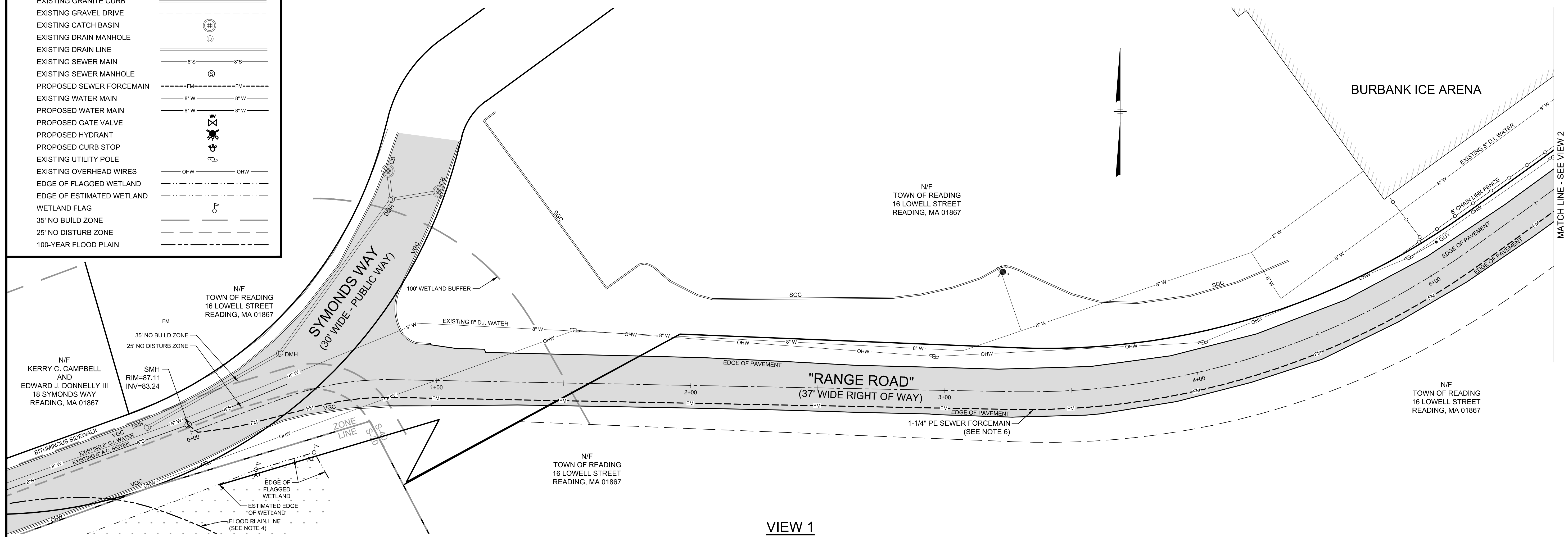
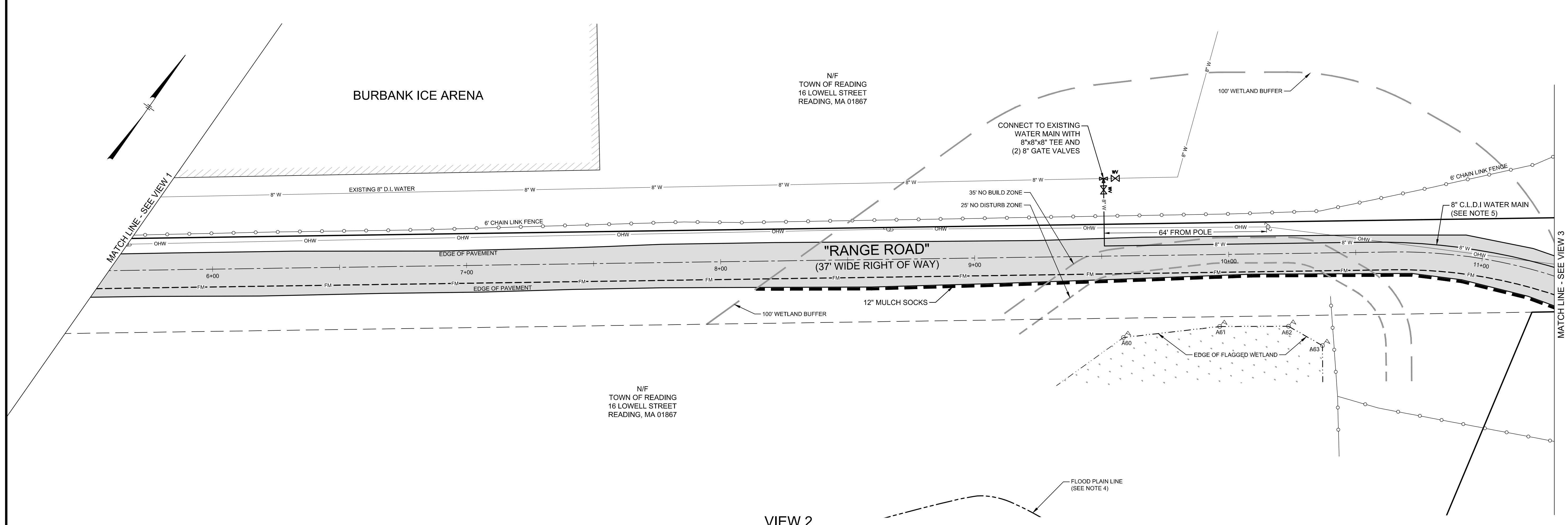


