

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

RETAINED TO PROVIDE AS-BUILT DRAWINGS FOR THIS

E. 7/10/20 DATE

☒ NOT FOR CONSTRUCTION

☐ REVIEWED FOR CONSTRUCTION

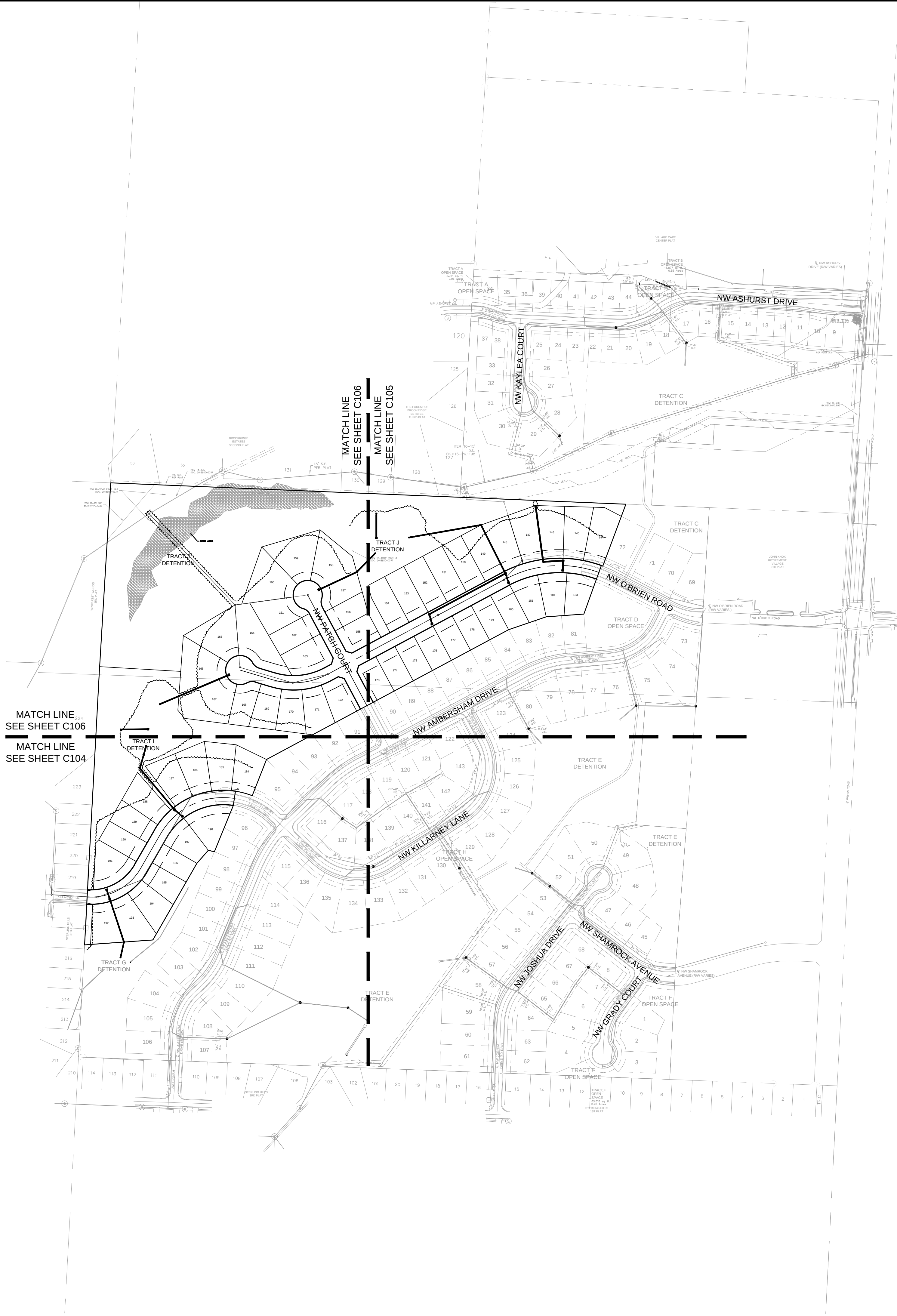
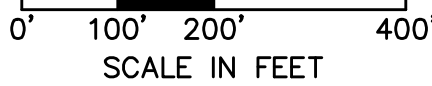


Part of Lot 3B, WEST VILLAGE COMMERCIAL DEVELOPMENT, LOTS 3A AND 3B, a subdivision recorded as Instrument Number 19E0018413 in Book 1182 at Page 62 in Jackson County Recorder of Deeds Office located in the Northeast and Southeast Quarter of Section 2, Township 47 North, Range 32 West of the 5th Principal Meridian in Lee's Summit, Jackson County, Missouri being bounded and described by or under the direct supervision of Jason S Roudsbaugh, P.L.S. 2002014092 as follows: Commencing at the Southeast corner of said Southeast Quarter; thence North 87°05'43" West, on the South line of said Southeast Quarter 2,633.21 feet to the Southwest corner of said Southeast Quarter; thence North 03°40'41" East, on the West line of said Southeast Quarter, 1,326.36 feet to the Southwest corner of said Lot 3B, also being the Southwest corner of the North half said Southeast Quarter, also being a point on the Easterly line of STERLING HILLS 5TH PLAT, a subdivision in said Lee's Summit recorded as Instrument Number 11273788 in Book 154 at Page 88 in said Jackson County Recorder of Deeds Office, also being the Southwest corner of proposed WOODSIDE RIDGE 1st Plat, Lots 1 thru 143 inclusive, and Tracts A, B, C, D, E, F, G and H; thence North 03°05'41" East on said West line and said Easterly line, also being the West line of said Lot 3B, also being the Westerly line of proposed WOODSIDE RIDGE 1ST PLAT, LOTS 1 thru 143 inclusive, and Tracts A, B, C, D, E, F, G and H, 389.26 feet to the Point of Beginning of the tract of land to be herein described; thence leaving said proposed Westerly line, continuing North 03°05'41" East on said West lines and said Easterly lines, 936.61 feet to the Northeast corner of said STERLING HILLS 5TH PLAT, also being a point on the Easterly line of WINTERSET WOODS – 3RD PLAT, a subdivision in said Lee's Summit recorded as Instrument Number 200310002463 in Book 174 at Page 14 in said Jackson County Recorder of Deeds Office, also being the Northwest corner of said Southeast Quarter; thence North 03°26'14" East, on the said West line of said Lot 3B, said Easterly line and West line of said Northeast Quarter, 665.72 feet to the Northwest corner of the South half of the South Half of said Northeast Quarter, also being the Northwest corner of said Lot 3B, also being the Northeast corner of the South half of the South Half of said Northeast Quarter, also being a point on the Southerly line of the FOREST OF BROOKRIDGE ESTATES – THIRD PLAT, LOTS 117 – 133, a subdivision in said Lee's Summit recorded as Instrument Number 1802804 in Book 144 at Page 57 in said Jackson County Recorder of Deeds Office; thence South 87°37'42" East, along said Southerly line, also along the North line of said Lot 3B, also being the North line of said South Half of said South Half of said Northeast Quarter, also being the South line of the FOREST OF BROOKRIDGE ESTATES – THIRD PLAT, LOTS 117 – 133, a distance of 1,210.45 feet to the Southeast corner of said the FOREST OF BROOKRIDGE ESTATES – THIRD PLAT LOTS 117 – 133 and to a point on said proposed Westerly line; thence South 87°37'42" East on said North line of said South Half of said South Half, said North line of said Lot 3B, and said proposed Westerly line, 574.95 feet; thence leaving said North lines, South 20°32'36" West, along said proposed Westerly line, 229.10 feet; thence Westerly, along said proposed Westerly line, on a curve to the left, having an initial tangent bearing of North 69°27'24" West with a radius of 428.00 feet, a central angle of 00°42'29" and an arc distance of 5.25 feet; thence South 19°50'07" West, along said proposed Westerly line 178.42 feet; thence South 85°52'23" West, along said proposed Westerly line, 130.41 feet; thence South 70°59'24" West, along said proposed Westerly line, 137.47 feet; thence South 61°49'26" West, along said proposed Westerly line, 951.56 feet; thence South 21°24'31" West, along said proposed Westerly line, 135.10 feet; thence Westerly, along said proposed Westerly line, along a curve to the left having an initial tangent bearing of North 68°35'29" West with a radius of 275.00 feet, a central angle of 12°33'32" and an arc distance of 60.28 feet; thence South 08°50'59" West, along said proposed Westerly line, 50.00 feet; thence South 22°12'04" West, along said proposed Westerly line, 173.03 feet; thence North 75°51'31" West, along said proposed Westerly line, 21.43 feet; thence South 41°11'03" West, along said proposed Westerly line, 60.06 feet; thence South 29°55'27" West, along said proposed Westerly line, 306.11 feet; thence South 85°54'26" West, along said proposed Westerly line, 236.75 feet to the Point of Beginning. Containing 1,514,368 square feet or 34.77 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



MASTER GENERAL LAYOUT STREET & STORM SEWER PLANS

WOODSIDE RIDGE
SECOND PLAT

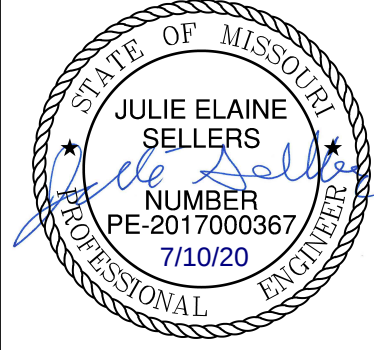
LEE'S SUMMIT, MO

2020

BY

REVISIONS DESCRIPTION

DEVIATIONS



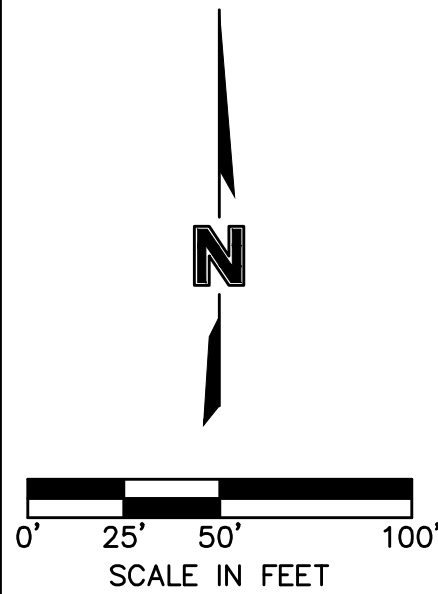
olson

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

www.njsson.com



KEY MAP



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NO. 000000000 of Authority of 001892
300 E. BROADWAY, SUITE 100
NORTH KANSAS CITY, MO 64116
TEL. 816.861.1177
www.olsson.com

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER
PE-2017000367
7/10/20
PROFESSIONAL ENGINEER

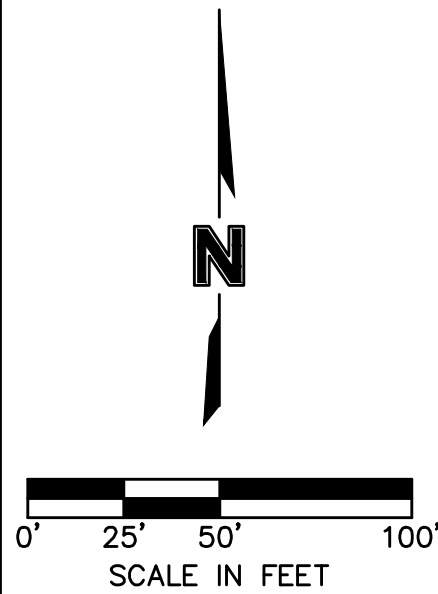
BY: [Signature]
NO. REV. DATE
REVISIONS DESCRIPTION
REVISIONS

GENERAL LAYOUT
STREET & STORM SEWER PLANS
WOODSIDE RIDGE
SECOND PLAT
LEE'S SUMMIT, MO
2020

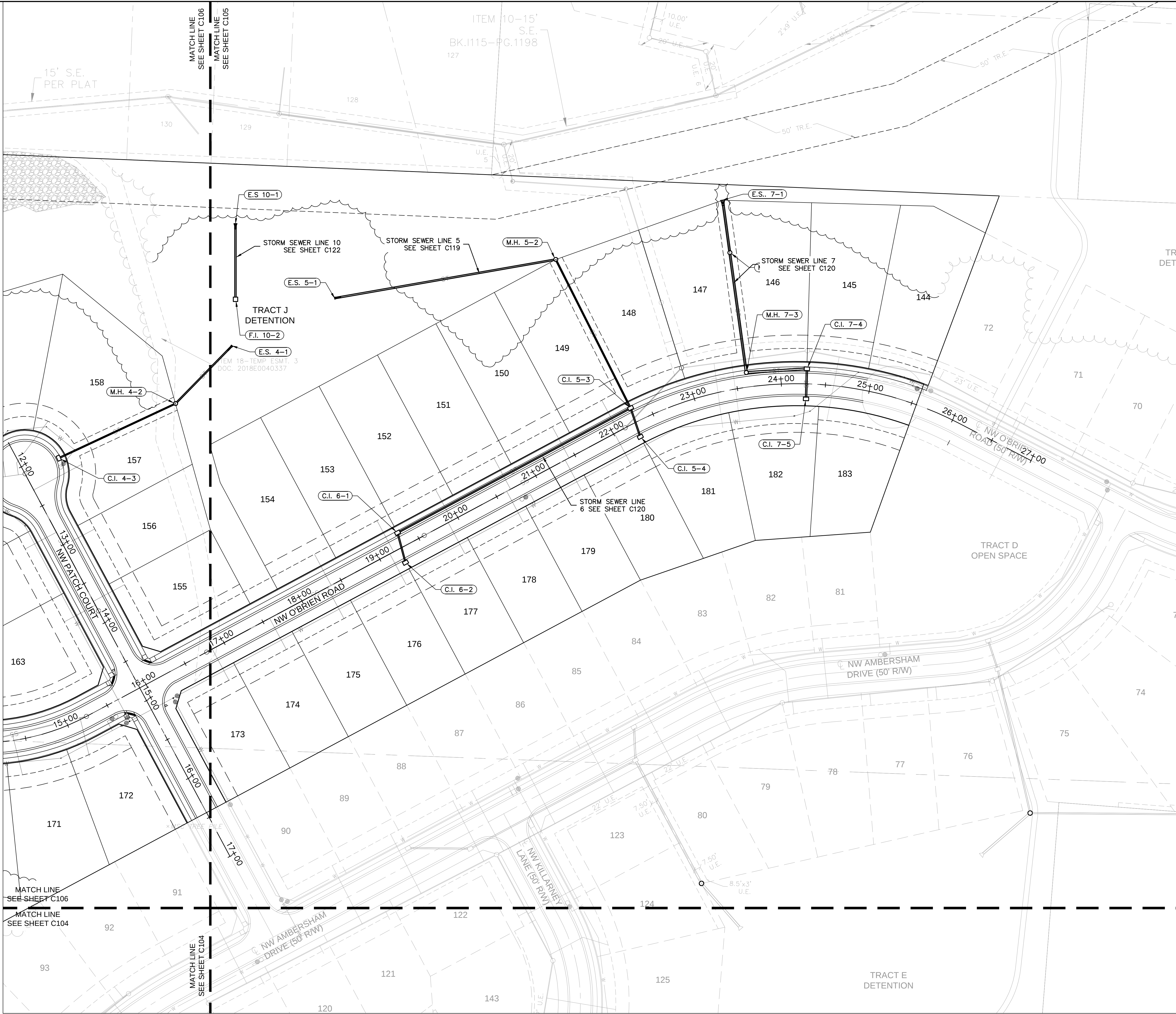
drawn by: C.S.M.
checked by: S.M.S.
designed by: C.S.M.
QA/QC by: J.E.S.
project no.: C18-1140
date: 2020.07.10

SHEET
C105

DWG: F:\2018\1001-1500\018-1140-C\40-Design\AutoCAD\Final Plans\Sheets\GNCV\Street & Storm\C_GEN02_C181140.dwg
DATE: Jul 03, 2020 8:50am
USER: sscylor



KEY MAP



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NO Conflicts of Interest at 03/19/22
300 E. BIRKING STREET, SUITE 100
NORTH KANSAS CITY, MO 64116
TEL 816.861.1177
www.olsson.com

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER
PE-2017000367
7/10/20
PROFESSIONAL ENGINEER

BY

REVISIONS DESCRIPTION

NO. REV. DATE

GENERAL LAYOUT
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
SECOND PLAT

LEE'S SUMMIT, MO

2020

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checked by: S.M.S.
designed by: C.S.M.
QA/QC by: J.E.S.
project no.: C18-1140
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SHEET
C106

USER: sscylor

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DATE: Jul 03, 2020 8:51am



KEY MAP

GENERAL NOTES:

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

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

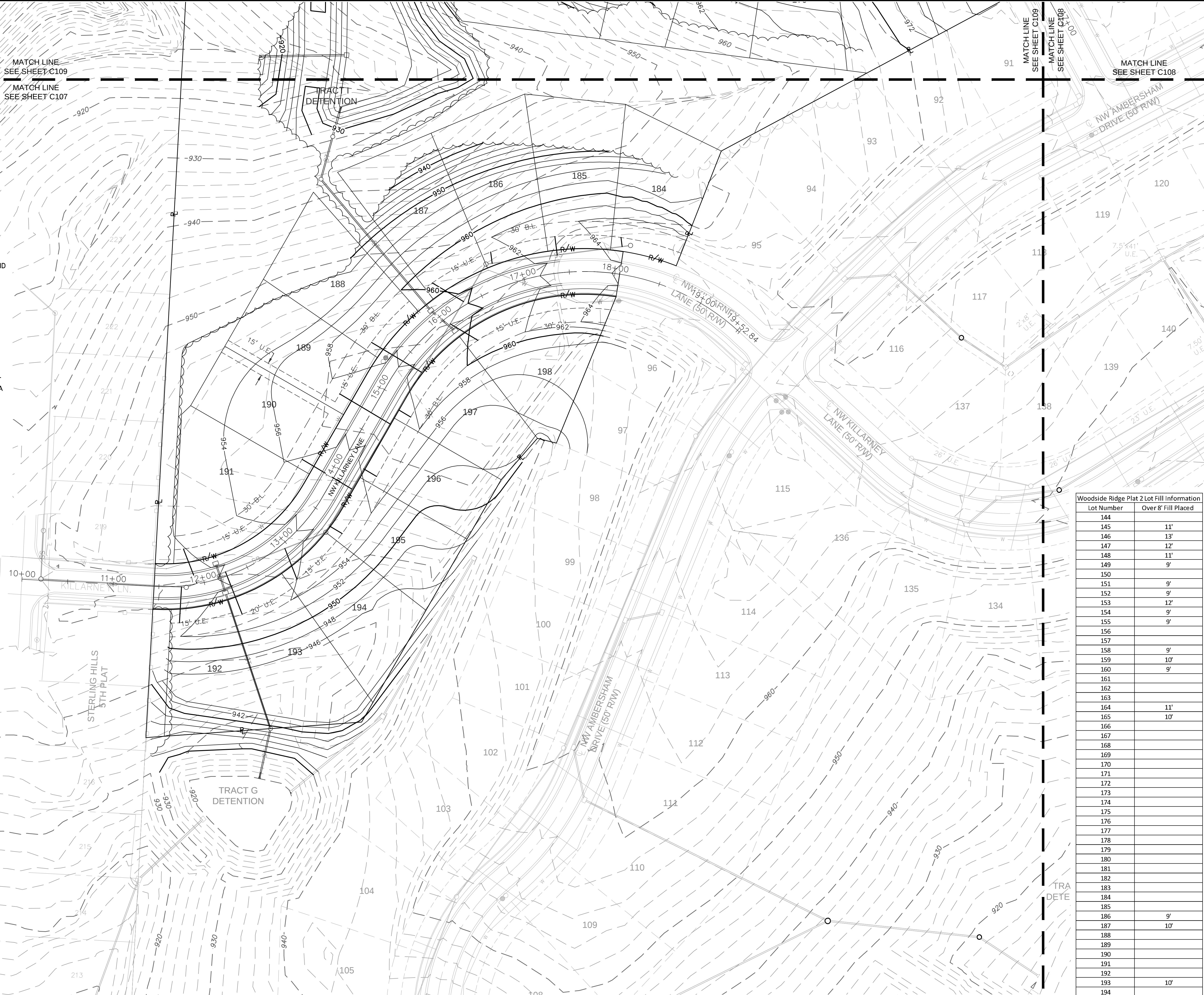
EARTHWORK QUANTITIES		
LOCATION	CUT (C.Y.)	FILL (C.Y.)
STREET	8049	7968
SITE	52613	83489
TOTAL	60662	91457

EARTHWORK QUANTITIES NOTES:

- EARTHWORK QUANTITIES BASED ON FINISHED GRADE SURFACE AND DO NOT INCLUDE ADJUSTMENTS FOR TOPSOIL AND SHRINKAGE.
- 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:
 - REMOVE TOPSOIL AND ORGANIC DIRT FROM THE AREA
 - PROOF ROLL TO CHECK THE SUBGRADE
 - REMOVE OR REPAIR ANY UNSTABLE AREA IN ACCORDANCE WITH THIRD-PARTY TESTER
- 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.



0 25' 50' 100'
SCALE IN FEET



Woodside Ridge Plat 2 Lot Fill Information	
Lot Number	Over 8' Fill Placed
144	
145	11'
146	13'
147	12'
148	11'
149	9'
150	
151	9'
152	9'
153	12'
154	9'
155	9'
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158	9'
159	10'
160	9'
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163	
164	11'
165	10'
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183	
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186	9'
187	10'
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191	
192	
193	10'
194	
195	
196	
197	
198	

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NOT A SEAL OF ANY STATE OR PROFESSIONAL ENGINEER
300 E. BROADWAY, SUITE 100
NORTH KANSAS CITY, MO 64116
TEL. 816.861.1177
WWW.OLSSON.COM

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER
PE-2017000367
7/10/20
PROFESSIONAL ENGINEER

BY: [Signature]
NO. REV. [] DATE []
REVISIONS DESCRIPTION []

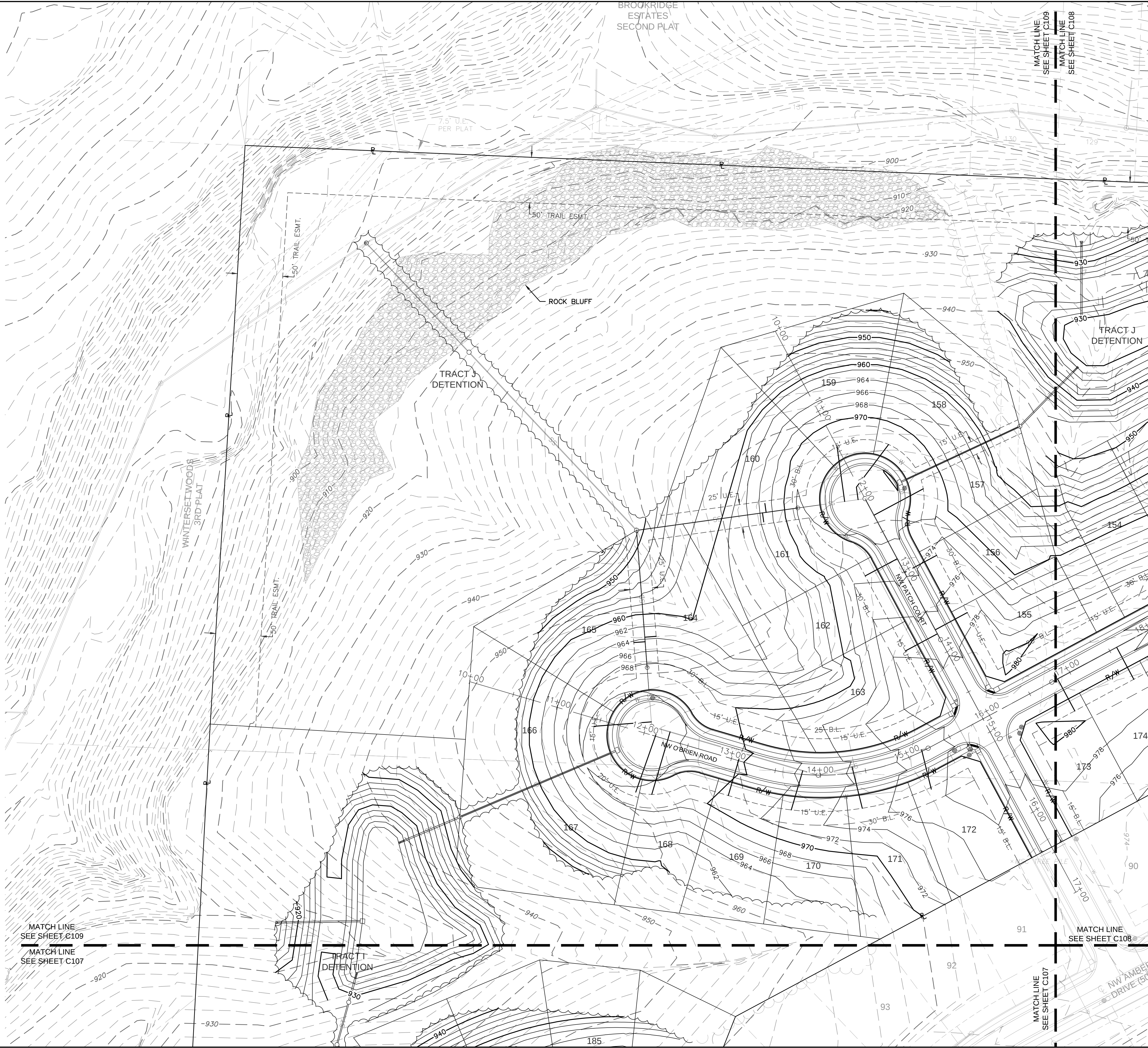
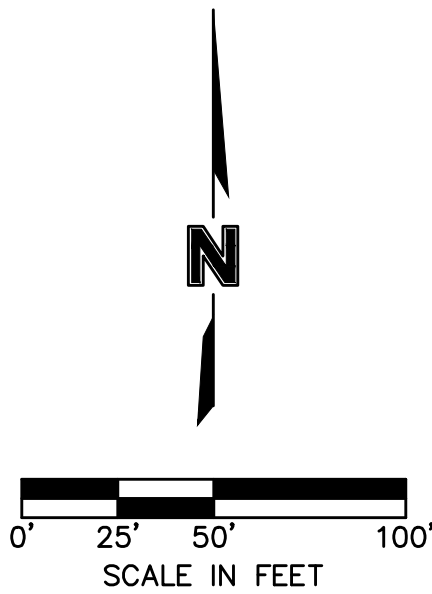
GRADING PLAN
STREET & STORM SEWER PLANS
WOODSIDE RIDGE
SECOND PLAT
LEE'S SUMMIT, MO
2020

drawn by: [] C.S.M.
checked by: [] S.M.S.
designed by: [] C.S.M.
QA/QC by: [] J.E.S.
project no.: C18-1140
date: 2020.07.10
SHEET
C107



KEY MAP

Woodside Ridge Plat 2 Lot Fill Information	
Lot Number	Over 8' Fill Placed
144	
145	11'
146	13'
147	12'
148	11'
149	9'
150	
151	9'
152	9'
153	12'
154	9'
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159	10'
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193	10'
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BY

NO. REV.

DATE

REVISIONS DESCRIPTION

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
7/10/20
PROFESSIONAL ENGINEER

GRADING PLAN
STREET & STORM SEWER PLANS
WOODSIDE RIDGE
SECOND PLAT
LEE'S SUMMIT, MO

2020

drawn by: C.S.M.
checked by: S.M.S.
designed by: C.S.M.
QA/QC by: J.E.S.
project no.: C18-1140
date: 2020.07.10

SHEET
C108

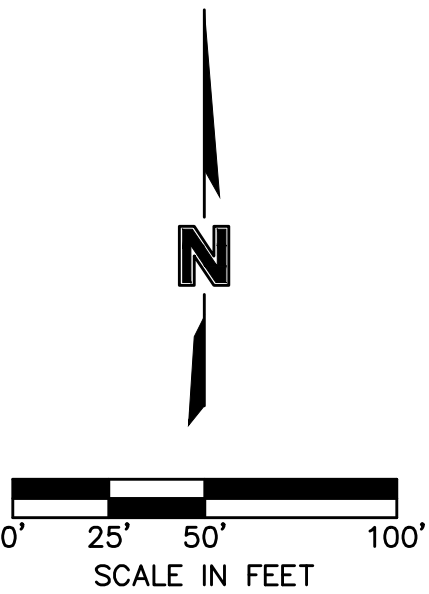
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303 E. BROADWAY, SUITE 100
NORTH KANSAS CITY, MO 64116
TEL. 816.861.1177
www.olsson.com



KEY MAP

Woodside Ridge Plat 2 Lot Fill Information	
Lot Number	Over 8' Fill Placed
144	
145	11'
146	13'
147	12'
148	11'
149	9'
150	
151	9'
152	9'
153	12'
154	9'
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186	9'
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193	10'
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BY

NO. REV.

