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- Diagram illustrating a typical precast hole section. The hole is circular with a diameter of 4'-0". The hole is surrounded by a grout annular space (typical for inlet and outlet). The hole is connected to a flexible boot with a stainless steel band (typical). The section is labeled SECTION A-A.

4' STANDARD MANHOLE
FOR PIPE 15" OR SMALLER
(FOR DEPTHS UP TO 15 FEET)

08/10/18

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- PLAN VIEW**
- EXISTING PIPE
- OUT TOP OF PIPE TO SPRINGLINE:
MIN. LENGTH = MANHOLE Ø - 2' 0"
- SLOPE CONCRETE TO OUT-OUT
- CONTINUOUS BUTYL MASTIC JOINT SEALER, ASTM C1619 (BOTH SIDES)
- PRECAST MANHOLE
- PLAN VIEW
- CONCRETE BASE
- CONTINUOUS WATER APPLIED AROUND PIPE MANHOLE OPENING (TO ALLOW TO CURE BEFORE PLACING CONCRETE) (SEE NOTES)
- 12" MIN. (TYP.)
- 12" MIN. (TYP.)
- 6" MIN.
- 4" MIN. CLEARANCE AROUND PIPE
- SECOND POUR (SEE NOTES)
- COLD JOINT (SEE NOTES)
- CONTINUOUS BUTYL MASTIC JOINT SEALER
- WATERSTOP (SEE NOTES)
- SMOOTH, FLAT, LEVEL BEARING SURFACE
- 12" MIN. (TYP.)
- 12" MIN. (TYP.)
- 12" MIN.
- 1st POURS (SEE NOTES)
- #4 BARS @ 6" O.C., EACH WAY, TIED; USE 3" REBAR SUPPORT
- STONE BASE (6" MIN. DEPTH) #57 OR EQUIVALENT
- SECTION A-A**

STRADDLE MANHOLE

01/01/14

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INSIDE DROP MANHOLE

01/01/14

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SANITARY SEWER LATERAL

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DOUBLE LATERAL
COMBINED 6" BY TWO 4" LATERALS

011041

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- Technical drawing illustrating a pipe repair method using a Fernco flexible coupling. The drawing shows a side view and a cross-section of the assembly.
- Side View Labels:**
- TYPE "A" PIPE
 - TYPE "B" PIPE
 - FERNCO FLEXIBLE COUPLING
 - CONCRETE TO SPRINGLINE OF PIPE
 - 3,000 PSI CONCRETE CRADLE-EXTEND 12" BEYOND END OF COUPLING
- Cross-Section Labels:**
- 12" PIPE DIA.
 - BACKFILL MATERIAL
 - BEDDING MATERIAL
 - 4" MIN.

JOINING DISSIMILAR PIPE FOR USE WITH EXISTING PIPE

01/05/14

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- Diagram illustrating the repair of a manhole connection to an existing pipe. The diagram shows a cross-section of the manhole structure and the surrounding ground. Key components and dimensions are labeled:
- EXISTING PIPE TO MANHOLE CONNECTION TO REMAIN**: The section of the pipe leading into the manhole.
 - 2" MINIMUM THICKNESS**: The thickness of the concrete repair area.
 - 20" MINIMUM**: The length of the concrete repair area.
 - MECHANICAL PLUG**: The plug used to seal the connection.
 - (REMOVE A MINIMUM OF TWO FEET OF EXISTING PIPE)**: The section of pipe to be removed.
 - READY MIX CONCRETE 3000 PSI IN 28 DAYS**: The material used for the repair.
 - DISCONNECT PIPE**: The section of pipe to be disconnected.
 - 20" MINIMUM**: The length of the disconnect pipe section.
 - PIPE TO REMAIN**: The section of pipe that remains in place.
 - PIPE TO BE ABANDONED**: The section of pipe that is to be removed.

SANITARY SEWER PIPE ABANDONMENT AT A MANHOLE

04/01/14

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- PAVEMENT IN ACCORDANCE WITH GOVERNING JURISDICTIONAL REQUIREMENTS
- REMOVE MANHOLE FRAME AND COVER, RESTORE TO MATCH SURROUNDING AREA AND GRADE
- FINISHED GRADE
- REMOVE MANHOLE TO A MINIMUM OF TWO FEET BELOW FINISHED GRADE (REMOVE ALL GRADE RINGS)
- #57 STONE, LEAN CONCRETE, OR FLOWABLE FILL
- FILL MANHOLE SOLID WITH 3,000 PSI CONCRETE
- 18" MINIMUM
- MECHANICAL PLUG

SANITARY SEWER MANHOLE ABANDONMENT

04/01/14

MINIMUM SPECIFIED TIME REQUIRED FOR A 1.0 PSIG PRESSURE DROP
FOR A SIZE AND LENGTH OF PIPE INDICATED FOR Q = 0.0015

NOTE: IF THERE HAS BEEN NO LEAKAGE (ZERO PSIG DROP) AFTER ONE HOUR OF TESTING, THE TEST SHALL BE ACCEPTED AND THE TEST COMPLETE.

LOW-PRESSURE AIR TESTING TABLE

SPECTRUMPC.COM

COMPREHENSIVE DEVELOPMENT PLAN

by Aaron Cypher 09/08/2021

**GRTC
TRANSIT STATION**

Spectrum Design Project No.:

Spectrum Design Project No.: 19106



PROJ. MGR.: **JM** CHECKED BY: **MAR** DRAWN BY: **CDL**

07.30.2021

PROJECT PHASE:
CONSTRUCTION DOCUMENTS

REVISION	NUMBER	DATE
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KEY PLAN

SHEET NUMBER

CONSTRUCTION DETAILS

C504