

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

<u>OWNER / DEVELOPER</u> 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	<u>UTILITY SERVICE NUMBERS</u>  NAME: DEVELOPMENT SERVICES PHONE: 816-969-1200 NAME: LEE'S SUMMIT WATER & SERVICES DEPARTMENT PHONE: 816-969-1940
<u>ENGINEER</u> OLSSON 1301 BURLINGTON, SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: JULIE E SELLERS, P.E. PHONE: 816.361.1177	NAME: SPIRE (MGE) PHONE: 314-342-0500 NAME: AT&T PHONE: 800-286-8313 NAME: KCP&L PHONE: 816-471-5275
<u>SURVEYOR</u> OLSSON 1301 BURLINGTON, SUITE 100	NAME: SPECTRUM (TWC) PHONE: 877-772-2253 NAME: GOOGLE FIBER PHONE: 877-454-6959



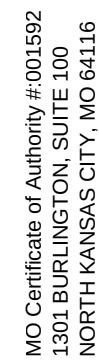
ALL OF JOHN KNOX RETIREMENT VILLAGE--10TH PLAT A SUBDIVISION RECORDED AS INSTRUMENT NUMBER 1279980 IN BOOK 35 AT PAGE 61 IN JACKSON COUNTY RECORDER OF DEEDS OFFICE, AND ALL OF FOREST LAKE AT JOHN KNOX VILLAGE -- 1ST PLAT A SUBDIVISION RECORDED AS INSTRUMENT NUMBER E00512922 IN BOOK 1106 AT PAGE 42 IN 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 11188888 IN BOOK 153 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 1121580 IN BOOK 153 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 11237388 IN BOOK 154 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, 389.28 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" EAST 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 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 11198645 IN BOOK 153 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 1736897 IN BOOK 143 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 1274676 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.

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

Sheet List Table	
Sheet Number	Sheet Title
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C104	GENERAL LAYOUT
C105	GENERAL LAYOUT
C106	GENERAL LAYOUT
C107	GENERAL LAYOUT
C108	GRADING PLAN
C109	GRADING PLAN
C110	GRADING PLAN
C111	GRADING PLAN
C112	SWALE PLAN & PROFILE
C113	SWALE PLAN & PROFILE
C114	SWALE PLAN & PROFILE
C115	ROADWAY PLAN & PROFILE
C116	ROADWAY PLAN & PROFILE
C117	ROADWAY PLAN & PROFILE
C118	ROADWAY PLAN & PROFILE
C119	ROADWAY PLAN & PROFILE
C120	ROADWAY PLAN & PROFILE
C121	ROADWAY PLAN & PROFILE
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C126	INTERSECTION DETAILS
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C128	INTERSECTION DETAILS
C129	INTERSECTION DETAILS
C130	INTERSECTION DETAILS
C131	INTERSECTION DETAILS
C132	STORM SEWER PLAN & PROFILE
C133	STORM SEWER PLAN & PROFILE
C134	STORM SEWER PLAN & PROFILE
C135	STORM SEWER PLAN & PROFILE
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C137	STORM SEWER PLAN & PROFILE
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C139	STORM SEWER PLAN & PROFILE
C140	STORM SEWER PLAN & PROFILE
C141	STORM SEWER PLAN & PROFILE
C142	DETENTION BASIN PLAN
C143	DETENTION BASIN PLAN
C144	DRAINAGE PLAN
C145	DRAINAGE PLAN
C146	DRAINAGE PLAN
C147	DRAINAGE PLAN
C148	10 YEAR DRAINAGE TABLES
C149	100 YEAR DRAINAGE TABLES
C150	MASTER DRAINAGE PLAN
C151	MASTER DRAINAGE PLAN
C152	MASTER DRAINAGE PLAN
C153	MASTER DRAINAGE PLAN
C154	SIGNAGE DETAIL SHEET
C155	STORM DETAIL SHEET
C156	STORM DETAIL SHEET

DATE _____

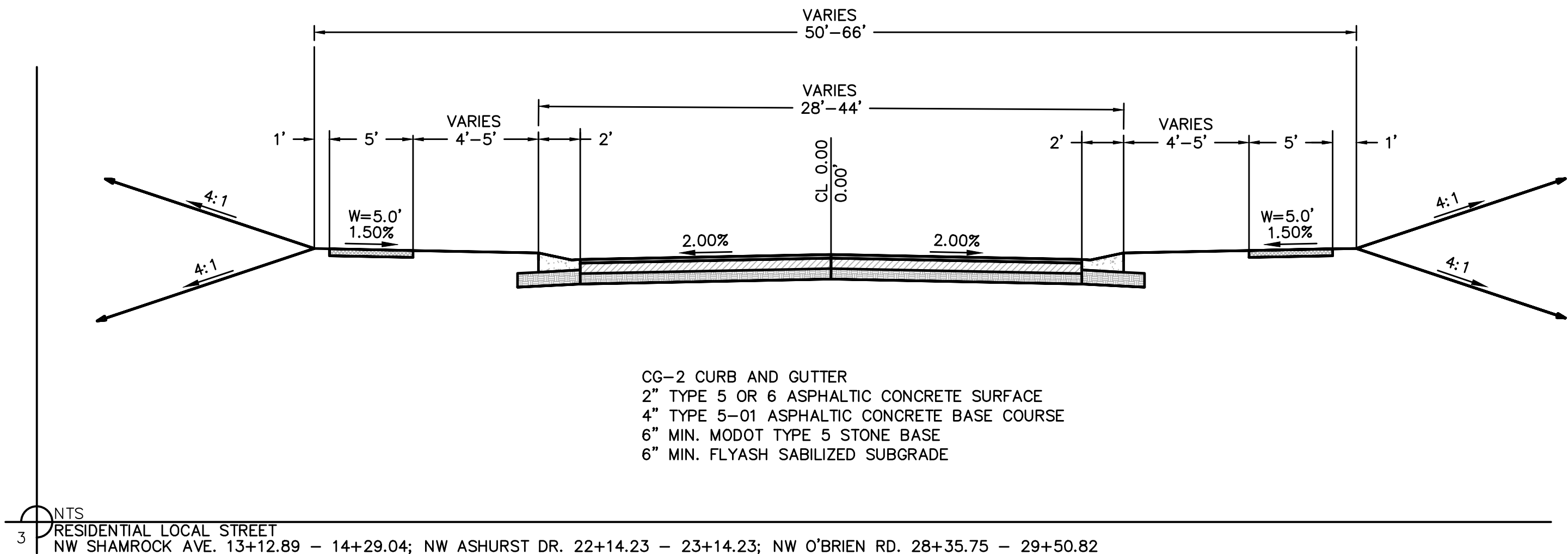
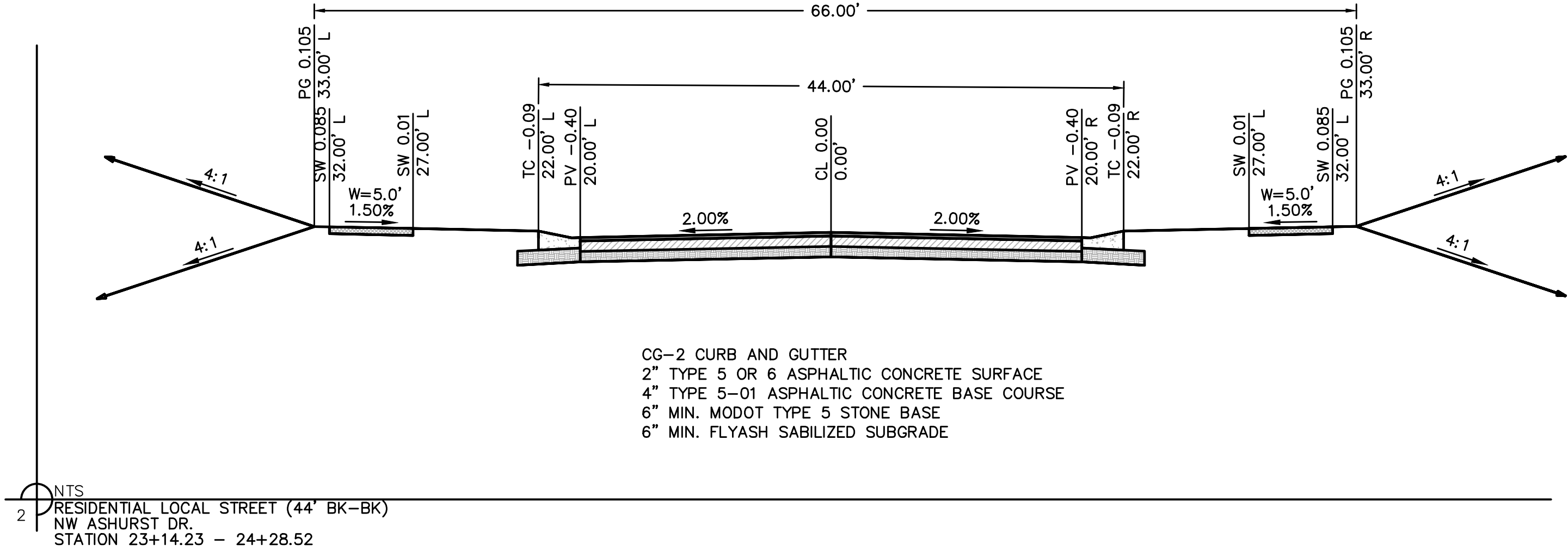
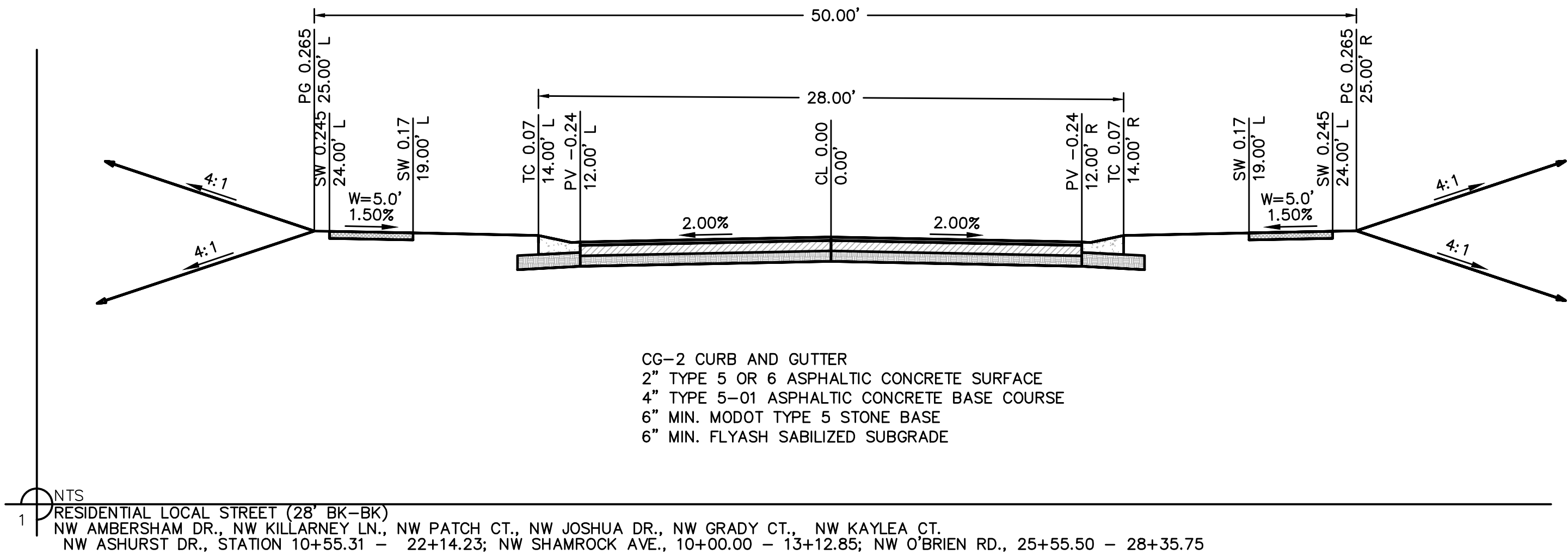
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LEE'S SUMMIT, MO

SHEET
C101

- 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.



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	
15	4" WHITE STRIPING	L.F.	89.46	
16	24" STOP BAR WHITE STRIPING	L.F.	20	
17	MILL & OVERLAY	S.Y.	69	
18	5' CONCRETE SIDEWALK	L.F.	888.39	
19	4" COMPACTED AGGREGATE FOR SIDEWALK	S.Y.	493.54	
20	SEEDING, FERTILIZER, OR MULCH	AC.	50.52	
21	TOPSOIL	C.Y.	40752.00	
STORM				
22	STD. CURB INLET (5'x3' INSIDE)	EA.	37	
23	STD. CURB INLET (7'x3' INSIDE)	EA.	2	
24	STD. MANHOLE (4' DIA. INSIDE)	EA.	16	
25	STD. MANHOLE (5' DIA. INSIDE)	EA.	2	
26	STD. FIELD INLET (4'x4' INSIDE)	EA.	8	
27	STD. FIELD INLET (5'x5' INSIDE)	EA.	1	
28	STD. FIELD INLET (8'x8' INSIDE)	EA.	1	
29	15" HDPE	L.F.	4743.16	
30	18" HDPE	L.F.	1337.87	
31	15" RCP	L.F.	96.55	
32	24" HDPE	L.F.	755.77	
33	30" HDPE	L.F.	108.38	
34	36" HDPE	L.F.	94.45	
35	42" RCP	L.F.	118.33	
36	15" CMP END SECTION	EA.	2	
37	18" CMP END SECTION	EA.	2	
38	24" CMP END SECTION	EA.	3	
39	30" CMP END SECTION	EA.	1	
40	36" CMP END SECTION	EA.	1	
41	42" RCP END SECTION	EA.	1	
42	CONNECTION TO EXISTING PIPE	EA.	1	
43	RIP-RAP	S.Y.	530	
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	
	EXISTING CABLE TV, OVERHEAD
	EXISTING CABLE TV, UNDERGROUND
	PROPOSED CABLE TV, OVERHEAD
	PROPOSED CABLE TV, UNDERGROUND
	FUTURE CABLE TV, OVERHEAD
	FUTURE CABLE TV, UNDERGROUND
	EXISTING FIBER OPTIC, OVERHEAD
	EXISTING FIBER OPTIC, UNDERGROUND
	PROPOSED FIBER OPTIC, OVERHEAD
	PROPOSED FIBER OPTIC, UNDERGROUND
	FUTURE FIBER OPTIC, OVERHEAD
	FUTURE FIBER OPTIC, UNDERGROUND
	EXISTING FIRE PROTECTION SYSTEM LINE
	PROPOSED FIRE PROTECTION SYSTEM LINE
	FUTURE FIRE PROTECTION SYSTEM LINE
	EXISTING FUEL LINE
	PROPOSED FUEL LINE
	FUTURE FUEL LINE
	EXISTING NATURAL GAS LINE
	PROPOSED NATURAL GAS LINE
	FUTURE NATURAL GAS LINE
	EXISTING TELEPHONE LINE, OVERHEAD
	EXISTING TELEPHONE LINE, UNDERGROUND
	PROPOSED TELEPHONE LINE, OVERHEAD
	PROPOSED TELEPHONE LINE, UNDERGROUND
	FUTURE TELEPHONE LINE, OVERHEAD
	FUTURE TELEPHONE LINE, UNDERGROUND
	EXISTING POWER/ELECTRIC LINE, OVERHEAD
	EXISTING POWER/ELECTRIC LINE, UNDERGROUND
	PROPOSED POWER/ELECTRIC LINE, OVERHEAD
	PROPOSED POWER/ELECTRIC LINE, UNDERGROUND
	FUTURE POWER/ELECTRIC LINE, OVERHEAD
	FUTURE POWER/ELECTRIC LINE, UNDERGROUND
	EXISTING SANITARY SEWER
	PROPOSED SANITARY SEWER
	FUTURE SANITARY SEWER
	EXISTING STEAM LINE
	PROPOSED STEAM LINE
	FUTURE STEAM LINE
	EXISTING STORM SEWER
	PROPOSED STORM SEWER
	FUTURE STORM SEWER
	EXISTING WATER LINE
	PROPOSED WATER LINE
	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

NS Consultants of Kansas, Inc.
300 EAST 10TH AVE., SUITE 100
NORTH KANSAS CITY, MO 64116
TEL 816.861.1177
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GENERAL NOTES
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

BY

REVISIONS DESCRIPTION

NO. REV.

DATE

REVISED PER CITY COMMENTS

REVISED PER CITY COMMENTS

2019

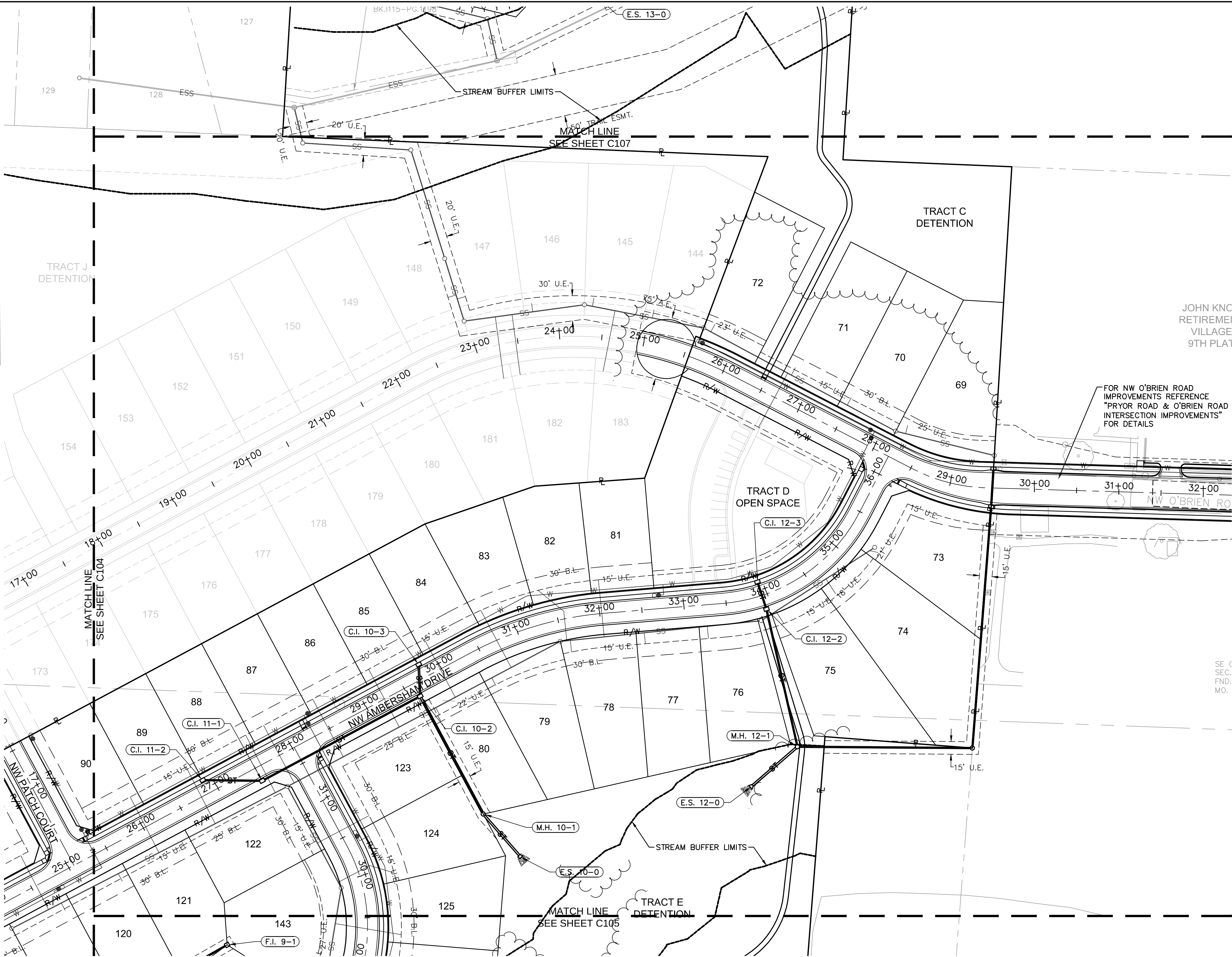
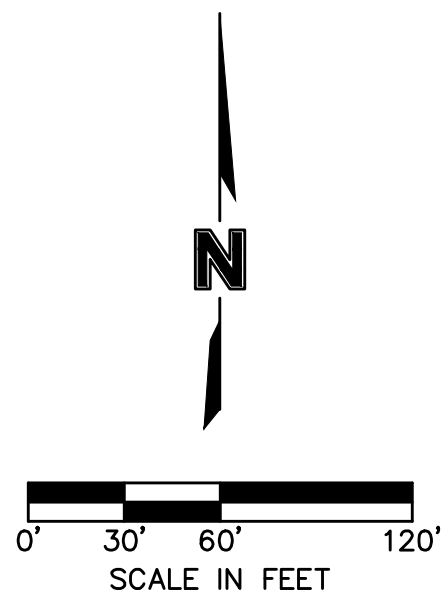
SHEET
C102

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

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Sheets\GNV\01_Street & Storm_36-24\C_GEN02_1140A.dwg
DATE: May 02, 2019 4:12pm
USER: ssaylor



Key Map



olsson

NOT A SEWERAGE DISTRICT OF KANSAS CITY
300 EAST BROADWAY, SUITE 1000
NORTH KANSAS CITY, MO 64116
TEL. 816.981.1177
WWW.OLSSON.COM

BY

REVISIONS DESCRIPTION

DATE

NO. REV.

GENERAL LAYOUT
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

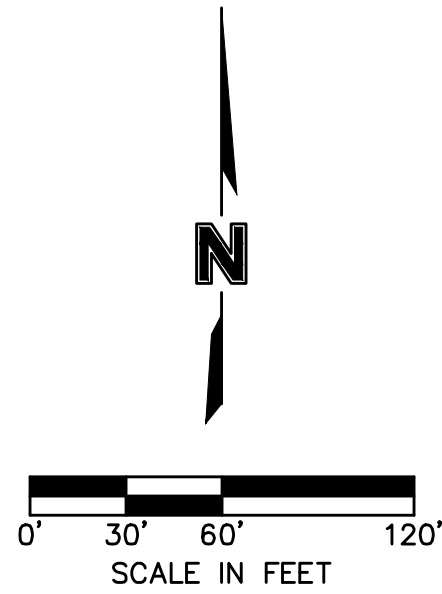
drawn by: J.E.S.
checked by: J.E.S.
designed by: S.M.S.
QA/QC by: M.G.B.
project no.: A18-1140
date: 2019.03.12

SHEET
C105

2019
REVISIONS



Key Map



GENERAL LAYOUT
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

2019

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

SHEET
C105

NO.	REV.	DATE	REVISIONS DESCRIPTION
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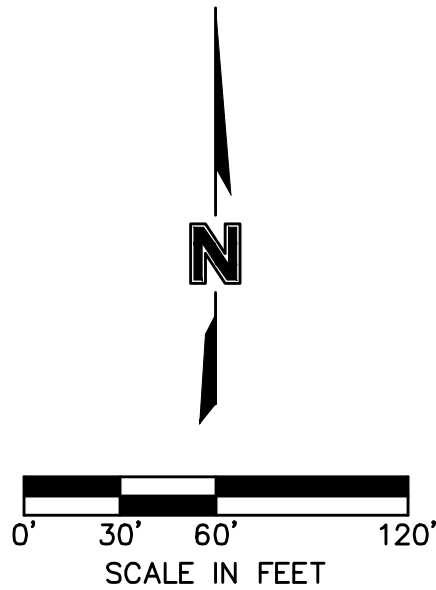
BY:

REVISIONS

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NOT A PROFESSIONAL ENGINEER
303 E. BROADWAY, SUITE 100
NORTH KANSAS CITY, MO 64116
TEL. 816.861.1177
WWW.OLSSON.COM

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'



GRADING PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

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

SHEET
C109

REVISIONS DESCRIPTION

NO. REV. DATE

REV. A 4/2/2019

REVISED PER CITY COMMENTS

BY

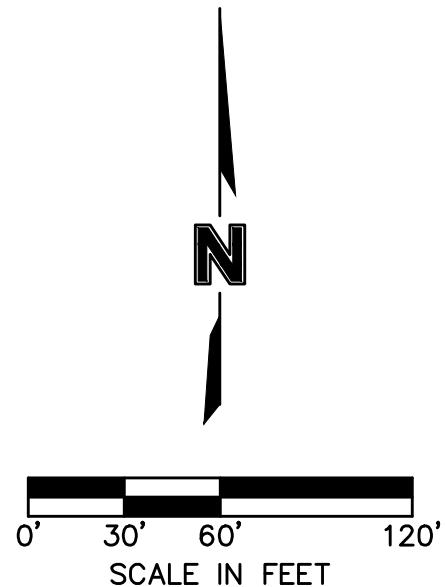
REVISIONS

2019

olsson

NOT A PROFESSIONAL ENGINEER
300 E. MAIN ST., SUITE 100
NORTH KANSAS CITY, MO 64116
TEL. 816.981.1177
WWW.OLSSON.COM

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'



grading plan
street & storm sewer plans

woodside ridge
first plat

lee's summit, mo

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
C110

NO. REV.

DATE

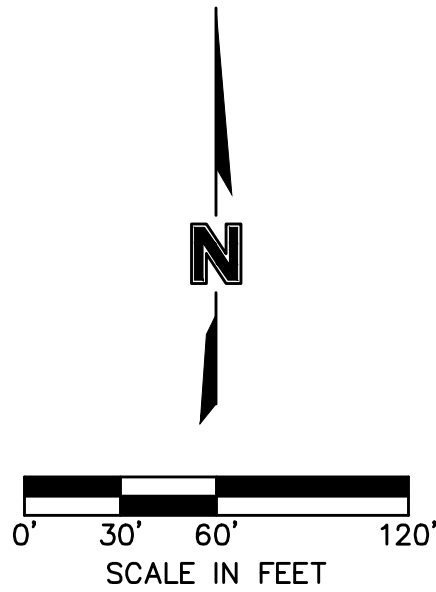
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BY

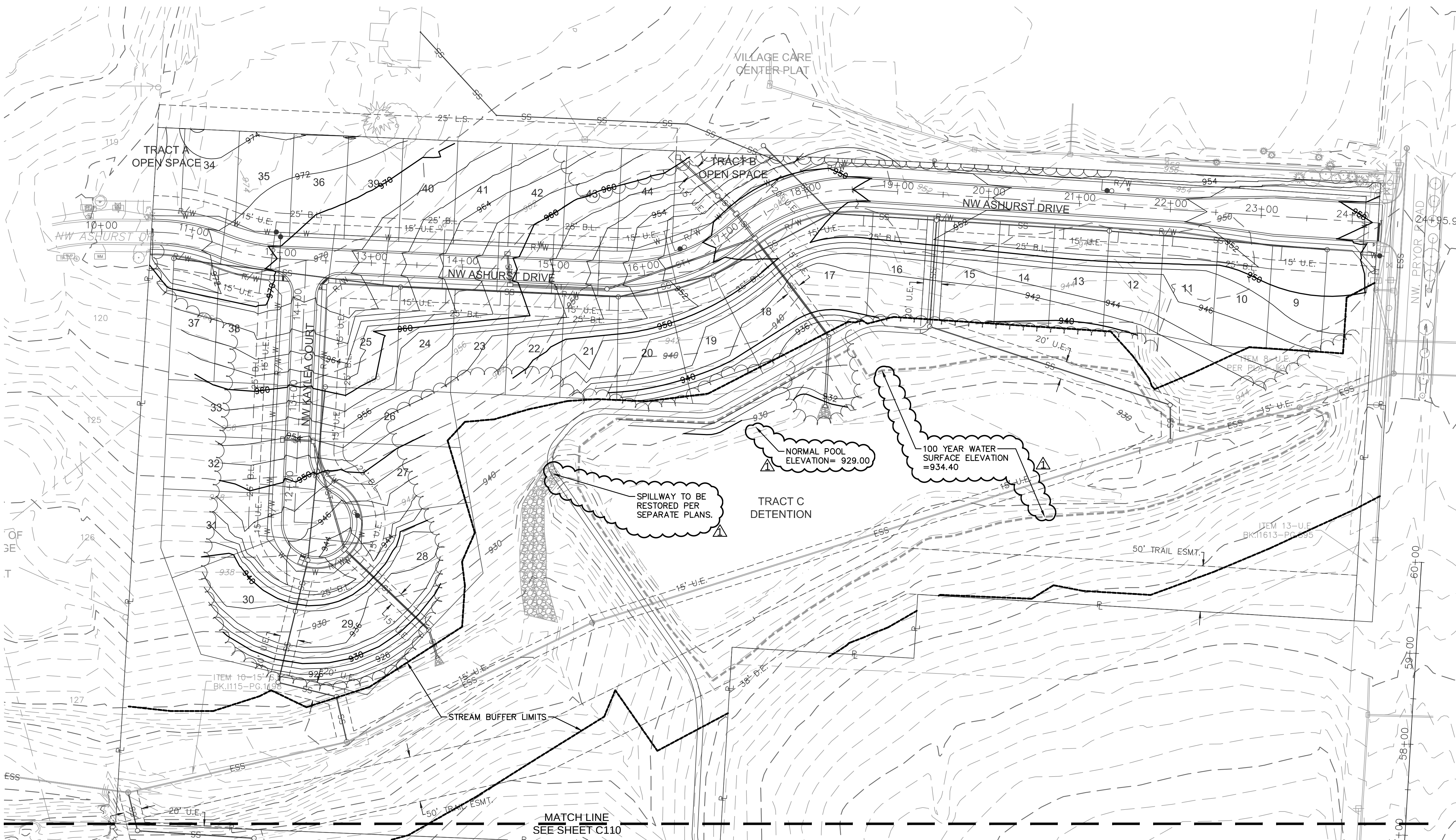
REVISIONS

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303 E. MAIN STREET, SUITE 100
NORTH KANSAS CITY, MO 64116
TEL. 816.861.1177
WWW.OLSSON.COM



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	



GRADING PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

NO. REV. 1

DATE 4/2/2019

REVISIONS DESCRIPTION

REVISED PER CITY COMMENTS

BY

2019

REVISIONS

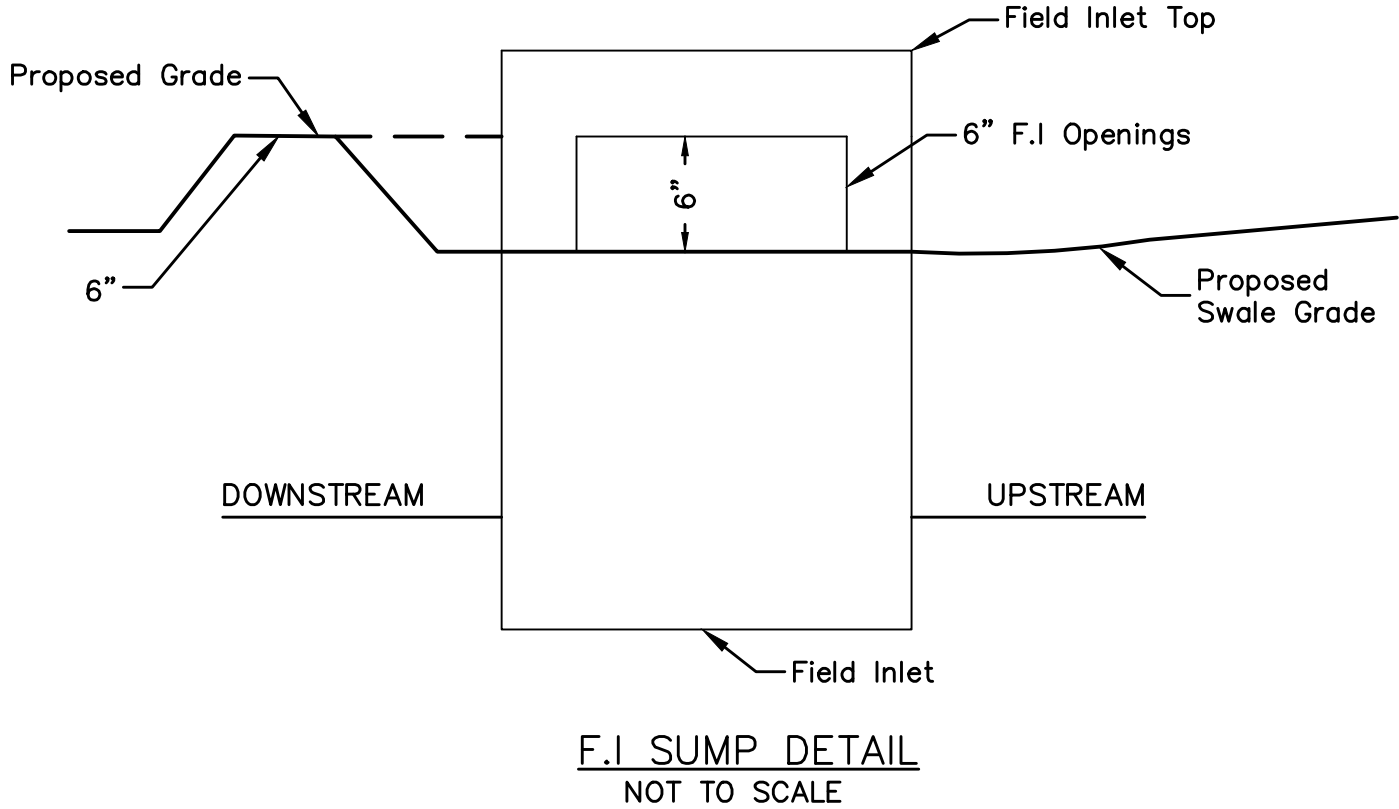
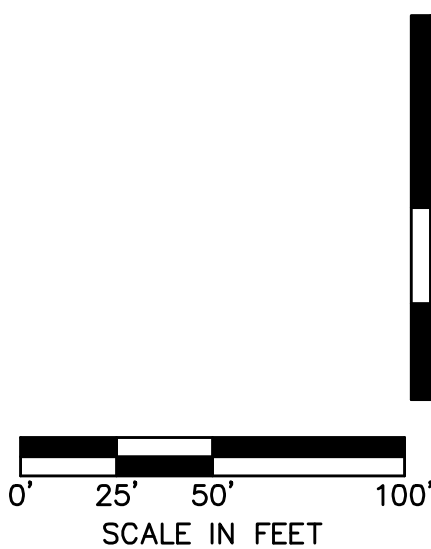
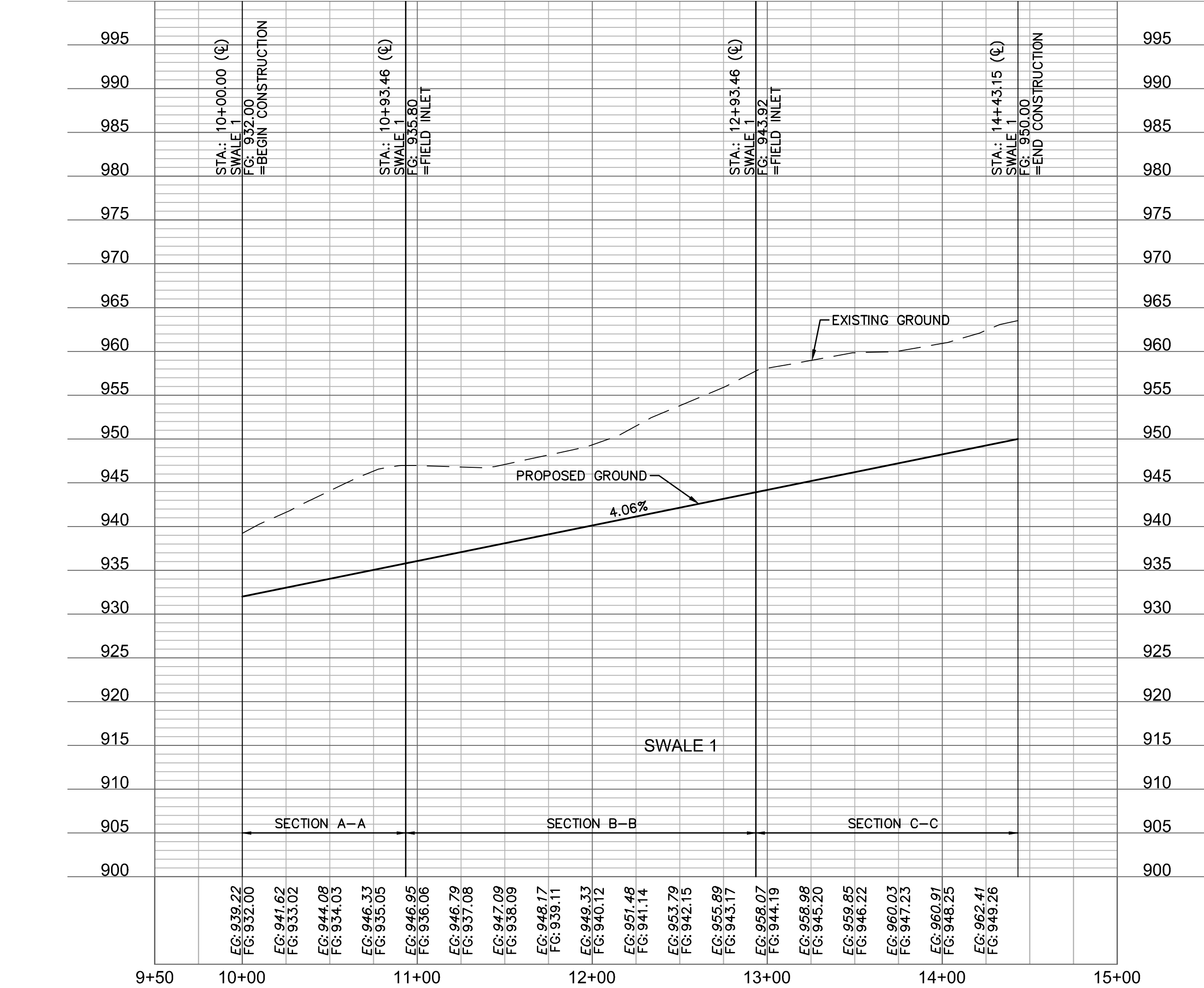
drawn by: D.A.H.O.
checked by: J.E.S.
designed by: S.M.S.
QA/QC by: M.G.D.
project no.: A18-1140
date: 2019.03.12

SHEET
C111

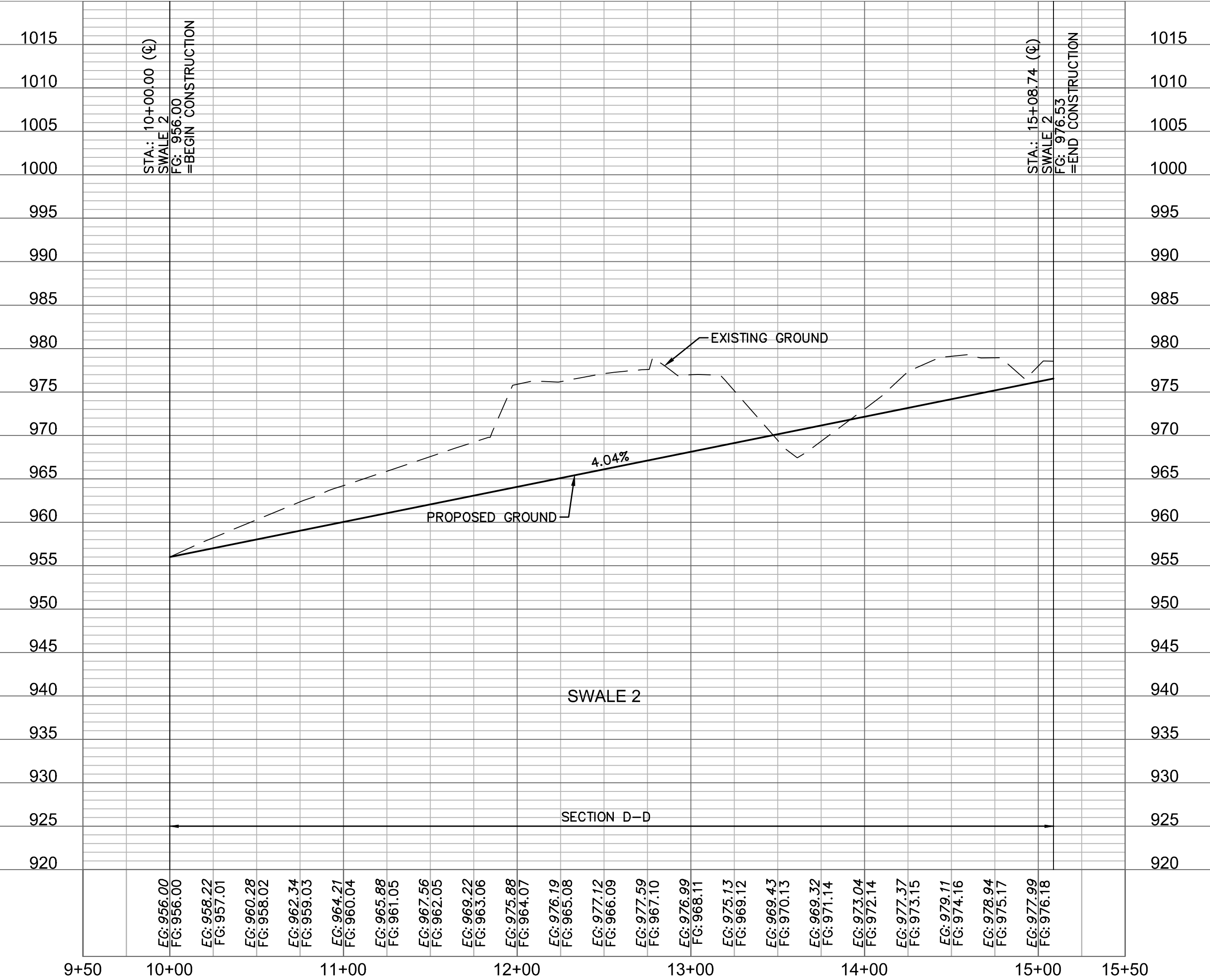
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NSC Corporation of America #01892
301 E. Main Street, Suite 100
North Kansas City, MO 64116
TEL 816.861.1177
WWW.OLSSON.COM

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



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



Swale Design Table (100 Year Return Frequency)													
Section Data							Flow Data						
SECTION	Mannings Coefficient	Channel Slope (%)	Swale Depth (ft)	Left Side Slope (H:V)	Right Side Slope (H:V)	Bottom Width (ft)	Discharge (cfs)	Water Depth (ft)	Flow Area (ft ²)	Velocity (ft/sec)	Wetted Perimeter (ft)	Top Width (ft)	Specific Energy (ft)
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
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
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
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

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.

