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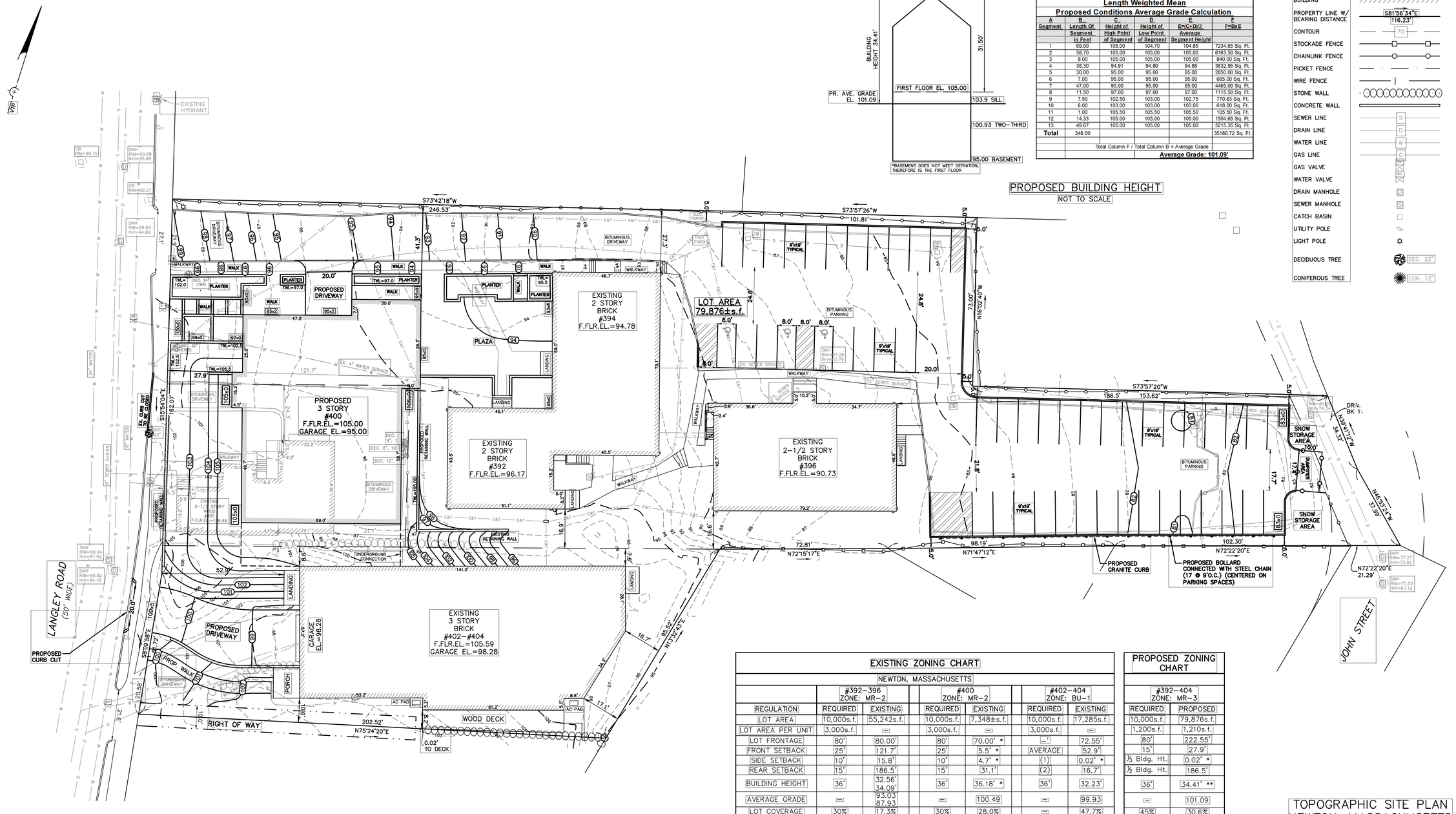

PROPOSED BUILDING HEIGHT
NOT TO SCALE

Address: #400 Langley Road

Length Weighted Mean

Proposed Conditions Average Grade Calculation

A Segment	B Length Of Segment In Feet	C Height of High Point of Segment	D Height of Low Point of Segment	E=C+D/2 Average Segment Height	F F=BxE
1	69.00	105.00	104.70	104.85	7234.65 Sq. Ft.
2	58.70	105.00	105.00	105.00	6163.50 Sq. Ft.
3	8.00	105.00	105.00	105.00	840.00 Sq. Ft.
4	38.30	94.91	94.80	94.86	3632.95 Sq. Ft.
5	30.00	95.00	95.00	95.00	2850.00 Sq. Ft.
6	7.00	95.00	95.00	95.00	665.00 Sq. Ft.
7	47.00	95.00	95.00	95.00	4465.00 Sq. Ft.
8	11.50	97.00	97.00	97.00	1115.50 Sq. Ft.
9	7.50	102.50	103.00	102.75	770.63 Sq. Ft.
10	6.00	103.00	103.00	103.00	618.00 Sq. Ft.
11	1.00	105.50	105.50	105.50	105.50 Sq. Ft.
12	14.33	105.00	105.00	105.00	1504.65 Sq. Ft.
13	49.67	105.00	105.00	105.00	5215.35 Sq. Ft.
Total	348.00				35180.72 Sq. Ft.
			Total Column F / Total Column B = Average Grade		
				Average Grade: 101.09'	

LEGEND

BUILDING	
PROPERTY LINE W/ BEARING DISTANCE	S81°56'34"E 116.23'
CONTOUR	70
STOCKADE FENCE	
CHAINLINK FENCE	
PICKET FENCE	
WIRE FENCE	
STONE WALL	
CONCRETE WALL	
SEWER LINE	S
DRAIN LINE	D
WATER LINE	W
GAS LINE	G
GAS VALVE	GV
WATER VALVE	WV
DRAIN MANHOLE	D
SEWER MANHOLE	S
CATCH BASIN	
UTILITY POLE	
LIGHT POLE	
DECIDUOUS TREE	DEC. 22"
CONIFEROUS TREE	CON. 12"

