"VILLAGE GREEN"

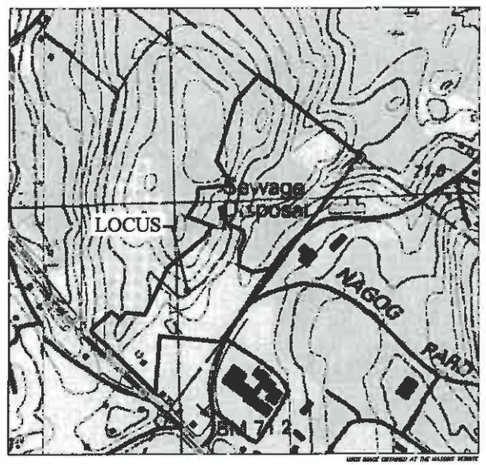
40B COMPREHENSIVE PERMIT AMENDED APPLICATION

at 15 Great Road

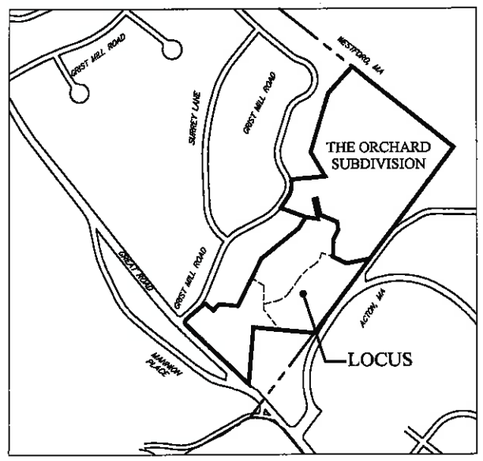
Littleton, Massachusetts

NOTE:

ALL SUPPLEMENTAL DATA SUBMITTED IN CONJUNCTION WITH THIS 40B COMPREHENSIVE PERMIT APPLICATION AS REQUIRED BY THE LITTLETON ZONING BOARD OF APPEALS IS HEREBY INCORPORATED AS PART OF THE PLAN SET. THIS PLAN, ITS SUPPORTING DOCUMENTATION AND FORM WORK ARE SUBMITTED PURSUANT TO THE PROVISIONS OF THE TOWN OF LITTLETON'S ZONING BOARD OF APPEALS MODEL RULES FOR THE ISSUANCE OF A COMPREHENSIVE PERMIT AND MASSACHUSETTS GENERAL LAW, CHAPTER 40B.



LOCUS
SCALE: 1" = 600'



LOCUS
SCALE: 1" = 600'

APPLICANT:
Fifteen Great Road II LLC
200 Baker Avenue–Suite 303
Concord, MA 01742

OWNER:
Fifteen Great Road II LLC
C/O Omni properties, LLC
200 Baker Ave, Suite 303
Concord, MA 01742

PLANNER, LANDSCAPE ARCHITECT, CIVIL ENGINEER & SURVEYOR:
Places Associates, Inc.
256 Great Road, Suite 4
Littleton, MA 01460

ARCHITECTS:
David M. White, Architect
54 Todd Farm Lane
P.O.Box 817
New London, NH 03257

Artform Architecture, Inc.
580 Greenland Road
Portsmouth, NH 03801

LITTLETON ASSESSOR DATA:
MAP & PARCEL: MAP U1 PARCELS 2–0, 6–0 AND 32–20.

REFERENCES:
MIDDLESEX SOUTH REGISTRY OF DEEDS
BK 62302 PG 405
BK 62302 PG 407
BK 62302 PG 409

ZONING
R–RESIDENTIAL

SITE DOES NOT CONTAIN ANY FLOOD HAZARD ZONE PER FLOOD INSURANCE RATE MAP 25017C243E PANEL 243 OF 656 EFFECTIVE JUNE 4, 2010.

SITE IS NOT WITHIN A LITTLETON AQUIFER OR WATERSHED PROTECTION OVERLAY DISTRICT.

SHEET INDEX

GENERAL REVISION NOTE:
PREVIOUS PLAN DATES:
DEC 4, 2012–MINOR REVISIONS
DEC 17, 2013–GENERAL REVISION

DUE TO EXTENSIVE REVISIONS, THESE PLANS SUPERCEDE ALL PREVIOUS PLANS AND ARE DATED FEB 4, 2014 TO AVOID CONFUSION.

PERMIT SET
NOT FOR CONSTRUCTION

COVER SHEET
LOCATION: 15 GREAT ROAD
TOWN: LITTLETON, MASSACHUSETTS
PREPARED FOR:
FIFTEEN GREAT ROAD II LLC
SCALE: AS SHOWN DATE: FEB 4, 2014

Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

PROJECT No.: 11–6303A PLAN No. 6303A CP–1

SEE DETAIL "A"

PLAN BOOK 776 PLAN 23

CB/DH FND.

CB/DH FND.

CB/DH FND.

GRIST MILL ROAD
PUBLIC ~ 50' WIDE

N20°33'11"E
92.90'

R=374.00'
L=167.10'

L=125.84'

CB/DH FND.

CB/DH FND.

N46°09'11"E
131.34'
(REC. 130.10')

L=41.27'

R=31.83'
L=50.01'

S49°53'06"E
110.07'

Lot 20-B

N43°19'36"E
75.00'

S8°02'59"E
174.86'

S51°00'53"E
302.95'

FOR REGISTRY USE ONLY

N/F
JEFFREY A. & LANETTE M. SUNDQUIST
BK. 33,463
PG. 586

N/F
PAUL J. & CYNTHIA M. AVELLA
BK. 42,576
PG. 535

N/F
JOHN P. & CARRIE A. BERGERON
BK. 45,849
PG. 249

N/F
THOMAS C. & DARA E. FURLONG
BK. 41,320
PG. 103

N/F
LITTLETON LAND CORPORATION
BK. 28,882
PG. 477

N/F
STEVEN & PATRICIA WOJTASZEK
BK. 32,195
PG. 394

DETAIL "A"
NOT TO SCALE

(RECORD)
R=31.83'
L=50.53'

R=31.83'
L=50.01'

N2°07'5."E
1.95'

CB/DH FND.

131.34'
N46°09'11"E
(RECORD 130.10')

N40°05'17"E
2.03'

CB/DH FND.

GRIST MILL ROAD
PUBLIC ~ 50' WIDE

N31°31'28"E
94.68'

R=195.85'
L=181.83'

R=382.83'
L=25.00'

N 70°20'17" W
235.79'

The Orchard Subdivision

LOCUS MAP
SCALE: 1"=1000'

N59°02'03"E
33.60'

N04°11'44"W
222.53'

209.97'
S04°11'44"E

IRON ROD FND.

S 83°13'32" E
124.40'

N31°23'20"E
115.40'

N50°11'00"E
21.94'

N49°57'17"E
60.36'

N49°32'18"E
124.03'

N48°39'35"E
69.01'

N49°05'51"E
44.46'

N49°58'37"E
106.67'

L19

L20

DH'S FND.

N24°16'58"E
39.70'

L18

DH'S FND.

L17

15.07'
N20°18'10"E

82.33'
N23°28'26"E

36.66'
N22°18'49"E

N 59°29'24" W
127.26'

96.17'
N25°13'44"E

53.30'

149.47'

87.91'
N23°11'40"E

76.42'
N23°47'56"E

Lot 1
7.03± Acres
R=0.55

Lot 2
6.82± Acres
R=0.56

N00°18'20"W
213.29'

169.39'

120.84'
S 74°43'22" W

CHD. BRG.
S54°16'18"W
131.38'

L=134.21'
R=188.00'

142.89'
S 33°49'14" W

CHD. BRG.
S45°59'10"W
184.61'

L=186.00'
R=438.00'

CHD. BRG.
S31°54'51"W
132.63'

L=137.38'
R=150.00'

N71°13'05"W
105.90'

156.55'
S 01°21'57" W

S65°06'53"E
136.70'

N78°11'18"E
213.71'

S67°48'42"E
140.45'

S21°54'05"W
44.43'

S31°00'28"W
48.24'

72.32'
S08°06'02"E

The Orchard Subdivision

GREAT ROAD (ROUTE 2A & 119)
PUBLIC ~ VARIABLE WIDTH

L=245.47'
R=4000.00'

569.61'

525.31'

N47°23'26"W
44.30'

SB FND.

SB FND.

508.90'
S 03°19'42" W

N 85°51'14" W
232.38'

N 38°52'40" W
232.55'

DH FND.

N 86°05'30" W
165.01'

98.17'
N 84°24'42" W

43.54'
N83°26'04"W

18.39'
N83°26'04"W

S 27°31'15" W
1.00'

S35°55'07"W
166.73'

662.55'
S 35°55'07" W

ACCESS AND UTILITY EASEMENT
(EXISTING)

N/F
ELAINE M. & JOHN LINDGREN
TRUSTEES OF LINDGREN
GREAT ROAD REALTY TRUST
BK. 45,713 PG. 243

N/F
KOLL BREN FUND VI, L.P.
BK. 30,821 PG. 557

LITTLETON
ACTON

NAGOG PARK

Parcel A

LINE TABLE		
LINE	LENGTH	BEARING
L1	26.73'	N07°41'06"E
L2	22.10'	N03°30'13"E
L3	6.92'	N04°21'09"E
L4	7.59'	N06°35'00"W
L5	13.91'	N05°12'49"E
L6	6.68'	N03°12'52"W
L7	72.46'	N03°59'26"E
L8	42.25'	N03°41'40"E
L9	21.07'	N02°13'12"E
L10	17.55'	N06°47'39"E
L11	21.98'	N01°12'56"E
L12	71.33'	N04°00'43"E
L13	23.27'	N03°40'23"E
L14	15.73'	N19°27'15"E
L15	3.99'	N62°15'45"W
L16	7.50'	N10°28'44"E
L17	11.25'	N19°49'16"E
L18	4.25'	N22°18'58"E
L19	15.00'	N5 1°55'46"E
L20	7.17'	N47°48'19"E

LEGEND:
- BOUND FOUND
- IRON PIPE OR PIN FOUND
- DRILL HOLE FOUND
- STONEWALL

CERTIFICATIONS

I CERTIFY THAT THE PREPARATION OF THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

PROFESSIONAL LAND SURVEYOR

DATE:

SCALE: 1 INCH = 60 FEET
0 30 60 120 180
GRAPHIC SCALE

OWNERS:
FIFTEEN GREAT ROAD II, LLC
BOOK 62302, PAGE 405
BOOK 62302, PAGE 407
BOOK 62302, PAGE 409

LITTLETON ASSESSOR'S DATA:
MAP: 001
PARCELS: 2-0,6-0,1-27,1-28,1-56,32-17, 32-18, 32-19,32-20

ZONING:
R-RESIDENTIAL

Littleton Zoning Board of Appeals

APPROVAL UNDER THE SUBDIVISION CONTROL LAW NOT REQUIRED

DATE OF APPROVAL:

DATE OF ENDORSEMENT:

NO DETERMINATION AS TO THE COMPLIANCE WITH ZONING OR LAND USE REGULATIONS IS HEREBY MADE OR INTENDED.

PLAN OF LAND
LOCATION: 15 GREAT ROAD
TOWN: LITTLETON, MASSACHUSETTS
PREPARED FOR:
FIFTEEN GREAT ROAD II LLC

SCALE: 1"=60' DATE: DECEMBER. 4, 2013

Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
250 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0333 Ph.
978.486.0447 Fax
places1.societ...com

PROJECT No.: 11-6303 PLAN No. 6303A-ANR

GENERAL NOTES:

1. PRIOR TO THE PREPARATION OF BIDS AND/OR THE INITIATION OF CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN AND CAREFULLY EXAMINE THIS PLAN SET, RELATED CONSTRUCTION PLAN SETS FROM OTHER PROFESSIONAL DISCIPLINES, CONSTRUCTION SPECIFICATIONS, MANUFACTURERS INFORMATION AND ANY APPLICABLE PERMIT REQUIREMENTS/CONDITIONS OF APPROVAL FOR THE PROJECT. SEE NOTE #4 BELOW, AS IT RELATES TO THIS REQUIREMENT.

2. THE EXISTING UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. DIG SAFE AND THE APPROPRIATE UTILITY COMPANIES SHALL BE CONTACTED BY THE CONTRACTOR PRIOR TO THE INITIATION OF CONSTRUCTION OR ANY EXCAVATION.

3. NOT ALL UTILITIES WERE ABLE TO BE LOCATED BY RECORD INFORMATION, SITE SURVEYS OR UTILITY LOCATOR SERVICES. THE DESIGN ENGINEER AND BASE PLAN SURVEYOR DO NOT ACCEPT ANY RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OR SUBSURFACE STRUCTURES WHICH ARE OMITTED OR INACCURATELY SHOWN. PRIOR TO THE INITIATION OF WORK, THE CONTRACTOR SHALL VERIFY THE LOCATION/ELEVATION OF EXISTING UTILITIES SHOWN ON THE PLAN.

4. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY UPON THE DISCOVERY OF ANY DISCREPANCY BETWEEN THE LOCATION/ELEVATION OF ANY EXISTING UTILITIES SHOWN ON THE PLANS AND THAT WHICH IS FOUND IN THE FIELD.

5. THE CONTRACTOR SHALL RETAIN THE SERVICES OF A REGISTERED PROFESSIONAL LAND SURVEYOR TO PROVIDE LAYOUT & CONTROL FOR THE DEVELOPMENT OF THE SITE.

6. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY UPON THE DISCOVERY OF ANY CONTRADICTORY, INCOMPLETE OR MISLABELED INFORMATION SHOWN ON THE PLANS OR PLANS PREPARED BY OTHERS. THE CONTRACTOR SHALL ALLOW FOR ADEQUATE TIME FOR THE ENGINEER TO RESPOND/PROVIDE DIRECTION FOR THE PLAN DISCREPANCY.

7. ALL CONSTRUCTION UNDER AREAS SUBJECT TO VEHICULAR TRAFFIC SHALL BE CONSTRUCTED TO WITHSTAND A DIRECT AASHTO H20 DESIGN LOAD. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT ALL UTILITY/SITE IMPROVEMENT AREAS UNDER LANDSCAPED/NON-TRAFFIC BEARING AREAS FROM TEMPORARY CONSTRUCTION LOADS DURING CONSTRUCTION.

8. THE CONSTRUCTION SHOWN ON THESE PLANS REQUIRES AN ORDER OF CONDITIONS BE ISSUED BY THE LITTLETON CONSERVATION COMMISSION. THE CONTRACTOR SHALL OBTAIN A COPY OF SUCH ORDERS OF CONDITIONS PRIOR TO ANY SITE-RELATED DISTURBANCES AND SHALL COMPLY WITH APPROPRIATE CONDITIONS FOR CONSTRUCTION.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL ADJACENT PROPERTY FROM DAMAGE. ALL DAMAGES BY THE CONTRACTOR OR SUBCONTRACTORS SHALL BE REPAIRED AT NO COST TO THE OWNER. PRE CONSTRUCTION PHOTOS SHALL BE TAKEN AND COPIES SUPPLIED TO THE ENGINEER, PRIOR TO ANY SITE CONSTRUCTION AND OR DISTURBANCE.

10. THE CONTRACTOR SHALL MAINTAIN AND PROTECT ALL EXISTING SURVEY MONUMENTS (BOUNDS, PINS, PIPES, DRILL HOLES, ETC.) THROUGHOUT ALL PHASES OF CONSTRUCTION. ANY DISTURBED MONUMENTS SHALL BE REPLACED BY A REGISTERED PROFESSIONAL LAND SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SHOP DRAWINGS OF PRODUCTS/MATERIALS TO THE ENGINEER AND/OR THE LOCAL APPROVING AUTHORITY AS REQUIRED IN THE CONSTRUCTION DOCUMENTS OR IF REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION OVER THE PRODUCT. ADEQUATE TIME SHALL BE ALLOWED FOR THE SHOP DRAWINGS TO BE REVIEWED AND RETURNED TO THE CONTRACTOR PRIOR TO ORDERING THE SPECIFIED PRODUCTS/MATERIALS.

12. ALL SUPPLEMENTAL DATA SUBMITTED IN CONJUNCTION WITH THIS PLAN SET AS REQUIRED BY THE APPROPRIATE REGULATIONS IS HEREBY INCORPORATED AS PART OF THE PLAN SET.

13. ALL PERMANENT BOUNDARY AND SURVEY MONUMENTS SHALL BE INSTALLED AFTER THE COMPLETION OF ALL HEAVY SITE WORK.

14. NO DEBRIS, JUNK, RUBBISH OR OTHER WASTE MATERIALS SHALL BE BURIED, BURNED OR OTHERWISE DISPOSED OF WITHIN THE LIMITS OF THE PROJECT. ALL WASTE, TRASH AND DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE LAWS.

15. UNLESS OTHERWISE SPECIFIED OR SHOWN, ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM THE THE STANDARDS DESCRIBED IN THE TOWN OF LITTLETON'S SUBDIVISION CONTROL REGULATIONS. IF NOT SPECIFIED THEREIN, SUCH CONSTRUCTION SHALL THEN CONFORM TO THE REQUIREMENTS OF THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MDOT, FORMERLY MASSHIGHWAY) STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST VERSION.

16. THE CONTRACTOR SHALL APPLY FOR AND OBTAIN, A PERMIT FROM MASS HIGHWAY TO CONSTRUCT WITHIN A PUBLIC WAY FOR WORK WITHIN GREAT ROAD, STATE ROUTE 2A. CONTROLLED DENSITY FILL SHALL BE USED AS PAVEMENT BASE COURSE WITHIN THE STATE HIGHWAY LAYOUT.

17. WETLANDS DELINEATION PERFORMED BY OXBOW ASSOCIATES, INC OF ACTON, MA IN APRIL 2011. LOCATIONS OF FLAGS WERE FIELD-SURVEY LOCATED BY PLACES ASSOCIATES, INC. THE FINAL WETLANDS LIMITS ARE SUBJECT TO REVIEW AND APPROVAL BY THE LITTLETON CONSERVATION COMMISSION, SEE NOTE #8 ABOVE.

SITE WORK NOTES:

1. THE LIMITS OF WORK SHALL BE FIELD ESTABLISHED PRIOR TO INITIATION OF ANY CONSTRUCTION, SITE EXPLORATIONS OR EARTHEN DISTURBANCE.

2. EROSION CONTROLS SHALL BE IMPLEMENTED PRIOR TO SITE CLEARING OR DISTURBANCE. SEE EROSION AND SEDIMENTATION CONTROL PLAN.

3. EXCEPT FOR THE SETUP FOR ENTRY TO THE SITE, NO CONSTRUCTION OR CONTRACTOR'S VEHICLES SHALL BE PARKED ON GRIST MILL ROAD OR GREAT ROAD, UNLESS COORDINATED WITH ADJACENT PROPERTY OWNERS. ALL CONSTRUCTION STAGING, STOCKPILE AND PARKING AREAS SHALL BE ONSITE.

4. LOAM SHALL BE STOCKPILED FOR RE-USE ON THE SITE TO THE EXTENT PRACTICAL, SEE EROSION AND SEDIMENTATION CONTROL PLAN.

5. NO DEBRIS, JUNK, RUBBISH OR OTHER WASTE MATERIALS SHALL BE BURIED, BURNED OR OTHERWISE DISPOSED OF WITHIN THE LIMITS OF THE PROJECT. ALL WASTE, TRASH AND DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE LAWS. THE SITE SHALL BE KEPT IN A NEAT AND ORDERLY FASHION.

6. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TRENCH OPERATIONS PERMIT PURSUANT TO THE REQUIREMENTS OF THE TOWN OF LITTLETON AND 520 CMR 14.00 TRENCH SAFETY REGULATIONS.

MATERIAL DEFINITIONS:

BITUMINOUS CONCRETE PAVEMENT — ALL SITE PAVING SHALL BE CLASS 1 BITUMINOUS CONCRETE. MIXTURES SHALL BE COMPOSED OF MINERAL AGGREGATE, MINERAL FILLER (IF REQUIRED) AND BITUMINOUS MATERIAL. THE MIXTURE MAY INCLUDE RECLAIMED ASPHALT PAVEMENT AT THE OPTION OF THE CONTRACTOR AND AS PRE-APPROVED BY LITTLETON HIGHWAY DEPARTMENT.

THE MIXTURE COMPOSITION AND TOLERANCES SHALL MEET THE SPECIFICATIONS FOR BINDER COURSE AND TOP COURSE MIXTURES AS SPECIFIED IN TABLE A OF SSHB M3.11.01. IF RECLAIMED ASPHALT PAVEMENT (RAP) IS USED IN THE MIXTURE, THE PROPORTION OF RAP TO VIRGIN AGGREGATE SHALL BE LIMITED TO A MAXIMUM OF 40% FOR DRUM MIX PLANTS AND 20% FOR MODIFIED BATCH PLANTS.

CAST IN PLACE CONCRETE — ALL SITE CAST IN PLACE CONCRETE AND RELATED REINFORCING SHALL MEET THE REQUIREMENTS OF THE MASSACHUSETTS STATE BUILDING CODE, THE AMERICAN CONCRETE INSTITUTE (ACI) AND THE AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM) FOR PRODUCT MATERIALS, FORM WORK, PLACEMENT AND CURING. ALL SITE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI UNLESS OTHERWISE REQUIRED IN THE CONSTRUCTION DOCUMENTS.

CONTROLLED DENSITY FILL (CDF) — CONTROL DENSITY FILL SHALL BE A FLOWABLE, SELF-CONSOLIDATING, RIGID HARDENING, LOW DENSITY MATERIAL THAT CAN SUBSTITUTE FOR COMPACTED GRAVELS FOR BACKFILLS, FILLS AND STRUCTURAL FILLS. CDF SHALL BE EXCAVATABLE BY HAND TOOLS AND/OR SMALL EQUIPMENT WHEN PLACED AND CURED. CDF SHALL MEET THE REQUIREMENTS OF SSHB M4.08.08, TYPE 2E, AND SHALL MEET THE FOLLOWING REQUIREMENTS:

A. CDF IS TO BE BATCHED AT A READY MIX PLANT AND IS TO BE USED AT A HIGH OF "VERY HIGH SLUMP FROM 10" TO 12". IT SHALL BE FLOWABLE AND REQUIRE NO VIBRATION AFTER IT HAS BEEN PLACED.

B. CDF SHALL BE A MIXTURE OF PORTLAND CEMENT, FLYASH, SAND AND WATER DESIGNED TO MEET THE CDF REQUIREMENTS. HIGH AIR ENTRAINMENT MAY BE SUBSTITUTED FOR FLYASH WITH AN ADMIXTURES (25%) ADJUSTMENT IN SAND CONTENT.

C. CDF MUST MEET THE FOLLOWING STRENGTH REQUIREMENTS:
-28 DAY COMPRESSIVE STRENGTH: 30-80 PSI
-90 DAY COMPRESSIVE STRENGTH: 100 PSI MAX

CRUSHED STONE — CRUSHED STONE SHALL BE THE SIZE AS INDICATED ON THE PLANS. THE STONE SHALL BE FROM A STONE QUARRY THAT PRODUCES HARD, ANGULAR DURABLE WASHED STONE FREE FROM DEBRIS AND ORGANIC MATERIALS. THE STONE SHALL MEET THE REQUIREMENTS OF SSHB M2.01.0

DENSE GRADED CRUSHED STONE — DENSE GRADED CRUSHED STONE SHALL CONSIST OF THE COMBINATION OF CRUSHER-RUN COARSE AGGREGATES (MEETING SSHB M3.01.0) AND FINE AGGREGATES OF NATURAL SAND OR STONE SCREENING UNIFORMLY PREMIXED WITH A PREDETERMINED QUANTITY OF WATER. COARSE AGGREGATE SHALL CONSIST OF HARD, DURABLE PARTICLES OR FRAGMENTS OF STONE. MATERIALS THAT BREAK UP WHEN ALTERNATELY FROZEN AND THAWED OR WETTED AND DRIED SHALL NOT BE USED. FINE AGGREGATE SHALL CONSIST OF NATURAL OR CRUSHED SAND. THE GRADATION/MATERIAL SHALL COMPLY WITH THE SPECIFICATIONS OF SSHB M2.01.7

GLACIAL TILL — A. GLACIAL TILL: NATURAL INORGANIC SOLID APPROVED BY THE ENGINEER AND MEETING THE FOLLOWING REQUIREMENTS:

A. IT SHALL BE FREE OF ORGANIC OR OTHER WEAK OR COMPRESSIBLE MATERIALS, FROZEN MATERIALS AND STONES GREATER THAN TWO INCHES IN MAXIMUM DIMENSION.

