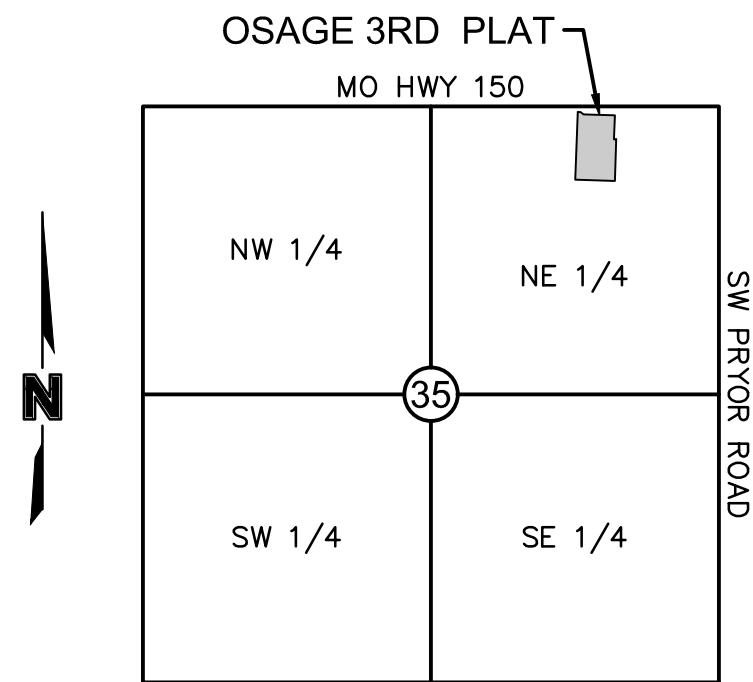


OSAGE
THIRD PLAT
STREET & STORM SEWER PLANS

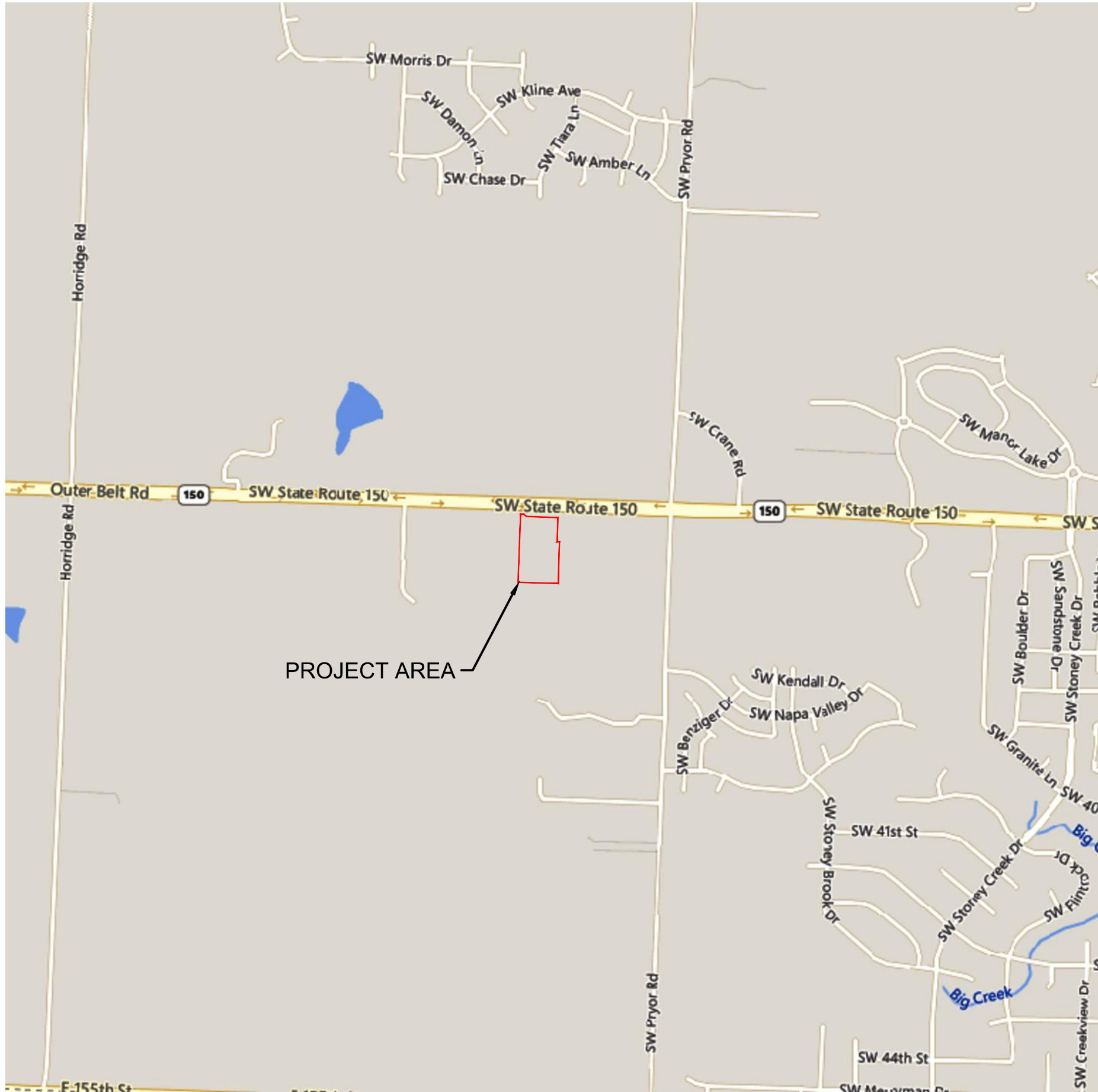
NE 1/4 SECTION 35, TOWNSHIP 47 N, RANGE 32 W.
IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI



VICINITY MAP
S35, T47N, R32W
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: EVERGY 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: JULIE E. SELLERS, P.E. PHONE: 816.361.1177 EMAIL: JSSELLERS@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:

ALL OF THE WEST HALF OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 35, TOWNSHIP 47 NORTH, RANGE 32 WEST OF THE FIFTH PRINCIPAL MERIDIAN IN LEE'S SUMMIT, JACKSON COUNTY MISSOURI EXCEPT THAT PART IN MISSOURI STATE HIGHWAY NO. 150 RIGHT-OF-WAY

ALSO

A TRACT OF LAND IN THE WEST HALF OF THE SOUTHWEST QUARTER AND EAST HALF OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 35, TOWNSHIP 47 NORTH, RANGE 32 WEST OF THE FIFTH PRINCIPAL MERIDIAN IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI BEING BOUNDED AND DESCRIBED BY OR UNDER THE DIRECT SUPERVISION OF JASON S. ROUDEBUSH, P.L.S. 2002014092, AS FOLLOWS: COMMENCING AT THE NORTHEAST CORNER OF SAID NORTHEAST QUARTER OF SAID NORTHEAST QUARTER; THENCE NORTH 88°07'14" WEST, ON THE NORTH LINE OF SAID NORTHEAST QUARTER OF SAID NORTHEAST QUARTER, 1,319.40 FEET TO THE NORTHWEST CORNER OF SAID NORTHEAST QUARTER OF SAID NORTHEAST QUARTER; THENCE SOUTH 02°10'22" WEST, ON THE WEST LINE OF SAID NORTHEAST QUARTER OF SAID NORTHEAST QUARTER, 659.27 FEET TO THE NORTHWEST CORNER OF SAID SOUTHWEST QUARTER OF SAID NORTHEAST QUARTER OF SAID NORTHEAST QUARTER ALSO BEING A POINT ON THE WESTERLY LINE OF PROPOSED OSAGE 2ND PLAT; THENCE SOUTH 88°08'29" EAST ON THE NORTH LINE OF SAID SOUTHWEST QUARTER OF SAID NORTHEAST QUARTER OF SAID NORTHEAST QUARTER, AND ALONG SAID WESTERLY LINE, 326.96 FEET TO THE NORTHEAST CORNER OF SAID WEST HALF OF SAID SOUTHWEST QUARTER OF SAID NORTHEAST QUARTER OF SAID NORTHEAST QUARTER, ALSO BEING THE SOUTHWEST CORNER OF SAID EAST HALF OF SAID NORTHWEST QUARTER OF SAID NORTHEAST QUARTER OF SAID NORTHEAST QUARTER; THENCE NORTH 02°09'46" EAST ON THE WEST LINE OF SAID EAST HALF OF SAID NORTHWEST QUARTER OF SAID NORTHEAST QUARTER OF SAID NORTHEAST QUARTER, AND ALONG SAID WESTERLY LINE, 346.14 FEET; THENCE LEAVING SAID EAST LINE AND SAID WESTERLY LINE, SOUTH 88°11'07" EAST, ALONG THE NORTH LINE OF PROPOSED TRACT I OF SAID PROPOSED OSAGE 2ND PLAT, 21.17 FEET; THENCE SOUTH 01°48'53" WEST ALONG THE EASTERLY LINE OF SAID PROPOSED TRACT I, A DISTANCE OF 366.13 FEET; THENCE NORTH 88°11'07" WEST, ALONG SAID EASTERLY LINE AND ITS WESTERLY EXTENSION 353.36 FEET TO A POINT ON SAID WEST LINE OF SAID NORTHEAST QUARTER OF SAID NORTHEAST QUARTER; THENCE NORTH 02°10'22" EAST ON SAID WEST LINE, 20.25 FEET TO THE POINT OF BEGINNING. CONTAINING 14,798 SQUARE FEET OR 0.34 ACRES, MORE OR LESS.

BENCHMARK

BENCHMARK NO. 1
CHISELED PLUS ON THE EAST FLANGED BOLT OF THE FIRE HYDRANT ON THE WEST SIDE OF SW PRYOR ROAD ON ADJOINING PROPERTY SOUTH OF THE SOUTHWEST CORNER OF SUBJECT PROPERTY.
ELEVATION = 1014.830

BENCHMARK NO. 2
RAILROAD SPIKE IN THE NORTH FACE OF POWER POLE LOCATED ON THE SOUTH SIDE MISSOURI STATE HIGHWAY 150 AT THE WEST SIDE OF THE DRIVEWAY TO 2025 MISSOURI STATE HIGHWAY 150, LEE'S SUMMIT, MO.
ELEVATION = 1031.313

Sheet List Table

Sheet Number	Sheet Title
C101	TITLE SHEET
C102	GENERAL NOTES
C103	GENERAL LAYOUT
C104	TYPICAL SECTIONS
C105	GRADING PLAN (FOR REFERENCE ONLY)
C106	RETAINING WALL PLAN & PROFILE
C107	SWALE 1 PLAN & PROFILE
C108	SWALE 2 PLAN & PROFILE
C109	ROADWAY PLAN & PROFILE (SW HOLDBROOKS DRIVE)
C110	ROADWAY PLAN & PROFILE (SW KNOXVILLE COURT)
C111	TRAFFIC CONTROL PLAN
C112	SW HOLDBROOKS DRIVE & SW KNOXVILLE COURT INTERSECTION
C113	DETENTION BASIN PLAN
C114	STORM SEWER PLAN & PROFILE (LINE 2)
C115	STORM SEWER PLAN & PROFILE (LINE 2 CONT.)
C116	STORM SEWER PLAN & PROFILE (LINE 4 & 5)
C117	MASTER DRAINAGE PLAN
C118	DRAINAGE PLAN
C119	DRAINAGE TABLES
C120	DETAIL SHEET
C121	DETAIL SHEET
C122	DETAIL SHEET

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

JULIE E. SELLERS, P.E.
CIVIL ENGINEER
MO# PE-2019000237

7/12/21

DATE

TITLE SHEET
STREET & STORM SEWER PLANS

OSAGE 3RD PLAT

LEE'S SUMMIT, MO

2021

BY
REVISIONS DESCRIPTION
DATE
REV. NO.

REVISIONS



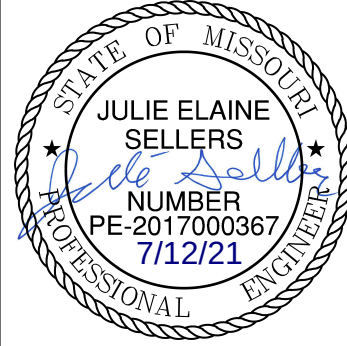
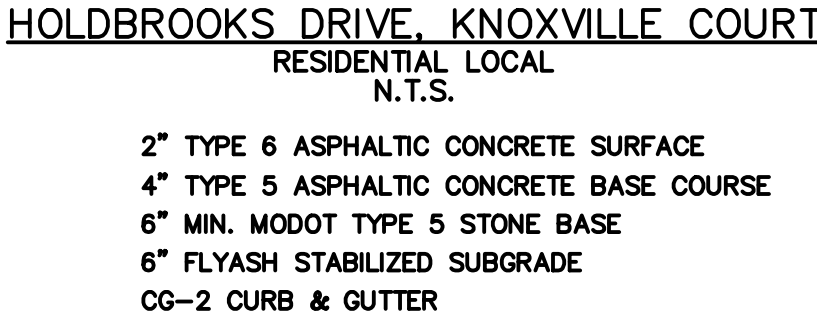
olsson

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TEL 816.361.1177
www.olsson.com

drawn by: MJD
checked by: JES
designed by: MJD
QA/QC by: JES
project no.: D19-2339
drawing no.: C_TTL01_D192339
date: 6/24/2021

SHEET
C101

—



USER: bworthley
C_PUTIL_D192339

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.

