

LOCATION MAP
Sec. 2, Twp. 47 N., Rge. 32 W.
(N.T.S.)

WOODSIDE RIDGE
FIRST PLAT
STREET & STORM SEWER PLANS

SECTION 2, TOWNSHIP 47 N, RANGE 32 W
IN LEE'S SUMMIT, JACKSON COUNTY, MO



PROJECT TEAM & UTILITY CONTACT LIST	
OWNER / DEVELOPER CLAYTON PROPERTIES GROUP, LLC, DBA SUMMIT HOMES 120 SE 30TH STREET LEE'S SUMMIT, MO 64082 CONTACT: DAVID PRICE PHONE: 816.246.6700 FAX: 816.246.2662	UTILITY SERVICE NUMBERS NAME: DEVELOPMENT SERVICES PHONE: 816-969-1200 NAME: LEE'S SUMMIT WATER & SERVICES DEPARTMENT PHONE: 816-969-1940 NAME: SPIRE (MGE) PHONE: 314-342-0500 NAME: AT&T PHONE: 800-286-8313 NAME: KCP&L PHONE: 816-471-5275 NAME: SPECTRUM (TWC) PHONE: 877-772-2253 NAME: GOOGLE FIBER PHONE: 877-454-6959
ENGINEER OLSSON 1301 BURLINGTON, SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: JULIE E SELLERS, P.E. PHONE: 816.361.1177	
SURVEYOR OLSSON 1301 BURLINGTON, SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: JASON ROUDEBUSH, PLS PHONE: 816.361.1177	
GEOTECHNICAL EGINNER OLSSON 1700 E. 123RD ST. OLATHE, KS 66061 CONTACT: CHRISTY WILSON PHONE: 816.829.0078	

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☐ NOT FOR CONSTRUCTION

☒ REVIEWED FOR CONSTRUCTION

CALL BEFORE YOU DIG 1-800-DIG-RITE MISSOURI ONE CALL SYSTEM

PROPERTY DESCRIPTION:

ALL OF JOHN KNOX RETIREMENT VILLAGE–10TH PLAT, A SUBDIVISION RECORDED AS INSTRUMENT NUMBER I279980 IN BOOK 35 AT PAGE 61 IN JACKSON COUNTY RECORDER OF DEEDS OFFICE, AND ALL OF FOREST LAKE AT JOHN KNOX VILLAGE – 1ST PLAT A SUBDIVISION RECORDED AS INSTRUMENT NUMBER E0051292 IN BOOK I106 AT PAGE 42 IN SAID JACKSON COUNTY RECORDER OF DEEDS OFFICE, BOTH SUBDIVISIONS OF LAND IN THE NORTHEAST QUARTER OF SECTION 2, TOWNSHIP 47 NORTH, RANGE 32, WEST OF THE 5TH PRINCIPAL MERIDIAN IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, AND ALSO AN UNPLATTED TRACT OF LAND IN SAID NORTHEAST QUARTER AND SOUTHEAST QUARTER OF SAID SECTION 2, BEING BOUNDED AND DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHEAST CORNER OF SAID SOUTHEAST QUARTER; THENCE NORTH 02°53'56" EAST, ON THE EAST LINE OF SAID SOUTHEAST QUARTER, 1,328.34 FEET TO THE SOUTHEAST CORNER OF THE NORTH HALF OF SAID SOUTHEAST QUARTER ALSO BEING THE NORTHEAST CORNER OF STERLING HILLS 1ST PLAT, A SUBDIVISION IN SAID LEE'S SUMMIT RECORDED AS INSTRUMENT NUMBER I1188888 IN BOOK I53 AT PAGE 22 IN SAID JACKSON COUNTY RECORDER OF DEEDS OFFICE; THENCE NORTH 87°49'43" WEST, 580.01 FEET ON THE SOUTH LINE OF SAID NORTH HALF OF SAID SOUTHEAST QUARTER, ALSO BEING THE NORTH LINE OF SAID STERLING HILLS 1ST PLAT TO THE POINT OF BEGINNING OF THE TRACT OF LAND TO BE HEREIN DESCRIBED; THENCE CONTINUING NORTH 87°49'43" WEST ON SAID SOUTH LINE OF SAID NORTH HALF OF SAID SOUTHEAST QUARTER, ALSO BEING THE NORTH LINE OF SAID STERLING HILLS 1ST PLAT AND ALSO ON THE NORTH LINE OF STERLING HILLS 3RD PLAT, A SUBDIVISION IN SAID LEE'S SUMMIT RECORDED AS INSTRUMENT NUMBER I1221580 IN BOOK I53 AT PAGE 96 IN SAID JACKSON COUNTY RECORDER OF DEEDS OFFICE, ALSO BEING A POINT TO THE EAST LINE OF STERLING HILLS 5TH PLAT, A SUBDIVISION IN SAID LEE'S SUMMIT RECORDED AS INSTRUMENT NUMBER I1273788 IN BOOK I54 AT PAGE 88 IN SAID JACKSON COUNTY RECORDER OF DEEDS OFFICE 2,048.69 FEET TO THE SOUTHWEST CORNER OF SAID NORTH HALF OF SAID SOUTHEAST QUARTER; THENCE NORTH 03°05'41" EAST ON SAID EAST LINE OF STERLING HILLS 5TH PLAT, ALSO BEING THE WEST LINE OF SAID SOUTHEAST QUARTER, 389.26 FEET; THENCE NORTH 85°54'26" EAST, 236.75 FEET; THENCE NORTH 29°55'27" EAST, 306.11 FEET; THENCE NORTH 41°11'03" EAST, 60.06 FEET; THENCE SOUTH 75°51'31" EAST, 21.43 FEET; THENCE NORTH 22°12'04" EAST, 173.03 FEET; THENCE WESTERLY, ALONG A CURVE TO THE LEFT, HAVING AN INITIAL TANGENT BEARING OF NORTH 81°09'01" WEST WITH A RADIUS OF 225.00 FEET, A CENTRAL ANGLE OF 15°28'14" AND AN ARC DISTANCE OF 60.75 FEET; THENCE NORTH 06°37'15" WEST, 50.00 FEET; THENCE EASTERLY ALONG A CURVE TO THE RIGHT HAVING AN INITIAL TANGENT BEARING OF NORTH 83°22'45" EAST WITH A RADIUS OF 275.00 FEET, A CENTRAL ANGLE OF 28°01'47" AND AN ARC DISTANCE OF 134.53 FEET; THENCE NORTH 21°24'31" EAST, 135.10 FEET; THENCE NORTH 61°49'26" EAST, 951.56 FEET; THENCE NORTH 70°59'24" EAST, 137.47 FEET; THENCE NORTH 85°52'23" EAST, 130.41 FEET; THENCE NORTH 19°50'07" EAST, 128.42 FEET; THENCE WESTERLY ALONG A CURVE TO THE LEFT HAVING AN INITIAL TANGENT BEARING OF NORTH 70°09'53" WEST WITH A RADIUS OF 375.00 FEET, A CENTRAL ANGLE OF 08°59'37" AND AN ARC DISTANCE OF 58.86 FEET; THENCE NORTH 10°50'30" EAST, 50.00 FEET; THENCE EASTERLY ALONG A CURVE TO THE RIGHT HAVING AN INITIAL TANGENT BEARING OF SOUTH 79°09'30" EAST WITH A RADIUS OF 425.00 FEET, A CENTRAL ANGLE OF 09°42'06" AND AN ARC DISTANCE OF 71.96 FEET; THENCE NORTH 20°32'36" EAST, 229.10 FEET TO A POINT ON THE NORTH LINE OF THE SOUTH HALF OF THE SOUTH HALF OF SAID NORTHEAST QUARTER; THENCE NORTH 87°37'42" WEST, ON SAID NORTH LINE OF SAID SOUTH HALF OF SAID NORTHEAST QUARTER, 574.95 FEET TO THE SOUTHEAST CORNER OF THE FORESTS OF BROOKRIDGE ESTATES THIRD PLAT, A SUBDIVISION IN SAID LEE'S SUMMIT RECORDED AS INSTRUMENT NUMBER I1198645 IN BOOK I53 AT PAGE 46 IN SAID JACKSON COUNTY RECORDER OF DEEDS OFFICE; THENCE NORTH 03°27'53" EAST, ON THE EAST LINE OF SAID THE FORESTS OF BROOKRIDGE ESTATES – THIRD PLAT, 765.70 FEET TO THE SOUTHWEST CORNER OF LOT 1, VILLAGE CARE CENTER PLAT, A SUBDIVISION IN SAID LEE'S SUMMIT RECORDED AS INSTRUMENT NUMBER I736897 IN BOOK I43 AT PAGE 122 IN SAID JACKSON COUNTY RECORDER OF DEEDS OFFICE; THENCE SOUTH 87°23'49" EAST, ON THE SOUTH LINE OF SAID LOT 1, ALSO A PORTION BEING ON THE NORTH LINE OF SAID JOHN KNOX RETIREMENT VILLAGE–10TH PLAT AND SAID FOREST LAKE AT JOHN KNOX VILLAGE–1ST PLAT 1,343.71 FEET TO THE NORTHEAST CORNER OF SAID FOREST LAKE AT JOHN KNOX VILLAGE 1ST PLAT, ALSO BEING A POINT ON THE EXISTING WEST RIGHT–OF–WAY LINE OF NW PRYOR ROAD, AS NOW ESTABLISHED; THENCE SOUTH 03°27'53" WEST, ON SAID EXISTING WEST RIGHT–OF–WAY LINE ALSO BEING THE EAST LINE OF FOREST LAKE AT JOHN KNOX VILLAGE–1ST PLAT FOR THE NORTH 243.74 FEET, 481.43 FEET; THENCE NORTH 86°32'07" WEST, 479.89 FEET; THENCE SOUTH 03°27'53" WEST, 70.20 FEET; THENCE NORTH 86°32'07" WEST, 200.00 FEET; THENCE SOUTH 03°27'53" WEST, 221.62 FEET TO A POINT ON THE NORTH LINE OF THE SOUTH HALF OF THE SOUTH HALF OF SAID NORTHEAST QUARTER; THENCE SOUTH 87°37'42" EAST ON SAID NORTH LINE OF SAID SOUTH HALF OF SAID SOUTH HALF OF SAID NORTHEAST QUARTER, 200.04 FEET TO THE NORTHWEST CORNER OF LOT 1, JOHN KNOX RETIREMENT VILLAGE 9TH PLAT, A SUBDIVISION IN LEE'S SUMMIT RECORDED AS INSTRUMENT NUMBER I274676 IN BOOK 35 AT PAGE 42 IN SAID JACKSON COUNTY RECORDER OF DEEDS OFFICE; THENCE SOUTH 03°27'53" WEST, ON THE WEST LINE OF SAID JOHN KNOX RETIREMENT VILLAGE 9TH PLAT 400.00 FEET TO THE SOUTHWEST CORNER OF SAID JOHN KNOX RETIREMENT VILLAGE 9TH PLAT; THENCE SOUTH 04°27'07" WEST, 289.53 FEET; THENCE NORTH 85°32'53" WEST, 175.00 FEET; THENCE SOUTH 04°27'07" WEST, 425.00 FEET; THENCE SOUTH 85°32'53" EAST, 175.00 FEET; THENCE SOUTH 04°27'07" WEST, 484.59 FEET; THENCE SOUTH 02°53'56" WEST , 385.97 FEET TO THE POINT OF BEGINNING. CONTAINING 3,360,308 SQUARE FEET OR 77.14 ACRES, MORE OR LESS.

BENCHMARK

BMK #5 CHISELED SQUARE ON THE S.E. CORNER OF A CONCRETE PAD FOR A TRAFFIC SIGNAL BOX AT THE S.W. CORNER OF PRYOR ROAD AND O'BRIEN ROAD.

ELEVATION: 979.24

REVIEWED BY:

CITY OF LEE'S SUMMIT — DATE

OLSSON HAS BEEN RETAINED TO PROVIDE AS-BUILT DRAWINGS FOR THIS PROJECT.

JULIE E SELLERS, P.E. — 6/7/19
CIVIL ENGINEER — DATE
MO# 2017000367

olsson
MO Certificate of Authority # 001592
KS Certificate of Authority # E-2066
NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
6/7/19
PROFESSIONAL ENGINEER

REVISIONS

NO. / REV.	DATE	REVISIONS DESCRIPTION	BY
1	4/2/2019	REVISED PER CITY COMMENTS	

COVER SHEET
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

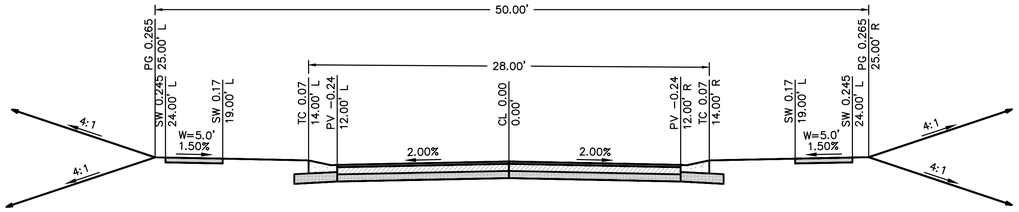
drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C101

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_TTL01_1140A.dwg
DATE: Apr 04, 2019 1:49pm
USER: ssoylor

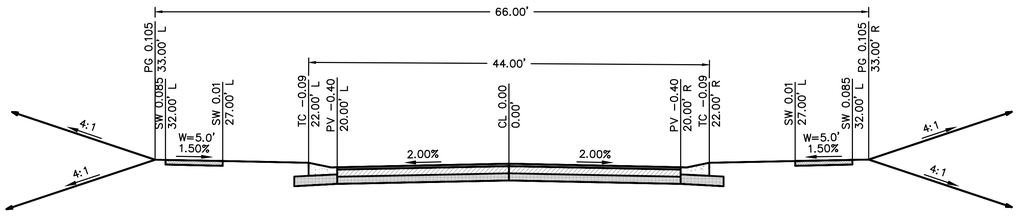
GENERAL NOTES:

1. THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO THE LEE'S SUMMIT, MISSOURI DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813. WHERE DISCREPANCIES EXIST BETWEEN THESE PLANS AND THE DESIGN AND CONSTRUCTION MANUAL, THE DESIGN AND CONSTRUCTION MANUAL SHALL PREVAIL.
2. ALL MANHOLES, CATCH BASINS, UTILITY VALVES, AND METER PITS TO BE ADJUSTED OR REBUILT TO GRADE AS REQUIRED.
3. ALL SIGNS (I.E. STREET NAME AND STOP SIGNS) SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF LEE'S SUMMIT, DESIGN AND CONSTRUCTION MANUAL, PRIOR TO SUBSTANTIAL COMPLETION. REFER TO SHEET C154 FOR SIGNAGE DETAILS.
4. THE ASPHALTIC CONCRETE SURFACES ON ALL PERMITTED STREETS SHALL BE VIRGIN MATERIAL.
5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTROL DOWNSTREAM EROSION AND SILTATION DURING ALL PHASES OF CONSTRUCTION. EROSION CONTROL PLANS AND PROCEDURES SHALL BE IN PLACE PRIOR TO ANY EXCAVATION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING ROCK ELEVATIONS AT 25 FOOT (MAXIMUM) INTERVALS WHERE ENCOUNTERED, AND FURNISHING THIS INFORMATION TO THE DESIGN ENGINEER FOR USE ON "AS-BUILT" PLANS.
7. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ARE APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES.
8. NO SUBSURFACE EXPLORATION FOR THE DETERMINATION OF AND/OR THE LOCATION OF EXISTING ROCK HAS BEEN MADE.
9. CONTRACTOR SHALL PROVIDE EARTHWORK AND MATERIAL TESTING TO COMPLY WITH THE STANDARD SPECIFICATIONS OF THE PUBLIC WORKS DEPARTMENT OR AS REQUIRED BY THE CITY'S FIELD REPRESENTATIVE.
10. CONTRACTOR MUST CONTACT DEVELOPMENT SERVICES INSPECTIONS AT 816-969-1200 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITIES.
11. P.O.S= PROPOSED OPEN SPACE.



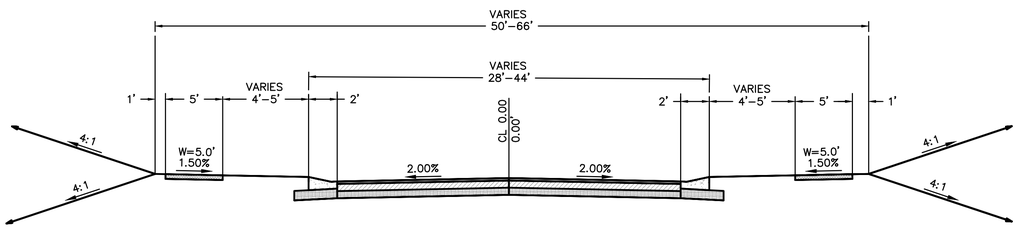
CG-2 CURB AND GUTTER
2" TYPE 5 OR 6 ASPHALTIC CONCRETE SURFACE
4" TYPE 5-01 ASPHALTIC CONCRETE BASE COURSE
6" MIN. MODOT TYPE 5 STONE BASE
6" MIN. FLYASH SABILIZED SUBGRADE

1 NTS
RESIDENTIAL LOCAL STREET (28' BK-BK)
NW AMBERSHAM DR., NW KILLARNEY LN., NW PATCH CT., NW JOSHUA DR., NW GRADY CT., NW KAYLEA CT.
NW ASHURST DR., STATION 10+55.31 - 22+14.23; NW SHAMROCK AVE., 10+00.00 - 13+12.85; NW O'BRIEN RD., 25+55.50 - 28+35.75



CG-2 CURB AND GUTTER
2" TYPE 5 OR 6 ASPHALTIC CONCRETE SURFACE
4" TYPE 5-01 ASPHALTIC CONCRETE BASE COURSE
6" MIN. MODOT TYPE 5 STONE BASE
6" MIN. FLYASH SABILIZED SUBGRADE

2 NTS
RESIDENTIAL LOCAL STREET (44' BK-BK)
NW ASHURST DR.
STATION 23+14.23 - 24+28.52



CG-2 CURB AND GUTTER
2" TYPE 5 OR 6 ASPHALTIC CONCRETE SURFACE
4" TYPE 5-01 ASPHALTIC CONCRETE BASE COURSE
6" MIN. MODOT TYPE 5 STONE BASE
6" MIN. FLYASH SABILIZED SUBGRADE

3 NTS
RESIDENTIAL LOCAL STREET
NW SHAMROCK AVE. 13+12.89 - 14+29.04; NW ASHURST DR. 22+14.23 - 23+14.23; NW O'BRIEN RD. 28+35.75 - 29+50.82

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	AS-BUILT
	SITE			
1	EXCAVATION	C.Y.	143863	
2	EMBANKMENT	C.Y.	136151	
	STREET			
3	EXCAVATION	C.Y.	23653	
4	EMBANKMENT	C.Y.	29509	
5	8" ASPHALT PAVEMENT	S.Y.	22773	
6	STABILIZED SUBGRADE	S.Y.	24583	
7	8" MoDOT TYPE 5 AGGREGATE	S.Y.	24583	
8	CONCRETE CURB & GUTTER (CG-2)	L.F.	15277.38	
9	ADA HANDICAP RAMP	EA.	17	
10	STOP SIGNS	EA.	9	
11	SPEED LIMIT SIGN	EA.	1	
12	STREET NAME SIGNS	EA.	28	
13	SIGN POSTS	EA.	9	
14	TYPE IV OBJECT MARKER	EA.	1	2
15	4" WHITE STRIPING	L.F.	89.46	
16	24" STOP BAR WHITE STRIPING	L.F.	20	
17	MILL & OVERLAY	S.Y.	69	
18	5' CONCRETE SIDEWALK	L.F.	888.39	
19	4" COMPACTED AGGREGATE FOR SIDEWALK	S.Y.	493.54	
20	SEEDING, FERTILIZER, OR MULCH	AC.	50.52	
21	TOPSOIL	C.Y.	40752.00	
	STORM			
22	STD. CURB INLET (5'x3' INSIDE)	EA.	37	
23	STD. CURB INLET (7'x3' INSIDE)	EA.	2	
24	STD. MANHOLE (4' DIA. INSIDE)	EA.	16	
25	STD. MANHOLE (5' DIA. INSIDE)	EA.	2	
26	STD. FIELD INLET (4'x4' INSIDE)	EA.	8	
27	STD. FIELD INLET (5'x5' INSIDE)	EA.	1	
28	STD. FIELD INLET (8'x8' INSIDE)	EA.	1	
29	15" HDPE	L.F.	4743.16	
30	18" HDPE	L.F.	1337.87	
31	15" RCP	L.F.	96.55	
32	24" HDPE	L.F.	755.77	
33	30" HDPE	L.F.	108.38	
34	36" HDPE	L.F.	94.45	
35	42" RCP	L.F.	118.33	
36	15" CMP END SECTION	EA.	2	
37	18" CMP END SECTION	EA.	2	
38	24" CMP END SECTION	EA.	3	
39	30" CMP END SECTION	EA.	1	
40	36" CMP END SECTION	EA.	1	
41	42" RCP END SECTION	EA.	1	
42	CONNECTION TO EXISTING PIPE	EA.	1	
43	RIP-RAP	S.Y.	530	2
44	FLEXAMAT TURF REINFORCEMENT MAT	S.Y.	1210	
45	PROPEX PYRAMAT TURF REINFORCEMENT MAT	S.Y.	137	
46	SWALE TURF REINFORCEMENT MAT	S.Y.	1634	

SUMMARY OF QUANTITIES AS INDICATED ABOVE AND ANY QUANTITIES AS SHOWN WITHIN THE PLANS HAVE BEEN PROVIDED FOR PERMITTING PURPOSES ONLY AND ARE NOT INTENDED FOR USE IN PREPARATION OF CONTRACT DOCUMENTS. QUANTITIES INTENDED FOR, BUT NOT LIMITED TO, THE PREPARATION OF PROPOSALS AND BID DOCUMENTS SHALL BE INDEPENDENTLY EVALUATED BY THE ESTIMATING PARTY BASED UPON THE CONTENTS OF THESE PLANS.

LEGEND	
ECTVOH	EXISTING CABLE TV, OVERHEAD
ECTV	EXISTING CABLE TV, UNDERGROUND
CTVOH	PROPOSED CABLE TV, OVERHEAD
CTV	PROPOSED CABLE TV, UNDERGROUND
FCTVOH	FUTURE CABLE TV, OVERHEAD
FCTV	FUTURE CABLE TV, UNDERGROUND
EFOOH	EXISTING FIBER OPTIC, OVERHEAD
EFO	EXISTING FIBER OPTIC, UNDERGROUND
FOOH	PROPOSED FIBER OPTIC, OVERHEAD
FO	PROPOSED FIBER OPTIC, UNDERGROUND
FFOOH	FUTURE FIBER OPTIC, OVERHEAD
FFO	FUTURE FIBER OPTIC, UNDERGROUND
EFP	EXISTING FIRE PROTECTION SYSTEM LINE
FP	PROPOSED FIRE PROTECTION SYSTEM LINE
FFP	FUTURE FIRE PROTECTION SYSTEM LINE
EFL	EXISTING FUEL LINE
FL	PROPOSED FUEL LINE
FFL	FUTURE FUEL LINE
EG	EXISTING NATURAL GAS LINE
G	PROPOSED NATURAL GAS LINE
FG	FUTURE NATURAL GAS LINE
ETELOH	EXISTING TELEPHONE LINE, OVERHEAD
ETEL	EXISTING TELEPHONE LINE, UNDERGROUND
TELOH	PROPOSED TELEPHONE LINE, OVERHEAD
TEL	PROPOSED TELEPHONE LINE, UNDERGROUND
FTELOH	FUTURE TELEPHONE LINE, OVERHEAD
FTEL	FUTURE TELEPHONE LINE, UNDERGROUND
EEOH	EXISTING POWER\ELECTRIC LINE, OVERHEAD
EE	EXISTING POWER\ELECTRIC LINE, UNDERGROUND
EOH	PROPOSED POWER\ELECTRIC LINE, OVERHEAD
E	PROPOSED POWER\ELECTRIC LINE, UNDERGROUND
FEOH	FUTURE POWER\ELECTRIC LINE, OVERHEAD
FE	FUTURE POWER\ELECTRIC LINE, UNDERGROUND
ESS	EXISTING SANITARY SEWER
SS	PROPOSED SANITARY SEWER
FSS	FUTURE SANITARY SEWER
ESL	EXISTING STEAM LINE
SL	PROPOSED STEAM LINE
FSL	FUTURE STEAM LINE
EST	EXISTING STORM SEWER
ST	PROPOSED STORM SEWER
FST	FUTURE STORM SEWER
EW	EXISTING WATER LINE
W	PROPOSED WATER LINE
FW	FUTURE WATER LINE

ALL NOTES REFERENCED ON THIS PLAN SHEET MAY HAVE APPLICATIONS TO EVERY FACET OF THE CONSTRUCTION PLANS. THE NOTE HEADINGS OR TITLES ARE TO BE USED AS A GENERAL GUIDE TO APPLICABLE SITUATIONS.

olsson
MO Certificate of Authority #2000000000
3101 Broadway, Suite 300
NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
6/7/19
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY
1	4/2/2019	REVISED PER CITY COMMENTS	
2	5/16/2019	REVISED PER CITY COMMENTS	

REVISIONS

GENERAL NOTES
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18:1140
date: 2019.03.12

SHEET
C102

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_GEN01_1140A.dwg
DATE: May 16, 2019 8:22am
USER: ssoylo

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_GEN02_1140A.dwg USER: ssaylor
DATE: Apr 04, 2019 1:51pm



SHEET C103

MASTER GENERAL LAYOUT
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO 2019

NO. REV.	DATE	REVISIONS DESCRIPTION	BY
1	4/2/2019	REVISED PER CITY COMMENTS	

REVISIONS

drawn by: DAS/LO
checked by: JES
designed by: SAS
QA/QC by: MGS
project no.: A18-1140
date: 2019.03.12

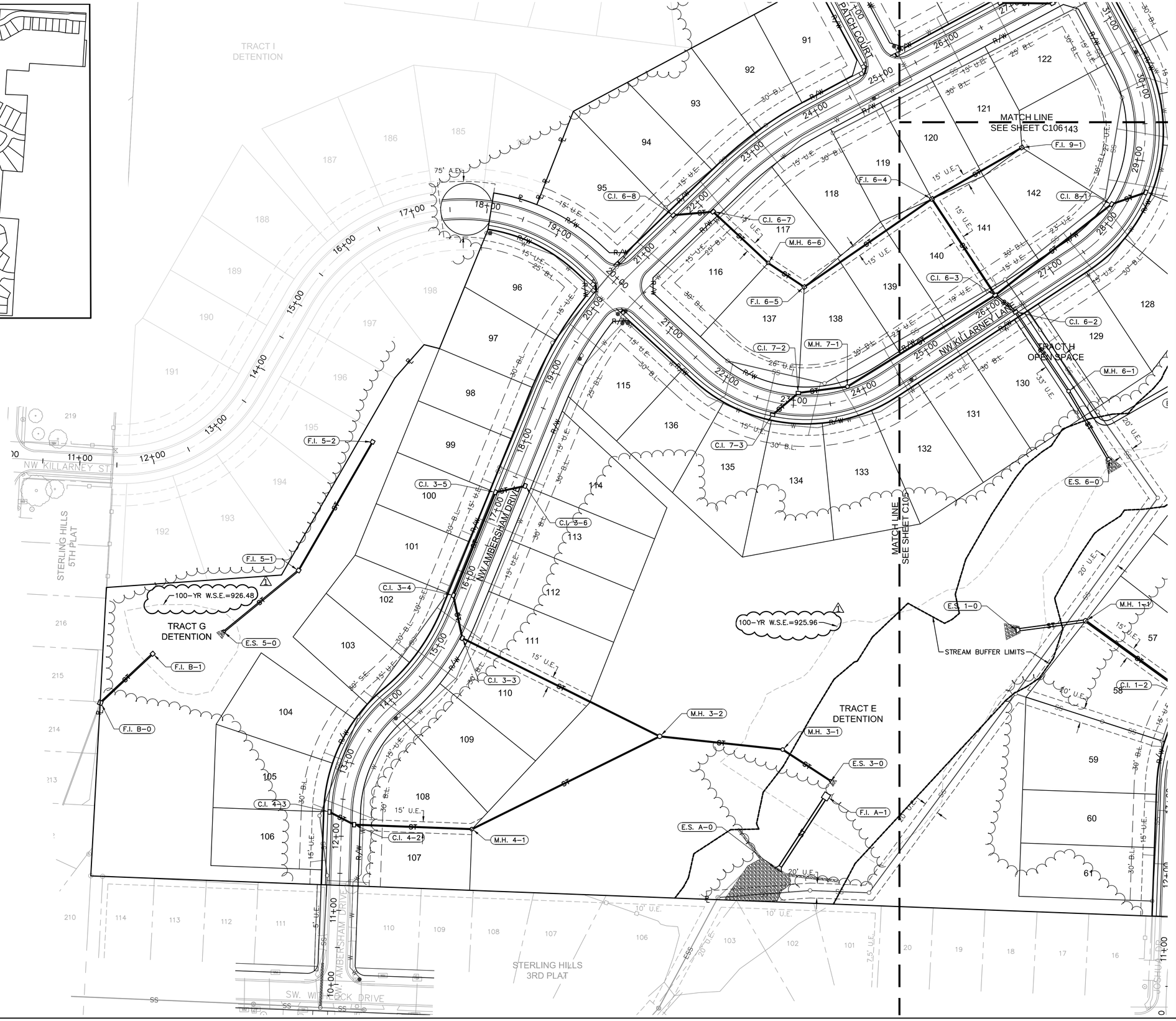
STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2010020587
4/7/19
MISSOURI PROFESSIONAL ENGINEER

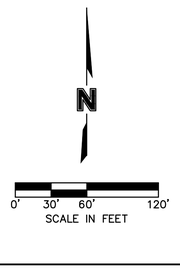
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NORTH KANSAS CITY, MO 64116 TEL 816.361.1177 www.olsson.com



Key Map





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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
6/7/19
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY
1	4/2/2019	REVISED PER CITY COMMENTS	

REVISIONS

GENERAL LAYOUT
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

2019

LEE'S SUMMIT, MO

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C104

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_GEN02_1140A.dwg USER: ssoylor
DATE: May 02, 2019 4:12pm

0' 30' 60' 120'
SCALE IN FEET

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
6/7/19
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY
		REVISIONS	

GENERAL LAYOUT
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

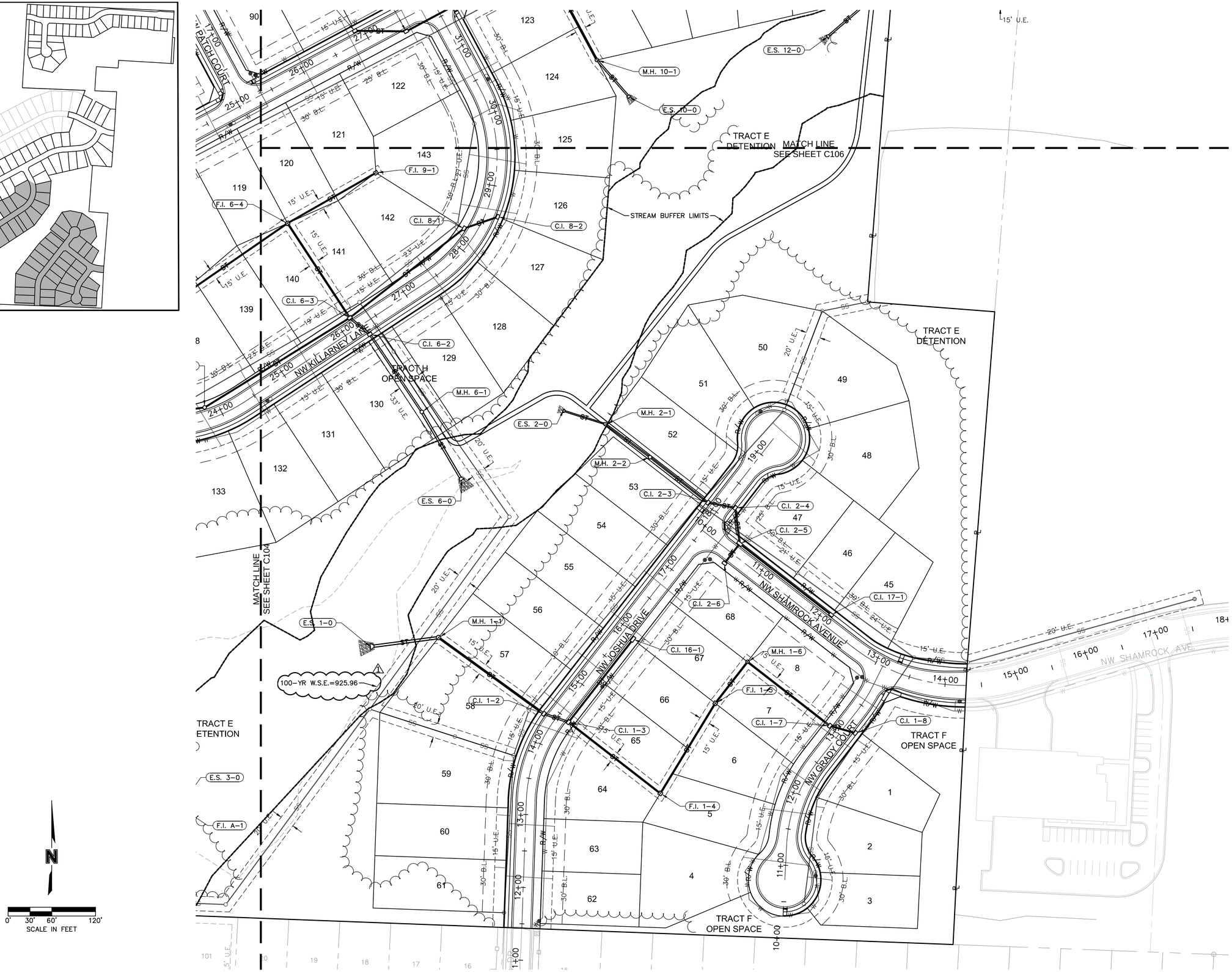
drawn by: D.A.H.Q
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18:1140
date: 2019.03.12

SHEET
C105

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DATE: May 02, 2019 4:12pm



Key Map



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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
6/7/19
PROFESSIONAL ENGINEER

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1	4/2/2019	REVISED PER CITY COMMENTS	

REVISIONS

GENERAL LAYOUT
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C105

USER: ssoylor
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DATE: May 02, 2019 4:12pm

VILLAGE CARE CENTER PLAT

TRACT A
OPEN SPACE

TRACT B
OPEN SPACE

NW ASHURST DRIVE

NW KAYLEA COURT

NW PRYOR ROAD

TRACT C
DETENTION

NORMAL POOL
ELEVATION= 929.00

100-YR W.S.E.=934.40

STREAM BUFFER LIMITS

ITEM 8-U.E.
PER PLAT (BK.

ITEM 13-U.E.
BK.I1613-PG.695

50' TRAIL ESMT.

ITEM 10-15'
BK.I115-PG.

MATCH LINE
SEE SHEET C106

F.I. 14-5
C.I. 14-3
C.I. 15-3
C.I. 14-2
C.I. 15-2
M.H. 15-1
M.H. 14-1
E.S. 14-0
C.I. 13-3
C.I. 13-4
C.I. 13-2
M.H. 13-1
E.S. 13-0

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 24+95.9

59+00 58+00

N

0' 30' 60' 120'
SCALE IN FEET

Key Map

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1301 Burlington, Suite 100
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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
6/7/19
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY
1	4/2/2019	REVISED PER CITY COMMENTS	
2	5/16/2019	REVISED PER CITY COMMENTS	

GENERAL LAYOUT
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C107

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DATE: May 16, 2019 8:23am

GENERAL NOTES:

1. CONTRACTOR SHALL ADHERE TO THE "DESIGN AND CONSTRUCTION MANUAL" SECTION 2100 AS ADOPTED BY THE CITY OF LEE'S SUMMIT (LATEST EDITION), FOR EXCAVATION AND EMBANKMENT WORK WITHIN THE PROPOSED RIGHT-OF-WAY.

2. AREAS OF CONSTRUCTION SHALL BE STRIPPED OF ALL VEGETATION, ORGANIC MATTER AND TOPSOIL TO A DEPTH AS RECOMMENDED BY GEOTECHNICAL ENGINEER AND OR TESTING AGENCY. SOILS REMOVED DURING SITE STRIPPING SHOULD BE EVALUATED TO DETERMINE IF PORTIONS OF THE TOPSOIL STRATUM MAY BE UTILIZED AS STRUCTURAL FILL WITHIN PAVEMENT AREAS. ANY MATERIAL NOT DEEMED AS SUITABLE FILL MATERIAL BY THE GEOTECHNICAL ENGINEER AND OR TESTING AGENCY SHALL BE REMOVED FROM THE JOB SITE BY THE CONTRACTOR AT HIS EXPENSE.

3. ALL EMBANKMENT OUTSIDE OF RIGHT-OF-WAY SHOULD BE PLACED IN CONTROLLED LIFTS HAVING A MAXIMUM LOOSE LIFT THICKNESS OF 8". EMBANKMENT SHOULD BE COMPACTED TO A MINIMUM OF 95% OF THE MATERIALS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 (STANDARD PROCTOR COMPACTION). MOISTURE CONTENT OF THE FILL AT THE TIME OF COMPACTION SHALL BE WITHIN A RANGE OF -0 TO +4 PERCENT OF OPTIMUM MOISTURE CONTENT.

LEGEND	
-100-	EXISTING INDEX CONTOURS
-100-	EXISTING INTERMEDIATE CONTOURS
100	PROPOSED INDEX CONTOURS
100	PROPOSED INTERMEDIATE CONTOURS

EARTHWORK QUANTITIES		
LOCATION	CUT (C.Y.)	FILL (C.Y.)
STREET	23653	29509
SITE	143863	136151
TOTAL	167516	165660

EARTHWORK QUANTITIES NOTES:
1. EARTHWORK QUANTITIES BASED ON FINISHED GRADE SURFACE AND DO NOT INCLUDE ADJUSTMENTS FOR TOPSOIL AND SHRINKAGE.

2. EARTHWORK QUANTITIES DO NOT TAKE INTO CONSIDERATION EXCAVATION, REMOVAL AND DISPOSAL OF MATERIAL DEEMED UNSUITABLE BY A GEOTECHNICAL ENGINEER. THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR EXCAVATION, REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL AND FOR REPLACING IT WITH SUITABLE MATERIAL.

THIRD PARTY TESTING REQUIRED FOR DETENTION BASIN IN TRACT E:
1. REMOVE TOPSOIL AND ORGANIC DIRT FROM THE AREA
2. PROOF ROLL TO CHECK THE SUBGRADE
   2.1. REMOVE OR REPAIR ANY UNSTABLE AREA IN ACCORDANCE WITH THIRD-PARTY TESTER
3. PLACE 9" LOOSE LIFTS OF 9" MATERIAL WITH LL=50 AND PI=25 OR GREATER. EMBANKMENT SHOULD BE COMPACTED TO A MINIMUM OF 95% OF THE MATERIALS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 (STANDARD PROCTOR COMPACTION). MOISTURE CONTENT OF THE FILL AT THE TIME OF COMPACTION SHALL BE WITHIN A RANGE OF -0 TO +4 PERCENT OF OPTIMUM MOISTURE CONTENT.

Woodside Ridge Lot Fill Information	
Lot Number	Over 8' fill placed
91	
92	
93	
94	
95	
96	
97	
98	
99	
100	
101	
102	
103	
104	
105	
106	
107	
108	
109	
110	
111	
112	
113	
114	
115	
116	
117	
118	
119	
133	
134	11'
135	10'
136	
137	
138	
139	



0' 30' 60' 120'
SCALE IN FEET

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
6/7/19
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY
1	4/2/2019	REVISED PER CITY COMMENTS	

REVISIONS

GRADING PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

drawn by: D.A.H.Q
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C108

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_GRD01_1140A.dwg
DATE: Apr 04, 2019 1:57pm
USER: ssoylor

Woodside Ridge Lot Fill Information	
Lot Number	Over 8' fill placed
1	
2	
3	
4	
5	
6	
7	
8	
45	14'
46	13'
47	16'
48	13'
49	
50	12'
51	16'
52	22'
53	20'
54	14'
55	10'
56	10'
57	
58	
59	
60	
61	
62	
63	
64	
65	
66	
67	
68	
125	15'
126	16'
127	17'
128	17'
129	16'
130	12'
131	9'
132	9'
140	
141	
142	13'
143	12'

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
6/7/19
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY
1	4/2/2019	REVISED PER CITY COMMENTS	

REVISIONS

GRADING PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C109

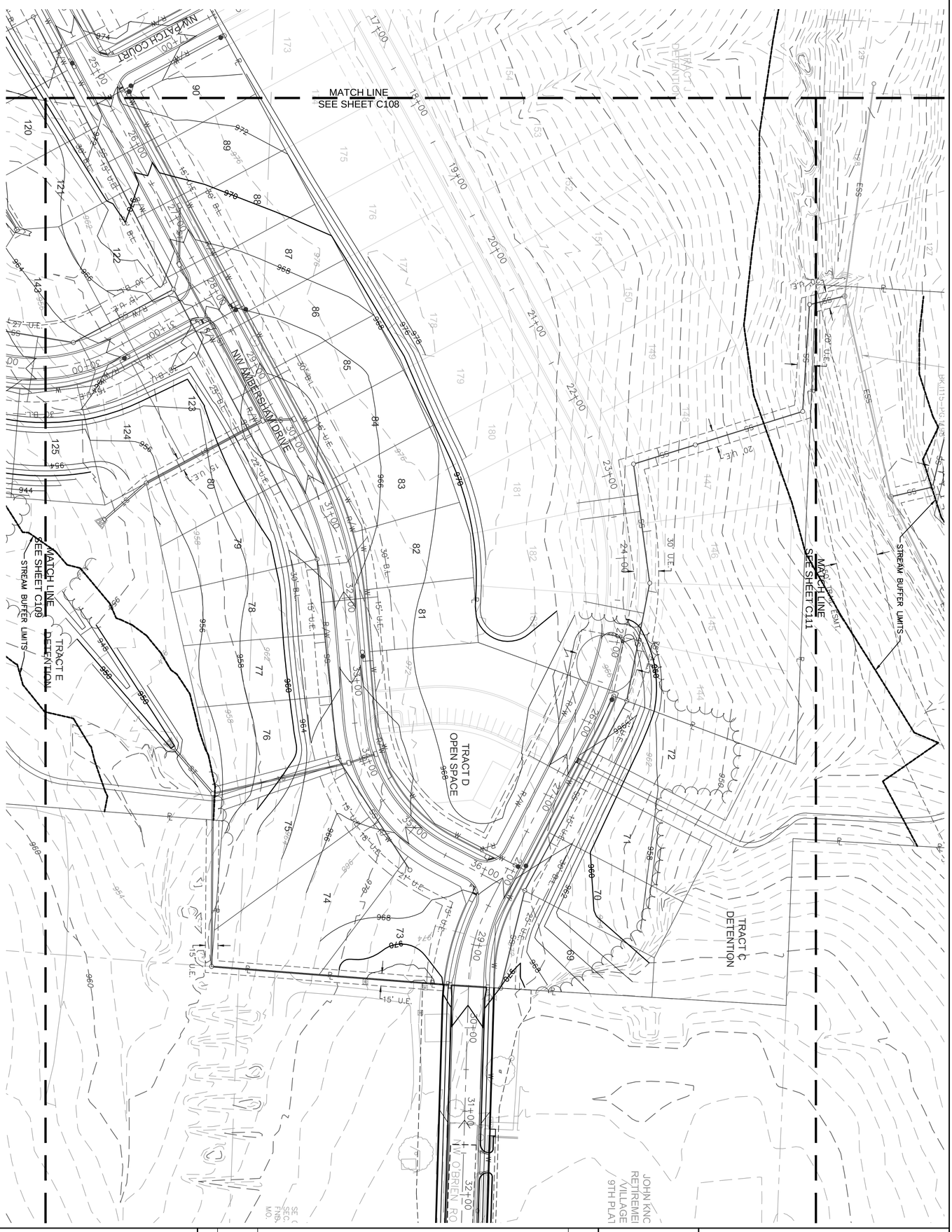
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USER: ssoylor

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DATE: Apr 04, 2019 1:57pm

Woodside Ridge Lot Fill Information	
Lot Number	Over 8' fill placed
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	
81	
82	
83	
84	
85	
86	
87	
88	
89	
90	
120	
121	
122	
123	
124	12'

0' 30' 60' 120'
SCALE IN FEET

N



SHEET
C110

GRADING PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO 2019

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

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checked by: S.A.S.
designed by: S.A.S.
QA/QC by: M.G.A.
project no.: A18-1140
date: 2019.03.12

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2010008587
8/7/19
PROFESSIONAL ENGINEER

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DATE: Apr 04, 2019 1:57pm

SCALE IN FEET 0 30' 60' 120'

Woodside Ridge Lot Fill information	
Lot Number	Over 6' fill placed
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	9'
21	10'
22	
23	
24	
25	
26	
27	
28	
29	10'
30	10'
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	



SHEET C111

GRADING PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO 2019

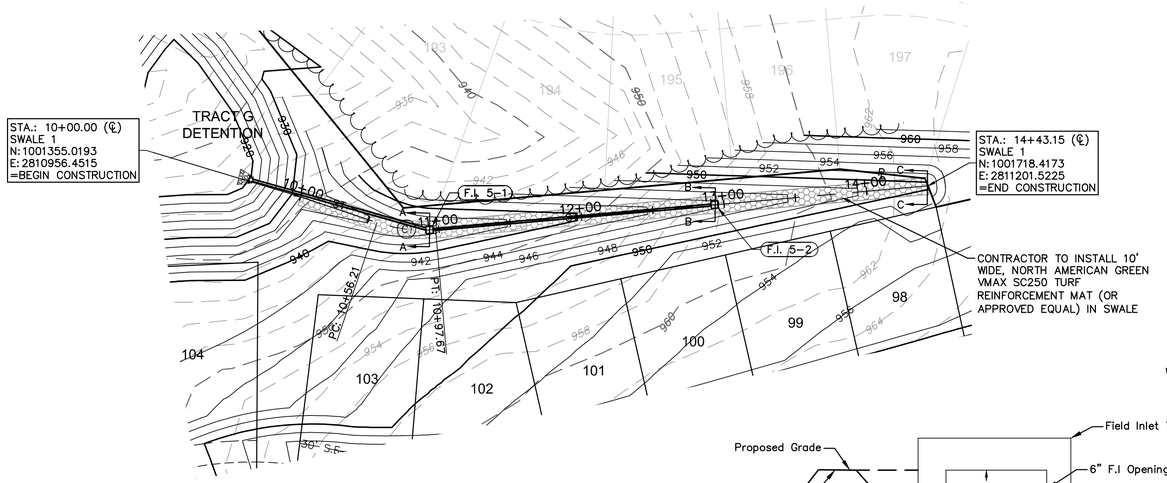
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1	4/2/2019	REVISED PER CITY COMMENTS	

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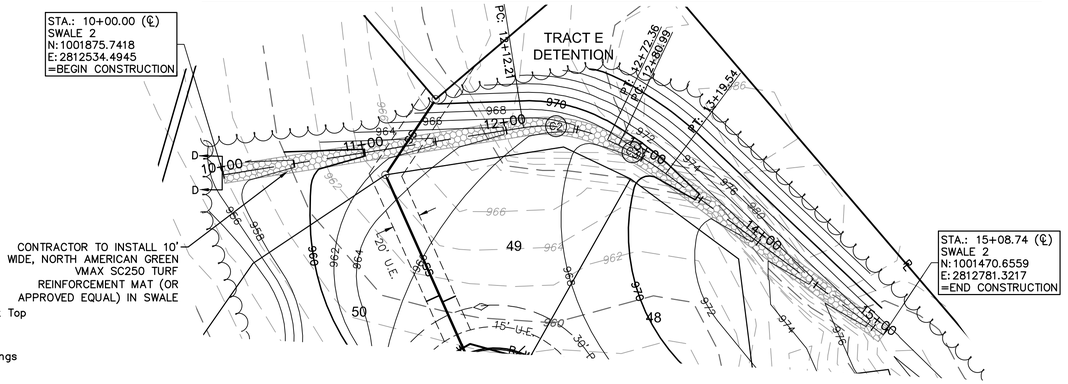
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checked by: J.L.S.
designed by: J.L.S.
QA/QC by: M.G.A.
project no: A18-1140
date: 2019.03.12

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2010019587
8/7/19
PROFESSIONAL ENGINEER

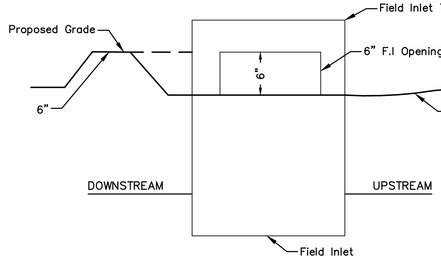
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Swale Design Table (100 Year Return Frequency)													
Section Data							Flow Data						
SECTION	Mannings Coefficient	Channel Slope (%)	Swale Depth (ft)	Left Side Slope (H:V)	Right Side Slope (H:V)	Bottom Width (ft)	Discharge (cfs)	Water Depth (ft)	Flow Area (ft^2)	Velocity (ft/sec)	Wetted Perimeter (ft)	Top Width (ft)	Specific Energy (ft)	Shear Stress (lbs/ft^2)
A-A	0.03	4.06%	1.35	3:1	3:1	5.00	1.97	0.15	0.82	2.41	5.95	5.90	0.54	0.35
B-B	0.03	4.06%	1.35	3:1	3:1	5.00	8.49	0.34	2.05	4.15	7.15	7.04	0.61	0.73
C-C	0.03	4.06%	1.35	3:1	3:1	5.00	8.88	0.35	2.12	4.19	7.21	7.10	0.62	0.74
D-D	0.03	4.04%	1.35	3:1	3:1	5.00	7.63	0.32	1.91	4.00	7.02	6.92	0.57	0.69

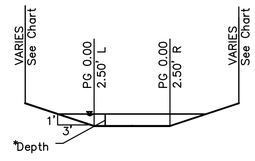


CURVE TABLE					
CURVE ID	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)
C1	100.00'	23°45'21"	41.46'	21.03'	10+76.64
C2	100.00'	34°27'53"	60.15'	31.02'	12+41.34
C3	214.36'	12°36'37"	47.18'	23.69'	12+95.85



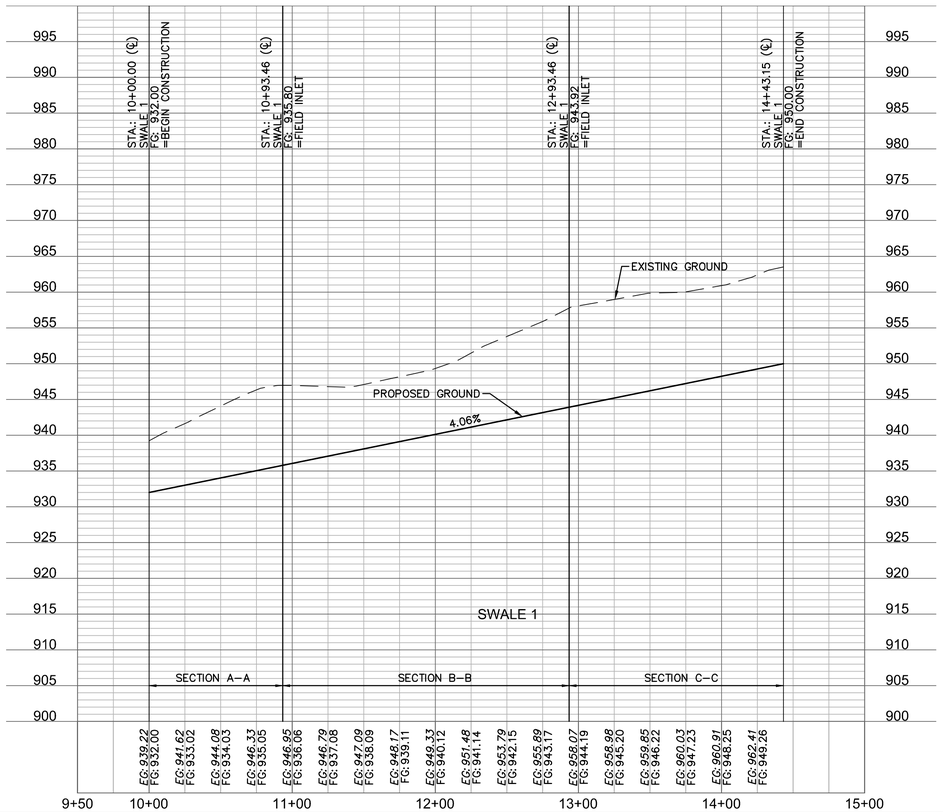
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NOT TO SCALE

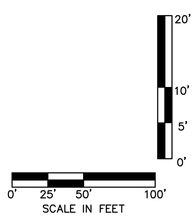
NOTE: INCLUDE SUMP PER ABOVE DETAIL WHERE FIELD INLETS ARE LOCATED WITHIN SWALES.

