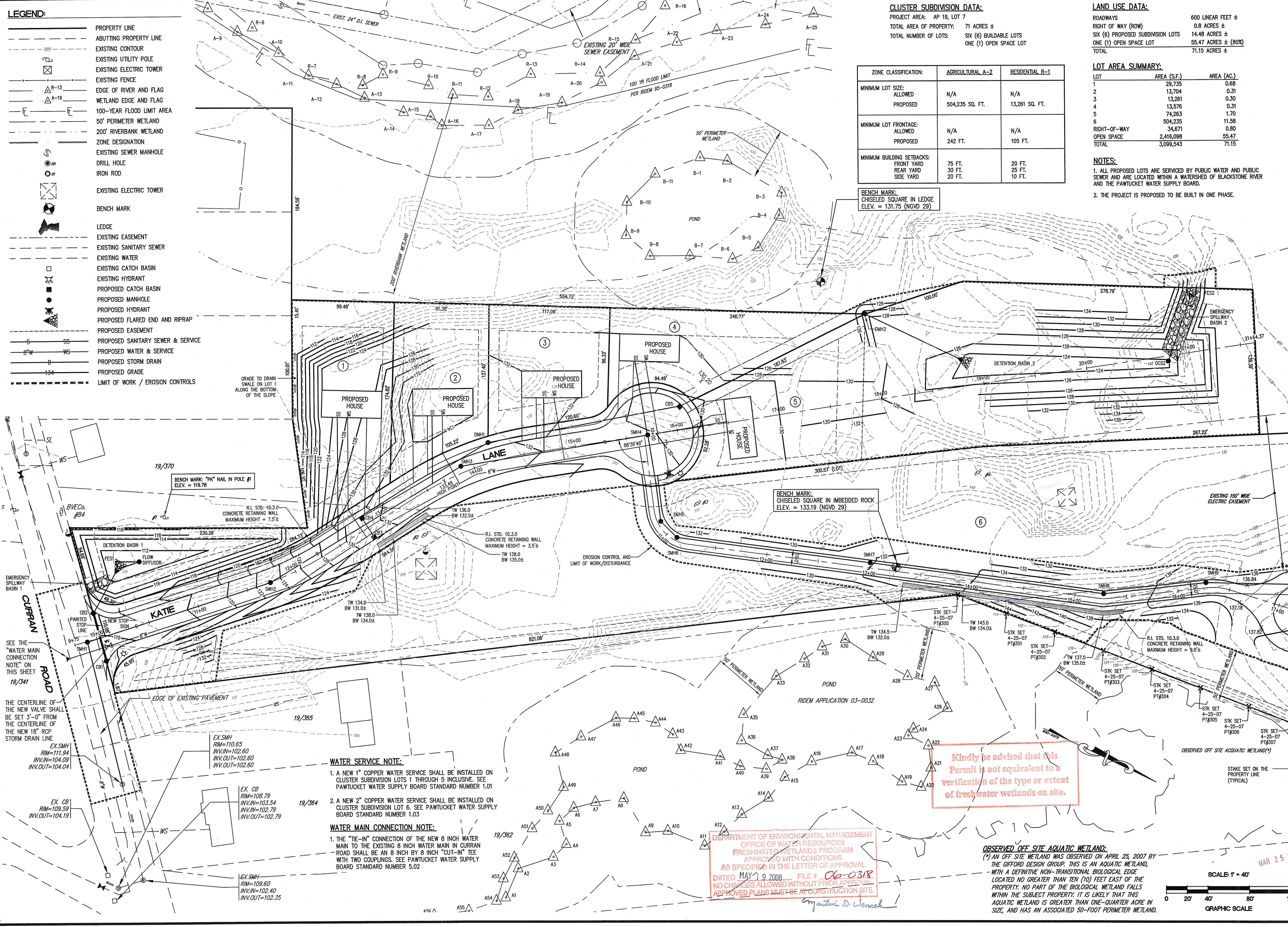
**CIVIL ENGINEERS**  
JOHN P. AIUTO  
141 JAMES P. MURPHY HIGHWAY  
WEST WARWICK, RHODE ISLAND 02893-0389  
401-615-8600  
FAX: 401-615-8606



**PROJECT NO:** 144301  
**DATE:** JUNE, 2006  
**SCALE:** 1" = 40'  
**DESIGNED BY:** S.G.T.  
**DRAWN BY:** J.P.M., S.G.T.  
**CHECKED BY:** J.P.C.

**SITE PLAN - 1**  
**MILLERS BROOK EAST**  
**ASSESSOR'S PLAT 19/ LOT 7**  
**CURRAN ROAD**  
**PREPARED FOR**  
**MACKLANDS REALTY, INC.**

**DRAWING NUMBER**  
**7**  
**SHEET 7 OF 13**



BENCH MARK: "PK" NAIL IN POLE #1  
ELEV. = 119.76

BENCH MARK:  
CHISELED SQUARE IN IMBEDDED ROCK  
ELEV. = 133.19 (NGVD 29)

**WATER SERVICE NOTE:**

- A NEW 1" COPPER WATER SERVICE SHALL BE INSTALLED ON CLUSTER SUBDIVISION LOTS 1 THROUGH 5 INCLUSIVE. SEE PAWTUCKET WATER SUPPLY BOARD STANDARD NUMBER 1.01
- A NEW 2" COPPER WATER SERVICE SHALL BE INSTALLED ON CLUSTER SUBDIVISION LOT 6. SEE PAWTUCKET WATER SUPPLY BOARD STANDARD NUMBER 1.03

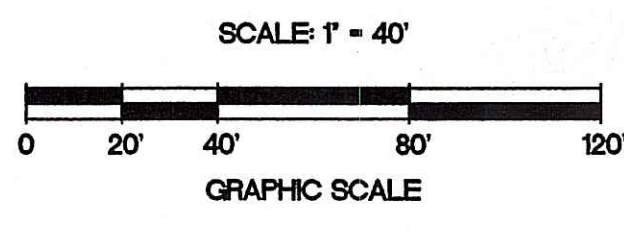
**WATER MAIN CONNECTION NOTE:**

- THE "TIE-IN" CONNECTION OF THE NEW 8 INCH WATER MAIN TO THE EXISTING 8 INCH WATER MAIN IN CURRAN ROAD SHALL BE AN 8 INCH BY 8 INCH "CUT-IN" TEE WITH TWO COUPLINGS. SEE PAWTUCKET WATER SUPPLY BOARD STANDARD NUMBER 5.02

Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED MAY 19 2008 FILE # 06-0318  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.

**OBSERVED OFF-SITE AQUATIC WETLAND:**  
(\*) AN OFF-SITE WETLAND WAS OBSERVED ON APRIL 25, 2007 BY THE GIFFORD DESIGN GROUP. THIS IS AN AQUATIC WETLAND, WITH A DEFINITIVE NON-TRANSITIONAL BIOLOGICAL EDGE LOCATED NO GREATER THAN TEN (10) FEET EAST OF THE PROPERTY. NO PART OF THE BIOLOGICAL WETLAND FALLS WITHIN THE SUBJECT PROPERTY. IT IS LIKELY THAT THIS AQUATIC WETLAND IS GREATER THAN ONE-QUARTER ACRE IN SIZE, AND HAS AN ASSOCIATED 50-FOOT PERIMETER WETLAND.



301-East\_Preliminary\_Site\_06-2008\_04\_032008.dwg (DSC# 2-1008)

**LEGEND:**

—	PROPERTY LINE	---	EXISTING EASEMENT
- - -	ABUTTING PROPERTY LINE	- - -	EXISTING SANITARY SEWER
---	EXISTING CONTOUR	---	EXISTING WATER
---	EXISTING UTILITY POLE	---	EXISTING CATCH BASIN
---	EXISTING ELECTRIC TOWER	---	EXISTING HYDRANT
---	EXISTING FENCE	---	PROPOSED CATCH BASIN
---	EDGE OF RIVER AND FLAG	---	PROPOSED MANHOLE
---	WETLAND EDGE AND FLAG	---	PROPOSED HYDRANT
---	100-YEAR FLOOD LIMIT AREA	---	PROPOSED FLARED END AND RIPRAP
---	50' PERIMETER WETLAND	---	PROPOSED EASEMENT
---	200' RIVERBANK WETLAND	---	PROPOSED SANITARY SEWER & SERVICE
---	ZONE DESIGNATION	---	PROPOSED WATER & SERVICE
---	EXISTING SEWER MANHOLE	---	PROPOSED STORM DRAIN
---	DRILL HOLE	---	PROPOSED GRADE
---	IRON ROD	---	LIMIT OF WORK / EROSION CONTROLS
---	EXISTING ELECTRIC TOWER	---	LEDGE
---	BENCH MARK		

**WATER SERVICE NOTE:**

1. A NEW 1" COPPER WATER SERVICE SHALL BE INSTALLED ON CLUSTER SUBDIVISION LOTS 1 THROUGH 5 INCLUSIVE. SEE PAWTUCKET WATER SUPPLY BOARD STANDARD NUMBER 1.01
2. A NEW 2" COPPER WATER SERVICE SHALL BE INSTALLED ON CLUSTER SUBDIVISION LOT 6. SEE PAWTUCKET WATER SUPPLY BOARD STANDARD NUMBER 1.03

**WATER MAIN CONNECTION NOTE:**

1. THE "TIE-IN" CONNECTION OF THE NEW 8 INCH WATER MAIN TO THE EXISTING 8 INCH WATER MAIN IN CURRAN ROAD SHALL BE AN 8 INCH BY 8 INCH "CUT-IN" TEE WITH TWO COUPLINGS. SEE PAWTUCKET WATER SUPPLY BOARD STANDARD NUMBER 5.02

**CLUSTER SUBDIVISION DATA:**

PROJECT AREA: AP 19, LOT 7  
 TOTAL AREA OF PROPERTY: 71 ACRES ±  
 TOTAL NUMBER OF LOTS: SIX (6) BUILDABLE LOTS  
 ONE (1) OPEN SPACE LOT

ZONE CLASSIFICATION:	AGRICULTURAL A-2	RESIDENTIAL R-1
MINIMUM LOT SIZE:		
ALLOWED	N/A	N/A
PROPOSED	504,235 SQ. FT.	13,261 SQ. FT.
MINIMUM LOT FRONTAGE:		
ALLOWED	N/A	N/A
PROPOSED	242 FT.	105 FT.
MINIMUM BUILDING SETBACKS:		
FRONT YARD	75 FT.	20 FT.
REAR YARD	30 FT.	25 FT.
SIDE YARD	20 FT.	10 FT.

**LAND USE DATA:**

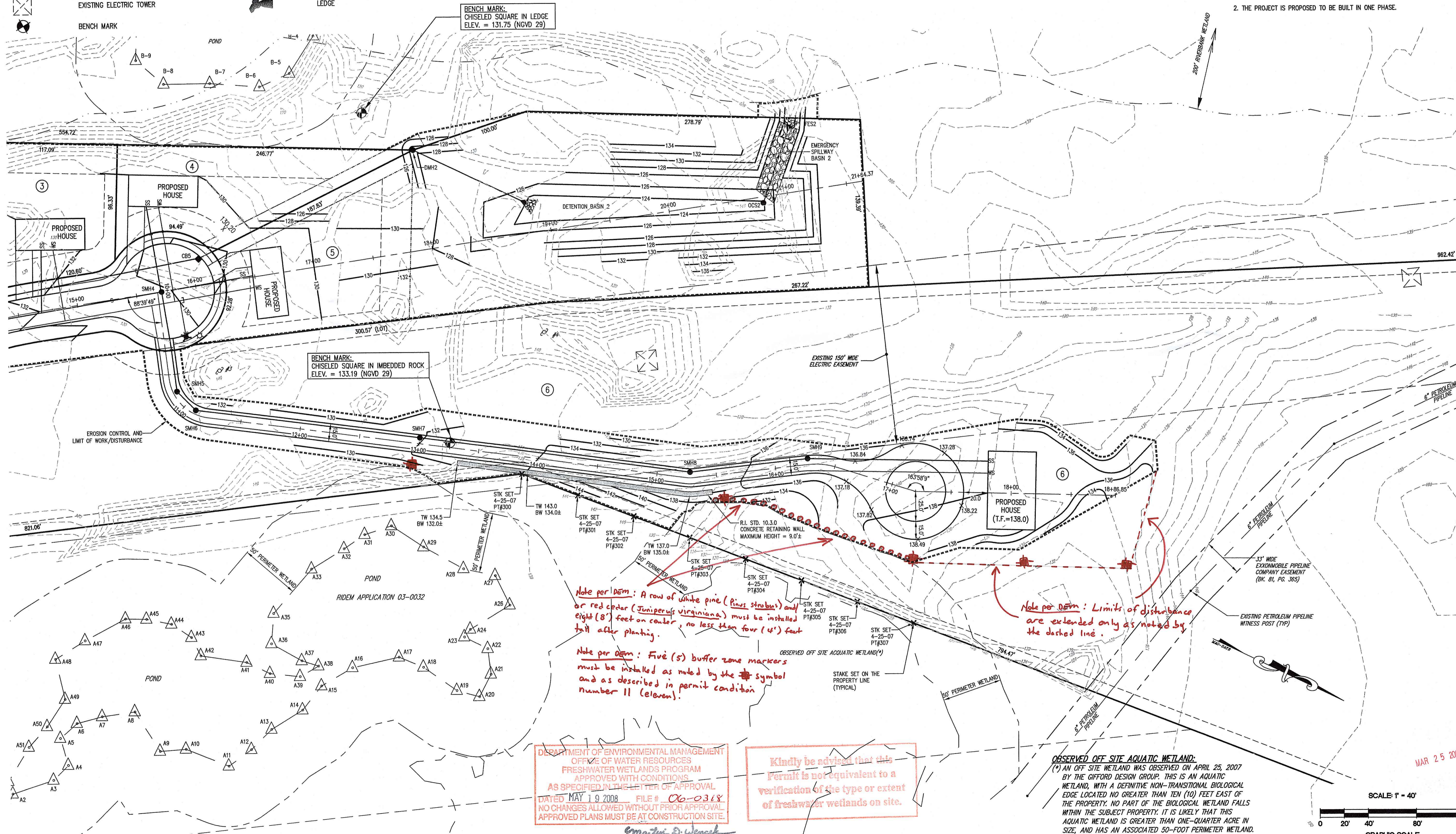
ROADWAYS: 600 LINEAR FEET ±  
 RIGHT OF WAY (ROW): 0.8 ACRES ±  
 SIX (6) PROPOSED SUBDIVISION LOTS: 14.48 ACRES ±  
 ONE (1) OPEN SPACE LOT: 55.47 ACRES ± (80%)  
 TOTAL: 71.15 ACRES ±

**LOT AREA SUMMARY:**

LOT	AREA (S.F.)	AREA (AC.)
1	29,735	0.68
2	13,704	0.31
3	13,261	0.30
4	13,576	0.31
5	74,263	1.70
6	504,235	11.58
RIGHT-OF-WAY	34,671	0.80
OPEN SPACE	2,416,098	55.47
TOTAL	3,099,543	71.15

**NOTES:**

1. ALL PROPOSED LOTS ARE SERVICED BY PUBLIC WATER AND PUBLIC SEWER AND ARE LOCATED WITHIN A WATERSHED OF BLACKSTONE RIVER AND THE PAWTUCKET WATER SUPPLY BOARD.
2. THE PROJECT IS PROPOSED TO BE BUILT IN ONE PHASE.