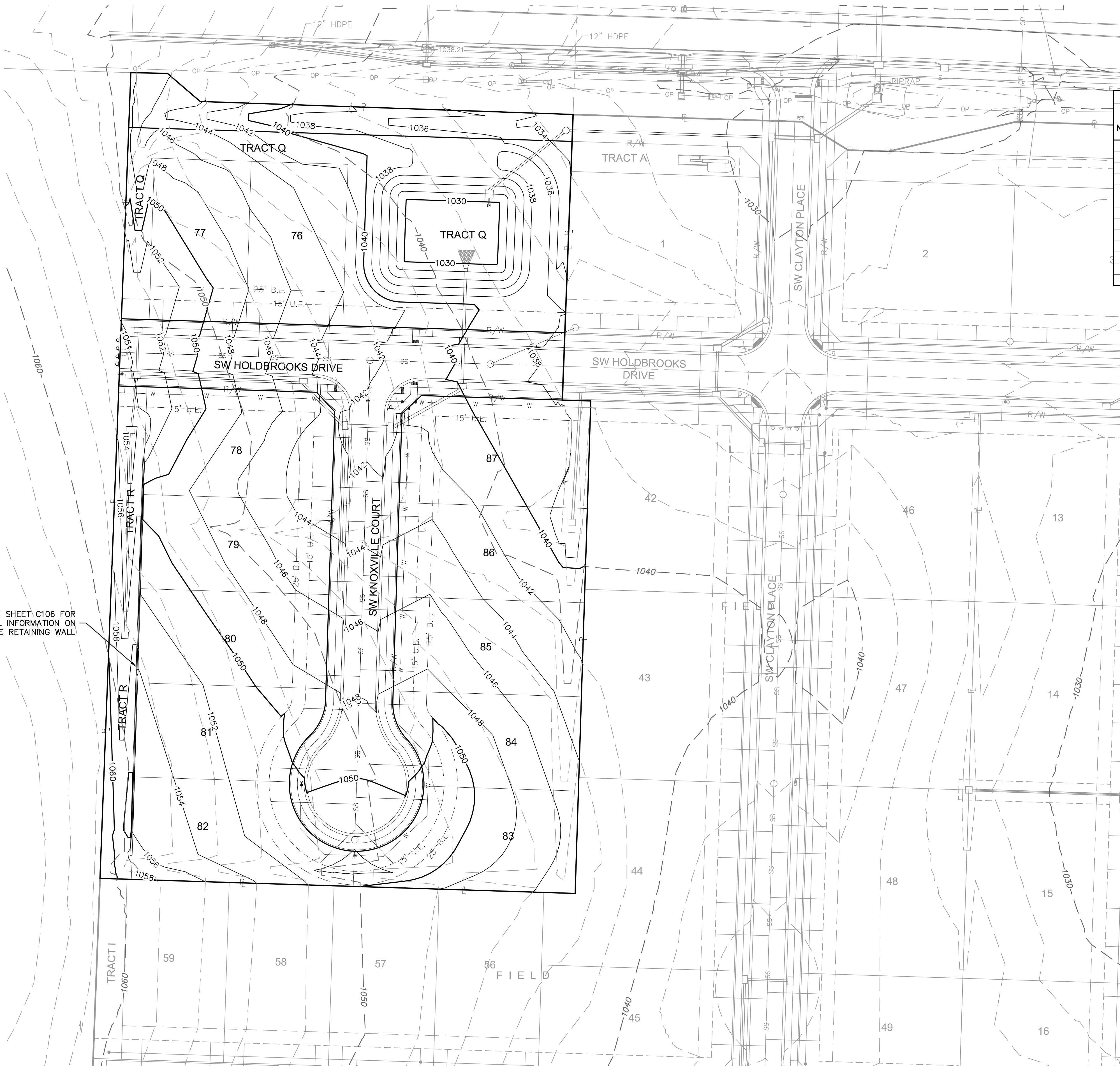
3. ALL EMBANKMENT OUTSIDE OF RIGHT-OF-WAY SHOULD BE PLACED IN CONTROLLED LIFTS HAVING A MAXIMUM LOOSE LIFT THICKNESS OF 8". EMBANKMENT SHOULD BE COMPACTED TO A MINIMUM OF 95% OF THE MATERIALS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 (STANDARD PROCTOR COMPACTION). MOISTURE CONTENT OF THE FILL AT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

EARTHWORK QUANTITIES		
LOCATION	CUT (C.Y.)	FILL (C.Y.)
STREET	1901	147
SITE	9104	3610
TOTAL	11005	3757

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

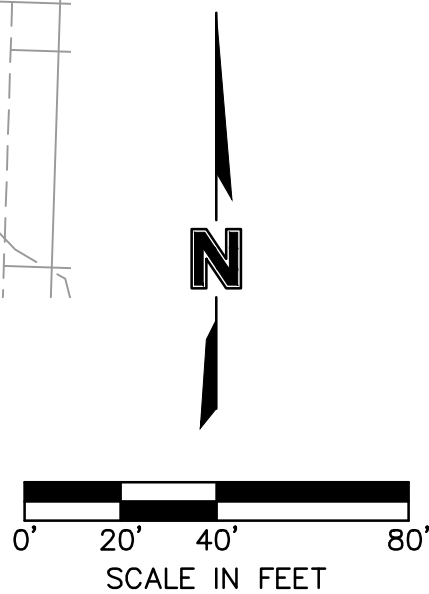
2. EARTHWORK QUANTITIES DO NOT TAKE INTO CONSIDERATION EXCAVATION, REMOVAL AND DISPOSAL OF MATERIAL DEEMED UNSUITABLE BY A GEOTECHNICAL ENGINEER. THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR EXCAVATION, REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL AND FOR REPLACING IT WITH SUITABLE MATERIAL.

REFERENCE SHEET C106 FOR
ADDITIONAL INFORMATION ON
THE RETAINING WALL



LOT FILL INFORMATION			
LOT NUMBER	MAX DEPTH OF FILL (OVER 2' PLACED)	FILL PLACED ON EXISTING SLOPES > 5:1	PROPOSED SLOPES > 3:1
76			
77			
78			
79			
80			
81			
82			
83	3.4	X	
84	3.4	X	
85		X	
86	3.4	X	
87			
X Indicates condition applies to lot			

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



GRADING PLAN (FOR REFERENCE ONLY)
STREET & STORM SEWER PLANS

OSAGE 3RD PLAT

LEE'S SUMMIT. MO.

BY

REVISIONS DESCRIPTION

DATA

REV.

DEVISIONS

2021

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER
PE-2017000367
7/12/21
PROFESSIONAL ENGINEERS

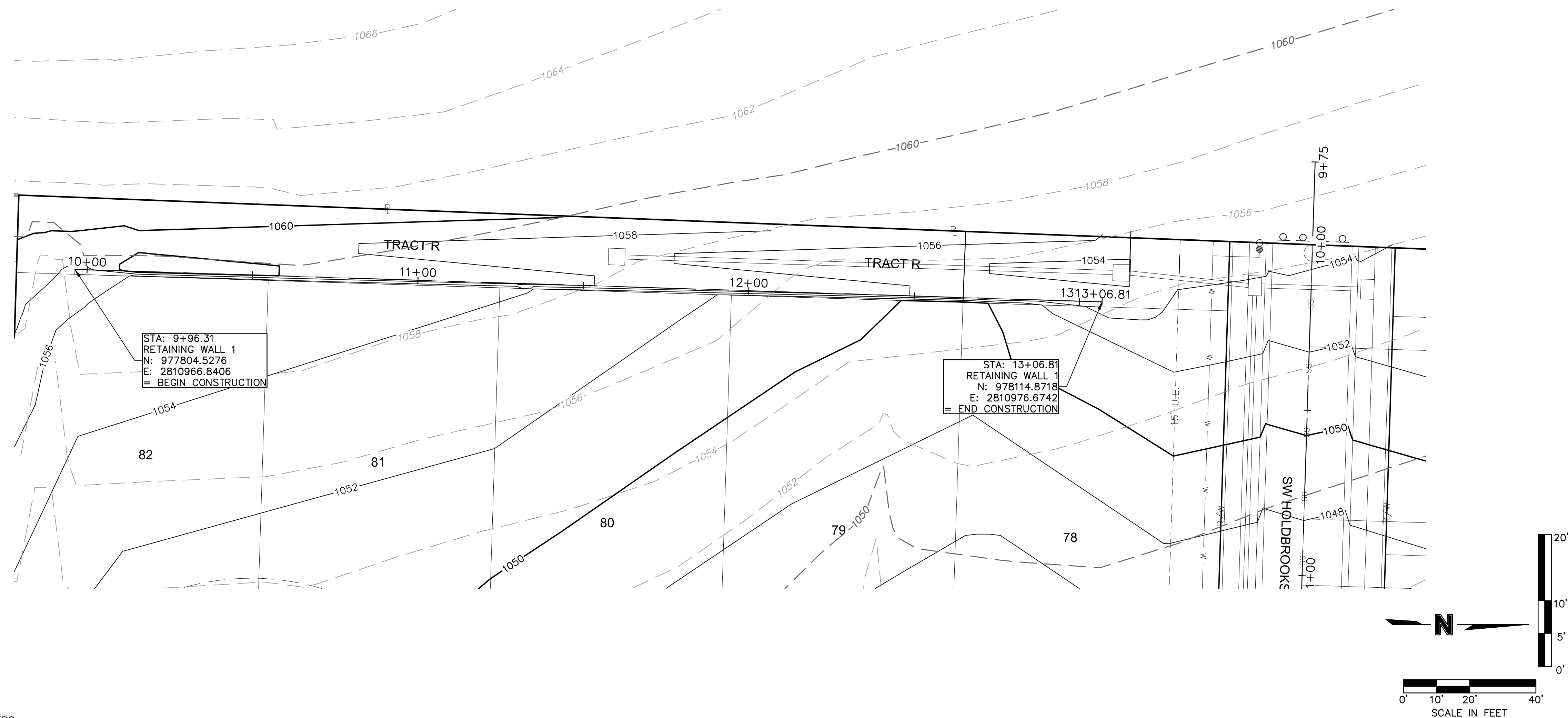
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Missouri Certificate of Authority #001592
1301 Burlington Street
North Kansas City, MO 64116

olson

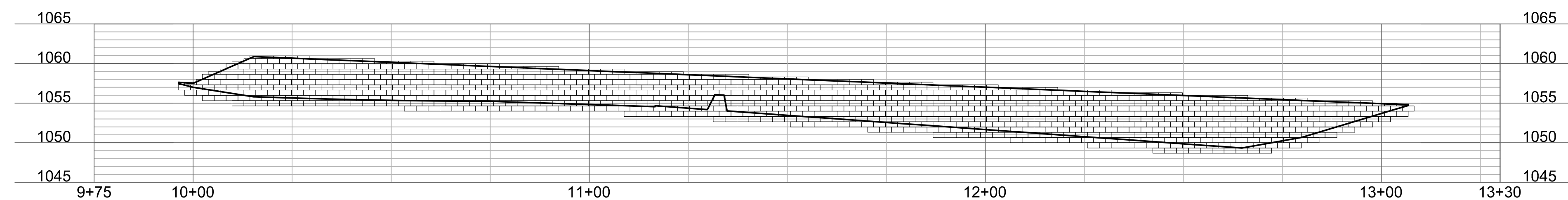
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USER: bworthley

NOTE:
RETAINING WALL TO BE STRUCTURALLY DESIGNED BY OTHERS.
PLAN AND PROFILE VIEW ARE SHOWN FOR REFERENCE ONLY.
REFER TO RETAINING WALL PLANS FOR MORE DETAILS.



