

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

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

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

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

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

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

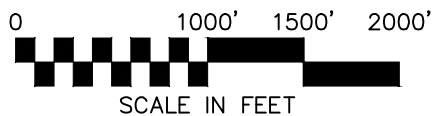
PROJECT BENCHMARK:  
#1 MODNR MONUMENT JA-45  
N: 986351.65  
E: 2824617.51  
TOP ELEV. 1012.79

#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	Existing Waterline	A	Proposed Fire Hydrant
- - - - -	Existing Gas Main	W	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

Accepted  
Record Drawings

These plans have been reviewed for  
accuracy and are accepted for basic  
conformance to the approved  
construction drawings.

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 drawings have been prepared by HG Consult, Inc. Engineering based on elevation shots by Ladwig and Associates on 03/04/2021

AS-BUILT  
03/25/21



Prepared: November 21, 2018

NO.	BY	CK/APP
1	EDH	RWS
2	EDH	RWS
3	EDH	RWS
4	EDH	RWS
5	EDH	RWS
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97	EDH	RWS
98	EDH	RWS
99	EDH	RWS
100	EDH	RWS

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R. KEVIN STERRETT, MO E-26440  
MARCH 25, 2021

**Consult Inc engineers planners**  
11010 Haskell Street, Suite 210, Kansas City, Kansas 66109  
CORPORATE LICENSE No. E20100573 (MO.) / E-1736 (KS.)

OFF-SITE SANITARY SEWER MAIN EXTENSION  
COVER SHEET

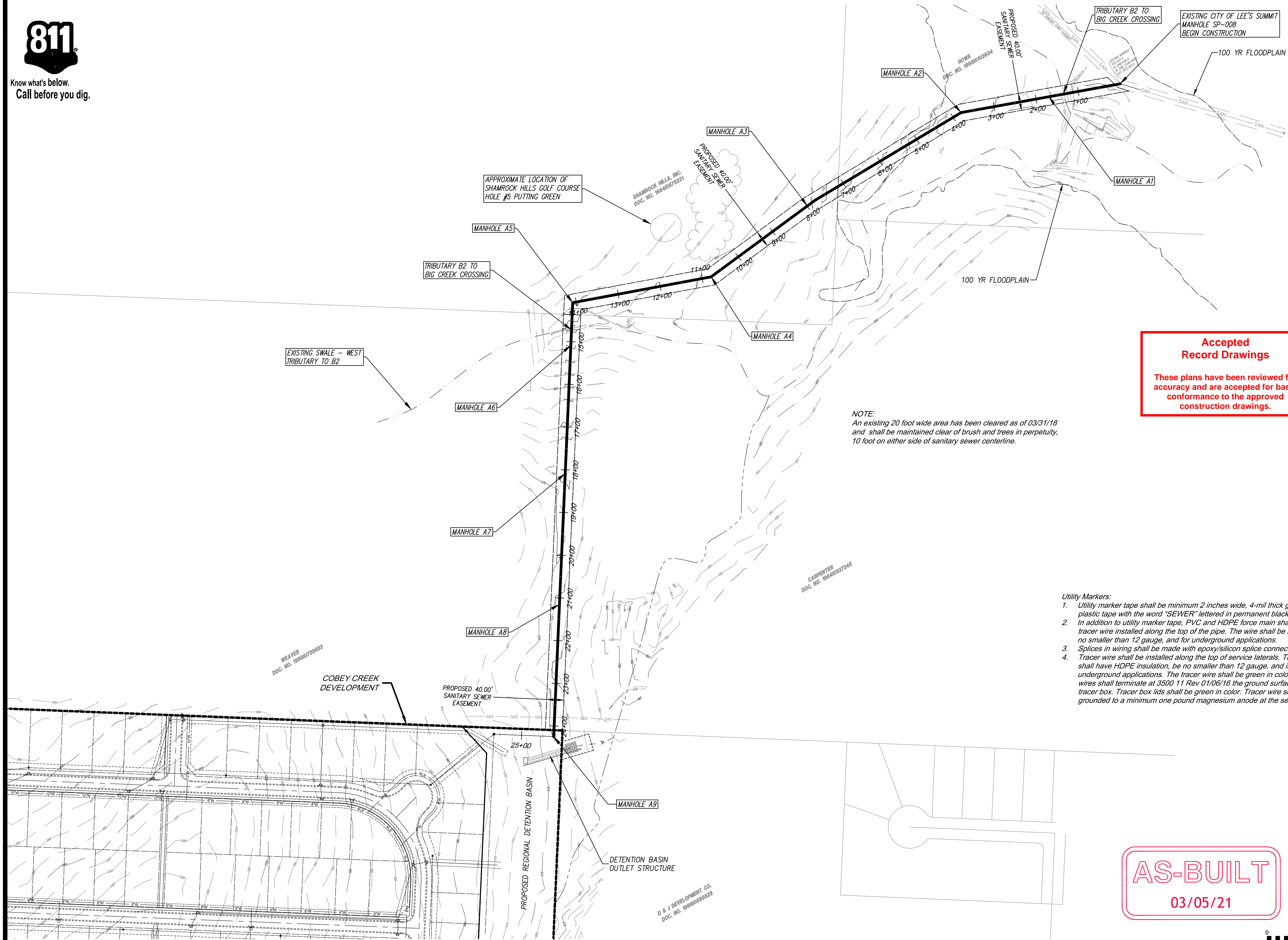
COBEY CREEK FIRST PLAT  
LEE'S SUMMIT - JACKSON COUNTY - MISSOURI

X-REF NO.  
16-059 Base  
DRAWING NO.  
16-059 Offsite Sanitary  
DATE  
February 20, 2019  
JOB NO.  
16-059  
SHEET  
OF  
17





Know what's below.  
Call before you dig.



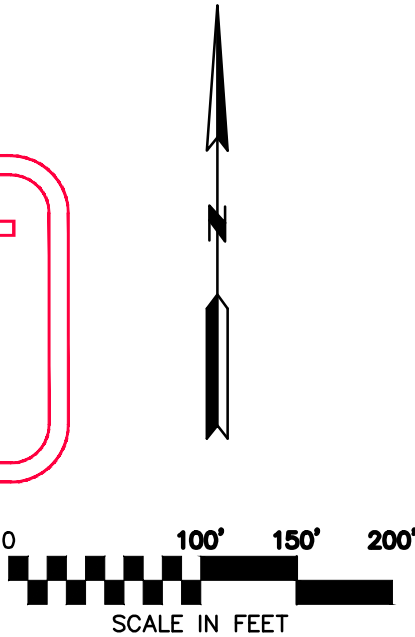
NOTE:  
An existing 20 foot wide area has been cleared as of 03/31/18 and shall be maintained clear of brush and trees in perpetuity, 10 foot on either side of sanitary sewer centerline.

Accepted  
Record Drawings

These plans have been reviewed for accuracy and are accepted for basic conformance to the approved construction drawings.