DATE

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
7/10/20
PROFESSIONAL ENGINEER

GRADING PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
SECOND PLAT

LEE'S SUMMIT, MO

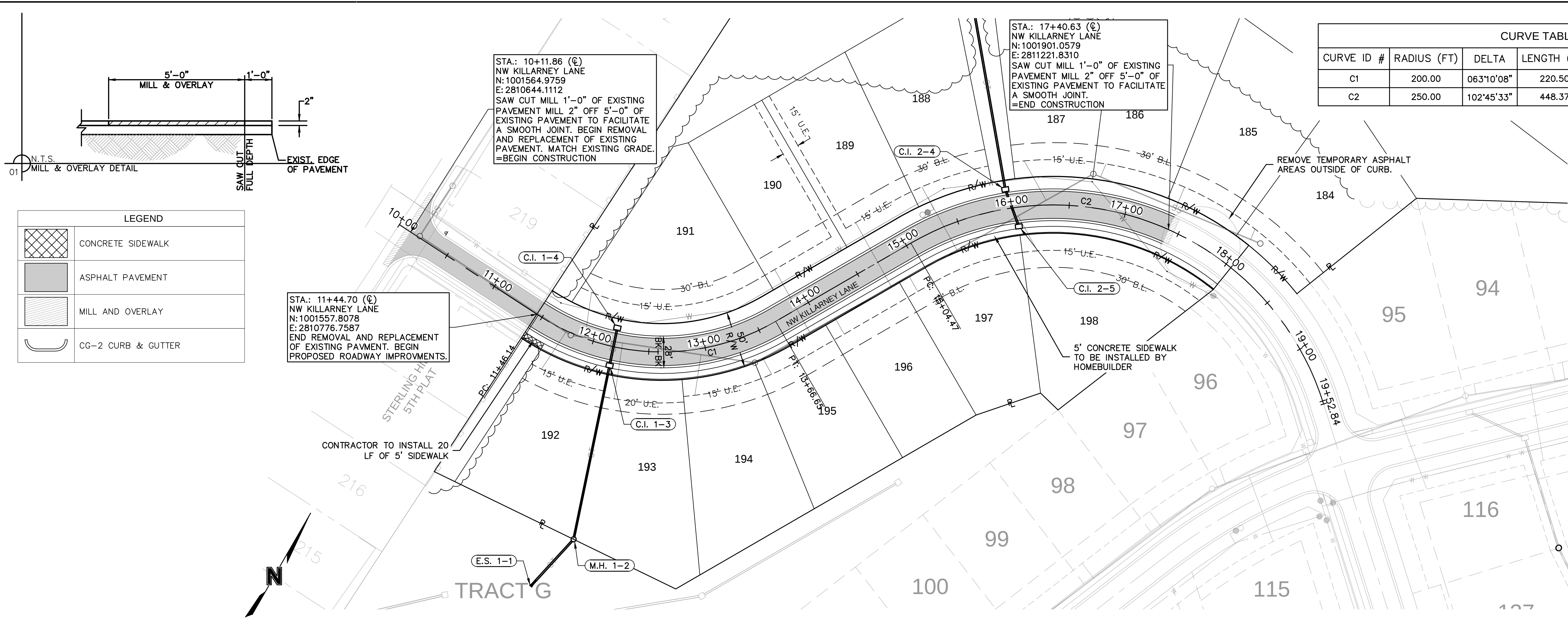
2020

drawn by: C.S.M.
checked by: S.M.S.
designed by: C.S.M.
QA/QC by: J.E.S.
project no.: C18-1140
date: 2020.07.10

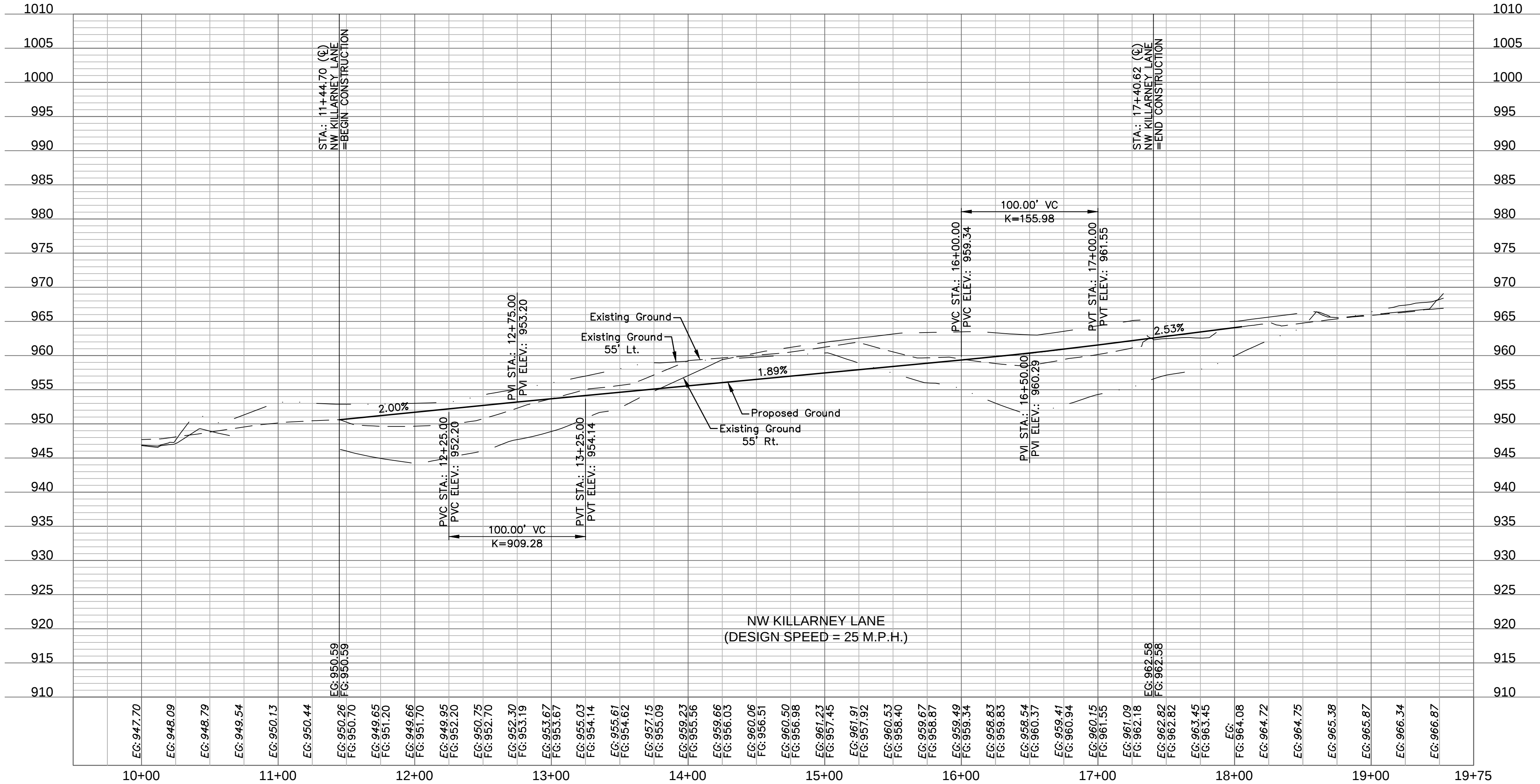
SHEET
C109

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CURVE TABLE					
CURVE ID #	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)
C1	200.00	063°10'08"	220.50	122.97	12+43.68
C2	250.00	102°45'33"	448.37	312.94	16+39.90



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303 E. BURGESS STREET, SUITE 100
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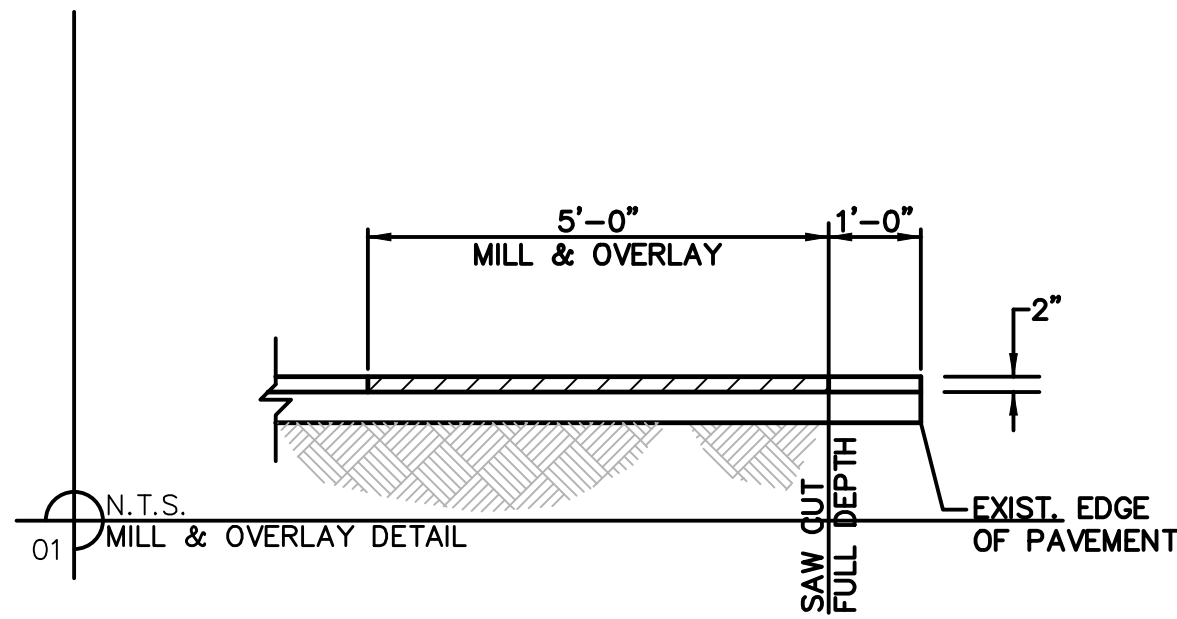
STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER
PE-2017000367
7/10/20
PROFESSIONAL ENGINEER

BY
NO. REV.
DATE
REVISIONS DESCRIPTION

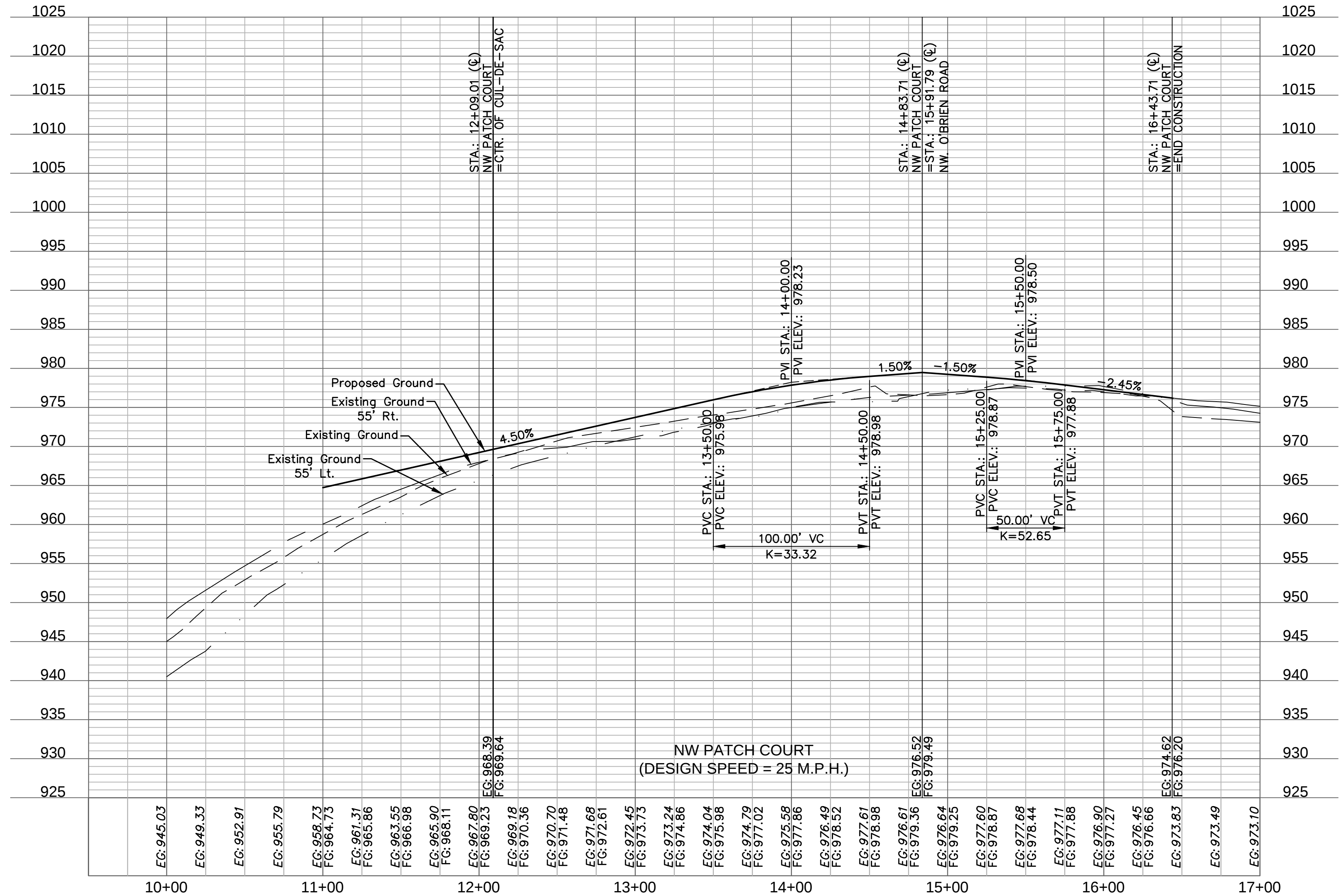
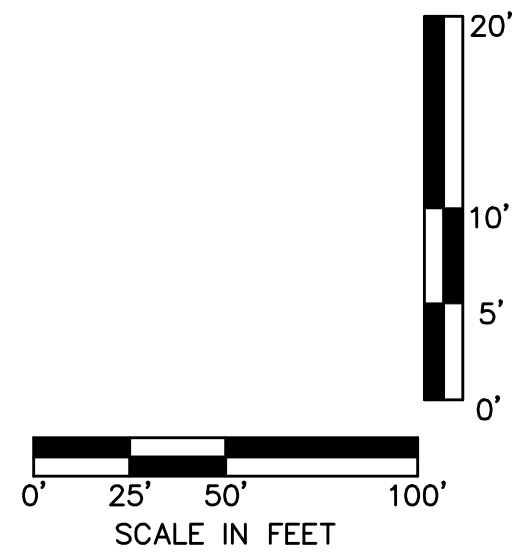
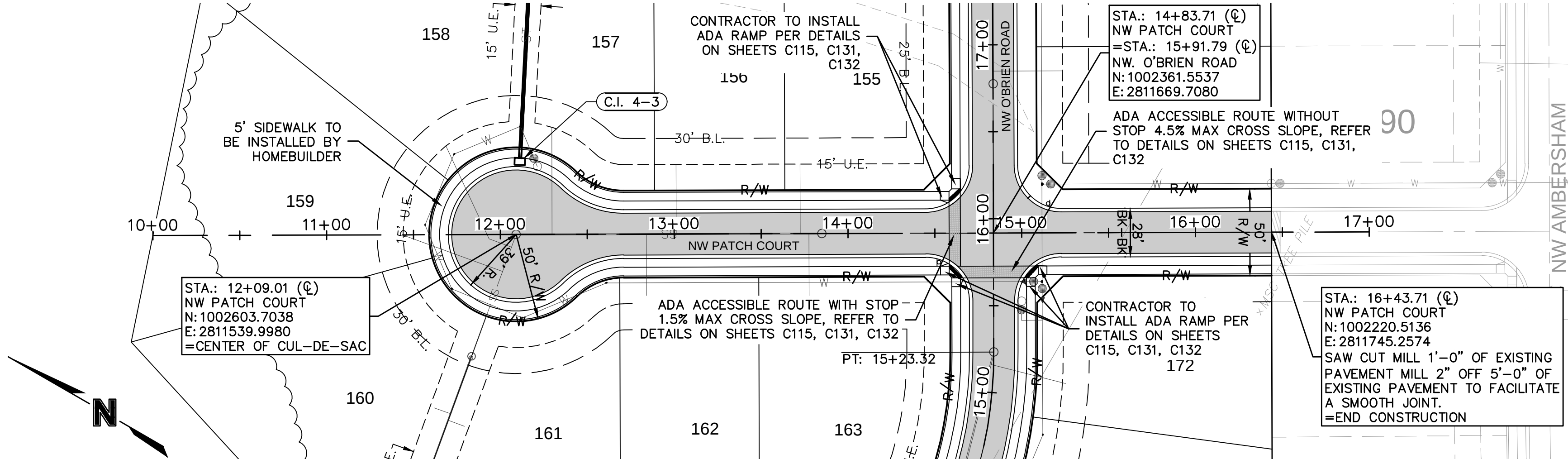
ROADWAY PLAN & PROFILE
STREET & STORM SEWER PLANS
WOODSIDE RIDGE
SECOND PLAT
LEE'S SUMMIT, MO
2020

drawn by: _____ C.S.M.
checked by: _____ S.M.S.
designed by: _____ C.S.M.
QA/QC by: _____ J.E.S.
project no.: C18-1140
date: 2020.07.10

SHEET
C110



LEGEND	
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	MILL AND OVERLAY
	CG-2 CURB & GUTTER

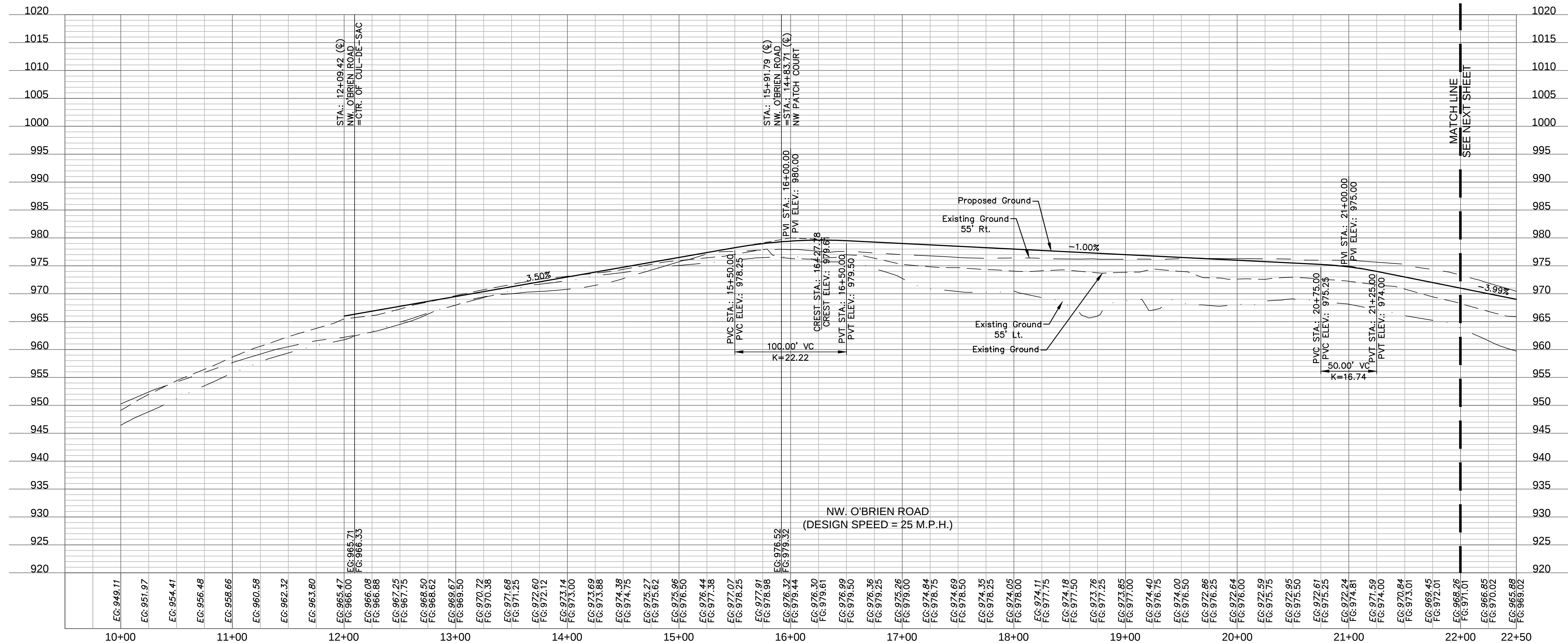
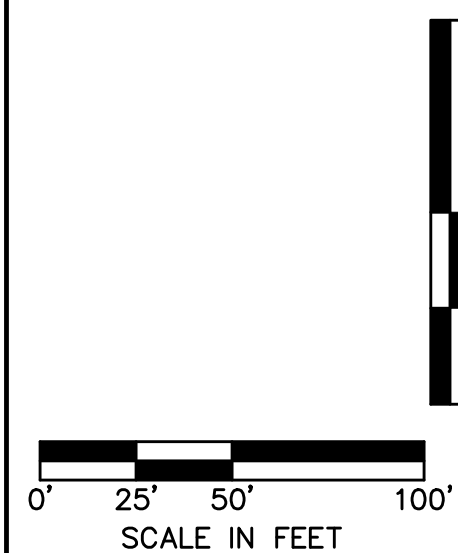
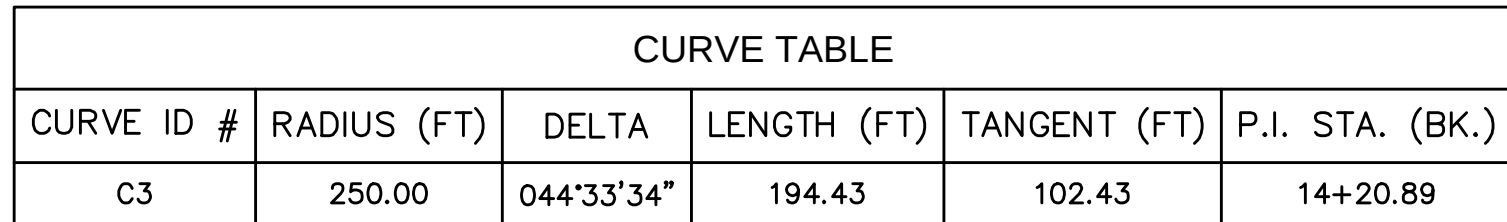


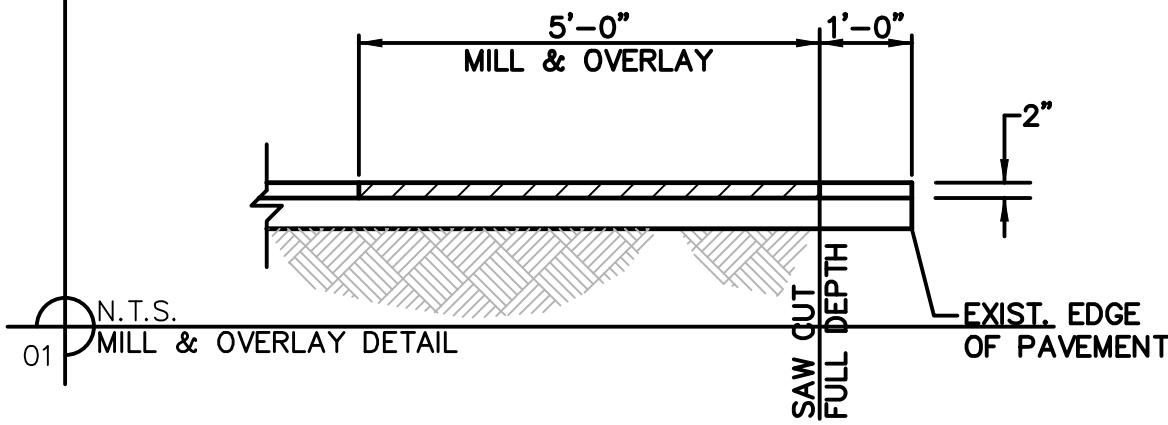
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WOODSIDE RIDGE SECOND PLAT		2020	
LEE'S SUMMIT, MO			
drawn by: _____ checked by: _____ designed by: _____ QA/QC by: _____ project no.: _____ date: _____			
SHEET C111			

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NO. 00181140-1500
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NORTH KANSAS CITY, MO 64116
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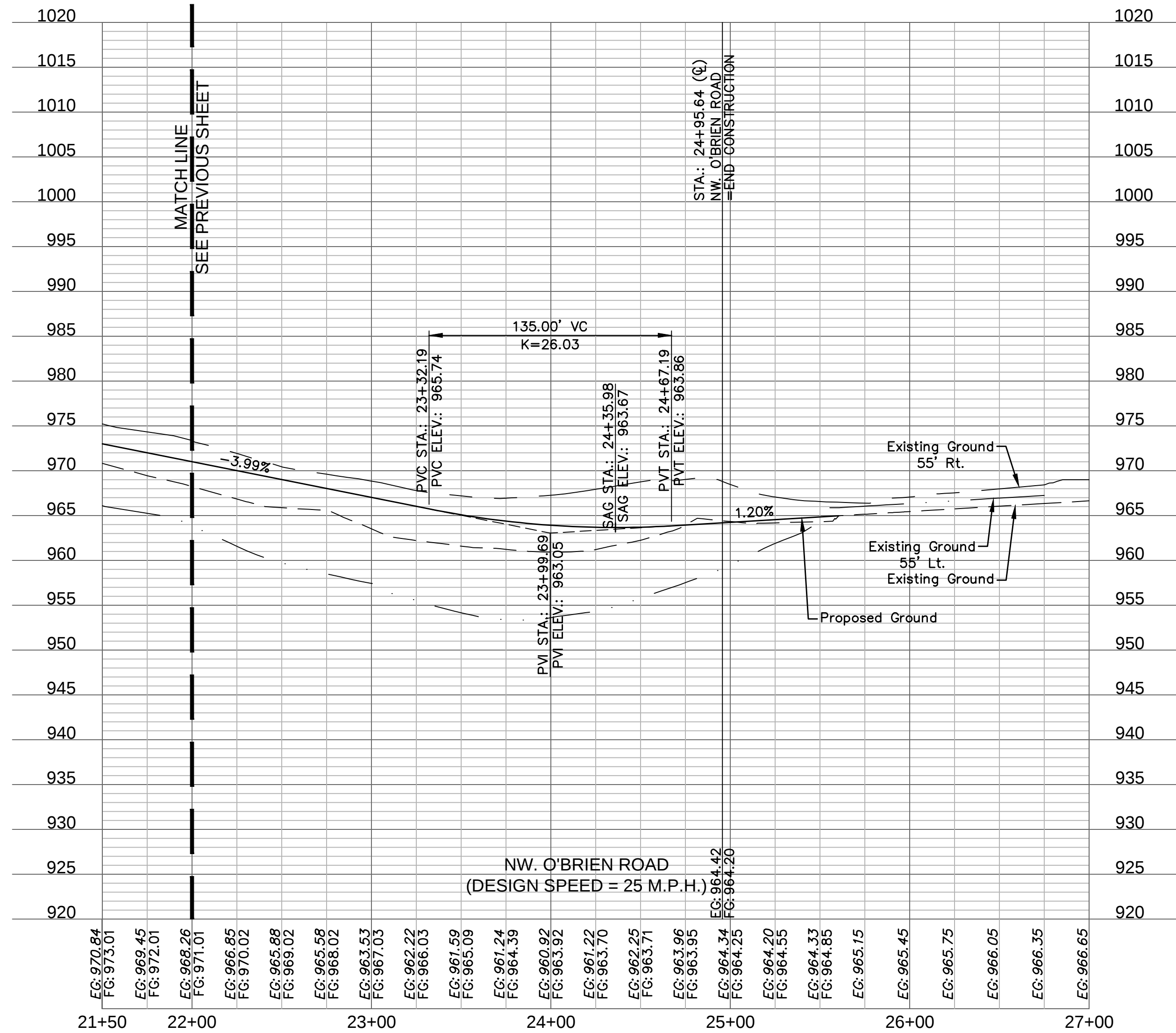
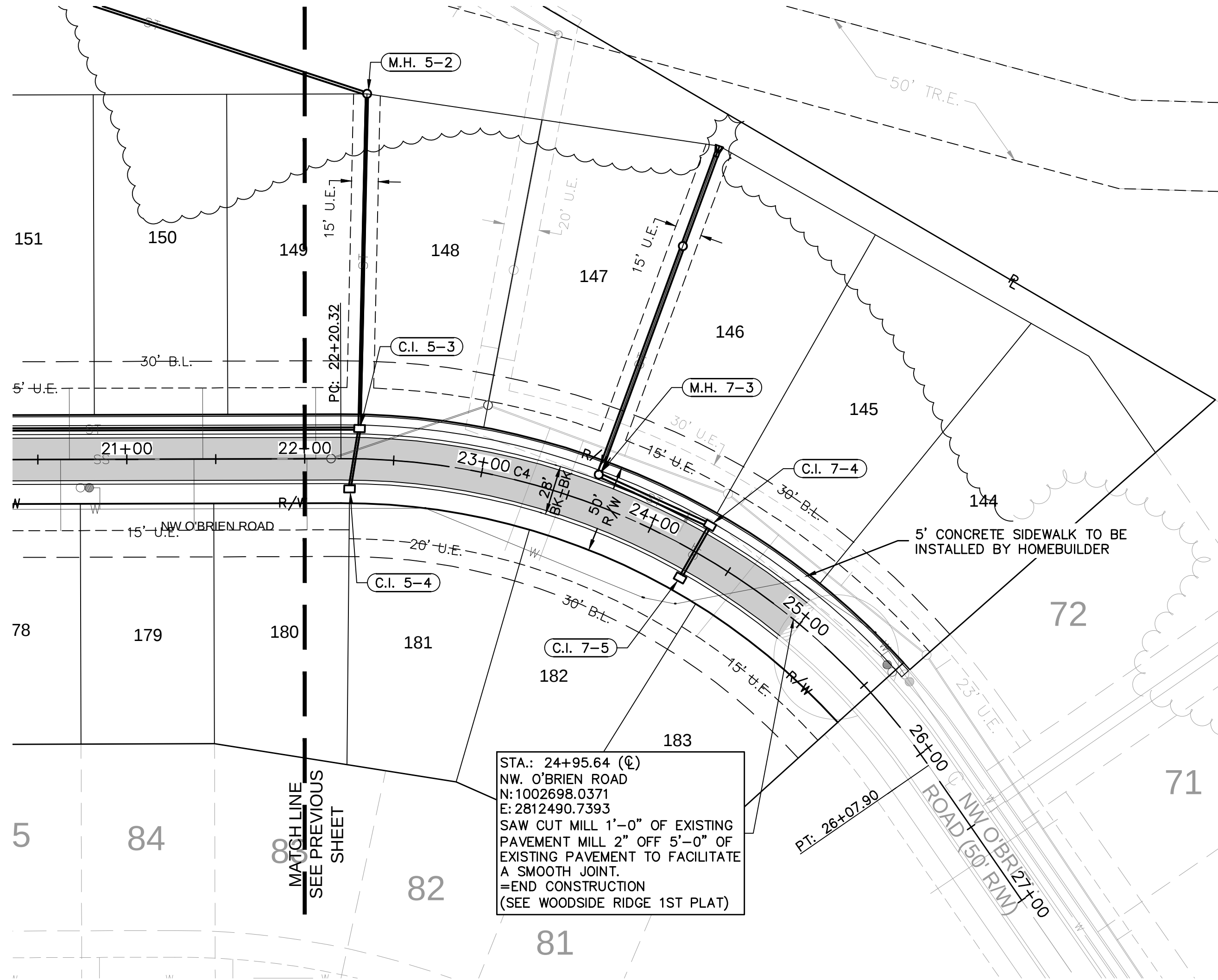
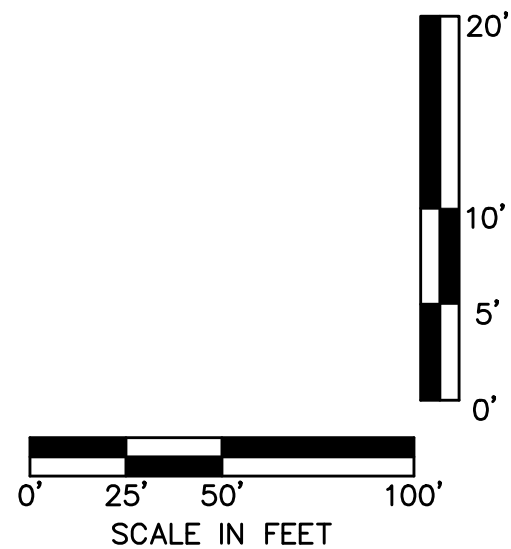
STATE OF MISSOURI
JULIE ELAINE
SELLERS
NUMBER
PE-2017000367
7/10/20
PROFESSIONAL ENGINEER





LEGEND	
	CONCRETE SIDEWALK
	ASPHALT PAVEMENT
	MILL AND OVERLAY
	CG-2 CURB & GUTTER

CURVE TABLE					
CURVE ID #	RADIUS (FT)	DELTA	LENGTH (FT)	TANGENT (FT)	P.I. STA. (BK.)
C4	400.00	055°31'00"	387.58	210.52	23+97.37



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NO Conflicts of Interest at 081892
303 E. BIRLINGHAM STREET, SUITE 100
NORTH KANSAS CITY, MO 64116
TEL 816.861.1177
www.olsson.com

STATE OF MISSOURI
JULIE ELAINE SELLERS
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PE-2017000367
7/10/20
PROFESSIONAL ENGINEER

BY

REVISIONS DESCRIPTION

NO. REV.