SWALE PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

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

SHEET
C112

REVISIONS DESCRIPTION

REVISIONS

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STREET & STORM SEWER PLANS

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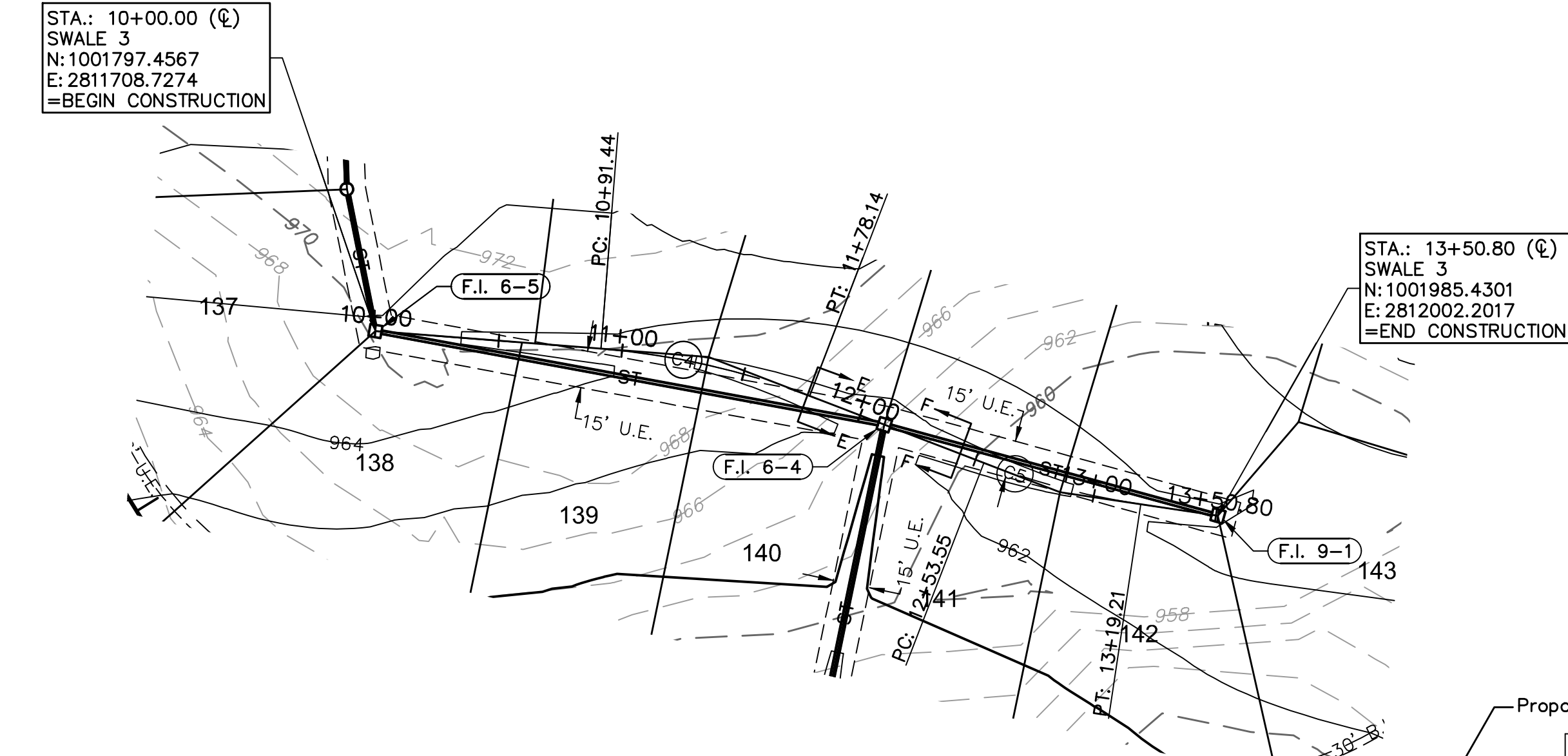
2019

SWALE PLAN & PROFILE
STREET & STORM SEWER PLANS

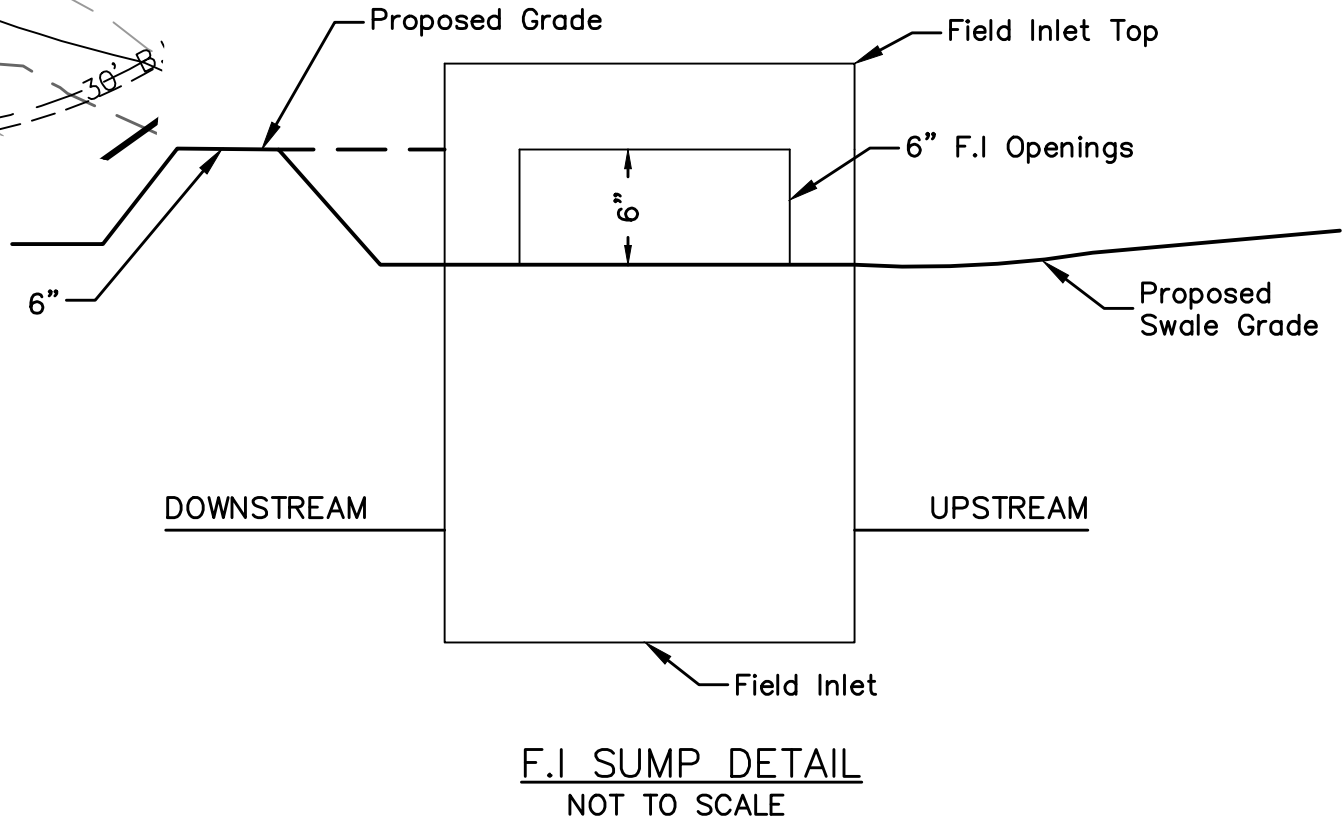
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FIRST PLAT

LEE'S SUMMIT, MO

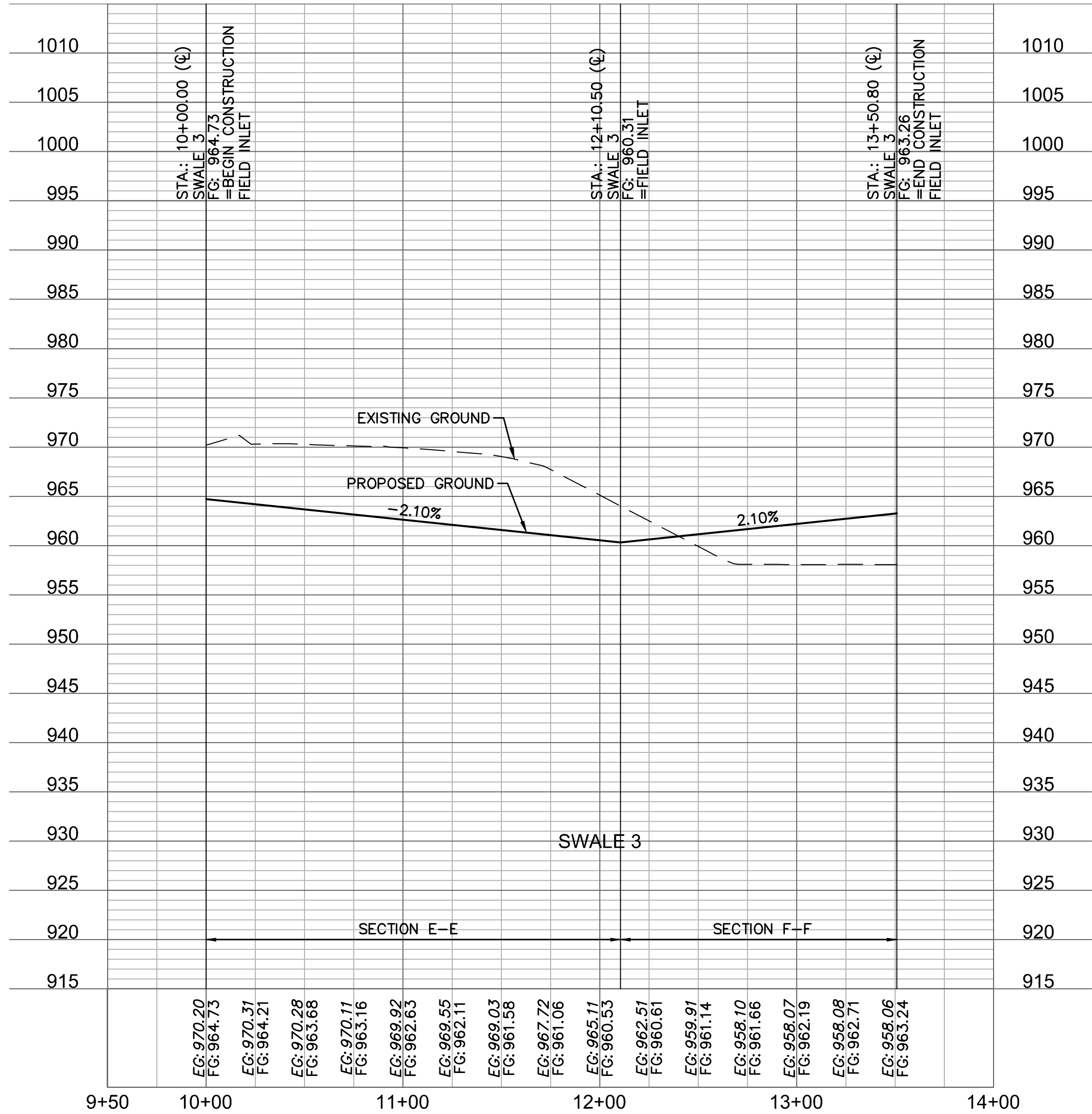
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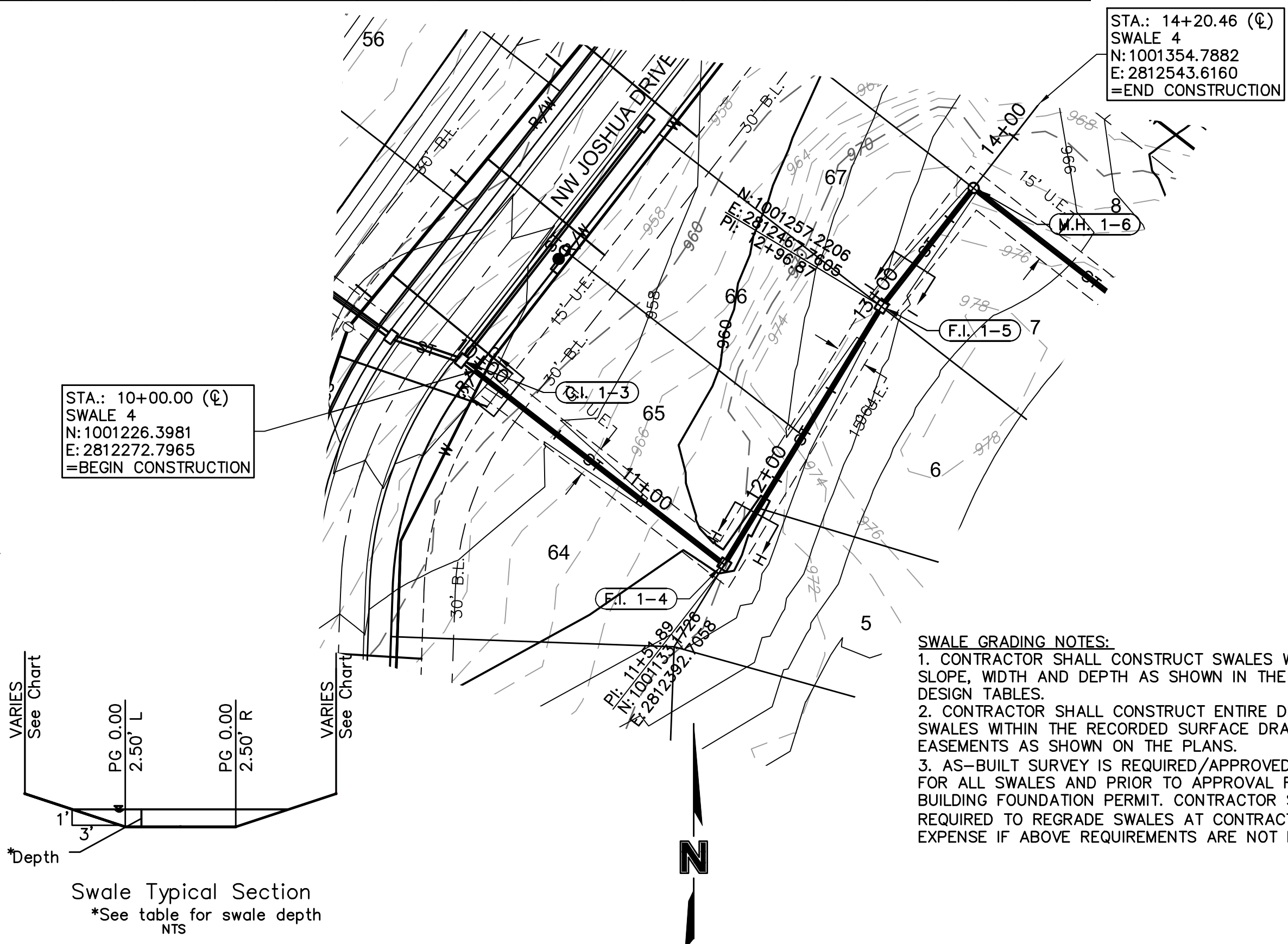
CURVE TABLE					
CURVE ID	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)
C4	300.00'	16°33'34"	86.70'	43.66'	11+34.48
C5	300.00'	12°32'26"	65.66'	32.96'	12+86.25



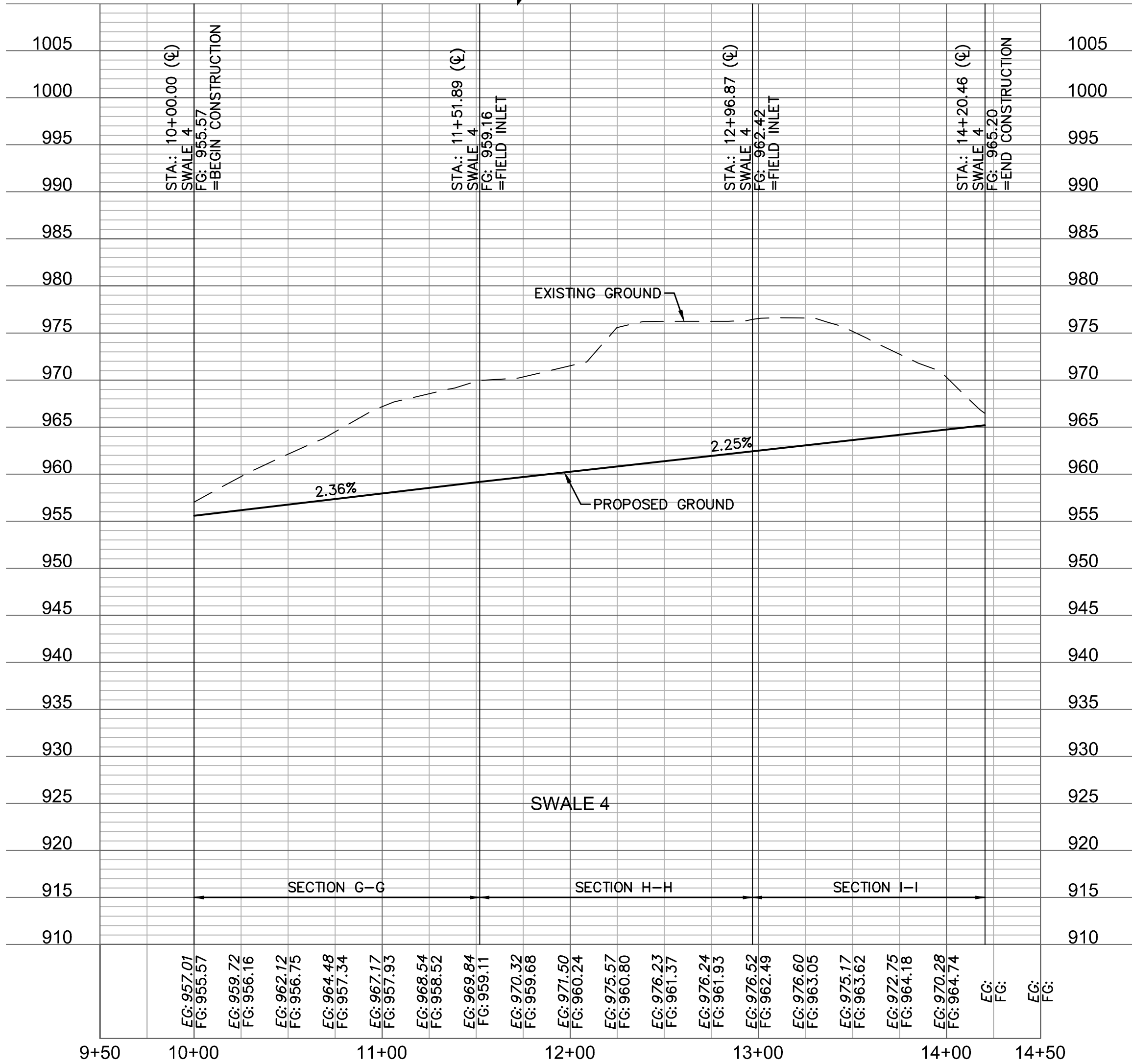
NOTE: INCLUDE SUMP PER ABOVE DETAIL WHERE FIELD INLETS ARE LOCATED WITHIN SWALES.



Swale Design Table (100 Year Return Frequency)														
Section Data							Flow Data							
SECTION	Mannings Coefficient	Channel Slope (%)	Swale Depth (ft)	Left Side Slope (H:V)	Right Side Slope (H:V)	Bottom Width (ft)	Discharge (cfs)	Water Depth (ft)	Flow Area (ft²)	Velocity (ft/sec)	Wetted Perimeter (ft)	Top Width (ft)	Specific Energy (ft)	Shear Stress (lbs/ft²)
E-E	0.03	2.10%	1.35	3:1	3:1	5.00	4.01	0.27	1.57	2.56	6.71	6.62	0.37	0.31
F-F	0.03	2.10%	1.35	3:1	3:1	5.00	2.83	0.22	1.25	2.27	6.39	6.32	0.30	0.26
G-G	0.03	2.36%	1.35	3:1	3:1	5.00	2.57	0.20	1.12	2.29	6.26	6.20	0.28	0.26
H-H	0.03	2.25%	1.35	3:1	3:1	5.00	2.76	0.21	1.18	2.33	6.33	6.26	0.29	0.26
I-I	0.03	2.25%	1.35	3:1	3:1	5.00	1.97	0.17	0.94	2.10	6.08	6.02	0.24	0.22



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



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300 E. HURON ST., SUITE 100
NORTH KANSAS CITY, MO 64116
TEL. 816.961.1177
WWW.OLSSON.COM

BY

REVISIONS DESCRIPTION

NO. REV.

DATE

2019

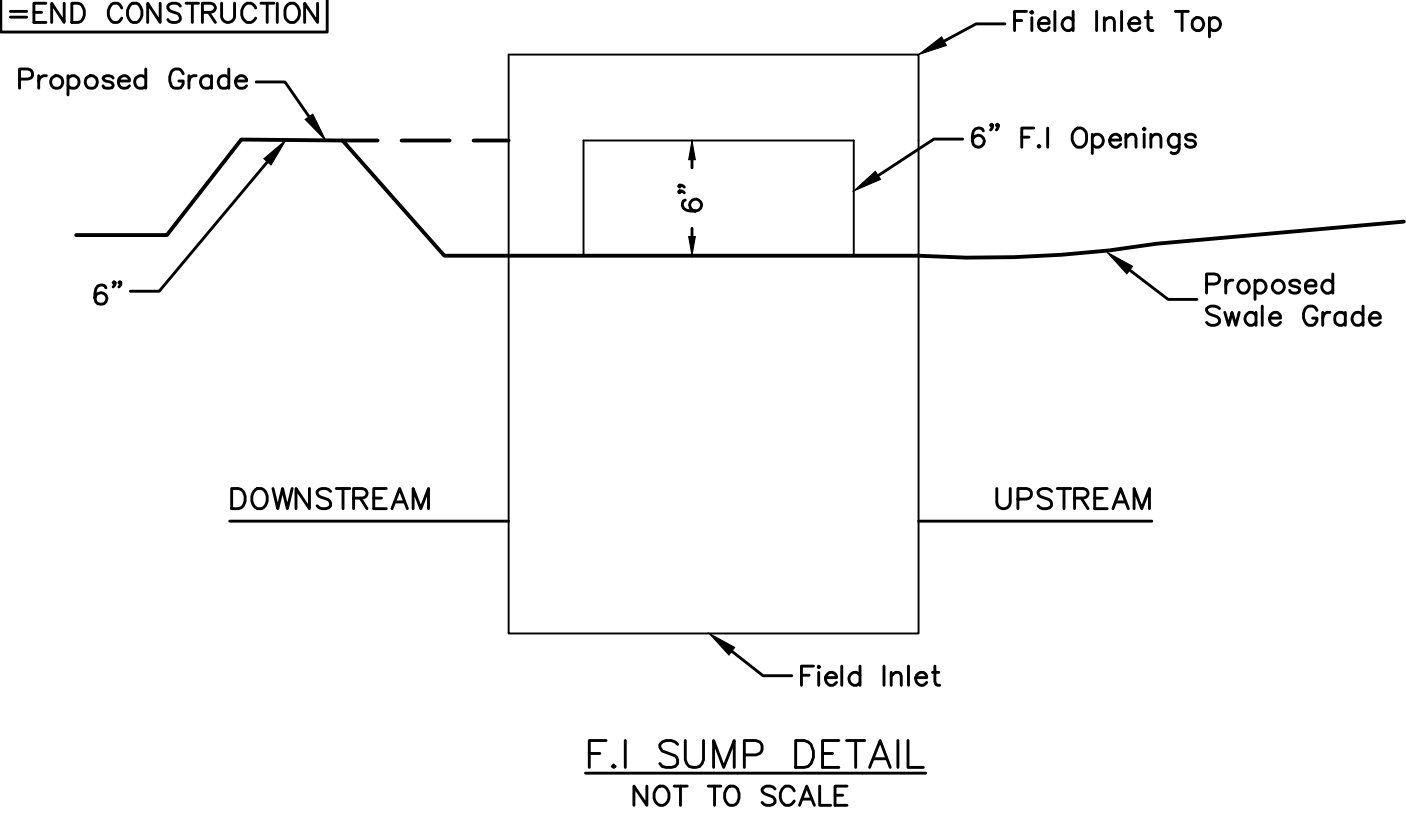
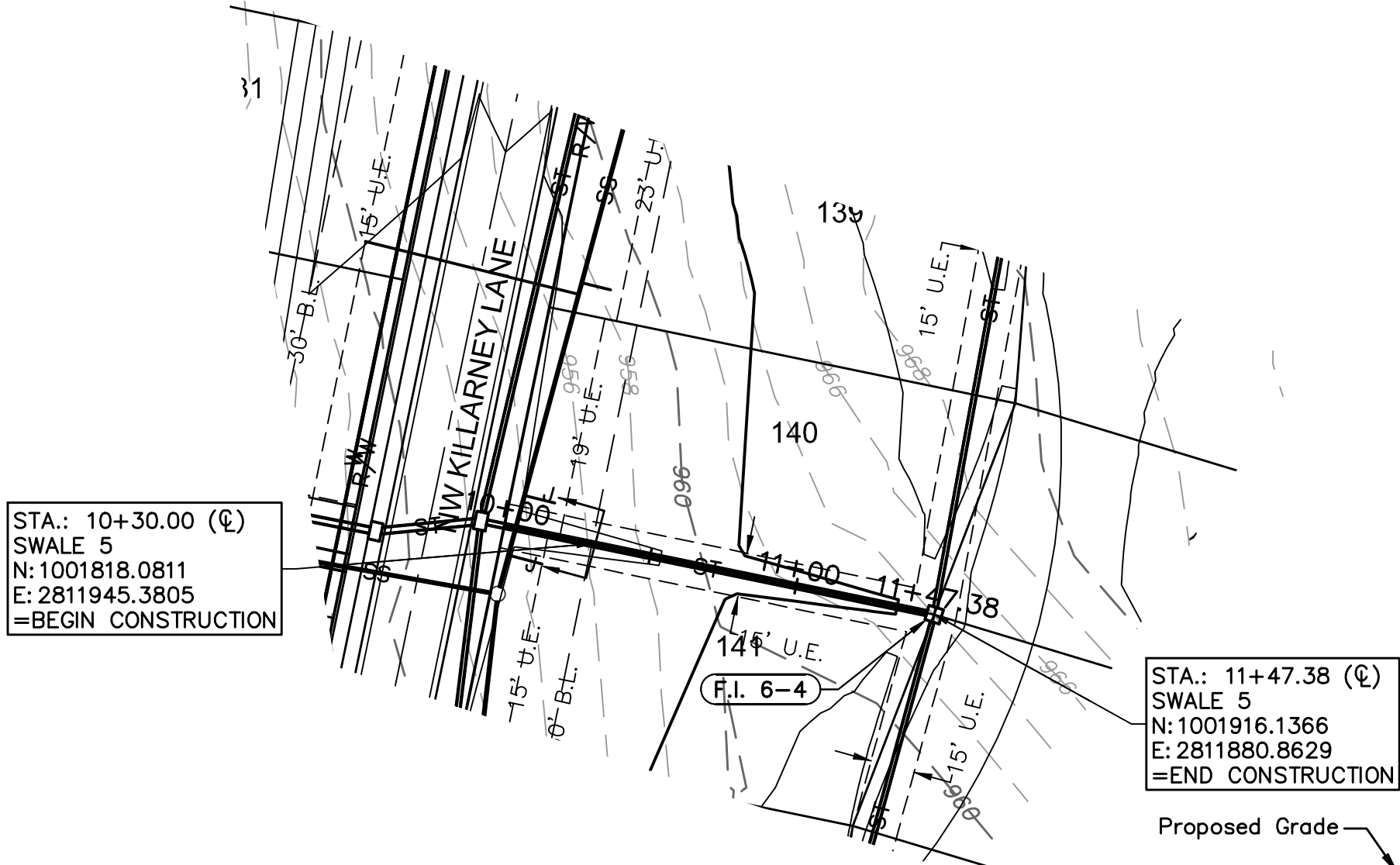
SWALE PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

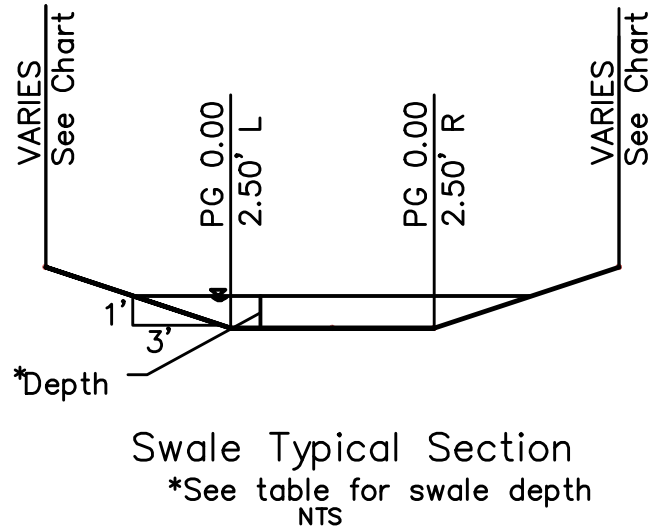
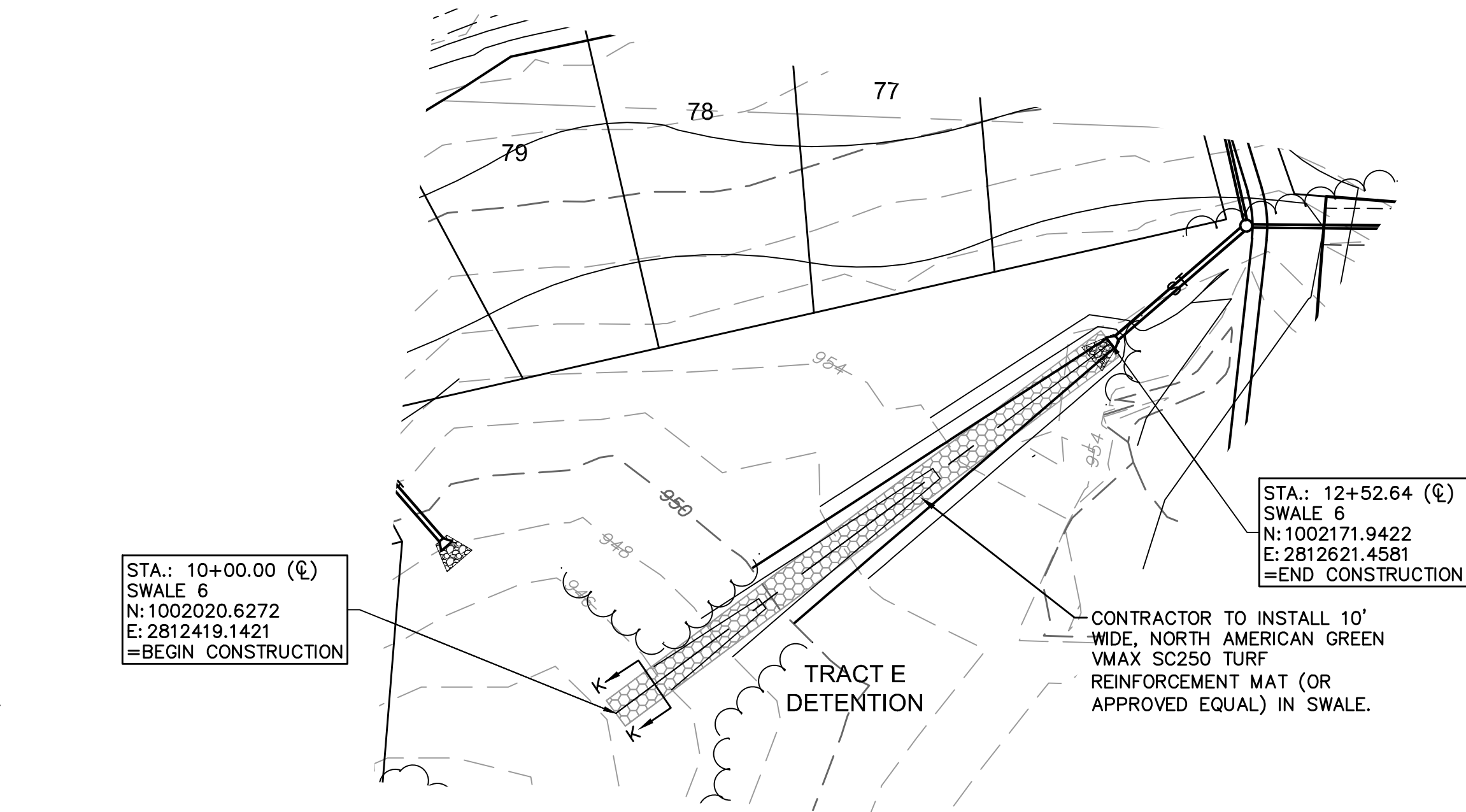
drawn by: D.A.H.O.
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SHEET
C113

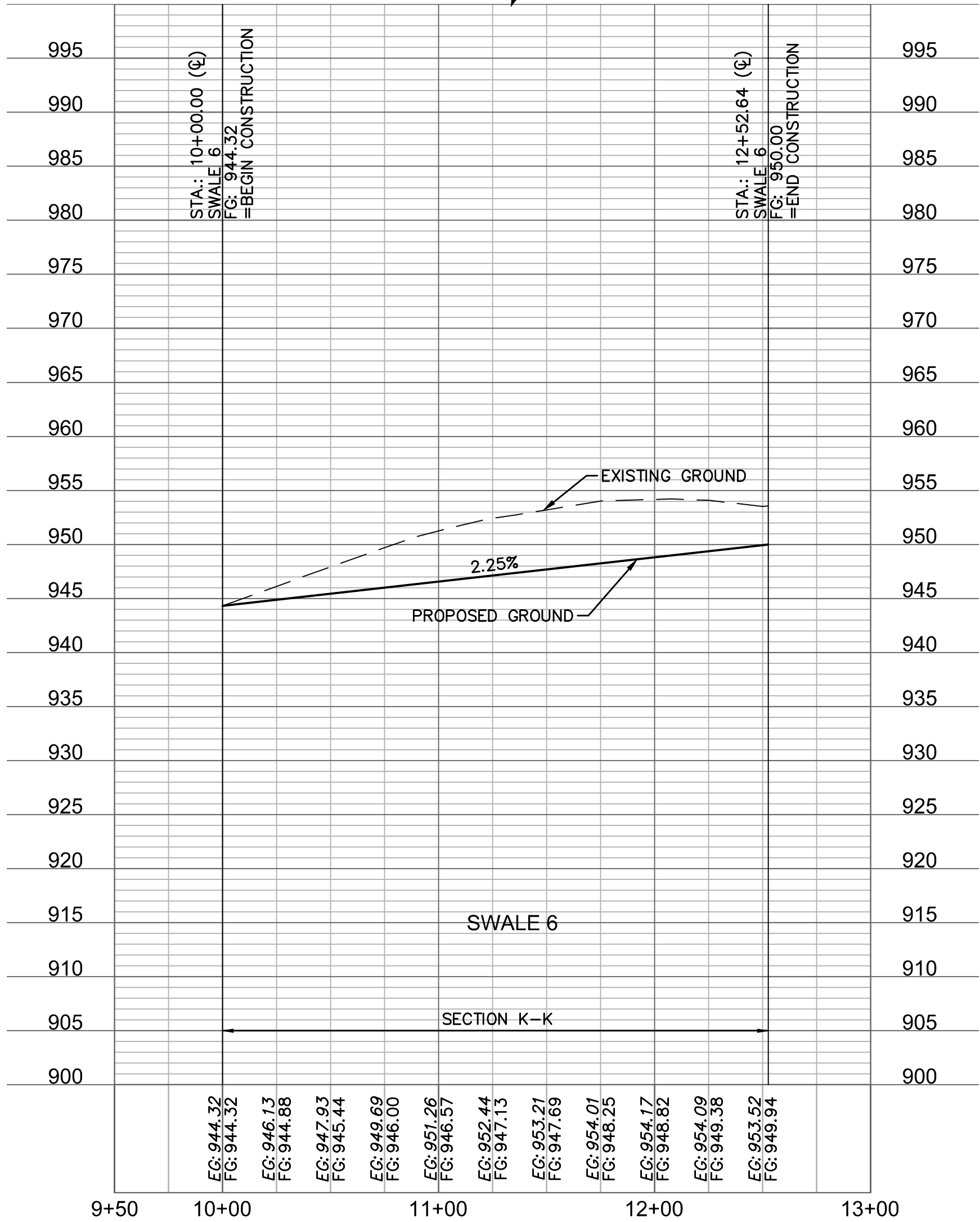
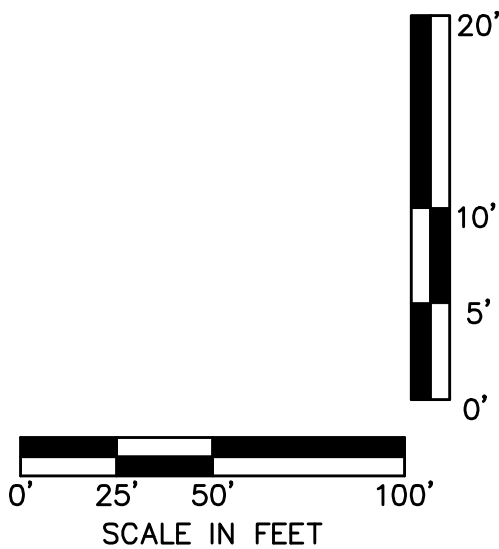
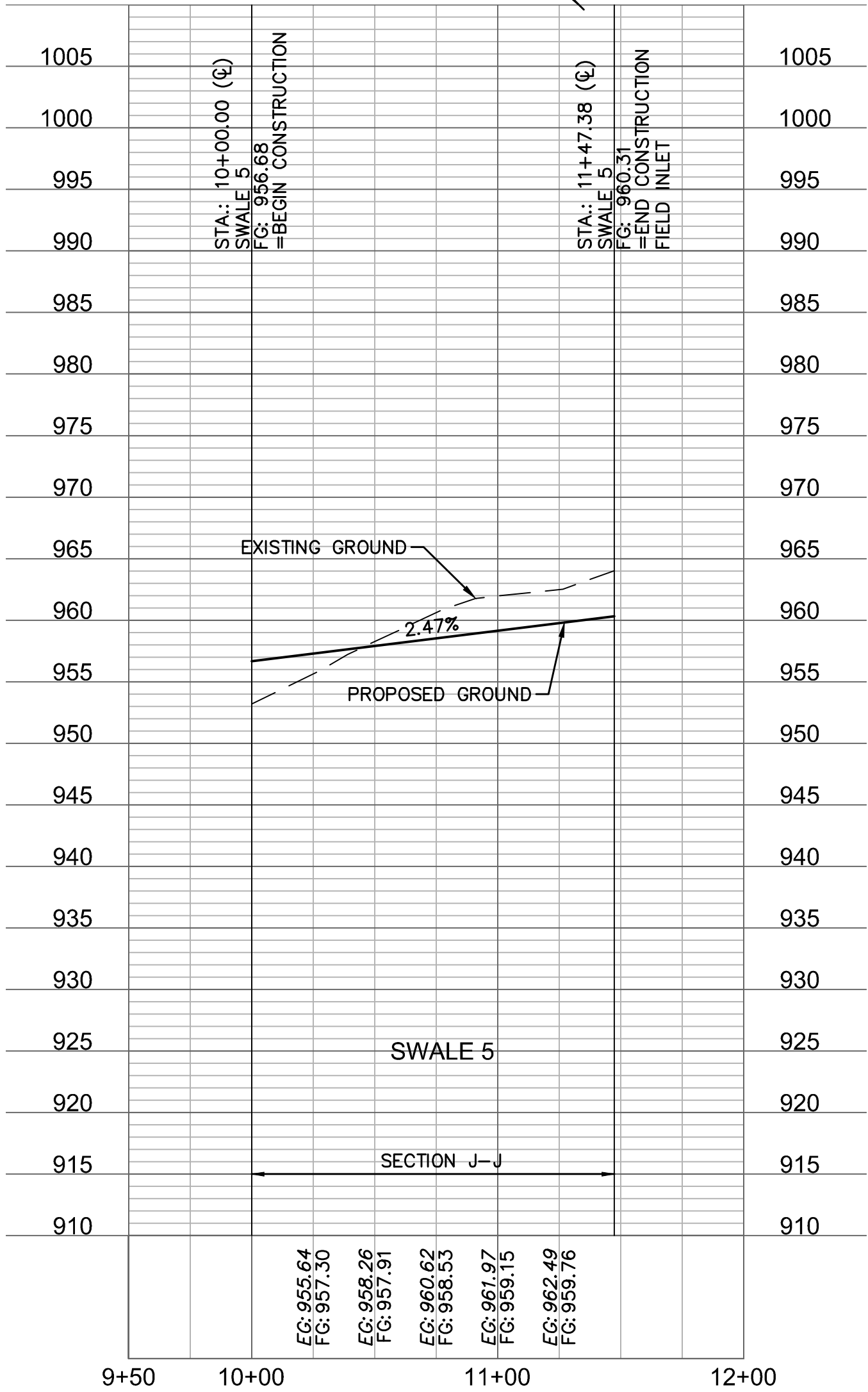


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Swale Design Table (100 Year Return Frequency)													
Section Data							Flow Data						
SECTION	Mannings Coefficient	Channel Slope (%)	Swale Depth (ft)	Left Side Slope (H:V)	Right Side Slope (H:V)	Bottom Width (ft)	Discharge (cfs)	Water Depth (ft)	Flow Area (ft ²)	Velocity (ft/sec)	Wetted Perimeter (ft)	Top Width (ft)	Specific Energy (ft)
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
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



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SWALE PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

NO. REV.

