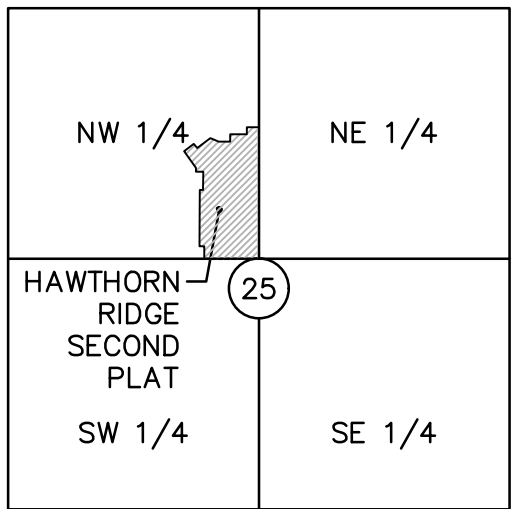


HAWTHORN RIDGE
SECOND PLAT
STREET & STORM SEWER PLANS

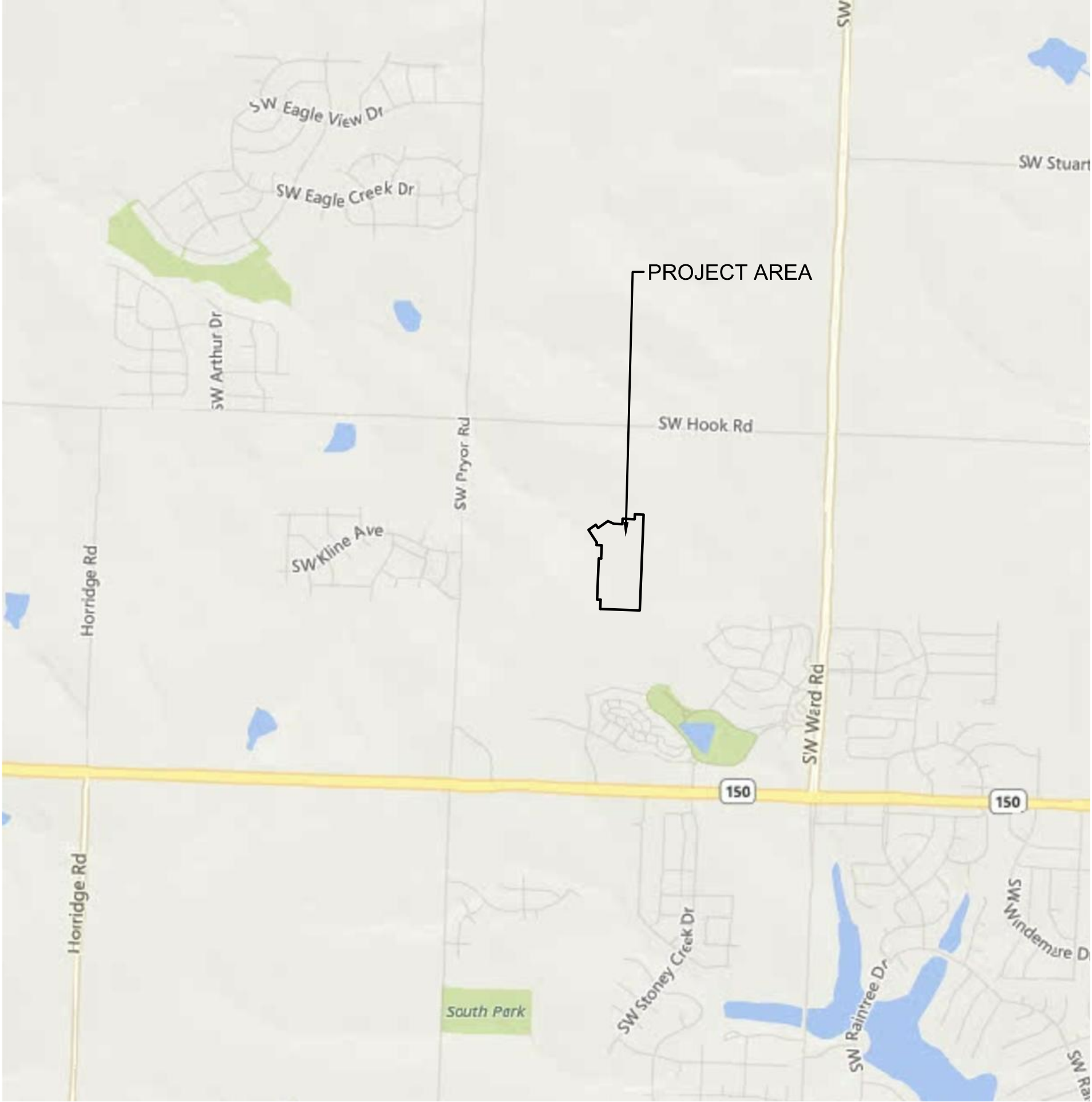
N/W 1/4 SECTION 25, TOWNSHIP 47 N, RANGE 32 W.
IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI



LOCATION MAP
Sec. 25, Twp. 47 N., Rge. 32 W.
(N.T.S.)

PROJECT TEAM & UTILITY CONTACT LIST	
OWNER / DEVELOPER CLAYTON PROPERTIES GROUP, INC. D.B.A. SUMMIT HOMES 120 SE 30TH STREET CONTACT: VINCENT WALKER LEE'S SUMMIT, MO 64082 PHONE: 816.246.6700 EMAIL: VINCENT@SUMMITHOMESKC.COM	UTILITY SERVICE NUMBERS NAME: LEE'S SUMMIT PUBLIC WORKS PHONE: 816-969-1800 NAME: LEE'S SUMMIT WATER & SERVICES DEPARTMENT PHONE: 816-969-1940 NAME: SPIRE (MGE) PHONE: 314-342-0500 NAME: AT&T PHONE: 800-286-8313 NAME: KOP&L PHONE: 816-471-5275 NAME: SPECTRUM (TWC) PHONE: 877-772-2253 NAME: GOOGLE FIBER PHONE: 877-454-6959
ENGINEER OLSSON 1301 BURLINGTON ST. SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: MELISSA DEGONIA PHONE: 816.361.1177 EMAIL: MDEGONIA@OLSSON.COM	
SURVEYOR OLSSON 1301 BURLINGTON ST. SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: JASON ROUDEBUSH PHONE: 816.361.1177 EMAIL: JROUDEBUSH@OLSSON.COM	

- ☐ NOT FOR CONSTRUCTION
- ☒ REVIEWED FOR CONSTRUCTION



PROPERTY DESCRIPTION:

A TRACT OF LAND IN THE NORTHWEST QUARTER OF SECTION 25, TOWNSHIP 47 NORTH, RANGE 32 WEST OF THE 5TH PRINCIPAL MERIDIAN IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, AND A PORTION OF TRACT E, OF HAWTHORN RIDGE 1ST PLAT, A SUBDIVISION OF LAND RECORDED AS DOCUMENT 2019E0020897 IN BOOK 182 AT PAGE 83, IN THE OFFICE OF RECORDER OF DEEDS FOR JACKSON COUNTY, MISSOURI ALL BEING BOUNDED AND DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHWEST CORNER OF SAID NORTHWEST QUARTER OF SECTION 25; THENCE SOUTH 87°46'49" EAST ON THE SOUTH LINE OF SAID NORTHWEST QUARTER, 2,653.29 FEET TO THE SOUTHEAST CORNER OF SAID NORTHWEST QUARTER, (CENTER OF SECTION) AND THE POINT OF BEGINNING OF THE TRACT OF LAND TO BE HEREIN DESCRIBED; THENCE ON SAID SOUTH LINE OF SAID NORTHWEST QUARTER, NORTH 87°46'49" WEST, 577.00 FEET; THENCE LEAVING SAID SOUTH LINE, NORTH 02°13'11" EAST, 135.00 FEET; THENCE NORTH 87°46'49" WEST, 50.79 FEET; THENCE NORTH 02°18'36" EAST, 596.57 FEET; THENCE SOUTH 87°41'24" EAST, 37.00 FEET; THENCE NORTH 02°18'36" EAST, 192.00 FEET; THENCE NORTH 87°41'24" WEST, 75.58 FEET; THENCE NORTH 02°18'36" EAST, 39.05 FEET; THENCE NORTH 33°13'50" WEST, 218.11 FEET TO THE SOUTHWESTERLY CORNER OF LOT 21 OF SAID HAWTHORN RIDGE 1ST PLAT; THENCE ON THE SOUTHERLY LINE OF SAID HAWTHORN RIDGE 1ST PLAT THE FOLLOWING 9 CALLS, NORTH 54°57'38" EAST, 130.00 FEET; THENCE SOUTH 35°02'22" EAST, 58.00 FEET; THENCE NORTH 54°57'38" EAST, 175.90 FEET; THENCE SOUTH 65°30'07" EAST, 95.33 FEET; THENCE SOUTH 87°41'24" EAST, 121.73 FEET; THENCE NORTH 02°18'36" EAST, 78.00 FEET; THENCE SOUTH 87°41'24" EAST, 175.00 FEET; THENCE NORTH 02°18'36" EAST, 72.00 FEET; THENCE SOUTH 87°41'24" EAST, 130.00 FEET TO THE SOUTHEASTERLY CORNER OF LOT 28 OF SAID HAWTHORN RIDGE 1ST PLAT AND A POINT ON THE EAST LINE OF SAID NORTHWEST QUARTER; THENCE ON SAID EAST LINE, SOUTH 02°18'36" WEST, 1,392.58 FEET TO THE POINT OF BEGINNING. CONTAINING 827,409 SQUARE FEET OR 19.00 ACRES, MORE OR LESS.

BENCHMARK

RR SPIKE IN SOUTH FACE OF POWER POLE ON NORTH SIDE OF SW. HOOK ROAD, IMMEDIATELY WEST OF DRIVEWAY FOR HOUSE#1622. ELEVATION= 1024.63'

SHEET INDEX	
Sheet Number	Sheet Title
C100	COVER SHEET
C101	GENERAL NOTES
C102	GENERAL LAYOUT
C103	GRADING PLAN
C104	TYPICAL SECTIONS
C105	SWALE PLAN & PROFILE
C106	SWALE PLAN & PROFILE
C107	SWALE PLAN & PROFILE
C108	SWALE PLAN & PROFILE
C109	ROAD PLAN & PROFILE
C110	ROAD PLAN & PROFILE
C111	ROAD PLAN & PROFILE
C112	ROAD PLAN & PROFILE
C113	ROAD PLAN & PROFILE
C114	ROAD PLAN & PROFILE
C115	ROAD PLAN & PROFILE
C116	ROAD PLAN & PROFILE
C117	TRAFFIC CONTROL
C118	SIGN DETAILS
C119	ROADWAY MARKING DETAILS
C120	SPOT ELEVATIONS
C121	SPOT ELEVATIONS
C122	SPOT ELEVATIONS
C123	SPOT ELEVATIONS
C124	STORM PLAN & PROFILE
C125	STORM PLAN & PROFILE
C126	STORM PLAN & PROFILE
C127	STORM PLAN & PROFILE
C128	STORM PLAN & PROFILE
C129	STORM PLAN & PROFILE
C130	STORM PLAN & PROFILE
C131	STORM PLAN & PROFILE
C132	STORM PLAN & PROFILE

C133	STORM PLAN & PROFILE
C134	STORM PLAN & PROFILE
C135	STORM PLAN & PROFILE
C136	STORM SEWER DETAILS
C137	STORM SEWER DETAILS
C138	DRAINAGE PLAN
C139	DRAINAGE TABLES
C140	DRAINAGE TABLES
C141	MASTER DRAINAGE PLAN
C142	SITE DISTURBANCE PHASE 1
C143	SITE DISTURBANCE PHASE 2
C144	SITE DISTURBANCE PHASE 3
C145	SITE DISTURBANCE PHASE 4
C146	SEDIMENT BASIN DETAIL
C147	SITE DISTURBANCE DETAILS
C148	SITE DISTURBANCE DETAILS

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

Julie E. Sellers
JULIE E. SELLERS, P.E.
CIVIL ENGINEER
MO# 2017000367

10/7/20
DATE

COVER SHEET
STREET & STORM SEWER PLANS

HAWTHORN RIDGE
SECOND PLAT

LEE'S SUMMIT, MISSOURI

2019

drawn by: _____ D.A.H.O.
checked by: _____ M.G.D.
designed by: _____ B.M.W.
QA/QC by: _____ N.D.H.
project no.: 019-1605
date: 07-12-2018

SHEET
C100

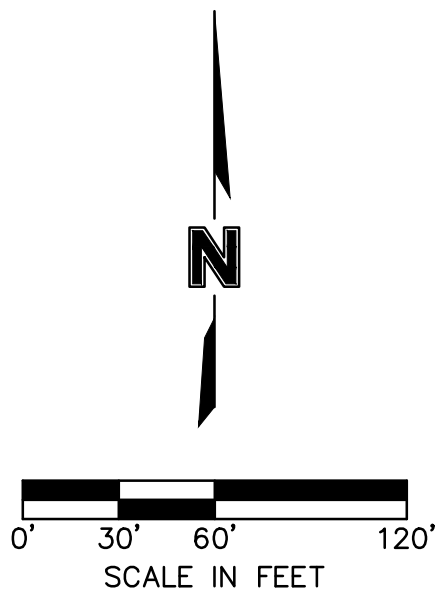
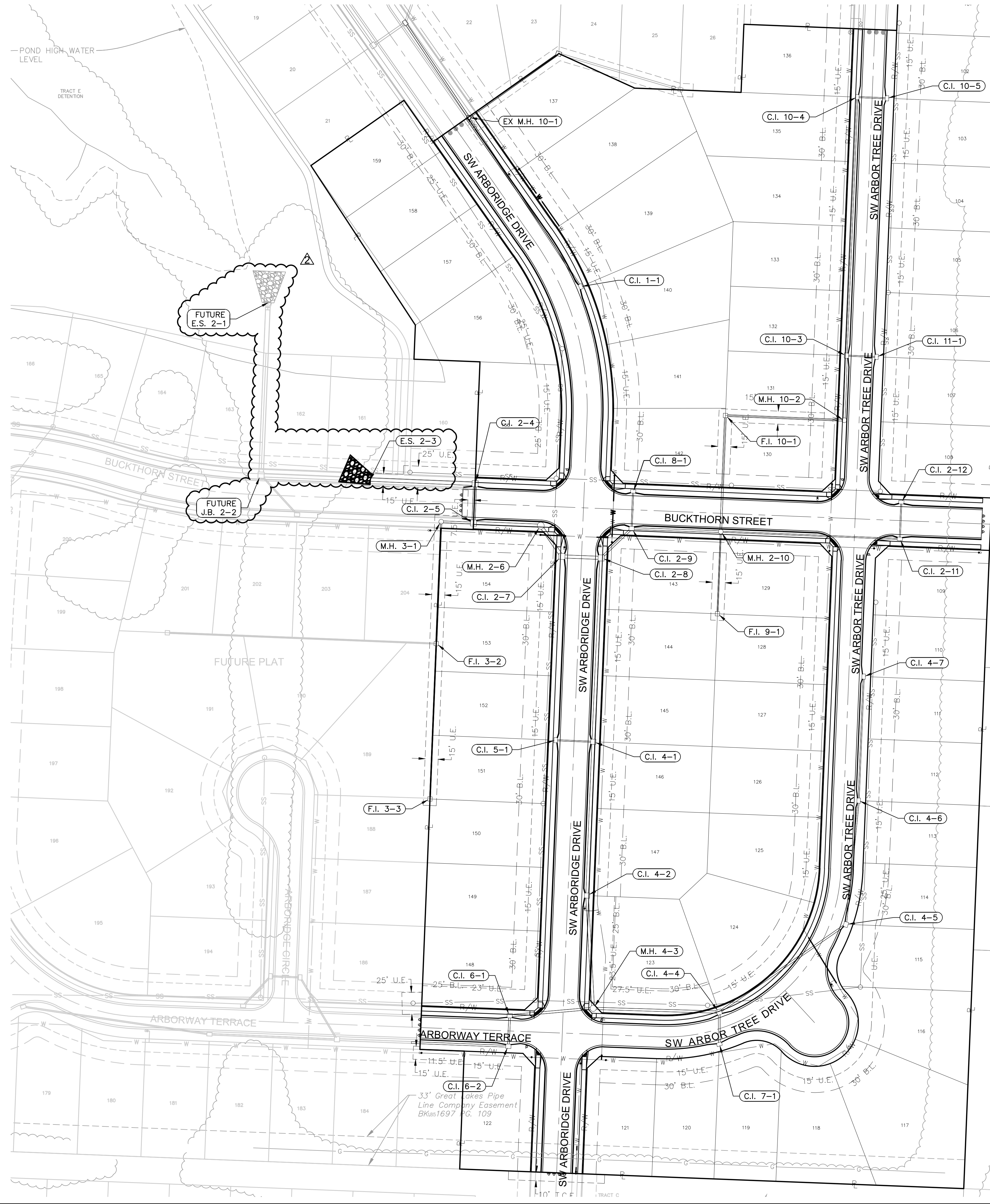


JULIE E. SELLERS, P.E.
MO# 2017000367

REVISIONS	
NO. REV.	DATE
1	08-12-2019
2	10-02-2020

REVISIONS DESCRIPTION	
1	REVISED PER CITY COMMENTS STORM LINE 2 ALIGNMENT CHANGED
2	

SHEET
C100



Hawthorn Ridge 2nd Plat Lot Fill information			
Lot Number	Max depth of fill (Over 2' fill placed)	Existing slopes greater than 5:1	Proposed slopes greater than 3:1
101			
102			
103			
104			
105			
106			
107		X	
108			
109			
110			
111			
112			
113			
114			
115			
116			
117			
118			
119			
120			
121			
122			
123	2.1		
124			
125			
126			
127	2.1	X	
128	3.7	X	
129	3.7	X	
130		X	
131	2.3	X	
132	2.3		
133			
134		X	
135		X	
136		X	
137			
138			
139			
140	2.3		
141	3.0		
142		X	
143		X	
144		X	
145		X	
146			
147			
148			
149	3.1		
150	4.9		
151	6.0		
152	6.4		
153	6.4		
154	6.1		
155	5.6		
156	4.7	X	
157		X	
158		X	
159		X	



GRADING NOTES:

1. CONTRACTOR SHALL ADHERE TO THE "STANDARDS, SPECIFICATIONS AND DESIGN CRITERIA" SECTION 2100 AS ADOPTED BY LEE'S SUMMIT, MO (LATEST EDITION), FOR EXCAVATION AND EMBANKMENT WORK WITHIN THE PROPOSED RIGHT-OF-WAY, OR SPECIFICATIONS IN THESE PLANS, WHICHEVER IS STRICTER.
2. AREAS OF CONSTRUCTION SHALL BE STRIPPED OF ALL VEGETATION, ORGANIC MATTER AND TOPSOIL, PRIOR TO PLACEMENT OF FILL MATERIAL. THE EXPOSED GRADES SHALL BE OBSERVED AND PROOF ROLLED USING A LOADED TANDEM AXLE DUMP TRUCK WITH A MINIMUM GROSS WEIGHT OF 20 TONS OR SIMILAR EQUIPMENT.
3. WHERE THE EXISTING GRADE IS STEEPER THEN ONE UNIT VERTICAL IN FIVE UNITS HORIZONTAL AND THE DEPTH OF FILL EXCEEDS 5 FEET, BENCHING OF THE FILL INTO THE NATURAL SLOPE SHALL BE PERFORMED. A KEY SHALL BE PROVIDED AT THE TOE OF THE FILL THAT IS AT LEAST 10 FEET WIDE AND 2 FEET IN DEPTH. BENCHES SHOULD BE CUT AS THE FILL PROGRESSES AND SHOULD HAVE A MAXIMUM BENCH HEIGHT OF 3 FEET.
4. MATERIAL FOR USE AS FILL SHALL BE IDENTIFIED AND SAMPLED FOR CLASSIFICATION, STANDARD PROCTOR (ASTM D-698) AND ATTERBERG LIMITS (ASTM D-4318) TESTING PRIOR TO COMMENCING FILL PLACEMENT.
5. ALL FILL OUTSIDE OF RIGHT-OF-WAY SHOULD BE PLACED IN CONTROLLED LIFTS HAVING A MAXIMUM LOOSE LIFT THICKNESS OF 9".
6. FILL SHOULD BE COMPACTED TO A MINIMUM OF 95% OF THE MATERIALS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 (STANDARD PROCTOR COMPACTION).
7. MOISTURE CONTENT OF THE FILL AT THE TIME OF COMPACTION SHALL BE WITHIN A RANGE OF -1 TO +3 PERCENT OF OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D-698.
8. SEE SHEET C141 FOR MINIMUM LOU OPENINGS AND THIS SHEET FOR FILL DEPTHS FOR EACH LOT.

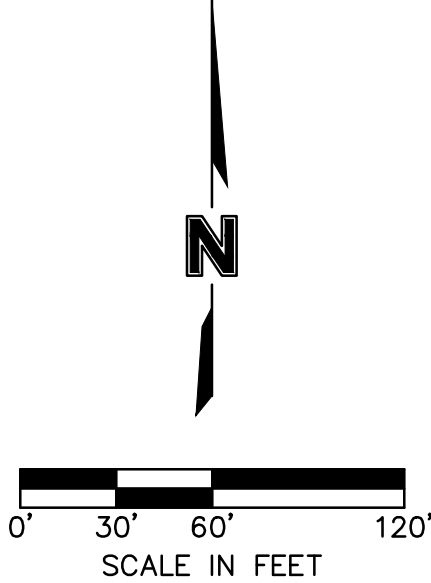
EARTHWORK QUANTITIES		
LOCATION	CUT (C.Y.)	FILL (C.Y.)
STREET	7,977	2,205
SITE	41,742	24,259
TOTAL	49,719	26,464

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.

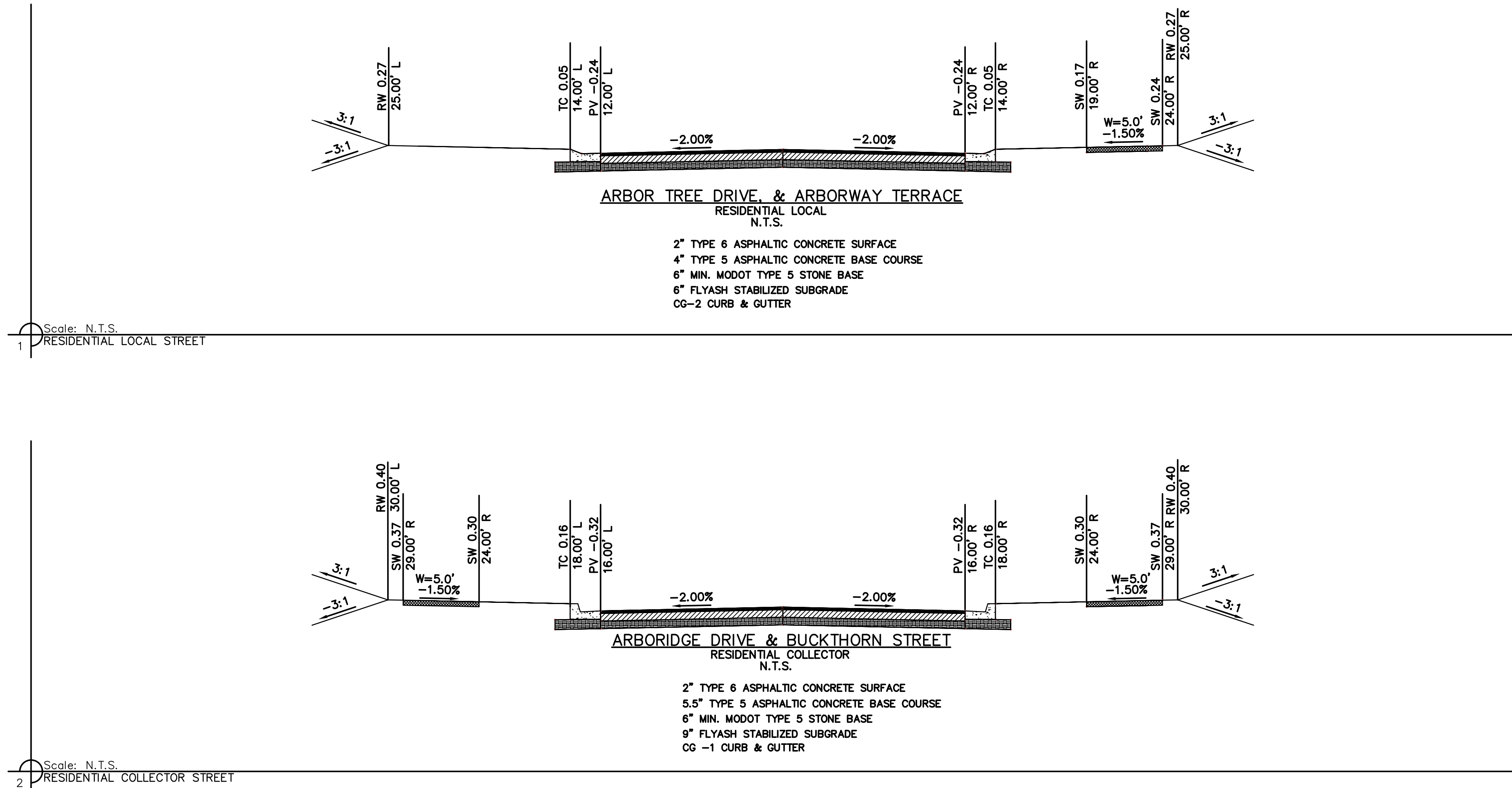
CONTRACTOR TO USE THIS
STOCKPILED MATERIAL WHEREVER
POSSIBLE BEFORE MOVING
MATERIAL FROM THE THIRD PLAT

WARNING
HIGH-PRESSURE PIPELINE
EXCAVATION AND/OR CONSTRUCTION PROHIBITED
WITHOUT COMPLIANCE WITH STATE ONE-CALL, AND
WITHOUT WRITTEN PERMISSION FROM
MAGELLAN PIPELINE COMPANY, L.P.



LEGEND	
	EXISTING INDEX CONTOURS
	EXISTING INTERMEDIATE CONTOURS
	PROPOSED INDEX CONTOURS
	PROPOSED INTERMEDIATE CONTOURS

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USER: bworthley



TYPICAL SECTIONS STREET & STORM SEWER PLANS

HAWTHORN RIDGE
SECOND PLAT

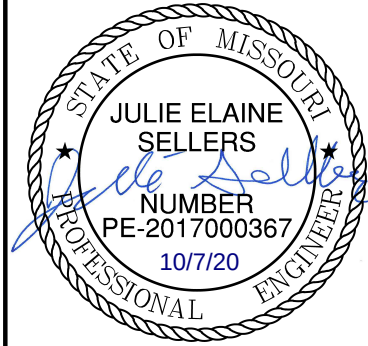
LEE'S SUMMIT, MISSOURI

drawn by: D.A.H.O
checked by: M.G.D
designed by: B.M.W
QA/QC by: N.D.H
project no.: 019-1605
date: 07-12-2019

SHEET
C104

[illegible]

JULIE E. SELLERS, P.E.

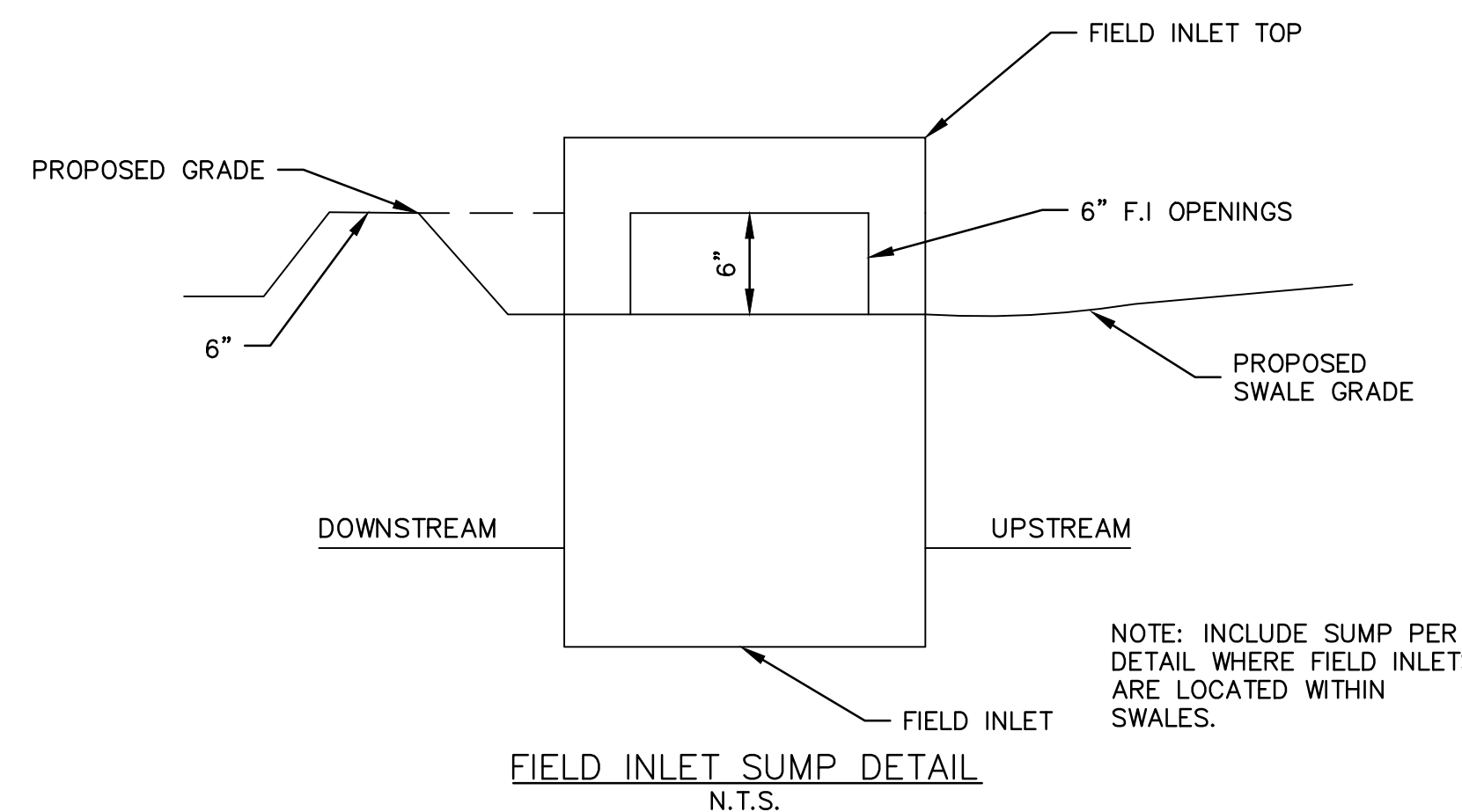
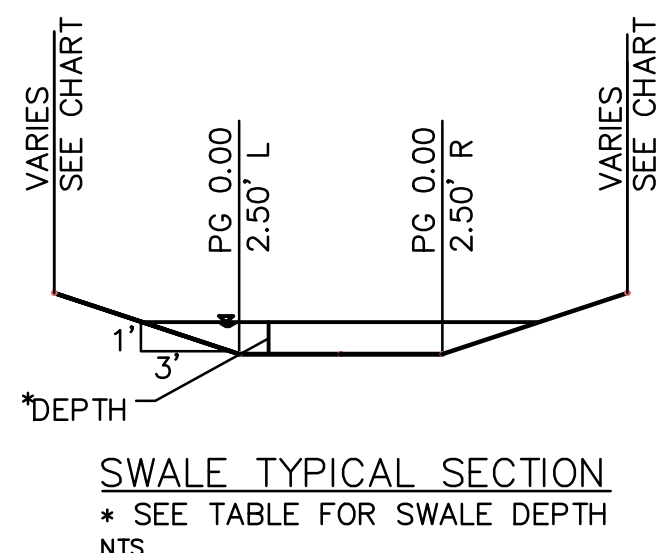
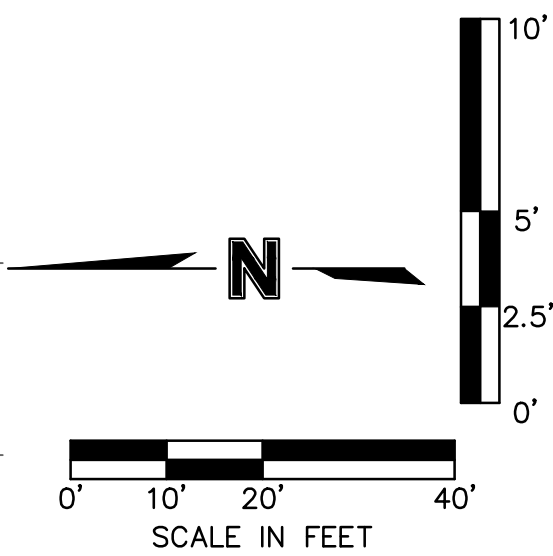
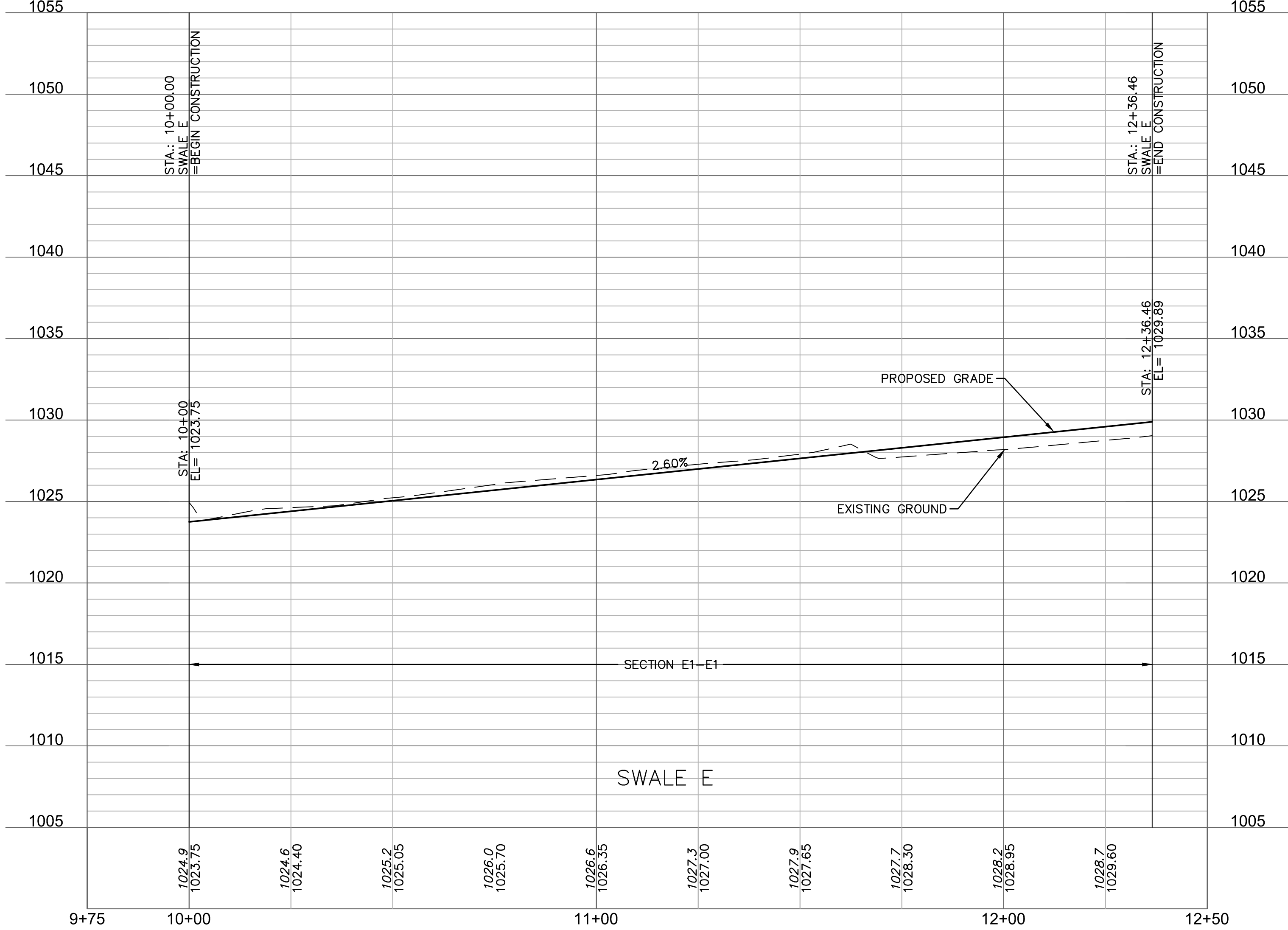


OLSSON - CIVIL ENGINEERING
MO CERTIFICATE OF AUTHORITY #:001592
1301 BURLINGTON, SUITE 100
NORTH KANSAS CITY, MO 64116 TEL

Olsson

Swale Design Table (100 Year Return Frequency)														
Section Data							Flow Data							
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 (ft ²)	Velocity (ft/sec)	Wetted Perimeter (ft)	Top Width (ft)	Specific Energy (ft)	Shear Stress (lbs/ft ²)
E1-E1	0.03	2.60%	1.25	3:1	3:1	5.00	3.92	0.25	1.44	2.73	6.58	6.50	0.37	0.35

Swale Drainage Area Table (100 year Return Frequency)						
Section	Drainage Area (ac.)	C	Tc (min)	i (in/hr)	K	Peak Flow (cfs)
E1-E1	0.60	0.51	5	10.32	1.25	3.92



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

OLSSON - CIVIL ENGINEERING
NO. CERTIFICATE OF AUTHORITY #001562
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TEL 816.361.1177
www.olsson.com

JULIE ELAINE SELLERS
NUMBER PE-2017000367
10/7/20
JULIE E. SELLERS, P.E.
MO# 2017000367

BY	REVISIONS DESCRIPTION	DATE	NO. REV.

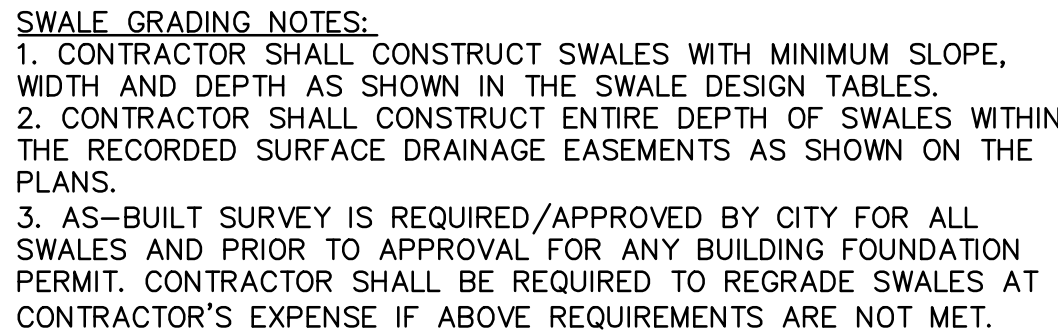
SWALE PLAN & PROFILE
STREET & STORM SEWER PLANS

HAWTHORN RIDGE
SECOND PLAT

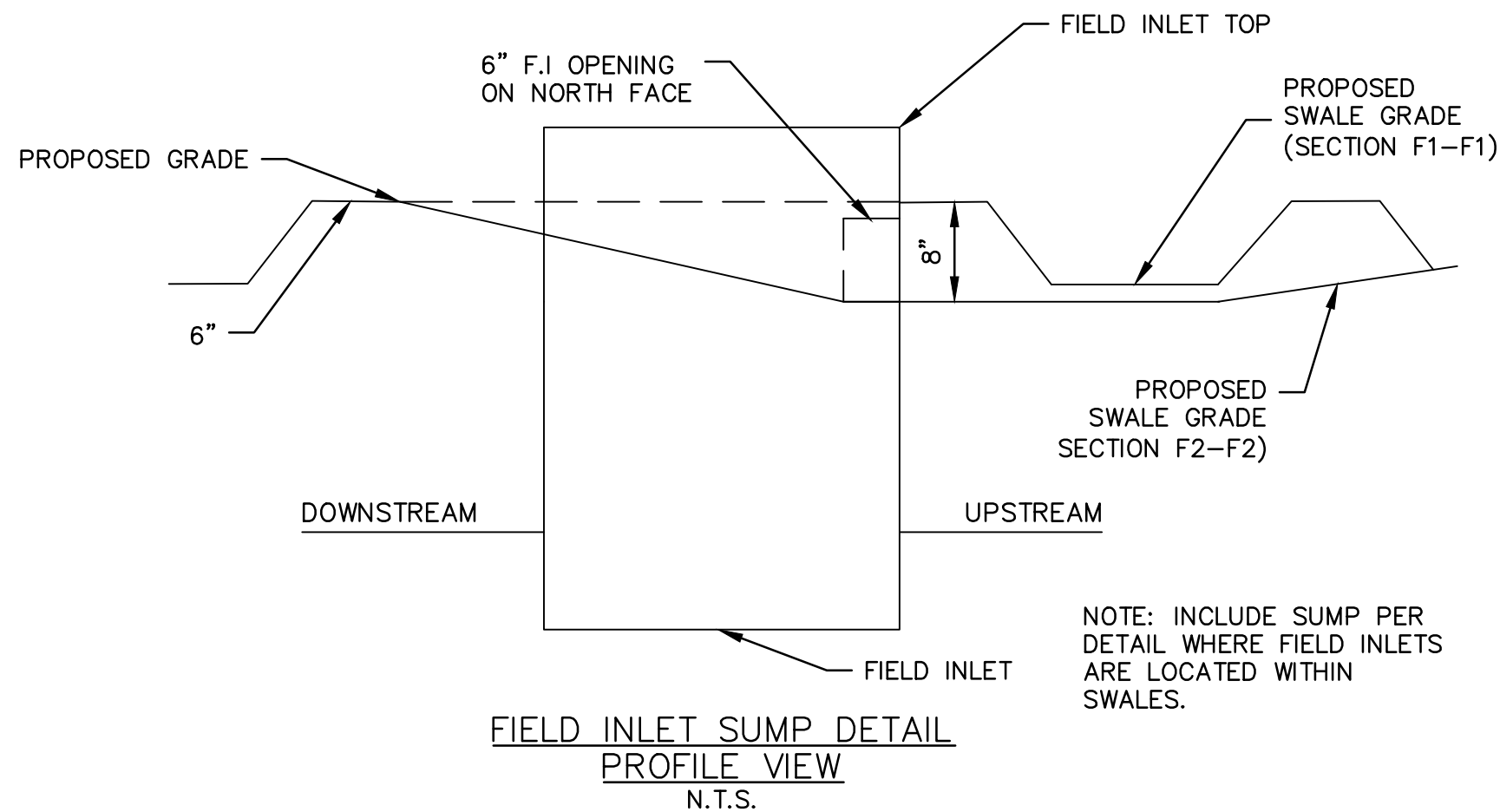
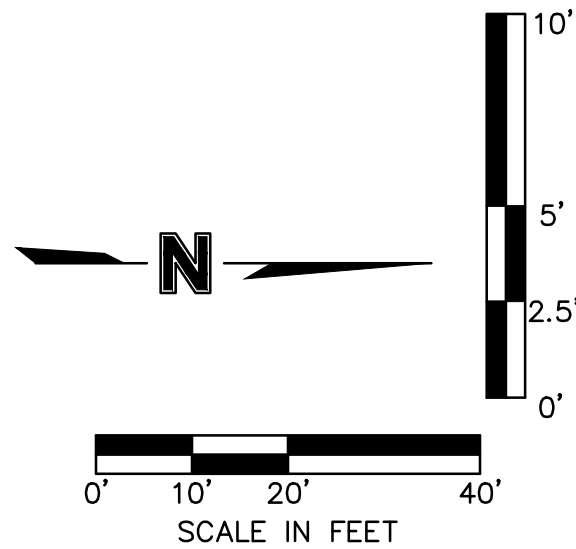
LEE'S SUMMIT, MISSOURI

drawn by: D.A.H.Q.
checked by: M.G.D.
designed by: B.M.W.
QA/QC by: N.D.H.
project no.: 019-1605
date: 07-12-2018