**LEGEND**

- EXISTING EDGE OF PAVEMENT
- EXISTING GRANITE CURB
- EXISTING GRAVEL DRIVE
- EXISTING CATCH BASIN
- EXISTING DRAIN MANHOLE
- EXISTING DRAIN LINE
- EXISTING SEWER MAIN
- EXISTING SEWER MANHOLE
- PROPOSED SEWER FORCEMAIN
- EXISTING WATER MAIN
- PROPOSED WATER MAIN
- PROPOSED GATE VALVE
- PROPOSED HYDRANT
- PROPOSED CURB STOP
- EXISTING UTILITY POLE
- EXISTING OVERHEAD WIRES
- EDGE OF FLAGGED WETLAND
- EDGE OF ESTIMATED WETLAND
- WETLAND FLAG
- 35' NO BUILD ZONE
- 25' NO DISTURB ZONE
- 100-YEAR FLOOD PLAIN



**VIEW 1**



**VIEW 2**

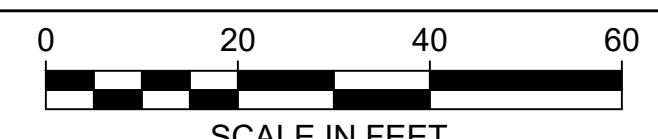
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**RECORD OWNER:**  
 READING RIFLE & REVOLVER CLUB  
 P.O. BOX 212  
 READING, MA 01867

**ASSESSORS PARCEL IDS:**  
 035.0-0000-0134.0  
 041.0-0000-0055.0  
 041.0-0000-0058.0  
 042.0-0000-0001.0  
 042.0-0000-0004.0



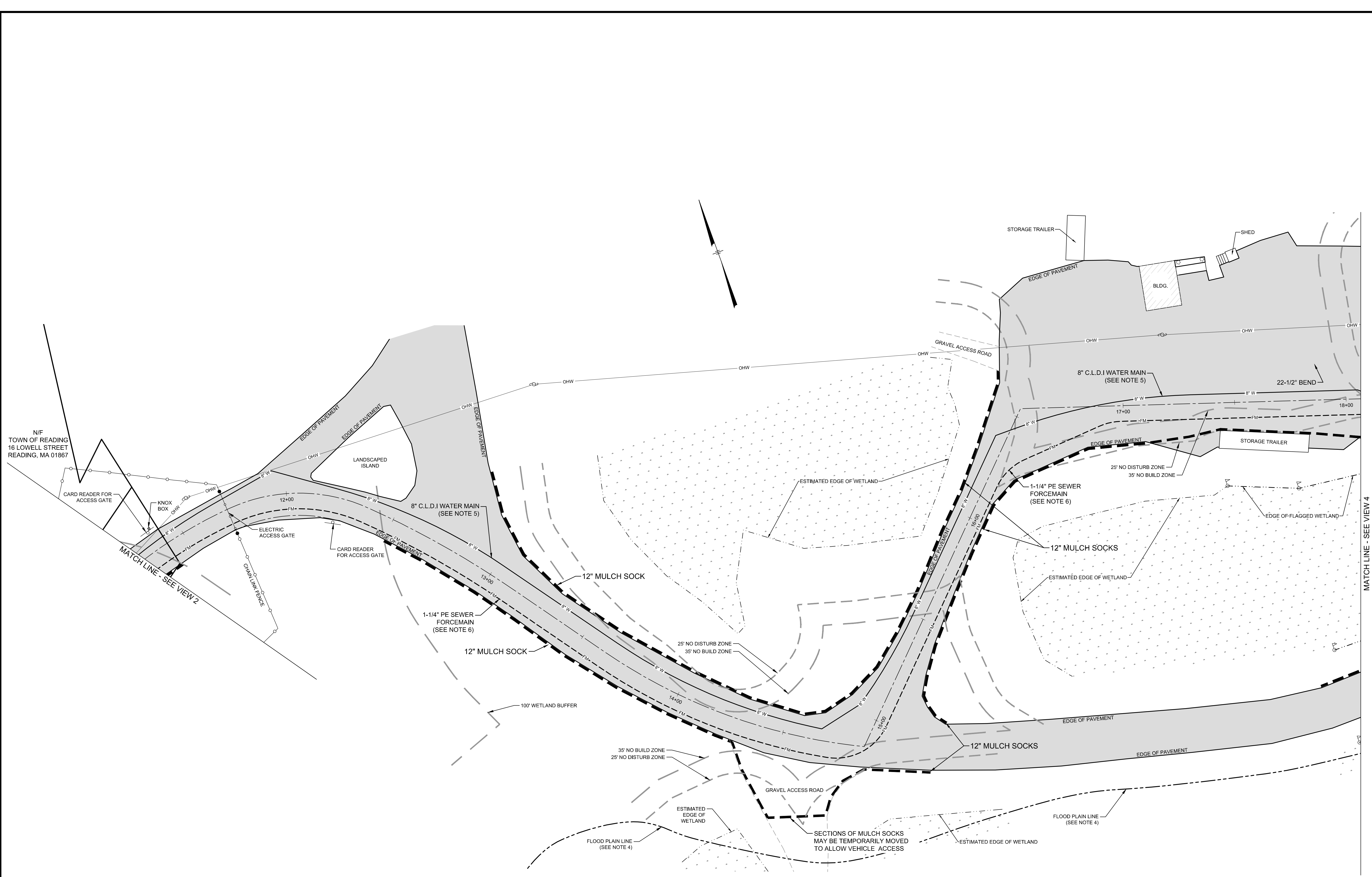
MAS	ADD MULCH SOCKS	10/17/2023
BY	REVISIONS	DATE

