



City of Middletown
WATER & SEWER DEPARTMENT
82 Berlin Street
Middletown, CT 06457
TEL: (860) 638-3500

LOW PRESSURE SEWER SYSTEMS (LPSS)
EVALUATION PROCEDURES
MARCH 2024

- A. If the City of Middletown Water Pollution Control Authority (WPCA) deems it to be in the best interest of the City of Middletown, and the Low Pressure Sewer System (LPSS) does not limit the City's use and expansion of the existing sewer system and/or its master plan of the gravity sewer system, then the WPCA may accept the application with conditions. The City shall limit the use of the LPSS systems to the following conditions:
1. Existing homes with failing septic systems and health related issues.
 2. Any Commercial or Industrial type of development.
 3. New Construction or development with private grinder pumps and force laterals that discharge into a gravity sewer main.
- B. If the WPCA deems it not to be in the best interest of the City of Middletown to accept the proposed LPSS, then the WPCA may reject the application.
- C. Upon written submission of a request for acceptance of a low pressure sewer system, the WPCA will evaluate the application on the following criteria:
1. Location of the proposed system in relation to the existing sanitary sewer system or proposed sanitary sewer master plan.
 2. Feasibility of extending existing gravity sanitary sewer system or proposed master plan sanitary sewer service area.
 3. Limitations that the proposed LPSS will put upon the future extension of the existing gravity sanitary sewer system or master plan sanitary sewer service area.
 4. The number of individual residences to be served by the proposed LPSS.
 5. The distance and complexity of the common force main to existing sanitary sewer facilities.

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6. Each proposed LPSS shall be hydraulically designed for the exact number of residences to be served as well as any additional units where deemed appropriate by the WPCA.
 7. The pumps shall be sized by the manufacturer or manufacturer's representative then submitted in writing for approval.
- D. If, under Item A above, the WPCA deems it appropriate to accept the proposed LPSS, they may impose any or all of the following conditions for acceptance:
1. Charge the current sanitary sewer connection charges for each residence served.
 2. Require the installation of an E-ONE grinder station or Liberty pump simplex grinder package. The location of the grinder pumps shall be shown a site plan. No interior grinder pumps are allowed.
 3. Require the installation of an emergency-generator to operate each low pressure pumping unit. Each emergency-generator to be furnished with complete operating instructions. Each emergency-generator to be furnished with an installed manual starting mechanism in case of power failure. The location of the generator shall be shown and noted on the site plan. The pump must be run on the generator to demonstrate to the inspector that the system will operate with loss of utility power.
 4. Require the installation of flushing connection manholes at appropriate distances along and at the end of common force mains. Require the installation of manholes at changes in direction or junctions of common force mains.
 5. Require that the subdivision map and each individual lot site plan, and the deed of conveyance contain the following note:

“Each lot within this subdivision, (*Name of Subdivision*), that contains its own sewer lateral, grinder pump, and appurtenances, shall be the sole responsibility of the individual lot owner and Not the City of Middletown or their agents for the repair, replacement, and maintenance of this equipment and appurtenances.”

**LOW PRESSURE SEWER SYSTEMS (LPSS)
INSTALLATION OF FORCE MAINS AND SERVICES**

Where approval of a LPSS has been granted by the WPCA the following materials and construction procedures shall be used:

MATERIALS

FORCE MAINS AND FORCE LATERALS: Schedule 40 PVC solvent weld joint, SDR-21 PVC push joint pipe, or ductile iron pipe

GRAVITY LINES PVC SDR 35 push joint pipe

CHECK VALVES: PVC fully ported swing type check valve

CORPORATION STOPS: Ford FB400-7 or Mueller H-9968

CURB (SERVICE) STOPS: Ford B-11 Brass fully ported ball valve

CURB (SERVICE) STOP BOXES: Two piece cast iron extension type curb box with arch pattern base for use with 1-1/4" to 2" services. The lid must be marked "SEWER".