RETAINING WALL 1 (9+75 - 13+30)

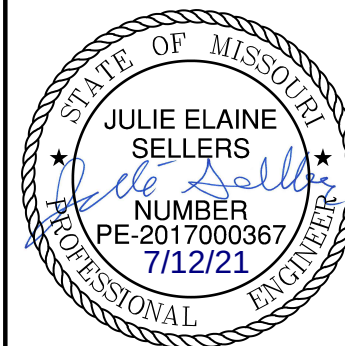


RETAINING WALL PLAN & PROFILE STREET & STORM SEWER PLANS

OSAGE 3RD PLAT

LEE'S SUMMIT, MO

2021

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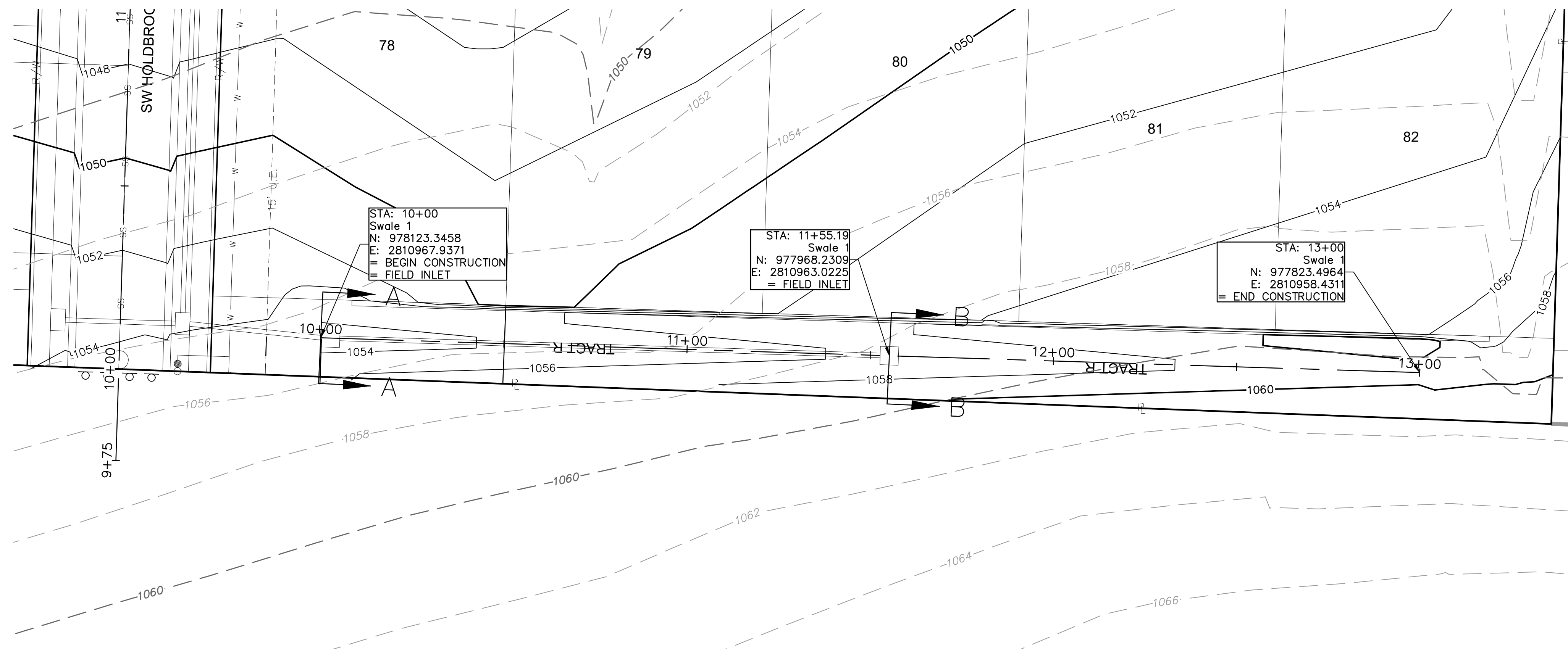
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Missouri Certificate of Authority #001592
1301 Burlington Street
North Kansas City, MO 64116

olsson

drawn by: _____ MJD
checked by: _____ JES
designed by: _____ MJD
QA/QC by: _____ JES
project no.: _____ D19-2339
drawing no.: C RWL01 D192339
date: _____ 6/24/2021

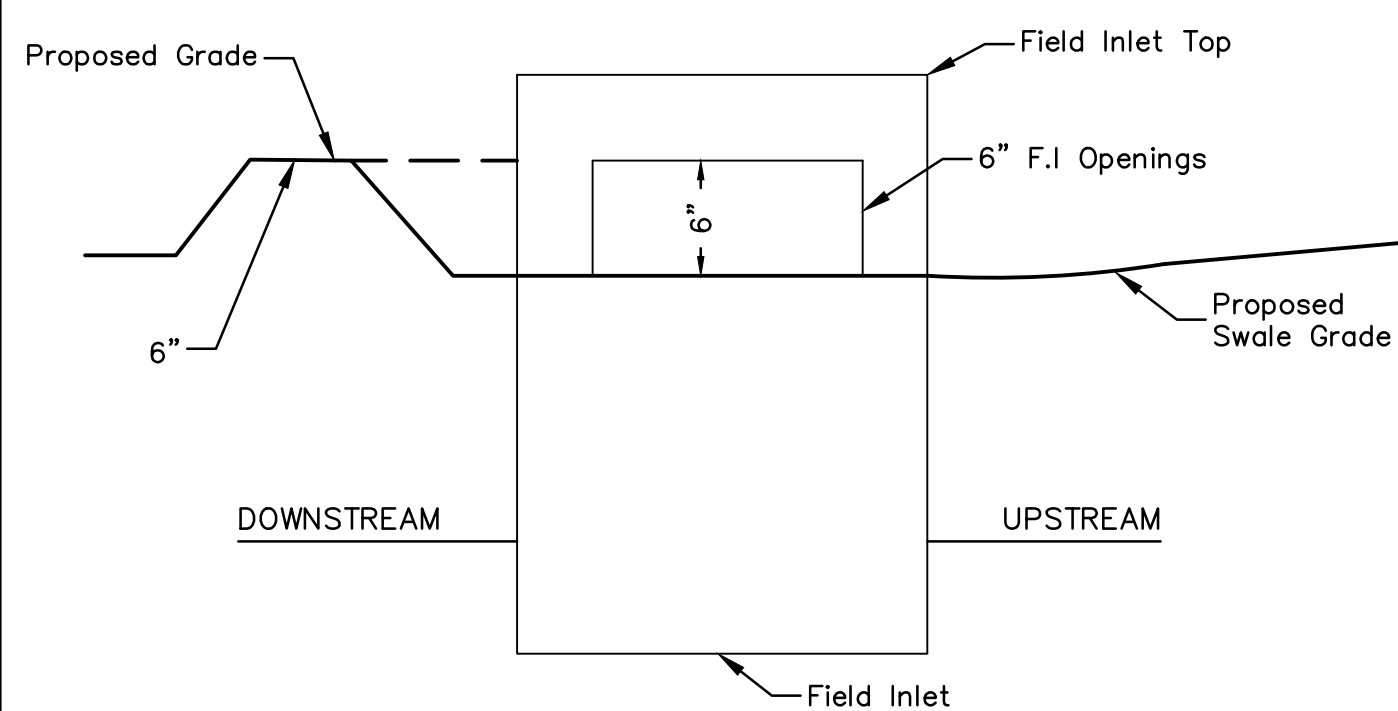
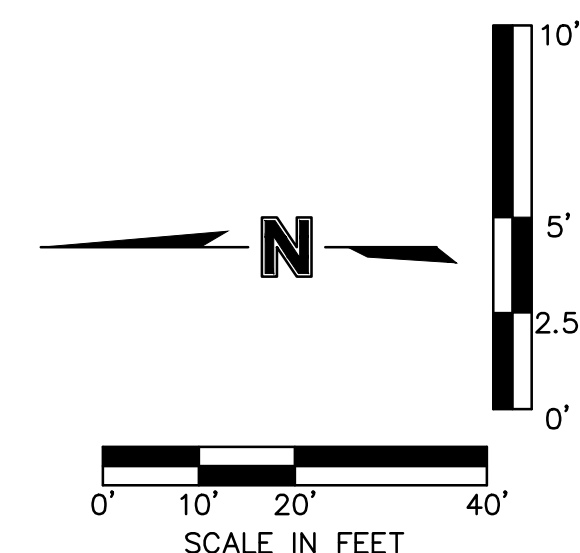
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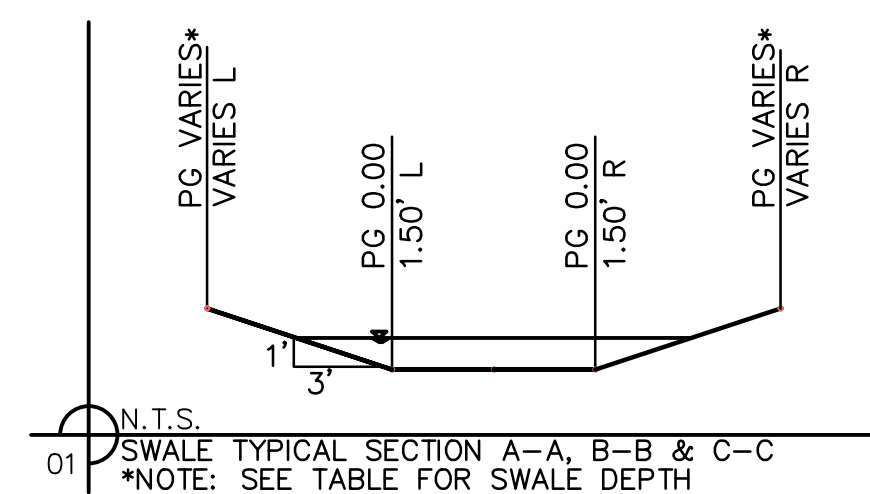
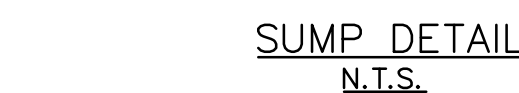


Swale Design Table (100 Year Return Frequency)														
Section Data							Flow Data							
SECTION	Mannings Coefficient	Channel Slope (%)	Swale Depth (ft)	Left Side Slope (H:V)	Right Side Slope (H:V)	Bottom Width (ft)	Discharge (cfs)	Water Depth (ft)	Flow Area (ft ²)	Velocity (ft/sec)	Wetted Perimeter (ft)	Top Width (ft)	Specific Energy (ft)	Shear Stress (lbs/ft ²)
A-A	0.03	2.10%	1.39	3:1	3:1	3.00	5.03	0.39	1.63	3.09	5.47	5.34	0.54	0.39
B-B	0.03	2.10%	1.39	3:1	3:1	3.00	5.03	0.39	1.63	3.09	5.47	5.34	0.54	0.39

Swale Drainage Area Table (100 year Return Frequency)						
Section	Drainage Area	C	Tc	i	K	Peak Flow
	(ac.)		(min)	(in/hr)		(cfs)
A-A	1.3	0.3	5	10.32	1.25	5.03
B-B	1.3	0.3	5	10.32	1.25	5.03

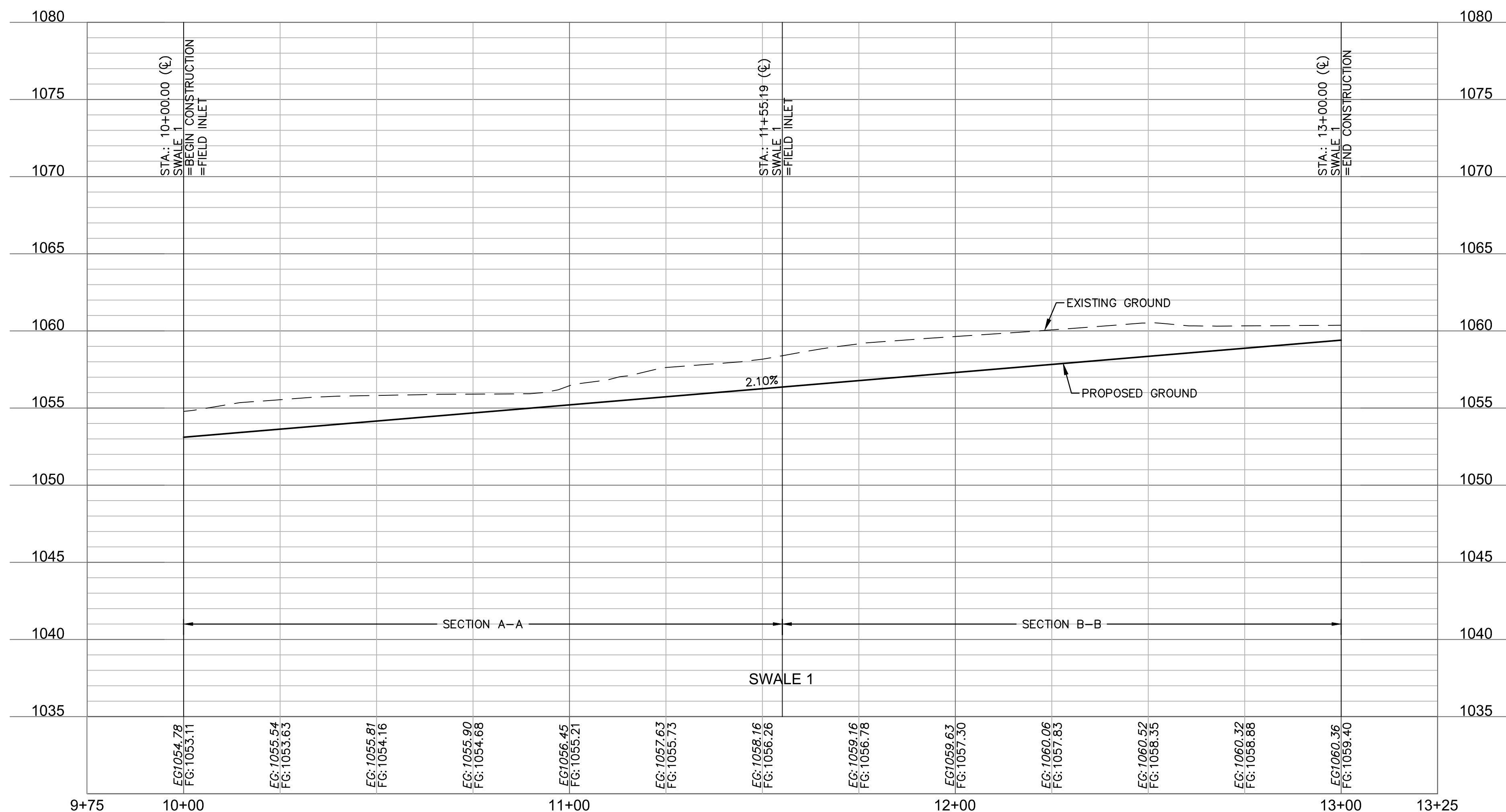


NOTE: INCLUDE SUMP PER ABOVE DETAIL WHERE
FIELD INLETS ARE LOCATED WITHIN SWALES.