**WATER AND SEWER CONNECTION PLAN**  
 READING RIFLE & REVOLVER CLUB  
 READING, MA 01867

**ALAN ENGINEERING, L.L.C.**  
 110 WINN STREET, SUITE 209  
 WOBURN, MA 01801  
 (781) 287-9789  
 alan.eng@verizon.net

**PREPARED FOR:**  
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 P.O. BOX 212  
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JOB NO: 1104	DWG NO: 2115
JUNE 26, 2023	<b>1 of 3</b>
SCALE: 1" = 20'	



VIEW 3

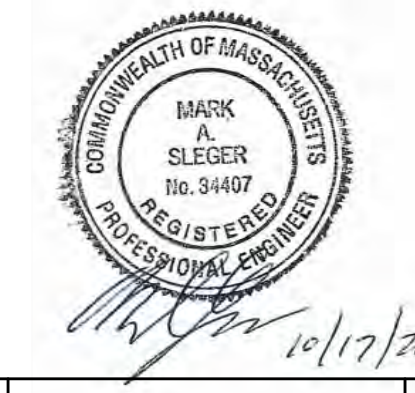
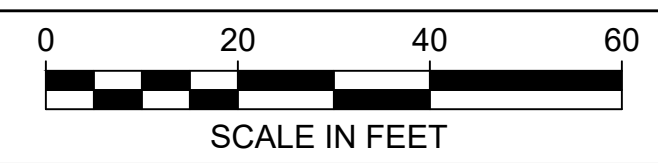
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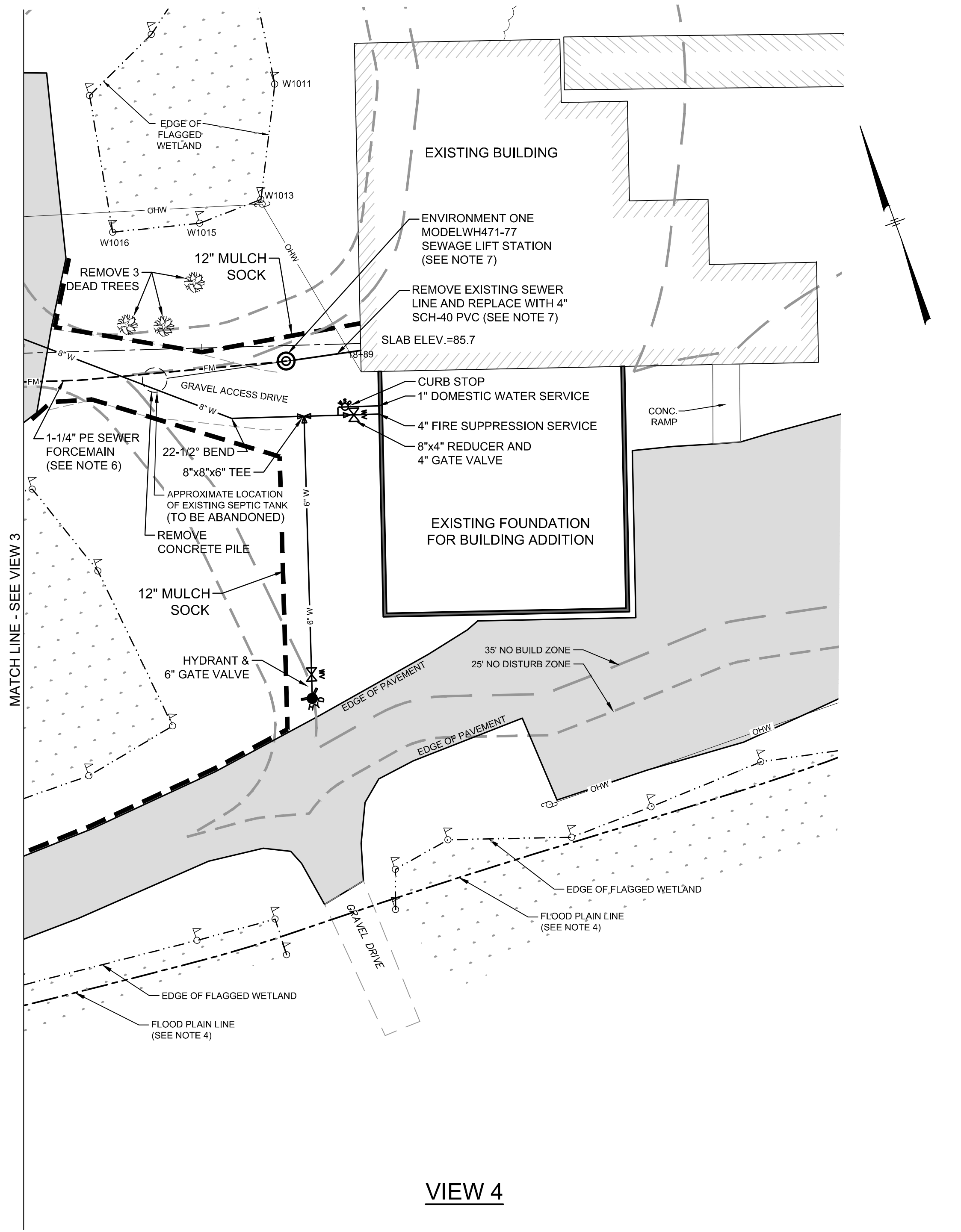
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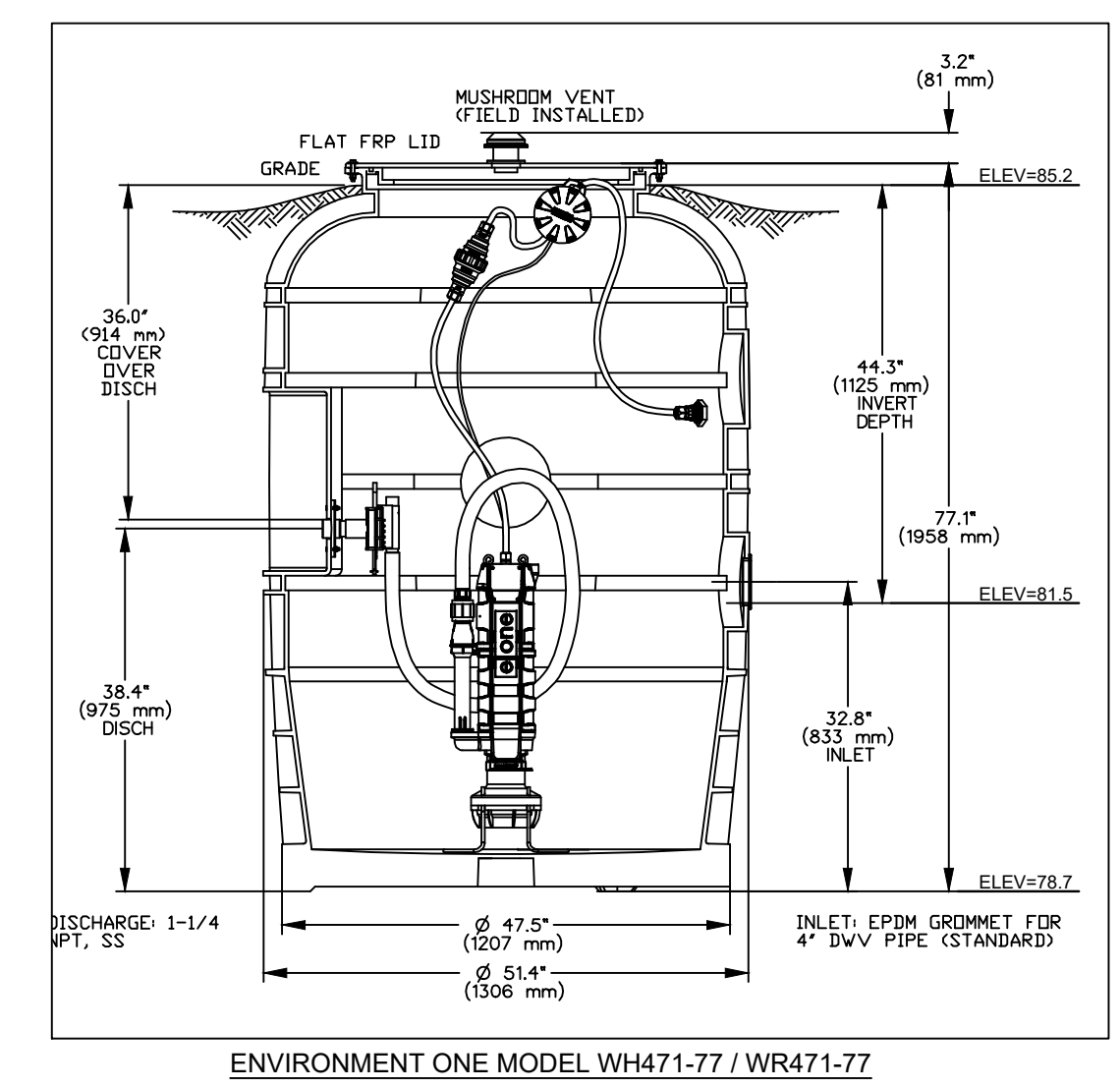