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED MAY 19 2008 FILE # 06-0318  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL.  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE.

Kindly be advised that this  
 Permit is not equivalent to a  
 verification of the type or extent  
 of freshwater wetlands on site.

OBSERVED OFF SITE AQUATIC WETLAND:  
 (\*) AN OFF SITE WETLAND WAS OBSERVED ON APRIL 25, 2007  
 BY THE GIFFORD DESIGN GROUP. THIS IS AN AQUATIC  
 WETLAND, WITH A DEFINITIVE NON-TRANSITIONAL BIOLOGICAL  
 EDGE LOCATED NO GREATER THAN TEN (10) FEET EAST OF  
 THE PROPERTY. NO PART OF THE BIOLOGICAL WETLAND FALLS  
 WITHIN THE SUBJECT PROPERTY. IT IS LIKELY THAT THIS  
 AQUATIC WETLAND IS GREATER THAN ONE-QUARTER ACRE IN  
 SIZE, AND HAS AN ASSOCIATED 50-FOOT PERIMETER WETLAND.

REVISION

NO. DATE

JOHN P. CARO  
 PROFESSIONAL ENGINEER  
 No. 0398

CIVIL ENGINEERS  
 JOHN P. CARO CORPORATION  
 LAND PLANNERS

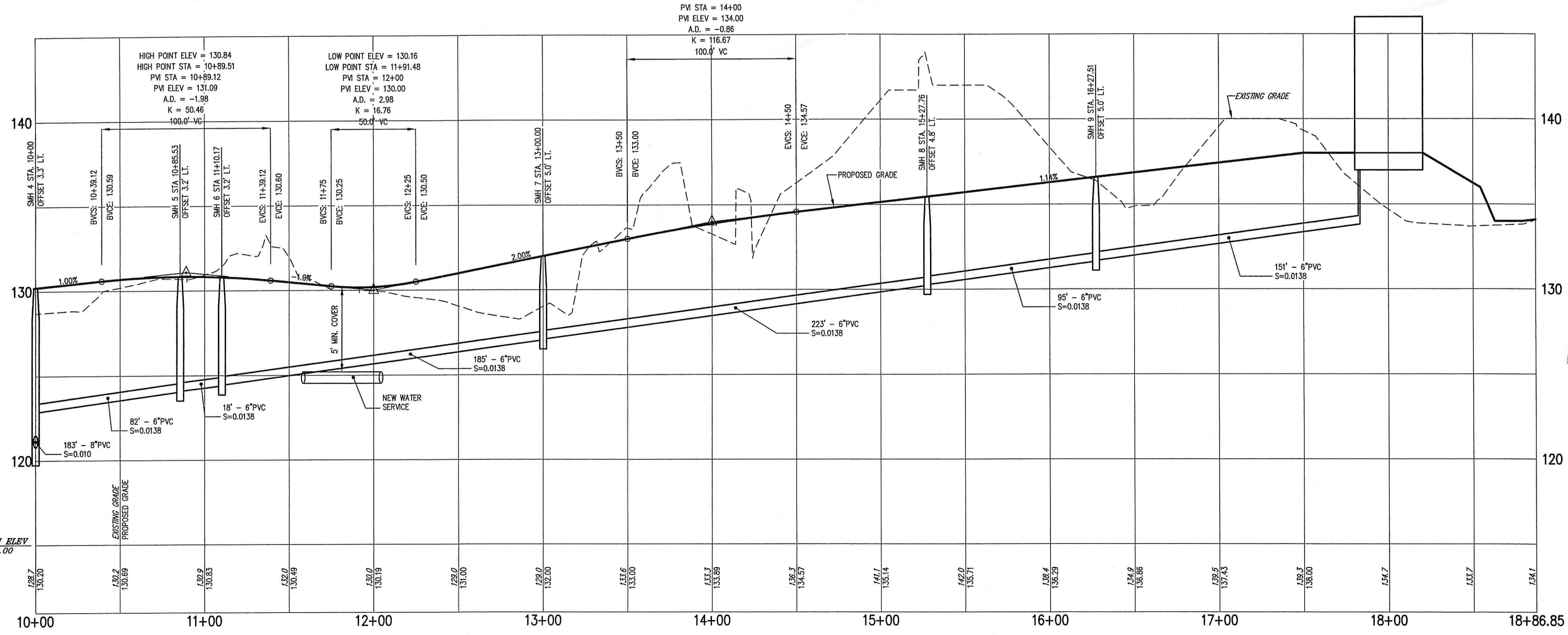
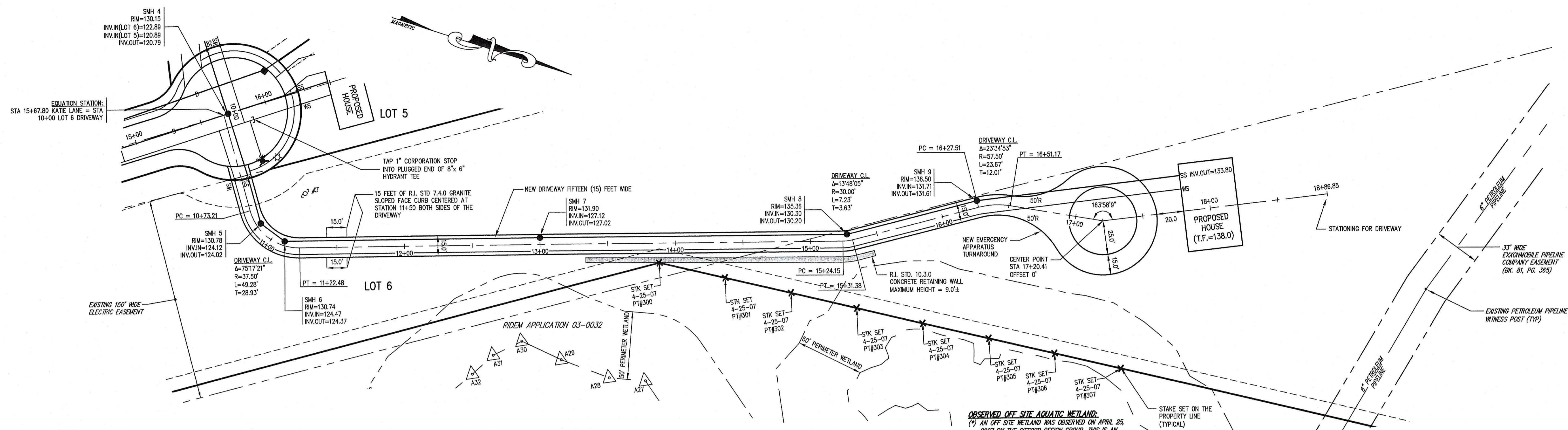
PROJECT NO: 144301  
 DATE: MARCH, 2008  
 SCALE: 1" = 40'  
 DESIGNED BY: J.P.M., S.G.T.  
 DRAWN BY: J.P.M., S.G.T.  
 CHECKED BY: J.P.C.

SITE PLAN - 2  
 MILLERS BROOK EAST  
 ASSESSOR'S PLAT 19/ LOT 7  
 CURRAN ROAD  
 PREPARED FOR  
 MACKLANDS REALTY, INC.

DRAWING NUMBER  
**7A**  
 SHEET 7 OF 13



301-Est-Prim-Preliminary-SITE-08-2006-R4\_032008.dwg (DISK: Z-1008)

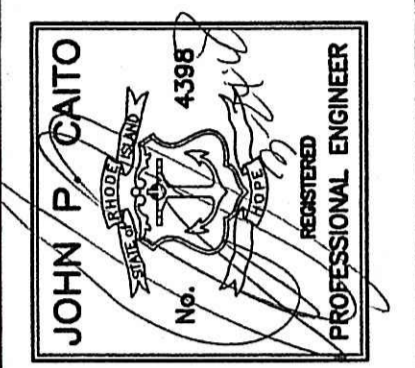


It should be advised that this plan is not equivalent to a re-creation of the type or extent of fresh water wetlands on site.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED MAY 19 2008  
FILE # 26-0318  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Magaret D. Wenzel*

NO.	DATE	REVISION
1	1/8/07	LOT 6 DRIVEWAY/SLOPE FACED CURB
2	1/26/07	WATER SERVICE NOTE
3	5/26/07	REV APPLICATION 03-0032, OBSERVED OFF SITE WETLAND & NOTE
4	3/20/08	REVISED LOT 6 LAYOUT, PETROLEUM PIPELINE EASEMENT



CIVIL ENGINEERS

CORPORATION

LAND PLANNERS

CORPORATION

141 JAMES P. MURPHY HIGHWAY  
WEST WARWICK, RHODE ISLAND  
02893-2382  
401-915-8600  
401-915-8606  
fax: 401-915-8606

PROJECT NO: 144301  
DATE: JUNE, 2008  
SCALE: 1" = 40'  
DESIGNED BY: JPM, S.G.T.  
DRAWN BY: JPM, S.G.T.  
CHECKED BY: J.P.C.

PLAN and PROFILE - LOT 6 DRIVEWAY

MILLERS BROOK EAST

ASSESSOR'S PLAT 19/ LOT 7

CURRAN ROAD

RHODE ISLAND

PREPARED FOR

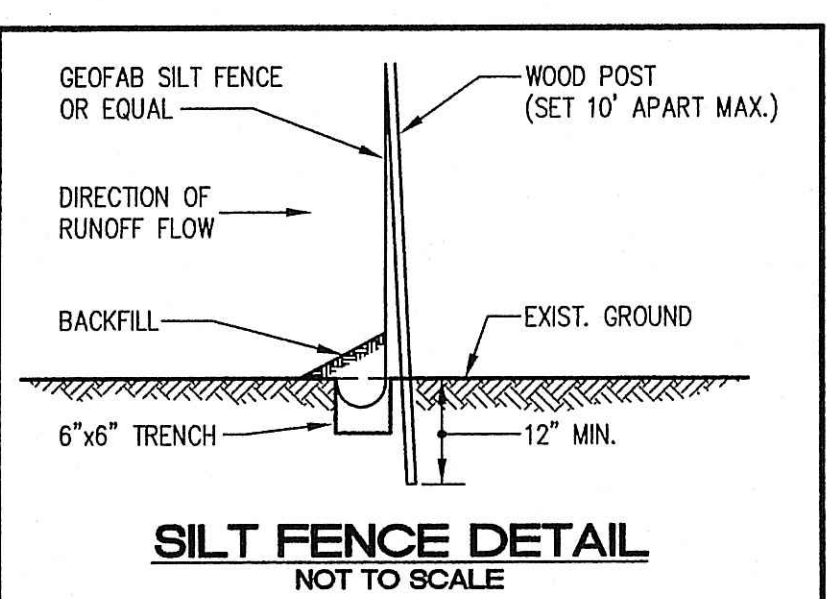
MACKLANDS REALTY, INC.

