SITE LOCUS
SCALE: 1" = 1/2 MILE

SIMON HILL VILLAGE

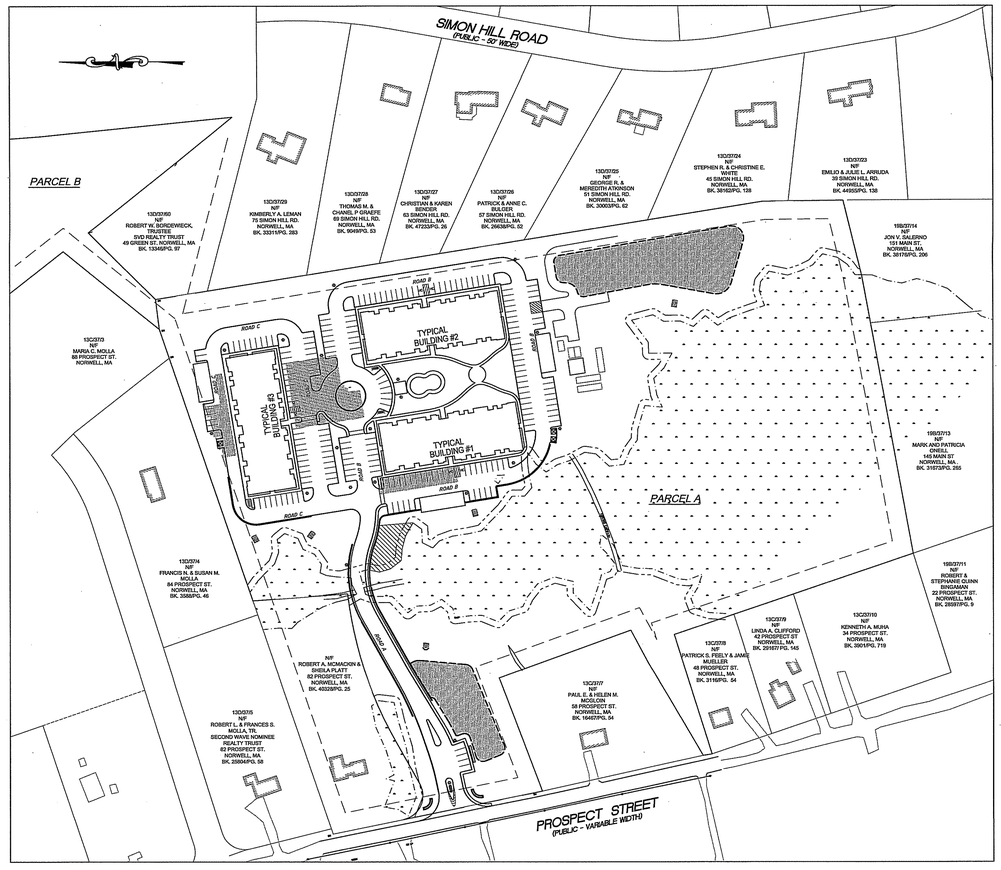
Notice of Project Change

(Map 13C, Block 37, Lot 6)

Comprehensive Permit Plans

in

Norwell, Massachusetts



SCALE: 1" = 100'

Drawing Index:

No.	Drawing Title
C-1	COVER SHEET
C-2	GENERAL NOTES, LEGEND, SYMBOLS & ABBREVIATIONS
EC1-EC2	EXISTING CONDITIONS PLANS
C-3	SITE LAYOUT PLAN
C-4	UTILITY PLAN
C-5	GRADING & DRAINAGE PLAN
C-6	ROADWAY PROFILES
LS-1	LANDSCAPING PLAN
D1-D8	CONSTRUCTION DETAILS

October 29, 2012
Revised January 23, 2013
Revised April 3, 2013
Revised May 23, 2013
Revised August 20, 2018
Revised November 19, 2018
Revised February 21, 2019
Revised June 17, 2019
Revised September 23, 2019

• McKenzie Engineering Group, Inc. Consulting Engineers •
150 Longwater Drive, Suite 101, Norwell, Massachusetts 02061

Owner:

Maureen V. Jensen, Trustee
Jensen Realty Trust
96 Manatee Road
Hingham, MA 02043

Applicant:

Simon Hill, LLC
293 R Washington Street
Norwell, MA 02061

Engineer/Surveyor:

McKenzie Engineering Group, Inc.
150 Longwater Drive
Suite 101
Norwell, MA 02061

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REV	DATE	DESCRIPTION	BY	APP
1	4/3/13	ZBA REVIEW COMMENTS	BKL	BCM
2	5/23/13	ZBA REVIEW COMMENTS	BKL	BCM
3	8/18/13	ZBA REVIEW COMMENTS	BKL	BCM
4	8/20/18	NOTICE OF INTENT	SBS	BCM
5	11/19/18	RECONFIGURATION - 3 BUILDING	SBS	BCM
6	2/21/19	RELOCATED WWTP	SBS	BCM
7	6/17/19	CONSERVATION PEER REVIEW COMMENTS	SBS	BCM
8	9/23/19	CONSERVATION PEER REVIEW COMMENTS	SBS	BCM

PREPARED BY:
MCKENZIE ENGINEERING GROUP
Assinippi Office Park
150 Longwater Drive, Suite 101
Norwell, MA 02061
Ph: 781-792-3900
Website: www.mckeng.com

COMPREHENSIVE PERMIT PLANS
KNOWN AS
SIMON HILL VILLAGE
(ASSESSORS MAP 13C, BLOCK 37, LOT 6)
OFF PROSPECT STREET
NORWELL, MASSACHUSETTS

PROFESSIONAL ENGINEER:
COMMONWEALTH OF MASSACHUSETTS
BRADLEY C. McKENZIE
CIVIL
No. 30917
REGISTERED PROFESSIONAL ENGINEER

APPLICANT:
SIMON HILL, LLC
293R WASHINGTON STREET
NORWELL, MASSACHUSETTS 02061

NOTICE OF PROJECT CHANGE

DRAWN BY:	BKL
DESIGNED BY:	DWK
CHECKED BY:	BCM
APPROVED BY:	BCM
DATE:	OCTOBER 29, 2012
SCALE:	1"=40'
PROJECT NO.:	27-221

DWG. TITLE:
Cover Sheet

DWG. No:
C-1

M:\MEG\2007 PROJECTS\27-221\DWGS\SUBMISSIONS\NOI\3 BLD\(R3)\27-221 C-1_3 BLD (R3).DWG

Abbreviations

ABAN	ABANDONED
ACP	ASBESTOS CEMENT PIPE
ACR	ACCESSIBLE CURB RAMP
ADJ	ADJUST
APPROX	APPROXIMATE
ASPH	ASPHALT
ACCMP	ASPHALT COATED CORRUGATED METAL PIPE
B	BOLLARD
BD	BOUND
BLDG	BUILDING
BIT CONC	BITUMINOUS CONCRETE
BM	BENCHMARK
BS	BOTTOM OF SLOPE
CAP	CORRUGATED ALUMINUM PIPE
CB	CATCH BASIN
C&C	CUT AND CAPPED
CB/DH	CONC. BOUND/DRILL HOLE
CB/EC/LP	CB/ESCUTCHEON
CCB	CAPE COD BERM
CIP	CAST IRON PIPE
CIT	CHANGE IN TYPE
C	CENTERLINE
CLF	CHAIN LINK FENCE
CO	CLEAN OUT
CONC	CONCRETE
COND	CONDUIT
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED POLYETHYLENE PIPE
CS	COMBINED SEWER
CSMH	COMBINED SEWER MANHOLE
CULV	CULVERT
Δ	DELTA ANGLE
D	DRAIN
DCB	DOUBLE CATCH BASIN
DIP	DUCTILE IRON PIPE
DMH	DRAIN MANHOLE
E	ELECTRIC
ECC	EXTRUDED CONCRETE CURB
ELEV	ELEVATION
EMH	ELECTRIC MANHOLE
E/T/C	ELECTRIC, TELEPHONE, & CABLE TV
EW	END WALL
EXIST	EXISTING
FAB	FIRE ALARM BOX
FES	FLARED END SECTION
FND.	FOUND
FND	FOUNDATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FD	FIRST DEFENSE UNIT
G	GAS
GD	GROUND
GG	GAS GATE
GIP	GALVANIZED IRON PIPE
GP	GUARD POST
GS	GAS SERVICE
GR	GUARD RAIL
GRAN.	GRANITE
HH	HANDHOLE
HOR	HORIZONTAL
HP	HIGH PRESSURE
HWL	HEADWALL
HYD	HYDRANT
INV	INVERT
I.P.	IRON PIN
I.R.	IRON ROD
L	LEAD
LP	LIGHT POLE
MAX	MAXIMUM
MC	METAL COVER
MH	MANHOLE
MHB	MASS. HIGHWAY BOUND
MIN	MINIMUM
MLP	METAL LIGHT POLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
O/HW	OVERHEAD WIRE
PB	PULL BOX
PE	POLYETHYLENE PIPE
P	PROPERTY LINE
PROP	PROPOSED
PVC	POLYVINYL CHLORIDE PIPE
PVMT	PAVEMENT
PWW	PAVED WATER WAY
RCP	REINFORCED CONCRETE PIPE
REM	REMOVE
REMOD	REMODEL
RET	RETAIN
ROW	RIGHT OF WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
S	SEWER
SB	STONE BOUND
SB/DH	STONE BOUND/DRILL HOLE
SGC	SLOPED GRANITE CURB
SMH	SEWER MANHOLE
STA	STATION
SS	SEWER SERVICE
STL	STEEL
SW	SIDEWALK
T	TELEPHONE
TCB	TRAFFIC CONTROL BOX
TL	TRAFFIC LIGHT
TMH	TELEPHONE MANHOLE
Tr	TREE
TRANS	TRANSFORMER
TS	TOP OF SLOPE
TSV	TAPPING SLEEVE, VALVE AND BOX
TYP	TYPICAL
UP	UTILITY POLE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VGC	VERTICAL GRANITE CURB
W	WATER MAIN
WG	WATER GATE

Legend

EXISTING	PROPOSED	
55	100	CONTOUR ELEVATION
X 100.2	+ 100.00	SPOT GRADE
27.21TC 27.15BC	27.21TC 27.15BC	TOP & BOTTOM ELEVATION
21.25	21.25	SPOT ELEVATION w/LEADER
S	S	SEWER MANHOLE (SMH)
	FD	FIRST DEFENSE UNIT (FD)
D	D	DRAIN MANHOLE (DMH)
		CATCH BASIN (CB)
	DCB	DOUBLE CATCH BASIN (DCB)
		HYDRANT (HYD)
		UTILITY POLE (UP)
		LIGHT
		WATER GATE (WG)
		GAS GATE (GG)
		SIGN
EP	EP	EDGE OF PAVEMENT (NO CURB)
TP	TP	TEST PIT AND/OR PERC TEST LOCATION
		EXISTING TREE
		BOLLARD
D	D	DUMPSTER PAD
	10	PARKING COUNT
		HANDICAP RAMP
		HANDICAP PARKING
	VAN	VAN-ACCESSIBLE HANDICAP PARKING
		UTILITY POLE
		GUY POLE
HH	HH	HAND HOLE
PB	PB	PULL BOX
T	T	TELEPHONE MANHOLE
T	T	TRANSFORMER PAD
		TREE LINE
—X—X—X—	—X—X—X—	CHAIN LINK FENCE
		STONE WALL
		RETAINING WALL
		TOWN AQUIFER LINE
		FLOODPLAIN, WATERSHED, AND WETLAND OVERLAY DISTRICT
		DEP ZONE C
A1		WETLAND FLAG LOCATION
A1 A2		WETLAND LINE
A1 (10' OS)		WETLAND FLAG INDICATING AN OFFSITE TREND LINE (OS=OFFSET)
		OFFSITE WETLAND TREND LINE
		100' WETLAND BUFFER
		BORDERING LAND SUBJECT TO FLOODING (BLSF)
		LIMIT OF WORK/EROSION CONTROL
		SNOW STORAGE AREA

GENERAL NOTES

1. LOCUS OWNER: ASSESSOR'S MAP 13C, BLOCK 37, LOT 6 (26.72 ACRES)
   MAUREEN V. JENSEN, TRUSTEE
   JENSEN REALTY TRUST
   96 MANATEE ROAD
   HINGHAM, MA 02043
2. DEED BOOK REFERENCE: PLYMOUTH COUNTY REGISTRY OF DEEDS BOOK 20071, PAGE 174
3. WETLAND RESOURCE AREAS SHOWN DELINEATED BY ENVIRONMENTAL CONSULTING & RESTORATION, LLC ON DECEMBER 19, 2017 AND FIELD LOCATED BY MCKENZIE ENGINEERING GROUP, INC. IN DECEMBER, 2017.
4. LOCUS IS LOCATED IN THE TOWN OF NORWELL RESIDENCE A ZONING DISTRICT, TOWN OF NORWELL AQUIFER PROTECTION DISTRICT (ZONE II & III) AND A PORTION OF THE LOCUS IS LOCATED WITHIN THE TOWN OF NORWELL FLOODPLAIN, WATERSHED AND WETLANDS OVERLAY DISTRICT. LOCUS IS NOT LOCATED IN A DEP ZONE II.
5. BY GRAPHIC PLOTTING, A SMALL PORTION OF THE LOCUS FALLS WITHIN ZONE A, WHILE THE MAJORITY OF THE SITE IS WITHIN ZONE X AS SHOWN ON THE FIRM COMMUNITY PANEL NO: 25023C0112J DATED JULY 17, 2012.
6. TOPOGRAPHICAL INFORMATION AS SHOWN ON THE DESIGN PLANS BASED ON GROUND FIELD SURVEY PERFORMED BY MCKENZIE ENGINEERING GROUP, INC., ALL ELEVATIONS SHOWN REFER TO MEAN SEA LEVEL 1929.
7. ABUTTER INFORMATION COMPILED FROM TOWN OF NORWELL ASSESSOR'S INFORMATION.
8. ALL LOCATIONS OF SUBSURFACE UTILITIES AND STRUCTURES WERE OBTAINED FROM AVAILABLE TOWN AND UTILITY RECORDS. THE SIZE, TYPE AND LOCATION OF UTILITIES SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL PROPERLY LOCATE THE UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN UTILITY INFORMATION BY CONTACTING DIGSAFE (888-344-7233). THE CONTRACTOR SHALL EXCAVATE TEST PITS TO VERIFY UTILITY LINE LOCATIONS AS NECESSARY.
9. ANY CHANGE IN THE FIELD CONDITIONS SHOULD BE REPORTED TO THE ENGINEER TO INSURE THAT ANY ANY MODIFICATIONS TO THE ORIGINAL DESIGN ARE PROPER AND ADEQUATE TO SERVE THE PROJECT'S NEEDS, AND COMPLY WITH THE APPLICABLE STANDARDS AND REGULATION.

GENERAL UTILITY NOTES:

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION SHALL BE TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLAN.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCHMARKS NECESSARY FOR THE WORK.
3. THE CONTRACTOR SHALL COORDINATE ALL STREET WORK WITH THE NORWELL DEPARTMENT OF PUBLIC WORKS.
4. THE CONTRACTOR SHALL EXCAVATE THE UTILITY TRENCHES IN THE LOCATIONS SHOWN ON THE PLAN PRIOR TO COMMENCING WORK TO VERIFY THE ELEVATIONS AND LOCATIONS OF EXISTING UTILITIES. THE CONTRACTOR SHALL PROVIDE THE OWNER AND ENGINEER WITH THE RESULTS PRIOR TO COMMENCING ANY WORK.
5. ALL WATER AND FIRE SERVICES SHALL BE INSTALLED WITH 5' OF COVER EXCEPT AS NOTED OR DETAILED OTHERWISE.
6. THE LOCATION AND SIZES OF THE DOMESTIC WATER AND FIRE SERVICES SHALL BE PROVIDED DURING FINAL DESIGN AND WERE NOT SPECIFIED BY MCKENZIE ENGINEERING GROUP, INC.
7. THE DOMESTIC WATER SERVICES SHALL BE POLYETHYLENE AND FIRE SERVICES SHALL BE CEMENT LINED DUCTILE IRON PIPE (C.L.D.I.) AND SHALL BE INSTALLED WITH APPROPRIATELY SIZED TAPPING SLEEVE, GATE VALVE AND BOX.
8. ALL WATER AND FIRE SERVICE APPURTENANCES, MATERIALS, METHODS OF INSTALLATION SHALL MEET OR EXCEED ALL LOCAL MUNICIPAL REQUIREMENTS.
9. THE FIRE SERVICE AND DOMESTIC WATER SERVICE SHALL BE ADEQUATELY PROTECTED AGAINST BACKFLOW (BACKFLOW PREVENTION) AT THE BUILDING.
10. AFTER PRESSURE TESTING AND CHLORINATION IS COMPLETED, SAMPLES SHALL BE TAKEN FROM THE FIRE SERVICE AND DOMESTIC WATER SERVICE AND SHALL BE TESTED AT 200 PSI FOR A MINIMUM OF 2 HOURS. THE CONTRACTOR IS REQUIRED TO NOTIFY THE NORWELL DEPARTMENT OF PUBLIC WORKS AT LEAST 24 HOURS PRIOR TO THE TESTING.
11. THE FIRE SERVICE AND DOMESTIC WATER SERVICE SHALL BE TESTED IN ACCORDANCE WITH DEPARTMENT OF ENVIRONMENTAL PROTECTION REGULATIONS. A MINIMUM OF 2 SEPARATE WATER SAMPLES SHALL BE TESTED AT A STATE CERTIFIED LABORATORY.
12. A MINIMUM OF 10 FEET CLEAR HORIZONTALLY SHALL BE MAINTAINED BETWEEN SANITARY SEWER SERVICES AND WATER SERVICES. WHENEVER CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET TO A WATER SERVICE THE ELEVATION OF THE CROWN OF THE SEWER SHALL BE AT LEAST 18 INCHES BELOW THE INVERT OF THE WATER SERVICE.
13. ALL GRAVITY SEWER PIPE SHALL BE POLYVINYL CHLORIDE (PVC) SDR-35 UNLESS OTHERWISE NOTED.
14. WHERE SANITARY SEWERS CROSS WATER MAINS, THE SEWER SHALL BE LAID AT SUCH AN ELEVATION THAT THE CROWN OF THE SEWER IS AT LEAST 18 INCHES BELOW THE INVERT OF THE WATER MAIN. IF THE ELEVATION OF THE SEWER CANNOT BE VARIED TO MEET THIS REQUIREMENT, THE WATER MAIN SHALL BE RELOCATED TO PROVIDE THIS SEPARATION OR CONSTRUCTED WITH MECHANICAL-JOINT PIPE FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE SEWER. ONE FULL LENGTH OF WATER MAIN SHALL BE CENTERED OVER THE SEWER SO THAT BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE. WHENEVER IT IS IMPOSSIBLE TO OBTAIN VERTICAL SEPARATION AS STIPULATED ABOVE, BOTH THE WATER MAIN AND THE SEWER MAIN SHALL BE ENCASED IN CONCRETE FOR A MINIMUM DISTANCE OF 10 FEET FROM THE CROSSING POINT OF THE OTHER PIPE AS MEASURED NORMALLY FROM ALL POINTS ALONG THE PIPE.
15. THE LOCATIONS OF PROPOSED ELECTRIC, TELEPHONE, COMMUNICATION (E.T.C.) AND FIRE SERVICES ARE APPROXIMATE. THE PROJECT ELECTRICAL ENGINEER SHALL VERIFY THESE LOCATIONS PRIOR TO THE START OF CONSTRUCTION AND SHALL COORDINATE ALL E.T.C. WORK WITH THE APPROPRIATE UTILITY COMPANIES.
16. THE PROPOSED GAS SERVICE LOCATIONS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL COORDINATE THE GAS SERVICE INSTALLATION WITH THE GAS COMPANY. THE CLIENT AND CONTRACTOR SHALL CONFIRM THE LOCATION AND SIZE OF THE PROPOSED GAS SERVICES WITH THE GAS COMPANY.
17. IF DURING THE CONSTRUCTION PROCESS THE NEED FOR EXCAVATION DEWATERING ARISES, A DEWATERING FILTER PIT SHALL BE CONSTRUCTED IN ACCORDANCE WITH APPROPRIATE STORMWATER MANAGEMENT AND ENGINEERING PRACTICES.

NOTES:

1. ALL INDIVIDUAL UNIT UTILITY SERVICES SHALL BE DESIGNED FOR TOWN SUBMISSION AND REVIEW.
2. PROPOSED GRADING AND UTILITY CONNECTIONS SHOWN ARE PRELIMINARY IN NATURE AND ARE SUBJECT TO CHANGE ONCE MORE DEFINITIVE SITE PLANS ARE PREPARED.

NORWELL ZONE 2 - AREA OF CONTRIBUTION TO TOWN WELLS, NORWELL MASTER PLAN, NOVEMBER 6, 2003.

NORWELL ZONE 3 - SURFACE DRAINAGE INTO ZONE 2, NORWELL MASTER PLAN, NOVEMBER 6, 2003.