EXISTING ZONING CHART

NEWTON, MASSACHUSETTS

	#392-396 ZONE: MR-2		#400 ZONE: MR-2		#402-404 ZONE: BU-1	
REGULATION	REQUIRED	EXISTING	REQUIRED	EXISTING	REQUIRED	EXISTING
LOT AREA	10,000s.f.	55,242s.f.	10,000s.f.	7,348±s.f.	10,000s.f.	17,285s.f.
LOT AREA PER UNIT	3,000s.f.	—	3,000s.f.	—	3,000s.f.	—
LOT FRONTAGE	80'	80.00'	80'	70.00' *	–'	72.55'
FRONT SETBACK	25'	121.7'	25'	5.5' *	AVERAGE	52.9'
SIDE SETBACK	10'	15.8'	10'	4.7' *	(1)	0.02' *
REAR SETBACK	15'	186.5'	15'	31.1'	(2)	16.7'
BUILDING HEIGHT	36'	32.56' 34.09'	36'	36.18' *	36'	32.23'
AVERAGE GRADE	—	93.03 87.93	—	100.49	—	99.93
LOT COVERAGE	30%	17.3%	30%	28.0%	—	47.7%
OPEN SPACE	50%	45.6% *	50%	34.3% *	–%	39.1%

* DOES NOT MEET REQUIREMENTS
** NEW PROPOSED BUILDING HEIGHT

NOTES:
(1) ½ bldg ht or equal to abutting side yard setback; abutting residential district: greater of ½ bldg ht or 15'
(2) Abutting residential or Public Use district: Greater of ½ bldg ht or 15'

PROPOSED ZONING CHART

#392-404 ZONE: MR-3	
REQUIRED	PROPOSED
10,000s.f.	79,876s.f.
1,200s.f.	1,210s.f.
80'	222.55'
15'	27.9'
½ Bldg. Ht.	0.02' *
½ Bldg. Ht.	186.5'
36'	34.41' **
—	101.09
45%	30.6%
30%	39.1%

DIG SAFE

EXCAVATORS
BEFORE YOU DIG CONTACT THE DIG SAFE CENTER TO PREVENT DAMAGE TO TELEPHONE, GAS OR ELECTRIC UNDERGROUND FACILITIES OF MEMBER UTILITIES, CALL TOLL FREE 1-888-322-4844, MASSACHUSETTS STATE LAW REQUIRES NOTIFICATION AT LEAST THREE BUSINESS DAYS BEFORE YOU START DIGGING OPERATIONS. IN AN EMERGENCY, CALL IMMEDIATELY

0 20 50 100
SCALE: 1" = 20'

TOPOGRAPHIC SITE PLAN
NEWTON, MASSACHUSETTS

SHOWING PROPOSED CONDITIONS AT #392-396, #400, #402-404 LANGLEY ROAD

SCALE: 1in.=20ft. DATE: OCTOBER 19, 2017
REVISED: NOVEMBER 1, 2017

PROJECT: 217133

VTP ASSOCIATES INC.
LAND SURVEYORS – CIVIL ENGINEERS. 132 ADAMS STREET 2ND FLOOR SUITE 3 NEWTON, MA 02458 (617) 332-8271

COMMONWEALTH OF MASSACHUSETTS JOSEPH R. PORTER NO. 39061 REGISTERED LAND SURVEYOR

SHEET 1 OF 6

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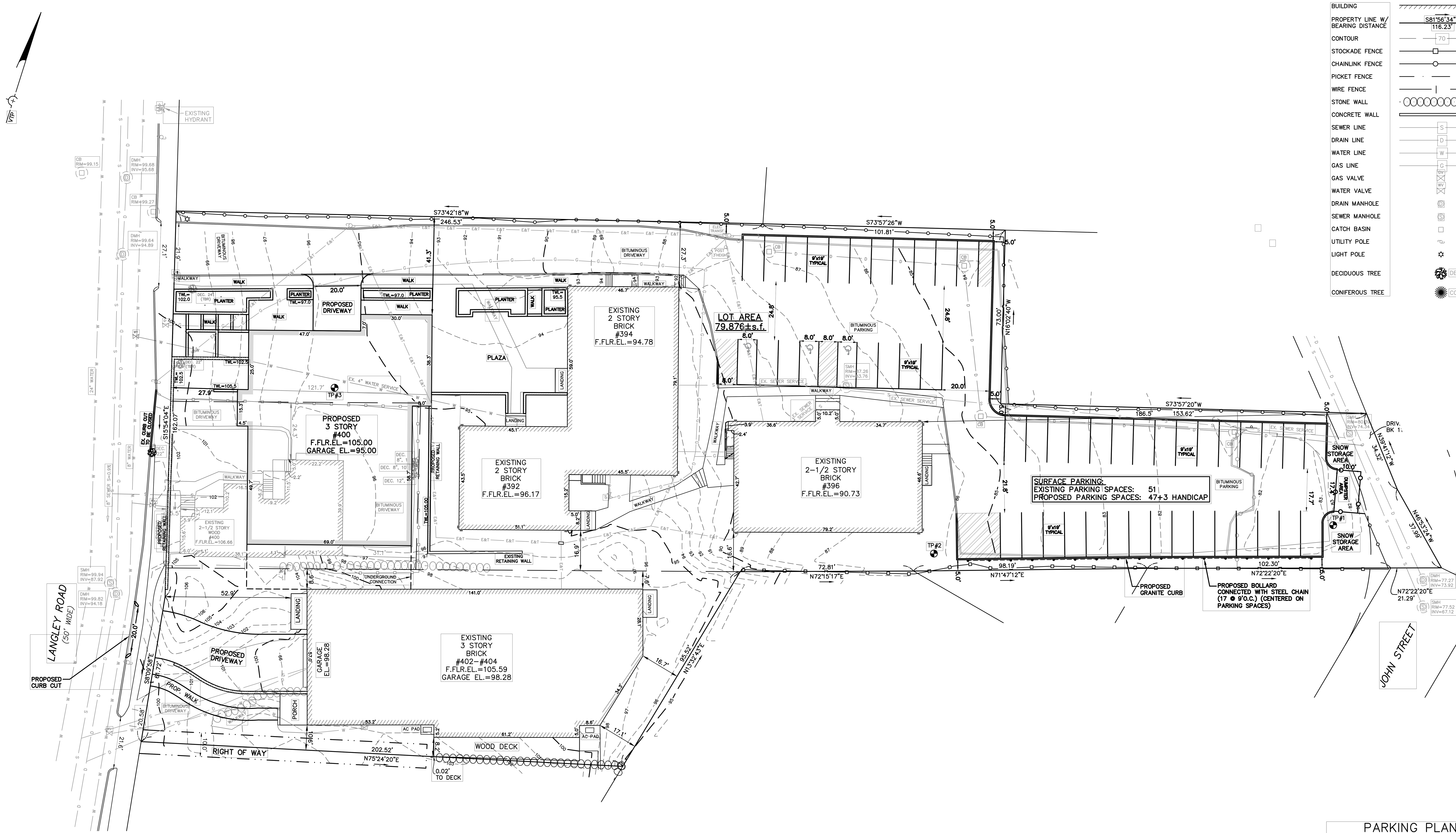