CUMBERLAND

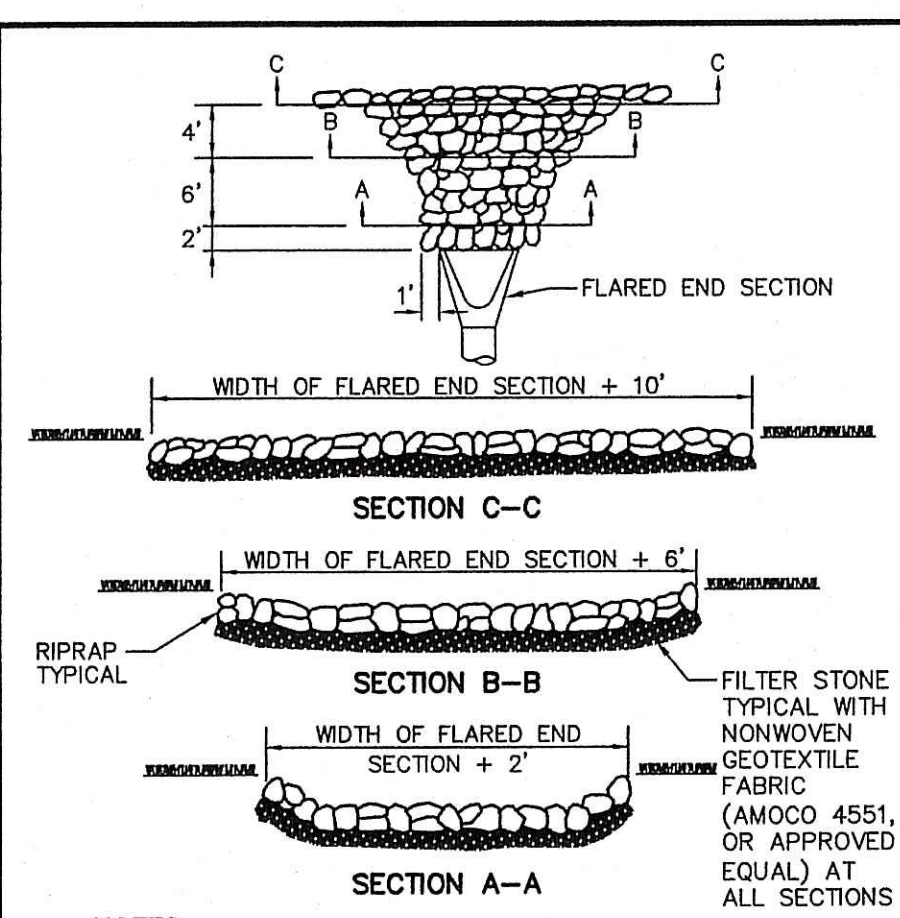
MAR 25 2008



AKAD2000\_101E01-NAD\_062008\_R3\_03\_2008.dwg (DISK 2-1008)



- INSTALLATION SEQUENCING:**
- DIG TRENCH 6" DEEP.
  - SET FENCE POST 10' APART MAX. AT SLIGHT ANGLE TOWARD RUNOFF DIRECTION.
  - ATTACH GEOFAB TO POST.
  - LOWER 6" OF GEOFAB IN TRENCH CURLED TOWARD RUNOFF DIRECTION & BACKFILL.
  - FENCE TO BE INSTALLED AS INDICATED ON THE SITE PLAN OR AS DIRECTED BY THE ENGINEER.



- NOTES:**
- SEE SITE PLAN FOR CLASS OF RIP-RAP TO BE USED
  - SEE FILTER STONE CHART FOR APPROPRIATE FILTER STONE TYPE AND DEPTH
  - DIMENSIONS MAY BE MODIFIED BY ENGINEER TO MEET FIELD CONDITIONS.
  - UNLESS OTHERWISE SPECIFIED, DUMPED RIP-RAP SHALL BE USED.
- ROCKFILL RIP-RAP AT FLARED END SECTION NOT TO SCALE**

**SEDIMENTATION CONTROL PROGRAM:**

- EXTREME CARE SHALL BE EXERCISED SO AS TO PREVENT ANY UNSUITABLE MATERIAL FROM ENTERING DOWNSTREAM WATERCOURSES AND STORMWATER DRAINAGE SYSTEMS.
- DURING CONSTRUCTION, THE CONTRACTOR AND/OR DEVELOPER SHALL BE RESPONSIBLE FOR MAINTAINING DRAINAGE AND RUN-OFF FLOW DURING STORMS AND PERIODS OF RAINFALL.
- SEDIMENTATION CONTROL DEVICES SHALL BE INSPECTED CLOSELY AND MAINTAINED PROMPTLY AFTER EACH RAINFALL.
- CARE SHALL BE TAKEN SO AS NOT TO PLACE "REMOVED SEDIMENTS" WITHIN THE PATH OF EXISTING, NEWLY CREATED (BOTH TEMPORARY AND PERMANENT) OR PROPOSED WATERCOURSES OR THOSE AREAS SUBJECT TO STORMWATER FLOWAGE.
- ADDITIONAL HAYBALES OR SANDBAGS SHALL BE LOCATED AS CONDITIONS WARRANT OR AS DIRECTED BY THE ENGINEER.
- SEDIMENTATION TRAPS SHALL BE PROVIDED AT ALL DRAINAGE STRUCTURES DURING CONSTRUCTION.
- EROSION AND SEDIMENTATION CONTROLS SHALL BE INSTALLED AT THE SITE PRIOR TO THE START OF CONSTRUCTION AND BE PROPERLY MAINTAINED UNTIL ALL DISTURBED AREAS ARE STABILIZED INCLUDING:
  - THE INSTALLATION OF A CONTINUOUS LINE OF STAKED HAYBALES IN ALL LOCATIONS SHOWN ON THE APPROVED SITE PLANS AND WHERE OTHERWISE NECESSARY TO PREVENT SEDIMENTS FROM ENTERING DOWNSTREAM WATERCOURSES AND STORMWATER DRAINAGE SYSTEMS.
  - ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED WITH APPROVED GROUND COVER PRIOR TO THE COMPLETION OF THE PROJECT. AREAS EXPOSED FOR EXTENDED PERIODS ARE TO BE COMPLETELY COVERED WITH SPREAD HAY MULCH.
  - CATCH BASINS WILL BE PROTECTED WITH HAYBALE FILTERS THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL ALL DISTURBED AREAS ARE THOROUGHLY STABILIZED. SUMPS ARE TO BE CLEANED IMMEDIATELY FOLLOWING INSTALLATION OF PERMANENT PAVEMENT.
  - OUTFALLS ARE TO BE PROTECTED BY HAYBALE FILTERS UNTIL DISTURBED AREAS ARE PERMANENTLY STABILIZED WITH APPROVED GROUND COVER.
  - ALL CONTROL MEASURES SHALL BE MAINTAINED IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD.
- THE LIMITS OF ALL CLEARING, GRADING AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE SHALL REMAIN TOTALLY UNDISTURBED.
- BANKS OR SLOPES OVER 5% SHALL BE STABILIZED AS SOON AS POSSIBLE AND SHALL BE PROTECTED WITH A HAY, STRAW OR FIBER MULCH.
- REFERENCE THE "R.I. SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" PREPARED BY THE U.S. DEPT. OF AGRICULTURE, SOIL CONSERVATION SERVICE, 1989, AS A GUIDE.
- AS STATED IN SECTIONS F.A.2 AND F.B.3 OF THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN THEY REACH ONE-HALF THE HEIGHT OF THE HAYBALE AND/OR SILT FENCE.

RIP-RAP	FILTER STONE	DEPTH
R-1	FS-1	6"
R-2	FS-2	6"
R-3	FS-2	6"
R-4	FS-3	7.5"
R-5	FS-3	7.5"
R-6	FS-2 and R-2	6" / 6"
R-7	FS-3 and R-4	7.5" / 21"
R-8	FS-3 and R-4	7.5" / 21"

**FILTER STONE CHART**

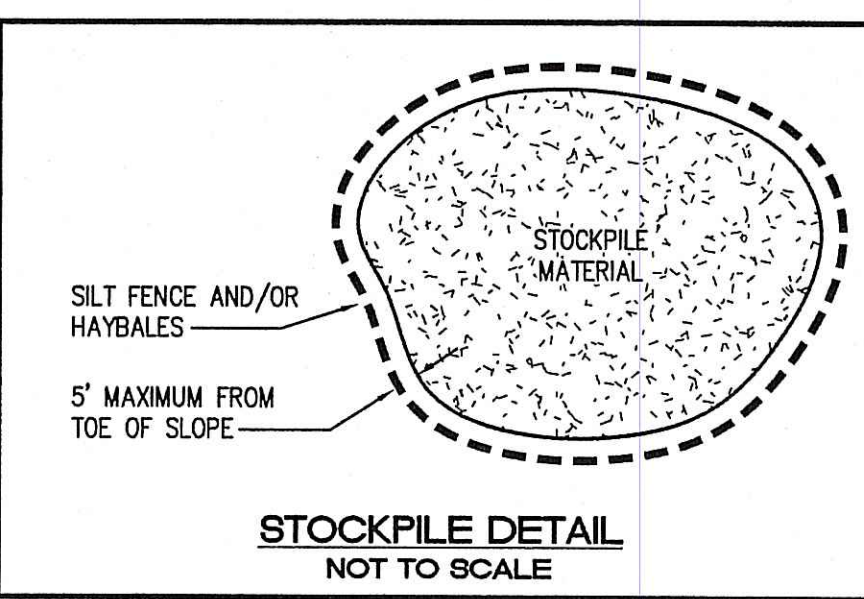
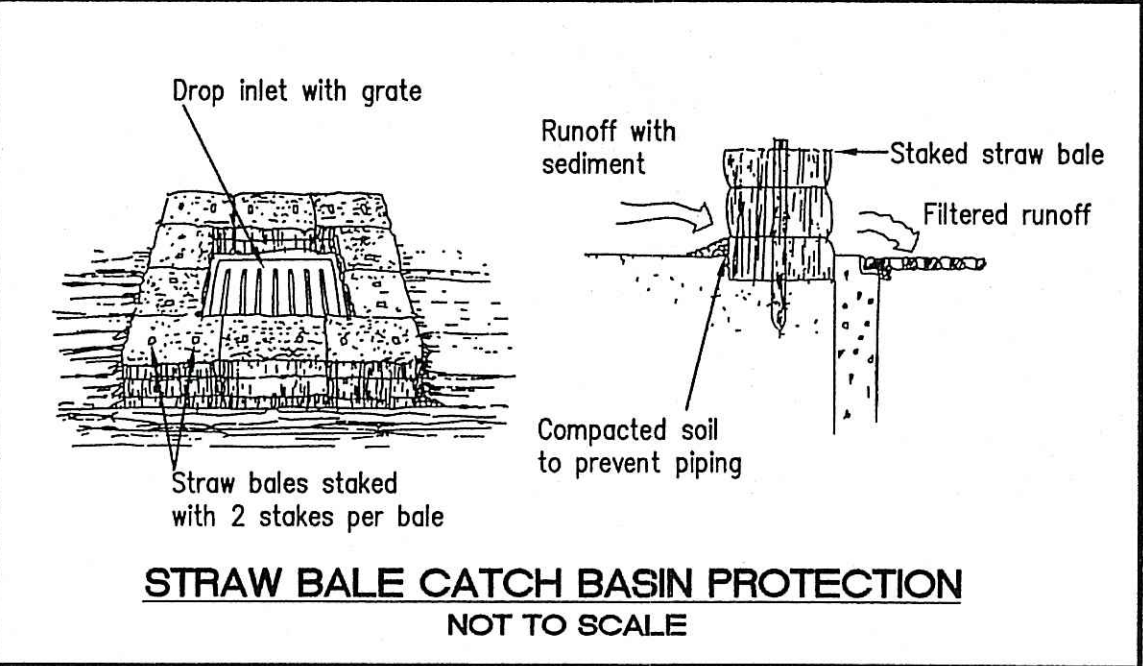
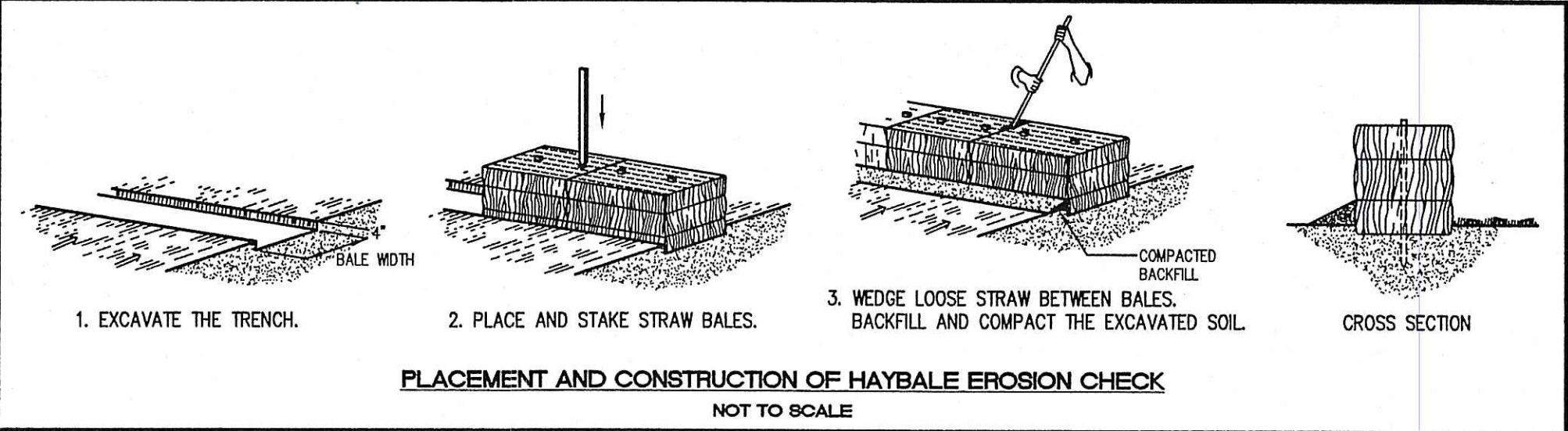
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED MAY 19 2008 FILE # 06-038  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
*Signature: D. Wenzel*