DEP ZONE C - DEP SURFACE WATER PROTECTION AREA

DIG SAFE
MA - RI - ME - NH - VT
CALL TOLL FREE
1-888-344-7233
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

REV	DATE	DESCRIPTION	BY	APP
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4	8/20/18	NOTICE OF INTENT	SBS	BCM
5	11/15/18	RECONFIGURATION - 3 BUILDING	SBS	BCM
6	2/21/19	NO CHANGES THIS SHEET	SBS	BCM
7	6/17/19	CONSERVATION PEER REVIEW COMMENTS	SBS	BCM
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PREPARED BY:
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Norwell, MA 02061
Ph: 781-792-3900
Website: www.mckeng.com

COMPREHENSIVE PERMIT PLANS

KNOWN AS
SIMON HILL VILLAGE
(ASSESSORS MAP 13C, BLOCK 37, LOT 6)
OFF PROSPECT STREET
NORWELL, MASSACHUSETTS

PROFESSIONAL ENGINEER:
COMMONWEALTH OF MASSACHUSETTS
BRADLEY C. McKENZIE
CIVIL
No. 39911
REGISTERED PROFESSIONAL ENGINEER

APPLICANT:
SIMON HILL, LLC
293R WASHINGTON STREET
NORWELL, MASSACHUSETTS 02061

NOTICE OF PROJECT CHANGE

DRAWN BY:	BKL
DESIGNED BY:	DWK
CHECKED BY:	BCM
APPROVED BY:	BCM
DATE:	OCTOBER 29, 2012
SCALE:	1"=40'
PROJECT NO.:	27-221

DWG. TITLE:
General Notes, Legend, & Abbreviatons

DWG. No:
C-2

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M:\MEG\2007 PROJECTS\27-221\DWGS\SUBMISSIONS\NOI\3 BLD\(R3)\27-221 C-1 3 BLD (R3).DWG

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3	8/16/13	ZBA REVIEW COMMENTS	BKL	BCM
4	8/28/18	NOTICE OF INTENT	SBS	BCM
5	10/9/18	REVISED LIMIT OF BORDERING VEGETATED WETLAND (BVW)	SBS	BCM
6	2/21/19	NO CHANGES THIS SHEET	SBS	BCM
7	6/17/19	NO CHANGES THIS SHEET	SBS	BCM
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(ASSESSORS MAP 13C, BLOCK 37, LOT 6)
OFF PROSPECT STREET
NORWELL, MASSACHUSETTS

PROFESSIONAL SURVEYOR:
COMMONWEALTH OF MASSACHUSETTS
RICHARD J. HOOD
No. 35031
PROFESSIONAL LAND SURVEYOR

APPLICANT:
SIMON HILL, LLC
293R WASHINGTON STREET
NORWELL, MASSACHUSETTS 02061

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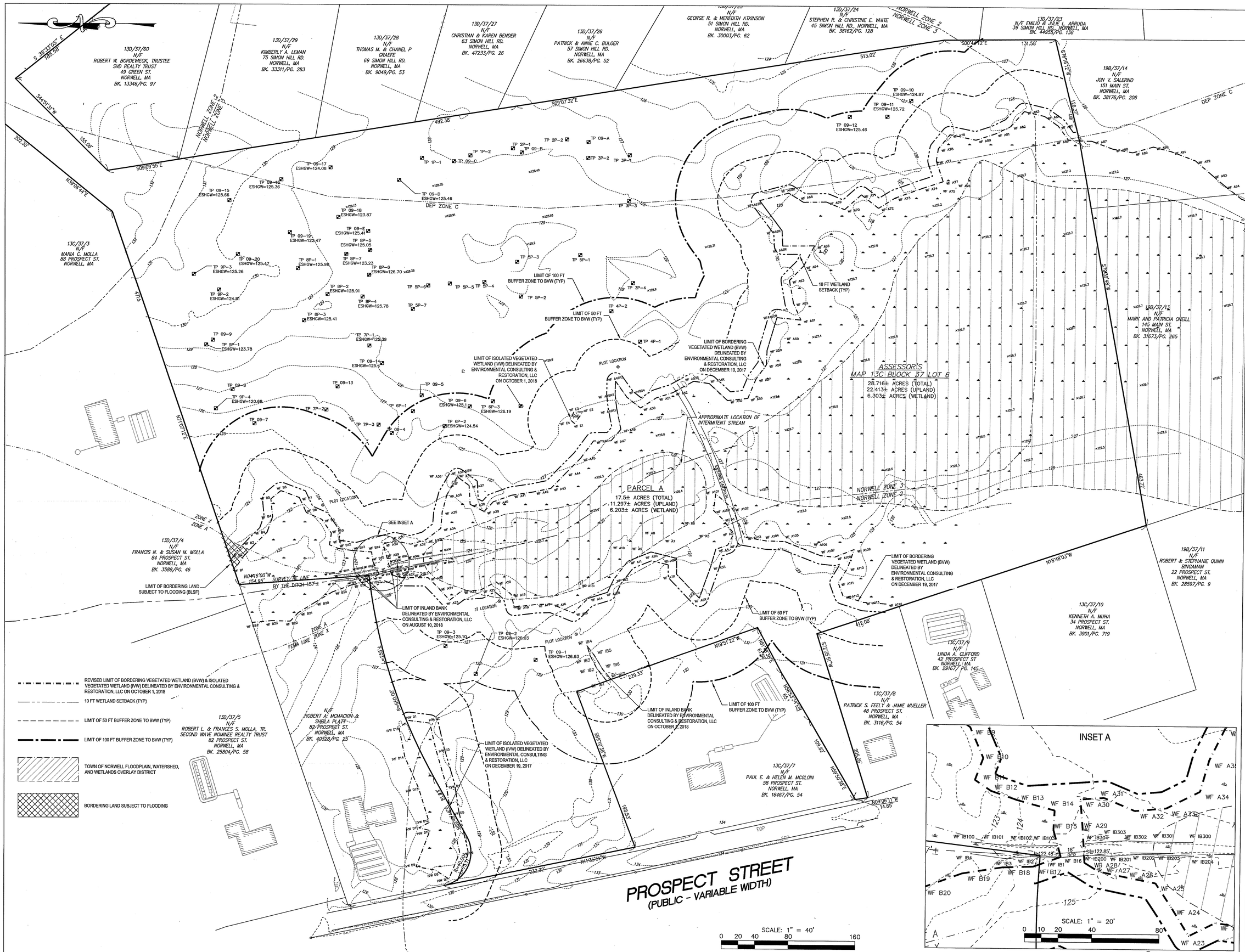
Existing Conditions Plan

DWG. No: EC-1



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M:\MEG\2007 PROJECTS\27-221\DWGS\SUBMISSIONS\NOI\3 BLD\(R3)\27-221 EXC (R3).DWG

13D/37/53
N/F
ROBERT W. BORDEWIECK, TRUSTEE
SVD REALTY TRUST
49 GREEN ST.
NORWELL, MA
BK. 13346/PG. 97

DEP ZONE C

S02°39'11"E 385.50' S02°46'18"E 167.87' S04°18'38"E 303.80' S05°45'07"E 314.60'

7D/36/20
N/F
TOWN OF NORWELL
NORWELL, MA
BK. 3849/PG. 643

638.34'

PARCEL B
11.2± ACRES (TOTAL)
11.1± ACRES (UPLAND)
0.1± ACRES (WETLAND)

13D/37/60
N/F
ROBERT W. BORDEWIECK, TRUSTEE
SVD REALTY TRUST
49 GREEN ST.
NORWELL, MA
BK. 13346/PG. 97

S 38°33'05" E 185.58' S44°51'31"W 155.06' S09°09'55"E 116.52' N33°15'56"W

NORWELL ZONE 2
NORWELL ZONE 3

N36°16'29"W 202.30' N39°08'44"E 417.16' N36°08'52"W 99.66' N36°39'43"W 97.31' N10°45'01"E 147.30' N10°26'04"W 258.60' N11°28'40"W 260.48' N07°18'39"W

13C/37/3
N/F
MARIA C. MOLLA
88 PROSPECT ST.
NORWELL, MA

TP 09-15
ESHGW=125.66

TP 9P-3
ESHGW=1

TP 9P-2
ESHGW=12

TP 09-9

NORWELL ZONE 3
NORWELL ZONE 2

N17°07'12"E

13A/36/19
N/F
CHARLOTTE A. HINES
P.O. BOX 575
NORWELL, MA
BK. 2308/PG. 467

13C/37/58
N/F
PAUL D. & PENELOPE W. WILSON
120 PROSPECT ST.
NORWELL, MA
BK. 33675/PG. 106

FLOODPLAIN, WATERSHED,
AND WETLANDS PROTECTION
OVERLAY DISTRICT

ZONE X
ZONE A

130/37/4
N/F
FRANCIS N. & SUSAN M. MOLLA
84 PROSPECT ST.
NORWELL, MA
BK. 3588/PG. 46

SCALE: 1" = 40'
0 20 40 80 160

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M:\MEG\2007 PROJECTS\27-221\DWGS\SUBMISSIONS\NOI\3 BLD\(R3)\27-221 EXC (R3).DWG

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COMMONWEALTH OF MASSACHUSETTS
RICHARD J. HOOD
No. 48031
PROFESSIONAL LAND SURVEYOR

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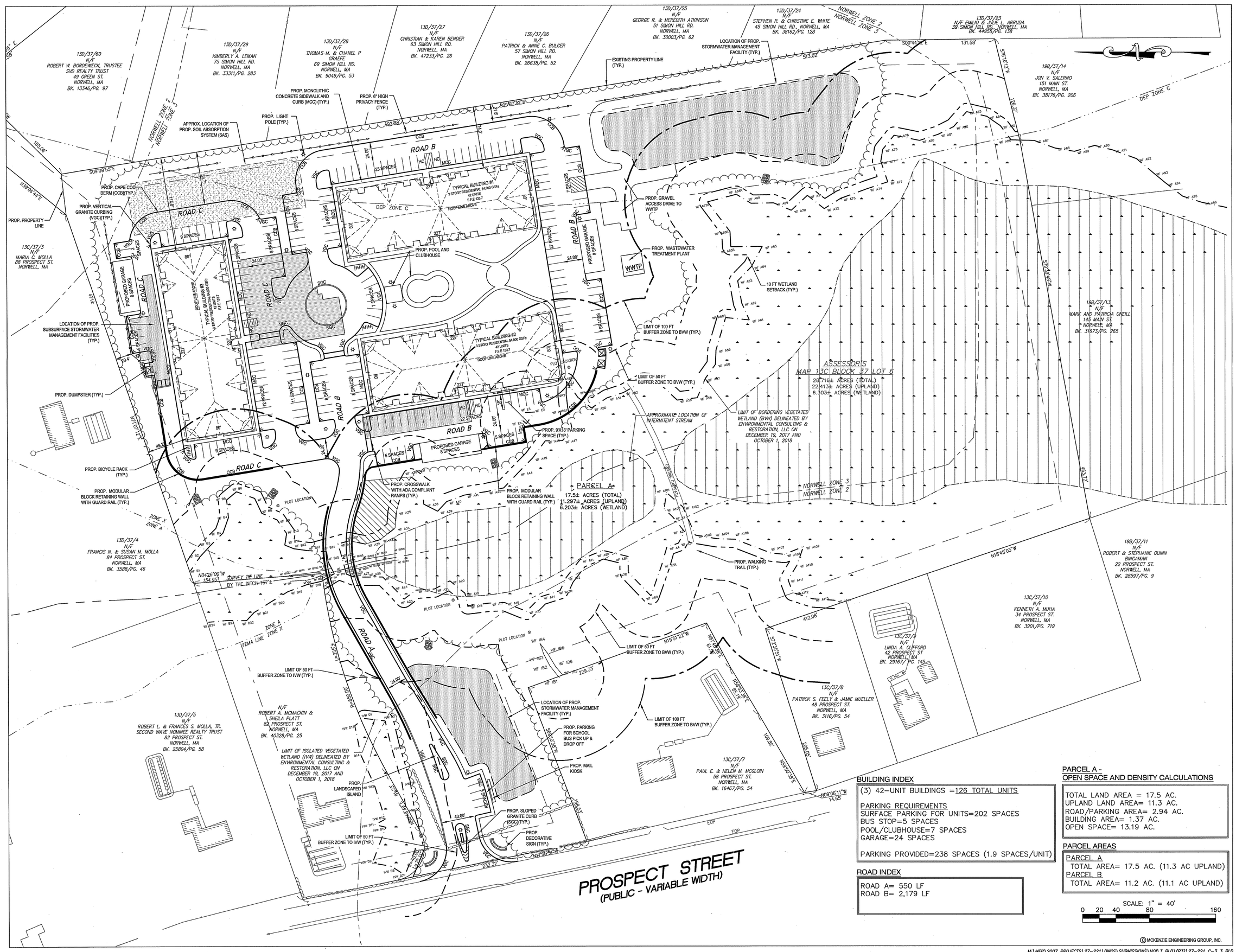

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5	11/19/18	RECONFIGURATION - 3 BUILDING	SBS	BCM
6	2/21/19	RELOCATED WWTP	SBS	BCM
7	8/17/19	CONSERVATION PEER REVIEW COMMENTS	SBS	BCM
8	9/23/19	CONSERVATION PEER REVIEW COMMENTS	SBS	BCM

PREPARED BY:

MCKENZIE ENGINEERING GROUP

Assinippi Office Park
150 Longwater Drive, Suite 101
Norwell, MA 02061
Ph: 781-792-3900
Website: www.mckeng.com

COMPREHENSIVE PERMIT PLANS

KNOWN AS

SIMON HILL VILLAGE

(ASSESSORS MAP 13C, BLOCK 37, LOT 6)
OFF PROSPECT STREET
NORWELL, MASSACHUSETTS

PROFESSIONAL ENGINEER:

COMMONWEALTH OF MASSACHUSETTS
BRADLEY C. MCKENZIE
CIVIL
No. 39917
REGISTERED PROFESSIONAL ENGINEER

APPLICANT:
SIMON HILL, LLC
293R WASHINGTON STREET
NORWELL, MASSACHUSETTS 02061

NOTICE OF PROJECT CHANGE

DRAWN BY:	BKL
DESIGNED BY:	DWK
CHECKED BY:	BCM
APPROVED BY:	BCM
DATE:	OCTOBER 29, 2012
SCALE:	1"=40'
PROJECT NO.:	27-221

DWG. TITLE:
Site Layout Plan

DWG. No: C-3

BUILDING INDEX

(3) 42-UNIT BUILDINGS =126 TOTAL UNITS

PARKING REQUIREMENTS
SURFACE PARKING FOR UNITS=202 SPACES
BUS STOP=5 SPACES
POOL/CLUBHOUSE=7 SPACES
GARAGE=24 SPACES

PARKING PROVIDED=238 SPACES (1.9 SPACES/UNIT)

ROAD INDEX

ROAD A= 550 LF
ROAD B= 2,179 LF

PARCEL A - OPEN SPACE AND DENSITY CALCULATIONS

TOTAL LAND AREA = 17.5 AC.
UPLAND LAND AREA= 11.3 AC.
ROAD/PARKING AREA= 2.94 AC.
BUILDING AREA= 1.37 AC.
OPEN SPACE= 13.19 AC.

PARCEL AREAS

PARCEL A
TOTAL AREA= 17.5 AC. (11.3 AC UPLAND)
PARCEL B
TOTAL AREA= 11.2 AC. (11.1 AC UPLAND)

SCALE: 1" = 40'
0 20 40 80 160

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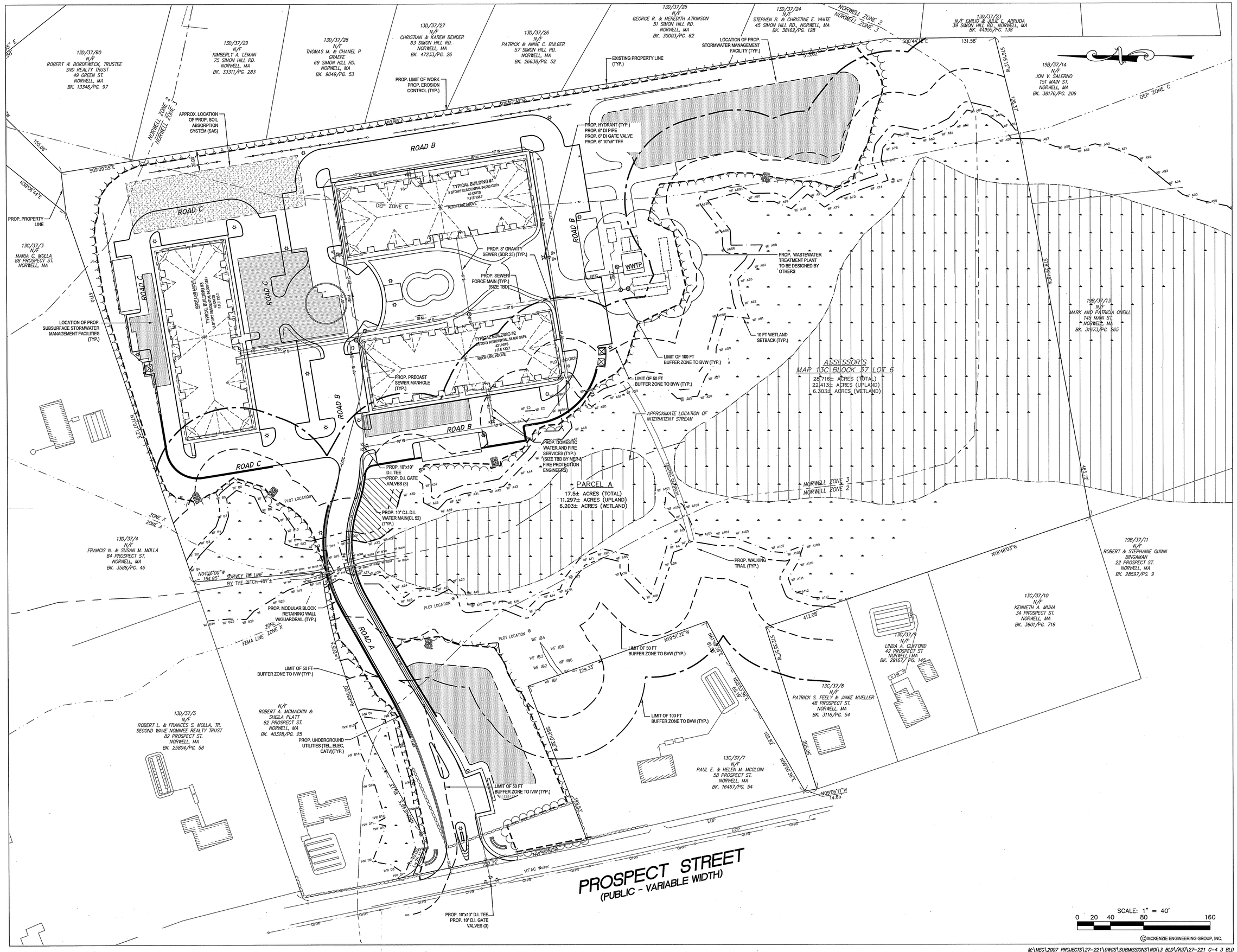
M:\MEG\2007 PROJECTS\27-221\DWGS\SUBMISSIONS\NOI\3 BLD\(R3)\27-221 C-3 3 BLD (R3).DWG



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REV	DATE	DESCRIPTION	BY	APP
1	4/3/13	ZBA REVIEW COMMENTS	BKL	BCM
2	5/23/13	ZBA REVIEW COMMENTS	BKL	BCM
3	8/19/13	ZBA REVIEW COMMENTS	BKL	BCM
4	8/20/18	NOTICE OF INTENT	SBS	BCM
5	11/19/18	RECONFIGURATION - 3 BUILDING	SBS	BCM
6	2/21/19	RELOCATED WWTP	SBS	BCM
7	6/17/19	CONSERVATION PEER REVIEW COMMENTS	SBS	BCM
8	9/23/19	CONSERVATION PEER REVIEW COMMENTS	SBS	BCM

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OFF PROSPECT STREET
NORWELL, MASSACHUSETTS

PROFESSIONAL ENGINEER:

COMMONWEALTH OF MASSACHUSETTS
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NOTICE OF PROJECT CHANGE

DRAWN BY:	BKL
DESIGNED BY:	DWK
CHECKED BY:	BCM
APPROVED BY:	BCM
DATE:	OCTOBER 29, 2012
SCALE:	1"=40'
PROJECT NO.:	27-221

DWG. TITLE:

Utility Plan

DWG. No: C-4

REV	DATE	DESCRIPTION	BY	APP
1	4/3/13	ZBA REVIEW COMMENTS	BKL	BCM
2	5/23/13	ZBA REVIEW COMMENTS	BKL	BCM
3	6/19/13	ZBA REVIEW COMMENTS	BKL	BCM
4	8/20/18	NOTICE OF INTENT	SBS	BCM
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7	6/17/19	CONSERVATION PEER REVIEW COMMENTS	SBS	BCM
8	9/20/19	CONSERVATION PEER REVIEW COMMENTS	SBS	BCM

PREPARED BY:

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Ph: 781-792-3900
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COMPREHENSIVE PERMIT PLANS

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(ASSESSORS MAP 13C, BLOCK 37, LOT 6)
OFF PROSPECT STREET
NORWELL, MASSACHUSETTS

PROFESSIONAL ENGINEER:

COMMONWEALTH OF MASSACHUSETTS
BRADLEY C. McKENZIE
CIVIL
No. 34974
REGISTERED PROFESSIONAL ENGINEER
07/19/2019

APPLICANT:
SIMON HILL, LLC
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NORWELL, MASSACHUSETTS 02061

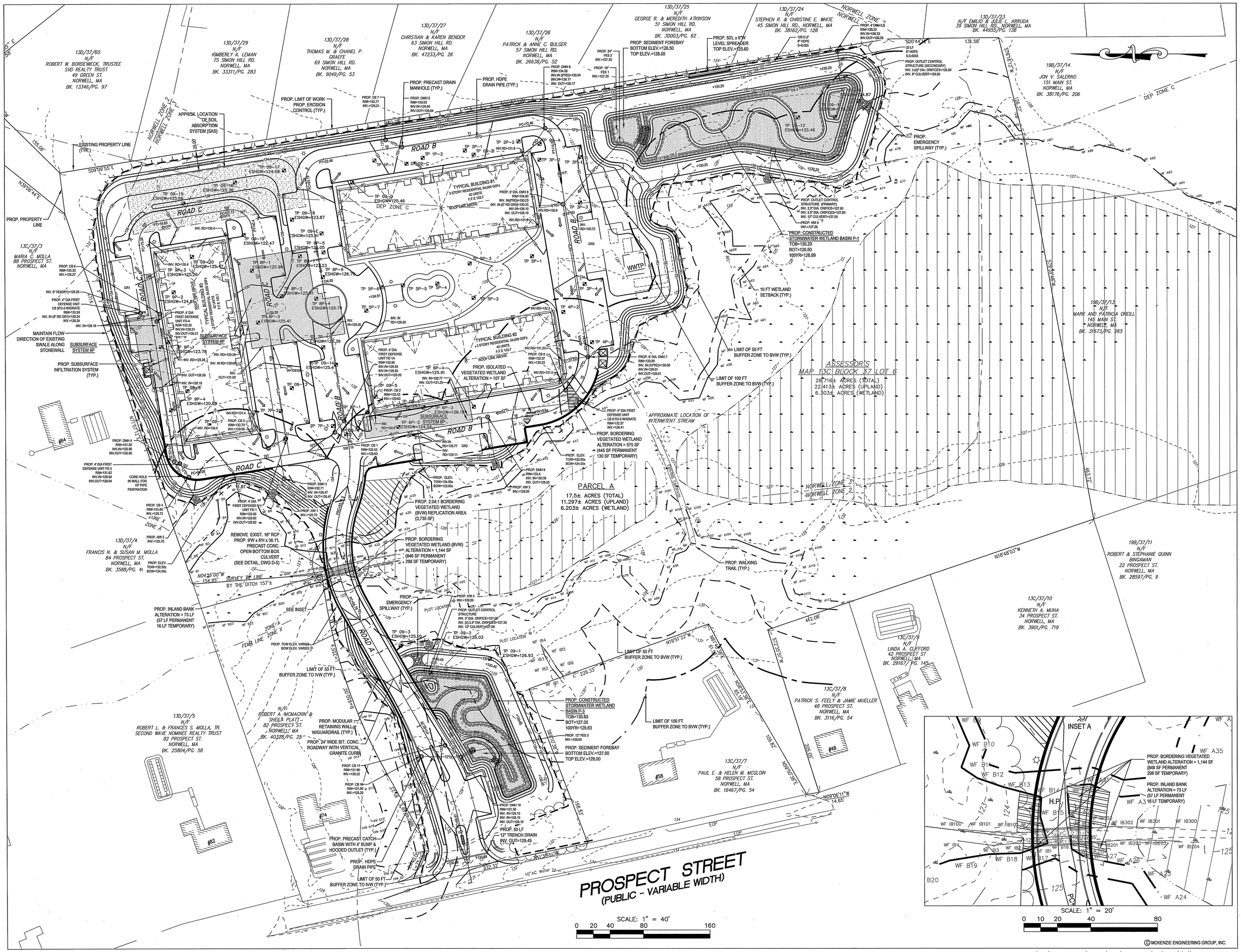
NOTICE OF PROJECT CHANGE

DRAWN BY:	BKL
DESIGNED BY:	DWK
CHECKED BY:	BCM
APPROVED BY:	BCM
DATE:	OCTOBER 29, 2012
SCALE:	1"=40'
PROJECT NO.:	27-221

DWG. TITLE:

Grading and Drainage Plan

DWG. No: C-5



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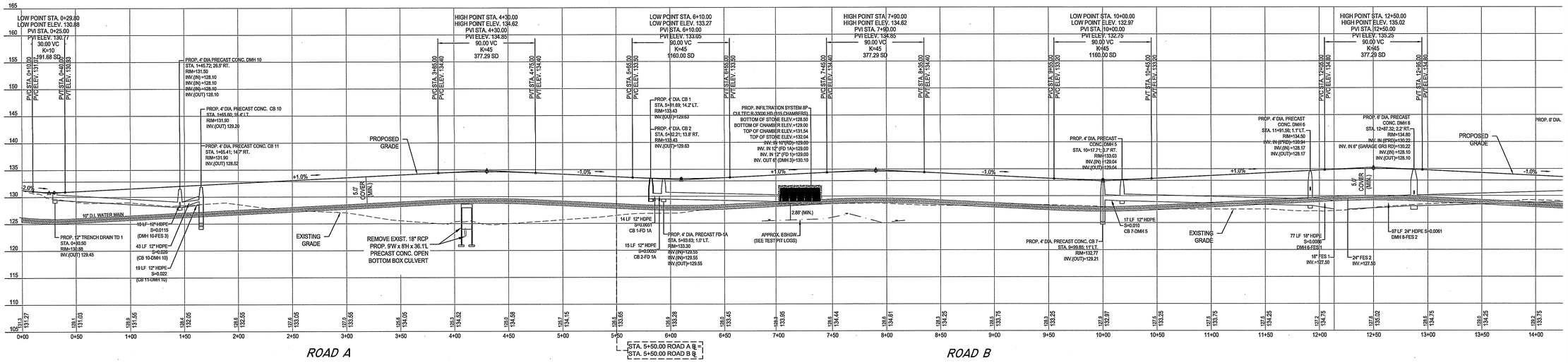
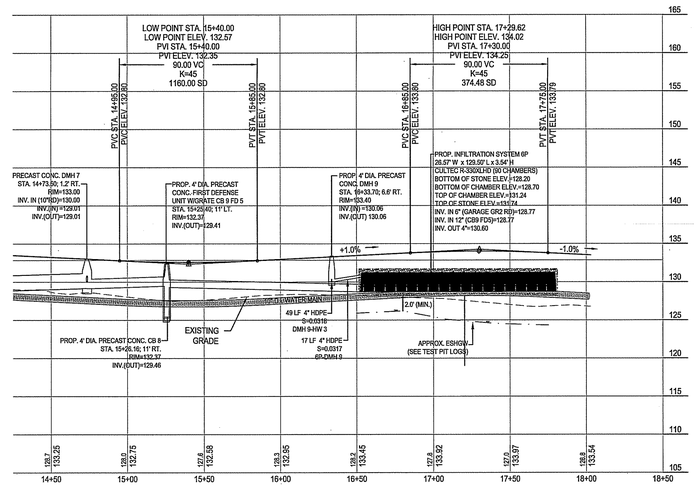
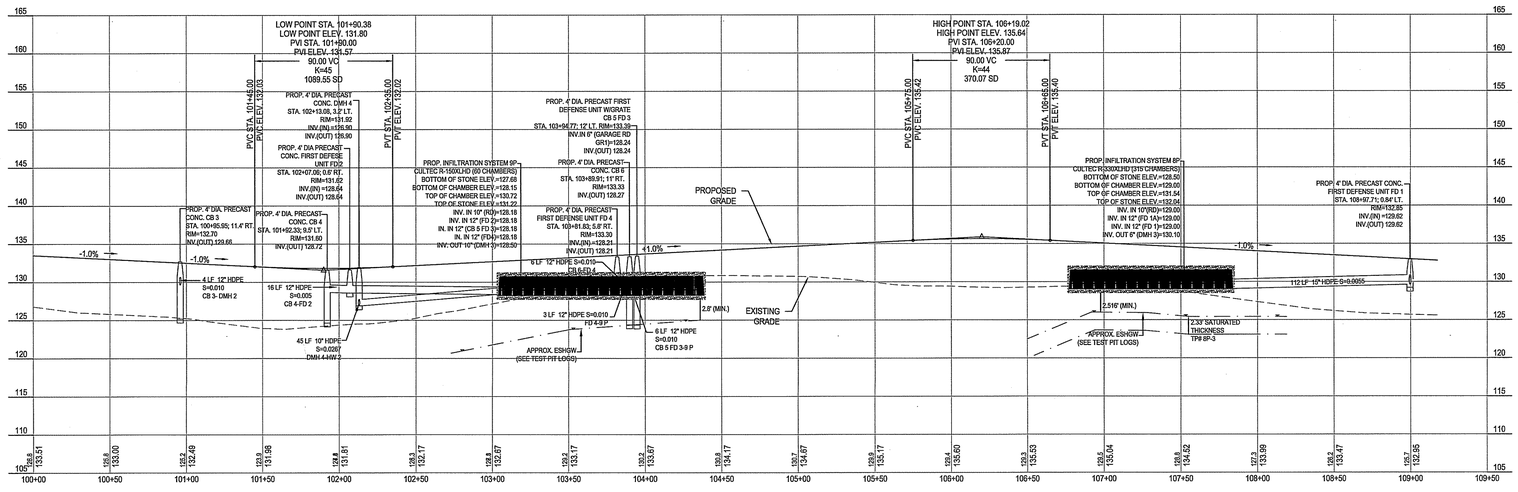


ROAD A

ROAD B



ROAD B



ROAD C

HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=8'

0 20 40 80 160

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M:\MEG\2007 PROJECTS\27-221\DWGS\SUBMISSIONS\NOI\3 BLD\(R3)\27-221 C-6 3 BLD (R3).DWG

6	2/21/19	MEW SHEET	BCM
7	6/17/19	CONSERVATION PEER REVIEW COMMENTS	SBS BCM
8	9/23/19	CONSERVATION PEER REVIEW COMMENTS	SBS BCM

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PROFESSIONAL ENGINEER:

COMMONWEALTH OF MASSACHUSETTS
BRADLEY C. MOEKNER
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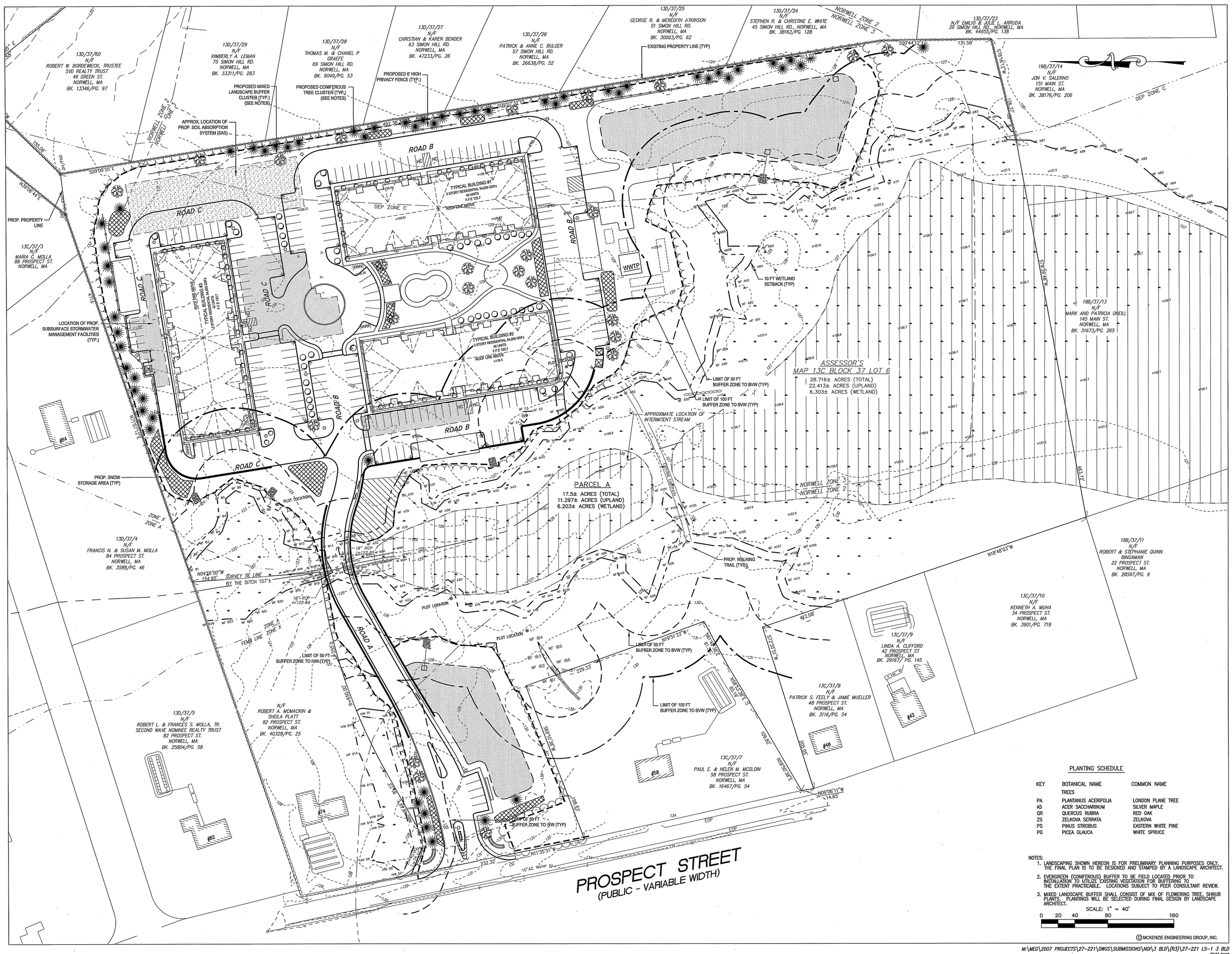
DESIGNED BY:	DWK
CHECKED BY:	BCM
APPROVED BY:	BCM
DATE:	OCTOBER 29, 2012
SCALE:	1"=40'
PROJECT NO.:	27-221

DWG. TITLE:
Roadway Profiles

DWG. No:
C-6



PLANTING SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME
	TREES	
PA	PLANTANUS ACERIFOLIA	LONDON PLANE TREE
AS	ACER SACCHARINUM	SILVER MAPLE
QR	QUERCIUS RUBRA	RED OAK
ZS	ZELKOVA SERRATA	ZELKOVA
PS	PINUS STROBUS	EASTERN WHITE PINE
PG	PICEA GLAUCA	WHITE SPRUCE

NOTES:

1. LANDSCAPING SHOWN HEREON IS FOR PRELIMINARY PLANNING PURPOSES ONLY. THE FINAL PLAN IS TO BE DESIGNED AND STAMPED BY A LANDSCAPE ARCHITECT.
2. EVERGREEN (CONIFEROUS) BUFFER TO BE FIELD LOCATED PRIOR TO INSTALLATION TO UTILIZE EXISTING VEGETATION FOR BUFFERING TO THE EXTENT PRACTICABLE. LOCATIONS SUBJECT TO PEER CONSULTANT REVIEW.
3. MIXED LANDSCAPE BUFFER SHALL CONSIST OF MIX OF FLOWERING TREE, SHRUB PLANTS. PLANTINGS WILL BE SELECTED DURING FINAL DESIGN BY LANDSCAPE ARCHITECT.

SCALE: 1" = 40'

0 20 40 80 160

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M:\MEG\2007 PROJECTS\27-221\DWGS\SUBMISSIONS\NOI\3 BLD\(R3)\27-221 LS-1 3 BLD (R3).DWG

REV	DATE	DESCRIPTION	BY	APP
1	4/3/13	ZBA REVIEW COMMENTS	BKL	BCM
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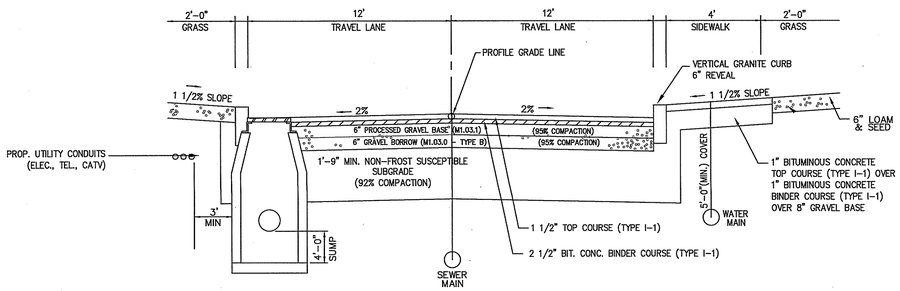
APPROVED BY:	BCM
DATE:	OCTOBER 29, 2012
SCALE:	1"=40'
PROJECT NO.:	27-221

DWG. TITLE:

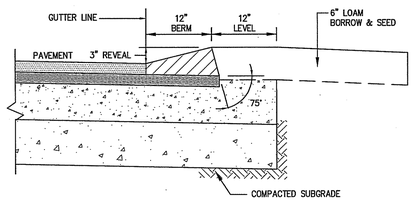
Landscaping Plan

DWG. No:

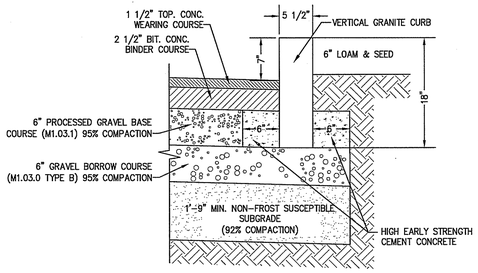
LS-1



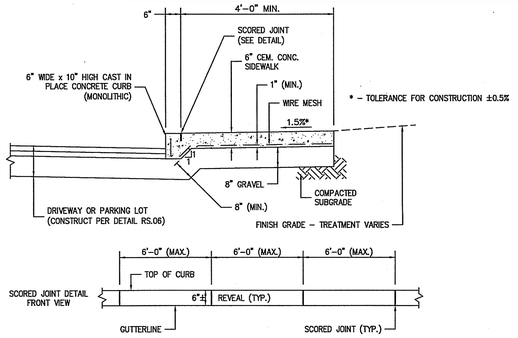
TYPICAL ROADWAY CROSS SECTION
ROAD A STA 0+00 TO 5+50
SCALE: N.T.S.



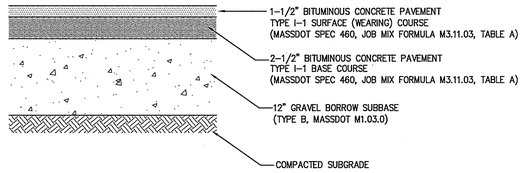
MONOLITHIC BITUMINOUS CONCRETE BERM (CAPE COD BERM) DETAIL
SCALE: N.T.S.



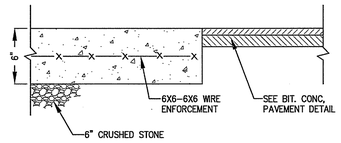
VERTICAL GRANITE CURB DETAIL
SCALE: N.T.S.



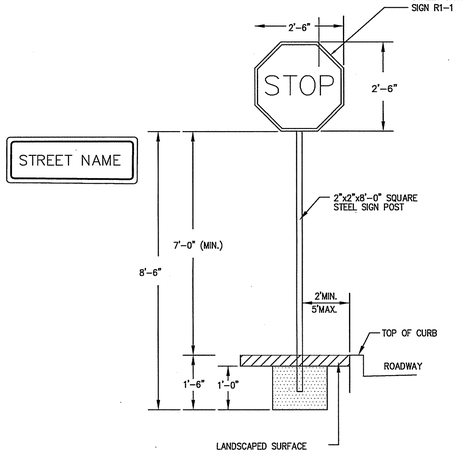
CAST IN PLACE CURB & SIDEWALK
SCALE: N.T.S.

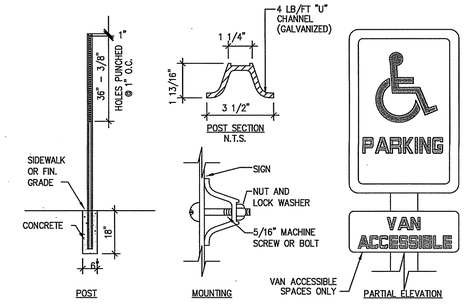


PARKING AREA PAVEMENT DETAIL
SCALE: N.T.S.



CONCRETE DUMPSTER PAD DETAIL
SCALE: N.T.S.





TYPICAL SIGN DETAIL
SCALE: N.T.S.

SEEDING SPECIFICATIONS

SEEDING RECOMMENDATIONS

1. SEEDBED PREPARATION
   A. SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
   B. STONES LARGER THAN FOUR INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT FOUR INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.
2. ESTABLISHING A STAND
   A. LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT THE TIME OF SEEDING AND INCORPORATED INTO THE SOIL. KINDS AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:

      AGRICULTURAL LIMESTONE: 2 TONS PER ACRE OR 100 LBS. PER SQ. FT.

      NITROGEN (N): 50 LBS. PER ACRE OR 1.1 LBS. PER 1000 SQ. FT.

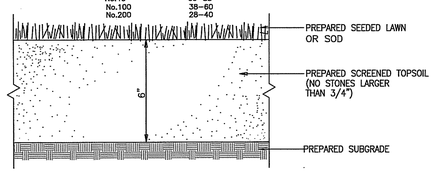
      PHOSPHATE (P_2O_5): 100 LBS. PER ACRE OR 2.2 LBS. PER 1000 SQ. FT.

      POTASH (K_2O): 100 LBS. PER ACRE OR 2.2 LBS. PER 1000 SQ. FT.

      (NOTE: THIS IS THE EQUIVALENT OF 500 LBS. PER ACRE OF 10-20-20 FERTILIZER OF 1,000 LBS. PER ACRE OF 5-10-10)
   B. SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING, AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH 0.25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING.
   C. REFER TO SEEDING RATES AND SEEDING GUIDES FOR APPROPRIATE SEED MIXTURES AND RATES OF SEEDING.
   D. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING SPRING TO EARLY OCTOBER. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 10 TO SEPTEMBER 1.
3. MULCH
   A. HAY, STRAW, OR OTHER MULCH, WHEN NEEDED, SHOULD BE APPLIED IMMEDIATELY AFTER SEEDING.
   B. MULCH WILL BE HELD IN PLACE USING TECHNIQUES AS SPECIFIED IN THE "BEST MANAGEMENT PRACTICES OPERATION AND MAINTENANCE PLAN"
4. MAINTENANCE TO ESTABLISH A STAND
   A. PLANTED AREAS SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH.
   B. FERTILIZATION NEEDS SHOULD BE DETERMINED BY ONSITE INSPECTIONS. SUPPLEMENTAL FERTILIZER IS USUALLY THE KEY TO FULLY COMPLETE THE ESTABLISHMENT OF THE STAND BECAUSE MOST PERENNIALS TAKE 2 TO 3 YEARS TO BECOME ESTABLISHED.
   C. IN WATERWAYS, CHANNELS, OR SWALES WHERE UNIFORM FLOW CONDITIONS ARE ANTICIPATED OCCASIONAL MOWING MAY BE NECESSARY TO CONTROL GROWTH OF WOODY VEGETATION.

NOTES:
1. TOP OF LOAM (TOPSOIL) IS FINISHED GRADE.
2. TOPSOIL SHALL CONTAIN BETWEEN 5% AND 12% ORGANIC MATTER AND SHALL HAVE A MAXIMUM STONE SIZE OF 3/4" AND SHALL CONFORM TO THE FOLLOWING GRADATION:

SIEVE	% PASSING
1 1/4 INCH	100
No.4	85-100
No.40	60-85
No.100	38-60
No.200	28-40



SEEDED OR SODDED LAWN DETAIL
SCALE: N.T.S.

SEEDING RATES

	POUND / ACRE	POUNDS / 1,000 S.F.
A. TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
REDTOP	2	0.05
TOTAL	42	0.95
B. TALL FESCUE	15	0.35
CREEPING RED FESCUE	10	0.25
BIRDSFOOT TREFOIL	15	0.35
TOTAL	40	0.95
C. TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
BIRDSFOOT TREFOIL	8	0.20
TOTAL	48	1.10
D. BIRDSFOOT TREFOIL	10	0.25
REDTOP	5	0.10
REED CANARY GRASS	15	0.35
TOTAL	30	0.70
E. TALL FESCUE	20	0.45
FLATPEA	30	0.75
TOTAL	50	1.20
F. CREEPING RED FESCUE 1/	85	2.00
KENTUCKY BLUEGRASS 1/	85	2.00
TOTAL	170	4.00
G. TALL FESCUE 1/	150	3.60

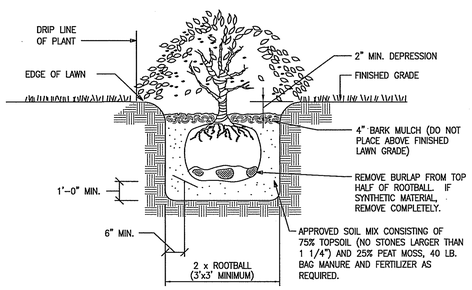
TEMPORARY SEEDING RATES

H. WINTER RYE	112	2.50	(BEST FOR FALL SEEDING, AUG 15 TO SEPT. 5)
OATS	80	2.00	(BEST FOR SPRING SEEDING, BEFORE MAY 15)
ANNUAL RYEGRASS	40	1.00	(BEST FOR FALL SEEDING, AUG 15 TO SEPT. 15) (MAY BE USED EARLY SPRING ALSO)

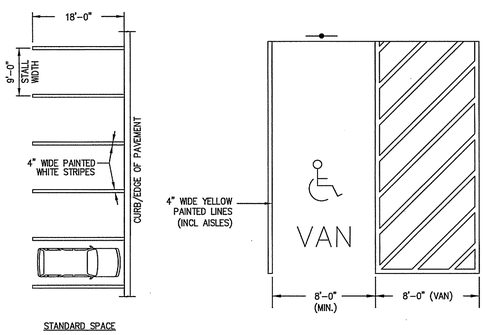
1/ FOR HEAVY USE ATHLETIC FIELDS CONSULT THE UNIVERSITY OF NEW HAMPSHIRE COOPERATIVE EXTENSION TURF SPECIALIST FOR CURRENT VARIETIES AND SEEDING RATES.

