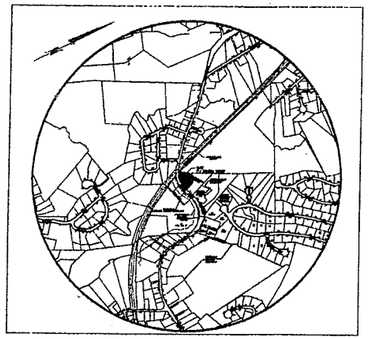
"RICHARDSON CROSSING"

A PROPOSED COMPREHENSIVE PERMIT PROJECT UNDER MGL CHAPTER 40B

ACTON, MASSACHUSETTS

JUNE 19, 2009
REVISED SEPTEMBER 29, 2009
REVISED NOVEMBER 2, 2009
REVISED JANUARY 6, 2010



LOCUS PLAN
SCALE: 1" = 1200'

LOCUS PARCEL INFORMATION

113 CENTRAL STREET
ASSESSORS MAP G-2 PARCEL 149
ZONING DISTRICT: R-2 (RESIDENCE 2)
OVERLAY DISTRICT: GROUNDWATER PROTECTION DISTRICT 4

APPLICANT:

RICHARDSON CROSSING, LLC.
411 MASS. AVE., SUITE 304
ACTON, MA 01720

OWNER:

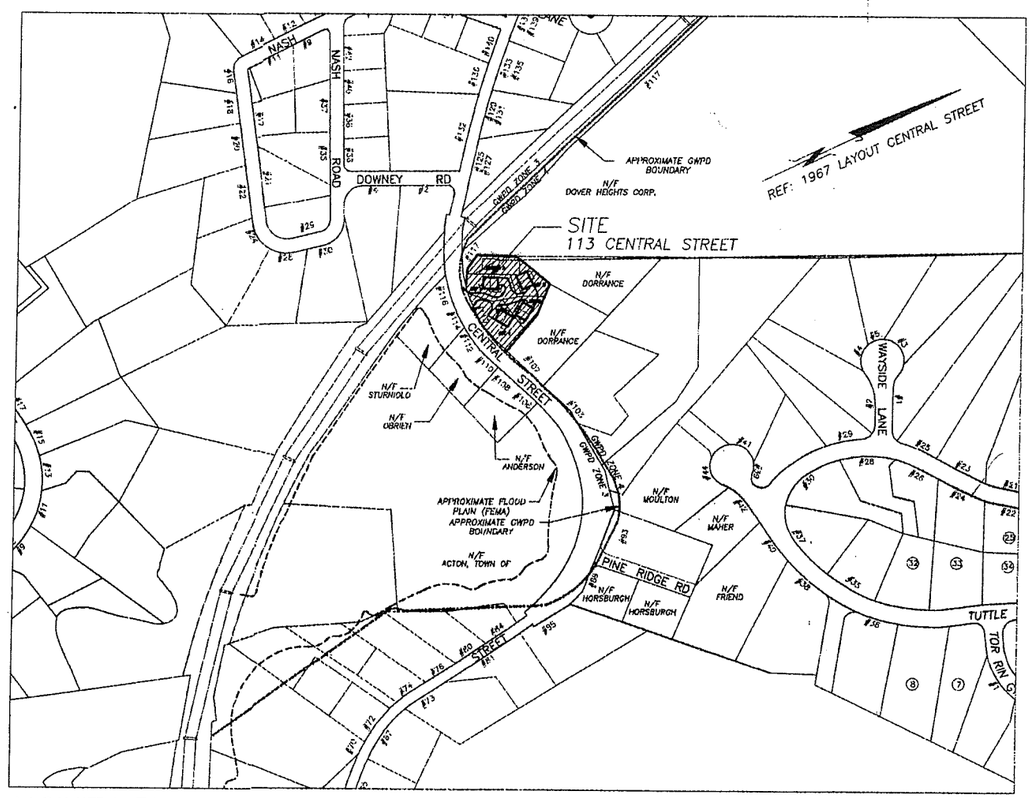
WESTCHESTER COMPANY, INC.
411 MASS. AVE., SUITE 304
ACTON, MA 01720

DEED AND PLAN REFERENCES:

MIDDLESEX SOUTH DISTRICT REGISTRY OF DEEDS
DEED BOOK 48077 PAGE 483
1967 LAYOUT CENTRAL STREET

TOTAL SITE AREA = 0.97 ACRE

ELEVATION DATUM REFERENCE: NGVD 1929
RM-8 (209.08) AS SHOWN ON FIRM
MAP 250176 0003C DATED 1-6-1988



VICINITY PLAN
Scale: 1" = 200 ft.

SHEET NO.	TITLE
1	COVER SHEET
2	MASTER DEVELOPMENT PLAN
3	RECORD PLAN
4	NATURAL FEATURES AND EXISTING CONDITIONS
5	SITE DEVELOPMENT PLAN
6	LANDSCAPE PLAN
7	EROSION & SEDIMENTATION CONTROL PLAN
8	SUBSURFACE SEWAGE DISPOSAL SYSTEM PLAN-SHEET 1
9	SUBSURFACE SEWAGE DISPOSAL SYSTEM PLAN-SHEET 2

THIS IS TO CERTIFY THAT NOTICE OF APPROVAL OF THIS PLAN BY THE ACTON BOARD OF APPEALS WAS RECEIVED AND RECORDED AT THIS OFFICE ON _____ AND THAT NO APPEAL WAS RECEIVED WITHIN TWENTY DAYS NEXT FOLLOWING RECEIPT AND RECORDING OF THIS NOTICE.

_____
ACTON TOWN CLERK DATE

ACTON BOARD OF APPEALS

_____
_____
_____
DATE_____

SEE DECISION ON APPLICATION BY RICHARDSON CROSSING, LLC. FOR A COMPREHENSIVE PERMIT, DECISION 09-04, DATED _____, 2010, RECORDED HEREWITH.

Douglas W. Arnold 1/6/10

COVER SHEET
RICHARDSON CROSSING
113 CENTRAL STREET
ACTON, MA
PREPARED FOR:
RICHARDSON CROSSING, LLC
411 MASS AVE, SUITE 304
ACTON, MA 01720
SCALE: AS NOTED DATE: JUNE 19, 2009.

ACTON SURVEY & ENGINEERING, INC.
Civil Engineers • Land Surveyors • Environmental Scientists
97 Great Road P.O. Box 666 Acton, Massachusetts 01720
Phone: (978) 263-3666

Acton Survey & Engineering, Inc.
Since 1967
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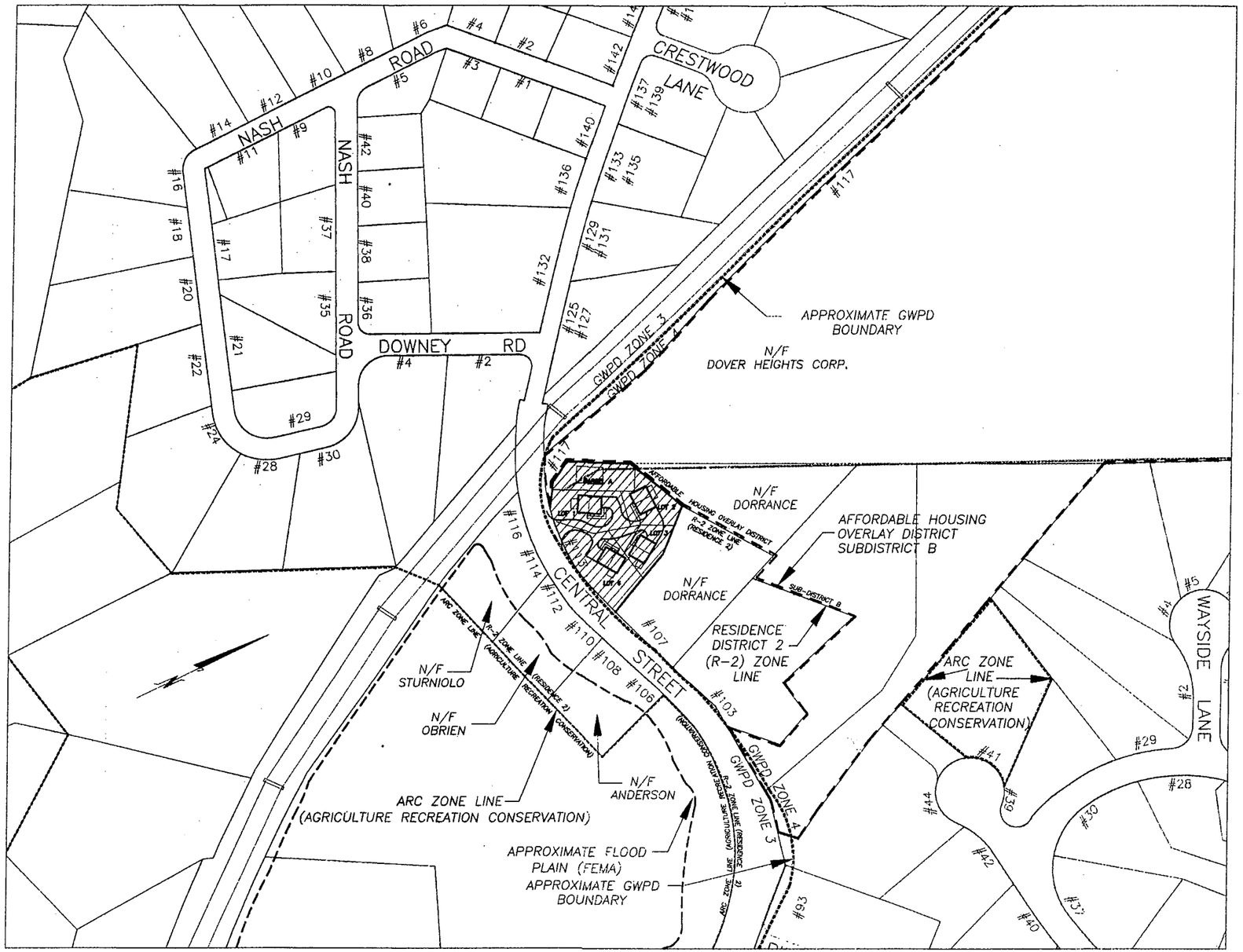
ACTON, MA 01720
PH. (978) 263-3666
FAX (978) 635-0218

6729W161-1/9



DEVELOPMENT DATA:

EXISTING:
DWELLING AND GARAGE LOCATED AT
113 CENTRAL STREET TO BE RAZED.

PROPOSED DEVELOPMENT: FOUR SINGLE FAMILY UNITS
(4) 3-BEDROOM UNITS = 12 BEDROOMS
(1) AFFORDABLE UNIT; (LOT #3)

THERE ARE NO WETLANDS LOCATED ON THE PROPERTY. THE ENTIRE SITE CONSISTS OF UPLANDS.