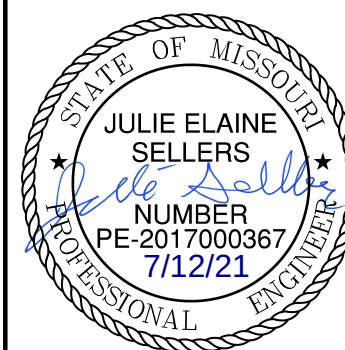
SWALE GRADING NOTES:

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.



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SWALE 1 PLAN & PROFILE
STREET & STORM SEWER PLANS

LEE'S SUMMIT, MO

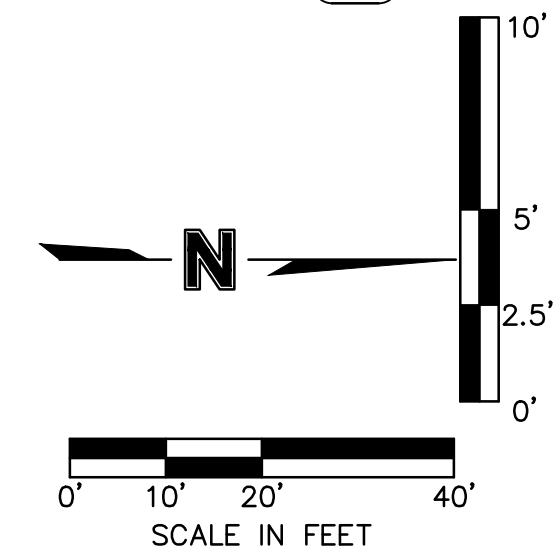
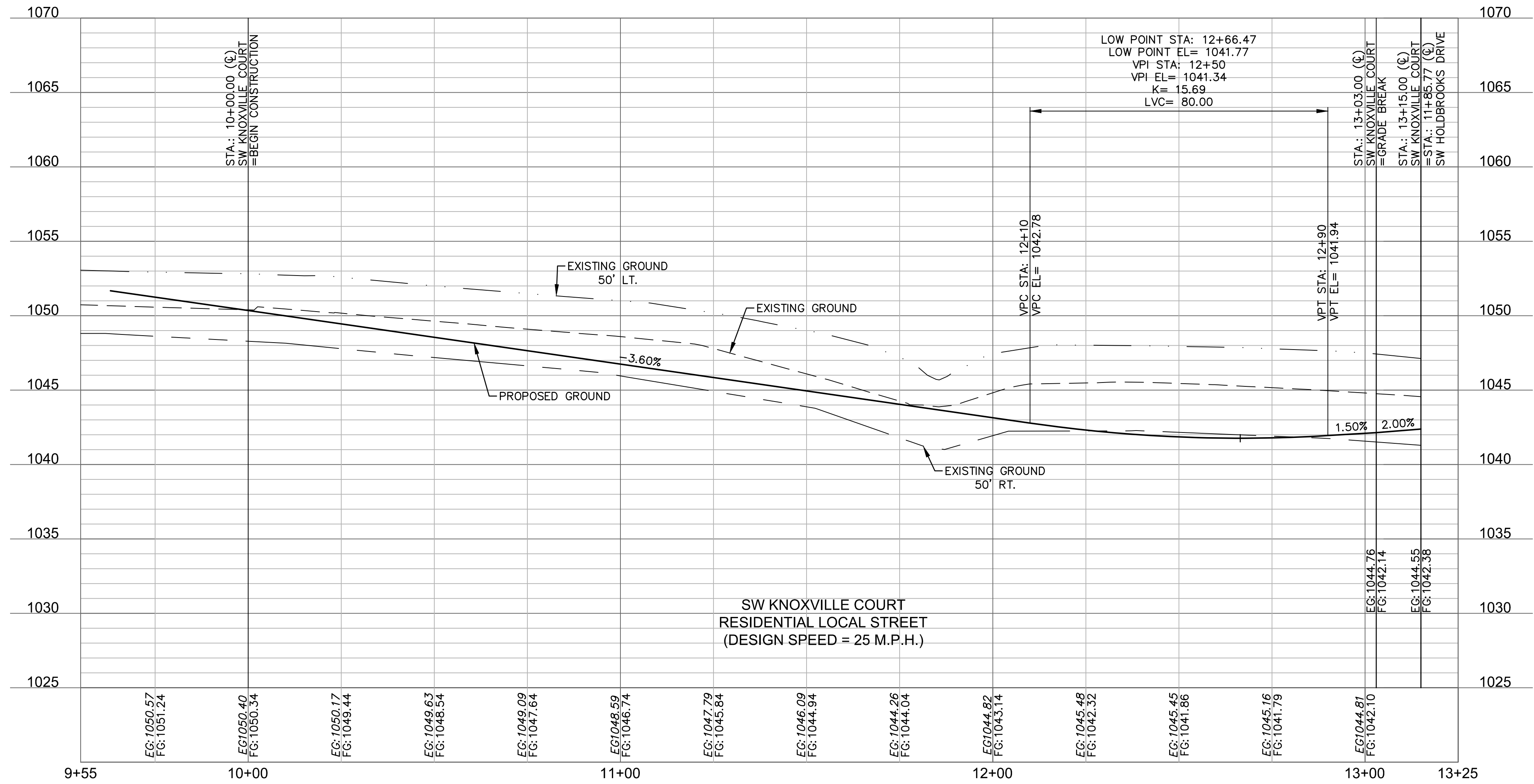
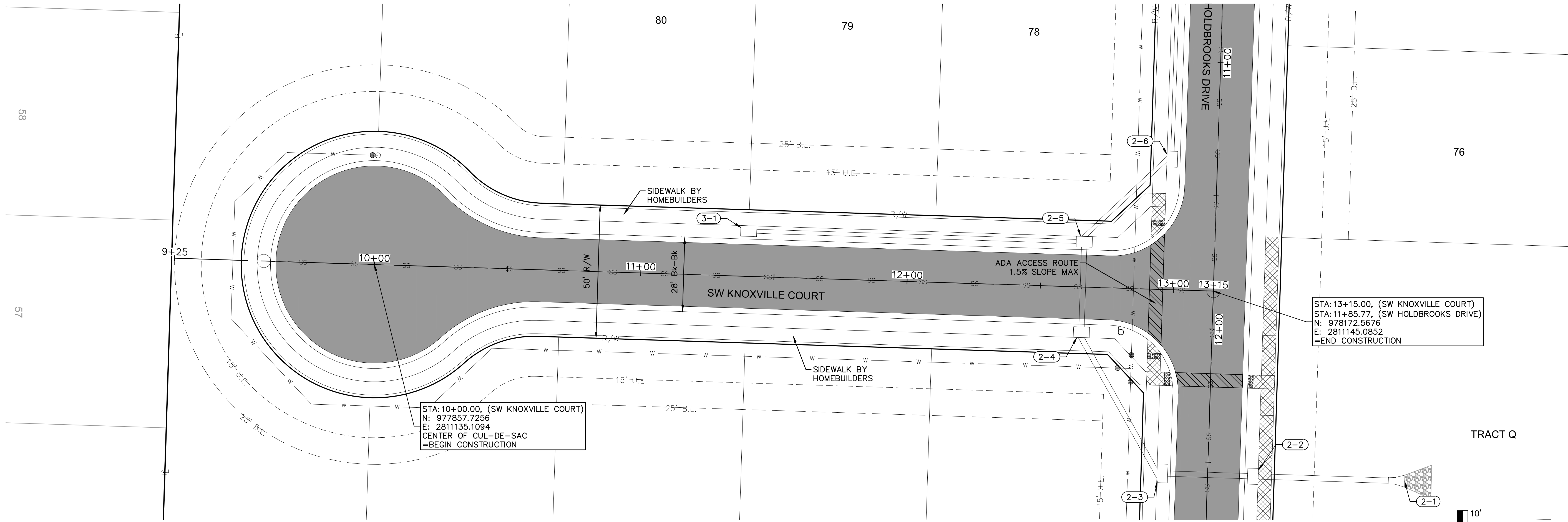
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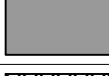
REVISIONS

drawn by: MJD
checked by: JES
designed by: MJD
QA/QC by: JES
project no.: D19-2339
drawing no.: C SWL01 D192339
date: 6/24/2021

SHEET
C107

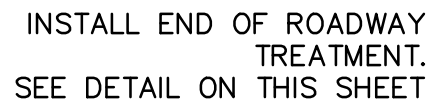
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LEGEND	
	ADA ACCESS ROUTE
	MILL & OVERLAY
	ASPHALT PAVEMENT
	CONCRETE SIDEWALK
	CG-2 CURB & GUTTER

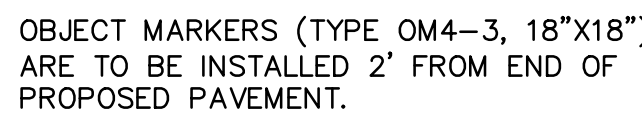
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DATE: Jul 08, 2019



REMOVE EXISTING
- END OF ROADWAY
TREATMENT MARKERS

87
INSTALL SW HOLDBROOKS
DRIVE AND SW KNOXVILLE
COURT STREET NAME
SIGNS WITH STOP SIGN



0' 20' 40' 80'

SCALE IN FEET

OSAGE 3RD PLAT

LEE'S SUMMIT, MO

C111

REV.

