

PREPARED FOR:

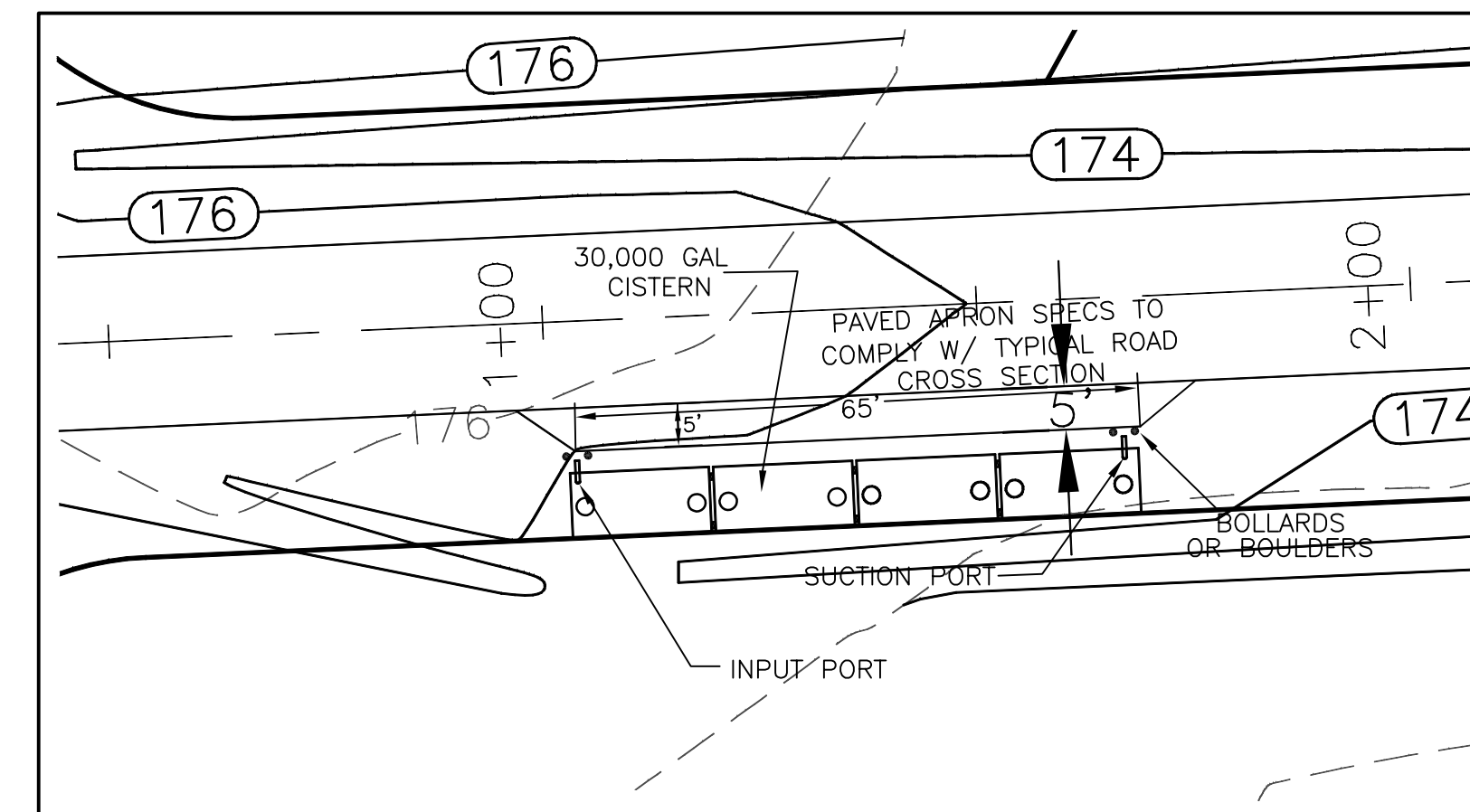
ONE HOME BUILDERS, LLC
PO BOX 334
STRATHAM, N.H. 03885