VIEW 4

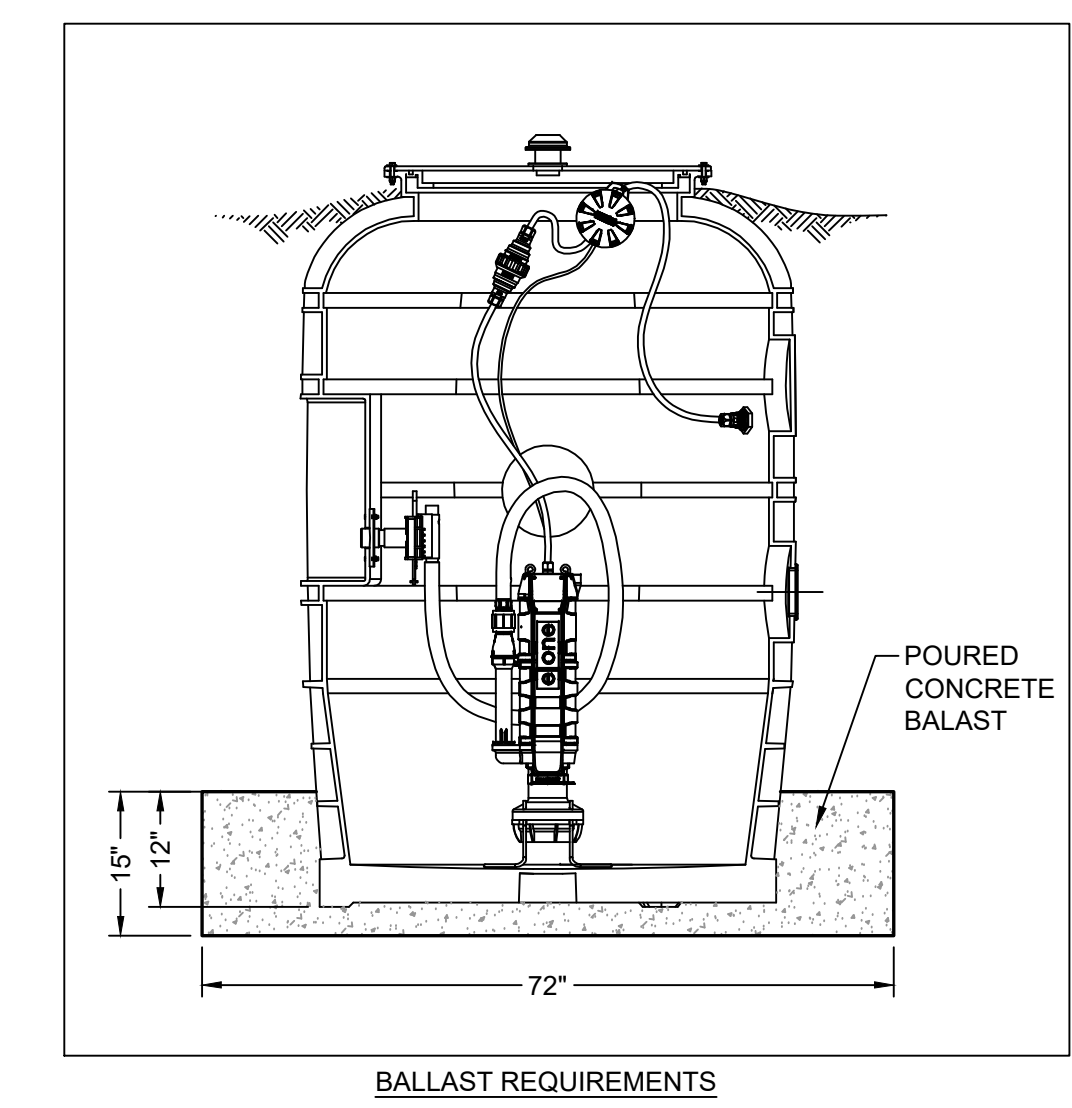
**SEWER FLOW CALCULATIONS & PUMP STATION SELECTION**  
 SEWER FLOW CALCULATIONS ARE BASED ON 310 CMR 15.203 (TITLE 5)  
 CURRENT & PROPOSED USE: SHOOTING RANGE AND CLUB HOUSE WITH SNACK ROOM  
 INDOOR SHOOTING STATIONS: 24  
 OUTDOOR SHOOTING STATIONS: 30 (ADJACENT TO CLUB HOUSE)  
 MEETING ROOM SEATING: 60  
 TOTAL CAPACITY: 114  
 SIMILAR TITLE 5 USE: COUNTRY CLUB WITH SNACK BAR OR LUNCH ROOM  
 DESIGN FLOW: 10 GPD PER PERSON  
 TOTAL DESIGN FLOW: 10 GPD / PERSON x 114 PERSONS = 1,140 GPD  
 USE: ENVIRONMENT ONE WH471-77  
 DAILY FLOW CAPACITY: 2,000 GPD  
 STORAGE CAPACITY: 476 GALLONS

**PUMP STATION BUOYANCY CALCULATIONS**  
 ESTIMATED SEASONAL HIGH GROUNDWATER ELEVATION: 81.5  
 BOTTOM OF LIFT STATION ELEVATION: 78.7  
 VOLUME OF SUBMERGED LIFT STATION: 14.2 S.F. x (81.5-78.7) = 40 CU-FT  
 UPLIFT FORCE: 40 CU-FT x 62.4 LBS/CU-FT = 2,496 LBS  
 STATION WEIGHT (DRY): 340 LBS  
 BALLAST REQUIRED: 2,496 LBS - 340 LBS = 2,156 LBS

