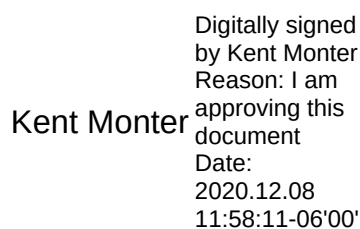


SECTION 23, TOWNSHIP 47 N, RANGE 32 W
IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI



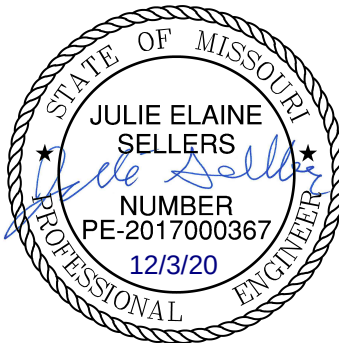
☐ NOT FOR CONSTRUCTION

☒ REVIEWED FOR CONSTRUCTION



**RELEASE FOR
CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
12/08/2020**

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REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	06/15/2020	REVISED PER CITY COMMENTS	
2	06/25/2020	REVISED PER CITY COMMENTS	
3	09/10/2020	REMOVED PIPE INSULATION	
4	10/01/2020	REVISED PER CITY COMMENTS	
5	11/8/2020	REVISED LOTS 25-29 GRADING	

TITLE SHEET

STREET AND STORM SEWER PLANS

HOOK FARMS
FIRST PLAT

LEE'S SUMMIT, MO

drawn by: _____ CGW
checked by: _____ JES
approved by: _____ NDH
QA/QC by: _____ JES
project no.: _____ 019-4061
drawing no.: _____
date: _____ 04/20/2020

SHEET
C101

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North Kansas City, MO 64116
TEL 816.361.1177
FAX 816.361.1888
www.olsson.com

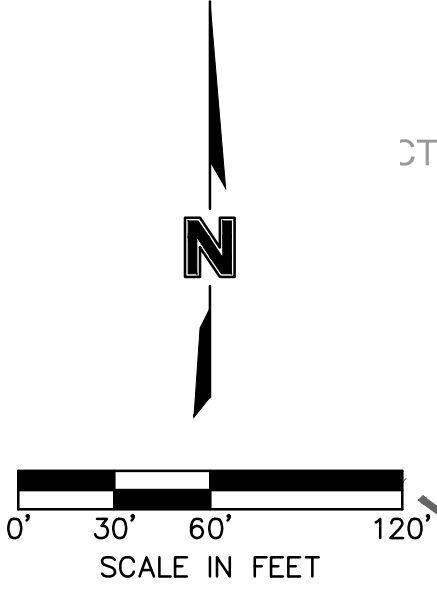
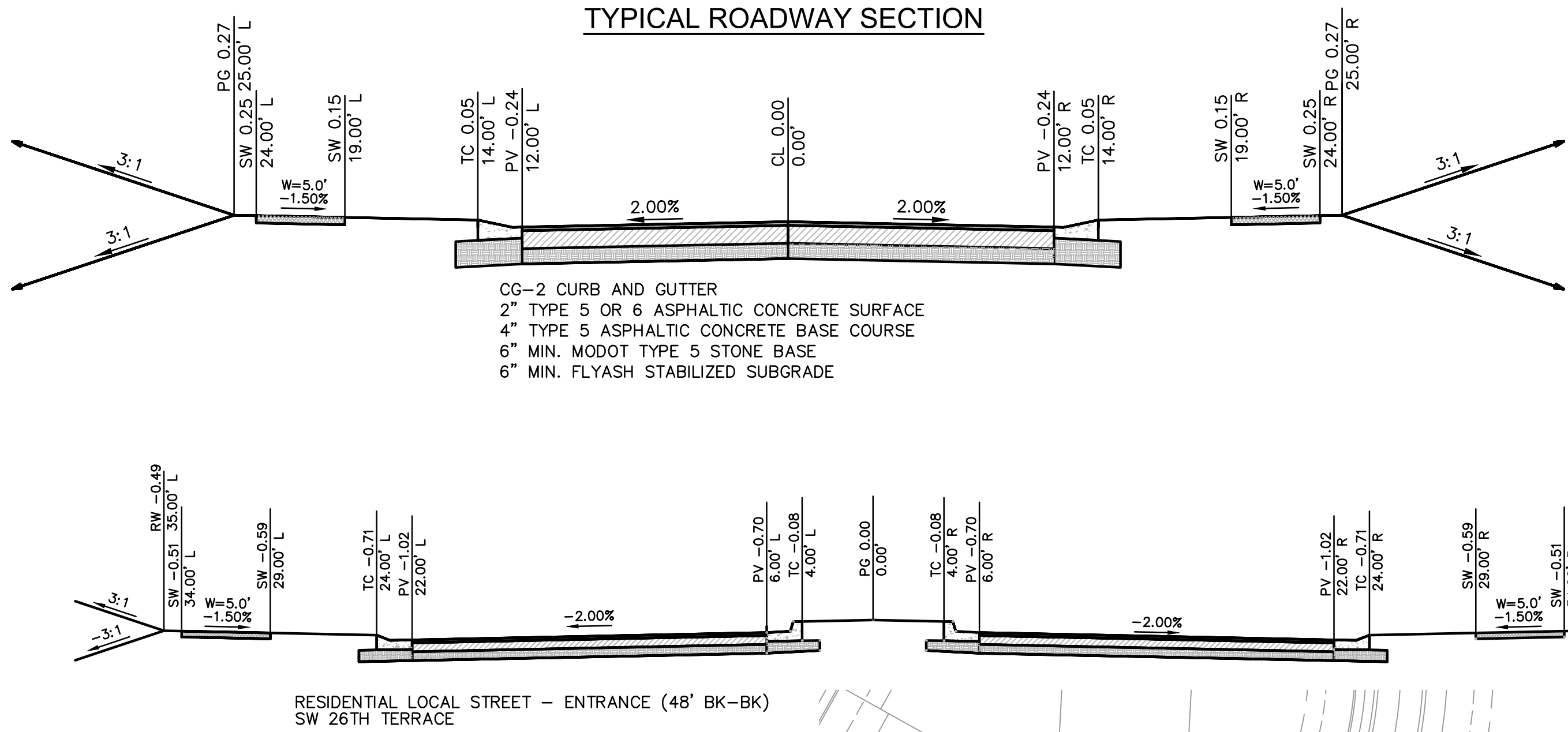
REFERENCES

- ## EXISTING CONDITIONS

- ## SHOP DRAWINGS

- www.olsson.com

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RELEASE FOR
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LEE'S SUMMIT, MISSOURI
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STATE OF MISSOURI
JULIE ELAINE
SELLERS
as seller
NUMBER
PE-2017000367
12/3/20
PROFESSIONAL ENGINEER

GENERAL LAYOUT
STREET AND STORM SEWER PLANS

HOOK FARMS
FIRST PLAT

LEE'S SUMMIT, MO

BY

DATE

REV. NO.

REVISIONS DESCRIPTION

REVISED PER CITY COMMENTS

REVISED PER CITY COMMENTS

2020

1

2

06/15/2020

06/25/2020

drawn by: CGW

checked by: JES

approved by: NDH

QA/QC by: JES

project no.: 019-4061

drawing no.: 04/20/2020

SHEET
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GENERAL NOTES:

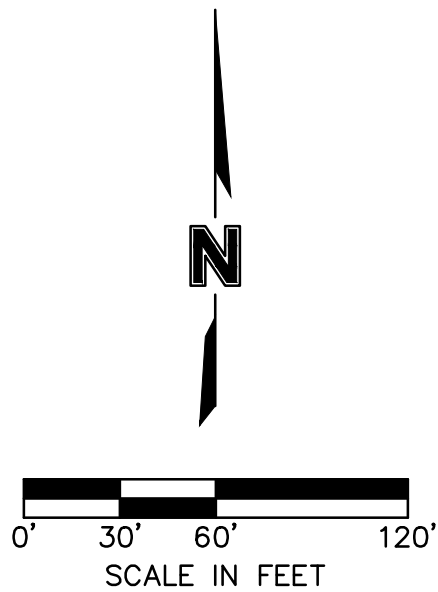
1. CONTRACTOR SHALL ADHERE TO THE "DESIGN AND CONSTRUCTION MANUAL" SECTION 2100 AS ADOPTED BY THE CITY OF LEE'S SUMMIT (LATEST EDITION), FOR EXCAVATION AND EMBANKMENT WORK WITHIN THE PROPOSED RIGHT-OF-WAY.
2. AREAS OF CONSTRUCTION SHALL BE STRIPPED OF ALL VEGETATION, ORGANIC MATTER AND TOPSOIL TO A DEPTH AS RECOMMENDED BY GEOTECHNICAL ENGINEER AND OR TESTING AGENCY. SOILS REMOVED DURING SITE STRIPPING SHOULD BE EVALUATED TO DETERMINE IF PORTIONS OF THE TOPSOIL STRATUM MAY BE UTILIZED AS STRUCTURAL FILL WITHIN PAVEMENT AREAS. ANY MATERIAL NOT DEEMED AS SUITABLE FILL MATERIAL BY THE GEOTECHNICAL ENGINEER AND OR TESTING AGENCY SHALL BE REMOVED FROM THE JOB SITE BY THE CONTRACTOR AT HIS EXPENSE.
3. ALL EMBANKMENT OUTSIDE OF RIGHT-OF-WAY SHOULD BE PLACED IN CONTROLLED LIFTS HAVING A MAXIMUM LOOSE LIFT THICKNESS OF 8". EMBANKMENT SHOULD BE COMPACTED TO A MINIMUM OF 95% OF THE MATERIALS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 (STANDARD PROCTOR COMPACTION). MOISTURE CONTENT OF THE FILL AT THE TIME OF COMPACTION SHALL BE WITHIN A RANGE OF -0 TO +4 PERCENT OF OPTIMUM MOISTURE CONTENT.

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

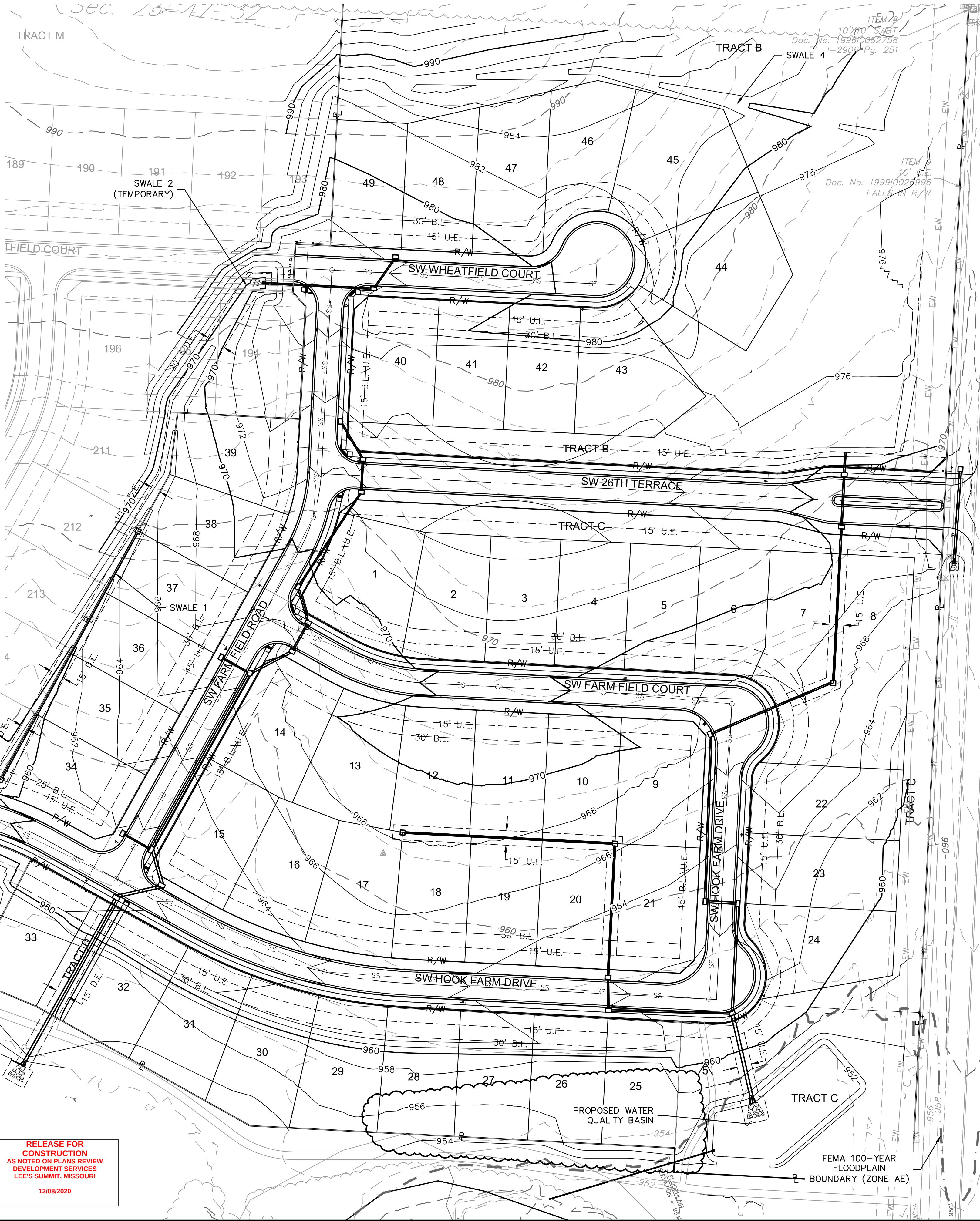
EARTHWORK QUANTITIES		
LOCATION	CUT (C.Y.)	FILL (C.Y.)
STREET	5,710	15,087
SITE	37,854	60,411
TOTAL	43,564	75,498

EARTHWORK QUANTITIES NOTES:

1. EARTHWORK QUANTITIES BASED ON FINISHED GRADE SURFACE AND DO NOT INCLUDE ADJUSTMENTS FOR TOPSOIL AND SHRINKAGE.
2. EARTHWORK QUANTITIES DO NOT TAKE INTO CONSIDERATION EXCAVATION, REMOVAL AND DISPOSAL OF MATERIAL DEEMED UNSUITABLE BY A GEOTECHNICAL ENGINEER. THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR EXCAVATION, REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL AND FOR REPLACING IT WITH SUITABLE MATERIAL.
3. EARTHWORK QUANTITIES DO NOT TAKE INTO CONSIDERATION THE IMPORTED STOCKPILE (APPROX. 20,000 CY) FROM KESSLER RIDGE 2ND PLAT.



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CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
12/08/2020



GRADING PLAN
STREET AND STORM SEWER PLANS

HOOK FARMS
FIRST PLAT

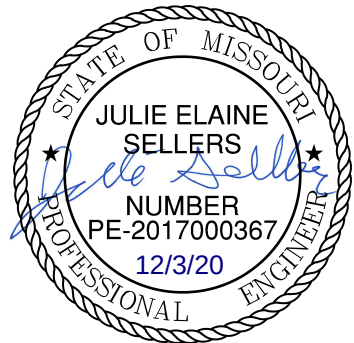
LEE'S SUMMIT, MO

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION
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2	06/25/2020	REVISED PER CITY COMMENTS
3	09/10/2020	REVISED PER CITY COMMENTS
4	10/01/2020	REVISED PER CITY COMMENTS
5	11/18/2020	REVISED LOTS 25-29 GRADING

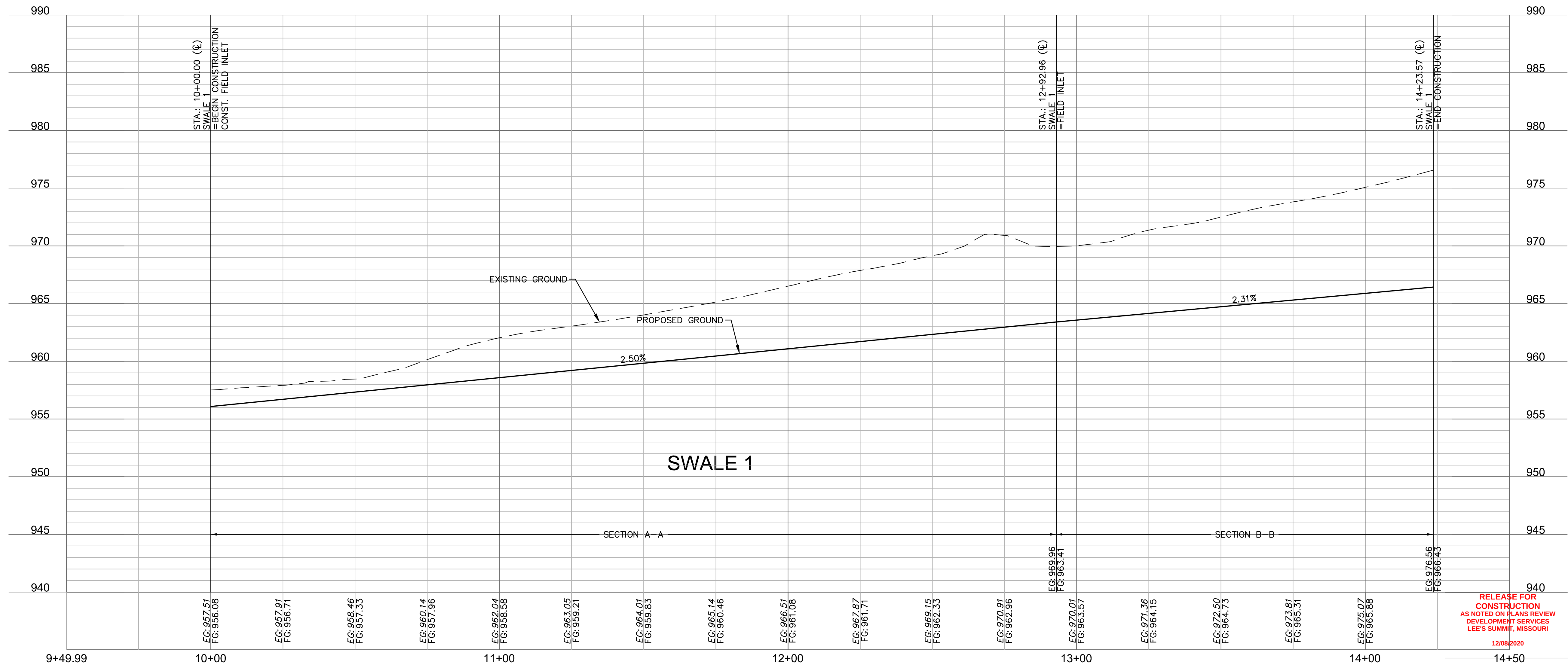
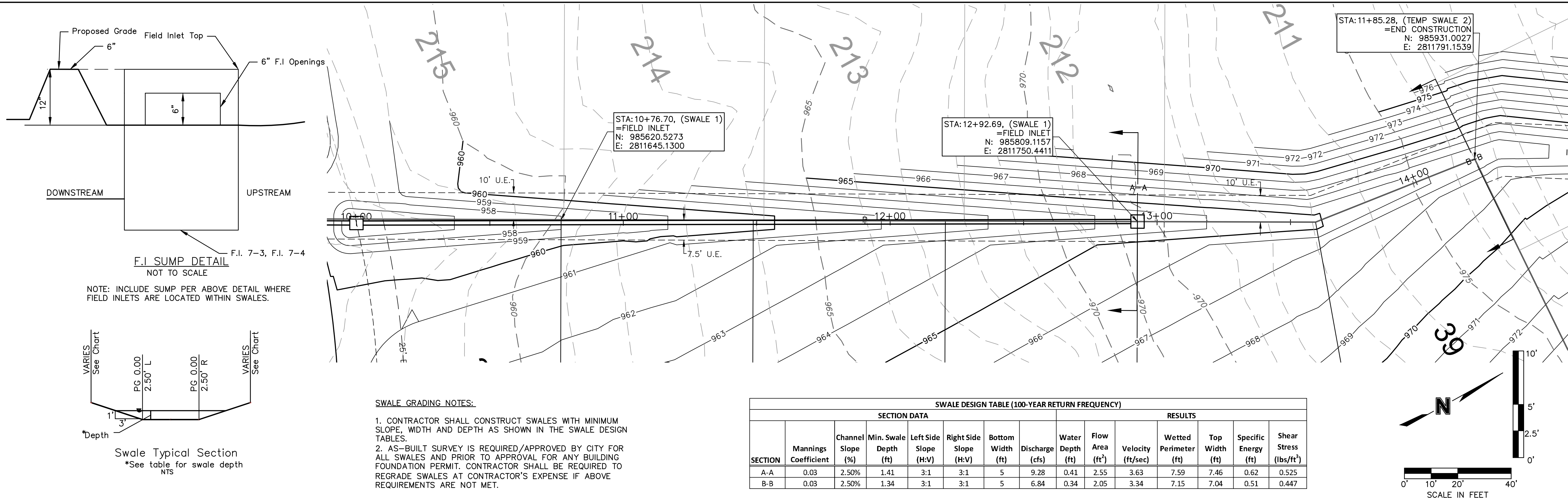
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checked by: JES
approved by: NDH
QA/QC by: JES
project no.: 019-4061
drawing no.:
date: 04/20/2020