DATE

REVISIONS

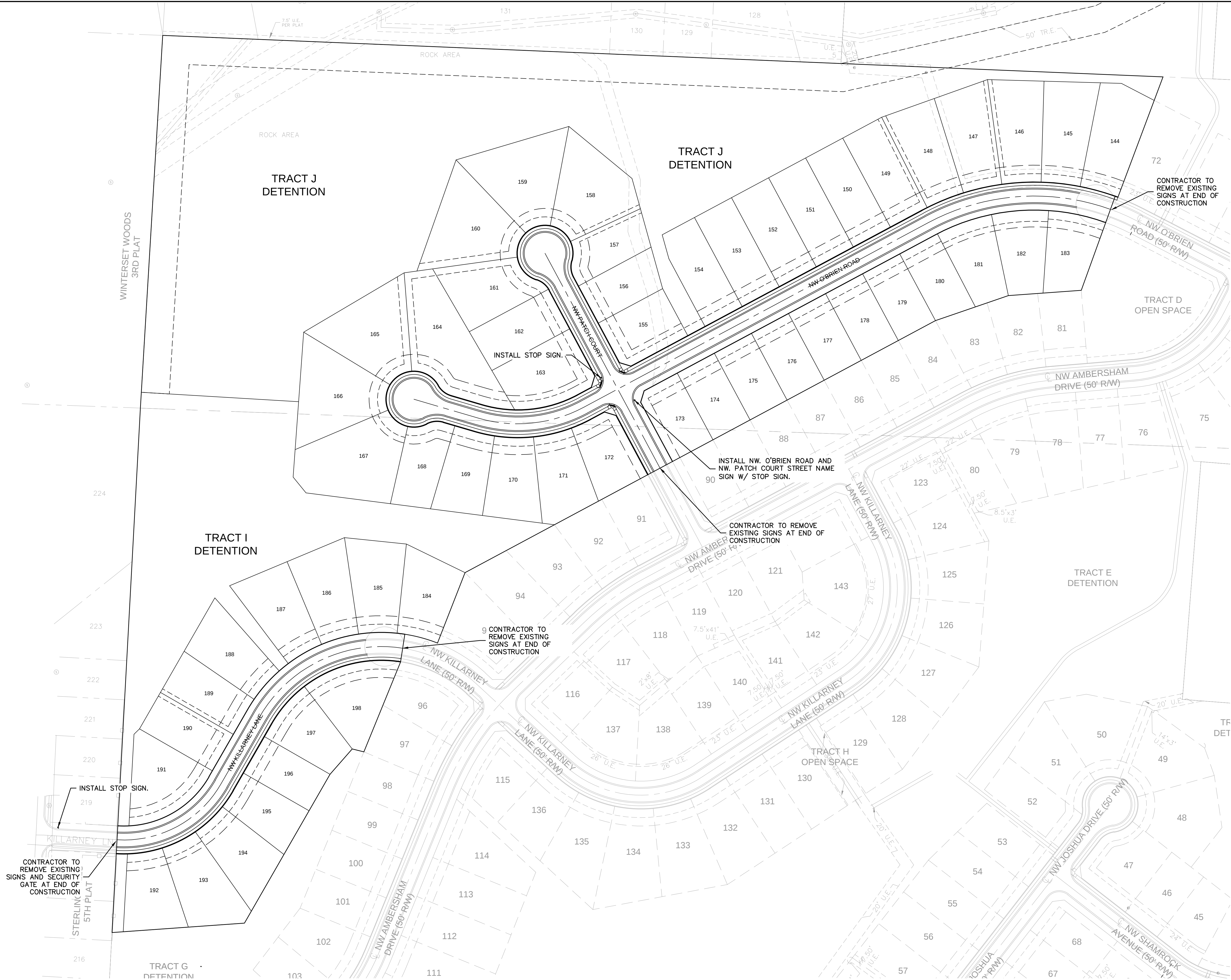
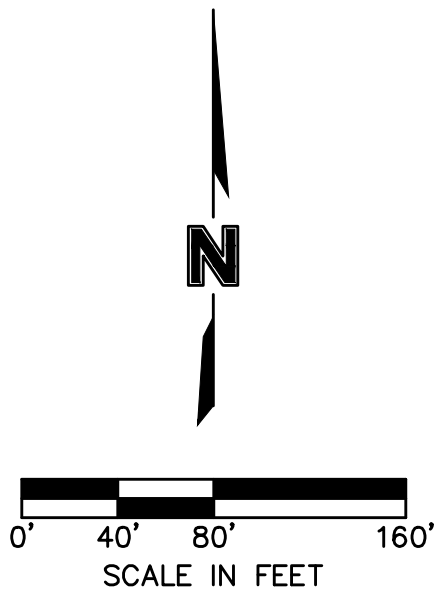
ROADWAY PLAN & PROFILE
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
SECOND PLAT

LEE'S SUMMIT, MO

drawn by: _____ C.S.M.
checked by: _____ S.M.S.
designed by: _____ C.S.M.
QA/QC by: _____ J.E.S.
project no.: _____ C18-1140
date: _____ 2020.07.10

SHEET
C113



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NO. 001140 of Authority of 001892
300 E. BIRCH STREET, SUITE 100
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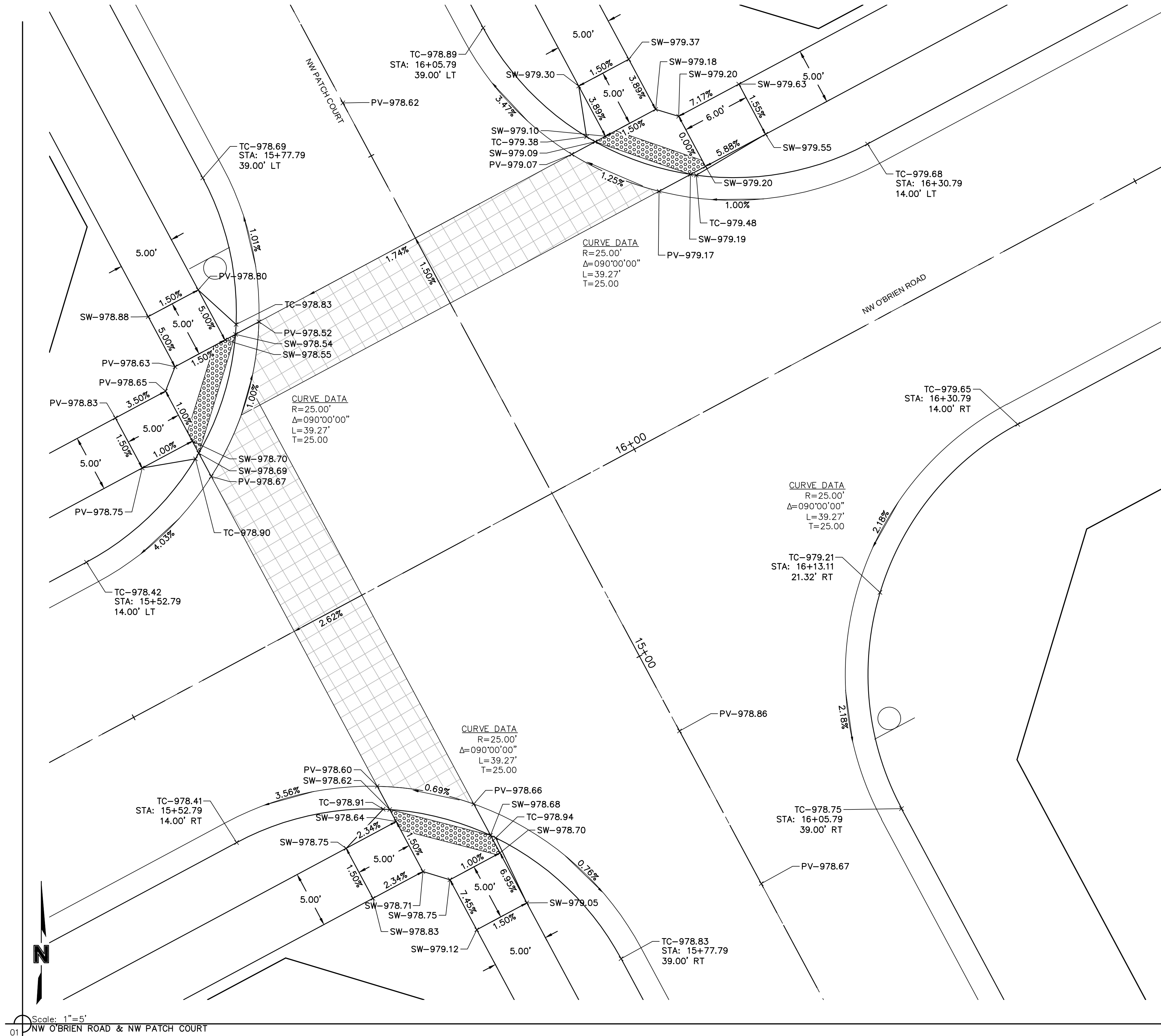
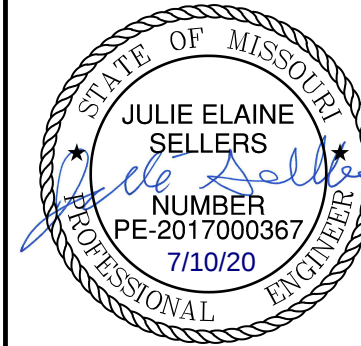
STATE OF MISSOURI
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DATE _____
REVISIONS DESCRIPTION

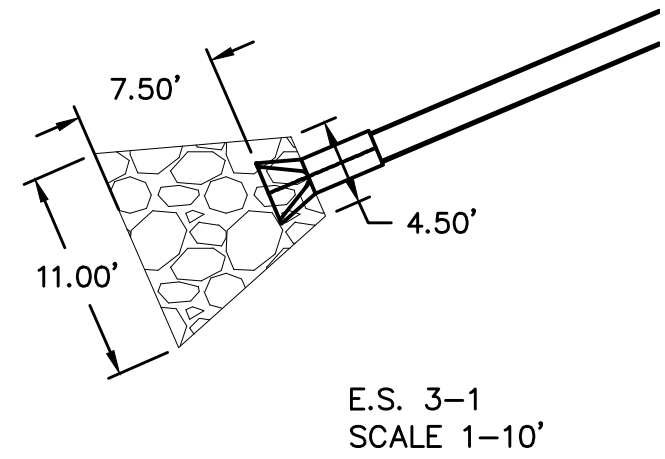
TRAFFIC CONTROL PLAN
STREET & STORM SEWER PLANS
WOODSIDE RIDGE
SECOND PLAT
LEE'S SUMMIT, MO
2020

drawn by: _____ C.S.M.
checked by: _____ S.M.S.
designed by: _____ C.S.M.
QA/QC by: _____ J.E.S.
project no.: C18-1140
date: 2020.07.10

SHEET
C114

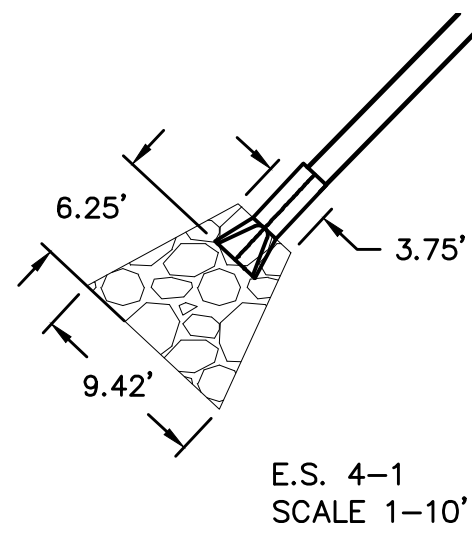
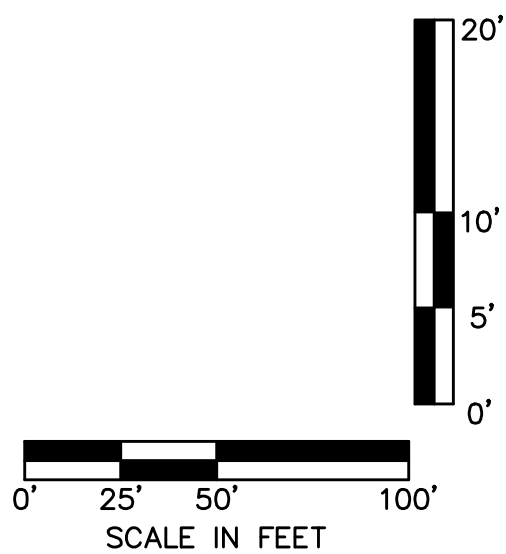
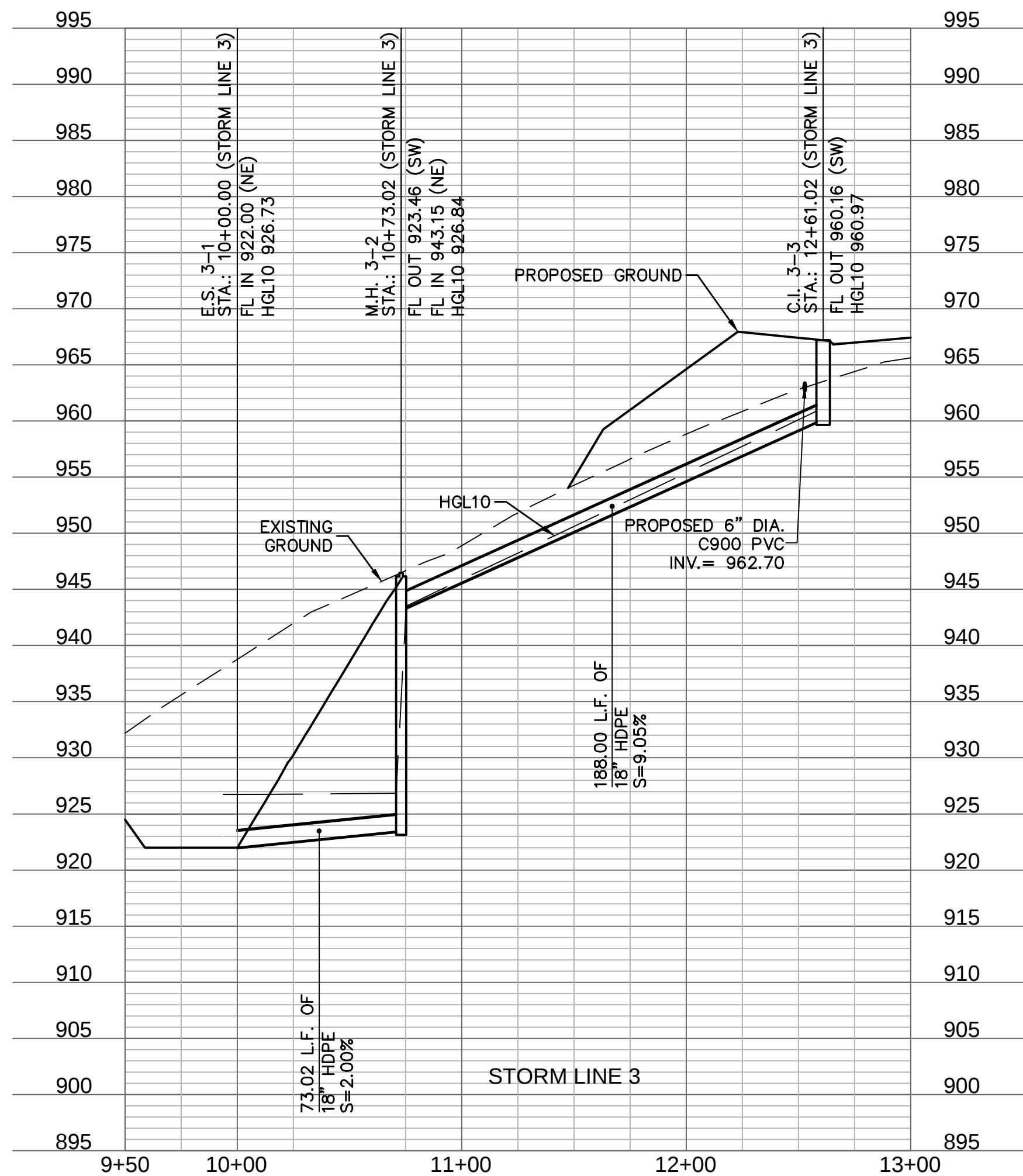
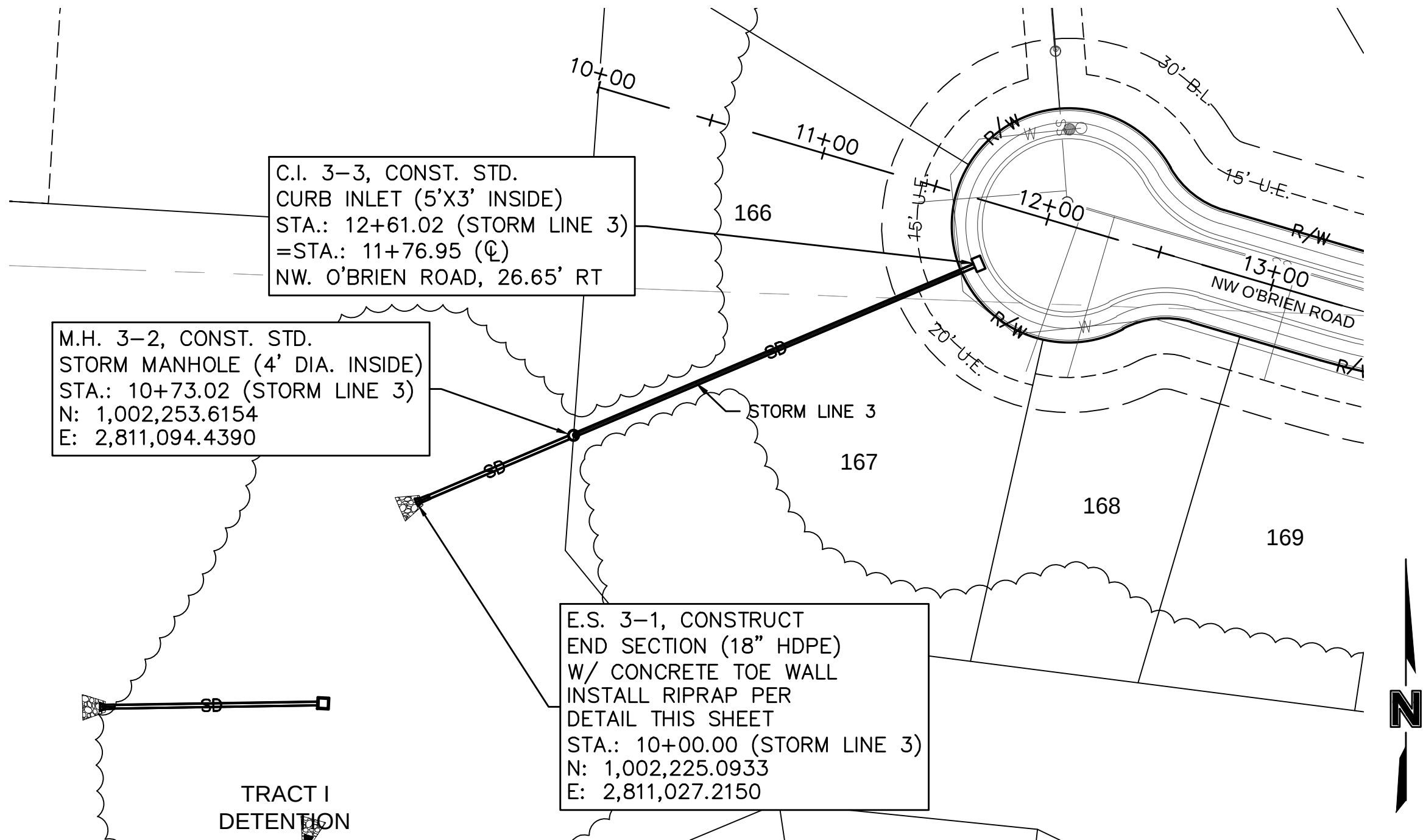
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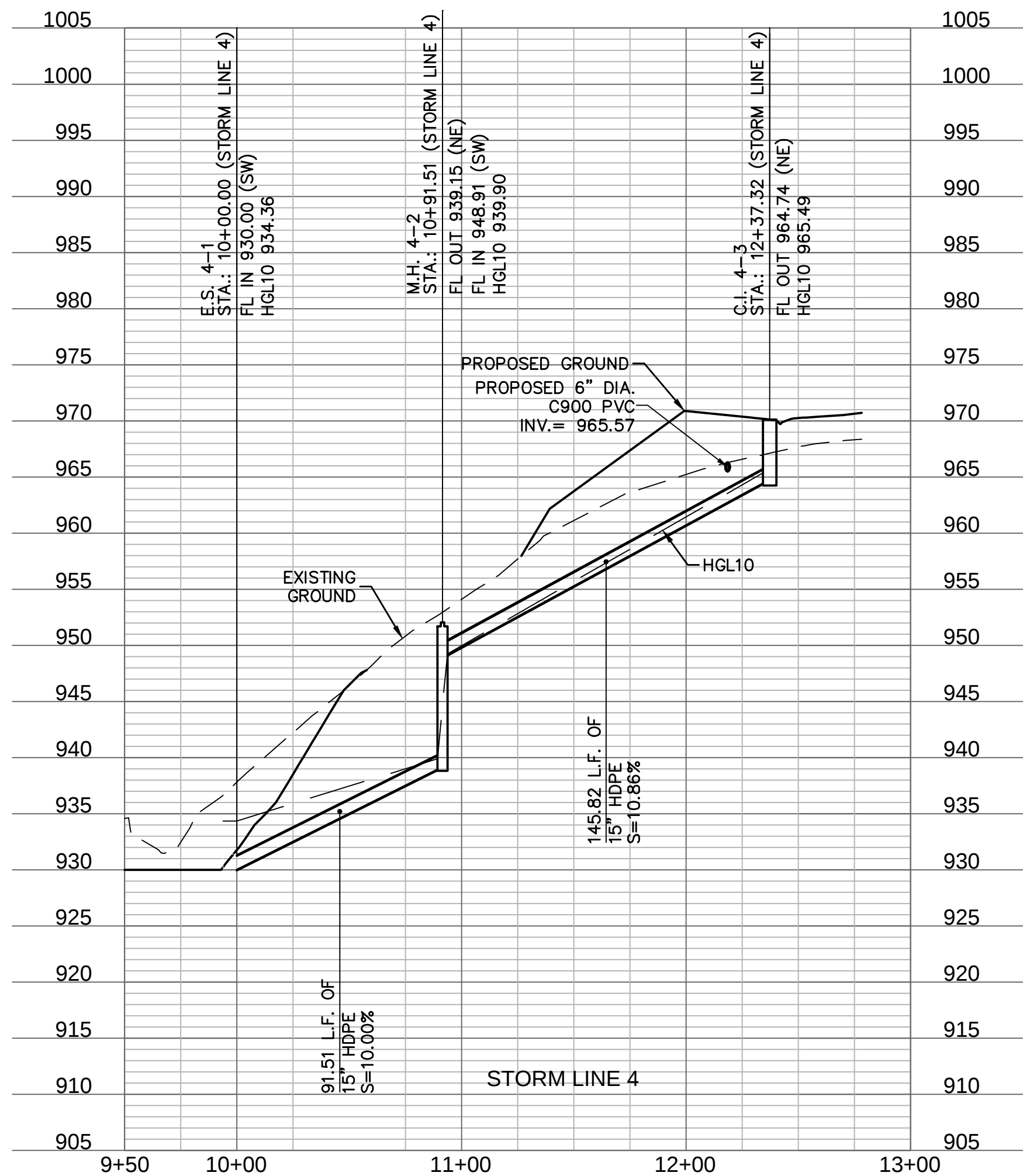
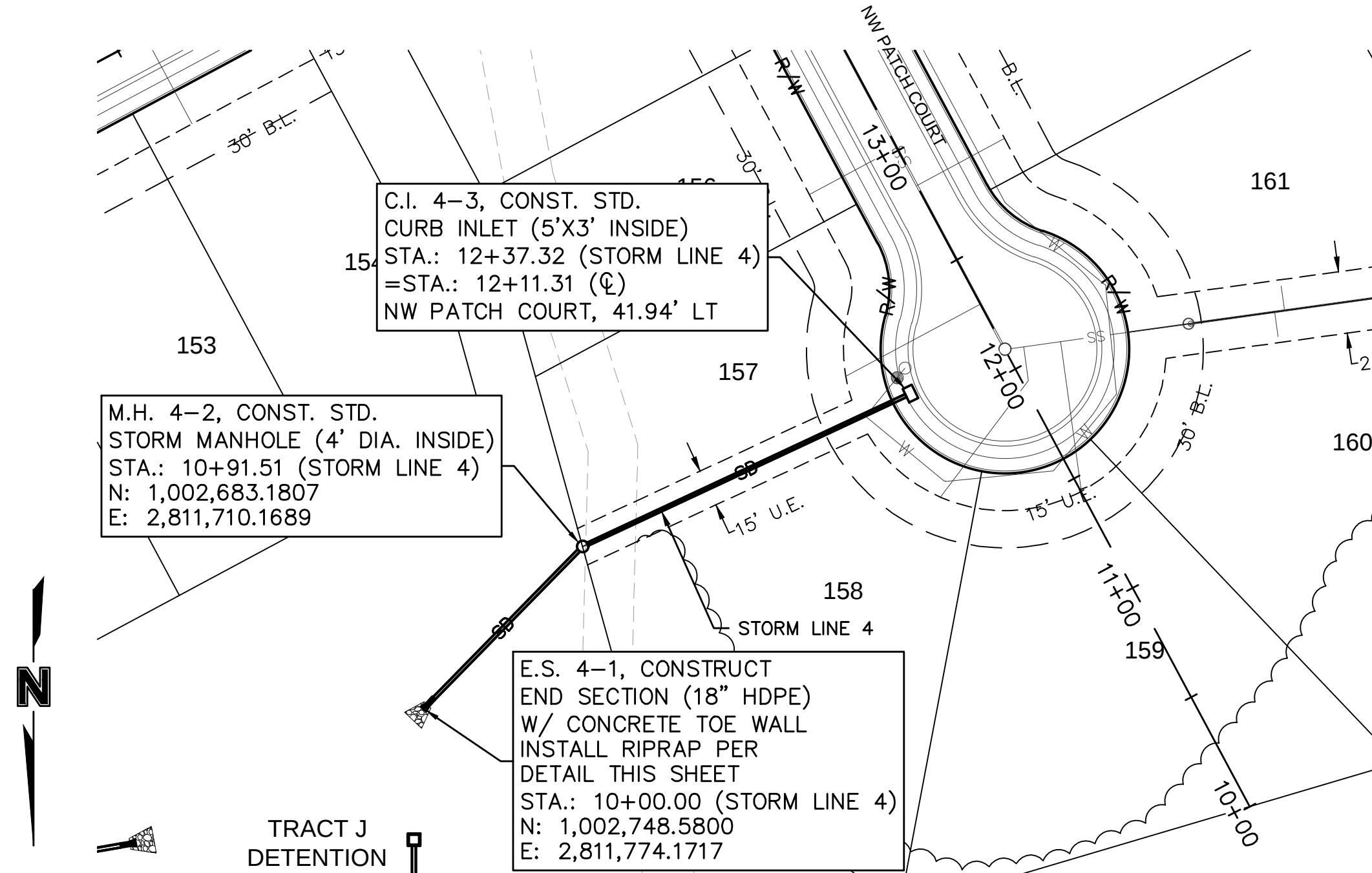
Riprap Calculations						
End Section	Q ₁₀₀ (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)
E.S. 3-1	7.83	1.5	3	10	7.5	2.00