**EROSION CONTROL AND SOIL STABILIZATION PROGRAM:**

- DENUDED SLOPES SHALL NOT BE LEFT EXPOSED FOR EXCESSIVE PERIODS OF TIME, SUCH AS THE INACTIVE WINTER SEASONS.
- TEMPORARY TREATMENTS SHALL CONSIST OF A HAY, STRAW, FIBER MULCH OR PROTECTIVE COVERS SUCH AS A MAT OR FIBER LINING (BURLAP, JUTE, FIBERGLASS NETTING, EXCELOR BLANKETS). THEY SHALL BE INCORPORATED INTO THE WORK AS WARRANTED OR AS ORDERED BY THE ENGINEER.
- HAY OR STRAW APPLICATIONS SHOULD BE IN THE AMOUNT OF 2000 LBS/ACRE.
- ALL HAYBALES OR TEMPORARY PROTECTION SHALL REMAIN IN-PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED.
- THE TOPSOIL SHALL HAVE A SANDY LOAM TEXTURE RELATIVELY FREE OF SUBSOIL MATERIAL, STONES, ROOTS, LUMPS OF SOIL, TREE LIMBS, TRASH OR CONSTRUCTION DEBRIS AND SHALL CONFORM WITH RHODE ISLAND STANDARD SPECIFICATION M.20.01.
- THE SEED MIX SHALL BE INOCULATED WITHIN 24-HOURS BEFORE MIXING AND PLANTING, WITH APPROPRIATE INOCULUM FOR EACH VARIETY.
- THE DESIGN MIX UTILIZED IN ALL DISTURBED AREAS TO BE SEEDED SHALL BE COMPRISED OF THE FOLLOWING:
 

TYPE	% BY WEIGHT
CREeping RED FESCUE	70
ASTORIA BENTGRASS	5
BIRDFOOT TREEFOOL	15
PERENNIAL RYEGRASS	10

 APPLICATION RATE 100 LBS/ACRE  
 LIMING AND FERTILIZING AS REQUIRED TO COMPLIMENT OR UPGRADE EXISTING CONDITIONS.
- THE CONTRACTOR MUST REPAIR AND/OR RESEED ANY AREAS THAT DO NOT DEVELOP WITHIN THE PERIOD OF ONE YEAR, AND SHALL DO SO AT AN ADDITIONAL EXPENSE.
- THE NORMAL ACCEPTABLE SEASONAL SEEDING DATES ARE APRIL 1ST THROUGH OCTOBER 15TH AS INDICATED IN THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, 1989, CHAPTER FOUR, SECTIONS A AND B, AS AMENDED.
- STABILIZATION OF ONE FORM OR ANOTHER AS DESCRIBED ABOVE SHALL BE ACHIEVED WITHIN FIFTEEN (15) DAYS OF FINAL GRADING.
- STOCKPILES OF TOPSOIL AND EARTH MATERIALS SHALL NOT BE LOCATED NEAR WATERWAYS. THEY SHALL HAVE SIDE SLOPES NO GREATER THAN THIRTY PERCENT (30%), SHALL ALSO BE SEED AND/OR STABILIZED AND SHALL BE COMPLETELY ENCLOSED WITH STAKE HAYBALES AND/OR SILT FENCE. (SEE DETAILS)
- ON BOTH STEEP AND LONG SLOPES, CONSIDERATION SHOULD BE GIVEN TO "CRIMPING" OR "TRACKING" TO TACK DOWN MULCH APPLICATIONS.
- TREES TO BE RETAINED SHALL BE FENCED OR ROPED OFF TO PROTECT THEM FROM CONSTRUCTION EQUIPMENT.
- ALL PROPOSED PLANTINGS MUST BE ACCOMPLISHED AS EARLY AS POSSIBLE UPON COMPLETION OF GRADING AND CONSTRUCTION, AND AT LEAST PRIOR TO ANY ON-SITE OCCUPANCY.
- ALL PROPOSED PLANTINGS MUST BE MAINTAINED BY THE CONTRACTOR TO ENSURE SURVIVAL.
- SHOULD ANY OR ALL OF THE PROPOSED PLANTS FAIL TO SURVIVE AT LEAST ONE (1) FULL GROWING SEASON FROM THE TIME THEY HAVE BEEN PLANTED, THE OWNER SHALL BE FULLY RESPONSIBLE FOR REPLACING AND MAINTAINING THE SAME PLANT SPECIES FOR ONE (1) ADDITIONAL GROWING SEASON.
- ALL DISTURBED AREAS MUST BE SEED OR PLANTED WITHIN THE CONSTRUCTION SEASON.
- TEMPORARY SEEDING MUST BE DONE WITHIN ONE (1) MONTH AFTER DISTURBANCE.
- ALL DISTURBED AREAS MUST BE PERMANENTLY SEED OR PLANTED BEFORE OCTOBER 1ST, IF NOT THEY MUST BE TEMPORARILY SEED.
- THE CONTRACTOR SHOULD INITIATE APPROPRIATE VEGETATIVE PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE BUT NOT MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA HAS TEMPORARILY OR PERMANENTLY CEASED, UNLESS THE ACTIVITY IS TO RESUME WITHIN 21 DAYS.
- ADDITIONAL HAYBALES OR SANDBAGS SHALL BE LOCATED AS CONDITIONS WARRANT OR AS DIRECTED BY THE ENGINEER, OWNER, TOWN REPRESENTATIVES OR R.I.D.E.M.



**GENERAL NOTES:**

- THE STATE OF RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2004 EDITION, AND THE RHODE ISLAND STANDARD DETAILS ARE MADE A PART HEREOF AS FULLY AND COMPLETELY AS IF ATTACHED HERETO. THE 2004 REVISION OF THE STANDARD SPECIFICATIONS MAY BE OBTAINED AT THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION, DIVISION OF PUBLIC WORKS. IN ADDITION, THE TOWN OF CUMBERLAND STANDARD SPECIFICATIONS ARE MADE A PART HEREOF AS FULLY AND COMPLETELY AS IF ATTACHED HERETO.
  - ALL REQUIRED SITE IMPROVEMENTS SHALL BE INSPECTED BY THE TOWN ENGINEER TO ENSURE SATISFACTORY COMPLETION. IN NO CASE SHALL THE INSTALLATION OF ANY IMPROVEMENTS BE STARTED UNTIL WRITTEN NOTIFICATION IS GIVEN TO THE TOWN ENGINEER. AT LEAST A 24-HOUR NOTICE SHALL BE GIVEN TO THE TOWN ENGINEER PRIOR TO ANY SUCH START OF CONSTRUCTION. A FINAL INSPECTION OF ALL SITE IMPROVEMENTS, UTILITIES AND GRADING WILL BE MADE TO DETERMINE WHETHER THE WORK IS SATISFACTORY AND IN SUBSTANTIAL AGREEMENT WITH THE APPROVED FINAL CONSTRUCTION DRAWINGS AND THE TOWN SPECIFICATIONS.
  - LOCATION AND DEPTH OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL CHECK AND VERIFY LOCATIONS OF ALL EXISTING UTILITIES BOTH UNDERGROUND AND OVERHEAD. ANY DAMAGE TO EXISTING UTILITIES AS SHOWN OR NOT SHOWN ON THE PLANS SHALL BE THE CONTRACTOR'S RESPONSIBILITY. COSTS OF SUCH DAMAGE SHALL BE BORNE BY THE CONTRACTOR. NO EXCAVATION SHALL BE DONE UNTIL ALL INVOLVED UTILITY COMPANIES ARE NOTIFIED 48-HOURS IN ADVANCE. THE CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY DIG-SAFE (1-800-344-7233) A MINIMUM OF 48 WORKING HOURS, EXCLUDING WEEKENDS AND HOLIDAYS, PRIOR TO THE START OF ANY EXCAVATION AND/OR BLASTING WORK. THE NAME OF THE COMPANY PERFORMING THE EXCAVATION AND/OR BLASTING WORK MUST BE SUPPLIED TO DIG-SAFE, IF IT IS DIFFERENT FROM THE CALLER.
  - IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO OBTAIN ANY AND ALL PERMITS REQUIRED BY THE STATE OF RHODE ISLAND, FEDERAL GOVERNMENT, PAWTUCKET WATER SUPPLY BOARD AND THE TOWN OF CUMBERLAND ON PRIOR TO COMMENCING ANY WORK.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL TEMPORARY SEDIMENTATION AND EROSION CONTROLS IN ACCORDANCE WITH THE TOWN OF CUMBERLAND SOIL EROSION AND SEDIMENT CONTROL ORDINANCE.
  - UNLESS OTHERWISE SPECIFIED, ALL STORM DRAINS SHALL BE REINFORCED CONCRETE PIPE, CLASS III, WITH ALL EXTERIOR JOINTS MORTARED.
  - THE INSTALLATION OF THE SANITARY SEWER SHALL CONFORM TO THE CONSTRUCTION DETAILS AND REQUIREMENTS OF THE TOWN OF CUMBERLAND AND THE NARRAGANSETT BAY COMMISSION. (SEE DEM SANITARY SEWER NOTES)
  - WATER MAIN AND SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE POLICIES AND PRACTICES OF THE PAWTUCKET WATER SUPPLY BOARD, AND MUST BE INSPECTED BY SUCH DEPARTMENT PERSONNEL AS DIRECTED BY THE SUPERINTENDENT.
  - THE ENTIRE PROPERTY IS LOCATED WITHIN "ZONE X" AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD PLAIN AS IDENTIFIED ON BELOW: "NATIONAL FLOOD INSURANCE PROGRAM; FIRM, FLOOD INSURANCE RATE MAP; TOWN OF CUMBERLAND, RHODE ISLAND, PROVIDENCE COUNTY; PANEL 6 OF 7; COMMUNITY PANEL NUMBER 440016-0006-B; MAP REVISED FEBRUARY 16, 1990; FEDERAL EMERGENCY MANAGEMENT AGENCY".
  - ALL MATERIAL FOR FILL SHALL BE CLEAN AND FREE OF MATTER WHICH COULD POLLUTE ANY DOWN STREAM WATERCOURSE.
  - VERTICAL DATUM: MEAN SEA LEVEL (NGVD 29).
  - STATE REGULATED FRESH WATER WETLANDS VERIFIED BY THE RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT UNDER APPLICATION 04-0342.
  - FILL MATERIAL SHALL BE COMPACTED IN ONE FOOT (MAXIMUM) LIFTS TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED IN ACCORDANCE WITH ASTM D-1557 (MODIFIED PROCTOR TEST).
  - ALL WORK SHALL CONFORM TO THE TOWN OF CUMBERLAND AND PAWTUCKET WATER SUPPLY BOARD SPECIFICATIONS.
  - DUST CONTROL IN THE FORM OF CALCIUM CHLORIDE SHALL BE APPLIED AS CONDITIONS WARRANT OR AS DIRECTED BY THE TOWN OF CUMBERLAND BUILDING OFFICIAL.
  - WORK SHOWN ON THE PLANS FOR WHICH THERE ARE NO PARTICULAR DETAILS OR SPECIFICATIONS DOES NOT RELIEVE THE CONTRACTOR FROM FINISHING AND INSTALLING THE WORK. THE CONTRACTOR SHALL THOROUGHLY EXAMINE THE CONTRACT DOCUMENTS AND PLANS AND INSPECT THE SITE, AND THE BID PRICE SHALL INCLUDE ALL SERVICES AND MATERIALS AS NECESSARY TO COMPLETE THE PROJECT. ANY CHANGES TO THE PROJECT OR THE INSTALLATION OF AN ITEM OR WHICH NO PARTICULAR DETAIL OR SPECIFICATION WAS PROVIDED MUST BE REVIEWED BY AND ACCEPTABLE TO THE ENGINEER.
  - SANITARY SEWER P.V.C. PIPE FITTINGS SHALL MEET ASTM SPECIFICATION D-3034-SDR-35.
  - THE CONTRACTOR HAS ACQUIRED THE APPROPRIATE PWSB REVIEW AND RECOGNIZES THE PROPER INSTALLATION REQUIREMENTS FOR MAIN EXTENSIONS AND SERVICE INSTALLATIONS.
  - AT CONSTRUCTION COMPLETION, THE CONTRACTOR SHALL SUBMIT "AS-BUILT" RECORD DRAWINGS SHOWING THE EXACT LOCATIONS OF ALL PIPES, VALVES, SERVICES, FITTINGS AND APPURTENANCES, REFERENCED TO PERMANENT BENCH MARKS.
- FLUSHING, FILLING, TESTING OF WATERMAINS:**
- THE FOLLOWING PROCEDURES SHALL BE STRICTLY ADHERED TO AFTER THE INSTALLATION OF WATER MAINS, SERVICES OR AS DIRECTED BY THE PAWTUCKET WATER SUPPLY BOARD.
- THE CONTRACTOR SHALL UTILIZE A BY-PASS PIPING SYSTEM FOR FLUSHING, FILLING, TESTING AND CHLORINATION OF VARIOUS SIZED WATER MAINS. THE BY-PASS PIPING SHALL CONSIST OF CORPORATION STOPS OR VALVES ON THE SUPPLY LINE AND THE MAIN TO BE FILLED. TWO (2) OR MORE CHECK VALVES SHALL BE INSTALLED IN THE BY-PASS PIPE TO ENSURE THAT NO WATER IS ALLOWED TO RETURN TO THE SUPPLY LINE.
  - FIRE HYDRANTS MAY BE UTILIZED IF PROPERLY FLUSHED AND THE ABOVE BY-PASS PIPING INSTALLED.
  - LINE VALVES SHALL NOT BE UTILIZED TO FILL, FLUSH, TEST OR CHLORINATE WATER MAINS.
  - MAINS SHALL BE PRESSURE TESTED TO 1.5 TIMES SYSTEM WORKING PRESSURE, AND SHALL BE REQUIRED TO HOLD FOR AT LEAST 2 HOURS.
  - WATER MAINS AND SERVICES SHALL BE THOROUGHLY FLUSHED. A TURBIDITY READING OF BELOW (5) FIVE SHALL BE MONITORED BY THE WATER DEPARTMENT CHEMIST BEFORE FLUSHING IS DISCONTINUED AND CHLORINATION MAY BEGIN. FLUSHING SHALL BE AT RATE SUFFICIENT TO CREATE A WATER VELOCITY OF AT LEAST 2.5 FEET PER SECOND THROUGH THE PIPE.
- R.I.D.E.M. PERMIT:**
- ALL WORK SHALL BE IN FULL CONFORMITY WITH THE PERMIT ISSUED BY R.I.D.E.M. FOR THE PROJECT.