BEALS ASSOCIATES PLLC

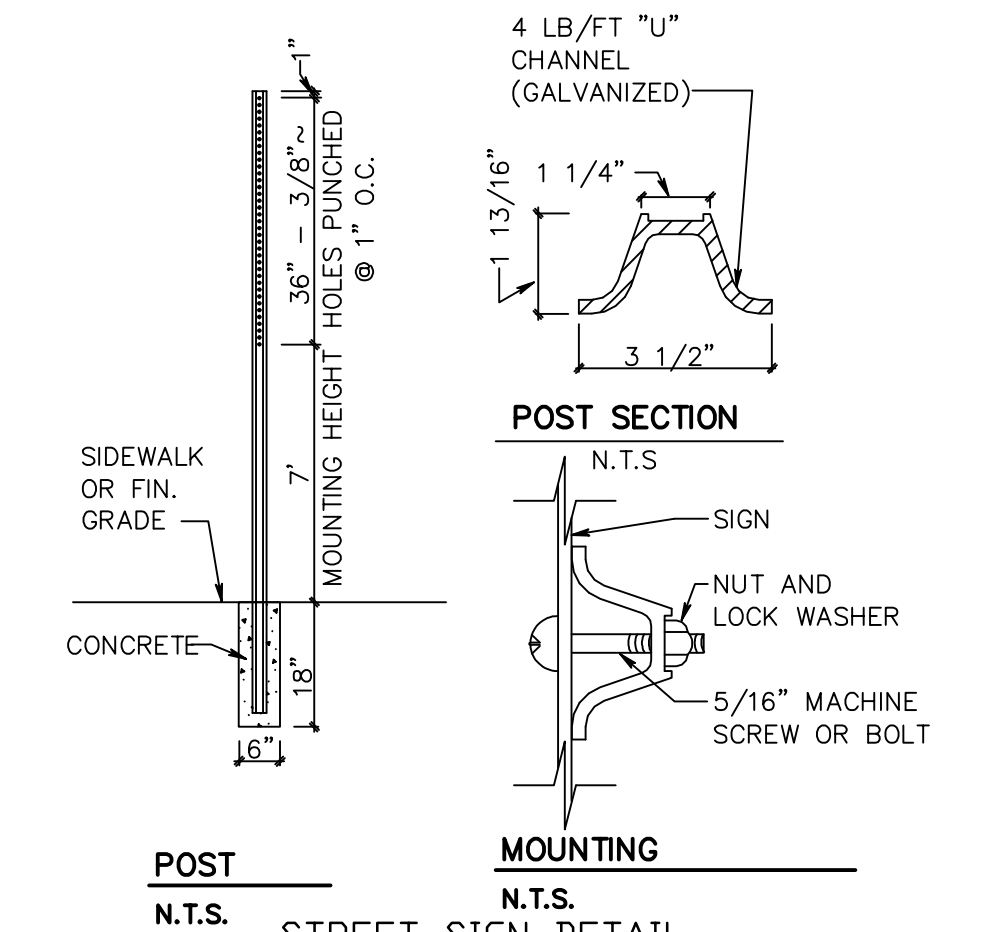
70 PORTSMOUTH AVE, STRATHAM, N.H. 03885
PHONE: 603-583-4860, FAX: 603-583-4863