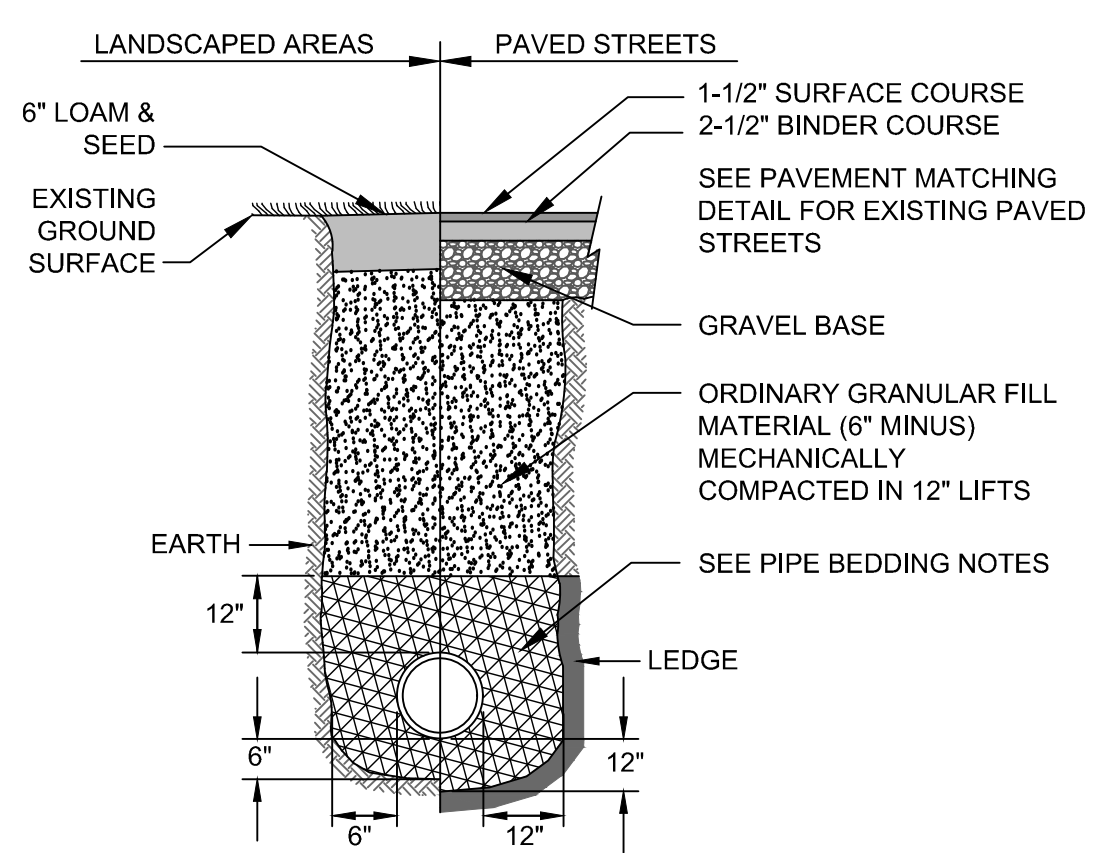
USE POURED CONCRETE BALLAST: 150 LBS / CU-FT  
 BALLAST REQUIRED: 2,156 LBS / (150 LBS / CU-FT) = 14.4 CU-FT  
 BALLAST PROPOSED: 21.1 CU-FT x (150 LBS / CU-FT) = 3,165 LBS