LEGEND

- BUILDING
- PROPERTY LINE W/ BEARING DISTANCE — S81°56'34"E 116.23'
- CONTOUR — 70
- STOCKADE FENCE
- CHAINLINK FENCE
- PICKET FENCE
- WIRE FENCE
- STONE WALL
- CONCRETE WALL
- SEWER LINE — S
- DRAIN LINE — D
- WATER LINE — W
- GAS LINE — G
- GAS VALVE — GV
- WATER VALVE — WV
- DRAIN MANHOLE
- SEWER MANHOLE
- CATCH BASIN
- UTILITY POLE
- LIGHT POLE
- DECIDUOUS TREE — DEC. 22"
- CONIFEROUS TREE — CON. 12"

DIG SAFE

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0 20 50 100
SCALE: 1" = 20'

COMMONWEALTH OF MASSACHUSETTS
JOSEPH R. PORTER
NO. 39001
PROFESSIONAL LAND SURVEYOR

PARKING PLAN
NEWTON, MASSACHUSETTS

SHOWING PROPOSED CONDITIONS AT #392-396, #400, #402-404 LANGLEY ROAD

SCALE: 1in.=20ft. DATE: SEPTEMBER 22, 2017

REVISED: OCTOBER 5, 2017; OCTOBER 19, 2017; NOVEMBER 1, 2017

PROJECT: 217133

VTP ASSOCIATES INC.

LAND SURVEYORS - CIVIL ENGINEERS. 132 ADAMS STREET 2ND FLOOR SUITE 3
NEWTON, MA 02458
(617) 332-8271

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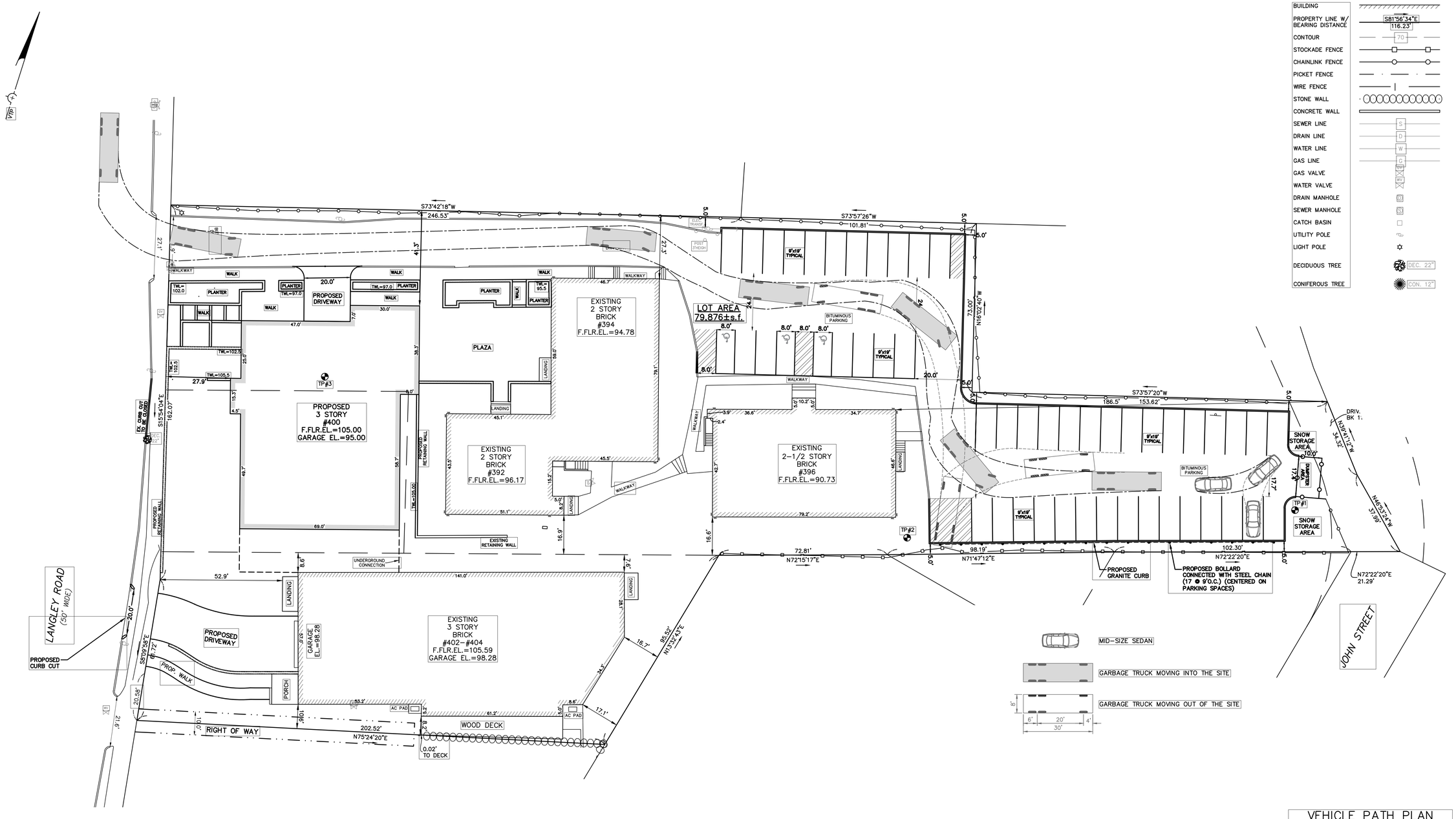

DIG SAFE

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0 20 50 100

SCALE: 1" = 20'