B. IT SHALL BE A SILT LOAM AS DEFINED BY THE U.S. DEPARTMENT OF AGRICULTURE SOIL TEXTURAL CLASSIFICATION.

C. THE SOIL SHALL CONSIST OF GREATER THAN 50% SILT, 12% TO 27% CLAY, OR 30% TO 80% SILT AND LESS THAN 12% CLAY.

GRAVEL BORROW — GRAVEL BORROW SHALL CONSIST OF INERT MATERIAL THAT IS HARD, DURABLE STONE AND COURSE SAND, FREE FROM CLAY, SURFACE COATINGS, ORGANIC AND DELETERIOUS MATERIAL. ALL GRAVEL BORROW SHALL MEET THE REQUIREMENTS OF SSHB M1.03.0. MAXIMUM STONE SIZE SHALL BE AS FOLLOWS:

TYPE A: 6" LARGEST DIMENSION
TYPE B: 3" LARGEST DIMENSION
TYPE C: 2" LARGEST DIMENSION

LOAM (BORROW) — LOAM SHALL CONSIST OF NATURAL TOPSOIL, FREE FROM SUB-SOIL, OBTAINED FROM AN AREA WHICH HAS NEVER BEEN STRIPPED. LOAM SHALL BE OF UNIFORM QUALITY, FREE FROM HARD CLODS, STIFF CLAY, HARDPAN, SOD, PARTIALLY DISINTEGRATED STONE, LIME, CEMENT, ASHES, SLAG, CONCRETE, TAR RESIDUE, TARRED PAPER, BOARDS, CHIPS OR ANY OTHER UNDESIRABLE MATERIAL.

LOAM SHALL CONTAIN BETWEEN 5.0 AND 7.5 PERCENT ORGANIC MATTER AS DETERMINED BY LOSS ON IGNITION OF A MOISTURE-FREE SAMPLE DRIED IN ACCORDANCE WITH THE CURRENT METHOD OF THE ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS.

THE ACIDITY RANGE OF THE LOAM SHALL BE PH 6.0 TO PH 7.5 INCLUSIVE.

THE MECHANICAL ANALYSIS OF THE SOIL SHALL BE AS FOLLOWS:

U.S. SIEVE SIZE #	PERCENT PASSING	
NUMBER	MINIMUM	MAXIMUM
1 INCH	100%	
¼ INCH	97%	100%
NO. 100 (SAND)	40%	60%
NO. 100 (SILT & CLAY)	40%	60%

ORDINARY BORROW — ORDINARY BORROW SHALL CONSIST OF MATERIAL NOT SPECIFIED AS ANY OTHER EARTHEN MATERIAL. ORDINARY BORROW SHALL BE WELL GRADED, NATURAL, INORGANIC MATERIAL ACCEPTABLE TO THE ENGINEER FOR THE GENERAL FILLING TO THE SPECIFIED SUB-GRADE. THE MATERIAL SHALL MEET THE FOLLOWING REQUIREMENTS:

A. IT SHALL BE FREE OF ORGANIC OR OTHER WEAK OR COMPRESSIBLE MATERIAL, OF FROZEN MATERIALS AND OF STONES LARGER THAN 6 INCHES IN MAXIMUM DIMENSION.

B. IT SHALL BE OF SUCH NATURE & CHARACTER THAT IT CAN BE COMPACTED TO THE SPECIFIED DENSITIES IN A REASONABLE AMOUNT OF TIME.

C. IT SHALL BE FREE OF HIGHLY PLASTIC CLAYS, OF ALL MATERIALS SUBJECT TO DECAY, DECOMPOSITION, AND OF CINDERS OR OTHER MATERIALS WHICH WILL CORRODE PIPING OR OTHER BURIED MATERIALS.

D. IT SHALL HAVE A MAXIMUM DRY DENSITY OF NOT LESS THAN 100 POUNDS PER CUBIC FOOT AND LESS THAN 40 % OF THE MATERIAL SHALL PASS THE NUMBER 200 SIEVE.

E. EXCAVATED ROCK & BOULDERS SMALLER THAN ONE CUBIC YARD IN SIZE MAY BE USED IN FILL AREAS UNDER LAWNS ONLY, PROVIDED THEY ARE A MINIMUM OF 24 INCHES BELOW THE SUBGRADE, PLACED AND COMPACTED IN LAYERS WITH NO VOIDS AND ALL INTERSTICES FILLED.

RIP RAP — RIP-RAP STONE SHALL BE SOUND, DURABLE ROCK, ANGULAR IN SHAPE. RIP RAP SHALL BE FREE FROM DEBRIS, ORGANIC OR DELETERIOUS MATERIAL. ROUNDED STONES, BOULDERS, SANDSTONE OR SIMILAR SOFT STONE OR RELATIVELY THIN SLABS WILL NOT BE PERMITTED UNLESS SPECIFICALLY PERMITTED BY THE DESIGN ENGINEER. ALL RIP RAP MATERIALS SHALL MEET THE REQUIREMENTS OF SSHB M2.02.0.

SAND BORROW — SAND BORROW SHALL CONSIST OF CLEAN INERT, HARD, DURABLE GRAINS OF QUARTZ OR OTHER HARD DURABLE ROCK, FREE FROM LOAM OR CLAY, SURFACE COATINGS AND DELETERIOUS MATERIALS. THE ALLOWABLE AMOUNT OF MATERIAL PASSING A #200 SIEVE AS DETERMINED BY AASHTO T 11 SHALL NOT EXCEED 10% MASS. ALL SAND BORROW SHALL MEET THE REQUIREMENTS OF SSHB M1.04.0.

COMPACTION TESTING — ALL EARTHEN MATERIALS SHALL BE COMPACTED TO THE DRY DENSITY INDICATED IN THE CONSTRUCTION DOCUMENTS AND/OR AS IS REQUIRED BY CODE OR REGULATION. MAXIMUM DRY DENSITY SHALL BE DETERMINED FROM A SAMPLE OF THE MATERIAL TO BE USED AND TESTED IN ACCORDANCE WITH THE MODIFIED PROCTOR DRY DENSITY TEST AS DEFINED IN ASTM D1557, METHOD C.

AREAS THAT WERE TESTED AND FOUND TO BE INSUFFICIENTLY COMPACTED SHALL BE RE-TESTED AFTER THE ADDITIONAL COMPACTION HAS BEEN COMPLETED.

ABBREVIATIONS

ABBREVIATION	DEFINITION
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ABR	ABBREVIATION
AR-1	ACCESSIBLE RAMP - TYPE 1
AR-2	ACCESSIBLE RAMP - TYPE 2
AR-3	ACCESSIBLE RAMP - TYPE 3
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
B&B	BALL & BURLAP
BC	BOTTOM CURB ELEVATION
BIT. CONC.	BITUMINOUS CONCRETE
BLDG	BUILDING
BM	BENCHMARK
BR	BOTTOM RAMP ELEVATION
CAL	CALIPER
CB	CONCRETE BOUND
CF	CUBIC FOOT
CI	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
CONC.	CONCRETE
CTB	CATCH BASIN
CY	CUBIC YARD
DH	DRILL HOLE
DI	DUCTILE IRON PIPE
DIA	DIAMETER
DMH	DRAIN MANHOLE
ELEV	ELEVATION
EMH	ELECTRIC MANHOLE
EX.	EXISTING
EXT.	EXTERIOR
FDN	FOUNDATION
FES	FLARED END SECTION
FFE	FINISH FLOOR ELEVATION
FG	FINISH GRADE
FND	FOUND
FSB	FIELD STONE BOUND
FT.	FEET - LINEAR MEASURE
GAL	GALLON
GPM	GALLONS PER MINUTE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HP	HIGH POINT
HT	HEIGHT
I. PIN	IRON PIN
I. PIPE	IRON PIPE
ID	INSIDE DIAMETER
INV.	PIPE INVERT ELEVATION
LP	LOW POINT
MAX	MAXIMUM
MHB	MASS HIGHWAY BOUND
MIN	MINIMUM
MUTCD	MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES
OC	ON CENTER
OD	OUTSIDE DIAMETER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
P&P	PLUG & PIN
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE PIPE
RCP	ROUND CONCRETE PIPE
R & S	REMOVE & STOCKPILE ITEM
RET'D	RETAINED
SB	STONE BOUND
SMH	SEWER MANHOLE
SPU	SPREAD
S&S	STAKE & STONE
SSHB	STANDARD SPECIFICATIONS OF HIGHWAYS & BRIDGES, THE COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS
STV	SLOPED TO VERTICAL CURB TRANSITION SEGMENT
TBM	TEMPORARY BENCH MARK
TC	TOP OF CURB ELEVATION
TMH	TELEPHONE MANHOLE
TOC	TOP OF CONCRETE FOUNDATION ELEVATION
TR	TOP OF RAMP ELEVATION
TYP	TYPICAL FOR ALL ITEMS SHOWN
UP	UTILITY POLE
VGCTS	VERTICAL GRANITE CURB TRANSITION SEGMENT

MATERIAL DEFINITIONS (CONT.):

STRUCTURAL FILL — STRUCTURAL FILL IS FILL OR REPLACEMENT SOIL MATERIALS LOCATED BELOW AND ADJACENT TO ALL STRUCTURAL FOOTINGS, SLABS AND BUILDINGS, (AS DEFINED BY THE MASSACHUSETTS BUILDING CODE) EXTENDING OUT TEN FEET (10'-0") FROM THE EXTERIOR LIMITS OF SUCH STRUCTURES.

STRUCTURAL FILL SHALL MEET THE FOLLOWING REQUIREMENTS - IN THE ORDER OF PRIORITY:

1. A SITE SPECIFIC GEOTECHNICAL REPORT, SPECIFICATION OR REQUIREMENT PREPARED BY A MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER.
2. A STRUCTURAL ENGINEERS REPORT, SPECIFICATIONS OR REQUIREMENTS.
3. AN ARCHITECT'S REPORT, SPECIFICATION OR REQUIREMENTS.
4. CRUSHED STONE BEING 3/4" TO 1 1/2" DIAMETER, MEETING SSHB M2.01.0

NOTE: ALL SUPPLEMENTAL DATA SUBMITTED IN CONJUNCTION WITH THIS PROJECT AS REQUIRED BY THE TOWN OF LITTLETON REGULATIONS IS HEREBY INCORPORATED AS PART OF THE PLAN SET. THIS PLAN, ITS SUPPORTING DOCUMENTATION AND FORM-WORK ARE SUBMITTED PURSUANT TO THE PROVISIONS OF THE TOWN OF LITTLETON'S SUBDIVISION REGULATIONS AND MASSACHUSETTS GENERAL LAW, CHAPTER 81 AND PURPOSEFULLY OBTAINS THE PROTECTIONS PROVIDED THEREIN.

GENERAL REVISION NOTE:

PREVIOUS PLAN DATES:
DEC 4, 2012-MINOR REVISIONS
DEC 17, 2013-GENERAL REVISION

DUE TO EXTENSIVE REVISIONS, THESE PLANS SUPERCEDE ALL PREVIOUS PLANS AND ARE DATED FEB 4, 2014 TO AVOID CONFUSION.

LEGEND

	EXISTING	PROPOSED
INDEX CONTOUR	100	100
INTERMEDIATE CONTOUR	99	99
SPOT GRADE	× 100.50	×100.50
STONE WALL		
EDGE OF WOODS		
EDGE OF WATER BODY		
100 YEAR FLOOD LINE		
EDGE OF WETLAND		
25' BUFFER		
50' BUFFER		
75' BUFFER		
100' BUFFER		
WETLAND		
WETLAND FLAG	△ 02-19	
RIVERFRONT		
100' RIVER BUFFER		
200' RIVER BUFFER		
SILTATION BARRIER		
BUILDING SETBACK LINE		
WELL		
TREE		
FLAGPOLE		
BOUND		
DRILL HOLE		
IRON PIN		
BENCHMARK		
PERC TEST		
TEST PIT		
SOIL BORING		
EDGE OF GRAVEL		
EDGE OF WALK		
EXPANSION JOINT		
CONSTRUCTION JOINT		
EDGE OF PAVEMENT		
CAPE COD BERM		
BIT. CONC. (TYPE 3)		
CONCRETE CURB		
VERT. GRANITE CURB		
SLOPED GRANITE CURB		
STOCKADE FENCE		
CHAIN LINK FENCE		
FENCE - OTHER		
FENCE GATE		
GUARD RAIL		
WOOD GUIDE RAIL		
ROOT BARRIER		
SIGN POST		
FOUNDATION DRAIN		
ROOF DRAIN		
DRAIN LINE		
DRAIN MANHOLE		
CATCHBASIN		
FLARED END IN/OUT		
CLEANOUT		
IRRIGATION LINE		
FIRE PROTECTION LINE		
WATER LINE		
WATER VALVE		
FIRE HYDRANT		
WATER SHUTOFF		
OVERHEAD WIRES		
UNDERGROUND WIRES		
GUY POLE		
UTILITY POLE		
GUY ANCHOR		
UTILITY BOX		
STREETLIGHT		
LAMP POST		
ELECTRIC MANHOLE		
TELEPHONE MANHOLE		
SEWER LINE		
SEWER FORCE MAIN		
LOW PRESSURE SEWER		
SEWER MANHOLE		
GAS LINE		
GAS VALVE		

PERMIT SET
NOT FOR CONSTRUCTION

VILLAGE GREEN NOTES AND LEGEND

LOCATION: 15 GREAT ROAD
TOWN: LITTLETON, MASSACHUSETTS
PREPARED FOR:

FIFTEEN GREAT ROAD LLC

SCALE: AS SHOWN DATE: FEB 4, 2014

Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

PROJECT No.: 11-6303A PLAN No. 6303A CP-2

GRIST MILL ROAD

GREAT ROAD (ROUTE 2A # 119)

N/F JAMES R. VASH ANGELA MUNOZ-AVILA

N/F ANTHONY J. SLAVINSKY JERILYNN G. SLAVINSKY

N/F KIMBERLY A. CARUSO

N/F MICHAEL D. SLUKERBERG JO ELLEN SLUKERBERG

N/F ROBERT J. MAIMONE MARY A. MAIMONE

N/F PHILLIP L. BUCKELLEW LISA F. BUCKELLEW

N/F DARYL K. BAKER ELAINE M. BAKER

PLAN BOOK 776 PLAN 23

N/F JEFFREY A. & LANETTE M. SUNDQUIST BK. 33,463 PG. 586

N/F PAUL J. & CYNTHIA M. AVELLA BK. 42,576 PG. 535

N/F JOHN P. & CARRIE A. BERGERON BK. 45,849 PG. 249

N/F DARA E. THOMAS C. & FURLONG BK. 41,320 PG. 103

N/F LITTLETON HOLDING REALTY TRUST BK. 28,882 PG. 477

N/F STEVEN & PATRICIA WOUTASZEK BK. 32,185 PG. 394

"THE ORCHARD" SUBDIVISION

N/F ELAINE M. & JOHN LINDGREN TRUSTEES OF LINDGREN GREAT ROAD REALTY TRUST BK. 45,713 PG. 243

POND

LEASE OFFICE/ CLUBHOUSE

POOL

PLAYGROUND AREA

STORAGE BUILDING

6 BAY GARAGE

BUILDING 1
48 Units
FF Elev=238.5±

7 BAY GARAGE

BUILDING 2
48 Units
FF Elev=239.75'

BUILDING 3
48 Units
FF Elev=241.0
GARAGE=230.0

20 SPACES - LAND BANK RESERVE

RECYCLING

N/F KOLL BREW FUND VI, L.P. BK. 30,861 PG. 057

LITTLETON
ACTON

N/F ALEVIZOS NAGOG LLC

FORMERLY DURKEE LANE

ACCESS AND UTILITY EASEMENT

NAGOG PARK

N/F NDWINROCK ACTON LLC

WESTFORD LA

PARKING SPACES:

LOT 1: 54
LOT 2: 64
LOT 3: 268+
(20 RESERVE)

GENERAL REVISION NOTE:

PREVIOUS PLAN DATES:
DEC 4, 2012–MINOR REVISIONS
DEC 17, 2013–GENERAL REVISION

DUE TO EXTENSIVE REVISIONS, THESE PLANS SUPERCEDE ALL PREVIOUS PLANS AND ARE DATED FEB 4, 2014 TO AVOID CONFUSION.

VILLAGE GREEN INDEX PLAN

LOCATION: 15 GREAT ROAD
TOWN: LITTLETON, MASSACHUSETTS
PREPARED FOR:
FIFTEEN GREAT ROAD II LLC

SCALE: 1"=60' *DATE:* FEB 4, 2014

Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

PROJECT No.: 11-6303A *PLAN No.* 6303A CP-3

PLAN BOOK 776 PLAN 23

GREAT ROAD (ROUTE 2A & 119)

MANNION PLACE

N/F
DIANNE M. LESSA

N/F
HOWARD E. ALLEN, JR.
PATRICIA J. ALLEN

N/F
TIMOTHY M. & HEIDI J.
WILEY

N/F
ELAINE M. & JOHN LINDGREN
TRUSTEES OF LINDGREN
GREAT ROAD REALTY TRUST
BK. 45,713 PG. 243

N/F
JEFFREY A. & LANETTE
M. SUNDQUIST BK.
33,463 PG. 586

N/F
PAUL J. & CYNTHIA M.
AVELLA
BK. 42,576 PG. 535

N/F
JOHN P. &
BERG
BK. 45,8

MORNING GLORY CIRCLE

BAXWOOD DRIVE

BUTTERCUP LANE

MINUTEMAN UTILITY LANTERN, TYP FOR 4

CARRIAGE HOUSE (8 CARS)

7 BAY GARAGE

BUILDING 1
48 Units
FF Elev=238±

PROPOSED SIGN
12 S.F. EACH SIDE

PROPOSED SIGN
21 S.F. EACH SIDE

12"X12"X10" TAPPING SLEEVE AND GATE

10" DICL

GENERAL REVISION NOTE:
PREVIOUS PLAN DATES:
DEC 4, 2012–MINOR REVISIONS
DEC 17, 2013–GENERAL REVISION

DUE TO EXTENSIVE REVISIONS, THESE PLANS SUPERCEDE ALL PREVIOUS PLANS AND ARE DATED FEB 4, 2014 TO AVOID CONFUSION.

PERMIT SET
NOT FOR CONSTRUCTION

VILLAGE GREEN
LAYOUT & UTILITIES
PLAN 1 OF 2

LOCATION: 15 GREAT ROAD
TOWN: LITTLETON, MASSACHUSETTS
PREPARED FOR:
FIFTEEN GREAT
ROAD II LLC

SCALE: 1"=40' DATE: FEB 4, 2014

Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

PROJECT No.: 11-6303A PLAN No. 6303A CP-4

N/F
JEFFREY A. & LANETTE M. SUNDQUIST BK. 33,463 PG. 586

PLAN BOOK 776 PLAN 23

N/F
PAUL J. & CYNTHIA M. AVELLA
BK. 42,576 PG. 535

N/F
JOHN P. & CARRIE A. BERGERON
BK. 45,849 PG. 249

N/F
DARA E. THOMAS C. & FURLONG
BK. 41,320 PG. 103

N/F
LITTLETON HOLDING REALTY TRUST
BK. 28,882 PG. 477

N/F
STEVEN & PATRICIA WOJTASZEK
BK. 32,195 PG. 394

"THE ORCHARD" SUBDIVISION

BASIN A

BASIN B

BASIN C

BASIN D

BASIN D-1

EXISTING FARM POND ELEV =232.2 7-24-12

BUILDING 1
48 Units
FF Elev=238±

BUILDING 2
48 Units
FF Elev=239.75'

BUILDING 3
48 Units
FF Elev=241.0
GARAGE=230.0

LEASE OFFICE CLUBHOUSE

POOL

PLAYGROUND AREA

STORAGE BUILDING

6 BAY GARAGE

7 BAY GARAGE

MAINTENANCE

WWTP

20 SPACES – LAND BANK RESERVE

RECYCLING

S34°37'06"W
353.22'

S 27°31'15" W
154.61'

420.64'

S36°25'45"W

FORMERLY DURKEE LANE

ACCESS AND UTILI

NACOG PARK

N/F
FUND VI, L.P.
PG. 557

GENERAL REVISION NOTE:
PREVIOUS PLAN DATES:
DEC 4, 2013–MINOR REVISIONS
DEC 17, 2013–GENERAL REVISION

DUE TO EXTENSIVE REVISIONS, THESE PLANS SUPERCEDE ALL PREVIOUS PLANS AND ARE DATED FEB 4, 2014 TO AVOID CONFUSION.

PERMIT SET
NOT FOR CONSTRUCTION

VILLAGE GREEN
LAYOUT & UTILITIES
PLAN 2 OF 2

LOCATION: *15 GREAT ROAD*
TOWN: *LITTLETON, MASSACHUSETTS*
PREPARED FOR:
FIFTEEN GREAT ROAD II LLC

SCALE: 1"=40' DATE: FEB 4, 2014

Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

PROJECT No.: 11-6303A PLAN No. 6303A CP-5

PLAN BOOK 776 PLAN 23

GREAT ROAD (ROUTE 2A & U19)

MANNION PLACE

HYSSOP LANE

MORNING GLORY CIRCLE

BOXWOOD DRIVE

SEE WETLANDS REPLICATION AND CROSSING PLANS AND DETAILS

BASIN A

BASIN B

BASIN C

EXISTING FARM POND ELEV =232.2 7-24-12

7 BAY GARAGE

PROPOSED SIGN 12 SF EACH SIDE

PROPOSED SIGN 21 SF EACH SIDE

LCTB RIM=238.5 12" INV=234.0

80' 12" HDPE, S=0.005 FT/FT TO FES=231.1

SEE MADOT ENTRANCE PLAN FOR CONSTRUCTION IN THIS AREA

GENERAL REVISION NOTE:
PREVIOUS PLAN DATES:
DEC 4, 2012–MINOR REVISIONS
DEC 17, 2013–GENERAL REVISION

DUE TO EXTENSIVE REVISIONS, THESE PLANS SUPERCEDE ALL PREVIOUS PLANS AND ARE DATED FEB 4, 2014 TO AVOID CONFUSION.

