

GENERAL NOTES

- The underground utilities shown herein have been plotted from available information and do not necessarily reflect the actual existence, or nonexistence, size, type, number, or locations of these or other utilities. The contractor shall be responsible for verifying the actual locations of all underground utilities, shown or not shown, and said utilities shall be located in the field prior to any grading, excavation, or construction of improvements. These provisions shall in now way absolve any party from complying with the "UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT", Chapter 319, RSMO.
- Gas, Water, and other Utilities shall not conflict with the depth or horizontal location of existing and proposed sanitary and storm sewers, including building laterals.
- The Contractor shall secure all required permits and notify the Development Services - Inspection Group of the City of Lee's Summit (816-969-1200) at least 48 hours prior to any construction.
- Prior to submittal of construction bids, the Contractor shall be required to visit the site to verify existing conditions and proposed improvements.
- All construction materials and methods used shall comply with the latest editions of the City of Lee's Summit "DESIGN AND CONSTRUCTION MANUAL" as adopted by City Ordinance NO. 5813. See said Manual for standard details.
- The Contractor shall be responsible for notification and coordination with all Utility Companies.
- The Contractor shall notify the Engineer immediately of any discrepancies in the plans.
- "Controlled Fill" indicates fill to be placed in accordance with APWA Section 2100 for grading and site preparation, with APWA Section 2200 for street construction (paving), with APWA Section 2500 for sanitary sewer construction and with APWA Section 2600 for storm sewer construction unless otherwise noted.
- All sanitary manholes shall have a 4' inside diameter unless otherwise noted.
- All disturbed areas to be seeded upon completion of construction.

EXISTING SANITARY SEWER ASSUMPTIONS

- Existing sanitary sewer at Point of Connection = 24" PVC at 0.45%.
- Depth of flow at Point of Connection for fully developed watershed to be critical depth.
- Y(c) from "Modern Sewer Design", Figure 3-24, critical flow and critical velocity in circular conduits.

Point of Connection 24" PVC at 0.45% Capacity = 14.0 cfs
Y(c) / D = .60, depth of flow = 15" = 1.25'

PROPOSED SANITARY SEWER ASSUMPTIONS

- Sanitary sewers provide service for this plan only
- Design flow rate of 0.02 cfs / acre per City Staff Recommendation.

DESIGN FLOWS

Drainage Area	Acreage	Design Flow (cfs)	Total Design Flow (cfs)
Commercial	13.75	0.02	0.67
Residential	83.53	0.02	0.80
			Total 1.47

UTILITIES

City of Lee's
Summit
Department of
Public Works
220 SE Green
Lee's Summit,
Mo.
816-969-1800

AT&T
215 N. Spring
Independence,
Mo.
816-325-5610

KCPL
130 SE Hamblen
Road
Lee's Summit,
Mo.
816-347-4320
Missouri One Call
1-800-344-7483

Time Warner
6550 Winchester
Avenue
Kansas City, Mo.
913-643-1901

Missouri Gas
Energy
3025 SE Clover
Road
Lee's Summit,
Mo.
816-537-4681

DEVELOPER
JCM DEVELOPMENT, LLC
1314 MARKET STREET
LEE'S SUMMIT, MO 64082
(816) 786-4008
CONTACT - CHRIS JEFFRIES

ENGINEER
Hg CONSULT, INC.
CONTACT - KEVIN STERRETT
1411 N.E. TODD GEORGE ROAD
LEES SUMMIT, MISSOURI 64086
(816) 703-7098

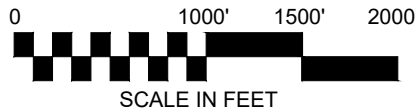
PROJECT BENCHMARK:
#1 MODNR MONUMENT JA-45
N: 986351.65
E: 2824617.51
TOP ELEV. 1012.79

#2 MONUMENT AT THE INTERSECTION OF M150 & DOC HENRY ROAD
N: 977823.53
E: 2828220.61
TOP ELEV. 1006.04

COBEY CREEK - 1ST PLAT
OFF-SITE SANITARY SEWER MAIN EXTENSION
NE & SE 1/4, SECTION 29 & NW 1/4 SECTION 28,
TOWNSHIP 47 NORTH, RANGE 31 WEST
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI



VICINITY MAP



LEGEND

---	Existing Section Line	---	Proposed Right-of-Way
----	Existing Right-of-Way Line	----	Proposed Property Line
----	Existing Lot Line	----	Proposed Lot Line
-----	Existing Easement Line	-----	Proposed Easement
=====	Existing Curb & Gutter	=====	Proposed Curb & Gutter
=====	Existing Sidewalk	=====	Proposed Sidewalk
=====	Existing Storm Sewer	=====	Proposed Storm Sewer
□	Existing Storm Structure	□	Proposed Storm Structure
W/L	Existing Waterline	A	Proposed Fire Hydrant
---	Existing Gas Main	W/L	Proposed Waterline
----	Existing Sanitary Sewer	----	Proposed Sanitary Sewer
●	Existing Sanitary Manhole	●	Proposed Sanitary Manhole
----	Existing Contour Major	----	Proposed Contour Major
----	Existing Contour Minor	----	Proposed Contour Minor
-----		-----	Future Curb & Gutter

INDEX OF SHEETS

OFF-SITE SANITARY SEWER PLANS

- COVER SHEET
- GENERAL UTILITY LAYOUT - OFF-SITE SANITARY SEWER

SANITARY SEWER - PLAN AND PROFILE

- SANITARY SEWER LINE A (STA. 0+00 TO 15+00)
- SANITARY SEWER LINE A (STA. 15+00 TO 26+49.69)

STANDARD DETAILS

- STANDARD DETAILS - STANDARD PRECAST MANHOLE & MANHOLE WALL CONNECTION
- STANDARD DETAILS - MANHOLE COVER AND FRAME
- STANDARD DETAILS - SANITARY PIPE ENCASEMENT & TYPICAL TRENCHING AND BEDDING DETAIL

LEGAL DESCRIPTION:

All that part of the Southeast Quarter of Section 29, Township 47 North, Range 31 West, more particularly described as follows:

Commencing at the Southeast corner of said Southeast Quarter; thence North 02°30'29" East, along the East line of the Southeast Quarter of said Section 29, a distance of 58.62 feet; thence departing said East line, North 87°29'31" West, a distance of 40.00 feet to the North right-of-way line of Missouri State Highway No. 150, as now established, and the Point of Beginning; thence South 85°26'23" West, along the North right-of-way line of said Missouri State Highway No. 150, a distance of 142.47 feet; thence South 65°50'12" West, continuing along said North right-of-way line, a distance of 27.99 feet; thence continuing along said North right-of-way line, North 87°54'10" West, along a line 30 feet North of and parallel with the South line of said Southeast Quarter, a distance of 1436.75 feet; thence departing said North right-of-way line, North 02°32'36" East, a distance of 2613.35 feet to the North line of said Southeast Quarter; thence South 87°44'49" East, along the North line of said Southeast Quarter, a distance of 1641.53 feet to the Northeast corner of said Southeast Quarter; thence South 02°30'29" West, along the East line of said Southeast Quarter, a distance of 1081.05 feet; thence departing said East line, North 87°29'31" West, a distance of 30.00 feet; thence South 02°30'29" West, along a line 30 feet West of and parallel with the East line of said Southeast Quarter, a distance of 1302.74 feet; thence South 08°13'07" West, a distance of 100.51 feet; thence South 02°30'29" West, along a line 40 feet West of and parallel with the East line of said Southeast Quarter, a distance of 96.45 feet to the Point of Beginning. Containing 4,237,595.37 square feet or 97.28 acres, more or less.