DWELLING UNIT DENSITY:
TOTAL SITE AREA = 42,550 SF = 0.97 ACRE
TOTAL UPLAND AREA = 0.97 ACRE
TOTAL NUMBER OF UNITS = 4
NUMBER OF UNITS PER ACRE = 4.1

EXISTING IMPERVIOUS COVER = 6,372 sf (15%)
PROPOSED BUILDING COVERAGE = 5,376 sf (13%)
PROPOSED IMPERVIOUS COVER = 13,735 sf (32%)

FLOOR AREA RATIO:
GROSS FLOOR AREAS-EXCLUDES STAIRS
BASEMENT = 500 SF
FIRST FLOOR = 1375 SF
SECOND FLOOR = 1172 SF
TOTAL = 3047 SF x 4 UNITS = 12,188 SF
FLOOR AREA RATIO = 12,188/42,550 = 0.29

ENDORSEMENT PERTAINS TO EXISTING CONDITIONS ONLY

PROFESSIONAL LAND SURVEYOR — DATE 1/6/10

ZONING INFORMATION:

DISTRICT:
RESIDENCE 2; R-2

OVERLAY DISTRICTS:
GROUNDWATER PROTECTION DISTRICT 4

FLOOD ZONE:
ZONE X (OUTSIDE OF 500 YR FLOODPLAIN)

ZONING REQUIREMENTS:	MINIMUM REQUIRED	PROPOSED LOT #1	PROPOSED LOT #2	PROPOSED LOT #3	PROPOSED LOT #4	PROPOSED PARCEL A
AREA (sf):	20,000	9,195	7,238	6,518	12,211	7,388
FRONTAGE (ft):	150	NA	NA	NA	NA	NA
FRONT YARD SETBACK (ft):	30	32	NA	NA	32	NA
REAR YARD SETBACK (ft):	10	35	17	14	3	NA
SIDE YARD SETBACK (ft):	10	9	1	1	28	NA
MIN. LOT WIDTH:	50	NA	NA	NA	NA	NA
NO. UNITS PER LOT:	1	1	1	1	1	0
FLOOR AREA RATIO:	NA	NA	NA	NA	NA	NA

No.	DATE	DESCRIPTION
3	1/6/10	TOWN COMMENTS
2	11/2/09	TOWN COMMENTS
1	9/29/09	TOWN COMMENTS

REVISIONS

MASTER DEVELOPMENT PLAN
RICHARDSON CROSSING
113 CENTRAL STREET
ACTON, MA

PREPARED FOR:
RICHARDSON CROSSING, LLC
411 MASS AVE, SUITE 204
ACTON, MA 01720

SCALE: AS NOTED — DATE: JUNE 19, 2009

Acton Survey & Engineering, Inc.
Since 1967
97 GREAT ROAD
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ACTON, MA 01720
PH. (978) 263-3666
FAX (978) 635-0218

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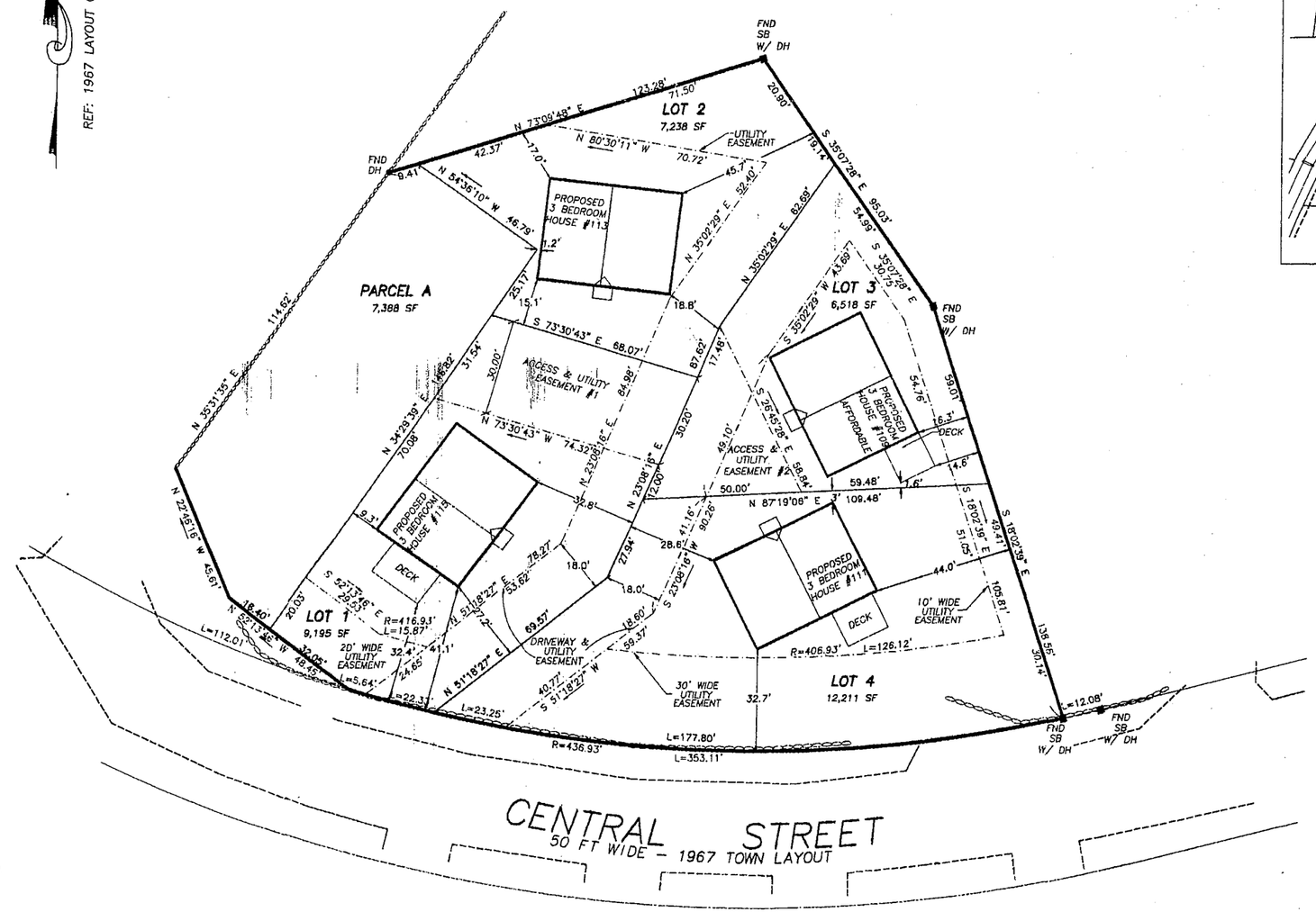
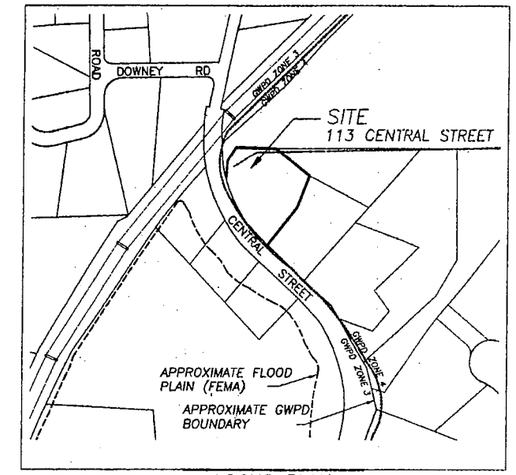
FOR REGISTRY OF DEEDS USE ONLY

REF: 1967 LAYOUT CENTRAL STREET





LOCUS PLAN
SCALE: 1" = 200'

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 INCH = 20 FEET

OWNERS:
WESTCHESTER COMPANY, INC.
411 MASS. AVE., SUITE 304
ACTON, MA 01720

APPLICANT:
RICHARDSON CROSSING. LLC.
411 MASS. AVE., SUITE 304
ACTON, MA 01720

DEED AND PLAN REFERENCE:
DEED BOOK 48077 PAGE 483
1967 LAYOUT CENTRAL STREET

ASSESSOR'S MAP G-2 PARCEL 149
113 CENTRAL STREET
ACTON, MA 01720

ZONING DISTRICT: R-2 (RESIDENCE 2)
OVERLAY DISTRICT: GROUNDWATER PROTECTION DISTRICT 4

TOTAL SITE AREA = 0.97 ACRES

APPROVAL UNDER THE SUBDIVISION CONTROL LAW REQUIRED
ACTON PLANNING BOARD

DATE _____

ACTON BOARD OF APPEALS

_____
_____
_____
_____
_____
DATE_____

SEE DECISION ON APPLICATION BY RICHARDSON CROSSING, LLC. FOR A COMPREHENSIVE PERMIT, DECISION 09-04, DATED _____, 2010, RECORDED HEREWITH.

PROPERTY IS SUBJECT TO DECLARATION OF COMMON DRIVEWAY COVENANT SHARED MAINTENANCE AGREEMENT CONCERNING THE SEWAGE DISPOSAL SYSTEM, AND RESTRICTIVE COVENANTS AND CONDITIONS FOR RICHARDSON'S CROSSING, ACTON, MASSACHUSETTS DATED_____, 2010 AND RECORDED HEREWITH.

THIS IS TO CERTIFY THAT NOTICE OF APPROVAL OF THIS PLAN BY THE ACTON BOARD OF APPEALS WAS RECEIVED AND RECORDED AT THIS OFFICE ON _____ AND THAT NO APPEAL WAS RECEIVED WITHIN TWENTY DAYS NEXT FOLLOWING RECEIPT AND RECORDING OF THIS NOTICE.

_____
ACTON TOWN CLERK DATE

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED IN CONFORMANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

Douglas W. Hardwick 1/6/10
PROFESSIONAL LAND SURVEYOR DATE

No.	DATE	DESCRIPTION
3	1/6/10	TOWN COMMENTS
2	11/2/09	TOWN COMMENTS
1	9/29/09	TOWN COMMENTS

REVISIONS

RECORD PLAN
RICHARDSON CROSSING
113 CENTRAL STREET
ACTON, MA

PREPARED FOR:
RICHARDSON CROSSING, LLC
411 MASS AVE, SUITE 204
ACTON, MA 01720

SCALE: 1"=20' DATE: JUNE 19, 2009

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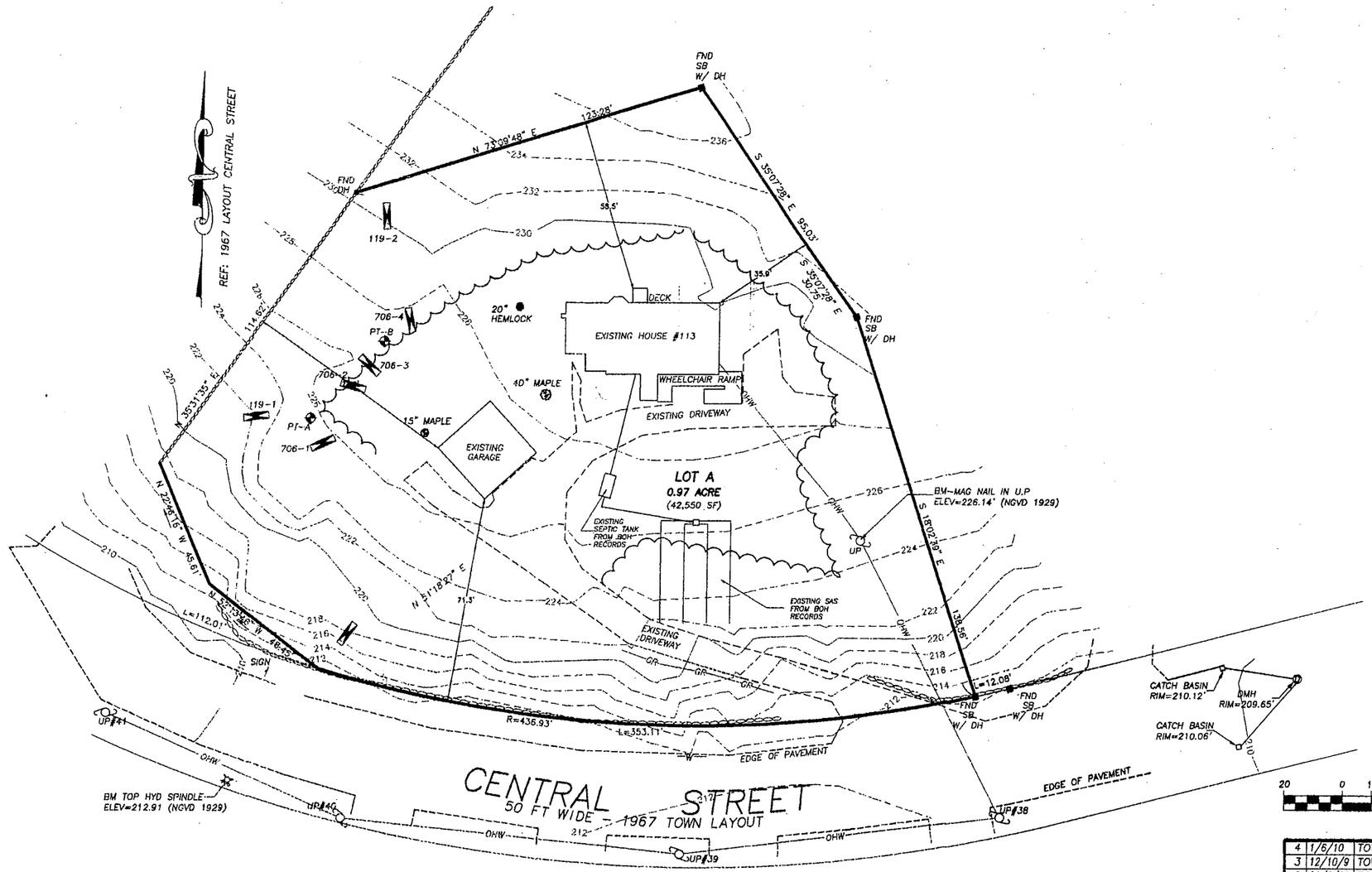
6729W161-3/9