VEHICLE PATH PLAN
NEWTON, MASSACHUSETTS

SHOWING PROPOSED CONDITIONS AT
#392-396, #400, #402-404 LANGLEY ROAD

SCALE: 1in.=20ft. DATE: NOVEMBER 1, 2017

PROJECT: 217133

COMMONWEALTH OF MASSACHUSETTS
JOSEPH R. PORTER
NO. 38901
REGISTERED LAND SURVEYOR

VTP ASSOCIATES INC.
LAND SURVEYORS - CIVIL ENGINEERS. 132
ADAMS STREET 2ND FLOOR SUITE 3
NEWTON, MA 02458
(617) 332-8271

SHEET 3 OF 6

217133_bps8.dwg (Z-2017)

TESTPIT LOG
TESTPIT #1 0–72" FILL 72–80" SUBSOIL 80–90" SILTY LOAM (GLACIAL TILL) NO WATER REFUSAL @ 90" PERC RATE > 20MPI
TESTPIT #2 0–108" FILL COARSE SAND WITH BOULDERS AND SOME DEBRIS FILL IS MAINLY COARSE SAND
TESTPIT #3 0–60" FILL (GLACIAL TILL) LARGE BOULDERS BLOCKING ACCESS

LEGEND

BUILDING
PROPERTY LINE W/ BEARING DISTANCE (S81°56'34"E 116.23')
CONTOUR (70)
STOCKADE FENCE
CHAINLINK FENCE
PICKET FENCE
WIRE FENCE
STONE WALL
CONCRETE WALL
SEWER LINE (S)
DRAIN LINE (D)
WATER LINE (W)
GAS LINE (G)
GAS VALVE (GV)
WATER VALVE (WV)
DRAIN MANHOLE (D)
SEWER MANHOLE (S)
CATCH BASIN
UTILITY POLE
LIGHT POLE
DECIDUOUS TREE (DEC. 22")
CONIFEROUS TREE (CON. 12")

NOTE:
EXISTING DOWNSPOUTS CONNECTIONS FROM #392–#394 AND #396 TO THE CITY DRAIN SHALL BE VERIFY ON SITE PRIOR THE INSTALLATION OF ANY DRAINAGE STRUCTURE.

CORRUGATED PLASTIC PIPE (CPP)
(ADS N-12 ST IB (Soiltight) PIPE (per ASTM F2648)

GRADING, DRAINAGE & UTILITY PLAN
NEWTON, MASSACHUSETTS

SHOWING PROPOSED CONDITIONS AT
#392–396, #400, #402–404 LANGLEY ROAD

SCALE: 1in.=20ft. DATE: SEPTEMBER 21, 2017
REVISED: OCTOBER 5, 2017; OCTOBER 19, 2017; NOVEMBER 1, 2017

PROJECT: 217133

DIG SAFE

EXCAVATORS
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0 20 50 100
SCALE: 1" = 20'

NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THIS PLAN. PRIOR TO ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BEFORE PROCEEDING WITH THE WORK.
2. THE LOCATION OF ALL UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASE ON THE FIELD LOCATION OF ALL VISIBLE STRUCTURES SUCH AS CATCH BASINS, MANHOLES, WATER GATES, ETC. AND GOVERNMENT AGENCIES.
3. ALL THE PROPOSED DOWNSPOUTS OF THE BUILDING #400 TO BE CONNECTED INTO ONSITE INFILTRATION SYSTEM.

COMMONWEALTH OF MASSACHUSETTS — JOSEPH R PORTER NO. 38281 — REGISTERED LAND SURVEYOR

VTP ASSOCIATES INC.
LAND SURVEYORS – CIVIL ENGINEERS. 132 ADAMS STREET 2ND FLOOR SUITE 3 NEWTON, MA 02458
(617) 332-8271

SHEET 4 OF 6

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GENERAL & UTILITIES NOTES:

ALL NEW SEWER SERVICE AND/OR STRUCTURES SHALL BE PRESSURE TESTED OR VIDEOTAPED AFTER FINAL INSTALLATION IS COMPLETE. METHOD OF FINAL INSPECTION SHALL BE DETERMINED SOLELY BY THE CONSTRUCTION INSPECTOR FROM THE CITY ENGINEERING DIVISION. ALL SEWER MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE TO THE CITY'S CONSTRUCTION STANDARDS & SPECIFICATIONS. THE SEWER SERVICE WILL NOT BE ACCEPTED UNTIL ONE OF THE TWO METHODS STATED ABOVE IS COMPLETED. ALL TESTING MUST BE WITNESSED BY A REPRESENTATIVE OF THE ENGINEERING DIVISION. A CERTIFICATE OF OCCUPANCY WILL NOT BE RECOMMENDED UNTIL THIS TEST IS COMPLETED AND A WRITTEN REPORT IS RECEIVED BY THE CITY ENGINEER.

THE SEWER SERVICES AND WATER SERVICES NEED TO BE COMPLETELY REMOVED FROM THE MAINS TO THE EXISTING DWELLING AND PROPERLY BACK-FILED. THE CONTRACTOR SHALL MAKE ARRANGEMENTS TO HAVE THIS ABANDONMENT INSPECTED BY A REPRESENTATIVE OF THE ENGINEERING DIVISION, FAILING TO HAVING THESE INSPECTIONS MAY RESULT IN THE DELAY OR DENIAL OF ISSUING NEW UTILITY CONNECTION PERMITS.

AS OF MARCH 1, 2009, ALL TRENCH EXCAVATION CONTRACTORS SHALL COMPLY WITH MASSACHUSETTS GENERAL LAWS CHAPTER 82A, TRENCH EXCAVATION SAFETY REQUIREMENTS, TO PROTECT THE GENERAL PUBLIC FROM UNAUTHORIZED ACCESS TO UNATTENDED TRENCHES. TRENCH EXCAVATION PERMIT REQUIRED. THIS APPLIES TO ALL TRENCHES ON PUBLIC AND PRIVATE PROPERTY.

THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE ENGINEERING DIVISION AND SCHEDULING AN APPOINTMENT 48 HOURS PRIOR TO THE DATE WHEN THE UTILITIES WILL BE MADE AVAILABLE FOR AN INSPECTION OF WATER SERVICES, SEWER SERVICES, AND DRAINAGE SYSTEM INSTALLATION. THE UTILITY IS QUESTION SHALL BE FULLY EXPOSED FOR THE INSPECTOR TO VIEW; BACKFILLING SHALL ONLY TAKE PLACE WHEN THE CITY'S INSPECTOR HAS GIVEN THEIR APPROVAL.