**STORM DRAINAGE SYSTEM MAINTENANCE PLAN:**

- THE FOLLOWING LIST OF MAINTENANCE TASKS AND FREQUENCIES MUST BE ADHERED TO IN ORDER TO INSURE A SUCCESSFUL LONG TERM OPERATION OF THE STORM DRAINAGE SYSTEM.
- DURING CONSTRUCTION ACTIVITIES, ALL EROSION CONTROLS ON THE SITE SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN TWENTY FOUR (24) HOURS AFTER AN EVENT WHICH GENERATES AT LEAST 0.25 INCHES OF RAIN IN A TWENTY FOUR (24) HOUR PERIOD.
  - ACCUMULATED SEDIMENTS SHALL BE REMOVED FROM ALL CATCH BASINS IMMEDIATELY AFTER SITE STABILIZATION.
  - SIDE-SLOPES OF THE STORMWATER BASINS SHALL BE MOWED A MINIMUM OF TWICE PER YEAR.
  - ALL TRASH, LITTER AND OTHER DEBRIS SHALL BE REMOVED FROM ALL STORMWATER INLET AND OUTLET STRUCTURES A MINIMUM OF TWICE PER YEAR. THESE STRUCTURES SHALL ALSO BE INSPECTED TWICE PER YEAR. INSPECTIONS SHALL BE PERFORMED SEVERAL TIMES WITHIN THE FIRST SIX MONTHS OF OPERATION.
  - THE GRASSED EMBANKMENT AREAS OF THE BASINS SHALL BE INSPECTED A MINIMUM OF TWICE PER YEAR BY THE TOWN OF CUMBERLAND. PROBLEM AREAS SHALL BE RESEED IMMEDIATELY TO STABILIZE EXPOSED SOILS.
  - INSPECTIONS OF ALL CATCH BASINS SHALL OCCUR ON AN ANNUAL BASIS TO CHECK FOR DEBRIS REMOVAL (SEDIMENT AND HYDROCARBONS) AND STRUCTURAL INTEGRITY OR DAMAGE. SUCH DEFICIENCIES SHALL BE CORRECTED IMMEDIATELY.
  - REPAIRS OR REPLACEMENT OF INLET/OUTLET STRUCTURES OR ANY ELEMENT OF THE FACILITY SHALL BE DONE WITHIN THIRTY (30) DAYS OF DEFICIENCY REPORTS. IF AN EMERGENCY SITUATION IS IMMINENT THEN REPAIR/REPLACEMENT SHALL BE DONE IMMEDIATELY TO AVERT FAILURE OR DANGER TO NEARBY RESIDENTS.
  - ALL STORM WATER INFRASTRUCTURE SHALL BE PRIVATELY OWNED AND MAINTAINED.
  - MAINTENANCE SHALL ALSO BE IN ACCORDANCE WITH THE FOLLOWING REFERENCES: STATE OF RHODE ISLAND, STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL, RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, RHODE ISLAND COASTAL RESOURCES MANAGEMENT COUNCIL, SEPTEMBER 1, 1993, AS AMENDED.
  - THE LEGAL LIABILITY FOR AND MAINTENANCE OF A HOLDING POND SHALL BE THE SOLE RESPONSIBILITY OF THE LANDOWNER.
  - THE LANDOWNER SHALL HAVE AN INSPECTION OF THE HOLDING POND PERFORMED BY A PROFESSIONAL ENGINEER EVERY THREE YEARS TO ENSURE MAINTENANCE AND PROPER FUNCTION OF THE HOLDING POND. RECORDS OF INSPECTION SHALL BE KEPT ON FILE WITH THE LANDOWNER AND THE DEPARTMENT OF PUBLIC WORKS.
  - UPON COMPLETION OF CONSTRUCTION OF THE ROADWAYS AND STORMWATER DRAINAGE SYSTEM, ALL CATCH BASINS AND STORM DRAIN PIPING SHALL BE CLEANED OF SEDIMENT. THE STORMWATER BASINS SHALL BE CLEANED OF SEDIMENT TO THE DESIGN GRADES INDICATED ON THE CONSTRUCTION DRAWINGS. THEREAFTER, MAINTENANCE OF THE STORMWATER DRAINAGE SYSTEM SHALL BE IN ACCORDANCE WITH THE TOWN OF CUMBERLAND HOLDING POND ORDINANCE, AS AMENDED, AND THE STATE OF RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL, AS AMENDED.
  - GRASSES MUST BE PLANTED AROUND AND WITHIN THE BASINS IMMEDIATELY FOLLOWING CONSTRUCTION TO STABILIZE THE SLOPES AND PREVENT EROSION. TREE AND SHRUBS SHOULD NOT BE PLANTED ON ANY IMPOUNDING EMBANKMENTS, TO PREVENT POTENTIAL SUBSURFACE DISTURBANCE AND POSSIBLE FAILURE OF THE STRUCTURE.
  - SEDIMENTS SHOULD BE REMOVED FROM DRAINAGE STRUCTURES AND THE STORMWATER BASINS IMMEDIATELY FOLLOWING SITE STABILIZATION AND DURING THE FIRST (INITIAL) YEAR OF OPERATION AND EVERY 10 YEARS THEREAFTER. MORE FREQUENT REMOVALS WILL BE NECESSARY IF THE SEDIMENT STORAGE CAPACITY OF A BASIN IS EXCEEDED.
  - SIDE SLOPES AND EMBANKMENTS OF THE BASINS SHOULD BE MOWED AT LEAST ONCE DURING THE GROWING SEASON (PREFERABLY AFTER AUGUST 15TH), TO PREVENT UNDESIRABLE WOODY GROWTH. MOWING CAN BE MORE FREQUENT IF A MORE GROOMED APPEARANCE IS DESIRED AND THE BASIN IS NOT MANAGED FOR WILDLIFE HABITAT. ALL TRASH AND LITTER SHALL BE REMOVED FROM THE BASINS DURING MOWING OPERATIONS.
  - ALL COSTS UNACCURED FOR MAINTENANCE, CLEANING, AND INSPECTION ARE THE RESPONSIBILITY OF THE PROPERTY OWNER AND/OR RESPONSIBLE PARTY. IN CERTAIN CASES, THE APPROPRIATE DEM PROGRAM MAY REQUIRE DOCUMENTATION OF MAINTENANCE.
  - ANY INADVERTENT OF DELIBERATE DISCHARGE OF WASTE OIL OR ANY OTHER POLLUTANT TO THE STORMWATER DISPOSAL SYSTEM REQUIRES IMMEDIATE NOTIFICATION OF THE DEM OIL POLLUTION CONTROL PROGRAM AT 222-2284, AS PER OIL POLLUTION CONTROL REGULATIONS. DURING NON-WORKING HOURS, NOTIFICATION OF SPILLS CAN BE MADE TO THE DEM DIVISION OF ENFORCEMENT AT 222-3070, THE 24-HOUR EMERGENCY RESPONSE PHONE NUMBER.

**CHLORINATION OF WATER MAINS AND SERVICES:**

- ALL MAINS AND APPURTENANCES SHALL BE CHLORINATED IN ACCORDANCE WITH PROVISIONS OF THE AMERICAN WATER WORKS ASSOCIATION STANDARD 0601-81, OR LATEST REVISION THEREOF, AND AS FOLLOWS:
- A CORPORATION STOP SHALL BE PROVIDED AT A LOCATION FOR FEEDING OF THE LIQUID CHLORINE SOLUTION, AND AT LOCATIONS DESIGNATED BY THE WATER DEPARTMENT. FOR SAMPLING POINTS. COPPER TUBING SHALL BE USED FOR ALL CHLORINATION AND SAMPLING PIPES. CHLORINE SHALL BE FED IN A LIQUID SOLUTION, MADE FROM CRYSTALLINE SODIUM HYPOCHLORITE.
  - THE INITIAL CHLORINE CONCENTRATION IN THE PIPE SHALL BE AT LEAST 25 MG/L WHEN TESTED BY THE WATER DEPARTMENT. THE TREATED WATER WILL REMAIN IN THE WATER MAIN FOR AT LEAST TWENTY-FOUR (24) HOURS. AFTER THE TWENTY-FOUR HOUR RETENTION PERIOD THE CHLORINE CONCENTRATION IN THE PIPE SHALL BE NO LESS THAN 10 MG/L WHEN TESTED BY THE WATER DEPARTMENT. IF AFTER THE APPLICATION RETENTION PERIOD, THE CHLORINE CONCENTRATION IS AT LEAST 10 MG/L, THE HEAVILY CHLORINATED WATER SHALL BE FLUSHED FROM THE MAIN UNTIL THE CHLORINE CONCENTRATION IN THE WATER LEAVING THE MAIN WHEN TESTED IS NO HIGHER THAN 1 MG/L, AND THE TURBIDITY IS LESS THAN 1.0. IF THE CHLORINE CONCENTRATION WHEN TESTED IS LESS THAN 10 MG/L, STEP (b) SHALL BE REPEATED.
  - BACTERIOLOGICAL TESTING SHALL BE DONE BY THE WATER DEPARTMENT CHEMIST AFTER THE FINAL FLUSHING AND BEFORE THE WATER MAIN IS PUT INTO SERVICE. THE SAMPLE OR SAMPLES SHALL BE COLLECTED IMMEDIATELY AFTER FINAL FLUSHING AND AGAIN, IF NECESSARY, AT LEAST TWENTY-FOUR (24) HOURS AFTER FINAL FLUSHING. THESE SAMPLES USUALLY REQUIRE A FOURTY-EIGHT (28) HOUR PERIOD TO ENSURE THAT NO COLIFORM ORGANISMS EXIST. IF THE TESTING IS POSITIVE, THE PROCEDURE SHALL BE REPEATED. NO WATER MAIN SHALL BE PUT INTO SERVICE WITHOUT THE PERMISSION OF THE TOWN OF CUMBERLAND PUBLIC WORKS ENGINEER AND THE PAWTUCKET WATER SUPPLY BOARD.
  - UNDER CERTAIN CONDITIONS EMERGENCY TYPE CHLORINATION MAY BE CONDUCTED WITH THE APPROVAL OF THE WATER DEPARTMENT SUPERVISOR.
  - CHLORINATION OF VALVES, FITTINGS AND SHORT LENGTHS OF MAIN SHALL BE THOROUGHLY DISINFECTED BY CONTACT SWABBING AND/OR BRUSHING WITH A HIGH STRENGTH SODIUM OR CALCIUM HYPOCHLORITE SOLUTION IN THE CONCENTRATION OF 500 MILLIGRAMS OF AVAILABLE CHLORINE PER LITER OF WATER.

Department of Environmental Management  
Division of Water Resources (DWR)

**SEWER LINE/WATER MAIN SEPARATION POLICY FOR DESIGN OF SANITARY SEWERS**

**A. Lateral placement of sewers and water mains**  
Sewers shall be laid at least 10 feet horizontally from any existing or proposed water main. The distance shall be measured edge-to-edge. There is no minimum vertical separation required provided the 10 foot horizontal separation is maintained.  
In cases where it is not possible to maintain a 10 foot horizontal separation, the Division may allow deviation on a case-by-case basis, if supported by data from the design engineer. Such deviation may allow installation of the sewer closer to a water main, provided that:

- The sewer and water main are laid in separate trenches, or
- The sewer and water main may be installed in the same trench with the water main placed on a bench of undisturbed earth, and
- In either case, the crown of the sewer shall be at least 18 inches below the invert of the water main.

In situations where it is impossible to obtain proper horizontal and vertical separation as stipulated above, the following protection shall be provided:

- Encasement of the sewer pipe in concrete (min. 6 inch thickness) or a carrier pipe for at least 10 feet either side of the area not complying with the minimum horizontal and vertical separation, or
- Design and construction of the sewer equal to water main pipe (cement-lined ductile iron or other AWWA-approved material for potable water conveyance), and pressure tested in accordance with AWWA specifications.

**B. Sewers crossing water mains**  
Sewers crossing over water mains should be avoided, but if conditions warrant this situation, then adequate structural support shall be provided for the sewer to maintain line and grade. Sewers crossing under water mains shall be laid to provide a minimum vertical separation of 18 inches between the invert of the water main and the crown of the sewer. Relocation of an existing water main may be necessary to achieve this vertical separation. Relocated water main shall be constructed of an AWWA-approved material for potable water conveyance and designed for the required water service pressure for a distance of 10 feet on each side of the crossing, measured perpendicular to the sewer. The crossing shall be arranged so that the joint is well seated and as far as possible from the water main joints.  
Where conditions prevent an 18 inch vertical separation from being maintained, the following methods shall be specified:

- The sewer shall be designed and constructed equal to water main pipe (cement-lined ductile iron pipe, PVC or other AWWA-approved material for potable water conveyance) for a distance of 10 feet on each side of the crossing, measured perpendicular to the water main and pressure tested in accordance with AWWA specifications, or
- Either the water main or the sewer may be encased in concrete (min. 6 inch thickness) or a carrier pipe for a distance of 10 feet on each side of the crossing, measured perpendicular to the water main. The carrier pipe shall be designed and constructed of materials which are satisfactory to the Division, or
- Any other methods, if supported by data from the design engineer, which ensure adequate watertightness and are satisfactory to the Division.

