September 19, 2018

Missouri Department of Natural Resources Water Protection Program P.O. Box 176 Jefferson City, MO 65102-0176

Re: Creekside at Raintree, MO0101087, Construction Permit ID MOGC00242 Statement of Work Completed, As-Builts LandRock Development, L.L.C.

Dear Mr. Mefrakis,

Please find enclosed the following to support the closeout of the Creekside at Raintree Construction Permit:

- Completed Application for Letter of Authorization Sewer Extension, signed by the applicant (LandRock Development, LLC) and engineer.
- One (1) CD containing as-built PDF's of the sanitary sewer extension.

Please contact me at (816) 347-1136 or William.Neds@hdrinc.com should you have any questions.

Sincerely,

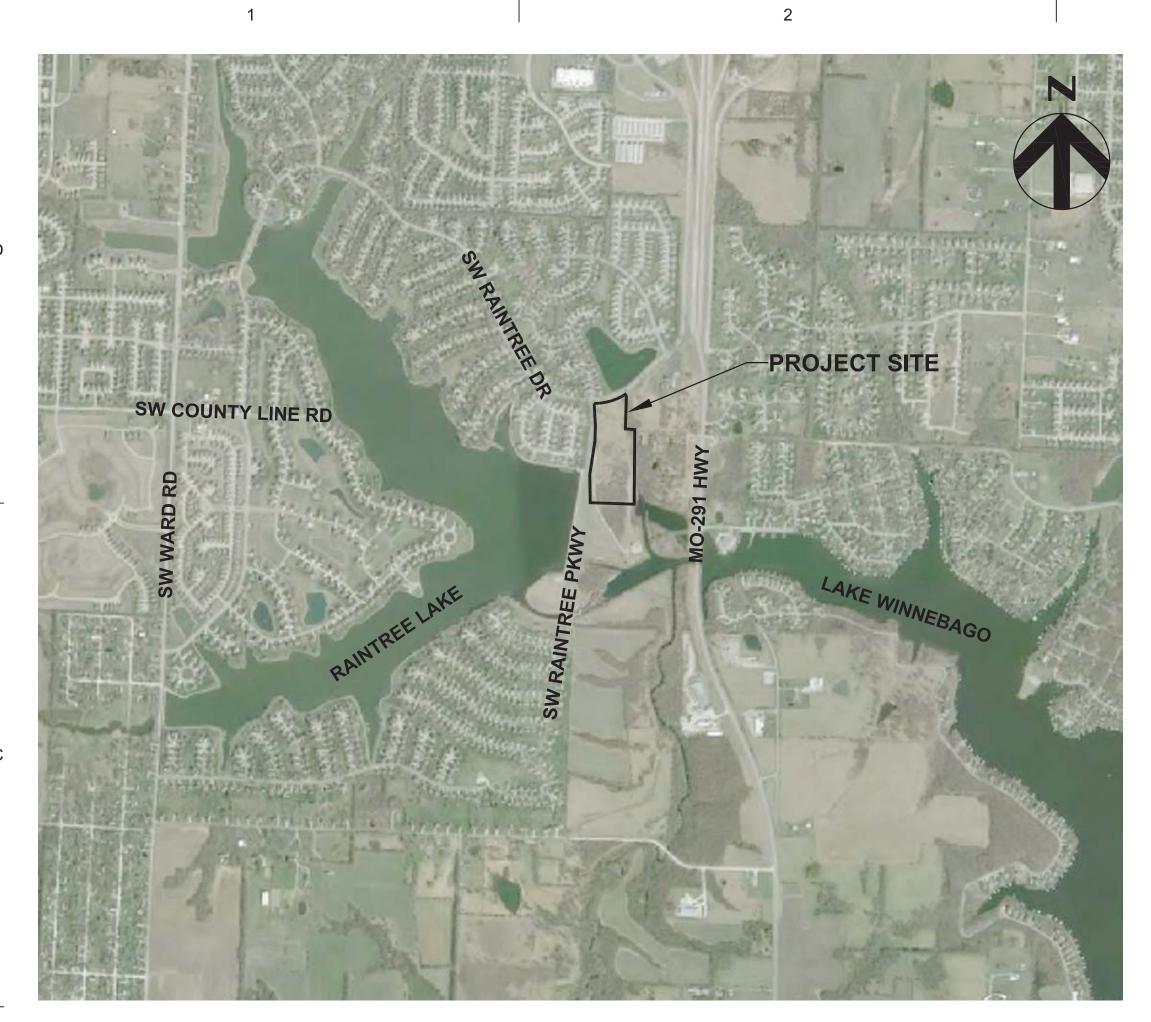
William Neds
Engineer in Training

Cc: JP Roberts LandRock Development, LLC



MISSOURI DEPARTMENT OF NATURAL RESOURCES WATER PROTECTION PROGRAM WASTEWATER CONSTRUCTION STATEMENT OF WORK COMPLETED

PART A - BASIC INFORMATION - All applicants	must com	plete	Part A.			
1. THIS FORM IS FOR:						
Construction is complete.						
Construction is substantially complete and of	perable.	Ex	pected date	e of completion:		
2. ISSUANCE OF AN OPERATING PERMIT:						
☐ Request issuance of the new/modified site-	specific o	perat	ing permit p	reviously public noti	ced. MO	
☐ Request general operating permit from the	appropria	te reç	gional office	at least 60 days prid	or to operation.	
MO-G; 🗍 Form B or 📗	Form E	E; 🔲	Appropriat	e fee		
No issuance of a new/modified operating pe	ermit is ne	ecess	ary.			
3. PROJECT INFORMATION						
NAME OF THE PROJECT Creekside at Raintree		(C)	MATED PROJECT	CONSTRUCTION COST	\$ 126,000.00	
CONSTRUCTION PERMIT # RE		RECE	•	TER TREATMENT FACILITY #	DEPARTMENT FUNDED PROJECT #	
4. AS-BUILT PLANS						
If construction is complete, an electronic copy of the as-builts is required and included with this form when: Nondepartment funded projects, in which changes from the previously submitted plans and specifications occurred. Department funded projects. N/A						
5. PROJECT OWNER: I hereby affirm that I am fam and belief such information is true, complete and according to the complete an	illiar with th urate.	he info	ormation con	tained in this form and	to the best of my knowledge	
AUTHORIZED SIGNATURE				TITLE OR CORPORATE POSITI Owner	ON	
John Roberts				9.27.20	8	
6. ENGINEER: I hereby affirm, to the best of my known and upon reports submitted by others, that this waste completed in accordance with the department's issue	water pro	ject is	substantially			
SIGNATURE	PRINTED				DATE 09-05 -2018	
CONSULTING FIRM NAME	Simon	Sun		LICENSE # AND SEAL	OF MISCON	
HDR, Inc.		***************************************			THE SOLD	
ADDRESS 3741 NE Troon Dr.					SIMON Z	
CITY Lee's Summit	STATE MO	ZIP CO 6406			SUN	
EMAIL ADDRESS simon.sun@hdrinc.com				A STATE OF THE STA	NUMBER PE-2017037511	
TELEPHONE NUMBER WITH AREA CODE (816) 347-1136				Y	STONAL ENGINEER	
Mail completed form and any attachments to one of t	the followin	ng:				
For Nondepartment-Funded Projects:		F	For Departme	ent-Funded Projects:	*	
MISSOURI DEPARTMENT OF NATURAL RESOUR WATER PROTECTION PROGRAM ATTN: ENGINEERING SECTION P.O. BOX 176 JEFFERSON CITY, MO 65102-0176	CES	\ F	WATER PRO ATTN: FINAI P.O. BOX 17	EPARTMENT OF NAT DTECTION PROGRAM NCIAL ASSISTANCE (6 I CITY, MO 65102-017	I CENTER	
	END	OF F	PART A.			



