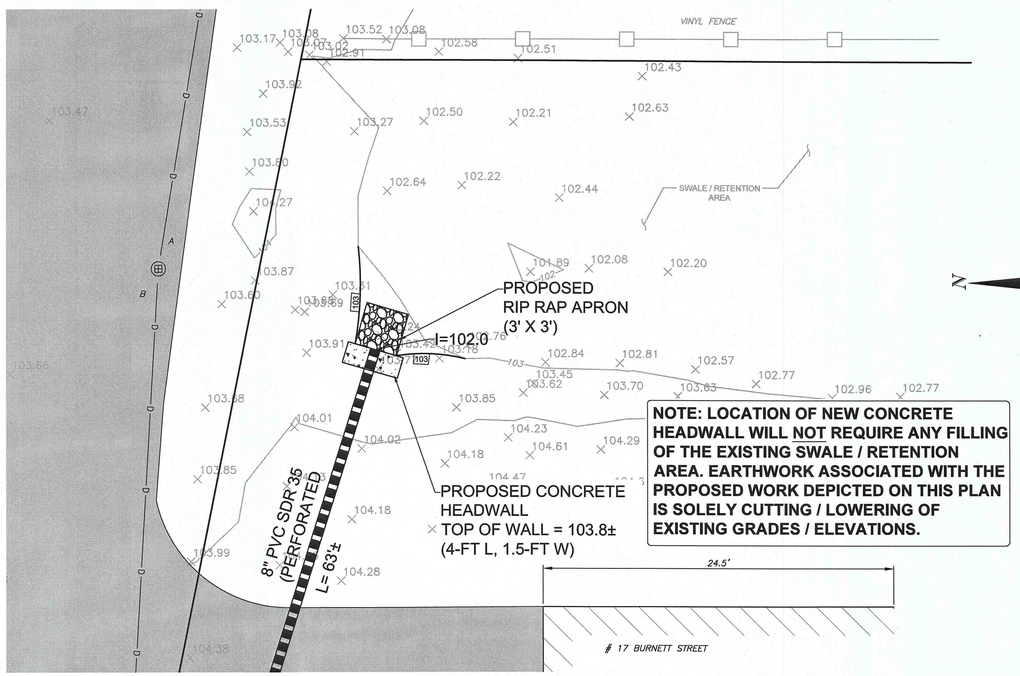


NOTE: LOCATION OF NEW CONCRETE HEADWALL WILL NOT REQUIRE ANY FILLING OF THE EXISTING SWALE / RETENTION AREA. EARTHWORK ASSOCIATED WITH THE PROPOSED WORK DEPICTED ON THIS PLAN IS SOLELY CUTTING / LOWERING OF EXISTING GRADES / ELEVATIONS.

DETAIL A

1" = 5'

5 0 2.5 5 10

GRAPHIC SCALE IN FEET

NOTES

1. UNDERGROUND UTILITIES SHOWN ARE FROM OBSERVED SURFACE INDICATIONS, SUBSURFACE INDICATIONS, AND COMPILED FROM AVAILABLE RECORD PLANS OF UTILITY COMPANIES AND PUBLIC AGENCIES AND ARE APPROXIMATE ONLY. AS OF THE DATE OF THIS SURVEY, NO INFORMATION REGARDING RECORD UTILITIES HAS BEEN PROVIDED BY ELECTRIC AND GAS PROVIDERS. BEFORE CONSTRUCTION CALL "DIG SAFE" 811.
2. THIS PLAN WAS PREPARED FROM AN ACTUAL SURVEY MADE ON THE GROUND BY RJ O'CONNELL & ASSOCIATES, INC. USING TOTAL STATION METHODS ON 09/16/2020. PROPERTY LINES DEPICTED ON THIS PLAN ARE APPROXIMATE AND COMPILED FROM AVAILABLE RECORD PLANS.
3. ELEVATIONS DEPICTED ON THIS PLAN ARE BASED UPON AN ASSUMED VERTICAL DATUM. THE ASSUMED VERTICAL DATUM IS CONSISTENT WITH THAT DEPICTED ON THE PLAN ENTITLED "PROP. C.B., HW, AND REVISED GRADING LOT A, (DEP # 217-0128"), BURNETT STREET, MELROSE, MA." AS PREPARED AND STAMPED BY ANTHONY P. SALAMANCA DATED 8/18/2006.
4. THE POSITIONAL ACCURACY OF THE DATA AND PHYSICAL IMPROVEMENTS ON THIS PLAN MAY BE APPROXIMATE. ANY USE OF ELECTRONIC DATA CONTAINED IN AUTOCAD VERSIONS OF THIS PLAN TO GENERATE COORDINATES OR DIMENSIONS NOT SHOWN ON THE PLAN IS NOT AUTHORIZED.
5. THE PARCEL SHOWN IS LOCATED IN ZONE A (NO BASE FLOOD ELEVATION DETERMINED), AS SHOWN ON "FLOOD INSURANCE RATE MAP, MIDDLESEX COUNTY, MA," PANEL 433 OF 656, MAP NUMBER 25017C0433E, EFFECTIVE DATE JUNE 04, 2010.