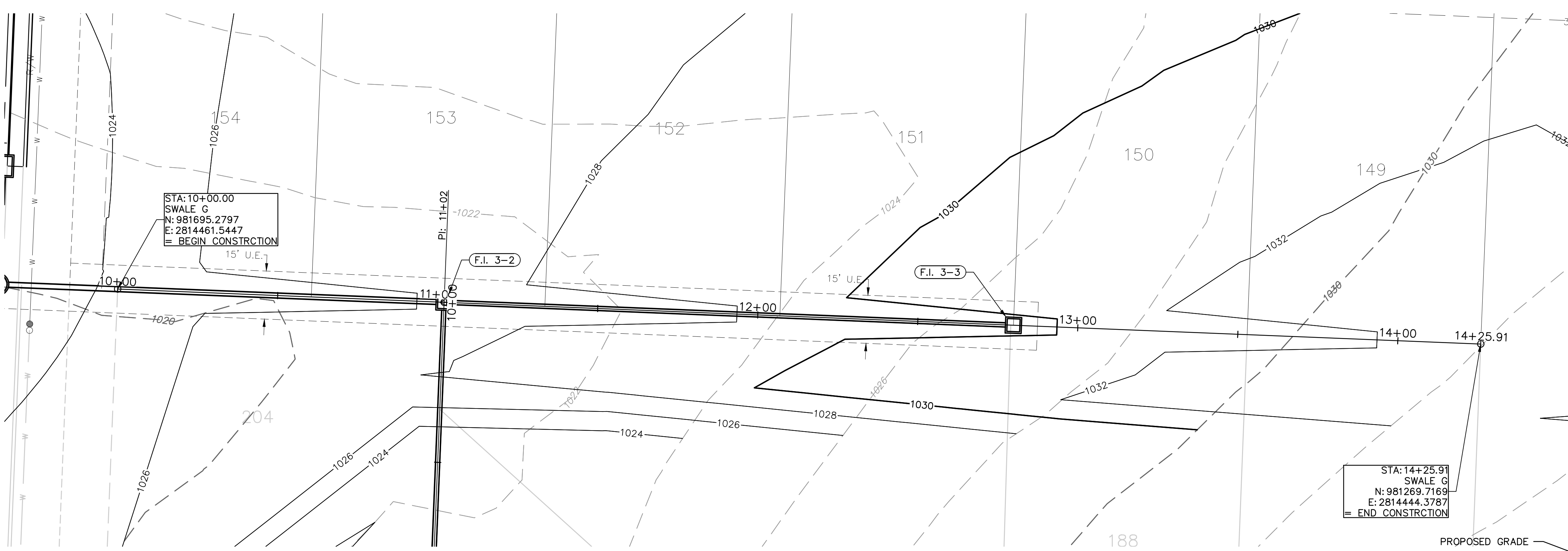
SHEET
C105



Swale Drainage Area Table (100 year Return Frequency)						
Section	Drainage Area	C	Tc	i	K	Peak Flow
	(ac.)		(min)	(in/hr)		(cfs)
F1-F1	0.38	0.51	5	10.32	1.25	2.50
F2-F2	0.14	0.51	5	10.32	1.25	0.92

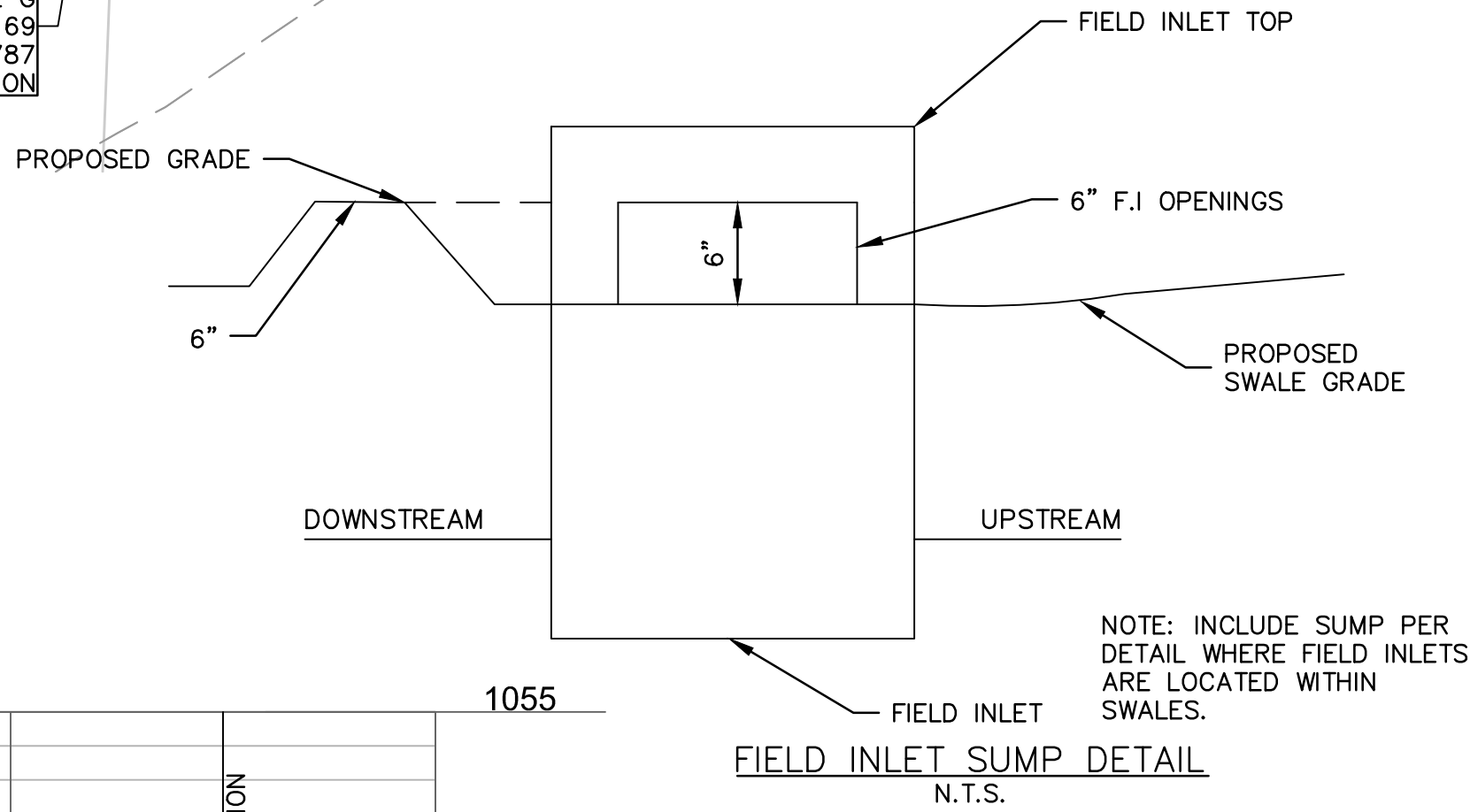
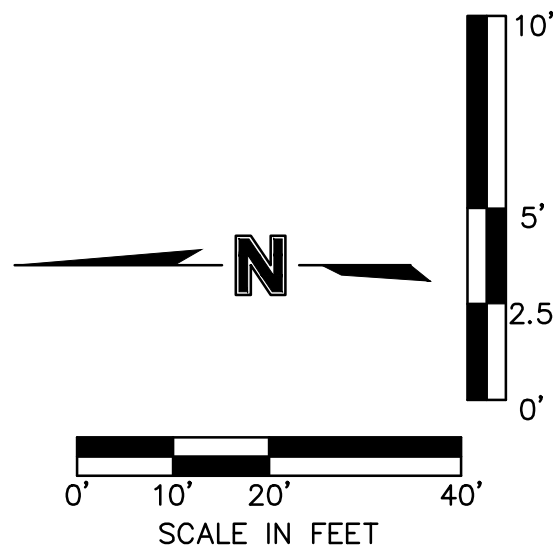


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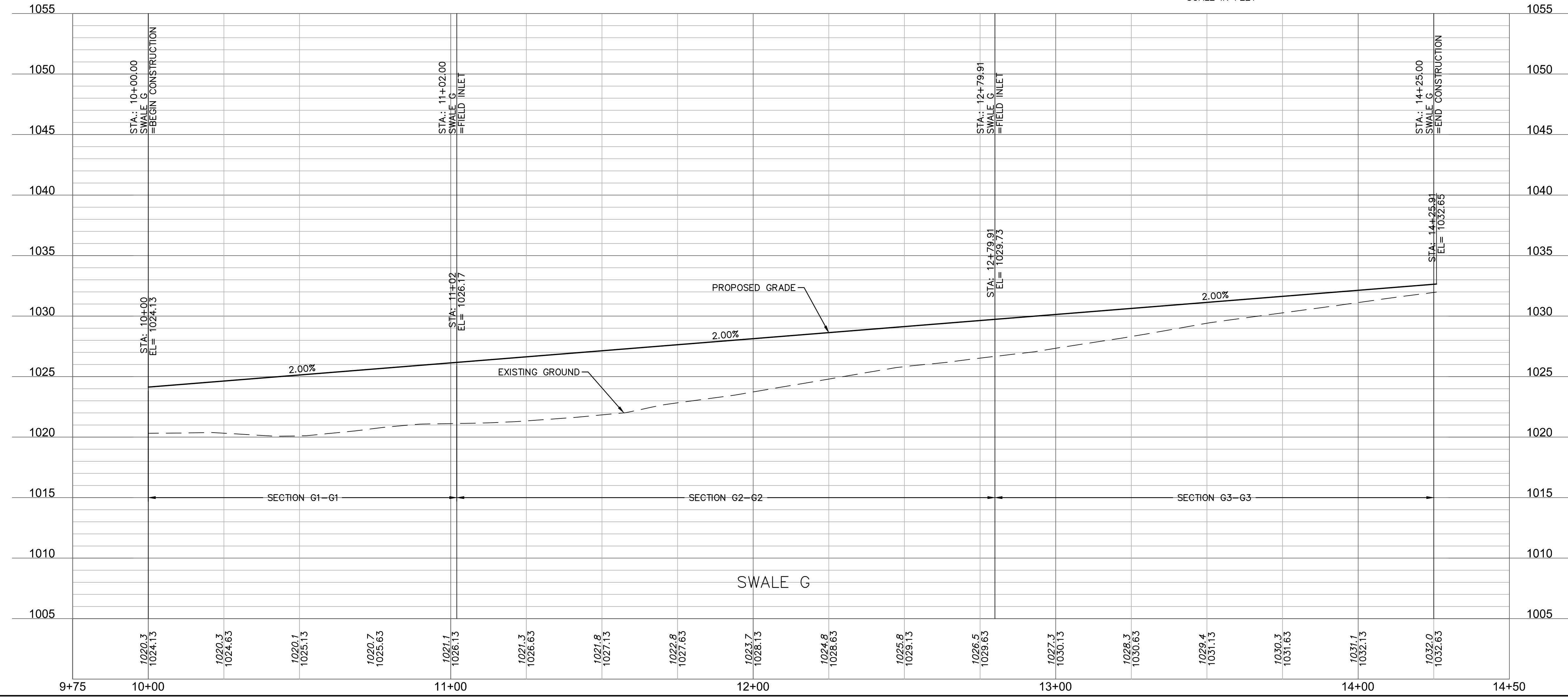


Swale Design Table (100 Year Return Frequency)													
Section Data							Flow Data						
SECTION	Manning's Coefficient	Channel Slope (%)	Min. Swale Depth (ft)	Left Side Slope (H:V)	Right Side Slope (H:V)	Bottom Width (ft)	Discharge (cfs)	Water Depth (ft)	Flow Area (ft²)	Velocity (ft/sec)	Wetted Perimeter (ft)	Top Width (ft)	Specific Energy (ft)
G1-G1	0.03	2.00%	1.07	3:1	3:1	5.00	0.34	0.07	0.37	0.93	5.44	5.42	0.08
G2-G2	0.03	2.00%	1.20	3:1	3:1	5.00	2.40	0.20	1.12	2.14	6.26	6.20	0.27
G3-G3	0.03	2.00%	1.24	3:1	3:1	5.00	3.28	0.24	1.37	2.39	6.52	6.44	0.33

Swale Drainage Area Table (100 year Return Frequency)						
Section	Drainage Area (ac.)	C	Tc (min)	i (in/hr)	K	Peak Flow (cfs)
G1-G1	0.05	0.51	5	10.32	1.25	0.34
G2-G2	0.36	0.51	5	10.32	1.25	2.40
G3-G3	0.50	0.51	5	10.32	1.25	3.28



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



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

JULIE E. SELLERS, P.E.
MO# 2017000367

BY

REVISIONS DESCRIPTION

DATE

NO. REV.

SWALE PLAN & PROFILE
STREET & STORM SEWER PLANS

HAWTHORN RIDGE
SECOND PLAT

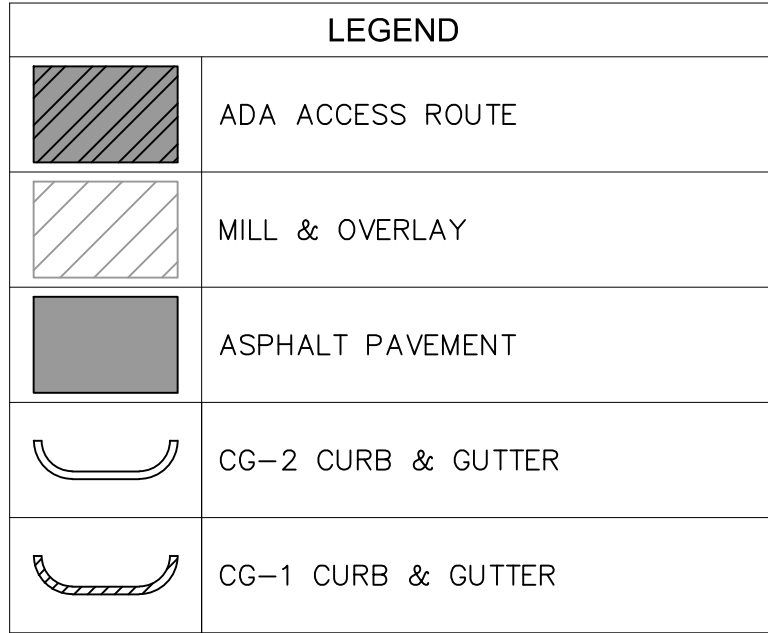
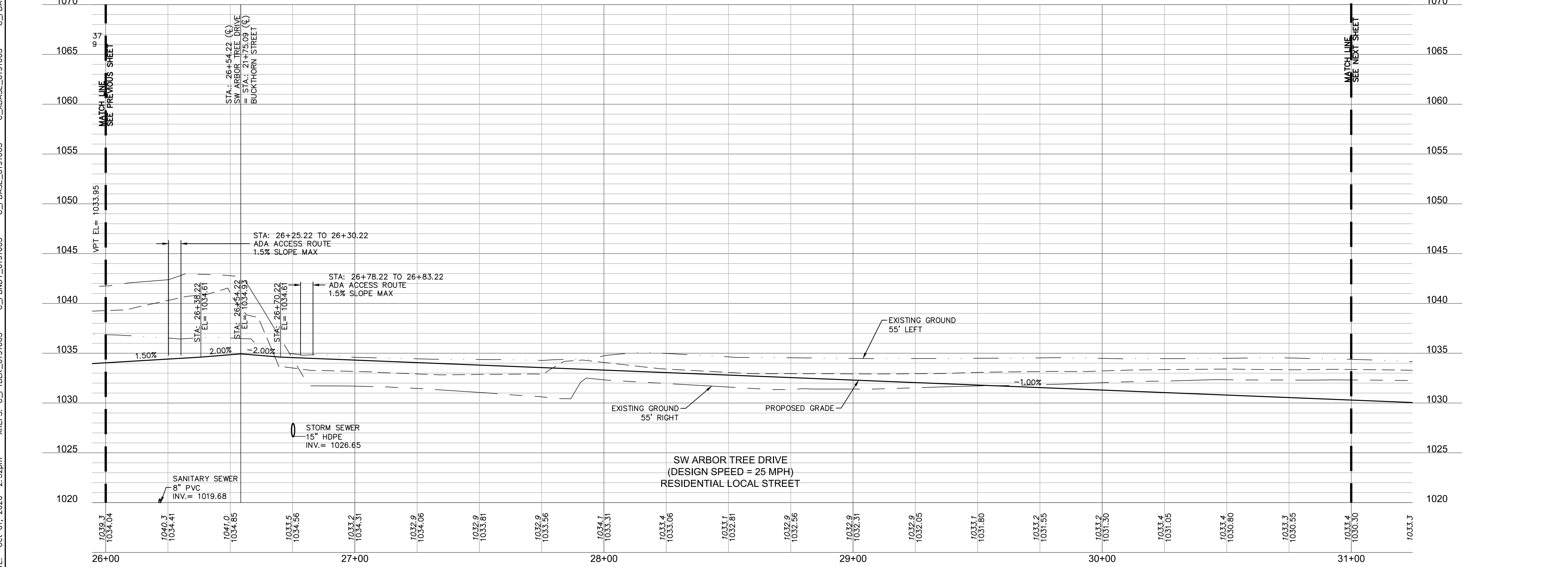
LEE'S SUMMIT, MISSOURI

drawn by: D.A.H.O.
checked by: M.G.D.
designed by: B.M.W.
QA/QC by: N.D.H.
project no.: 019-1605
date: 07-12-2018

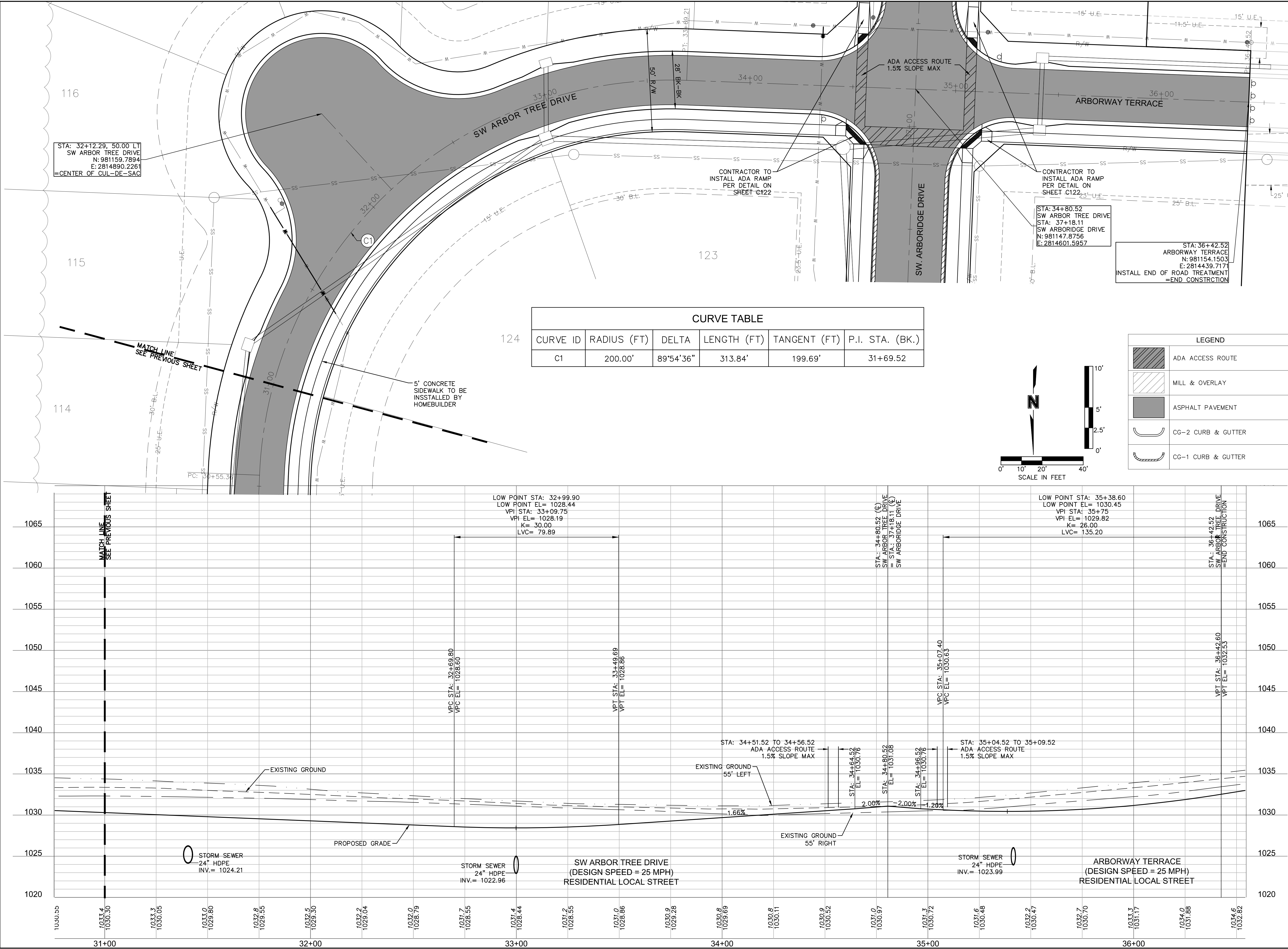
SHEET
C107

2019

REVISIONS



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2019

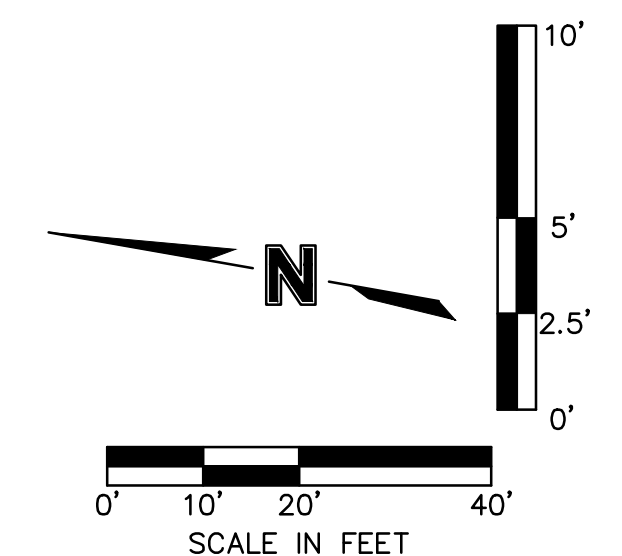
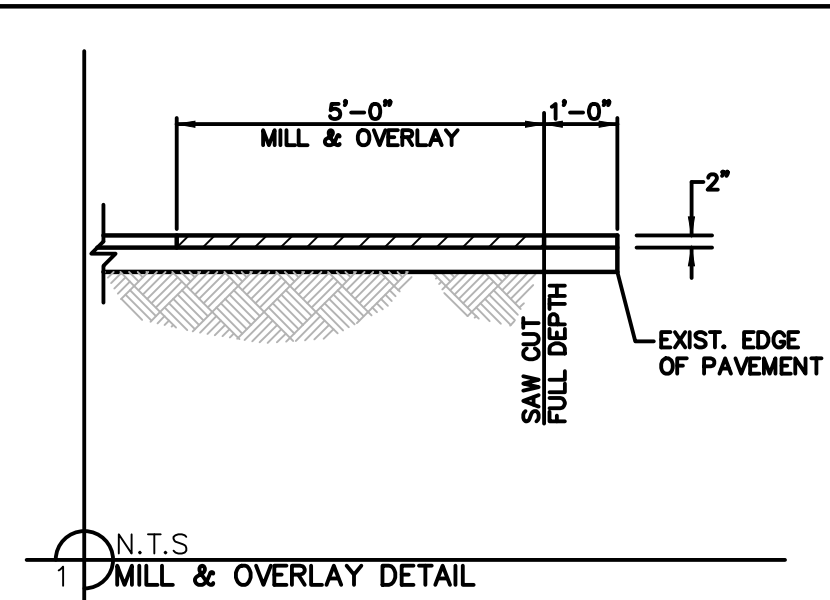
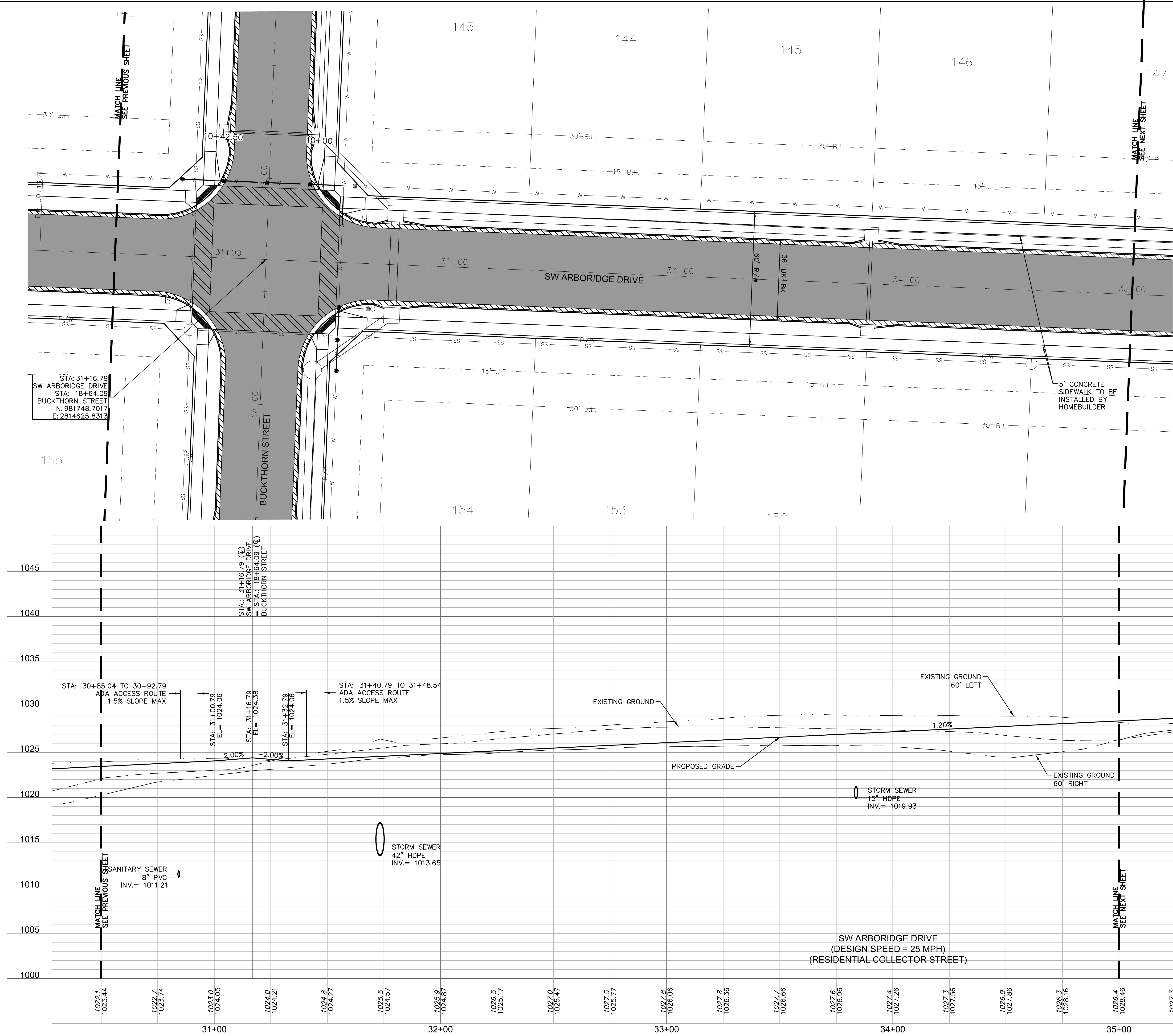
ROAD PLAN & PROFILE
STREET & STORM SEWER PLANS

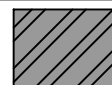
HAWTHORN RIDGE
SECOND PLAT

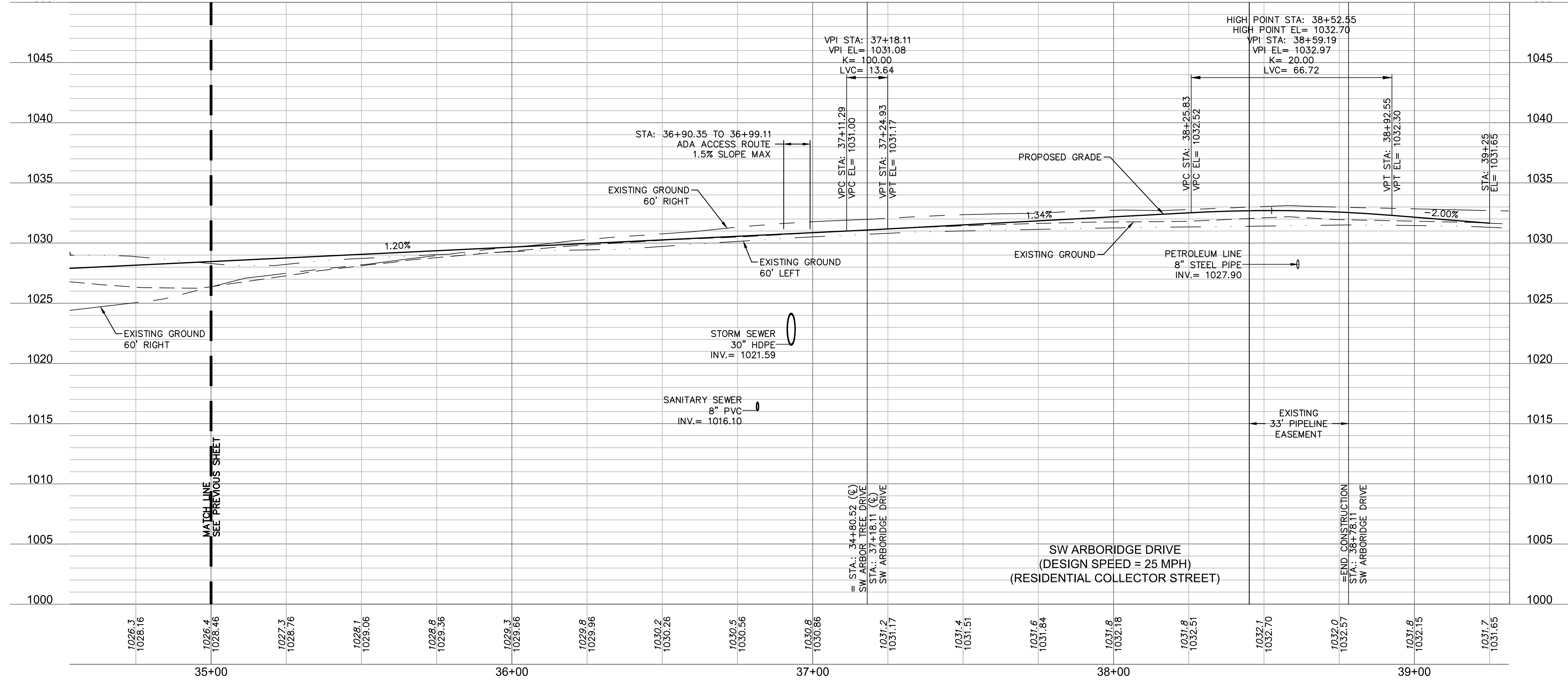
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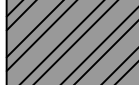
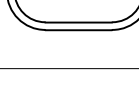
drawn by: D.A.H.Q.
checked by: M.G.D.
designed by: B.M.W.
QA/QC by: N.D.H.
project no.: 019-1605
date: 07-12-2018

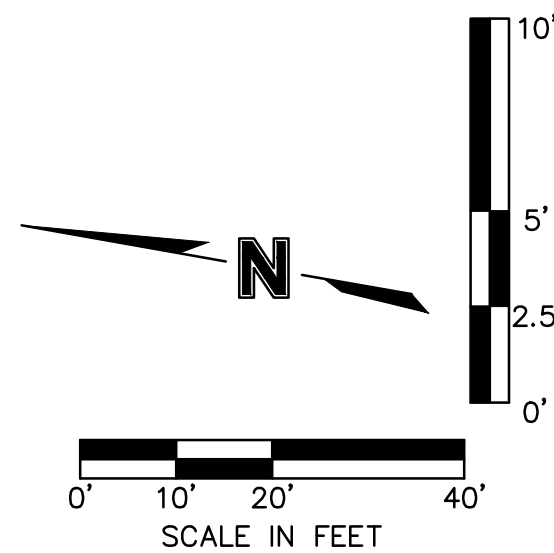
SHEET
C111



LEGEND	
	ADA ACCESS ROUTE
	MILL & OVERLAY
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER
	CG-1 CURB & GUTTER

USER: bworthley
191605 C_PU

LEGEND	
	ADA ACCESS ROUTE
	MILL & OVERLAY
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER
	CG-1 CURB & GUTTER



drawn by: D.A.H.
checked by: M.G.
designed by: B.M.
QA/QC by: N.D.
project no.: 019-160
date: 07-12-201

SHEET
C114

		C C C

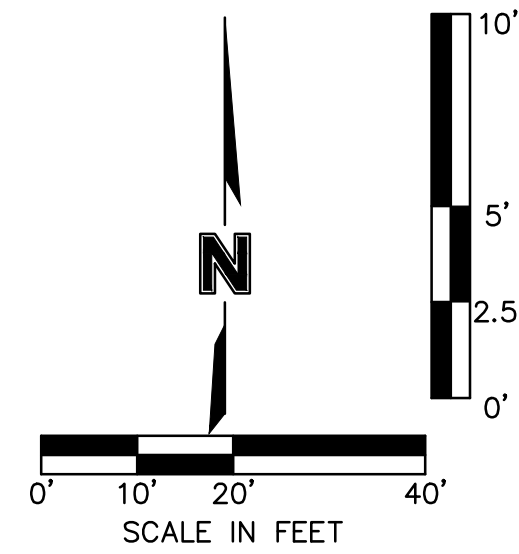
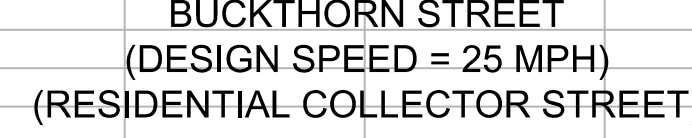
REVISIONS DESCRIPTION

BY	

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

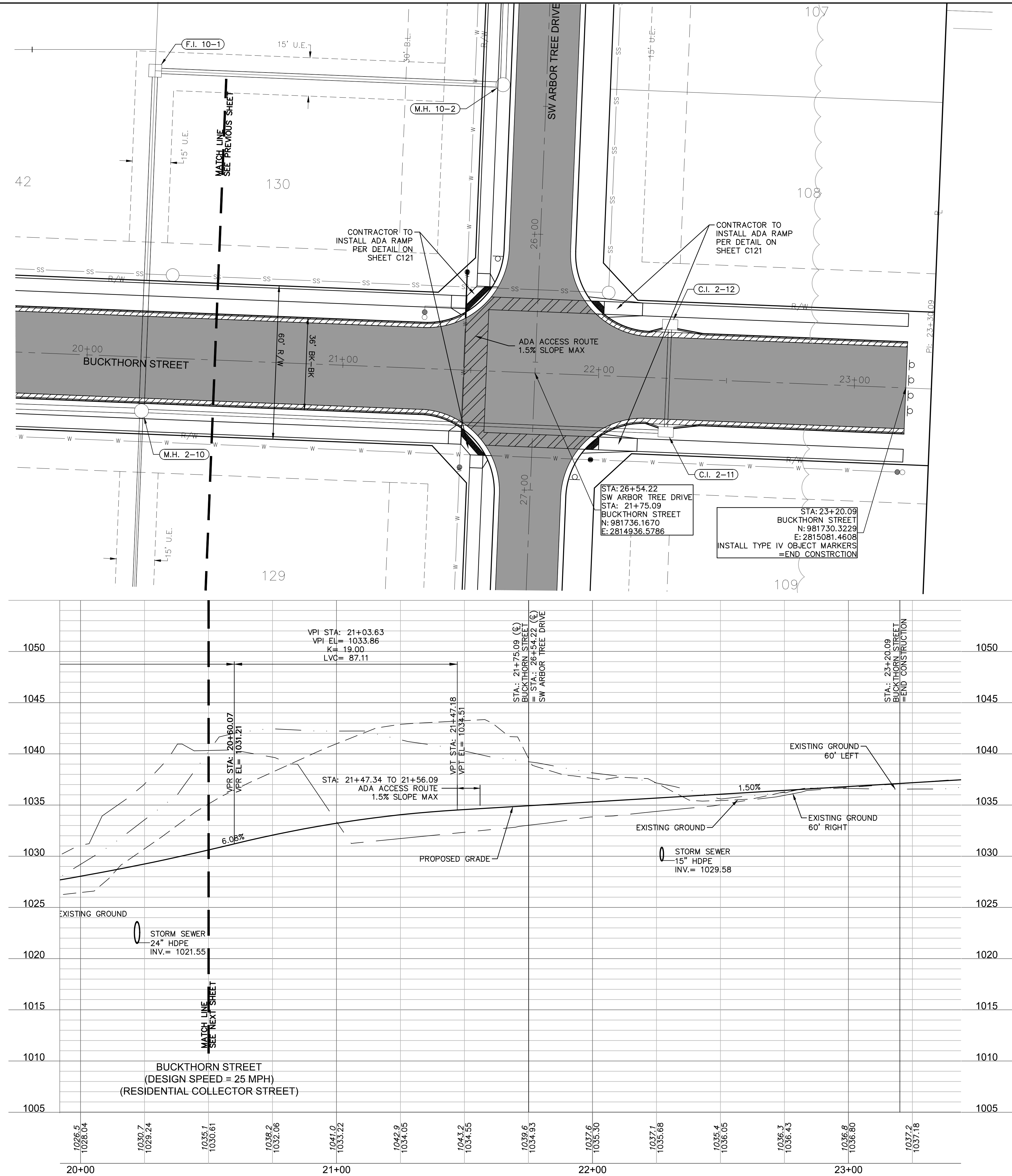
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NO CERTIFICATE OF AUTHORITY #001592
1301 BURLINGTON, SUITE 100
NORTH KANSAS CITY, MO 64116
TEL 816.361.1177
www.olsson.com

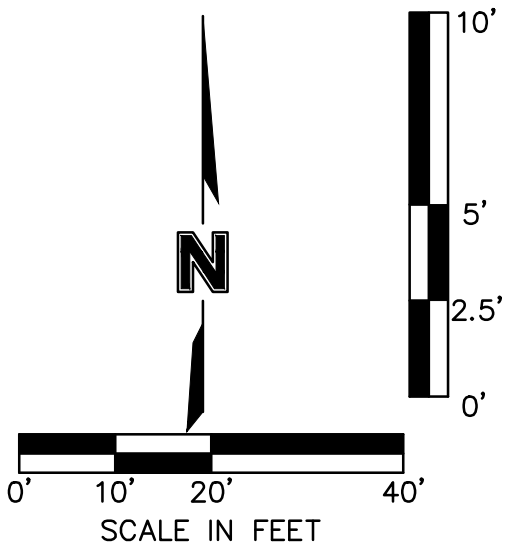


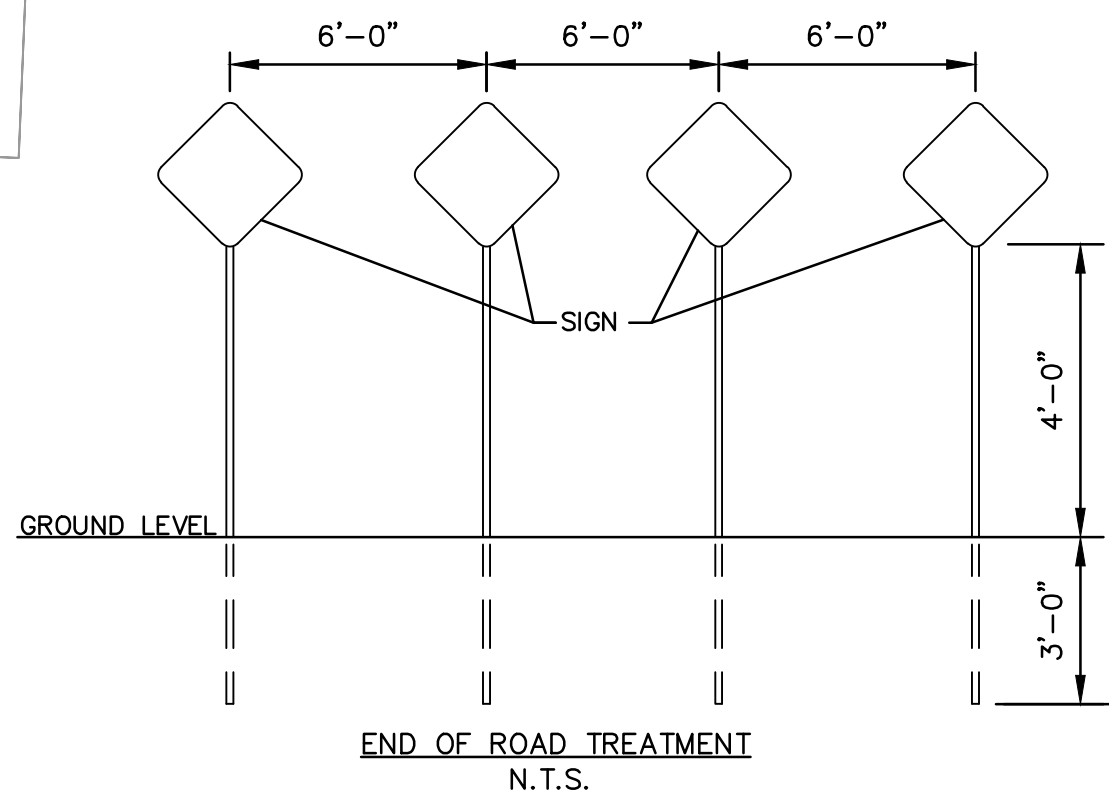
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	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER
	CG-1 CURB & GUTTER

SHEET
C115

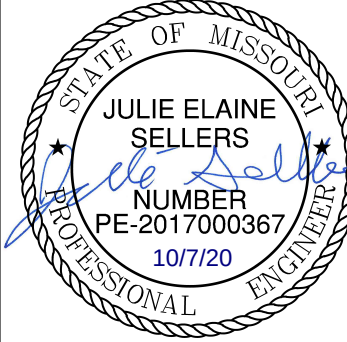


LEGEND	
	ADA ACCESS ROUTE
	MILL & OVERLAY
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER
	CG-1 CURB & GUTTER





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



JULIE E. SELLERS, P.E.
MO# 2017000367

[illegible]