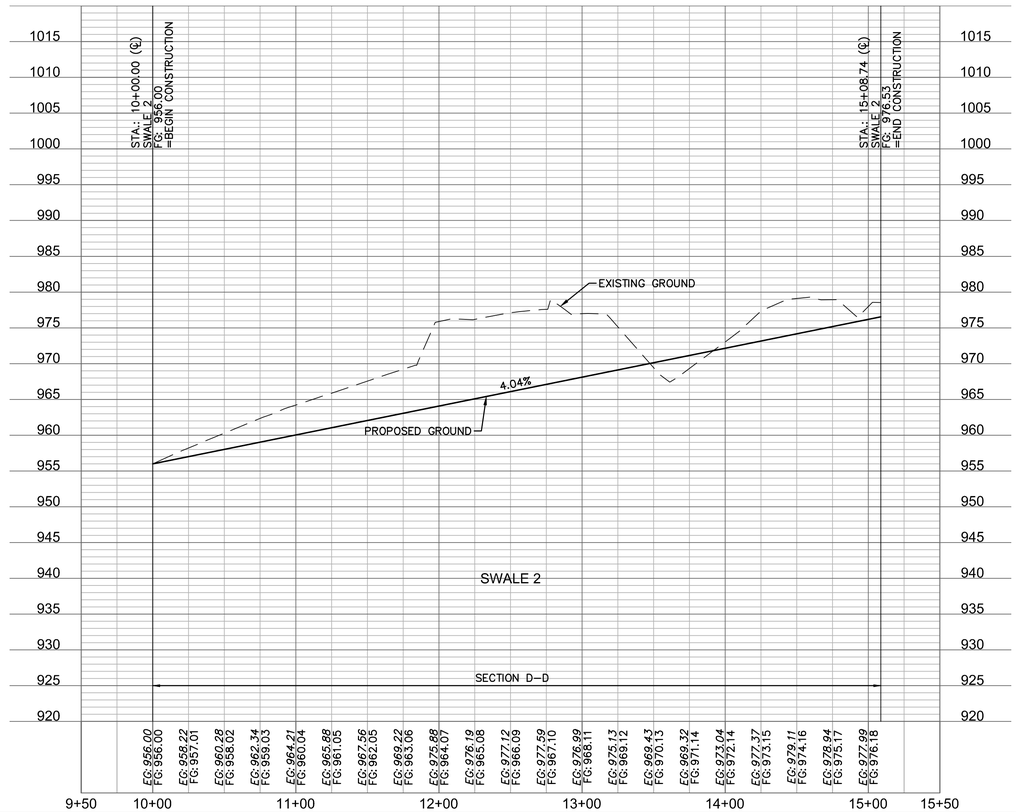


Swale Typical Section
*See table for swale depth
NTS

SWALE GRADING NOTES:
1. CONTRACTOR SHALL CONSTRUCT SWALES WITH MINIMUM SLOPE, WIDTH AND DEPTH AS SHOWN IN THE SWALE DESIGN TABLES.
2. CONTRACTOR SHALL CONSTRUCT ENTIRE DEPTH OF SWALES WITHIN THE RECORDED SURFACE DRAINAGE EASEMENTS AS SHOWN ON THE PLANS.
3. AS-BUILT SURVEY IS REQUIRED/APPROVED BY CITY FOR ALL SWALES AND PRIOR TO APPROVAL FOR ANY BUILDING FOUNDATION PERMIT.
CONTRACTOR SHALL BE REQUIRED TO REGRADE SWALES AT CONTRACTOR'S EXPENSE IF ABOVE REQUIREMENTS ARE NOT MET.







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JULIE ELAINE SELLERS
NUMBER PE-2017000367
6/7/19
PROFESSIONAL ENGINEER

REVISIONS

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

SWALE PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

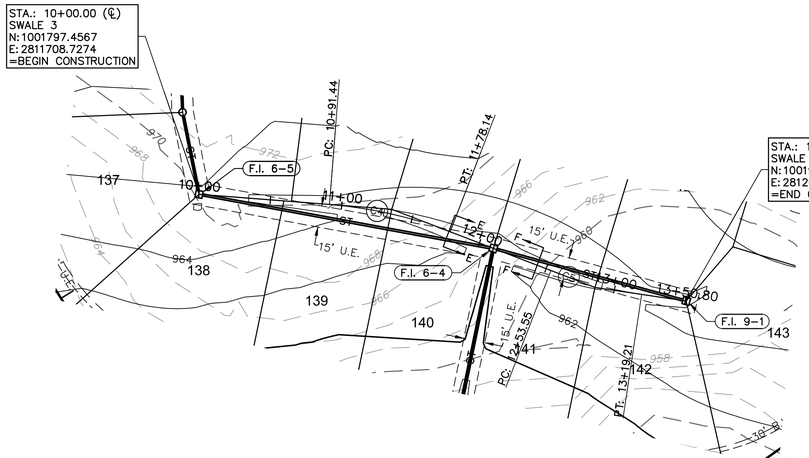
LEE'S SUMMIT, MO

2019

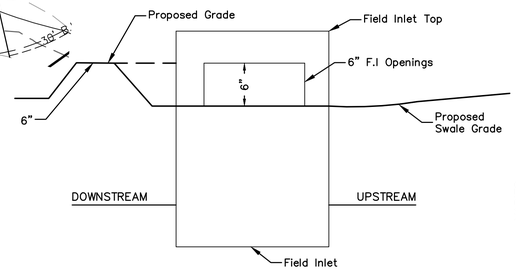
drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C112

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_SW.01_1140A.dwg
DATE: Apr 04, 2019 11:07am
USER: ssoylor



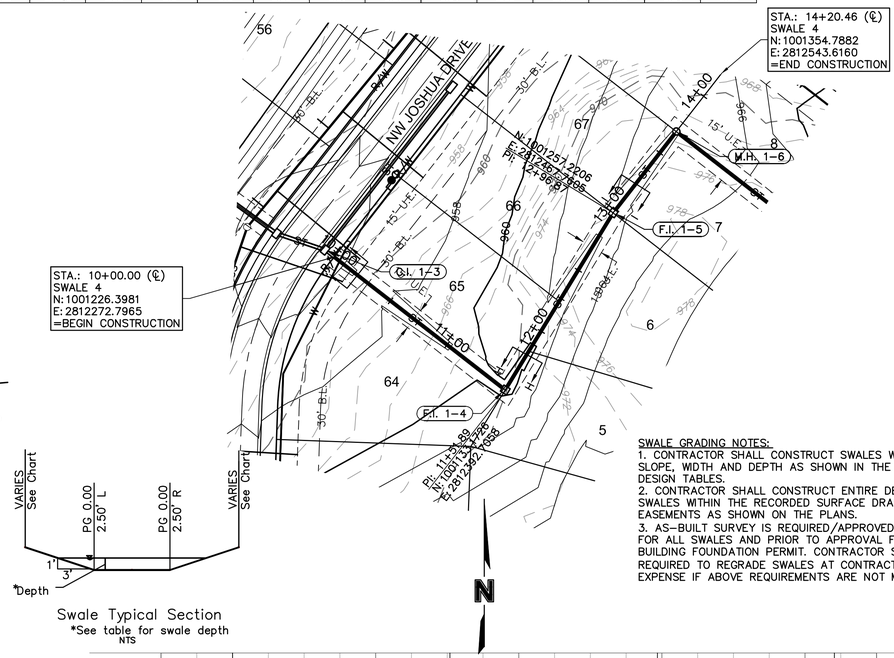
CURVE TABLE					
CURVE ID	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)
C4	300.00'	16°33'34"	86.70'	43.66'	11+34.48
C5	300.00'	12°32'26"	65.66'	32.96'	12+86.25



F.I SUMP DETAIL
NOT TO SCALE

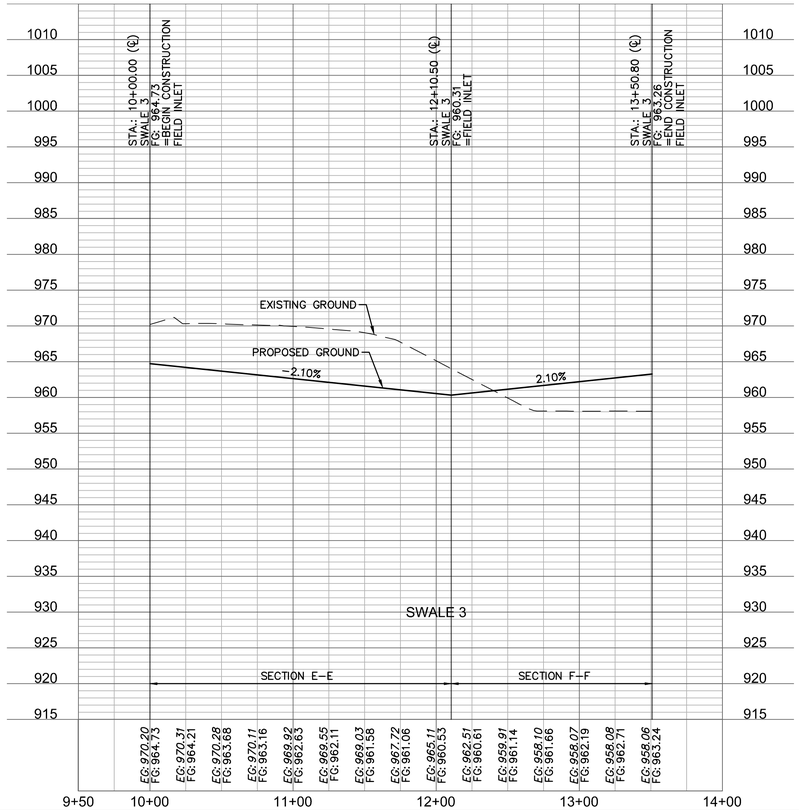
NOTE: INCLUDE SUMP PER ABOVE DETAIL WHERE FIELD INLETS ARE LOCATED WITHIN SWALES.

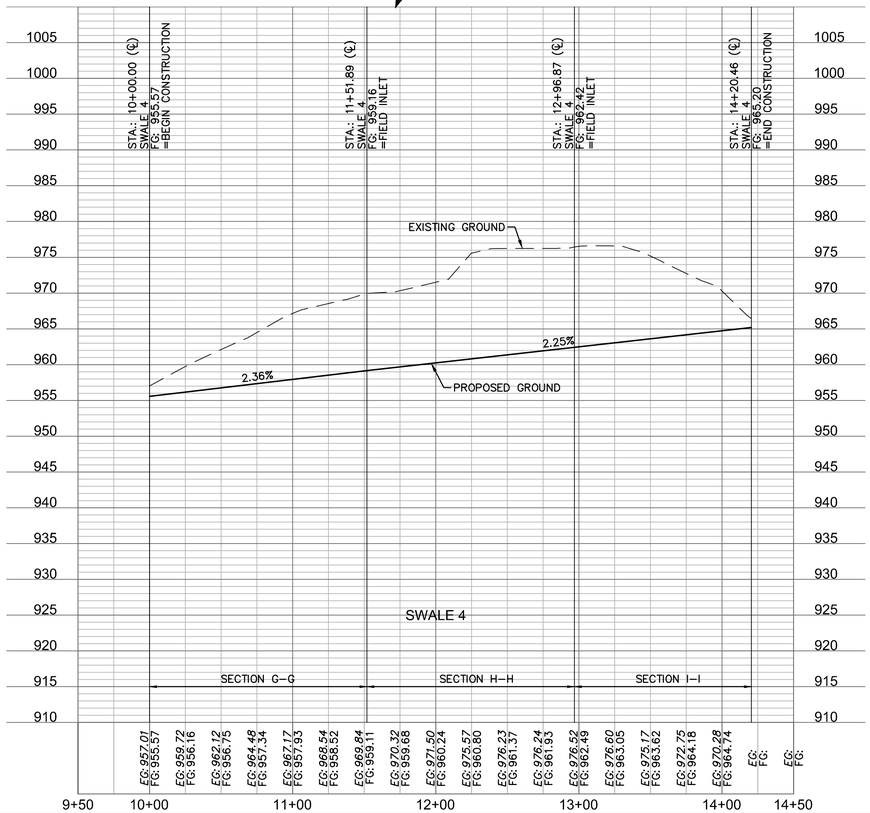
Swale Design Table (100 Year Return Frequency)													
Section Data							Flow Data						
SECTION	Mannings Coefficient	Channel Slope (%)	Swale Depth (ft)	Left Side Slope (H:V)	Right Side Slope (H:V)	Bottom Width (ft)	Discharge (cfs)	Water Depth (ft)	Flow Area (ft^2)	Velocity (ft/sec)	Wetted Perimeter (ft)	Top Width (ft)	Specific Energy (ft)	Shear Stress (lbs/ft^2)
E-E	0.03	2.10%	1.35	3:1	3:1	5.00	4.01	0.27	1.57	2.56	6.71	6.62	0.37	0.31
F-F	0.03	2.10%	1.35	3:1	3:1	5.00	2.83	0.22	1.25	2.27	6.39	6.32	0.30	0.26
G-G	0.03	2.36%	1.35	3:1	3:1	5.00	2.57	0.20	1.12	2.29	6.26	6.20	0.28	0.26
H-H	0.03	2.25%	1.35	3:1	3:1	5.00	2.76	0.21	1.18	2.33	6.33	6.26	0.29	0.26
I-I	0.03	2.25%	1.35	3:1	3:1	5.00	1.97	0.17	0.94	2.10	6.08	6.02	0.24	0.22

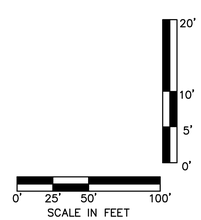


Swale Typical Section
*See table for swale depth
NTS

SWALE GRADING NOTES:
1. CONTRACTOR SHALL CONSTRUCT SWALES WITH MINIMUM SLOPE, WIDTH AND DEPTH AS SHOWN IN THE SWALE DESIGN TABLES.
2. CONTRACTOR SHALL CONSTRUCT ENTIRE DEPTH OF SWALES WITHIN THE RECORDED SURFACE DRAINAGE EASEMENTS AS SHOWN ON THE PLANS.
3. AS-BUILT SURVEY IS REQUIRED/APPROVED BY CITY FOR ALL SWALES AND PRIOR TO APPROVAL FOR ANY BUILDING FOUNDATION PERMIT. CONTRACTOR SHALL BE REQUIRED TO REGRADE SWALES AT CONTRACTOR'S EXPENSE IF ABOVE REQUIREMENTS ARE NOT MET.







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REVISIONS

SWALE PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

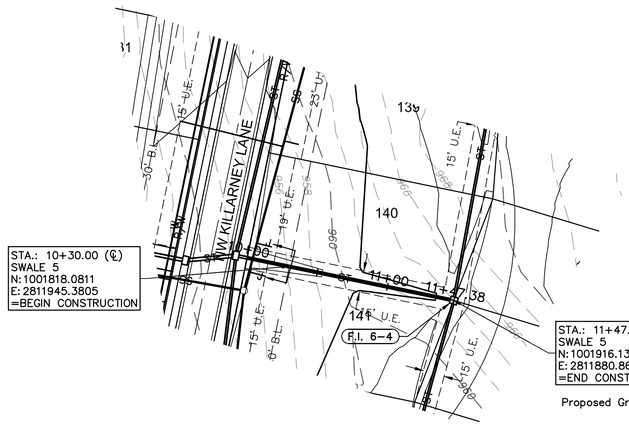
2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C113

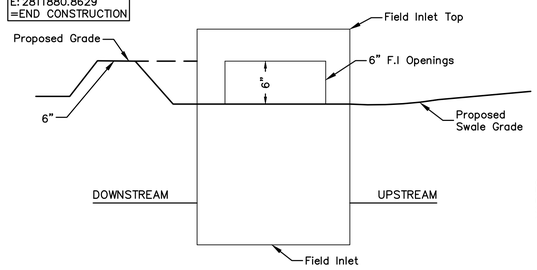
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DATE: Apr 04, 2019 11:09am

Swale Design Table (100 Year Return Frequency)														
Section Data							Flow Data							
SECTION	Mannings Coefficient	Channel Slope (%)	Swale Depth (ft)	Left Side Slope (H:V)	Right Side Slope (H:V)	Bottom Width (ft)	Discharge (cfs)	Water Depth (ft)	Flow Area (ft^2)	Velocity (ft/sec)	Wetted Perimeter (ft)	Top Width (ft)	Specific Energy (ft)	Shear Stress (lbs/ft^2)
J-J	0.03	2.47%	1.35	3:1	3:1	5.00	0.72	0.10	0.53	1.36	5.63	5.60	0.13	0.15
K-K	0.03	2.25%	1.35	3:1	3:1	5.00	18.49	0.61	4.17	4.44	8.86	8.66	0.92	0.66



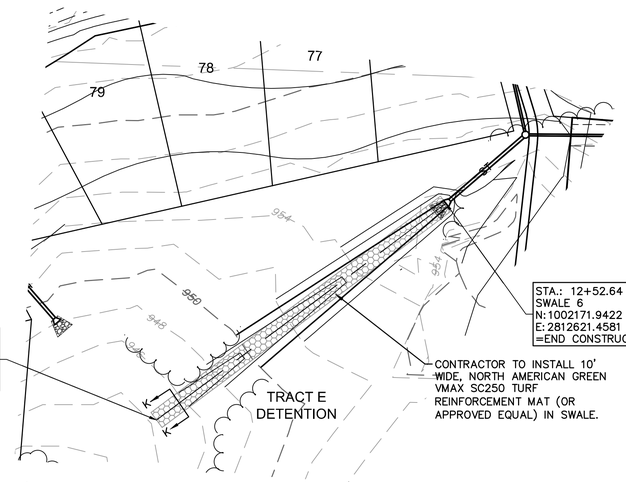
STA.: 10+30.00 (℄)
SWALE 5
N: 1001818.0811
E: 2811945.3805
=BEGIN CONSTRUCTION

STA.: 11+47.38 (℄)
SWALE 5
N: 1001916.1366
E: 2811880.8629
=END CONSTRUCTION



F.I SUMP DETAIL
NOT TO SCALE

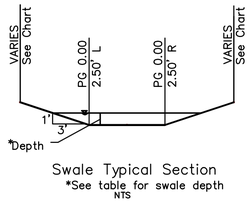
NOTE: INCLUDE SUMP PER ABOVE DETAIL WHERE FIELD INLETS ARE LOCATED WITHIN SWALES.



STA.: 10+00.00 (℄)
SWALE 6
N: 1002020.6272
E: 2812419.1421
=BEGIN CONSTRUCTION

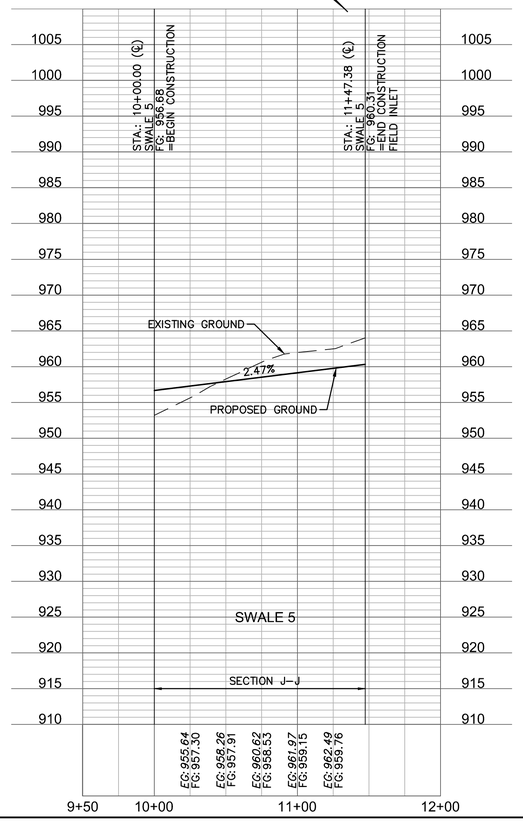
STA.: 12+52.64 (℄)
SWALE 6
N: 1002171.9422
E: 2812621.4581
=END CONSTRUCTION

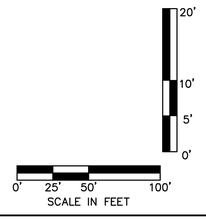
CONTRACTOR TO INSTALL 10' WIDE, NORTH AMERICAN GREEN VMAX SC250 TURF REINFORCEMENT MAT (OR APPROVED EQUAL) IN SWALE.

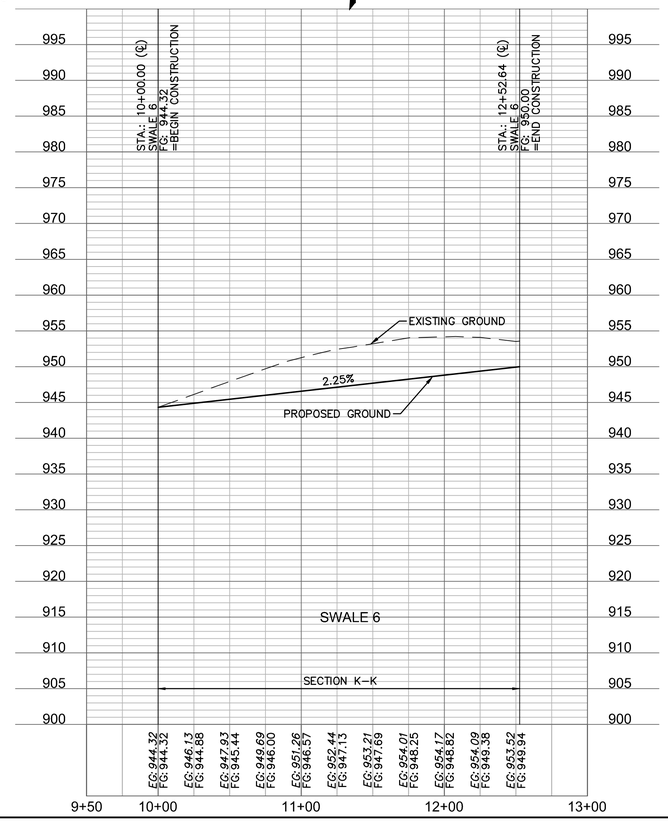


Swale Typical Section
*See table for swale depth
NTS

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3101 BROADWAY, SUITE 575
NORTH KANSAS CITY, MO 64116
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REVISIONS

SWALE PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

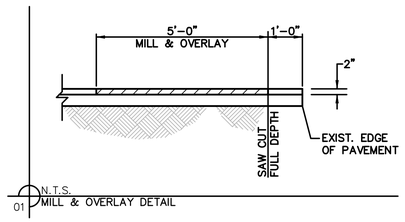
2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

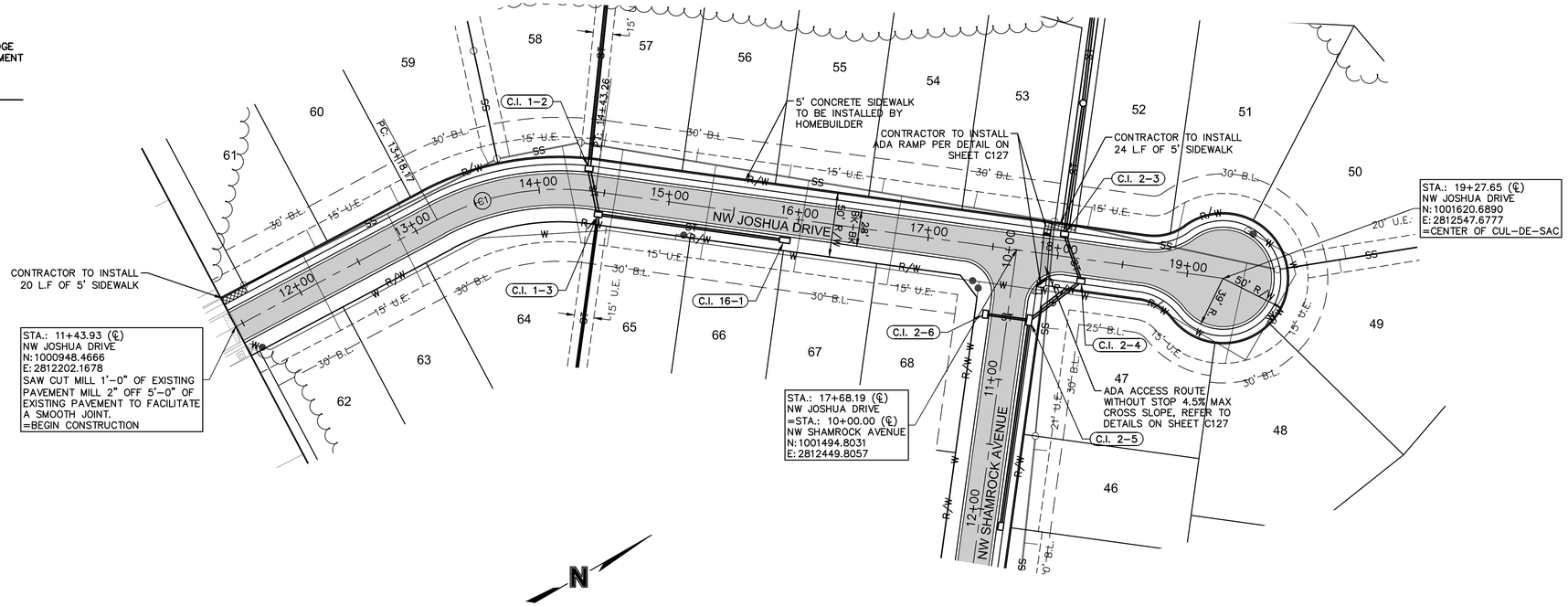
SHEET
C114

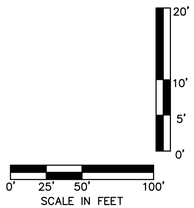
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DATE: Apr 04, 2019 11:11am
USER: ssaylor

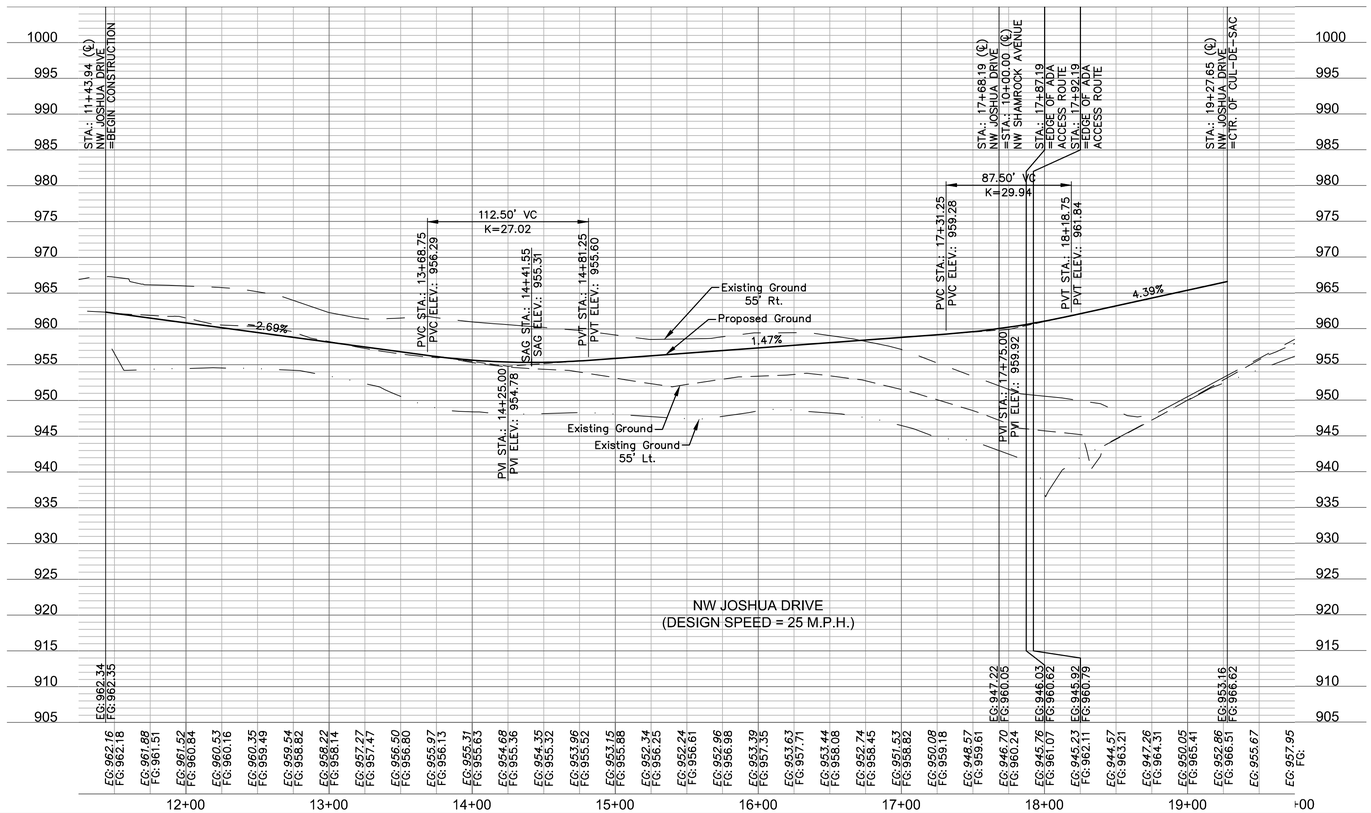
CURVE TABLE					
CURVE ID	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)
C1	200.00'	35°50'10"	125.09'	64.67'	13+78.59



LEGEND	
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER







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2301 Main Street, Suite 200
NORTH KANSAS CITY, MO 64116
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WOODSIDE RIDGE
FIRST PLAT

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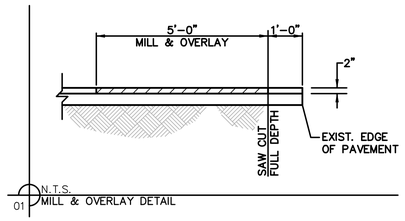
2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

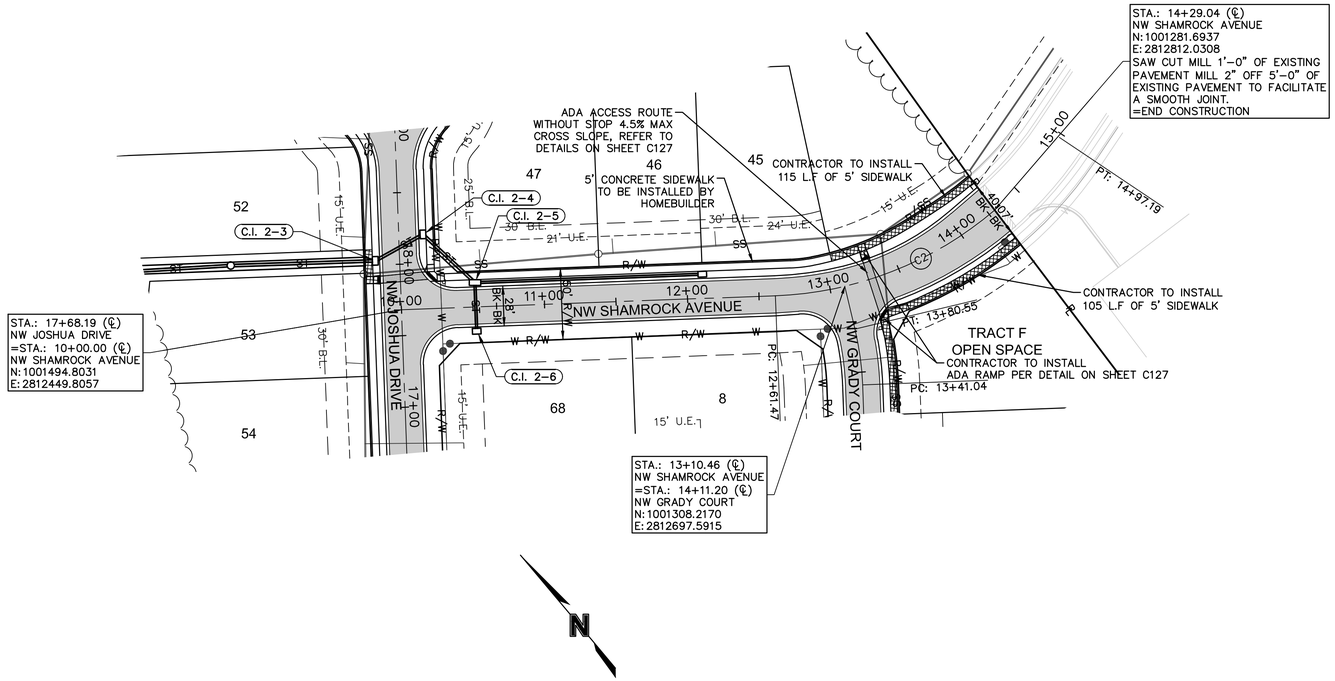
SHEET
C115

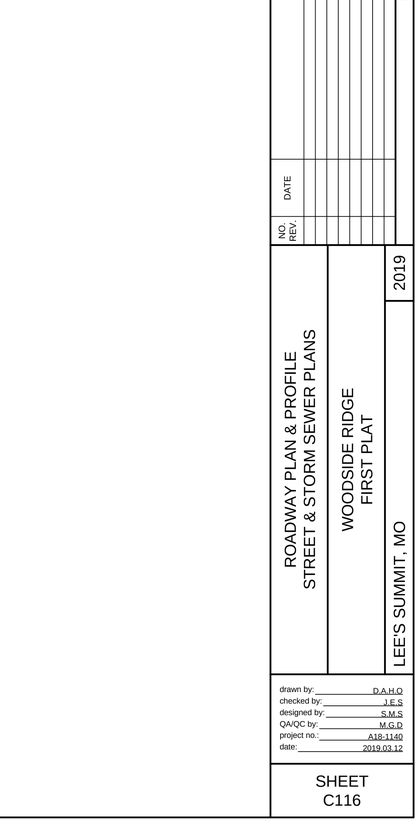
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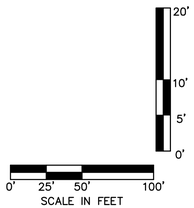
CURVE TABLE					
CURVE ID	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)
C2	200.00'	54°01'20"	235.71'	127.44'	13+69.75



LEGEND	
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER







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REVISIONS

ROADWAY PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

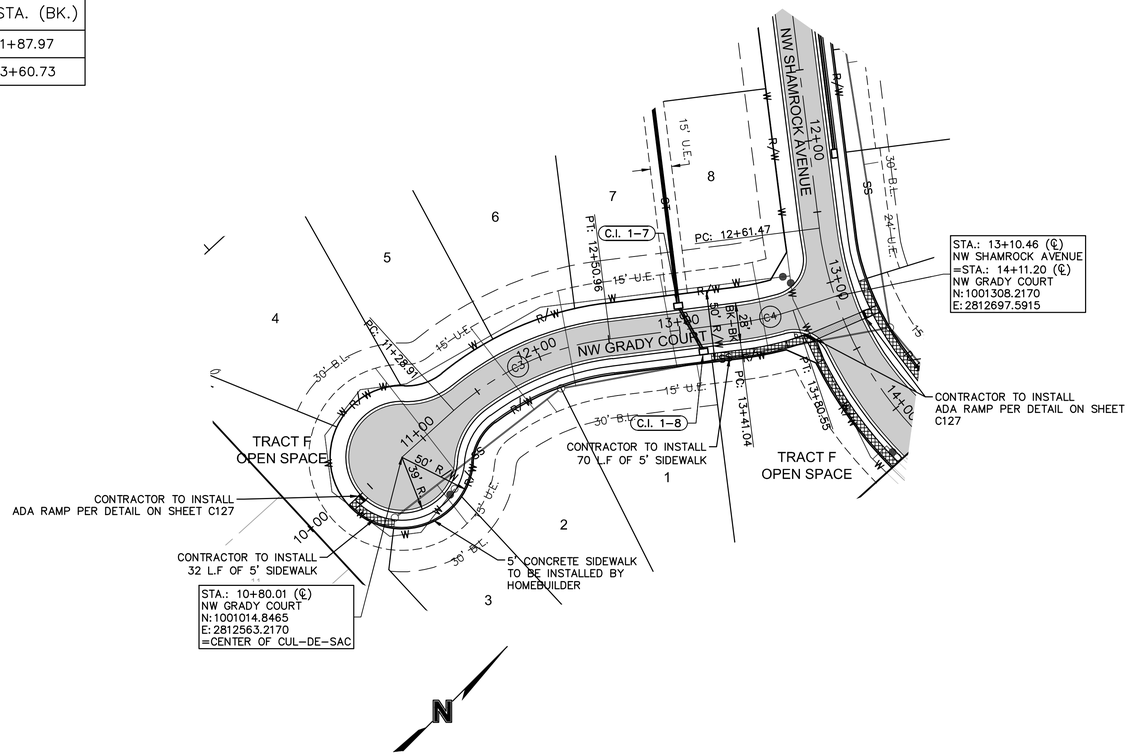
drawn by: D.A.H.Q
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

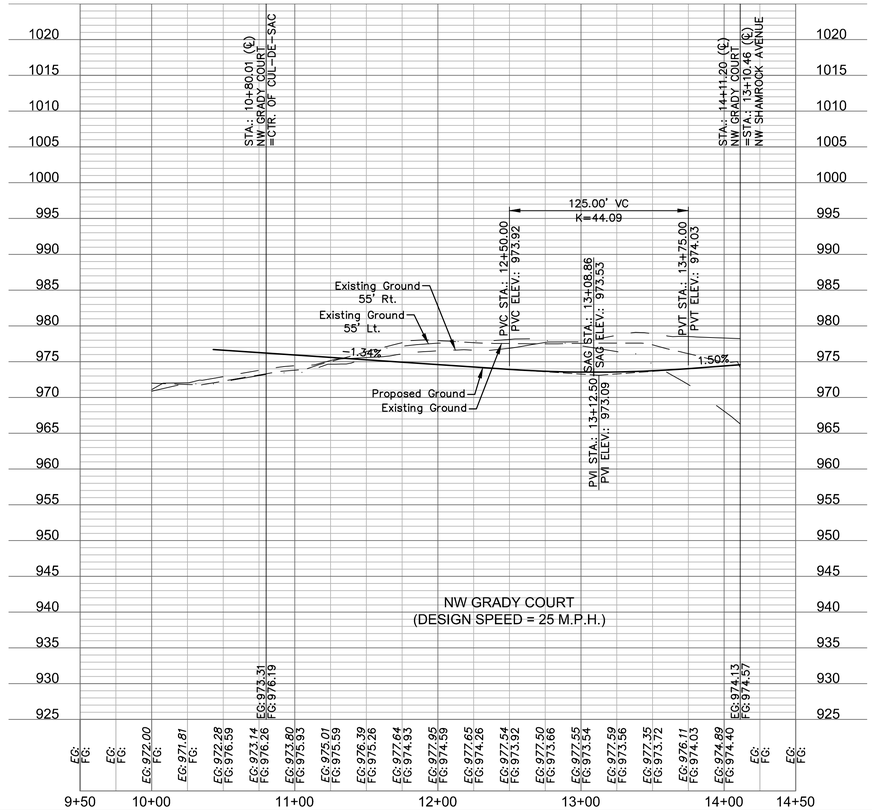
SHEET
C116

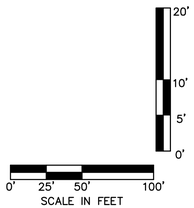
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DATE: Apr 04, 2019 11:14am
USER: ssoylor

CURVE TABLE					
CURVE ID	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)
C3	200.00'	34°57'50"	122.05'	62.99'	11+87.97
C4	200.00'	11°19'00"	39.51'	19.82	13+60.73

LEGEND	
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER







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LEE'S SUMMIT, MO

2019

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checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C117

USER: ssaylor
DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_RPP03_1140A.dwg
DATE: Apr 04, 2019 11:15am

CURVE TABLE						
CURVE ID	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)	P.C. STA.
C5	250.00'	102°45'30"	448.37'	312.94'	16+39.90	15+04.47
C6	200.00'	76°01'40"	265.39'	156.33'	22+76.97	
C7	200.00'	84°50'00"	296.12'	182.73'	28+54.87	

LEGEND

- CONCRETE SIDEWALK
- ASPHALT PAVEMENT
- CG-2 CURB & GUTTER

STA.: 17+37.71 (℄)
NW KILLARNEY LANE
N: 1001900.7385
E: 2811218.9310
=BEGIN CONSTRUCTION

8" MINIMUM ASPHALT PAVEMENT OUTSIDE CURB (TYP)

STA.: 17+72.53 (℄)
NW KILLARNEY LANE
N: 1001902.3356
E: 2811253.6786
=CENTER OF CUL-DE-SAC

STA.: 28+02.33 (℄)
NW AMBERSHAM DRIVE
=STA.: 31+71.35 (℄)
NW KILLARNEY LANE
N: 1002219.1284
E: 2812081.5224

ADA ACCESS ROUTE WITH STOP 1.5% MAX CROSS SLOPE, REFER TO DETAILS ON SHEET C126

STA.: 20+08.54 (℄)
NW KILLARNEY LANE
=STA.: 20+44.37 (℄)
NW AMBERSHAM DRIVE
N: 1001798.4256
E: 2811458.1842

CONTRACTOR TO INSTALL ADA RAMP PER DETAIL ON SHEET C126

CONTRACTOR TO INSTALL ADA RAMP PER DETAIL ON SHEET C129

5' CONCRETE SIDEWALK TO BE INSTALLED BY HOMEBUILDER

CONTRACTOR TO INSTALL 38 L.F OF 5' SIDEWALK

TRACT H OPEN SPACE

NW KILLARNEY LANE

NW AMBERSHAM DRIVE

PC: 21+67.92

PT: 20+52.84

PT: 24+33.30

PT: 30+37.60

C.I. 7-3 · C.I. 7-2 · M.H. 7-1 · C.I. 6-3 · C.I. 6-2 · C.I. 8-1 · C.I. 8-2 · C.I. 11-1

SCALE IN FEET: 0' 25' 50' 100' · 0' 5' 10' 20'

NW KILLARNEY LANE
(DESIGN SPEED = 25 M.P.H.)

