

GENERAL SPECIFICATIONS

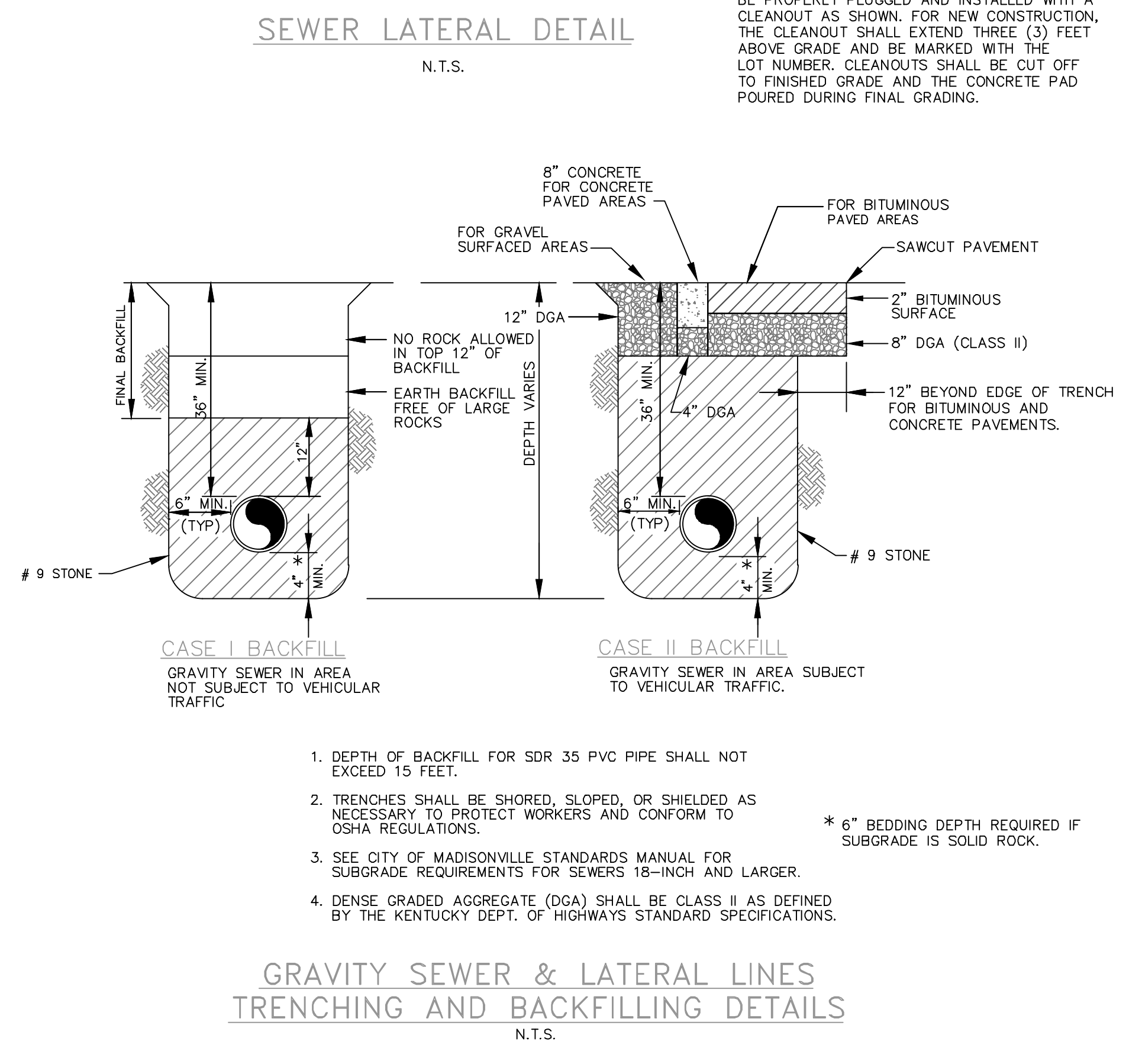
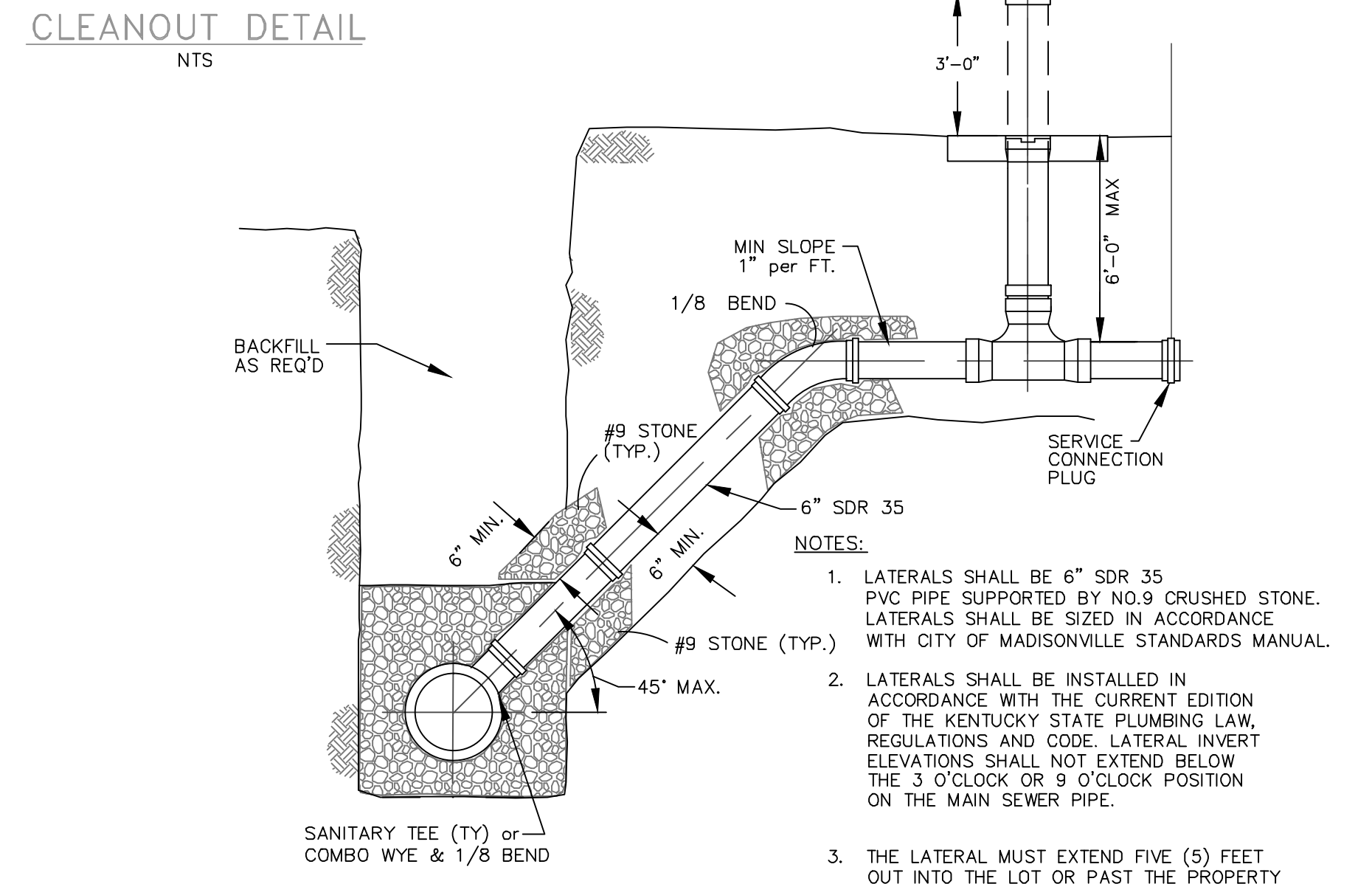
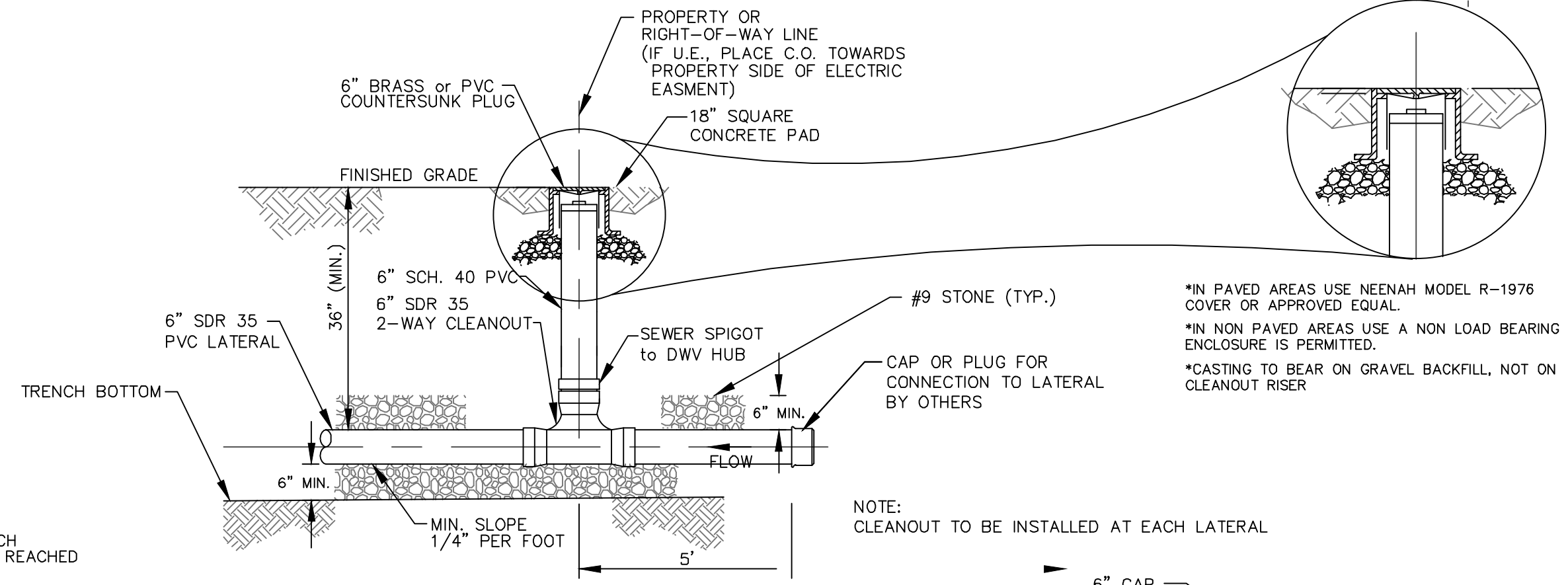
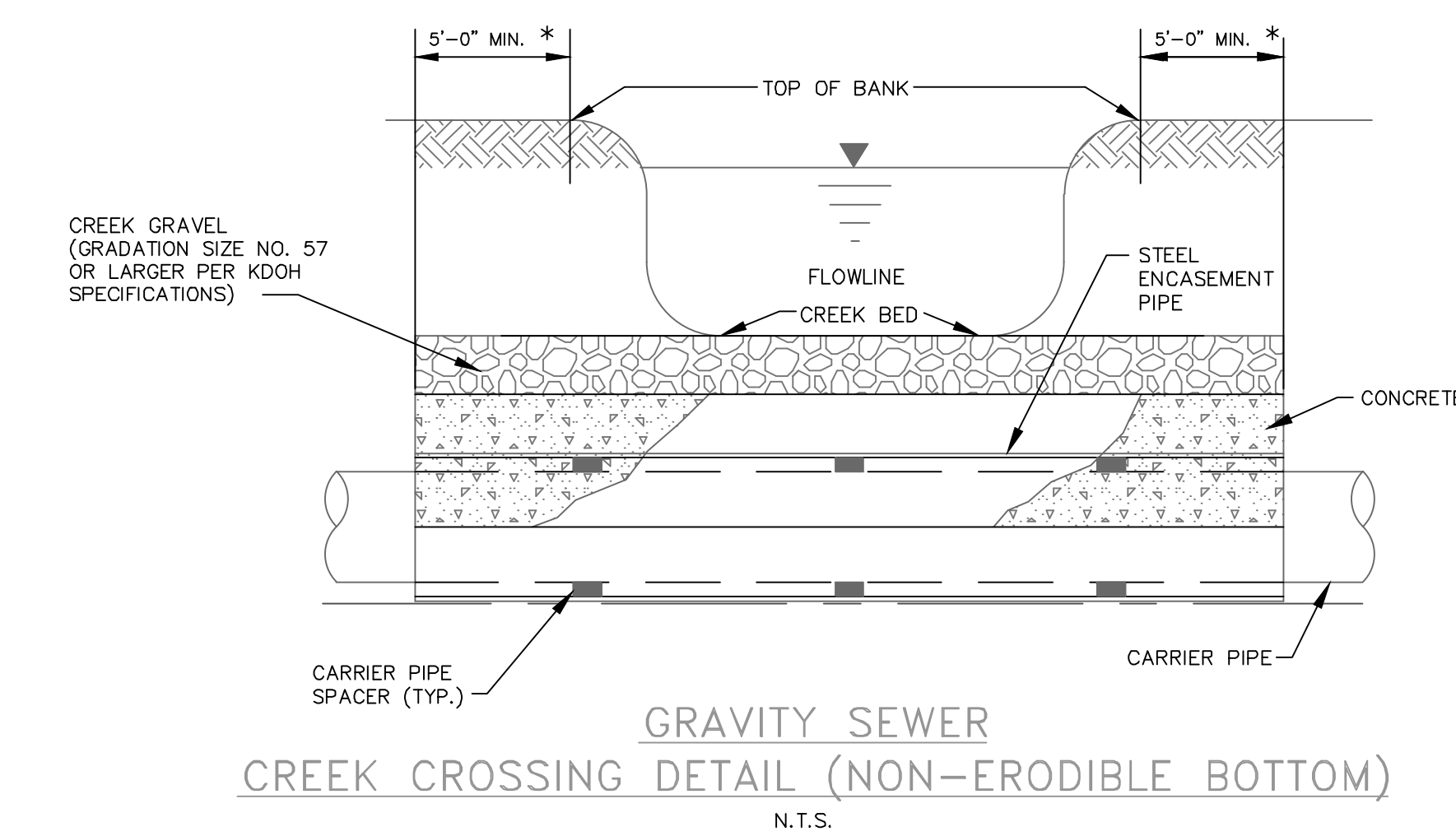
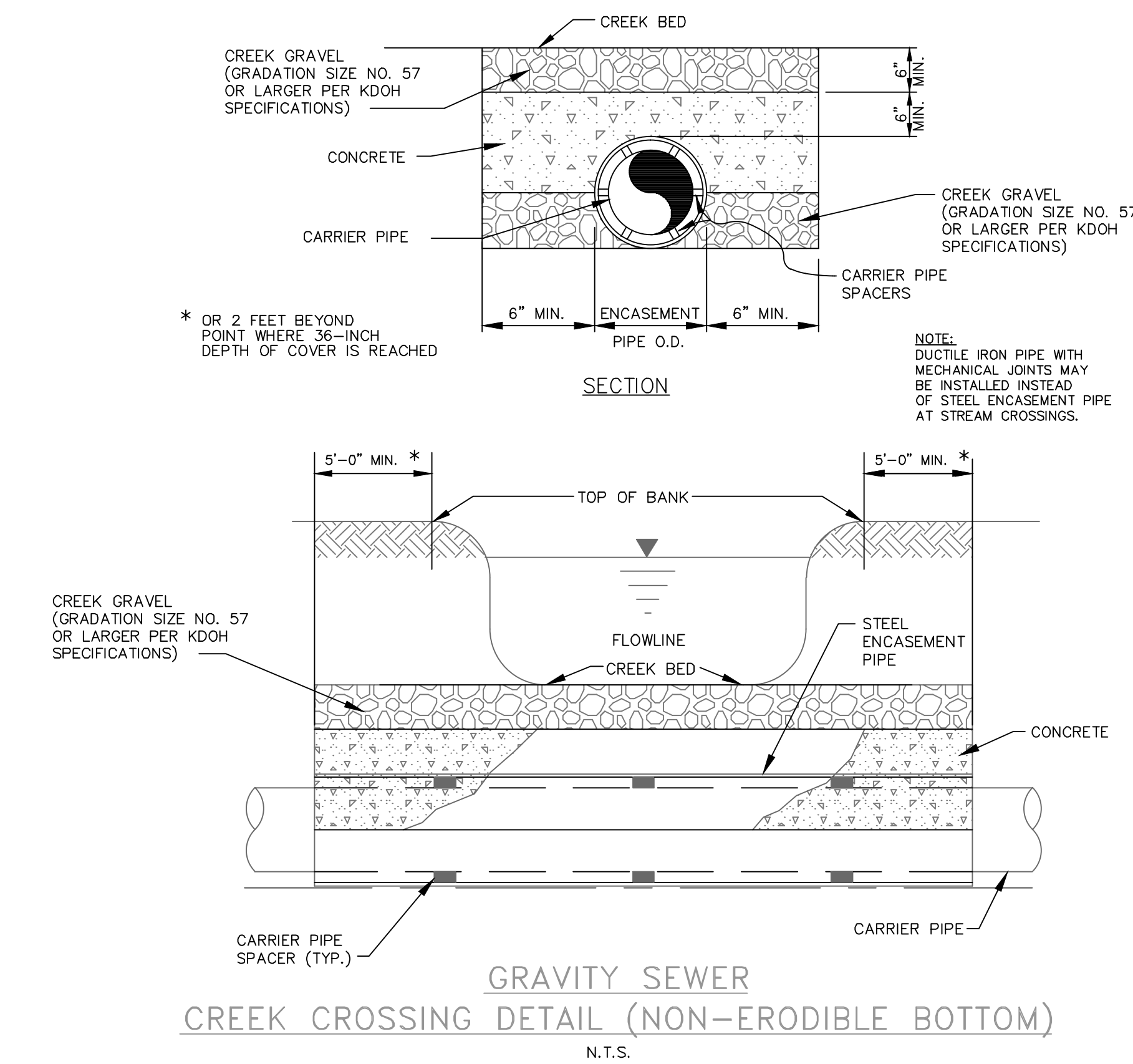
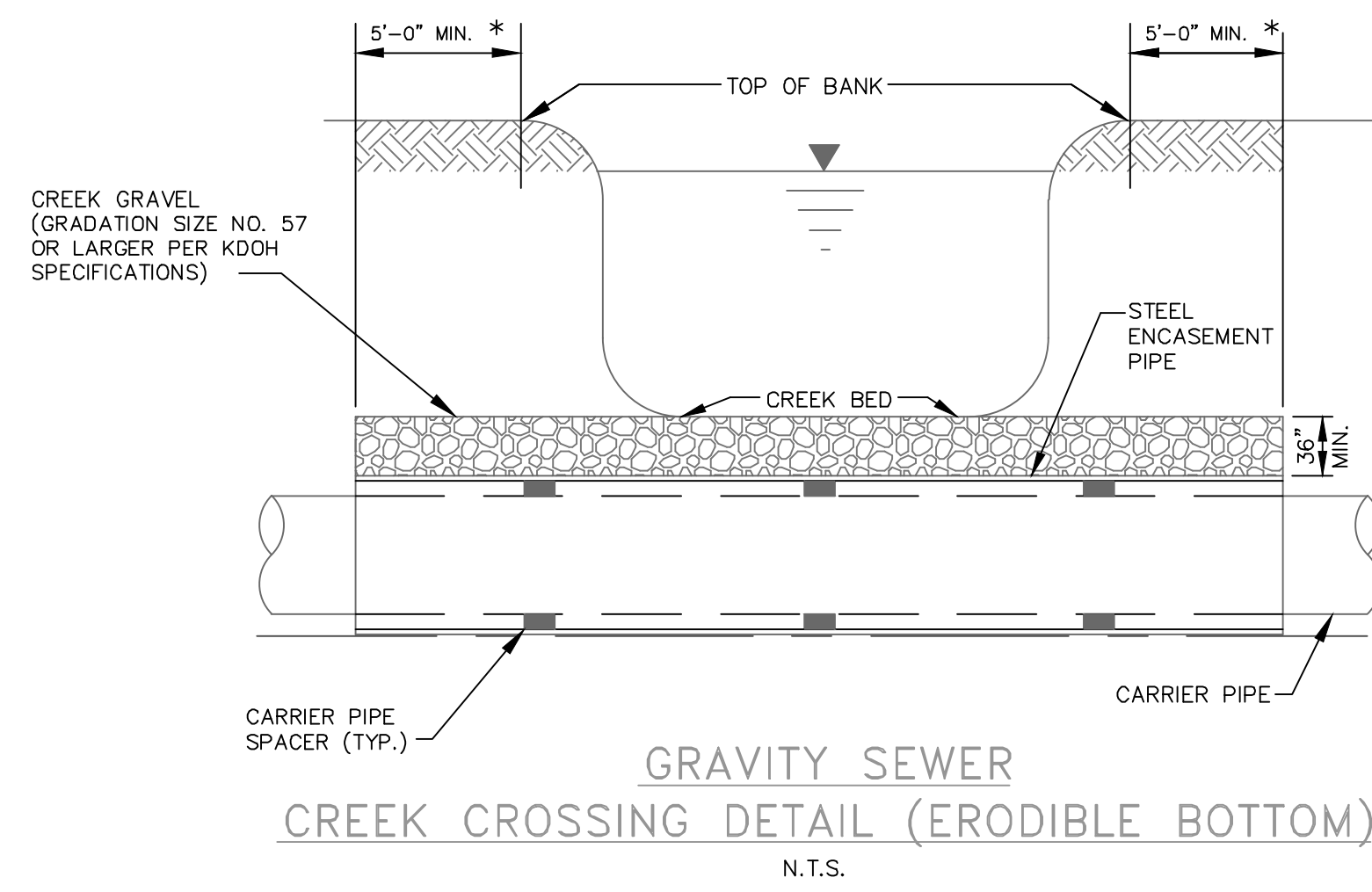
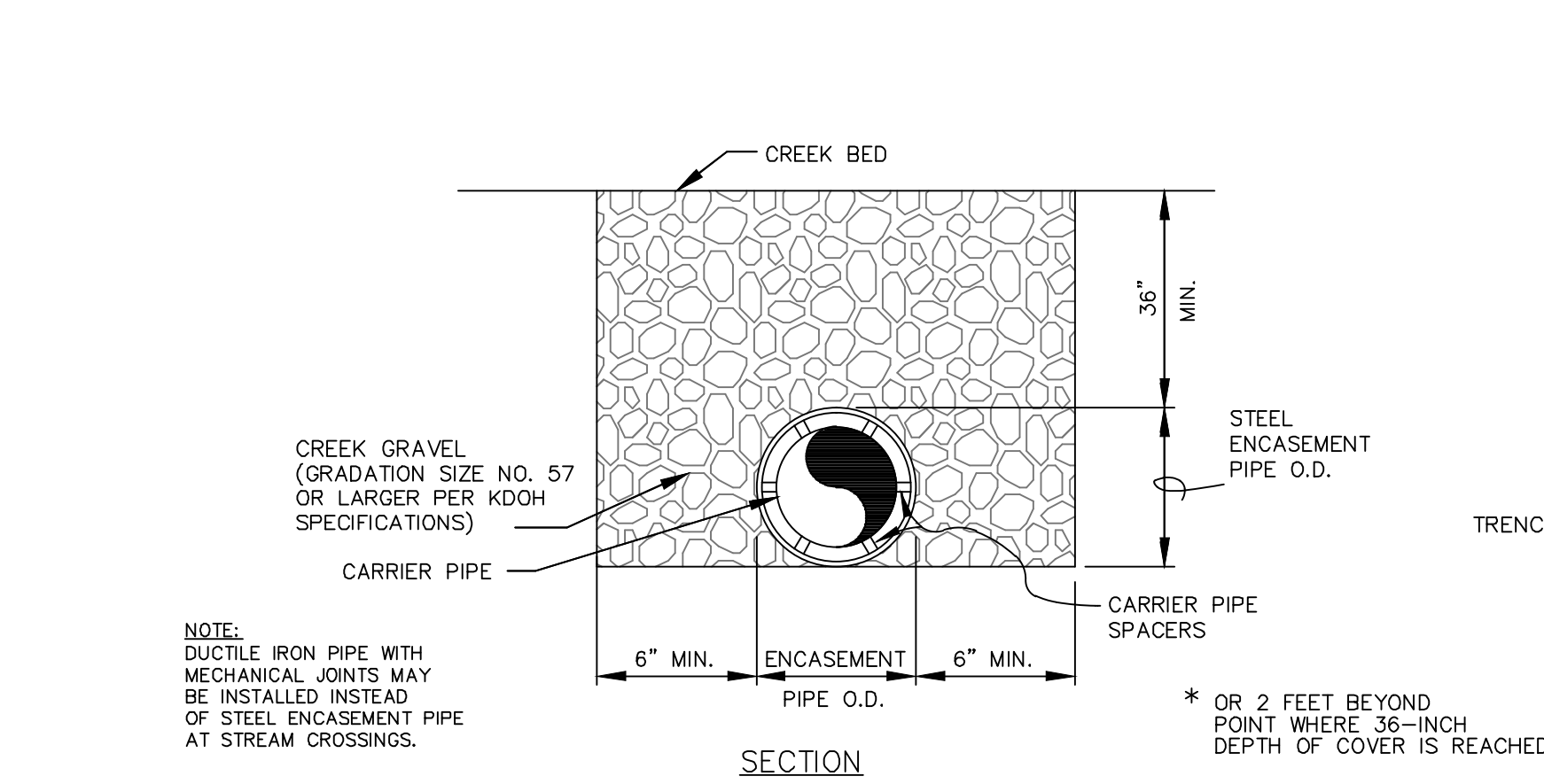
- PVC sewer pipe shall be SDR 35 and shall conform to ASTM D3034. For bury depths