REVISIONS

2021

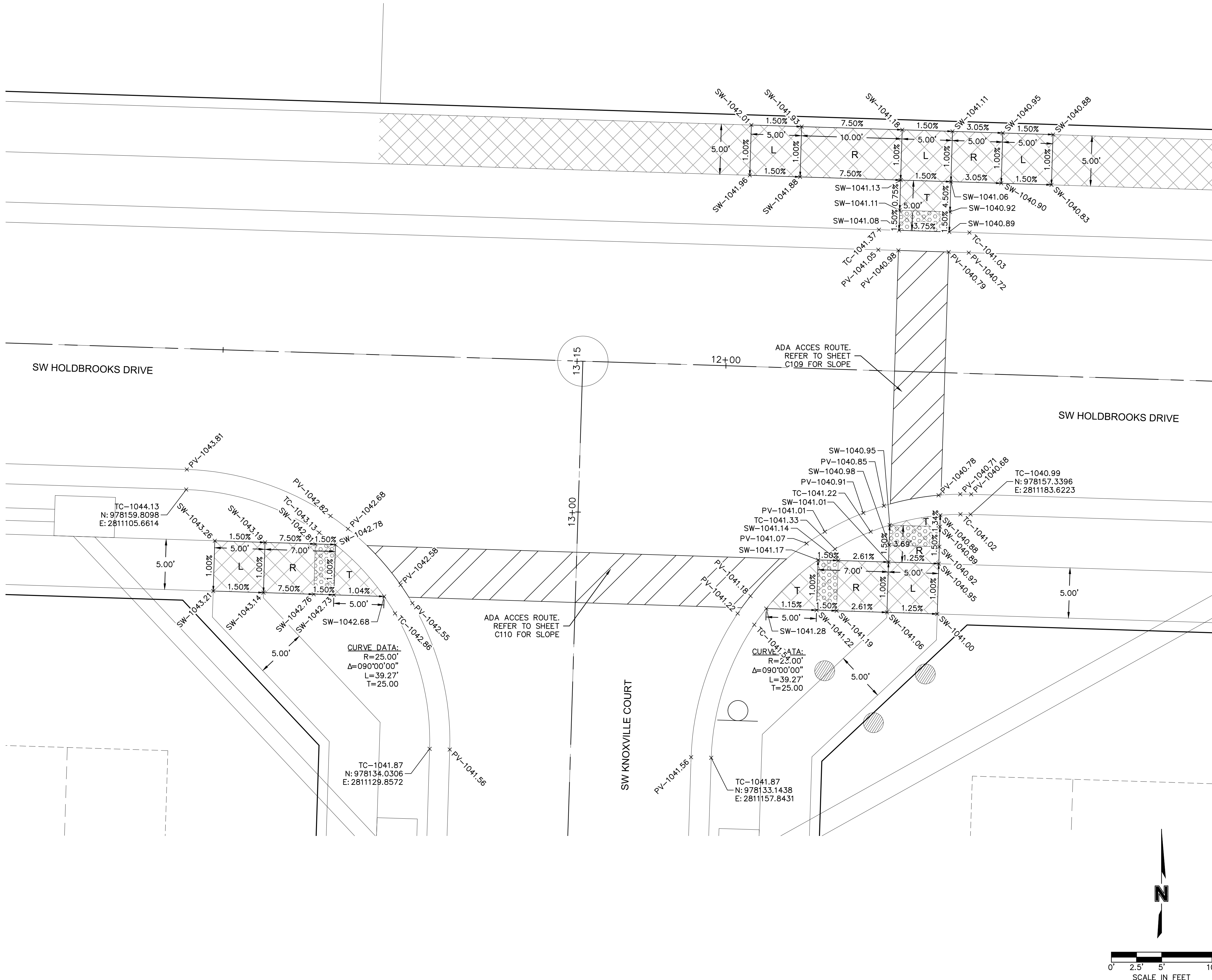
STATE OF MISSOURI
JULIE ELAINE
SELLERS
NUMBER
PE-2017000367
7/12/21
PROFESSIONAL ENGINEER

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Missouri Certificate of Authority #001592
1301 Burlington Street
North Kansas City, MO 64116

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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 SLOPE.
3. LANDING SHALL BE PROVIDED WHERE INDICATED ON PLAN SHEET 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 GRADE.
5. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
6. CROSS SLOPE FOR RAMPS AND SIDEWALK SHALL NOT EXCEED 2%. 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
	ADA ACCESS ROUTE
	CG-2 CURB & GUTTER
	CONCRETE SIDEWALK (CONSTRUCTED BY CONTRACTOR)



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USER: bworthley

SW HOLDBROOKS DRIVE & SW KNOXVILLE COURT INTERSECTION
STREET & STORM SEWER PLANS

OSAGE 3RD PLAT

LEE'S SUMMIT. MO

by:	MJD
by:	JES
by:	MJD
by:	JES
o.:	D19-2339
no.:	C INT01 D192339
	6/24/2021

SHEET
C112

[illegible]

REVISIONS



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North Kansas City, MO 64116
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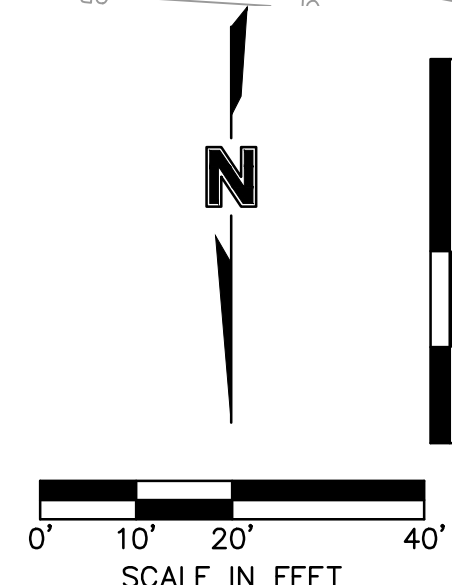
The technical drawings illustrate the design of a concrete outlet structure. The top view shows a square structure with a width of 5 feet and a depth of 5 feet, featuring a central rectangular opening and a set of steps. The front view shows the structure's height and the vertical arrangement of openings: a 15-inch circular opening with a 12-inch clearance above it, a 28-inch clearance below that, and a 1.5-inch square primary outlet at the base with a 6-inch clearance. The cross-section view provides elevation data for various components: the emergency spillway at EL=1037.50, the earth berm, the top of the outlet structure at EL=1033.50, the 15-inch circular opening at EL=1031.25, the bottom of the detention basin at EL=1029.00, and the primary outlet at EL=1028.50. A discharge culvert is also shown, with a reference to its profile for more details.

CONCRETE OUTLET STRUCTURE
TOP VIEW

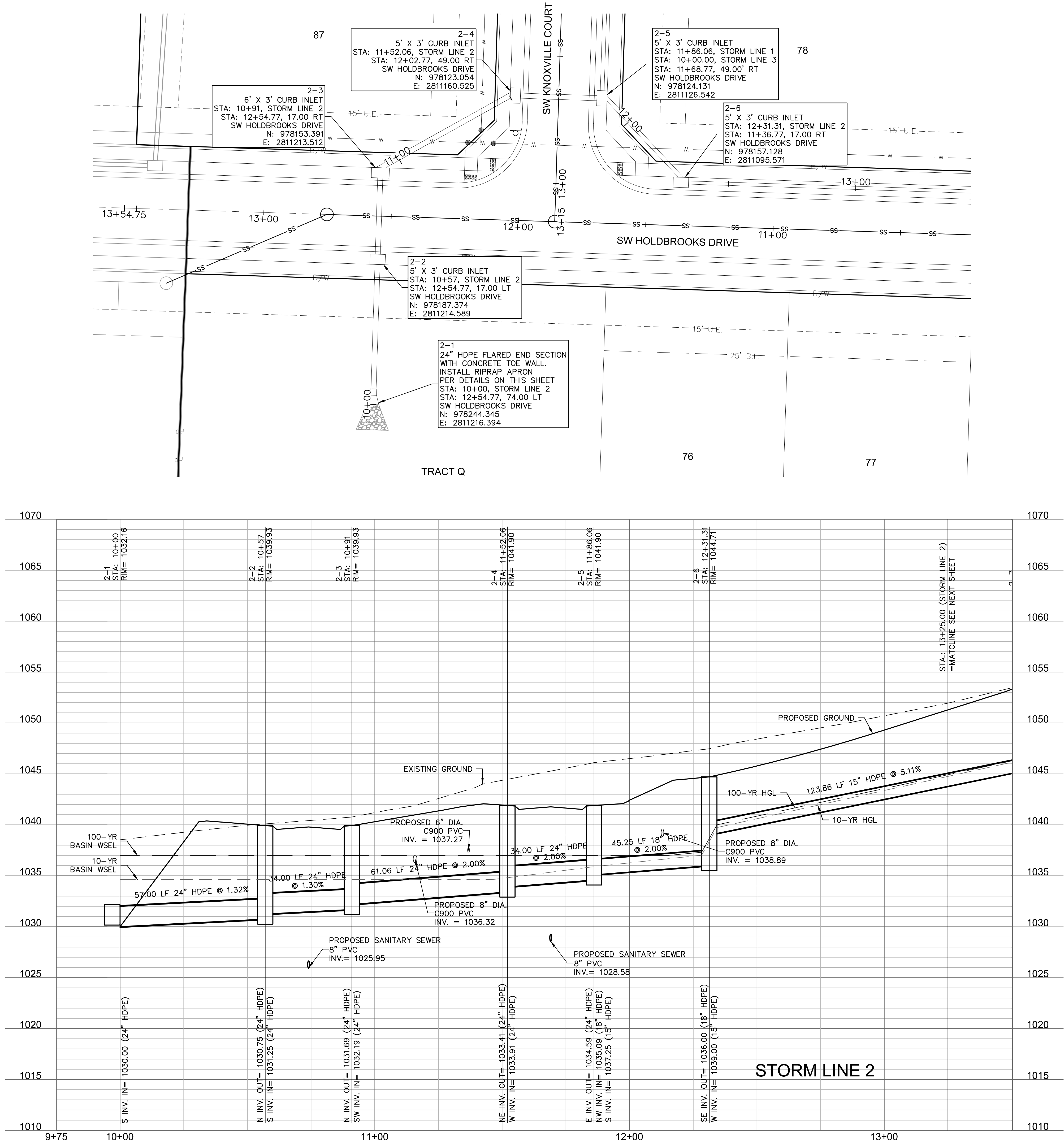
CONCRETE OUTLET STRUCTURE
FRONT VIEW

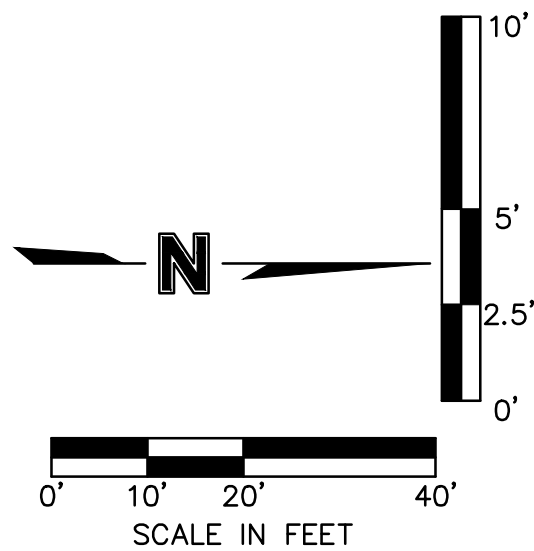
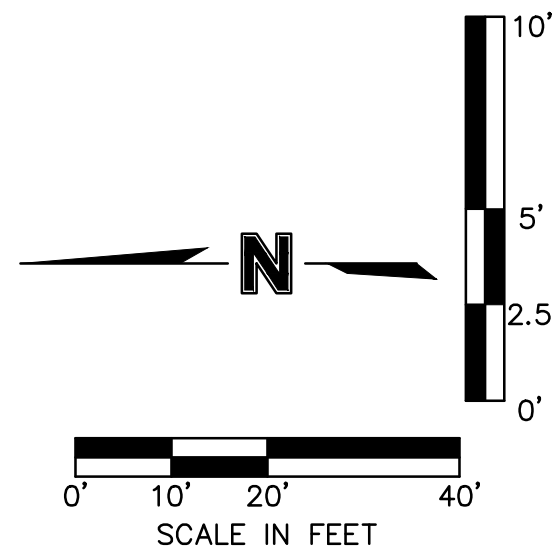
EL=1039.00
EMERGENCY SPILLWAY
EL=1037.50
EARTH BERM
TOP OF OUTLET STRUCTURE
5'X5' (INSIDE) OPEN TOP
WITH TRASH RACK
TOP EL=1033.50
15" CIRCULAR OPENING
WITH TRASH RACK
EL=1031.25
DISCHARGE CULVERT
SEE PROFILE FOR MORE DETAILS
BOTTOM OF DETENTION BASIN
EL=1029.00
PRIMARY OUTLET:
1.5" SQUARE ORIFICE
SEE DETAIL 01 ABOVE
EL=1028.50

N.T.S.