SHEET
C104

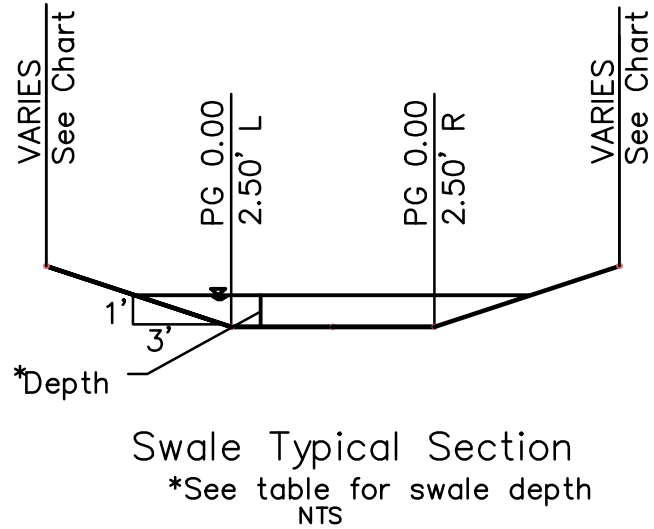


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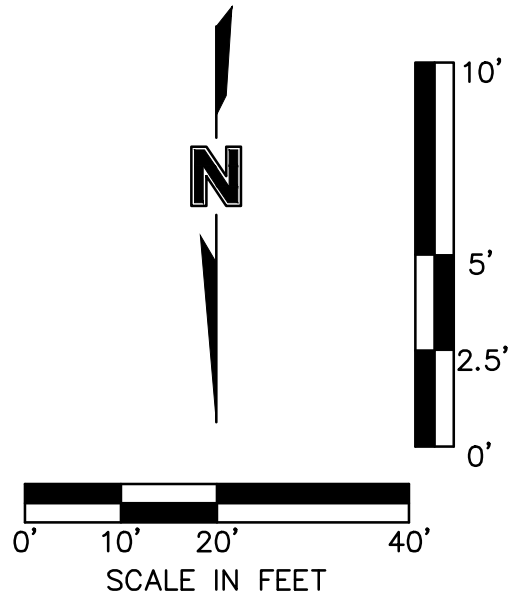
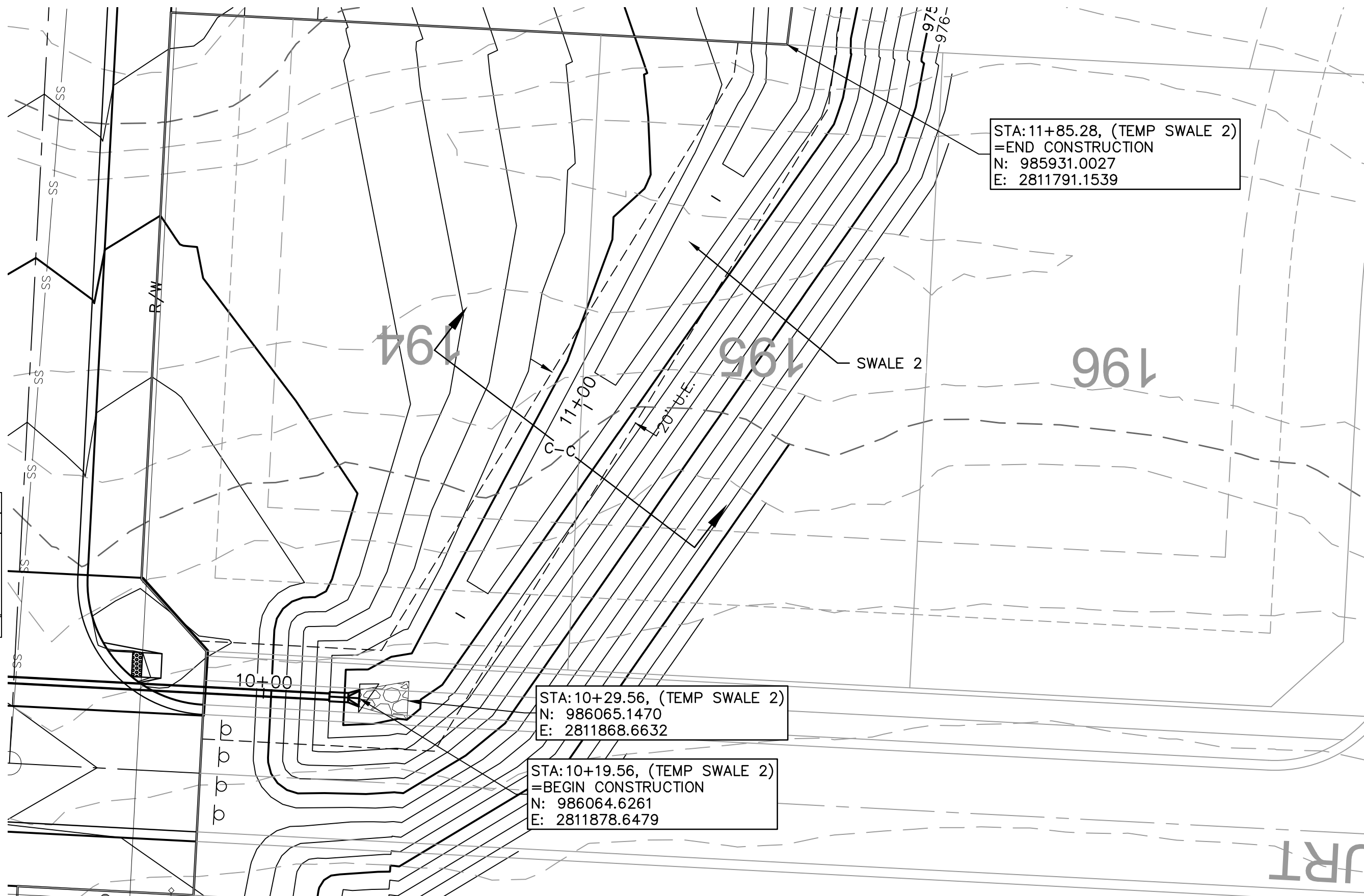
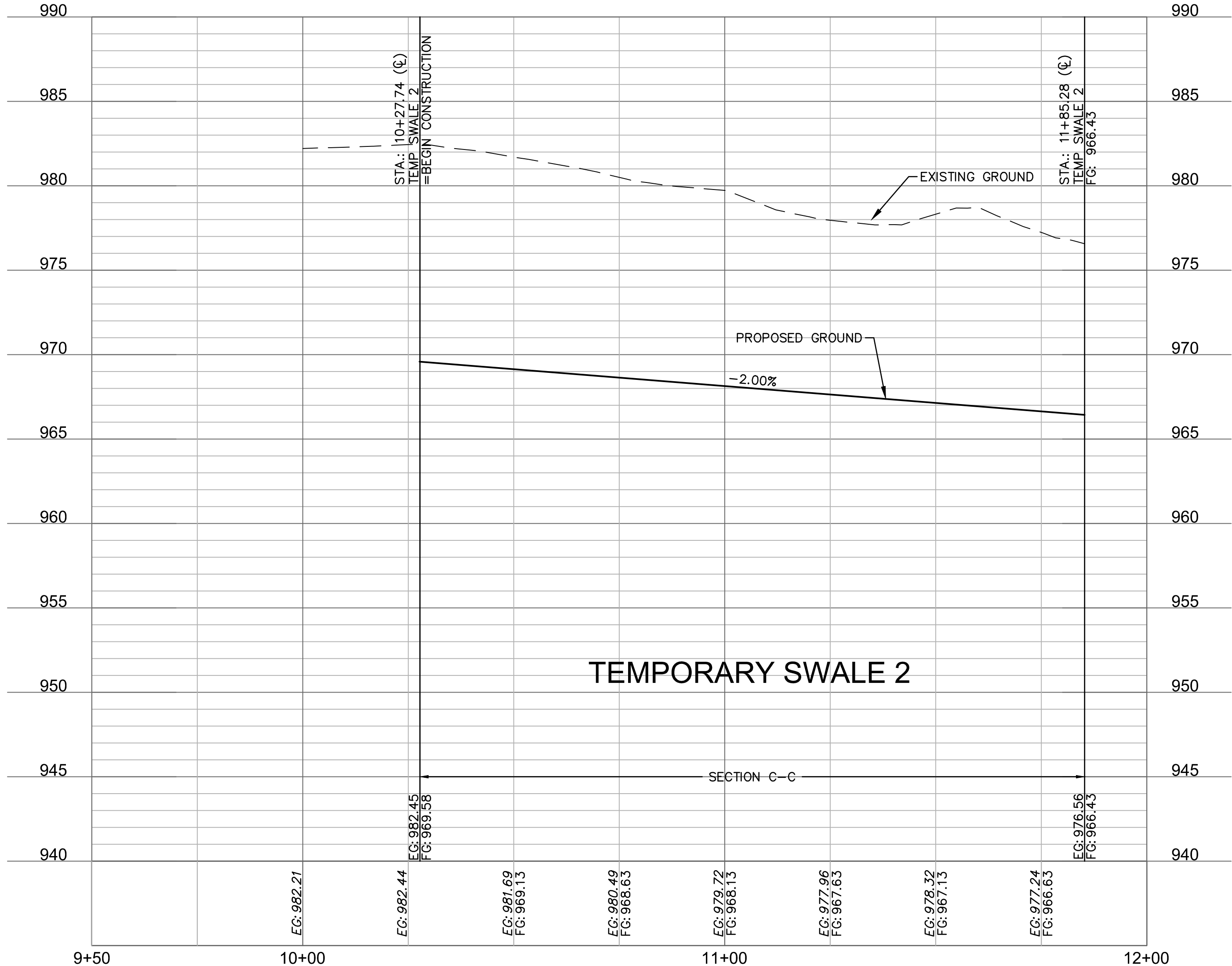


Swale Typical Section
*See table for swale depth
NTS

SWALE DESIGN TABLE (100-YEAR RETURN FREQUENCY)														
SECTION DATA								RESULTS						
SECTION	Mannings Coefficient	Channel Slope (%)	Min. 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)
C-C	0.03	2.00%	1.23	3:1	3:1	5	19.60	0.23	1.31	2.28	6.45	6.38	0.31	0.253

SWALE GRADING NOTES:

1. CONTRACTOR SHALL CONSTRUCT SWALES WITH MINIMUM SLOPE, WIDTH AND DEPTH AS SHOWN IN THE SWALE DESIGN TABLES.
2. 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.



RELEASE FOR
CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
12/08/2020

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
12/3/20
PROFESSIONAL ENGINEER

BY
DATE
REV. NO.
1 06/15/2020
2 06/25/2020
REVISIONS DESCRIPTION
REVISED PER CITY COMMENTS
REVISED PER CITY COMMENTS
REVISIONS

SWALE 2 PLAN & PROFILE
STREET AND STORM SEWER PLANS
HOOK FARMS
FIRST PLAT
LEE'S SUMMIT, MO
2020

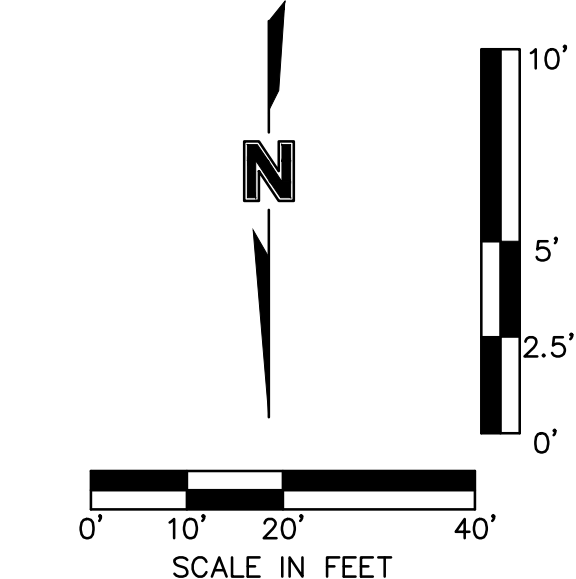
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approved by: NDH
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project no.: 019-4061
drawing no.:
date: 04/20/2020

SHEET
C106

USER: nheiser
061 C_FB



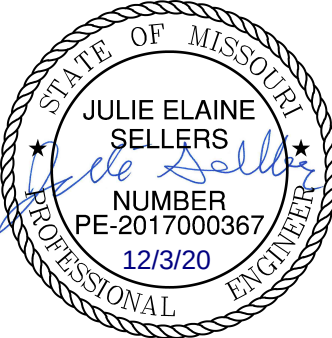
- RELEASE FOR
CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI**



SWALE DESIGN TABLE (100-YEAR RETURN FREQUENCY)														
SECTION DATA								RESULTS						
SECTION	Mannings Coefficient	Channel Slope (%)	Min. 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)
D-D	0.03	1.23%	2.03	3:1	3:1	5	36.35	1.03	8.33	4.36	11.51	11.18	1.33	0.556

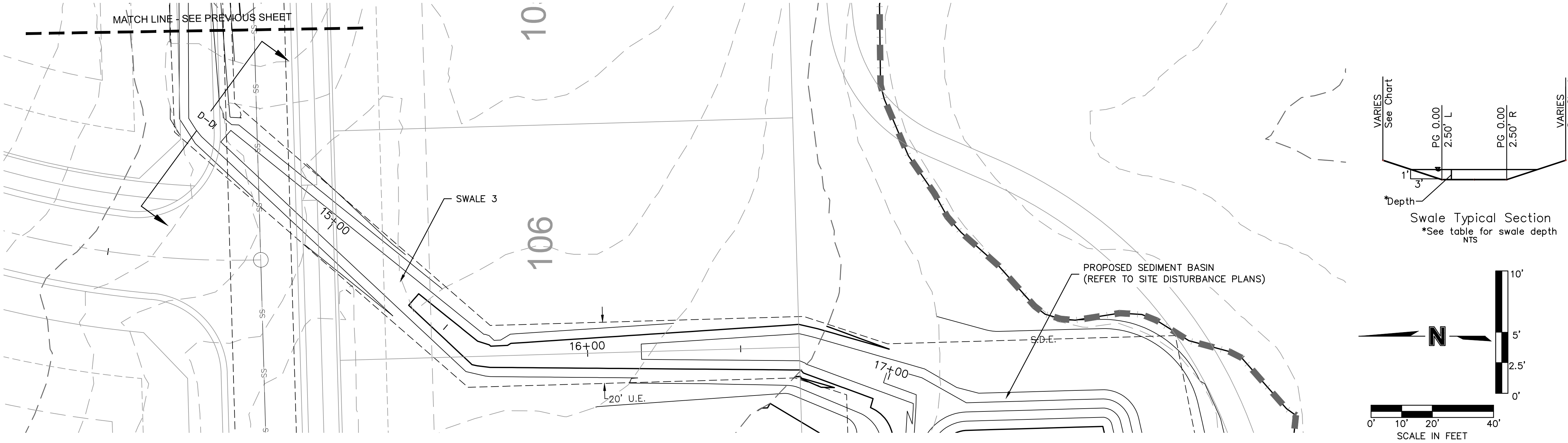
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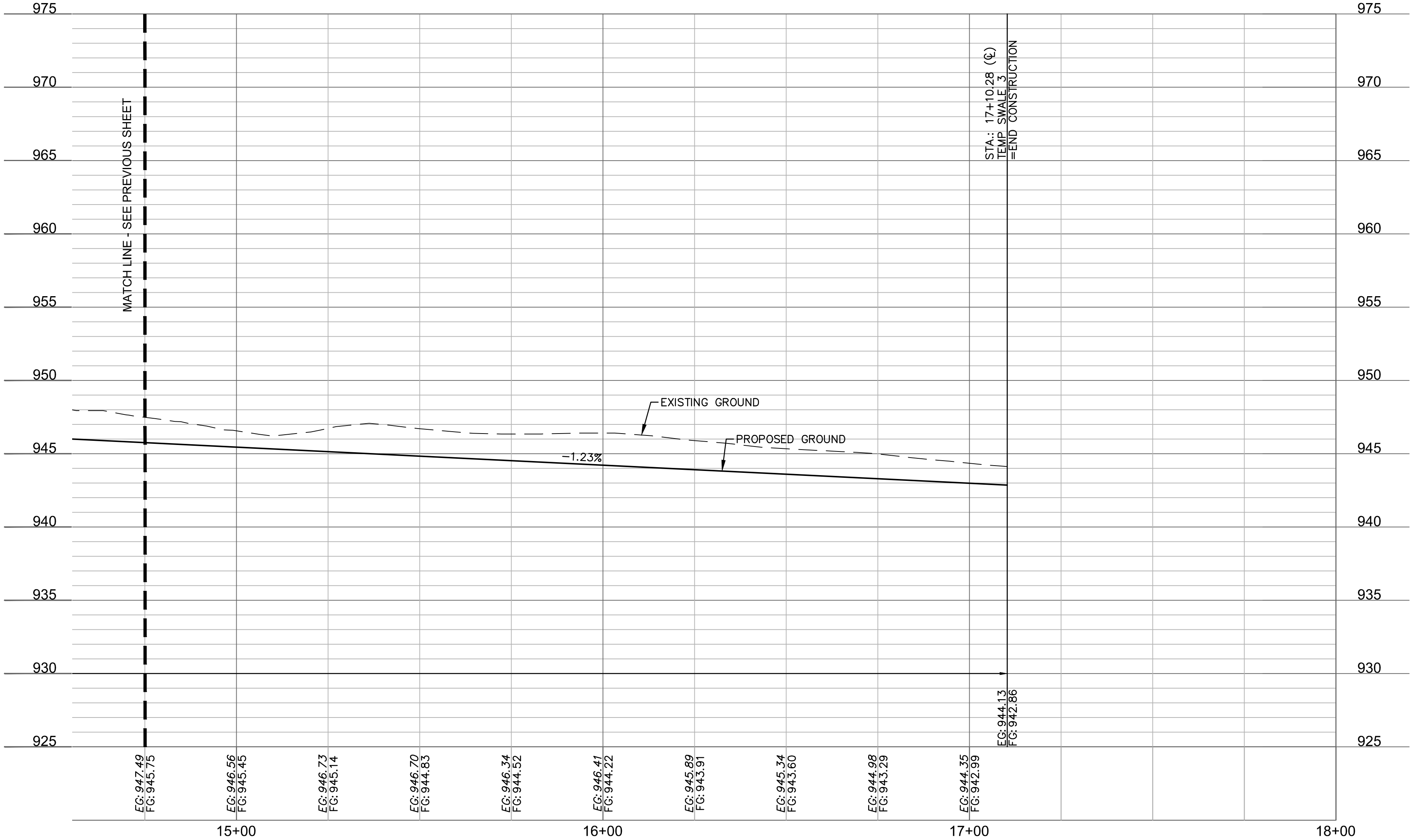


drawn by: _____ CGW checked by: _____ JES QA/QC by: _____ NDH project no.: _____ 019-4061 drawing no.: _____ date: _____ 04/20/2020	SWALE 3 PLAN & PROFILE STREET AND STORM SEWER PLANS		REV. NO.	DATE	REVISIONS DESCRIPTION	BY
			1	06/15/2020	REVISED PER CITY COMMENTS	
			2	06/25/2020	REVISED PER CITY COMMENTS	
HOOK FARMS FIRST PLAT						
LEE'S SUMMIT, MO		2020	REVISIONS			

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SWALE DESIGN TABLE (100-YEAR RETURN FREQUENCY)														
SECTION DATA								RESULTS						
SECTION	Mannings Coefficient	Channel Slope (%)	Min. 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)
D-D	0.03	1.23%	2.03	3:1	3:1	5	36.35	1.03	8.33	4.36	11.51	11.18	1.33	0.556



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

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JULIE ELAINE SELLERS
NUMBER PE-2017000367
12/3/20
PROFESSIONAL ENGINEER

BY	
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REV. NO.	DATE
1	06/15/2020
2	06/25/2020

SWALE 3 PLAN & PROFILE CONT'D
STREET AND STORM SEWER PLANS

HOOK FARMS
FIRST PLAT

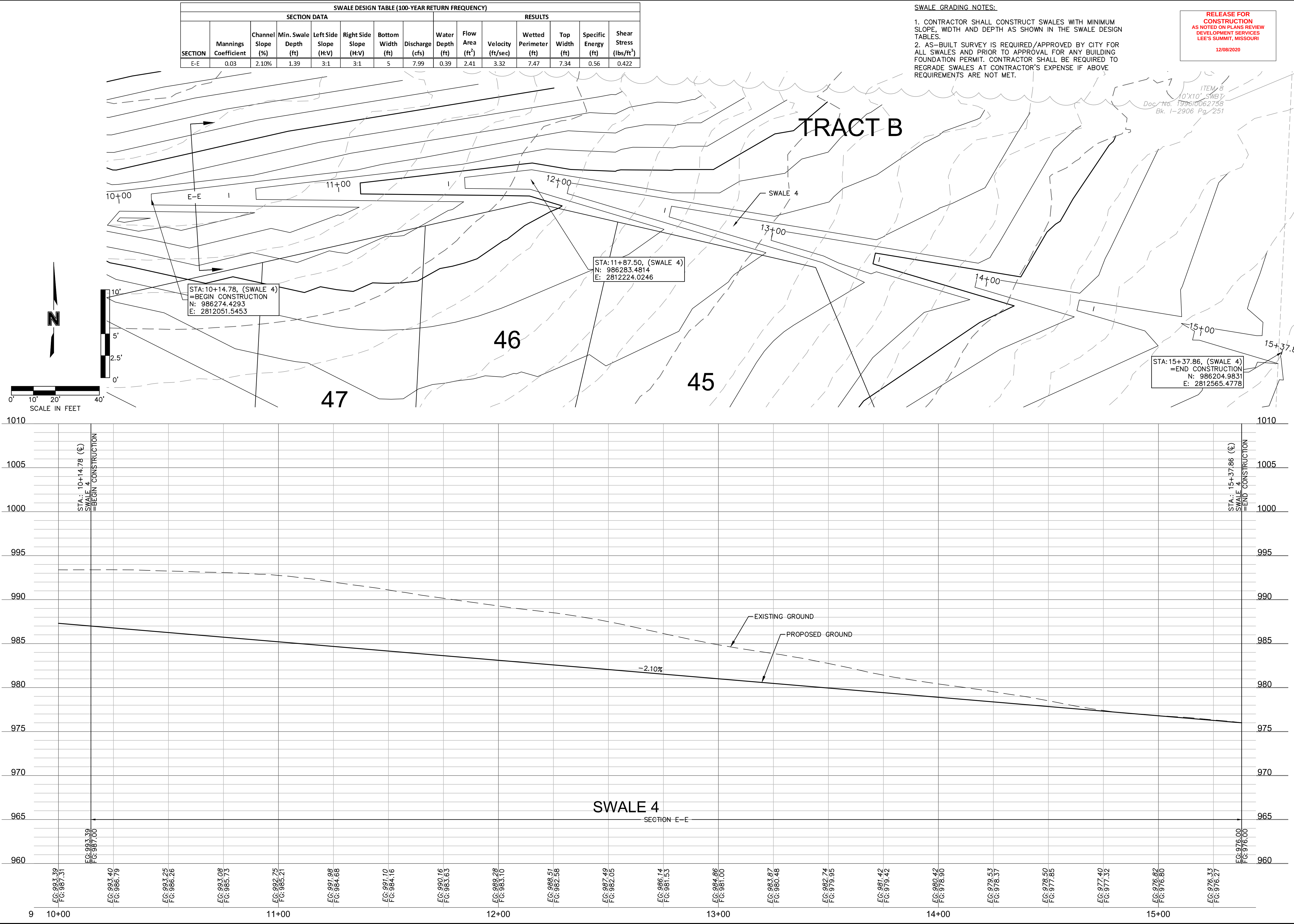
LEE'S SUMMIT, MO

2020

drawn by: CGW
checked by: JES
approved by: NDH
QA/QC by: JES
project no.: 019-4061
drawing no.:
date: 04/20/2020

SHEET
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1	06/15/2020	REVISED PER CITY COMMENTS
2	06/25/2020	REVISED PER CITY COMMENTS

SWALE 4 PLAN & PROFILE
STREET AND STORM SEWER PLANS

HOOK FARMS
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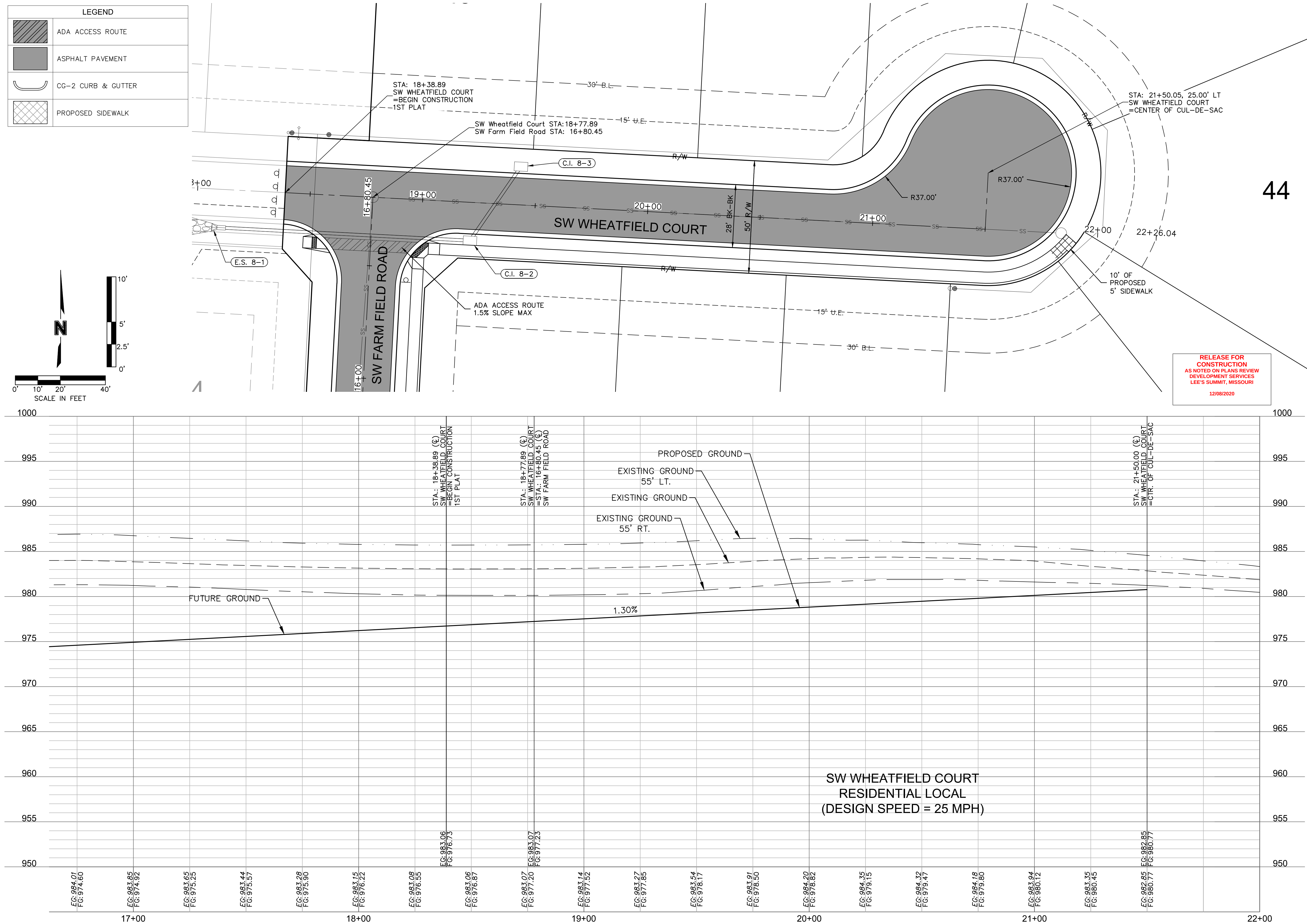
LEE'S SUMMIT, MO