REVISIONS

TRAFFIC CONTROL STREET & STORM SEWER PLANS

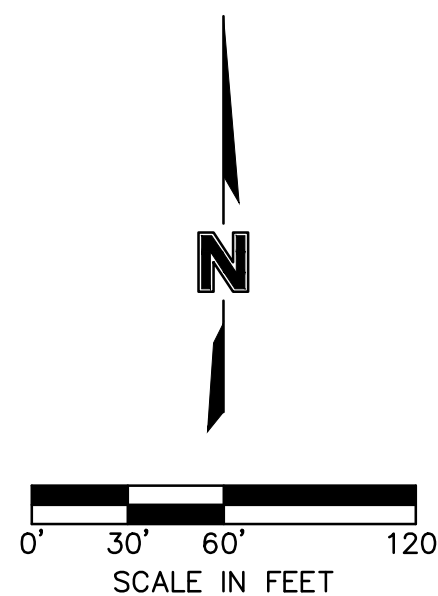
HAWTHORN RIDGE
SECOND PLAT

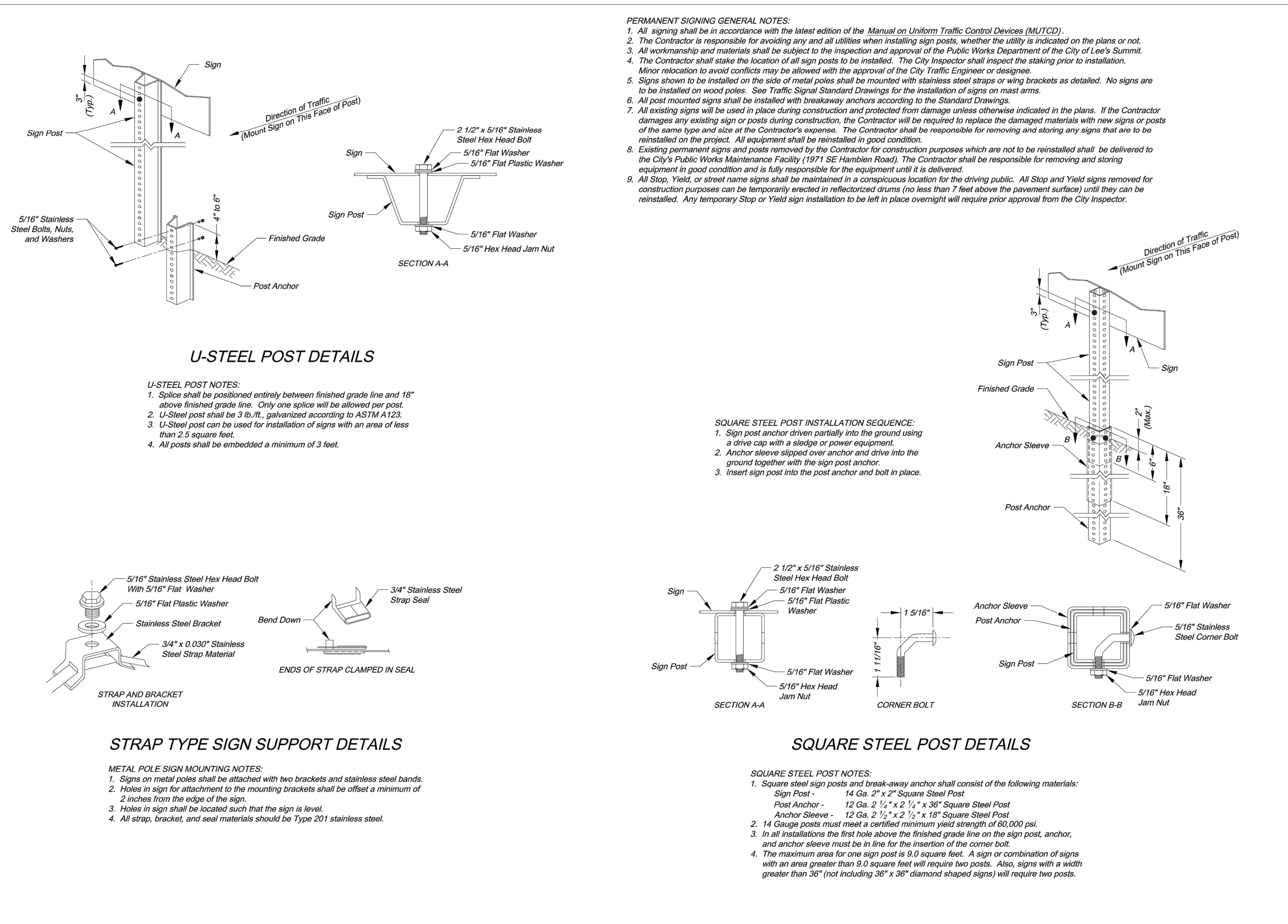
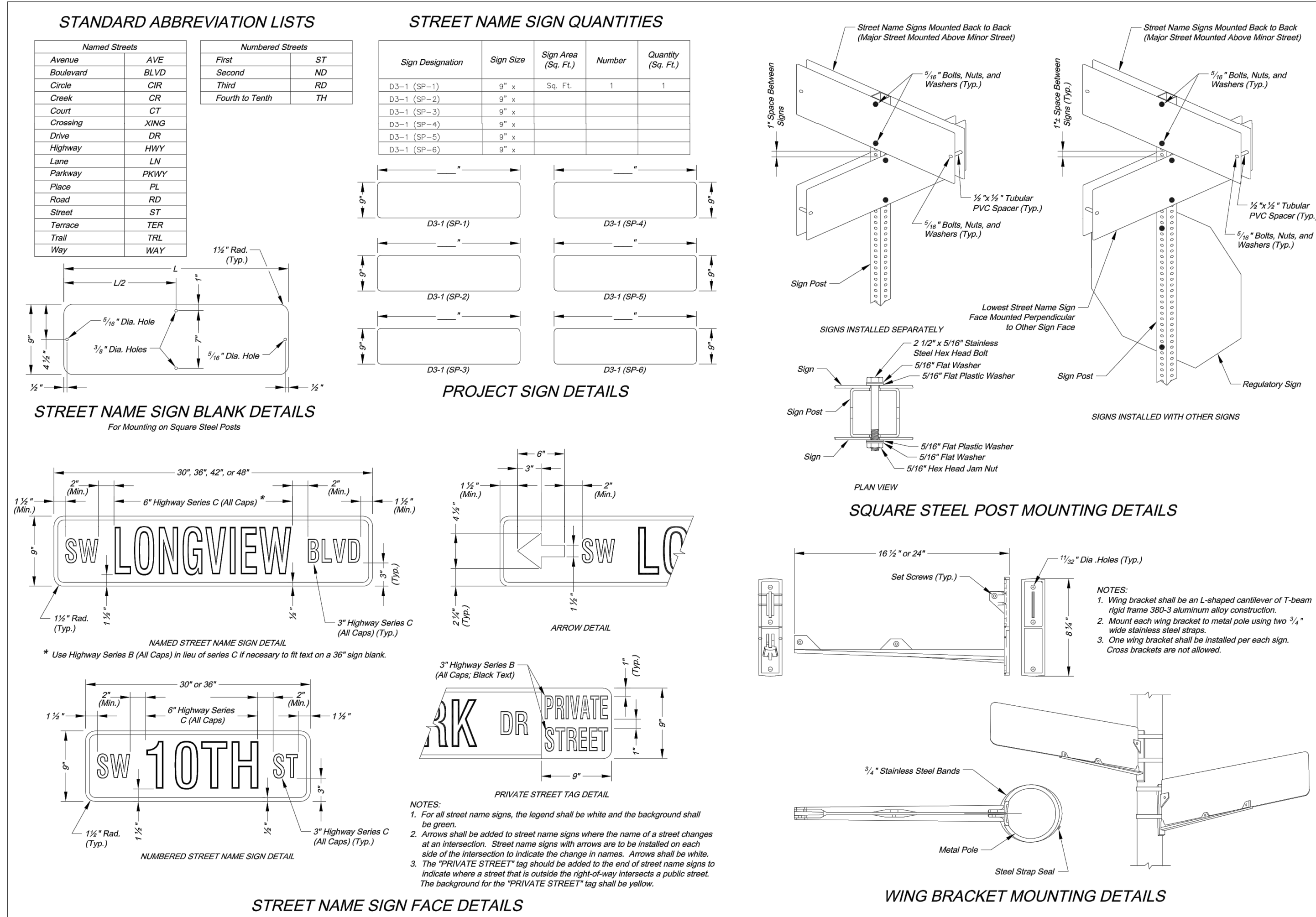
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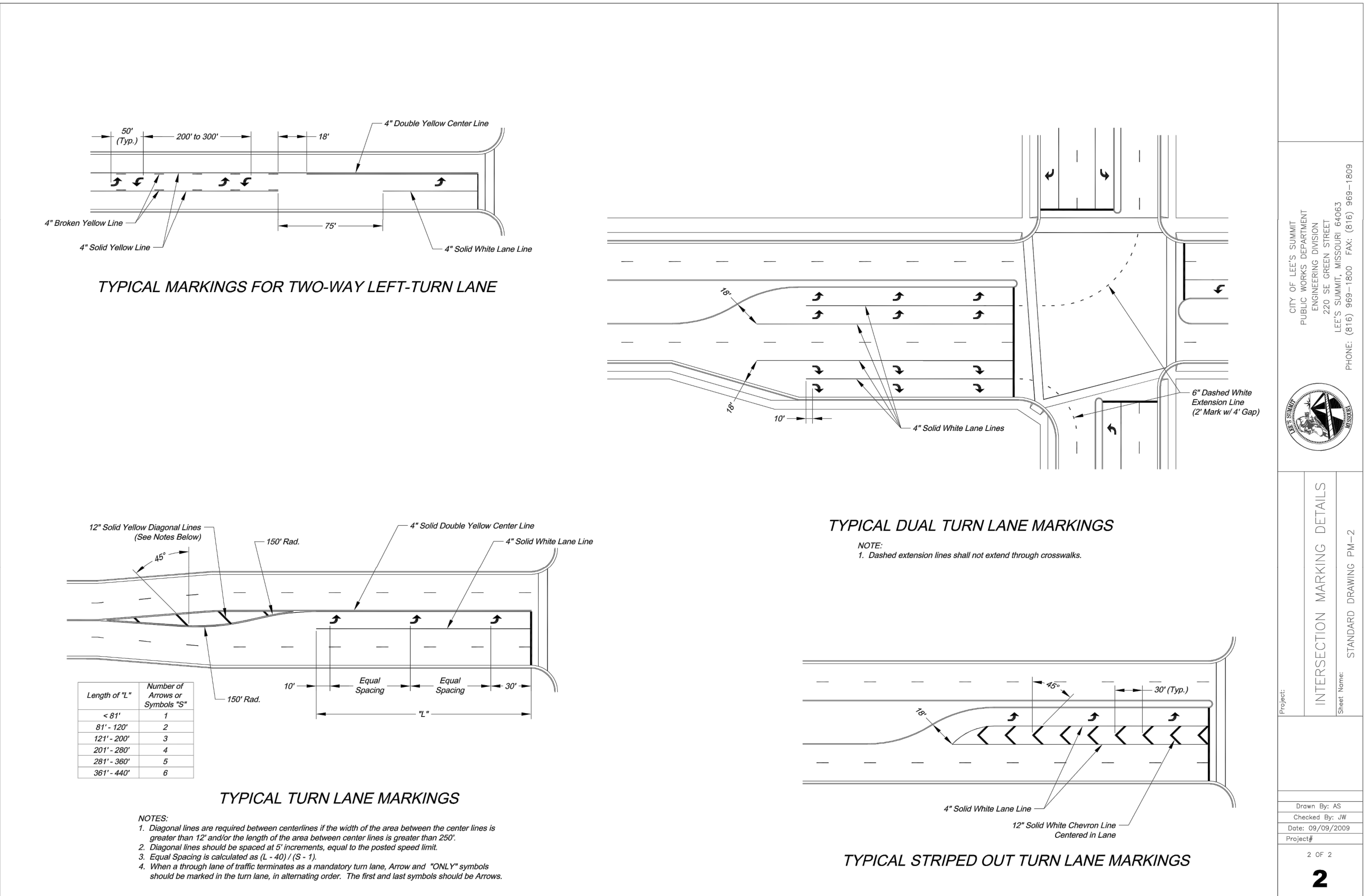
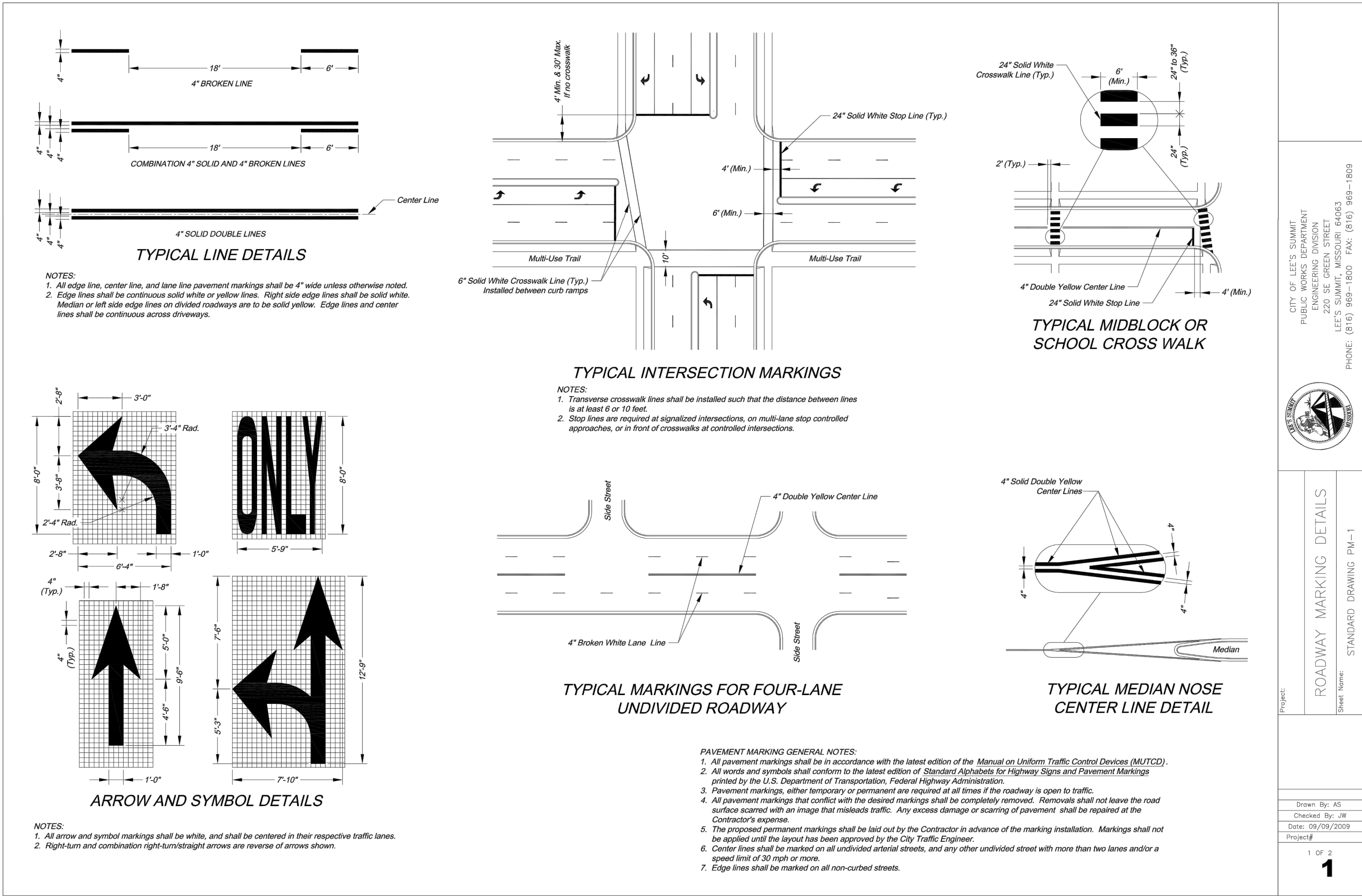
2019

drawn by: D.A.H.C.
checked by: M.G.D.
designed by: B.M.V.
QA/QC by: N.D.H.
project no.: 019-1603
date: 07-12-2019

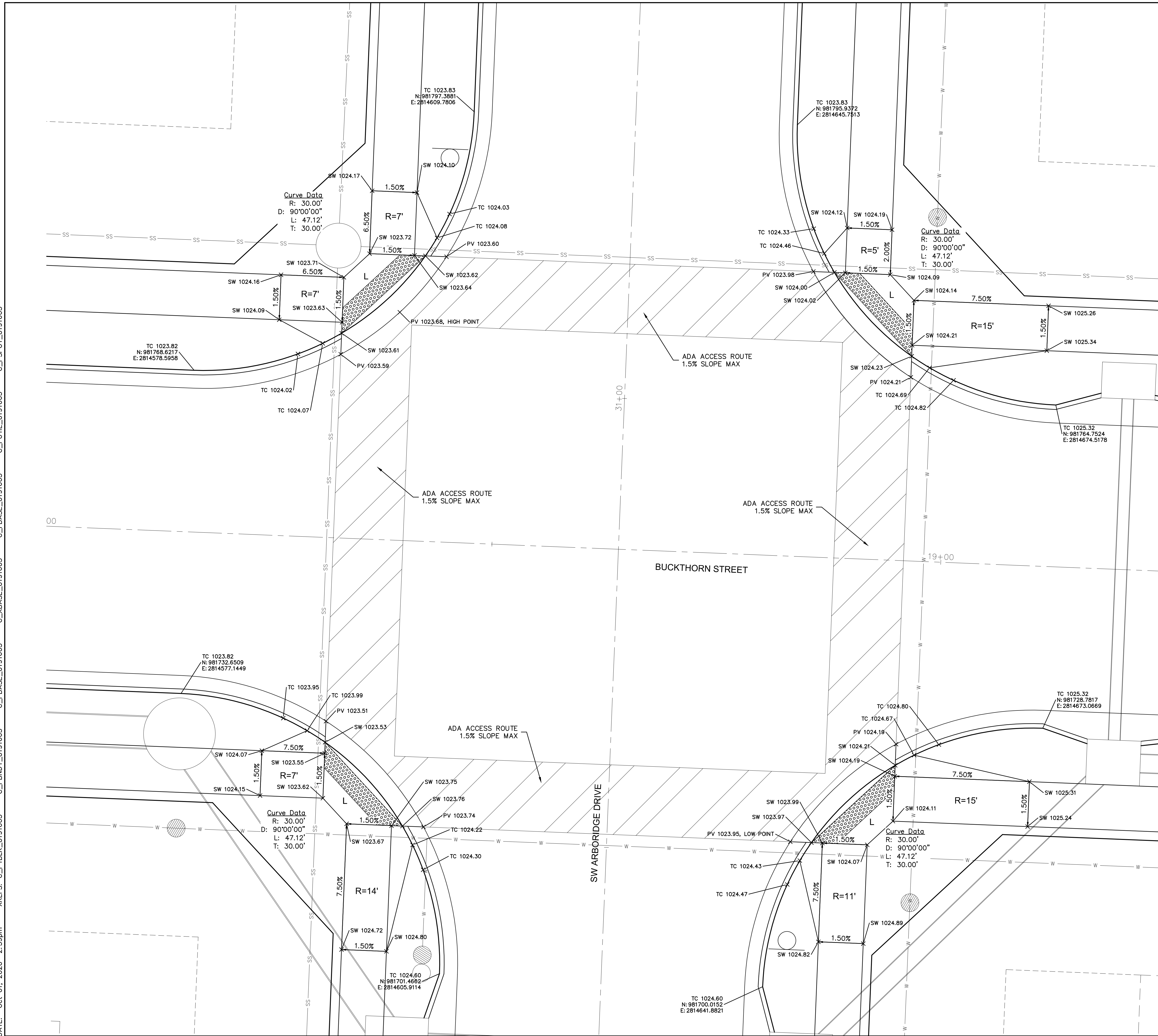
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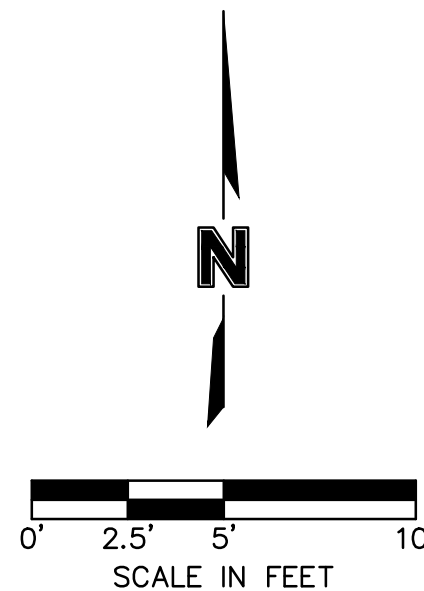


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USER: bworthley



- INTERSECTION AND ADA DETAIL NOTES:
1. ALL ADA CURB RAMPS SHALL BE BUILT PER CURRENT MUNICIPALITY ADOPTED ADA STANDARDS.
2. CURB RAMP FLARES SHALL NOT BE STEEPER THAN 1:10 MAX SLOPES.
3. LANDING SHALL BE PROVIDED WHERE INDICATED ON PLAN SHEET AND/OR BY PROWAG STANDARDS. LANDING SHALL BE 4'x4' MINIMUM.
4. RAMP RUNS SHALL HAVE A MAXIMUM RUNNING SLOPE OF 1:12 UNLESS THE RAMP LENGTH IS OVER 15 FEET, THEN THE SLOPE CAN BE GREATER AS INDICATED IN DETAILS TO REACH STREET GRADES.
5. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
6. CURB SLOPE FOR RAMPS AND SIDEWALK SHALL NOT EXCEED 2%.
7. AFTER CURBS HAVE BEEN CONSTRUCTED, AND BEFORE ASPHALT OR CONCRETE PAVEMENT IS POURED, CURBS SHOULD BE MEASURED WITH A LEVEL TO ENSURE CURBS ALONG ADA RAMPS AND LANDINGS WILL MEET ADA REQUIREMENTS.
8. ADA RAMP CONSTRUCTION WILL BE INSPECTED THOROUGHLY BY THE CITY INSPECTOR. CONTRACTOR SHALL BE REQUIRED TO RECONSTRUCT RAMPS, CURBS AND/OR PAVEMENT AT CONTRACTOR'S EXPENSE IF ADA RAMPS AND LANDINGS CANNOT MEET THE ADA REQUIREMENTS, PER APPROVED PLAN OR APPROVED ALTERNATIVE.
9. CURVE DATA IS FOR BACK OF CURB.

LEGEND	
TC—	TOP OF CURB
PV—	TOP OF PAVEMENT
SW—	SIDEWALK
L	LANDING AREA
R	RAMP AREA
T	TRANSITION AREA



SPOT ELEVATIONS
STREET & STORM SEWER PLANS

HAWTHORN RIDGE
SECOND PLAT

LEE'S SUMMIT, MISSOURI

2019

REVISIONS DESCRIPTION

BY _____

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

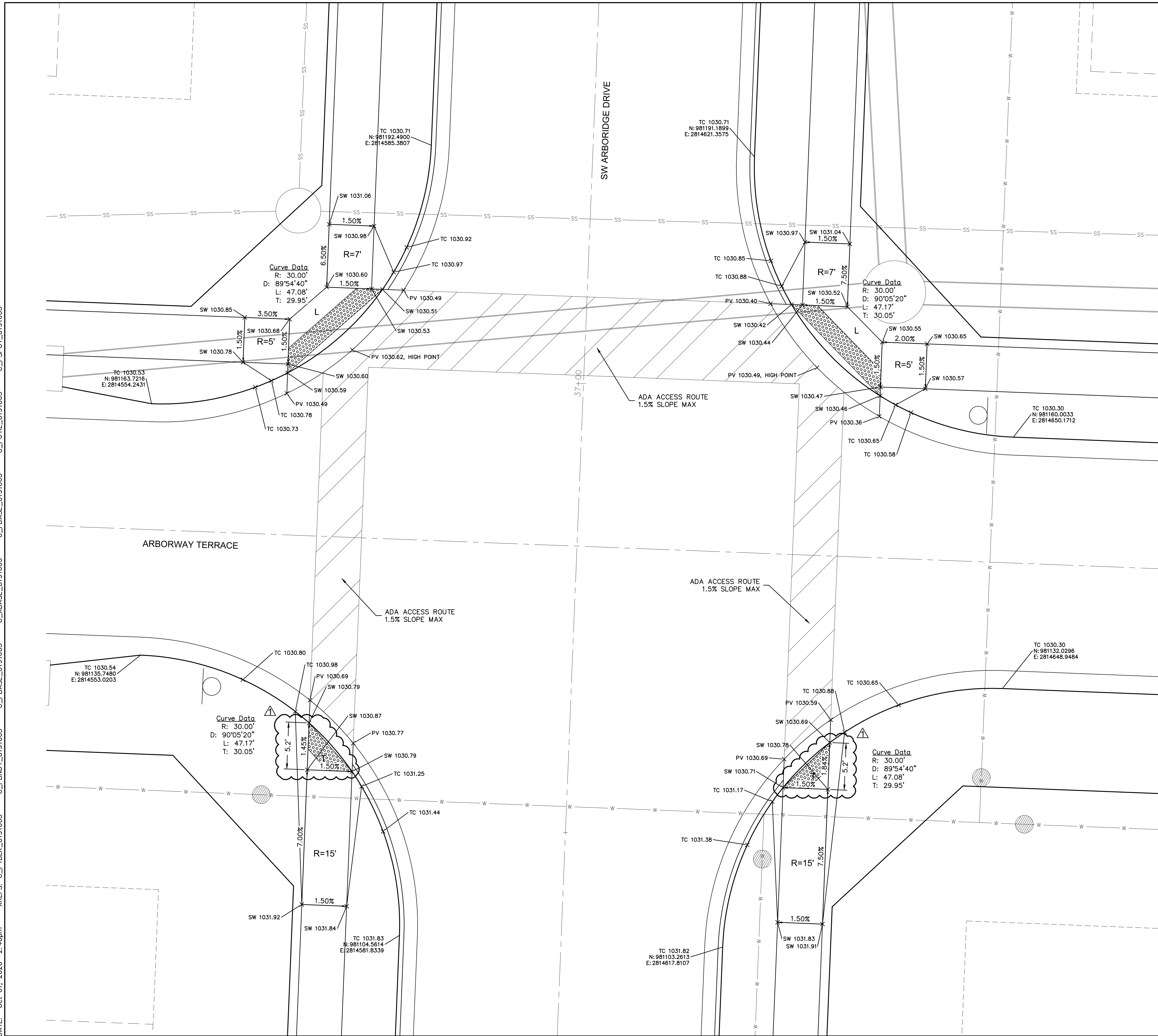
JULIE E. SELLERS, P.E.
MO# 2017000367

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MO CERTIFICATE OF AUTHORITY #:001592
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NORTH KANSAS CITY, MO 64116 TEL

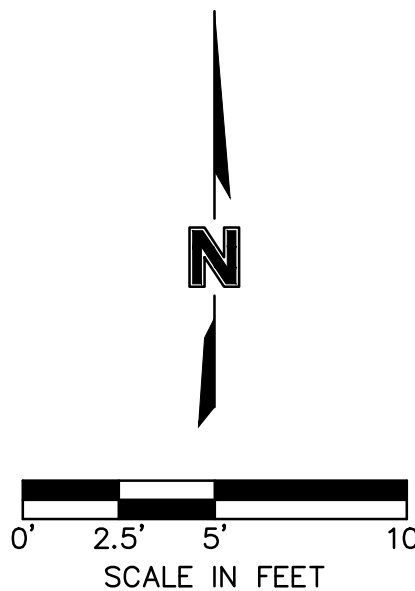
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SHEET
C120

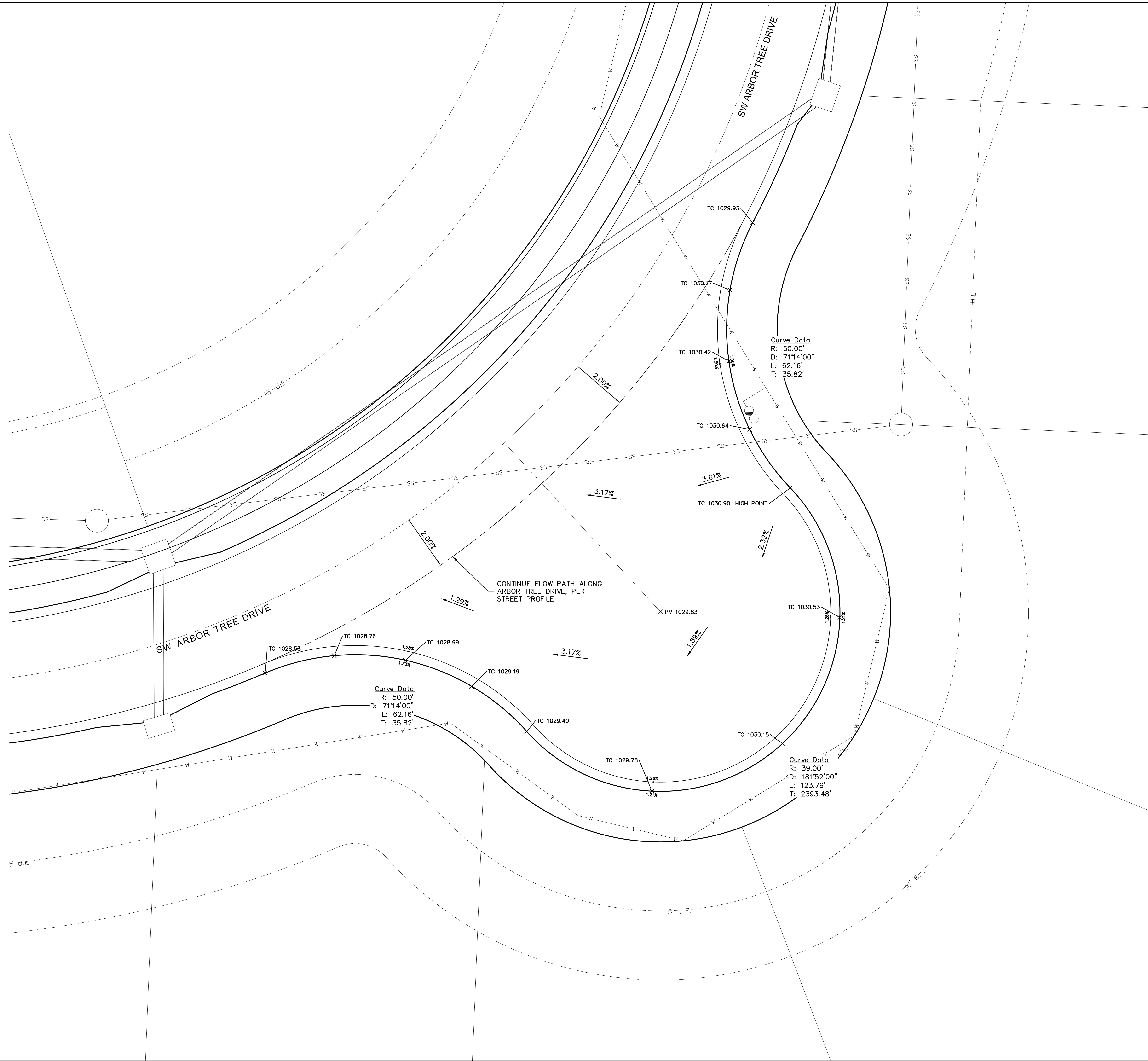


- INTERSECTION AND ADA DETAIL NOTES:
1. ALL ADA CURB RAMPS SHALL BE BUILT PER CURRENT MUNICIPALITY ADOPTED ADA STANDARDS.
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5. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
6. CROWN SLOPE FOR RAMPS AND SIDEWALK SHALL NOT EXCEED 2%.
7. AFTER CURBS HAVE BEEN CONSTRUCTED, AND BEFORE ASPHALT OR CONCRETE PAVEMENT IS POURED, CURBS SHOULD BE MEASURED WITH A LEVEL TO ENSURE CURB ALONG ADA RAMPS AND LANDINGS WILL MEET ADA REQUIREMENTS.
8. ADA RAMP CONSTRUCTION WILL BE INSPECTED THOROUGHLY BY THE CITY INSPECTOR. CONTRACTOR SHALL BE REQUIRED TO RECONSTRUCT RAMPS, CURBS AND/OR PAVEMENT AT CONTRACTOR'S EXPENSE IF ADA RAMPS AND LANDINGS CANNOT MEET THE ADA REQUIREMENTS, PER APPROVED PLAN OR APPROVED ALTERNATIVE.
9. CURVE DATA IS FOR BACK OF CURB.

LEGEND	
TC—	TOP OF CURB
PV—	TOP OF PAVEMENT
SW—	SIDEWALK
L	LANDING AREA
R	RAMP AREA
T	TRANSITION AREA

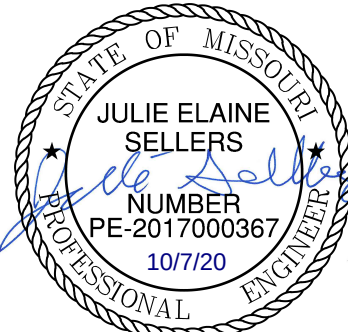


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USER: bworthley



LEGEND	
TC—	TOP OF CURB
PV—	TOP OF PAVEMENT
SW—	SIDEWALK
L	LANDING AREA
R	RAMP AREA
T	TRANSITION AREA

- INTERSECTION AND ADA DETAIL NOTES:
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5. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
6. CROSS SLOPE FOR RAMPS AND SIDEWALK SHALL NOT EXCEED 2%.
7. AFTER CURBS HAVE BEEN CONSTRUCTED, AND BEFORE ASPHALT OR CONCRETE PAVEMENT IS POURED, CURBS SHOULD BE MEASURED WITH A LEVEL TO ENSURE CURB ALONG ADA RAMPS AND LANDINGS WILL MEET ADA REQUIREMENTS.
8. ADA RAMP CONSTRUCTOR WILL BE INSPECTED THOROUGHLY BY THE CITY INSPECTOR. CONTRACTOR SHALL BE REQUIRED TO RECONSTRUCT RAMPS, CURBS, AND/OR PAVEMENT CONTRACTOR'S EXPENSE IF ADA RAMPS AND LANDINGS CANNOT MEET THE ADA REQUIREMENTS, PER APPROVED PLAN OR APPROVED ALTERNATIVE.
9. CURVE DATA IS FOR BACK OF CURB.



JULIE E. SELLERS, P.E.
MO# 2017000367

[illegible]

SPOT ELEVATIONS
STREET & STORM SEWER PLANS

HAWTHORN RIDGE
SECOND PLAT

2019

LEE'S SUMMIT MISSOURI

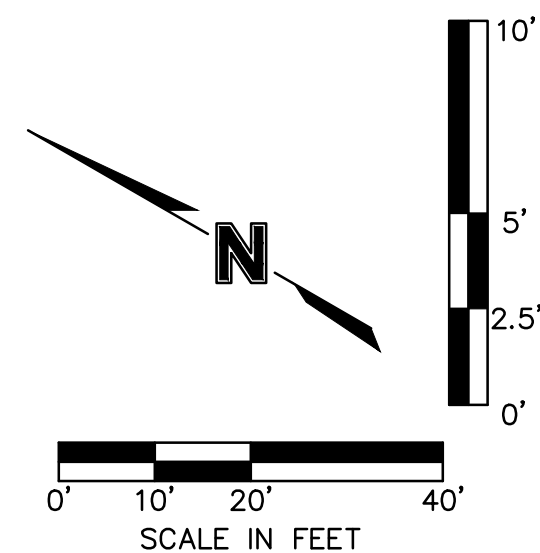
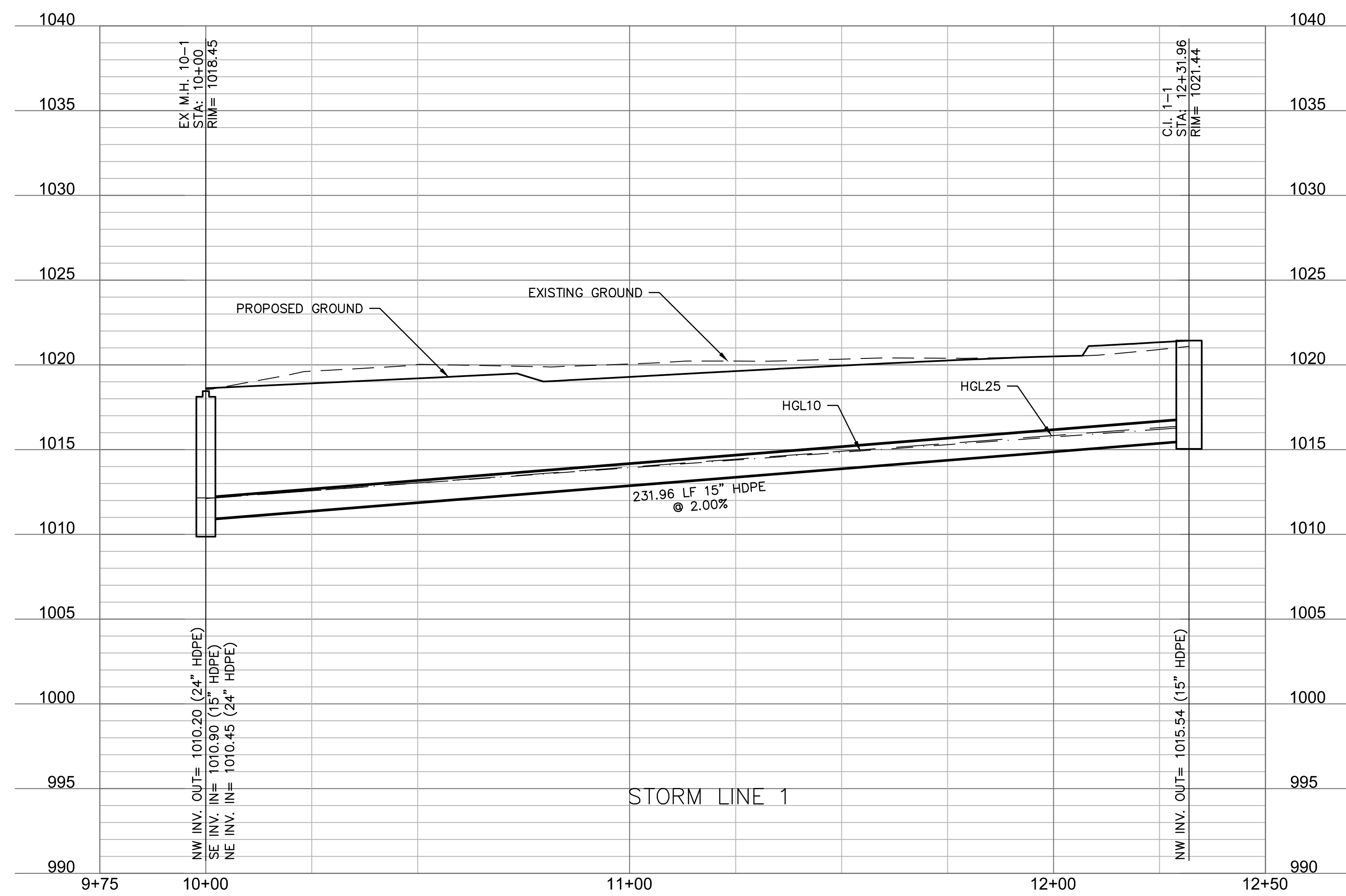
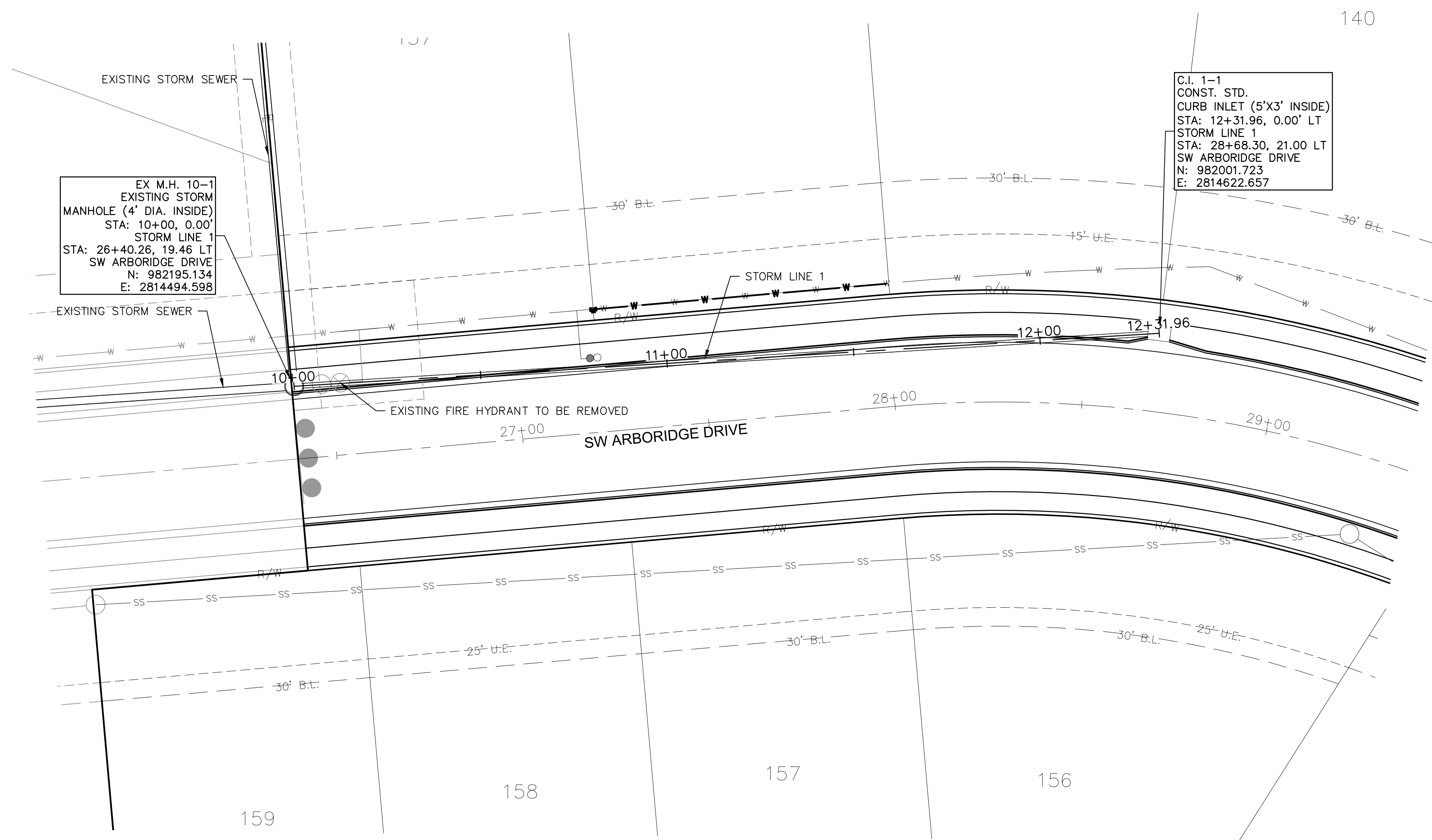
drawn by: D.A.H.O
checked by: M.G.D
designed by: B.M.W
QA/QC by: N.D.H
project no.: 019-1605
date: 07-12-2019

SHEET
C123

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MO CERTIFICATE OF AUTHORITY #001592
1301 BURLINGTON, SUITE 100
BURLINGTON, VT 05403-4479
TEL: 802.496.4479
WWW.OLSSON-VE.COM

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STORM PLAN & PROFILE
STREET & STORM SEWER PLANS

HAWTHORN RIDGE
SECOND PLAT

LEE'S SUMMIT, MISSOURI

NO.	DATE
-----	------

REVISIONS DESCRIPTION

BY

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

JULIE E. SELLERS, P.E.
MO# 2017000367

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MO CERTIFICATE OF AUTHORITY #001592
1301 BURLINGTON, SUITE 100
NORTH KANSAS CITY, MO 64116

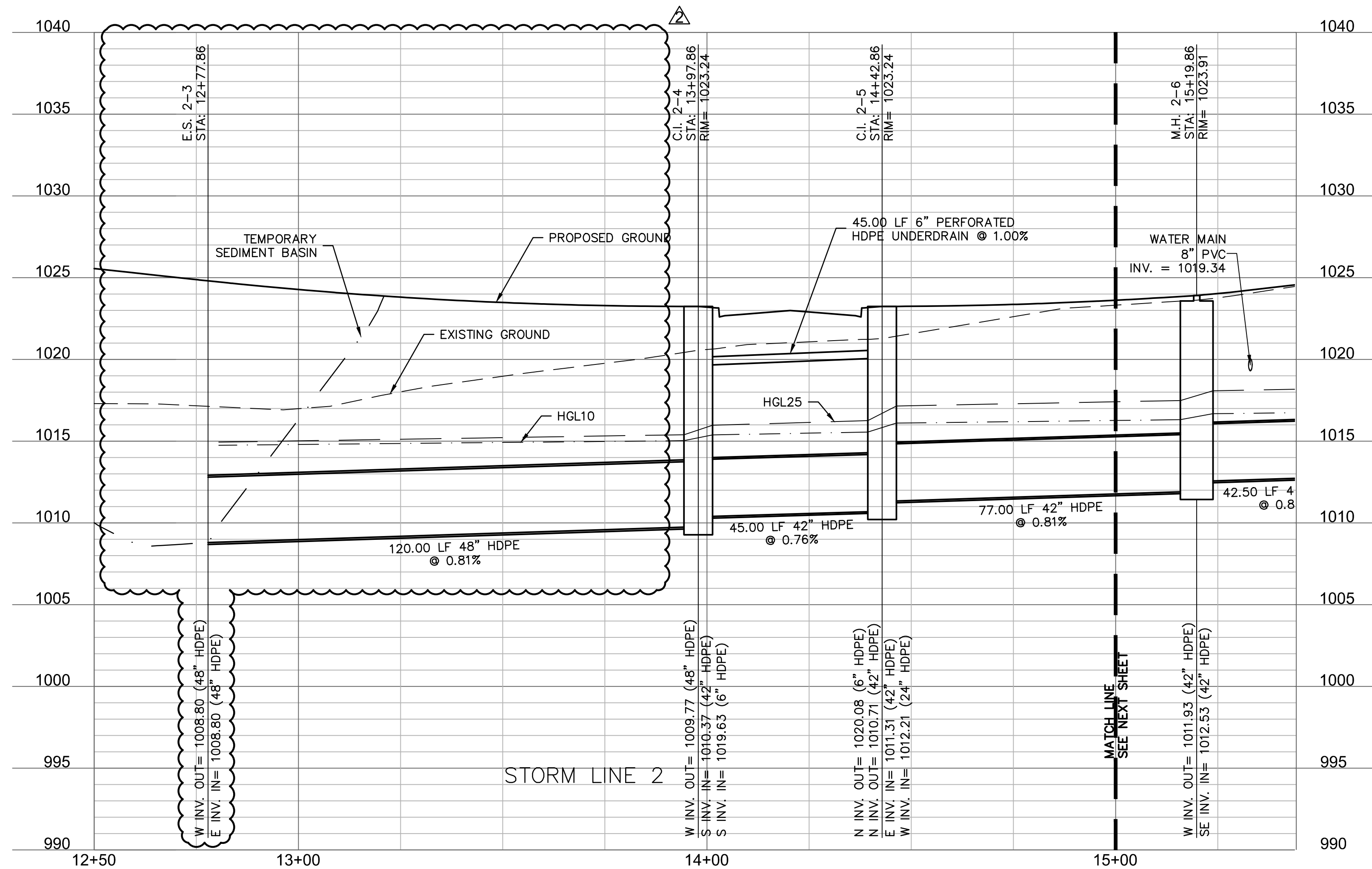
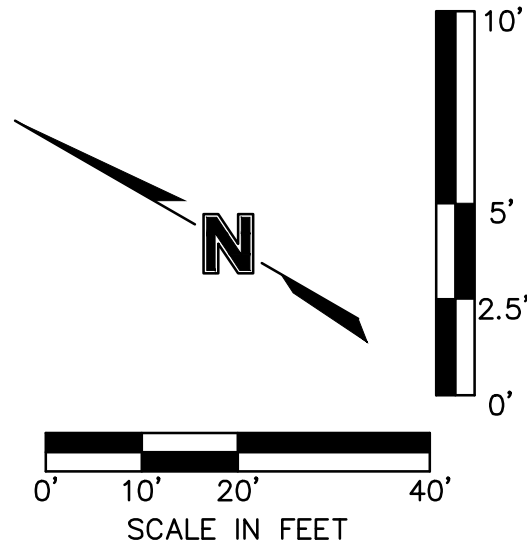
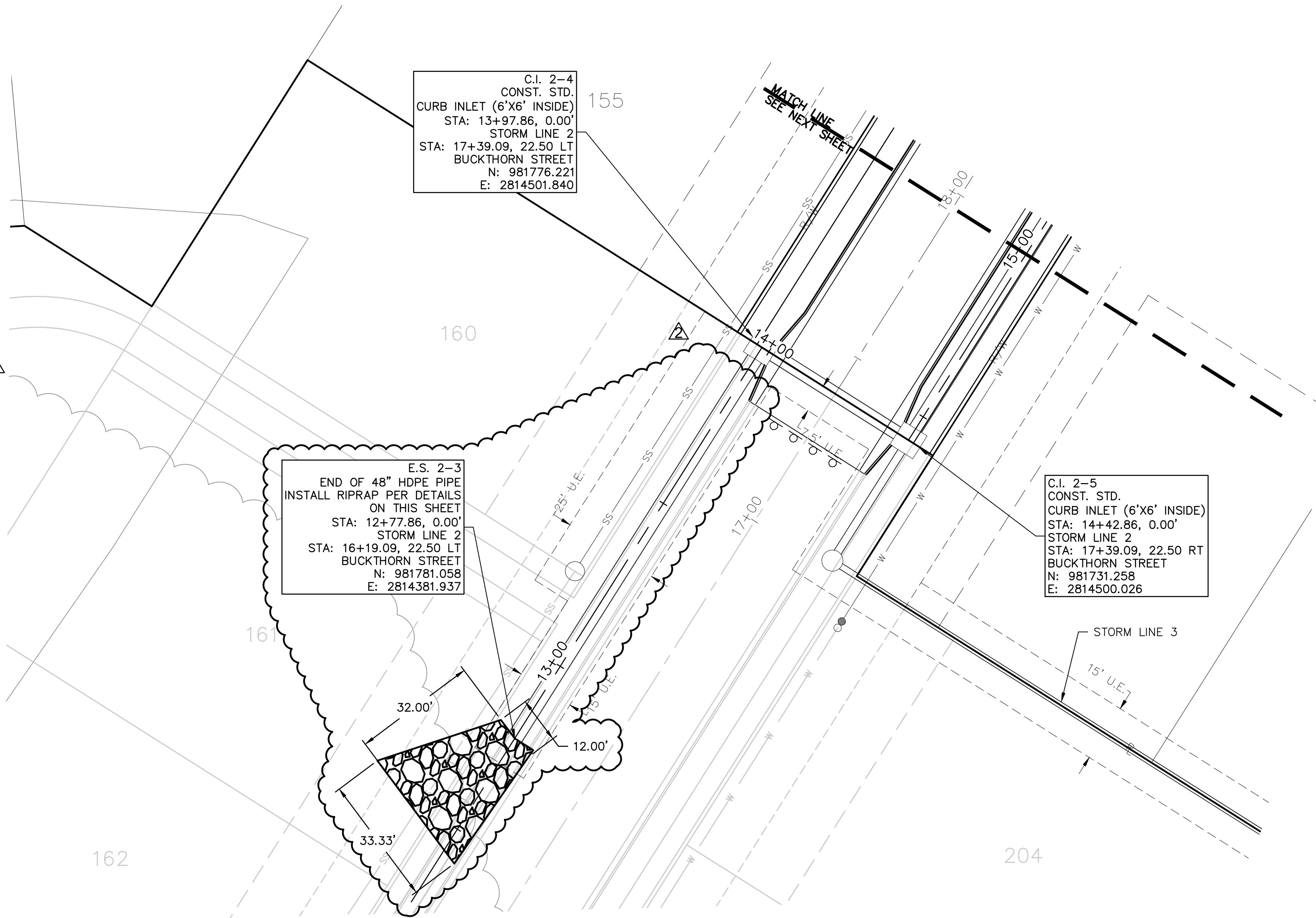
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Riprap Calculations							
End Section	Q ₁₀₀ (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. 2-3	164.18	4	6	22	32	3.67	80.6

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

NOTE: CONTRACTOR TO UTILIZE ON-SITE MATERIAL FOR TEMPORARY RIPRAP AT END OF PIPE. RIPRAP WILL BE REMOVED AND PIPE EXTENDED WITH HAWTHORN RIDGE 3RD PLAT CONSTRUCTION DOCUMENTS, CURRENTLY UNDER CITY REVIEW.