ENVIRONMENT ONE MODEL WH471-77 / WR471-77  
 ENVIRONMENT ONE LIFT STATION  
 NOT TO SCALE

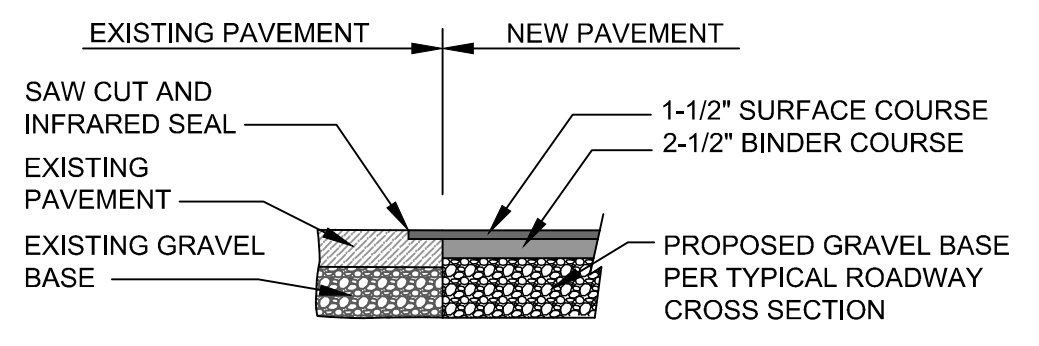


BALLAST REQUIREMENTS

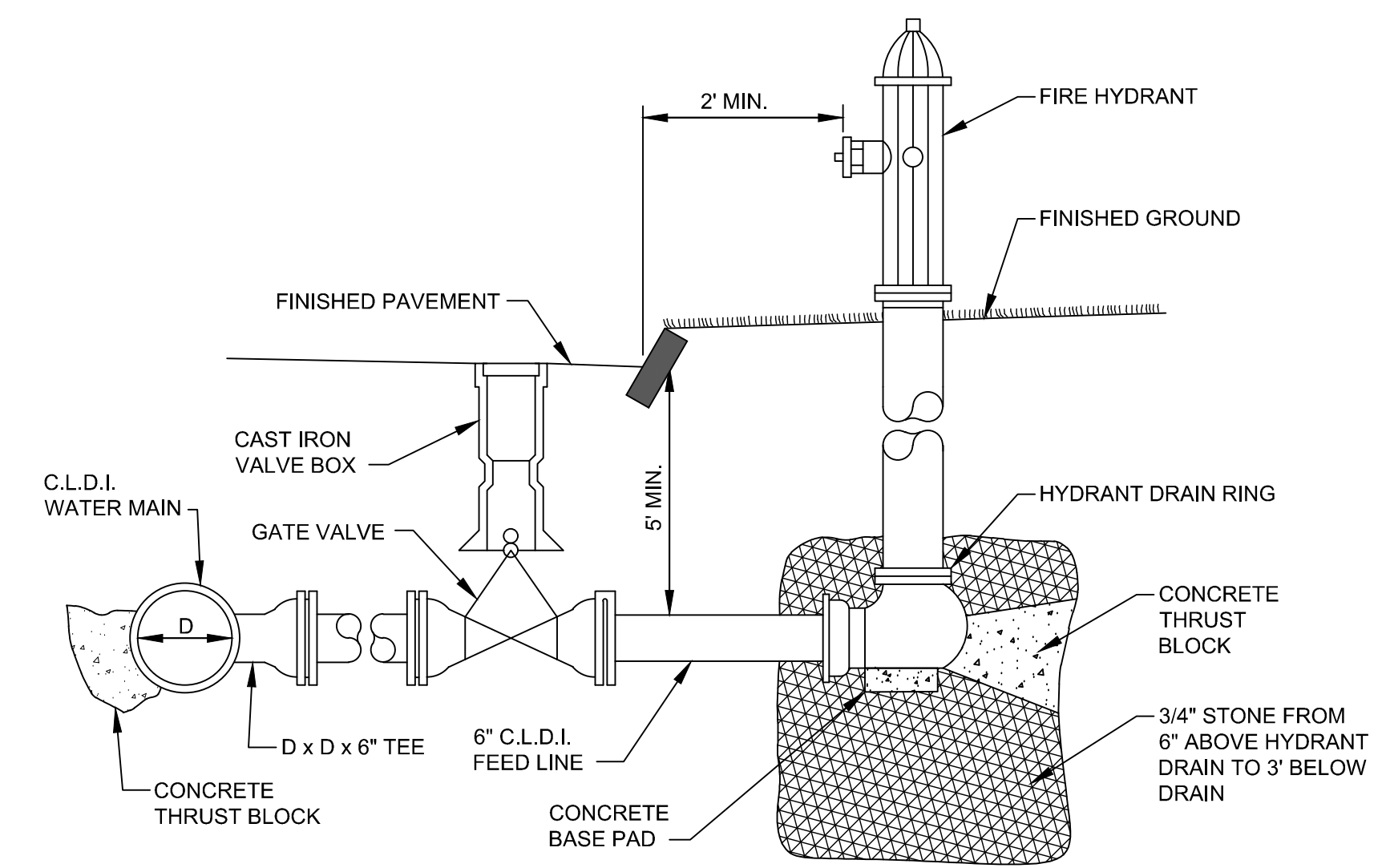


TYPICAL TRENCH SECTION  
 NOT TO SCALE

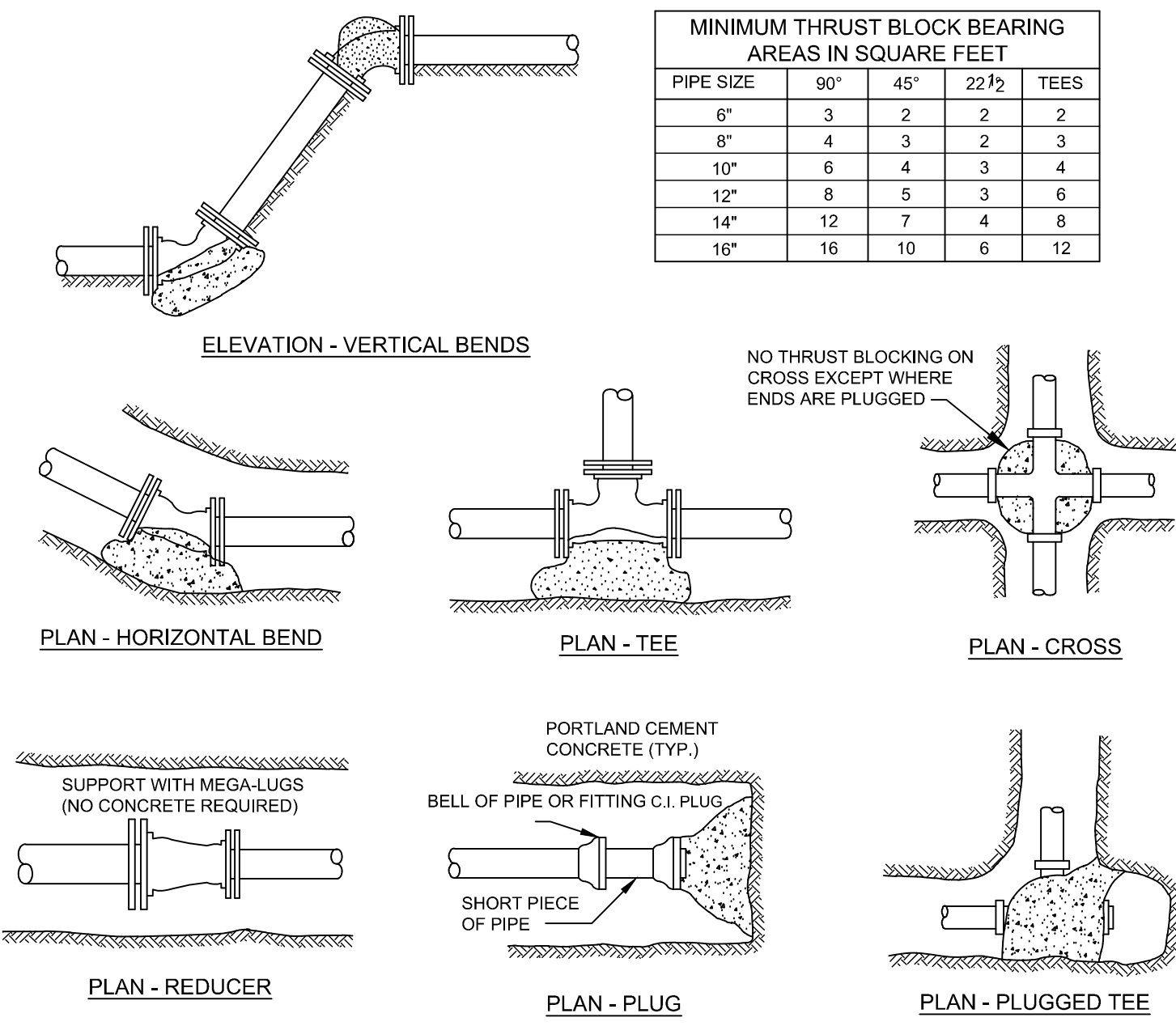
PIPE BEDDING NOTES:  
 FOR CLDI WATER MAINS USE SAND  
 FOR PVC, PE AND HDPE PIPING USE 3/4\"/>



PAVEMENT MATCHING DETAIL  
 NOT TO SCALE



HYDRANT CONNECTION DETAIL  
 NOT TO SCALE



WATER MAIN DETAILS  
 NOT TO SCALE

- NOTES:
- ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM TO THE SPECIFICATIONS OF THE LOCAL WATER DEPARTMENT.
  - CONCRETE SHALL BE 3,000 PSI MINIMUM AT 28 DAYS.
  - THRUST BLOCKS SHALL BE PLACED AGAINST UNDISTURBED EARTH.
  - ALL FITTINGS (EXCEPT AS INDICATED) SHALL BE SUPPORTED AND ANCHORED IN CONCRETE AND WITH "MEGALUG JOINT RESTRAINTS" OR APPROVED EQUAL.