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



Riprap Calculations						
End Section	Q ₁₀₀ (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)
E.S. 4-1	6.05	1.25	3	10	6.25	2.00

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



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

STATE OF MISSOURI
JULIE ELAINE SELLERS
Professional Engineer
NUMBER
PE-2017000367
7/10/20

BY
REVISIONS DESCRIPTION
NO. REV. DATE

2020

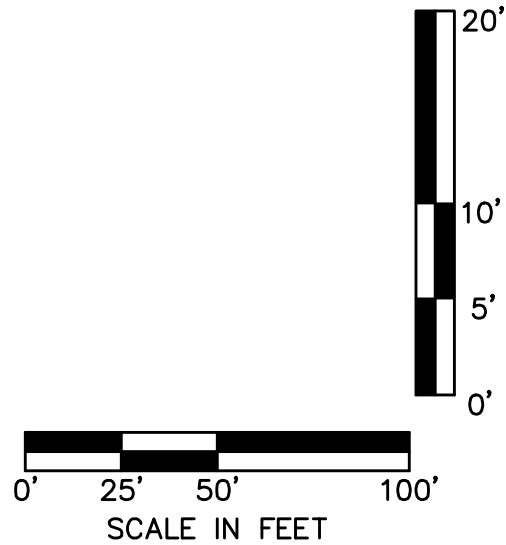
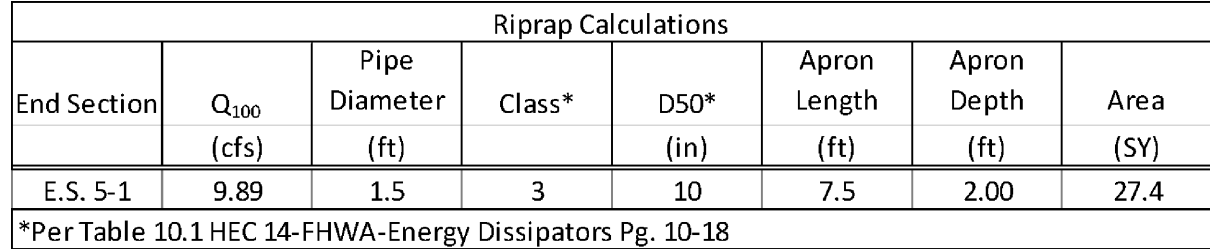
STORM SEWER PLAN & PROFILE
STREET & STORM SEWER PLANS

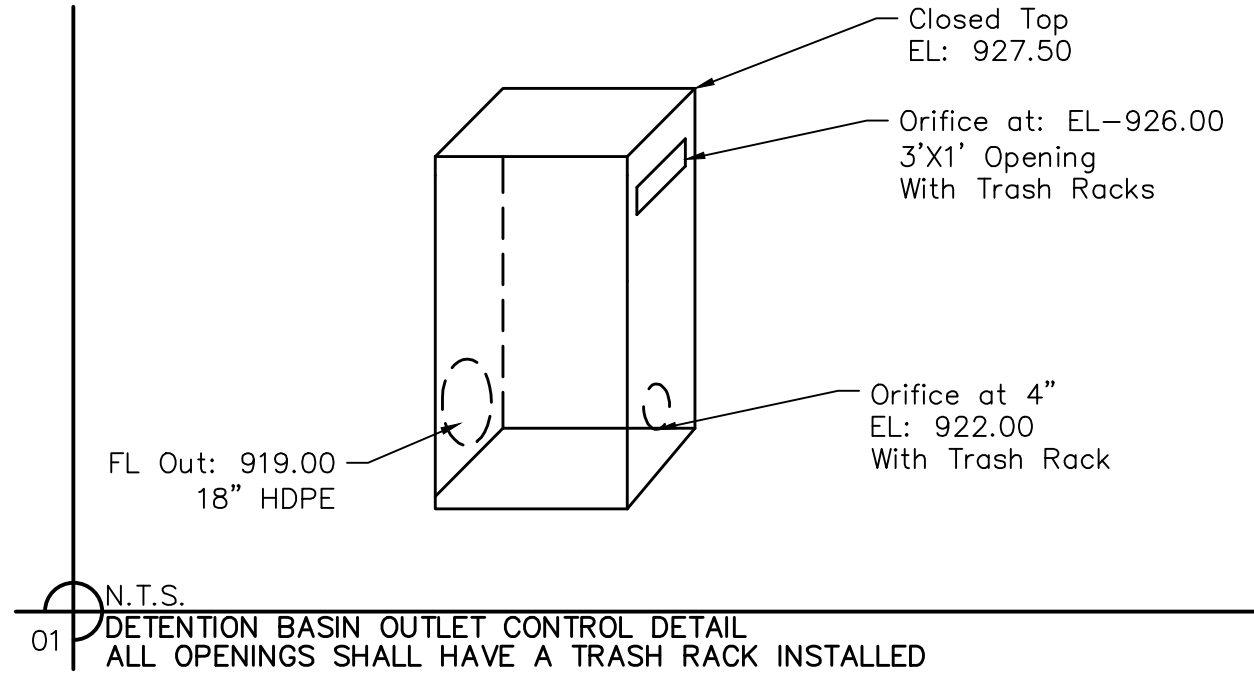
WOODSIDE RIDGE
SECOND PLAT

LEE'S SUMMIT, MO

drawn by: C.S.M.
checked by: S.M.S.
designed by: C.S.M.
QA/QC by: J.E.S.
project no.: C18-1140
date: 2020.07.10

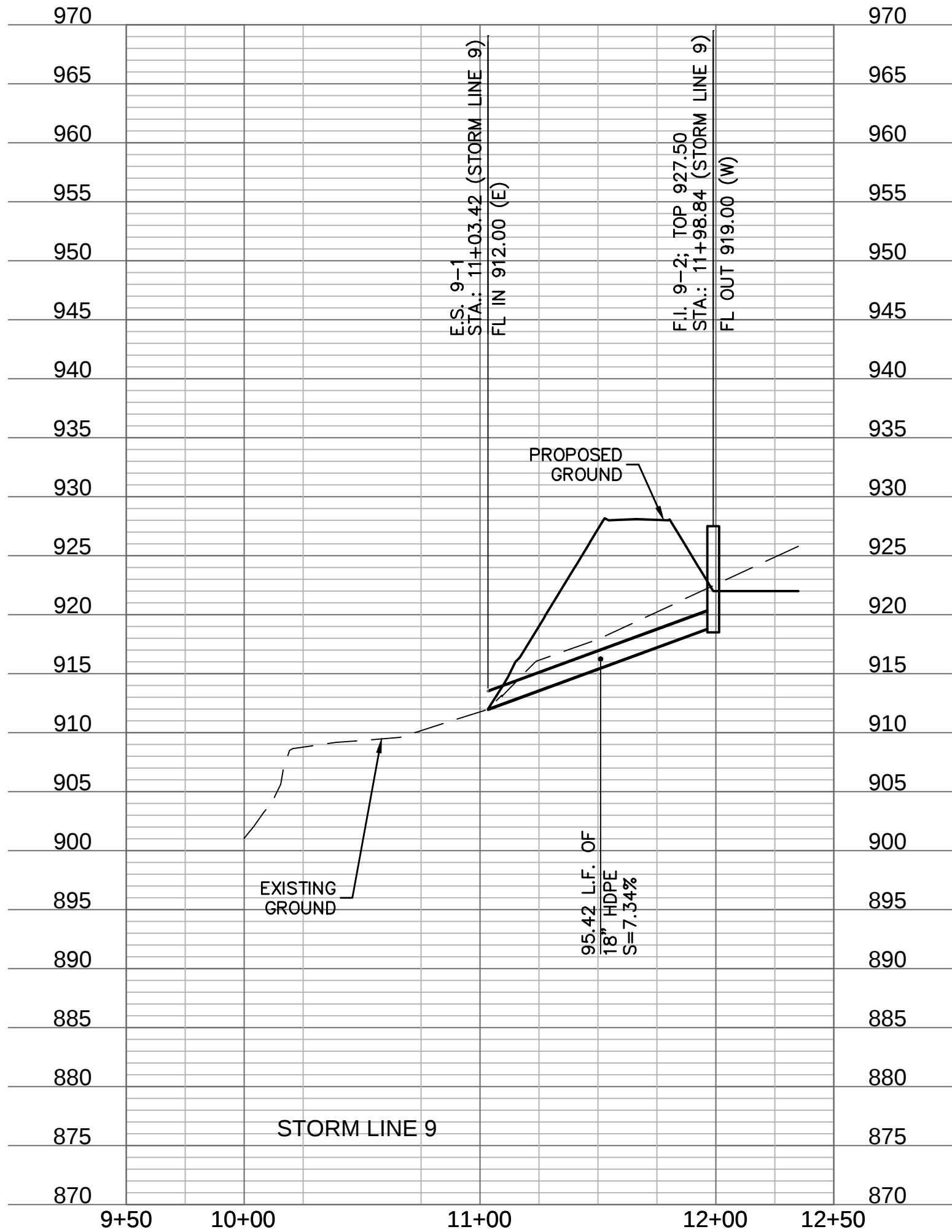
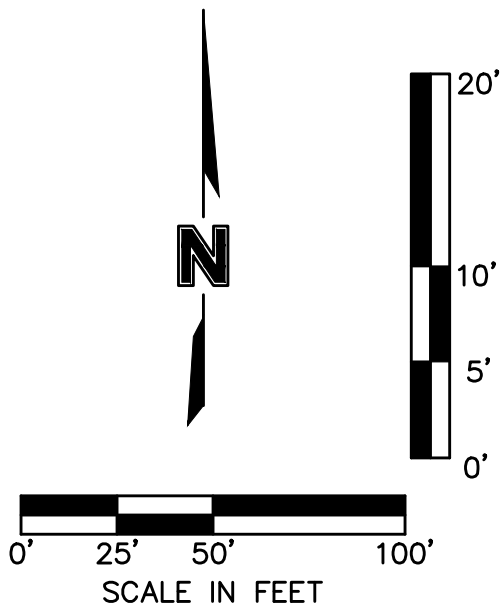
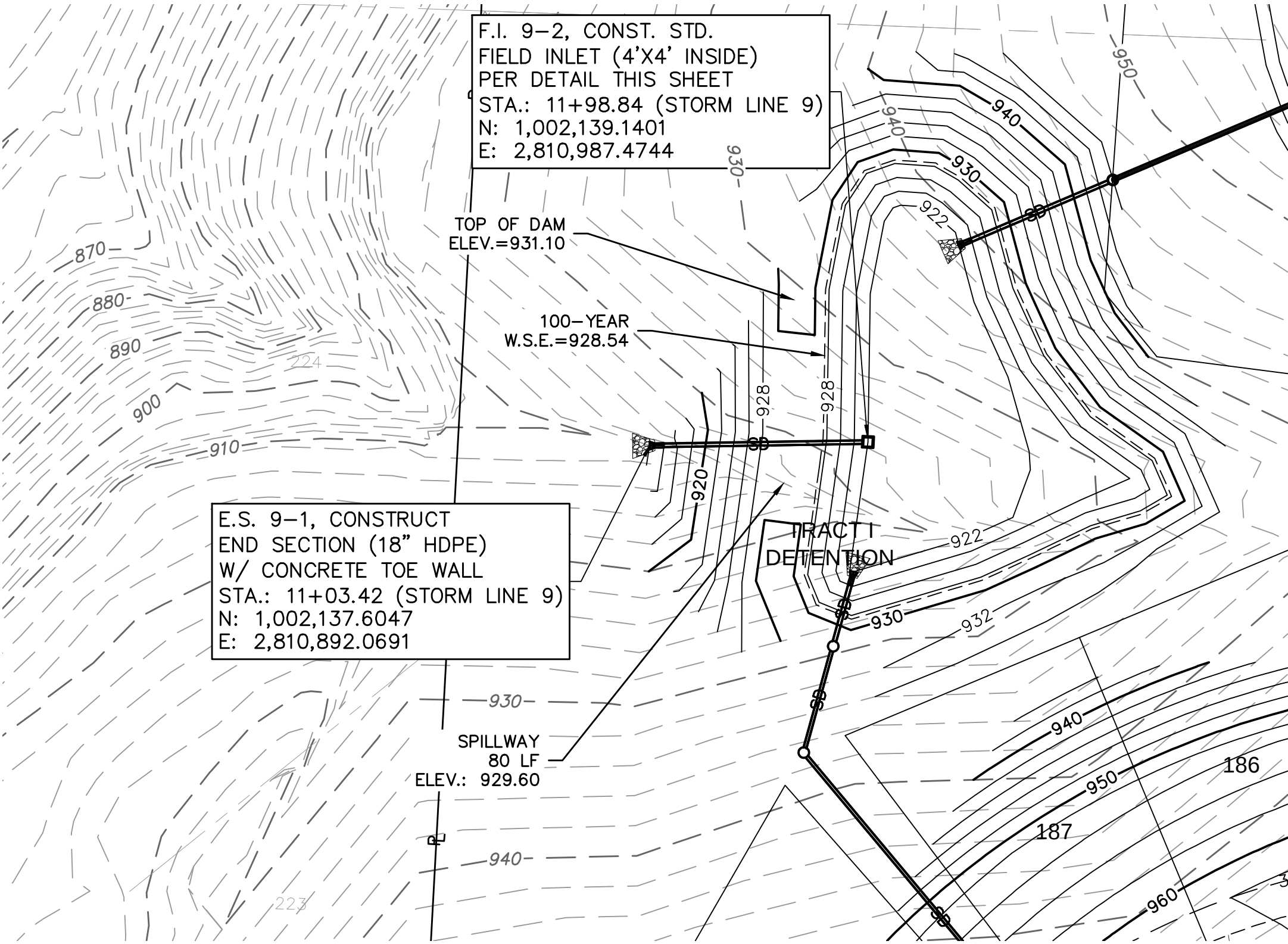
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C118



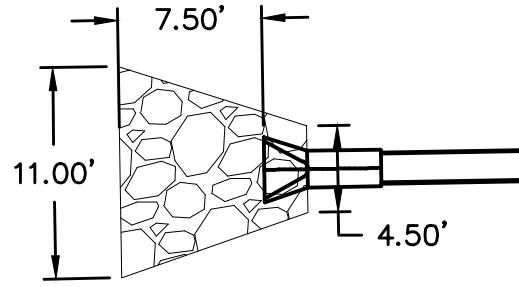


EARTHWORK QUANTITIES	
CUT (C.Y.)	FILL (C.Y.)
6,485	2,184

10yr. W.S.E.	100yr. W.S.E.
926.73	928.54



- 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.



E.S. 9-1
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. 9-1	23.91	1.5	3	10	7.5	2.00	27.4

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

REVISIONS DESCRIPTION

NO. REV. DATE

DETENTION BASIN PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
SECOND PLAT

LEE'S SUMMIT, MO

drawn by: _____ C.S.M.
checked by: _____ S.M.S.
designed by: _____ C.S.M.
QA/QC by: _____ J.E.S.
project no.: C18-1140
date: 2020.07.10

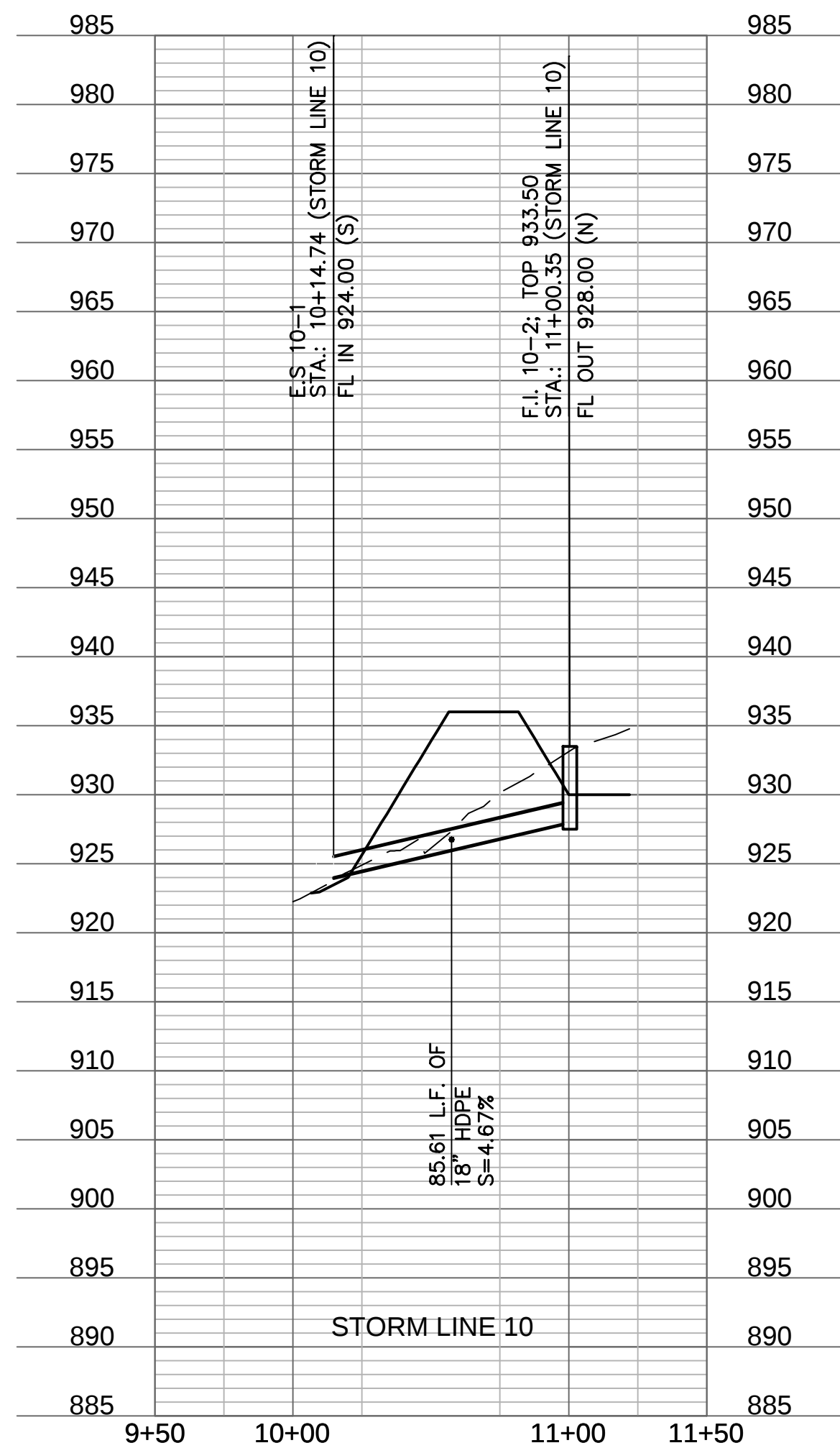
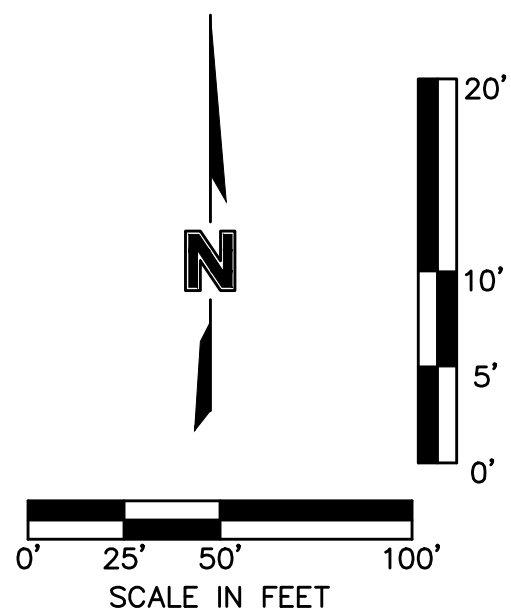
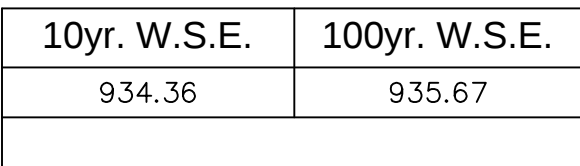
SHEET
C121

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NOTES: JULIE ELAINE SELLERS
NUMBER PE-2017000367
7/10/20
PROFESSIONAL ENGINEER

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
7/10/20
PROFESSIONAL ENGINEER

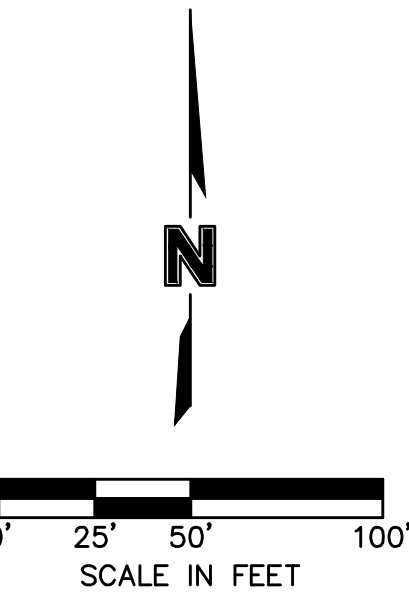
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NCE Certificate of Authority #001892
300 E. BURNING TREE SUITE 100
NORTH KANSAS CITY, MO 64116



E.S. 10-1
SCALE 1"=10'

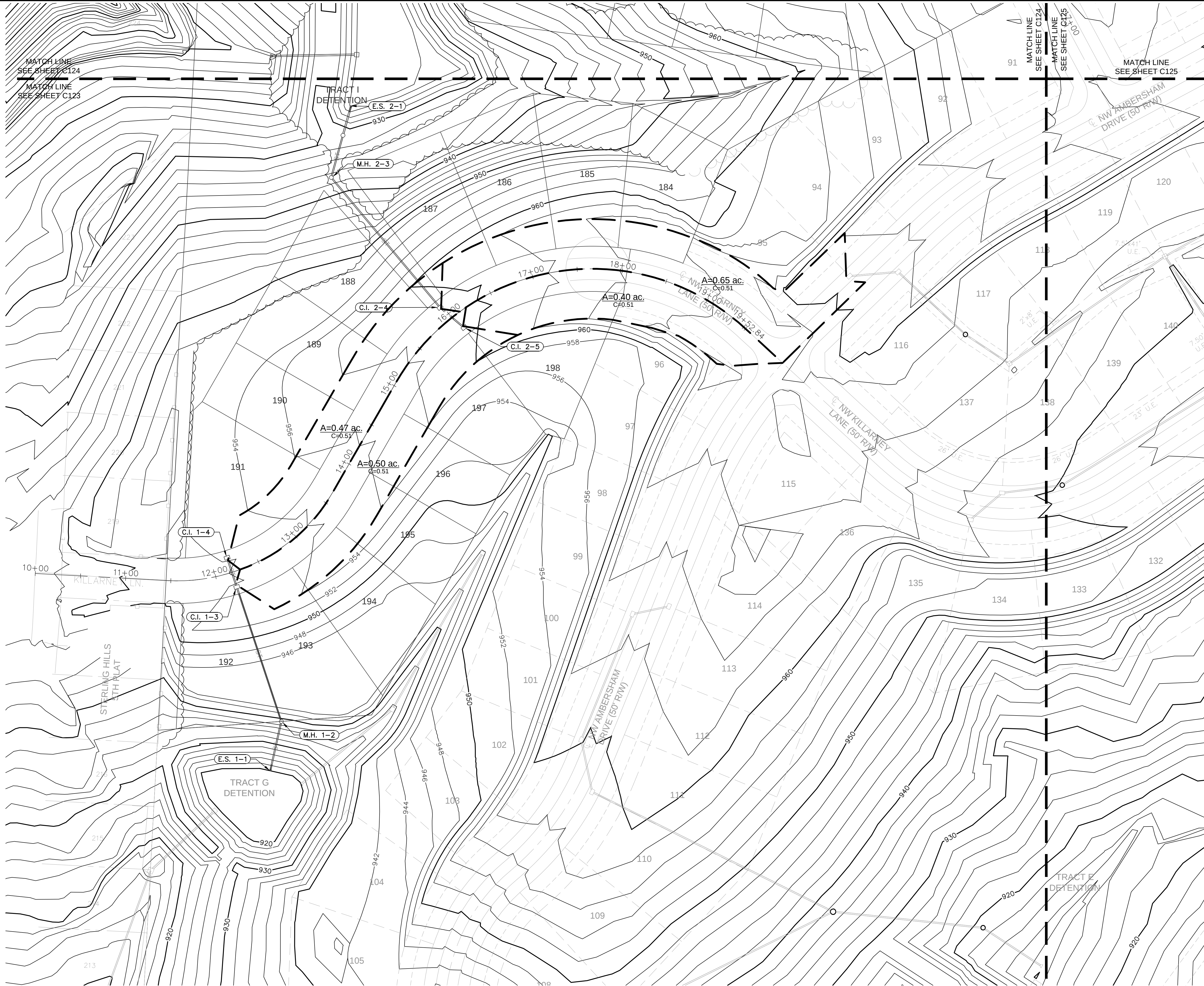
Riprap Calculations							
End Section	Q ₁₀₀ (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. 10-1	18.41	1.5	3	10	7.5	2.00	27.4

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



LEGEND	
	FINISHED INDEX CONTOURS
	FINISHED INTERMEDIATE CONTOURS
	RIDGE LINE
	DRAINAGE AREA
	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 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.



