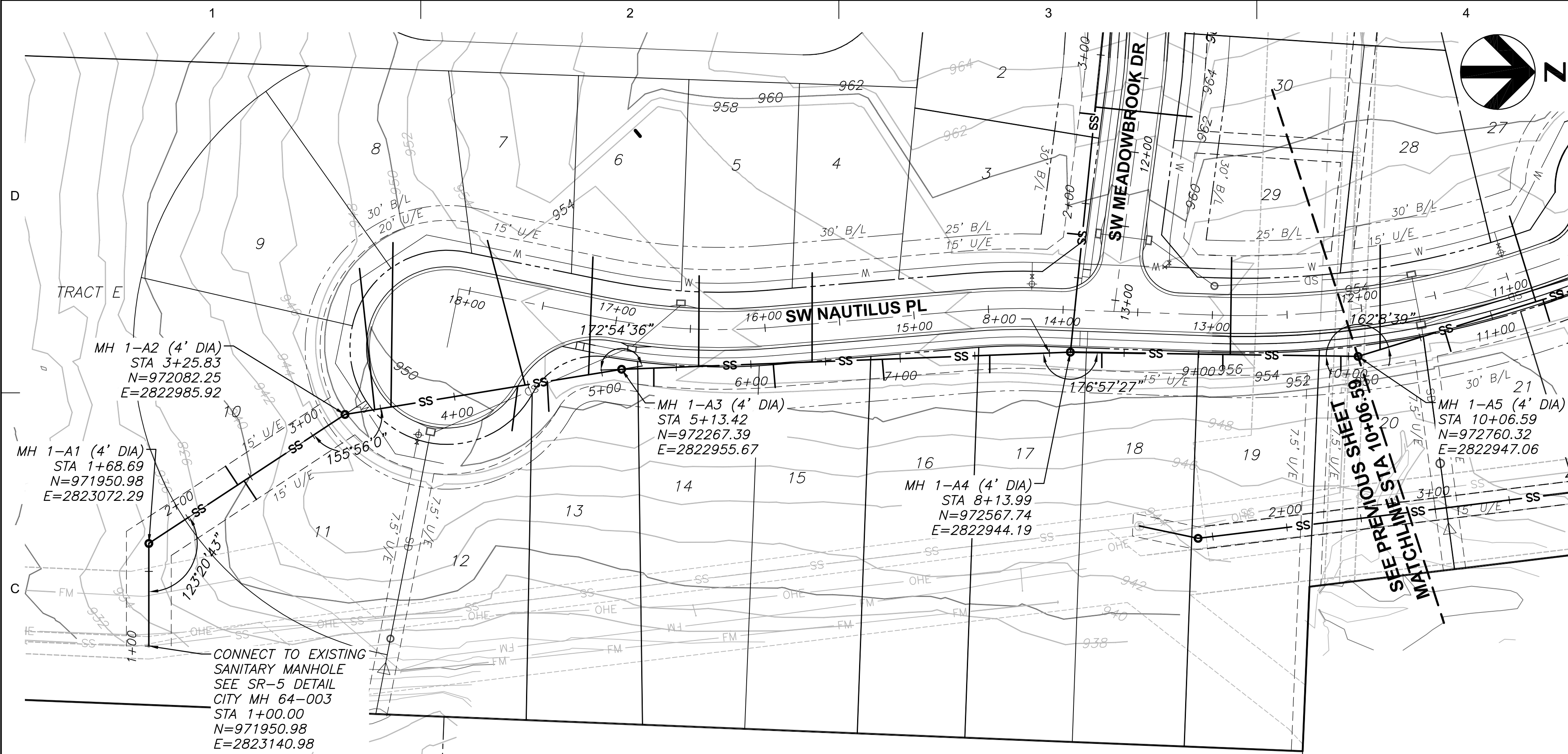
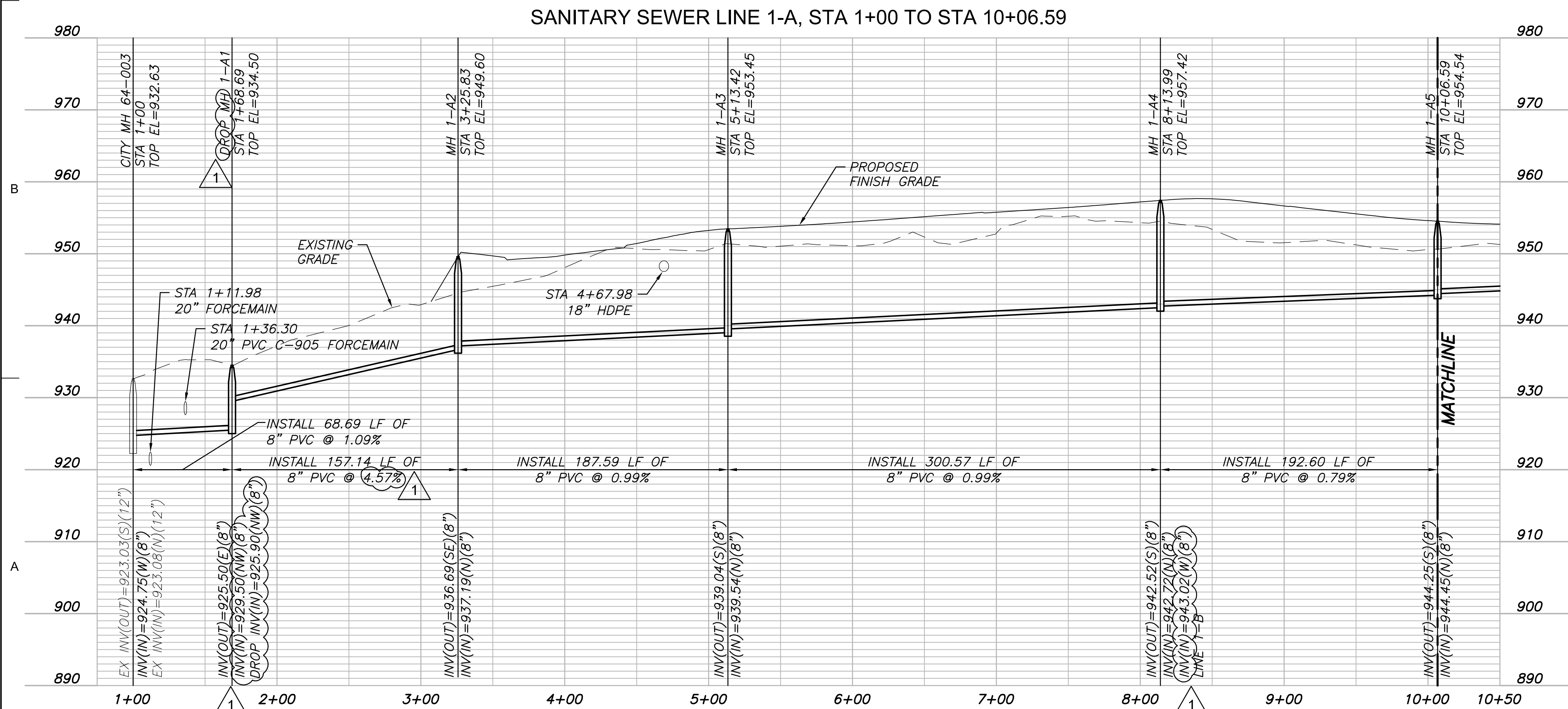




- MANHOLE STRUCTURE NOTE:
1. PROPOSED MANHOLES SHALL CONFORM TO LEE'S SUMMIT STANDARD DETAILS (SAN-2, SAN-3, AND SAN-4).
- GENERAL NOTES:
1. WATER MAINS AND SANITARY SEWER MAINS/STRUCTURES SHALL HAVE AT LEAST 10' OF HORIZONTAL SEPARATION FROM EDGE OF WATER PIPE TO EDGE OF SEWER PIPE OR SEWER STRUCTURE.
 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-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
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



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

C	07/28/2017	CITY RESUBMITTAL
B	05/01/2017	CITY RESUBMITTAL
A	03/08/2017	CITY SUBMITTAL
MARK	DATE	DESCRIPTION

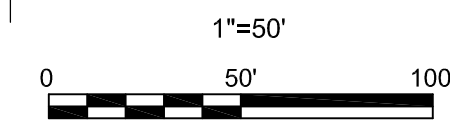
PROJECT NUMBER	10028825-276408
ORIGINAL ISSUE	MARCH 7, 2017

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

SHEET NAME

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

SCALE

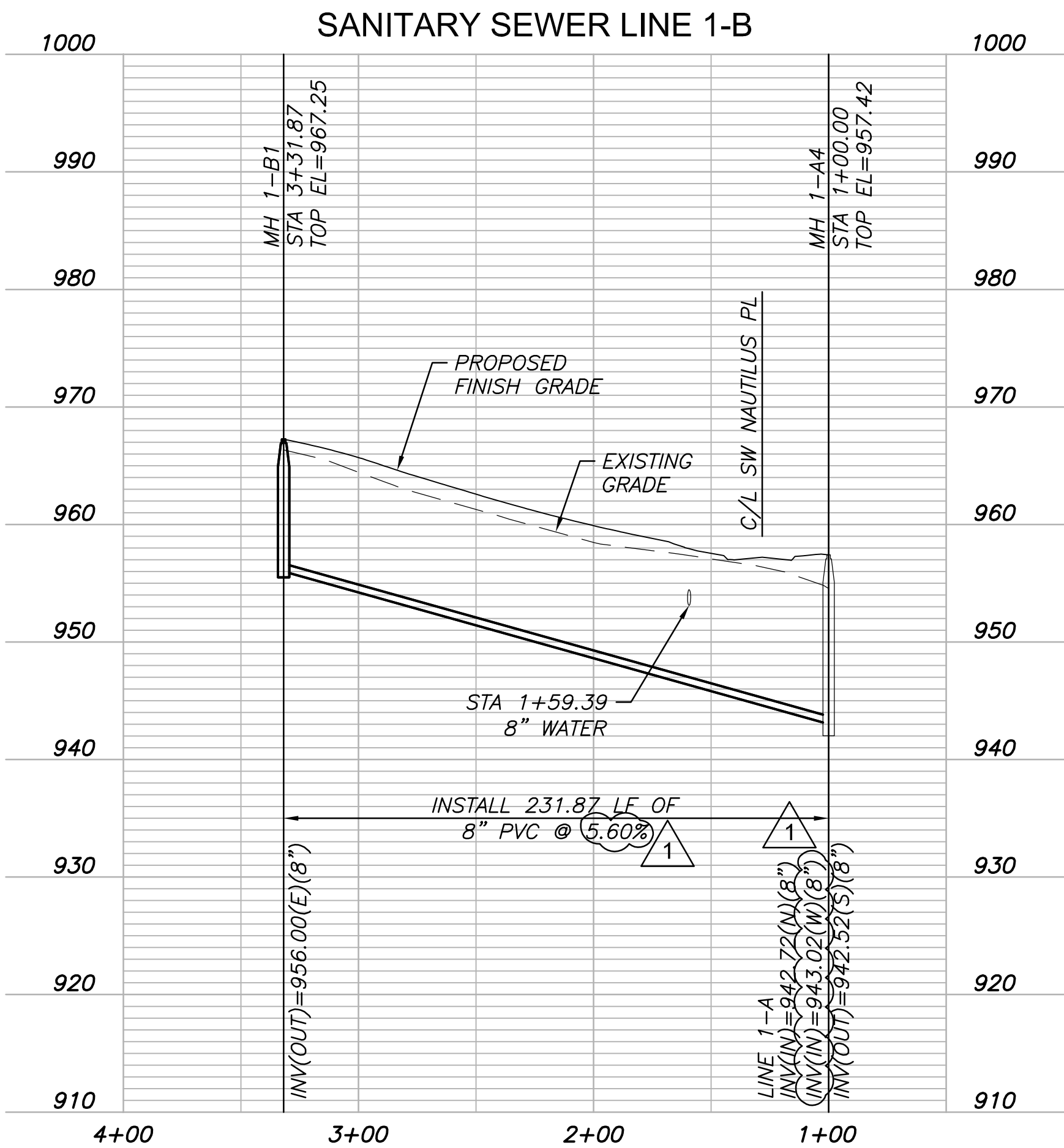
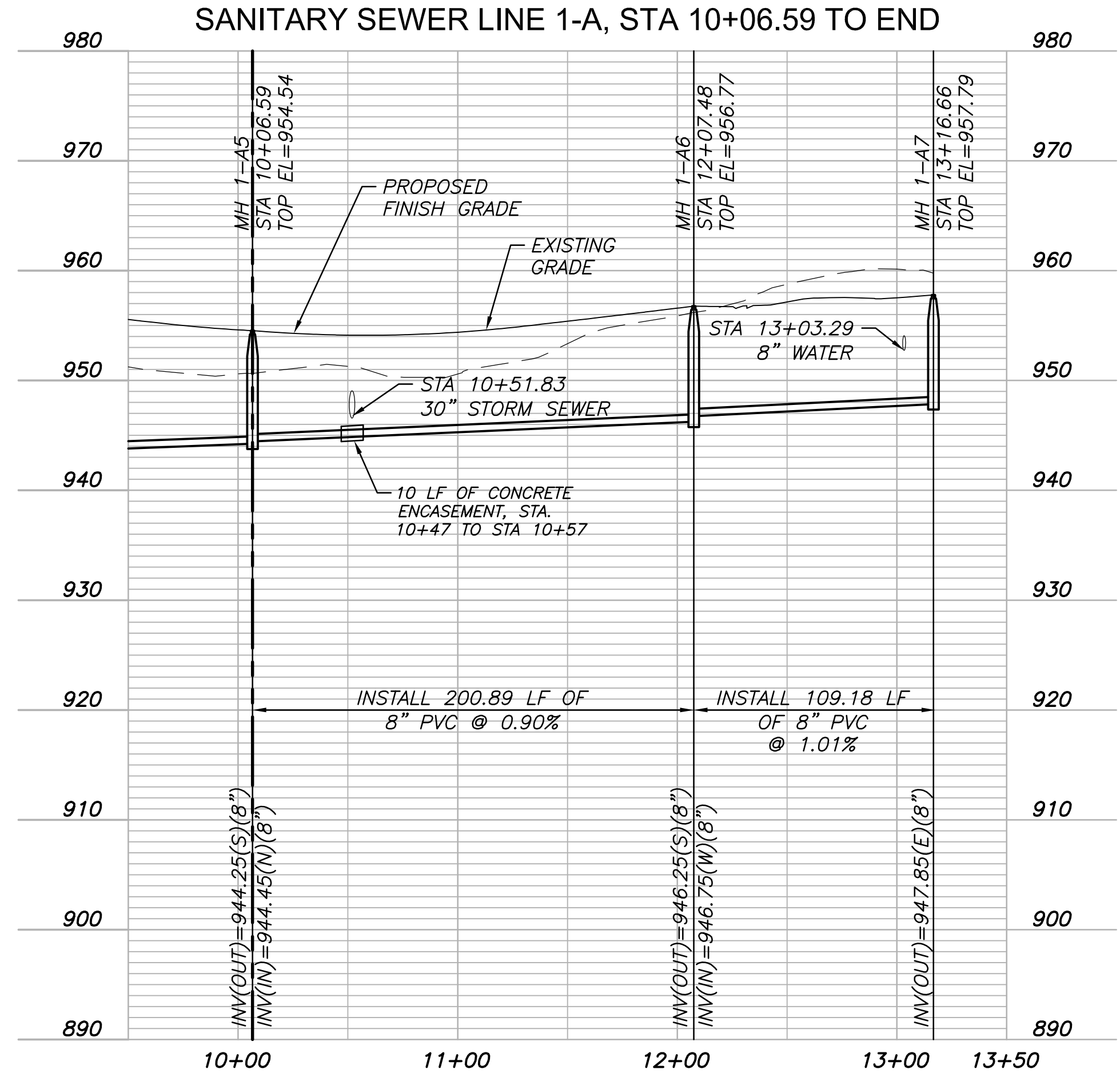
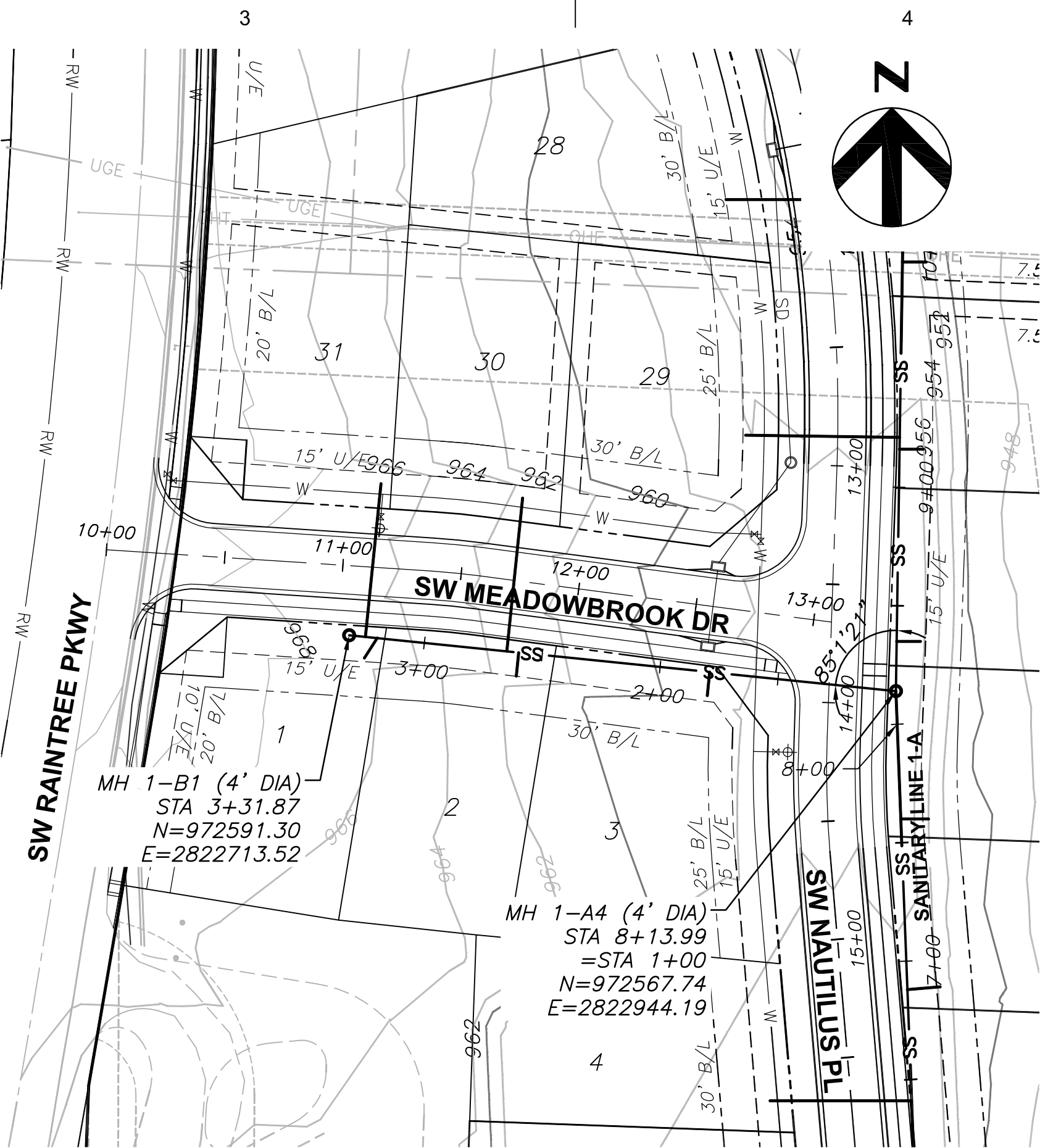
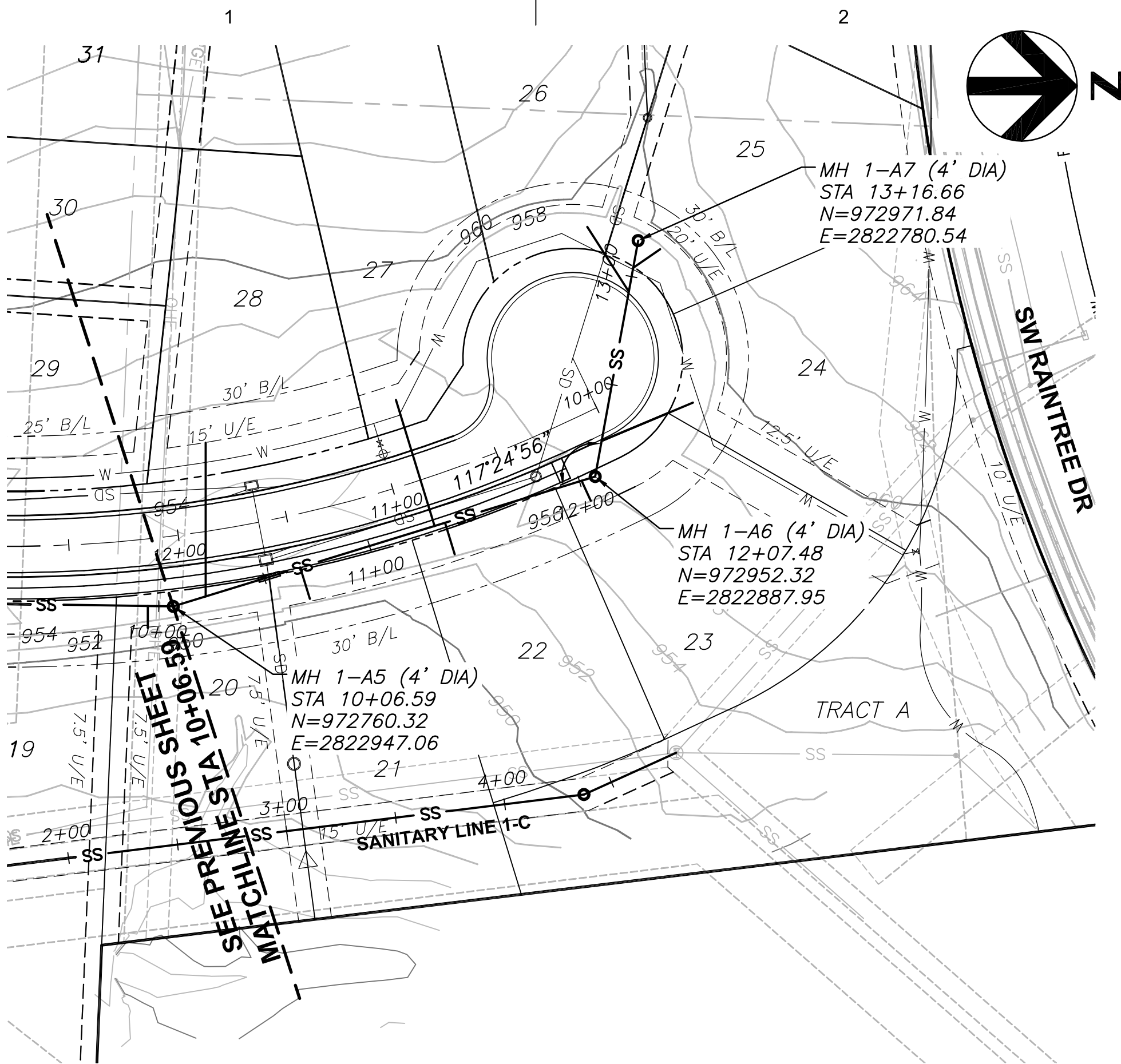


SHEET NUMBER

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	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
3+25	955.62	957.15	65 LF	31



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

MO STATE CERTIFICATE OF
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PROJECT FOR

LANDROCK
DEVELOPMENT, LLC

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

C	07/28/2017	CITY RESUBMITTAL
B	05/01/2017	CITY RESUBMITTAL
A	03/08/2017	CITY SUBMITTAL
MARK	DATE	DESCRIPTION

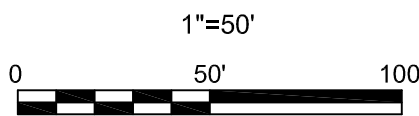
PROJECT NUMBER	10028825-276408
ORIGINAL ISSUE	MARCH 7, 2017

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

SHEET NAME

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

SCALE



SHEET NUMBER

01C-CR-SS-03

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

PERMIT REVIEW DRAWINGS

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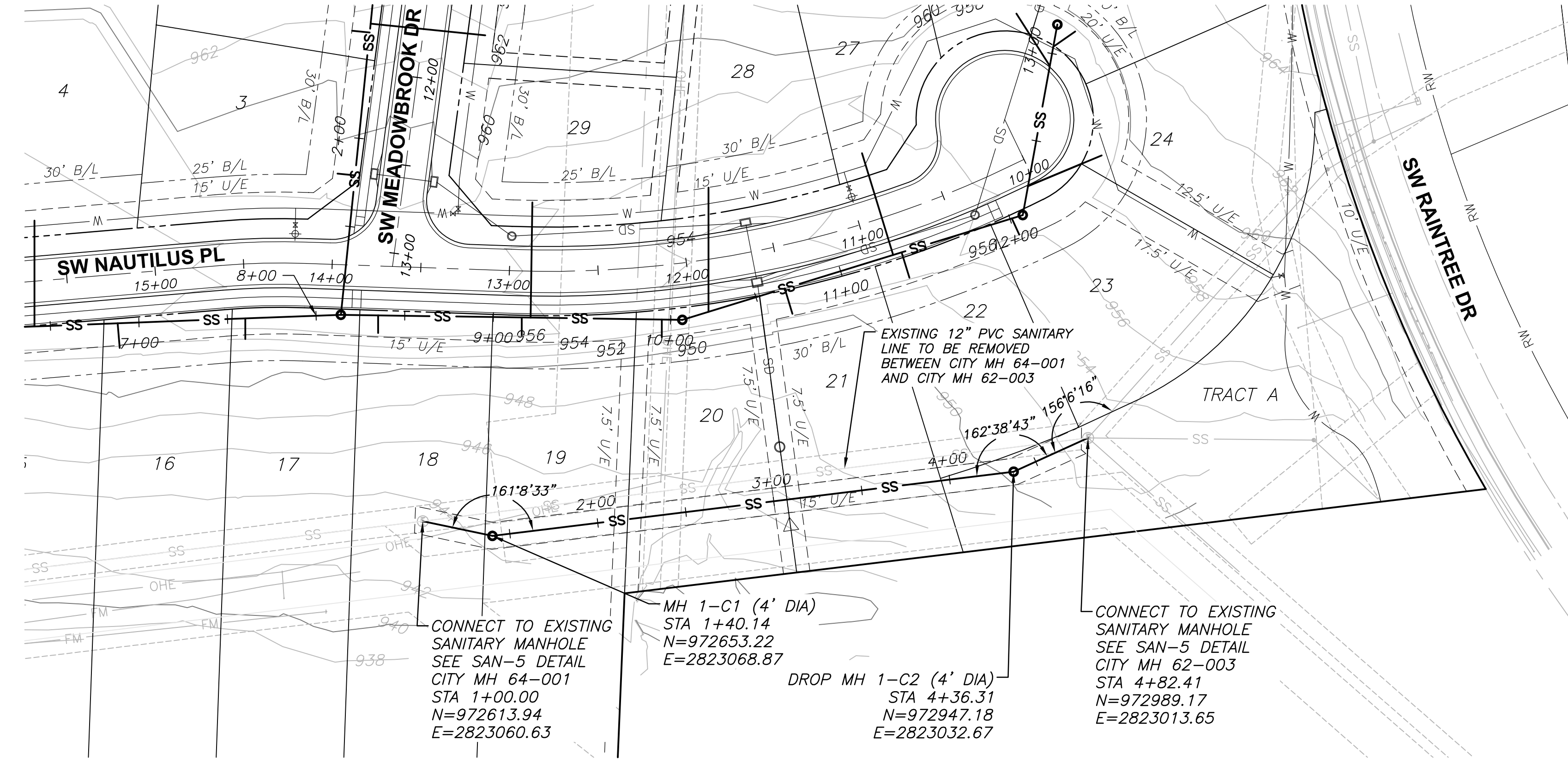
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MANHOLE STRUCTURE NOTE:

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

GENERAL NOTES:

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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



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LEE'S SUMMIT, MO 64064
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MO STATE CERTIFICATE OF
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PROJECT FOR

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

C	07/28/2017	CITY RESUBMITTAL
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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-C

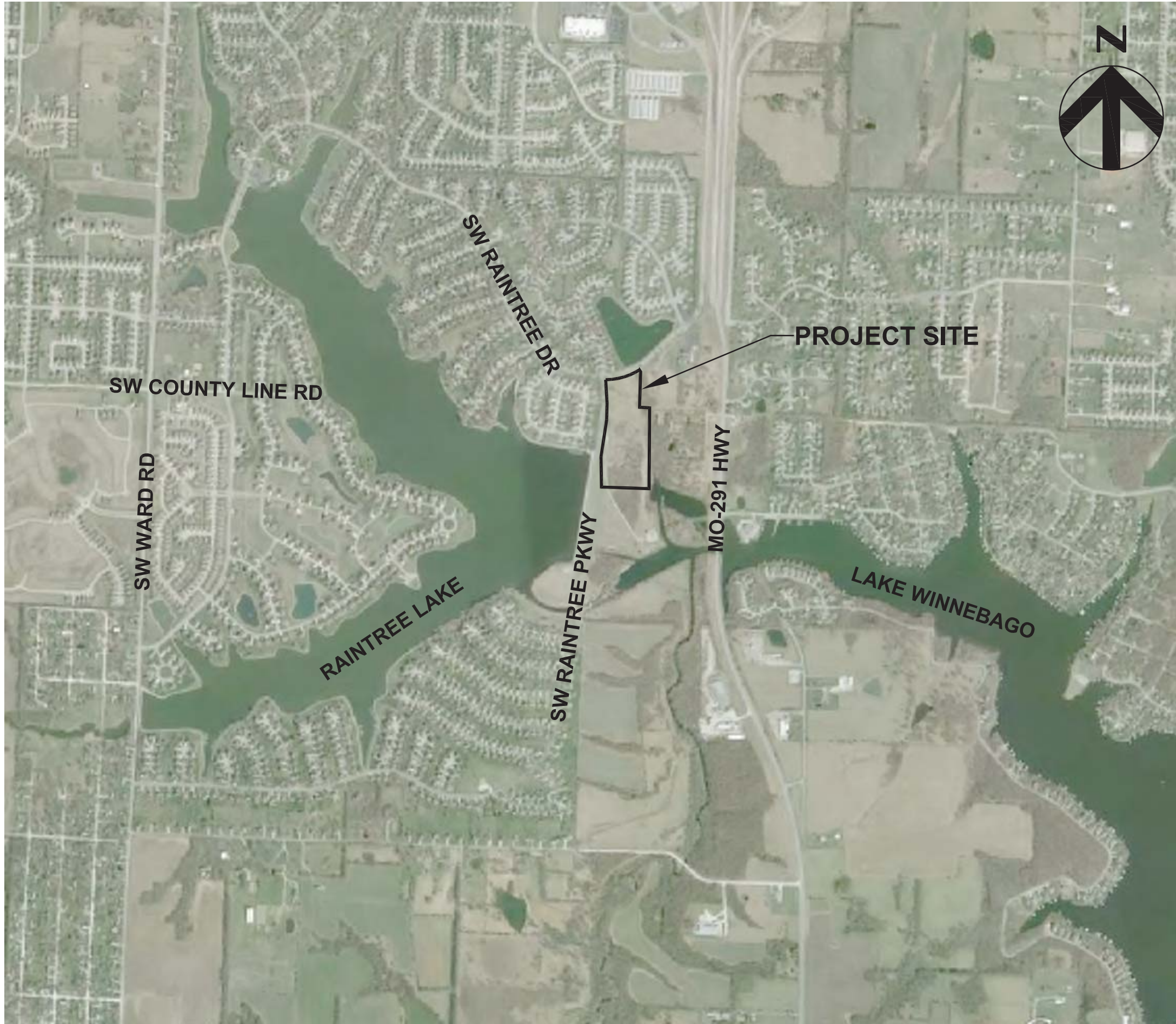


SHEET NUMBER

01C-CR-SS-04

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

PERMIT REVIEW DRAWINGS



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 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

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



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.



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	04/14/2017	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.

"AS-BUILT"
October 29, 2018



SHEET NAME

COVER SHEET

SCALE

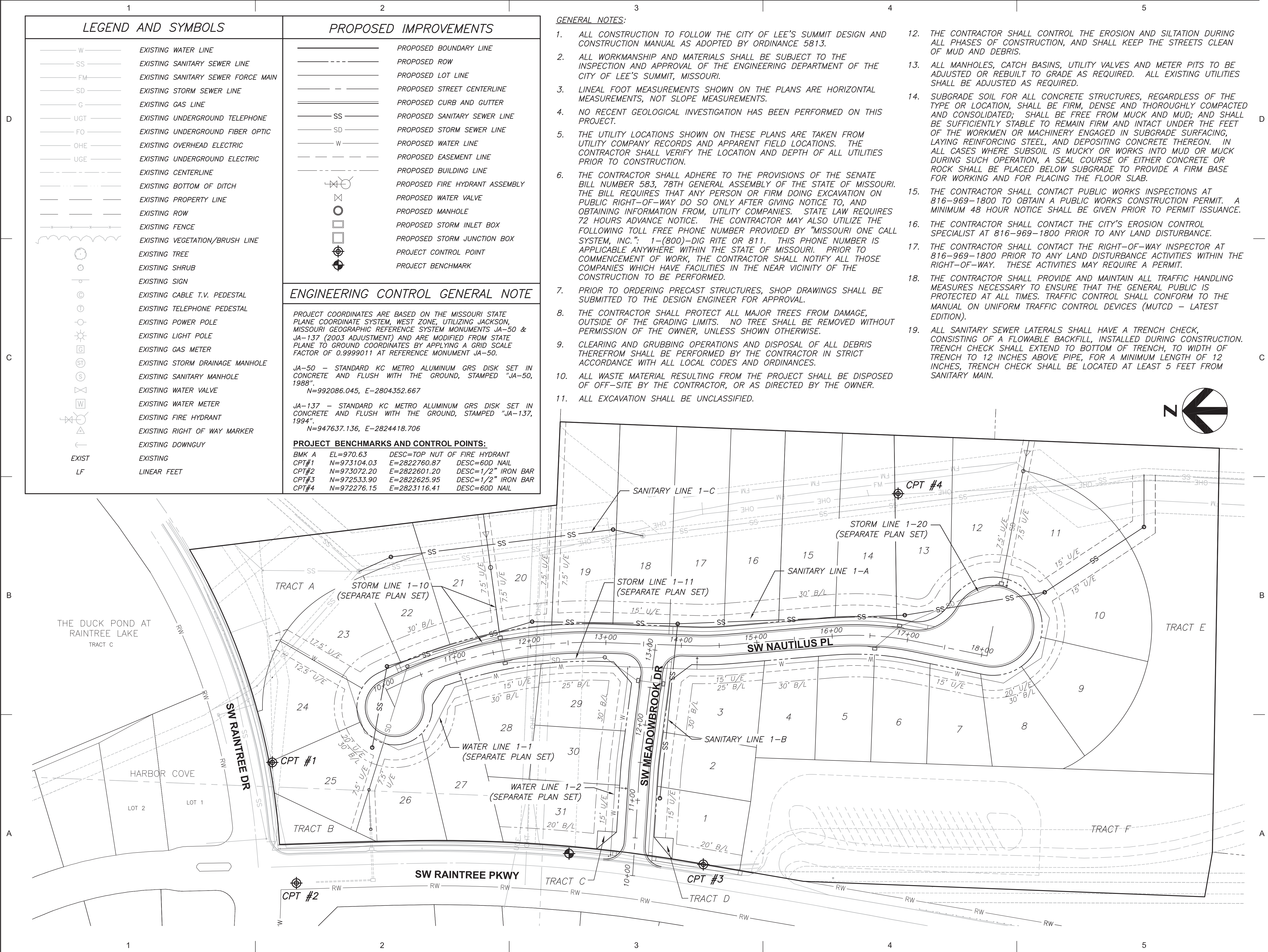
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SHEET NUMBER

01C-CR-SS-00

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

PERMIT REVIEW DRAWINGS



3741 NE TROON DR
LEE'S SUMMIT, MO 64064
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MO STATE CERTIFICATE OF
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PROJECT FOR

**LANDROCK
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**CREEKSIDE AT RAINTREE
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B	04/14/2017	CITY RESUBMITTAL
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PROJECT MANAGER	SIMON SUN
PROJECT ENGINEER	WILL NEDS, E.I.T.



SHEET NAME

**GENERAL LAYOUT
AND NOTES**



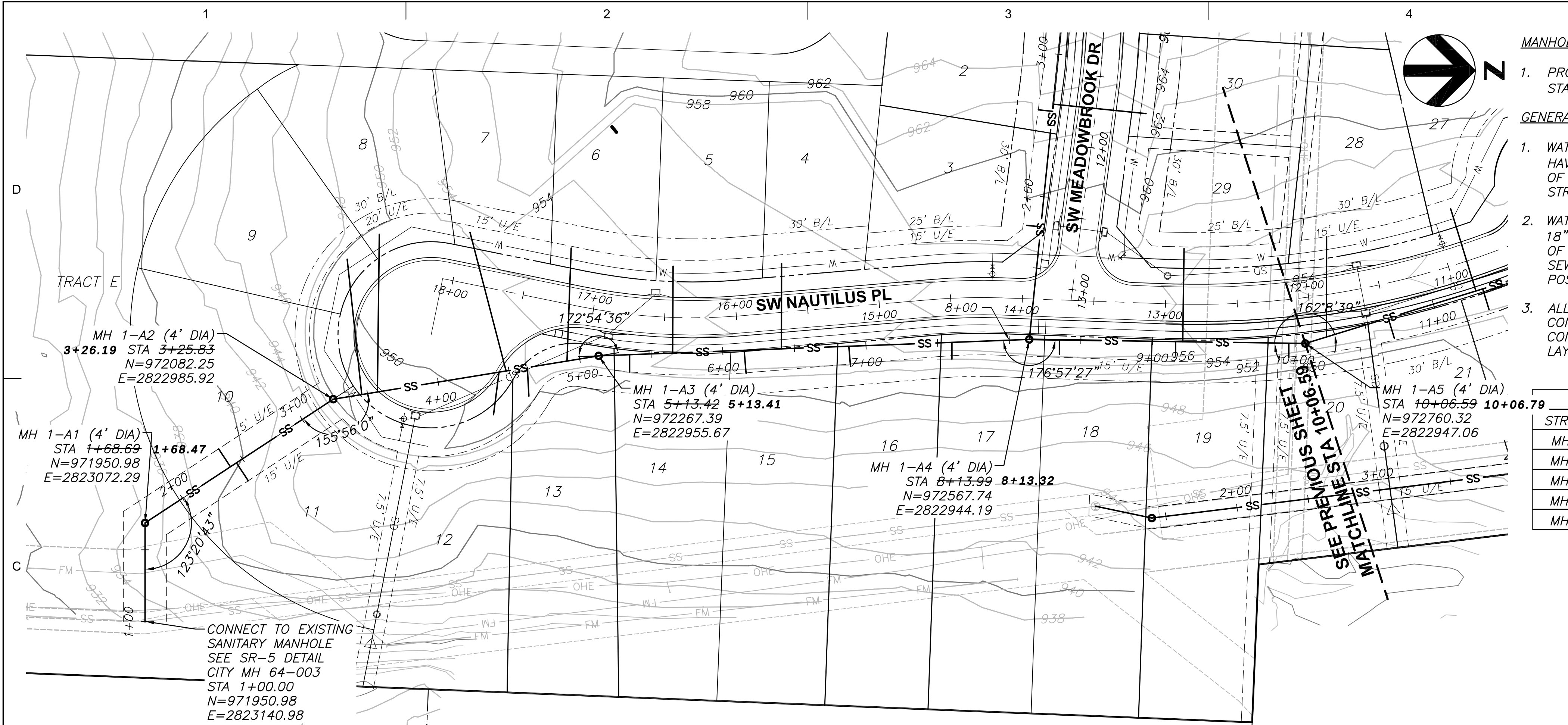
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01C-CR-SS-01

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PERMIT REVIEW DRAWINGS

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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.
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SANITARY SEWER STRUCTURE TABLE

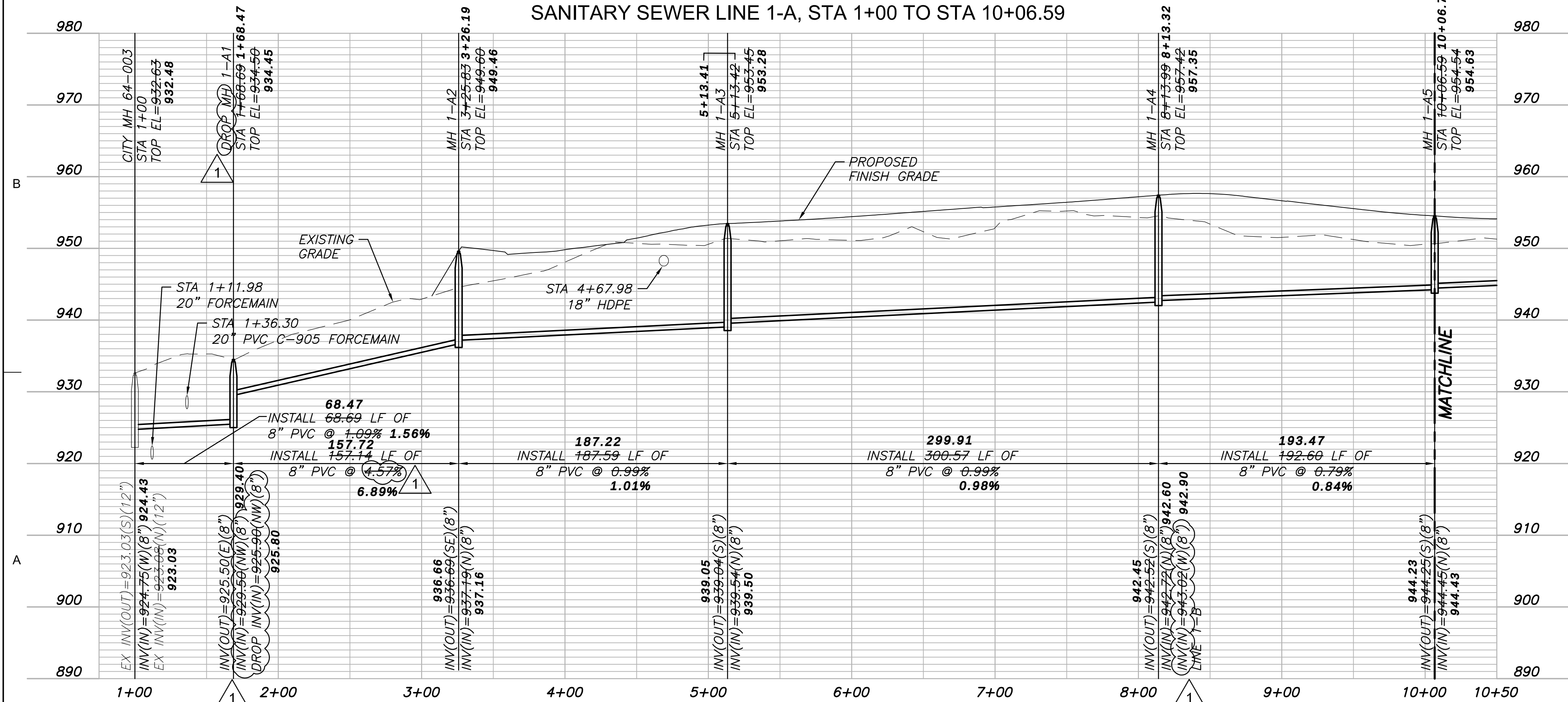
STRUCTURE	STATION & OFFSET	STREET NAME
MH 1-A1	19+76.80, 208.44' LT	SW NAUTILUS PL
MH 1-A2	18+56.36, 97.65' LT	SW NAUTILUS PL
MH 1-A3	16+91.45, 31.63' LT	SW NAUTILUS PL
MH 1-A4	13+94.09, 28.26' LT	SW NAUTILUS PL
MH 1-A5	12+06.09, 31.84' LT	SW NAUTILUS PL

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
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3+57	937.50	941.03	110 LF	8
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4+48	938.40	941.73	100 LF	7
4+63	938.55	940.48	30 LF	13
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9+95	944.15	945.68	10 LF	20

"AS-BUILT"
October 29, 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
C	07/28/2017	CITY RESUBMITTAL
B	05/01/2017	CITY RESUBMITTAL
A	03/08/2017	CITY SUBMITTAL
MARK	DATE	DESCRIPTION

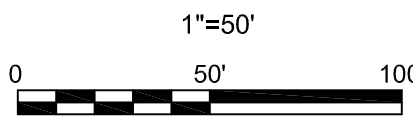
PROJECT NUMBER	10028825-276408
ORIGINAL ISSUE	MARCH 7, 2017