PERMIT SET
NOT FOR CONSTRUCTION

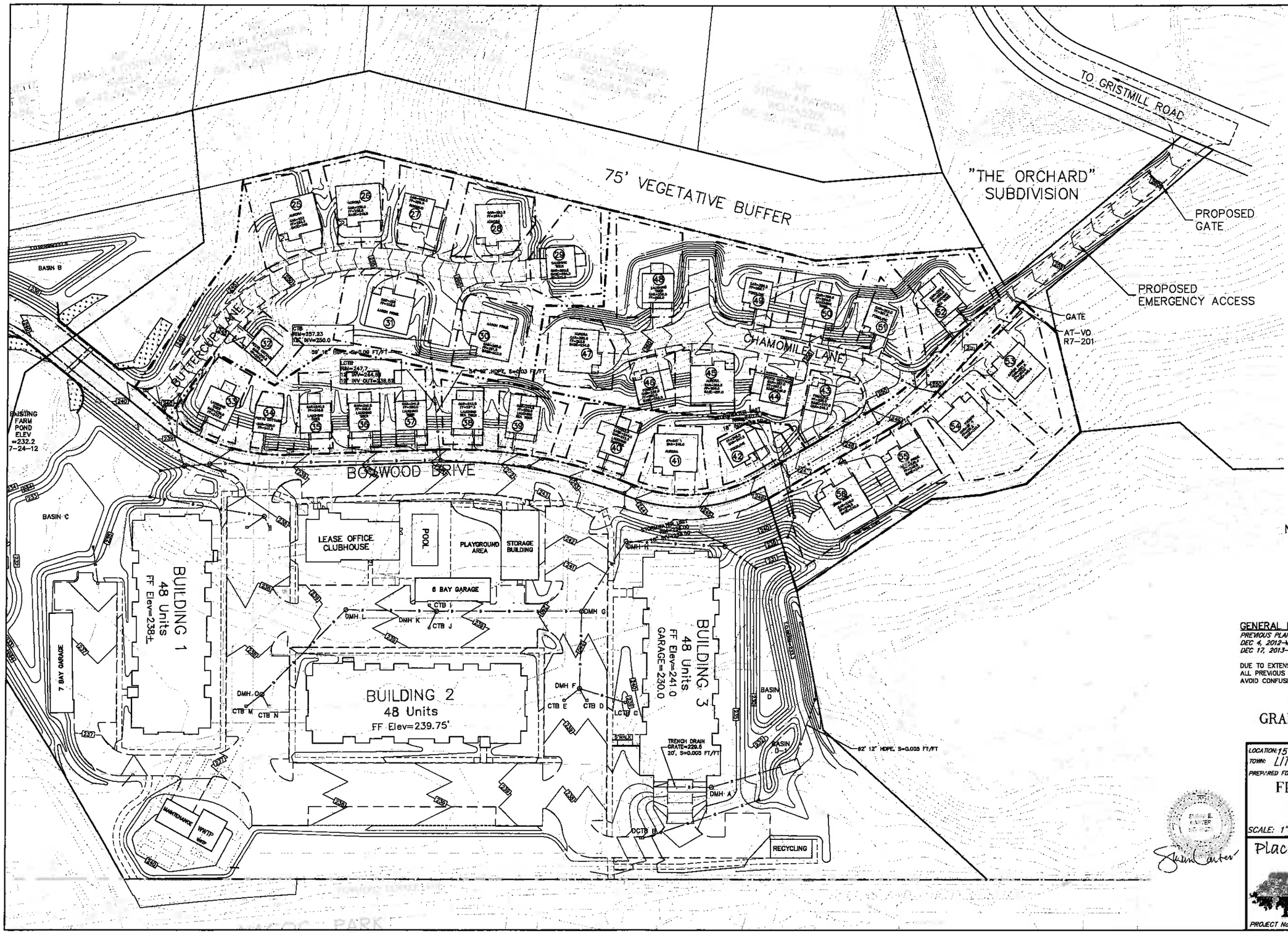
VILLAGE GREEN GRADING AND DRAINAGE PLAN 1 OF 2

LOCATION: 15 GREAT ROAD
TOWN: LITTLETON, MASSACHUSETTS
PREPARED FOR:
FIFTEEN GREAT ROAD II LLC

SCALE: 1"=40' *DATE:* FEB 4, 2014

Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

PROJECT No.: 11-6303A *PLAN No.* 6303A CP-5



NOTES:

1. PLAN IS THE COMPILATION OF INFORMATION FROM VARIOUS SOURCES INCLUDING RECORD DEEDS, AERIAL TOPOGRAPHY AND WETLANDS DELINEATIONS BY OTHERS AND IS NOT NECESSARILY THE RESULT OF AN ON THE GROUND SURVEY BY PLACES SITE CONSULTANTS, INC.

2. REFER TO SHEET CP-2 FOR ADDITIONAL NOTES.

PERMIT SET
NOT FOR CONSTRUCTION

GENERAL REVISION NOTE:
PREVIOUS PLAN DATES:
DEC 4, 2012–MINOR REVISIONS
DEC 17, 2013–GENERAL REVISION

DUE TO EXTENSIVE REVISIONS, THESE PLANS SUPERCEDE ALL PREVIOUS PLANS AND ARE DATED FEB 4, 2014 TO AVOID CONFUSION.

VILLAGE GREEN GRADING AND DRAINAGE PLAN 2 OF 2

LOCATION: 15 GREAT ROAD
TOWN: LITTLETON, MASSACHUSETTS
PREPARED FOR:
FIFTEEN GREAT ROAD II LLC

SCALE: 1"=40' *DATE:* FEB 4, 2014

Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
510 KING STREET, SUITE 9
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

PROJECT No.: 11-6303A *PLAN No.* 6303A CP-7

GRIST MILL ROAD

GREAT ROAD (ROUTE 2A & 119)

PLAN BOOK 776 PLAN 23

N/F JAMES E. PEEHAN, BONNIE J. PEEHAN

N/F JAMES R. VASH, ANGELA MUNOZ-AVILA

N/F ANTHONY J. SLAVINSKY, JERILYNN G. SLAVINSKY

N/F KIMBERLY A. CARUSO

N/F MICHAEL D. SAURSBERG, JO ELLEN SAURSBERG

N/F ROBERT J. MAIMONE, MARY A. MAIMONE

N/F PHILLIP L. BUCKELLEW, LISA F. BUCKELLEW

N/F DARYL K. BAKER, ELAINE M. BAKER

N/F JEFFREY A. & LANETTE M. SUNDQUIST BK. 33,463 PG. 586

N/F PAUL J. & CYNTHIA M. AVELLA BK. 42,576 PG. 535

N/F JOHN P. & CARRIE A. BERGERON BK. 45,849 PG. 249

N/F DARA E. THOMAS C. & FURLONG BK. 41,320 PG. 103

N/F LITTLETON HOLDING REALTY TRUST BK. 28,882 PG. 477

N/F STEVEN & PATRICIA WOJTASZEK BK. 32,195 PG. 394

Lot 1
7.03± Acres
R=0.55

Lot 2
6.82± Acres
R=0.56

Lot 3
7.32± Acres
R=0.76

"THE ORCHARD" SUBDIVISION

GATE
AT-VO
R7-20

N/F ELAINE M. & JOHN LINDGREN TRUSTEES OF LINDGREN GREAT ROAD REALTY TRUST BK. 45,713 PG. 243

BUILDING 1
48 Units
FF Elev=238±

BUILDING 2
48 Units
FF Elev=239.75'

BUILDING 3
48 Units
FF Elev=241.0
GARAGE=230.0

LEASE OFFICE CLUBHOUSE

POOL

PLAYGROUND AREA

STORAGE BUILDING

6 BAY GARAGE

7 BAY GARAGE

"THE ORCHARD" SUBDIVISION

N/F KOLL BREN FUND VI, L.P. BK. 30,861 PG. 557

LITTLETON
ACTON

N/F ALEVIZOS NAGOG LLC

FORMERLY DURKEE LANE

NAGOG PARK

N/F NDW/INROCK ACTON LLC

WESTFORD LANE

RECYCLING

GENERAL REVISION NOTE:
PREVIOUS PLAN DATES:
DEC 4, 2012–MINOR REVISIONS
DEC 17, 2013–GENERAL REVISION

DUE TO EXTENSIVE REVISIONS, THESE PLANS SUPERCEDE ALL PREVIOUS PLANS AND ARE DATED FEB 4, 2014 TO AVOID CONFUSION.

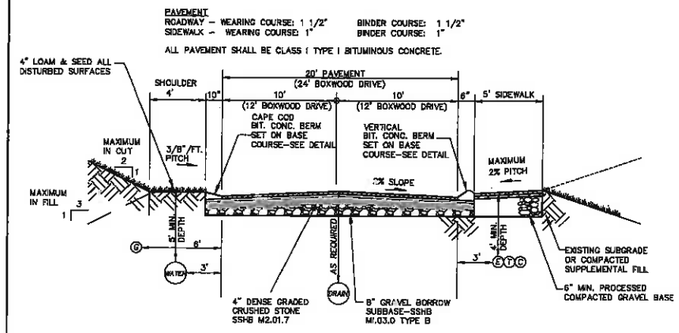
VILLAGE GREEN WAIVER PLAN

LOCATION: 15 GREAT ROAD
TOWN: LITTLETON, MASSACHUSETTS
PREPARED FOR:
FIFTEEN GREAT ROAD II LLC

SCALE: 1"=60' *DATE:* FEB 4, 2014

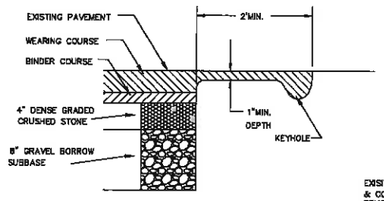
Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

PROJECT No.: 11-6303A *PLAN No.* 6303A CP-8



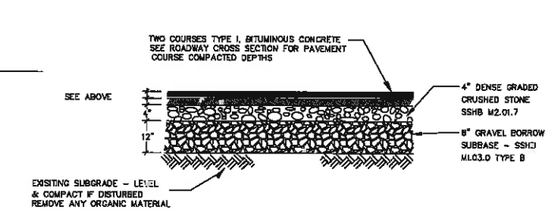
TYPICAL ROAD CROSS SECTION

NOT TO SCALE



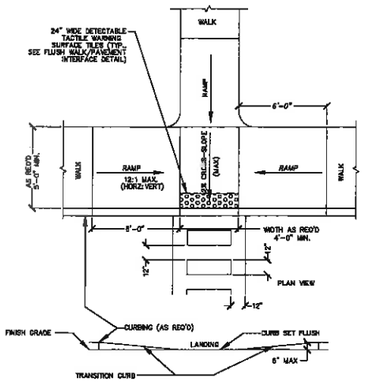
TRANSITION TO EXISTING PAVEMENT

NOT TO SCALE



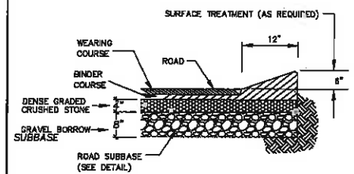
BITUMINOUS CONC. WALKWAY, DRIVE & PARKING

NOT TO SCALE



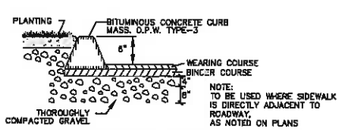
TYPE 2 ACCESSIBLE RAMP

NOT TO SCALE



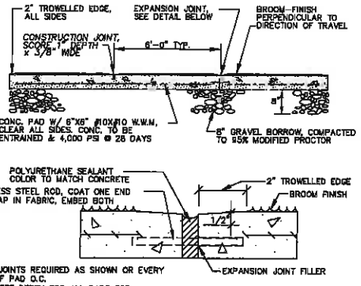
CAPE COD BERM

NOT TO SCALE



VERTICAL BITUMINOUS CONCRETE CURB

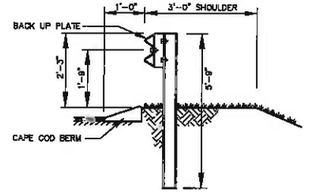
NOT TO SCALE



CONCRETE PADS

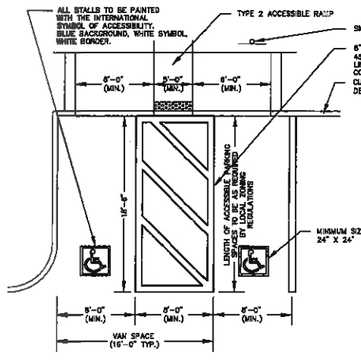
NOT TO SCALE

GUARDRAIL TO BE INSTALLED AND CONSTRUCTED WITH MATERIALS AS SPECIFIED IN COMMONWEALTH OF MASS. DEPT. OF PUBLIC WORKS "CONSTRUCTION STANDARDS " AND SECTION 601 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, LATEST EDITIONS



STEEL BEAM GUARDRAIL

NOT TO SCALE



NOTES:

1) PARKING SPACES SHALL MEET THE REQUIREMENTS OF THE CODE OF MASSACHUSETTS REGULATIONS ARCHITECTURAL ACCESS BOARD – 521CMR.

2) PARKING SPACES AND ACCESS ISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:50 (2%) IN ALL DIRECTIONS, AS MEASURED USING A TWO–FOOT LONG "SMART LEVEL." NO ALLOWANCES CAN BE MADE FOR ANY SLOPE– IN ANY DIRECTION– GREATER THAN 2%.

3) VAN ACCESSIBLE SPACES ACCESS AISLES SHALL BE A MINIMUM 8'–0" WIDE. A MINIMUM OF ONE VAN SPACE SHALL BE PROVIDED PER SITE.

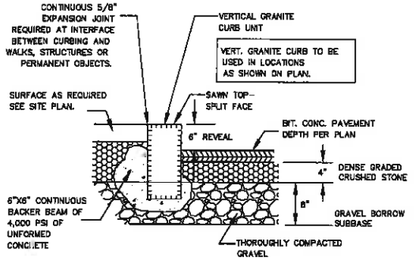
4) TWO ACCESSIBLE SPACES MAY SHARE A COMMON ACCESS ISLE.

5) A SIGN, IDENTIFYING ACCESSIBLE PARKING SPACES AS RESERVED, SHALL BE LOCATED AT THE HEAD OF EACH SPACE AND NO MORE THAN 10'–0" AWAY. THE SIGN SHALL BE AS SPECIFIED BY THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), R7–8 OR APPROVED EQUAL.

6) SIGNS AT THE HEAD OF VAN ACCESSIBLE SPACES SHALL INCLUDE THE WORDS "VAN ACCESSIBLE," R7–8A

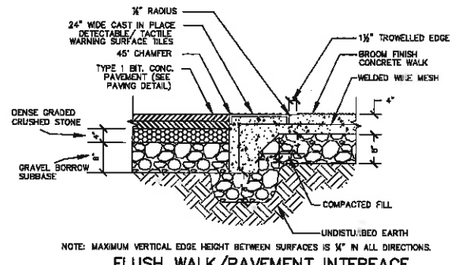
ACCESSIBLE PARKING SPACES

NOT TO SCALE



VERTICAL GRANITE CURB

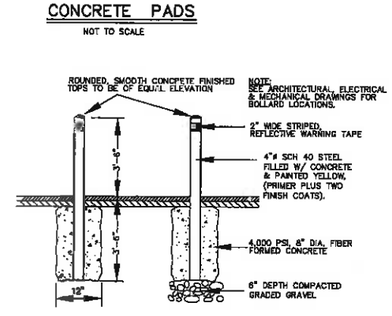
NOT TO SCALE



NOTE: MAXIMUM VERTICAL EDGE HEIGHT BETWEEN SURFACES IS ¼" IN ALL DIRECTIONS.

FLUSH WALK/PAVEMENT INTERFACE

NOT TO SCALE



BOLLARD GUARD

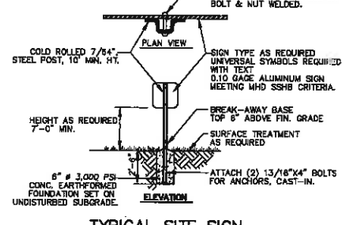
NOT TO SCALE

SIGN	LEGEND	DIMENSIONS	SPECIFICATIONS
	R1–1	24" OCTAGONAL	MUTCD
	AT–VO	24" X 8"	N/A
DO NOT ENTER	R5–1	24"	MUTCD
	R7–1	12" X 18"	MUTCD

SIGN LEGEND

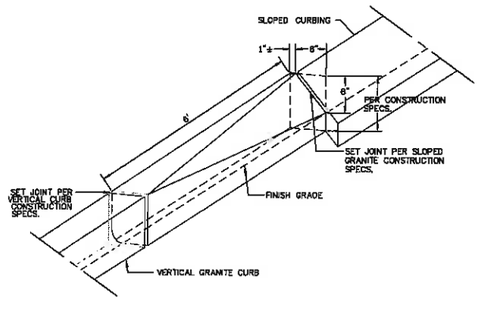
NOT TO SCALE

1. ALL SURFACES TO BE PRIMED & PAINTED MEETING MASS. HIGHWAY DEPT. STANDARDS
2. SIGN CONSTRUCTION & MATERIALS TO CONFORM TO MHD SSHB, SECTION 840, AND M8.18.5.
3. SIGN TYPES REQUIRED: SEE SIGN LEGEND DETAIL



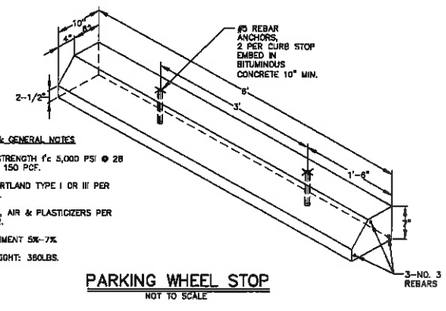
TYPICAL SITE SIGN

NOT TO SCALE



SLOPED TO VERTICAL TRANSITION CURBING

NOT TO SCALE



DESIGN DATA & GENERAL NOTES

1. CONCRETE STRENGTH f'c 5,000 PSI @ 28 DAYS. DENSITY 150 PCF.
2. CEMENT, PORTLAND TYPE I OR III PER ASTM C150–81.
3. ADMIXTURES, AIR & PLASTICIZERS PER ASTM C233–82.
4. AIR ENTRAINMENT 5%–7%
5. APPROX. WEIGHT: 360LBS.

PARKING WHEEL STOP

NOT TO SCALE

PERMIT SET
NOT FOR CONSTRUCTION

GENERAL REVISION NOTE:
PREVIOUS PLAN DATES:
DEC 4, 2012–MINOR REVISIONS
DEC 17, 2013–GENERAL REVISION

DUE TO EXTENSIVE REVISIONS, THESE PLANS SUPERCEDE ALL PREVIOUS PLANS AND ARE DATED FEB 4, 2014 TO AVOID CONFUSION

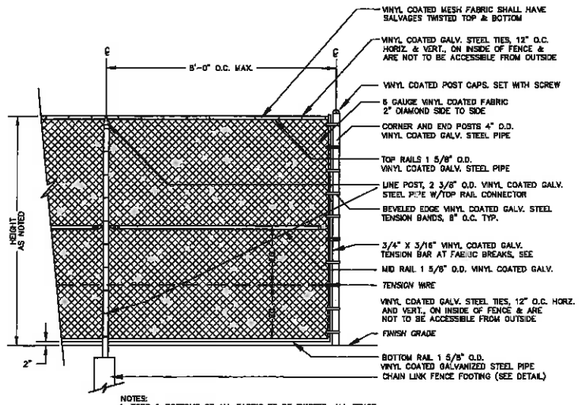
VILLAGE GREEN SITE DETAILS

LOCATION: *15 GREAT ROAD*
TOWN: *LITTLETON, MASSACHUSETTS*
PREPARED FOR:
FIFTEEN GREAT ROAD II LLC

SCALE: AS SHOWN DATE: FEB 4, 2014

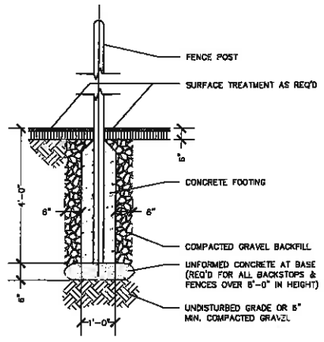
Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

PROJECT No.: 11–6303A PLAN No. 6303A CP–9

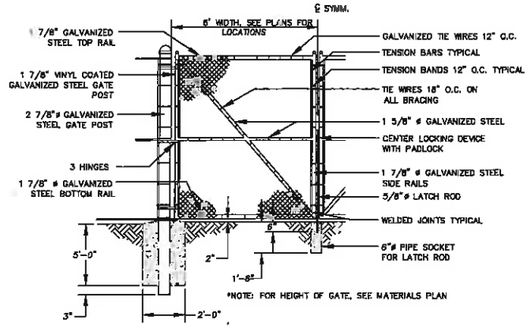


NOTES:
1. TOPS & BOTTOMS OF ALL FABRIC TO BE TWISTED. ALL FENCE FABRIC SHALL BE VINYL-COATED GALVANIZED STLEL AS PER SPEC., ALL POSTS AND HARDWARE TO be VINYL-COATED GALVANIZED STEEL AS PER SPEC. VINYL COATING TO BE BLACK.
2. PROVIDE 4" OFFSET END POST TO ALL BUILDINGS AND/OR STRUCTURES.
3. FENCING AROUND THE POOL IS TO BE A MINIMUM OF 6 FT HT., ALL GATES TO HAVE CHILD-RESISTENT LATCHES AND BE CAPABLE OF BEING LOCKED.

CHAIN LINK FENCE
NOT TO SCALE

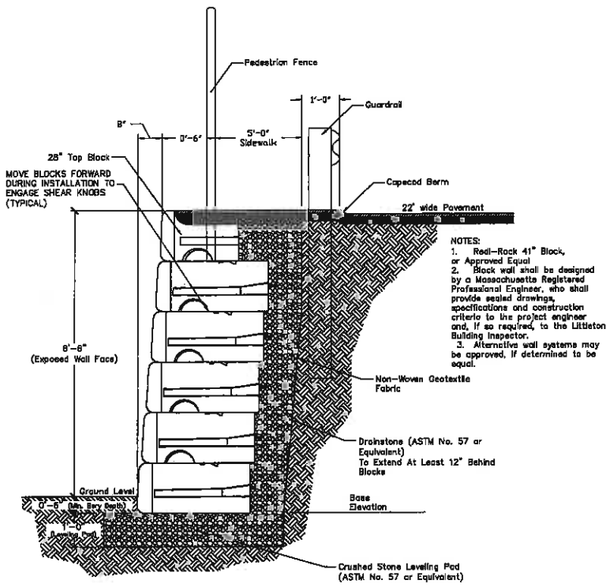


CHAIN LINK FENCE FOOTING
NOT TO SCALE



*NOTE: FOR HEIGHT OF GATE, SEE MATERIALS PLAN

CHAIN LINK GATE
NOT TO SCALE

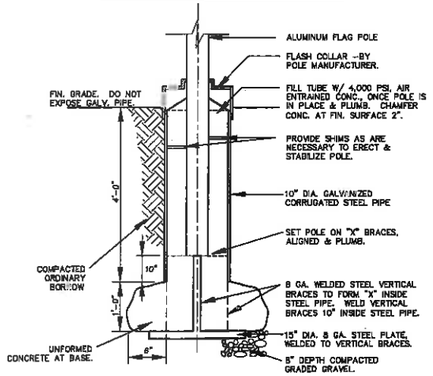


BLOCK RETAINING WALL SECTION
NOT TO SCALE

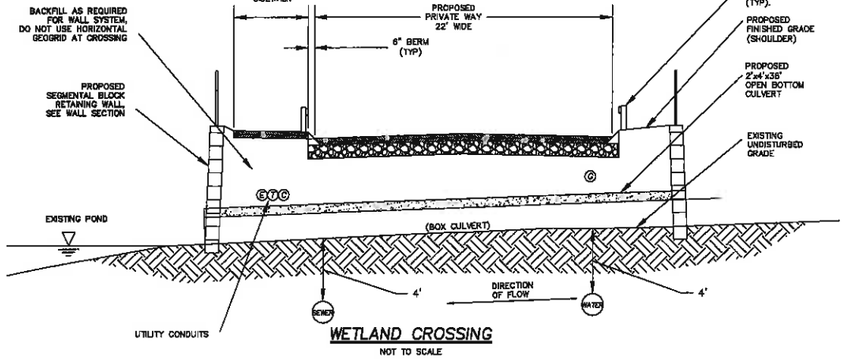
ENTIRE ASSEMBLY TO BE PREFABRICATED, PRIMED & SEAL COATED BEFORE DELIVERY TO SITE.

ALL WELDS TO BE CONTINUOUS BEADS.

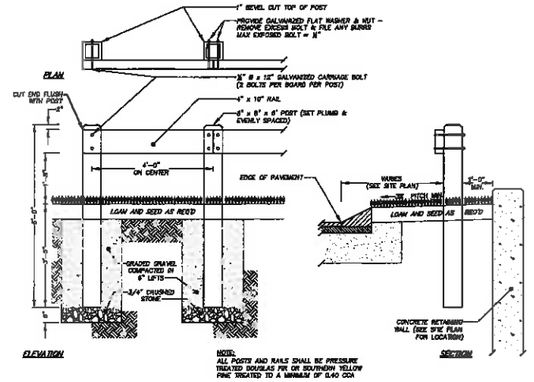
MANUFACTURER'S STANDARD BASE SHALL BE PROVIDED & SIZED FOR FLAG POLE HEIGHT AND WINDLOADS.



