

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  
April 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 PROFILE LINE 1-A
01C-CR-SS-03	SANITARY SEWER PLAN AND PROFILE LINE 1-A AND LINE 1-B
01C-CR-SS-04	SANITARY SEWER PLAN AND PROFILE LINE 1-C
01C-CR-SS-05	SANITARY SEWER DETAILS
01C-CR-SS-06	SANITARY SEWER DETAILS



3741 NE TROON DR  
LEE'S SUMMIT, MO 64084  
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**

B	04/20/2017	CITY RESUBMITTAL
A	03/08/2017	CITY SUBMITTAL
MARK	DATE	DESCRIPTION

PROJECT NUMBER	10028402-276408
ORIGINAL ISSUE	MARCH 7, 2017

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

**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

**CITY OF LEE'S SUMMIT  
PUBLIC WORKS DEPARTMENT  
DEVELOPMENT ENGINEERING GROUP**

STREETS: Approved By: \_\_\_\_\_ Date: \_\_\_\_\_  
TRAFFIC: Approved By: \_\_\_\_\_ Date: \_\_\_\_\_  
WATER: Approved By: *Suches for KM* Date: *7/3/17*

Approval by the City Engineer, or designee does not release the applicant from responsibilities to comply with all City of Lee's Summit Ordinances and sound engineering/construction practices.

\_\_\_\_ PW Records \_\_\_\_\_ PW Insp \_\_\_\_\_ Reviewer  
\_\_\_\_ P&D/Codes \_\_\_\_\_ Dev. File \_\_\_\_\_ ITS



SHEET NAME  
**COVER SHEET**

SCALE  
NO SCALE

SHEET NUMBER  
**01C-CR-SS-00**

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

PERMIT REVIEW DRAWINGS



Know what's below.  
Call before you dig.

**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.

PRP WFR 2017/420



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

MO STATE CERTIFICATE OF  
AUTHORITY #000856

PROJECT FOR

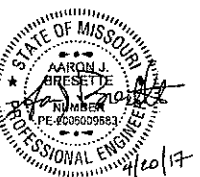
**LANDROCK  
DEVELOPMENT, LLC**

**CREEKSIDE AT RAIN TREE  
LOTS 1 THRU 31  
LEE'S SUMMIT, MISSOURI**

B	04/20/2017	CITY RESUBMITTAL
A	03/08/2017	CITY SUBMITTAL
MARK	DATE	DESCRIPTION

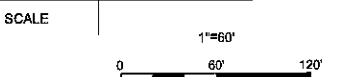
PROJECT NUMBER	10028825-276408
ORIGINAL ISSUE	MARCH 7, 2017

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



SHEET NAME

**GENERAL LAYOUT  
AND NOTES**



SHEET NUMBER

**01C-CR-SS-01**

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

PERMIT REVIEW DRAWINGS

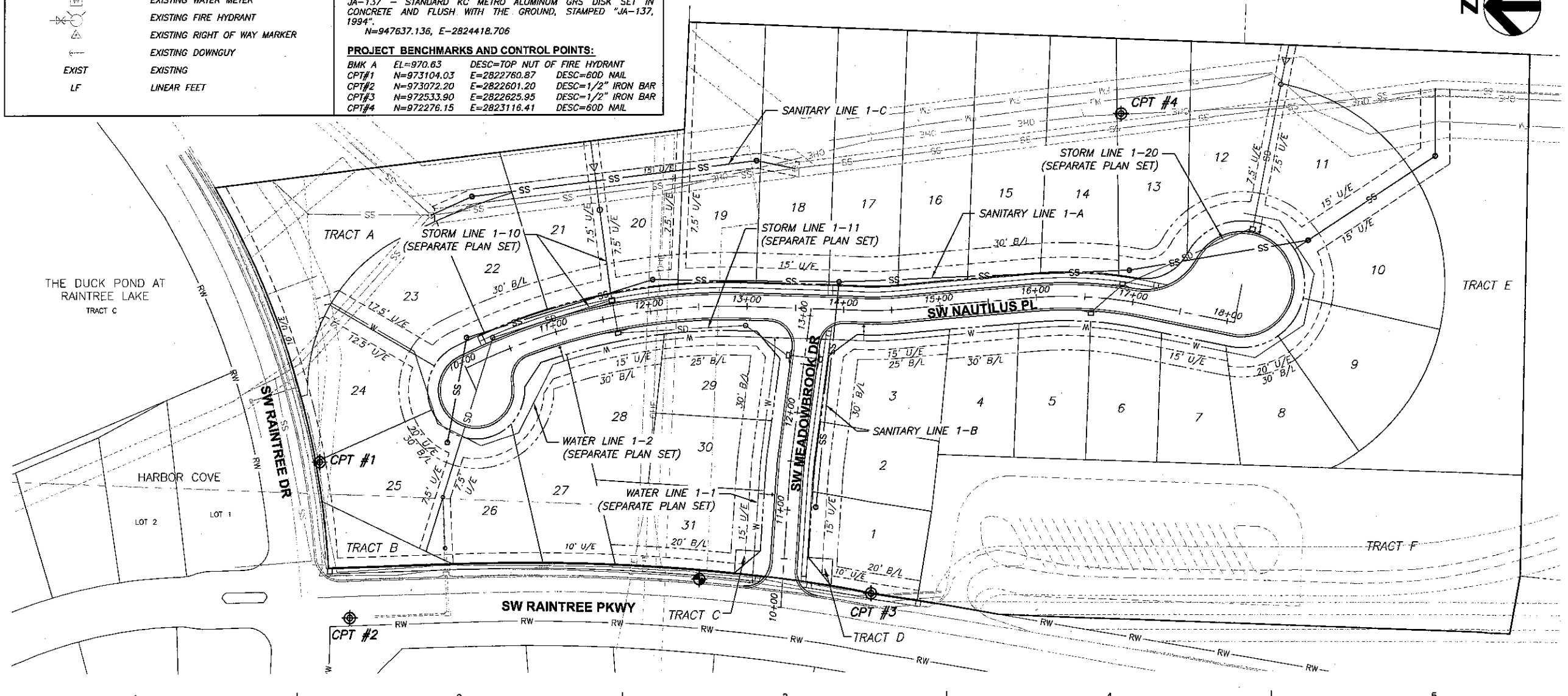
LEGEND AND SYMBOLS	
	EXISTING WATER LINE
	EXISTING SANITARY SEWER LINE
	EXISTING SANITARY SEWER FORCE MAIN
	EXISTING STORM SEWER LINE
	EXISTING GAS LINE
	EXISTING UNDERGROUND TELEPHONE
	EXISTING UNDERGROUND FIBER OPTIC
	EXISTING OVERHEAD ELECTRIC
	EXISTING UNDERGROUND ELECTRIC
	EXISTING CENTERLINE
	EXISTING BOTTOM OF DITCH
	EXISTING PROPERTY LINE
	EXISTING ROW
	EXISTING FENCE
	EXISTING VEGETATION/BRUSH LINE
	EXISTING TREE
	EXISTING SHRUB
	EXISTING SIGN
	EXISTING CABLE T.V. PEDESTAL
	EXISTING TELEPHONE PEDESTAL
	EXISTING POWER POLE
	EXISTING LIGHT POLE
	EXISTING GAS METER
	EXISTING STORM DRAINAGE MANHOLE
	EXISTING SANITARY MANHOLE
	EXISTING WATER VALVE
	EXISTING WATER METER
	EXISTING FIRE HYDRANT
	EXISTING RIGHT OF WAY MARKER
	EXISTING DOWNGUY
	EXISTING
	LINEAR FEET