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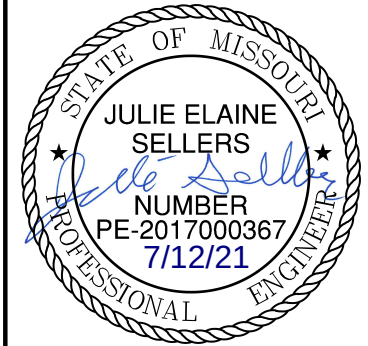




2021

2021

REVISIONS



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C:\PBASE_D192339
C:\PBDY_D192339
C:\PBASE_D192339
C:\PBDY_D192339

NOTES:

MBOE - MINIMUM BUILDING OPENING ELEVATION
FG - FINISHED GRADE

LEGEND	
	FINISHED INDEX CONTOURS
	FINISHED INTERMEDIATE CONTOURS

BASEMENT TYPES

- (S) STANDARD
(D) DAYLIGHT

NOTES:

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

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

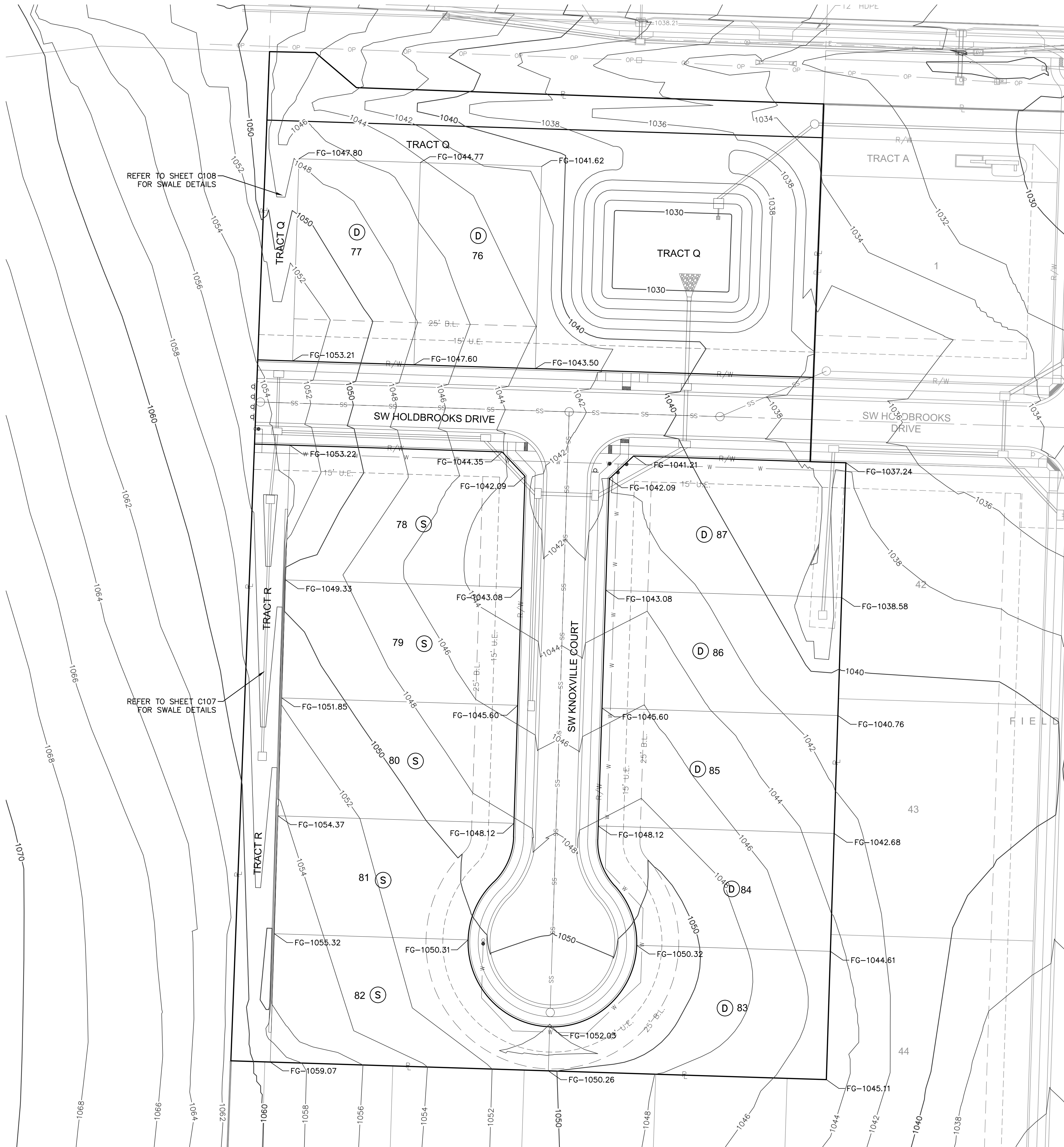
3. PLAT IS LOCATED OUTSIDE OF ANY REQUIRED BUFFER ZONES FOR NATURAL STREAMS.

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 C107-C108 FOR SWALE GRADING DETAILS.

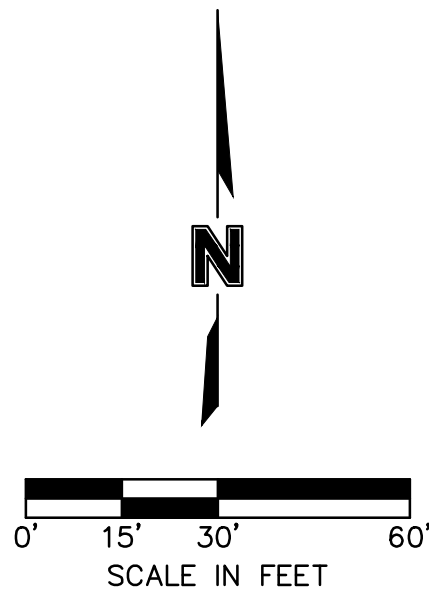
6. DRAINAGE PATHS TO BE CONSTRUCTED BETWEEN LOTS LABELED AS STANDARD AND/OR UPHILL LOTS.

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.



Hook Farms Second Plat Minimum Building Opening Elevations		
Lot	MBOE Required*	As-Built Grading Plan Required
76	X	X
77	X	X
78		
79		
80		
81		
82		
83		
84		
85		
86	X	X
87	X	X

Notes:
X - Indicates the condition applies to the lot.
* - MBOE's will be determined once the as-built survey has been completed. This table will be replaced with a new table showing the determined MBOE for these lots.



MASTER DRAINAGE PLAN
STREET & STORM SEWER PLANS

OSAGE 3RD PLAT

LEE'S SUMMIT, MO

2021

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION	BY



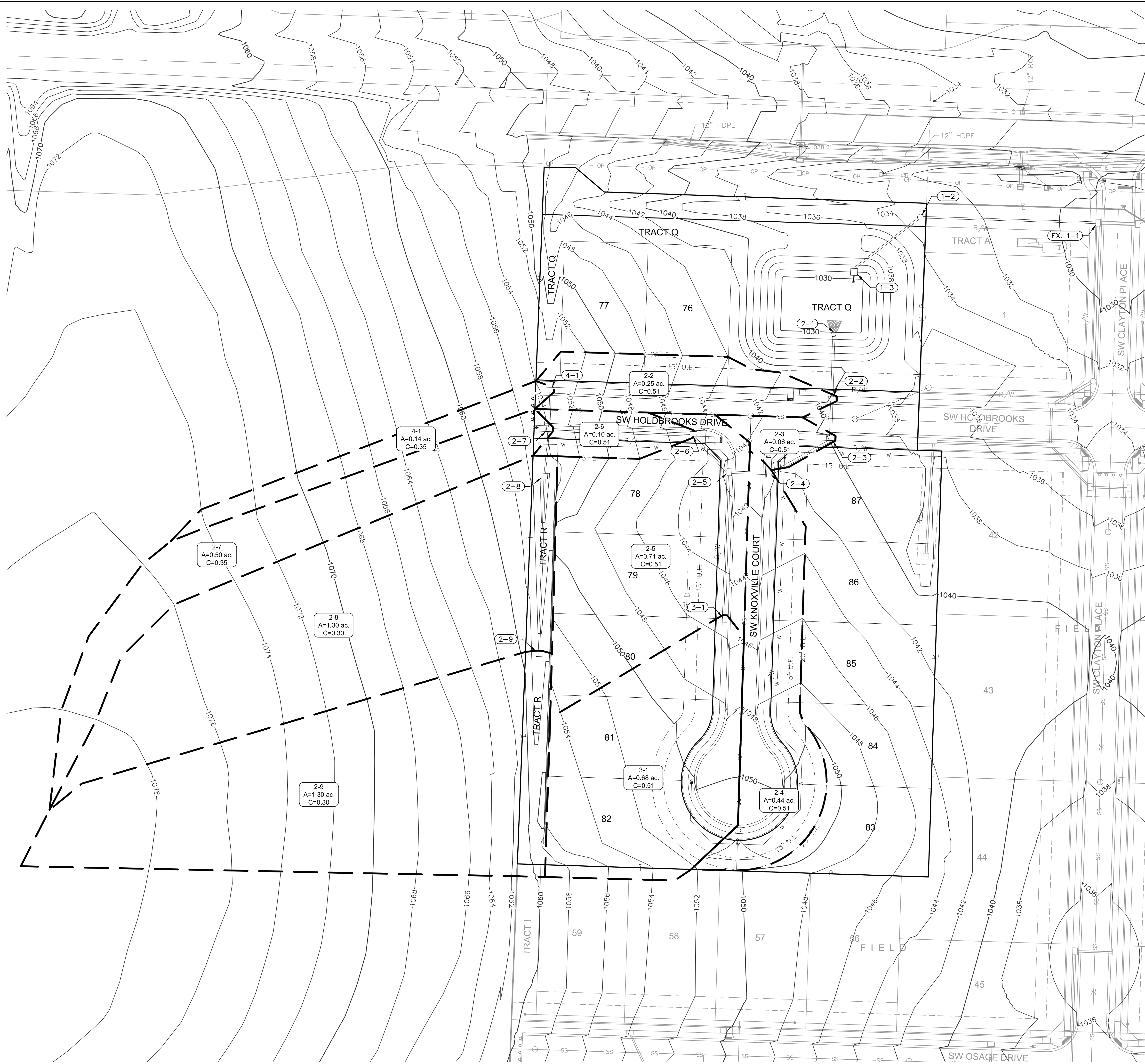
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Missouri Certificate of Authority #001592
1301 Burlington Street
North Kansas City, MO 64116
TEL 816.361.1177
www.olsson.com

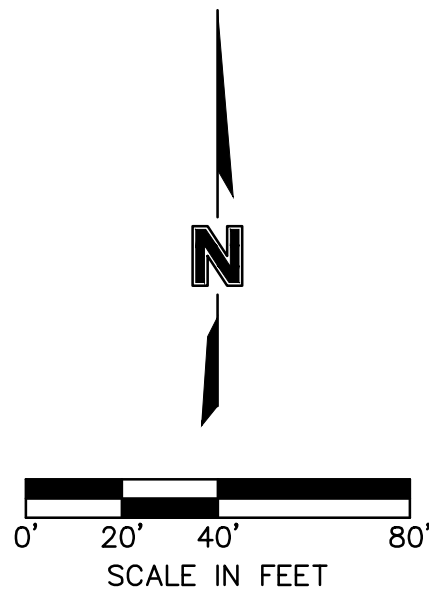
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checked by: JES
designed by: MJD
QA/QC by: JES
project no.: D19-2339
drawing no.: C_DRN01_D192339
date: 6/24/2021

SHEET
C117

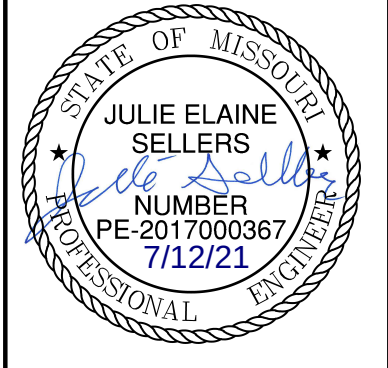
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USER: bworthley



LEGEND	
	FINISHED INDEX CONTOURS
	FINISHED INTERMEDIATE CONTOURS
	RIDGE LINE
A	DRAINAGE AREA
C	RUNOFF COEFFICIENT
C.I. 0-0	STORM STRUCTURE NUMBER



DRAINAGE PLAN		REVISIONS	
STREET & STORM SEWER PLANS			
OSAGE 3RD PLAT			
LEE'S SUMMIT, MO			
drawn by: MJD	checked by: JES	DATE	REV. NO.
designed by: MJD	QA/QC by: JES		
project no.: C_DRN02_D192339	drawing no.: 6/24/2021		
SHEET C118		2021	



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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. 2-2	0.25	0.51	5.00	7.35	1.00	0.94
C.I. 2-3	0.06	0.51	5.00	7.35	1.00	0.23
C.I. 2-4	0.44	0.51	5.00	7.35	1.00	1.65
C.I. 2-5	0.71	0.51	5.00	7.35	1.00	2.66
C.I. 2-6	0.10	0.51	5.00	7.35	1.00	0.38
C.I. 2-7	0.50	0.35	5.00	7.35	1.00	1.29
F.I. 2-8	1.30	0.30	5.00	7.35	1.00	2.87
F.I. 2-9	1.30	0.30	5.00	7.35	1.00	2.87
C.I. 3-1	0.68	0.51	5.00	7.35	1.00	2.55
C.I. 4-1	0.25	0.35	5.00	7.35	1.00	0.64

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. 2-2	0.25	0.51	5.00	10.32	1.25	1.65
C.I. 2-3	0.06	0.51	5.00	10.32	1.25	0.39
C.I. 2-4	0.44	0.51	5.00	10.32	1.25	2.90
C.I. 2-5	0.71	0.51	5.00	10.32	1.25	4.67
C.I. 2-6	0.10	0.51	5.00	10.32	1.25	0.66
C.I. 2-7	0.50	0.35	5.00	10.32	1.25	2.26
F.I. 2-8	1.30	0.30	5.00	10.32	1.25	5.03
F.I. 2-9	1.30	0.30	5.00	10.32	1.25	5.03
C.I. 3-1	0.68	0.51	5.00	10.32	1.25	4.47
C.I. 4-1	0.25	0.35	5.00	10.32	1.25	1.13