FLAG POLE BASE
NOT TO SCALE



WETLAND CROSSING
NOT TO SCALE



WOOD GUIDE RAIL
NOT TO SCALE

PERMIT SET
NOT FOR CONSTRUCTION

GENERAL REVISION NOTE:
PREVIOUS PLAN DATES:
DEC 4, 2013–MINOR REVISIONS
DEC 17, 2013–GENERAL REVISION

DUE TO EXTENSIVE REVISIONS, THESE PLANS SUPERCEDE ALL PREVIOUS PLANS AND ARE DATED FEB 4, 2014 TO AVOID CONFUSION

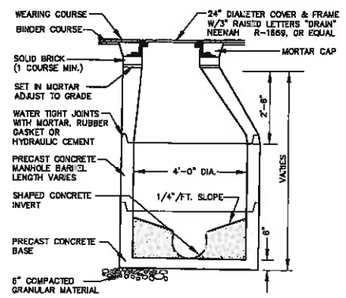
VILLAGE GREEN SITE DETAILS

LOCATION: *15 GREAT ROAD*
TOWN: *LITTLETON, MASSACHUSETTS*
PREPARED FOR:
FIFTEEN GREAT ROAD II LLC

SCALE: AS SHOWN DATE: FEB 4, 2014

Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

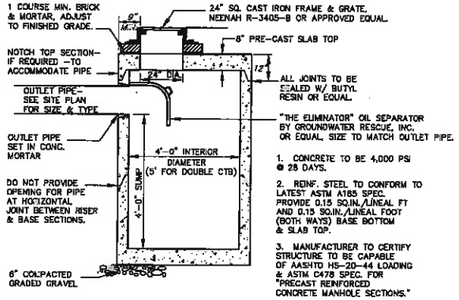
PROJECT No.: 11-6303A PLAN No. 6303A CP-10



DRAIN MANHOLE DETAIL

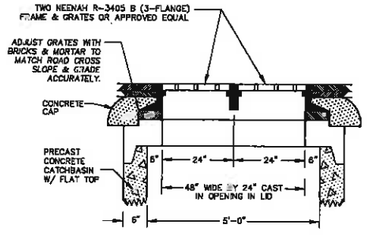
NOT TO SCALE

NOTE: FOR CATCHBASINS IN LANDSCAPED AREAS, CREATE 4" CONCRETE PAD 12" AROUND FRAME TO FACILITATE MOWING OPERATIONS



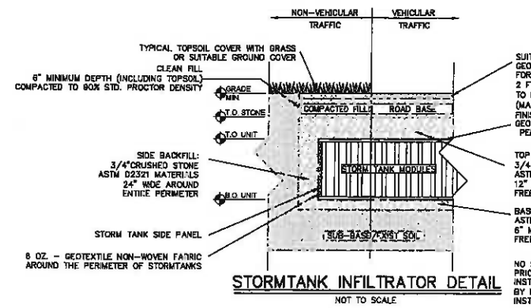
PRECAST FLAT TOP CATCHBASIN

NOT TO SCALE - FOR USE WHERE COVER OVER TOP PIPE IS LESS THAN 2'



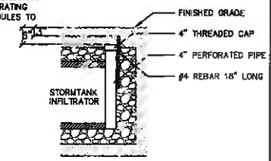
DOUBLE CATCHBASIN DETAIL

NOT TO SCALE



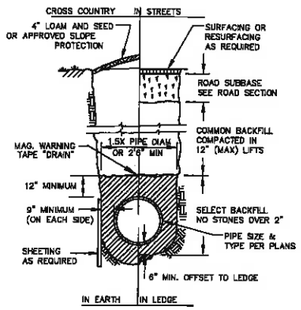
STORMTANK INFILTRATOR DETAIL

NOT TO SCALE



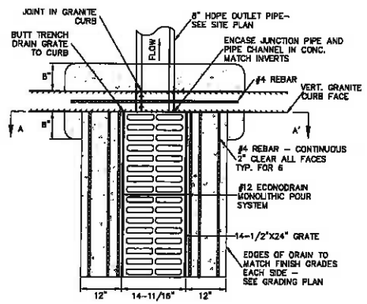
INSPECTION PORT DETAIL

NOT TO SCALE



DRAINAGE TRENCH

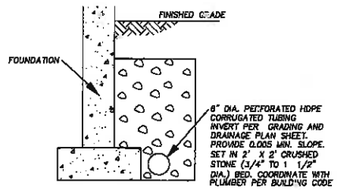
NOT TO SCALE



VILLAGE GREEN - ROOF RECHARGE CALCULATIONS

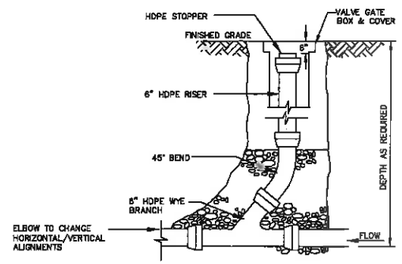
Unit Data			Dripline Trench Design Criteria				
Unit	Sq. Ft.	Unit Width	Side Trench	Trench Width	Trench Depth	Total Length Trench	Bot Area
Pesto	676	26		2	2	52	104
Foxglove	768	26		2	2	52	104
Rosebud	868	30		2	2	60	120
Aaron Prime/Aurora	1573	44		2	3	88	176
Aaron Solo	1212	32		2	3	64	128
Shetland	1508	38	40	2	2	156	312
Gairloch	1623	38	40	2	2	156	312
Laughing Tiger Series	1020	30		2	3	60	120
Clubhouse	3710	90	76	2	2	332	664
Storage Building	2464	67.5	73	2	2	281	562
Garage (by Bldg 1)	2140	96	46	2	2	142	284
Garage (by Clubhouse)	1660	72	46	2	2	118	236
Carriage House (Front)	1660	72	46	2	2	118	236
Bldg 1	15160	212.2	76	3	3	576.4	1729.2
Bldg 2	15160	212.2	76	3	3.5	500.4	1501.2
Bldg 3	no recharge proposed due to presence of garage on lower level						

Notes:
1. Recharge trench for Building 2 is not allowed on the easterly side of the building due to the proximity of the leaching field.
2. Recharge trenches to utilize 3/4-1 1/2" double washed stone with geotextile on sidewalls.



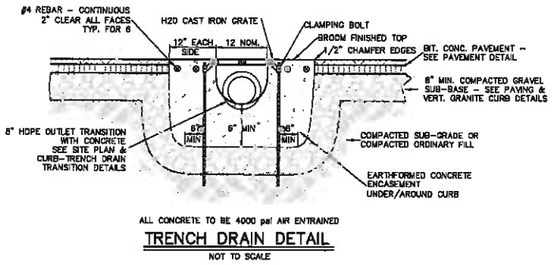
FOUNDATION DRAIN

NOT TO SCALE



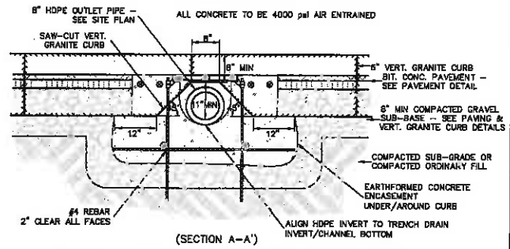
ROOF DRAIN CLEANOUT

NOT TO SCALE



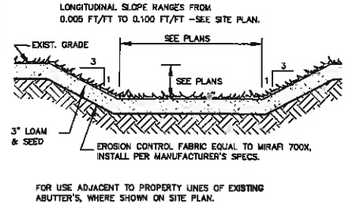
TRENCH DRAIN DETAIL

NOT TO SCALE



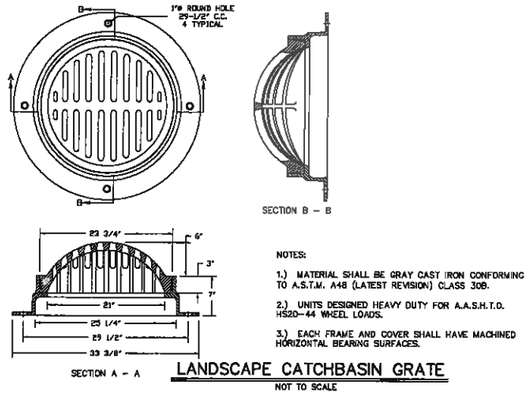
CURB - TRENCH DRAIN TRANSITION DETAIL

NOT TO SCALE



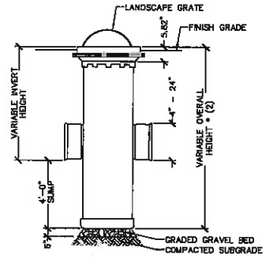
GRASSED SWALE

NOT TO SCALE



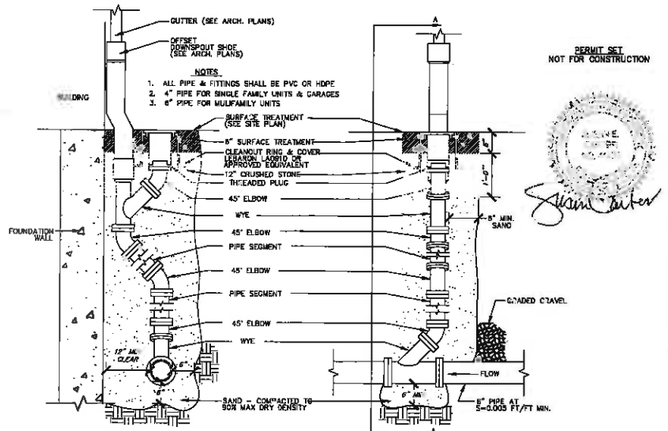
LANDSCAPE CATCHBASIN GRATE

NOT TO SCALE



CATCHBASIN IN LANDSCAPING

NOT TO SCALE



ROOF DRAIN CONNECTION

NOT TO SCALE

GENERAL REVISION NOTE:

PREVIOUS PLAN DATES:
DEC 4, 2012-MINOR REVISIONS
DEC 17, 2013-GENERAL REVISION

DUE TO EXTENSIVE REVISIONS, THESE PLANS SUPERCEDE ALL PREVIOUS PLANS AND ARE DATED FEB 4, 2014 TO AVOID CONFUSION

VILLAGE GREEN DRAINAGE DETAILS

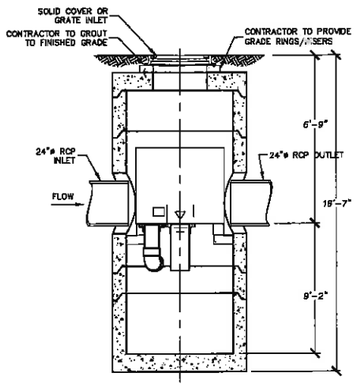
LOCATION: 15 GREAT ROAD
TOWN: LITTLETON, MASSACHUSETTS
PREPARED FOR:

FIFTEEN GREAT ROAD II LLC

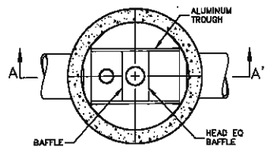
SCALE: AS SHOWN DATE: FEB 4, 2014

Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

PROJECT No.: 11-6303A PLAN No. 6303A CP-11



SECTION A-A'



PLAN VIEW

CONTECH CDS 2015-4, OR APPROVED EQUAL

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, CONTACT YOUR CONTECH CONSTRUCTION PRODUCTS REPRESENTATIVE. www.contech-cpi.com
3. WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
4. STRUCTURE SHALL MEET AASHTO H20 LOAD RATING. CASTINGS SHALL MEET AASHTO M306, CAST WITH THE CONTECH STORMWATER SOLUTIONS LOGO.

INSTALLATION NOTES
1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
2. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
3. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
4. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
5. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

STORMWATER TREATMENT UNIT

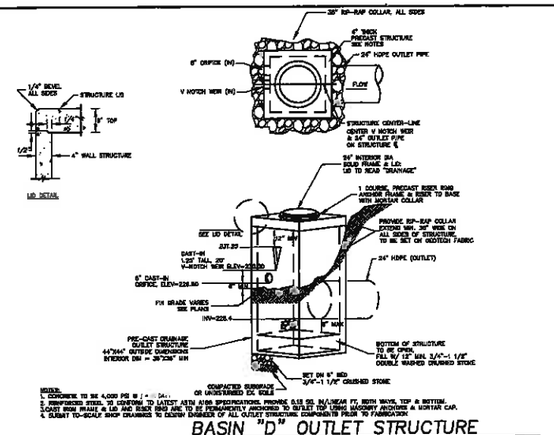
NOT TO SCALE

SCHEDULE OF DRAINAGE STRUCTURES

STRUCTURE	RIM ELEV.	INVERT IN	DIA. (IN.)	INVERT OUT	OUTLET PIPE
DMH A	235.00	TRENCH DRAIN	12"	228.80	70' 12" HDPE S=0.005 FT/FT (RECHARGE)
DCTB B	235.50		12"	232.50	116' 12" HDPE S=0.005 FT/FT (FES**)
LCTB C	238.80		12"	235.07	45' 12" RCP S=0.01 FT/FT (DMH F)
CTB D	239.20		12"	235.70	13' 12" RCP S=0.014 FT/FT (DMH F)
CTB E	239.20		12"	235.70	18' 12" RCP S=0.01 FT/FT (DMH F)
DMH F	239.66	235.52 (CTB D&E) 234.62 (LCTB C)	12" 12"	234.62	75' 12" RCP S=0.015 FT/FT (DMH G)
DMH G	240.36	233.50 (DMH F) 233.06 (DMH K)	12" 12"	232.56	80' 18" RCP S=0.005 FT/FT (DMH H)
DMH H	240.20	232.16 (DMH G)	18"	232.16	95' 18" RCP S=0.005 FT/FT (STORM UNIT*)
STORM UNIT*	237.80	231.69 (DMH H)	18"	231.69	36' 18" RCP S=0.005 FT/FT (FES**)
CTB M	237.50		8"	235.30	18' 8" RCP S=0.01 FT/FT (DMH O)
CTB N	237.50		8"	235.30	13' 8" RCP S=0.014 FT/FT (DMH O)
DMH O	237.60	235.12 (CTB M&N)	8"	235.12	115' 8" RCP S=0.005 FT/FT (DMH L)
DMH L	239.50	234.54 (DMH O)	8"	234.54	87' 8" RCP S=0.005 FT/FT (DMH K)
CTB I	238.30		12"	235.30	12' 12" RCP S=0.01 FT/FT (DMH K)
CTB J	238.30		12"	235.30	19' 12" RCP S=0.008 FT/FT (DMH K)
DMH K	238.35	235.18 (CTB I&J) 233.76 (DMH O)	12" 8"	233.76	140' 12" RCP S=0.005 FT/FT (DMH G)
CTB P	237.50		12"	235.00	11' 12" RCP S=0.01 FT/FT (DMH R)
CTB Q	237.50		12"	235.00	19' 12" RCP S=0.006 FT/FT (DMH R)
DMH R	237.85	235.18 (CTB P&Q)	12"	234.89	111' 12" RCP S=0.005 FT/FT (FES**)

* STORM UNIT = TREATMENT UNIT, SEE STORMWATER TREATMENT UNIT DETAIL
** FES = FLARED END SECTION, SEE DETAILS AND PLANS FOR LOCATION AND INVERT

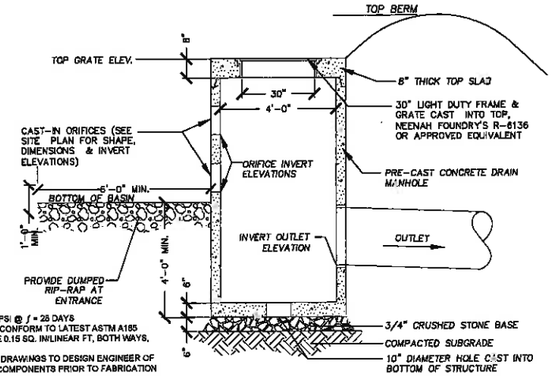
STORMWATER TREATMENT UNITS:
DMH R - CDS 2015-4
DMH K - CDS 2015-4
DMH 4+65 (BOXWOOD) - CDS 2015-4
DMH 8+85 (BOXWOOD) - CDS 2015-4
DMH 14+50 (BOXWOOD) - CDS 2015-4
TRENCH DRAIN - CDS 2015-4



NOTES:
1. CONCRETE TO BE 4,000 PSI @ / = 28 DAYS
2. REINFORCED STEEL TO CONFORM TO LATEST ASTM A185 SPECIFICATIONS. PROVIDE 0.15 SQ. IN/LINEAR FT, BOTH WAYS, TOP & BOTTOM.
3. SUBMIT TO-SCALE SHOP DRAWINGS TO DESIGN ENGINEER OF ALL OUTLET STRUCTURE COMPONENTS PRIOR TO FABRICATION

BASIN "D" OUTLET STRUCTURE

NOT TO SCALE



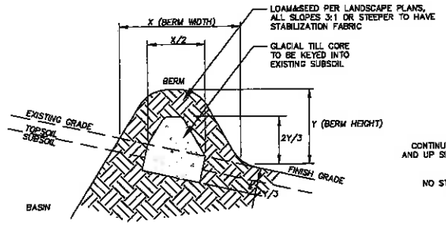
NOTES:
1. CONCRETE TO BE 4,000 PSI @ / = 28 DAYS
2. REINFORCED STEEL TO CONFORM TO LATEST ASTM A185 SPECIFICATIONS. PROVIDE 0.15 SQ. IN/LINEAR FT, BOTH WAYS, TOP & BOTTOM.
3 SUBMIT TO-SCALE SHOP DRAWINGS TO DESIGN ENGINEER OF ALL OUTLET STRUCTURE COMPONENTS PRIOR TO FABRICATION

ROUND OUTLET CONTROL STRUCTURE

NOT TO SCALE

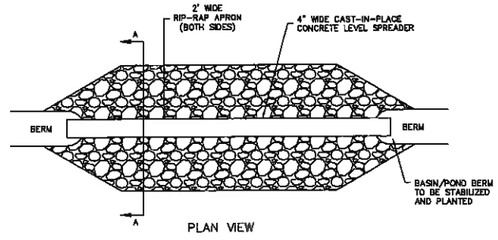
BASIN NO.	TOP BERM	OUTLET STRUCTURE ORIFICE SIZE	ELEV	HORIZ /VERT	INVERT SIZE	INVERT INLET	INVERT OUTLET	OVERFLOW WEIR ELEV	WIDTH
A	237.0	4"	233.00	V	12"	232.50	232.30	234.50	8'
		GRATE	234.25	H					
B	237.5	4"	235.00	V	12"	235.00	234.67	236.50	10'
C	234.90	4"	233.00	V	8"	233.00	232.80	233.80	15'
		GRATE	233.50	H					
D	233.3	6"	229.50	V	24"	228.40	228.00	231.80	10'
		*	230.00	H	–				

* V-NOTCH WEIR, SEE OUTLET STRUCTURE DETAIL

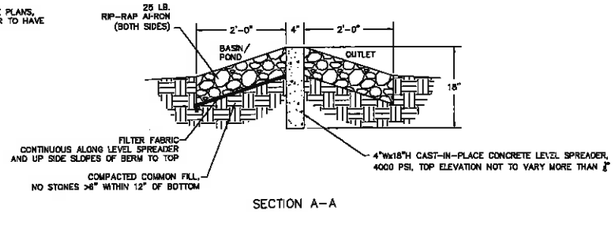


BASIN BERM CROSS SECTION

NOT TO SCALE



PLAN VIEW



SECTION A-A

LEVEL SPREADER/BASIN OVERFLOW

NOT TO SCALE

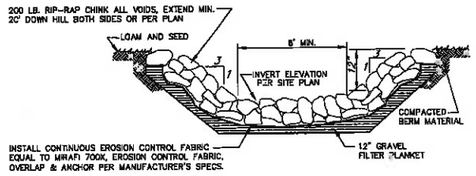
200LB. RIP-RAP SPECIFICATIONS:

1. ALL STONE SHALL BE CLEAN DURABLE ANGULAR STONE MEETING THE FOLLOWING SPECIFICATIONS:

STONE SIZE	% OF WEIGHT SMALLER THEN GIVEN SIZE
200 LB.	100%
100 LB.	75%
75 LB.	50%
50 LB.	25%
10 LB.	10%

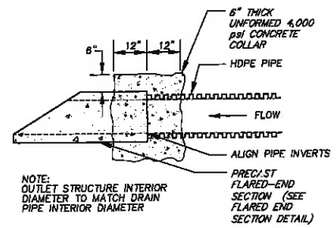
ROUNDED STONES, BOULDERS, SANDSTONE OR SIMILAR STONE OR RELATIVELY THIN SLAB SHALL NOT BE ACCEPTABLE.

2. THE RIP-RAP SHALL BE UNDERLAYED WITH A FILTER BLANKET CONSISTING OF CLEAN, COARSE GRAVEL WITH NO STONES OVER 4" IN LONGEST DIMENSION AND NO FEWER THEN 10% OF TOTAL VOLUME PASSING A 200# SIEVE.
3. THE FILTER BLANKET NEED NOT BE COMPACTED, BUT SHALL BE GRADED TO A UNIFORM THICKNESS OF 12".
4. THE FILTER BLANKET SHALL BE OVERLAYED WITH A STRUCTURAL/EROSION CONTROL FABRIC OF THE TYPE SPECIFIED. SUCH FABRIC SHALL BE CONTINUOUS IN LENGTHS, EITHER PARALLEL OR PERPENDICULAR TO THE SLOPE AND MUST BE UNDER ALL RIP-RAPPED SURFACES.



REINFORCED OVERFLOW BROAD-CRESTED WEIR

NOT TO SCALE



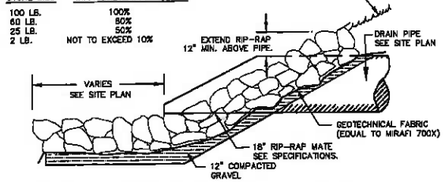
NOTE:
OUTLET STRUCTURE INTERIOR DIAMETER TO MATCH DRAIN PIPE INTERIOR DIAMETER

FLARED END SECTION/HDPE PIPE CONNECTION

NOT TO SCALE

RIP-RAP SPECIFICATIONS

STONE SIZE	% OF TOTAL WEIGHT SMALLER THAN GIVEN SIZE
100 LB.	100%
60 LB.	80%
25 LB.	50%
2 LB.	NOT TO EXCEED 10%



FLARED END RIP-RAP INLET/OUTLET

NOT TO SCALE

PERMIT SET
NOT FOR CONSTRUCTION

GENERAL REVISION NOTE:
PREVIOUS PLAN DATES:
DEC 4, 2012-MINOR REVISIONS
DEC 17, 2013-GENERAL REVISION

DUE TO EXTENSIVE REVISIONS, THESE PLANS SUPERCEDE ALL PREVIOUS PLANS AND ARE DATED FEB 4, 2014 TO AVOID CONFUSION

VILLAGE GREEN DRAINAGE DETAILS

LOCATION: 15 GREAT ROAD
TOWN: LITTLETON, MASSACHUSETTS
PREPARED FOR:
FIFTEEN GREAT ROAD II LLC

SCALE: AS SHOWN DATE: FEB 4, 2014

Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

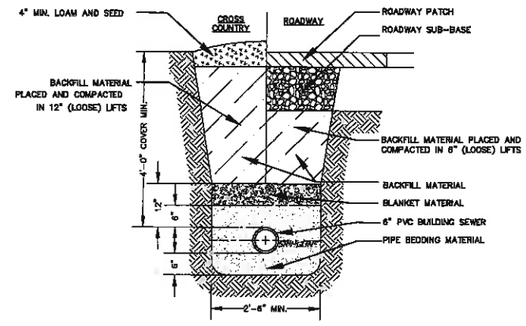
PROJECT No.: 11-6303A PLAN No. 6303A CP-12

NOTES:

1. ROADWAY PATCH AND BASE/SUB-BASE SHALL BE INSTALLED AS DIRECTED BY THE HIGHWAY SUPERINTENDENT.

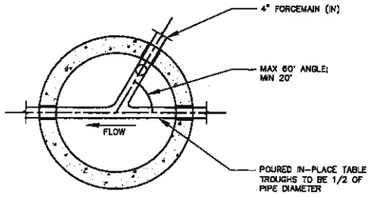
2. BEDDING, BLANKET, & BACKFILL MATERIALS SHALL BE COMPACTED TO 90% MAXIMUM DENSITY (MODIFIED PROCTOR) AT OPTIMUM MOISTURE CONTENT FOR BOTH CROSS COUNTRY AND ROADWAY INSTALLATION.