N — RJOC — APPROX.

BUOYANCY CALCULATION

VOLUME OF HEAD WALL (ASSUMING 2.0' DEPTH BELOW INVERT (ELEV. = 100.0))

4'(WIDE) X 1.5' (THICK) X 3.0' (ASSUMED DEPTH SUBMERGED)
= 18.0 CF

WEIGHT OF CONCRETE HEADWALL (DOWNWARD FORCE)

=(VOLUME OF HEADWALL (SUBMERGED)) X (UNIT WEIGHT OF CONCRETE)
=(18.0 CF) X (150 LBS/ CF)
=2,700 LBS

UPWARD FORCE OF WATER

=(VOLUME OF HEADWALL (SUBMERGED)) X (UNIT WEIGHT OF WATER)
=(18.0 CF) X (62.4 LBS/ CF)
=1,123 LBS

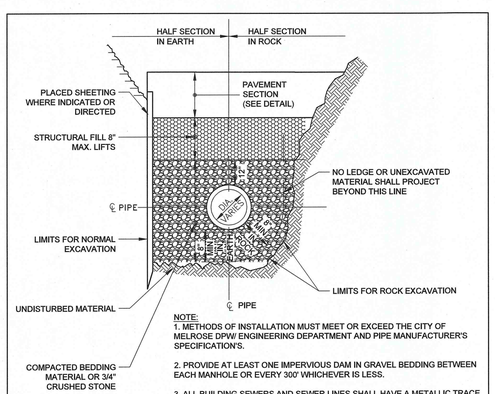
FACTOR OF SAFETY

=(DOWNWARD FORCE)/ (UPWARD FORCE)
=(2,700 LBS) / (1,123 LBS)
=2.40 FACTOR OF SAFETY

LEGEND

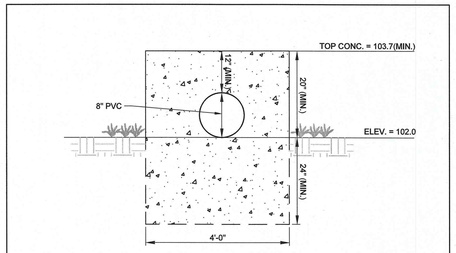
(NOT ALL FEATURES CONTAINED IN THIS LEGEND APPEAR ON THE PLAN)

	PROPERTY LINE
	ABUTTING PROPERTY LINE
	EASEMENT LINE
S — S	SEWER SERVICE
D — D	DRAIN SERVICE
W — W	WATER SERVICE
G — G	GAS LINE
E — E	ELECTRIC LINE
T — T	TELEPHONE LINE
ohw — ohw	OVERHEAD WIRES
	PROPOSED DRAIN LINE
X — X — X — X	CHAIN LINK FENCE
	STOCKADE FENCE
100	INDEX CONTOUR
98	INTERMEDIATE CONTOUR
UP	UTILITY POLE
LP	LIGHT POLE
	ELECTRIC HAND HOLE
C	CABLE MANHOLE
S	SEWER MANHOLE
D	DRAIN MANHOLE
	CATCH BASIN
	WATER VALVE
	FIRE HYDRANT
SPR	SPRINKLER CONNECTION
PIV	POST INDICATOR VALVE
	BOLLARD
GM	GAS METER
	GAS VALVE
RD	ROOF DRAIN
AD	AREA DRAIN
ICV	IRRIGATION CONTROL VALVE
×114.7	SPOT GRADE
ACCM	ASPHALT-COATED CORRUGATED METAL
CC	CONCRETE CURB
VGC	VERTICAL GRANITE CURB
BCB	BITUMINOUS CONCRETE CURB
HC	HANDICAP
HPDE	HIGH DENSITY POLYETHYLENE
CONC.	CONCRETE
LSA	LANDSCAPE AREA
	DOOR
	SIGN
	DECIDUOUS TREE
	CONIFEROUS TREE
(REC)	FROM RECORD PLANS
	PAVEMENT
	DIRECTION OF FLOW WITHIN PIPE

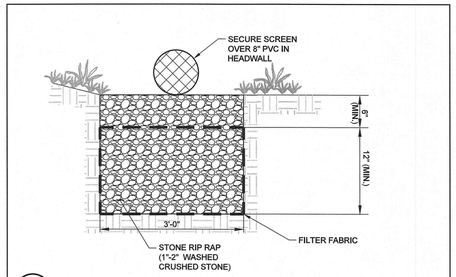


NOTE:
1. METHODS OF INSTALLATION MUST MEET OR EXCEED THE CITY OF MELROSE DPW/ ENGINEERING DEPARTMENT AND PIPE MANUFACTURER'S SPECIFICATION'S.
2. PROVIDE AT LEAST ONE IMPERVIOUS DAM IN GRAVEL BEDDING BETWEEN EACH MANHOLE OR EVERY 300' WHICHEVER IS LESS.
3. ALL BUILDING SEWERS AND SEWER LINES SHALL HAVE A METALLIC TRACE TAPE IN THE TRENCH ONE FOOT BELOW FINISHED GRADE.

