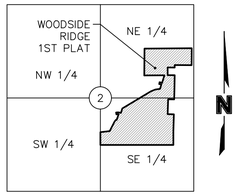
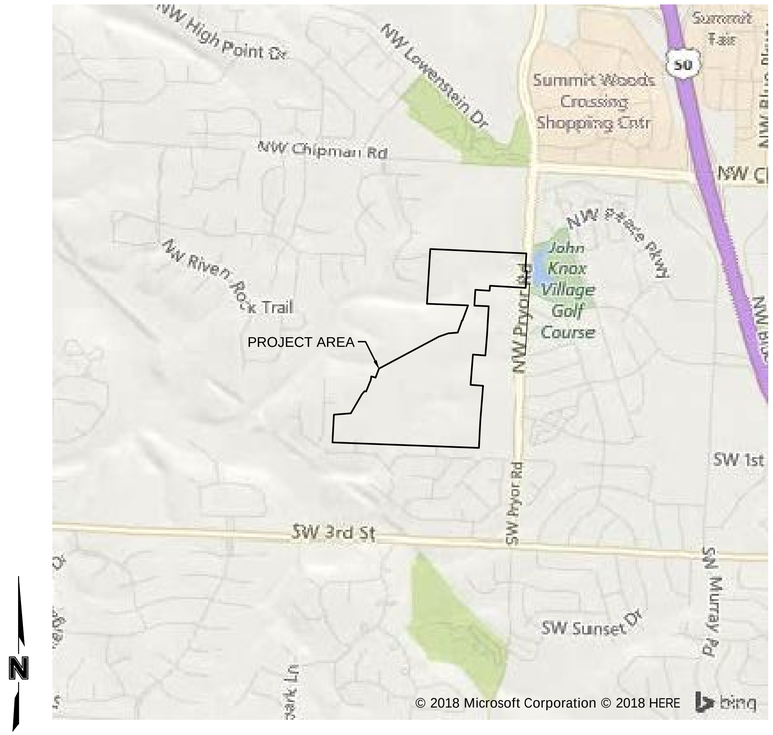
WOODSIDE RIDGE
FIRST PLAT
STREET & STORM SEWER PLANS

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



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

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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C152	MASTER DRAINAGE PLAN
C153	MASTER DRAINAGE PLAN
C154	SIGNAGE DETAIL SHEET
C155	STORM DETAIL SHEET
C156	STORM DETAIL SHEET

☐ NOT FOR CONSTRUCTION

☒ REVIEWED FOR CONSTRUCTION

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

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

JULIE E SELLERS, P.E. — 12/11/2020
CIVIL ENGINEER — DATE
MO# 2017000367

AS-BUILT

Survey Dates:
Storm Sewer- 10/20/2020
Detention Basins- 12/1/2020
Surface for Master Drainage Plan- 10/2/2020, updated in areas 12/1/2020

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

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MO Certificate of Authority # 001592
KS Certificate of Authority # E-2089
NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI — JULIE ELAINE SELLERS — NUMBER PE-2017000367 — 12/11/2020 — PROFESSIONAL ENGINEER

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

REVISIONS

COVER SHEET
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

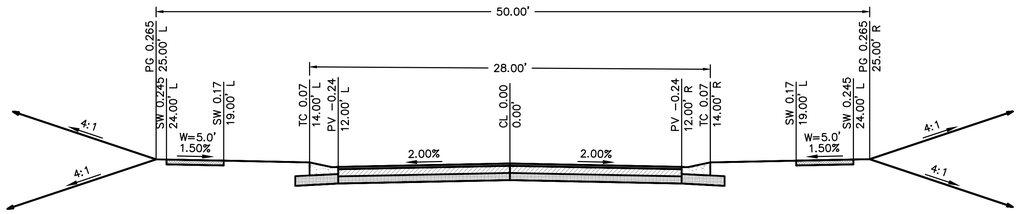
drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C101

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\As-Builts\Sheets\GNCV\01_Street & Storm_36x24\C_TTL01_1140A.dwg USER: jsellers
DATE: Nov 01, 2020 9:58pm

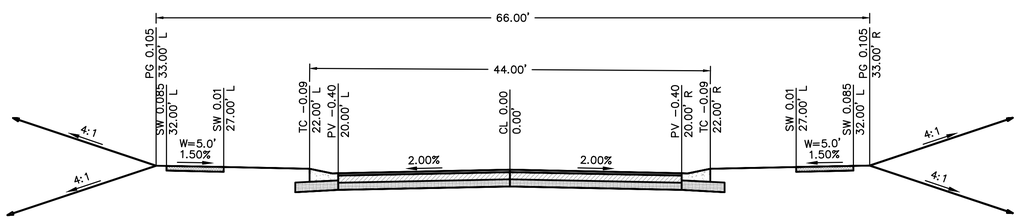
GENERAL NOTES:

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.



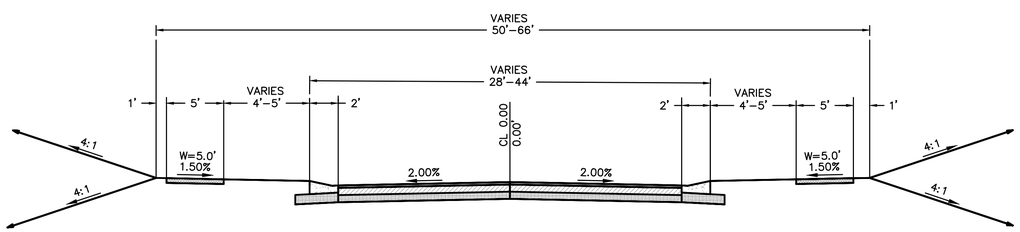
CG-2 CURB AND GUTTER
2" TYPE 5 OR 6 ASPHALTIC CONCRETE SURFACE
4" TYPE 5-01 ASPHALTIC CONCRETE BASE COURSE
6" MIN. MODOT TYPE 5 STONE BASE
6" MIN. FLYASH SABILIZED SUBGRADE

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~~	35
23	STD. CURB INLET (7'x3' INSIDE)	EA.	~~2~~	2
24	STD. MANHOLE (4' DIA. INSIDE)	EA.	~~16~~	15
25	STD. MANHOLE (5' DIA. INSIDE)	EA.	~~2~~	2
26	STD. FIELD INLET (4'x4' INSIDE)	EA.	~~8~~	8
27	STD. FIELD INLET (5'x5' INSIDE)	EA.	~~1~~	2
28	STD. FIELD INLET (8'x8' INSIDE)	EA.	~~1~~	1
29	15" HDPE	L.F.	~~4743.16~~	4746.27
30	18" HDPE	L.F.	~~1337.87~~	1395.80
31	15" RCP	L.F.	~~96.55~~	
32	24" HDPE	L.F.	~~755.77~~	752.05
33	30" HDPE	L.F.	~~108.38~~	109.17
34	36" HDPE	L.F.	~~94.45~~	96.31
35	42" RCP	L.F.	~~118.33~~	
36	15" CMP END SECTION	EA.	~~2~~	2
37	18" CMP END SECTION	EA.	~~2~~	2
38	24" CMP END SECTION	EA.	~~3~~	3
39	30" CMP END SECTION	EA.	~~1~~	1
40	36" CMP END SECTION	EA.	~~1~~	1
41	42" RCP END SECTION	EA.	~~1~~	1
42	CONNECTION TO EXISTING PIPE	EA.	~~1~~	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
~~EFOH~~	EXISTING FIBER OPTIC, OVERHEAD
~~EFO~~	EXISTING FIBER OPTIC, UNDERGROUND
~~FOH~~	PROPOSED FIBER OPTIC, OVERHEAD
~~FO~~	PROPOSED FIBER OPTIC, UNDERGROUND
~~FFOH~~	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 #:0000000000
2301 NORTH 104TH STREET
NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
12/11/2020
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY
1	4/12/2019	REVISED PER CITY COMMENTS	
2	5/16/2019	REVISED PER CITY COMMENTS	

REVISIONS

GENERAL NOTES
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

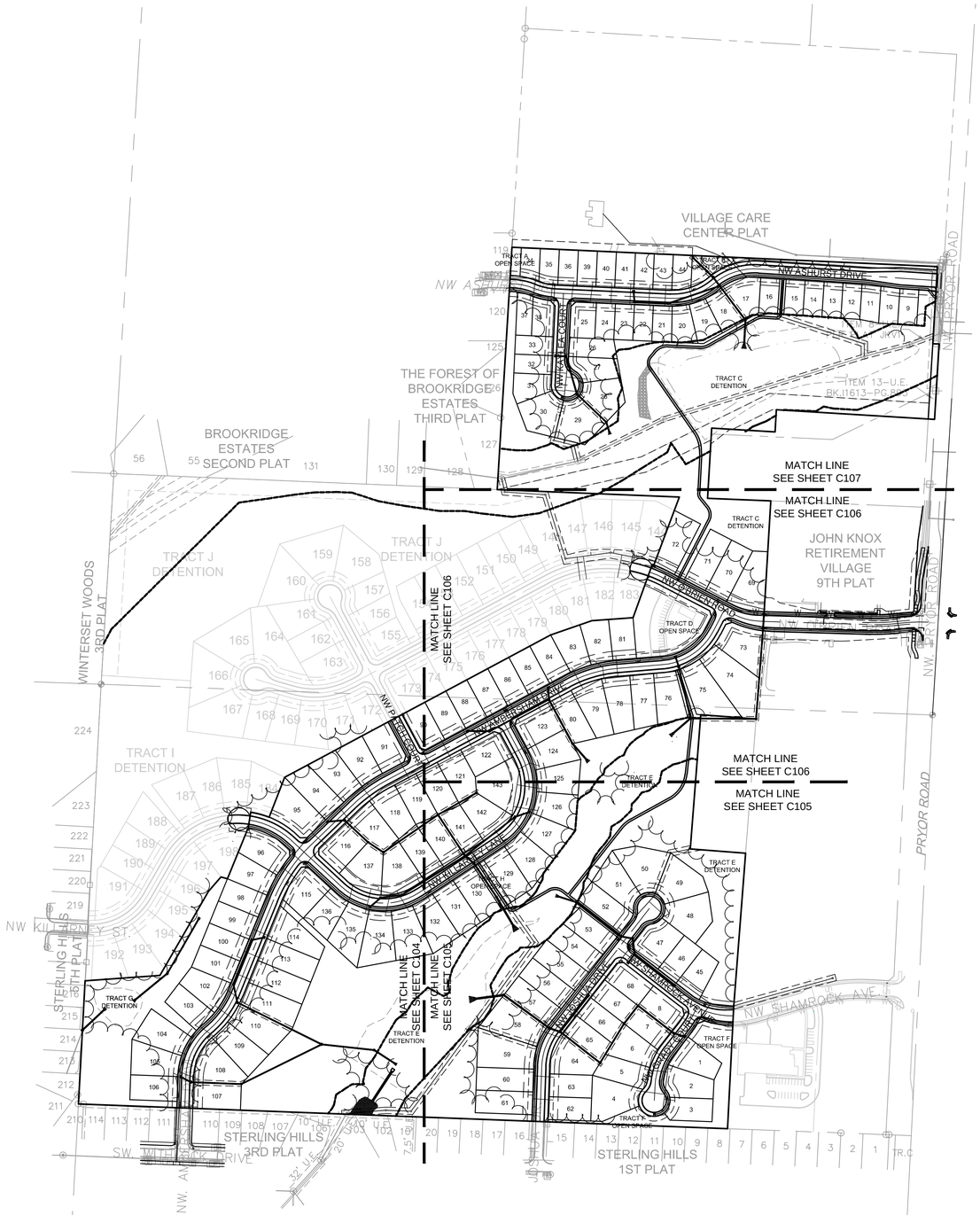
LEE'S SUMMIT, MO

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 USER: ssoylor
DATE: May 16, 2019 8:22am



N

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SCALE IN FEET

NOT AS-BUILT

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DATE: Apr 04, 2019 1:51pm

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12/11/2020
PROFESSIONAL ENGINEER

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

REVISIONS

MASTER GENERAL LAYOUT
STREET & STORM SEWER PLANS

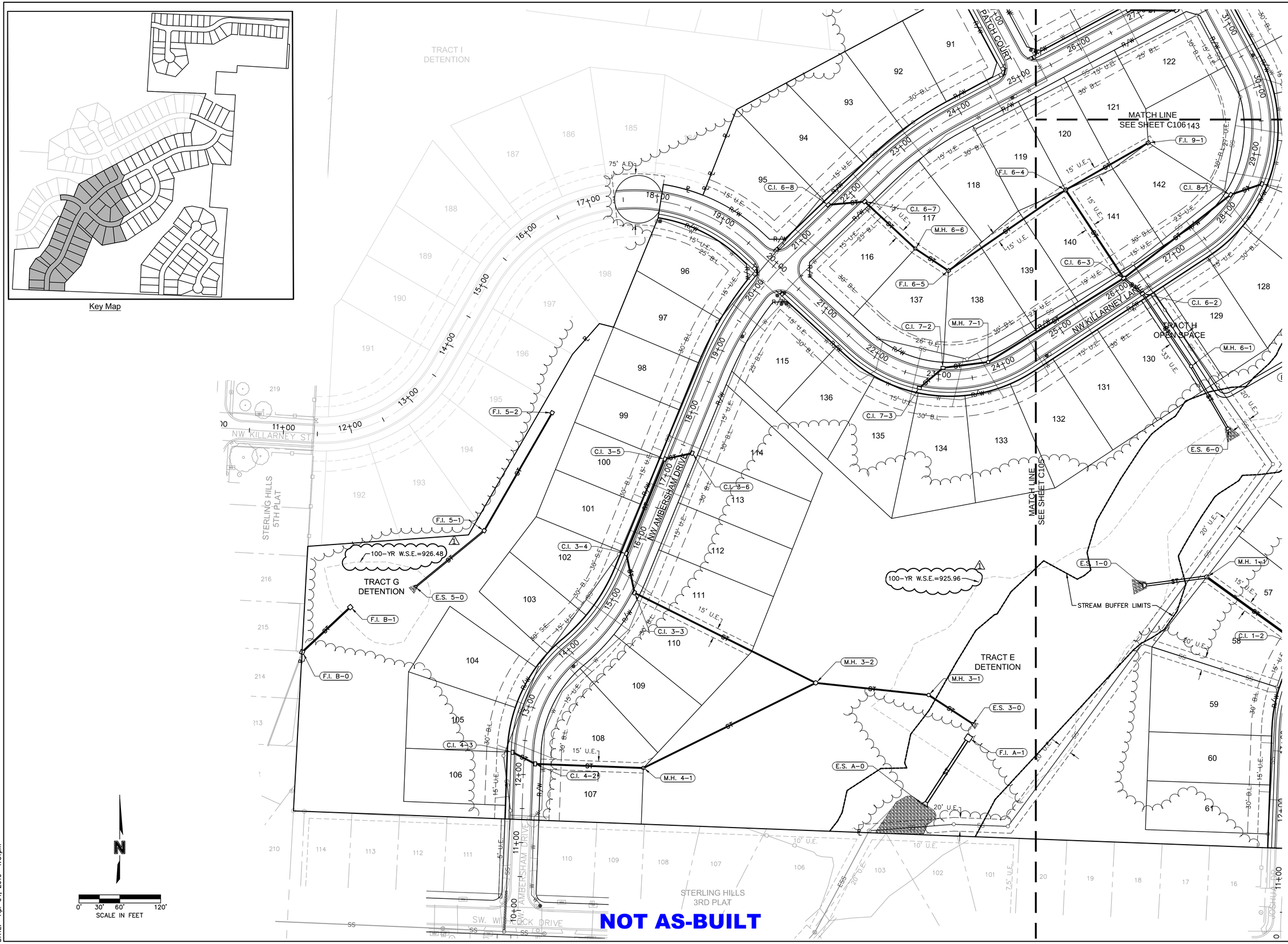
WOODSIDE RIDGE
FIRST PLAT

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
C103



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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
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: ssaylor
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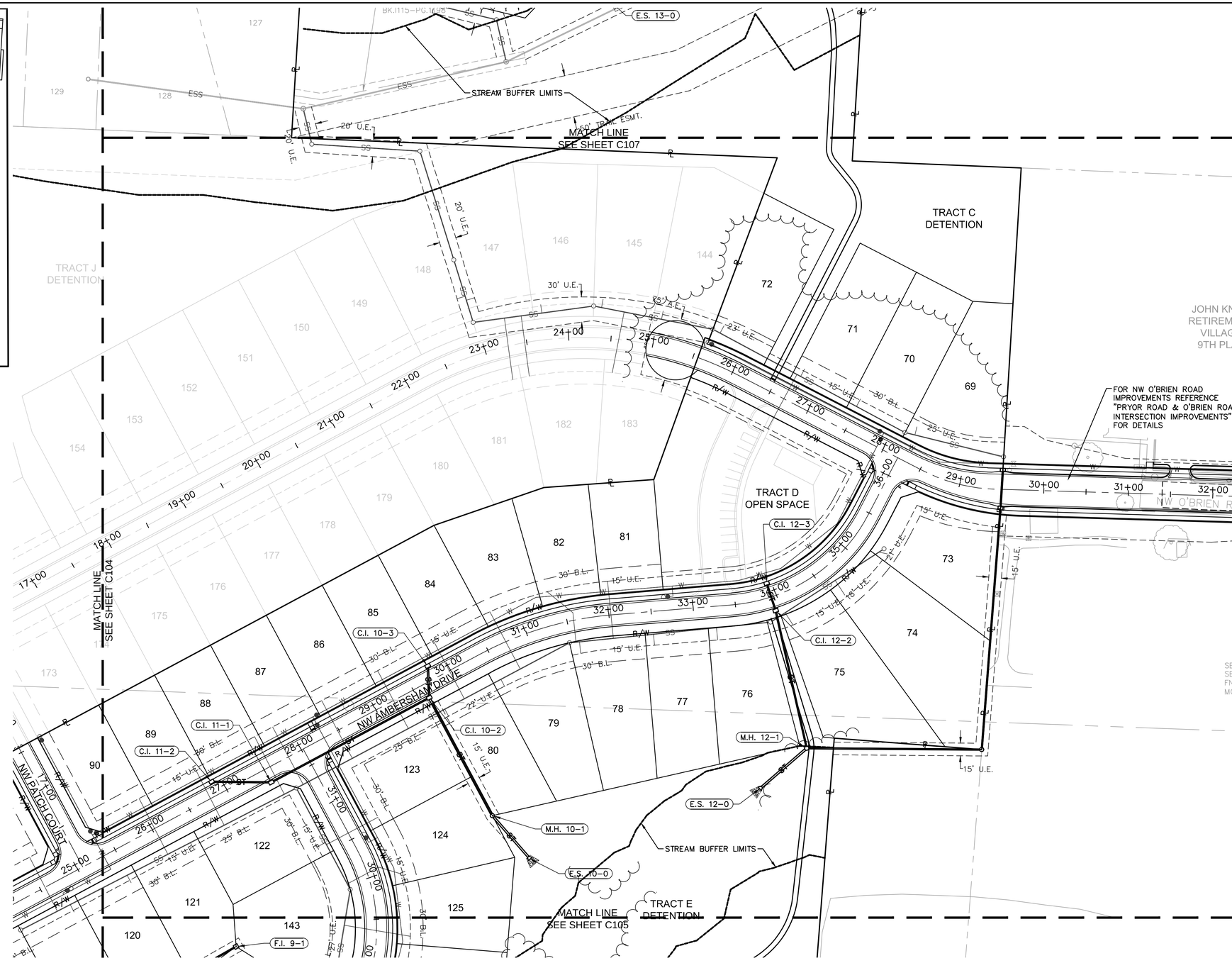
Key Map



N

0' 30' 60' 120'
SCALE IN FEET

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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

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
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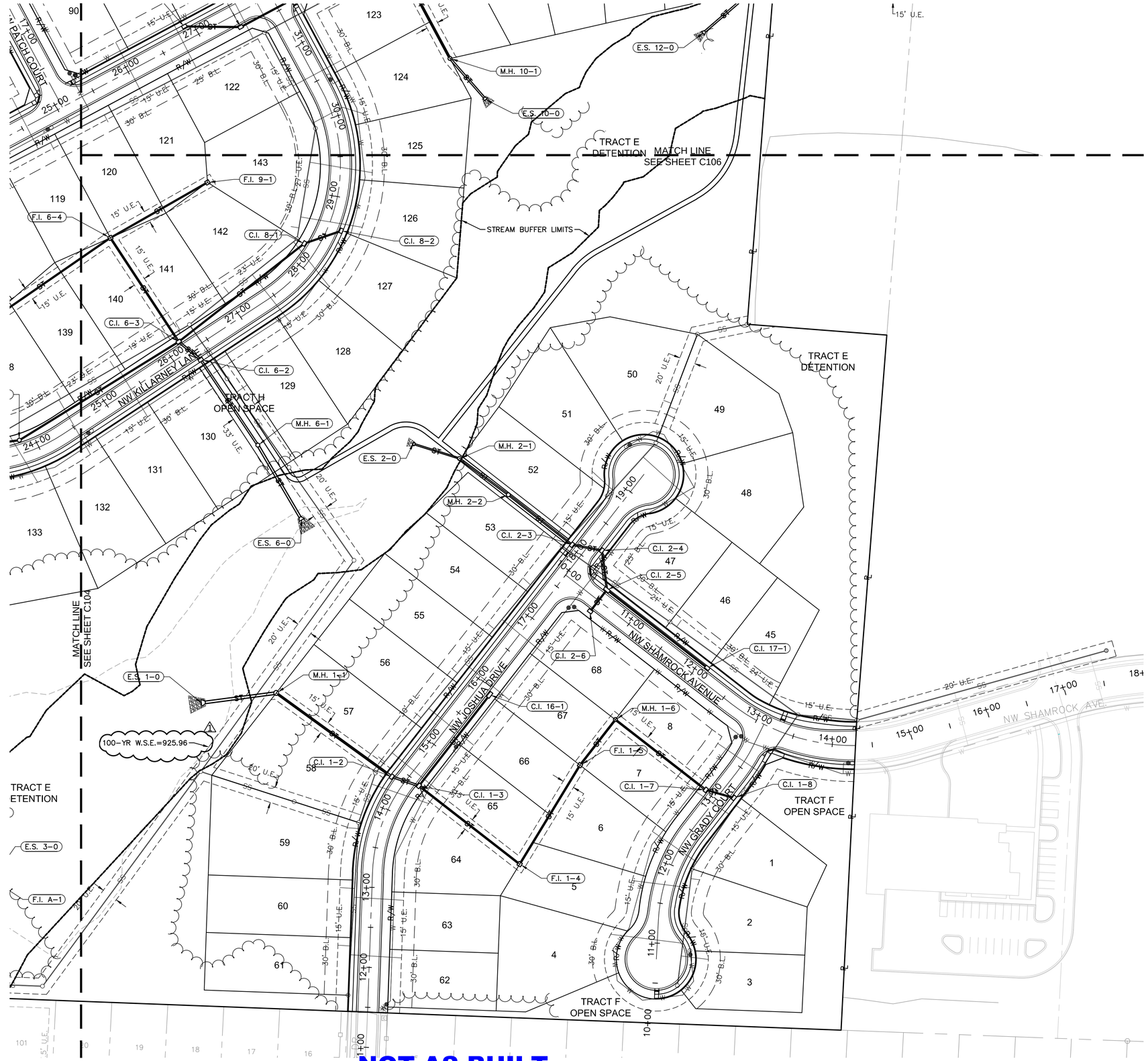

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REVISIONS

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

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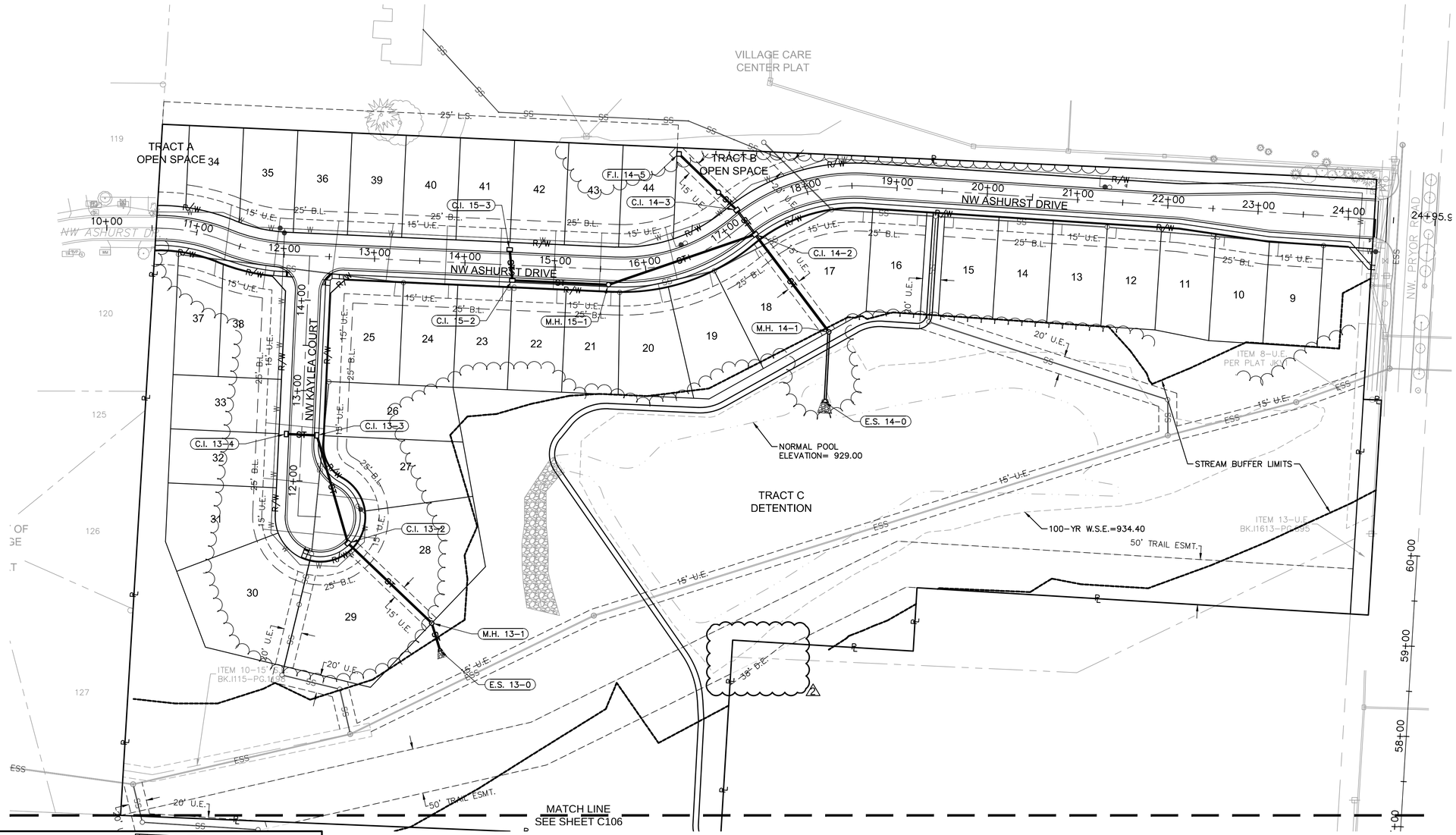

Key Map

N

0' 30' 60' 120'
SCALE IN FEET

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STATE OF MISSOURI
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1	5/16/2019	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
C107

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: 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

NOT AS-BUILT
REFER TO MASTER
DRAINAGE PLAN

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

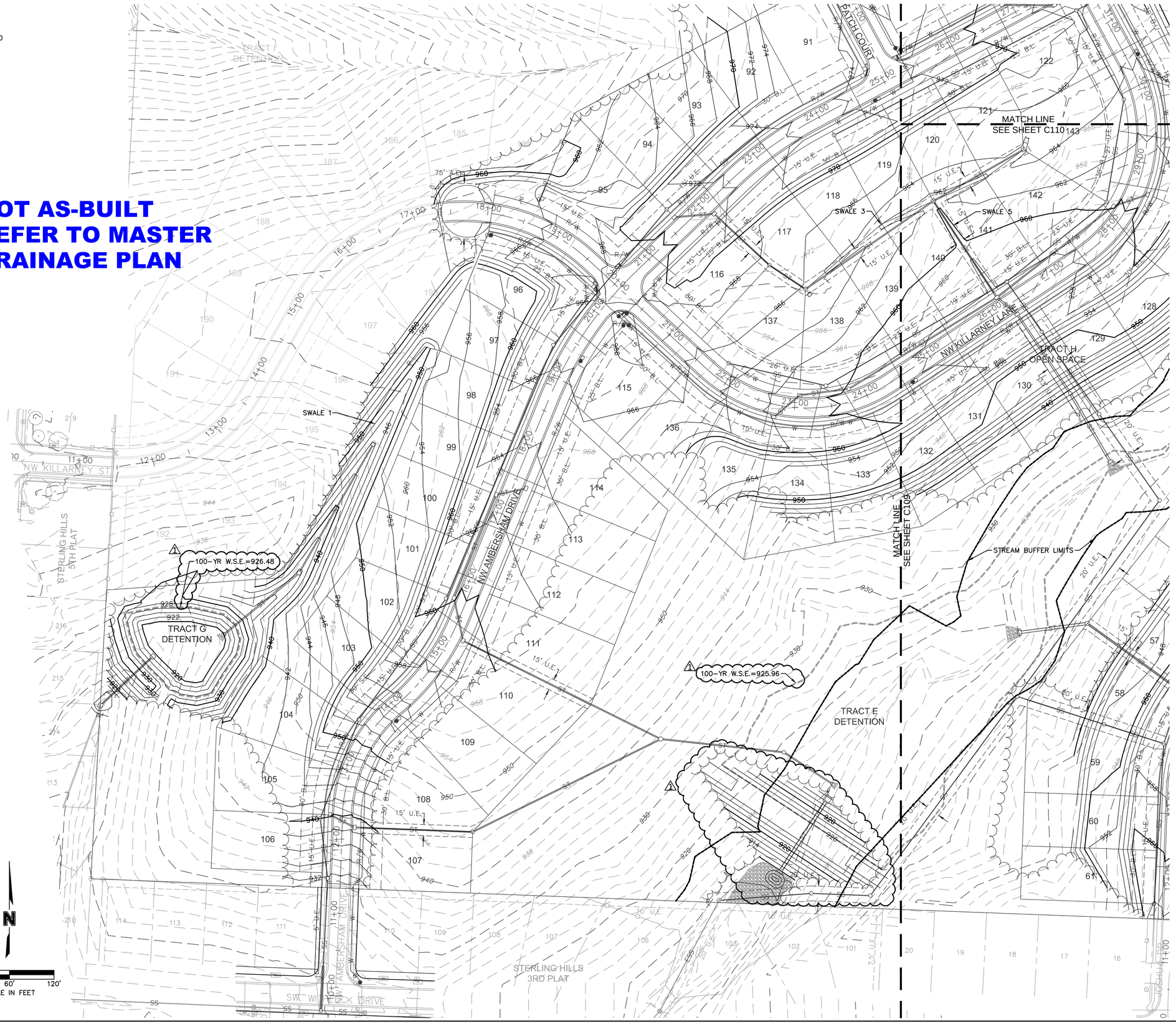
EARTHWORK QUANTITIES NOTES:
1. EARTHWORK QUANTITIES BASED ON FINISHED GRADE SURFACE AND DO NOT INCLUDE ADJUSTMENTS FOR TOPSOIL AND SHRINKAGE.

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	



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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
12/11/2020
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY
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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

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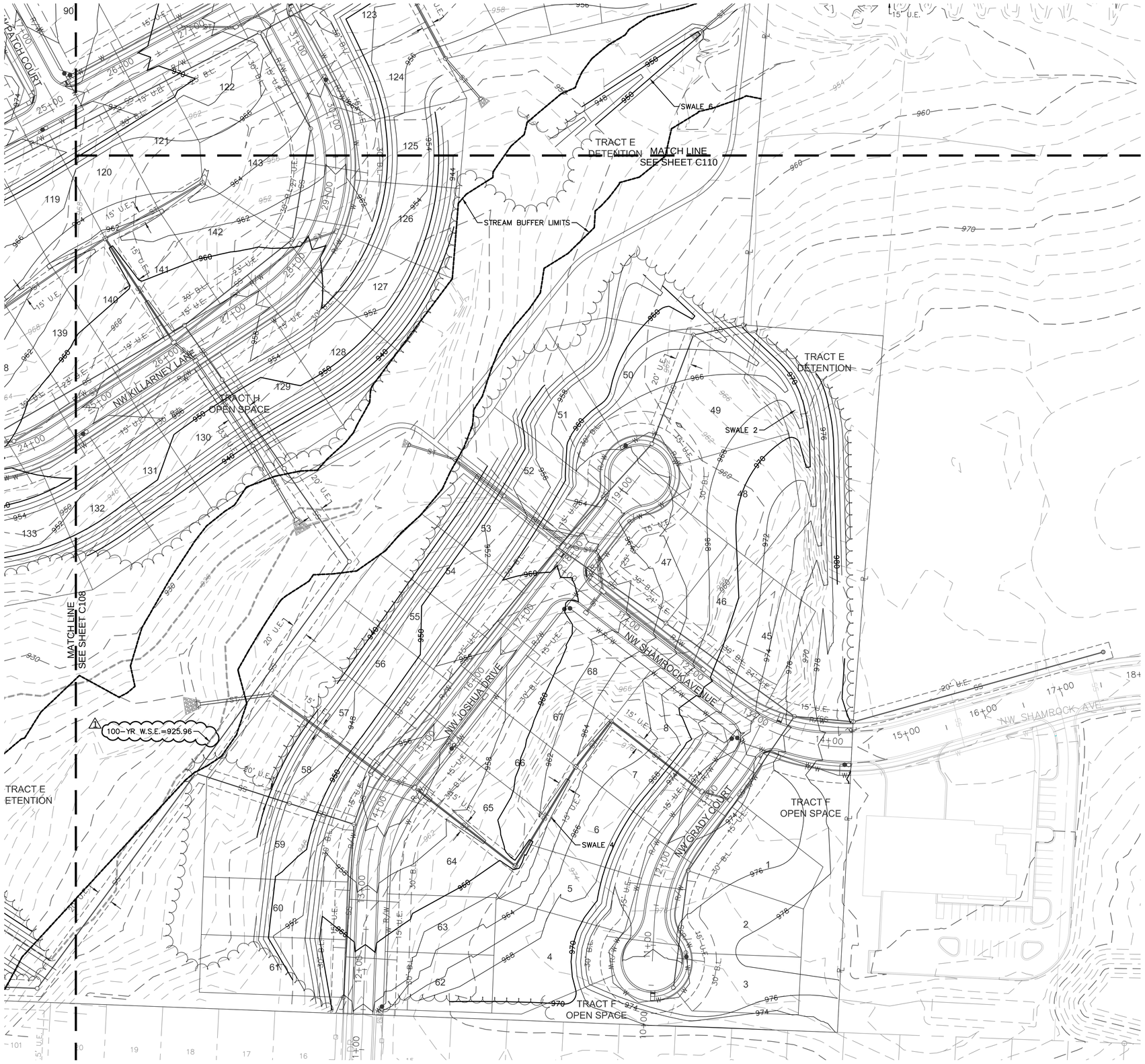
DATE: Apr 04, 2019 1:57pm

NOT AS-BUILT
REFER TO MASTER DRAINAGE PLAN

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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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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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'

N

0' 30' 60' 120'
SCALE IN FEET

NOT AS-BUILT
REFER TO MASTER
DRAINAGE PLAN

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12/11/2020
PROFESSIONAL ENGINEER

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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
C110

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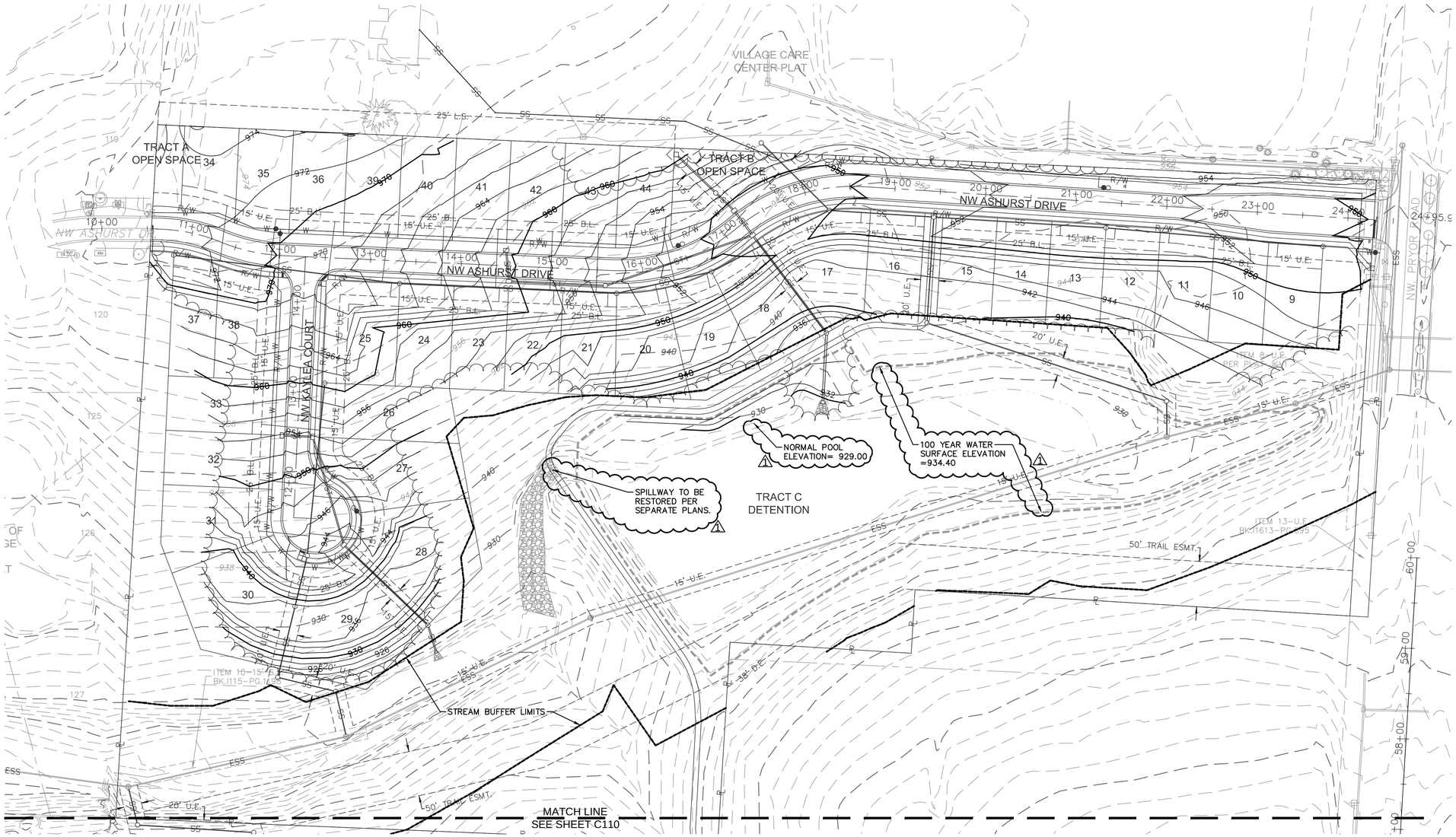
DATE: Apr 04, 2019 1:57pm