2020

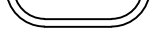
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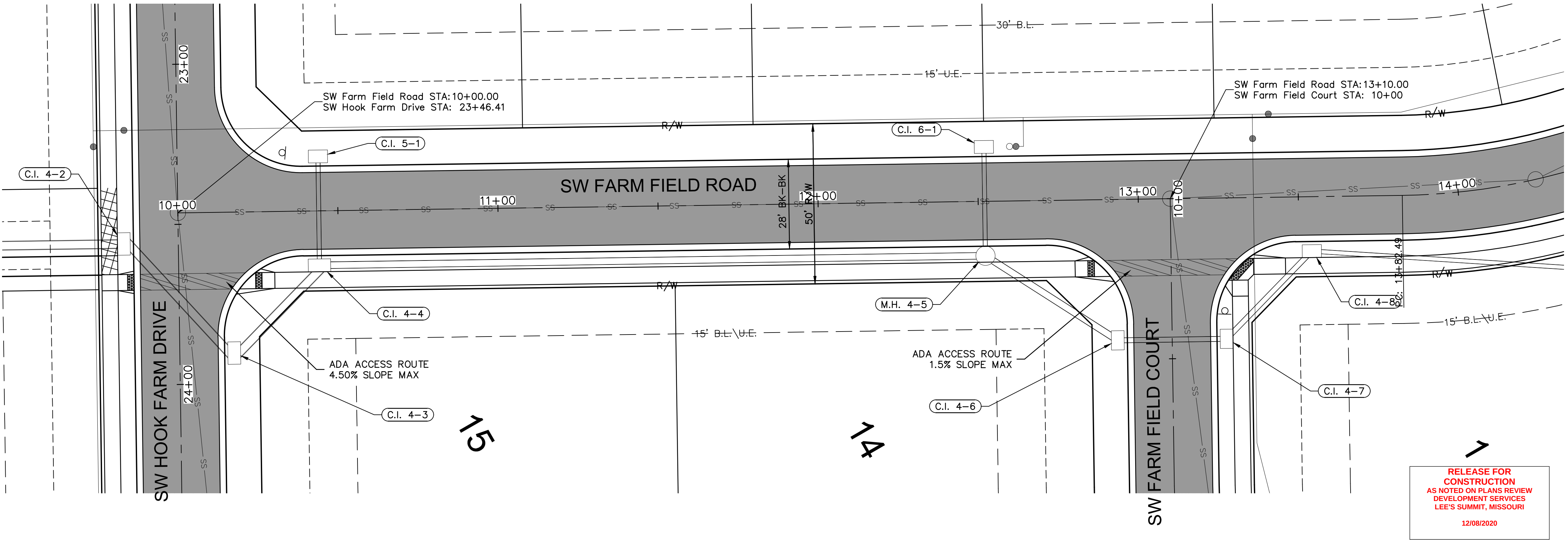
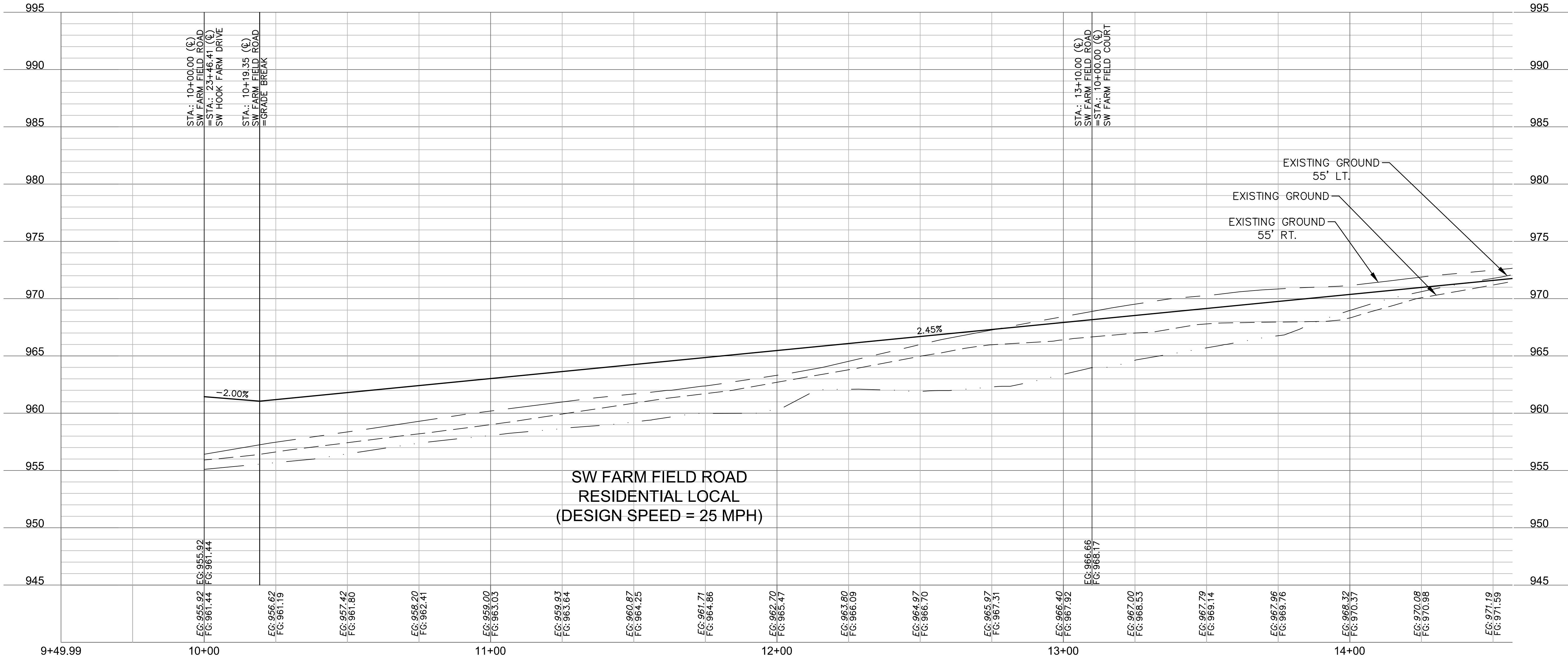
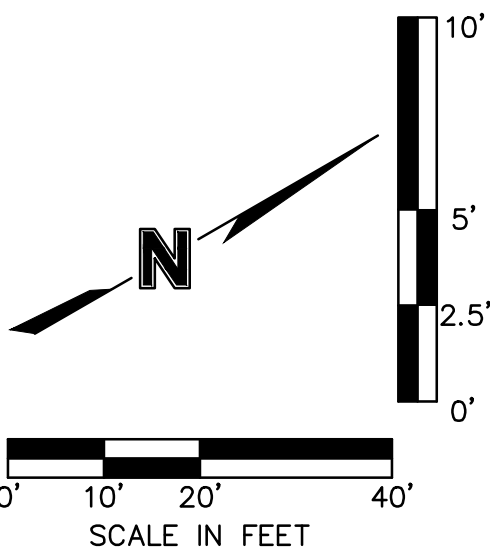
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USER: rheiser

LEGEND	
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STATE OF MISSOURI
JULIE ELAINE SELLERS
PE-2017000367
12/3/20
PROFESSIONAL ENGINEER

BY

REVISIONS

ROADWAY PLAN & PROFILE (SW FARM FIELD ROAD)
STREET AND STORM SEWER PLANS

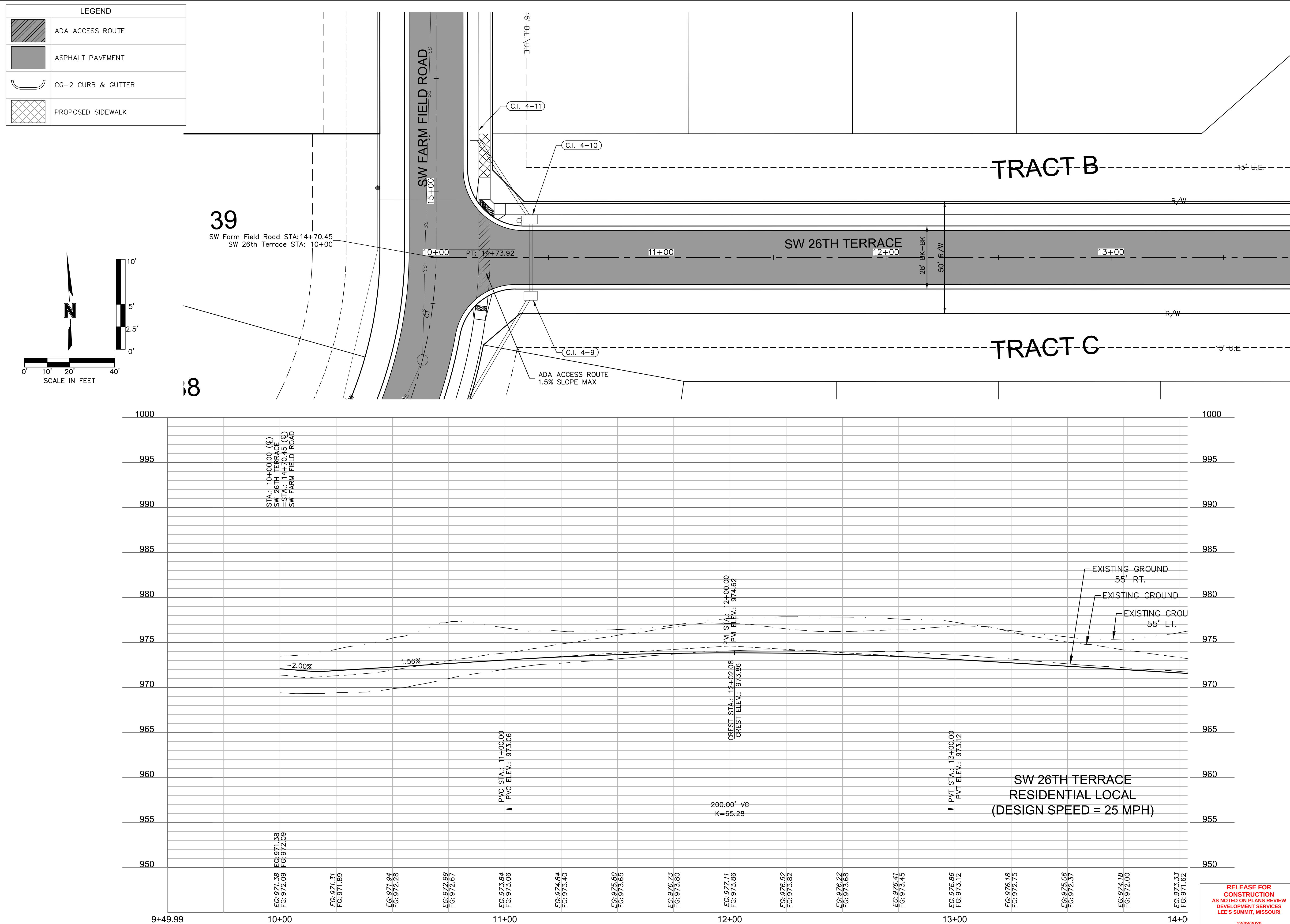
HOOK FARMS
FIRST PLAT

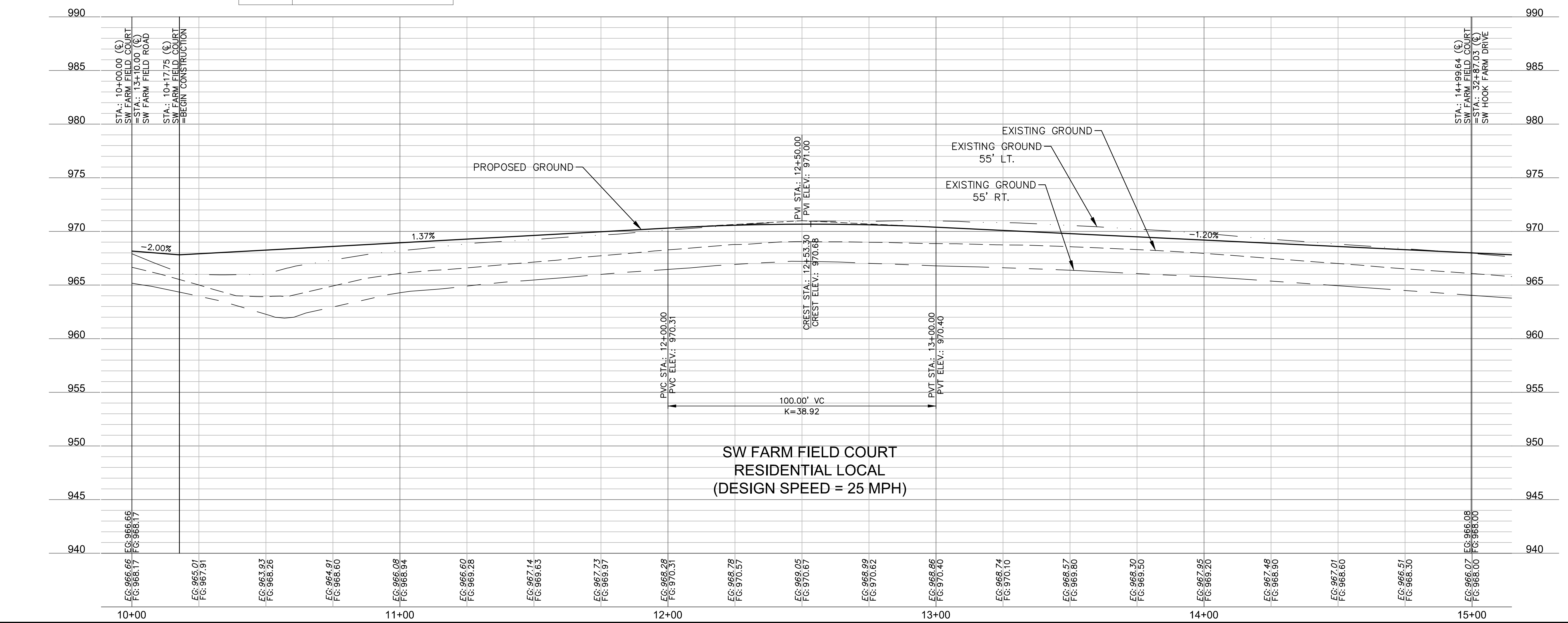
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2020

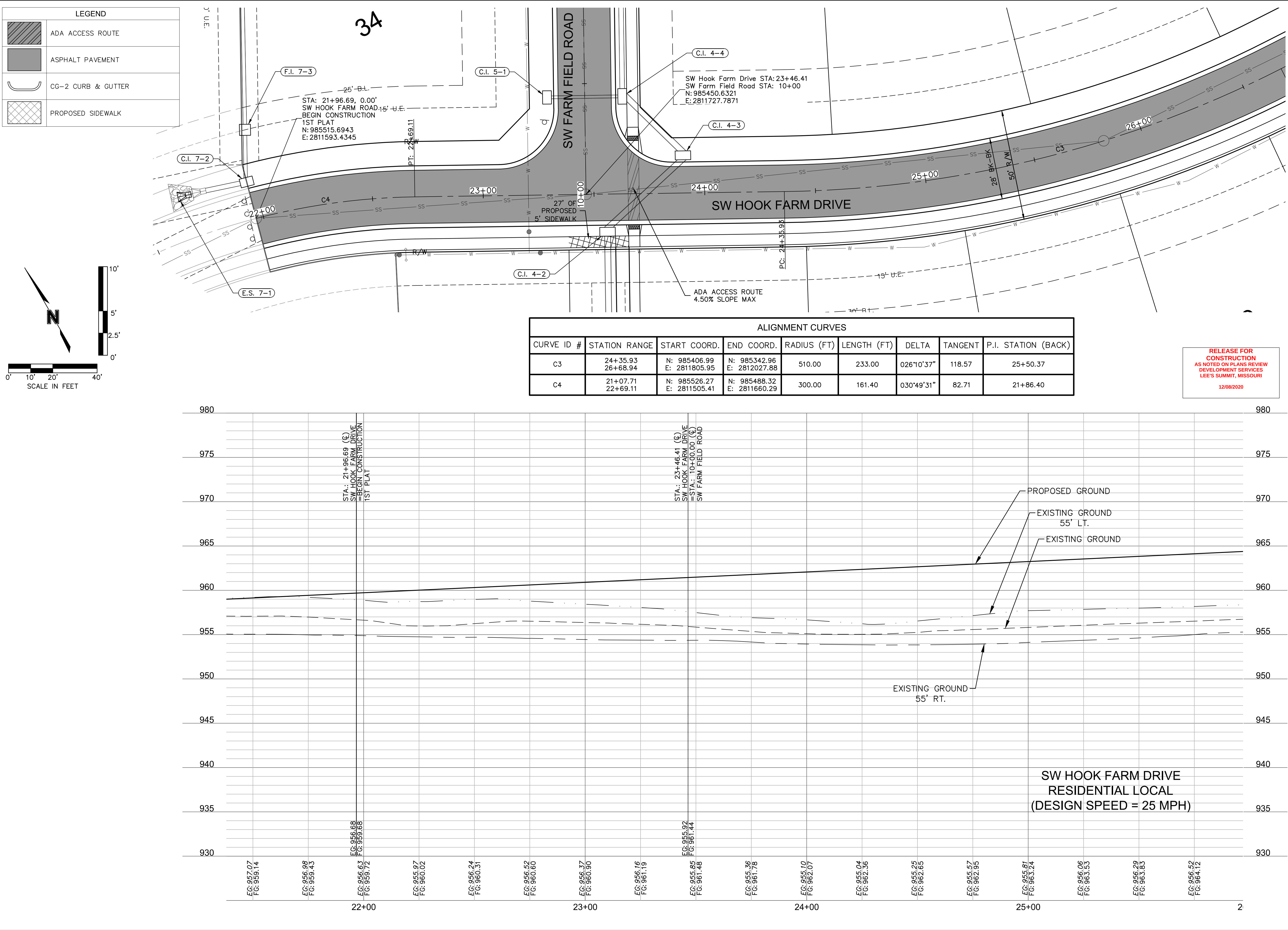
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approved by: _____ NDH
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project no.: 019-4061
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STATE OF MISSOURI
JULIE ELAINE SELLERS
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PROFESSIONAL ENGINEER

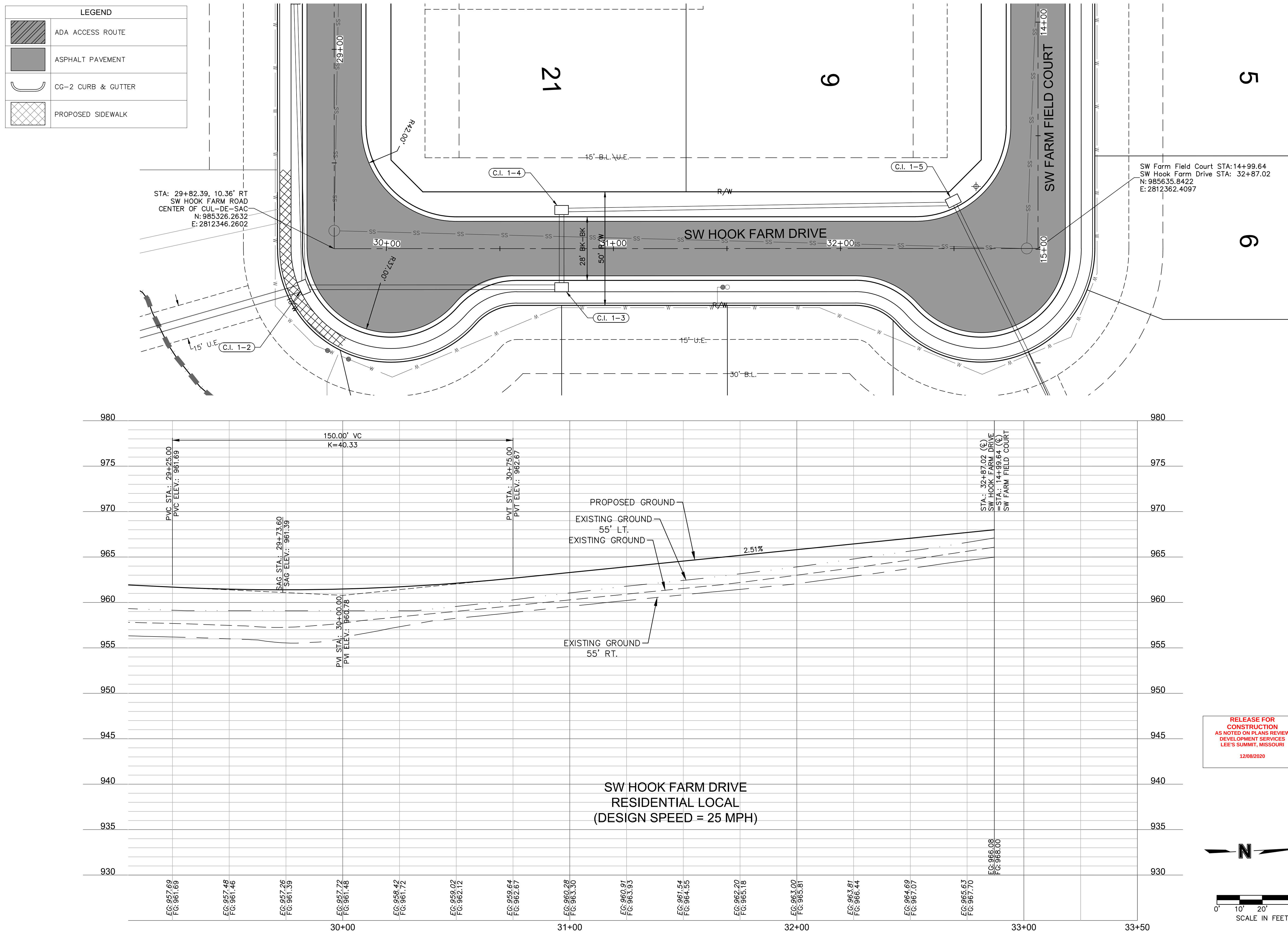
BY
REVISIONS
1
2
REVISED PER CITY COMMENTS
REVISED PER CITY COMMENTS

ROADWAY PLAN & PROFILE (SW HOOK FARM DRIVE)
STREET AND STORM SEWER PLANS
HOOK FARMS
FIRST PLAT
LEE'S SUMMIT, MO
2020

drawn by: CGW
checked by: JES
approved by: NDH
QA/QC by: JES
project no.: 019-4061
drawing no.:
date: 04/20/2020

SHEET
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DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI**

12/08/2020



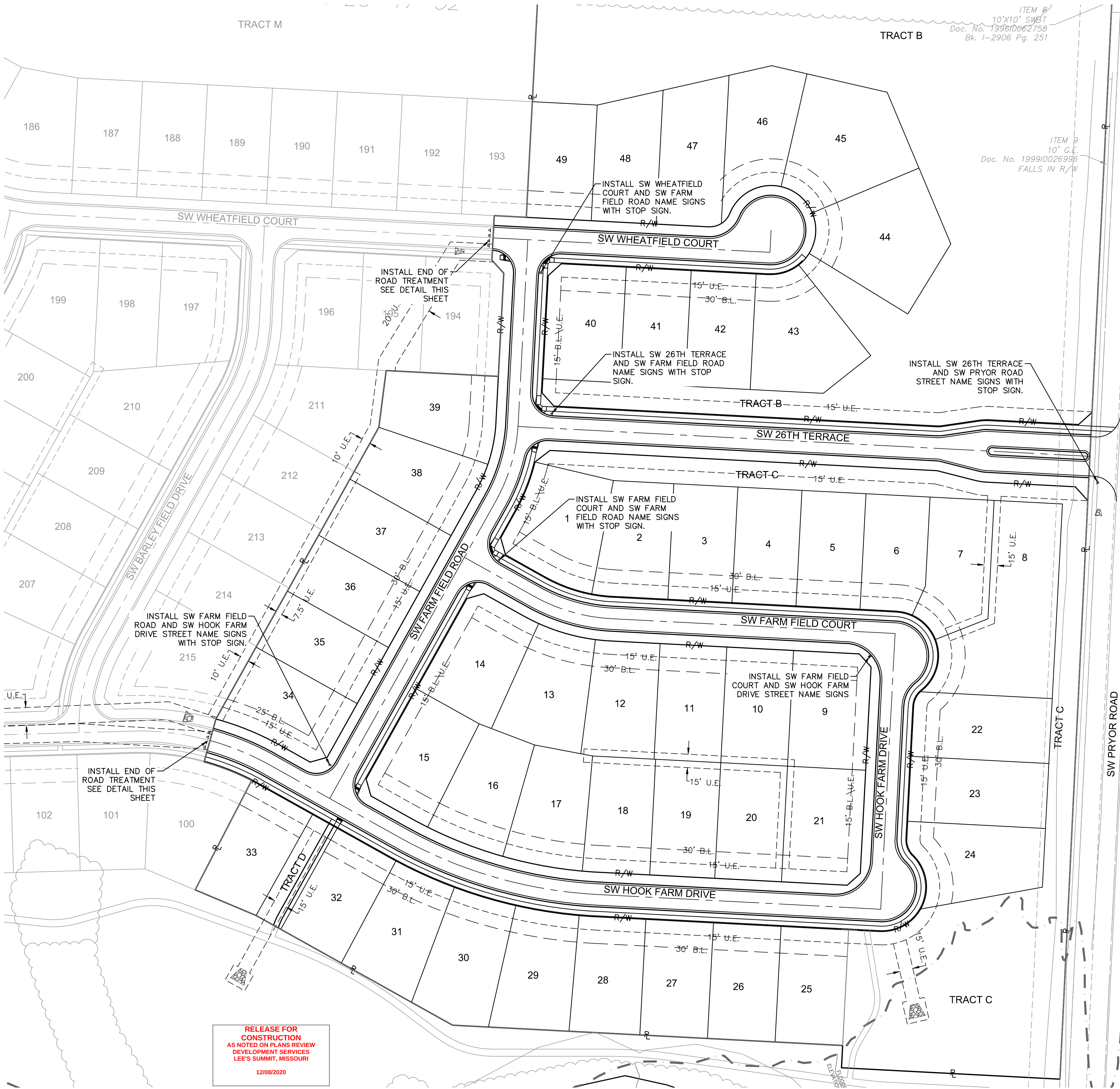
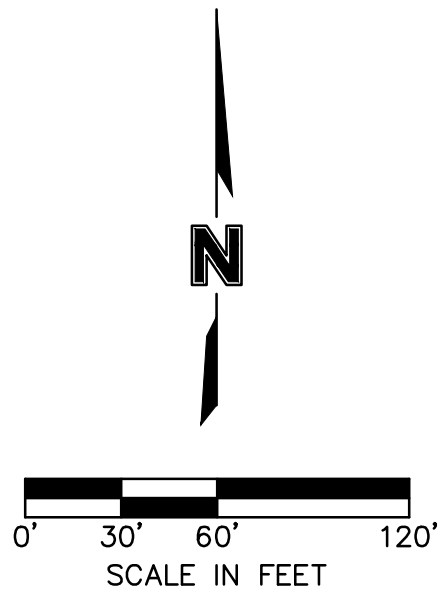
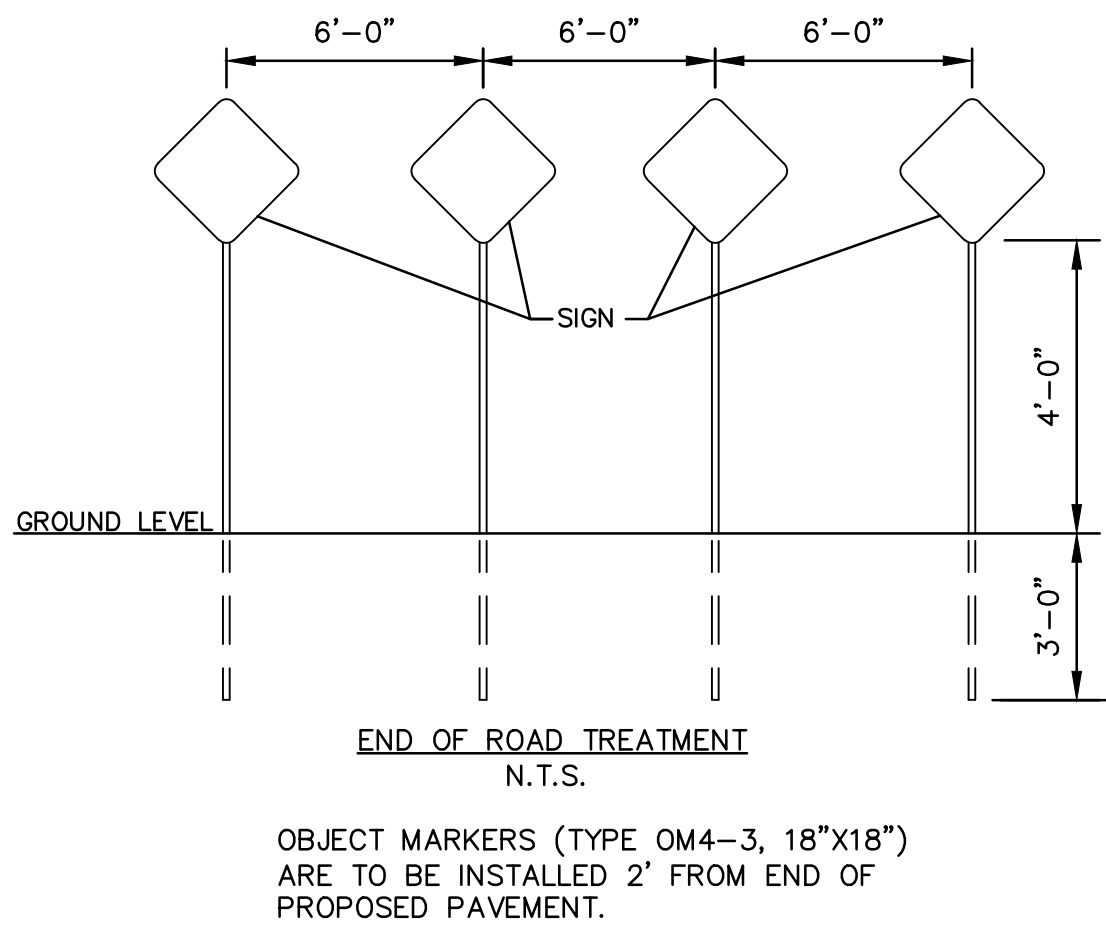
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0' 10' 20'

