PROPOSED HAYBALE SILTATION BARRIER

USE AREA III AS SHOWN ON PLAN No. 93 OF 1977 AND DESCRIBED IN DEED BOOK 13138 PAGE 427

BORDERING VEGETATED WETLANDS AS DELINEATED BY B & C ASSOCIATES

PROPOSED 2:1 WETLAND REPLICATION 3,009 SF

PROPOSED WETLAND FILL 1,455 SF

(2) 6" RCP L=22'; S=0.01

231.60

PROPOSED HYDRAULIC CONNECTION

PROPOSED RETAINING WALL T.O.W.=235.00

INV.=231.86

CB-1 RIM=234.00 INV.(OUT)=232.13

SMH-A RIM=234.40 INV.(IN)=229.63 INV.(OUT)=229.53

UTILITY EASEMENT AS SHOWN ON PLAN No. 139 OF 1979

(2) INV.=232.28

S58°07'20"E 33.65'

N61°47'48"E

PROVIDE SCH 40 PVC SLEEVE

PROPOSED RETAINING WALL (SEE NOTE 9)

PROPOSED SILTATION FENCE ALONG EDGE OF EASEMENT

PROPOSED EDGE OF PAVEMENT (18' WIDTH)

PROPOSED ELECTRIC, FIRE ALARM, AND GAS IF NECESSARY

CATCH BASIN: RIM EL.=236.80±

CATCH BASIN: RIM EL.=236.94±

STONE HEADWALL INV 18" RCP=233.89±

18" ADS L=14'; S=0.01

PROPOSED OUTLET STRUCTURE "1C" (SEE DETAIL)

INV.=231.60

PROPOSED RIP RAP (TYP.)

TOP OF WALL=235.00 (MIN.)

6" SCH 40 L=76'; S=0.01

6" SCH 40 L=136'; S=0.01

6" SCH 40 L=54'; S=0.01

LOW PT 232.38

PROPOSED TRENCH DETAIL (SEE DETAIL)

LOW PT

UTILITY BOX

PROPOSED CONSTRUCTED STORMWATER WETLAND "1C-B"

CATCH BASIN: RIM EL.=239.65±

CATCH BASIN: RIM EL.=239.49±

100' BUFFER ZONE

SEDIMENT FOREBAY

SEDIMENT FOREBAY

SEDIMENT FOREBAY

18" RCP L=28'; S=0.01

SMH-B RIM=235.70 INV.(IN)=230.49 INV.(OUT)=230.39

INV.=235.00

12" ADS L=30'; S=0.12

PROPOSED OUTLET STRUCTURE "1B" (SEE DETAIL)

PROPOSED RETAINING WALL WITH GUARDRAIL

S36°22'55"W

PHEASANT HILL (PRIVATE DRIVE)

USE AREA III AS SHOWN ON PLAN No. 93 OF 1977 AND DESCRIBED IN DEED BOOK 13138 PAGE 427

6" SCH 40 L=78'; S=0.09

CATCH BASIN: RIM EL.=245.50±

PROPOSED INFILTRATION BASIN "1B"

EDGE OF PAVEMENT (TYPICAL)

SMH-C RIM=238.40 INV.(IN)=237.50 INV.(OUT)=237.40

SEDIMENT FOREBAY

LOT 17
314,328 ±S.F.
7,2160 ±AC.

INV.=242.46

PROPOSED TREELINE (TYP.)

PROPOSED SINGLE FAMILY DWELLING UNIT (TYP.)

213.52'

12" RCP L=57'; S=0.005

1

2

T.C.=252.50 B.F.=248.50

G.F.=251.50

T.C.=252.00 B.F.=248.00

CB-3 RIM=245.50 INV.(OUT)=242.75

PROPOSED CAPE COD BERM

N20°24'15"W 90.00'

HENLEY ROAD (PUBLIC - 45' WIDE)

8" SCH40 PVC L=26'; S=0.005

DMH-1 RIM=234.45 INV.(IN)=232.00 INV.(OUT)=231.90

12" RCP L=10'; S=0.005

INV.=231.85

PROPOSED RETAINING WALL T.O.W.=235.00 MIN.

INV.=231.85

R=64.50' L=22.97'

PROPOSED CONSTRUCTED SIORMWATER WETLAND "1C-A"

R=64.50' L=22.96'

N53°37'10"W 43.83'

N69°15'45"E 184.80'

INV.=233.00

12" RCP L=4'; S=0.03

CB-2 RIM=235.80 INV.(OUT)=233.10

EDGE OF PAVEMENT (TYPICAL)

#107 EXISTING DWELLING (APPROX.)

N/F KEJIANG

#109 EXISTING DWELLING (APPROX.)

N/F KOMMINENI

#111 EXISTING DWELLING (APPROX.)

N/F WU

N/F KROLL

EXISTING FOUNDATION DRAIN TO REMAIN

EXISTING GARAGE (APPROX.)

30' UTILITY EASEMENT AS SHOWN ON PLAN No. 93 OF 1985

RIGHT OF WAY AND UTILITY EASEMENT AS SHOWN ON PLAN No. 20 OF 1981

ALL EXISTING UTILITIES AND ACCESS DRIVEWAYS TO REMAIN. PAVEMENT WIDENED TO 18' WIDTH AND RESURFACED TO IMPROVE ACCESS.