- 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  
03/05/21



DATE	REVISION	NO.	BY	CHK/APR
03/05/21	AS-BUILT			
02/20/19	PER CITY COMMENTS	3	AS	AS
02/09/19	PER CITY COMMENTS	2	AS	AS
01/21/19	PER CITY COMMENTS	1	AS	AS
11/21/18	SUBMITTAL TO CITY OF LEE'S SUMMIT			



**Consult Inc** engineers planners

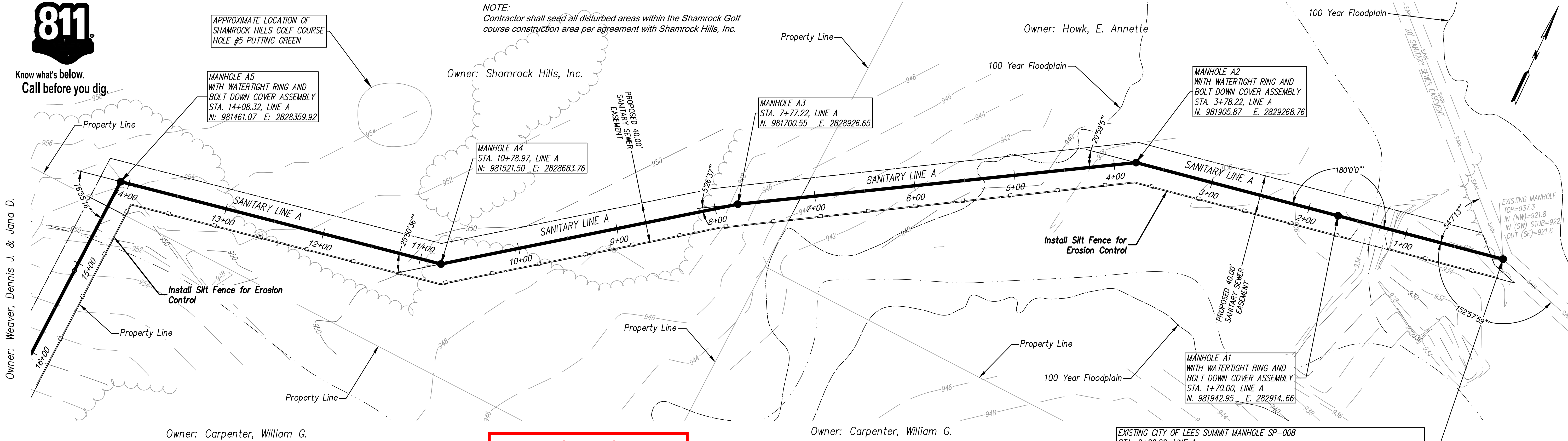
11010 Haskell Street, Suite 210, Kansas City, Kansas 66109  
CORPORATE LICENSE NO. E20100573 (MO.) / E-1726 (KS.)

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





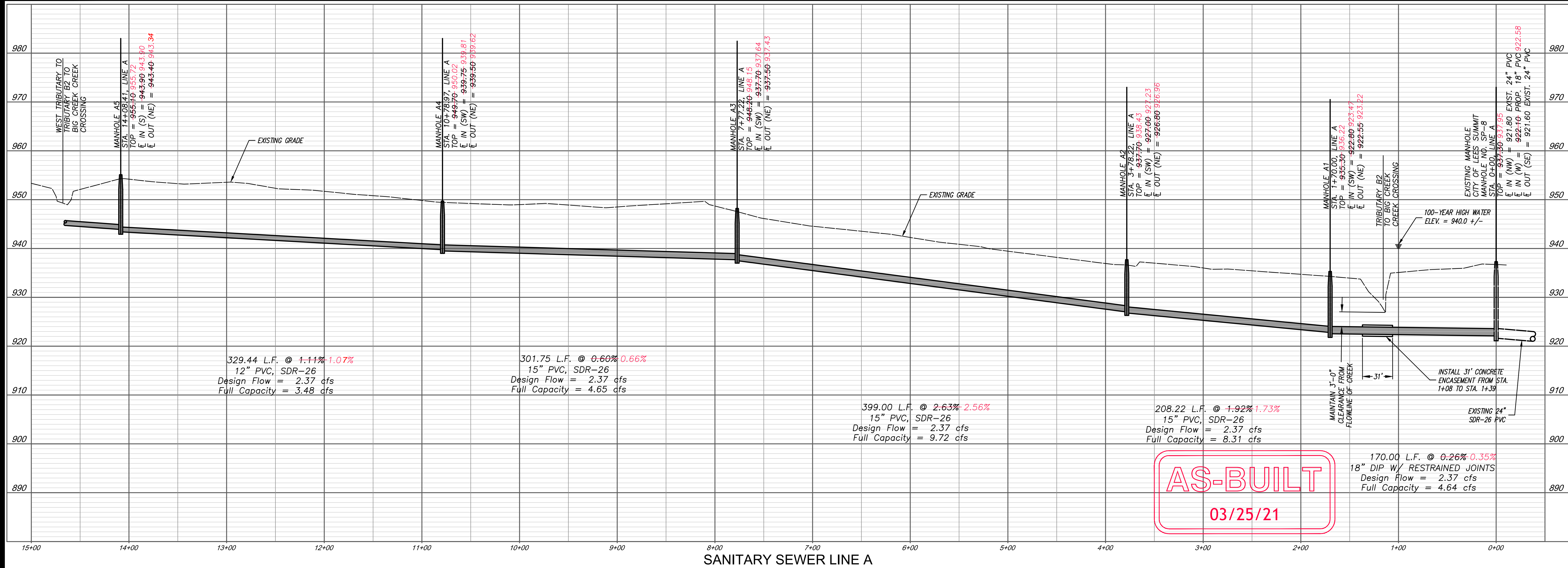
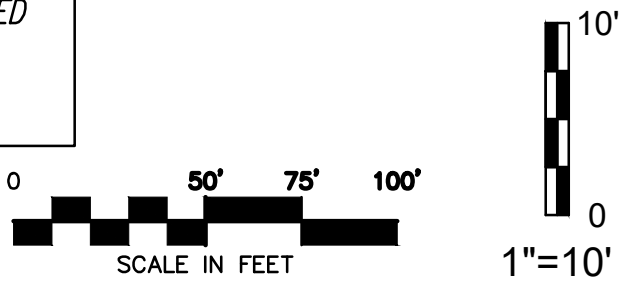
Know what's below.  
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NOTE:  
A 20 foot wide area shall be maintained clear of brush and trees in perpetuity 10 foot on either side of sanitary sewer centerline.