3. ALL MATERIALS, INSTALLATION TECHNIQUES, PROCEDURES, INSPECTIONS, AND TESTING SHALL BE IN COMPLIANCE WITH THE REQUIREMENTS OF THE SEWER RULES AND REGULATIONS UNLESS OTHERWISE APPROVED BY THE SEWER SUPERINTENDENT IN WRITING.

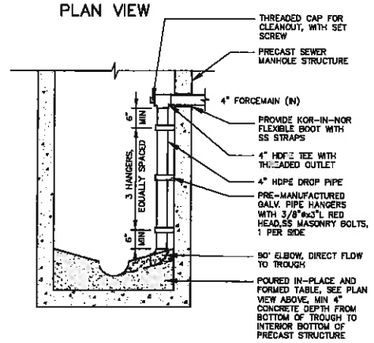


BUILDING SEWER TRENCH

NOT TO SCALE

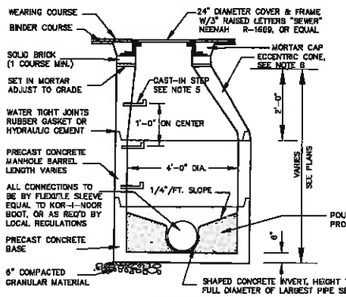


PLAN VIEW



FORCEMAIN DISCHARGE

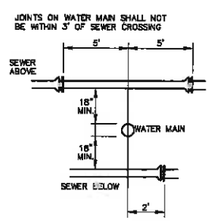
NOT TO SCALE



NOTES:
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
2. REINFORCED STEEL CONFORMS TO LATEST ASTM A185 SPEC. 0.12 SQ. IN./LINEAL FT. AND 0.12 SQ. IN. (BOTH WAYS) @BASE BOTTOM.
3. H-20 DESIGN LOADING PER AASHTO HS-20-44; ASTM C478 SPEC FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS."
4. BUTYL RESIN SECTION JOINT CONFORMS TO LATEST ASTM C443 SPEC.
5. STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC STEP CONFORMS TO LATEST ASTM C478 SPEC.
6. IN AREAS WHERE COVER IS 3' OR LESS ABOVE PIPES, USE FLAT TOP SLAB IN LIEU OF ECCENTRIC CONE SECTION.

SEWER MANHOLE DETAIL

NOT TO SCALE



SEWER LINE CROSSING– WATER LINE

NOT TO SCALE

NOTES:

THE SEPARATION OF WATER MAINS AND SEWERS SHALL COMPLY WITH THE FOLLOWING GENERAL REQUIREMENTS.

A. PARALLEL INSTALLATION:

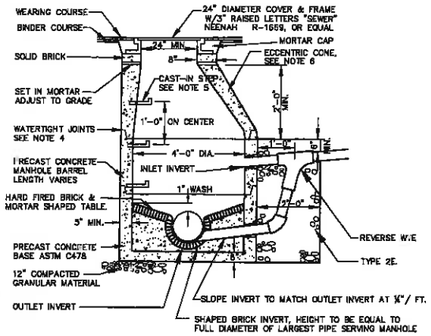
1. NORMAL CONDITIONS: THE INSIDE EDGE OF A WATER MAIN SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM THE INSIDE EDGE OF ANY SANITARY SEWER, STORM SEWER OR SEWER MANHOLE.
2. WHEN LOCAL CONDITIONS PREVENT A HORIZONTAL SEPARATION OF 10 FEET, ONE OF TWO METHODS MAY BE EMPLOYED. IN BOTH CASES THE INVERT OF THE WATER LINE MUST BE AT LEAST 18" ABOVE THE CROWN OF THE SEWER LINE.
   (a) LAY WATER AND SEWER IN SEPARATE TRENCHES
   (b) LAY THE WATER AND SEWER IN THE SAME TRENCH WITH THE WATER MAIN AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH WITH A MINIMUM HORIZONTAL SEPARATION FROM INSIDE PIPE TO INSIDE PIPE OF 36"

B. CROSSINGS:

1. WHEN SEWERS MUST CROSS UNDER WATER MAINS, THE SEWER LAID SUCH THAT THE INVERT OF THE WATER LINE IS AT LEAST 18 INCHES ABOVE THE CROWN OF THE SEWER LINE.
2. WHEN THE SEWER ELEVATION CANNOT BE VARIED TO MEET THE REQUIREMENT, THE WATER LINE MUST BE RELOCATED OR RECONSTRUCTED WITH MECHANICAL JOINT CEMENT LINED DUCTILE IRON PIPE FOR A DISTANCE OF 10 ft ON EACH SIDE OF THE SEWER.
3. WHEN IT IS IMPOSSIBLE TO OBTAIN EITHER OR BOTH OF THE ABOVE REQUIREMENTS, BOTH THE WATER AND SEWER LINES SHALL BE CONSTRUCTED OF MECHANICAL JOINT CEMENT LINED DUCTILE IRON PIPE OR OTHER EQUIVALENT MATERIAL. BOTH PIPES SHALL BE PRESSURE TESTED BY AN APPROVED METHOD TO ASSURE WATER TIGHTNESS OR BOTH PIPES SHALL BE ENCASED IN CONCRETE.

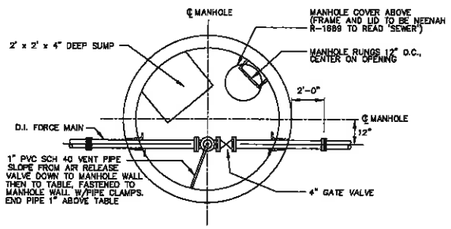
FOR ALL MANHOLE TYPES NOTES:

1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
2. REINFORCED STEEL CONFORMS TO LATEST ASTM A185 SPEC. 0.12 SQ. IN./LINEAL FT. AND 0.12 SQ. IN. (BOTH WAYS) CASE BOTTOM.
3. H-20 DESIGN LOADING PER AASHTO HS-20-44; ASTM C478 SPEC FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS."
4. WATERTIGHT JOINT USING AN APPROVED MASTIC TYPE SEALANT OR O-RING GASKET (EXTERIOR OF ALL JOINTS SHALL BE RECOATED WITH ASPHALTIC WATER PROOFING AFTER SETTING)
5. STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC STEP CONFORMS TO LATEST ASTM C478 SPEC.
6. WHEN MANHOLES ARE LESS THAN 6' DEEP USE FLAT TOP SLAB IN LIEU OF ECCENTRIC CONE SECTION.

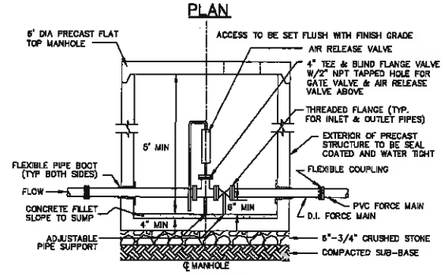


DROP SEWER MANHOLE DETAIL

NOT TO SCALE



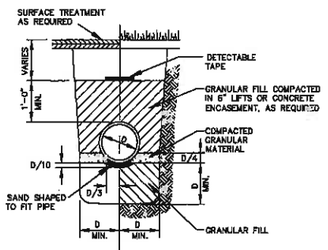
PLAN



ELEVATION

PRESSURE RELEASE VALVE MANHOLE

NOT TO SCALE



NOTES:
1. NO STONES OVER 2" WITHIN 6" OF PIPE.
2. CONCRETE ENCASEMENT, AS REQUIRED

UTILITY TRENCH DETAIL

NOT TO SCALE

PERMIT SET
NOT FOR CONSTRUCTION

GENERAL REVISION NOTE:
PREVIOUS PLAN DATES:
DEC 4, 2012–MINOR REVISIONS
DEC 17, 2013–GENERAL REVISION

DUE TO EXTENSIVE REVISIONS, THESE PLANS SUPERCEDE ALL PREVIOUS PLANS AND ARE DATED FEB 4, 2014 TO AVOID CONFUSION

VILLAGE GREEN SEWER DETAILS

LOCATION: 15 GREAT ROAD
TOWN: LITTLETON, MASSACHUSETTS
PREPARED FOR:
FIFTEEN GREAT ROAD II LLC

SCALE: AS SHOWN *DATE:* FEB 4, 2014

Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

PROJECT No.: 11–6303A *PLAN No.* 6303A CP–13

MATERIALS

1 - DESCRIPTION

1.1 General:
This part of the specifications shall govern for all materials used in the construction of water distribution facilities under the jurisdiction of the Littleton Water Department. Projects that include necessary trades materials other than those included in this specification shall be subject to the approval of the Water Department Superintendent. Complete specifications covering all materials not included herein shall be submitted for approval. Any material used other than materials herein specified shall be of the kind and type normally used in the construction of water distribution facilities.

1.1.1 All products installed in this work shall conform to the requirements of the standard specifications referenced herein.

1.2 Reference Standards:
A. ANSI A21.4/AWWA C104 - Cement Mortar Lining For Ductile Iron Pipe and Gray Iron Pipe and Fittings for Water.
B. ANSI A21.10/AWWA C110 - Gray Iron and Ductile Iron Fittings, 3" Through 48", for Water and Other Liquids.
C. ANSI A21.11/AWWA C111 - Rubber Gasket Joints for Ductile Iron and Gray Iron Pressure Pipe and Fittings.
D. ANSI A21.51/AWWA C151 - Ductile Iron Pipe.
E. ANSI B.16 - Cast Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250, and 800.
F. ASTM A126 - Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
G. ASTM B62 - Composition Bronze or Ounce Metal Castings.
H. AWWA C500 - Dry Barrel Fire Hydrants.
I. AWWA C900 - Manufacture of Cast Iron Water Mains.
J. AWWA C150 - Thickness Design for Ductile Iron Pipe.
K. AWWA C509 - Resilient-Seated Gate Valves.
L. AWWA C550 - Protective Interior Coatings for Valves and Hydrants.

2 - DUCTILE IRON WATERMAINS

2.1 General - Only pipe materials listed in this section shall be used for main extensions unless specifically authorized in writing by the Superintendent.

2.2 Ductile Iron Pressure Pipes:
2.2.1 Ductile Iron Pipe shall be designed in accordance with AWWA C150 and ANSI A21.51/AWWA C151. Class 52 and shall have push-on joints where specified. Pipe shall be double cement-lined with seal coat inside and out conforming to ANSI A21.4/AWWA C104.
Push-on joints and rubber gaskets.
2.2.2 The pipe manufacturer shall supply LWD with certificates of compliance with these specifications and certification that each piece of ductile iron pipe has been tested at the foundry with Dell Impression Test, Ring Sampling or other approved test for ductility upon request.
2.2.3 Ductile iron pipe may be rejected for failure to meet any of the requirements of this specification.

3 - SERVICE LINES (See Attachment A)

3.1 Description:
The service line is the line from the main to the outlet valve at the customer's meter. It shall consist of the corporation stop at the main, the tubing or pipe, the curb stop and curb box, and a meter setter with valve on both the inlet and outlet. LWD also requires a Pressure Reducer be installed past the meter, as well as for all 6" Cocks to be equipped with a Hose Bib Vacuum Breaker except in Wells # 8.

3.1.1 Polyethylene Service Line: Tubing for services shall be polyethylene designed for 200 psi service. Pipe shall be in accordance with AWWA C901 standard for Polyethylene Pressure Pipe, Tubing and Fittings.

3.1.2 For service lines larger than two inches in diameter, any pipe approved in section for water mains shall be used

3.2 Inspection: All tubing may be rejected for failure to meet any of the requirements of this specification.

4 - FITTINGS

4.1 Description:
All fittings used in the construction of water lines shall be "Underwriters Laboratory" (UL) for approved.
All materials listed in this section shall be manufactured in the U.S.A., unless specifically authorized in writing by the Superintendent.

4.2 Fittings for Ductile Iron Pipe:
4.2.1 Fittings shall be Cast Iron, 250 psi pressure rating, or Ductile iron, 350 psi pressure rating, conforming to ANSI A21.10/AWWA C110 with mechanical joints. Compact Ductile Iron Fittings conforming to ANSI A21.53/AWWA C153 ...ill be acceptable. Joints shall be furnished with ductile iron retaining glands. Retaining glands shall be EBAA/IRON/ MEGALUG/TYTE, INC. GRIP RING™ PIPE RESTRAINER, or an approved equal. Glands using cast iron shall not be acceptable. Fittings shall be double cement-lined and seal-coated inside and out in accordance with ANSI A21.4/AWWA C104. Tees for hydrant branches and for stubs for future use shall have mechanical joints on the run with a plain-end fitting or integral retaining gland on the branch (Anchor-tee). The gland ...ll anchor mechanical joint pipe or valves and to the plain end of this pipe.

4.2.2 All Ductile and Cast Iron Pipe and fittings shall be clean, sound, and without defects. The castings shall be smooth and free from pinholes, excess iron, etc. The castings shall be continuous, smooth and neither brittle nor sticky.

4.3 Brass Water Service Fittings / Service Boxes:
4.3.1 General - Brass and Fittings furnished under these specifications shall be of the size and type specified, with all parts of brass, conforming to Alloy Number 4 A (ASTM Designation B-62) which has a nominal composition of 85% copper and 5% each of tin, lead, and zinc, plus or minus 1%. All snaps, cocks, and fittings shall be full size openings, throughout, of the size specified.
All castings shall be smooth, free from burrs, scales, blisters, sand holes, and defects of every nature that would make them unfit for the use for which they are intended.
Nuts shall be smooth cast, with symmetrical, hexagonal wrench flats.
4.3.2 Compression shall be ...AWWA compression valve inlet thread by compression fitting, meeting the requirements of ANSI/AWWA C800-89 , Mueller 300SS or equivalent. They shall be designed to resist about the axis of the flow perpendicular to the circle of rotation small enough to properly close the inside of any standard tapping machine of appropriate size.
4.3.3 Curb Stops shall be compression fitting meeting the requirements of ANSI/AWWA C800-89, Mueller 300SS or equivalent.
4.3.4 Service Boxes shall be Erie Box Plug Style with 36" Stainless Steel Rod with standard 4.5 - 7.5 feet brass with a standard plug cover with brass pentagon plug. Each box shall be filled with a 36" bent rod and the box shall be manufactured in U.S.A.

SECTION 5 - WATERMAIN VALVES

5.1 Resilient Seated Gate Valves:
5.1.1 Valves shall be Resilient Wedge Gate Valve, WATEROUS Series 500 or equivalent meeting AWWA C509 of the latest revision. All bolts shall be stainless steel. Valves shall have an unobstructed waterway when fully opened equal in diameter to at least ¾" greater than the nominal valve sizes. Valves shall have mechanical joint end. Valves used in conjunction with Romac Tapping Sleeves shall flange end.
5.1.2 All internal surfaces shall be coated with epoxy to a minimum thickness of 4 mils. Said coating shall be non-toxic, impart no taste to water and shall conform to AWWA C 550 of latest revision.
5.1.3 Valves shall be provided with two O-ring stem seals. Both O-rings shall be located above the thread collar. The sealing mechanism shall provide a drip tight zero leakage at the water working pressure when installed with the line flow in either direction, and shall consist of a ductile iron gate having a vulcanized synthetic rubber coating with no rubber mold seams or edges in the water way when in the fully closed position.
5.1.4 All valves shall be seat tested at the rated working pressure in accordance with Section 8 of AWWA C-509. Valve shall be rated at 200 psi working pressure and 400 psi test pressure.
5.1.5 Valves shall OPEN LEFT.

5.2 Tapping Sleeve and Valve:
5.2.1 Tapping sleeve shall be Romac Stainless Steel or equivalent with outlet, meeting AWWA C223.
5.2.2 The mechanical joint sleeve shall have longitudinal compound rubber gaskets which shall fit against the rubber and gaskets thus affecting a totally enclosed rubber water-tight seal.
5.2.3 Tapping sleeve shall have a flange which will ring seal and drilled to correspond to that of the tapping sleeve to insure proper alignment.

5.3 Valve Boxes:
5.3.1 Valve boxes shall be standard cast-iron, asphalt coated, adjustable, sliding type, together with cast-iron cover with the word "Water" plainly cast in relief on the top surface. All Valve Boxes shall be manufactured in the U.S.A.
5.3.2 The cast iron section shall have a minimum I.D. of 5- ¼". The top section shall have a minimum diameter of 6-¾". There shall be a minimum 6" overlap between sections.
5.3.3 The bottom section shall be 36" in length for all gate valves. The top section shall be at least 24" in length and have a plain bottom. No brass piece combinations shall be acceptable.
5.4.6 Valve boxes shall be completely and thoroughly coated with bituminastic paint.

6 - FIRE HYDRANTS

6.1 General:
6.1.1 Hydrants - The Littleton Water Dept has standardized on the Waterous WB-67 or Clow Medallion. All Hydrants will be "OPEN LEFT". Hydrants shall conform to the requirements of AWWA C-502, and be designed for 150 psi working pressure tested to 300 psi hydrostatic
6.1.2 Hydrants shall be able to be rotated 360 degrees. They shall have a positive closing, self-cleaning drain valve and drainage area shall be completely waste or brass lined.
6.1.3 Hydrants shall be painted yellow to match the Town's standard color. In addition, two coloured rings shall be installed to protect hydrants from vehicular traffic and snow plows. Colorers shall be painted yellow to match hydrants.
6.1.4 Hydrant Extension - shall be approved by LWD , and shall be provided by the same manufacturer as hydrants. Extension shall include barrel, rod, coupling, bolts, gaskets, and all other accessory requirements for a complete installation.

SECTION 7 - METERS

7.1 Description:
This section covers water meters ¾ inch to 2 inches. A special detail will be submitted for approval for meters larger than two inches.

7.2 Meters must conform to AWWA Standard C-700, latest edition.

7.3 As of September 1, 2003, LWD will charge $300.00 for a ¾" and $350.00 for a 1" meter set up for new installations. The owner shall provide a shut-off valve adjacent to and on the house side of the meter. The valve must be shut off from the meter in cold weather or the meter other, as protected from frost. Any person allowing their meter to be damaged by frost or otherwise will be held responsible for the cost of making good the same. For meter sizes one and one-half inch (1 ½") or greater, it is the responsibility of the water purchaser to supply said meter and shut-off, in accordance with LWD Specifications. All meters larger than 1" shall be approved by LWD.

7.4 LWD requires a pressure reducer on the house side of the meter. It is installed by a licensed plumber prior to final sign off.

8 - THRUST BLOCKS

8.1 Blocks - Thrust blocks shall be Red Precast Concrete Block placed between back of fitting and trench wall, in a manner to prevent blow off of the fitting.

8.2 Rodding - In areas where thrust blocks are unable to be used to properly restrain the fittings, threaded rods shall be used to anchor the connection to the main.

SECTION 9 - PIPE BEDDING AND BACKFILL

9.1 Bedding:
9.1.1 Bedding sand shall be used for ductile or plastic pipe. Sand shall be free of stones. A minimum 6" - 12" of bedding sand shall be laid beneath the pipe, and extend 12" over the pipe. Bedding sand shall be extend to the width of the trench.

9.2 Backfill:
9.2.1 Backfilling shall be done with good earth, sand or gravel and shall be free from large rocks or hard lumps material, unless the rocks or lumps are not more than approximately four (4) inches in greatest diameter and are scattered in the soil. No material of a perishable, spongy, or otherwise unsuitable nature shall be used in backfilling.

SECTION 10 - METER BOXES

10.1 Meter Boxes for ¾inch and 1 inch Meters:
Meter boxes for ¾inch thru 1" inch meters shall be as depicted below. Dimensions of meter box and lid are in the Standard details. Meter box lids shall be cast iron as per standard details. SEE BELOW

10.2 Meter Boxes for Meters Larger than 1 inch:
Meter boxes shall be Quality Water Product 1.5" - 2" Meter Pit or equal.

10.3 Meter Boxes for Meters Larger than 2 inch:
Meter boxes shall be made of concrete blocks, bricks or poured concrete box inches thick or greater. Concrete shall be 3000 lb. minimum at 28 days
Covers for these meter boxes shall be made of steel as per design and plans. The steel shall be strong enough to handle the traffic load (if any).
The walls of the meter boxes shall be coated with a bituminous sealant inside and outside. The steel lids shall be bituminous coated to prevent rust. Lids shall be as per special standard details.

SECTION 11 - TRACEWIRE

11.1 Trace wire shall be laid with all non-metallic pipe as per standard details
Trace shall be fourteen (14) gauge single strand plastic coated copper black wire.

CONSTRUCTION OFWATER MAINS

SECTION 1 - GENERAL

1.1 This part of the specifications shall govern the construction procedures used in the installation of water line facilities under the jurisdiction of the Littleton Water Dept. Construction procedures other than those outlined in this specification shall meet with the approval of the Utility. Complete specifications covering any seasonal or special construction procedures shall be submitted for approval and approval must be received prior to beginning any construction operations.

SECTION 2 - EXCAVATION AND BACKFILL

2.1 Description:
This section covers the excavation and backfill of water lines, and appurtenances.

2.2 Trench Excavation:
2.2.1 The sides of the excavation shall be cut as such a slope that will prevent cave-ins. In areas where soil conditions permit normal excavation of the trench, the sides shall be cut as nearly vertical as possible from the bottom of the trench to a point 12" above the top of the pipe when it is laid to grade, trenchwork and minimum widths of the trench shall be as shown in the plans.
2.2.2 In caving ground or in wet, saturated, or flowing materials, the sides of the excavation shall be adequately sheeted and braced so as to maintain the same dimensions from sides or cave-ins and safe for workmen. Sheeting and shoring shall not be removed until the excavation has been backfilled to a sufficient depth to prevent cave-ins.

2.3 Trench Bottom:
The entire length of the water line shall be founded on bedding specified in Pipe Bedding and Backfill Materials.

2.4 Disposal of Excavated Materials:
Excavated material shall be piled adjacent to the work to be used for backfilling as required. Excavated materials which are unsuitable for backfilling and excess material shall be disposed legally disposed of at contractor's expense.

2.5 Use of Explosives:
In the event the use of explosives is necessary for the efficient prosecution of the work, the Contractor shall notify the Superintendent in advance of their use and shall exercise every precaution to prevent damage to adjoining improvements or property by reason of their use. Any damage to private property resulting from the use of explosives shall be the liability of the Contractor. In all cases where the explosives are necessary, a permit from the local government agency shall be obtained prior to their use.

2.6 Backfilling:
2.6.1 Water Lines:
2.6.1.1 Backfilling of water lines shall include the refilling and consolidation of the fill in the excavation up to the surrounding ground surface or road grade at crossings. It is essential that the complete backfill be done in such a manner to minimize voids in the backfill.
2.6.1.2 Backfilling up to the point 12" above the top of the pipe shall be done with good earth, sand, or gravel and shall be free from large rocks or hard, lumpy materials. No materials of a perishable, spongy or other unsuitable nature shall be used in backfilling.

2.6.1.3 Backfill of Pipe:
Rigid pipe (concrete, cast iron, or asbestos cement) shall be backfilled with select materials of the proper moisture content to obtain a support under the lower ½ of the pipe, compacted to a density of 90% AASHTO T-180 modified or better. The haunch is to cradle the pipe so that the 60 length of each joint is uniformly supported on from bedding and the weight of pipe and fill is borne uniformly by the lower ½ of the pipe barrel. Tamping of fill below the spring line of the pipe may be by hand tamps provided the required density is obtained.
Where trenches are not under existing or proposed paved areas, backfill shall proceed in the same select materials hand placed to a point 12" over the top of the pipe.
Backfill may then proceed by whatever commonly used construction methods are considered with the integrity of the pipeline. Backfill outside the area of proposed paved areas shall be left slightly over full to allow for settlement.
Where trenches are under existing or proposed paved areas, the entire trench up to a point 2' below existing or proposed subgrade shall be backfilled with select materials and compacted to a density of 90% AASHTO T-180 modified or better. The remaining 2' shall be similar, backfilled, but the minimum compaction shall be 95% AASHTO T-180 modified.
The backfill of materials in trenches under existing or proposed paved areas shall be compacted with mechanical devices manufactured for that purpose form to feet above the top of the pipe to the top of the existing or proposed subgrade

SECTION 3 - DEWATERING OF TRENCHES

3.1 Description:
This section covers the dewatering of trenches to the extent that bedding material and water pipe can be placed on dry, firm trench bottom.