THE APPLICANT WILL HAVE TO APPLY FOR STREET OPENING, SIDEWALK CROSSING, AND UTILITIES CONNECTING PERMITS WITH THE DEPARTMENT OF PUBLIC WORKS PRIOR TO ANY CONSTRUCTION.

PRIOR TO OCCUPANCY PERMIT BEING ISSUED, AN AS-BUILT PLAN SHALL BE SUBMITTED TO THE ENGINEERING DIVISION IN BOTH DIGITAL FORMAT AND HARD COPY. THE PLAN SHOULD SHOW ALL UTILITIES AND FINAL GRADES ANY EASEMENTS AND FINAL GRADING, IMPROVEMENTS AND LIMITS OF RESTORATION WORK. THE PLAN SHALL ALSO INCLUDE PROFILES OF THE VARIOUS NEW UTILITIES, INDICATING RIM & INVERT ELEVATIONS, SLOPES OF PIPES, PIPE MATERIAL, AND SWING TIES FROM PERMANENT BUILDING CORNERS.

IF A CERTIFICATE OF OCCUPANCY IS REQUESTED PRIOR TO ALL SITE WORK BEING COMPLETED, THE APPLICANT WILL BE REQUIRED TO POST A CERTIFIED BANK CHECK IN THE AMOUNT TO COVER THE REMAINING WORK. THE CITY ENGINEER SHALL DETERMINE THE VALUE OF THE UNCOMPLETED WORK.

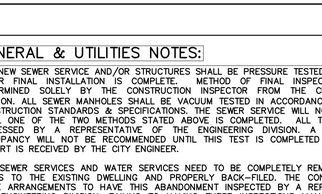
NO EXCAVATION IS ALLOWED WITHIN ANY CITY RIGHT-OF-WAY BETWEEN NOVEMBER 15TH AND APRIL 15TH. IF AN EMERGENCY EXISTS OR THERE ARE EXTENUATING CIRCUMSTANCES, APPLICANT MAY SEEK PERMISSION FOR SUCH WORK FROM THE CITY DPW COMMISSIONER VIA THE CITY ENGINEER. IF PERMISSION IS GRANTED, SPECIAL CONSTRUCTION STANDARDS WILL BE APPLIED. APPLICANT OR APPLICANT'S REPRESENTATIVE MUST CONTACT THE CITY OF NEWTON ENGINEERING DEPARTMENT PRIOR TO START OF WORK FOR CLARIFICATION.

ALL SITE WORK INCLUDING TRENCH RESTORATION MUST BEING COMPLETED BEFORE A CERTIFICATION OF OCCUPANCY IS ISSUED.

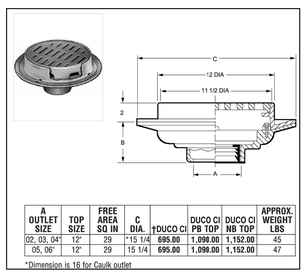
THE APPLICANT WILL HAVE TO APPLY FOR STREET OPENING, UTILITY CONNECTION AND TRENCH PERMITS AS WELL AS AN INSTALL CURB & SIDEWALK PERMIT WITH THE DPW PRIOR TO START OF WORK.

WITH THE EXCEPTION OF GAS SERVICES, ALL UTILITY TRENCHES WITHIN THE CITY OF NEWTON RIGHT-OF-WAY WILL BE BACKFILLED WITH TYPE IE (EXCAVATABLE) CONTROLLED DENSITY FILL, AS SPECIFIED BY THE CITY OF NEWTON ENGINEERING SPECIFICATIONS.

APPROVAL OF THIS PLAN BY THE CITY OF NEWTON ENGINEERING DIVISION IMPLIES THAT THE PLAN MEETS THE MINIMAL DESIGN STANDARDS OF THE CITY OF NEWTON. HOWEVER, THE ENGINEERING DIVISION MAKES NO REPRESENTATIONS AND ASSUMES NO RESPONSIBILITY FOR THE DESIGN(S) IN TERMS OF SUITABILITY FOR THE PARTICULAR SITE CONDITIONS OR OF THE FUNCTIONABILITY OR PERFORMANCE OF ANY ITEMS CONSTRUCTED IN ACCORDANCE WITH THE DESIGN(S). THE CITY OF NEWTON ASSUMES NO LIABILITIES FOR DESIGN ASSUMPTION, ERRORS OR OMISSIONS BY THE ENGINEER OF RECORD.



A OUTLET SIZE	TOP SIZE	FREE AREA SQ IN	B	†DUCO CI	DUCO CI PB TOP	DUCO CI NB TOP	APPROX. WEIGHT LBS
02"	12"	28.5	6 7/8	1,036.00	1,431.00	1,493.00	51
03"	12"	28.5	6 3/8	1,036.00	1,431.00	1,493.00	51
04"	12"	28.5	5 7/8	1,036.00	1,431.00	1,493.00	51
05"	12"	28.5	5	1,036.00	1,431.00	1,493.00	51
06"	12"	28.5	4 1/2	1,036.00	1,431.00	1,493.00	51



A OUTLET SIZE	TOP SIZE	FREE AREA SQ IN	C DIA.	†DUCO CI	DUCO CI PB TOP	DUCO CI NB TOP	APPROX. WEIGHT LBS
02, 03, 04"	12"	29	15 1/4	695.00	1,090.00	1,152.00	45
05, 06"	12"	29	15 1/4	695.00	1,090.00	1,152.00	47

*Dimension is 16 for Caulk outlet

DIG SAFE

EXCAVATORS

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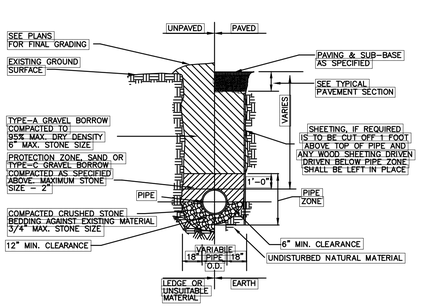
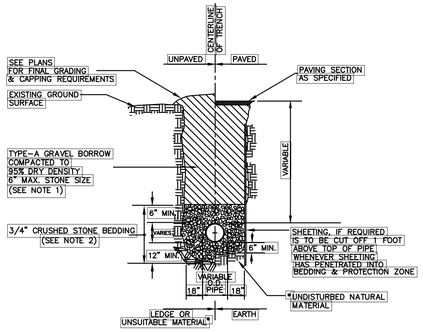