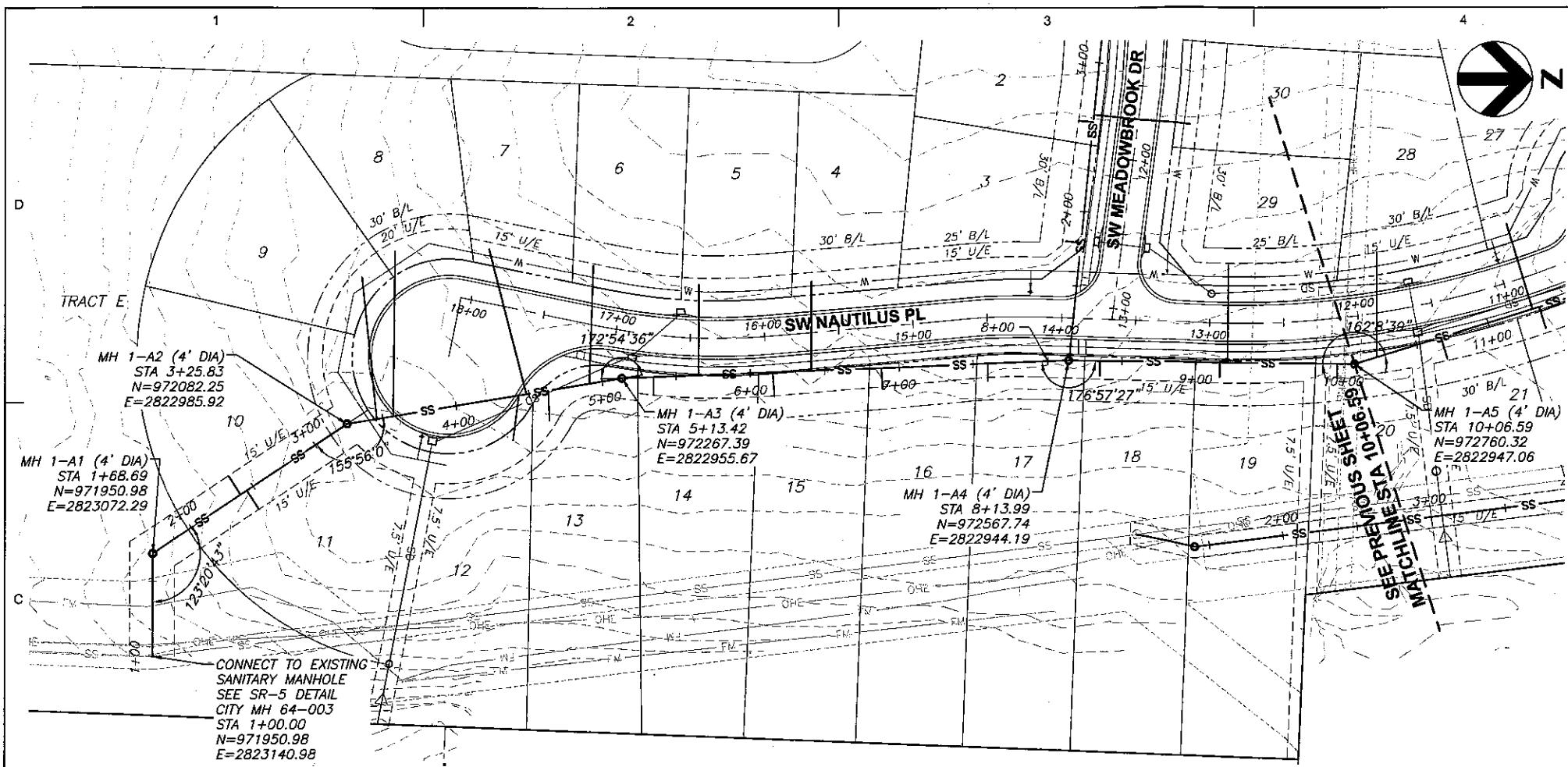
PROPOSED IMPROVEMENTS	
	PROPOSED BOUNDARY LINE
	PROPOSED ROW
	PROPOSED LOT LINE
	PROPOSED STREET CENTERLINE
	PROPOSED CURB AND GUTTER
	PROPOSED SANITARY SEWER LINE
	PROPOSED STORM SEWER LINE
	PROPOSED WATER LINE
	PROPOSED EASEMENT LINE
	PROPOSED BUILDING LINE
	PROPOSED FIRE HYDRANT ASSEMBLY
	PROPOSED WATER VALVE
	PROPOSED MANHOLE
	PROPOSED STORM INLET BOX
	PROPOSED STORM JUNCTION BOX
	PROJECT CONTROL POINT
	PROJECT BENCHMARK

ENGINEERING CONTROL GENERAL NOTE	
PROJECT COORDINATES ARE BASED ON THE MISSOURI STATE PLANE COORDINATE SYSTEM, WEST ZONE, UTILIZING JACKSON, MISSOURI GEOGRAPHIC REFERENCE SYSTEM MONUMENTS JA-50 & JA-137 (2003 ADJUSTMENT) AND ARE MODIFIED FROM STATE PLANE TO GROUND COORDINATES BY APPLYING A GRID SCALE FACTOR OF 0.9999011 AT REFERENCE MONUMENT JA-50.	
JA-50 - STANDARD KC METRO ALUMINUM GRS DISK SET IN CONCRETE AND FLUSH WITH THE GROUND, STAMPED "JA-50, 1988".	N=992086.045, E=2804352.667
JA-137 - STANDARD KC METRO ALUMINUM GRS DISK SET IN CONCRETE AND FLUSH WITH THE GROUND, STAMPED "JA-137, 1994".	N=947637.136, E=2824418.706
<b>PROJECT BENCHMARKS AND CONTROL POINTS:</b>	
BMK A EL=970.63	DESC=TOP NUT OF FIRE HYDRANT
CPT#1 N=973104.03	E=2822780.87
CPT#2 N=973072.20	E=2822601.20
CPT#3 N=972533.90	E=2822625.95
CPT#4 N=972276.15	E=2823116.41

**GENERAL NOTES:**

- ALL CONSTRUCTION TO FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
- ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE ENGINEERING DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI.
- LINEAL FOOT MEASUREMENTS SHOWN ON THE PLANS ARE HORIZONTAL MEASUREMENTS, NOT SLOPE MEASUREMENTS.
- NO RECENT GEOLOGICAL INVESTIGATION HAS BEEN PERFORMED ON THIS PROJECT.
- THE UTILITY LOCATIONS SHOWN ON THESE PLANS ARE TAKEN FROM UTILITY COMPANY RECORDS AND APPARENT FIELD LOCATIONS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL ADHERE TO THE PROVISIONS OF THE SENATE BILL NUMBER 583, 78TH GENERAL ASSEMBLY OF THE STATE OF MISSOURI. THE BILL REQUIRES THAT ANY PERSON OR FIRM DOING EXCAVATION ON PUBLIC RIGHT-OF-WAY DO SO ONLY AFTER GIVING NOTICE TO, AND OBTAINING INFORMATION FROM, UTILITY COMPANIES. STATE LAW REQUIRES 72 HOURS ADVANCE NOTICE. THE CONTRACTOR MAY ALSO UTILIZE THE FOLLOWING TOLL FREE PHONE NUMBER PROVIDED BY "MISSOURI ONE CALL SYSTEM, INC.": 1-(800)-DIG RITE OR 811. THIS PHONE NUMBER IS APPLICABLE ANYWHERE WITHIN THE STATE OF MISSOURI. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL NOTIFY ALL THOSE COMPANIES WHICH HAVE FACILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION TO BE PERFORMED.
- PRIOR TO ORDERING PRECAST STRUCTURES, SHOP DRAWINGS SHALL BE SUBMITTED TO THE DESIGN ENGINEER FOR APPROVAL.
- THE CONTRACTOR SHALL PROTECT ALL MAJOR TREES FROM DAMAGE, OUTSIDE OF THE GRADING LIMITS. NO TREE SHALL BE REMOVED WITHOUT PERMISSION OF THE OWNER, UNLESS SHOWN OTHERWISE.
- CLEARING AND GRUBBING OPERATIONS AND DISPOSAL OF ALL DEBRIS THEREFROM SHALL BE PERFORMED BY THE CONTRACTOR IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES.
- ALL WASTE MATERIAL RESULTING FROM THE PROJECT SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR, OR AS DIRECTED BY THE OWNER.
- ALL EXCAVATION SHALL BE UNCLASSIFIED.
- THE CONTRACTOR SHALL CONTROL THE EROSION AND SILTATION DURING ALL PHASES OF CONSTRUCTION, AND SHALL KEEP THE STREETS CLEAN OF MUD AND DEBRIS.
- ALL MANHOLES, CATCH BASINS, UTILITY VALVES AND METER PITS TO BE ADJUSTED OR REBUILT TO GRADE AS REQUIRED. ALL EXISTING UTILITIES SHALL BE ADJUSTED AS REQUIRED.
- SUBGRADE SOIL FOR ALL CONCRETE STRUCTURES, REGARDLESS OF THE TYPE OR LOCATION, SHALL BE FIRM, DENSE AND THOROUGHLY COMPACTED AND CONSOLIDATED; SHALL BE FREE FROM MUCK AND MUD; AND SHALL BE SUFFICIENTLY STABLE TO REMAIN FIRM AND INTACT UNDER THE FEET OF THE WORKMEN OR MACHINERY ENGAGED IN SUBGRADE SURFACING, LAYING REINFORCING STEEL, AND DEPOSITING CONCRETE THEREON. IN ALL CASES WHERE SUBSOIL IS MUCKY OR WORKS INTO MUD OR MUCK DURING SUCH OPERATION, A SEAL COURSE OF EITHER CONCRETE OR ROCK SHALL BE PLACED BELOW SUBGRADE TO PROVIDE A FIRM BASE FOR WORKING AND FOR PLACING THE FLOOR SLAB.
- THE CONTRACTOR SHALL CONTACT PUBLIC WORKS INSPECTIONS AT 816-969-1800 TO OBTAIN A PUBLIC WORKS CONSTRUCTION PERMIT. A MINIMUM 48 HOUR NOTICE SHALL BE GIVEN PRIOR TO PERMIT ISSUANCE.
- THE CONTRACTOR SHALL CONTACT THE CITY'S EROSION CONTROL SPECIALIST AT 816-969-1800 PRIOR TO ANY LAND DISTURBANCE.
- THE CONTRACTOR SHALL CONTACT THE RIGHT-OF-WAY INSPECTOR AT 816-969-1800 PRIOR TO ANY LAND DISTURBANCE ACTIVITIES WITHIN THE RIGHT-OF-WAY. THESE ACTIVITIES MAY REQUIRE A PERMIT.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL TRAFFIC HANDLING MEASURES NECESSARY TO ENSURE THAT THE GENERAL PUBLIC IS PROTECTED AT ALL TIMES. TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD - LATEST EDITION).
- ALL SANITARY SEWER LATERALS SHALL HAVE A TRENCH CHECK, CONSISTING OF A FLOWABLE BACKFILL, INSTALLED DURING CONSTRUCTION. TRENCH CHECK SHALL EXTEND TO BOTTOM OF TRENCH, TO WIDTH OF TRENCH TO 12 INCHES ABOVE PIPE, FOR A MINIMUM LENGTH OF 12 INCHES. TRENCH CHECK SHALL BE LOCATED AT LEAST 5 FEET FROM SANITARY MAIN.