LEGEND

- 255 — EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- 260 — PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- EDGE OF WETLANDS
- 100' WETLANDS BUFFER ZONE
- CATCH BASIN
- DRAIN MANHOLE
- W — EXISTING WATER MAIN
- CURB STOP
- UTILITY POLE
- OHW — EXISTING OVERHEAD WIRES
- E — PROPOSED ELECTIC UTILITES
- PROPOSED LIGHT
- PROPOSED SIGN
- ZONE LINE

OWNER:
WESTCHESTER COMPANY, INC.
411 MASSACHUSETTS AVENUE, SUITE 304
ACTON, MA 01720

DEED BOOK 48077 PAGE 483
1967 LAYOUT CENTRAL STREET

ASSESSOR'S MAP G-2 PARCEL 149
113 CENTRAL STREET
ACTON, MA 01720

ZONING DISTRICT: R-2 (RESIDENCE 2)
OVERLAY DISTRICT: GROUNDWATER PROTECTION DISTRICT 4

COMMONWEALTH OF MASSACHUSETTS
DOUGLAS W. HADLEY
#34808
PROFESSIONAL LAND SURVEYOR

Douglas W. Hadley 1/6/10

No.	DATE	DESCRIPTION
4	1/6/10	TOWN COMMENTS
3	12/10/9	TOWN COMMENTS
2	11/2/09	TOWN COMMENTS
1	9/29/09	TOWN COMMENTS

REVISIONS

EXISTING CONDITIONS PLAN RICHARDSON CROSSING

113 CENTRAL STREET
ACTON, MA

PREPARED FOR:
RICHARDSON CROSSING, LLC
411 MASS AVE, SUITE 204
ACTON, MA 01720

SCALE: 1"=20' DATE: JUNE 19, 2009

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EROSION AND SEDIMENTATION CONTROL

GENERAL

A rapid and well ordered construction project at this site resulting in the limitation of extent and time in which surfaces are not erosion resistant shall be the primary erosion and sedimentation control method utilized at this site.

The transport of or tracking of earth to Central Street where it could be "washed" to catch basins or wetland resource areas is of major concern.

The area of disturbance shown on the plans is less than one acre. Disturbance of over one acre requires a filing with US EPA.

CLEARING

Prior to clearing the limit of work shall be demarcated. Invasive vegetation shall be removed and transported off site for disposal by incineration. All other vegetation shall be removed and disposed of within one week of cutting, except woodchips which should be retained on site for erosion control.

EROSION BARRIERS

A silt fence shall be installed 5 feet from the top of the wall along Central Street and its toe sealed with wood chips.

The existing driveway shall be used for access and a row of sand bag dikes shall be placed across the bottom to divert runoff to a basin formed by placing sand bags extending to the wall. The capacity of the basin will be minimal and earthen products must be removed from the driveways and the area tributary to the sand bags must be kept stable or materials will be transported beyond the sand bags.

A broom and shovel shall be kept at the site for policing the driveway and Central Street.

Silt fences and sand bag check dams shall be installed as necessary to decrease the concentration of runoff and transport of products of erosion.

The installation of a temporary construction entrance or tracking pad at the top of the driveway, before it widens and branches out, should be installed if warranted by site conditions.

SITE CONSTRUCTION

The existing house shall be removed with allowances for proper dust control and be removed from site simultaneously with its demolition. Materials shall not be piled on site.

The interceptor trench should be installed early in the construction process if site grading is to be initiated during periods in which groundwater could be intercepted at the rear of the property. The drain shall discharge at locations that will not impact Central Street and temporary recharge works might be required.

The existing driveway shall be utilized for access to the site with the permanent driveway being constructed with equipment working up hill and away from Central Street so that the areas of disturbance tributary to Central Street is limited. As soon as possible a temporary construction entrance shall be installed and the existing driveway be abandoned as the access point. Once the existing driveway can be abandoned the pavement shall be removed and the area shall be graded and made erosion resistant.

The proposed driveway slopes continuously down to Central Street and care shall be taken to limit the concentration of runoff on its surface. Sand bag check dams shall be installed to divert and hold runoff and a temporary settling basin could be located in the driveway of house number 111 to remove sediment. Care must be taken to insure that the basin does not become overtopped and result in erosion.

Building materials shall be stored in a manner that will not concentrate runoff and create unnecessary traffic. Containers shall be utilized for disposal of refuse except liquid wastes which shall be placed in sealed containers and transported offsite for required disposal.

The site shall be kept neat and litter free.

The area of disturbance required for the subsurface sewage disposal is a significant portion of the site and the construction of the system shall be scheduled so it can be accomplish and made erosion resistant in a short time period. Stabilization of its surface with an annual cover shall be done if permanent stabilization is not possible.

Driveways shall be brought to binder course as soon as possible to limit rutting. The placement of pavement will enhance the transport of products of erosion from tributary surfaces and efforts shall be made to limit runoff, control erosion and capture materials prior to their reaching the pavements.

Stabilization shall be an on going process and not be delayed until final landscaping. Topsoil has a high erosion potential.

RECHARGE SYSTEMS

Stormwater management for the site is accomplished by recharge chambers for roof runoff and at the end of the driveway. The long term viability of these facilities will be adversely impacted if products of erosion reached them.

Prior to the construction of the recharge facilities areas tributary to them shall be made erosion resistant and barriers such as sand bag dikes shall be installed as required to provide necessary protections.

After there installation the site shall be maintained to limit the transport of soil, debris and landscape litter to the recharge trenches.

RECHARGE SYSTEM OPERATION AND MAINTENACE

The recharge systems has been designed to require limited maintenance if the surfaces tributary to them are kept erosion resistant and free of materials [leaf litter, sand for ice control, etc.] that could be transported by runoff to the trenches.

Noticeable amounts of sand and debris located on the driveways shall be promptly removed and properly disposed of.

The concrete structures located at the bottom driveway near Central Street are catch basins installed to removed materials from the runoff flowing down the driveway.. The catch basins have four foot deep sumps to retain sand and other debris and the piped outlet is arranged to retain oil and other materials that float on the water surface.

The catch basins should be cleaned on a annual basis by a licensed person and observed each quarter to determine if additional cleaning is required by passing a dipstick through the open grate and measuring the depth of water. If debris is not present the depth of water will be four feet. If the depth of water is less than three feet there is over a foot of debris and the basin should be cleaned.

When the dipstick is removed its surface should be inspected for the presence of oil and if such materials are detected the catch basin shall be cleaned.

The catch basins and roof gutter downspouts discharge to buried recharge chambers. With the exception of the recharge system serving house 109 the chambers are interconnected. The chambers have a grated observation port to allow their water levels to be observed. If localized blockages occur the chambers will overflow through the observation ports.

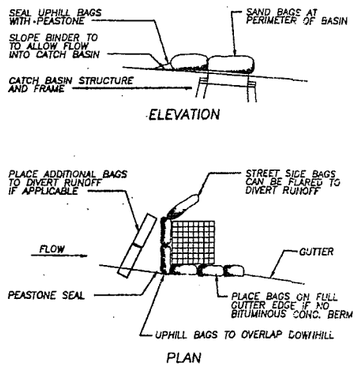
Intense or long duration rainfalls will result in the recharge chambers overflowing through either the observation ports and/or the lowest catch basins.

If overflowing is observed the recharge works should be monitored to determine if this is a common occurrence. If it is found that it is a common occurrence replacement of the recharge works by excavation and placement of new stone shall be planned. Expansion of the works might be required.

Water should be absent in the recharge chambers between rain storms. The water level can be viewed through the observation port grate. If it is found to be present it should be closely monitored to determine if renovation of the recharge works should be planned.

ENDORSEMENT PERTAINS TO EXISTING CONDITIONS ONLY

PROFESSIONAL LAND SURVEYOR DATE

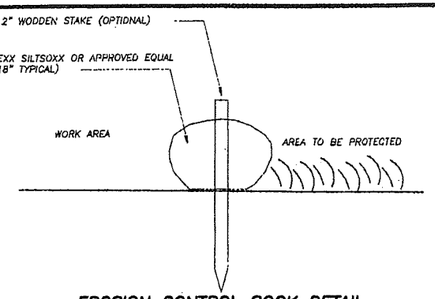


NOTE:

1. FRAMES SHALL BE SET LOW OR PAVEMENT ADDED AND REMOVED TO PROVIDE FLOW TO BASIN FROM BINDER COURSE.

CATCH BASIN PROTECTION DETAIL

N.T.S.



EROSION CONTROL SOCK DETAIL

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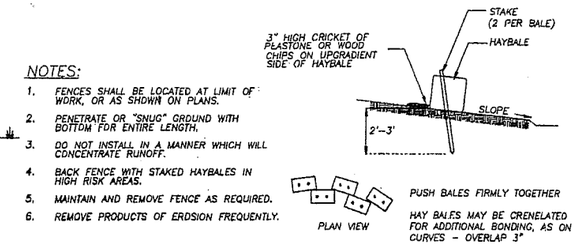
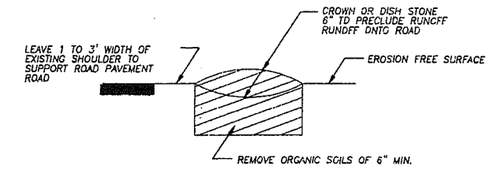


NOTES:

1. FENCES SHALL BE LOCATED AT LIMIT OF WORK, OR AS SHOWN ON PLANS.
2. PENETRATE OR "SNUG" GROUND WITH BOTTOM FOR ENTIRE LENGTH.
3. DO NOT INSTALL IN A MANNER WHICH WILL CONCENTRATE RUNOFF.
4. BACK FENCE WITH STAKED HAYBALES IN HIGH RISK AREAS.
5. MAINTAIN AND REMOVE FENCE AS REQUIRED.
6. REMOVE PRODUCTS OF ERDSION FREQUENTLY.