Permit Review Drawings For

CREEKSIDE AT RAINTREE LOTS 1 THRU 31 AND TRACTS A THRU F

SANITARY SEWER PLANS

IN THE CITY OF LEE'S SUMMIT JACKSON & CASS COUNTY, MISSOURI

SECTION 31, TOWNSHIP 47 N, RANGE 31 W SECTION 32, TOWNSHIP 47 N, RANGE 31 W SECTION 5, TOWNSHIP 46 N, RANGE 31 W

HDR Project No. 10028402-276408 Lee's Summit, MO February 2017

PLAN SHEET INDEX

01C-CR-SS-00	COVER SHEET
01C-CR-SS-01	GENERAL LAYOUT AND NOTES
01C-CR-SS-02	SANITARY SEWER PLAN AND PROFIL LINE 1-A
01C-CR-SS-03	SANITARY SEWER PLAN AND PROFIL LINE 1-A AND LINE 1-B
01C-CR-SS-04	SANITARY SEWER PLAN AND PROFIL LINE 1-C
01C-CR-SS-05	SANITARY SEWER DETAILS
01C-CR-SS-06	SANITARY SEWER DETAILS



MO STATE CERTIFICATE OF

PROJECT FOR

LANDROCK DEVELOPMENT, LLC

CREEKSIDE AT RAINTREE LOTS 1 THRU 31 LEE'S SUMMIT, MISSOURI

В	04/14/2017	CITY RESUBMITTAL
A	03/08/2017	CITY SUBMITTAL
MARK	DATE	DESCRIPTION
PROJEC	T NUMBER	10028825-276408
ORIGINA		MARCH 7, 2017
PROJEC	T MANAGER	SIMON SUN
	T ENGINEER	WILL NEDS, E.I.T.



SHEET NAME

COVER SHEET

SCALE

NO SCALE

SHEET NUMBER

01C-CR-SS-00

FILE NAME 01C-CR-SS-00.dwg

PERMIT REVIEW DRAWINGS

OWNER CONTACT

J.P. Roberts
Landrock Development, LLC
4335 McGee St
Kansas City, MO 64111
jp@landrocksignaturehomes.com
(816) 863-5588

CONSULTANT CONTACT

Simon Sun
HDR Engineering, Inc.
4435 Main St, Suite 1000
Kansas City, MO 64111
simon.sun@hdrinc.com
(816) 360-2765

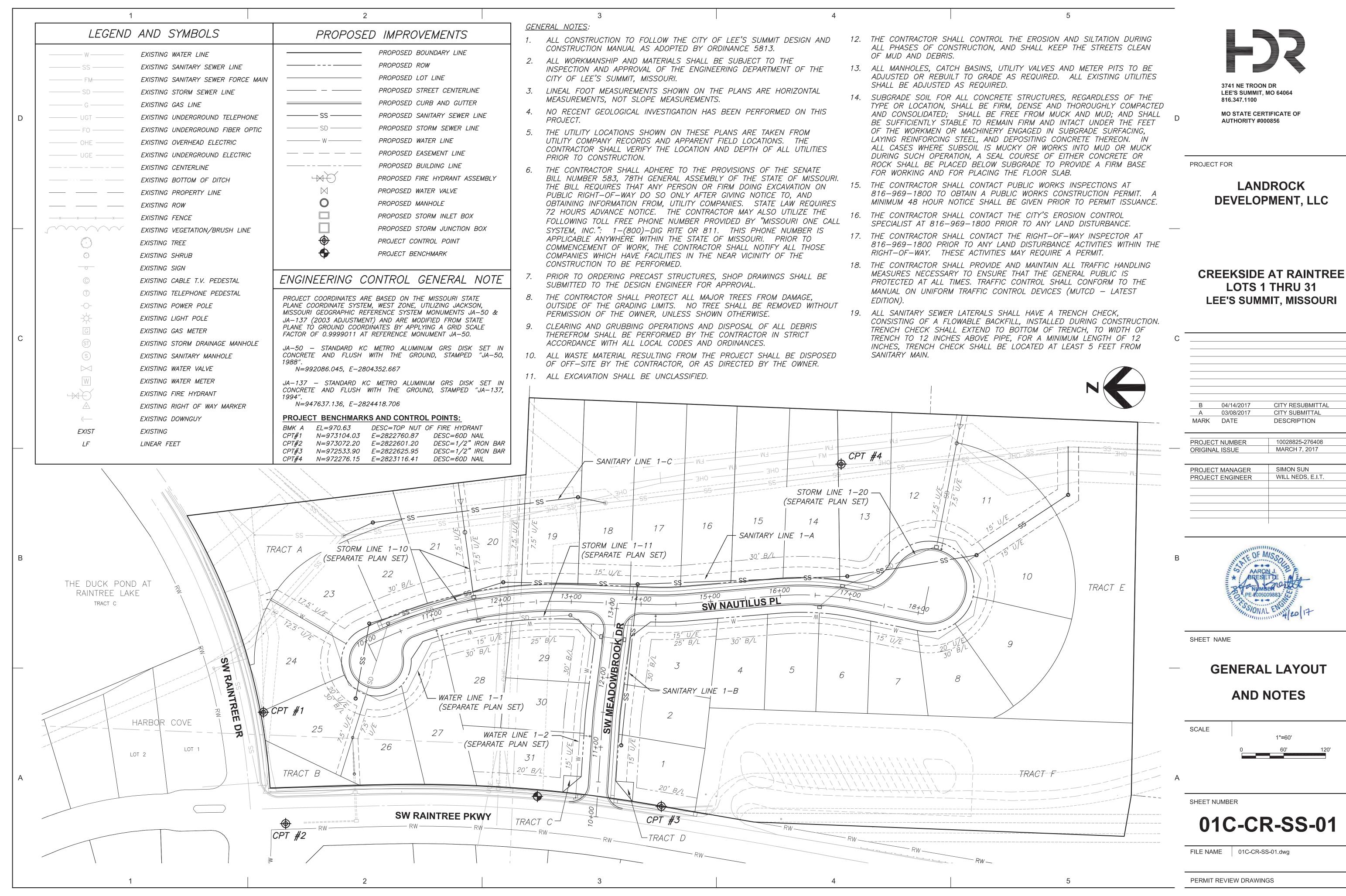
UTILITIES

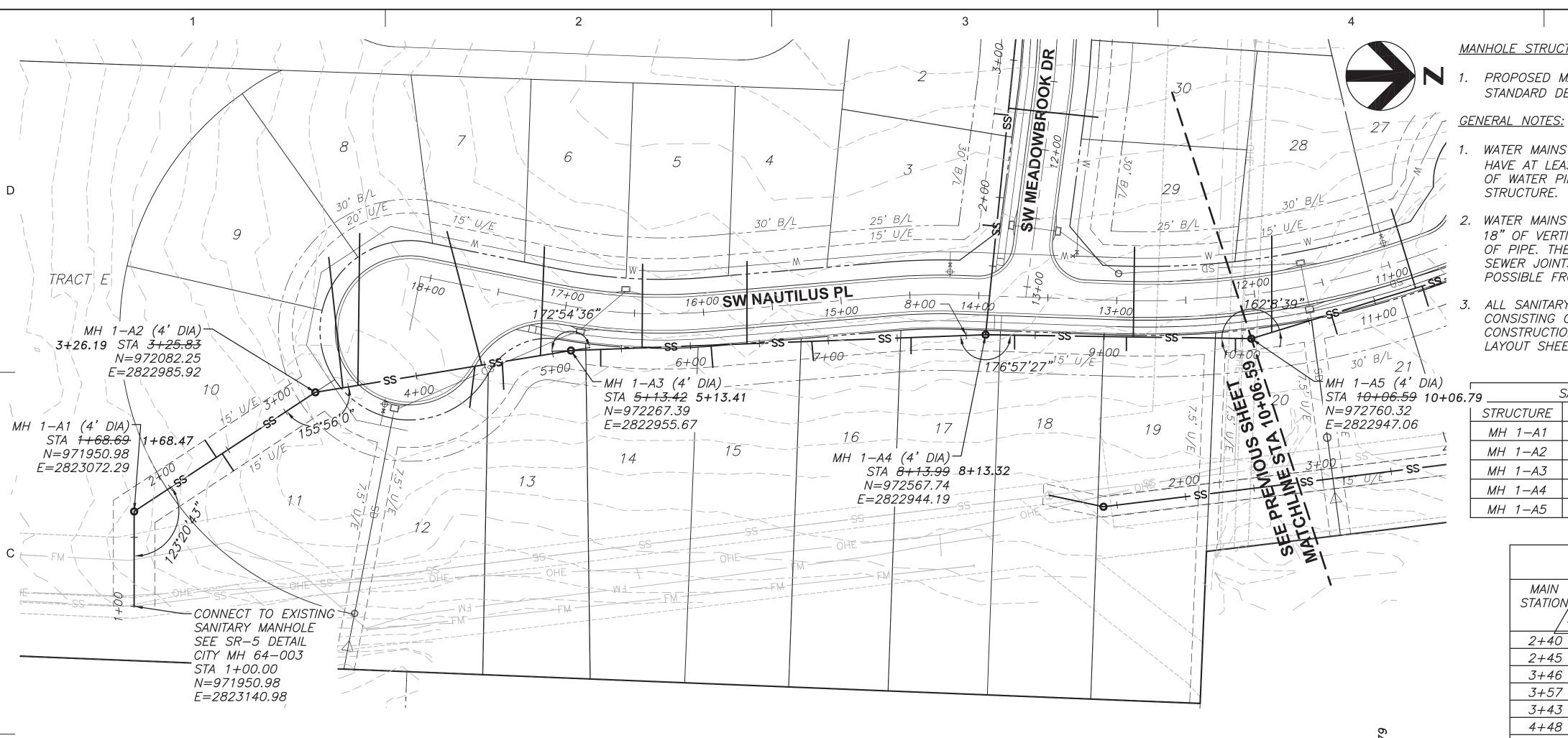
ELECTRIC: KCP&L	816-471-5275
GAS: LACLEDE GAS, MISSOURI GAS ENERGY DIVISION	816-756-5252
TELEPHONE: AT&T	816-325-5607
CABLE: TIME WARNER	816-358-8833
WATER: LEE'S SUMMIT WATER UTILITIES	816-969-1900
SEWER: LEE'S SUMMIT PUBLIC WORKS	816-969-1800
INTERCEPTOR SEWER: LITTLE BLUE VALLEY SEWER DISTRICT	816-796-7660