**MANHOLE STRUCTURE NOTE:**

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

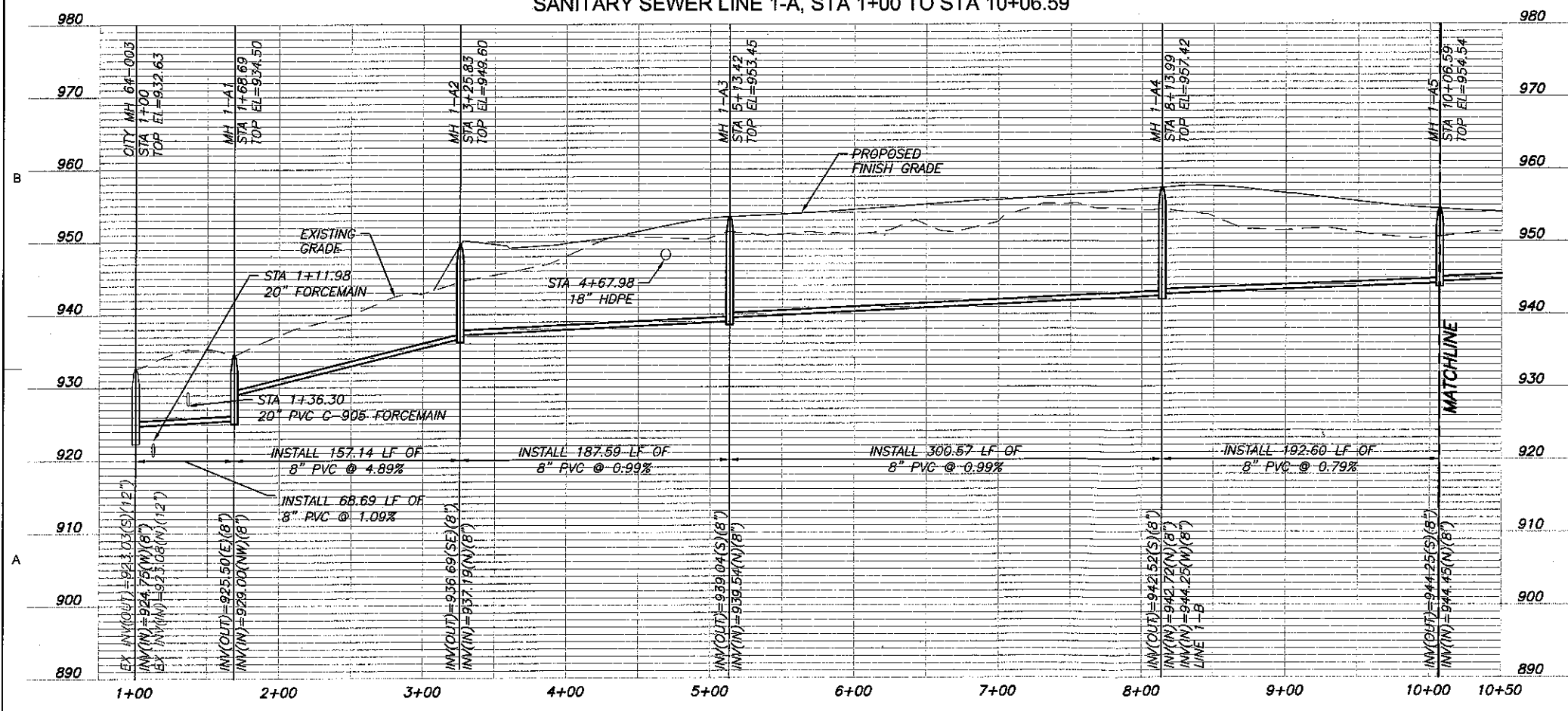
**GENERAL NOTES:**

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.

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

MAIN STATION	MAIN INV @ LATERAL	MIN INV @ END LATERAL	LATERAL LENGTH	LOT SERVED
2+40	932.49	934.12	15 LF	10
2+45	932.73	934.36	10 LF	11
3+46	937.39	940.62	95 LF	9
3+57	937.50	941.03	110 LF	8
3+43	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
5+35	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
8+35	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

**SANITARY SEWER LINE 1-A, STA 1+00 TO STA 10+06.59**

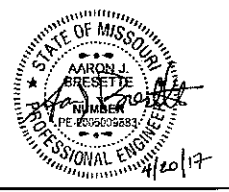


3741 NE TROON DR  
LEE'S SUMMIT, MO 64064  
816.347.1100  
MO STATE CERTIFICATE OF AUTHORITY #000856

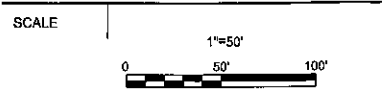
PROJECT FOR  
**LANDROCK DEVELOPMENT, LLC**

**CREEKSIDE AT RAIN TREE  
LOTS 1 THRU 31  
LEE'S SUMMIT, MISSOURI**

MARK	DATE	DESCRIPTION
B	04/20/2017	CITY RESUBMITTAL
A	03/08/2017	CITY SUBMITTAL
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