SEEDING GUIDE

USE	SEEDING MIXTURE 1/
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	E
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER	D
LAWN AREAS	F

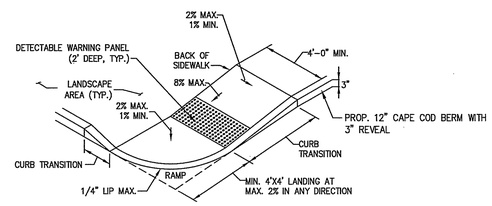


TYPICAL SHRUB PLANTING
SCALE: N.T.S.

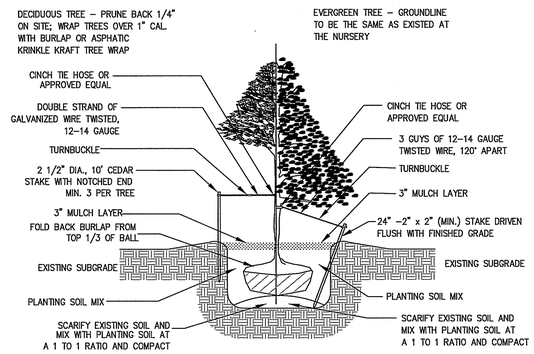


TYPICAL STRIPING DETAILS
SCALE: N.T.S.

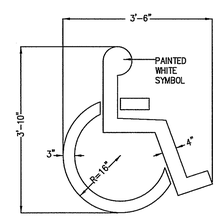
HANDICAP PARKING STALL DETAIL
SCALE: N.T.S.



BITUMINOUS CONCRETE SIDEWALK RAMPS
SCALE: N.T.S.



DECIDUOUS AND EVERGREEN TREE PLANTING DETAIL
SCALE: N.T.S.



PAINTED HANDICAP SYMBOL DETAIL
SCALE: N.T.S.

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M:\MEG\2007 PROJECTS\27-221\DWGS\SUBMISSIONS\NOI\3 BLD\(R3)\27-221 DETAILS 3 BLD (R3).DWG

REV	DATE	DESCRIPTION	BY	APP
1	4/3/13	ZBA REVIEW COMMENTS	BKL	BCM
2	5/23/13	ZBA REVIEW COMMENTS	BKL	BCM
3	6/19/13	ZBA REVIEW COMMENTS	BKL	BCM
4	8/20/18	NOTICE OF INTENT - NEW SHEET	SBS	BCM
5	11/19/18	RECONFIGURATION - 3 BUILDING	SBS	BCM
6	2/21/19	NO CHANGES THIS SHEET	SBS	BCM
7	6/17/19	NO CHANGES THIS SHEET	SBS	BCM
8	9/23/19	NO CHANGES THIS SHEET	SBS	BCM

PREPARED BY:

MCKENZIE ENGINEERING GROUP
Assinippi Office Park
150 Longwater Drive, Suite 101
Norwell, MA 02061
Ph: 781-792-3900
Website: www.mckeng.com

COMPREHENSIVE PERMIT PLANS

KNOWN AS
SIMON HILL VILLAGE
(ASSESSORS MAP 13C, BLOCK 37, LOT 6)
OFF PROSPECT STREET
NORWELL, MASSACHUSETTS

PROFESSIONAL ENGINEER:

COMMONWEALTH OF MASSACHUSETTS
BRADLEY C. McKENZIE
No. 36917
REGISTERED PROFESSIONAL ENGINEER

APPLICANT:
SIMON HILL, LLC
293R WASHINGTON STREET
NORWELL, MASSACHUSETTS 02061

NOTICE OF PROJECT CHANGE

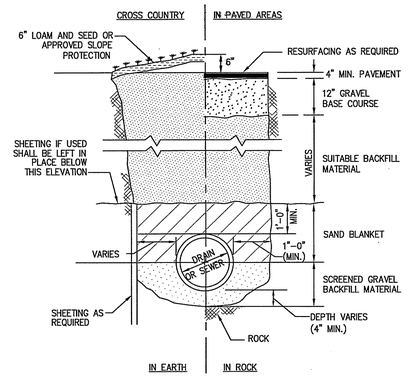
DRAWN BY:	BKL
DESIGNED BY:	DWK
CHECKED BY:	BCM
APPROVED BY:	BCM
DATE:	OCTOBER 29, 2012
SCALE:	AS NOTED
PROJECT NO.:	27-221

DWG. TITLE:
Construction Details
Sheet 1 of 9

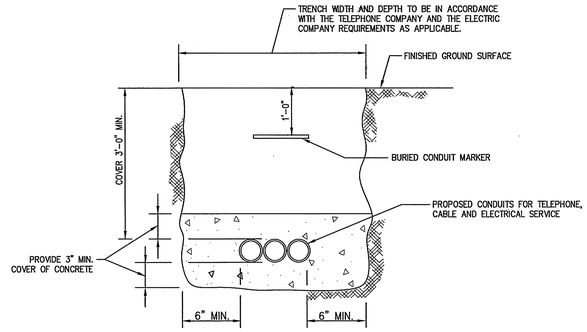
DWG. No:
D-1

GENERAL UTILITY NOTES

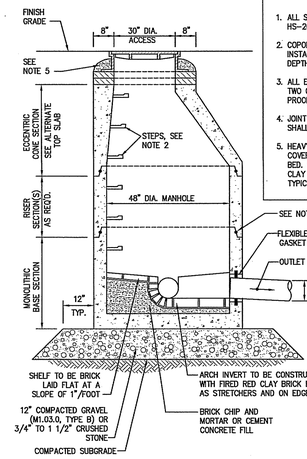
1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLAN.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCHMARKS NECESSARY FOR THE WORK.
3. THE CONTRACTOR SHALL EXCAVATE THE TEST PITS IN THE LOCATIONS SHOWN ON THE PLAN PRIOR TO COMMENCING WORK TO VERIFY THE ELEVATIONS AND LOCATIONS OF EXISTING UTILITIES. THE CONTRACTOR SHALL PROVIDE THE OWNER AND ENGINEER WITH THE RESULTS PRIOR TO COMMENCING ANY WORK.
4. ALL WATER SERVICES SHALL BE INSTALLED WITH 5' OF COVER EXCEPT AS NOTED OR DETAILED OTHERWISE.
5. DOMESTIC WATER SERVICES 2 INCHES AND SMALLER SHALL BE TYPE K COPPER TUBING AND SHALL BE INSTALLED WITH APPROPRIATELY SIZED CORPORATION STOP WITH APPROVED SADDLE, CURB STOP, GATE AND BOX.
6. SEE SHEET D-3 FOR NORWELL WATER DEPT. CONSTRUCTION DETAILS, NOTES, AND SPECIFICATIONS.
7. THE CONTRACTOR SHALL PROVIDE INLET PROTECTION, SUCH AS SILT SACKS, AT ALL CATCH BASINS TO PREVENT SEDIMENT FROM ENTERING THE EXTENDED DETENTION WETLAND AREA. INLET PROTECTION WILL ALLOW THE STORM DRAIN INLETS TO BE USED BEFORE FINAL STABILIZATION.
8. THE CONTRACTOR SHALL PROVIDE SIEVE ANALYSIS SUBMITTALS TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION OF THE SAND/SILT MATERIAL TO BE USED.



TYPICAL TRENCH DETAIL
SCALE: N.T.S.



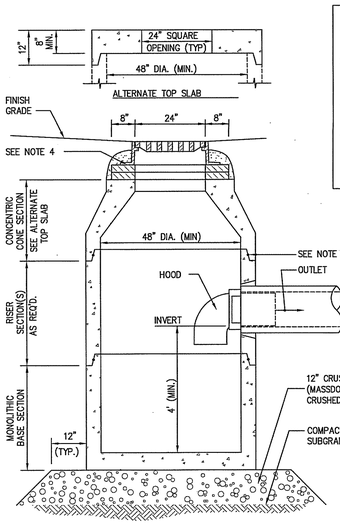
TYPICAL ELECTRIC/TELEPHONE/CABLE CONDUIT (US-UTILITY SERVICE)
SCALE: N.T.S.



NOTES:

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. COPOLYMER MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
3. ALL EXTERIOR SURFACES SHALL BE GIVEN TWO COATS OF BITUMINOUS WATER-PROOFING MATERIAL.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
5. HEAVY DUTY SEWER MANHOLE FRAME AND COVER SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH FIRED RED CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)

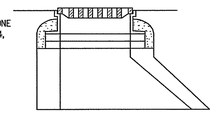
TYPICAL SEWER MANHOLE
SCALE: N.T.S.



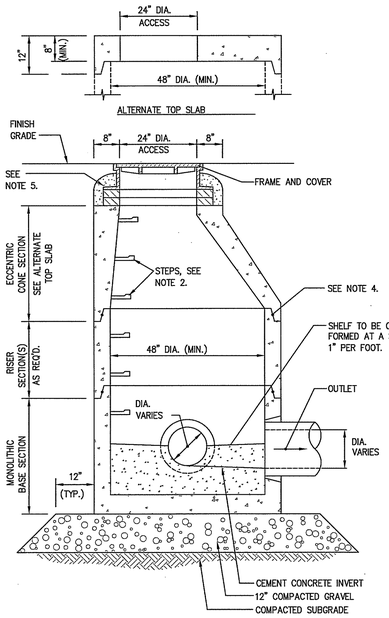
CATCH BASIN W/HOOD
SCALE: N.T.S.

NOTES:

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
4. CATCH BASIN FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)



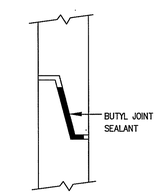
ALTERNATE ECCENTRIC CONE SECTION



DRAIN MANHOLE DETAIL
SCALE: N.T.S.

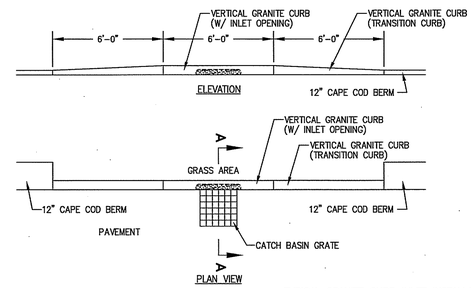
NOTES:

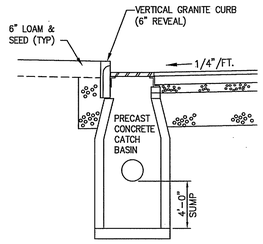
1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. COPOLYMER MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
3. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
5. DRAIN MANHOLE FRAME AND COVER SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)



PREFORMED FLEXIBLE JOINT SEALANT

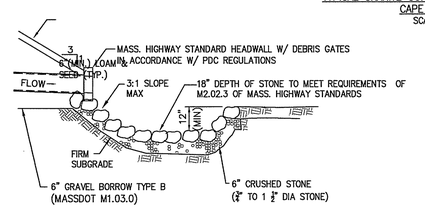
MANHOLE JOINT DETAILS
SCALE: N.T.S.



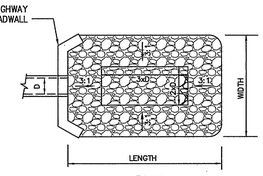


SECTION A-A

TYPICAL GRANITE CURB INLET INSTALLATION WITH CAPE COD BERM
SCALE: N.T.S.



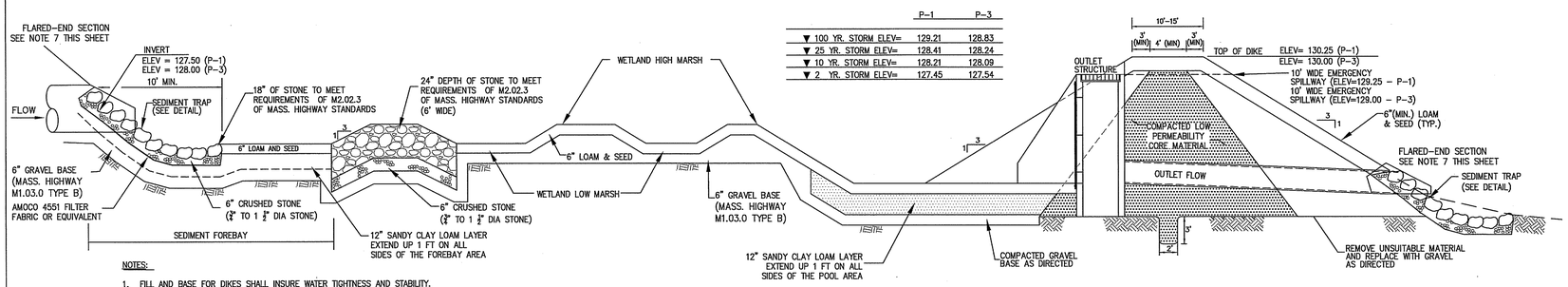
SECTION



PLAN

DRAINAGE STRUCTURE	D=PIPE DIA.	LENGTH	WIDTH	MIN. STONE SIZE
HW-1	4"	7.0'	8.0'	8"
HW-2	8"	8.0'	7.67'	8"
HW-3	4"	9.0'	8.0'	8"
HW-4	12"	10.0'	8.0'	8"
HW-5	12"	9.0"	8.0'	8"
FES-1	18"	10.5'	9.0'	8"
FES-2	24"	12.0'	10.0'	8"
FES-3	12"	9.0'	8.0'	8"

TYPICAL SEDIMENT TRAP DETAIL
SCALE: N.T.S.



	P-1	P-3
▼ 100 YR. STORM ELEV=	129.21	128.83
▼ 25 YR. STORM ELEV=	128.41	128.24
▼ 10 YR. STORM ELEV=	128.21	128.09
▼ 2 YR. STORM ELEV=	127.45	127.54

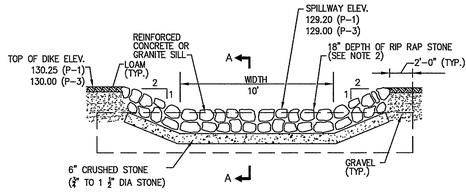
NOTES:

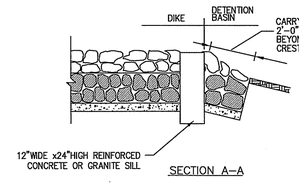
1. FILL AND BASE FOR DIKES SHALL INSURE WATER TIGHTNESS AND STABILITY.
2. REFER TO LANDSCAPE PLANS FOR BASIN PLANTINGS.
3. THE CONTRACTOR SHALL NOT DISCHARGE SEDIMENT-LADEN WATER TO BASINS DURING CONSTRUCTION. NO HEAVY EQUIPMENT SHALL BE ALLOWED ON THE BASIN FLOORS AFTER INSTALLATION.
4. ALL CONTRIBUTING AREAS TO THE BASIN SHALL BE FULLY STABILIZED PRIOR TO THE DETENTION BASIN BEING PLACED INTO SERVICE.
5. THE CONTRACTOR SHALL PROVIDE PROTECTION ABOVE AND AROUND THE SUBSURFACE STORMWATER INFILTRATION FACILITY FROM CONSTRUCTION VEHICLE ACTIVITY, TO PREVENT ANY DAMAGE TO THE SUBSURFACE FACILITIES.
6. THE CONTRACTOR SHALL PROVIDE SIEVE ANALYSIS SUBMITTALS TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION OF THE SANDY CLAY LOAM MATERIAL USED ON SITE.
7. ALL FLARED END SECTIONS TO BE EQUIPPED WITH TRASH RACKS.

PROPOSED STORMWATER CONSTRUCTED WETLAND BASIN SECTION EXTENDED DETENTION WETLAND BASIN P-1 & P-3
SCALE: N.T.S.

DIKE SECTION NOTES:

1. THE PLACEMENT AND COMPACTION OF THE COMPACTED LOW PERMEABILITY CORE MATERIAL SHALL PROVIDE AN IN-SITU PERMEABILITY RATE OF NOT MORE THAN 1.0x10 CM/SEC AND SHALL BE INSTALLED AT A SLOPE NO STEEPER THAN 1:1. BASED ON THE SPECIFIC APPLICATION, A SLOWER PERMEABILITY RATE MAY BE REQUIRED BY THE ENGINEER.
2. PIPES PENETRATING THE LOW PERMEABILITY CORE SHALL BE BEDDED IN THE LOW PERMEABILITY CORE MATERIAL.





SECTION A-A

SPILLWAY DETAIL
SCALE: N.T.S.

NOTES:

1. DIMENSIONS VARY TO SUIT CAPACITY REQUIREMENTS
2. RIP RAP TO BE HAND CHINKED WITH A SMOOTH SURFACE ALONG THE TOP OF THE DIKE AND A ROUGH SURFACE ALONG THE DOWNSTREAM FACE AND TOE OF THE DIKE. STONE TO MEET M2.02.3 REQUIREMENTS.
3. RIP RAP SHALL EXTEND A MINIMUM OF 2 FT. DOWN THE UPSTREAM FACE OF DIKE AND DOWN THE DOWNSTREAM FACE OF THE DIKE TO A POINT AT LEAST 2 FT. BEYOND THE TOE OF SLOPE.

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M:\MEG\2007 PROJECTS\27-221\DWGS\SUBMISSIONS\NOI\3 BLD\(R3)\27-221 DETAILS 3 BLD (R3).DWG

REV	DATE:	DESCRIPTION	BY	APP
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5	11/19/18	RECONFIGURATION - 3 BUILDING	SBS	BCM
6	2/21/19	DETENTION BASIN ELEVATIONS	SBS	BCM
7	6/17/19	CONSERVATION PEER REVIEW COMMENTS	SBS	BCM
8	9/23/19	CONSERVATION PEER REVIEW COMMENTS	SBS	BCM

PREPARED BY:
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Assinippi Office Park
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COMPREHENSIVE PERMIT PLANS

KNOWN AS
SIMON HILL VILLAGE
(ASSESSORS MAP 13C, BLOCK 37, LOT 6)
OFF PROSPECT STREET
NORWELL, MASSACHUSETTS

PROFESSIONAL ENGINEER:
COMMONWEALTH OF MASSACHUSETTS
BRADLEY C. MUSCHINE
No. 39917
REGISTERED PROFESSIONAL ENGINEER

APPLICANT:
SIMON HILL, LLC
293R WASHINGTON STREET
NORWELL, MASSACHUSETTS 02061

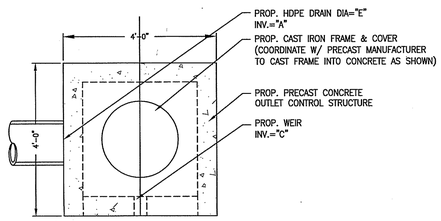
NOTICE OF PROJECT CHANGE

DRAWN BY:	BKL
DESIGNED BY:	DWK
CHECKED BY:	BCM
APPROVED BY:	BCM
DATE:	OCTOBER 29, 2012
SCALE:	AS NOTED
PROJECT NO.:	27-221

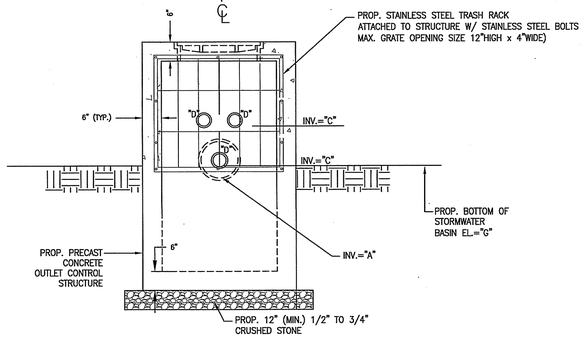
DWG. TITLE:
Construction Details
Sheet 2 of 9

DWG. No:
D-2

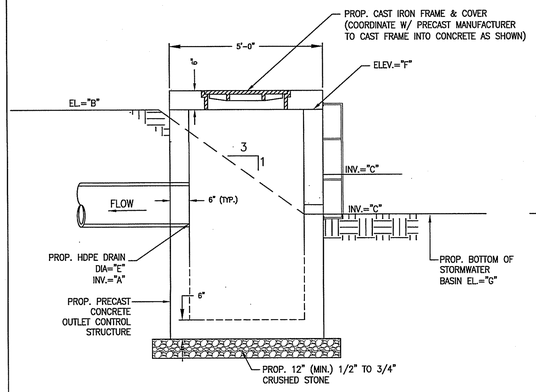
	A	B	C	D	E	F	G
P-1 PRIMARY	127.50	130.20	127.60 127.80	2.5" DIA. ORIFICE 2.5" DIA. ORIFICE	12"	131.95	126.50
P-1 SECONDARY	126.50	130.20	126.50	(3) 4" DIA. ORIFICE	8"	131.95	126.50
P-3	127.00	130.00	127.00 127.33	3" DIA. ORIFICE (2) 2.5" DIA. ORIFICE	12"	131.00	127.00



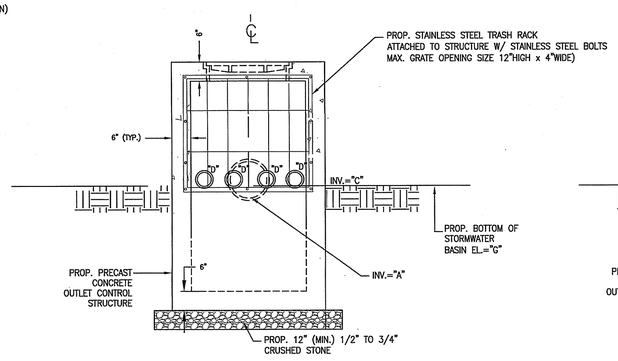
PLAN



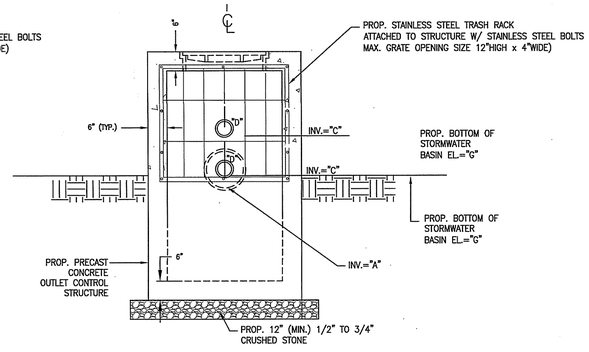
FRONT ELEVATION P-3



SECTION



FRONT ELEVATION P-1 (SECONDARY)



FRONT ELEVATION P-1 (PRIMARY)

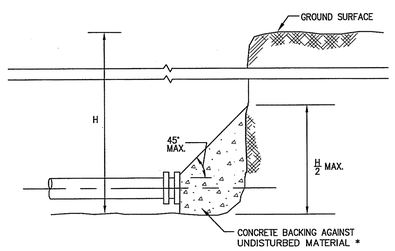
OUTLET CONTROL STRUCTURE DETAIL P-1 & P-3
SCALE: N.T.S

REQUIREMENTS OF THE TOWN OF NORWELL WATER DEPARTMENT MATERIAL SPECIFICATIONS WATER MAINS AND APPURTENANCES

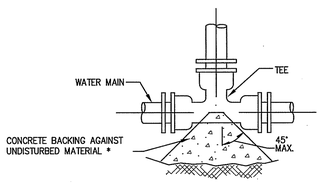
NOTE: ALL WATER MAIN INSTALLATION SHALL BE IN ACCORDANCE WITH THE BOARD OF THE TOWN OF NORWELL WATER COMISSIONERS AND TOWN OF NORWELL WATER DEPARTMENT REQUIREMENTS. THE INSTALLATION OF THE WATER MAIN SHALL BE UNDER THE SUPERVISION OF THE WATER COMMISSIONERS OR THEIR REPRESENTATIVE. NO WATER MAIN SHALL BE INSTALLED WITHIN 3 FEET OF A CATCH BASIN.