Woodside Ridge Lot Fill Information	
Lot Number	Over 8' 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	



NOT AS-BUILT
REFER TO MASTER
DRAINAGE PLAN

N

0' 30' 60' 120'
SCALE IN FEET

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DATE: Apr 04, 2019 1:57pm

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GRADING PLAN
STREET & STORM SEWER PLANS

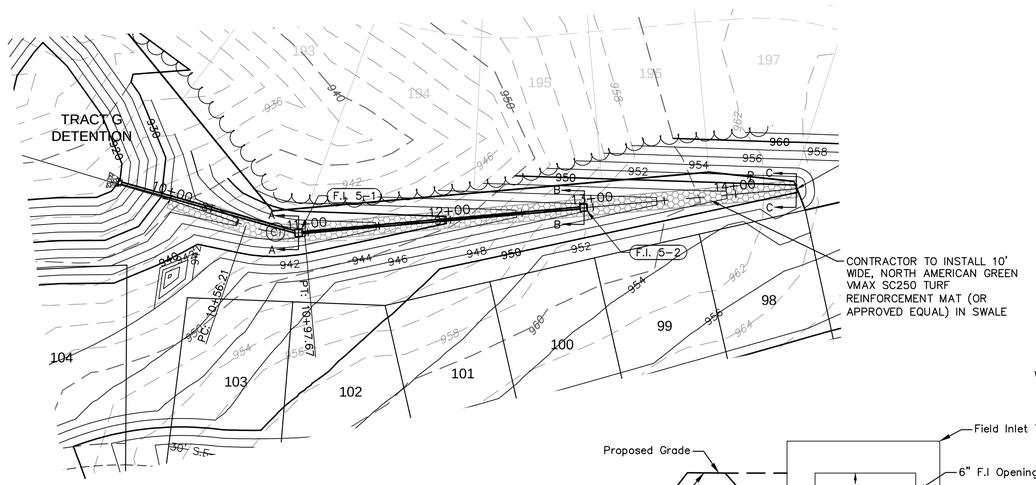
WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

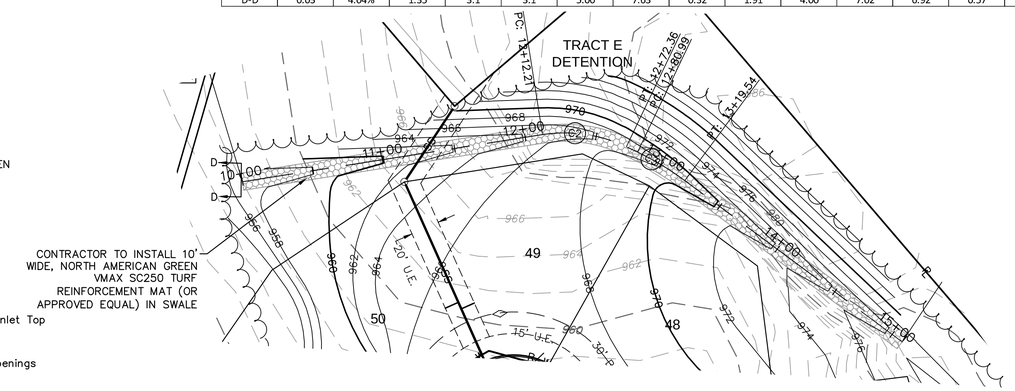
2019

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

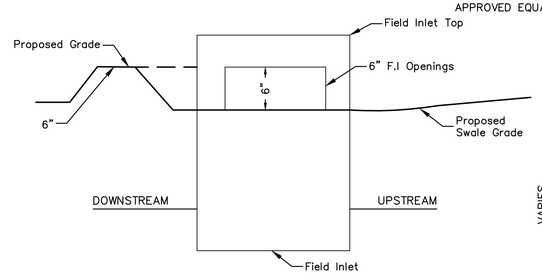
SHEET
C111



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

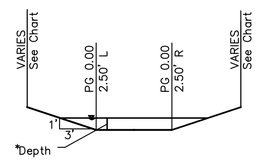


CURVE TABLE					
CURVE ID	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)
C1	100.00'	23°45'21"	41.46'	21.03'	10+76.64
C2	100.00'	34°27'53"	60.15'	31.02'	12+41.34
C3	214.36'	12°36'37"	47.18'	23.69'	12+95.85



F.I SUMP DETAIL
NOT TO SCALE

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

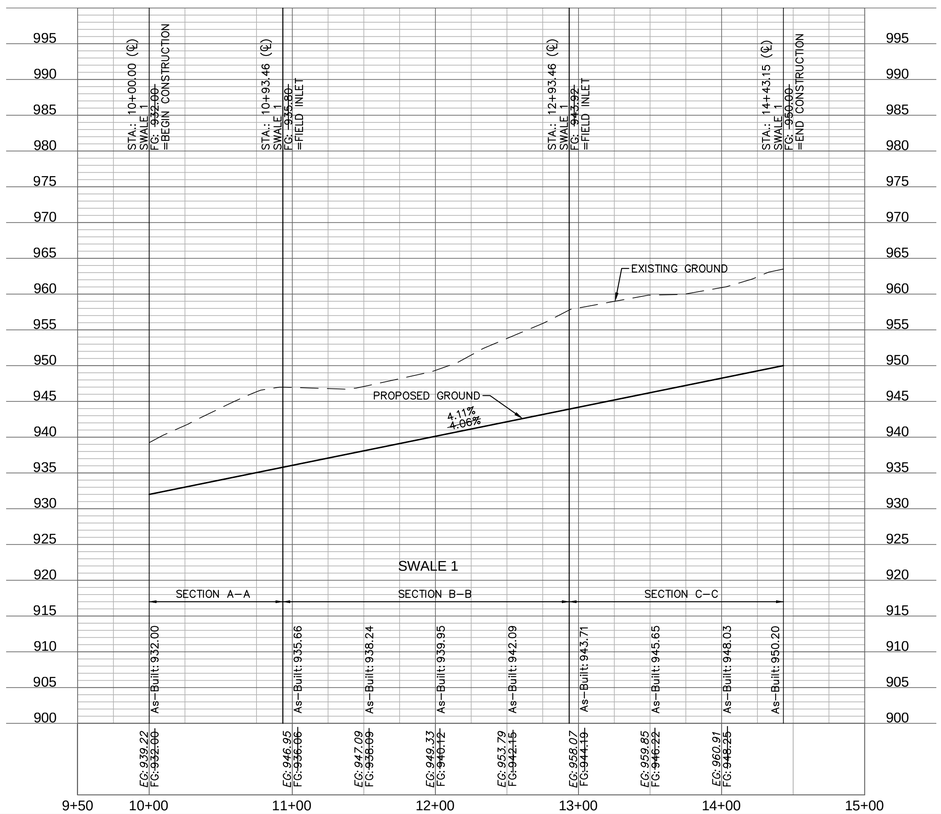


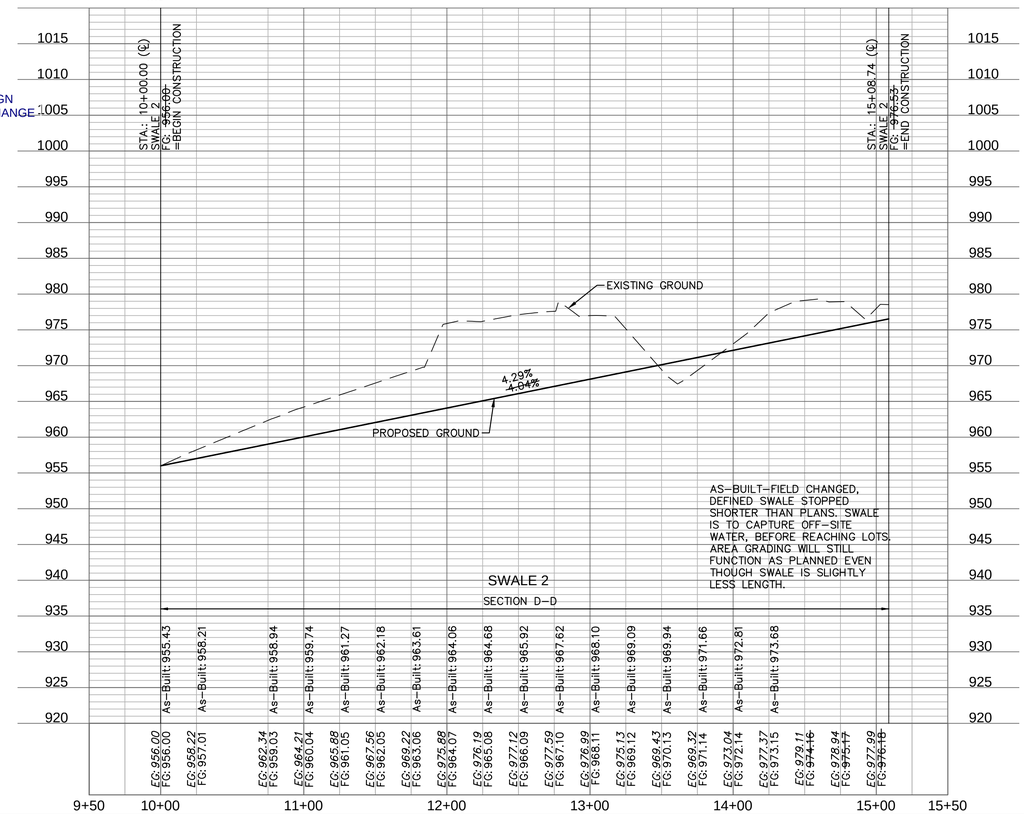
Swale Typical Section
*See table for swale depth
NTS

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.

AS-BUILT

GRADING CONTOURS ARE DESIGN BASED, REFER TO MASTER DRAIANGE PLAN FOR AS-BUILT CONTOURS





0' 25' 50' 100'
SCALE IN FEET

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
12/11/2020
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SWALE PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

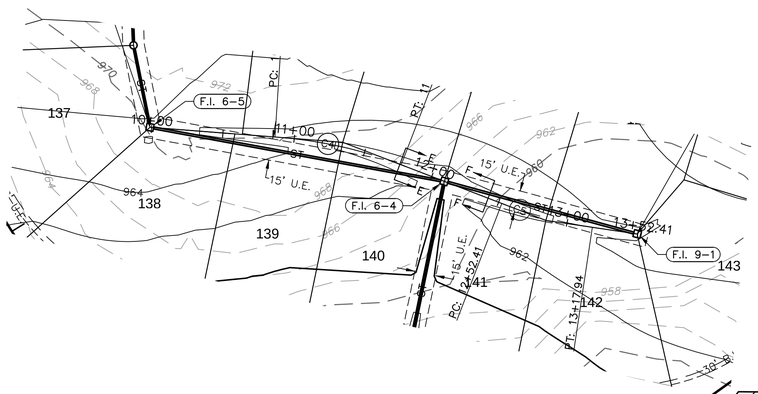
2019

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

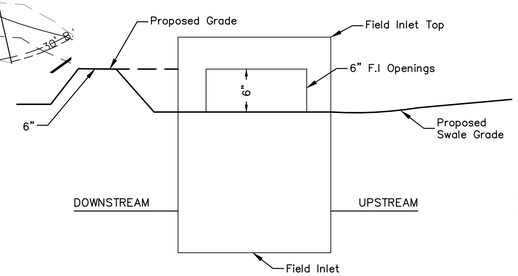
SHEET
C112

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\As-Builts\Sheets\GNCV\01_Street & Storm_36x24\C_SWL01_1140A.dwg USER: jsellers
DATE: Nov 02, 2020 12:04pm

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

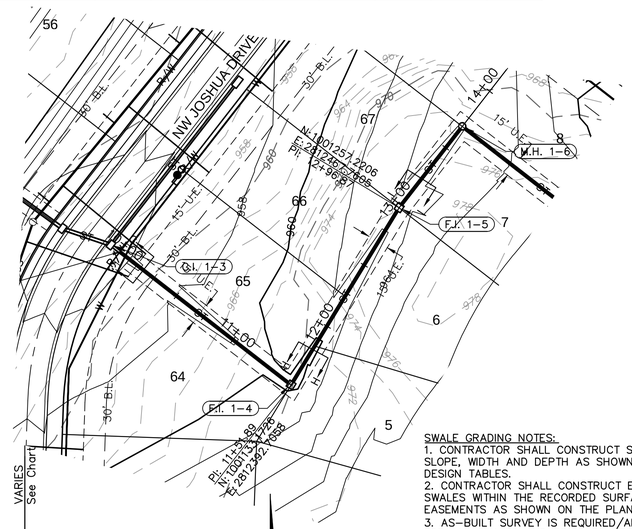


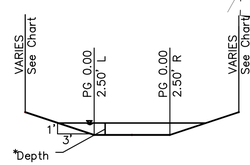
CURVE TABLE					
CURVE ID	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)
C4	300.00'	16°33'34"	86.70'	43.66'	11+34.48
C5	300.00'	12°32'26"	65.66'	32.96'	12+86.25



F.I SUMP DETAIL
NOT TO SCALE

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



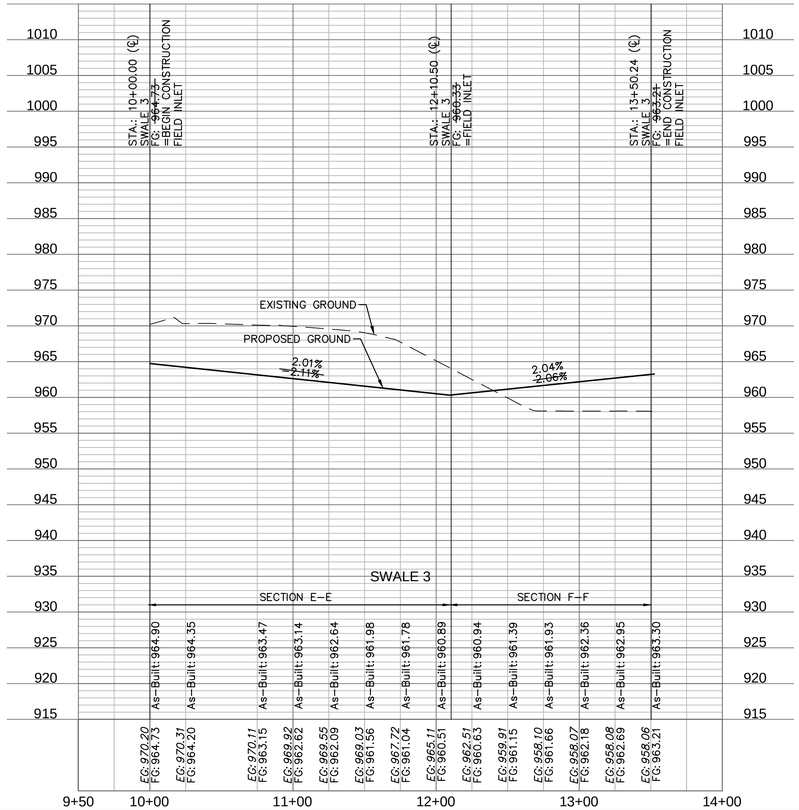


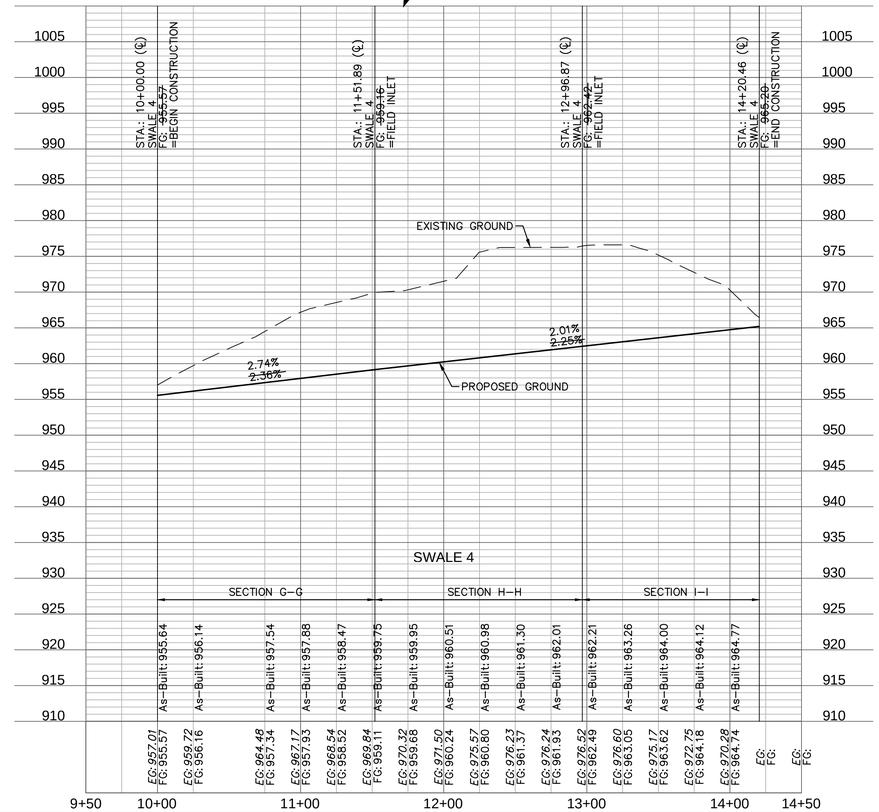
Swale Typical Section
*See table for swale depth
NTS

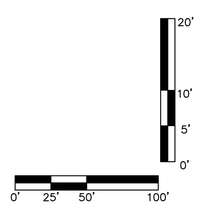
SWALE GRADING NOTES:
1. CONTRACTOR SHALL CONSTRUCT SWALES WITH MINIMUM SLOPE, WIDTH AND DEPTH AS SHOWN IN THE SWALE DESIGN TABLES.
2. CONTRACTOR SHALL CONSTRUCT ENTIRE DEPTH OF SWALES WITHIN THE RECORDED SURFACE DRAINAGE EASEMENTS AS SHOWN ON THE PLANS.
3. AS-BUILT SURVEY IS REQUIRED/APPROVED BY CITY 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.

AS-BUILT

GRADING CONTOURS ARE DESIGN BASED, REFER TO MASTER DRAIANGE PLAN FOR AS-BUILT CONTOURS







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12/11/2020
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SWALE PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

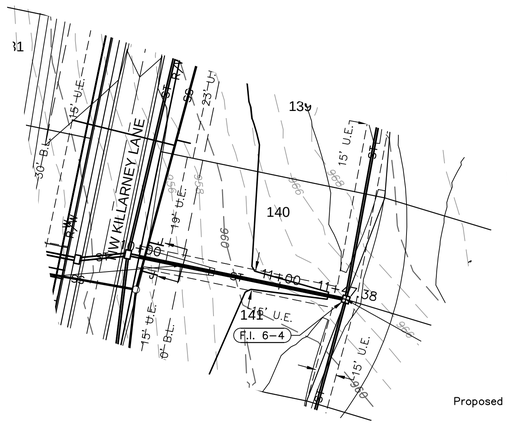
2019

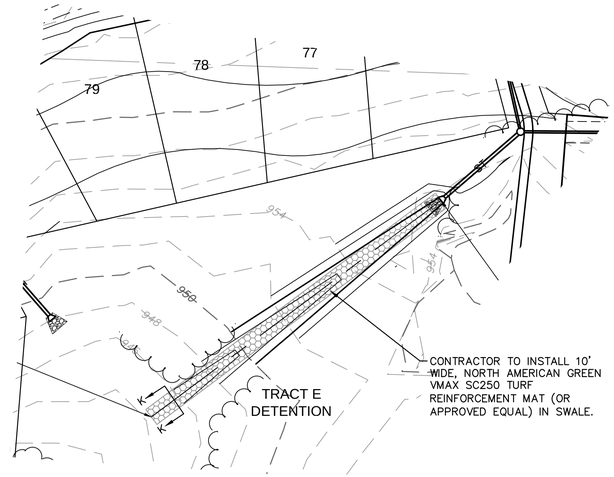
drawn by: D.A.H.Q
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

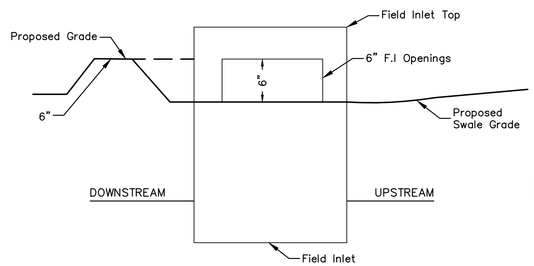
SHEET
C113

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\As-Builts\Sheets\GNCV\01_Street & Storm_36x24\C_SWL02_1140A.dwg
DATE: Nov 02, 2020 12:11pm
USER: jsellers

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

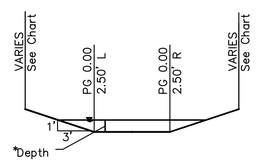






F.I SUMP DETAIL
NOT TO SCALE

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



Swale Typical Section
*See table for swale depth
NTS

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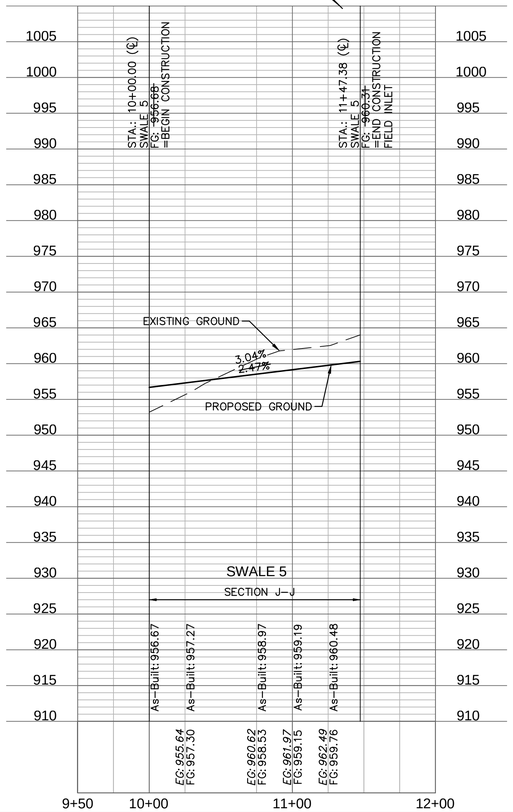
N



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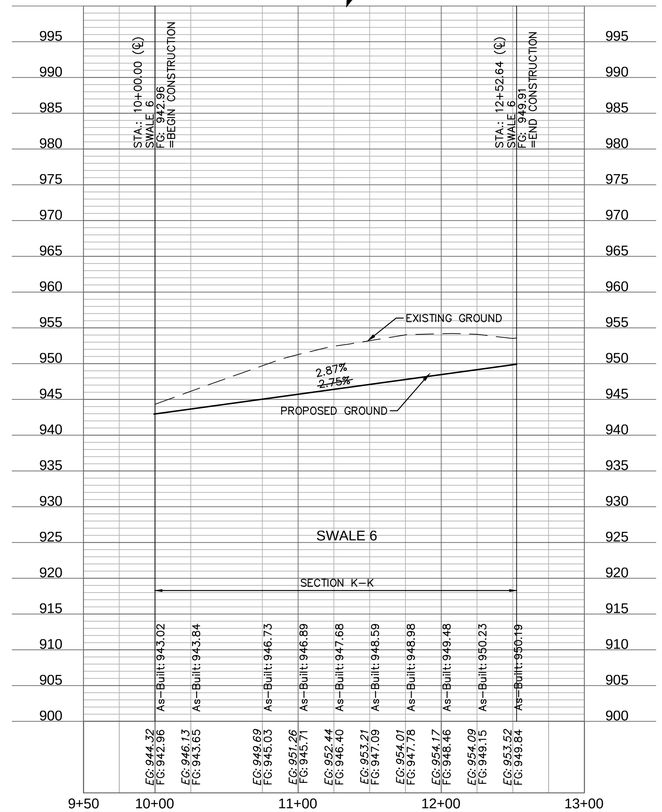

AS-BUILT

GRADING CONTOURS ARE DESIGN BASED, REFER TO MASTER DRAIANGE PLAN FOR AS-BUILT CONTOURS

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

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PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SWALE PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

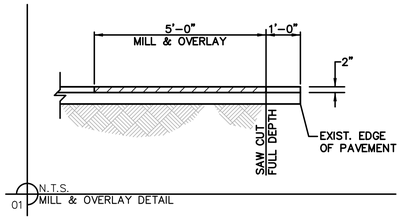
2019

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

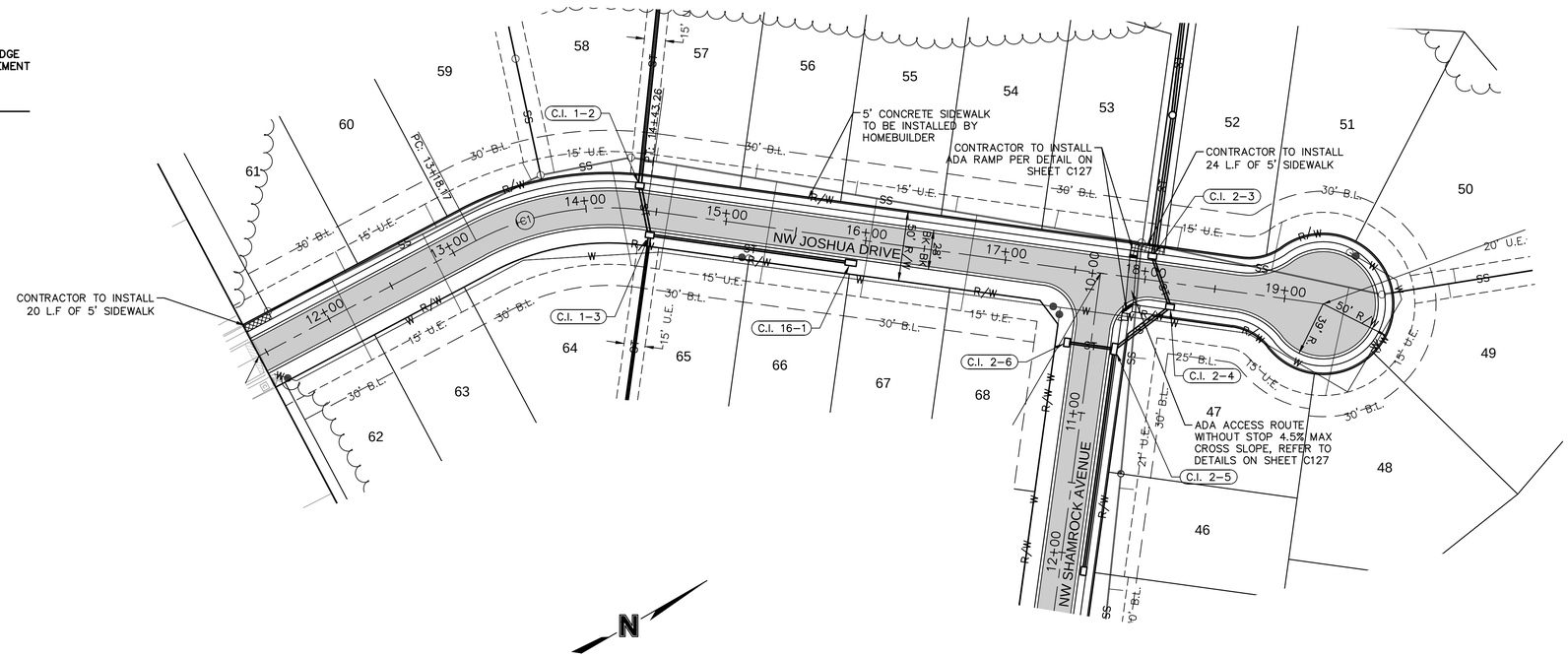
SHEET
C114

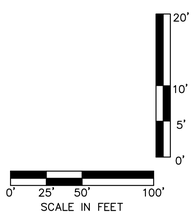
DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\As-Builts\Sheets\GNCV\01_Street & Storm_36x24\C_SWL03_1140A.dwg USER: jsellers
DATE: Nov 02, 2020 12:18pm

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

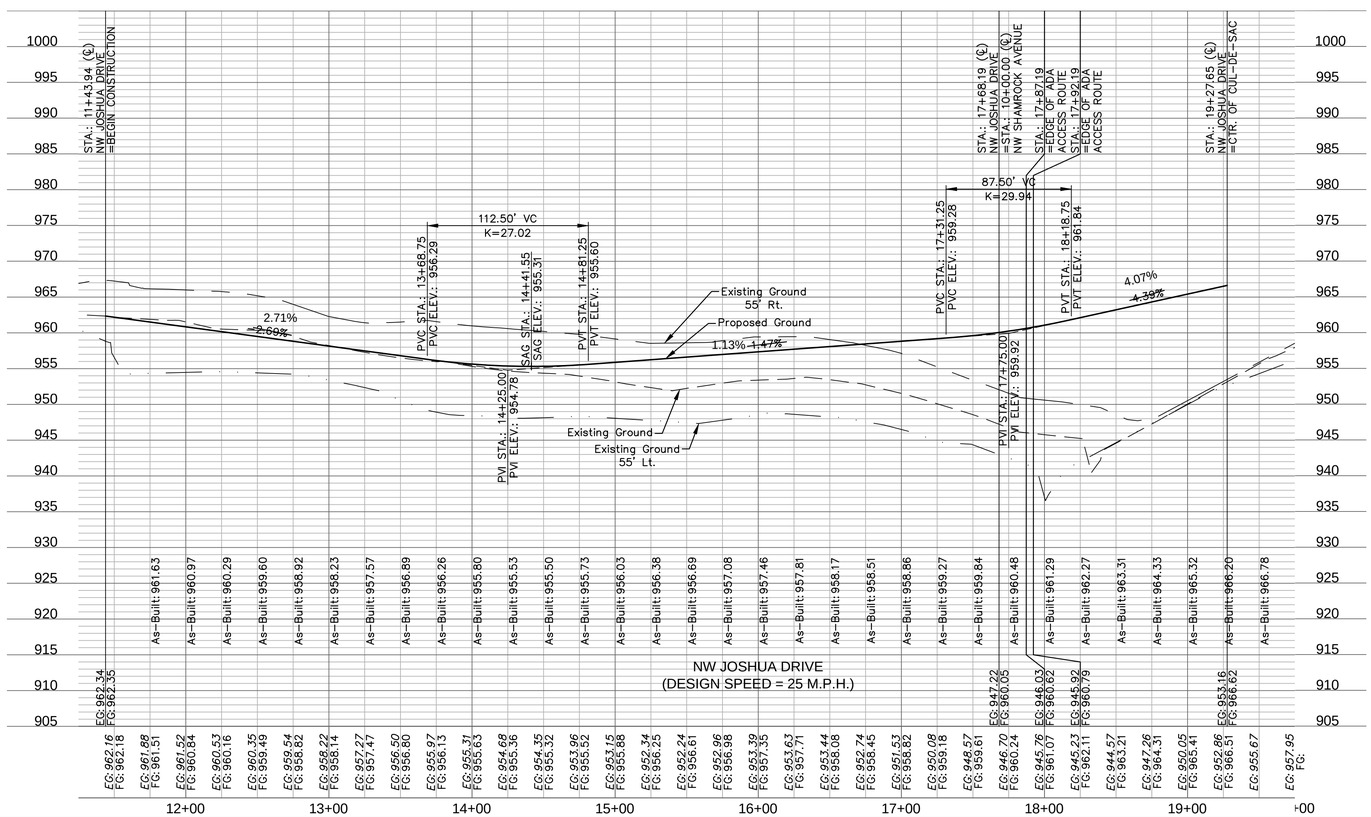


LEGEND	
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER





AS-BUILT



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12/11/2020
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

ROADWAY PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

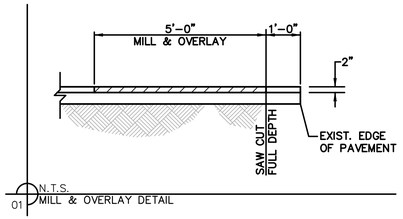
2019

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

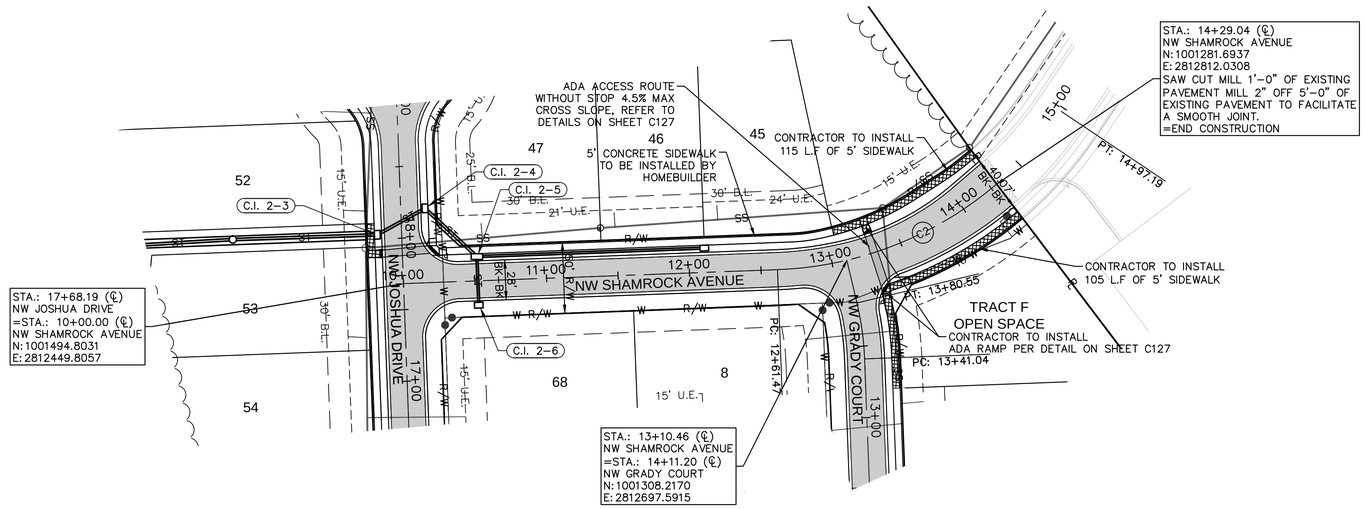
SHEET
C115

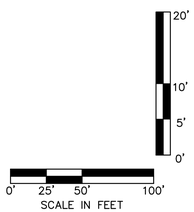
DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\As-Builts\Sheets\GNCV\01_Street & Storm_36x24\C_RPP01_1140A.dwg USER: jsellers
DATE: Nov 02, 2020 8:49am

CURVE TABLE					
CURVE ID	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)
C2	250.00'	54°01'18"	235.71'	127.44'	13+88.91

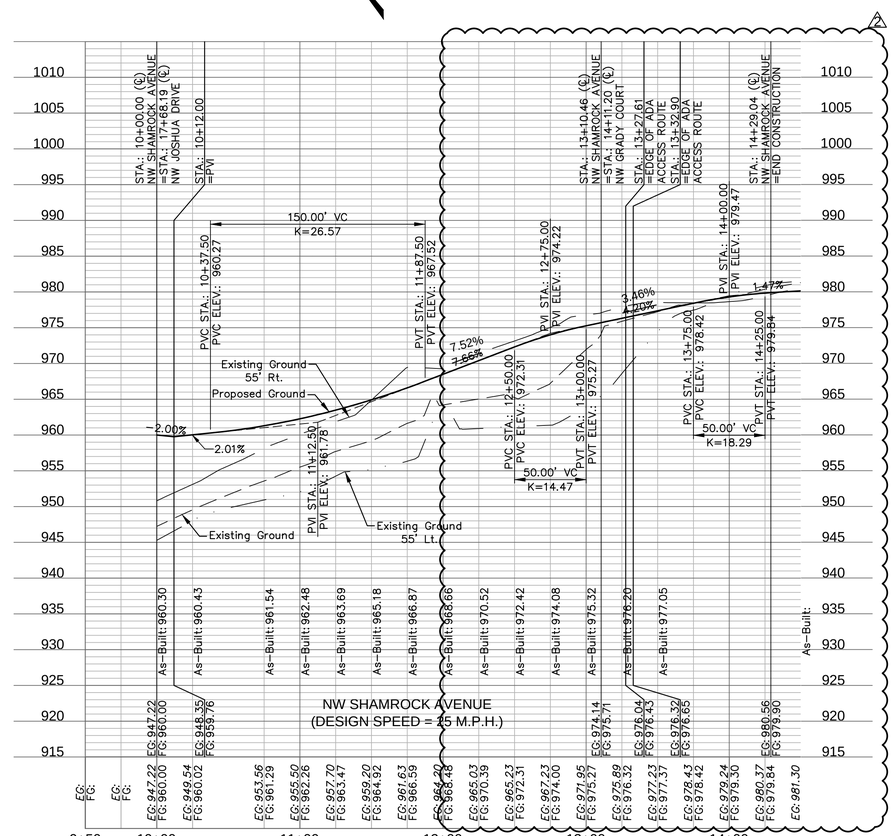


LEGEND	
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER





AS-BUILT



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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
12/11/2020
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY
1	10/31/2019	REVISED PER CITY COMMENTS	

REVISIONS

ROADWAY PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

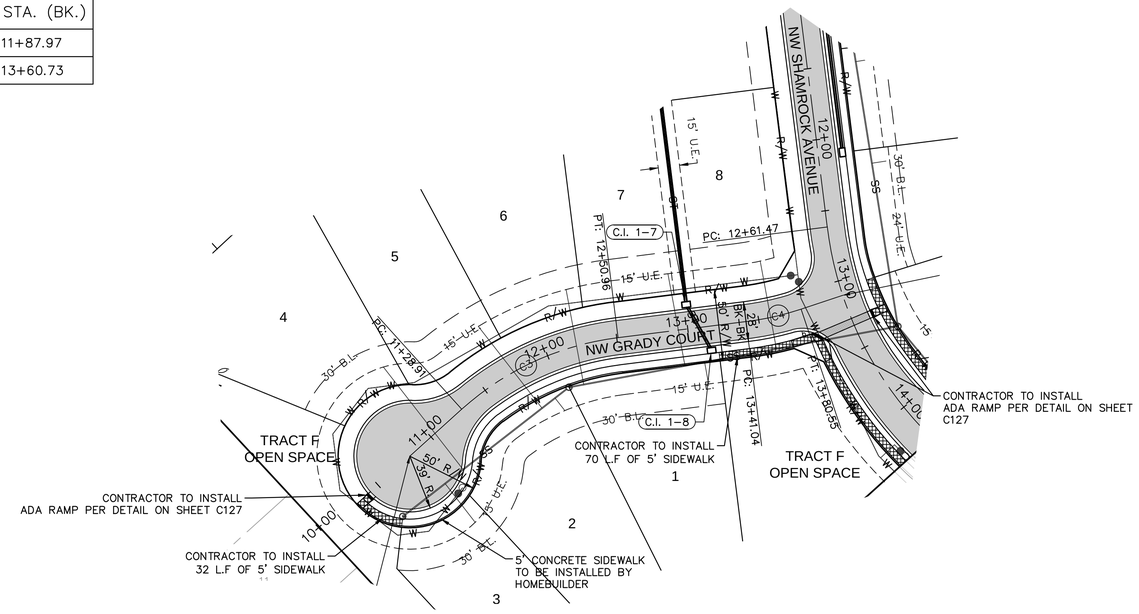
drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