DRAINAGE PLAN STREET & STORM SEWER PLANS		NO. REV.		DATE		REVISIONS DESCRIPTION		BY	
WOODSIDE RIDGE SECOND PLAT									
LEE'S SUMMIT, MO									
2020		REVISIONS							

drawn by: _____ C.S.M

checked by: _____ S.M.S

designed by: _____ C.S.M

QA/QC by: _____ J.E.S

project no.: C18-1140

date: 2020.07.10

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TEL 816.861.1177
NCS Corporation of Architects and Engineers
300 E. BROADWAY SUITE 100
NORTH KANSAS CITY, MO 64116

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
7/10/20
PROFESSIONAL ENGINEER

SHEET
C123

USER: ssaylor

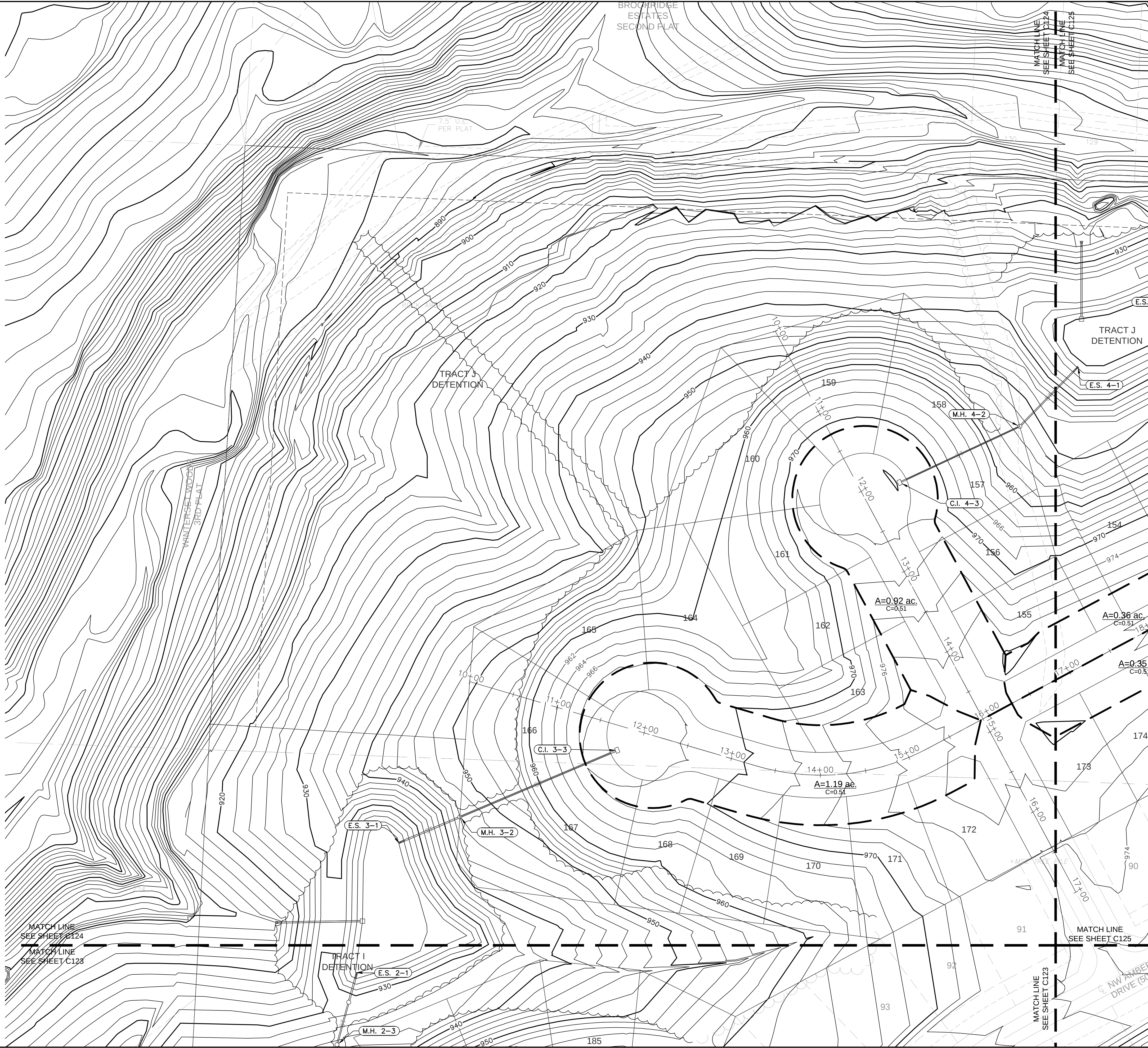
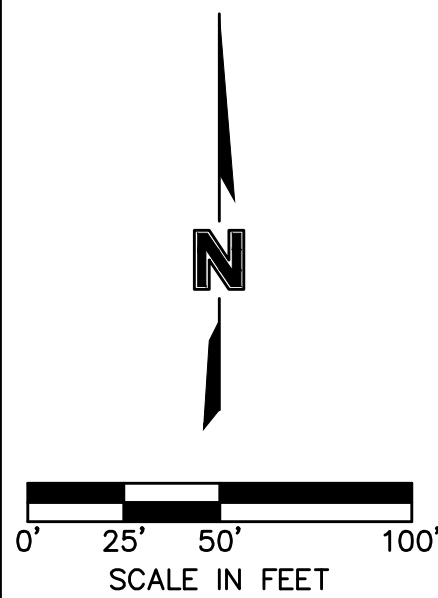
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DATE: Jul 03, 2020 8:57am



KEY MAP

LEGEND	
	FINISHED INDEX CONTOURS
	FINISHED INTERMEDIATE CONTOURS
	RIDGE LINE
	DRAINAGE AREA
	RUNOFF COEFFICIENT
	STORM STRUCTURE NUMBER

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

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
7/10/20
PROFESSIONAL ENGINEER

BY: [Signature]
REVISIONS DESCRIPTION
NO. REV. DATE
2020

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

drawn by: C.S.M.
checked by: S.M.S.
designed by: C.S.M.
QA/QC by: J.E.S.
project no.: C18-1140
date: 2020.07.10

SHEET
C124

USER: ssaylor

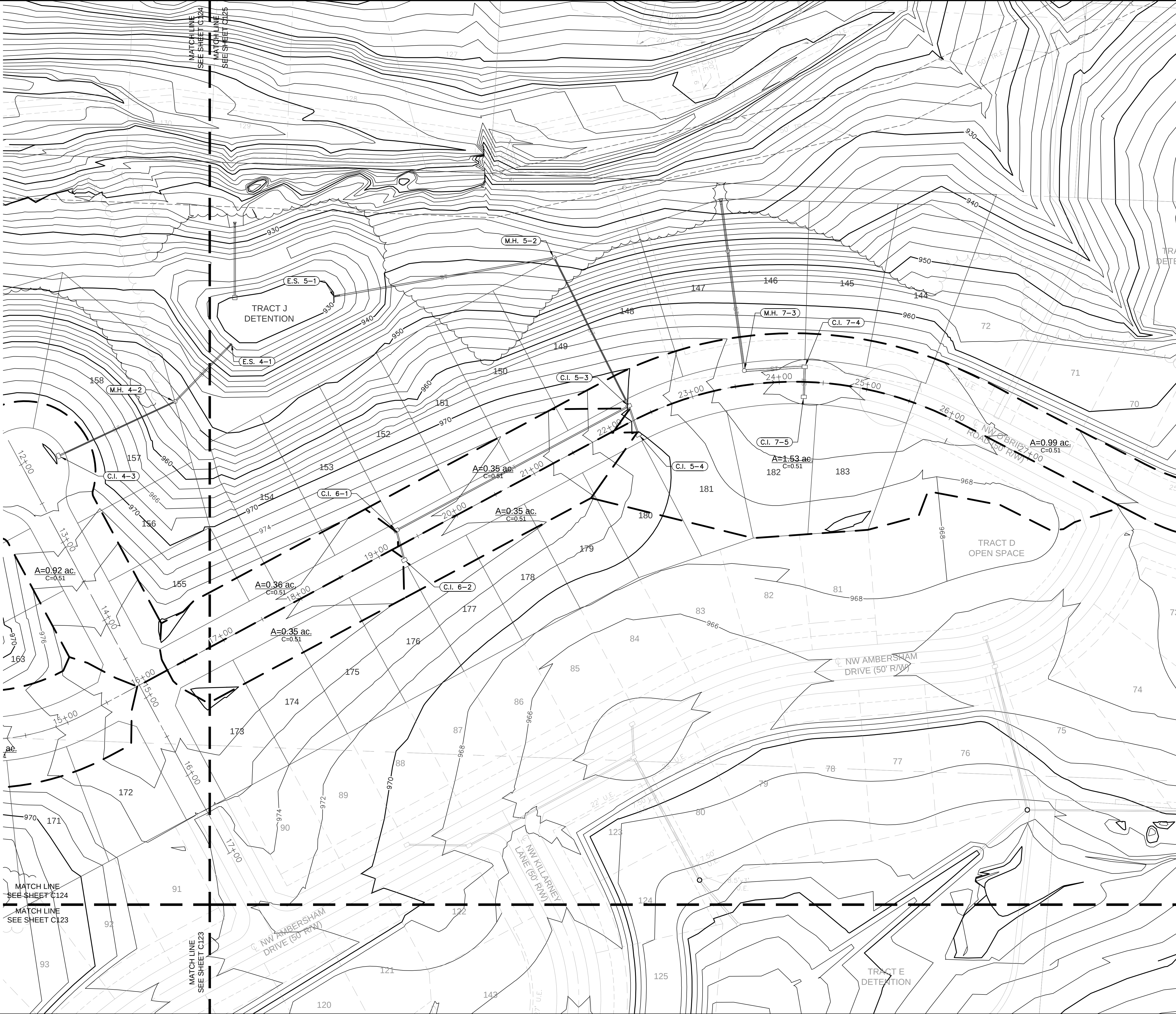
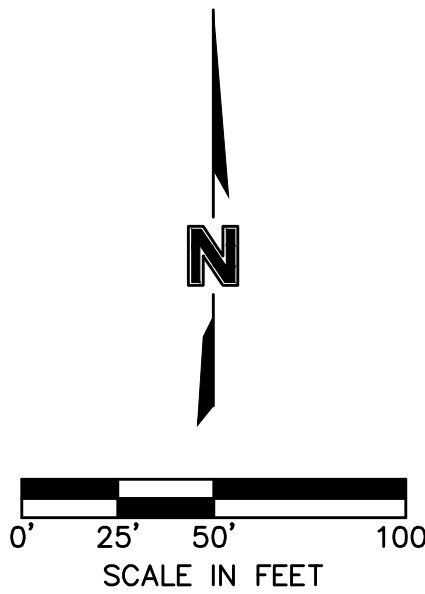
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DATE: Jul 03, 2020 8:57am



KEY MAP

LEGEND	
	FINISHED INDEX CONTOURS
	FINISHED INTERMEDIATE CONTOURS
	RIDGE LINE
	DRAINAGE AREA
	RUNOFF COEFFICIENT
	STORM STRUCTURE NUMBER

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NO Conflicts of Interest at 03/03/22
303 E. BURNING TREE DRIVE, SUITE 100
NORTH KANSAS CITY, MO 64116
TEL 816.861.1177
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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
7/10/20
PROFESSIONAL ENGINEER

BY

REVISIONS DESCRIPTION

DATE

NO. REV.

DRAINAGE PLAN
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
SECOND PLAT

LEE'S SUMMIT, MO

drawn by: C.S.M.
checked by: S.M.S.
designed by: C.S.M.
QA/QC by: J.E.S.
project no.: C18-1140
date: 2020.07.10

SHEET
C125

2020
REVISIONS

Storm Sewer Design Calculation Table												
10 Year Return Frequency												
Upstream Structure	Downstream Structure	Length (ft)	Upstream Invert (ft)	Downstream Invert (ft)	Slope (%)	Diameter (in)	Manning's n	Total Flow (cfs)	Velocity (ft/s)	Capacity (cfs)	Flow Depth (ft)	Upstream Struct. HGL (ft)
M.H. 5-2	Outfall	253.96	933.89	930.00	1.53	18	0.012	5.48	3.60	14.08	1.50	934.95
C.I. 5-3	M.H. 5-2	188.19	964.02	934.29	15.80	15	0.012	5.48	6.22	27.80	0.77	964.97
C.I. 6-1	C.I. 5-3	299.05	971.17	964.62	2.19	15	0.012	2.66	5.58	10.35	0.43	971.82
C.I. 6-2	C.I. 6-1	34.93	972.17	971.37	2.29	15	0.012	1.31	3.27	10.59	0.45	972.62 j
C.I. 5-4	C.I. 5-3	34.40	965.30	964.62	1.98	15	0.012	1.41	4.20	9.84	0.35	965.77
M.H. 7-2	Outfall	42.64	925.43	925.00	1.01	24	0.012	10.22	6.48	24.61	0.90	926.57
M.H. 7-3	M.H. 7-2	178.96	955.95	925.75	16.88	24	0.012	10.22	6.94	100.66	0.82	957.09
C.I. 7-4	M.H. 7-3	68.71	957.92	956.55	1.99	24	0.012	10.22	7.54	34.60	0.75	959.06
C.I. 7-5	C.I. 7-4	34.00	959.20	958.52	2.00	18	0.012	6.12	6.82	16.09	0.64	960.15
M.H. 2-2	Outfall	33.74	922.67	922.00	1.99	18	0.012	3.94	2.23	16.03	1.50	926.77
M.H. 2-3	M.H. 2-2	48.32	932.95	925.78	14.84	15	0.012	3.94	4.20	26.95	1.02	933.75 j
C.I. 2-4	M.H. 2-3	187.22	952.46	933.55	10.10	15	0.012	3.94	9.20	22.23	0.36	953.26
C.I. 2-5	C.I. 2-4	34.74	954.94	953.96	2.82	15	0.012	1.50	4.99	11.75	0.30	955.42
M.H. 4-2	Outfall	91.51	939.15	930.00	10.00	15	0.012	3.45	3.65	22.12	1.25	939.90 j
C.I. 4-3	M.H. 4-2	145.82	964.74	948.91	10.86	15	0.012	3.45	8.99	23.05	0.33	965.49
M.H. 1-2	Outfall	55.95	921.68	920.00	3.00	15	0.012	4.34	3.54	12.12	1.25	924.90
C.I. 1-3	M.H. 1-2	156.54	946.25	936.08	6.50	15	0.012	4.34	8.45	17.83	0.42	947.09
C.I. 1-4	C.I. 1-3	34.01	947.53	946.85	2.00	15	0.012	2.27	5.21	9.89	0.41	948.13
M.H. 3-2	Outfall	73.02	923.46	922.00	2.00	18	0.012	4.46	2.52	16.09	1.50	926.84
C.I. 3-3	M.H. 3-2	188.00	960.16	943.15	9.05	18	0.012	4.46	8.98	34.22	0.37	960.97

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. 5-3	GRADE	1.31	0.10	1.41	1.00	1.12	1.12	1.12	0.29	79.64%	0.12	5.85	...	
C.I. 5-4	GRADE	1.31	0.09	1.41	1.00	1.12	1.12	1.12	0.29	79.72%	0.12	5.85	...	
C.I. 6-1	GRADE	1.35	0.00	1.35	1.00	1.25	1.25	1.25	0.10	92.60%	0.15	7.46	...	
C.I. 6-2	GRADE	1.31	0.00	1.31	1.00	1.22	1.22	1.22	0.09	92.83%	0.15	7.38	...	
C.I. 7-4(L)	SAG	0.75	0.39	1.14	0.80	19.40	15.52	1.14	0.00	100.00%	0.14	6.76	...	
C.I. 7-4(R)	SAG	2.25	0.00	2.25	0.80	19.40	15.52	2.25	0.00	100.00%	0.14	6.97	...	
C.I. 7-4(B)	SAG	0.71	0.00	0.71	0.80	19.40	15.52	0.71	0.00	100.00%	...	...	...	
C.I. 7-4	SAG	3.71	0.39	4.10	0.80	19.40	15.52	4.10	0.00	100.00%	...	...	...	
C.I. 7-5(L)	SAG	2.25	0.38	2.63	0.80	19.40	15.52	2.63	0.00	100.00%	0.15	7.39	...	
C.I. 7-5(R)	SAG	1.61	0.00	1.61	0.80	19.40	15.52	1.61	0.00	100.00%	0.15	7.71	...	
C.I. 7-5(B)	SAG	1.88	0.00	1.88	0.80	19.40	15.52	1.88	0.00	100.00%	...	...	...	
C.I. 7-5	SAG	5.74	0.38	6.12	0.80	19.40	15.52	6.12	0.00	100.00%	...	...	...	
C.I. 4-3(L)	SAG	2.29	0.00	2.29	0.80	19.40	15.52	2.29	0.00	100.00%	0.14	7.13	...	
C.I. 4-3(R)	SAG	0.53	0.00	0.53	0.80	19.40	15.52	0.53	0.00	100.00%	0.10	5.03	...	
C.I. 4-3(B)	SAG	0.64	0.00	0.64	0.80	19.40	15.52	0.64	0.00	100.00%	...	...	...	
C.I. 4-3	SAG	3.45	0.00	3.45	0.80	19.40	15.52	3.45	0.00	100.00%	...	...	...	
C.I. 3-3(L)	SAG	1.99	0.00	1.99	0.80	19.40	15.52	1.99	0.00	100.00%	0.17	8.59	...	
C.I. 3-3(R)	SAG	1.80	0.00	1.80	0.80	19.40	15.52	1.80	0.00	100.00%	0.16	7.77	...	
C.I. 3-3(B)	SAG	0.68	0.00	0.68	0.80	19.40	15.52	0.68	0.00	100.00%	...	...	...	
C.I. 3-3	SAG	4.46	0.00	4.46	0.80	19.40	15.52	4.46	0.00	100.00%	...	...	...	
C.I. 2-4	GRADE	2.44	0.00	2.44	1.00	1.93	1.93	1.93	0.51	79.16%	0.17	8.26	...	
C.I. 2-5	GRADE	1.50	0.00	1.50	1.00	1.30	1.30	1.30	0.20	86.81%	0.14	6.88	...	
C.I. 1-3	GRADE	1.88	0.20	2.07	1.00	1.69	1.69	1.69	0.39	81.41%	0.15	7.69	...	
C.I. 1-4	GRADE	1.76	0.51	2.27	1.00	1.81	1.81	1.81	0.46	79.80%	0.16	7.96	...	
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. 5-3	0.35	0.51	5.00	7.35	1.00	1.31
C.I. 5-4	0.35	0.51	5.00	7.35	1.00	1.31
C.I. 6-1	0.36	0.51	5.00	7.35	1.00	1.35
C.I. 6-2	0.35	0.51	5.00	7.35	1.00	1.31
C.I. 7-4(L)	0.20	0.51	5.00	7.35	1.00	0.75
C.I. 7-4(R)	0.60	0.51	5.00	7.35	1.00	2.25
C.I. 7-4(B)	0.19	0.51	5.00	7.35	1.00	0.71
C.I. 7-4	0.99	0.51	5.00	7.35	1.00	3.71
C.I. 7-5(L)	0.60	0.51	5.00	7.35	1.00	2.25
C.I. 7-5(R)	0.43	0.51	5.00	7.35	1.00	1.61
C.I. 7-5(B)	0.50	0.51	5.00	7.35	1.00	1.88
C.I. 7-5	1.53	0.51	5.00	7.35	1.00	5.74
C.I. 4-3(L)	0.61	0.51	5.00	7.35	1.00	2.29
C.I. 4-3(R)	0.14	0.51	5.00	7.35	1.00	0.53
C.I. 4-3(B)	0.17	0.51	5.00	7.35	1.00	0.64
C.I. 4-3	0.92	0.51	5.00	7.35	1.00	3.45
C.I. 3-3(L)	0.53	0.51	5.00	7.35	1.00	1.99
C.I. 3-3(R)	0.48	0.51	5.00	7.35	1.00	1.80
C.I. 3-3(B)	0.18	0.51	5.00	7.35	1.00	0.68
C.I. 3-3	1.19	0.51	5.00	7.35	1.00	4.46
C.I. 2-4	0.65	0.51	5.00	7.35	1.00	2.44
C.I. 2-5	0.40	0.51	5.00	7.35	1.00	1.50
C.I. 1-3	0.50	0.51	5.00	7.35	1.00	1.88
C.I. 1-4	0.47	0.51	5.00	7.35	1.00	1.76

10 YEAR DRAINAGE TABLES
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
SECOND PLAT

LEE'S SUMMIT, MO

2020

BY

NO. REV.

DATE

REVISIONS DESCRIPTION

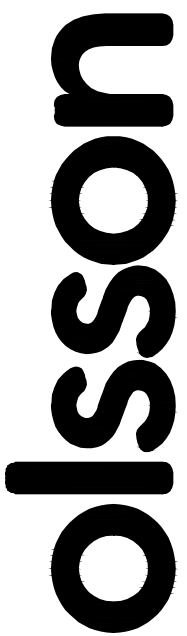
REVISIONS

drawn by: _____ C.S.M
checked by: _____ S.M.S
designed by: _____ C.S.M
QA/QC by: _____ J.E.S
project no.: C18-1140
date: 2020.07.10

SHEET
C126



STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
7/10/20
PROFESSIONAL ENGINEER



olsson

NO. 0011611177
303 E. BURNING STAR BLVD., SUITE 100
NORTH KANSAS CITY, MO 64116
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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. 5-2	Outfall	253.96	933.89	930.00	1.53	18	0.012	9.89	5.60	14.08	1.50	937.59
C.I. 5-3	M.H. 5-2	188.19	964.02	934.29	15.80	15	0.012	9.89	8.15	27.80	1.25	965.20 j
C.I. 6-1	C.I. 5-3	299.05	971.17	964.62	2.19	15	0.012	4.67	6.65	10.35	0.59	972.05
C.I. 6-2	C.I. 6-1	34.93	972.17	971.37	2.29	15	0.012	2.30	3.65	10.59	0.68	972.78 j
C.I. 5-4	C.I. 5-3	34.40	965.30	964.62	1.98	15	0.012	2.60	4.36	9.84	0.58	965.95
M.H. 7-2	Outfall	42.64	925.43	925.00	1.01	24	0.012	18.97	7.91	24.61	1.32	927.00
M.H. 7-3	M.H. 7-2	178.96	955.95	925.75	16.88	24	0.012	18.97	8.21	100.66	1.25	957.52
C.I. 7-4	M.H. 7-3	68.71	957.92	956.55	1.99	24	0.012	18.97	9.23	34.60	1.06	959.49
C.I. 7-5	C.I. 7-4	34.00	959.20	958.52	2.00	18	0.012	11.25	8.18	16.09	0.97	960.48
M.H. 2-2	Outfall	33.74	922.67	922.00	1.99	18	0.012	6.91	3.91	16.03	1.50	928.66
M.H. 2-3	M.H. 2-2	48.32	932.95	925.78	14.84	15	0.012	6.91	5.95	26.95	1.25	934.00 j
C.I. 2-4	M.H. 2-3	187.22	952.46	933.55	10.10	15	0.012	6.91	11.12	22.23	0.48	953.51
C.I. 2-5	C.I. 2-4	34.74	954.94	953.96	2.82	15	0.012	2.63	5.90	11.75	0.40	955.59
M.H. 4-2	Outfall	91.51	939.15	930.00	10.00	15	0.012	6.05	5.36	22.12	1.25	940.14 j
C.I. 4-3	M.H. 4-2	145.82	964.74	948.91	10.86	15	0.012	6.05	10.80	23.05	0.44	965.73
M.H. 1-2	Outfall	55.95	921.68	920.00	3.00	15	0.012	8.40	6.85	12.12	1.25	927.29
C.I. 1-3	M.H. 1-2	156.54	946.25	936.08	6.50	15	0.012	8.40	10.75	17.83	0.60	947.38
C.I. 1-4	C.I. 1-3	34.01	947.53	946.85	2.00	15	0.012	4.52	6.44	9.89	0.59	948.39
M.H. 3-2	Outfall	73.02	923.46	922.00	2.00	18	0.012	7.83	4.43	16.09	1.50	928.89
C.I. 3-3	M.H. 3-2	188.00	960.16	943.15	9.05	18	0.012	7.83	10.71	34.22	0.49	961.24

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. 5-3	GRADE	2.30	0.31	2.62	1.00	1.73	1.73	1.73	0.89	65.92%	0.15	7.38	...
C.I. 5-4	GRADE	2.30	0.30	2.60	1.00	1.72	1.72	1.72	0.88	66.09%	0.15	7.36	...
C.I. 6-1	GRADE	2.37	0.00	2.37	1.00	2.05	2.05	2.05	0.31	86.71%	0.18	9.21	...
C.I. 6-2	GRADE	2.30	0.00	2.30	1.00	2.01	2.01	2.01	0.30	87.07%	0.18	9.12	...
C.I. 7-4(L)	SAG	1.32	1.21	2.52	0.80	19.40	15.52	2.52	0.00	100.00%	0.18	9.12	...
C.I. 7-4(R)	SAG	3.95	0.00	3.95	0.80	19.40	15.52	3.95	0.00	100.00%	0.17	8.61	...
C.I. 7-4(B)	SAG	1.25	0.00	1.25	0.80	19.40	15.52	1.25	0.00	100.00%	...	...	...
C.I. 7-4	SAG	6.51	1.21	7.72	0.80	19.40	15.52	7.72	0.00	100.00%	...	...	...
C.I. 7-5(L)	SAG	3.95	1.18	5.13	0.80	19.40	15.52	5.13	0.00	100.00%	0.19	9.49	...
C.I. 7-5(R)	SAG	2.83	0.00	2.83	0.80	19.40	15.52	2.83	0.00	100.00%	0.19	9.52	...
C.I. 7-5(B)	SAG	3.29	0.00	3.29	0.80	19.40	15.52	3.29	0.00	100.00%	...	...	...
C.I. 7-5	SAG	10.07	1.18	11.25	0.80	19.40	15.52	11.25	0.00	100.00%	...	...	...
C.I. 4-3(L)	SAG	4.01	0.00	4.01	0.80	19.40	15.52	4.01	0.00	100.00%	0.18	8.80	...
C.I. 4-3(R)	SAG	0.92	0.00	0.92	0.80	19.40	15.52	0.92	0.00	100.00%	0.12	6.21	...
C.I. 4-3(B)	SAG	1.12	0.00	1.12	0.80	19.40	15.52	1.12	0.00	100.00%	...	...	...
C.I. 4-3	SAG	6.05	0.00	6.05	0.80	19.40	15.52	6.05	0.00	100.00%	...	...	...
C.I. 3-3(L)	SAG	3.49	0.00	3.49	0.80	19.40	15.52	3.49	0.00	100.00%	0.21	10.61	...
C.I. 3-3(R)	SAG	3.16	0.00	3.16	0.80	19.40	15.52	3.16	0.00	100.00%	0.19	9.60	...
C.I. 3-3(B)	SAG	1.18	0.00	1.18	0.80	19.40	15.52	1.18	0.00	100.00%	...	...	...
C.I. 3-3	SAG	7.83	0.00	7.83	0.80	19.40	15.52	7.83	0.00	100.00%	...	...	...
C.I. 2-4	GRADE	4.28	0.00	4.28	1.00	2.85	2.85	2.85	1.43	66.66%	0.20	10.19	...
C.I. 2-5	GRADE	2.63	0.00	2.63	1.00	2.04	2.04	2.04	0.59	77.68%	0.17	8.50	...
C.I. 1-3	GRADE	3.29	0.59	3.88	1.00	2.65	2.65	2.65	1.23	68.23%	0.19	9.73	...
C.I. 1-4	GRADE	3.09	1.43	4.52	1.00	2.90	2.90	2.90	1.61	64.28%	0.21	10.31	...

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	C	Tc	i	K	Peak Flow
	(ac)		(min)	(in/hr)		(cfs)
C.I. 5-3	0.35	0.51	5.00	10.32	1.25	2.30
C.I. 5-4	0.35	0.51	5.00	10.32	1.25	2.30
C.I. 6-1	0.36	0.51	5.00	10.32	1.25	2.37
C.I. 6-2	0.35	0.51	5.00	10.32	1.25	2.30
C.I. 7-4(L)	0.20	0.51	5.00	10.32	1.25	1.32
C.I. 7-4(R)	0.60	0.51	5.00	10.32	1.25	3.95
C.I. 7-4(B)	0.19	0.51	5.00	10.32	1.25	1.25
C.I. 7-4	0.99	0.51	5.00	10.32	1.25	6.51
C.I. 7-5(L)	0.60	0.51	5.00	10.32	1.25	3.95
C.I. 7-5(R)	0.43	0.51	5.00	10.32	1.25	2.83
C.I. 7-5(B)	0.50	0.51	5.00	10.32	1.25	3.29
C.I. 7-5	1.53	0.51	5.00	10.32	1.25	10.07
C.I. 4-3(L)	0.61	0.51	5.00	10.32	1.25	4.01
C.I. 4-3(R)	0.14	0.51	5.00	10.32	1.25	0.92
C.I. 4-3(B)	0.17	0.51	5.00	10.32	1.25	1.12
C.I. 4-3	0.92	0.51	5.00	10.32	1.25	6.05
C.I. 3-3(L)	0.53	0.51	5.00	10.32	1.25	3.49
C.I. 3-3(R)	0.48	0.51	5.00	10.32	1.25	3.16
C.I. 3-3(B)	0.18	0.51	5.00	10.32	1.25	1.18
C.I. 3-3	1.19	0.51	5.00	10.32	1.25	7.83
C.I. 2-4	0.65	0.51	5.00	10.32	1.25	4.28
C.I. 2-5	0.40	0.51	5.00	10.32	1.25	2.63
C.I. 1-3	0.50	0.51	5.00	10.32	1.25	3.29
C.I. 1-4	0.47	0.51	5.00	10.32	1.25	3.09

100 YEAR DRAINAGE TABLES
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
SECOND PLAT

LEE'S SUMMIT, MO

2020

BY

NO. REV.