1. RESILIENT SEATED WEDGE GATE VALVES
1.1 VALVES SHALL BE IRON BODY, BI-DIRECTIONAL, RESILIENT TYPE DESIGNED FOR 200 PSI WORKING PRESSURE AND CONFORM TO THE LATEST REVISION OF AWWA C-509-87.
1.2 VALVES SHALL HAVE O-RING SEALS, NON-RISING SEAM AND 2" OPERATING NUT. VALVES SHALL OPEN RIGHT.
1.3 VALVES SHALL HAVE MECHANICAL JOINT END, UNLESS OTHERWISE NOTED.
1.4 VALVES INTERIORS AND EXTERIORS SHALL BE EPOXY COATED IN ACCORDANCE WITH AWWA SPECIFICATION C-550
1.5 VALVES SHALL BE AS MANUFACTURED BY MUELLER, CLOW OR AMERICAN DARLING.
2. VALVE BOXES
2.1 VALVE BOXES SHALL BE CAST IRON, TAR COATED, TELESCOPING HEAVY PATTERN TYPE CONSISTING OF FLANGED BOTTOM, FLANGED TOP AND COVER WITH THE WORD "WATER" CAST IN THE COVER.
3. HYDRANTS
3.1 HYDRANTS SHALL BE OF BREAK FLANGE CONSTRUCTION WITH A 6" MECHANICAL JOINT INLET CONNECTION, TWO 2 ½" FIRE HOSE CONNECTIONS AND ONE 4 ½" STEAMER CONNECTION AND A STANDPIPE WITH A 6" DIAMETER MINIMUM.
3.2 HYDRANTS SHALL HAVE A MECHANICAL JOINT BOOT, 5 ½" BURY, A 5 ¼" VALVE OPENING AND CONFORM TO THE LATEST REVISION OF AWWA SPECIFICATION C-502-85. HYDRANT OPENING DIRECTION SHALL BE CLEARLY INDICATED BY AN ARROW. HYDRANTS SHALL OPEN LEFT.
3.3 HYDRANT BRANCHES ARE TO BE OF 6" D.I.
3.4 HYDRANTS ARE TO BE PAINTED AS PER NORWELL WATER DEPARTMENT SPECIFICATION.
3.5 HYDRANTS SHALL BE AS MANUFACTURED BY MUELLER – SUPER CENTURION MODEL NO. A-423.
4. FITTINGS
4.1 FITTINGS SHALL BE FULL FLOW, COMPACT SIZE CONFORMING TO THE LATEST REVISION OF AWWA SPECIFICATION C-153 AND HAVE A WORKING PRESSURE RATING OF 200 PSI.
4.2 UNLESS OTHERWISE APPROVED, ALL FITTINGS SHALL HAVE MECHANICAL JOINT ENDS WITH APPROPRIATE GLANDS, GASKETS, NUTS, BOLTS AND ACCESSORIES.
4.3 RESTRAINED JOINTS FOR MECHANICAL JOINT FITTINGS SHALL BE MEGALUG ASSEMBY AS MANUFACTURED BY EBAA IRON INC.
4.4 ANCHOR TEES ARE REQUIRED FOR ALL HYDRANT ASSEMBLIES.
4.5 APPROPRIATE THRUST BLOCKING IS REQUIRED AT ALL HYDRANTS, FITTINGS AND BENDS.
5. P.V.C. PIPE
5.1 ALL PVC PRESSURE PIPE OF 4" THROUGH 12" DIAMETER SHALL CONFORM TO AWWA SPECIFICATION C-900
5.2 THE PIPE SHALL HAVE A WORKING PRESSURE OF L50 PSI AND A DIMENSION RATIO (DR) OF 18.
5.3 PIPE JOINTS SHALL BE OF THE BELL AND SPIGOT TYPE.
6. DUCTILE IRON PIPE
6.1 ALL DUCTILE IRON PIPE SHALL BE DESIGNED IN ACCORDANCE WITH ANS A2L.50 AND MANUFACTURED IN ACCORDANCE WITH ANS A21.51.
6.2 ALL DUCTILE IRON PIPE UP TO 12" IN DIAMETER SHALL BE OF CLASS 52 THICKNESS.
6.3 ALL DUCTILE IRON PIPE SHALL BE CEMENT LINED IN ACCORDANCE WITH ANS A21.4.
6.4 ALL PIPE JOINTS SHALL BE OF THE BELL AND SPIGOT TYPE.
7. METALLIC INDICATOR TAPE
7.1 METALLIC INDICATOR TAPE WITH "CAUTION WATER MAIN BURIED BELOW" SHALL BE PLACED IN TRENCH 1' FROM FINAL GRADE.
8. CORPORATION STOP
8.1 THE CORPORATION STOP SHALL BE OF ALL BRONZE CONSTRUCTION. THE INLET THREAD SHALL BE OF C.C. TYPE OUTLET CONNECTIONS SHALL BE COMPRESSION SUITABLE FOR USE WITH C.T.S. P.E. TUBING.
8.2 FOR PURPOSES OF STANDARDIZATION, CORPORATION STOP SHALL BE MODEL F-L000CC AS MANUFACTURED BY THE FORD METER BOX CO.
9. CURB STOPS
9.1 CURB STOPS SHALL BE OF ALL BRONZE CONSTRUCTION WITH A DRAIN AND INLET AND OUTLET COMPRESSION CONNECTION SUITABLE FOR USE WITH P.E. TUBING. CURB STOPS SHALL OPEN LEFT.
9.2 FOR PURPOSES OF STANDARDIZATION, THE CURB STOP SHALL BE MODEL NO. 244-444SW AS MANUFACTURED BY THE FORD METER BOX CO.
10. CURB BOX
10.1 THE CURB BOX SHALL BE CAST IRON TAR COATED TELESCOPING "BUFFALO" TYPE, CONSISTING OF A BOTTOM, TOP AND COVER SECURED BY A PENTAGON NUT.
11. SADDLES
11.1 SADDLES FOR SERVICE CONNECTIONS SHALL BE ALL BRASS WITH A MINIMUM 1" CC OUTLET.
11.2 FOR THE PURPOSES OF STANDARDIZATION, THE SADDLE SHALL BE MODEL 202 BS-LLL0X4CC AS MANUFACTURED BY THE FORD METER BOX CO.
12. P.E. TUBING
12.1 THE POLYETHYLENE TUBING SHALL BE TYPE 3408 WITH A WORKING PRESSURE OF 200 PSI. THE TUBING SHALL BE MINIMUM 1" COPPER TUBE SIZE AND FITTED WITH SOLID STAINLESS STEEL INSERTS AT ALL COMPRESSION CONNECTIONS.

SERVICE CONNECTIONS
ALL SERVICE CONNECTIONS SHALL CONSIST OF A SADDLE, CORPORATION STOP, CURB STOP, CURB BOX, P.E. TUBING, STAINLESS STEEL INSERTS AND METALLIC INDICATOR TAPE.



TYPICAL WATER MAIN PLUG
SCALE: N.T.S.



* SEE TABLE ON THRUST BLOCK BEARING AREAS FOR THE AREA OF CONCRETE REQUIRED.

TYPICAL WATER MAIN TEE THRUST BLOCK DETAILS
SCALE: N.T.S.

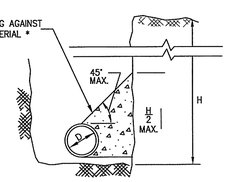
THRUST BLOCK BEARING AREAS FOR WATER PIPE

TABLE OF BEARING AREAS IN SQ. FT. AGAINST UNDISTURBED MATERIAL FOR WATER MAIN FITTINGS*			
SIZE OF MAIN (IN.)	90° BEND	TEES AND PLUGS	45° BEND
6	4	2.5	2
8	6	4	3
12	12	9	7
16	21	16	12

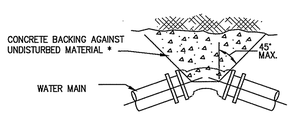
ASSUMPTIONS:
* TYPE OF SOIL IS MEDIUM CLAYEY, 6 OR MORE BLOWS PER FOOT, OR LOOSE GRANULAR, 9 OR MORE BLOWS PER FOOT. SOIL CONDITIONS OTHER THAN THOSE GIVEN WILL REQUIRE LARGER BEARING AREAS.

NOTES:

1. FOR FITTINGS WITH LESS THAN 45 DEFLECTION, USE BEARING AREAS FOR 45 BEND.
2. BEARING AREAS BASED ON HORIZONTAL PASSIVE SOIL PRESSURE OF 2000 P.S.F. AND INTERNAL WATER PRESSURE OF 150 P.S.I.G. JOINTS SHALL NOT BE ENCASED IN CONCRETE. BEARING AREAS MAY BE DIREGARDED FOR TRENCHES IN ROCK WHERE THE TOP OF THE ROCK FACE IS AT OR ABOVE THE CROWN OF THE PIPE. HOWEVER, CONCRETE BACKING SHALL BE PLACED BETWEEN THE PIPE AND THE ROCK FACE.
3. THE CONTRACTOR SHALL SUBMIT 2 WEEKS IN ADVANCE OF PLACEMENT, WORKING DRAWINGS FOR EACH THRUST BLOCK TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
4. ALL VALVES AND FITTINGS SHALL BE RODDED TOGETHER.



TYPICAL WATER MAIN THRUST BLOCK SECTION DETAILS SCALE: N.T.S.



* SEE TABLE ON THRUST BLOCK BEARING AREAS FOR THE AREA OF CONCRETE REQUIRED.

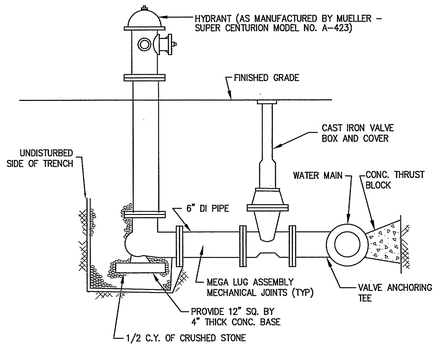
TYPICAL WATER MAIN BEND THRUST BLOCK DETAILS SCALE: N.T.S.

MAXIMUM SIZE TAPPED CONNECTION *	
WATER MAIN DIAMETER	MAXIMUM TAP DIAMETER
4"	1/2"
6"	3/4"
8"	3/4"
12"	1"

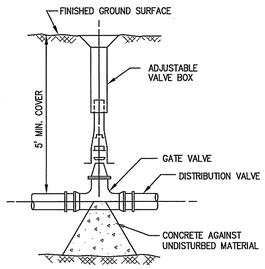
* WHERE THE SIZE OF THE CONNECTION EXCEEDS THAT GIVEN IN THE TABLE A BOSS SHALL BE PROVIDED OR THE TAP SHALL BE MADE BY MEANS OF MUTIPLE CORP. STOPS AND BRANCH FITTINGS, TAPPED TEE, OR TAPPED SADDLE.

NOTE:
WHERE NO PAVED SIDEWALK EXIST CURB STOPS & VALVE BOXES TO BE INSTALLED IN STREET

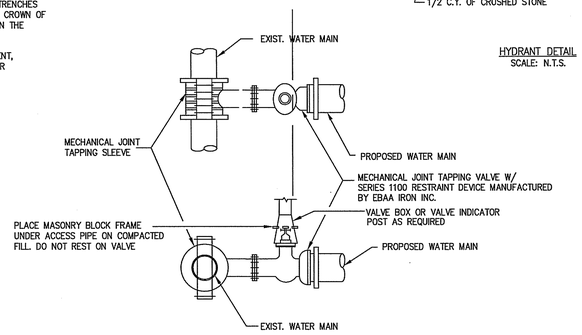
REQUIREMENTS OF THE TOWN OF NORWELL WATER DEPARTMENT MATERIAL SPECIFICATIONS WATER MAINS AND APPURTENANCES SCALE: N.T.S.



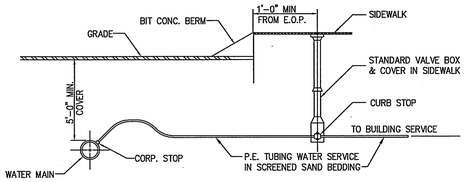
HYDRANT DETAIL
SCALE: N.T.S.



WATER GATE DETAIL
SCALE: N.T.S.



TYPICAL TAPPING SLEEVE AND VALVE SCALE:
N.T.S.



SERVICE CONNECTION
SCALE: N.T.S.

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REV	DATE	DESCRIPTION	BY	APP
1	4/3/13	ZBA REVIEW COMMENTS	BKL	BCM
2	5/23/13	ZBA REVIEW COMMENTS	BKL	BCM
3	6/19/13	ZBA REVIEW COMMENTS	BKL	BCM
4	8/20/18	NOTICE OF INTENT - NEW SHEET	SBS	BCM
5	11/19/18	RECONFIGURATION - 3 BUILDING	SBS	BCM
6	2/21/19	OUTLET CONTROL STRUCTURE ELEVATIONS	SBS	BCM
7	8/17/19	CONSERVATION PEER REVIEW COMMENTS	SBS	BCM
8	9/23/19	CONSERVATION PEER REVIEW COMMENTS	SBS	BCM

PREPARED BY:
MCKENZIE ENGINEERING GROUP
Assinippi Office Park
150 Longwater Drive, Suite 101
Norwell, MA 02061
Ph: 781-792-3900
Website: www.mckeng.com

COMPREHENSIVE PERMIT PLANS

KNOWN AS
SIMON HILL VILLAGE
(ASSESSORS MAP 13C, BLOCK 37, LOT 6)
OFF PROSPECT STREET
NORWELL, MASSACHUSETTS

PROFESSIONAL ENGINEER:
COMMONWEALTH OF MASSACHUSETTS
BRADLEY C. MCKENZIE
CIVIL
NO. 36917
REGISTERED PROFESSIONAL ENGINEER

APPLICANT:
SIMON HILL, LLC
293R WASHINGTON STREET
NORWELL, MASSACHUSETTS 02061

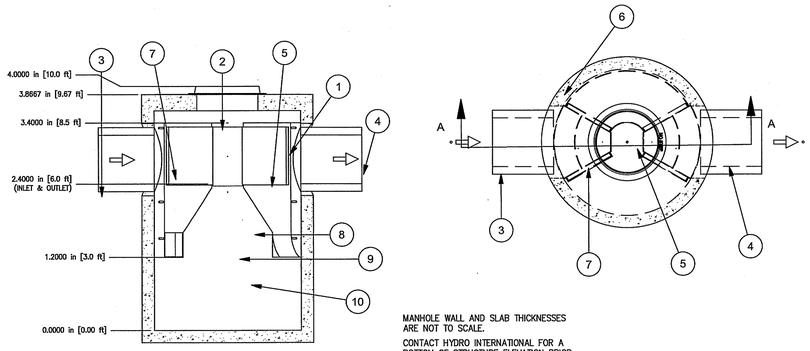
NOTICE OF PROJECT CHANGE

DRAWN BY:	BKL
DESIGNED BY:	DWK
CHECKED BY:	BCM
APPROVED BY:	BCM
DATE:	OCTOBER 29, 2012
SCALE:	AS NOTED
PROJECT NO.:	27-221

DWG. TITLE:
Construction Details
Sheet 3 of 9

DWG. No:
D-3

M:\MEG\2007 PROJECTS\27-221\DWGS\SUBMISSIONS\NOI\3 BLD\(R3)\27-221 DETAILS 3 BLD (R3).DWG



MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.

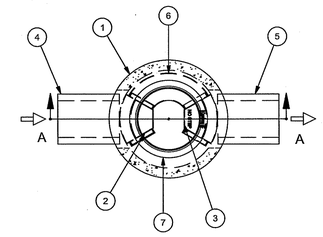
CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.

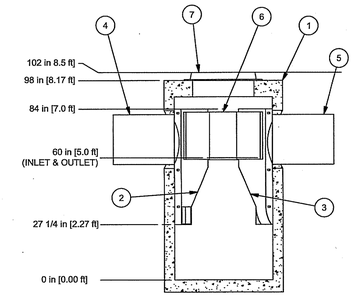
CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASING UNIT TO FABRICATION.

Parts List			
ITEM	QTY.	DESCRIPTION	SIZE (in)
1	1	I.D. CONCRETE MANHOLE	72
2	1	INLET CHUTE (W/ FLOATABLES TRAP)	
3	1	OUTLET CHUTE	
4	1	INLET PIPE (BY OTHERS)	24
5	1	OUTLET PIPE (BY OTHERS)	24
6	1	HIGH FLOW BYPASS	
7	1	FRAME AND COVER (OR GRATE)	30

Hydro International
Stormwater Solutions
94 Hutchins Drive
Portland, Maine 04102
Tel: (207) 756-6200
Fax: (207) 756-6212
stormwaterinquiry@hydro-int.com

6 FT. DIAMETER FIRST DEFENSE UNIT
SCALE: N.T.S.





SECTION A-A

Parts List			
ITEM	QTY.	DESCRIPTION	SIZE (in)
1	1	I.D. CONCRETE MANHOLE	48
2	1	INLET CHUTE (W/ FLOATABLES TRAP)	
3	1	OUTLET CHUTE	
4	1	INLET PIPE (BY OTHERS)	12
5	1	OUTLET PIPE (BY OTHERS)	12
6	1	HIGH FLOW BYPASS	
7	1	FRAME AND COVER (OR GRATE)	30

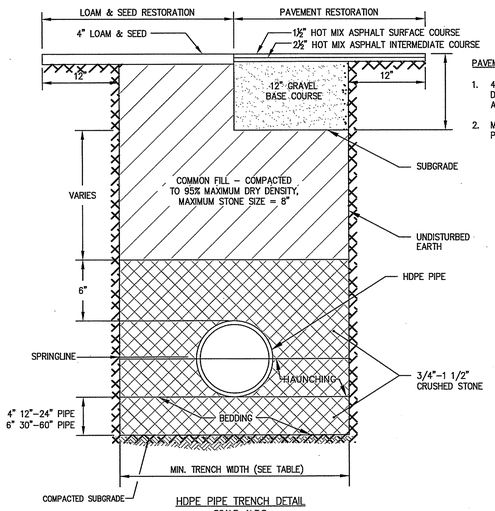
MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.

CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.

CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASING UNIT TO FABRICATION.

Hydro International
Stormwater Solutions
94 Hutchins Drive
Portland, Maine 04102
Tel: (207) 756-6200
Fax: (207) 756-6212
stormwaterinquiry@hydro-int.com

4 FT. DIAMETER FIRST DEFENSE UNIT
SCALE: N.T.S.



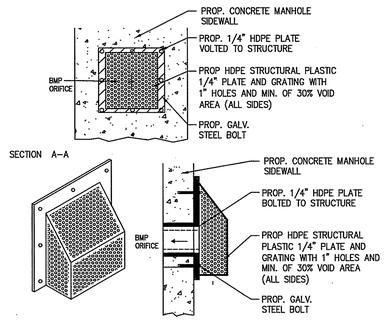
PAVEMENT REQUIREMENTS:

1. 4" HOT MIX ASPHALT PATCH FOR FULL DEPTH CONSTRUCTION AND RECLAMATION AREAS.
2. MATCH EXISTING PAVEMENT FOR COLD PLANE AREAS.

RECOMMENDED MINIMUM TRENCH WIDTHS

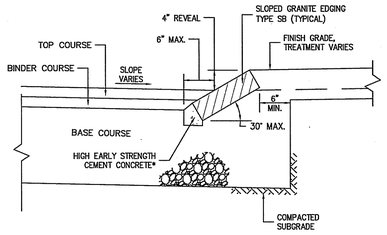
PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
60"	96"

HDPE PIPE TRENCH DETAIL
SCALE: N.T.S.



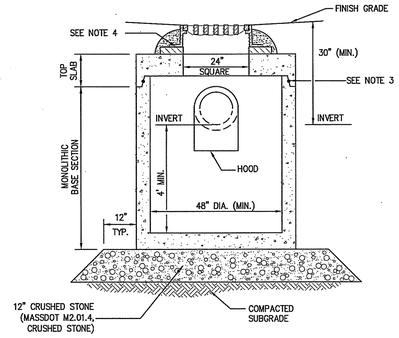
NOTE:
SHOWN FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR SHALL INSTALL TRASH RACK PER MANUFACTURER SPECIFICATIONS. (PLASTIC SOLUTIONS INC.)

HDPE TRASH RACK DETAIL
SCALE: N.T.S.



* – GRAVEL BASECOURSE TO BE PLACED PRIOR TO SETTING EDGING.

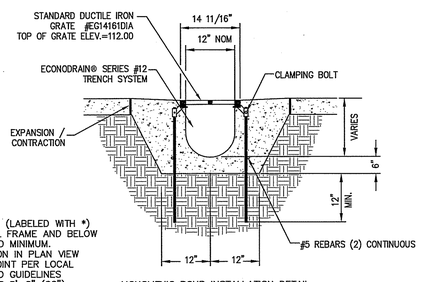
SLOPED GRANITE CURB
SCALE: N.T.S.



SHALLOW CATCH BASIN
SCALE: N.T.S.

NOTES:

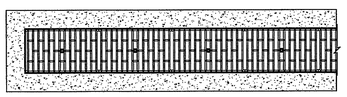
1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. PROVIDE DOGHOUSE OPENING FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. TOP SLAB SHALL NOT REST DIRECTLY ON PIPE. GROUT ALL PIPE CONNECTIONS (NON-SHRINK GROUT).
3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
4. CATCH BASIN FRAME AND GRATE (4" DEPTH) SHALL BE SET IN FULL MORTAR BED.
5. ADJUST TO FINISH GRADE WITH CLAY BRICK AND MORTAR AS REQUIRED.