EXISTING PAVED DRIVEWAY

SMH SEWER INV.=227.97

EDGE OF PAVEMENT (TYPICAL)

100' BUFFER ZONE

SWALE

NONSET PATH (PUBLIC - 60' WIDE)

PAVED SIDEWALK

SMH

STONE BOUND/ DRILL HOLE

STONE BOUND/ DRILL HOLE

STONE BOUND/ DRILL HOLE

CB

12"ROP CB

12" RCP INV.=229.28

36" SP.AL. INV.=229.25'

36" SP.AL. INV.=229.10'

12" RCP INV.=229.32'

12"ROP

WATER GATE

TMH

MH

PLAN 837 OF 1977

LEGEND:

- EXISTING CONTOUR
- N/F — NOW OR FORMERLY
- UP — UTILITY POLE
- BORDERING VEGETATED WETLAND
- 100' BUFFER ZONE
- OHW — APPROX. EXISTING OVERHEAD WIRES
- W — APPROX. EXISTING WATER MAIN
- G — APPROX. EXISTING GAS SERVICE
- EXISTING TREELINE
- PROPOSED TREELINE
- 219 — PROPOSED CONTOUR
- 201.07 — PROPOSED SPOT GRADE
- DMH — DRAIN MANHOLE
- CB — CATCH BASIN
- SMH — SEWER MANHOLE
- PROPOSED UNDERGROUND UTILS
- G — PROPOSED GAS LINE
- W — PROPOSED WATER LINE
- FE — FLARED END
- DI — DROP INLET
- ID — INLINE DRAIN
- TD — TRENCH DRAIN

GENERAL NOTES

1. ALL UNDERGROUND UTILITIES SHOWN HEREON WERE COMPILED ACCORDING TO AVAILABLE RECORD PLANS FROM VARIOUS UTILITY COMPANIES AND PUBLIC AGENCIES AND ARE APPROXIMATE ONLY. ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD BEFORE EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORATION OR REPAIRING. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE CONTACTED INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN. SEE CHAPTER 370, ACTS OF 1963 MASS. WE ASSUME NO RESPONSIBILITY FOR DAMAGE INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN. BEFORE PLANNING FUTURE CONNECTIONS, THE APPROPRIATE PUBLIC UTILITY ENGINEERING DEPARTMENT MUST BE CONSULTED. DIG-SAFE TELE. NO. (888) 344-7233.
2. UNLESS OTHERWISE SPECIFIED ON THESE PLANS, ALL CONSTRUCTION METHODS AND MATERIALS SHALL COMPLY WITH SPECIFICATIONS OUTLINED IN THE ACTON ZONING BYLAW.
3. ALL LIMITS OF WORK SHALL BE LOCATED IN THE FIELD PRIOR TO CONSTRUCTION OR SITE CLEARING.
4. ALL WATER PIPES, HYDRANTS, GATE VALVES AND OTHER APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH THE ACTON WATER SUPPLY DISTRICT REQUIREMENTS.
5. ALL STUMPS AND OTHER CONSTRUCTION DEBRIS SHALL BE PROPERLY REMOVED ANY FILL MATERIAL USED SHALL BE FREE OF HAZARDOUS MATERIALS OR WASTE.
6. ALL DRAIN PIPES SHALL BE ADS N-12 UNLESS OTHERWISE SHOWN.
7. TRANSPORTATION OF FILL, EARTH, OR CONSTRUCTION DEBRIS TO OR FROM THE SITE SHALL BE RESTRICTED TO DAYTIME HOURS (9 AM TO 4 PM) MONDAY THROUGH FRIDAY.
8. ANY FILL MATERIAL USED SHALL BE FREE OF HAZARDOUS MATERIALS OR WASTE.
9. COMBINATION OF CURBING, RETAINING WALLS, AND STONE WALLS ALONG PROPOSED DRIVEWAY, AROUND PROPOSED CONSTRUCTED STORMWATER WETLANDS, AND WETLAND REPLICATION AREA TO BE DESIGNED BY A STRUCTURAL ENGINEER. PLANS TO BE SUBMITTED TO CONSERVATION COMMISSION PRIOR TO CONSTRUCTION.

NONSET PATH
WETLAND PERMITTING PLAN
ACTON, MASSACHUSETTS

GRADING, DRAINAGE & UTILITIES PLAN
FOR: HAWTHORNE HOMES, LLC
SCALE: 1"=20' JANUARY 26, 2011
REV. JUNE 28, 2011

STAMSKI AND MCNARY, INC.
1000 MAIN STREET ACTON, MASSACHUSETTS
(978) 263-8585
ENGINEERING - PLANNING - SURVEYING

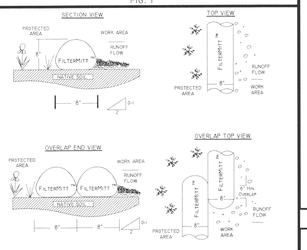
0 10 20 40 60 80 FT

(4627CONCEPT3D.DWG) SHEET 1 OF 3 SM-4627

COMMONWEALTH OF MASSACHUSETTS JOSEPH MARCH CIVIL #40472 REGISTERED PROFESSIONAL ENGINEER

COMMONWEALTH OF MASSACHUSETTS WILLIAM F. McNARY No. 30753 PROFESSIONAL LAND SURVEYOR

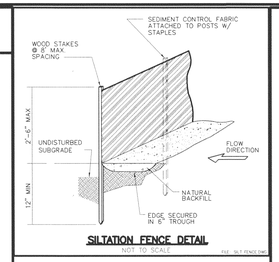
DETAILED SPECIFICATIONS
8" SEDIMENT FILTERMITT™
SLOPES 2 TO 1 OR LESS
FIG. 1



ALTERNATIVE SILTATION BARRIER DETAIL

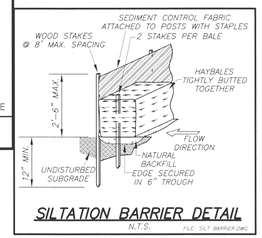
NOT TO SCALE

FOR FURTHER INFORMATION ABOUT PHASE II STORMWATER PRODUCTS, INC. CONTACT US AT:
P.O. Box 737 - WRENTHAM, MA 02093 - PH: (508) 384-7400 - FAX: (508) 384-0571
www.groundscapesexpress.com