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

SHEET NAME

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

SCALE

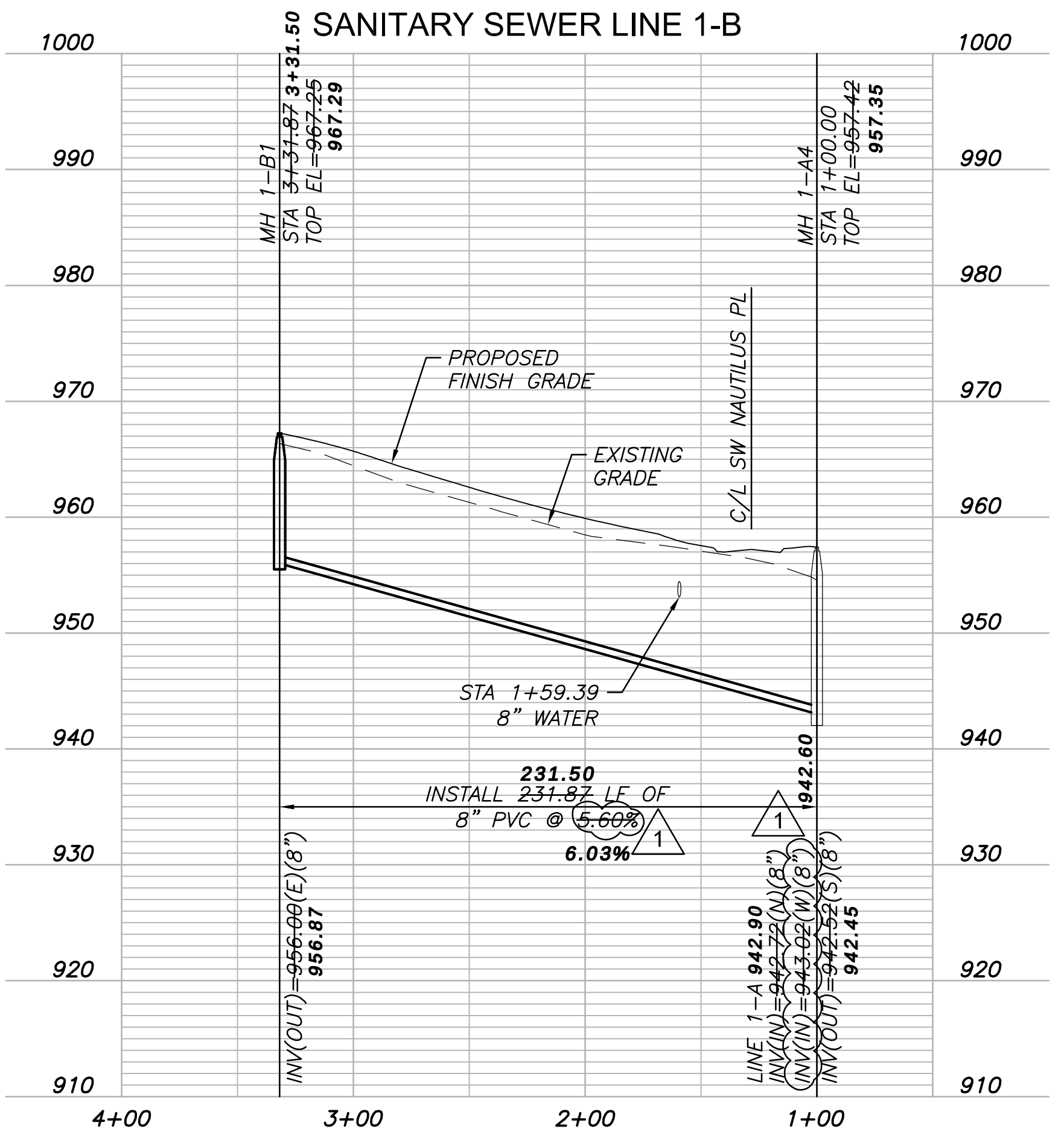
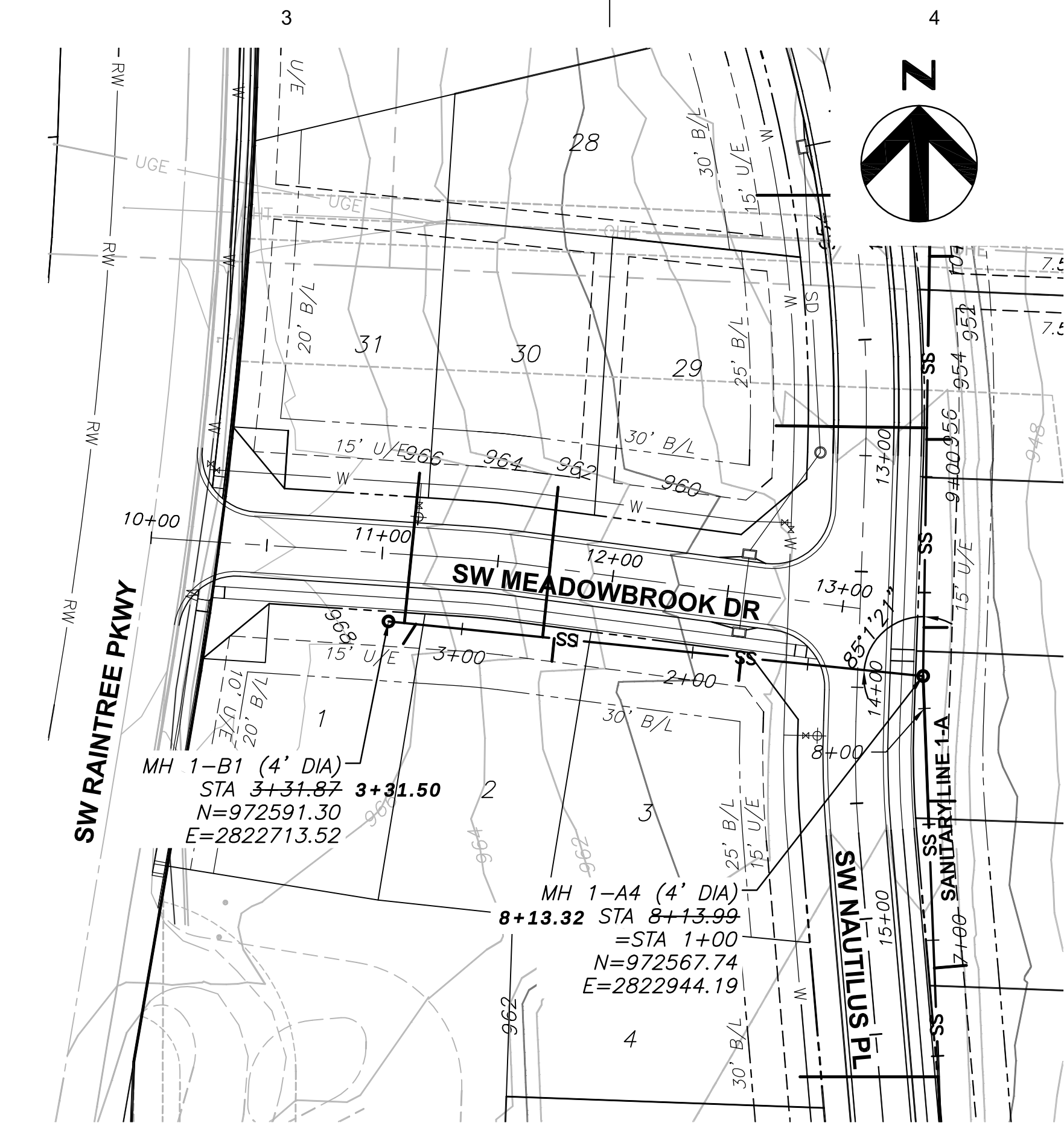
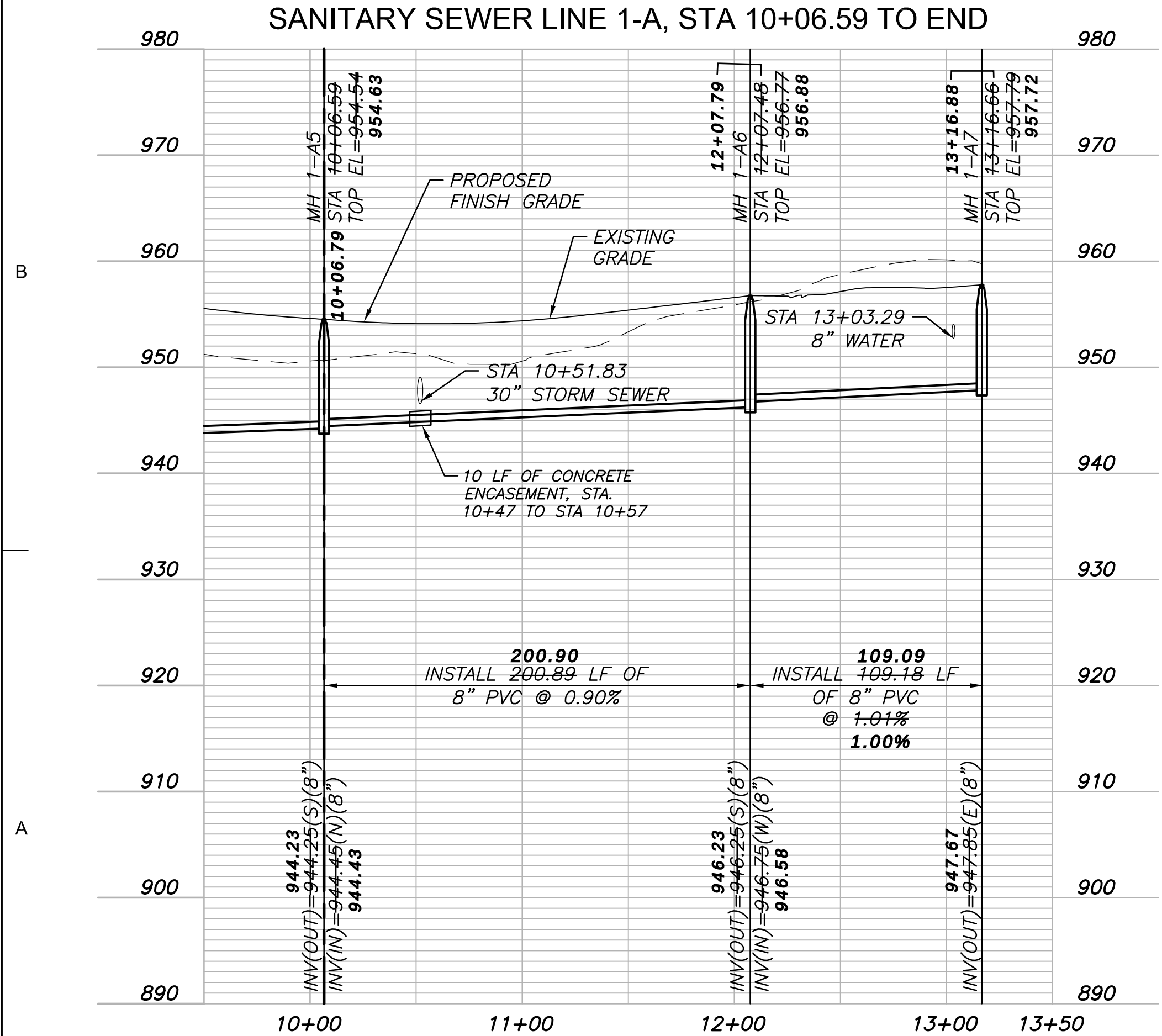
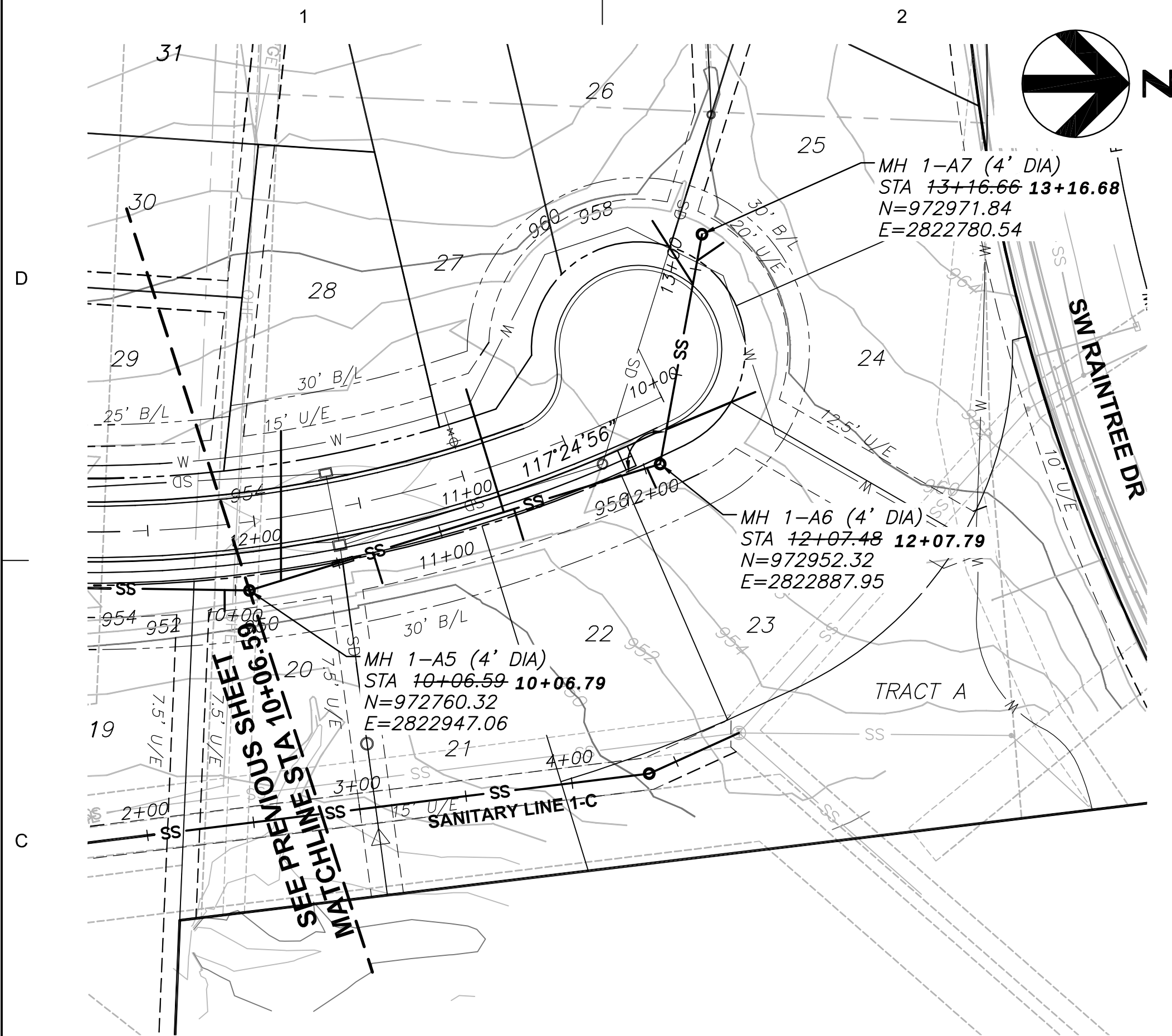


SHEET NUMBER

01C-CR-SS-02

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

PERMIT REVIEW DRAWINGS



MANHOLE STRUCTURE NOTE:

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STRUCTURE	STATION & OFFSET	STREET NAME
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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	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
3+25	955.62	957.15	65 LF	31

"AS-BUILT"
October 29, 2018

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PROJECT FOR

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DEVELOPMENT, LLC

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

D	10/19/2018	AS-BUILT
C	07/28/2017	CITY RESUBMITTAL
B	05/01/2017	CITY RESUBMITTAL
A	03/08/2017	CITY SUBMITTAL
MARK	DATE	DESCRIPTION

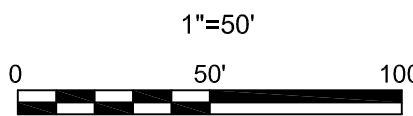
PROJECT NUMBER	10028825-276408
ORIGINAL ISSUE	MARCH 7, 2017

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

SHEET NAME

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

SCALE



SHEET NUMBER

01C-CR-SS-03

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

PERMIT REVIEW DRAWINGS

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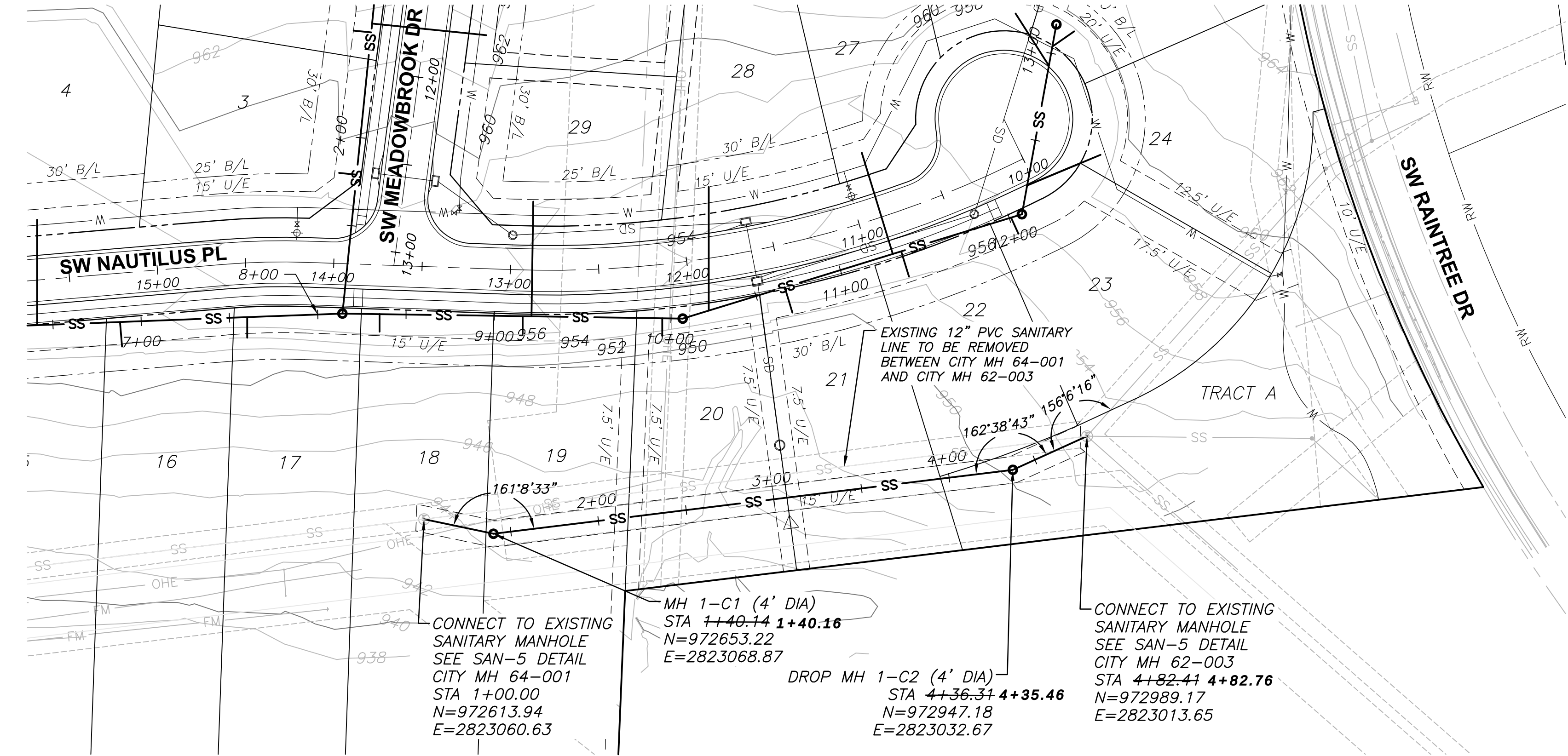
1

2

3

4

5



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 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

MARK	DATE	DESCRIPTION
D	10/29/2018	AS-BUILT
C	07/28/2017	CITY RESUBMITTAL
B	05/01/2017	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.

"AS-BUILT"
October 29, 2018

SHEET NAME

SANITARY SEWER
PLAN AND PROFILE
LINE 1-C

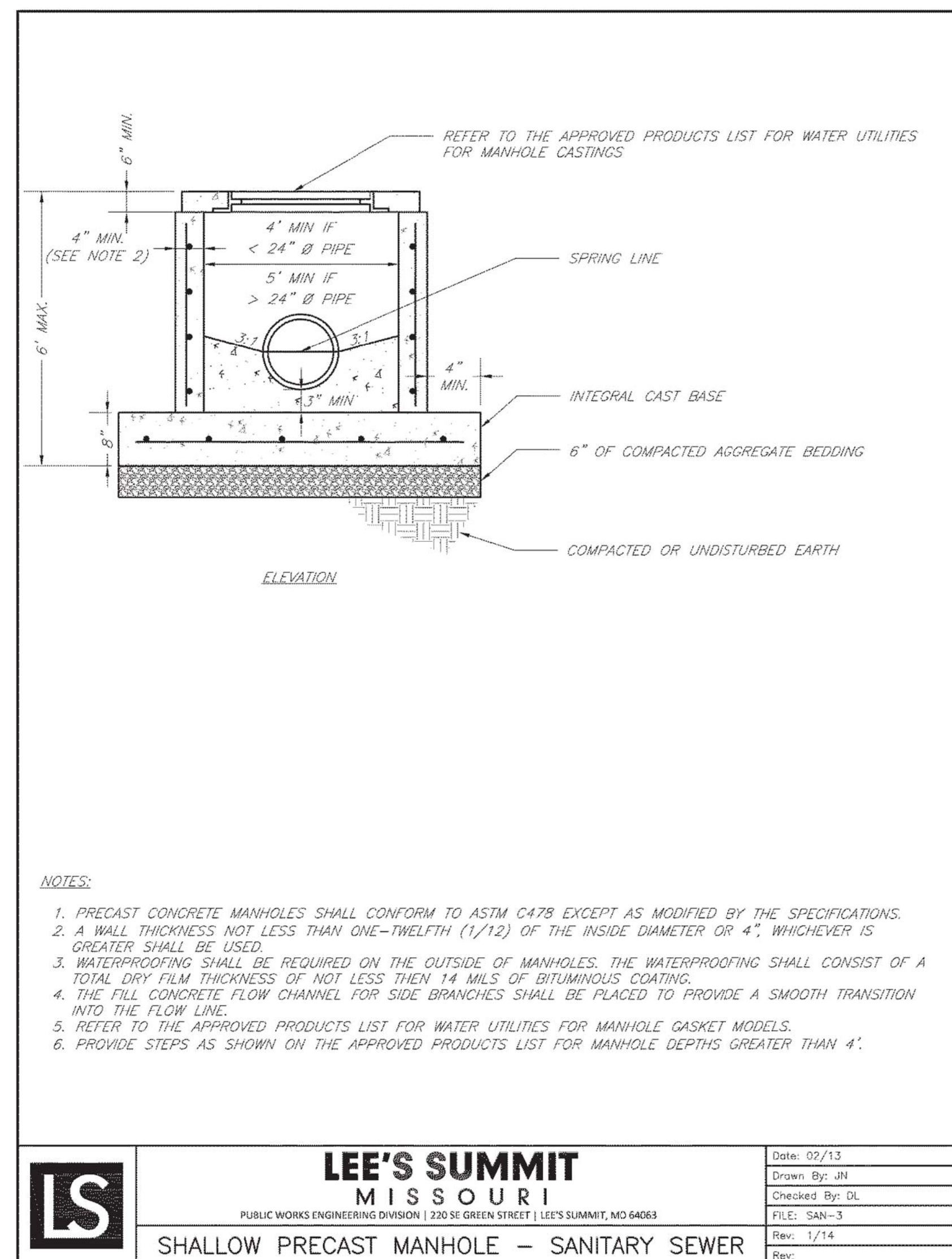
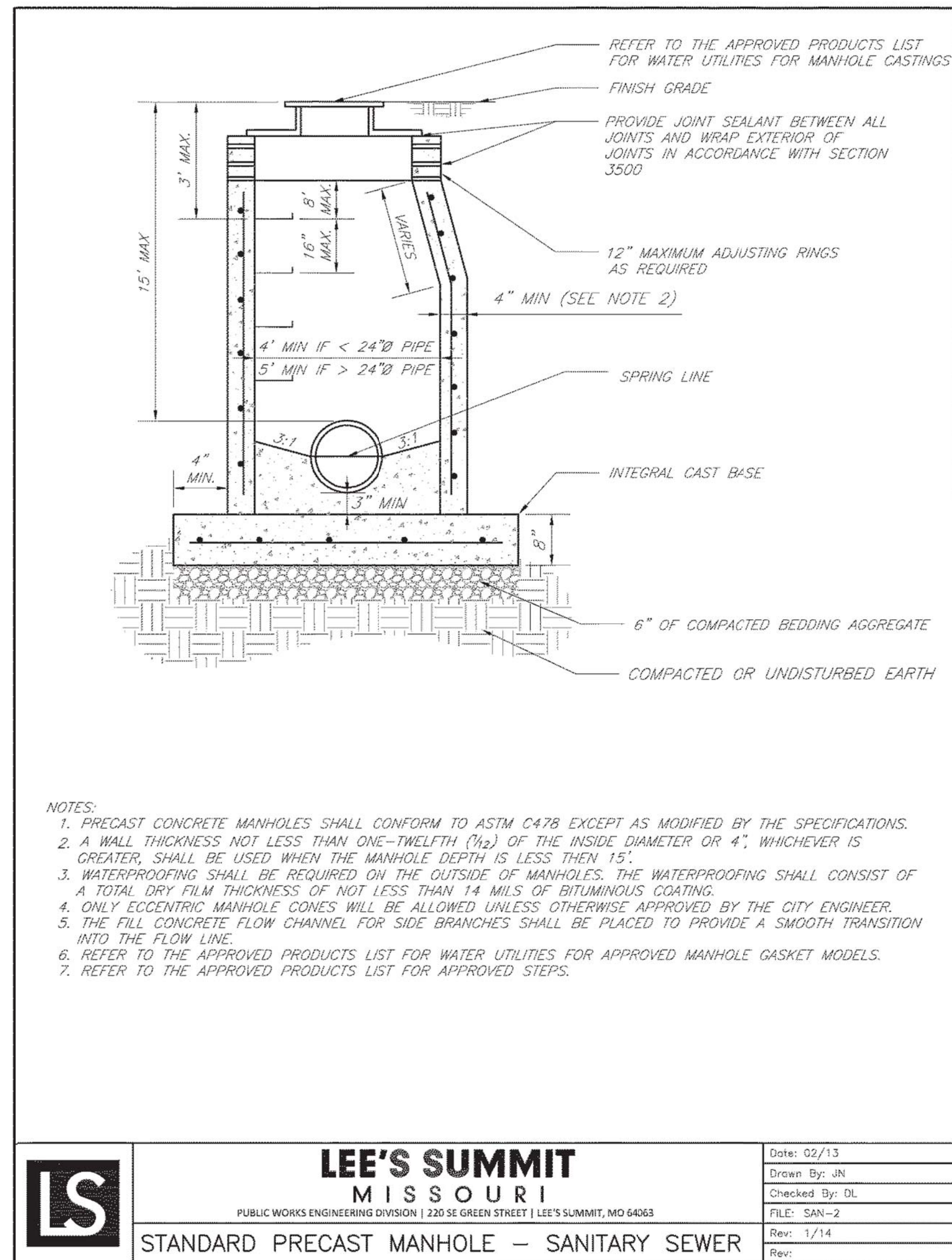
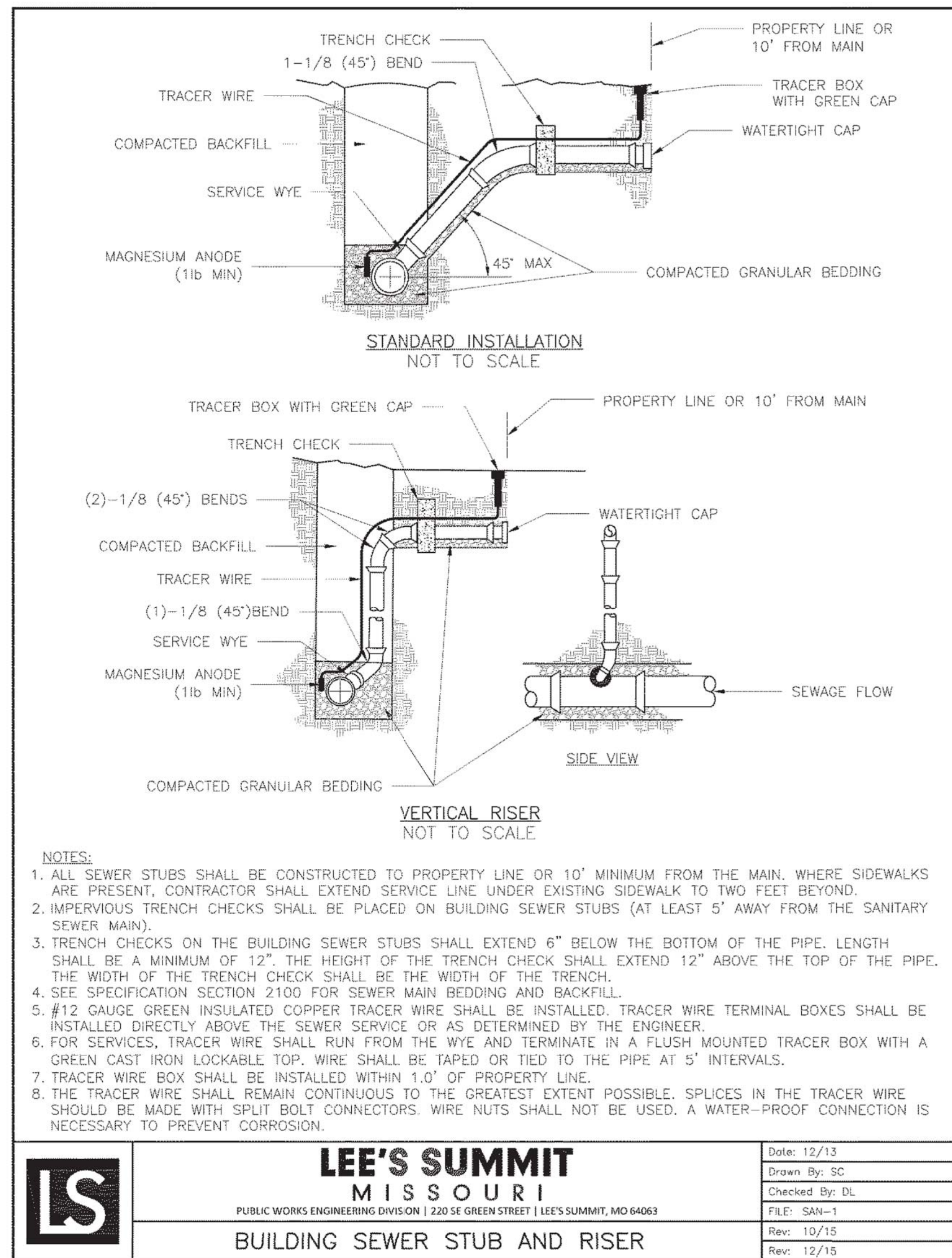


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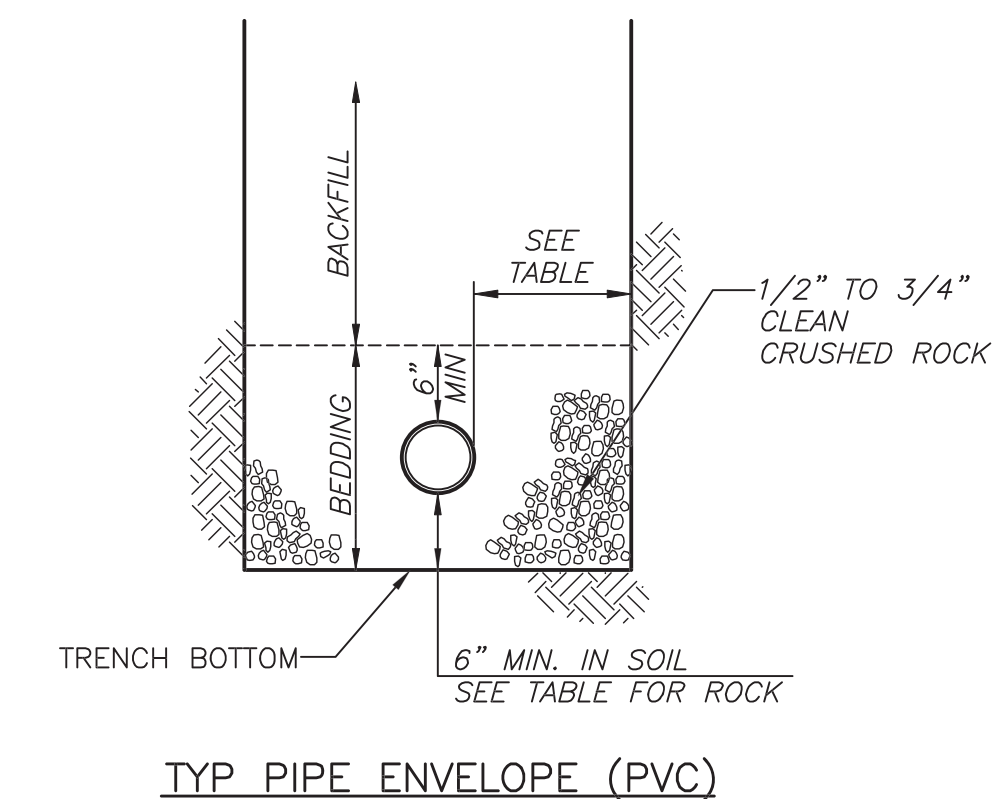
01C-CR-SS-04

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

PERMIT REVIEW DRAWINGS

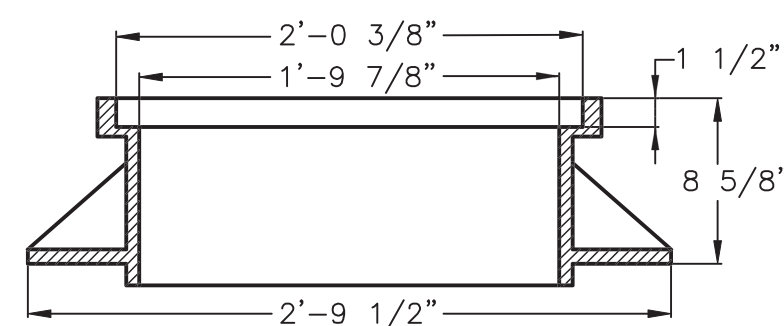


MINIMUM TRENCH WIDTHS AND PIPE CLEARANCES (IN)			
NOMINAL PIPE DIAMETER	TRENCH WIDTH	PIPE SIDE CLEARANCE (SOIL/ROCK)	PIPE BOTTOM CLEARANCE (SOIL/ROCK)
6	22	6/6	6/6
8	22	6/6	6/6
10	24	6/6	6/6
12	27	6/6	6/6



NOTES:

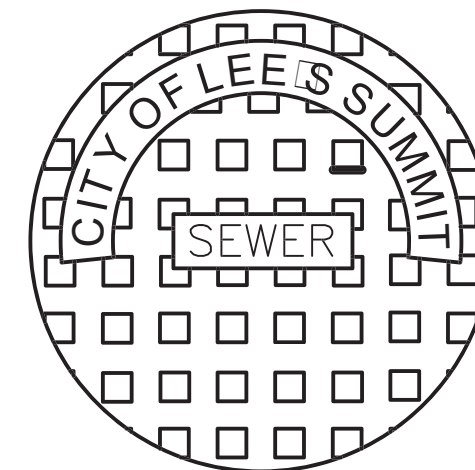
1. BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 2100 OF THE KCMETRO APWA SPECIFICATIONS.
2. BEDDING MATERIAL SHALL BE 1/2" TO 3/4" CLEAN CRUSHED ROCK.
3. TRENCH BANKS SHALL BE CUT BACK ON SLOPES IN ACCORDANCE WITH CURRENT OSHA REGULATIONS. SLOPES MUST NOT EXTEND BELOW TOP OF BEDDING.
4. ALL PUBLIC SANITARY 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".
7. 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.



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

NOTE:

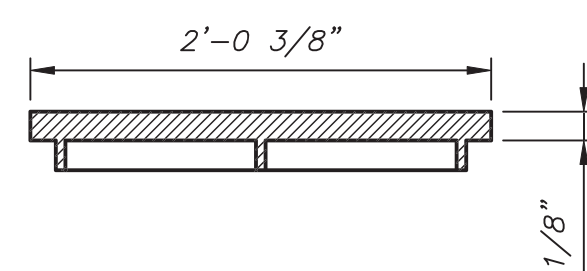
REFER TO WATER UTILITIES LIST
OF APPROVED MANUFACTURER'S.



STANDARD 24" MANHOLE COVER
LEE'S SUMMIT PART NO.: LS101B
MINIMUM WEIGHT = 160 LB
MATCHING FRAME: LS101A
NOTE: PICK HOLES NOT SHOWN.

NOTE:

REFER TO WATER UTILITIES LIST
OF APPROVED MANUFACTURER'S.



24" MANHOLE COVER
NOT TO SCALE

H2R

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

PROJECT FOR

**LANDROCK
DEVELOPMENT, LLC**

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

B	04/14/2017	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

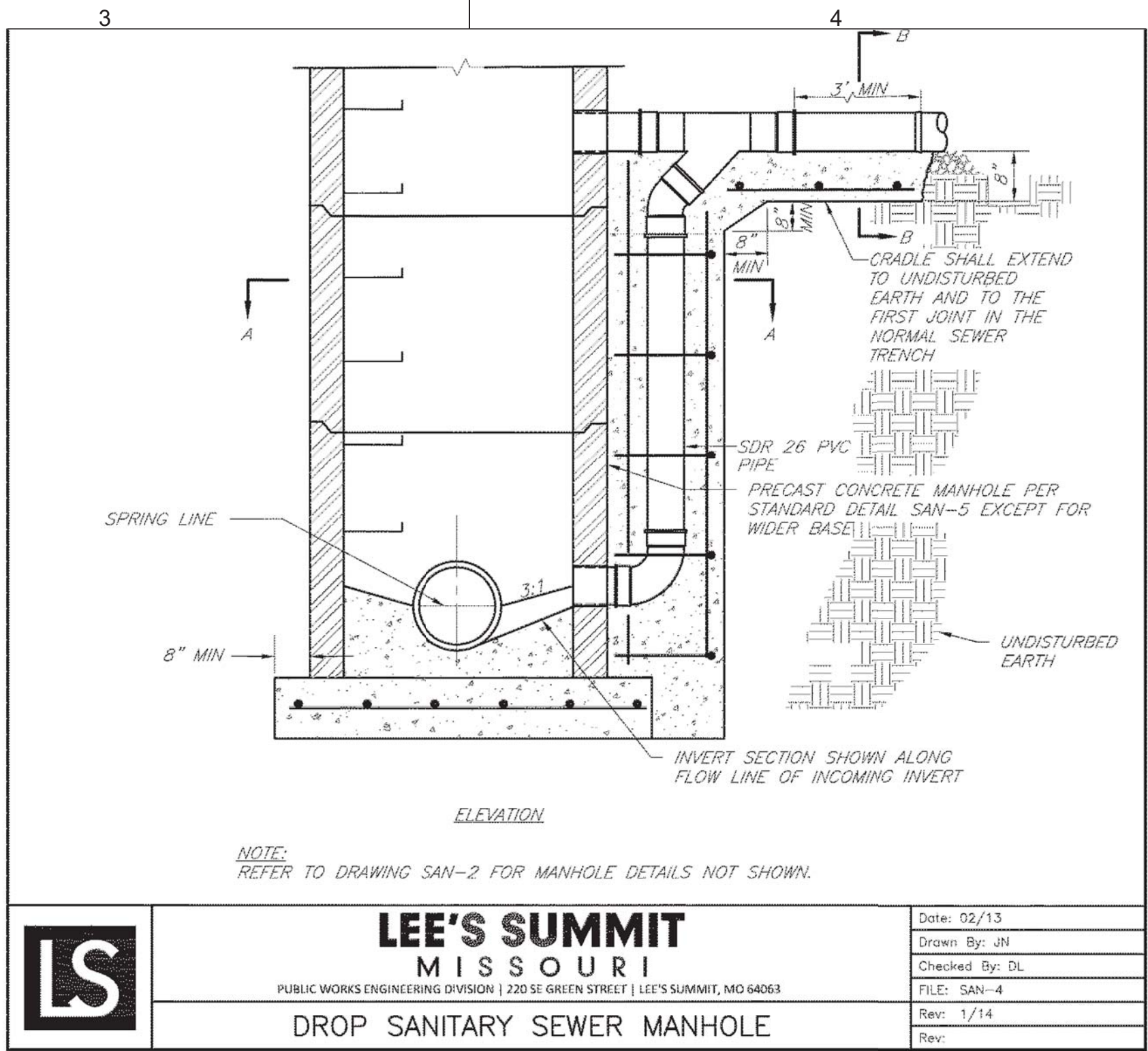
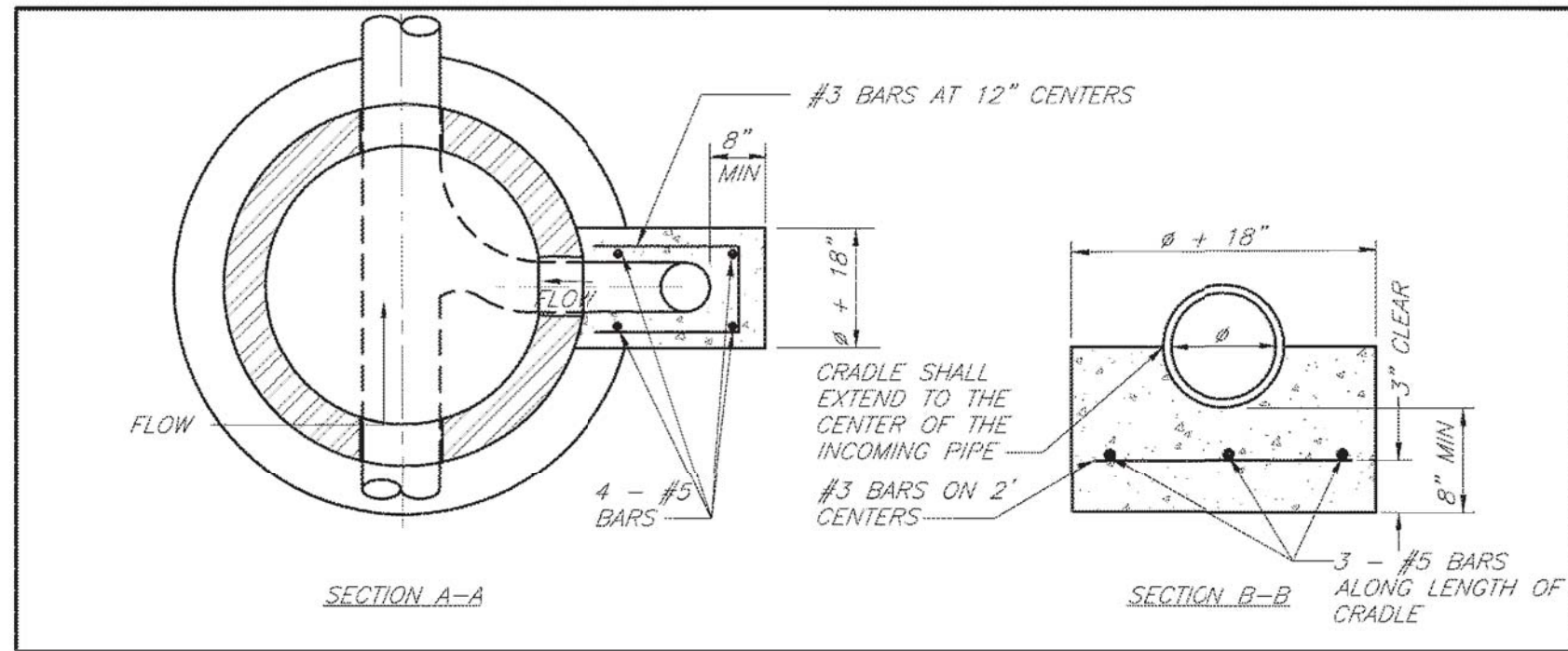
SCALE | NO SCALE

SHEET NUMBER

01C-CR-SS-05

FILE NAME	01C-CR-SS-05.dwg
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PERMIT REVIEW DRAWINGS



LS

LEE'S SUMMIT

MISSOURI

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

Drop Sanitary Sewer Manhole

Date: 02/13

Drawn By: JN

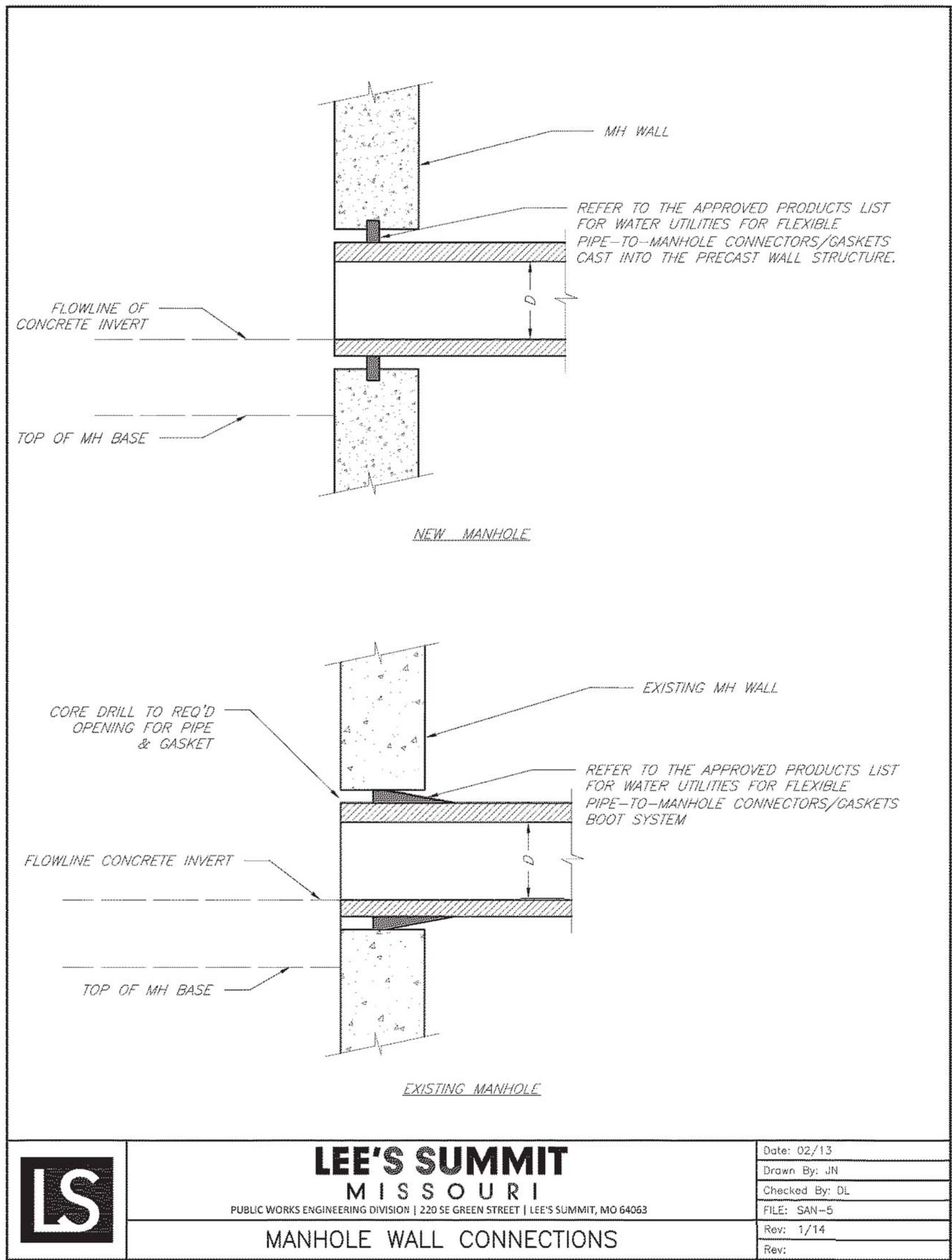
Checked By: DL

FILE: SAN-4

Rev: 1/14

Rev:

SAN-4



LS

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

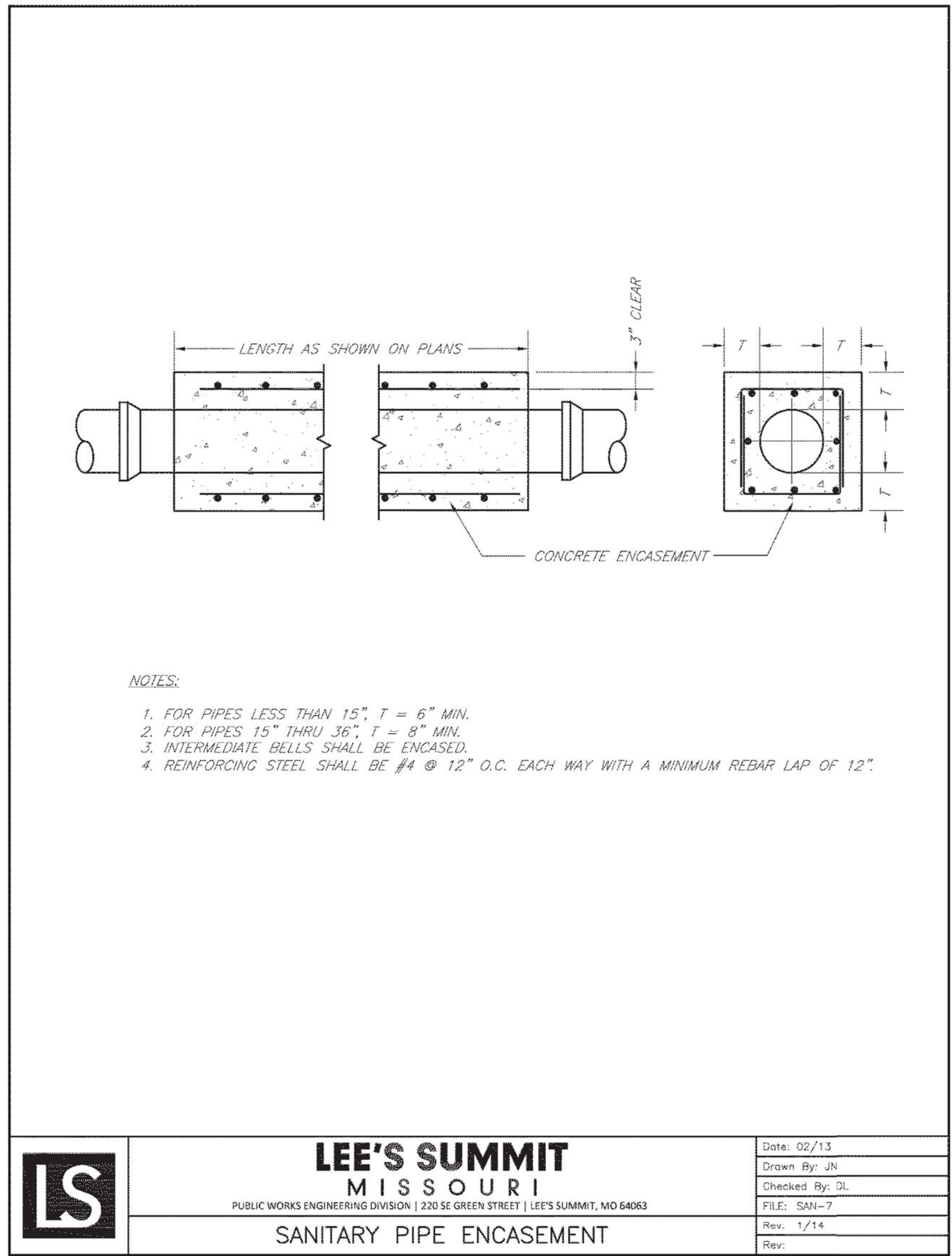
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FILE: SAN-5

Rev: 1/14

Rev:

SAN-5



LS

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:

SAN-7



3741 NE TROON DR
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PROJECT MANAGER	SIMON SUN
PROJECT ENGINEER	WILL NEDS, 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

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LEE'S SUMMIT, MO 64064
816.347.1100

MO STATE CERTIFICATE OF
AUTHORITY #000856

PROJECT FOR

LANDROCK
DEVELOPMENT, LLC

CREEKSIDE AT RAINTREE
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LEE'S SUMMIT, MISSOURI

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PROJECT NUMBER	10028825-276408
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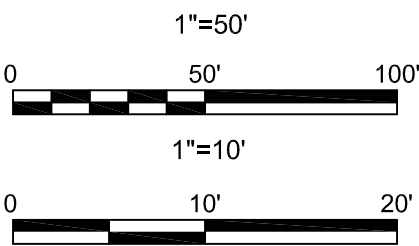
PROJECT MANAGER	SIMON SUN
PROJECT ENGINEER	WILL NEDS, E.I.T.