**MANHOLE STRUCTURE NOTE:**

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

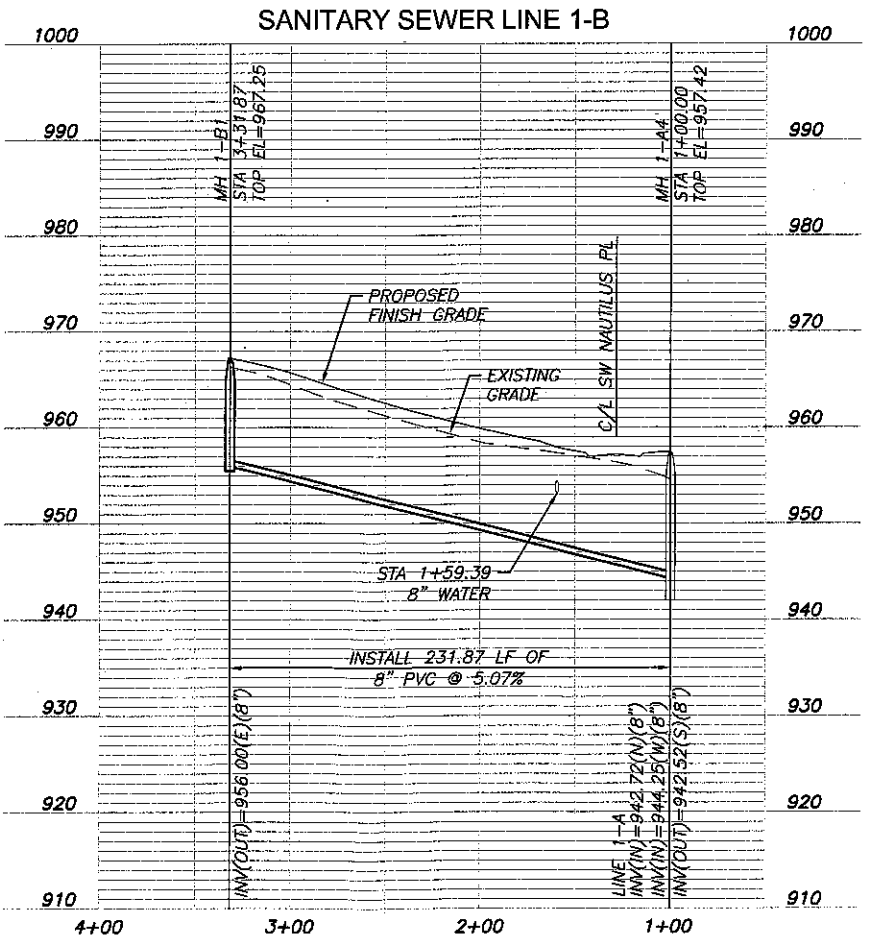
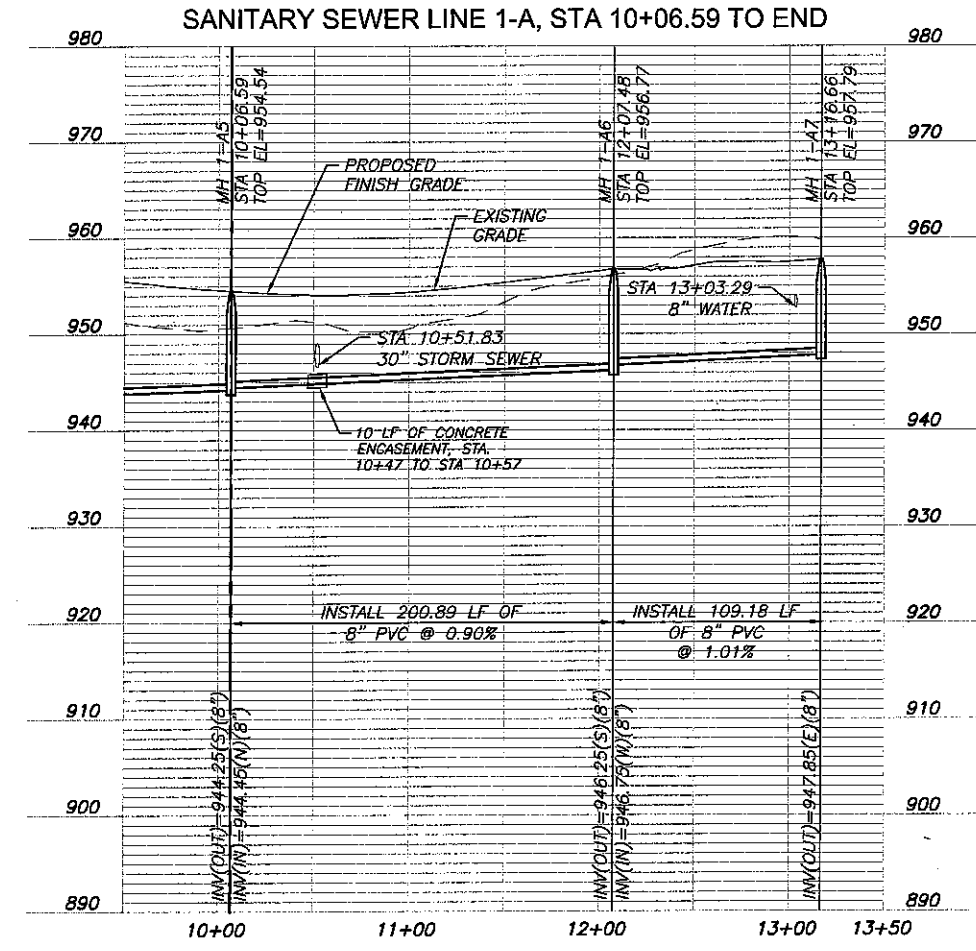
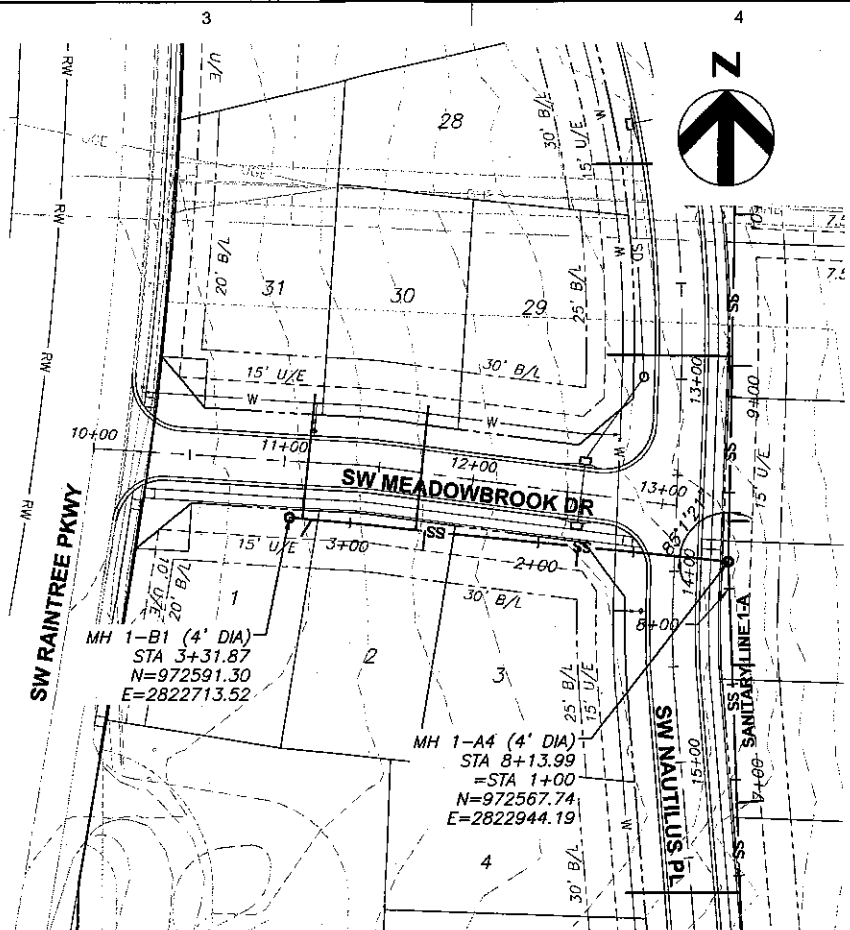
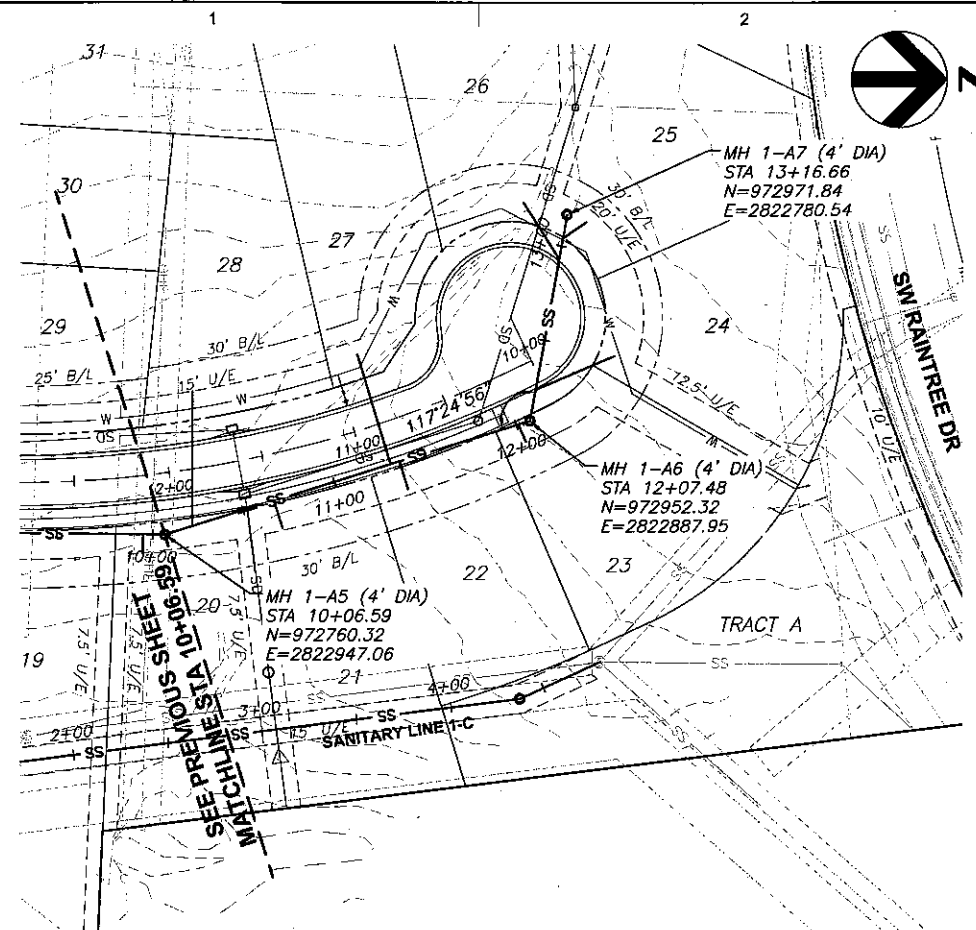
**GENERAL NOTES:**