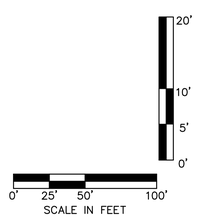
SHEET
C116

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\As-Builts\Sheets\GNCV\01_Street & Storm_36x24\C_RPP02_1140A.dwg USER: jsellers
DATE: Nov 02, 2020 8:51am

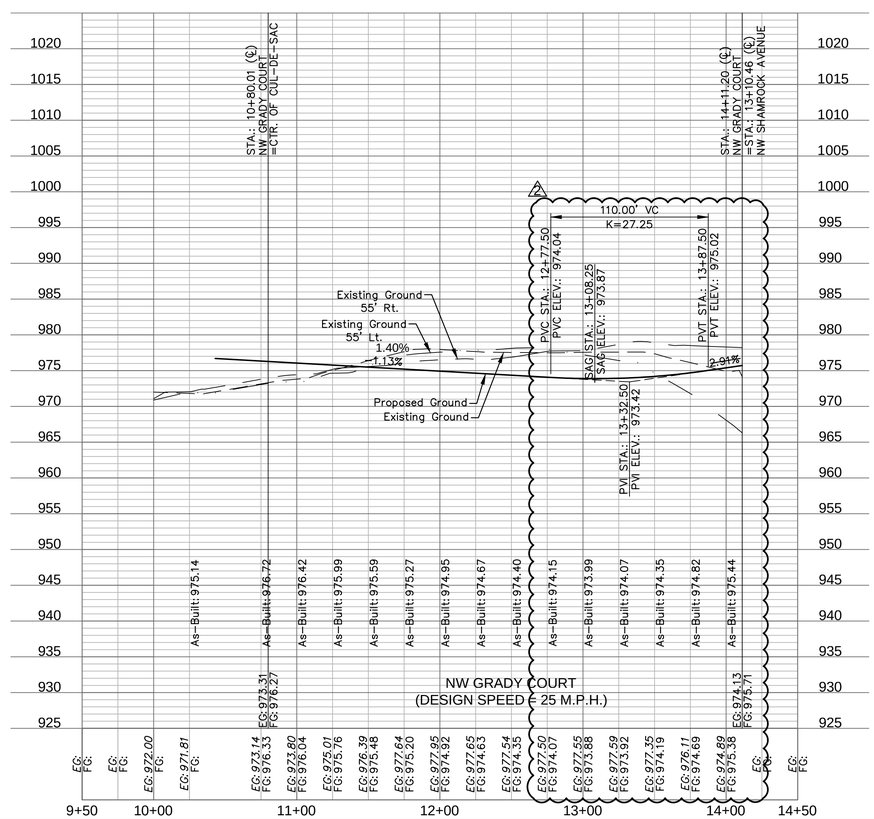
CURVE TABLE					
CURVE ID	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)
C3	200.00'	34°57'50"	122.05'	62.99'	11+87.97
C4	200.00'	11°19'00"	39.51'	19.82	13+60.73

LEGEND	
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER





AS-BUILT



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1	10/31/2019	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

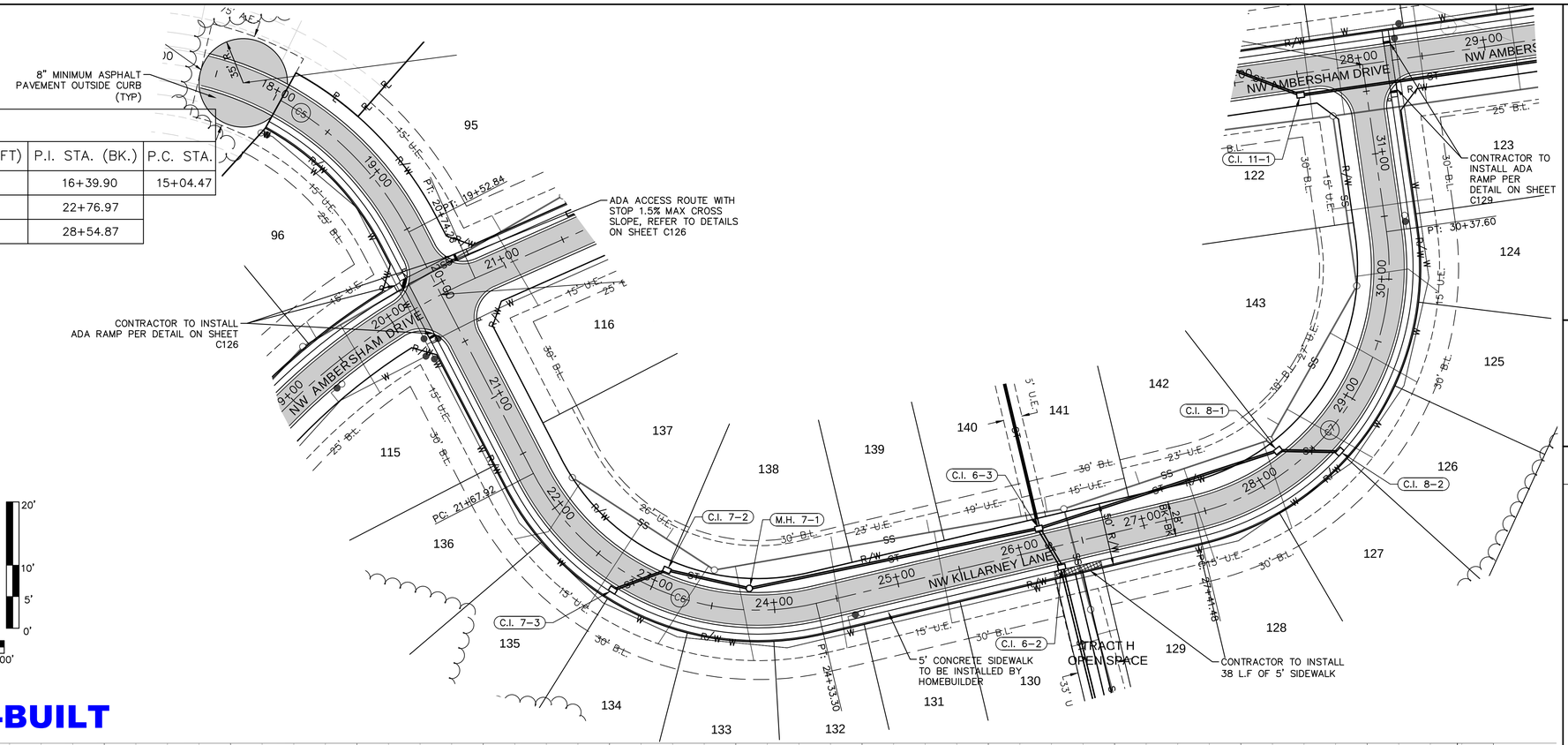
SHEET
C117

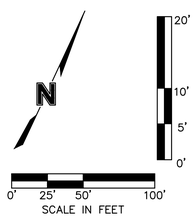
DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\As-Builts\Sheets\GNCV\01_Street & Storm_36x24\C_RPP03_1140A.dwg USER: jsellers
DATE: Nov 02, 2020 8:53am

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	

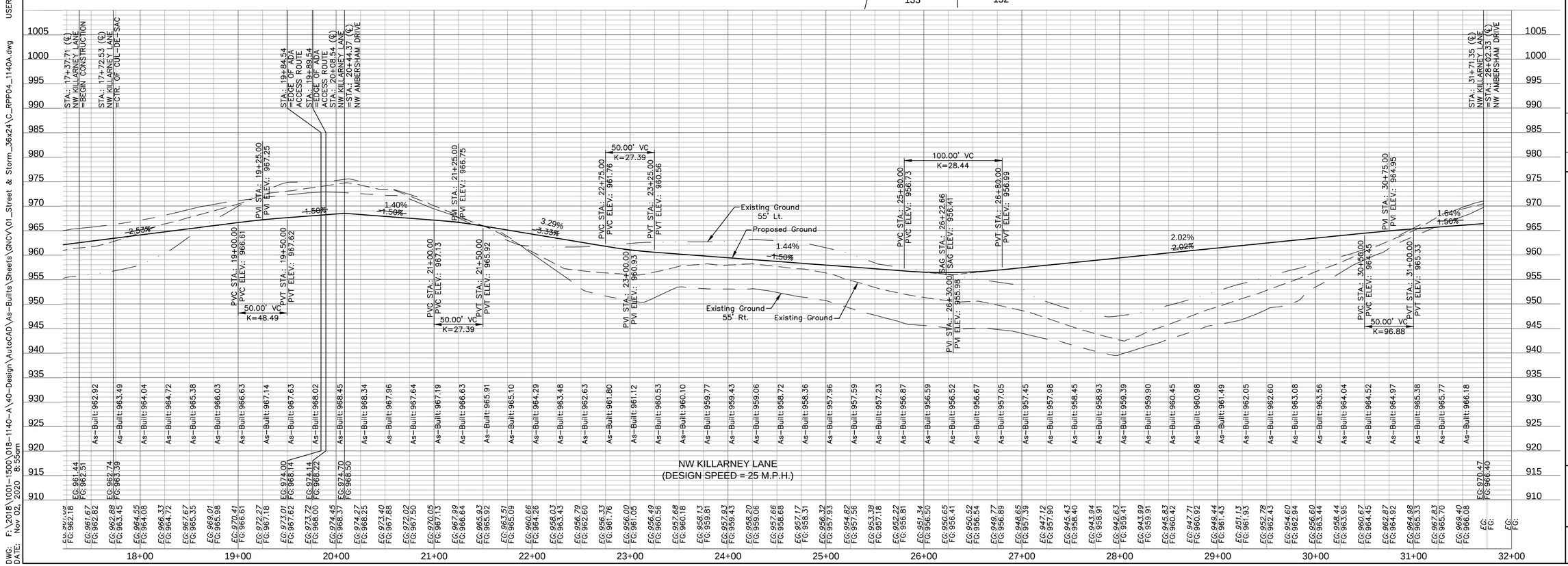
LEGEND

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





AS-BUILT



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12/11/2020
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ROADWAY PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

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QA/QC by: M.G.D
project no.: A18-1140
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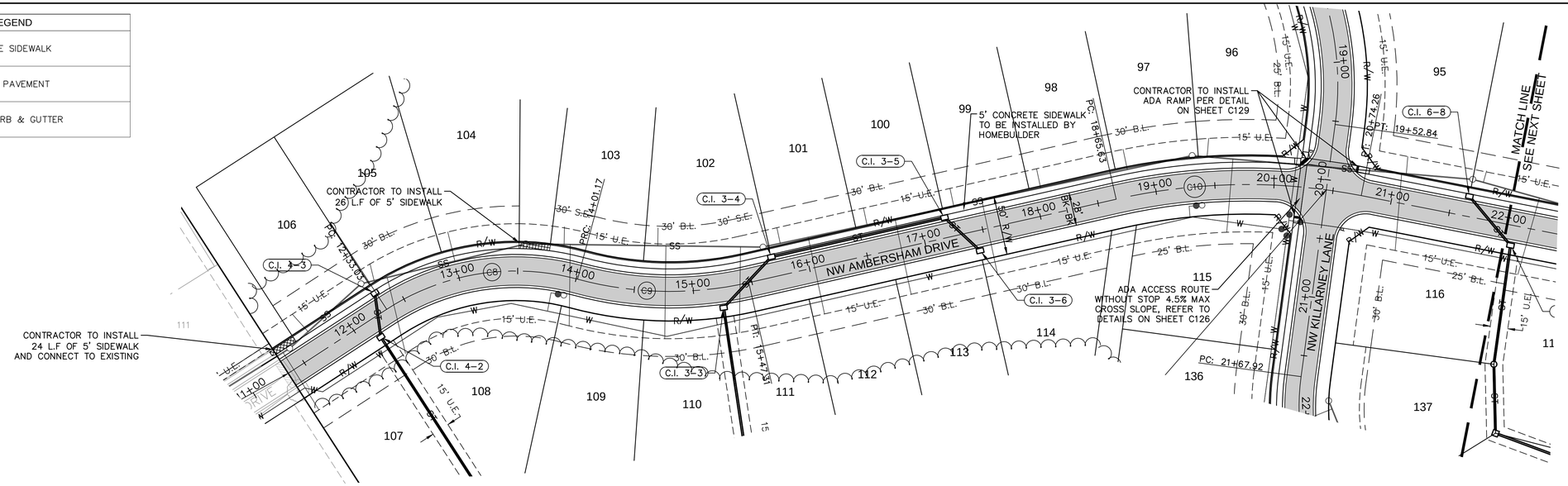
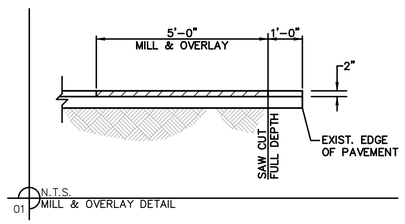
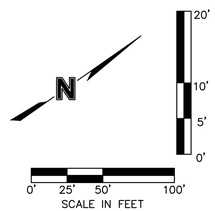
SHEET
C118

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\As-Builts\Sheets\GNCV\01_Street & Storm_36x24\C_RPP04_1140A.dwg
DATE: Nov 02, 2020 8:55am
USER: jsellers

LEGEND	
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER

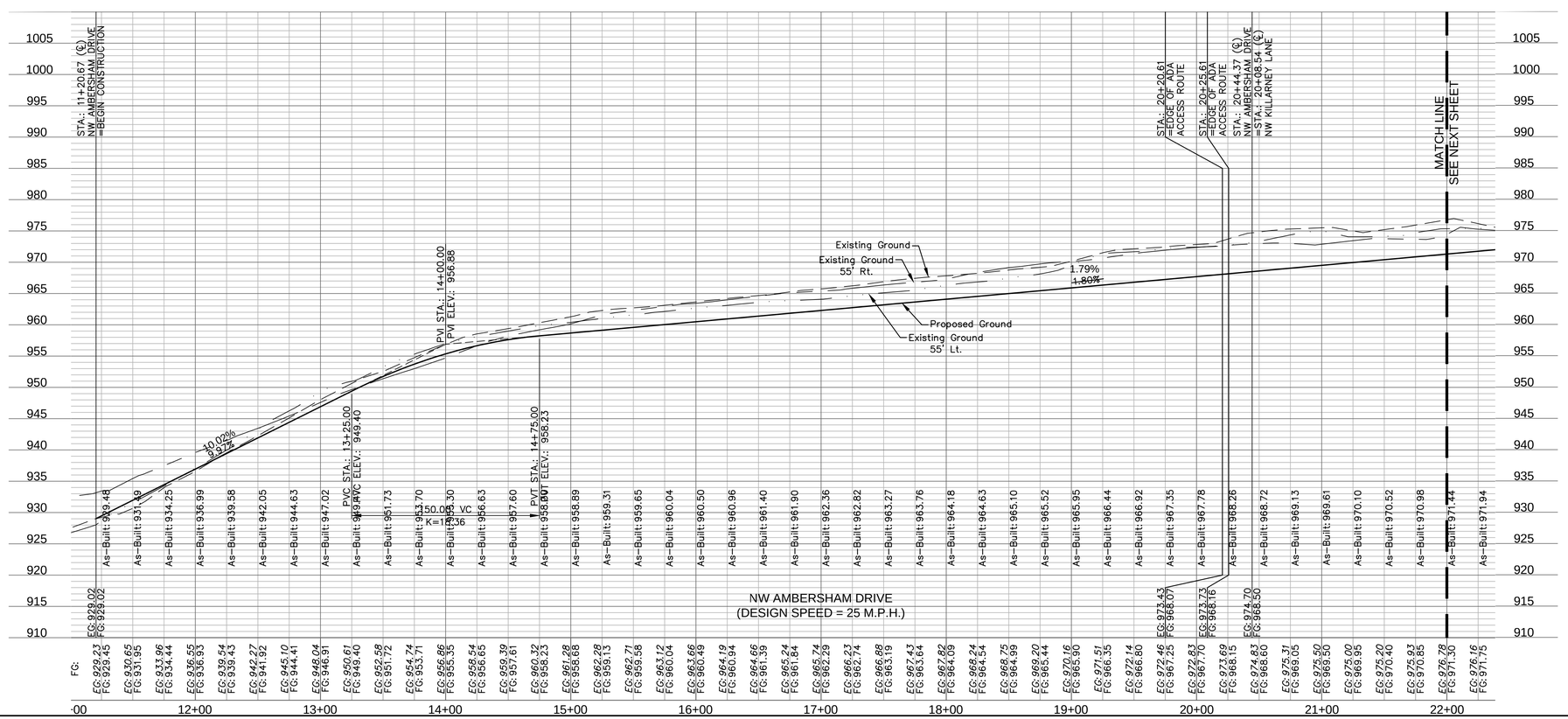






AS-BUILT

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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NUMBER PE-2017000367
12/11/2020
PROFESSIONAL ENGINEER

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REVISIONS

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STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

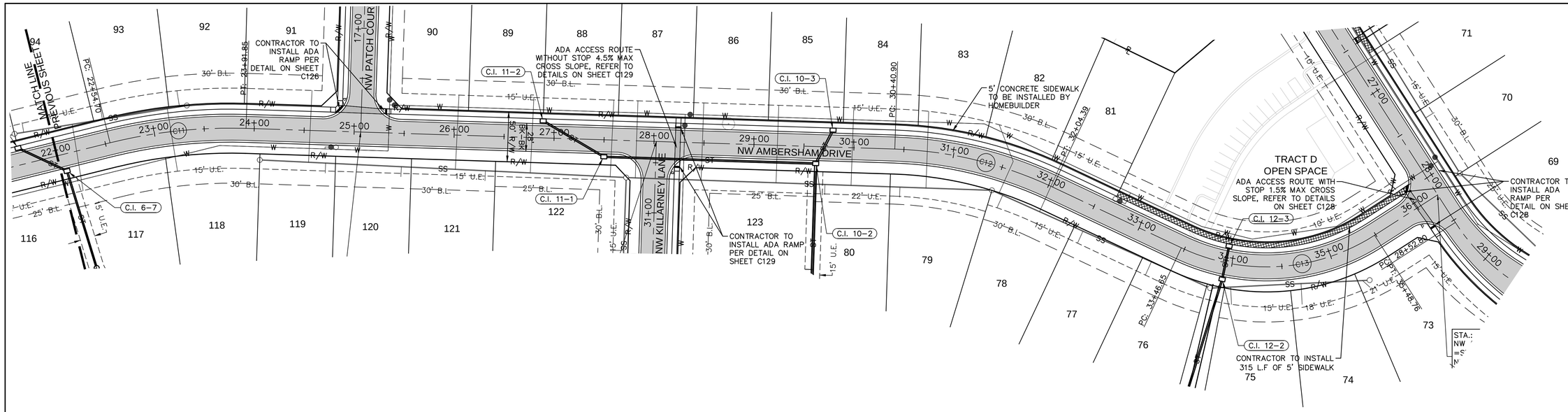
LEE'S SUMMIT, MO

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
C119

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\As-Builts\Sheets\GNCV\01_Street & Storm_36x24\C_RPP05_1140A.dwg USER: jsellers
DATE: Nov 02, 2020 8:58am



LEGEND	
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER

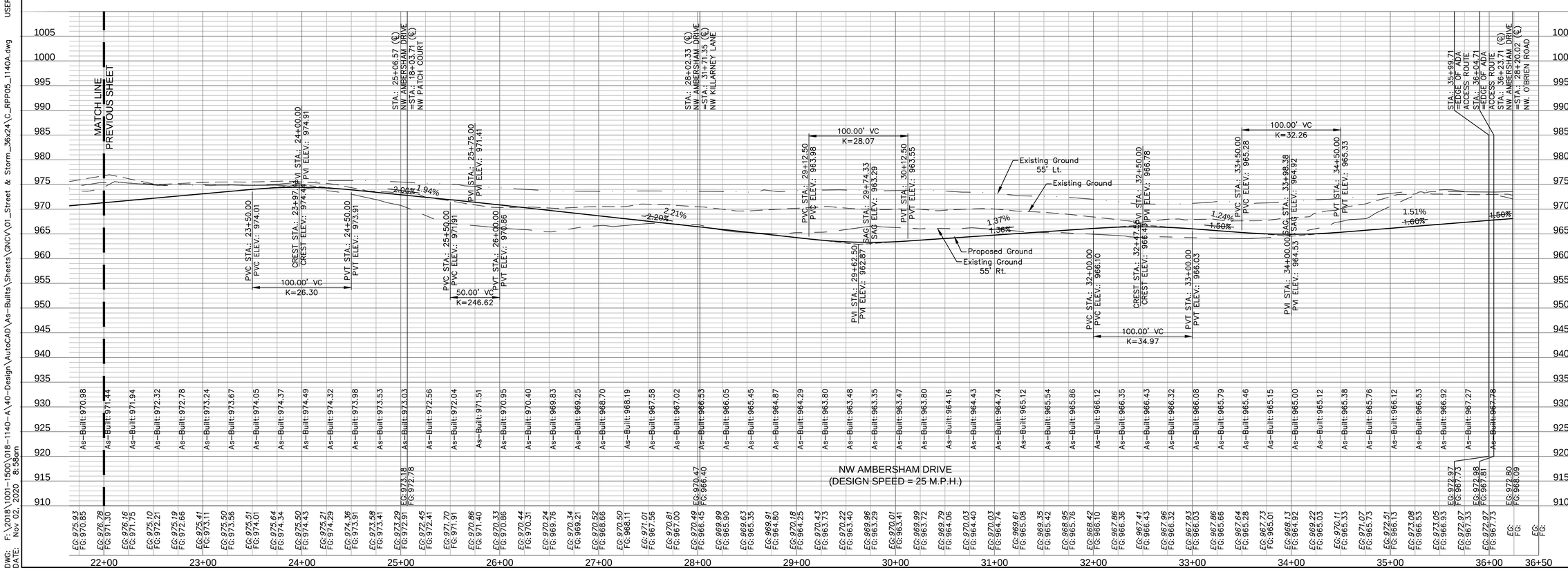
N

0' 25' 50' 100'
SCALE IN FEET

20' 10' 5' 0'

AS-BUILT

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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DATE: Nov 02, 2020 8:58am

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2301 Maitland Center Parkway
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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
12/11/2020
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

ROADWAY PLAN & PROFILE
STREET & STORM SEWER PLANS

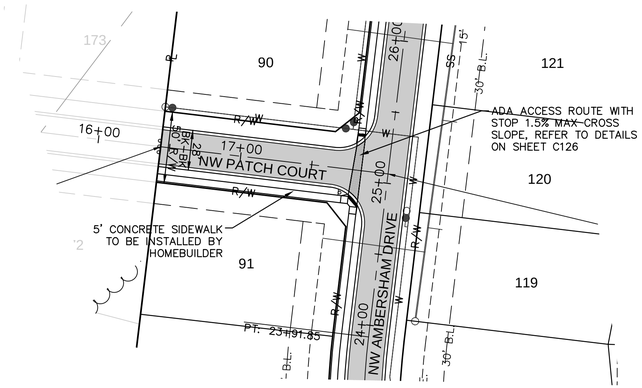
WOODSIDE RIDGE
FIRST PLAT

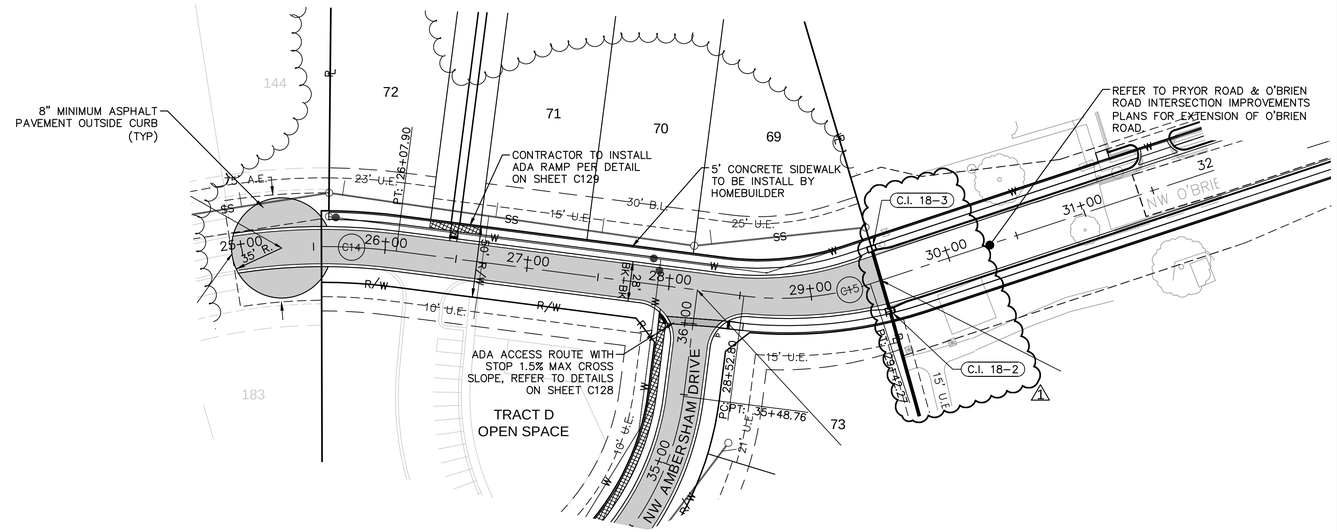
LEE'S SUMMIT, MO

2019

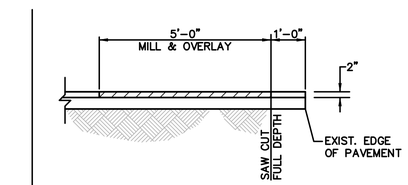
drawn by: D.A.H.Q
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C120



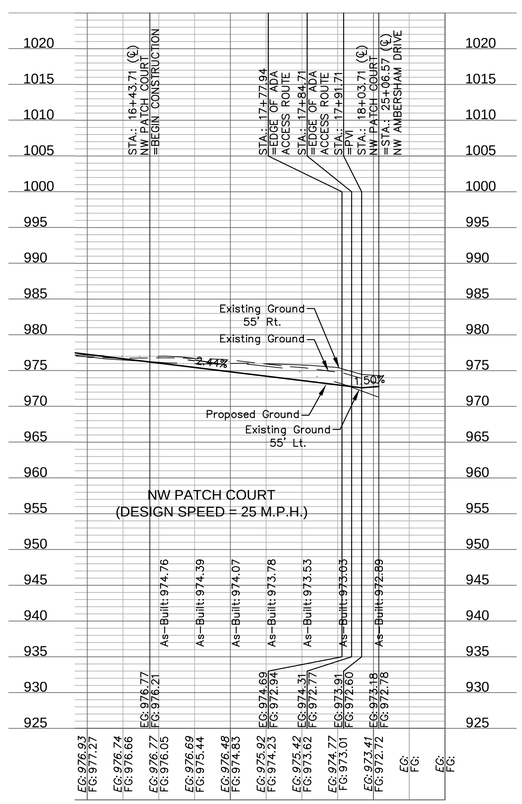


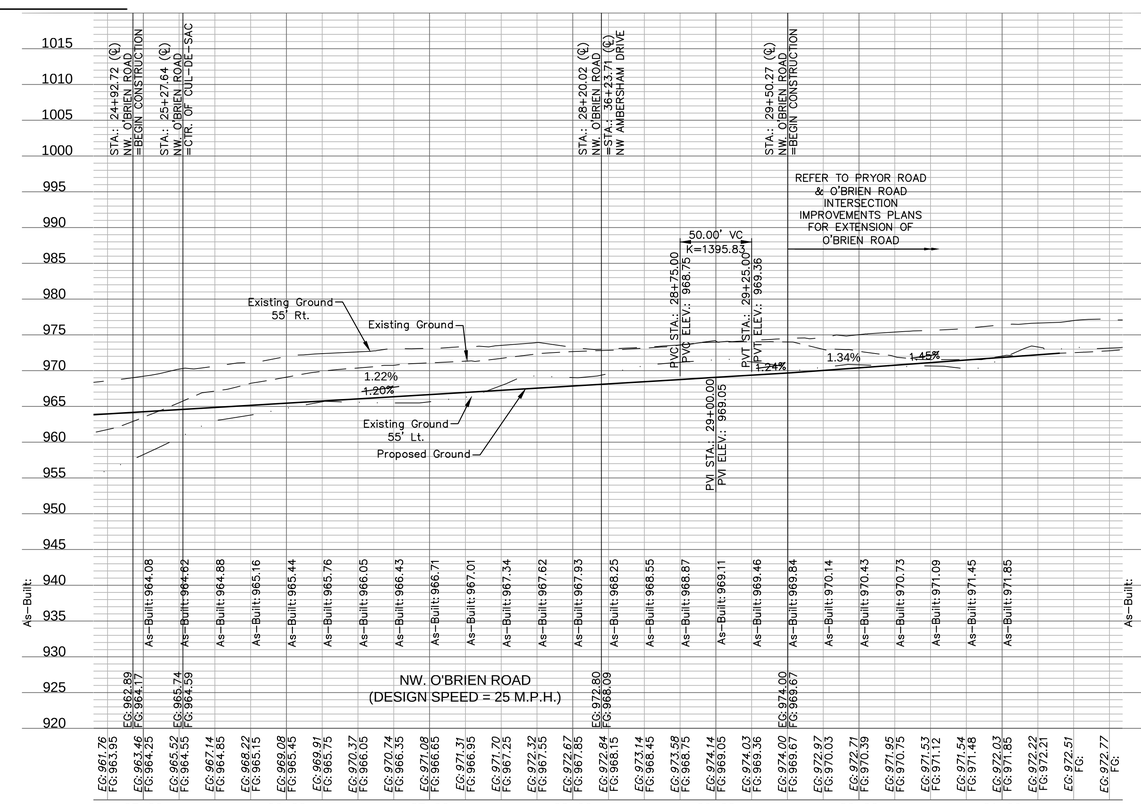
LEGEND	
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER



N.T.S.
01 MILL & OVERLAY DETAIL

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	





AS-BUILT

SCALE IN FEET

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
12/11/2020
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NO. REV.	DATE	REVISED PER CITY COMMENTS	BY
1	4/22/2019		

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
C121

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\As-Builts\Sheets\GNCV\01_Street & Storm_36x24\C_RPP06_1140A.dwg USER: jsellers
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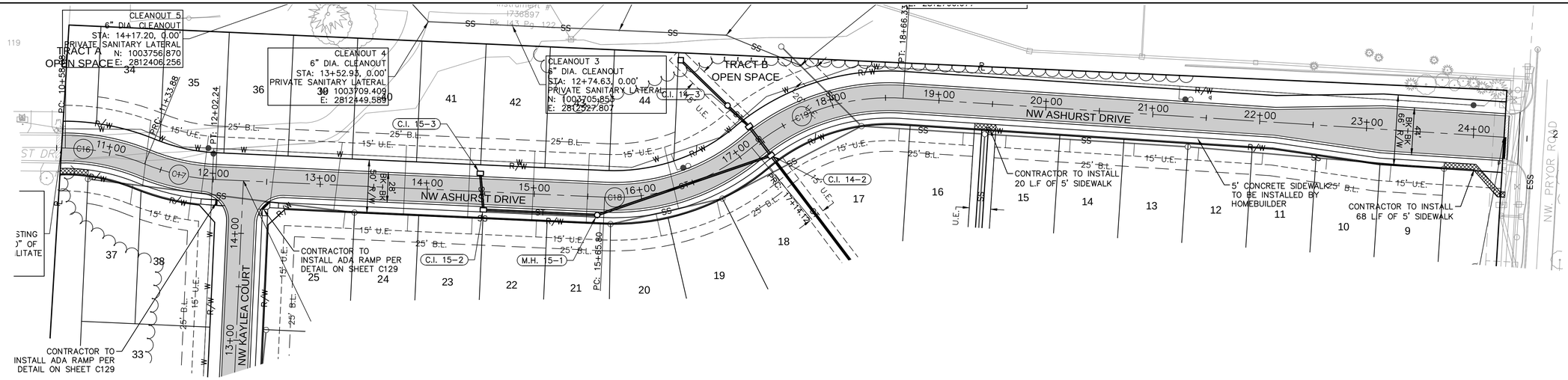
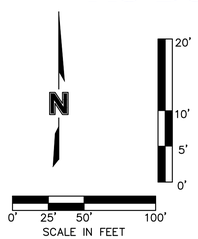
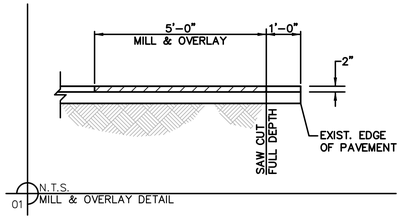


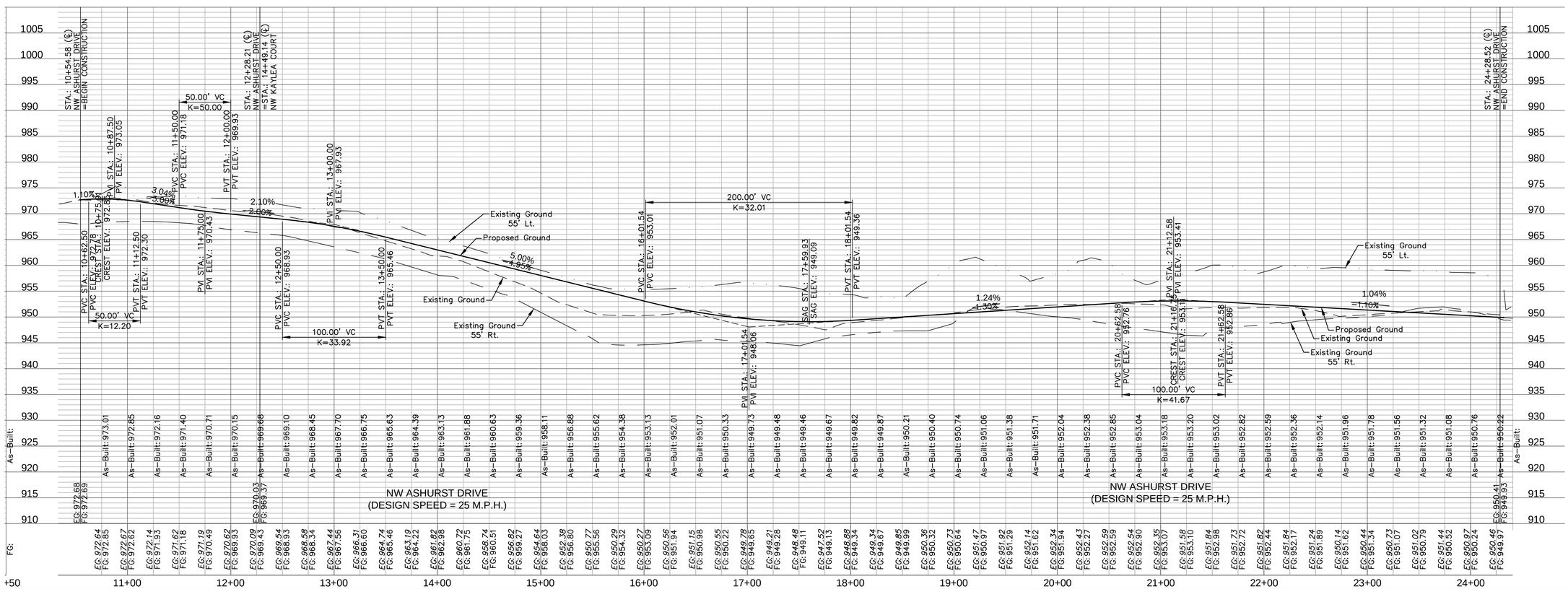
AS-BUILT

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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STATE OF MISSOURI
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NUMBER PE-2017000367
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PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

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
C122

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\As-Builts\Sheets\GNCV\01_Street & Storm_36x24\C_RPP07_1140A.dwg USER: jsellers
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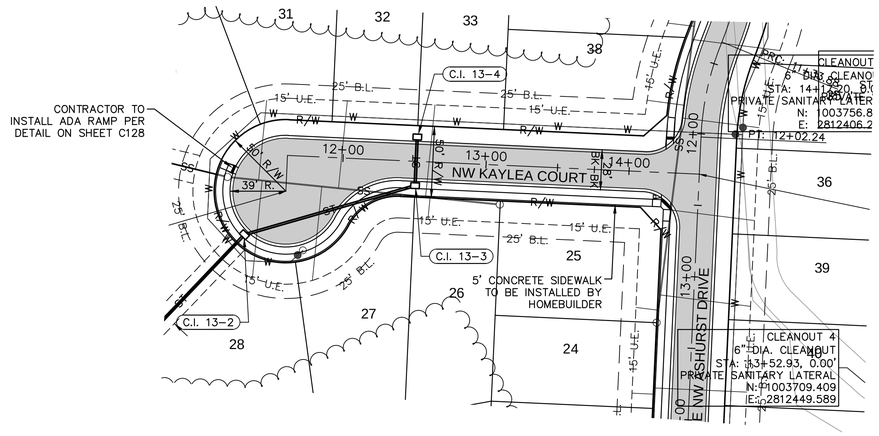
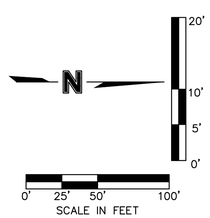
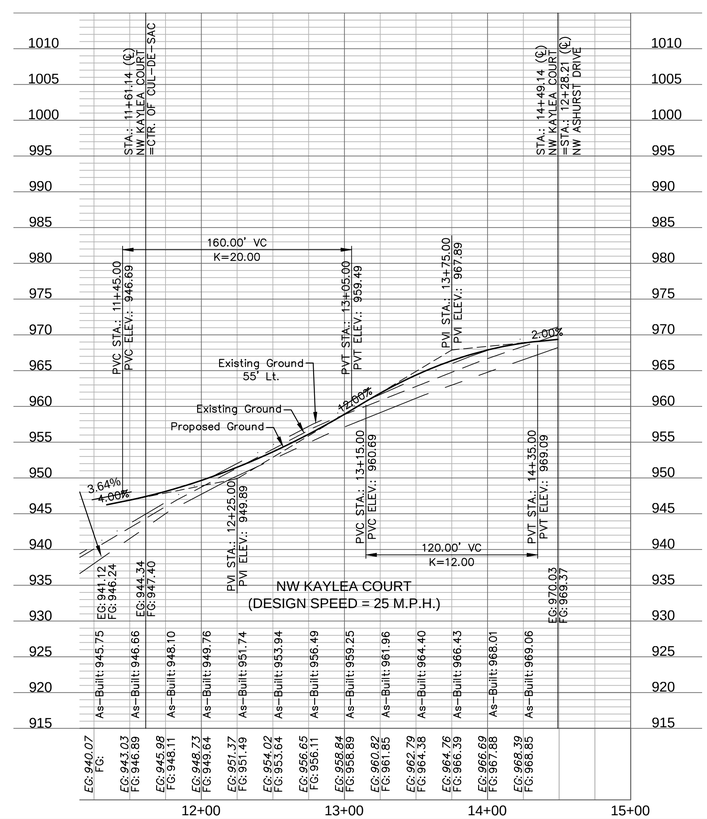


LEGEND	
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER



AS-BUILT



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DATE: Nov 02, 2020 9:06am

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12/11/2020
PROFESSIONAL ENGINEER

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REVISIONS

ROADWAY PLAN & PROFILE
STREET & STORM SEWER PLANS

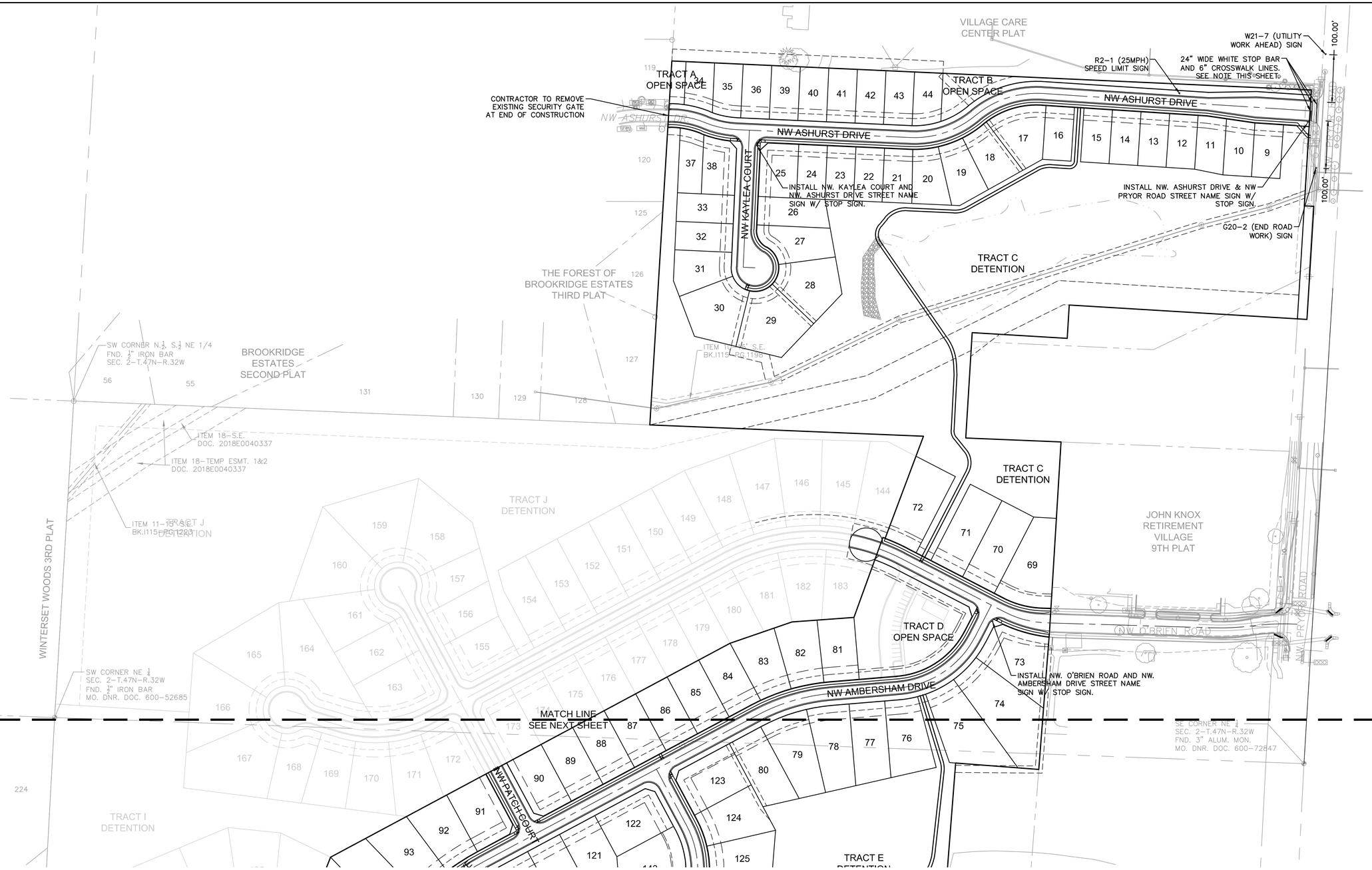
WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

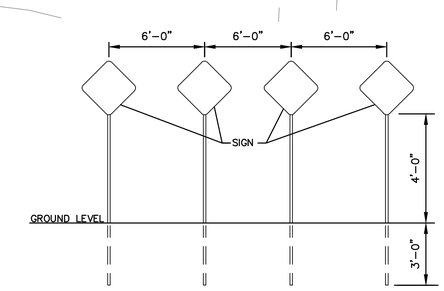
2019

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
C123



NOTE: THE CROSSWALK AND STOP LINES SHALL BE PREFORMED THERMOPLASTIC MATERIAL AND LOCATED IN CONFORMANCE WITH STANDARD DETAILS AND MUTCD WITH 4' OF SEPARATION AND CONSISTENT PARALLEL WIDTH. CROSSWALK LINES SHALL BE 10' APART MATCHING THE WIDTH OF THE SHARED-USE PATH.