STA.: 17+37.71 (℄) NW KILLARNEY LANE =BEGIN CONSTRUCTION
STA.: 17+72.53 (℄) NW KILLARNEY LANE =CTR. OF CUL-DE-SAC
STA.: 19+84.54 =EDGE OF ADA ACCESS ROUTE
STA.: 19+89.54 =EDGE OF ADA ACCESS ROUTE
STA.: 20+08.54 (℄) NW KILLARNEY LANE =STA.: 20+44.37 (℄) NW AMBERSHAM DRIVE
STA.: 31+71.35 (℄) NW KILLARNEY LANE =STA.: 28+02.33 (℄) NW AMBERSHAM DRIVE

PVC STA.: 19+00.00 PVC ELEV.: 966.61
PVI STA.: 19+25.00 PVI ELEV.: 967.25
PVT STA.: 19+50.00 PVT ELEV.: 967.62
50.00' VC K=48.49
2.53% · 1.50%

PVC STA.: 21+00.00 PVC ELEV.: 967.13
PVI STA.: 21+25.00 PVI ELEV.: 966.75
PVT STA.: 21+50.00 PVT ELEV.: 965.92
50.00' VC K=27.39
-1.50% · -3.33%

PVC STA.: 22+75.00 PVC ELEV.: 961.76
PVI STA.: 23+00.00 PVI ELEV.: 960.93
PVT STA.: 23+25.00 PVT ELEV.: 960.56
50.00' VC K=27.39

Existing Ground 55' Lt.
Proposed Ground
Existing Ground 55' Rt.
Existing Ground
-1.50%

PVC STA.: 25+80.00 PVC ELEV.: 956.73
SAG STA.: 26+22.66 SAG ELEV.: 956.41
PVT STA.: 26+80.00 PVT ELEV.: 956.99
100.00' VC K=28.44

PVI STA.: 26+30.00 PVI ELEV.: 955.98
2.02%

PVC STA.: 30+00.00 PVC ELEV.: 964.95
PVI STA.: 30+25.00 PVI ELEV.: 964.45
PVT STA.: 31+00.00 PVT ELEV.: 965.33
50.00' VC K=96.88
1.50%

EG: 961.44 FG: 962.18
EG: 961.67 FG: 962.51
EG: 962.74 FG: 962.82
EG: 962.88 FG: 963.45
EG: 964.55 FG: 964.08
EG: 966.33 FG: 964.72
EG: 967.67 FG: 965.35
EG: 969.01 FG: 965.98
EG: 970.41 FG: 966.61
EG: 972.27 FG: 967.18
EG: 973.01 FG: 967.62
EG: 973.72 FG: 968.00
EG: 974.00 FG: 968.14
EG: 974.14 FG: 968.22
EG: 974.45 FG: 968.37
EG: 974.70 FG: 968.50
EG: 974.27 FG: 968.25
EG: 973.40 FG: 967.88
EG: 972.02 FG: 967.50
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EG: 967.99 FG: 966.64
EG: 965.83 FG: 965.92
EG: 963.51 FG: 965.09
EG: 960.66 FG: 964.26
EG: 958.03 FG: 963.43
EG: 956.79 FG: 962.60
EG: 956.33 FG: 961.76
EG: 956.00 FG: 961.05
EG: 956.49 FG: 960.56
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EG: 958.13 FG: 959.81
EG: 957.93 FG: 959.43
EG: 958.20 FG: 959.06
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EG: 956.32 FG: 957.93
EG: 954.82 FG: 957.56
EG: 950.65 FG: 956.41
EG: 950.52 FG: 956.54
EG: 949.77 FG: 956.89
EG: 948.65 FG: 957.39
EG: 947.12 FG: 957.90
EG: 945.43 FG: 958.40
EG: 943.94 FG: 958.91
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EG: 945.83 FG: 960.42
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EG: 949.44 FG: 961.43
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EG: 964.98 FG: 965.33
EG: 967.83 FG: 965.70
EG: 968.40 FG: 966.08
EG: 970.47 FG: 966.40
EG: FG:
EG: FG:

18+00 · 19+00 · 20+00 · 21+00 · 22+00 · 23+00 · 24+00 · 25+00 · 26+00 · 27+00 · 28+00 · 29+00 · 30+00 · 31+00 · 32+00

1005 · 1000 · 995 · 990 · 985 · 980 · 975 · 970 · 965 · 960 · 955 · 950 · 945 · 940 · 935 · 930 · 925 · 920 · 915 · 910

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6/7/19
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REVISIONS

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

ROADWAY PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

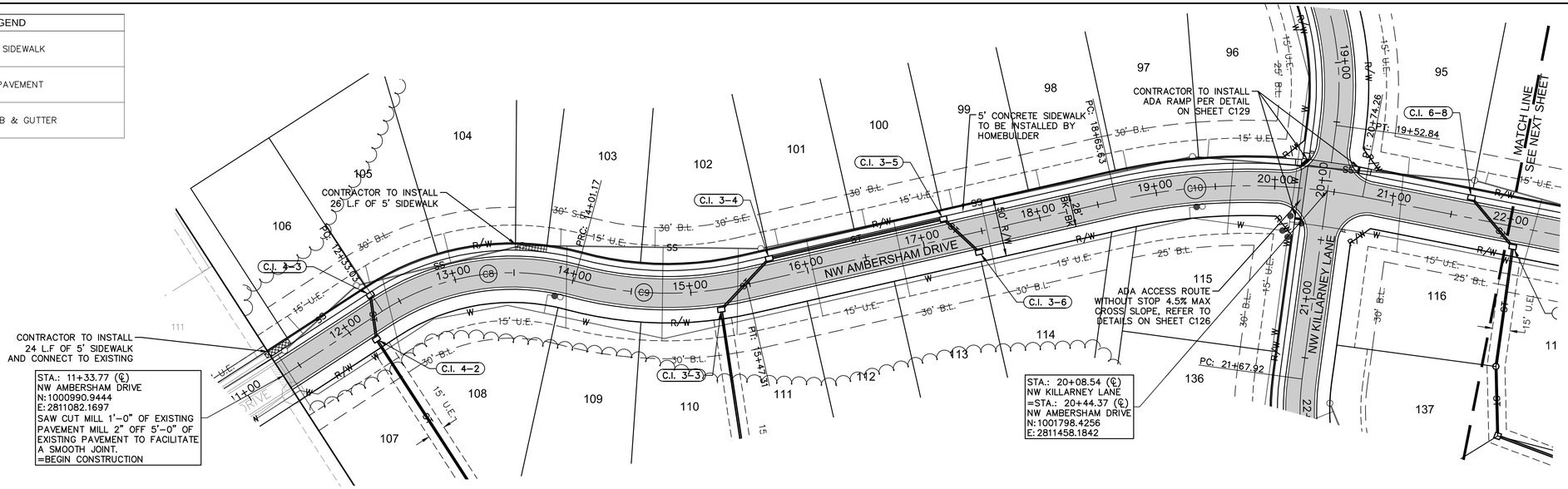
2019

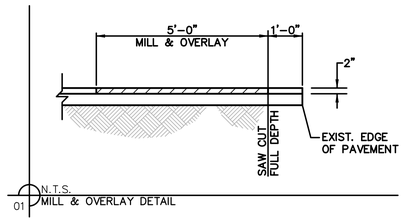
drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

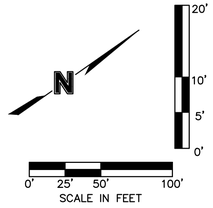
SHEET
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USER: ssoylor

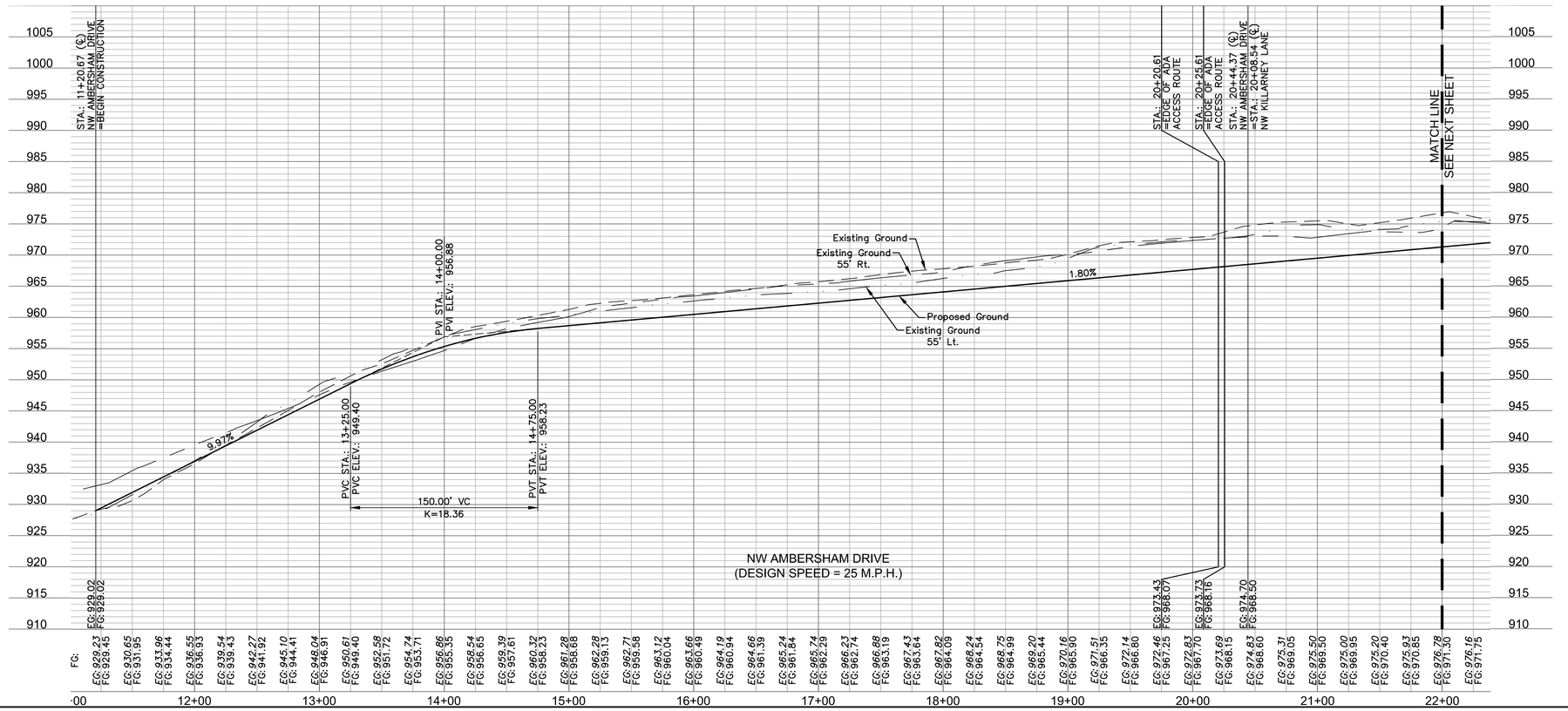
LEGEND	
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER







CURVE TABLE					
CURVE ID	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)
C8	200.00'	48°10'10"	168.14'	89.40'	13+11.77
C9	300.00'	37°54'40"	146.14'	74.55'	14+72.76
C10	500.00'	23°54'20"	208.62'	105.85'	19+68.41



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REVISIONS

ROADWAY PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

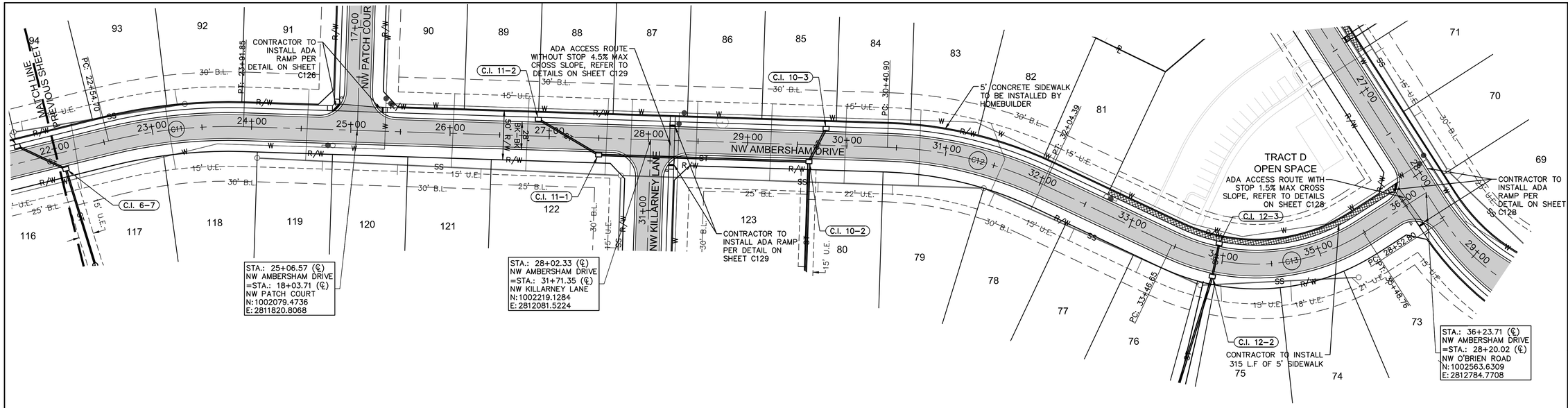
LEE'S SUMMIT, MO

2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C119

USER: ssoylor
DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_RPP05_1140A.dwg
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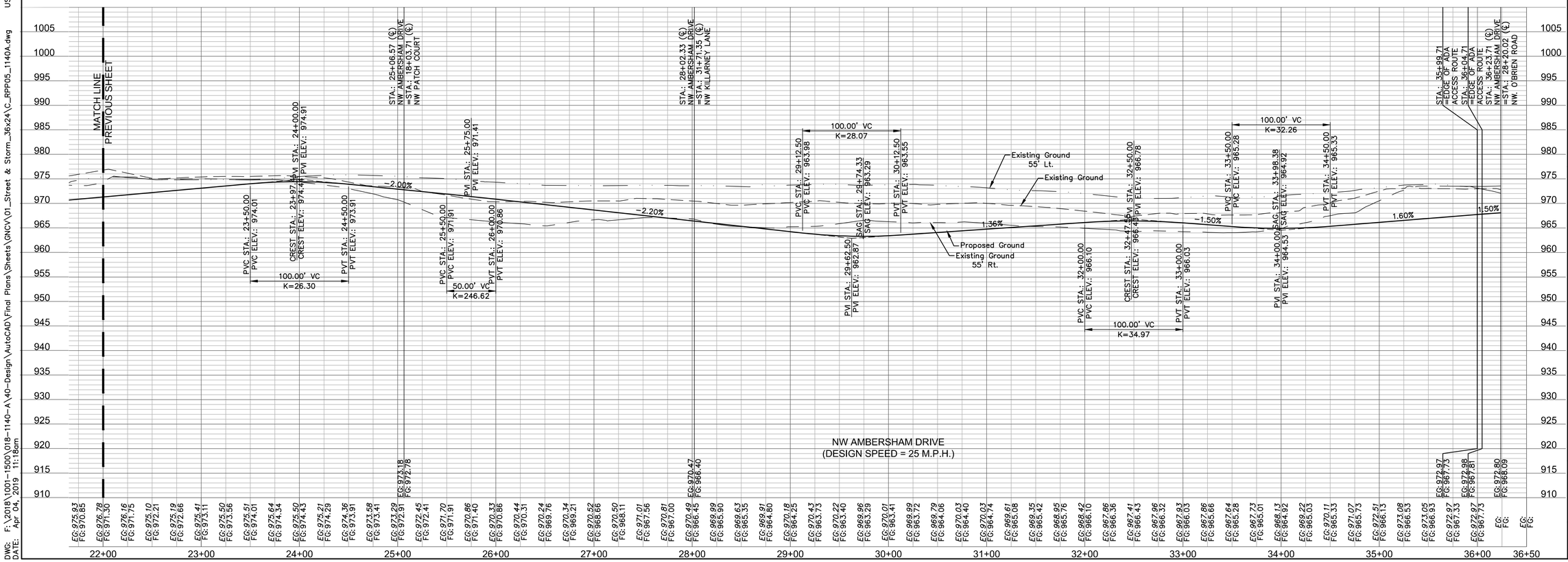
LEGEND	
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER

N

0' 25' 50' 100'
SCALE IN FEET

20' 10' 5' 0'

CURVE TABLE					
CURVE ID	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)
C11	500.00'	15°43'00"	137.15'	69.01'	23+22.84
C12	400.00'	23°25'00"	163.49'	82.90'	31+21.49
C13	200.00'	57°54'00"	202.11'	110.64'	34+38.12



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ROADWAY PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

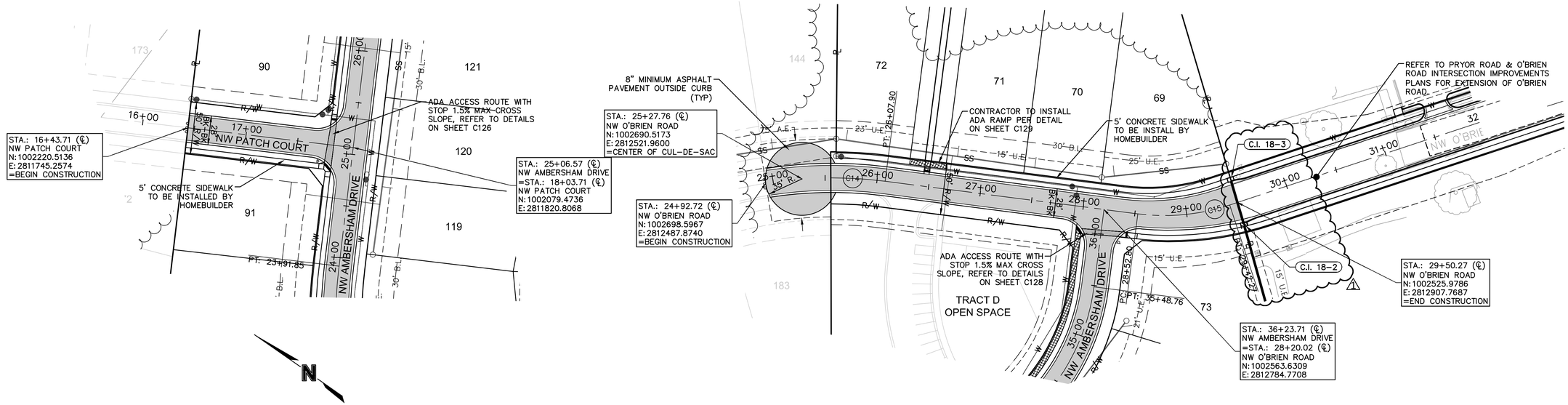
LEE'S SUMMIT, MO

2019

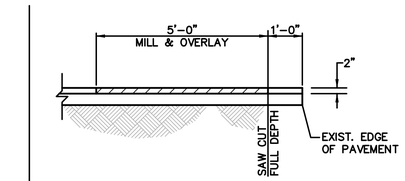
drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C120

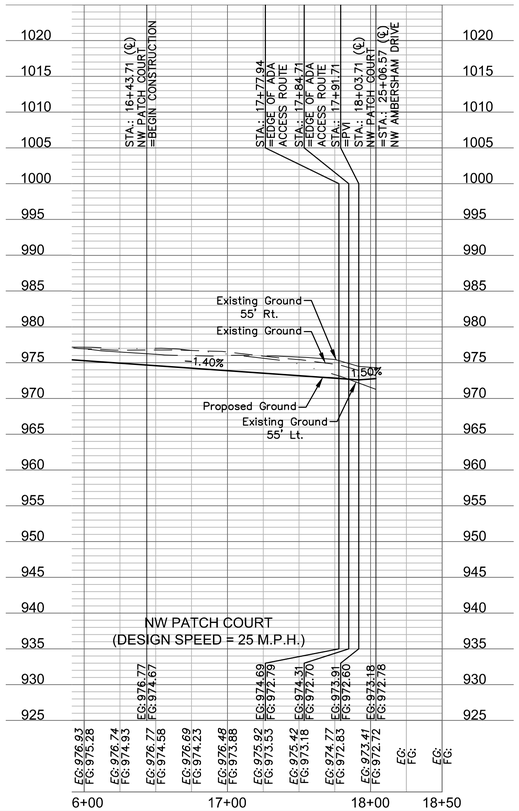
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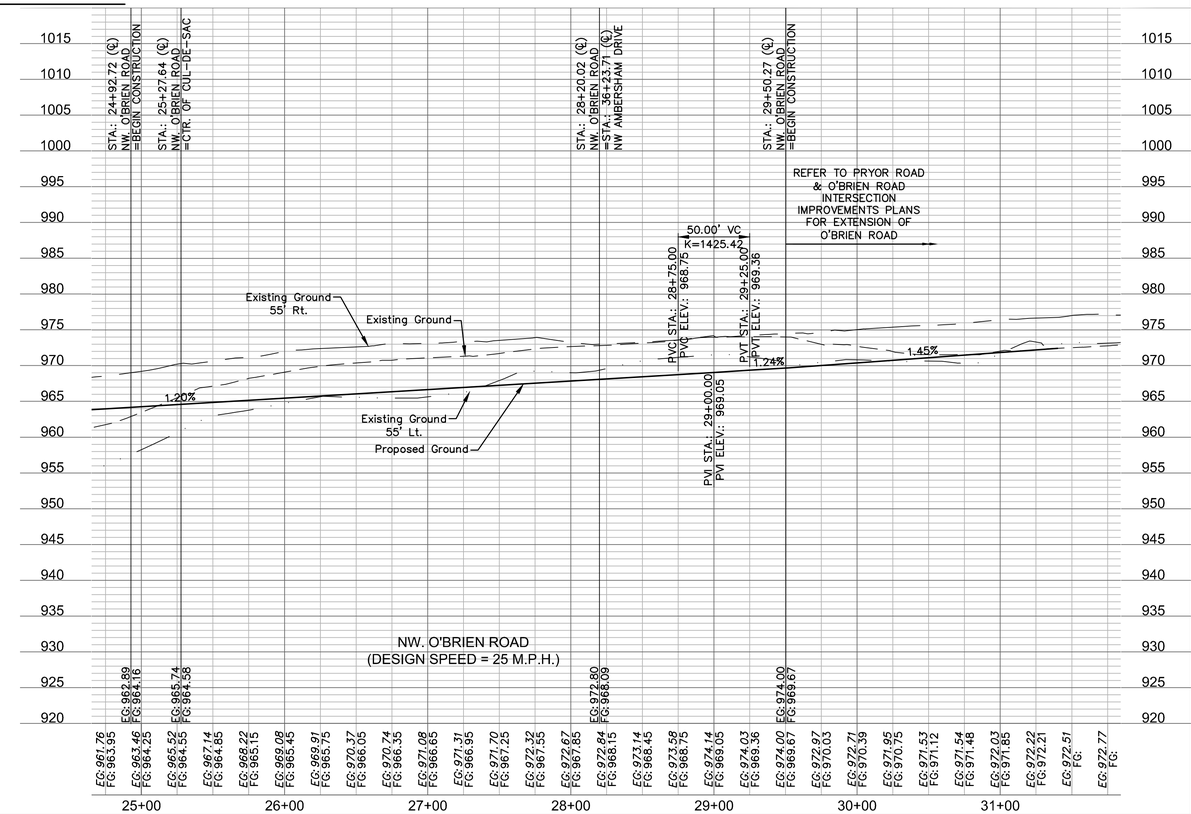


LEGEND	
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER



CURVE TABLE						
CURVE ID	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)	P.C. STA.
C14	400.00'	48°43'10"	340.13'	181.11'	24+26.79	22+20.32
C15	200.00'	24°58'10"	87.16'	44.28'	28+95.68	





20' 10' 5' 0'

0' 25' 50' 100'

SCALE IN FEET

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1	4/22/2019	REVISED PER CITY COMMENTS	

REVISIONS

ROADWAY PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

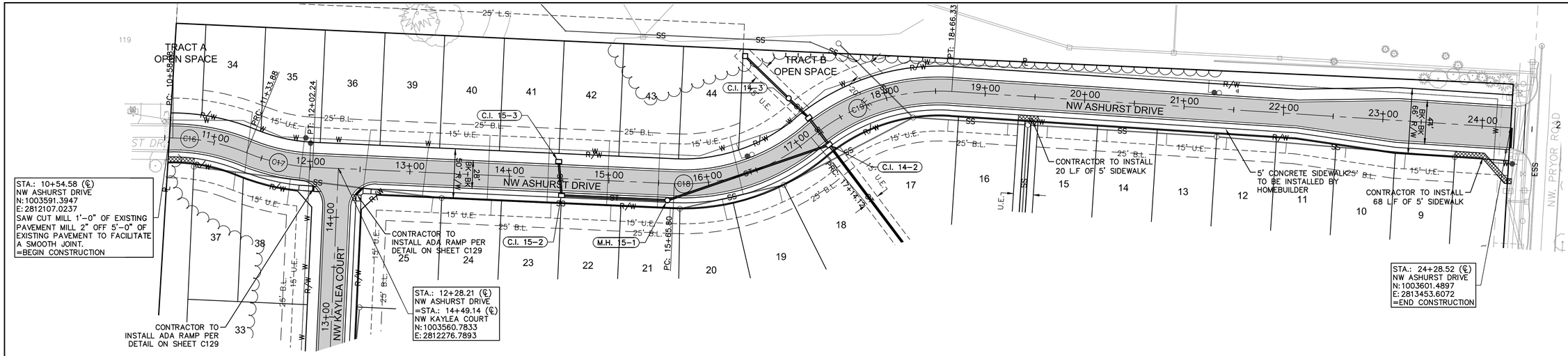
LEE'S SUMMIT, MO

2019

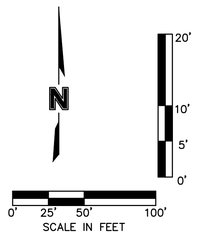
drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

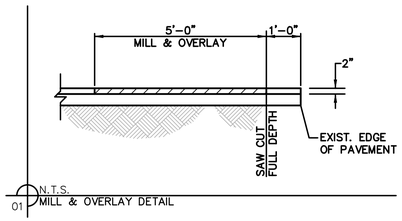
SHEET
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DATE: Apr 04, 2019 11:21am
USER: ssoylor

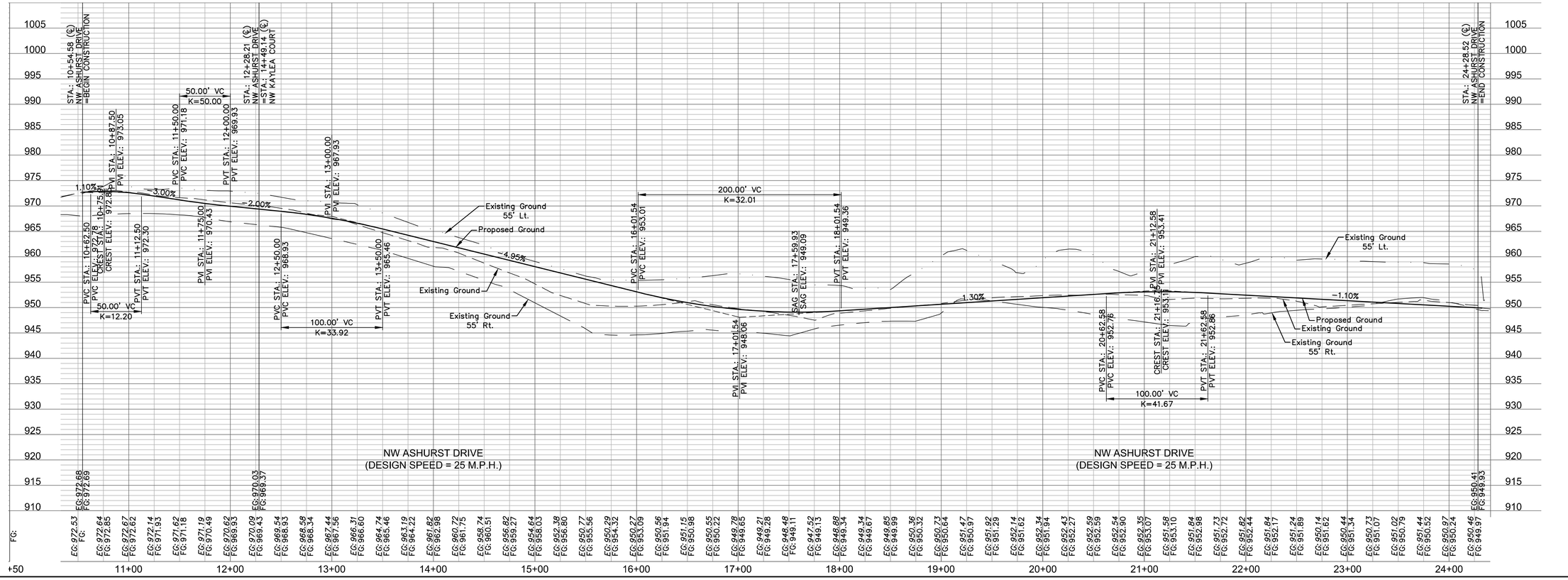


LEGEND	
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER





CURVE TABLE					
CURVE ID	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)
C16	200.00'	21°42'50"	75.80'	38.36'	10+95.52
C17	200.00'	19°35'00"	68.36'	68.36'	11+33.88
C18	200.00'	42°29'30"	148.32'	77.76'	16+36.36
C19	200.00'	43°36'10"	152.20'	80.00'	17+86.33



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REVISIONS

ROADWAY PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

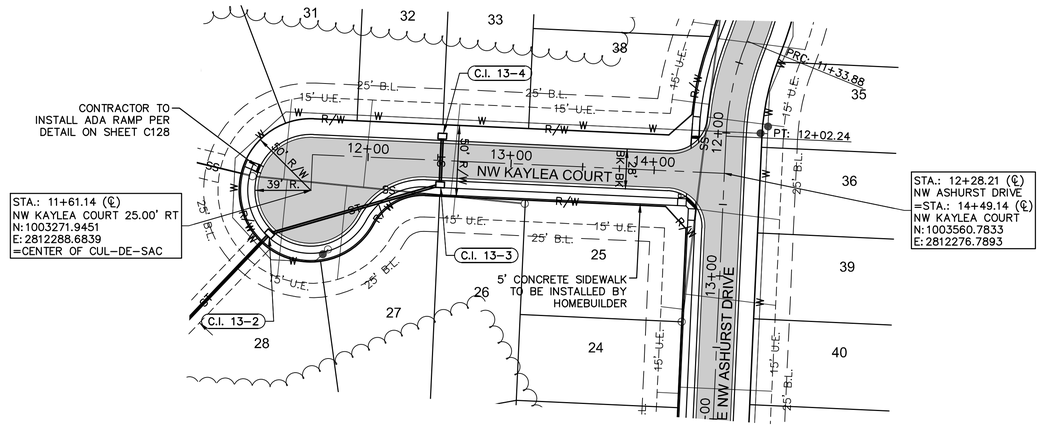
LEE'S SUMMIT, MO

2019

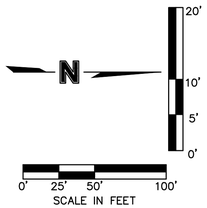
drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

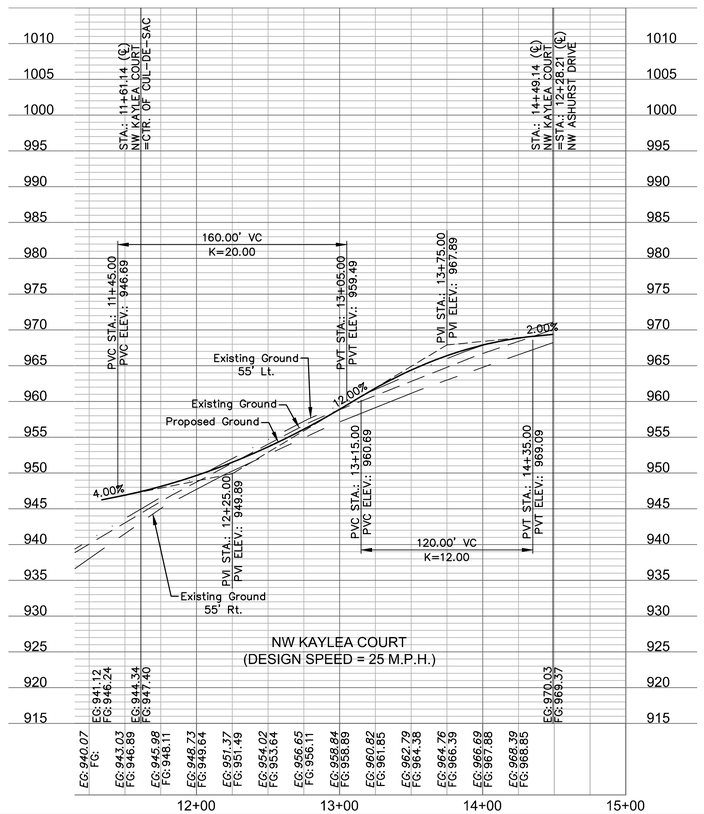
SHEET
C122

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DATE: Apr 04, 2019 11:22am



LEGEND	
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER





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ROADWAY PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C123

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DATE: Apr 04, 2019 11:23am
USER: ssoylor

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1	03/27/2019	REVISED PER CITY COMMENTS	
2	5/16/2019	REVISED PER CITY COMMENTS	

TRAFFIC CONTROL PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

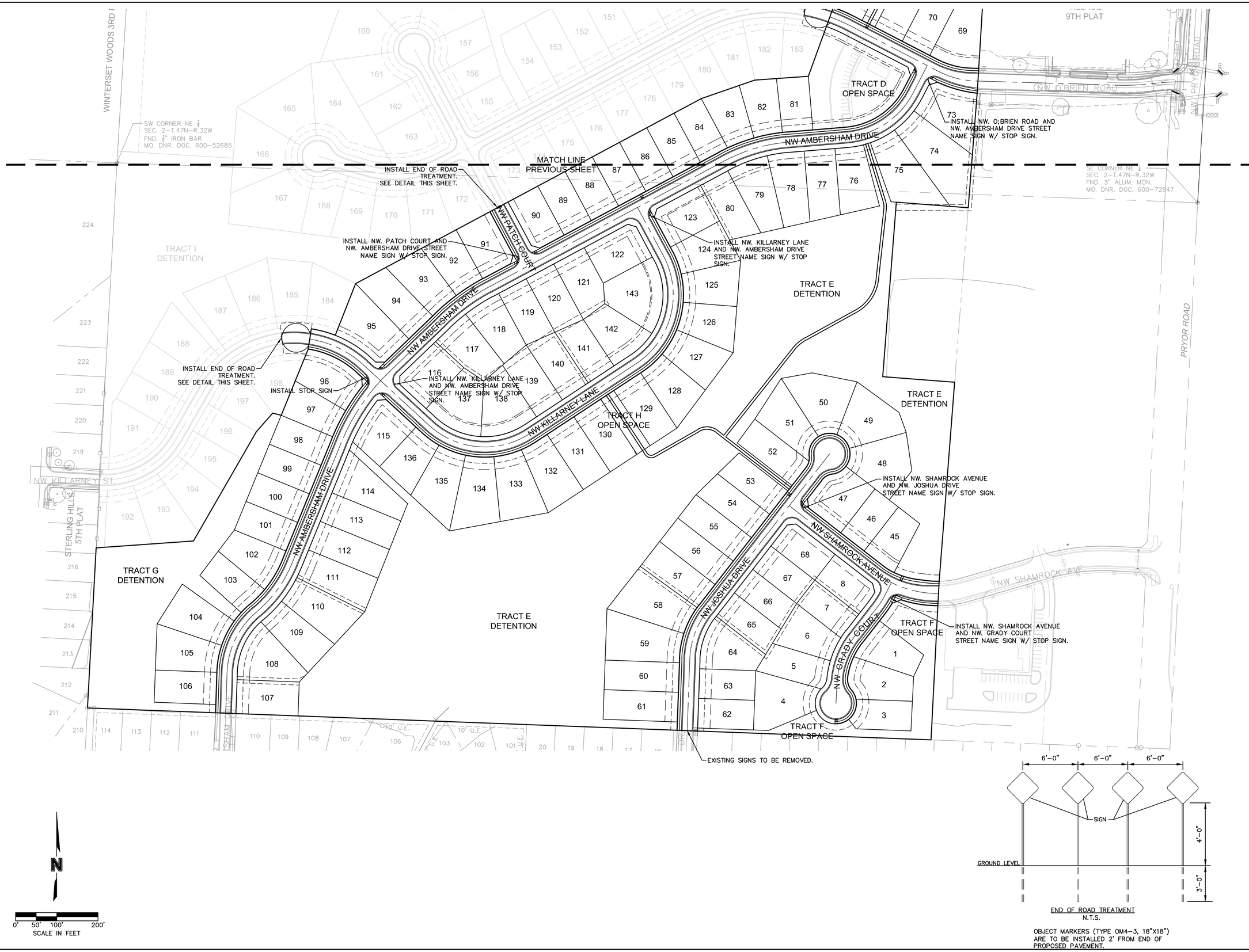
LEE'S SUMMIT, MO

2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C124

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DATE: May 16, 2019 8:24am



END OF ROAD TREATMENT
N.T.S.

OBJECT MARKERS (TYPE OM4-3, 18"X18") ARE TO BE INSTALLED 2' FROM END OF PROPOSED PAVEMENT.

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TRAFFIC CONTROL PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

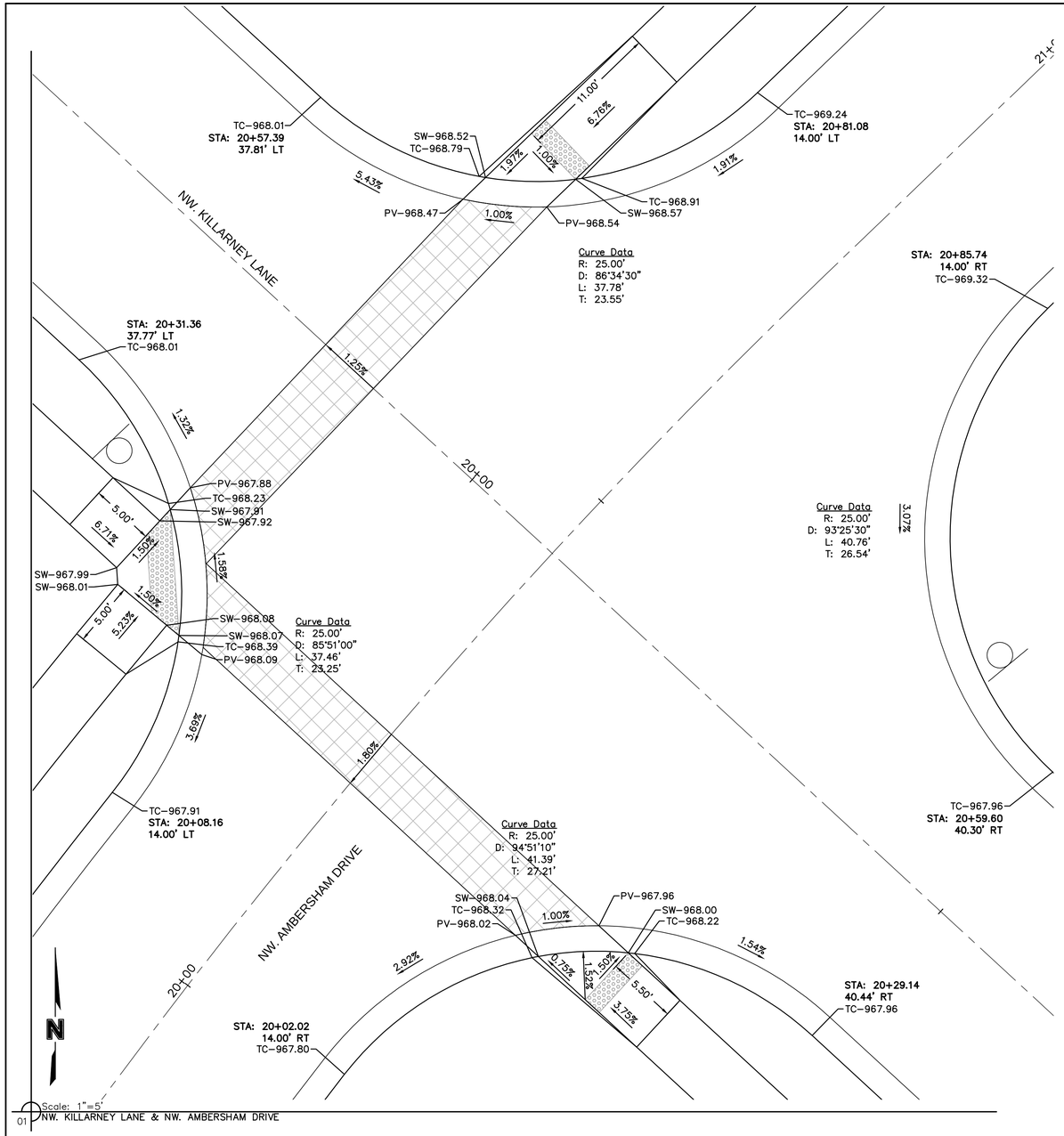
LEE'S SUMMIT, MO

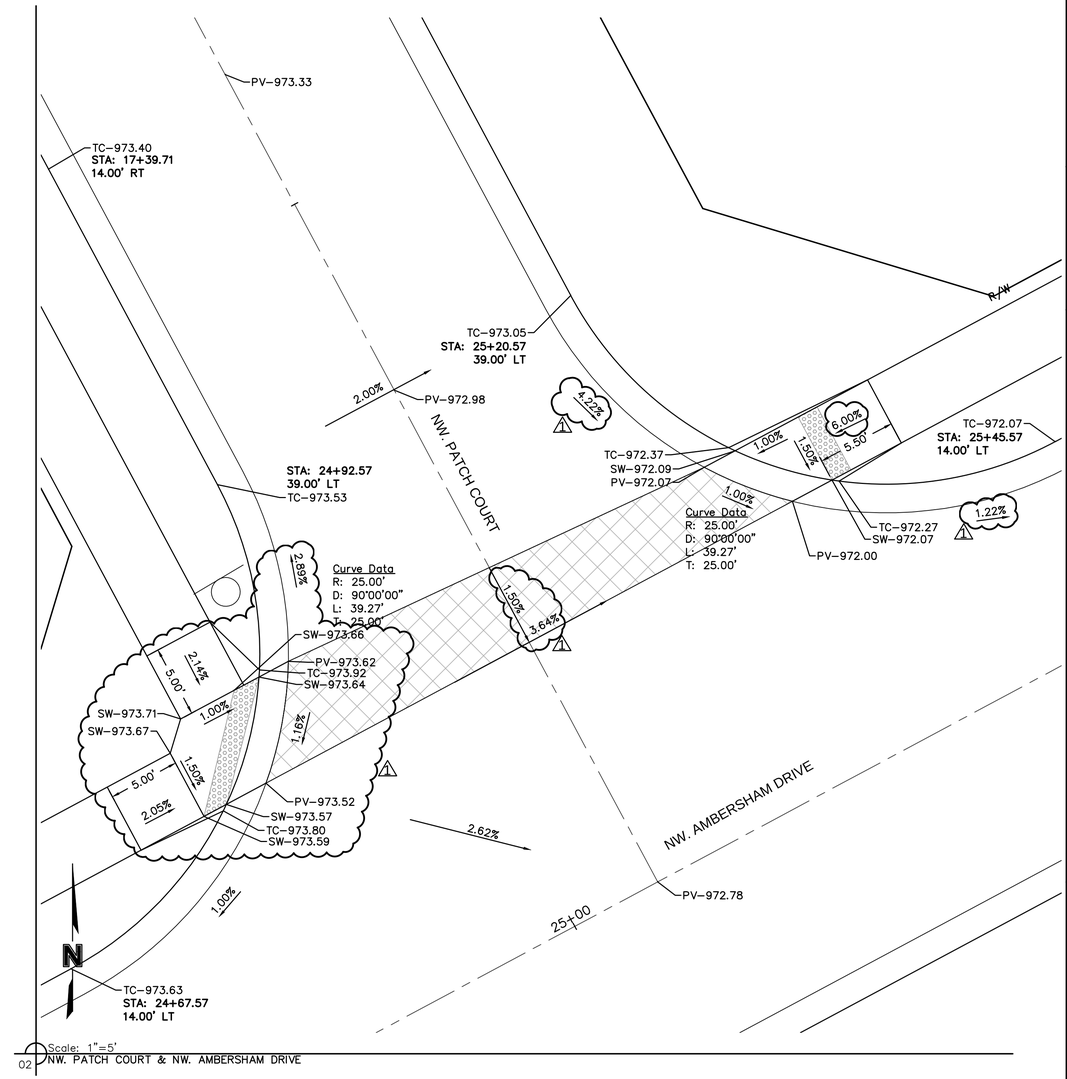
2019

drawn by: D.A.H.O
checked by: J.R.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C125

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DATE: Apr 04, 2019 1:58pm USER: ssoylor





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1	4/2/2019	REVISED PER CITY COMMENTS	

INTERSECTION DETAILS
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C126

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DATE: Apr 04, 2019 11:25am
USER: ssoylor

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1	4/2/2019	REVISED PER CITY COMMENTS	