* SUITABILITY OF MATERIALS IS TO BE DETERMINED BY THE CITY OF NEWTON

TYPICAL P.V.C. DRAIN TRENCH DETAIL

NOT TO SCALE

1. GRAVEL BORROW SHALL CONFORM TO MASS HIGHWAY SPECIFICATION M1.03.0
2. CRUSHED STONE BEDDING SHALL CONFORM TO MASS HIGHWAY SPECIFICATION M2.01.1

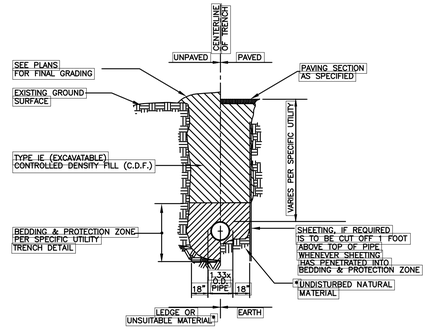


* SUITABILITY OF MATERIAL IS TO BE DETERMINED BY THE CITY OF NEWTON.

1. GRAVEL BORROW SHALL CONFORM TO MASS HIGHWAY SPECIFICATION M1.03.0
2. CRUSHED STONE BEDDING SHALL CONFORM TO MASS HIGHWAY SPECIFICATION M2.01.1

GRAVITY SEWER TRENCH DETAIL

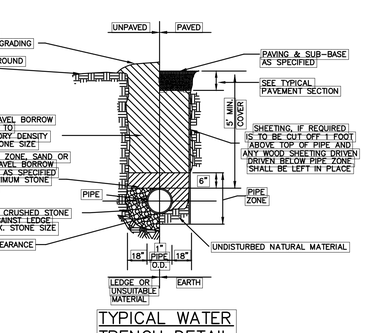
NOT TO SCALE



* SUITABILITY OF MATERIAL IS TO BE DETERMINED BY THE CITY OF NEWTON.

TYPICAL C.D.F. TRENCH DETAIL

NOT TO SCALE

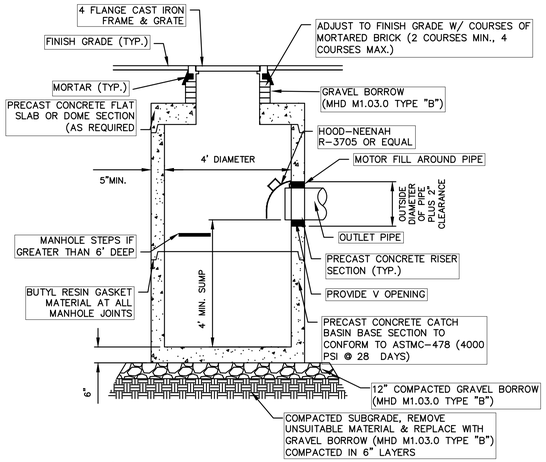


TYPICAL WATER TRENCH DETAIL

NOT TO SCALE

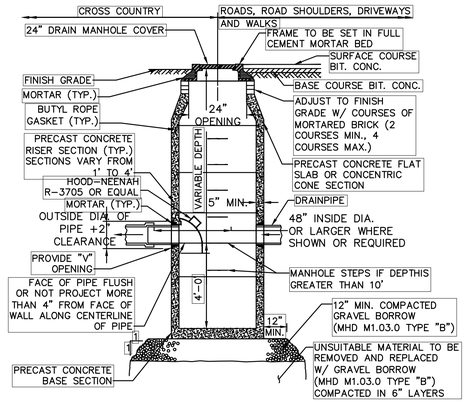
1. GRAVEL BORROW SHALL CONFORM TO MASS HIGHWAY SPECIFICATION M1.03.0
2. CRUSHED STONE BEDDING SHALL CONFORM TO MASS HIGHWAY SPECIFICATION M2.01.1

+ SUITABILITY OF MATERIAL IS TO BE DETERMINED BY THE CITY OF NEWTON.



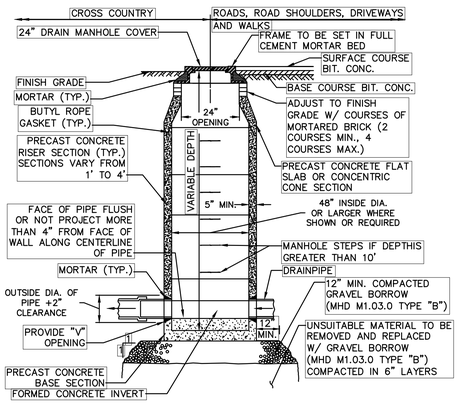
TYPICAL CATCH BASIN DETAIL

NOT TO SCALE



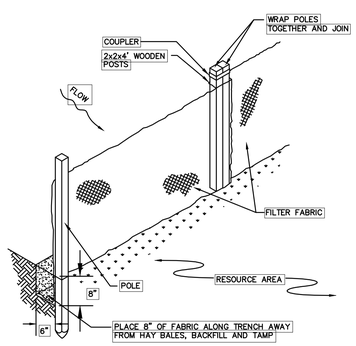
DRAIN MANHOLE WITH SUMP DETAIL

NOT TO SCALE



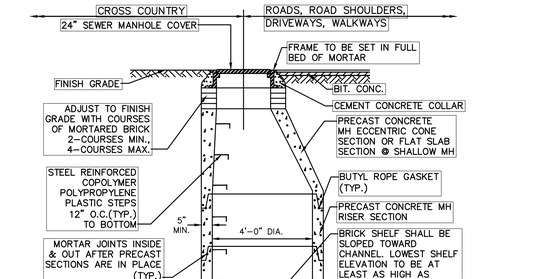
TYPICAL DRAIN MANHOLE DETAIL

NOT TO SCALE



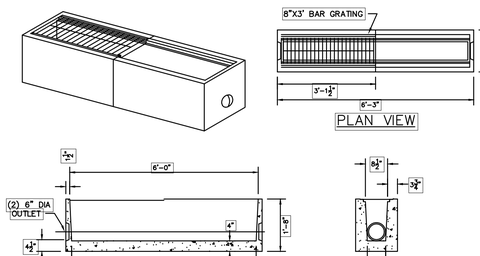
SILT FENCE

NOT TO SCALE



TYPICAL SEWER MANHOLE DETAIL

NOT TO SCALE

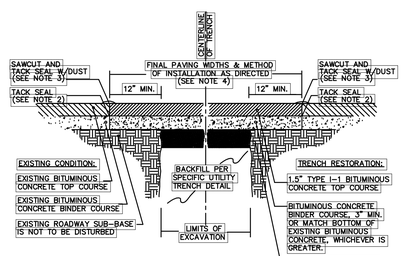


NOTES:
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
2. AVAILABLE IN 3' AND 6' SECTIONS.
3. AVAILABLE IN END OR MIDDLE SECTIONS.
4. CONFORMS TO H-20 LOADING.