**Accepted  
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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.



**AS-BUILT**  
03/25/21

DATE	REVISION	NO.	BY	CHKD
02/25/21	REVISED PER INQUIRY FROM MW 4-5 PER FIELD RE-ASUREMENT	5	EDH	RMS
03/03/21	AS-BUILTS	4	EDH	RMS
02/20/19	PER CITY COMMENTS	3	SPW	RMS
02/08/19	PER CITY COMMENTS	2	SPW	RMS
01/21/19	PER CITY COMMENTS	1	SPW	RMS
11/21/18	SUBMITTAL TO CITY OF LEES SUMMIT			



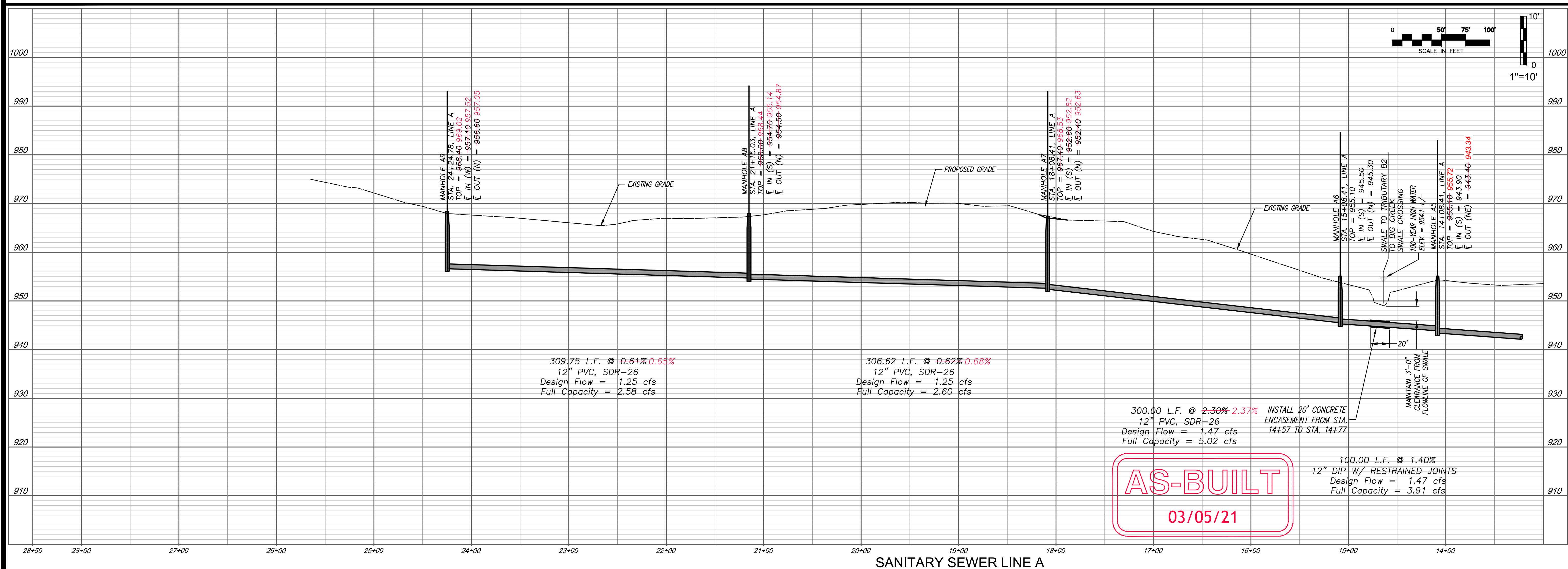
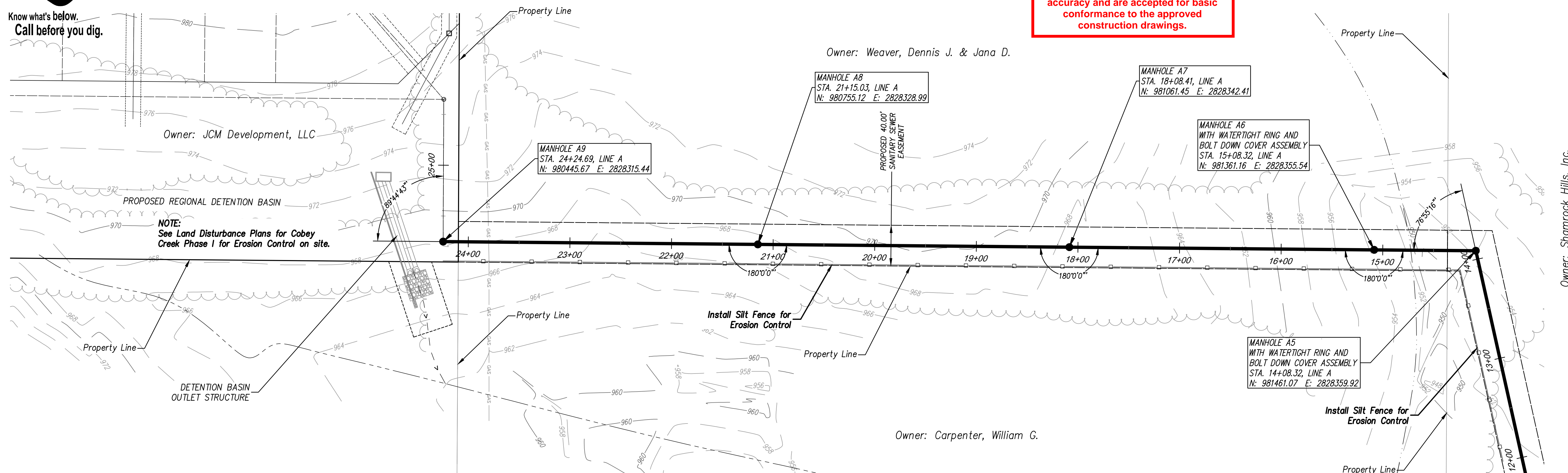
**g Consult Inc**  
engineers planners  
11010 Haskell Street, Suite 210, Kansas City, Kansas 66109  
CORPORATE LICENSE NO. E20100573 (MO.) / E-1736 (KS.)

OFF-SITE SANITARY SEWER MAIN EXTENSION  
PLAN AND PROFILE  
  
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

3 OF 7





**Accepted  
Record Drawings**

These plans have been reviewed for accuracy and are accepted for basic conformance to the approved construction drawings.

DATE	REVISION	NO.	BY	CK/APP
02/09/21	45-84015		DM	
02/09/19	PER CITY COMMENTS	3	SPW	
02/28/19	PER CITY COMMENTS	2	SPW	
01/21/19	PER CITY COMMENTS	1	SPW	
11/21/18	SUBMITTAL TO CITY OF LEES SUMMIT		SPW	

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**g** **Consult Inc** engineers planners  
1111010 Haskell Street, Suite 210, Kansas City, Kansas 66109  
COMPANY'S OFFICE: MOBILE: 314-433-4000 FAX: 314-433-4001