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

JULIE E. SELLERS, P.E.
MO# 2017000367

BY

REVISIONS DESCRIPTION

NO. REV.

DATE

1 08-12-2019 GEOGRAPHIC NOTE ADDED AND 10-YEAR STORM HGL ADDED TO PROFILE VIEW

2 10-02-2020 STORM LINE 2 CHANGED TO DAYLIGHT INTO SEDIMENT BASIN

STORM PLAN & PROFILE
STREET & STORM SEWER PLANS

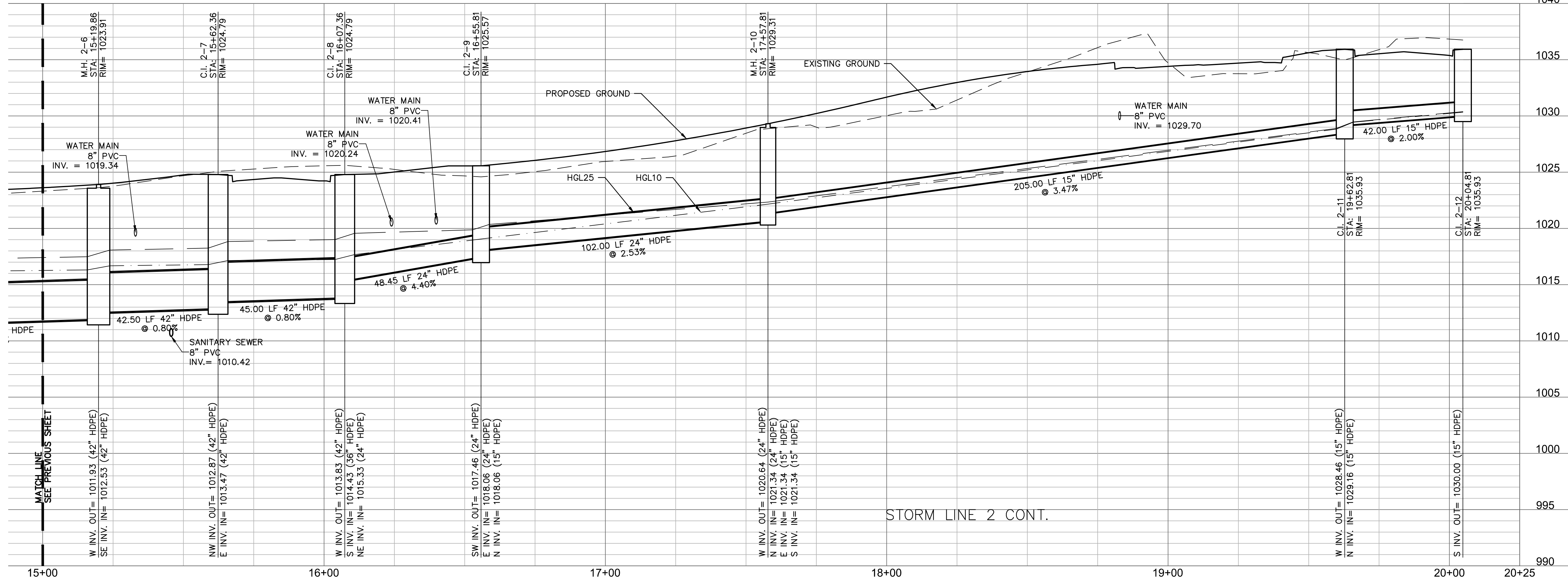
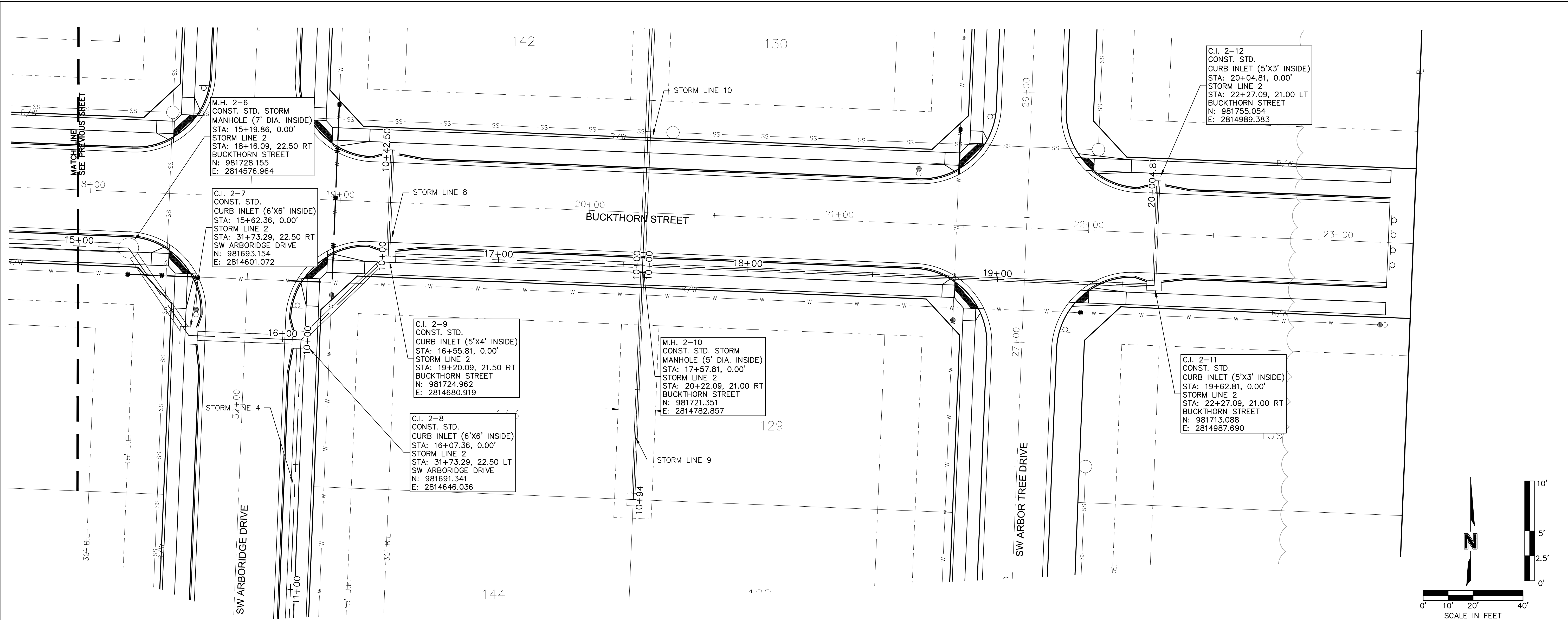
HAWTHORN RIDGE
SECOND PLAT

LEE'S SUMMIT, MISSOURI

2019

drawn by: D.A.H.O.
checked by: M.G.D.
designed by: B.M.W.
QA/QC by: N.D.H.
project no.: 019-1605
date: 07-12-2018

SHEET
C125



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

JULIE E. SELLERS, P.E.
MO# 2017000367

NO.	REV.	DATE	REVISIONS DESCRIPTION
1		08-12-2019	10-YEAR STORM HGL ADDED TO PROFILE VIEW

STORM PLAN & PROFILE
STREET & STORM SEWER PLANS

HAWTHORN RIDGE
SECOND PLAT

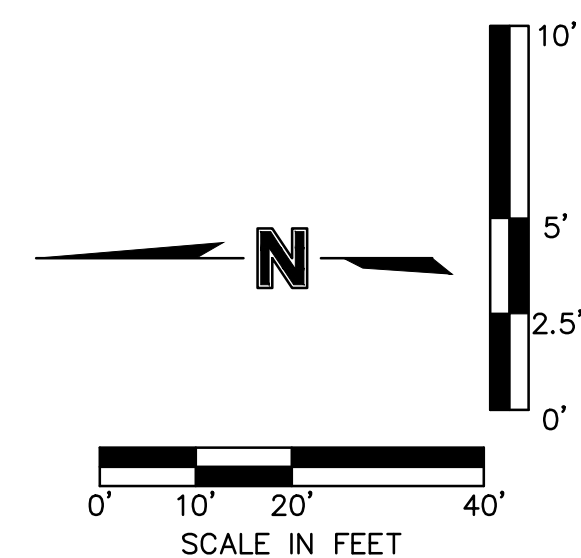
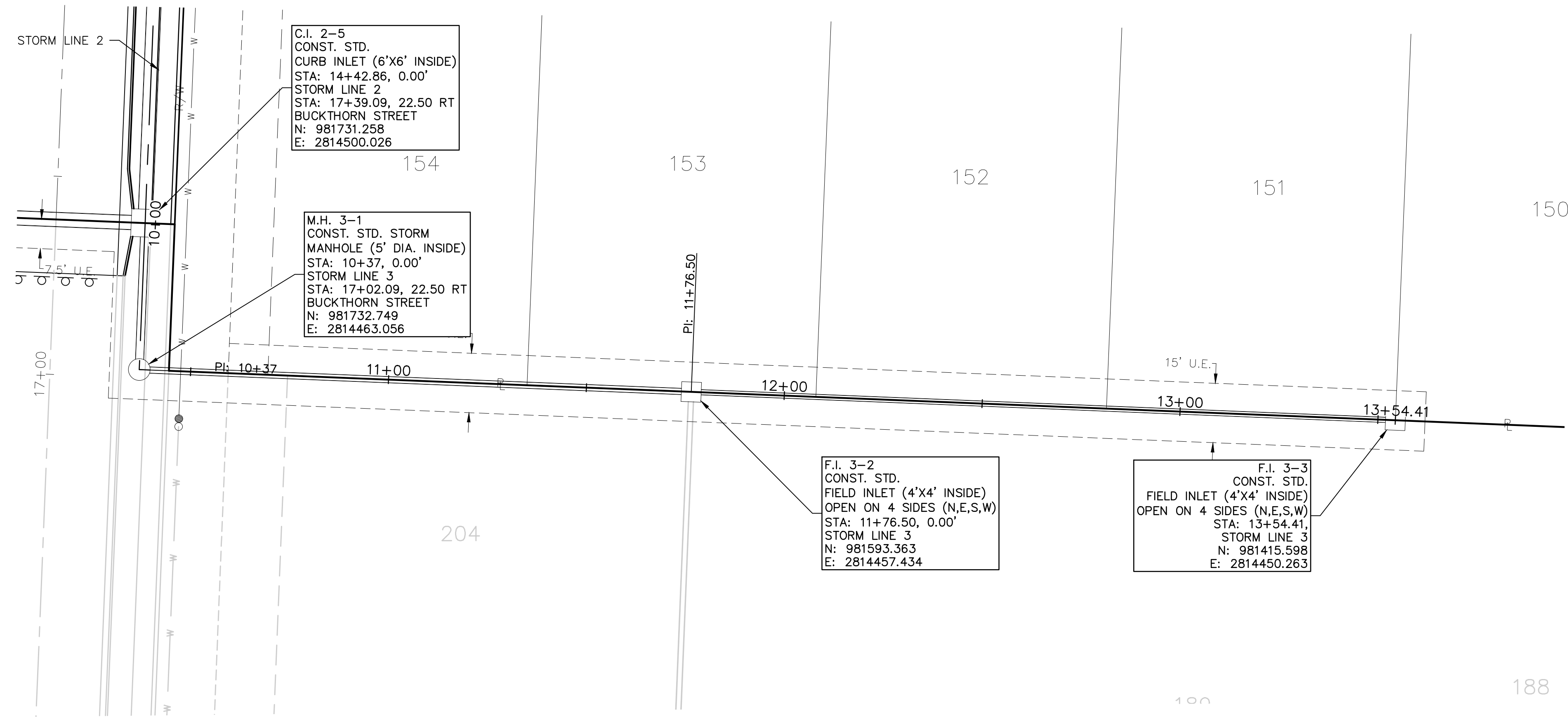
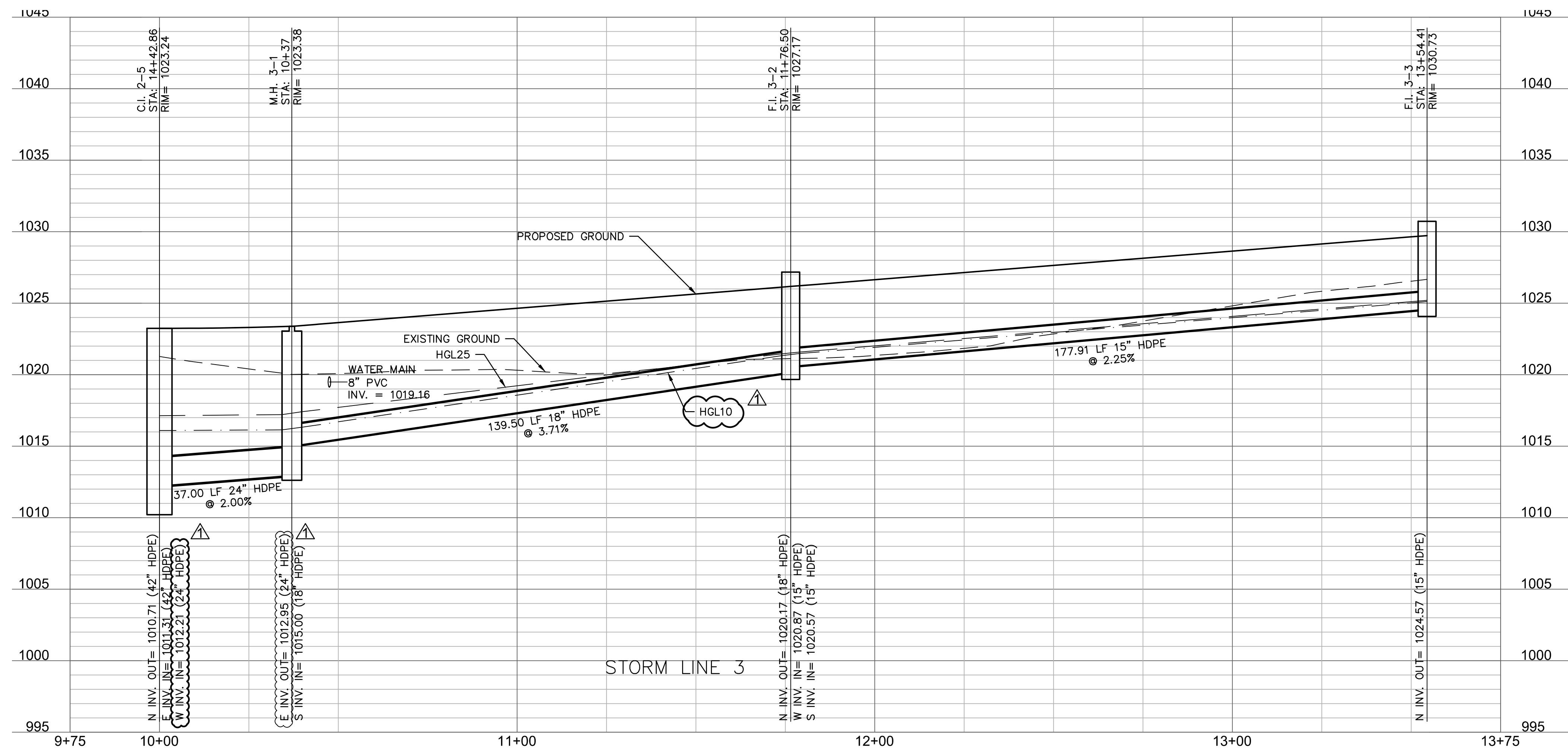
LEE'S SUMMIT, MISSOURI

2019

drawn by: D.A.H.O.
checked by: M.G.D.
designed by: B.M.W.
QA/QC by: N.D.H.
project no.: 019-1605
date: 07-12-2018

SHEET
C126

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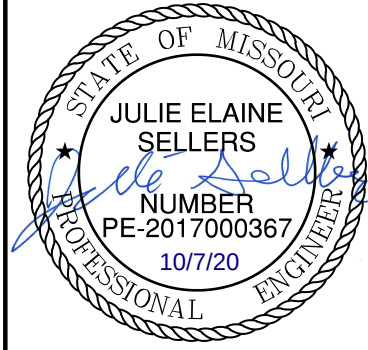
STORM PLAN & PROFILE
STREET & STORM SEWER PLANS

HAWTHORN RIDGE
SECOND PLAT

LEE'S SUMMIT, MISSOURI

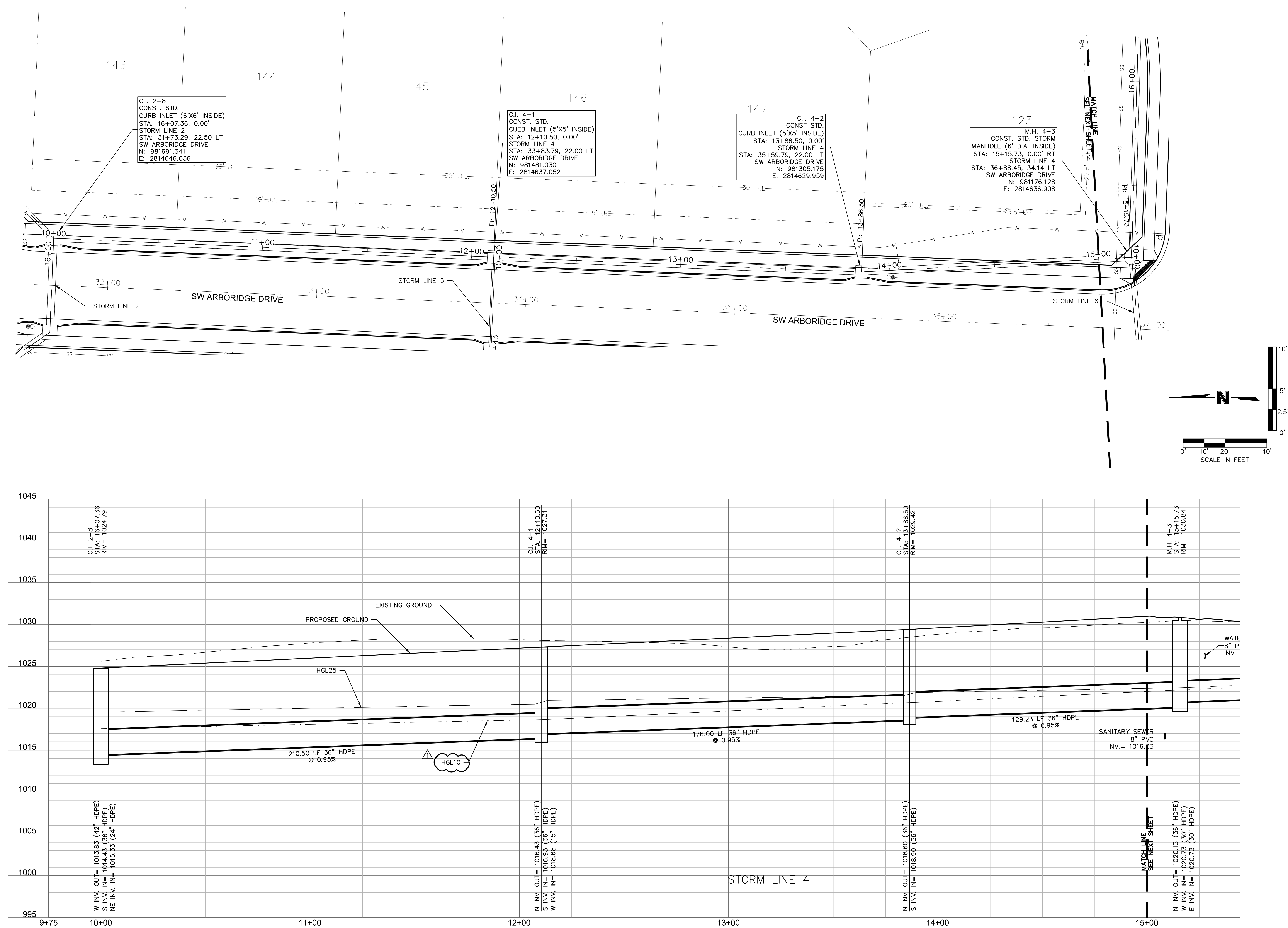
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JULIE E. SELLERS, P.E.

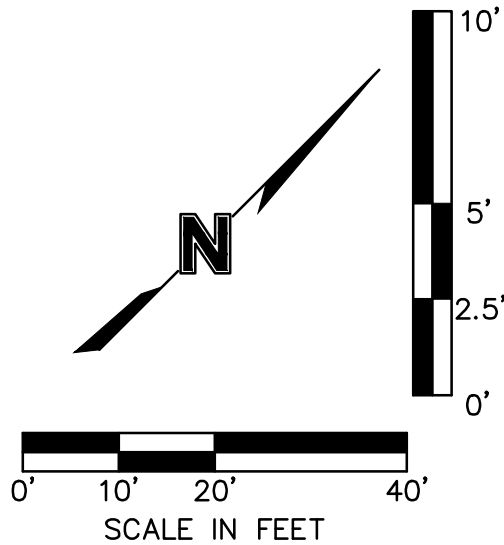
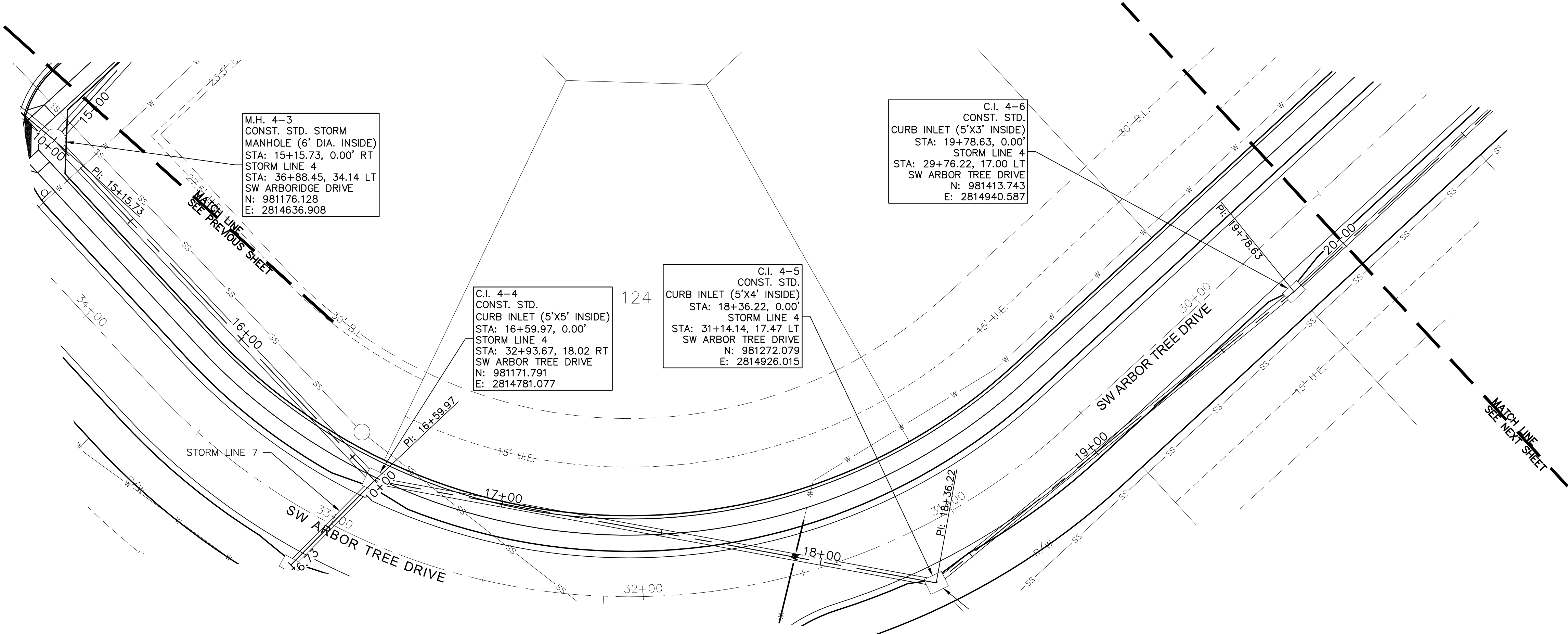
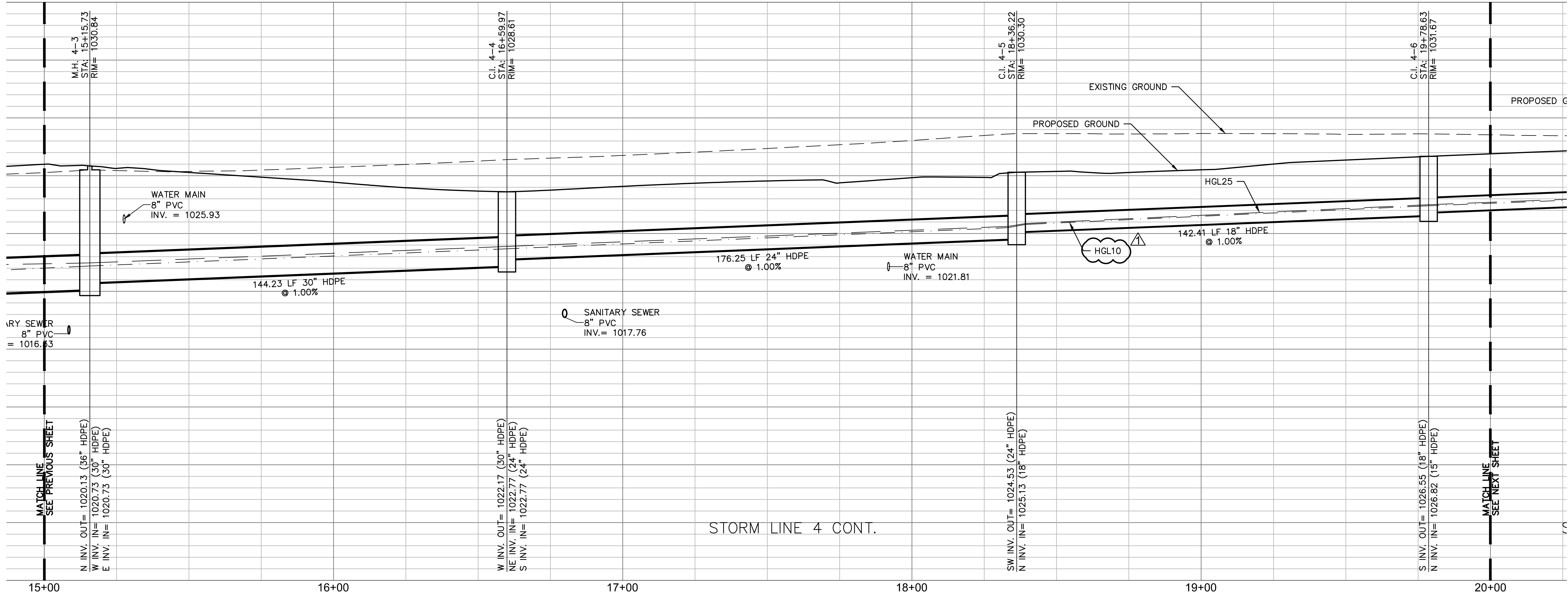


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TEL # 816-441-1111

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STORM PLAN & PROFILE STREET & STORM SEWER PLANS		HAWTHORN RIDGE SECOND PLAT		LEE'S SUMMIT, MISSOURI		2019
drawn by: D.A.H.O.		checked by: M.G.D.		designed by: B.M.W.		QA/QC by: N.D.H.
project no.: 019-1605		date: 07-12-2018				
SHEET C129						

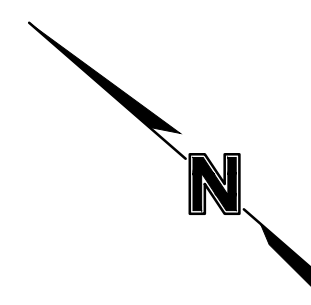
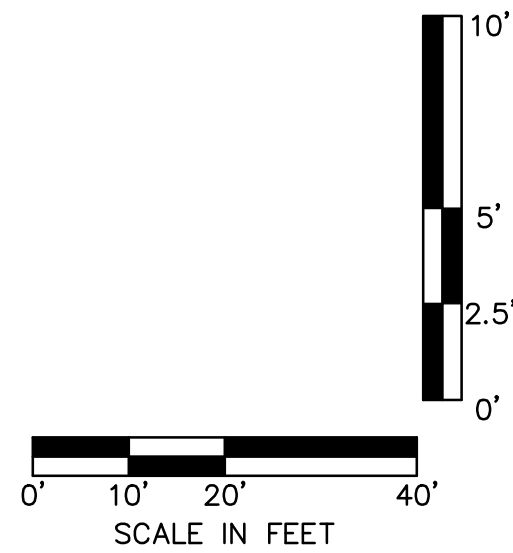
NO. REV.	DATE	REVISIONS DESCRIPTION
1	08-12-2019	10-YEAR STORM HGL ADDED TO PROFILE VIEW

BY	
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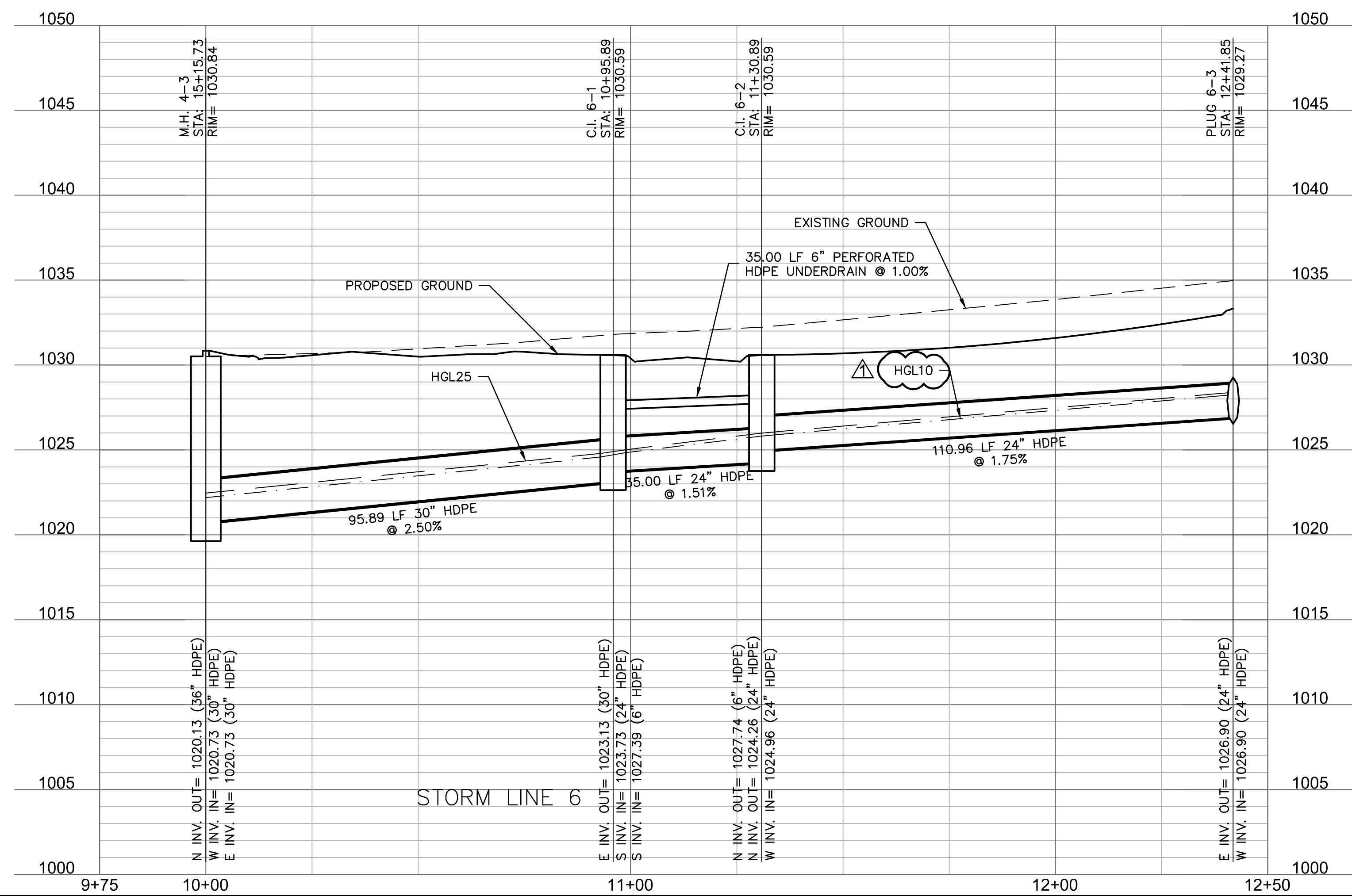
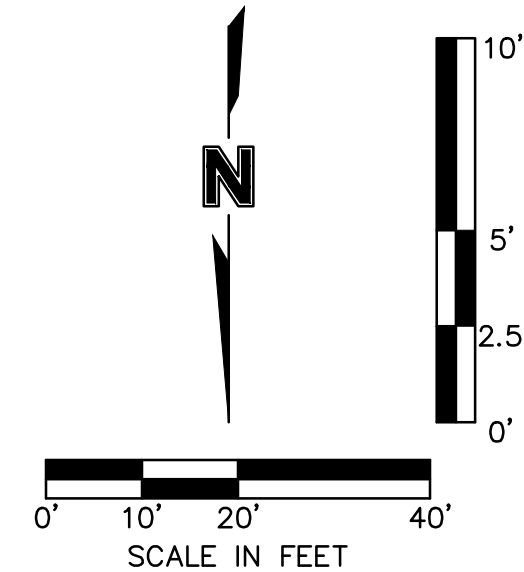
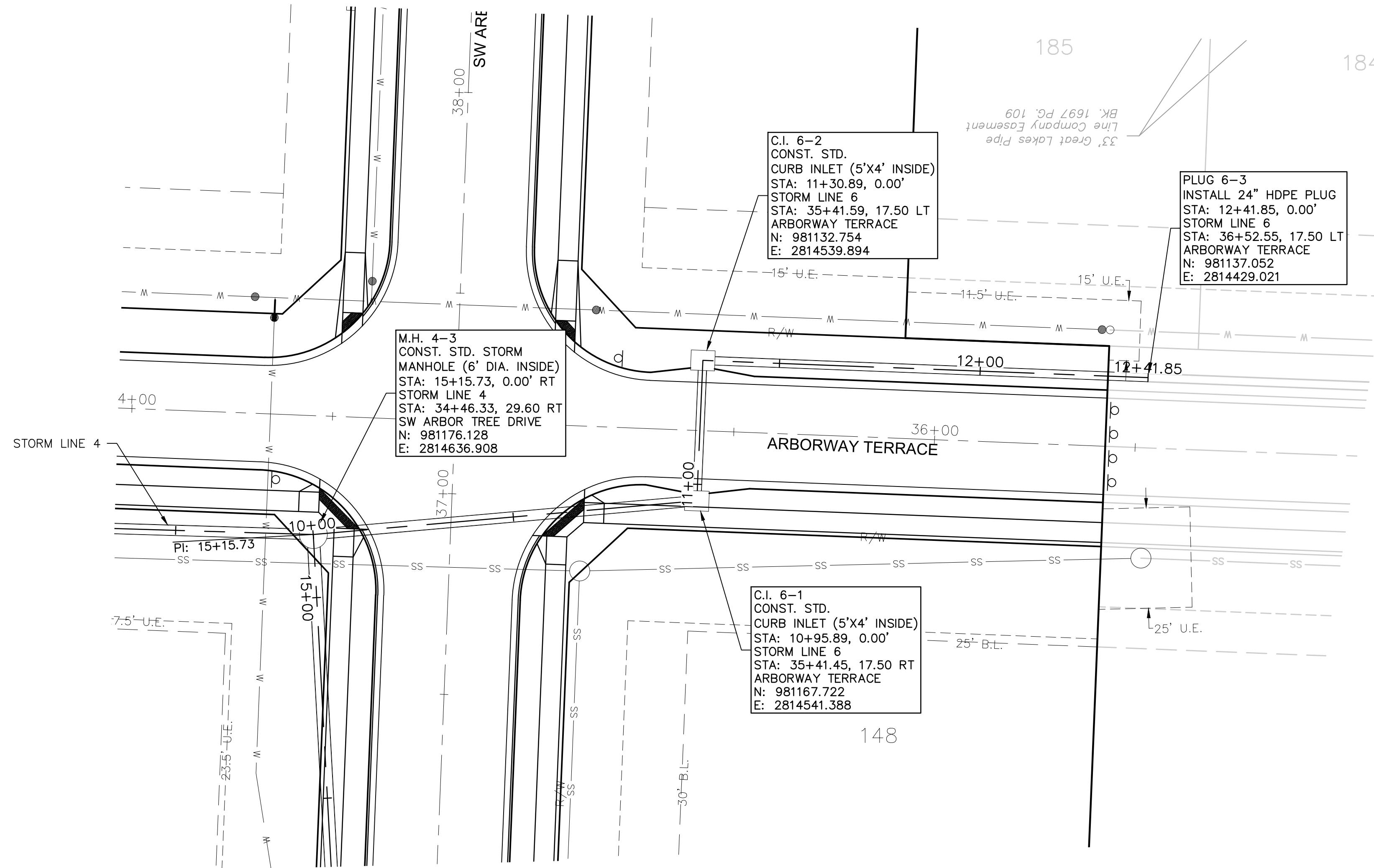
STATE OF MISSOURI JULIE ELAINE SELLERS NUMBER PE-2017000367 10/7/20 PROFESSIONAL ENGINEER
JULIE E. SELLERS, P.E. MO# 2017000367

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OLSSON - CIVIL ENGINEERING
NO. CERTIFICATE OF AUTHORITY #001552
NORTH KANSAS CITY, MO 64116
TEL 816.381.1177
WWW.OLSSON.COM

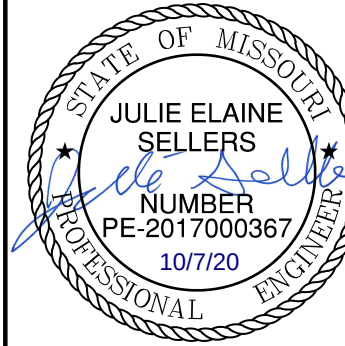


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USER: bworthley



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MO CERTIFICATE OF AUTHORITY #:001592
1301 BURLINGTON, SUITE 100
NORTH KANSAS CITY, MO 64116 TEL