ITEM NO. M-TD6 6' SECTION
M-TD3 3' SECTION

TRENCH DRAIN DETAIL

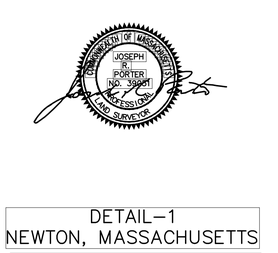
NOT TO SCALE



1. ALL INSTALLATION AND MATERIAL SPECIFICATIONS PER MASS. HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, 1988 AS AMENDED.
2. ALL EXPOSED BITUMINOUS CONCRETE IS TO BE TACKED PER MHD PRIOR TO NEW BITUMINOUS CONCRETE INSTALLATION.
3. ALL EXPOSED JOINTS ARE TO BE SEALED WITH TACK AND STONE DUST.
4. ANY TOP COURSE APPLIED AT A WIDTH OF 6' WIDE OR GREATER IS TO BE PLACED BY MACHINE/BOX SPREADER WHEN & AS DIRECTED BY THE CITY OF NEWTON.

TYPICAL TRENCH REPAIR & PAVEMENT SECTION DETAIL (1/2)

NOT TO SCALE



DETAIL-1
NEWTON, MASSACHUSETTS

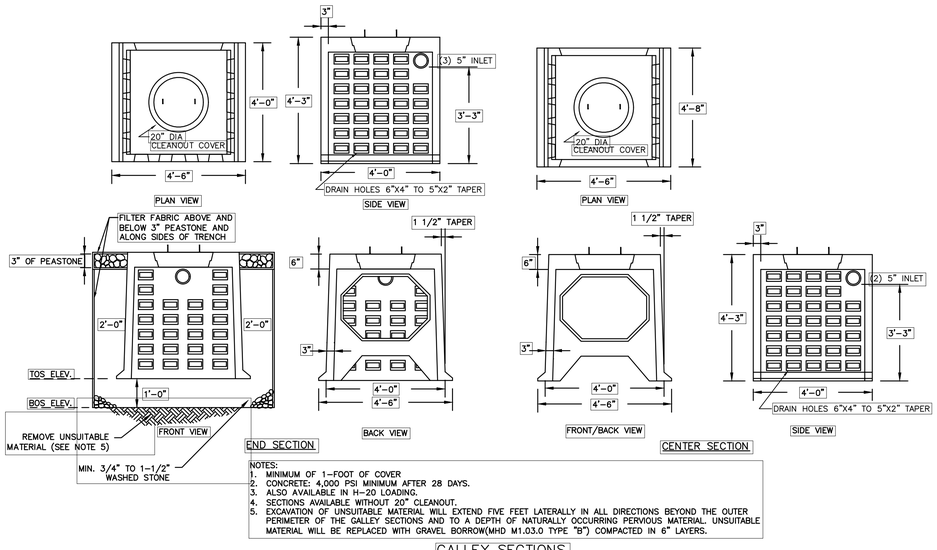
SHOWING PROPOSED CONDITIONS AT #392-396, #400, #402-404 LANGLEY ROAD

SCALE: AS-SHOWN DATE: SEPTEMBER 22, 2017
REVISED: NOVEMBER 1, 2017

PROJECT: 217133

VTP ASSOCIATES INC.
LAND SURVEYORS - CIVIL ENGINEERS. 132 ADAMS STREET 2ND FLOOR SUITE 3
NEWTON, MA 02458
(617) 332-8271

217133_bps8.dwg (Z-2017)



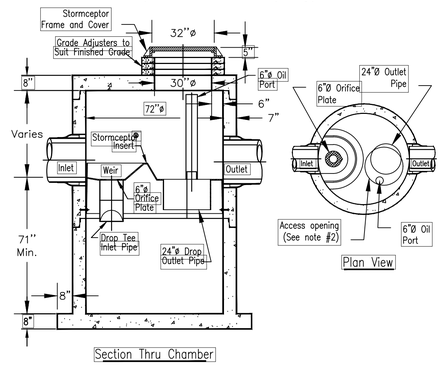
NOTES:
1. MINIMUM OF 1-FOOT OF COVER
2. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
3. ALSO AVAILABLE IN H-20 LOADING.
4. SECTIONS AVAILABLE WITHOUT 20" CLEANOUT.
5. EXCAVATION OF UNSUITABLE MATERIAL WILL EXTEND FIVE FEET LATERALLY IN ALL DIRECTIONS BEYOND THE OUTER PERIMETER OF THE GALLEY SECTIONS AND TO A DEPTH OF NATURALLY OCCURRING PERVIOUS MATERIAL. UNSUITABLE MATERIAL WILL BE REPLACED WITH GRAVEL BORROW(MHD M1.03.0 TYPE "B") COMPACTED IN 6" LAYERS.