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.

SANITARY SEWER STRUCTURE 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 - LATERAL TABLE				
MAIN STATION	MAIN INV @ LATERAL	MIN INV @ END LATERAL	LATERAL LENGTH	LOT SERVED
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 - LATERAL TABLE				
MAIN STATION	MAIN INV @ LATERAL	MIN INV @ END LATERAL	LATERAL LENGTH	LOT SERVED
1+79	948.26	949.79	10 LF	3
2+60	952.36	953.89	10 LF	2
2+65	952.62	955.25	65 LF	30
3+20	955.40	956.93	10 LF	1
3+25	955.66	958.29	65 LF	31



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

PROJECT FOR

**LANDROCK  
DEVELOPMENT, LLC**

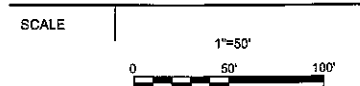
**CREEKSIDE AT RAINTREE  
LOTS 1 THRU 31  
LEE'S SUMMIT, MISSOURI**

B	04/20/2017	CITY RESUBMITTAL
A	03/08/2017	CITY SUBMITTAL
MARK	DATE	DESCRIPTION
PROJECT NUMBER	10028825-276408	
ORIGINAL ISSUE	MARCH 7, 2017	
PROJECT MANAGER	SIMON SUN	
PROJECT ENGINEER	WILL NEES, E.I.T.	