SHEET NAME

STREET PLAN
AND PROFILE

SW MEADOWBROOK DR

SCALE

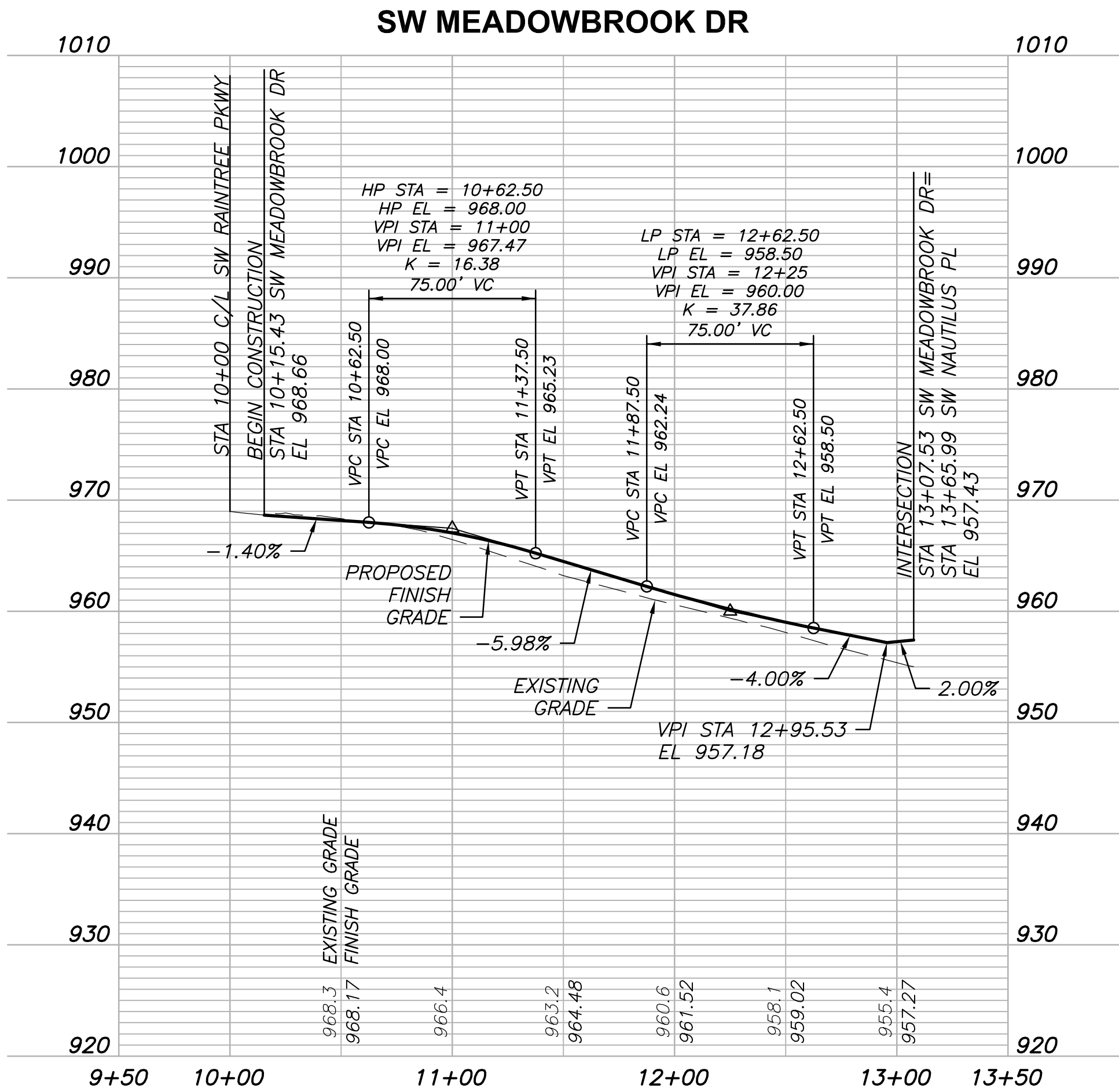
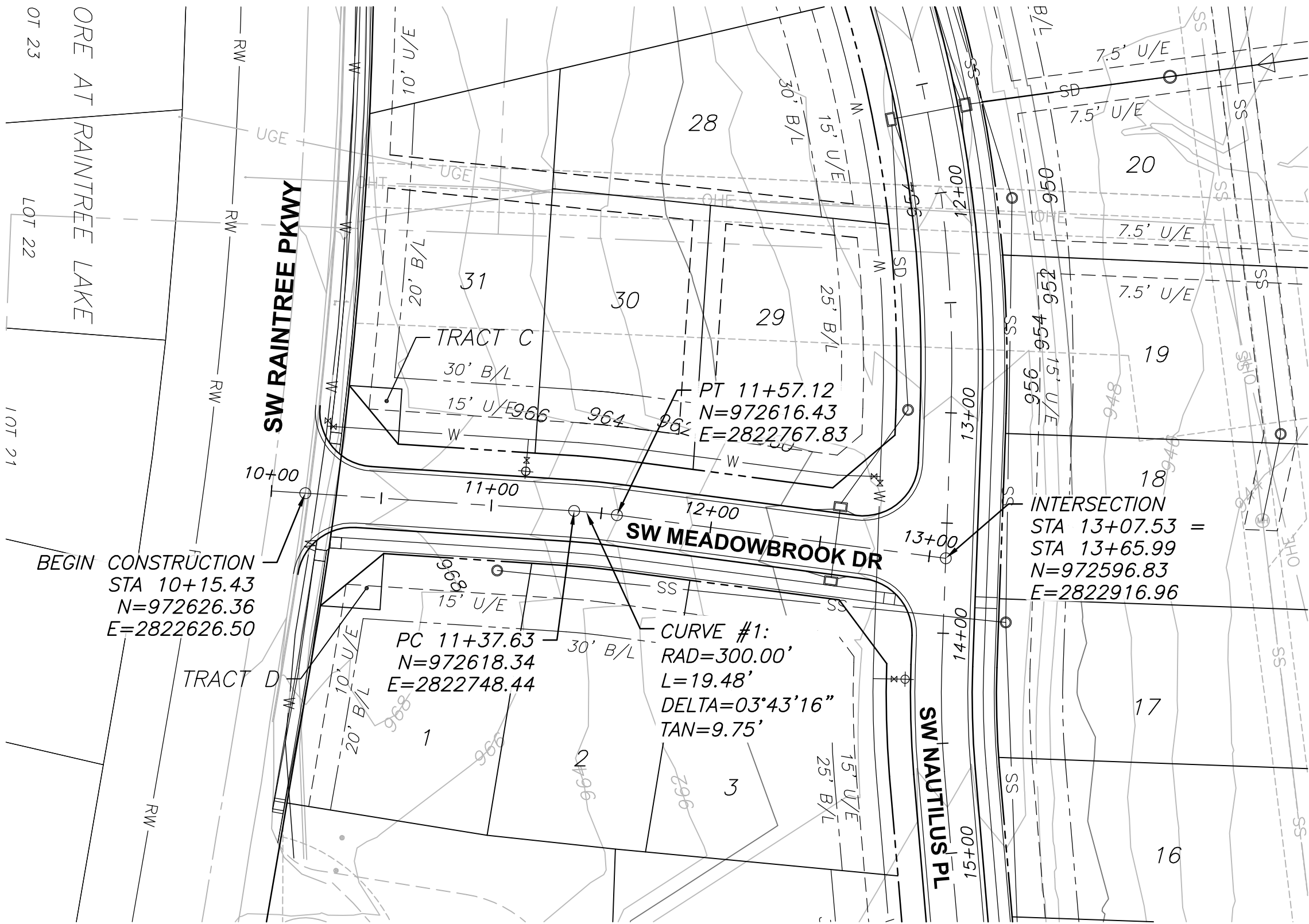


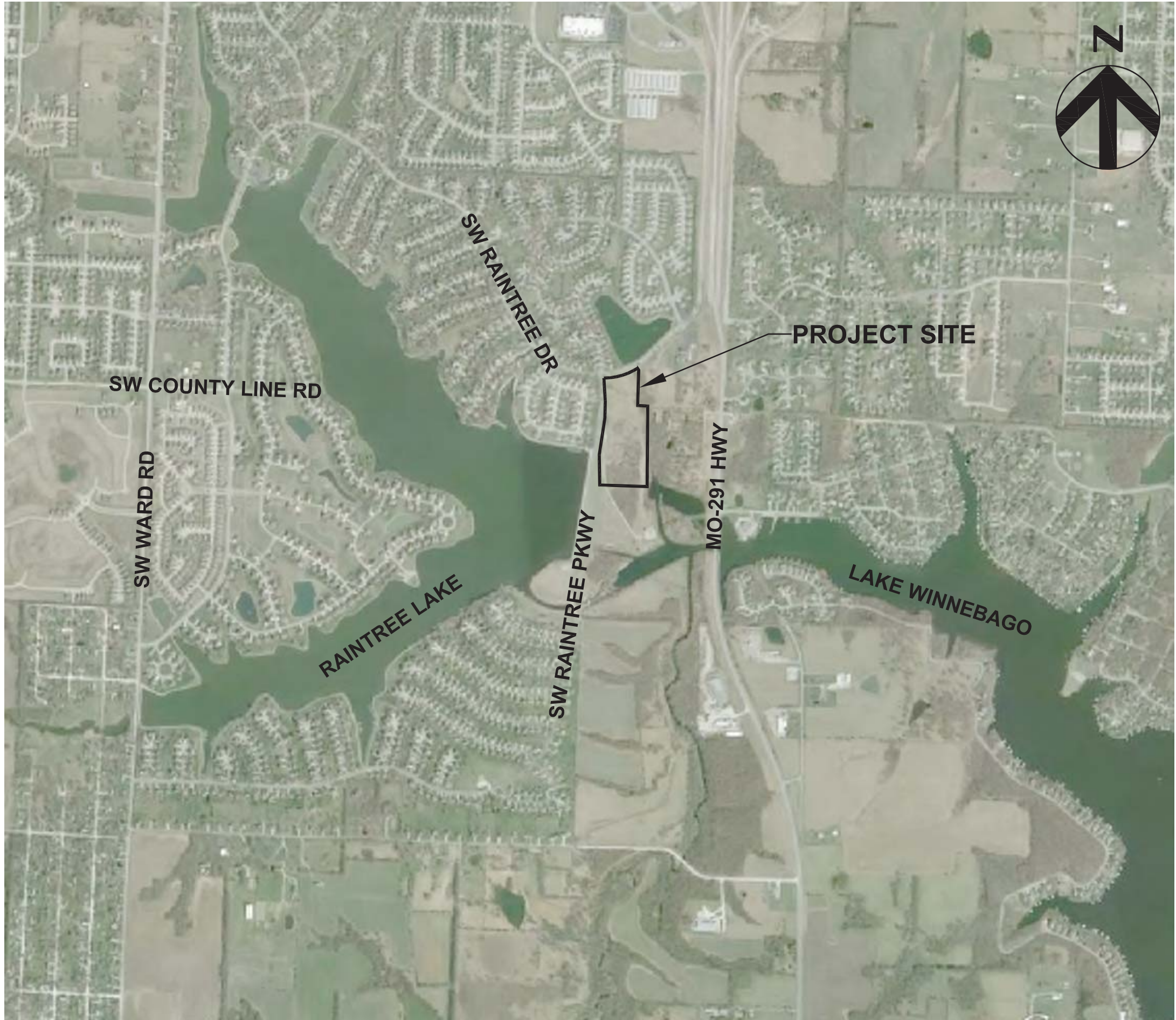
SHEET NUMBER

01C-CR-13

FILE NAME | 01C-CR-13.dwg

PERMIT REVIEW DRAWINGS





Permit Review Drawings For

CREEKSIDE AT RAINTREE LOTS 1 THRU 31 AND TRACTS A THRU F STREET, STORM, MASS GRADING, & EROSION/SEDIMENT CONTROL 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

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

PLAN SHEET INDEX

01C-CR-00	COVER SHEET
01C-CR-01	GENERAL LAYOUT AND NOTES
01C-CR-02	MASS GRADING PLAN
01C-CR-03	PRE-CLEARING EROSION AND SEDIMENT CONTROL PLAN
01C-CR-04	INACTIVE AREA STABILIZATION EROSION AND SEDIMENT CONTROL PLAN
01C-CR-05	FINAL RESTORATION EROSION AND SEDIMENT CONTROL PLAN
01C-CR-06	EROSION AND SEDIMENT CONTROL DETAILS
01C-CR-07	EROSION AND SEDIMENT CONTROL DETAILS
01C-CR-08	MASTER DRAINAGE PLAN
01C-CR-09	TYPICAL ADA RAMP DETAILS
01C-CR-10	TYPICAL ADA RAMP DETAILS
01C-CR-11	TYPICAL ROAD SECTION AND DETAILS
01C-CR-12	STREET PLAN & PROFILE SW MEADOWBROOK DR
01C-CR-13	STREET PLAN & PROFILE SW NAUTILUS PL
01C-CR-14	INTERSECTION AND SIGNAGE DETAILS
01C-CR-15	STORMWATER DRAINAGE MAP
01C-CR-16	STORM SEWER PLAN & PROFILE LINE 1-10 AND LINE 1-11
01C-CR-17	STORM SEWER PLAN & PROFILE LINE 1-20
01C-CR-18	STORM SEWER DETAILS
01C-CR-19	STORM SEWER DETAILS



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MO STATE CERTIFICATE OF
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PROJECT FOR

LANDROCK
DEVELOPMENT, LLC

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

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



SHEET NAME

COVER SHEET

SCALE
NO SCALE

SHEET NUMBER

01C-CR-00

FILE NAME
01C-CR-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) 360-2756



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.

LEGEND AND SYMBOLS	
— W —	EXISTING WATER LINE
— SS —	EXISTING SANITARY SEWER LINE
— FM —	EXISTING SANITARY SEWER FORCE MAIN
— SD —	EXISTING STORM SEWER LINE
— G —	EXISTING GAS LINE
— UGT —	EXISTING UNDERGROUND TELEPHONE
— FO —	EXISTING UNDERGROUND FIBER OPTIC
— OHE —	EXISTING OVERHEAD ELECTRIC
— UGE —	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
— SS —	PROPOSED SANITARY SEWER LINE
— SD —	PROPOSED STORM SEWER LINE
— W —	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	
PROJECT BENCHMARKS AND CONTROL POINTS:	
BMK A	EL=970.63 DESC=TOP NUT OF FIRE HYDRANT
CPT#1	N=973104.03 E=2822760.87 DESC=60D NAIL
CPT#2	N=973072.20 E=2822601.20 DESC=1/2" IRON BAR
CPT#3	N=972533.90 E=2822625.95 DESC=1/2" IRON BAR
CPT#4	N=972276.15 E=2823116.41 DESC=60D NAIL

- 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).



3741 NE TROON DR
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PROJECT FOR

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LOTS 1 THRU 31
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PROJECT ENGINEER	WILL NEDS, E.I.T.



SHEET NAME

GENERAL LAYOUT
AND NOTES

SCALE

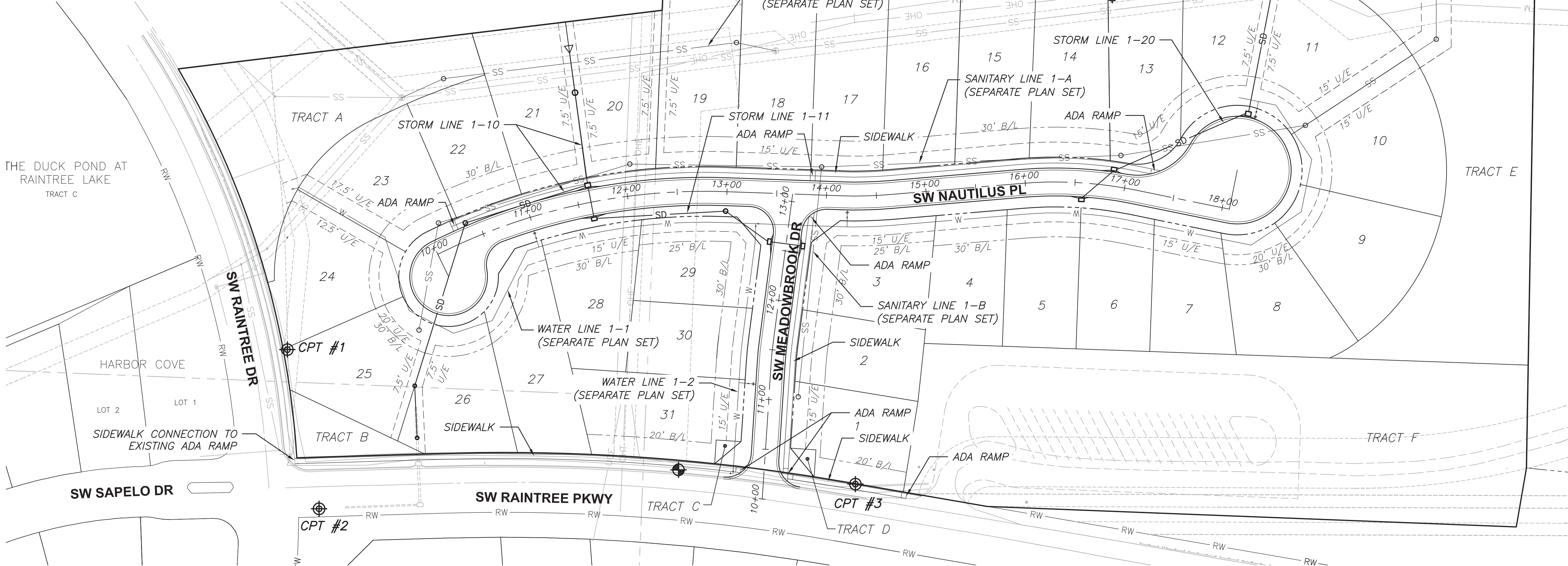
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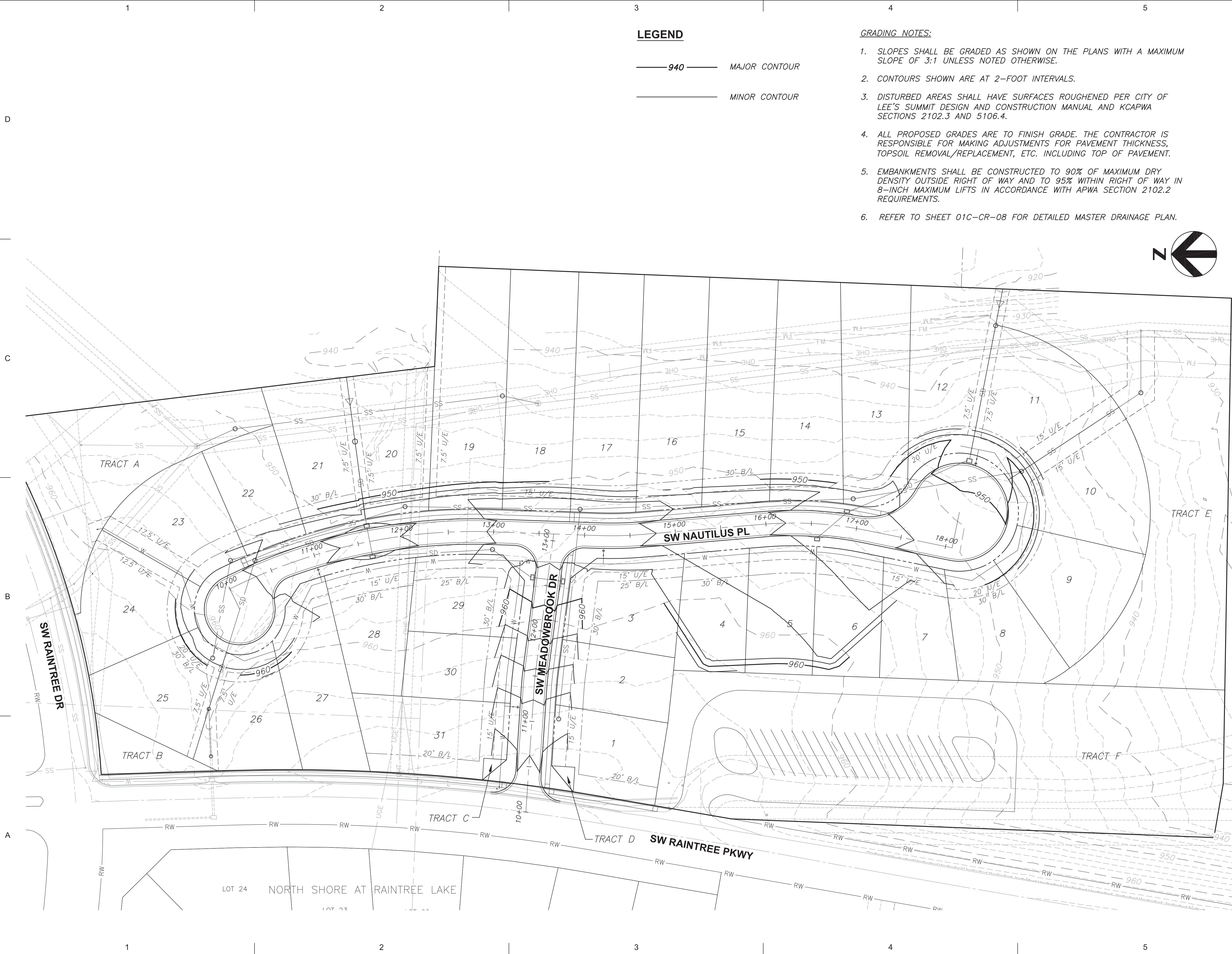
SHEET NUMBER

01C-CR-01

FILE NAME | 01C-CR-01.dwg

PERMIT REVIEW DRAWINGS





LEGEND

- 940 — MAJOR CONTOUR
- MINOR CONTOUR

GRADING NOTES:

- SLOPES SHALL BE GRADED AS SHOWN ON THE PLANS WITH A MAXIMUM SLOPE OF 3:1 UNLESS NOTED OTHERWISE.
- CONTOURS SHOWN ARE AT 2-FOOT INTERVALS.
- DISTURBED AREAS SHALL HAVE SURFACES ROUGHENED PER CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AND KCAPWA SECTIONS 2102.3 AND 5106.4.
- ALL PROPOSED GRADES ARE TO FINISH GRADE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING ADJUSTMENTS FOR PAVEMENT THICKNESS, TOPSOIL REMOVAL/REPLACEMENT, ETC. INCLUDING TOP OF PAVEMENT.
- EMBANKMENTS SHALL BE CONSTRUCTED TO 90% OF MAXIMUM DRY DENSITY OUTSIDE RIGHT OF WAY AND TO 95% WITHIN RIGHT OF WAY IN 8-INCH MAXIMUM LIFTS IN ACCORDANCE WITH APWA SECTION 2102.2 REQUIREMENTS.
- REFER TO SHEET 01C-CR-08 FOR DETAILED MASTER DRAINAGE PLAN.



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	04/14/2017	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

MASS GRADING PLAN

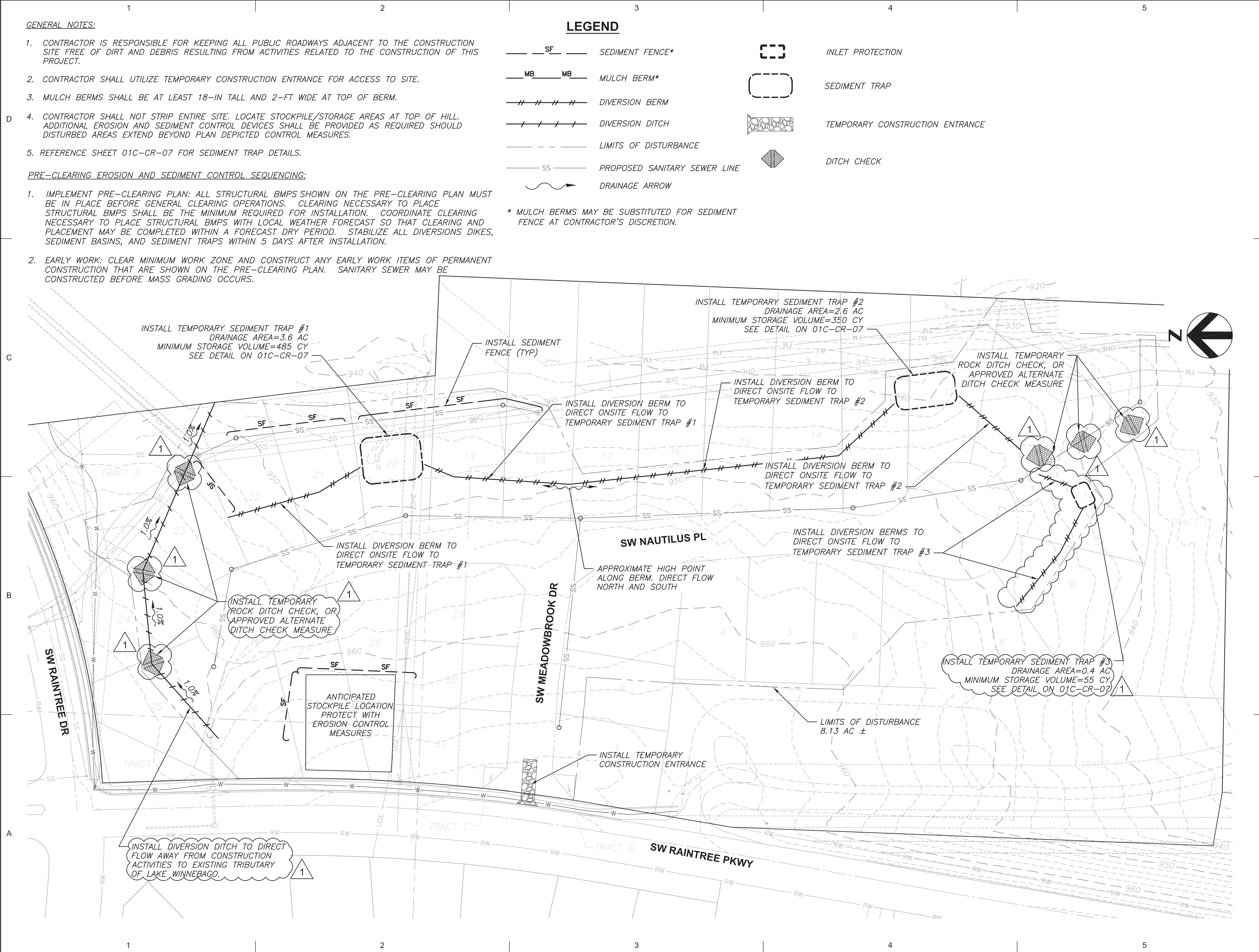


SHEET NUMBER

01C-CR-02

FILE NAME 01C-CR-02.dwg

PERMIT REVIEW DRAWINGS



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PROJECT FOR

**LANDROCK
DEVELOPMENT, LLC**

**CREEKSIDE AT RAINTREE
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B	05/01/2017	CITY RESUBMITTAL
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MARK	DATE	DESCRIPTION

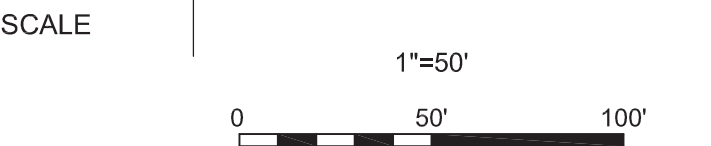
PROJECT NUMBER	10028825-276408
ORIGINAL ISSUE	MARCH 7, 2017

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



SHEET NAME

**PRE-CLEARING
EROSION AND SEDIMENT
CONTROL PLAN**



SHEET NUMBER

01C-CR-03

FILE NAME 01C-CR-03.dwg

PERMIT REVIEW DRAWINGS

GENERAL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR KEEPING ALL PUBLIC ROADWAYS ADJACENT TO THE CONSTRUCTION SITE FREE OF DIRT AND DEBRIS RESULTING FROM ACTIVITIES RELATED TO THE CONSTRUCTION OF THIS PROJECT.
2. CONTRACTOR SHALL UTILIZE TEMPORARY CONSTRUCTION ENTRANCE FOR ACCESS TO SITE.
3. MULCH BERMS SHALL BE AT LEAST 18-IN TALL AND 2-FT WIDE AT TOP OF BERM.
4. CONTRACTOR SHALL NOT STRIP ENTIRE SITE. LOCATE STOCKPILE/STORAGE AREAS AT TOP OF HILL. ADDITIONAL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE PROVIDED AS REQUIRED SHOULD DISTURBED AREAS EXTEND BEYOND PLAN DEPICTED CONTROL MEASURES.
5. REFERENCE SHEET 01C-CR-07 FOR SEDIMENT TRAP DETAILS.

INACTIVE AREA STABILIZATION EROSION AND SEDIMENT CONTROL SEQUENCING:

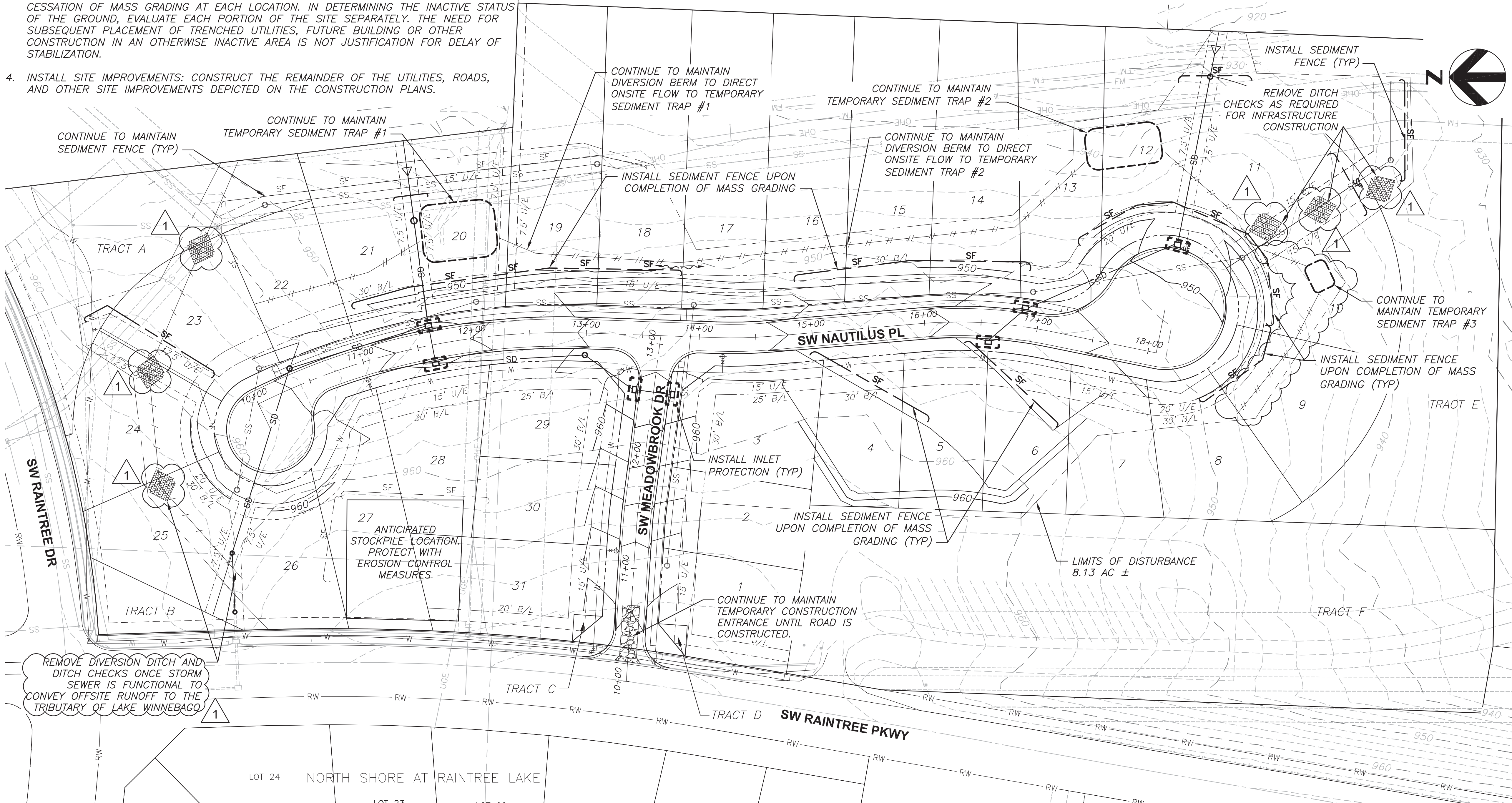
1. GRADING: CLEAR SITE AND COMPLETE MASS GRADING.
2. IMPLEMENT STEEP SLOPE PROTECTION. DURING GRADING OPERATIONS, PLACE STEEP SLOPE PROTECTION SHOWN ON THE INACTIVE AREA STABILIZATION DRAWING AS SOON AS PRACTICABLE. THIS APPLIES TO SLOPES GREATER THAN 15%.
3. STABILIZE INACTIVE AREAS: THE GROUND COVER AND OTHER STRUCTURAL BMPS SHOWN ON THE INACTIVE AREA STABILIZATION DRAWING MUST BE PLACED WITHIN 14 DAYS OF CESSATION OF MASS GRADING AT EACH LOCATION. IN DETERMINING THE INACTIVE STATUS OF THE GROUND, EVALUATE EACH PORTION OF THE SITE SEPARATELY. THE NEED FOR SUBSEQUENT PLACEMENT OF TRENCHED UTILITIES, FUTURE BUILDING OR OTHER CONSTRUCTION IN AN OTHERWISE INACTIVE AREA IS NOT JUSTIFICATION FOR DELAY OF STABILIZATION.
4. INSTALL SITE IMPROVEMENTS: CONSTRUCT THE REMAINDER OF THE UTILITIES, ROADS, AND OTHER SITE IMPROVEMENTS DEPICTED ON THE CONSTRUCTION PLANS.

LEGEND

- SF — SEDIMENT FENCE*
- MB — MB MULCH BERM*
- // // // // DIVERSION BERM
- / / / / / DIVERSION DITCH
- — — — — LIMITS OF DISTURBANCE
- SS — PROPOSED SANITARY SEWER LINE
- W — PROPOSED WATER SERVICE LINE
- SD — PROPOSED STORM DRAINAGE LINE

- INLET PROTECTION
- SEDIMENT TRAP
- TEMPORARY CONSTRUCTION ENTRANCE
- DITCH CHECK

* MULCH BERMS MAY BE SUBSTITUTED FOR SEDIMENT FENCE AT CONTRACTOR'S DISCRETION.



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B	05/01/2017	CITY RESUBMITTAL
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MARK	DATE	DESCRIPTION

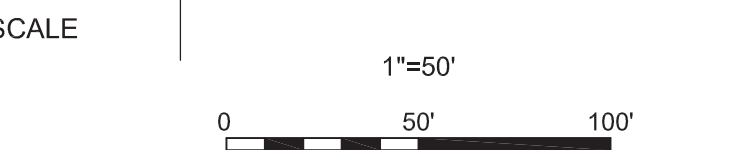
PROJECT NUMBER	10028825-276408
ORIGINAL ISSUE	MARCH 7, 2017

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



SHEET NAME

INACTIVE AREA
STABILIZATION
EROSION AND SEDIMENT
CONTROL PLAN



SHEET NUMBER

01C-CR-04

FILE NAME 01C-CR-04.dwg

PERMIT REVIEW DRAWINGS

GENERAL NOTES:

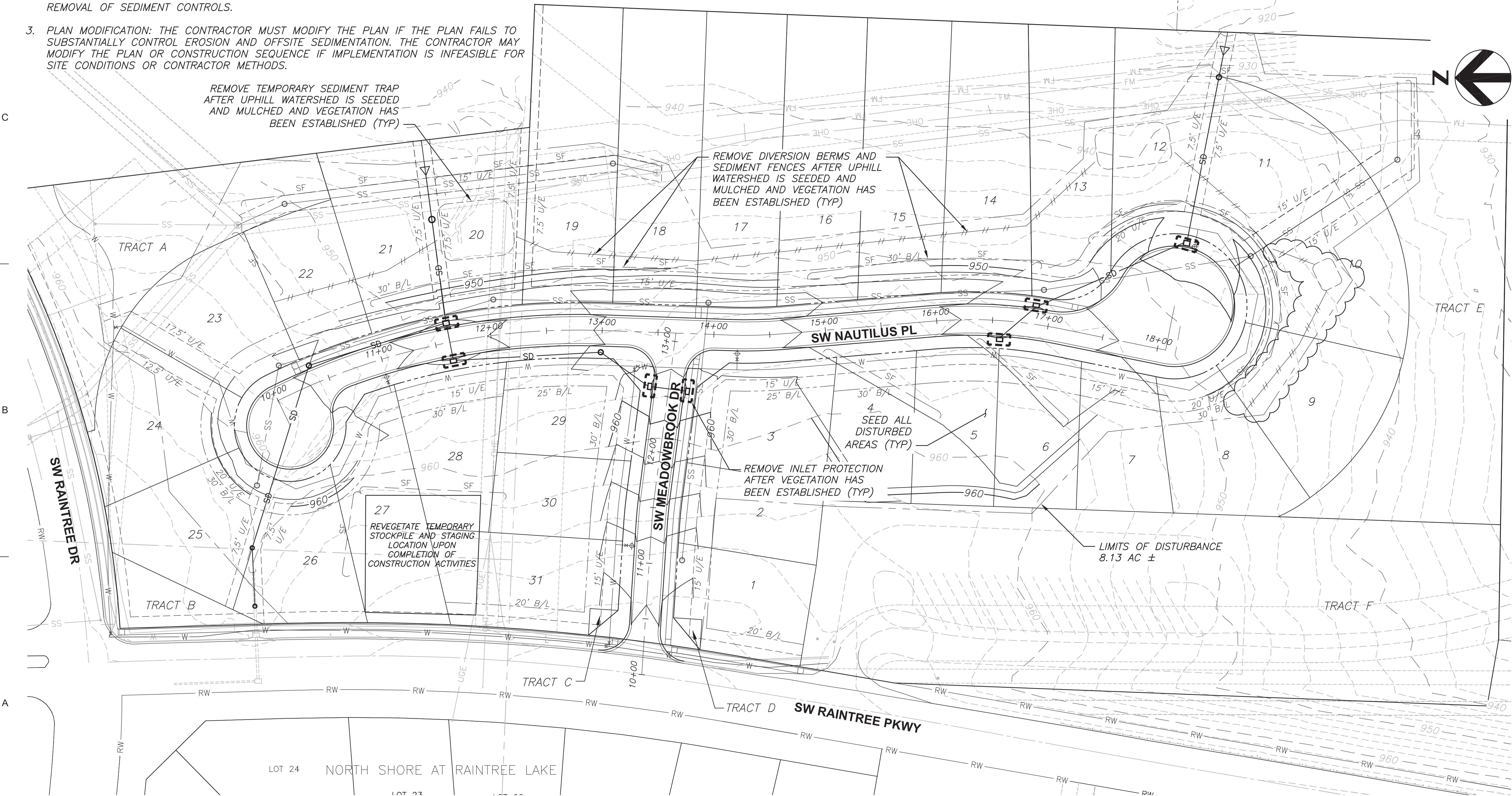
1. CONTRACTOR IS RESPONSIBLE FOR KEEPING ALL PUBLIC ROADWAYS ADJACENT TO THE CONSTRUCTION SITE FREE OF DIRT AND DEBRIS RESULTING FROM ACTIVITIES RELATED TO THE CONSTRUCTION OF THIS PROJECT.
2. DISTURBED AREAS SHALL HAVE SURFACES ROUGHENED IN ACCORDANCE WITH KCAPWA SECTION 2153.11.
3. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED, INCLUDING AREAS PREVIOUSLY OCCUPIED BY TEMPORARY EROSION CONTROL DEVICES.
4. REFERENCE SHEET 01C-CR-07 FOR SEDIMENT TRAP DETAILS.

FINAL RESTORATION EROSION AND SEDIMENT CONTROL SEQUENCING:

1. IMPLEMENT FINAL STABILIZATION: COORDINATE REMOVAL OF CONSTRUCTION PHASE BMPs NECESSARY TO PLACE FINAL STABILIZATION WITH LOCAL WEATHER FORECAST SO THAT REMOVAL AND PLACEMENT MAY BE COMPLETED WITHIN A FORECAST DRY PERIOD. DOWN-SLOPE PERIMETER CONTROLS SHALL NOT BE REMOVED UNTIL FINAL STABILIZATION IS PLACED AND VEGETATIVE COVER IS ESTABLISHED OVER THE REMAINDER OF THE SITE.
2. ESTABLISHMENT AND FINAL CONSTRUCTION: ONCE THE REMAINDER OF THE SITE IS STABILIZED INCLUDING ESTABLISHMENT OF SEEDED COVER TYPES, REMOVE THE SEDIMENT CONTROLS AND THE REMAINING ACCESS CONTROLS. RESTORE AREA DISTURBED BY REMOVAL OF SEDIMENT CONTROLS.
3. PLAN MODIFICATION: THE CONTRACTOR MUST MODIFY THE PLAN IF THE PLAN FAILS TO SUBSTANTIALLY CONTROL EROSION AND OFFSITE SEDIMENTATION. THE CONTRACTOR MAY MODIFY THE PLAN OR CONSTRUCTION SEQUENCE IF IMPLEMENTATION IS INFEASIBLE FOR SITE CONDITIONS OR CONTRACTOR METHODS.