UTILITY NOTES:

VISUAL INDICATIONS OF UTILITIES ARE AS SHOWN. UNDERGROUND LOCATIONS SHOWN, AS FURNISHED BY THEIR LESSORS, ARE APPROXIMATE AND SHOULD BE VERIFIED IN THE FIELD AT THE TIME OF CONSTRUCTION. FOR ACTUAL FIELD LOCATIONS OF UNDERGROUND UTILITIES IN MISSOURI, CALL 1-800-344-7483.





MANHOLE STRUCTURE NOTE:

1. PROPOSED MANHOLES SHALL CONFORM TO LEE'S SUMMIT STANDARD DETAILS (SAN-2, SAN-3, AND SAN-4).

- 1. WATER MAINS AND SANITARY SEWER MAINS/STRUCTURES SHALL HAVE AT LEAST 10' OF HORIZONTAL SEPARATION FROM EDGE OF WATER PIPE TO EDGE OF SEWER PIPE OR SEWER STRUCTURE.
- WATER MAINS AND SANITARY SEWERS SHALL HAVE AT LEAST 18" OF VERTICAL SEPARATION FROM EDGE OF PIPE TO EDGE OF PIPE. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER MAIN JOINTS.
- ALL SANITARY SEWER LATERALS SHALL HAVE A TRENCH CHECK, CONSISTING OF FLOWABLE BACKFILL, INSTALLED DURING CONSTRUCTION. REFER TO GENERAL NOTE 19 ON GENERAL LAYOUT SHEET FOR ADDITIONAL INFORMATION.

79	SANITARY SEWER STRUCTUR	RE TABLE
STRUCTURE	STATION & OFFSET	STREET NAME
MH 1-A1	19+76.80, 208.44' LT	SW NAUTILUS PL
MH 1-A2	18+56.36, 97.65' LT	SW NAUTILUS PL
MH 1-A3	16+91.45, 31.63' LT	SW NAUTILUS PL
MH 1-A4	13+94.09, 28.26' LT	SW NAUTILUS PL
MH 1-A5	12+06.09, 31.84' LT	SW NAUTILUS PL

LINE 1-A - LATERAL TABLE

	MAIN STATION	MAIN INV @ LATERAL	MIN INV @ END LATERAL	LATERAL LENGTH	LOT SERVED
	2+40	932.76	934.39	15 LF	10
	2+45	932.99	934.62	10 LF	11
	3+46	937.39	940.62	95 LF	9
	<i>3+57</i>	937.50	941.03	110 LF	8
	<i>3+43</i>	937.36	939.29	30 LF	12
	4+48	938.40	941.73	100 LF	7
	4+63	938.55	940.48	30 LF	13
	4+91	938.83	941.66	75 LF	6
	<i>5+35</i>	939.75	941.28	10 LF	14
	5+65	940.05	942.68	65 LF	5
	6+15	940.55	942.08	10 LF	15
	6+41	940.80	943.43	65 LF	4
	6+88	941.27	942.80	10 LF	16
	7+60	941.99	943.52	10 LF	17
	<i>8+35</i>	942.89	945.75	10 LF	18
_	9+16	943.53	945.06	10 LF	19
	9+21	943.78	946.41	65 LF	29
	9+95	944.15	945.68	10 LF	20

"AS-BUILT" August 24, 2018

LATERAL TABLE CONTAINS DESIGN ELEVATIONS. HOME BUILDERS SHALL FIELD VERIFY AS—BUILT LATERAL ELEVATIONS



3741 NE TROON DR LEE'S SUMMIT, MO 64064 816.347.1100

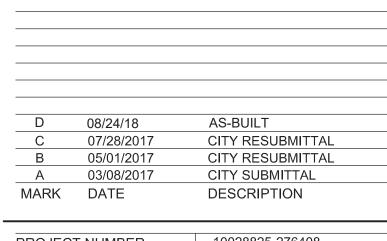
MO STATE CERTIFICATE OF

AUTHORITY #000856

PROJECT FOR

LANDROCK **DEVELOPMENT, LLC**

CREEKSIDE AT RAINTREE LOTS 1 THRU 31 LEE'S SUMMIT, MISSOURI

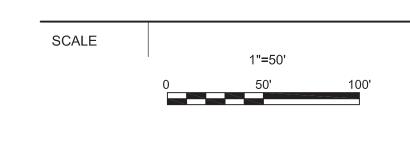


	PROJECT NUMBER	10028825-276408
•	ORIGINAL ISSUE	MARCH 7, 2017
_		
	PROJECT MANAGER	SIMON SUN
	PROJECT ENGINEER	WILL NEDS, E.I.T.