  - FOR FIRE HYDRANT THRUSTING SEE HYDRANT CONNECTION DETAIL.
  - POURED CONCRETE SHALL BE KEPT 6" CLEAR OF MECHANICAL JOINTS TO ALLOW FOR FUTURE REPAIR OR REMOVAL.
  - RETAINER GLANDS REQUIRED ON ALL BENDS.
  - ALL MECHANICAL JOINT GLANDS SHALL BE WEDGE-ACTION LOCKING RESTRAINT TYPE.
  - BELL ENDS OF PUSH-ON PIPE WITHIN 30 FEET OF THE TERMINATION OF THE WATER MAIN OR EITHER SIDE OF A 90-DEGREE BEND SHALL BE MECHANICALLY RESTRAINED. (FIELD-LOC GASKETS, RODS AND RESTRAINT CLAMPS OF SET SCREW PLUG)
  - BRONZE CONDUCTIVITY WEDGES (2) SHALL BE INSTALLED AT EACH BELL JOINT.
  - THE TAPPING SLEEVE SHALL BE ALL STAINLESS STEEL WRAP-AROUND TYPE.

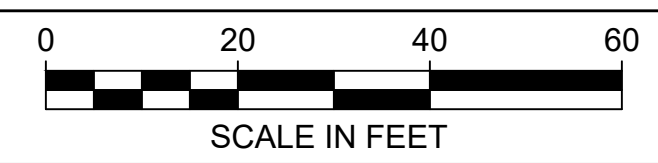
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SCALE IN FEET



MAS	ADD MULCH SOCKS	10/17/2023
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