END OF ROAD TREATMENT
N.T.S.

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

N

0' 50' 100' 200'
SCALE IN FEET

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_TRF01_1140A.dwg USER: ssaylor
DATE: May 16, 2019 8:24am

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

REVISIONS

TRAFFIC CONTROL PLAN
STREET & STORM SEWER PLANS

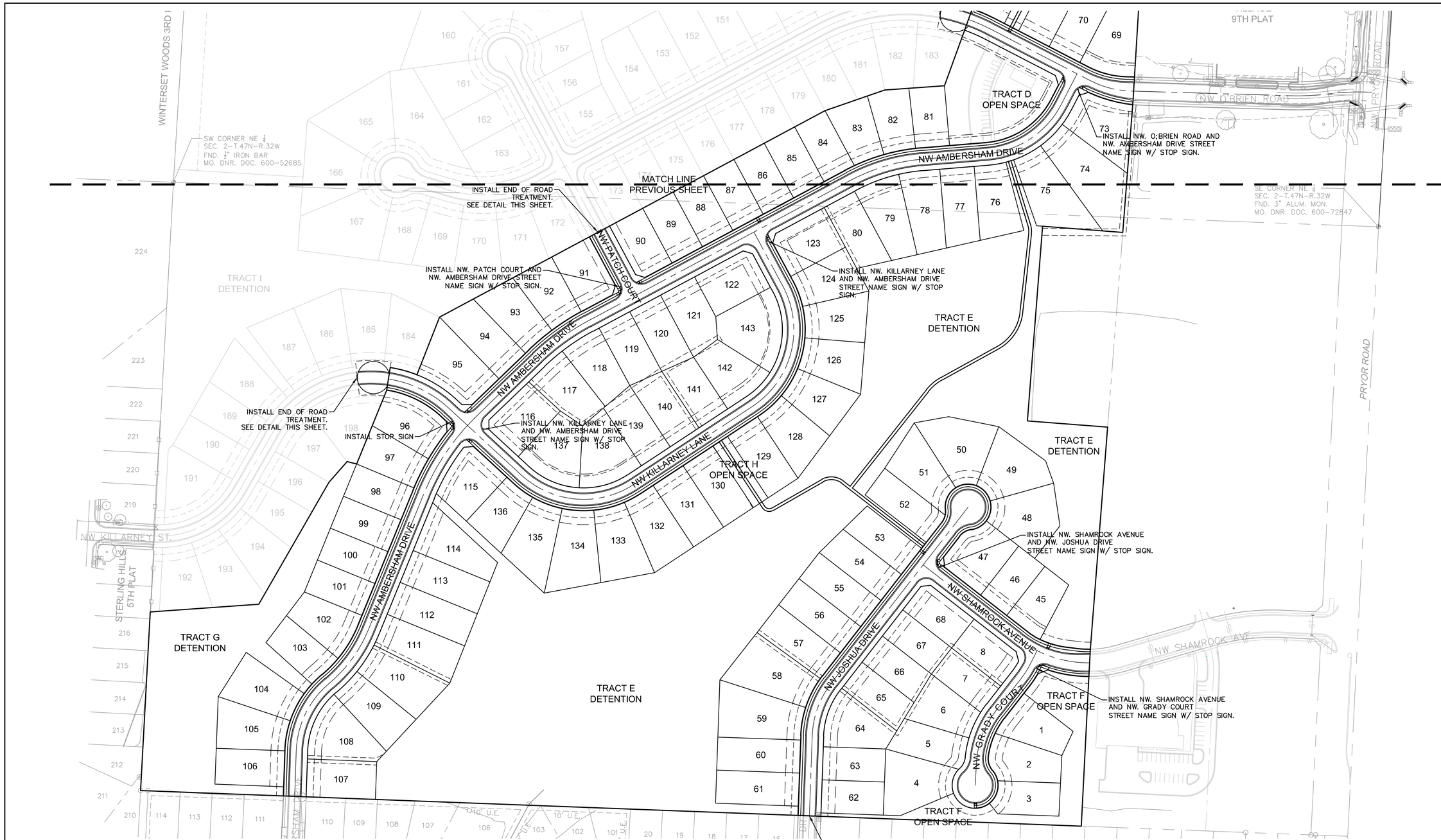
WOODSIDE RIDGE
FIRST PLAT

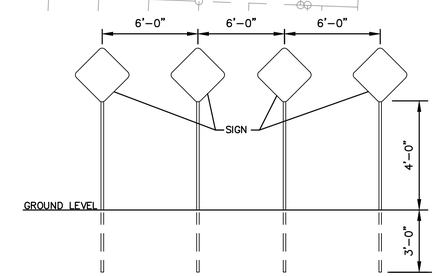
LEE'S SUMMIT, MO

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





END OF ROAD TREATMENT
N.T.S.

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

NOT AS-BUILT

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REVISIONS

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
C125

DWG: F:\2018\1001–1500\018–1140–A\40–Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_TRF01_1140A.dwg USER: ssoylor
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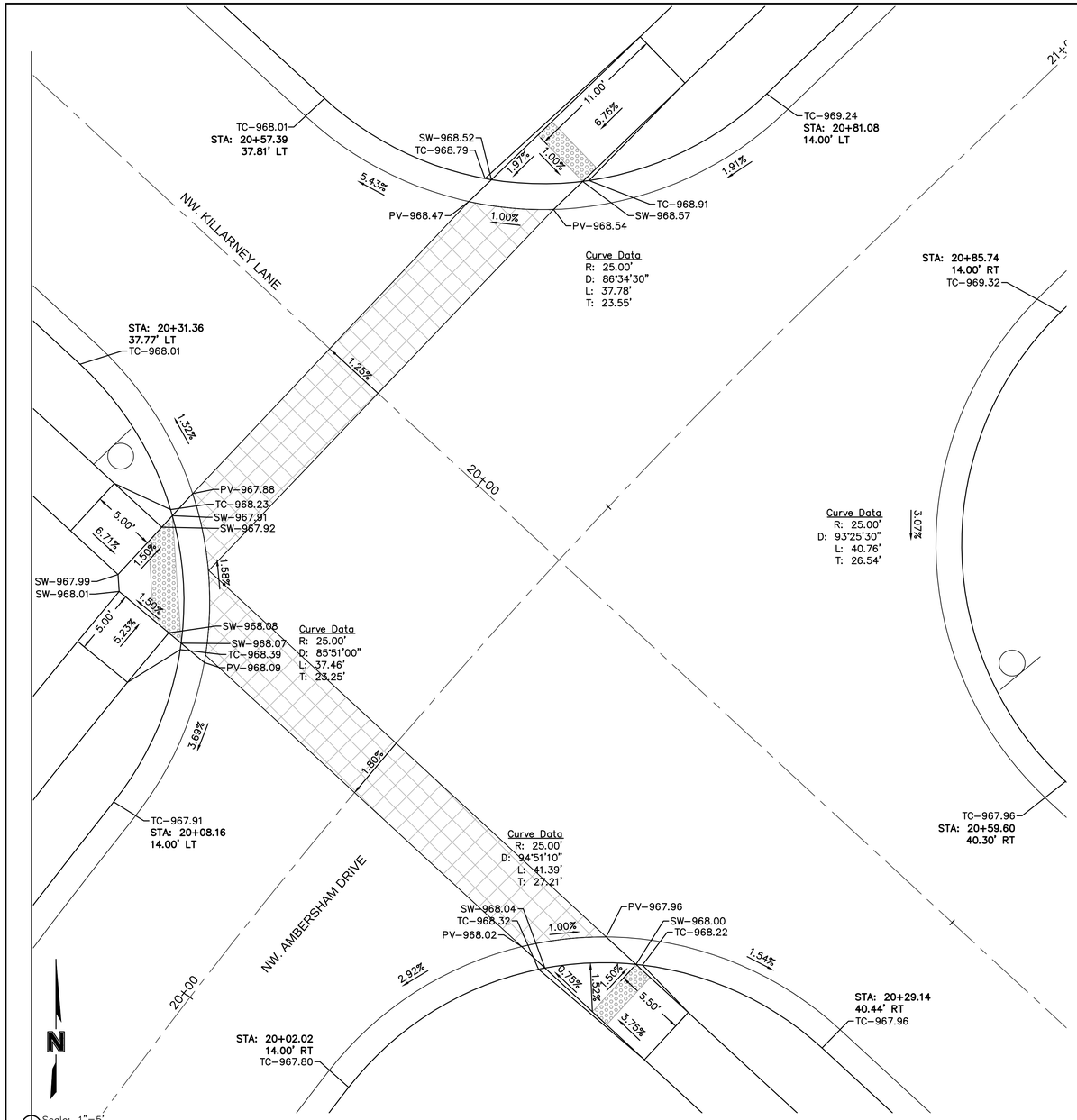
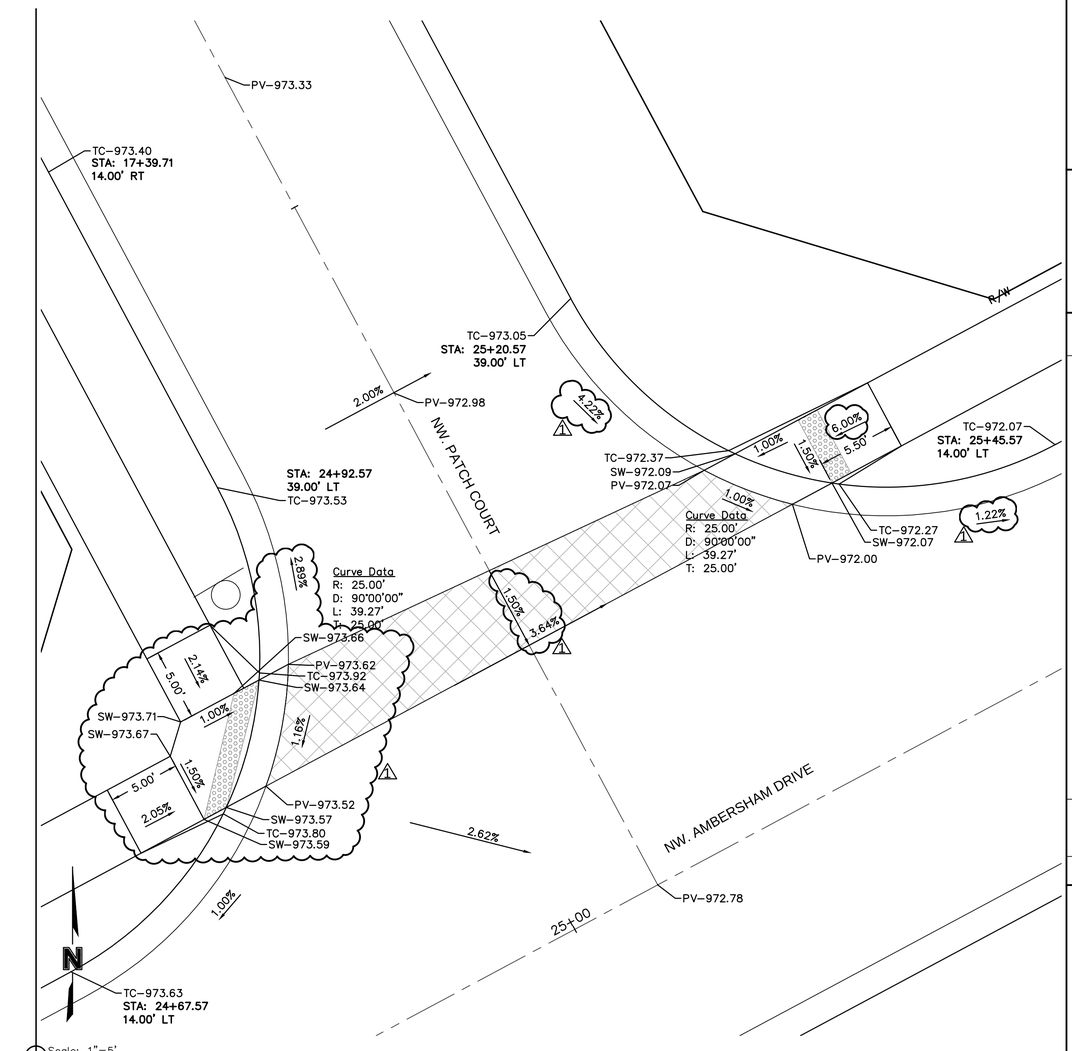


01 Scale: 1"=5'
NW. KILLARNEY LANE & NW. AMBERSHAM DRIVE



02 Scale: 1"=5'
NW. PATCH COURT & NW. AMBERSHAM DRIVE

NOT AS-BUILT

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12/11/2020
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REVISIONS

INTERSECTION DETAILS
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

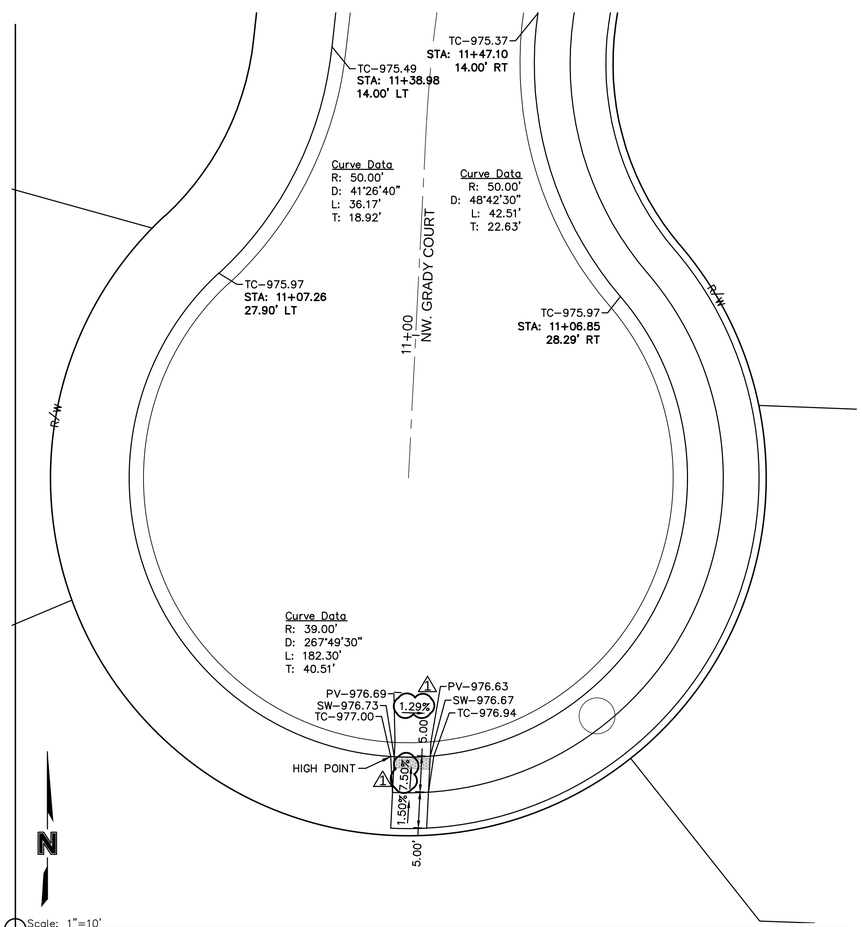
2019

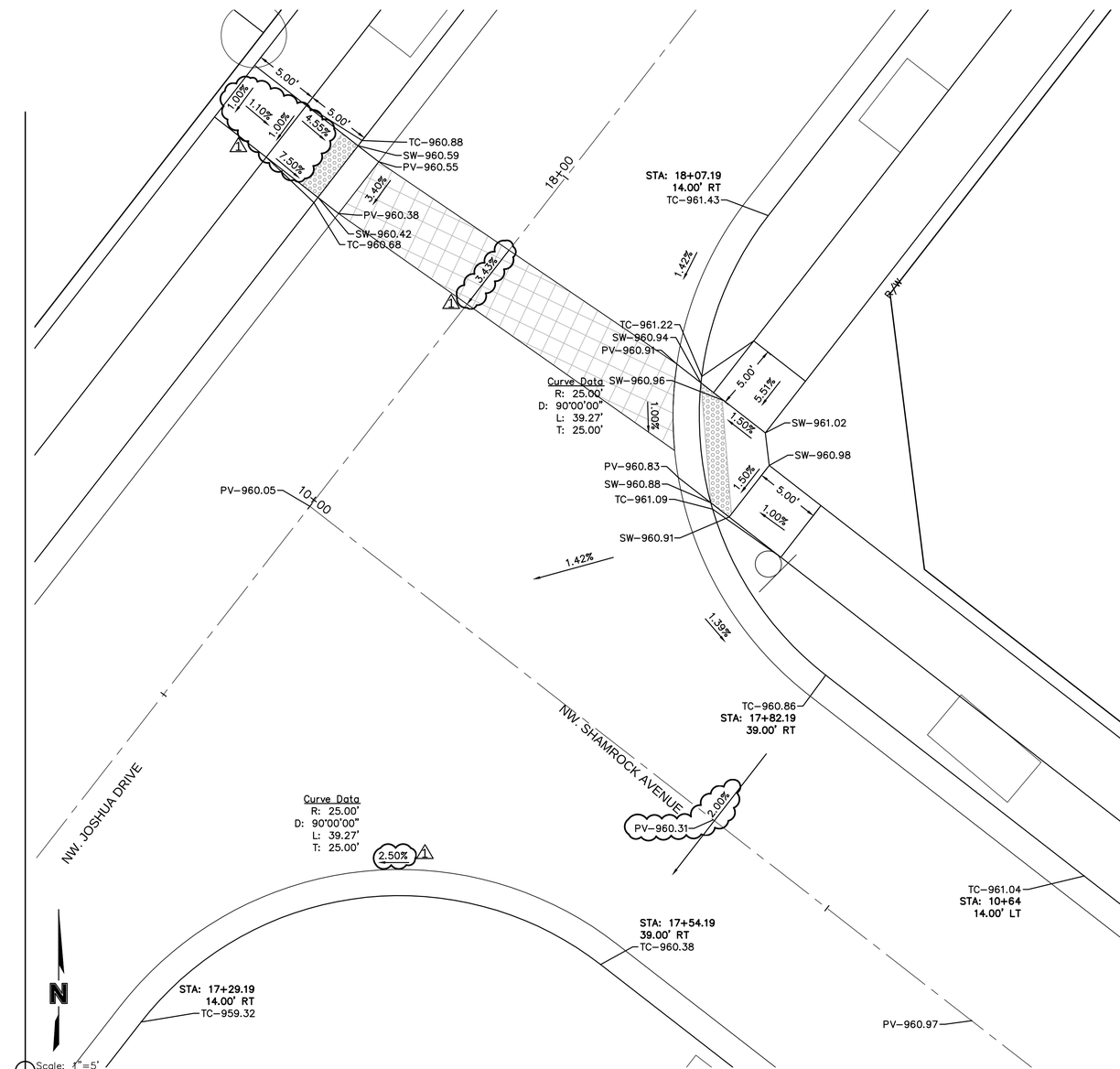
drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C126

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_SPT01_1140A.dwg USER: ssoylor
DATE: Apr 04, 2019 11:25am

NOT AS-BUILT





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DATE: Apr 04, 2019 11:25am

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REVISIONS

INTERSECTION DETAILS
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

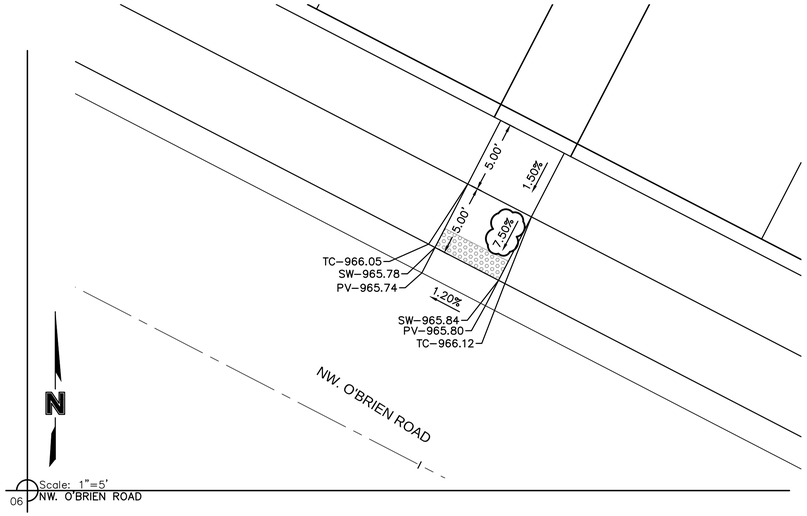
LEE'S SUMMIT, MO

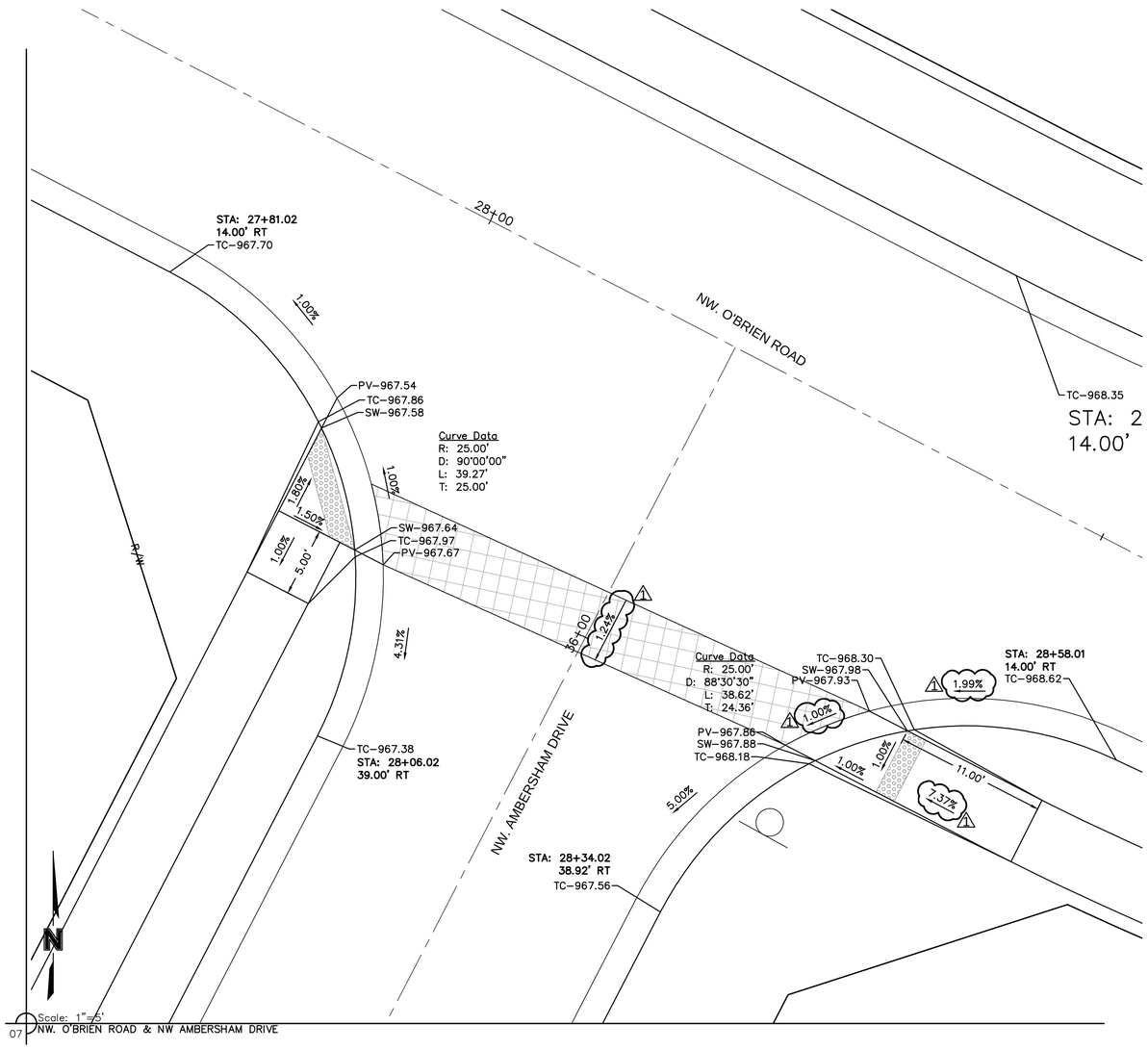
2019

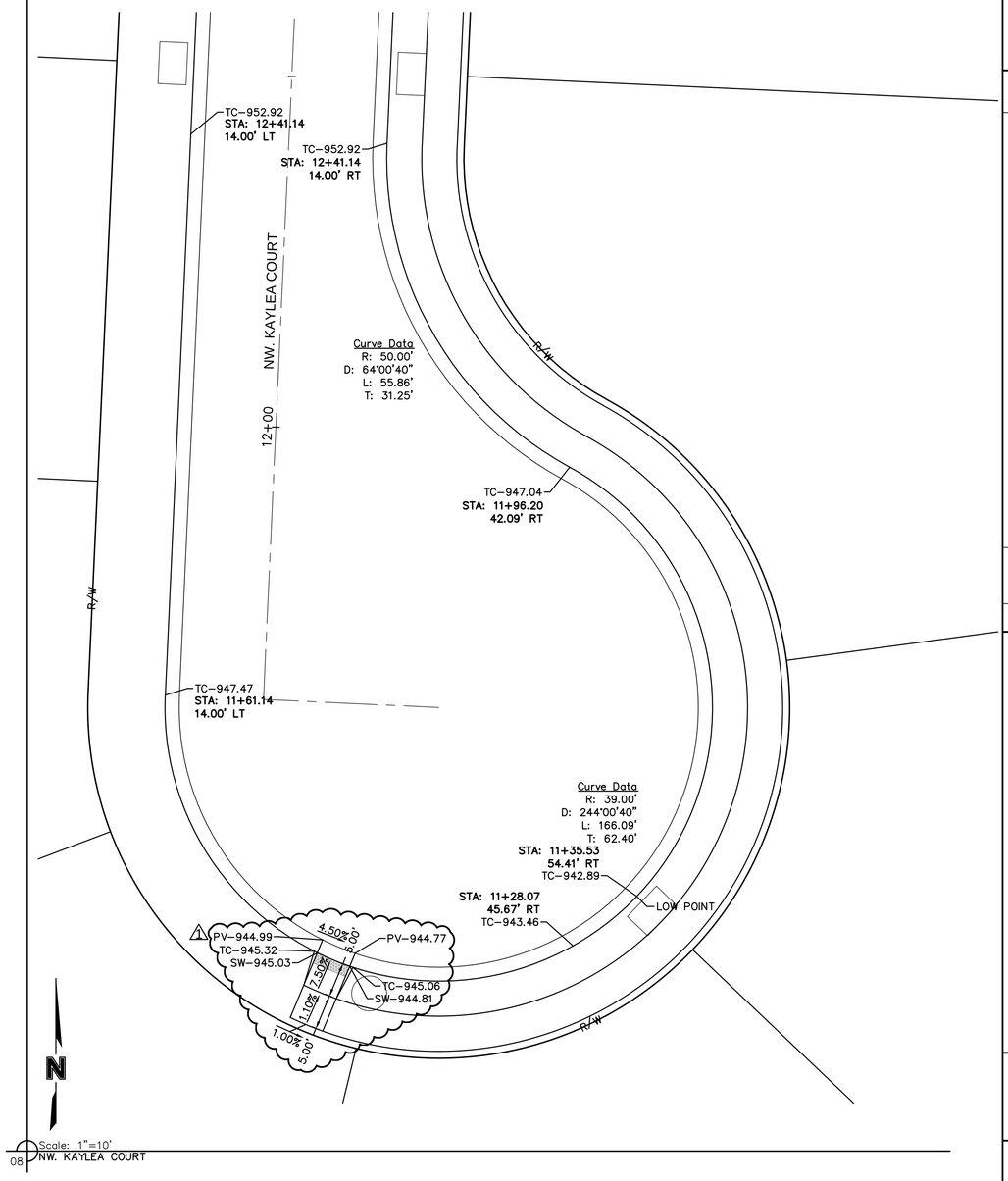
drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

SHEET
C127

NOT AS-BUILT







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STATE OF MISSOURI
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REVISIONS

INTERSECTION DETAILS
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

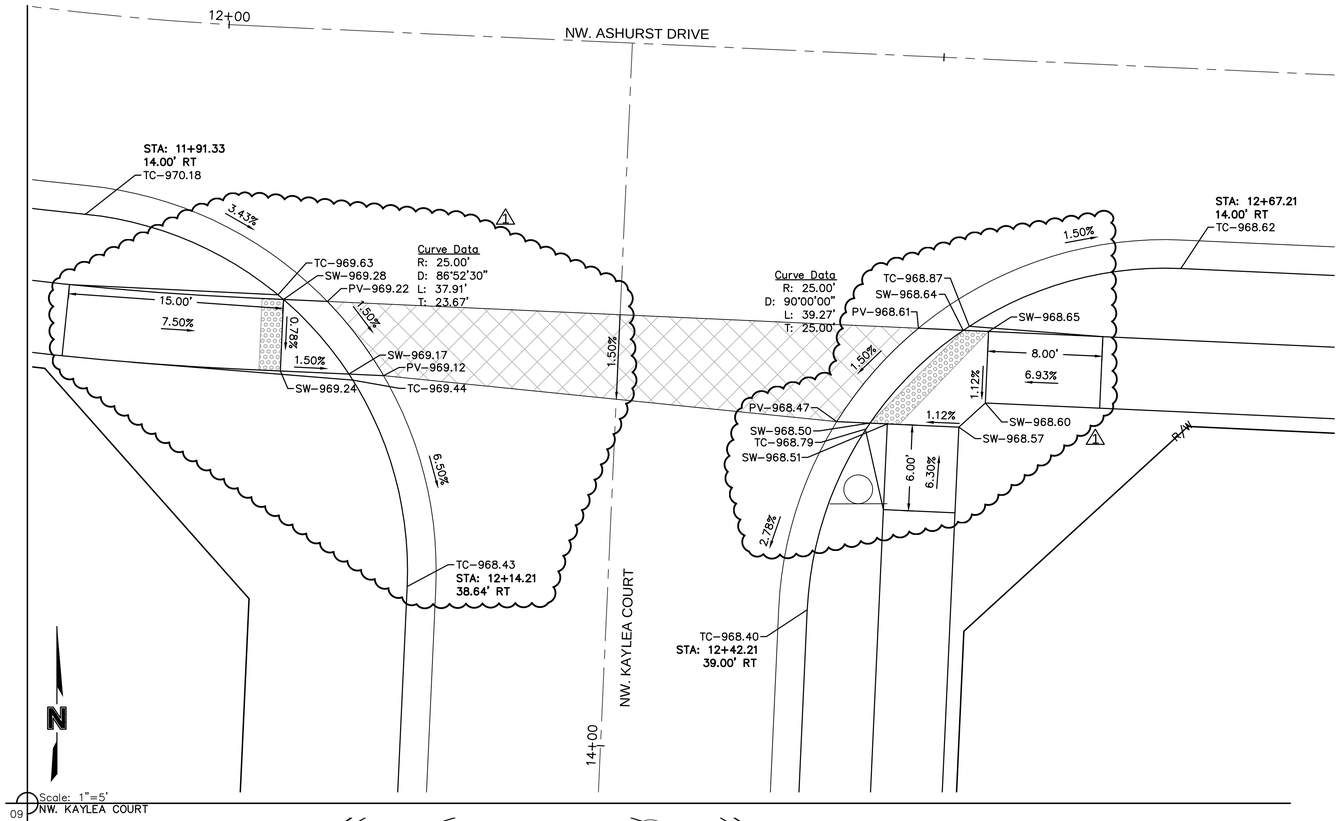
2019

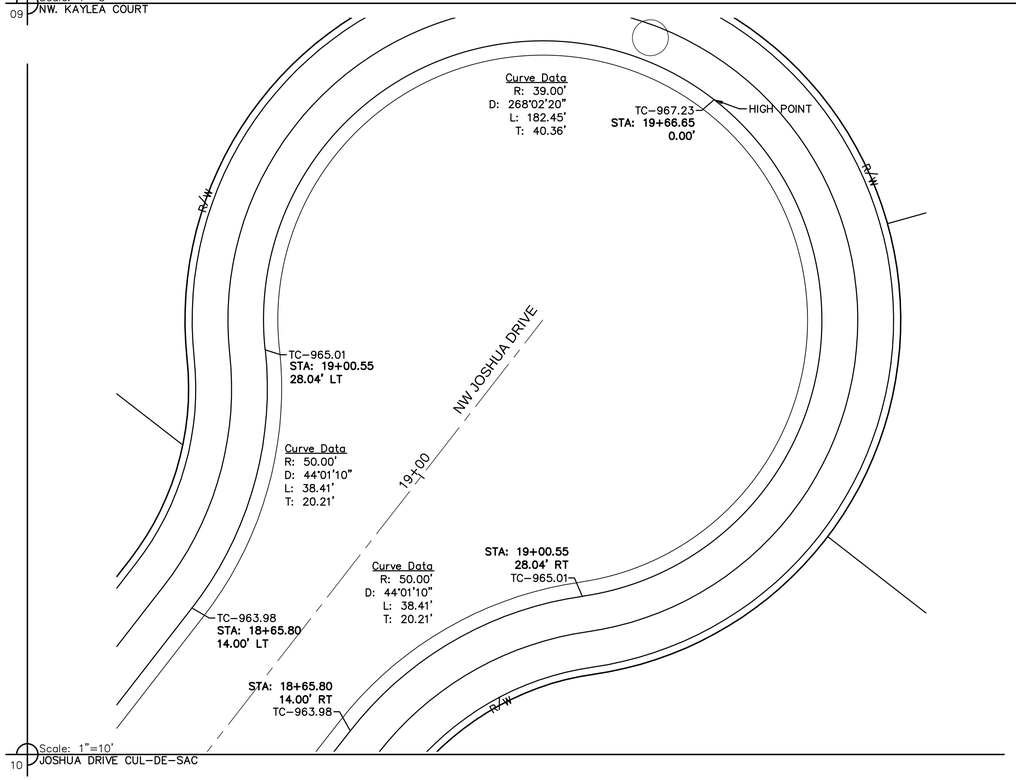
drawn by: D.A.H.O
checked by: J.E.S
designed by: S.M.S
QA/QC by: M.G.D
project no.: A18-1140
date: 2019.03.12