OFF-SITE SANITARY SEWER MAIN EXTENSION  
PLAN AND PROFILE

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COBEY CREEK FIRST PLAT

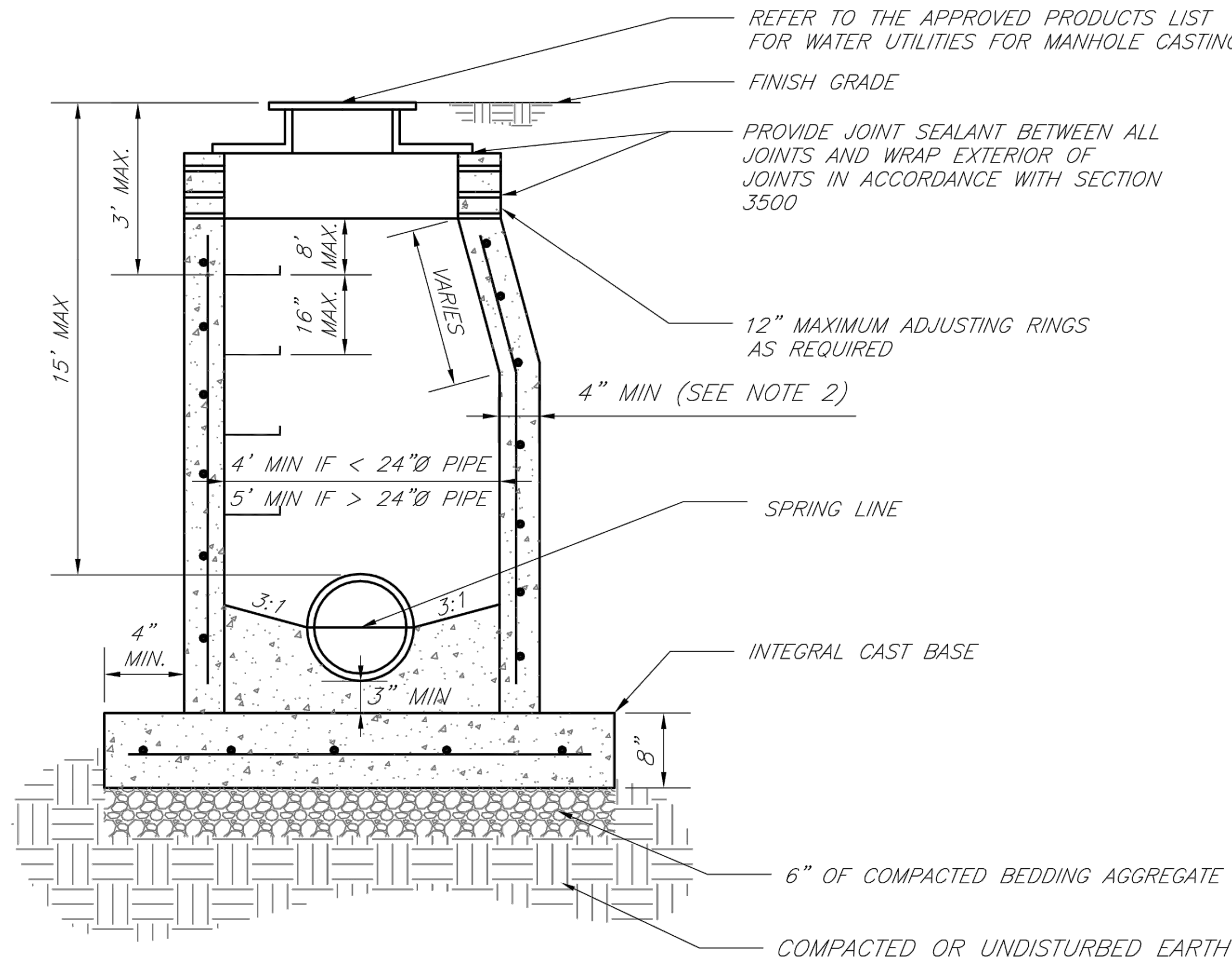
LEE'S SUMMIT - JACKSON COUNTY - MISSOURI

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

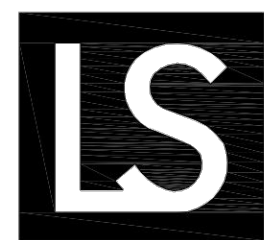


Accepted  
Record Drawings

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- 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

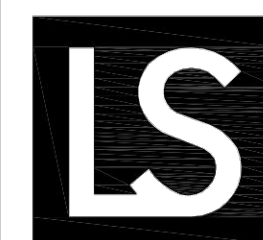
Drawn By: JN

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

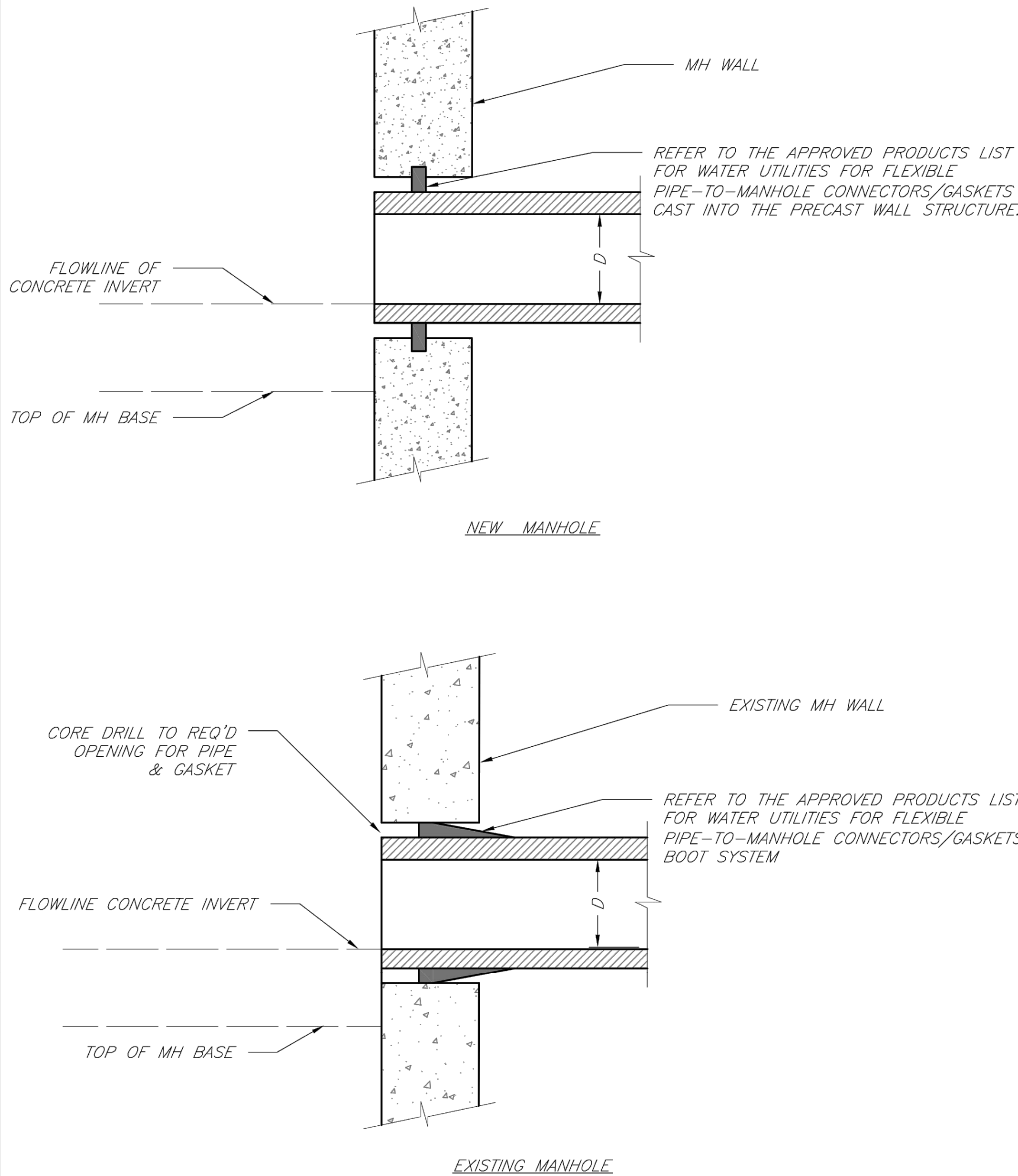
Drawn By: JN

Checked By: DL

FILE: SAN-5

Rev: 1/14

Rev:



AS-BUILT

03/05/21

**Consult  
Inc**  
engineers  
planners

11010 Haskell Street, Suite 210, Kansas City, Kansas 66109  
CORPORATE LICENSE No. E20100573 (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

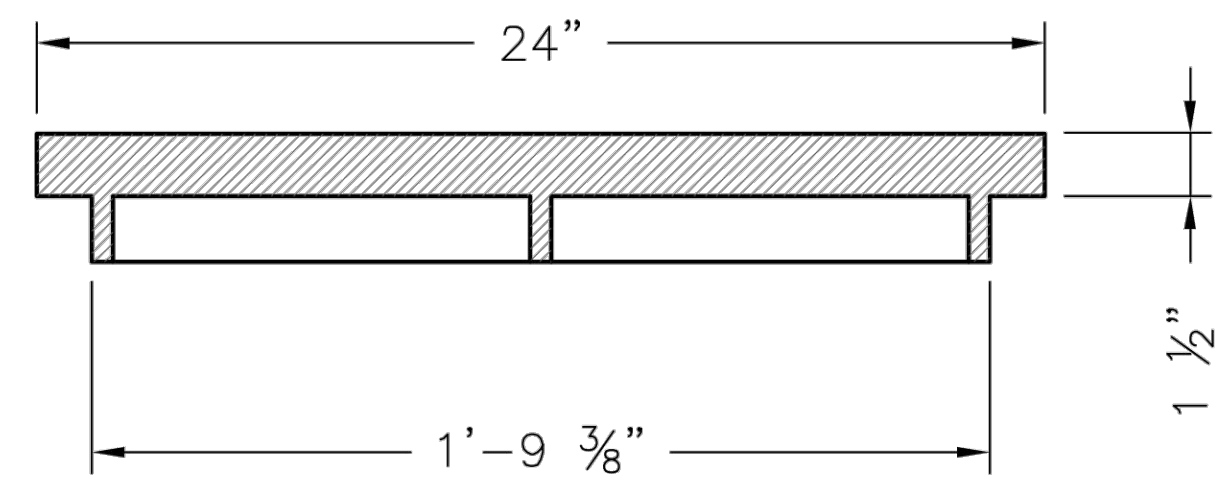
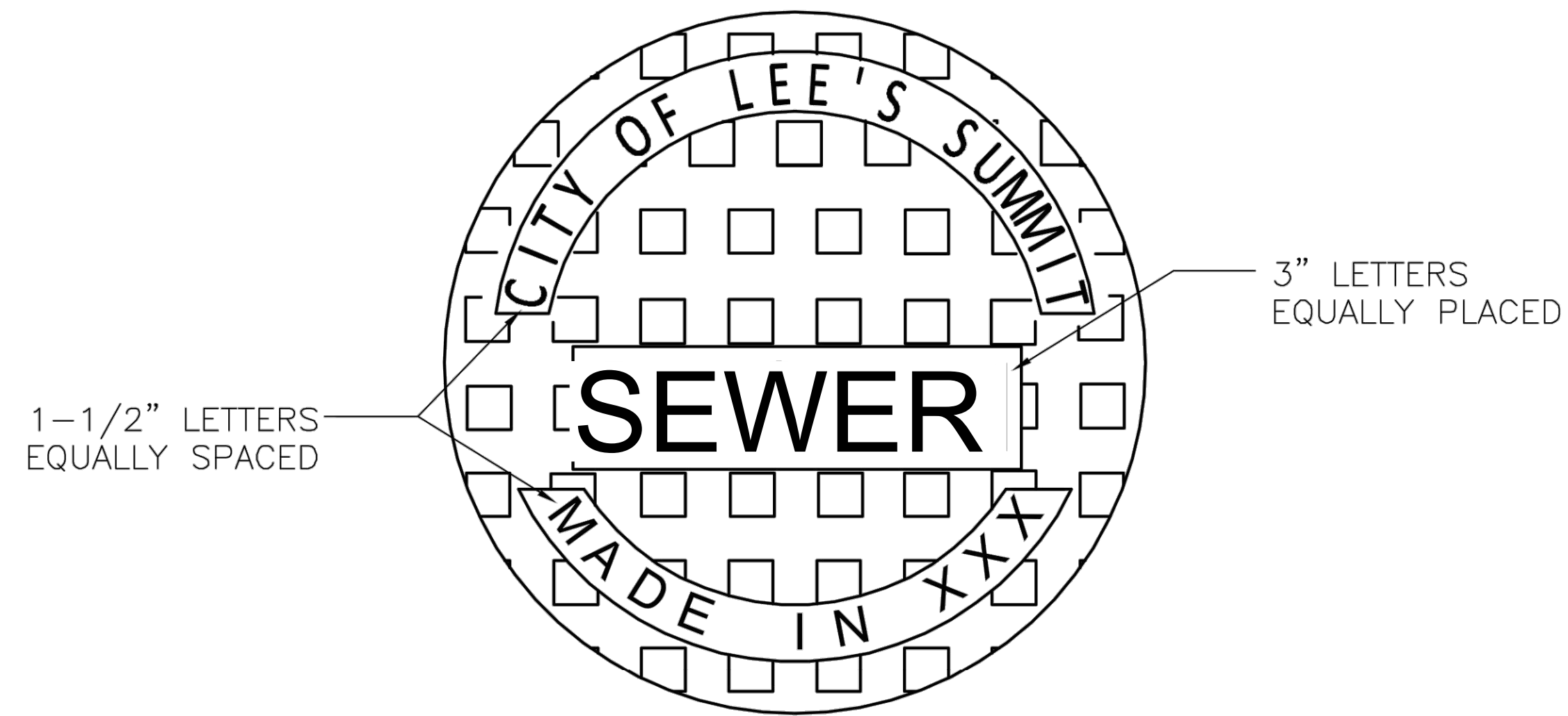
SHEET  
OF

5 7

DATE	REVISION	NO.	BY	CHK/APR
03/05/21	AS-BUILT			RKS
02/20/19	PER CITY COMMENTS	3		RKS
02/08/19	PER CITY COMMENTS	2		RKS
01/23/19	PER CITY COMMENTS	1		RKS
11/21/18	SUBMITTAL TO CITY OF LEE'S SUMMIT			RKS

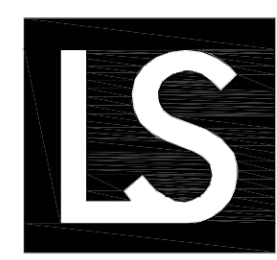
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STANDARD 24" MANHOLE COVER  
MINIMUM WEIGHT = 160 LB  
NOTE: PICK HOLES NOT SHOWN