3.2Prohibited Use:
Dewatering where required to keep the excavation dry and the subgrade stable, shall be installed when the excavation is made a minimum of two (2) feet of the water table, except as hereinafter provided, and shall be in continuous operation until backfill is completed to this level. When construction equipment is to be operated in an area that has been excavated and wallpointing is required to keep the trench excavation dry and the subgrade stable, the dewatering shall be installed so that the excavation is kept a minimum of five (5) feet of the water table. There shall be sufficient pumping equipment in good working order, available at all times, to remove any water that accumulates when the pipe line creates natural drainage channels, the work shall be conducted in such a manner that unnecessary damage or delays in the prosecution of the work shall be prevented. Provision shall be made for the satisfactory disposal of surface water pumped so as to prevent damage to public or private property.

3.3 Trench Dewatering:
Dewatering of trenches other than by wellpointing shall be accomplished by whatever means elected by the Contractor, however, bedding material or pipe may not be placed in wet or unstable trenches. Soil that cannot be properly consolidated shall be excavated and dry material dumped in place to such a depth as may be required to provide a firm trench bottom.

3.4 Surface Runoff:
Surface runoff water shall be diverted away from the trenches. Such diversion shall be into existing drainage structures such as storm sewers, ditches or streams. Diversion of surface runoff shall be in such a manner to prevent flooding of streets or private property.

3.5 Disposition of Water from Dewatering:
All water used for the purpose of dewatering or any other means shall be pumped, piped or drained into existing drainage structures, such as storm sewers, ditches or streams. The disposition of water from dewatering operations shall be accomplished in a manner that will prevent the flooding of public or private property.

SECTION 4 - SHEETING AND SHORING

4.1 Description:
This section covers the sheeting and shoring to protect the safety of workers, provide suitable means for constructing the water line, and to protect public or private property, including existing utilities.

4.2 Cave-ins:
Where trench cave-ins are a possibility, adequate sheeting and/or shoring shall be provided so as to maintain the trench free from slides or cave-ins and safe for workmen.

4.3 Existing Structures:
Where existing buildings, other utilities, streets, or other structures are in close proximity to the trench, adequate protection shall be provided by the use of sheeting and shoring to protect the structure from possible damage.
In the case of streets or utilities, the Contractor may elect to remove the street or utility provided that the removal and subsequent replacement meets with the approval of the Town of Littleton, the utility owner, or whoever has jurisdiction of the structure. In all cases, it shall be the responsibility of the Contractor to protect public and private property and any person or person who might, as a result of the Contractor's work, be injured.

SECTION 5 - PIPE LAYING

5.1 Description: This section covers the laying of pipe for water lines.
Each joint of pipe shall be inspected carefully before being placed in the trench. Any joint found to be cracked or otherwise damaged as to impair its usefulness shall be plainly marked in such a manner that the markings will not rub or wash off. Damaged joints shall be removed from the site as soon as feasible.

5.2 Pipe Laying:
5.2.1 All pipe and fittings shall be installed to the line and grade as detailed on the plans. Subject to the approval of the Engineer, other fittings may be added to or substituted for those shown on the plans, should the need arise during construction. This permissive stipulation in no way shall relieve the Contractor of the responsibility for furnishing and installing all fittings required for a complete and proper installation of water mains detailed on the plans.
5.2.2 Proper facilities shall be provided for lowering sections of pipe into trenches. Under no circumstances shall pipe be laid in water and no pipe shall be laid when trench conditions or weather are unsuitable for such work. Full responsibility for the diversion of drainage and for the cleaning of trenches during construction shall be borne by the Contractor.
5.2.3 All dirt and other foreign matter shall be removed from the inside of pipe and fittings before they are lowered into the trench. They shall be kept clean during and after laying, care shall be taken to keep dirt out of the jointing space.
5.2.4 Spigot and bells shall be cleaned thoroughly before the application of lubricant and attachment of the gasket shall be to shall extend with the joint.
5.2.5 All fittings shall be handled and laid using fixture wrenches to the manufacturer's specifications.
5.2.6 At the end of each day's work, and when pipe laying is discontinued for an appreciable period, open ends of pipe shall be closed with a cast plug or cap firmly secured in place.
5.2.7 All pipe and fittings shall be lowered carefully into the trench in such manner as to prevent damage to pipe, fittings, coatings. Neither pipe nor fittings shall be dropped or dumped into the trench.
5.2.8 Cutting of pipe, where needed, shall be done in a neat and workmanlike manner without damage to pipe or lining.
5.2.9 Deflections shall not exceed the maximum recommended by the pipe manufacturer.
5.2.10 All non-metallic pipes shall have trace wire meeting requirements of Section MW12. "Trace Wire" of these specifications as per standard details.
5.2.11 Backfilling shall not be undertaken until water main installation has been inspected and approved by LWD

5.3 Early Warning Tape:
Early warning tape of blue color shall be installed in trench on top of pipe bedding sand.

SECTION 6 - TAPS

6.1 Service Taps:
6.1.1 General:
Taps: Taps for transmission of water or air from the main into system service accessories are defined as follows:
a. Standard (normal) pipe threaded holes in the wall of water mains; these taps may be either manufactured into the pipe or installed in the field.
b. Tap installations that are made by clamping a bronze service clamp equipped with a sealed threaded port on the periphery of the main than drilling through the pipe wall to complete each service port.
c. When a direct tap is made, pipe clips or Teflon tape shall be applied to the threaded part of the corporation stop.
d. Services will only be provided from dedicated easements, alley or right-of-ways.
e. Taps will be located in such a manner to avoid the thrust blocks and most direct line to the meter.
f. Effort should be made to locate taps above or below the centerline of the pipe at either 10 o'clock or 2 o'clock.

6.1.2 Tapping Asbestos-Cement Pipe:
Asbestos-cement pipe shall be tapped by the use of a tapping saddle with double stainless steel straps.

6.1.3 Tapping Cast Iron Pipe:
Cast iron pipe four (4) inches in diameter and smaller shall be tapped by the use of a tapping saddle made of bronze or stainless

6.1.4 Tapping Ductile Iron Pipe:
Ductile Iron Pipe shall be tapped the same as cast iron pipe, Section CWA 1.3 above.

6.1.5 Tapping PVC Pipe:
PVC pipe shall be tapped the same as cast iron pipe, Section CWA 1.3 above

6.1.6 Tapping Concrete Pressure Pipe:
Concrete pressure pipe shall be tapped by the use of a bronze or stainless steel tapping saddle as in CWA 1.1.3 above. Tap shall be made according to Pipe Manufacturer's specifications. After tap is made, tap shall be covered with mortar conforming to MW03.1 "Mortar" of these specifications.

6.2 Main Taps:

6.2.1 Wet Taps:
Wet connections shall be used for all connections except where directed by the Engineer. Wet connections shall be made with a tapping sleeve and valve conforming to MW3.7 "Tapping Valves and Sleeves" of these specifications. Either air driven or manual tapping machines may be used. The pipe to be tapped shall be cleaned thoroughly and the brushed to remove rust and other foreign matter. The tapping sleeve shall be put on and tightened down securely. The valve shall be put on the sleeve and braced against movement. Then the tap shall be made.

6.2.2 Dry Taps:
Dry connections shall only be made when directed by the Engineer and/or when a fitting must be added to an existing line. For dry connections, the existing line must be shut off and drained.
This should be done so that down time of the line shall be as short as possible. After line has been drained, but the shall be cut and the fitting put in and blocked. The section in line cut into shall be tested and sterilized as would a new line.

SECTION 7 - HYDRANTS

7.1 Description:
This section covers construction methods used in setting fire hydrants. All fire hydrants shall conform to Section MW12 - "Fire Hydrants".

7.2 Excavation:
Excavation for fire hydrants shall be neat and shall leave back of trench and bottom of trench undisturbed earth for concrete blocking.

7.3 Installation:
Fire hydrants shall be installed as per standard details. A standard six-inch gate valve shall be between the main and hydrant, as per standard details. Six (6) inch Ductile iron water line, meeting requirements MW2.9 - "Ductile Iron Pressure Pipe" of these specifications, or Six (6) inch adapters shall be used to install fire hydrants.

7.4 Backfill:
Backfill shall be as per standard details. Concrete blocking shall be put underneath and behind hydrant. At least seven (7) cubic feet of crushed stone, average 14 inch diameter, shall be placed around hydrant as per standard details for drainage of hydrant barrel. Fabric shall be placed above stone to provide a separation barrier between backfill and stone.

SECTION 8 - PAVEMENT REPAIRS

8.1 Description:
This section covers the construction methods to be used in the repair of roads, streets, or other public rights-of-way

8.2 Permanent Repairs:
8.2.1 Asphalt concrete hot mix surface course construction shall meet all the current requirements of the Littleton Highway Department Specifications or the Mass DOT Specifications for the construction of asphalt concrete hot mix surface course or as otherwise approved.
8.2.2 Concrete pavement repairs shall meet with the current requirements of the Mass DOT Specifications or the Littleton Highway Department Specifications for the construction of concrete rigid pavements.
8.2.3 Gravel surfacing shall meet with the current requirements of the Littleton Highway Department
8.2.4 All permanent repairs of streets, roads, or other public rights-of-way shall meet with the construction requirements of the governing agency or private owner and shall meet with the requirements of all local Ordinances, Regulations, Permits, or Codes governing the repairs to roads, streets, or other rights-of-way.

8.3 Temporary Surfacing:
Methods of temporary surfacing shall consist with the requirements of Paragraph 14.2 or as otherwise approved to adequately maintain traffic and proper drainage.

SECTION 9 - CONSTRUCTION WITHIN CITY RIGHT-OF-WAY

9.1 City Streets:
Littleton Highway Department and MassDOT (when applicable) shall be notified prior to any street work.
Proper permitting shall be obtained prior to opening of any city streets if city streets have to be closed, the Littleton Fire, Police and Highway department shall be notified of closing. Proper barricades, warning signs, lights and watchmen shall be employed. Work shall be proceeded in such a manner that one-half of the traveled portions of the road are open to traffic unless approved by Littleton Police Dept. in writing.
Right-of-way shall be left in neat and orderly manner and left in as good or better shape than it was before construction

9.2 Easements:
Easements shall be left in a neat and orderly manner. Easements shall be left in as good or better shape than that before construction.

SECTION 10 - EXISTING STRUCTURES

10.1 General:
No trees or existing structures shall be removed unless approved by the Superintendent. All existing structures, improvements, and utilities shall be adequately protected, at the expenses of the Contractor, from damage that might otherwise occur due to construction operations. The Contractor shall be liable for damage to any utilities resulting from his operation. During construction, all fire hydrants, valve boxes, fire or police call boxes, and other existing utility controls shall be left intact, unobstructed and accessible.

SECTION 11 - STERILIZATION

11.1 Description:
This section covers methods for sterilization of water lines and facilities. Before water lines are sterilized they must first be pressure tested according to the requirements of Part IV - "Testing of Water Mains" of these specifications. Water lines also must be flushed to remove dirt and other foreign matter.

11.2 Flushing:
A service tap must be put on one end of the water line to allow entry of flushing water and sterilization water. The tap shall be done according to the requirements of CWA 1.3 - "Service Taps" of these specifications.
Flushing shall be done until clean water from the Town's system until water leaving the other end of the main is clear.

11.3 Sterilization:
Chlorine shall be used to sterilize the pipe line by the following method:
The amount of chlorine applied shall be such as to provide a dosage of not less than fifty (50) parts per million. The chlorinating material shall be introduced to the water lines and distribution system in a manner approved by the Engineer. After a contact period of not less than eight (8) hours, the system shall be flushed until clean water until the residual chlorine content is not greater than 0.2 parts per million. All valves in the lines being sterilized shall be opened and closed several times during the contact period.
The cost of furnishing the chlorine, labor, tools, equipment, and tests of chlorine content and bacteriological tests shall be at the expense of the Contractor. No water mains shall be placed in service until a satisfactory test report has been received from an approved laboratory.

TESTING OFWATER MAIN SECTION

SECTION 1 - GENERAL

1.1 This part of the specifications stipulates test requirements for materials, construction methods, and leakage, pressure and bacteriological tests of the water lines. Testing for materials and construction methods shall be at the Developer's option except as stipulated herein. The Littleton Water Department may require tests as outlined in these specifications for materials and construction procedures if, in the opinion of the Water Department, the quality of materials and the construction procedures do not meet the requirements stipulated herein.
In all cases, leakage, pressure and bacteriological tests shall be performed in the manner as specified in these standard specifications.

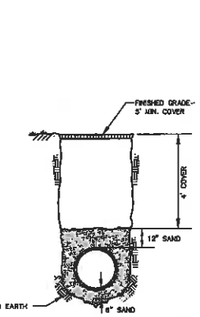
SECTION 2 - HYDRODSTATIC TESTING

2.1 Ductile Iron Pipe:
As soon as a continuous section of new water main has been installed, the Contractor shall proceed immediately to complete all testing and sterilizing, make all connections, and place these sections in service. The Contractor shall furnish all labor, materials, tools, and equipment necessary to bulkhead and seal off the line for testing, fill it with water, raise the filled line to test pressure and measure the amount of leakage over the test period.
Unless otherwise indicated, the pipeline shall be tested with a hydrostatic pressure of not less than two hundred (200) pounds per square inch maintained over a continuous period of not less than four (4) hours. After a successful continuous pressure period of four (4) hours has been completed, a test for the determination of amount of leakage shall be run at the same pressures as before for a duration of two (2) hours. If the tests indicate a leakage in excess of a rate equal to ten (10) gallons per inch of internal pipe diameter per mile of pipeline per twenty-four (24) hours, the Contractor shall be required to find and eliminate the leak. All known tests shall be stopped, regardless of the test requirement.
The cost of testing, finding, and repairing the leaks and retesting, shall be at the expense of the Contractor. The water required to fill the lines shall be furnished by the Owner, without charge to the Contractor.

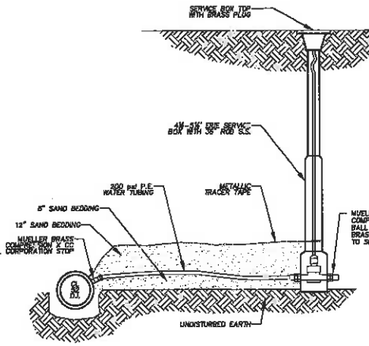
2.2 PVC Pressure Pipe:
As soon as a continuous section of new water main has been installed, the Contractor shall proceed immediately to complete all testing and sterilizing, make all connections, and place these sections in service. The Contractor shall furnish all labor, materials, tools, and equipment necessary to bulkhead and seal off the line for testing, fill it with water, raise the filled line to test pressure, and measure the amount of leakage over the test period. Unless otherwise indicated, the pipeline shall be tested with a hydrostatic pressure of not less than that pressure the pipe is rated at (i.e., class 200 test pressure 200 psi) maintained over a continuous period of not less than four (4) hours. After a successful continuous pressure period of four (4) hours has been completed, a test for the determination of amount of leakage shall be run at the same pressure as before for a duration of two (2) hours. If the tests indicate a leakage in excess of a rate equal to ten (10) gallons per inch of internal pipe diameter per mile of pipe line per twenty-four (24) hours, the Contractor will be required to find and eliminate the leak. All known leaks shall be stopped, regardless of the test requirement.
The cost of testing, finding and repairing the leaks and retesting, shall be at the expense of the Contractor. The water required to fill the lines shall be furnished by the Owner, without charge to the Contractor.

SECTION 3 - BACTERIOLOGICAL TEST

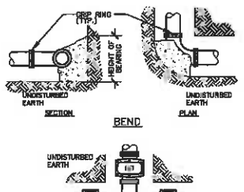
3.1 After a section of water main has been sterilized and flushed according to Section CW19 - "Sterilization" of these specifications, the Utility shall be notified to pick up a sample. A bacteriological test shall be run to determine whether coliform organisms are present. If coliform organisms are found, the line will have to be re-sterilized as per Section 11.3 of these specifications.
The Contractor will be notified as to the results of the test. The test requires 48 hours to complete.



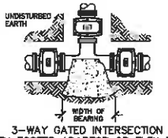
WATER MAIN INSTALLATION
NOT TO SCALE



SERVICE INSTALLATION
NOT TO SCALE



BEND



3-WAY GATED INTERSECTION WITH FOSTER ADAPTOR OR FLEX T-3

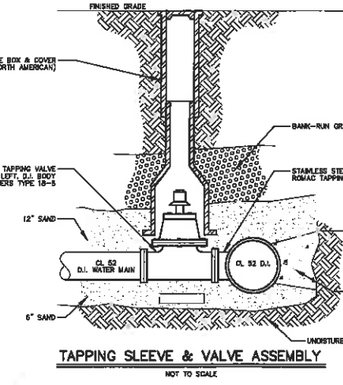
AREA OF BEARING FACE OF CONCRETE THRUST BLOCKS IN SQUARE FEET BASED ON 250 P.S.I. @ 1.5 TONS/SF. ALLOWABLE SOIL BEARING CAPACITY

PIPE SIZE (N.)	1/4 BEND	1/8 BEND	1/16 BEND	PLUG & TEES
4,6,8	6.0	2.9	2.3	6.6
10	9.6	5.2	2.3	6.7
12	13.3	6.7	3.7	9.6
16	24.0	11.8	5.7	17.0

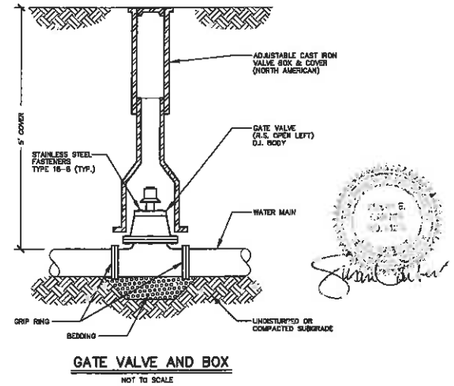
NORMAL FITTING DIAMETER	CEARING AREA - SQ. FT. FITTING 90° BEND	45° BEND	BETWEEN 10°-45°	BRANCH OF TEE	DEAD END
6"	4	2	2	4	4
8"	7	4	3	5	9

1. ALL BENDS, TEES, WYES, HYDRANTS AND DEAD ENDS SHALL BE BRACED WITH CONCRETE THRUST BLOCKS.
2. BEARING AREA OF X (J) IS AREA OF CONE IN CONTACT WITH WALL OF TRENCH.
3. HEIGHT (H) & LENGTH (L) AS REQUIRED TO OBTAIN BEARING AREA IN TABLE.
4. BOULDERS ARE NOT TO BE USED AS THRUST BLOCKS.

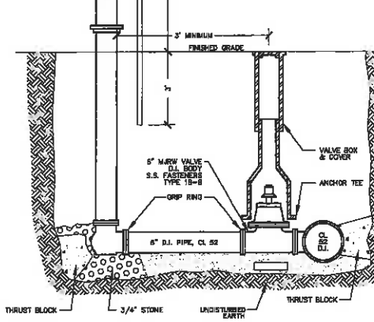
THRUST BLOCK DETAILS
NOT TO SCALE



TAPPING SLEEVE & VALVE ASSEMBLY
NOT TO SCALE



GATE VALVE AND BOX
NOT TO SCALE



HYDRANT ASSEMBLY
THREE—WAY GATED ANCHOR TEE WITH FOSTER ADAPTER
NOT TO SCALE

PERMIT SET
NOT FOR CONSTRUCTION

GENERAL REVISION NOTE:
PREVIOUS PLAN DATES:
DEC 4, 2012–MINOR REVISIONS
DEC 17, 2013–GENERAL REVISION

DUE TO EXTENSIVE REVISIONS, THESE PLANS SUPERCEDE ALL PREVIOUS PLANS AND ARE DATED FEB 4, 2014 TO AVOID CONFUSION

VILLAGE GREEN
WATER DETAILS

LOCATION: 15 GREAT ROAD
TOWN: LITTLETON, MASSACHUSETTS
PREPARED FOR:
FIFTEEN GREAT ROAD II LLC
SCALE: AS SHOWN DATE: FEB 4, 2014

Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

PROJECT No.: 11–6303A PLAN No. 6303A CP–14

DRAINAGE SYSTEM OPERATIONS & MAINTENANCE PLAN

STORM WATER COLLECTION SYSTEM:

THE STORMWATER COLLECTION SYSTEM SERVING THIS SITE IS INTENDED TO BOTH COLLECT STORM WATER RUNOFF AND TO PROVIDE TREATMENT OF THE STORMWATER PRIOR TO IT ENTERING THE INFILTRATION BASINS/SYSTEM. THIS SYSTEM COLLECTS RUNOFF GENERATED FROM THE SITE THROUGH THE USE OF CATCHBASINS. EACH CATCHBASIN IS EQUIPPED WITH A FOUR (4') FOOT DEEP SUMP (WHICH COLLECTS SEDIMENTS AND DEBRIS) AND A OIL/GAS TRAP (WHICH PREVENTS THE INTRUSION OF HYDROCARBONS AND OTHER FLOATING MATERIALS FROM ENTERING THE DRAINAGE SYSTEM). WHEN THESE TWO BASIC CONTROL MECHANISMS ARE FUNCTIONING PROPERLY THEY PROVIDE FOR A REDUCTION OF CONTAMINANTS AND DEBRIS ENTERING THE STORMWATER COLLECTION AND RECHARGE SYSTEMS, AND THEREFORE DOWNSTREAM RECEIVING WATERS/WETLANDS.

THIS SITE IS ALSO BE SERVED BY INFILTRATION SYSTEMS WHICH COLLECT THE GENERATED RUNOFF AND RECHARGE IT TO THE GROUND, THUS PROVIDING RECHARGE SIMILAR TO THAT OF THE PRE-DEVELOPMENT CONDITION AND FILTERING THE RUNOFF AS IT TRAVELS THROUGH THE EXISTING SOILS TO THE GROUNDWATER TABLE.

BOTH OF THE ABOVE-DESCRIBED SYSTEMS RELY UPON PROPER MONITORING, OPERATIONS AND MAINTENANCE TO FUNCTION AS DESIGNED AND INTENDED. A PROGRAM OF MONITORING, OPERATIONS AND MAINTENANCE MUST BE ONGOING THROUGHOUT THE LIFE AND USE OF THE SITE, AND IS THE OWNER'S RESPONSIBILITY SOLELY. THESE ACTIVITIES, AS DESCRIBED BELOW, ARE TO BE INITIATED AFTER COMPLETION OF THE PROJECT AND ARE NOT RELATED TO THE CONSTRUCTION OF THE SITE, EXCEPT AS SPECIFICALLY PROVIDED. THIS PLAN IS SPECIFICALLY FOR SITE-RELATED ACTIVITIES, NOT ACTIVITIES WHICH ARE INTERIOR TO BUILDINGS, THOUGH THERE ARE NECESSARY IMPLICATIONS AND CORRELATION'S BETWEEN THE TWO.

MONITORING:

THE DRAINAGE SYSTEMS ARE REQUIRED TO BE MONITORED BY THE PROPERTY MANAGER, WHO SHALL DIRECT AN INDIVIDUAL TO ACT AS THE SYSTEM'S MANAGER. THE NAME, ADDRESS AND DAY AND NIGHT (OR EMERGENCY) TELEPHONE NUMBER OF THIS PERSON OR ENTITY SHALL BE PROVIDED TO THE LITTLETON CONSERVATION COMMISSION PRIOR TO THE ISSUANCE OF A CERTIFICATE OF COMPLIANCE FOR THE SITE CONSTRUCTION. THIS INDIVIDUAL SHALL BE REQUIRED TO KEEP A LOG OF ALL REQUIRED INSPECTIONS, OBSERVATIONS AND MAINTENANCE ACTIVITIES DRAINAGE SYSTEM COMPONENTS SHALL BE REFERRED TO BY SPECIFIC LOCATION OR THE DESIGN PLAN DESIGNATION, (E.G. CTB # 10) TO AVOID CONFUSION OR MISIDENTIFICATION THE LOG SHALL BE MADE AVAILABLE TO THE CONSERVATION COMMISSION WITHIN TEN (10) DAYS OF A WRITTEN REQUEST BY THAT AGENCY.