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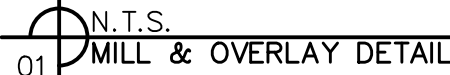
REVISIONS

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SHEET
C114

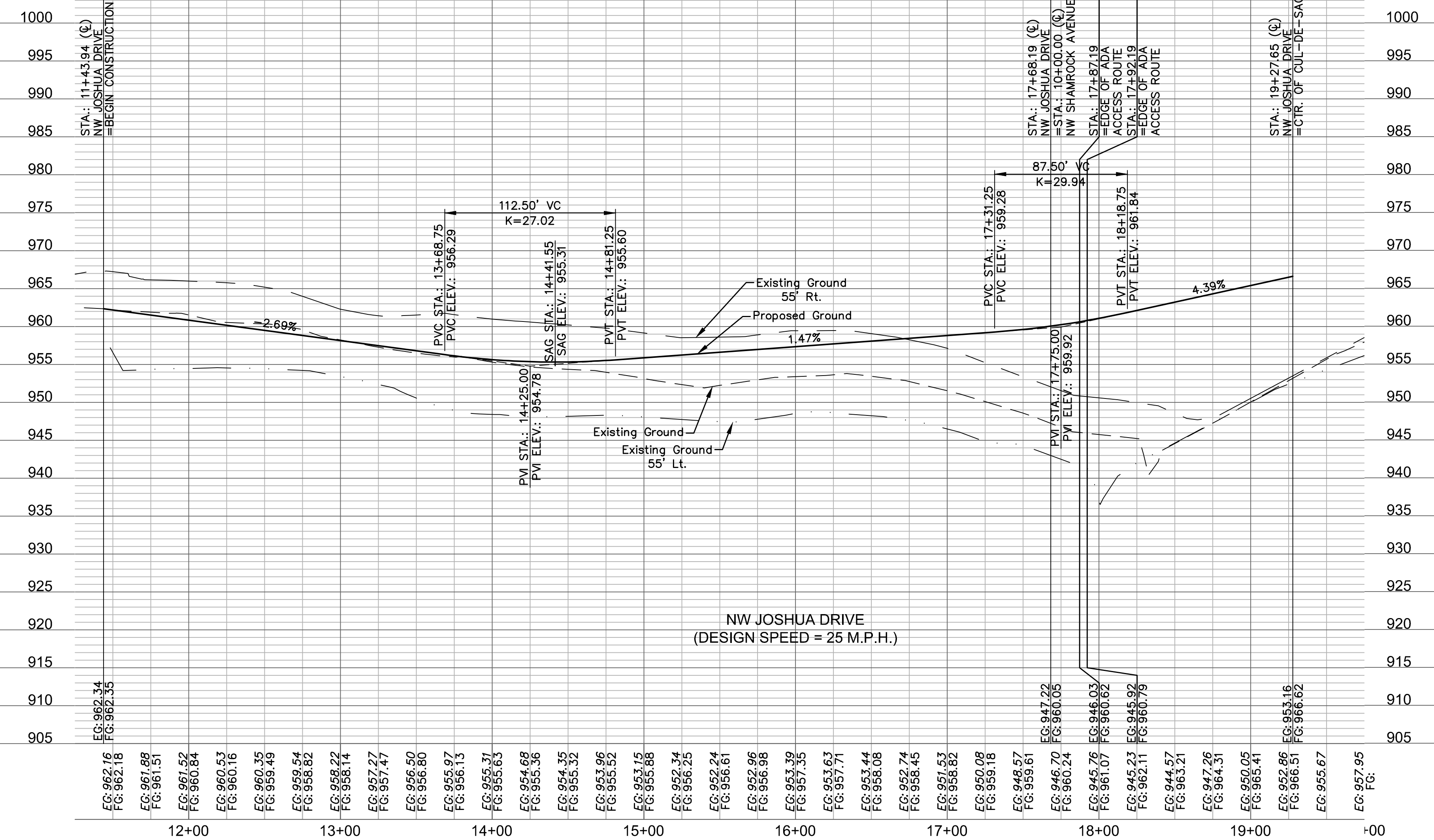
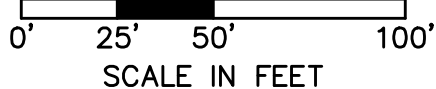
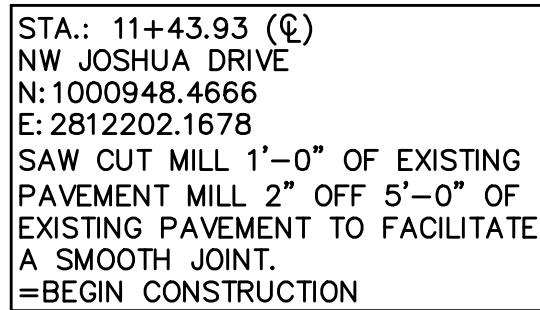
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300 E. BROADWAY, SUITE 1000
NORTH KANSAS CITY, MO 64116
TEL 816.981.1177
WWW.OLSSON.COM

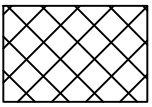


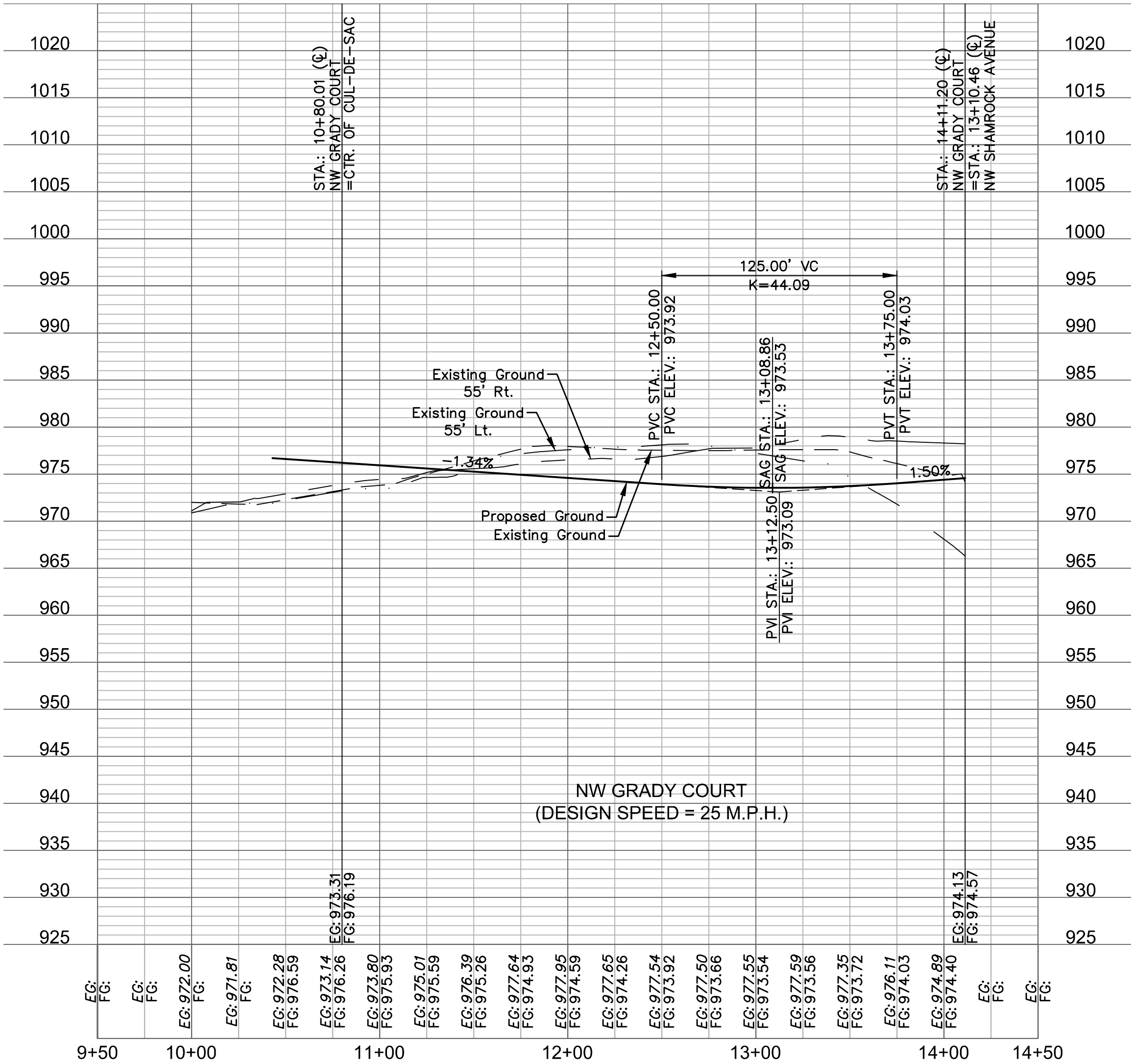
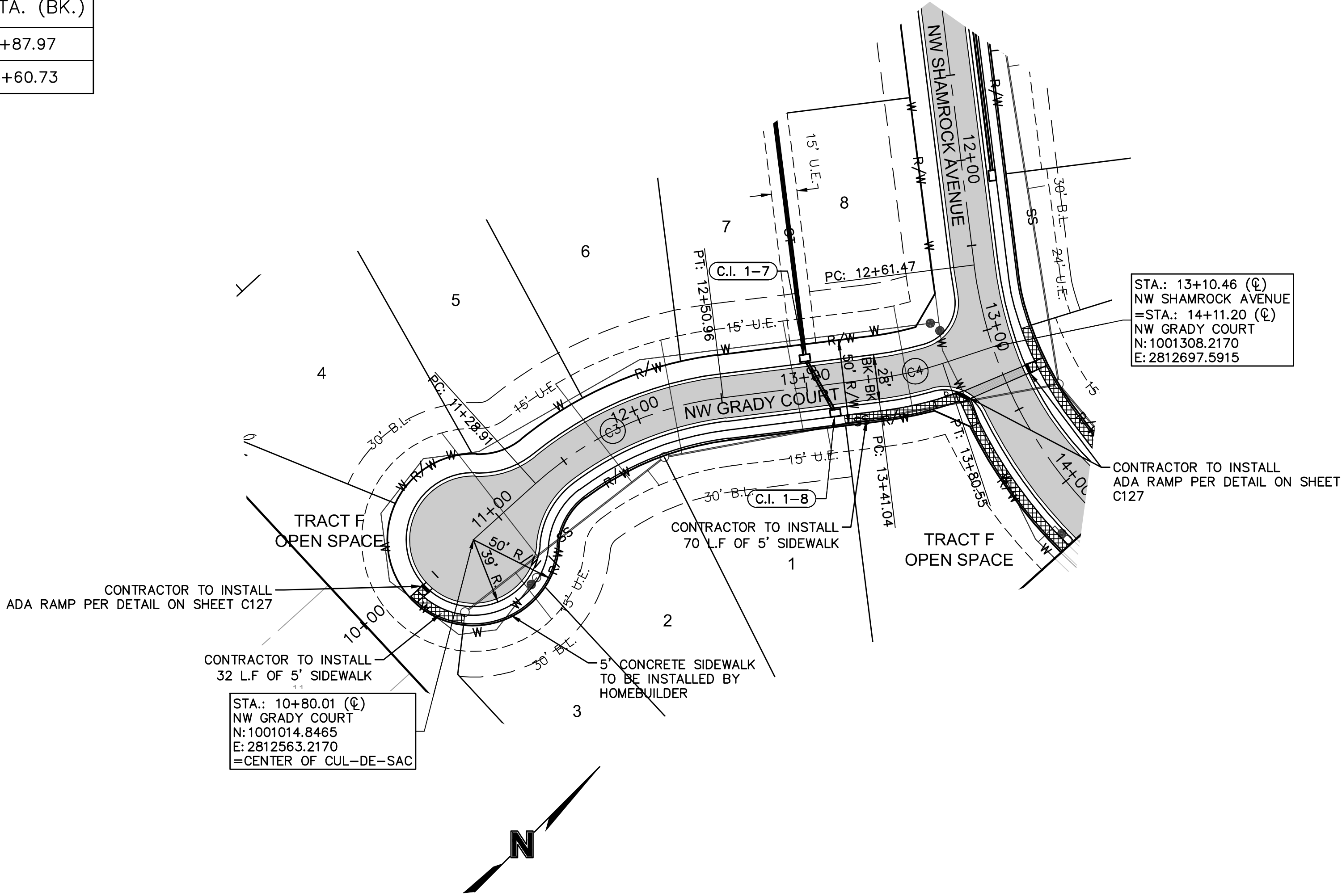
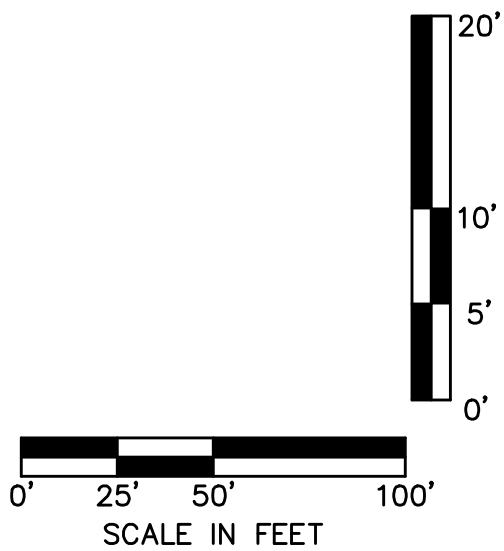
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER

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



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

LEGEND	
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER



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NORTH KANSAS CITY, MO 64116
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ROADWAY PLAN & PROFILE
STREET & STORM SEWER PLANS

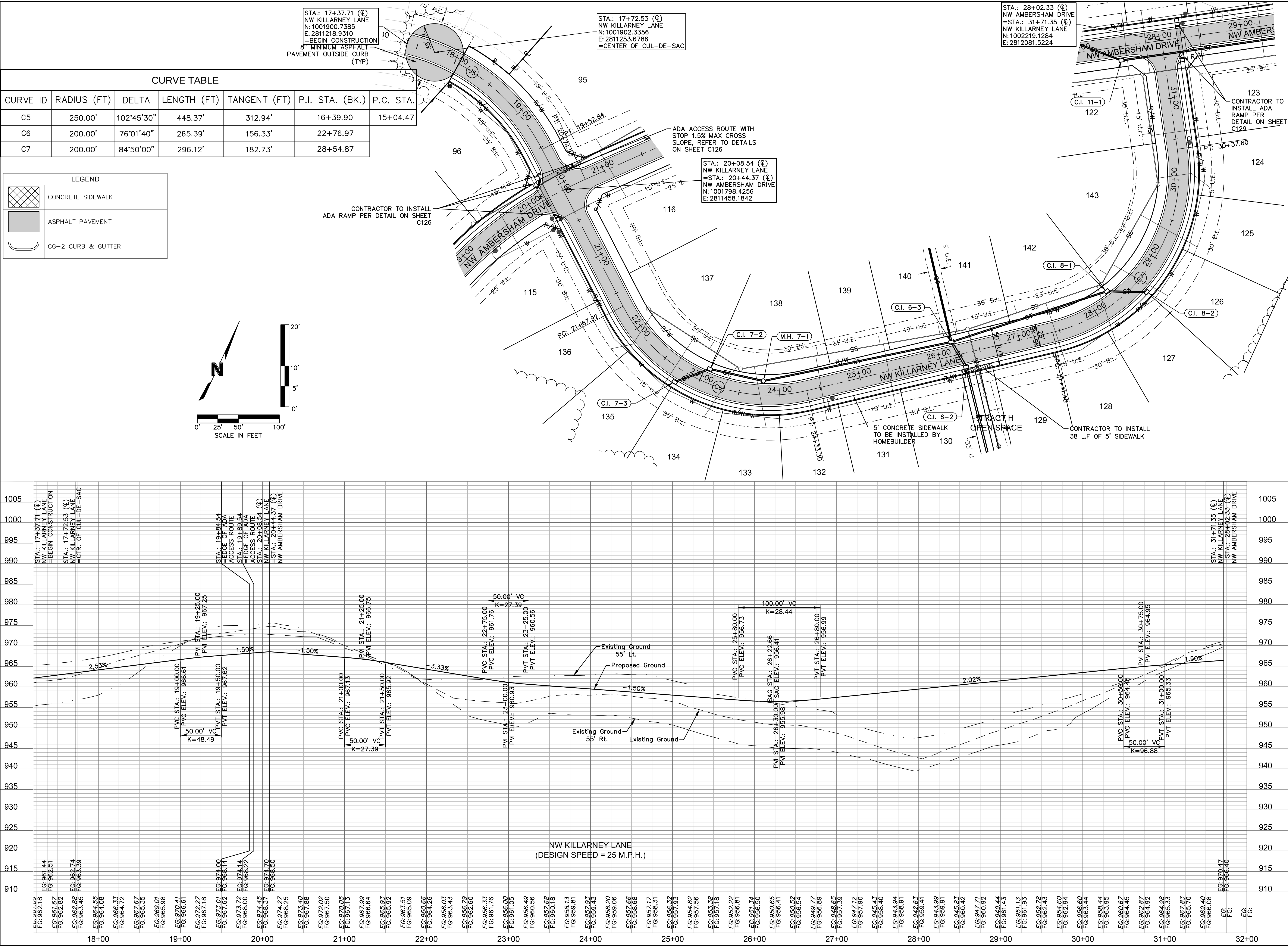
WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

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

2019

REVISIONS



olsson

NO. Certificate of Authority: 001892
303 E. Main Street, Suite 100
North Kansas City, MO 64116
TEL 816.861.1177
www.olsson.com

BY

NO. REV.

DATE

REVISIONS DESCRIPTION

ROADWAY PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

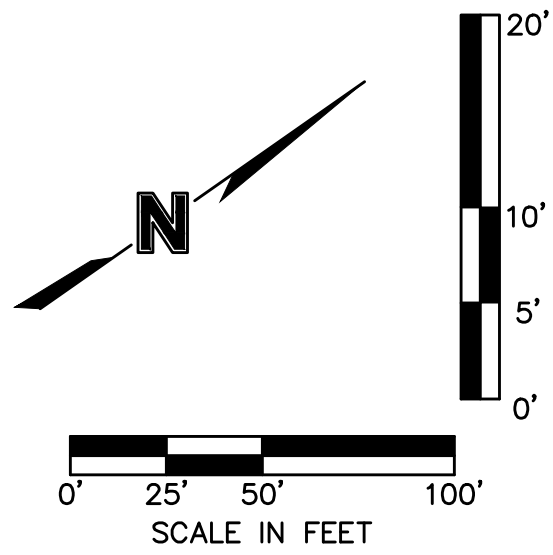
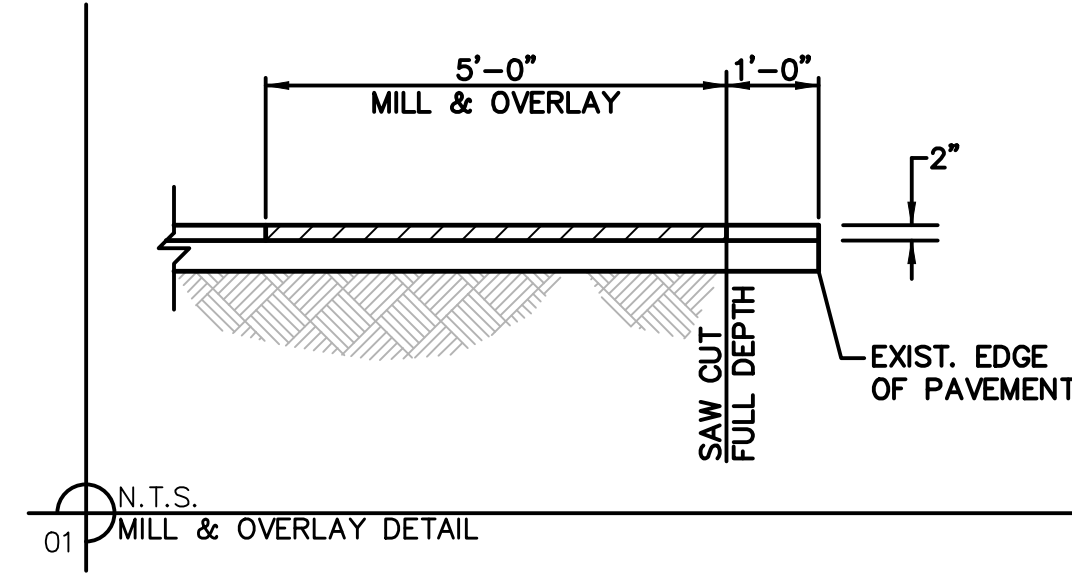
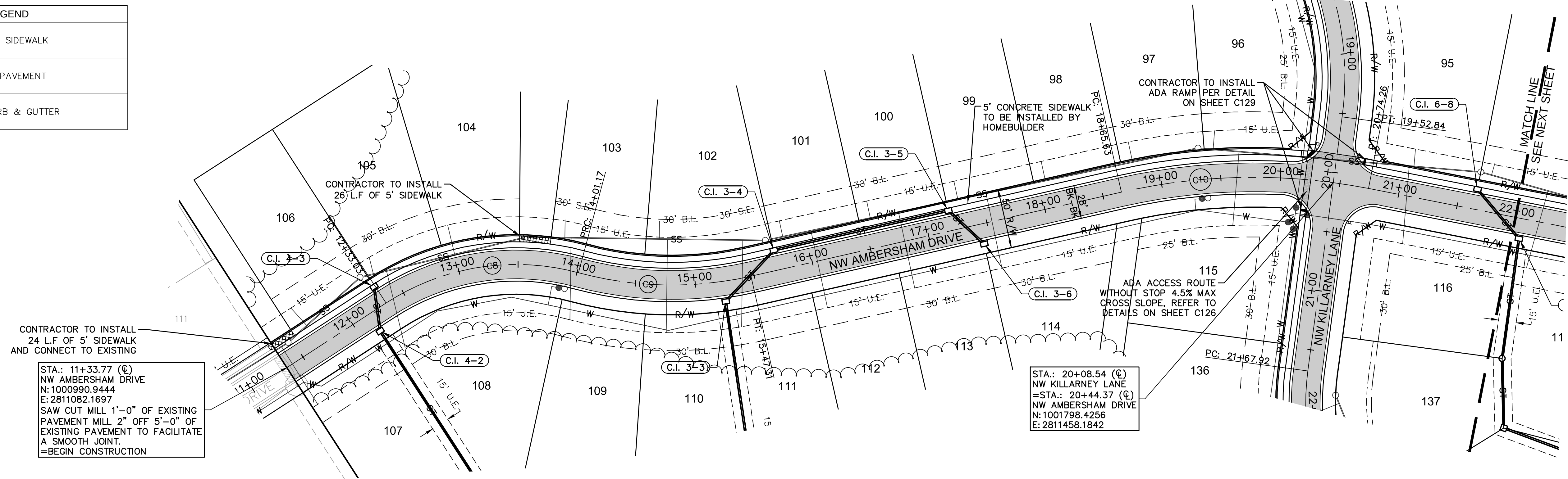
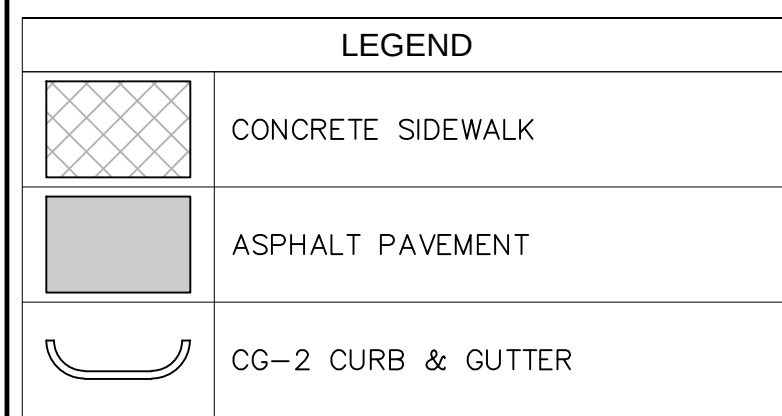
LEE'S SUMMIT, MO

2019

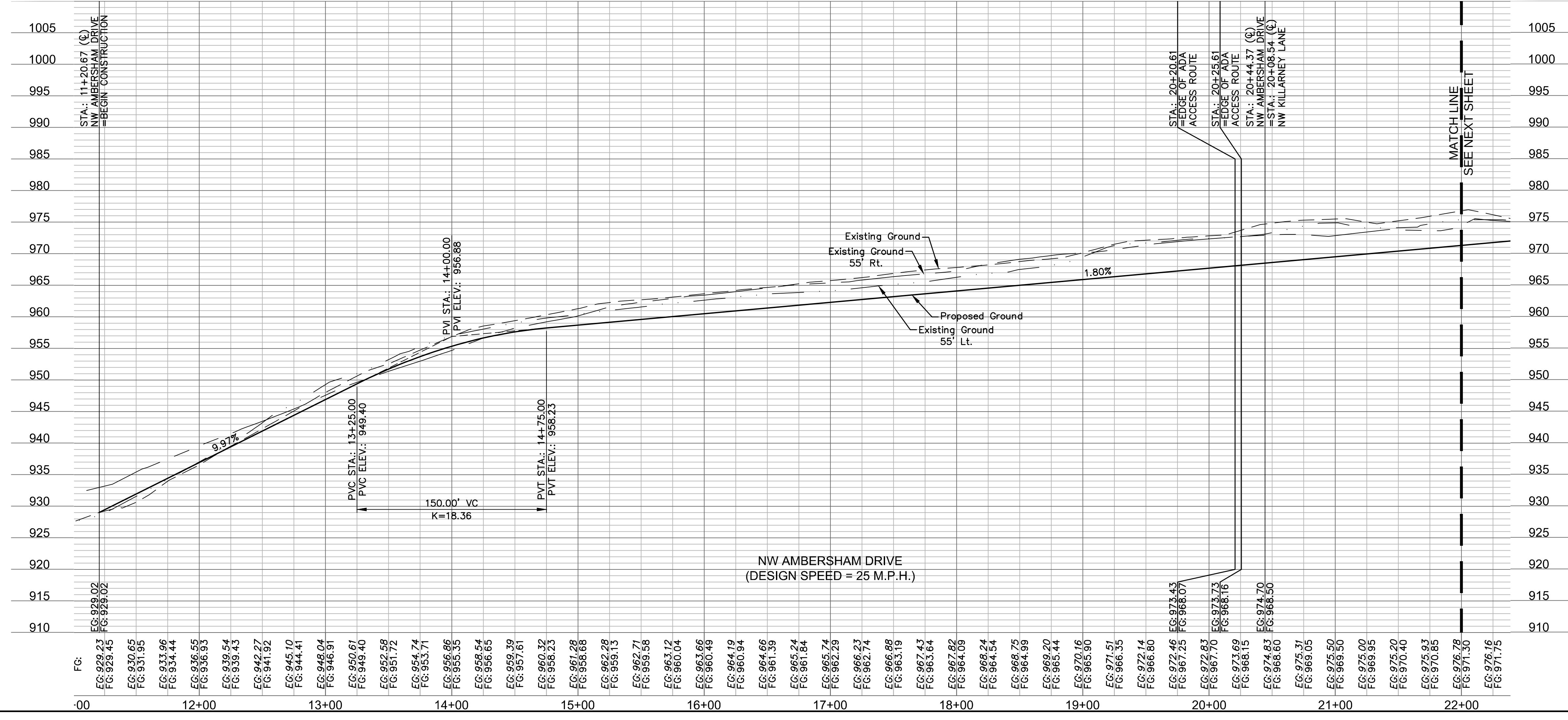
REVISIONS

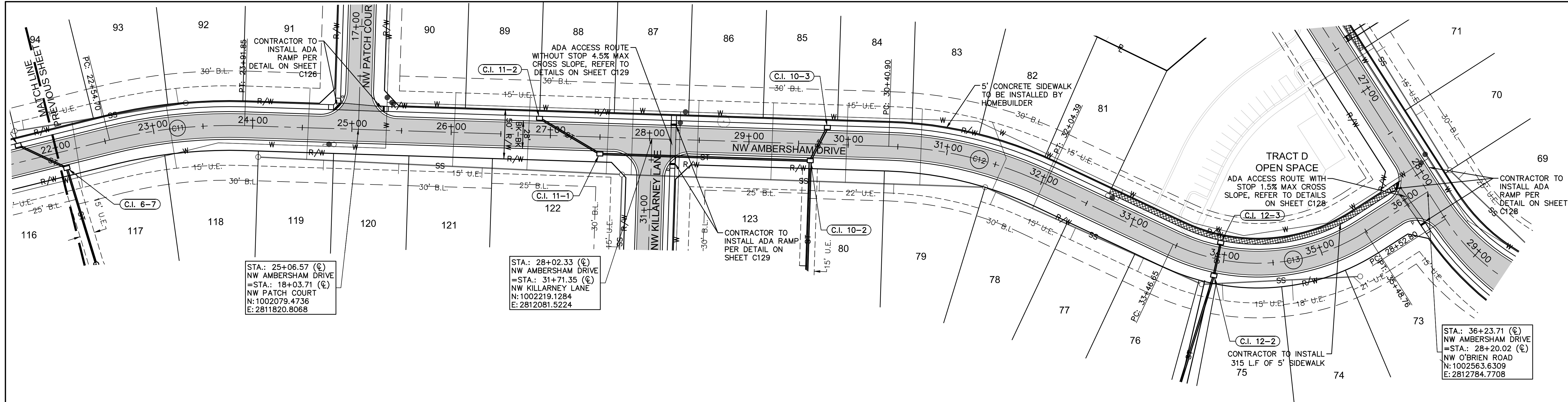
drawn by: D.A.H.O.
checked by: J.E.S.
designed by: S.M.S.
QA/QC by: M.G.B.
project no.: A18-1140
date: 2019.03.12

SHEET
C118

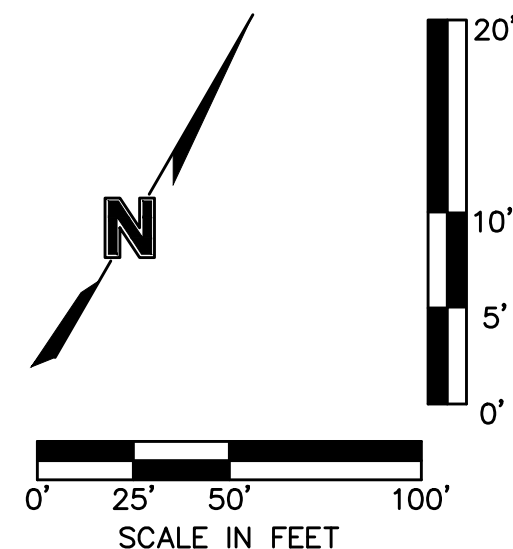


CURVE TABLE					
CURVE ID	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)
C8	200.00'	48°10'10"	168.14'	89.40'	13+11.77
C9	300.00'	37°54'40"	146.14'	74.55'	14+72.76
C10	500.00'	23°54'20"	208.62'	105.85'	19+68.41