SILTATION FENCE DETAIL

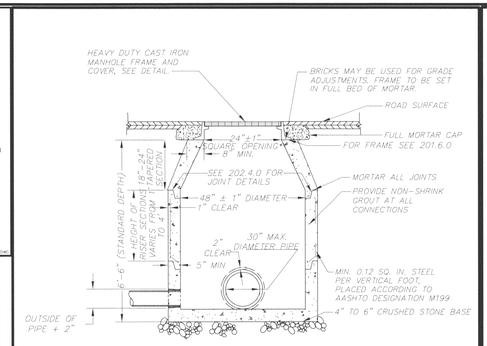
NOT TO SCALE



SILTATION BARRIER DETAIL

N.T.S.

FILE: SILT BARRIER.DWG

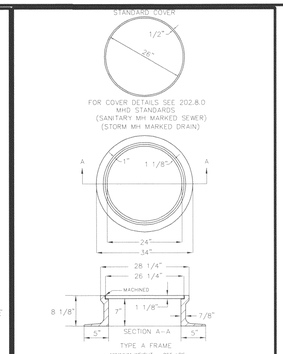


PRECAST CONCRETE MANHOLE DETAIL

NOT TO SCALE

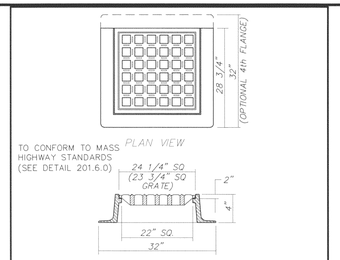
NOTES

1. MANHOLE TO CONFORM TO MASS. D.P.W. STANDARD 202.4.0.
2. FACE OF PIPE FLUSH OR NOT TO PROJECT MORE THAN 4" FROM FACE OF WALL ALONG CENTERLINE OF PIPE.
3. FOR DESCRIPTION, MATERIALS AND CONSTRUCTION METHOD, SEE SPECIFICATIONS.



MANHOLE FRAME AND COVER

N.T.S.



TO CONFORM TO MASS. HIGHWAY STANDARDS (SEE DETAIL 201.6.0)

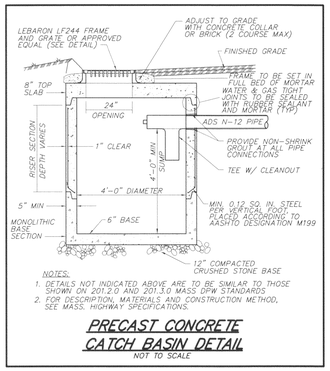
FRAME: LEBARON LF244-2
GRATE: LEBARON L24SG17

SINGLE CATCH BASIN

FULLY MACHINED AND INTERCHANGABLE FRAMES AND COVERS.
HIGH QUALITY MATERIALS AND WORKMANSHIP.
COAL TAR EPOXY PAINTED.
NO ROCK COVERS.
H-20 LOADING RATE
3 FLANGE FRAMES TO BE USED WITH CURB INLET

CATCH BASIN FRAME AND GRATE

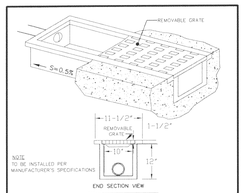
NOT TO SCALE



NOTES:
1. DETAILS NOT INDICATED ABOVE ARE TO BE SIMILAR TO THOSE SHOWN ON 201.2.0 AND 201.3.0 MASS DPW STANDARDS
2. FOR DESCRIPTION, MATERIALS AND CONSTRUCTION METHOD, SEE MASS. HIGHWAY SPECIFICATIONS.