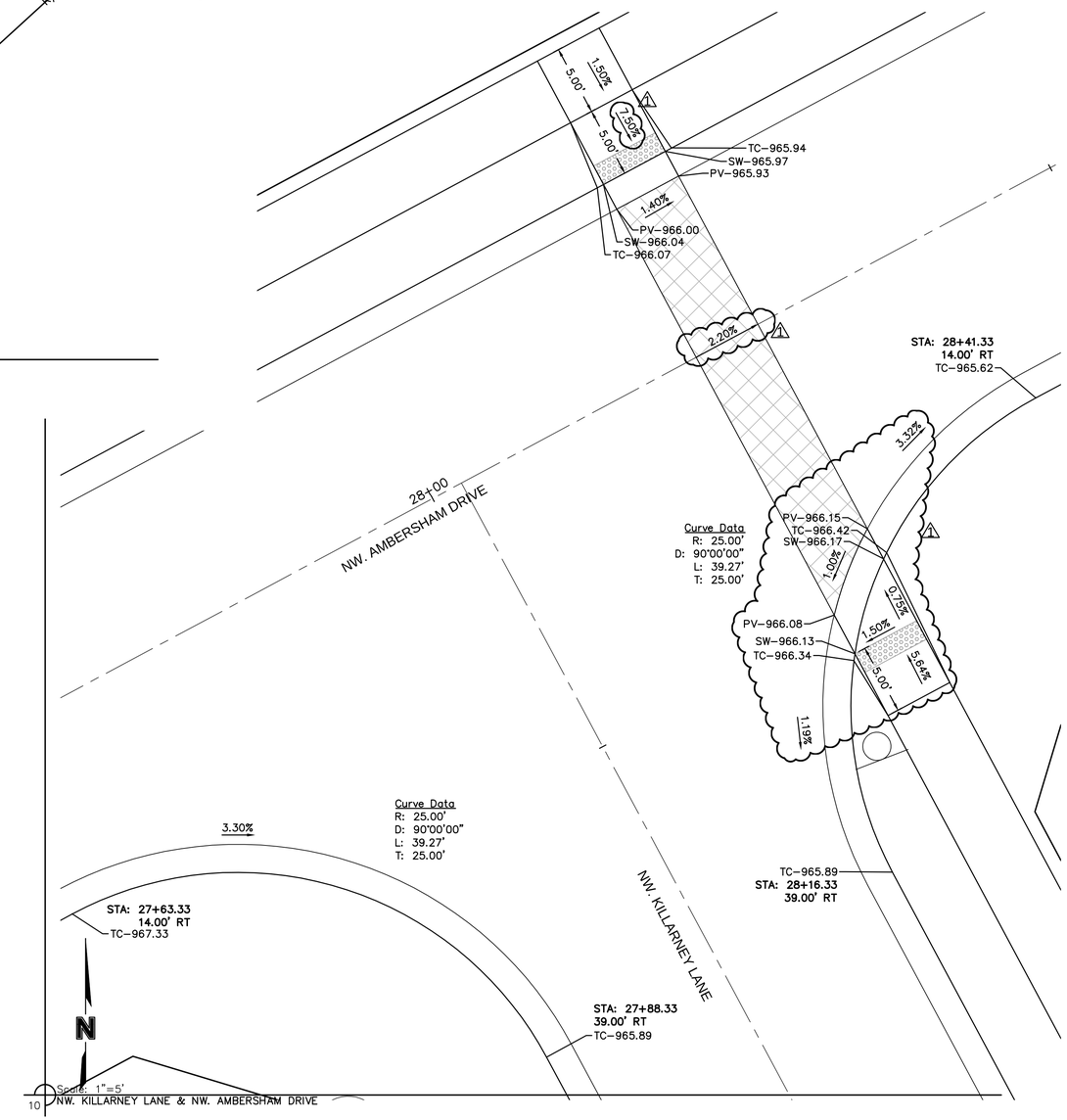
SHEET
C128

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

NOT AS-BUILT







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NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
12/11/2020
PROFESSIONAL ENGINEER

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

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
C129

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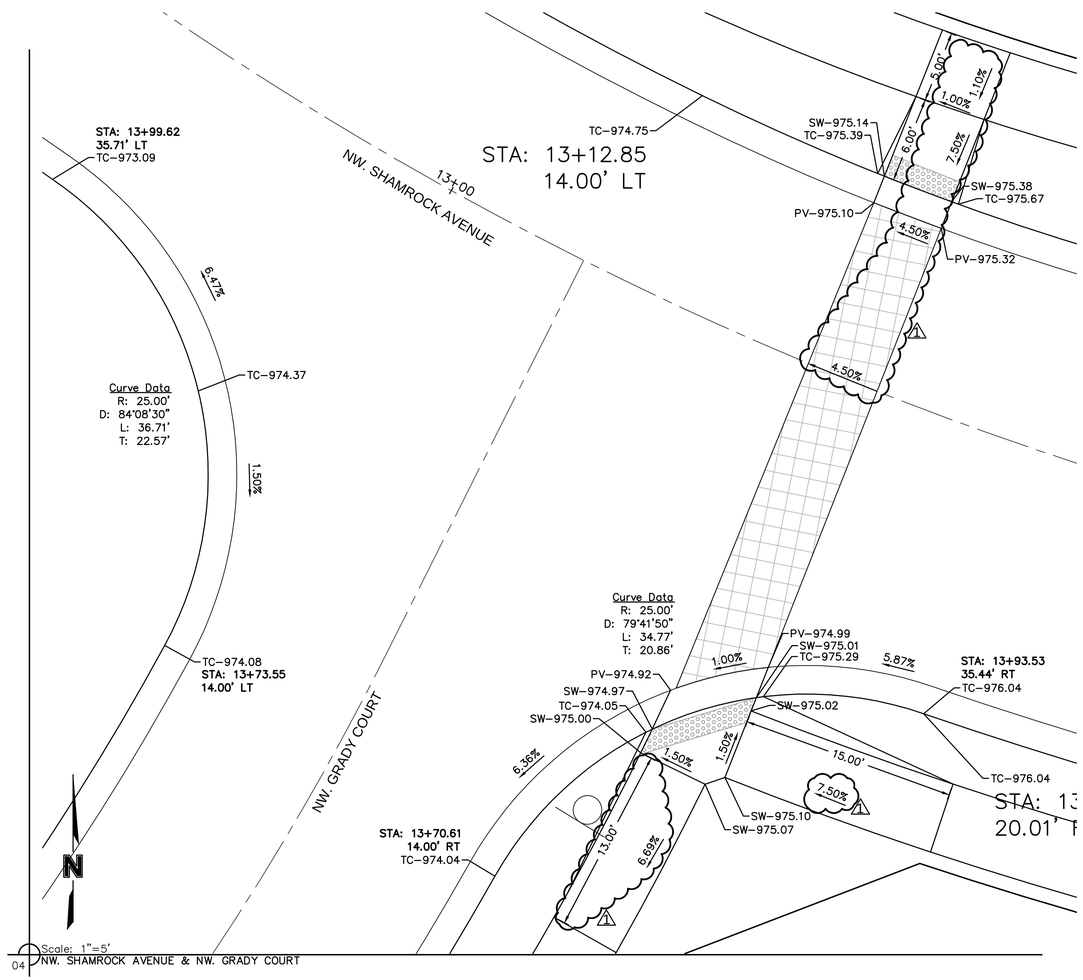

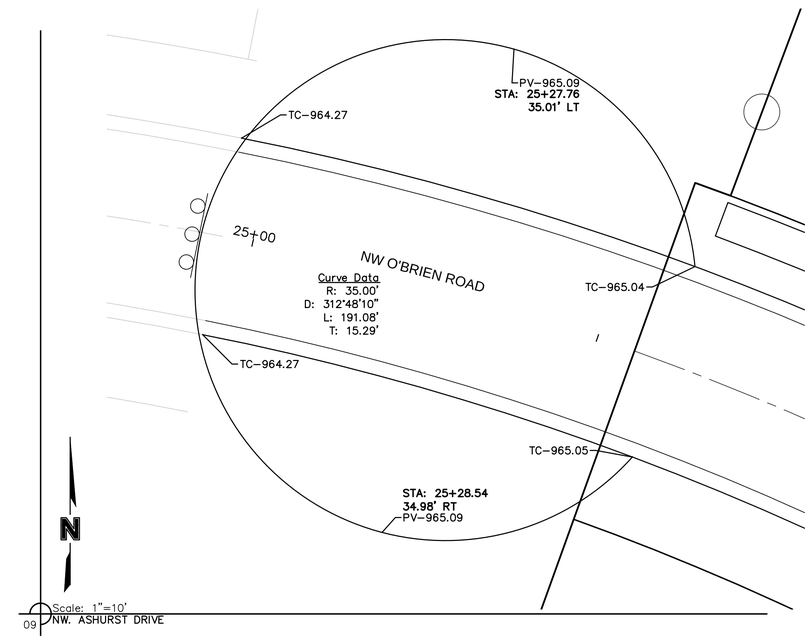

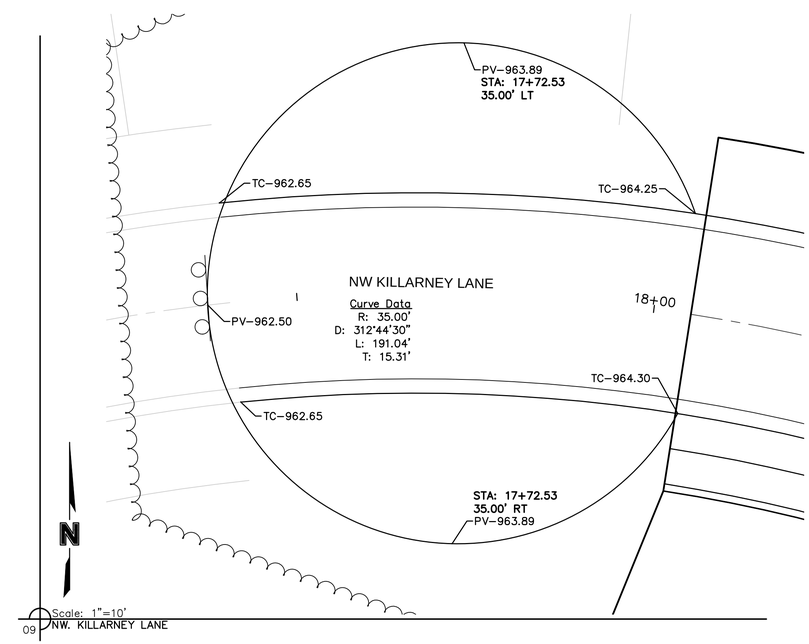

NOT AS-BUILT

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TEL 816.361.1177

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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

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

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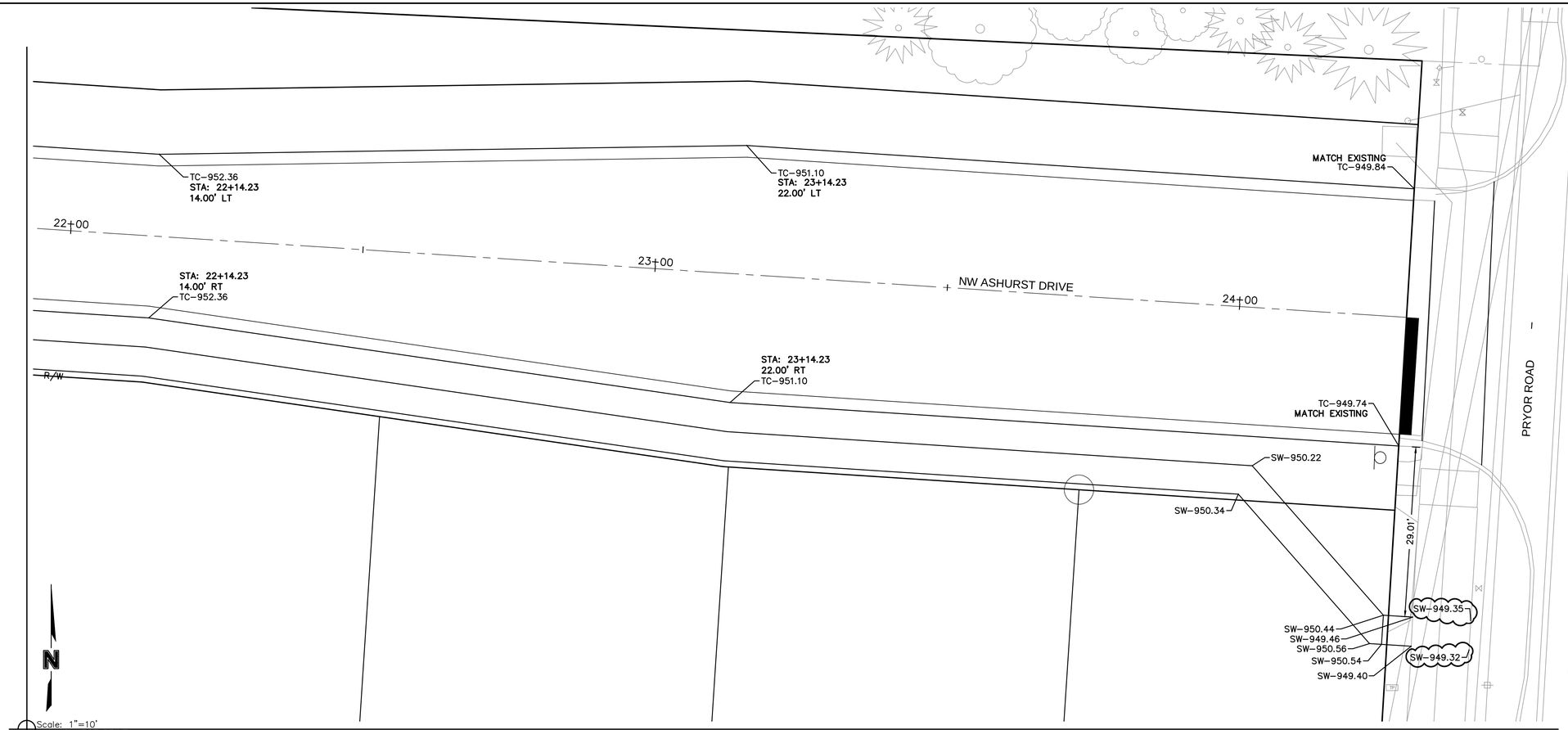
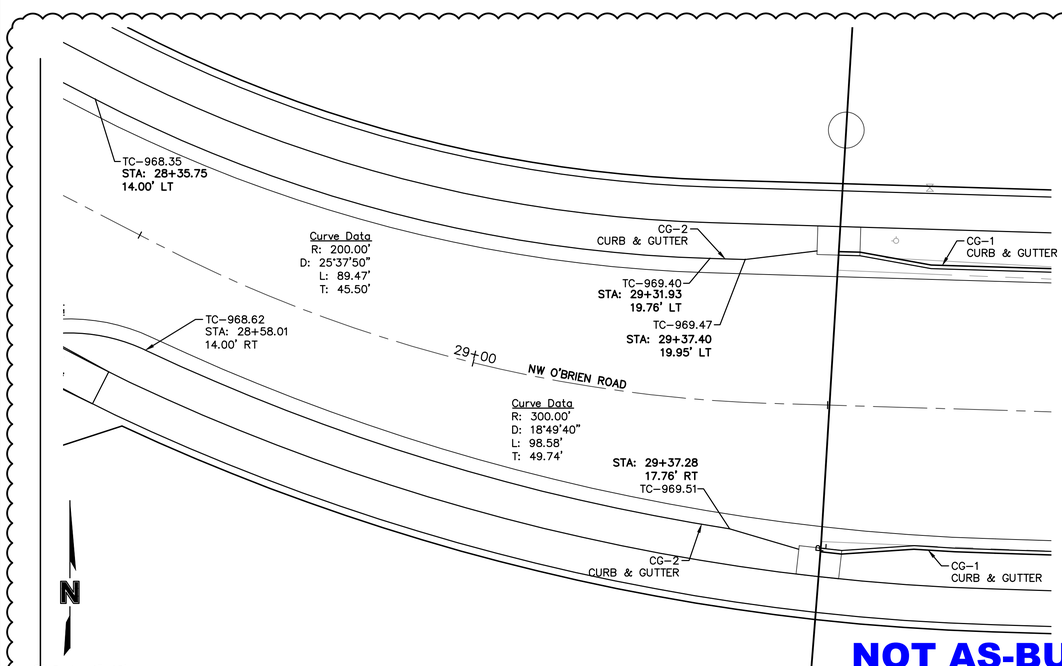
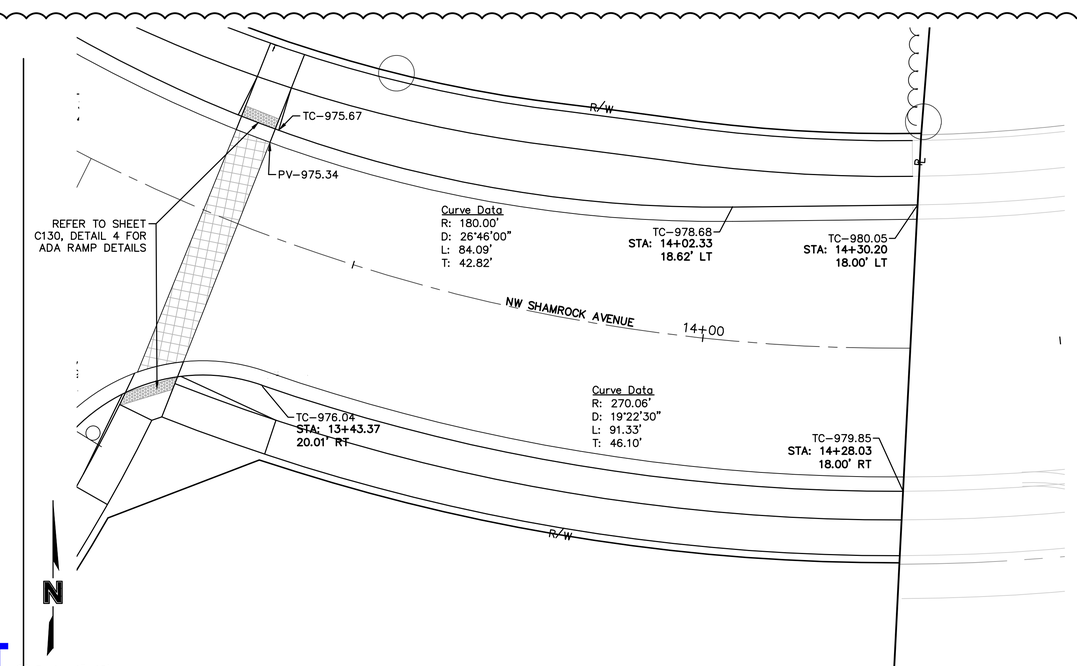


09 Scale: 1"=10'
NW. ASHURST DRIVE



NOT AS-BUILT

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



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

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DATE: Apr 04, 2019 11:27am

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STATE OF MISSOURI
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NUMBER PE-2017000367
12/11/2020
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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

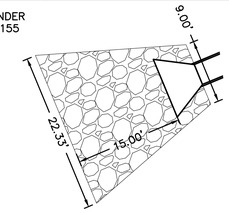
2019

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

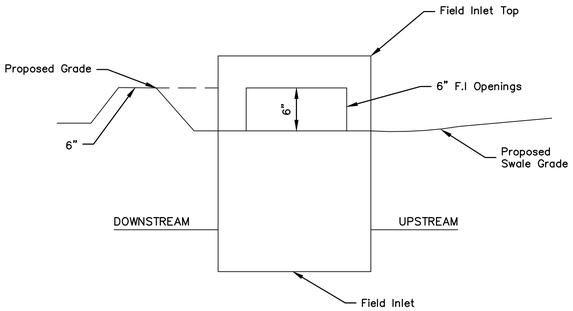
SHEET
C131

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

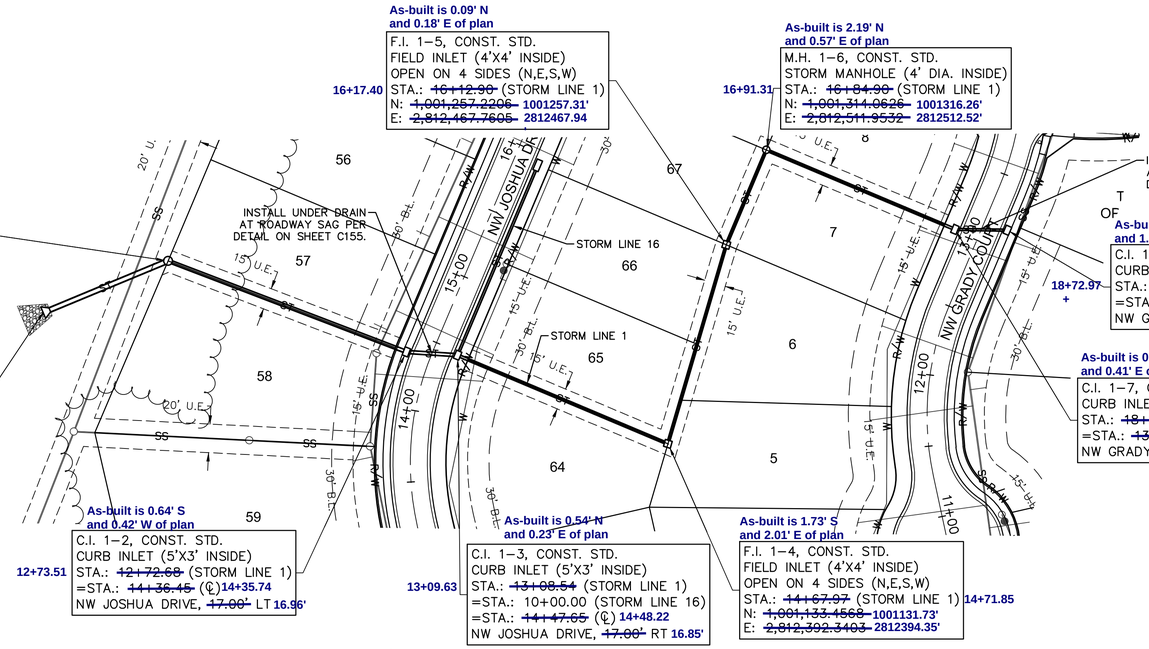


E.S. 1–0
SCALE 1–10'

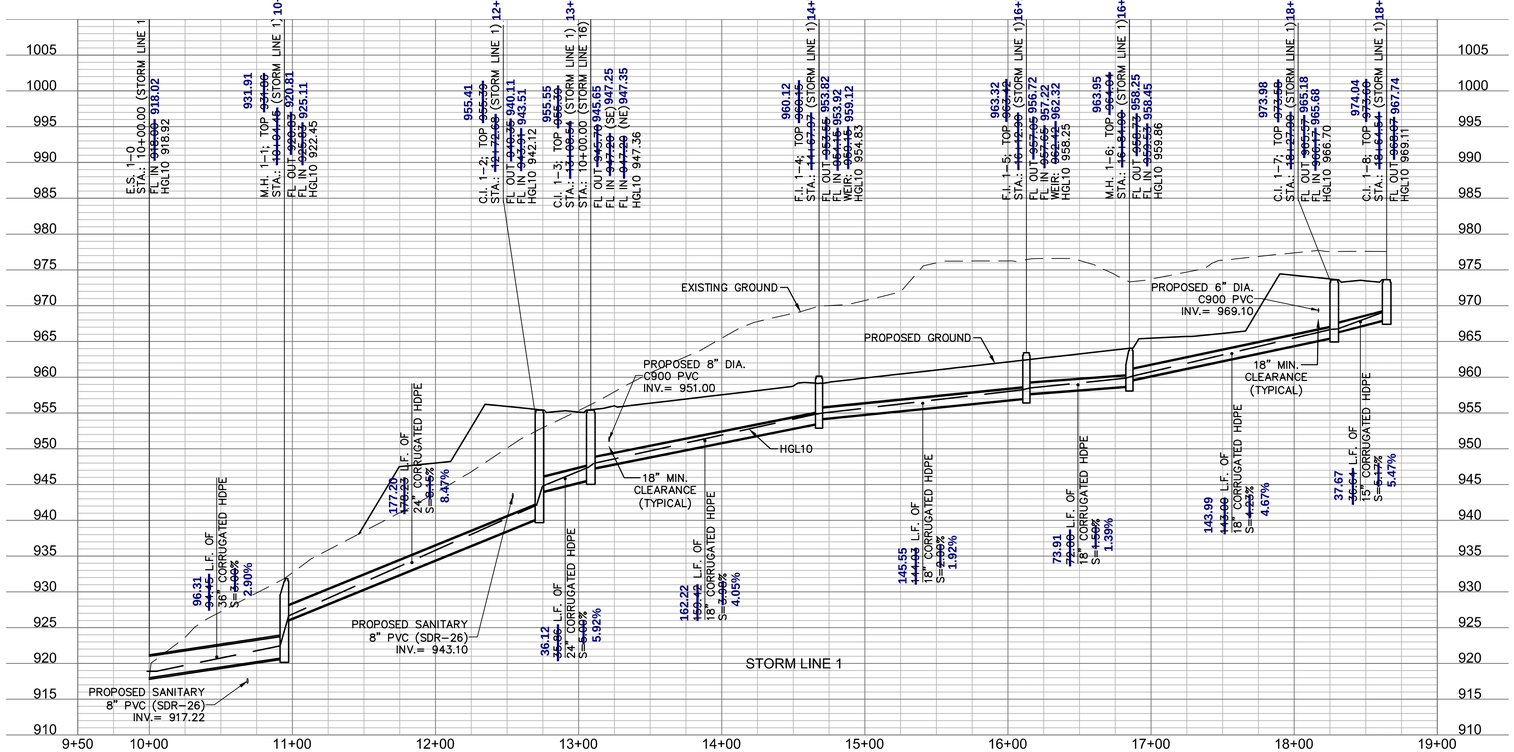


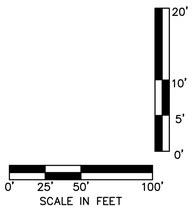
F.I. SUMP DETAIL
NOT TO SCALE

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



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
C132

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_STM01_1140A.dwg USER: ssoylor
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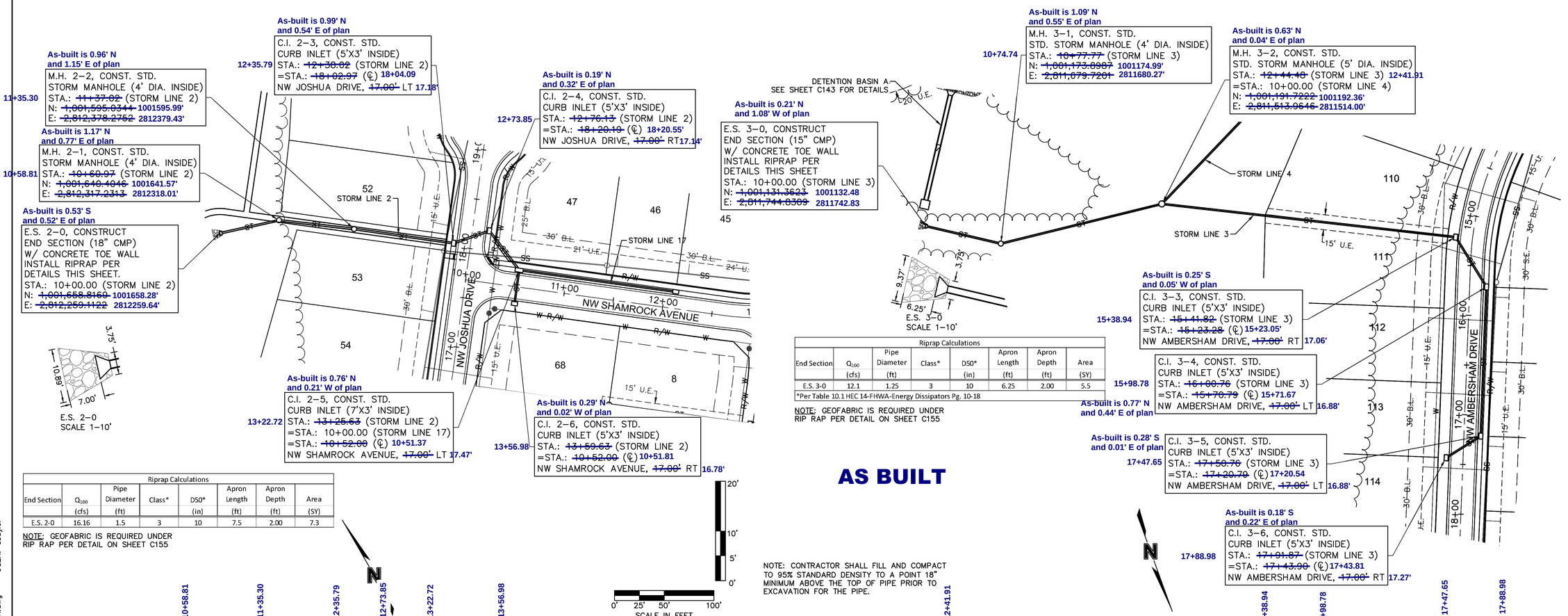

Riprap Calculations								
End Section	Q_{100} (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. 2-0	16.16	1.5	3	10	7.5	2.00	7.3

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

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

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_STM02_1140A.dwg USER: ssoylor
DATE: Apr 04, 2019 11:31am

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REVISIONS

STORM SEWER PLAN & PROFILE
STREET & STORM SEWER PLANS

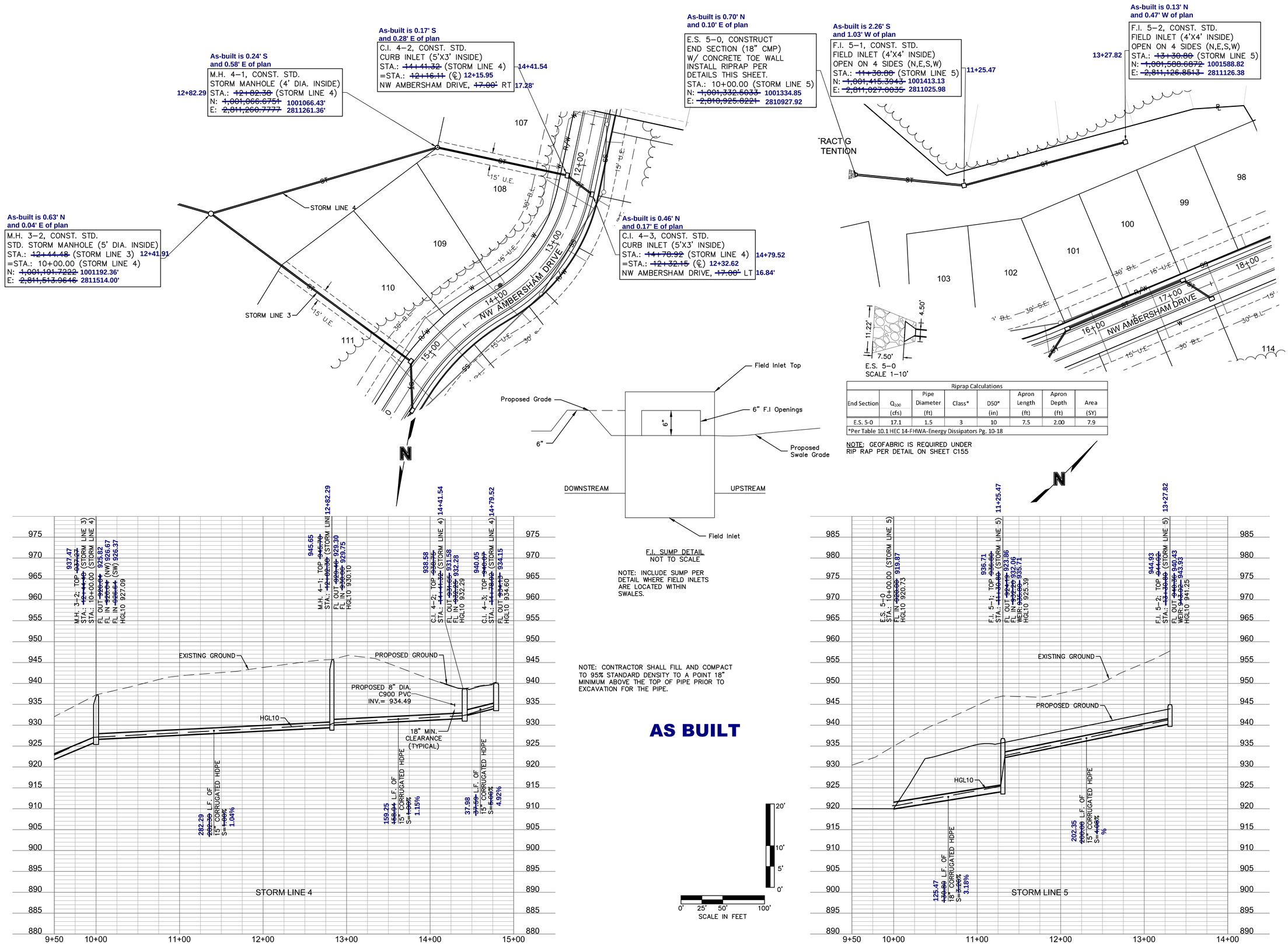
WOODSIDE RIDGE
FIRST PLAT

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
C133



Riprap Calculations							
End Section	Q_{100} (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (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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DATE: Apr 04, 2019 11:33am

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12/11/2020
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REVISIONS

STORM SEWER PLAN & PROFILE
STREET & STORM SEWER PLANS

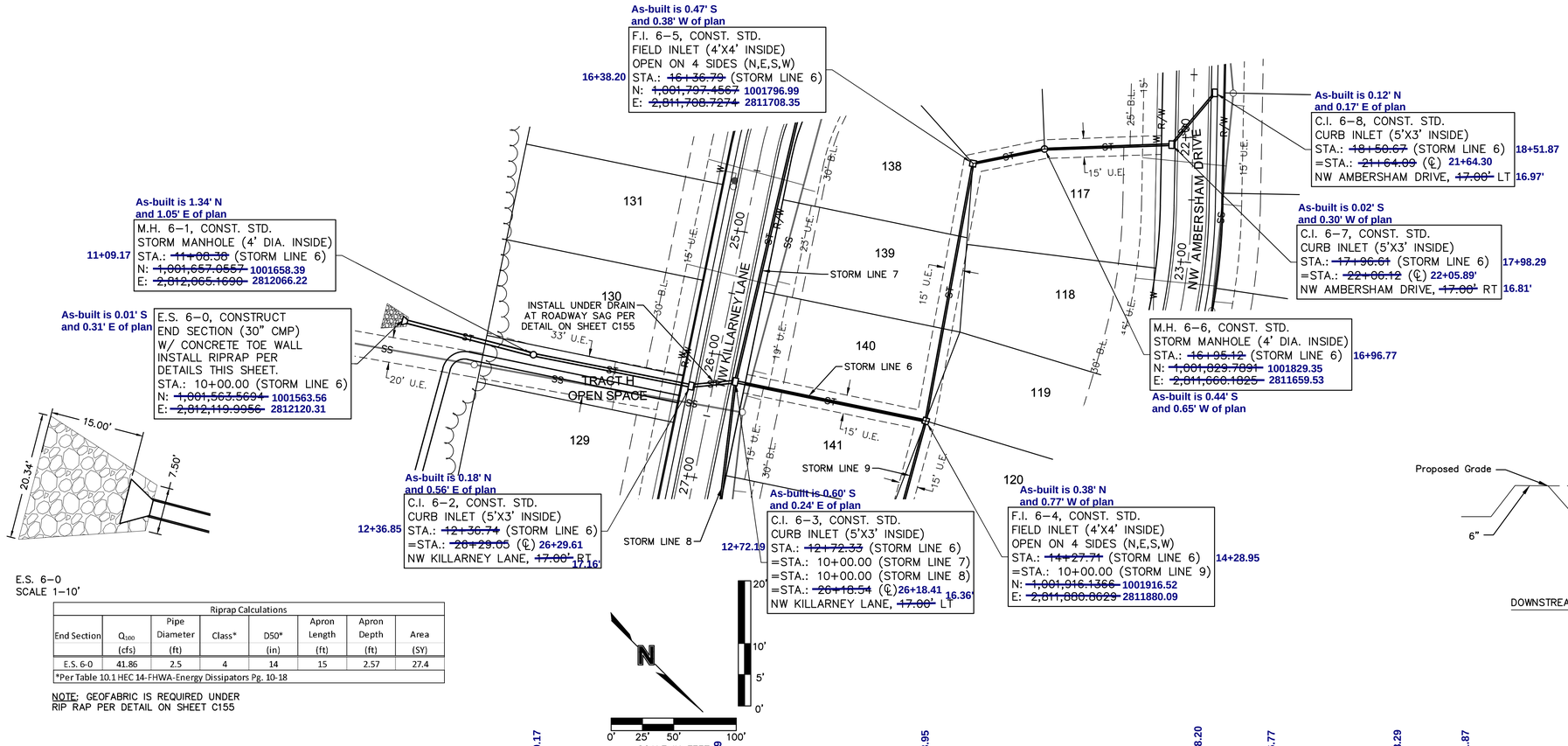
WOODSIDE RIDGE
FIRST PLAT

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
C134

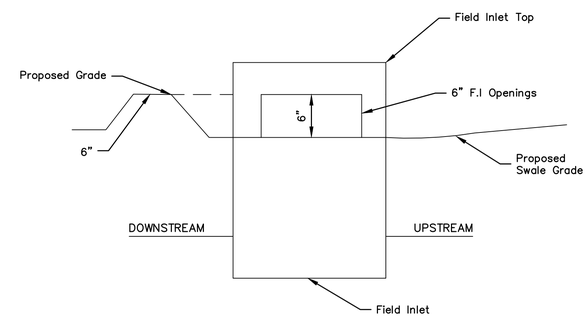


E.S. 6–0
SCALE 1–10'

Riprap Calculations							
End Section	Q_{100}	Pipe Diameter	Class*	D50*	Apron Length	Apron Depth	Area
	(cfs)	(ft)		(in)	(ft)	(ft)	(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

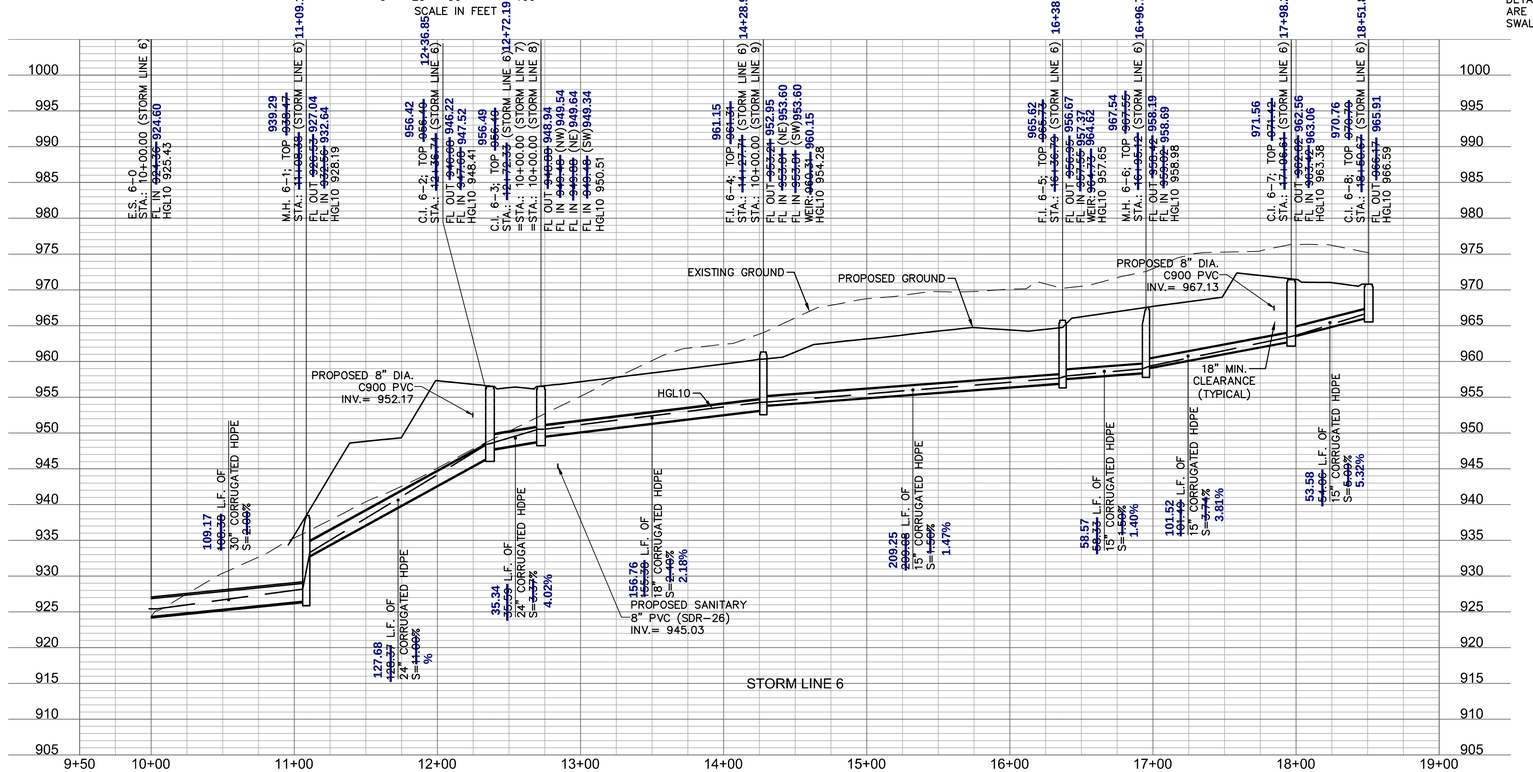


F.I. SUMP DETAIL
NOT TO SCALE

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.