SHEET NAME

SANITARY SEWER PLAN AND PROFILE LINE 1-A STA 1+00 TO STA 10+06.59



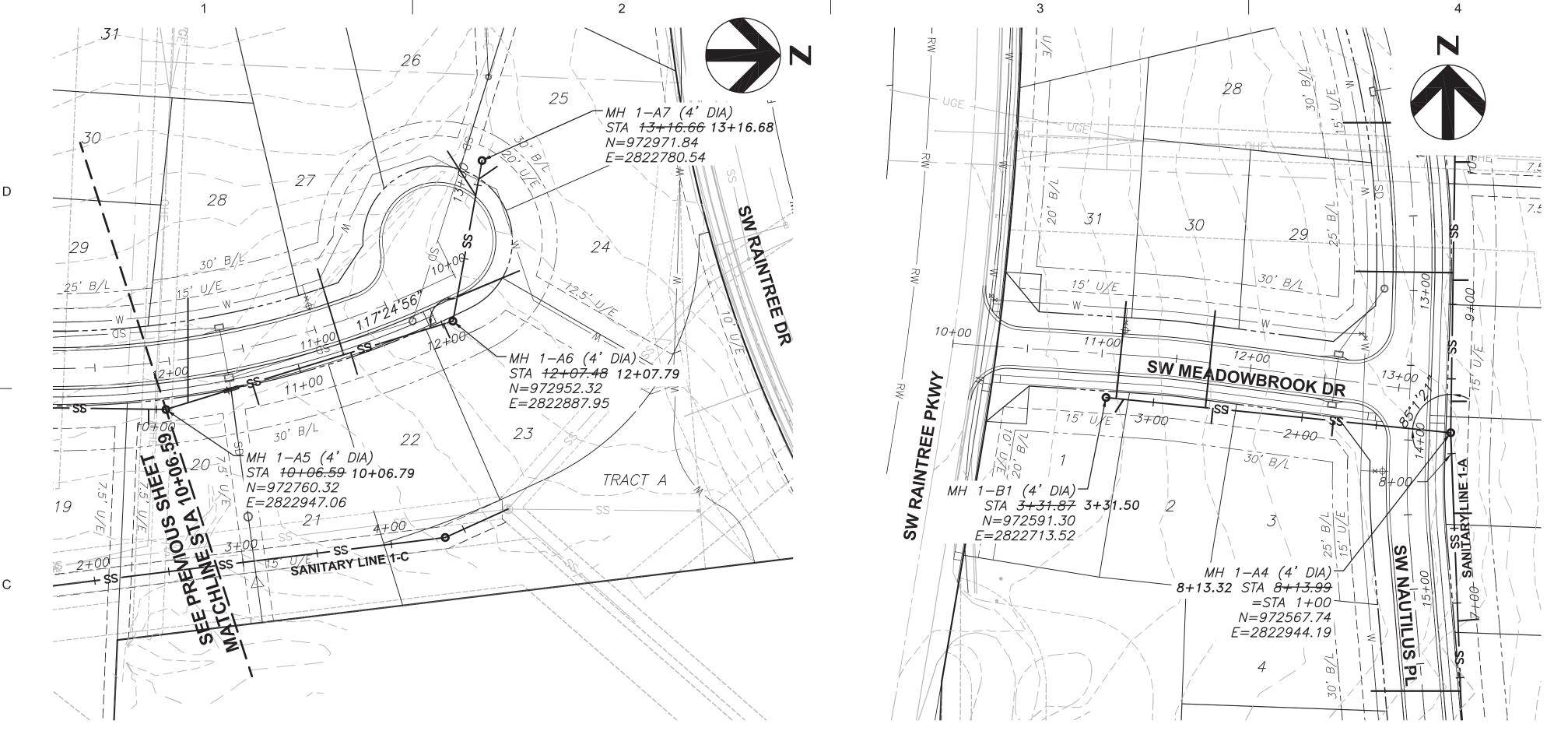
SHEET NUMBER

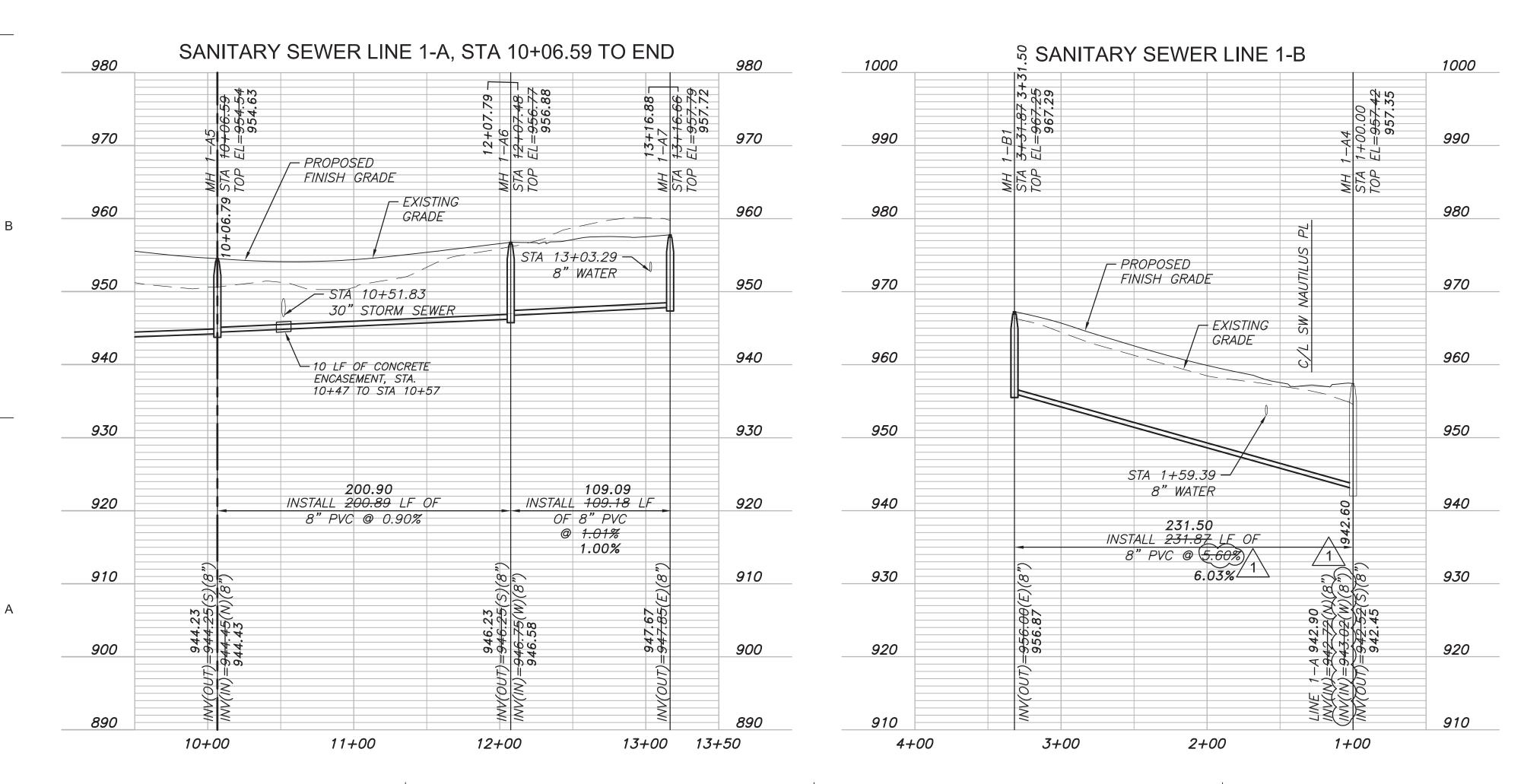
01C-CR-SS-02

FILE NAME 01C-CR-SS-02.dwg

PERMIT REVIEW DRAWINGS

980_	88.47	6.19	SANITARY SEWER LINE 1-A, STA	. 1+00 TO STA 10+06.59	3.32	980	
970_	MH 64-0 1+00 EL=932.6 932.48 SOP MH 1-		S+13.41 MH 1-A3 STA 5+13.42 TOP EL=953.45 953.28			10P EL=954.54 954.63 954.63	0 8
<i>960</i> _	O(0)	2 80,2		PROPOSED FINISH GRADE		960	8
950_		EXISTING — GRADE				950	
940_	STA 1		STA 4+67.98 18" HDPE			940	2
		68.47				930	2
920_	7.7 7.4.43 929.40	INSTALL 68.69 LF OF 8" PVC @ 1.09% 1.56% 157.72 INSTALL 157.14 LF OF 8" PVC @ 4.57% 6.89% 1	187.22 INSTALL 187.59 LF OF 8" PVC @ 0.99% 1.01%	299.91 INSTALL 300.57 LF OF 8" PVC @ 0.99% 0.98%	193.47 INSTALL 192.60 LF OF 8" PVC @ 0.79% 0 6 0.84%	920	2
910	0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03	5.80 (NW 5.80 (NW (SE)(8")	(8)(8)		(2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	0)
900	(N) = 924.75(M) $(NV(N)) = 923.6$ $(OUT) = 925.50$ $(NV) = 925.50$	8" PVC @ 4.57%) 6.89% 1	1NV(OUT) = 939.05 1NV(IN) = 939.04 1NV(IN) = 939.50 939.50	942.45 	WV (IV) = 943.02 (W) (8") 942.60 WV (IV) = 944.23 WV (IV) = 944.	900 1 4 9 1 4 9 1 7 9	2
890	1+00	2+00 3+00		+00 7+00 8+00	9+00 10+00	890 0 10+50	<u>)</u>





MANHOLE STRUCTURE NOTE:

1. PROPOSED MANHOLES SHALL CONFORM TO LEE'S SUMMIT STANDARD DETAILS (SAN-2, SAN-3, AND SAN-4).

GENERAL NOTES:

- 1. WATER MAINS AND SANITARY SEWER MAINS/STRUCTURES SHALL HAVE AT LEAST 10' OF HORIZONTAL SEPARATION FROM EDGE OF WATER PIPE TO EDGE OF SEWER PIPE OR SEWER STRUCTURE.
- 2. WATER MAINS AND SANITARY SEWERS SHALL HAVE AT LEAST 18" OF VERTICAL SEPARATION FROM EDGE OF PIPE TO EDGE OF PIPE. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER MAIN JOINTS.
- 3. ALL SANITARY SEWER LATERALS SHALL HAVE A TRENCH CHECK, CONSISTING OF FLOWABLE BACKFILL, INSTALLED DURING CONSTRUCTION. REFER TO GENERAL NOTE 19 ON GENERAL LAYOUT SHEET FOR ADDITIONAL INFORMATION.