greater than 15 feet, the engineer shall select the pipe wall thickness based on an engineering analysis of specific site conditions and subject to approval by the City of Madisonville. DIP shall conform to ANSI A21.50 (AWWA C 150) latest revision. Pipe materials other than PVC or DIP must be approved by the City of Madisonville prior to installation.
- Gravity lines, force mains and lateral lines must be encased in #9 crushed stone as shown on standard details.
- All sewer lines must be installed in a dedicated right-of way or utility easement. The minimum easement width is 15 feet for 6" through 12" diameter sewers and 20 feet for larger sewers. The main line shall be centered in the easement. Easements shall be properly recorded, with a copy of the stamped documents provided to City of Madisonville. Easements are required for any sewer mains crossing through private property.
- A complete set of Record Drawings shall be provided to the City of Madisonville after the construction has been completed. Each sheet of the Record Drawings shall be signed and dated by a Professional Engineer licensed in the Commonwealth of Kentucky. Revisions to the Record Drawings must be signed and dated on each page.
- Buildings must be set-back from the sewer easement so the building foundation will not be undermined. The set-back must be greater than a 45-degree line from the edge of the trench at the pipe invert to its intersection with the foundation elevation.
- After the Record Drawings are accepted by the City of Madisonville, the City will televise the main lines to verify their condition. Repairs, if necessary, shall be made at the developer's expense prior to acceptance of the sewers. Sewers will not be accepted until the Record Drawings are completed and the main lines have been televised.
- Each lot shall have a separate lateral that does not cross into any other lots. The laterals must extend five (5) feet into the lot.
- The lowest floor of any structure to be provided service must be a minimum of one (1) foot higher than the rim elevation of the nearest sanitary manhole. If these requirements cannot be met, an ejector pump will be required to serve the structure. An in-line backflow preventer may also be required. The ejector pump installation must be approved by the City of Madisonville prior to the sewer connection being permitted.