REVISIONS

INTERSECTION DETAILS
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

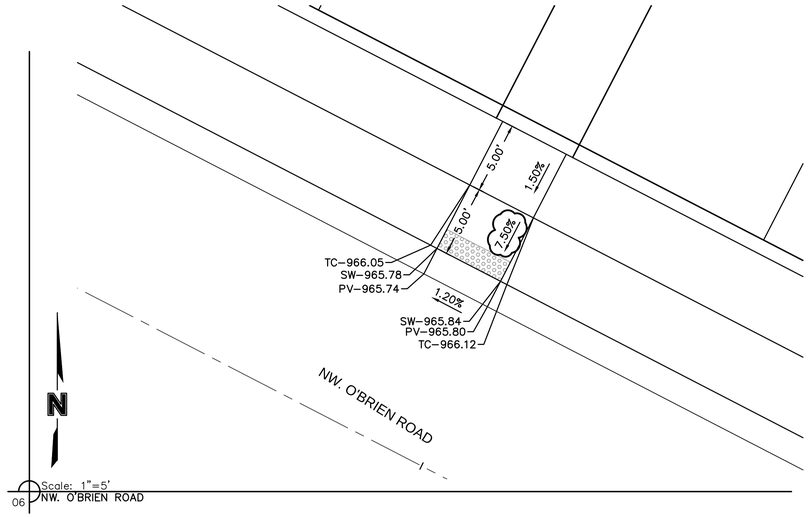
LEE'S SUMMIT, MO

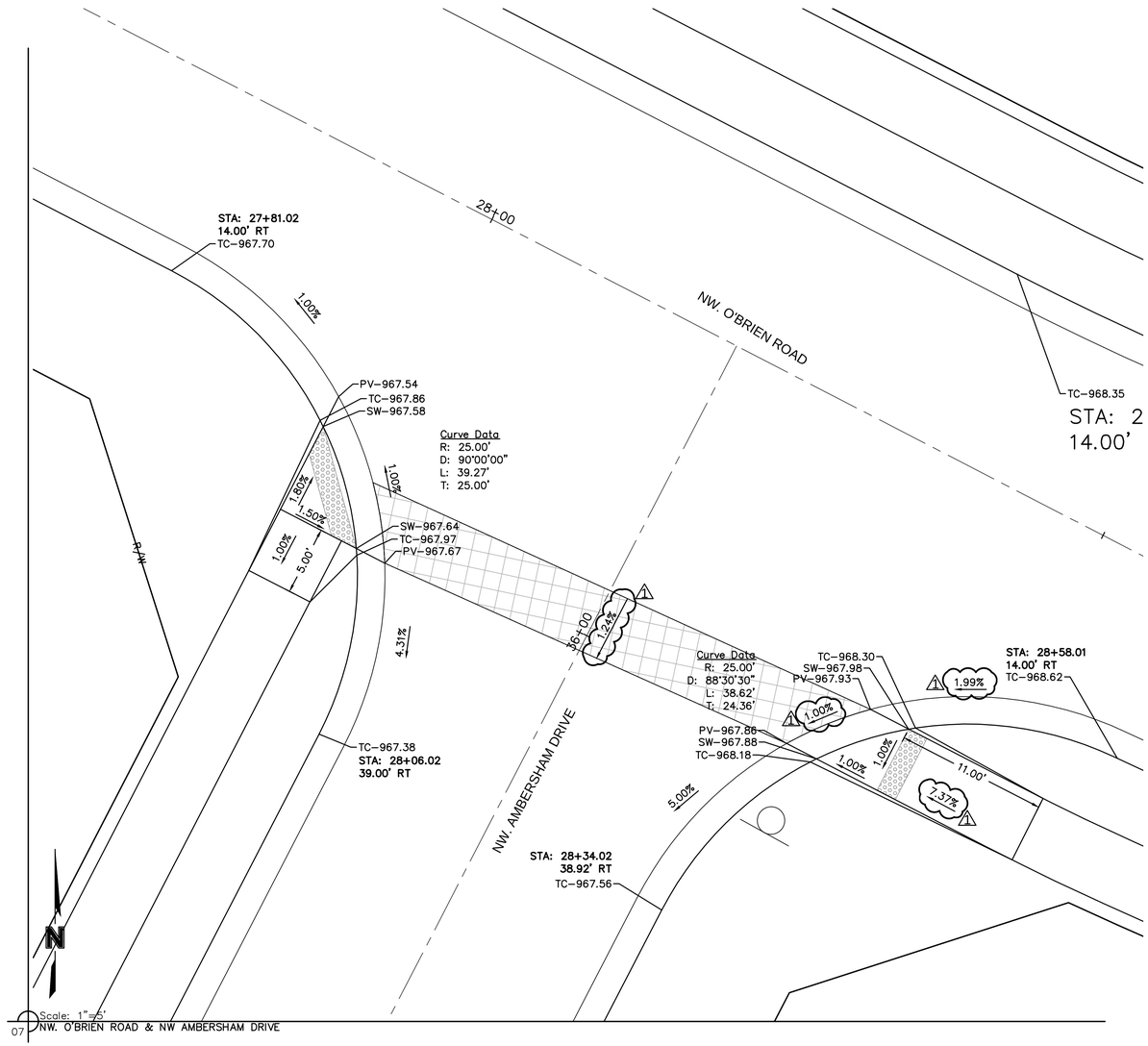
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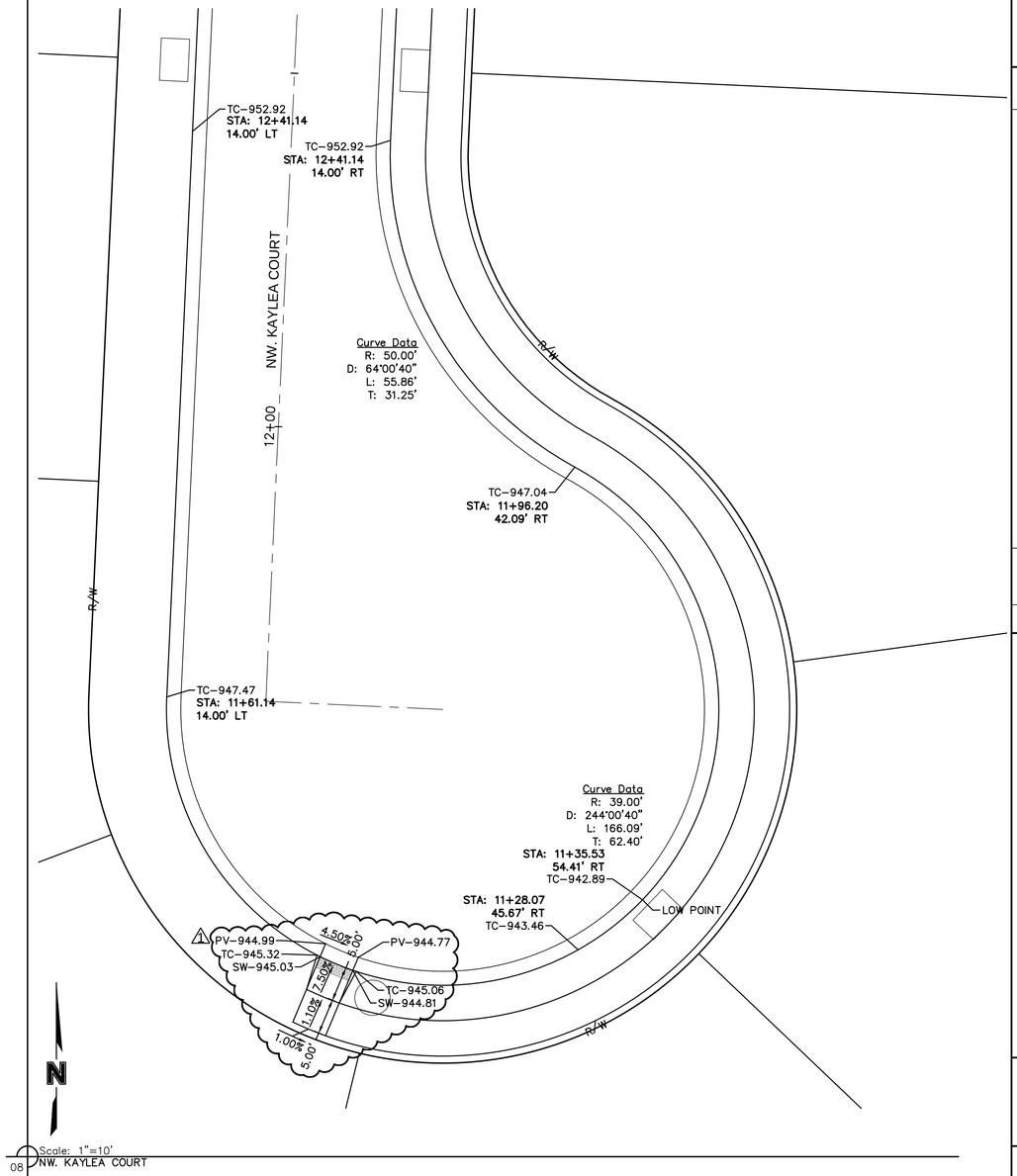
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checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C127

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DATE: Apr 04, 2019 11:25am







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NO. REV.	DATE	REVISIONS DESCRIPTION	BY
1	4/2/2019	REVISED PER CITY COMMENTS	

REVISIONS

INTERSECTION DETAILS
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

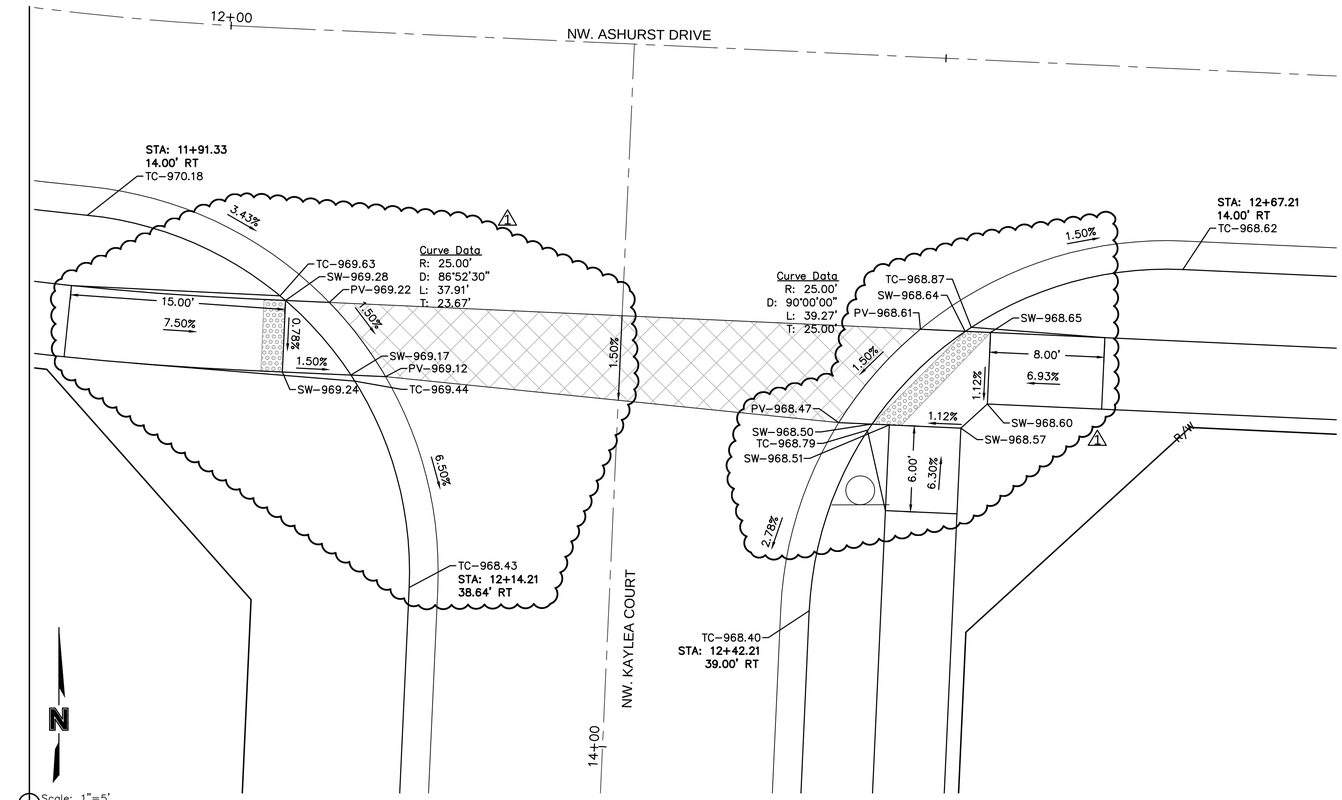
LEE'S SUMMIT, MO

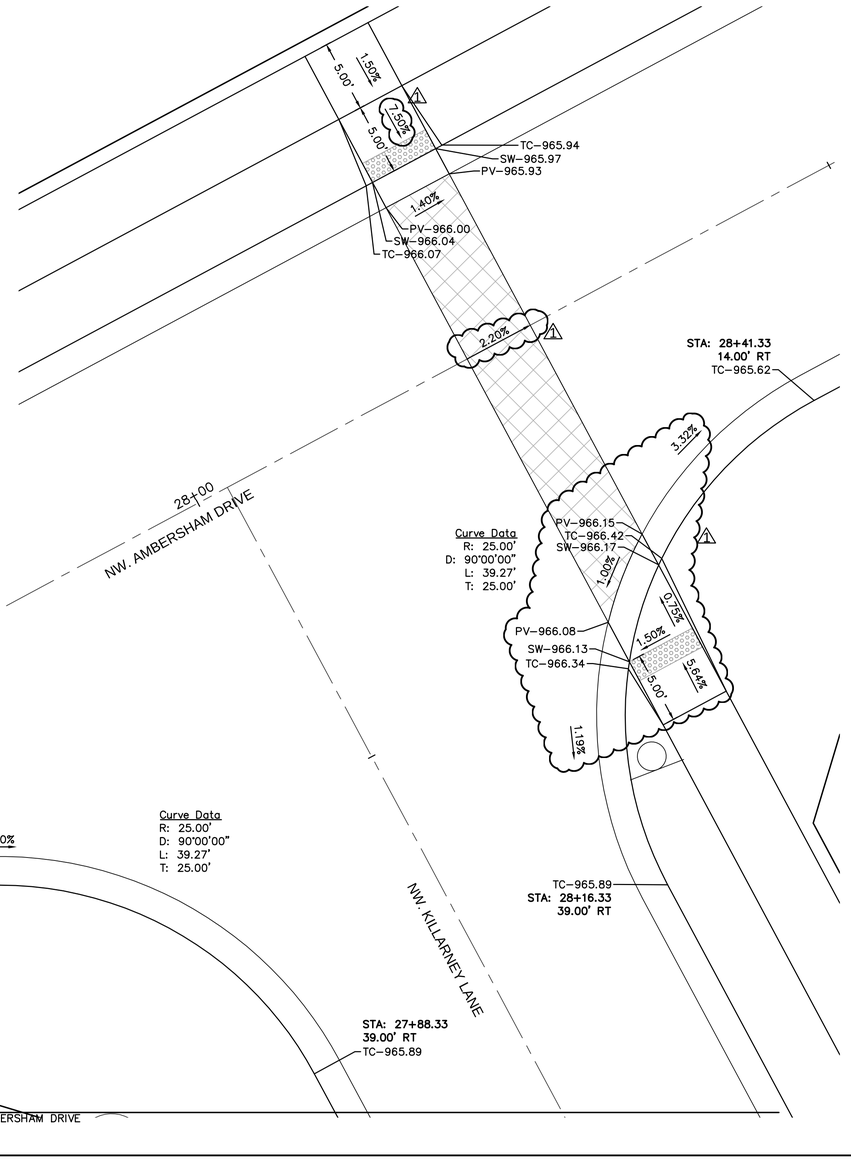
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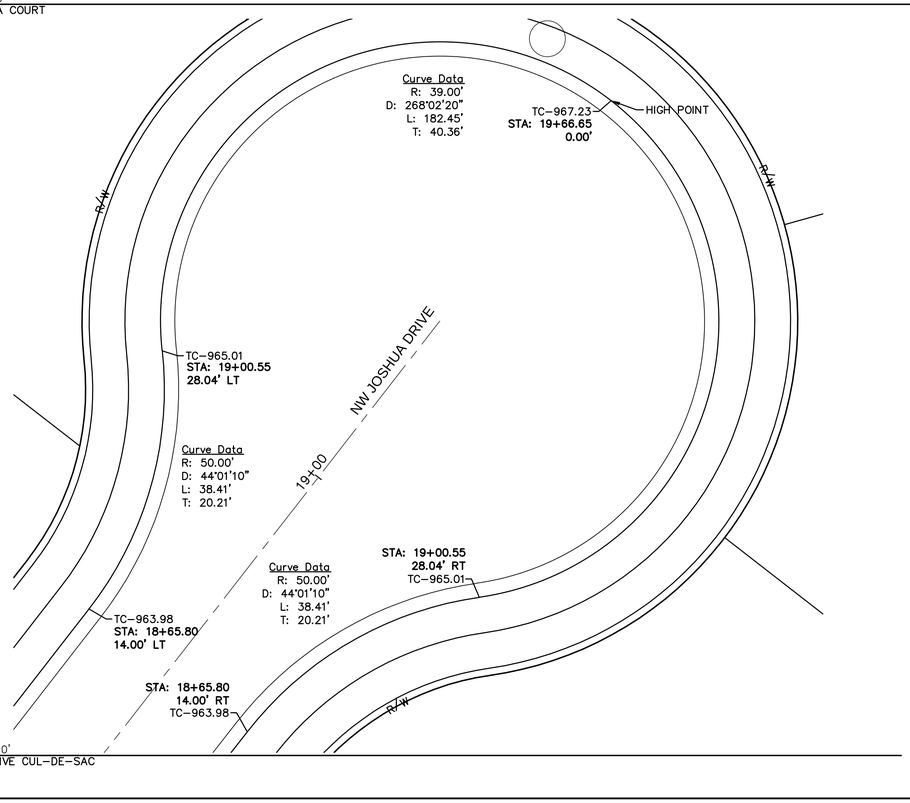
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checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C128

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DATE: Apr 04, 2019 11:26am
USER: ssoylor







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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
6/7/19
PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS DESCRIPTION	BY
1	4/2/2019	REVISED PER CITY COMMENTS	

REVISIONS

INTERSECTION DETAILS
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

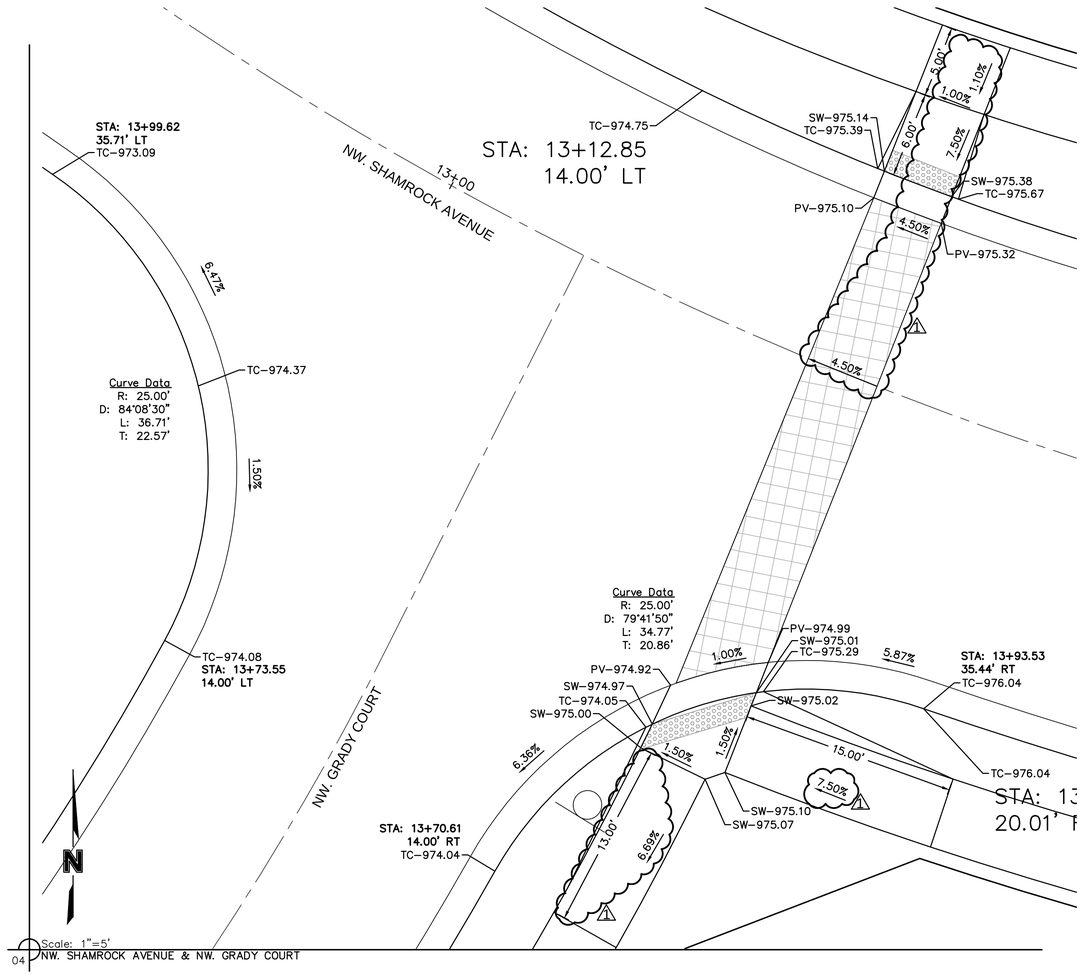
LEE'S SUMMIT, MO

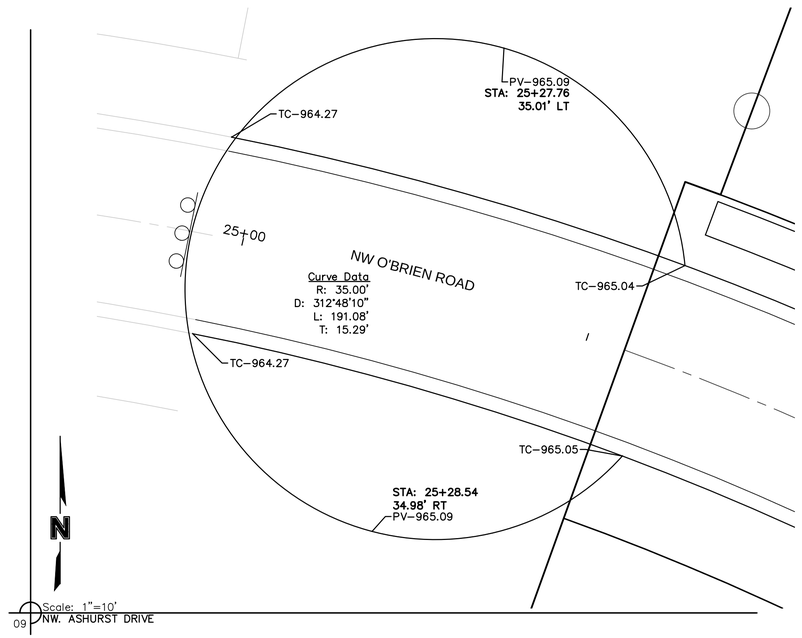
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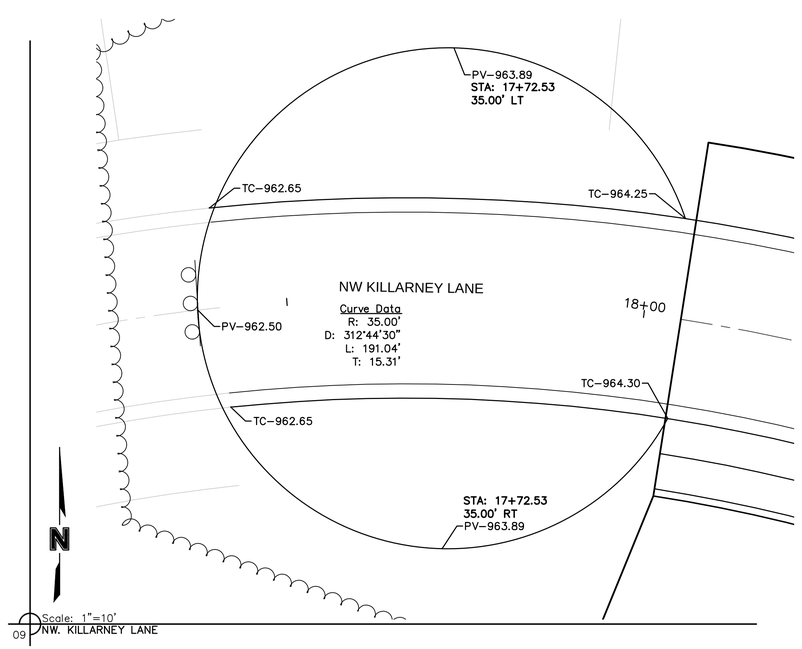
drawn by: D.A.H.Q
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C129

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_SPT01_1140A.dwg
DATE: Apr 04, 2019 11:26am
USER: ssoylor







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NORTH KANSAS CITY, MO 64116
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WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C130

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DATE: Apr 04, 2019 11:27am

TC–952.36
STA: 22+14.23
14.00' LT

TC–951.10
STA: 23+14.23
22.00' LT

MATCH EXISTING
TC–949.84

22+00

23+00

NW ASHURST DRIVE

24+00

STA: 22+14.23
14.00' RT
TC–952.36

STA: 23+14.23
22.00' RT
TC–951.10

R/W

TC–949.74
MATCH EXISTING

PRYOR ROAD

SW–950.22

SW–950.34

29.01'

SW–949.35

SW–950.44
SW–949.46
SW–950.56
SW–950.54
SW–949.40

SW–949.32

N

Scale: 1"=10'
09 NW. ASHURST DRIVE

TC–968.35
STA: 28+35.75
14.00' LT

Curve Data
R: 200.00'
D: 25°37'50"
L: 89.47'
T: 45.50'

CG–2
CURB & GUTTER

CG–1
CURB & GUTTER

TC–969.40
STA: 29+31.93
19.76' LT

TC–969.47
STA: 29+37.40
19.95' LT

TC–968.62
STA: 28+58.01
14.00' RT

29+00

NW O'BRIEN ROAD

Curve Data
R: 300.00'
D: 18°49'40"
L: 98.58'
T: 49.74'

STA: 29+37.28
17.76' RT
TC–969.51

CG–2
CURB & GUTTER

CG–1
CURB & GUTTER

N

Scale: 1"=10'
10 NW. O'BRIEN ROAD

TC–975.67

PV–975.34

R/W

REFER TO SHEET
C130, DETAIL 4 FOR
ADA RAMP DETAILS

Curve Data
R: 180.00'
D: 26°46'00"
L: 84.09'
T: 42.82'

TC–978.68
STA: 14+02.33
18.62' LT

TC–980.05
STA: 14+30.20
18.00' LT

NW SHAMROCK AVENUE

14+00

TC–976.04
STA: 13+93.53
35.44' RT

TC–976.04
STA: 13+43.37
20.01' RT

Curve Data
R: 270.06'
D: 19°22'30"
L: 91.33'
T: 46.10'

TC–979.85
STA: 14+28.03
18.00' RT

R/W

N

Scale: 1"=10'
11 NW. SHAMROCK AVENUE

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_SPT01_1140A.dwg
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WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

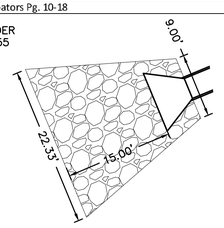
2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

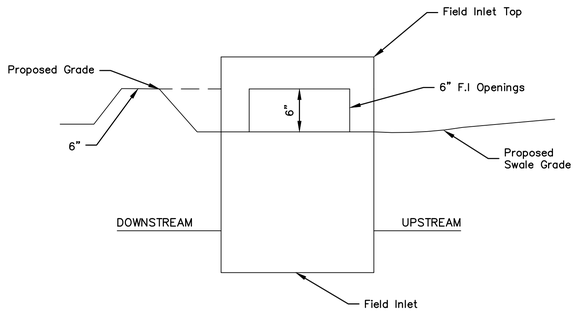
SHEET
C131

Riprap Calculations							
End Section	Q_{100} (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. 1-0	44.33	3	3	10	15	2.00	31.5
*Per Table 10.1 HEC 14-FHWA-Energy Dissipators Pg. 10-18							

NOTE: GEOFABRIC IS REQUIRED UNDER RIP RAP PER DETAIL ON SHEET C155

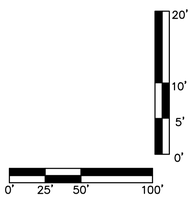


E.S. 1–0
SCALE 1–10'



F.I. SUMP DETAIL
NOT TO SCALE

NOTE: INCLUDE SUMP PER DETAIL WHERE FIELD INLETS ARE LOCATED WITHIN SWALES.



SCALE IN FEET

M.H. 1–1, CONST. STD.
STD. STORM MANHOLE (5' DIA. INSIDE)
STA.: 10+94.45 (STORM LINE 1)
N: 1,001,347.3403
E: 2,812,088.1575

E.S. 1–0, CONSTRUCT
END SECTION (36" CMP)
W/ CONCRETE TOE WALL
INSTALL RIPRAP PER
DETAILS ON THIS SHEET.
STA.: 10+00.00 (STORM LINE 1)
N: 1,001,334.9690
E: 2,811,994.5222

F.I. 1–5, CONST. STD.
FIELD INLET (4'X4' INSIDE)
OPEN ON 4 SIDES (N,E,S,W)
STA.: 16+12.90 (STORM LINE 1)
N: 1,001,257.2206
E: 2,812,467.7605

M.H. 1–6, CONST. STD.
STORM MANHOLE (4' DIA. INSIDE)
STA.: 16+84.90 (STORM LINE 1)
N: 1,001,314.0626
E: 2,812,511.9532

INSTALL UNDER DRAIN AT ROADWAY SAG PER DETAIL ON SHEET C155.

INSTALL UNDER DRAIN AT ROADWAY SAG PER DETAIL ON SHEET C155.

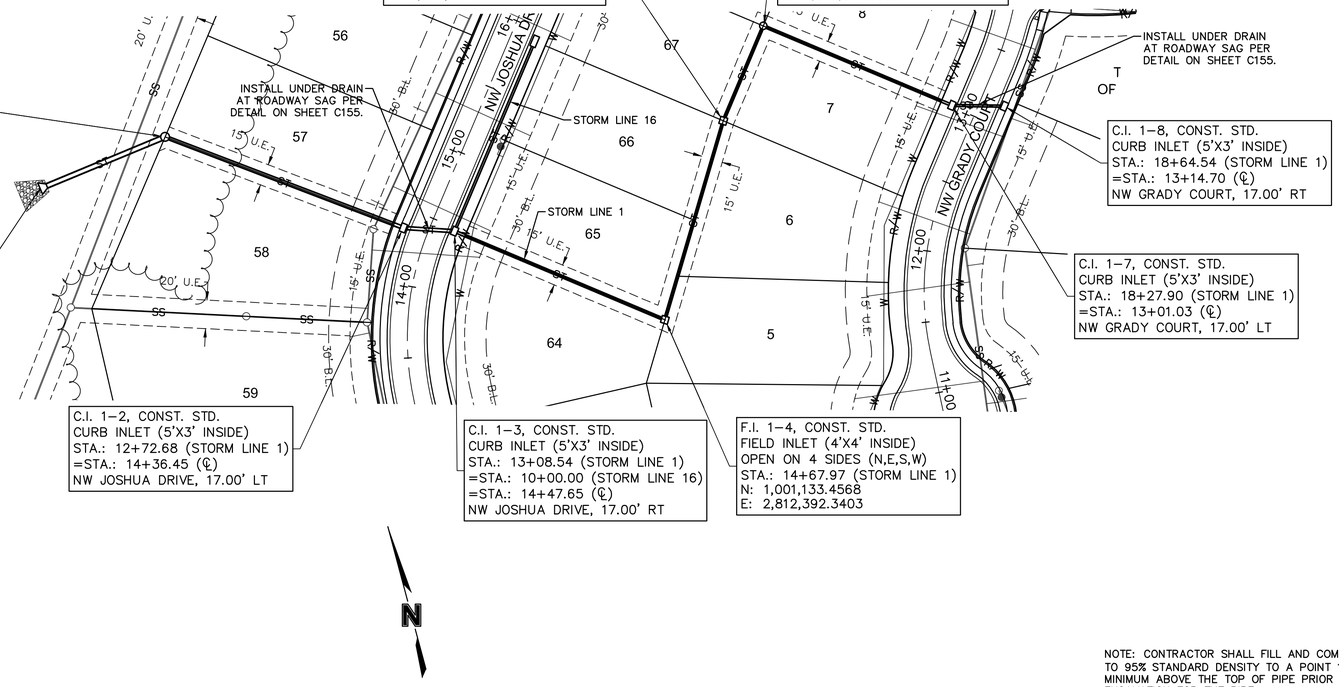
C.I. 1–8, CONST. STD.
CURB INLET (5'X3' INSIDE)
STA.: 18+64.54 (STORM LINE 1)
=STA.: 13+14.70 (℄)
NW GRADY COURT, 17.00' RT

C.I. 1–7, CONST. STD.
CURB INLET (5'X3' INSIDE)
STA.: 18+27.90 (STORM LINE 1)
=STA.: 13+01.03 (℄)
NW GRADY COURT, 17.00' LT

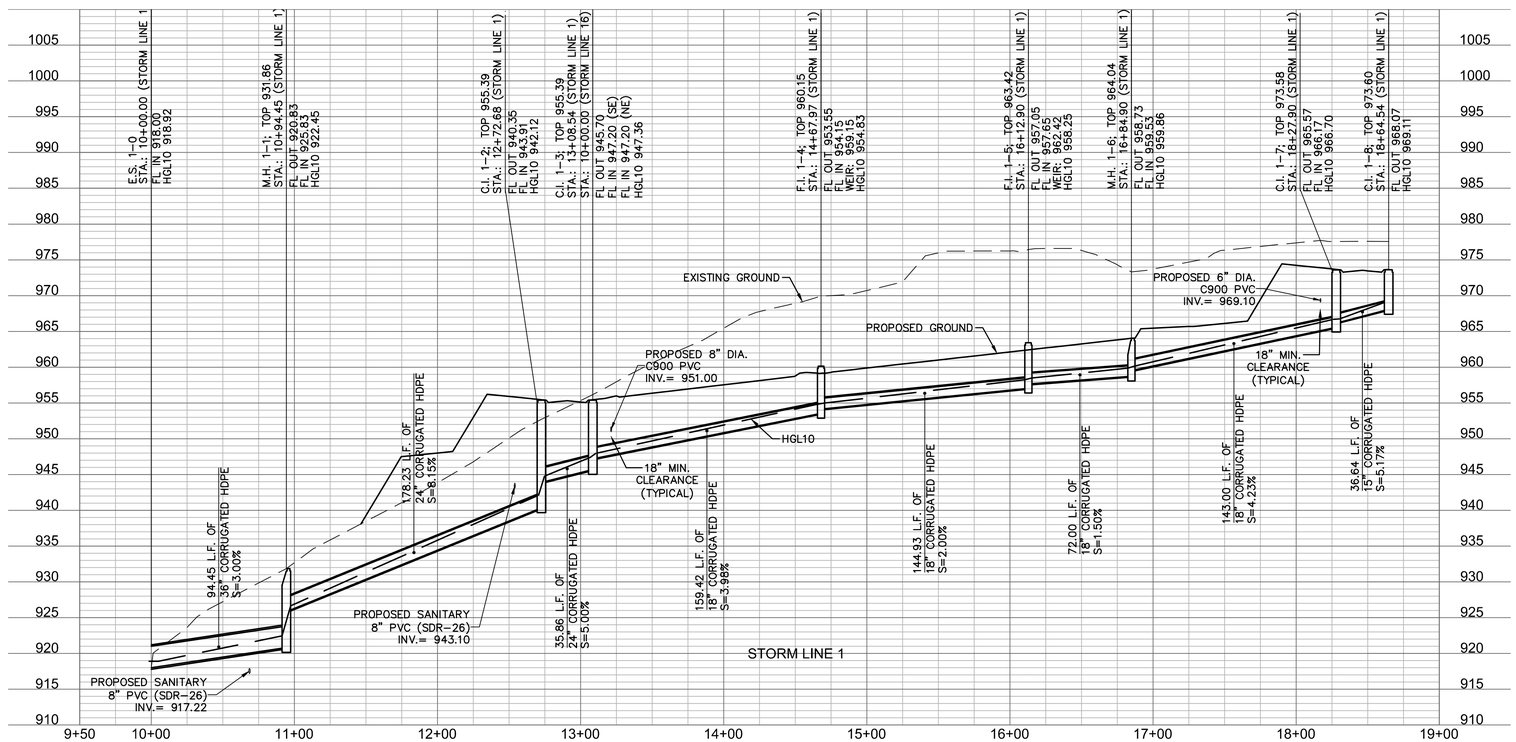
C.I. 1–2, CONST. STD.
CURB INLET (5'X3' INSIDE)
STA.: 12+72.68 (STORM LINE 1)
=STA.: 14+36.45 (℄)
NW JOSHUA DRIVE, 17.00' LT

C.I. 1–3, CONST. STD.
CURB INLET (5'X3' INSIDE)
STA.: 13+08.54 (STORM LINE 1)
=STA.: 10+00.00 (STORM LINE 16)
=STA.: 14+47.65 (℄)
NW JOSHUA DRIVE, 17.00' RT

F.I. 1–4, CONST. STD.
FIELD INLET (4'X4' INSIDE)
OPEN ON 4 SIDES (N,E,S,W)
STA.: 14+67.97 (STORM LINE 1)
N: 1,001,133.4568
E: 2,812,392.3403



NOTE: CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 18" MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.



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NUMBER PE-2017000367
6/7/19
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

STORM SEWER PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18:1140
date: 2019.03.12

SHEET
C132

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_STM01_1140A.dwg
DATE: Apr 04, 2019 11:29am
USER: ssoylor

M.H. 2–2, CONST. STD.
STORM MANHOLE (4' DIA. INSIDE)
STA.: 11+37.02 (STORM LINE 2)
N: 1,001,595.0344
E: 2,812,378.2752

M.H. 2–1, CONST. STD.
STORM MANHOLE (4' DIA. INSIDE)
STA.: 10+60.97 (STORM LINE 2)
N: 1,001,640.4046
E: 2,812,317.2313

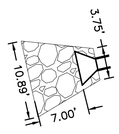
E.S. 2–0, CONSTRUCT
END SECTION (18" CMP)
W/ CONCRETE TOE WALL
INSTALL RIPRAP PER
DETAILS THIS SHEET.
STA.: 10+00.00 (STORM LINE 2)
N: 1,001,658.8169
E: 2,812,259.1122

C.I. 2–3, CONST. STD.
CURB INLET (5'X3' INSIDE)
STA.: 12+38.02 (STORM LINE 2)
=STA.: 18+02.97 (℄)
NW JOSHUA DRIVE, 17.00' LT

C.I. 2–4, CONST. STD.
CURB INLET (5'X3' INSIDE)
STA.: 12+76.13 (STORM LINE 2)
=STA.: 18+20.19 (℄)
NW JOSHUA DRIVE, 17.00' RT

C.I. 2–5, CONST. STD.
CURB INLET (7'X3' INSIDE)
STA.: 13+25.63 (STORM LINE 2)
=STA.: 10+00.00 (STORM LINE 17)
=STA.: 10+52.00 (℄)
NW SHAMROCK AVENUE, 17.00' LT

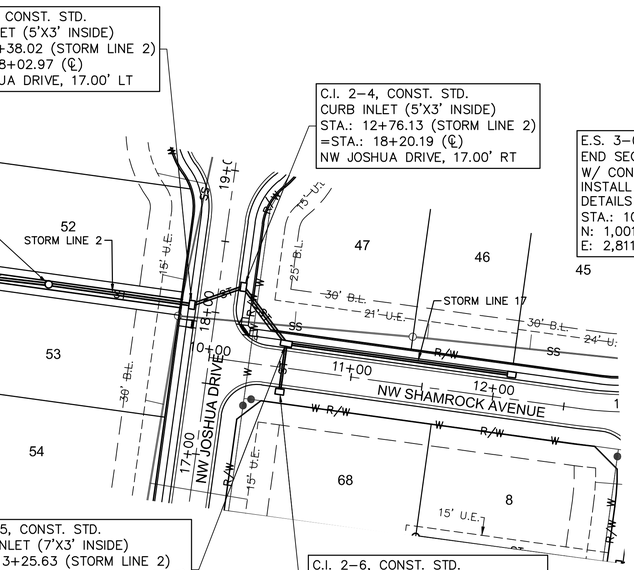
C.I. 2–6, CONST. STD.
CURB INLET (5'X3' INSIDE)
STA.: 13+59.63 (STORM LINE 2)
=STA.: 10+52.00 (℄)
NW SHAMROCK AVENUE, 17.00' RT

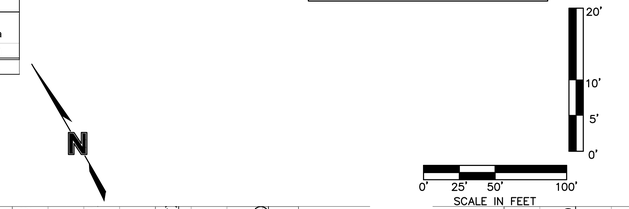


E.S. 2–0
SCALE 1–10'

Riprap Calculations							
End Section	Q_{100} (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. 2-0	16.16	1.5	3	10	7.5	2.00	7.3

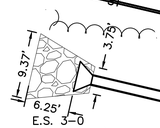
NOTE: GEOFABRIC IS REQUIRED UNDER
RIP RAP PER DETAIL ON SHEET C155





DETENTION BASIN A
SEE SHEET C143 FOR DETAILS

E.S. 3–0, CONSTRUCT
END SECTION (15" CMP)
W/ CONCRETE TOE WALL
INSTALL RIPRAP PER
DETAILS THIS SHEET
STA.: 10+00.00 (STORM LINE 3)
N: 1,001,131.3623
E: 2,811,744.8309



E.S. 3–0
SCALE 1–10'

Riprap Calculations							
End Section	Q_{100} (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. 3-0	12.1	1.25	3	10	6.25	2.00	5.5

*Per Table 10.1 HEC 14-FHWA-Energy Dissipators Pg. 10-18

NOTE: GEOFABRIC IS REQUIRED UNDER
RIP RAP PER DETAIL ON SHEET C155

NOTE: CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 18" MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.

M.H. 3–1, CONST. STD.
STD. STORM MANHOLE (4' DIA. INSIDE)
STA.: 10+77.77 (STORM LINE 3)
N: 1,001,173.8987
E: 2,811,679.7201

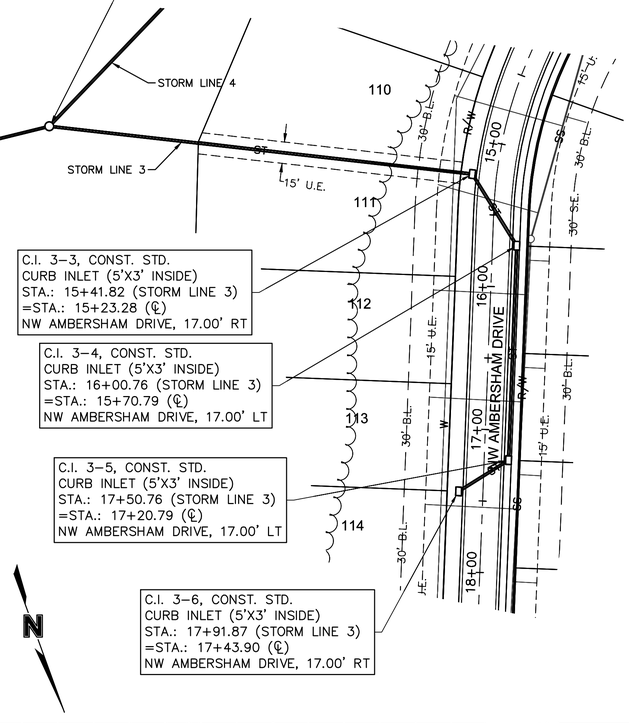
M.H. 3–2, CONST. STD.
STD. STORM MANHOLE (5' DIA. INSIDE)
STA.: 12+44.48 (STORM LINE 3)
=STA.: 10+00.00 (STORM LINE 4)
N: 1,001,191.7222
E: 2,811,513.9646

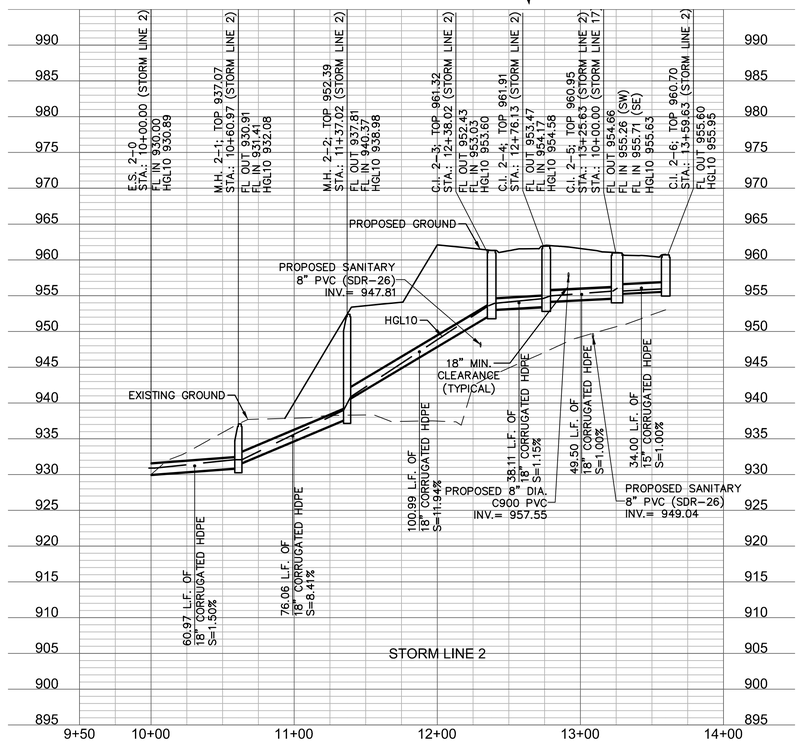
C.I. 3–3, CONST. STD.
CURB INLET (5'X3' INSIDE)
STA.: 15+41.82 (STORM LINE 3)
=STA.: 15+23.28 (℄)
NW AMBERSHAM DRIVE, 17.00' RT

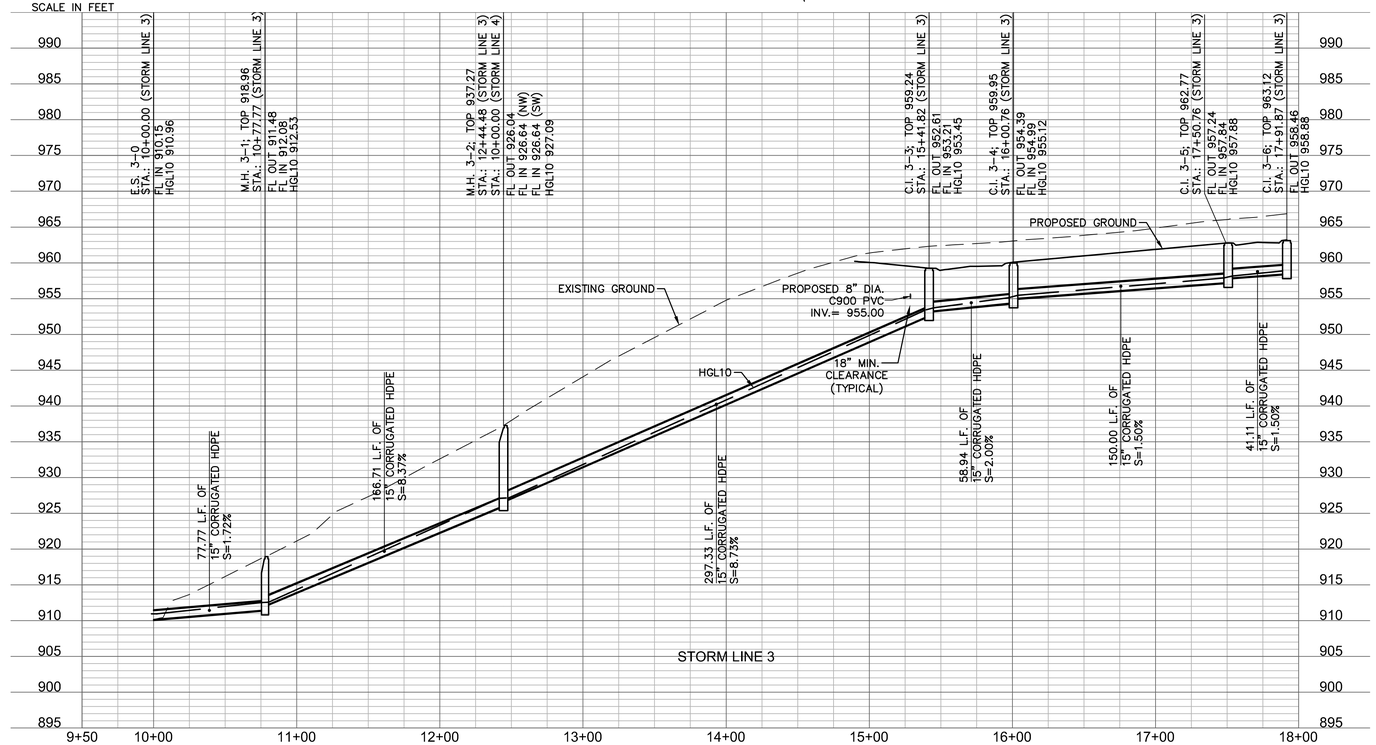
C.I. 3–4, CONST. STD.
CURB INLET (5'X3' INSIDE)
STA.: 16+00.76 (STORM LINE 3)
=STA.: 15+70.79 (℄)
NW AMBERSHAM DRIVE, 17.00' LT

C.I. 3–5, CONST. STD.
CURB INLET (5'X3' INSIDE)
STA.: 17+50.76 (STORM LINE 3)
=STA.: 17+20.79 (℄)
NW AMBERSHAM DRIVE, 17.00' LT

C.I. 3–6, CONST. STD.
CURB INLET (5'X3' INSIDE)
STA.: 17+91.87 (STORM LINE 3)
=STA.: 17+43.90 (℄)
NW AMBERSHAM DRIVE, 17.00' RT







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101 SW MAIN STREET, SUITE 1300
NORTH KANSAS CITY, MO 64116
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STORM SEWER PLAN & PROFILE
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WOODSIDE RIDGE
FIRST PLAT

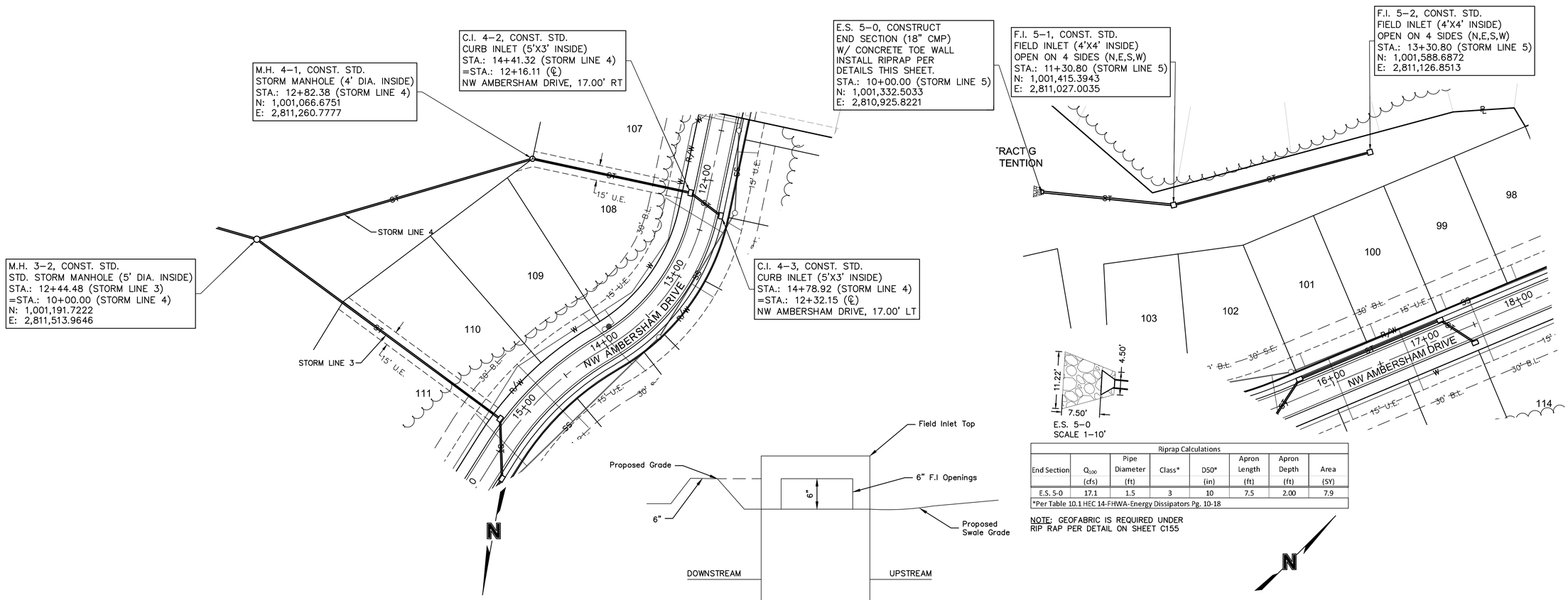
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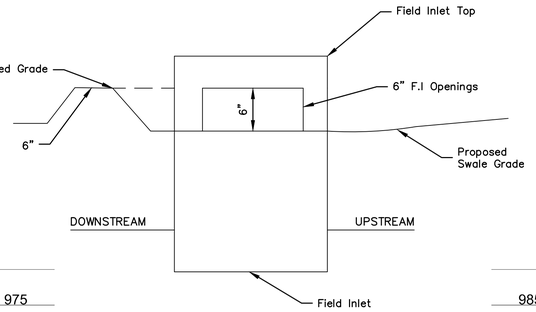
2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C133

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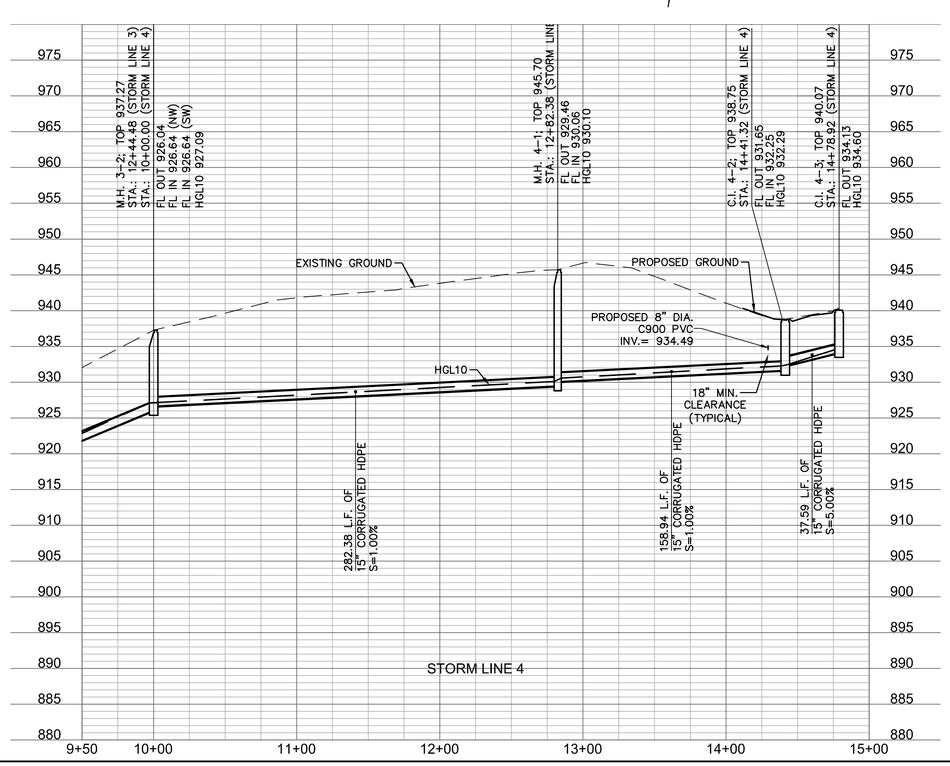
F.I. SUMP DETAIL
NOT TO SCALE

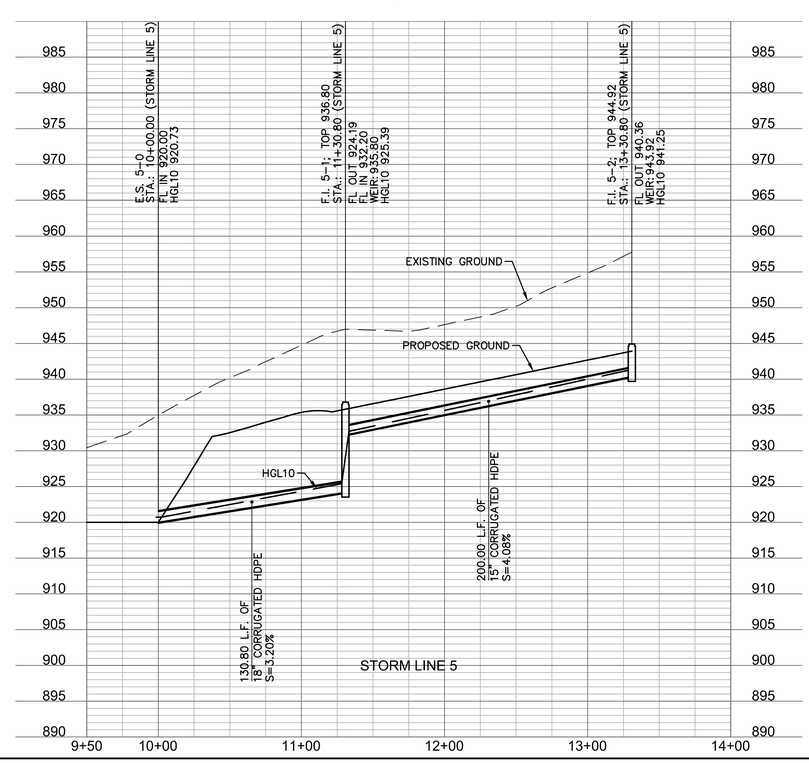
NOTE: INCLUDE SUMP PER DETAIL WHERE FIELD INLETS ARE LOCATED WITHIN SWALES.