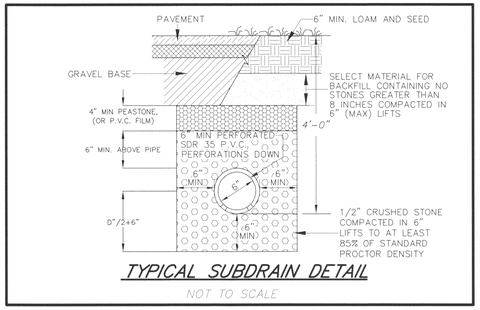
PRECAST CONCRETE CATCH BASIN DETAIL

NOT TO SCALE



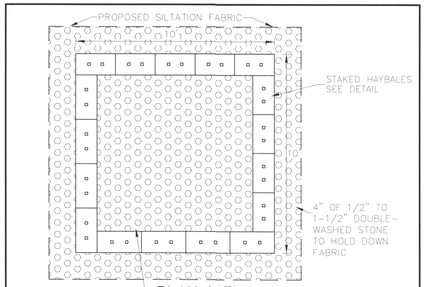
TRENCH DRAIN DETAIL

AS MANUFACTURED BY:
NEENAH FOUNDRY COMPANY
NOT TO SCALE



TYPICAL SUBDRAIN DETAIL

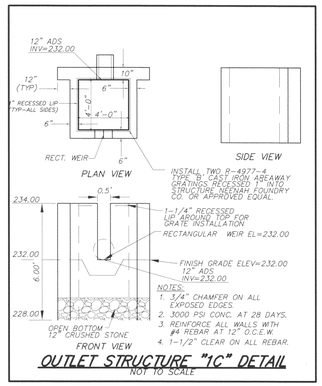
NOT TO SCALE



NOTES:
1. A TRENCH DEWATERING STILL SHALL BE INSTALLED WHEREVER GROUNDWATER IS ENCOUNTERED SO AS TO PROVIDE AN AREA FOR PUMPED WATER TO BE DEPOSITED.
2. THE HAYBALES SHALL BE INSTALLED IN ACCORDANCE WITH THE HAYBALE SILTATION DETAIL PROVIDED ON THIS PLAN.
3. THE DEWATERING STILL SHALL BE CLEANED OF SILT AS NECESSARY.

DEWATERING STILL DETAIL

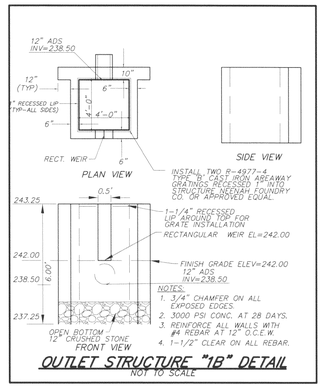
N.T.S.



NOTES:
1. 3/4" CHAMFER ON ALL EXPOSED EDGES.
2. 3000 PSI CONC. AT 28 DAYS.
3. REINFORCE ALL WALLS WITH #4 REBAR AT 12" O.C.E.W.
4. 1-1/2" CLEAR ON ALL REBAR.

OUTLET STRUCTURE "1C" DETAIL

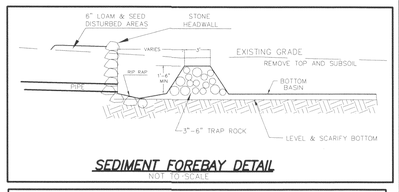
NOT TO SCALE



NOTES:
1. 3/4" CHAMFER ON ALL EXPOSED EDGES.
2. 3000 PSI CONC. AT 28 DAYS.
3. REINFORCE ALL WALLS WITH #4 REBAR AT 12" O.C.E.W.
4. 1-1/2" CLEAR ON ALL REBAR.

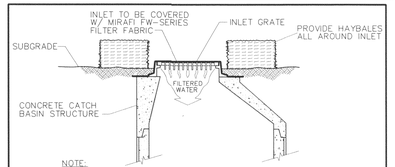
OUTLET STRUCTURE "1B" DETAIL

NOT TO SCALE



SEDIMENT FOREBAY DETAIL

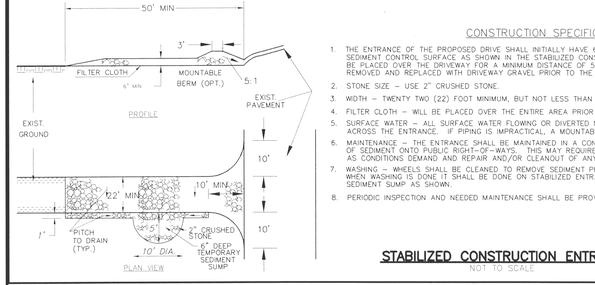
NOT TO SCALE



NOTE:
ONCE WEARING COURSE IS INSTALLED, REMOVE FILTER FABRIC AND REPLACE WITH A SILT SACK. HAYBALES TO REMAIN.

INLET PROTECTION DETAIL

NOT TO SCALE

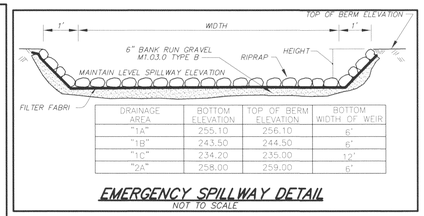


CONSTRUCTION SPECIFICATIONS

1. THE ENTRANCE OF THE PROPOSED DRIVE SHALL INITIALLY HAVE 6" OF 2" CRUSHED STONE LAID DOWN AS A TRAFFIC SEDIMENT CONTROL SURFACE AS SHOWN IN THE STABILIZED CONSTRUCTION ENTRANCE DETAIL. THIS STONE PACK SHALL BE PLACED OVER THE DRIVEWAY FOR A MINIMUM DISTANCE OF 50 FEET FROM THE EDGE OF PAVEMENT AND SHALL BE REMOVED AND REPLACED WITH DRIVEWAY GRAVEL PRIOR TO THE PLACEMENT OF PAVEMENT.
2. STONE SIZE – USE 2" CRUSHED STONE.
3. WIDTH – TWENTY TWO (22) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS OF INGRESS OR EGRESS.
4. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO THE PLACEMENT OF STONE.
5. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED NEAR CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
6. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
7. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAYS. WHEN WASHING IS DONE IT SHALL BE DONE ON STABILIZED ENTRANCE WITH STONE AND WHICH DRAINS INTO THE SEDIMENT SUMP AS SHOWN.
8. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE

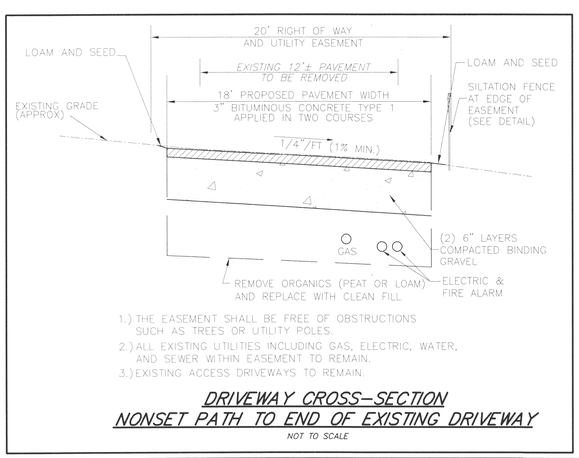
NOT TO SCALE



DRAINAGE AREA	BOTTOM ELEVATION	TOP OF BERM ELEVATION	BOTTOM WIDTH OF WEIR
"1A"	255.10	256.10	6'
"1B"	243.50	244.50	6'
"1C"	234.20	235.00	12'
"2A"	258.00	259.00	6'

EMERGENCY SPILLWAY DETAIL

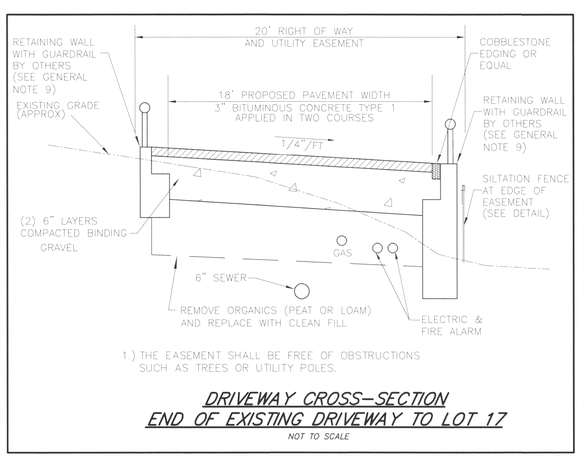
NOT TO SCALE



1.) THE EASEMENT SHALL BE FREE OF OBSTRUCTIONS SUCH AS TREES OR UTILITY POLES.
2.) ALL EXISTING UTILITIES INCLUDING GAS, ELECTRIC, WATER, AND SEWER WITHIN EASEMENT TO REMAIN.
3.) EXISTING ACCESS DRIVEWAYS TO REMAIN.

DRIVEWAY CROSS-SECTION NONSET PATH TO END OF EXISTING DRIVEWAY

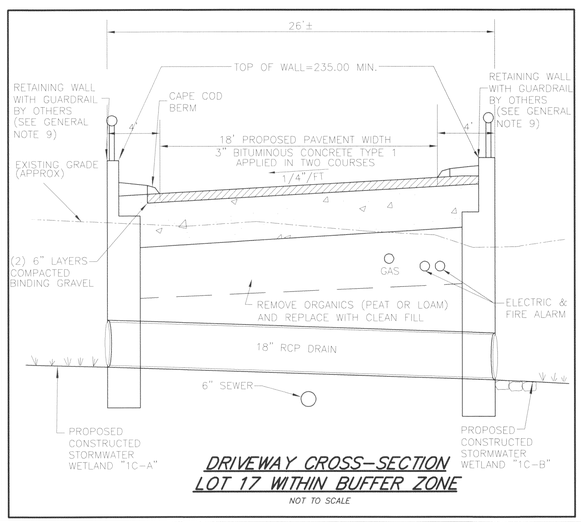
NOT TO SCALE



1.) THE EASEMENT SHALL BE FREE OF OBSTRUCTIONS SUCH AS TREES OR UTILITY POLES.

DRIVEWAY CROSS-SECTION END OF EXISTING DRIVEWAY TO LOT 17

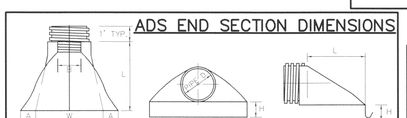
NOT TO SCALE



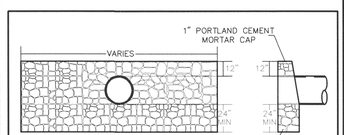
DRIVEWAY CROSS-SECTION LOT 17 WITHIN BUFFER ZONE

NOT TO SCALE

ADS END SECTION DIMENSIONS



PIPE DIAMETER	DIMENSION (inches)					
	PART NO.	A(1±)	B MAX	H(1±)	L(1/2±)	W(2±)
12" and 15"	1210 NP	6.5	10	6.5	25	29
18"	1810 NP	7.5	15	6.5	32	35
24"	2410 NP	7.5	18	6.5	36	45
36"	3610 NP	10.5	NA	7.0	53	68