LEGEND

- SF SEDIMENT FENCE
- MB MB MULCH BERM
- LIMITS OF DISTURBANCE
- SS PROPOSED SANITARY SEWER LINE
- W PROPOSED WATER SERVICE LINE
- SD PROPOSED STORM DRAINAGE LINE
- DIVERSION DITCH
- INLET PROTECTION
- SEDIMENT TRAP



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PROJECT FOR

LANDROCK
DEVELOPMENT, LLC

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

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B	05/01/2017	CITY RESUBMITTAL
A	03/08/2017	CITY SUBMITTAL
MARK	DATE	DESCRIPTION

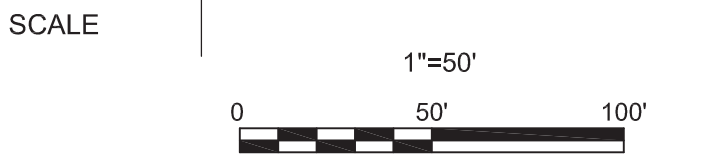
PROJECT NUMBER	10028825-276408
ORIGINAL ISSUE	MARCH 7, 2017

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



SHEET NAME

FINAL RESTORATION
EROSION AND SEDIMENT
CONTROL PLAN



SHEET NUMBER

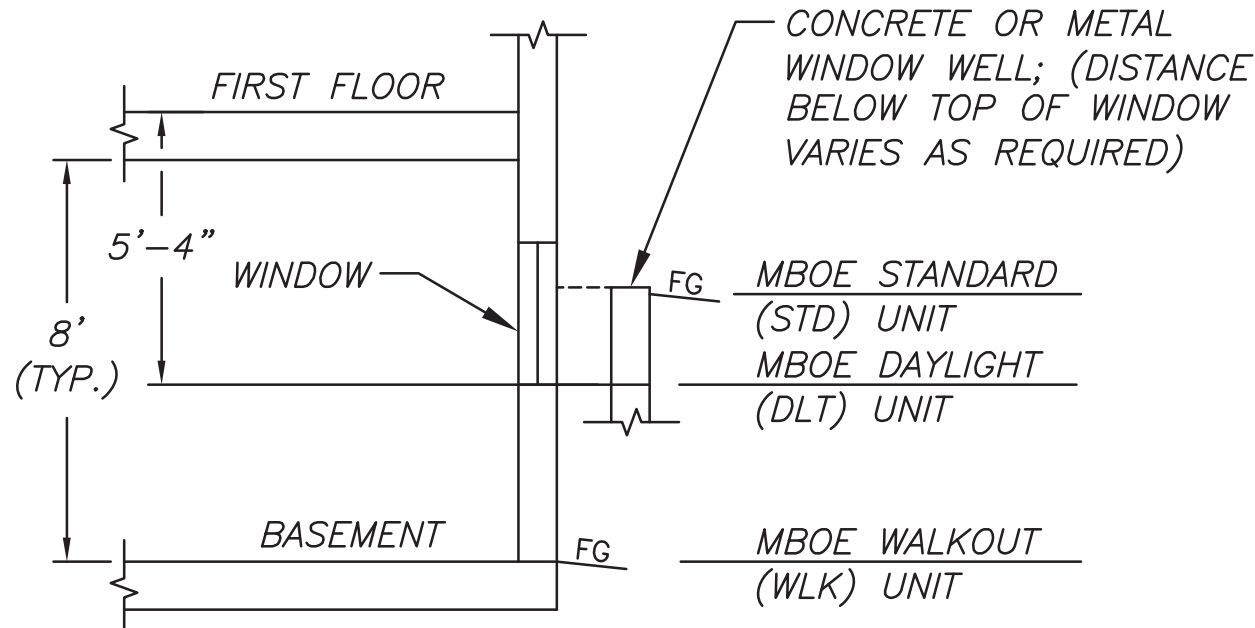
01C-CR-05

FILE NAME 01C-CR-05

PERMIT REVIEW DRAWINGS

MASTER DRAINAGE PLAN NOTES:

- MINIMUM BUILDING OPENING ELEVATIONS (MBOE'S) SHOWN REPRESENT THE MINIMUM RECOMMENDED ELEVATIONS THAT WILL PROVIDE ADEQUATE POSITIVE STORM WATER DRAINAGE TO THE LOWEST POINT ON THE LOT FROM THE ANTICIPATED LOW SIDE OF THE BUILDING. THE HOME BUILDER SHALL BE RESPONSIBLE FOR ENSURING ADEQUATE POSITIVE DRAINAGE AWAY FROM ALL BUILDING OPENINGS TO PREVENT LOCALIZED STRUCTURE FLOODING.
- A DAYLIGHT OR STANDARD UNIT MAY BE CONSTRUCTED ON WALKOUT LOT, AND A STANDARD UNIT MAY BE CONSTRUCTED ON A DAYLIGHT LOT.
- A DAYLIGHT UNIT IS DEFINED AS A UNIT HAVING A WINDOW ON THE BASEMENT LEVEL WITH AT LEAST 5'-4" OF CLEARANCE FROM THE FINISHED FIRST FLOOR ELEVATION TO THE BOTTOM OF THE WINDOW. CLEARANCES LESS THAN 5'-4" ARE DEFINED AS STANDARD UNITS, WHETHER OR NOT A WINDOW WELL IS REQUIRED.
- REFER TO SANITARY SEWER SHEETS FOR SEWER MAIN AND LATERAL ELEVATIONS. SOME LOT MBOE ELEVATIONS ARE HIGHER TO ACCOUNT FOR GRAVITY BASEMENT SEWER SERVICE.
- ALL FRONT LOT ELEVATIONS ARE PROPOSED ELEVATIONS. REAR LOT ELEVATIONS ARE EXISTING ELEVATIONS UNLESS NOTED OTHERWISE WITH AN ELEVATION FOLLOWED BY (P).
- HOME BUILDERS SHALL MAINTAIN 2% GRADE, 1.5% ACROSS SIDEWALKS, WITHIN RIGHT-OF-WAY. AS-BUILT ELEVATIONS SHOWN AT RIGHT-OF-WAY ARE CALCULATED FROM AS-BUILT BACK OF CURB ELEVATIONS.

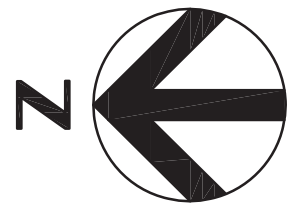


TYPICAL UNIT SECTION
NOT TO SCALE

LEGEND:

- STD = STANDARD UNIT
DLT = DAYLIGHT UNIT
WLK = WALKOUT UNIT
MBOE = MINIMUM BUILDING OPENING ELEVATION
() = DIRECTION OF MBOE
~ = DRAINAGE PATH
FBD = FLAT BOTTOM DITCH
1/2" = 1% STORM WSE

"AS-BUILT"
August 24, 2018



PROJECT FOR

LANDROCK
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CREEKSIDE AT RAINTREE
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LEE'S SUMMIT, MISSOURI

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ORIGINAL ISSUE	MARCH 7, 2017

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



SHEET NAME

MASTER
DRAINAGE PLAN

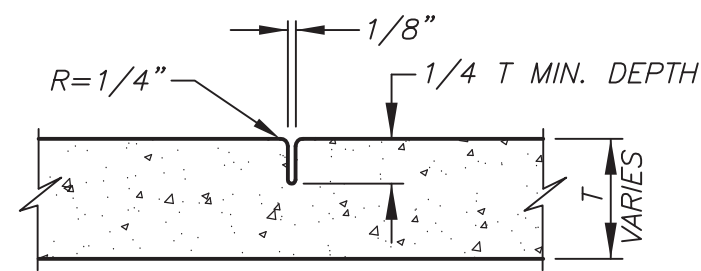


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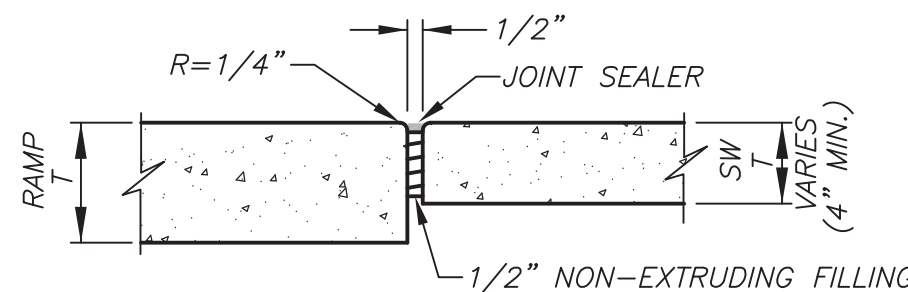
01C-CR-08

FILE NAME | 01C-CR-08.dwg

PERMIT REVIEW DRAWINGS

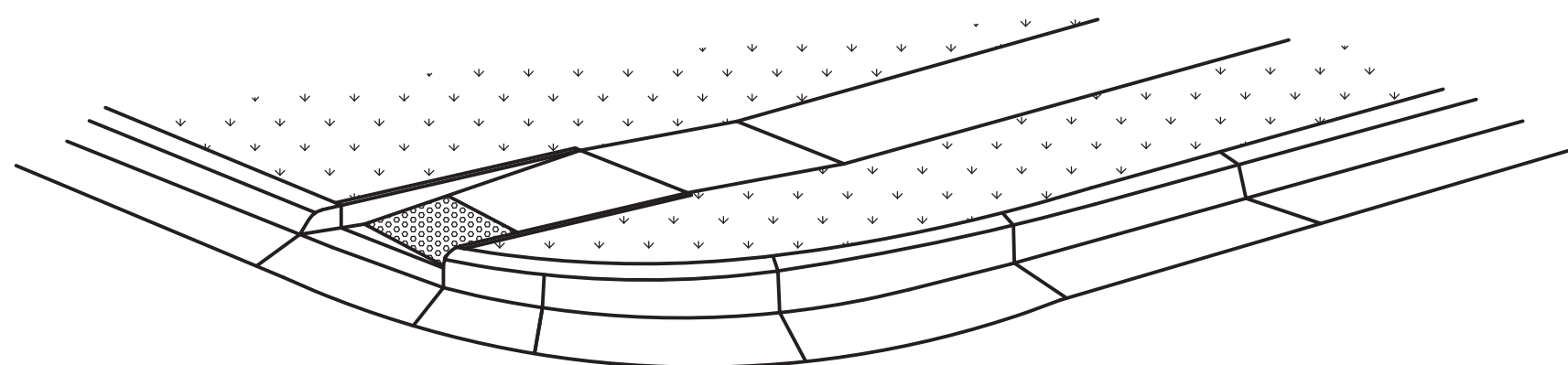


CONTRACTION JOINT



ISOLATION JOINT

JOINT DETAILS
NOT TO SCALE



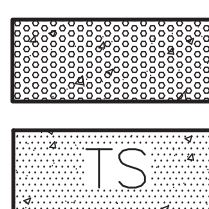
3-D VIEW TYPE A
SIDEWALK RAMP

LEGEND:



RAMP

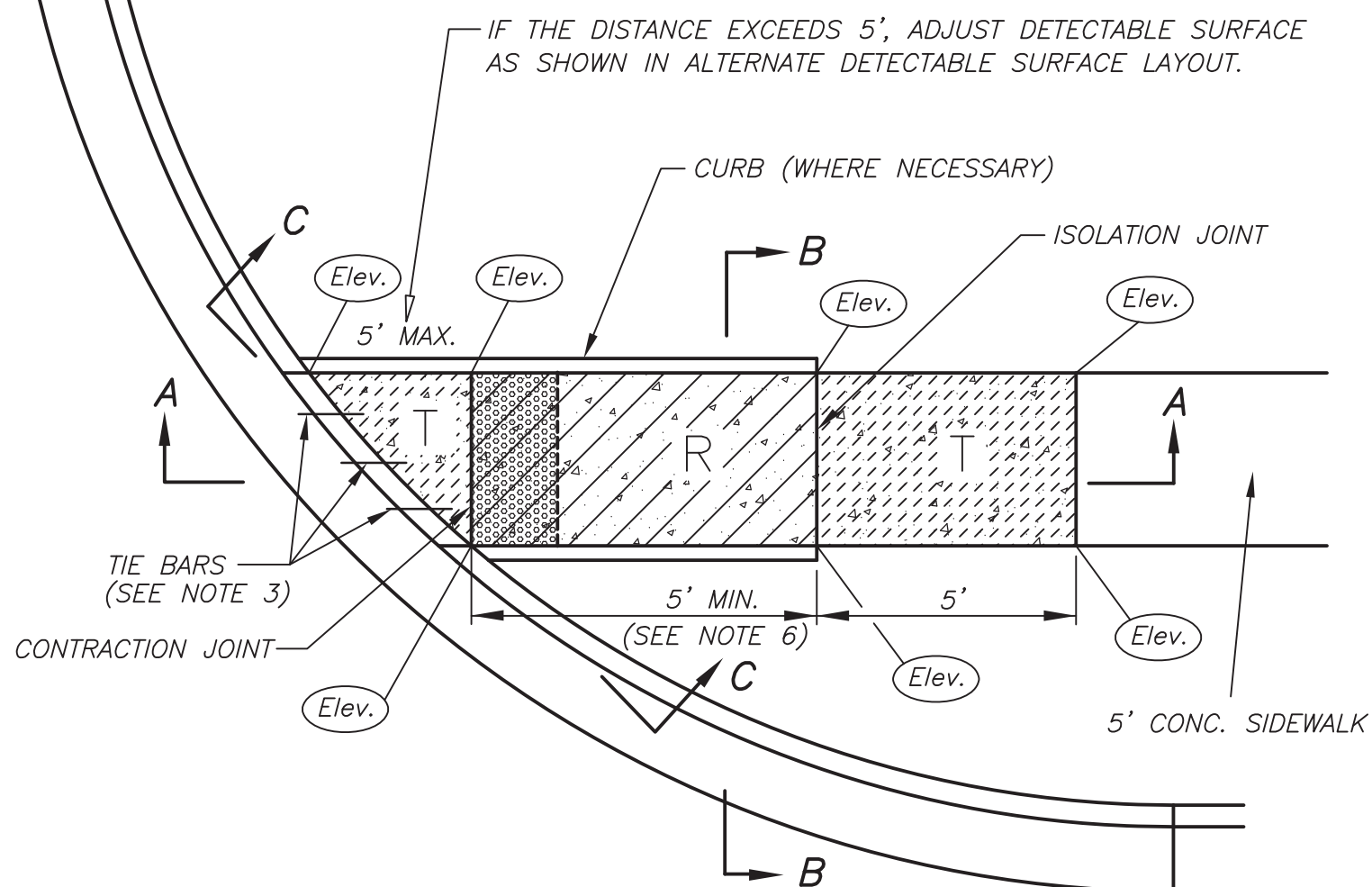
TRANSITION



SURFACE

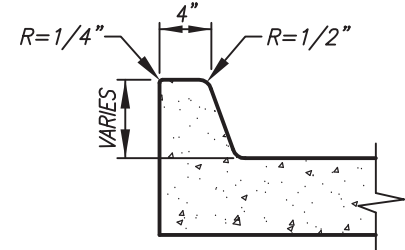
TURNING SPACE

ALTERNATE DETECTABLE SURFACE LAYOUT

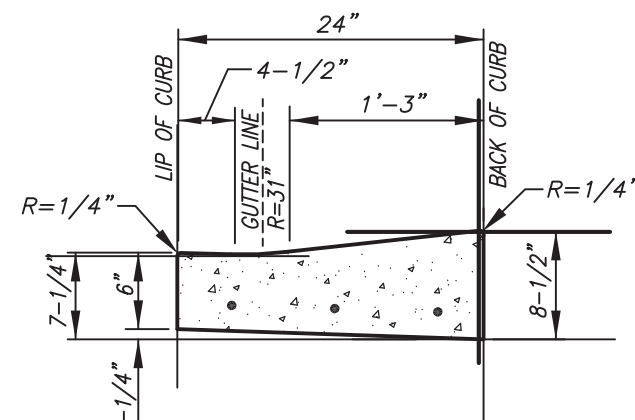


TYPE A SIDEWALK RAMP

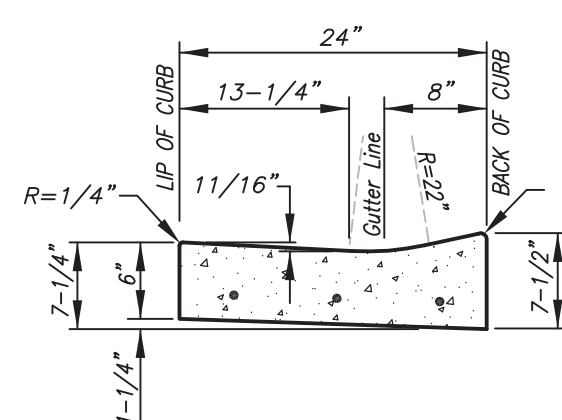
NOT TO SCALE



RAMP CURB DETAIL



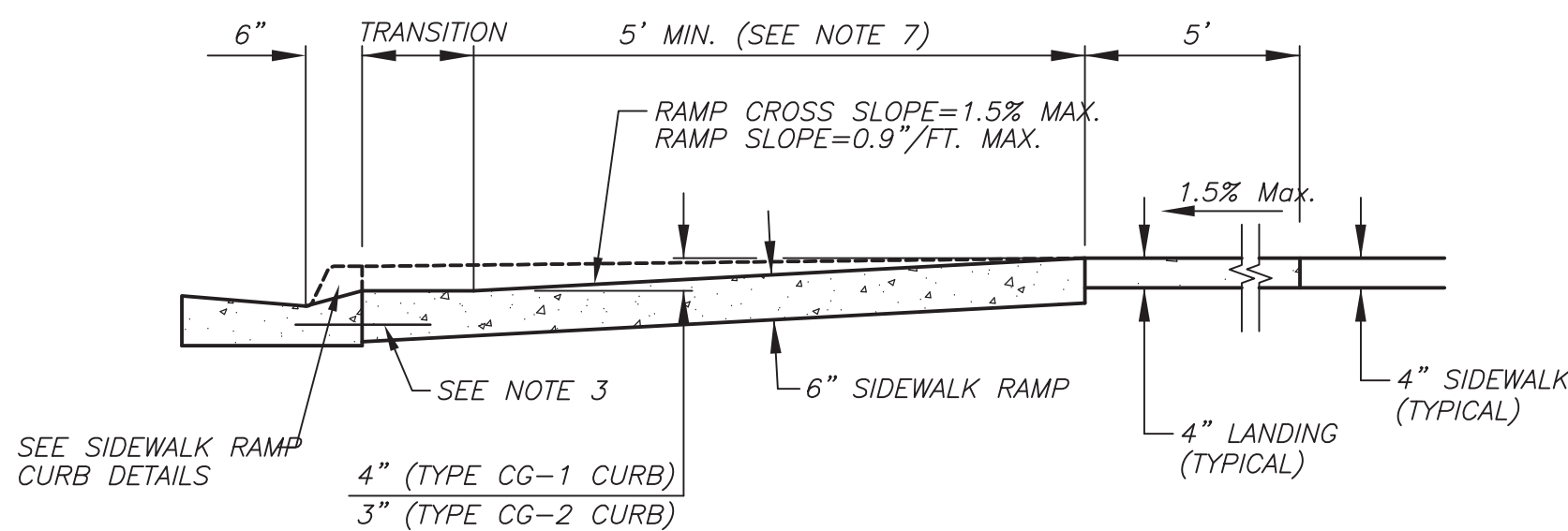
STREET CURB AT RAMP
USE WITH TYPE CG-2 CURB



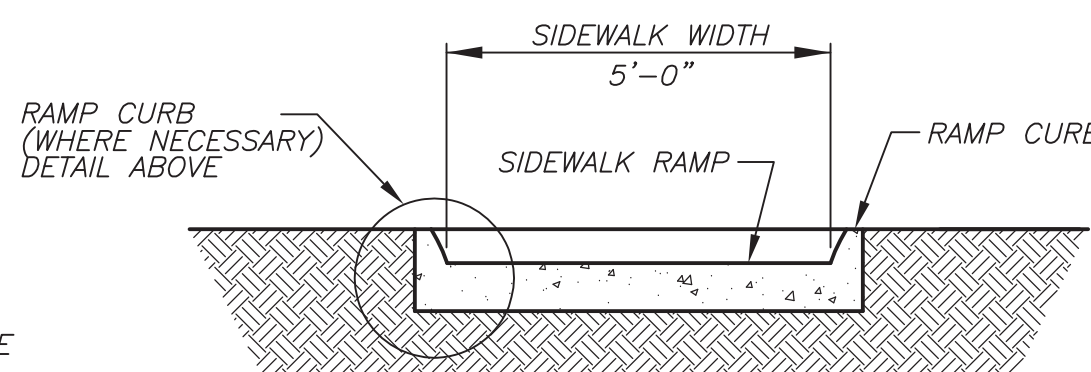
STREET CURB AT RAMP
USE WITH TYPE CG-1 CURB

ADA CURB DETAILS

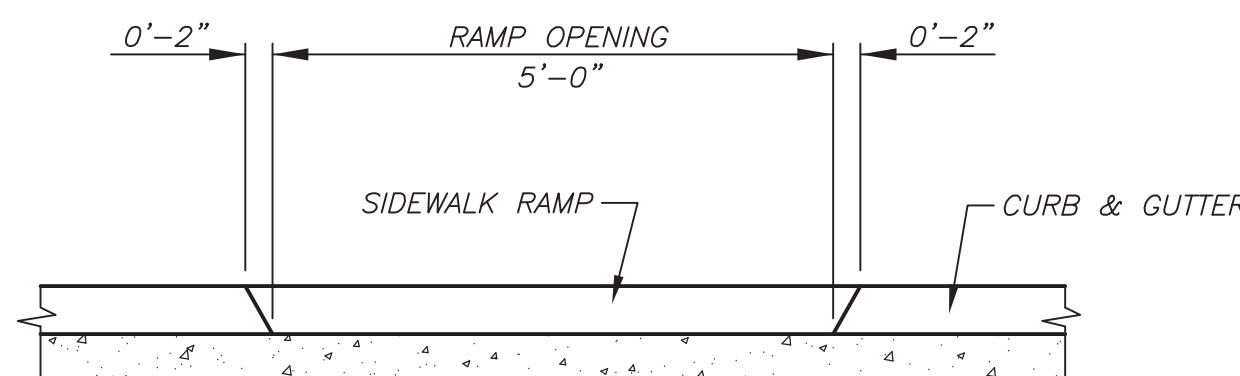
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SECTION A-A



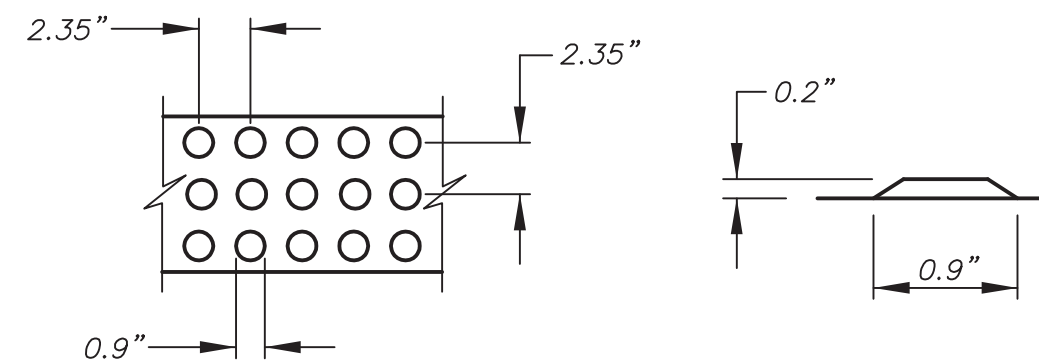
SECTION B-B



SECTION C-C

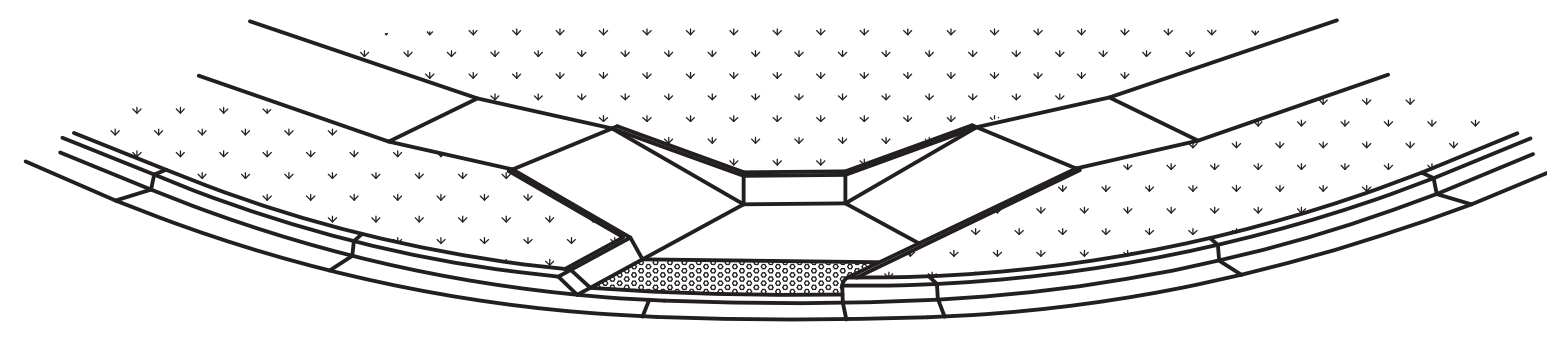
SIDEWALK & SIDEWALK RAMP NOTES:

1. SIDEWALK RAMP LOCATION DETERMINED FROM THE INTERSECTION OF THE EXTENSION OF BACK OF SIDEWALK AND BACK OF CURB AND GUTTER.
2. PLAN DRAWINGS INCLUDE A TABLE OF ELEVATIONS FOR ALL POINTS.
3. KEY ALL CONSTRUCTION JOINTS OR USE TIE BARS #4 EPOXY COATED @ 12" O.C.
4. LONGITUDINAL JOINT SPACING TO MATCH WIDTH OF SIDEWALK.
5. ISOLATION JOINTS SHALL BE PLACED WHERE WALK ABUTS DRIVEWAYS AND SIMILAR STRUCTURES, AND 250' CENTERS MAX.
6. SIDEWALK RAMP SHALL BE LENGTHENED TO PROVIDE ADA COMPLIANCE SLOPE BUT NEED NOT EXCEED 15'.
7. ADA MAXIMUM RAMP SLOPE = 1"/FT.
ADA MAXIMUM CROSS SLOPE = 2%.
8. TURNING SPACES SHALL BE 1.5%, ± 0.5%, SLOPE IN ANY DIRECTION. TURNING SPACES SHALL HAVE A MINIMUM 4'X4' TURNING AREA. TURNING SPACES, WITH A SIDEWALK CURB, SHALL HAVE A 5' TURNING AREA PERPENDICULAR TO THE SIDEWALK CURB.
9. ALL SIDEWALK AND RAMP CONSTRUCTION SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).

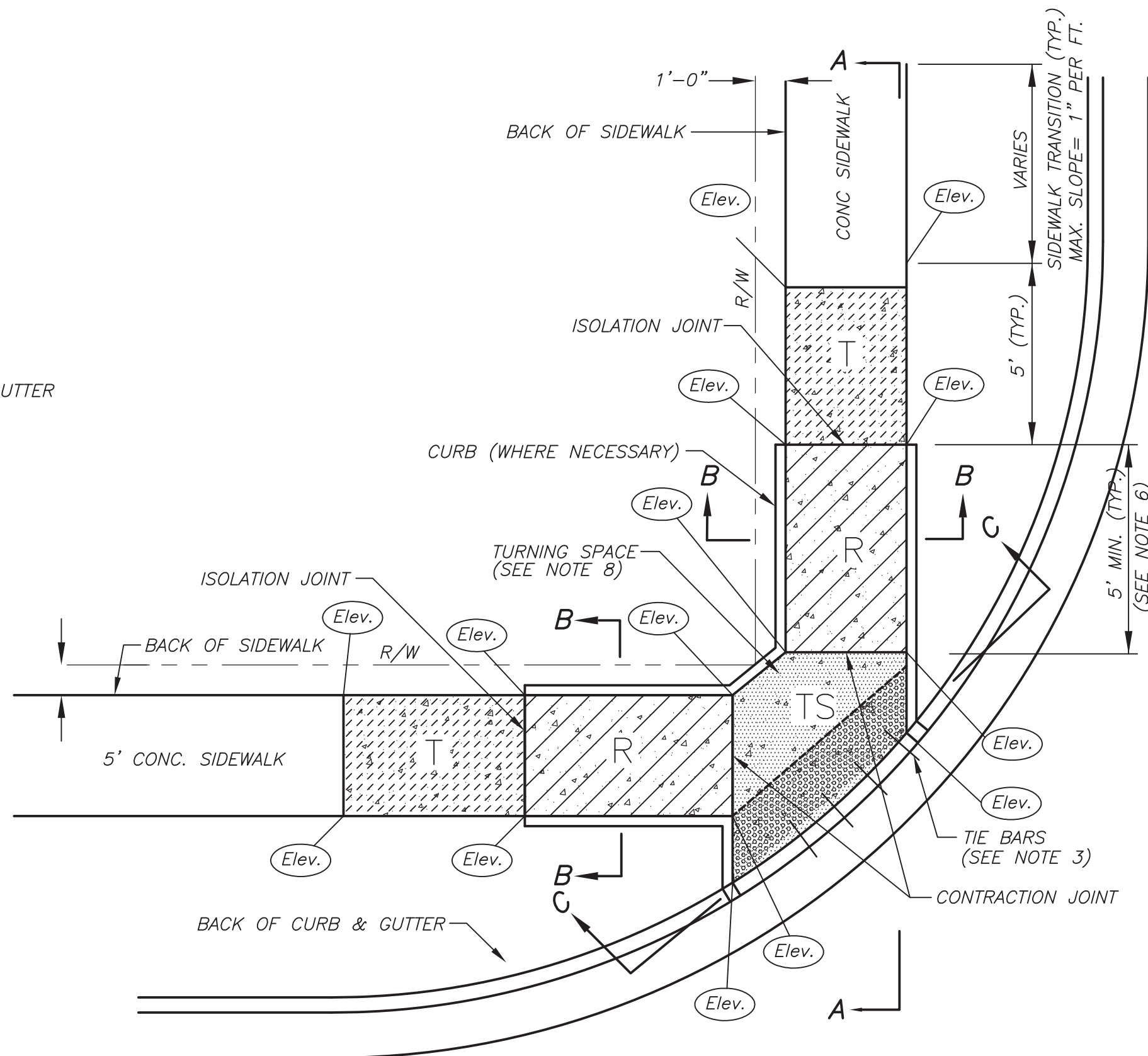


DETECTABLE WARNING DOME
SPACING AND SECTION

NOT TO SCALE



3-D VIEW TYPE B
SIDEWALK RAMP



TYPE B SIDEWALK RAMP

NOT TO SCALE



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PROJECT FOR

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



SHEET NAME

TYPICAL ADA RAMP
DETAILS

SCALE
NO SCALE

SHEET NUMBER

01C-CR-09

FILE NAME
01C-CR-09.dwg

PERMIT REVIEW DRAWINGS



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SHEET NAME

TYPICAL ADA RAMP
DETAILS

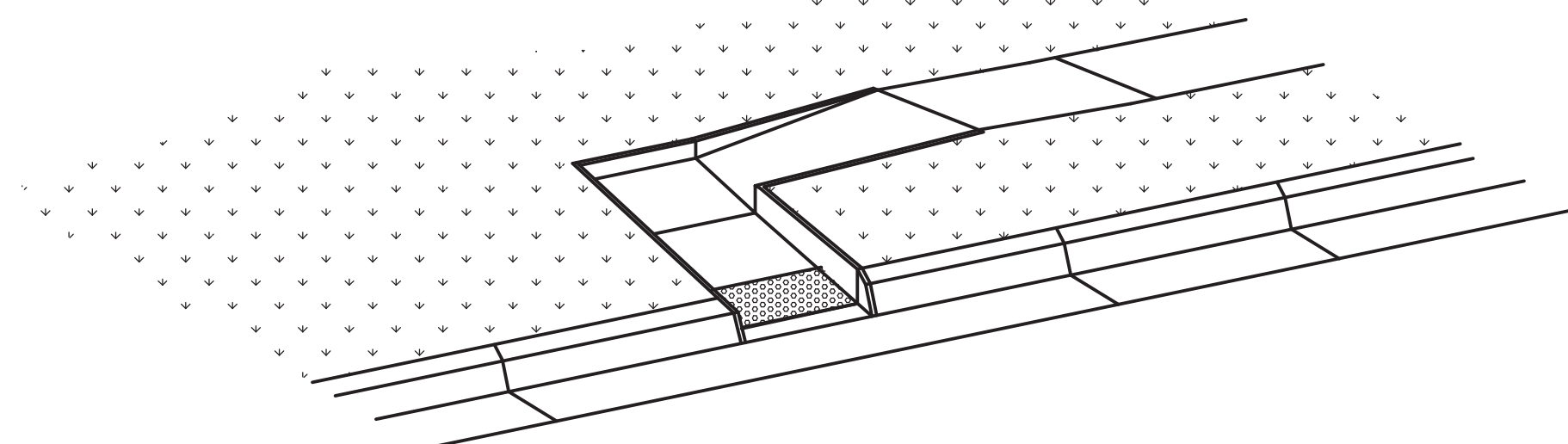
SCALE
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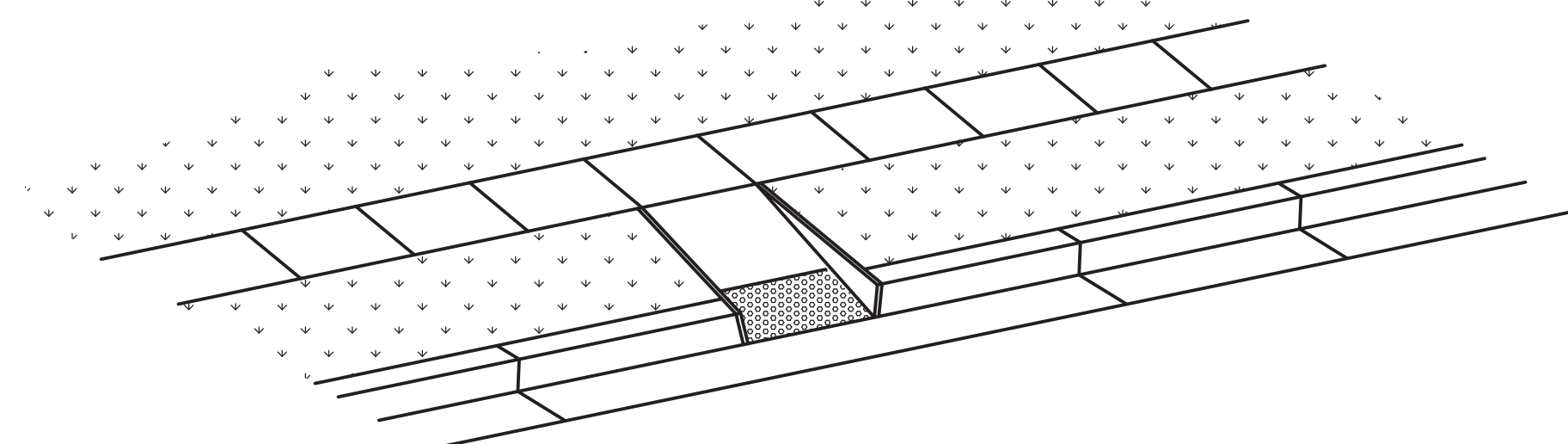
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FILE NAME
01C-CR-10.dwg

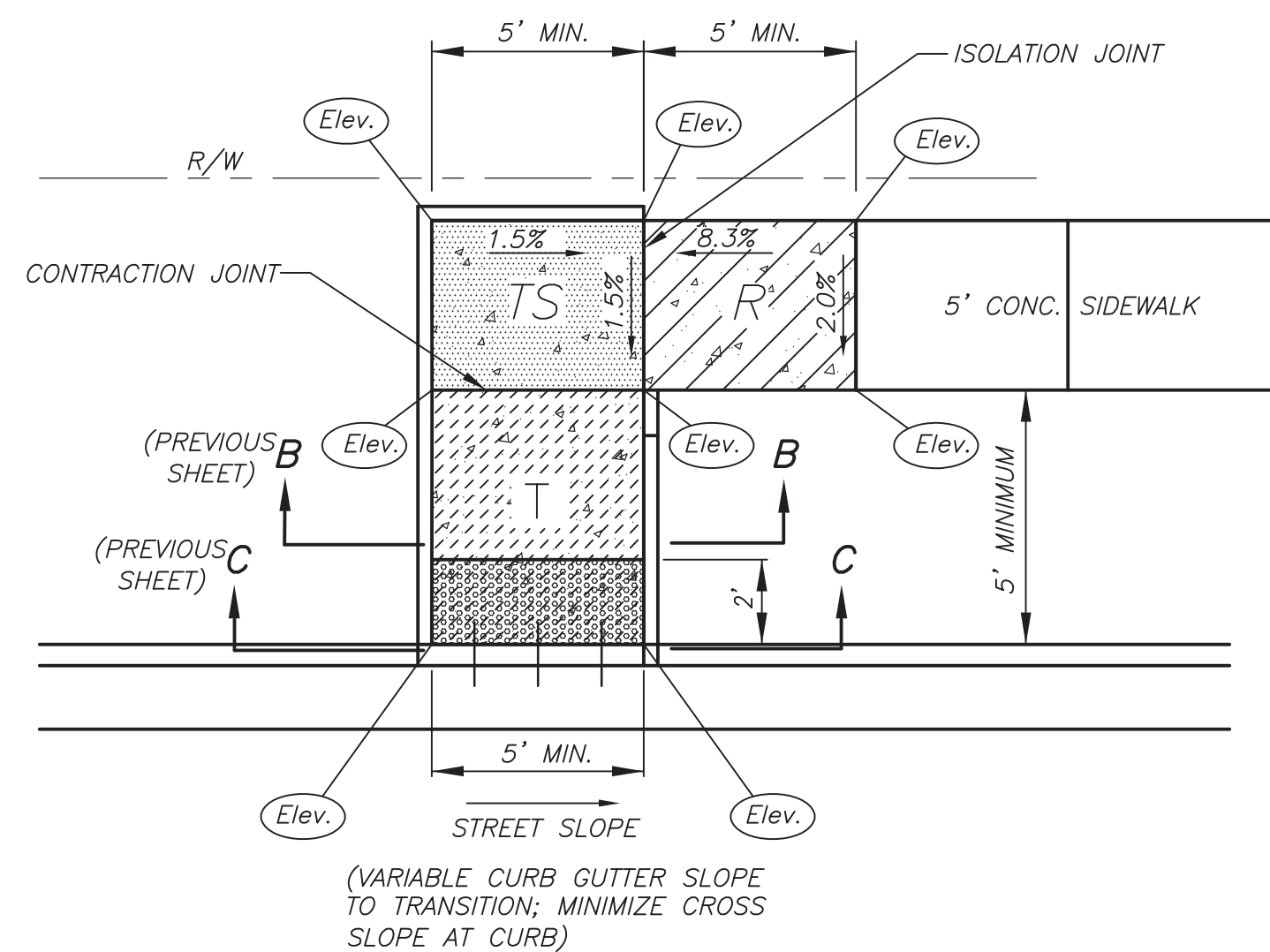
PERMIT REVIEW DRAWINGS



3-D VIEW
MID-BLOCK SIDEWALK CONNECTION

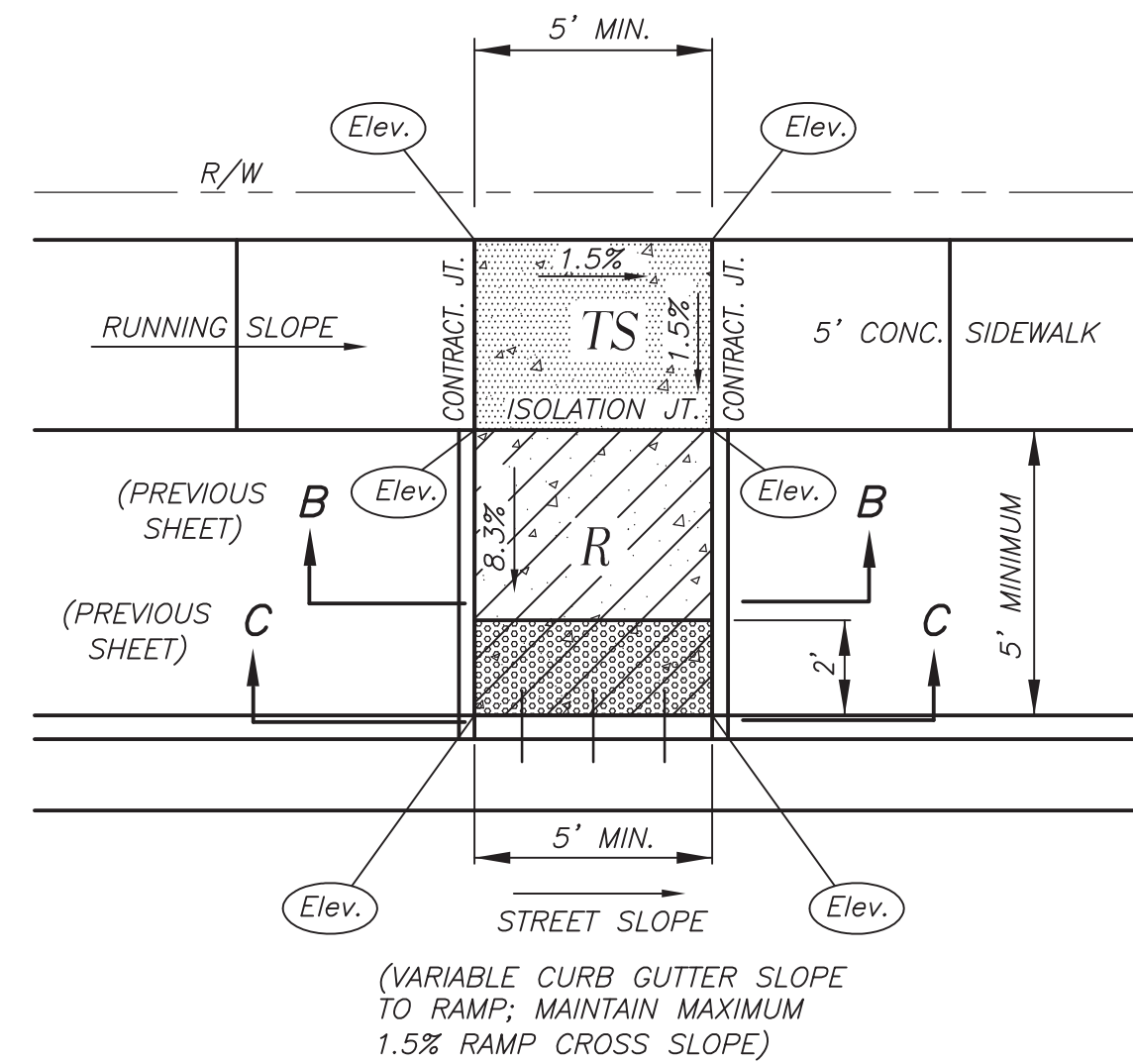


3-D VIEW
MID-BLOCK SIDEWALK RAMP



MODIFIED MID-BLOCK
SIDEWALK CONNECTION
NOT TO SCALE

1. REFERENCE SHEET 01C-CR-09 FOR ADDITIONAL ADA RAMP NOTES
AND CROSS-SECTION INFORMATION.



MODIFIED MID-BLOCK
SIDEWALK RAMP
NOT TO SCALE



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SHEET NAME

**TYPICAL ROAD
SECTIONS AND DETAILS**

SCALE | NO SCALE

SHEET NUMBER

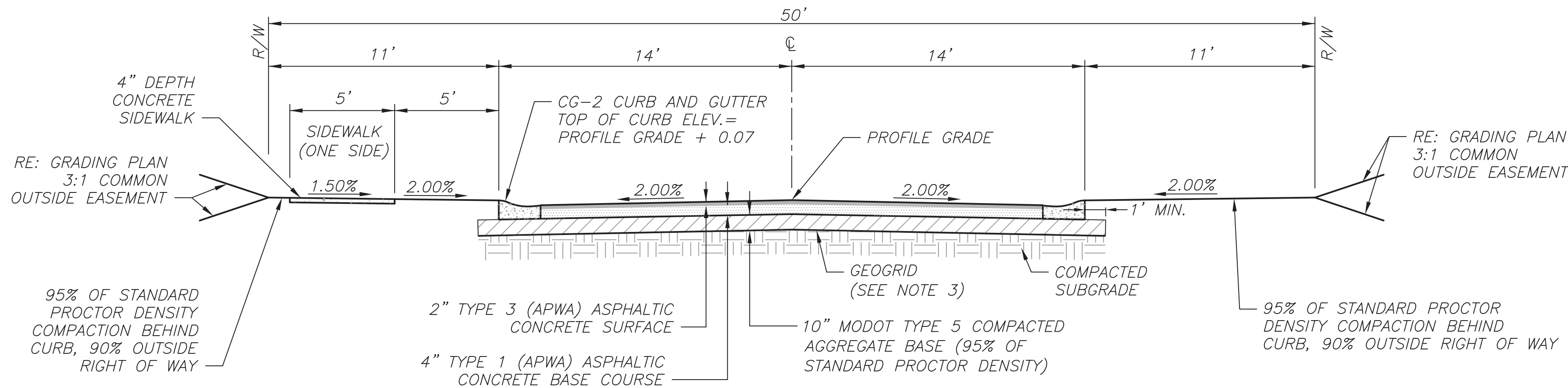
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FILE NAME | 01C-CR-11.dwg

PERMIT REVIEW DRAWINGS

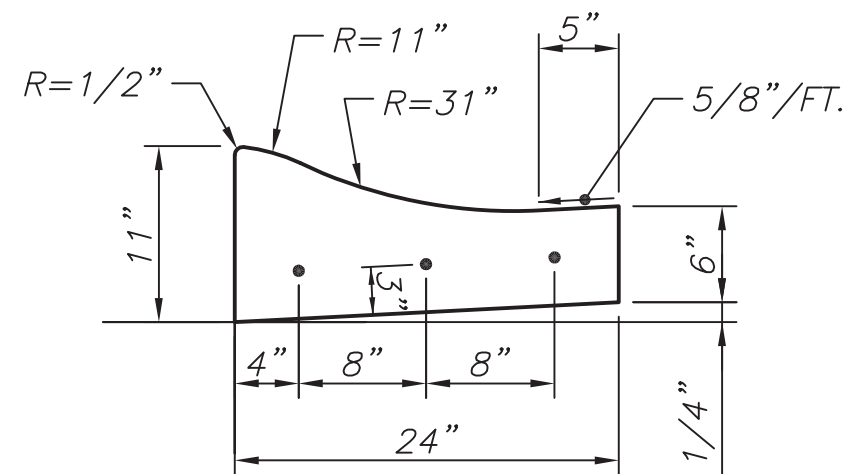
GENERAL NOTES:

1. CONCRETE FOR CURB AND GUTTER AND ANY CONCRETE STREET PAVEMENT SHALL CONFORM TO KCMMB 4K MIX.
2. CONCRETE PAVEMENT JOINTS AND JOINT LOCATIONS SHALL BE PER APWA DETAILS AND AS MODIFIED BY CITY OF LEE'S SUMMIT SPECIFICATIONS.
3. GEOGRID MUST MEET SPECIFICATIONS OF LEE'S SUMMIT SECTION 2200, TABLE 2201.6-1. ALTERNATE GEOGRID MUST BE SUBMITTED TO CITY FOR REVIEW AND APPROVAL.
4. MATERIAL DEPTHS PROVIDED ARE CITY'S ABSOLUTE MINIMUM ACCEPTABLE DEPTHS.
5. ALL SIDEWALK SHOWN ALONG TRACTS SHALL BE CONSTRUCTED DURING PUBLIC INFRASTRUCTURE CONSTRUCTION.