SHEET NAME

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

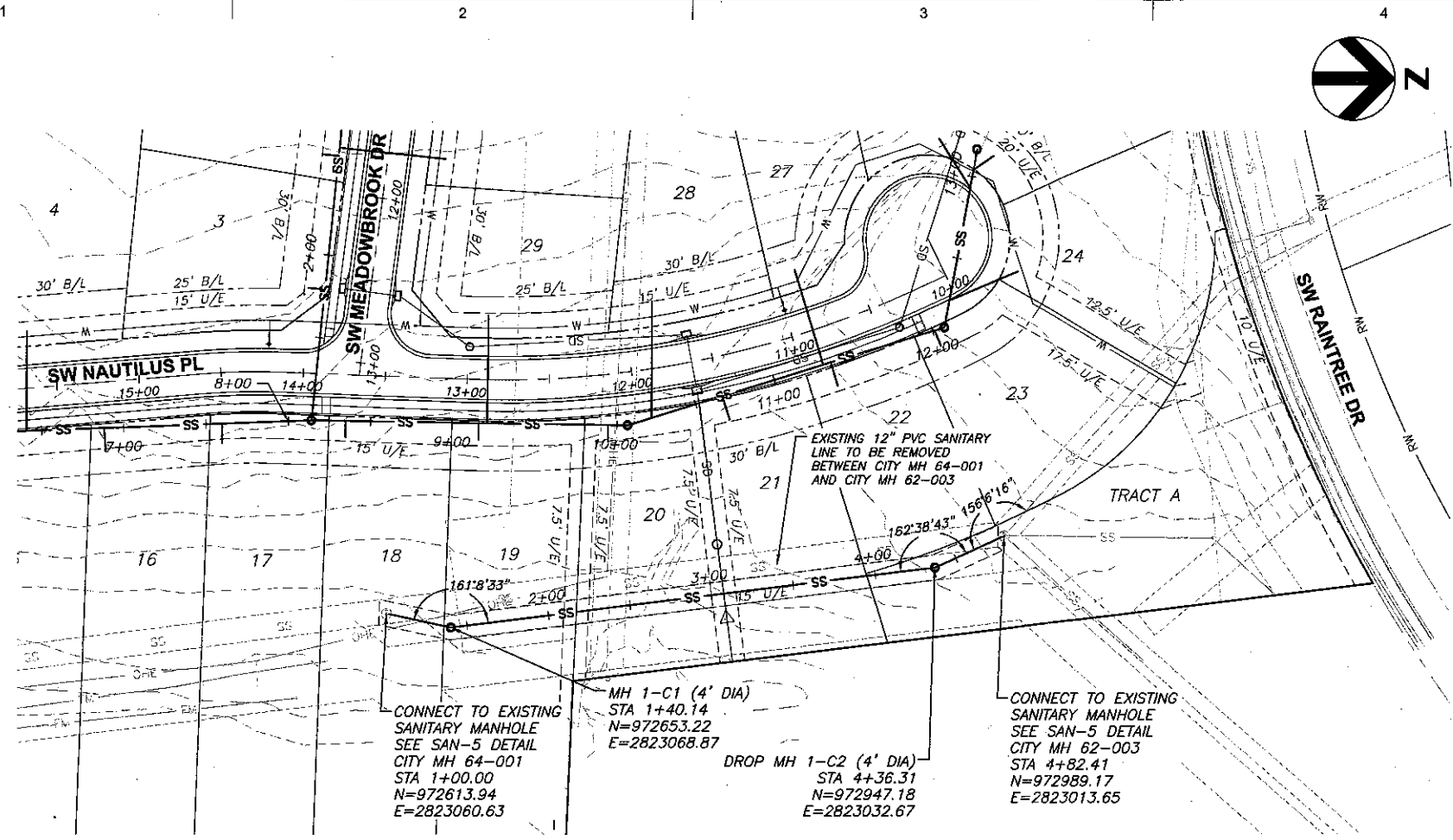


SHEET NUMBER

**01C-CR-SS-03**

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

PERMIT REVIEW DRAWINGS



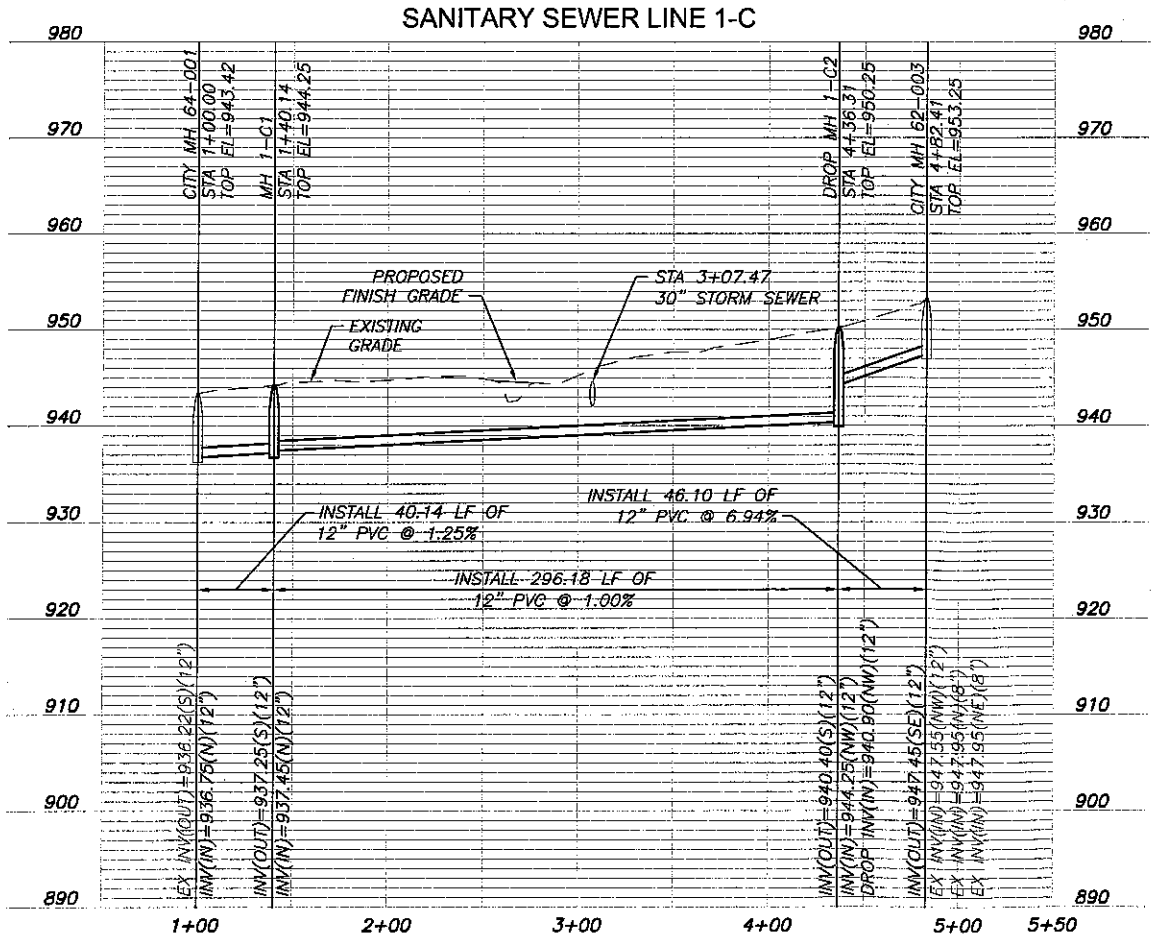
**MANHOLE STRUCTURE NOTE:**

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.

SANITARY SEWER STRUCTURE TABLE		
STRUCTURE	STATION & OFFSET	STREET NAME
MH 1-C1	13+04.19, 149.79' LT	SW NAUTILUS PL
MH 1-C2	10+66.35, 159.63' LT	SW NAUTILUS PL



3741 NE TROON DR  
LEE'S SUMMIT, MO 64084  
816.347.1100  
MO STATE CERTIFICATE OF  
AUTHORITY #080856

PROJECT FOR

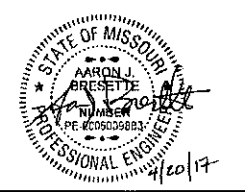
**LANDROCK  
DEVELOPMENT, LLC**

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

MARK	DATE	DESCRIPTION
B	04/20/2017	CITY RESUBMITTAL
A	03/08/2017	CITY SUBMITTAL

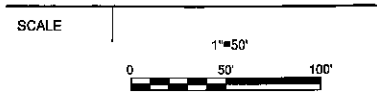
PROJECT NUMBER	10028825-278406
ORIGINAL ISSUE	MARCH 7, 2017

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



SHEET NAME

**SANITARY SEWER  
PLAN AND PROFILE  
LINE 1-C**



SHEET NUMBER

**01C-CR-SS-04**

FILE NAME | 01C-CR-SS-04.dwg

PERMIT REVIEW DRAWINGS



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 RAIN TREE  
LOTS 1 THRU 31  
LEE'S SUMMIT, MISSOURI**