AS BUILT



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STORM SEWER PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

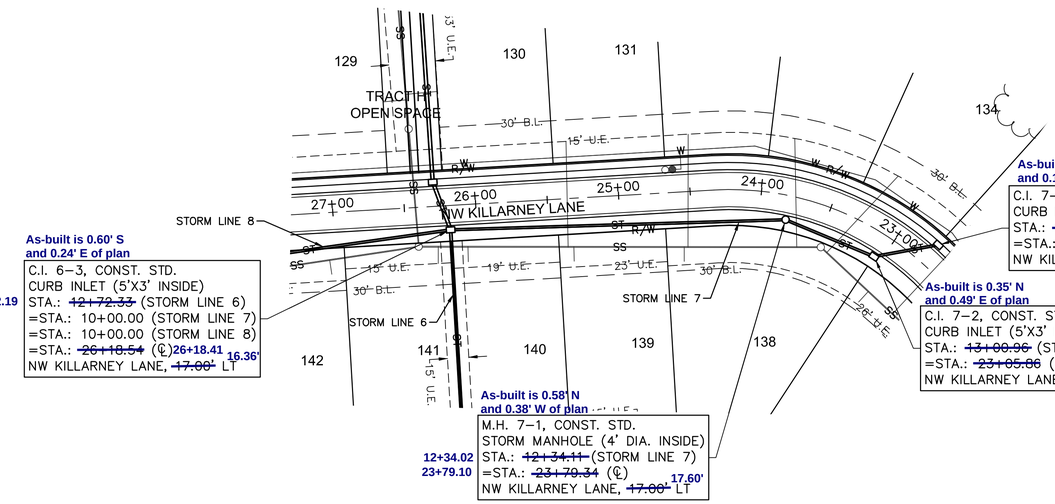
LEE'S SUMMIT, MO

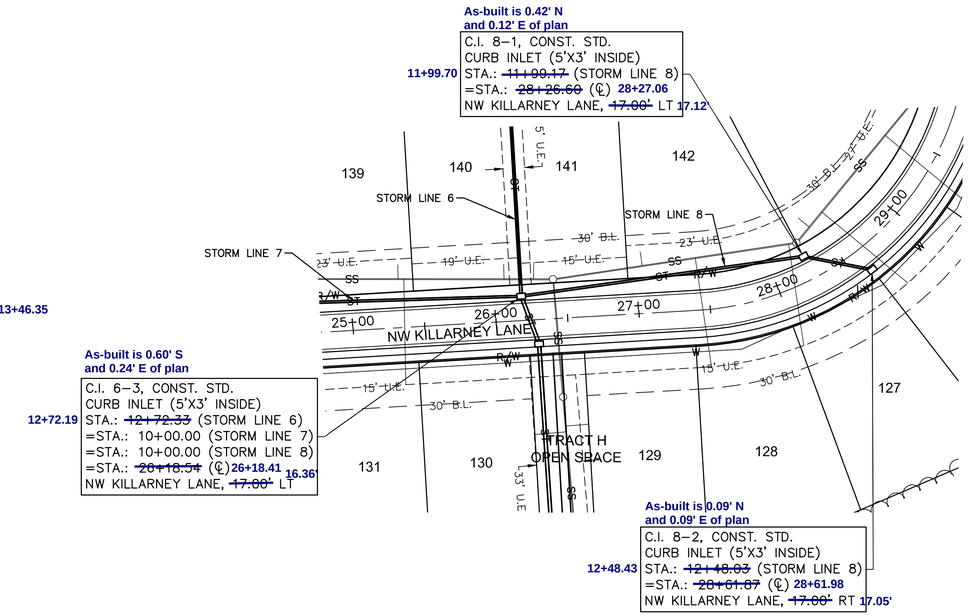
2019

drawn by: D.A.H.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

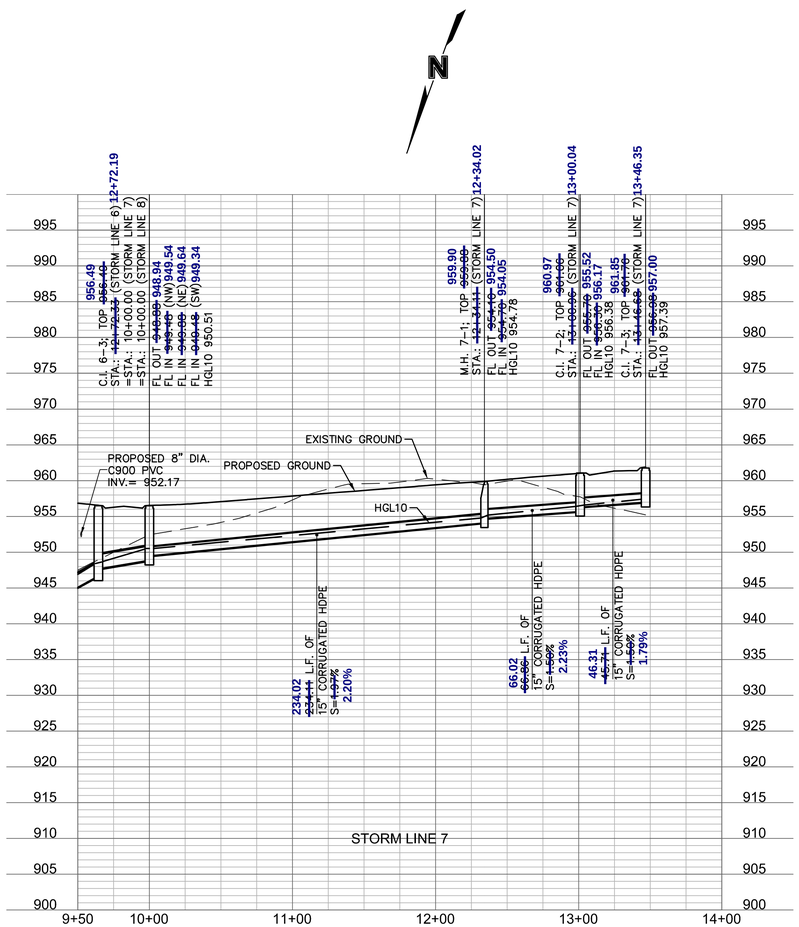
SHEET
C135

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_STM04_1140A.dwg
DATE: Apr 04, 2019 11:35am
USER: ssaylor

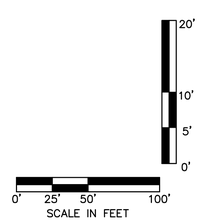


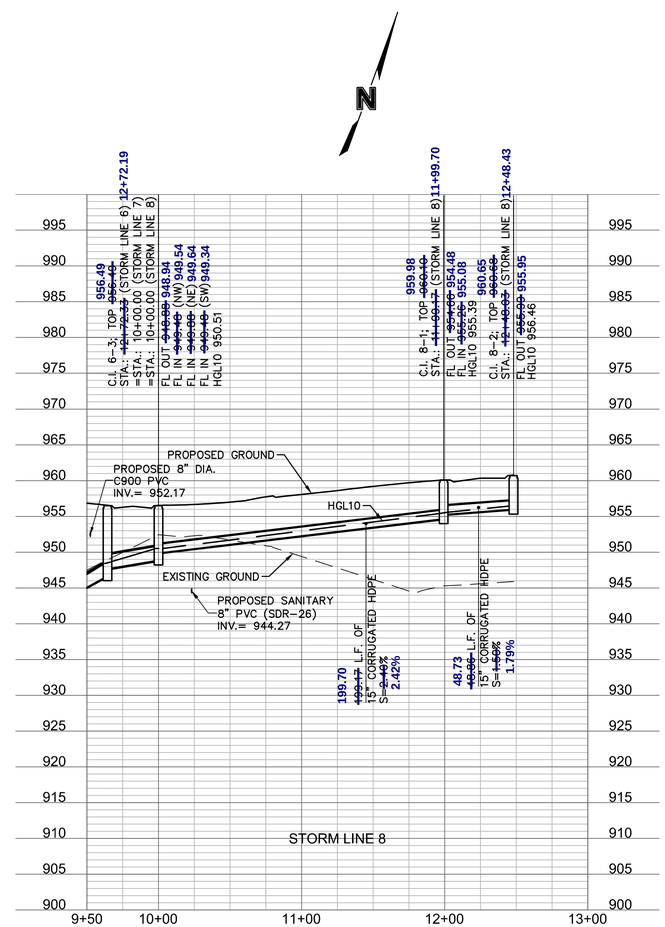


AS BUILT



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.





USER: ssaylor

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DATE: Apr 04, 2019 11:36am

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REVISIONS

STORM SEWER PLAN & PROFILE
STREET & STORM SEWER PLANS

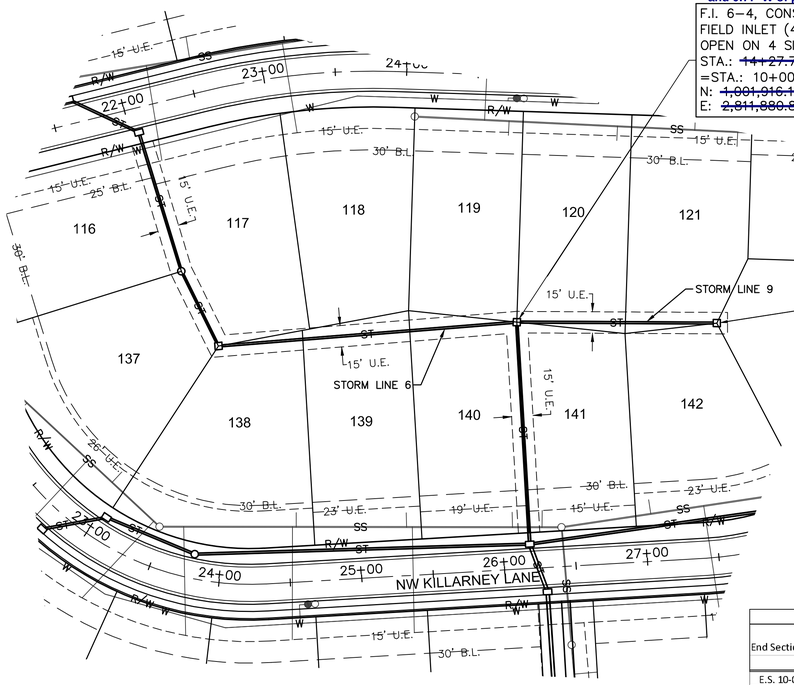
WOODSIDE RIDGE
FIRST PLAT

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
C136

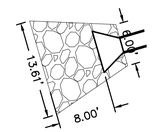


As-built is 0.38' N
and 0.77' W of plan

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) 14+28.95
=STA.: 10+00.00 (STORM LINE 9)
N: ~~1,001,916.1366~~ 1001916.52
E: ~~2,811,880.8620~~ 2811880.09

As-built is 0.33' N
and 0.06' E of plan

F.I. 9–1, CONST. STD.
FIELD INLET (4'X4' INSIDE)
OPEN ON 4 SIDES (N,E,S,W)
11+40.43 STA.: ~~11+39.75~~ (STORM LINE 9)
N: ~~1,001,985.4301~~ 1001985.76
E: ~~2,812,002.2017~~ 2812002.26



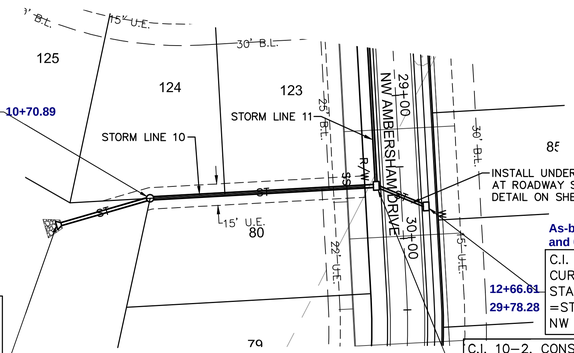
E.S. 10–0
SCALE 1–10'

As-built is 0.44' S
and 1.01' W of plan

M.H. 10–1, CONST. STD.
STORM MANHOLE (4' DIA. INSIDE)
10+70.89 STA.: ~~10+68.05~~ (STORM LINE 10)
N: ~~1,002,140.2363~~ 1002139.80'
E: ~~2,812,305.2905~~ 2812304.28'

As-built is 2.01' S
and 1.50' E of plan

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~~ 1002086.95'
E: ~~2,812,350.0340~~ 2812351.54'



INSTALL UNDER DRAIN
AT ROADWAY SAG PER
DETAIL ON SHEET C155

As-built is 0.23' S
and 0.21' W of plan

C.I. 10–3, CONST. STD.
CURB INLET (5'X3' INSIDE)
12+66.61 STA.: ~~12+63.33~~ (STORM LINE 10)
29+78.28 =STA.: ~~29+78.57~~ (℄)
NW AMBERSHAM DRIVE, ~~17.00'~~ LT 16.90'

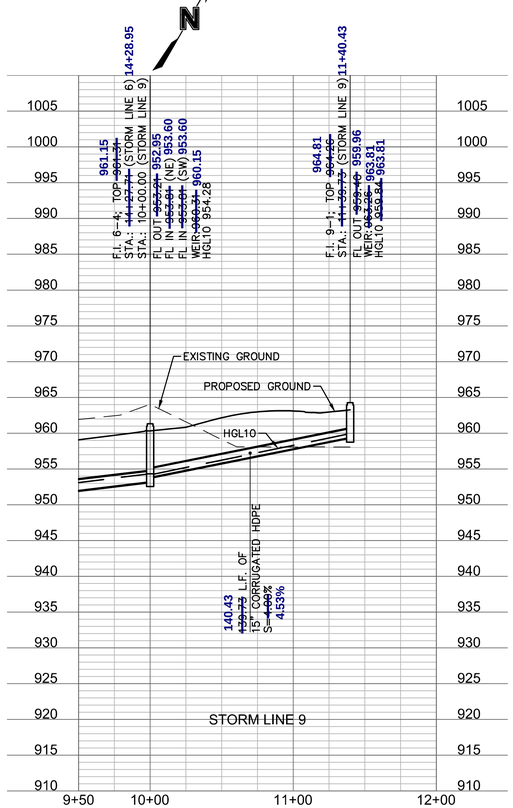
C.I. 10–2, CONST. STD.
CURB INLET (5'X3' INSIDE)
STA.: ~~12+26.25~~ (STORM LINE 10) 12+28.95
=STA.: ~~29+62.33~~ (℄) 29+62.00
NW AMBERSHAM DRIVE, ~~17.00'~~ RT 17.06'

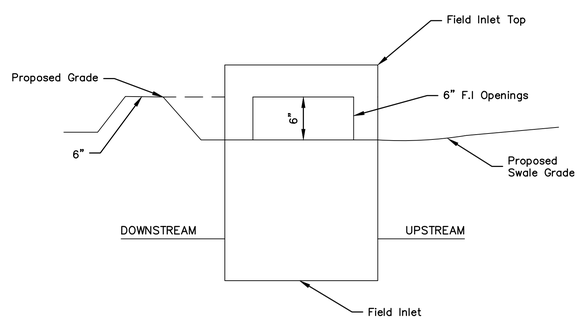
As-built is 0.21' S
and 0.26' W of plan

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

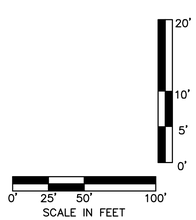
AS BUILT



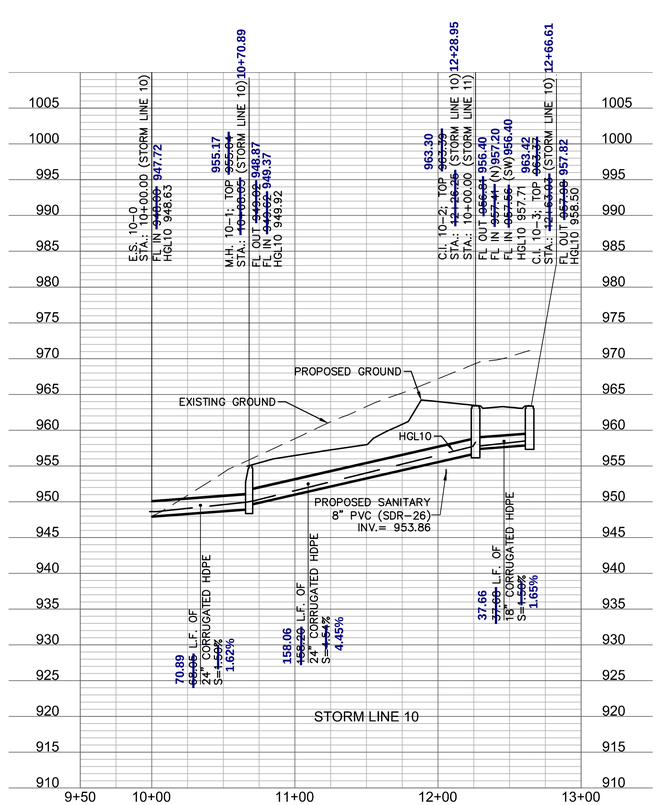


F.I. SUMP DETAIL
NOT TO SCALE

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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NUMBER PE-2017000367
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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

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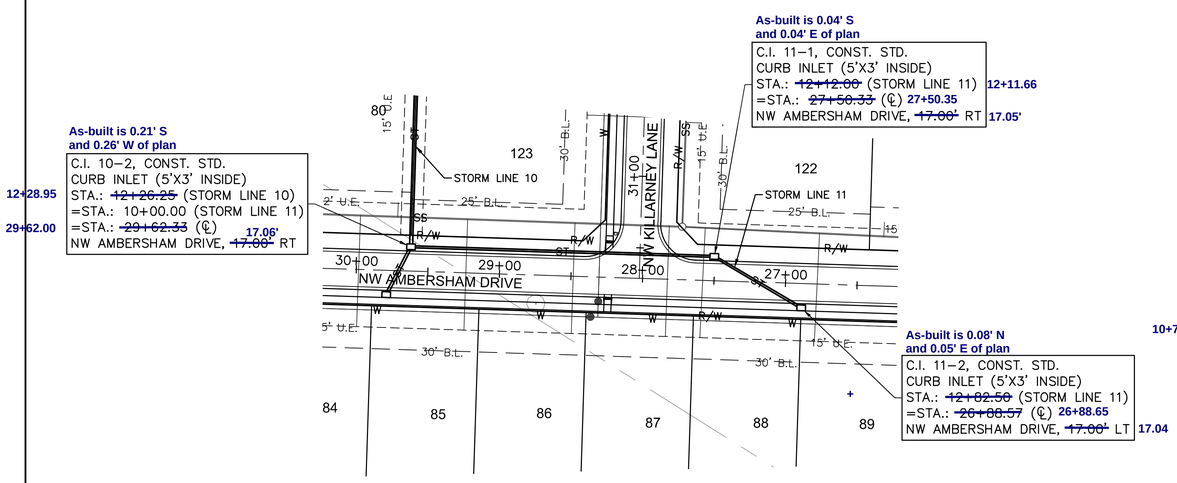
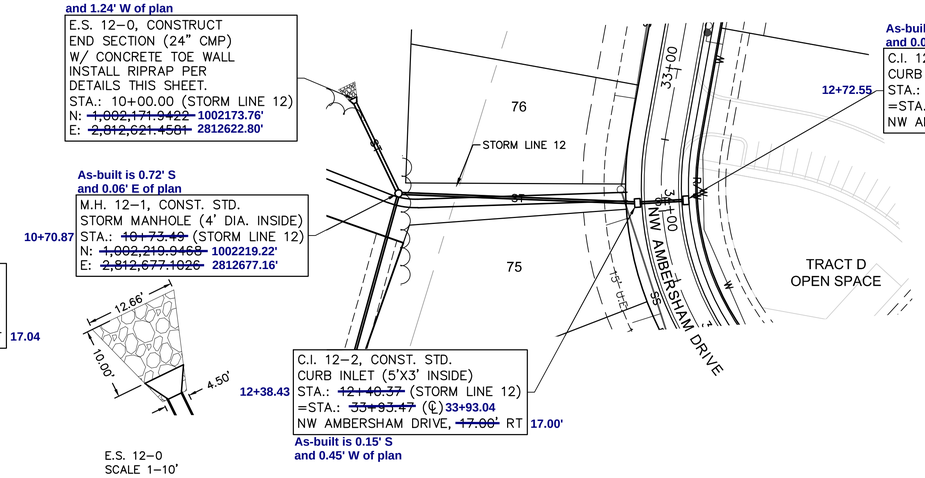
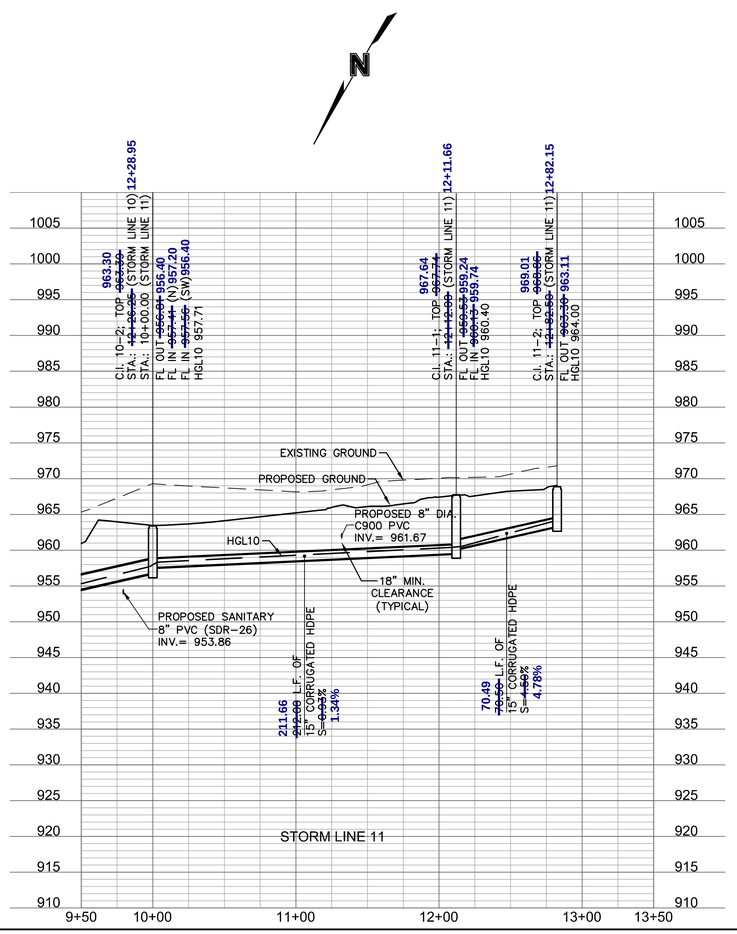


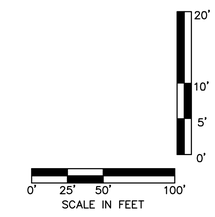


Riprap Calculations							
End Section	Q_{100} (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. 12-0	20.34	2	3	10	10	2.00	7.9
*Per Table 10.1 HEC 14-FHWA-Energy Dissipators Pg. 10-18							

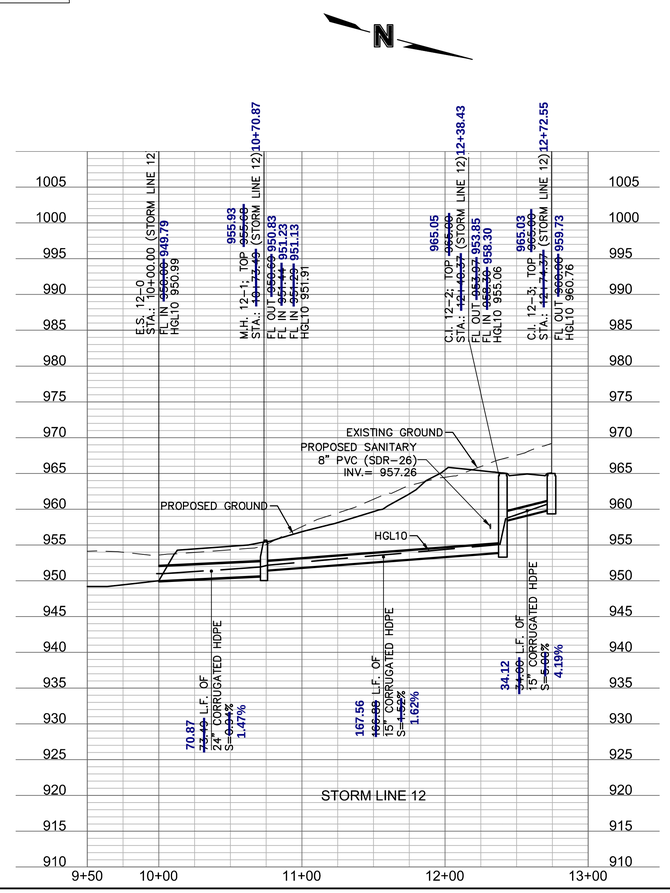
NOTE: GEOFABRIC IS REQUIRED UNDER RIP RAP PER DETAIL ON SHEET C155



AS BUILT



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
12/11/2020
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
C138

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_STM07_1140A.dwg USER: ssoylor
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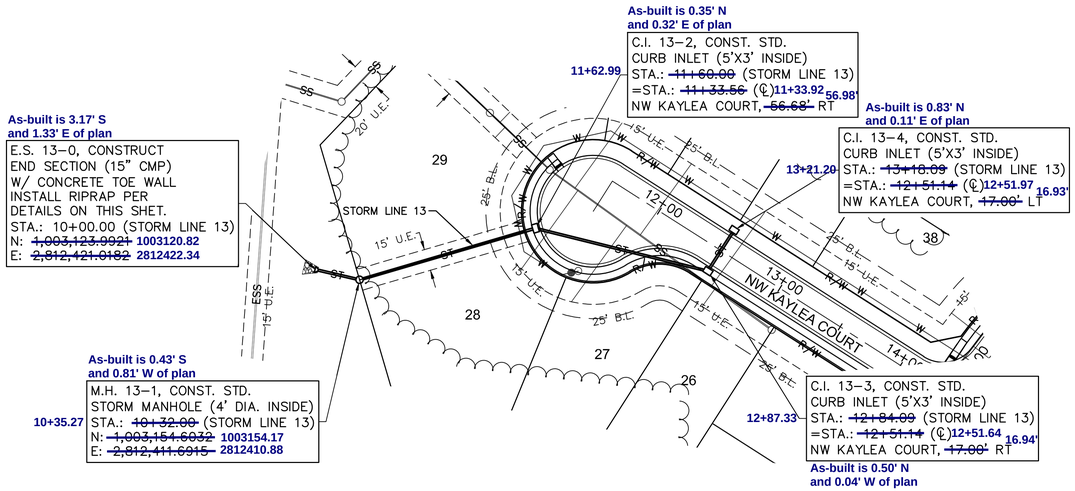
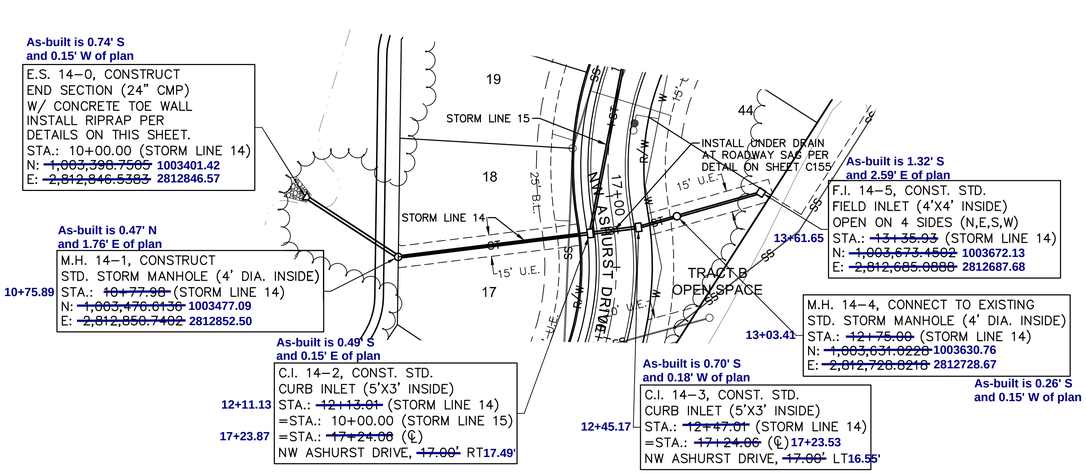
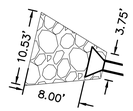




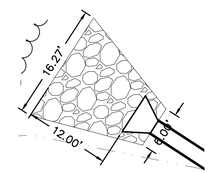


E.S. 13–0
SCALE 1–10'

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

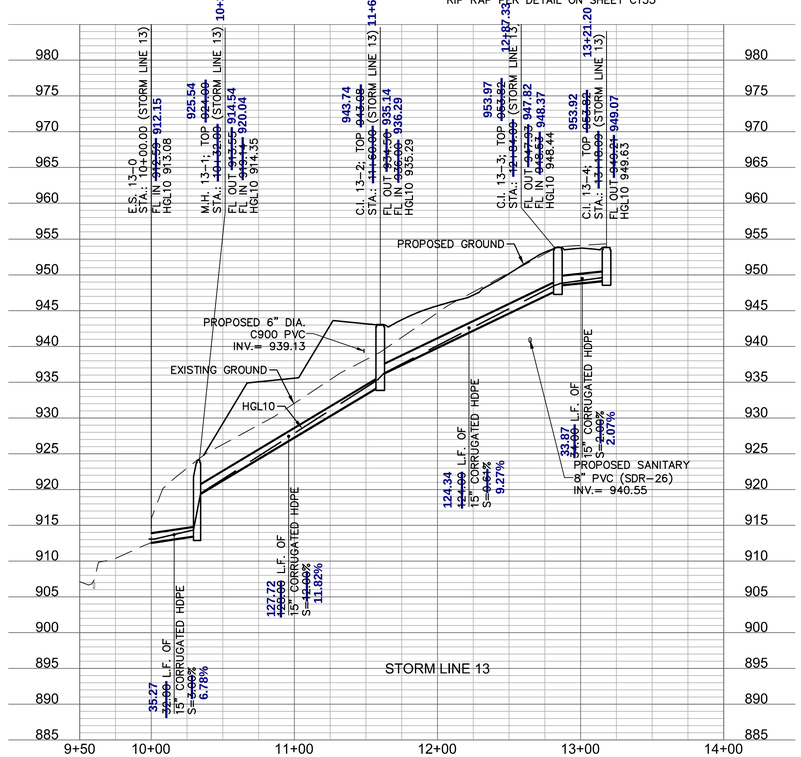


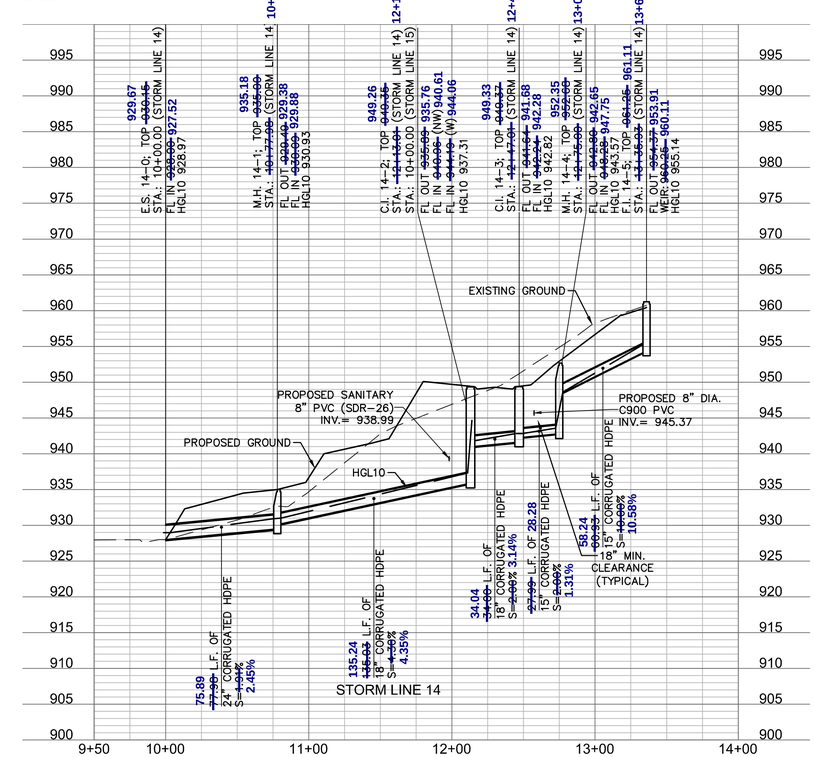
Riprap Calculations							
End Section	Q_{100} (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. 14-0	28.19	2	4	14	12	2.57	17.6

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

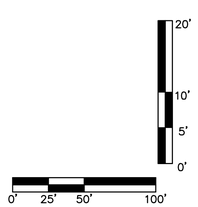
NOTE: GEOFABRIC IS REQUIRED UNDER RIP RAP PER DETAIL ON SHEET C155

E.S. 14–0
SCALE 1–10'





AS BUILT



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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12/11/2020
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
C139

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_STM08_1140A.dwg USER: ssaylor
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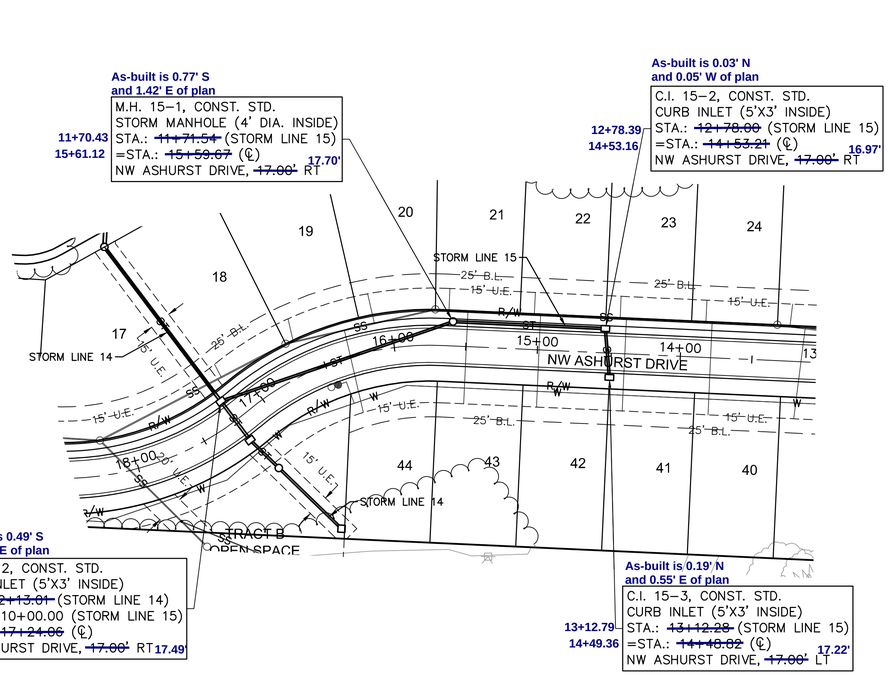