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



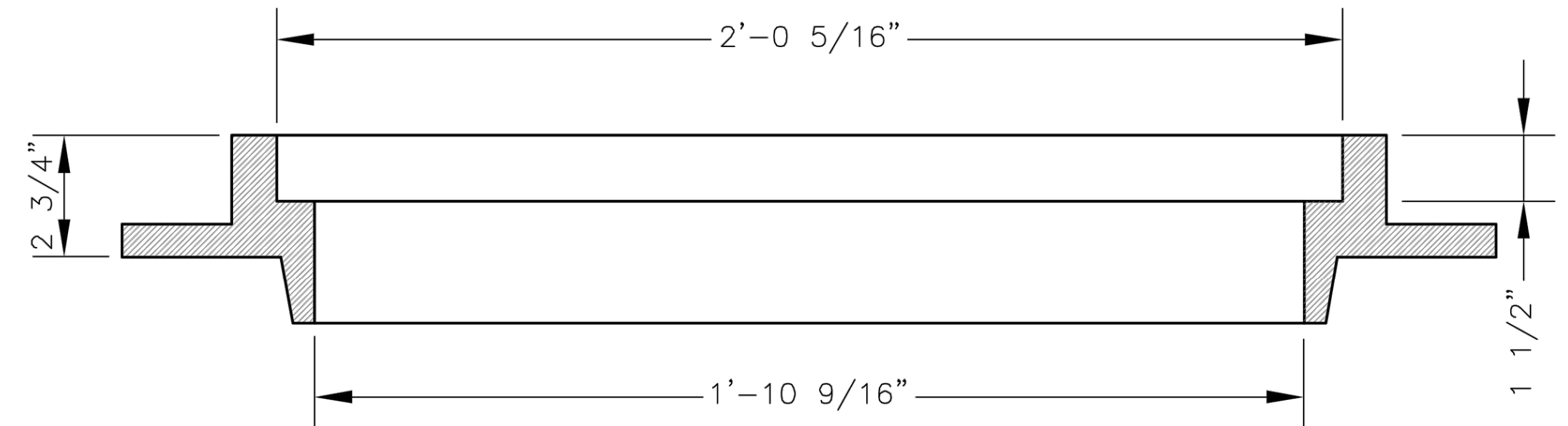
**LEE'S SUMMIT  
MISSOURI**

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

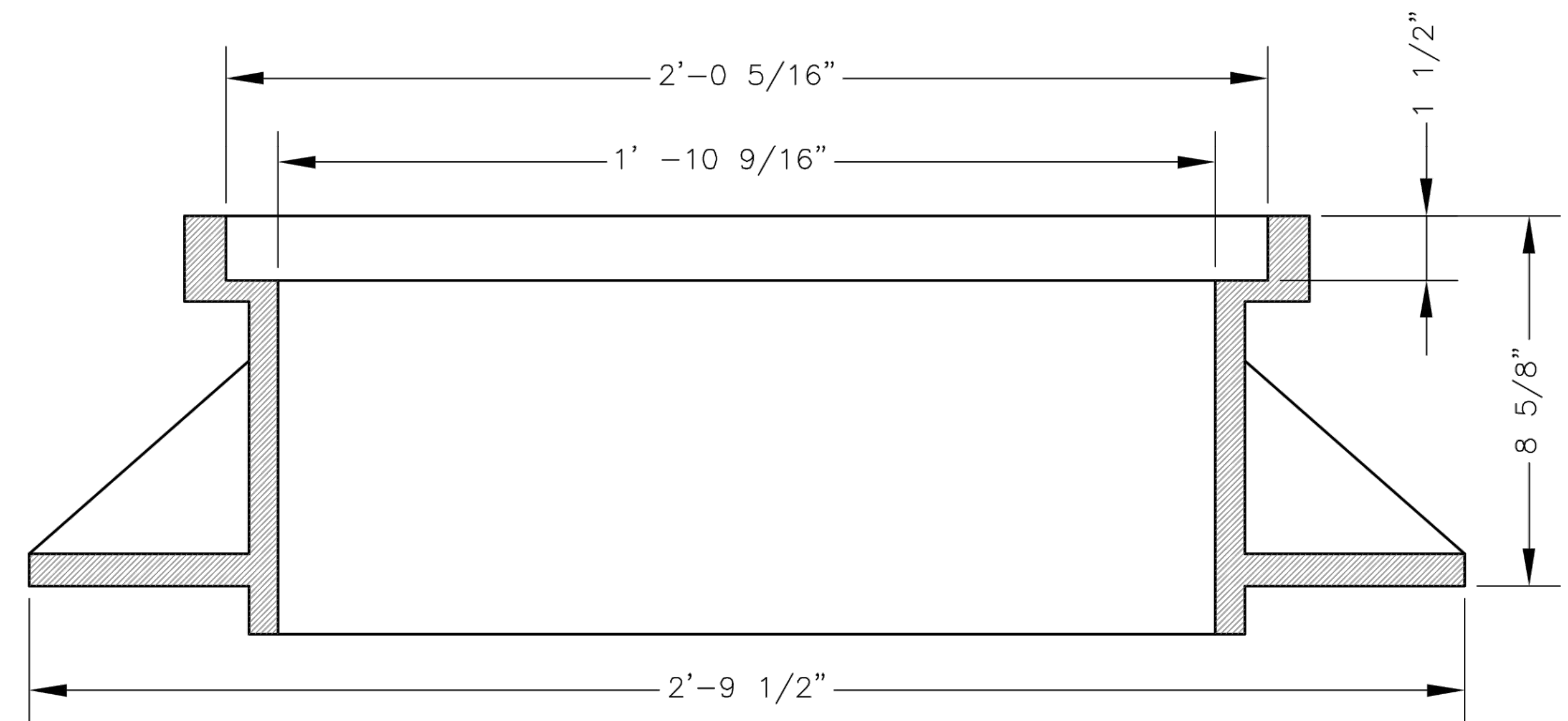
**SANITARY MANHOLE COVER DETAIL**

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

**STM-6**

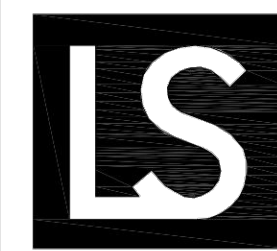


SLAB MANHOLE FRAME  
LEE'S SUMMIT PART NO.: LS103A  
MINIMUM WEIGHT = 145 LB



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**  
03/05/21

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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.  
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16-059