DATE

REVISIONS DESCRIPTION

REVISIONS

drawn by: _____ C.S.M
checked by: _____ S.M.S
designed by: _____ C.S.M
QA/QC by: _____ J.E.S
project no.: C18-1140
date: 2020.07.10

SHEET
C127

olsson

NSC Certified as Authority #001892
303 E. BIRNINGHAM ST. SUITE 100
NORTH KANSAS CITY, MO 64116
TEL. 816.861.1177
WWW.OLSSON.COM

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER
PE-2017000367
7/10/20
PROFESSIONAL ENGINEER

USER: scaylor

DWG: F:\2018\1001-1500\018-1140-C-40-Design\AutoCAD\Final Plans\Sheets\GNCV\Street & Storm\C_MDR02_C181140.dwg
DATE: Jul 10, 2020 8:04am

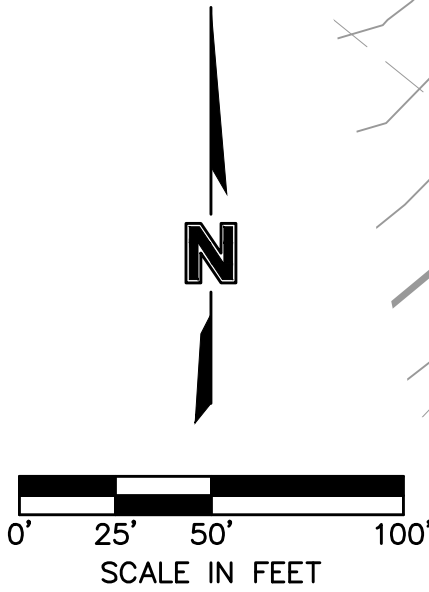
Woodside Ridge Second Plat Minimum Building Opening Elevation					
Lot	Rear Left MBOE	Rear Right MBOE	Front Left MBOE	Front Right MBOE	As Built Plot Plan Required
144	940.10	945.66	965.31	966.10	N
145	933.24	940.10	964.68	965.31	N
146	928.29	933.24	965.74	964.68	N
147	933.18	928.29	968.29	965.74	N
148	939.46	933.18	970.92	968.29	N
149	945.79	939.46	973.86	970.92	N
150	951.84	945.79	976.29	973.86	N
151	951.38	951.84	977.05	976.29	Y
152	947.93	951.38	977.80	977.05	Y
153	949.37	947.93	978.55	977.80	Y
154	952.61	949.37	979.30	978.55	Y
155	969.65	979.35	977.69	980.14	N
156	957.40	969.65	974.34	977.69	N
157	950.17	957.40	971.11	974.34	Y
158	937.67	950.17	971.56	971.11	Y
159	946.44	937.67	972.01	971.56	N
160	951.59	946.44	972.45	972.01	N
161	957.15	955.18	973.50	972.45	N
162	967.15	957.15	977.04	973.50	N
163	973.63	967.15	979.36	977.04	N
164	948.53	955.18	968.89	973.93	N
165	945.07	948.53	967.94	968.89	N
166	947.09	945.07	968.19	967.94	Y
167	950.08	947.09	968.68	968.19	Y
168	954.90	950.08	970.38	968.68	Y
169	959.54	954.90	972.82	970.38	Y
170	965.95	959.54	975.03	972.82	Y
171	973.41	965.95	977.24	975.03	N
172	977.02	973.41	979.44	977.24	N
173	974.60	977.02	980.13	980.02	N
174	973.09	974.60	979.38	980.13	N
175	971.62	973.09	978.63	979.38	N
176	970.02	971.62	977.86	978.63	N
177	968.93	970.02	977.13	977.86	N
178	968.60	968.93	976.38	977.13	N
179	968.79	968.60	974.18	976.38	N
180	972.83	977.49	971.12	974.18	N
181	969.41	972.83	966.76	971.12	N
182	966.47	969.41	964.73	966.76	N
183	969.68	971.53	966.04	964.73	N
184	962.58	969.68	965.01	966.71	Y
185	968.19	962.58	963.43	965.01	Y
186	934.00	938.19	961.89	963.43	Y
187	936.92	934.00	960.56	961.89	Y
188	939.22	936.92	959.04	960.20	N
189	950.12	939.22	957.70	959.04	N
190	953.33	950.12	956.28	957.70	N
191	954.38	953.33	952.17	956.28	N
192	937.39	934.54	953.20	952.07	Y
193	941.50	937.39	954.35	952.07	Y
194	945.85	941.50	955.48	954.35	Y
195	948.71	945.85	956.74	955.48	Y
196	951.57	948.71	958.16	956.74	Y
197	965.82	970.06	960.53	958.16	Y
198	961.69	965.82	965.34	960.53	Y

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

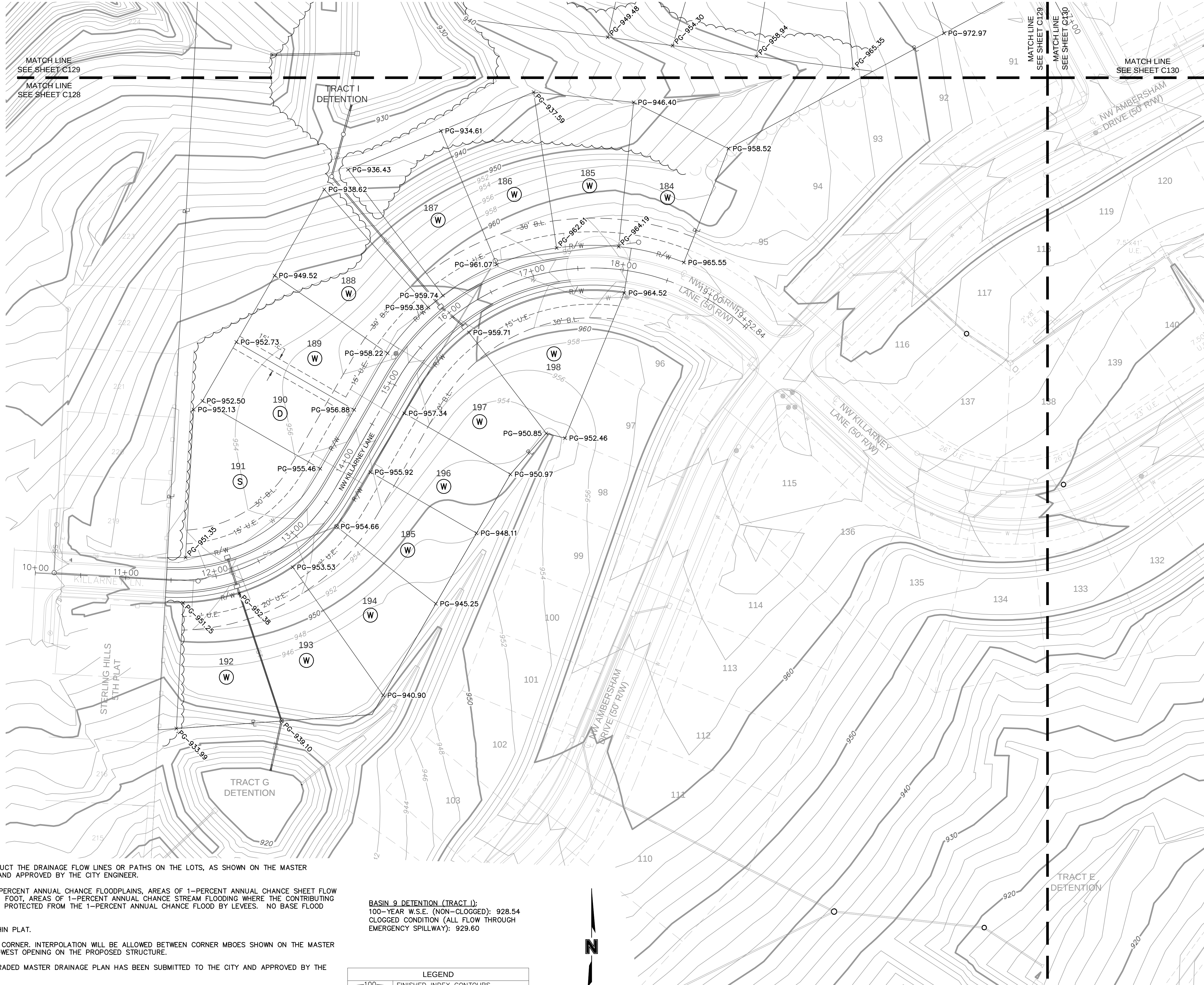
- NOTES:
- INDIVIDUAL LOT OWNERS SHALL NOT CHANGE OR OBSTRUCT THE DRAINAGE FLOW LINES OR PATHS ON THE LOTS, AS SHOWN ON THE MASTER DRAINAGE PLAN, UNLESS SPECIFIC APPLICATION IS MADE AND APPROVED BY THE CITY ENGINEER.
 - PLAT IS LOCATED IN ZONE X, "AREAS OUTSIDE THE 1-PERCENT ANNUAL CHANCE FLOODPLAINS,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

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

LEGEND	
100	FINISHED INDEX CONTOURS
100	FINISHED INTERMEDIATE CONTOURS



BASIN 9 DETENTION (TRACT I):
100-YEAR W.S.E. (NON-CLOGGED): 928.54
CLOGGED CONDITION (ALL FLOW THROUGH EMERGENCY SPILLWAY): 929.60



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NS Certified of Authority #031892
300 E. BURNSIDE ST. SUITE 100
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STATE OF MISSOURI
JULIE ELAINE SELLERS
Professional Engineer
NUMBER
PE-2017000367
7/10/20

BY
REVISIONS DESCRIPTION
NO. REV. DATE
1 7/10/2020 REVISED PER CITY COMMENTS

MASTER DRAINAGE PLAN
STREET & STORM SEWER PLANS

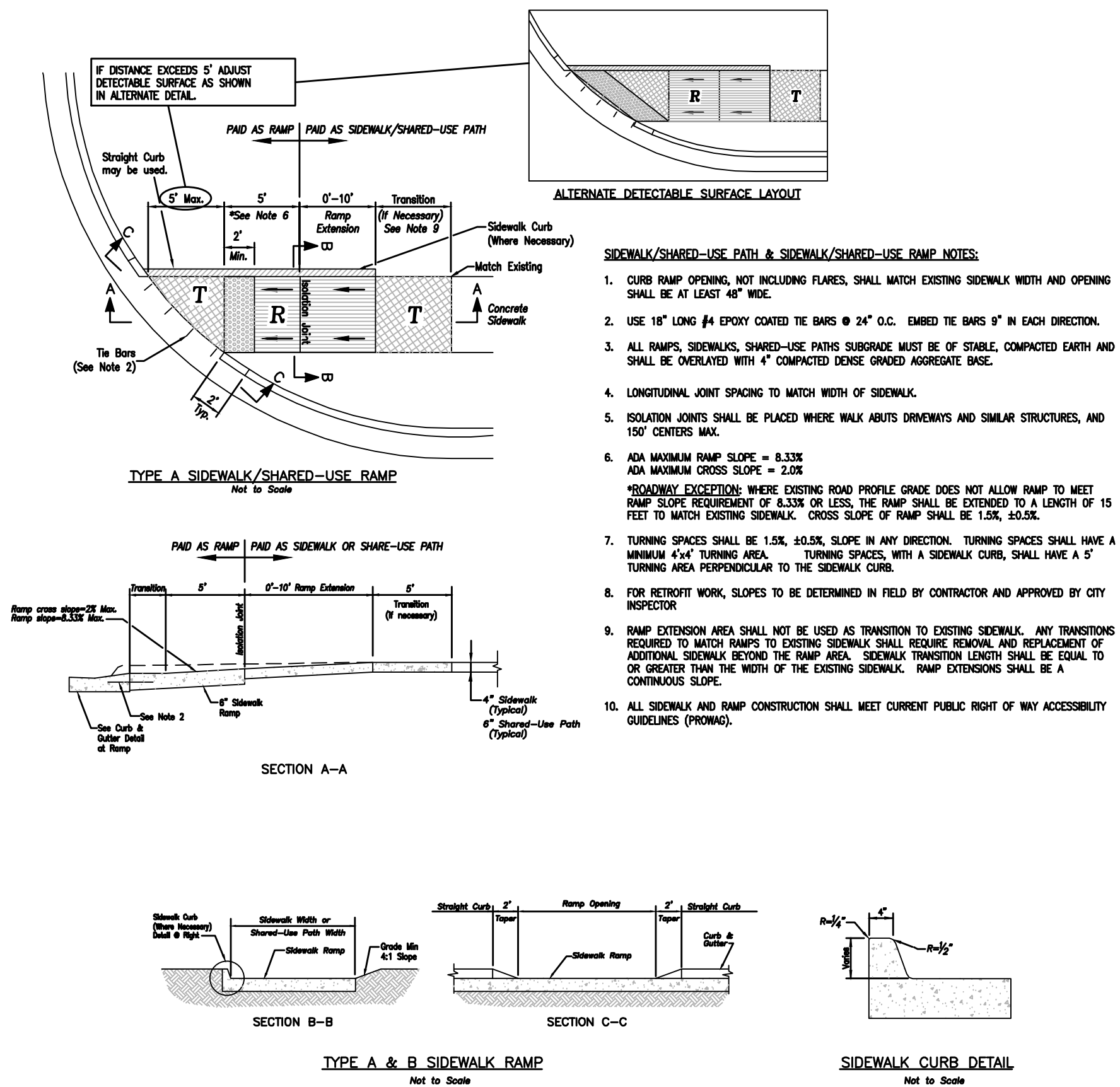
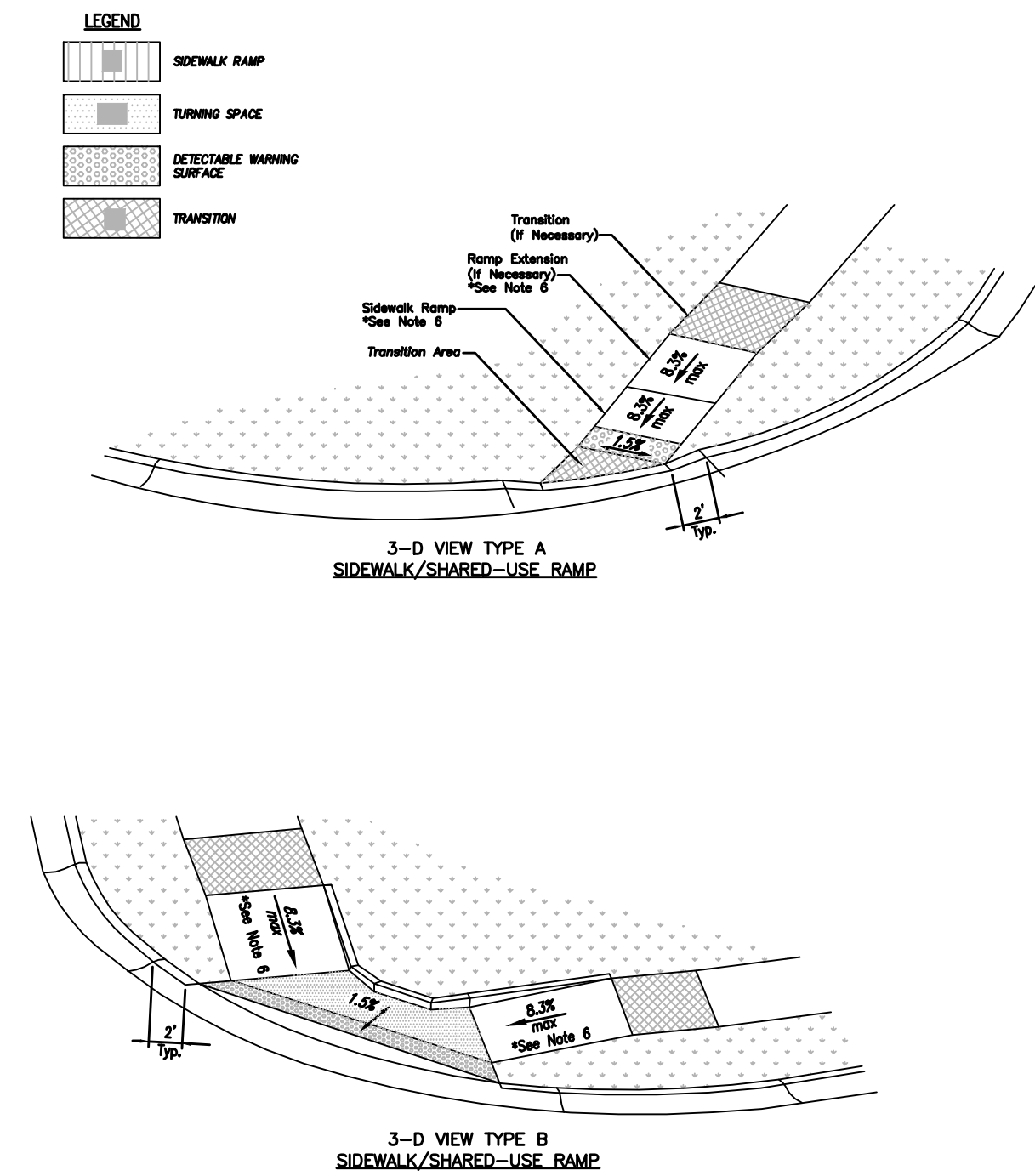
WOODSIDE RIDGE
SECOND PLAT

LEE'S SUMMIT, MO

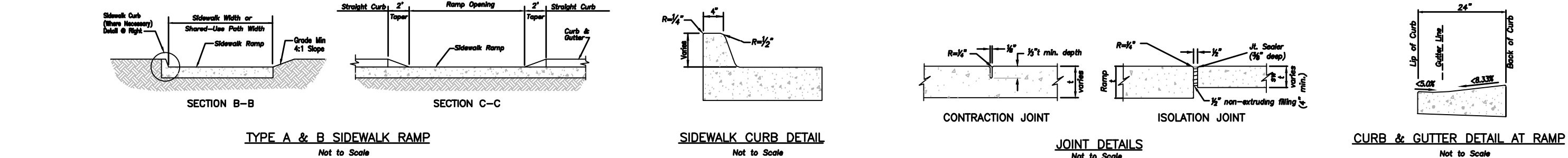
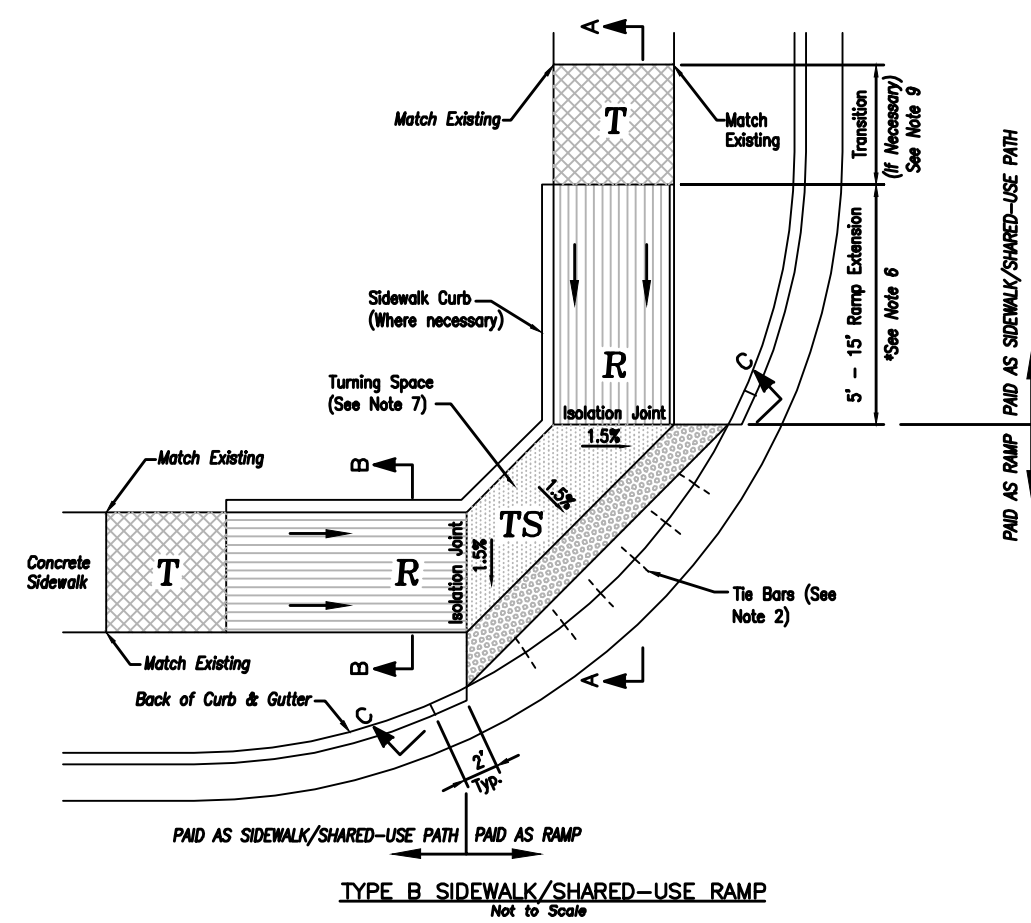
drawn by: _____ C.S.M.
checked by: _____ S.M.S.
designed by: _____ C.S.M.
QA/QC by: _____ J.E.S.
project no.: C18-1140
date: 2020.07.10

SHEET
C128

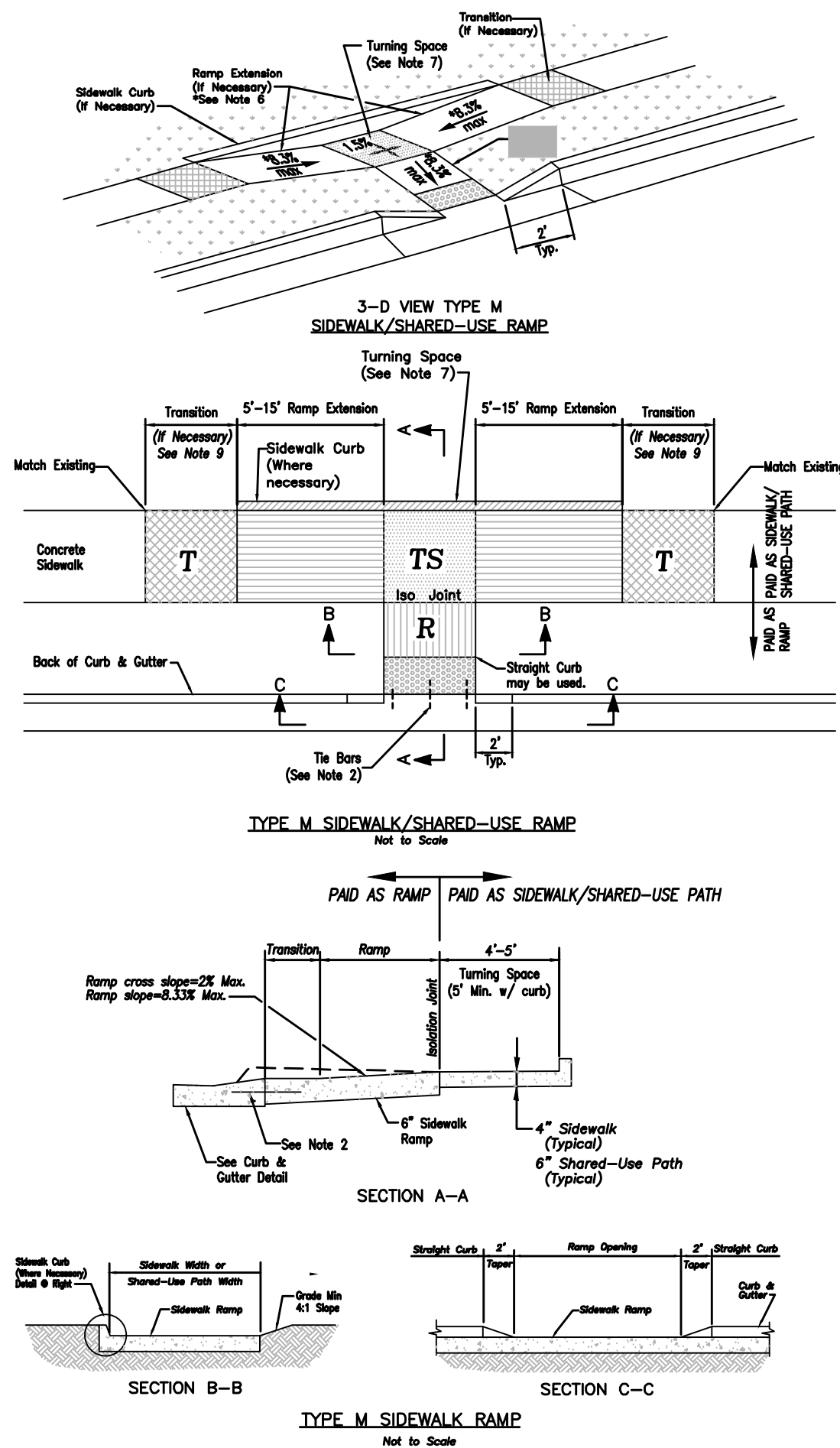
2020



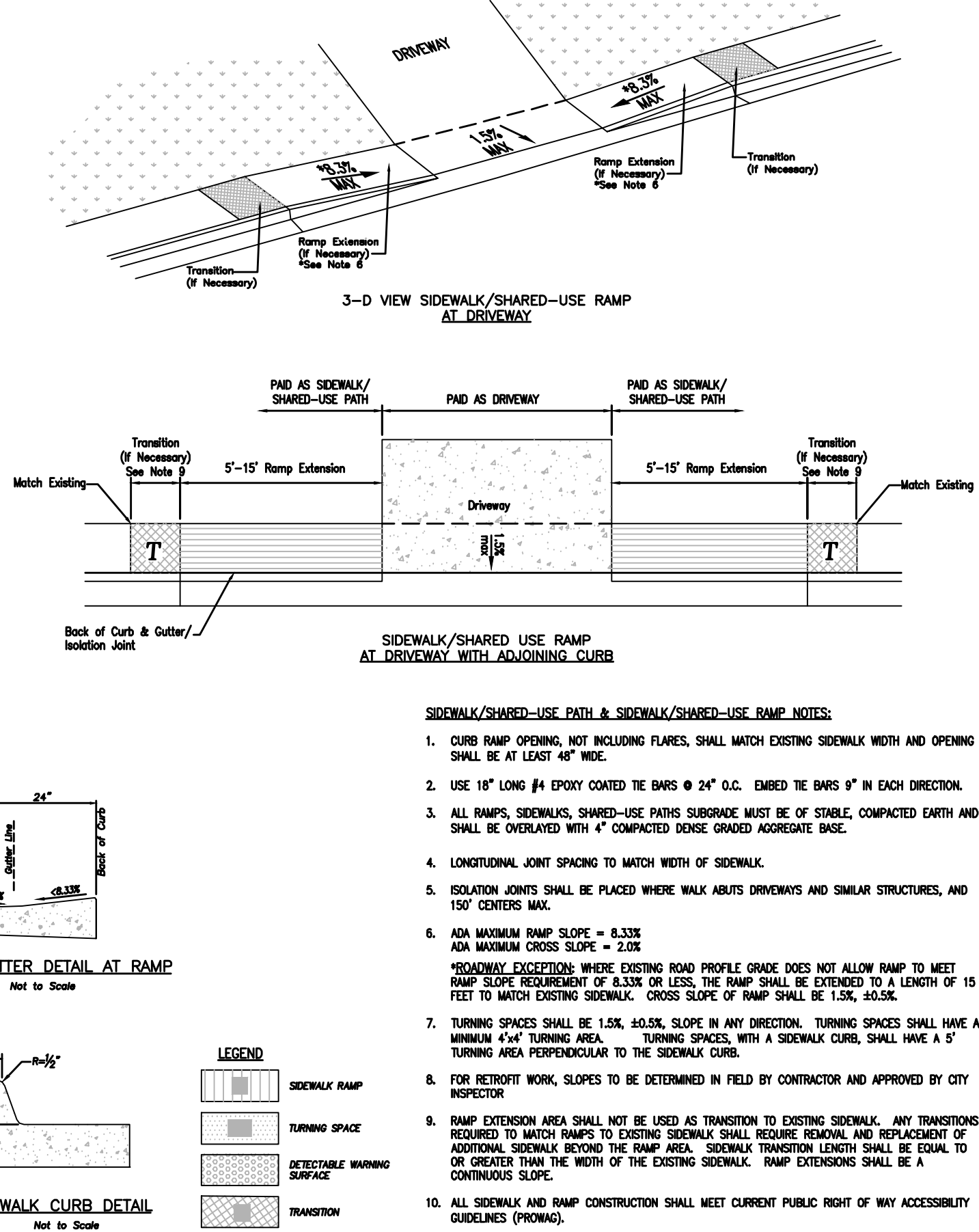
REFER TO SHEETS C110 AND C111
FOR RAMP SLOPE AND DIMENSION.
DETAILS ARE GUIDELINES AS TO HOW
RAMPS SHALL BE CONSTRUCTED.



01 N.T.S. ADA RAMP RETROFIT DETAIL (A)



02 N.T.S. ADA RAMP RETROFIT DETAIL (B)



GENERAL NOTES:

1. SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADE AGGREGATE BASE.
2. 1.5% CROSS SLOPE MUST BE MAINTAINED THROUGH DRIVEWAYS.
3. KCMCM 4# CONCRETE MIX SHALL BE REQUIRED FOR ALL SIDEWALKS AND SHARED-USE PATHS OR AS APPROVED BY THE CITY INSPECTOR.
4. ALL SIDEWALKS SHALL GUARANTEE PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
5. AN EXPANSION JOINT SHALL BE PLACED AT A MAXIMUM OF 150 FT. CONSTRUCTION JOINTS SHALL BE PLACED AT THE SAME WIDTH OF SIDEWALK, BUT NOT GREATER THAN 10 FT.
6. SHARED-USE PATH WIDTH SHALL BE 10 FT. WIDE.
7. SIDEWALK FINISHING (NO PICTURE FRAMING) AS DIRECTED BY CITY INSPECTOR.
8. CURB CURT CURB COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.

03 N.T.S. SIDEWALK\SHARED-USE PATH DETAIL

[illegible]

REVISIONS

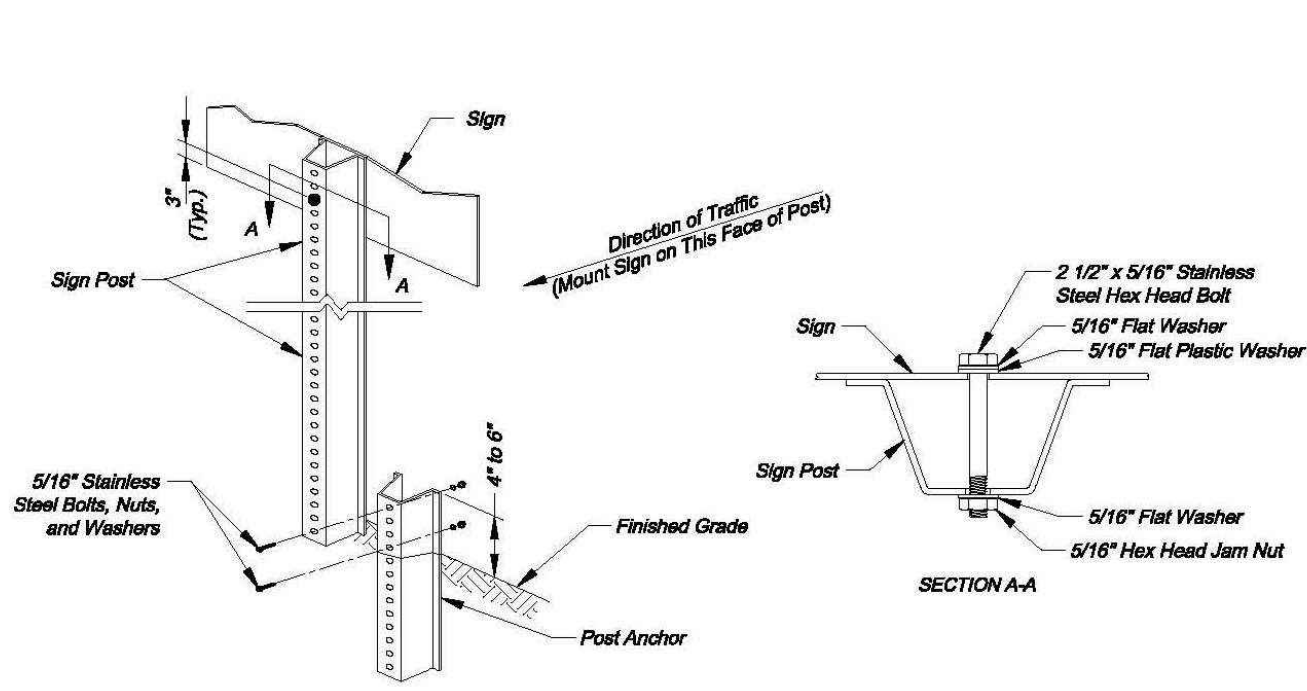
2020

ADA DETAIL SHEET
STREET & STORM SEWER PLANS

WOODSIDE RIDGE
SECOND PLAT

MMIT, MO

drawn by: C.S.M
checked by: S.M.S
designed by: C.S.M
QA/QC by: J.E.S
project no.: C18-1140
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U-STEEL POST DETAILS

- U-STEEL POST NOTES:**
1. Splice shall be positioned entirely between finished grade line and 16" above finished grade line. Only one splice will be allowed per post.
 2. U-Steel post shall be 3 to 6 ft., galvanized according to ASTM A123.
 3. U-Steel post can be used for installation of signs with an area of less than 2.5 square feet.
 4. All posts shall be embedded a minimum of 3 feet.