REVISION

NO.	DATE	NOTES
1	1/8/07	

JOHN P. CAITO  
No. 4288  
REGISTERED PROFESSIONAL ENGINEER

CIVIL ENGINEERS  
141 JAMES P. MURPHY HIGHWAY  
WEST WARWICK, RHODE ISLAND  
08893-9382  
401-915-8600  
401-915-8600  
fax: 401-915-8600

ALTO CORPORATION  
LAND PLANNERS

PROJECT NO: 144301  
DATE: JUNE, 2006  
SCALE: AS NOTED  
DESIGNED BY: D.T.  
DRAWN BY: D.T.  
CHECKED BY: J.P.C.

NOTES and DETAILS  
MILLERS BROOK EAST  
ASSESSOR'S PLAT 19/ LOT 7  
CURRAN ROAD  
PREPARED FOR  
MACKLANDS REALTY, INC.

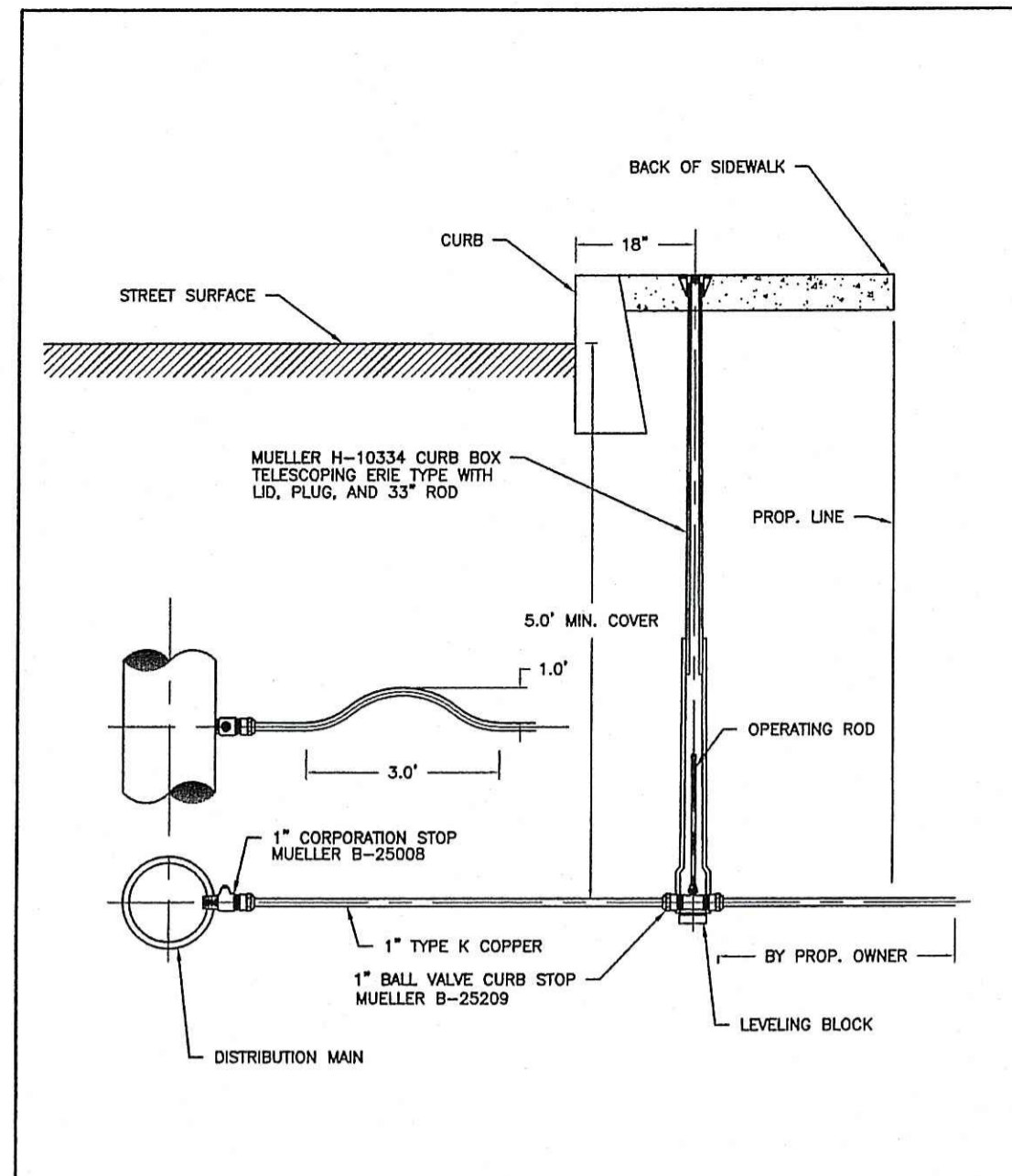
RHODE ISLAND  
CUMBERLAND

DRAWING NUMBER  
11  
SHEET 11 OF 13

MAR 25 2008

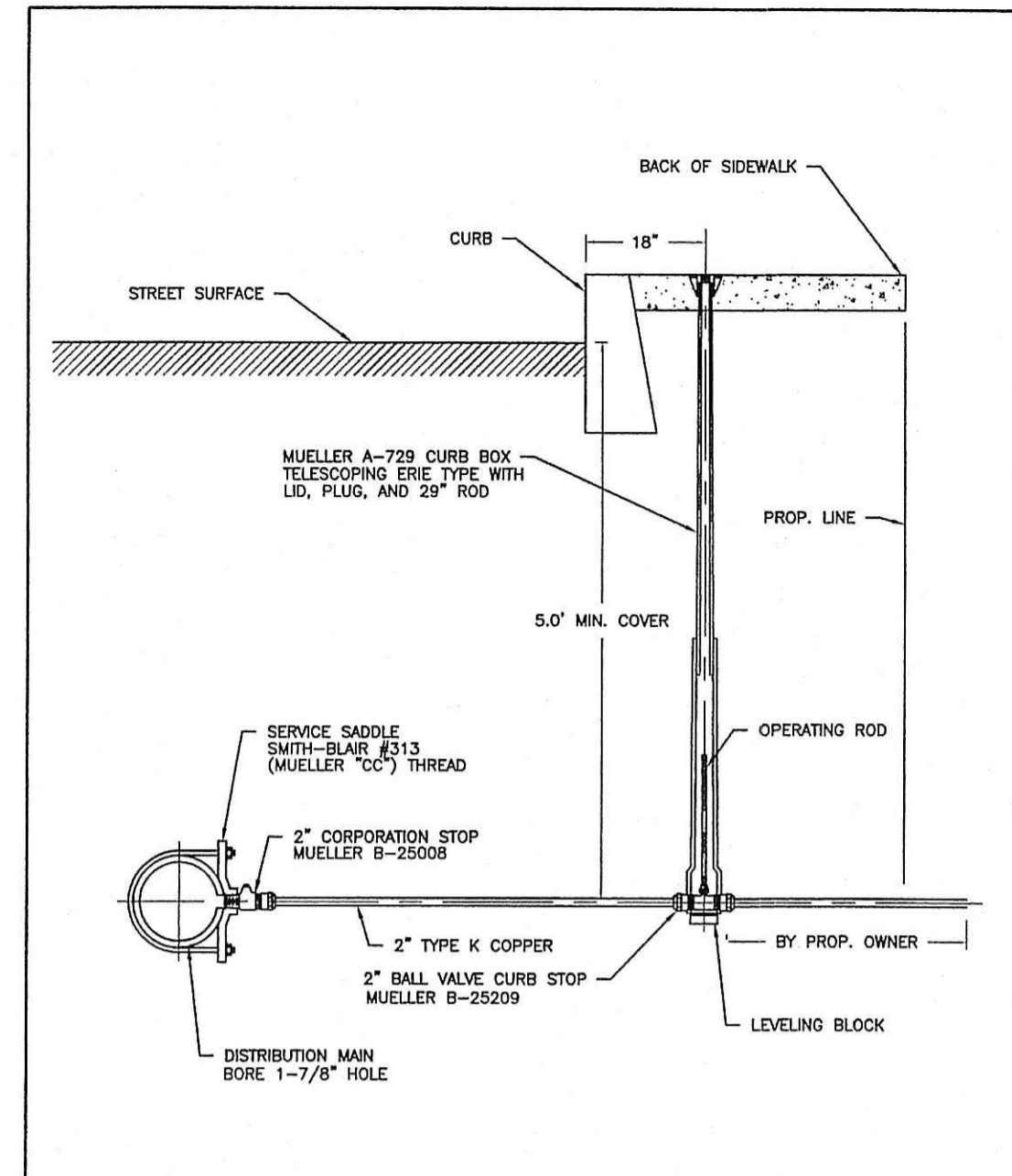


ACAD2000\_30TECH-NAD\_092008\_63\_03\_2008.dwg (DISK Z-1008)