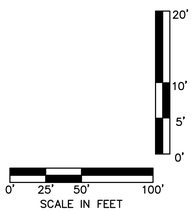
NOTE: CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 18" MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.

Riprap Calculations							
End Section	Q_{100}	Pipe Diameter	Class*	D50*	Apron Length	Apron Depth	Area
	(cfs)	(ft)		(in)	(ft)	(ft)	(SY)
E.S. 5-0	17.1	1.5	3	10	7.5	2.00	7.9
*Per Table 10.1 HEC 14-FHWA-Energy Dissipators Pg. 10-18							

NOTE: GEOFABRIC IS REQUIRED UNDER RIP RAP PER DETAIL ON SHEET C155







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3101 BROADWAY, SUITE 300
NORTH KANSAS CITY, MO 64116
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REVISIONS

NO. REV.	DATE	BY	REVISIONS DESCRIPTION

STORM SEWER PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

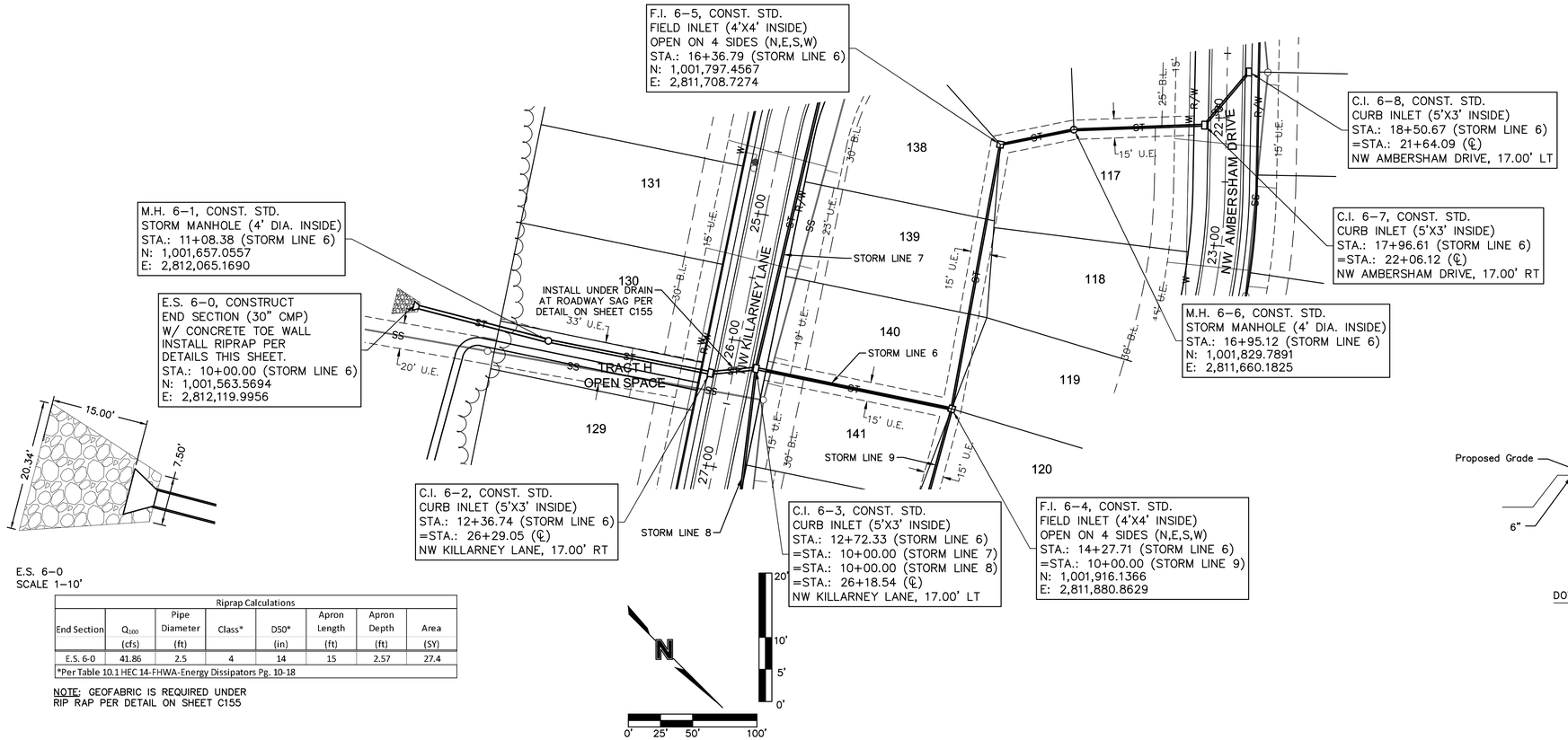
LEES SUMMIT, MO

2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

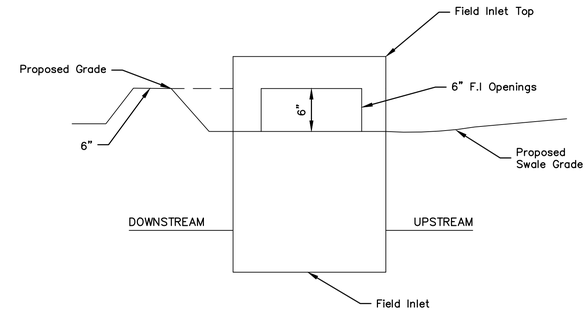
SHEET
C134

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DATE: Apr 04, 2019 11:33am
USER: ssoylor



Riprap Calculations							
End Section	Q_{100} (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. 6-0	41.86	2.5	4	14	15	2.57	27.4
*Per Table 10.1 HEC 14-FHWA-Energy Dissipators Pg. 10-18							

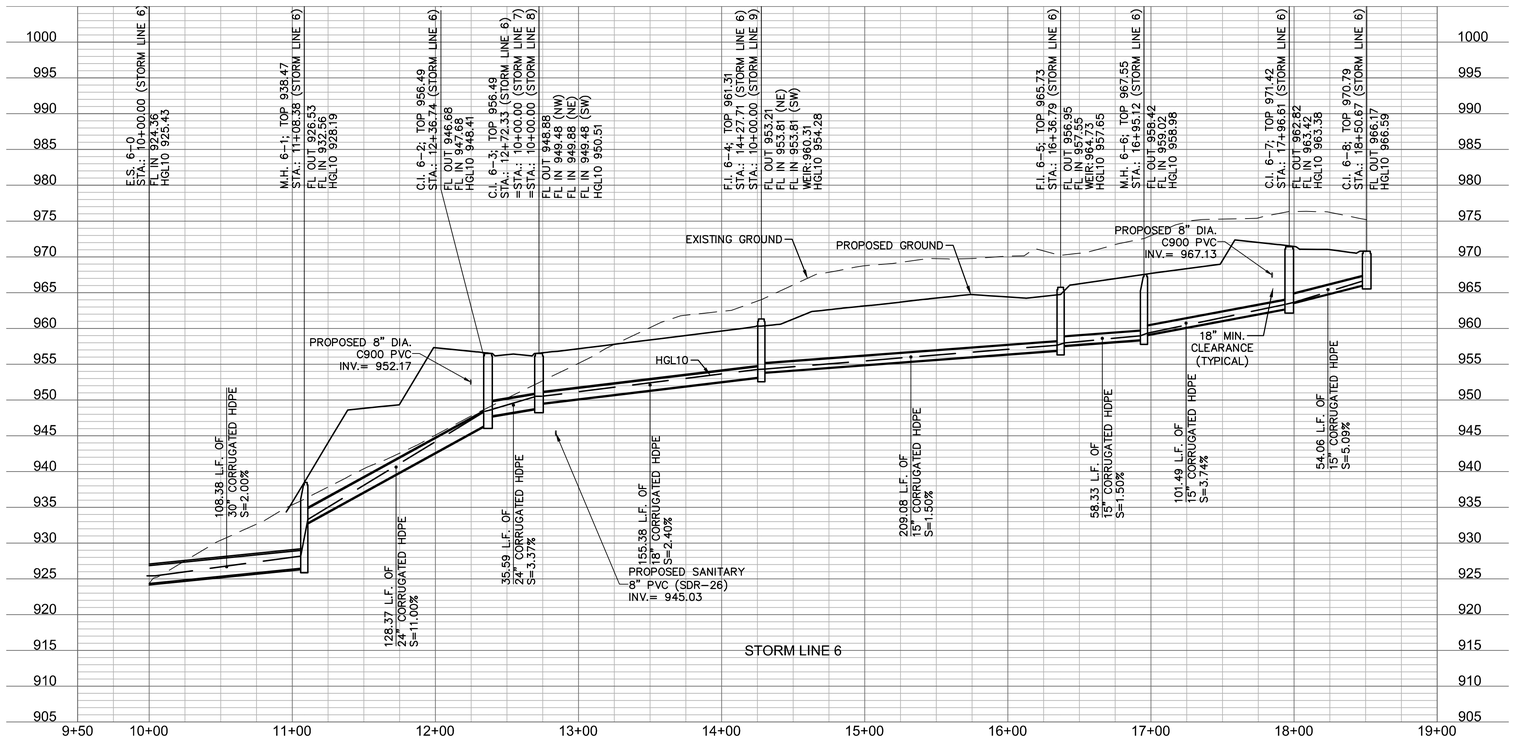
NOTE: GEOFABRIC IS REQUIRED UNDER RIP RAP PER DETAIL ON SHEET C155



F.I. SUMP DETAIL
NOT TO SCALE

NOTE: INCLUDE SUMP PER DETAIL WHERE FIELD INLETS ARE LOCATED WITHIN SWALES.

NOTE: CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 18" MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.



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REVISIONS

STORM SEWER PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

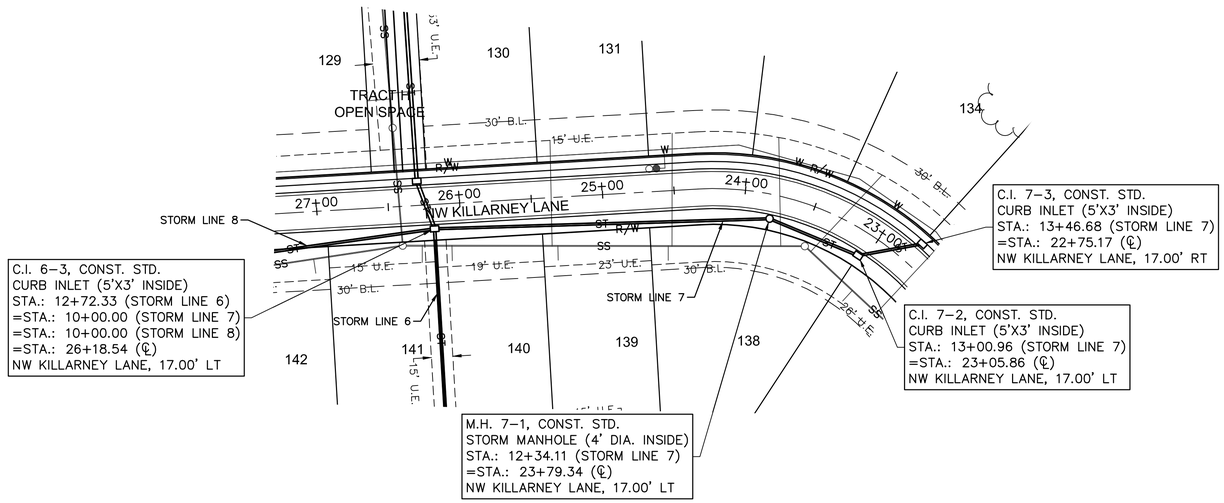
LEE'S SUMMIT, MO

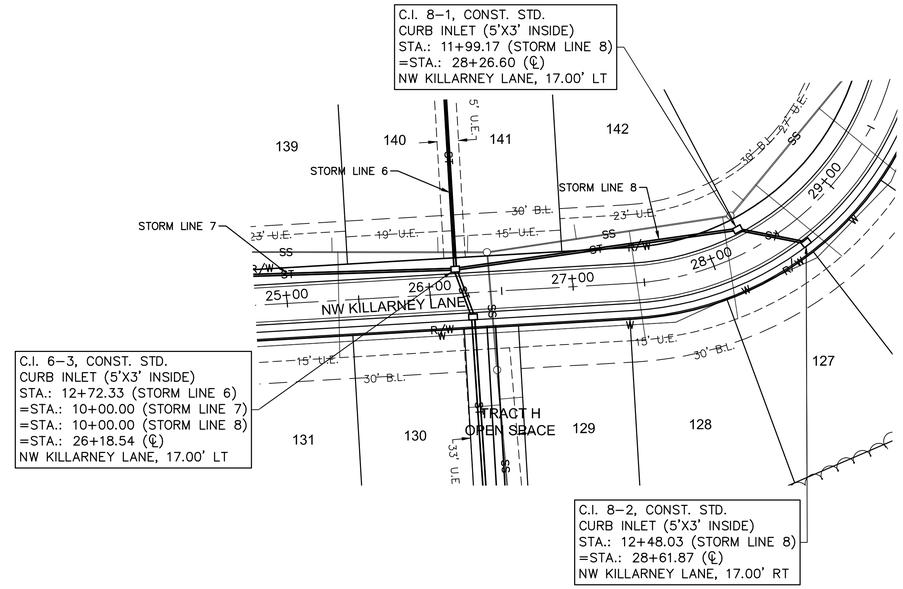
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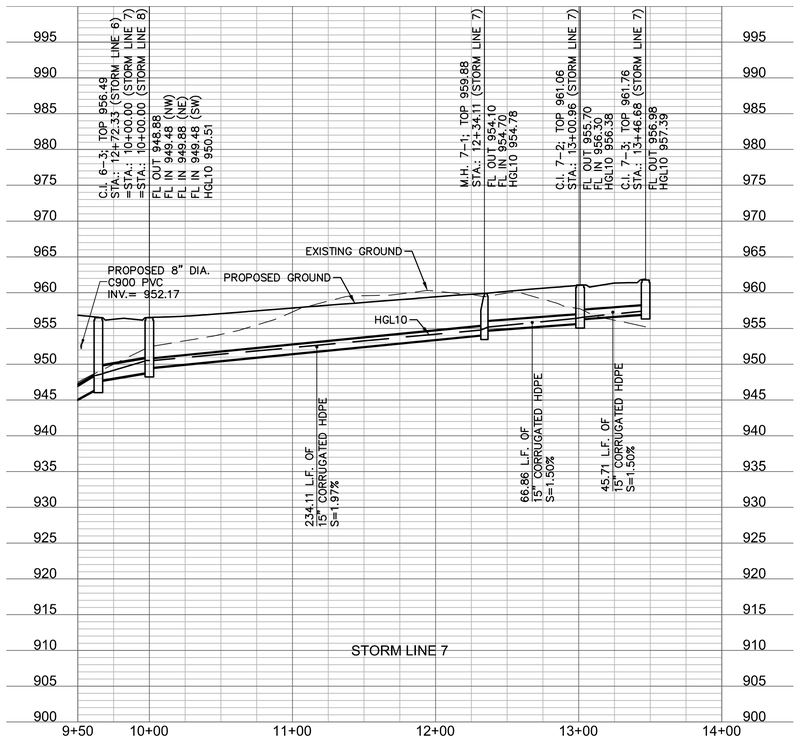
drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C135

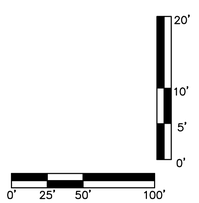
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USER: ssoylor

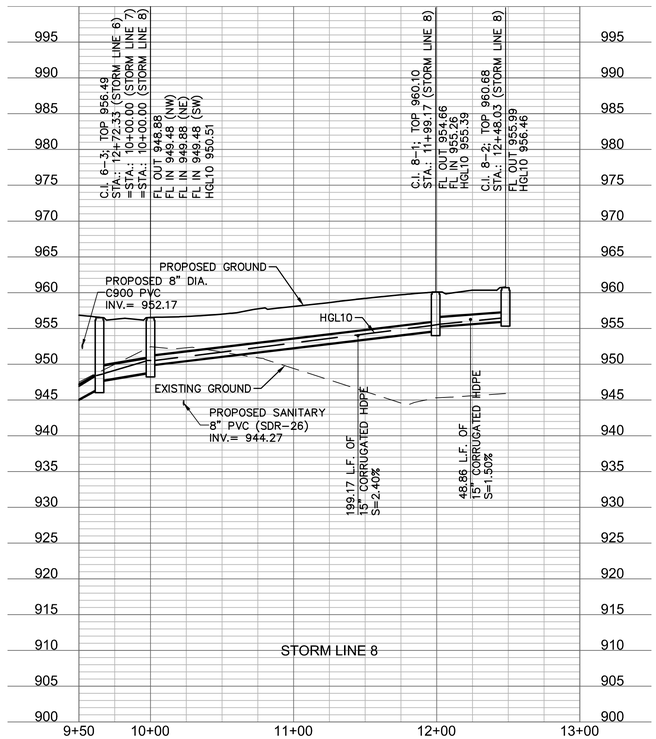






NOTE: CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 18" MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.





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NO. REV.	DATE	REVISIONS DESCRIPTION	BY

STORM SEWER PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

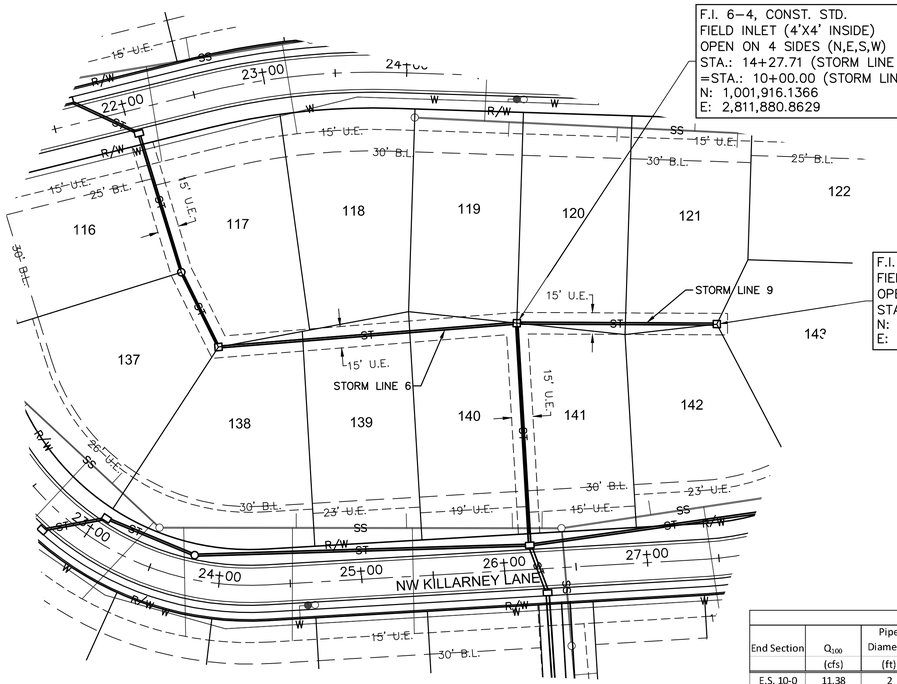
LEE'S SUMMIT, MO

2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

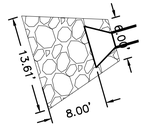
SHEET
C136

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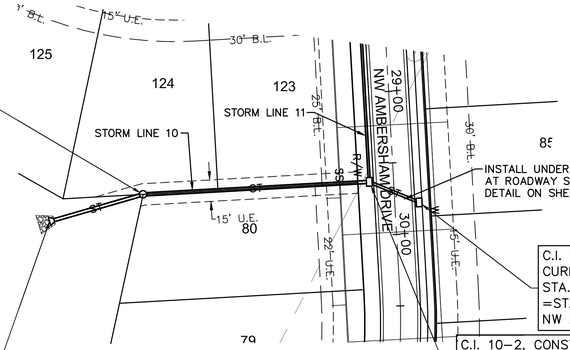
F.I. 6–4, CONST. STD.
FIELD INLET (4'X4' INSIDE)
OPEN ON 4 SIDES (N,E,S,W)
STA.: 14+27.71 (STORM LINE 6)
=STA.: 10+00.00 (STORM LINE 9)
N: 1,001,916.1366
E: 2,811,880.8629

F.I. 9–1, CONST. STD.
FIELD INLET (4'X4' INSIDE)
OPEN ON 4 SIDES (N,E,S,W)
STA.: 11+39.73 (STORM LINE 9)
N: 1,001,985.4301
E: 2,812,002.2017



E.S. 10–0
SCALE 1–10'

M.H. 10–1, CONST. STD.
STORM MANHOLE (4' DIA. INSIDE)
STA.: 10+68.05 (STORM LINE 10)
N: 1,002,140.2363
E: 2,812,305.2905



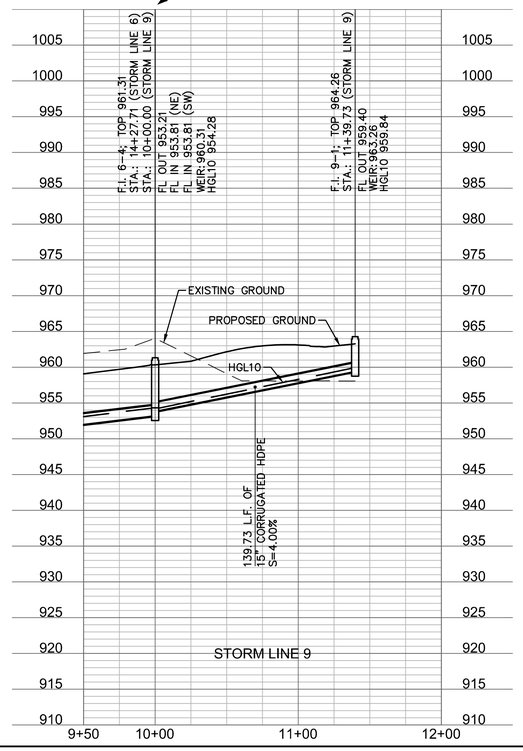
E.S. 10–0, CONSTRUCT
END SECTION (24" CMP)
W/ CONCRETE TOE WALL
INSTALL RIPRAP PER
DETAIL THIS SHEET.
STA.: 10+00.00 (STORM LINE 10)
N: 1,002,088.9646
E: 2,812,350.0340

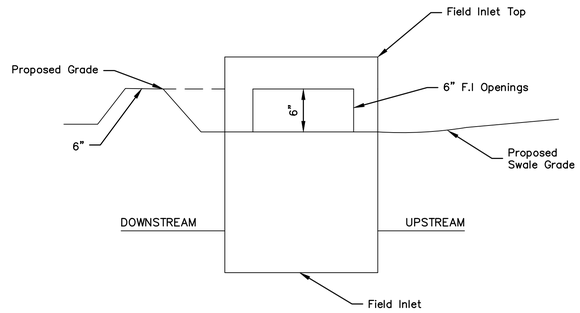
C.I. 10–3, CONST. STD.
CURB INLET (5'X3' INSIDE)
STA.: 12+63.93 (STORM LINE 10)
=STA.: 29+78.57 (℄
NW AMBERSHAM DRIVE, 17.00' LT

C.I. 10–2, CONST. STD.
CURB INLET (5'X3' INSIDE)
STA.: 12+26.25 (STORM LINE 10)
=STA.: 29+62.33 (℄
NW AMBERSHAM DRIVE, 17.00' RT

Riprap Calculations							
End Section	Q_{100} (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. 10-0	11.38	2	3	10	10	2.00	10.9
*Per Table 10.1 HEC 14-FHWA-Energy Dissipators Pg. 10-18							

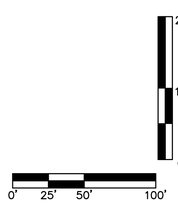
NOTE: GEOFABRIC IS REQUIRED UNDER
RIP RAP PER DETAIL ON SHEET C155



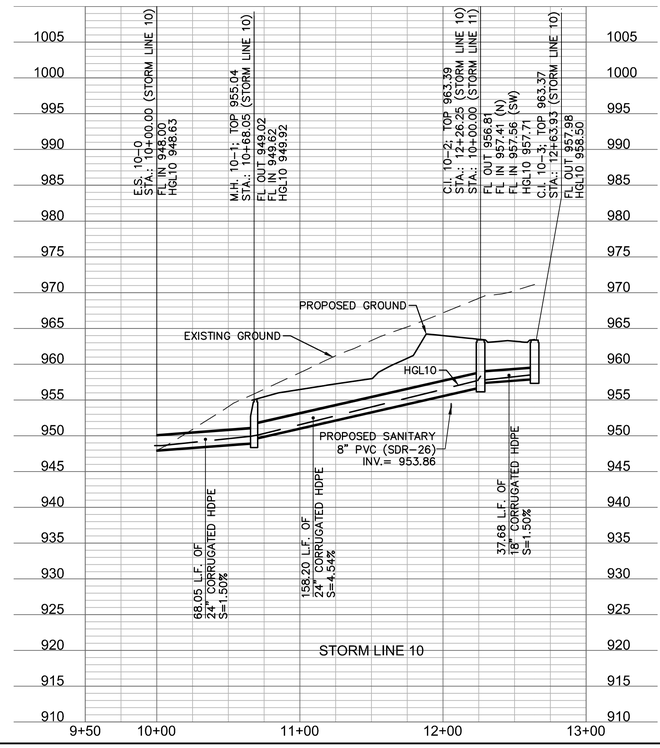


F.I. SUMP DETAIL
NOT TO SCALE

NOTE: INCLUDE SUMP PER
DETAIL WHERE FIELD INLETS
ARE LOCATED WITHIN
SWALES.



NOTE: CONTRACTOR SHALL FILL AND COMPACT
TO 95% STANDARD DENSITY TO A POINT 18"
MINIMUM ABOVE THE TOP OF PIPE PRIOR TO
EXCAVATION FOR THE PIPE.



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REVISIONS

STORM SEWER PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

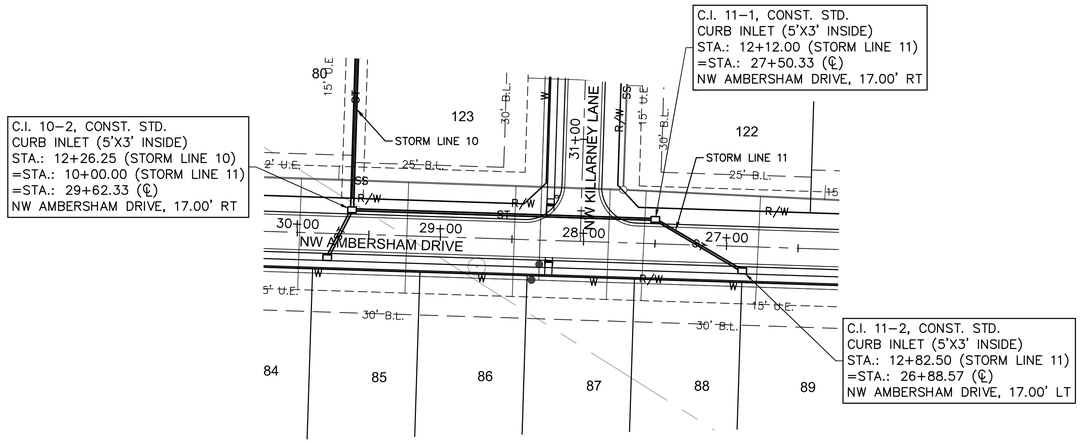
LEE'S SUMMIT, MO

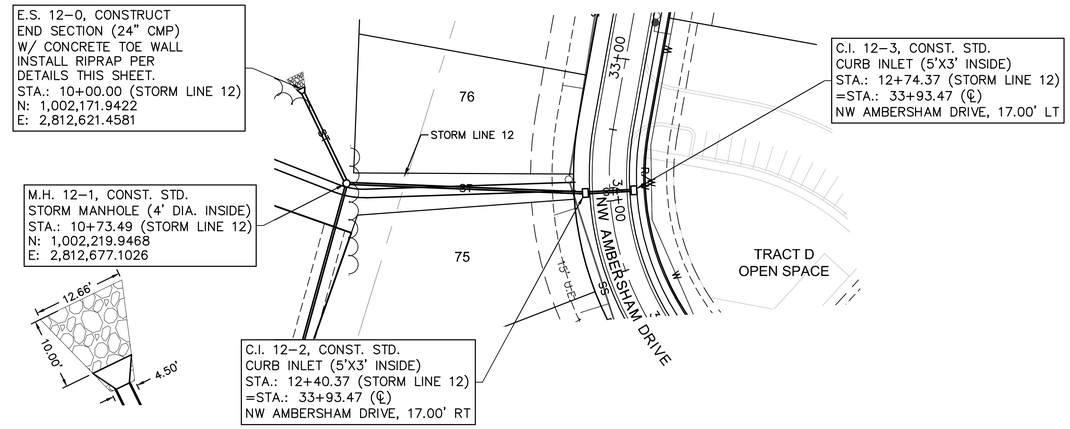
2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C137

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_STM06_1140A.dwg
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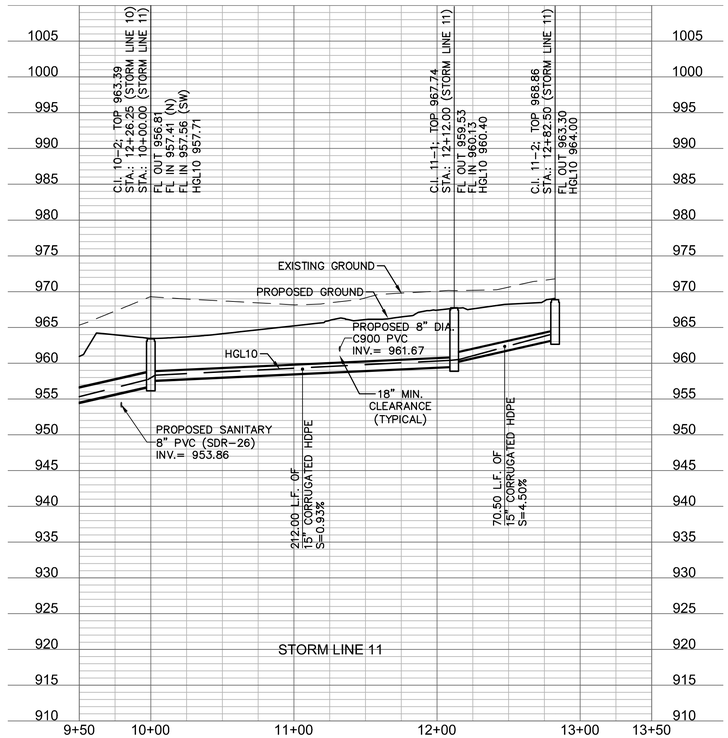


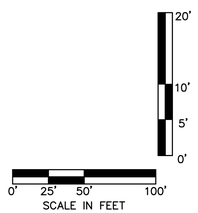


E.S. 12–0
SCALE 1–10'

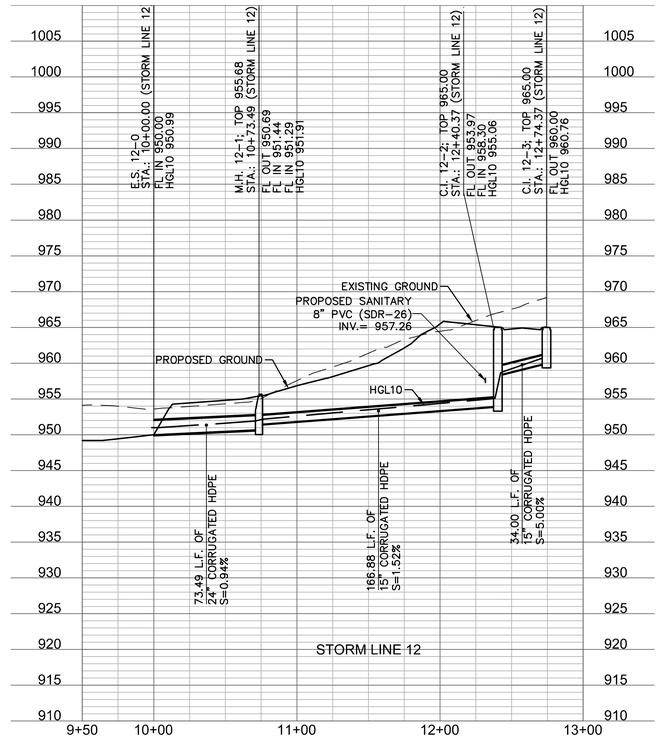
Riprap Calculations							
End Section	Q_{100} (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. 12-0	20.34	2	3	10	10	2.00	7.9
*Per Table 10.1 HEC 14-FHWA-Energy Dissipators Pg. 10-18							

NOTE: GEOFABRIC IS REQUIRED UNDER
RIP RAP PER DETAIL ON SHEET C155





NOTE: CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 18" MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.



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STORM SEWER PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

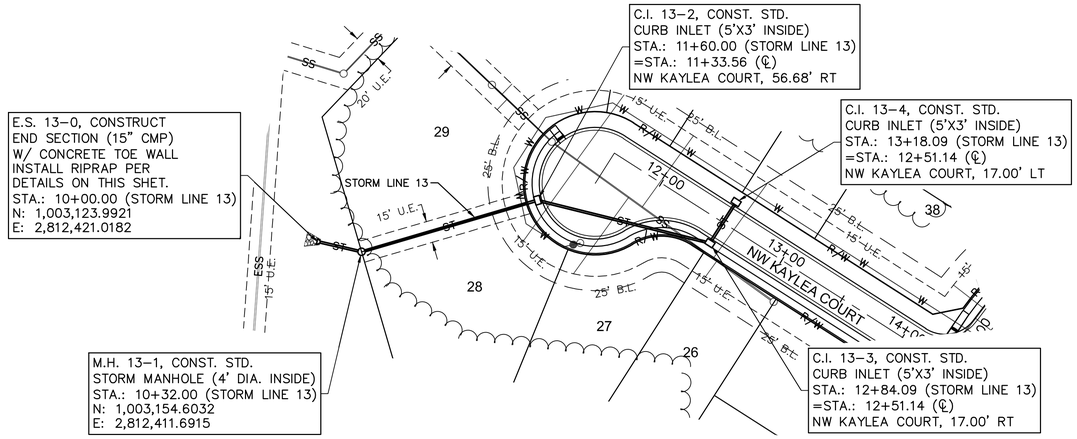
LEE'S SUMMIT, MO

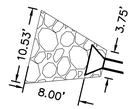
2019

drawn by: D.A.H.Q
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C138

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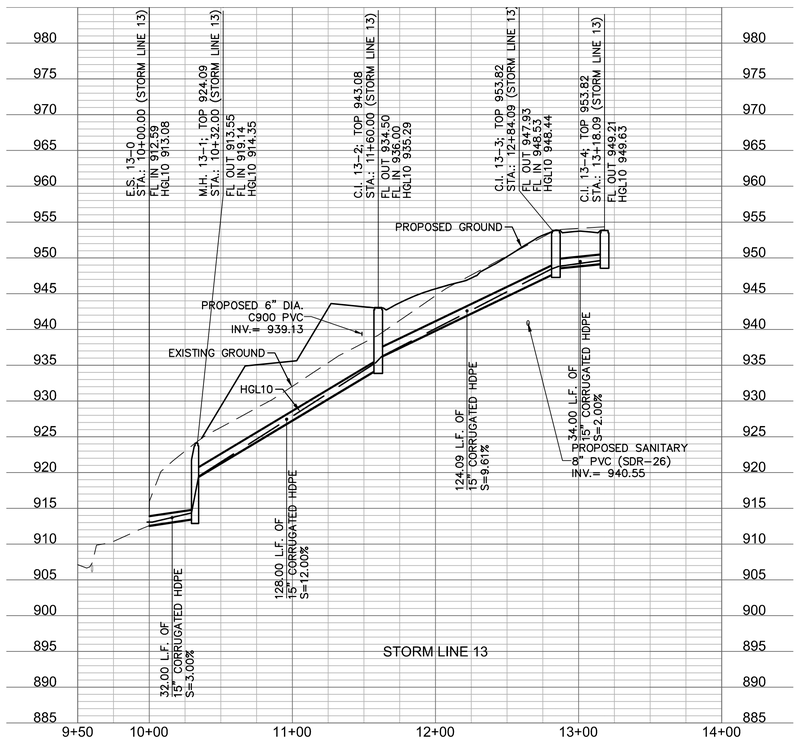


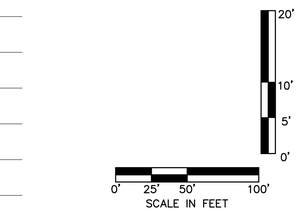


E.S. 13–0
SCALE 1–10'

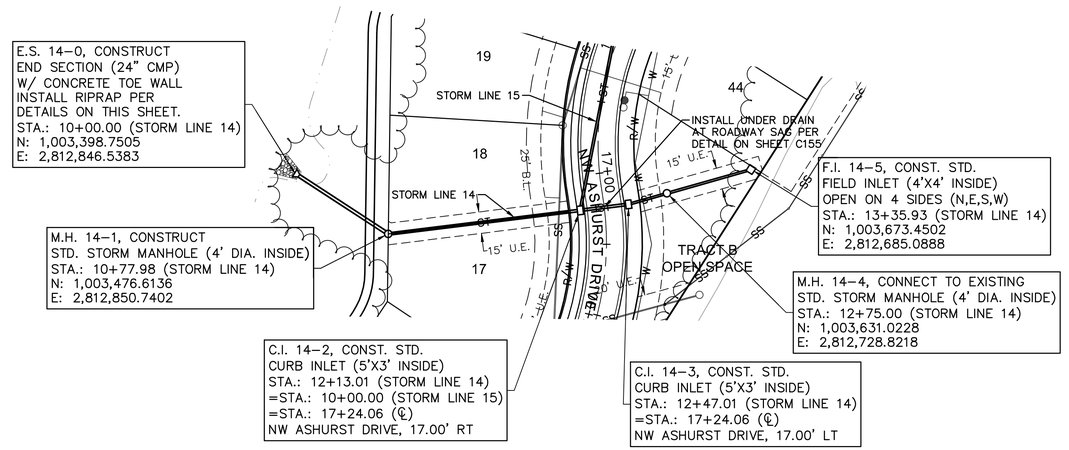
Riprap Calculations							
End Section	Q_{100} (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. 13-0	6.77	1.25	2	6	5	1.65	7.4
*Per Table 10.1 HEC 14-FHWA-Energy Dissipators Pg. 10-18							

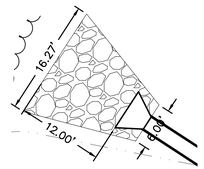
NOTE: GEOFABRIC IS REQUIRED UNDER
RIP RAP PER DETAIL ON SHEET C155





NOTE: CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 18" MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE.