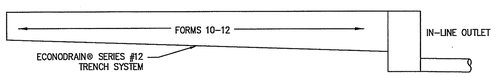
MONOLITHIC POUR INSTALLATION DETAIL

NOTES TO THE SPECIFIER:

1. ADD REBAR AS REQUIRED
2. SPECIFY REQUIRED DIMENSIONS (LABELED WITH *) USING 6" EACH SIDE OF STEEL FRAME AND BELOW EPS FORM AS A RECOMMENDED MINIMUM.
3. SHOW TOP OF GRATE ELEVATION IN PLAN VIEW
4. EXPANSION / CONTRACTION JOINT PER LOCAL ENGINEERING REGULATIONS AND GUIDELINES
5. STANDARD CHANNEL LENGTH IS 8'-0" (96")
6. STANDARD CHANNEL SLOPE IS 0.5%

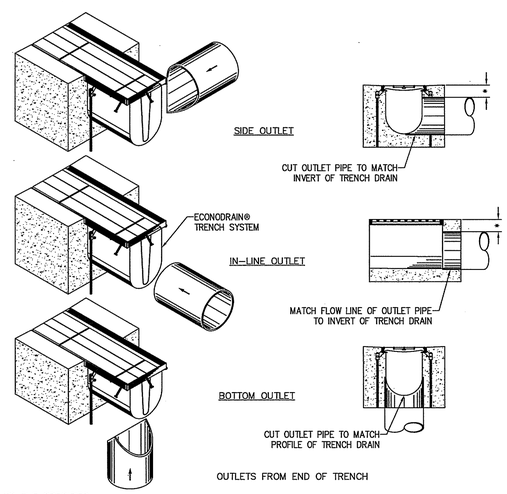


PLAN VIEW



	EPS FORM	DEPTH MIN	DEPTH MAX	FLOW GPM
SHALLOW EPS FORMS	10	8"	8 1/2"	743
	11	8 1/2"	9"	829
	12	9"	9 1/2"	915
	13	9 1/2"	10"	1003
	14	10"	10 1/2"	1091
	15	10 1/2"	11"	1180
	16	11"	11 1/2"	1269
	17	11 1/2"	12"	1359
	18	12"	12 1/2"	1450
	19	12 1/2"	13"	1541
	20	13"	13 1/2"	1633
	21	13 1/2"	14"	1725
	22	14"	14 1/2"	1817
	23	14 1/2"	15"	1910
DEEP EPS FORMS	24	15"	15 1/2"	2002
	25	15 1/2"	16"	2095
	26	16"	16 1/2"	2189
	27	16 1/2"	17"	2282
	28	17"	17 1/2"	2376
	29	17 1/2"	18"	2470
	30	18"	18 1/2"	2564
	31	18 1/2"	19"	2658
	32	19"	19 1/2"	2753
	33	19 1/2"	20"	2847
	34	20"	20 1/2"	2942
	35	20 1/2"	21"	3036
	36	21"	21 1/2"	3131
	37	21 1/2"	22"	3226
	38	22"	22 1/2"	3321
	39	22 1/2"	23"	3416
	40	23"	23 1/2"	3511
	41	23 1/2"	24"	3607
	42	24"	24 1/2"	3702
	43	24 1/2"	25"	3798
	44	25"	25 1/2"	3893
	45	25 1/2"	26"	3989

EPS FORM CHART



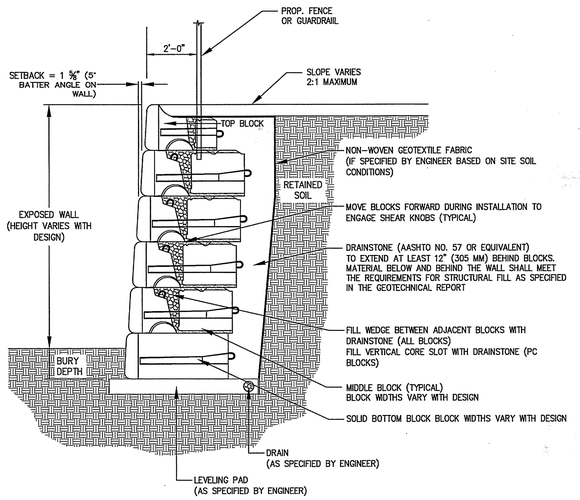
NOTES TO THE SPECIFIER:

1. ADD REBAR AS REQUIRED.
2. SPECIFY MINIMUM CONCRETE ENCASEMENT.
3. 4" MINIMUM CONCRETE COVERAGE OF OUTLET PIPE IS RECOMMENDED (LABELED WITH *).
4. FINAL CONCRETE THICKNESS PER LOCAL ENGINEERING REGULATIONS AND GUIDELINES.

CONSTRUCTION NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
2. SECURE OUTLET PIPE PRIOR TO CONCRETING OPERATIONS.
3. FOR ILLUSTRATION ONLY – DO NOT SCALE

ECONODRAIN® SERIES #12 TRENCH DRAIN
SCALE: N.T.S.



NOTE:
DESIGN OF PRECAST CONCRETE MODULAR BLOCK RETAINING WALL SHALL BE BY A PROFESSIONAL CIVIL STRUCTURAL ENGINEER REGISTERED IN THE COMMONWEALTH OF MASSACHUSETTS

MODULAR BLOCK GRAVITY RETAINING WALL DETAIL
SCALE: N.T.S.

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M:\MEG\2007 PROJECTS\27-221\DWGS\SUBMISSIONS\NOI\3 BLD\(R3)\27-221 DETAILS 3 BLD (R3).DWG

REV	DATE	DESCRIPTION	BY	APP
1	4/3/13	ZBA REVIEW COMMENTS	BKL	BCM
2	5/23/13	ZBA REVIEW COMMENTS	BKL	BCM
3	6/18/13	ZBA REVIEW COMMENTS	BKL	BCM
4	8/20/18	NOTICE OF INTENT - NEW SHEET	SBS	BCM
5	11/19/18	RECONFIGURATION - 3 BUILDING	SBS	BCM
6	2/21/19	NO CHANGES THIS SHEET	SBS	BCM
7	6/17/19	NO CHANGES THIS SHEET	SBS	BCM
8	9/23/19	HDPE PIPE TRENCH DETAIL/CONSERVATION/PEER REVIEW COMMENTS	SBS	BCM

PREPARED BY:
MCKENZIE ENGINEERING GROUP
Assinippi Office Park
150 Longwater Drive, Suite 101
Norwell, MA 02061
Ph: 781-792-3900
Website: www.mckeng.com

COMPREHENSIVE PERMIT PLANS

KNOWN AS
SIMON HILL VILLAGE
(ASSESSORS MAP 13C, BLOCK 37, LOT 6)
OFF PROSPECT STREET
NORWELL, MASSACHUSETTS

PROFESSIONAL ENGINEER:
COMMONWEALTH OF MASSACHUSETTS
BRADLEY C. MCKENZIE
CIVIL
No. 36917
REGISTERED PROFESSIONAL ENGINEER

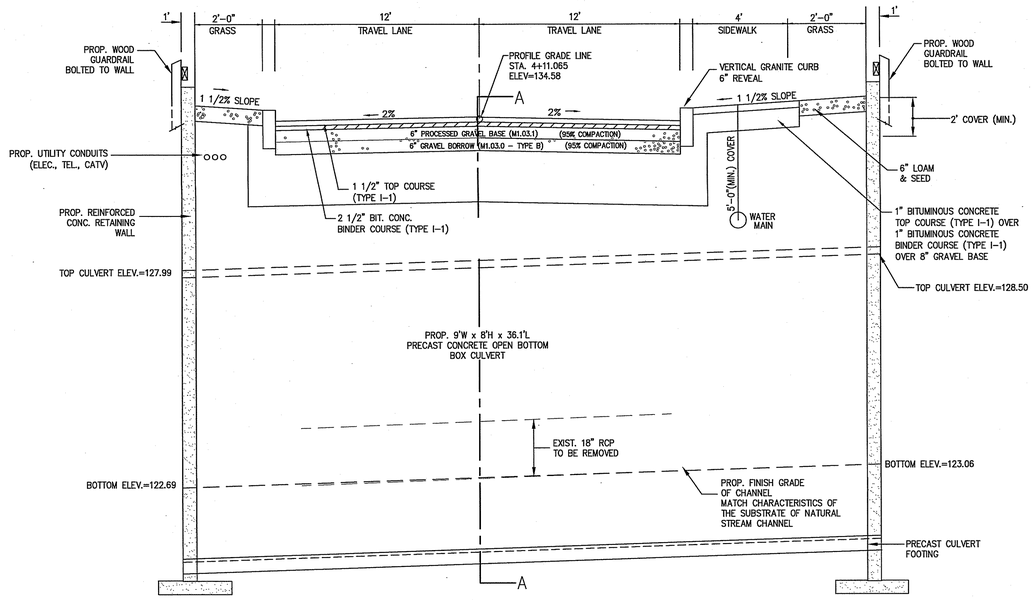
APPLICANT:
SIMON HILL, LLC
293R WASHINGTON STREET
NORWELL, MASSACHUSETTS 02061

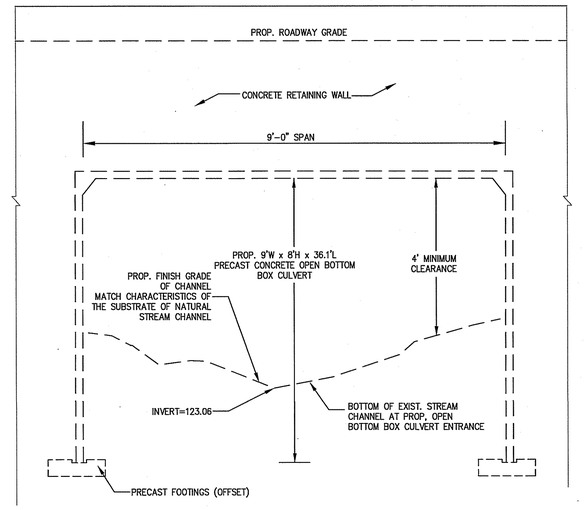
NOTICE OF PROJECT CHANGE

DRAWN BY:	BKL
DESIGNED BY:	DWK
CHECKED BY:	BCM
APPROVED BY:	BCM
DATE:	OCTOBER 29, 2012
SCALE:	AS NOTED
PROJECT NO.:	27-221

DWG. TITLE:
Construction Details
Sheet 4 of 9

DWG. No:
D-4





NOTES:

1. CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
2. DESIGN PER ASTM C1504 SPECIFICATION FOR 3-SIDED CULVERT.
3. ALL REINFORCEMENT PER ASTM A615.
4. DESIGNED AASHTO HS-20 LOADING OR AS REQUIRED.
5. TONGUE AND GROOVE JOINT SEALED WITH BUTYL WRAP.
6. PRECAST FOOTINGS OPTIONAL

GENERAL NOTES:

1. BOX CULVERT CONSTRUCTION SEQUENCE
   - A. EXCAVATE FOOTING AREAS AND PERFORM DEWATERING OPERATIONS TO LOWER THE GROUNDWATER LEVEL AS REQUIRED TO PROVIDE A STABLE, DRY SUBGRADE FOR THE CONSTRUCTION OF THE CULVERT FOOTINGS AND PREVENT SURFACE WATER TO ACCUMULATE IN EXCAVATION AREAS. WATER SHALL BE PUMPED TO A SEDIMENTATION BASIN FOR TREATMENT PRIOR TO DISCHARGING THE WETLAND.
   - B. FORM AND POUR CULVERT FOOTING.
   - C. INSTALL SECTIONS OF BOX CULVERT AND BACKFILL ROADWAY ENTRANCE AREA.
2. UPON COMPLETION OF CONSTRUCTION ANY DISTURBED SOILS WILL BE REGRADED TO THEIR ORIGINAL ELEVATION AND STABILIZED WITH PLANTINGS AS SHOWN ON THE PLANS AND LOAM AND SEED.
3. ONCE PAVED, THE STRUCTURE IS CAPABLE OF CARRYING HS-20 LIVE LOADS. ANY CONSTRUCTION TRAFFIC LOADING THAT EXCEEDS THIS LEVEL OR IS APPLIED PRIOR TO PAVING MUST BE REVIEWED AND APPROVED BY THE MANUFACTURER.
4. THE CONTRACTOR SHALL PROVIDE SOIL BORINGS IN THE FOOTING LOCATIONS FOR REVIEW AND APPROVAL BY THE MANUFACTURER TO ENSURE PROPER FOOTING SIZING.

NOTE:

FINAL DESIGN OF PRECAST CONCRETE BOX CULVERT TO BE FINALIZED PRIOR TO CONSTRUCTION. DETAILS ON THIS SHEET ARE FOR ILLUSTRATIVE PURPOSES ONLY.

PRECAST CONCRETE OPEN BOTTOM BOX CULVERT
ROAD A STA 4+11.065
SCALE: N.T.S.

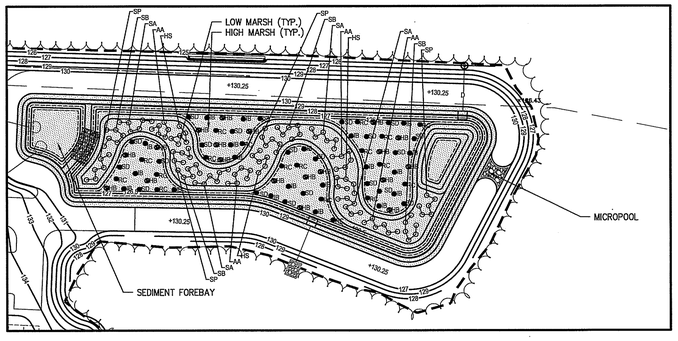
PLANTING SCHEDULE STORMWATER BASIN P-3

TYPE	NAME	ABBREV.	SIZE	NUMBER OF SPECIMENS
Low Marsh	Soft-stem bulrush / *Schoenoplectus tabernaemontani*	SB	2" PLUG	180
	Hard-stem bulrush / *Schoenoplectus acutus*	HS	2" PLUG	120
	Common three square / *Schoenoplectus pungens*	SP	2" PLUG	150
	Burreed / *Sparganium americanum*	SA	2" PLUG	120
	Sweet flag / *Acorus americana*	AA	2" PLUG	120
High Marsh	Hydroseed with New England Wetland Mix at 1 lb/1250 square feet		SEED	
Side Slopes	Hydroseed with New England Erosion Control/Restoration Mix at 1 lb/1250 square feet		SEED	
Shrubs	Highbush Blueberry / *Vaccinium corymbosum*	HB	1.5-2 FT.	7
	Inkberry / *Ilex glabra*	IB	1.5-2 FT.	7
	Red Chokeberry / *Aronia arbutifolia*	RC	1.5-2 FT.	7
	Silky Dogwood / *Cornus amommum*	SD	1.5-2 FT.	7

PLANTING NOTES

1. THE PROJECT SUPERVISOR SHALL HOLD A PRE-CONSTRUCTION CONFERENCE WITH THE CONTRACTOR TO ENSURE ALL ASPECTS OF THE PROJECT, AS WELL AS ANY ORDER OF CONDITIONS ISSUED BY THE NORWELL CONSERVATION COMMISSION ARE UNDERSTOOD. EQUIPMENT NEEDS AND ACCESS ROUTES TO THE PROPOSED REPLICATION AREA SHALL BE FIRMLY ESTABLISHED.
2. EROSION CONTROL BARRIERS SHALL BE INSTALLED ALONG THE PROPOSED WORK AREA. THIS EROSION CONTROL BARRIER SHALL ALSO SERVE AS A LIMIT OF WORK. IT IS RECOMMENDED THAT ONLY SILTATION FENCE AND/OR HAYBALES BE USED FOR EROSION CONTROL IN ORDER TO MINIMIZE THE POTENTIAL FOR INVASION BY WEED SPECIES.
3. ROUGH GRADES SHALL BE VERIFIED BY FIELD SURVEY TO CONFIRM DESIGN ELEVATIONS HAVE BEEN MET. ADJUSTMENTS SHALL BE MADE AS DIRECTED BY THE WETLAND SCIENTIST.
4. THE STORMWATER BASIN SHALL BE PLANTED IN ACCORDANCE WITH THE PLANTING SCHEDULE PROVIDED.
5. PLANTINGS WILL BE WITH CONTAINER GROWN NURSERY STOCK. SUBSTITUTIONS MAY BE REQUIRED DEPENDING ON AVAILABILITY AND COST.

   IT IS RECOMMENDED THAT THE STORMWATER WETLAND BASIN PLANTINGS BE CONDUCTED UNDER THE SUPERVISION OF A WETLAND SCIENTIST EXPERIENCED IN THE CONSTRUCTION OF WETLANDS.
6. SYMBOL ON THE PLANTING PLANS REPRESENT A CLUSTER OF THIRTY (30) PLANTS.



PLANTING PLAN FOR CONSTRUCTED STORMWATER EXTENDED DETENTION WETLAND BASIN P-1
SCALE: 1"=40'

PLANTING SCHEDULE STORMWATER BASIN P-1

TYPE	NAME	ABBREV.	SIZE	NUMBER OF SPECIMENS
Low Marsh	Soft-stem bulrush / *Schoenoplectus tabernaemontani*	SB	2" PLUG	240
	Hard-stem bulrush / *Schoenoplectus acutus*	HS	2" PLUG	180
	Common three square / *Schoenoplectus pungens*	SP	2" PLUG	240
	Burreed / *Sparganium americanum*	SA	2" PLUG	240
	Sweet flag / *Acorus americana*	AA	2" PLUG	240
High Marsh	Hydroseed with New England Wetland Mix at 1 lb/1250 square feet		SEED	
Side Slopes	Hydroseed with New England Erosion Control/Restoration Mix at 1 lb/1250 square feet		SEED	
Shrubs	Highbush Blueberry / *Vaccinium corymbosum*	HB	1.5-2 FT.	19
	Inkberry / *Ilex glabra*	IB	1.5-2 FT.	20
	Red Chokeberry / *Aronia arbutifolia*	RC	1.5-2 FT.	19
	Silky Dogwood / *Cornus amommum*	SD	1.5-2 FT.	20

PLANTING NOTES

1. THE PROJECT SUPERVISOR SHALL HOLD A PRE-CONSTRUCTION CONFERENCE WITH THE CONTRACTOR TO ENSURE ALL ASPECTS OF THE PROJECT, AS WELL AS ANY ORDER OF CONDITIONS ISSUED BY THE NORWELL CONSERVATION COMMISSION ARE UNDERSTOOD. EQUIPMENT NEEDS AND ACCESS ROUTES TO THE PROPOSED REPLICATION AREA SHALL BE FIRMLY ESTABLISHED.
2. EROSION CONTROL BARRIERS SHALL BE INSTALLED ALONG THE PROPOSED WORK AREA. THIS EROSION CONTROL BARRIER SHALL ALSO SERVE AS A LIMIT OF WORK. IT IS RECOMMENDED THAT ONLY SILTATION FENCE AND/OR HAYBALES BE USED FOR EROSION CONTROL IN ORDER TO MINIMIZE THE POTENTIAL FOR INVASION BY WEED SPECIES.
3. ROUGH GRADES SHALL BE VERIFIED BY FIELD SURVEY TO CONFIRM DESIGN ELEVATIONS HAVE BEEN MET. ADJUSTMENTS SHALL BE MADE AS DIRECTED BY THE WETLAND SCIENTIST.
4. THE STORMWATER BASIN SHALL BE PLANTED IN ACCORDANCE WITH THE PLANTING SCHEDULE PROVIDED.
5. PLANTINGS WILL BE WITH CONTAINER GROWN NURSERY STOCK. SUBSTITUTIONS MAY BE REQUIRED DEPENDING ON AVAILABILITY AND COST.

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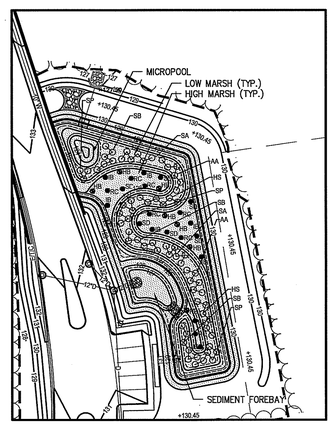

PLANTING PLAN FOR CONSTRUCTED STORMWATER EXTENDED DETENTION WETLAND BASIN P-3
SCALE: 1"=40'

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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REV	DATE	DESCRIPTION	BY	APP
1	4/3/13	ZBA REVIEW COMMENTS	BKL	BCM
2	5/23/13	ZBA REVIEW COMMENTS	BKL	BCM
3	6/19/13	ZBA REVIEW COMMENTS	BKL	BCM
4	8/20/18	NOTICE OF INTENT - NEW SHEET	SBS	BCM
5	11/19/18	RECONFIGURATION - 3 BUILDING	SBS	BCM
6	2/21/19	NO CHANGES THIS SHEET	SBS	BCM
7	8/17/19	NEW SHEET	SBS	BCM
8	9/23/19	CONSERVATION/PEER REVIEW COMMENTS	SBS	BCM

PREPARED BY:
MCKENZIE ENGINEERING GROUP
Assinippi Office Park
150 Longwater Drive, Suite 101
Norwell, MA 02061
Ph: 781-792-3900
Website: www.mckeng.com

COMPREHENSIVE PERMIT PLANS

KNOWN AS
SIMON HILL VILLAGE
(ASSESSORS MAP 13C, BLOCK 37, LOT 6)
OFF PROSPECT STREET
NORWELL, MASSACHUSETTS

PROFESSIONAL ENGINEER:
COMMONWEALTH OF MASSACHUSETTS
BRADLEY C. MCKENZIE
CIVIL
No. 39917
REGISTERED PROFESSIONAL ENGINEER

APPLICANT:
SIMON HILL, LLC
293R WASHINGTON STREET
NORWELL, MASSACHUSETTS 02061

NOTICE OF PROJECT CHANGE

DRAWN BY:	BKL
DESIGNED BY:	DWK
CHECKED BY:	BCM
APPROVED BY:	BCM
DATE:	OCTOBER 29, 2012
SCALE:	AS NOTED
PROJECT NO.:	27-221