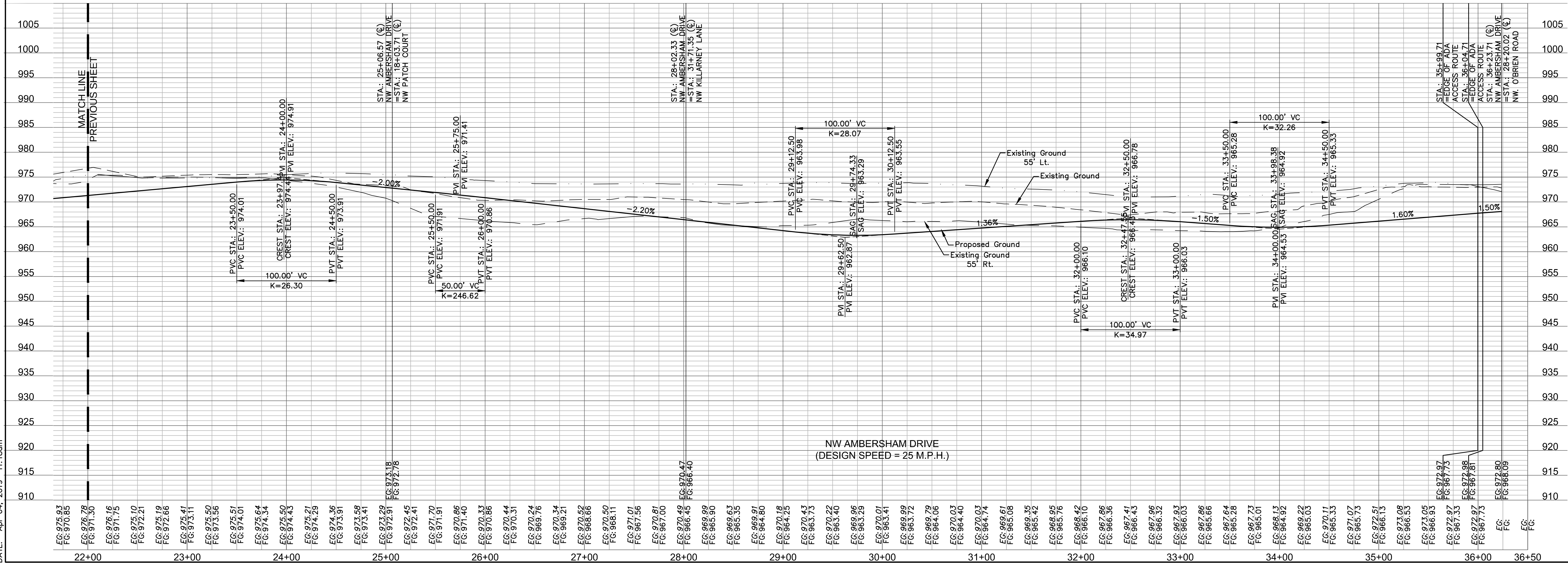




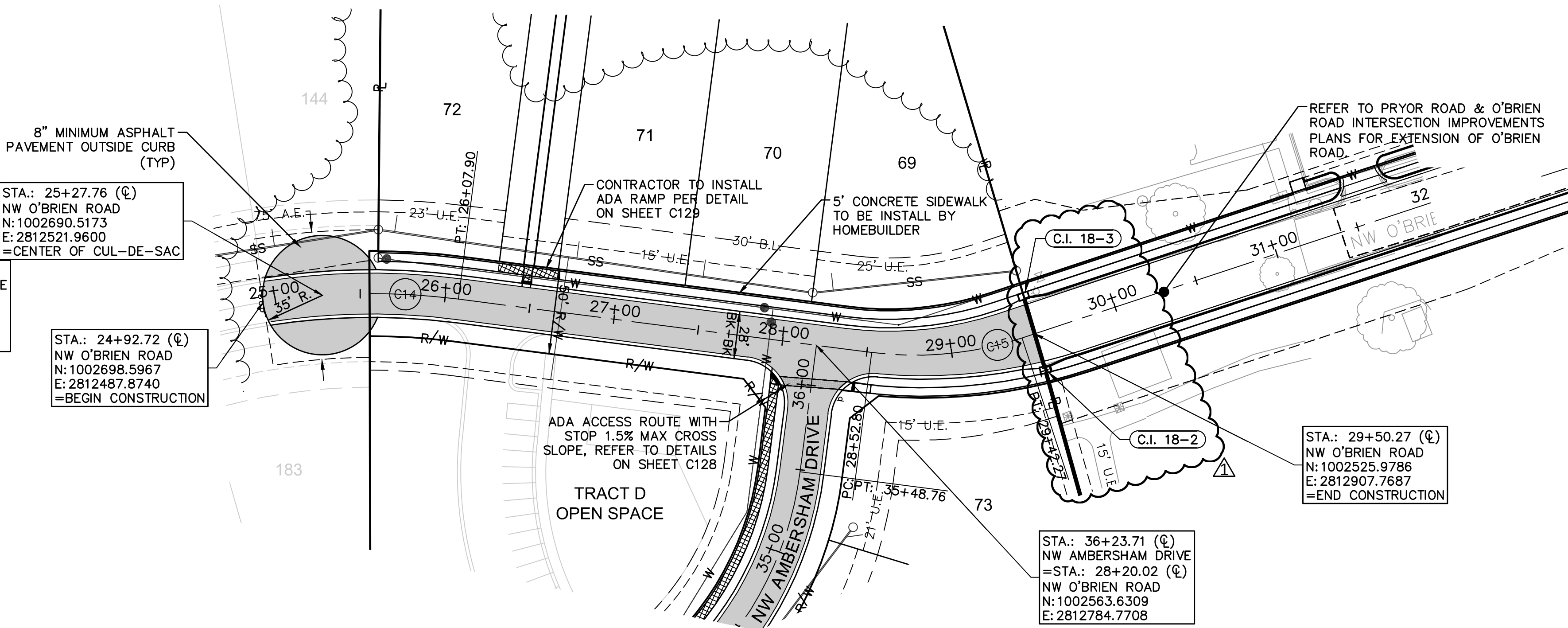
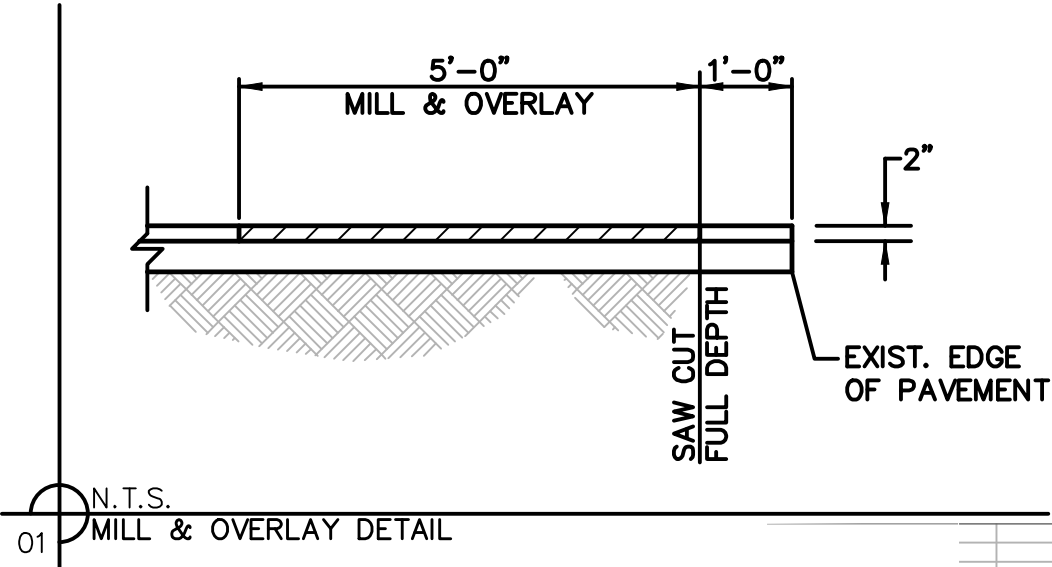
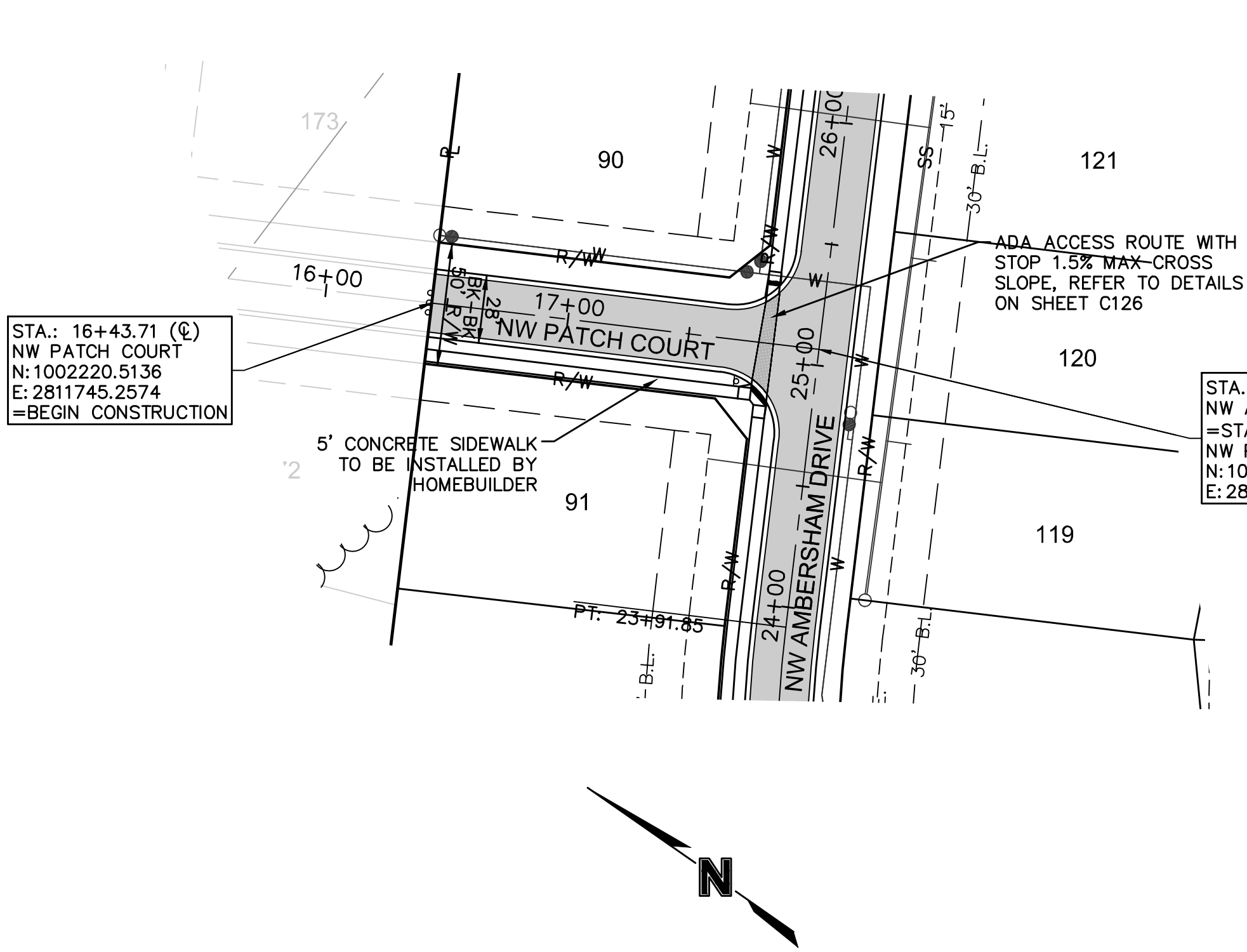
LEGEND	
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER



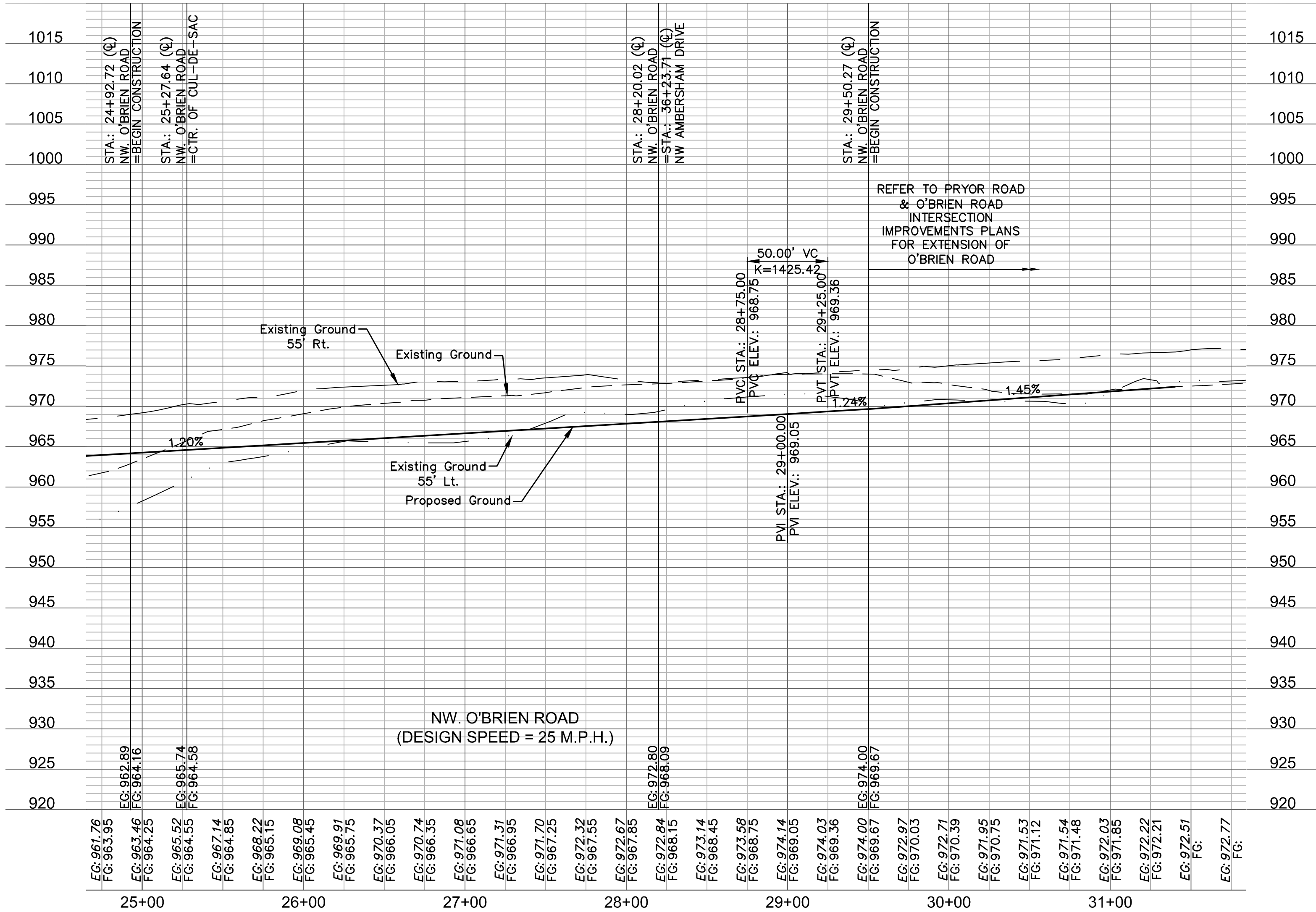
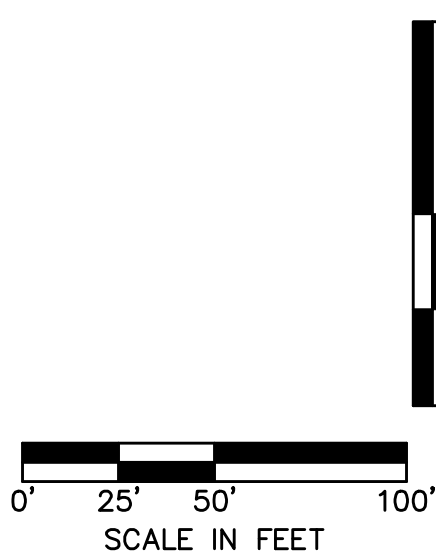
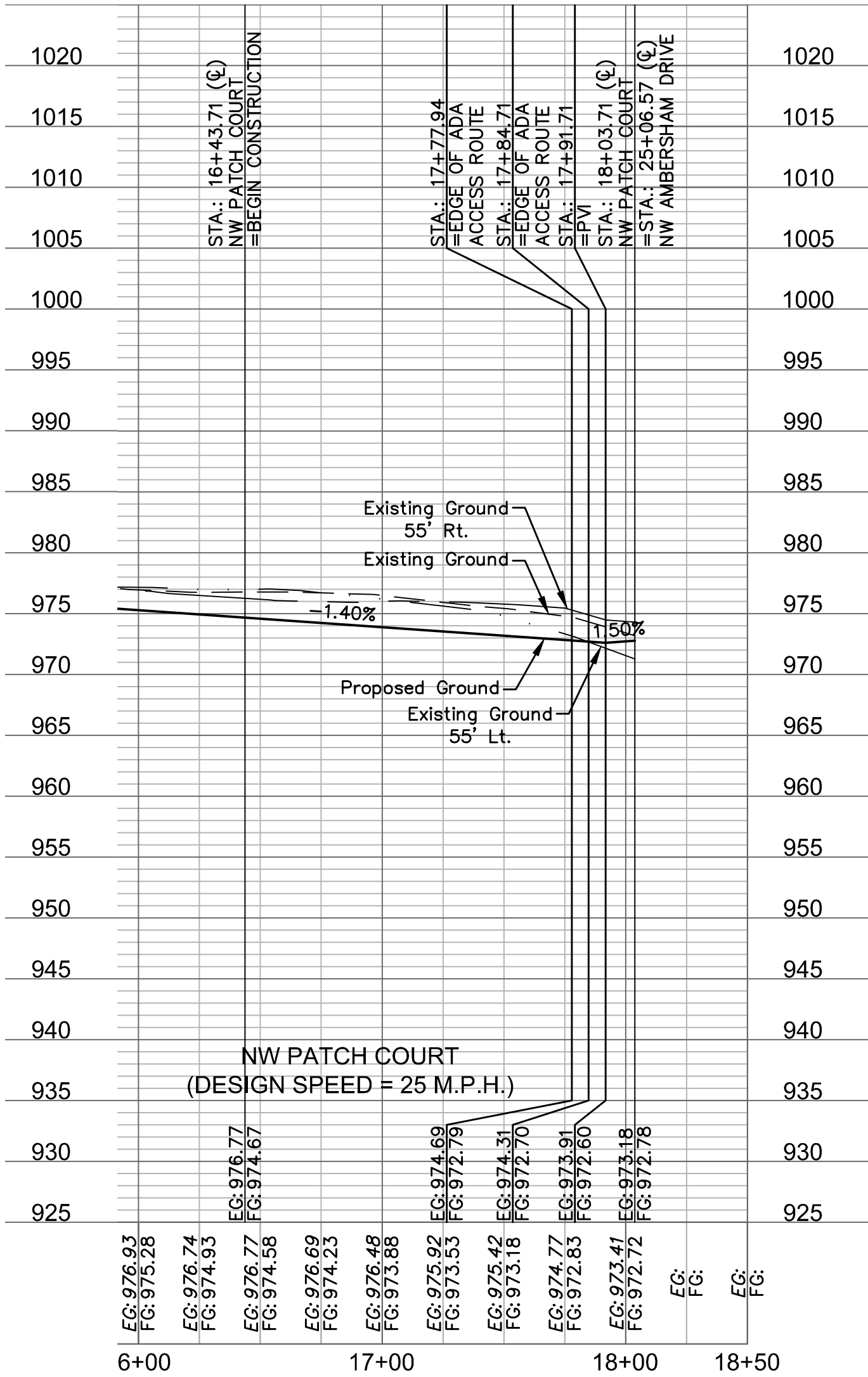
CURVE TABLE					
CURVE ID	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)
C11	500.00'	15°43'00"	137.15'	69.01'	23+22.84
C12	400.00'	23°25'00"	163.49'	82.90'	31+21.49
C13	200.00'	57°54'00"	202.11'	110.64'	34+38.12



LEGEND	
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER



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



NO. REV.

DATE

REVISIONS DESCRIPTION

BY

REVISED PER CITY COMMENTS

ROADWAY PLAN & PROFILE

STREET & STORM SEWER PLANS

WOODSIDE RIDGE

FIRST PLAT

LEE'S SUMMIT, MO

2019

REVISIONS

drawn by: D.A.H.O.

checked by: J.E.S.

designed by: S.M.S.

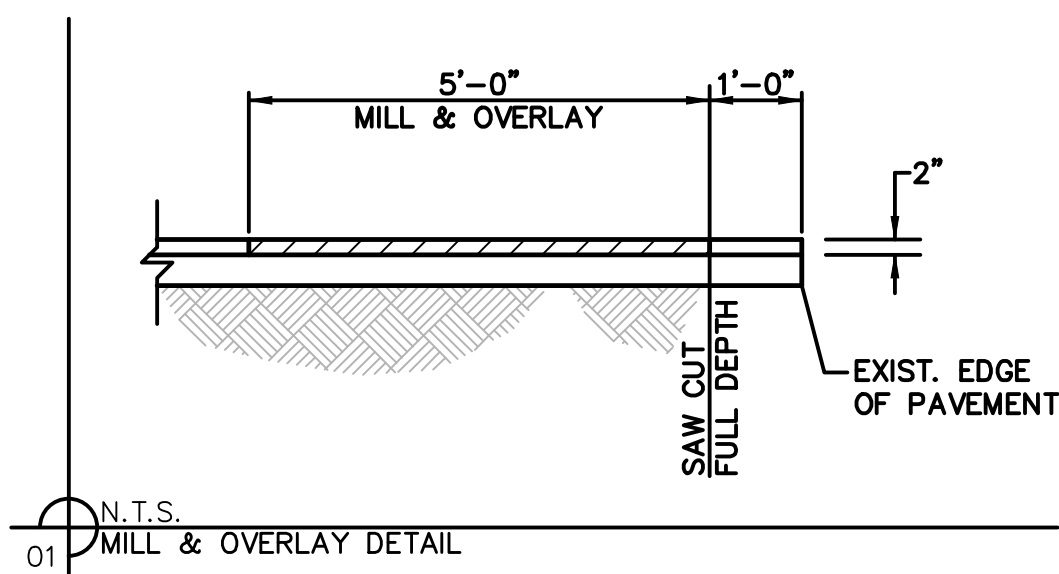
QA/QC by: M.G.D.

project no.: A18-1140

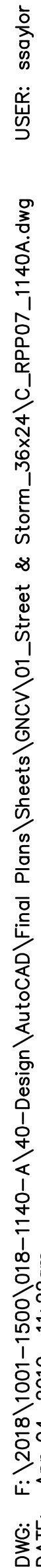
date: 2019.03.12

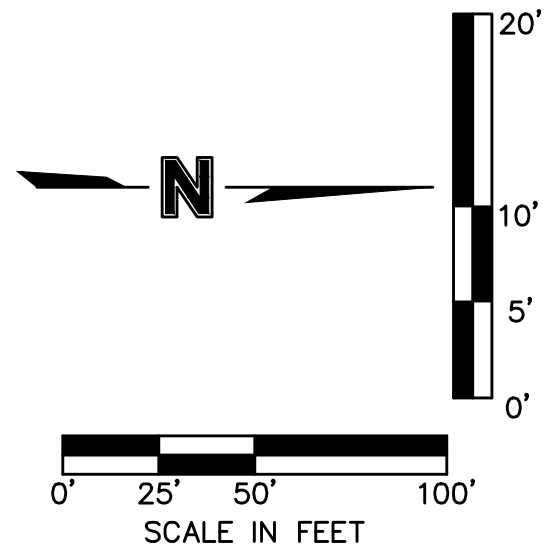
SHEET

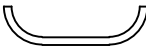
C121

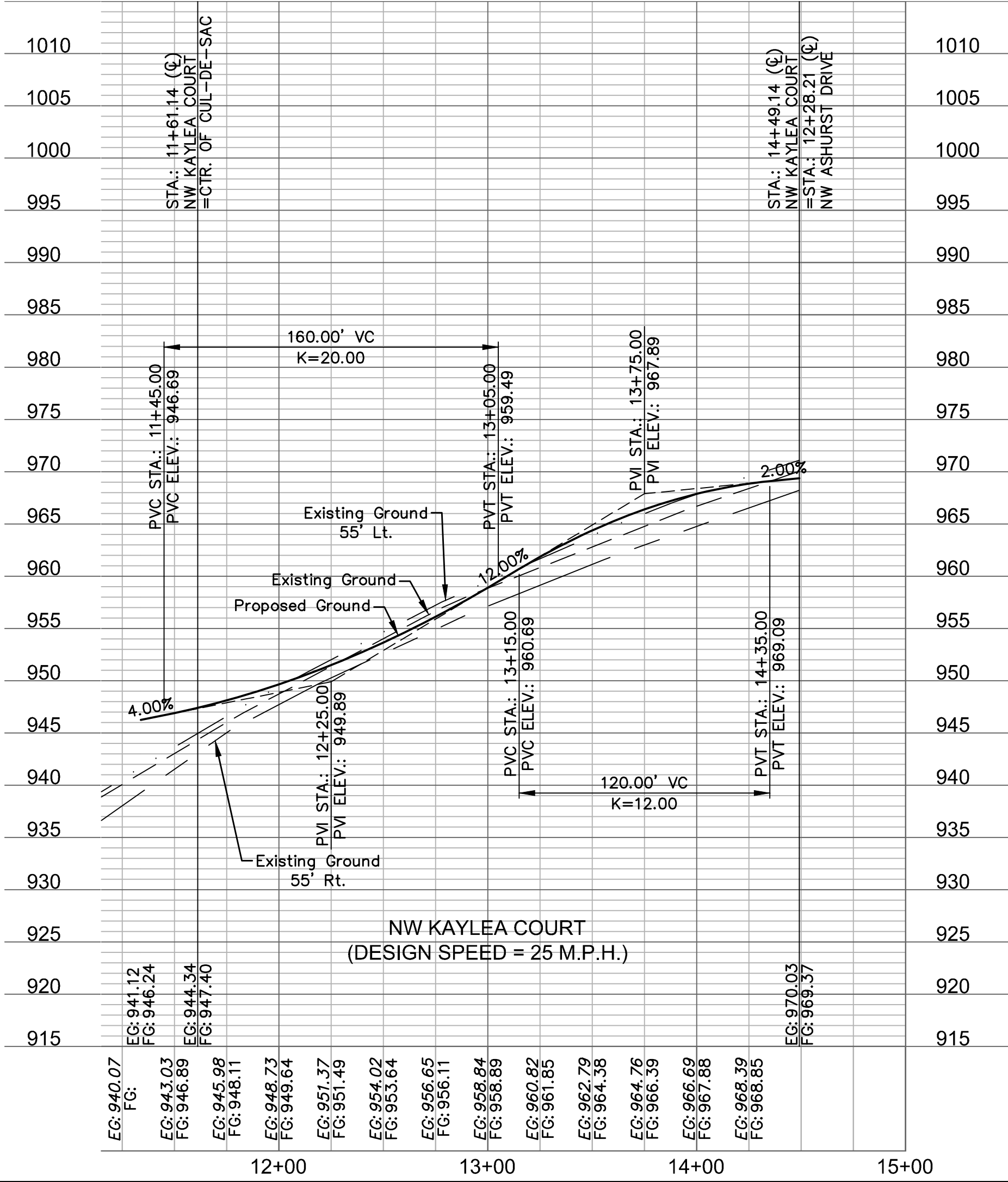
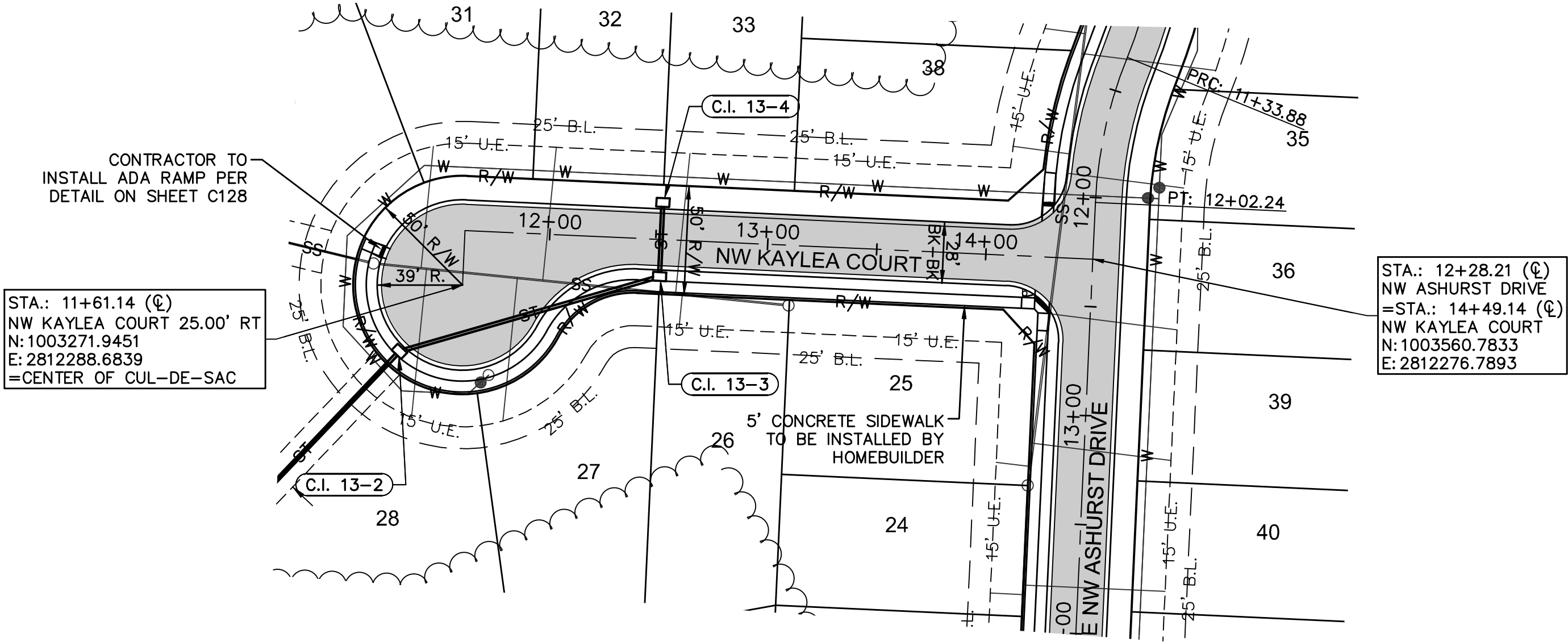


CURVE TABLE					
CURVE ID	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)
C16	200.00'	21°42'50"	75.80'	38.36'	10+95.52
C17	200.00'	19°35'00"	68.36'	68.36'	11+33.88
C18	200.00'	42°29'30"	148.32'	77.76'	16+36.36
C19	200.00'	43°36'10"	152.20'	80.00'	17+86.33





LEGEND	
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER



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

SHEET
C123

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

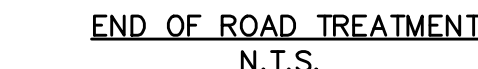
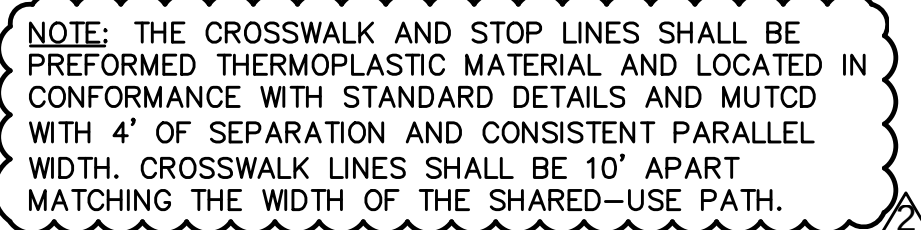
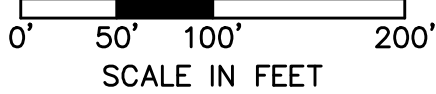
2019

REVISIONS

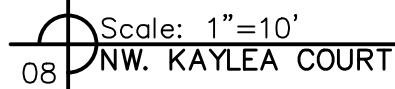
NO. REV.	DATE	REVISIONS DESCRIPTION	BY

olsson

NO. 36, Suite 101, of Ashurst at 101.892
3601 E. Ashurst Street, Suite 101
NORTH KANSAS CITY, MO 64116
TEL. 816.981.1177
www.olson.com

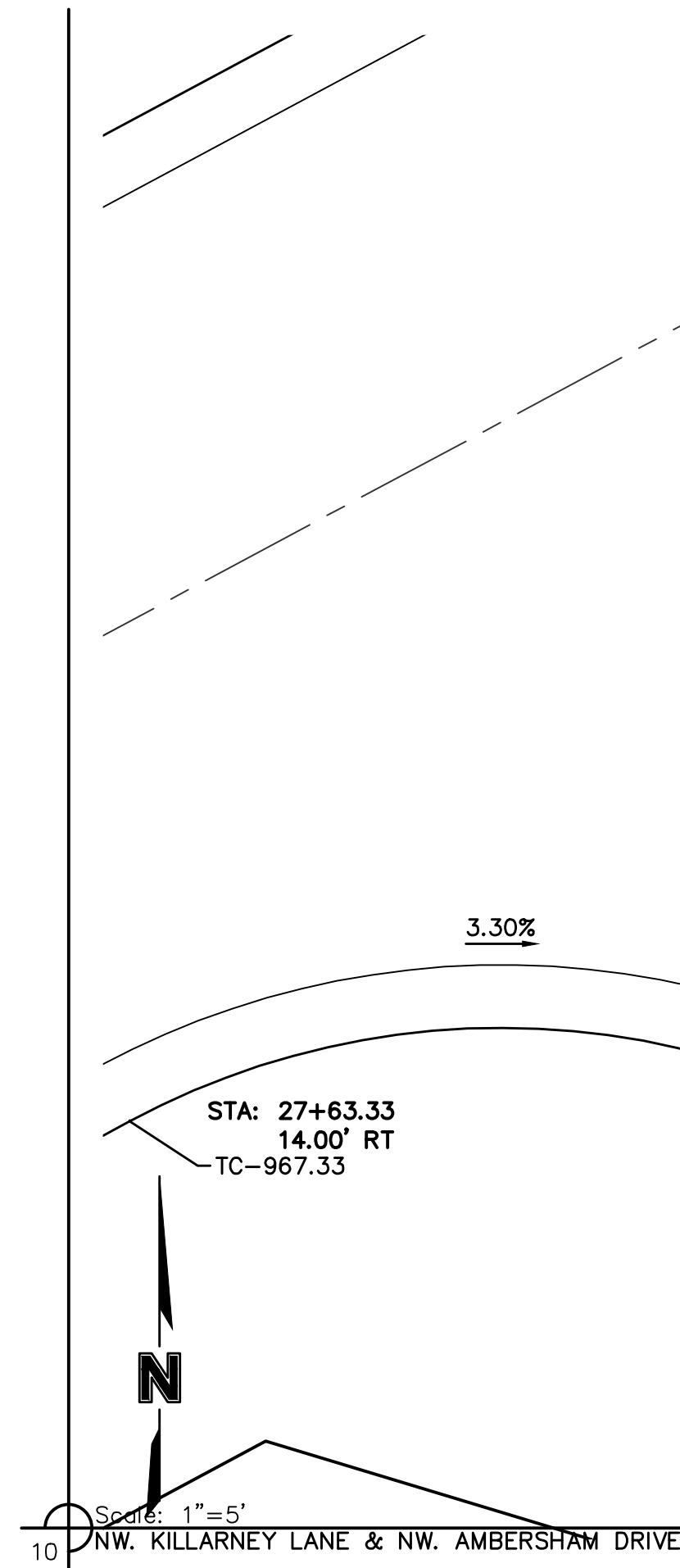
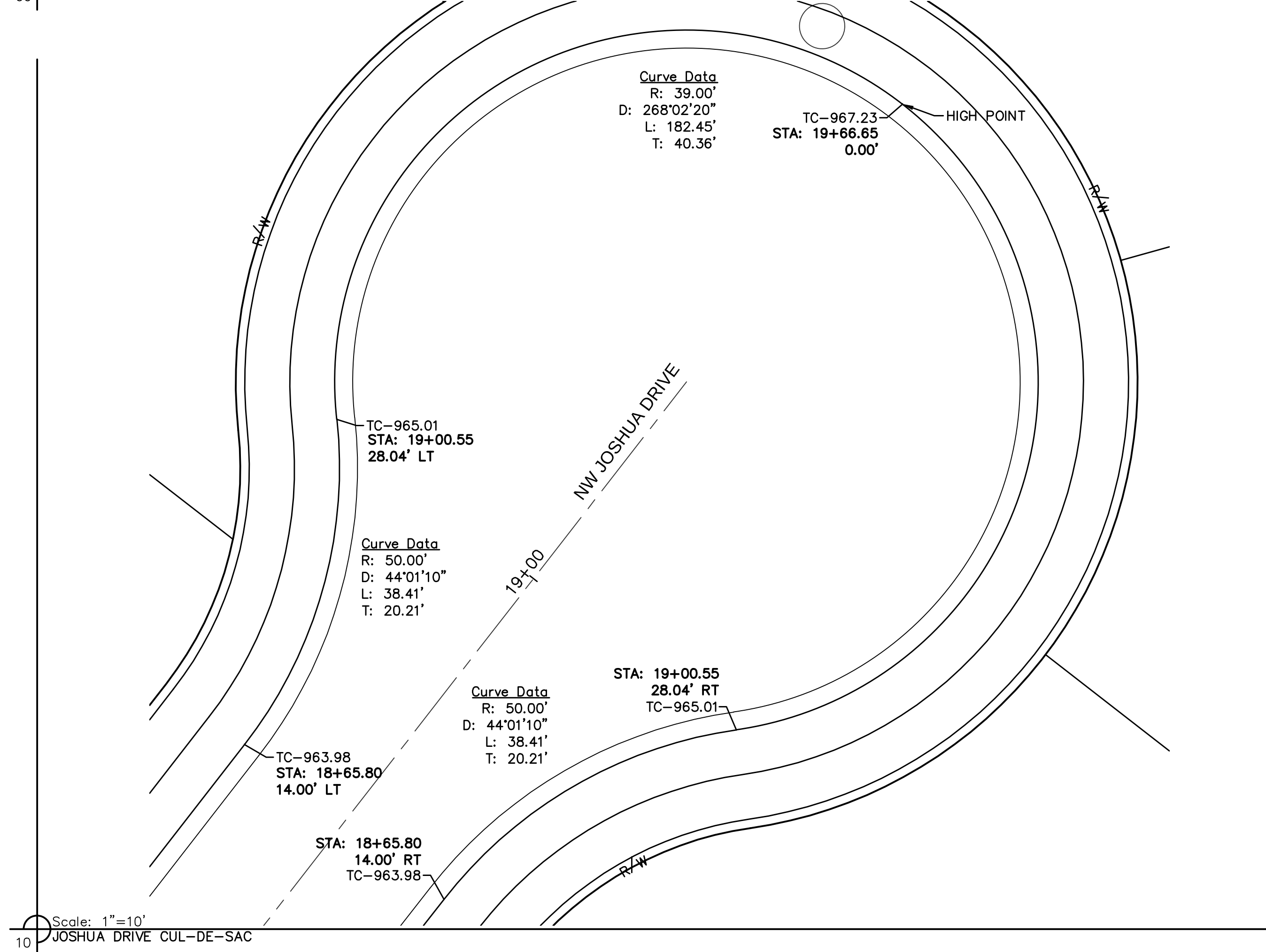


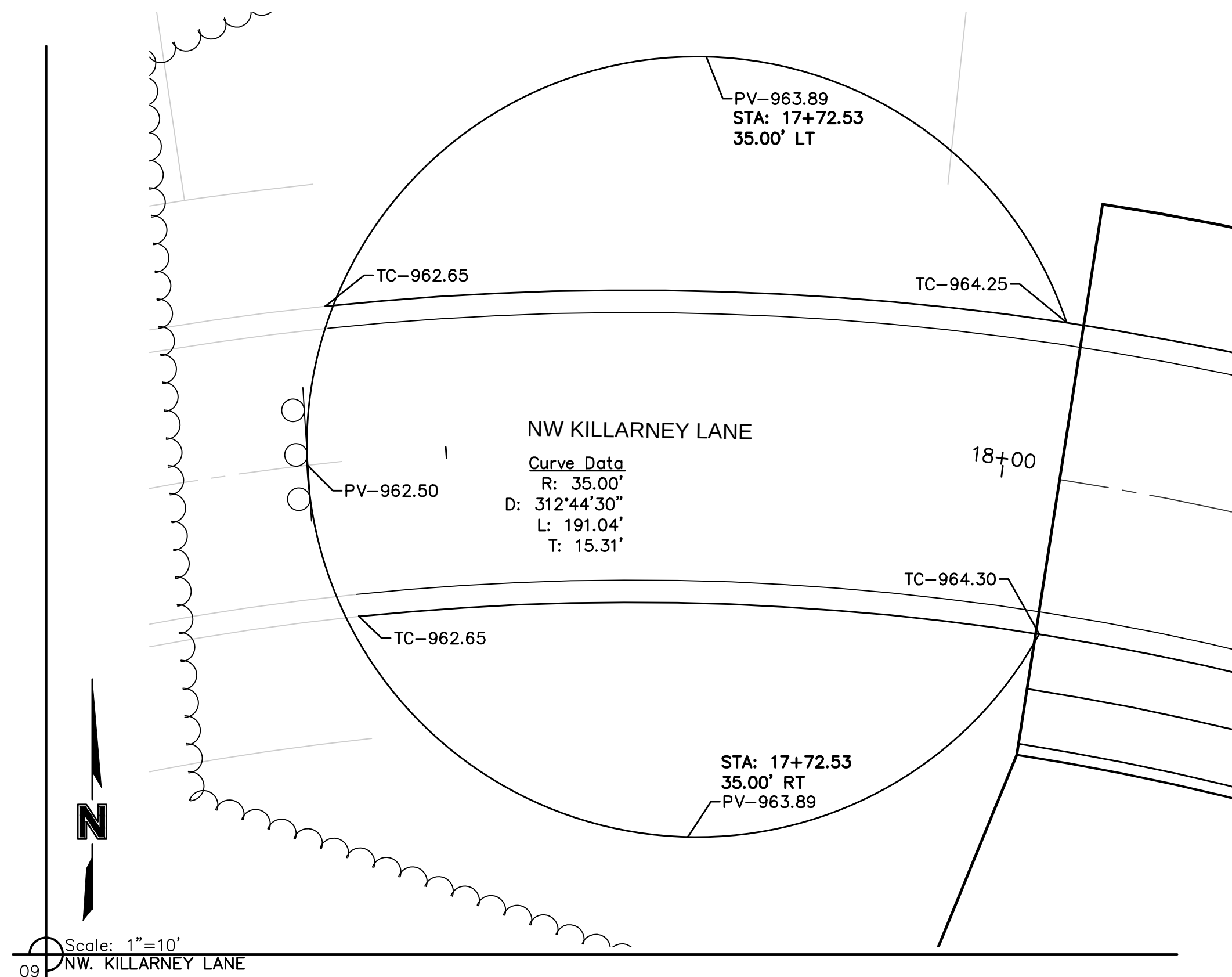
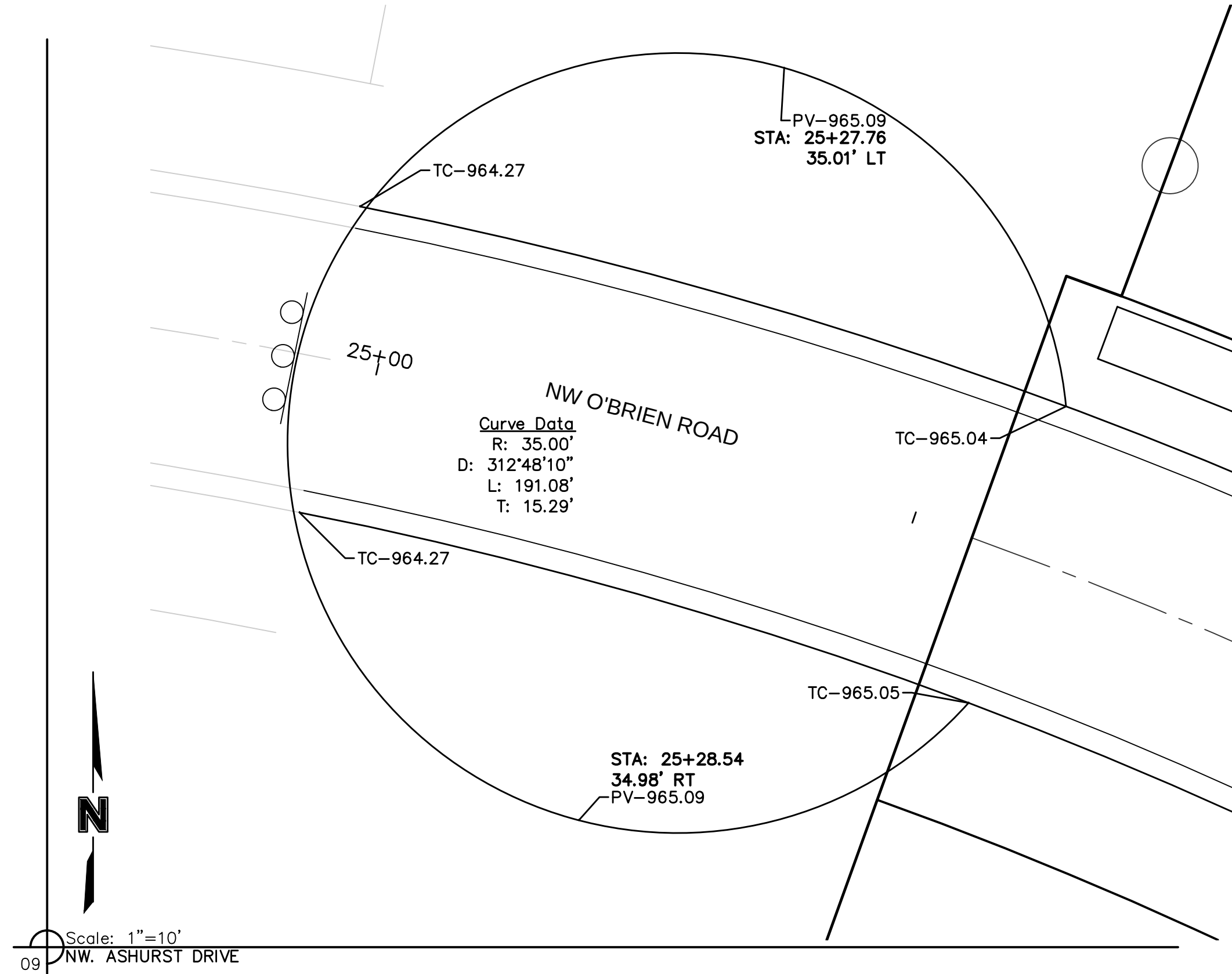
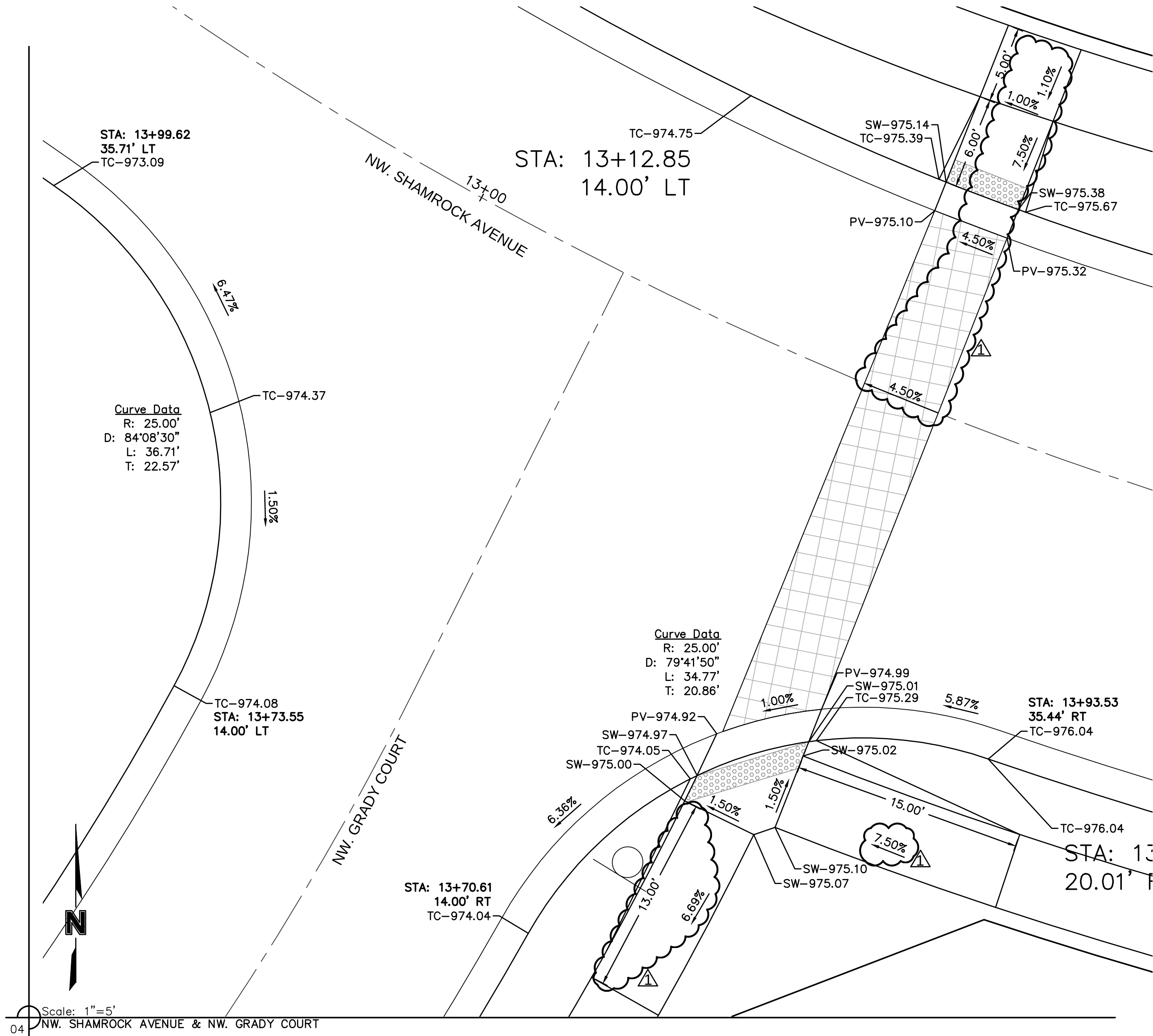
OBJECT MARKERS (TYPE OM4-3, 18"x18")
ARE TO BE INSTALLED 2' FROM END OF
PROPOSED PAVEMENT.