9	SANITARY SEWER STRUCTUR	RE TABLE
STRUCTURE	STATION & OFFSET	STREET NAME
MH 1-A6	10+13.95, 27.97 LT	SW NAUTILUS PL
MH 1-A7	9+49.96, 60.31° RT	SW NAUTILUS PL
MH 1-B1	11+04.56, 29.27° RT	SW MEADOWBROOK DR

	LINE 1-A	– LATER	AL TABLE	
MAIN STATION	MAIN INV @ LATERAL	MIN INV @ END LATERAL	LATERAL LENGTH	LOT SERVEL
10+22	944.58	947.31	70 LF	28
10+67	944.89	946.52	15 LF	21
11+31	945.56	948.08	60 LF	27
11+36	945.60	947.23	15 LF	22
12+01	945.14	946.67	10 LF	23
12+24	946.92	949.15	45 LF	24
12+93	947.61	949.64	35 LF	26
13+04	947.72	949.35	15 LF	25

	LINE 1-B	- LATER	AL TABLE	
MAIN STATION	MAIN INV @ LATERAL	MIN INV @ END LATERAL	LATERAL LENGTH	LOT SERVED
1+79	(947.44	948.97	10 LF	3
2+60	951.48	953.01)	10 LF	2
2+65	952.26	954.89)	65 LF	30
3+20	955.34	957.97 🕽	10 LF	1
<i>3+25</i>	955.62	957.15)	65 LF	31

"AS-BUILT" August 24, 2018

LATERAL TABLE CONTAINS DESIGN ELEVATIONS. HOME BUILDERS SHALL FIELD VERIFY AS—BUILT LATERAL ELEVATIONS



3741 NE TROON DR LEE'S SUMMIT, MO 64064 816.347.1100

MO STATE CERTIFICATE OF AUTHORITY #000856

PROJECT FOR

LANDROCK DEVELOPMENT, LLC

CREEKSIDE AT RAINTREE LOTS 1 THRU 31 LEE'S SUMMIT, MISSOURI

D	08/24/18	AS-BUILT
С	07/07/2017	CITY RESUBMITTAL
	05/01/2017	CITY RESUBMITTAL
В	00,0.,=0	
B A	03/08/2017	CITY SUBMITTAL

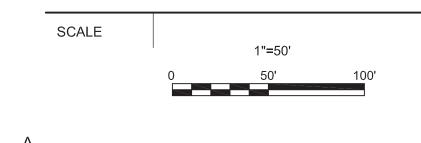
PROJECT NUMBER	10028825-276408
ORIGINAL ISSUE	MARCH 7, 2017
PROJECT MANAGER	SIMON SUN
-	

PROJECT MANAGER	SIMON SUN
PROJECT ENGINEER	WILL NEDS, E.I.T.