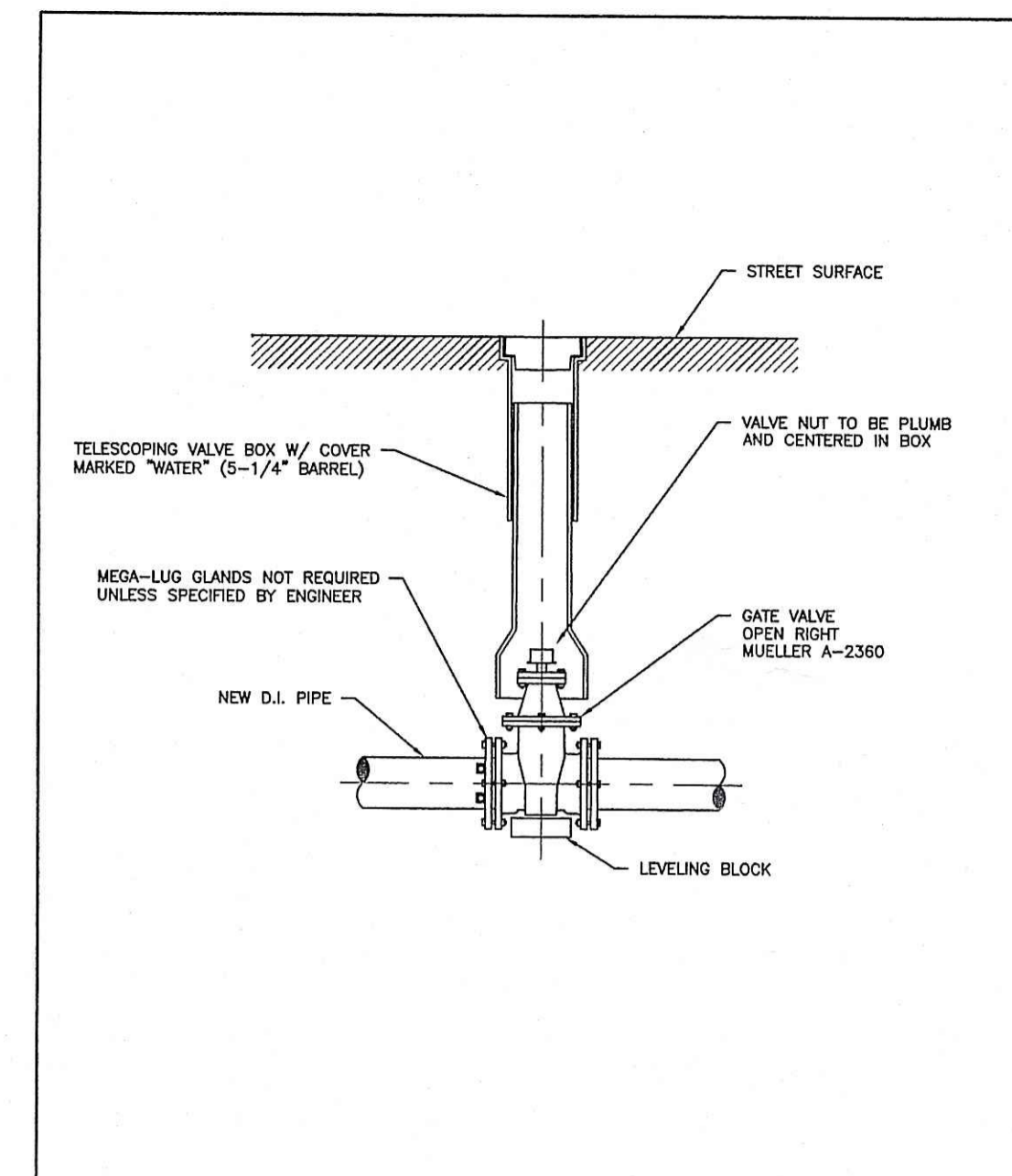
PAWTUCKET WATER SUPPLY BOARD  
NEW 1" SERVICE INSTALLATION

REVISION DATE:	NOT TO SCALE	STD. NO.
APRIL 2006		1.01



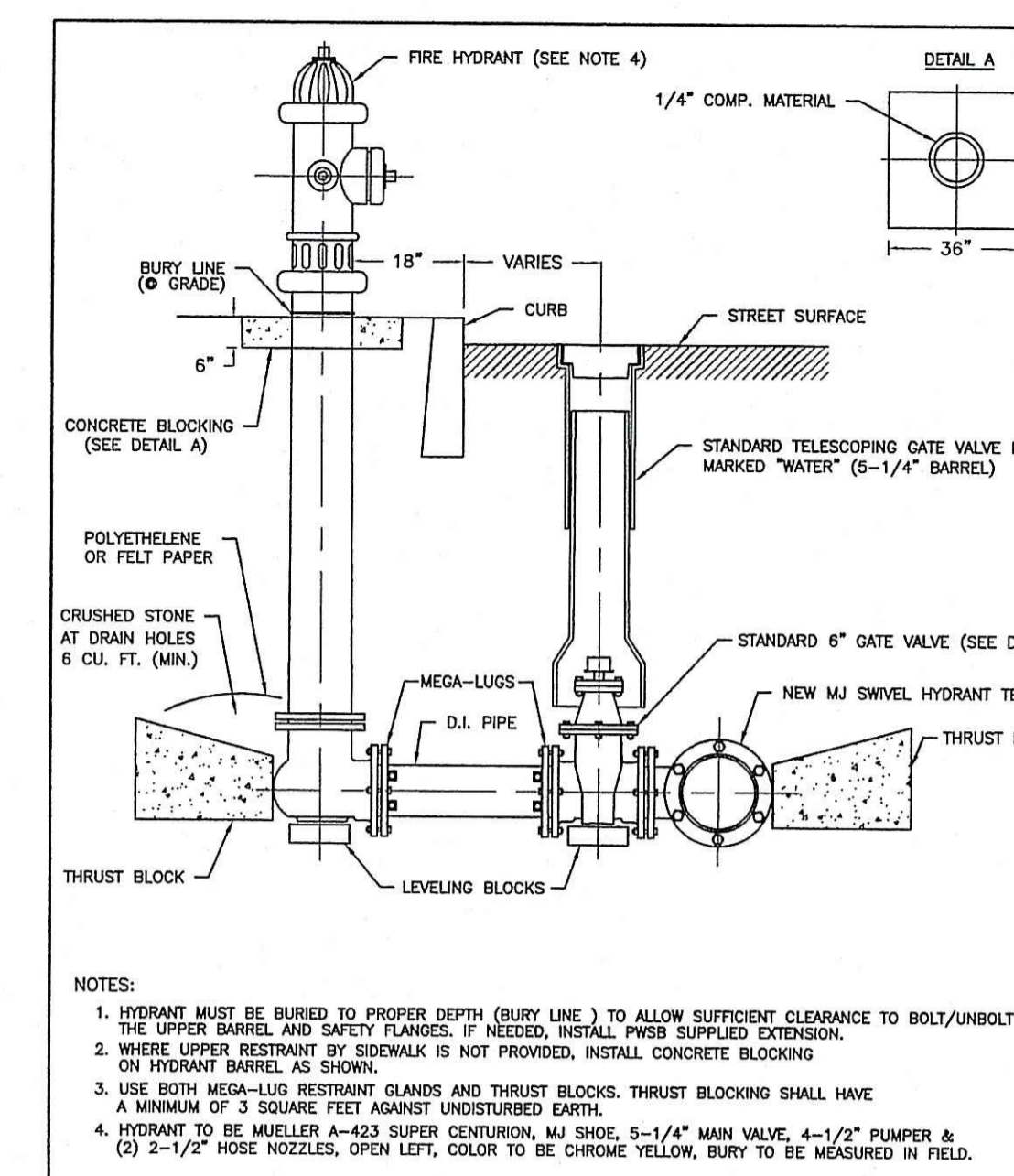
PAWTUCKET WATER SUPPLY BOARD  
NEW 2" SERVICE INSTALLATION

REVISION DATE:	NOT TO SCALE	STD. NO.
FEB. 2006		1.03



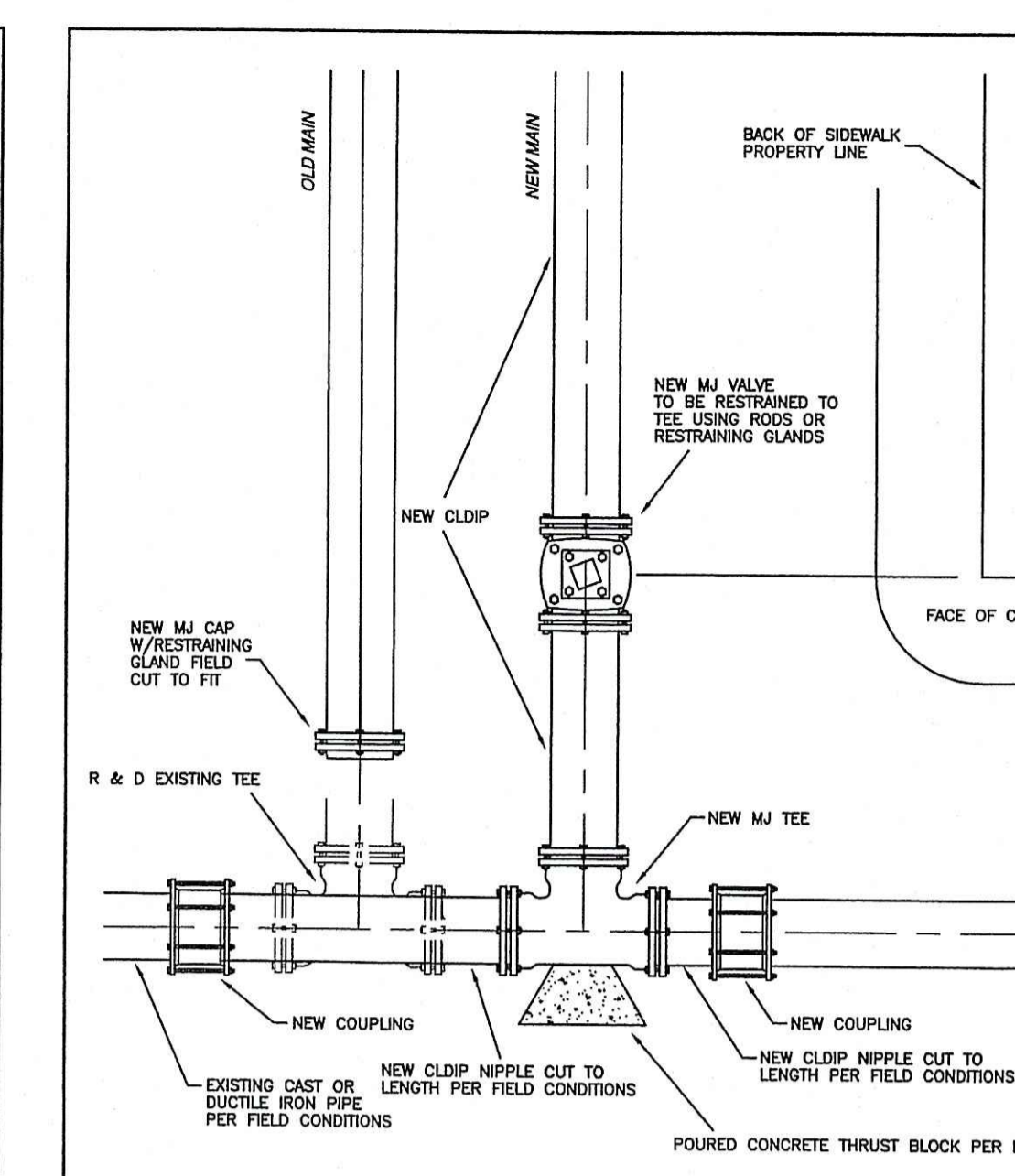
PAWTUCKET WATER SUPPLY BOARD  
GATE VALVE INSTALLATION

REVISION DATE:	NOT TO SCALE	STD. NO.
FEB. 2006		3.01



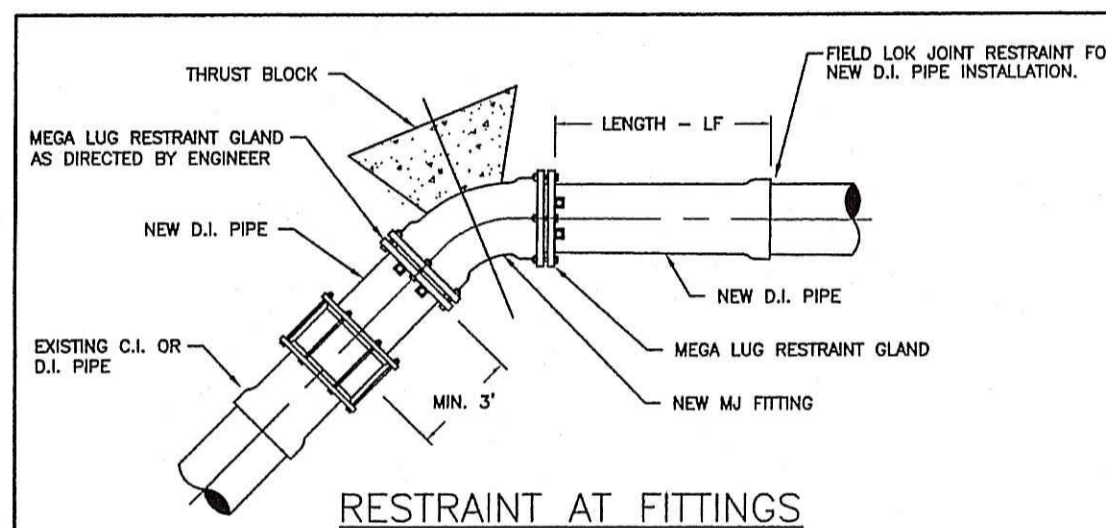
PAWTUCKET WATER SUPPLY BOARD  
NEW FIRE HYDRANT INSTALLATION

REVISION DATE:	NOT TO SCALE	STD. NO.
FEB. 2006		4.01



PAWTUCKET WATER SUPPLY BOARD  
MAIN CONNECTION AT INTERSECTION (CUT-IN TEE)

REVISION DATE:	NOT TO SCALE	STD. NO.
FEB. 2006		5.02



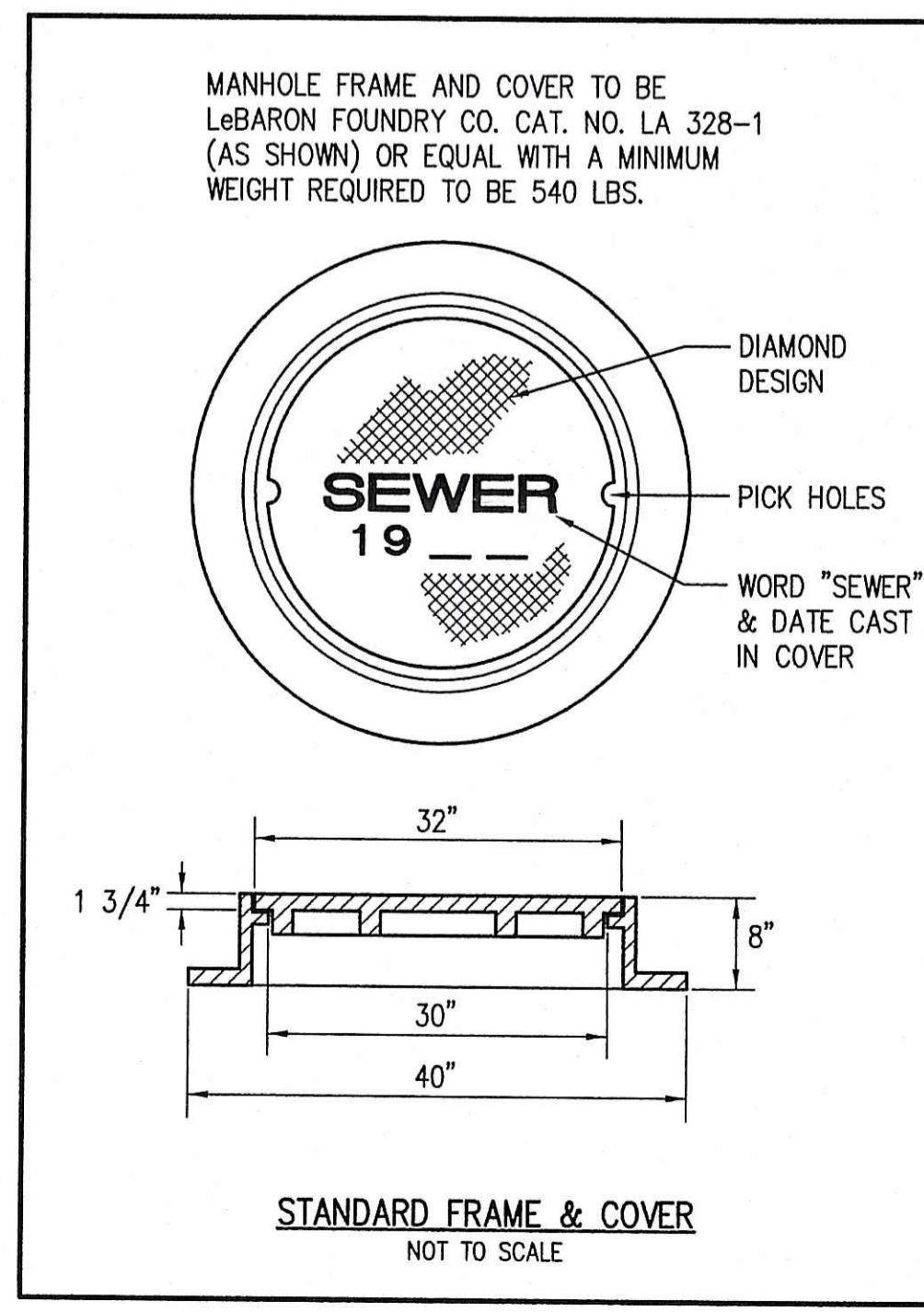
RESTRAINT AT FITTINGS

PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND	
	PLUG SF	LF	PLUG SF	LF	PLUG SF	LF	PLUG SF	LF
8"	2.8	37	2.8	32	4.0	18	2.1	7
10"	4.8	48	4.8	43	6.8	23	3.7	10
12"	7.3	58	7.3	53	10.3	28	5.6	12
14"	10.3	69	10.3	63	14.3	33	7.9	14
16"	17.8	89	17.8	83	25.2	42	13.6	17
20"	27.5	108	27.5	102	38.9	51	21.0	21
24"	39.2	127	39.2	121	55.4	59	30.0	25