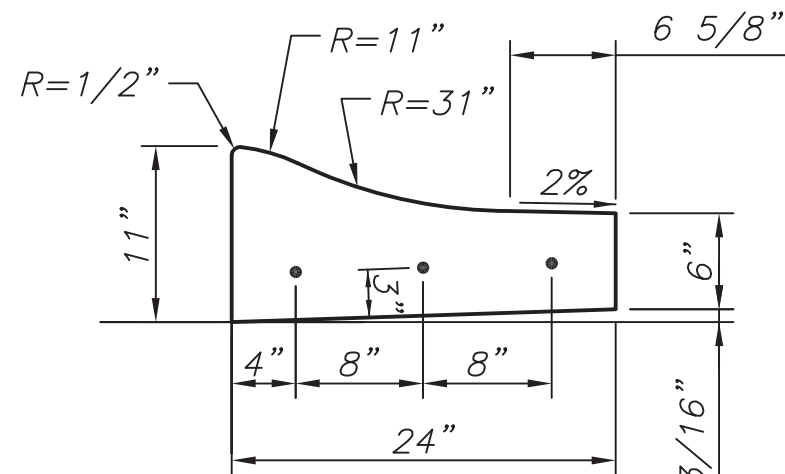


TYPICAL 28' ROADWAY SECTION

NOT TO SCALE



**TYPE CG-2
ROLL BACK CURB & GUTTER**



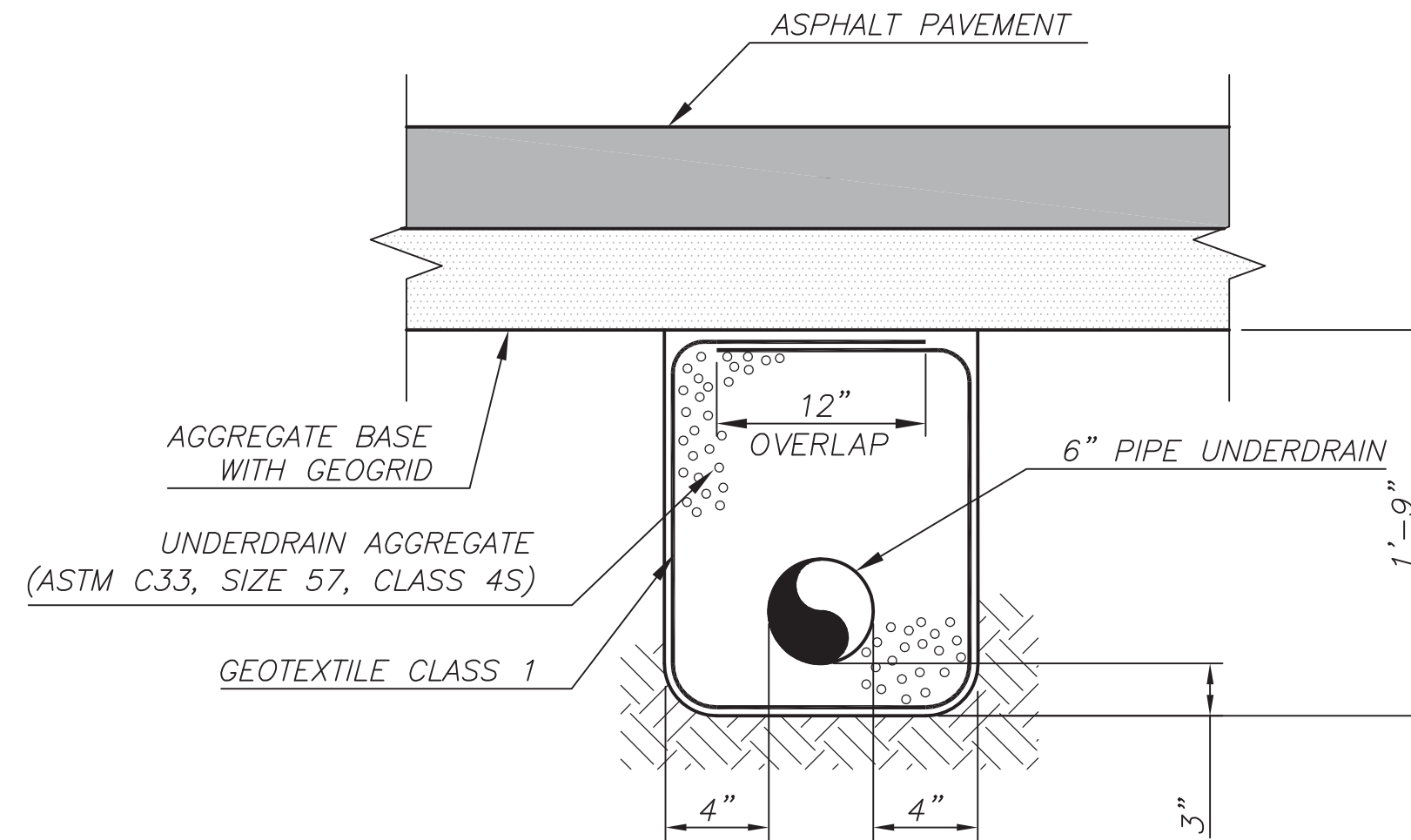
**MODIFIED TYPE CG-2 DRY
ROLL BACK DRY CURB & GUTTER**

GENERAL CURB NOTES:

1. 3/4" ISOLATION JOINTS WITH 5/8" DIA. x 2' SMOOTH DOWELS SHALL BE PLACED AT RADIUS POINTS AND AT 150' INTERVALS. THESE DOWEL BARS SHALL BE GREASED AND WRAPPED ON ONE END WITH EXPANSION TUBES.
2. 1" DEEP CONTRACTION JOINTS SHALL BE INSTALLED AT APPROXIMATELY 10' INTERVALS. THESE JOINTS SHALL PASS ACROSS THE ENTIRE CURB SECTION.
3. FIX DOWEL BARS WITH BAR SUPPORTS.
4. DEPTH OF CURB SHALL BE A MINIMUM OF 8" THROUGH THE HANICAP ACCESS RAMP.
5. CONCRETE SHALL CONFORM TO STANDARD SPECIFICATIONS SECTION 2208.2.B.

TYPICAL CURB & GUTTER DETAILS

NOT TO SCALE

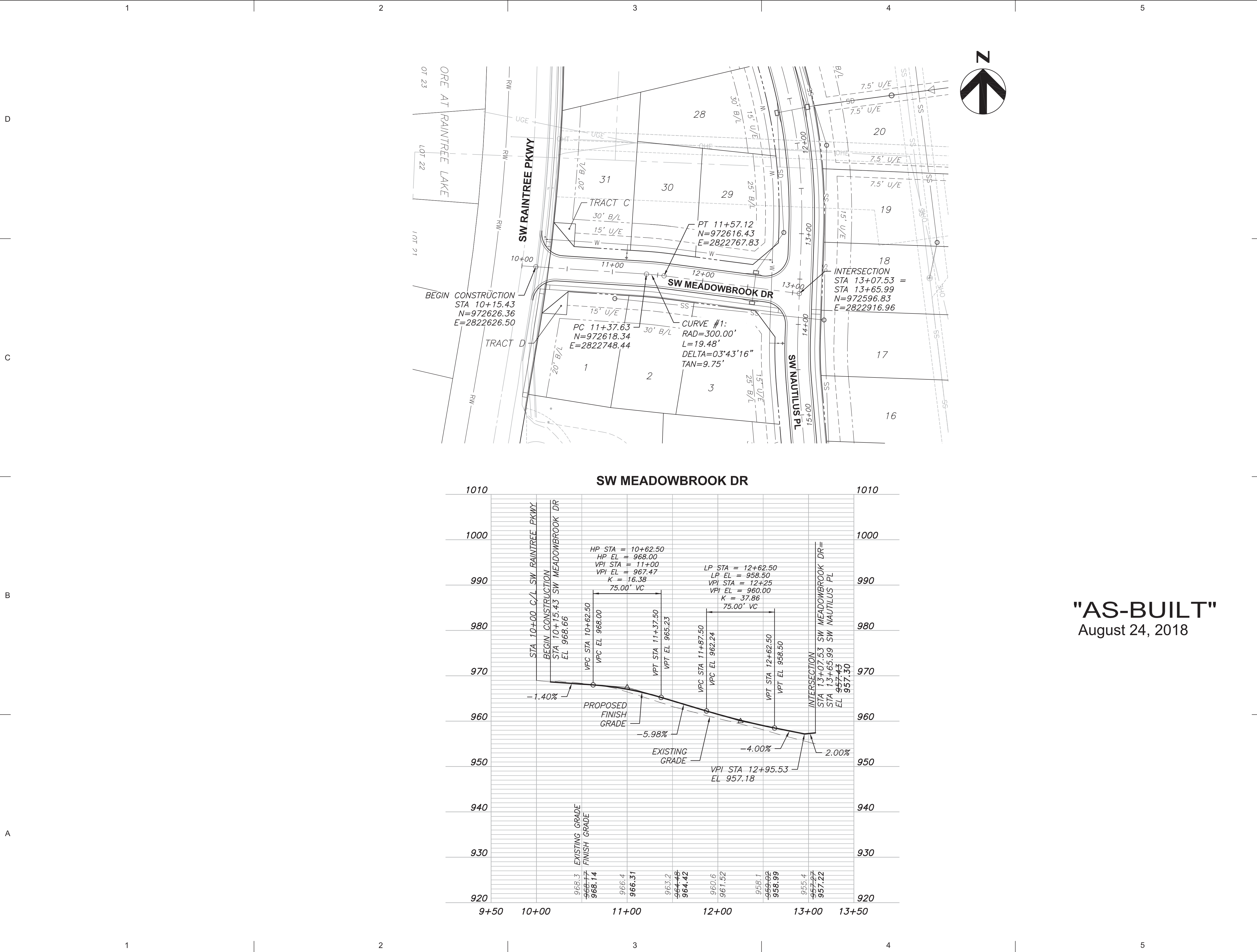


UNDERDRAIN NOTES:

1. WHERE PIPE UNDERDRAINS ARE USED, ALL UNDERDRAIN OUTLET PIPES SHALL BE SOLID WALL WITH WATERTIGHT JOINTS. ALL OUTLET PIPES SHALL BE TIED INTO THE NEAREST STORM SEWER INLETS AT ROADWAY SAG LOCATIONS AS INDICATED IN THE STREET PROFILE.
2. ALL UNDERDRAIN PIPES SHALL BE INSTALLED AT A MINIMUM SLOPE OF 1%. UNDERDRAIN PIPE SHALL BE INSTALLED WITH THE PERFORATIONS PLACED DOWN.
3. BLANKET UNDERDRAIN AGGREGATE, PIPE UNDERDRAIN AGGREGATE, PIPE UNDERDRAIN, EDGE UNDERDRAIN AND OUTLET PIPE SHALL CONFORM CITY OF LEE'S SUMMIT SPECIFICATIONS.

PIPE UNDERDRAIN LATERAL

NOT TO SCALE



3741 NE TROON DR
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MO STATE CERTIFICATE OF
AUTHORITY #000856

PROJECT FOR

LANDROCK
DEVELOPMENT, LLC

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

C	08/24/18	AS-BUILT
B	04/14/2017	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.



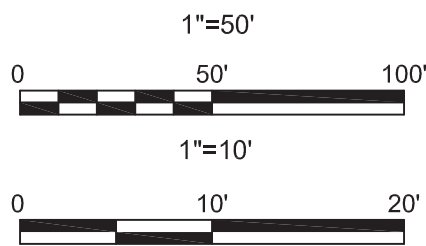
09-05-2018

SHEET NAME

STREET PLAN
AND PROFILE

SW MEADOWBROOK DR

SCALE

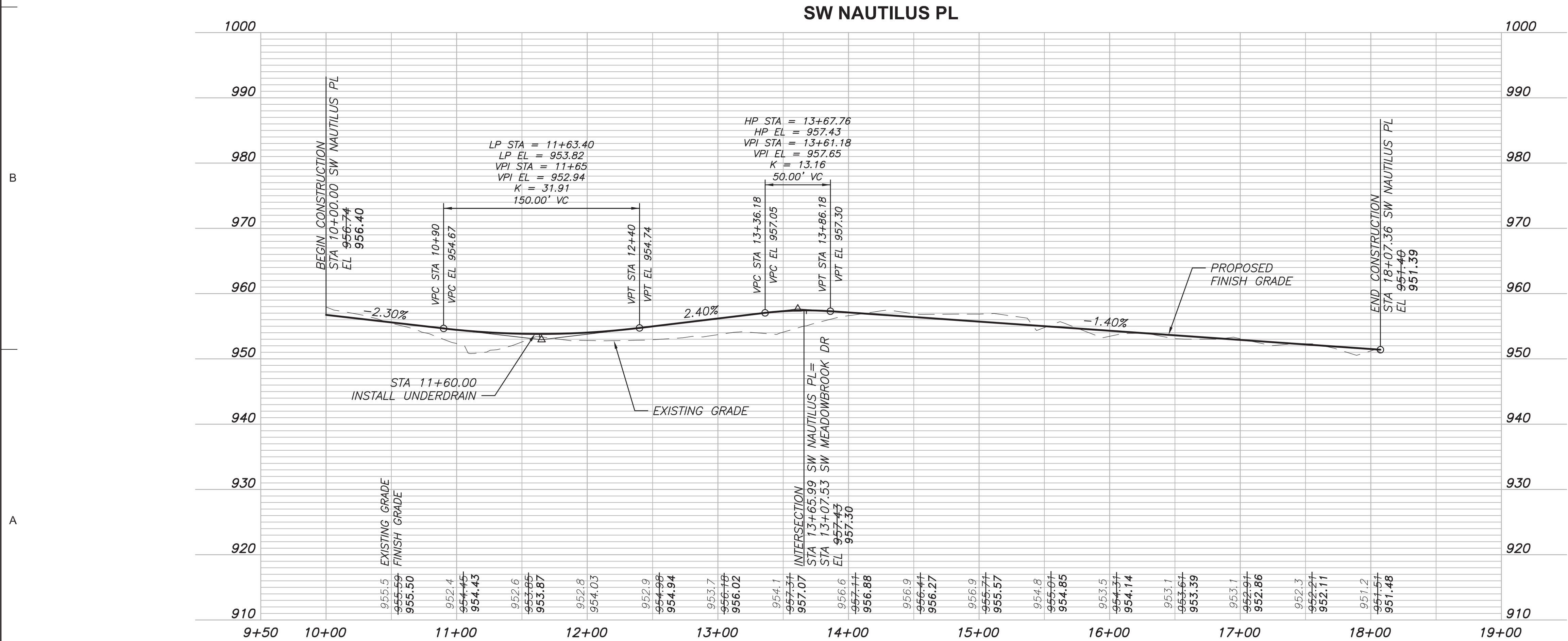
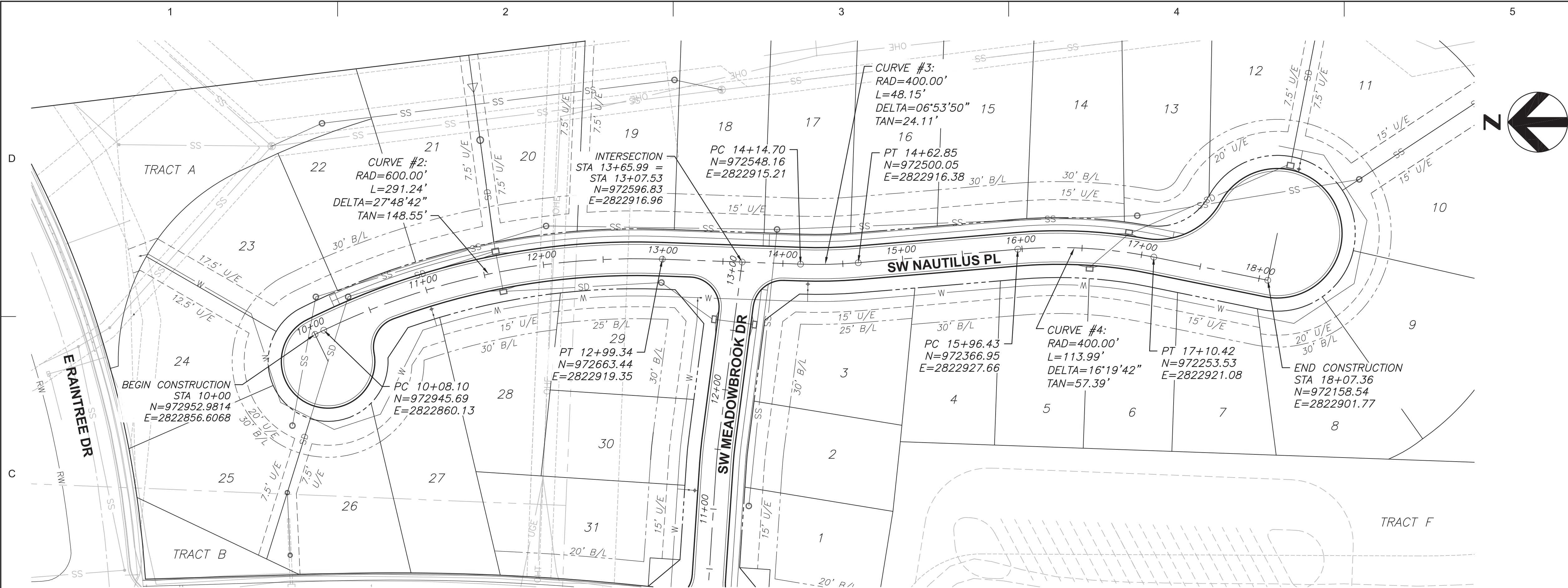


SHEET NUMBER

01C-CR-12

FILE NAME | 01C-CR-12.dwg

PERMIT REVIEW DRAWINGS



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MO STATE CERTIFICATE OF
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PROJECT MANAGER	SIMON SUN
PROJECT ENGINEER	WILL NEDS, E.I.T.

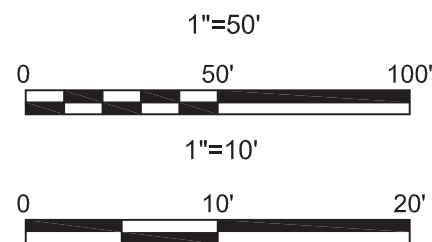


SHEET NAME

STREET PLAN
AND PROFILE

SW NAUTILUS PL

SCALE

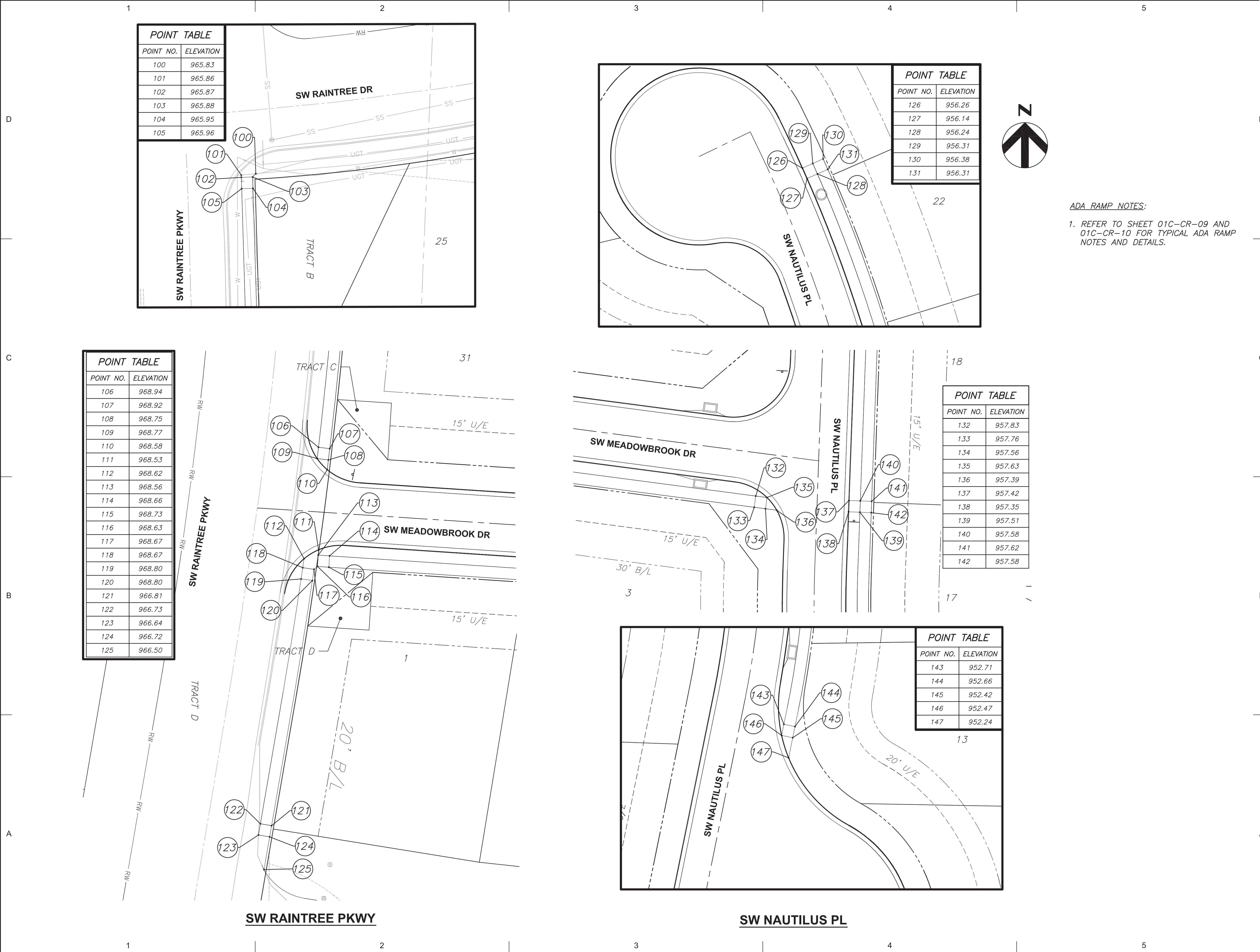


SHEET NUMBER

01C-CR-13

FILE NAME | 01C-CR-13.dwg

PERMIT REVIEW DRAWINGS



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MO STATE CERTIFICATE OF
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PROJECT FOR

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

ADA RAMP NOTES:

1. REFER TO SHEET 01C-CR-09 AND
01C-CR-10 FOR TYPICAL ADA RAMP
NOTES AND DETAILS.

B	04/18/2017	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

ADA RAMP
ELEVATIONS

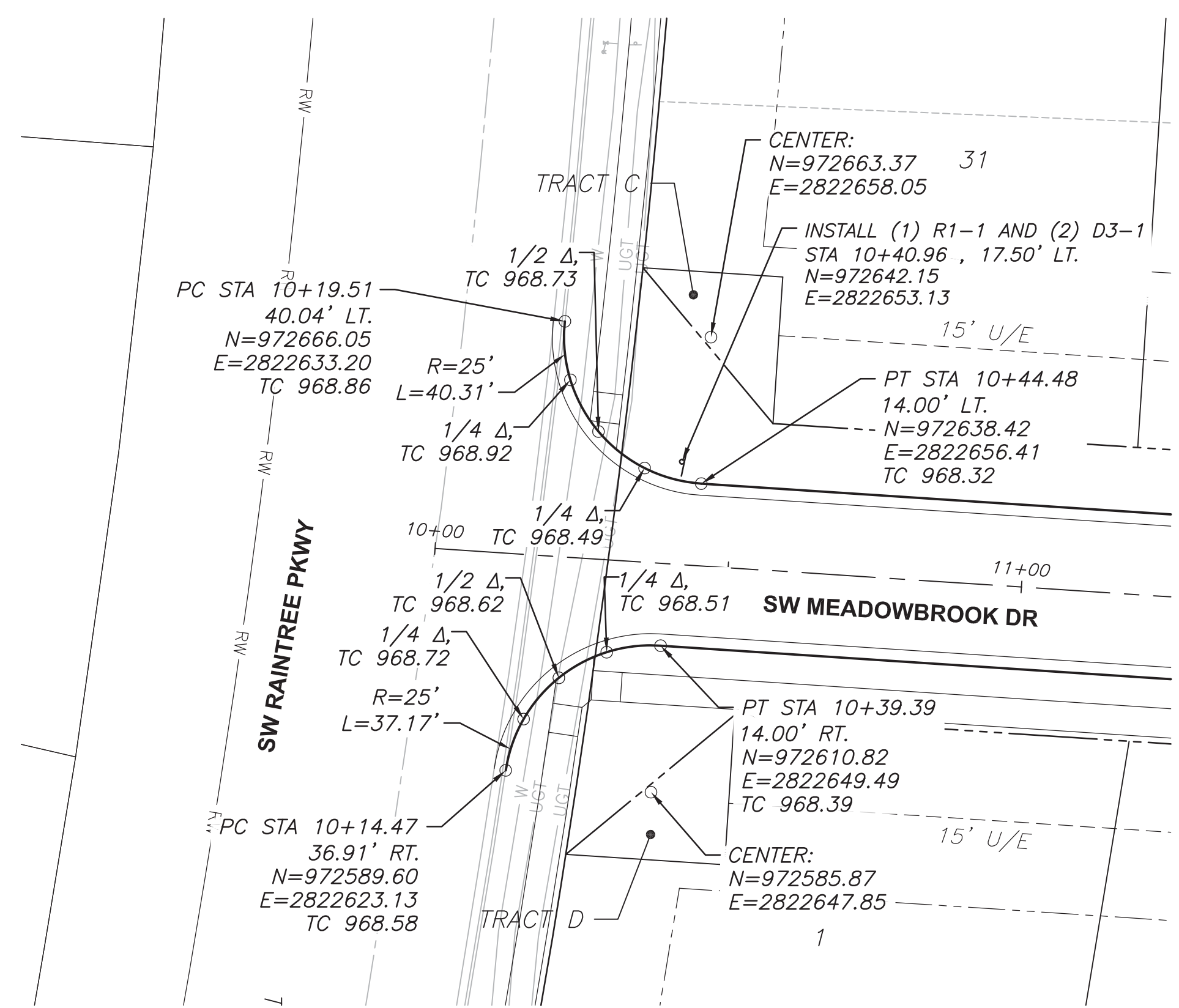


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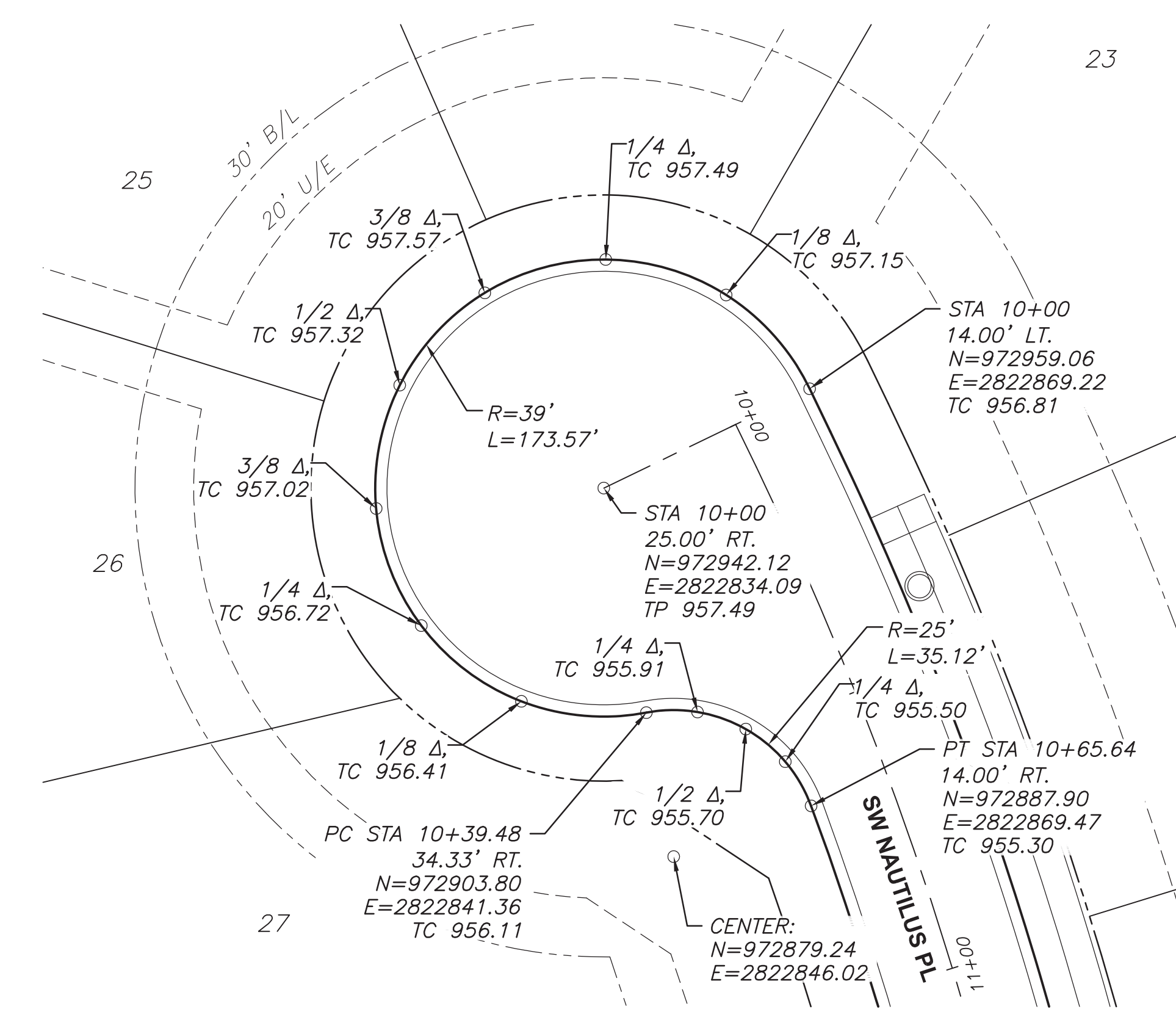
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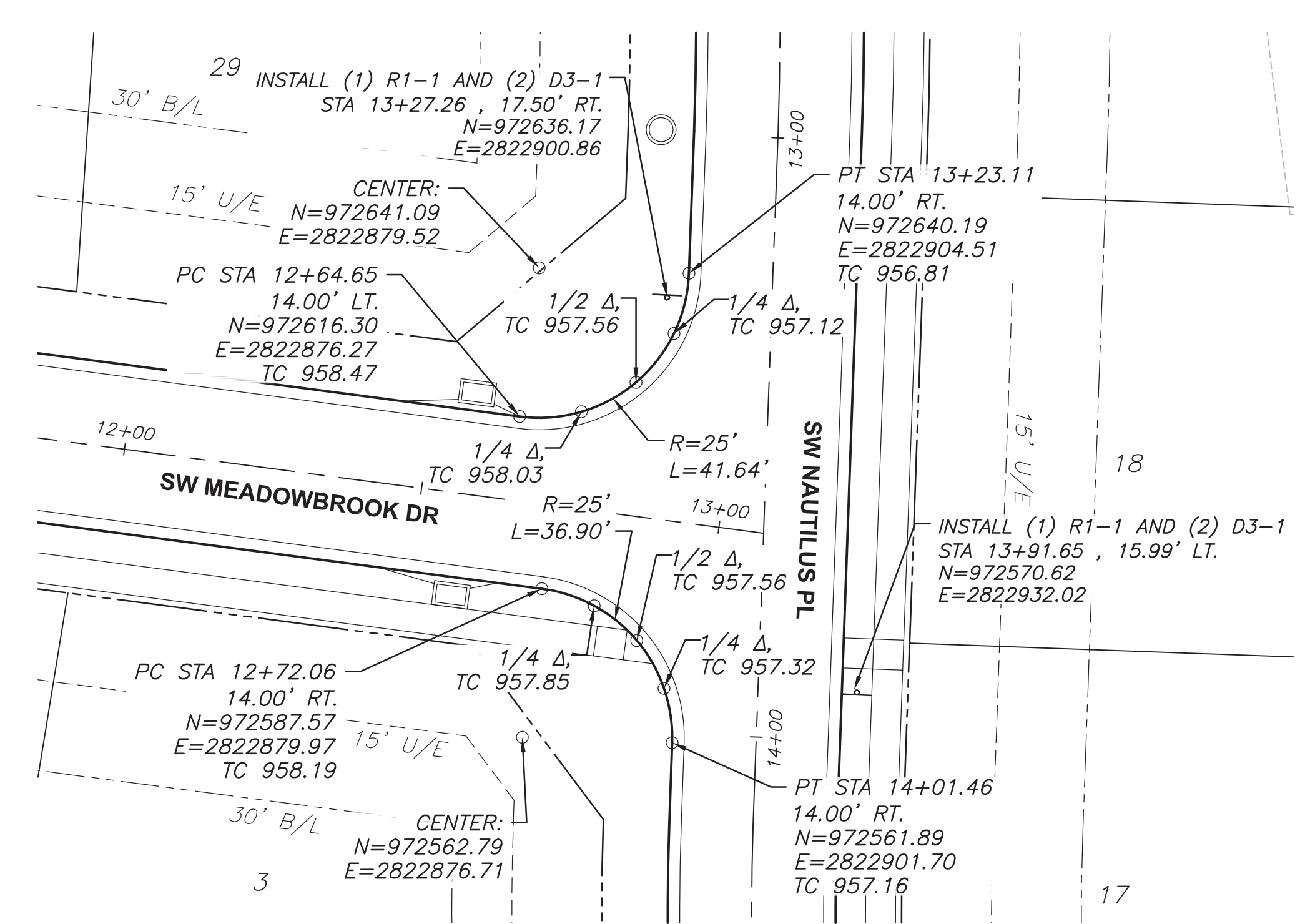
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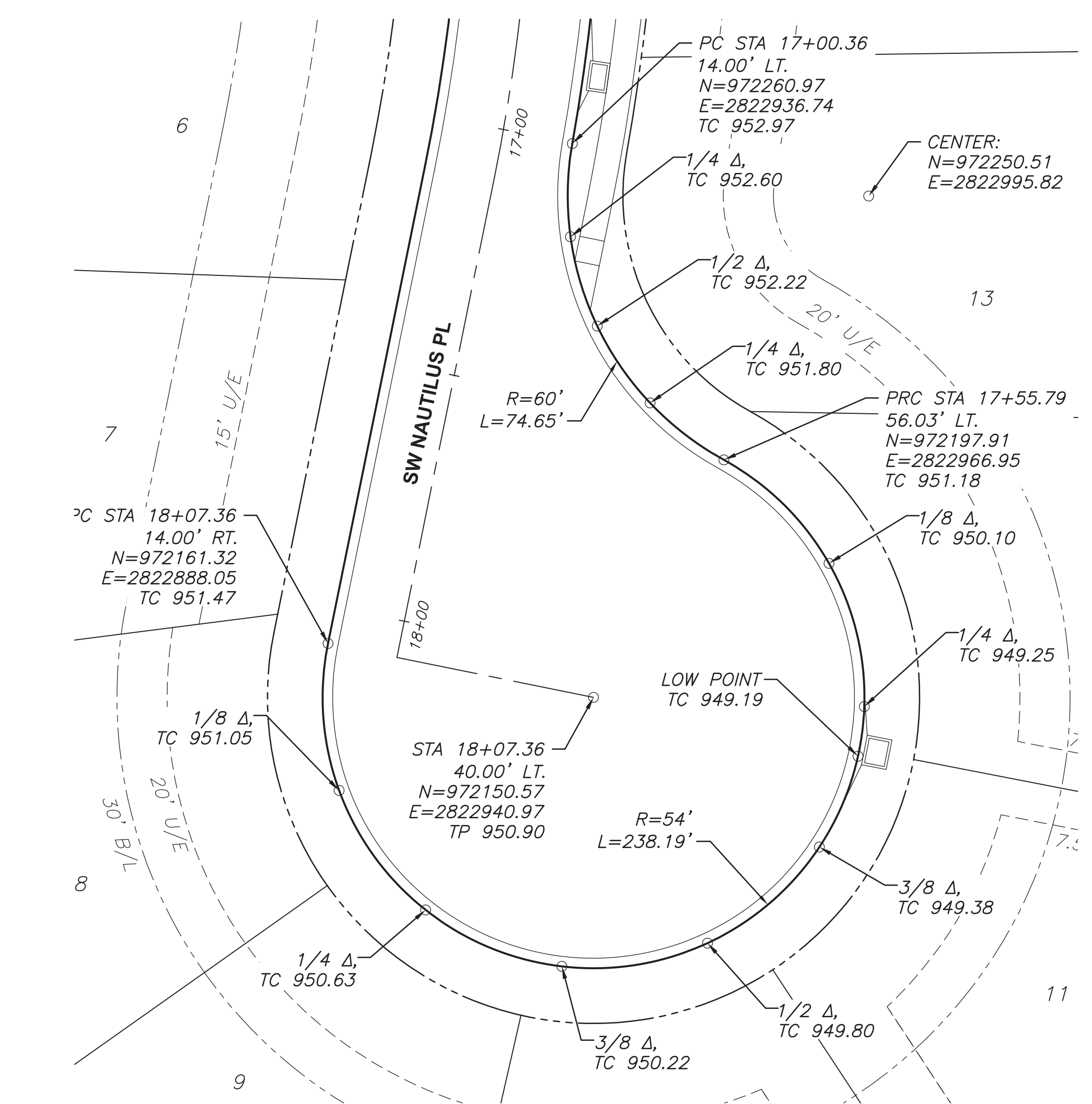
SW RAIN TREE PKWY & SW MEADOWBROOK DR



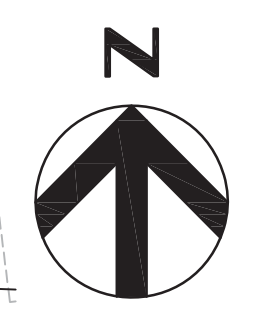
SW NAUTILUS PL: NORTH CUL-DE-SAC



SW MEADOWBROOK DR & SW NAUTILUS PL



SW NAUTILUS PL: SOUTH CUL-DE-SAC



R1-1*



D3-1*

*RE: CITY STANDARD SIGN DETAILS FOR POSTS, SIGNS, STREET NAMES, AND INSTALLATION REQUIREMENTS

SIGNAGE NOTES:

- ALL SIGNS SHALL BE IN ACCORDANCE WITH PART 3 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL. TWO SEPARATE SIGNS ARE REQUIRED FOR ONE STREET NAME INSTALLATION AT EACH POLE.



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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	04/18/2017	CITY RESUBMITTAL
A	03/08/2017	CITY SUBMITTAL
MARK	DATE	DESCRIPTION

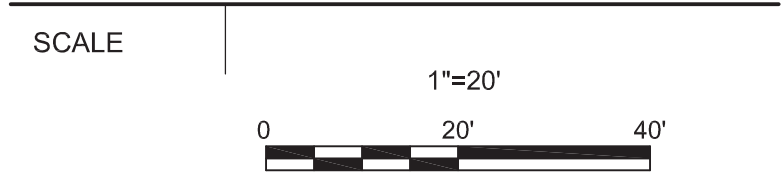
PROJECT NUMBER	10028825-276408
ORIGINAL ISSUE	MARCH 7, 2017

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



SHEET NAME

INTERSECTION AND
SIGNAGE DETAILS

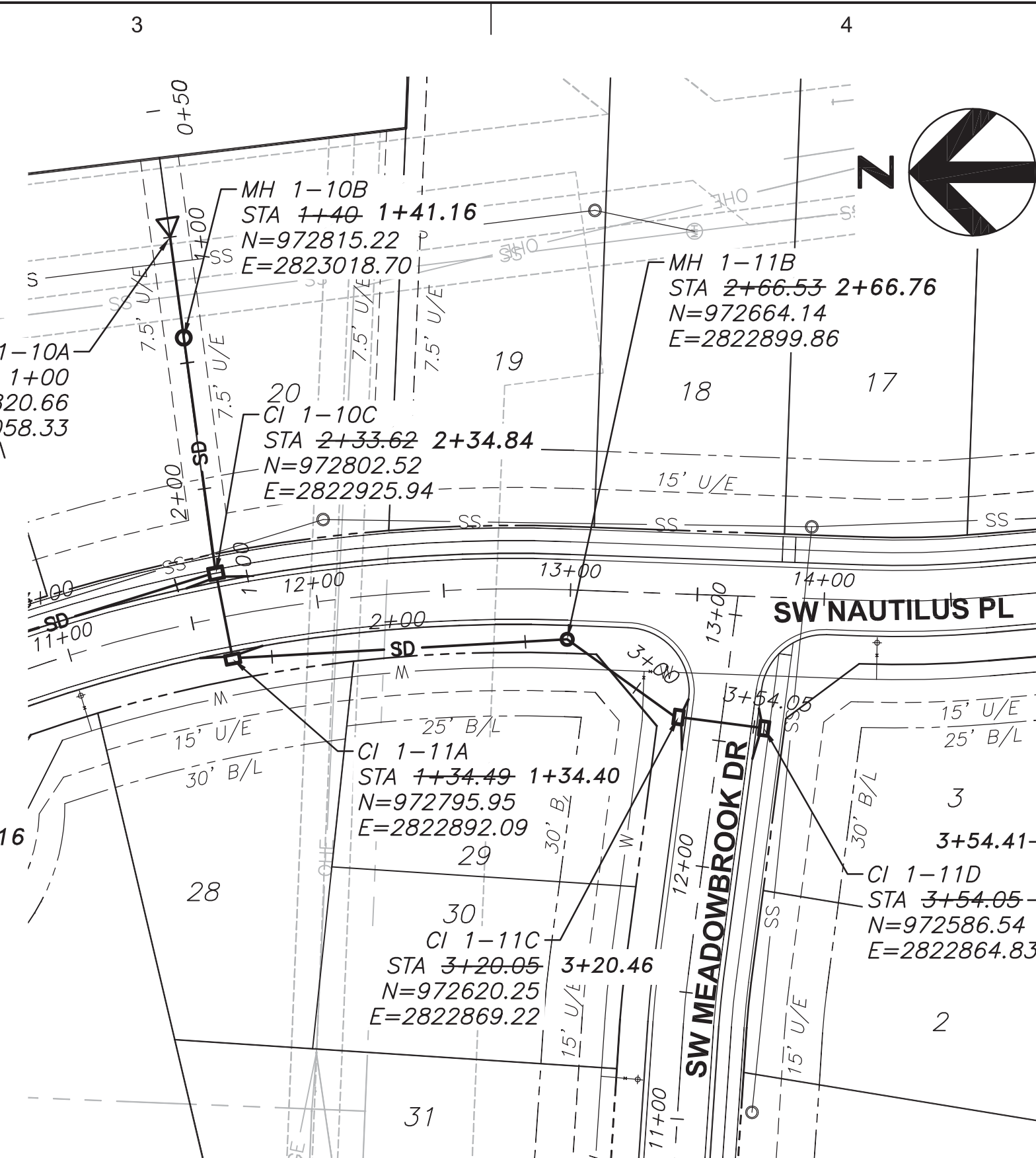
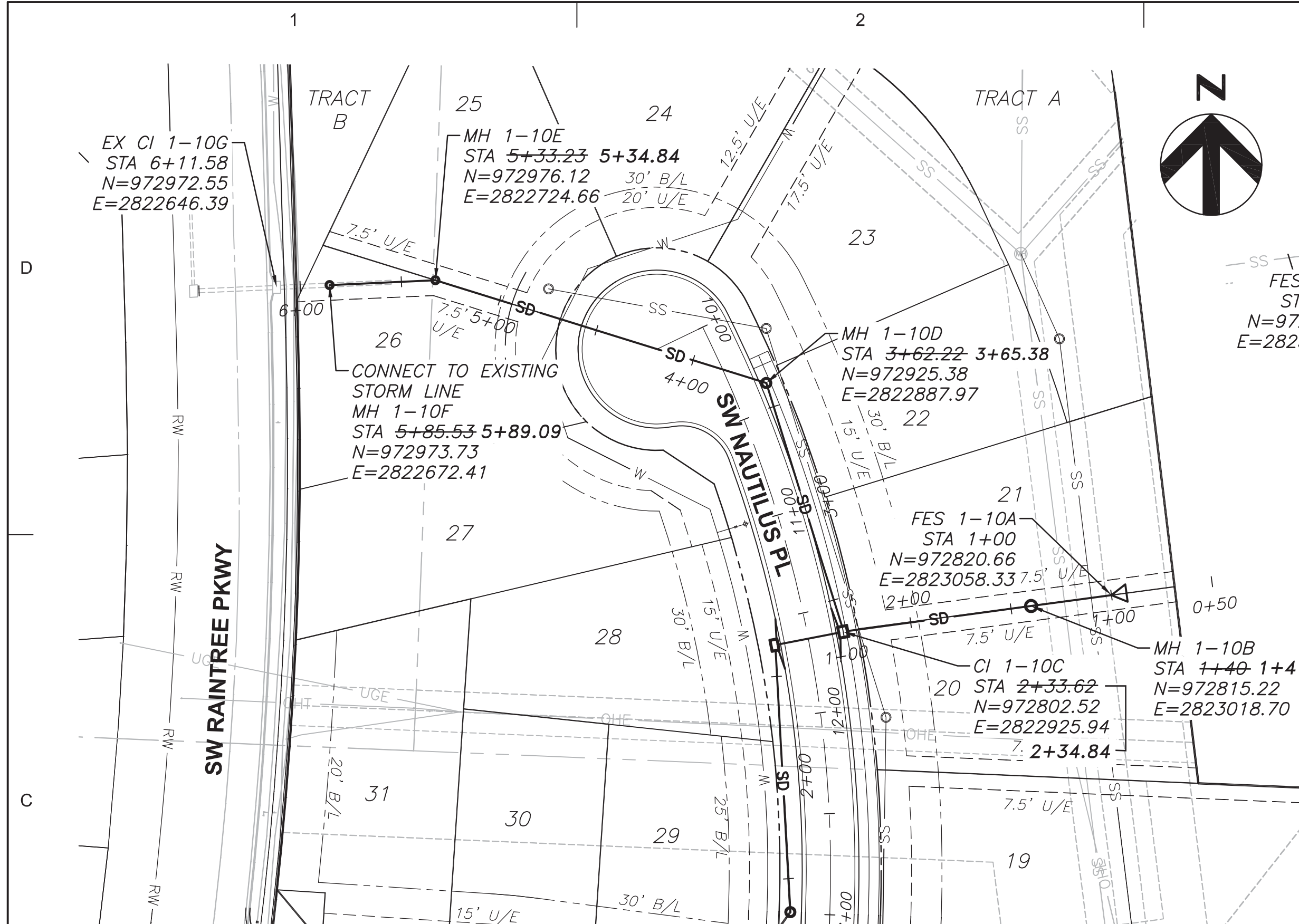


SHEET NUMBER

01C-CR-15

FILE NAME | 01C-CR-15.dwg

PERMIT REVIEW DRAWINGS



STORM PIPE AND STRUCTURE MATERIAL NOTES:

1. HDPE PIPE SHALL CONFORM TO AASHTO M294, TYPE S.
2. CONCRETE PIPE OR ALUMINIZED CORRUGATED METAL PIPE MAY BE USED IN LIEU OF HDPE PIPE. MANNING'S N VALUE SHALL BE EQUAL TO OR LESS THAN 0.013. CONCRETE PIPE SHALL CONFORM TO ASTM C76, CLASS III, WALL TYPE B. ALUMINIZED (TYPE 2) CORRUGATED METAL PIPE SHALL CONFORM TO AASHTO M274. PIPE GAUGE SHALL BE 14 FOR 30" DIAMETER AND SMALLER PIPES.
3. PROPOSED CURB INLETS SHALL CONFORM TO APWA TYPE 2 (C1-2), MANHOLES SHALL CONFORM TO APWA TYPE MH-1, JUNCTION BOXES SHALL CONFORM TO APWA TYPE JB-1.

