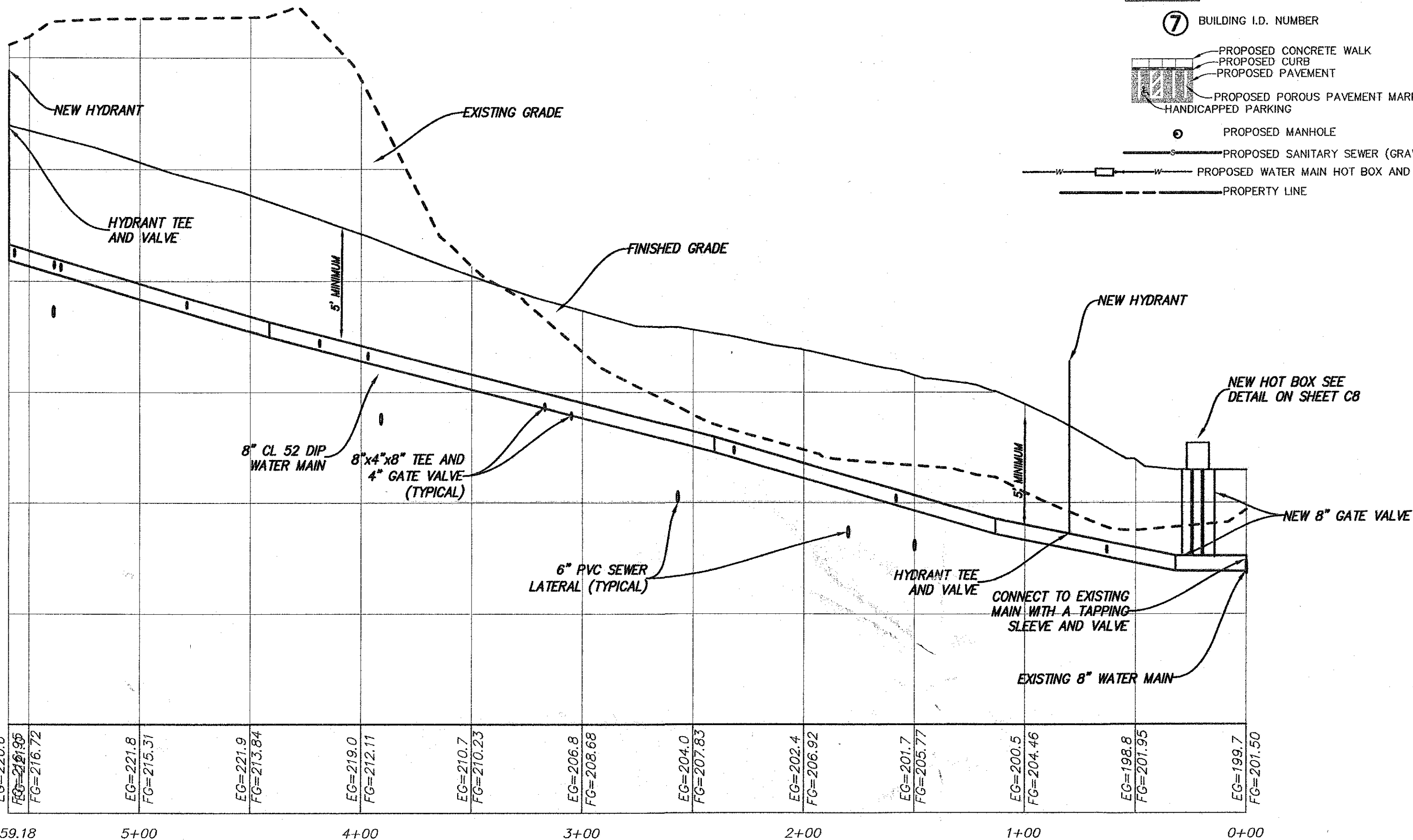


WATER EXTENSION PLAN



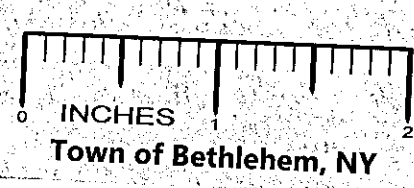
WATER MAIN PROFILE

WATER INSTALLATION AND DISINFECTION PROCEDURE

1. VERTICAL SEPARATION OF 18" MINIMUM IS REQUIRED BETWEEN WATER MAIN & SANITARY SEWER CROSSING IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEW YORK STATE HEALTH DEPARTMENT. SEPARATION OF 10" MINIMUM HORIZONTALLY SHALL BE MAINTAINED BETWEEN O.D. TO O.D. OF PARALLEL LINES.
2. IF MINIMUM VERTICAL SEPARATION OF 18" BETWEEN SANITARY SEWER WATER MAIN CANNOT BE MAINTAINED, THE SANITARY SEWER SHALL BE CONSTRUCTED OF SAME MATERIALS AND JOINTS AS THE WATER MAIN AND MUST BE PRESSURE TESTED TO MEET REQUIREMENTS FOR WATER MAIN. THIS MATERIAL SHALL EXTEND 10' IN EACH DIRECTION FROM POINT OF CROSSING.
3. WATER MAINS SHALL BE PRESSURE TESTED AND DISINFECTED IN ACCORDANCE WITH THE LATEST A.W.W.A. STANDARDS. SUBMIT RESULTS TO THE ENGINEER.
4. WATER MAIN DEPTH 5'-0" (MINIMUM COVER)
5. FILL BELOW WATER MAINS SHALL BE COMPACTED GRANULAR MATERIAL.
6. THE CONTRACTOR'S MUST STRICTLY ADHERE TO N.Y.S. LABOR SAFETY STANDARDS AND OSHA STANDARDS RELATED TO CONSTRUCTION SAFETY AND PROPER TRENCH SHORING.
7. PIPE MATERIALS AND APPURTENANCES ARE SUBJECT TO APPROVAL BY THE ENGINEER.
8. DISINFECTION: MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C651-92, PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY. WATER CONTAINING NOT MORE THAN 50 PARTS PER MILLION OF FREE AVAILABLE CHLORINE SHALL BE ALLOWED TO STAND IN ALL LINES AND SYSTEMS