EROSION CONTROL BARRIER

(TWO ALTERNATIVES)
N.T.S.

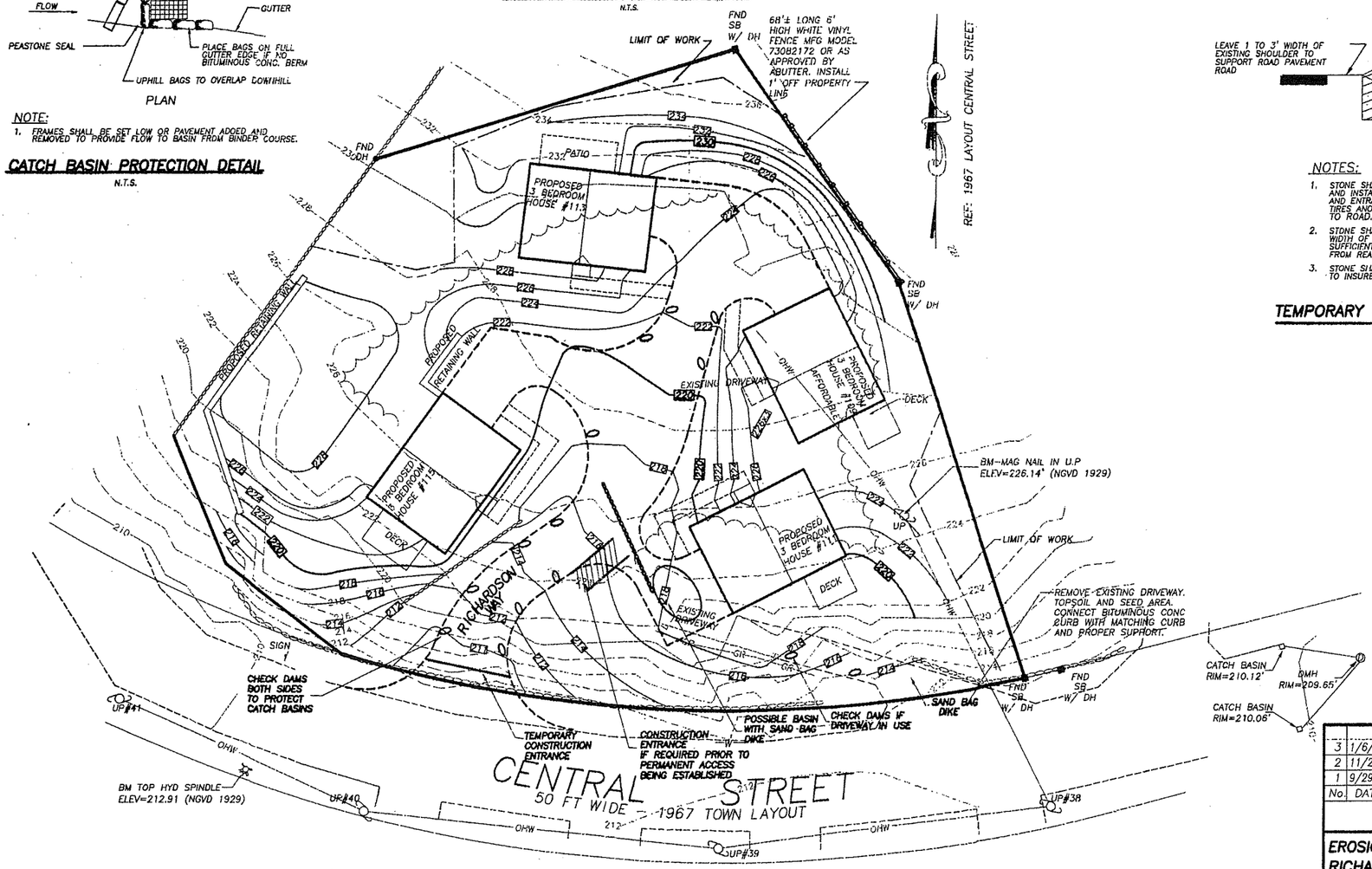


NOTES:

1. STONE SHALL BE 1-3" IN SIZE AND INSTALLED TO REMOVE AND ENTRAP MATERIALS FROM TIRES AND NOT BE TRANSPORTED TO ROAD.
2. STONE SHALL EXTEND ACROSS FULL WIDTH OF ENTRANCE AND BE OF SUFFICIENT LENGTH TO PRECLUDE MUD FROM REACHING ROAD.
3. STONE SHALL BE REPLACED AS REQUIRED TO INSURE MUD REMOVAL.

TEMPORARY CONSTRUCTION ENTRANCE

N.T.S.



LEGEND

- 255 — EXISTING 10' CONTOUR
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- EXISTING PAVEMENT
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- EDGE OF WETLANDS
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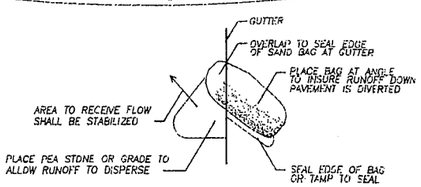
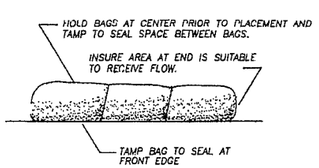


SAND BAG CHECK DAM DETAIL

N.T.S.



SAND BAG DIKE DETAIL

N.T.S.

No.	DATE	DESCRIPTION
3	1/6/10	TOWN COMMENTS
2	11/2/09	TOWN COMMENTS
1	9/29/09	TOWN COMMENTS

REVISIONS

EROSION AND SEDIMENTATION CONTROL
RICHARDSON CROSSING
113 CENTRAL STREET
ACTON, MA

PREPARED FOR:
RICHARDSON CROSSING, LLC
411 MASS AVE, SUITE 204
ACTON, MA 01720

SCALE: 1"=20' DATE: JUNE 19, 2009

Acton Survey & Engineering, Inc.
Since 1967
97 GREAT ROAD
P.O. BOX 666
ACTON, MA 01720
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6729W161-7/9

GENERAL NOTES:

1. Plans were prepared for named client and project. Reproduction in whole, in part or by adaptation for other purposes is expressly prohibited.
2. Drawings shall not be scaled. If clarification of intent is REQUIRED, contractor shall obtain prompt clarification prior to continuing work.
3. Contractor shall visit site prior to initiation of work and shall notify ACTON SURVEY & ENGINEERING, INC. and owner of any discrepancies with site conditions, or proposed construction, on date discovered.
4. Contractor shall be responsible for coordinating proposed construction with existing conditions.
5. Contractor shall notify Dig-Safe [1-888-344-7233] and verify all underground utilities prior to construction.
6. Contractor shall be responsible for obtaining all necessary permits and licenses.
7. All work shall conform to all local and state regulatory agencies and utility company requirements.
8. Upon entering the site, the contractor shall become responsible for all erosion control, dewatering and shall undertake all measures to protect wetlands, the drainage system and streets from siltation and dust.
9. Contractor shall be responsible for repairing any damage caused to roads, walks, utilities, site improvements [existing or proposed] both inside and outside the limit of work if damage due to work directly associated with this project.
10. Existing utilities shall be maintained in service as required by the use of site and adjacent properties. Relocate utility lines as required. Connections in Central Street as required by utility companies.
11. The drainage system shall be maintained and functional during construction and all catch basins, manholes & pipes shall be cleaned after the completion of the project.
12. The "site plan" is based on topographic survey showing all visually apparent features of the site on the date(s) that surface explorations and topography were completed.
13. No attempt was made, in preparing the plans, to ascertain the location of non-visually apparent subsurface utilities and structures, or conditions.
14. The limit of work shall be as designated and / or the edge of the proposed grading and / or the property lines, if not indicated.
15. Materials imported to the site shall be free of hazardous waste and noxious materials, stored as designated and shall not hamper the site activities.
16. Materials exported from the site shall become the property of the contractor and be disposed of in a legal manner.
17. All existing and new utility structures shall be adjusted to finished grades. Setting of rims temporarily at binder course may be required.
18. All water mains, water services and force mains shall have a five (5') foot minimum cover.
19. All pavements shall be cut to a vertical face outside limits of prior disturbance and prior to installing adjacent new pavements. All new pavements shall be installed in a manner that is uniform, with watertight joints resulting.
20. The project shall be complete when the site is found to be litter/debris free, erosion resistant, all erosion barriers are removed and pavements, catch basins, manholes and pipes are clean.
21. The contractor shall clearly mark the limits of work in the field prior to the the start of construction.
22. Hauling of earth to or from the site shall be done between the hours of 9:00 a.m. and 4:00 p.m. on weekdays only.

EXISTING FACILITIES

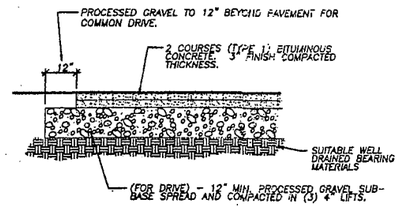
1. THE EXISTING STRUCTURES ARE TO BE DEMOLISHED AND REMOVED FROM THE SITE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
2. FLOOR SLABS ARE TO BE CRACKED AND FOUNDATIONS ARE TO BE PUSHED IN AND BACKFILLED IN A MANNER SUCH THAT VOIDS ARE NOT FORMED UNLESS THEY ARE LOCATED UNDER AREAS TO BE UTILIZED FOR NEW STRUCTURES, INSTALLATION OF UTILITIES, STORMWATER MANAGEMENT SYSTEMS, OR SUBSURFACE SEWAGE DISPOSAL SYSTEMS.
3. COLLAPSED FOUNDATIONS SHALL NOT RETAIN WATER.
4. EXISTING BITUMINOUS CONCRETE PAVEMENTS ARE TO BE REMOVED AND TRANSPORTED OFF SITE FOR RECYCLING.
5. THE EXISTING UTILITIES ARE TO BE DISCONNECTED AS DIRECTED BY THE APPROPRIATE UTILITY COMPANIES.
6. THE EXISTING WATER SERVICE IS TO BE TERMINATED AS DIRECTED BY THE ACTON WATER DISTRICT
7. THE EXISTING SUBSURFACE SEWAGE DISPOSAL SYSTEM SHALL BE REMOVED AND DISPOSED OF AS REQUIRED BY 310 CMR 15.354 (TITLE 5)

OWNER:
WESTCHESTER COMPANY, INC.
411 MASSACHUSETTS AVENUE, SUITE 304
ACTON, MA 01720

DEED BOOK 48077 PAGE 483
1967 LAYOUT CENTRAL STREET

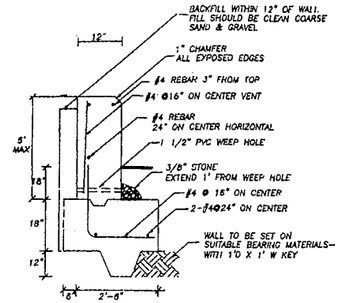
ASSESSOR'S MAP G-2 PARCEL 149

PROJECT SIGN NOTES:
PROJECT SIGN IS TO CONFORM TO ACTON ZONING BYLAW.
UPON OCCUPATION OF FIRST HOUSE, THE SIGN SHALL BE REPLACED WITH AN ADDRESS SIGN.
SIGN SHALL BE UNOBTRUSIVE AND CLEARLY VISIBLE FROM PASSING VEHICLES IN CENTRAL STREET.