6

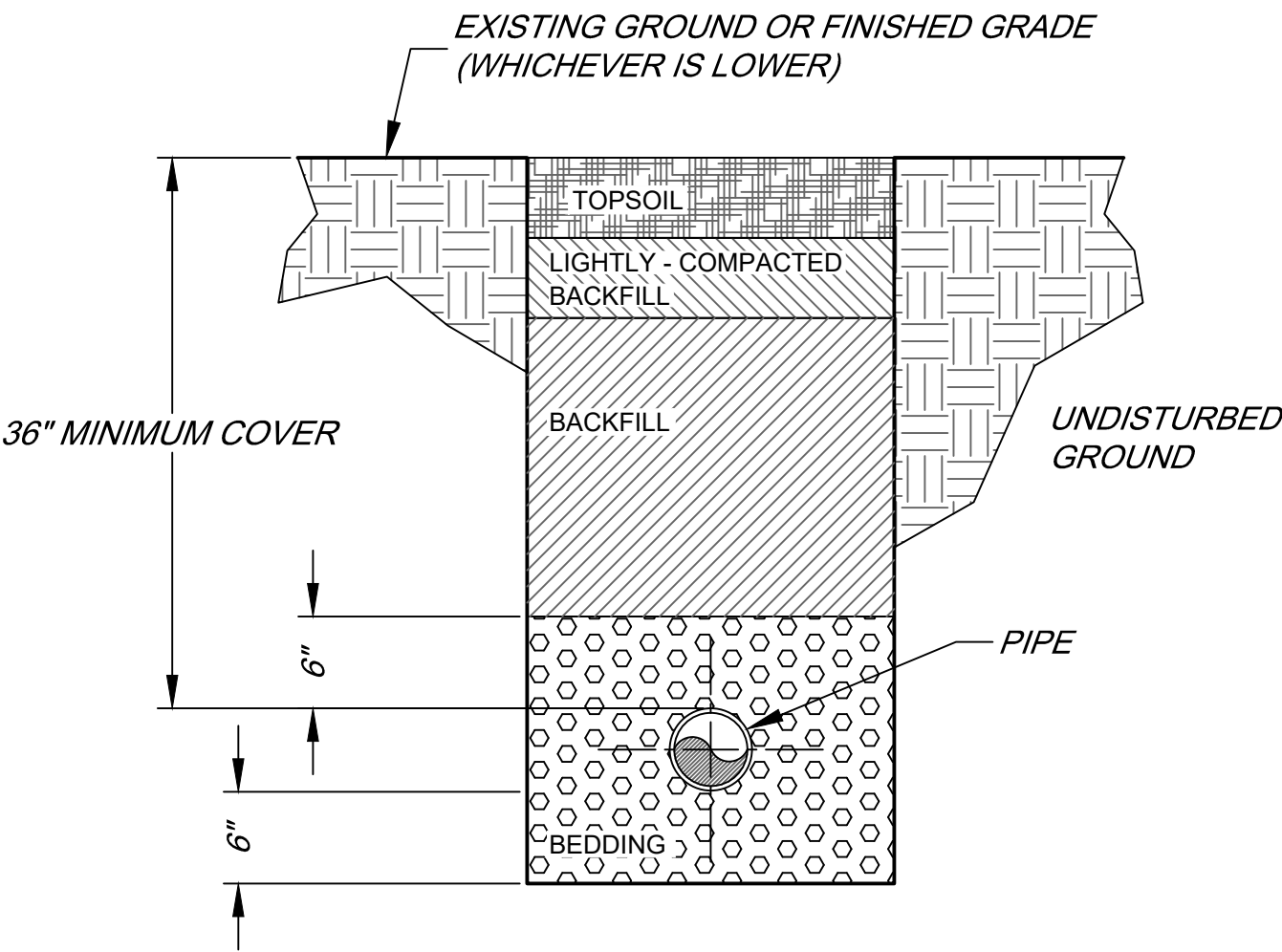
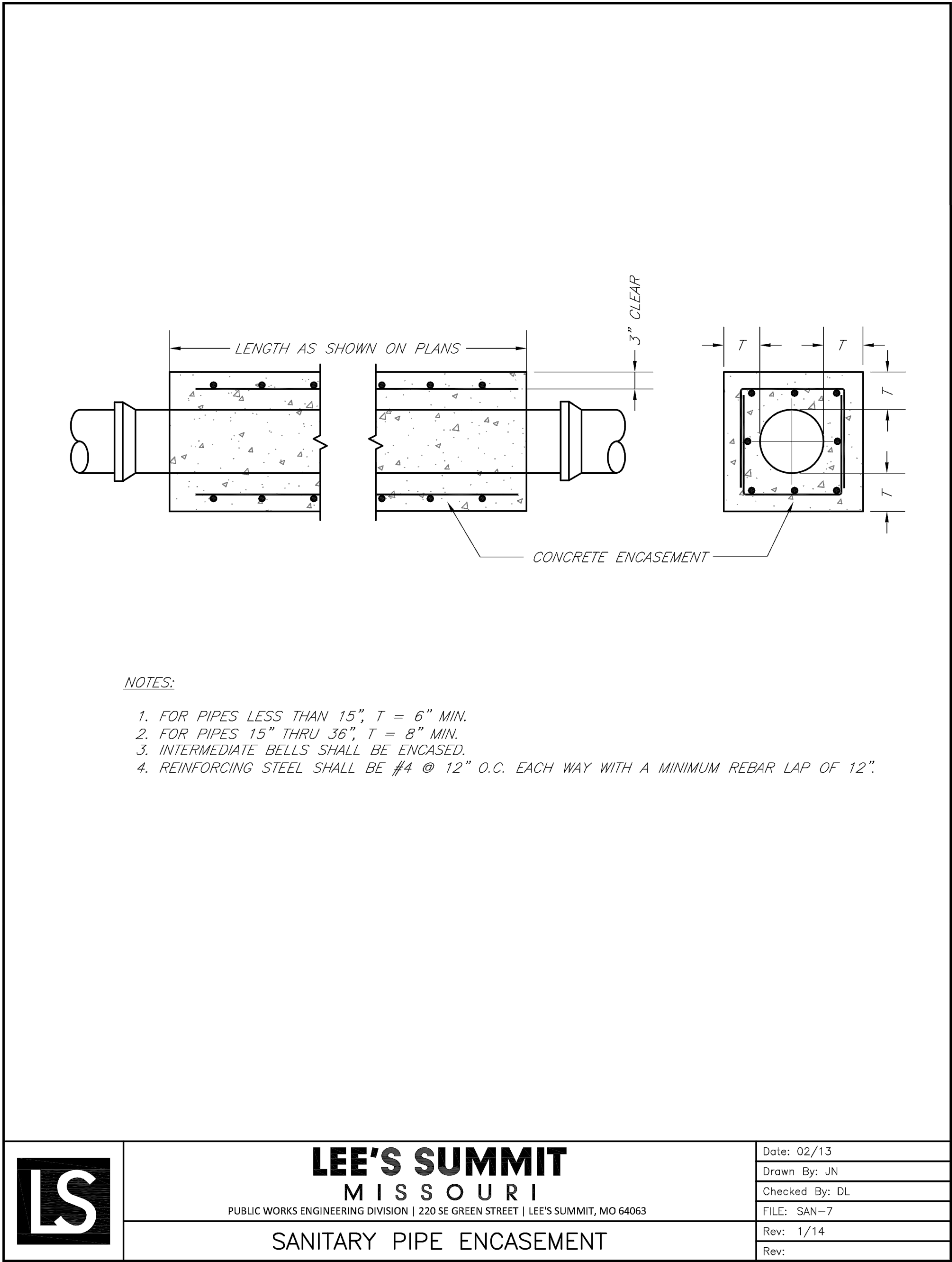
SHEET  
OF

7

DATE	REVISION	NO.	BY	CHK/APR
03/05/21	AS-BUILT			MS
02/20/19	PER CITY COMMENTS	3	SPW	MS
02/20/19	PER CITY COMMENTS	2	SPW	MS
01/23/19	PER CITY COMMENTS	1	SPW	MS
11/21/18	SUBMITTAL TO CITY OF LEE'S SUMMIT			MS

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.