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. 2-2	GRADE	0.94	0.10	1.04	1.00	0.89	0.89	0.89	0.15	85.63%	0.11	5.30	...
C.I. 2-3	GRADE	0.23	0.10	0.33	1.00	0.31	0.31	0.31	0.01	95.94%	0.07	3.44	...
C.I. 2-4(L)	SAG	0.00	...	...	...	...	...	...	...	...	0.00	0.00	...
C.I. 2-4(R)	SAG	1.28	...	...	...	...	...	...	...	...	0.11	5.74	...
C.I. 2-4(B)	SAG	0.38	...	...	...	...	...	...	...	...	...	...	...
C.I. 2-4	SAG	1.65	0.00	1.65	0.80	19.40	15.52	1.65	0.00	100.00%	...	...	...
C.I. 2-5(L)	SAG	0.94	...	...	...	...	...	...	...	...	0.14	7.03	...
C.I. 2-5(R)	SAG	0.00	...	...	...	...	...	...	...	...	0.00	0.00	...
C.I. 2-5(B)	SAG	1.73	...	...	...	...	...	...	...	...	...	...	...
C.I. 2-5	SAG	2.66	0.00	2.66	0.80	19.40	15.52	2.66	0.00	100.00%	...	...	...
C.I. 2-6	GRADE	0.38	0.37	0.74	1.00	0.64	0.64	0.64	0.10	86.35%	0.09	4.34	...
C.I. 2-7	GRADE	1.29	0.00	1.29	1.00	0.92	0.92	0.92	0.37	71.44%	0.10	4.96	...
F.I. 2-8	SAG	2.87	0.00	2.87	0.80	14.00	11.20	2.87	0.00	100.00%	...	...	0.17
F.I. 2-9	SAG	2.87	0.00	2.87	0.80	14.00	11.20	2.87	0.00	100.00%	...	...	0.17
C.I. 3-1	GRADE	2.55	0.00	2.55	1.00	1.86	1.86	1.86	0.69	72.90%	0.16	7.83	...
C.I. 4-1	GRADE	0.64	0.00	0.64	1.00	0.54	0.54	0.54	0.10	84.59%	0.08	3.83	...

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.

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. 2-2	GRADE	1.65	0.29	1.93	1.00	1.44	1.44	1.44	0.49	74.62%	0.13	6.70	...
C.I. 2-3	GRADE	0.39	0.46	0.85	1.00	0.75	0.75	0.75	0.10	88.15%	0.10	4.93	...
C.I. 2-4(L)	SAG	0.00	...	...	...	...	...	...	...	...	0.00	0.00	...
C.I. 2-4(R)	SAG	2.24	...	...	...	...	...	...	...	...	0.14	7.09	...
C.I. 2-4(B)	SAG	0.66	...	...	...	...	...	...	...	...	...	...	...
C.I. 2-4	SAG	2.90	0.00	2.90	0.80	19.40	15.52	2.90	0.00	100.00%	...	...	...
C.I. 2-5(L)	SAG	1.65	...	...	...	...	...	...	...	...	0.19	9.37	...
C.I. 2-5(R)	SAG	0.00	...	...	...	...	...	...	...	...	0.00	0.00	...
C.I. 2-5(B)	SAG	3.03	...	...	...	...	...	...	...	...	...	...	...
C.I. 2-5	SAG	4.67	0.00	4.67	0.80	19.40	15.52	4.67	0.00	100.00%	...	...	...
C.I. 2-6	GRADE	0.66	0.98	1.64	1.00	1.18	1.18	1.18	0.46	72.05%	0.12	5.84	...
C.I. 2-7	GRADE	2.26	0.00	2.26	1.00	1.28	1.28	1.28	0.98	56.53%	0.12	6.13	...
F.I. 2-8	SAG	5.03	0.00	5.03	0.80	14.00	11.20	5.03	0.00	100.00%	...	...	0.25
F.I. 2-9	SAG	5.03	0.00	5.03	0.80	14.00	11.20	5.03	0.00	100.00%	...	...	0.25
C.I. 3-1	GRADE	4.47	0.00	4.47	1.00	2.61	2.61	2.61	1.86	58.37%	0.19	9.67	...
C.I. 4-1	GRADE	1.13	0.00	1.13	1.00	0.84	0.84	0.84	0.29	74.38%	0.09	4.72	...

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.

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. (ft)
1-2	EX. 1-1	152.90	1026.89	1024.76	1.39	18	0.012	16.66	9.43	13.43	1.50	1030.34	1033.41
1-3	1-2	73.91	1028.42	1027.39	1.39	18	0.012	16.66	9.43	13.43	1.50	1032.48	1033.50
2-2	2-1	57.00	1030.75	1030.00	1.32	24	0.012	16.08	6.10	28.11	1.72	1032.20	1039.93
2-3	2-2	34.00	1031.69	1031.25	1.29	24	0.012	15.14	7.75	27.87	1.05	1033.09	1039.93
2-4	2-3	61.06	1033.41	1032.19	2.00	24	0.012	14.91	8.50	34.64	0.92	1034.80	1041.90
2-5	2-4	34.00	1034.59	1033.91	2.00	24	0.012	13.26	7.94	34.65	0.89	1035.90	1041.90
2-6	2-5	45.26	1036.00	1035.10	1.99	18	0.012	8.05	7.11	16.04	0.80	1037.10	1044.71
2-7	2-6	123.87	1045.33	1039.01	5.10	15	0.012	7.67	9.75	15.80	0.61	1046.43	1053.79
2-8	2-7	40.59	1046.64	1045.83	2.00	15	0.012	5.74	6.99	9.88	0.68	1047.61	1053.72
2-9	2-8	152.50	1051.70	1048.65	2.00	15	0.012	2.87	5.59	9.89	0.46	1052.38	1056.36
3-1	2-5	126.00	1040.40	1037.25	2.50	15	0.012	2.55	5.68	11.06	0.41	1041.04	1045.44
4-1	2-7	34.00	1048.50	1047.43	3.15	15	0.012	0.64	3.99	12.41	0.19	1048.81	1053.44