JULIE E. SELLERS, P.E.
MO# 2017000367

BY

REVISIONS DESCRIPTION

DATE _____

REVISIONS
PROFILE VIEW

STORM PLAN & PROFILE
STREET & STORM SEWER PIPES

HAWTHORN RIDGE

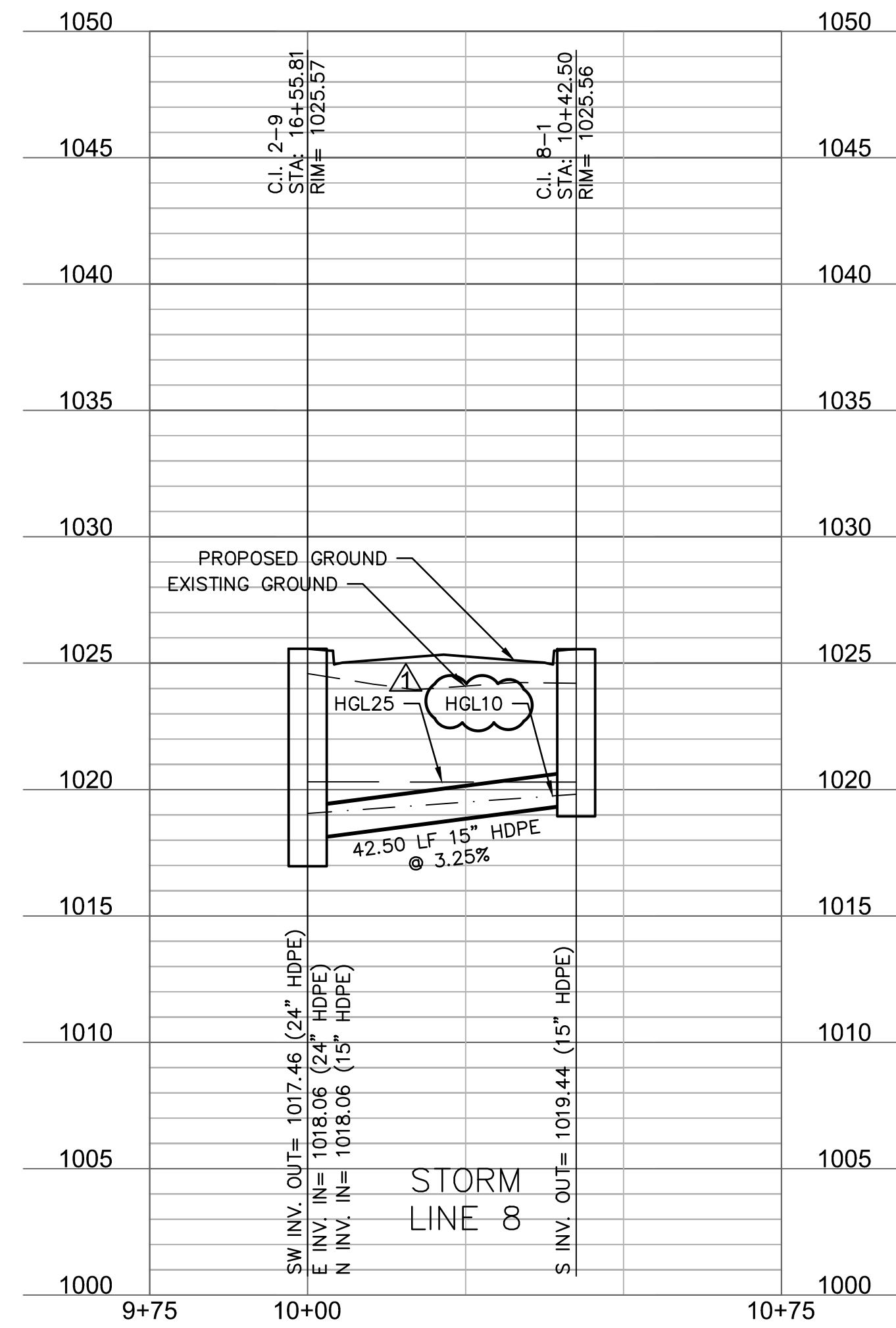
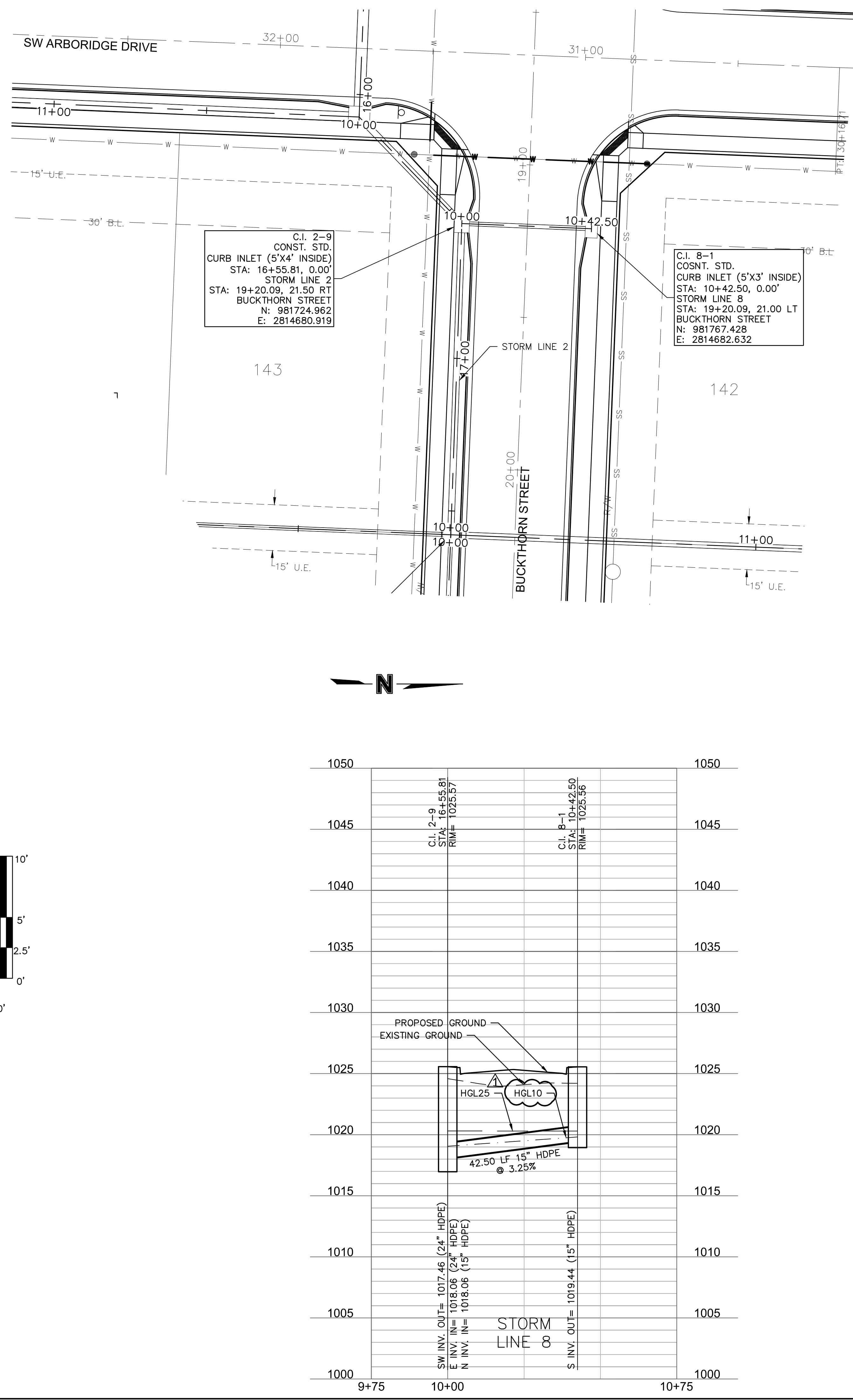
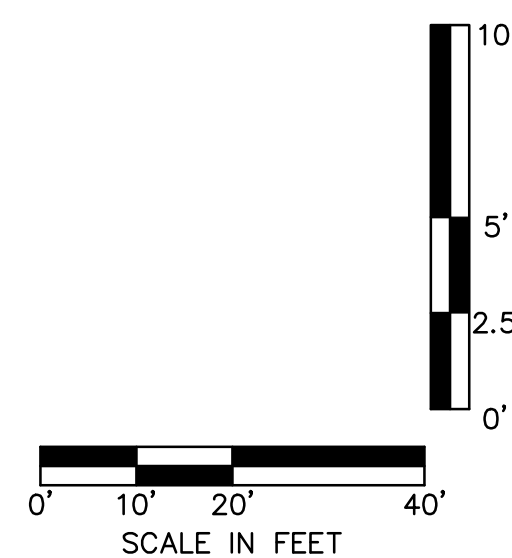
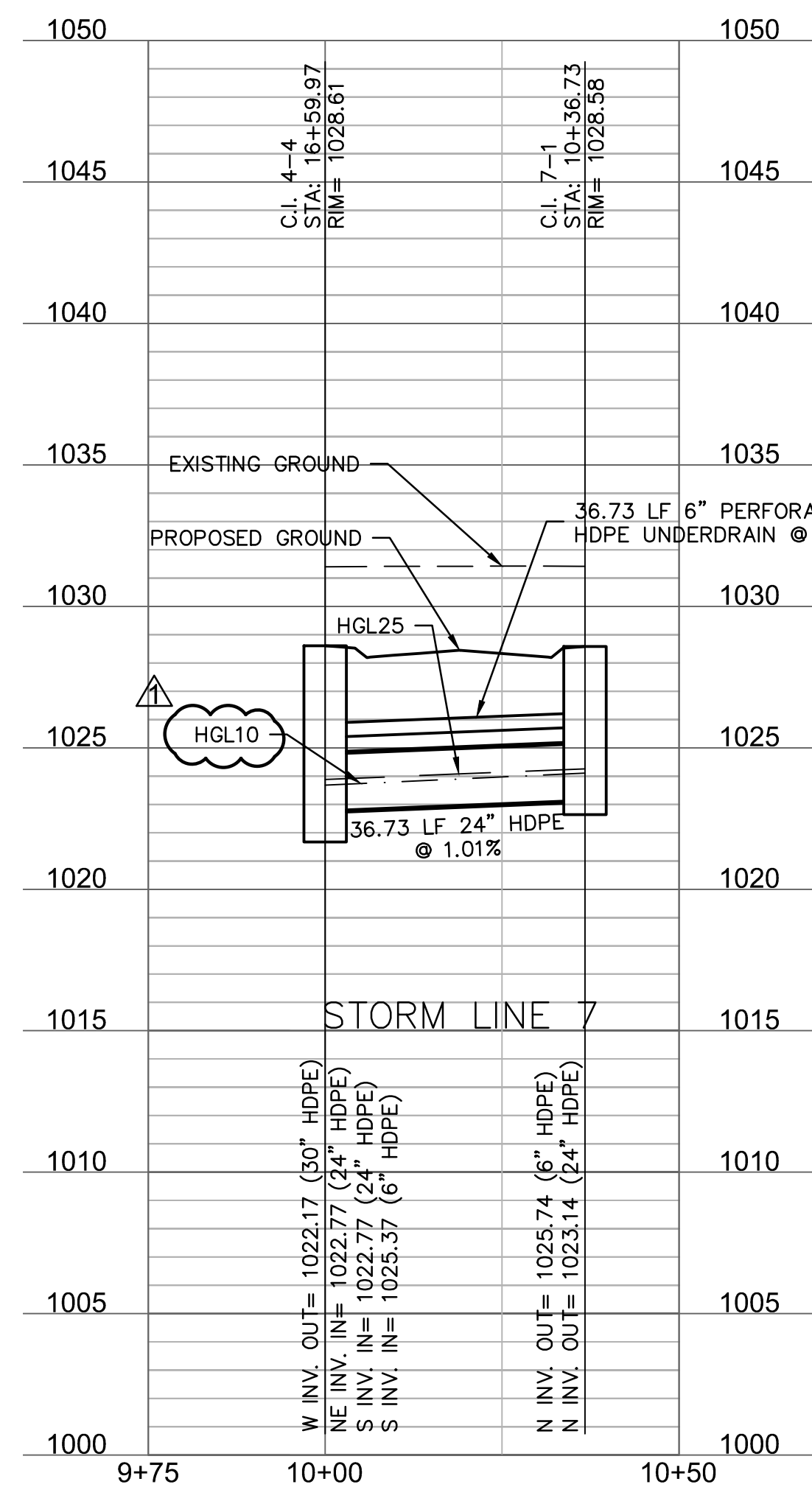
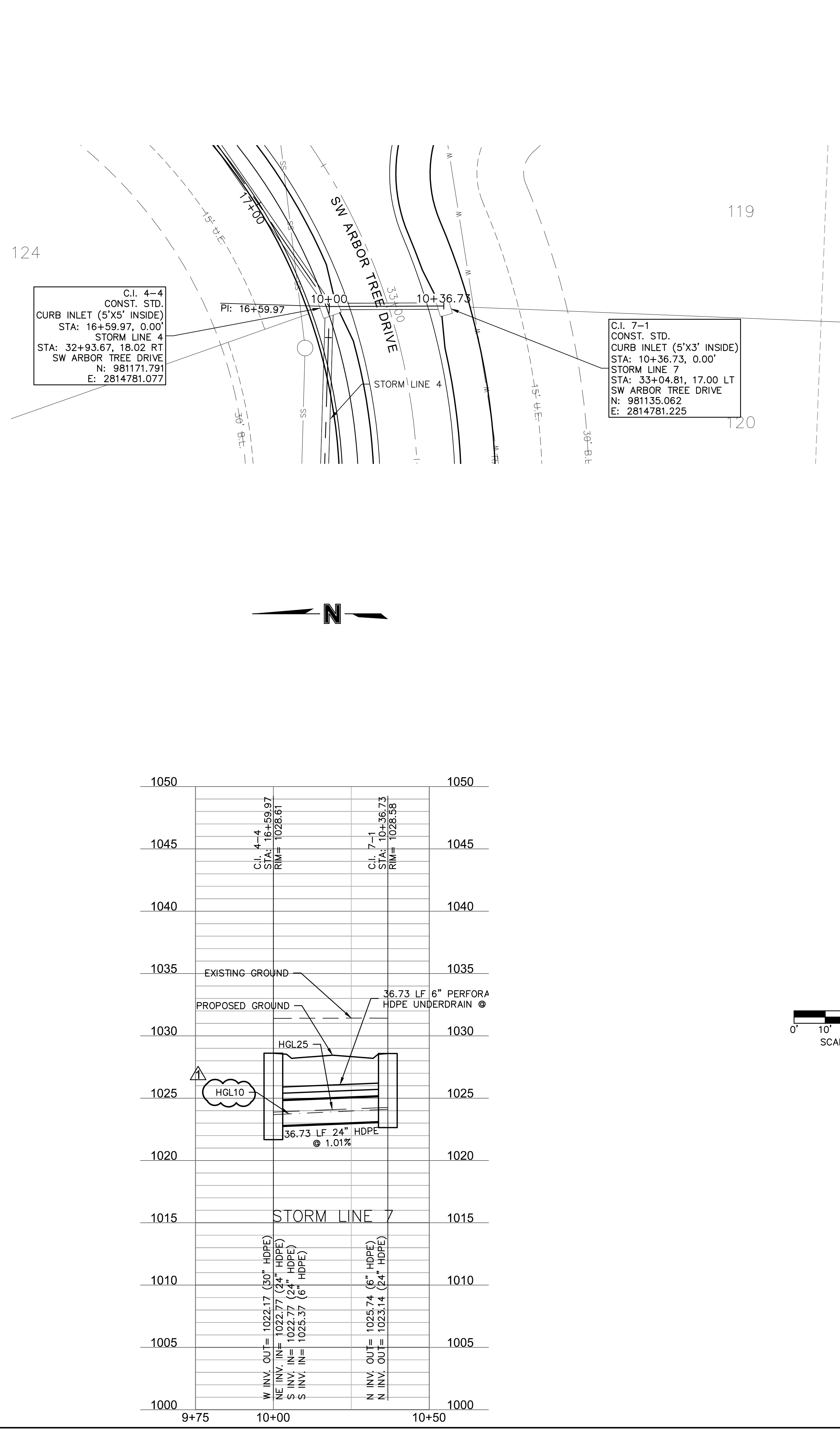
LEE'S SUMMIT MISSOURI

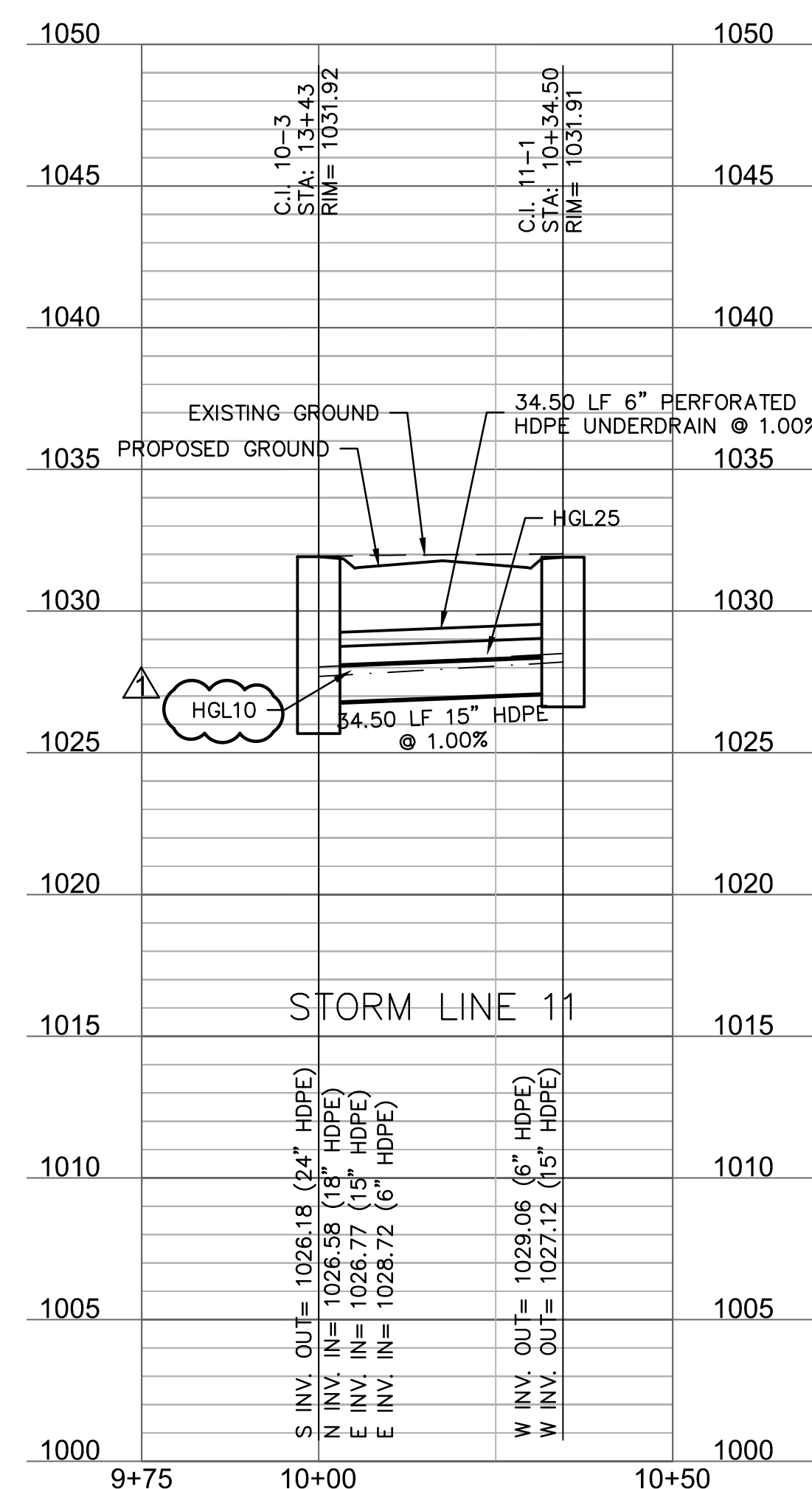
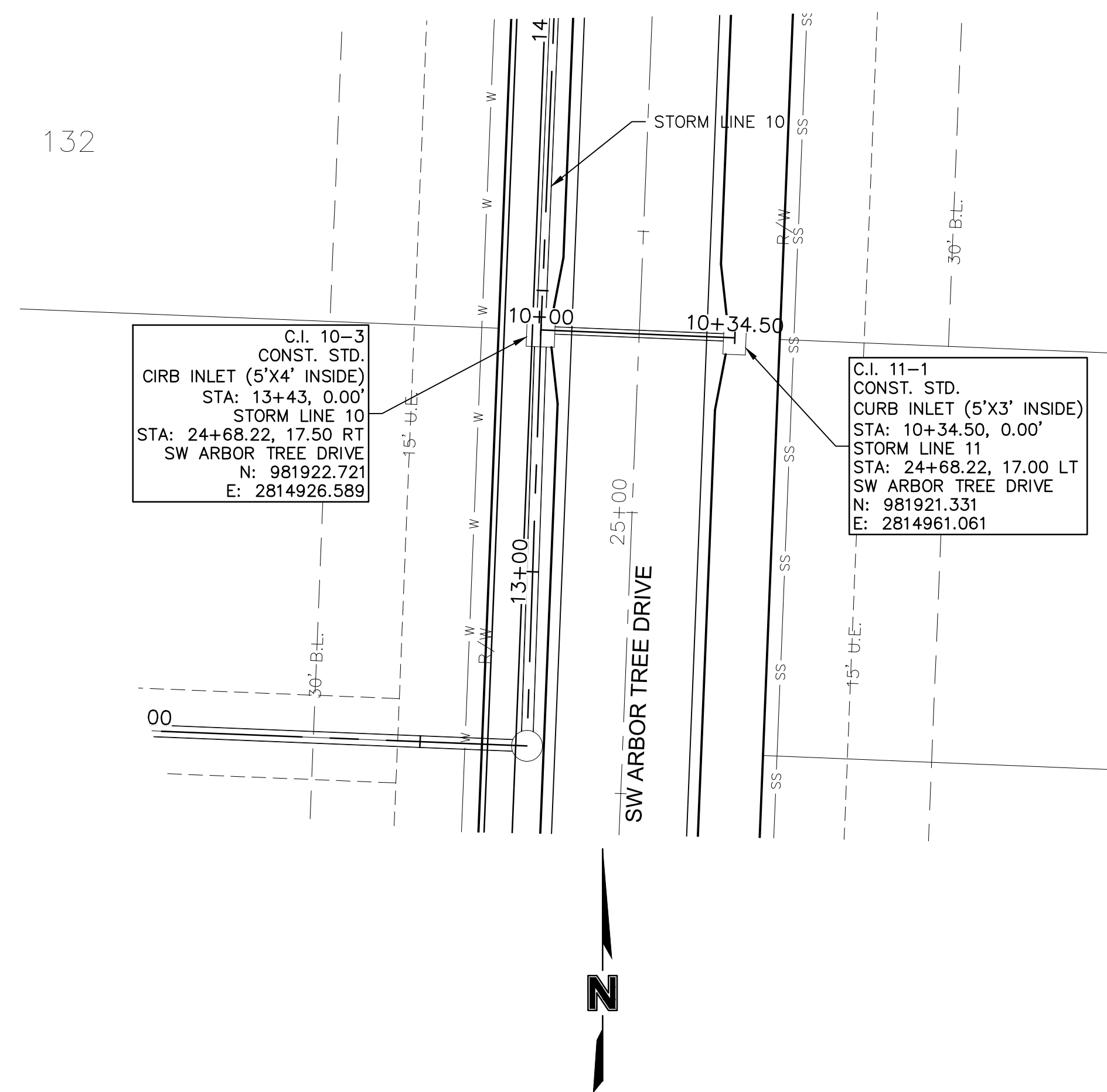
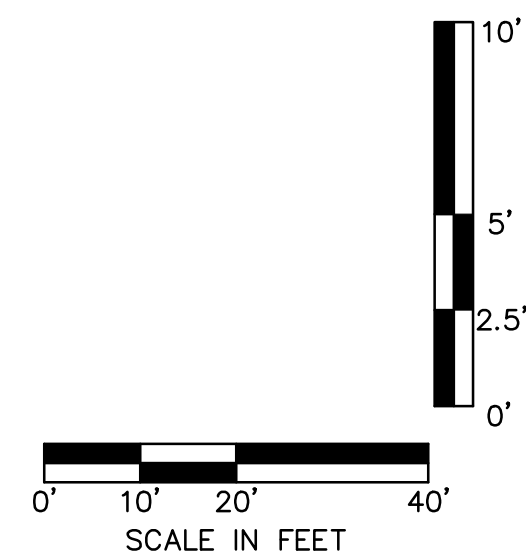
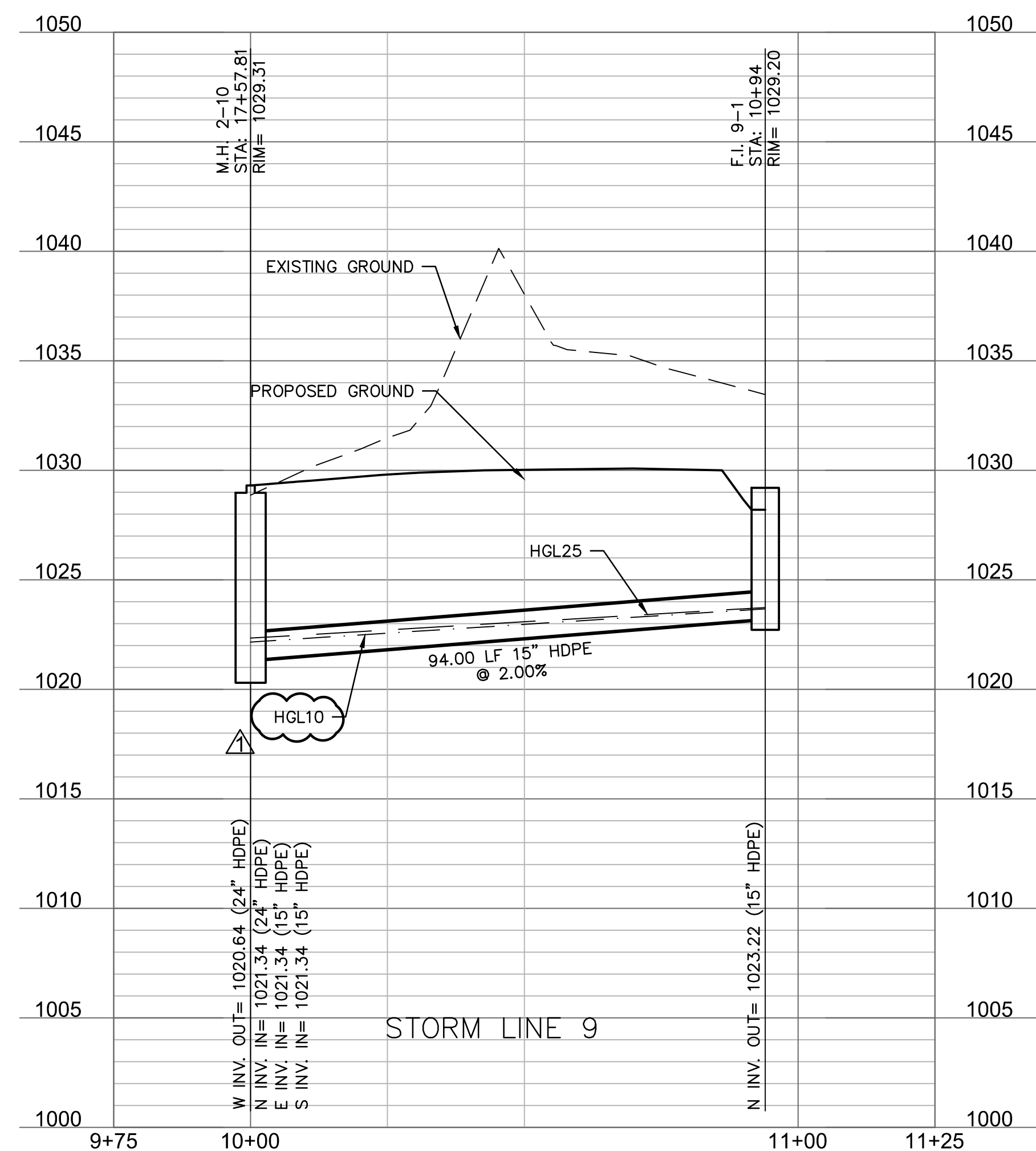
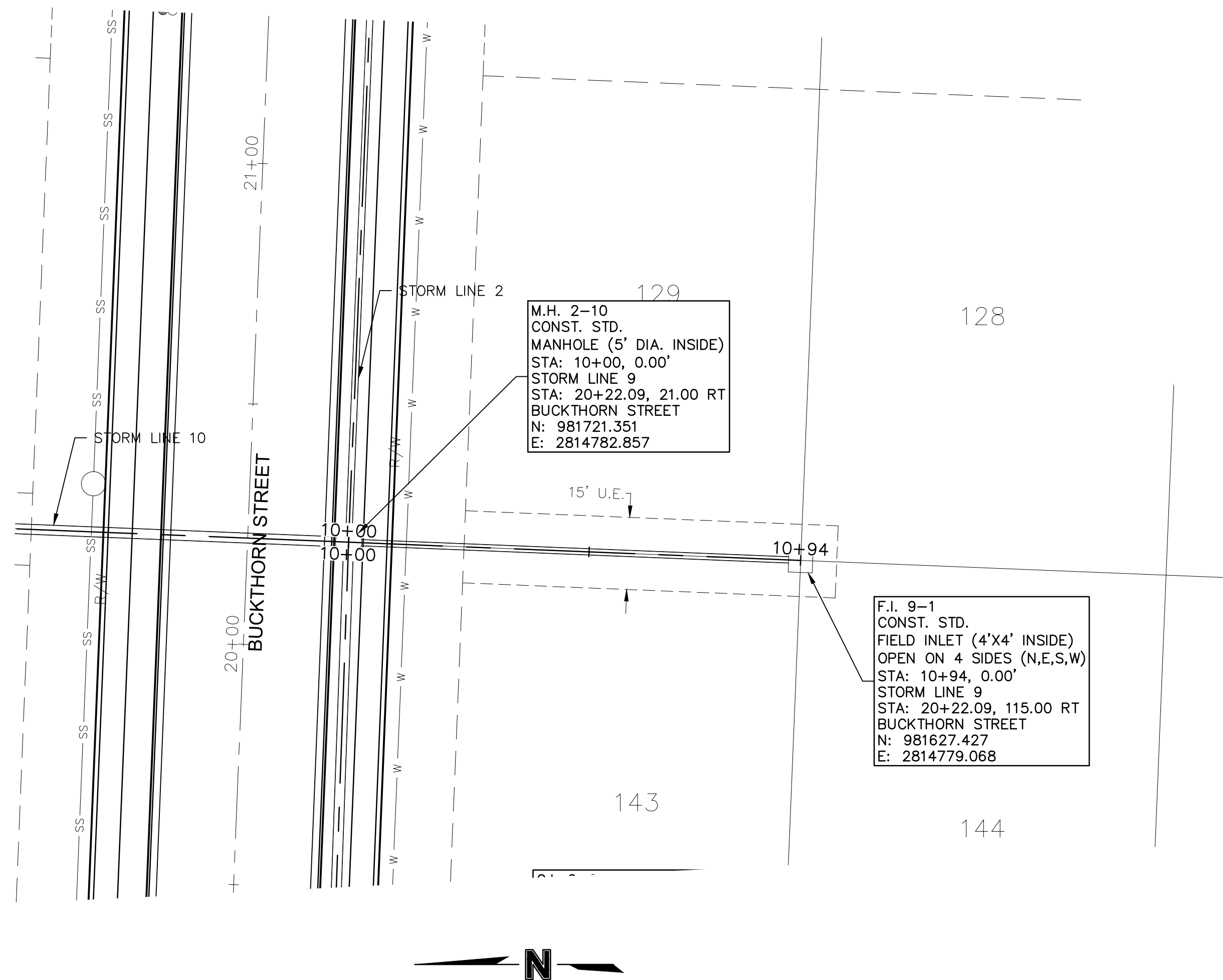
2019

DEVICIONS

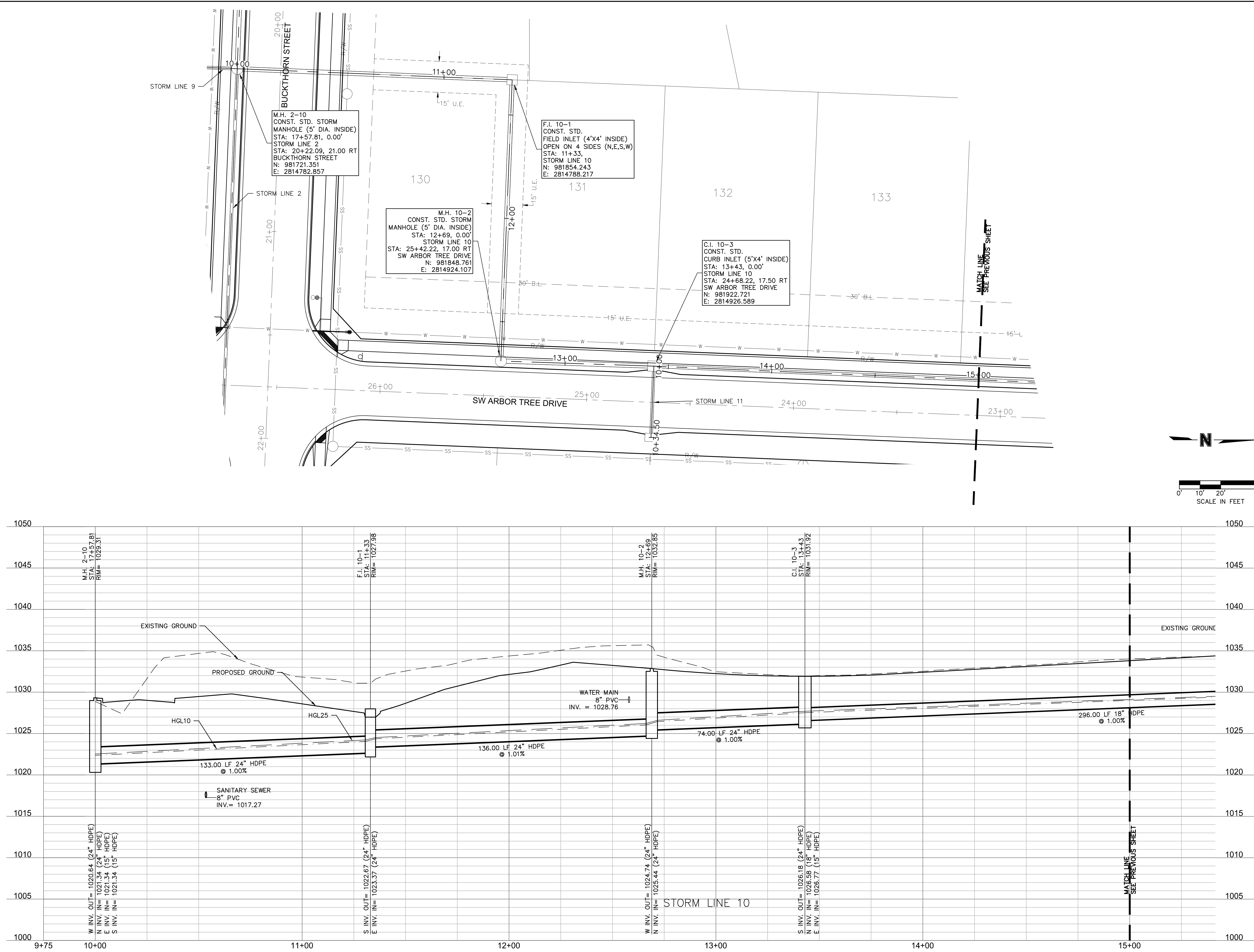
drawn by: D.A.H.O.
checked by: M.G.D.
designed by: B.M.W.
QA/QC by: N.D.H.
project no.: 019-1605
date: 07-12-2019

SHEET
C131

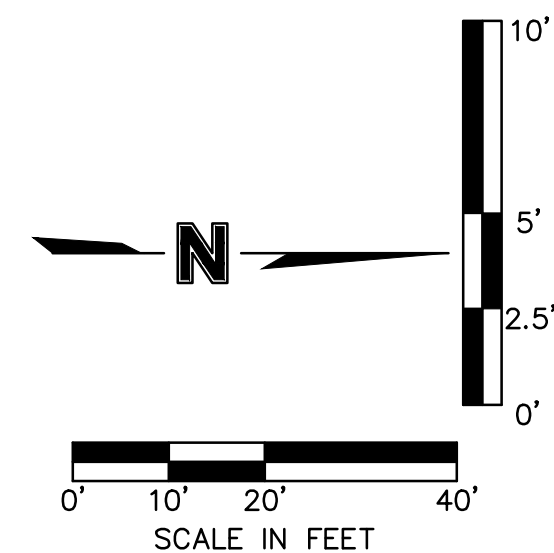
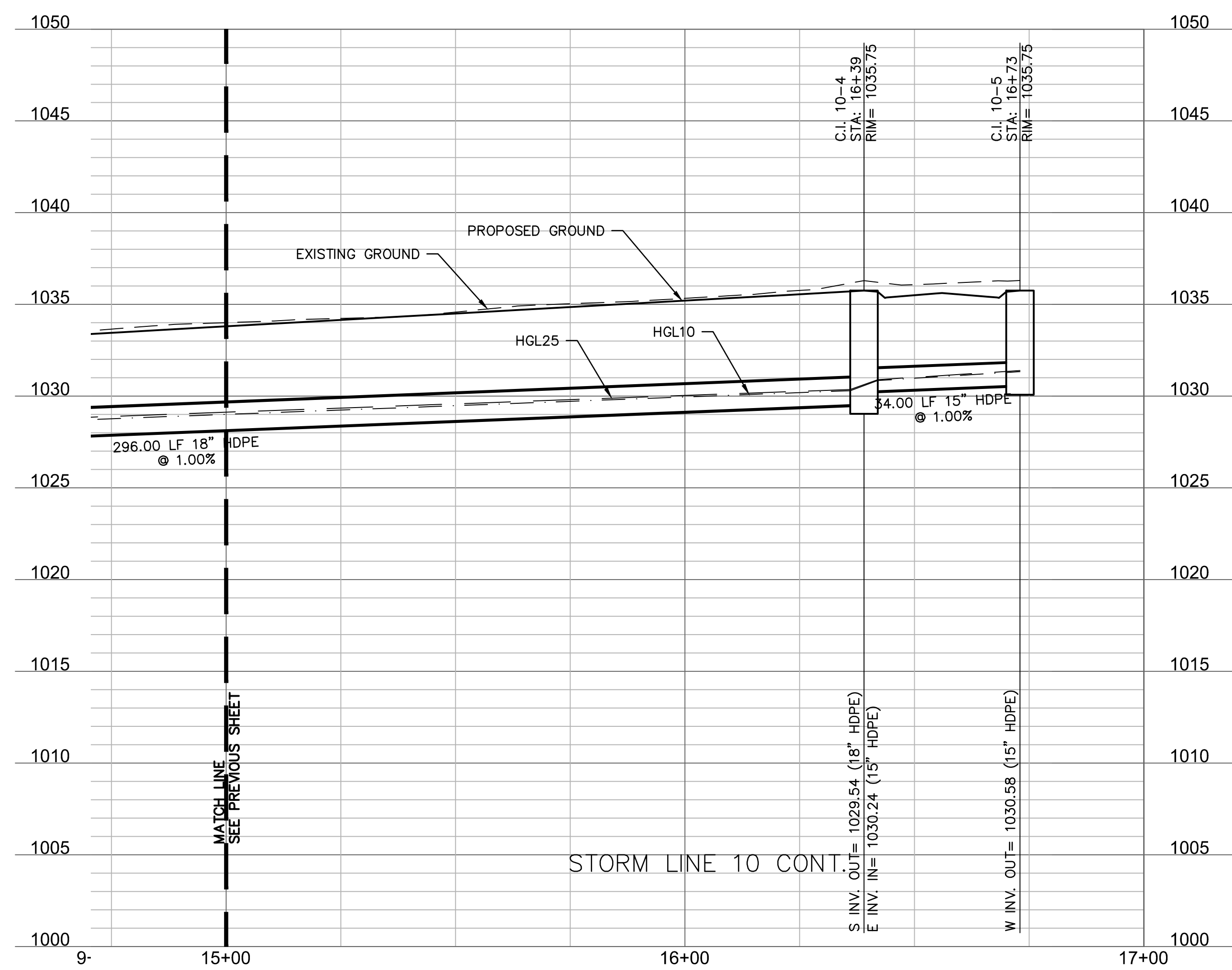
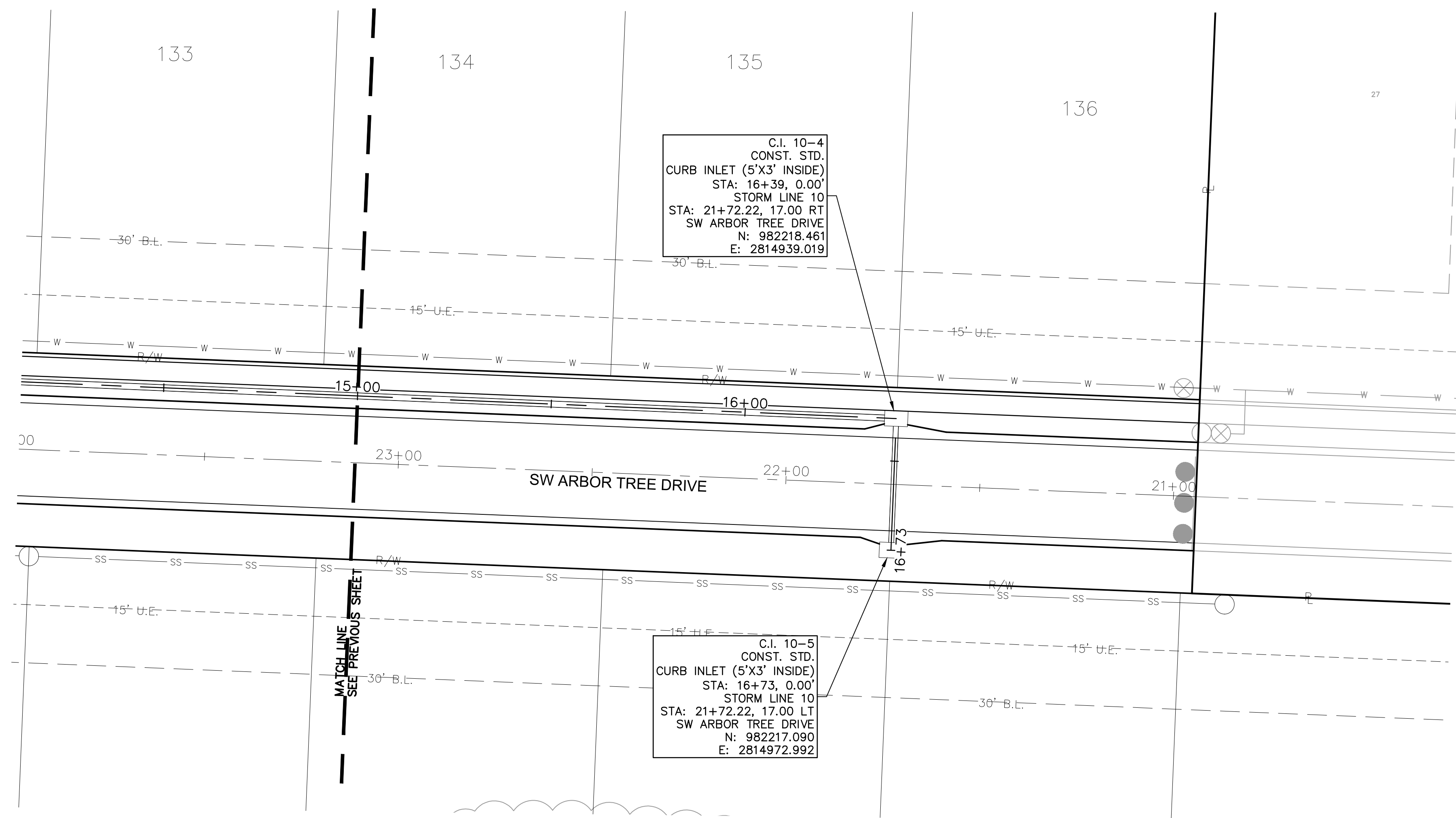




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USER: bworthley

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USER: bwortheley



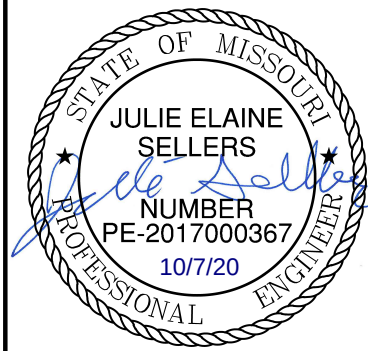
STORM PLAN & PROFILE
STREET & STORM SEWER PLANS

HAWTHORN RIDGE
SECOND PLAT

LEE'S SUMMIT, MISSOURI

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REVISIONS DESCRIPTION
REVISIONS

[illegible]