B	04/20/2017	CITY RESUBMITTAL
A	03/08/2017	CITY SUBMITTAL
MARK	DATE	DESCRIPTION

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**

SCALE

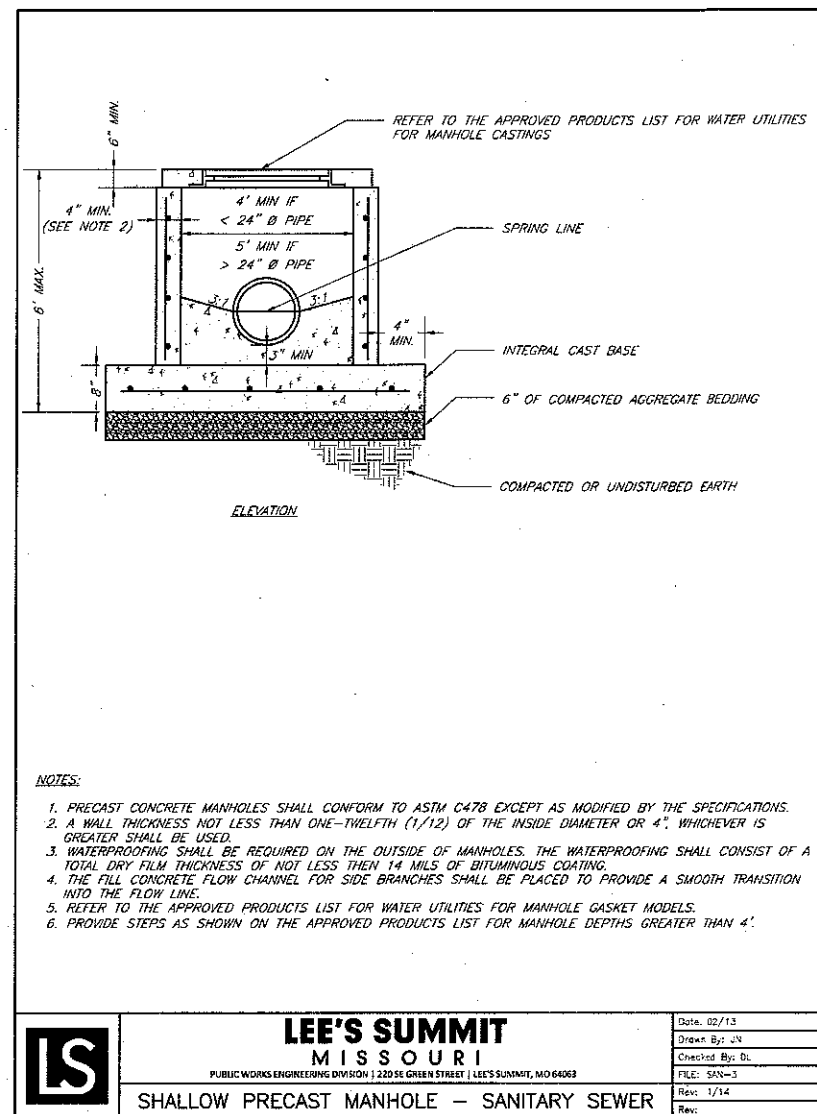
NO SCALE

SHEET NUMBER

**01C-CR-SS-05**

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

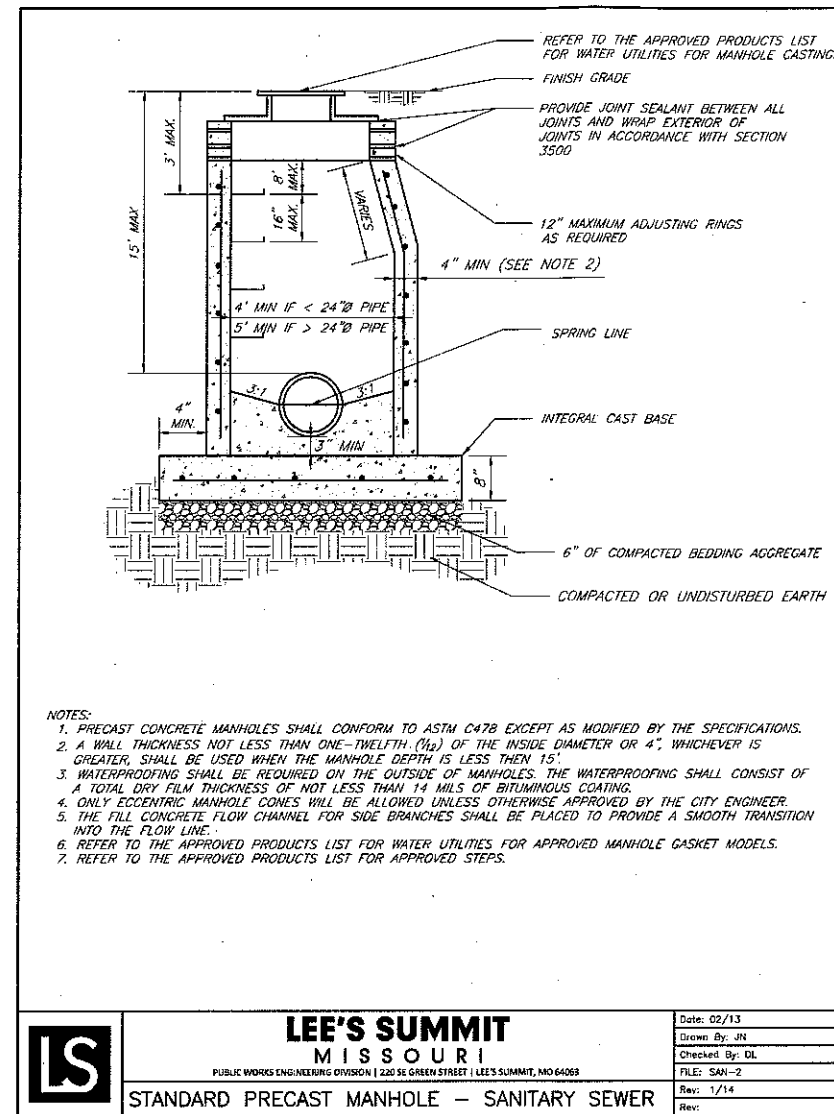
PERMIT REVIEW DRAWINGS



**LEE'S SUMMIT MISSOURI**  
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64068

**SHALLOW PRECAST MANHOLE - SANITARY SEWER**

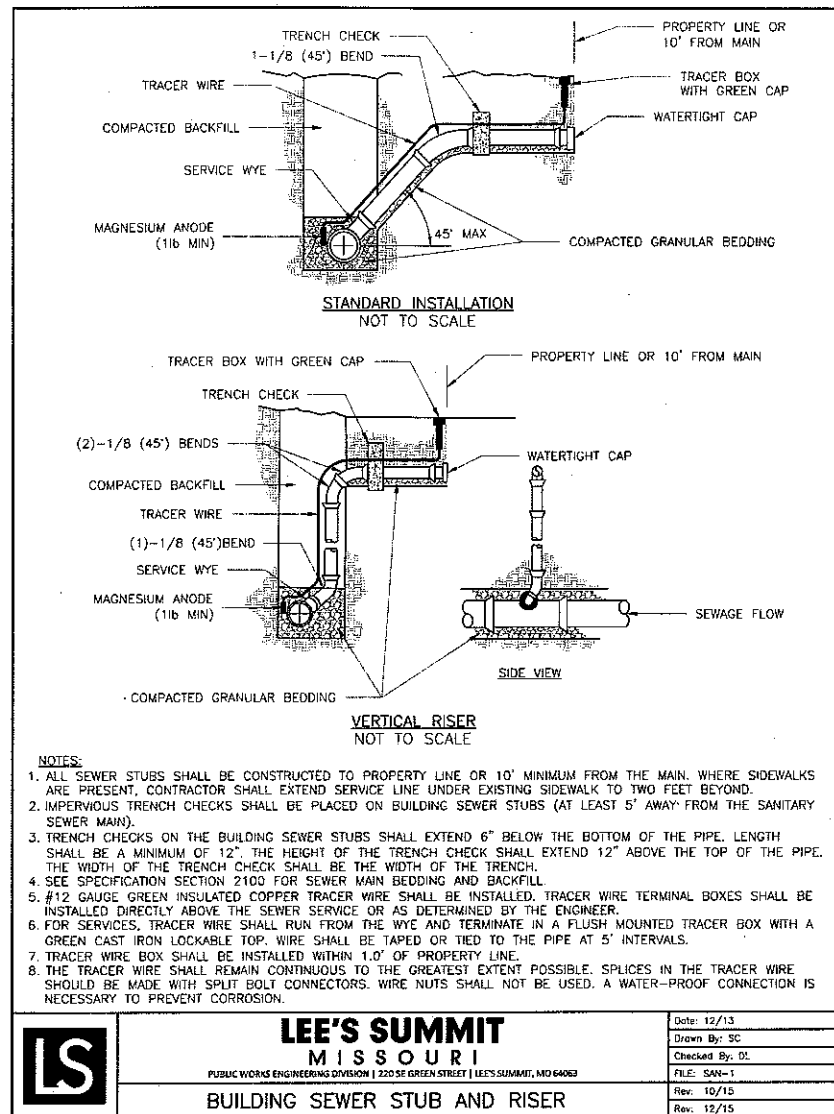
Date: 02/13  
Drawn By: JN  
Checked By: DL  
File: SAN-3  
Rev: 1/14



**LEE'S SUMMIT MISSOURI**  
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64068

**STANDARD PRECAST MANHOLE - SANITARY SEWER**

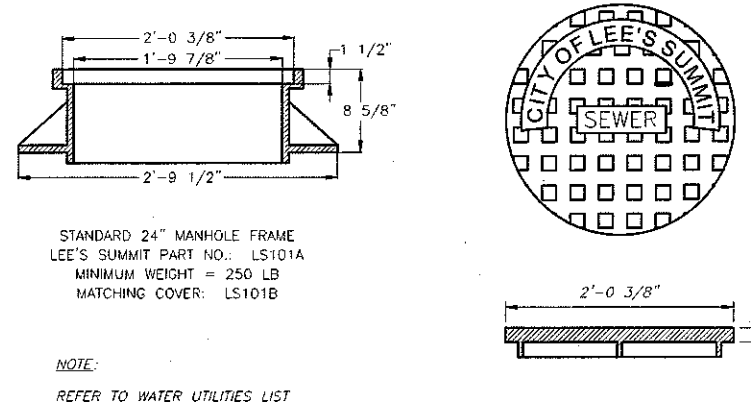
Date: 02/13  
Drawn By: JN  
Checked By: DL  
File: SAN-2  
Rev: 1/14



**LEE'S SUMMIT MISSOURI**  
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64068

**BUILDING SEWER STUB AND RISER**

Date: 12/13  
Drawn By: SC  
Checked By: DL  
File: SAN-1  
Rev: 10/15  
Rev: 12/15