SCALE IN FEET

ROADWAY PLAN & PROFILE (SW HOOK FARM DRIVE) STREET AND STORM SEWER PLANS			
HOOK FARMS FIRST PLAT			
LEE'S SUMMIT, MO		2020	
drawn by: _____ CGW checked by: _____ JES approved by: _____ JDS QA/QC by: _____ JES project no.: _____ 019-4061 drawing no.: _____ date: _____ 04/20/2020			
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AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
12/08/2020

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STATE OF MISSOURI
JULIE ELAINE
SELLERS
as SELLER
NUMBER
PE-2017000367
12/3/20
PROFESSIONAL ENGINEER

REV.	NO.	DATE	REVISIONS DESCRIPTION
1		06/15/2020	REVISED PER CITY COMMENTS
2		06/25/2020	REVISED PER CITY COMMENTS

BY

TRAFFIC CONTROL PLAN
STREET AND STORM SEWER PLANS

HOOK FARMS
FIRST PLAT

LEE'S SUMMIT, MO

2020

REVISIONS

drawn by: CGW
checked by: JES
approved by: NDH
QA/QC by: JES
project no.: 019-4061
drawing no.:
date: 04/20/2020

SHEET
C120

0' 2.5' 5' 10'

SCALE IN FEET



LEE'S SUMMIT, MO

STATE OF MISSOURI
JULIE ELAINE
SELLERS
NUMBER
PE-2017000367
12/3/20
PROFESSIONAL ENGINEER

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SW FARM FIELD ROAD

SW 26th Terrace STA:10+00.03
SW Farm Field Road STA: 14+70.45
EL= 972.09

TC-971.37
N: 985833.14 -
E: 2811947.98

TC-973.14
N: 985906.42 -
E: 2811955.21

CURVE DATA
R=25.00'
 $\Delta=090^{\circ}00'00''$
L=39.27'
T=25.00

TC-972.18
-N: 985880.15
E: 2811978.88

SW 26TH TERRACE

TC-972.10
-N: 985852.39
E: 2811973.62

CURVE DATA
R=25.00'
 $\Delta=079^{\circ}45'49''$
L=34.80'
T=20.89

**RELEASE FOR
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DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
12/08/2020**

SW FARM FIELD ROAD & SW 26TH TERRACE
STREET AND STORM SEWER PLANS

HOOK FARMS
FIRST PLAT

LEE'S SUMMIT. MO

SHEET
C122

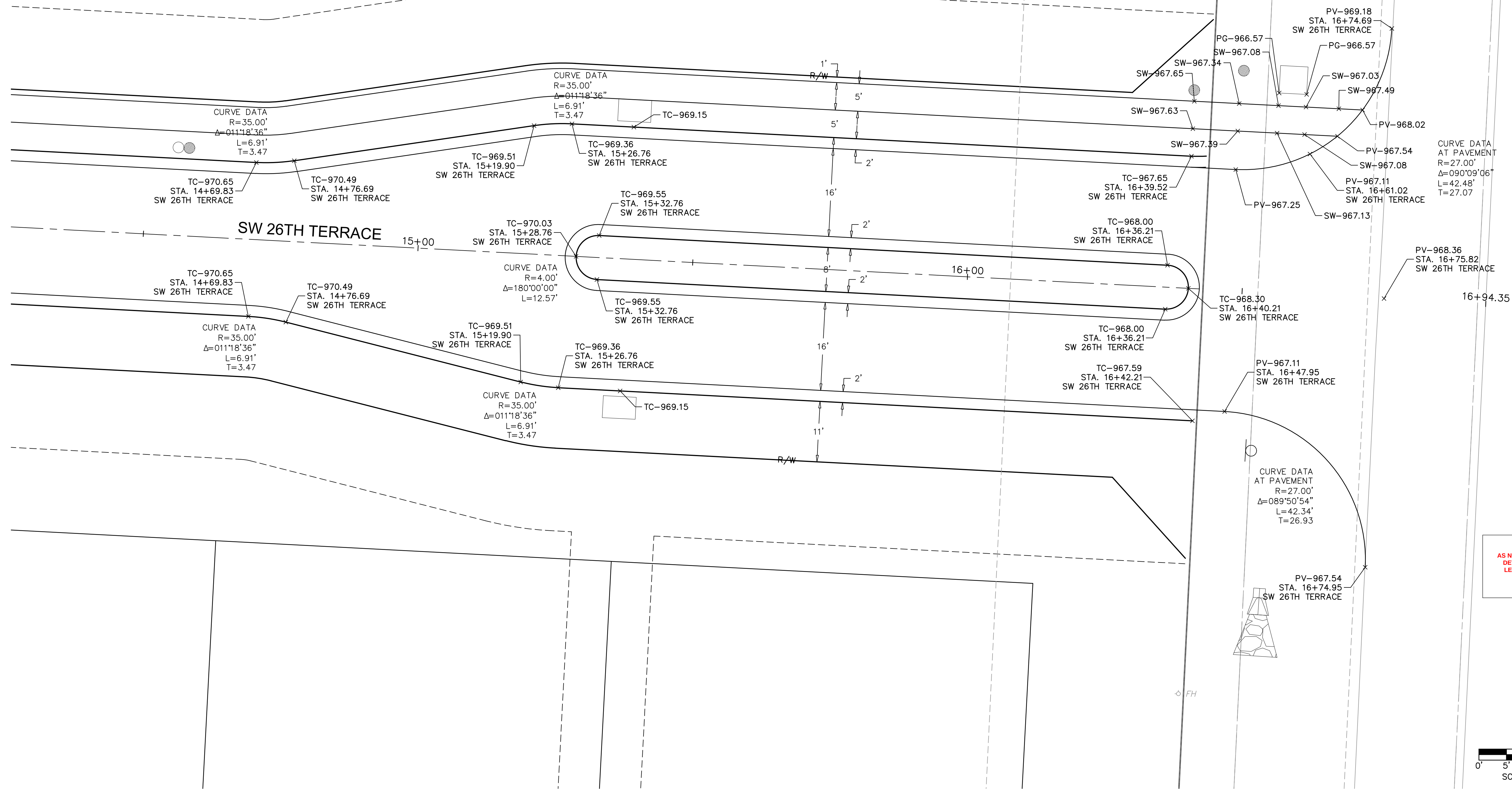
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STATE OF MISSOURI
JULIE ELAINE
SELLERS
NUMBER
PE-2017000367
12/3/20
PROFESSIONAL ENGINEER

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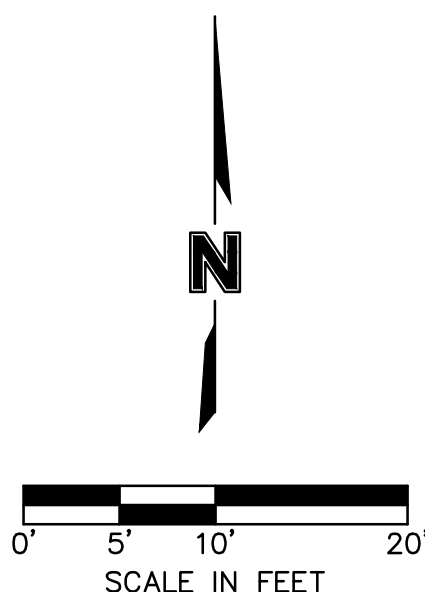
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 DATE: Jun 29, 2020 6:43pm



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SW PRYOR ROAD



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SW 26TH TERRACE
STREET AND STORM SEWER PLANS

HOOK FARMS
FIRST PLAT

LEE'S SUMMIT, MO

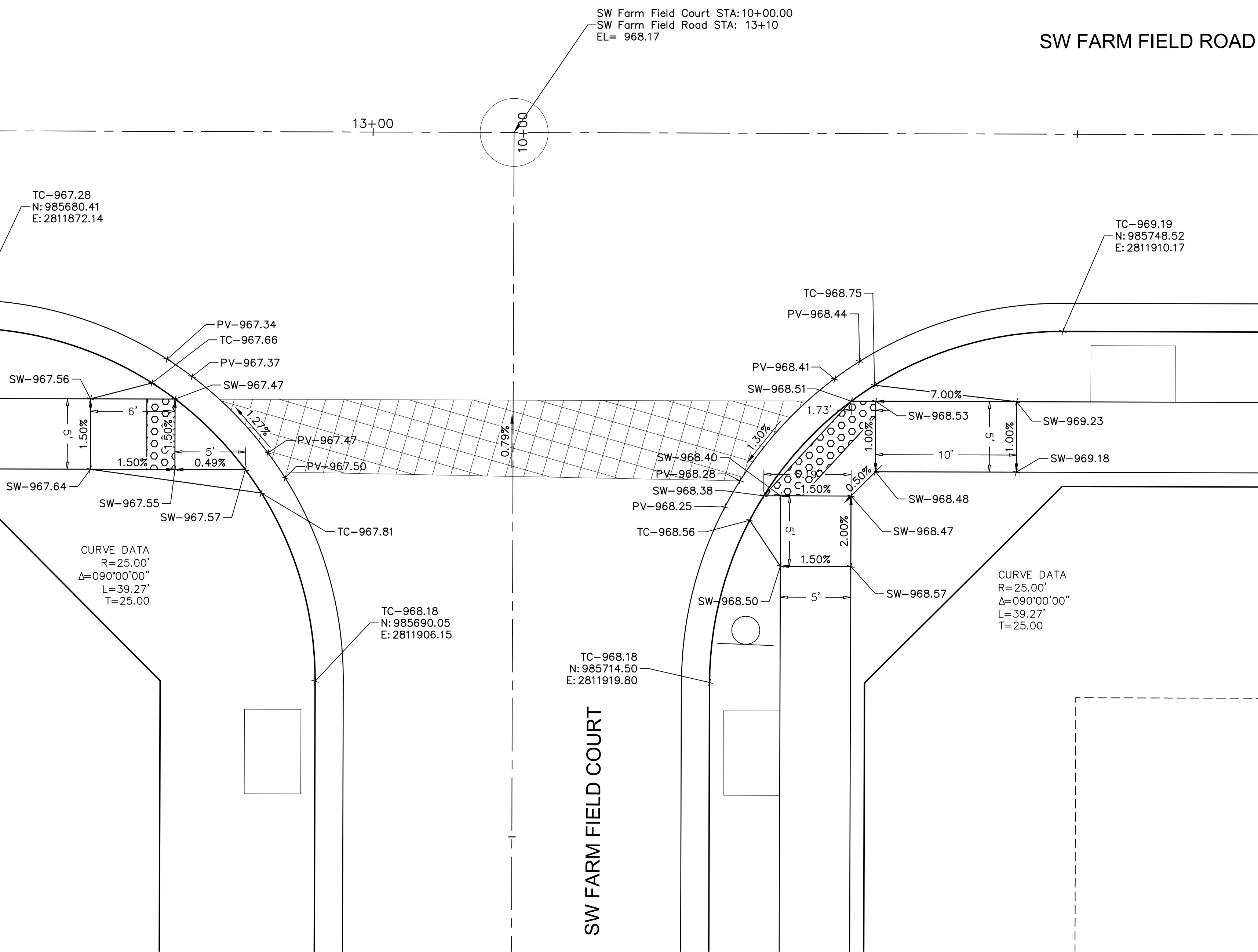
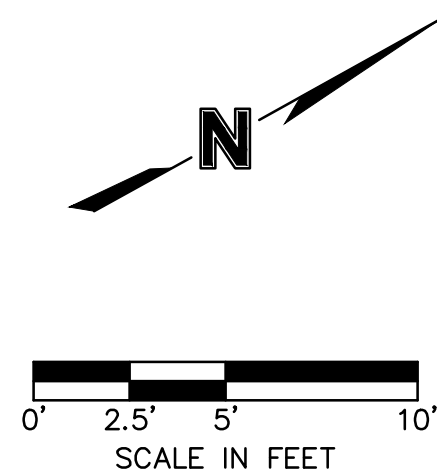
2020

REVISIONS

drawn by: _____ CGW
checked by: _____ JES
approved by: _____ NDH
QA/QC by: _____ JES
project no.: _____ 019-4061
drawing no.: _____
date: _____ 04/20/2020

SHEET
C123

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12/08/2020**

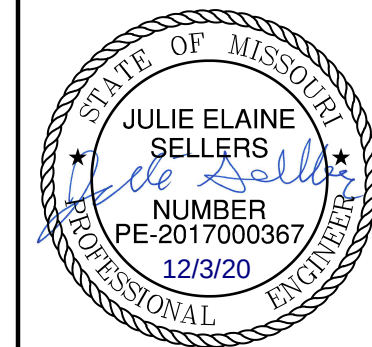
SW FARM FIELD ROAD & SW FARM FIELD COURT
STREET AND STORM SEWER PLANS

**HOOK FARMS
FIRST PLAT**

LEE'S SUMMIT, MO

drawn by: _____ CGW
checked by: _____ JES
approved by: _____ NDH
QA/QC by: _____ JES
project no.: _____ 019-4061
drawing no.: _____
date: _____ 04/20/2020

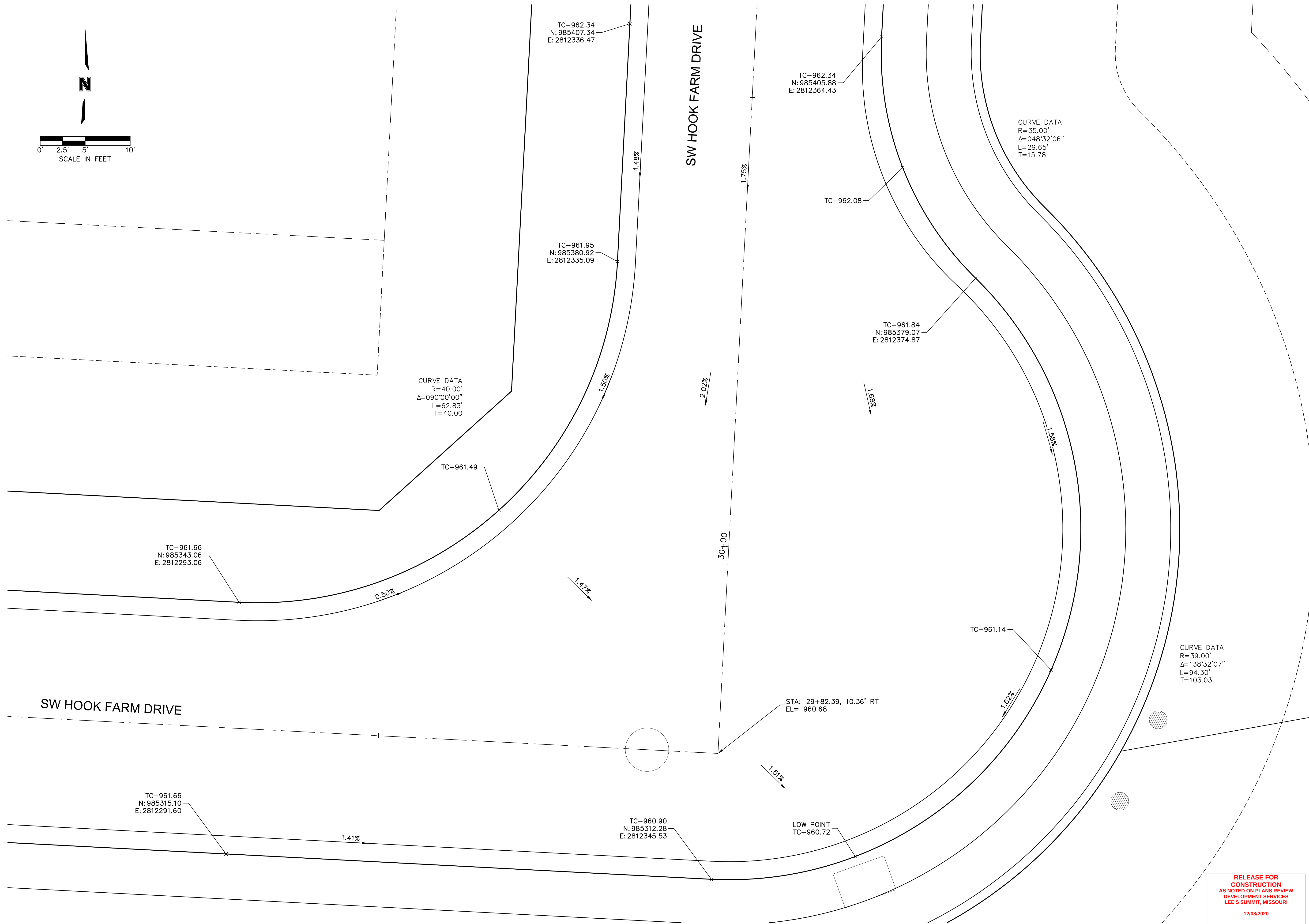
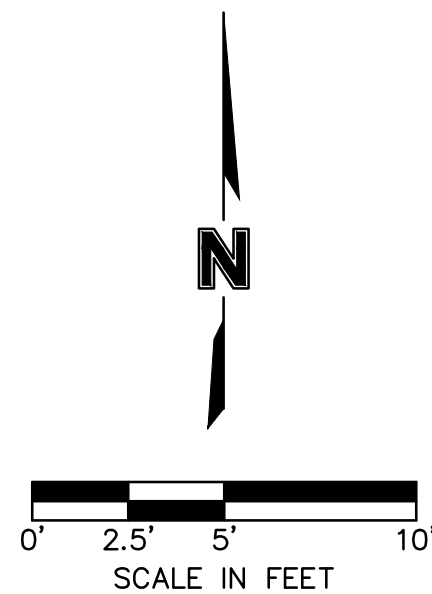
SHEET
C124

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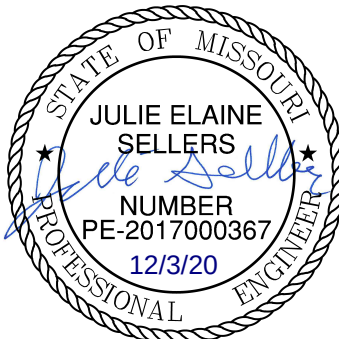
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DATE: Jun 29, 2020 6:46pm USER: nreiser



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[illegible]

SW HOOK FARM DRIVE & SW HOOK FARM DRIVE STREET AND STORM SEWER PLANS

HOOK FARMS
FIRST PLAT

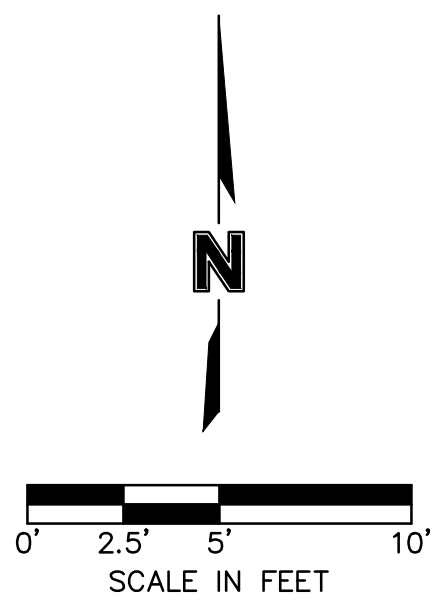
LEE'S SUMMIT, MO

REVISIONS

drawn by: _____ CGW
checked by: _____ JES
approved by: _____ NDH
QA/QC by: _____ JES
project no.: _____ 019-4061
drawing no.: _____
date: _____ 04/20/2020