JULIE E. SELLERS, P.E.
MO# 2017000367

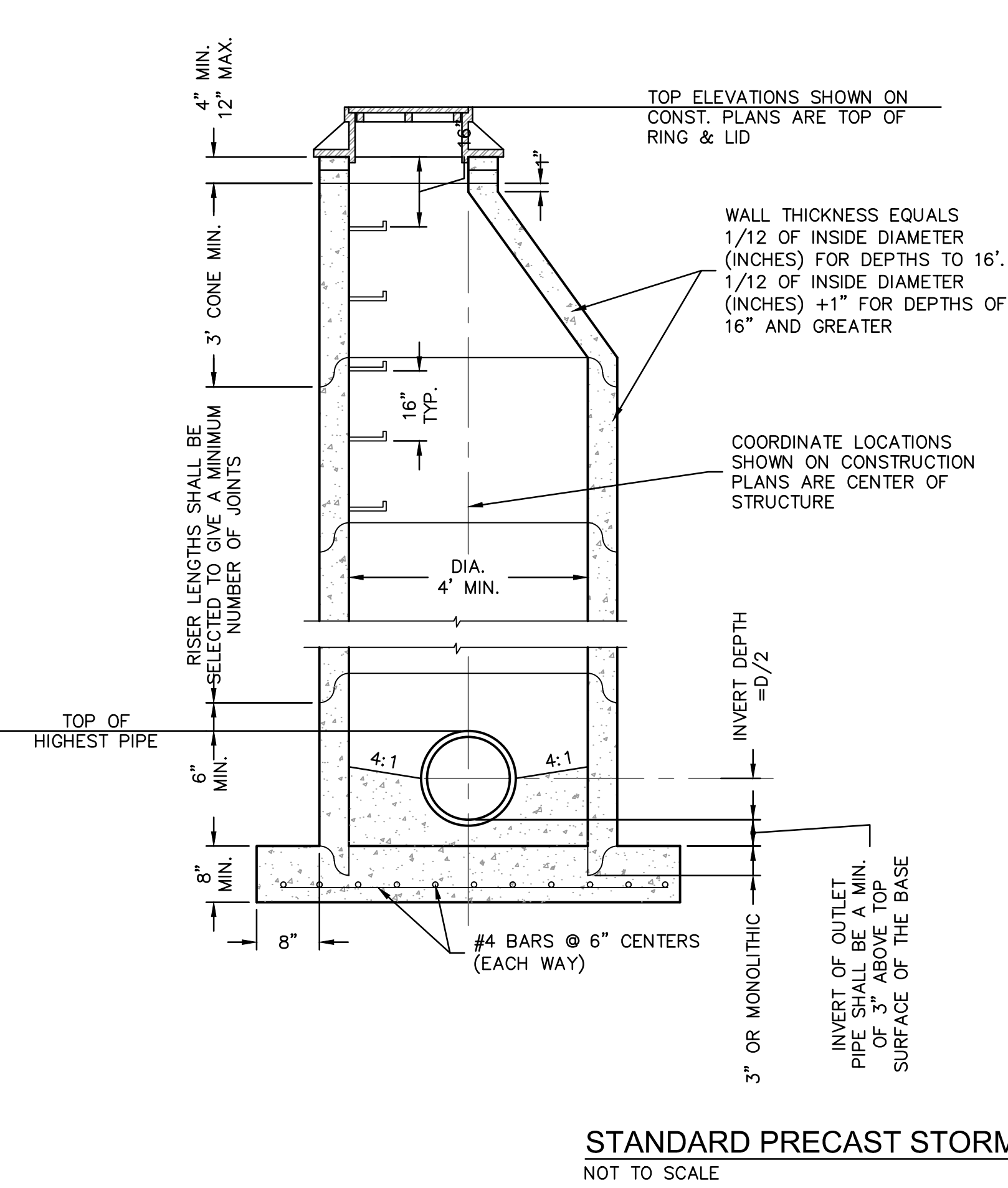
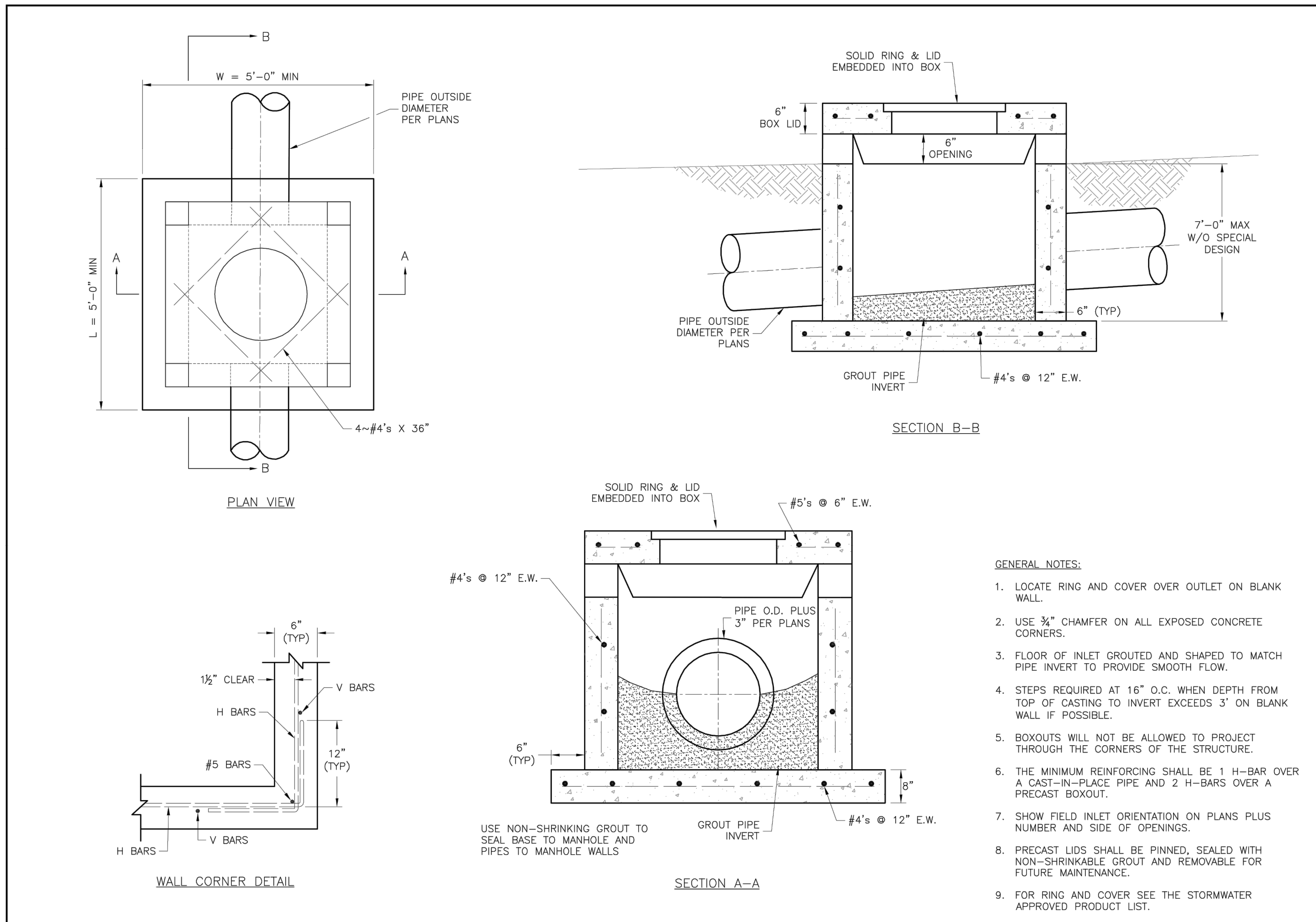
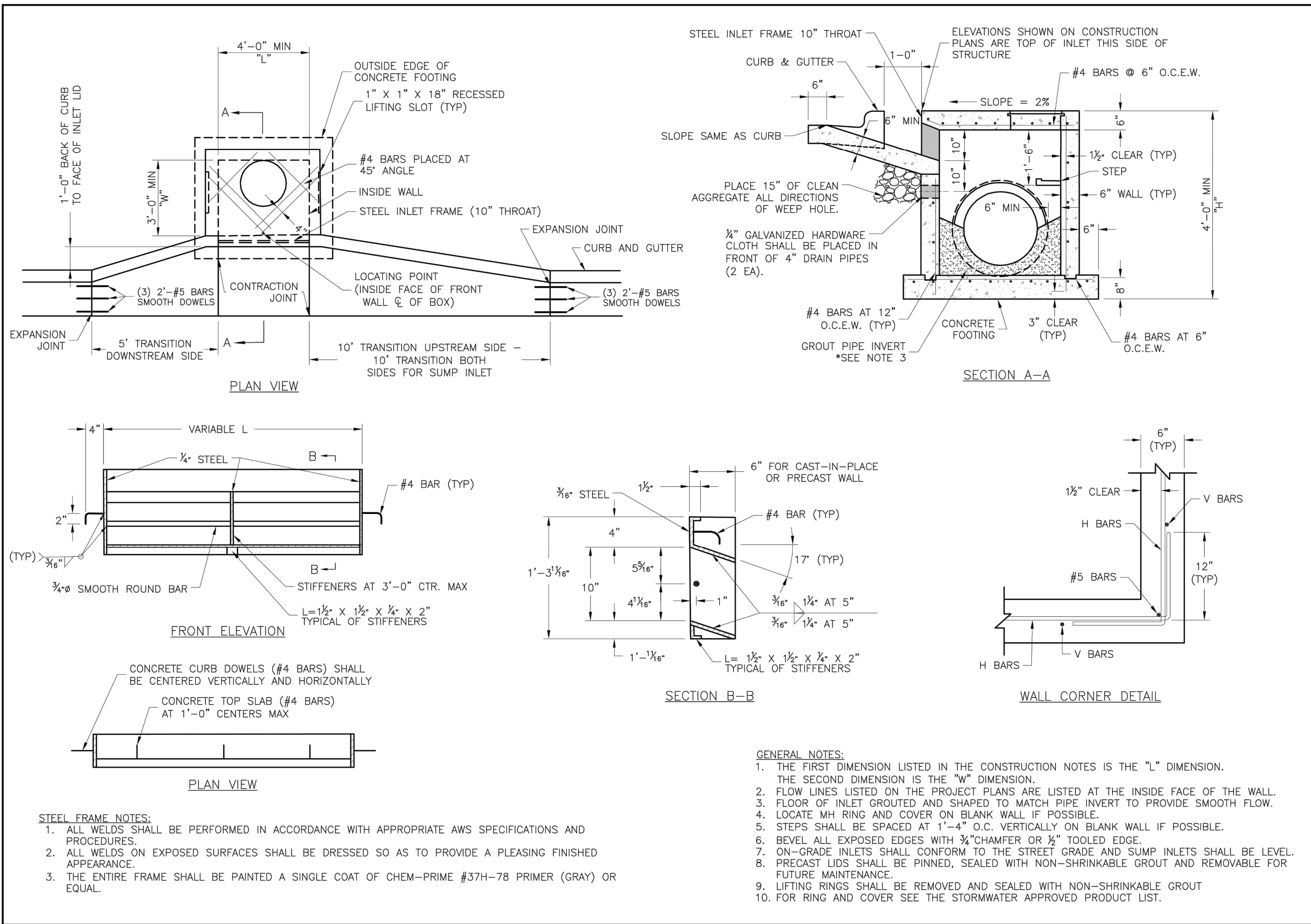
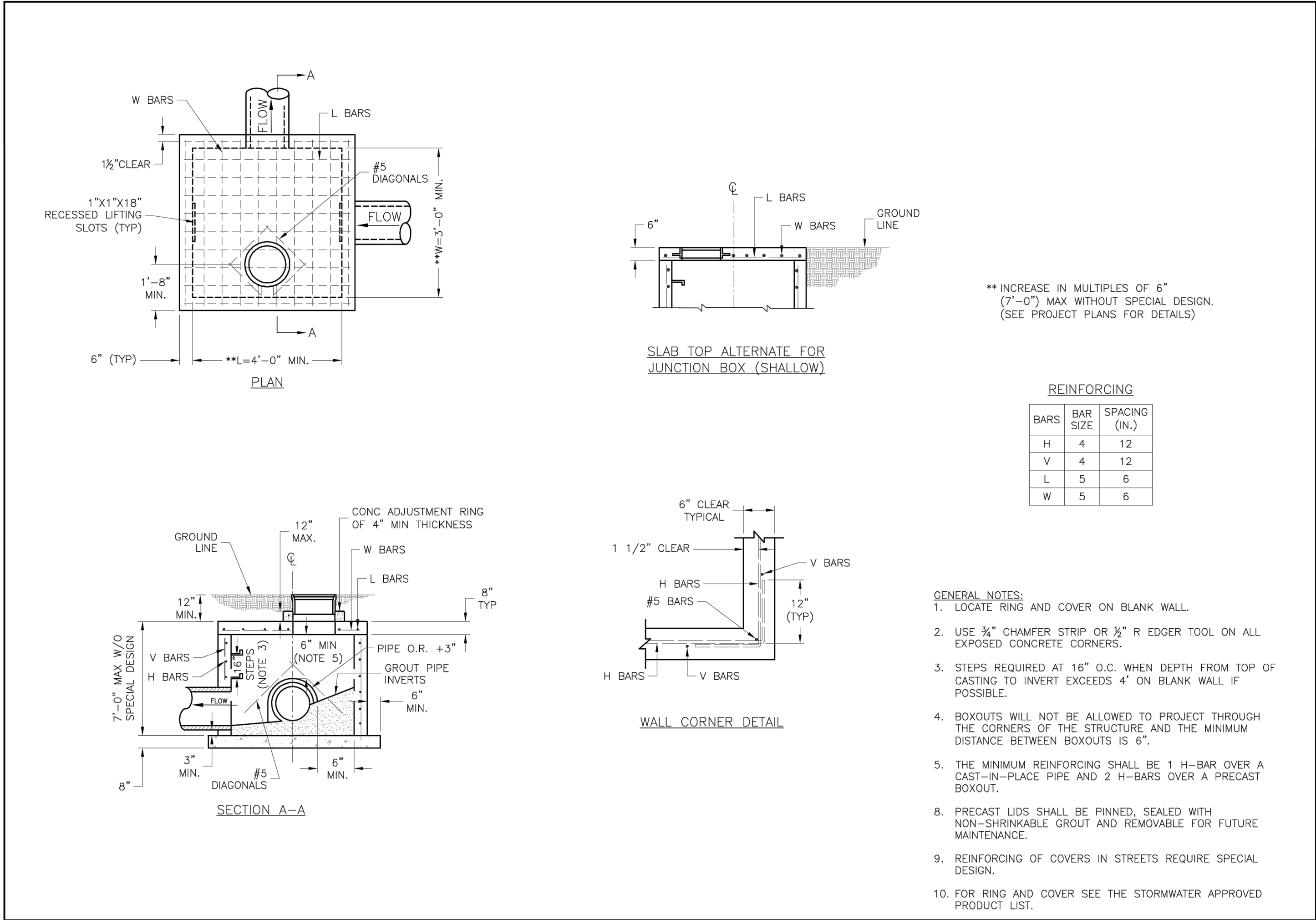
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MO CERTIFICATE OF AUTHORITY # 001592
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NORTH KANSAS CITY, MO 64116
TEL #

www.olsson.com

SHEET
C135

drawn by: D.A.H.O
checked by: M.G.D
designed by: B.M.W
QA/QC by: N.D.H
project no.: 019-1605
date: 07-12-2019



- STORM MANHOLE NOTES**
1. ALL MANHOLES ARE TO BE PRECAST CONCRETE AND OF ECCENTRIC CONE TYPE UNLESS OTHERWISE SPECIFIED.
 2. MANHOLE TOP ADJUSTMENTS SHALL BE ACCOMPLISHED BY THE USE OF CONCRETE ADJUSTMENT RINGS.
 3. TOP OF MANHOLE CASTING SHALL BE SET FLUSH AND ON SAME SLOPE AS FINISHED SURFACE OR AS DIRECTED BY THE ENGINEER.
 4. REINFORCEMENT IN ALL SECTIONS SHALL EQUAL OR EXCEED A.S.T.M. C-478 SPECIFICATIONS.
 5. THE ENGINEER SHALL DESIGNATE MODIFICATIONS FOR MANHOLES WITH SPECIAL DESIGNS.
 6. THE INSIDE DIAMETER OF THE MANHOLE SHALL BE 4'-0" FOR PIPE DIAMETERS FROM 12" THRU 24", 5'-0" FOR PIPE DIAMETERS FROM 27" THRU 36", AND 6'-0" FOR PIPE DIAMETERS 42" THRU 48".
 7. CLEARANCE TOLERANCE OF PIPE OPENINGS: THE MAXIMUM ALLOWABLE PIPE OPENING ON A HORIZONTAL AXIS SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 12". THE MAXIMUM ALLOWABLE PIPE OPENING ON VERTICAL AXIS SHALL BE THE OUTSIDE DIAMETER PLUS 8". THE MAXIMUM CLEARANCE BETWEEN THE OUTSIDE SURFACE OF AN INSTALLED PIPE AND THE CONCRETE OF THE MANHOLE SHALL BE 2".
 8. INSTALLATION OF PIPE OPENINGS: ALL REQUIRED PIPE OPENINGS SHALL BE PLANT CAST IN MANHOLE UNITS. FIELD ALTERATIONS OF OPENINGS WILL BE PERMITTED PROVIDED WALLS ARE SCORED WITH A MASONRY SAW TO A DEPTH SUFFICIENT TO SEVER REINFORCING STEEL. A CHIPPING HAMMER MAY THEN BE USED TO REMOVE THE CONCRETE. MINIMUM DISTANCE BETWEEN ANY TWO ADJACENT PIPES SHALL BE 2".
 9. NO DIRECT PAYMENT FOR SHAPING FLOOR OR CONNECTING PIPES AS SHOWN ON PLANS.
 10. RING AND COVER TO BE NEENAH R-1736, CLAY & BAILEY #2008, DEETER # 1316, OR APPROVED EQUAL. (CASTING MAY VARY BY MUNICIPALITY, REFER TO PLANS & CONTRACT DOCUMENTS.)

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TEL 816.381.1177
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STATE OF MISSOURI
JULIE ELAINE SELLERS
PROFESSIONAL ENGINEER
NUMBER PE-2017000367
10/7/20

JULIE E. SELLERS, P.E.
MO# 2017000367

BY

NO. REV.

DATE

REVISIONS DESCRIPTION

STORM SEWER DETAILS
STREET AND STORM SEWER PLANS

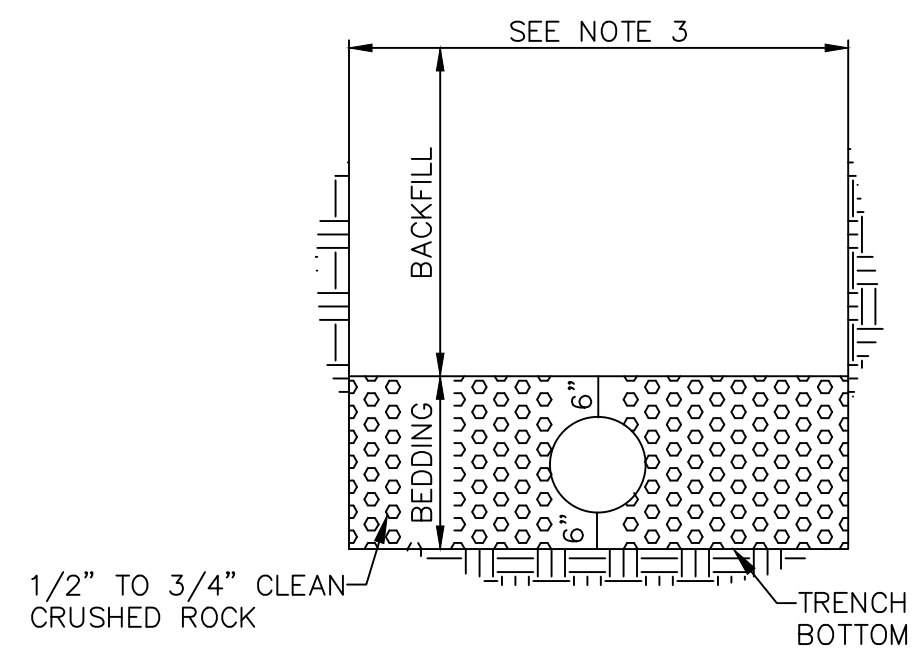
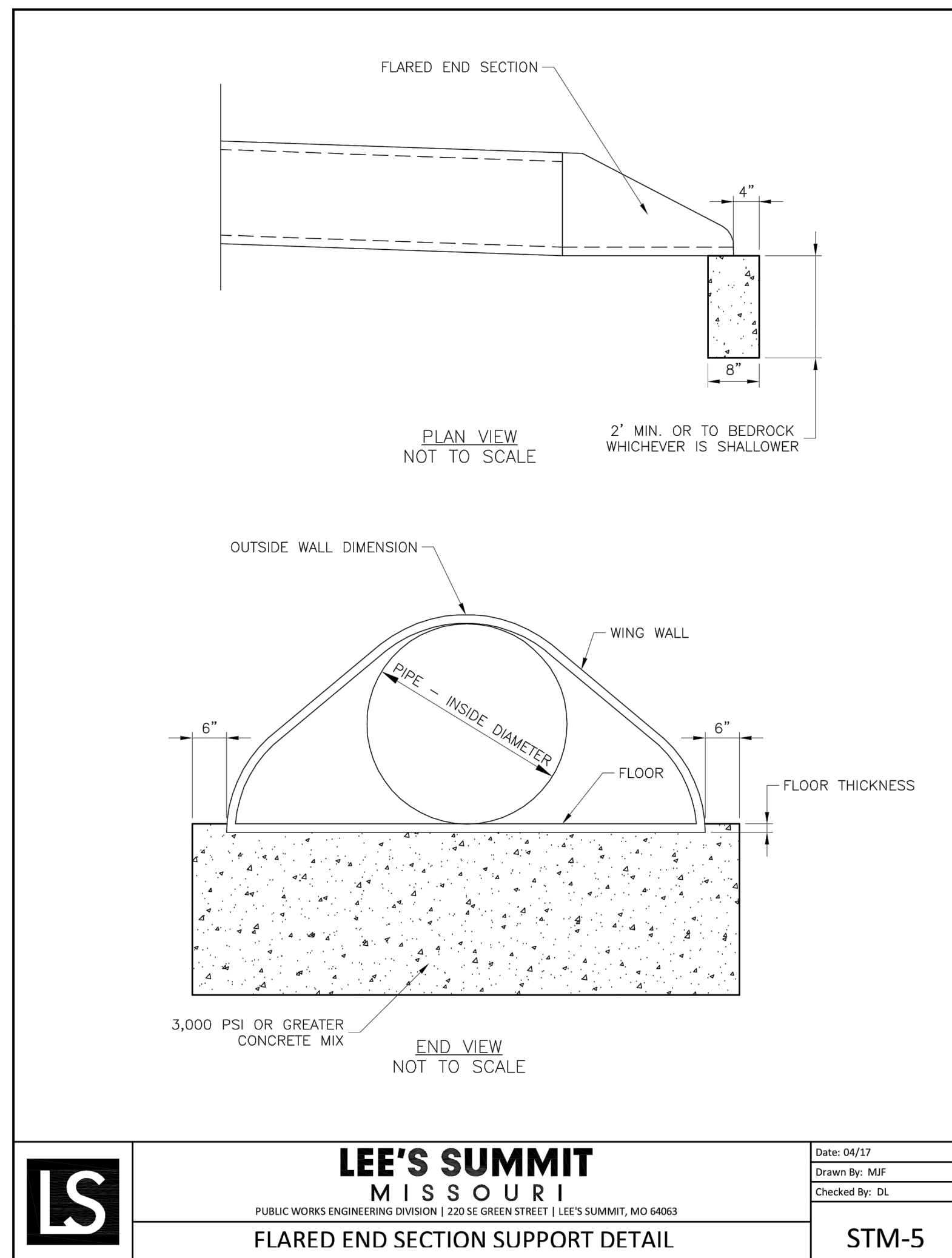
HAWTHORN RIDGE
SECOND PLAT

2019

LEE'S SUMMIT, MISSOURI

drawn by: D.A.H.O.
checked by: M.G.D.
designed by: B.M.W.
QA/QC by: N.D.H.
project no.: 019-1605
date: 07-12-2018

SHEET
C136

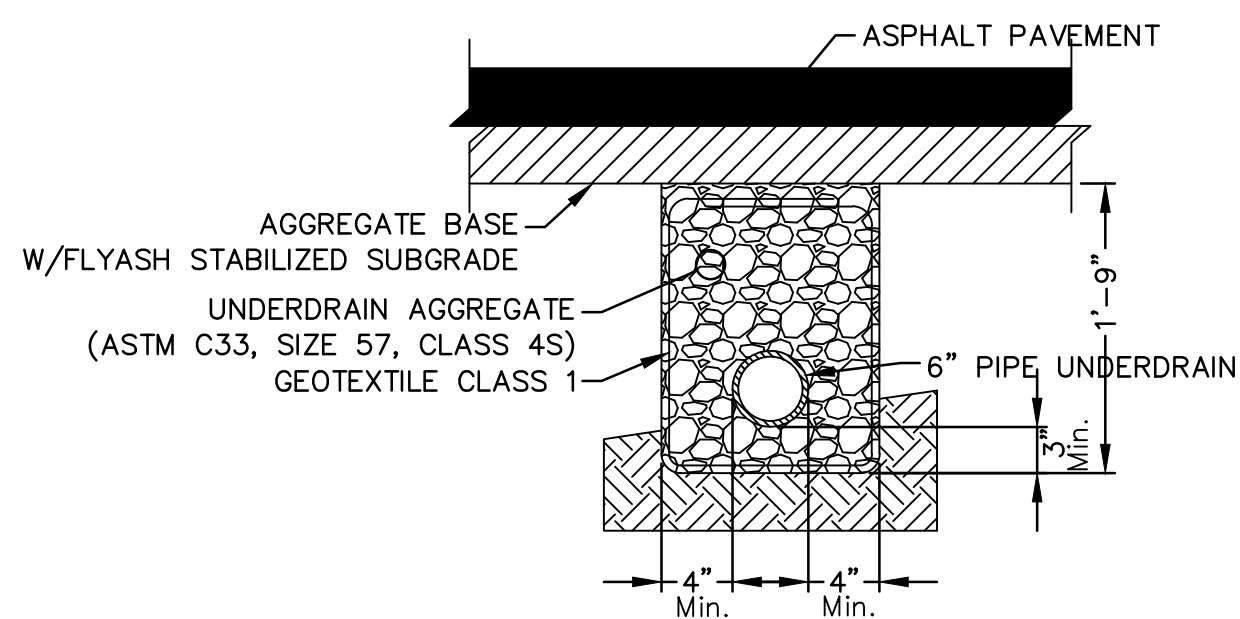
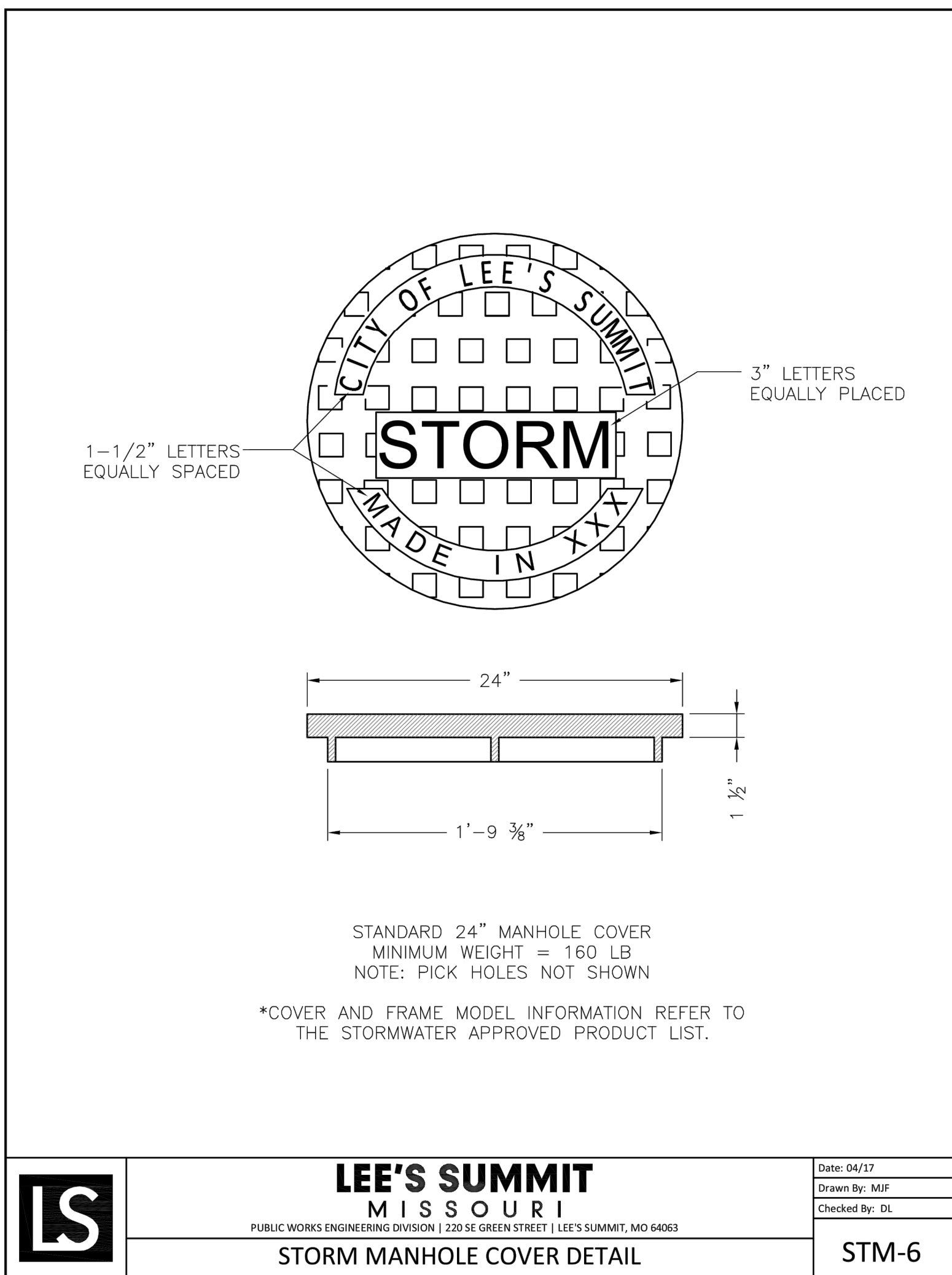


TYPICAL SECTION FOR PLASTIC PIPE
(IN ROCK OR SOIL)

UNDERGROUND PIPE INSTALLATION FOR STORM SEWER LINES

N.T.S.

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

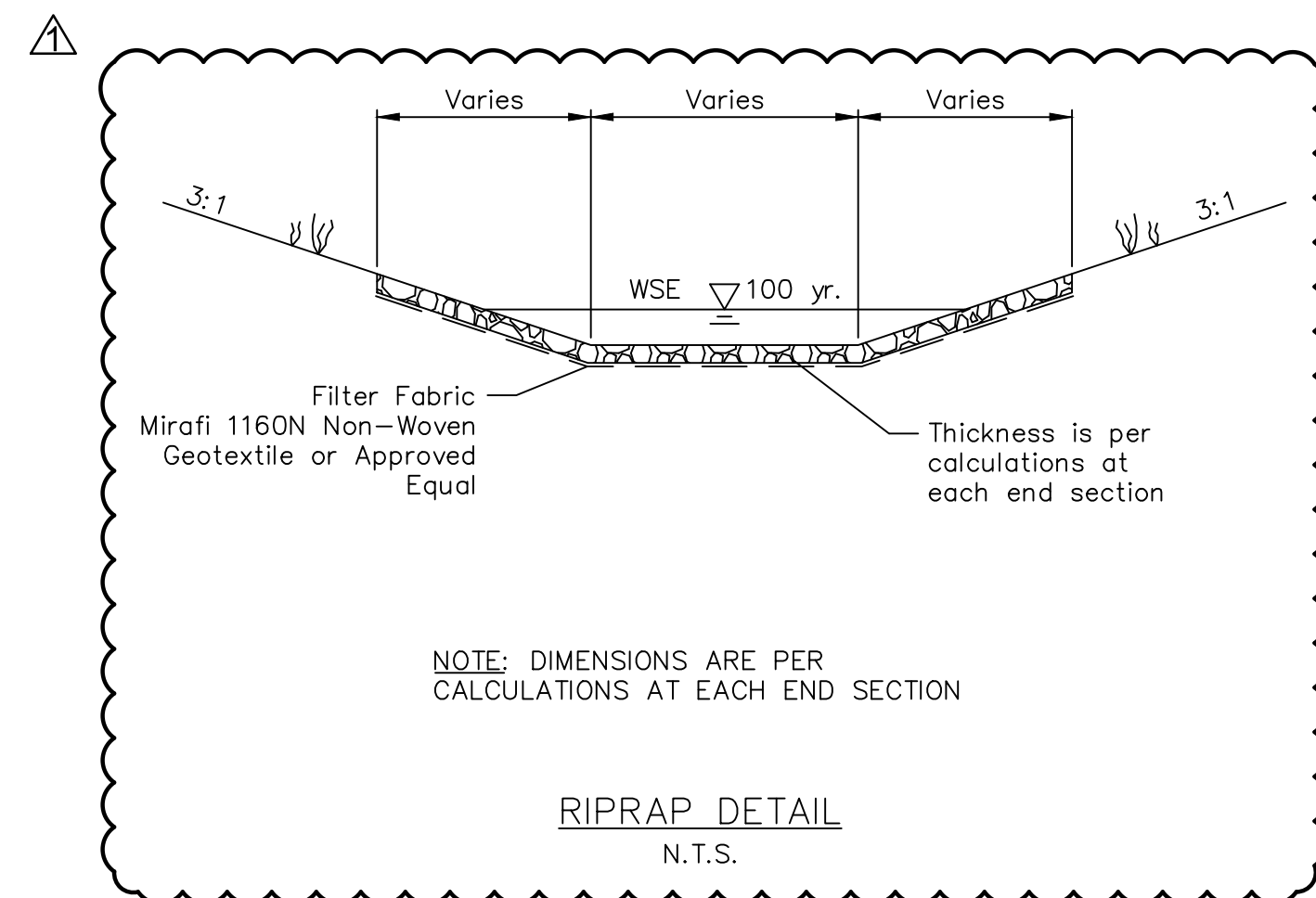
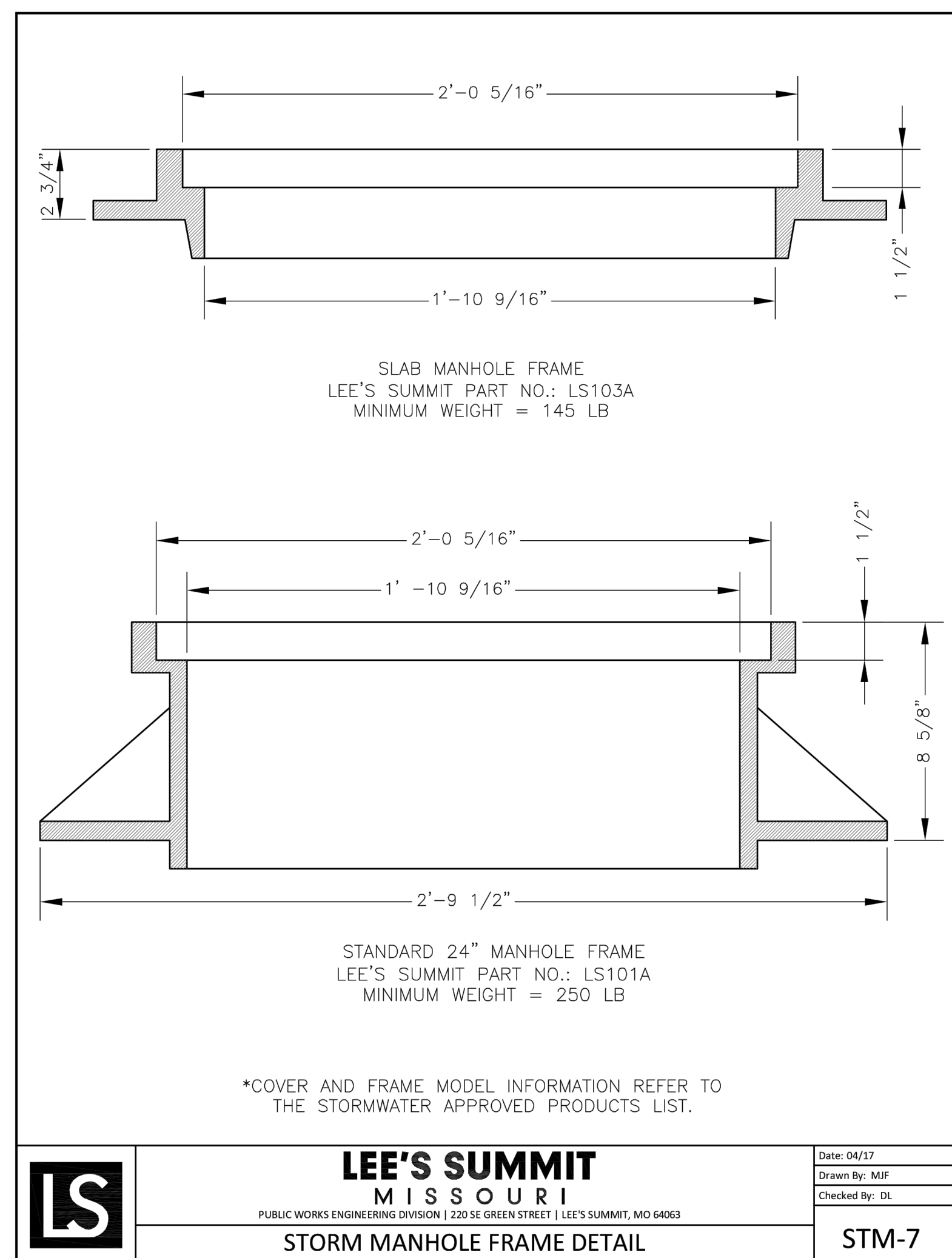


PIPE UNDERDRAIN LATERAL

N.T.S.

NOTES:

- 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 Layout.
- All Underdrain Pipes shall be installed at a minimum slope of 1%.
- Underdrain Pipe shall be installed with the perforations placed down.
- Blanket Underdrain Aggregate, Pipe Underdrain Aggregate, Pipe Underdrain Underdrain, Edge Inlets and Outlet Pipe shall conform to City of Lee's Summit Specifications.
- Overlap geotextile at top of trench a minimum of 12".