SHEET NAME

SANITARY SEWER PLAN AND PROFILE LINE 1-A STA 10+06.59 TO END LINE 1-B

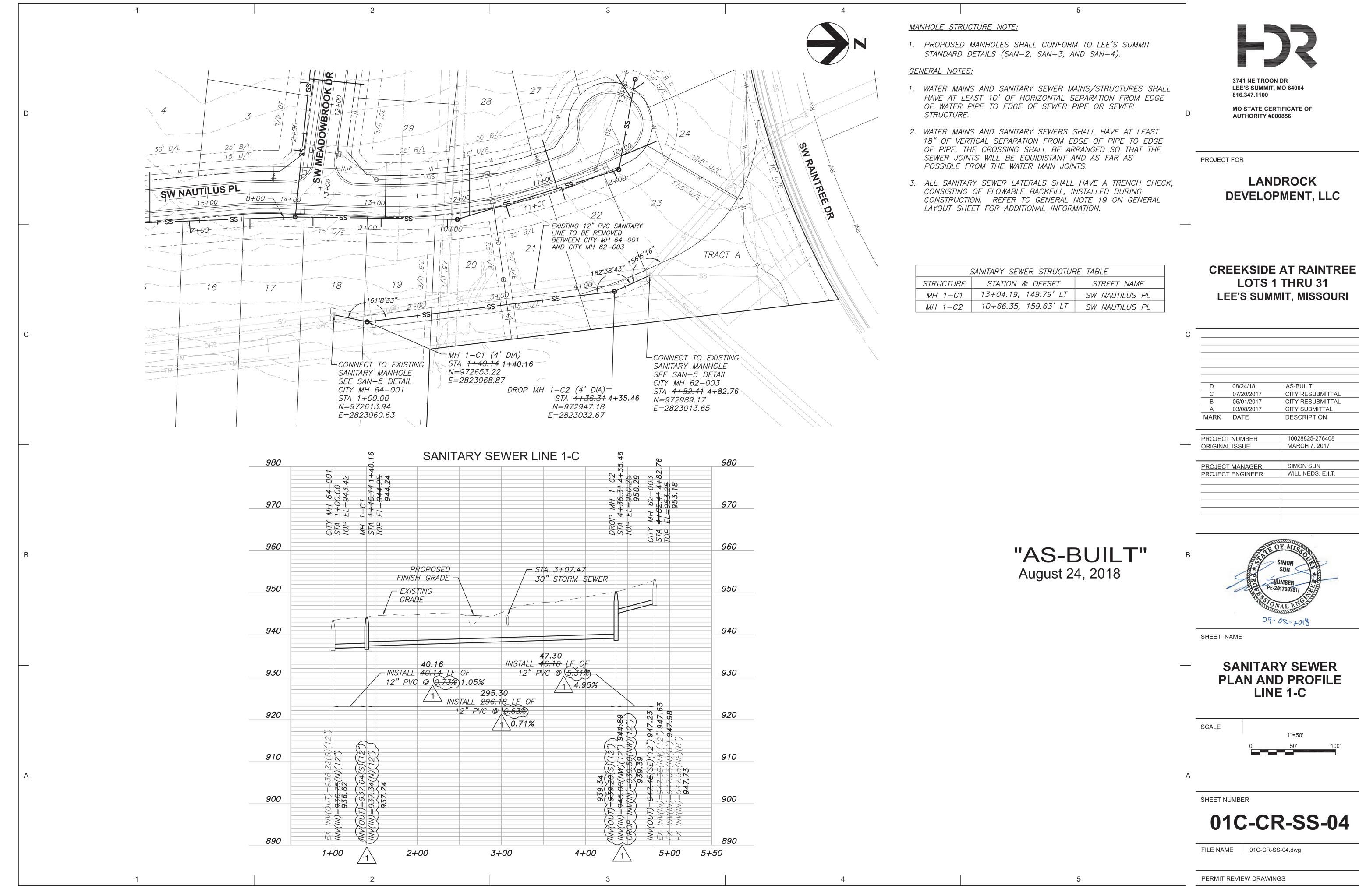


SHEET NUMBER

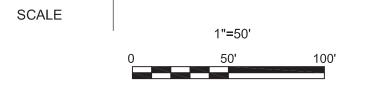
01C-CR-SS-03

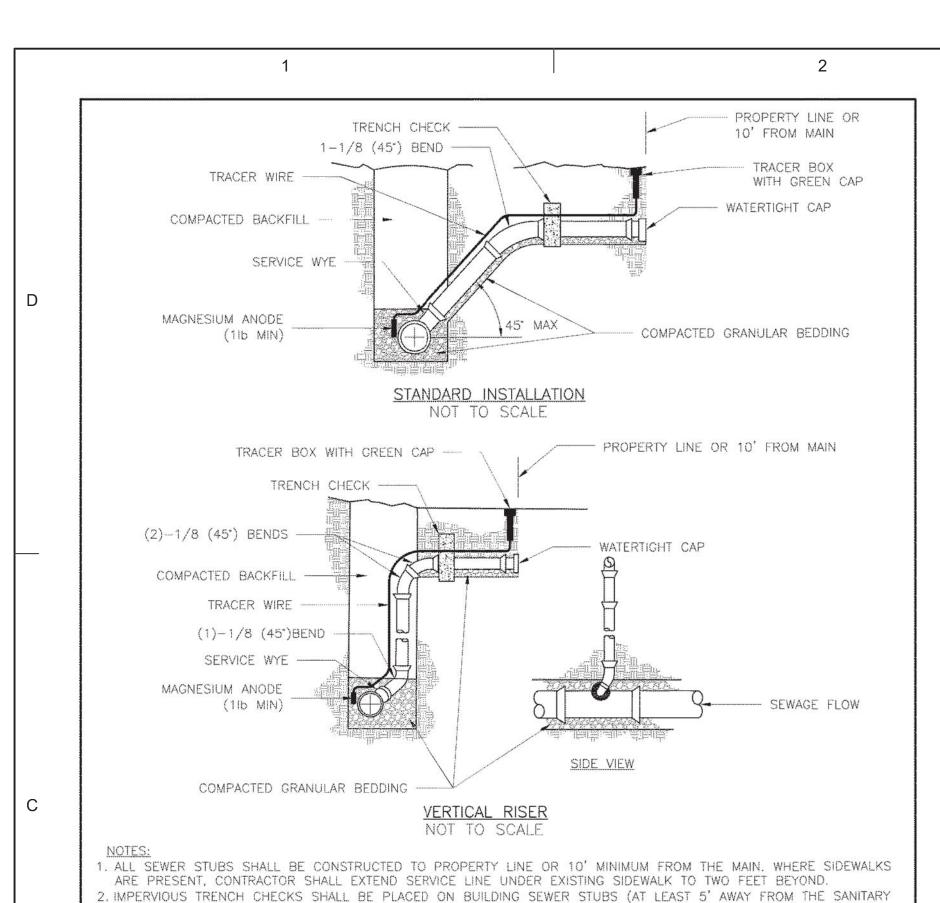
FILE NAME 01C-CR-SS-03.dwg

PERMIT REVIEW DRAWINGS



	PROJECT NUMBER	10028825-276408
-	ORIGINAL ISSUE	MARCH 7, 2017
•	PROJECT MANAGER	SIMON SUN
	PROJECT ENGINEER	WILL NEDS, E.I.T.





3. TRENCH CHECKS ON THE BUILDING SEWER STUBS SHALL EXTEND 6" BELOW THE BOTTOM OF THE PIPE. LENGTH

THE WIDTH OF THE TRENCH CHECK SHALL BE THE WIDTH OF THE TRENCH.

INSTALLED DIRECTLY ABOVE THE SEWER SERVICE OR AS DETERMINED BY THE ENGINEER.

GREEN CAST IRON LOCKABLE TOP. WIRE SHALL BE TAPED OR TIED TO THE PIPE AT 5' INTERVALS.

4. SEE SPECIFICATION SECTION 2100 FOR SEWER MAIN BEDDING AND BACKFILL

". TRACER WIRE BOX SHALL BE INSTALLED WITHIN 1.0" OF PROPERTY LINE.

NECESSARY TO PREVENT CORROSION.

SHALL BE A MINIMUM OF 12". THE HEIGHT OF THE TRENCH CHECK SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE.

5. #12 GAUGE GREEN INSULATED COPPER TRACER WIRE SHALL BE INSTALLED. TRACER WIRE TERMINAL BOXES SHALL BE

6. FOR SERVICES, TRACER WIRE SHALL RUN FROM THE WYE AND TERMINATE IN A FLUSH MOUNTED TRACER BOX WITH A

<u>SAN-1</u>

8. THE TRACER WIRE SHALL REMAIN CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. SPLICES IN THE TRACER WIRE SHOULD BE MADE WITH SPLIT BOLT CONNECTORS. WIRE NUTS SHALL NOT BE USED. A WATER-PROOF CONNECTION IS

LEE'S SUMMIT

MISSOURI

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

BUILDING SEWER STUB AND RISER

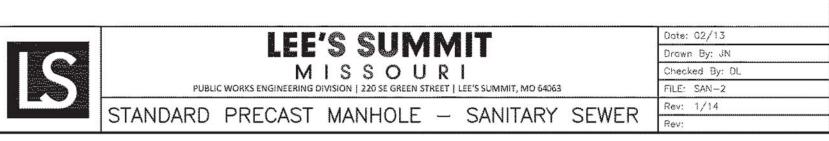
PROVIDE JOINT SEALANT BETWEEN ALL JOINTS AND WRAP EXTERIOR OF JOINTS IN ACCORDANCE WITH SECTION 12" MAXIMUM ADJUSTING RINGS AS REQUIRED 4" MIN (SEE NOTE 2) " MIN IF < 24"0 PIPE MIN IF > 24"0 PIPE SPRING LINE INTEGRAL CAST BASE 4 1 1 10 5 X 4.4 6" OF COMPACTED BEDDING AGGREGATE COMPACTED OR UNDISTURBED EARTH

REFER TO THE APPROVED PRODUCTS LIST

FINISH GRADE

FOR WATER UTILITIES FOR MANHOLE CASTINGS

- 1. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478 EXCEPT AS MODIFIED BY THE SPECIFICATIONS. 2. A WALL THICKNESS NOT LESS THAN ONE-TWELFTH (1/12) OF THE INSIDE DIAMETER OR 4", WHICHEVER IS
- GREATER, SHALL BE USED WHEN THE MANHOLE DEPTH IS LESS THEN 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
- 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.

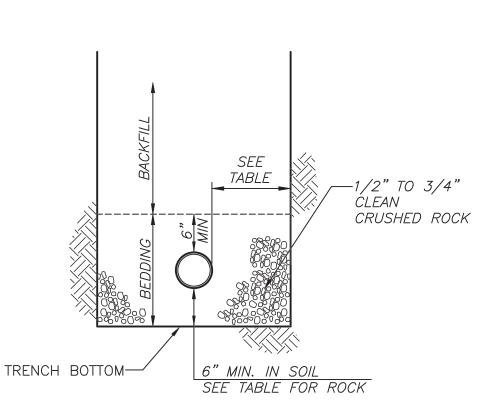


REFER TO THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR MANHOLE CASTINGS 4' MIN IF 4" MIN. < 24" Ø PIPE (SEE NOTE 2) - SPRING LINE 5' MIN IF > 24" Ø PIPE - INTEGRAL CAST BASE — 6" OF COMPACTED AGGREGATE BEDDING - COMPACTED OR UNDISTURBED EARTH **ELEVATION**

- 1. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478 EXCEPT AS MODIFIED BY THE SPECIFICATIONS, 2. A WALL THICKNESS NOT LESS THAN ONE-TWELFTH (1/12) OF THE INSIDE DIAMETER OR 4", WHICHEVER IS
- GREATER SHALL BE USED. 3. WATERPROOFING SHALL BE REQUIRED ON THE OUTSIDE OF MANHOLES. THE WATERPROOFING SHALL CONSIST OF A TOTAL DRY FILM THICKNESS OF NOT LESS THEN 14 MILS OF BITUMINOUS COATING.
- 4. THE FILL CONCRETE FLOW CHANNEL FOR SIDE BRANCHES SHALL BE PLACED TO PROVIDE A SMOOTH TRANSITION
- 5. REFER TO THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR MANHOLE GASKET MODELS.
- 6. PROVIDE STEPS AS SHOWN ON THE APPROVED PRODUCTS LIST FOR MANHOLE DEPTHS GREATER THAN 4'.

S	LEE'S SUMMIT	Date: 02/13
	LEE 3 3 WIVINII	Drawn By: JN
	MISSOURI	Checked By: DL
	PUBLIC WORKS ENGINEERING DIVISION 220 SE GREEN STREET LEE'S SUMMIT, MO 64063	FILE: SAN-3
	CHALLOW DECACT MANUALE CANITADY SEWED	Rev: 1/14
	SHALLOW PRECAST MANHOLE - SANITARY SEWER	Rev:

<u>SAN-3</u> <u>SAN-2</u>



TYP PIPE ENVELOPE (PVC)

MINIMUM TRENCH WIDTHS AND PIPE CLEARANCES (IN) PIPE SIDE PIPE BOTTOM CLEARANCE CLEARANCE NOMINAL PIPE TRENCH (SOIL/ROCK) (SOIL/ROCK) DIAMETER WIDTH 22 6/6 6/6 6 8 22 6/6 6/6 10 24 6/6 6/6 12 27 6/6 6/6

NOTES:

- 1. BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 2100 OF THE KCMETRO APWA SPECIFICATIONS.
- 2. BEDDING MATERIAL SHALL BE 1/2" TO 3/4" CLEAN CRUSHED ROCK.