SHEET
C126

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 DATE: Jun 29, 2020 6:46pm



TC-968.72
N: 985652.64
E: 2812309.21

TC-968.72
N: 985624.67
E: 2812307.75

CURVE DATA
R=40.00'
 $\Delta=090^{\circ}00'00''$
L=62.83'
T=40.00

TC-966.81
N: 985582.64
E: 2812345.62

TC-966.05
N: 985556.23
E: 2812344.24

SW Hook Farm Drive STA: 32+87.03
SW Farm Field Court STA: 14+99.64
EL= 967.41

TC-967.90
N: 985649.82
E: 2812363.14

TC-966.05
N: 985554.77
E: 2812372.20

TC-966.53
N: 985580.35
E: 2812385.37

CURVE DATA
R=35.00'
 $\Delta=048^{\circ}32'06''$
L=29.65'
T=15.78

CURVE DATA
R=39.00'
 $\Delta=138^{\circ}32'06''$
L=94.30'
T=103.03

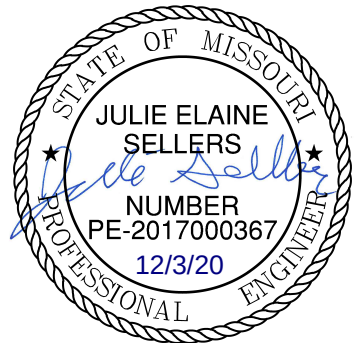
TC-967.21-

- TC-967.77

- TC-967.36

TC-966.29-

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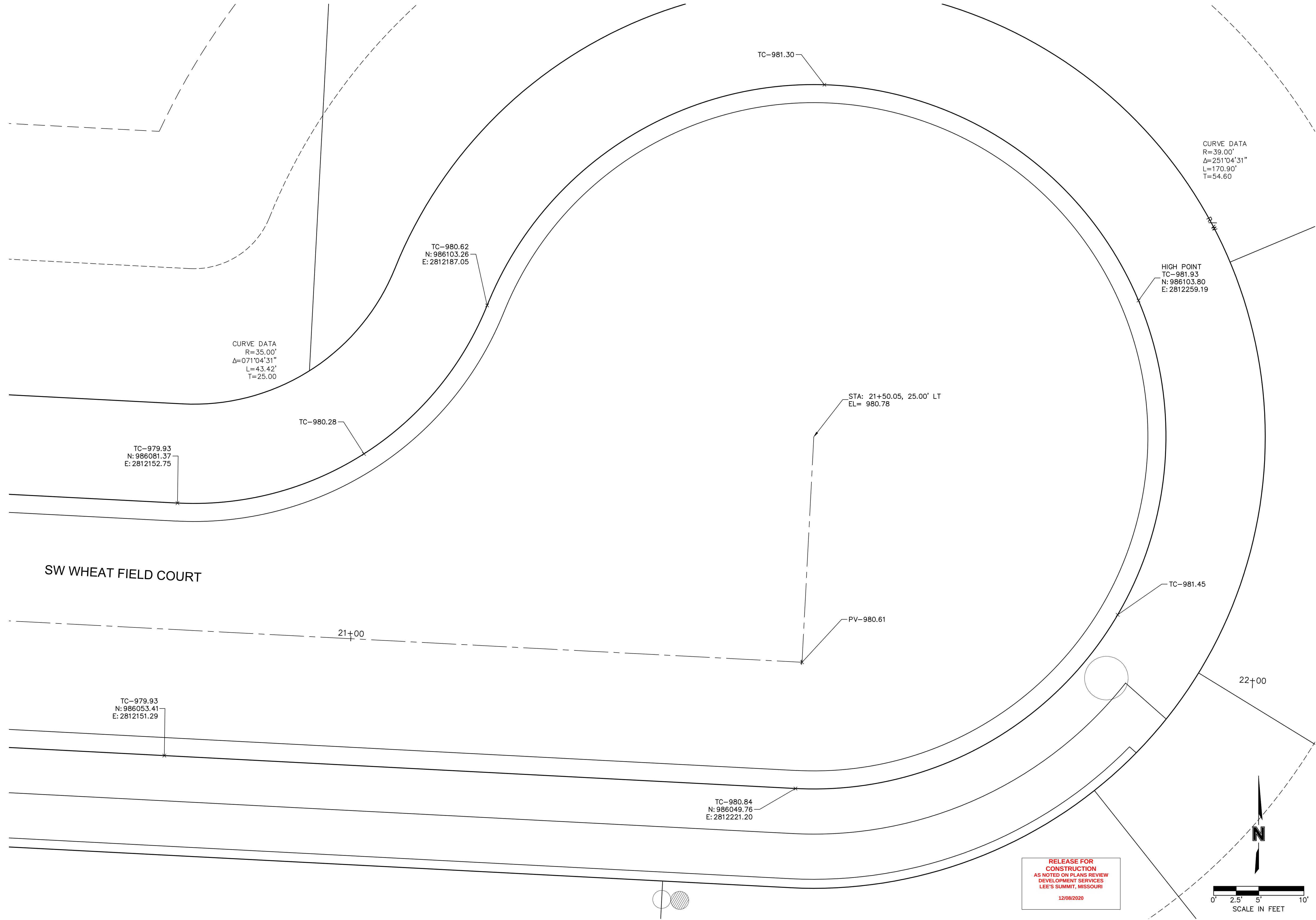
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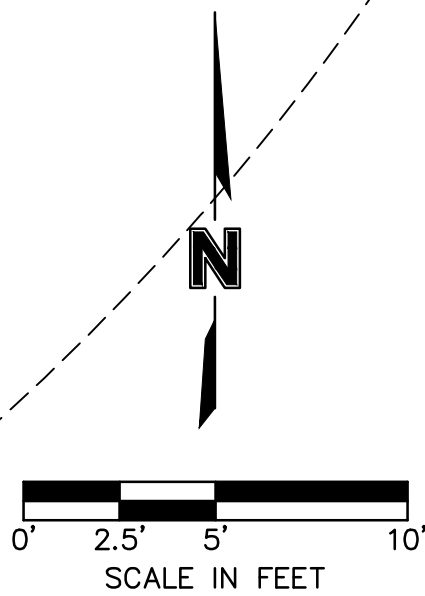
12/08/2020

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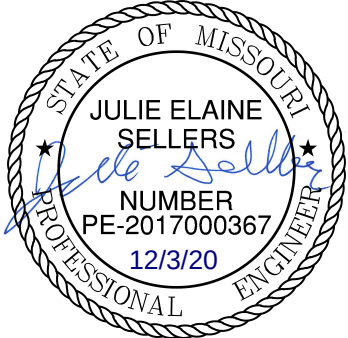


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LEE'S SUMMIT, MISSOURI**

12/08/2020



SW WHEAT FIELD COURT CUL-DE-SAC STREET AND STORM SEWER PLANS	drawn by: _____ CGW checked by: _____ JES approved by: _____ NDH QA/QC by: _____ JES project no.: 019-4061 drawing no.: _____ date: 04/20/2020	2020	REVISIONS	BY
	HOOK FARMS FIRST PLAT	LEE'S SUMMIT, MO		



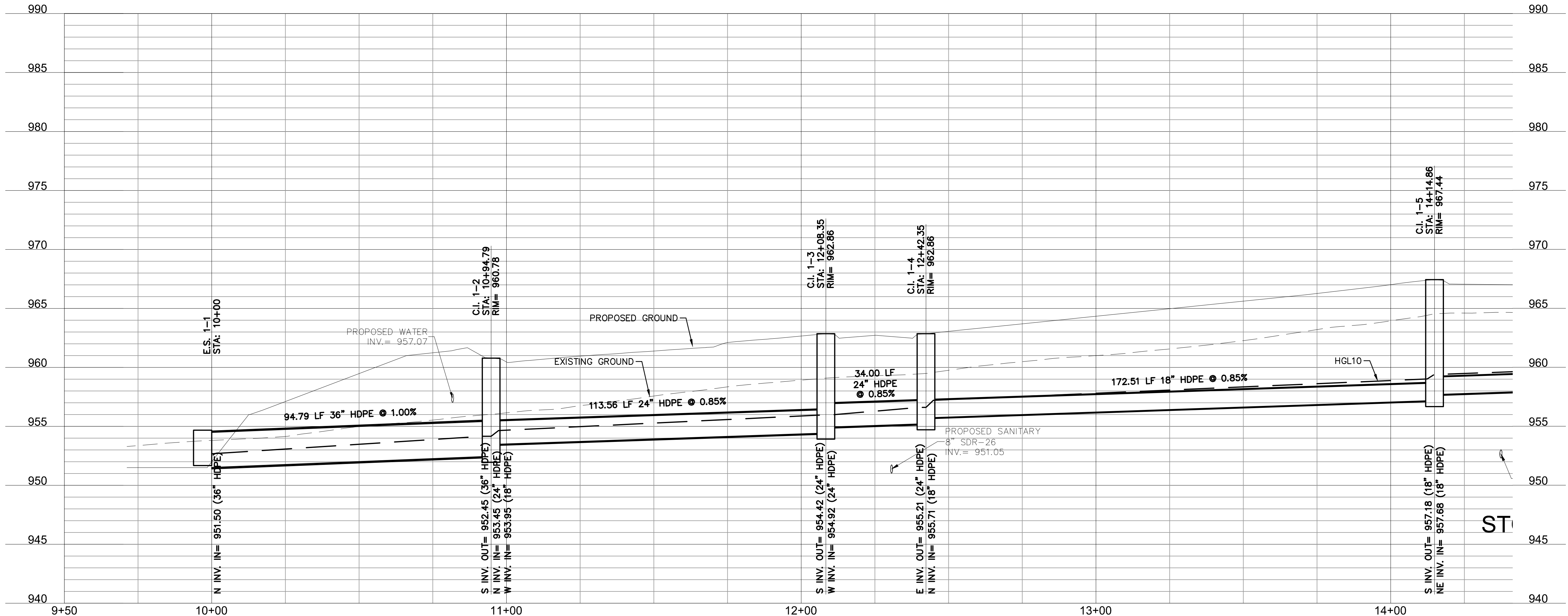
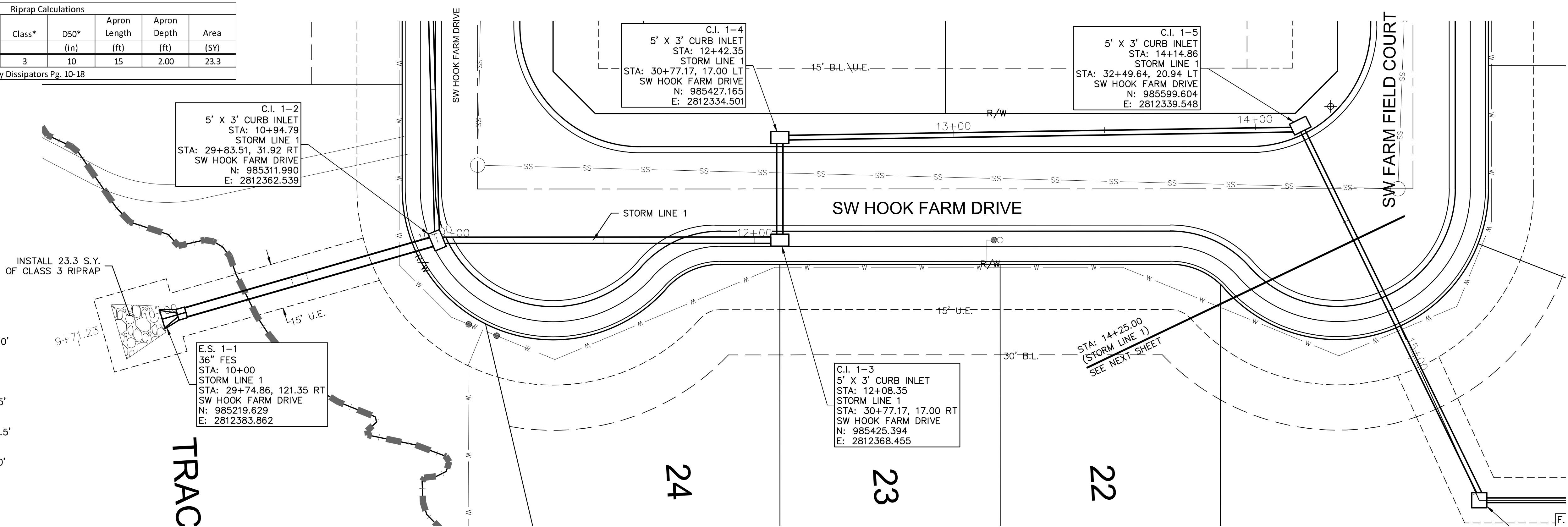
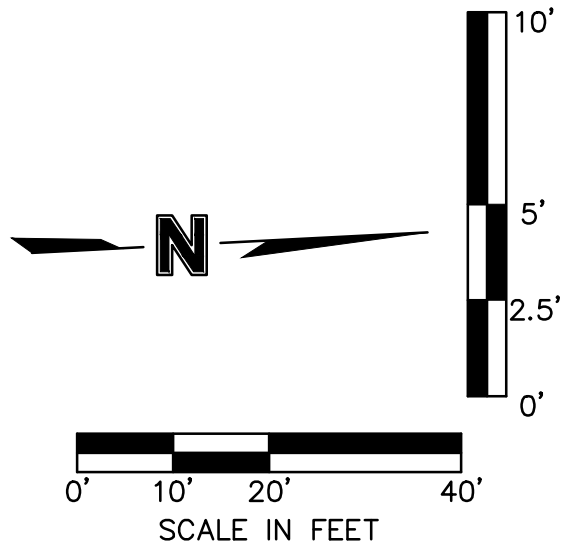
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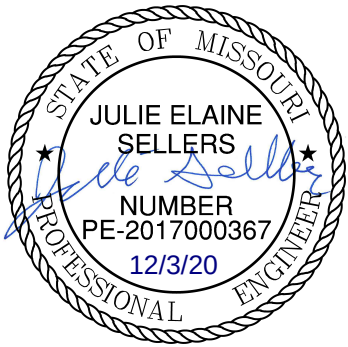
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USER: rneiser

Riprap Calculations							
End Section	Q ₁₀₀ (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. 1-1	48.24	3	3	10	15	2.00	23.3

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



RELEASE FOR
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LEE'S SUMMIT, MISSOURI
12/08/2020



BY		REVISIONS	
REV. NO.	DATE	REVISIONS DESCRIPTION	
1	06/15/2020	REVISED PER CITY COMMENTS	
2	06/25/2020	REVISED PER CITY COMMENTS	

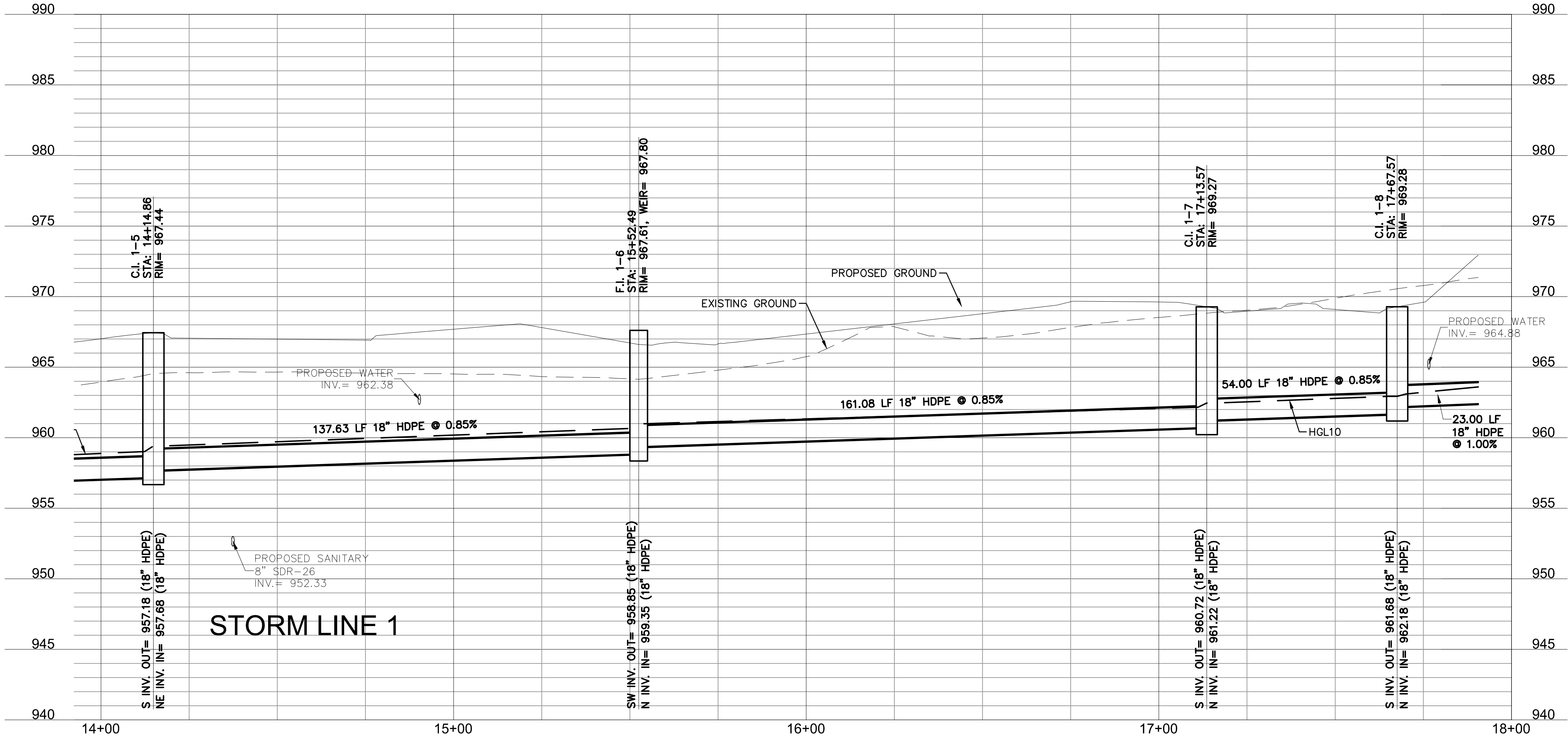
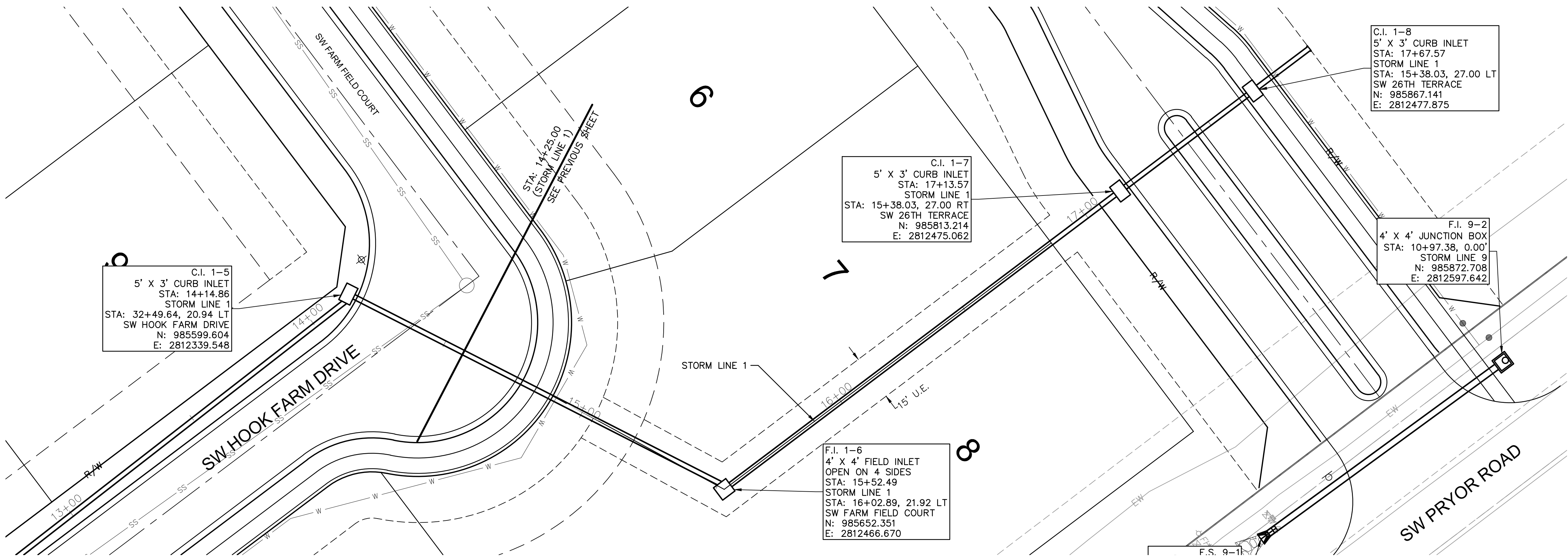
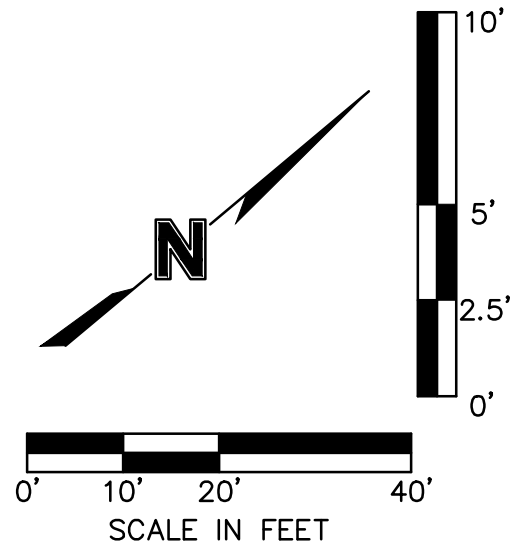
STORM SEWER PLAN & PROFILE (LINE 1) STREET AND STORM SEWER PLANS		2020
HOOK FARMS FIRST PLAT		
LEE'S SUMMIT, MO		

drawn by: CGW
checked by: JES
approved by: NDH
QA/QC by: JES
project no.: 019-4061
drawing no.:
date: 04/20/2020

SHEET
C129

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USER: nheiser



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STATE OF MISSOURI
JULIE ELAINE
SELLERS
NUMBER
PE-2017000367
12/3/20
PROFESSIONAL ENGINEER

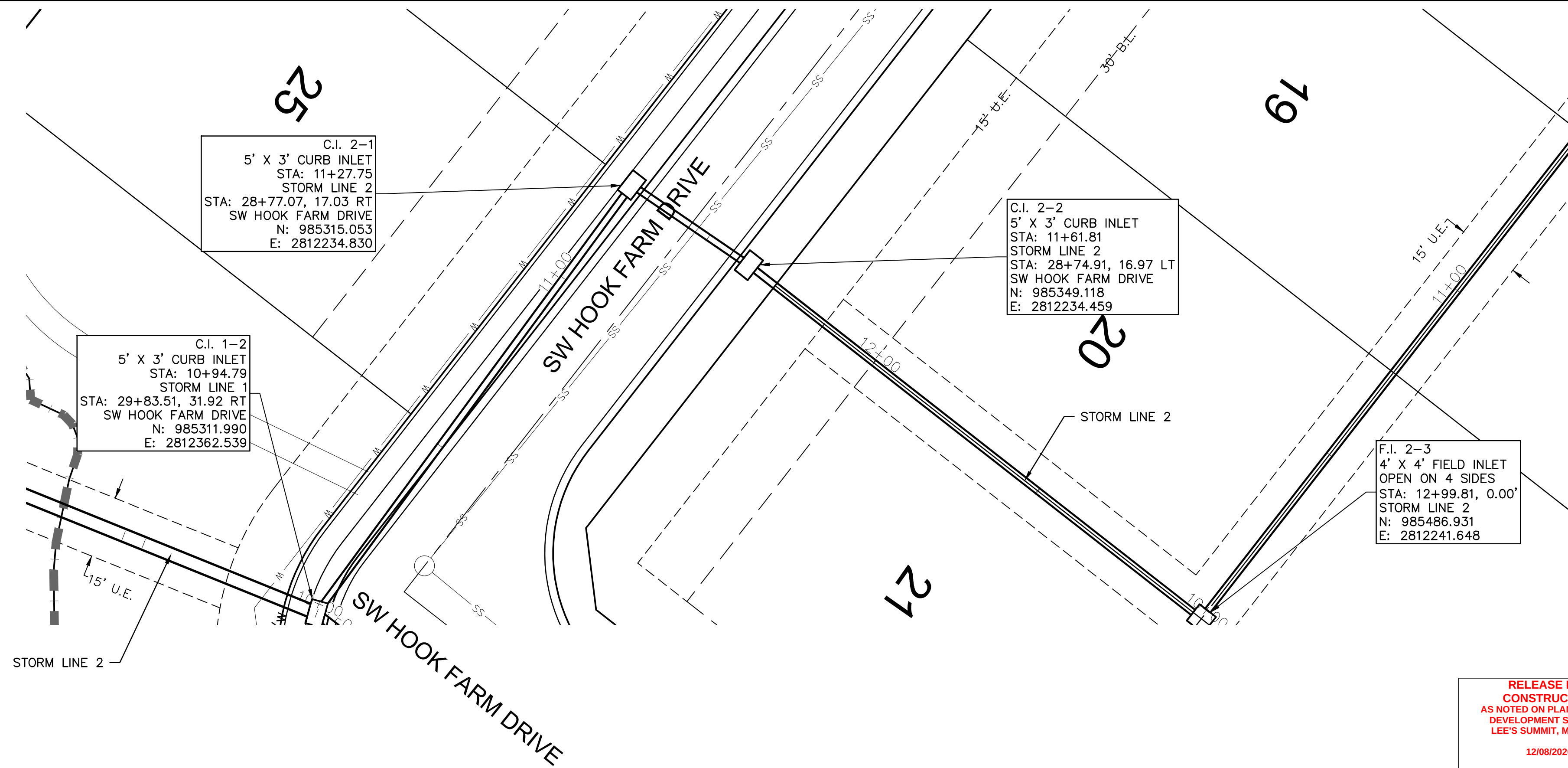
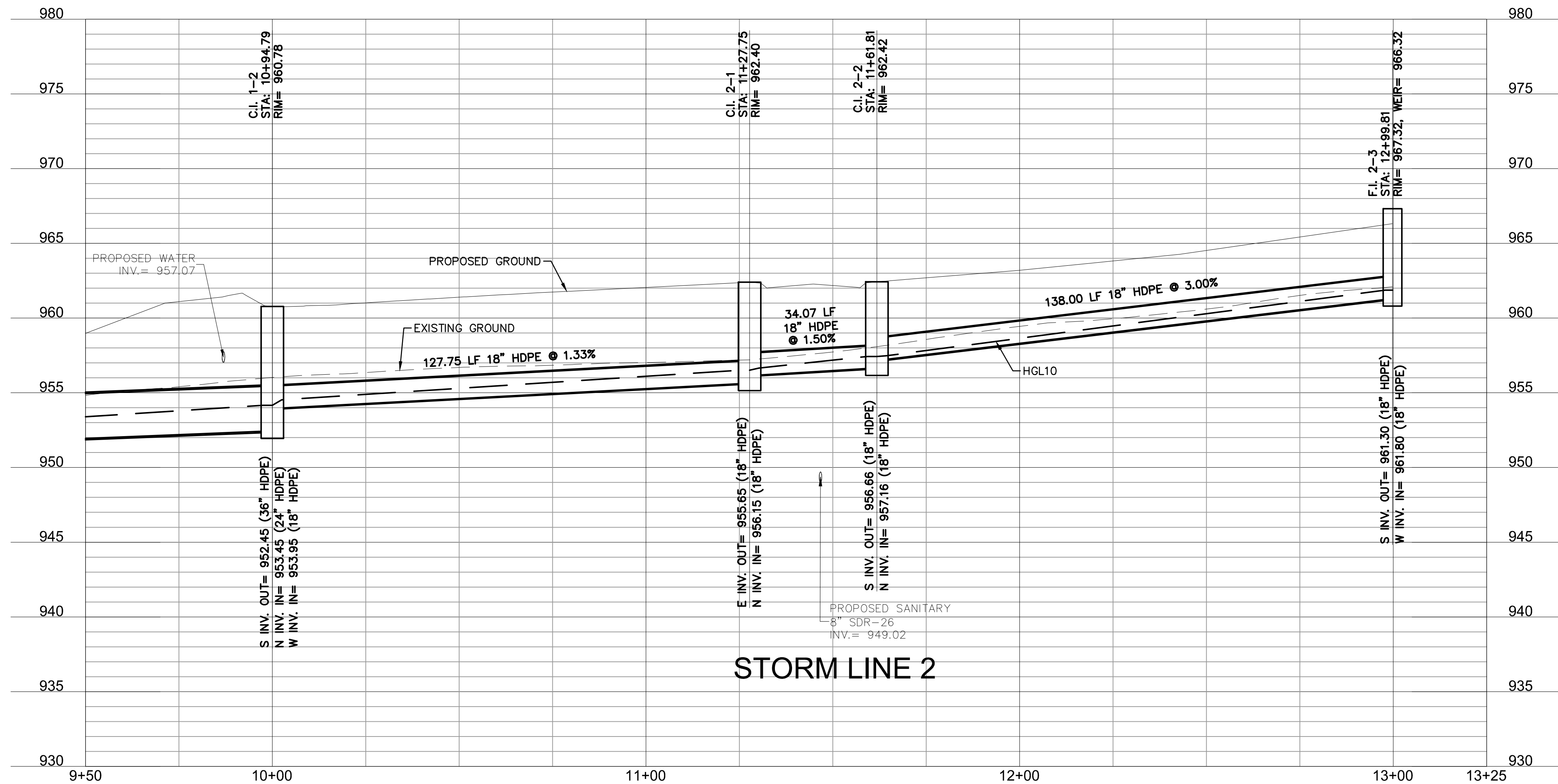
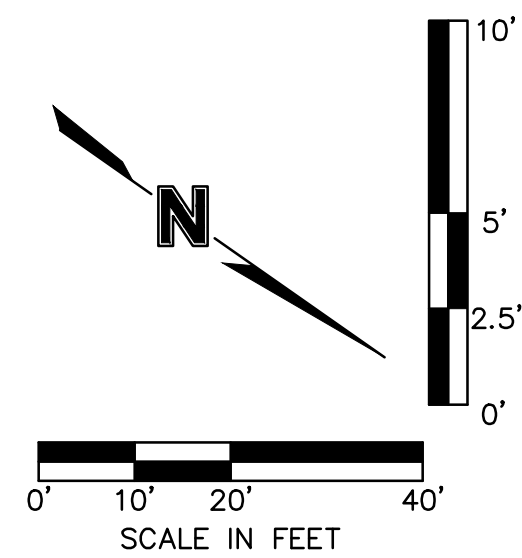
BY
DATE
REV. NO.
1 06/15/2020
2 06/25/2020
REVISED PER CITY COMMENTS
REVISED PER CITY COMMENTS