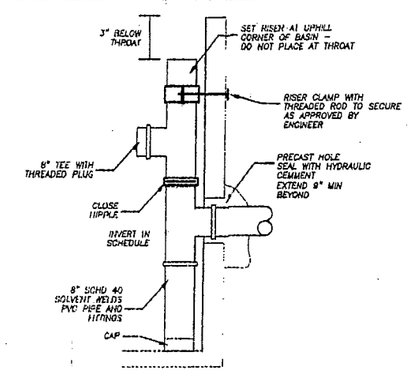
NOTES:
1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE ACTON "COMMON DRIVEWAY BY LAWS AND / OR MASS. HIGHWAY DEPARTMENT STANDARDS SPECIFICATIONS AND REGULATIONS.
2. PAVEMENT SHALL BE CLASS 1 BITUMINOUS CONCRETE LAID IN 2 COURSES TO A FINISHED DEPTH OF 3" (1 1/2" MIN. BINDER WITH A 1 1/2" WEARING COURSE ABOVE.)
3. GRAVEL SUBBASE SHALL CONTAIN NO STONES GREATER THAN 2" AND BE INSTALLED TO A MIN. DEPTH OF 12" (FOR DRIVE). COMPACT IN 4" (MAX.) LIFTS. REMOVE ALL ORGANIC SILTS & UNSUITABLE MATERIALS BENEATH.

BITUMINOUS CONCRETE DRIVEWAY DETAIL
N.T.S.

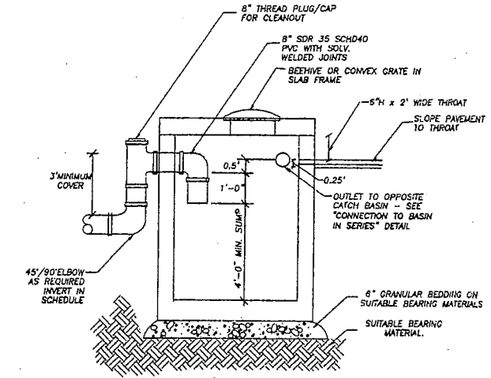


HOUSE #115 DRIVEWAY WALL
N.T.S.

NOTES:
1. CONCRETE TO BE 3,000 P.S.I. @ 28 DAYS
2. REINFORCING STEEL TO HAVE 3" MINIMUM COVER AND BE SPLICED 18"
3. ENGINEER TO BE INFORMED OF ANY INCOMPATIBILITY OF WALL WITH FIELD CONDITIONS



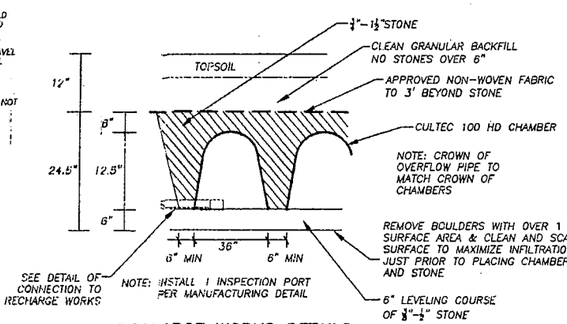
CONNECTION TO BASIN IN SERIES
N.T.S.



CATCH BASIN / DISCHARGE DETAIL
N.T.S.

NOTE: ALL CONNECTING PIPE IS TO BE 6" SDR 35 PVC OR SCHD 40 PVC

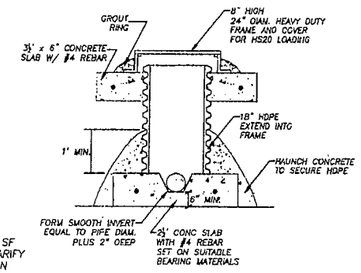
INTERCEPTOR TRENCH DETAIL
N.T.S.



RECHARGE WORKS DETAILS
N.T.S.

RECHARGE WORKS SCHEDULE

WORKS #1:	3 ROWS OF 3 CHAMBERS
WORKS #2.	2 ROWS OF 7 CHAMBERS
WORKS #3 THROUGH #7:	2 ROWS OF 2 CHAMBERS



CLEANOUT DETAIL
N.T.S.

RECHARGE WORKS ELEVATION SCHEDULE

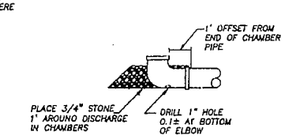
SYSTEM No.	BOTTOM OF CHAMBER ELEVATION
1	207.5
2	207.0
3	212.0
4	216.0
5	215.5
6	219.5
7	222.0

NOTE: FOUNDATION/ROOF DRAINS ARE LAID FLAT AT ELEVATIONS SHOWN ON PLAN.

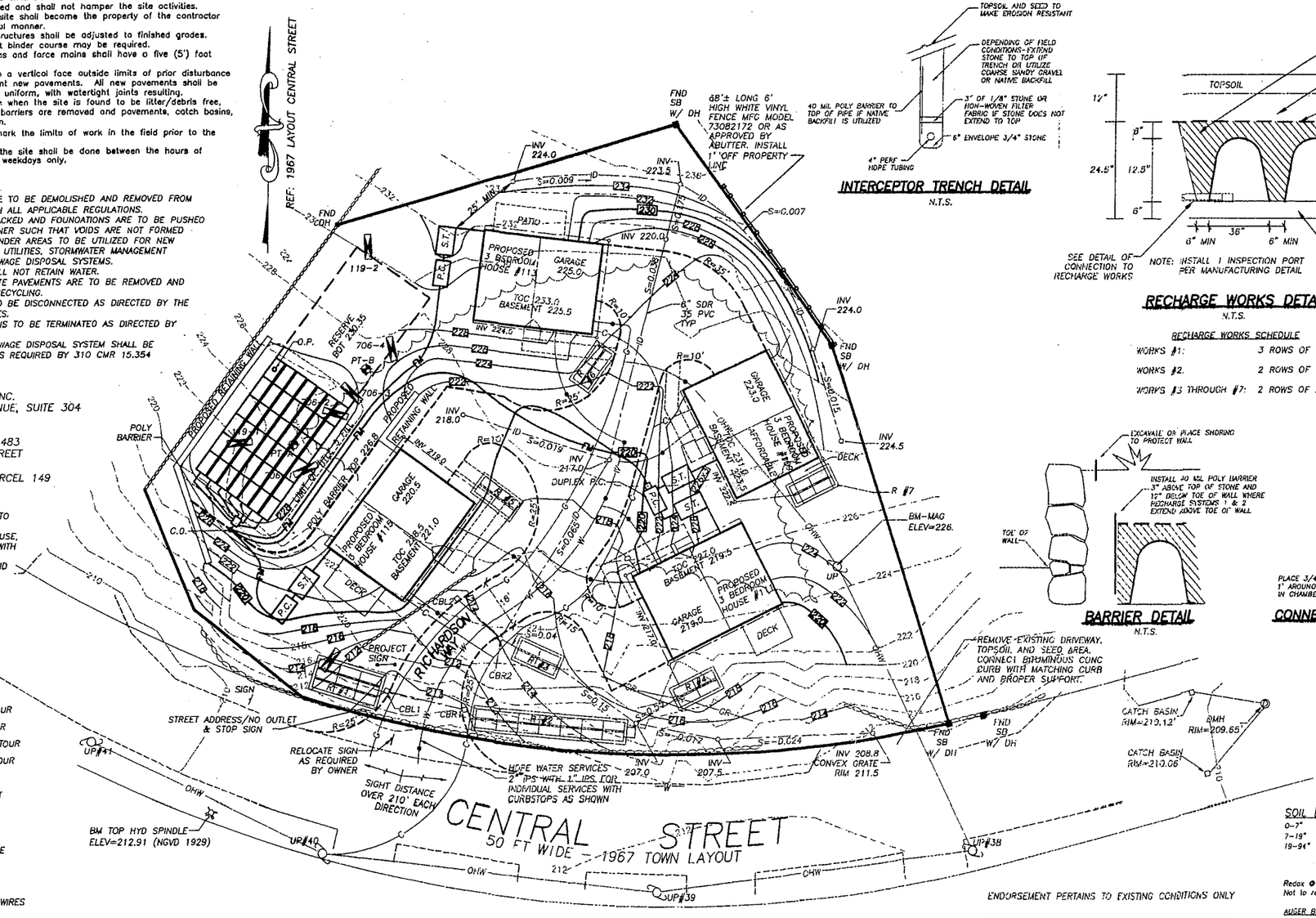
CATCH BASIN INVERT SCHEDULE

CBL1	THROAT 210.6 OUTLET TO R#1 207.5 OUTLET TO CBR1 207.0
CBR1	THROAT 210.8 OUTLET TO R#2 207.0 OUTLET TO CBL1 207.0
CBL2	THROAT 213.7 OUTLET TO CBR2 210.0
CBR2	THROAT 213.9 OUTLET TO R#3 212.25 OUTLET TO CBL2 210.0

BARRIER DETAIL
N.T.S.



CONNECTION TO RECHARGE WORKS
N.T.S.



LEGEND

- 230 — EXISTING 10' CONTOUR
- 236 — EXISTING 2' CONTOUR
- 230 — PROPOSED 10' CONTOUR
- 236 — PROPOSED 2' CONTOUR
- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- CATCH BASIN
- DRAIN MANHOLE
- W — PROPOSED WATERLINE
- CURB STOP
- UTILITY POLE
- OHW — EXISTING OVERHEAD WIRES
- EXISTING SIGN

SOIL EVALUATION @ RECHARGE #1

0-7"	Ap, SL	10 YR 3/3	- crumb
7-19"	Bw, SL	10 YR 5/4	- M/F
19-94"	C, SL	2.5Y5/4	- 20 % stones, cobbles & boulders, some gravel, some silt, loose

Redox @ 86" 7.5YR5/6 - No weeping
Not to refusal

AUGER BELOW WALL @ R #1
Loose sand encountered from 14 to 20"

ENDORSEMENT PERTAINS TO EXISTING CONDITIONS ONLY

PROFESSIONAL LAND SURVEYOR DATE

No.	DATE	DESCRIPTION
4	1/19/10	TOWN COMMENTS
3	12/10/09	TOWN COMMENTS
2	11/2/09	TOWN COMMENTS
1	9/29/09	TOWN COMMENTS

REVISIONS

SITE DEVELOPMENT PLAN
RICHARDSON CROSSING

113 CENTRAL STREET
ACTON, MA

PREPARED FOR:
RICHARDSON CROSSING, LLC
411 MASS AVE, SUITE 204
ACTON, MA 01720

SCALE: 1"=20' DATE: JUNE 19, 2009

Acton Survey & Engineering, Inc.
Since 1967
97 GREAT ROAD
P.O. BOX 666
ACTON, MA 01720
PH. (978) 263-3666
FAX (978) 635-0218

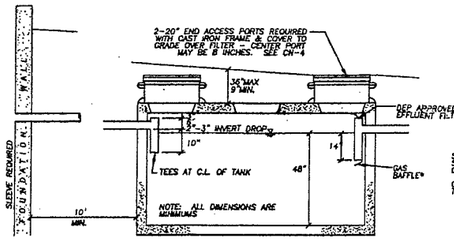
6729W161-5/9

GENERAL NOTES:

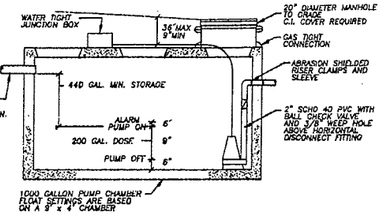
1. PLAN WAS PREPARED FOR NAMED CLIENT TO SHOW THE DESIGN OF THE SUBSURFACE SEWAGE DISPOSAL SYSTEM IN ACCORDANCE WITH TITLE 5 AND ANY MORE RESTRICTIVE REGULATIONS OF THE BOARD OF HEALTH.
2. DESIGN IS BASED UPON A TOPOGRAPHIC PLAN SHOWING THE VISUALLY APPARENT FEATURES OF THE SITE IN THE ENVIRONS OF THE SYSTEM AND THE SUBSURFACE EXPLORATIONS LISTED ON THIS PLAN.
3. PROPERTY LINES ARE BASED ON THE PLAN REFERENCED AND SHALL BE CONFIRMED AS BEING MOST RECENT PRIOR TO CONSTRUCTION.
4. PRIOR TO CONSTRUCTION, CONTRACTOR/OWNER SHALL REVIEW CURRENT ZONING, WETLANDS, AND ALL OTHER REGULATIONS THAT MAY AFFECT THIS PLAN.
5. THE BUILDINGS, DRIVEWAY, AND SEPTIC TANK CONFIGURATION MAY BE ALTERED WITH THE APPROVAL OF THE ENGINEER AND THE BOARD OF HEALTH.
6. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY PLAN DEFICIENCIES PRIOR TO INITIATION OF CONSTRUCTION AND ALL DEFICIENCIES FOUND DURING CONSTRUCTION SHALL BE REPORTED ON THE DAY DISCOVERED.
7. ALL KNOWN DRINKING WATER WELLS WITHIN 200 FEET OF THE SEWAGE DISPOSAL SYSTEM, AND ALL KNOWN SEWAGE DISPOSAL SYSTEMS WITHIN 200 FEET OF THE WELL, ARE SHOWN OR INDICATED.
8. THE SEWAGE DISPOSAL SYSTEM SHALL BE OFFSET A MINIMUM OF 10 FEET FROM ANY DRAIN OR PROPERTY LINE, 50 FEET FROM ANY SURFACE WATERS OR WETLANDS, 100 FEET FROM DRINKING WATER WELLS, OR AS OTHERWISE REQUIRED BY STATE AND LOCAL REGULATIONS.
9. ANY ALTERATIONS WITHIN 100' OF WETLANDS REQUIRE A FILING WITH THE CONSERVATION COMMISSION.

CONSTRUCTION NOTES:

1. CONTRACTOR SHALL CALL DIG SAFE (1-888-322-4844) PRIOR TO CONSTRUCTION.
2. MATERIALS AND WORKMANSHIP SHALL CONFORM TO THESE PLANS, TITLE 5, BOARD OF HEALTH REGULATIONS, AND ALL OTHER APPLICABLE REGULATIONS UNLESS SPECIFIED OTHERWISE IN WRITING.
3. STRUCTURES, PIPE, STONE AND FILL SHALL BE INSTALLED ON SUITABLE BEARING MATERIALS, FREE OF ORGANIC MATTER.
4. ALL STRUCTURES SHALL BE OF AN APPROVED DESIGN, SET LEVEL ON 8 INCHES OF CRUSHED STONE, AND BE MADE WATERTIGHT. SEPTIC TANK TEES SHALL BE OF LENGTH REQUIRED BY TITLE 5 (THOSE SHOWN ARE FOR FOUR FOOT LIQUID DEPTH). RISERS ARE REQUIRED ON ALL TANK OPENINGS WHICH COVER EXCEEDS 8".
5. ALL GRAVITY PIPING SHALL BE 4" AND LAID TRUE TO LINE AND GRADE WITH SECURE WATERTIGHT JOINTS AND BE BEDDED AND BACKFILLED AS REQUIRED BY MANUFACTURER.
   A. THE BUILDING SEWER SHALL BE SCHEDULE 40 PVC, CAST OR DUCTILE IRON, OR AN APPROVED EQUAL.
   B. SOLID AND PERFORATED PIPES UNDER PAVEMENT SHALL BE SCHEDULE 40 PVC, OR THE APPROVED EQUIVALENT.
   C. DISTRIBUTION LINES SHALL BE SCHEDULE 40 PVC/ABS, SDR 35 PVC, OR HDPE-ASTM D 3035.
6. GRAVITY LINES SHALL HAVE THE FOLLOWING MINIMUM SLOPES:
   A. BUILDING TO SEPTIC TANK: 0.02 FT/FT.
   B. SEPTIC TANK TO DISTRIBUTION BOX: 0.01 FT/FT.
   C. DISTRIBUTION BOX TO LINES: 0.005 FT/FT.
7. DISTRIBUTION BOX OUTLETS SHALL BE LEVEL FOR THE FIRST TWO FEET AND AN INLET TEE CUT OFF ONE INCH ABOVE OUTLETS SHALL BE INSTALLED IF INLET PIPE EXCEEDS 0.06 FT/FT OR IF PIPE IS A FORCE MAIN.
8. D-BOX SHALL BE EXTENDED BETWEEN 6 AND 9 INCHES OF FINAL GRADE WITH A PRECAST CONCRETE RISER FURNISHED BY D-BOX MANUFACTURER. PUDDLE 9" WIDE MORTAR RING 3 INCHES ABOVE AND BELOW JOINT.
9. ALL LARGE BOULDERS, ROOTS AND OTHER UNSUITABLE MATERIALS ENCOUNTERED IN EXCAVATIONS SHALL BE REMOVED.
10. ALL SURFACES SHALL BE SCARIFIED PRIOR TO THE PLACEMENT OF FILL OR STONE, TO ENHANCE INFILTRATIVE CAPABILITIES.
11. WHEN GRAVEL FILL IS REQUIRED, ALL ORGANIC MATERIALS SHALL BE REMOVED AND FILL CONFORMING TO REQUIREMENTS OF 310CMR 15.255 SHALL BE PLACED IN A MANNER TO INSURE SUPPORT AND PERCOLATION.
12. DOUBLE WASHED STONE SHALL BE DURABLE AND FREE FROM IRON, FINES AND DUST.
13. ALL BACKFILL SHALL BE CLEAN EARTHEN MATERIALS FREE OF LARGE STONES AND FROZEN MATERIALS. BACKFILL SHALL BE PLACED TO SUPPORT THE SYSTEM, INSURE PROPER RUNOFF AND BE STABILIZED TO PREVENT EROSION.
14. COVER OVER STRUCTURES AND LEACHING WORKS SHALL BE A MINIMUM OF 9 INCHES AND A MAXIMUM OF 36 INCHES.
15. ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE, OR APPROVED EQUAL.
16. SEPTIC TANK EFFLUENT TEE SHALL HAVE A DEP EFFLUENT FILTER WITH HANDLE EXTENDING TO WITHIN 3" OF C.I. FRAME AND COVER EXTENDED TO GRADE OVER OUTLET.

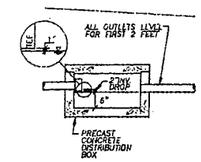


1500 GALLON SEPTIC TANK

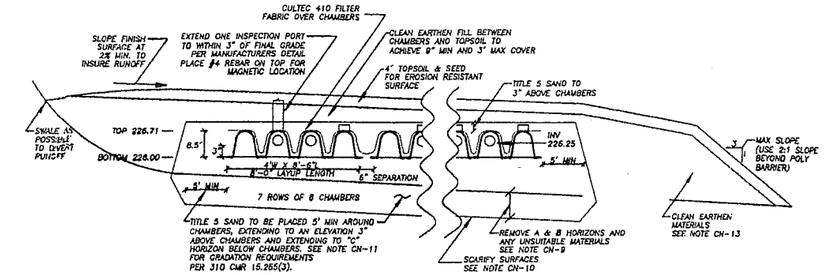


PUMP CHAMBER
FOR HOUSES #113 AND #115

PROFILE
N.T.S.

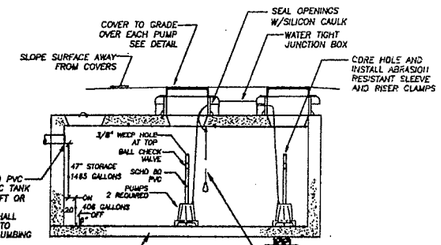


D-BOX

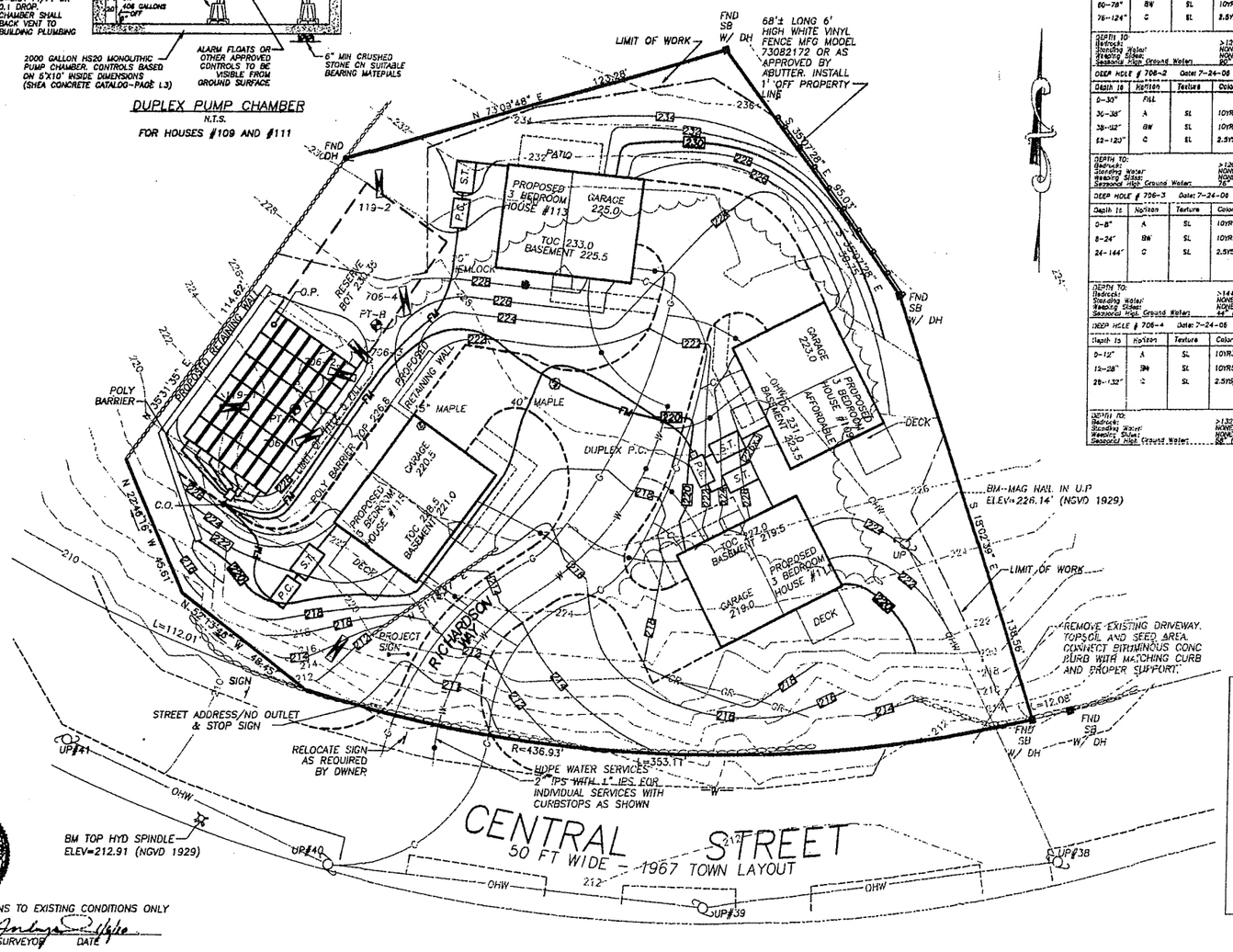


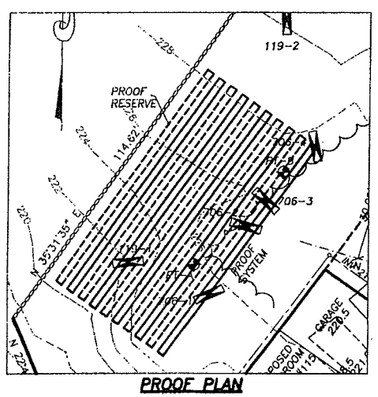
NOTE: CONTACTORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS AND DEP APPROVAL

CULTEC CONTACTOR C-4 HD (HEAVY DUTY)
BED CROSS SECTION
N.T.S.