ISOLATION AND CLEAN-OUT VALVES: PVC union type ball valve

PIPE LOCATOR WIRE: High molecular weight polyethylene (HMW-PE) insulation, color green. 12 AWG copper, 7 strand soft drawn wire conductor. Direct bury splice kit DBR by 3M.

CONSTRUCTION PROCEDURES

FORCE MAINS AND LATERALS: Trench cross section for force mains in traveled right of ways shall be identical in all aspects to a gravity sewer trench cross section.

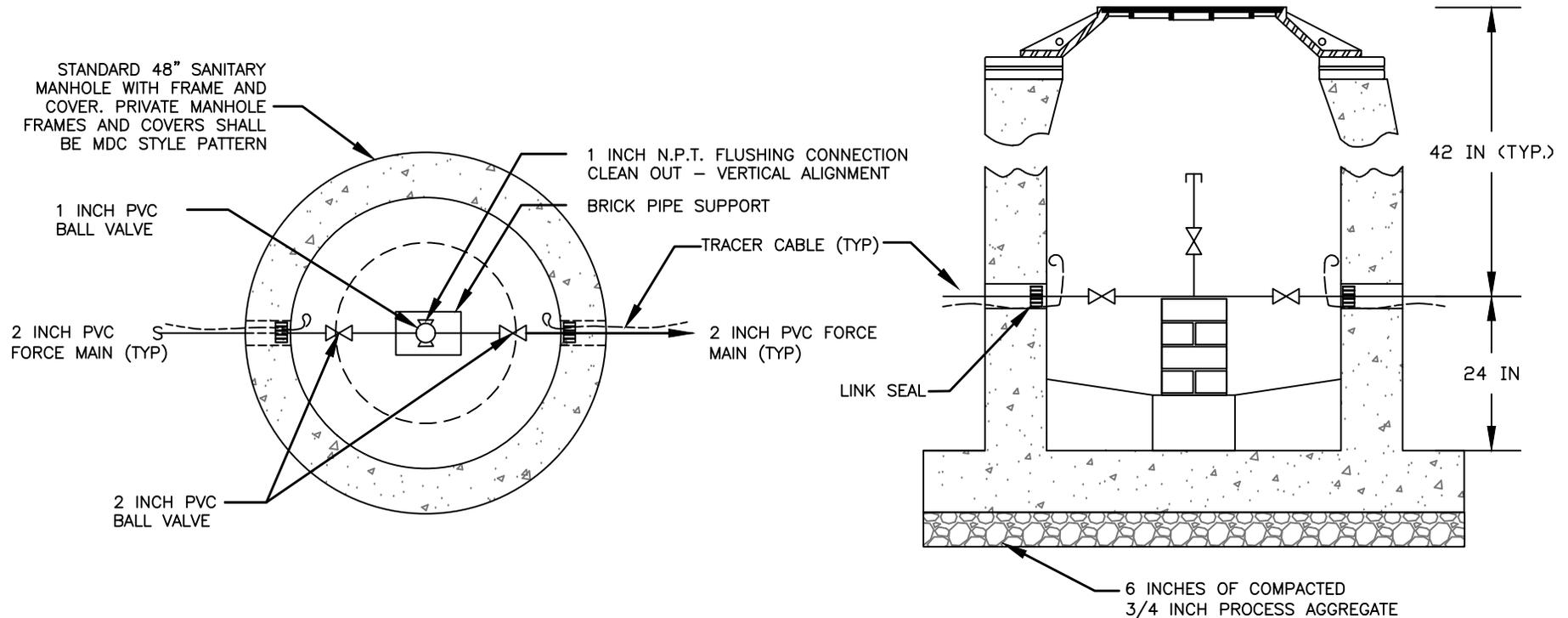
FLUSHING CONNECTIONS: Flushing connections shall be provided at the terminal end of each force main, every 400 feet along straight runs of pipe, and wherever two or more mains or laterals join and feed into another main.