FIELDSTONE HEADWALL DETAIL

NOT TO SCALE

NONSET PATH
WETLAND PERMITTING PLAN
ACTON, MASSACHUSETTS

DETAILS

FOR: HAWTHORNE HOMES, LLC

SCALE: 1"=20' JANUARY 26, 2011
REV. JUNE 28, 2011

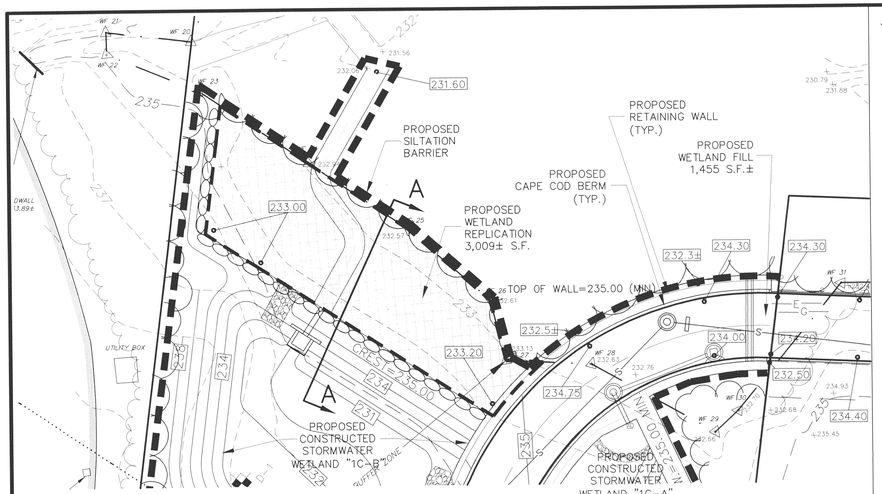
STAMSKI AND MCNARY, INC.
1000 MAIN STREET ACTON, MASSACHUSETTS
(978) 263-8585
ENGINEERING – PLANNING – SURVEYING

0 10 20 40 60 80 FT

(4627CONCEPT3D.DWG) SHEET 2 OF 3 SM-4627

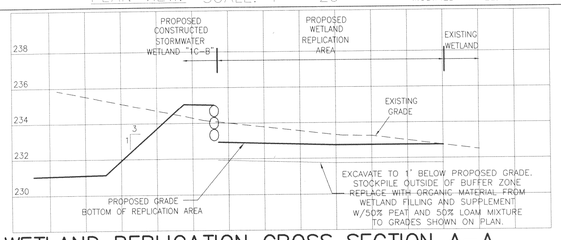
COMMONWEALTH OF MASSACHUSETTS
JOSEPH MARCH CIVIL #40472 REGISTERED PROFESSIONAL ENGINEER

COMMONWEALTH OF MASSACHUSETTS
WILLIAM F. McNARY No. 30753 PROFESSIONAL LAND SURVEYOR



PLAN VIEW: SCALE: 1"= 20'

NOTE: FINAL GRADES IN REPLICATION AREA MAY BE MODIFIED IN FIELD BY BOTANIST



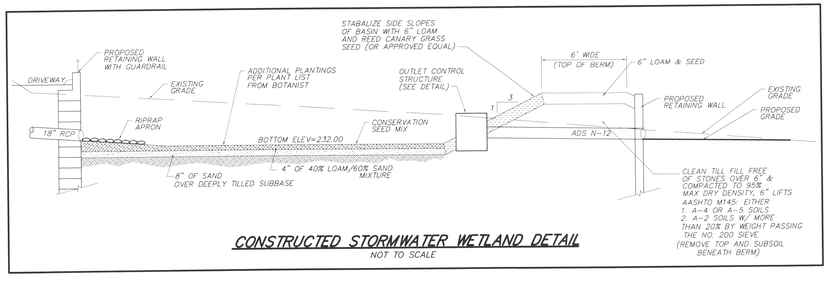
WETLAND REPLICATION CROSS SECTION A–A

SCALE: 1"= 10' H, 1"= 4' V.

PLANT LIST

Wetland Replication Area

Symbol	Botanical Name	Common Name	Size	Quantity	Condition
		TREES			
AR	*Acer rubrum*	Red Maple	1.0" caliper	5	B & B
		SHRUBS			
VC	*Vaccinium corymbosum*	Highbush Blueberry	36 inch	9	CONT. GROWN
IV	*Ilex verticillata*	Winterberry	36 inch	20	CONT. GROWN
AV	*Azalea viscosum*	Swamp Azalea	36 inch	5	CONT. GROWN
VD	*Viburnum dentatum*	Arrowwood	36 inch	7	CONT. GROWN
CA	*Cornus amomum*	Silky Dogwood	36 inch	6	CONT. GROWN
		FERNS			
OC	*Osmunda cinnamomea*	Cinnamon Fern	Gallon	30	CONT. GROWN
OS	*Onoclea sensibilis*	Sensitive Fern	Gallon	20	CONT. GROWN
OR	*Osmunda regalis*	Royal Fern	Gallon	9	CONT. GROWN