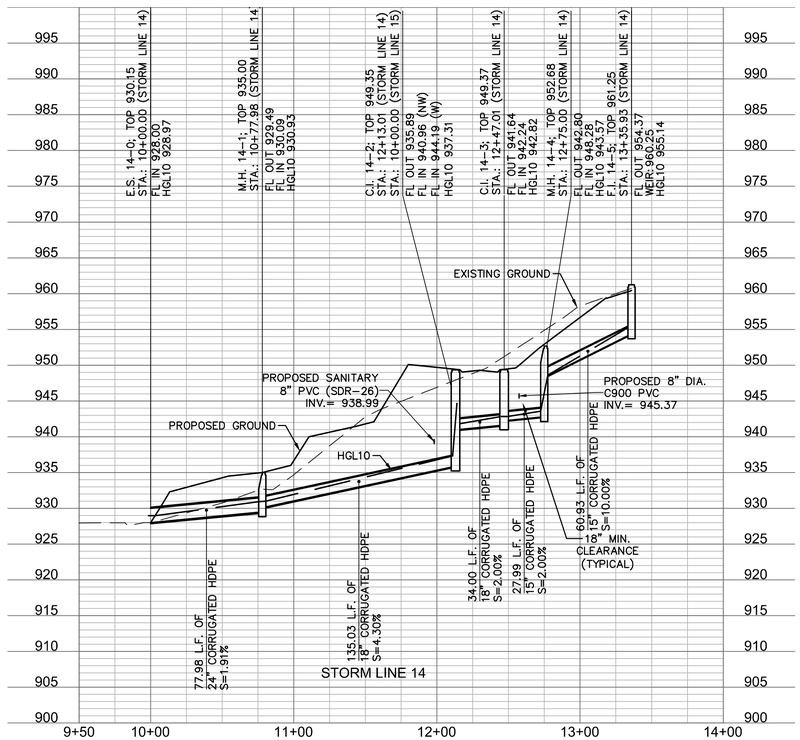




E.S. 14–0
SCALE 1–10'

Riprap Calculations							
End Section	Q_{100} (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. 14-0	28.19	2	4	14	12	2.57	17.6
*Per Table 10.1 HEC 14-FHWA-Energy Dissipators Pg. 10-18							

NOTE: GEOFABRIC IS REQUIRED UNDER
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6/7/19
PROFESSIONAL ENGINEER

NO. REV.	DATE	BY	REVISIONS DESCRIPTION
			REVISIONS

STORM SEWER PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

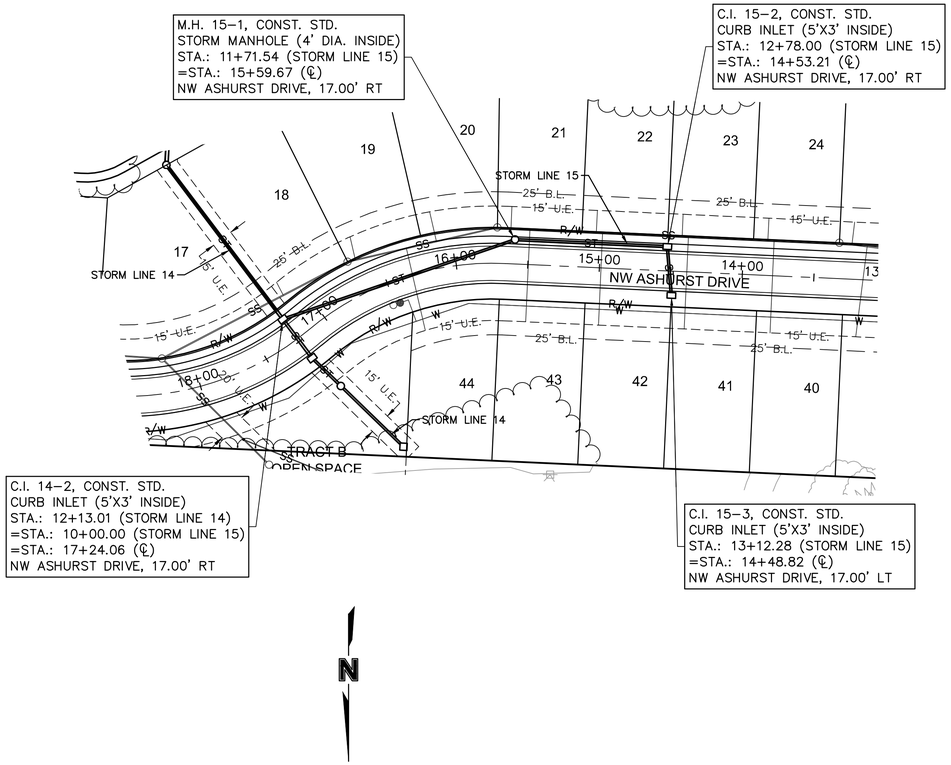
LEE'S SUMMIT, MO

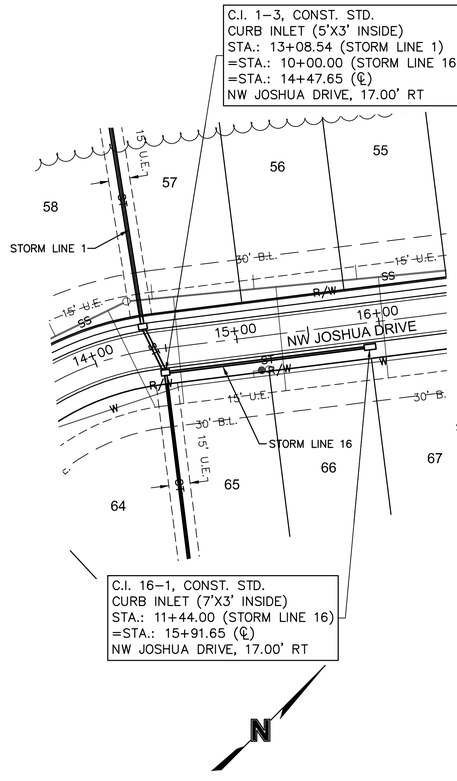
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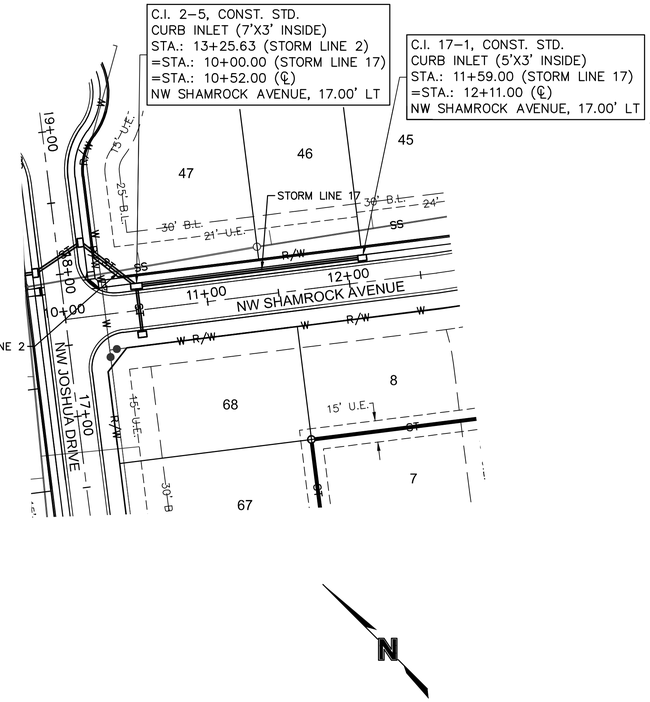
drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

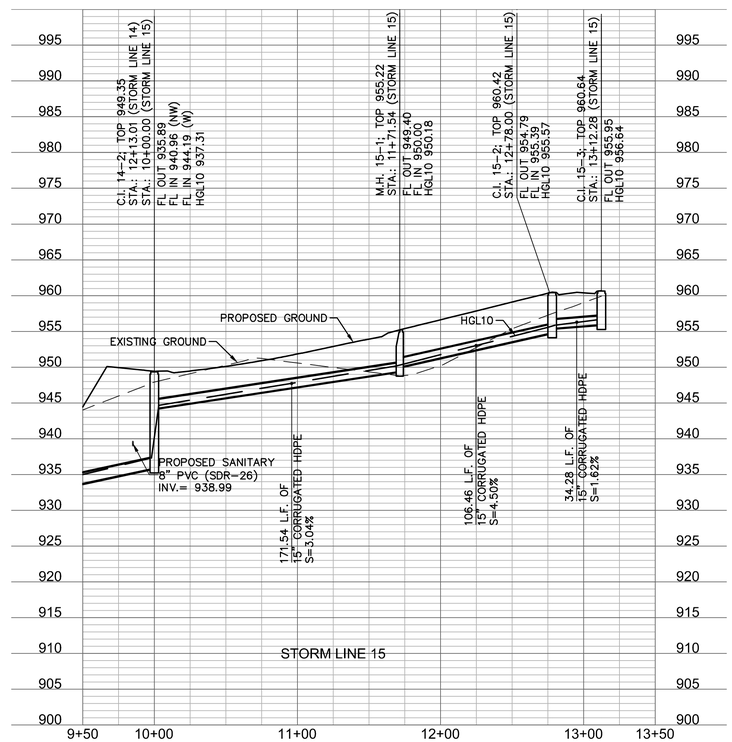
SHEET
C139

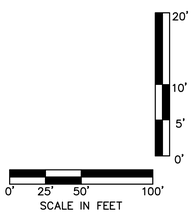
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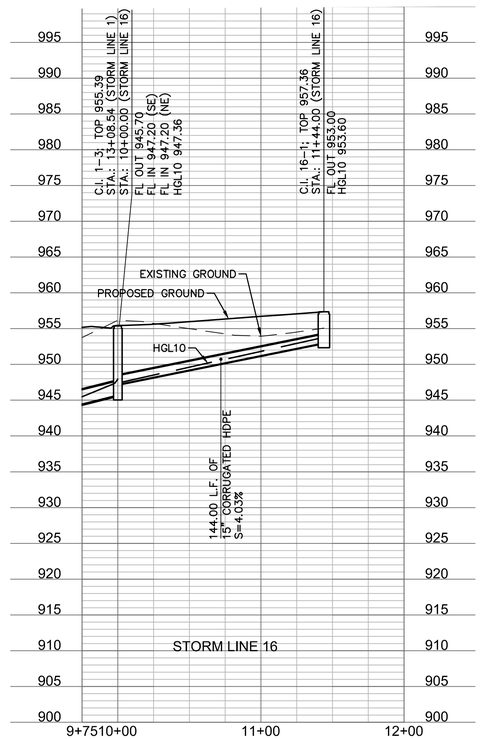


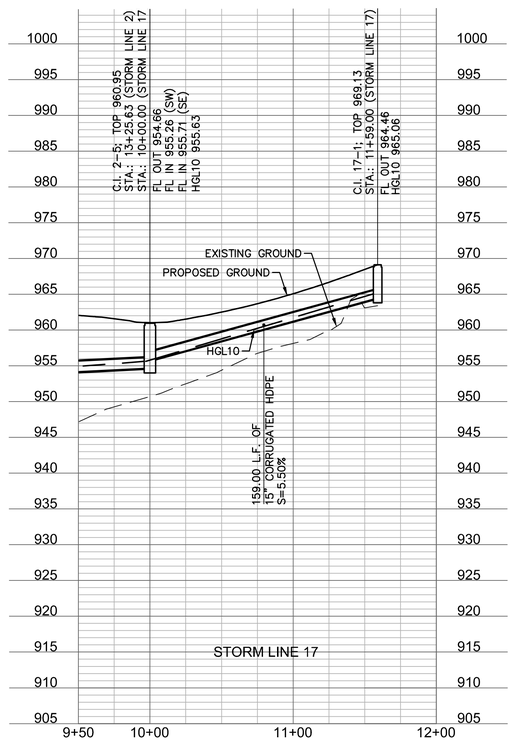












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2500 Main Street, Suite 210
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6/7/19
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PROFESSIONAL ENGINEER

NO. REV.	DATE	BY	REVISIONS DESCRIPTION

STORM SEWER PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

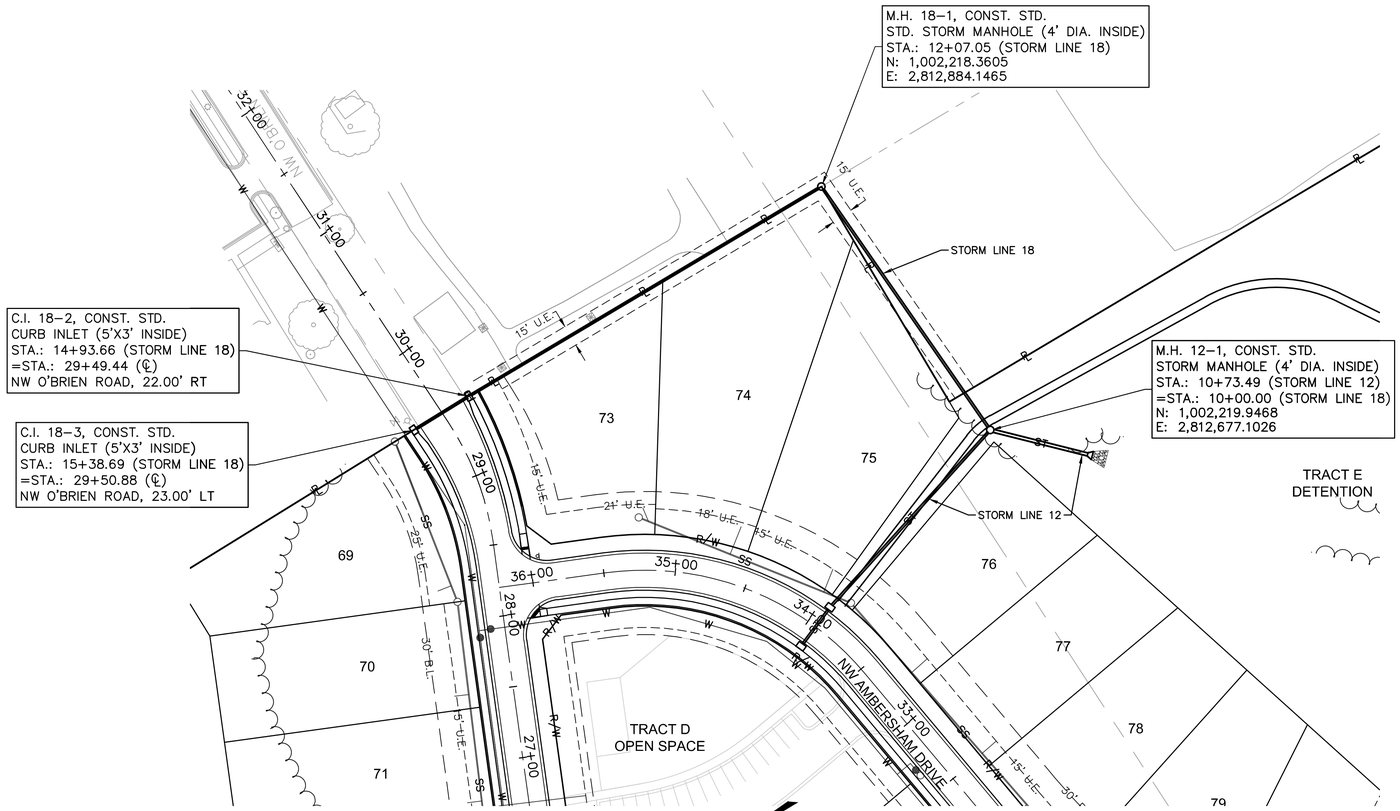
LEE'S SUMMIT, MO

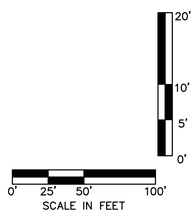
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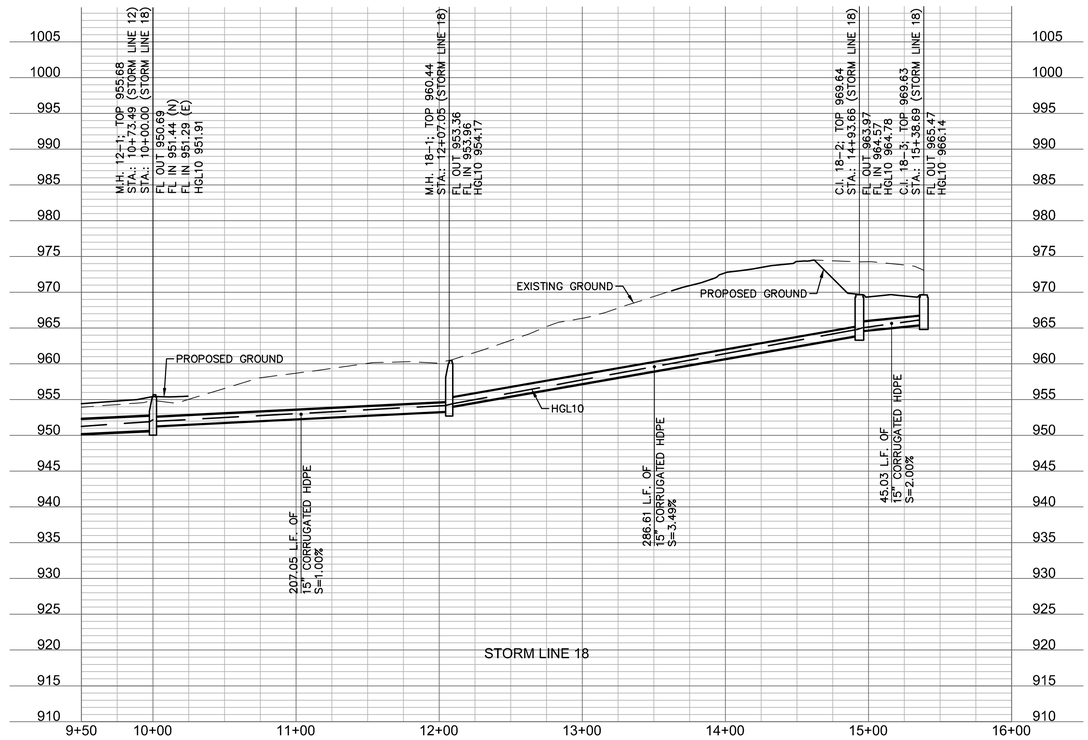
drawn by: D.A.H.Q
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C140

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_STM09_1140A.dwg
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JULIE ELAINE SELLERS
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REVISIONS

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

STORM SEWER PLAN & PROFILE
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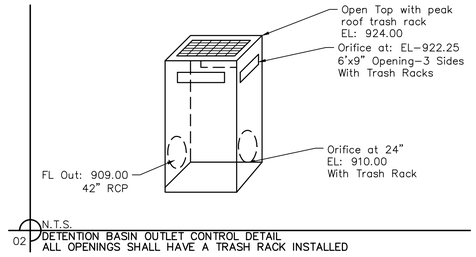
LEE'S SUMMIT, MO

2019

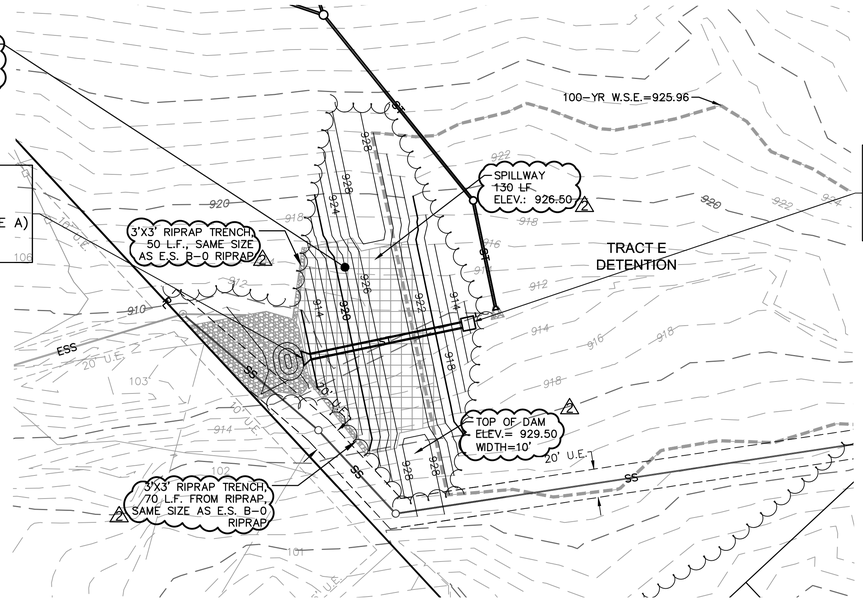
drawn by: D.A.H.Q
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C141

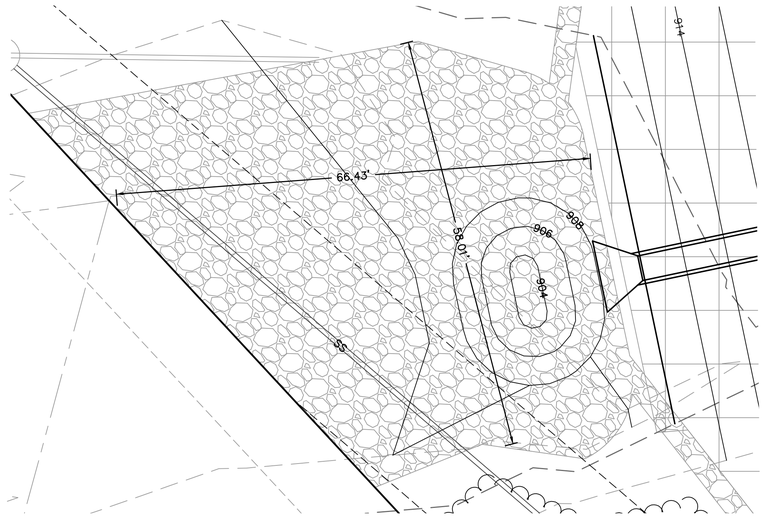
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USER: ssoylor



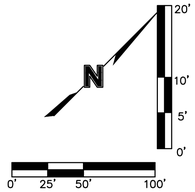
N.T.S.
02 DETENTION BASIN OUTLET CONTROL DETAIL
ALL OPENINGS SHALL HAVE A TRASH RACK INSTALLED



NOTES:
1. CONTRACTOR SHALL MAINTAIN DRAINAGE DURING CONSTRUCTION AND IS RESPONSIBLE FOR ANY DEWATERING NECESSARY FOR CONSTRUCTION. DEWATERING SHALL BE SUBSIDIARY TO OTHER BID ITEMS.
2. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS DETAILING THE STRUCTURE DIMENSIONS, INVERTS, AND STRUCTURAL REINFORCEMENT DETAILS ON THE PRINCIPAL SPILLWAY.
3. REINFORCED CONCRETE PIPE SHALL BE A MINIMUM OF CLASS 3, FOR THE CONDUIT THROUGH THE DAM.
4. THE CONDUIT NEEDS TO BE PLACED ON CONCRETE CRADLES, WITH TAPERED SIDED.



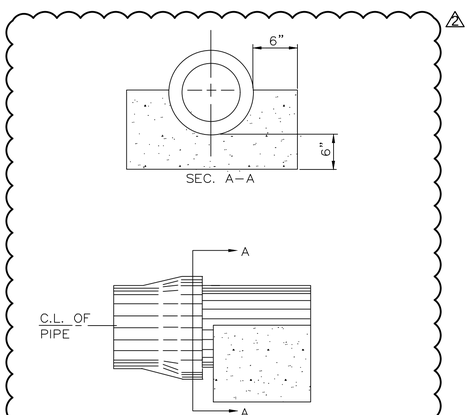
E.S. A-0
SCALE 1-10'



SCALE IN FEET

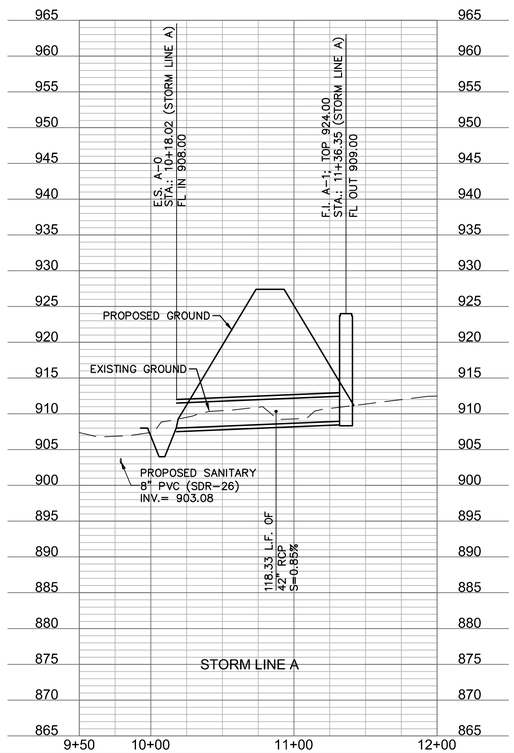
EARTHWORK QUANTITIES	
CUT (C.Y.)	FILL (C.Y.)
25	5410

10yr. W.S.E.	100yr. W.S.E.
923.65	925.96



CONCRETE FOR STRUCTURES AND STRUCTURAL COMPONENTS SHALL BE KCMMB 4K OR 5K MIX; OR MCIB 4,500 PSI OR 5,000 PSI MIX. NOMINAL AGGREGATE SHALL BE 1-INCH OR LARGER. CONCRETE USED FOR SOIL STABILIZATION, PIPE CRADLES, FILLING, LEVELING COURSES AND OTHER SIMILAR PURPOSES MAY USE SMALLER NOMINAL AGGREGATE SIZES OF 1/2-INCH, 3/4-INCH.

CONCRETE CRADLE DETAIL
N.T.S.



Riprap Calculations							
End Section	Q_{100} (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. B-0	207	3.5	6	22	25	4.00	149.0

*Per Table 10.1 HEC 14-FHWA-Energy Dissipators Pg. 10-18

NOTE: GEOFABRIC IS REQUIRED UNDER RIP RAP PER DETAIL ON SHEET C155

ENERGY DISSIPATOR BASIN DIMENSIONS:
D50 = 1.75'; DISSIPATOR POOL LENGTH (LS) = 20'; APRON LENGTH (LA) = 5'; APRON WIDTH (WB) = 17'; OVERALL BASIN LENGTH (LB) = 25'. PROVIDE RIPRAP UP TO ELEVATION 909 SURROUNDING DISSIPATOR BASIN. SEE BELOW FOR DETAILS.

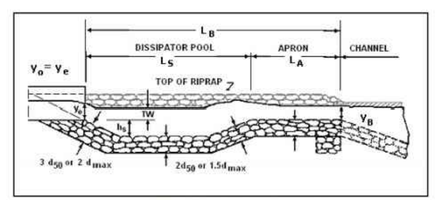


Figure 10.1. Profile of Riprap Basin

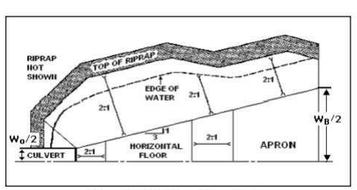


Figure 10.2. Half Plan of Riprap Basin

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1	4/2/2019	REVISED PER CITY COMMENTS	
2	5/16/2019	REVISED PER CITY COMMENTS	

REVISIONS

DETENTION BASIN PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

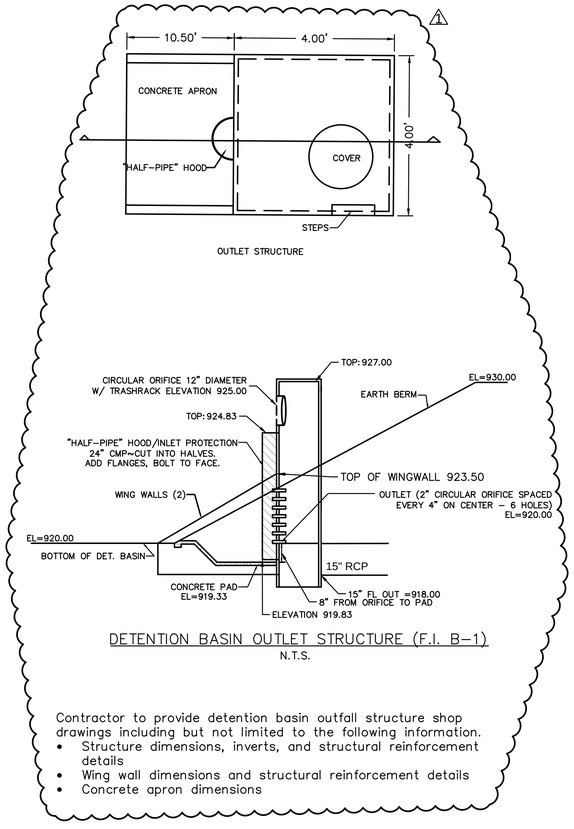
LEE'S SUMMIT, MO

2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C142

USER: ssoylor
DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_DBP01_1140A.dwg
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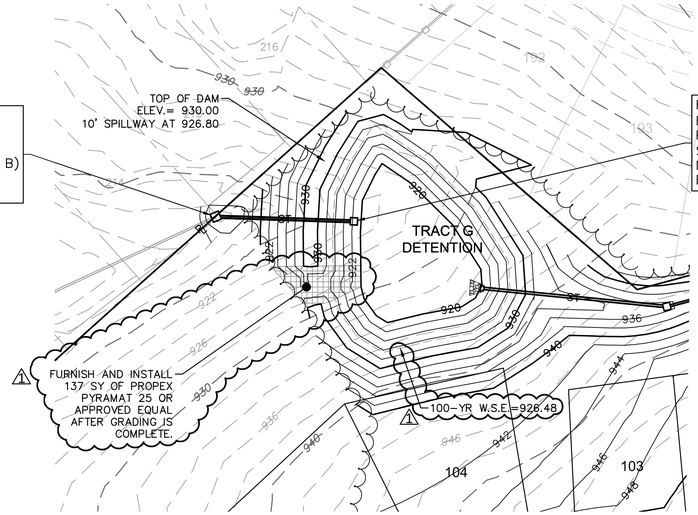
DETENTION BASIN OUTLET STRUCTURE (F.I. B-1)

N.T.S.

Contractor to provide detention basin outfall structure shop drawings including but not limited to the following information.

- Structure dimensions, inverts, and structural reinforcement details
- Wing wall dimensions and structural reinforcement details
- Concrete apron dimensions

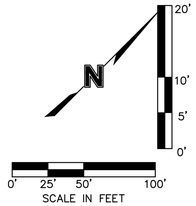
F.I. B-0, CONST. STD.
FIELD INLET (5'X5' INSIDE)
OPEN ON 2 SIDES (N,E)
STA.: 10+00.00 (STORM LINE B)
N: 1,001,237.0710
E: 2,810,759.7550

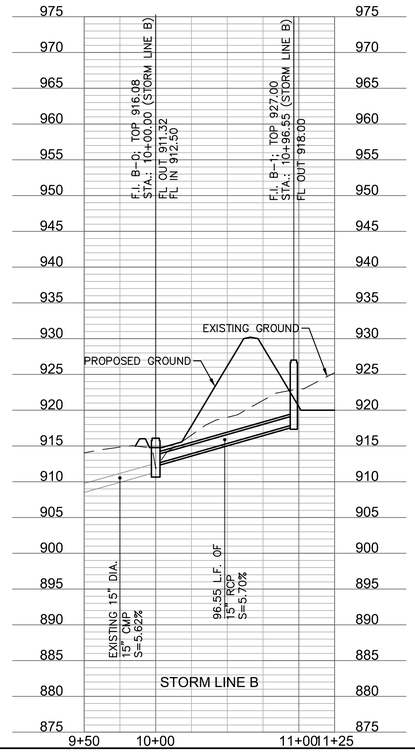


F.I. B-1, CONST. STD.
FIELD INLET (4'X4' INSIDE)
PER DETAIL THIS SHEET
STA.: 10+96.55 (STORM LINE B)
N: 1,001,303.0104
E: 2,810,830.2869

EARTHWORK QUANTITIES	
CUT (C.Y.)	FILL (C.Y.)
5702	1004

10yr. W.S.E.	100yr. W.S.E.
924.68	926.48





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DETENTION BASIN PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C143

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_DBP02_1140A.dwg
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USER: dhernandez

LEGEND	
100	FINISHED INDEX CONTOURS
100	FINISHED INTERMEDIATE CONTOURS
	RIDGE LINE
A	DRAINAGE AREA
C	RUNOFF COEFFICIENT
C.I. 0–0	STORM STRUCTURE NUMBER

NOTES:
1. INDIVIDUAL LOT OWNERS SHALL NOT CHANGE OR OBSTRUCT THE DRAINAGE FLOW LINES OR PATHS ON THE LOTS, AS SHOWN ON THE MASTER DRAINAGE PLAN, UNLESS SPECIFIC APPLICATION IS MADE AND APPROVED BY THE CITY ENGINEER.

2. PLAT IS LOCATED IN ZONE X, "AREAS OUTSIDE THE 1–PERCENT ANNUAL CHANCE FLOODPLAINS, AREAS OF 1–PERCENT ANNUAL CHANCE SHEET FLOW FLOODING WHERE THE AVERAGE DEPTHS ARE LESS THAN 1 FOOT, AREAS OF 1–PERCENT ANNUAL CHANCE STREAM FLOODING WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 1 SQUARE MILE, OR AREAS PROTECTED FROM THE 1–PERCENT ANNUAL CHANCE FLOOD BY LEVEES. NO BASE FLOOD ELEVATIONS OR DEPTHS ARE SHOWN WITHIN THIS ZONE"

3. BUFFER ZONE FOR NATURAL STREAMS IS LOCATED WITHIN PLAT.

4. MLO ELEVATIONS HAVE BEEN PROVIDED AT EACH LOT CORNER. INTERPOLATION WILL BE ALLOWED BETWEEN CORNER MBOES SHOWN ON THE MASTER DRAINAGE PLAN, DEPENDING ON THE LOCATION OF THE LOWEST OPENING ON THE PROPOSED STRUCTURE.

5. NO BUILDING PERMITS WILL BE ISSUED UNTIL AN AS–GRADED MASTER DRAINAGE PLAN HAS BEEN SUBMITTED TO THE CITY AND APPROVED BY THE CITY.

6. REFER TO SHEET C112–C114 FOR SWALE GRADING DETAILS.

N

0' 30' 60' 120'
SCALE IN FEET

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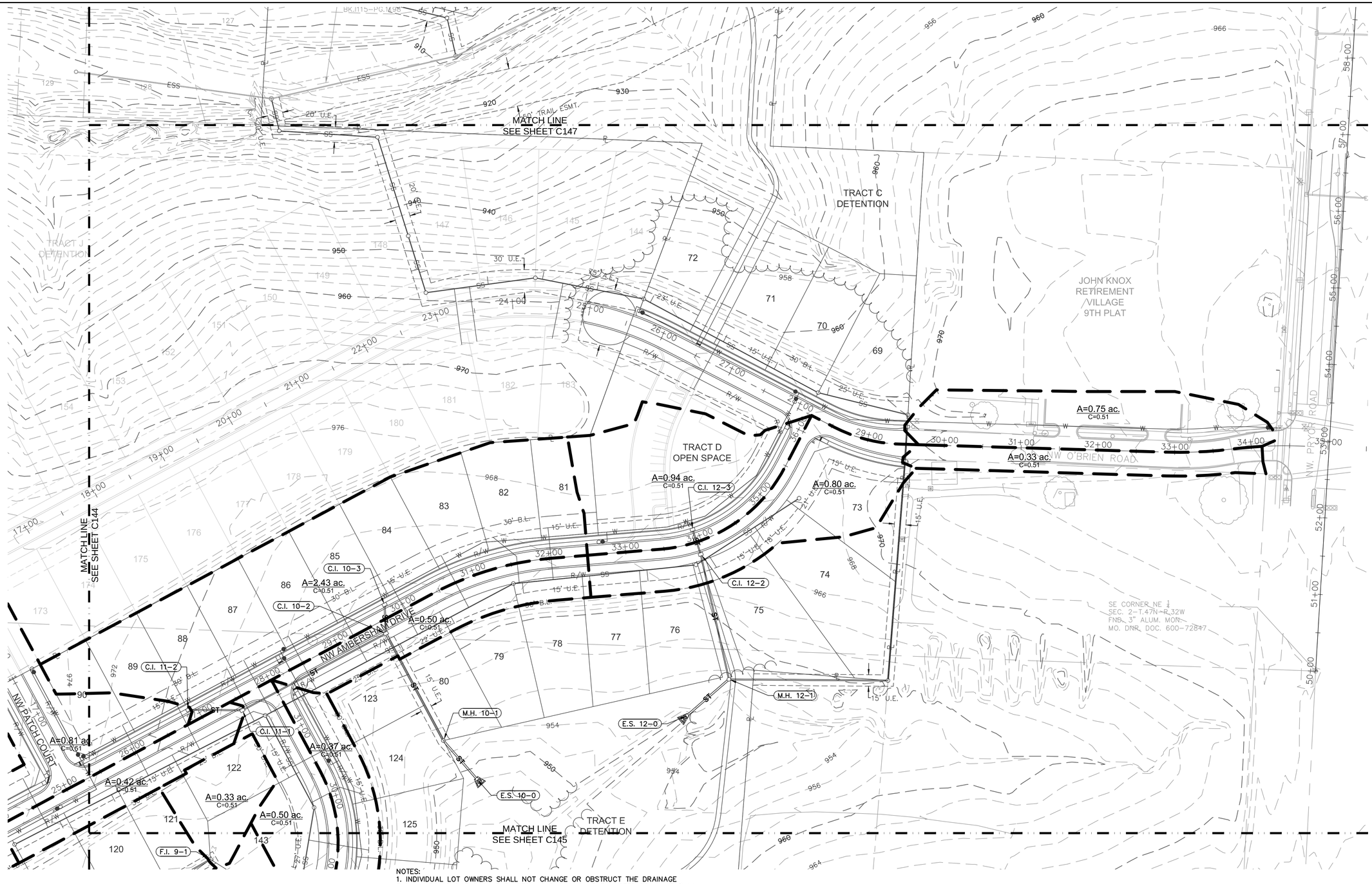
REVISIONS
REVISIONS DESCRIPTION

DRAINAGE PLAN
STREET & STORM SEWER PLANS
WOODSIDE RIDGE
FIRST PLAT
LEE'S SUMMIT, MO
2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C144

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_DRN01_1140A.dwg USER: ssoylor
DATE: Apr 04, 2019 11:49am



NOTES:
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6. REFER TO SHEET C112-C114 FOR SWALE GRADING DETAILS.

N

0' 30' 60' 120'
SCALE IN FEET

LEGEND	
100	FINISHED INDEX CONTOURS
100	FINISHED INTERMEDIATE CONTOURS
	RIDGE LINE
A	DRAINAGE AREA
C	RUNOFF COEFFICIENT
C.I. 0-0	STORM STRUCTURE NUMBER

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6/7/19
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		REVISIONS	

DRAINAGE PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

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checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C145

NOTES:
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LEGEND	
100	FINISHED INDEX CONTOURS
100	FINISHED INTERMEDIATE CONTOURS
	RIDGE LINE
A	DRAINAGE AREA
C	RUNOFF COEFFICIENT
C.I. 0–0	STORM STRUCTURE NUMBER

N

0' 30' 60' 120'
SCALE IN FEET

MATCH LINE SEE SHEET C104

MATCH LINE SEE SHEET C146

TRACT E DETENTION

TRACT H OPEN SPACE

TRACT F OPEN SPACE

NW PATCH COURT

NW KILLARNEY LANE

NW JOSITU DRIVE

NW SHAMROCK AVENUE

NW GRADY COURT

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QA/QC by: M.G.D
project no.: A18:1140
date: 2019.03.12

SHEET
C146

DWG: F:\2018\1001–1500\018–1140–A\40–Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_DRN01_1140A.dwg
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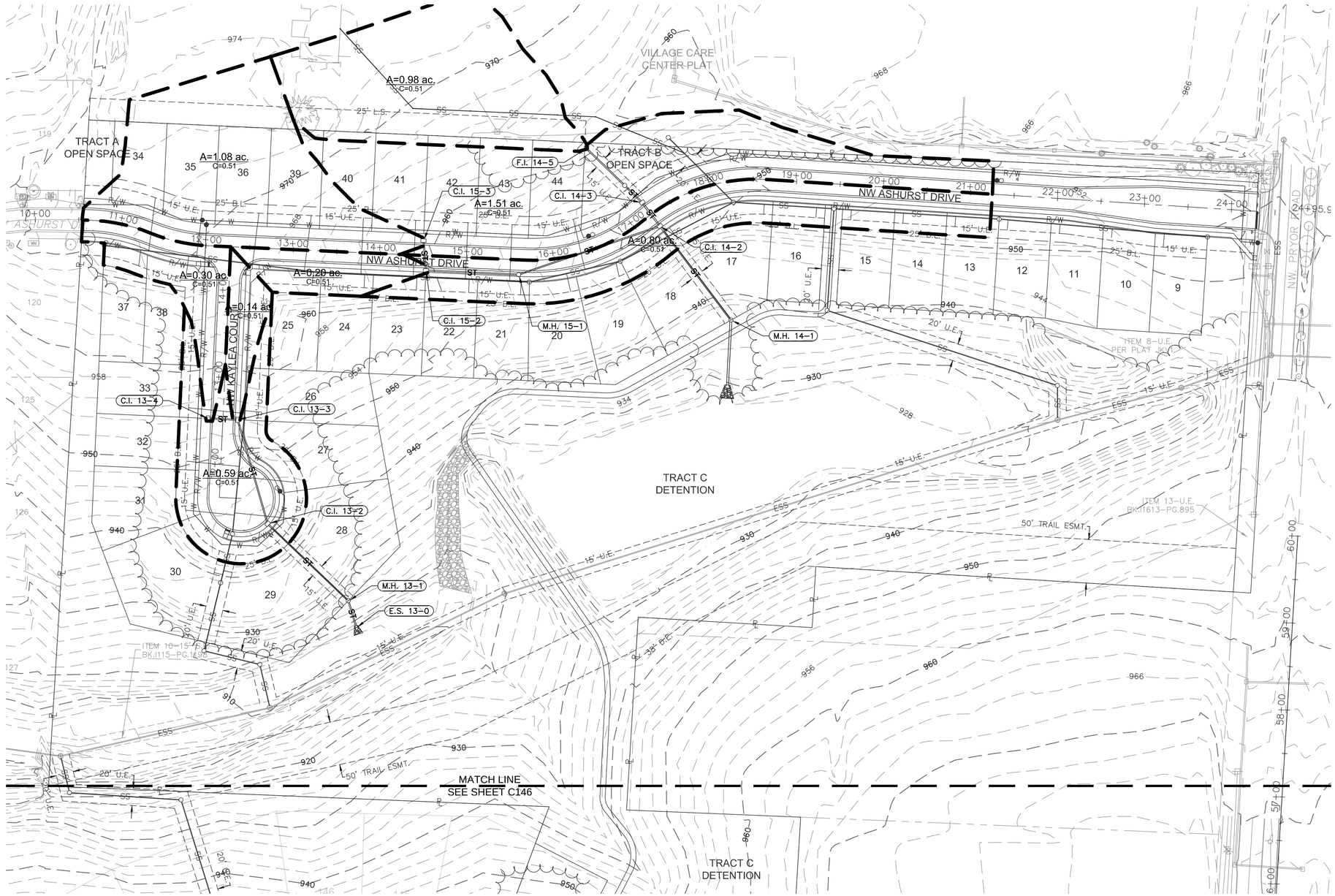
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LEGEND	
100	FINISHED INDEX CONTOURS
100	FINISHED INTERMEDIATE CONTOURS
	RIDGE LINE
A	DRAINAGE AREA
C	RUNOFF COEFFICIENT
C.I. 0-0	STORM STRUCTURE NUMBER



N

0' 30' 60' 120'
SCALE IN FEET

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_DRN01_1140A.dwg USER: ssoylor
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project no.: A18-1140
date: 2019.03.12

SHEET
C147

Storm Sewer Design Calculation Table

10 Year Return Frequency

Upstream Structure	Downstream Structure	Length (ft)	Upstream Invert (ft)	Downstream Invert (ft)	Slope (%)	Diameter (in)	Manning's n	Total Flow (cfs)	Velocity (ft/s)	Capacity (cfs)	Flow Depth (ft)	Upstream Struct. HGL (ft)
M.H. 1-1	E.S. 1-0	94.45	920.83	918.00	3.00	36	0.012	25.29	10.17	125.07	0.92	922.45
C.I. 1-2	M.H. 1-1	178.23	940.35	925.83	8.15	24	0.012	25.29	14.53	69.94	0.83	942.12
C.I. 1-3	C.I. 1-2	35.86	945.70	943.91	4.99	24	0.012	21.58	12.06	54.74	0.87	947.36
F.I. 1-4	C.I. 1-3	159.42	953.55	947.20	3.98	18	0.012	11.23	9.90	22.70	0.75	954.83
F.I. 1-5	F.I. 1-4	144.93	957.05	954.15	2.00	18	0.012	9.65	7.95	16.09	0.84	958.25
M.H. 1-6	F.I. 1-5	72.00	958.73	957.65	1.50	18	0.012	8.52	7.12	13.93	0.85	959.86
C.I. 1-7	M.H. 1-6	143.00	965.57	959.53	4.22	18	0.012	8.52	9.08	23.38	0.63	966.70
C.I. 1-8	C.I. 1-7	36.65	968.07	966.17	5.18	15	0.012	6.68	9.27	15.93	0.56	969.11
M.H. 2-1	E.S 2-0	60.97	930.91	930.00	1.49	18	0.012	9.18	7.30	13.90	0.89	932.08
M.H. 2-2	M.H. 2-1	76.06	937.81	931.41	8.41	18	0.012	9.18	9.10	33.00	0.67	938.98
C.I. 2-3	M.H. 2-2	100.99	952.43	940.37	11.94	18	0.012	9.18	12.17	39.31	0.49	953.60
C.I. 2-4	C.I. 2-3	38.11	953.47	953.03	1.15	18	0.012	8.20	6.63	12.22	0.90	954.58
C.I. 2-5	C.I. 2-4	49.50	954.66	954.17	0.99	18	0.012	6.29	5.89	11.32	0.80	955.63
C.I. 2-6	C.I. 2-5	34.00	955.60	955.26	1.00	15	0.012	0.79	2.72	7.00	0.37	955.95 j
M.H. 3-1	E.S. 3-0	77.77	911.48	910.15	1.71	15	0.012	6.90	7.22	9.15	0.81	912.53
M.H. 3-2	M.H. 3-1	166.71	926.04	912.08	8.37	15	0.012	6.90	10.59	20.24	0.50	927.09
C.I. 3-3	M.H. 3-2	297.33	952.61	926.64	8.73	15	0.012	4.35	7.89	20.67	0.45	953.45
C.I. 3-4	C.I. 3-3	58.94	954.39	953.21	2.00	15	0.012	3.30	5.84	9.90	0.50	955.12
C.I. 3-5	C.I. 3-4	150.00	957.24	954.99	1.50	15	0.012	2.59	5.09	8.57	0.47	957.88
C.I. 3-6	C.I. 3-5	41.11	958.46	957.84	1.51	15	0.012	1.16	4.02	8.59	0.31	958.88
M.H. 4-1	M.H. 3-2	282.38	929.46	926.64	1.00	15	0.012	2.55	4.64	6.99	0.52	930.10
C.I. 4-2	M.H. 4-1	158.94	931.65	930.06	1.00	15	0.012	2.55	4.65	7.00	0.52	932.29
C.I. 4-3	C.I. 4-2	37.59	934.13	932.25	5.00	15	0.012	1.39	5.60	15.64	0.25	934.60
F.I. 5-1	E.S. 5-0	130.80	924.19	920.00	3.20	18	0.012	9.69	8.88	20.36	0.73	925.39
F.I. 5-2	F.I. 5-1	200.00	940.36	932.20	4.08	15	0.012	4.85	7.80	14.13	0.51	941.25
M.H. 6-1	E.S. 6-0	108.38	926.53	924.36	2.00	30	0.012	23.86	9.40	62.87	1.07	928.19
C.I. 6-2	M.H. 6-1	128.37	946.68	932.56	11.00	24	0.012	23.86	15.37	81.27	0.74	948.41
C.I. 6-3	C.I. 6-2	35.59	948.88	947.68	3.37	24	0.012	20.75	10.79	44.99	0.95	950.51
F.I. 6-4	C.I. 6-3	155.38	953.21	949.48	2.40	18	0.012	7.58	5.75	17.63	1.03	954.28
F.I. 6-5	F.I. 6-4	209.08	956.95	953.81	1.50	15	0.012	3.01	5.32	8.57	0.51	957.65
M.H. 6-6	F.I. 6-5	58.33	958.42	957.55	1.49	15	0.012	1.96	4.68	8.54	0.41	958.98
C.I. 6-7	M.H. 6-6	101.49	962.82	959.02	3.74	15	0.012	1.96	5.77	13.54	0.32	963.38
C.I. 6-8	C.I. 6-7	54.06	966.17	963.42	5.09	15	0.012	1.13	5.29	15.78	0.23	966.59
M.H. 7-1	C.I. 6-3	234.11	954.10	949.48	1.97	15	0.012	2.85	3.41	9.83	1.03	954.78 j
C.I. 7-2	M.H. 7-1	66.86	955.70	954.70	1.50	15	0.012	2.85	5.23	8.56	0.50	956.38
C.I. 7-3	C.I. 7-2	45.71	956.98	956.30	1.49	15	0.012	1.09	3.94	8.53	0.30	957.39
C.I. 8-1	C.I. 6-3	199.17	954.66	949.88	2.40	15	0.012	3.27	4.83	10.84	0.63	955.39
C.I. 8-2	C.I. 8-1	48.86	955.99	955.26	1.49	15	0.012	1.39	4.23	8.55	0.34	956.46
F.I. 9-1	F.I. 6-4	139.73	959.40	953.81	4.00	15	0.012	1.24	3.10	13.99	0.47	959.84 j
M.H. 10-1	E.S. 10-0	68.05	949.02	948.00	1.50	24	0.012	6.50	6.17	30.00	0.63	949.92
C.I. 10-2	M.H. 10-1	158.20	956.81	949.62	4.54	24	0.012	6.50	8.02	52.24	0.48	957.71
C.I. 10-3	C.I. 10-2	37.68	957.98	957.41	1.51	18	0.012	1.88	4.50	13.99	0.37	958.50
C.I. 11-1	C.I. 10-2	212.00	959.53	957.56	0.93	15	0.012	4.62	5.49	6.74	0.76	960.40
C.I. 11-2	C.I. 11-1	70.50	963.30	960.13	4.50	15	0.012	3.04	6.90	14.83	0.38	964.00
M.H. 12-1	E.S. 12-0	73.49	950.69	950.00	0.94	24	0.012	11.59	6.64	23.74	0.99	951.91
C.I. 12-2	M.H. 12-1	166.88	953.97	951.44	1.52	15	0.012	7.54	7.27	8.61	0.91	955.06
C.I. 12-3	C.I. 12-2	34.00	960.00	958.30	5.00	15	0.012	3.53	7.41	15.64	0.40	960.76
M.H. 13-1	E.S. 13-0	32.00	913.55	912.59	3.00	15	0.012	3.87	6.74	12.12	0.49	914.34
C.I. 13-2	M.H. 13-1	128.00	934.50	919.14	12.00	15	0.012	3.87	9.58	24.23	0.34	935.29
C.I. 13-3	C.I. 13-2	124.09	947.93	936.00	9.61	15	0.012	1.66	6.98	21.69	0.23	948.44
C.I. 13-4	C.I. 13-3	34.00	949.21	948.53	2.00	15	0.012	1.13	4.25	9.89	0.29	949.63
M.H. 14-1	E.S. 14-0	77.98	929.49	928.00	1.91	24	0.012	16.03	8.62	33.87	0.97	930.93
C.I. 14-2	M.H. 14-1	135.03	935.89	930.09	4.30	18	0.012	16.03	11.79	23.58	0.91	937.31
C.I. 14-3	C.I. 14-2	34.00	941.64	940.96	2.00	18	0.012	9.34	7.85	16.09	0.82	942.82
M.H. 14-4	C.I. 14-3	27.99	942.80	942.24	2.00	15	0.012	3.68	5.60	9.90	0.58	943.57
F.I. 14-5	M.H. 14-4	60.93	954.37	948.28	9.99	15	0.012	3.68	8.97	22.12	0.35	955.14
M.H. 15-1	C.I. 14-2	171.54	949.40	944.19	3.04	15	0.012	3.69	6.66	12.19	0.47	950.18
C.I. 15-2	M.H. 15-1	106.46	954.79	950.00	4.50	15	0.012	3.69	7.32	14.84	0.42	955.57
C.I. 15-3	C.I. 15-2	34.28	955.95	955.39	1.63	15	0.012	2.94	5.38	8.94	0.49	956.64
C.I. 16-1	C.I. 1-3	144.00	953.00	947.20	4.03	15	0.012	2.25	6.13	14.04	0.34	953.60
C.I. 17-1	C.I. 2-5	159.00	964.46	955.71	5.50	15	0.012	2.25	6.62	16.41	0.31	965.06
M.H. 18-1	M.H. 12-1	207.05	953.36	951.29	1.00	15	0.012	4.05	5.35	6.99	0.68	954.17
C.I. 18-2	M.H. 18-1	286.61	963.97	953.96	3.49	15	0.012	4.05	7.09	13.07	0.48	964.78
C.I. 18-3	C.I. 18-2	45.03	965.47	964.57	2.00	15	0.012	2.81	5.56	9.89	0.46	966.14