DUPLEX PUMP CHAMBER
N.T.S.
FOR HOUSES #109 AND #111





PROOF PLAN
1"=20'

5 TRENCHES x 74L x 6'(BOTTOM AND SIDEWALL) = 2220 SF
2220 SF x 0.60 GPD/SF = 1332 CAPACITY

SOIL TESTS

SOIL EVALUATOR:
SCOTT P. HAYES
FORESITE ENGINEERING

BOARD OF HEALTH AGENT:
BRENT REKOSH

1. PERCOLATION RATES: (MIN/IN)

P#	RATE	DEPTH	DATE
PT-A	6 MIN/IN	60"	7/24/06
PT-B	3 MIN/IN	40"	7/24/06

2. OBSERVATION HOLE DATA

DEEP HOLE # 706-1 Date: 7-24-06 Elevation: 225.6

Depth to	Horizon	Texture	Color	Soil Mottling
0-50"	FILL			
50-60"	A	SL	10YR3/2	-
60-78"	BW	SL	10YR6/6	-
78-124"	C	SL	2.5Y5/4	10YR5/8 2.5Y6/1 @80"

DEPTH TO:
Bedrock: >124"
Standing Water: NONE
Weeping Sides: NONE
Seasonal High Ground Water: 80" (218.1)

DEEP HOLE # 706-2 Date: 7-24-06 Elevation: 226.3

Depth to	Horizon	Texture	Color	Soil Mottling
0-30"	FILL			
30-38"	A	SL	10YR3/2	-
38-52"	BW	SL	10YR5/6	-
52-120"	C	SL	2.5Y5/4	10YR5/8 2.5Y6/1 @76"

DEPTH TO:
Bedrock: >120"
Standing Water: NONE
Weeping Sides: NONE
Seasonal High Ground Water: 76" (220.0)

DEEP HOLE # 706-3 Date: 7-24-06 Elevation: 226.5

Depth to	Horizon	Texture	Color	Soil Mottling
0-8"	A	SL	10YR3/2	-
8-24"	BW	SL	10YR5/6	-
24-144"	C	SL	2.5Y5/4	10YR5/8 2.5Y6/1 @44"

DEPTH TO:
Bedrock: >144"
Standing Water: NONE
Weeping Sides: NONE
Seasonal High Ground Water: 44" (222.5)

DEEP HOLE # 706-4 Date: 7-24-06 Elevation: 227.7

Depth to	Horizon	Texture	Color	Soil Mottling
0-12"	A	SL	10YR3/2	-
12-28"	BW	SL	10YR5/8	-
28-132"	C	SL	2.5Y5/4	10YR3/8 2.5Y6/1 @58"

DEPTH TO:
Bedrock: >132"
Standing Water: NONE
Weeping Sides: NONE
Seasonal High Ground Water: 58" (222.9)

DEEP HOLE # 119-1 Date: 11-2-09 Elevation: 222.2

Depth to	Horizon	Texture	Color	Soil Mottling
0-4"	AP	SL	10YR3/3	-
4-18"	BW	SL	10YR4/6	-
18-118"	C	SL	2.5Y6/3	7.5YR5/8 @73"

DEPTH TO:
Bedrock: >118"
Standing Water: None
Weeping Sides: None
Seasonal High Ground Water: 73" (216.1)

DEEP HOLE # 119-2 Date: 11-2-09 Elevation: 230.2

Depth to	Horizon	Texture	Color	Soil Mottling
0-8"	AP	SL	10YR3/3	-
8-19"	BW	SL	10YR5/6	-
19-120"	C	SL	2.5Y6/3	7.5YR5/8 @70"

DEPTH TO:
Bedrock: >120"
Standing Water: None
Weeping Sides: None
Seasonal High Ground Water: 70" (224.4)

DESIGN ELEVATIONS

HOUSE	#115	#113	#103	#111
TOP OF CONC	228.52	233.02	231.02	227.06
AT FOUNTAIN	219.50	229.50	224.50	224.50
S.T. INLET	219.25	229.25	224.25	224.26
S.T. OUTLET	219.00	229.00	224.00	224.00
AT P.C.	218.15	228.75	223.75	223.75

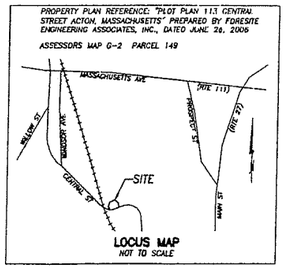
INVERTS

AT CLEANOUT	226.70
AT D-BOX INLET	226.55
AT D-BOX OUTLET	226.36
CHAMBER INVERT	226.25
TOP OF CHAMBERS/BREAKOUT	226.71
BOTTOM OF CHAMBERS	226.06

INLET TEE REQUIRED

DESIGN CRITERIA

1. SYSTEM IS DESIGNED TO ACCOMMODATE SANITARY SEWAGE ASSOCIATED WITH DOMESTIC USAGE CONSISTING OF NUTRESCIBLE WASTE AND FOR THE FLOWS CALCULATED.
2. SYSTEM IS NOT DESIGNED FOR THE USE OF A GARBAGE GRINDER, OR FOR WATER SOFTENER BACKWASH DISCHARGE.
3. FLOWS PER UNIT: 3 BEDROOMS @ 110 GPD = 330 GPD
   TOTAL FLOW = 330 GPD x 4 UNITS = 1320 GPD
4. SEPTIC TANK PER UNIT: 2 x FLOW REQUIRED
   1500 GALLON SINGLE COMPARTMENT TANK - MINIMUM SIZE
5. LEACHING AREA:
   A. PERCOLATION RATE USED: 6 MIN/IN
   B. SOIL CLASS: 2
   C. APPLICATION RATE: 0.60 GPD/SF
   D. AREA REQUIRED: 1320 GPD / 0.60 = 2200 SF
   E. AREAS PROVIDED:
      1. 42 CHAMBERS = 6 x 7 x 8 LF = 336 LF
      2. EFFECTIVE AREA PER LF = 6.7 SF
      3. EFFECTIVE AREA = 2251 SF
   F. CAPACITY PROVIDED: 0.60 x 2251 SF = 1351 GPD
6. MINIMUM GROUNDWATER OFFSET PROVIDED: 4'
7. SITE IS NOT IN A NITROGEN SENSITIVE AREA.



LOCUS MAP
NOT TO SCALE

LEGEND

S.T.	SEPTIC TANK
D-BOX	DISTRIBUTION BOX
	OBSERVATION HOLE (TEST PIT)
	PERCOLATION TEST
120.5	SPOT ELEVATIONS
100	EXISTING 10' CONTOURS
98	EXISTING 2' CONTOURS
150	PROPOSED CONTOURS
W	PROPOSED PRESSURED WATER LINE

COMMONWEALTH OF MASSACHUSETTS DOUGLAS W. ANDRYSICK #34028 PROFESSIONAL LAND SURVEYOR

ENDORSEMENT PERTAINS TO EXISTING CONDITIONS ONLY

Douglas W. Andrysick 7/8/10
PROFESSIONAL LAND SURVEYOR DATE

No.	DATE	DESCRIPTION
3	1/6/10	TOWN COMMENTS
2	11/11/9	ADDITIONAL TEST HOLES
1	11/2/09	ADJUST ELEVATIONS

REVISIONS

PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEM-SHEET 1

113 CENTRAL STREET-RICHARDSON CROSSING
ACTON, MA

PREPARED FOR:
RICHARDSON CROSSING, LLC
411 MASS AVE, SUITE 204
ACTON, MA 01720

SCALE: 1'=20' DATE: DECEMBER 24, 2008

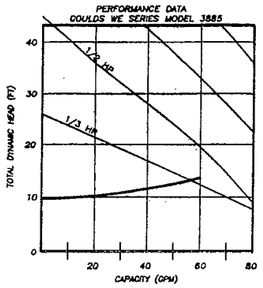
Acton Survey & Engineering, Inc.
Since 1967
97 GREAT ROAD
P.O. BOX 666
ACTON, MA 01720
PH. (978) 263-3666
FAX (978) 635-0218

6729-SDS-8/9

RESIDENTIAL PUMP CHAMBERS

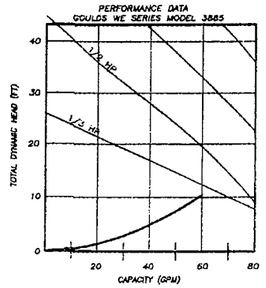
1. STRUCTURES, PUMPS, AND CONTROLS SHALL CONFORM TO THE REQUIREMENTS OF TITLE 5 AND ALL APPLICABLE CODES.
2. CHAMBER SHALL BE WATERTIGHT, VENTED, AND ALL OPENINGS SHALL BE A MINIMUM OF 2 FEET ABOVE THE MAXIMUM GROUNDWATER ELEVATION.
3. THE CAST IRON ACCESS MANHOLE SHALL BE OF SUITABLE SIZE TO ALLOW PUMP REMOVAL, BE CHILD PROOF, AND EXTEND 1" ABOVE FINISHED GRADE
4. THE PUMP SHALL BE CAPABLE OF PASSING A 1 1/4" SPHERICAL SOLID AND BE MADE FOR PUMPING RAW SEWAGE UNDER THE CONDITIONS SHOWN.
5. THE DISCHARGE SHALL BE A MINIMUM OF 25 GPM AGAINST A TDH OF 13 FT.
6. THE MOTORS SHALL HAVE A MINIMUM HP AS NOTED IN THE PERFORMACE CURVES AND BE SUITABLE FOR THE CURRENT AVAILABLE, AS DETERMINED BY THE CONTRACTOR.
7. THE CHAMBER SHALL BE OF SIZE THAT WILL ALLOW A TOTAL DISCHARGE DOSE OF 250 GAL. AND STORE 440 GAL. ABOVE THE PUMP ON FLOAT.
8. CONTROLS SHALL BE MERCURY SWITCH FLOATS INSTALLED TO BE VISIBLE FROM THE MANHOLE AND SET TO OPERATE AS SHOWN.
9. ALARM AND CONTROLS SHALL BE LOCATED WITHIN HOUSE AND NO SPLICES OR JUNCTION BOXES SHALL BE INSTALLED WITHIN CHAMBER.
10. MANUFACTURERS LITERATURE SHALL BE STAPLED NEXT TO CONTROLS. ALARM SHALL BE ON SEPARATE CIRCUITS.
11. THE CHECK VALVE SHALL BE BALL TYPE.
12. ALL PIPING SHALL BE SECURED AND SHIELDED FROM ABRASION.
13. FORCE MAIN SHALL SLOPE CONTINUALLY UPWARD (UNLESS SHOWN OTHERWISE) BE PROTECTED FROM FROST AND FREEZING-BY COVER, INSULATION, OR A WEEP HOLE PLACED ABOVE THE CHECK VALVE.
14. FORCE MAIN SHALL BE 2" IPS HD POLYETHYLENE
15. SEPTIC TANK OUTLET TEE SHALL HAVE A DEP APPROVED FILTER WITH HANDLE EXTENDED TO 3" BELOW CI COVER