CISTERN SPECIFICATIONS

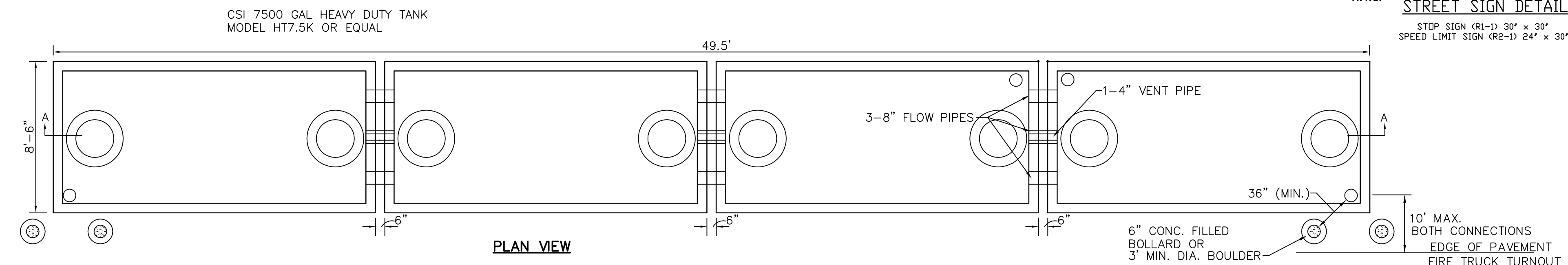
- THE CISTERN SHALL BE DESIGNED TO BE TROUBLE FREE, AND IT SHALL BE DESIGNED TO LAST 50 YEARS.
- THE MINIMUM CAPACITY SHALL BE 30,000 GALLONS. DEPENDING ON THE DEVELOPMENT LAYOUT/CONFIGURATION, ADDITIONAL GALLON REQUIREMENTS MAY BE IMPOSED AT THE DISCRETION OF THE FIRE CHIEF. ALL EXCEPTIONS, ADDITIONS, OR DELETIONS WILL BE IN WRITING.
- THE SUCTION CAPACITY SHALL BE CAPABLE OF DELIVERING 1,000 GALLONS PER MINUTE (GPM) FOR THREE-QUARTERS OF THE CISTERN CAPACITY.
- THE ENTIRE CISTERN AND APPURTENANCES SHALL BE RATED FOR H-20 HIGHWAY LOADING.
- DRAWINGS OF THE DESIGN ARE FOR ESTIMATING GENERAL REQUIREMENT AND DESIGN PURPOSES ONLY AND ARE NOT INTENDED FOR USE AS DESIGN. FINAL MANUFACTURER CUT SHEETS WILL BE REQUIRED TO BE APPROVED BY THE FIRE CHIEF PRIOR TO CISTERN CONSTRUCTION. NO OCCUPANCY PERMITS WILL BE ISSUED UNTIL THE FIRE CISTERN IS INSTALLED, INSPECTED AND APPROVED BY THE MADBURY FIRE DEPT.
- EACH CISTERN SHALL BE DESIGNED, SITED TO THE PARTICULAR LOCATION, STAMPED BY A REGISTERED ENGINEER, AND APPROVED BY THE FIRE CHIEF.
- ALL SUCTION AND FILL PIPING SHALL BE AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM) SCHEDULE 40 OR 80 CPVC (ASTM F437, 438 or 439). ALL VENT PIPING SHALL BE ASTM SCHEDULE 40 OR 80 CPVC. ALL PIPING LOCATED WITHIN THE TANK SHALL BE ASTM SCHEDULE 40 STEEL WITH WELDED JOINTS. ALL PIPING LEADING FROM THE TANK TO THE HYDRANT SHALL BE ASTM SCHEDULE 40 STEEL.
- THE FINAL SUCTION CONNECTION SHALL BE SIX INCH FEMALE CONNECTION WITH NST THREADS AND CAP. THE SUCTION PIPE SHALL BE BRACED TO ENSURE DURABILITY DURING PUMPING OPERATIONS. THE FIRE CHIEF SHALL APPROVE BRACE CONFIGURATION AND INSTALLATION. THE SUCTION PIPE CONNECTION SHALL BE TWENTY-EIGHT INCHES ABOVE THE LEVEL OF THE VEHICLE PAD TO THE CENTER OF THE CONNECTION WHERE VEHICLE WHEELS WILL BE LOCATED WHEN THE CISTERN IS IN USE.
- THE FILLER CONNECTION SHALL BE INSTALLED INTO THE EIGHT INCH VENT WITH 4" MALE STEEL OR ALUMINUM STORZ FITTING W/30" DOWN FACING ELBOW. THIS FITTING SHALL BE 24" ABOVE FINISH GRADE AND FACE THE ROAD. A THIRTY-TWO INCH DIAMETER MANHOLE WITH COVER WILL BE LOCATED ON TOP OF THE CISTERN. THE CONFIGURATION OF THIS MANHOLE SHALL ALLOW THE UNIT TO BE SECURED WITH TWO PADLOCKS AND SHALL BE APPROVED BY THE FIRE CHIEF. THE PADLOCKS WILL BE SUPPLIED BY THE FIRE DEPARTMENT.
- THE DISTANCE FROM THE BOTTOM OF THE SUCTION PIPE TO THE PUMPER CONNECTION SHALL NOT EXCEED FOURTEEN FEET VERTICAL.
- ALL HORIZONTAL SUCTION PIPING SHALL SLOPE SLIGHTLY UPHILL TOWARD THE PUMPER CONNECTION.