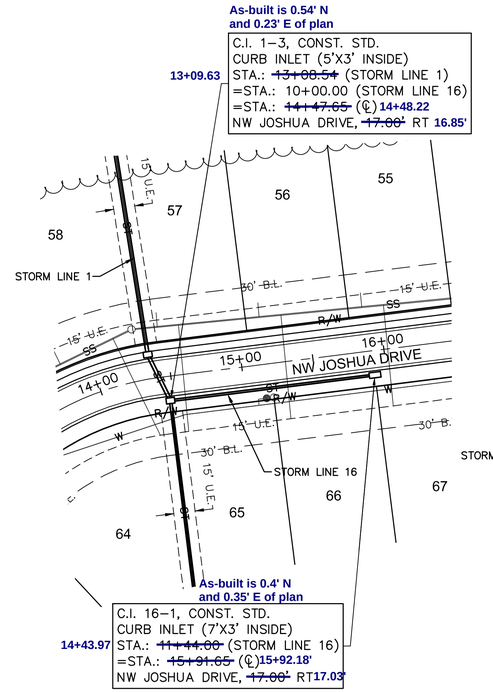

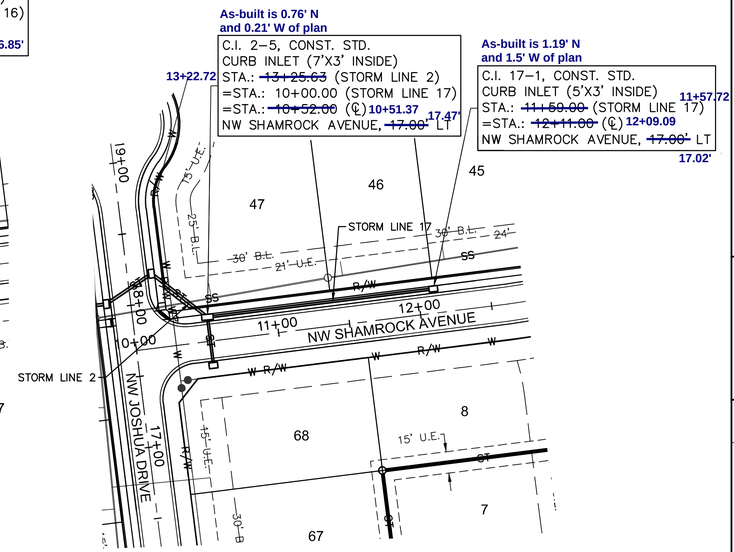

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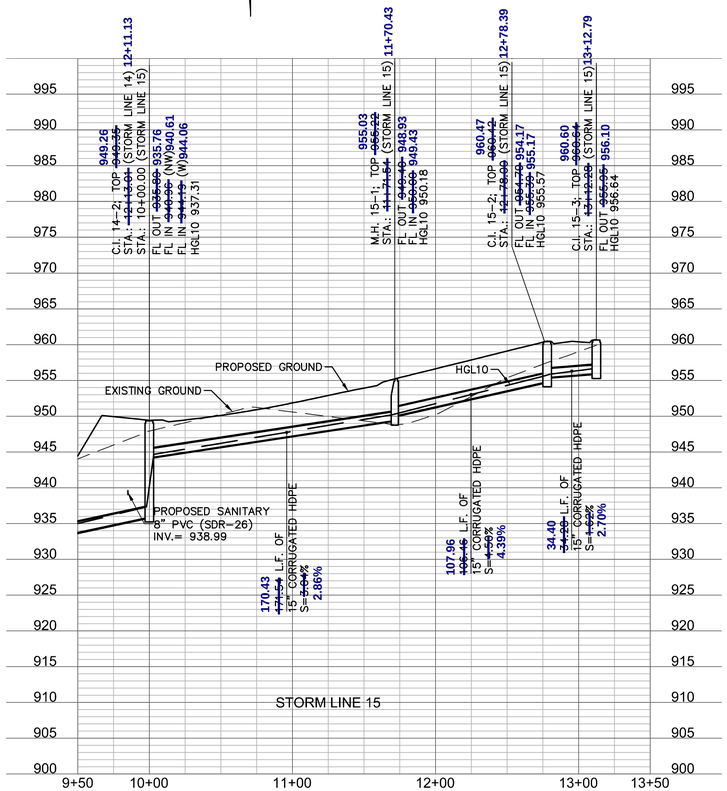

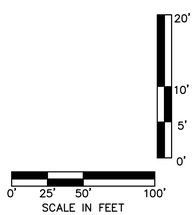

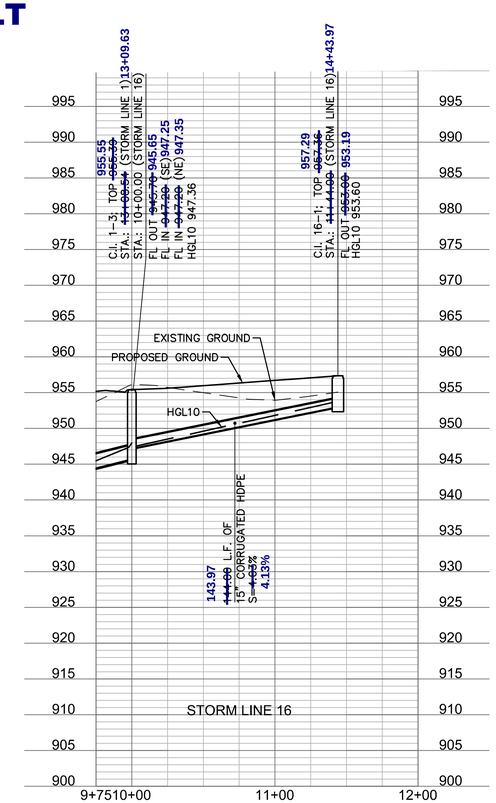

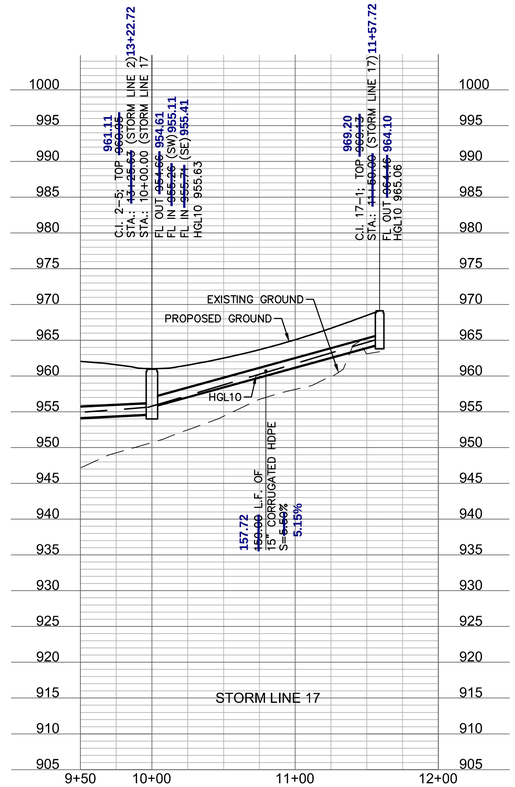

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STORM SEWER PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

drawn by: D.A.H.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
C140

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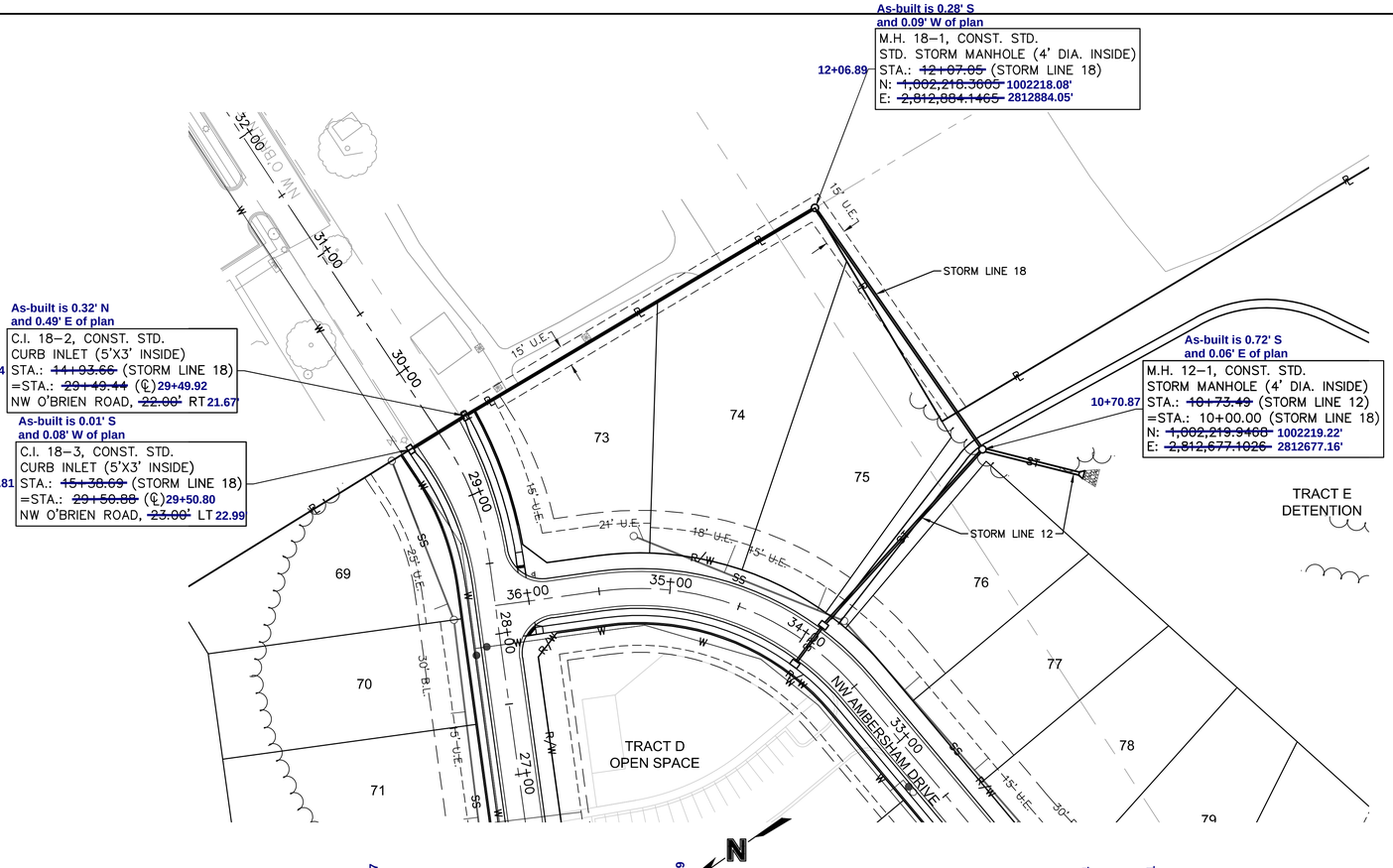

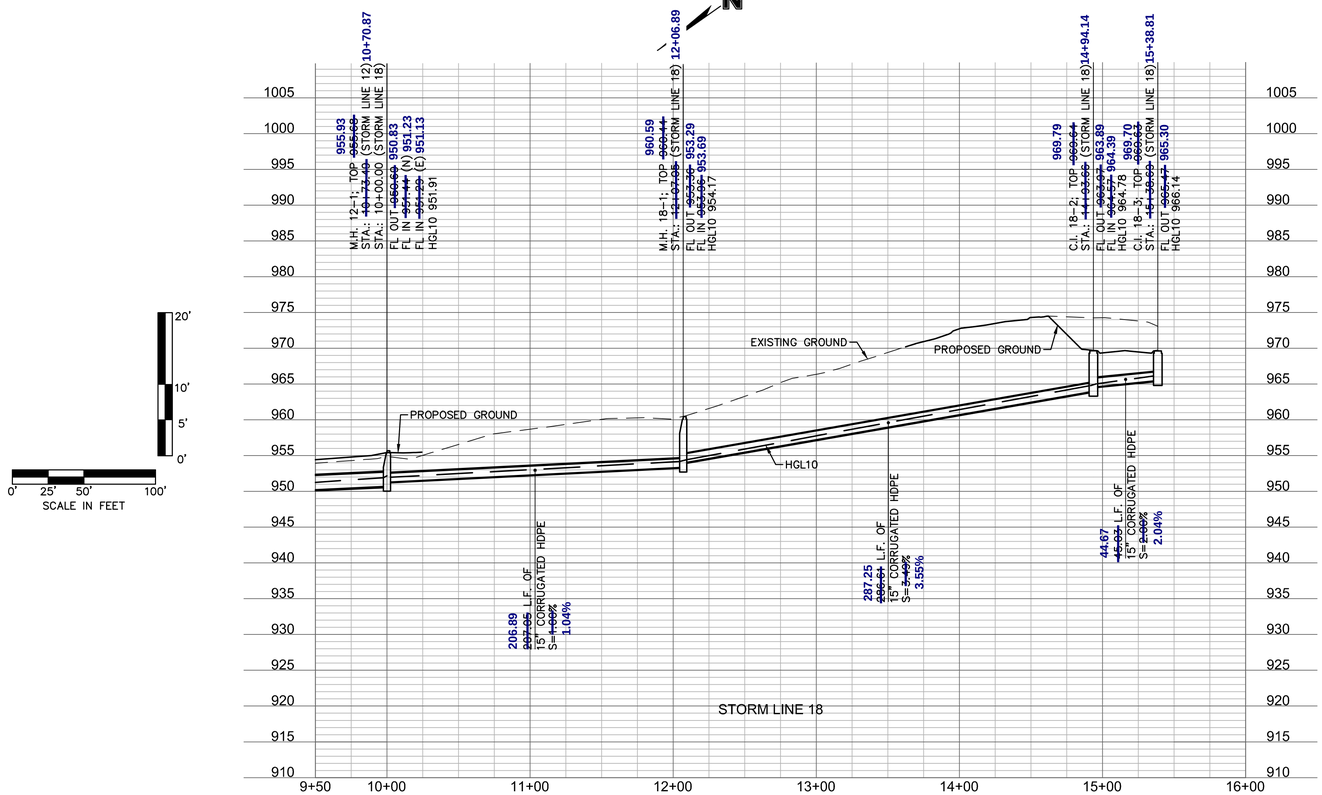

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REVISIONS

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
C141

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_STM10_1140A.dwg USER: ssoylor
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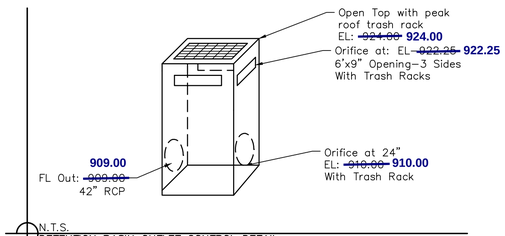
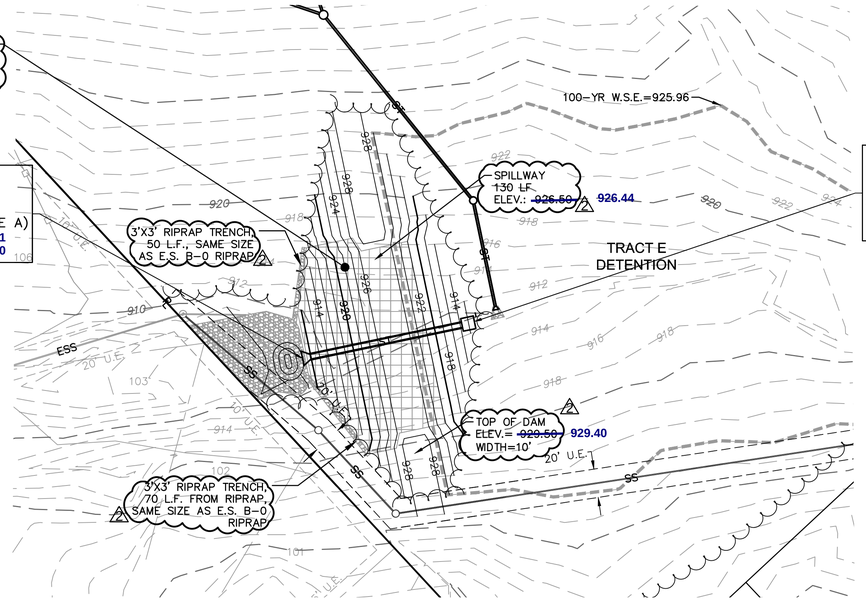
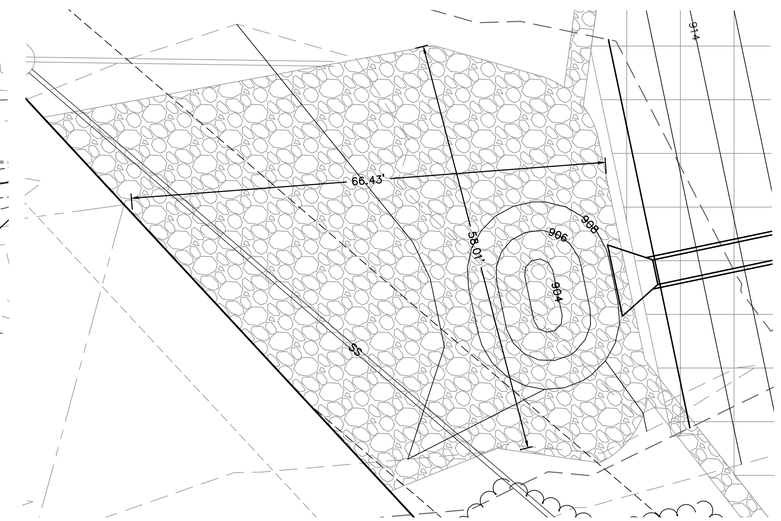


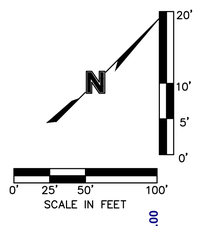
N.T.S.
02 DETENTION BASIN OUTLET CONTROL DETAIL
ALL OPENINGS SHALL HAVE A TRASH RACK INSTALLED



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'



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

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

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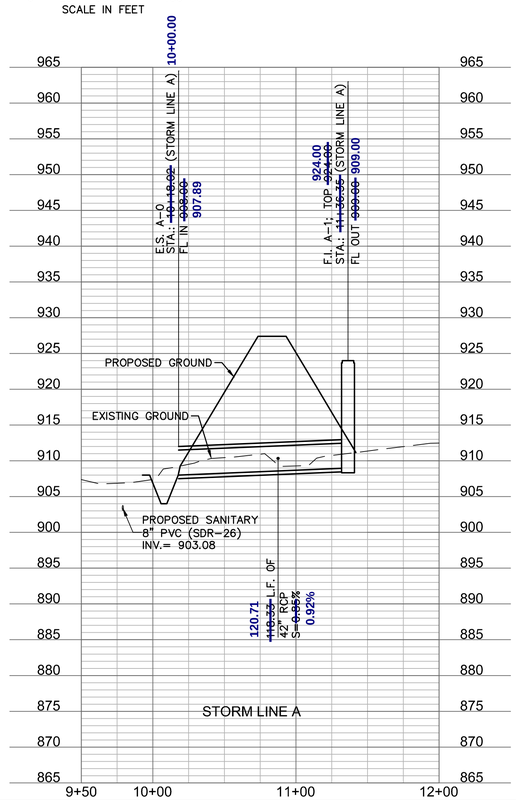
Date Surveyed: 12/1/2020



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.

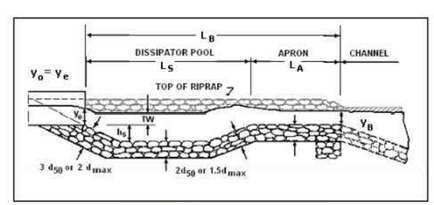


Figure 10.1. Profile of Riprap Basin

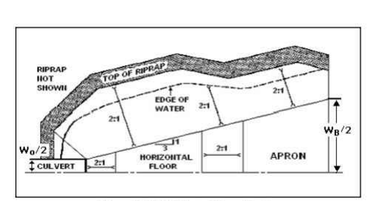


Figure 10.2. Half Plan of Riprap Basin

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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

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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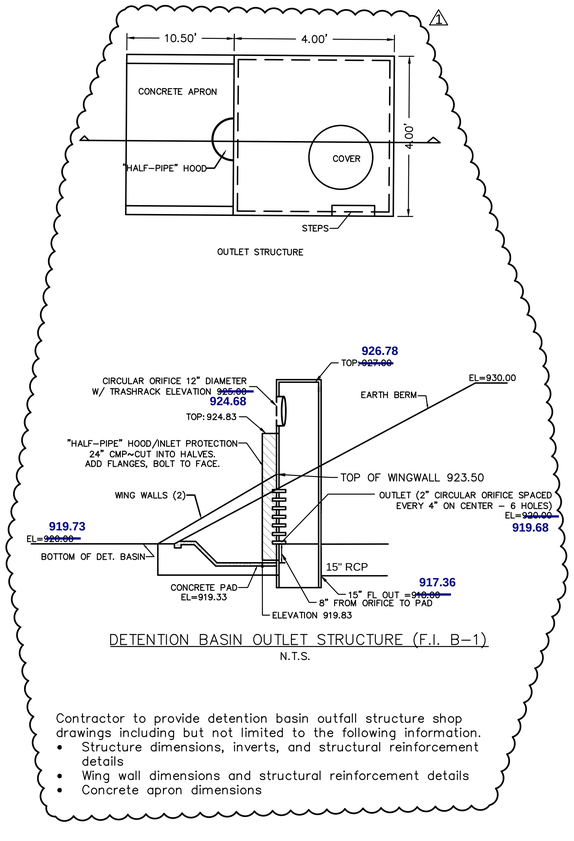
USER: ssoylor



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.

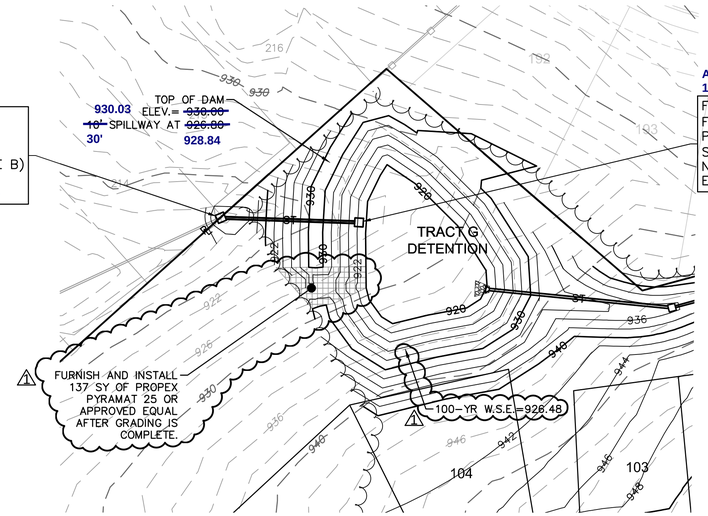
- Structure dimensions, inverts, and structural reinforcement details
- Wing wall dimensions and structural reinforcement details
- Concrete apron dimensions

As-built is 2.01' S and 0.81' W of plan

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~~ 1001239.08
E: ~~2,810,759.7550~~ 2810760.56

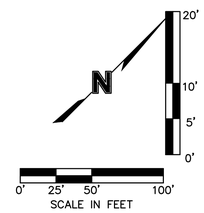
As-built is 1.53' N and 1.16' W of plan

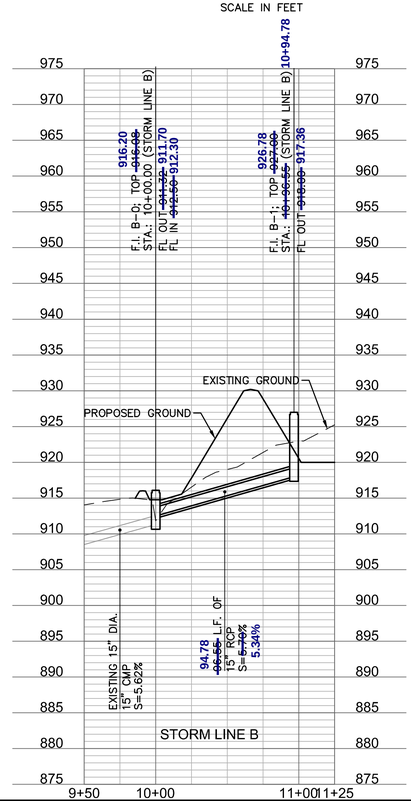
F.I. B-1, CONST. STD.
FIELD INLET (5'X5' INSIDE)
PER DETAIL THIS SHEET
STA.: ~~10+96.55~~ (STORM LINE B) 10+94.78
N: ~~1,001,303.0101~~ 1001304.54
E: ~~2,810,830.2869~~ 2810829.12



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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Date Surveyed: 12/1/2020

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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
C143

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DATE: Apr 04, 2019 2:07pm

NOT AS-BUILT
REFER TO MASTER DRAINAGE PLAN FOR CONTOUR UPDATES

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.

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

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
DATE: Apr 04, 2019 11:49am

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MO Certificate of Authority # 001592
2301 Maitland Center Pkwy, Suite 425
NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
12/11/2020
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

DRAINAGE PLAN
STREET & STORM SEWER PLANS

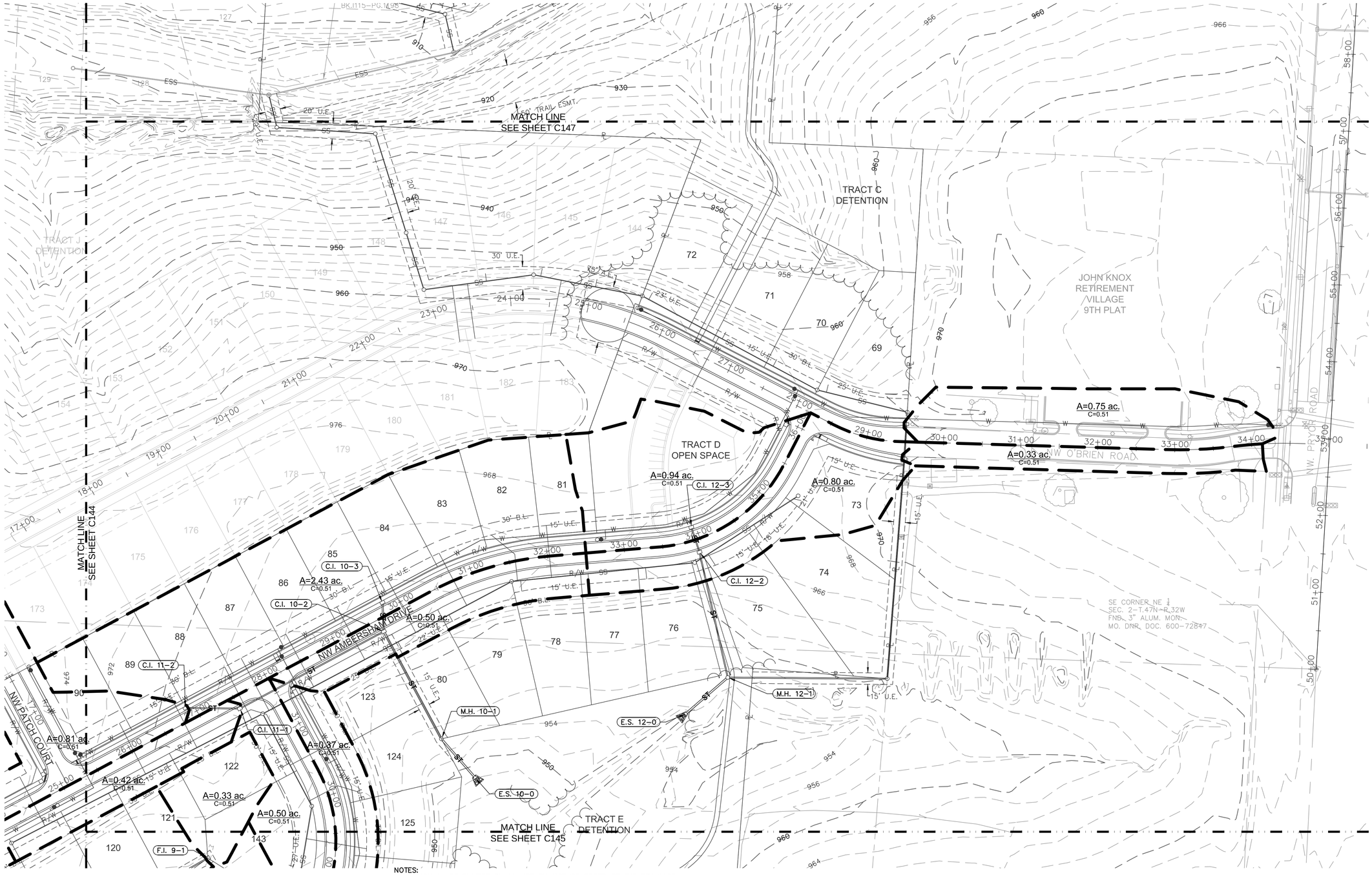
WOODSIDE RIDGE
FIRST PLAT

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



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

NOT AS-BUILT
REFER TO MASTER
DRAINAGE PLAN
FOR CONTOUR
UPDATES

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KS Certificate of Authority # E-2001
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STATE OF MISSOURI
JULIE ELAINE SELLERS
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NO. REV.	DATE	REVISIONS DESCRIPTION	BY

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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
C145

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

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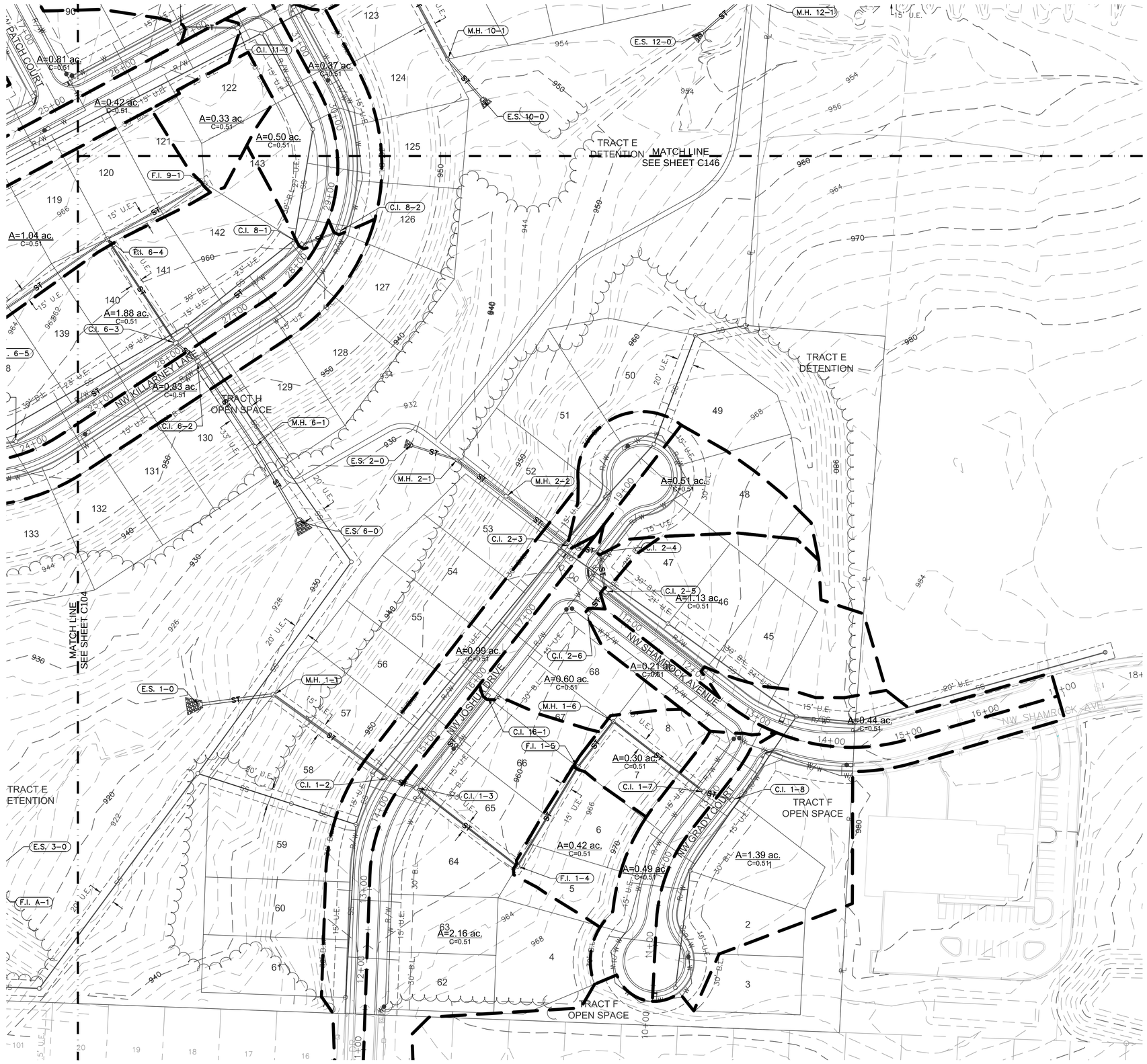
	RIDGE LINE
A	DRAINAGE AREA
C	RUNOFF COEFFICIENT
C.I. 0-0	STORM STRUCTURE NUMBER

NOT AS-BUILT
REFER TO MASTER DRAINAGE PLAN FOR CONTOUR UPDATES



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DATE: Apr 04, 2019 11:49am

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JULIE ELAINE SELLERS
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12/11/2020
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NO. REV.	DATE	REVISIONS DESCRIPTION	BY

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STREET & STORM SEWER PLANS

WOODSIDE RIDGE
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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
C146

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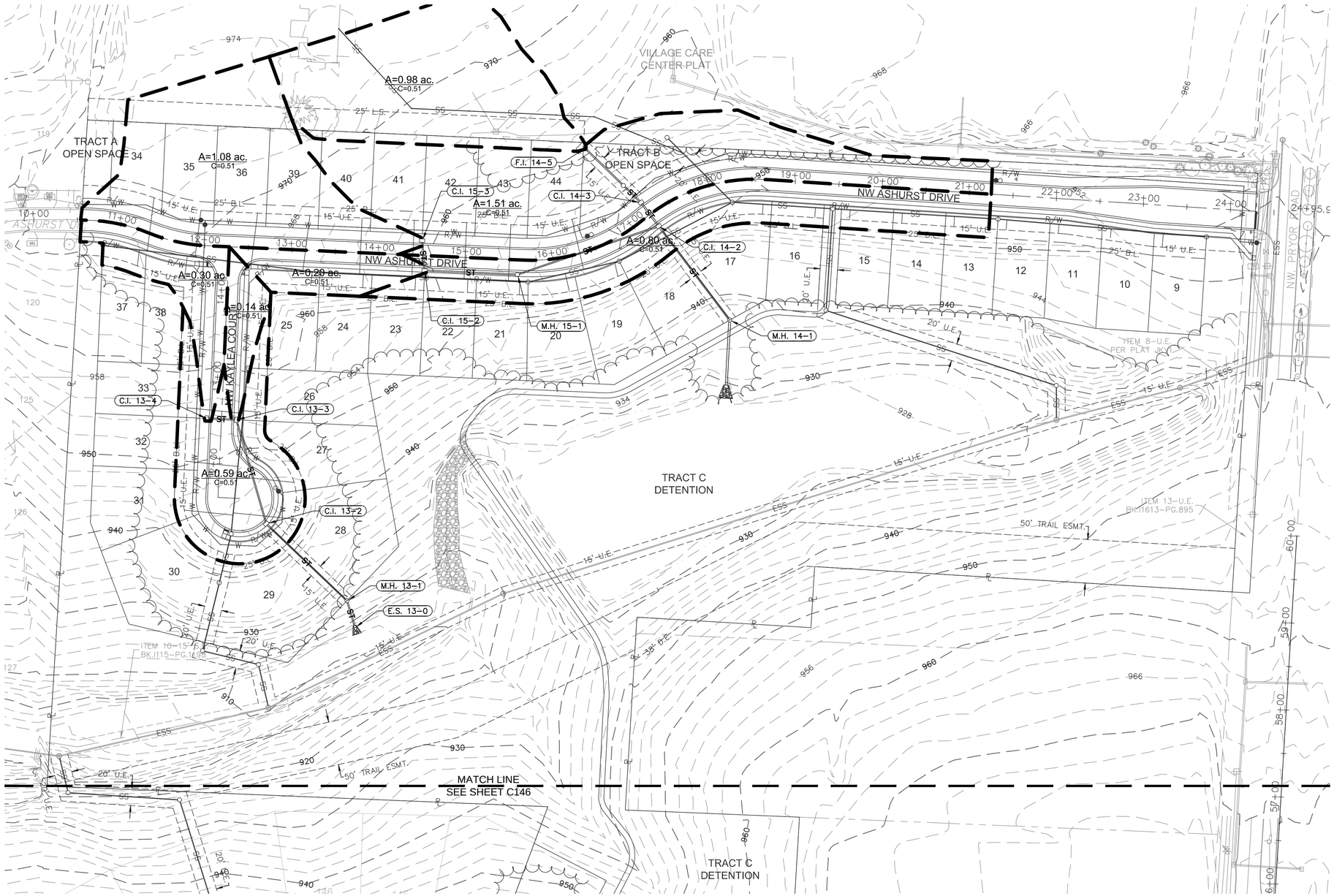

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100	FINISHED INTERMEDIATE CONTOURS
	RIDGE LINE
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C.I. 0–0	STORM STRUCTURE NUMBER

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SHEET
C147

DWG: F:\2018\1001–1500\018–1140–A\40–Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_DRN01_1140A.dwg USER: ssaylor
DATE: Apr 04, 2019 2:08pm

Storm Sewer Design Calculation Table

10 Year Return Frequency

Upstream Structure	Downstream Structure	Length	Upstream Invert	Downstream Invert	Slope	Diameter	Manning's n	Total Flow	Velocity	Capacity	Flow Depth	Upstream Struct. HGL
		(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(ft/s)	(cfs)	(ft)	(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

NOT AS-BUILT

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12/11/2020

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

10 YEAR DRAINAGE TABLES
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
C148

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

NOT AS-BUILT

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DATE: Apr 04, 2019 11:51am

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JULIE ELAINE SELLERS
NUMBER PE-2017000367
12/11/2020
Julie Sellers

REVISIONS

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

100 YEAR DRAINAGE TABLES
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
C149

Key Map

Woodside Ridge First Plat Minimum Low Opening Elevations						
Lot	Rear Left MLO	Rear Right MLO	Front Left MLO	Front Right MLO	Requires Berm in Rear Yard **See Note 7	Requires "As-built" Plot Plan
91	974.70	974.63	975.32	973.79		
92	968.74	974.70	974.31	975.32		
93	964.40	968.74	972.99	974.31		
94	959.28	964.40	971.55	972.99		
95	967.33	959.28	968.30	971.55		
96	956.49	966.73	967.47	968.30		
97	954.29	956.37	966.39	967.41		X
98	953.92	954.29	964.90	966.39		X
99	953.38	954.40	963.56	964.91		X
100	951.98	953.38	962.20	963.56		X
101	950.26	951.98	960.85	962.20		X
102	947.82	950.26	958.67	960.85		X
103	943.05	947.82	954.57	958.67		X
104	939.71	939.74	946.99	952.70		X
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	966.42	966.78	966.87	967.98		
116	971.22	969.46	970.14	967.25		
117	966.90	965.80	974.14	972.29		X
118	964.21	965.80	975.31	974.14		X
119	962.50	964.21	974.15	975.31		X
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	966.42	964.69	966.87		
137	969.46	964.01	967.25	961.80		
138	964.01	961.51	961.80	959.30	X	X
139	961.51	960.38	959.30	958.17	X	X
140	960.38	959.49	958.17	957.28	X	X
141	959.49	960.56	957.28	958.35	X	X
142	960.56	963.26	958.35	961.05	X	X
143	963.26	966.02	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.