Inlet Design Table

10 Year Return Frequency

Inlet ID	Inlet Location	Peak Flow	Upstream Bypass	Total Flow	Clogging Factor	Inlet Capacity	Sag Inlet Capacity (Note 1)	Captured Flow	Bypass Flow	Inlet Efficiency (Note 2)	Gutter Depth	Gutter Spread	Ponding Depth
		(cfs)	(cfs)	(cfs)		(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)
C.I. 1-2(L)	SAG	1.58	...	...	...	...	...	...	...	...	0.15	7.61	...
C.I. 1-2(R)	SAG	1.46	...	...	...	...	...	...	...	...	0.13	6.39	...
C.I. 1-2	SAG	3.71	0.00	3.71	0.80	19.40	15.52	3.71	0.00	100.00%	...	...	...
C.I. 1-3(L)	SAG	3.64	...	...	...	...	...	...	...	...	0.18	8.99	...
C.I. 1-3(R)	SAG	1.16	...	...	...	...	...	...	...	...	0.13	6.56	...
C.I. 1-3	SAG	8.10	0.00	8.10	0.80	19.40	15.52	8.10	0.00	100.00%	...	...	...
F.I. 1-4	SAG	1.58	0.00	1.58	0.80	14.00	11.20	1.58	0.00	100.00%	...	...	0.12
F.I. 1-5	SAG	1.13	0.00	1.13	0.80	14.00	11.20	1.13	0.00	100.00%	...	...	0.09
C.I. 1-7(R)	SAG	1.13	...	...	...	...	...	...	...	...	0.13	6.60	...
C.I. 1-7	SAG	1.84	0.00	1.84	0.80	19.40	15.52	1.84	0.00	100.00%	...	...	...
C.I. 1-8(L)	SAG	3.71	...	...	...	...	...	...	...	...	0.21	10.32	...
C.I. 1-8(R)	SAG	1.13	...	...	...	...	...	...	...	...	0.13	6.46	...
C.I. 1-8	SAG	6.68	0.00	6.68	0.80	19.40	15.52	6.68	0.00	100.00%	...	...	...
C.I. 2-3	GRADE	0.98	0.00	0.98	1.00	0.83	0.83	0.83	0.15	84.65%	0.10	5.00	...
C.I. 2-4	GRADE	1.91	0.00	1.91	1.00	1.38	1.38	1.38	0.54	71.99%	0.13	6.44	...
C.I. 2-5	GRADE	3.25	0.96	4.21	1.00	2.80	2.80	2.80	1.41	66.54%	0.19	9.50	...
C.I. 2-6	GRADE	0.79	0.00	0.79	1.00	0.72	0.72	0.72	0.07	91.26%	0.10	5.06	...
C.I. 3-3	GRADE	1.05	0.11	1.16	1.00	1.05	1.05	1.05	0.11	90.19%	0.13	6.32	...
C.I. 3-4	GRADE	0.71	0.17	0.88	1.00	0.82	0.82	0.82	0.06	92.69%	0.11	5.70	...
C.I. 3-5	GRADE	1.43	0.00	1.43	1.00	1.25	1.25	1.25	0.17	87.93%	0.14	6.82	...
C.I. 3-6	GRADE	1.16	0.00	1.16	1.00	1.05	1.05	1.05	0.11	90.20%	0.13	6.32	...
C.I. 4-2	GRADE	1.16	0.11	1.28	1.00	0.87	0.87	0.87	0.41	67.89%	0.09	4.75	...
C.I. 4-3	GRADE	1.39	0.06	1.45	1.00	0.94	0.94	0.94	0.51	64.56%	0.10	4.98	...
F.I. 5-1	SAG	4.84	0.00	4.84	0.80	14.00	11.20	4.84	0.00	100.00%	...	...	0.25
F.I. 5-2	SAG	4.85	0.00	4.85	0.80	14.00	11.20	4.85	0.00	100.00%	...	...	0.25
C.I. 6-2(L)	SAG	1.58	...	...	...	...	...	...	...	...	0.15	7.59	...
C.I. 6-2(R)	SAG	0.90	...	...	...	...	...	...	...	...	0.12	6.00	...
C.I. 6-2	SAG	3.11	0.00	3.11	0.80	19.40	15.52	3.11	0.00	100.00%	...	...	...
C.I. 6-3(L)	SAG	1.50	...	...	...	...	...	...	...	...	0.15	7.42	...
C.I. 6-3(R)	SAG	3.08	...	...	...	...	...	...	...	...	0.20	9.87	...
C.I. 6-3	SAG	7.05	0.00	7.05	0.80	19.40	15.52	7.05	0.00	100.00%	...	...	...
F.I. 6-4	SAG	3.33	0.00	3.33	0.80	14.00	11.20	3.33	0.00	100.00%	...	...	0.19
F.I. 6-5	SAG	1.05	0.00	1.05	0.80	14.00	11.20	1.05	0.00	100.00%	...	...	0.09
C.I. 6-7	GRADE	0.83	0.00	0.83	1.00	0.77	0.77	0.77	0.06	93.24%	0.11	5.56	...
C.I. 6-8	GRADE	1.13	0.00	1.13	1.00	1.02	1.02	1.02	0.11	90.53%	0.12	6.24	...
C.I. 7-2	GRADE	1.76	0.06	1.82	1.00	1.40	1.40	1.40	0.41	77.23%	0.13	6.66	...
C.I. 7-3	GRADE	1.09	0.00	1.09	1.00	0.93	0.93	0.93	0.15	85.85%	0.11	5.49	...
C.I. 8-1	GRADE	1.88	0.23	2.11	1.00	1.70	1.70	1.70	0.40	80.89%	0.15	7.71	...
C.I. 8-2	GRADE	1.39	0.00	1.39	1.00	1.21	1.21	1.21	0.18	87.17%	0.13	6.59	...
F.I. 9-1	SAG	1.24	0.00	1.24	0.80	14.00	11.20	1.24	0.00	100.00%	...	...	0.10
C.I. 10-3(L)	SAG	0.34	...	...	...	...	...	...	...	...	0.08	3.87	...
C.I. 10-3(R)	SAG	0.98	...	...	...	...	...	...	...	...	0.13	6.38	...
C.I. 10-3	SAG	1.88	0.00	1.88	0.80	19.40	15.52	1.88	0.00	100.00%	...	...	...
C.I. 10-4(L)	SAG	2.96	...	...	...	...	...	...	...	...	0.21	10.60	...
C.I. 10-4(R)	SAG	3.56	...	...	...	...	...	...	...	...	0.19	9.36	...
C.I. 10-4	SAG	9.11	0.00	9.11	0.80	19.40	15.52	9.11	0.00	100.00%	...	...	...
C.I. 11-1	GRADE	1.58	0.00	1.58	1.00	1.34	1.34	1.34	0.23	85.28%	0.14	6.89	...
C.I. 11-2	GRADE	3.04	0.00	3.04	1.00	2.23	2.23	2.23	0.81	73.35%	0.18	8.82	...
C.I. 12-2(L)	SAG	0.41	...	...	...	...	...	...	...	...	0.09	4.43	...
C.I. 12-2(R)	SAG	3.00	...	...	...	...	...	...	...	...	0.19	9.33	...
C.I. 12-2	SAG	4.01	0.00	4.01	0.80	19.40	15.52	4.01	0.00	100.00%	...	...	...
C.I. 12-3(L)	SAG	0.64	...	...	...	...	...	...	...	...	0.10	5.22	...
C.I. 12-3(R)	SAG	0.53	...	...	...	...	...	...	...	...	0.10	4.85	...
C.I. 12-3	SAG	3.53	0.00	3.53	0.80	19.40	15.52	3.53	0.00	100.00%	...	...	...
C.I. 13-2(L)	SAG	0.60	...	...	...	...	...	...	...	...	0.10	4.84	...
C.I. 13-2(R)	SAG	0.38	...	...	...	...	...	...	...	...	0.07	3.55	...
C.I. 13-2	SAG	2.21	0.00	2.21	0.80	19.40	15.52	2.21	0.00	100.00%	...	...	...
C.I. 13-3	GRADE	0.53	0.00	0.53	1.00	0.44	0.44	0.44	0.09	83.36%	0.07	3.29	...
C.I. 13-4	GRADE	1.13	0.00	1.13	1.00	0.76	0.76	0.76	0.36	67.81%	0.09	4.37	...
C.I. 14-2(L)	SAG	0.98	...	...	...	...	...	...	...	...	0.10	5.07	...
C.I. 14-2(R)	SAG	1.39	...	...	...	...	...	...	...	...	0.14	7.18	...
C.I. 14-2	SAG	3.00	0.00	3.00	0.80	19.40	15.52	3.00	0.00	100.00%	...	...	...
C.I. 14-3(L)	SAG	1.76	...	...	...	...	...	...	...	...	0.16	7.85	...
C.I. 14-3(R)	SAG	2.59	...	...	...	...	...	...	...	...	0.16	8.15	...
C.I. 14-3	SAG	5.66	0.00	5.66	0.80	19.40	15.52	5.66	0.00	100.00%	...	...	...
F.I. 14-5	SAG	3.68	0.00	3.68	0.80	14.00	11.20	3.68	0.00	100.00%	...	...	0.20
C.I. 15-2	GRADE	0.75	0.00	0.75	1.00	0.65	0.65	0.65	0.10	87.10%	0.09	4.43	...
C.I. 15-3	GRADE	2.94	0.00	2.94	1.00	1.72	1.72	1.72	1.22	58.61%	0.15	7.40	...
C.I. 16-1	GRADE	2.25	2.01	4.26	1.00	3.26	3.26	3.26	1.00	76.52%	0.21	10.68	...
C.I. 17-1	GRADE	2.25	0.00	2.25	1.00	1.29	1.29	1.29	0.96	57.46%	0.12	6.17	...
C.I. 18-2	GRADE	1.24	0.00	1.24	1.00	1.23	1.23	1.23	0.01	99.52%	0.14	6.60	...
C.I. 18-3	GRADE	2.81	0.00	2.81	1.00	2.63	2.63	2.63	0.18	93.65%	0.19	8.98	...

Notes:
1. Inlet capacity at sag location has been reduced by a clogging factor of 0.80, reducing theoretical capacity to 80% capacity, as required per APWA Section 5600.
   Both theoretical capacity and reduced capacity are shown.
2. Inlet efficiency shown in the tables is Captured Flow/Total Flow, denoting the actual percentage of flow captured after the capacity has been reduced to 80% of theoretical capacity.

Drainage Area Design Table

10 Year Return Frequency

Inlet ID	Drainage Area	C	Tc	i	K	Peak Flow
	(ac)		(min)	(in/hr)		(cfs)
C.I. 1-2(L)	0.42	0.51	5.00	7.35	1.00	1.58
C.I. 1-2(R)	0.39	0.51	5.00	7.35	1.00	1.46
C.I. 1-2(B)	0.18	0.51	5.00	7.35	1.00	0.68
C.I. 1-2	0.99	0.51	5.00	7.35	1.00	3.71
C.I. 1-3(L)	0.97	0.51	5.00	7.35	1.00	3.64
C.I. 1-3(R)	0.31	0.51	5.00	7.35	1.00	1.16
C.I. 1-3(B)	0.88	0.51	5.00	7.35	1.00	3.30
C.I. 1-3	2.16	0.51	5.00	7.35	1.00	8.10
F.I. 1-4	0.42	0.51	5.00	7.35	1.00	1.58
F.I. 1-5	0.30	0.51	5.00	7.35	1.00	1.13
C.I. 1-7(R)	0.30	0.51	5.00	7.35	1.00	1.13
C.I. 1-7(B)	0.19	0.51	5.00	7.35	1.00	0.71
C.I. 1-7	0.49	0.51	5.00	7.35	1.00	1.84
C.I. 1-8(L)	0.99	0.51	5.00	7.35	1.00	3.71
C.I. 1-8(R)	0.30	0.51	5.00	7.35	1.00	1.13
C.I. 1-8(B)	0.49	0.51	5.00	7.35	1.00	1.84
C.I. 1-8	1.78	0.51	5.00	7.35	1.00	6.68
C.I. 2-3	0.26	0.51	5.00	7.35	1.00	0.98
C.I. 2-4	0.51	0.51	5.00	7.35	1.00	1.91
C.I. 2-5	1.13	0.51	12.19	5.65	1.00	3.25
C.I. 2-6	0.21	0.51	5.00	7.35	1.00	0.79
C.I. 3-3	0.28	0.51	5.00	7.35	1.00	1.05
C.I. 3-4	0.19	0.51	5.00	7.35	1.00	0.71
C.I. 3-5	0.38	0.51	5.00	7.35	1.00	1.43
C.I. 3-6	0.31	0.51	5.00	7.35	1.00	1.16
C.I. 4-2	0.31	0.51	5.00	7.35	1.00	1.16
C.I. 4-3	0.37	0.51	5.00	7.35	1.00	1.39
F.I. 5-1	1.29	0.51	5.00	7.35	1.00	4.84
F.I. 5-2	1.35	0.51	6.07	7.04	1.00	4.85
C.I. 6-2(L)	0.42	0.51	5.00	7.35	1.00	1.58
C.I. 6-2(R)	0.24	0.51	5.00	7.35	1.00	0.90
C.I. 6-2(B)	0.17	0.51	5.00	7.35	1.00	0.64
C.I. 6-2	0.83	0.51	5.00	7.35	1.00	3.11
C.I. 6-3(L)	0.40	0.51	5.00	7.35	1.00	1.50
C.I. 6-3(R)	0.82	0.51	5.00	7.35	1.00	3.08
C.I. 6-3(B)	0.66	0.51	5.00	7.35	1.00	2.48
C.I. 6-3	1.88	0.51	5.00	7.35	1.00	7.05
F.I. 6-4	1.04	0.51	9.06	6.28	1.00	3.33
F.I. 6-5	0.28	0.51	5.00	7.35	1.00	1.05
C.I. 6-7	0.22	0.51	5.00	7.35	1.00	0.83
C.I. 6-8	0.30	0.51	5.00	7.35	1.00	1.13
C.I. 7-2	0.47	0.51	5.00	7.35	1.00	1.76
C.I. 7-3	0.29	0.51	5.00	7.35	1.00	1.09
C.I. 8-1	0.50	0.51	5.00	7.35	1.00	1.88
C.I. 8-2	0.37	0.51	5.00	7.35	1.00	1.39
F.I. 9-1	0.33	0.51	5.00	7.35	1.00	1.24
C.I. 10-3(L)	0.09	0.51	5.00	7.35	1.00	0.34
C.I. 10-3(R)	0.26	0.51	5.00	7.35	1.00	0.98
C.I. 10-3(B)	0.15	0.51	5.00	7.35	1.00	0.56
C.I. 10-3	0.50	0.51	5.00	7.35	1.00	1.88
C.I. 10-4(L)	0.79	0.51	5.00	7.35	1.00	2.96
C.I. 10-4(R)	0.95	0.51	5.00	7.35	1.00	3.56
C.I. 10-4(B)	0.69	0.51	5.00	7.35	1.00	2.59
C.I. 10-4	2.43	0.51	5.00	7.35	1.00	9.11
C.I. 11-1	0.42	0.51	5.00	7.35	1.00	1.58
C.I. 11-2	0.81	0.51	5.00	7.35	1.00	3.04
C.I. 12-2(L)	0.11	0.51	5.00	7.35	1.00	0.41
C.I. 12-2(R)	0.80	0.51	5.00	7.35	1.00	3.00
C.I. 12-2(B)	0.16	0.51	5.00	7.35	1.00	0.60
C.I. 12-2	1.07	0.51	5.00	7.35	1.00	4.01
C.I. 12-3(L)	0.17	0.51	5.00	7.35	1.00	0.64
C.I. 12-3(R)	0.14	0.51	5.00	7.35	1.00	0.53
C.I. 12-3(B)	0.63	0.51	5.00	7.35	1.00	2.36
C.I. 12-3	0.94	0.51	5.00	7.35	1.00	3.53
C.I. 13-2(L)	0.16	0.51	5.00	7.35	1.00	0.60
C.I. 13-2(R)	0.10	0.51	5.00	7.35	1.00	0.38
C.I. 13-2(B)	0.33	0.51	5.00	7.35	1.00	1.24
C.I. 13-2	0.59	0.51	5.00	7.35	1.00	2.21
C.I. 13-3	0.14	0.51	5.00	7.35	1.00	0.53
C.I. 13-4	0.30	0.51	5.00	7.35	1.00	1.13
C.I. 14-2(L)	0.26	0.51	5.00	7.35	1.00	0.98
C.I. 14-2(R)	0.37	0.51	5.00	7.35	1.00	1.39
C.I. 14-2(B)	0.17	0.51	5.00	7.35	1.00	0.64
C.I. 14-2	0.80	0.51	5.00	7.35	1.00	3.00
C.I. 14-3(L)	0.47	0.51	5.00	7.35	1.00	1.76
C.I. 14-3(R)	0.69	0.51	5.00	7.35	1.00	2.59
C.I. 14-3(B)	0.35	0.51	5.00	7.35	1.00	1.31
C.I. 14-3	1.51	0.51	5.00	7.35	1.00	5.66
F.I. 14-5	0.98	0.51	5.00	7.35	1.00	3.68
C.I. 15-2	0.20	0.51	5.00	7.35	1.00	0.75
C.I. 15-3	1.08	0.51	13.98	5.34	1.00	2.94
C.I. 16-1	0.60	0.51	5.00	7.35	1.00	2.25
C.I. 17-1	0.60	0.51	5.00	7.35	1.00	2.25
C.I. 18-2	0.33	0.51	5.00	7.35	1.00	1.24
C.I. 18-3	0.75	0.51	5.00	7.35	1.00	2.81

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6/7/19
PROFESSIONAL ENGINEER

Storm Sewer Design Calculation Table

100 Year Return Frequency

Upstream Structure	Downstream Structure	Length (ft)	Upstream Invert (ft)	Downstream Invert (ft)	Slope (%)	Diameter (in)	Manning's n	Total Flow (cfs)	Velocity (ft/s)	Capacity (cfs)	Flow Depth (ft)	Upstream Struct. HGL (ft)
M.H. 1-1	E.S. 1-0	94.45	920.83	918.00	3.00	36	0.012	44.33	12.14	125.07	1.23	923.00
C.I. 1-2	M.H. 1-1	178.23	940.35	925.83	8.15	24	0.012	44.33	18.86	69.94	1.16	942.32
C.I. 1-3	C.I. 1-2	35.86	945.70	943.91	4.99	24	0.012	37.82	15.47	54.74	1.22	947.64
F.I. 1-4	C.I. 1-3	159.42	953.55	947.20	3.98	18	0.012	19.66	12.83	22.70	1.08	955.01
F.I. 1-5	F.I. 1-4	144.93	957.05	954.15	2.00	18	0.012	16.90	10.01	16.09	1.31	958.49
M.H. 1-6	F.I. 1-5	72.00	958.73	957.65	1.50	18	0.012	14.93	8.75	13.93	1.37	960.13
C.I. 1-7	M.H. 1-6	143.00	965.57	959.53	4.22	18	0.012	14.93	11.36	23.38	0.87	966.97
C.I. 1-8	C.I. 1-7	36.65	968.07	966.17	5.18	15	0.012	11.71	11.84	15.93	0.80	969.28
M.H. 2-1	E.S 2-0	60.97	930.91	930.00	1.49	18	0.012	16.16	9.15	13.90	1.50	932.73
M.H. 2-2	M.H. 2-1	76.06	937.81	931.41	8.41	18	0.012	16.16	9.23	33.00	1.50	939.24 j
C.I. 2-3	M.H. 2-2	100.99	952.43	940.37	11.94	18	0.012	16.16	15.23	39.31	0.67	953.86
C.I. 2-4	C.I. 2-3	38.11	953.47	953.03	1.15	18	0.012	14.45	8.18	12.22	1.50	955.15
C.I. 2-5	C.I. 2-4	49.50	954.66	954.17	0.99	18	0.012	11.09	6.28	11.32	1.50	957.11
C.I. 2-6	C.I. 2-5	34.00	955.60	955.26	1.00	15	0.012	1.38	1.12	7.00	1.25	958.16
M.H. 3-1	E.S. 3-0	77.77	911.48	910.15	1.71	15	0.012	12.10	9.86	9.15	1.25	913.73
M.H. 3-2	M.H. 3-1	166.71	926.04	912.08	8.37	15	0.012	12.10	9.90	20.24	1.25	927.26 j
C.I. 3-3	M.H. 3-2	297.33	952.61	926.64	8.73	15	0.012	7.63	9.66	20.67	0.62	953.71
C.I. 3-4	C.I. 3-3	58.94	954.39	953.21	2.00	15	0.012	5.79	7.01	9.90	0.69	955.36
C.I. 3-5	C.I. 3-4	150.00	957.24	954.99	1.50	15	0.012	4.54	6.05	8.57	0.65	958.10
C.I. 3-6	C.I. 3-5	41.11	958.46	957.84	1.51	15	0.012	2.04	4.75	8.59	0.41	959.03
M.H. 4-1	M.H. 3-2	282.38	929.46	926.64	1.00	15	0.012	4.47	5.52	6.99	0.73	930.32
C.I. 4-2	M.H. 4-1	158.94	931.65	930.06	1.00	15	0.012	4.47	5.52	7.00	0.73	932.51
C.I. 4-3	C.I. 4-2	37.59	934.13	932.25	5.00	15	0.012	2.43	6.61	15.64	0.33	934.75
F.I. 5-1	E.S. 5-0	130.80	924.19	920.00	3.20	18	0.012	17.01	11.33	20.36	1.05	925.63
F.I. 5-2	F.I. 5-1	200.00	940.36	932.20	4.08	15	0.012	8.52	9.66	14.13	0.70	941.50
M.H. 6-1	E.S. 6-0	108.38	926.53	924.36	2.00	30	0.012	41.86	11.48	62.87	1.49	928.70
C.I. 6-2	M.H. 6-1	128.37	946.68	932.56	11.00	24	0.012	41.86	19.72	81.27	1.02	948.64
C.I. 6-3	C.I. 6-2	35.59	948.88	947.68	3.37	24	0.012	36.40	13.83	44.99	1.36	950.81
F.I. 6-4	C.I. 6-3	155.38	953.21	949.48	2.40	18	0.012	13.31	7.97	17.63	1.33	954.57
F.I. 6-5	F.I. 6-4	209.08	956.95	953.81	1.50	15	0.012	5.26	6.05	8.57	0.76	957.88
M.H. 6-6	F.I. 6-5	58.33	958.42	957.55	1.49	15	0.012	3.42	5.53	8.54	0.55	959.17
C.I. 6-7	M.H. 6-6	101.49	962.82	959.02	3.74	15	0.012	3.42	6.84	13.54	0.43	963.57
C.I. 6-8	C.I. 6-7	54.06	966.17	963.42	5.09	15	0.012	1.97	6.24	15.78	0.30	966.73
M.H. 7-1	C.I. 6-3	234.11	954.10	949.48	1.97	15	0.012	5.00	4.66	9.83	1.25	955.01 j
C.I. 7-2	M.H. 7-1	66.86	955.70	954.70	1.50	15	0.012	5.00	6.25	8.56	0.69	956.61
C.I. 7-3	C.I. 7-2	45.71	956.98	956.30	1.49	15	0.012	1.91	4.64	8.53	0.40	957.53
C.I. 8-1	C.I. 6-3	199.17	954.66	949.88	2.40	15	0.012	5.72	5.72	10.84	0.93	955.63
C.I. 8-2	C.I. 8-1	48.86	955.99	955.26	1.49	15	0.012	2.43	4.99	8.55	0.46	956.61
F.I. 9-1	F.I. 6-4	139.73	959.40	953.81	4.00	15	0.012	2.17	3.30	13.99	0.76	959.99 j
M.H. 10-1	E.S. 10-0	68.05	949.02	948.00	1.50	24	0.012	11.38	7.31	30.00	0.85	950.23
C.I. 10-2	M.H. 10-1	158.20	956.81	949.62	4.54	24	0.012	11.38	9.51	52.24	0.63	958.02
C.I. 10-3	C.I. 10-2	37.68	957.98	957.41	1.51	18	0.012	3.29	4.51	13.99	0.61	958.67
C.I. 11-1	C.I. 10-2	212.00	959.53	957.56	0.93	15	0.012	8.09	6.59	6.74	1.25	961.65
C.I. 11-2	C.I. 11-1	70.50	963.30	960.13	4.50	15	0.012	5.33	4.88	14.83	1.25	964.24 j
M.H. 12-1	E.S. 12-0	73.49	950.69	950.00	0.94	24	0.012	20.34	7.98	23.74	1.43	952.31
C.I. 12-2	M.H. 12-1	166.88	953.97	951.44	1.52	15	0.012	13.23	10.78	8.61	1.25	958.66
C.I. 12-3	C.I. 12-2	34.00	960.00	958.30	5.00	15	0.012	6.19	5.45	15.64	1.25	961.00 j
M.H. 13-1	E.S. 13-0	32.00	913.55	912.59	3.00	15	0.012	6.77	8.16	12.12	0.67	914.59
C.I. 13-2	M.H. 13-1	128.00	934.50	919.14	12.00	15	0.012	6.77	11.55	24.23	0.45	935.54
C.I. 13-3	C.I. 13-2	124.09	947.93	936.00	9.61	15	0.012	2.89	8.25	21.69	0.31	948.61
C.I. 13-4	C.I. 13-3	34.00	949.21	948.53	2.00	15	0.012	1.97	5.00	9.89	0.38	949.77
M.H. 14-1	E.S. 14-0	77.98	929.49	928.00	1.91	24	0.012	28.19	10.71	33.87	1.39	931.32
C.I. 14-2	M.H. 14-1	135.03	935.89	930.09	4.30	18	0.012	28.19	15.95	23.58	1.50	939.88
C.I. 14-3	C.I. 14-2	34.00	941.64	940.96	2.00	18	0.012	16.39	9.28	16.09	1.50	946.29
M.H. 14-4	C.I. 14-3	27.99	942.80	942.24	2.00	15	0.012	6.45	5.26	9.90	1.25	947.20
F.I. 14-5	M.H. 14-4	60.93	954.37	948.28	9.99	15	0.012	6.45	10.81	22.12	0.46	955.39
M.H. 15-1	C.I. 14-2	171.54	949.40	944.19	3.04	15	0.012	6.54	5.69	12.19	1.25	950.43 j
C.I. 15-2	M.H. 15-1	106.46	954.79	950.00	4.50	15	0.012	6.54	8.88	14.84	0.58	955.82
C.I. 15-3	C.I. 15-2	34.28	955.95	955.39	1.63	15	0.012	5.22	6.46	8.94	0.69	956.88
C.I. 16-1	C.I. 1-3	144.00	953.00	947.20	4.03	15	0.012	3.95	7.28	14.04	0.45	953.80
C.I. 17-1	C.I. 2-5	159.00	964.46	955.71	5.50	15	0.012	3.95	3.98	16.41	1.25	965.26 j
M.H. 18-1	M.H. 12-1	207.05	953.36	951.29	1.00	15	0.012	7.11	6.43	6.99	1.04	954.43
C.I. 18-2	M.H. 18-1	286.61	963.97	953.96	3.49	15	0.012	7.11	8.62	13.07	0.66	965.04
C.I. 18-3	C.I. 18-2	45.03	965.47	964.57	2.00	15	0.012	4.94	6.64	9.89	0.62	966.37

Inlet Design Table

100 Year Return Frequency

Inlet ID	Inlet Location	Peak Flow (cfs)	Upstream Bypass (cfs)	Total Flow (cfs)	Clogging Factor	Inlet Capacity (cfs)	Sag Inlet Capacity (Note 1) (cfs)	Captured Flow (cfs)	Bypass Flow (cfs)	Inlet Efficiency (Note 2) (%)	Gutter Depth (ft)	Gutter Spread (ft)	Ponding Depth (ft)
C.I. 1-2(L)	SAG	2.76	...	...	...	...	...	...	...	...	0.19	9.59	...
C.I. 1-2(R)	SAG	2.57	...	...	...	...	...	...	...	...	0.16	7.89	...
C.I. 1-2	SAG	6.51	0.00	6.51	0.80	19.40	15.52	6.51	0.00	100.00%	...	...	...
C.I. 1-3(L)	SAG	6.38	...	...	...	...	...	...	...	...	0.22	11.10	...
C.I. 1-3(R)	SAG	2.04	...	...	...	...	...	...	...	...	0.16	8.10	...
C.I. 1-3	SAG	14.21	0.00	14.21	0.80	19.40	15.52	14.21	0.00	100.00%	...	...	...
F.I. 1-4	SAG	2.76	0.00	2.76	0.80	14.00	11.20	2.76	0.00	100.00%	...	...	0.17
F.I. 1-5	SAG	1.97	0.00	1.97	0.80	14.00	11.20	1.97	0.00	100.00%	...	...	0.14
C.I. 1-7(R)	SAG	1.97	...	...	...	...	...	...	...	...	0.16	8.14	...
C.I. 1-7	SAG	3.22	0.00	3.22	0.80	19.40	15.52	3.22	0.00	100.00%	...	...	...
C.I. 1-8(L)	SAG	6.51	...	...	...	...	...	...	...	...	0.25	12.74	...
C.I. 1-8(R)	SAG	1.97	...	...	...	...	...	...	...	...	0.16	7.97	...
C.I. 1-8	SAG	11.71	0.00	11.71	0.80	19.40	15.52	11.71	0.00	100.00%	...	...	...
C.I. 2-3	GRADE	1.71	0.00	1.71	1.00	1.27	1.27	1.27	0.44	74.48%	0.12	6.18	...
C.I. 2-4	GRADE	3.36	0.00	3.36	1.00	1.92	1.92	1.92	1.44	57.22%	0.16	7.96	...
C.I. 2-5	GRADE	5.76	2.34	8.11	1.00	3.83	3.83	3.83	4.28	47.24%	0.24	12.14	...
C.I. 2-6	GRADE	1.38	0.00	1.38	1.00	1.17	1.17	1.17	0.21	84.57%	0.13	6.25	...
C.I. 3-3	GRADE	1.84	0.35	2.19	1.00	1.79	1.79	1.79	0.40	81.72%	0.16	8.01	...
C.I. 3-4	GRADE	1.25	0.52	1.77	1.00	1.50	1.50	1.50	0.26	85.09%	0.15	7.39	...
C.I. 3-5	GRADE	2.50	0.00	2.50	1.00	1.99	1.99	1.99	0.52	79.38%	0.17	8.42	...
C.I. 3-6	GRADE	2.04	0.00	2.04	1.00	1.69	1.69	1.69	0.35	82.90%	0.16	7.80	...
C.I. 4-2	GRADE	2.04	0.40	2.44	1.00	1.21	1.21	1.21	1.23	49.64%	0.12	6.05	...
C.I. 4-3	GRADE	2.43	0.26	2.70	1.00	1.26	1.26	1.26	1.44	46.61%	0.13	6.29	...
F.I. 5-1	SAG	8.49	0.00	8.49	0.80	14.00	11.20	8.49	0.00	100.00%	...	...	0.36
F.I. 5-2	SAG	8.52	0.00	8.52	0.80	14.00	11.20	8.52	0.00	100.00%	...	...	0.36
C.I. 6-2(L)	SAG	2.76	...	...	...	...	...	...	...	...	0.19	9.58	...
C.I. 6-2(R)	SAG	1.58	...	...	...	...	...	...	...	...	0.15	7.72	...
C.I. 6-2	SAG	5.46	0.00	5.46	0.80	19.40	15.52	5.46	0.00	100.00%	...	...	...
C.I. 6-3(L)	SAG	2.63	...	...	...	...	...	...	...	...	0.19	9.75	...
C.I. 6-3(R)	SAG	5.40	...	...	...	...	...	...	...	...	0.25	12.53	...
C.I. 6-3	SAG	12.37	0.00	12.37	0.80	19.40	15.52	12.37	0.00	100.00%	...	...	...
F.I. 6-4	SAG	5.88	0.00	5.88	0.80	14.00	11.20	5.88	0.00	100.00%	...	...	0.28
F.I. 6-5	SAG	1.84	0.00	1.84	0.80	14.00	11.20	1.84	0.00	100.00%	...	...	0.13
C.I. 6-7	GRADE	1.45	0.00	1.45	1.00	1.27	1.27	1.27	0.18	87.74%	0.14	6.86	...
C.I. 6-8	GRADE	1.97	0.00	1.97	1.00	1.65	1.65	1.65	0.33	83.42%	0.15	7.71	...
C.I. 7-2	GRADE	3.09	0.18	3.27	1.00	2.07	2.07	2.07	1.20	63.38%	0.17	8.30	...
C.I. 7-3	GRADE	1.91	0.00	1.91	1.00	1.46	1.46	1.46	0.45	76.25%	0.14	6.78	...
C.I. 8-1	GRADE	3.29	0.68	3.97	1.00	2.67	2.67	2.67	1.30	67.29%	0.20	9.78	...
C.I. 8-2	GRADE	2.43	0.00	2.43	1.00	1.90	1.90	1.90	0.53	78.23%	0.16	8.14	...
F.I. 9-1	SAG	2.17	0.00	2.17	0.80	14.00	11.20	2.17	0.00	100.00%	...	...	0.14
C.I. 10-3(L)	SAG	0.59	...	...	...	...	...	...	...	...	0.10	4.78	...
C.I. 10-3(R)	SAG	1.71	...	...	...	...	...	...	...	...	0.16	7.88	...
C.I. 10-3	SAG	3.29	0.00	3.29	0.80	19.40	15.52	3.29	0.00	100.00%	...	...	...
C.I. 10-4(L)	SAG	5.20	...	...	...	...	...	...	...	...	0.27	13.64	...
C.I. 10-4(R)	SAG	6.25	...	...	...	...	...	...	...	...	0.23	11.56	...
C.I. 10-4	SAG	15.99	0.00	15.99	0.80	19.40	15.52	15.52	0.47	97.06%	...	...	...
C.I. 11-1	GRADE	2.76	0.00	2.76	1.00	2.08	2.08	2.08	0.68	75.40%	0.17	8.51	...
C.I. 11-2	GRADE	5.33	0.00	5.33	1.00	3.14	3.14	3.14	2.19	58.95%	0.22	10.88	...
C.I. 12-2(L)	SAG	0.72	...	...	...	...	...	...	...	...	0.11	5.47	...
C.I. 12-2(R)	SAG	5.26	...	...	...	...	...	...	...	...	0.23	11.52	...
C.I. 12-2	SAG	7.04	0.00	7.04	0.80	19.40	15.52	7.04	0.00	100.00%	...	...	...
C.I. 12-3(L)	SAG	1.12	...	...	...	...	...	...	...	...	0.13	6.44	...
C.I. 12-3(R)	SAG	0.92	...	...	...	...	...	...	...	...	0.12	5.99	...
C.I. 12-3	SAG	6.19	0.00	6.19	0.80	19.40	15.52	6.19	0.00	100.00%	...	...	...
C.I. 13-2(L)	SAG	1.05	...	...	...	...	...	...	...	...	0.13	6.37	...
C.I. 13-2(R)	SAG	0.66	...	...	...	...	...	...	...	...	0.09	4.57	...
C.I. 13-2	SAG	3.88	0.00	3.88	0.80	19.40	15.52	3.88	0.00	100.00%	...	...	...
C.I. 13-3	GRADE	0.92	0.00	0.92	1.00	0.67	0.67	0.67	0.25	72.60%	0.08	4.06	...
C.I. 13-4	GRADE	1.97	0.00	1.97	1.00	1.03	1.03	1.03	0.95	52.11%	0.11	5.40	...
C.I. 14-2(L)	SAG	1.71	...	...	...	...	...	...	...	...	0.13	6.40	...
C.I. 14-2(R)	SAG	2.43	...	...	...	...	...	...	...	...	0.18	8.86	...
C.I. 14-2	SAG	5.26	0.00	5.26	0.80	19.40	15.52	5.26	0.00	100.00%	...	...	...
C.I. 14-3(L)	SAG	3.09	...	...	...	...	...	...	...	...	0.19	9.69	...
C.I. 14-3(R)	SAG	4.54	...	...	...	...	...	...	...	...	0.21	10.56	...
C.I. 14-3	SAG	9.94	0.00	9.94	0.80	19.40	15.52	9.94	0.00	100.00%	...	...	...
F.I. 14-5	SAG	6.45	0.00	6.45	0.80	14.00	11.20	6.45	0.00	100.00%	...	...	0.30
C.I. 15-2	GRADE	1.32	0.00	1.32	1.00	1.03	1.03	1.03	0.29	78.13%	0.11	5.48	...
C.I. 15-3	GRADE	5.22	0.00	5.22	1.00	2.17	2.17	2.17	3.05	41.51%	0.18	9.18	...
C.I. 16-1	GRADE	3.95	5.93	9.88	1.00	5.35	5.35	5.35	4.53	54.17%	0.29	14.64	...
C.I. 17-1	GRADE	3.95	0.00	3.95	1.00	1.61	1.61	1.61	2.34	40.65%	0.15	7.61	...
C.I. 18-2	GRADE	2.17	0.00	2.17	1.00	2.09	2.09	2.09	0.08	96.28%	0.18	8.15	...
C.I. 18-3	GRADE	4.94	0.00	4.94	1.00	4.19	4.19	4.19	0.74	84.99%	0.24	11.08	...

Notes:

1. Inlet capacity at sag location has been reduced by a clogging factor of 0.80, reducing theoretical capacity to 80% capacity, as required per APWA Section 5600.
   Both theoretical capacity and reduced capacity are shown.
2. Inlet efficiency shown in the tables is Captured Flow/Total Flow, denoting the actual percentage of flow captured after the capacity has been reduced to 80% of theoretical capacity.

Drainage Area Design Table

100 Year Return Frequency

Inlet ID	Drainage Area (ac)	C	Tc (min)	i (in/hr)	K	Peak Flow (cfs)
C.I. 1-2(L)	0.42	0.51	5.00	10.32	1.25	2.76
C.I. 1-2(R)	0.39	0.51	5.00	10.32	1.25	2.57
C.I. 1-2(B)	0.18	0.51	5.00	10.32	1.25	1.18
C.I. 1-2	0.99	0.51	5.00	10.32	1.25	6.51
C.I. 1-3(L)	0.97	0.51	5.00	10.32	1.25	6.38
C.I. 1-3(R)	0.31	0.51	5.00	10.32	1.25	2.04
C.I. 1-3(B)	0.88	0.51	5.00	10.32	1.25	5.79
C.I. 1-3	2.16	0.51	5.00	10.32	1.25	14.21
F.I. 1-4	0.42	0.51	5.00	10.32	1.25	2.76
F.I. 1-5	0.30	0.51	5.00	10.32	1.25	1.97
C.I. 1-7(R)	0.30	0.51	5.00	10.32	1.25	1.97
C.I. 1-7(B)	0.19	0.51	5.00	10.32	1.25	1.25
C.I. 1-7	0.49	0.51	5.00	10.32	1.25	3.22
C.I. 1-8(L)	0.99	0.51	5.00	10.32	1.25	6.51
C.I. 1-8(R)	0.30	0.51	5.00	10.32	1.25	1.97
C.I. 1-8(B)	0.49	0.51	5.00	10.32	1.25	3.22
C.I. 1-8	1.78	0.51	5.00	10.32	1.25	11.71
C.I. 2-3	0.26	0.51	5.00	10.32	1.25	1.71
C.I. 2-4	0.51	0.51	5.00	10.32	1.25	3.36
C.I. 2-5	1.13	0.51	12.19	8.00	1.25	5.76
C.I. 2-6	0.21	0.51	5.00	10.32	1.25	1.38
C.I. 3-3	0.28	0.51	5.00	10.32	1.25	1.84
C.I. 3-4	0.19	0.51	5.00	10.32	1.25	1.25
C.I. 3-5	0.38	0.51	5.00	10.32	1.25	2.50
C.I. 3-6	0.31	0.51	5.00	10.32	1.25	2.04
C.I. 4-2	0.31	0.51	5.00	10.32	1.25	2.04
C.I. 4-3	0.37	0.51	5.00	10.32	1.25	2.43
F.I. 5-1	1.29	0.51	5.00	10.32	1.25	8.49
F.I. 5-2	1.35	0.51	6.07	9.90	1.25	8.52
C.I. 6-2(L)	0.42	0.51	5.00	10.32	1.25	2.76
C.I. 6-2(R)	0.24	0.51	5.00	10.32	1.25	1.58
C.I. 6-2(B)	0.17	0.51	5.00	10.32	1.25	1.12
C.I. 6-2	0.83	0.51	5.00	10.32	1.25	5.46
C.I. 6-3(L)	0.40	0.51	5.00	10.32	1.25	2.63
C.I. 6-3(R)	0.82	0.51	5.00	10.32	1.25	5.40
C.I. 6-3(B)	0.66	0.51	5.00	10.32	1.25	4.34
C.I. 6-3	1.88	0.51	5.00	10.32	1.25	12.37
F.I. 6-4	1.04	0.51	9.06	8.87	1.25	5.88
F.I. 6-5	0.28	0.51	5.00	10.32	1.25	1.84
C.I. 6-7	0.22	0.51	5.00	10.32	1.25	1.45
C.I. 6-8	0.30	0.51	5.00	10.32	1.25	1.97
C.I. 7-2	0.47	0.51	5.00	10.32	1.25	3.09
C.I. 7-3	0.29	0.51	5.00	10.32	1.25	1.91
C.I. 8-1	0.50	0.51	5.00	10.32	1.25	3.29
C.I. 8-2	0.37	0.51	5.00	10.32	1.25	2.43
F.I. 9-1	0.33	0.51	5.00	10.32	1.25	2.17
C.I. 10-3(L)	0.09	0.51	5.00	10.32	1.25	0.59
C.I. 10-3(R)	0.26	0.51	5.00	10.32	1.25	1.71
C.I. 10-3(B)	0.15	0.51	5.00	10.32	1.25	0.99
C.I. 10-3	0.50	0.51	5.00	10.32	1.25	3.29
C.I. 10-4(L)	0.79	0.51	5.00	10.32	1.25	5.20
C.I. 10-4(R)	0.95	0.51	5.00	10.32	1.25	6.25
C.I. 10-4(B)	0.69	0.51	5.00	10.32	1.25	4.54
C.I. 10-4	2.43	0.51	5.00	10.32	1.25	15.99
C.I. 11-1	0.42	0.51	5.00	10.32	1.25	2.76
C.I. 11-2	0.81	0.51	5.00	10.32	1.25	5.33
C.I. 12-2(L)	0.11	0.51	5.00	10.32	1.25	0.72
C.I. 12-2(R)	0.80	0.51	5.00	10.32	1.25	5.26
C.I. 12-2(B)	0.16	0.51	5.00	10.32	1.25	1.05
C.I. 12-2	1.07	0.51	5.00	10.32	1.25	7.04
C.I. 12-3(L)	0.17	0.51	5.00	10.32	1.25	1.12
C.I. 12-3(R)	0.14	0.51	5.00	10.32	1.25	0.92
C.I. 12-3(B)	0.63	0.51	5.00	10.32	1.25	4.15
C.I. 12-3	0.94	0.51	5.00	10.32	1.25	6.19
C.I. 13-2(L)	0.16	0.51	5.00	10.32	1.25	1.05
C.I. 13-2(R)	0.10	0.51	5.00	10.32	1.25	0.66
C.I. 13-2(B)	0.33	0.51	5.00	10.32	1.25	2.17
C.I. 13-2	0.59	0.51	5.00	10.32	1.25	3.88
C.I. 13-3	0.14	0.51	5.00	10.32	1.25	0.92
C.I. 13-4	0.30	0.51	5.00	10.32	1.25	1.97
C.I. 14-2(L)	0.26	0.51	5.00	10.32	1.25	1.71
C.I. 14-2(R)	0.37	0.51	5.00	10.32	1.25	2.43
C.I. 14-2(B)	0.17	0.51	5.00	10.32	1.25	1.12
C.I. 14-2	0.80	0.51	5.00	10.32	1.25	5.26
C.I. 14-3(L)	0.47	0.51	5.00	10.32	1.25	3.09
C.I. 14-3(R)	0.69	0.51	5.00	10.32	1.25	4.54
C.I. 14-3(B)	0.35	0.51	5.00	10.32	1.25	2.30
C.I. 14-3	1.51	0.51	5.00	10.32	1.25	9.94
F.I. 14-5	0.98	0.51	5.00	10.32	1.25	6.45
C.I. 15-2	0.20	0.51	5.00	10.32	1.25	1.32
C.I. 15-3	1.08	0.51	13.98	7.58	1.25	5.22
C.I. 16-1	0.60	0.51	5.00	10.32	1.25	3.95
C.I. 17-1	0.60	0.51	5.00	10.32	1.25	3.95
C.I. 18-2	0.33	0.51	5.00	10.32	1.25	2.17
C.I. 18-3	0.75	0.51	5.00	10.32	1.25	4.94

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
6/7/19
PROFESSIONAL ENGINEER

REVISIONS

| NO. | DATE | REVISIONS



Key Map

NOTES:
1. INDIVIDUAL LOT OWNERS SHALL NOT CHANGE OR OBSTRUCT THE DRAINAGE FLOW LINES OR PATHS ON THE LOTS, AS SHOWN ON THE MASTER DRAINAGE PLAN, UNLESS SPECIFIC APPLICATION IS MADE AND APPROVED BY THE CITY ENGINEER.