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INSTALLATION OF FORCE MAINS AND SERVICES**

- HYDROSTATIC TESTING:** A hydrostatic pressure test of at least 50 psi for one hour shall be performed on all new force mains and laterals. An allowable leakage shall be less than 0.25 gpm/1,000 linear feet of pipe.
- CURB BOX VALVE INSTALLATION:** At the curb box valve location, excavate below the valve, to place concrete blocks with the top of the block 2" below the bottom of the pipe. Place bricks on top of these blocks Parallel to the pipeline, such that they are located outside of the edge of the valve. Install the arch pattern base so that its load is transferred to the block base. Backfill around the installation with sand. Be sure blocks are located upon undisturbed soil or fully compacted processed stone fill
- FLUSHING CONNECTION FITTINGS:** All flushing connections shall be incorporated into the standard gravity sewer type manhole. Actual piping connections shall be coordinated with the City of Middletown Sewer Department for compatibility with the Departmental Flusher Truck.
- METALIZED PLASTIC WARNING TAPE:** Metalized plastic warning tape shall be installed over each force main and force main lateral. Tape shall be Lineguard Detectable Tape or equal. The color shall be green and shall be lettered "SEWER". The tape shall be placed in the trench approximately 24 inches above the sewer main/lateral and approximately 30 inches below the finished grade.
- PIPE LOCATOR WIRE:** Locating wire shall be installed along the bottom of the entire length of the force main and/or lateral piping with accessible test stations. Splices shall be kept to a minimum.

TYPICAL LOW PRESSURE SEWER CLEAN OUT

N.T.S.



NOTES:

1. MANHOLE TO BE MANUFACTURED IN ACCORDANCE WITH ASTM C-478.
2. MANHOLE STEPS TO BE STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC MODEL #PS2-PF-SL OR CAST ALUMINUM ALLOY 6061 DROP FRONT DESIGN.
3. INSERT RUBBER PLUG INTO LIFTING HOLES FROM OUTSIDE & FILL WITH NON-SHRINK MORTAR INSIDE & OUTSIDE.
4. BRICK RISER COLLAR TO BE PARGED & RECEIVE TWO COATS BITUMINOUS WATERPROOFING MATERIAL.
5. MANHOLE JOINTS SHALL RECEIVE NON-SHRINK GROUT INTERIOR.
6. MANHOLE STEPS SHALL BE 12 INCH ON CENTER.
7. OUTSIDE OF MANHOLE SHALL RECEIVE TWO COATS BITUMINOUS WATERPROOFING MATERIAL.
8. BACKFILL AND COMPACT IN 12 INCH LIFTS.
9. ALL FASTENING HARDWARE SHALL BE 316 STAINLESS STEEL.
10. DETAIL IS DIAGRAMATIC ONLY.