NOTE:

- The subject property is located within the Big Creek Watershed.
- There was no oil or gas wells located on the subject property as of May 14, 2018 as shown by the Missouri Geological Survey GEOSTRAT (Geosciences Technical Resource Assessment Tool).

AS-BUILT
02/19/21



NO.	BY	DATE	REVISION
1	SW	02/19/21	AS-BUILT
2	SW	02/20/19	REF CITY COMMENTS
3	SW	02/20/19	REF CITY COMMENTS
4	SW	02/20/19	REF CITY COMMENTS
5	SW	02/20/19	REF CITY COMMENTS
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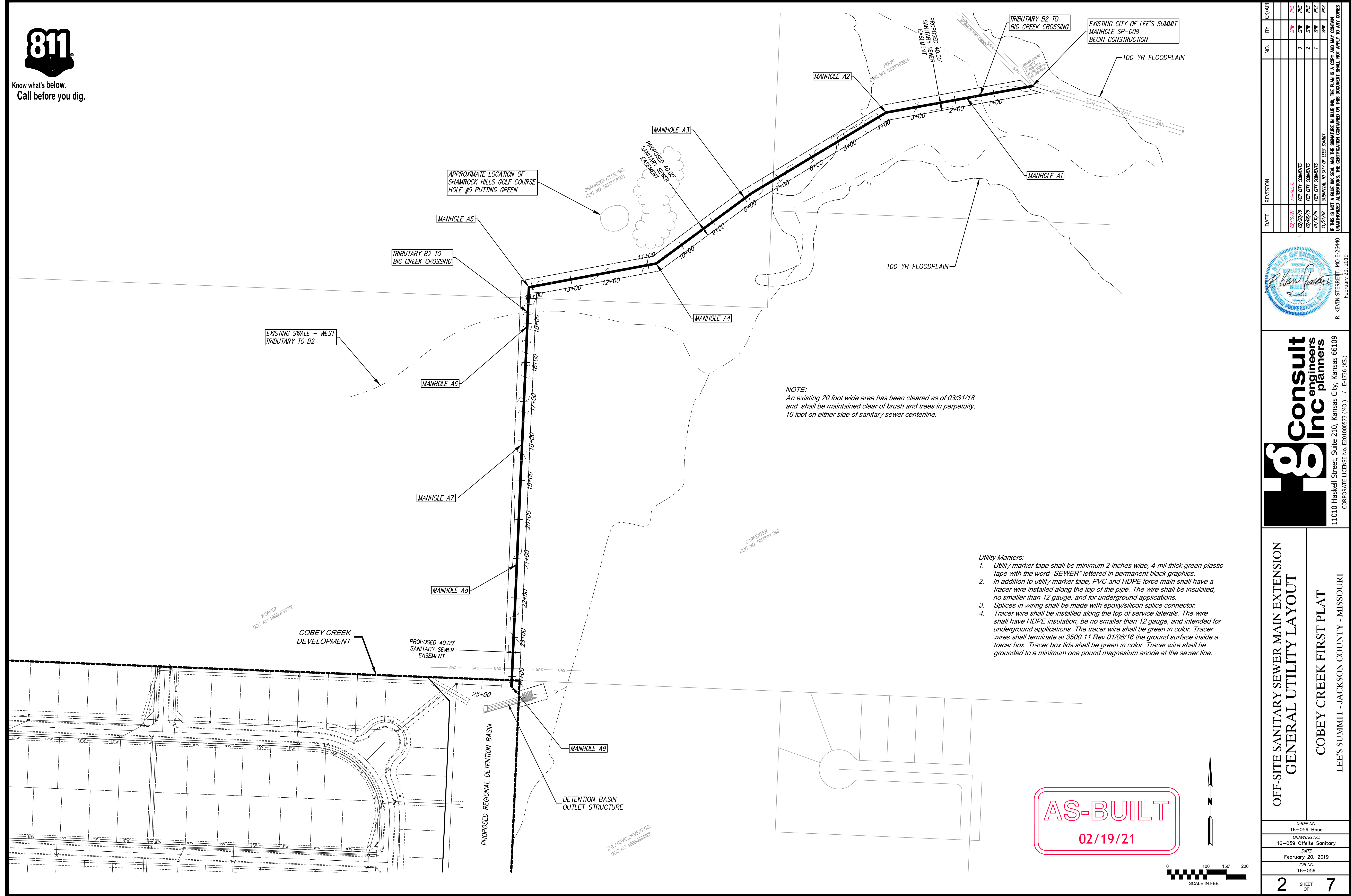
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CORPORATE LICENSE NO. E201000573 (MO.) / E-1736 (KS.)

OFF-SITE SANITARY SEWER MAIN EXTENSION
COVER SHEET

COBEY CREEK FIRST PLAT
LEE'S SUMMIT - JACKSON COUNTY - MISSOURI

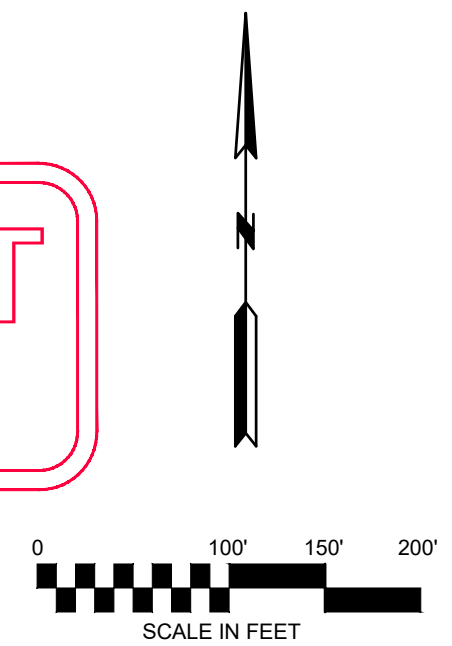
X-REF NO. 16-059 Base	
DRAWING NO. 16-059 Offsite Sanitary	
DATE February 20, 2019	
SHEET NO. 16-059	
1	7



NOTE:
An existing 20 foot wide area has been cleared as of 03/31/18 and shall be maintained clear of brush and trees in perpetuity, 10 foot on either side of sanitary sewer centerline.

- Utility Markers:
- Utility marker tape shall be minimum 2 inches wide, 4-mil thick green plastic tape with the word "SEWER" lettered in permanent black graphics.
 - In addition to utility marker tape, PVC and HDPE force main shall have a tracer wire installed along the top of the pipe. The wire shall be insulated, no smaller than 12 gauge, and for underground applications.
 - Splices in wiring shall be made with epoxy/silicon splice connector.
 - Tracer wire shall be installed along the top of service laterals. The wire shall have HDPE insulation, be no smaller than 12 gauge, and intended for underground applications. The tracer wire shall be green in color. Tracer wires shall terminate at 3500 11 Rev 01/06/16 the ground surface inside a tracer box. Tracer box lids shall be green in color. Tracer wire shall be grounded to a minimum one pound magnesium anode at the sewer line.

AS-BUILT
02/19/21



DATE	REVISION	NO.	BY	CHK/APP.
02/19/21	AS-BUILT		SPW	RMS
02/20/19	REV CITY COMMENTS	3	SPW	RMS
02/09/19	REV CITY COMMENTS	2	SPW	RMS
01/21/19	REV CITY COMMENTS	1	SPW	RMS
11/27/18	SUBMITTAL TO CITY OF LEE'S SUMMIT		SPW	RMS

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OFF-SITE SANITARY SEWER MAIN EXTENSION
GENERAL UTILITY LAYOUT

COBEY CREEK FIRST PLAT

LEE'S SUMMIT - JACKSON COUNTY - MISSOURI

X-REF NO. 16-059 Base	SHEET OF	
DRAWING NO. 16-059 Offsite Sanitary		
DATE February 20, 2019		
JOB NO. 16-059	2	7

811

Know what's below.
Call before you dig.