- BEDDING FOR THE CISTERN SHALL CONSIST OF A MINIMUM OF TWELVE INCHES OF 3/4" TO 1 1/2" WASHED PEA STONE, COMPACTED. NO FILL SHALL BE USED UNDER THE STONE. OVER EXCAVATION SHALL BE FILLED WITH THE SAME STONE BEDDING MATERIAL.
- ALL BACKFILL MATERIALS SHALL BE SCREENED GRAVEL WITH NO STONES LARGER THAN SIX INCHES AND SHALL BE COMPACTED TO 95 PERCENT OF ITS ORIGINAL VOLUME IN ACCORDANCE WITH ASTM D 1557. 16. THE TOP OF CISTERN SHALL BE INSULATED WITH VERMIN RESISTANT FOAM INSULATION AND TWO FEET OF BACKFILL WITH A MINIMUM WEIGHT OF 120 PCF. COMPACTED. FOAM USED FOR THIS INSTALLATION SHALL BE CLOSED CELL POLYURETHANE FOAM WITH AN INSULATION FACTOR OF R=5 PER INCH. ALL BACKFILL SHALL EXTEND TEN FEET BEYOND THE EDGE OF THE VEHICLE PAD AND THEN HAVE A MAXIMUM OF 3:1 SLOPE, LOAM AND SEEDED.
- BEFORE ANY BACKFILLING IS DONE THE ENTIRE CISTERN SHALL BE COMPLETED AND INSPECTED BY THE FIRE CHIEF.
- AFTER BACKFILLING, BOLLARDS OR LARGE STONES SHALL BE PLACED TO PROTECT THE TANK AND APPURTENANCES.
- THE PITCH OF THE SHOULDER AND VEHICLE PAD FROM THE EDGE OF THE PAVEMENT TO THE PUMPER SUCTION CONNECTION SHALL BE ONE PERCENT TO THREE PERCENT DOWNGRADE.
- THE SHOULDER AND VEHICLE PAD SHALL BE OF A SUFFICIENT LENGTH TO ALLOW CONVENIENT ACCESS TO THE SUCTION CONNECTION WHEN THE PUMPER IS SET AT 45 DEGREES TO THE ROAD. THE SHOULDER AND VEHICLE PAD SECTION SHALL CONSIST OF 3" BITUMINOUS PAVING, REFER TO SITE PLAN FOR REQUIREMENTS.
- TWO CONCRETE FILLED STEEL BOLLARDS SHALL BE PLACED IN A MANNER TO PROTECT THE HYDRANT. THE BASE OF THESE BOLLARDS SHALL EXTEND BELOW THE FROST LINE. THE UPPER PORTION OF THE BOLLARDS SHALL EXTEND THIRTY SIX INCHES ABOVE THE LEVEL OF THE VEHICLE PAD WHERE VEHICLE WHEELS WILL BE LOCATED WHEN THE CISTERN IS IN USE.
- ALL CONSTRUCTION, BACKFILL, AND GRADING MATERIALS SHALL BE IN ACCORDANCE WITH PROPER CONSTRUCTION PRACTICES AND SHALL BE ACCEPTABLE TO THE FIRE CHIEF.
- THE FIRE CHIEF (OR REPRESENTATIVE) AND THE ENGINEER'S INSPECTOR WILL BE NOTIFIED BY THE CONTRACTOR TO OBSERVE THE FOLLOWING POINTS OF INSTALLATION:
 - EXCAVATION COMPLETE.
 - CRUSHED STONE INSTALLED AND COMPACTED
 - BACKFILLING COMPLETE PRIOR TO PLACEMENT OF INSULATION.
 - PLACEMENT OF INSULATION.
 - START AND FINISH OF LEAKAGE TEST.
 - PIPING MANWAYS AND BOLLARDS IN PLACE AND PAINTED.
 - ALL BACKFILLING LOAM, SEED, ETC. COMPLETE WITH TURNOUT GRAVEL IN PLACE AND GRADED.
 - PAVEMENT COMPLETE, AND ALL OTHER WORK 100% COMPLETE.
- THE FIRE CHIEF SHALL BE NOTIFIED OF THE DATE THAT SITE WORK IS TO BEGIN.
- ANY EXCEPTION, ADDITIONS, OR DELETIONS ARE DATED AND NOTED BELOW:
- CONCRETE MUST HAVE A MINIMUM OF 150 PCF.
- STONE AND GRAVEL BACKFILL MUST HAVE A MINIMUM OF 120 PCF.