CONSTRUCTED STORMWATER WETLAND DETAIL

NOT TO SCALE

CONSTRUCTION SEQUENCE FOR WETLAND CROSSING

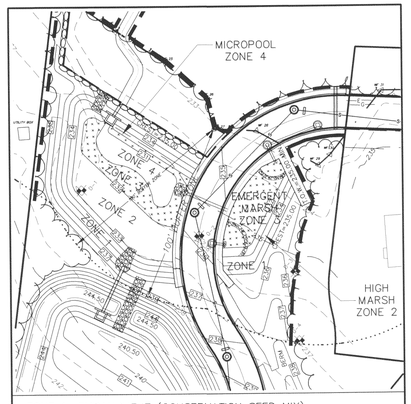
1. INSTALL EROSION CONTROL BARRIER PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION AT ALL LOCATIONS SHOWN ON THE PLANS. SET HAYBALES LINES IN THE LOCATIONS SPECIFIED BY THE DESIGN ENGINEER.
2. NOTIFY CONSERVATION COMMISSION 48 HOURS PRIOR TO STARTING DATE OF CONSTRUCTION.
3. CLEAR AND GRUB AREA WITHIN WETLAND CROSSING AND DESIGNATED AREA FOR WETLAND REPLICATION.
4. EXCAVATE MATERIAL WITHIN WETLAND REPLICATION AREA TO ONE (1) FOOT BELOW GRADES SHOWN ON PLAN. STOCKPILE EXCAVATED MATERIAL OUTSIDE OF THE 100' BUFFER ZONE.
5. STRIP ORGANIC MATERIAL FROM AREA WITHIN WETLAND CROSSING AND SPREAD EXCAVATED ORGANIC MATERIAL OVER WETLAND REPLICATION AREA TO THE GRADES SHOWN ON THE PLAN. COMPLETE WETLAND REPLICATION AREA IN COMPLIANCE WITH "CONSTRUCTION SEQUENCE FOR WETLAND REPLICATION AREA".
6. INSTALL SEWER MAIN, ELECTRICAL, AND FIRE ALARM.
7. INSTALL GAS LINE.
8. INSTALL HEADWALLS AND CULVERT.
9. PLACE AND COMPACT GRAVEL FILL FOR PROPOSED DRIVEWAY WITHIN WETLAND CROSSING TO THE GRADES SHOWN ON THE PLAN.
10. STABILIZE SLOPES IN WETLAND FILL AREA WITH 6" OF LOAM AND HYDROSEEDING.
11. INSTALL OTHER PROPOSED UNDERGROUND UTILITIES.
12. INSTALL DRIVEWAY SURFACE TO THE WIDTH SHOWN ON THE PLAN.
13. LOAM AND SEED ALL DISTURBED SURFACES WHICH HAVE NOT BEEN STABILIZED.
14. REMOVE EROSION CONTROL BARRIERS AFTER ALL VEGETATION IS ESTABLISHED AND THE APPROVING AUTHORITY HAS ISSUED A CERTIFICATE OF COMPLIANCE.

Proposed Wetland Replication Area

The proposed wetland replication area is currently vegetated by a White Pine stand. All of the vegetation will have to be removed in order to construction the replication area. This will result in the removal of the following trees:

8 White Pines	*Pinus strobus*
1 Red Oak	*Quercus rubra*
1 White Oak	*Quercus alba*
4 small Black Birch	*Betula lenta*

There are very few shrubs and the herbaceous layer consists of an escaped groundcover.



ZONE 1: EMBANKMENT (CONSERVATION SEED MIX)
ZONE 2: SEMI-WET ZONE (PLANT PER BOTANIST)
ZONE 3: HIGH MARSH ZONE (PLANT PER BOTANIST)
ZONE 4: LOW MARSH ZONE (PLANT PER BOTANIST)

CONSTRUCTED STORMWATER WETLAND

SCALE: 1"=40'

WETLAND REPLICATION SCHEDULE

Part 1 General

1.01 Extent of Work

A. The work includes the furnishing of all plant, labor, equipment, materials and required professional services in connection with the protection, replication and provision of specific mitigation and enhancement measures to minimize and compensate for impacts to wetlands.

B. It shall be the responsibility of the Applicant to retain a Botanist, Biologist, Wetland Scientist or other individual with qualifications and a minimum of five years experience in similar wetland replications, and thoroughly versed in the Commonwealth of Massachusetts Wetlands Protection Act (MGL Chapter 131, section 40) and all other relevant regulations of the Department of Environmental Protection. This individual, herein after referred to as "Botanist", shall be approved by the Town of Acton Conservation Commission.

Part 2 Execution

2.01 General

A. The Applicant shall plan and execute operations in a manner minimizing the amount of excavated and exposed fill, or other foreign materials that may be washed or otherwise carried into the replication area.

2.02 Erosion/Sedimentation Control

A. The applicant shall install hay bales and/or siltation fencing and utilize erosion/sedimentation control methods prior to the commencement of any work.

2.03 Replication Area Preparation

A. This wetland replication shall be performed under the direction and guidance of a qualified Botanist and as specified herein.

B. The replication area shall have finished grades which meet the existing grades in the adjacent wetland as shown on this plan.

C. Before planting the replication area, the Applicant shall remove any trees, shrubs, stumps, and sod from the replication area. These are not to be stockpiled in the resource area or buffer zones while awaiting disposition.

D. During the removal of the trees, shrubs, stumps and sod, some of the soils (within the replication area) will likely be removed during the process. Additional wetland soils shall be provided in quantities sufficient to establish grades as shown on the previously referenced plans. The replacement soil shall be purchased by the Applicant at a 1:1 mix of loam to peat/organic soils.

1. The replication area shall be excavated to a depth of 8 to 12 inches below proposed finish grades. The replication area is to then be backfilled with the 1:1 mixture of loam to peat/organic soil.

2. The wetland soils shall be deposited in the replication area in a manner minimizing travel and subsequent compaction of the underlying material and replacement wetland soils.

3. The replication area shall not have finished grading which results in a completely flat topography. The finish grading should result in a shallow pit and mound topography throughout the replication area.

E. Any fill not being utilized, must be stockpiled outside the resource area and buffer zones. Precautions shall be taken as necessary to prevent erosion of the stockpiled material.

F. Any significant field changes deemed necessary to achieve final grading within twelve inches from the groundwater table, must be approved by the Botanist (in the field) and reported to the Conservation Commission in the weekly report.

G. Upon completion of the replication area, siltation fence shall be placed around the entire perimeter (of the replication area) to protect the replication area during the remainder of construction.

H. After replication construction is completed, no fertilizer, limestone, superphosphate, mulch or other amendments shall be added to the wetland soils.