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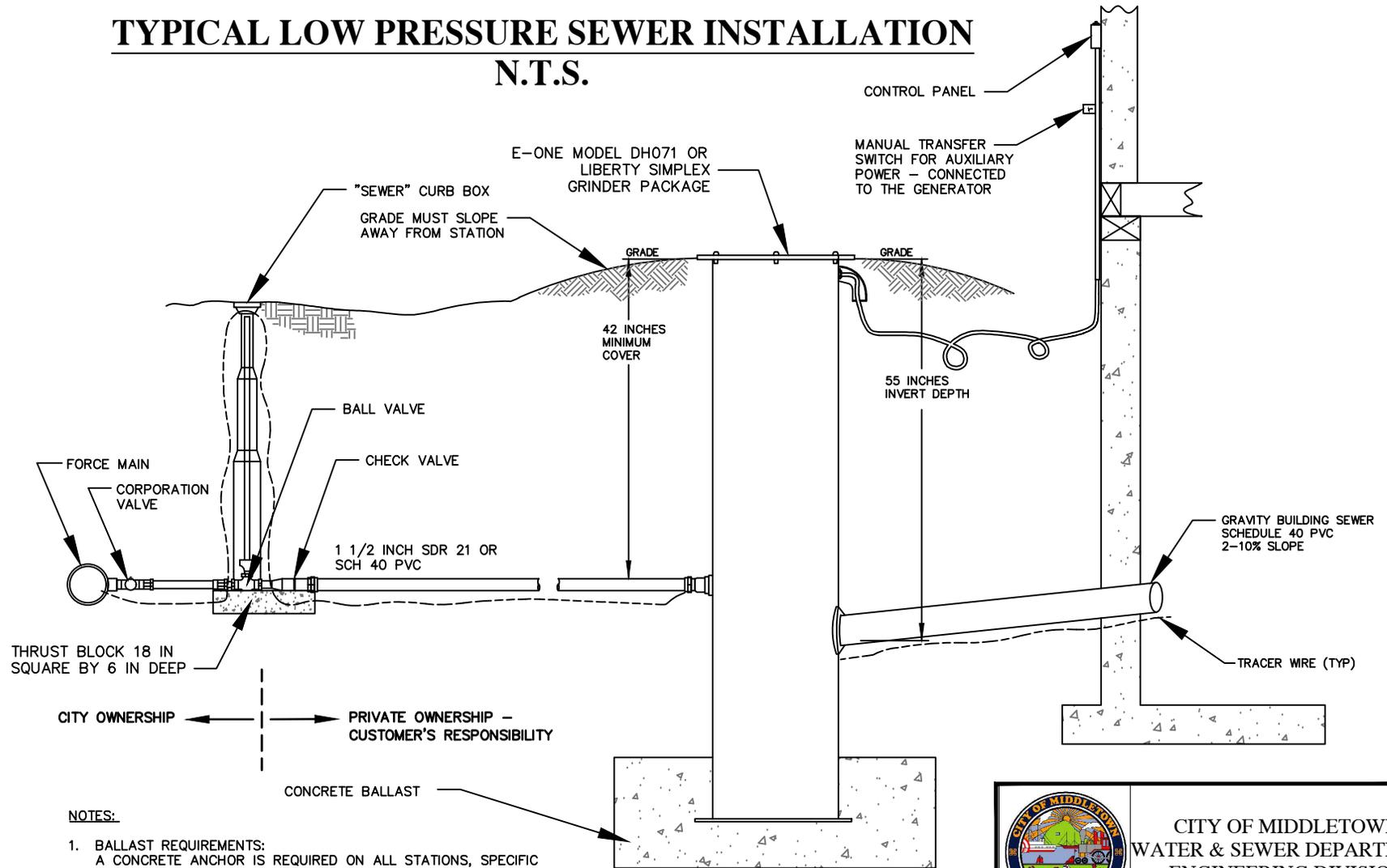
LOW PRESSURE SEWER SYSTEM
SPECIFICATIONS
TYPICAL CLEANOUT MANHOLE DETAIL

DATE: MARCH 2024

SHEET 1 OF 3

TYPICAL LOW PRESSURE SEWER INSTALLATION

N.T.S.



NOTES:

1. BALLAST REQUIREMENTS:
A CONCRETE ANCHOR IS REQUIRED ON ALL STATIONS, SPECIFIC CONCRETE DIMENSIONS ARE REQUIRED TO ACHIEVE NECESSARY BALLAST EFFECT. SEE MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS.
2. INSTALL ALL PIPING IN 12 INCHES OF SAND OR SCREENINGS.
3. OWNER IS RESPONSIBLE FOR INSTALLING THE COMPLETE LATERAL FROM THE CITY FORCE MAIN TO THE BUILDING BEING SERVED. THE CITY WILL TAKE OWNERSHIP FROM THE MAIN TO THE CURB BOX INCLUDING THE BALL VALVE AFTER ACCEPTANCE.