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





INTERSECTION DETAILS
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

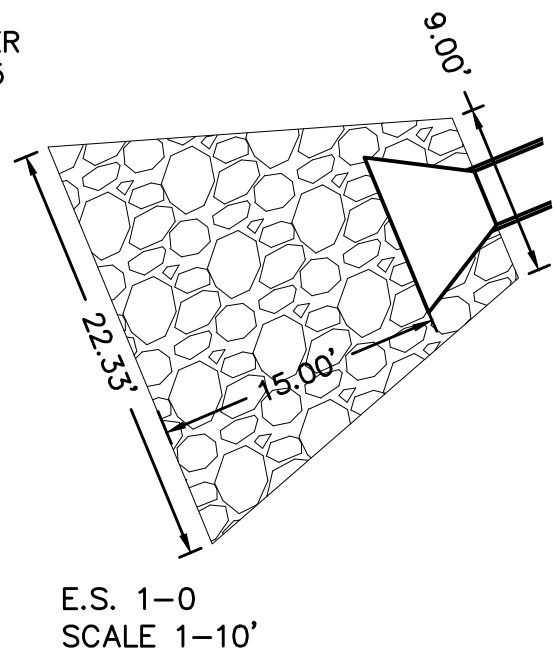
2019

NO.	REV.	DATE	DESCRIPTION
1	A	4/2/2019	REVISED PER CITY COMMENTS
2			
3			
4			
5			
6			
7			
8			
9			
10			

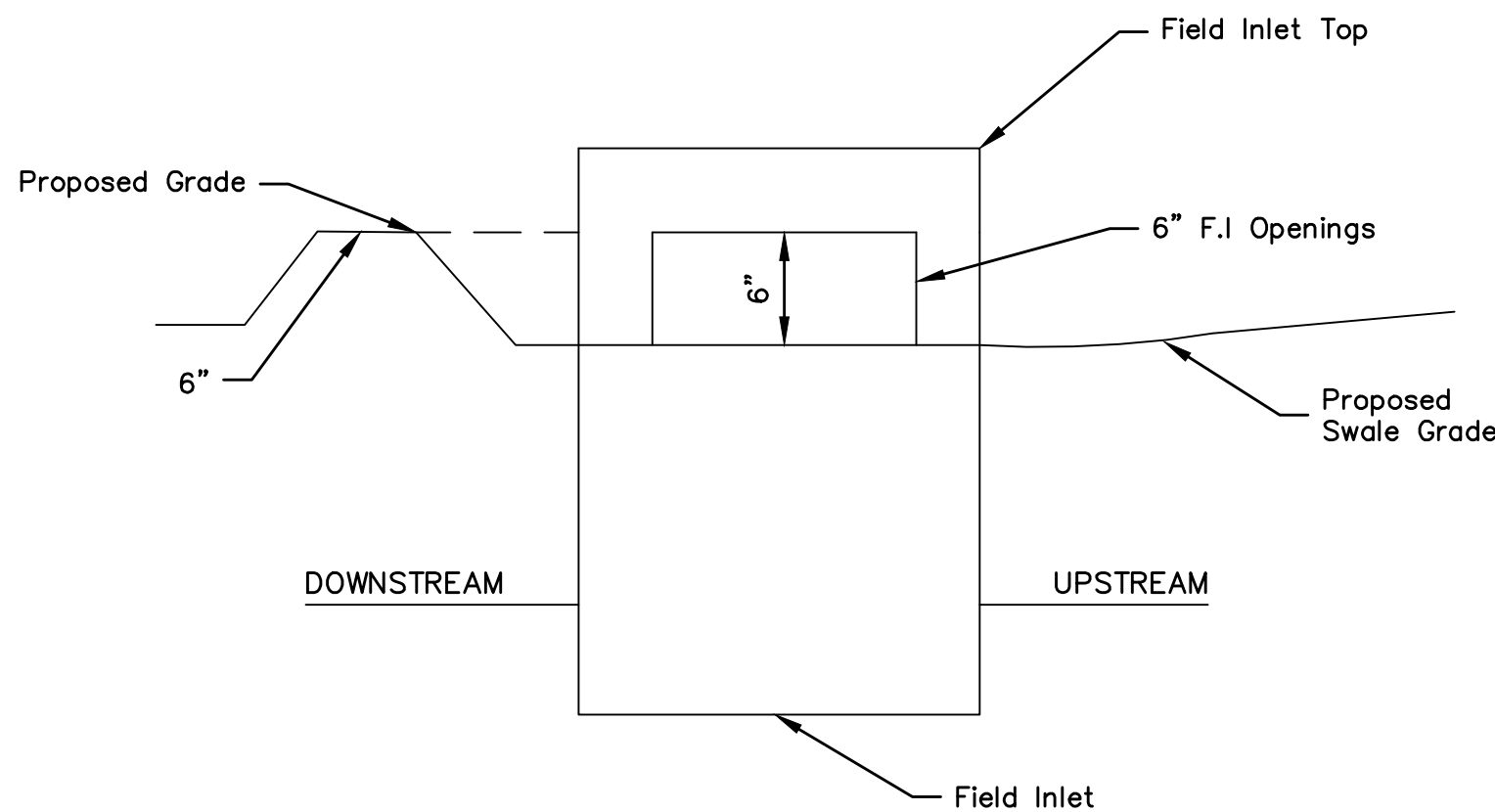
BY	DATE

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

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

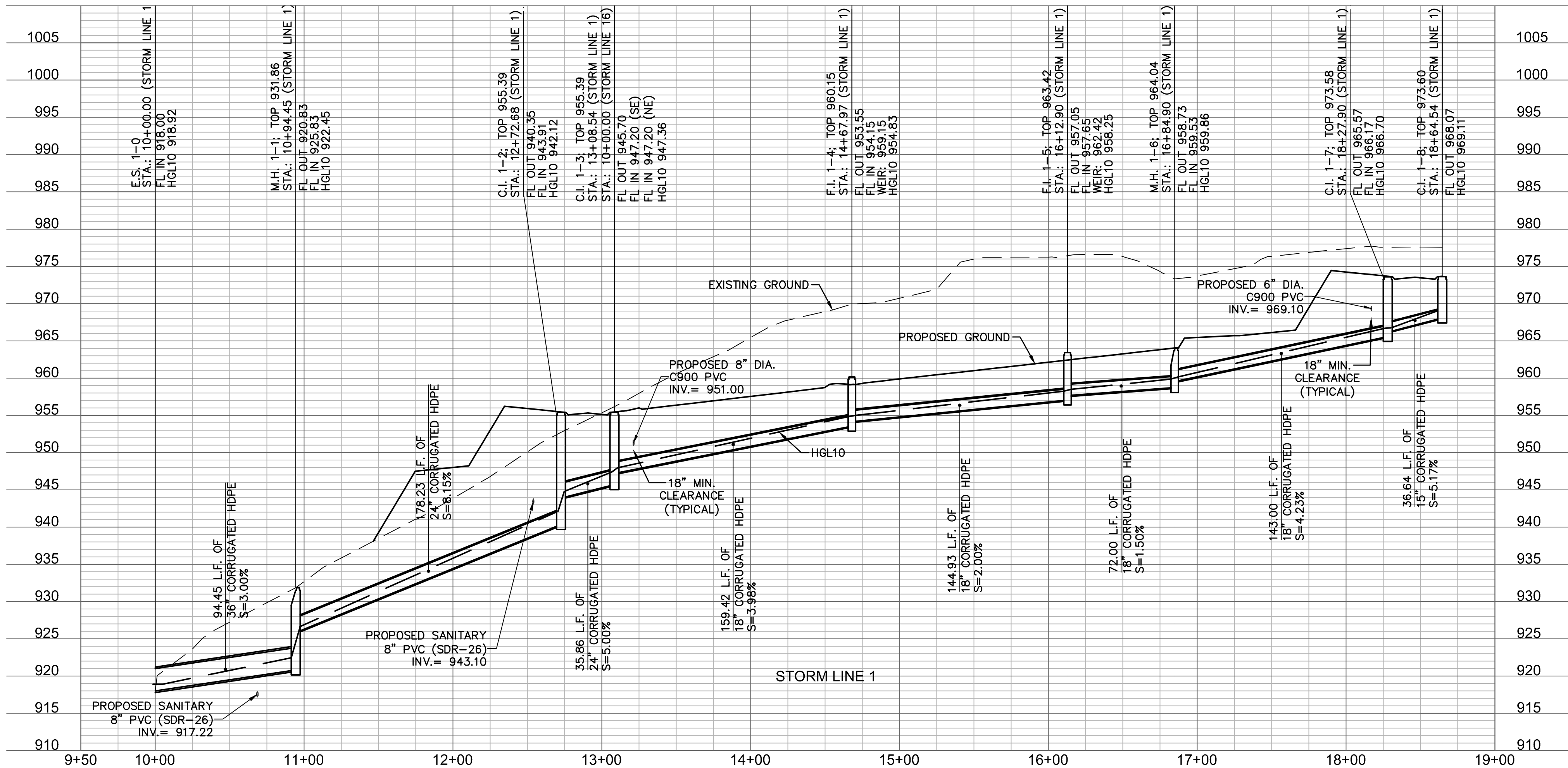
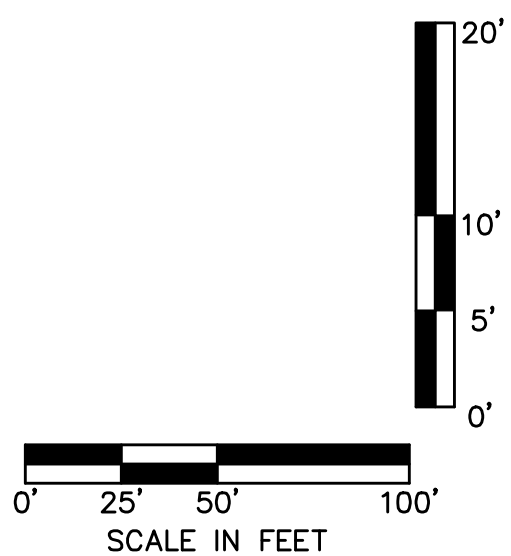


E.S. 1-0
SCALE 1-10'



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.

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

REVISIONS DESCRIPTION

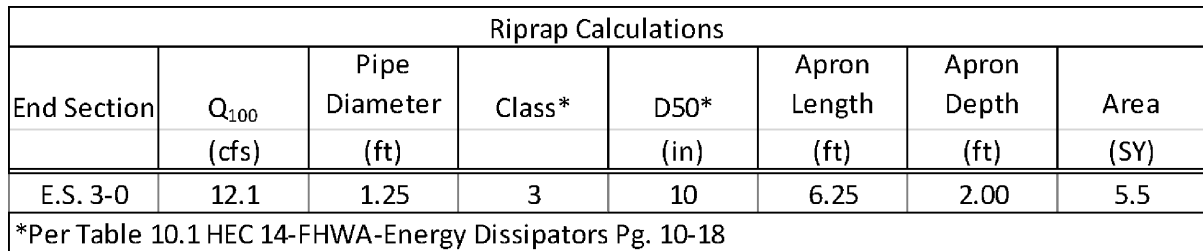
BY

NO. REV. DATE

REVISIONS

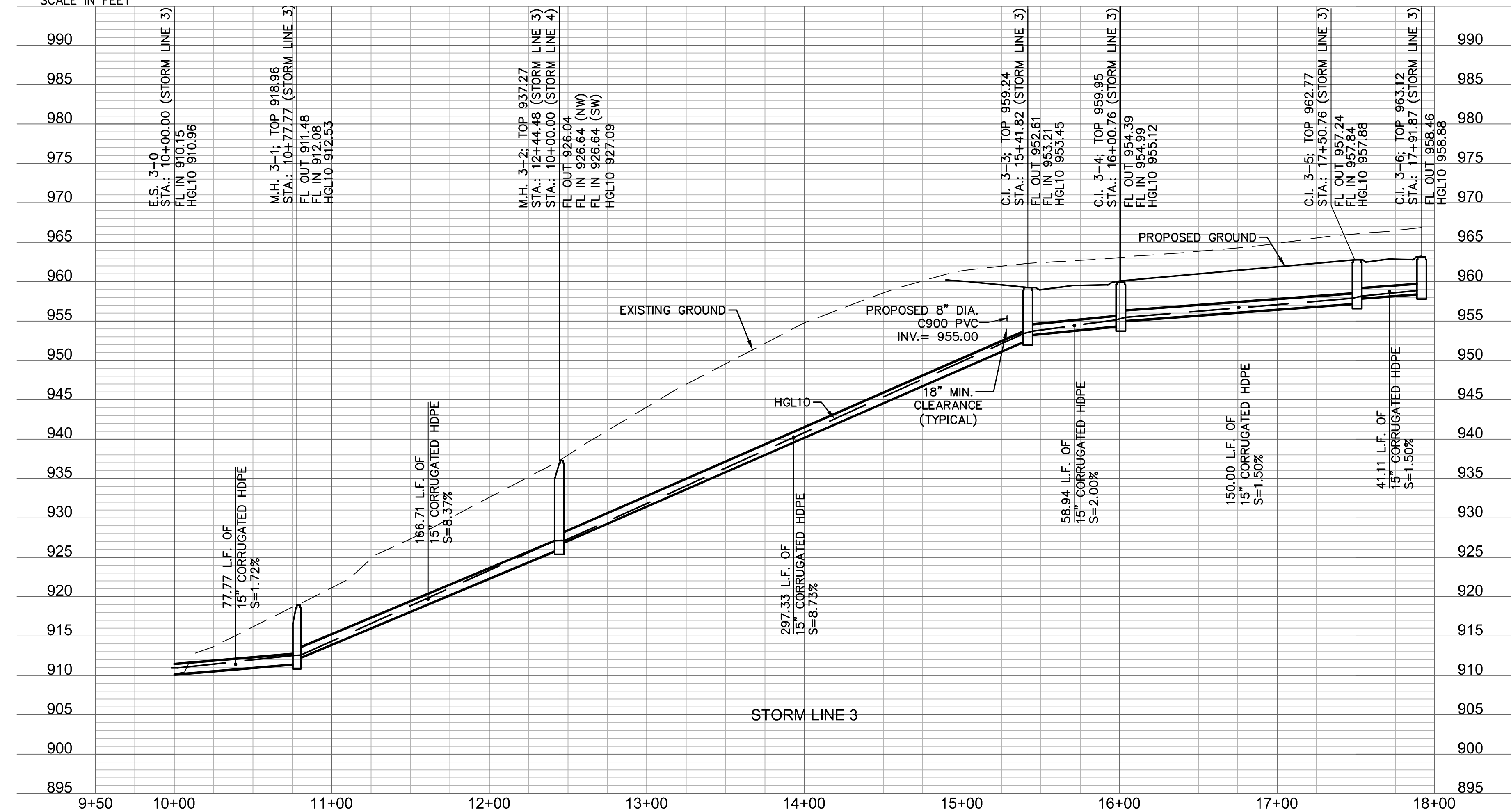
olsson

NO. 018-1140-001
300 E. MAIN ST., SUITE 100
NORTH KANSAS CITY, MO 64116
TEL. 816.861.1177
WWW.OLSSON.COM



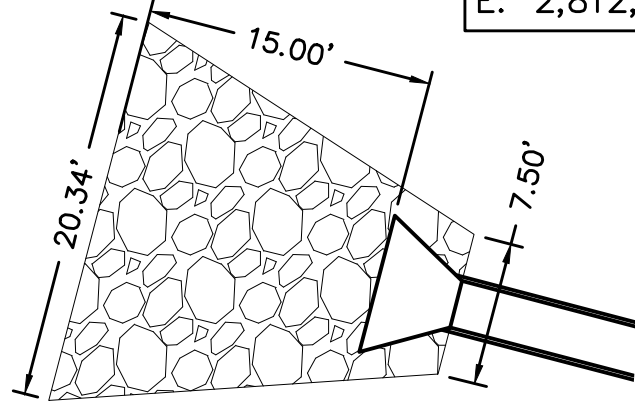
Riprap Calculations							
End Section	Q ₁₀₀ (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. 2-0	16.16	1.5	3	10	7.5	2.00	7.3

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



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

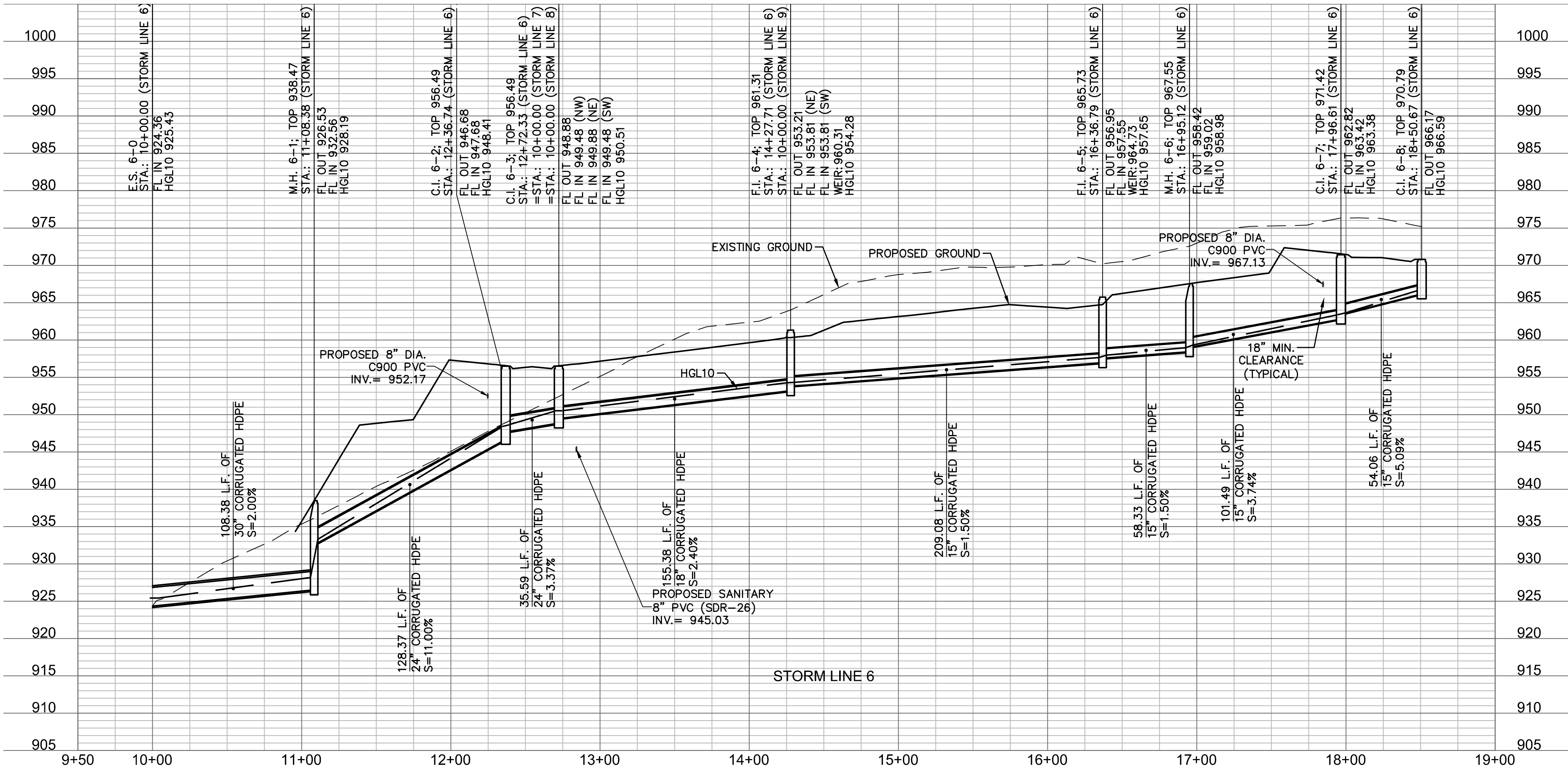




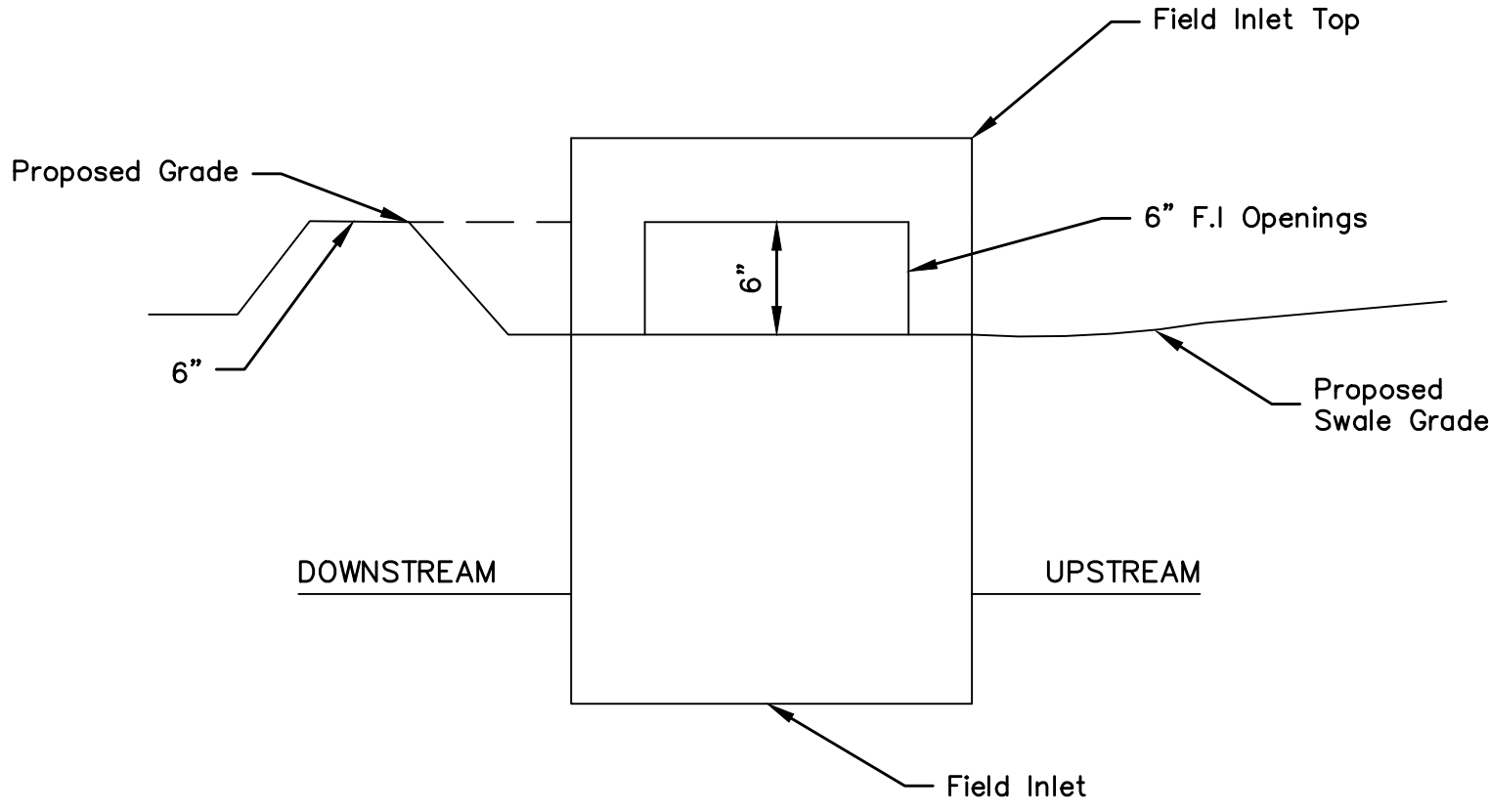
E.S. 6-0
SCALE 1-10'

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

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



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



F.I. SUMP DETAIL
NOT TO SCALE

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

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

REVISIONS DESCRIPTION

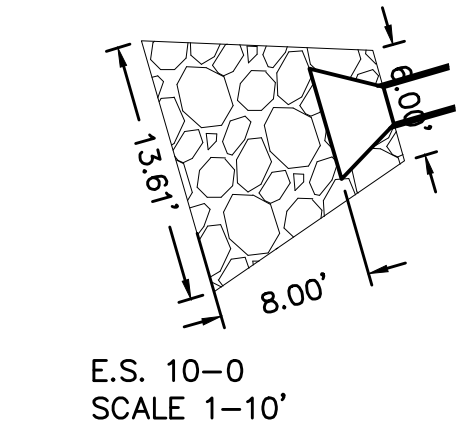
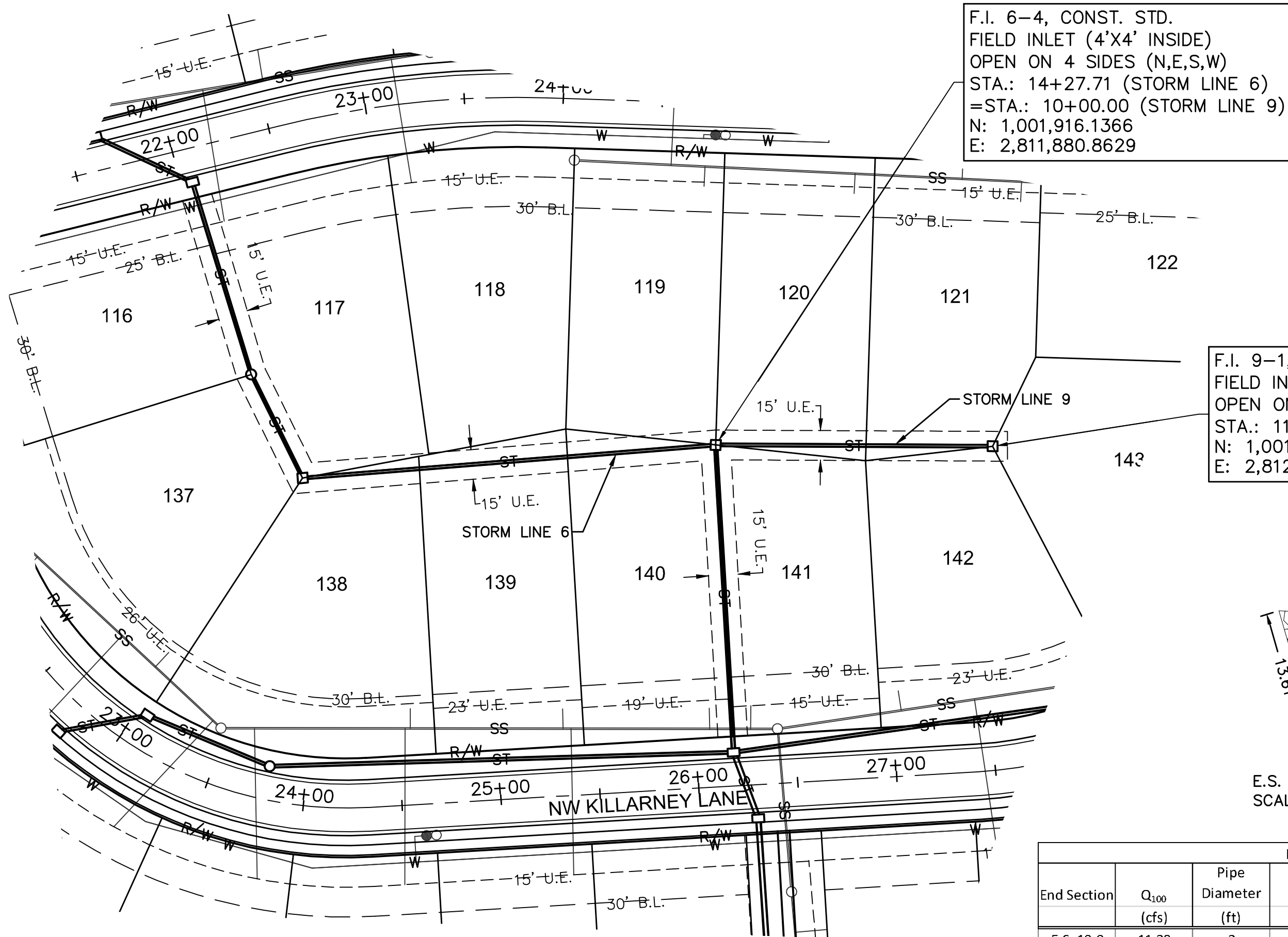
BY

NO. REV. DATE

REVISIONS

olsson

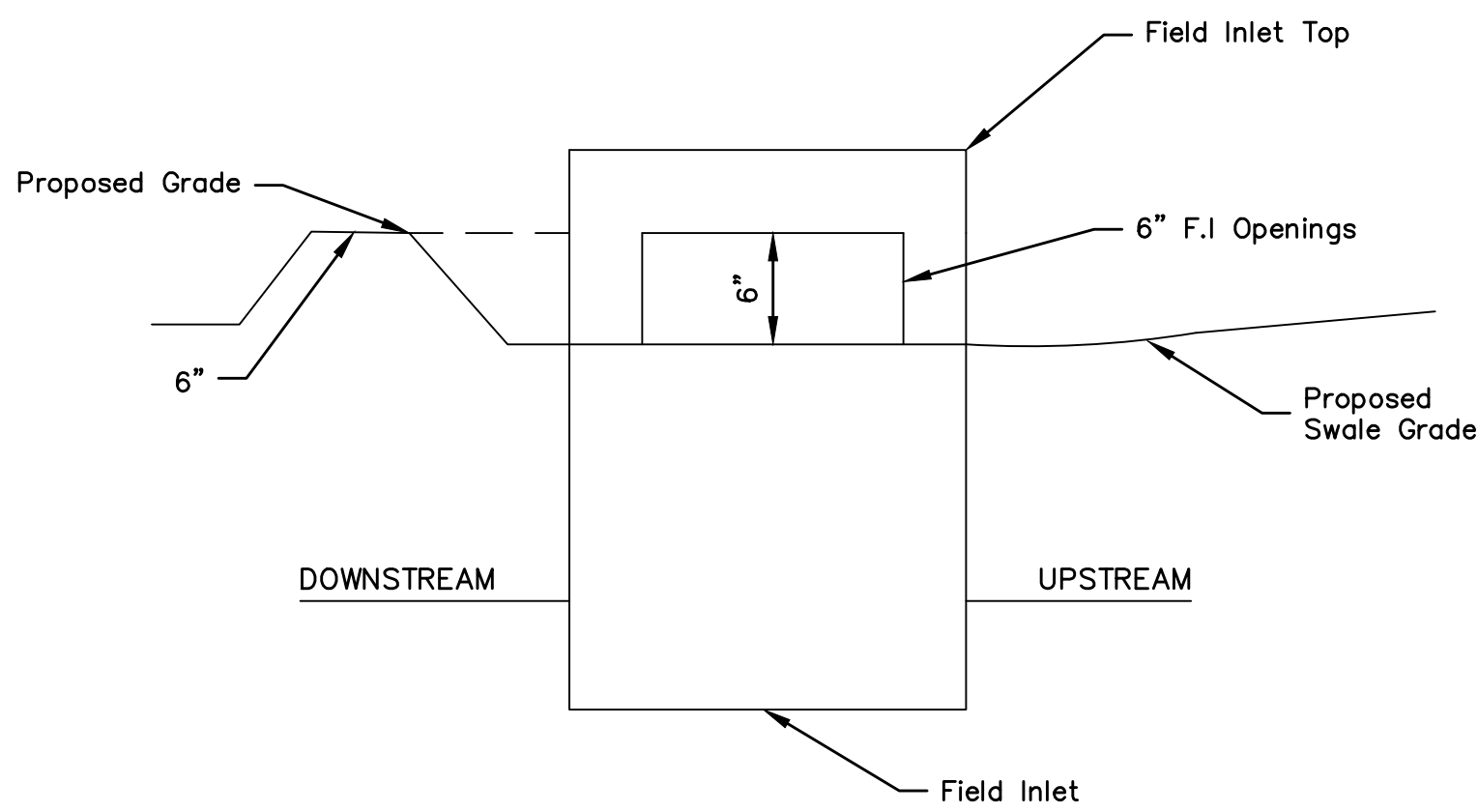
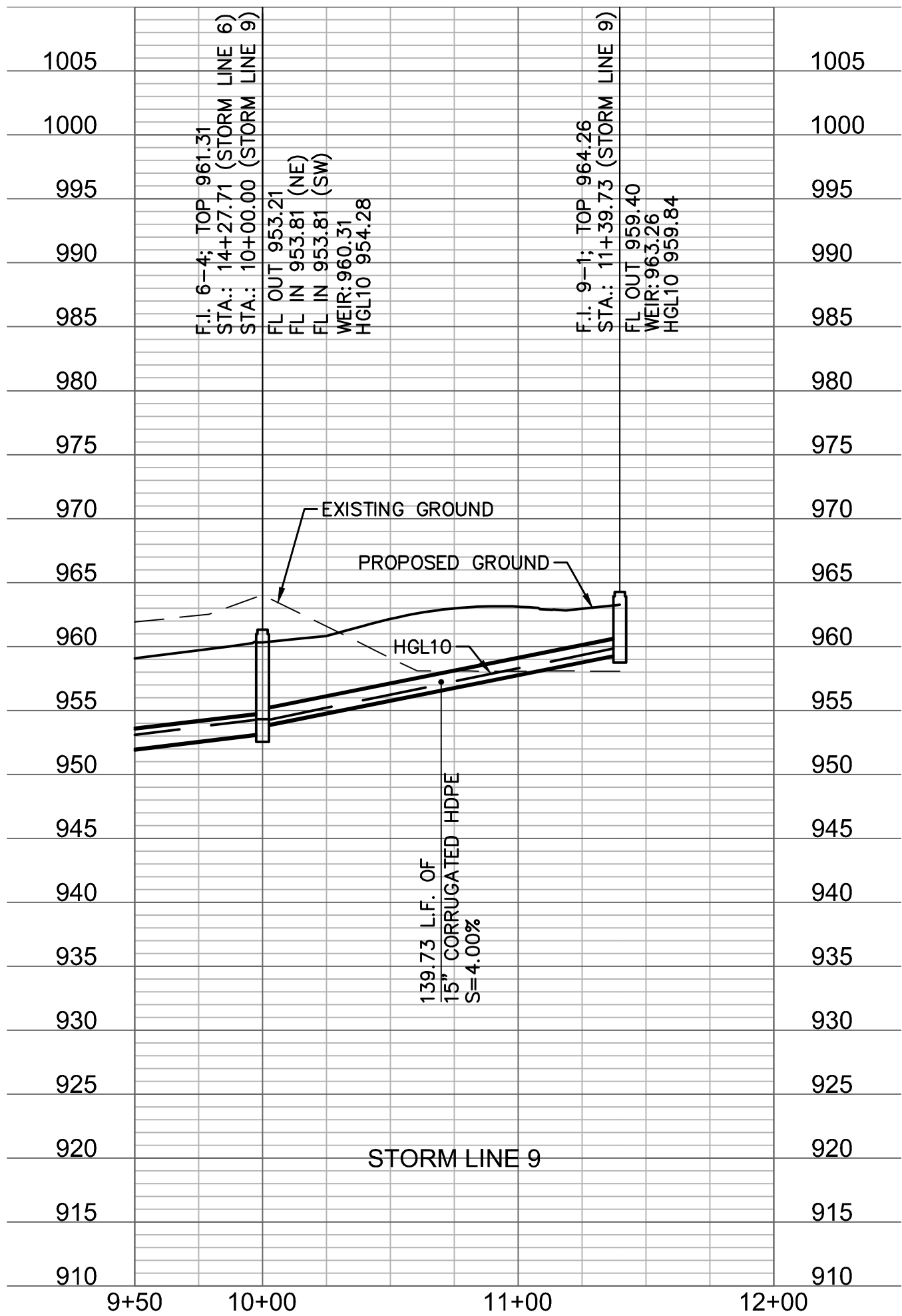
NOT A CONSULTING ENGINEER
303 E. MAIN STREET, SUITE 100
NORTH KANSAS CITY, MO 64116
TEL. 816.981.1177
WWW.OLSSON.COM



Riprap Calculations						
End Section	Q ₁₀₀ (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)
E.S. 10-0	11.38	2	3	10	10	2.00

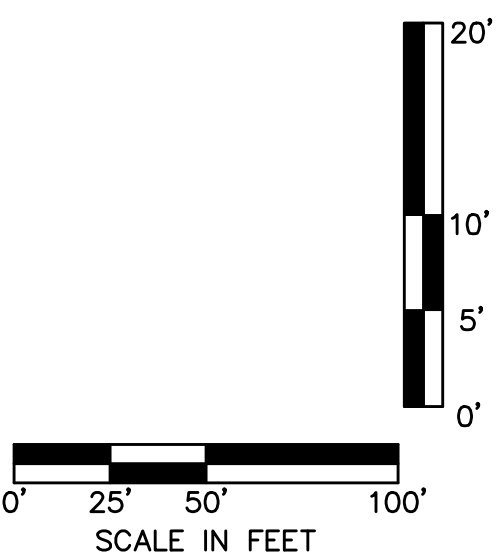
*Per Table 10.1 HEC 14-FHWA-Energy Dissipators Pg. 10-18

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

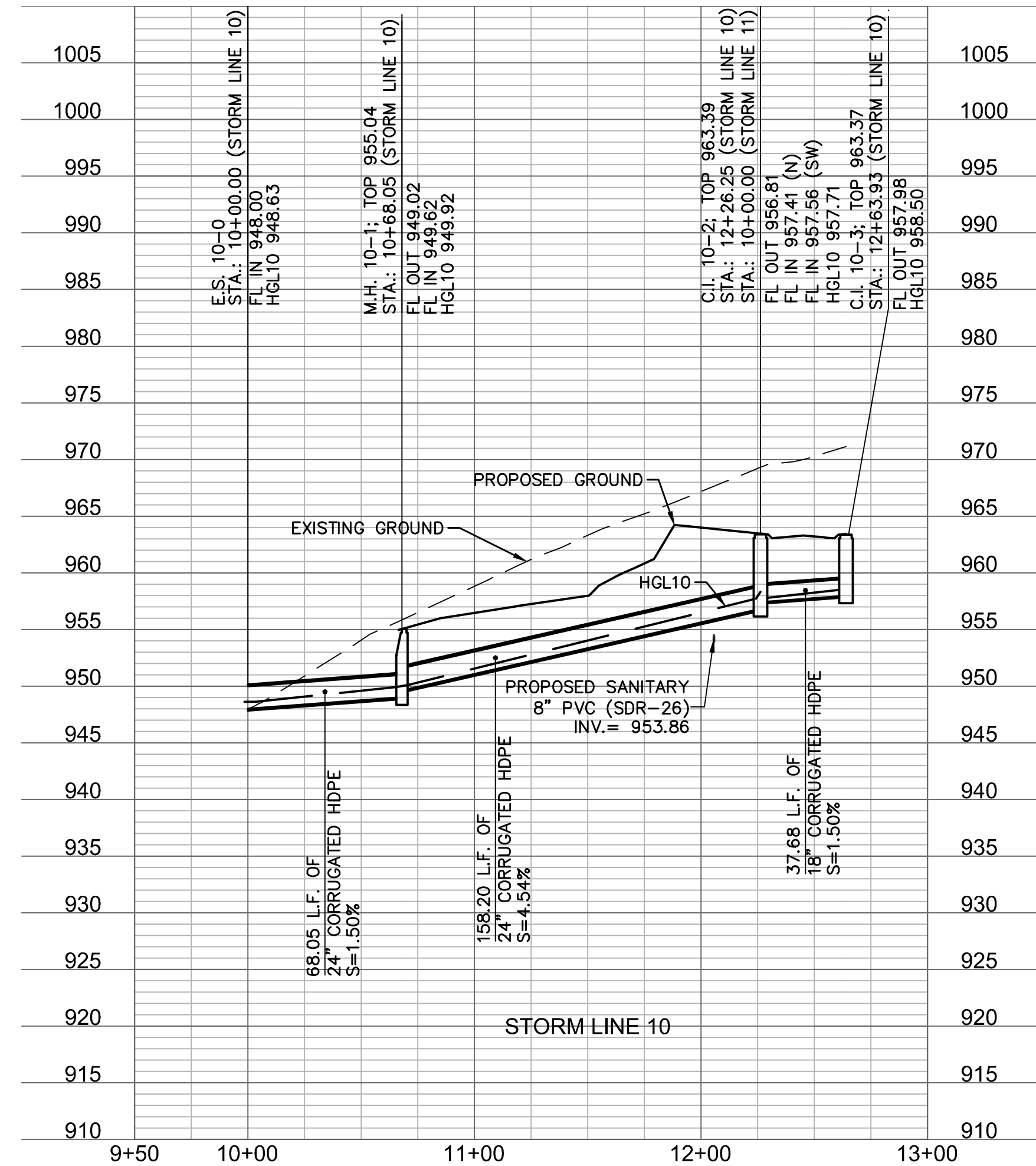


F.I. SUMP DETAIL
NOT TO SCALE

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.