Owner: Weaver, Dennis J. & Jana D.

APPROXIMATE LOCATION OF
SHAMROCK HILLS GOLF COURSE
HOLE #5 PUTTING GREEN

MANHOLE A5
WITH WATERTIGHT RING AND
BOLT DOWN COVER ASSEMBLY
STA. 14+08.32, LINE A
N: 981461.07 E: 2828359.92

Owner: Shamrock Hills, Inc.

MANHOLE A4
STA. 10+78.97, LINE A
N: 981521.50 E: 2828683.76

MANHOLE A3
STA. 7+77.22, LINE A
N: 981700.55 E: 2828926.65

Owner: Howk, E. Annette

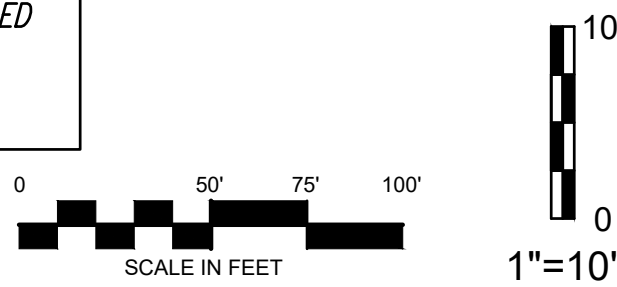
MANHOLE A2
WITH WATERTIGHT RING AND
BOLT DOWN COVER ASSEMBLY
STA. 3+78.22, LINE A
N: 981903.87 E: 2829268.76

MANHOLE A1
WITH WATERTIGHT RING AND
BOLT DOWN COVER ASSEMBLY
STA. 1+70.00, LINE A
N: 981942.95 E: 282914.66

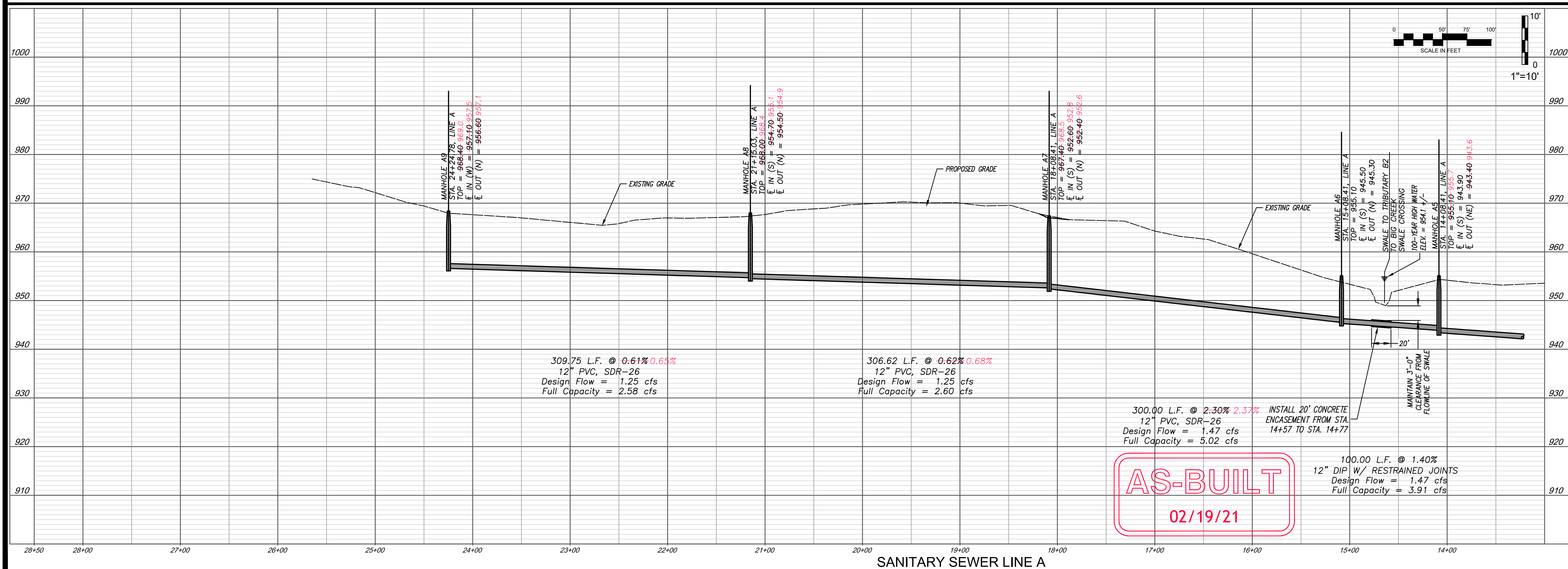
EXISTING CITY OF LEES SUMMIT MANHOLE SP-008
STA. 0+00.00, LINE A
CONTRACTOR SHALL CONTACT ENGINEER WHEN EXISTING STUB IS EXPOSED. ENGINEER
SHALL BE ONSITE TO DETERMINE IF CONNECTION TO EXISTING STUB CAN BE MADE. IF
CONNECTION CAN NOT BE MADE EXISTING MANHOLE WALL SHALL BE CORE DRILLED
AND A FLEXIBLE PIPE-TO-MANHOLE CONNECTOR SHALL BE INSTALLED
N: 981973.22
E: 2829640.94

NOTE:
A 20 foot wide area shall be maintained clear of brush and
trees in perpetuity 10 foot on either side of sanitary sewer
centerline.

NOTE:
Base Flood Elevation shown was determined from Cross
Section Line C as shown on F.E.M.A. Flood Insurance Rate
Map Number 29095C0551G, Effective Date January 20, 2017.

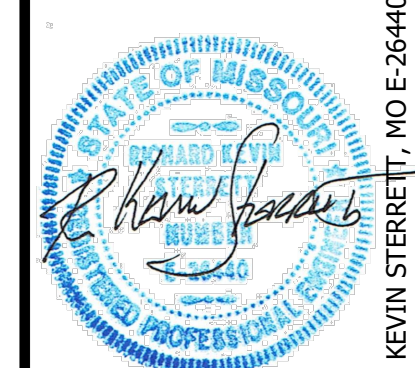


NO.	BY	DATE	REVISION	DATE	BY



DATE	REVISION	NO.	BY	QC/APP
02/29/21	45-BULE 15		SPW	RKS
02/20/19	PER CITY COMMENTS	3	SPW	RKS
02/08/19	PER CITY COMMENTS	2	SPW	RKS
01/21/19	PER CITY COMMENTS	1	RKS	RKS
11/21/18	SUBMITTAL TO CITY OF LEES SUMMIT		SPW	RKS

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R. KEVIN STERRETT, MO E-26440
February 20, 2019



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CORPORATE LICENSE No. E201000573 (MO.) / E-1736 (KS.)