FOR AT LEAST 24 HOURS. AFTER WHICH TIME THERE SHALL BE AT LEAST 25 PARTS PER MILLION RESIDUAL CHLORINE REMAINING IN THE WATER. ALL NEW VALVES AND HYDRANTS SHALL BE OPERATED WHILE THE LINES ARE FILLED WITH HEAVILY CHLORINATED WATER. ALL WATER USED FOR THE DISINFECTION WATER SHALL BE FLUSHED FROM THE LINES UNTIL THE CHLORINE RESIDUAL DOES NOT EXCEED 1.0 PART PER MILLION. THE OWNER OR HIS REPRESENTATIVE SHALL COLLECT SAMPLES OF THE WATER AT THE LOCATIONS SHOWN ON THE PLAN. THE SAMPLES SHALL BE SUBMITTED TO AN APPROVED TESTING LABORATORY FOR BACTERIAL ANALYSIS AND TWO (2) COPIES OF THE TEST RESULTS SHALL BE SENT TO THE ENGINEER. THE OWNER SHALL BEAR ALL COSTS FOR SUCH SAMPLING AND TESTING.
 - A. THE TABLET METHOD SHALL BE USED AS THE PREFERRED METHOD OF DISINFECTION IN ACCORDANCE WITH AWWA C651-92.
 - B. CONDUCT THREE SAMPLE COLLECTIONS AT THE LOCATIONS SHOWN ON THE PLAN
9. PIPE JOINTS AND MATERIAL SHALL BE AS FOLLOWS:
 - A. CLASS 52 DUCTILE IRON PIPE OF SIZE SHOWN ON THE DRAWINGS, CENTRIFUGALLY CAST IN ACCORDANCE WITH ANSI/AWWA C151/A21.51, FOR 150 P.S.I. WORKING PRESSURE;
 - B. MECHANICAL JOINT, ANSI/AWWA C111/A21.11
 - C. PUSH-ON JOINT, ANSI/AWWA C111/A21.11
 - D. LAYING LENGTH: EIGHTEEN (18) OR TWENTY (20) FEET
 - E. CEMENT MORTAR LINING SHALL CONFORM TO ANSI/AWWA C104/A21.4, THAT THE LINING THICKNESS SHALL BE MORE THAN 1/8 INCH.
 - F. ALL PIPE AND FITTINGS SHALL BE COATED WITH BITUMINOUS COATING CONFORMING TO ANSI A21.51.
 - G. WHERE HARNESSED JOINTS ARE REQUIRED USE M.J. WITH RETAINER GLANDS