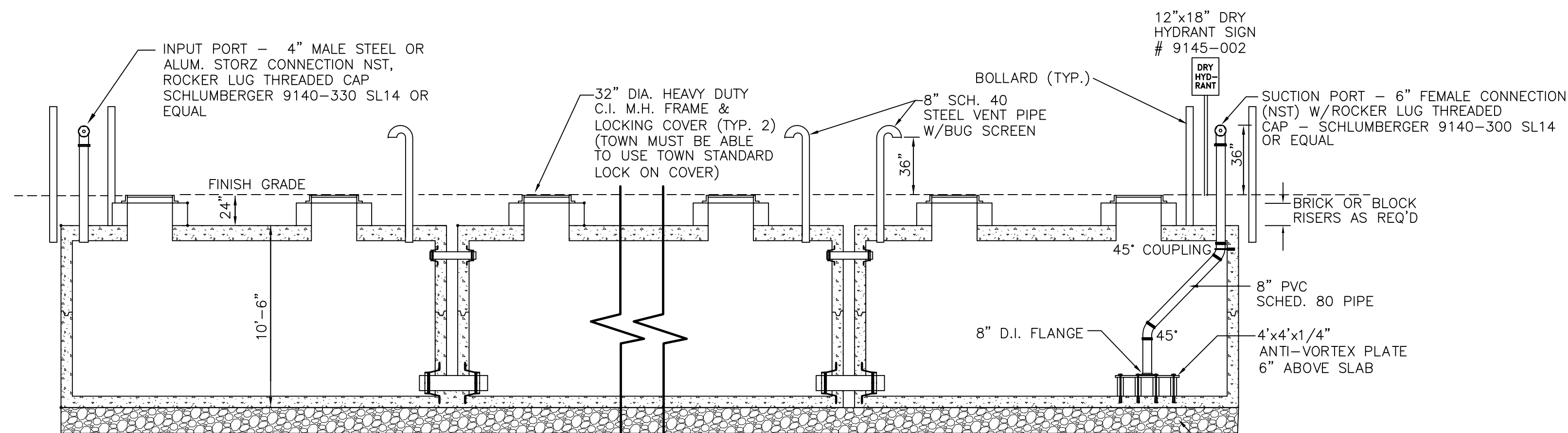
CISTERN SITE PLAN
SCALE: 1"=20'



POST N.T.S.
MOUNTING N.T.S.
STREET SIGN DETAIL
STOP SIGN (R1-1) 30" x 30"
SPEED LIMIT SIGN (R2-1) 24" x 30"



PLAN VIEW



SECTION A-A

- NOTES
- CONCRETE: 5,000 PSI AFTER 28 DAYS.
 - REINFORCED FOR H-20 LOADING.
 - JOINTS SEALED WATER TIGHT.
 - ALL BELOW GRADE EXTERIOR SURFACES OF THE TANK SHALL BE COATED WITH KOL-TAR'S BLACK SHIELD ASPHALT COATING, OR APPROVED EQUAL.
 - CISTERN INSTALLATION MUST CONFORM WITH ALL LOCAL FIRE DEPARTMENT REQUIREMENTS.

PROPOSED 30,000 GAL. FIRE CISTERN DETAIL
NOT TO SCALE

REVISIONS:	DATE:

CISTERN DETAILS

PLAN FOR:
RESIDENTIAL DEVELOPMENT
HUCKBURY ROAD
MADBURY, NH

DATE: SEPT., 2016	SCALE: AS NOTED
PROJ. NO: NH-767	SHEET NO. 1 OF 1