OFF-SITE SANITARY SEWER MAIN EXTENSION PLAN AND PROFILE

COBEY CREEK FIRST PLAT

LEE'S SUMMIT - JACKSON COUNTY - MISSOURI

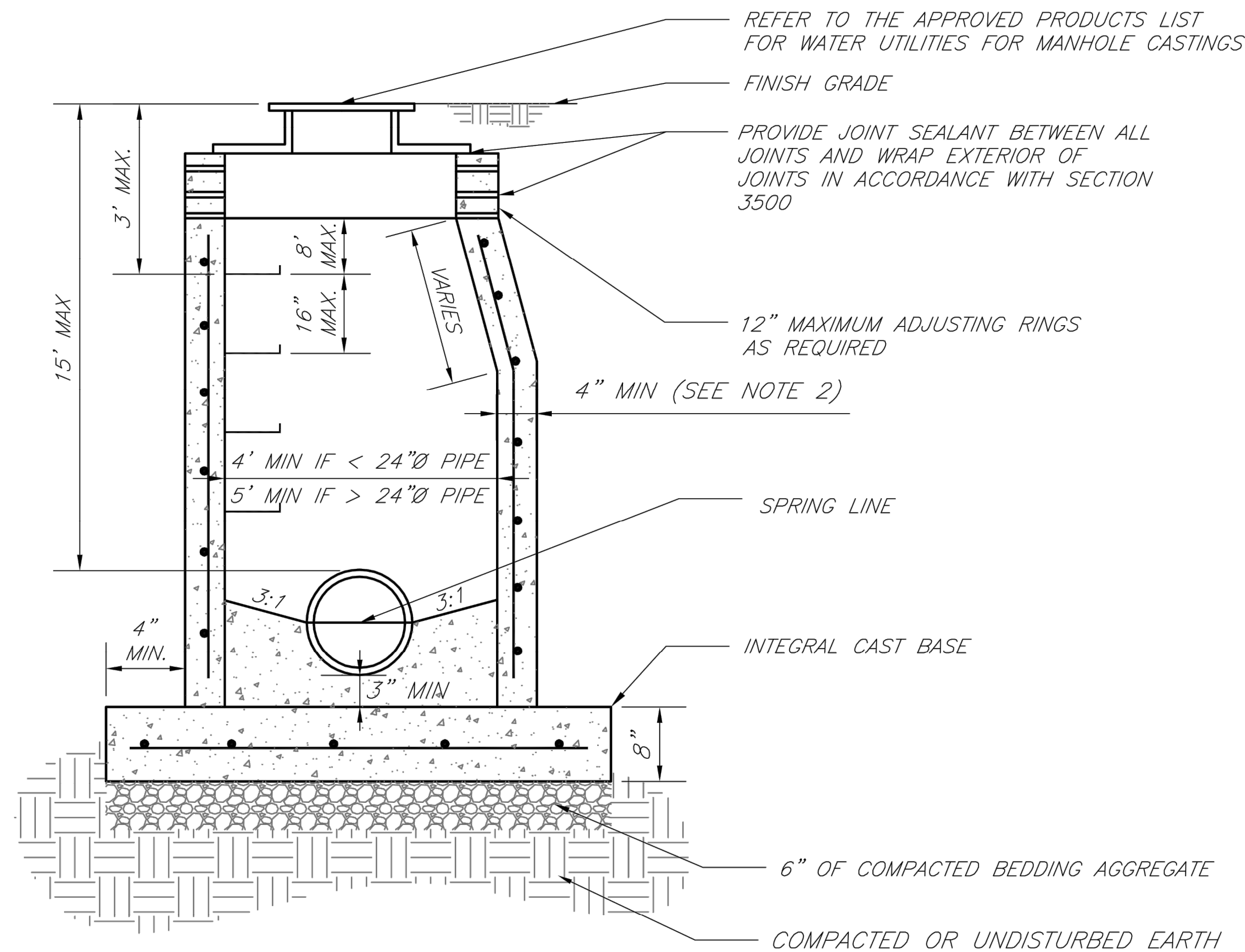
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DRAWING NO.	9 Offsite Sanitary

DATE
February 20, 2019

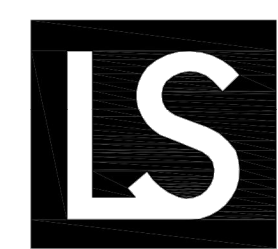
JOB NO.
16-059

4 7

4 SHEET OF 7



- NOTES:
1. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478 EXCEPT AS MODIFIED BY THE SPECIFICATIONS.
 2. A WALL THICKNESS NOT LESS THAN ONE-TWELFTH ($\frac{1}{12}$) OF THE INSIDE DIAMETER OR 4", WHICHEVER IS GREATER, SHALL BE USED WHEN THE MANHOLE DEPTH IS LESS THAN 15'.
 3. WATERPROOFING SHALL BE REQUIRED ON THE OUTSIDE OF MANHOLES. THE WATERPROOFING SHALL CONSIST OF A TOTAL DRY FILM THICKNESS OF NOT LESS THAN 14 MILS OF BITUMINOUS COATING.
 4. ONLY ECCENTRIC MANHOLE CONES WILL BE ALLOWED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
 5. THE FILL CONCRETE FLOW CHANNEL FOR SIDE BRANCHES SHALL BE PLACED TO PROVIDE A SMOOTH TRANSITION INTO THE FLOW LINE.
 6. REFER TO THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR APPROVED MANHOLE GASKET MODELS.
 7. REFER TO THE APPROVED PRODUCTS LIST FOR APPROVED STEPS.



**LEE'S SUMMIT
MISSOURI**

PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STANDARD PRECAST MANHOLE — SANITARY SEWER

Date: 02/13

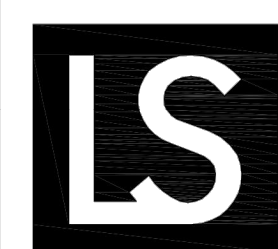
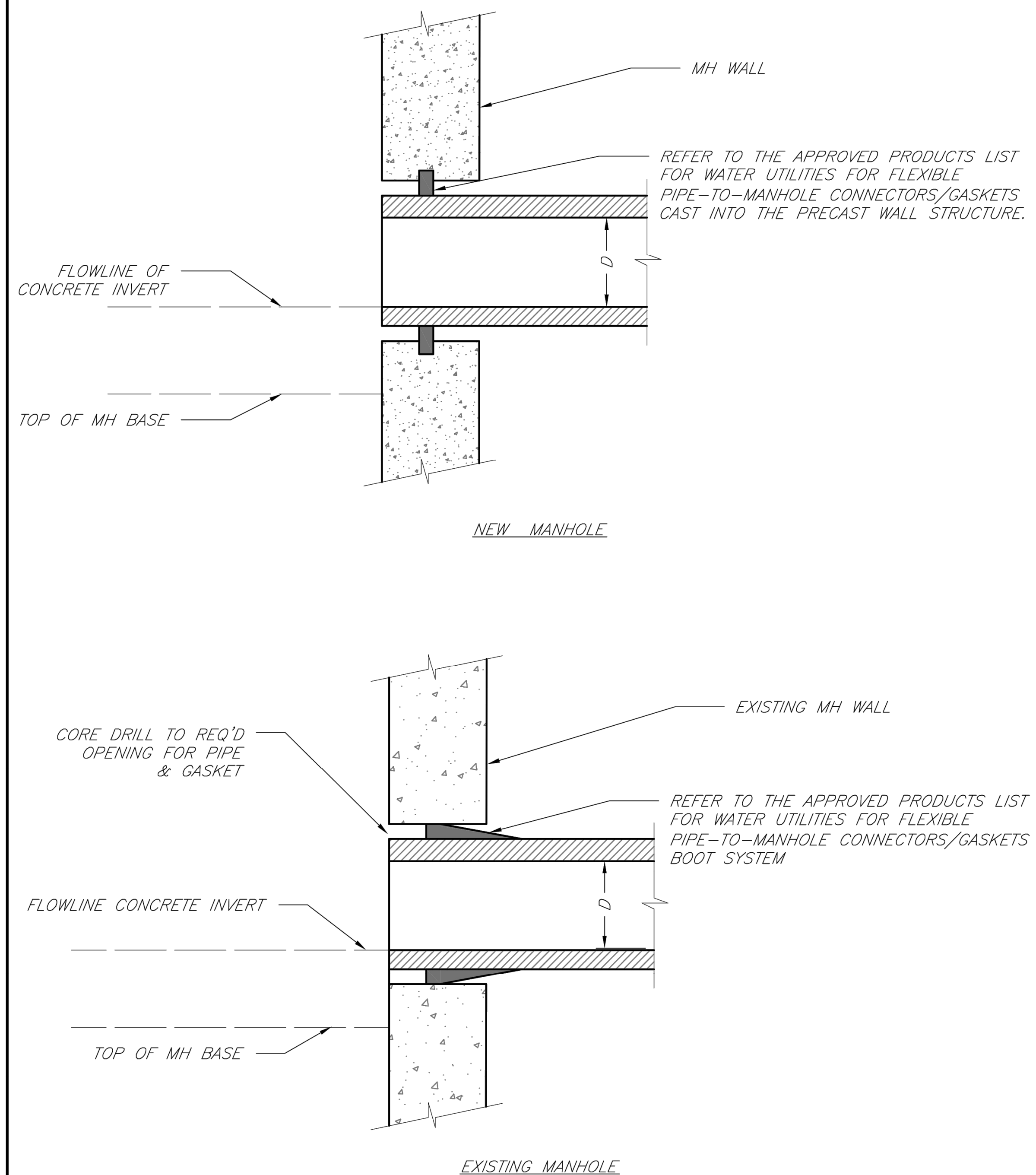
Drawn By: JN