GALLEY SECTIONS
NOT TO SCALE

Rinker MATERIALS

Concrete Pipe Division

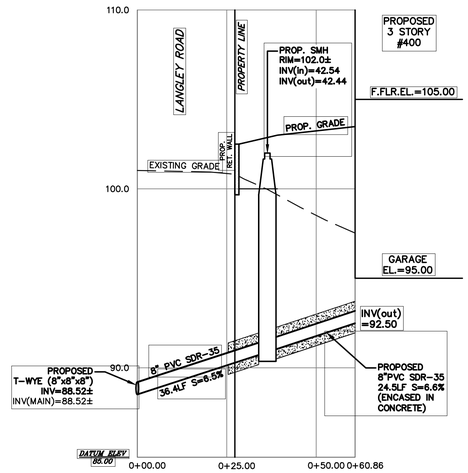
STC 1200 Precast Concrete Stormceptor
(1200 U.S. Gallon Capacity)



Section Thru Chamber

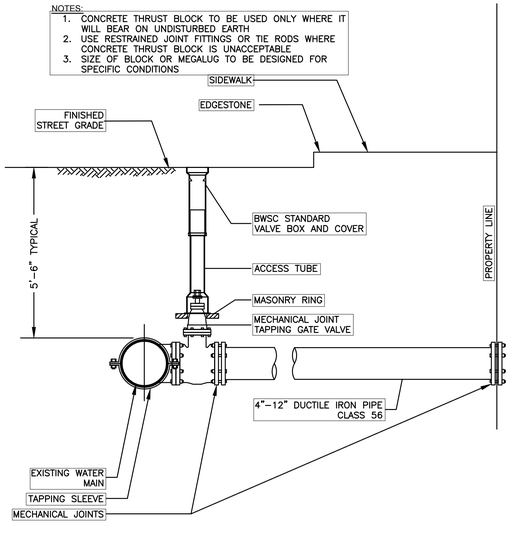
Notes:
1. The Use Of Flexible Connection is Recommended at The Inlet and Outlet Where Applicable.
2. The Cover Should be Positioned Over The Outlet Drop Pipe and The Oil Port.
3. The Stormceptor System is protected by one or more of the following U.S. Patents: #4985148, #5498331, #5725760, #5753115, #5849181, #6068765, #6371690.
4. Contact a Concrete Pipe Division representative for further details not listed on this drawing.

Rinker 029

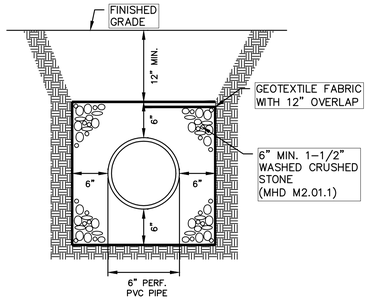


#400
PROPOSED SEWER PROFILE
SCALE: 1" = 20' (HORIZONTAL)
SCALE: 1" = 4' (VERTICAL)

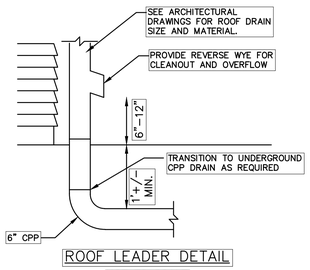
NOTES:
1. CONCRETE THRUST BLOCK TO BE USED ONLY WHERE IT WILL BEAR ON UNDISTURBED EARTH
2. USE RESTRAINED JOINT FITTINGS OR TIE RODS WHERE CONCRETE THRUST BLOCK IS UNACCEPTABLE
3. SIZE OF BLOCK OR MEGALUG TO BE DESIGNED FOR SPECIFIC CONDITIONS



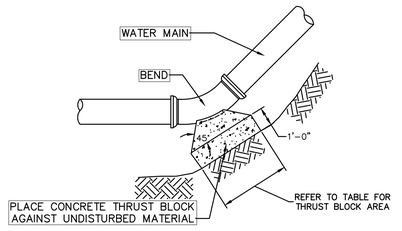
TYPICAL WATER PIPE CONNECTION WITH TAPPING SLEEVE AND GATE VALVE
SCALE: NOT TO SCALE



FRENCH DRAIN DETAIL
NOT TO SCALE



ROOF LEADER DETAIL
NOT TO SCALE



PLAN

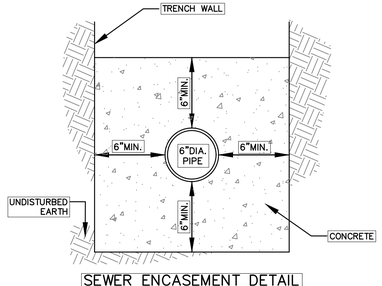
THRUST BLOCK DETAIL
NOT TO SCALE

TABLE OF BEARING AREAS IN SQUARE FEET AGAINST UNDISTURBED MATERIAL FOR FITTING. *

SIZE OF MAIN (INCHES)	90° BEND (S.F.)	45° BEND (S.F.)	DEAD END (S.F.)
4	2.3	1.3	1.6
6	4.7	2.5	3.3
8	8.0	4.5	6.0
12	17.0	9.5	12.0

NOTES:
1. FOR FITTINGS WITH LESS THAN 45° DEFLECTION USE BEARING AREAS FOR 45° BEND.
2. BEARING AREAS BASED ON HORIZONTAL PASSIVE SOIL PRESSURE OF 2000 PSF AND A MINIMUM INTERNAL WATER PRESSURE OF 175 PSIG. JOINTS SHALL NOT BE ENCASED IN CONCRETE, BEARING AREAS MAY BE DISREGARDED FOR TRENCHES IN ROCK WHERE THE TOP OF THE ROCK FACE IS AT OR ABOVE THE CROWN OF THE PIPE. HOWEVER, CONCRETE BACKING SHALL BE PLACED BETWEEN THE PIPE AND ROCK FACE.

THRUST BLOCK BEARING AREAS FOR PIPE
NOT TO SCALE



SEWER ENCASEMENT DETAIL
NOT TO SCALE

DIG SAFE

EXCAVATORS
BEFORE YOU DIG CONTACT THE DIG SAFE CENTER TO PREVENT DAMAGE TO TELEPHONE, GAS OR ELECTRIC UNDERGROUND FACILITIES OF MEMBER UTILITIES, CALL TOLL FREE 1-888-322-4844. MASSACHUSETTS STATE LAW REQUIRES NOTIFICATION AT LEAST THREE BUSINESS DAYS BEFORE YOU START DIGGING OPERATIONS. IN AN EMERGENCY, CALL IMMEDIATELY

DETAIL-2
NEWTON, MASSACHUSETTS
SHOWING PROPOSED CONDITIONS AT #392-396, #400, #402-404 LANGLEY ROAD
SCALE: AS-SHOWN
DATE: SEPTEMBER 22, 2017

PROJECT: 217133

VTP ASSOCIATES INC.

COMMONWEALTH OF MASSACHUSETTS JOSEPH R. PORTER NO. 39941 REGISTERED LAND SURVEYOR

LAND SURVEYORS - CIVIL ENGINEERS. 132 ADAMS STREET 2ND FLOOR SUITE 3 NEWTON, MA 02458 (617) 332-8271

SHEET 6 OF 6