DWG. TITLE:
Construction Details
Sheet 5 of 9

DWG. No:
D-5

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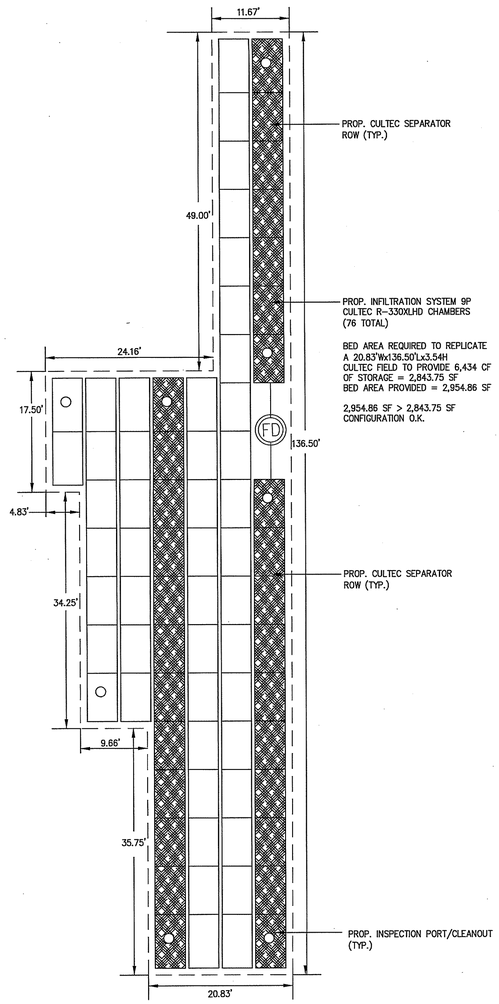
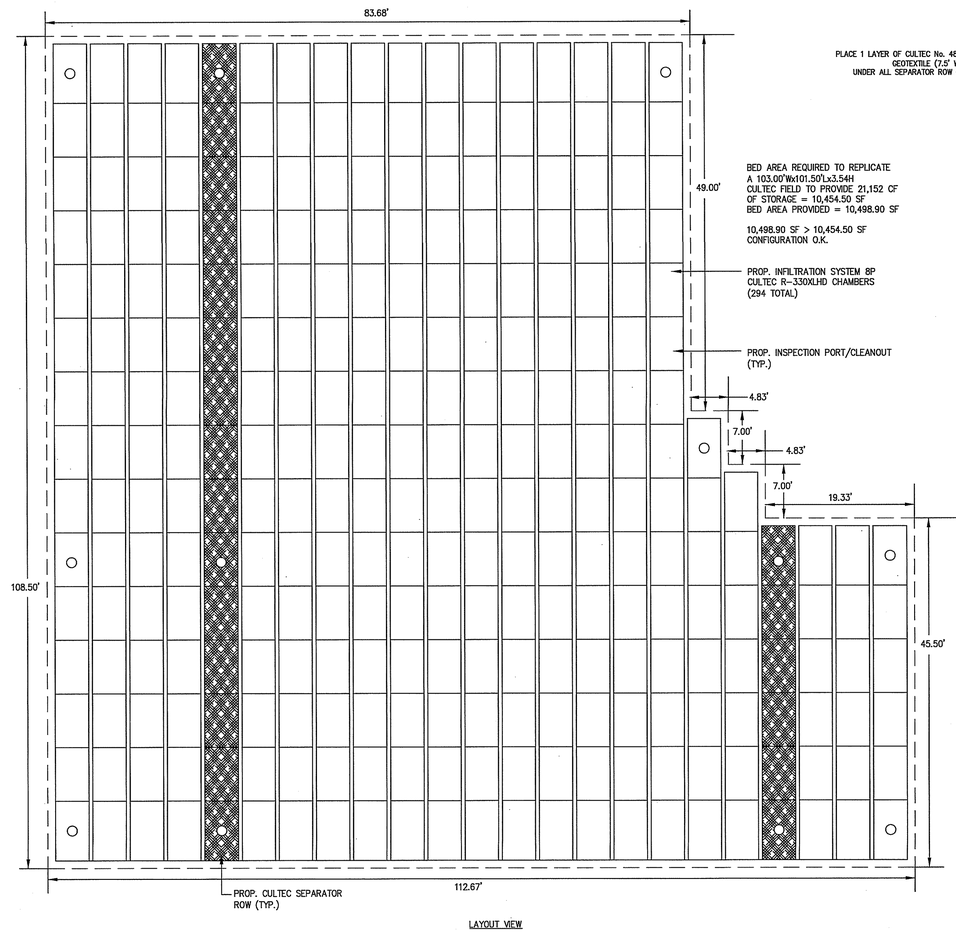


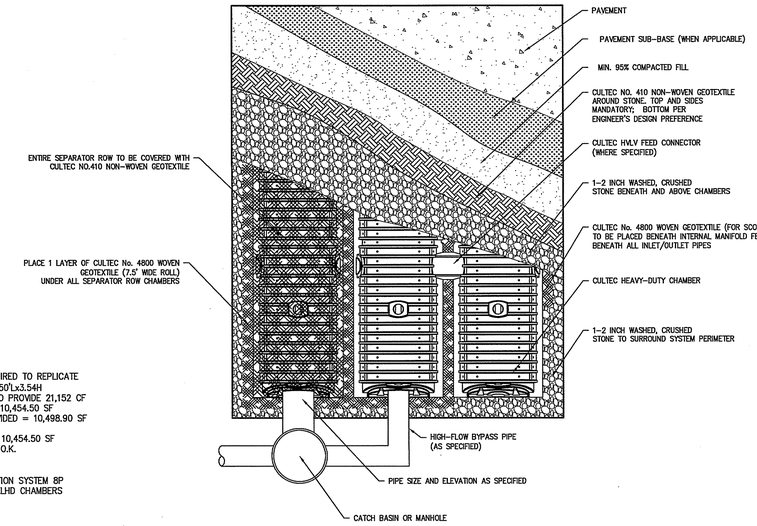
LAYOUT VIEW

SUBSURFACE INFILTRATION SYSTEMS 9P
SCALE: N.T.S.

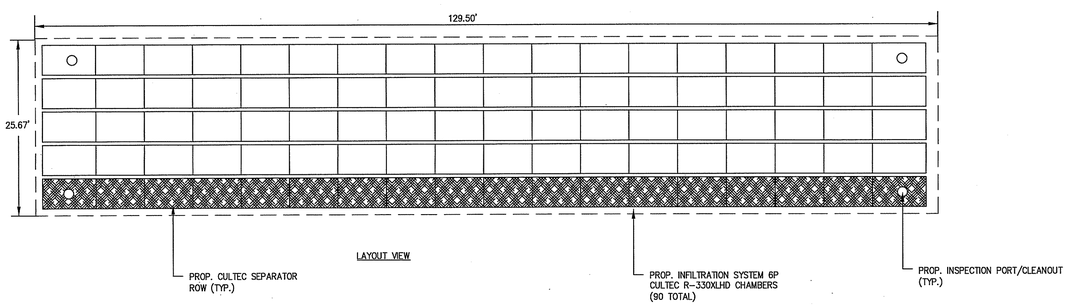


LAYOUT VIEW

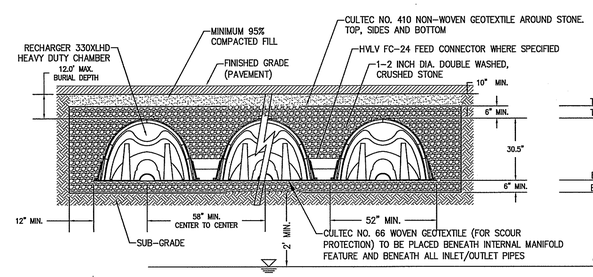
SUBSURFACE INFILTRATION SYSTEMS 8P
SCALE: N.T.S.



CULTEC SEPARATOR ROW
PLAN VIEW
SCALE: N.T.S.



LAYOUT VIEW



CROSS SECTION

	SYSTEM NO. 6P TP#6P-3	SYSTEM NO. 8P TP#8P-1	SYSTEM NO. 9P TP#9P-2
TOP STONE	ELEV. 131.74	ELEV. 132.04	ELEV. 131.22
TOP CHAMBER	ELEV. 131.24	ELEV. 131.54	ELEV. 130.72
BOTTOM CHAMBER	ELEV. 128.70	ELEV. 129.00	ELEV. 128.18
BOTTOM STONE	ELEV. 128.20	ELEV. 128.50	ELEV. 127.68
GROUNDWATER	ELEV. 126.19	ELEV. 125.98	ELEV. 124.81

SUBSURFACE INFILTRATION SYSTEM 6P
SCALE: N.T.S.

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M:\MEG\2007 PROJECTS\27-221\DWGS\SUBMISSIONS\NOI\3 BLD\(R3)\27-221 DETAILS 3 BLD (R3).DWG

REV	DATE	DESCRIPTION	BY	APP
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SCALE:	AS NOTED
PROJECT NO.:	27-221

DWG. TITLE:
Construction Details
Sheet 6 of 9

DWG. No:
D-6

CONSTRUCTION SEQUENCE

TO PREVENT EXCESSIVE EROSION AND SILTING, THE FOLLOWING CONSTRUCTION SEQUENCE COUPLED WITH OTHER WIDELY ACCEPTED PRINCIPALS FOR REDUCING EROSION AND SEDIMENTATION SHALL BE IMPLEMENTED IN THE DEVELOPMENT OF THE SITE. REFER TO THE APPROVED CONSTRUCTION PHASE BEST MANAGEMENT PRACTICES OPERATION & MAINTENANCE PLAN DATED JANUARY 28, 2010 AND REVISED THROUGH FEBRUARY 21, 2019

1) THE CONTRACTOR SHALL COORDINATE A PRE-CONSTRUCTION MEETING AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITY WITH THE DEVELOPER, TOWN PLANNER AND ANY INTERESTED TOWN DEPARTMENT REPRESENTATIVES.

2) PRIOR TO THE COMMENCEMENT OF ROADWAY CONSTRUCTION, A STANDARD TOWN OF NORWELL STREET SIGN SHALL BE ERECTED INDICATING THE APPROVED STREET NAME.

3) STABILIZATION PRACTICES FOR EROSION AND SEDIMENT CONTROL SHALL BE INSTALLED PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
PLACE SILTATION FENCE AND SILT SACK BARRIERS AT LOCATIONS INDICATED ON THE SITE PLANS.

4) CLEAR AND GRUB ALL RIGHTS-OF-WAY AND EASEMENTS AS REQUIRED FOR THE CONSTRUCTION OF THE ROADWAY, STORMWATER INFILTRATION/DETENTION BASIN AND RELATED INFRASTRUCTURE. ALL TEMPORARY STOCKPILES OF BRUSH, TREE LIMBS, TREE TRUNKS & STUMPS SHALL BE SURROUNDED WITH EROSION CONTROL BARRIER PER THE CONSTRUCTION PHASE OPERATION & MAINTENANCE PLAN. ALL BRUSH, TREE LIMBS, TREE TRUNK & STUMP DISPOSAL SHALL TAKE PLACE OFF SITE AND WITHIN 30 DAYS OF CUTTING. ALL DISPOSAL SHALL BE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.

5) CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE AT PROSPECT STREET.

6) EXCAVATE TOPSOIL AND SUBSOIL FROM CUT AND FILL AREAS AND STOCKPILE ON SITE IN LOCATIONS SHOWN ON THE PLAN. CONSIDERATION SHOULD BE GIVEN TO LOCATING STOCKPILES ON THE UPHILL SIDE OF DISTURBED AREAS, WHERE POSSIBLE, TO ACT AS TEMPORARY DIVERSIONS.

7) CONSTRUCT CUT AND FILL AREAS, INSTALLING SILT SACK CHECK DAMS AT TOES OF ALL 3:1 OR GREATER SLOPES, AND AT ENDS OF ALL CUT AREAS. ALL FILL WILL BE INSTALLED USING 12" MAXIMUM COMPACTION LIFTS. PLACE ALL SLOPE PROTECTION WHERE INDICATED ON THE PLAN.

8) THE STORMWATER INFILTRATION/DETENTION BASINS SHALL BE CONSTRUCTED IMMEDIATELY AFTER THE ROADWAY ROUGH GRADING IS COMPLETED AND THE AREA HAS BEEN CLEARED OF VEGETATION. THE PROPOSED TEMPORARY EARTH BERM SHALL BE PLACED UPGRADIENT OF THE INFILTRATION/DETENTION BASIN AS SHOWN ON THIS PLAN IMMEDIATELY AFTER THE BASIN IS CONSTRUCTED. THE BERM SHALL REMAIN IN PLACE DURING INDIVIDUAL LOT CONSTRUCTION AND REMOVED ONLY AFTER FINAL LOT GRADING HAS BEEN ESTABLISHED.

9) INSTALL CLOSED DRAINAGE SYSTEM AND OTHER UTILITIES. ALL CATCH BASINS SHALL BE PROTECTED WITH SILT SACK SEDIMENT TRAPS AND OTHER EROSION CONTROL MEASURES AS SHOWN ON THE PLANS.

10) GRADE ROADWAY TO SUBGRADE ELEVATION AND CONSTRUCT SIDE SLOPES. APPLY TEMPORARY STABILIZATION MEASURES WHERE WARRANTED.

11) PLACE GRAVEL SUBBASE PER TOWN OF NORWELL SPECIFICATIONS AND ROADWAY SECTION.

12) PLACE THE BITUMINOUS CONCRETE BINDER COURSE ON ROADWAYS. SET CATCH BASIN GRATES FLUSH WITH THE BINDER COURSE.

13) GRADE SLOPES AND STABILIZE CUT AREAS AT TOE OF SLOPES. BLEND ALL SLOPES INTO EXISTING TOPOGRAPHY AND LOAM AND SEED ALL DISTURBED AREAS. SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH JUTE MESH.

14) COMMENCE LOT AND BUILDING DEVELOPMENT ONCE ALL EROSION CONTROL MEASURES ARE IN PLACE.

15) PLACE THE FINAL WEARING COURSE OF PAVEMENT. RESET CATCH BASIN GRATES TO FINAL PAVEMENT GRADE.

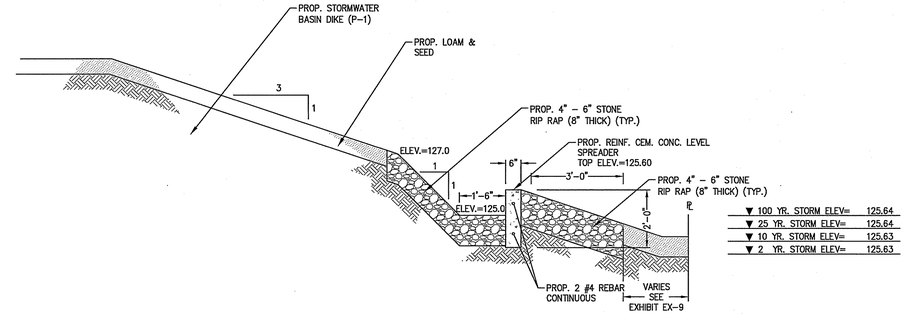
16) COMPLETE FINE GRADING OF SHOULDERS AND PLACE PAVEMENT IN MISCELLANEOUS AREAS.

17) REMOVE TEMPORARY EROSION CONTROL DEVICES ONCE ADEQUATE GROWTH IS ESTABLISHED. ADEQUATE GROWTH IS DEFINED AS VEGETATION COVERING 75% OR MORE OF THE GROUND SURFACE.

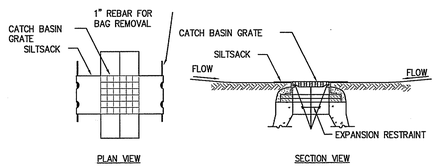
EROSION AND SEDIMENTATION CONTROL

WIDELY ACCEPTED PRACTICES FOR REDUCING EROSION AND SEDIMENTATION WILL BE EMPLOYED IN THE DEVELOPMENT OF THIS SITE. REFER TO THE APPROVED CONSTRUCTION PHASE BEST MANAGEMENT PRACTICES OPERATION & MAINTENANCE PLAN DATED AUGUST 20, 2018 AND REVISED THROUGH FEBRUARY 21, 2019.

1) THE DEVELOPMENT OF THE SITE HAS BEEN PLANNED TO ENHANCE THE EXISTING TOPOGRAPHY AND VEGETATIVE COVER. ALL NATURAL DRAINAGE PATTERNS OF THE SITE HAVE BEEN MAINTAINED.
2) STEEP SLOPES, WHERE POSSIBLE, WILL NOT BE DISTURBED.
3) NATURAL WATERWAYS WILL BE PRESERVED AND PROTECTED, AND EXISTING VEGETATION WILL BE RETAINED AND PROTECTED.
4) THE ROADWAY DESIGN CONFORMS TO EXISTING LAND CONTOURS WHERE PRACTICAL.
5) THE CONTRACTOR SHALL MINIMIZE THE AREA OF DISTURBED LAND TO THE EXTENT FEASIBLE.
6. SEDIMENT CONTROL MEASURES WILL BE APPLIED TO CONTROL ANY SEDIMENTS THAT MAY BE PRODUCED AS A RESULT OF SITE CONSTRUCTION ACTIVITIES. EROSION AND DEPOSITION OF SEDIMENT WILL BE CLOSELY MONITORED DURING CONSTRUCTION.
7) TEMPORARY EROSION CONTROL MEASURES WILL INCLUDE HAY BALE CHECK DAMS, FILTER FABRIC SILT FENCES, SEEDING AND MULCHING, AND SEEDED FILTER STRIPS.
8) TOPSOIL STRIPPED FROM CUT AND FILL AREAS WILL BE STOCKPILED FOR LOAMING AND SEEDING AT LATER CONSTRUCTION STAGES. THE STOCKPILES SHALL BE LOCATED SO AS TO ACT AS TEMPORARY DIVERSIONS, GENERALLY ON THE UPHILL SLOPE.
9) ALL CUT AREAS LOCATED AT TOES OF SLOPES AND DITCHES THAT HAVE GRADES EXCEEDING 5% SHALL BE STABILIZED WITH RIP-RAP. THE RIP-RAP SHALL CONSIST OF 50% STONES GREATER THAN 6" IN SIZE. SWALES SHALL BE 6" IN DEPTH AND APPROXIMATELY 5' IN WIDTH. ALL SLOPES WILL BE BLENDED INTO THE EXISTING TOPOGRAPHY TO MINIMIZE IMPACT.
10) LOT AND BUILDING DEVELOPMENT WILL NOT COMMENCE UNTIL ALL TEMPORARY EROSION CONTROL MEASURES ARE IN PLACE. THESE MEASURES SHALL BE EMPLOYED UNTIL FINAL PAVING AND ADEQUATE VEGETATION HAS BEEN ESTABLISHED.



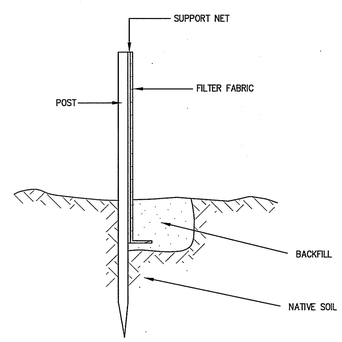
LEVEL SPREADER DETAIL
SCALE: N.T.S.

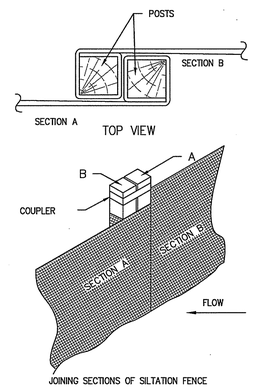


SILT SACK SEDIMENT TRAP CONTRUCTION NOTES:

1. INSTALL SILTSACK IN ALL CATCH BASINS WHERE INDICATED ON THE PLAN BEFORE COMMENCING WORK OR IN PAVED AREAS AFTER BINDER COURSE IS PLACED AND HAY BALES HAVE BEEN REMOVED.
2. GRATE TO BE PLACED OVER SILTSACK.
3. SILTSACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED. MAINTAIN UNTIL UPSTREAM AREAS HAVE BEEN PERMANENTLY STABILIZED

SILTSACK SEDIMENT TRAP
SCALE: N.T.S.





JOINING SECTIONS OF SILTATION FENCE

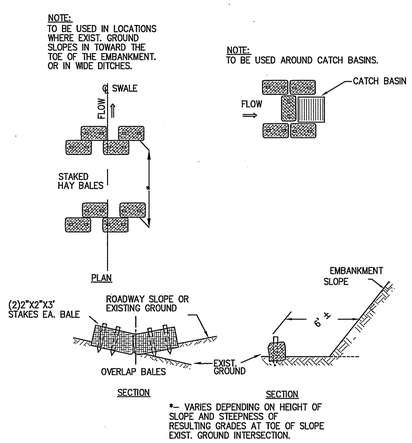
CONSTRUCTION NOTES:

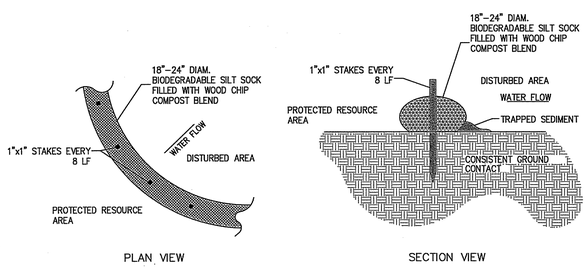
1) WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2) FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3) WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES AND FOLDED.
4) MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

NOTES:

1. INSTALL SILTSACK IN ALL CATCH BASINS WHERE INDICATED ON THE PLAN BEFORE COMMENCING WORK OR IN PAVED AREAS AFTER BINDER COURSE IS PLACED AND HAY BALES HAVE BEEN REMOVED.
2. GRATE TO BE PLACED OVER SILTSACK.
3. SILTSACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED. MAINTAIN UNTIL UPSTREAM AREAS HAVE BEEN PERMANENTLY STABILIZED.

SILTATION FENCE
SCALE: N.T.S.

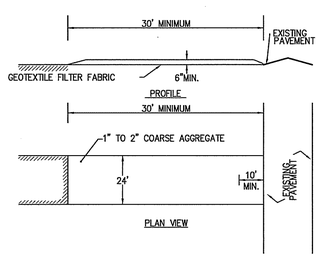




CONSTRUCTION NOTES:

1) SILT SOCKS SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING OR LAPPING THE ADJACENT SECTIONS.
2) SILT SOCKS SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR RE-BARS DRIVEN EVERY 8 LF.
3) INSPECTION SHALL BE FREQUENT, AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS REQUIRED.
4) SILT SOCKS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS, SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

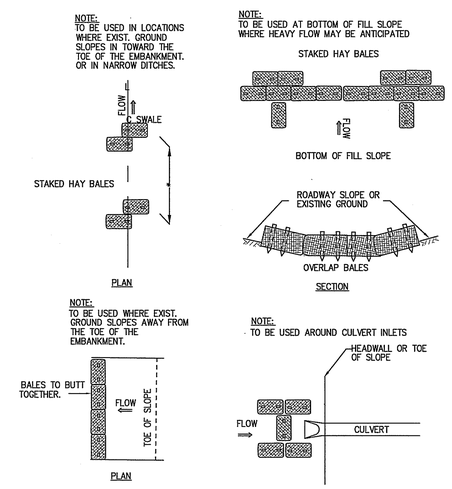
SILT SOCK DETAIL
SCALE: N.T.S.



(SCE) CONSTRUCTION SPECIFICATIONS:

1. STONE FOR A STABILIZATION CONSTRUCTION ENTRANCE SHALL BE 1 TO 2 INCH STONE, RECLAIMED STONE.
2. THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 50 FEET, EXCEPT FOR A SINGLE RESIDENTIAL LOT A 30 FOOT MINIMUM LENGTH WOULD APPLY.
3. THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
4. THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN A FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICH EVER IS GREATER.
5. GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE.
6. ALL SURFACE WATER THAT IS FLOWING TO OR DEVERTED TOWARDS THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED PROMPTLY.

STABILIZED CONSTRUCTION ENTRANCE (SCE) DETAIL
SCALE: N.T.S.



TEMPORARY EROSION CONTROL
SCALE: N.T.S.