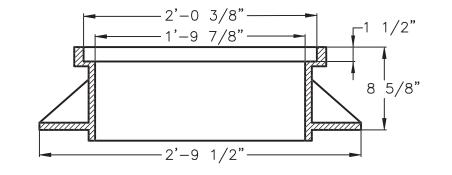
rawn By: SC

Checked By: DL

FILE: SAN-1

Rev: 10/15

- 3. TRENCH BANKS SHALL BE CUT BACK ON SLOPES IN ACCORDANCE WITH CURRENT OSHA REGULATIONS. SLOPES MUST NOT EXTEND BELOW 7. MAXIMUM TRENCH WIDTH SHALL NOT EXCEED TOP OF BEDDING.
- 4. ALL PUBLIC SANITARY SEWER MAINS SHALL BE 8" PVC, SDR-26, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- 5. ALL PRIVATE SANITARY SEWER LATERALS SHALL BE 4" PVC, SDR-26.
- 6. ALL WATER LINES SHALL HORIZONTALLY CLEAR STORM SEWER STRUCTURES BY 5' AND SANITARY SEWER STRUCTURES BY 10'. WATER MAINS SHALL VERTICALLY CLEAR STORM SEWER STRUCTURES AND SANITARY SEWER STRUCTURES BY 18".
- MANUFACTURER'S RECOMMENDATIONS. MAXIMUM TRENCH WIDTH IS DEFINED AS THE HORIZONTAL PLANE MEASURED 6" ABOVE THE TOP OF PIPE, PERPENDICULAR TO THE SEWER ALIGNMENT.



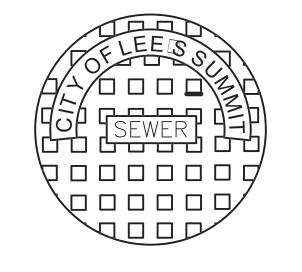
STANDARD 24" MANHOLE FRAME LEE'S SUMMIT PART NO.: LS101A MINIMUM WEIGHT = 250 LB MATCHING COVER: LS101B

<u>NOTE</u>:

NOT TO SCALE

REFER TO WATER UTILITIES LIST OF APPROVED MANUFACTURER'S.





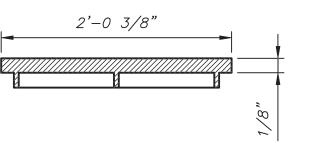
MINIMUM WEIGHT = 160 LB MATCHING FRAME: LS101A NOTE: PICK HOLES NOT SHOWN.

STANDARD 24" MANHOLE COVER

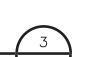
LEE'S SUMMIT PART NO.: LS101B

<u>NOTE</u>:

REFER TO WATER UTILITIES LIST OF APPROVED MANUFACTURER'S.



24" MANHOLE COVER



3741 NE TROON DR LEE'S SUMMIT, MO 64064 816.347.1100

MO STATE CERTIFICATE OF AUTHORITY #000856

PROJECT FOR

LANDROCK **DEVELOPMENT, LLC**

CREEKSIDE AT RAINTREE LOTS 1 THRU 31 LEE'S SUMMIT, MISSOURI

В	04/14/2017	CITY RESUBMITTAL
Α	03/08/2017	CITY SUBMITTAL
MARK	DATE	DESCRIPTION

	MARK DATE	DEGGIAII TION
•		4000005 070400
	PROJECT NUMBER	10028825-276408
_	ORIGINAL ISSUE	MARCH 7, 2017

PROJECT MANAGER	SIMON SUN
PROJECT ENGINEER	WILL NEDS, E.I.T.

SHEET NAME

SANITARY SEWER

DETAILS

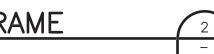
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SHEET NUMBER

01C-CR-SS-05

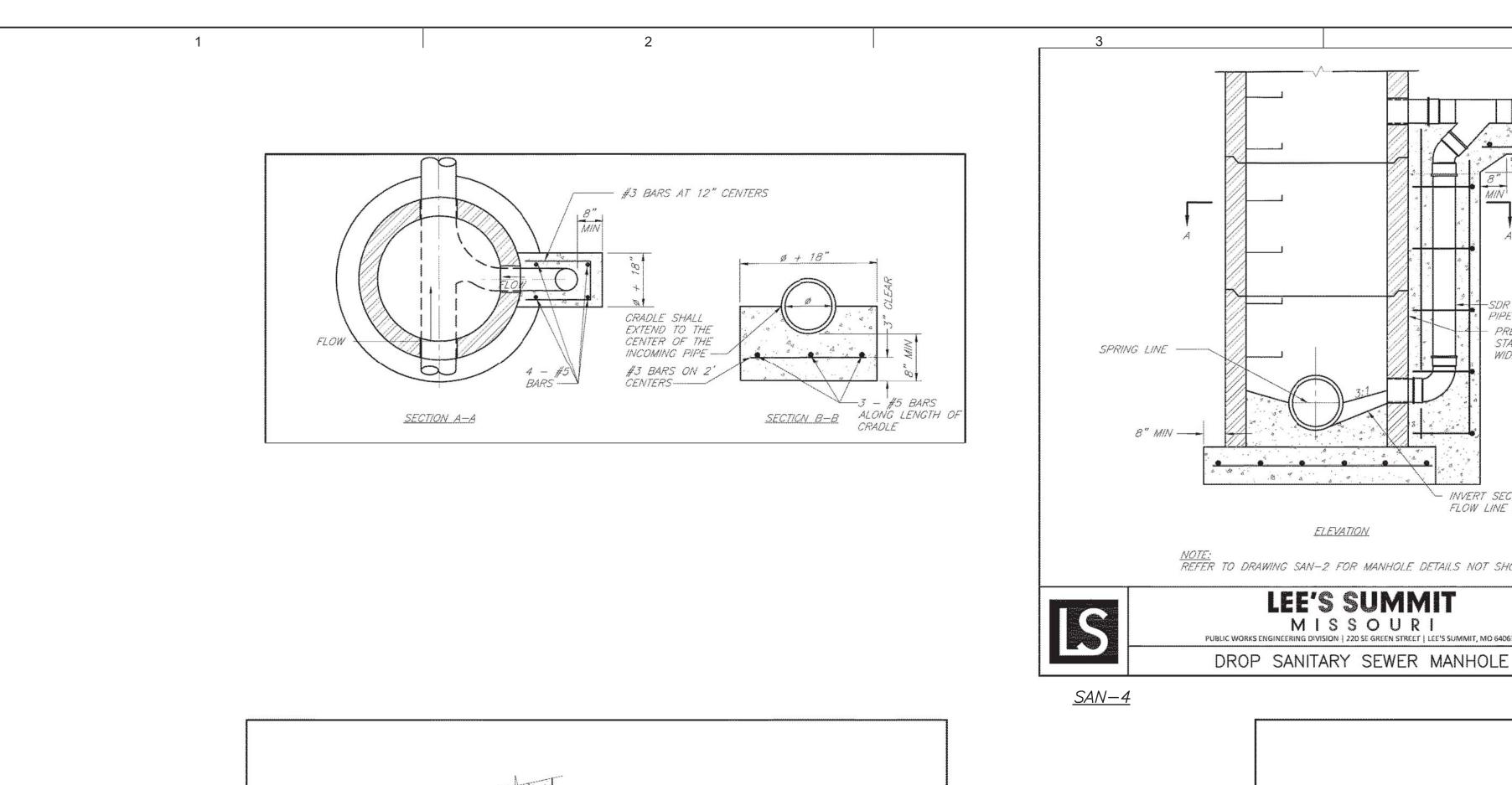
FILE NAME 01C-CR-SS-05.dwg

UNDERGROUND PIPE INSTALLATION FOR SANITARY SEWER LINES NOT TO SCALE



NOT TO SCALE

PERMIT REVIEW DRAWINGS



TO UNDISTURBED EARTH AND TO THE FIRST JOINT IN THE NORMAL SEWER PRECAST CONCRETE MANHOLE PER STANDARD DETAIL SAN-5 EXCEPT FOR WIDER BASE UNDISTURBED EARTH INVERT SECTION SHOWN ALONG FLOW LINE OF INCOMING INVERT ELEVATION NOTE: REFER TO DRAWING SAN—2 FOR MANHOLE DETAILS NOT SHOWN. LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063 Checked By: DL FILE: SAN-4

