ISSUE REMARKS/DATE

1	2023-09-28, INITIAL SUBMITTAL
2	2024-02-01, CITY COMMENTS
3	2024-04-17, CITY COMMENTS
4	2024-05-20, FOR APPROVAL

PROJECT TITLE

HARVEST AT HOPEWELL

O'Fallon, Missouri

O'FALLON PHASE 1B

THE STERLING CO.
ENGINEERS & SURVEYORS
5055 New Baumgartner Road
St. Louis, Missouri 63129
Ph 314-487-0440 Fax 314-487-8944
www.sterling-eng-sur.com
Corporate Certificate of Authority #001348

Date: 05-20-2024
Michael G. Boerding
License No. MO E-28643
Professional Engineer

HARVEST HOPEWELL, LLC
5091 New Baumgartner Road
St. Louis, Missouri 63129

DCSD SANITARY DETAILS

P+Z No. 21-004994
City No. 21-011444
Date: 05-20-2024
Job No. 20-09-327

Page No.

DTL-6A
IMP

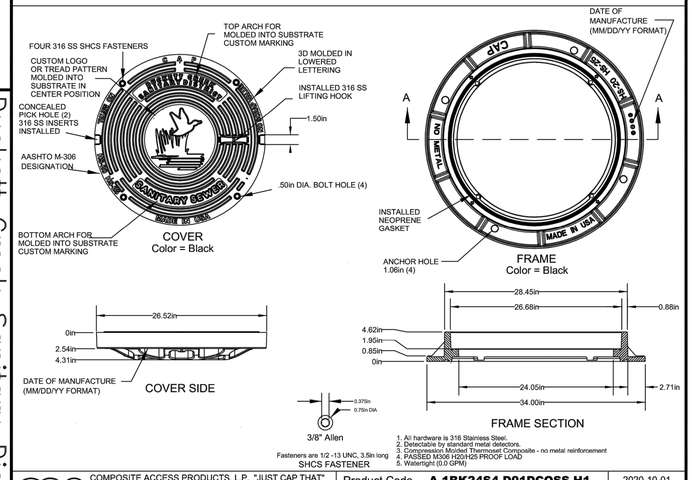
"FINAL PLAN" Approval Date: Dec. 16, 2021

Drawing name: V:\2009327 Highway N Assemblage\Drawings\Engineering\Improvements\9327 IMP DETAILS.dwg Plotted on: May 20, 2024 - 10:25am Plotted by: jlueltenhaus

Duckett Creek Sanitary District

COMPOSITE MANHOLE LID FOR MANHOLES RECEIVING HYDROGEN SULFIDE DISCHARGE

Drawn By: MSM
Chkd By:
Date: OCT. 2020
App. By: KA
DCSD Dwg. No. 17



COMPOSITE ACCESS PRODUCTS, L.P. "JUST CAP THAT"
5216 N. 26TH STREET
MCALLEN, TX 78504
WEBSITE: www.justcapthat.com
(844) 344-CAP1 (2271)

MODEL # CAP ONE

Product Code **A-1BK24S4-D01DCOSS-H1**

2020-10-01

APPROVED BY: _____

DATE: _____

4.2 FORCE MAIN REQUIREMENTS

The following elements shall be included in the force main system design:

A. Air Relief / Vacuum Valves (ARV)
Automatic combination vacuum/air relief valves shall be placed at high points in the force main as required. Refer to the District's Detail FM-2 for additional information.

1. **Acceptable Manufacturer:** ARI Model D-025 NS (minimum standard).

2. On valves other than A.R.I. model D-025, the body of the ARV shall be supported to the wall of the structure by a 1-¼" x 1-¼"x ¼" stainless steel angle bracket (or as approved by DCSD).

B. Connection to Gravity System
Force mains shall discharge to the gravity sewer system at a manhole. The point of connection shall be no more than one foot above the flow line of the receiving manhole.

C. Existing Gravity Manhole Rehabilitation
The sides and bottom of the force main discharge manhole and a minimum of five (5) downstream manholes from the point of connection shall be lined with a solventless, 100% solids, corrosion resistant epoxy coating or a lining having multiple, structural fiberglass layers with a non-porous diaphragm bonded between layers of fiberglass and molded to the existing structure. See acceptable manufacturers below.

D. New Manhole Construction
When a new manhole is to be constructed at the point of connection to the gravity system, the new manhole shall be treated with the epoxy coating specified above.

Acceptable Manufacturer: Raven Lining Systems AquataPoxy A-6, Terre Hill Composites Multiplex Liner THC-610-SL-68, Ameron Protective Lining Division, Amer-Plat T-Lock, or approved equal.

E. Mechanically Restrained Joints
The force main shall be fitted at all angle points with mechanically restrained joints designed to withstand the thrust developed under the test pressure plus 50 psi. The required number of mechanically restrained joints from the angle point shall be determined by the design engineer and shown in plan and profile (see Section One).

F. Tracer Wire
On all force mains there shall be installed a tracer wire which shall be a single insulated No. 12 AWG copper wire. The insulated wire shall be furnished in rolls of not less than 500 feet. Where splices are required, splices shall be made with 3M splice kits or approved equal. The Contractor shall furnish all materials. The No. 12 wire shall be placed along the top of the force main and taped in place with duct tape or electrical tape at a maximum of 6 feet intervals. Permanent access points shall be provided through manholes, access vaults, valve boxes or other approved means at the ends of the tracer wire. The wire shall be extended into the access points a minimum of 5feet from each direction. The wire shall be neatly rolled and placed so that it does not interfere with normal operation. The two wires shall be spliced inside the access point with a standard plastic or rubberized wire connector. After testing for continuity, the splices inside the access point shall be made with a 3M splice kit or approved equal. Where splices become necessary outside of access points, the splices shall be made with a 3m splice kit or approved equal. All tracer wire shall be tested for continuity as called for in Section 4.2 I below.

G. Utility Marking Tape
A detectable underground utility marking tape shall be installed the entire length of the force main as per the District's Detail FM-1. The material to be installed for this purpose shall consist of three (3) inch wide tape made of bonded layer plastic with a metallic foil core. Tape splices shall be knotted to prevent tensile pressure on the splice. The metallic tape shall be colored green and shall bear an imprint identifying the line below as, "Caution Buried Sewer Main Below". The Contractor shall furnish all materials. The three (3) inch wide tape shall be installed 12" below finished grade. The tape material shall be installed in accordance with the manufacturer's recommendations. The tape is to be placed in a manner such that trench backfill settlement will not cause an excessive stress on the material.

H. Testing
Testing of force mains shall include:

1. Force mains shall be pressure tested at the highest point in the project. The Contractor shall fill and pressure test the force main. The minimum required test pressure shall be the force main test pressure for a period of 2 hours with a maximum of not more than 2 PSI drop in pressure.
2. The tracer wire on all force mains shall be tested by the Contractor for continuity in the presence of a DCSD Construction Inspector. If the test is satisfactory, all splices shall be made permanent by means of 3M splice kits or approved equal. If test fails in a section, the Contractor shall find and repair any failure in the locator wires.