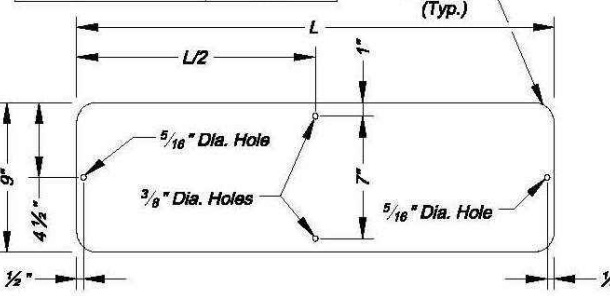


STRAP TYPE SIGN SUPPORT DETAILS

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

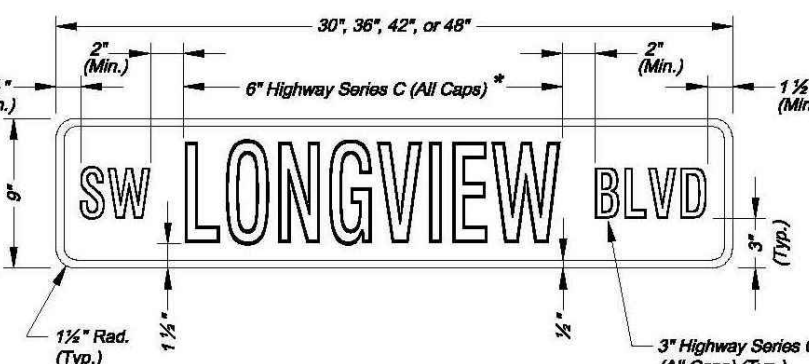
STANDARD ABBREVIATION LISTS

Named Streets	Numbered Streets
Avenue	First
Boulevard	Second
Circle	Third
Creek	Fourth to Tenth
Court	TH
Crossing	
Drive	
Highway	
Lane	
Parkway	
Piece	
Road	
Street	
Terrace	
Trail	
Way	

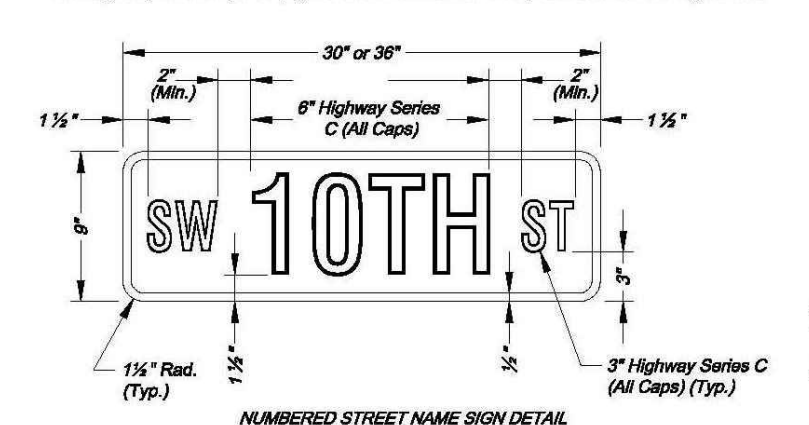


STREET NAME SIGN BLANK DETAILS

For Mounting on Square Steel Posts



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



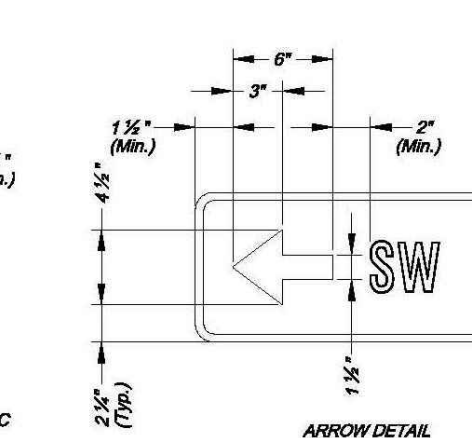
STREET NAME SIGN FACE DETAILS

STREET NAME SIGN QUANTITIES

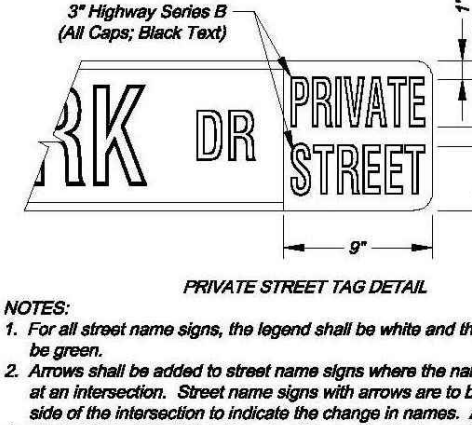
Sign Designation	Sign Size	Sign Area (Sq. Ft.)	Number	Quantity (Sq. Ft.)
D3-1 (SP-1)	9" x 9"	Sq. Ft.	1	1
D3-1 (SP-2)	9" x 9"	Sq. Ft.	1	1
D3-1 (SP-3)	9" x 9"	Sq. Ft.	1	1
D3-1 (SP-4)	9" x 9"	Sq. Ft.	1	1
D3-1 (SP-5)	9" x 9"	Sq. Ft.	1	1
D3-1 (SP-6)	9" x 9"	Sq. Ft.	1	1

PROJECT SIGN DETAILS

For Mounting on Square Steel Posts



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

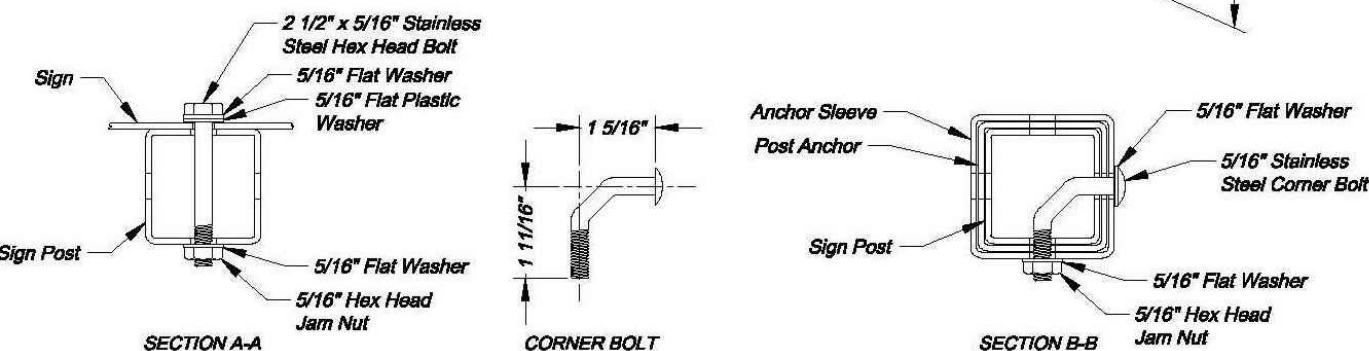


NOTES:

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 name. 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.

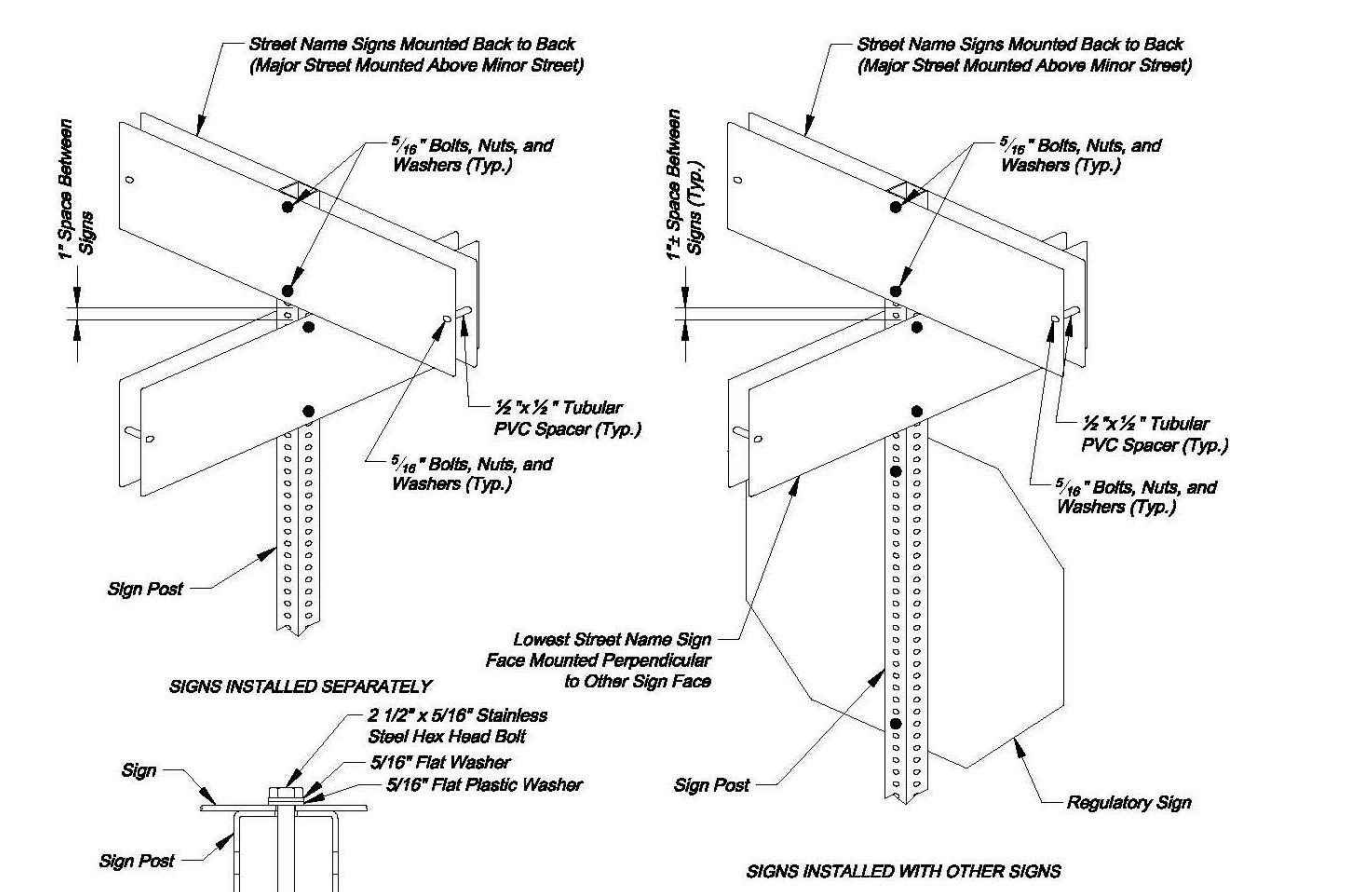
- PERMANENT SIGNING GENERAL NOTES:**
1. All signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
 2. The Contractor is responsible for avoiding any and all utilities when installing sign posts, whether the utility is indicated on the plans or 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 submit the location of all sign posts to be installed. The City Inspector shall inspect the staking prior to installation.
 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 pole during construction, the Contractor will be required to replace the damaged materials with new signs or poles 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 maintained 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 (1671 SE Hamblen Road). The Contractor shall be responsible for removing and storing equipment in good condition and is fully responsible for the equipment until it is delivered.
 9. All Stop, Yield, or street name signs shall be maintained in a conspicuous location for the driving public. All Stop and Yield signs removed for construction purposes can be temporarily erected in reflectorized drums (no less than 7 feet above the pavement surface) until they can be reinstalled. Any temporary Stop or Yield sign installation to be left in place overnight will require prior approval from the City Inspector.

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

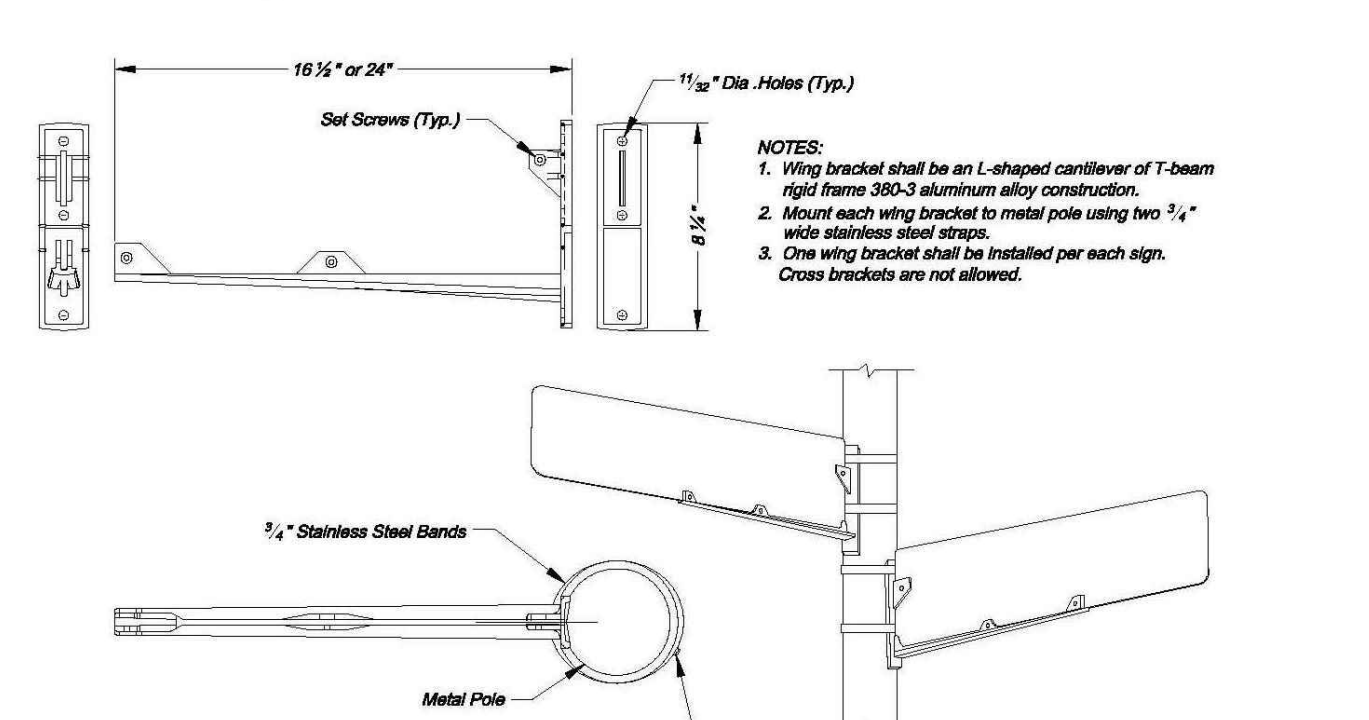


SQUARE STEEL POST DETAILS

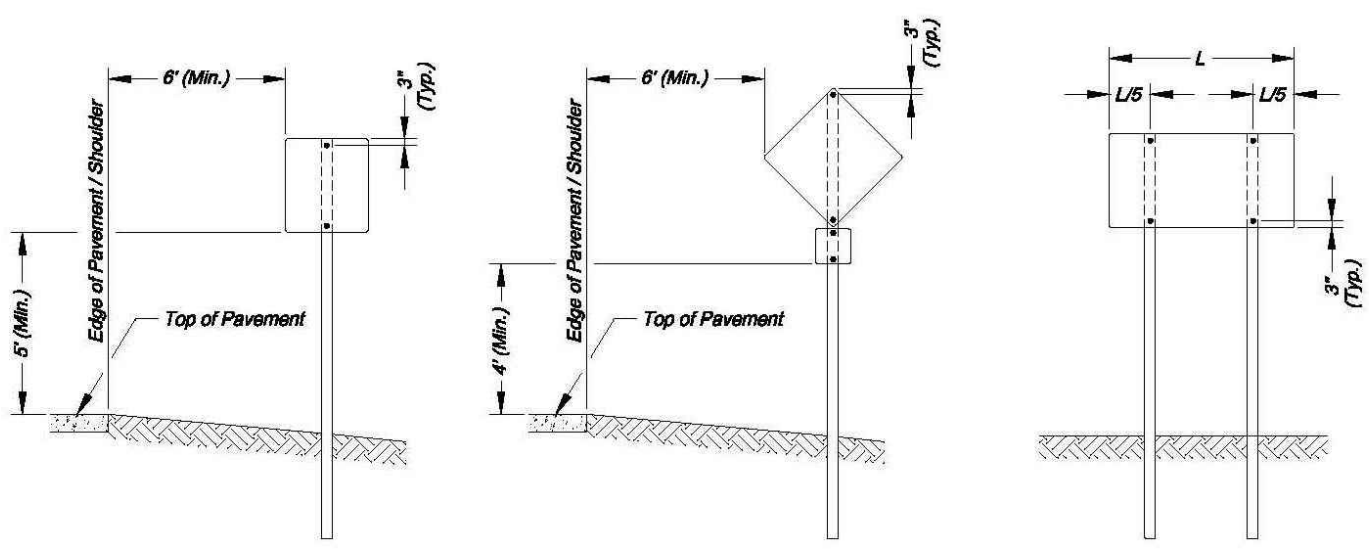
- SQUARE STEEL POST NOTES:**
1. Square steel sign posts and break-away anchor shall consist of the following materials:
 - Sign Post - 14 Ga. 2" x 2" Square Steel Post
 - Post Anchor - 12 Ga. 2 1/2" x 2 1/2" x 36" Square Steel Post
 - Anchor Sleeve - 12 Ga. 2 1/2" x 2 1/2" x 18" Square Steel Post
 2. 14 Gauge posts must meet a certified minimum yield strength of 80,000 psi.
 3. In all installations the first hole above the finished grade line on the sign post, anchor, and anchor sleeve must be in line for the insertion of the corner bolt.
 4. The maximum area for one sign post is 9.0 square feet. A sign or combination of signs with an area greater than 9.0 square feet will require two posts. Also, signs with a width greater than 36" (not including 36" x 36" diamond shaped signs) will require two posts.



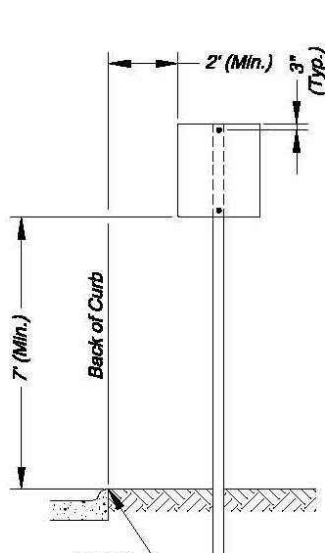
SQUARE STEEL POST MOUNTING DETAILS



WING BRACKET MOUNTING DETAILS



SIGN INSTALLATION FOR NON-CURBED STREET



SIGN INSTALLATION FOR CURBED STREET



SIGN INSTALLATION WITH AUXILIARY SIGN FOR NON-CURBED STREET



SIGN INSTALLATION WITH TWO SIGN POSTS



SIGN INSTALLATION FOR CURBED STREET



SIGN INSTALLATION WITH AUXILIARY SIGN FOR CURBED STREET



SIGN INSTALLATION FOR RAISED MEDIAN



SIGN INSTALLATION WITH AUXILIARY SIGN FOR RAISED MEDIAN



SIGN INSTALLATION FOR CURBED STREET



SIGN INSTALLATION WITH AUXILIARY SIGN FOR CURBED STREET



SIGN INSTALLATION FOR RAISED MEDIAN



SIGN INSTALLATION WITH AUXILIARY SIGN FOR RAISED MEDIAN



SIGN INSTALLATION FOR CURBED STREET



SIGN INSTALLATION WITH AUXILIARY SIGN FOR CURBED STREET



SIGN INSTALLATION FOR RAISED MEDIAN



SIGN INSTALLATION WITH AUXILIARY SIGN FOR RAISED MEDIAN



SIGN INSTALLATION FOR CURBED STREET



SIGN INSTALLATION WITH AUXILIARY SIGN FOR CURBED STREET



SIGN INSTALLATION FOR RAISED MEDIAN



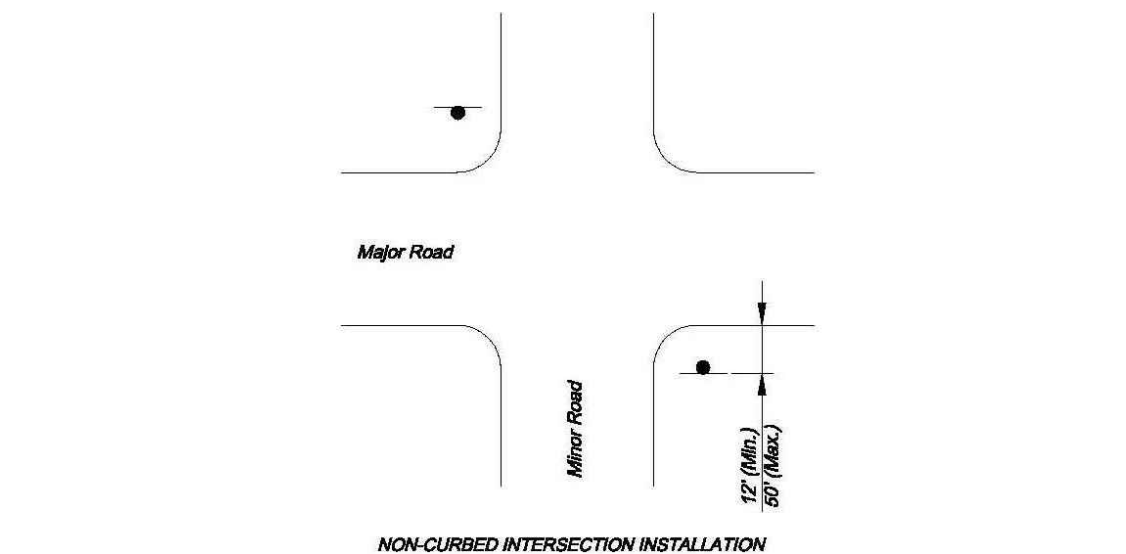
SIGN INSTALLATION WITH AUXILIARY SIGN FOR RAISED MEDIAN



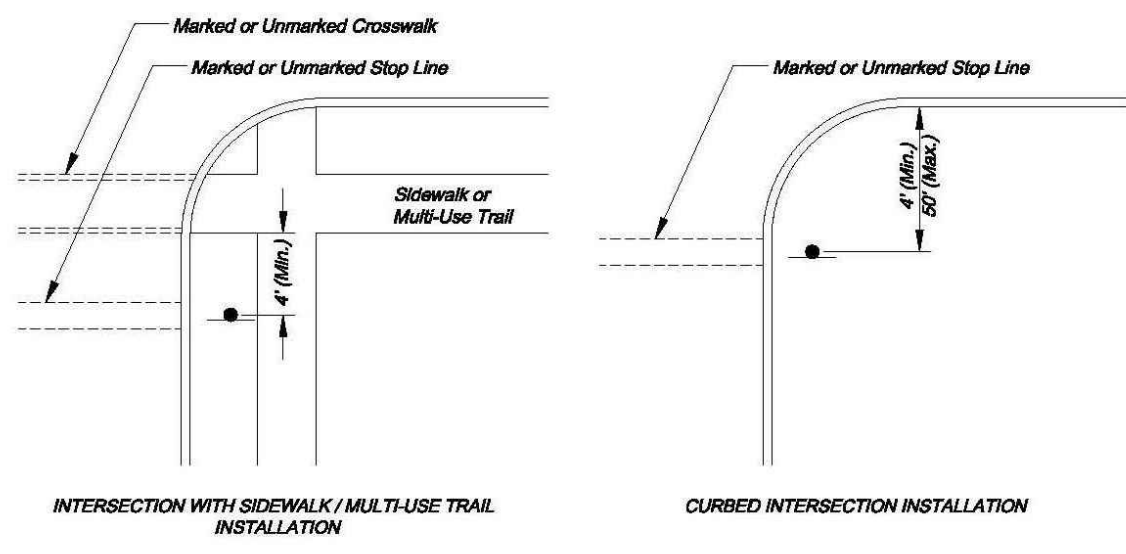
SIGN INSTALLATION FOR CURBED STREET



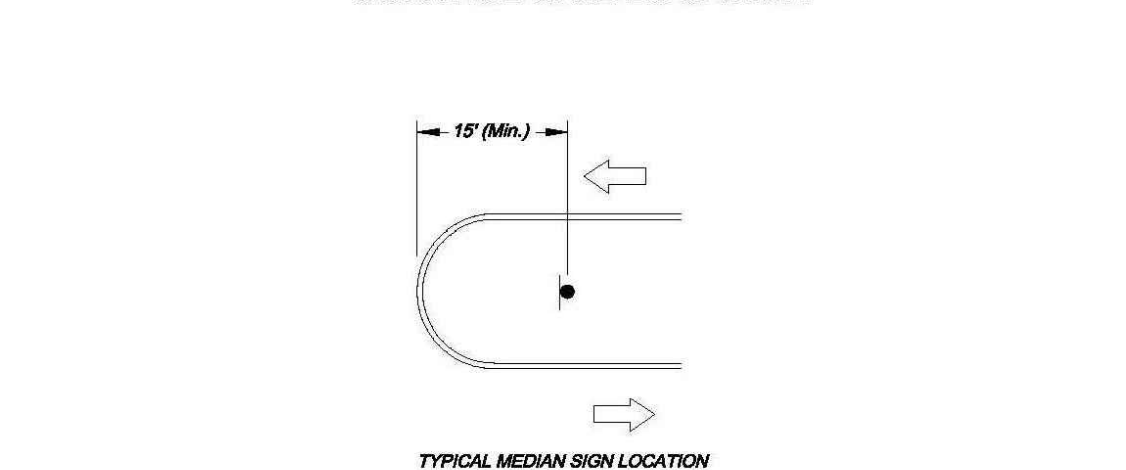
SIGN INSTALLATION WITH AUXILIARY SIGN FOR CURBED STREET



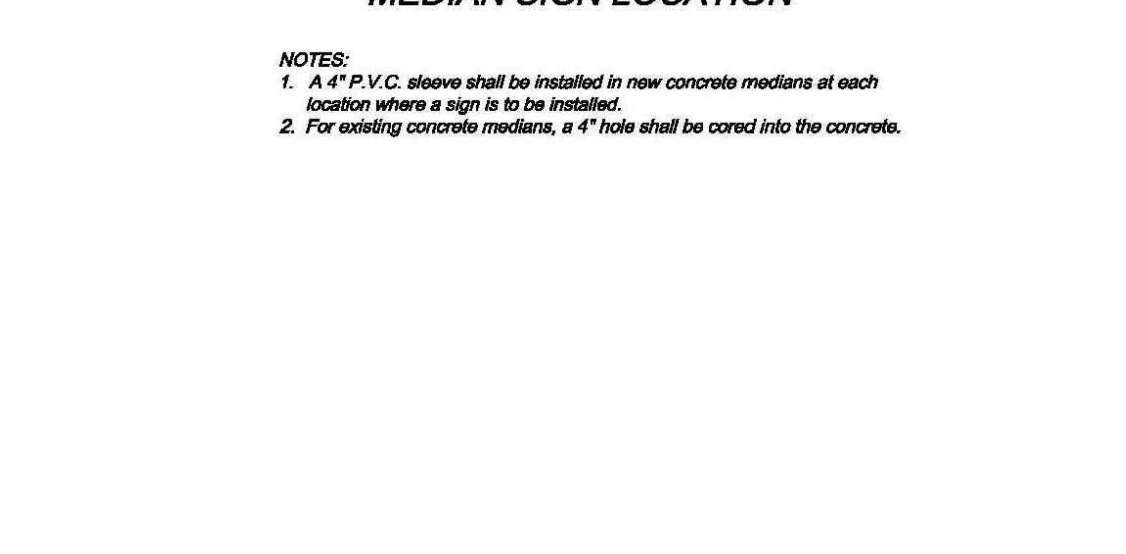
NON-CURBED INTERSECTION INSTALLATION



CURBED INTERSECTION INSTALLATION



CONTROL SIGN LOCATION



MEDIAN SIGN LOCATION

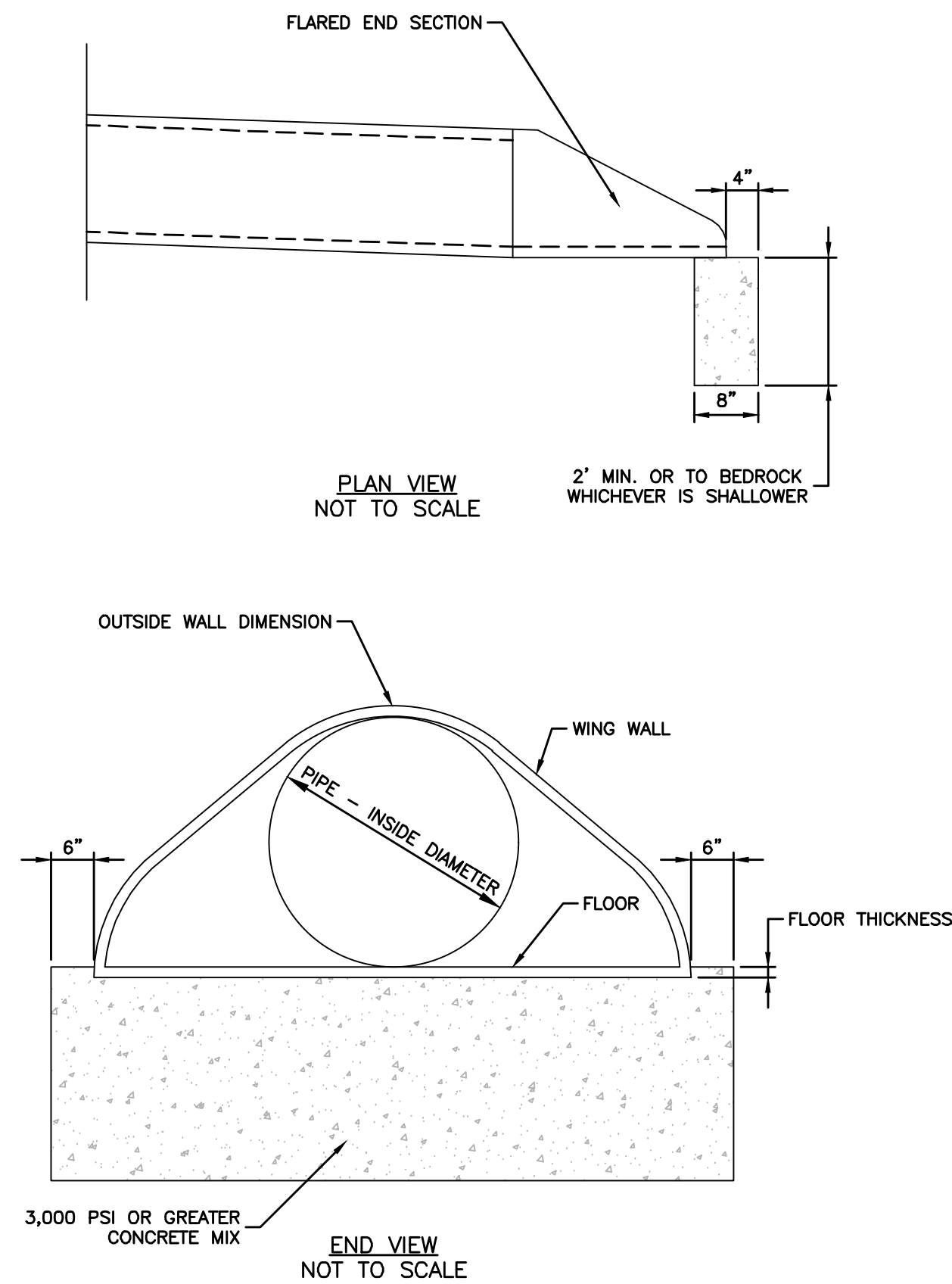
NOTES:

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 bored into the concrete.