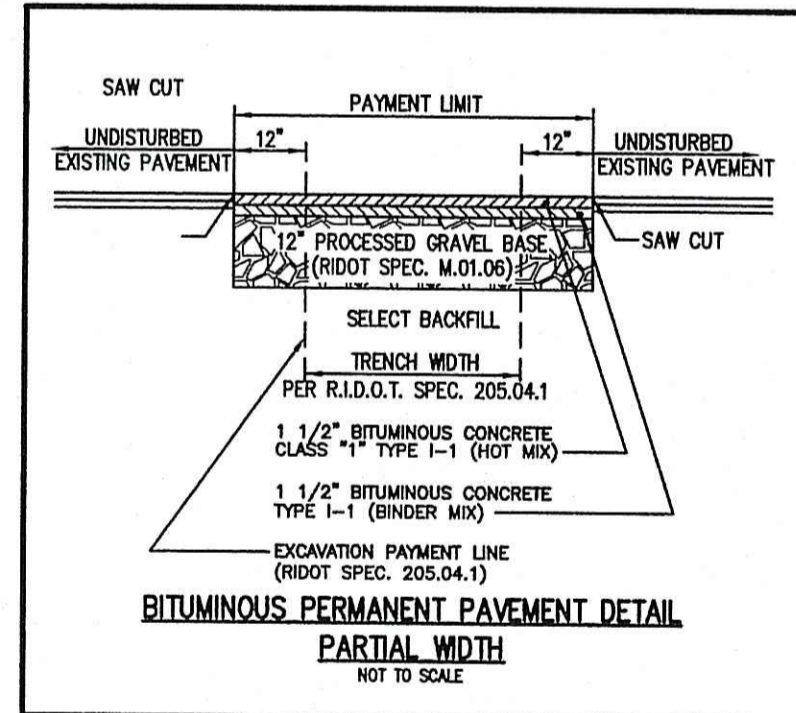
- ALL CONCRETE TO BE CLASS B (A4)
- THE "SF" VALUES IN THE ABOVE TABLE ARE BASED ON 3000 p.s.f. SOIL BEARING CAPACITY, 150 p.s.i. TEST PRESSURE AND A 1.5 FACTOR OF SAFETY.
- THE "LF" VALUES IN THE ABOVE TABLE ARE BASED ON A TYPE 3 LAYING CONDITIONS, A SAND SILT SOIL DESIGNATION, A 5 FOOT RUN LENGTH, 150 p.s.i. TEST PRESSURE AND A 1.5 FACTOR OF SAFETY AS USED IN THE "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" COMPUTER PROGRAM BY THE DUCTILE IRON PIPE RESEARCH ASSOCIATION.
- IF SOIL CONDITIONS OR EXCAVATION LIMITS ENCOUNTERED DURING CONSTRUCTION MAKE IT UNFEASIBLE TO PLACE THRUST BLOCKS AGAINST UNDISTURBED EARTH OF THE PROPER BEARING CAPACITY, THE CONTRACTOR SHALL DESIGN AND PLACE SPECIAL REACTION BLOCKS OF SUFFICIENT WEIGHT TO RESIST FULL THRUST UNDER ALL CONDITIONS. THE DESIGN SHALL BE SUBJECT TO PRIOR APPROVAL.
- MINIMUM SURFACE AREAS SHALL BE INCREASED BY 50% IF DEEMED NECESSARY BY THE ENGINEER.
- A MECHANICAL JOINT RESTRAINT SYSTEM MUST BE USED FOR VERTICAL BENDS.
- AT THE DISCRETION OF THE ENGINEER, A JOINT RESTRAINT SYSTEM MAY BE SUBSTITUTED FOR OR USED IN COMBINATION WITH PROPER THRUST BLOCKING.
- A 48 HR. CURING PERIOD MUST BE GIVEN BEFORE FULL LINE PRESSURE CAN BE APPLIED TO NEW CONCRETE THRUST BLOCKS.
- ANCHOR BLOCK DESIGN FOR PIPE LARGER THAN 24" SHALL BE REVIEWED ON AN INDIVIDUAL BASIS BY THE PWSB.

PAWTUCKET WATER SUPPLY BOARD  
RESTRAINT AT FITTINGS

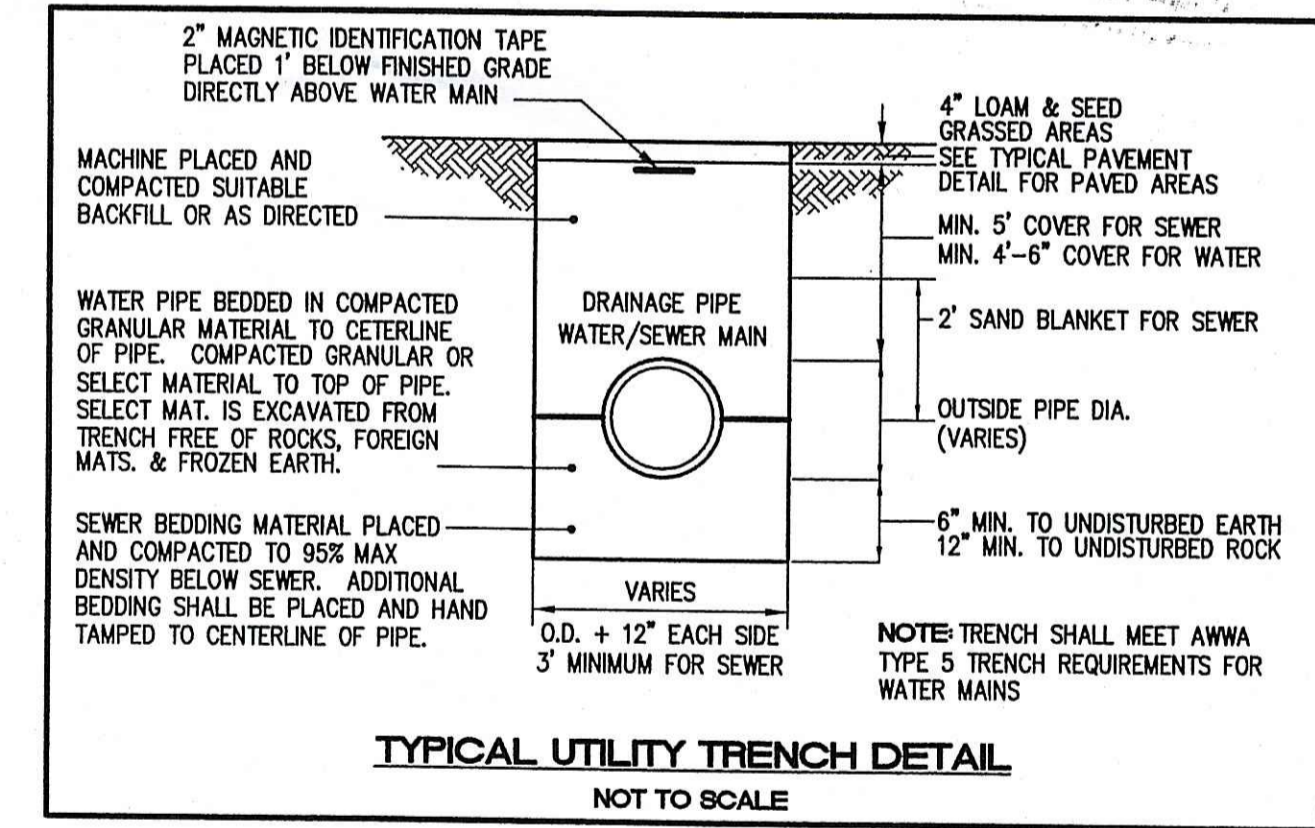
REVISION DATE:	NOT TO SCALE	STD. NO.
MAR. 2006		5.04



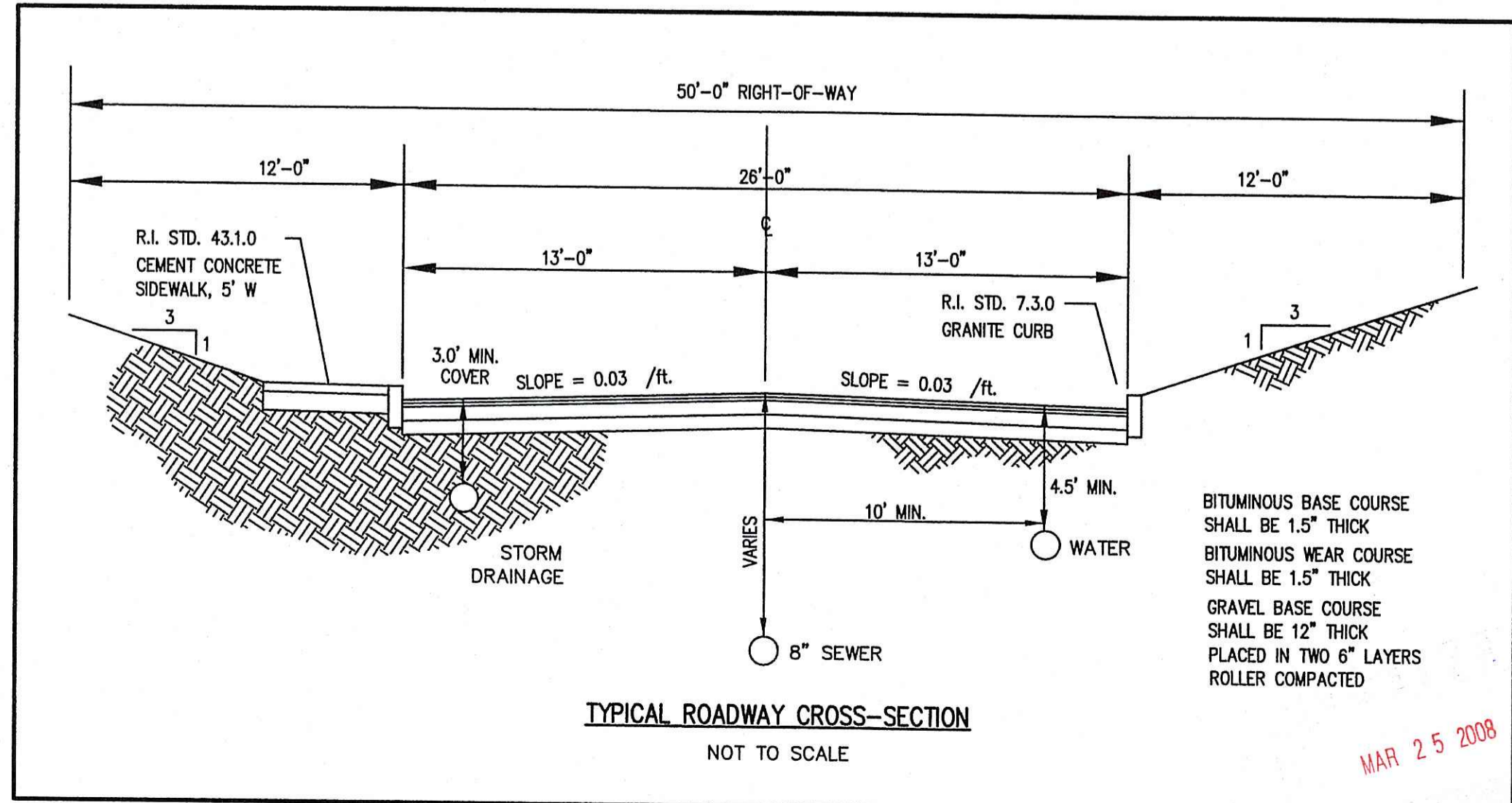
STANDARD FRAME & COVER  
NOT TO SCALE



BITUMINOUS PERMANENT PAVEMENT DETAIL  
PARTIAL WIDTH  
NOT TO SCALE



TYPICAL UTILITY TRENCH DETAIL  
NOT TO SCALE



TYPICAL ROADWAY CROSS-SECTION  
NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED MAY 19 2006  
FILE # 06-038  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
*Myra D. Wenzel*

NO. DATE REVISION

1	1/18/07	PAWTUCKET WATER SUPPLY DETAILS
2	1/15/07	PWSB DETAIL 1.03

JOHN P. CAITO  
Professional Engineer  
No. 4398

CIVIL ENGINEERS  
141 JAMES P. MURPHY HIGHWAY  
WEST WARWICK, RHODE ISLAND  
02893-5382  
401-415-8600  
FAX: 401-415-8606

ALTO CORPORATION  
LAND PLANNERS

PROJECT NO: 144.301  
DATE: JUNE, 2006  
SCALE: AS NOTED  
DESIGNED BY: D.T.  
DRAWN BY: D.T.  
CHECKED BY: J.P.C.

DETAILS  
MILLERS BROOK EAST  
ASSESSOR'S PLAT 19 / LOT 7  
CURRAN ROAD  
PREPARED FOR  
MACKLANDS REALTY, INC.  
CUMBERLAND  
RHODE ISLAND

DRAWING NUMBER  
13  
SHEET 19 OF 13

MAR 25 2008

© 2008 JOHN P. CAITO CORPORATION