MONITORING FOR THIS SITE SHALL CONSIST OF THE FOLLOWING:

1. ALL CATCHBASINS SHALL BE INSPECTED TO ENSURE THEY ARE WATER-TIGHT (HOLDING WATER), HAVE ADEQUATE SUMP CAPACITY, ALL OIL/GAS TRAPS ARE IN-PLACE, ALL GRATES AND FRAMES ARE FREE FROM STRUCTURAL DAMAGE, AND ARE DRAINING FREELY. THIS MONITORING SHALL OCCUR AT A MINIMUM OF THREE (3) MONTH INTERVALS (QUARTERLY).

2. ALL DRAINAGE MANHOLES SHALL BE INSPECTED TO ENSURE THAT THEY ARE WATER-TIGHT, ALL LIDS AND FRAMES ARE FREE FROM STRUCTURAL DAMAGE, ARE DRAINING FREELY AND ARE NOT PONDING WATER. THIS MONITORING SHALL OCCUR A MINIMUM OF ONCE PER YEAR.

3. OTHER DRAINAGE SYSTEMS SHALL BE INSPECTED TO ENSURE THAT NO EROSION IS OCCURRING AT OUTLETS, ALL OUTLETS ARE FREE-FLOWING AND NO DAMAGE HAS OCCURRED AS PART OF SITE MAINTENANCE OR ACTIVITIES.

OPERATIONS:

1. GOOD HOUSE KEEPING AND MATERIAL MANAGEMENT REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORMWATER RUNOFF. A POLLUTION PREVENTION PLAN SHALL BE DEVELOPED WHICH SHALL INCLUDE THE FOLLOWING AT A MINIMUM:
   - A. ALL MATERIALS STORED ON-SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
   - B. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.
   - C. SUBSTANCES SHOULD NOT BE MIXED WITH ONE ANOTHER, UNLESS RECOMMENDED BY THE MANUFACTURER.
   - D. WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF A CONTAINER.
   - E. THE SYSTEM'S MANAGER SHALL INSPECT THE SITE DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE, DURING ALL CONSTRUCTION PHASES
   - F. ORIGINAL MATERIALS LABELS AND MATERIAL SAFETY DATA SHEETS SHALL BE KEPT; THEY RETAIN IMPORTANT INFORMATION.
   - G. PETROLEUM PRODUCTS:
     1) ALL ONSITE VEHICLES AND PARKING AREAS SHALL BE REGULARLY MONITORED OR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO PREVENT LEAKAGE.
     2) PETROLEUM PRODUCTS SHALL BE STORED UNDER COVER AND SHALL BE IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED.
   - H. FERTILIZERS:
     1) FERTILIZERS SHALL ONLY BE USED IN THE MINIMUM AMOUNTS AS RECOMMENDED BY THE MANUFACTURER.
     2) THE CONTENTS OF ANY UNUSED FERTILIZER SHALL BE TRANSFERRED TO A CLEARLY LABELED, SEALABLE PLASTIC BIN, TO AVOID SPILLAGE.
   - I. PAINTS, SOLVENTS.
     1) ALL PAINTS AND SOLVENTS SHALL BE STORED IN ORIGINAL MANUFACTURER'S CONTAINERS IN A COVERED LOCATION.
2. SPILL CONTROL PRACTICES:
   - A. MANUFACTURER'S RECOMMENDED METHODS SHALL BE CLEARLY POSTED FOR SPILL CLEANUP AND SITE PERSONNEL SHALL BE MADE AWARE OF THE PROCEDURES AND THE LOCATIONS OF CLEANUP INFORMATION AND SUPPLIES.
   - B. MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT ON-SITE IN A DESIGNATED MATERIAL STORAGE AREA. EQUIPMENT WILL INCLUDE, BUT NOT BE LIMITED TO, BROOMS, DUST PANS , MOPS, RAGS, GLOVES, GOGGLES, ABSORBENT MATERIALS, SAND, SAWDUST AND PLASTIC & METAL TRASH CONTAINERS SPECIFICALLY KEPT AND LABELED FOR THIS PURPOSE.
   - C. ALL SPILLS WILL BE CLEANED-UP IMMEDIATELY AFTER DISCOVERY.
   - D. SPILLS OF TOXIC OR HAZARDOUS MATERIAL OR NATURE WILL BE REPORTED TO THE APPROPRIATE STATE, LOCAL OR FEDERAL AGENCY, AS REQUIRED BY-LAW.
   - E. THE SPILL PREVENTION PLAN WILL INCLUDE PROVISIONS TO ADAPT THE PLAN TO ENSURE THAT SPILLS WILL NOT REOCCUR, AND HOW TO CLEANUP THE SPILL IF THERE IS ANOTHER ONE.
3. SITE OPERATIONS AND DAILY USE SHALL CONSIDER THE ULTIMATE DISPOSITION OF STORMWATER AND OTHER SITE-GENERATED FORMS OF RUNOFF.THE WASHING OF VEHICLES ON SITE BY RESIDENTS SHALL BE DISCOURAGED.
4. SNOW PLOWING - SNOW PLOWING OPERATIONS SHALL STOCKPILE SNOW, ICE AND ACCUMULATED MATERIALS IN AREAS WHERE SNOW MELT WILL FLOW INTO THE ON-SITE DRAINAGE SYSTEMS, INCLUDING DRAINAGE BASINS. NO PLOWING OR STORAGE OF SNOW INTO WETLANDS OR AREAS DRAINING TO WETLAND.
5. SALT USE SITE-WIDE SHALL BE APPLIED TO THE MINIMUM EXTENT POSSIBLE TO MAINTAIN SAFE CONDITIONS, AND ONLY IF NOT SPECIFICALLY EXCLUDED BY ANY SPECIAL CONDITIONS.

MAINTENANCE:

1. PARKING AREAS, ROAD AND ACCESS WAYS AND GUTTERS SHALL BE SWEPT CLEAN OF DEBRIS AND ACCUMULATION ON A REGULAR BASIS. AT A MINIMUM, A SPRING AND FALL CLEANING SCHEDULE IS RECOMMENDED.
2. ALL CATCHBASINS SHALL HAVE THE SUMPS CLEANED AT ANY TIME OF THE YEAR WHEN 2' OR LESS SPACE EXISTS BELOW THE OUTLET INVERT, OR A MINIMUM OF ONCE PER YEAR, REGARDLESS OF SUMP ACCUMULATION. ALL DEBRIS FROM THE CLEANING SHALL BE DISPOSED OF OFF-SITE AND IN A MANNER AS PROSCRIBED BY LAW.
3. ALL HYDROCARBON TRAPS SHALL BE CHECKED FOR PHYSICAL INTEGRITY AND SEALED IMMEDIATELY AFTER EACH CATCHBASIN CLEANING.
4. OIL ABSORBING "PILLOWS" OR OTHER MEANS SHALL BE USED TO REMOVE ACCUMULATIONS OF HYDROCARBONS (OIL/GREASE) IN CATCHBASINS THAT ARE REGULARLY OBSERVED TO CONTAIN HYDROCARBONS, WHICH DO NOT EVAPORATE BETWEEN INSPECTIONS.
5. ALL BROKEN, LEAKING OR OTHERWISE DAMAGED STRUCTURES SHALL BE REPAIRED PROMPTLY UPON DISCOVERY. CATCHBASIN GRATES OR MANHOLE LIDS SHALL BE REPLACED WITH SIMILAR WEIGHT AND LOADING CHARACTERISTIC REPLACEMENT PARTS.
6. ALL EROSION SHALL BE REPAIRED. THE REPLACEMENT OF ANY PIPE OR DRAINAGE STRUCTURE SHALL MATCH THE ORIGINAL DESIGN SPECIFICATIONS.

NPDES GENERAL NOTES:

1. THIS PLAN IS INTENDED TO MEET THE REQUIREMENTS OF THE NATIONAL STORM WATER POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) OF SECTION 402 OF THE FEDERAL CLEAN WATER ACT. THE CONSTRUCTION OF THE ROADWAY, BUILDINGS AND APPURTENANT STRUCTURES WILL RESULT IN MORE THAN 1 ACRE OF TOTAL DISTURBED AREA, REQUIRING THE SUBMITTAL OF A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR THIS SITE.
2. IT IS ANTICIPATED THAT THE SITE AS DESIGNED WILL MEET THE CRITERIA FOR A NPDES GENERAL PERMIT. THE SUBMISSION OF THE NPDES NOTICE OF INTENT (NPDES NOI), THIS PLAN AND SUPPORTING DOCUMENTATION MUST BE POSTMARKED A MINIMUM OF TWO (2) DAYS PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE OR CONSTRUCTION.

NPDES RECORD REQUIREMENTS:

1. A COPY OF THE NPDES SUBMITTAL AND THIS PLAN MUST BE KEPT ON-SITE AT ALL TIMES DURING CONSTRUCTION AND SHALL BE MADE AVAILABLE TO ALL INTERESTED PARTIES.
2. RECORDS MUST BE MAINTAINED BY THE PERMITEE FOR A PERIOD OF THREE (3) YEARS FROM THE DATE OF STABILIZATION OF THE SITE. STABILIZATION OCCURS WHEN % VEGETATIVE GROWTH AND/OR MECHANICAL STABILIZATION THE SITE HAS OVER 70 THROUGHOUT.

NPDES INSPECTION REQUIREMENTS:

1. ALL INSPECTIONS SHALL BE CONDUCTED BY QUALIFIED PERSONNEL, WHO SHALL PRODUCE WRITTEN QUANTITATIVE AND QUALITATIVE REPORTS ON THE METHODS, SUITABILITY OF STRUCTURES AND THE GENERAL CONSTRUCTION.
2. INSPECTIONS ARE REQUIRED DURING SITE ALTERATIONS A MINIMUM OF ONCE EVERY SEVEN (7) DAYS WHILE SURFACES ARE UNSTABILIZED.
3. INSPECTIONS ARE REQUIRED WITHIN 24 HOURS OF STORMS WHICH PRODUCE 0.5" OF PRECIPITATION OR GREATER.
4. WHEN THE SITE IS FULLY STABILIZED, INSPECTIONS SHALL BE CONDUCTED AT MONTHLY INTERVALS FOR A PERIOD OF 3 YEARS.

EROSION & SEDIMENTATION CONTROL PLAN

GENERAL:

THIS PLAN IS PART OF A SET OF DOCUMENTS THAT ARE TO BE VIEWED AND REVIEWED IN THEIR ENTIRETY; SUCH DOCUMENTS INCLUDE THE CONSTRUCTION SPECIFICATIONS, CONSTRUCTION PLANS AND ANY PERMITS ISSUED BY THE TOWN OF LITTLETON, AGENTS OF THE TOWN OF LITTLETON OR OTHER REGULATORY AGENCIES.

EROSION CONTROL MEASURES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT EROSION AND SEDIMENTATION ARE CONTROLLED. THIS PLAN SHALL BE SHALL BE ADAPTED TO FIT THE CONTRACTOR'S EQUIPMENT, WEATHER CONDITIONS, AND ANY ORDERS OF CONDITIONS ISSUED BY THE CONSERVATION COMMISSION AND ANY SPECIAL CONDITIONS ISSUED BY LITTLETON.

2. THE MOST IMPORTANT ASPECTS OF CONTROLLING EROSION AND SEDIMENTATION ARE LIMITING THE EXTENT OF DISTURBANCE AND STABILIZING SURFACES AS SOON AS POSSIBLE. OF SECONDARY IMPORTANCE IN EROSION CONTROL IS THE LIMITING THE SIZE AND LENGTH OF THE TRIBUTARY DRAINAGE AREA WITHIN THE WORK SITE AND DRAINAGE STRUCTURES. THESE FUNDAMENTAL PRINCIPLES SHALL BE THE KEY FACTOR IN THE CONTRACTOR'S CONTROL OF EROSION ON THE SITE.

3. THE EXISTING SOIL CONDITIONS PROVIDE THE POTENTIAL OF RUNOFF TO OFF-SITE AREAS WITH EROSION POTENTIAL.

4. THE CONTRACTOR SHALL CONSTRUCT TEMPORARY DIVERSION SWALES AND SETTLING BASINS IN AREAS OF FUTURE CONSTRUCTION. CONSTRUCTION IS PERMITTED BEYOND THE LIMIT OF DISTURBANCE ONLY WHEN ADDITIONAL DRAINAGE MEASURES OR STABILIZATION MEASURES ARE NEEDED, AND SHALL BE SUBJECT TO APPROVAL BY THE LITTLETON CONSERVATION COMMISSION, PRIOR TO WORK OUTSIDE OF DESIGNATED LIMIT OF DISTURBANCE LINE. THE LIMIT OF DISTURBANCE LINE SHALL BE THE EROSION CONTROL BARRIER.

5. ALL DISTURBED SURFACES SHALL BE STABILIZED A MINIMUM OF 14 DAYS AFTER CONSTRUCTION IN ANY PORTION OF THE SITE HAS CEASED OR IS TEMPORARILY HALTED UNLESS ADDITIONAL CONSTRUCTION IS INTENDED TO BE INITIATED WITHIN 21 DAYS.

6. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE AND REPAIR OF ALL EROSION CONTROL DEVICES ON-SITE. ALL EROSION CONTROL DEVICES SHALL BE REGULARLY INSPECTED. ANY SEDIMENTS REMOVED FROM THE CONTROL DEVICES SHALL BE DISPOSED OF OUTSIDE OF THE 100' WETLANDS BUFFER ZONE.

7. AT NO TIME SHALL SILT-LADEN WATER BE ALLOWED TO ENTER SENSITIVE AREAS (WETLANDS, OFF-SITE AREAS AND DRAINAGE SYSTEMS). ANY RUNOFF FROM DISTURBED SURFACES SHALL BE DIRECTED THROUGH SETTLING BASINS AND EROSION CONTROL BARRIERS PRIOR TO ENTERING ANY SENSITIVE AREAS.

PRELIMINARY SITE WORK:

1. MATERIAL REMOVED SHOULD BE STOCKPILED, SEPARATING THE TOPSOIL FOR FUTURE USE ON THE SITE. EROSION CONTROLS SHALL BE UTILIZED ALONG THE DOWNSLOPE SIDE OF THE PILES IF THE PILES ARE TO REMAIN MORE THAN THREE WEEKS OR SUBJECT TO EROSIVE CONDITIONS SUCH AS INTENSE RAIN, WIND OR OTHER EXPOSURE.

2. STOCKPILES SHALL BE OUTSIDE OF THE FUTURE INFILTRATION SYSTEMS/BASINS TO THE EXTENT PRACTIBLE WITHIN THE LIMITS OF DISTURBANCE AND IN AREAS OF MINIMAL IMPACT. IF A STOCKPILE IS LOCATED ON A SLOPE, THE RUNOFF SHALL BE DIRECTED AWAY FROM THE PILE.

3. IF INTENSE RAINFALL IS ANTICIPATED, THE INSTALLATION OF SUPPLEMENTAL HAYBALE DIKES, SILT FENCES, OR ARMORED DIKES SHALL BE UTILIZED.

4. IF THE SITE CONSTRUCTION OCCURS AT ANY TIME OTHER THAN THE MAY - NOVEMBER CONSTRUCTION SEASON, THE SITE DRAINAGE SYSTEM SHALL BE INSTALLED, MAINTAINING HYDRAULIC CAPACITY, PRIOR TO ANY ROUGH GRADING IN THE BUFFER ZONE.

DRAINAGE SYSTEM:

1. THE DRAINAGE SYSTEM SHALL BE INSTALLED FROM THE DOWNSTREAM END UP.

2. A SILT FENCE SHALL BE INSTALLED AT THE OUTFALL OF ALL TEMPORARY BASINS AND SWALES. IT SHALL REMAIN IN PLACE UNTIL ALL TRIBUTARY AREAS ARE STABILIZED.

3. WATER SHALL NOT BE ALLOWED TO ENTER PIPES FROM UN-STABILIZED SURFACES.

4. TRENCH EXCAVATIONS SHALL BE LIMITED TO THE MINIMUM LENGTH REQUIRED FOR DAILY PIPE INSTALLATION. ALL TRENCHES SHALL BE BACKFILLED AS SOON AS POSSIBLE. THE ENDS OF PIPES SHALL BE CLOSED NIGHTLY WITH PLYWOOD AND BACKER BOARD.

5. IF UNSTABLE AREAS ARE ENCOUNTERED DUE TO NATURAL SPRINGS OR GROUNDWATER, UNDERCUT, INTERCEPTOR DRAINS SHALL BE INSTALLED TO DIRECT THE RUNOFF INTO THE DRAINAGE SYSTEM, SEE DETAILS.

6. IT IS IMPORTANT THAT THE BINDER COURSE, WITH BERMS, BE INSTALLED ON THE LIMITS OF THE PARKING LOT AND ACCESS ROADS AS SOON AS FEASIBLE AS THESE AREAS WILL FUNCTION AS A CONDUIT FOR RUNOFF.

INSTALLATION OF UTILITIES:

1. CARE SHALL BE TAKEN TO ASSURE THAT THE UTILITY TRENCHES DO NOT CHANNELIZE RUNOFF TOWARDS EXISTING STREETS OR OTHER OFF-SITE AREAS.

2. THE INSTALLATION OF SUBSURFACE UTILITIES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE APPLICABLE UTILITY COMPANY SPECIFICATIONS.

3. TRENCH EXCAVATIONS SHALL BE LIMITED TO THE MINIMUM LENGTH REQUIRED FOR DAILY UTILITY INSTALLATION. ALL TRENCHES SHALL BE BACKFILLED AS SOON AS POSSIBLE.

LANDSCAPING:

1. LANDSCAPING SHALL OCCUR AS SOON AS POSSIBLE TO PROVIDE PERMANENT STABILIZATION OF DISTURBED SURFACES.

2. CONTRACTOR SHALL UTILIZE A VARIETY OF SLOPE STABILIZATION METHODS AND MATERIALS WHICH SHALL BE ADJUSTED TO THE SITE CONDITIONS. EROSION CONTROL BLANKETS OR MIRAFI MIRAMAT (OR SIMILAR PRODUCTS) SHALL BE AVAILABLE ON SITE.

3. IF THE SEASON OR ADVERSE WEATHER CONDITIONS DO NOT ALLOW THE ESTABLISHMENT OF VEGETATION, TEMPORARY MULCHING WITH HAY, TACKIFIED WOOD CHIPS OR OTHER METHODS SHALL BE PROVIDED. IN AREAS OF STEEP SLOPES, TEMPORARY STABILIZATION WITH STUMP GRINDINGS SHOULD BE CONSIDERED.

4. A MINIMUM OF 6" TOPSOIL SHALL BE PLACED AND ITS SURFACE SMOOTHED TO THE SPECIFIED GRADES.

5. SEED APPLICATIONS SHALL BE IN ACCORDANCE WITH THE GRASS AND SLOPE COVER SPECIFICATIONS.

PRE-CONSTRUCTION:

1. AN EROSION CONTROL BARRIER SHALL BE INSTALLED AS DEPICTED ON THE SITE PLAN, BETWEEN THE AREAS TO BE DISTURBED AND WETLAND AREAS. THIS BARRIER SHALL REMAIN IN PLACE UNTIL ALL TRIBUTARY SURFACES HAVE BEEN FULLY STABILIZED. THE EROSION CONTROL BARRIERS AS SHOWN ON THE SITE PLAN ARE THE MINIMUM REQUIRED TO PROTECT THE ON & OFF SITE DRAINAGE SYSTEMS.

2. PHOTOGRAPHS AND/OR VIDEO IMAGES OF THE PRE-CONSTRUCTION CONDITION OF THE SITE AND SURROUNDING AREAS, ESPECIALLY THE ADJACENT STREETS SHALL BE TAKEN, DEVELOPED AND DATED. A COPY OF THESE MATERIALS SHALL BE SUBMITTED TO THE COMMISSION AND OWNER FOR THEIR FILES. THESE PICTURES AND IMAGES SHALL REFERENCE EXISTING SITE CONDITIONS AND PERMANENT REFERENCE MARKS TO ENABLE RECOGNITION OF THE AREA BEING PHOTOGRAPHED, AND SHALL REPRESENT A COMPREHENSIVE VIEW OF THE SITE PRIOR TO DEVELOPMENT.

3. THE CONTRACTOR SHALL ESTABLISH A STAGING AREA ON A PORTION OF THE AREA TO BE DISTURBED FOR THE OVERNIGHT STORAGE OF EQUIPMENT AND STOCKPILING OF MATERIALS. THE STAGING AREA SHALL BE OUTSIDE OF THE 100' WETLANDS BUFFER ZONE.

4. IN THE STAGING AREA, THE CONTRACTOR SHALL HAVE A STOCKPILE OF MATERIALS REQUIRED TO CONTROL EROSION ON-SITE TO BE USED TO SUPPLEMENT OR REPAIR EROSION CONTROL DEVICES. THESE MATERIALS SHALL INCLUDE, BUT ARE NOT LIMITED TO: HAYBALES, SILT FENCE AND CRUSHED STONE.

5. A TEMPORARY STONE CONSTRUCTION ENTRANCE IS REQUIRED TO PREVENT TRACKING OF SILT, MUD, ETC. ONTO EXISTING ROADS. THE STONE SHALL BE REPLACED REGULARLY AS WELL AS WHEN THE STONE IS SILT LADEN OR EQUIPMENT IS OBSERVED TO BE TRACKING SOIL ONTO THE ROADWAYS.

6. THE CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL ON SITE AND SHALL UTILIZE EROSION CONTROL MEASURES WHERE NEEDED, REGARDLESS OF WHETHER THE MEASURES ARE SPECIFIED HEREIN, ON THE PLAN OR IN ANY ORDER OF CONDITIONS.

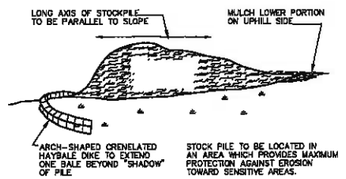
GENERAL CONSTRUCTION REQUIREMENTS:

1. ANY REFUELING OF CONSTRUCTION VEHICLES AND EQUIPMENT SHALL TAKE PLACE OUTSIDE OF THE 100 FOOT BUFFER ZONE TO THE ENTRANCE TO THE DRAINAGE SYSTEM AND SHALL NOT BE CONDUCTED IN PROXIMITY TO SEDIMENTATION BASINS OR DIVERSION SWALES.

2. NO ON-SITE DISPOSAL OF SOLID WASTE, INCLUDING BUILDING MATERIALS IS ALLOWED IN THE 100 FOOT BUFFER ZONE. THE BURIAL OF STUMPS, CONSTRUCTION DEBRIS OR OTHER MATERIALS SHALL NOT BE ALLOWED ANYWHERE ON-SITE.

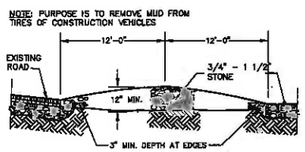
3. NO MATERIALS SHALL BE DISPOSED OF INTO THE WETLANDS OR EXISTING OR PROPOSED DRAINAGE SYSTEMS. ALL CONTRACTORS INCLUDING: CONCRETE SUPPLIERS, PAINTERS AND PLASTERERS, SHALL BE INFORMED THAT THE CLEANING OF EQUIPMENT IS PROHIBITED IN AREAS WHERE THE WASH-WATER WILL DRAIN DIRECTLY TO THE SITE DRAINAGE SYSTEMS.

4. CONTRACTOR IS RESPONSIBLE FOR DUST CONTROL WHICH SHALL INCLUDE STREET SWEEPING OF ALL PAVED SURFACES WITHIN THE SITE AND OFF-SITE AREAS THAT ARE IMPACTED BY SITE CONSTRUCTION ON A REGULAR BASIS, AS NEEDED.