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

**Accepted Record Drawings**

These plans have been reviewed for accuracy and are accepted for basic conformance to the approved construction drawings.

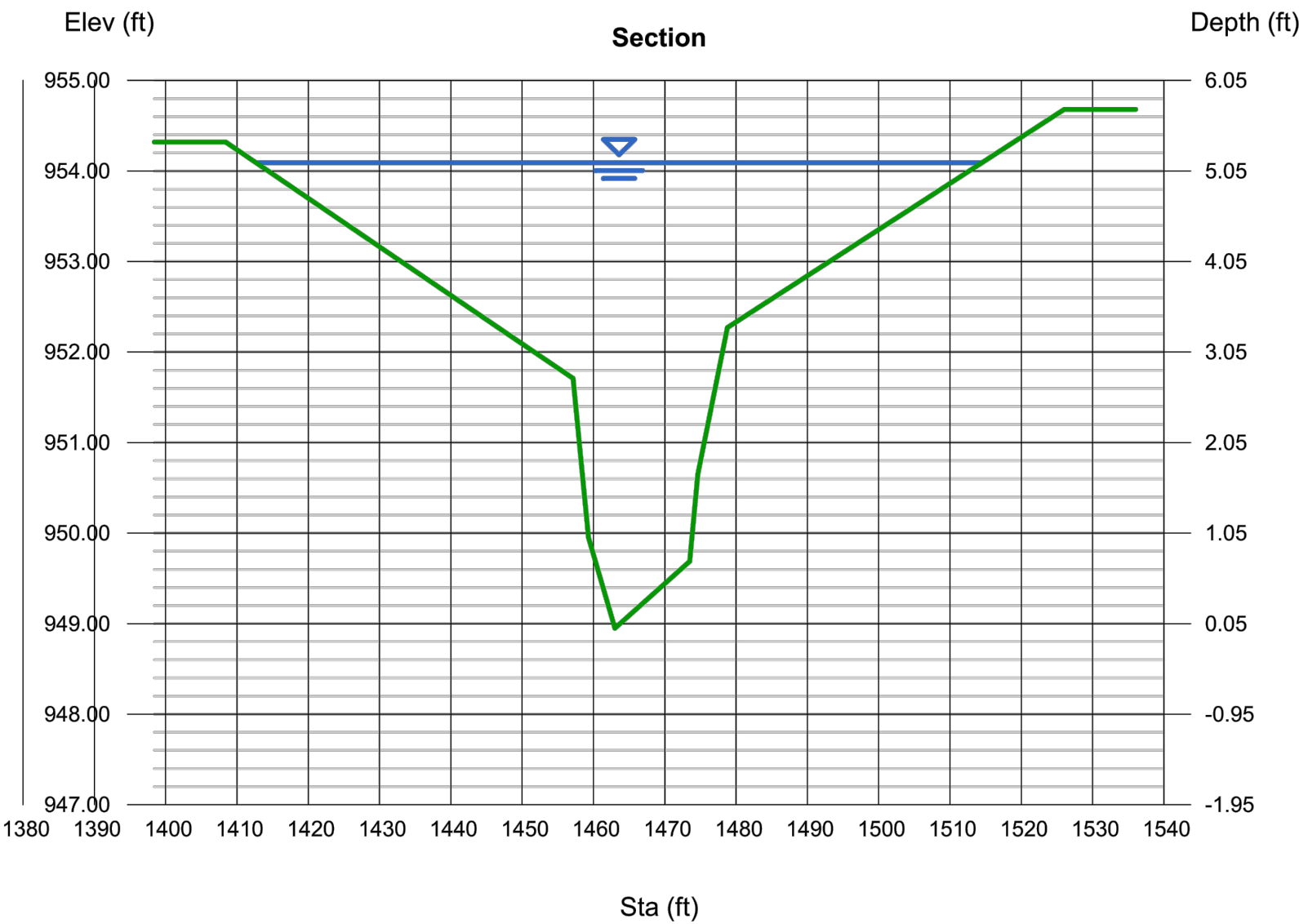
- NOTES:**
1. **BEDDING:**  
BEDDING AGGREGATE SHALL BE PLACED FROM A LEVEL OF 6 INCHES BELOW THE BOTTOM OF THE PIPE TO A LEVEL OF 6 INCHES ABOVE THE TOP OF THE PIPE.
  2. **BACKFILL:**  
A) **TRENCH FOUNDATION:**  
THE AREA AT THE BOTTOM OF THE EXCAVATION SHALL BE COMPOSED OF A STABLE MATERIAL CAPABLE 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.**

**Channel Report**

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Wednesday, Feb 6 2019

**Cobey Creek Swale to Tributary B2**

<b>User-defined</b>		<b>Highlighted</b>	
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
		Wetted Perim (ft)	= 103.32
<b>Calculations</b>		Crit Depth, Yc (ft)	= 3.74
Compute by:	Known Q	Top Width (ft)	= 101.76
Known Q (cfs)	= 479.00	EGL (ft)	= 5.26
<b>(Sta, El, n)-(Sta, El, n)...</b>			
(-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, -0.1478.78, 952.27, 0.050)-(-1528.03, 954.69, 0.080)			



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

**AS-BUILT**  
03/05/21

DATE	REVISION	NO.	BY	CHK/APP
03/05/21	AS-BUILT			
02/20/19	PER CITY COMMENTS	3	SPW	RKS
02/08/19	PER CITY COMMENTS	2	SPW	RKS
01/31/19	PER CITY COMMENTS	1	SPW	RKS
11/01/18	SUBMITTAL TO CITY OF LEE'S SUMMIT			
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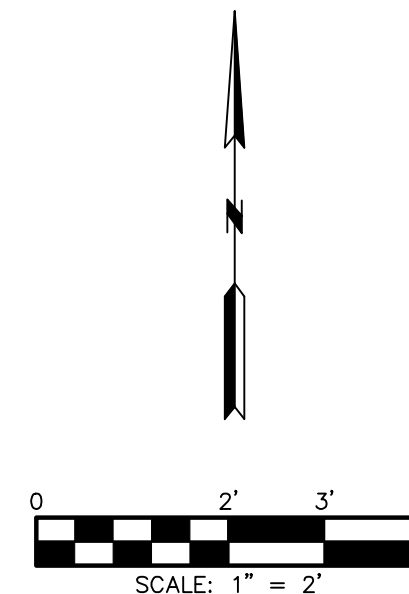
**Consult Inc engineers planners**  
11010 Haskell Street, Suite 210, Kansas City, Kansas 66109  
CORPORATE LICENSE No. E20100573 (MO.) / E-1736 (KS.)

**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  
SHEET  
OF

**7**



[illegible]

03/05/21