Rev: 1/14

<u>SAN-7</u>

Drawn By: JN

FILE: SAN-7

Rev. 1/14

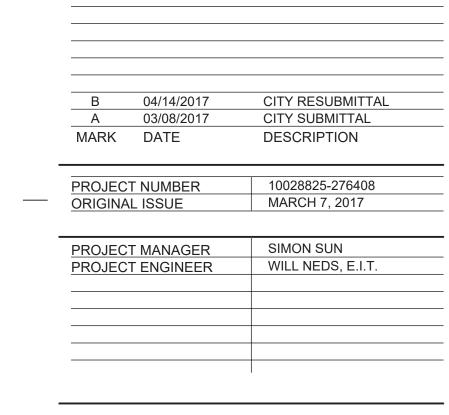
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3741 NE TROON DR LEE'S SUMMIT, MO 64064 816.347.1100 MO STATE CERTIFICATE OF **AUTHORITY #000856**

PROJECT FOR

LANDROCK **DEVELOPMENT, LLC**

CREEKSIDE AT RAINTREE LOTS 1 THRU 31 LEE'S SUMMIT, MISSOURI





SHEET NAME

SANITARY SEWER

DETAILS

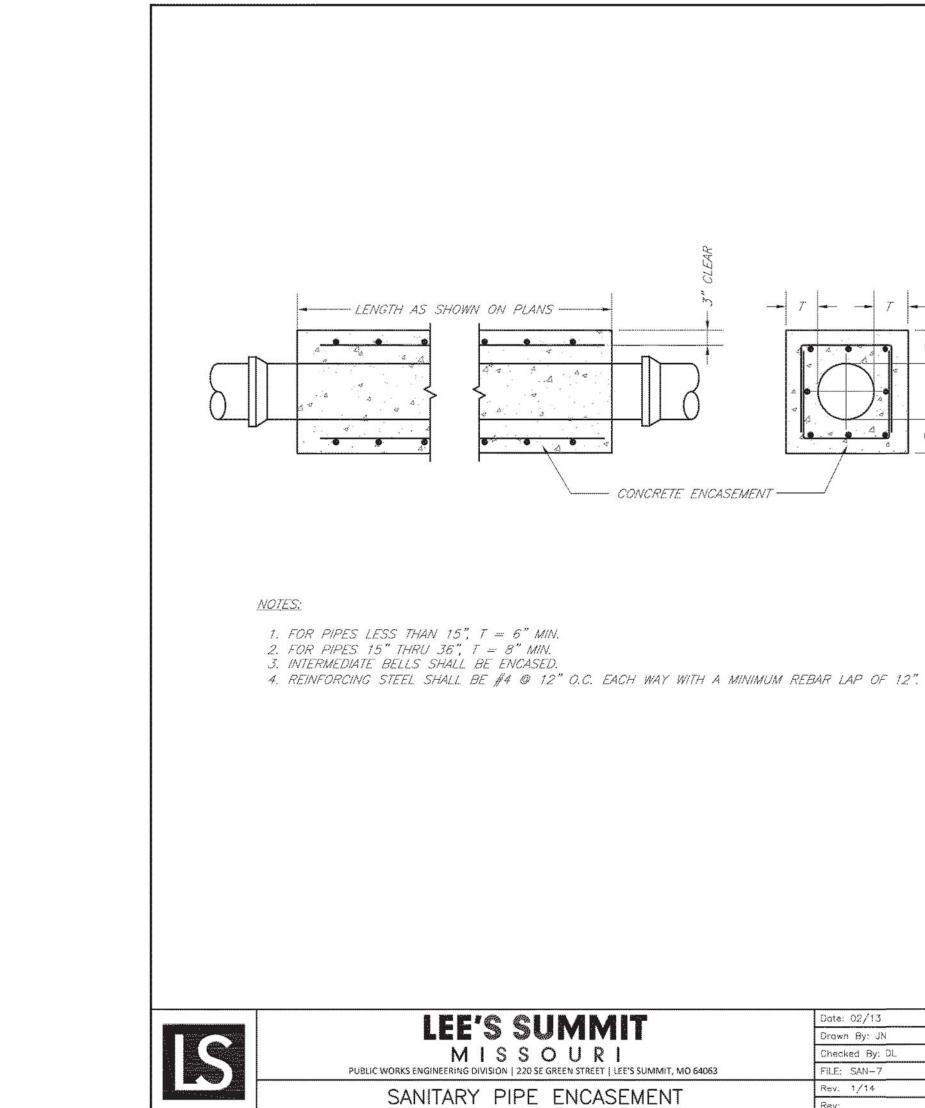
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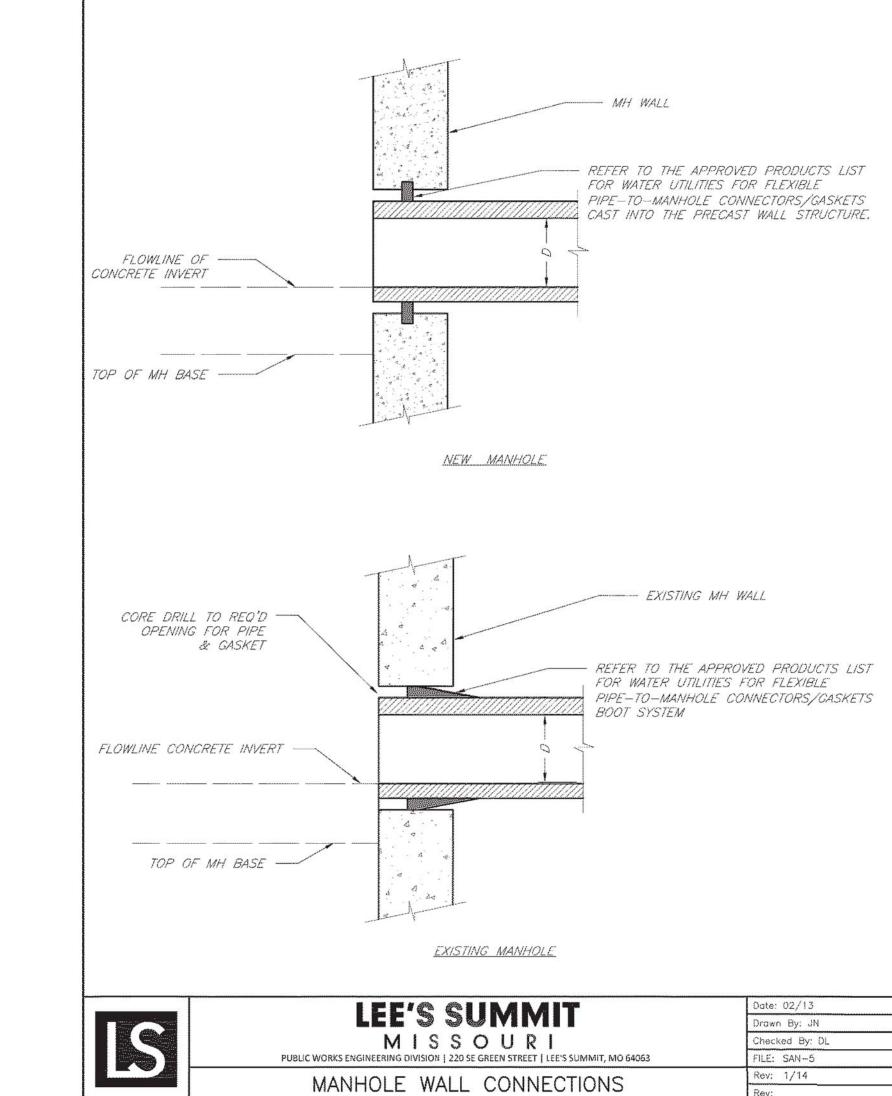
SHEET NUMBER

01C-CR-SS-06

FILE NAME 01C-CR-SS-06.dwg

PERMIT REVIEW DRAWINGS





<u>SAN-5</u>