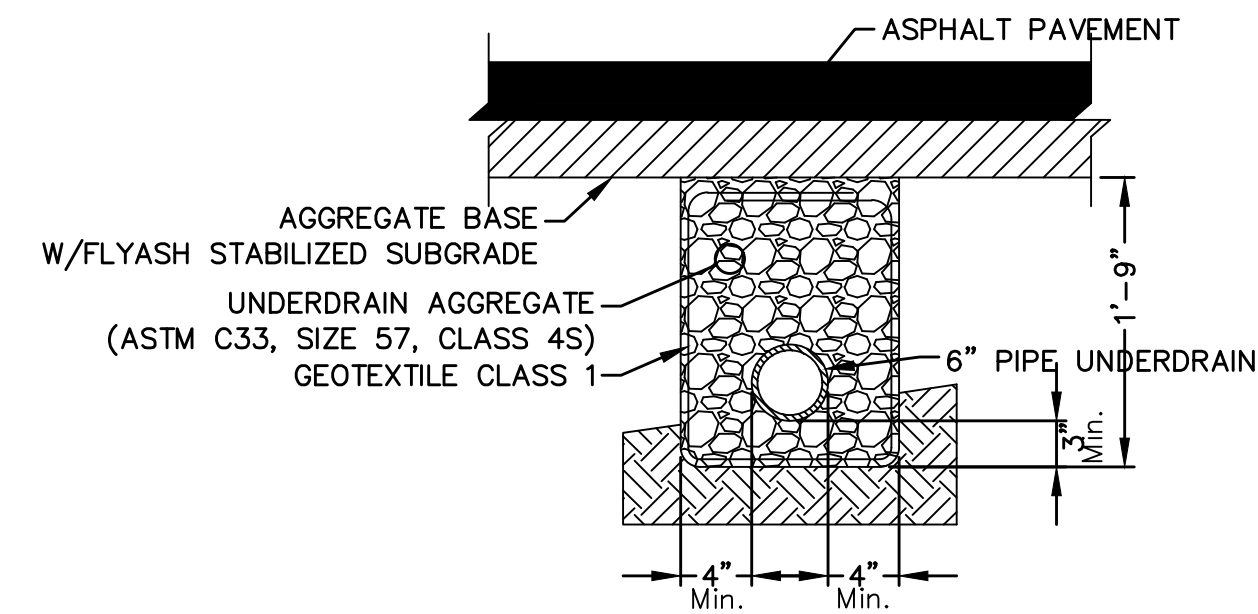


1. BACKFILL SHALL BE JOY EXCAVATED MATERIAL FREE FROM DEBRIS AND STONES COMPACTED TO 90% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698 FOR BACKFILL UNDER PAVEMENT (EXISTING OR PROPOSED).
2. TRENCH BANKS MAY BE CUT BACK ON SLOPES IN ACCORDANCE WITH CURRENT OSHA REGULATIONS, 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.

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



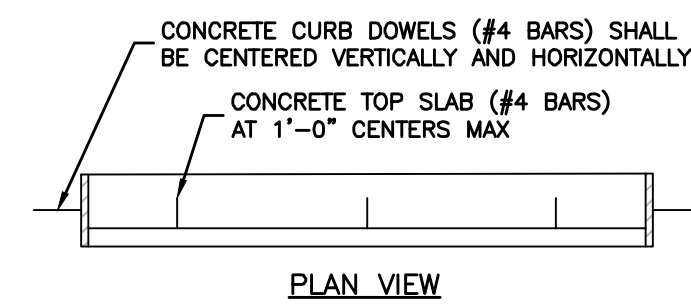
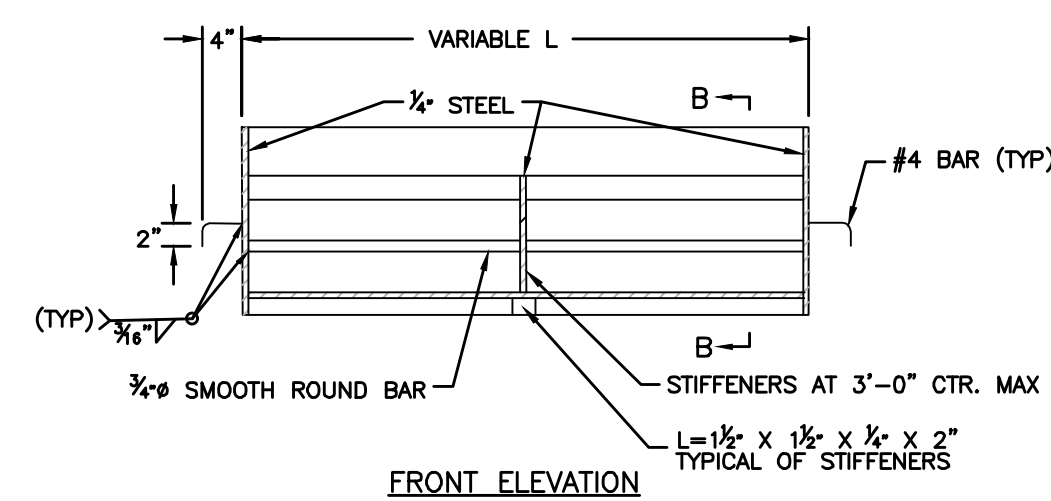
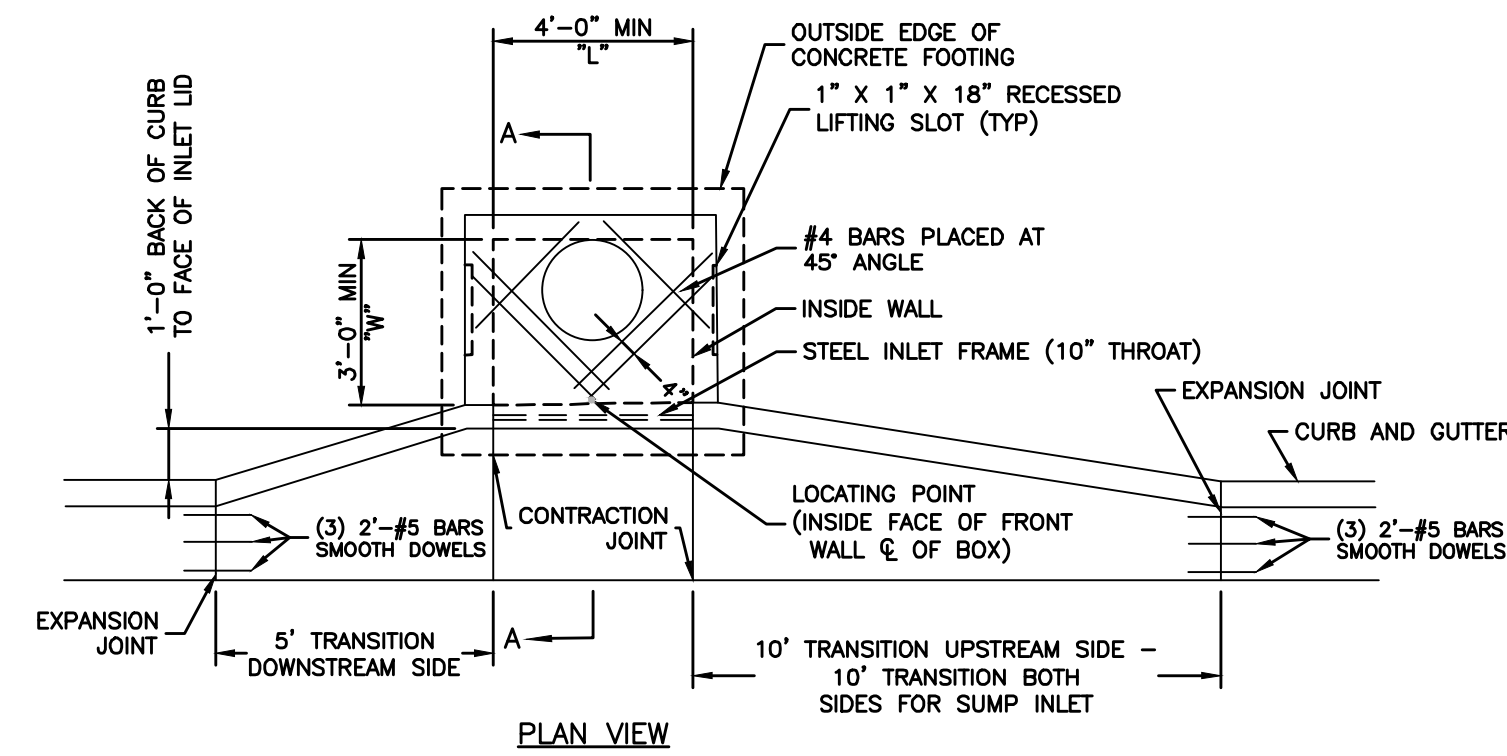
03 N.T.S.
FLARED END SECTION SUPPORT DETAIL



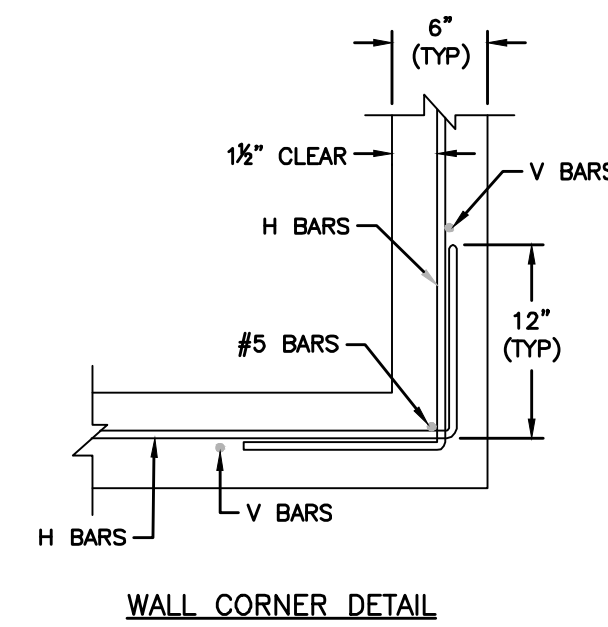
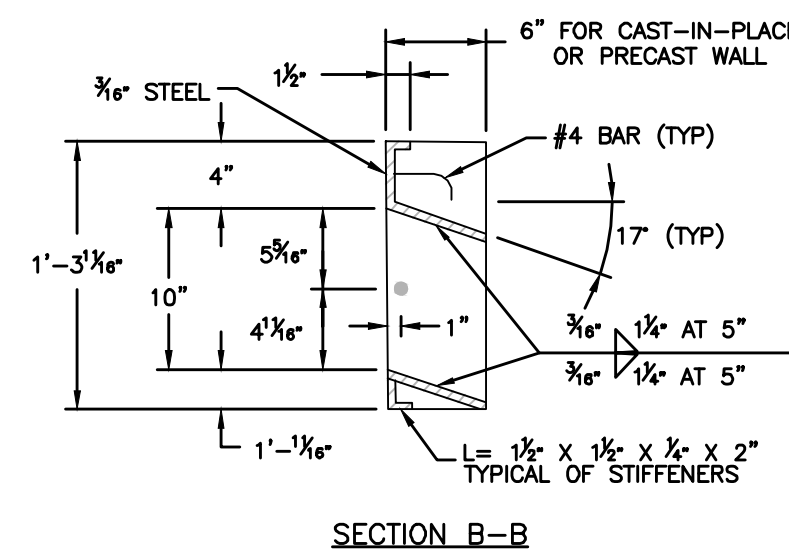
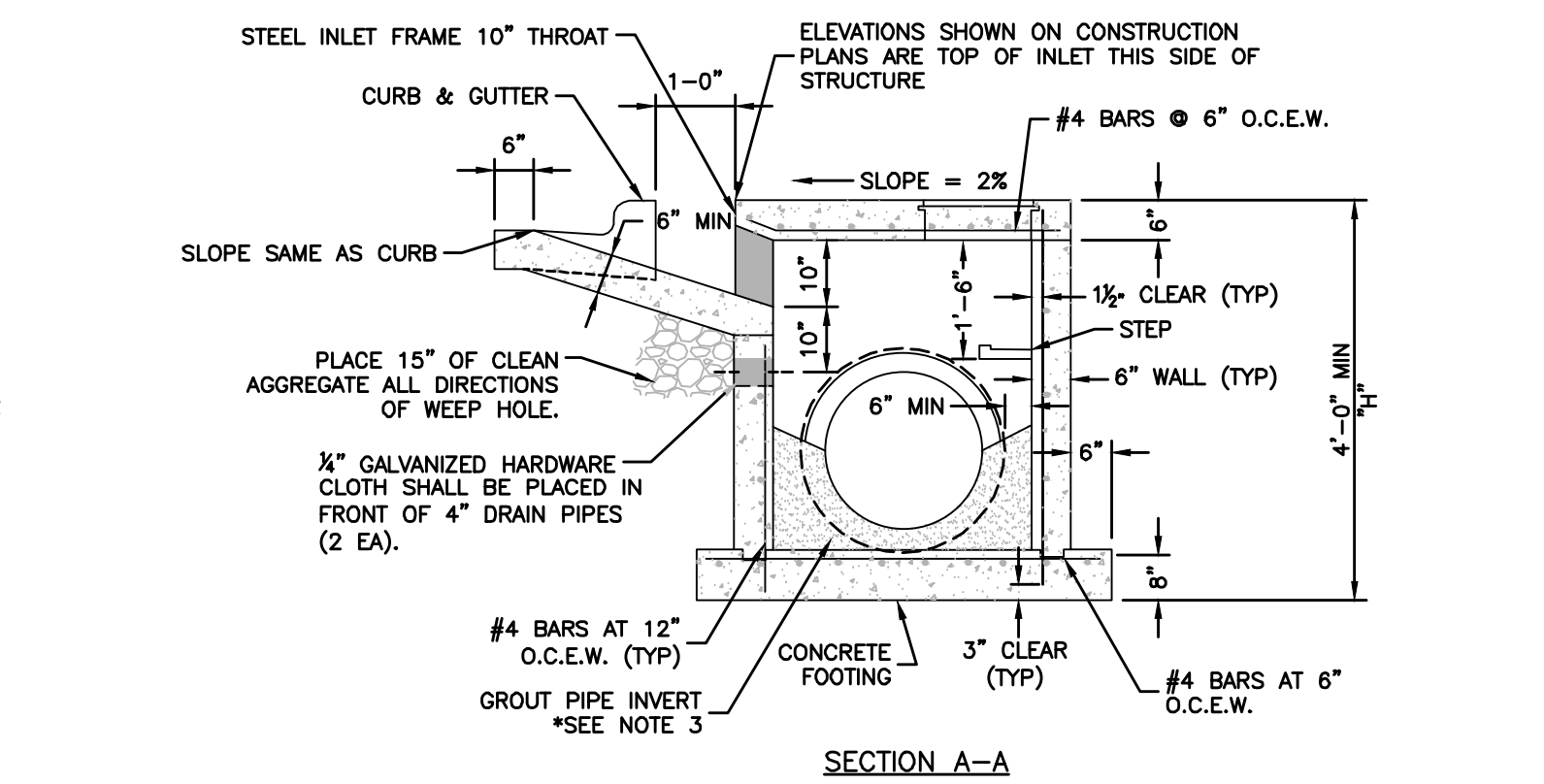
- NOTES:

3. 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 on the street profile.
4. All Underdrain Pipes shall be installed at a minimum slope of 1%.
5. Underdrain Pipe shall be installed with the perforations placed down.
6. Blanket Underdrain Aggregate, Pipe Underdrain Aggregate, Pipe Underdrain, Edge Underdrain and Outlet Pipe shall conform to City of Lee's Summit Specifications.
7. Overlap geotextile at top of trench a minimum of 12".

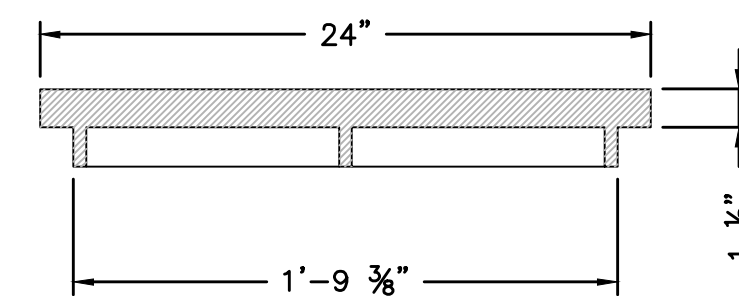
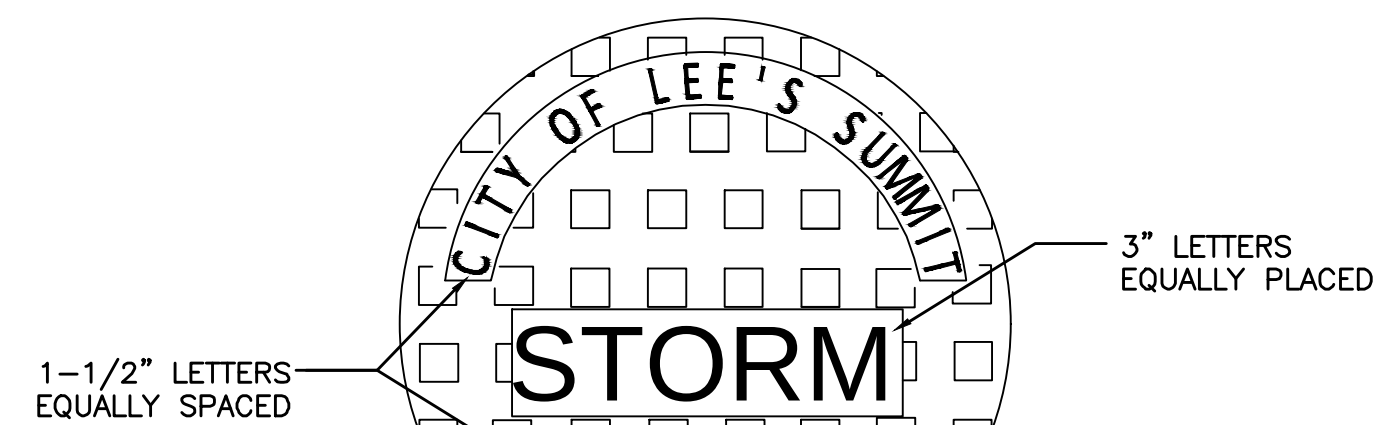
05 N.T.S. PIPE UNDERDRAIN LATERAL



- 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.

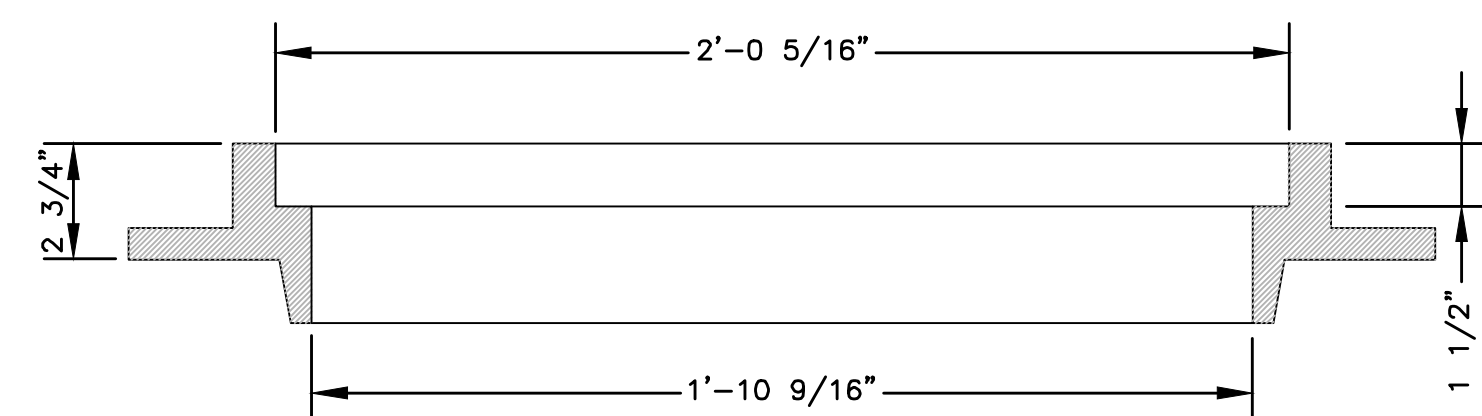


- GENERAL NOTES:**
1. THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION.
 2. THE SECOND DIMENSION IS THE "W" DIMENSION.
 3. ITEMS LISTED ON THE PROJECT PLANS ARE LISTED AT THE INSIDE FACE OF THE WALL.
 4. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
 5. LOCATE MH RING AND COVER ON BLACK WALL IF POSSIBLE.
 6. STEPS SHALL BE SPACED AT 1'-4" O.C. VERTICALLY ON BLACK WALL IF POSSIBLE.
 7. EXPOSED INTERIOR WALLS SHALL BE FINISHED WITH 3/4" THICK UNTOOLED ELK WOOD.
 8. ON-GRADE INLETS SHALL CONFORM TO THE STREET GRADE AND GUMP INLETS SHALL BE LEVEL.
 9. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON-SHRINKABLE 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.

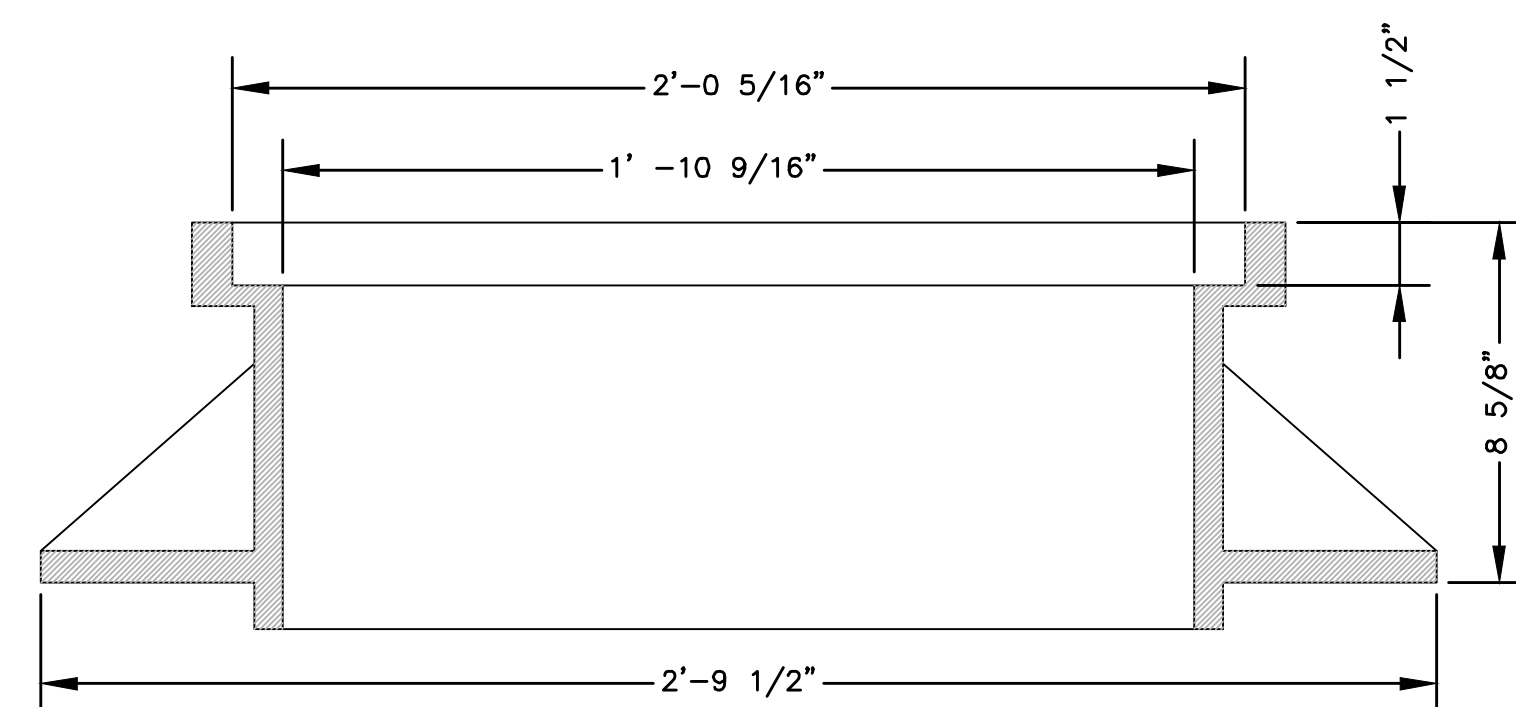


STANDARD 24" MANHOLE COVER
MINIMUM WEIGHT = 160 LB
NOTE: PICK HOLES NOT SHOWN

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

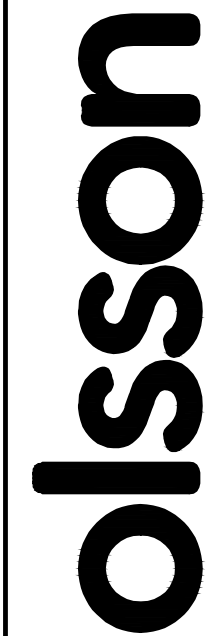


SLAB MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS103A
MINIMUM WEIGHT = 145 LB

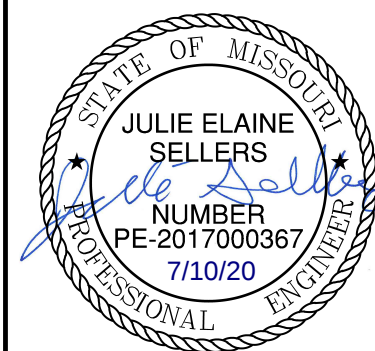


STANDARD 24" MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS101A
MINIMUM WEIGHT = 250 LB

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



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

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STORM DETAIL SHEET STREET & STORM SEWER PLANS	2020
WOODSIDE RIDGE SECOND PLAT	LEE'S SUMMIT, MO

drawn by: C.S.M
checked by: S.M.S
designed by: C.S.M
QA/QC by: J.E.S
project no.: C18-1140
date: 2020.07.10

SHEET
C135