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

REVISIONS DESCRIPTION

BY

NO.

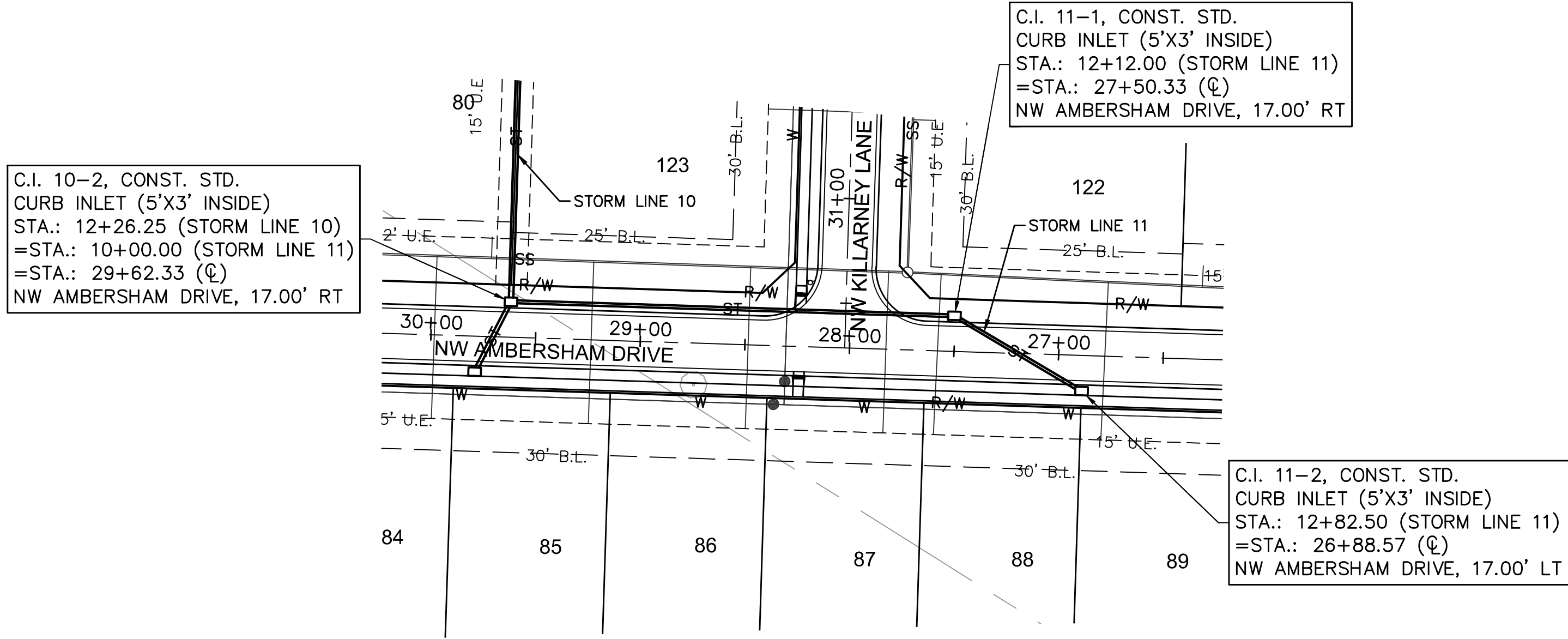
DATE

REV.

REVISIONS

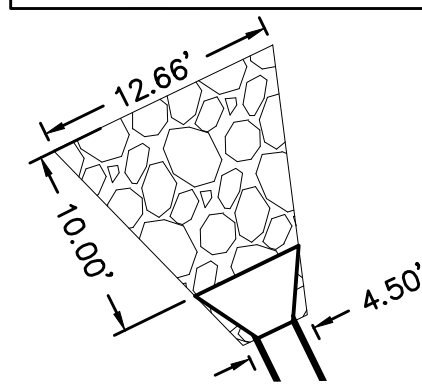
olsson

NOT A SEWERAGE OF AMERICA #001892
300 E. MAIN ST. SUITE 100
NORTH KANSAS CITY, MO 64116
TEL. 816.861.1177
WWW.OLSSON.COM

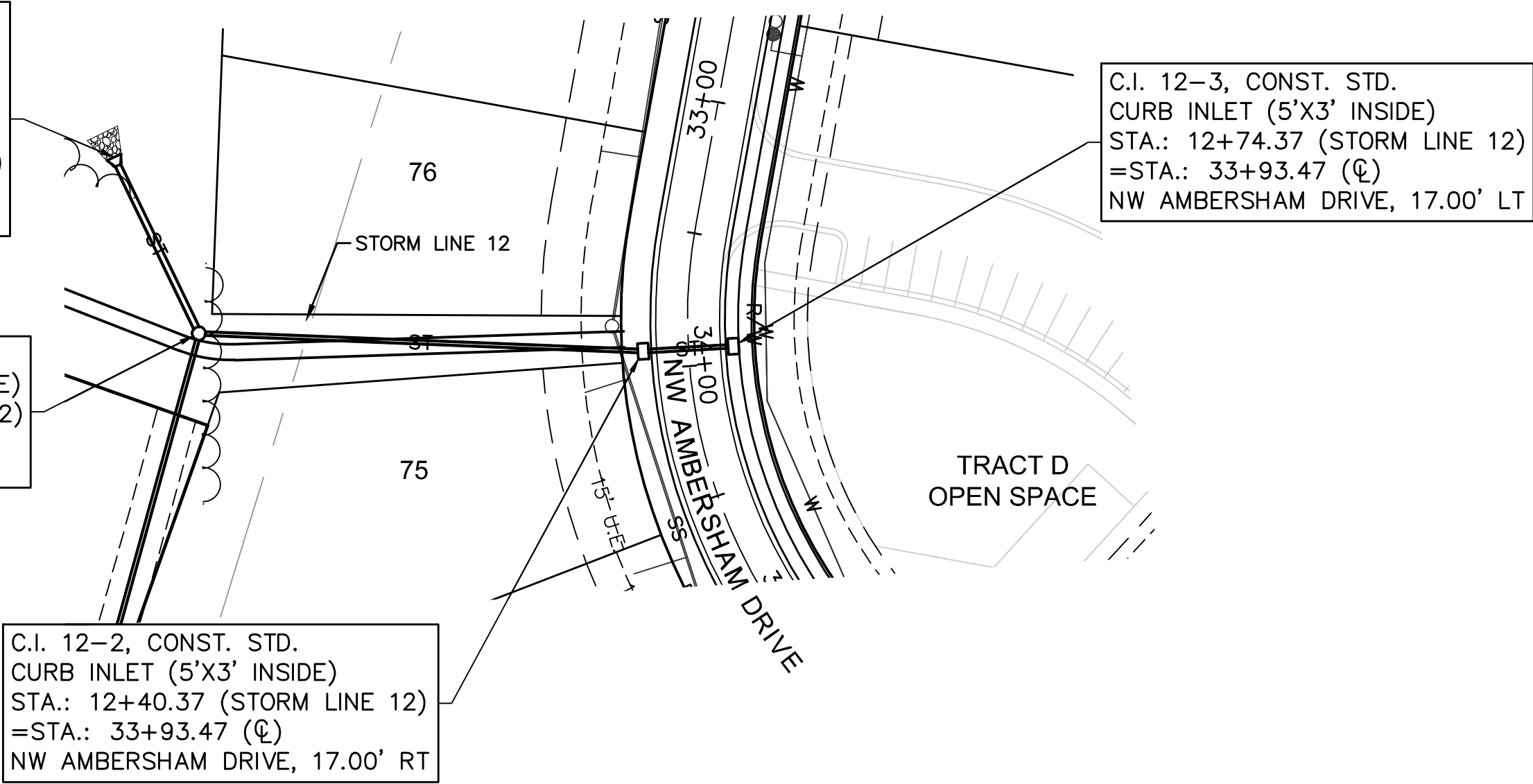


E.S. 12-0, CONSTRUCT END SECTION (24" CMP) W/ CONCRETE TOE WALL INSTALL RIPRAP PER DETAILS THIS SHEET.
STA.: 10+00.00 (STORM LINE 12)
N: 1,002,171.9422
E: 2,812,621.4581

M.H. 12-1, CONST. STD. STORM MANHOLE (4' DIA. INSIDE)
STA.: 10+73.49 (STORM LINE 12)
N: 1,002,219.9468
E: 2,812,677.1026

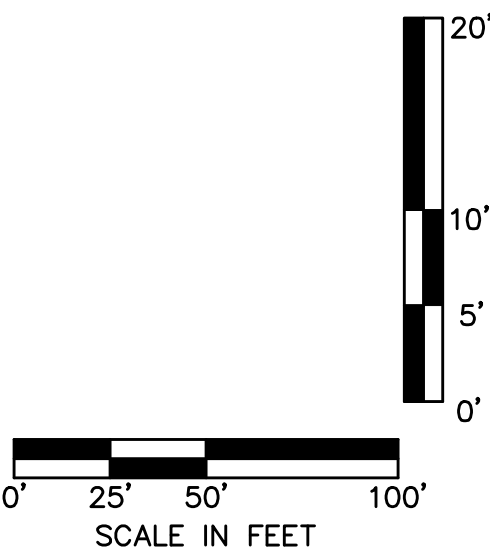
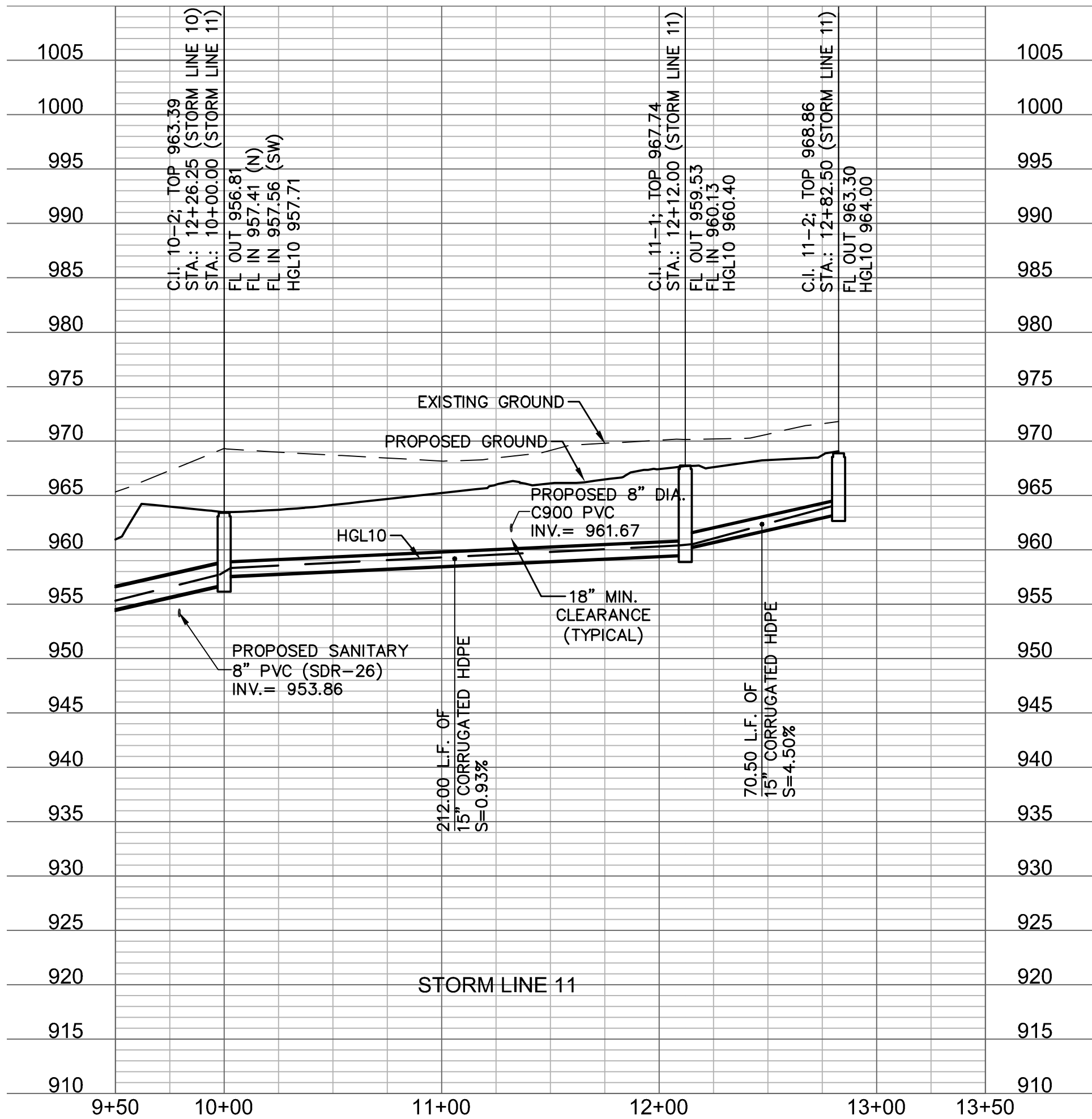


E.S. 12-0
SCALE 1-10'

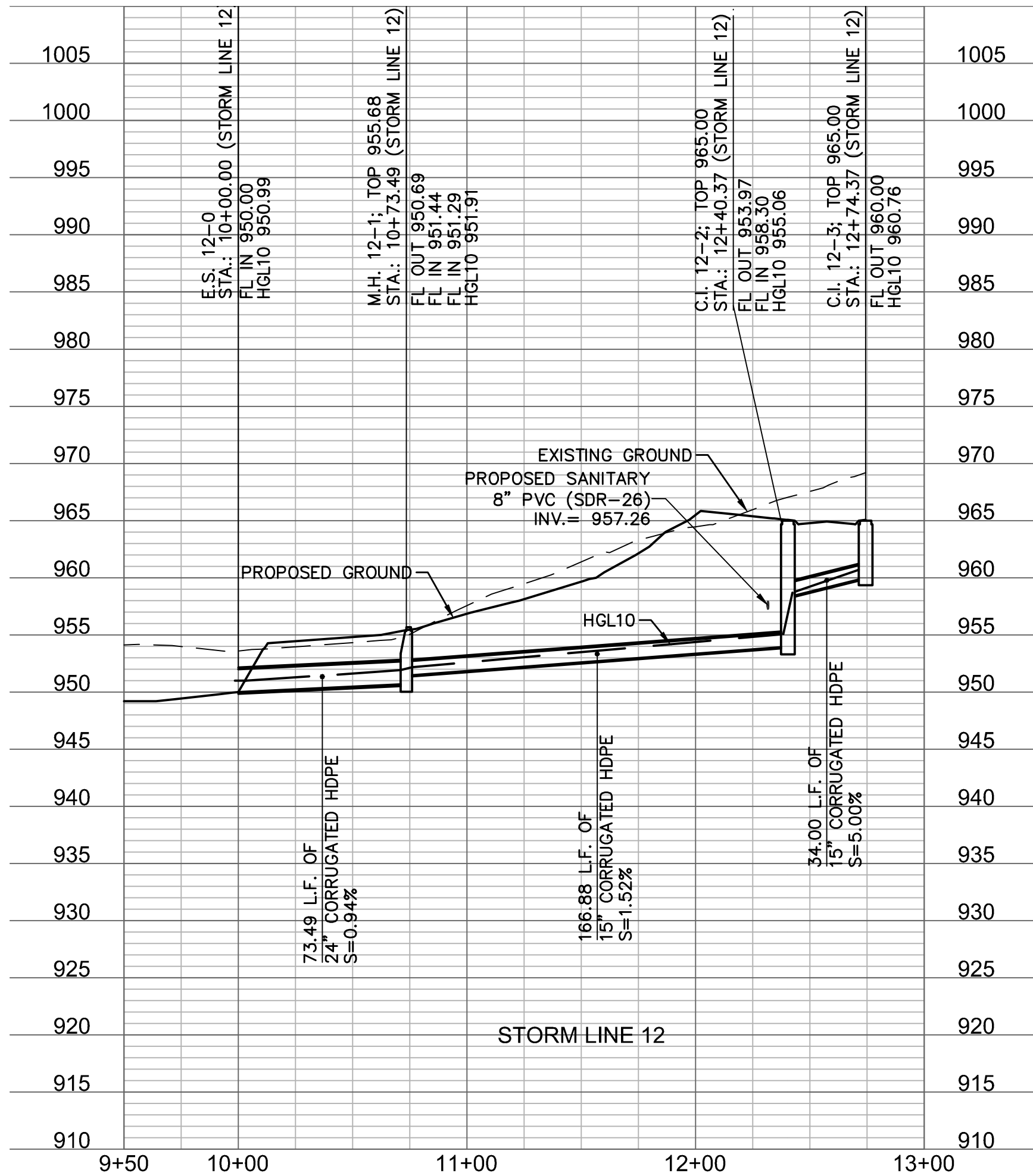


Riprap Calculations						
End Section	Q ₁₀₀	Pipe Diameter	Class*	D50*	Apron Length	Apron Depth
	(cfs)	(ft)		(in)	(ft)	(ft)
E.S. 12-0	20.34	2	3	10	10	2.00
Area						
(SV)						
E.S. 12-0	20.34	2	3	10	10	2.00
7.9						

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



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



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

REVISIONS DESCRIPTION

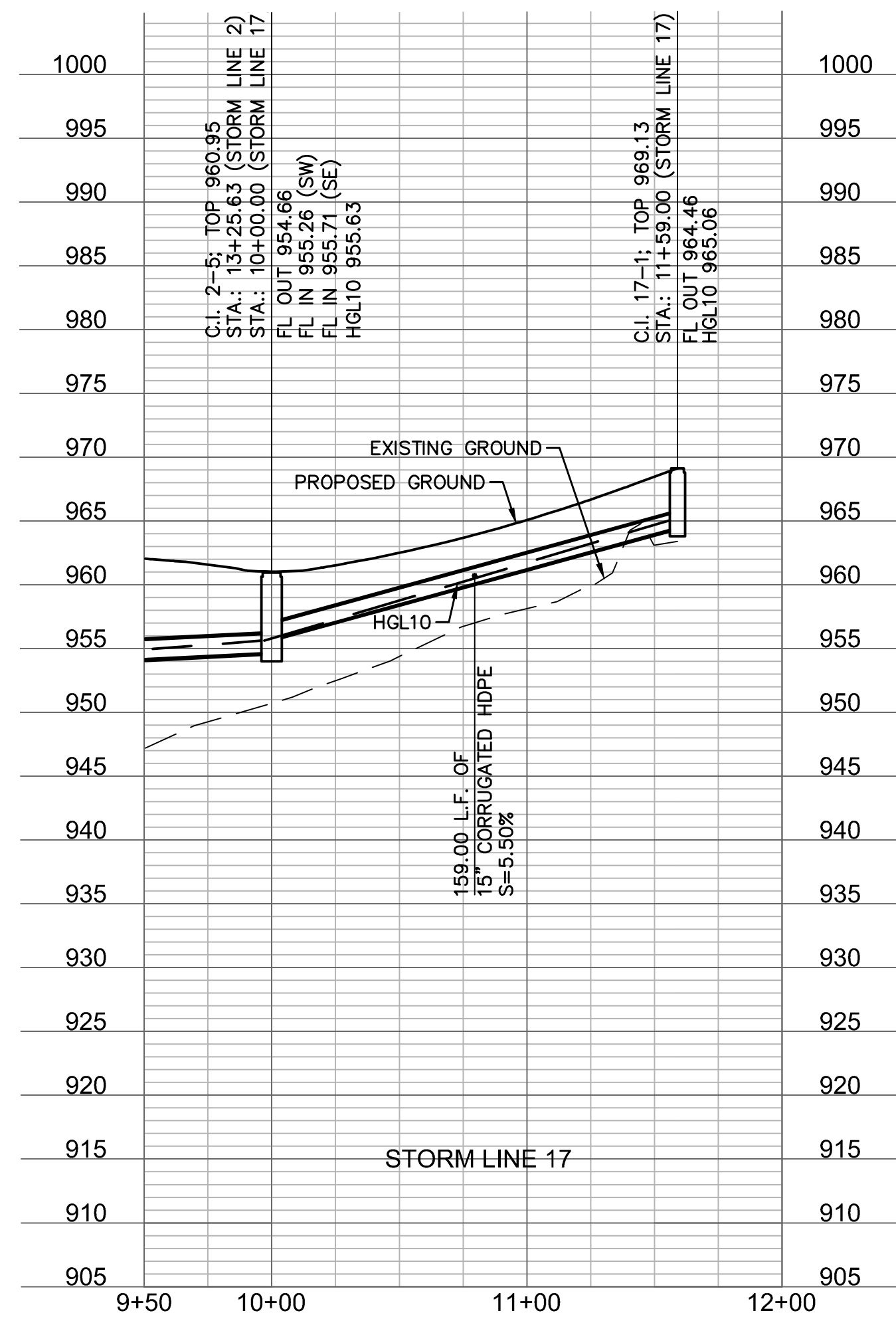
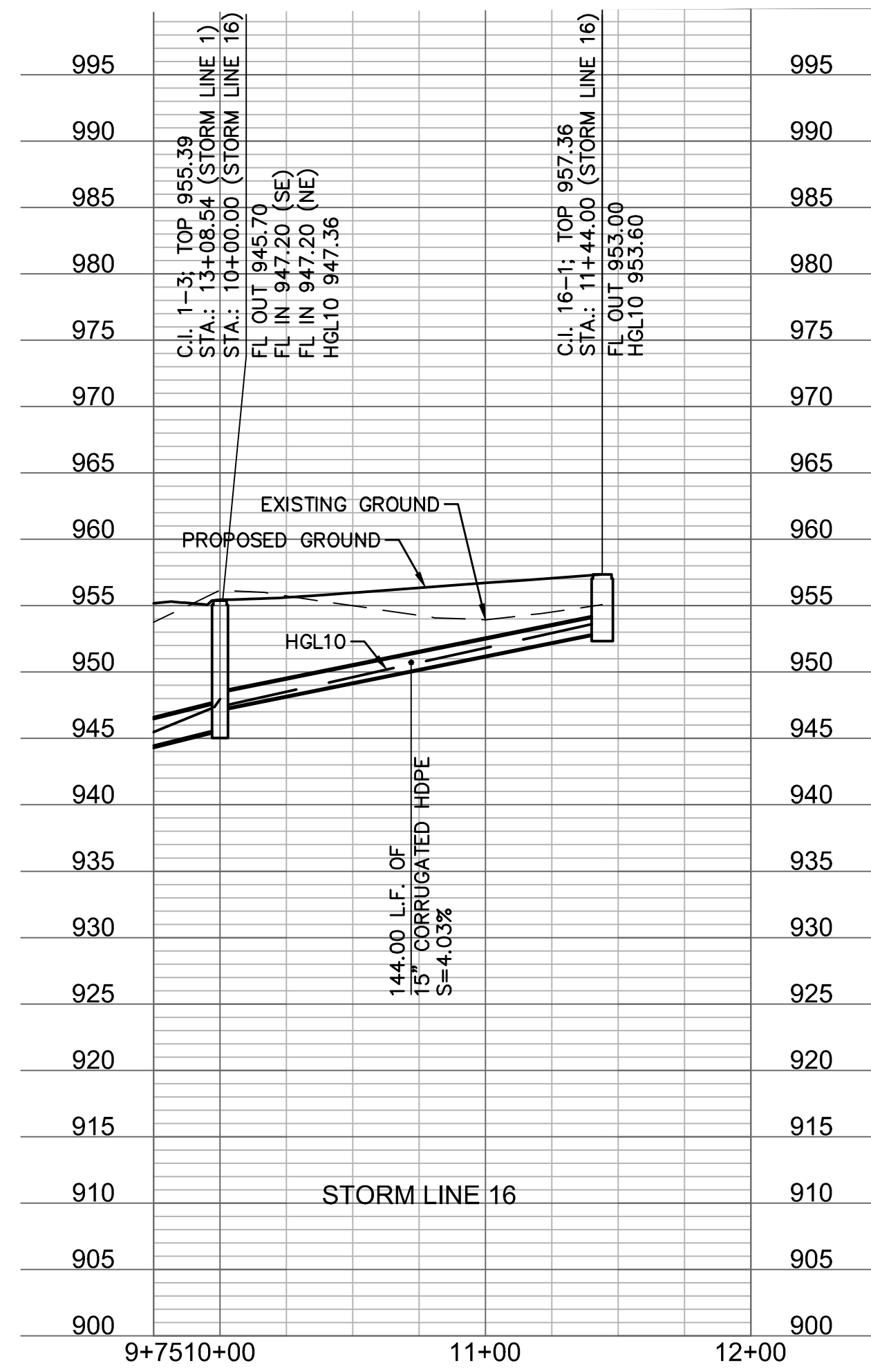
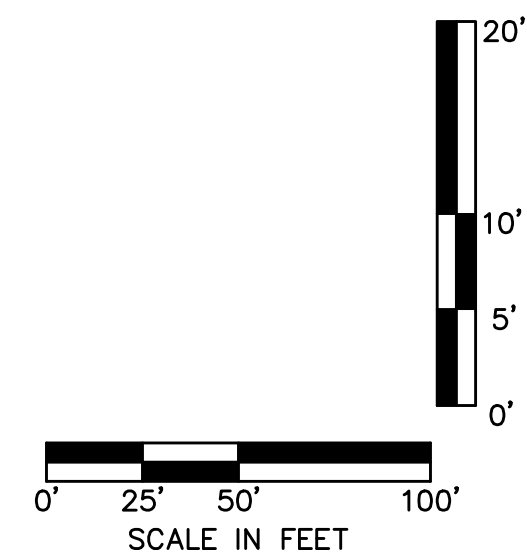
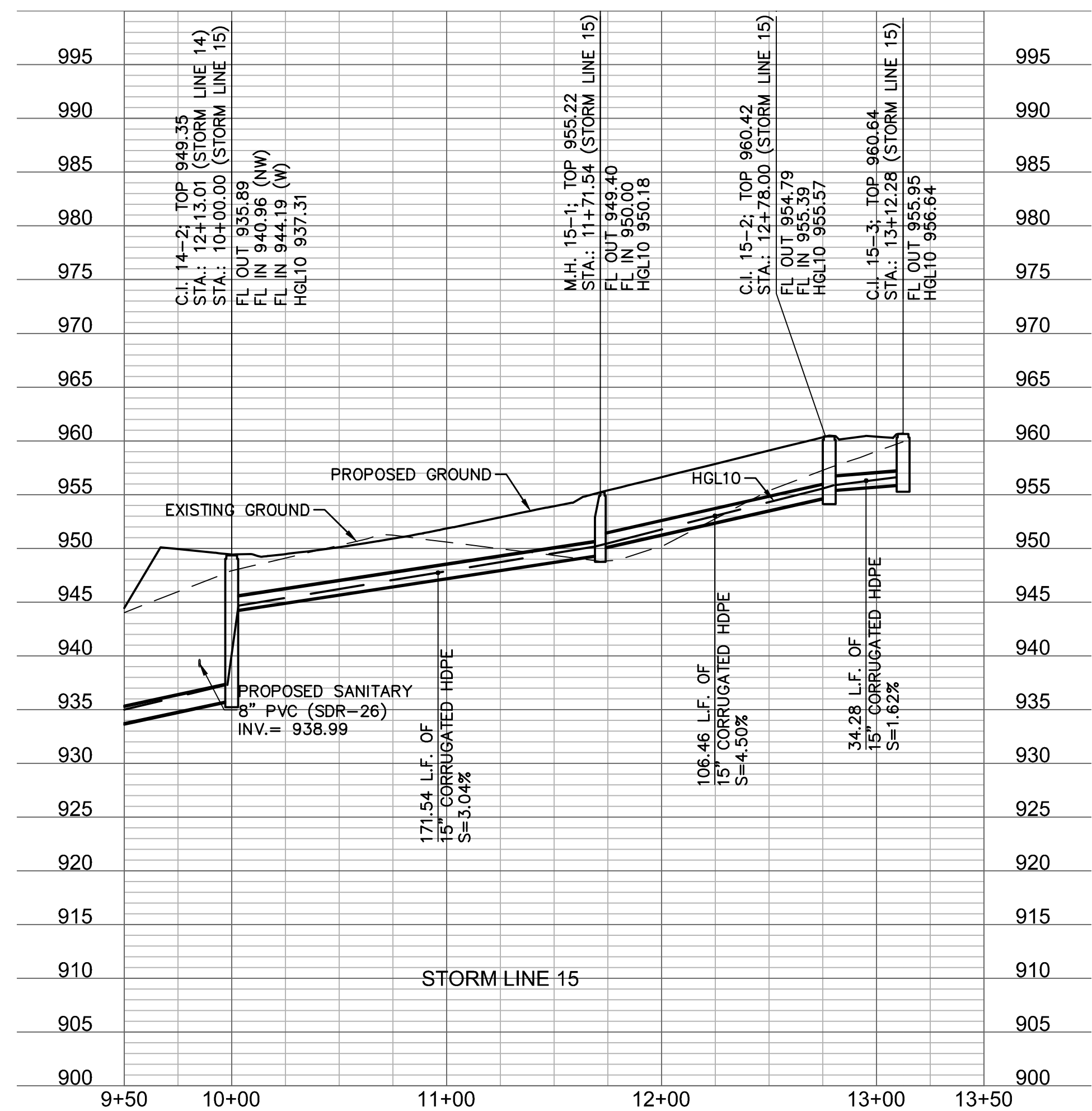
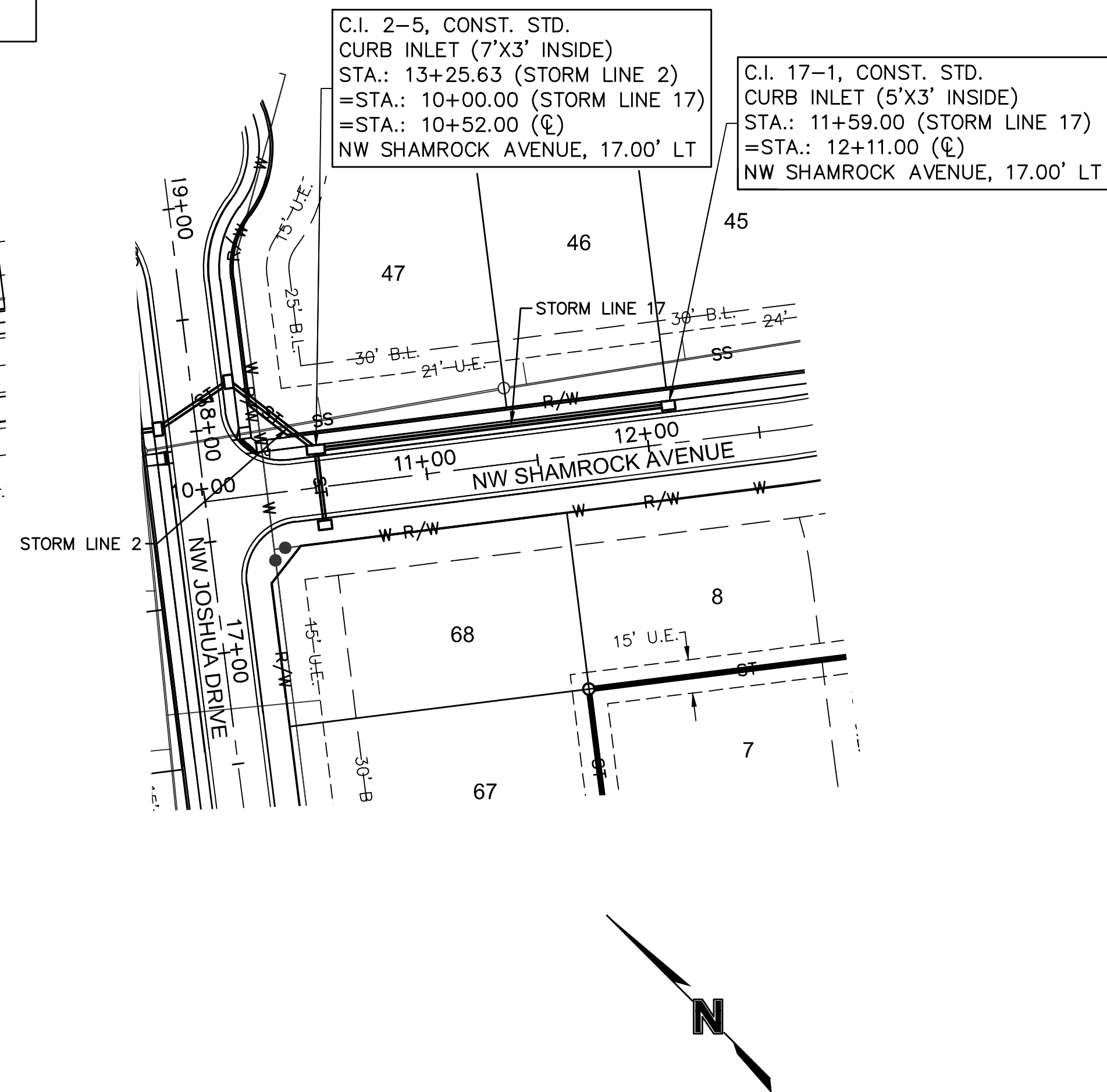
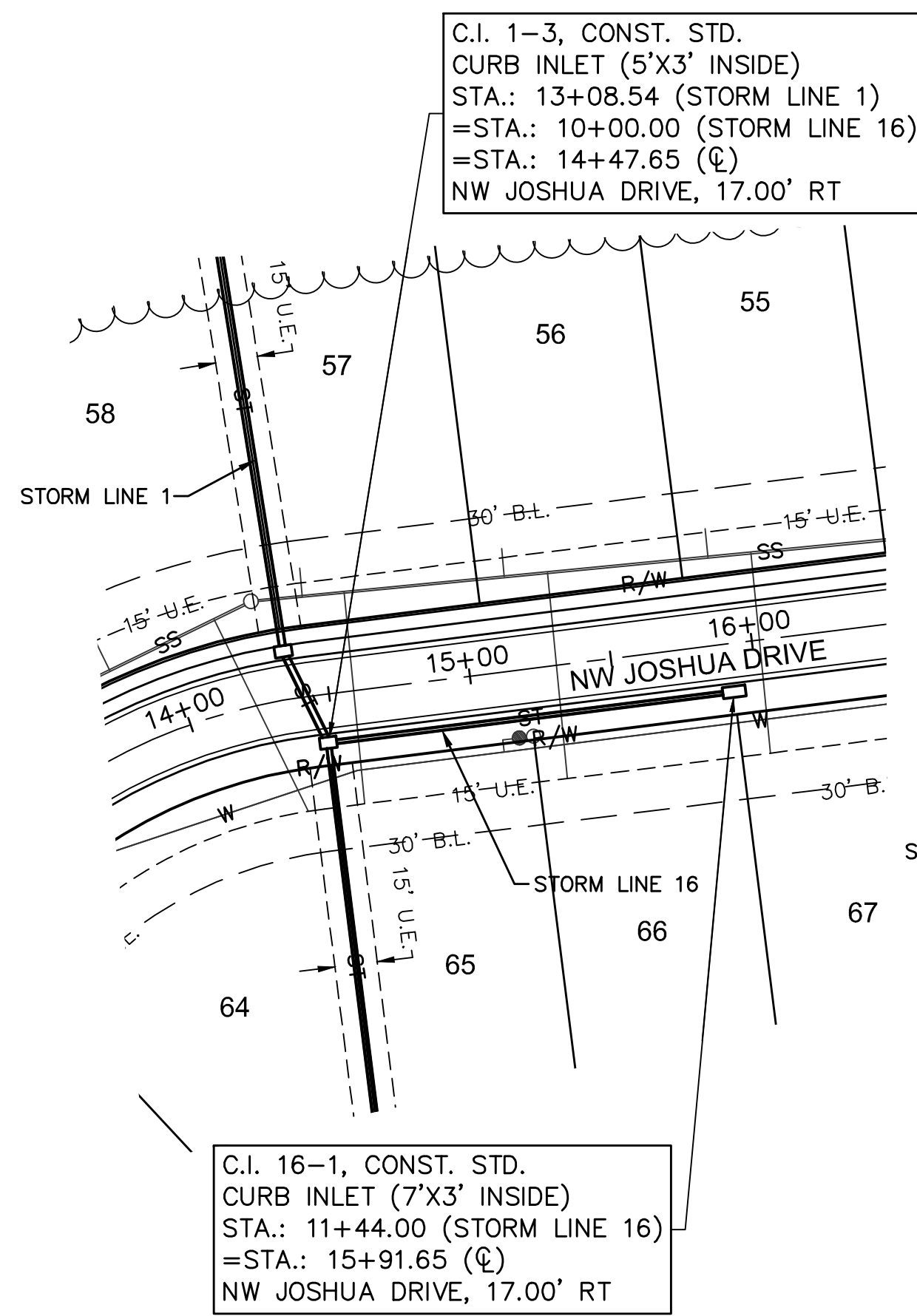
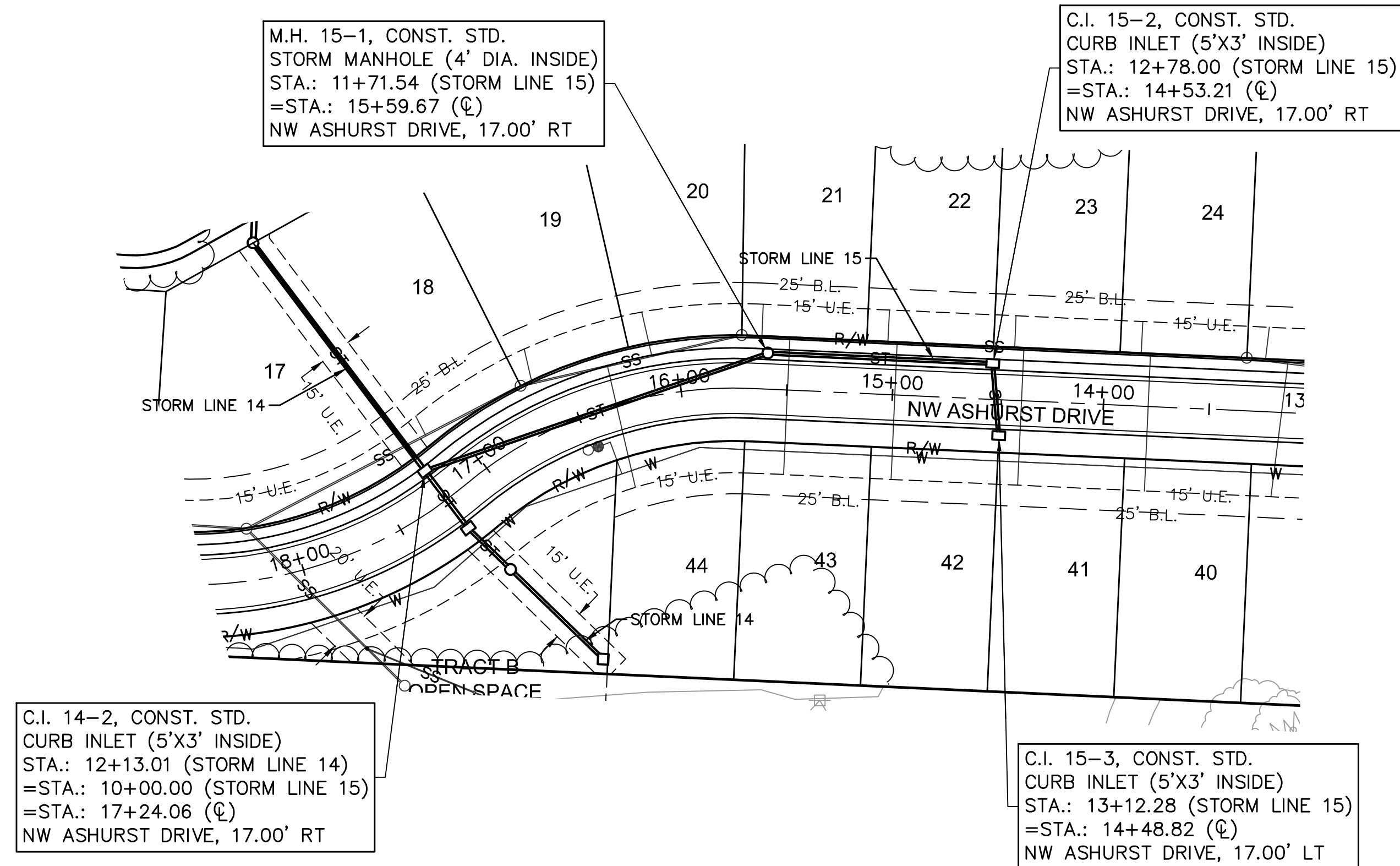
BY