PRESSURE TESTING PROCEDURE

- TESTING:
1. AFTER INSTALLING ALL PIPES, CONTRACTOR SHALL TEST SECTIONS OF PIPE BETWEEN VALVES. TESTING SHALL CONFORM TO AWWA C900, SECTION 4.
 2. CONTRACTOR SHALL MAKE THE NECESSARY ARRANGEMENTS WITH DEPARTMENT OF WATER & WATER SUPPLY FOR PROCUREMENT OF WATER FOR PRESSURE AND LEAKAGE TESTING AND FOR SUBSEQUENT STERILIZATION. CONTRACTOR SHALL FURNISH THE NECESSARY LABOR, PUMPS, VALVES, PRESSURE GAUGES, WATER METERS, AND ALL OTHER EQUIPMENT REQUIRED FOR THIS PURPOSE.
 3. EACH SECTION OF PIPE SHALL BE SLOWLY FILLED WITH WATER. ALL AIR SHALL BE EXPELLED FROM THE PIPE, THROUGH HYDRANTS, BLOWOFFS, OR ANY TAP (TAPS MUST BE REMOVED AND THE HOLES PLUGGED AFTER ACCEPTANCE) THAT MAY BE NECESSARY FOR THE RELEASE OF AIR FROM THE HIGHEST POINTS. IT SHALL THEN BE SUBJECT TO A STATIC PRESSURE TEST, AT OPERATING PRESSURE, FOR A PERIOD OF EIGHT (8) HOURS, WITH PRESSURE VARIATION NOT TO EXCEED 0.5 P.S.I.
 4. ANY CRACKED OR DEFECTIVE PIPES, FITTINGS, VALVES, OR APPURTENANCES DISCOVERED IN CONSEQUENCE OF THE PRESSURE TEST, SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR WITH SOUND MATERIAL, AND THE TEST SHALL BE REPEATED TO SATISFACTION OF ENGINEER. PIPE NOT PASSING THE TEST SHALL BE TAKEN OUT, A NEW GASKET SUPPLIED AND RELAID.
- LEAKAGE TEST:
1. LEAKAGE TESTING SHALL BE CONDUCTED AFTER PRESSURE TEST HAS BEEN SATISFACTORILY COMPLETED. CONTRACTOR SHALL FURNISH THE NECESSARY PUMPS, PIPE, CONNECTIONS, GAUGES AND WATER METERS REQUIRED FOR THIS TEST.
 2. THE DURATION OF EACH LEAKAGE TEST SHALL BE NO LESS THAN TWO HOURS. LEAKAGE IS DEFINED AS THE QUANTITY OF WATER TO BE SUPPLIED INTO THE NEWLY LAID PIPE OR ANY SECTION THEREOF, NECESSARY TO MAINTAIN THE SPECIFIED TEST PRESSURE AFTER THE PIPE HAS BEEN FILLED WITH WATER AND THE AIR EXPELLED.
 3. WHERE IT IS NECESSARY FOR THE JOINTS TO BE COVERED BEFORE THE LEAKAGE TEST, THE DURATION OF THIS TEST SHALL BE EXTENDED TO TWENTY-FOUR (24) HOURS.
 4. PIPE INSTALLED WILL NOT BE ACCEPTED UNTIL AMOUNT OF LEAKAGE FOR NOMINAL 18-FOOT PIPE MEETS THE REQUIREMENT OF AWWA STD. C-900-64, OR LATEST AMENDMENT THEREOF.
- MAXIMUM ACCEPTABLE LEAKAGE FORMULA
- $$L = \frac{N \times D \times P \times 1/2}{7400}$$
- L = ALLOWABLE LEAKAGE, IN GPH
N = NO. OF JOINTS IN TEST SECTION
D = NOMINAL PIPE DIAMETER, IN INCHES
P = AVERAGE TEST PRESSURE, IN PSI (50 PSI)
5. WHERE SECTIONS OF PIPE FAIL TO MEET THESE REQUIREMENTS, THEY SHALL BE REPAIRED AGAIN, MAINTAINED UNDER PRESSURE FOR A SUFFICIENT PERIOD OF TIME, AND RE-TESTED AS NECESSARY UNTIL THESE REQUIREMENTS ARE MET.



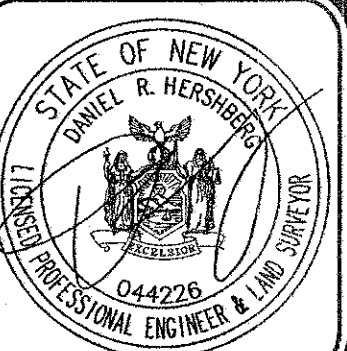
FOR MUNICIPAL APPROVAL ONLY-NOT INTENDED FOR CONSTRUCTION

APPLICANT: MARINI LAND 1, INC.
TOWN OF BETHLEHEM PLANNING BOARD APPROVAL

Town of Bethlehem Planning Board
By direction of the Chairman
these plans are hereby Approved.
See first sheet for date & signature

HERSHBERG & HERSHBERG
Consulting Engineers and Land Surveyors
18 Locust Street
Albany, New York 12203

ALTERATION OF THIS DOCUMENT EXCEPT BY A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR, IS ILLEGAL



DATE	11/15/13
TOWN COMMENT LETTER #	11/28/13
TOWN REVIEW COMMENTS	1/13/2014
REVISIONS	50' PDD BUFFER

PROPOSED WATER MAIN PLAN & PROFILE
BLESSINGS CORNER
No. 572 RUSSELL ROAD
TOWN OF BETHLEHEM, ALBANY COUNTY, NEW YORK

FILE: 080032
SCALE: 1"=40' (V=1")
DATE: 9/25/13
CHK: DRH
CNS: MAL
080032-3.DWG