- These drawings and specifications represent standards adopted by the City of Madisonville. These drawings are not a substitute for detailed design and engineering. Sewers shall be designed in accordance with the Recommended Standards for Wastewater Facilities, 1997 Edition (Ten States Standards). Construction plans and specifications must be approved by the Kentucky Division of Water (DOW). A construction permit must be obtained from DOW before sewers can be installed.

TESTING REQUIREMENTS

- The following tests shall be conducted on gravity sewer lines in the order listed:
 - Low pressure air test
 - Vacuum test for manholes
 - Mandrel deflection test (for PVC pipe)
- The Mandrel (go/no-go) device shall be cylindrical in shape and constructed with nine (9) evenly spaced arms of prongs. The Mandrel dimension shall be 95 percent of the flexible pipe's published ASTM average inside diameter. The Mandrel inspection shall be conducted no earlier than 30 days after installation and final trench backfill. Deflection shall not exceed 5 percent of the pipe's average inside diameter. The Mandrel shall be hand pulled by the contractor through all sewer lines. The Mandrel shall not be forced through the pipe; pipe damage could result.
- Low pressure air tests shall be conducted using equipment specifically designed and manufactured for the purpose of testing sewer lines using low pressure air. The equipment shall be provided with an air regulator valve or air safety valve so set that the internal pressure in the pipeline cannot exceed 5 psig. The test shall be made on each manhole-to-manhole section of piping after placement of the backfill. Testing shall be conducted in accordance with ASTM F1417 and Section 12.17 of the City of Madisonville Standards Manual.
- Manholes shall be vacuum tested after installation, with all connections in place, in accordance with ASTM C1244. The vacuum test shall include testing of the seal between the cast iron frame and the concrete cone, slab or grade rings. A vacuum of 10 inches of mercury shall be drawn on the manhole. The manhole shall be considered to pass the vacuum test if it holds at least 9 inches of mercury for the following time durations:

Manhole Depth	4 ft. Dia.	5 ft. Dia.	6 ft. Dia.
20 feet or less	50	65	81
20.1 to 30 feet	74	98	121

 If a manhole fails the vacuum test, it shall be repaired with a non-shrinkable grout or other suitable material and retested.
- The contractor must schedule acceptance testing 24 hours in advance and will be required to call the morning of the test to ensure City personnel are available to witness the test. City personnel must witness all tests.
- All tests shall be performed by the contractor. The contractor shall provide all equipment, appearances, and labor necessary to properly conduct the tests. The contractor is responsible for the ultimate performance of the sewer line and manholes within the above test requirements. City of Madisonville personnel will witness and record the test results.



- DEPTH OF BACKFILL FOR SDR 35 PVC PIPE SHALL NOT EXCEED 15 FEET.
 - TRENCHES SHALL BE SHORED, SLOPED, OR SHIELDED AS NECESSARY TO PROTECT WORKERS AND CONFORM TO OSHA REGULATIONS.
 - SEE CITY OF MADISONVILLE STANDARDS MANUAL FOR SUBGRADE REQUIREMENTS FOR SEWERS 18-INCH AND LARGER.
 - DENSE GRADED AGGREGATE (DGA) SHALL BE CLASS II AS DEFINED BY THE KENTUCKY DEPT. OF HIGHWAYS STANDARD SPECIFICATIONS.
- * 6" BEDDING DEPTH REQUIRED IF SUBGRADE IS SOLID ROCK.

CITY OF
 MADISONVILLE, KENTUCKY
 ENGINEERING DEPARTMENT
 STANDARD DETAILS - SANITARY SEWER CONSTRUCTION

SCALE: AS NOTED
 DATE: APRIL, 2015
 JOB NO.:
 DESIGNED: RKS
 DRAWN: PTH
 CHECKED:
 Q/C:

OWNER APPROVAL:
 BY:
 TITLE:

REVISIONS:

NO.:	DATE:
1/JDH/09-03/CLEANOUT DETAIL REVISION	