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REV	DATE	DESCRIPTION	BY	APP
1	4/3/13	ZBA REVIEW COMMENTS	BKL	BCM
2	5/23/13	ZBA REVIEW COMMENTS	BKL	BCM
3	6/18/13	ZBA REVIEW COMMENTS	BKL	BCM
4	6/20/16	NOTICE OF INTENT - NEW SHEET	SBS	BCM
5	11/19/18	RECONFIGURATION - 3 BUILDING	SBS	BCM
6	2/21/19	NO CHANGES THIS SHEET	SBS	BCM
7	6/17/19	LEVEL SPREADER DETAIL/RENUMBERED SHEET	SBS	BCM
8	9/23/19	CONSERVATIONPEER REVIEW COMMENTS	SBS	BCM

PREPARED BY:

MCKENZIE ENGINEERING GROUP
Assinippi Office Park
150 Longwater Drive, Suite 101
Norwell, MA 02061
Ph: 781-792-3900
Website: www.mckeng.com

COMPREHENSIVE PERMIT PLANS

KNOWN AS
SIMON HILL VILLAGE
(ASSESSORS MAP 13C, BLOCK 37, LOT 6)
OFF PROSPECT STREET
NORWELL, MASSACHUSETTS

PROFESSIONAL ENGINEER:
COMMONWEALTH OF MASSACHUSETTS
BRADLEY C. McKENZIE
CIVIL
No. 36917
REGISTERED PROFESSIONAL ENGINEER

APPLICANT:
SIMON HILL, LLC
293R WASHINGTON STREET
NORWELL, MASSACHUSETTS 02061

NOTICE OF PROJECT CHANGE

DRAWN BY:	BKL
DESIGNED BY:	DWK
CHECKED BY:	BCM
APPROVED BY:	BCM
DATE:	OCTOBER 29, 2012
SCALE:	AS NOTED
PROJECT NO.:	27-221

DWG. TITLE:
Construction Details
Sheet 7 of 9

DWG. No: D-7

M:\MEG\2007 PROJECTS\27-221\DWGS\SUBMISSIONS\NOI\3 BLD\(R3)\27-221 DETAILS 3 BLD (R3).DWG

CULTEC RECHARGER® 330XLHD PRODUCT SPECIFICATIONS

GENERAL
CULTEC RECHARGER 330XLHD CHAMBERS ARE DESIGNED FOR UNDERGROUND STORMWATER MANAGEMENT. THE CHAMBERS MAY BE USED FOR RETENTION, RECHARGING, DETENTION OR CONTROLLING THE FLOW OF ON-SITE STORMWATER RUNOFF.

CHAMBER PARAMETERS
1. THE CHAMBERS WILL BE MANUFACTURED IN THE U.S.A. BY CULTEC, INC. OF BROOKFIELD, CT (203-775-4416 OR 1-800-428-5832).
2. THE CHAMBER WILL BE VACUUM THERMOFORMED OF BLACK POLYETHYLENE.
3. THE CHAMBER WILL BE ARCHED IN SHAPE.
4. THE CHAMBER WILL BE OPEN-BOTTOMED.
5. THE CHAMBER WILL BE JOINED USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE COUPLINGS OR SEPARATE END WALLS
6. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC RECHARGER 330XLHD SHALL BE 30.5 INCHES (775 mm) TALL, 52 INCHES (1321 mm) WIDE AND 8.5 FEET (2.59 m) LONG. THE INSTALLED LENGTH OF A JOINED RECHARGER 330XLHD SHALL BE 7 FEET (2.13 m).
7. MAXIMUM INLET OPENING ON THE CHAMBER END WALL IS 24 INCHES (600 mm).
8. THE CHAMBER WILL HAVE TWO SIDE PORTALS TO ACCEPT CULTEC HVLV FC-24 FEED CONNECTORS TO CREATE AN INTERNAL MANIFOLD. THE NOMINAL DIMENSIONS OF EACH SIDE PORTAL WILL BE 10.5 INCHES (267 mm) HIGH BY 11.5 INCHES (292 mm) WIDE. MAXIMUM ALLOWABLE OUTER DIAMETER (O.D.) PIPE SIZE IN THE SIDE PORTAL IS 11.75 INCHES (298 mm).
9. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV FC-24 FEED CONNECTOR SHALL BE 12 INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 24.2 INCHES (614 mm) LONG.
10. THE NOMINAL STORAGE VOLUME OF THE RECHARGER 330XLHD CHAMBER WILL BE 7.459 FT^3 / FT (0.693 m^3 / m) – WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF A JOINED RECHARGER 330XLHD SHALL BE 52.213 FT^3 / UNIT (1.478 m^3 / UNIT) – WITHOUT STONE.
11. THE NOMINAL STORAGE VOLUME OF THE HVLV FC-24 FEED CONNECTOR WILL BE 0.913 FT^3 / FT (0.085 m^3 / m) – WITHOUT STONE.
12. THE RECHARGER 330XLHD CHAMBER WILL HAVE FIFTY-SIX DISCHARGE HOLES BORED INTO THE SIDEWALLS OF THE UNIT'S CORE TO PROMOTE LATERAL CONVEYANCE OF WATER.
13. THE RECHARGER 330XLHD CHAMBER SHALL HAVE 16 CORRUGATIONS.
14. THE END WALL OF THE CHAMBER, WHEN PRESENT, WILL BE AN INTEGRAL PART OF THE CONTINUOUSLY FORMED UNIT. SEPARATE END PLATES CANNOT BE USED WITH THIS UNIT.
15. THE RECHARGER 330XLHRD STAND ALONE UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO FULLY FORMED INTEGRAL END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS.
16. THE RECHARGER 330XLSHD STARTER UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL END WALL AND ONE PARTIALLY FORMED INTEGRAL END WALL WITH A LOWER TRANSFER OPENING OF 14 INCHES (356 mm) HIGH X 34.5 INCHES (876 mm) WIDE.
17. THE RECHARGER 330XLHD INTERMEDIATE UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY OPEN ENDWALL AND ONE PARTIALLY FORMED INTEGRAL END WALL WITH A LOWER TRANSFER OPENING OF 14 INCHES (356 mm) HIGH X 34.5 INCHES (876 mm) WIDE.
18. THE RECHARGER 330XLEHD END UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL END WALL AND ONE FULLY OPEN END WALL AND HAVING NO SEPARATE END PLATES OR END WALLS.
19. THE HVLV FC-24 FEED CONNECTOR MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT WILL FIT INTO THE SIDE PORTALS OF THE RECHARGER 330XLHD AND ACT AS CROSS FEED CONNECTIONS.
20. CHAMBERS MUST HAVE HORIZONTAL STIFFENING FLEX REDUCTION STEPS BETWEEN THE RIBS.
21. HEAVY DUTY UNITS ARE DESIGNATED BY A COLORED STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER.
22. THE CHAMBER WILL HAVE A 6 INCH (152 mm) DIAMETER RAISED INTEGRAL CAP LOCATED ON TOP OF THE ARCH IN THE CENTER OF EACH UNIT TO BE USED AS AN OPTIONAL INSPECTION PORT OR CLEAN-OUT.
23. THE UNITS MAY BE TRIMMED TO CUSTOM LENGTHS BY CUTTING BACK TO ANY CORRUGATION.
24. THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2008 CERTIFIED FACILITY.
25. MAXIMUM ALLOWED COVER OVER TOP OF UNIT SHALL BE 12 FEET (3.66 m)

CULTEC HVLV FC-24 FEED CONNECTOR PRODUCT SPECIFICATIONS

GENERAL
CULTEC HVLV FC-24 FEED CONNECTORS ARE DESIGNED TO CREATE AN INTERNAL MANIFOLD FOR CULTEC RECHARGER MODEL 330XLHD STORMWATER CHAMBERS.

CHAMBER PARAMETERS
1. THE CHAMBERS WILL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
2. THE CHAMBER WILL BE VACUUM THERMOFORMED OF BLACK HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (NAMHDPE).
3. THE CHAMBER WILL BE ARCHED IN SHAPE.
4. THE CHAMBER WILL BE OPEN-BOTTOMED.
5. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV FC-24 FEED CONNECTOR SHALL BE 12 INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 24.2 INCHES (614 mm) LONG.
6. THE NOMINAL STORAGE VOLUME OF THE HVLV FC-24 FEED CONNECTOR WILL BE 0.913 FT^3 / FT (0.085 m^3 / m) – WITHOUT STONE.
7. THE HVLV FC-24 FEED CONNECTOR CHAMBER SHALL HAVE 2 CORRUGATIONS.
8. THE HVLV FC-24 FEED CONNECTOR MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT WILL FIT INTO THE SIDE PORTALS OF THE CULTEC RECHARGER STORMWATER CHAMBER AND ACT AS CROSS FEED CONNECTIONS CREATING AN INTERNAL MANIFOLD.
9. THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
10. THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2008 CERTIFIED FACILITY.

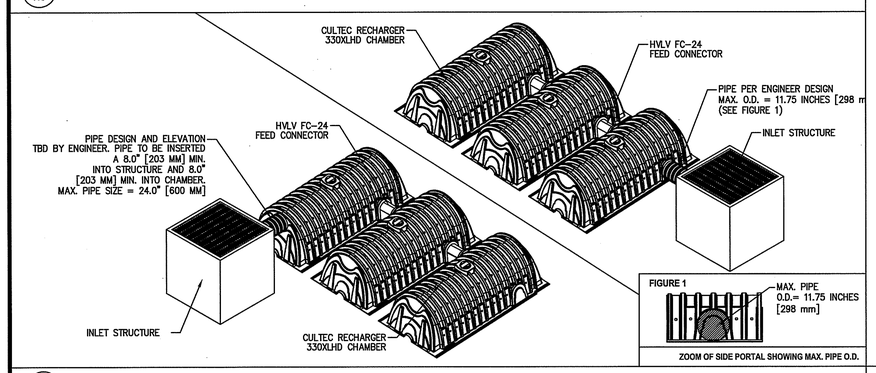
CULTEC NO. 66™ WOVEN GEOTEXTILE

GENERAL
CULTEC NO. 66™ WOVEN GEOTEXTILE IS UTILIZED AS AN UNDERLAYMENT TO PREVENT SCOURING CAUSED BY WATER MOVEMENT WITHIN THE CULTEC CHAMBERS AND FEED CONNECTORS UTILIZING THE CULTEC MANIFOLD FEATURE.

GEOTEXTILE PARAMETERS
1. THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
2. THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
3. THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH OF 315 LBS (1.40KN) PER ASTM D4632 TESTING METHOD.
4. THE GEOTEXTILE SHALL HAVE A TENSILE ELONGATION RESISTANCE OF 15% PER ASTM D4632 TESTING METHOD.
5. THE GEOTEXTILE SHALL HAVE A MULLEN BURST RESISTANCE OF 600PSI (4138 KPA) PER ASTM D3786 TESTING METHOD.
6. THE GEOTEXTILE SHALL HAVE A TEAR RESISTANCE OF 115 LBS (0.51 KN) PER ASTM D4533 TESTING METHOD.
7. THE GEOTEXTILE SHALL HAVE A PUNCTURE RESISTANCE OF 150 LBS (0.66 KN) PER ASTM D4833 TESTING METHOD.
8. THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE RESISTANCE OF 900 LBS (4.00 KN) PER ASTM D6241 TESTING METHOD.
9. THE GEOTEXTILE SHALL HAVE A UV RESISTANCE OF 70% @ 500 HRS. PER ASTM D4355 TESTING METHOD.
10. THE GEOTEXTILE SHALL HAVE A PERMITTIVITY RATING OF 0.05 SEC-1 PER ASTM D4491 TESTING METHOD.
11. THE GEOTEXTILE SHALL HAVE A WATER FLOW RATING OF 4 GPM/FT2 (160 LPM/M2) PER ASTM D4491 TESTING METHOD.
12. THE GEOTEXTILE SHALL HAVE A PERCENT OPEN AREA OF <1% PER CW-02215 TESTING METHOD.
13. THE GEOTEXTILE SHALL HAVE AN APPARENT OPENING SIZE OF 40 US STD. SIEVE (0.425 MM) PER ASTM D4751 TESTING METHOD.
14. THE GEOTEXTILE SHALL CONSIST OF A 100% HIGH-TENACITY, SILT-FILM POLYPROPYLENE YARNS.

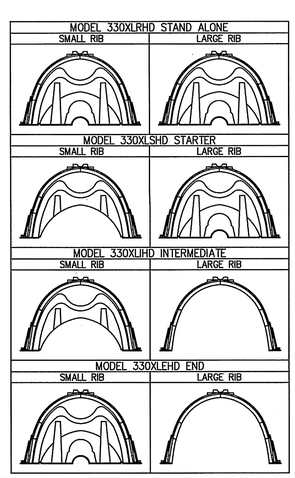
330XLHD 1.0

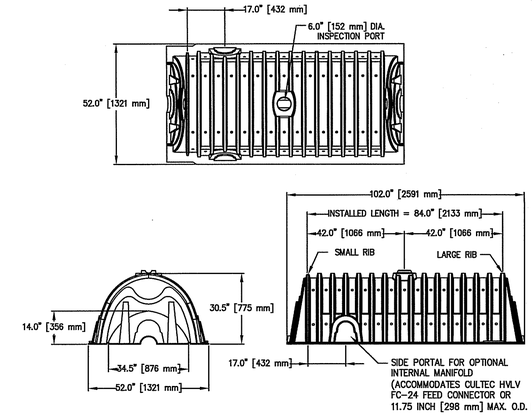
GENERAL NOTES



330XLHD 4.0

CULTEC TYPICAL INLET CONNECTION

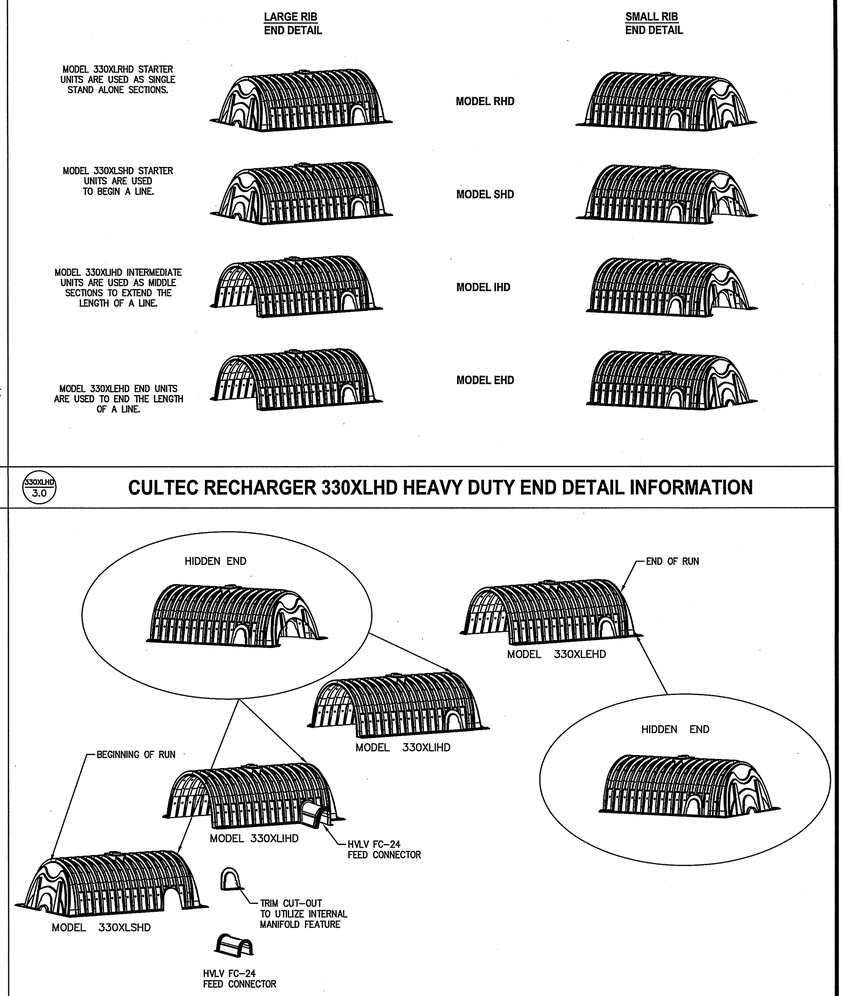




CULTEC RECHARGER 330XLHD CHAMBER STORAGE = 7.459 CF/FT [0.693 m^3/m]
INSTALLED LENGTH ADJUSTMENT = 1.5' [0.46 m]
SIDE PORTAL ACCEPTS CULTEC HVLV FC-24 FEED CONNECTOR

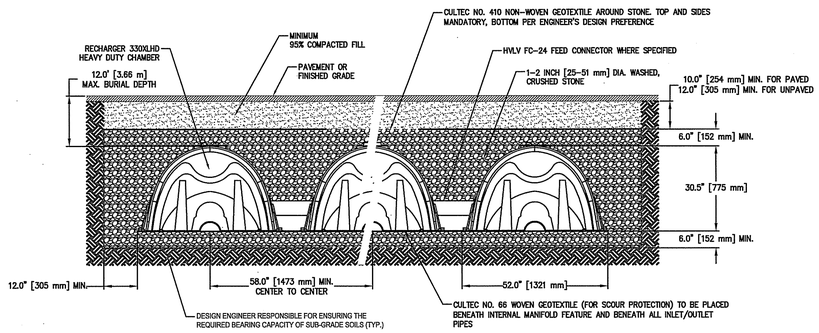
330XLHD 2.0

CULTEC RECHARGER 330XLHD HEAVY DUTY THREE VIEW



330XLHD 3.0

CULTEC RECHARGER 330XLHD HEAVY DUTY END DETAIL INFORMATION



GENERAL NOTES
RECHARGER 330XL HD BY CULTEC, INC. OF BROOKFIELD, CT.
STORAGE PROVIDED = 11.32 CF/FT [1.05 m^3/m] PER DESIGN UNIT.
REFER TO CULTEC, INC.'S CURRENT RECOMMENDED INSTALLATION GUIDELINES.
THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS

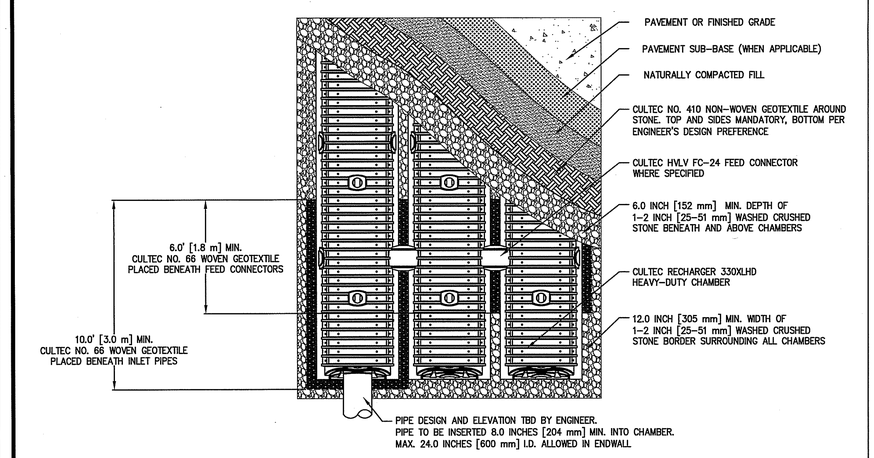
ALL RECHARGER 330XL HD HEAVY DUTY UNITS ARE MARKED WITH A COLOR STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER.
ALL RECHARGER 330XL HD CHAMBERS MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS

330XLHD 5.0

CULTEC RECHARGER 330XLHD HEAVY DUTY TYPICAL CROSS SECTION

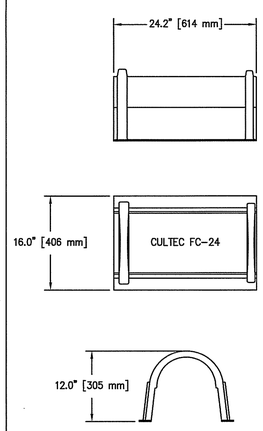
330XLHD 6.0

CULTEC RECHARGER 330XLHD HEAVY DUTY TYPICAL INTERLOCK



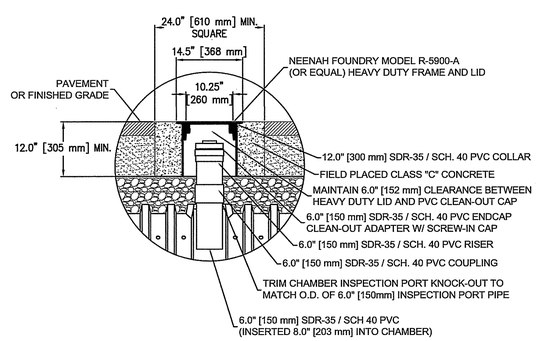
330XLHD 7.0

CULTEC RECHARGER 330XLHD HEAVY DUTY PLAN VIEW



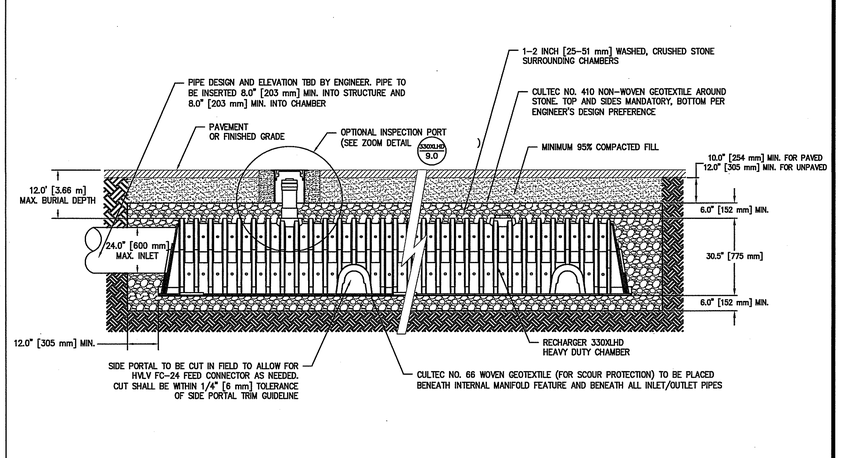
330XLHD 8.0

CULTEC HVLV FC-24 FEED CONNECTOR THREE VIEW



330XLHD 9.0

OPTIONAL INSPECTION PORT- ZOOM DETAIL



330XLHD 10.0

CULTEC INTERNAL MANIFOLD- OPTIONAL INSPECTION PORT DETAIL

CULTEC™
CULTEC, Inc.
Subsurface Stormwater Management Systems
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PH: (800) 4-CULTEC
FX: (203) 775-1462
tech@cultec.com

THIS DRAWING WAS PREPARED TO SUPPORT THE DESIGN ENGINEER FOR THE PROPOSED SYSTEM. IT IS THE ULTIMATE RESPONSIBILITY OF THE DESIGN ENGINEER TO ASSURE THAT THE STORMWATER SYSTEM'S DESIGN IS IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THAT THE CULTEC PRODUCTS ARE DESIGNED IN ACCORDANCE WITH CULTEC'S MINIMUM REQUIREMENTS. CULTEC INC. DOES NOT APPROVE PLANS, SIZING, OR SYSTEM DESIGNS. THE DESIGNING ENGINEER IS RESPONSIBLE FOR ALL DESIGN DECISIONS.

RECHARGER 330XLHD
DETAIL SHEET
TRAFFIC APPLICATION

CULTEC RECHARGER® 330XLHD	
PROJECT NO: –	DATE: 02/2016
DESIGNED BY: CULTEC, INC	DRAWN BY: TECH
SCALE: N.T.S.	SHEET NO: D-8