AS-BUILT

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

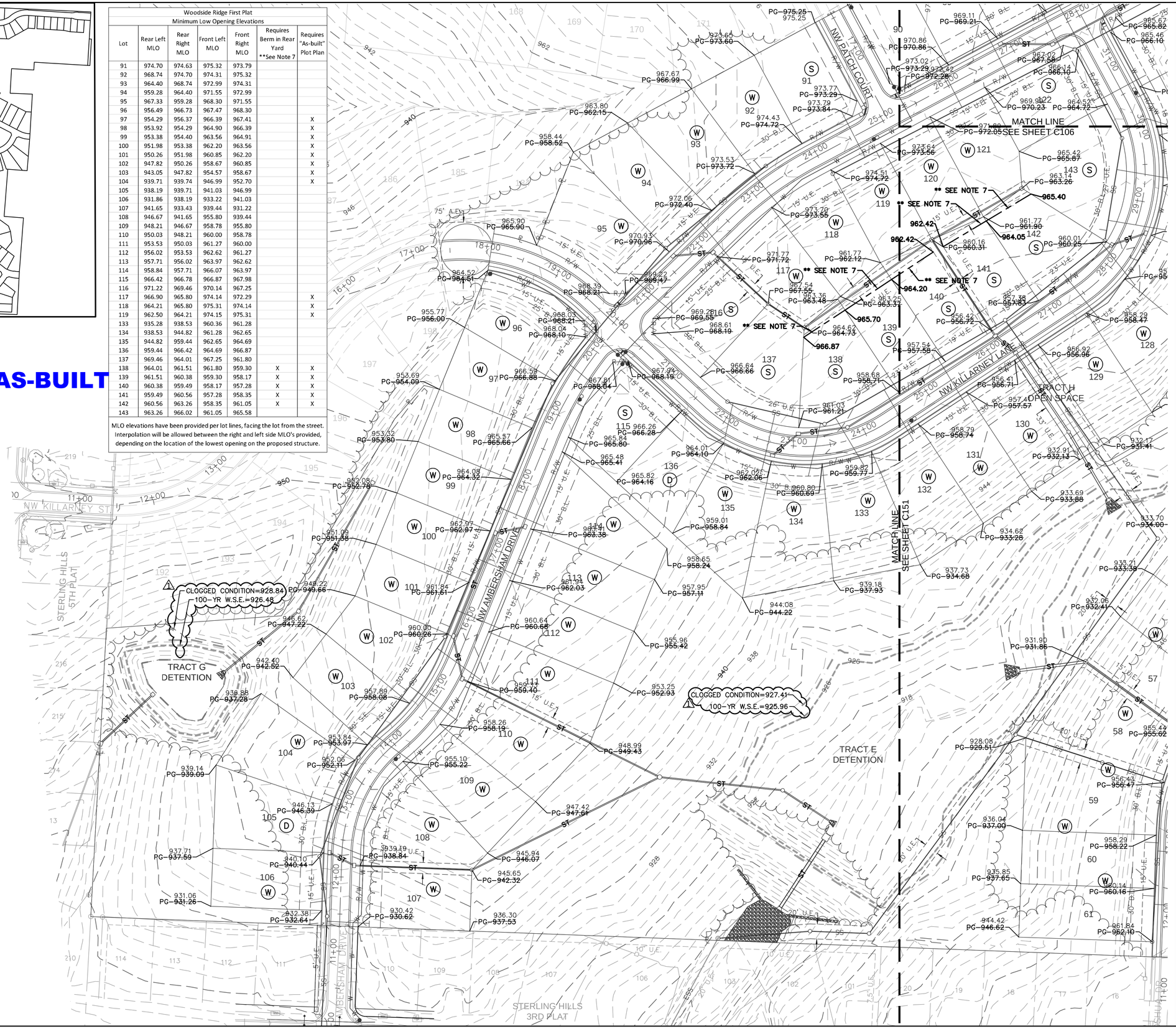
6. REFER TO SHEET C112–C114 FOR SWALE GRADING DETAILS.

**7. A BERM SHALL BE INSTALLED WITH HOUSE PLOT PLANS, UTILIZING A 3:1 SLOPE FROM THE EDGE OF THE SWALE UP TO THE PROVIDED SPOTS. TOP OF BERM MUST BE 2' ABOVE THE 100 YEAR WATER SURFACE ELEVATION, PER CITY CODES. ALL SECONDARY OVERFLOW PATHS SHALL STILL BE DOWN LOT LINES.

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

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



N

0' 30' 60' 120'
SCALE IN FEET

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DATE: Dec 11, 2020 3:27pm

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
12/11/2020
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.

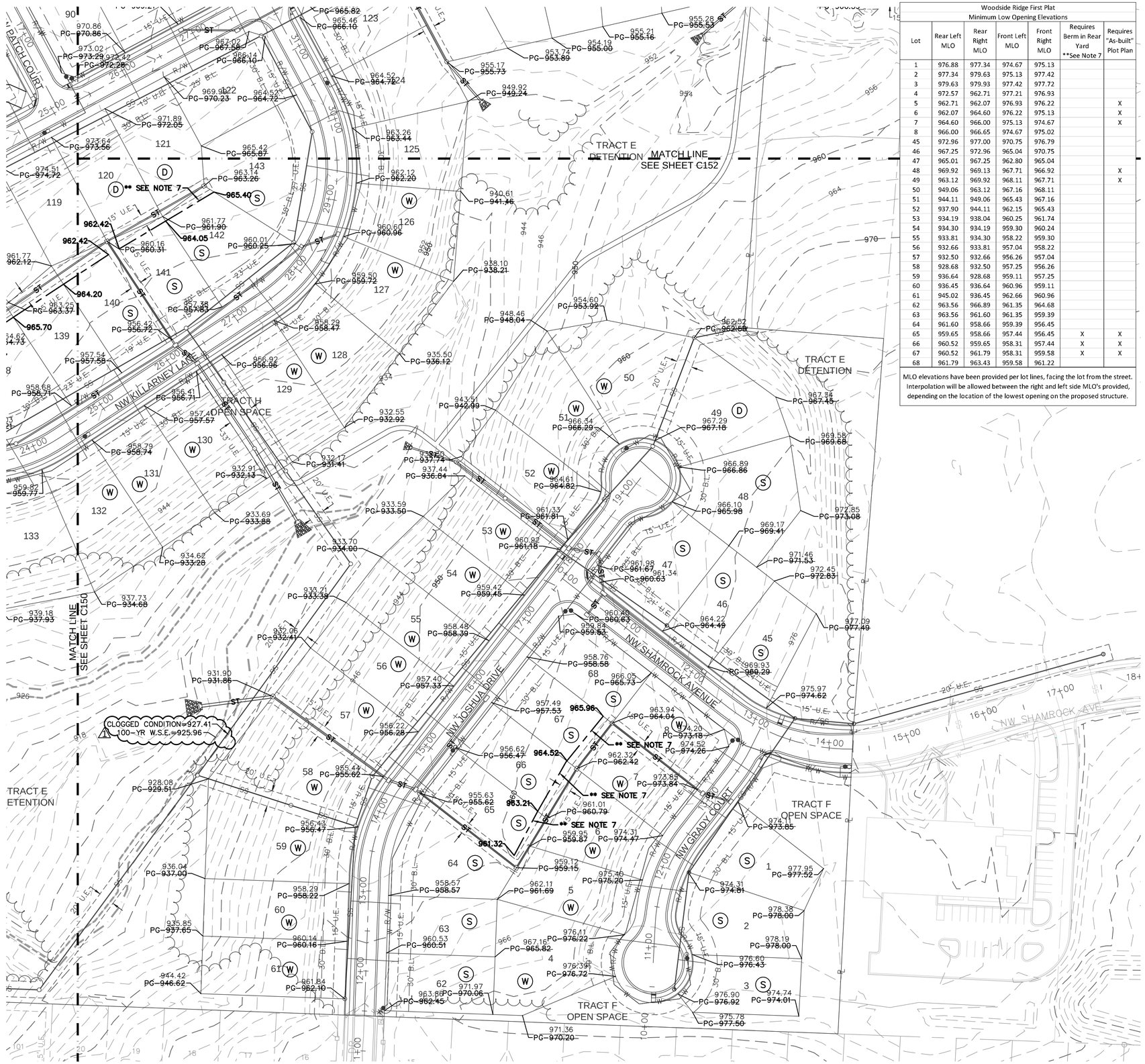
5. SWALES TO BE CONSTRUCTED BETWEEN EACH OF THE LOTS 1–3 TO DRAIN TOWARDS THE ROADWAY.

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.

**7.A BERM SHALL BE INSTALLED WITH HOUSE PLOT PLANS, UTILIZING A 3:1 SLOPE FROM THE EDGE OF THE SWALE UP TO THE PROVIDED SPOTS. TOP OF BERM MUST BE 2' ABOUT THE 100 YEAR WATER SURFACE ELEVATION, PER CITY CODES. ALL SECONDARY OVERFLOW PATHS SHALL STILL BE DOWN LOT LINES.

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

AS-BUILT

Key Map

Woodside Ridge First Plat Minimum Low Opening Elevations						
Lot	Rear Left MLO	Rear Right MLO	Front Left MLO	Front Right MLO	Requires Berm in Rear Yard **See Note 7	Requires "As-built" Plot Plan
1	976.88	977.34	974.67	975.13		
2	977.34	979.63	975.13	977.42		
3	979.63	979.93	977.42	977.72		
4	972.57	962.71	977.21	976.93		
5	962.71	962.07	976.93	976.22		X
6	962.07	964.60	976.22	975.13		X
7	964.60	966.00	975.13	974.67		X
8	966.00	966.65	974.67	975.02		
45	972.96	977.00	970.75	976.79		
46	967.25	972.96	965.04	970.75		
47	965.01	967.25	962.80	965.04		
48	969.92	969.13	967.71	966.92		X
49	963.12	969.92	968.11	967.71		X
50	949.06	963.12	967.16	968.11		
51	944.11	949.06	965.43	967.16		
52	937.90	944.11	962.15	965.43		
53	934.19	938.04	960.25	961.74		
54	934.30	934.19	959.30	960.24		
55	933.81	934.30	958.22	959.30		
56	932.66	933.81	957.04	958.22		
57	932.50	932.66	956.26	957.04		
58	928.68	932.50	957.25	956.26		
59	936.64	928.68	959.11	957.25		
60	936.45	936.64	960.96	959.11		
61	945.02	936.45	962.66	960.96		
62	963.56	966.89	961.35	964.68		
63	963.56	961.60	961.35	959.39		
64	961.60	958.66	959.39	956.45		
65	959.65	958.66	957.44	956.45	X	X
66	960.52	959.65	958.31	957.44	X	X
67	960.52	961.79	958.31	959.58	X	X
68	961.79	963.43	959.58	961.22		

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.

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
12/11/2020
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
C151

USER: jsellers
DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\As-Builts\Sheets\GNCV\01_Street & Storm_36x24\C_MDR01_1140A.dwg
DATE: Dec 11, 2020 3:28pm

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. 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.

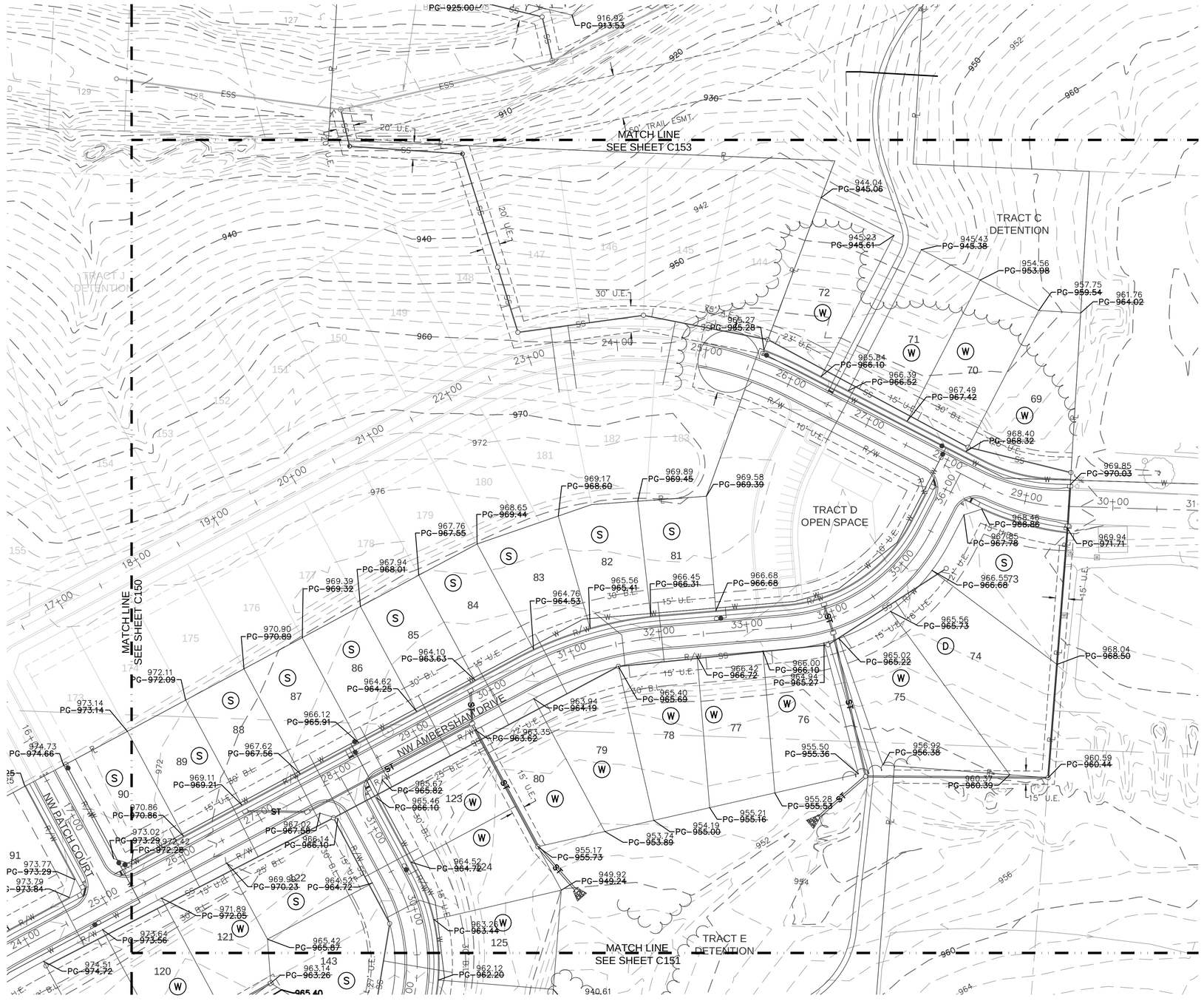
RMLO – REAR MINIMUM LOW OPENING
FMLO – FRONT MINIMUM LOW OPENING

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

Woodside Ridge First Plat Minimum Low Opening Elevations						
Lot	Rear Left MLO	Rear Right MLO	Front Left MLO	Front Right MLO	Requires Berm in Rear Yard **See Note 7	Requires "As-built" Plot Plan
69	958.35	962.36	969.22	970.67		
70	958.16	958.35	968.31	969.22		
71	946.03	955.16	967.21	968.31		
72	944.64	945.83	966.09	966.66		
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		
120	964.10	962.50	972.64	974.15		X
121	965.50	964.10	970.90	972.64		X
122	967.79	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



AS-BUILT

N

0' 30' 60' 120'
SCALE IN FEET

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
12/11/2020
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

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
C152

DWG: F:\2018\1001–1500\018–1140–A\40–Design\AutoCAD\As–Builts\Sheets\GNCV\01_Street & Storm_36x24\C_MDR01_1140A.dwg USER: jsellers
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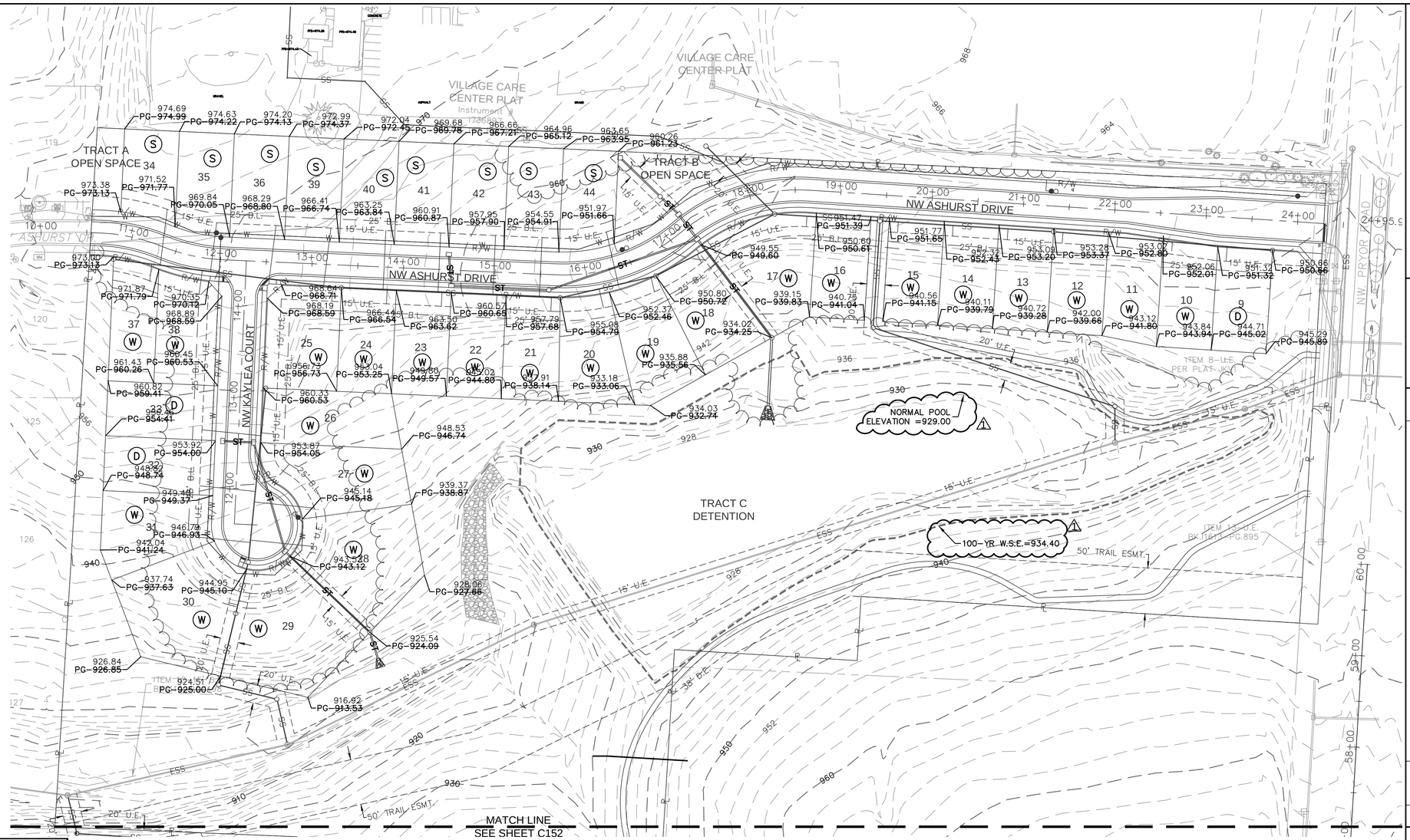
Woodside Ridge First Plat					
Minimum Low Opening Elevations					
Lot	Rear Left MLO	Rear Right MLO	Front Left MLO	Front Right MLO	Requires Berm in Rear Yard **See Note 7	Requires "As-built" Plot Plan
9	945.89	945.31	951.48	952.14		
10	945.31	944.44	952.14	952.88		
11	944.44	943.72	952.88	953.84		
12	943.72	942.60	953.84	954.10		
13	942.60	941.32	954.08	953.91		X
14	941.32	940.71	953.91	953.14		X
15	940.71	941.16	953.14	952.59		X
16	941.35	939.75	952.29	951.42		X
17	939.75	934.75	951.42	950.37		X
18	934.62	936.48	950.37	951.62		X
19	936.48	933.78	951.62	953.19		X
20	933.78	938.51	953.19	955.90		X
21	938.51	945.62	955.90	958.61		X
22	961.17	950.40	958.61	945.84		
23	950.40	953.64	961.39	964.32		
24	953.64	957.33	964.32	967.26		
25	957.33	960.93	967.26	969.01		
26	953.64	949.13	961.15	954.69		
27	949.13	939.97	954.69	945.96		
28	939.97	926.14	945.96	944.35		
29	926.14	925.11	944.35	945.77		
30	925.11	938.34	945.77	947.52		
31	938.34	949.42	947.52	950.22		
32	949.42	957.06	950.22	954.74		
33	957.06	961.42	954.74	961.27		
34	976.41	974.55	974.20	972.34		
35	974.55	972.87	972.34	970.66		
36	972.87	971.32	970.66	969.11		
37	962.03	961.42	972.69	973.82		
38	961.05	962.03	969.71	972.69		
39	971.32	969.44	969.11	967.23		
40	969.44	966.28	967.23	964.07		
41	966.28	963.94	964.07	961.73		
42	963.94	960.98	961.73	958.77		
43	960.98	957.58	958.77	955.37		
44	957.58	955.00	955.37	952.79		

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

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. SWALES TO BE CONSTRUCTED BETWEEN EACH OF THE LOTS 34-36, 39-44 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

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'

AS-BUILT

N

0' 30' 60' 120'
SCALE IN FEET

olsson
MO Certificate of Authority # 001592
2301 Maitland Center Pkwy, Suite 201
NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
12/11/2020
PROFESSIONAL ENGINEER

NO. REV.	DATE	REVISIONS DESCRIPTION	BY
1	03/12/2019	REVISED PER CITY COMMENTS	

REVISIONS

MASTER DRAINAGE PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

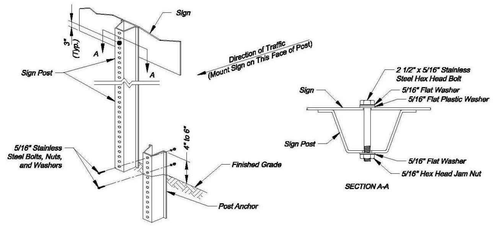
LEE'S SUMMIT, MO

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
C153

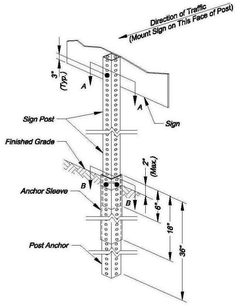
DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\As-Builts\Sheets\GNCV\01_Street & Storm_36x24\C_MDR01_1140A.dwg USER: jsellers
DATE: Dec 11, 2020 4:23pm



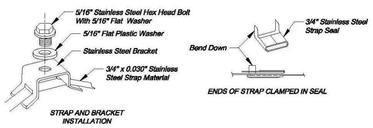
U-STEEL POST DETAILS

U-STEEL POST NOTES:
1. Splice shall be positioned entirely between finished grade line and 18" 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.

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.

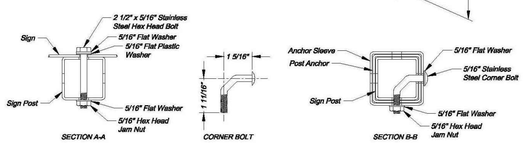


SQUARE STEEL POST INSTALLATION SEQUENCE:
1. Sign post anchor driven partially into the ground using a drive cap with a sledge or power equipment.
2. Anchor sleeve slipped over anchor and drive into the ground together with the sign post anchor.
3. Insert sign post into the post anchor and bolt in place.



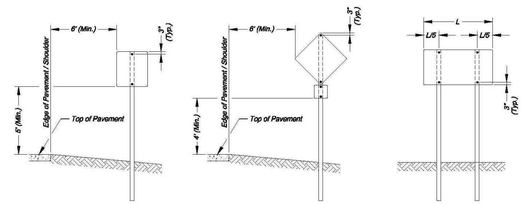
STRAP TYPE SIGN SUPPORT DETAILS

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.



SQUARE STEEL POST DETAILS

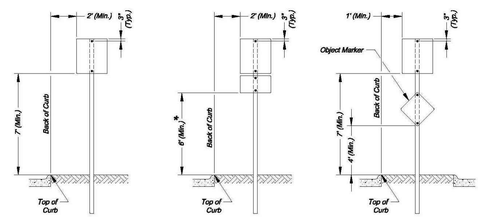
SQUARE STEEL POST NOTES:
1. Square steel sign posts and break-away anchor shall consist of the following materials:
   Sign Post - 14 Ga. 2" x 2" Square Steel Post
   Post Anchor - 12 Ga. 2 1/4" x 2 1/4" x 36" Square Steel Post
   Anchor Sleeve - 12 Ga. 2 1/2" x 2 1/2" x 18" Square Steel Post
2. 14 Gauge 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.



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

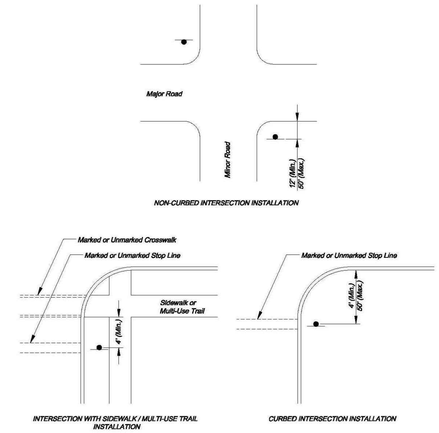
SIGN INSTALLATION WITH AUXILARY SIGN FOR CURBED STREET

SIGN INSTALLATION FOR RAISED MEDIANS

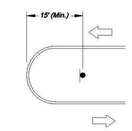
SIGN MOUNTING DETAILS

* 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.



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.

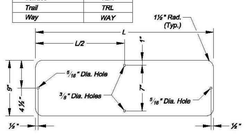
STANDARD ABBREVIATION LISTS

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

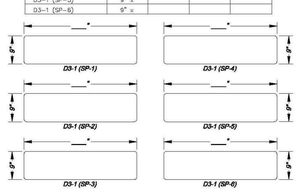
STREET NAME SIGN QUANTITIES

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			

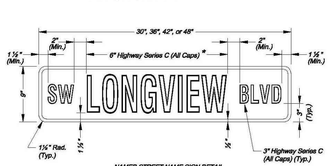


STREET NAME SIGN BLANK DETAILS

For Mounting on Square Steel Posts

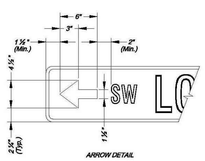


PROJECT SIGN DETAILS

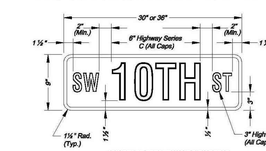


NAMED STREET NAME SIGN DETAIL

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



ARROW DETAIL

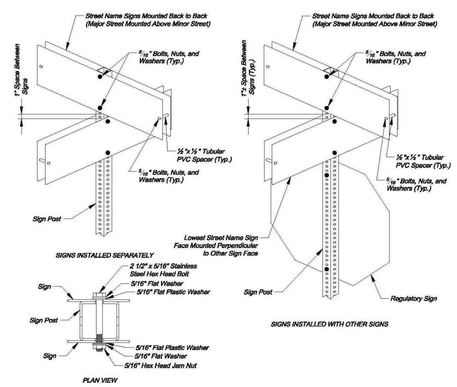


NUMBERED STREET NAME SIGN DETAIL

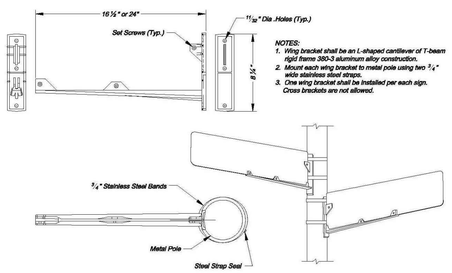
PRIVATE STREET TAG DETAIL

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

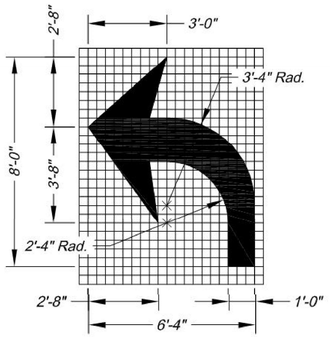


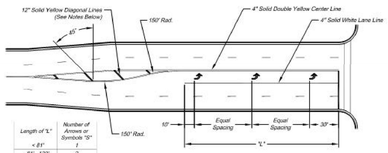
SQUARE STEEL POST MOUNTING DETAILS



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





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 alternating order. The first and last symbols should be Arrows.

NOT AS-BUILT

olsson
MO Certificate of Authority # 001592
2301 SE MINNESOTA AVE, STE 125
NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
12/11/2020
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

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_DTL02_1140A.dwg USER: ssoylor
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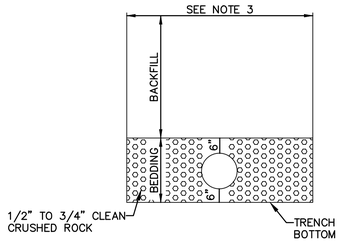


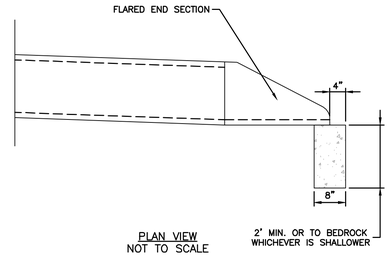
TYPICAL SECTION FOR PLASTIC PIPE
(IN ROCK OR SOIL)

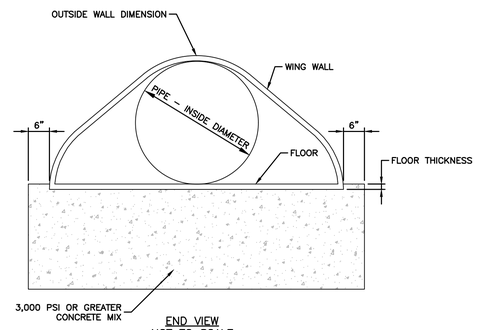
1. BACKFILL SHALL BE JOB EXCAVATED MATERIAL FREE FROM DEBRIS AND STONES COMPACTED TO 90% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698 FOR BACKFILL UNDER PAVEMENT (EXISTING OR PROPOSED).

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.

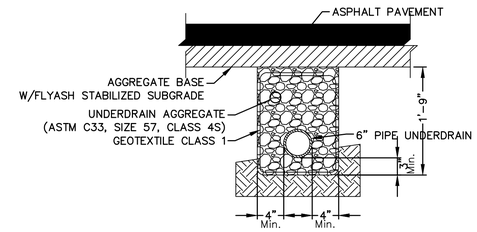
3. MINIMUM AND MAXIMUM WIDTHS SHALL BE IN ACCORDANCE WITH PIPE MANUFACTURER'S RECOMMENDATION AS APPROVED ON ENGINEERING PLANS.

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





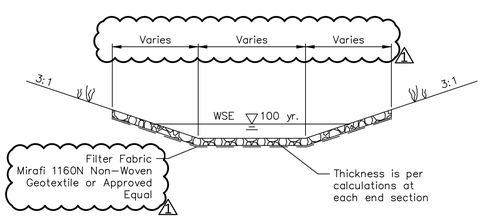
N.T.S.
03 FLARED END SECTION SUPPORT DETAIL



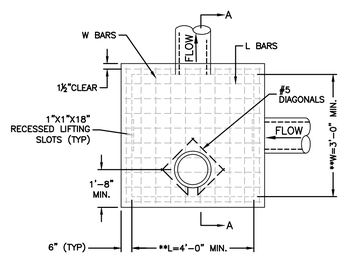
NOTES:
1. Where Pipe Underdrains are used, all Underdrain Outlet Pipes shall be solid wall with watertight joints. All Outlets Pipes shall be tied into the nearest storm sewer inlets at roadway sag locations as indicated in the street profile.
2. All Underdrain Pipes shall be installed at a minimum slope 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

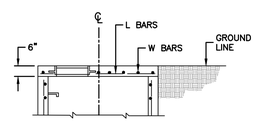
NOTE: DIMENSIONS ARE PER CALCULATIONS AT EACH END SECTION 1



N.T.S.
02 RIP-RAP DETAIL



PLAN

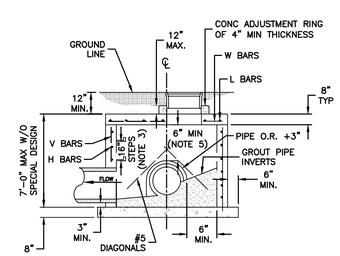


SLAB TOP ALTERNATE FOR JUNCTION BOX (SHALLOW)

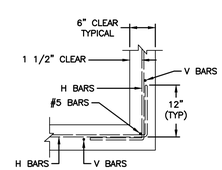
** INCREASE IN MULTIPLES OF 6" (7'-0") MAX WITHOUT SPECIAL DESIGN. (SEE PROJECT PLANS FOR DETAILS)

REINFORCING

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



SECTION A–A



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

NOT AS-BUILT

olsson
MO Certificate of Authority # 001592
2301 MAIN STREET, SUITE 200
NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olsson.com

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
12/11/2020
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

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_DTL03_1140A.dwg USER: ssaylor
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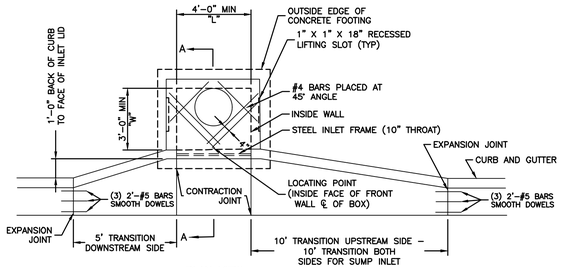
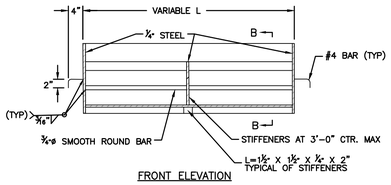
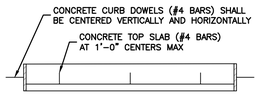


PLAN VIEW



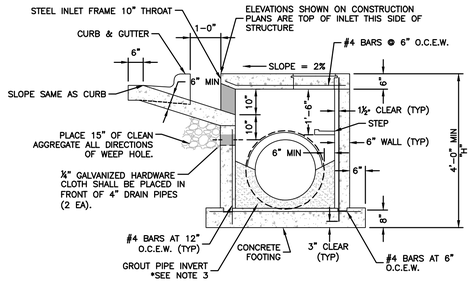
FRONT ELEVATION



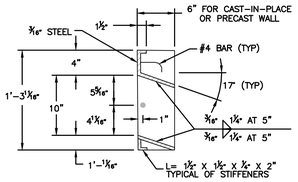
PLAN VIEW

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.

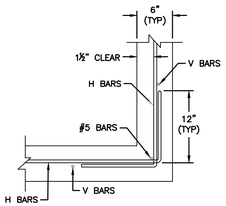
N.T.S.
01 03



SECTION A–A

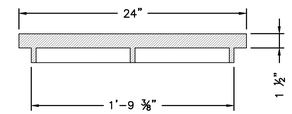


SECTION B–B



WALL CORNER DETAIL

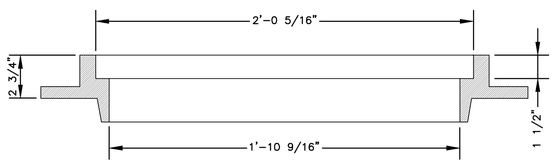
GENERAL NOTES:
1. THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION. THE SECOND DIMENSION IS THE "W" DIMENSION.
2. FLOW LINES LISTED ON THE PROJECT PLANS ARE LISTED AT THE INSIDE FACE OF THE WALL.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
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.



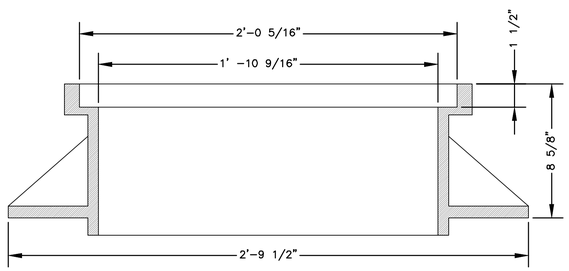
STANDARD 24" MANHOLE COVER
MINIMUM WEIGHT = 160 LB
NOTE: PICK HOLES NOT SHOWN

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

N.T.S.
04 STORM MANHOLE COVER DETAIL



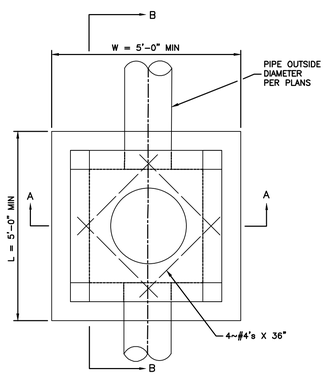
SLAB MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS103A
MINIMUM WEIGHT = 145 LB



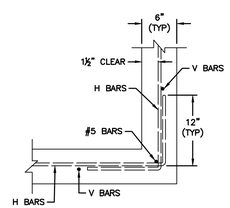
STANDARD 24" MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS101A
MINIMUM WEIGHT = 250 LB

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

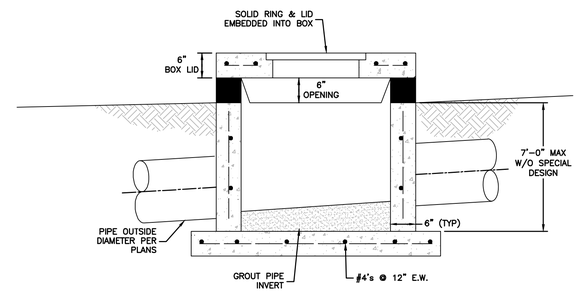
N.T.S.
02 STORM MANHOLE FRAME DETAIL



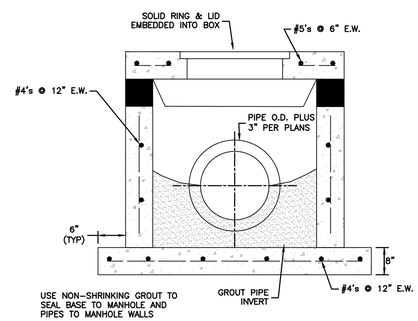
PLAN VIEW



WALL CORNER DETAIL



SECTION B–B



SECTION A–A

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

NOT AS-BUILT

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TEL 816.361.1177
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STATE OF MISSOURI
JULIE ELAINE SELLERS
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SHEET
C156

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