GENERAL NOTES:

1. COORDINATES AND TOP ELEVATIONS SHOWN ARE LOCATED AT CENTER OF STRUCTURES. ROAD OFFSETS ARE AT INSIDE FACE OF CURB INLETS, AND AT CENTER OF MANHOLES AND JUNCTION BOXES.
2. PIPE LENGTHS INDICATED ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
3. INSIDE FRONT FACE OF CURB INLETS SHALL BE LOCATED 1.5 FEET BEHIND BACK OF CURB. STRUCTURE SHALL BE PARALLEL WITH CURB ALIGNMENT.
4. WATER MAINS AND STORM SEWERS SHALL HAVE AT LEAST 10' OF CLEAR HORIZONTAL SEPARATION.

STORM SEWER STRUCTURE TABLE		
STRUCTURE	STATION & OFFSET	STREET NAME
FES 1-10A	11+68.80, 150.96' LT	SW NAUTILUS PL
MH 1-10B	11+67.23, 111.00' LT	SW NAUTILUS PL
CI 1-10C	11+62.89, 15.50' LT	SW NAUTILUS PL
MH 1-10D	10+27.92, 17.11' LT	SW NAUTILUS PL
MH 1-10E	9+21.83, 108.79' RT	SW NAUTILUS PL
MH 1-10F	9+01.27, 156.88' RT	SW NAUTILUS PL
CI 1-11A	11+62.89, 15.50' RT	SW NAUTILUS PL
MH 1-11B	12+99.34, 19.50' RT	SW NAUTILUS PL
CI 1-11C	12+57.14, 15.50' LT	SW MEADOWBROOK DR
CI 1-11D	12+57.14, 15.50' RT	SW MEADOWBROOK DR



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PROJECT FOR

**LANDROCK
DEVELOPMENT, LLC**

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

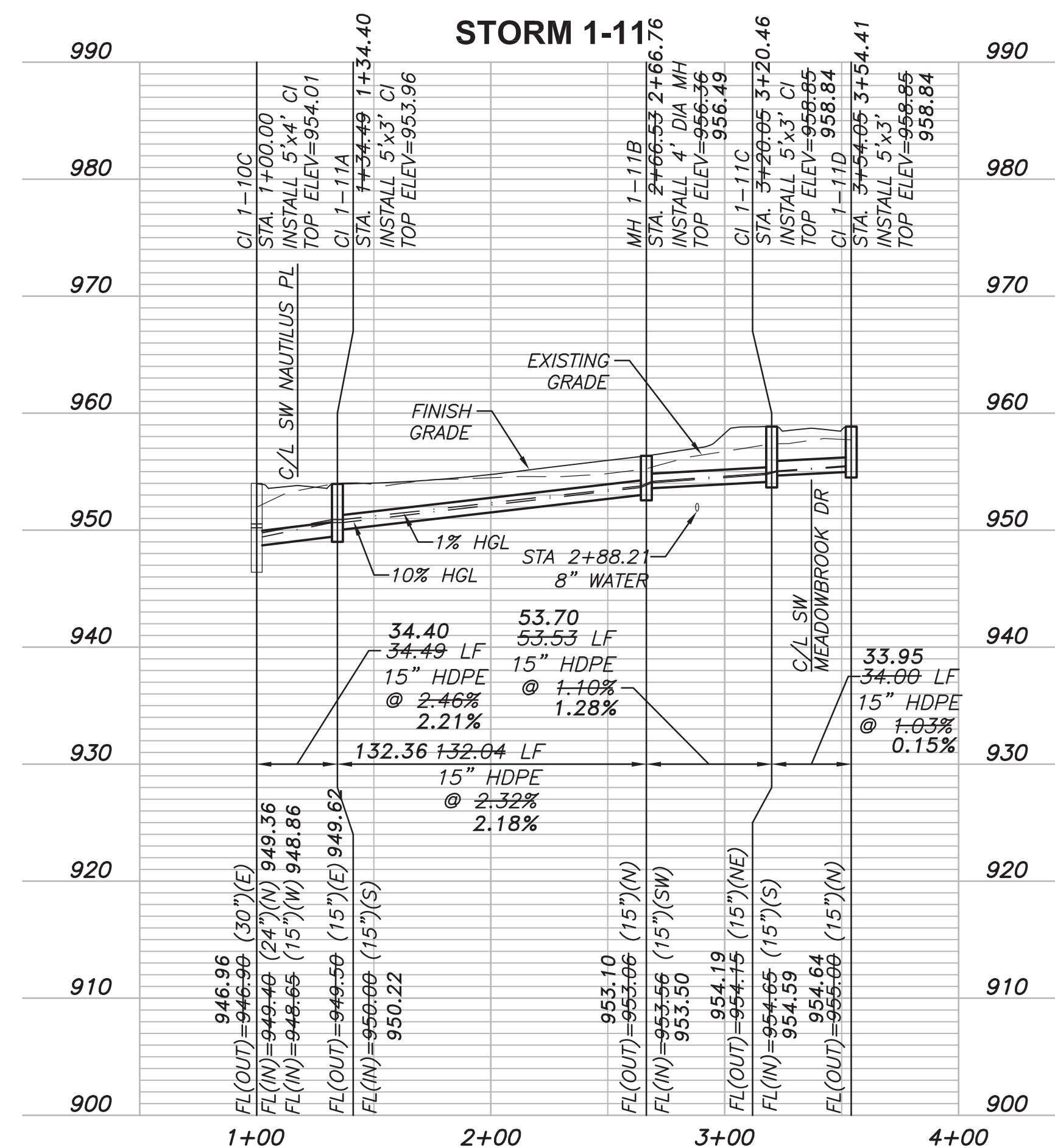
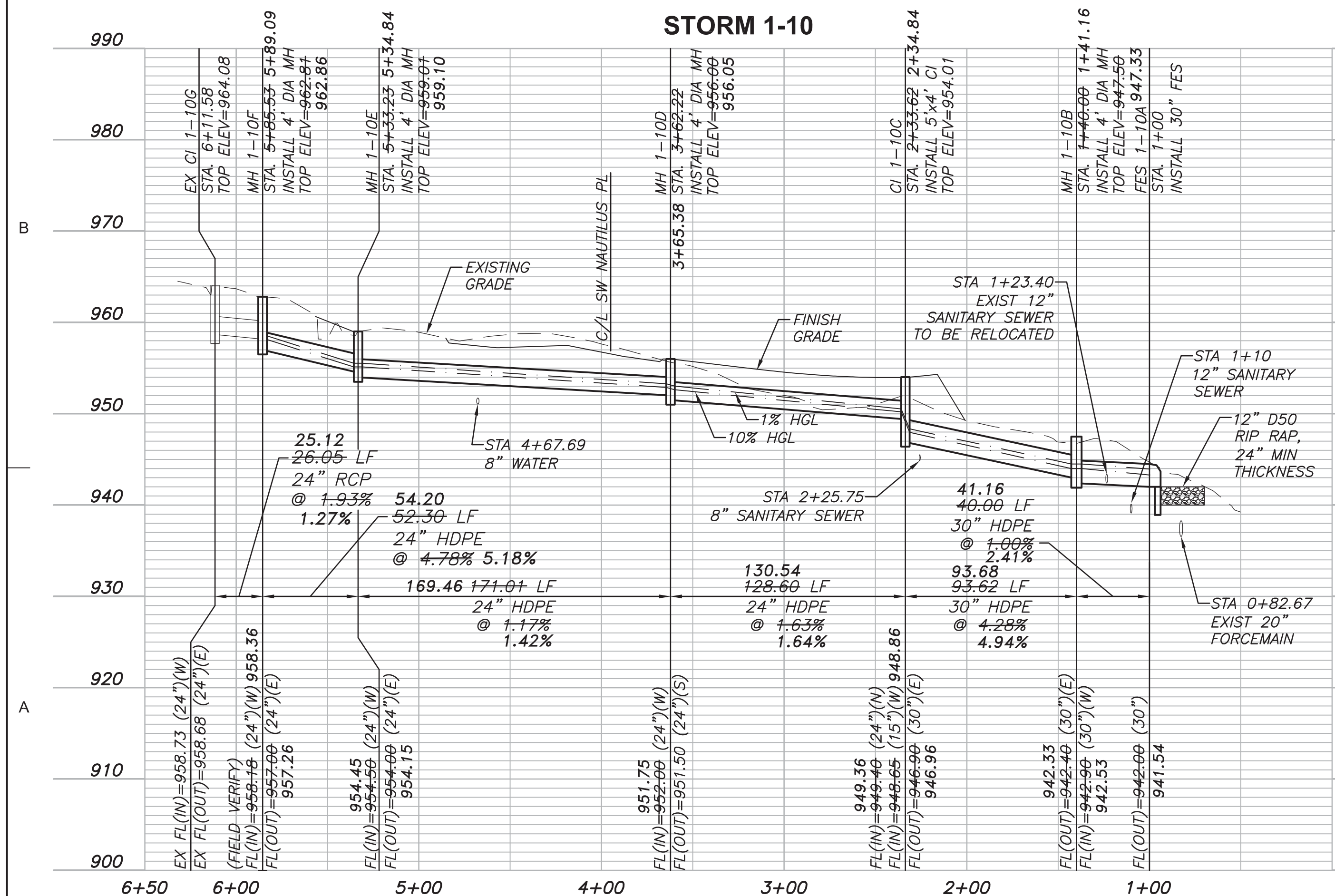
C	08/24/18	AS-BUILT
B	04/14/2017	CITY RESUBMITTAL
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MARK	DATE	DESCRIPTION

PROJECT NUMBER	10028825-276408
ORIGINAL ISSUE	MARCH 7, 2017

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

"AS-BUILT"

August 24, 2018



B



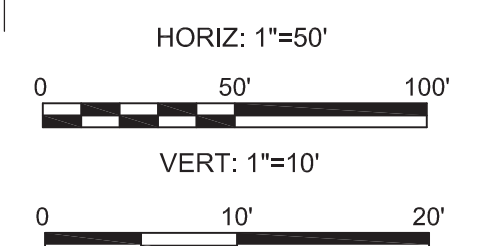
09-05-2018

SHEET NAME

STORM SEWER PLAN AND PROFILE

LINES 1-10 AND 1-11

SCALE

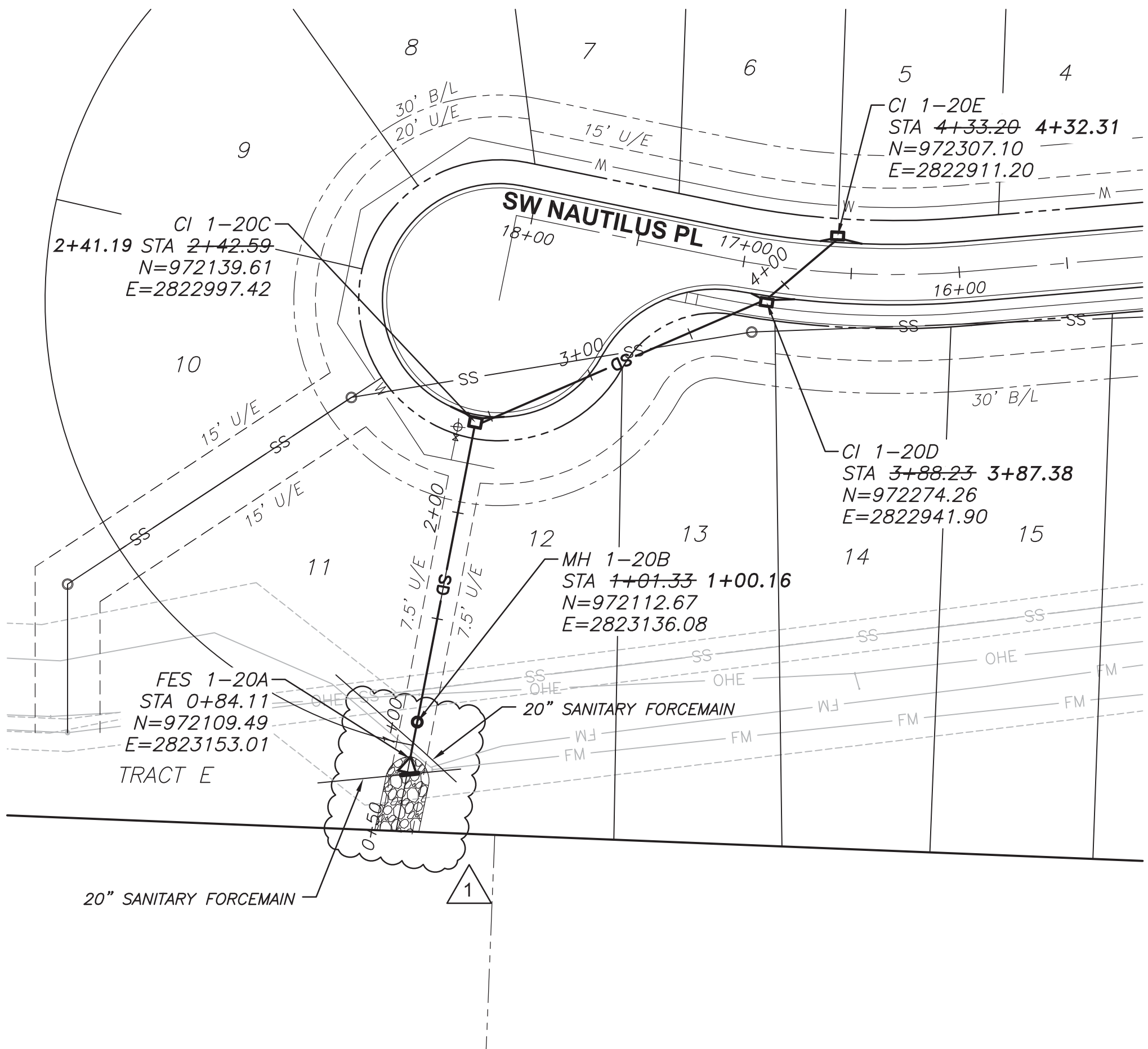


SHEET NUMBER

01C-CR-16

FILE NAME	01C-CR-16.dwg
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PERMIT REVIEW DRAWINGS



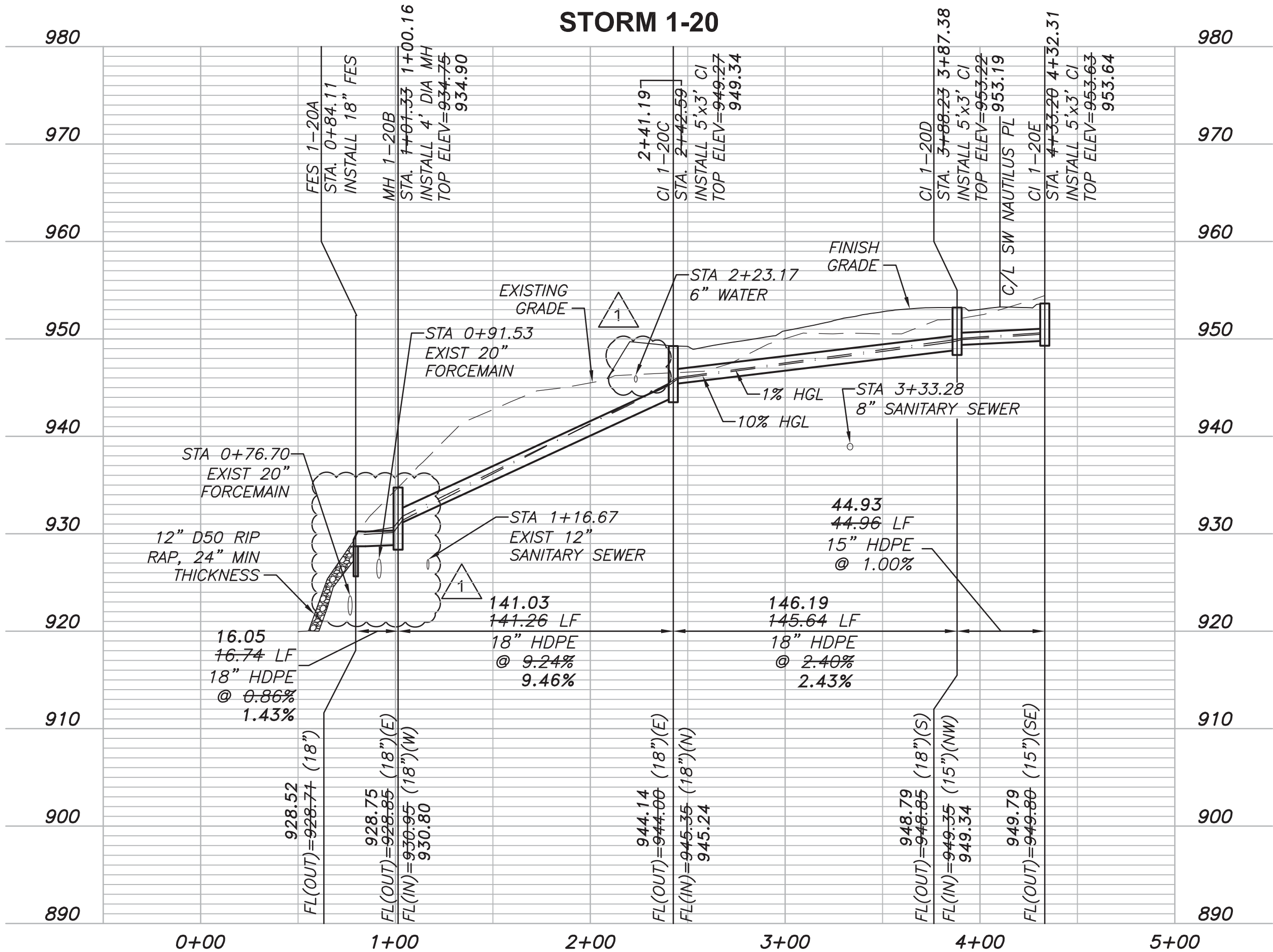
STORM PIPE AND STRUCTURE MATERIAL NOTES:

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GENERAL NOTES:

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4. WATER MAINS AND STORM SEWERS SHALL HAVE AT LEAST 10' OF CLEAR HORIZONTAL SEPARATION.

STORM SEWER STRUCTURE TABLE		
STRUCTURE	STATION & OFFSET	STREET NAME
FES 1-20A	18+05.50, 254.94' LT	SW NAUTILUS PL
MH 1-20B	18+05.64, 238.75' LT	SW NAUTILUS PL
CI 1-20C	18+06.86, 97.50' LT	SW NAUTILUS PL
CI 1-20D	16+86.95, 15.50' LT	SW NAUTILUS PL
CI 1-20E	16+60.98, 15.50' RT	SW NAUTILUS PL



"AS-BUILT"
August 24, 2018



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

D	08/24/18	AS-BUILT
CO1	04/05/2018	STORM REVISION
C	07/28/2017	CITY RESUBMITTAL
B	05/01/2017	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.

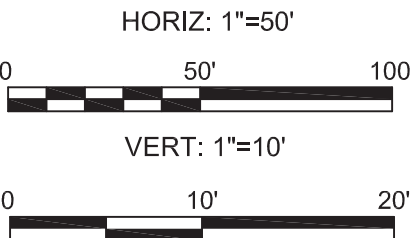


SHEET NAME

STORM SEWER
PLAN AND PROFILE

LINE 1-20

SCALE



SHEET NUMBER

01C-CR-17

FILE NAME | 01C-CR-18.dwg

PERMIT REVIEW DRAWINGS



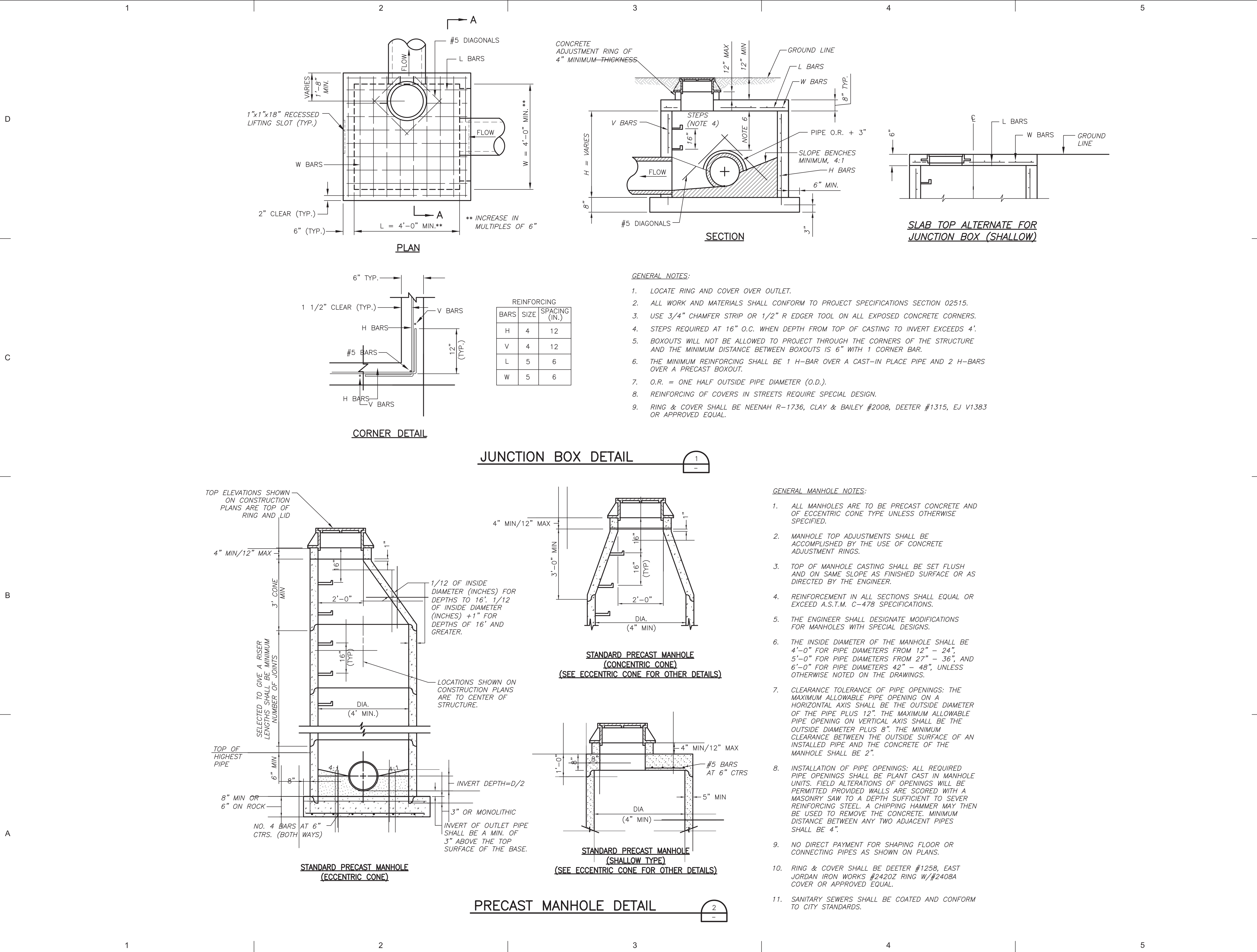
**LANDROCK
DEVELOPMENT, LLC**

STATE OF MISSOURI
AARON J. BRESETTE
NUMBER
PE-005009883
PROFESSIONAL ENGINEER
4/20/17

PERMIT REVIEW DRAWINGS



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PROJECT ENGINEER	WILL NEDS, E.I.T.



SHEET NAME

STORM SEWER
DETAILS

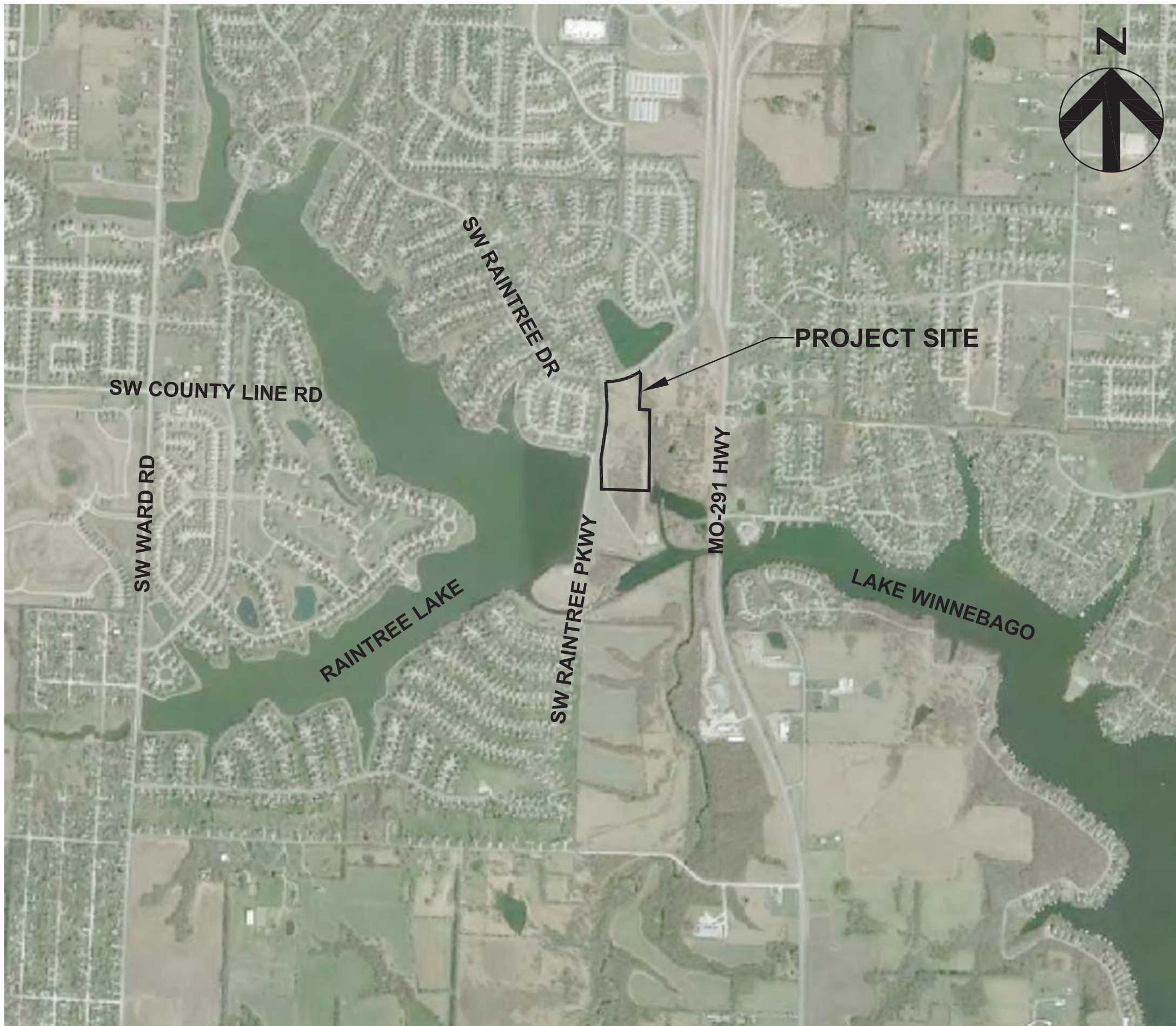
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SHEET NUMBER

01C-CR-19

FILE NAME
01C-CR-19.dwg

PERMIT REVIEW DRAWINGS



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 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

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



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.



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PROJECT FOR

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

B	04/14/2017	CITY RESUBMITTAL
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ORIGINAL ISSUE	MARCH 7, 2017

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



SHEET NAME

COVER SHEET

SCALE

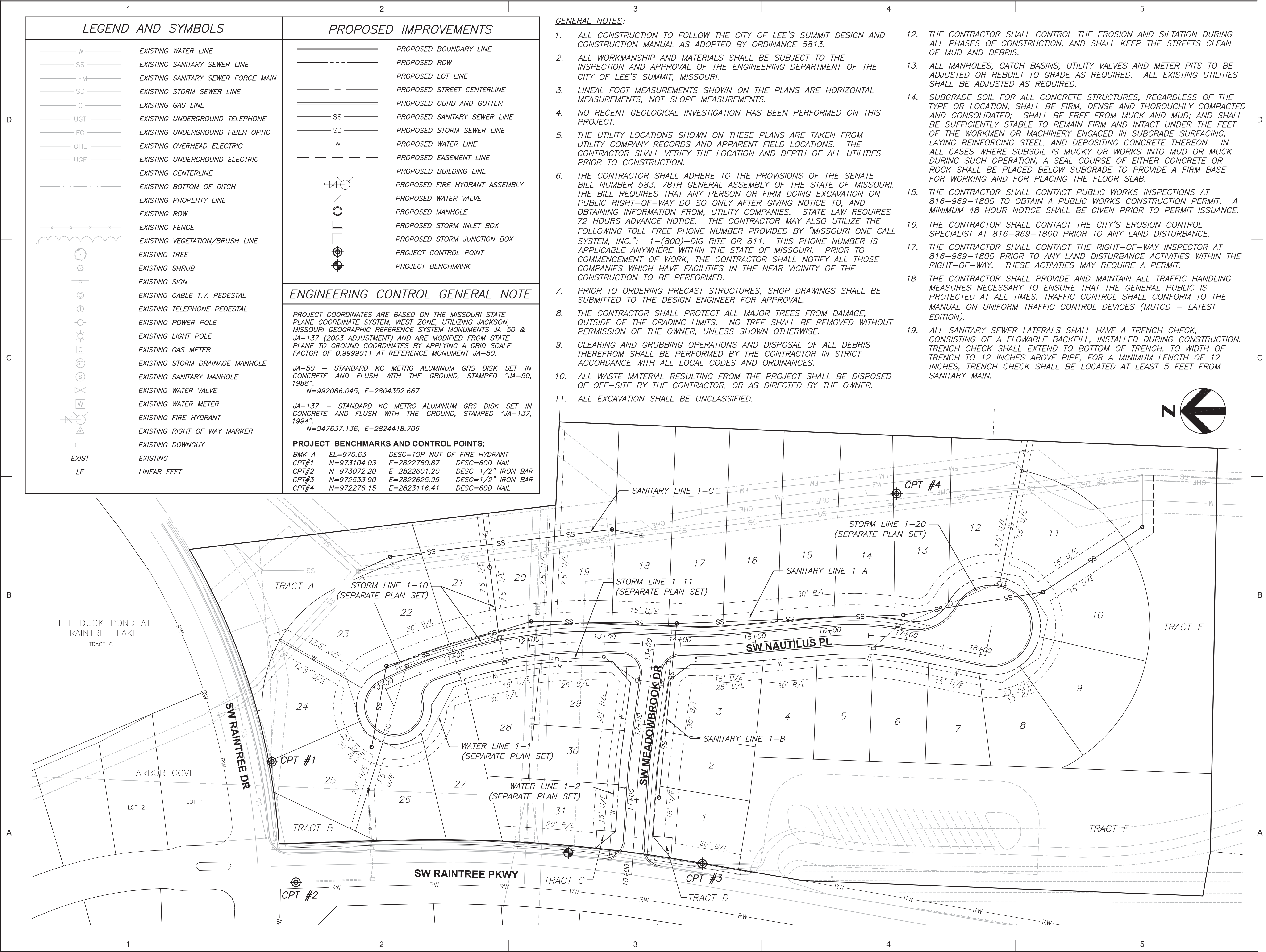
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SHEET NUMBER

01C-CR-SS-00

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

PERMIT REVIEW DRAWINGS



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PROJECT FOR

LANDROCK
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PROJECT ENGINEER	WILL NEDS, E.I.T.



SHEET NAME

GENERAL LAYOUT
AND NOTES



SHEET NUMBER

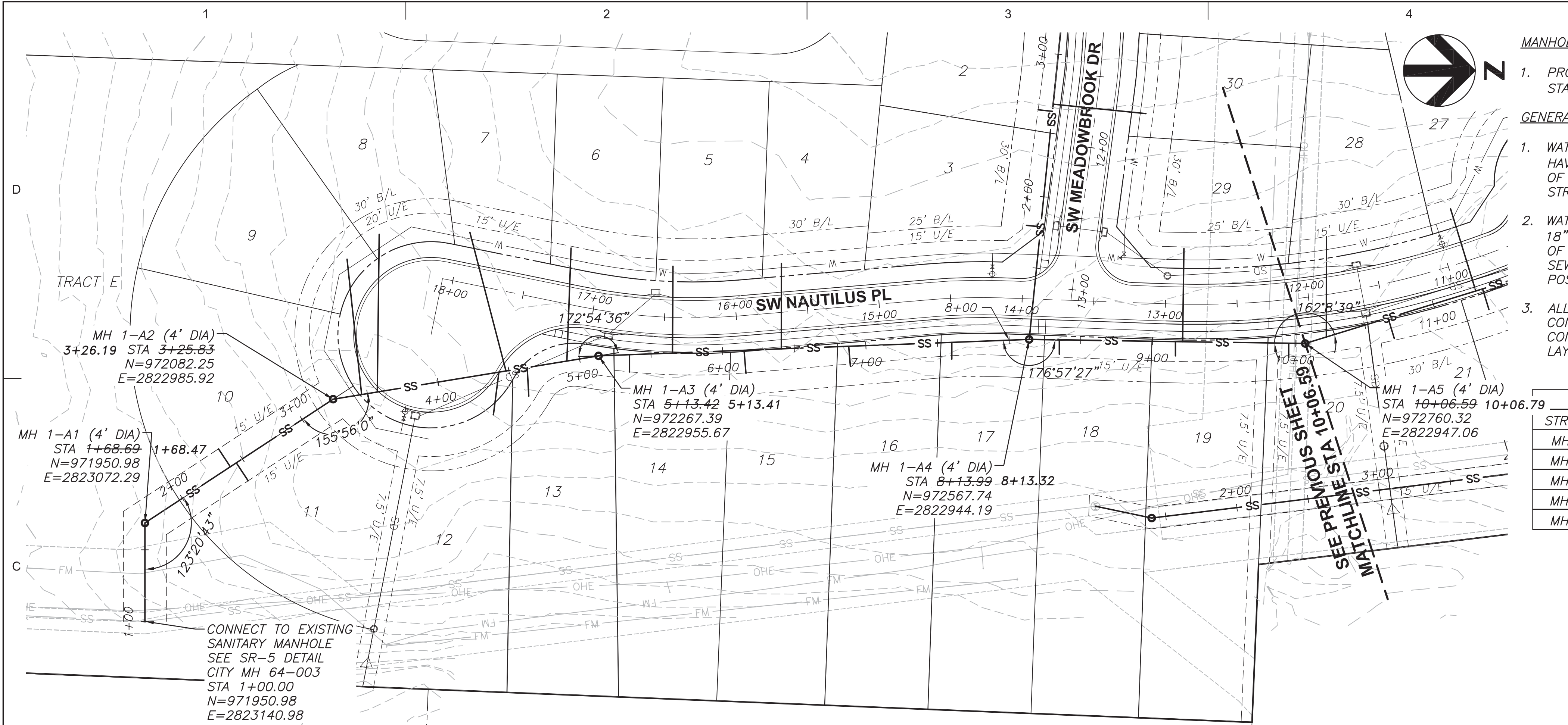
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PERMIT REVIEW DRAWINGS

GENERAL NOTES:

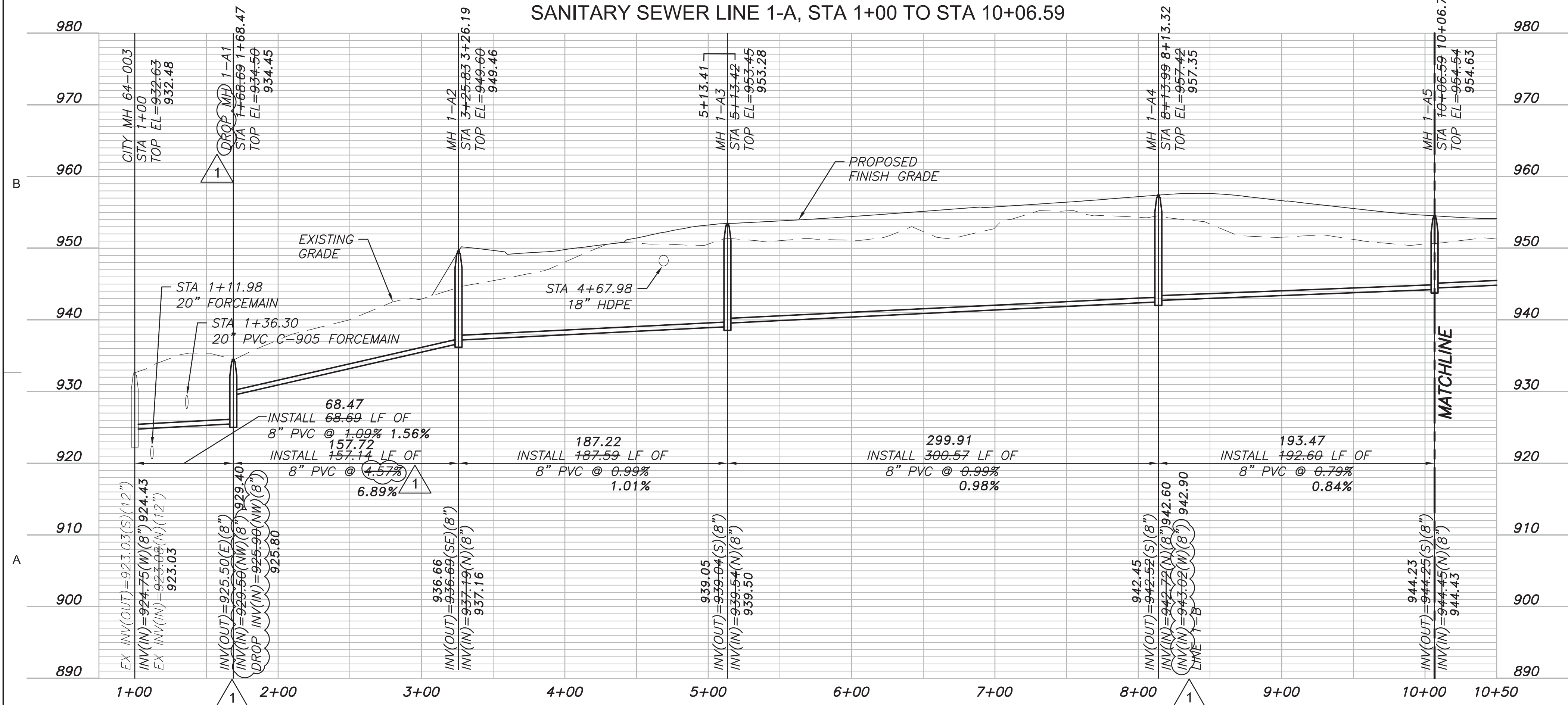
- ALL CONSTRUCTION TO FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
- ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE ENGINEERING DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI.
- LINEAL FOOT MEASUREMENTS SHOWN ON THE 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.

SANITARY SEWER STRUCTURE 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
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



"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
C	07/28/2017	CITY RESUBMITTAL
B	05/01/2017	CITY RESUBMITTAL
A	03/08/2017	CITY SUBMITTAL
MARK	DATE	DESCRIPTION

PROJECT NUMBER	10028825-276408
ORIGINAL ISSUE	MARCH 7, 2017

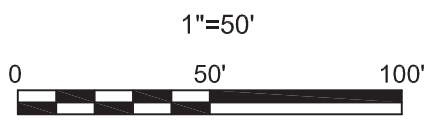
PROJECT MANAGER	SIMON SUN
PROJECT ENGINEER	WILL NEDS, E.I.T.