Checked By: DL

FILE: SAN-2

Rev: 1/14

Rev:



**LEE'S SUMMIT
MISSOURI**

PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

MANHOLE WALL CONNECTIONS

Date: 02/13

Drawn By: JN

Checked By: DL

FILE: SAN-5

Rev: 1/14

Rev:

AS-BUILT

02/19/21

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OFF-SITE SANITARY SEWER MAIN EXTENSION
SANITARY DETAILS

COBEY CREEK FIRST PLAT
LEE'S SUMMIT - JACKSON COUNTY - MISSOURI

X-REF NO.

16-059 Base

DRAWING NO.

16-059 Offsite Sanitary

DATE

February 20, 2019

JOB NO.

16-059

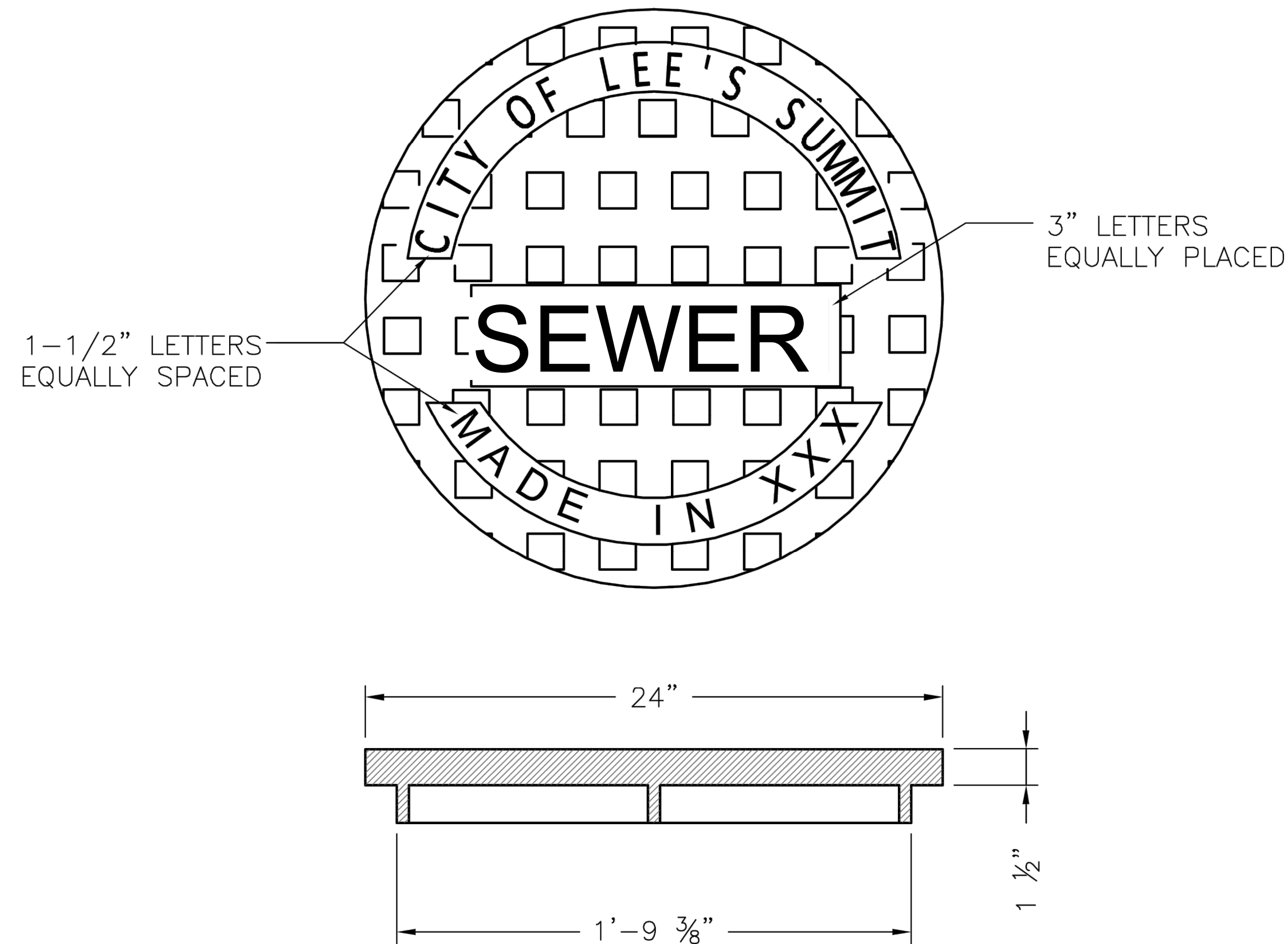
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SHEET
OF

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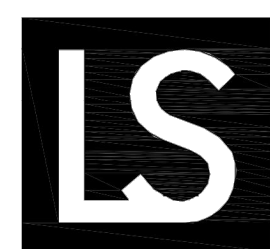
DATE	REVISION	NO.	BY	CHK/APR
02/19/21	AS-BUILT		SPW	RWS
02/20/19	REF CITY COMMENTS	3	SPW	RWS
02/08/19	REF CITY COMMENTS	2	SPW	RWS
01/21/19	REF CITY COMMENTS	1	SPW	RWS
11/27/18	SUBMITTAL TO CITY OF LEE'S SUMMIT		SPW	RWS

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STANDARD 24" MANHOLE COVER
MINIMUM WEIGHT = 160 LB
NOTE: PICK HOLES NOT SHOWN

*COVER AND FRAME MODEL INFORMATION REFER TO
THE STORMWATER APPROVED PRODUCT LIST.