2. PLAT IS LOCATED IN ZONE X, "AREAS OUTSIDE THE 1–PERCENT ANNUAL CHANCE FLOODPLAINS, AREAS OF 1–PERCENT ANNUAL CHANCE SHEET FLOW FLOODING WHERE THE AVERAGE DEPTHS ARE LESS THAN 1 FOOT, AREAS OF 1–PERCENT ANNUAL CHANCE STREAM FLOODING WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 1 SQUARE MILE, OR AREAS PROTECTED FROM THE 1–PERCENT ANNUAL CHANCE FLOOD BY LEVEES. NO BASE FLOOD ELEVATIONS OR DEPTHS ARE SHOWN WITHIN THIS ZONE"

3. BUFFER ZONE FOR NATURAL STREAMS IS LOCATED WITHIN PLAT.

4. MLO ELEVATIONS HAVE BEEN PROVIDED AT EACH LOT CORNER. INTERPOLATION WILL BE ALLOWED BETWEEN CORNER MBOES SHOWN ON THE MASTER DRAINAGE PLAN, DEPENDING ON THE LOCATION OF THE LOWEST OPENING ON THE PROPOSED STRUCTURE.

5. NO BUILDING PERMITS WILL BE ISSUED UNTIL AN AS–GRADED MASTER DRAINAGE PLAN HAS BEEN SUBMITTED TO THE CITY AND APPROVED BY THE CITY.

RMLO – REAR MINIMUM LOW OPENING
FMLO – FRONT MINIMUM LOW OPENING

6. REFER TO SHEET C112–C114 FOR SWALE GRADING DETAILS.

LOT TYPES:
S – STANDARD
D – DAYLIGHT
W – WALKOUT

1 BASIN B1 (TRACT G) CONDITIONS:
100–YEAR W.S.E. (NON–CLOGGED): 926.48
CLOGGED CONDITION (ALL FLOW THROUGH EMERGENCY SPILLWAY): 928.84

BASIN C1 DETENTION (TRACT E):
100–YEAR W.S.E. (NON–CLOGGED): 925.96
CLOGGED CONDITION (ALL FLOW THROUGH EMERGENCY SPILLWAY): 927.41

Woodside Ridge First Plat
Minimum Low Opening Elevations

Lot	Rear Left MLO	Rear Right MLO	Front Left MLO	Front Right MLO
91	974.70	974.63	975.32	973.79
92	968.74	974.70	974.31	975.32
93	962.75	968.74	972.99	974.31
94	959.28	962.75	971.55	972.99
95	967.33	959.28	968.30	971.55
96	956.49	966.73	967.47	968.30
97	952.94	956.49	966.25	967.47
98	954.40	952.94	964.91	966.25
99	953.38	954.40	963.56	964.91
100	951.98	953.38	962.20	963.56
101	950.26	951.98	960.85	962.20
102	947.82	950.26	958.67	960.85
103	943.05	947.82	954.57	958.67
104	939.71	937.28	946.99	952.70
105	938.19	939.71	941.03	946.99
106	931.86	938.19	933.22	941.03
107	941.65	933.43	939.44	931.22
108	946.67	941.65	955.80	939.44
109	948.21	946.67	958.78	955.80
110	950.03	948.21	960.00	958.78
111	953.53	950.03	961.27	960.00
112	956.02	953.53	962.62	961.27
113	957.71	956.02	963.97	962.62
114	958.84	957.71	966.07	963.97
115	964.76	966.78	966.87	967.98
116	971.22	967.55	970.14	967.25
117	965.46	964.73	974.14	972.29
118	964.21	965.46	975.31	974.14
119	962.22	964.21	974.15	975.31
120	963.94	962.35	972.64	974.15
128	936.94	933.52	960.52	959.26
129	933.52	932.01	959.26	957.67
130	932.73	934.48	957.28	958.16
131	934.48	933.88	958.16	959.33
132	933.88	935.28	959.33	960.36
133	935.28	938.53	960.36	961.28
134	938.53	944.82	961.28	962.65
135	944.82	959.44	962.65	964.69
136	959.44	964.76	964.69	966.87
137	969.46	964.73	967.25	961.80
138	964.01	961.51	961.80	959.30
139	961.51	960.38	959.30	958.17
140	962.22	964.21	958.17	957.28
141	959.49	960.56	957.28	958.35
142	963.94	963.86	958.35	961.05
143	963.26	962.95	961.05	965.58

MLO elevations have been provided per lot lines, facing the lot from the street. Interpolation will be allowed between the right and left side MLO's provided, depending on the location of the lowest opening on the proposed structure.

0' 30' 60' 120'
SCALE IN FEET

DWG: F:\2018\1001–1500\018–1140–A\40–Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_MDR01_1140A.dwg USER: ssoylor
DATE: Apr 04, 2019 11:53am

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
6/7/19
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY
1	4/2/2019	REVISED PER CITY COMMENTS	

REVISIONS

MASTER DRAINAGE PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

drawn by: D.A.H.O
checked by: J.E.S.
designed by: S.M.S.
QA/QC by: M.G.D.
project no.: A18-1140
date: 2019.03.12

SHEET
C150

NOTES:
1. INDIVIDUAL LOT OWNERS SHALL NOT CHANGE OR OBSTRUCT THE DRAINAGE FLOW LINES OR PATHS ON THE LOTS, AS SHOWN ON THE MATER DRAINAGE PLAN, UNLESS SPECIFIC APPLICATION IS MADE AND APPROVED BY THE CITY ENGINEER.

2. PLAT IS LOCATED IN ZONE X, "AREAS OUTSIDE THE 1–PERCENT ANNUAL CHANCE FLOODPLAINS, AREAS OF 1–PERCENT ANNUAL CHANCE SHEET FLOW FLOODING WHERE THE AVERAGE DEPTHS ARE LESS THAN 1 FOOT, AREAS OF 1–PERCENT ANNUAL CHANCE STREAM FLOODING WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 1 SQUARE MILE, OR AREAS PROTECTED FROM THE 1–PERCENT ANNUAL CHANCE FLOOD BY LEVEES. NO BASE FLOOD ELEVATIONS OR DEPTHS ARE SHOWN WITHIN THIS ZONE"

3. BUFFER ZONE FOR NATURAL STREAMS IS LOCATED WITHIN PLAT.

4. MLO ELEVATIONS HAVE BEEN PROVIDED PER LOT LINES. INTERPOLATION WILL BE ALLOWED BETWEEN THE RIGHT AND LEFT SIDE MBOES SHOWN ON THE MASTER DRAINAGE PLAN, DEPENDING ON THE LOCATION OF THE LOWEST OPENING ON THE PROPOSED STRUCTURE.

5. NO BUILDING PERMITS WILL BE ISSUED UNTIL AN AS–GRADED MASTER DRAINAGE PLAN HAS BEEN SUBMITTED TO THE CITY AND APPROVED BY THE CITY.

RMLO – REAR MINIMUM LOW OPENING
FMLO – FRONT MINIMUM LOW OPENING

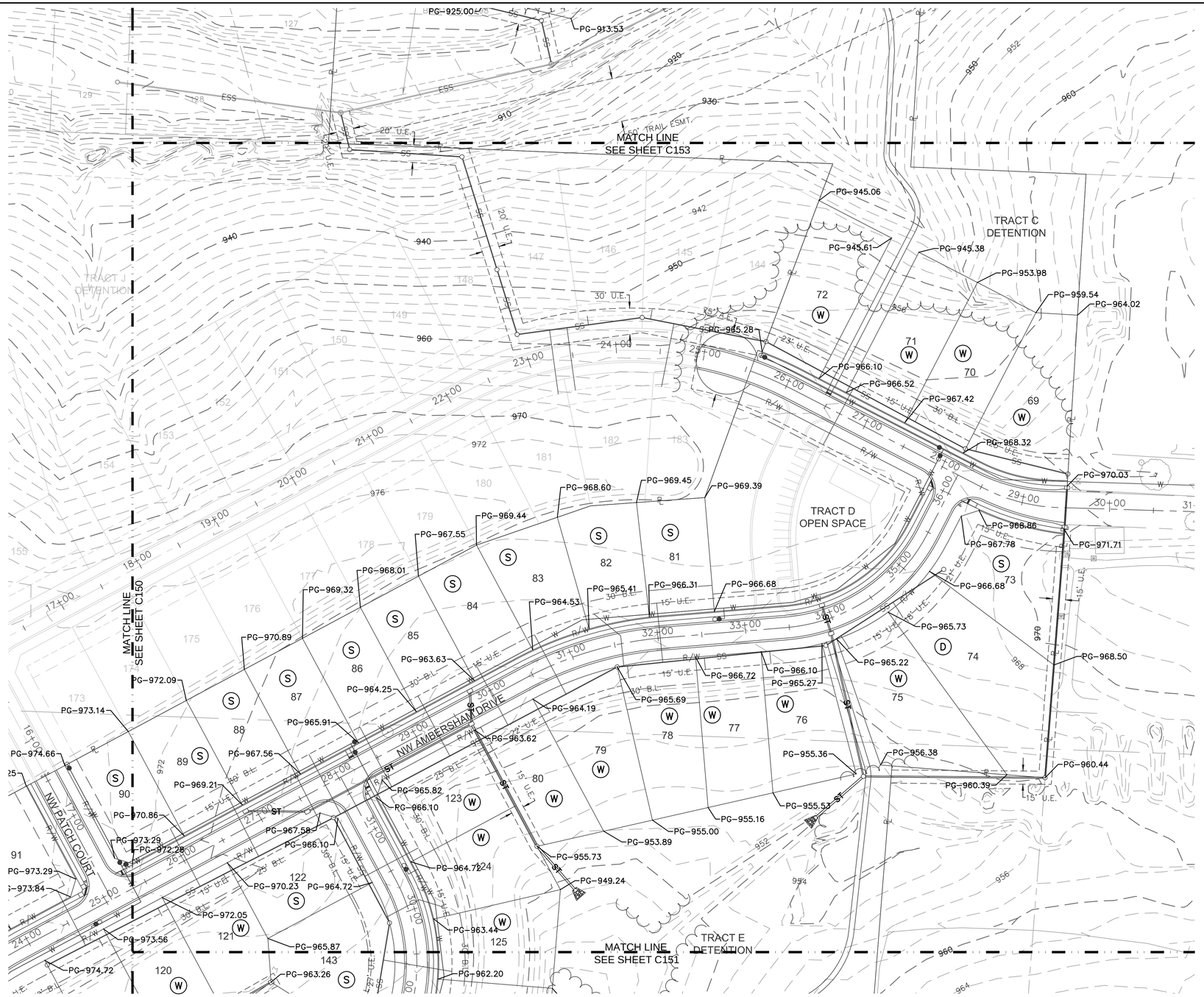
LOT TYPES:
S – STANDARD
D – DAYLIGHT
W – WALKOUT

Woodside Ridge First Plat Minimum Low Opening Elevations				
Lot	Rear Left MLO	Rear Right MLO	Front Left MLO	Front Right MLO
69	960.14	964.62	968.91	970.65
70	954.58	960.14	968.01	968.91
71	946.08	954.58	967.11	968.01
72	945.66	946.21	965.87	966.69
73	969.91	969.36	969.29	967.15
74	969.36	960.99	967.15	966.27
75	960.99	956.92	966.27	965.80
76	955.96	956.13	965.85	966.69
77	956.13	955.76	966.69	967.34
78	955.76	955.50	967.34	966.44
79	955.50	955.35	966.44	965.12
80	954.50	955.64	964.78	964.21
81	969.20	969.49	966.99	967.28
82	968.41	969.20	966.20	966.99
83	967.64	968.41	965.43	966.20
84	966.84	967.64	964.63	965.43
85	967.46	966.84	965.25	964.63
86	969.02	967.46	966.81	965.25
87	970.58	969.02	968.37	966.81
88	972.15	970.58	969.94	968.37
89	973.71	972.15	971.50	969.94
90	974.63	973.71	973.79	971.50
121	963.86	963.94	970.90	972.64
122	962.95	969.66	965.58	968.41
123	964.87	958.69	966.12	965.58
124	958.69	949.84	965.58	964.28
125	949.84	942.06	964.28	963.03

MLO elevations have been provided per lot lines, facing the lot from the street. Interpolation will be allowed between the right and left side MLO's provided, depending on the location of the lowest opening on the proposed structure.



Key Map



olsson
MO Certificate of Authority #001592
7301 W. 133rd Street, Suite 200
NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
6/7/19
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

MASTER DRAINAGE PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C152

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_MDR01_1140A.dwg USER: ssaylor
DATE: Apr 04, 2019 11:53am

NOTES:
1. INDIVIDUAL LOT OWNERS SHALL NOT CHANGE OR OBSTRUCT THE DRAINAGE FLOW LINES OR PATHS ON THE LOTS, AS SHOWN ON THE MATER DRAINAGE PLAN, UNLESS SPECIFIC APPLICATION IS MADE AND APPROVED BY THE CITY ENGINEER.

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5. SWALES TO BE CONSTRUCTED BETWEEN EACH OF THE LOTS 81-90 TO DRAIN TOWARDS THE ROADWAY.

6. NO BUILDING PERMITS WILL BE ISSUED UNTIL AN AS-GRADED MASTER DRAINAGE PLAN HAS BEEN SUBMITTED TO THE CITY AND APPROVED BY THE CITY.

RMLO – REAR MINIMUM LOW OPENING
FMLO – FRONT MINIMUM LOW OPENING

LOT TYPES:
S – STANDARD
D – DAYLIGHT
W – WALKOUT

N

0' 30' 60' 120'
SCALE IN FEET

Woodside Ridge First Plat Minimum Low Opening Elevations					
Lot	Rear Left MLO	Rear Right MLO	Front Left MLO	Front Right MLO
37	972.83	977.49	969.88	975.21
38	969.41	972.83	965.08	969.88
39	966.47	969.41	962.63	965.08
40	969.68	971.53	967.45	966.57
41	962.58	969.68	967.77	967.45
42	948.90	962.58	966.88	967.77
43	943.59	948.90	965.26	966.88
44	938.34	943.59	962.39	965.26
45	934.10	937.44	960.04	961.74
46	934.60	934.10	958.98	960.04
47	933.98	934.60	957.93	958.98
48	933.01	933.98	956.87	957.93
49	932.46	933.01	956.15	956.87
50	930.11	932.46	957.06	956.15
51	937.60	930.11	958.81	957.06
52	938.25	937.60	960.75	958.81
53	947.22	938.25	962.69	960.75
54	965.82	970.06	961.10	963.04
55	961.69	965.82	959.16	961.10
56	958.37	961.69	956.16	959.16
57	959.27	958.37	957.06	956.16
58	960.33	959.27	958.12	957.06
59	961.38	960.33	959.17	958.12
60	963.65	964.64	960.82	959.17
61	964.64	968.81	974.43	972.88
62	964.41	964.64	975.08	974.43
63	961.90	964.41	975.79	975.08
64	961.69	961.90	976.73	975.79
65	970.06	961.69	977.30	976.73
66	979.20	979.72	976.99	977.51
67	977.62	979.20	975.41	976.99
68	976.65	977.62	974.44	975.41

MLO elevations have been provided per lot lines, facing the lot from the street. Interpolation will be allowed between the right and left side MLO's provided, depending on the location of the lowest opening on the proposed structure.



Key Map



olsson
MO Certificate of Authority #001592
KS Certificate of Authority #E-2001
NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
6/7/19
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY
1	4/2/2019	REVISED PER CITY COMMENTS	

REVISIONS

MASTER DRAINAGE PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

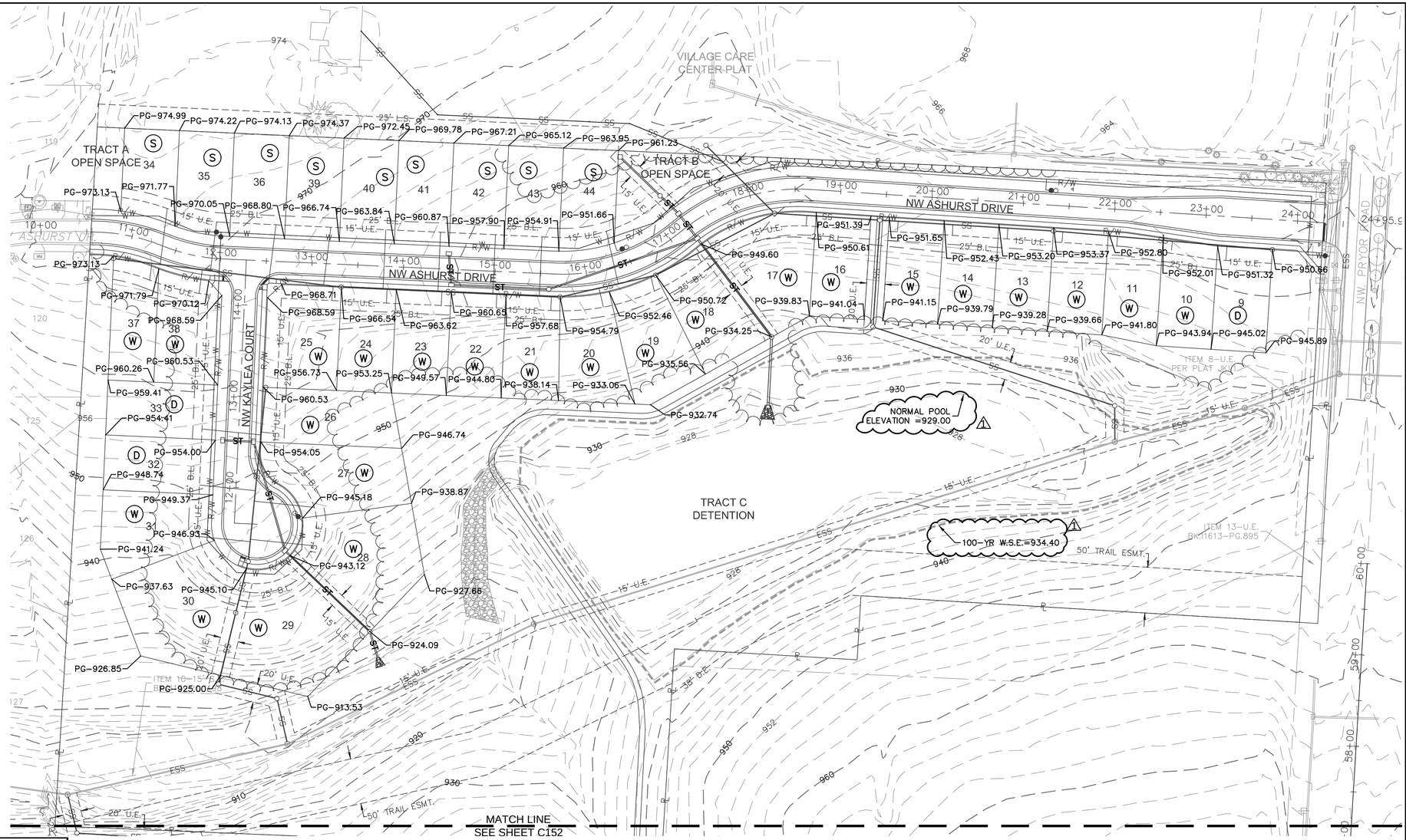
drawn by: D.A.H.Q
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C152

USER: ssoylor
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DATE: Apr 04, 2019 11:53am

Woodside Ridge First Plat Minimum Low Opening Elevations				
Lot	Rear Left MLO	Rear Right MLO	Front Left MLO	Front Right MLO
1	946.50	945.62	951.26	951.92
2	945.62	944.54	951.92	952.74
3	944.54	942.40	952.74	953.40
4	942.40	940.26	953.40	953.96
5	940.26	939.88	953.96	953.79
6	939.88	940.39	953.79	953.03
7	940.39	941.75	953.03	952.25
8	941.64	940.43	951.99	951.21
9	940.43	933.28	951.21	950.18
10	933.28	936.16	950.18	951.31
11	936.16	933.66	951.31	953.05
12	933.66	938.74	953.05	955.38
13	938.74	945.40	955.38	958.27
14	945.40	950.17	958.27	961.24
15	950.17	953.85	961.24	964.21
16	953.85	957.33	964.21	967.14
17	957.33	963.93	967.14	968.42
18	953.85	947.34	961.12	954.64
19	947.34	939.47	954.64	945.77
20	939.47	934.69	945.77	943.72
21	934.69	935.60	943.72	945.70
22	935.60	938.23	945.70	947.52
23	938.23	949.34	947.52	949.96
24	949.34	955.01	949.96	954.64
25	955.01	960.01	954.64	961.12
26	964.04	960.86	968.48	972.48
27	960.86	960.01	972.48	973.72
28	975.92	974.46	973.71	972.25
29	974.46	972.86	972.25	970.65
30	972.86	971.60	970.65	969.39
31	971.60	969.54	969.39	967.33
32	969.54	966.64	967.33	964.43
33	966.64	963.67	964.43	961.46
34	963.67	960.70	961.46	958.49
35	960.70	957.72	958.49	955.51
36	957.72	954.63	955.51	952.42

MLO elevations have been provided per lot lines, facing the lot from the street. Interpolation will be allowed between the right and left side MLO's provided, depending on the location of the lowest opening on the proposed structure.





Key Map

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FMLO - FRONT MINIMUM LOW OPENING

LOT TYPES:
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D - DAYLIGHT
W - WALKOUT

⚠1
EXISTING POND CONDITIONS:
100-YEAR W.S.E. (NON-CLOGGED): 934.38
NORMAL POOL ELEVATION: 929.00
CLOGGED CONDITION: 936.68
- NOTE: THERE IS NO EMERGENCY SPILLWAY, ASSUMED POND FULL UP TO 934.38 AND WATER OVERTOPS THE ENTIRE EXISTING DAM WITH TOP OF DAM ELEVATION 935, LENGTH 250'

N

0' 30' 60' 120'
SCALE IN FEET

olsson
MO Certificate of Authority #001592
7301 W. 133rd Street, Suite 200
NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
6/7/19
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY
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REVISIONS

MASTER DRAINAGE PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

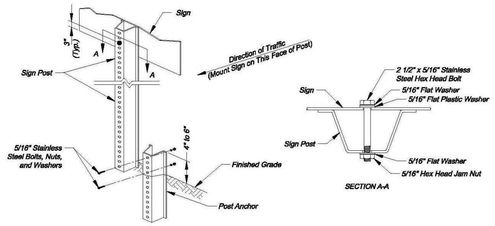
LEE'S SUMMIT, MO

2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
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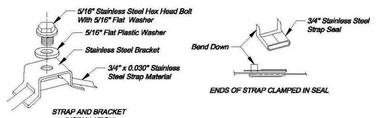
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DATE: Apr 04, 2019 2:10pm
USER: ssoylor



U-STEEL POST DETAILS

U-STEEL POST NOTES:

1. *Splice shall be positioned entirely between finished grade line and 16" above finished grade line. Only one splice will be allowed per post.*
2. *U-Steel post shall be 3 lb./ft., galvanized according to ASTM A123.*
3. *U-Steel post can be used for installation of signs with an area of less than 2.5 square feet.*
4. *All posts shall be embedded a minimum of 3 feet.*



STRAP TYPE SIGN SUPPORT DETAILS

METAL POLE SIGN MOUNTING NOTES:

1. *Signs on metal poles shall be attached with two brackets and stainless steel bands.*
2. *Holes in sign for attachment to the mounting brackets shall be offset a minimum of 2 inches from the edge of the sign.*
3. *Holes in sign shall be located such that the sign is level.*
4. *All strap, bracket, and seal materials should be Type 201 stainless steel.*

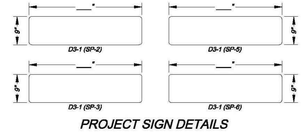
STANDARD ABBREVIATION LISTS

Named Streets	
Avenue	AVE
Boulevard	BLVD
Circle	CIR
Creek	CR
Court	CT
Crossing	XING
Drive	DR
Highway	HWY
Lane	LN
Parkway	PKWY
Place	PL
Road	RD
Street	ST
Terrace	TER
Trail	TRL
Way	WAY

Numbered Streets	
First	ST
Second	ND
Third	RD
Fourth to Tenth	TH

STREET NAME SIGN QUANTITIES

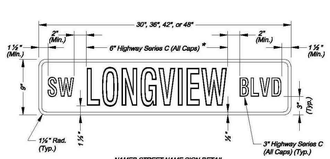
Sign Designation	Sign Size	Sign Area (Sq. Ft.)	Number	Quantity (Sq. Ft.)
D3-1 (SP-1)	9" x	Sq. Ft.	1	1
D3-1 (SP-2)	9" x			
D3-1 (SP-3)	9" x			
D3-1 (SP-4)	9" x			
D3-1 (SP-5)	9" x			
D3-1 (SP-6)	9" x			



STREET NAME SIGN BLANK DETAILS

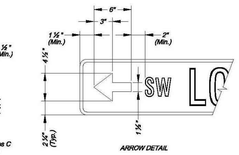
For Mounting on Square Steel Posts

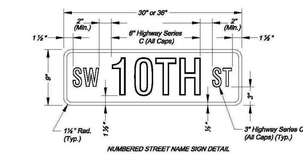
PROJECT SIGN DETAILS



NAMED STREET NAME SIGN DETAIL

* Use Highway Series B (All Caps) in lieu of series C if necessary to fit text on a 36" sign blank.





NUMBERED STREET NAME SIGN DETAIL



PRIVATE STREET TAG DETAIL

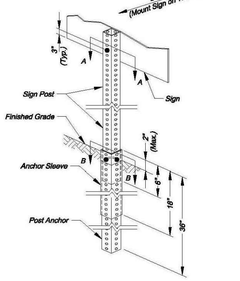
NOTES:

1. *For all street name signs, the legend shall be white and the background shall be green.*
2. *Arrows shall be added to street name signs where the name of a street changes at an intersection. Street name signs with arrows are to be installed on each side of the intersection to indicate the change in names. Arrows shall be white.*
3. *The "PRIVATE STREET" tag should be added to the end of street name signs to indicate where a street that is outside the right-of-way intersects a public street. The background for the "PRIVATE STREET" tag shall be yellow.*

STREET NAME SIGN FACE DETAILS

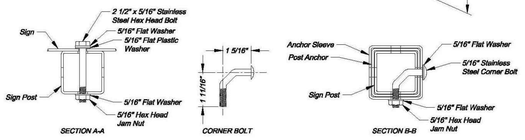
PERMANENT SIGNING GENERAL NOTES:

1. *All signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).*
2. *The Contractor is responsible for avoiding any and all utilities when installing sign posts, whether the utility is indicated on the plans or not.*
3. *All workmanship and materials shall be subject to the inspection and approval of the Public Works Department of the City of Lee's Summit.*
4. *The Contractor shall stake the location of all sign posts to be installed. The City Inspector shall inspect the staking prior to installation. Minor relocation to avoid conflicts may be allowed with the approval of the City Traffic Engineer or designee.*
5. *Signs shown to be installed on the side of metal poles shall be mounted with stainless steel straps or wing brackets as detailed. No signs are to be installed on wood poles. See Traffic Signal Standard Drawings for the installation of signs on mast arms.*
6. *All post mounted signs shall be installed with breakaway anchors according to the Standard Drawings.*
7. *All existing signs will be used in place during construction and protected from damage unless otherwise indicated in the plans. If the Contractor damages any existing sign or posts during construction, the Contractor will be required to replace the damaged materials with new signs or posts of the same type and size at the Contractor's expense. The Contractor shall be responsible for removing and storing any signs that are to be reinstalled on the project. All equipment shall be reinstalled in good condition.*
8. *Existing permanent signs and posts removed by the Contractor for construction purposes which are not to be reinstalled shall be delivered to the City's Public Works Maintenance Facility (1971 SE Hamblen Road). The Contractor shall be responsible for removing and storing equipment in good condition and is fully responsible for the equipment until it is delivered.*
9. *All Stop, Yield, or street name signs shall be maintained in a conspicuous location for the driving public. All Stop and Yield signs removed for construction purposes can be temporarily erected in reflectorized drums (no less than 7 feet above the pavement surface) until they can be reinstalled. Any temporary Stop or Yield sign installation to be left in place overnight will require prior approval from the City Inspector.*



SQUARE STEEL POST INSTALLATION SEQUENCE:

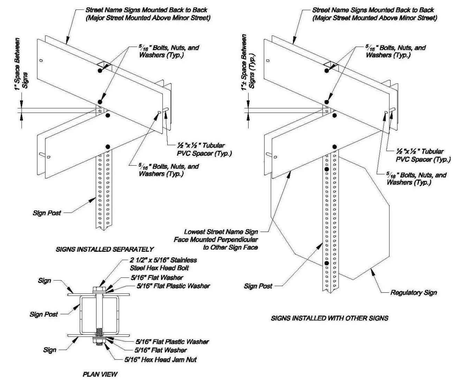
1. *Sign post anchor driven partially into the ground using a drive cap with a sledge or power equipment.*
2. *Anchor sleeve slipped over anchor and drive into the ground together with the sign post anchor.*
3. *Insert sign post into the post anchor and bolt in place.*



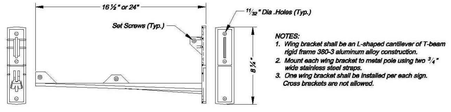
SQUARE STEEL POST DETAILS

SQUARE STEEL POST NOTES:

1. *Square steel sign posts and break-away anchor shall consist of the following materials:*
   Sign Post - 14 Ga. 2" x 2" Square Steel Post
   Post Anchor - 12 Ga. 2 1/4" x 2 1/4" x 36" Square Steel Post
   Anchor Sleeve - 12 Ga. 2 1/2" x 2 1/2" x 18" Square Steel Post
2. *14 Gauge posts must meet a certified minimum yield strength of 60,000 psi.*
3. *In all installations the first hole above the finished grade line on the sign post, anchor, and anchor sleeve must be in line for the insertion of the corner bolt.*
4. *The maximum area for one sign post is 9.0 square feet. A sign or combination of signs with an area greater than 9.0 square feet will require two posts. Also, signs with a width greater than 36" (not including 36" x 36" diamond shaped signs) will require two posts.*

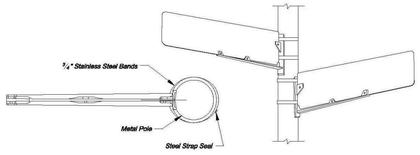


SQUARE STEEL POST MOUNTING DETAILS

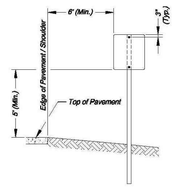


NOTES:

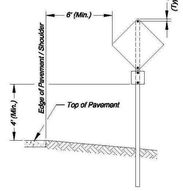
1. *Wing bracket shall be an L-shaped cantilever of T-beam rigid frame 380-3 aluminum alloy construction.*
2. *Mount each wing bracket to metal pole using two ¾" wide stainless steel straps.*
3. *One wing bracket shall be installed per each sign. Cross brackets are not allowed.*



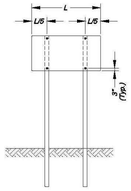
WING BRACKET MOUNTING DETAILS



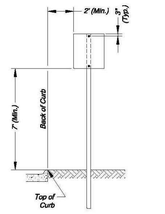
SIGN INSTALLATION FOR NON-CURBED STREET



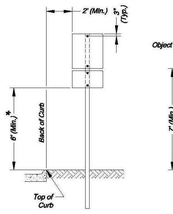
SIGN INSTALLATION WITH AUXILARY SIGN FOR NON-CURBED STREET



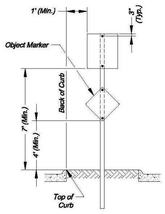
SIGN INSTALLATION WITH TWO SIGN POSTS



SIGN INSTALLATION FOR CURBED STREET



SIGN INSTALLATION WITH AUXILARY SIGN FOR CURBED STREET



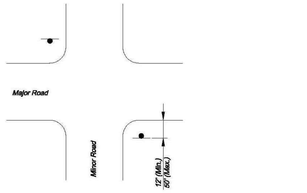
SIGN INSTALLATION FOR RAISED MEDIANS

SIGN MOUNTING DETAILS

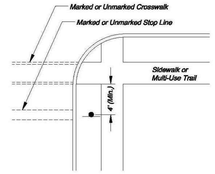
* *The height to the bottom of a sign when it is located in a pedestrian walkway or extends into a walkway shall be a minimum of 80 inches above the walkway.*

NOTE:

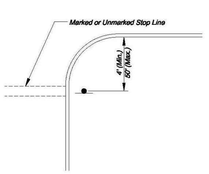
1. *Generally, the sign mounting height should not be more than 1' greater than the minimum mounting height.*



NON-CURBED INTERSECTION INSTALLATION

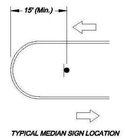


INTERSECTION WITH SIDEWALK / MULTI-USE TRAIL INSTALLATION



CURBED INTERSECTION INSTALLATION

CONTROL SIGN LOCATION

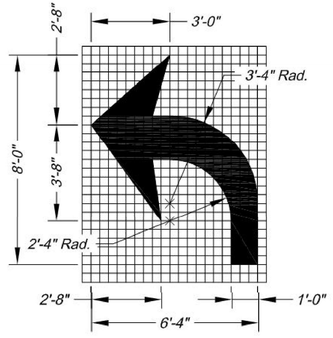


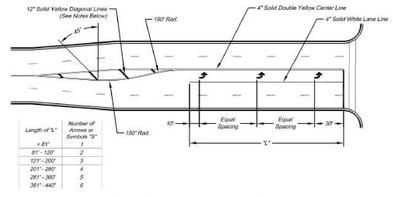
TYPICAL MEDIAN SIGN LOCATION

MEDIAN SIGN LOCATION

NOTES:

1. *A 4" P.V.C. sleeve shall be installed in new concrete medians at each location where a sign is to be installed.*
2. *For existing concrete medians, a 4" hole shall be cored into the concrete.*





Length of 'L'	Number of Arrows or Symbols "S"
< 81'	1
81' - 120'	2
121' - 200'	3
201' - 280'	4
281' - 360'	5
361' - 440'	6

TYPICAL TURN LANE MARKINGS

NOTES:

1. *Diagonal lines are required between centerlines if the width of the area between the center lines is greater than 12' and/or the length of the area between center lines is greater than 250'.*
2. *Diagonal lines should be spaced at 5' increments, equal to the posted speed limit.*
3. *Equal Spacing is calculated as (L - 40) / (S - 1).*
4. *When a through lane of traffic terminates as a mandatory turn lane, Arrow and "ONLY" symbols should be marked in the turn lane, in alforesiding order. The first and last symbols should be Arrows.*

olsson
MO Certificate of Authority # 001592
KS Certificate of Authority # E-2011
NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
6/7/19
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SIGNAGE DETAIL SHEET
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

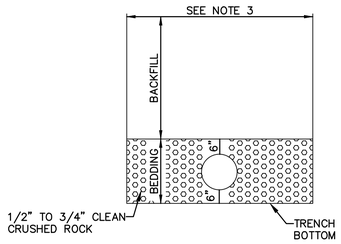
LEE'S SUMMIT, MO

2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C154

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USER: ssoylor



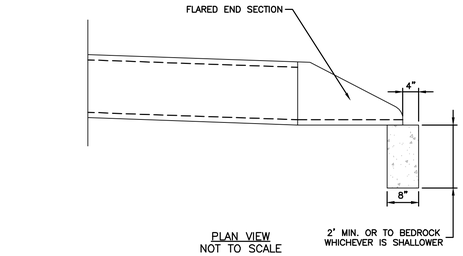
TYPICAL SECTION FOR PLASTIC PIPE
(IN ROCK OR SOIL)

1. BACKFILL SHALL BE JOB EXCAVATED MATERIAL FREE FROM DEBRIS AND STONES COMPACTED TO 90% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698 FOR BACKFILL UNDER PAVEMENT (EXISTING OR PROPOSED).

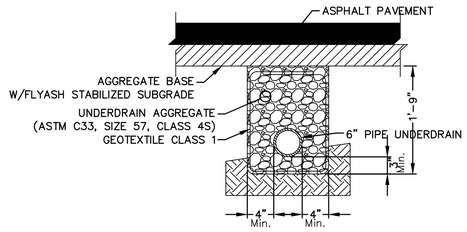
2. TRENCH BANKS MAY BE CUT BACK ON SLOPES IN ACCORDANCE WITH CURRENT OSHA REGULATIONS, BUT ONLY IN AREAS WHERE THE INCREASED TRENCH WIDTH WILL NOT INTERFERE WITH SURFACE FEATURES. SLOPES MUST NOT EXTEND BELOW TOP OF BEDDING.

3. MINIMUM AND MAXIMUM WIDTHS SHALL BE IN ACCORDANCE WITH PIPE MANUFACTURER'S RECOMMENDATION AS APPROVED ON ENGINEERING PLANS.

N.T.S.
01 UNDERGROUND PIPE INSTALLATION FROM STORM SEWER LINES

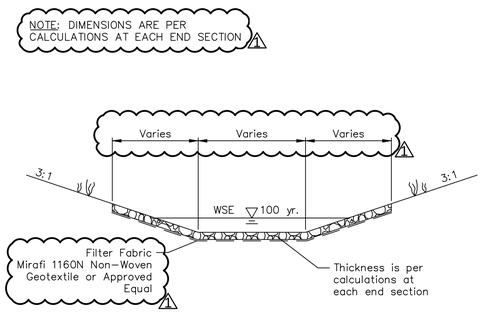


N.T.S.
03 FLARED END SECTION SUPPORT DETAIL

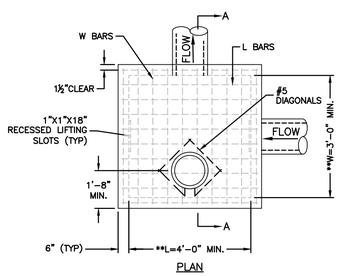


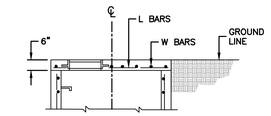
NOTES:
1. Where Pipe Underdrains are used, all Underdrain Outlet Pipes shall be solid wall with watertight joints. All Outlets Pipes shall be tied into the nearest storm sewer inlets at roadway sag locations as indicated in the street profile.
2. All Underdrain Pipes shall be installed at a minimum slope of 1%.
3. Underdrain Pipe shall be installed with the perforations placed down.
4. Blanket Underdrain Aggregate, Pipe Underdrain Aggregate, Pipe Underdrain, Edge Underdrain and Outlet Pipe shall conform to City of Lee's Summit Specifications.
5. Overlap geotextile at top of trench a minimum of 12".

N.T.S.
05 PIPE UNDERDRAIN LATERAL



N.T.S.
02 RIP-RAP DETAIL



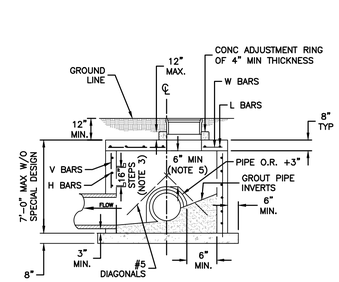


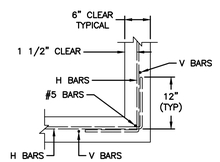
SLAB TOP ALTERNATE FOR JUNCTION BOX (SHALLOW)

** INCREASE IN MULTIPLES OF 6" (7'-0") MAX WITHOUT SPECIAL DESIGN. (SEE PROJECT PLANS FOR DETAILS)

REINFORCING

BARS	BAR SIZE	SPACING (IN.)
H	4	12
V	4	12
L	5	6
W	5	6





WALL CORNER DETAIL

GENERAL NOTES:
1. LOCATE RING AND COVER ON BLANK WALL.
2. USE ¾" CHAMFER STRIP OR ½" R EDGER TOOL ON ALL EXPOSED CONCRETE CORNERS.
3. STEPS REQUIRED AT 16" O.C. WHEN DEPTH FROM TOP OF CASTING TO INVERT EXCEEDS 4' ON BLANK WALL IF POSSIBLE.
4. BOXOUTS WILL NOT BE ALLOWED TO PROJECT THROUGH THE CORNERS OF THE STRUCTURE AND THE MINIMUM DISTANCE BETWEEN BOXOUTS IS 6".
5. THE MINIMUM REINFORCING SHALL BE 1 H-BAR OVER A CAST-IN-PLACE PIPE AND 2 H-BARS OVER A PRECAST BOXOUT.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON-SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. REINFORCING OF COVERS IN STREETS REQUIRE SPECIAL DESIGN.
10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

Scale: 1"=50'
04 JUNCTION BOX DETAIL

olsson
MO Certificate of Authority # 001592
KS Certificate of Authority # E-2011
NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
6/7/19
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY
1	4/2/2019	REVISED PER CITY COMMENTS	

REVISIONS

STORM DETAIL SHEET
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

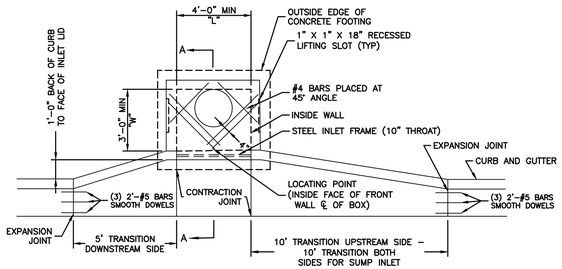
LEE'S SUMMIT, MO

2019

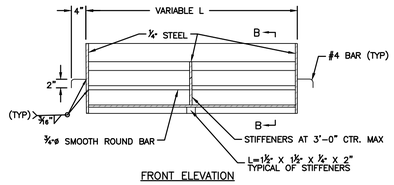
drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18:1140
date: 2019.03.12

SHEET
C155

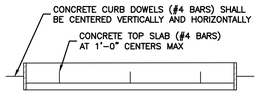
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DATE: Apr 04, 2019 2:10pm



PLAN VIEW



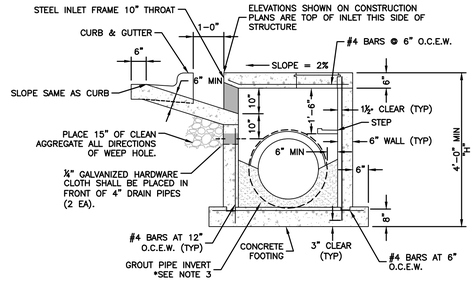
FRONT ELEVATION



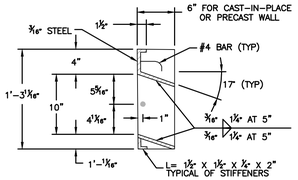
PLAN VIEW

STEEL FRAME NOTES:
1. ALL WELDS SHALL BE PERFORMED IN ACCORDANCE WITH APPROPRIATE AWS SPECIFICATIONS AND PROCEDURES.
2. ALL WELDS ON EXPOSED SURFACES SHALL BE DRESSED SO AS TO PROVIDE A PLEASING FINISHED APPEARANCE.
3. THE ENTIRE FRAME SHALL BE PAINTED A SINGLE COAT OF CHEM-PRIME #37H-78 PRIMER (GRAY) OR EQUAL.

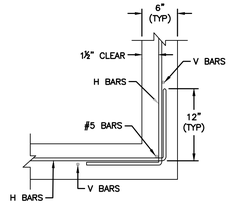
N.T.S.
01 03



SECTION A–A

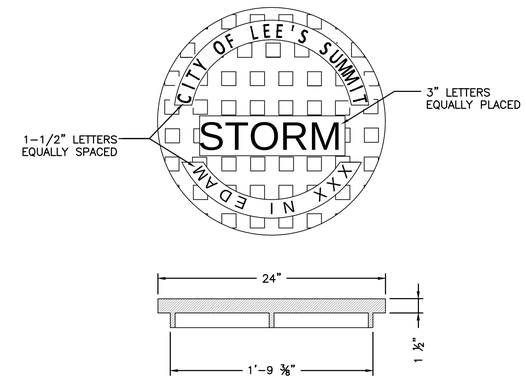


SECTION B–B



WALL CORNER DETAIL

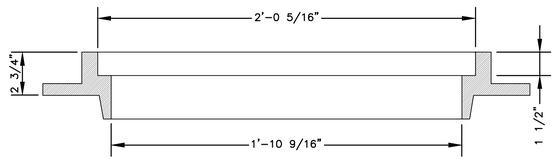
GENERAL NOTES:
1. THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION. THE SECOND DIMENSION IS THE "W" DIMENSION.
2. FLOW LINES LISTED ON THE PROJECT PLANS ARE LISTED AT THE INSIDE FACE OF THE WALL.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
4. LOCATE MH RING AND COVER ON BLANK WALL IF POSSIBLE.
5. STEPS SHALL BE SPACED AT 1'-4" O.C. VERTICALLY ON BLANK WALL IF POSSIBLE.
6. BEVEL ALL EXPOSED EDGES WITH ¾"CHAMFER OR ½" TOOLED EDGE.
7. ON-GRADE INLETS SHALL CONFORM TO THE STREET GRADE AND SUMP INLETS SHALL BE LEVEL.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON-SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. LIFTING RINGS SHALL BE REMOVED AND SEALED WITH NON-SHRINKABLE GROUT
10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.



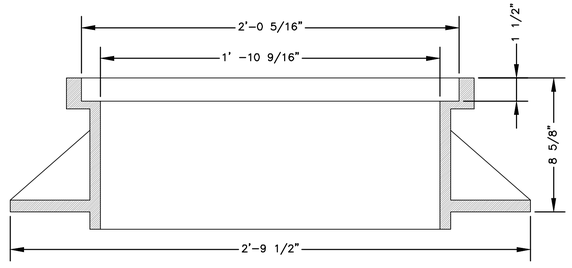
STANDARD 24" MANHOLE COVER
MINIMUM WEIGHT = 160 LB
NOTE: PICK HOLES NOT SHOWN

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

N.T.S.
04 STORM MANHOLE COVER DETAIL



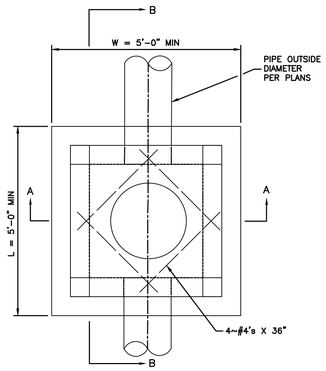
SLAB MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS103A
MINIMUM WEIGHT = 145 LB



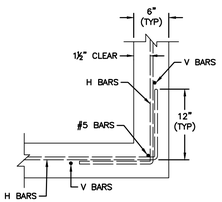
STANDARD 24" MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS101A
MINIMUM WEIGHT = 250 LB

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

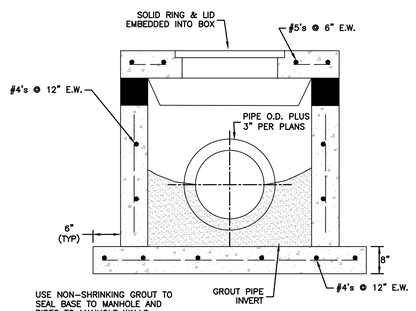
N.T.S.
02 STORM MANHOLE FRAME DETAIL



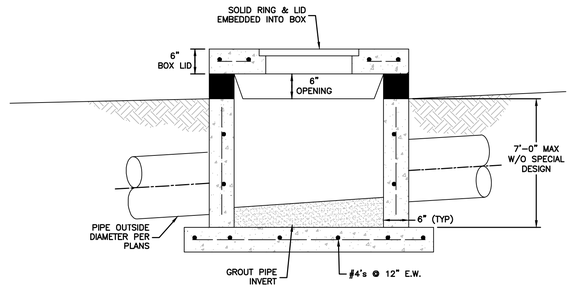
PLAN VIEW



WALL CORNER DETAIL



SECTION A–A



SECTION B–B

GENERAL NOTES:
1. LOCATE RING AND COVER OVER OUTLET ON BLANK WALL.
2. USE ¾" CHAMFER ON ALL EXPOSED CONCRETE CORNERS.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
4. STEPS REQUIRED AT 16" O.C. WHEN DEPTH FROM TOP OF CASTING TO INVERT EXCEEDS 3' ON BLANK WALL IF POSSIBLE.
5. BOXOUTS WILL NOT BE ALLOWED TO PROJECT THROUGH THE CORNERS OF THE STRUCTURE.
6. THE MINIMUM REINFORCING SHALL BE 1 H-BAR OVER A CAST-IN-PLACE PIPE AND 2 H-BARS OVER A PRECAST BOXOUT.
7. SHOW FIELD INLET ORIENTATION ON PLANS PLUS NUMBER AND SIDE OF OPENINGS.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON-SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST

N.T.S.
03 FIELD INLET DETAIL

olsson
MO Certificate of Authority #001592
3101 Broadway, Suite 300
NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
6/7/19
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

STORM DETAIL SHEET
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
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SHEET
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USER: ssoylor
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