SHEET NAME

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

SCALE

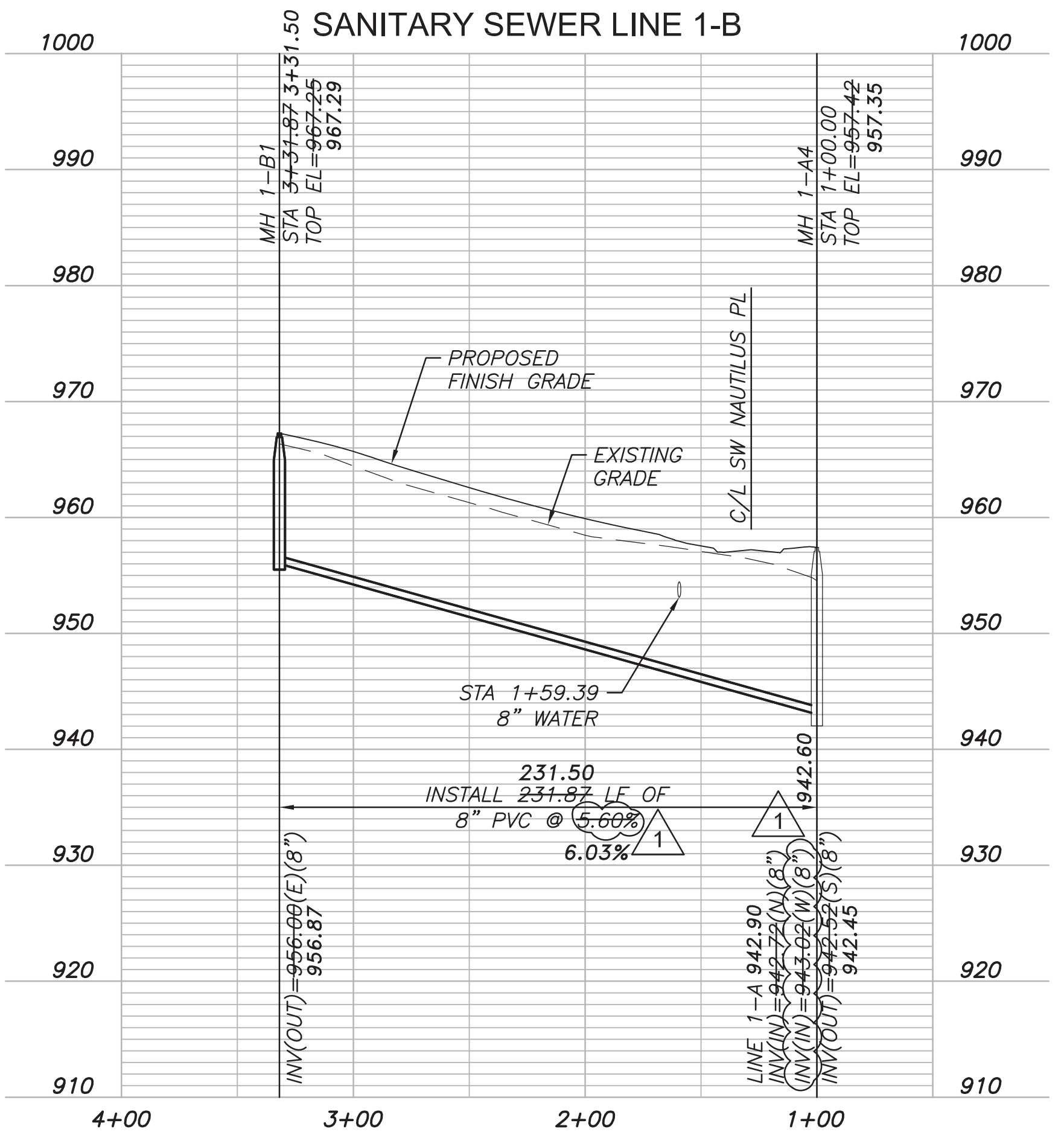
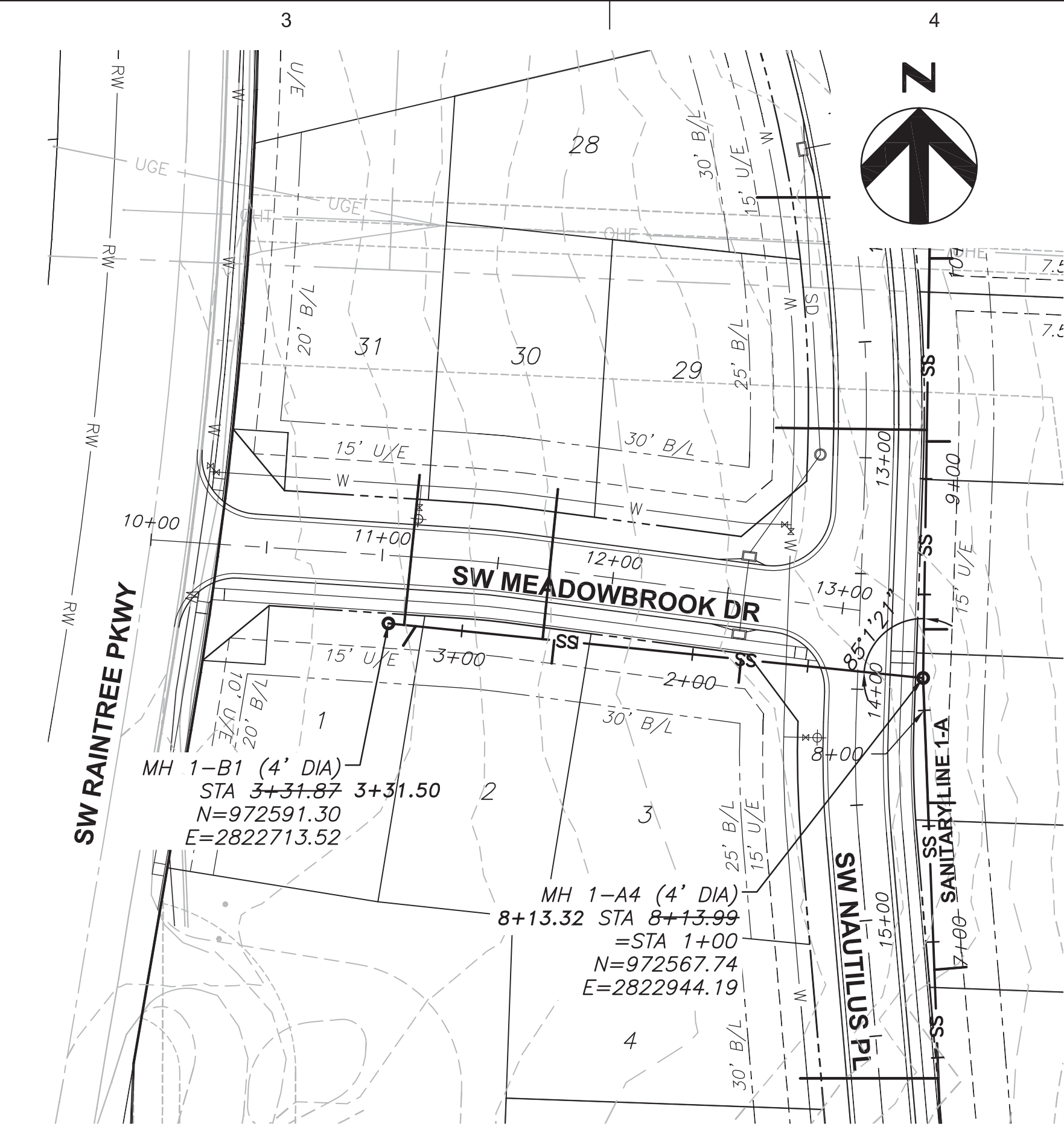
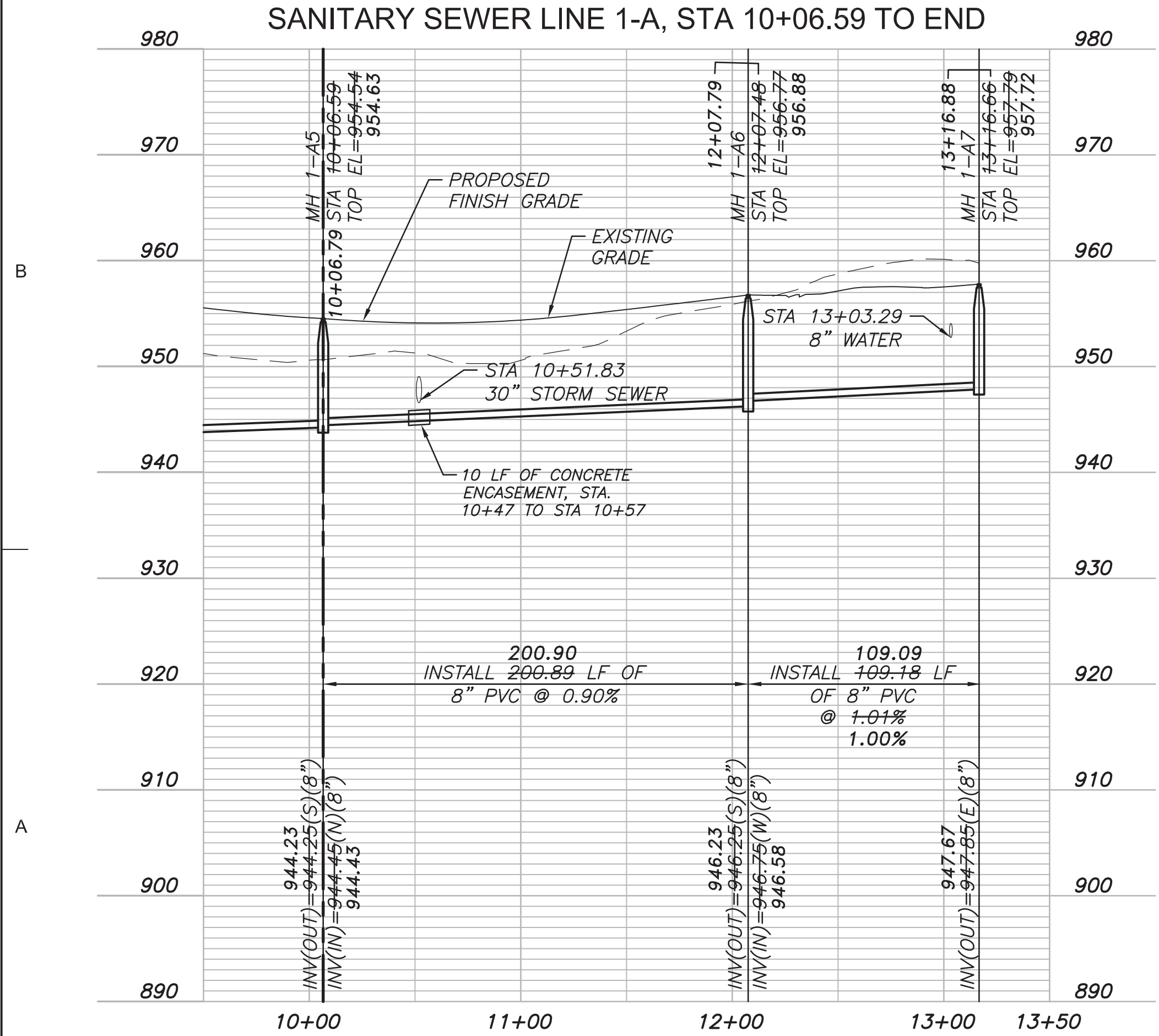
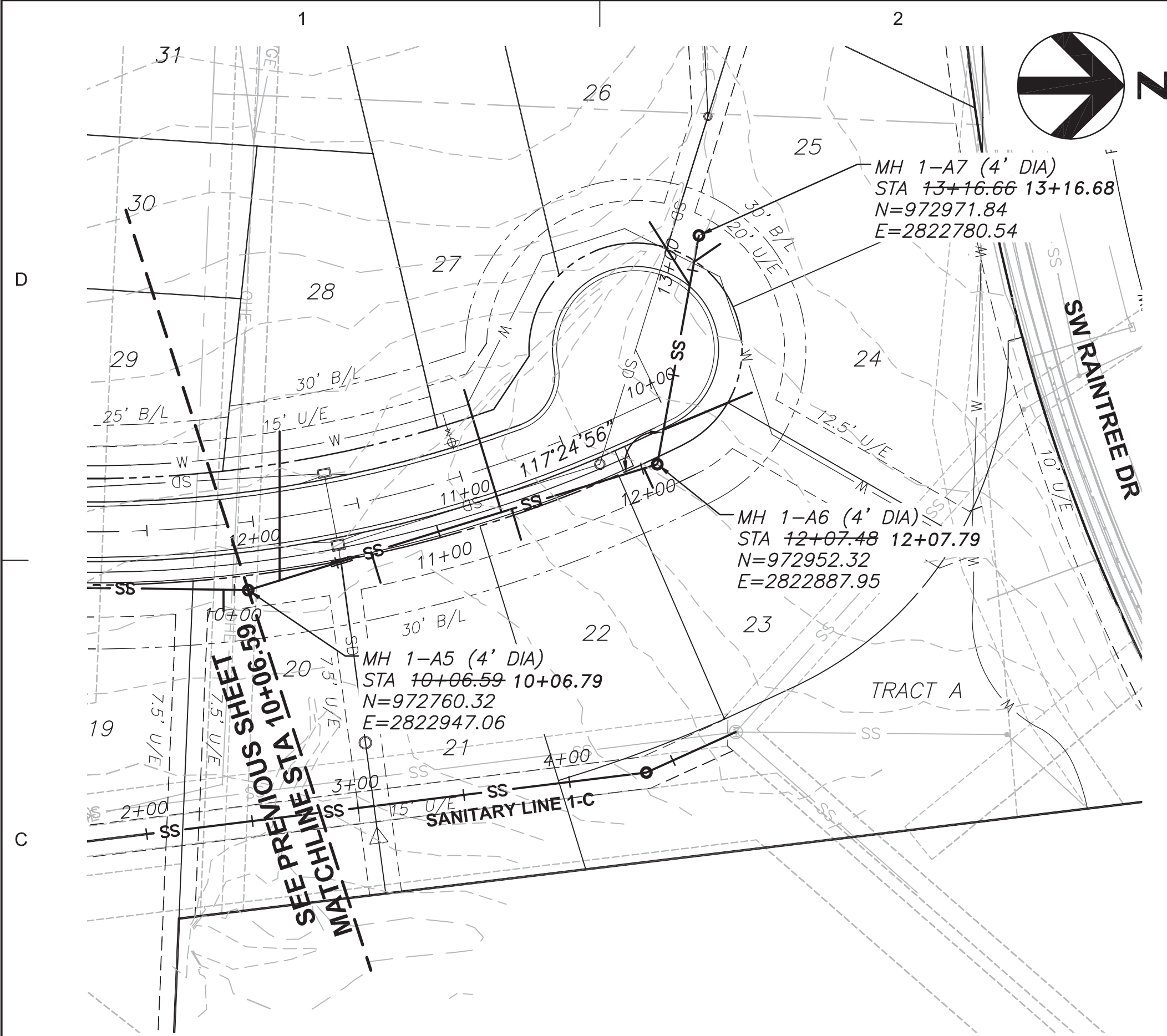


SHEET NUMBER

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	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
3+25	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

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 10+06.59 TO END LINE 1-B

SCALE 1"=50'

SHEET NUMBER

01C-CR-SS-03

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

PERMIT REVIEW DRAWINGS

1

2

3

4

5

D

C

B

A

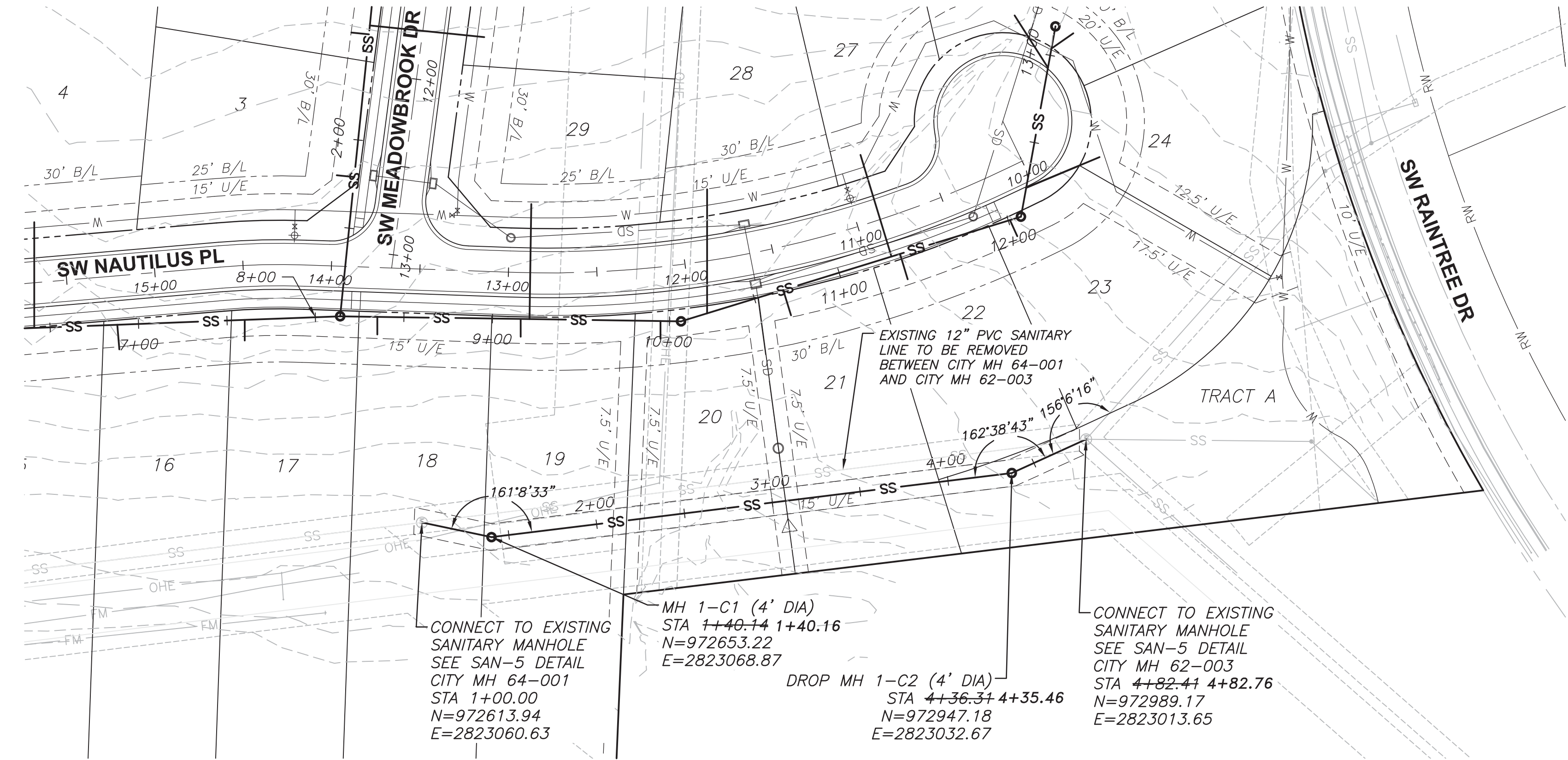
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2

3

4

5



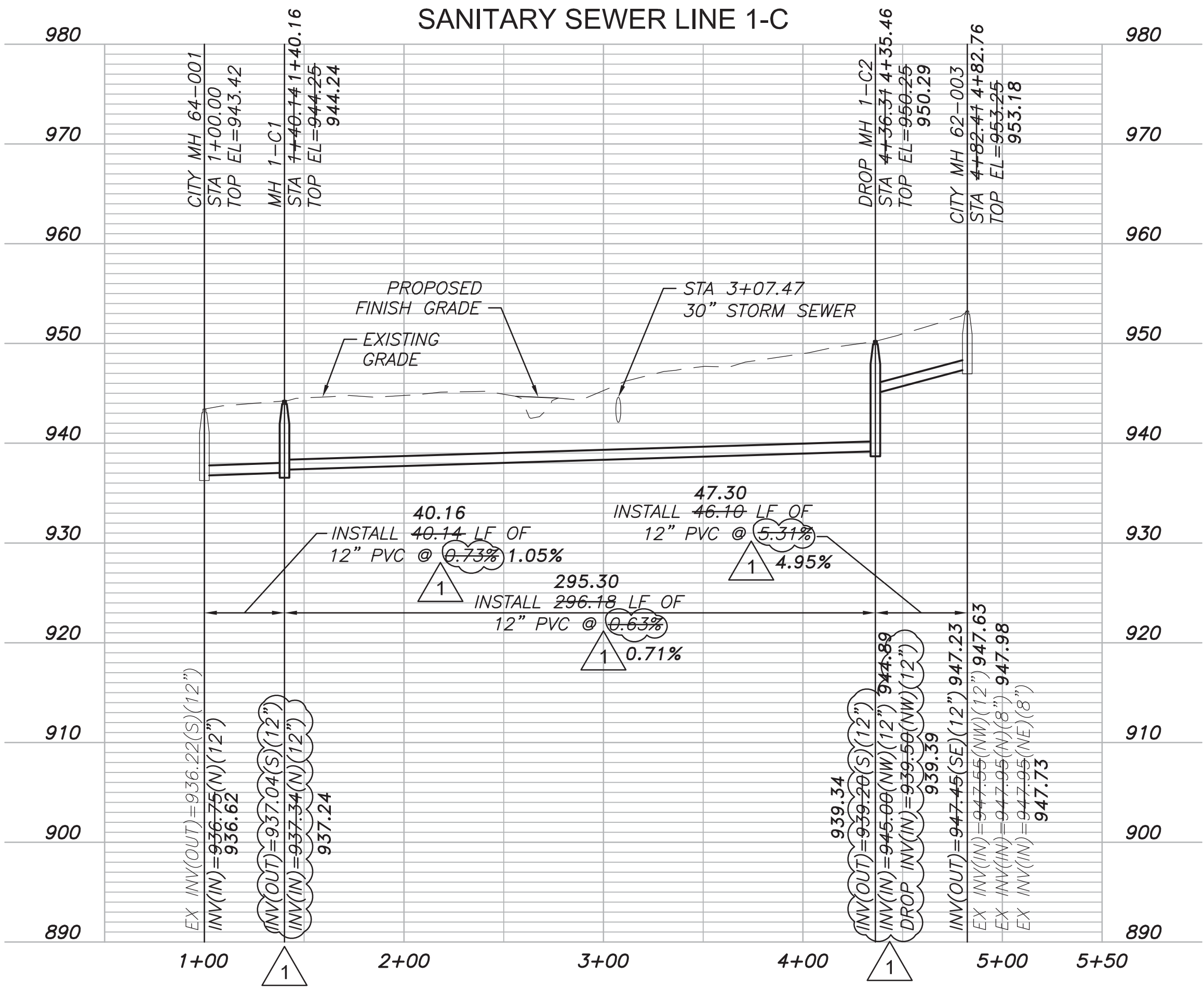
MANHOLE STRUCTURE NOTE:

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

GENERAL NOTES:

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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



"AS-BUILT"
August 24, 2018



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

MARK	DATE	DESCRIPTION
D	08/24/18	AS-BUILT
C	07/20/2017	CITY RESUBMITTAL
B	05/01/2017	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.



09-08-2018

SHEET NAME

SANITARY SEWER
PLAN AND PROFILE
LINE 1-C

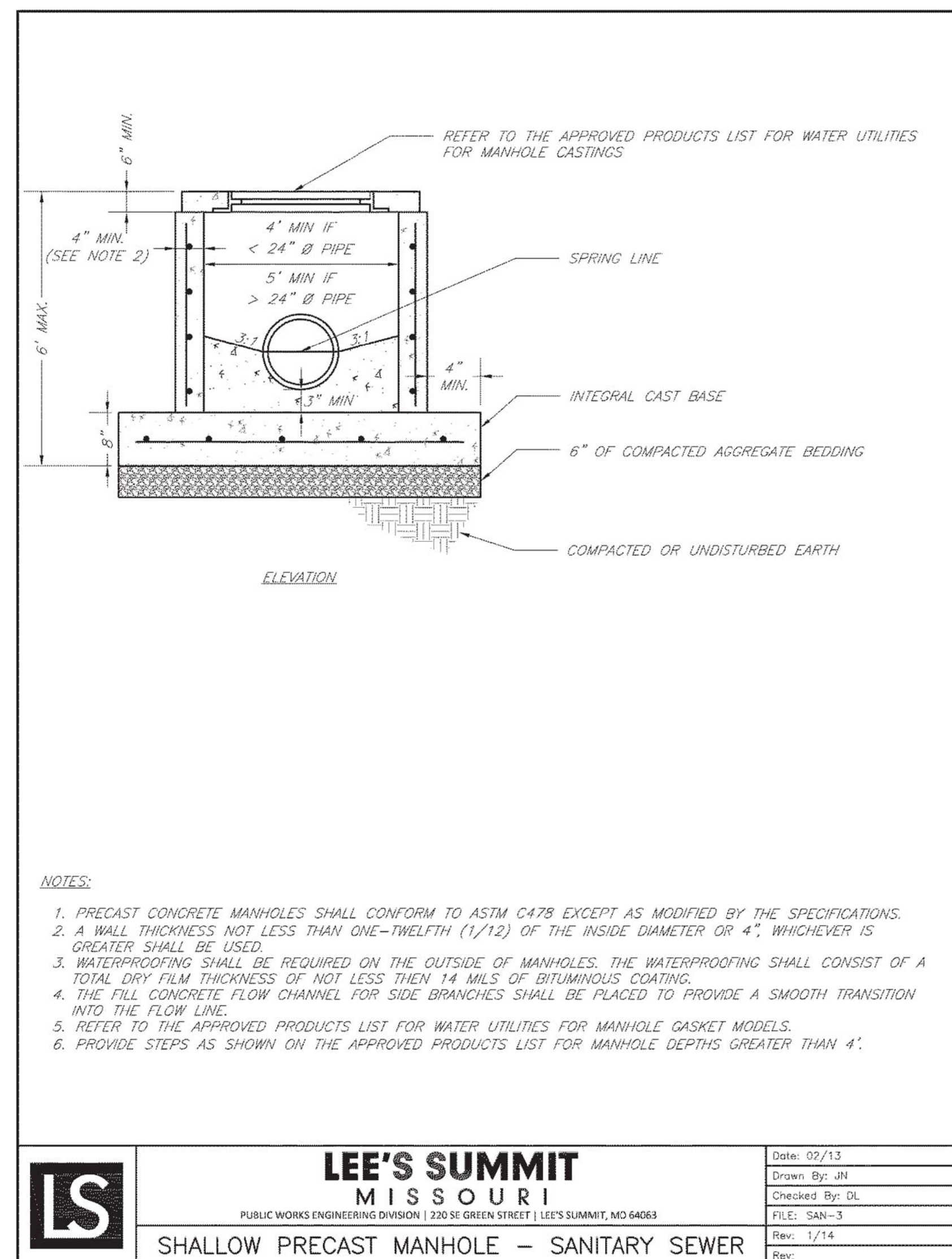
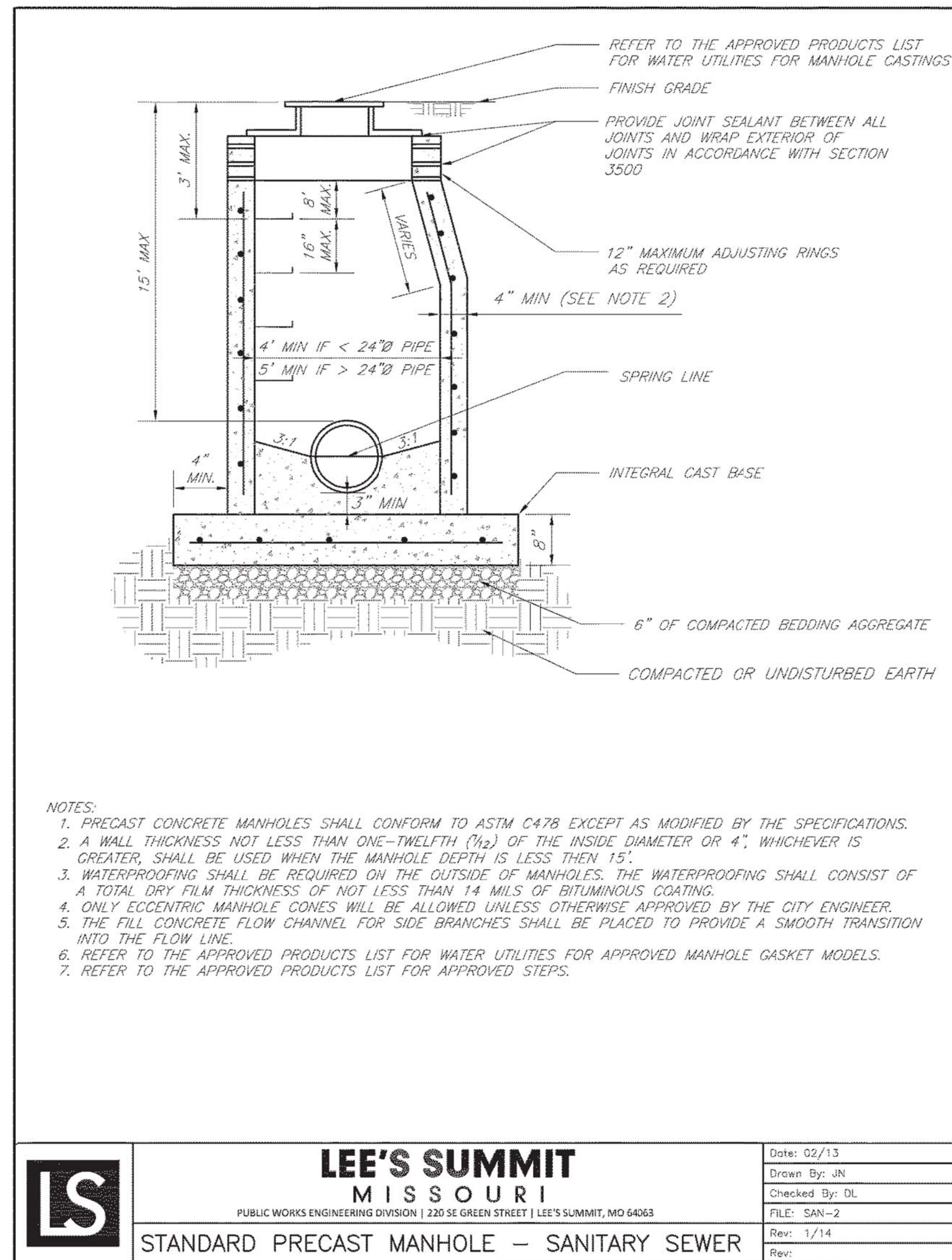
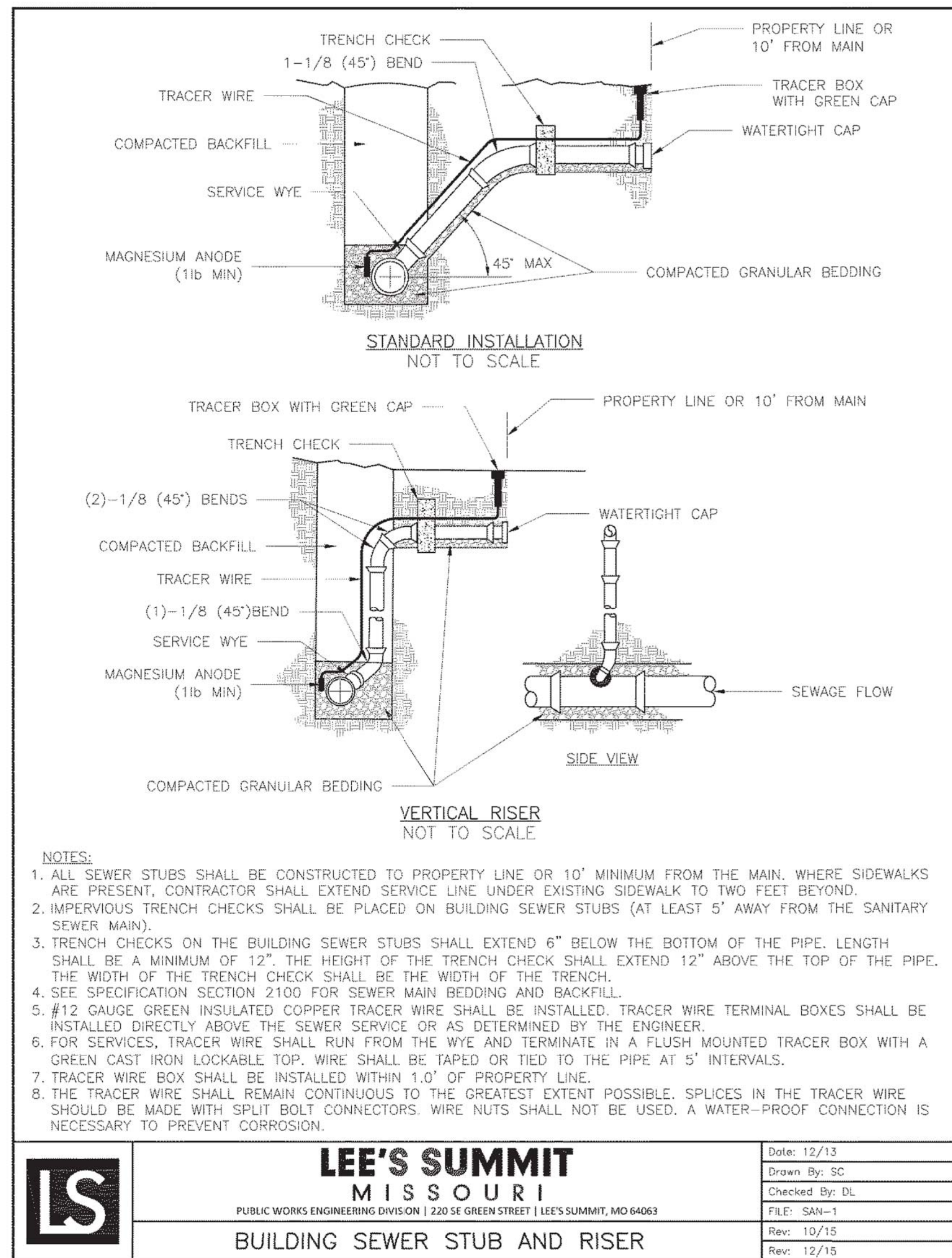


SHEET NUMBER

01C-CR-SS-04

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

PERMIT REVIEW DRAWINGS

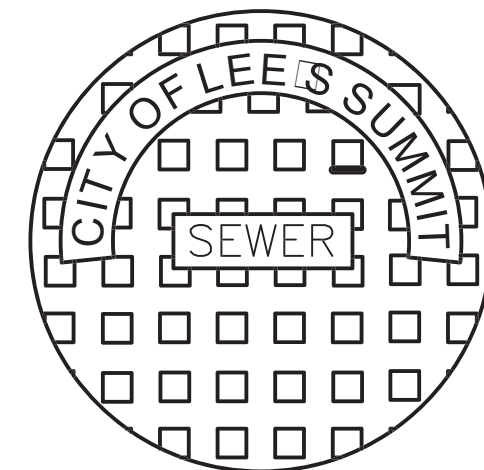
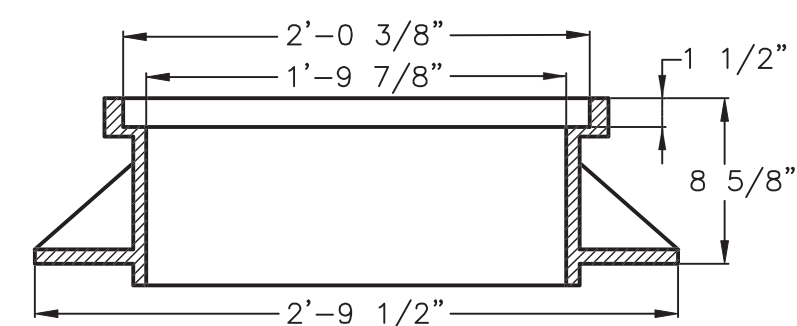


TYP PIPE ENVELOPE (PVC)

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

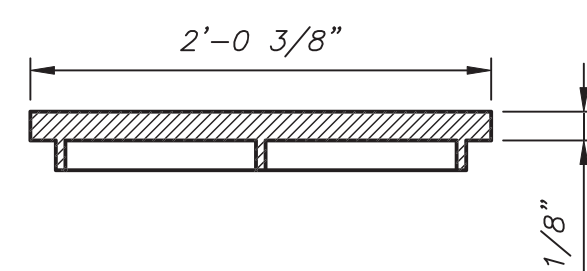
NOTES:

- BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 2100 OF THE KCMETRO 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 CROSS OVER STORM SEWER STRUCTURES BY 5' AND VERTICALLY CLEAR STORM SEWER STRUCTURES BY 10'. WATER SHALL CROSS OVER SANITARY SEWER STRUCTURES BY 5'.
- MAXIMUM TRENCH WIDTH SHALL NOT EXCEED THE MANUFACTURER'S RECOMMENDATIONS. TRENCH WIDTH IS DEFINED AS THE HORIZONTAL DISTANCE MEASURED 6" ABOVE THE TOP OF THE PIPE PERPENDICULAR TO THE SEWER ALIGNMENT.



STANDARD 24" MANHOLE COVER
LEE'S SUMMIT PART NO.: LS101B
MINIMUM WEIGHT = 160 LB
MATCHING FRAME: LS101A
NOTE: PICK HOLES NOT SHOWN.

NOTE:
REFER TO WATER UTILITIES LIST
OF APPROVED MANUFACTURER'S.



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

NOTE:
REFER TO WATER UTILITIES LIST
OF APPROVED MANUFACTURER'S.

24" MANHOLE COVER
NOT TO SCALE

HDR

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	04/14/2017	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

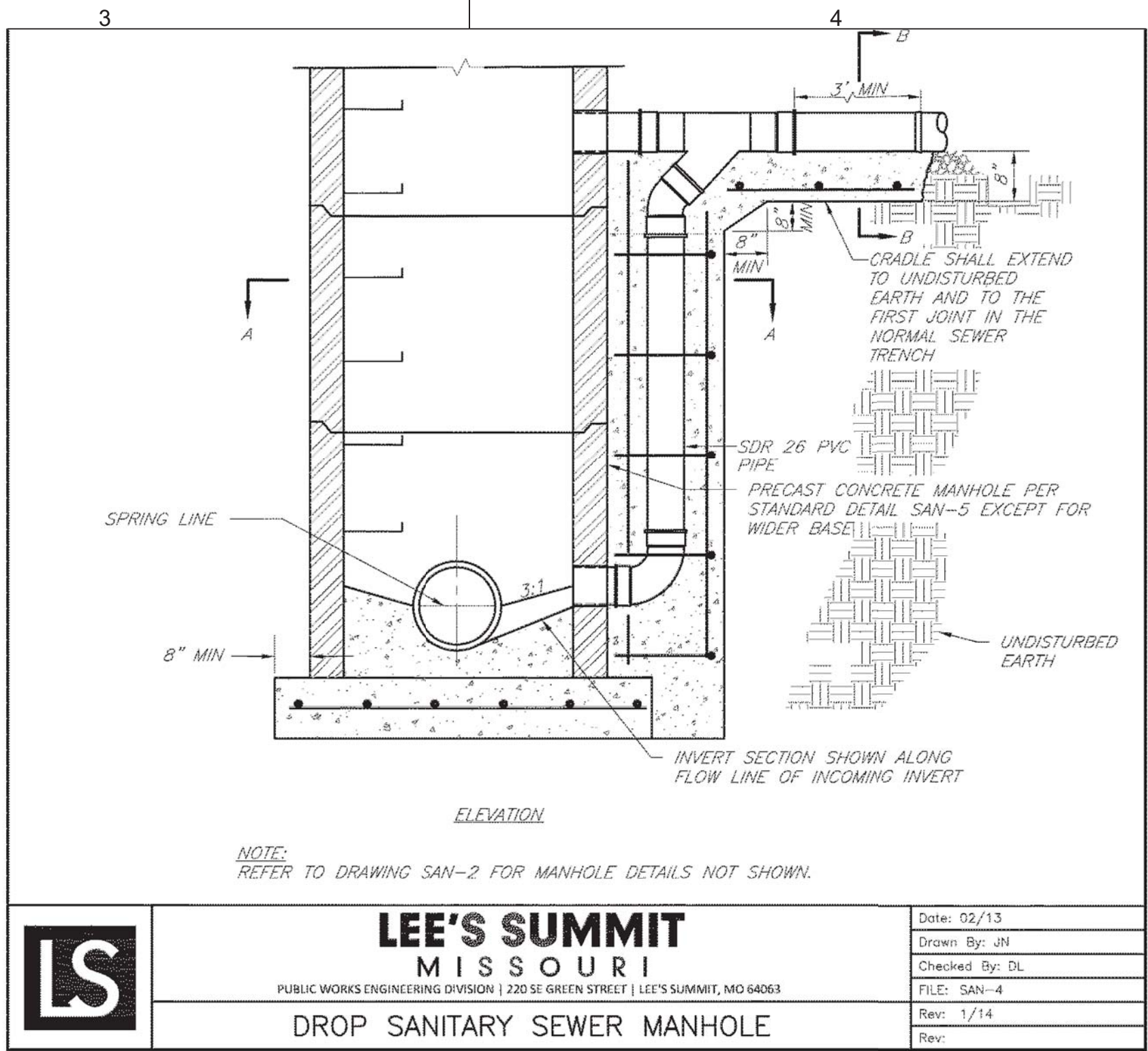
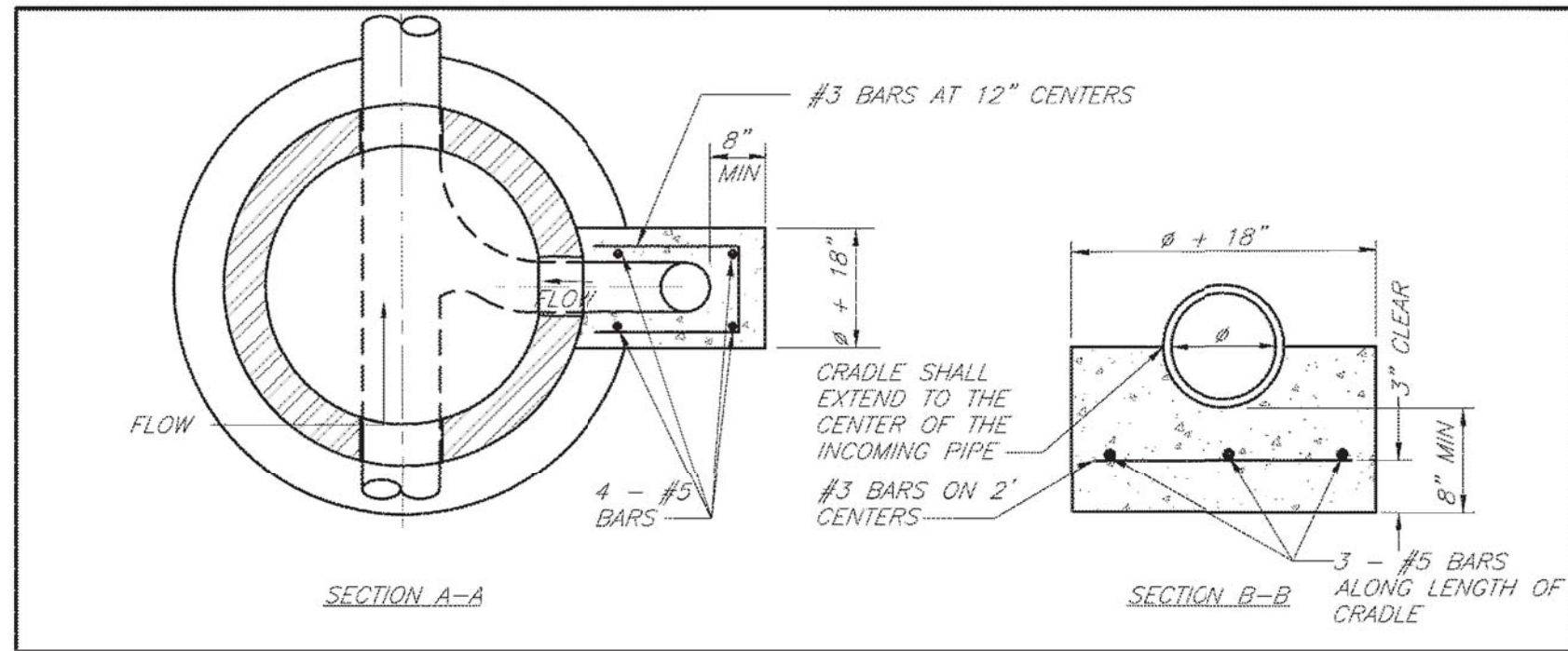
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SHEET NUMBER

01C-CR-SS-05

FILE NAME	01C-CR-SS-05.dwg
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PERMIT REVIEW DRAWINGS



LS

LEE'S SUMMIT

MISSOURI

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

Drop Sanitary Sewer Manhole

Date: 02/13

Drawn By: JN

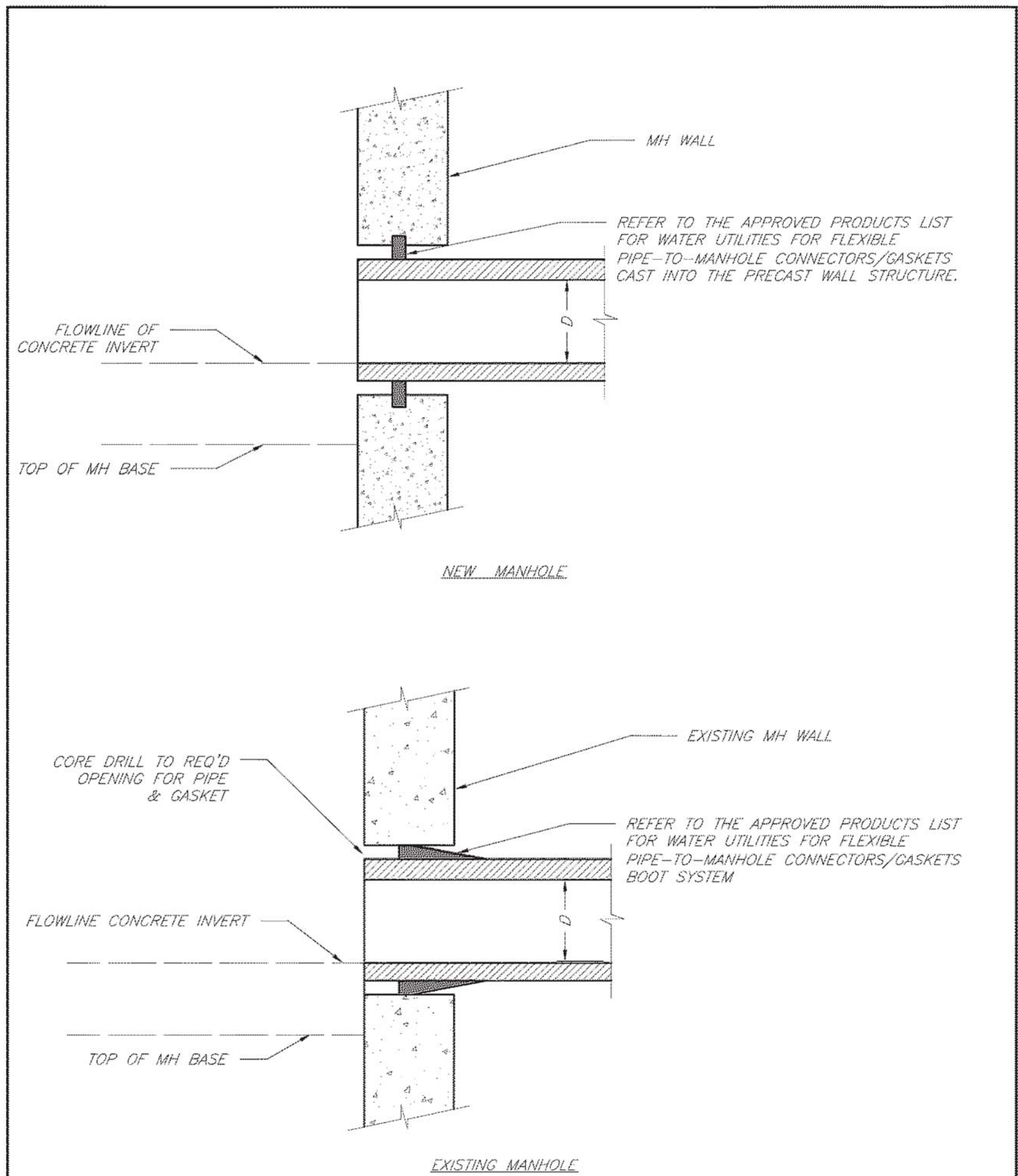
Checked By: DL

FILE: SAN-4

Rev: 1/14

Rev:

SAN-4



LS

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

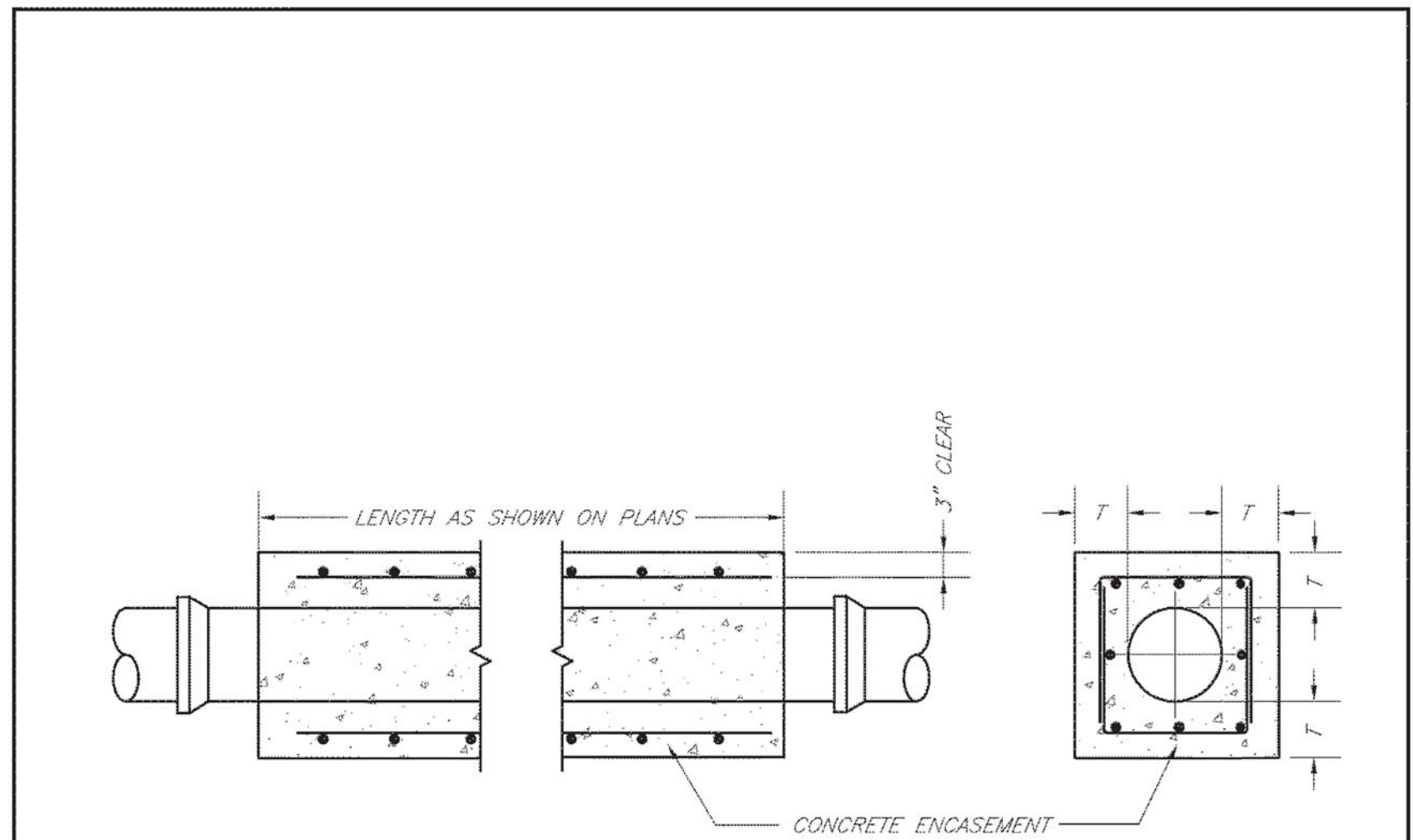
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Rev: 1/14

Rev:

SAN-5



LS

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:

SAN-7



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	04/14/2017	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

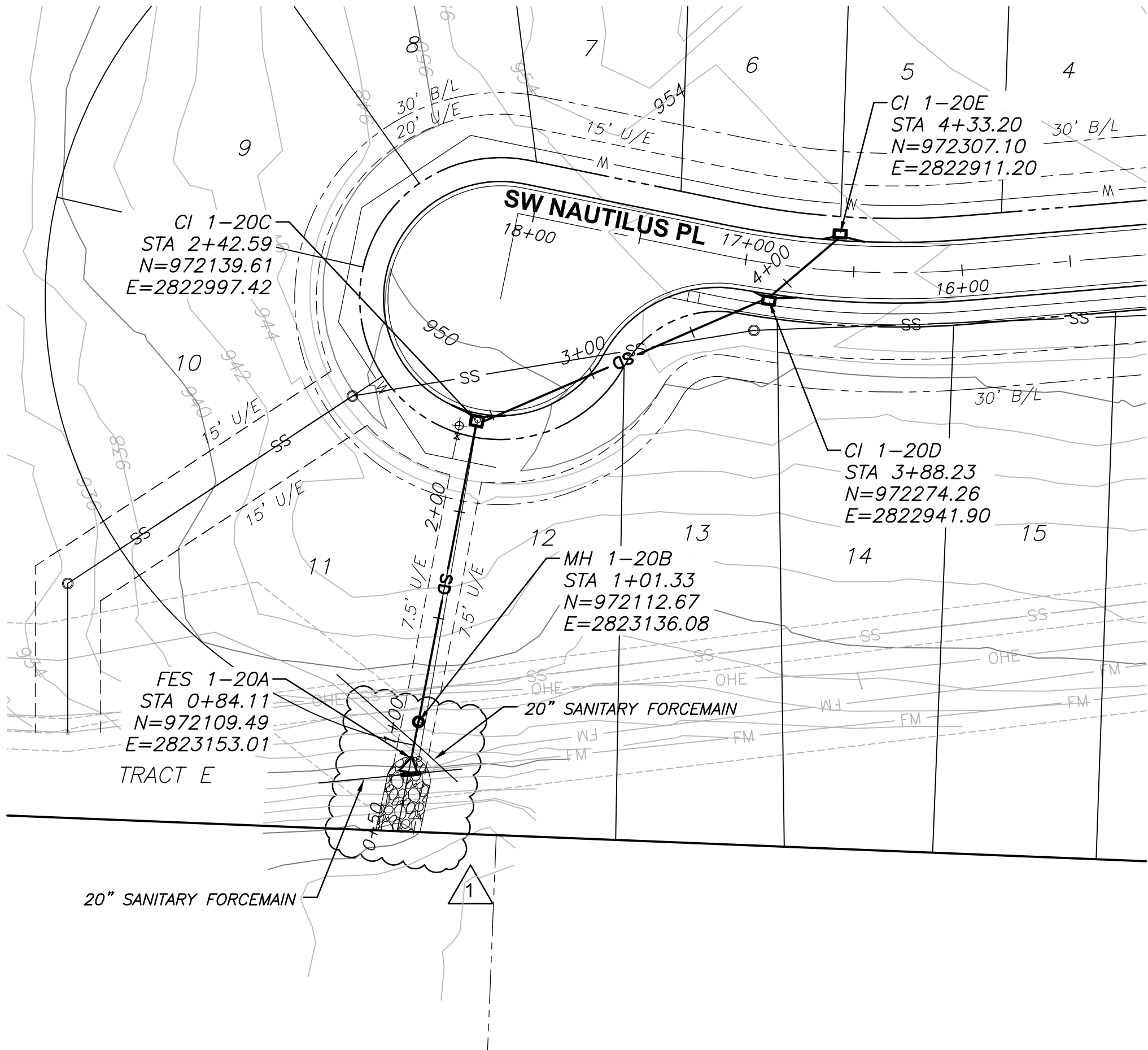
SHEET NUMBER

01C-CR-SS-06

FILE NAME
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PERMIT REVIEW DRAWINGS

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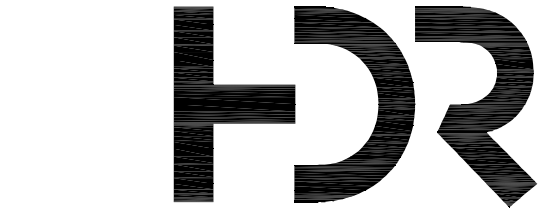
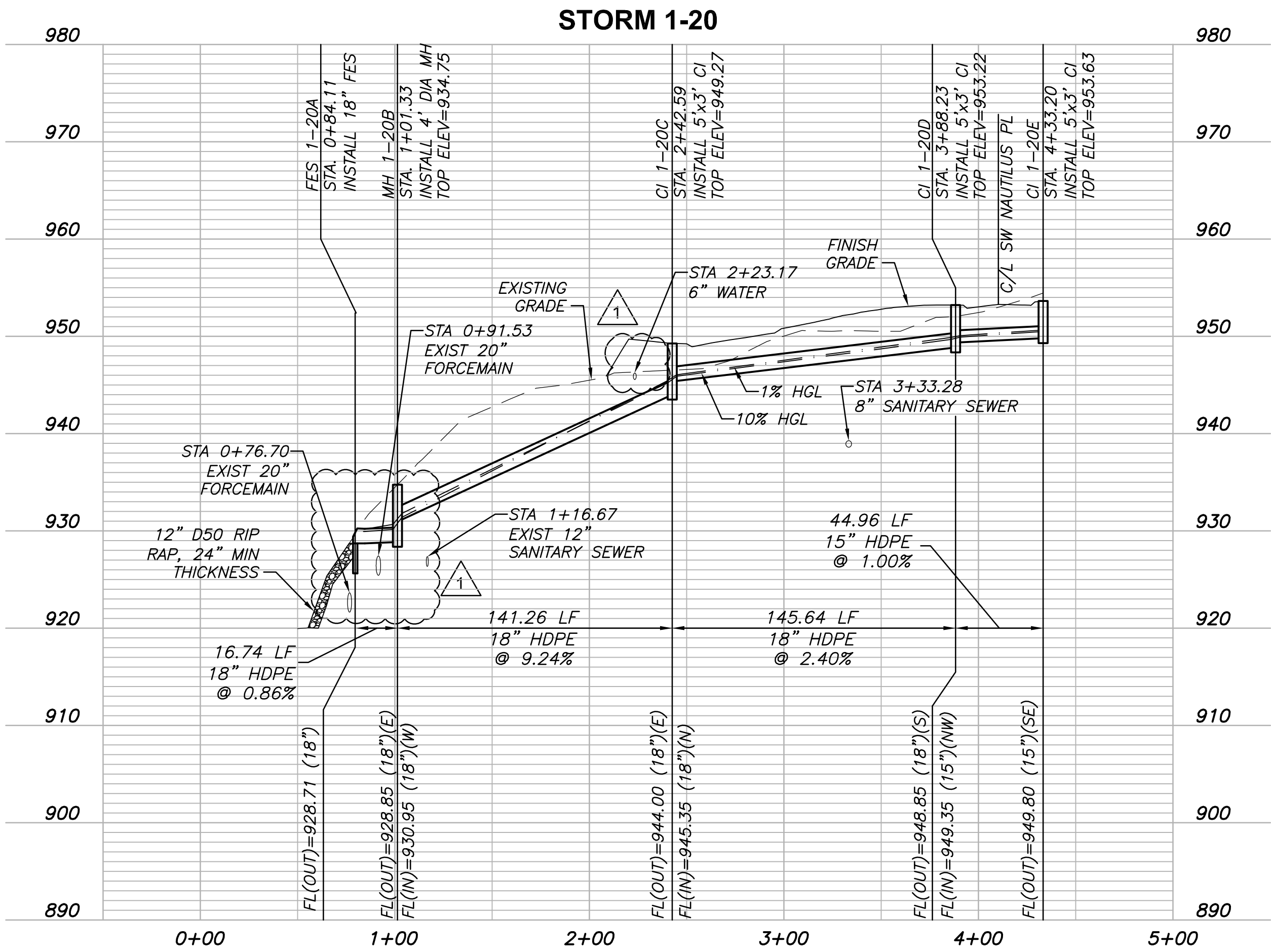
STORM PIPE AND STRUCTURE MATERIAL NOTES:

1. HDPE PIPE SHALL CONFORM TO AASHTO M294, TYPE S.
2. CONCRETE PIPE OR ALUMINIZED CORRUGATED METAL PIPE MAY BE USED IN LIEU OF HDPE PIPE. MANNING'S N VALUE SHALL BE EQUAL TO OR LESS THAN 0.013. CONCRETE PIPE SHALL CONFORM TO ASTM C76, CLASS III, WALL TYPE B. ALUMINIZED (TYPE 2) CORRUGATED METAL PIPE SHALL CONFORM TO AASHTO M274. PIPE GAUGE SHALL BE 14 FOR 30" DIAMETER AND SMALLER PIPES.
3. PROPOSED CURB INLETS SHALL CONFORM TO APWA TYPE 2 (CI-2). MANHOLES SHALL CONFORM TO APWA TYPE MH-1, JUNCTION BOXES SHALL CONFORM TO APWA TYPE JB-1.

GENERAL NOTES:

1. COORDINATES AND TOP ELEVATIONS SHOWN ARE LOCATED AT CENTER OF STRUCTURES. ROAD OFFSETS ARE AT INSIDE FACE OF CURB INLETS, AND AT CENTER OF MANHOLES AND JUNCTION BOXES.
2. PIPE LENGTHS INDICATED ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
3. INSIDE FRONT FACE OF CURB INLETS SHALL BE LOCATED 1.5 FEET BEHIND BACK OF CURB. STRUCTURE SHALL BE PARALLEL WITH CURB ALIGNMENT.
4. WATER MAINS AND STORM SEWERS SHALL HAVE AT LEAST 10' OF CLEAR HORIZONTAL SEPARATION.

STORM SEWER STRUCTURE TABLE		
STRUCTURE	STATION & OFFSET	STREET NAME
FES 1-20A	18+05.50, 254.94' LT	SW NAUTILUS PL
MH 1-20B	18+05.64, 238.75' LT	SW NAUTILUS PL
CI 1-20C	18+06.86, 97.50' LT	SW NAUTILUS PL
CI 1-20D	16+86.95, 15.50' LT	SW NAUTILUS PL
CI 1-20E	16+60.98, 15.50' RT	SW NAUTILUS PL



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**

C	07/28/2017	CITY RESUBMITTAL
B	05/01/2017	CITY RESUBMITTAL
A	03/08/2017	CITY SUBMITTAL
MARK	DATE	DESCRIPTION

PROJECT NUMBER	10028825-276408
ORIGINAL ISSUE	MARCH 7, 2017

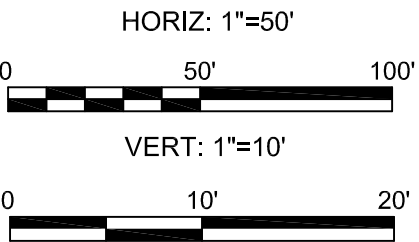
PROJECT MANAGER	SIMON SUN
PROJECT ENGINEER	WILL NEDS, E.I.T.

SHEET NAME

**STORM SEWER
PLAN AND PROFILE**

LINE 1-20

SCALE

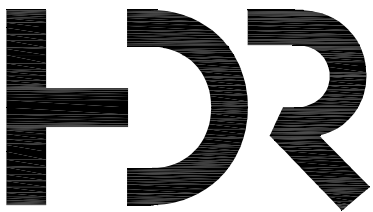
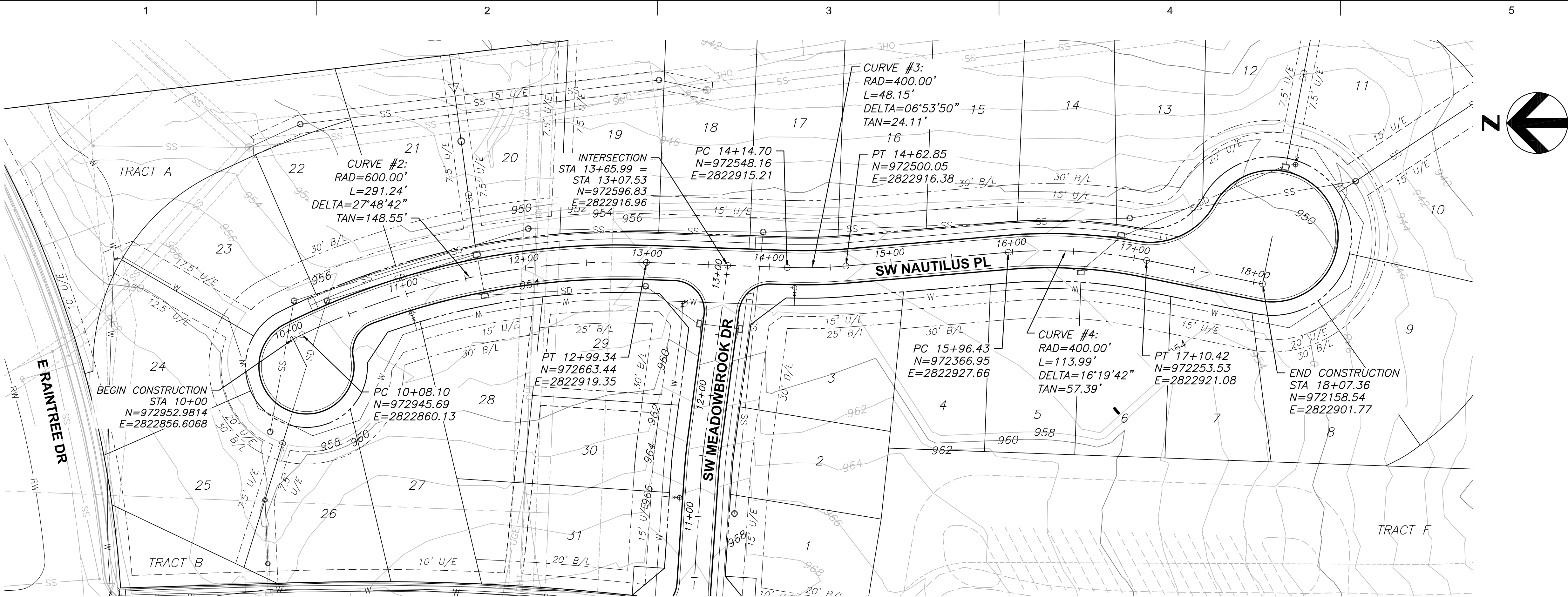


SHEET NUMBER

01C-CR-18

FILE NAME | 01C-CR-18.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 RAINTREE
LOTS 1 THRU 31
LEE'S SUMMIT, MISSOURI**

C	07/28/2017	CITY RESUBMITTAL
B	05/01/2017	CITY RESUBMITTAL
A	03/08/2017	CITY SUBMITTAL
MARK	DATE	DESCRIPTION

PROJECT NUMBER	10028825-276408
ORIGINAL ISSUE	MARCH 7, 2017

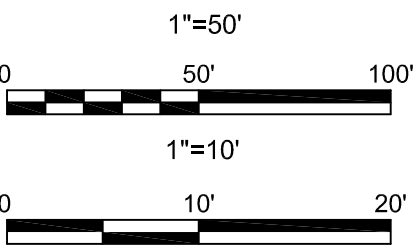
PROJECT MANAGER	SIMON SUN
PROJECT ENGINEER	WILL NEDS, E.I.T.

SHEET NAME

**STREET PLAN
AND PROFILE**

SW NAUTILUS PL

SCALE



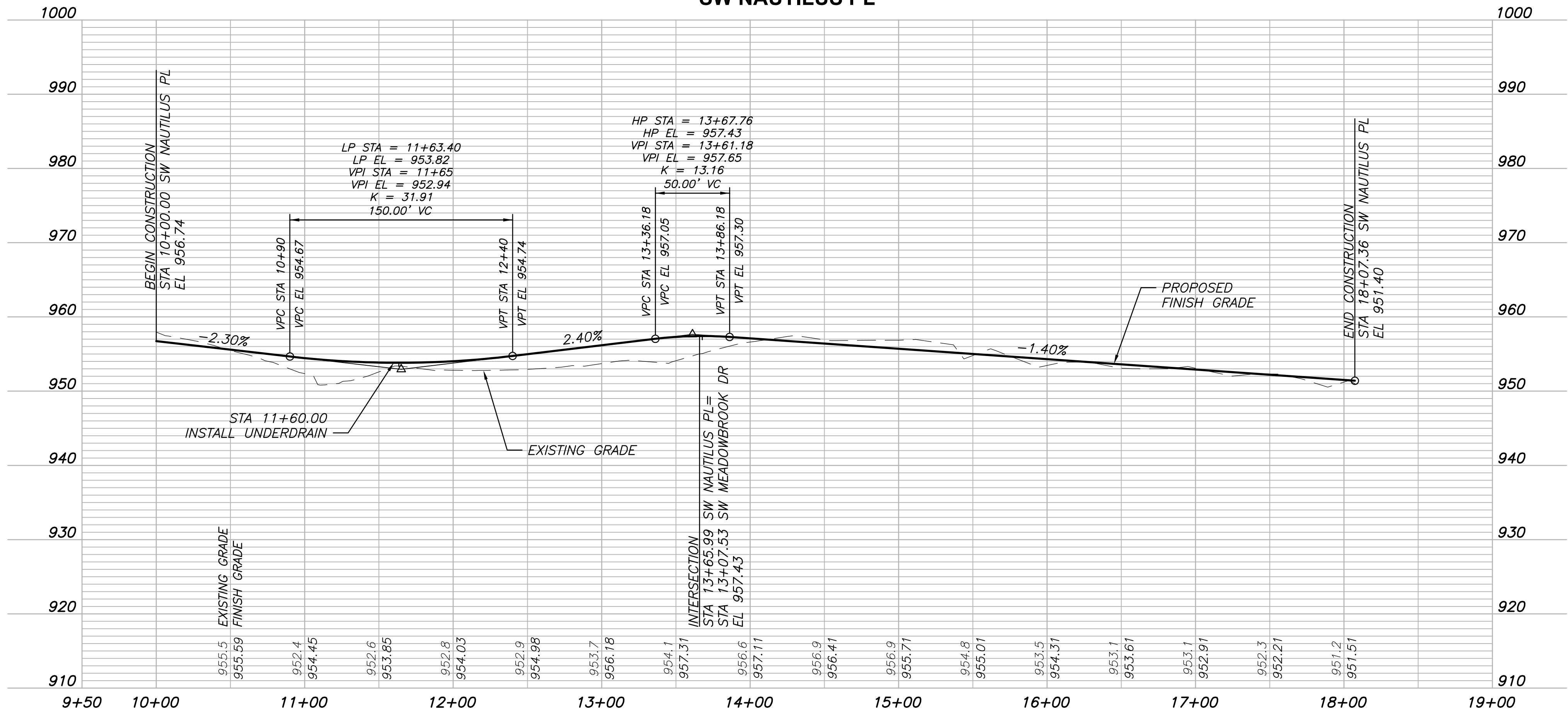
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01C-CR-14

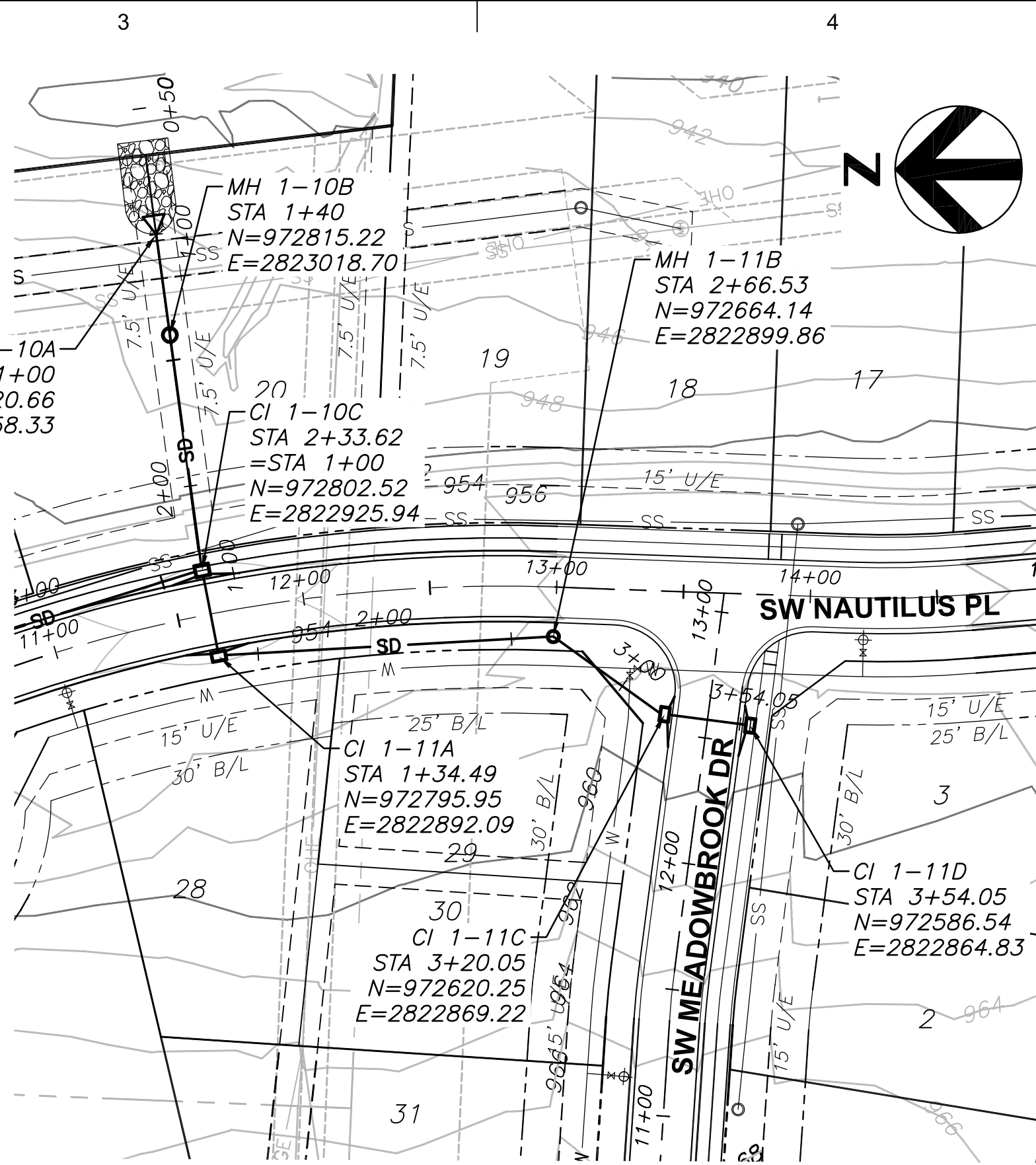
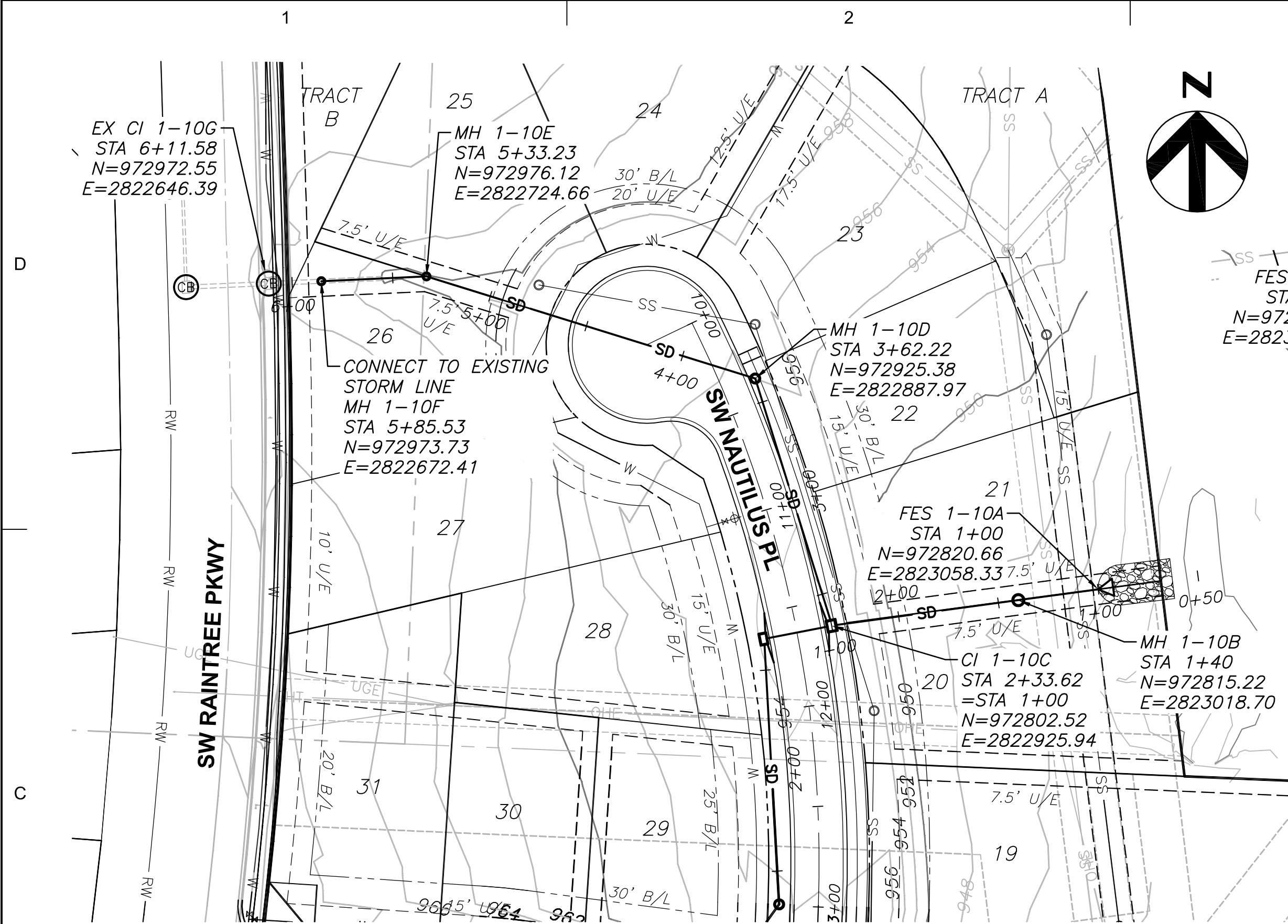
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PERMIT REVIEW DRAWINGS

SW NAUTILUS PL



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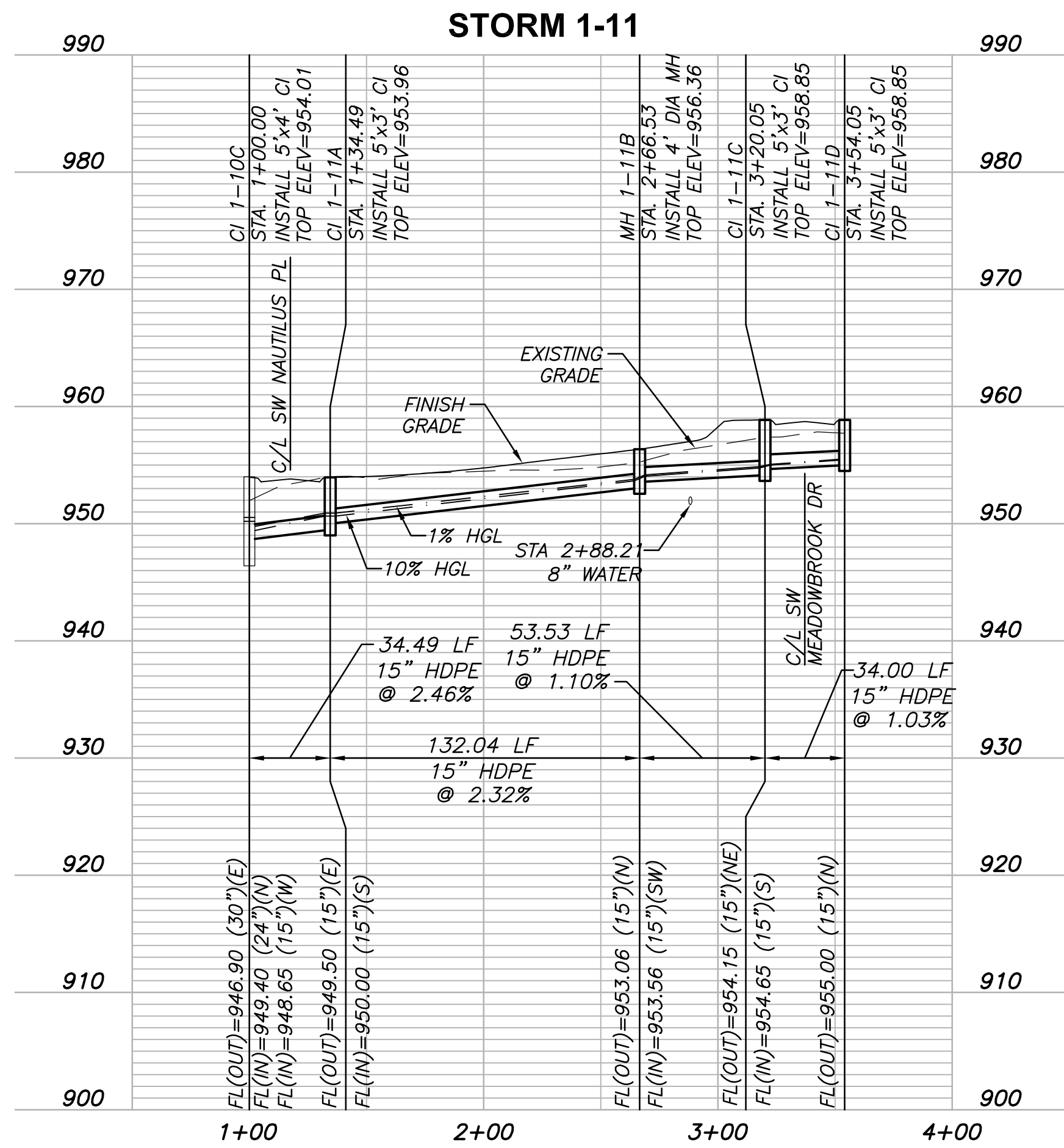
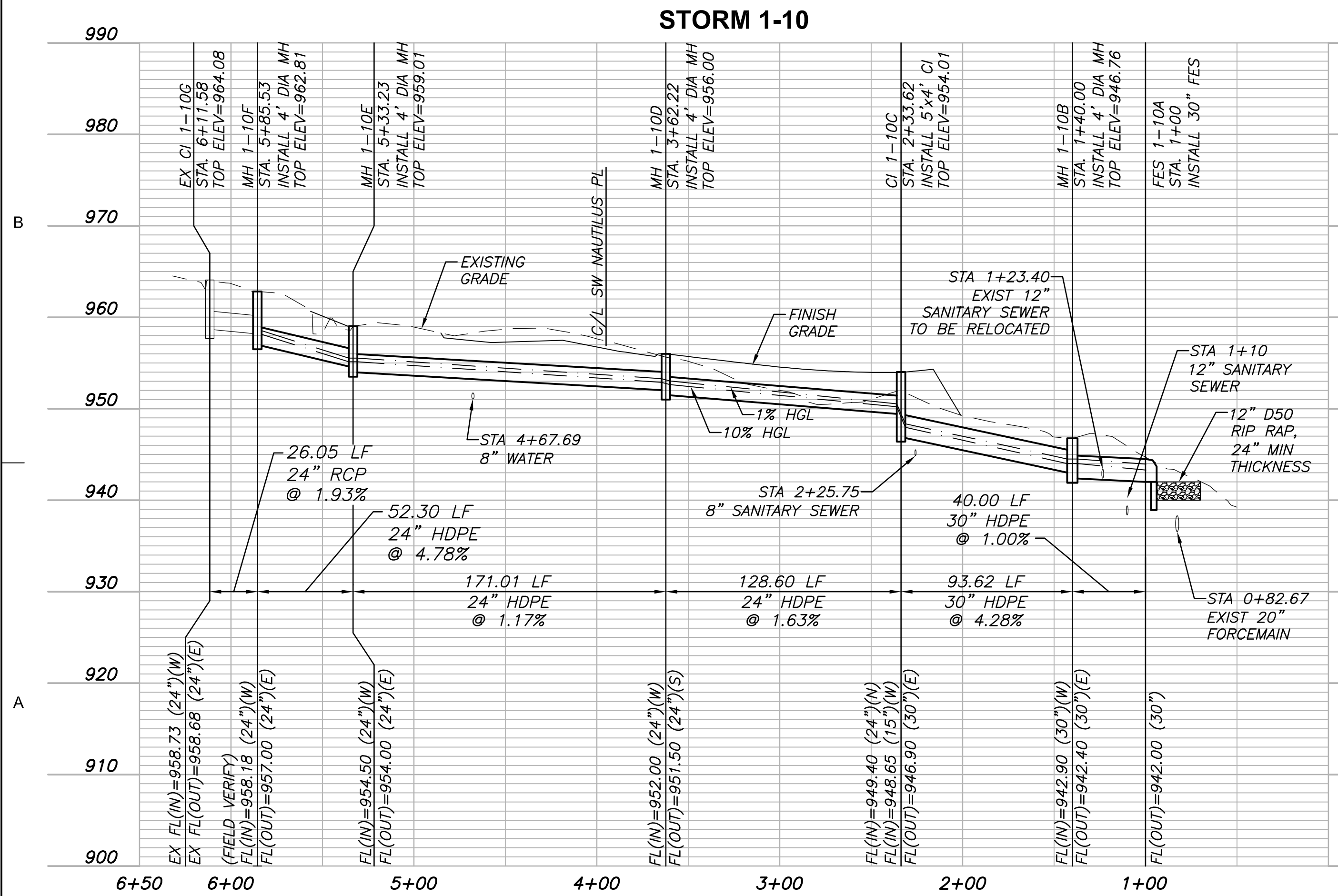
STORM PIPE AND STRUCTURE MATERIAL NOTES:

1. HDPE PIPE SHALL CONFORM TO AASHTO M294, TYPE S.
2. CONCRETE PIPE OR ALUMINIZED CORRUGATED METAL PIPE MAY BE USED IN LIEU OF HDPE PIPE. MANNING'S N VALUE SHALL BE EQUAL TO OR LESS THAN 0.013. CONCRETE PIPE SHALL CONFORM TO ASTM C76, CLASS III, WALL TYPE B. ALUMINIZED (TYPE 2) CORRUGATED METAL PIPE SHALL CONFORM TO AASHTO M274. PIPE GAUGE SHALL BE 14 FOR 30" DIAMETER AND SMALLER PIPES.
3. PROPOSED CURB INLETS SHALL CONFORM TO APWA TYPE 2 (CI-2), MANHOLES SHALL CONFORM TO APWA TYPE MH-1, JUNCTION BOXES SHALL CONFORM TO APWA TYPE JB-1.

GENERAL NOTES:

1. COORDINATES AND TOP ELEVATIONS SHOWN ARE LOCATED AT CENTER OF STRUCTURES. ROAD OFFSETS ARE AT INSIDE FACE OF CURB INLETS, AND AT CENTER OF MANHOLES AND JUNCTION BOXES.
2. PIPE LENGTHS INDICATED ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
3. INSIDE FRONT FACE OF CURB INLETS SHALL BE LOCATED 1.5 FEET BEHIND BACK OF CURB. STRUCTURE SHALL BE PARALLEL WITH CURB ALIGNMENT.
4. WATER MAINS AND STORM SEWERS SHALL HAVE AT LEAST 10' OF CLEAR HORIZONTAL SEPARATION.

STORM SEWER STRUCTURE TABLE		
STRUCTURE	STATION & OFFSET	STREET NAME
FES 1-10A	11+68.80, 150.96' LT	SW NAUTILUS PL
MH 1-10B	11+67.23, 111.00' LT	SW NAUTILUS PL
CI 1-10C	11+62.89, 15.50' LT	SW NAUTILUS PL
MH 1-10D	10+27.92, 17.11' LT	SW NAUTILUS PL
MH 1-10E	9+21.83, 108.79' RT	SW NAUTILUS PL
MH 1-10F	9+01.27, 156.88' RT	SW NAUTILUS PL
CI 1-11A	11+62.89, 15.50' RT	SW NAUTILUS PL
MH 1-11B	12+99.34, 19.50' RT	SW NAUTILUS PL
CI 1-11C	12+57.14, 15.50' LT	SW MEADOWBROOK DR
CI 1-11D	12+57.14, 15.50' RT	SW MEADOWBROOK DR



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

C	07/28/2017	CITY RESUBMITTAL
B	05/01/2017	CITY RESUBMITTAL
A	03/08/2017	CITY SUBMITTAL
MARK	DATE	DESCRIPTION

PROJECT NUMBER	10028825-276408
ORIGINAL ISSUE	MARCH 7, 2017

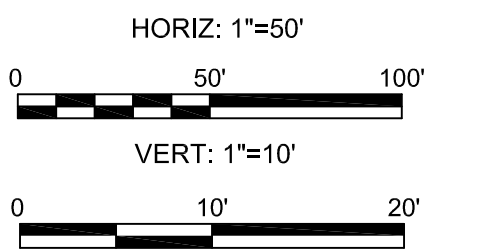
PROJECT MANAGER	SIMON SUN
PROJECT ENGINEER	WILL NEDS, E.I.T.

SHEET NAME

STORM SEWER
PLAN AND PROFILE

LINES 1-10 AND 1-11

SCALE



SHEET NUMBER

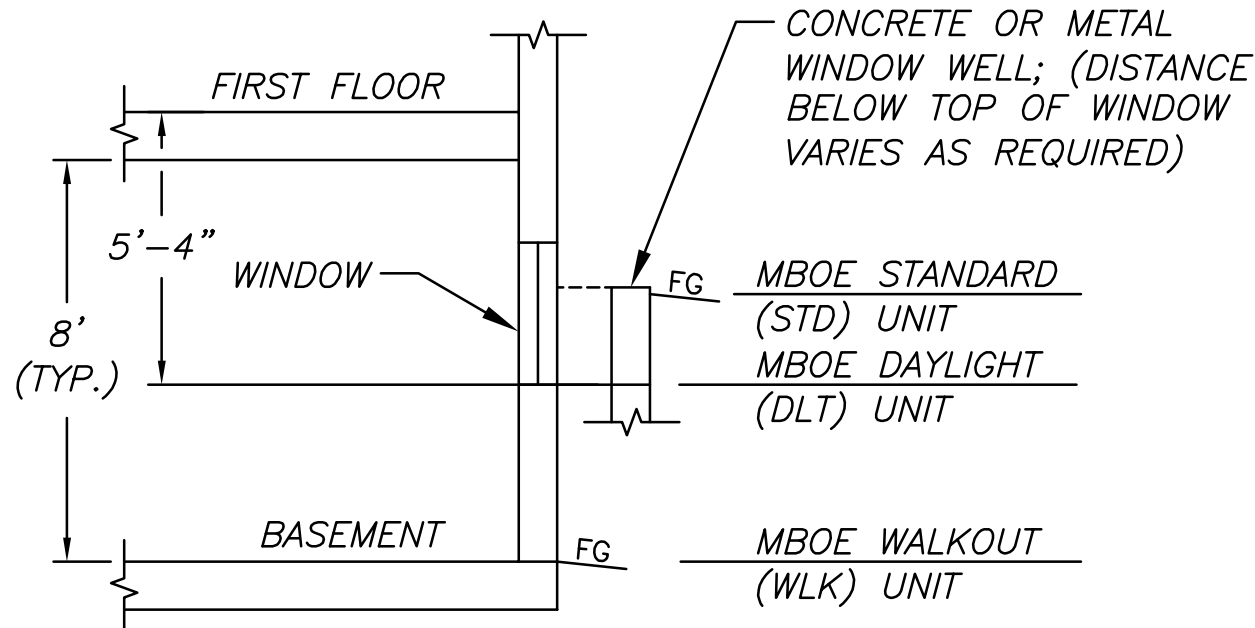
01C-CR-17

FILE NAME 01C-CR-17.dwg

PERMIT REVIEW DRAWINGS

MASTER DRAINAGE PLAN NOTES:

- MINIMUM BUILDING OPENING ELEVATIONS (MBOE'S) SHOWN REPRESENT THE MINIMUM RECOMMENDED ELEVATIONS THAT WILL PROVIDE ADEQUATE POSITIVE STORM WATER DRAINAGE TO THE LOWEST POINT ON THE LOT FROM THE ANTICIPATED LOW SIDE OF THE BUILDING. THE HOME BUILDER SHALL BE RESPONSIBLE FOR ENSURING ADEQUATE POSITIVE DRAINAGE AWAY FROM ALL BUILDING OPENINGS TO PREVENT LOCALIZED STRUCTURE FLOODING.
- A DAYLIGHT OR STANDARD UNIT MAY BE CONSTRUCTED ON WALKOUT LOT, AND A STANDARD UNIT MAY BE CONSTRUCTED ON A DAYLIGHT LOT.
- A DAYLIGHT UNIT IS DEFINED AS A UNIT HAVING A WINDOW ON THE BASEMENT LEVEL WITH AT LEAST 5'-4" OF CLEARANCE FROM THE FINISHED FIRST FLOOR ELEVATION TO THE BOTTOM OF THE WINDOW. CLEARANCES LESS THAN 5'-4" ARE DEFINED AS STANDARD UNITS, WHETHER OR NOT A WINDOW WELL IS REQUIRED.
- REFER TO SANITARY SEWER SHEETS FOR SEWER MAIN AND LATERAL ELEVATIONS. SOME LOT MBOE ELEVATIONS ARE HIGHER TO ACCOUNT FOR GRAVITY BASEMENT SEWER SERVICE.
- ALL FRONT LOT ELEVATIONS ARE PROPOSED ELEVATIONS. REAR LOT ELEVATIONS ARE EXISTING ELEVATIONS UNLESS NOTED OTHERWISE WITH AN ELEVATION FOLLOWED BY (P).
- HOME BUILDERS SHALL MAINTAIN 2% GRADE, 1.5% ACROSS SIDEWALKS, WITHIN RIGHT-OF-WAY. AS-BUILT ELEVATIONS SHOWN AT RIGHT-OF-WAY ARE CALCULATED FROM AS-BUILT BACK OF CURB ELEVATIONS.

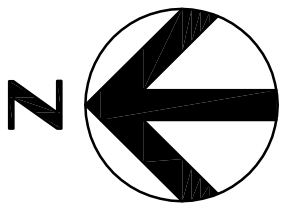


TYPICAL UNIT SECTION
NOT TO SCALE

LEGEND:

- STD = STANDARD UNIT
DLT = DAYLIGHT UNIT
WLK = WALKOUT UNIT
MBOE = MINIMUM BUILDING OPENING ELEVATION
() = DIRECTION OF MBOE
~ = DRAINAGE PATH
FBD = FLAT BOTTOM DITCH
1% = 1% STORM WSE

"AS-BUILT"
October 29, 2018



PROJECT FOR

LANDROCK
DEVELOPMENT, LLC

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

C	10/29/2018	AS-BUILT
B	05/01/2017	CITY RESUBMITTAL
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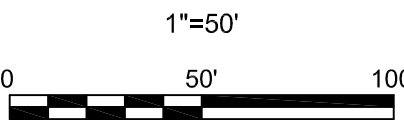
PROJECT NUMBER	10028825-276408
ORIGINAL ISSUE	MARCH 7, 2017

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

SHEET NAME

MASTER
DRAINAGE PLAN

SCALE



SHEET NUMBER

01C-CR-08

FILE NAME | 01C-CR-08.dwg

PERMIT REVIEW DRAWINGS