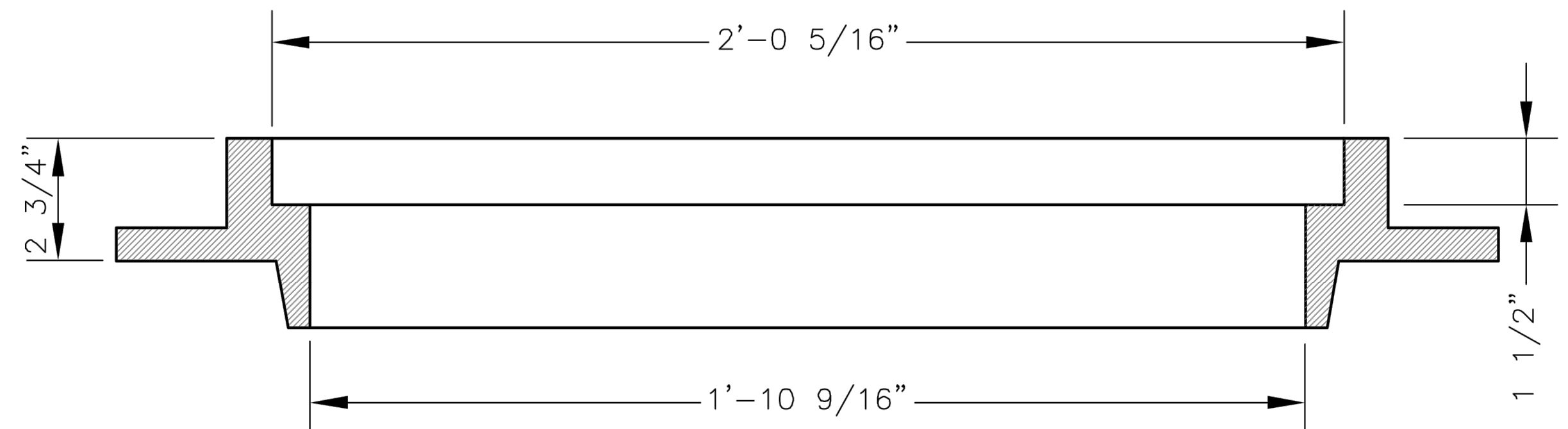
LEE'S SUMMIT
MISSOURI

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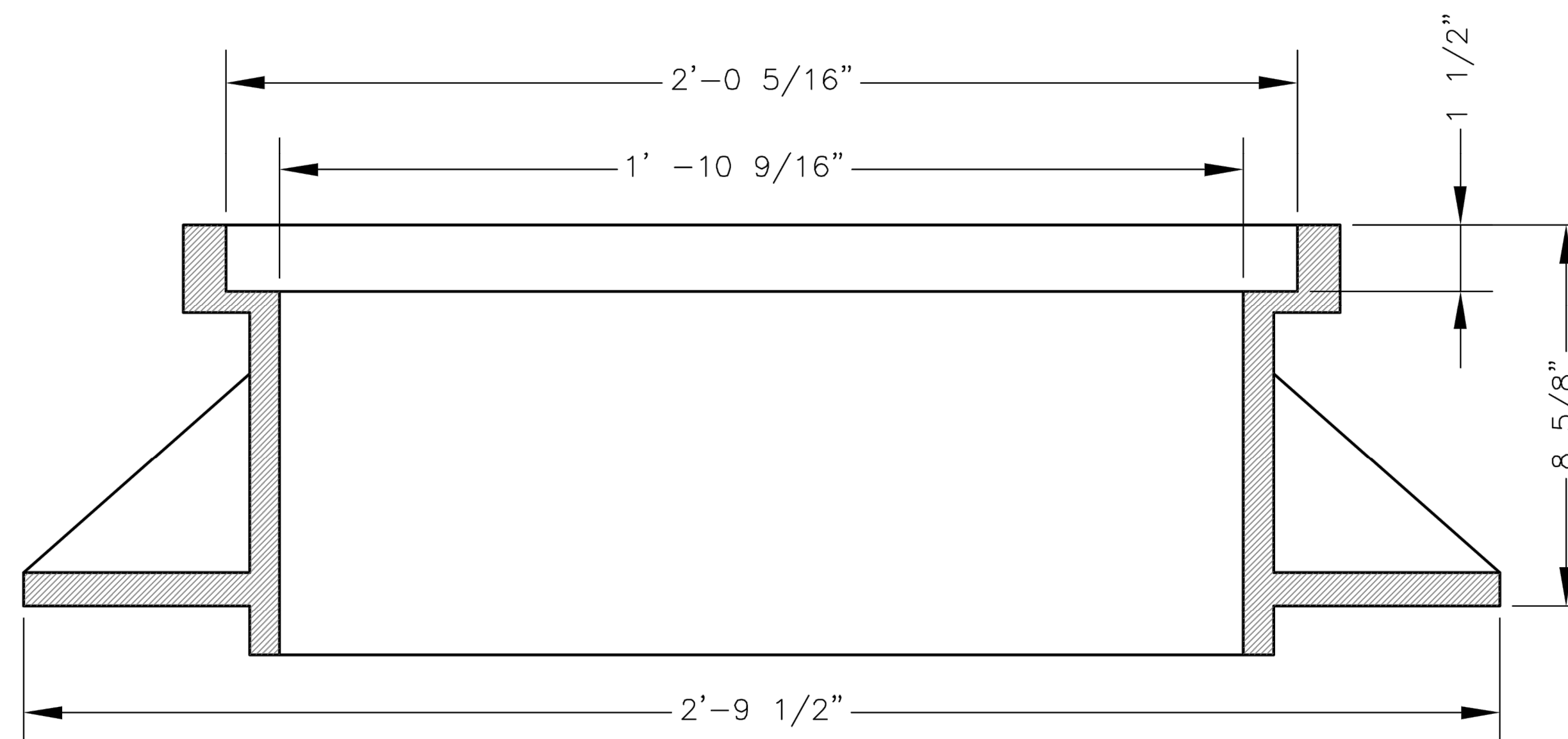
SANITARY MANHOLE COVER DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

~~STM-6~~



SLAB MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS103A
MINIMUM WEIGHT = 145 LB



STANDARD 24" MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS101A
MINIMUM WEIGHT = 250 LB

*COVER AND FRAME MODEL INFORMATION REFER TO
THE STORMWATER APPROVED PRODUCTS LIST.



LEE'S SUMMIT
MISSOURI

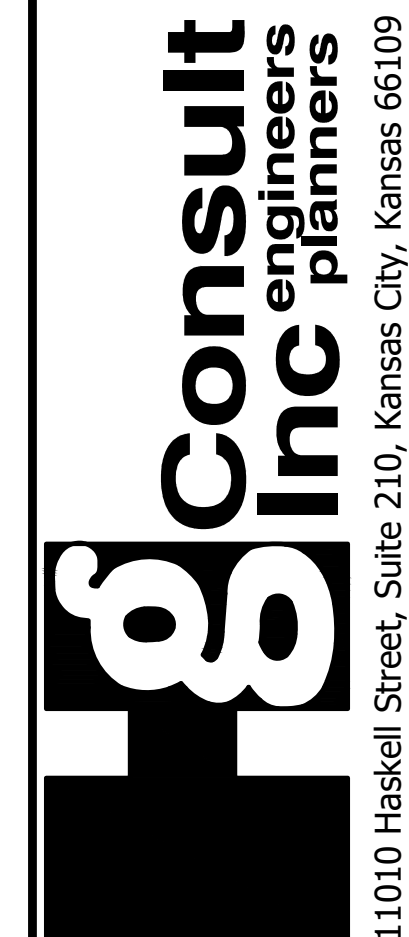
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

SANITARY MANHOLE FRAME DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

~~STM-7~~

AS-BUILT
02/19/21



11010 Haskell Street, Suite 210, Kansas City, Kansas 66109
CORPORATE LICENSE No. E201000573 (MO.) / E-1736 (KS.)

OFF-SITE SANITARY SEWER MAIN EXTENSION
SANITARY DETAILS

COBEY CREEK FIRST PLAT
LEE'S SUMMIT - JACKSON COUNTY - MISSOURI

X-REF NO.
16-059 Base
DRAWING NO.
16-059 Offsite Sanitary
DATE
February 20, 2019
JOB NO.
16-059