STORM SEWER PLAN & PROFILE (LINE 1 CONT'D)
STREET AND STORM SEWER PLANS
HOOK FARMS
FIRST PLAT
LEE'S SUMMIT, MO
2020

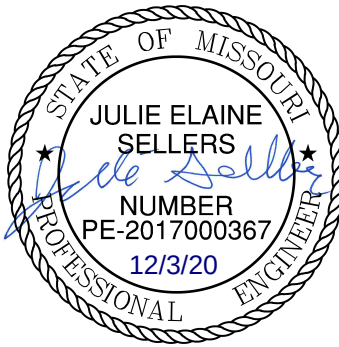
drawn by: CGW
checked by: JES
approved by: NDH
QA/QC by: JES
project no.: 019-4061
drawing no.:
date: 04/20/2020

SHEET
C130

USER: nheiser
061 C_FBA

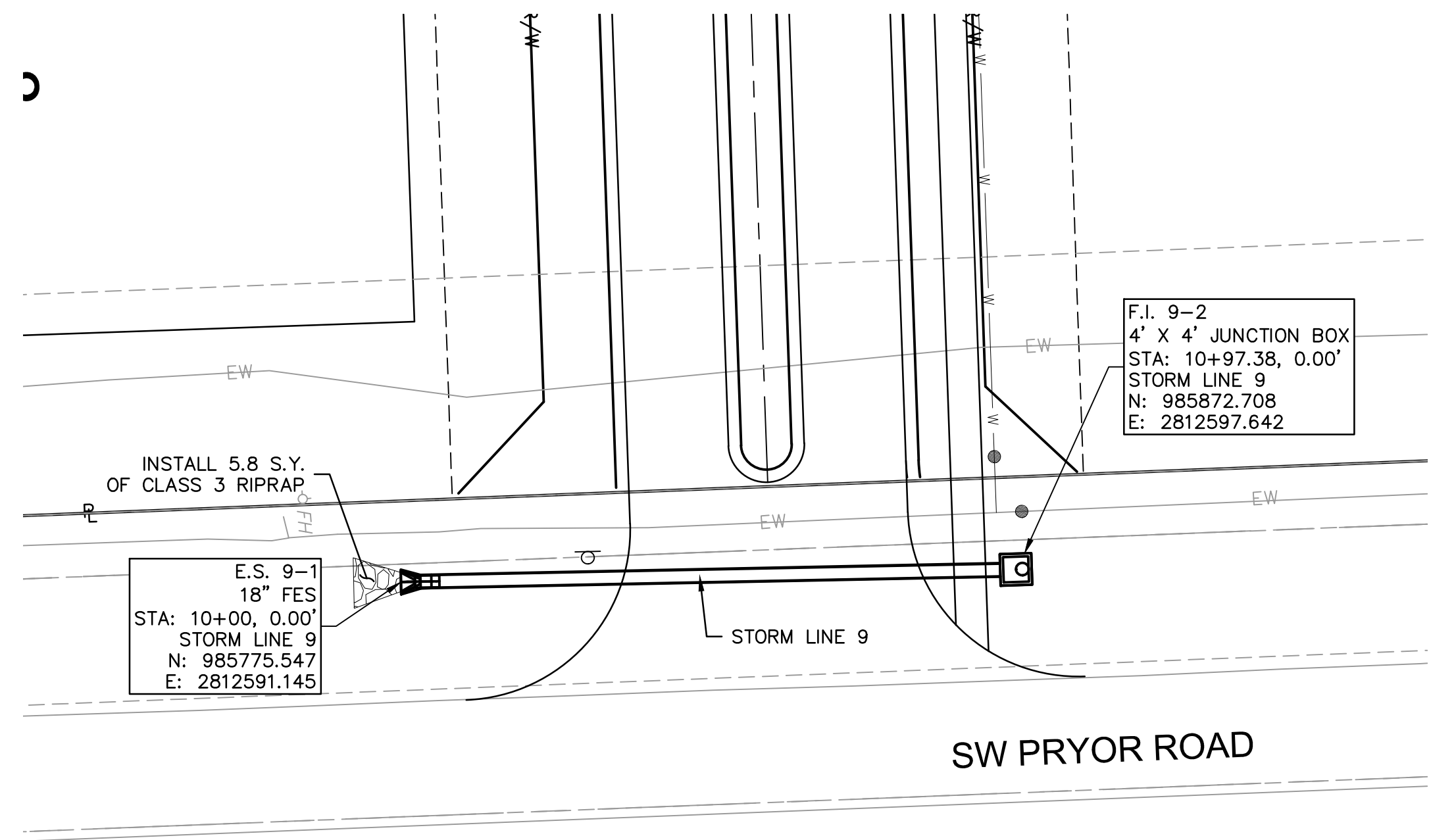


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LEE'S SUMMIT, MISSOURI
12/08/2020**

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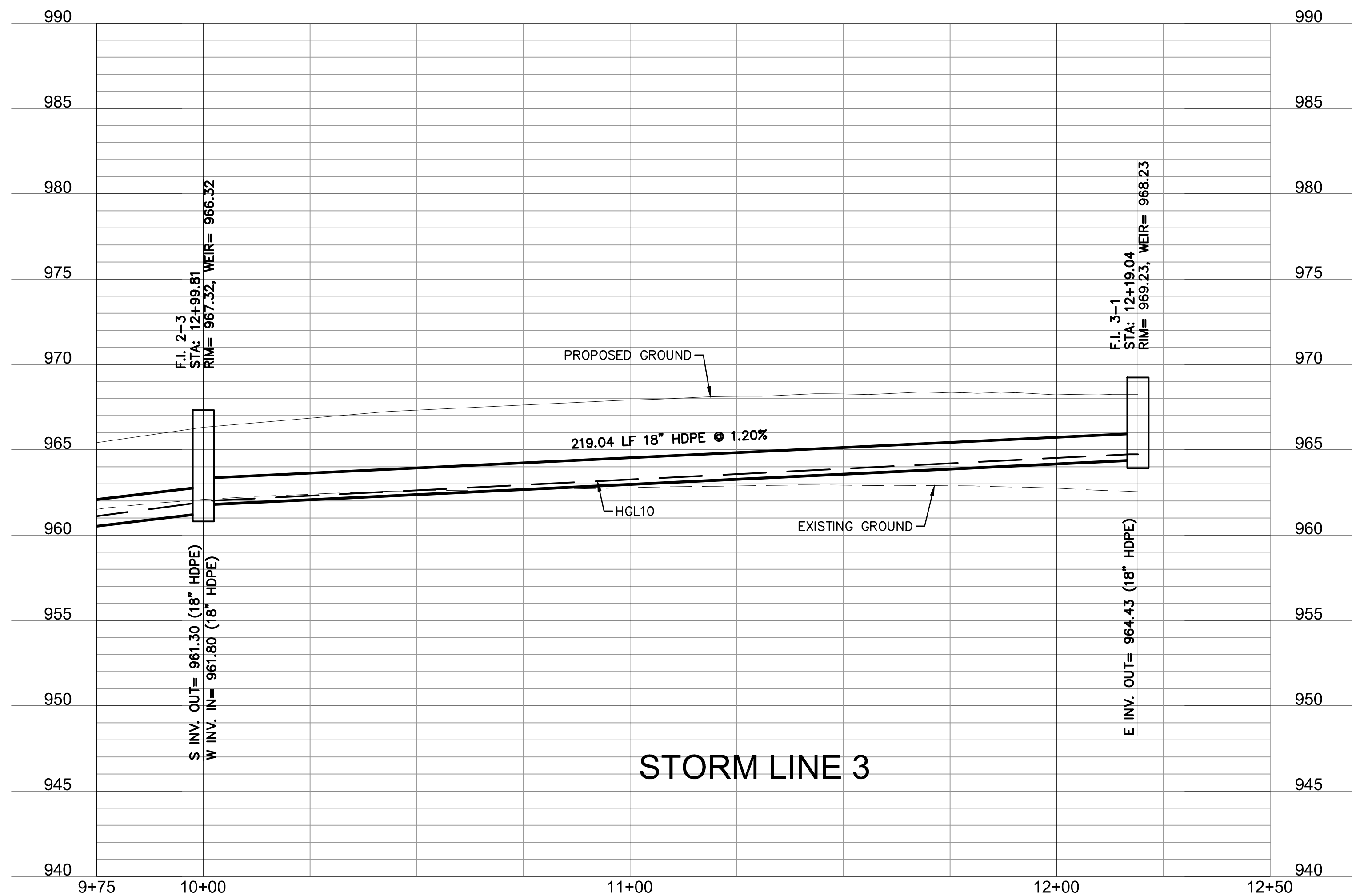
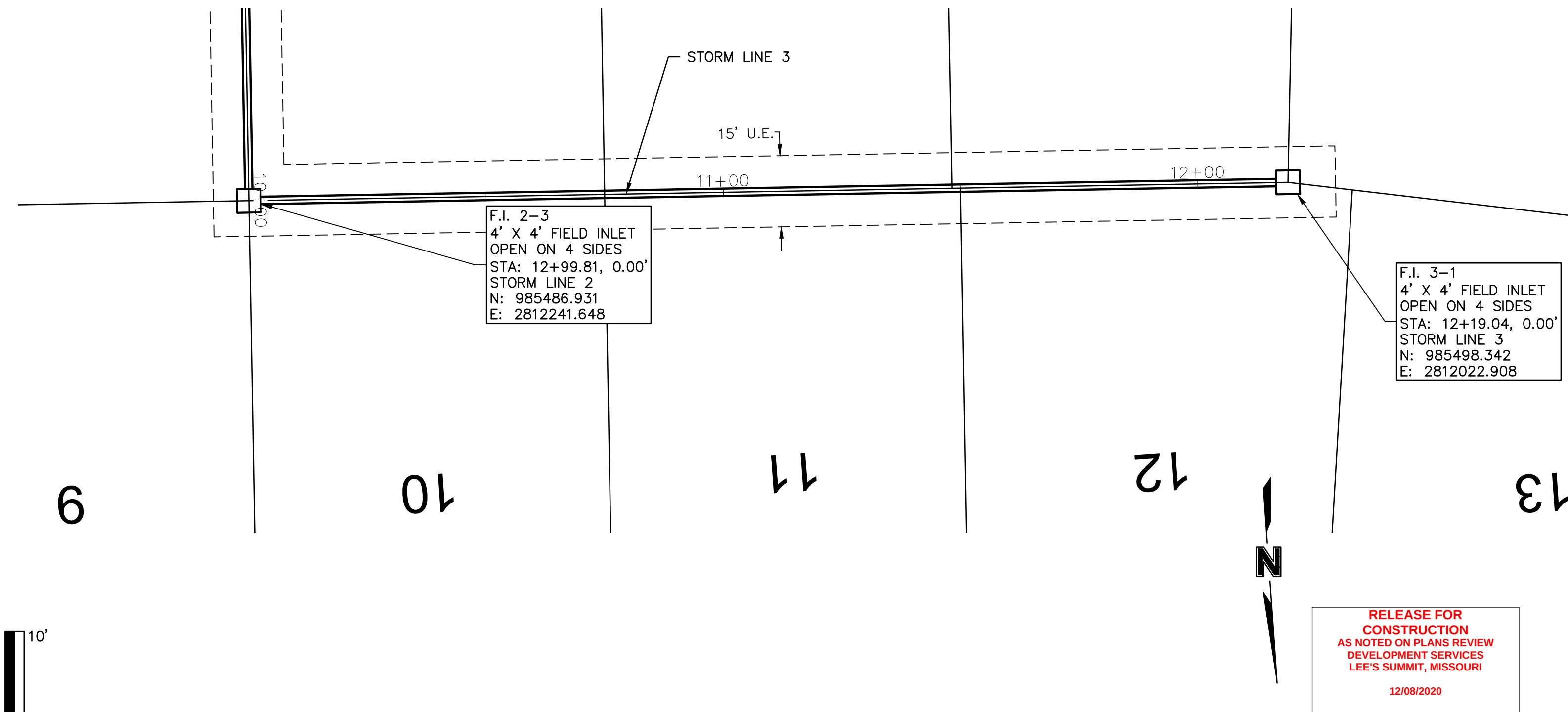
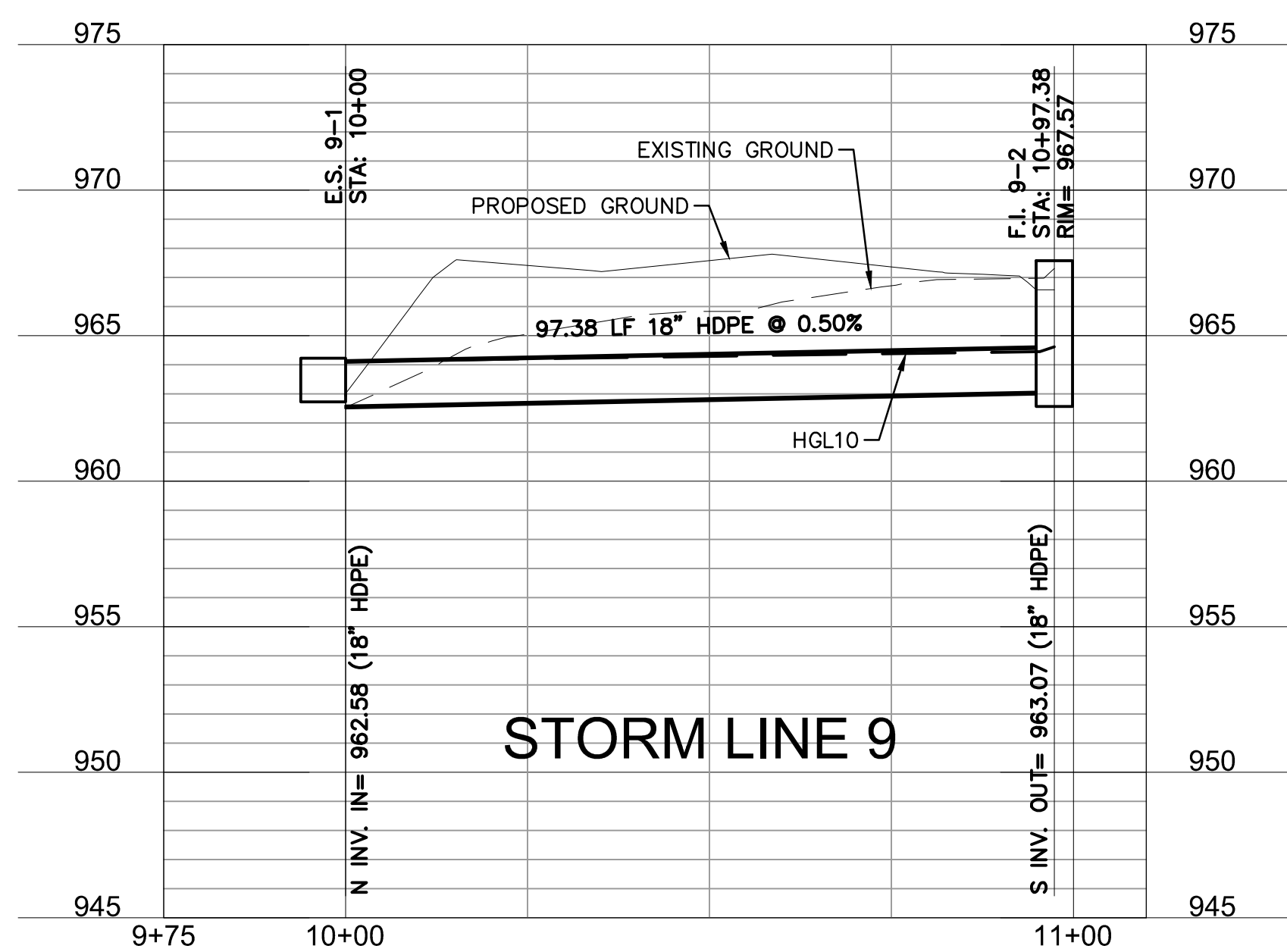
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Riprap Calculations							
End Section	Q ₁₀₀ (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. 9-1	14.93	1.5	3	10	7.5	2.00	5.8

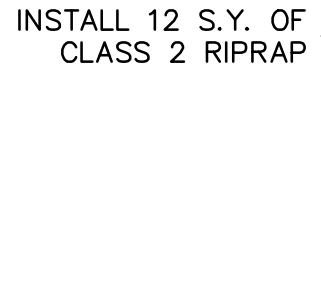
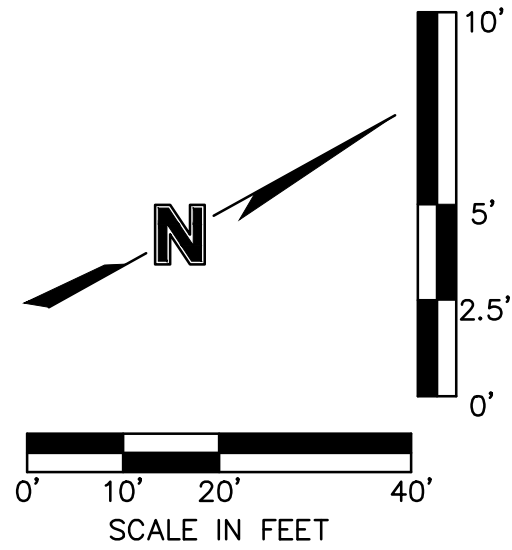
*Per Table 10.1 HEC 14-FHWA-Energy Dissipators Pg. 10-18



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Riprap Calculations						
End Section	Q ₁₀₀ (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Area (SY)
E.S. 4-1	27.38	2.5	2	6	10	12.0

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



E.S. 4-1
30" FES
STA: 10+00
STORM LINE 4
N: 985258.303
E: 2811631.226

33

32

C.I. 4-2
6' X 3' CURB INLET
STA: 11+98
STORM LINE 4
STA: 23+55.88, 17.00 RT
SW HOOK FARM DRIVE
N: 985431.176
E: 2811727.761

C.I. 4-3
6' X 3' CURB INLET
STA: 12+46.46
STORM LINE 4
STA: 23+90.41, 17.00 LT
SW HOOK FARM DRIVE
N: 985444.022
E: 2811774.492

SW HOOK FARM DRIVE

C.I. 5-1
5' X 3' CURB INLET
STA: 10+34
STORM LINE 5
STA: 10+44.00, 17.00 LT
SW FARM FIELD ROAD
N: 985497.337
E: 2811734.397

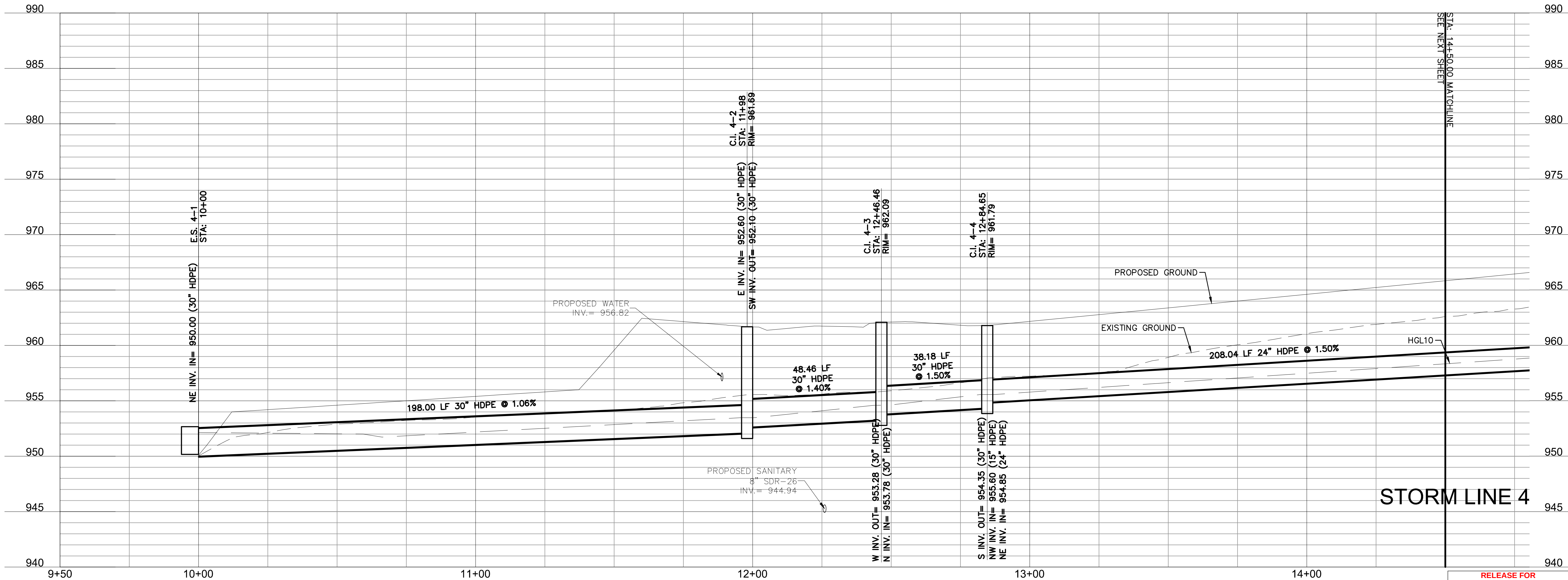
C.I. 4-4
6' X 3' CURB INLET
STA: 12+84.65
STORM LINE 4
STA: 10+44.00, 17.00 RT
SW FARM FIELD ROAD
N: 985480.760
E: 2811764.082

M.H. 4-5
60" MH
STA: 14+92.88
STORM LINE 4
STA: 12+52.04, 17.00 RT
SW FARM FIELD ROAD
N: 985662.394
E: 2811865.510

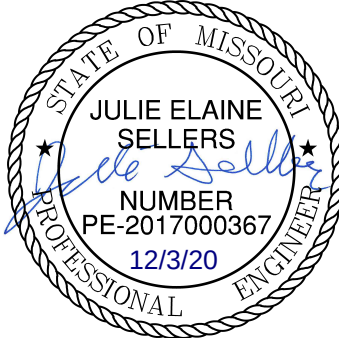
SW FARM FIELD ROAD

14

15



RELEASE FOR
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LEE'S SUMMIT, MISSOURI
12/08/2020