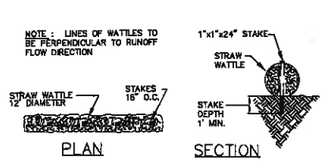
TEMPORARY STOCKPILE

NOT TO SCALE



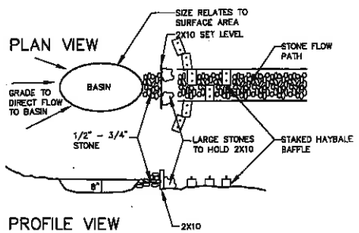
TEMPORARY CONSTRUCTION ENTRANCE

NOT TO SCALE



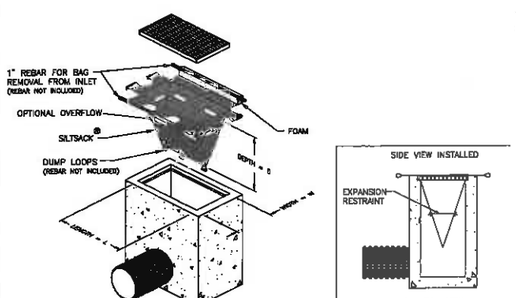
STRAW WATTLES

NOT TO SCALE



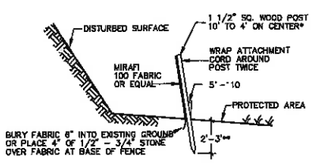
TEMPORARY DEWATERING AREA

NOT TO SCALE



INLET SEDIMENT CONTROL DEVICE

NOT TO SCALE

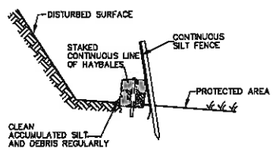


* STEEL POST MAY BE SUBSTITUTED. DISTANCE BETWEEN POSTS TO VARY AS REQUIRED BY TRIBUTARY AREA: 10' FOR 100 SF/LF FENCE 8' FOR 500 SF/LF FENCE

** DEPTH TO VARY WITH TRIBUTARY AREA: 2' FOR 100 SF ETC. IF POST IS TO BE SET IN PEAT OR UNSTABLE SOILS, THEN 3' OR DEPTH NECESSARY TO PROVIDE A STABLE POST FOR LOADED FENCE CONDITIONS

SILT FENCE DETAIL

NOT TO SCALE



SILT FENCE & HAYBALE BARRIER

NOT TO SCALE

NOTE: ALL SITE CONSTRUCTION METHODS & MATERIALS SHALL COMPLY TO THE REQUIREMENTS OF THE LITTLETON HIGHWAY DEPARTMENT AND ALL ISSUED ORDERS OF CONDITIONS AND OTHER APPLICABLE FEDERAL, STATE AND LOCAL PERMITS..

GENERAL REVISION NOTE:
PREVIOUS PLAN DATES:
DEC 4, 2012-MINOR REVISIONS
DEC 17, 2013-GENERAL REVISION

DUE TO EXTENSIVE REVISIONS, THESE PLANS SUPERCEDE ALL PREVIOUS PLANS AND ARE DATED FEB 4, 2014 TO AVOID CONFUSION.

VILLAGE GREEN EROSION AND SEDIMENTATION CONTROL PLAN

LOCATION: 15 GREAT ROAD
TOWN: LITTLETON, MASSACHUSETTS
PREPARED FOR:

FIFTEEN GREAT ROAD II LLC

SCALE: AS NOTED DATE: FEB 4, 2014

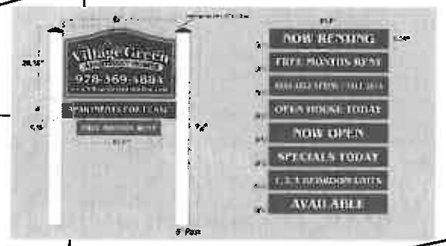
Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

PROJECT No.: 11-6303A PLAN No. 6303A CP-15

GRIST MILL ROAD

PLAN BOOK 776 PLAN 23

GREAT ROAD (ROUTE 2A & 119)



SIGN B
MARKETING SIGN

"THE ORCHARD" SUBDIVISION

RITSSOP LANE

MORNING GLORY CIRCLE

BOXWOOD DRIVE

POND

BUTTERCUP LANE

CHAMOMILE LANE

GATE
AT-VO
R7-201

BOXWOOD DRIVE

LEASE OFFICE CLUBHOUSE

POOL

PLAYGROUND AREA

STORAGE BUILDING

8 BAY GARAGE

BUILDING 1
48 Units
FF Elev=239±

7 BAY GARAGE

BUILDING 2
48 Units
FF Elev=239.75'

BUILDING 3
48 Units
FF Elev=241.0
GARAGE=230.0

POND

RECYCLING

SIGN A
MAIN SIGN

LITTLETON
ACTON

FORMERLY DURKEE LANE

NAGOG PARK

SIGN B
MARKETING SIGN

WESTFORD LANE

VILLAGE GREEN
SIGNAGE PLAN

LOCATION: 15 GREAT ROAD
TOWN: LITTLETON, MASSACHUSETTS
PREPARED FOR:
FIFTEEN GREAT ROAD II LLC

SCALE: 1"=60' DATE: FEB. 4, 2014

Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

PROJECT No.: 11-6303 PLAN No. 6303A CP-16

GRIST MILL ROAD

PLAN BOOK 176 PLAN 23

GREAT ROAD (ROUTE 2A & 119)

N/F JAMES E. FEEHAN BONNIE J. FEEHAN

N/F JAMES R. VASH ANGELA MUNOZ-VILA

N/F ANTHONY J. SLAVINSKY JERILYNN G. SLAVINSKY

N/F KIMBERLY A. CARUSO

N/F MICHAEL D. SILBERBERG JO ELLEN SILBERBERG

N/F ROGERS J. MAHONEY MARY A. MAHONEY

N/F PHILLIP L. BUCKELLEW LISA F. BUCKELLEW

N/F DARYL K. BAKER ELAINE M. BAKER

N/F UTTLETON LAND CORPORATION

N/F JEFFREY A. & LANETTE M. SUNDQUIST BK. 33,463 PG. 586

N/F PAUL J. & CYNTHIA M. AVELLA BK. 42,576 PG. 535

N/F JOHN P. & CARRIE A. BERGERON BK. 45,849 PG. 249

N/F DARA E. THOMAS C. & FURLONG BK. 41,320 PG. 103

N/F UTTLETON HOLDING REALTY TRUST BK. 28,882 PG. 477

N/F STEVEN & PATRICIA WOJTASZEK BK. 32,195 PG. 394

"THE ORCHARD" SUBDIVISION

HYSSOP LANE

MORNING GLORY CIRCLE

BOXWOOD DRIVE

BUTTERCUP LANE

CHAMOMILE LANE

GATE AT-VO R7-201

BOXWOOD DRIVE

LEASE OFFICE CLUBHOUSE

POOL

PLAYGROUND AREA

STORAGE BUILDING

6 BAY GARAGE

BUILDING 1
48 Units
FF Elev=238.0

BUILDING 2
48 Units
FF Elev=239.75'

BUILDING 3
48 Units
FF Elev=241.0
GARAGE=230.0

SEWER LINE

RECYCLING

N/F ELAINE M. & JOHN LINDGREN TRUSTEES OF LINDGREN GREAT ROAD REALTY TRUST BK. 45,713 PG. 243

N/F KOLL BREN FUND VI, L.P. BK. 30,821 PG. 557

LITTLETON

ACTON

N/F ALEVIZOS NAGOG LLC

FORMERLY DURKEE LANE

NAGOG PARK

N/F NDMNROCK ACTON LLC

WESTFORD LANE (F

AREA OF COMMON INFRASTRUCTURE

PERMIT SET
NOT FOR CONSTRUCTION

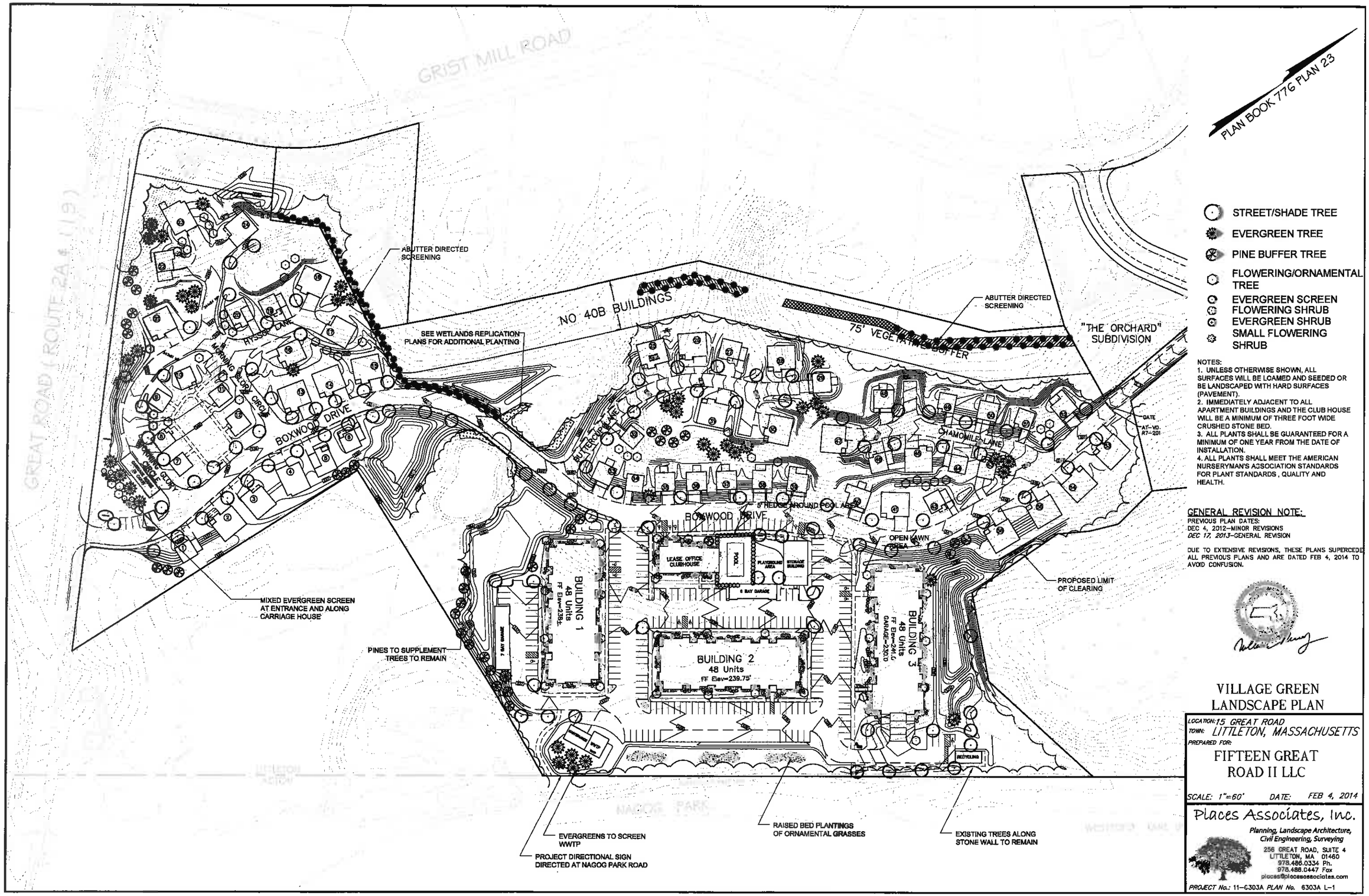
VILLAGE GREEN COMMON INFRASTRUCTURE PLAN

LOCATION: 15 GREAT ROAD
TOWN: LITTLETON, MASSACHUSETTS
PREPARED FOR:
FIFTEEN GREAT ROAD II LLC

SCALE: 1"=60' DATE: FEB 4, 2014

Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

PROJECT No.: 11-6303A PLAN No. 6303A CP-17



NOTES:
1. UNLESS OTHERWISE SHOWN, ALL SURFACES WILL BE LOAMED AND SEEDED OR BE LANDSCAPED WITH HARD SURFACES (PAVEMENT).
2. IMMEDIATELY ADJACENT TO ALL APARTMENT BUILDINGS AND THE CLUB HOUSE WILL BE A MINIMUM OF THREE FOOT WIDE CRUSHED STONE BED.
3. ALL PLANTS SHALL BE GUARANTEED FOR A MINIMUM OF ONE YEAR FROM THE DATE OF INSTALLATION.
4. ALL PLANTS SHALL MEET THE AMERICAN NURSERYMAN'S ASSOCIATION STANDARDS FOR PLANT STANDARDS, QUALITY AND HEALTH.

GENERAL REVISION NOTE:
PREVIOUS PLAN DATES:
DEC 4, 2012–MINOR REVISIONS
DEC 17, 2013–GENERAL REVISION

DUE TO EXTENSIVE REVISIONS, THESE PLANS SUPERCEDE ALL PREVIOUS PLANS AND ARE DATED FEB 4, 2014 TO AVOID CONFUSION.

VILLAGE GREEN LANDSCAPE PLAN

LOCATION: 15 GREAT ROAD
TOWN: LITTLETON, MASSACHUSETTS
PREPARED FOR:
FIFTEEN GREAT ROAD II LLC

SCALE: 1"=60' DATE: FEB 4, 2014

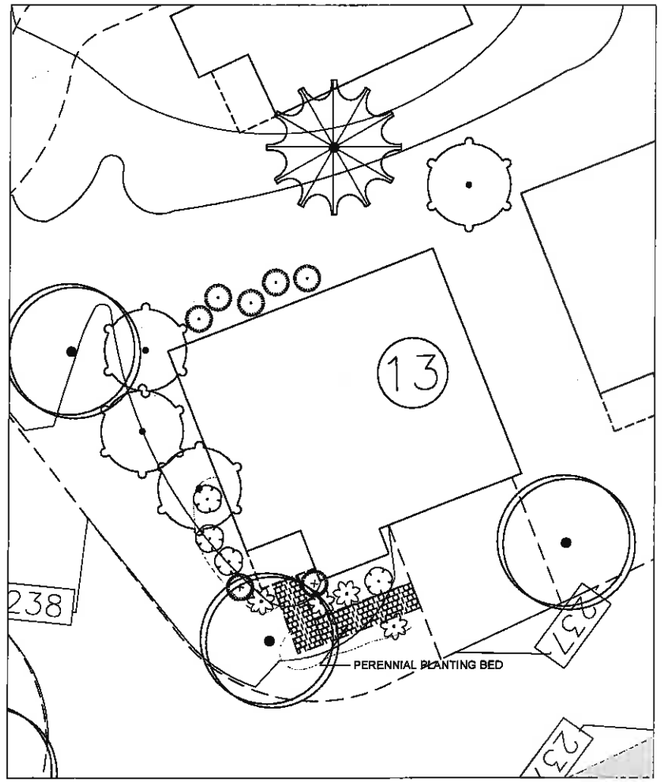
Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

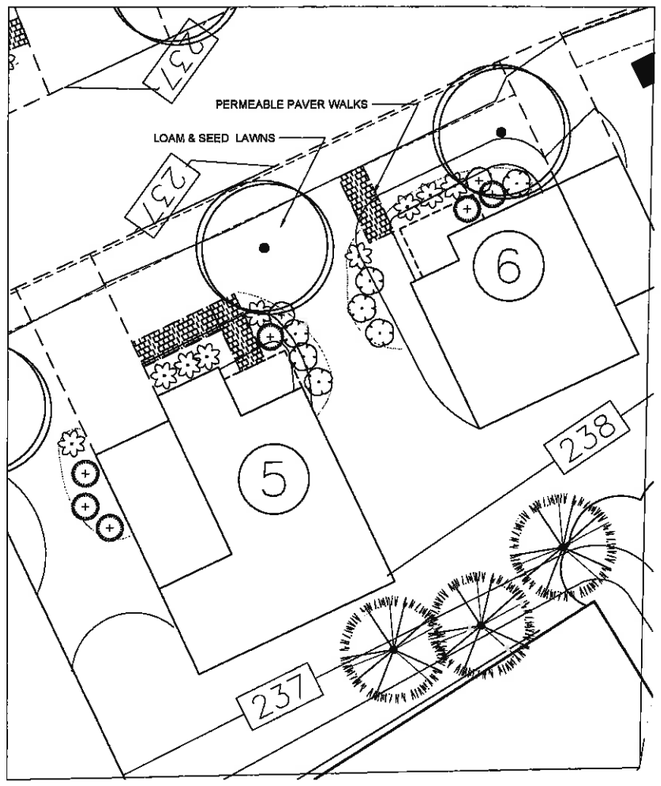
PROJECT No.: 11-6303A PLAN No. 6303A L-1

PLAN BOOK 776 / LAN 23

INDIVIDUAL UNIT LANDSCAPING:

1. TREES: Tree to be planted for typical individual units would include species such as
   a. Flowering Dogwoods b. Flowering Crab Apples c. Magnolias
   d. Arborviate e. Paperbark Maple f. River Birch
   g. Flowering Cherry h. Flowering Almond i. Flowering Pear
   j. Similar, low stature, flowering or accent trees.
2. SHRUBS:
   Evergreen Shrubs:
   a. Yew b. Blue Rug Juniper c. Upright Juniper
   d. Arborvitae e. Accent Pines f. Holly
   g. Cypress h. False Cypress i. Cedar
   j. Broad-leafed Evergreens (Rhododendrons, Mountain Laurel, Azalea, Luecothoe)
3. Flowering Shrubs:
   a. Azalea b. Forsythia c. Enkianthus
   d. Potentilla e. Spirea f. Lilac (early & late)
   g. Inkberry h. Winterberry i. Hydrangea
   j. Viburnums k. Other similar mid to small size flowering shrubs, with design intent of full seasonal color.
4. Accent & Ground cover:
   a. Decorative Grasses b. Daylilly c. Perrennial Plants
   d. Pachysandra e. Virginia Creeper f. Hosta
   g. Other accent and groundcover plants to provide surface stabilization, in fill and aesthetics





- STREET/SHADE TREE
- EVERGREEN TREE
- PINE BUFFER TREE
- FLOWERING/ORNAMENTAL TREE
- EVERGREEN SCREEN
- FLOWERING SHRUB
- EVERGREEN SHRUB
- SMALL FLOWERING SHRUB

NOTES:
1. UNLESS OTHERWISE SHOWN, ALL SURFACES WILL BE LOAMED AND SEEDED OR BE LANDSCAPED WITH HARD SURFACES (PAVEMENT).
2. IMMEDIATELY ADJACENT TO ALL BUILDINGS WILL BE A MINIMUM OF THREE FOOT WIDE CRUSHED STONE BED.
3. ALL PLANTS SHALL BE GUARANTEED FOR A MINIMUM OF ONE YEAR FROM THE DATE OF INSTALLATION.
4. ALL PLANTS SHALL MEET THE AMERICAN NURSERYMAN'S ASSOCIATION STANDARDS FOR PLANT STANDARDS , QUALITY AND HEALTH.
5. ALL PLANTING BEDS ARE TO RECEIVE A MINIMUM OF 6" DEPTH OF PLANTING LOAM AND A MINIMUM OF 4" OF SHREDDED BARK MULCH OR OTHER SIMILAR MULCHING MATERIAL.

GENERAL REVISION NOTE:
PREVIOUS PLAN DATES:
DEC 4, 2012–MINOR REVISIONS
DEC 17, 2013–GENERAL REVISION

DUE TO EXTENSIVE REVISIONS, THESE PLANS SUPERCEDE ALL PREVIOUS PLANS AND ARE DATED FEB 4, 2014 TO AVOID CONFUSION.

VILLAGE GREEN

LOCATION: 15 GREAT ROAD
TOWN: LITTLETON, MASSACHUSETTS
PREPARED FOR:
FIFTEEN GREAT ROAD II LLC

SCALE: 1"=60' DATE: FEB 4, 2014

Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

PROJECT No.: 11-6303A PLAN No. 6303A L-2

PLAN BOOK 7:6 PLAN 23

N/F
DIANNE M. LESSA

GREAT ROAD (ROUTE 2A # 119)

N/F
HOWARD E. ALLEN, JR.
PATRICIA J. ALLEN

MANNION PLACE

PROPOSED SIGN
12 S.F. EACH SIDE

PROPOSED SIGN
21 S.F. EACH SIDE

N/F
TIMOTHY M. & HEIDI J.
WILEY

LINE OF BUILDING ENVELOPE

HYSSOP LANE

MORNING GLORY CIRCLE

MORNING GLORY CIRCLE
CARRIAGE HOUSE
(6 CARS)

BOXWOOD DRIVE

BUILDING OFFSET LINE (TYPICAL)

N/F
ELAINE M. & JOHN LINDGREN
TRUSTEES OF LINDGREN
GREAT ROAD REALTY TRUST
BK. 45,713 PG. 243

N/F
JEFFREY A. & LANETTE
M. SUNDQUIST BK.
33,463 PG. 586

N/F
PAUL J. & CYNTHIA M.
AVELLA
BK. 42,576 PG. 535

N/F
JOHN P. &
BERG
BK. 45,8

LOT 1

LOT 2

LOT 3

BUTTERCUP LANE

15' (TYP.)

7 BAY GARAGE

BUILDING 1
48 Units
FF Elev=238±

GENERAL REVISION NOTE:
PREVIOUS PLAN DATES:
DEC 4, 2012–MINOR REVISIONS
DEC 17, 2013–GENERAL REVISION

DUE TO EXTENSIVE REVISIONS, THESE PLANS SUPERCEDE ALL PREVIOUS PLANS AND ARE DATED FEB 4, 2014 TO AVOID CONFUSION.

PERMIT SET
NOT FOR CONSTRUCTION

WILDFLOWER MEADOW
BUILDING ENVELOPE PLAN
PLAN 1 OF 2

LOCATION: 15 GREAT ROAD
TOWN: LITTLETON, MASSACHUSETTS
PREPARED FOR:
FIFTEEN GREAT
ROAD II LLC

SCALE: 1"=40' *DATE:* FEB 4, 2014

Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

PROJECT No.: 11-6303A *PLAN No.* 6303A BE-1

N/F
JEFFREY A. & LANETTE M. SUNDQUIST BK. 33,463 PG. 586

N/F
PAUL J. & CYNTHIA M. AVELLA
BK. 42,576 PG. 535

N/F
JOHN P. & CARRIE A. BERGERON
BK. 45,849 PG. 249

N/F
THOMAS C. & FURLONG
BK. 41,320 PG. 103

N/F
LITTLETON HOLDING REALTY TRUST
BK. 28,882 PG. 477

N/F
STEVEN & PATRICIA WOJTASZEK
BK. 32,195 PG. 394

"THE ORCHARD" SUBDIVISION

LOT 1

PLAN BOOK 776 PLAN 23

LOT 2

BUTTERCUP LANE

CHAMOMILE LANE

BOXWOOD DRIVE

LEASE OFFICE CLUBHOUSE

POOL

PLAYGROUND AREA

STORAGE BUILDING

5 BAY GARAGE

LOT 3

BUILDING 1
48 Units
FF Elev=238±

7 BAY GARAGE

BUILDING 2
48 Units
FF Elev=239.75'

BUILDING 3
48 Units
FF Elev=241.0
GARAGE=230.0

MAINTENANCE

WWTP

RECYCLING

FORMERLY DURKEE LANE

ACCESS AND UTILITY EASEMENT

NAGOG PARK

GENERAL REVISION NOTE:
PREVIOUS PLAN DATES:
DEC 4, 2012–MINOR REVISIONS
DEC 17, 2013–GENERAL REVISION

DUE TO EXTENSIVE REVISIONS, THESE PLANS SUPERCEDE ALL PREVIOUS PLANS AND ARE DATED FEB 4, 2014 TO AVOID CONFUSION.

PERMIT SET
NOT FOR CONSTRUCTION

WILDFLOWER MEADOW BUILDING ENVELOPE PLAN
PLAN 2 OF 2

LOCATION: 15 GREAT ROAD
TOWN: LITTLETON, MASSACHUSETTS
PREPARED FOR:
FIFTEEN GREAT ROAD II LLC

SCALE: 1"=40' *DATE:* FEB 4, 2014

Places Associates, Inc.
Planning, Landscape Architecture, Civil Engineering, Surveying
256 GREAT ROAD, SUITE 4
LITTLETON, MA 01460
978.486.0334 Ph.
978.486.0447 Fax
places@placesassociates.com

PROJECT No.: 11-6303A *PLAN No.* 6303A BE-2