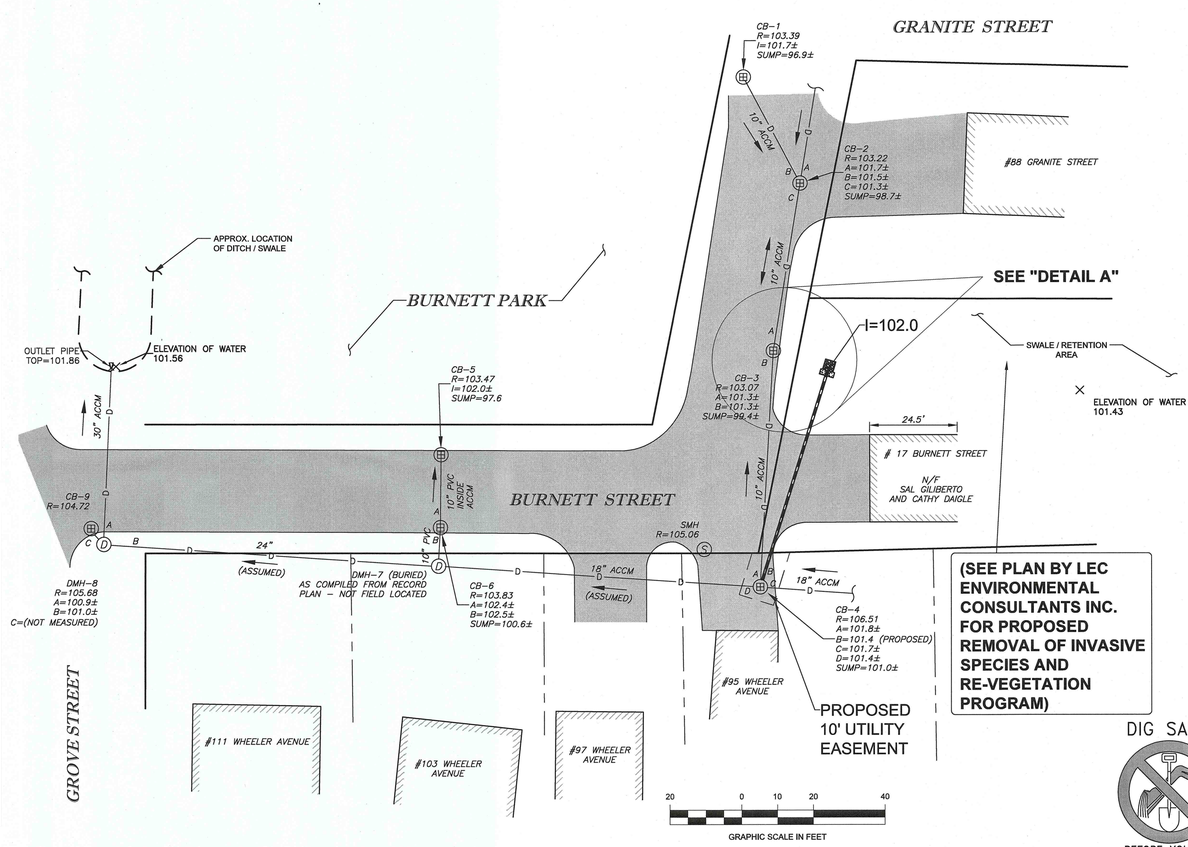
TYPICAL SEWER/DRAIN TRENCH DETAIL
SCALE: N.T.S.



CONCRETE HEADWALL
SCALE: N.T.S.



RIP RAP APRON
SCALE: N.T.S.



(SEE PLAN BY LEC ENVIRONMENTAL CONSULTANTS INC. FOR PROPOSED REMOVAL OF INVASIVE SPECIES AND RE-VEGETATION PROGRAM)

DIG SAFE
BEFORE YOU DIG CALL 811

RJOC

NO.	REVISION	DATE

NO.	REVISION	DATE

PREPARED BY:
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CIVIL ENGINEERS, SURVEYORS & LAND PLANNERS
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PREPARED FOR:

SAL GILIBERTO & CATHY DAIGLE
17 BURNETT STREET
MELROSE, MA 02176

PROJECT NAME:

17 BURNETT STREET
MELROSE, MA 02176

SEAL: COMMONWEALTH OF MASSACHUSETTS — BRIAN W. TIMM — No. 48120 — CIVIL — REGISTERED PROFESSIONAL ENGINEER — 3/29/2021

DESIGNED BY:	BWT
DRAWN BY:	CMM/ JBJ
REVIEWED BY:	BWT
SCALE:	AS NOTED
DATE:	03/29/2021

DRAWING NAME:

GRADING AND DRAINAGE PLAN

DRAWING NUMBER: C-1

PROJECT NUMBER: 20060

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Drawing name: G:\MA\Melrose\Sal and Kathy Giliberto\17 Burnette Street\Main\20060_Grading and Drainage Design.dwg
Mar 29, 2021 - 15:55pm