REV.	NO.	DATE	REVISIONS DESCRIPTION
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2		06/25/2020	REVISED PER CITY COMMENTS

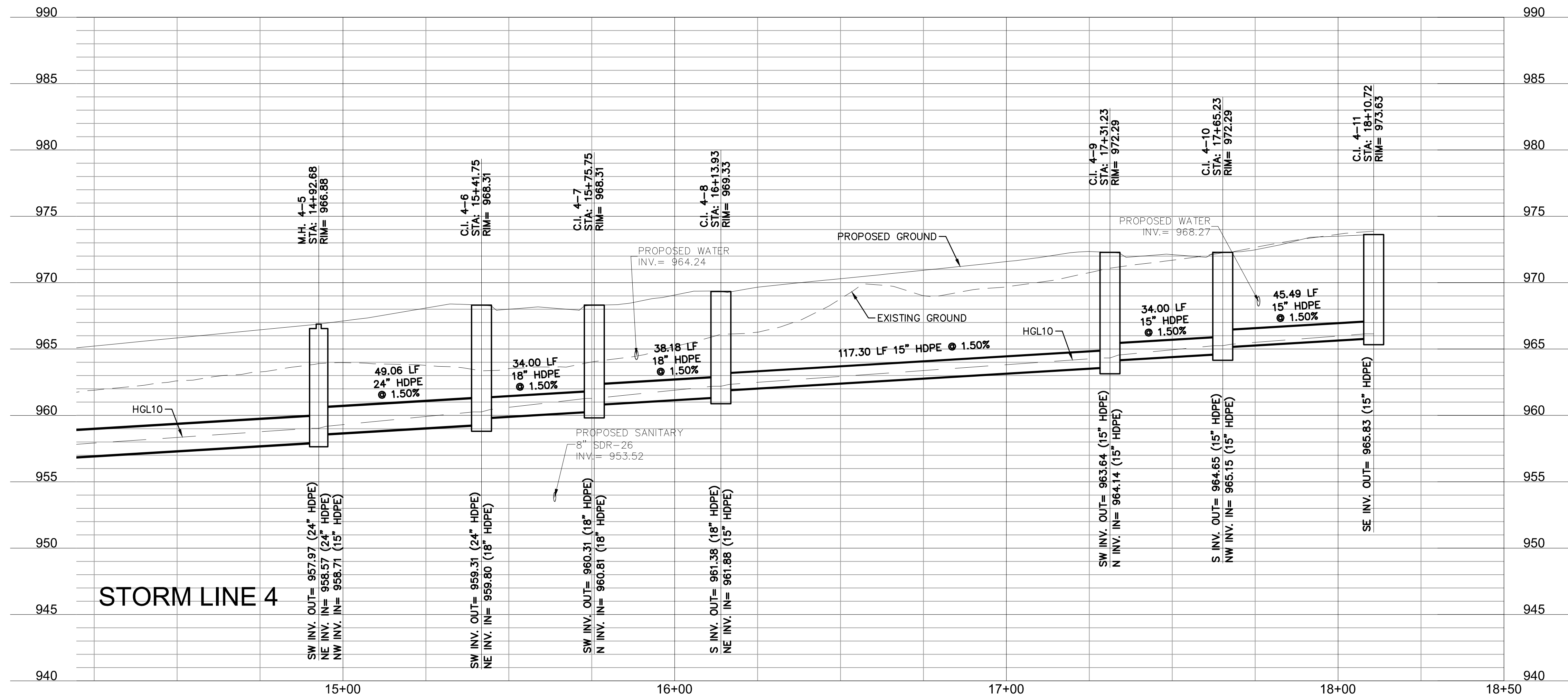
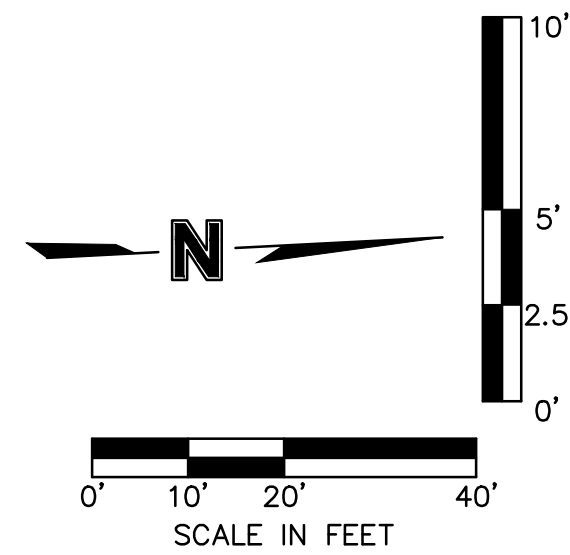
STORM SEWER PLAN & PROFILE (LINE 4) STREET AND STORM SEWER PLANS		2020
HOOK FARMS FIRST PLAT		
LEE'S SUMMIT, MO		

drawn by:	CGW
checked by:	JES
approved by:	NDH
QA/QC by:	JES
project no.:	019-4061
drawing no.:	
date:	04/20/2020

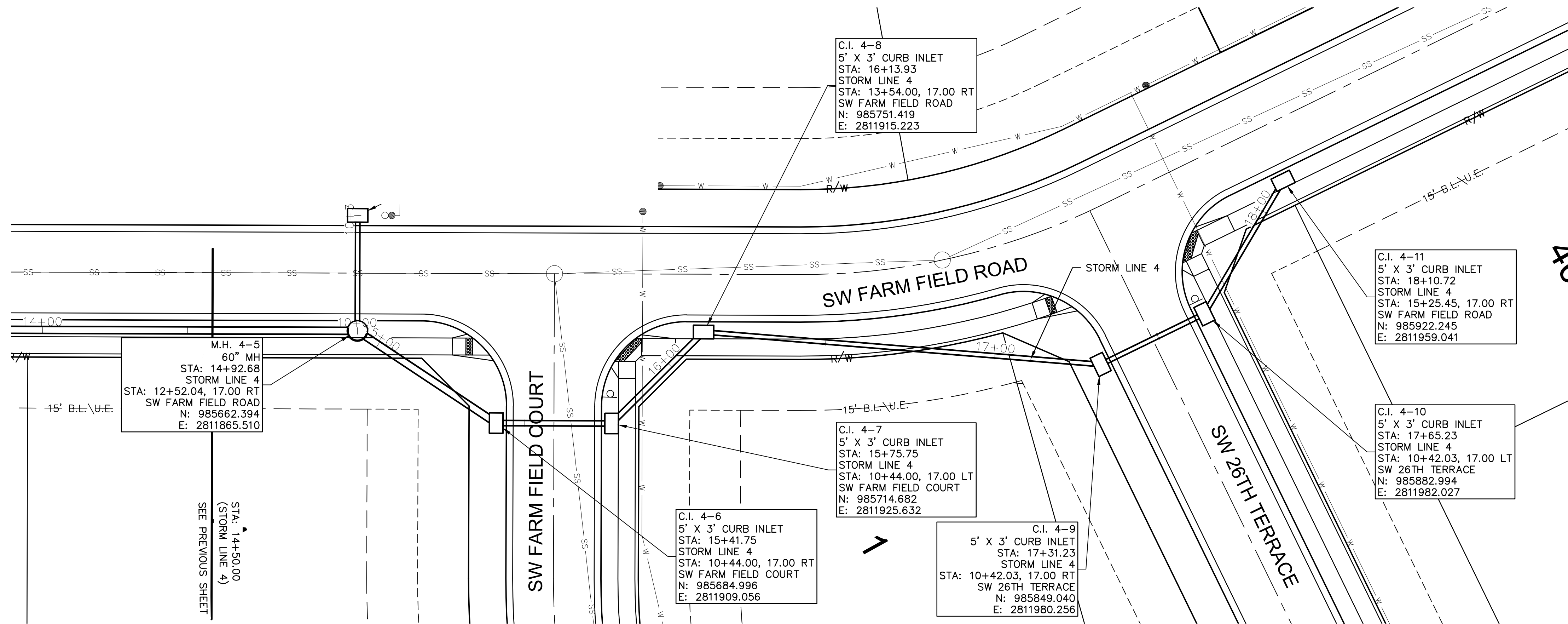
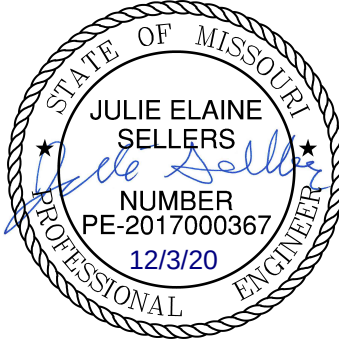
SHEET
C133

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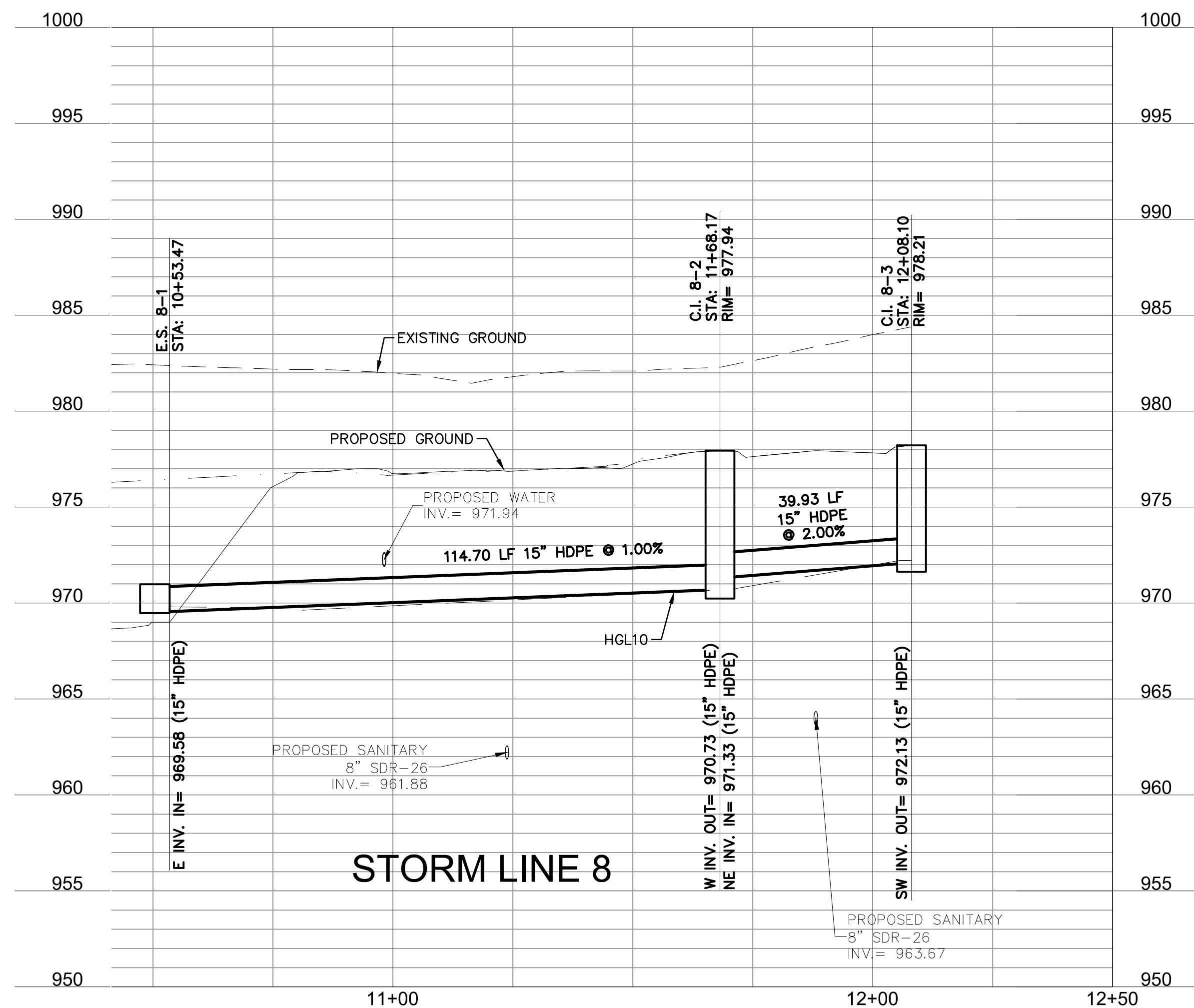
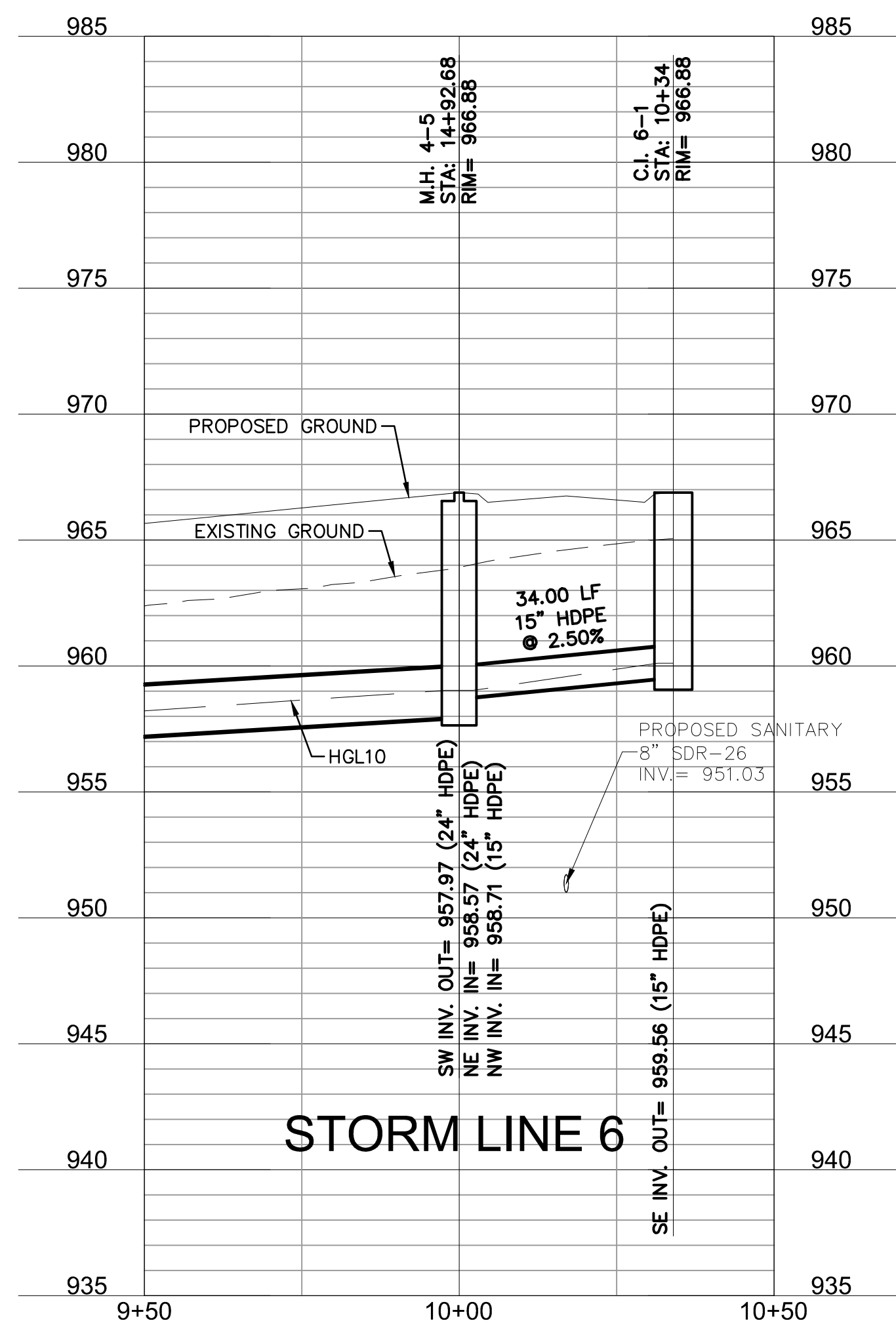
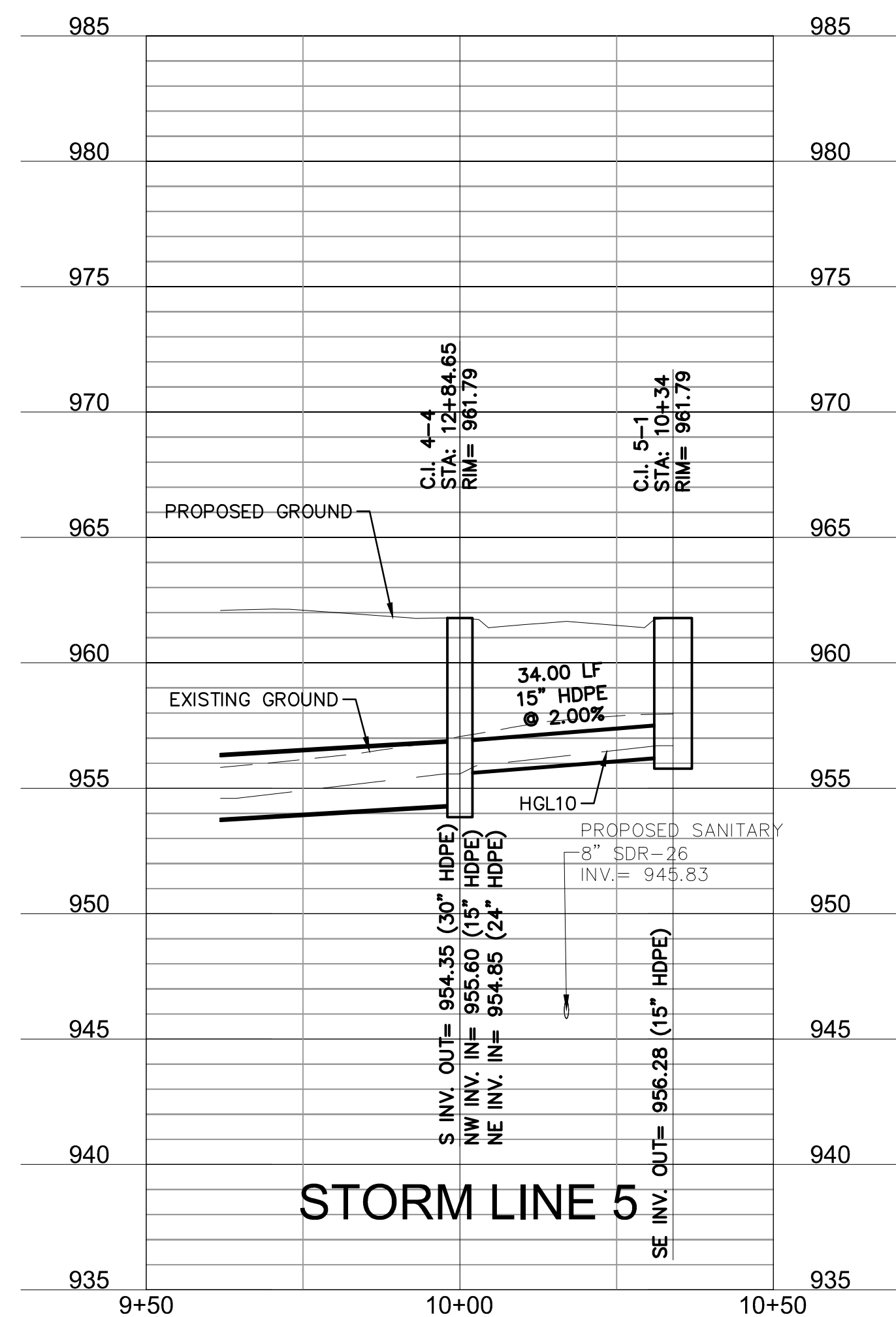
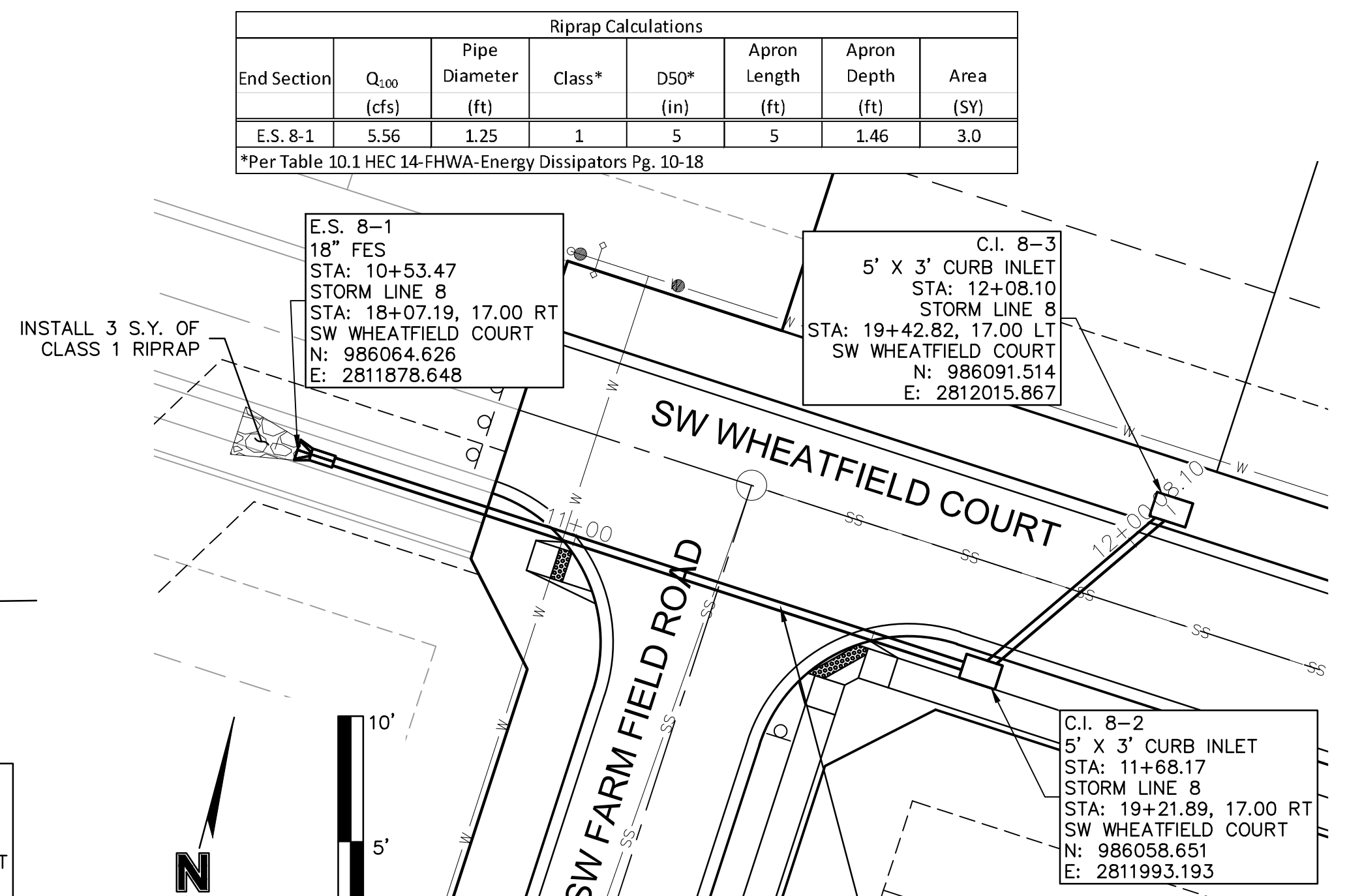
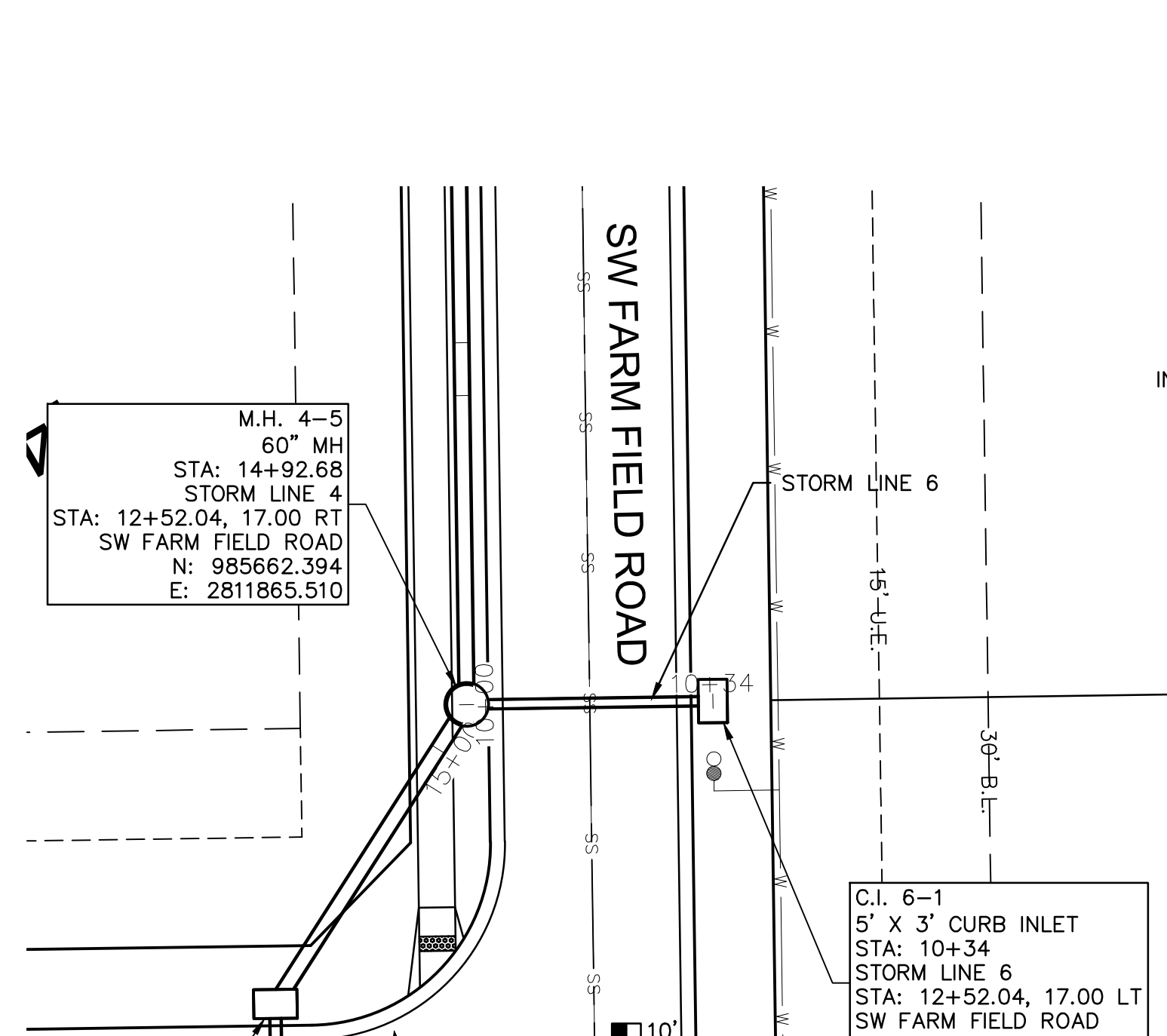
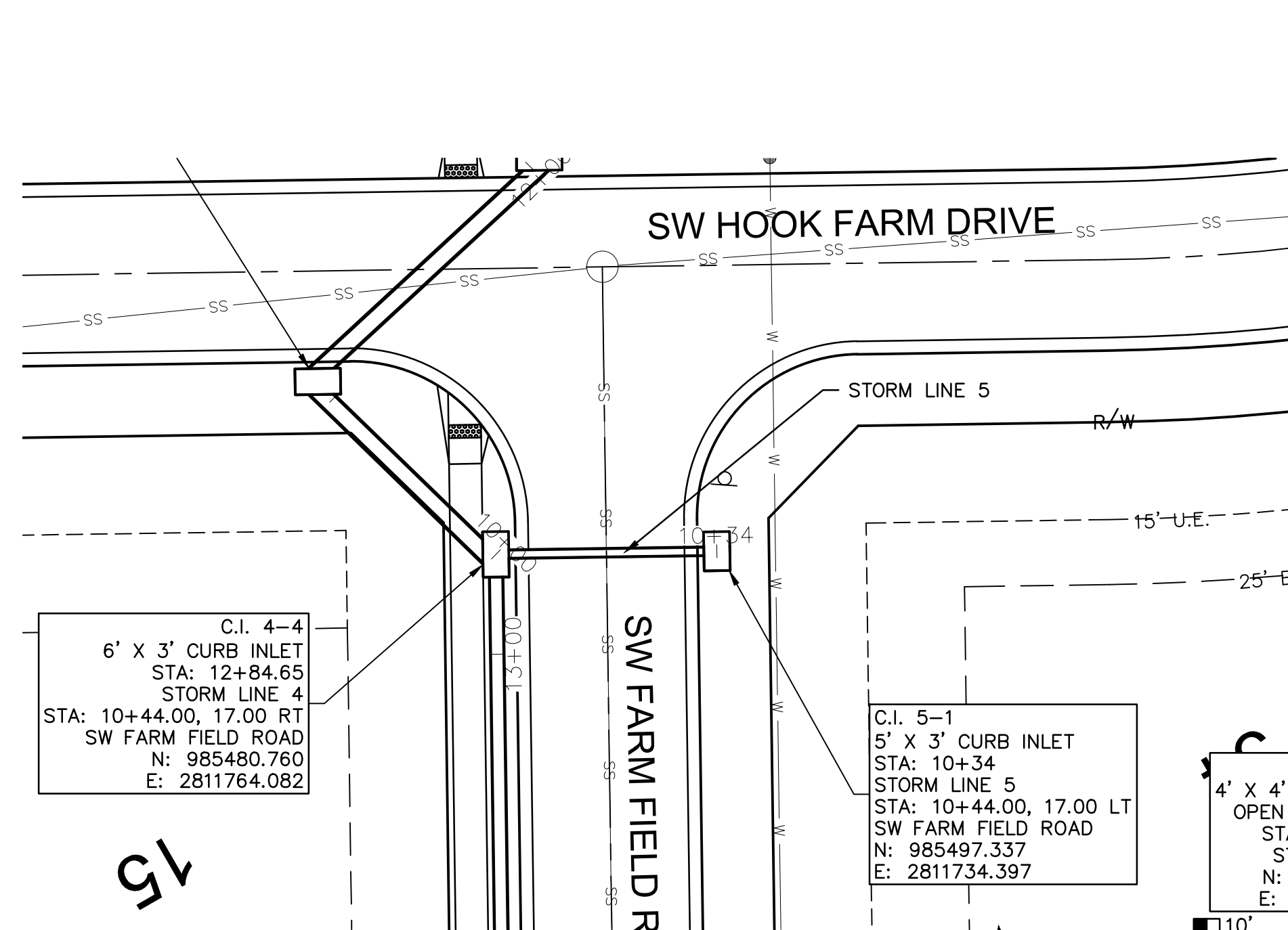