NO. REV. DATE

REVISIONS

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NO. 018-1140-001
300 E. MAIN ST., SUITE 100
NORTH KANSAS CITY, MO 64116
TEL. 816.861.1177
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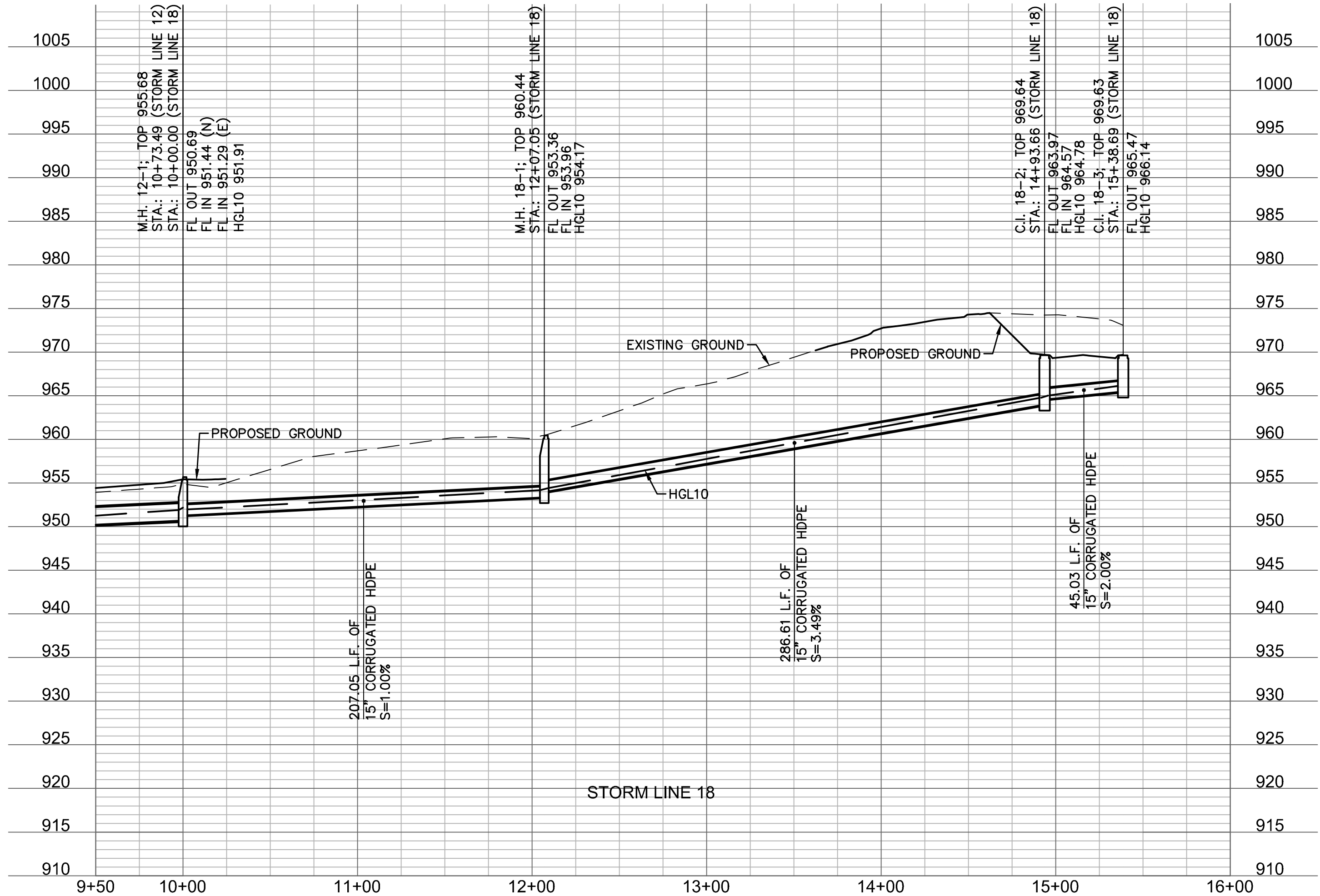
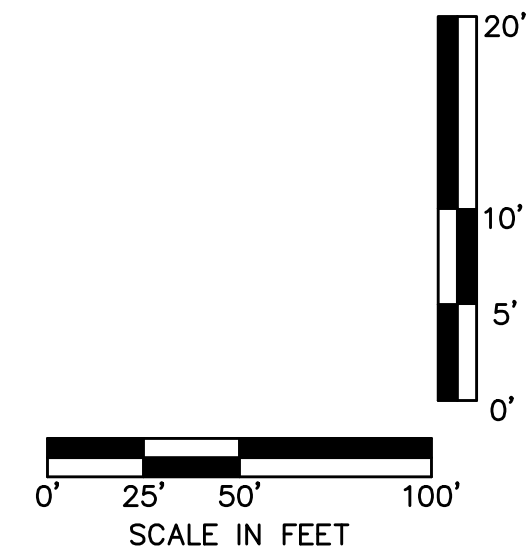


C.I. 18-2, CONST. STD.
CURB INLET (5'X3' INSIDE)
STA.: 14+93.66 (STORM LINE 18)
=STA.: 29+49.44 (℄)
NW O'BRIEN ROAD, 22.00' RT

C.I. 18-3, CONST. STD.
CURB INLET (5'X3' INSIDE)
STA.: 15+38.69 (STORM LINE 18)
=STA.: 29+50.88 (℄)
NW O'BRIEN ROAD, 23.00' LT

M.H. 18-1, CONST. STD.
STD. STORM MANHOLE (4' DIA. INSIDE)
STA.: 12+07.05 (STORM LINE 18)
N: 1,002,218.3605
E: 2,812,884.1465

M.H. 12-1, CONST. STD.
STORM MANHOLE (4' DIA. INSIDE)
STA.: 10+73.49 (STORM LINE 12)
=STA.: 10+00.00 (STORM LINE 18)
N: 1,002,219.9468
E: 2,812,677.1026



olsson

NOT A Seal of Authority
300 E. Main Street, Suite 100
North Kansas City, MO 64116
TEL 816.981.1177
www.olsson.com

STORM SEWER PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

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

SHEET
C141

NO. REV.

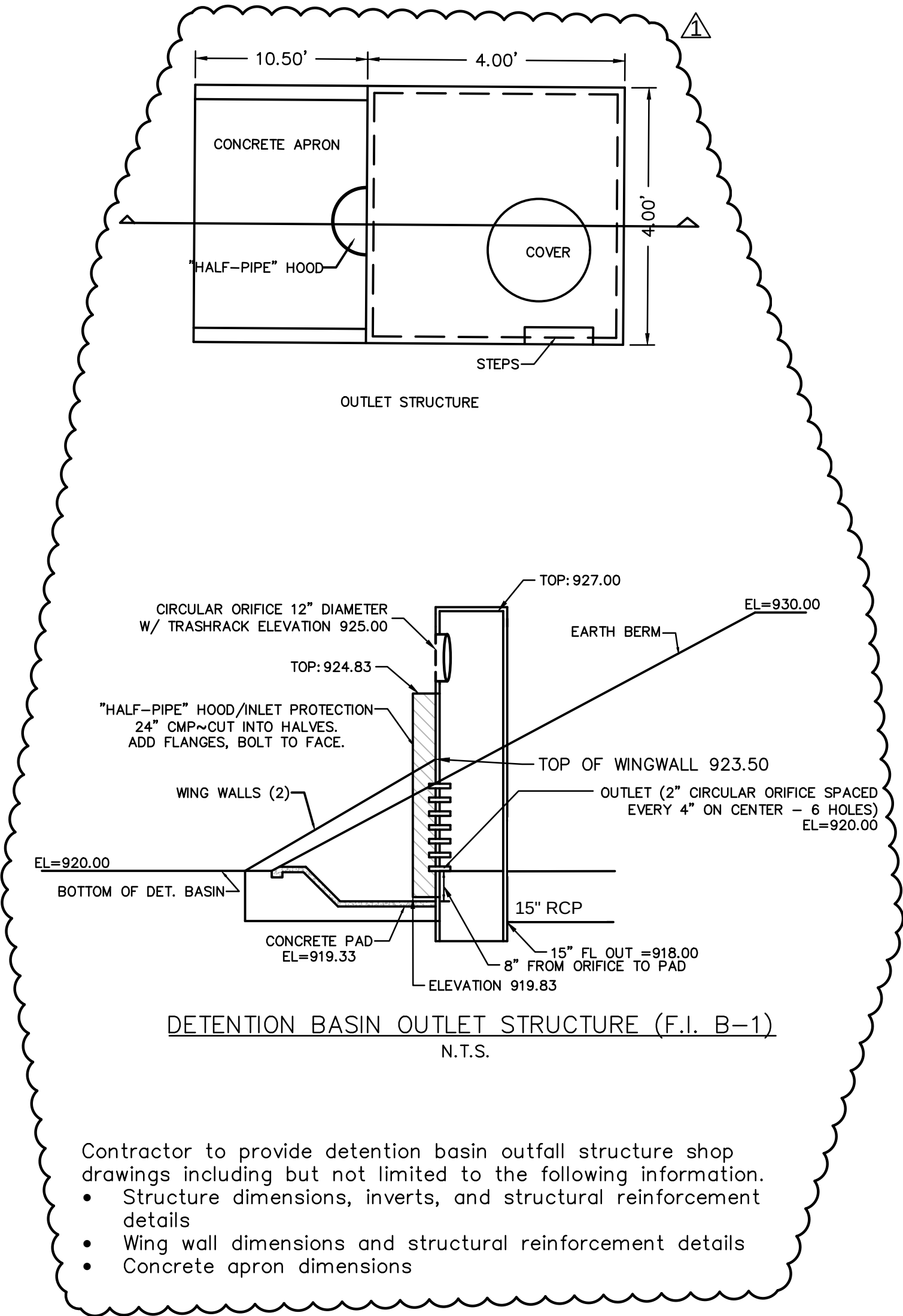
DATE

REVISIONS DESCRIPTION

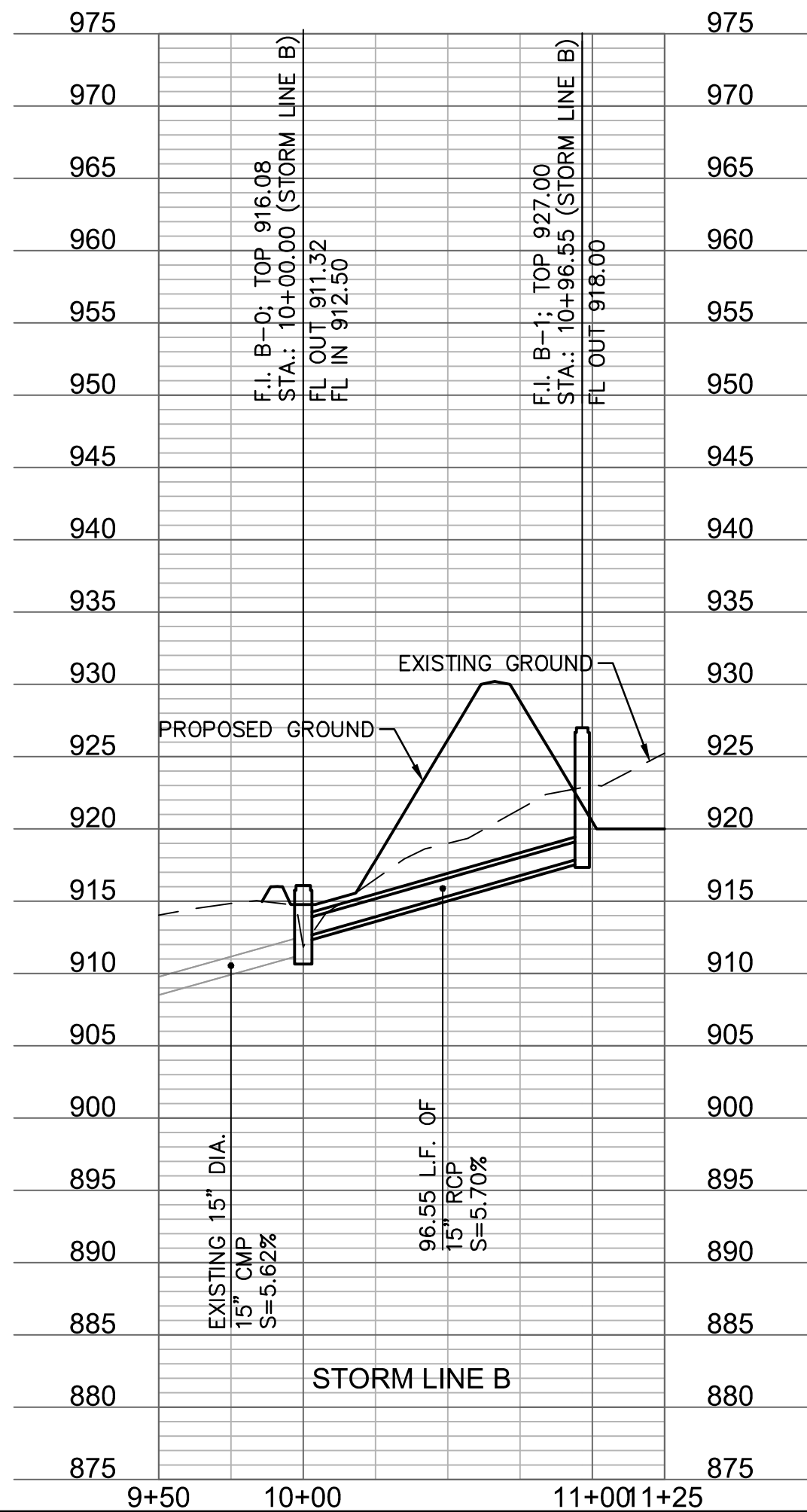
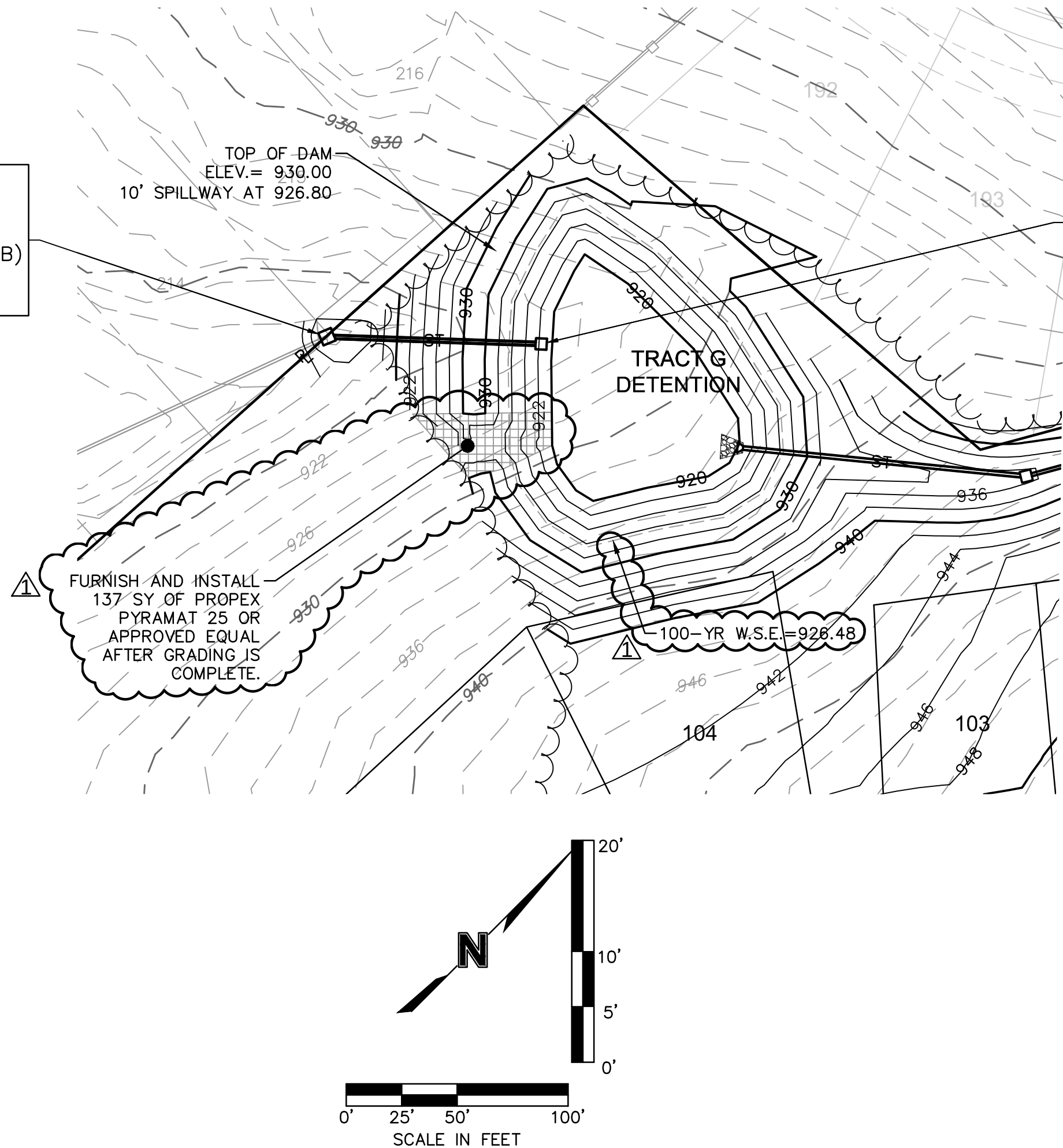
BY

2019

REVISIONS



EARTHWORK QUANTITIES	
CUT (C.Y.)	FILL (C.Y.)
5702	1004
10yr. W.S.E.	100yr. W.S.E.
924.68	926.48



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

SHEET
C143

DETENTION BASIN PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

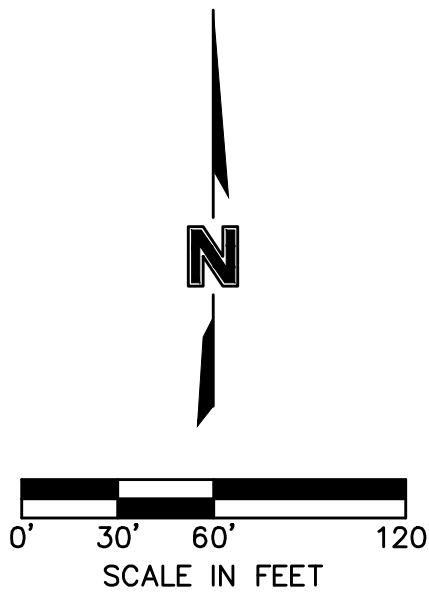
2019

REVISIONS

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

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NO. 36,000 of Authority of 031892
303 EAST WASHINGTON ST., SUITE 100
NORTH KANSAS CITY, MO 64116
TEL 816.861.1177
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LEGEND	
	FINISHED INDEX CONTOURS
	FINISHED INTERMEDIATE CONTOURS
	RIDGE LINE
A	DRAINAGE AREA
C	RUNOFF COEFFICIENT
	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 FLOODING WHERE THE AVERAGE DEPTHS ARE LESS THAN 1 FOOT, AREAS OF 1-PERCENT ANNUAL CHANCE STREAM FLOODING WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 1 SQUARE MILE, OR AREAS PROTECTED FROM THE 1-PERCENT ANNUAL CHANCE FLOOD BY LEVEES. NO BASE FLOOD ELEVATIONS OR DEPTHS ARE SHOWN WITHIN THIS ZONE"
3. BUFFER ZONE FOR NATURAL STREAMS IS LOCATED WITHIN PLAT.
4. MLO ELEVATIONS HAVE BEEN PROVIDED AT EACH LOT CORNER. INTERPOLATION WILL BE ALLOWED BETWEEN CORNER MBOES SHOWN ON THE MASTER DRAINAGE PLAN, DEPENDING ON THE LOCATION OF THE LOWEST OPENING ON THE PROPOSED STRUCTURE.
5. NO BUILDING PERMITS WILL BE ISSUED UNTIL AN AS-GRADED MASTER DRAINAGE PLAN HAS BEEN SUBMITTED TO THE CITY AND APPROVED BY THE CITY.
6. REFER TO SHEET C112-C114 FOR SWALE GRADING DETAILS.

DRAINAGE PLAN

STREET & STORM SEWER PLANS

WOODSIDE RIDGE

FIRST PLAT

DRAINAGE PLAN STREET & STORM SEWER PLANS	WOODSIDE RIDGE FIRST PLAT	2019
---	------------------------------	------

NO. REV.	DATE

REVISIONS DESCRIPTION

BY _____

oslo

MO Certificate of Authority #:001592
1301 BURLINGTON, SUITE 100
NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olson.com

SHEET
C145

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

A north arrow pointing upwards with the letter 'N' in the center. Below it is a scale bar marked from 0' to 120' in feet, with major ticks every 30'.



LEE'S SUMMIT, MO

SHEET
C146

REVISIONS

QA/	
proj	
date	

MO Certificate of Authority #:001592
1301 BURLINGTON, SUITE 100
NORTH KANSAS CITY, MO 64116

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

Inlet Design Table														
10 Year Return Frequency														
Inlet ID	Inlet Location	Peak Flow	Upstream Bypass	Total Flow	Clogging Factor	Inlet Capacity	Sag Inlet Capacity (Note 1)	Captured Flow	Bypass Flow	Inlet Efficiency (Note 2)	Gutter Depth	Gutter Spread	Ponding Depth	
		(cfs)	(cfs)	(cfs)		(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)	
C.I. 1-2(L)	SAG	1.58	...	...	...	...	...	...	...	...	0.15	7.61	...	
C.I. 1-2(R)	SAG	1.46	...	...	...	...	...	...	...	...	0.13	6.39	...	
C.I. 1-2	SAG	3.71	0.00	3.71	0.80	19.40	15.52	3.71	0.00	100.00%	...	...	...	
C.I. 1-3(L)	SAG	3.64	...	...	...	...	...	...	...	...	0.18	8.99	...	
C.I. 1-3(R)	SAG	1.16	...	...	...	...	...	...	...	...	0.13	6.56	...	
C.I. 1-3	SAG	8.10	0.00	8.10	0.80	19.40	15.52	8.10	0.00	100.00%	...	...	...	
F.I. 1-4	SAG	1.58	0.00	1.58	0.80	14.00	11.20	1.58	0.00	100.00%	...	...	0.12	
F.I. 1-5	SAG	1.13	0.00	1.13	0.80	14.00	11.20	1.13	0.00	100.00%	...	...	0.09	
C.I. 1-7(R)	SAG	1.13	...	...	...	...	...	...	...	...	0.13	6.60	...	
C.I. 1-7	SAG	1.84	0.00	1.84	0.80	19.40	15.52	1.84	0.00	100.00%	...	...	...	
C.I. 1-8(L)	SAG	3.71	...	...	...	...	...	...	...	...	0.21	10.32	...	
C.I. 1-8(R)	SAG	1.13	...	...	...	...	...	...	...	...	0.13	6.46	...	
C.I. 1-8	SAG	6.68	0.00	6.68	0.80	19.40	15.52	6.68	0.00	100.00%	...	...	...	
C.I. 2-3	GRADE	0.98	0.00	0.98	1.00	0.83	0.83	0.83	0.15	84.65%	0.10	5.00	...	
C.I. 2-4	GRADE	1.91	0.00	1.91	1.00	1.38	1.38	1.38	0.54	71.99%	0.13	6.44	...	
C.I. 2-5	GRADE	3.25	0.96	4.21	1.00	2.80	2.80	2.80	1.41	66.54%	0.19	9.50	...	
C.I. 2-6	GRADE	0.79	0.00	0.79	1.00	0.72	0.72	0.72	0.07	91.26%	0.10	5.06	...	
C.I. 3-3	GRADE	1.05	0.11	1.16	1.00	1.05	1.05	1.05	0.11	90.19%	0.13	6.32	...	
C.I. 3-4	GRADE	0.71	0.17	0.88	1.00	0.82	0.82	0.82	0.06	92.69%	0.11	5.70	...	
C.I. 3-5	GRADE	1.43	0.00	1.43	1.00	1.25	1.25	1.25	0.17	87.93%	0.14	6.82	...	
C.I. 3-6	GRADE	1.16	0.00	1.16	1.00	1.05	1.05	1.05	0.11	90.20%	0.13	6.32	...	
C.I. 4-2	GRADE	1.16	0.11	1.28	1.00	0.87	0.87	0.87	0.41	67.89%	0.09	4.75	...	
C.I. 4-3	GRADE	1.39	0.06	1.45	1.00	0.94	0.94	0.94	0.51	64.56%	0.10	4.98	...	
F.I. 5-1	SAG	4.84	0.00	4.84	0.80	14.00	11.20	4.84	0.00	100.00%	...	...	0.25	
F.I. 5-2	SAG	4.85	0.00	4.85	0.80	14.00	11.20	4.85	0.00	100.00%	...	...	0.25	
C.I. 6-2(L)	SAG	1.58	...	...	...	...	...	...	...	...	0.15	7.59	...	
C.I. 6-2(R)	SAG	0.90	...	...	...	...	...	...	...	...	0.12	6.00	...	
C.I. 6-2	SAG	3.11	0.00	3.11	0.80	19.40	15.52	3.11	0.00	100.00%	...	...	...	
C.I. 6-3(L)	SAG	1.50	...	...	...	...	...	...	...	...	0.15	7.42	...	
C.I. 6-3(R)	SAG	3.08	...	...	...	...	...	...	...	...	0.20	9.87	...	
C.I. 6-3	SAG	7.05	0.00	7.05	0.80	19.40	15.52	7.05	0.00	100.00%	...	...	...	
F.I. 6-4	SAG	3.33	0.00	3.33	0.80	14.00	11.20	3.33	0.00	100.00%	...	...	0.19	
F.I. 6-5	SAG	1.05	0.00	1.05	0.80	14.00	11.20	1.05	0.00	100.00%	...	...	0.09	
C.I. 6-7	GRADE	0.83	0.00	0.83	1.00	0.77	0.77	0.77	0.06	93.24%	0.11	5.56	...	
C.I. 6-8	GRADE	1.13	0.00	1.13	1.00	1.02	1.02	1.02	0.11	90.53%	0.12	6.24	...	
C.I. 7-2	GRADE	1.76	0.06	1.82	1.00	1.40	1.40	1.40	0.41	77.23%	0.13	6.66	...	
C.I. 7-3	GRADE	1.09	0.00	1.09	1.00	0.93	0.93	0.93	0.15	85.85%	0.11	5.49	...	
C.I. 8-1	GRADE	1.88	0.23	2.11	1.00	1.70	1.70	1.70	0.40	80.89%	0.15	7.71	...	
C.I. 8-2	GRADE	1.39	0.00	1.39	1.00	1.21	1.21	1.21	0.18	87.17%	0.13	6.59	...	
F.I. 9-1	SAG	1.24	0.00	1.24	0.80	14.00	11.20	1.24	0.00	100.00%	...	...	0.10	
C.I. 10-3(L)	SAG	0.34	...	...	...	...	...	...	...	...	0.08	3.87	...	
C.I. 10-3(R)	SAG	0.98	...	...	...	...	...	...	...	...	0.13	6.38	...	
C.I. 10-3	SAG	1.88	0.00	1.88	0.80	19.40	15.52	1.88	0.00	100.00%	...	...	...	
C.I. 10-4(L)	SAG	2.96	...	...	...	...	...	...	...	...	0.21	10.60	...	
C.I. 10-4(R)	SAG	3.56	...	...	...	...	...	...	...	...	0.19	9.36	...	
C.I. 10-4	SAG	9.11	0.00	9.11	0.80	19.40	15.52	9.11	0.00	100.00%	...	...	...	
C.I. 11-1	GRADE	1.58	0.00	1.58	1.00	1.34	1.34	1.34	0.23	85.28%	0.14	6.89	...	
C.I. 11-2	GRADE	3.04	0.00	3.04	1.00	2.23	2.23	2.23	0.81	73.35%	0.18	8.82	...	
C.I. 12-2(L)	SAG	0.41	...	...	...	...	...	...	...	...	0.09	4.43	...	
C.I. 12-2(R)	SAG	3.00	...	...	...	...	...	...	...	...	0.19	9.33	...	
C.I. 12-2	SAG	4.01	0.00	4.01	0.80	19.40	15.52	4.01	0.00	100.00%	...	...	...	
C.I. 12-3(L)	SAG	0.64	...	...	...	...	...	...	...	...	0.10	5.22	...	
C.I. 12-3(R)	SAG	0.53	...	...	...	...	...	...	...	...	0.10	4.85	...	
C.I. 12-3	SAG	3.53	0.00	3.53	0.80	19.40	15.52	3.53	0.00	100.00%	...	...	...	
C.I. 13-2(L)	SAG	0.60	...	...	...	...	...	...	...	...	0.10	4.84	...	
C.I. 13-2(R)	SAG	0.38	...	...	...	...	...	...	...	...	0.07	3.55	...	
C.I. 13-2	SAG	2.21	0.00	2.21	0.80	19.40	15.52	2.21	0.00	100.00%	...	...	...	
C.I. 13-3	GRADE	0.53	0.00	0.53	1.00	0.44	0.44	0.44	0.09	83.36%	0.07	3.29	...	
C.I. 13-4	GRADE	1.13	0.00	1.13	1.00	0.76	0.76	0.76	0.36	67.81%	0.09	4.37	...	
C.I. 14-2(L)	SAG	0.98	...	...	...	...	...	...	...	...	0.10	5.07	...	
C.I. 14-2(R)	SAG	1.39	...	...	...	...	...	...	...	...	0.14	7.18	...	
C.I. 14-2	SAG	3.00	0.00	3.00	0.80	19.40	15.52	3.00	0.00	100.00%	...	...	...	
C.I. 14-3(L)	SAG	1.76	...	...	...	...	...	...	...	...	0.16	7.85	...	
C.I. 14-3(R)	SAG	2.59	...	...	...	...	...	...	...	...	0.16	8.15	...	
C.I. 14-3	SAG	5.66	0.00	5.66	0.80	19.40	15.52	5.66	0.00	100.00%	...	...	...	
F.I. 14-5	SAG	3.68	0.00	3.68	0.80	14.00	11.20	3.68	0.00	100.00%	...	...	0.20	
C.I. 15-2	GRADE	0.75	0.00	0.75	1.00	0.65	0.65	0.65	0.10	87.10%	0.09	4.43	...	
C.I. 15-3	GRADE	2.94	0.00	2.94	1.00	1.72	1.72	1.72	1.22	58.61%	0.15	7.40	...	
C.I. 16-1	GRADE	2.25	2.01	4.26	1.00	3.26	3.26	3.26	1.00	76.52%	0.21	10.68	...	
C.I. 17-1	GRADE	2.25	0.00	2.25	1.00	1.29	1.29	1.29	0.96	57.46%	0.12	6.17	...	
C.I. 18-2	GRADE	1.24	0.00	1.24	1.00	1.23	1.23	1.23	0.01	99.52%	0.14	6.60	...	
C.I. 18-3	GRADE	2.81	0.00	2.81	1.00	2.63	2.63	2.63	0.18	93.65%	0.19	8.98	...	
Notes:														
1. Inlet capacity at sag location has been reduced by a clogging factor of 0.80, reducing theoretical capacity to 80% capacity, as required per APWA Section 5600.														
Both theoretical capacity and reduced capacity are shown.														
2. Inlet efficiency shown in the tables is Captured Flow/Total Flow, denoting the actual percentage of flow captured after the capacity has been reduced to 80% of theoretical capacity.														

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	939.24j
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	927.26j
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	955.01j
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	959.99j
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	964.24j
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	961.00j
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	950.43j
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	965.26j
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

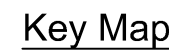
Inlet Design Table														
100 Year Return Frequency														
Inlet ID	Inlet Location	Peak Flow	Upstream Bypass	Total Flow	Clogging Factor	Inlet Capacity	Sag Inlet Capacity (Note 1)	Captured Flow	Bypass Flow	Inlet Efficiency (Note 2)	Gutter Depth	Gutter Spread	Ponding Depth	
		(cfs)	(cfs)	(cfs)		(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)	
C.I. 1-2(L)	SAG	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.