RIPRAP DETAIL

N.T.S



0' 40' 80' 160'

SCALE IN FEET

SHEET
C138

[illegible][illegible]

JULIE E. SELLERS, P.E.
MO# 2017000367

olson

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NO CERTIFICATE OF AUTHORITY #:001592
1301 BURLINGTON, SUITE 100
NORTH KANSAS CITY, MO 64116 TEL

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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. 1-1	0.88	0.51	5.00	7.35	1.00	3.30
C.I. 2-4(L)	0.68	0.51	5.00	7.35	1.00	2.56
C.I. 2-4(R)	0.05	0.51	5.00	7.35	1.00	0.18
C.I. 2-4(B)	0.17	0.51	7.00	6.78	1.00	0.59
C.I. 2-4	0.90	0.51	7.00	6.78	1.00	3.11
C.I. 2-5(L)	0.20	0.51	5.00	7.35	1.00	0.74
C.I. 2-5(R)	0.65	0.51	5.00	7.35	1.00	2.46
C.I. 2-5(B)	0.58	0.51	7.00	6.78	1.00	2.00
C.I. 2-5	1.43	0.51	7.00	6.78	1.00	4.95
C.I. 2-7	0.59	0.51	5.00	7.35	1.00	2.21
C.I. 2-8	1.13	0.51	10.88	5.90	1.00	3.40
C.I. 2-9	0.25	0.51	5.00	7.35	1.00	0.94
C.I. 2-11	0.17	0.51	5.00	7.35	1.00	0.64
C.I. 2-12	0.20	0.51	5.00	7.35	1.00	0.75
F.I. 3-2	1.24	0.51	5.00	7.35	1.00	4.65
F.I. 3-3	0.50	0.51	5.00	7.35	1.00	1.88
C.I. 4-1	0.77	0.51	5.00	7.35	1.00	2.89
C.I. 4-2	0.21	0.51	5.00	7.35	1.00	0.79
C.I. 4-4(L)	0.14	0.51	5.00	7.35	1.00	0.51
C.I. 4-4(R)	0.82	0.51	5.00	7.35	1.00	3.09
C.I. 4-4(B)	0.31	0.51	7.00	6.78	1.00	1.07
C.I. 4-4	1.27	0.51	7.00	6.78	1.00	4.39
C.I. 4-5	0.88	0.51	5.00	7.35	1.00	3.30
C.I. 4-6	0.83	0.51	5.00	7.35	1.00	3.11
C.I. 4-7	0.64	0.51	5.00	7.35	1.00	2.40
C.I. 5-1	0.93	0.51	11.83	5.71	1.00	2.71
C.I. 6-1(L)	0.29	0.51	5.00	7.35	1.00	1.08
C.I. 6-1(R)	0.00	0.51	5.00	7.35	1.00	0.00
C.I. 6-1(B)	0.12	0.51	5.00	7.35	1.00	0.46
C.I. 6-1	0.41	0.51	5.00	7.35	1.00	1.54
C.I. 6-2(L)	0.00	0.51	5.00	7.35	1.00	0.00
C.I. 6-2(R)	0.47	0.51	5.00	7.35	1.00	1.77
C.I. 6-2(B)	0.66	0.51	7.00	6.78	1.00	2.28
C.I. 6-2	1.13	0.51	7.00	6.78	1.00	3.91
C.I. 7-1(L)	1.59	0.51	13.45	5.43	1.00	4.40
C.I. 7-1(R)	0.21	0.51	5.00	7.35	1.00	0.79
C.I. 7-1(B)	0.56	0.51	5.00	7.35	1.00	2.10
C.I. 7-1	2.36	0.51	13.45	5.43	1.00	6.53
C.I. 8-1	0.24	0.51	5.00	7.35	1.00	0.90
F.I. 9-1	0.36	0.51	5.00	7.35	1.00	1.35
F.I. 10-1	0.38	0.51	5.00	7.35	1.00	1.43
C.I. 10-3(L)	0.11	0.51	5.00	7.35	1.00	0.41
C.I. 10-3(R)	0.30	0.51	5.00	7.35	1.00	1.13
C.I. 10-3(B)	0.17	0.51	5.00	7.35	1.00	0.64
C.I. 10-3	0.58	0.51	5.00	7.35	1.00	2.18
C.I. 10-4	0.20	0.51	5.00	7.35	1.00	0.75
C.I. 10-5	1.62	0.51	8.83	6.33	1.00	5.23
C.I. 11-1(L)	0.73	0.51	5.00	7.35	1.00	2.75
C.I. 11-1(R)	0.20	0.51	5.00	7.35	1.00	0.73
C.I. 11-1(B)	0.70	0.51	7.00	6.78	1.00	2.42
C.I. 11-1	1.63	0.51	7.00	6.78	1.00	5.64

Drainage Area Design Table						
25 Year Return Frequency						
Inlet ID	Drainage Area	C	Tc	i	K	Peak Flow
	(ac)		(min)	(in/hr)		(cfs)
C.I. 1-1	0.88	0.51	5.00	8.53	1.10	4.21
C.I. 2-4(L)	0.68	0.51	5.00	8.53	1.10	3.26
C.I. 2-4(R)	0.05	0.51	5.00	8.53	1.10	0.23
C.I. 2-4(B)	0.17	0.51	7.00	7.87	1.10	0.75
C.I. 2-4	0.90	0.51	7.00	7.87	1.10	3.97
C.I. 2-5(L)	0.20	0.51	5.00	8.53	1.10	0.94
C.I. 2-5(R)	0.65	0.51	5.00	8.53	1.10	3.13
C.I. 2-5(B)	0.58	0.51	7.00	7.87	1.10	2.55
C.I. 2-5	1.43	0.51	7.00	7.87	1.10	6.31
C.I. 2-7	0.59	0.51	5.00	8.53	1.10	2.82
C.I. 2-8	1.13	0.51	10.88	6.84	1.10	4.34
C.I. 2-9	0.25	0.51	5.00	8.53	1.10	1.20
C.I. 2-11	0.17	0.51	5.00	8.53	1.10	0.81
C.I. 2-12	0.20	0.51	5.00	8.53	1.10	0.96
F.I. 3-2	1.24	0.51	5.00	8.53	1.10	5.93
F.I. 3-3	0.50	0.51	5.00	8.53	1.10	2.39
C.I. 4-1	0.77	0.51	5.00	8.53	1.10	3.68
C.I. 4-2	0.21	0.51	5.00	8.53	1.10	1.00
C.I. 4-4(L)	0.14	0.51	5.00	8.53	1.10	0.65
C.I. 4-4(R)	0.82	0.51	5.00	8.53	1.10	3.94
C.I. 4-4(B)	0.31	0.51	7.00	7.87	1.10	1.37
C.I. 4-4	1.27	0.51	7.00	7.87	1.10	5.61
C.I. 4-5	0.88	0.51	5.00	8.53	1.10	4.21
C.I. 4-6	0.83	0.51	5.00	8.53	1.10	3.97
C.I. 4-7	0.64	0.51	5.00	8.53	1.10	3.06
C.I. 5-1	0.93	0.51	11.83	6.63	1.10	3.46
C.I. 6-1(L)	0.29	0.51	5.00	8.53	1.10	1.38
C.I. 6-1(R)	0.00	0.51	5.00	8.53	1.10	0.00
C.I. 6-1(B)	0.12	0.51	5.00	8.53	1.10	0.59
C.I. 6-1	0.41	0.51	5.00	8.53	1.10	1.96
C.I. 6-2(L)	0.00	0.51	5.00	8.53	1.10	0.00
C.I. 6-2(R)	0.47	0.51	5.00	8.53	1.10	2.25
C.I. 6-2(B)	0.66	0.51	7.00	7.87	1.10	2.91
C.I. 6-2	1.13	0.51	7.00	7.87	1.10	4.99
C.I. 7-1(L)	1.59	0.51	13.45	6.29	1.10	5.61
C.I. 7-1(R)	0.21	0.51	5.00	8.53	1.10	1.00
C.I. 7-1(B)	0.56	0.51	5.00	8.53	1.10	2.68
C.I. 7-1	2.36	0.51	13.45	6.29	1.10	8.33
C.I. 8-1	0.24	0.51	5.00	8.53	1.10	1.15
F.I. 9-1	0.36	0.51	5.00	8.53	1.10	1.72
F.I. 10-1	0.38	0.51	5.00	8.53	1.10	1.82
C.I. 10-3(L)	0.11	0.51	5.00	8.53	1.10	0.53
C.I. 10-3(R)	0.30	0.51	5.00	8.53	1.10	1.44
C.I. 10-3(B)	0.17	0.51	5.00	8.53	1.10	0.81
C.I. 10-3	0.58	0.51	5.00	8.53	1.10	2.78
C.I. 10-4	0.20	0.51	5.00	8.53	1.10	0.96
C.I. 10-5	1.62	0.51	8.83	7.35	1.10	6.68
C.I. 11-1(L)	0.73	0.51	5.00	8.53	1.10	3.51
C.I. 11-1(R)	0.20	0.51	5.00	8.53	1.10	0.94
C.I. 11-1(B)	0.70	0.51	7.00	7.87	1.10	3.09
C.I. 11-1	1.63	0.51	7.00	7.87	1.10	7.19

Inlet Design Table													
10 Year Return Frequency													
Inlet ID	Inlet Location	Peak Flow	Upstream Bypass	Total Flow	Clogging Factor	Inlet Capacity	Sag Inlet Capacity (Note 1)	Captured Flow	Bypass Flow	Inlet Efficiency (Note 2)	Gutter Depth	Gutter Spread	Ponding Depth
		(cfs)	(cfs)	(cfs)		(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)
C.I. 1-1	GRADE	3.30	0.00	3.30	1.00	3.04	3.04	3.04	0.26	92.05%	0.21	9.66	...
C.I. 2-4(L)	SAG	2.56	0.00	2.56	...	...	...	...	...	...	0.19	8.70	...
C.I. 2-4(R)	SAG	0.18	0.00	0.18	...	...	...	...	...	...	0.07	3.21	...
C.I. 2-4	SAG	3.11	0.00	3.11	0.80	23.28	18.63	3.11	0.00	100.00%	...	...	...
C.I. 2-5(L)	SAG	0.74	0.39	1.12	...	...	...	...	...	...	0.14	6.35	...
C.I. 2-5(R)	SAG	2.46	0.79	3.25	...	...	...	...	...	...	0.21	9.52	...
C.I. 2-5	SAG	4.95	1.18	6.12	0.80	23.28	18.63	6.12	0.00	100.00%	...	...	...
C.I. 2-7	GRADE	2.21	0.16	2.37	1.00	2.28	2.28	2.28	0.09	96.21%	0.18	8.47	...
C.I. 2-8	GRADE	3.40	0.19	3.58	1.00	3.29	3.29	3.29	0.29	91.86%	0.21	9.89	...
C.I. 2-9	GRADE	0.94	0.00	0.94	1.00	0.93	0.93	0.93	0.01	99.42%	0.11	5.29	...
C.I. 2-11	GRADE	0.64	0.00	0.64	1.00	0.64	0.64	0.64	0.00	99.71%	0.11	4.96	...
C.I. 2-12	GRADE	0.75	0.00	0.75	1.00	0.75	0.75	0.75	0.00	99.97%	0.11	5.28	...
F.I. 3-2	SAG	4.65	...	4.65	0.80	18.67	14.93	4.65	0.00	100.00%	...	...	0.20
F.I. 3-3	SAG	1.88	...	1.88	0.80	18.67	14.93	1.88	0.00	100.00%	...	...	0.11
C.I. 4-1	GRADE	2.89	0.00	2.89	1.00	2.70	2.70	2.70	0.19	93.53%	0.20	9.12	...
C.I. 4-2	GRADE	0.79	0.00	0.79	1.00	0.79	0.79	0.79	0.00	99.90%	0.12	5.60	...
C.I. 4-4(L)	SAG	0.51	0.00	0.51	...	...	...	...	...	...	0.09	4.64	...
C.I. 4-4(R)	SAG	3.09	0.00	3.09	...	...	...	...	...	...	0.20	10.07	...
C.I. 4-4	SAG	4.39	0.00	4.39	0.80	19.40	15.52	4.39	0.00	100.00%	...	...	...
C.I. 4-5	GRADE	3.30	0.65	3.95	1.00	3.10	3.10	3.10	0.85	78.52%	0.22	11.16	...
C.I. 4-6	GRADE	3.11	0.32	3.44	1.00	2.79	2.79	2.79	0.65	81.07%	0.21	10.59	...
C.I. 4-7	GRADE	2.40	0.00	2.40	1.00	2.08	2.08	2.08	0.32	86.54%	0.19	9.26	...
C.I. 5-1	GRADE	2.71	0.00	2.71	1.00	2.55	2.55	2.55	0.16	94.26%	0.19	8.91	...
C.I. 6-1(L)	SAG	1.08	0.65	1.73	...	...	...	...	...	...	0.14	7.10	...
C.I. 6-1(R)	SAG	0.00	0.00	0.00	...	...	...	...	...	...	0.00	0.00	...
C.I. 6-1	SAG	1.54	0.65	2.19	0.80	19.40	15.52	2.19	0.00	100.00%	...	...	...
C.I. 6-2(L)	SAG	0.00	0.00	0.00	...	...	...	...	...	...	0.00	0.00	...
C.I. 6-2(R)	SAG	1.77	1.39	3.15	...	...	...	...	...	...	0.18	8.89	...
C.I. 6-2	SAG	3.91	1.39	5.30	0.80	19.40	15.52	5.30	0.00	100.00%	...	...	...
C.I. 7-1(L)	SAG	4.40	0.85	5.25	...	...	...	...	...	...	0.24	11.91	...
C.I. 7-1(R)	SAG	0.79	0.00	0.79	...	...	...	...	...	...	0.11	5.63	...
C.I. 7-1	SAG	6.53	0.85	7.38	0.80	19.40	15.52	7.38	0.00	100.00%	...	...	...
C.I. 8-1	GRADE	0.90	0.00	0.90	1.00	0.90	0.90	0.90	0.00	99.54%	0.11	5.21	...
F.I. 9-1	SAG	1.35	...	1.35	0.80	18.67	14.93	1.35	0.00	100.00%	...	...	0.09
F.I. 10-1	SAG	1.43	...	1.43	0.80	18.67	14.93	1.43	0.00	100.00%	...	...	0.09
C.I. 10-3(L)	SAG	0.41	0.00	0.41	...	...	...	...	...	...	0.09	4.26	...
C.I. 10-3(R)	SAG	1.13	0.04	1.16	...	...	...	...	...	...	0.13	6.62	...
C.I. 10-3	SAG	2.18	0.04	2.21	0.80	19.40	15.52	2.21	0.00	100.00%	...	...	...
C.I. 10-4	GRADE	0.75	0.00	0.75	1.00	0.71	0.71	0.71	0.04	95.06%	0.11	5.62	...
C.I. 10-5	GRADE	5.23	0.00	5.23	1.00	3.50	3.50	3.50	1.73	66.97%	0.23	11.64	...
C.I. 11-1(L)	SAG	2.75	1.73	4.48	...	...	...	...	...	...	0.22	10.98	...
C.I. 11-1(R)	SAG	0.73	0.00	0.73	...	...	...	...	...	...	0.11	5.29	...
C.I. 11-1	SAG	5.64	1.73	7.37	0.80	19.40	15.52	7.37	0.00	100.00%	...	...	...

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. 1-1	0.88	0.51	5.00	10.32	1.25	5.79
C.I. 2-4(L)	0.68	0.51	5.00	10.32	1.25	4.49
C.I. 2-4(R)	0.05	0.51	5.00	10.32	1.25	0.32
C.I. 2-4(B)	0.17	0.51	7.00	9.55	1.25	1.03
C.I. 2-4	0.90	0.51	7.00	9.55	1.25	5.48
C.I. 2-5(L)	0.20	0.51	5.00	10.32	1.25	1.29
C.I. 2-5(R)	0.65	0.51	5.00	10.32	1.25	4.31
C.I. 2-5(B)	0.58	0.51	7.00	9.55	1.25	3.52
C.I. 2-5	1.43	0.51	7.00	9.55	1.25	8.71
C.I. 2-7	0.59	0.51	5.00	10.32	1.25	3.88
C.I. 2-8	1.13	0.51	10.88	8.34	1.25	6.01
C.I. 2-9	0.25	0.51	5.00	10.32	1.25	1.65
C.I. 2-11	0.17	0.51	5.00	10.32	1.25	1.12
C.I. 2-12	0.20	0.51	5.00	10.32	1.25	1.32
F.I. 3-2	1.24	0.51	5.00	10.32	1.25	8.16
F.I. 3-3	0.50	0.51	5.00	10.32	1.25	3.29
C.I. 4-1	0.77	0.51	5.00	10.32	1.25	5.07
C.I. 4-2	0.21	0.51	5.00	10.32	1.25	1.38
C.I. 4-4(L)	0.14	0.51	5.00	10.32	1.25	0.89
C.I. 4-4(R)	0.82	0.51	5.00	10.32	1.25	5.42
C.I. 4-4(B)	0.31	0.51	7.00	9.55	1.25	1.89
C.I. 4-4	1.27	0.51	7.00	9.55	1.25	7.73
C.I. 4-5	0.88	0.51	5.00	10.32	1.25	5.79
C.I. 4-6	0.83	0.51	5.00	10.32	1.25	5.46
C.I. 4-7	0.64	0.51	5.00	10.32	1.25	4.21
C.I. 5-1	0.93	0.51	11.83	8.09	1.25	4.80
C.I. 6-1(L)	0.29	0.51	5.00	10.32	1.25	1.89
C.I. 6-1(R)	0.00	0.51	5.00	10.32	1.25	0.00
C.I. 6-1(B)	0.12	0.51	5.00	10.32	1.25	0.81
C.I. 6-1	0.41	0.51	5.00	10.32	1.25	2.70
C.I. 6-2(L)	0.00	0.51	5.00	10.32	1.25	0.00
C.I. 6-2(R)	0.47	0.51	5.00	10.32	1.25	3.10
C.I. 6-2(B)	0.66	0.51	7.00	9.55	1.25	4.01
C.I. 6-2	1.13	0.51	7.00	9.55	1.25	6.88
C.I. 7-1(L)	1.59	0.51	13.45	7.70	1.25	7.80
C.I. 7-1(R)	0.21	0.51	5.00	10.32	1.25	1.38
C.I. 7-1(B)	0.56	0.51	5.00	10.32	1.25	3.69
C.I. 7-1	2.36	0.51	13.45	7.70	1.25	11.58
C.I. 8-1	0.24	0.51	5.00	10.32	1.25	1.58
F.I. 9-1	0.36	0.51	5.00	10.32	1.25	2.37
F.I. 10-1	0.38	0.51	5.00	10.32	1.25	2.50
C.I. 10-3(L)	0.11	0.51	5.00	10.32	1.25	0.72
C.I. 10-3(R)	0.30	0.51	5.00	10.32	1.25	1.97
C.I. 10-3(B)	0.17	0.51	5.00	10.32	1.25	1.12
C.I. 10-3	0.58	0.51	5.00	10.32	1.25	3.82
C.I. 10-4	0.20	0.51	5.00	10.32	1.25	1.32
C.I. 10-5	1.62	0.51	8.83	8.94	1.25	9.23
C.I. 11-1(L)	0.73	0.51	5.00	10.32	1.25	4.83
C.I. 11-1(R)	0.20	0.51	5.00	10.32	1.25	1.29
C.I. 11-1(B)	0.70	0.51	7.00	9.55	1.25	4.27
C.I. 11-1	1.63	0.51	7.00	9.55	1.25	9.92

Inlet Design Table													
100 Year Return Frequency													
Inlet ID	Inlet Location	Peak Flow	Upstream Bypass	Total Flow	Clogging Factor	Inlet Capacity	Sag Inlet Capacity (Note 1)	Captured Flow	Bypass Flow	Inlet Efficiency (Note 2)	Gutter Depth	Gutter Spread	Ponding Depth
		(cfs)	(cfs)	(cfs)		(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)
C.I. 1-1	GRADE	5.79	0.06	5.85	1.00	4.81	4.81	4.81	1.04	82.22%	0.26	11.96	...
C.I. 2-4(L)	SAG	4.49	0.00	4.49	...	...	...	...	...	...	0.23	10.75	...
C.I. 2-4(R)	SAG	0.32	0.00	0.32	...	...	...	...	...	...	0.09	3.96	...
C.I. 2-4	SAG	5.48	0.00	5.48	0.80	23.28	18.63	5.48	0.00	100.00%	...	...	...
C.I. 2-5(L)	SAG	1.29	1.89	3.18	...	...	...	...	...	...	0.20	9.38	...
C.I. 2-5(R)	SAG	4.31	2.76	7.07	...	...	...	...	...	...	0.28	12.74	...
C.I. 2-5	SAG	8.71	4.64	13.28	0.80	23.28	18.63	13.28	0.00	100.00%	...	...	...
C.I. 2-7	GRADE	3.88	0.68	4.56	1.00	4.03	4.03	4.03	0.53	88.39%	0.23	10.83	...
C.I. 2-8	GRADE	6.01	0.77	6.78	1.00	5.49	5.49	5.49	1.29	80.98%	0.27	12.57	...
C.I. 2-9	GRADE	1.65	0.00	1.65	1.00	1.58	1.58	1.58	0.07	95.98%	0.14	6.53	...
C.I. 2-11	GRADE	1.12	0.00	1.12	1.00	1.11	1.11	1.11	0.01	99.54%	0.13	6.13	...
C.I. 2-12	GRADE	1.32	0.00	1.32	1.00	1.30	1.30	1.30	0.01	98.93%	0.14	6.52	...
F.I. 3-2	SAG	8.16	...	8.16	0.80	18.67	14.93	8.16	0.00	100.00%	...	...	0.29
F.I. 3-3	SAG	3.29	...	3.29	0.80	18.67	14.93	3.29	0.00	100.00%	...	...	0.16
C.I. 4-1	GRADE	5.07	0.01	5.08	1.00	4.30	4.30	4.30	0.77	84.75%	0.24	11.27	...
C.I. 4-2	GRADE	1.38	0.00	1.38	1.00	1.37	1.37	1.37	0.01	99.20%	0.15	6.92	...
C.I. 4-4(L)	SAG	0.89	0.00	0.89	...	...	...	...	...	...	0.11	5.73	...
C.I. 4-4(R)	SAG	5.42	0.00	5.42	...	...	...	...	...	...	0.25	12.43	...
C.I. 4-4	SAG	7.73	0.00	7.73	0.80	19.40	15.52	7.73	0.00	100.00%	...	...	...
C.I. 4-5	GRADE	5.79	2.07	7.86	1.00	4.91	4.91	4.91	2.95	62.43%	0.29	14.45	...
C.I. 4-6	GRADE	5.46	0.96	6.42	1.00	4.35	4.35	4.35	2.07	67.76%	0.27	13.39	...
C.I. 4-7	GRADE	4.21	0.00	4.21	1.00	3.25	3.25	3.25	0.96	77.27%	0.23	11.43	...
C.I. 5-1	GRADE	4.80	0.00	4.80	1.00	4.12	4.12	4.12	0.68	85.83%	0.24	11.04	...
C.I. 6-1(L)	SAG	1.89	1.91	3.80	...	...	...	...	...	...	0.19	9.53	...
C.I. 6-1(R)	SAG	0.00	0.00	0.00	...	...	...	...	...	...	0.00	0.00	...
C.I. 6-1	SAG	2.70	1.91	4.61	0.80	19.40	15.52	4.61	0.00	100.00%	...	...	...
C.I. 6-2(L)	SAG	0.00	0.00	0.00	...	...	...	...	...	...	0.00	0.00	...
C.I. 6-2(R)	SAG	3.10	5.45	8.54	...	...	...	...	...	...	0.26	12.91	...
C.I. 6-2	SAG	6.88	5.45	12.33	0.80	19.40	15.52	12.33	0.00	100.00%	...	...	...
C.I. 7-1(L)	SAG	7.80	2.95	10.76	...	...	...	...	...	...	0.31	15.58	...
C.I. 7-1(R)	SAG	1.38	0.00	1.38	...	...	...	...	...	...	0.14	6.95	...
C.I. 7-1	SAG	11.58	2.95	14.54	0.80	19.40	15.52	14.54	0.00	100.00%	...	...	...
C.I. 8-1	GRADE	1.58	0.00	1.58	1.00	1.52	1.52	1.52	0.06	96.34%	0.14	6.43	...
F.I. 9-1	SAG	2.37	...	2.37	0.80	18.67	14.93	2.37	0.00	100.00%	...	...	0.13
F.I. 10-1	SAG	2.50	...	2.50	0.80	18.67	14.93	2.50	0.00	100.00%	...	...	0.13
C.I. 10-3(L)	SAG	0.72	0.00	0.72	...	...	...	...	...	...	0.11	5.26	...
C.I. 10-3(R)	SAG	1.97	0.12	2.10	...	...	...	...	...	...	0.17	8.26	...
C.I. 10-3	SAG	3.82	0.12	3.94	0.80	19.40	15.52	3.94	0.00	100.00%	...	...	...
C.I. 10-4	GRADE	1.32	0.00	1.32	1.00	1.19	1.19	1.19	0.12	90.72%	0.14	6.94	...
C.I. 10-5	GRADE	9.23	0.00	9.23	1.00	4.70	4.70	4.70	4.53	50.95%	0.29	14.41	...
C.I. 11-1(L)	SAG	4.83	4.53	9.36	...	...	...	...	...	...	0.29	14.48	...
C.I. 11-1(R)	SAG	1.29	0.01	1.30	...	...	...	...	...	...	0.13	6.56	...
C.I. 11-1	SAG	9.92	4.54	14.47	0.80	19.40	15.52	14.47	0.00	100.00%	...	...	...

- Notes:
- 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.
 - Inlet efficiency shown in the tables is Captured Flow/Total Flow, denoting the actual percentage of flow captured after the capacity has been reduced to 80% of theoretical capacity.

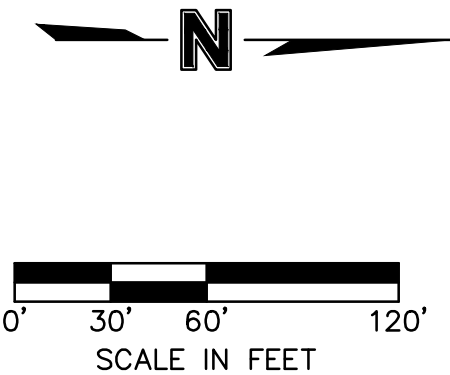
Storm Sewer Design Calculation Table														
100 Year Return Frequency														
Upstream Structure	Downstream Structure	Length (ft)	Upstream Invert (ft)	Downstream Invert (ft)	Slope (%)	Diameter (in)	Manning's n	Total Flow (cfs)	Velocity (ft/s)	Capacity (cfs)	Flow Depth (ft)	Upstream Struct. HGL (ft)	Upstream Top Elev. (ft)	
C.I. 1-1	EX C.I. 10-1	231.96	1015.54	1010.90	2.00	15	0.010	5.85	4.77	9.89	1.25	1031.28	1021.44	
C.I. 2-4	E.S. 2-3	120.00	1009.77	1008.80	0.81	48	0.010	162.27	12.91	167.90	4.00	1015.97	1023.24	
C.I. 2-5	C.I. 2-4	45.00	1010.71	1010.37	0.76	42	0.010	156.79	16.30	113.69	3.50	1017.65	1023.24	
M.H. 2-6	C.I. 2-5	77.00	1011.93	1011.31	0.81	42	0.010	124.62	12.95	117.36	3.50	1020.00	1023.91	
C.I. 2-7	M.H. 2-6	42.50	1012.87	1012.53	0.80	42	0.010	124.62	12.95	116.98	3.50	1021.44	1024.79	
C.I. 2-8	C.I. 2-7	45.00	1013.83	1013.47	0.80	42	0.010	120.59	12.54	116.99	3.50	1022.86	1024.79	
C.I. 2-9	C.I. 2-8	48.45	1017.46	1015.33	4.40	24	0.010	34.68	11.04	61.65	2.00	1024.51	1025.57	
M.H. 2-10	C.I. 2-9	102.00	1020.64	1018.06	2.53	24	0.010	31.58	10.05	46.76	2.00	1026.45	1029.31	
C.I. 2-11	M.H. 2-10	205.00	1028.46	1021.34	3.47	15	0.010	2.41	2.96	15.64	1.25	1029.08	1035.93	
C.I. 2-12	C.I. 2-11	42.00	1030.00	1029.16	2.00	15	0.010	1.30	4.81	11.87	0.28	1030.45	1035.93	
M.H. 3-1	C.I. 2-5	37.00	1012.95	1012.21	2.00	24	0.010	18.89	6.01	41.58	2.00	1019.46	1023.38	
F.I. 3-2	M.H. 3-1	139.50	1020.17	1015.00	3.71	18	0.010	18.89	10.69	26.28	1.50	1022.35	1027.17	
F.I. 3-3	F.I. 3-2	177.91	1024.57	1020.57	2.25	15	0.010	3.29	3.55	12.59	1.25	1025.30	1030.73	
C.I. 4-1	C.I. 2-8	210.50	1016.43	1014.43	0.95	36	0.010	80.42	11.38	84.51	3.00	1025.65	1027.31	
C.I. 4-2	C.I. 4-1	176.00	1018.60	1016.93	0.95	36	0.010	72.00	10.19	84.46	3.00	1027.67	1029.42	
M.H. 4-3	C.I. 4-2	129.23	1022.13	1018.90	0.95	36	0.010	70.63	9.99	84.58	3.00	1029.17	1030.84	
C.I. 4-4	M.H. 4-3	144.24	1022.17	1020.73	1.00	30	0.010	34.78	7.09	53.27	2.50	1030.41	1028.61	
C.I. 4-5	C.I. 4-4	176.25	1024.53	1022.77	1.00	24	0.010	12.51	3.98	29.38	2.00	1031.04	1030.30	
C.I. 4-6	C.I. 4-5	142.41	1026.55	1025.13	1.00	18	0.010	7.60	4.30	13.63	1.50	1031.58	1031.67	
C.I. 4-7	C.I. 4-6	142.00	1028.24	1026.82	1.00	15	0.010	3.25	2.65	8.39	1.25	1031.88	1033.10	
C.I. 5-1	C.I. 4-1	43.00	1021.13	1018.68	5.70	15	0.010	4.12	3.36	20.04	1.25	1026.56	1027.29	
C.I. 6-1	M.H. 4-3	95.89	1023.13	1020.73	2.50	30	0.010	35.85	7.30	84.35	2.50	1030.23	1030.59	
C.I. 6-2	C.I. 6-1	35.00	1024.26	1023.73	1.51	24	0.010	33.15	10.55	36.18	2.00	1031.01	1030.59	
C.I. 7-1	C.I. 4-4	36.73	1023.14	1022.77	1.01	24	0.010	14.54	4.63	29.51	2.00	1030.81	1028.58	
C.I. 8-1	C.I. 2-9	42.50	1019.44	1018.06	3.25	15	0.010	1.52	1.24	15.13	1.25	1025.29	1025.56	
F.I. 9-1	M.H. 2-10	94.00	1023.22	1021.34	2.00	15	0.010	2.37	1.93	11.87	1.25	1027.15	1029.20	
F.I. 10-1	M.H. 2-10	133.00	1022.67	1021.34	1.00	24	0.010	26.80	8.53	29.40	2.00	1028.18	1027.98	
M.H. 10-2	F.I. 10-1	136.00	1024.74	1023.37	1.01	24	0.010	24.30	7.74	29.51	2.00	1029.57	1032.85	
C.I. 10-3	M.H. 10-2	74.00	1026.18	1025.44	1.00	24	0.010	24.30	7.74	29.41	2.00	1030.44	1031.92	
C.I. 10-4	C.I. 10-3	296.00	1029.54	1026.58	1.00	18	0.010	5.89	3.33	13.65	1.50	1031.37	1035.75	
C.I. 10-5	C.I. 10-4	34.00	1030.58	1030.24	1.00	15	0.010	4.70	4.50	8.39	1.20	1031.46	1035.75	
C.I. 11-1	C.I. 10-3	34.50	1027.12	1026.78	0.99	15	0.010	14.47	11.79	8.33	1.25	1031.84	1031.91	

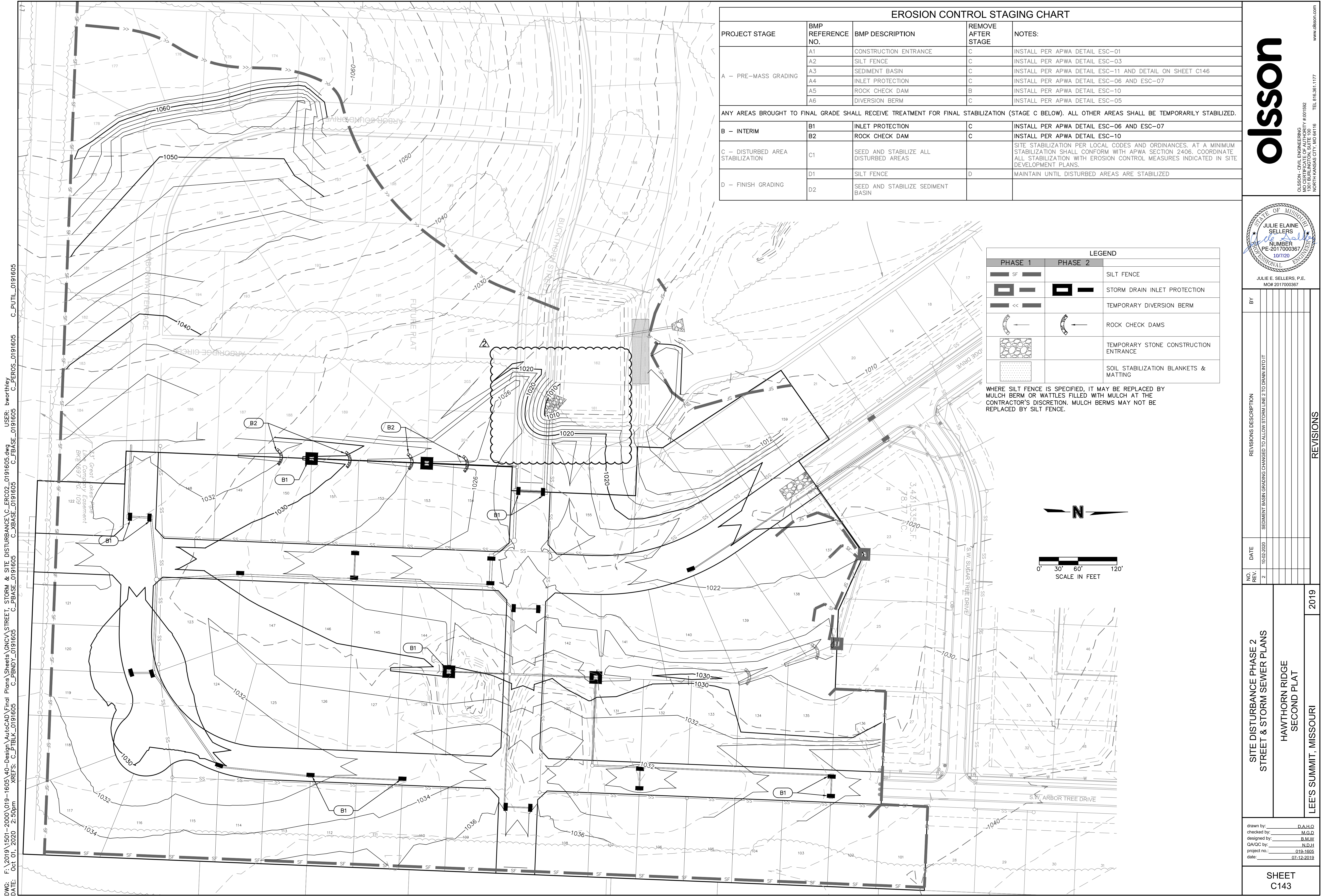


PROJECT STAGE	BMP REFERENCE NO.	BMP DESCRIPTION	REMOVE AFTER STAGE
A – PRE–MASS GRADING	A1	CONSTRUCTION ENTRANCE	C
	A2	SILT FENCE	C
	A3	SEDIMENT BASIN	C
	A4	INLET PROTECTION	C
	A5	ROCK CHECK DAM	B
	A6	DIVERSION BERM	C
ANY AREAS BROUGHT TO FINAL GRADE SHALL RECEIVE TREATMENT FOR FINAL STABILIZATION ()			
B – INTERIM	B1	INLET PROTECTION	C
	B2	ROCK CHECK DAM	C
C – DISTURBED AREA STABILIZATION	C1	SEED AND STABILIZE ALL DISTURBED AREAS	
D – FINISH GRADING	D1	SILT FENCE	D
	D2	SEED AND STABILIZE SEDIMENT BASIN	

LEGEND	
PHASE 1	
 SF	SILT FENCE
 	STORM DRAIN INLET PROTECTION
 << 	TEMPORARY DIVERSION BERM
 	ROCK CHECK DAMS
	TEMPORARY STONE CONSTRUCTION ENTRANCE
	SOIL STABILIZATION BLANKETS & MATTING
	TREE CLEARING

WHERE SILT FENCE IS SPECIFIED, IT MAY BE REPLACED BY MULCH BERM OR WATTLES FILLED WITH MULCH AT THE CONTRACTOR'S DISCRETION. MULCH BERMS MAY NOT BE REPLACED BY SILT FENCE.

[illegible]



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JULIE E. SELLERS, P.E.
 MO# 2017000367

NO. REV.		DATE	REVISIONS DESCRIPTION	BY
2	10-02-2020	SEGMENT BASIN GRADING CHANGED TO ALLOW STORM LINE 2 TO DRAIN INTO IT		

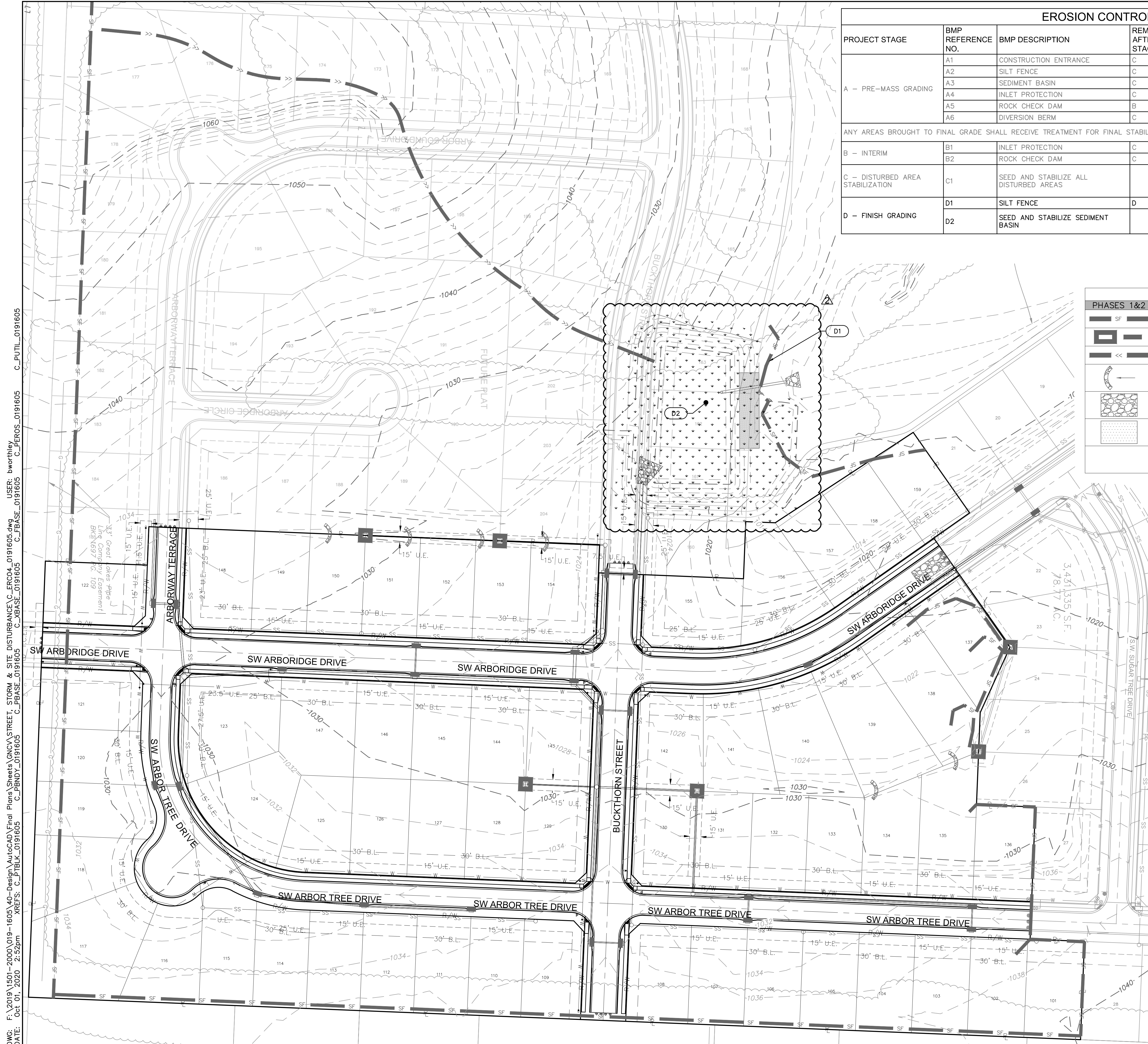
SITE DISTURBANCE PHASE 2
 STREET & STORM SEWER PLANS

HAWTHORN RIDGE
 SECOND PLAT

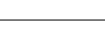
LEE'S SUMMIT, MISSOURI

drawn by: D.A.H.O.
 checked by: M.G.D.
 designed by: B.M.W.
 QA/QC by: N.D.H.
 project no.: 019-1605
 date: 07-12-2018

SHEET
 C143



EROSION CONTROL STAGING CHART				
PROJECT STAGE	BMP REFERENCE NO.	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
A – PRE-MASS GRADING	A1	CONSTRUCTION ENTRANCE	C	INSTALL PER APWA DETAIL ESC-01
	A2	SILT FENCE	C	INSTALL PER APWA DETAIL ESC-03
	A3	SEDIMENT BASIN	C	INSTALL PER APWA DETAIL ESC-11 AND DETAIL ON SHEET C146
	A4	INLET PROTECTION	C	INSTALL PER APWA DETAIL ESC-06 AND ESC-07
	A5	ROCK CHECK DAM	B	INSTALL PER APWA DETAIL ESC-10
	A6	DIVERSION BERM	C	INSTALL PER APWA DETAIL ESC-05
ANY AREAS BROUGHT TO FINAL GRADE SHALL RECEIVE TREATMENT FOR FINAL STABILIZATION (STAGE C BELOW). ALL OTHER AREAS SHALL BE TEMPORARILY STABILIZED.				
B – INTERIM	B1	INLET PROTECTION	C	INSTALL PER APWA DETAIL ESC-06 AND ESC-07
	B2	ROCK CHECK DAM	C	INSTALL PER APWA DETAIL ESC-10
C – DISTURBED AREA STABILIZATION	C1	SEED AND STABILIZE ALL DISTURBED AREAS		SITE STABILIZATION PER LOCAL CODES AND ORDINANCES. AT A MINIMUM STABILIZATION SHALL CONFORM WITH APWA SECTION 2406. COORDINATE ALL STABILIZATION WITH EROSION CONTROL MEASURES INDICATED IN SITE DEVELOPMENT PLANS.
D – FINISH GRADING	D1	SILT FENCE	D	MAINTAIN UNTIL DISTURBED AREAS ARE STABILIZED
	D2	SEED AND STABILIZE SEDIMENT BASIN		

LEGEND		
PHASES 1&2	PHASE 3	PHASE 4
		SILT FENCE
		STORM DRAIN INLET PROTECTION
		TEMPORARY DIVERSION BERM
		ROCK CHECK DAMS
		TEMPORARY STONE CONSTRUCTION ENTRANCE
		SOIL STABILIZATION BLANKETS & MATTING
		TURF GRASS SEEDING
		

GENERAL NOTES:

CONTRACTOR TO PLACE AT LEAST 12" OF TOP SOIL CAPABLE OF SUPPORTING VEGETATION.

SEED & MULCH NOTES:

SEEDING SHALL BE DONE BEFORE THE PROPOSED SEEDBED BECOMES CRUSTED, CRUSTED OVER, OR DRIED OUT AND SHALL NOT BE DONE WHEN THE GROUND IS FROZEN, OR COVERED WITH SNOW. THE SEED SHALL COMPLY WITH THE REQUIREMENTS OF THE MISSOURI SEED LAW AND THE FEDERAL SEED ACT. ALSO, IT SHALL CONTAIN NO SEED OF ANY PLANT ON THE FEDERAL NOXIOUS WEED LIST. OTHER WEED SEED SHALL NOT EXCEED ONE PERCENT BY WEIGHT OF MIX.

SEED & FERTILIZER RATE:

MIX I - RYE GRASS / BLUE GRASS -----100 LBS. PER. ACRE

MIX II - TALL FESCUE / BLUE GRASS -----195 LBS. PER ACRE

FERTILIZER -----800 TO 1200 LBS. PER ACRE

(25 LBS. PER 1000 SQ. FT.)

DURING THE DATES DECEMBER 15TH THROUGH MAY 31 ALL FERTILIZER, SEED, AND MULCH SHALL BE APPLIED TO FINISHED SLOPES OF DISTURBED AREAS. DURING THE MONTHS OF JUNE, JULY, OCTOBER, AND NOVEMBER THROUGH DECEMBER 15TH, FERTILIZER, SEED, AND MULCH SHALL BE APPLIED AT THE FOLLOWING RATES:

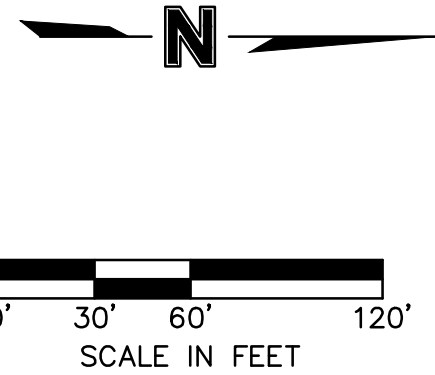
- FERTILIZER - 75 % OF THE SPECIFIED QUANTITY
- SEED - 50 % OF THE SPECIFIED QUANTITY
- MULCH - 100 % OF THE SPECIFIED QUANTITY

MULCH SHALL BE VEGETATIVE TYPE, CEREAL STRAW FROM STALKS OF OATS, RYE, OR BARLEY, OR APPROVED EQUIV. THE STRAW SHALL BE FREE OF PROHIBITED WEED SEED AND RELATIVELY FREE OF ALL OTHER WEEDS, ROCKS, AND FOREIGN MATERIAL. MULCH SHALL BE APPLIED AT A RATE OF 2 TONS PER ACRE, (70 TO 90 LBS. PER 1000 SQ. FT.). MULCH SHALL BE EMBEDDED BY A MULCH ANCHORING TOOL OR DISK TYPE ROLLER HAVING FLAT SERRATED DISKS SPACED NOT MORE THAN 10 INCHES APART AND CLEANING SCRAPERS SHALL BE PROVIDED.

THE SITE DISTURBANCE PLANS INDICATES THE FINAL PLACEMENT OF EROSION CONTROL DEVICES. THE CONTRACTOR(S) MAY PROCEED WITH THE CONSTRUCTION PRIOR TO THE FINAL PLACEMENT OF THESE DEVICES BY PROVIDING ADDITIONAL DEVICES TO CONTROL EROSION ON THEIR ITEMS OF WORK. THESE DEVICES SHALL BE MAINTAINED UNTIL THE FINAL DEVICES ARE IN PLACE.

ALL DISTURBED AREAS SHALL BE PREPPED FOR SEEDING/SODDING PER KCMO/APWA 2406, APPLICATION OF SEED/SOD SHALL BE DONE IN ACCORDANCE WITH KCMO/APWA 2406.4. THE SITE DISTURBANCE PERMIT SHALL BE MAINTAINED IN AN "OPEN" STATUS UNTIL FINAL ACCEPTANCE PER KCMO/APWA 2407.

NATIVE SEED MIXES AND SLOPES OVER 5:1 TO BE INSTALLED WITH AN EROSION CONTROL BLANKET (NORTH AMERICAN GREEN SC10B OR APPROVE EQUAL) AND INSTALLED PER MANUFACTURER'S SPECIFICATIONS.