**RELEASE FOR
CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI**

[illegible]

Olsson - Civil Engineering
Missouri Certificate of Authority #001592
1301 Burlington Street
North Kansas City, MO 64116
TEL 816.361.1177
FAX 816.361.1888
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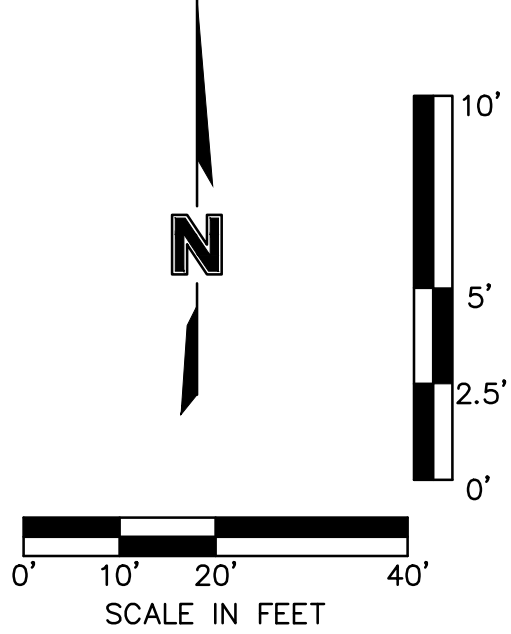
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Riprap Calculations							
End Section	Q ₁₀₀	Pipe Diameter	Class*	D50*	Apron Length	Apron Depth	Area
	(cfs)	(ft)		(in)	(ft)	(ft)	(SY)
E.S. 8-1	5.56	1.25	1	5	5	1.46	3.0
*Per Table 10.1 HEC 14-FHWA-Energy Dissipators Pg. 10-18							

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

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



DWG: F:\2019\4001-4500\019-4061\40-Design\AutoCAD\Final Plans\Sheets\GNCV\Street and Storm Plans\VC_STM03_0194061.dwg
DATE: Nov 25, 2020 3:06pm
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LEGEND	
	100 FINISHED INDEX CONTOURS
	100 FINISHED INTERMEDIATE CONTOURS
	RIDGE LINE
	A DRAINAGE AREA
	C RUNOFF COEFFICIENT
	C.I. 0-0 STORM STRUCTURE NUMBER

NOTES:

MBOE - MINIMUM BUILDING OPENING ELEVATION

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 LOCATION 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. PLAT IS LOCATED OUTSIDE OF ANY REQUIRED BUFFER ZONES FOR NATURAL STREAMS.

4. MBOE ELEVATIONS HAVE BEEN PROVIDED AT EACH LOT CORNER. INTERPOLATION WILL BE ALLOWED BETWEEN THE RIGHT AND LEFT SIDE MBOE'S SHOWN ON THE MASTER DRAINAGE PLAN, DEPENDING ON THE LOCATION OF THE LOWEST OPENING ON THE PROPOSED STRUCTURE.

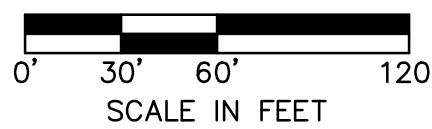
5. REFER TO SHEET C105-C109 FOR SWALE GRADING DETAILS.

6. DRAINAGE PATHS TO BE CONSTRUCTED BETWEEN EACH OF THE LOTS LABELED AS STANDARD LOTS TO DRAIN WEST.

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

BASEMENT TYPES

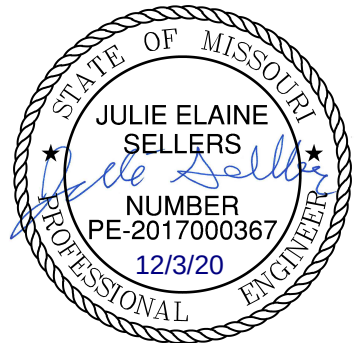
- (S) STANDARD
(D) DAYLIGHT
(WO) WALK-OUT



N

RELEASE FOR
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LEE'S SUMMIT, MISSOURI
12/08/2020

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BY		REVISIONS	
REV. NO.	DATE	REVISIONS DESCRIPTION	
1	06/15/2020	REVISED PER CITY COMMENTS	
2	06/25/2020	REVISED PER CITY COMMENTS	
3	09/10/2020	REVISED PIPE INSULATION	
4	10/01/2020	REVISED PER CITY COMMENTS	
5	11/18/2020	REVISED LOTS 25-29 GRADING	

MASTER DRAINAGE PLAN
STREET AND STORM SEWER PLANS

HOOK FARMS
FIRST PLAT

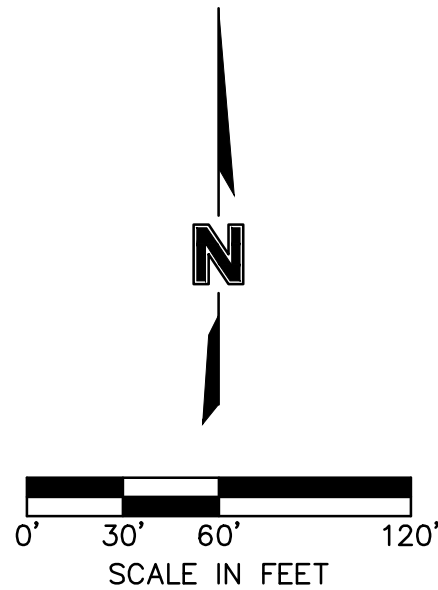
LEE'S SUMMIT, MO

drawn by: CGW
checked by: JES
approved by: NDH
QA/QC by: JES
project no.: 019-4061
drawing no.:
date: 04/20/2020

SHEET
C137

DWG: F:\2019\4001-4500\019-4061\40-Design\AutoCAD\Final Plans\Sheets\GNCV\Street and Storm Plans\VC_STM04_0194061.dwg USER: nheiser
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LEGEND	
	100 FINISHED INDEX CONTOURS
	100 FINISHED INTERMEDIATE CONTOURS
	RIDGE LINE
	DRAINAGE AREA
	RUNOFF COEFFICIENT
	STORM STRUCTURE NUMBER



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STATE OF MISSOURI
JULIE ELAINE
SELLERS
NUMBER
PE-2017000367
12/3/20
PROFESSIONAL ENGINEER

BY

DATE

REV. NO.

REVISIONS DESCRIPTION

REVISED PER CITY COMMENTS

REVISED PER CITY COMMENTS

2020

LEE'S SUMMIT, MO

SHEET
C138

Inlet Design Table													
10 Year Return Frequency													
Inlet ID	Inlet Location	Peak Flow	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	0.60	...	...	...	...	...	...	...	...	0.16	8.12	...
C.I. 1-2(R)	SAG	1.43	...	...	...	...	...	...	...	...	0.14	6.86	...
C.I. 1-2	SAG	3.08	1.89	4.97	0.80	19.40	15.52	4.97	0.00	100.00%	...	...	...
C.I. 1-3	GRADE	4.80	0.00	4.80	1.00	3.01	3.01	3.01	1.79	62.65%	0.21	10.54	...
C.I. 1-4	GRADE	1.09	0.11	1.19	1.00	1.06	1.06	1.06	0.13	89.12%	0.13	6.26	...
C.I. 1-5	GRADE	1.09	0.00	1.09	1.00	0.98	0.98	0.98	0.11	90.13%	0.12	6.04	...
F.I. 1-6	SAG	0.90	0.00	0.90	0.80	18.67	14.93	0.90	0.00	100.00%	...	...	0.07
C.I. 1-7	GRADE	1.54	0.00	1.54	1.00	1.49	1.49	1.49	0.04	97.14%	0.14	6.54	...
C.I. 1-8	GRADE	1.16	0.00	1.16	1.00	1.15	1.15	1.15	0.01	98.84%	0.13	5.89	...
PLUG 1-9	SAG	9.46	...	...	...	...	...	...	...	...	...	...	...
C.I. 2-1	GRADE	1.05	0.00	1.05	1.00	0.95	0.95	0.95	0.10	90.49%	0.12	5.96	...
C.I. 2-2	GRADE	2.25	0.00	2.25	1.00	1.80	1.80	1.80	0.45	79.97%	0.16	7.94	...
F.I. 2-3	SAG	1.58	0.00	1.58	0.80	18.67	14.93	1.58	0.00	100.00%	...	...	0.10
F.I. 3-1	SAG	0.68	0.00	0.68	0.80	18.67	14.93	0.68	0.00	100.00%	...	...	0.05
C.I. 4-2	GRADE	1.39	0.00	1.39	1.00	1.24	1.24	1.24	0.15	89.36%	0.13	6.62	...
C.I. 4-3	GRADE	2.81	0.00	2.81	1.00	2.20	2.20	2.20	0.61	78.28%	0.17	8.63	...
C.I. 4-4(L)	SAG	2.51	...	...	...	...	...	...	...	...	0.17	8.27	...
C.I. 4-4(R)	SAG	0.00	...	...	...	...	...	...	...	...	0.00	0.00	...
C.I. 4-4	SAG	3.08	0.09	3.17	0.80	23.28	18.63	3.17	0.00	100.00%	...	...	...
C.I. 4-6	GRADE	1.01	0.00	1.01	1.00	0.92	0.92	0.92	0.09	90.84%	0.12	5.88	...
C.I. 4-7	GRADE	2.25	0.00	2.25	1.00	1.80	1.80	1.80	0.45	79.97%	0.16	7.94	...
C.I. 4-8(L)	SAG	0.64	...	...	...	...	...	...	...	...	0.12	6.05	...
C.I. 4-8(R)	SAG	0.00	...	...	...	...	...	...	...	...	0.00	0.00	...
C.I. 4-8	SAG	1.09	0.45	1.54	0.80	19.40	15.52	1.54	0.00	100.00%	...	...	...
C.I. 4-9	GRADE	0.71	0.00	0.71	1.00	0.67	0.67	0.67	0.04	93.77%	0.10	5.16	...
C.I. 4-10	GRADE	2.03	0.00	2.03	1.00	1.66	1.66	1.66	0.37	81.81%	0.15	7.63	...
C.I. 4-11	GRADE	0.68	0.00	0.68	1.00	0.64	0.64	0.64	0.04	94.15%	0.10	5.05	...
C.I. 5-1	GRADE	1.01	0.34	1.35	1.00	1.18	1.18	1.18	0.17	87.71%	0.13	6.55	...
C.I. 6-1	GRADE	1.76	0.17	1.93	1.00	1.59	1.59	1.59	0.34	82.61%	0.15	7.49	...
C.I. 7-2	GRADE	0.64	0.61	1.25	1.00	1.11	1.11	1.11	0.14	88.63%	0.13	6.36	...
F.I. 7-3	SAG	5.29	0.00	5.29	0.80	18.67	14.93	5.29	0.00	100.00%	...	...	0.22
F.I. 7-4	SAG	7.72	0.00	7.72	0.80	18.67	14.93	7.72	0.00	100.00%	...	...	0.28
C.I. 8-2	GRADE	1.35	0.00	1.35	1.00	1.18	1.18	1.18	0.17	87.69%	0.13	6.55	...
C.I. 8-3	GRADE	4.16	0.00	4.16	1.00	2.77	2.77	2.77	1.40	66.43%	0.20	9.99	...
F.I. 9-1	SAG	8.70	0.00	8.70	0.80	18.67	14.93	8.70	0.00	100.00%	...	...	0.30

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

Drainage Area Design Table						
10 Year Return Frequency						
Inlet ID	Drainage Area	C	Tc	i	K	Peak Flow
	(ac)		(min)	(in/hr)		(cfs)
C.I. 1-2(L)	0.16	0.51	5.00	7.35	1.00	0.60
C.I. 1-2(R)	0.38	0.51	5.00	7.35	1.00	1.43
C.I. 1-2(B)	0.28	0.51	5.00	7.35	1.00	1.05
C.I. 1-2	0.82	0.51	5.00	7.35	1.00	3.08
C.I. 1-3	1.28	0.51	5.00	7.35	1.00	4.80
C.I. 1-4	0.29	0.51	5.00	7.35	1.00	1.09
C.I. 1-5	0.29	0.51	5.00	7.35	1.00	1.09
F.I. 1-6	0.24	0.51	5.00	7.35	1.00	0.90
C.I. 1-7	0.41	0.51	5.00	7.35	1.00	1.54
C.I. 1-8	0.31	0.51	5.00	7.35	1.00	1.16
PLUG 1-9	2.34	0.55	5.00	7.35	1.00	9.46
C.I. 2-1	0.28	0.51	5.00	7.35	1.00	1.05
C.I. 2-2	0.60	0.51	5.00	7.35	1.00	2.25
F.I. 2-3	0.42	0.51	5.00	7.35	1.00	1.58
F.I. 3-1	0.18	0.51	5.00	7.35	1.00	0.68
C.I. 4-2	0.37	0.51	5.00	7.35	1.00	1.39
C.I. 4-3	0.75	0.51	5.00	7.35	1.00	2.81
C.I. 4-4(L)	0.67	0.51	5.00	7.35	1.00	2.51
C.I. 4-4(R)	0.00	0.51	5.00	7.35	1.00	0.00
C.I. 4-4(B)	0.15	0.51	5.00	7.35	1.00	0.56
C.I. 4-4	0.82	0.51	5.00	7.35	1.00	3.08
C.I. 4-6	0.27	0.51	5.00	7.35	1.00	1.01
C.I. 4-7	0.60	0.51	5.00	7.35	1.00	2.25
C.I. 4-8(L)	0.17	0.51	5.00	7.35	1.00	0.64
C.I. 4-8(R)	0.00	0.51	5.00	7.35	1.00	0.00
C.I. 4-8(B)	0.12	0.51	5.00	7.35	1.00	0.45
C.I. 4-8	0.29	0.51	5.00	7.35	1.00	1.09
C.I. 4-9	0.19	0.51	5.00	7.35	1.00	0.71
C.I. 4-10	0.54	0.51	5.00	7.35	1.00	2.03
C.I. 4-11	0.18	0.51	5.00	7.35	1.00	0.68
C.I. 5-1	0.27	0.51	5.00	7.35	1.00	1.01
C.I. 6-1	0.47	0.51	5.00	7.35	1.00	1.76
C.I. 7-2	0.17	0.51	5.00	7.35	1.00	0.64
F.I. 7-3	1.41	0.51	5.00	7.35	1.00	5.29
F.I. 7-4	3.00	0.35	5.00	7.35	1.00	7.72
C.I. 8-2	0.36	0.51	5.00	7.35	1.00	1.35
C.I. 8-3	1.11	0.51	5.00	7.35	1.00	4.16
F.I. 9-1	3.38	0.35	5.00	7.35	1.00	8.70

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)	Upstream Top Elev.
C.I. 8-2	E.S. 8-1	114.701	969.58	970.73	1.00	15	0.01	3.95	5.74	8.41	0.60	971.53	977.94
C.I. 8-3	C.I. 8-2	39.926	971.33	972.13	2.00	15	0.01	2.77	6.02	11.88	0.41	972.80	978.21
C.I. 4-2	E.S. 4-1	198.000	952.10	950.00	1.06	30	0.01	16.51	4.84	54.91	2.14	953.47 j	961.69
C.I. 4-3	C.I. 4-2	48.464	953.28	952.60	1.40	30	0.01	15.30	7.93	63.16	0.87	954.60	962.09
C.I. 4-4	C.I. 4-3	38.184	954.35	953.78	1.49	30	0.01	13.17	7.48	65.14	0.82	955.57	961.79
M.H. 4-5	C.I. 4-4	208.035	957.97	954.79	1.53	24	0.01	8.82	6.51	36.35	0.78	959.03	966.88
C.I. 4-6	M.H. 4-5	49.062	959.31	958.57	1.51	24	0.01	7.23	6.93	36.11	0.61	960.26	966.31
C.I. 4-7	C.I. 4-6	34.000	960.31	959.80	1.50	18	0.01	6.31	7.01	16.72	0.64	961.28	968.31
C.I. 4-8	C.I. 4-7	38.184	961.38	960.81	1.49	18	0.01	4.51	6.31	16.68	0.53	962.19	969.18
C.I. 4-9	C.I. 4-8	117.300	963.64	961.88	1.50	15	0.01	2.97	5.75	10.28	0.46	964.33	972.29
C.I. 4-10	C.I. 4-9	34.000	964.65	964.14	1.50	15	0.01	2.30	5.32	10.28	0.40	965.26	972.29
C.I. 4-11	C.I. 4-10	45.486	965.83	965.15	1.49	15	0.01	0.64	3.66	10.26	0.21	966.14	973.57
C.I. 1-2	E.S. 1-1	94.790	952.45	951.50	1.00	36	0.01	28.03	8.84	86.80	1.17	954.16	960.78
C.I. 1-3	C.I. 1-2	113.558	954.42	953.45	0.85	24	0.01	18.05	8.13	27.17	1.19	955.95	962.86
C.I. 1-4	C.I. 1-3	34.000	955.21	954.92	0.85	24	0.01	15.04	7.64	27.16	1.06	956.61	962.86
C.I. 1-5	C.I. 1-4	172.513	957.18	955.71	0.85	18	0.01	13.98	7.91	12.60	1.50	959.02	967.44
F.I. 1-6	C.I. 1-5	137.631	958.85	957.68	0.85	18	0.01	13.00	7.36	12.59	1.50	960.66	968.80
C.I. 1-7	F.I. 1-6	161.082	960.72	959.35	0.85	18	0.01	12.10	6.90	12.59	1.50	962.16	968.91
C.I. 1-8	C.I. 1-7	54.000	961.68	961.22	0.85	18	0.01	10.61	6.78	12.60	1.24	962.93	968.91
PLUG 1-9	C.I. 1-8	23.000	962.41	962.18	1.00	18	0.01	9.46	7.32	13.65	0.92	963.60	967.43
C.I. 2-1	C.I. 1-9	127.746	955.65	953.95	1.33	18	0.01	5.01	6.34	15.75	0.58	956.51	962.40
C.I. 2-2	C.I. 2-1	34.068	956.66	956.15	1.50	18	0.01	4.06	6.11	16.70	0.50	957.43	962.42
F.I. 2-3	C.I. 2-2	138.000	961.30	957.16	3.00	18	0.01	2.26	6.06	23.65	0.31	961.87	967.32
F.I. 3-1	F.I. 2-3	219.038	964.43	961.80	1.20	18	0.01	0.68	3.46	14.96	0.22	964.74	969.23
C.I. 6-1	M.H. 4-5	34.000	959.61	958.71	2.65	15	0.01	1.59	4.96	13.66	0.32	960.11	966.88
C.I. 7-2	E.S. 7-1	31.830	951.66	951.34	1.01	24	0.01	14.17	5.53	29.48	1.78	953.01 j	959.82
F.I. 7-3	C.I. 7-2	23.540	952.40	952.16	1.02	18	0.01	13.01	8.32	13.79	1.16	953.75	956.08
F.I. 7-4	F.I. 7-3	292.690	957.84	952.90	1.69	15	0.01	7.72	7.71	10.91	0.85	958.94	963.40
C.I. 5-1	C.I. 4-4	34.000	956.27	955.62	1.91	15	0.01	1.18	4.62	11.61	0.27	956.70	961.79
F.I. 9-1	E.S. 9-1	97.38	963.07	962.58	0.50	18	0.010	8.70	5.02	9.68	1.50	964.45	967.57