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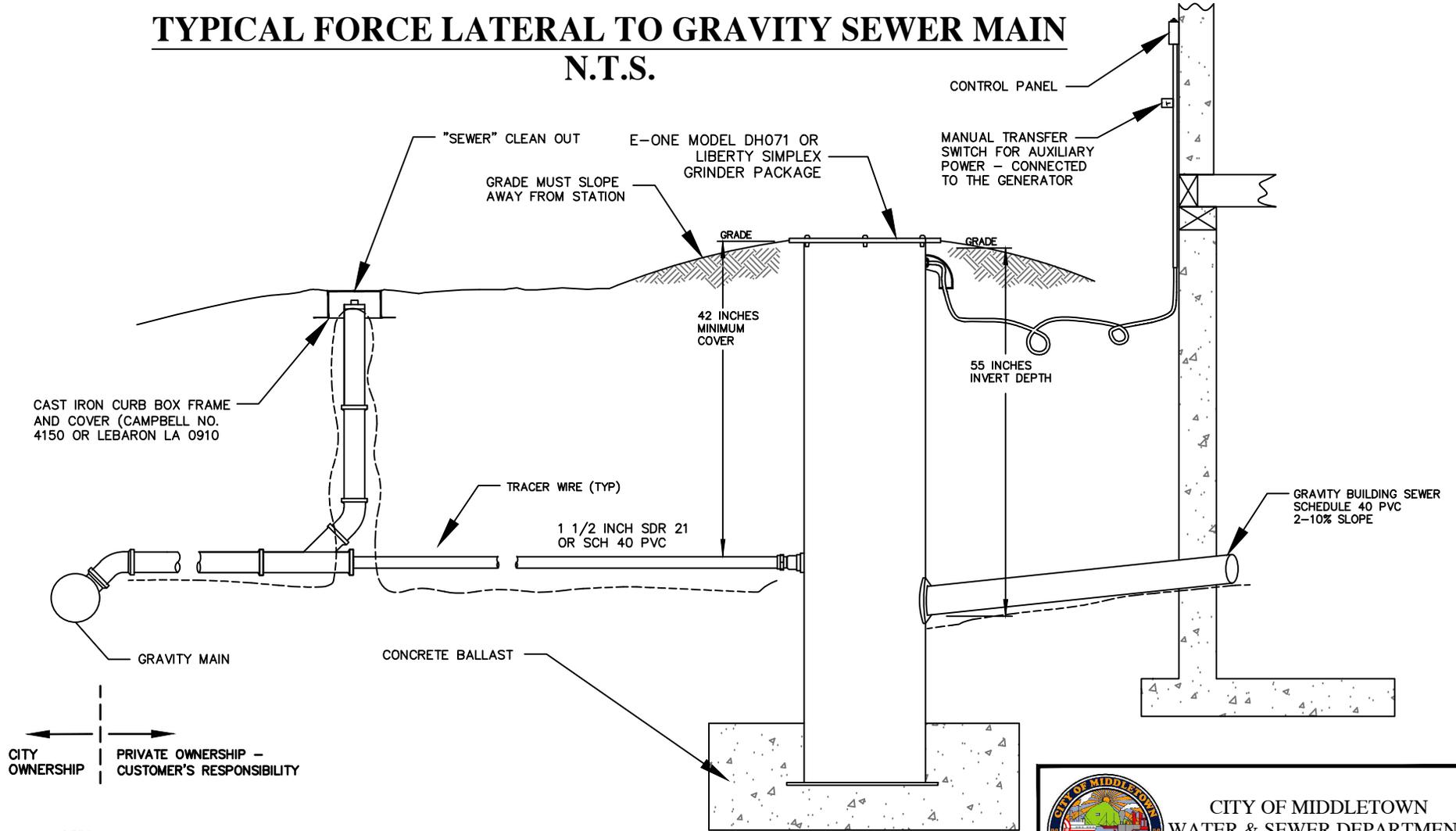
LOW PRESSURE SEWER SYSTEM
SPECIFICATIONS
TYPICAL SANITARY LATERAL DETAIL

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SHEET 2 OF 3

TYPICAL FORCE LATERAL TO GRAVITY SEWER MAIN

N.T.S.



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2. INSTALL ALL PIPING IN 12 INCHES OF SAND OR SCREENINGS.



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LOW PRESSURE SEWER SYSTEM
SPECIFICATIONS
TYPICAL SANITARY LATERAL DETAIL

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SHEET 3 OF 3