SITE DISTURBANCE PHASE 4 STREET & STORM SEWER PLANS		NO. REV.	DATE	REVISIONS DESCRIPTION	BY
		2	10-02-2020	SEDIMENT BASIN TO REMAIN IN PLACE	
HAWTHORN RIDGE SECOND PLAT					
LEE'S SUMMIT, MISSOURI		2019		REVISIONS	

drawn by: _____ D.A.H.Q

checked by: _____ M.G.D

designed by: _____ B.M.W

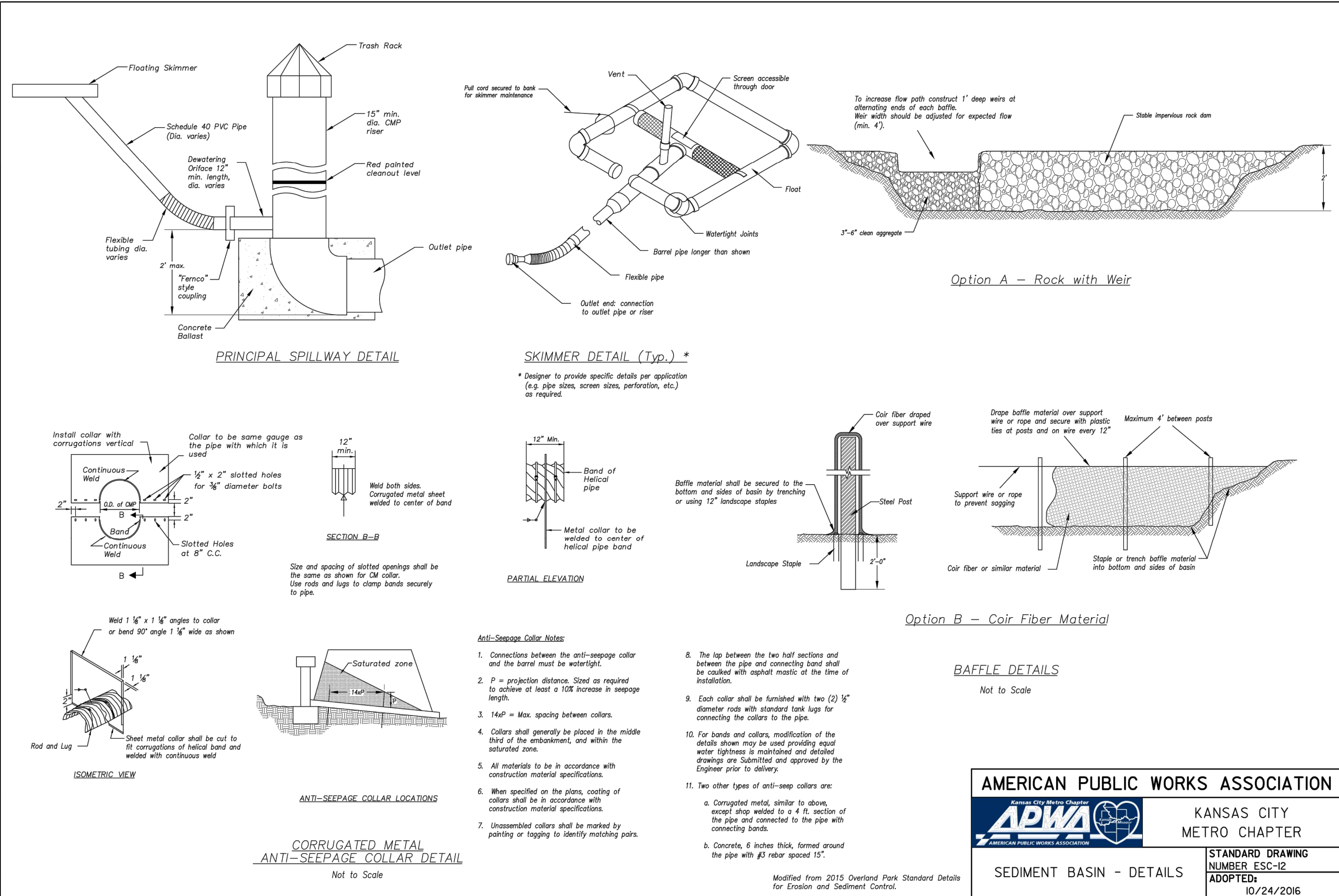
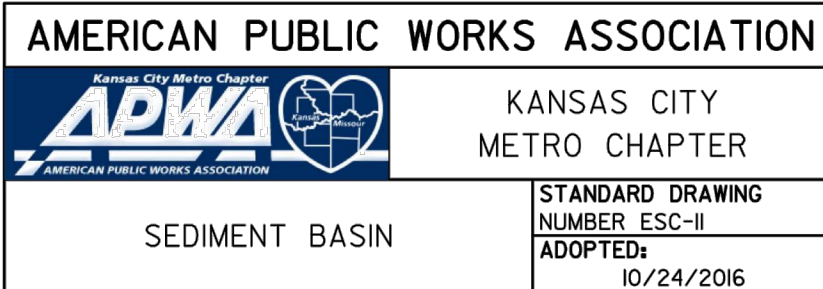
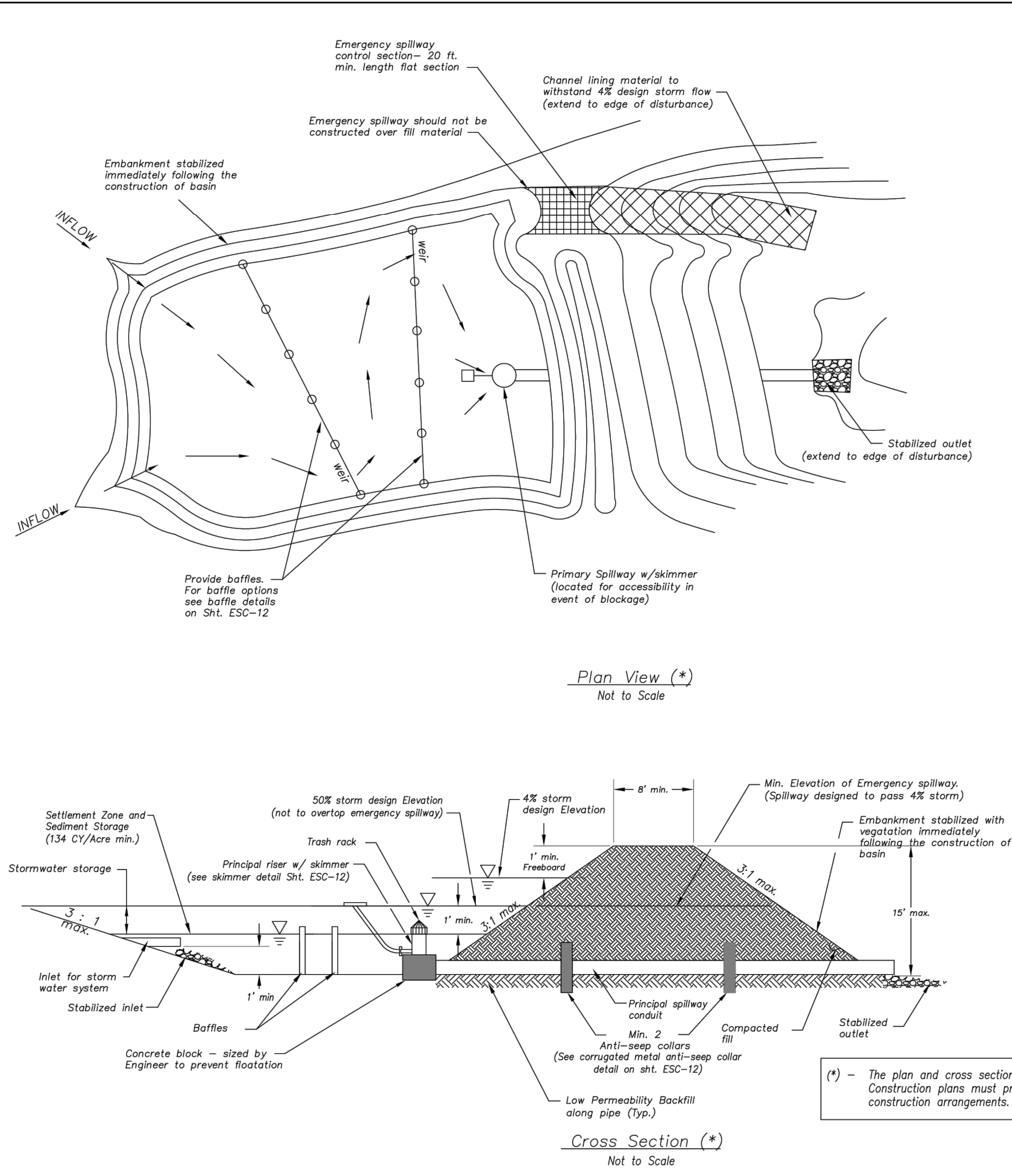
QA/QC by: _____ N.D.H

project no.: 019-1605

date: 07-12-2019

SHEET

C145



Sediment Basin #1 Design Summary		
Design Item	Quantity	Units
Site Data		
Tributary Drainage Area To Pond	27.17	Acres
50% (2 YR) Design Flow	72.16	cfs
4% (25 YR) Design Flow	139.96	cfs
1% (100 YR) Design Flow	177.96	cfs
Pond Data		
Minimum Sediment Storage Volume	3641	cu yd
Provided Sediment Storage Volume	4216	cu yd
Bottom Elevation	1008.00	ft
Sediment Cleanout Elevation	1011.11	ft
Sediment Cleanout Volume	2711.63	cu yd
Top of Riser Elevation	1013.50	ft
Top of Dam Elevation	1016.00	ft
Basin Shape Data		
A = Area at Top of Riser	22954	sq ft
L = Length of Flow Path	180	ft
WE = Effective Width = A/L	128	ft
Principal Spillway Data		
Riser Pipe DIA	36	in
Barrel Pipe DIA	36	in
Barrel Invert In	1008.00	ft
Barrel Invert Out	1007.05	ft
Riser Perforations		
Number of Rows	4	
Perforation DIA	1	in
Perforations per Row	36	
Lowest Row Elevation	1011.50	ft
Distance Between Rows	0.5	ft
Emergency Spillway Data		
Spillway Width	100.00	ft
Emergency Spillway Elevation	1014.50	ft
Water Surface Data		
2 year WSE	1014.40	ft
25 year WSE	1014.94	ft
100 year WSE	1015.06	ft
Discharge Data		
2 year	29.88	cfs
25 year	138.96	cfs
100 year	178.71	cfs

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

JULIE E. SELLERS, P.E.
MO# 2017000367

BY

REVISIONS DESCRIPTION

NO. REV.

DATE

2019

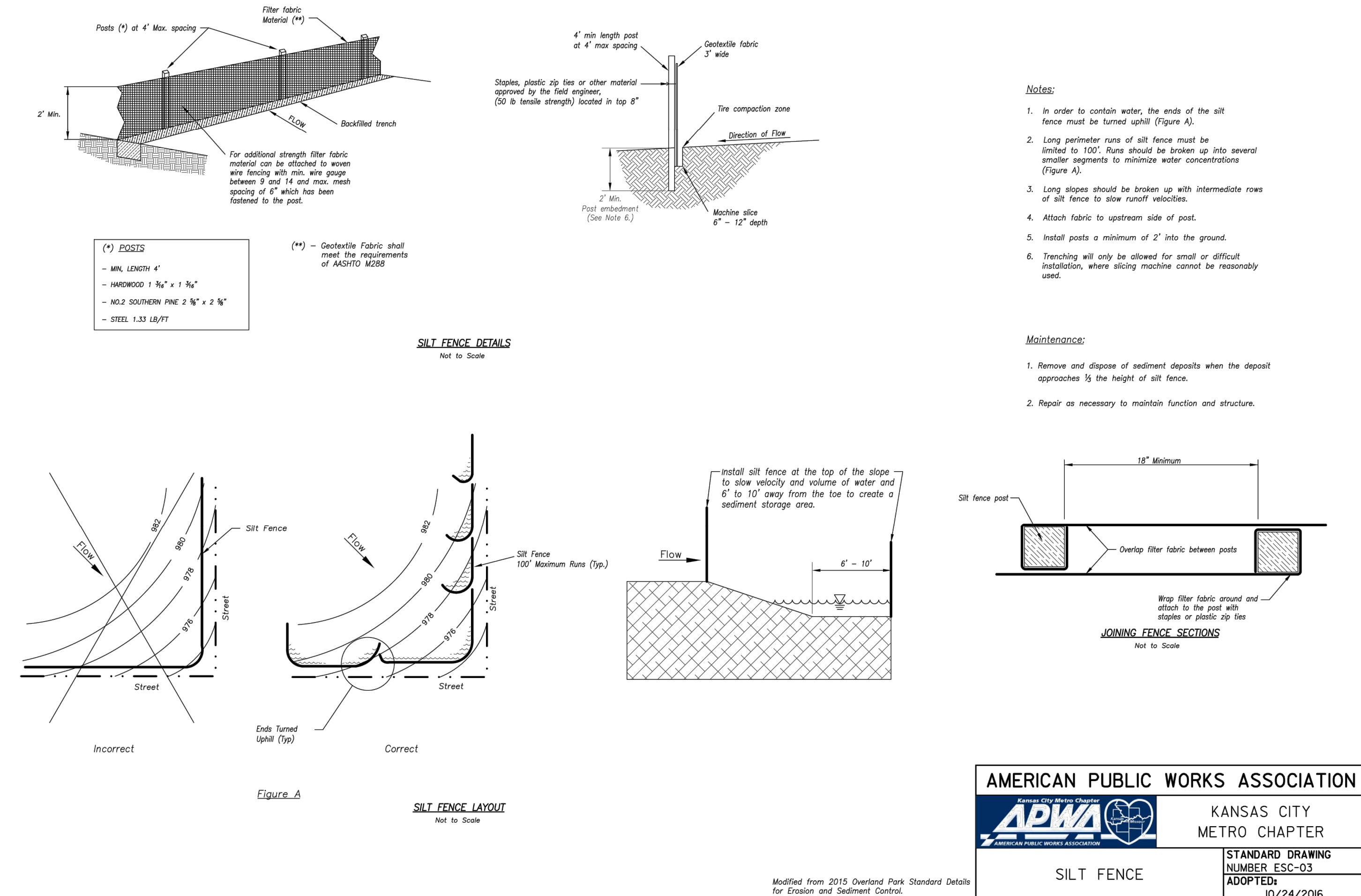
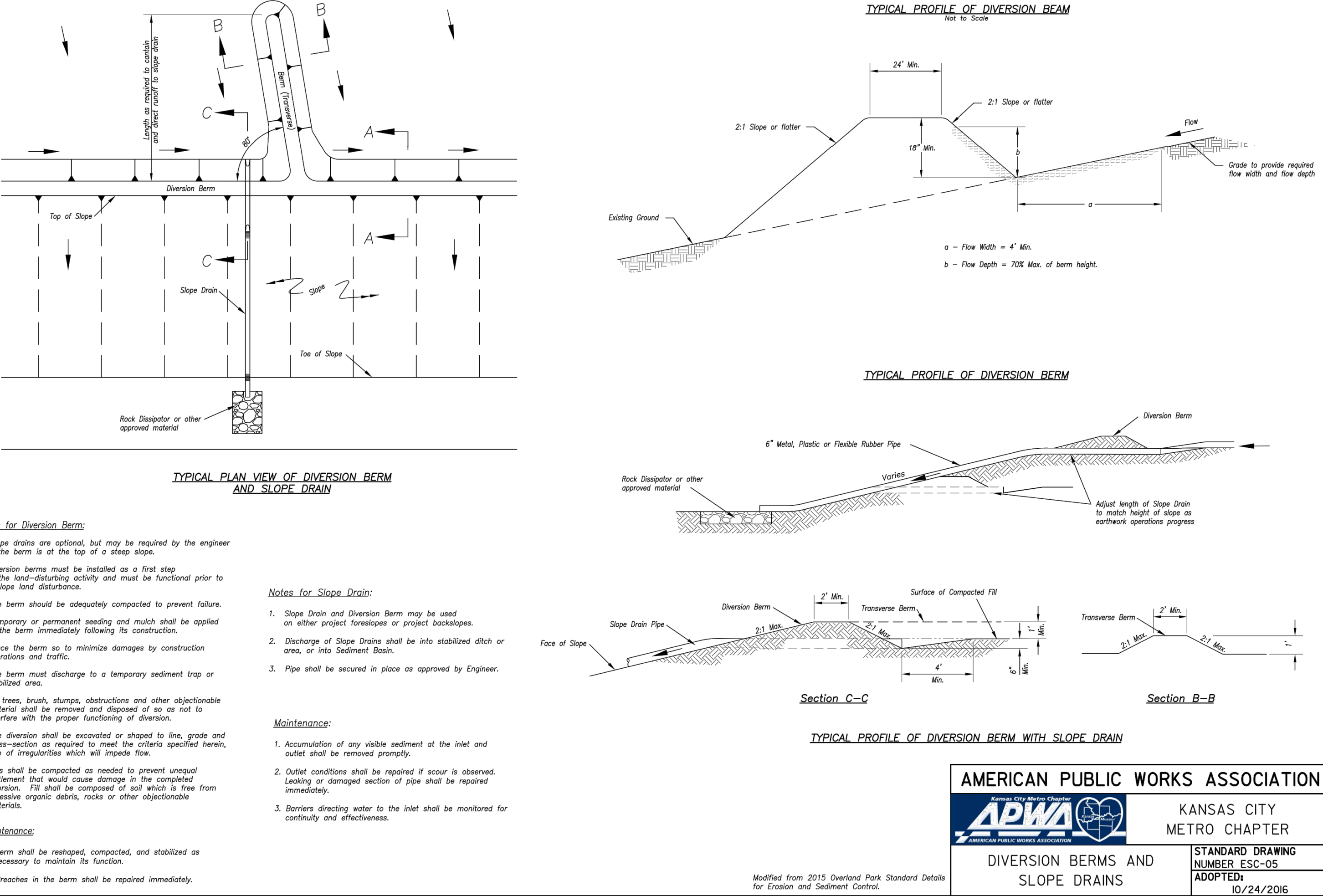
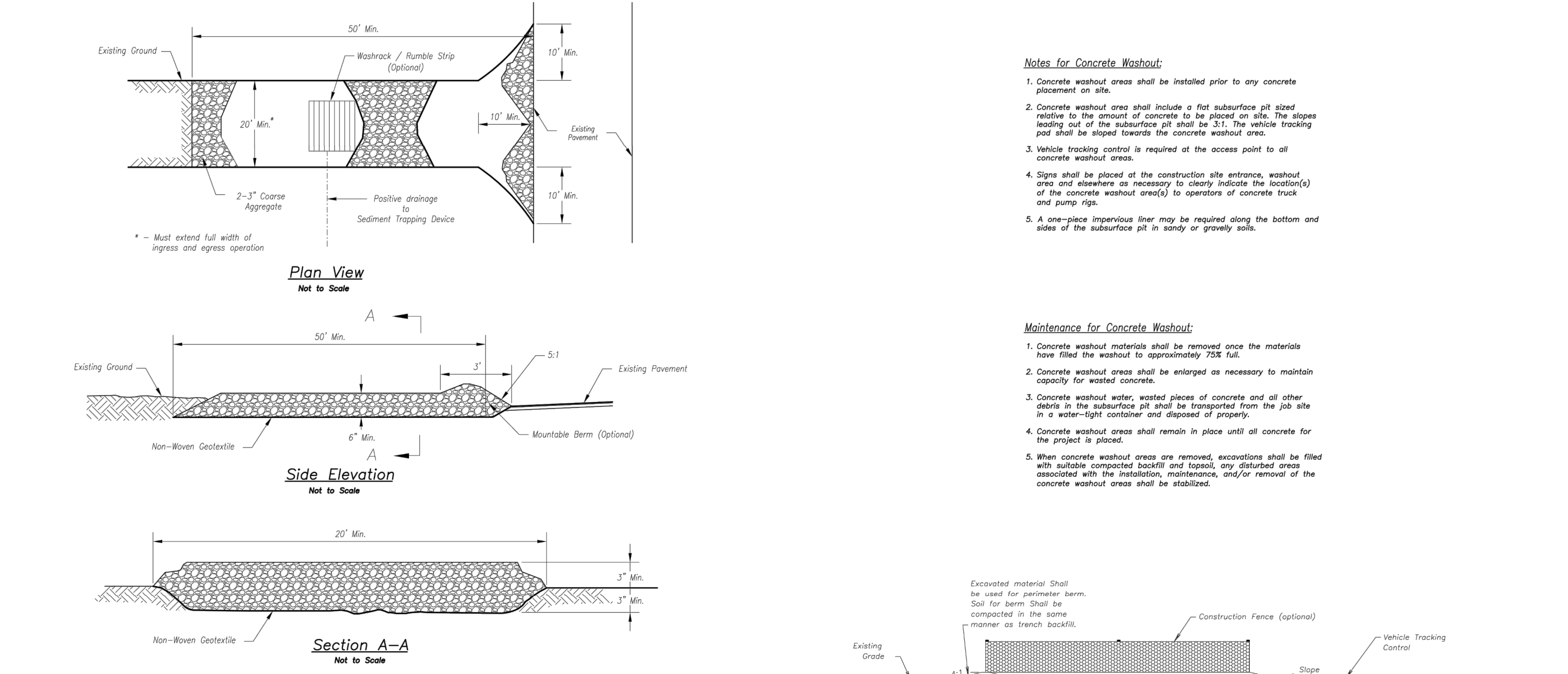
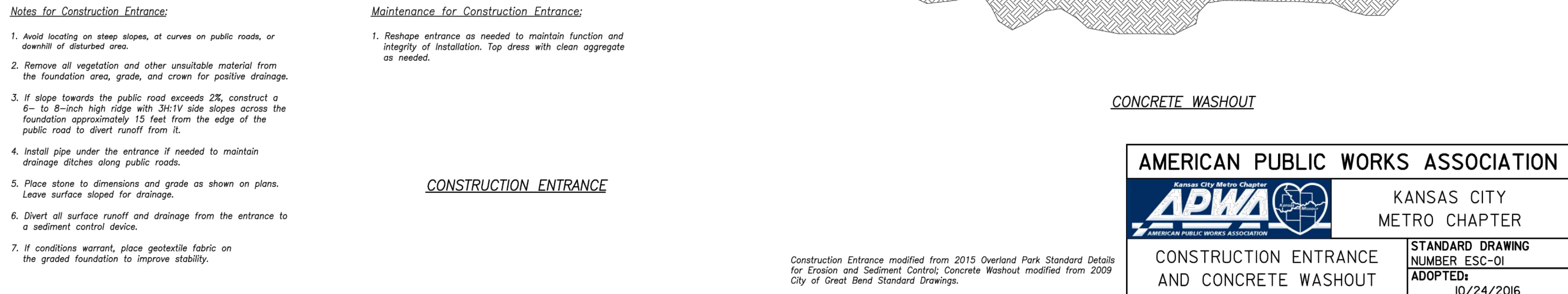
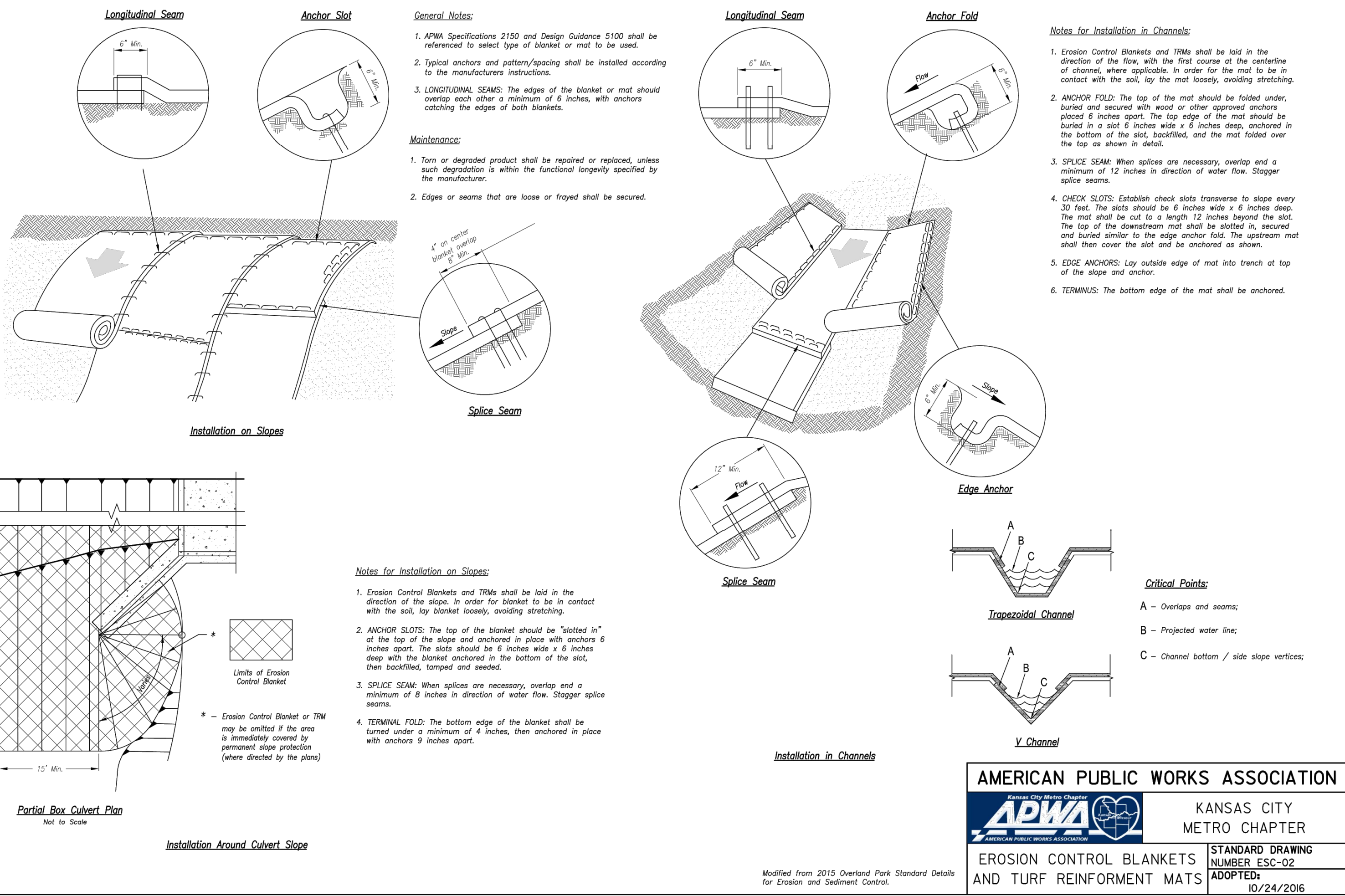
SEDIMENT BASIN DETAIL
STREET & STORM SEWER PLANS

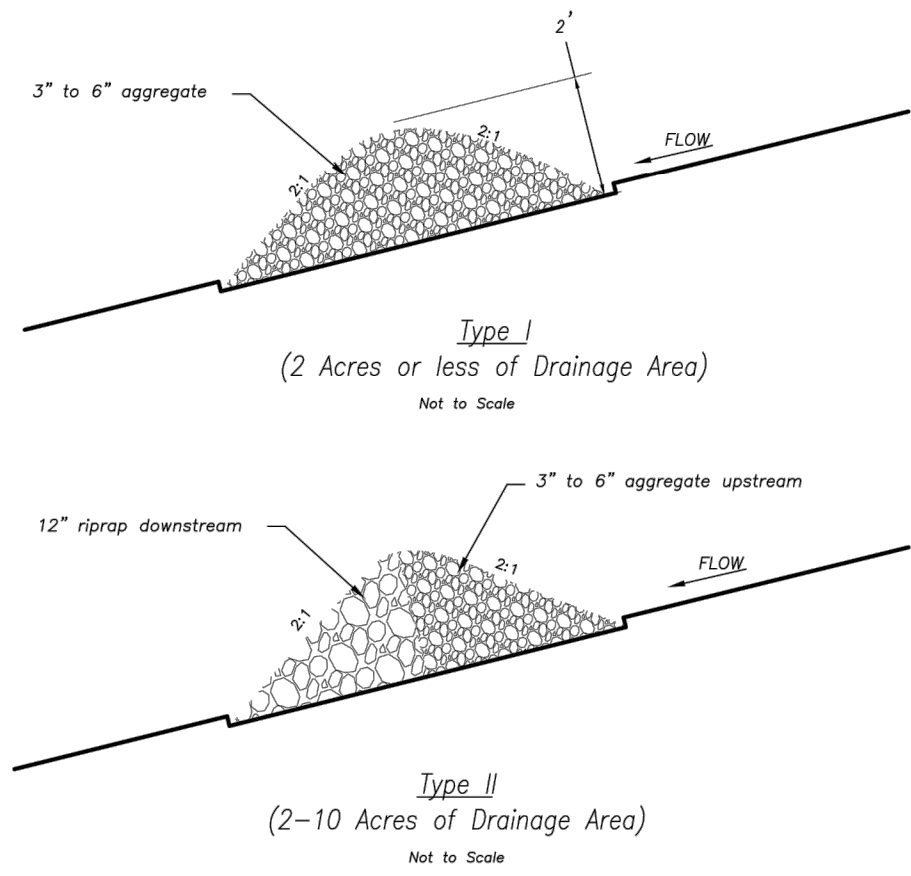
HAWTHORN RIDGE
SECOND PLAT

LEE'S SUMMIT, MISSOURI

drawn by: D.A.H.Q.
checked by: M.G.D.
designed by: B.M.W.
QA/QC by: N.D.H.
project no.: 019-1605
date: 07-12-2018

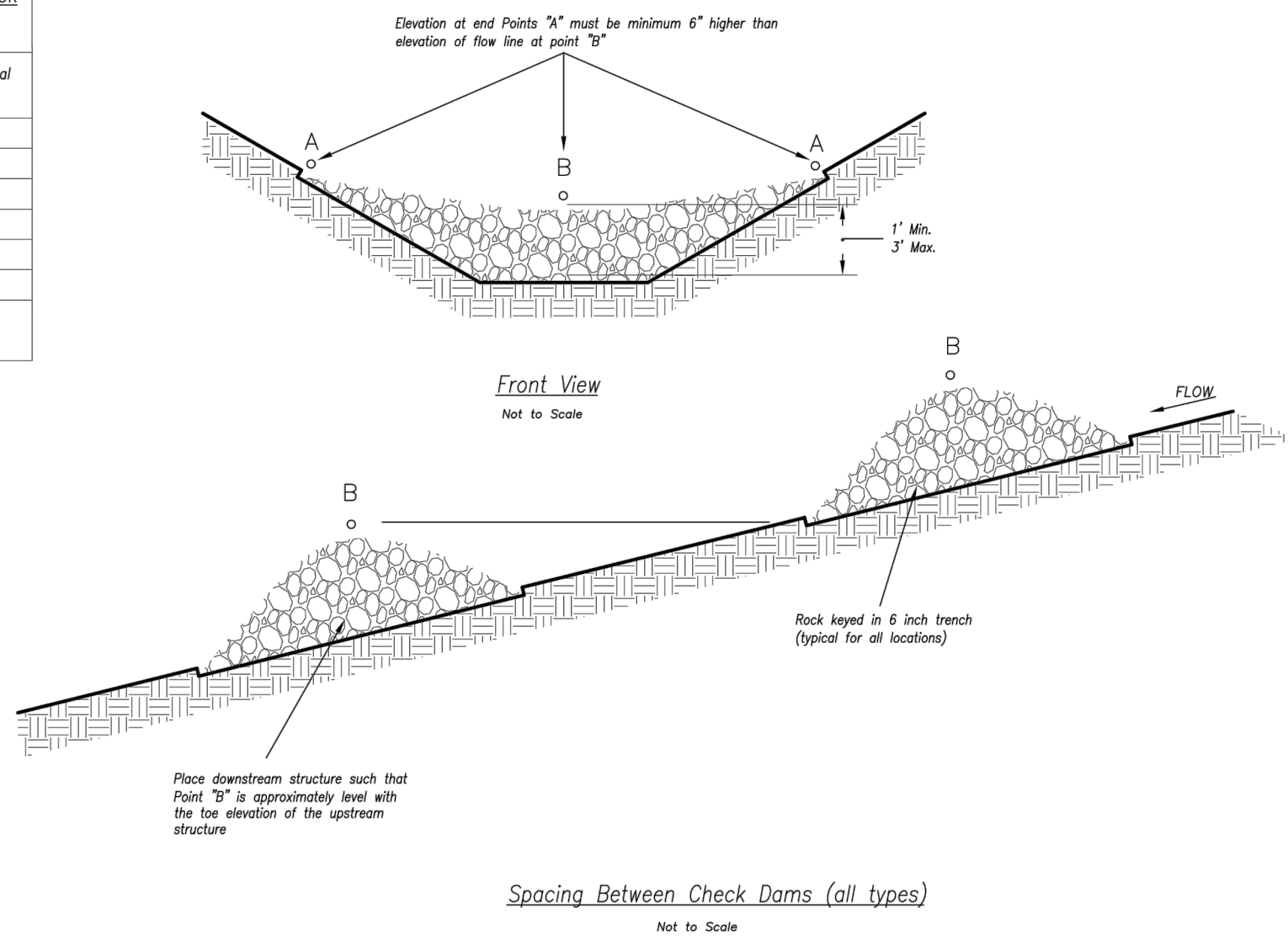
SHEET
C146





Temporary Rock Ditch Check Spacing	
Ditch Centerline Slope (%)	Spacing Interval (Feet)
5.0	60
6.0	50
7.0	43
8.0	36
9.0	33
10.0	29

Note: Use this spacing only for Rock Ditch Checks.



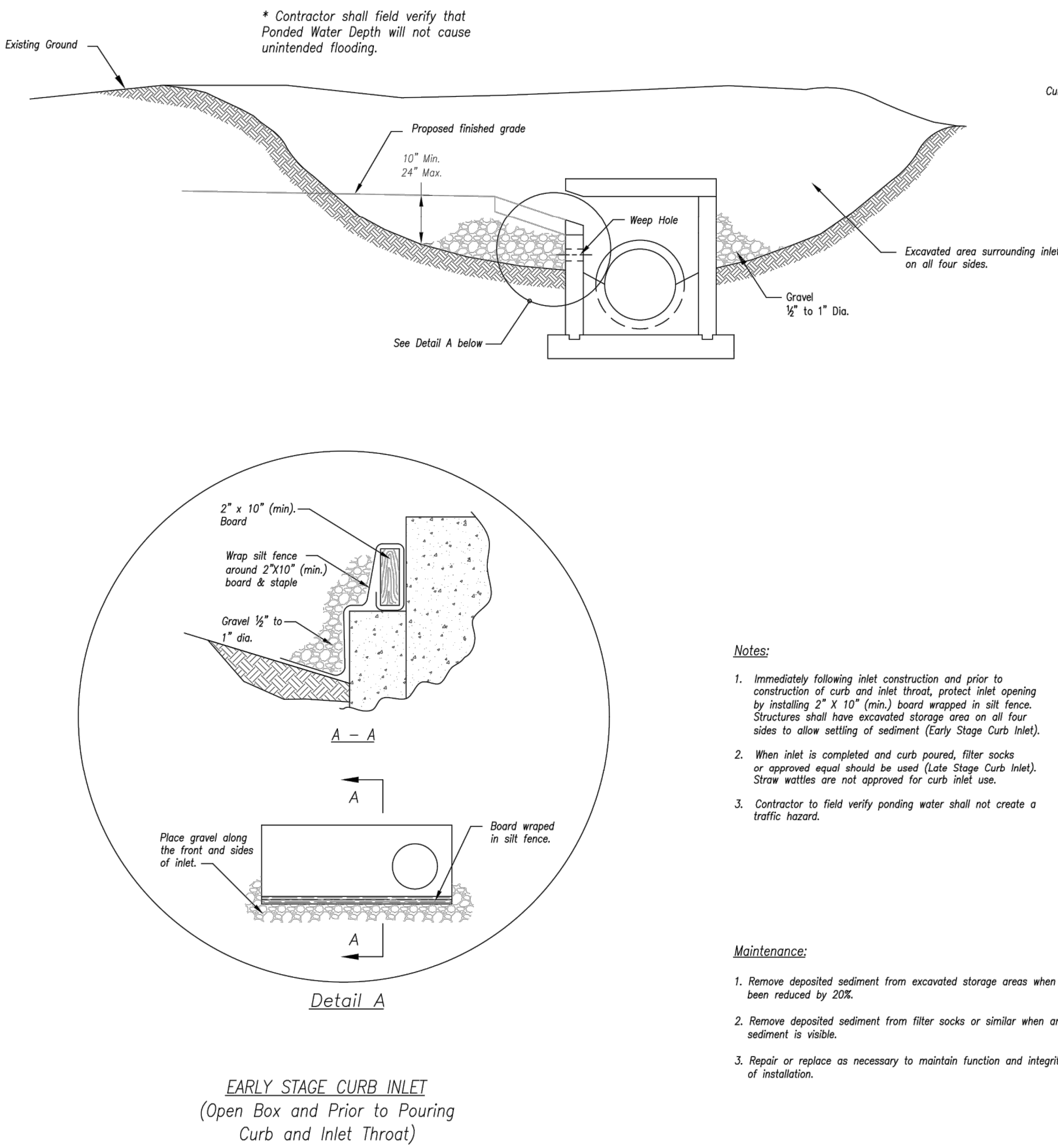
- Notes:**
1. Rock check dams shall be used only for drainage areas less than 10 acres unless approved by the City Engineer.
 2. Use rock checks only in situations where the ditch slope exceeds 6%.
- Maintenance:**
1. Remove and dispose of sediment deposits when the deposit approaches 1/2 the height of the ditch check.
 2. Replace and reshape as necessary to maintain function and integrity of installation.

Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

AMERICAN PUBLIC WORKS ASSOCIATION
 KANSAS CITY METRO CHAPTER

ROCK DITCH CHECKS

STANDARD DRAWING
NUMBER ESC-10
ADOPTED: 10/24/2016

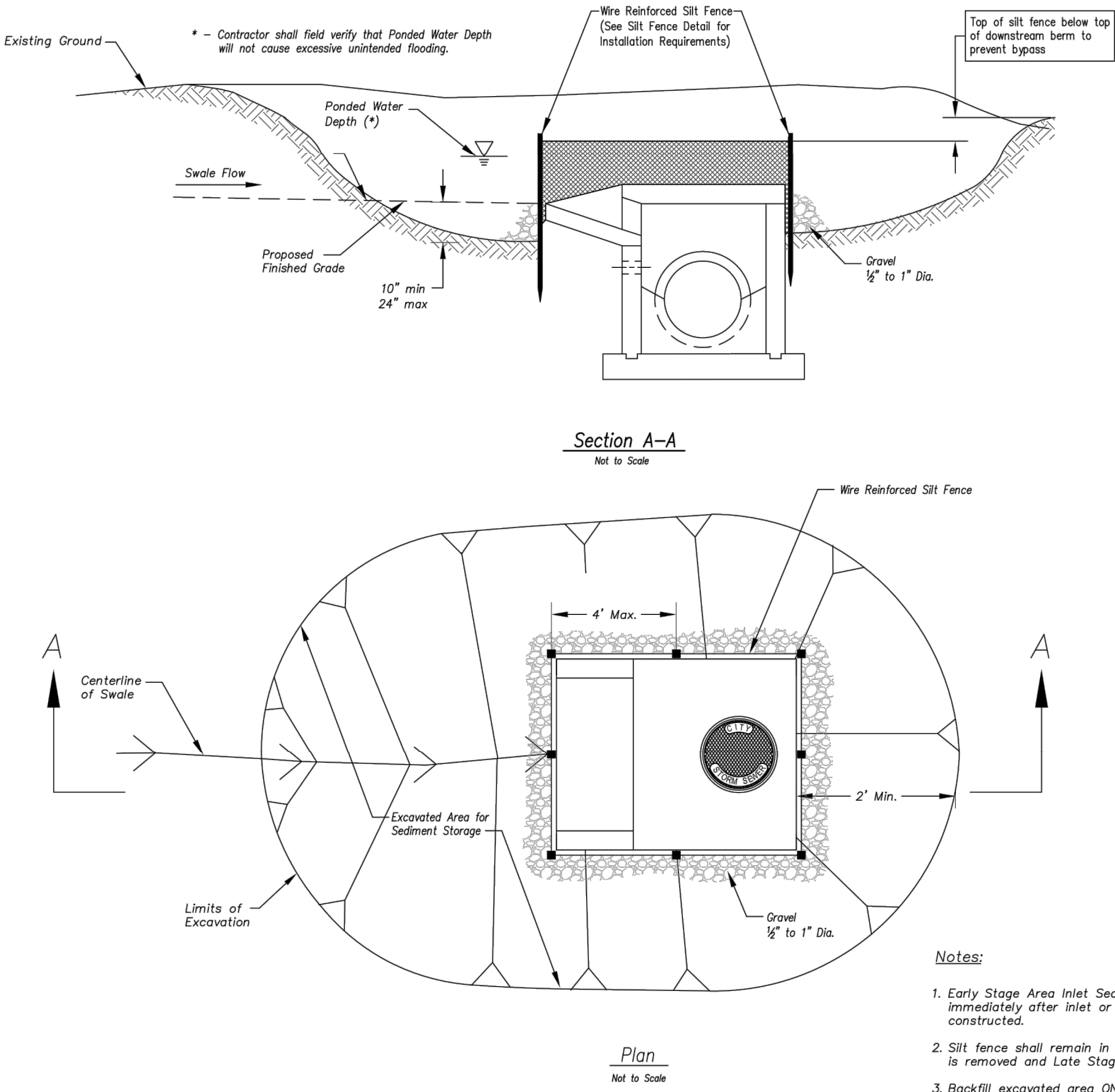


Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

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 KANSAS CITY METRO CHAPTER

CURB INLET PROTECTION

STANDARD DRAWING
NUMBER ESC-06
ADOPTED: 10/24/2016

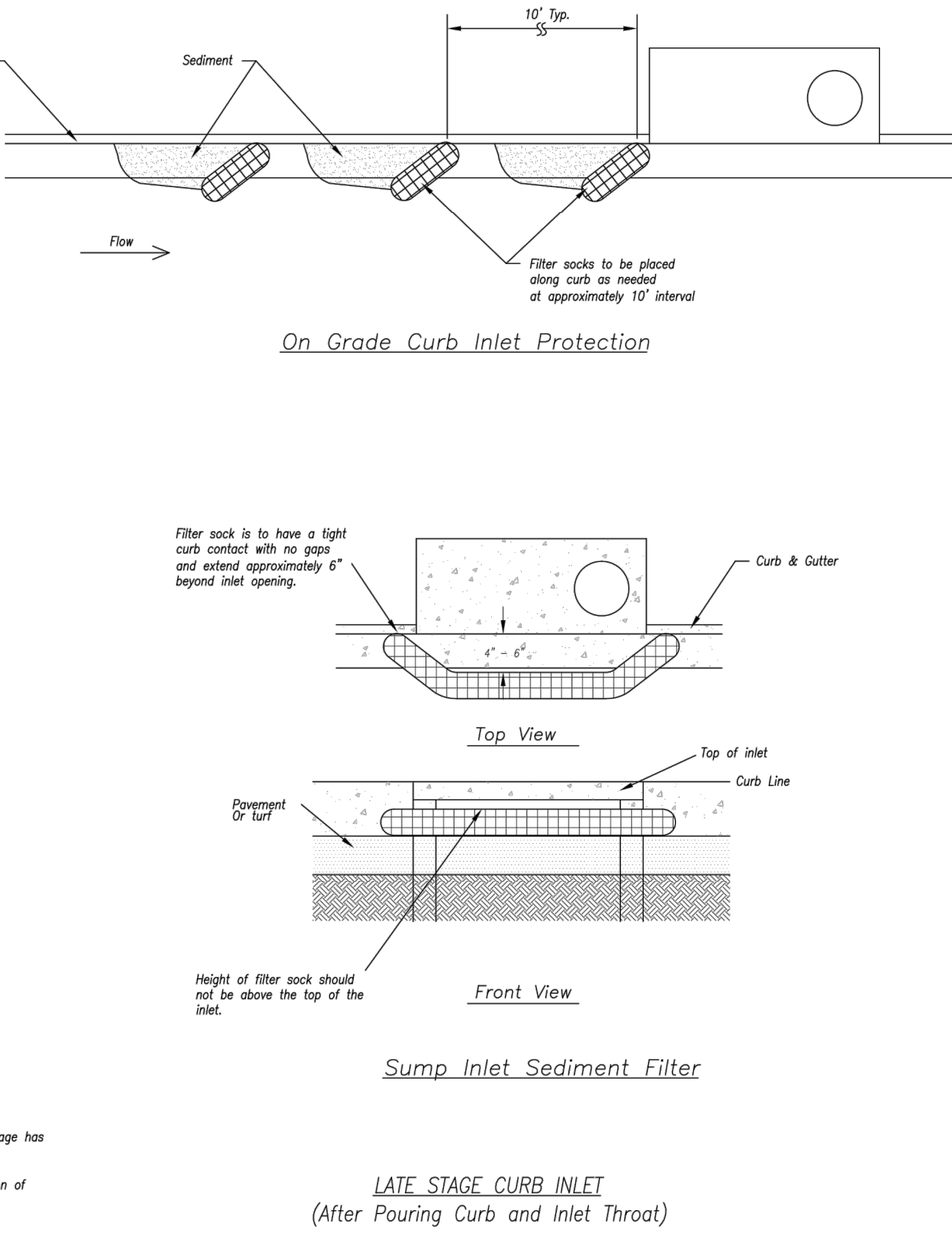


Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

AMERICAN PUBLIC WORKS ASSOCIATION
 KANSAS CITY METRO CHAPTER

AREA INLET AND JUNCTION BOX PROTECTION

STANDARD DRAWING
NUMBER ESC-07
ADOPTED: 10/24/2016



SITE DISTURBANCE DETAILS
STREET AND STORM SEWER PLANS

HAWTHORN RIDGE
SECOND PLAT

LEE'S SUMMIT, MISSOURI

drawn by: _____ D.A.H.O.
checked by: _____ M.G.D.
designed by: _____ B.M.W.
QA/QC by: _____ N.D.H.
project no.: 019-1605
date: 07-12-2018

SHEET
C148

REVISIONS DESCRIPTION

REVISIONS

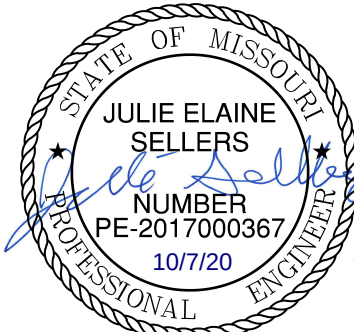
2019

NO. REV.

DATE

BY

JULIE E. SELLERS, P.E.
MO# 2017000367



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