PUMP FOR HOUSE #115



USE 1/3hp PUMP

PUMP FOR HOUSE #113

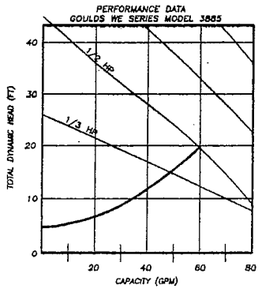


USE 1/3hp PUMP

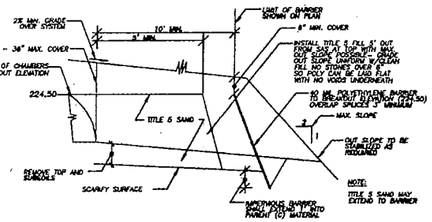
DUPLEX RESIDENTIAL PUMP CHAMBERS

1. STRUCTURES, PUMPS, AND CONTROLS SHALL CONFORM TO THE REQUIREMENTS OF TITLE 5 AND ALL APPLICABLE CODES.
2. CHAMBER SHALL BE WATERTIGHT, VENTED, AND ALL OPENINGS SHALL BE A MINIMUM OF 2 FEET ABOVE THE MAXIMUM GROUNDWATER TABLE ELEVATION.
3. THE CAST IRON ACCESS MANHOLES SHALL BE OF SUITABLE SIZE TO ALLOW EACH PUMP TO BE REMOVED, TO BE CHILD PROOF, AND EXTEND 1" ABOVE FINISHED GRADE. AN APPROVED LOCKABLE METAL HATCH OR HATCH RAIL SYSTEM BY PUMP MANUFACTURER MAY BE SUBSTITUTED.
4. PUMPS SHALL ALTERNATE ON SUCCESSIVE STARTS.
5. BOTH PUMPS SHALL BE THE SAME AND CAPABLE OF PASSING A 1 1/4" SPHERICAL SOLID AND BE MADE FOR PUMPING RAW SEWAGE UNDER THE CONDITIONS SHOWN.
6. THE DISCHARGE SHALL BE A MINIMUM OF 40 GPM AGAINST A TDH OF 11 FEET.
7. THE MOTOR SHALL HAVE A MINIMUM HP OF 1/3 AND BE SUITABLE FOR THE CURRENT AVAILABLE, AS DETERMINED BY THE CONTRACTOR
8. CHAMBERS TO HAVE MANHOLES SUITABLE FOR REMOVAL OF PUMPS FROM GROUND SURFACE.
9. CONTROLS SHALL BE MERCURY SWITCH FLOATS INSTALLED TO BE VISIBLE FROM THE MANHOLE AND SET TO OPERATE AS SHOWN.
10. ALARM AND CONTROLS SHALL BE LOCATED WITHIN THE BUILDING AND HAVE A NEOPRENE SOCK INDICATING THE ALARM SOURCE AND WHO TO NOTIFY. NO SPLICES OR JUNCTION BOXES SHALL BE INSTALLED WITHIN THE CHAMBER.
11. CONTROLS SHALL BE IN A SUITABLE NEMA ENCLOSURE WITH EXTERIOR MOUNTED H-O-A SWITCHES AND RUNNING LIGHTS.
12. MANUFACTURER'S LITERATURE SHALL BE STAPLED NEXT TO THE CONTROLS. ALARM SHALL BE ON SEPARATE CIRCUIT.
13. THE CHECK VALVE SHALL BE BALL TYPE.
14. ALL PIPING SHALL BE SECURED AND SHIELDED FROM ABRASION
15. FORCE MAIN SHALL SLOPE CONTINUALLY UPWARD, BE PROTECTED FROM FROST AND FREEZING-BY COVER, INSULATION, OR A WEEP HOLE PLACED ABOVE THE CHECK VALVE.
16. FORCE MAIN SHALL BE 2" IPS HD POLYETHYLENE
17. ENGINEER SHALL RECEIVE COMPLETE SHOP DRAWINGS FOR CHAMBERS, PUMPS AND CONTROLS PRIOR TO ORDERING.

PUMPS FOR HOUSES #109 AND #111

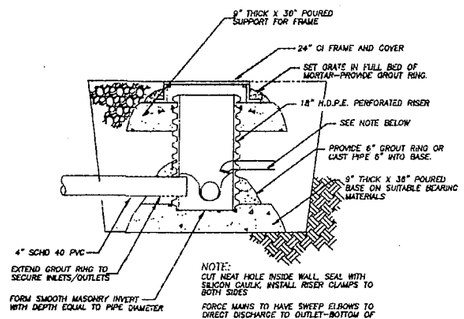


USE 1/3hp PUMP



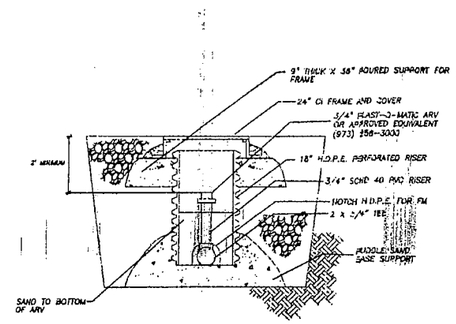
40 MIL POLYETHYLENE BARRIER DETAIL

(N.T.S.)



SEWER CLEANOUT DETAIL

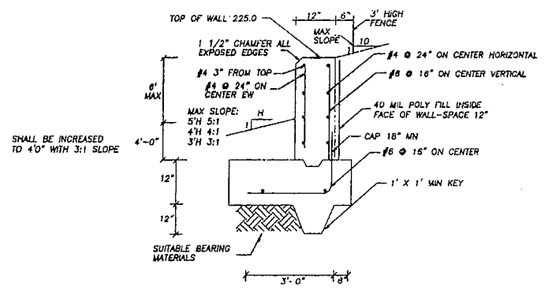
N.T.S.



ARV DETAIL

N.T.S.

REQUIRED IF HIGH POINT ON FORCE MAIN WARRANTS USE



BARRIER WALL DETAIL

N.T.S.

NOTES:
1. CONCRETE TO BE 3,000 P.S.I. @ 28 DAYS
2. REBARS TO HAVE 3" MINIMUM COVERAGE AND BE SPLICED 18" MINIMUM
3. ENGINEER SHALL OBSERVE WALL:
   A. FOOTING FORMERS WITH STEEL INSTALLED
   B. WALL STEEL PRIOR TO FORMS
   C. FORMS IN PLACE
   D. PRIOR TO BACKFILL
4. BACKFILL ON SYSTEM SIDE OF WALL SHALL BE "TITLE 5 SAND".

No.	DATE	DESCRIPTION
2	1/6/10	TOWN COMMENTS
1	11/2/09	ADJUST ELEVATIONS

REVISIONS

PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEM-SHEET 2

113 CENTRAL STREET-RICHARDSON CROSSING
ACTON, MA

PREPARED FOR:
RICHARDSON CROSSING, LLC
411 MASS AVE, SUITE 204
ACTON, MA 01720

SCALE: 1'=20' DATE: DECEMBER 24, 2008

Acton Survey & Engineering, Inc.
Since 1967
97 GREAT ROAD
P.O. BOX 666
ACTON, MA 01720
PH. (978) 263-3666
FAX (978) 635-0218

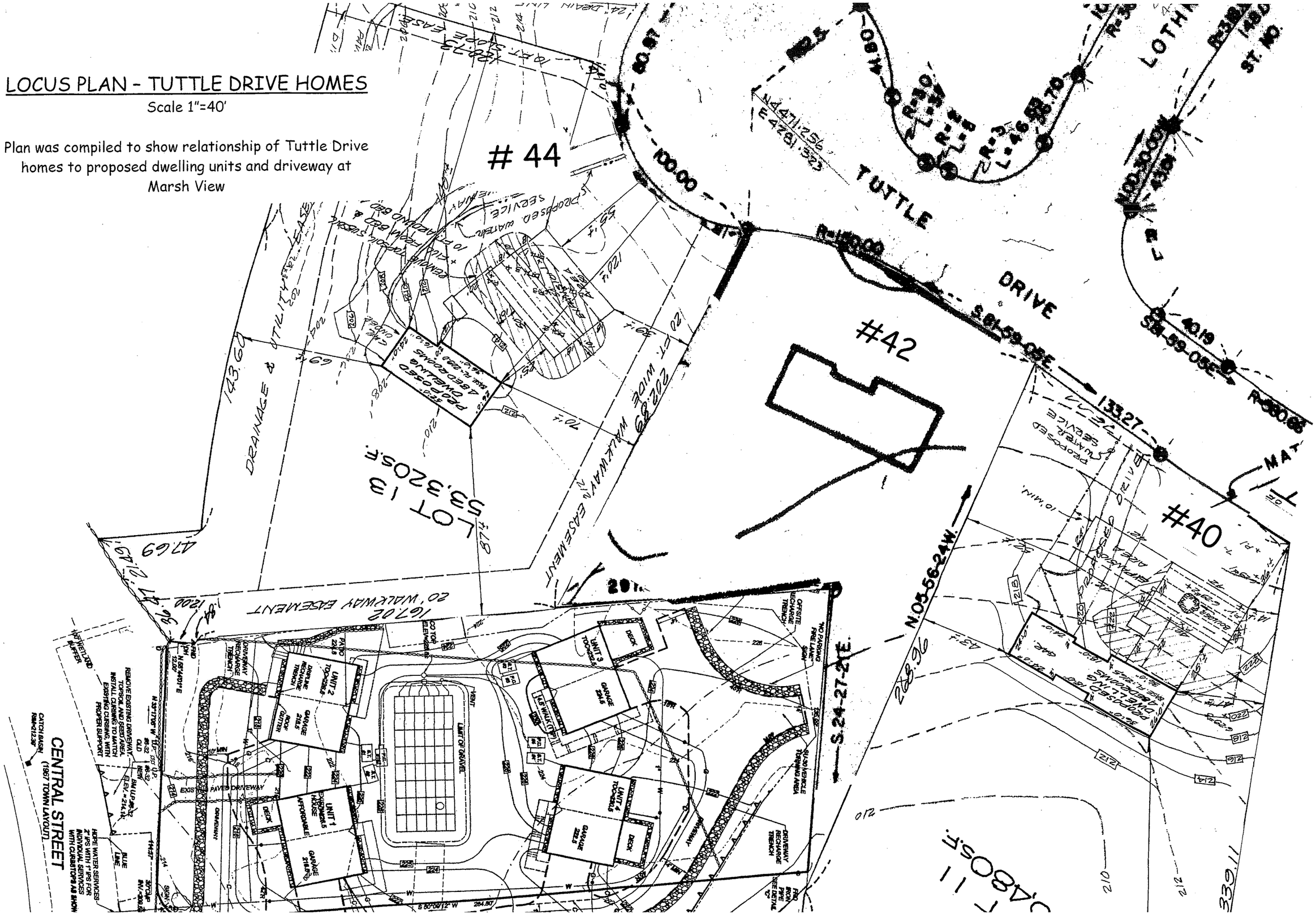
6729-SDS-9/9

COMMONWEALTH OF MASSACHUSETTS
DOUGLAS W. ANDRUSCK #34405
PROFESSIONAL LAND SURVEYOR

ENDORSEMENT PERTAINS TO EXISTING CONDITIONS ONLY

Douglas W. Andrusck 1/6/10
PROFESSIONAL LAND SURVEYOR DATE

LOCUS PLAN - TUTTLE DRIVE HOMES

Scale 1"=40'

Plan was compiled to show relationship of Tuttle Drive homes to proposed dwelling units and driveway at Marsh View