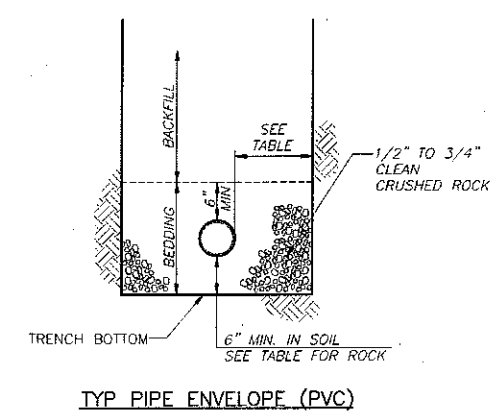
**24" MANHOLE FRAME**  
NOT TO SCALE

**24" MANHOLE COVER**  
NOT TO SCALE

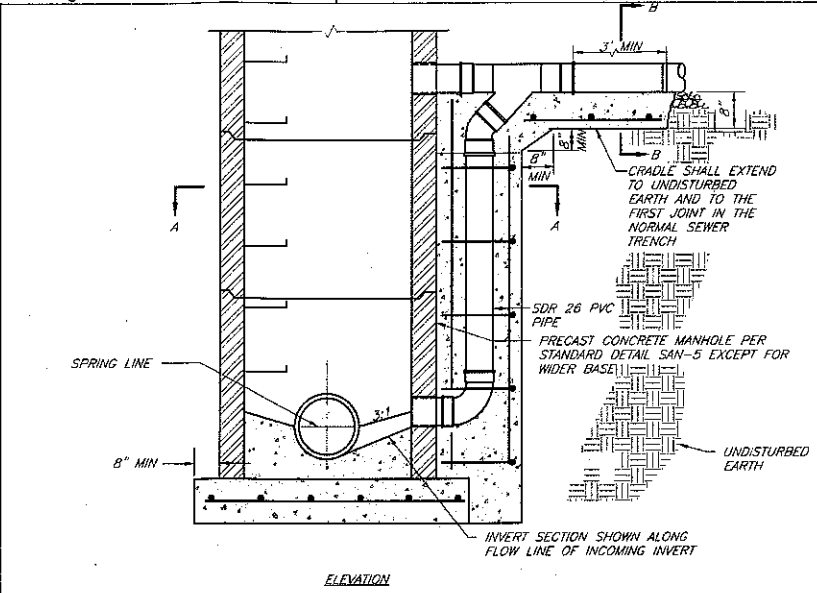
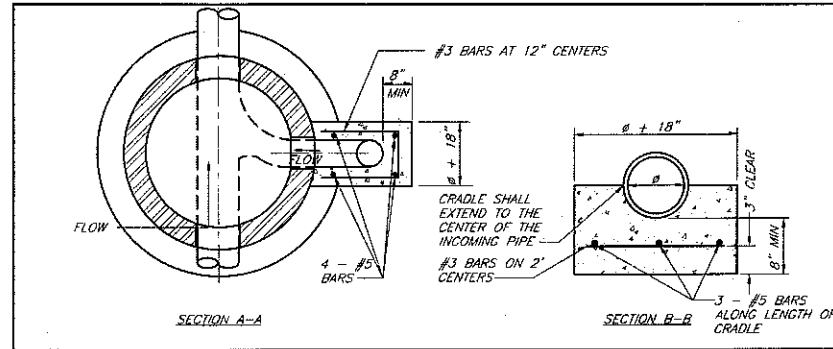
MINIMUM TRENCH WIDTHS AND PIPE CLEARANCES (IN)

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

- NOTES:
- BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 2100 OF THE KOMETRO APWA SPECIFICATIONS.
  - BEDDING MATERIAL SHALL BE 1/2" TO 3/4" CLEAN CRUSHED ROCK.
  - TRENCH BANKS SHALL BE CUT BACK ON SLOPES IN ACCORDANCE WITH CURRENT OSHA REGULATIONS. SLOPES MUST NOT EXTEND BELOW TOP OF BEDDING.
  - ALL PUBLIC SANITARY SEWER MAINS SHALL BE 8" PVC, SDR-26, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
  - ALL PRIVATE SANITARY SEWER LATERALS SHALL BE 4" PVC, SDR-26.
  - 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".
  - MAXIMUM TRENCH WIDTH SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATIONS. MAXIMUM TRENCH WIDTH IS DEFINED AS THE HORIZONTAL PLANE MEASURED 6" ABOVE THE TOP OF PIPE, PERPENDICULAR TO THE SEWER ALIGNMENT.



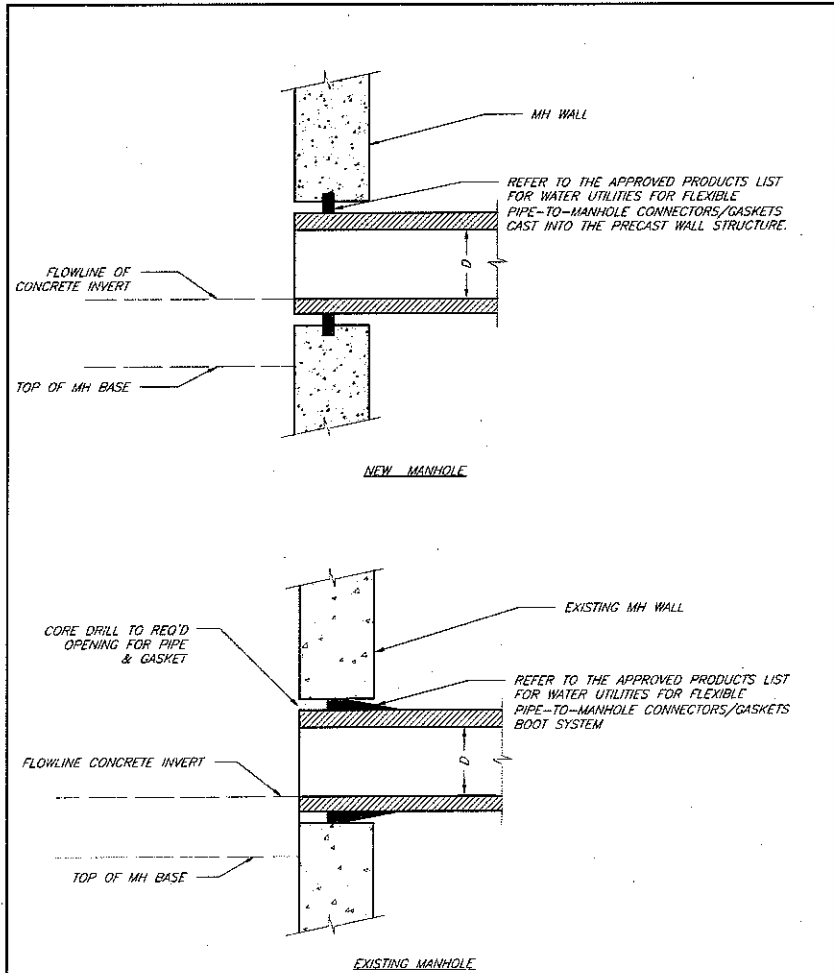
**UNDERGROUND PIPE INSTALLATION FOR SANITARY SEWER LINES**  
NOT TO SCALE



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

**SAN-4**

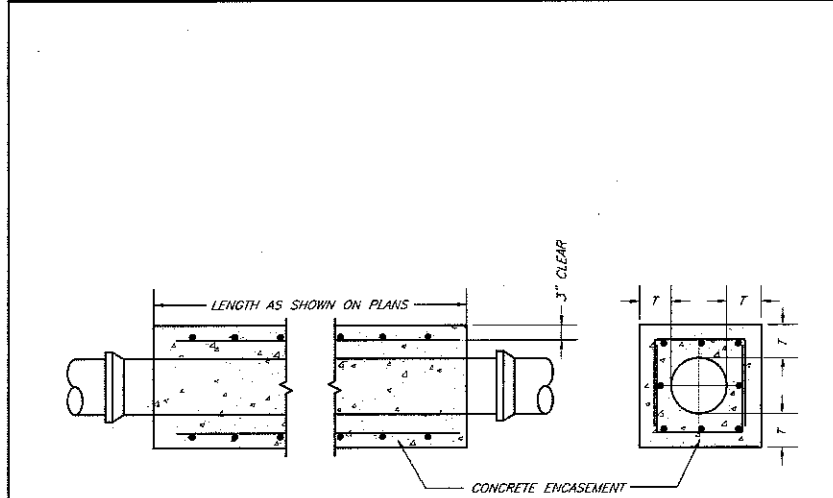
Date: 02/13  
 Drawn By: JN  
 Checked By: DL  
 FILE: SAN-4  
 Rev: 1/14  
 Rev:



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

**SAN-5**

Date: 02/13  
 Drawn By: JN  
 Checked By: DL  
 FILE: SAN-5  
 Rev: 1/14  
 Rev:



- NOTES:**
- FOR PIPES LESS THAN 15", T = 6" MIN.
  - FOR PIPES 15" THRU 36", T = 8" MIN.
  - INTERMEDIATE BELLS SHALL BE ENCASED.
  - 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

**SAN-7**

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



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

MO STATE CERTIFICATE OF  
 AUTHORITY #000896

PROJECT FOR  
**LANDROCK DEVELOPMENT, LLC**

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

MARK	DATE	DESCRIPTION
B	04/20/2017	CITY RESUBMITTAL
A	03/08/2017	CITY SUBMITTAL

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



SHEET NAME  
**SANITARY SEWER  
 DETAILS**

SCALE  
 NO SCALE

SHEET NUMBER  
**01C-CR-SS-06**

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

PERMIT REVIEW DRAWINGS