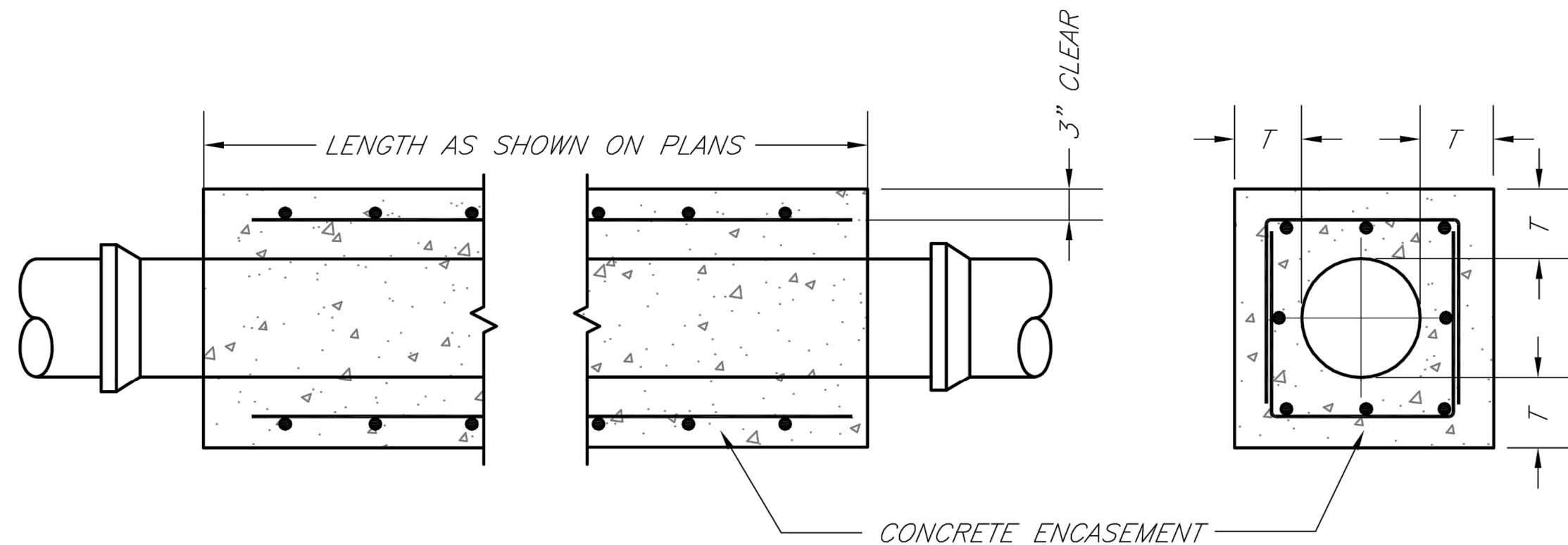
6

SHEET
OF

7

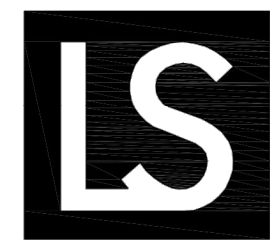
DATE	REVISION	NO.	BY	CHK/APR
02/19/21	AS-BUILT		SPW	RWS
02/20/19	REF CITY COMMENTS	3	SPW	RWS
02/08/19	REF CITY COMMENTS	2	SPW	RWS
01/21/19	REF CITY COMMENTS	1	SPW	RWS
11/27/18	SUBMITTAL TO CITY OF LEE'S SUMMIT		SPW	RWS

IF THIS IS NOT A BLUE INK SEAL AND THE SIGNATURE IN BLUE INK, THE PLAN IS A COPY AND MAY CONTAIN UNAUTHORIZED ALTERATIONS. THE CERTIFICATION CONTAINED ON THIS DOCUMENT SHALL NOT APPLY TO ANY COPIES



NOTES:

1. FOR PIPES LESS THAN 15", T = 6" MIN.
2. FOR PIPES 15" THRU 36", T = 8" MIN.
3. INTERMEDIATE BELLS SHALL BE ENCASED.
4. REINFORCING STEEL SHALL BE #4 @ 12" O.C. EACH WAY WITH A MINIMUM REBAR LAP OF 12".

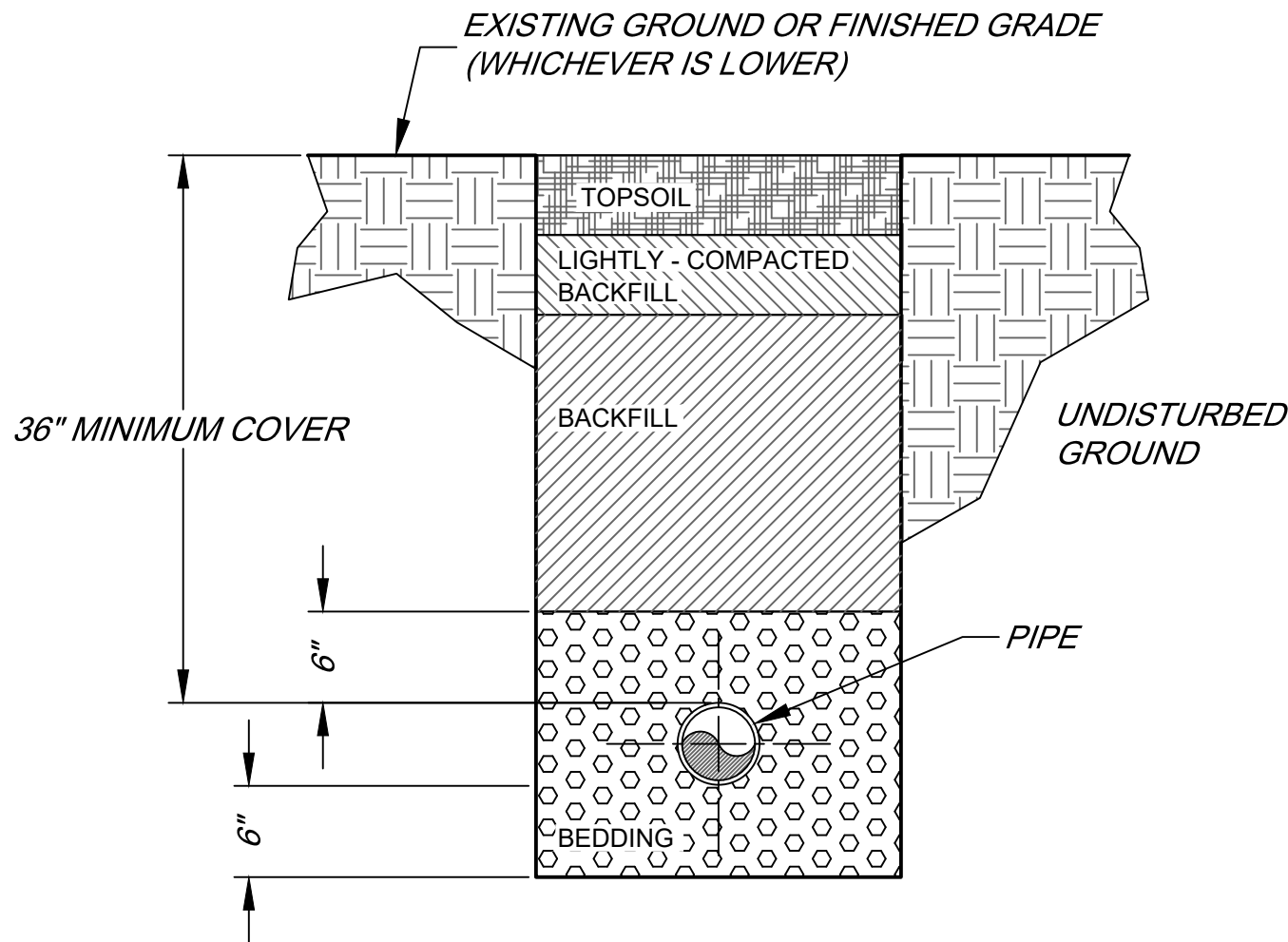


**LEE'S SUMMIT
MISSOURI**

PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

SANITARY PIPE ENCASEMENT

Date: 02/13
Drawn By: JN
Checked By: DL
FILE: SAN-7
Rev: 1/14
Rev:



NOTES:

1. **BEDDING:**
BEDDING AGGREGATE SHALL BE PLACED FROM A LEVEL OF 6 INCHES BELOW THE BOTTOM OF THE PIPE TO A LEVEL OF 6 INCHES ABOVE THE TOP OF THE PIPE.
2. **BACKFILL:**
A) **TRENCH FOUNDATION:**
THE AREA AT THE BOTTOM OF THE EXCAVATION SHALL BE COMPOSED OF A STABLE MATERIAL CAPABLE OF SUPPORTING THE PLACEMENT OF BEDDING MATERIAL, PIPE, OR STRUCTURES.
B) **BACKFILL OF ALL PIPES UNDER ROADWAYS, CURB AND GUTTER AND ALL OTHER PAVED AREAS WITHIN THE RIGHT OF WAY SHALL CONSIST OF FLOWABLE BACKFILL AS SPECIFIED IN APIWA SPEC. 2100 PARAGRAPH 2602.2H MIX DESIGN TYPE A. THE FLOWABLE BACKFILL SHALL EXTEND 2 FEET FROM THE BACK OF CURB TO 2 FEET BACK OF CURB, UP TO 18" INCHES BELOW FINISHED GRADE. FOR EXISTING ROADWAYS FLOWABLE BACKFILL SHALL BE EXTENDED TO THE BASE OF PAVEMENT.**

**SANITARY SEWER TYPICAL
TRENCHING AND BEDDING DETAIL**
NOT TO SCALE

Channel Report

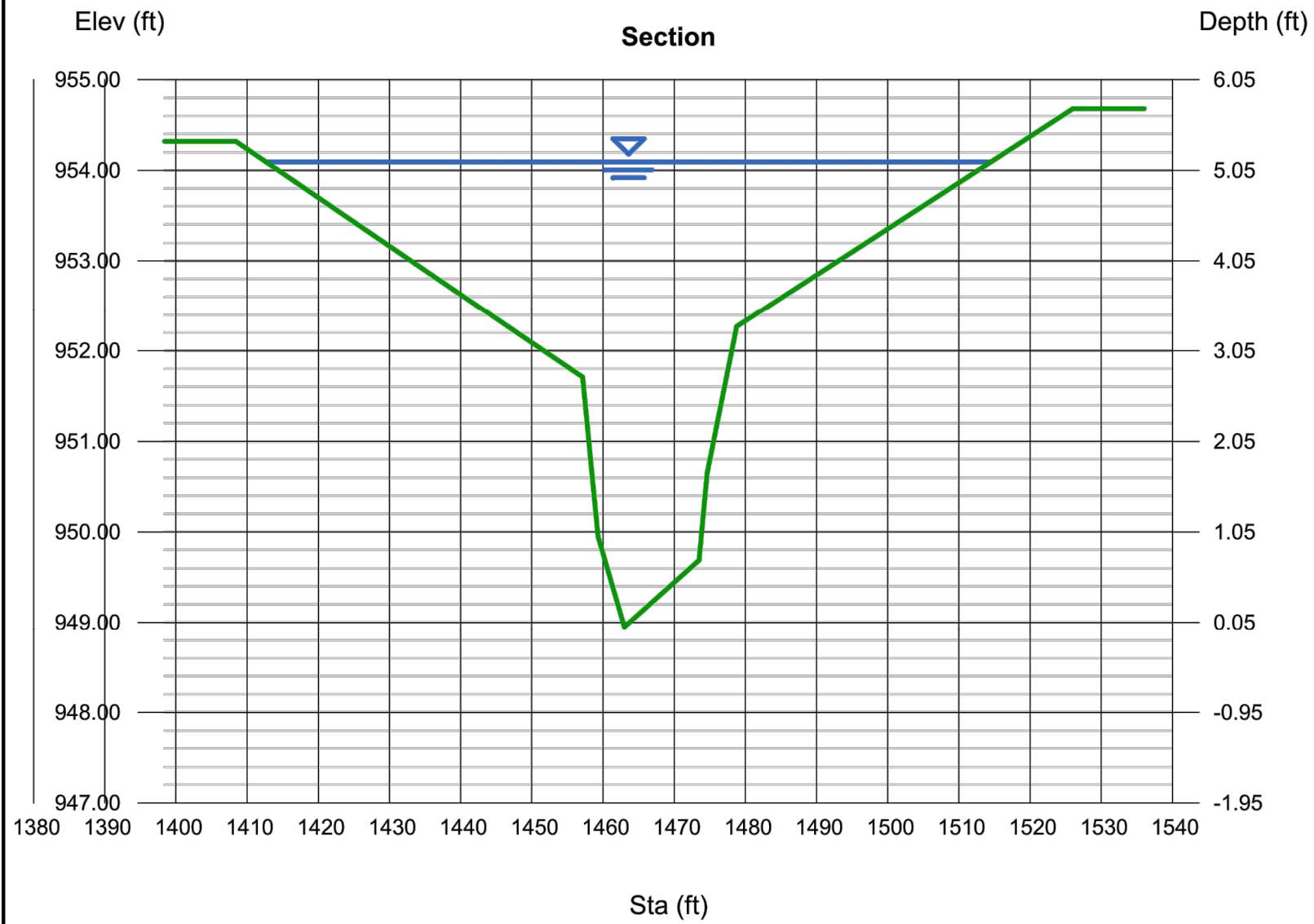
Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc.

Wednesday, Feb 6 2019

Cobey Creek Swale to Tributary B2

User-defined		Highlighted	
Invert Elev (ft)	= 948.95	Depth (ft)	= 5.14
Slope (%)	= 0.80	Q (cfs)	= 479.00
N-Value	= 0.069	Area (sqft)	= 175.08
		Velocity (ft/s)	= 2.74
Calculations		Wetted Perim (ft)	= 103.32
Compute by:	Known Q	Crit Depth, Yc (ft)	= 3.74
Known Q (cfs)	= 479.00	Top Width (ft)	= 101.76
		EGL (ft)	= 5.26

(Sta, El, n)-(Sta, El, n)...
(1408.41, 954.32)-(1446.65, 952.27, 0.080)-(1457.14, 951.71, 0.050)-(1459.29, 949.95, 0.035)-(1462.99, 948.95, 0.035)-(1473.51, 949.69, 0.035)-(1474.65, 950.65, 0.035)-(1476.76, 952.27, 0.050)-(1526.03, 954.68, 0.080)



**SWALE TO TRIBUTARY B2 WATER SURFACE
CALCULATIONS AT SANITARY SEWER CROSSING**

AS-BUILT
02/19/21

**gconsult
Inc**
engineers
planners
11010 Haskell Street, Suite 210, Kansas City, Kansas 66109
CORPORATE LICENSE No. E201000573 (MO.) / E-1736 (KS.)

OFF-SITE SANITARY SEWER MAIN EXTENSION
SANITARY DETAILS

COBEY CREEK FIRST PLAT
LEE'S SUMMIT - JACKSON COUNTY - MISSOURI

DATE	REVISION	NO.	BY	CHK/APR
02/19/21	AS-BUILT		SPW	RWS
02/20/19	REV CITY COMMENTS	3	SPW	RWS
02/08/19	REV CITY COMMENTS	2	SPW	RWS
01/21/19	REV CITY COMMENTS	1	SPW	RWS
11/27/18	SUBMITTAL TO CITY OF LEE'S SUMMIT		SPW	RWS

X-REF NO. 16-059 Base
DRAWING NO. 16-059 Offsite Sanitary
DATE February 20, 2019
JOB NO. 16-059
SHEET OF

7

7

COBEY CREEK - PHASE I

**OFFSITE SANITARY SEWER
EXISTING MANHOLE CONNECTION EXHIBIT**