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

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

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

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

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

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

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

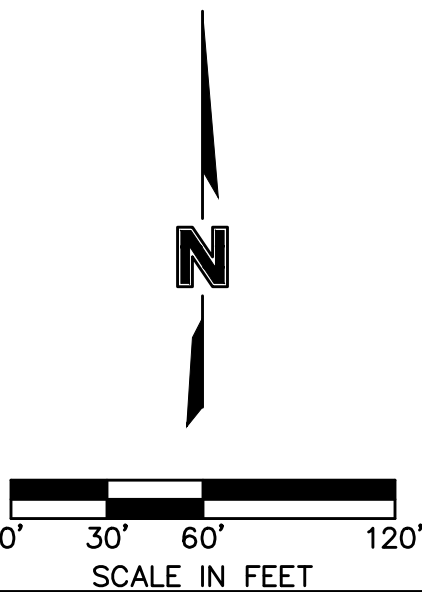
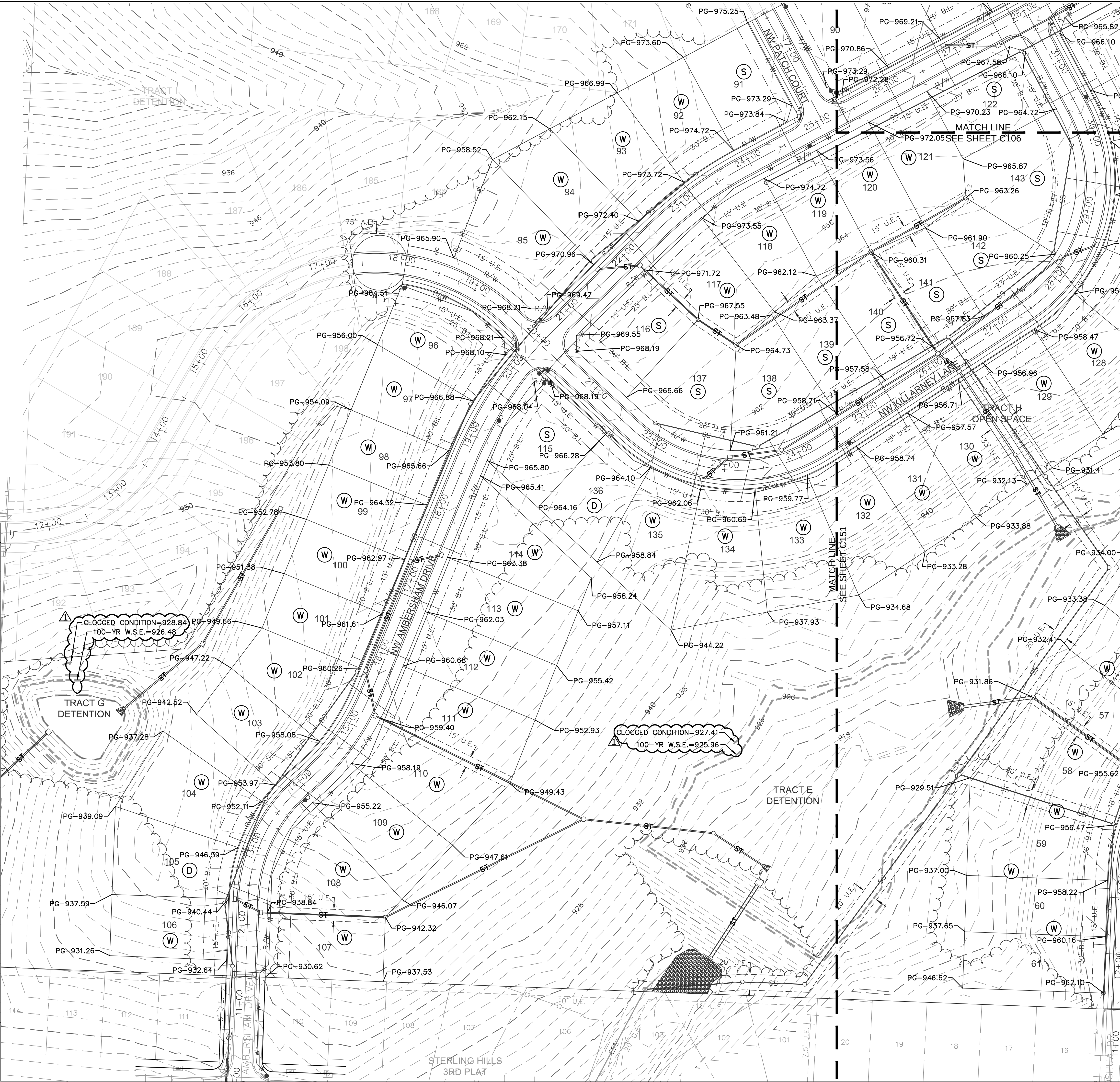
LOT TYPES:
S - STANDARD
D - DAYLIGHT
W - WALKOUT

BASIN B1 (TRACT G) CONDITIONS:
100-YEAR W.S.E. (NON-CLOGGED):
CLOGGED CONDITION (ALL FLOW TH
EMERGENCY SPILLWAY): 928.84

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

Woodside Ridge First Plat				
Minimum Low Opening Elevations				
Lot	Rear Left MLO	Rear Right MLO	Front Left MLO	Front Right MLO
91	974.70	974.63	975.32	973.79
92	968.74	974.70	974.31	975.32
93	962.75	968.74	972.99	974.31
94	959.28	962.75	971.55	972.99
95	967.33	959.28	968.30	971.55
96	956.49	966.73	967.47	968.30
97	952.94	966.73	966.25	967.47
98	954.40	952.94	964.91	966.25
99	953.38	954.40	963.56	964.91
100	951.98	953.38	962.20	963.56
101	950.26	951.98	960.85	962.20
102	947.82	950.26	958.67	960.85
103	943.05	947.82	954.57	958.67
104	939.71	937.78	946.99	957.20
105	938.19	939.71	941.03	946.99
106	931.86	938.19	933.22	941.03
107	941.65	933.43	939.44	931.22
108	946.67	941.65	955.80	939.44
109	948.21	946.67	958.78	955.80
110	950.03	948.21	960.00	958.78
111	953.53	950.03	961.27	960.00
112	956.02	953.53	962.62	961.27
113	957.71	956.02	963.97	962.62
114	958.84	957.71	966.07	963.97
115	964.76	966.78	966.87	967.98
116	971.22	967.95	970.14	967.25
117	965.46	964.73	974.14	972.29
118	964.21	965.46	975.31	974.14
119	962.22	964.21	974.15	975.31
120	963.94	962.35	972.64	974.15
128	936.94	933.52	950.52	959.26
129	933.52	932.01	926.26	957.67
130	932.73	934.48	957.28	958.16
131	934.48	933.88	958.16	959.33
132	933.88	935.28	959.33	960.36
133	935.28	938.53	960.36	961.28
134	938.53	944.82	961.28	962.65
135	944.82	959.44	962.65	964.69
136	959.44	964.76	964.69	966.87
137	969.46	964.73	967.25	961.80
138	964.01	961.51	961.80	959.30
139	961.51	960.38	959.30	958.17
140	962.22	964.21	958.17	957.28
141	959.49	960.56	957.28	958.35
142	963.94	963.86	958.35	961.05
143	963.26	962.95	961.05	965.56

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.



USER: ssaylor

DWG: F:\2018\1001-1500\018-1140-A\40-Design\AutoCAD\Final Plans\Storm_36x24\C_MDR01_1140A.dwg
DATE: Apr 04 2019 11:53am

MASTER DRAINAGE PLAN STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

NO. REV.	DATE
1	4/2/2019

REVISIONS DESCRIPTION

BY	
----	--

2

olson

MO Certificate of Authority #:001592
1301 BURLINGTON, SUITE 100
NORTH KANSAS CITY, MO 64116

www.olsson.com

SHEET
C150



Key Map

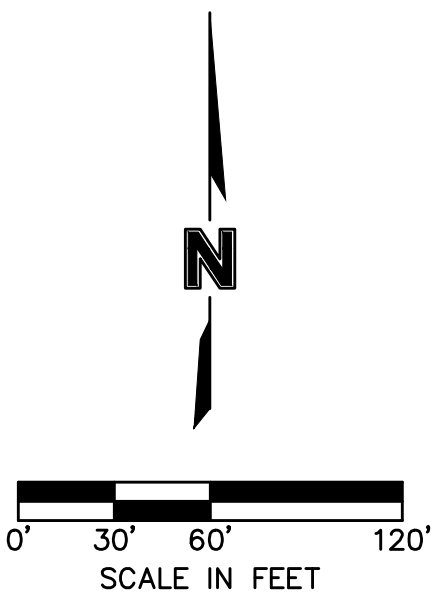
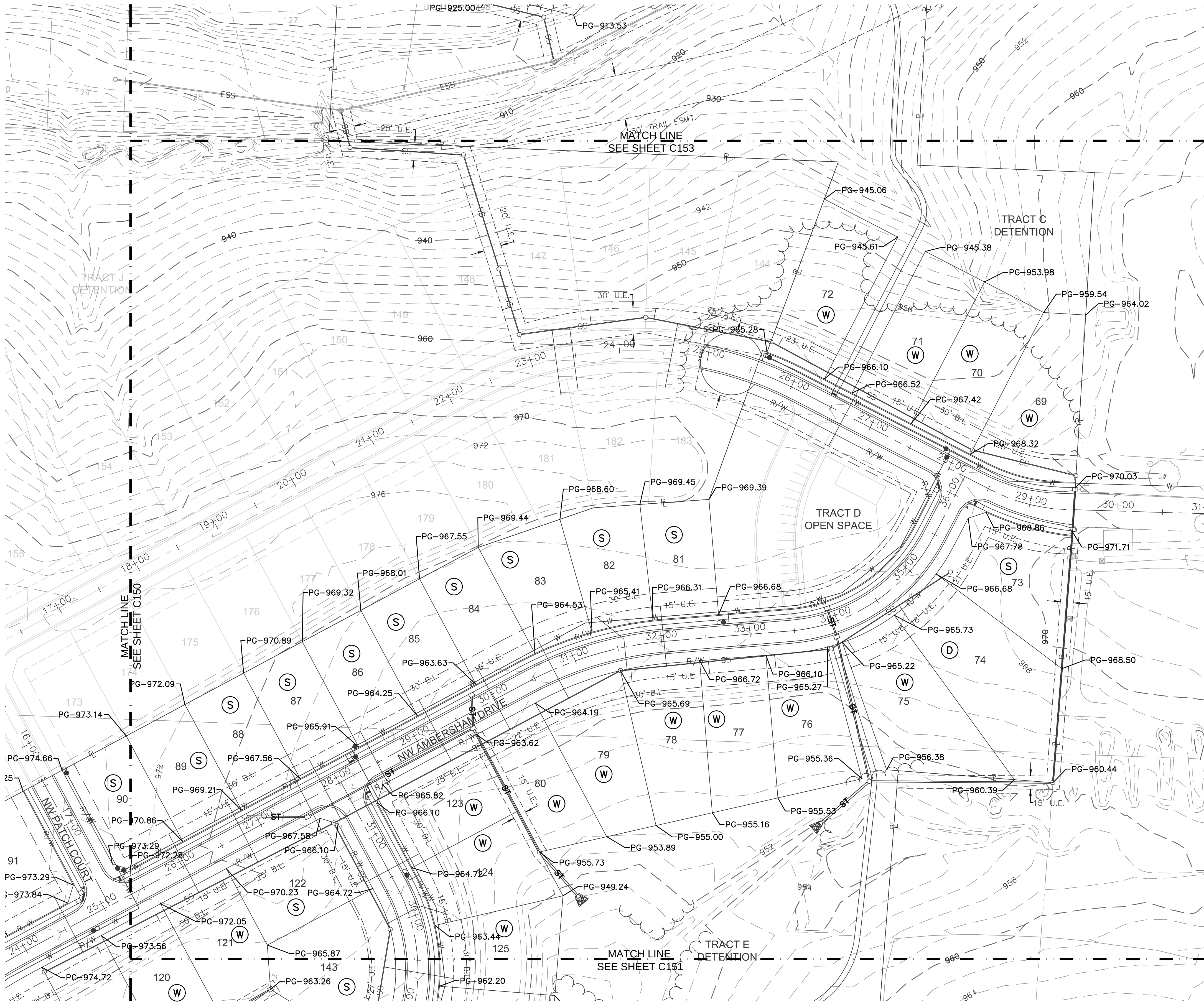
- NOTES:
1. INDIVIDUAL LOT OWNERS SHALL NOT CHANGE OR OBSTRUCT THE DRAINAGE FLOW LINES OR PATHS ON THE LOTS, AS SHOWN ON THE MATER DRAINAGE PLAN, UNLESS SPECIFIC APPLICATION IS MADE AND APPROVED BY THE CITY ENGINEER.
 2. PLAT IS LOCATED IN ZONE X, "AREAS OUTSIDE THE 1-PERCENT ANNUAL CHANCE FLOODPLAINS, 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. NO BUILDING PERMITS WILL BE ISSUED UNTIL AN AS-GRADED MASTER DRAINAGE PLAN HAS BEEN SUBMITTED TO THE CITY AND APPROVED BY THE CITY.

RMLO - REAR MINIMUM LOW OPENING
FMLO - FRONT MINIMUM LOW OPENING

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

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

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



MASTER DRAINAGE PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

REVISIONS DESCRIPTION

DATE

NO. REV.

REVISIONS

2019

SHEET
C152

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

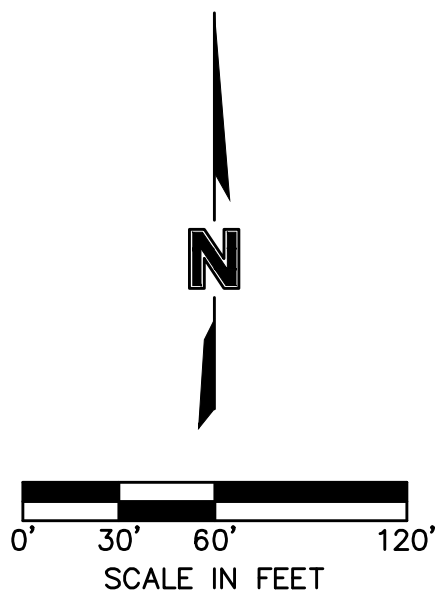
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NOTES: See City of Lee's Summit, MO
300 E. Main Street, Suite 100
North Kansas City, MO 64116
TEL: 816.961.1177
www.olsson.com

NOTES:
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3. BUFFER ZONE FOR NATURAL STREAMS IS LOCATED WITHIN PLAT.
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5. SWALES TO BE CONSTRUCTED BETWEEN EACH OF THE LOTS 81-90 TO DRAIN TOWARDS THE ROADWAY.
6. NO BUILDING PERMITS WILL BE ISSUED UNTIL AN AS-GRADED MASTER DRAINAGE PLAN HAS BEEN SUBMITTED TO THE CITY AND APPROVED BY THE CITY.

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D - DAYLIGHT
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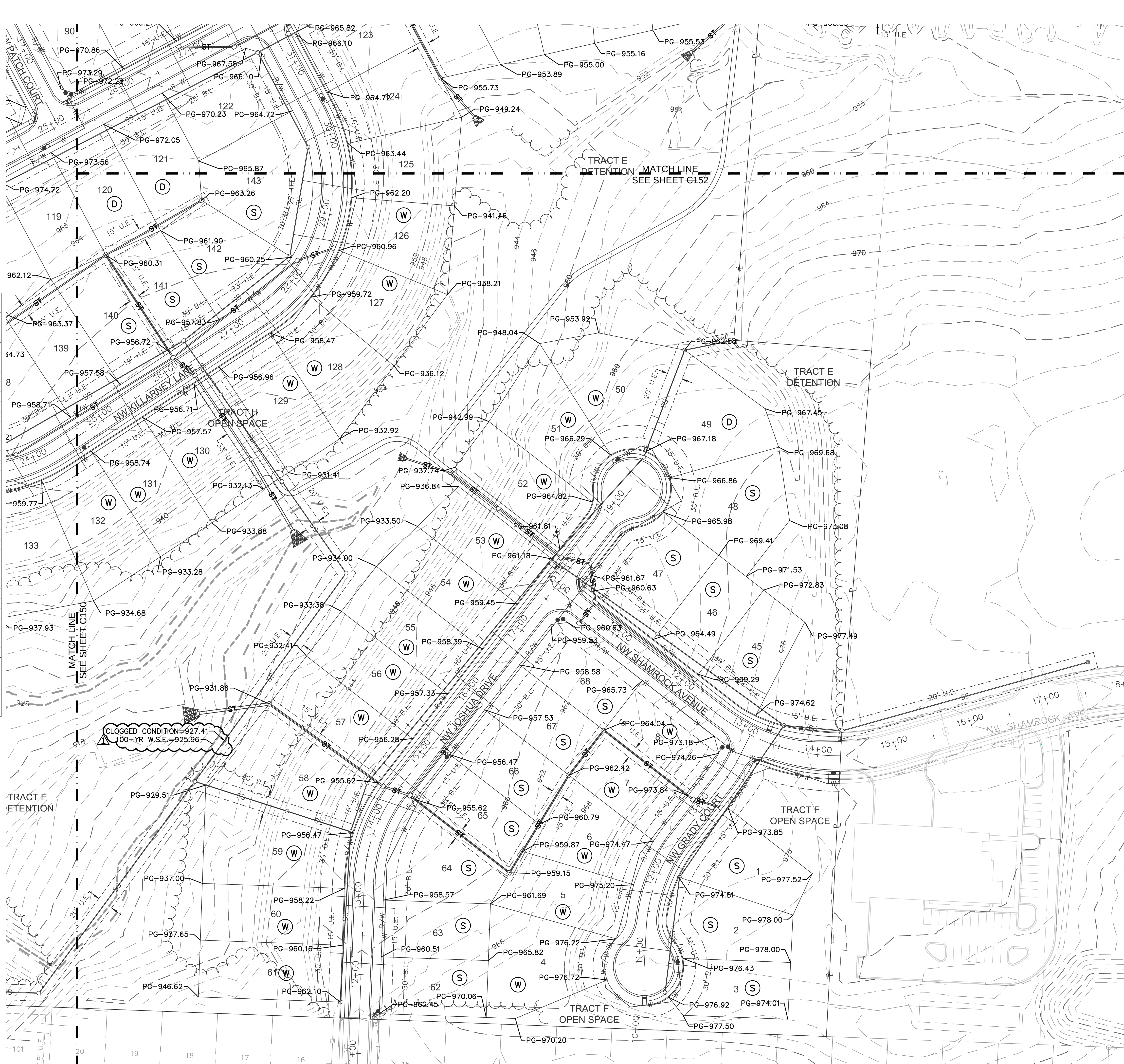


Woodside Ridge First Plat				
Minimum Low Opening Elevations				
Lot	Rear Left MLO	Rear Right MLO	Front Left MLO	Front Right MLO
37	972.83	977.49	969.88	975.21
38	969.41	972.83	965.08	969.88
39	966.47	969.41	962.63	965.08
40	969.68	971.53	967.45	966.57
41	962.58	969.68	967.77	967.45
42	948.90	962.58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

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



Key Map



olsson

NOT A SEWERAGE DISTRICT OF KANSAS
300 E. MAIN ST., SUITE 100
NORTH KANSAS CITY, MO 64116
TEL. 816.961.1177
WWW.OLSSON.COM

MASTER DRAINAGE PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

LEE'S SUMMIT, MO

BY

REVISIONS DESCRIPTION

NO. REV. DATE

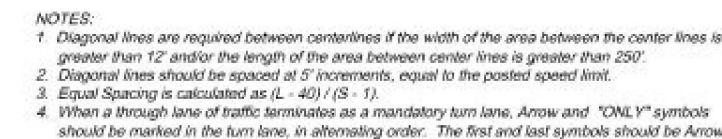
4/2/2019

REVISED PER CITY COMMENTS

2019

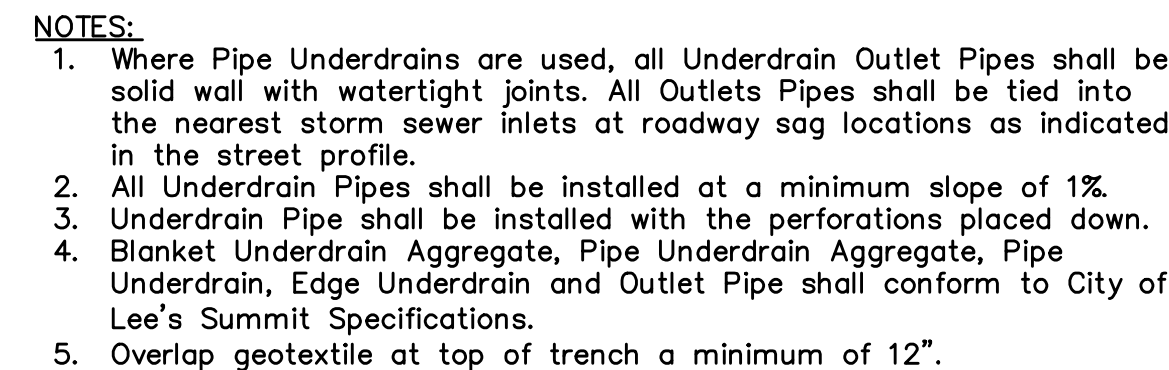
drawn by: D.A.H.O.
checked by: J.E.S.
designed by: S.M.S.
QA/QC by: M.G.D.
project no.: A18-1140
date: 2019.03.12

SHEET
C152





1. BACKFILL SHALL BE JOINTLY 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.

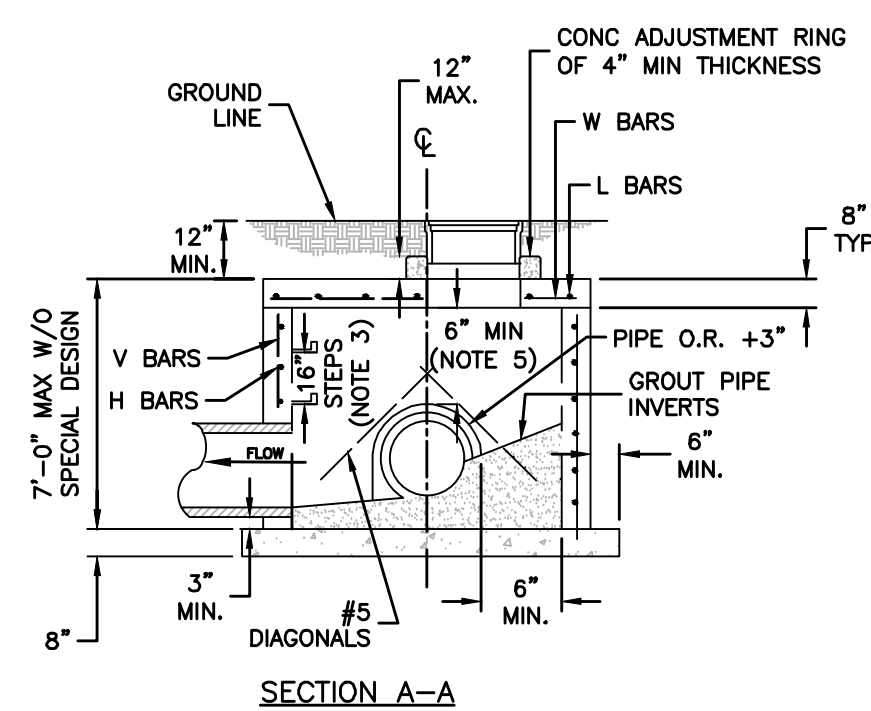
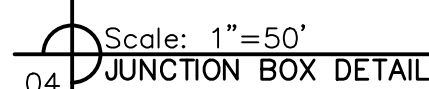


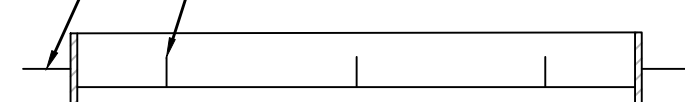
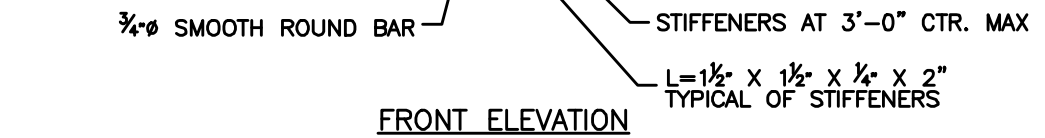
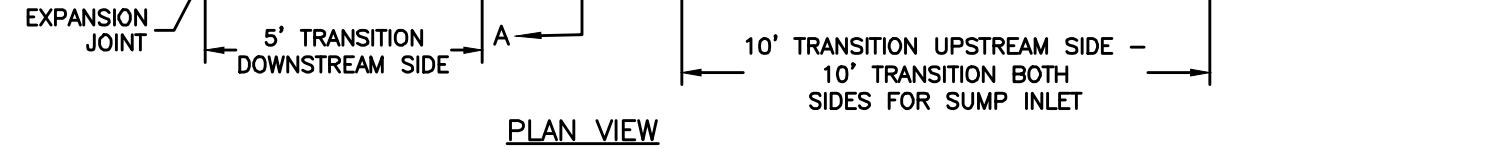
REINFORCING		
BARS	BAR SIZE	SPACING (IN.)
H	4	12
V	4	12
L	5	6
W	5	6

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

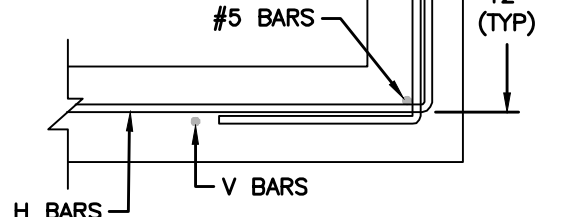
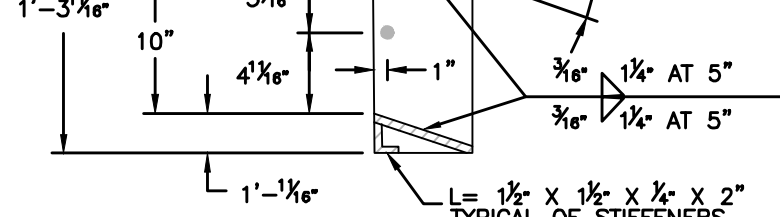
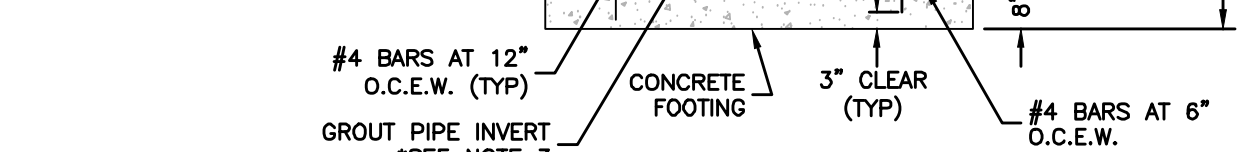


- GENERAL NOTES:**
1. LOCATE RING AND COVER ON BLANK WALL.
 2. USE $\frac{3}{4}$ " CHAMFER STRIP OR $\frac{1}{2}$ " R EDGER TOOL ON ALL EXPOSED CONCRETE CORNERS.
 3. STEPS REQUIRED AT 16" O.C. WHEN DEPTH FROM TOP OF CAST-TO INVERT EXCEEDS 4' ON BLANK WALL IF POSSIBLE.
 4. BOXOUTS WILL NOT BE ALLOWED TO PROJECT THROUGH THE FACE 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.
 6. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON-SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
 7. REINFORCING OF COVERS IN STREETS REQUIRE SPECIAL DESIGN.
 10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

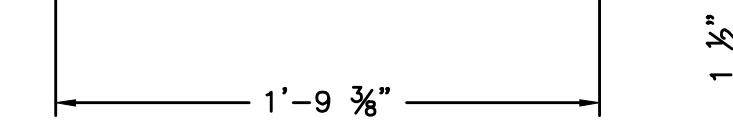




1. ALL WELDS SHALL BE PERFORMED IN ACCORDANCE WITH APPROPRIATE AWS SPECIFICATIONS AND PROCEDURES.
2. ALL WELDS ON EXPOSED SURFACES SHALL BE DRESSED SO AS TO PROVIDE A PLEASING FINISHED APPEARANCE.
3. THE ENTIRE FRAME SHALL BE PAINTED A SINGLE COAT OF CHEM-PRIME #37H-78 PRIMER (GRAY) OR EQUAL.

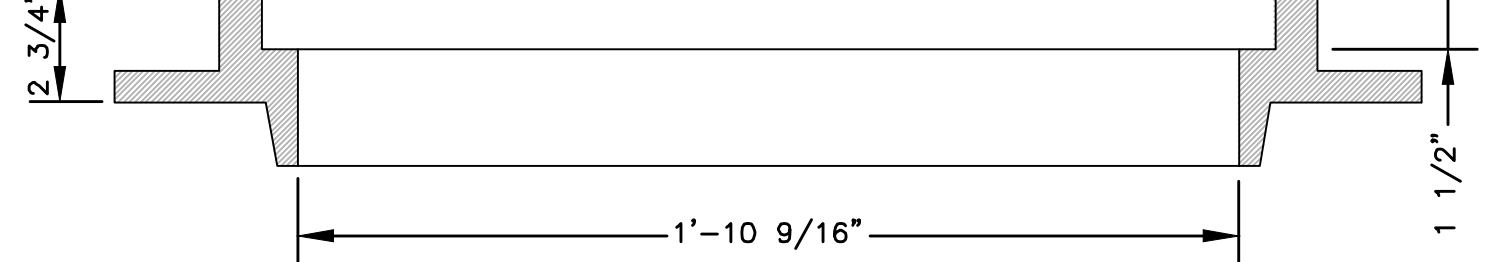


1. THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION.
2. THE SECOND DIMENSION IS THE "W" DIMENSION.
3. THE FLOW LINES LISTED ON THE PROJECT PLANS ARE LISTED AT THE INSIDE FACE OF THE WALL.
4. FLOOR OF INLET GROUNDING SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
5. ALL JOINTS SHALL BE REINFORCED WITH 2" WIDE FIBERGLASS REINFORCING FABRIC.
6. STEPS SHALL BE SPACED AT 1'-4" O.C. VERTICALLY ON BLANK WALL IF POSSIBLE.
7. BEVEL ALL EXPOSED EDGES WITH 3/4" CHAMFER OR 1/2" TORN-EDGE.
8. ALL EXPOSED EDGES SHALL BE FINISHED WITH STREET-SURFACING GRAOUT INLETS SHALL BE LEVEL TO FINISH GRADE.
9. ALL JOINTS SHALL BE PINNED, SEALED WITH AN UNPOSSIBLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
10. LIFTING RINGS SHALL BE REMOVED AND SEALED WITH NON-SHRINKABLE GROUT.
11. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

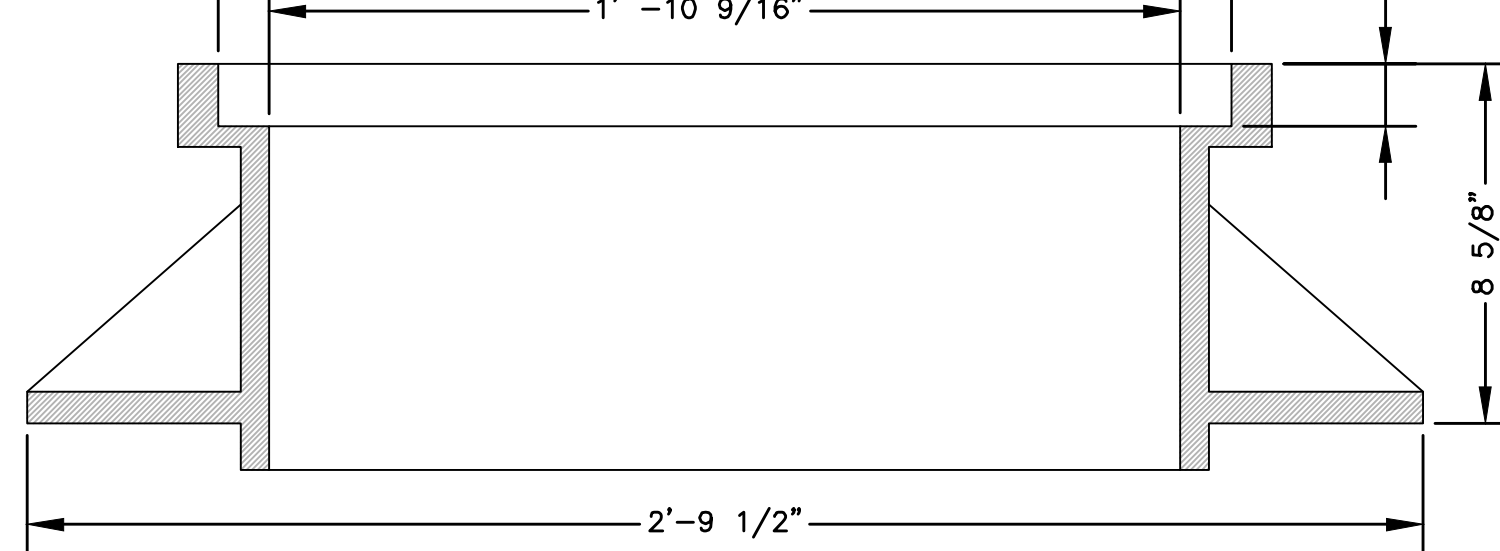


NOTE: PICK HOLES NOT SHOWN

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

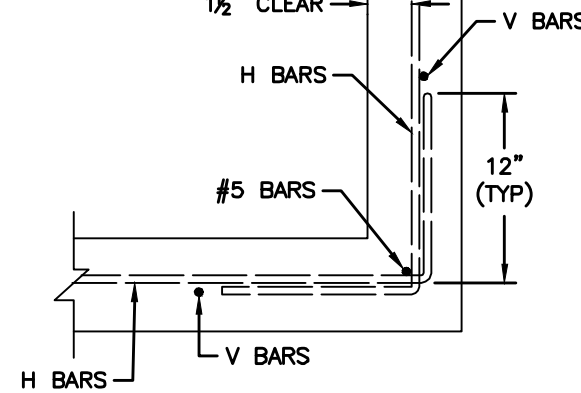
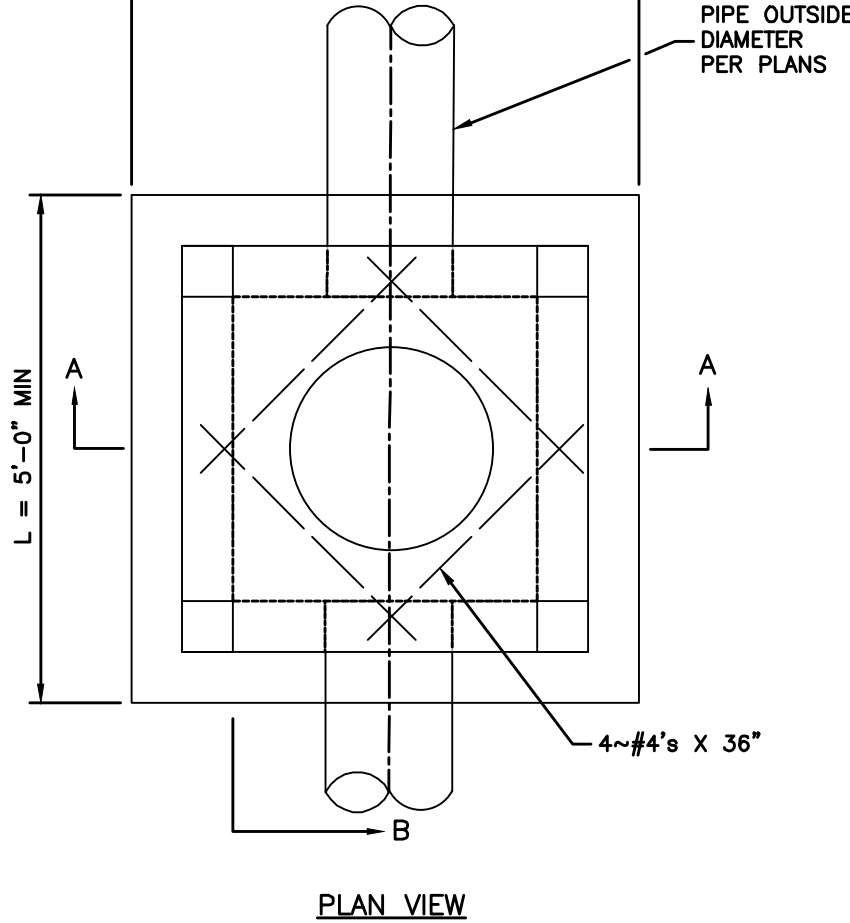


LEE'S SUMMIT PART NO.: LS103A
MINIMUM WEIGHT = 145 LB

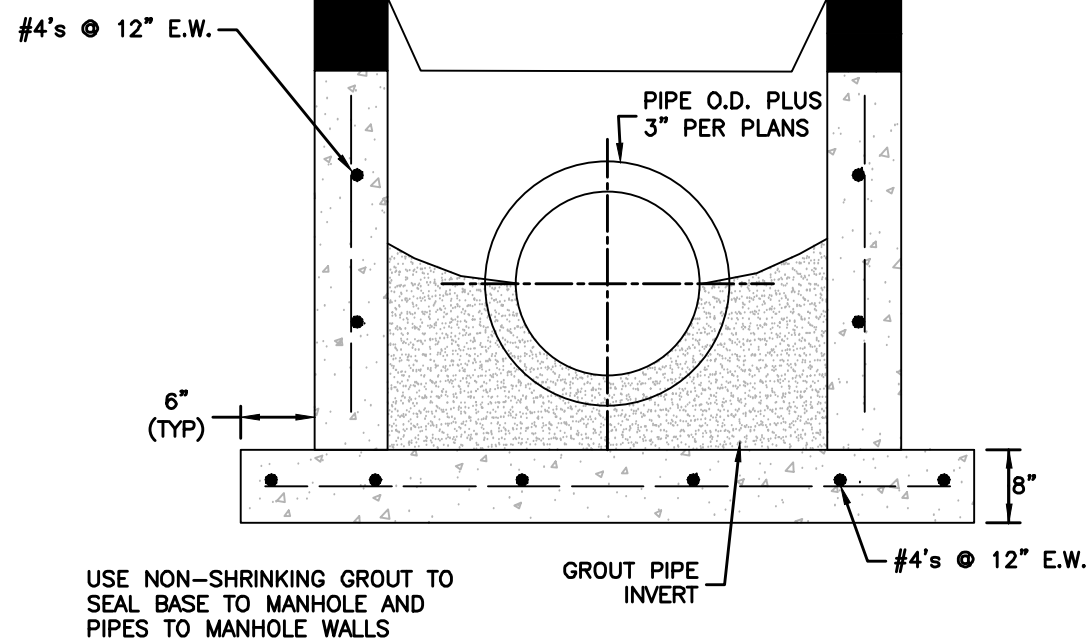


LEE'S SUMMIT PART NO.: LS101A
MINIMUM WEIGHT = 250 LB

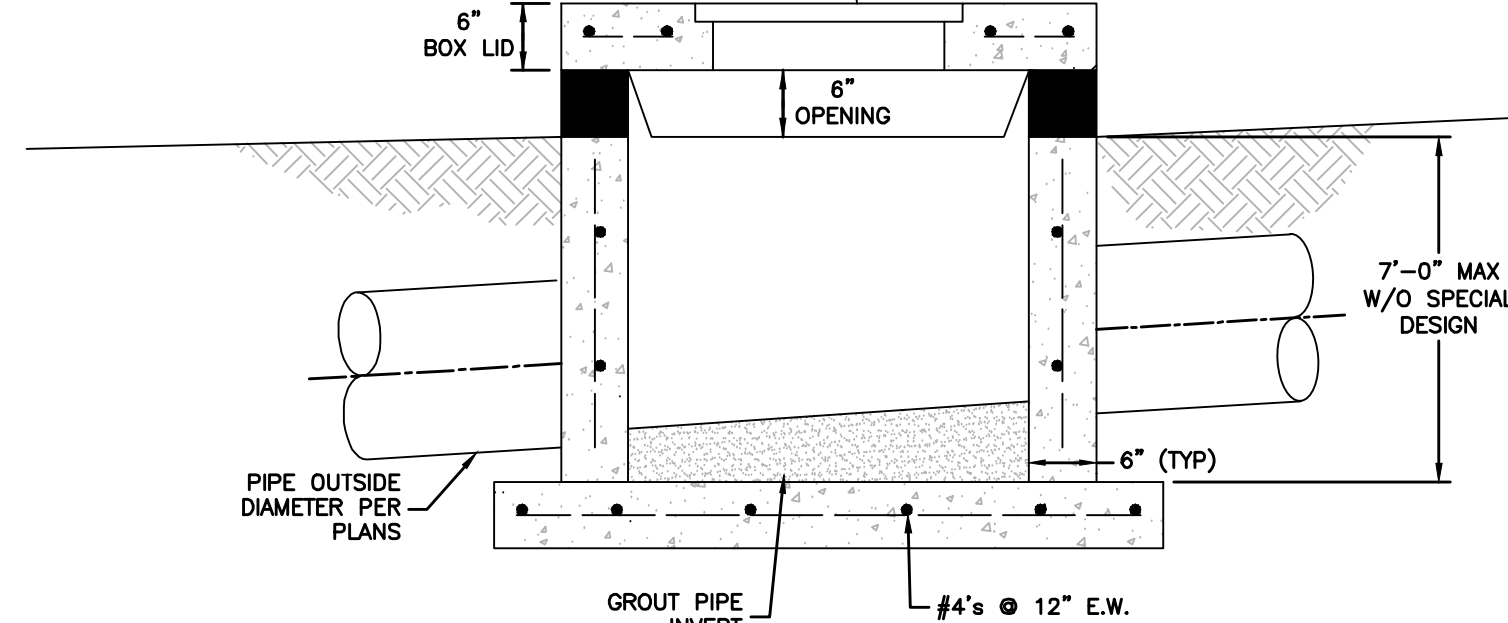
*COVER AND FRAME MODEL INFORMATION REFER TO THE STORMWATER APPROVED PRODUCTS LIST.



WALL CORNER DETAIL



SECTION A-A



SECTION B-B

GENERAL NOTES:

1. LOCATE RING AND COVER OVER OUTLET ON BLANK WALL.
2. USE $\frac{3}{4}$ " CHAMFER ON ALL EXPOSED CONCRETE CORNERS.
3. FLOOR OF INLET GROUDED 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-SINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

[illegible]

STORM DETAIL SHEET
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
FIRST PLAT

2019

DEVISIONS

MO Certificate of Authority #:001592
1301 BURLINGTON, SUITE 100
NORTH KANSAS CITY, MO 64116

SHEET
C156