Part 3 Removing, Storing, and Replanting of Existing Wetland Trees and Shrubs

A. In any disturbed wetland (where practical), the Applicant may, at his option, dig up, store and maintain existing wetland trees and shrubs for use in the replication area. Trees shall be a minimum of one inch caliper and shrubs shall be thirty-six inches in spread or height. All plants shall be vigorous and well formed specimens. All plant materials dug for this purpose shall be dug by hand, hydraulic tree spade specifically designed for this purpose or other suitable equipment of sufficient size to remove the rootball. Rootball size shall be the minimum specified by the American Association of Nurserymen for each species. For hand dug plants, a suitable burlap or other wrap or container shall be provided to keep the rootball intact.

1. All plants dug for reuse shall be immediately moved to a protective storage area approved by the Botanist. Plants shall be set plumb on grade or in prepared holes and guyed as necessary. The area or holes shall be backfilled with suitable topsoil to cover the rootballs entirely and mulched to prevent erosion. All stored vegetation shall be maintained in a damp condition by regular watering. All horticultural measures required for the survival of collected plantings shall be utilized by the Applicant.

2. After the replication area has been constructed, stockpiled plants shall be replanted in locations specified and approved by the Botanist.

Part 4 Wetland Replication Planting

A. Wetland planting shall be performed between March 1 and October 15 or as recommended by the Botanist.

B. Wetland plantings shall consist of a minimum of five trees planted no farther apart than twenty-five feet on center and forty-seven shrubs planted no farther apart than eight feet on center.

1. The tree layer will be comprised of five Red Maple (*Acer rubrum*).

2. Shrubs shall consist of twenty Winterberry (*Ilex verticillata*), nine Highbush Blueberry (*Vaccinium corymbosum*), seven Arrowwood (*Viburnum dentatum*), six Silky Dogwood (*Cornus amomum*) and five Swamp Azalea (*Azalea viscosum*).

3. The herbaceous layer shall include thirty Cinnamon Ferns (*Osmunda cinnamomea*), twenty Sensitive Ferns (*Onoclea sensibilis*) and nine Royal Ferns (*Osmunda regalis*).

C. The Applicant shall have the option of digging, storing and replanting existing trees and shrubs per Part 3 of this Schedule, or alternatively, providing and planting new wetland species, purchased by the Applicant from nursery stock, and approved by the Botanist.

D. Wetland planting, in the replication area, will be performed in a manner which reproduces the placement and proportions of the plant species that are found in the adjacent wetland resource area.

E. All wetland plantings will be performed by hand. Burlap will be removed from the top third of the rootballs and ropes, twine and wire baskets will be completely removed from the rootballs. Completely remove all plastic burlap, rope, twine and wire baskets from the replication area. Completely remove the containers from the potted plants while keeping the soil around the roots unbroken.

F. After plantings are completed, the replication area shall be hand raked to eliminate any depressions, greater than four inches in depth, which may be created during digging and to eliminate compaction of the soils as much as possible.

G. Once planting is completed, the remaining exposed soils maybe over-seeded with New England Wetmix at the discretion of the Botanist.

H. The intent of this schedule is to insure that at least 75 percent of the replication surface area is re-established with indigenous wetland plant species within two growing seasons of their planting, in accordance with the Massachusetts DEP Wetlands Protection Act regulations. Purple Loosestrife (*Lythrum salicari*) and European Buckthorn (*Rhamnus frangula*) shall not be planted in the replication area. If after 180 growing season days, it is evident in the opinion of the Botanist that it is unlikely that the 75 percent re-establishment requirement will be achieved, the Applicant shall supplement the plantings as necessary to achieve the required coverage. If after the end of two growing seasons, 75 percent re-establishment has not been achieved, the Applicant shall provide and plant healthy wetland vegetation in sufficient quantities to achieve the 75 percent re-establishment.

Part 5 Wetland Replication Monitoring

A. The Town of Acton Conservation Commission will be notified 72 hours in advance of the commencement of the wetland replication construction.

B. All construction activities and plantings will be overseen by a qualified Botanist.

C. A brief progress report will be provided to the Town of Acton Conservation Commission at the end of each week until construction and planting of the replication area has been completed.

D. Two reports will be provided to the Town of Acton Conservation Commission. The reports will be provided on June 1st and October 1st following the planting of the replication area. These reports will be provided for two growing seasons.

E. Each report will include an observed species list, relative abundance of each species, percent cover of upland and wetland species, the viability of the plantings and proposed remedial measures to ensure 75 percent re-establishment within two growing seasons. Pictures shall also be provided.

F. While performing the inspection of the replication area, any invasive plants species found shall be removed. The plant species, and number of plants removed, shall be included within the monitoring reports.

G. If the replication area does not achieve the required 75 percent coverage within two growing seasons, then additional plantings will be provided as per Part 4 section G. These plantings will be monitored for the next two growing seasons with reports provided to the Town of Acton Conservation Commission on June 1st and October 1st of each year in order to ensure the viability of these late plantings.

NONSET PATH
WETLAND PERMITTING PLAN
ACTON, MASSACHUSETTS

DETAILS

FOR: HAWTHORNE HOMES, LLC

SCALE: 1"=20' JANUARY 26, 2011
REV. JUNE 28, 2011

STAMSKI AND MCNARY, INC.
1000 MAIN STREET ACTON, MASSACHUSETTS
(978) 263-8585
ENGINEERING – PLANNING – SURVEYING

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(4627CONCEPT3D.DWG) SHEET 3 OF 3 SM-4627

COMMONWEALTH OF MASSACHUSETTS
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