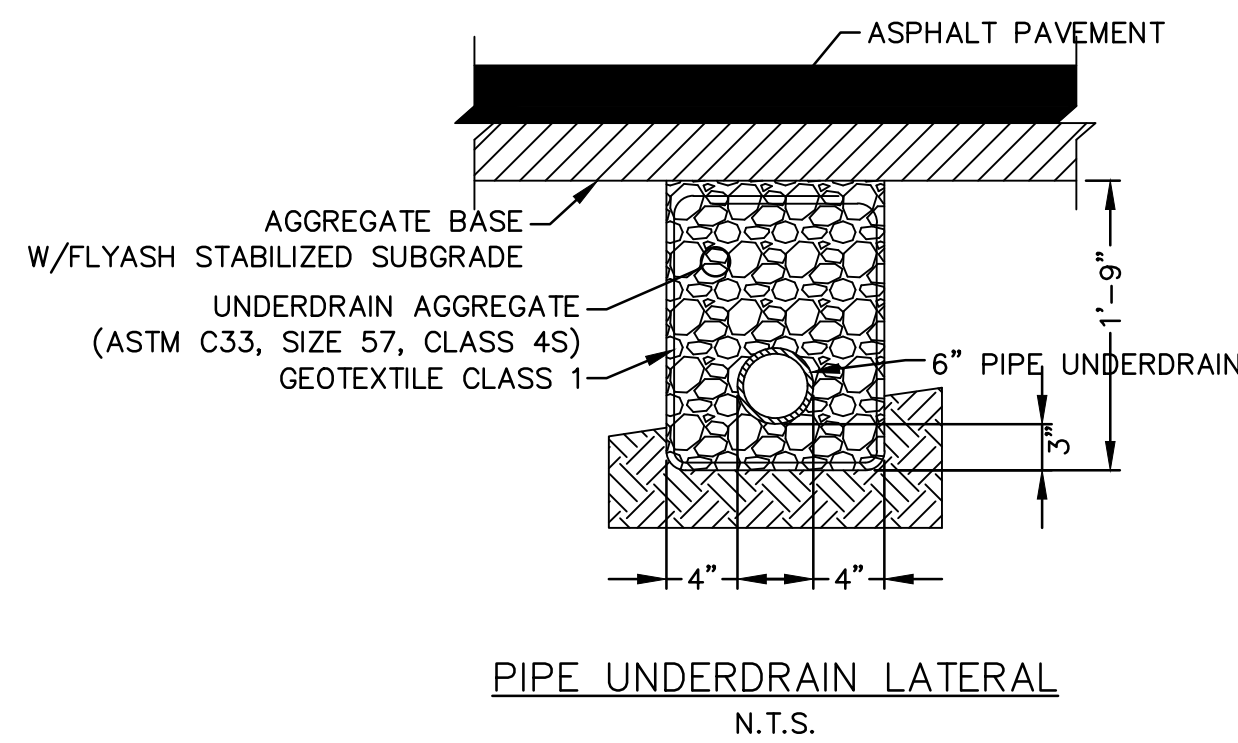
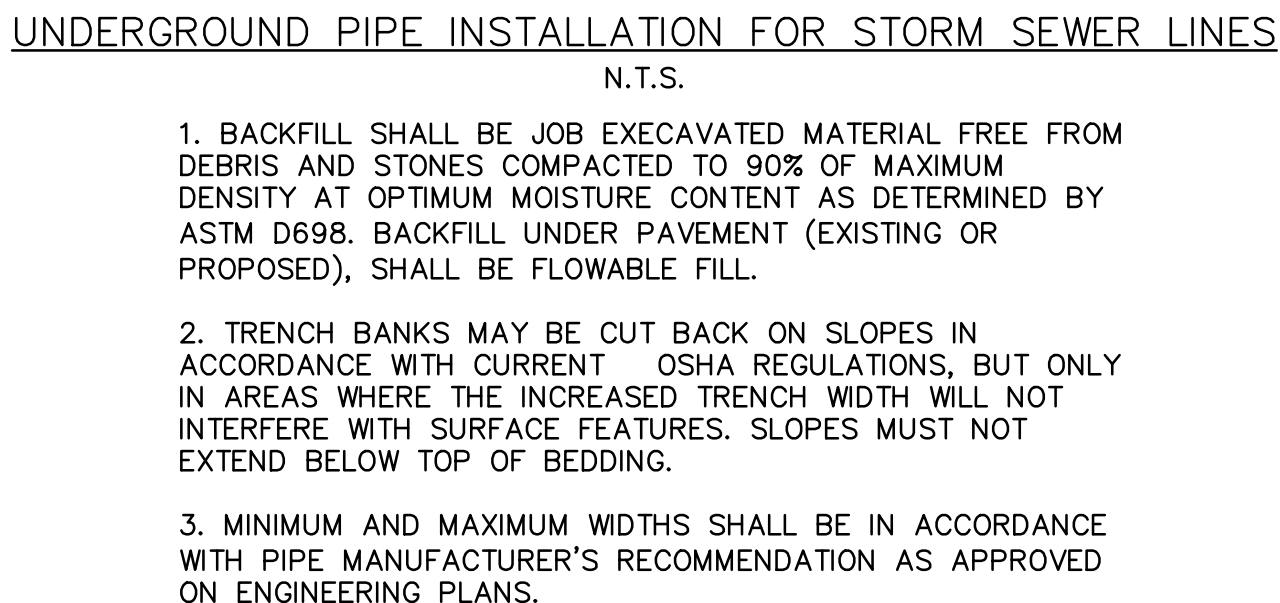
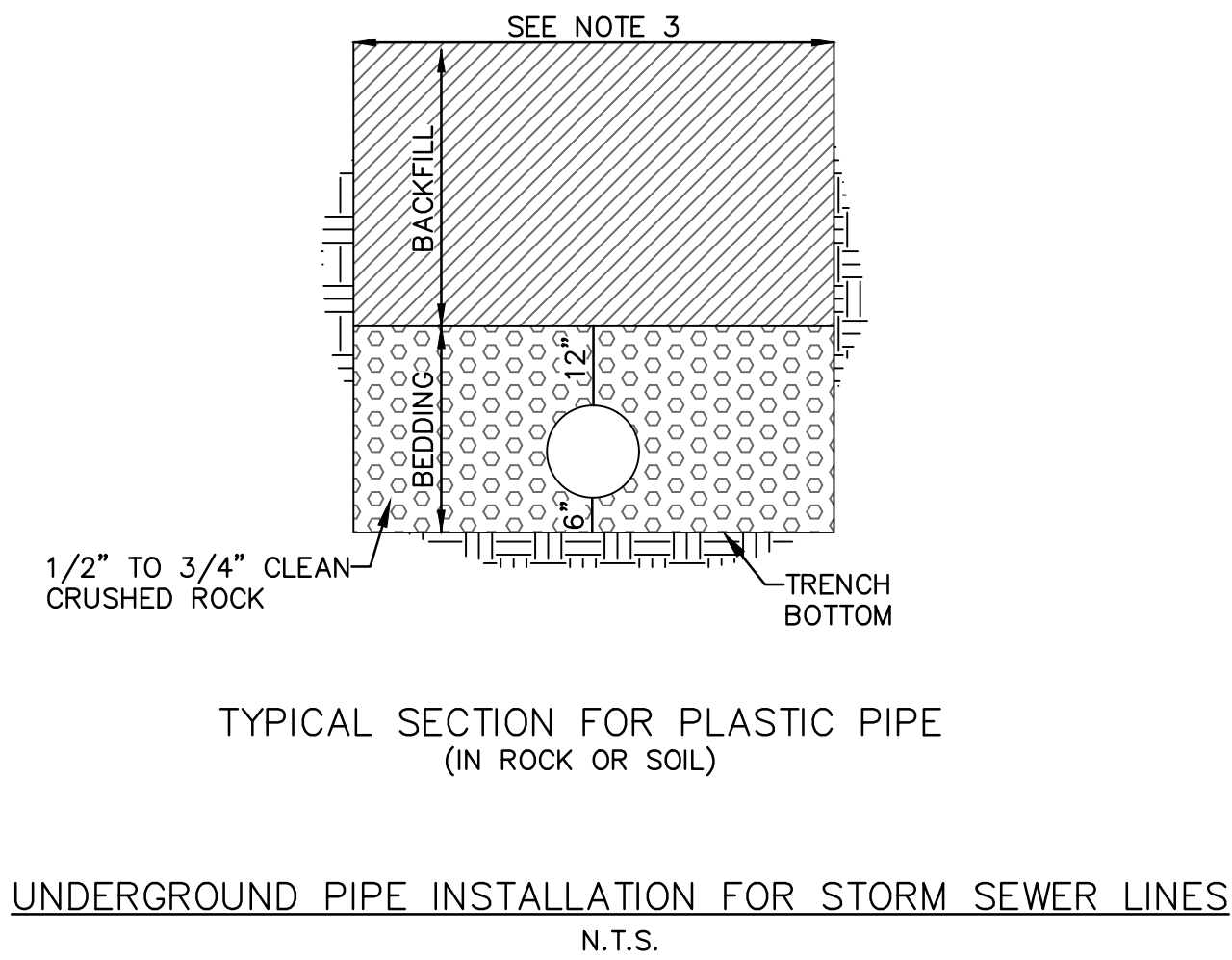
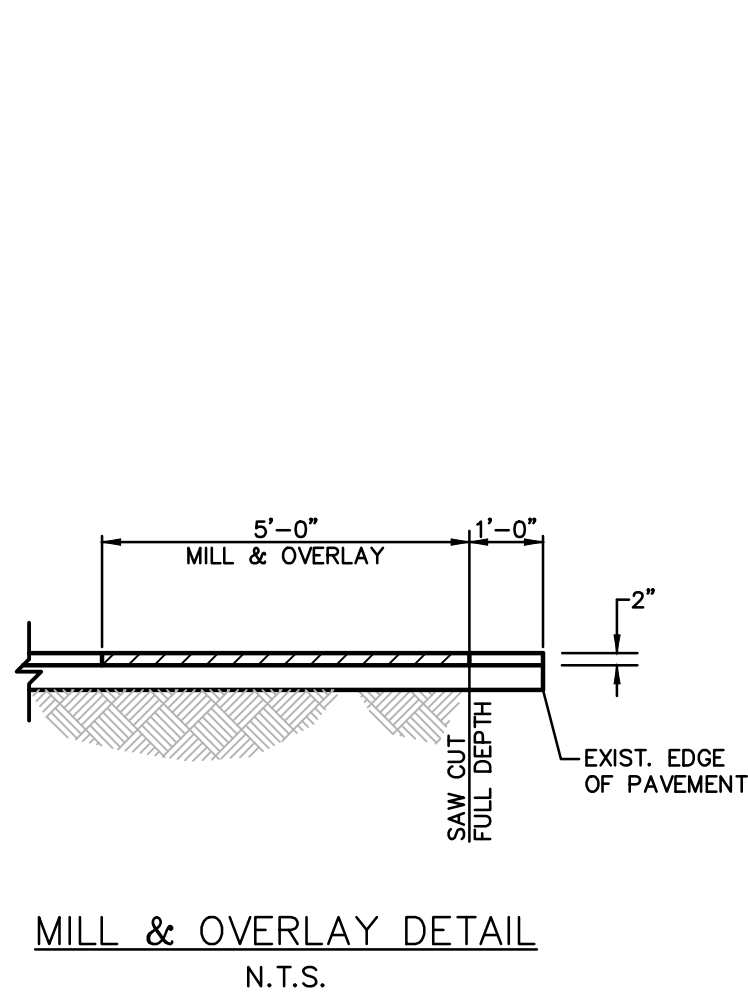
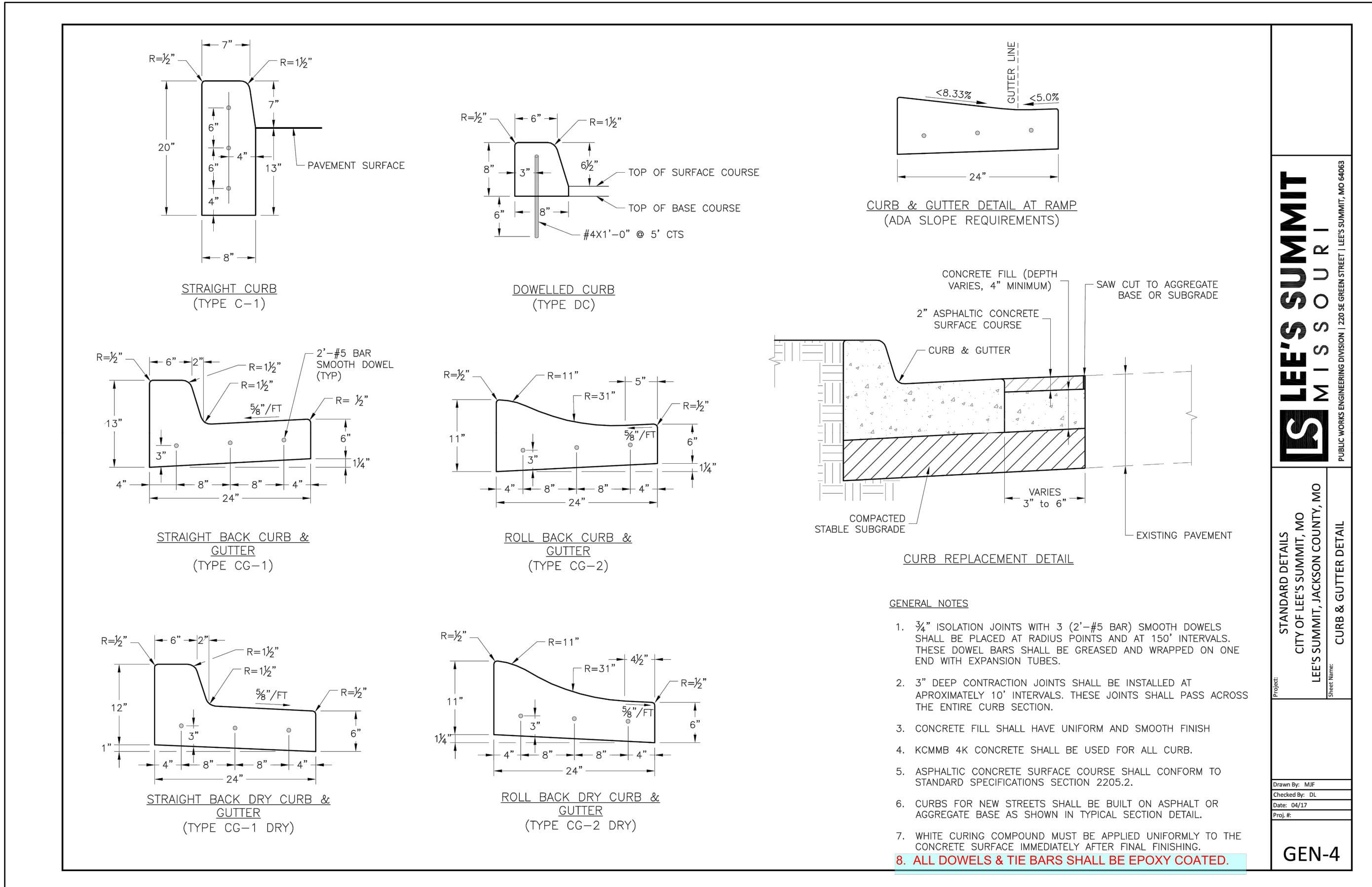
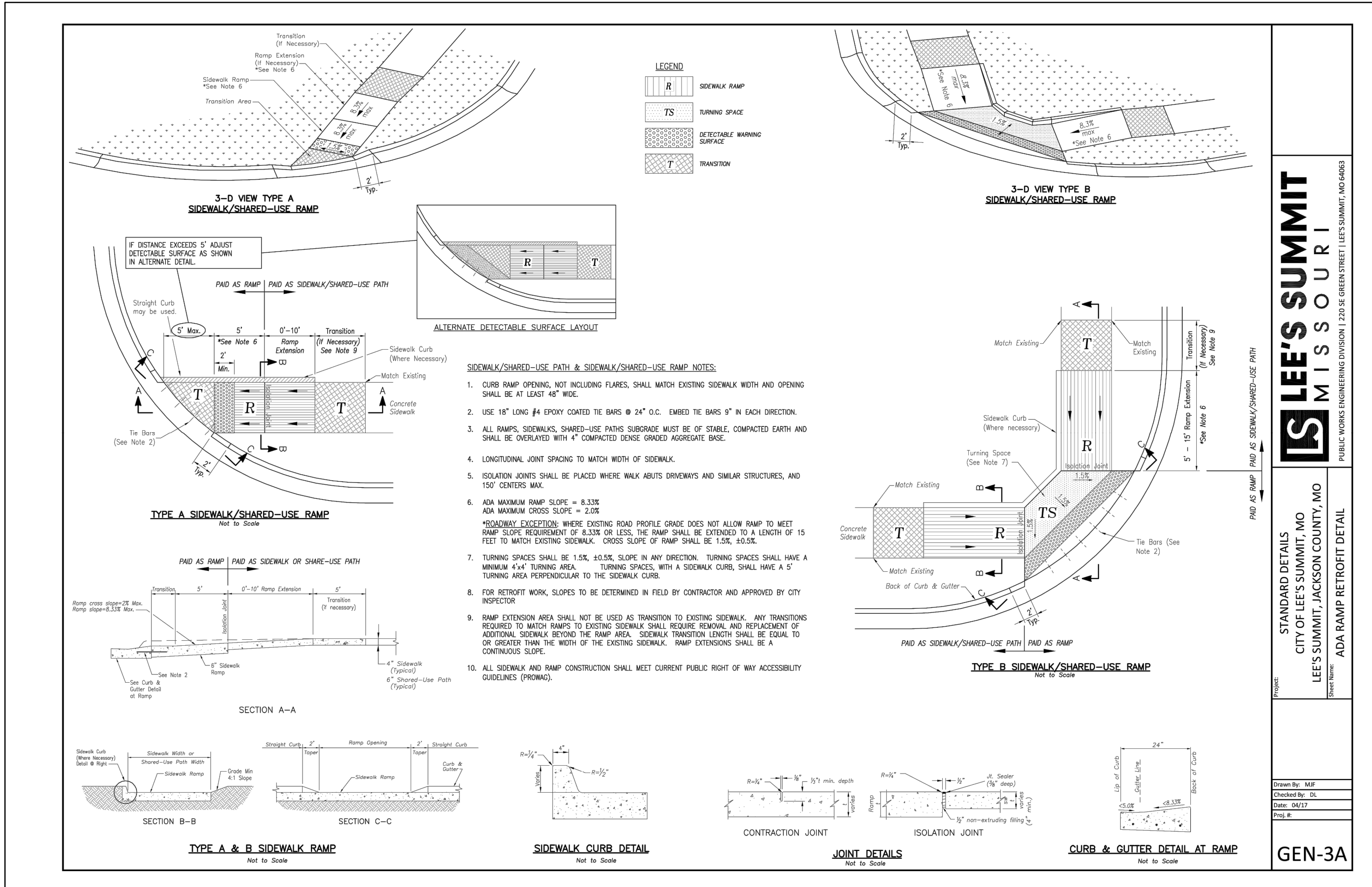
100 Year Return Frequency													
Upstream Structure	Downstream Structure	Length (ft)	Upstream Invert (ft)	Downstream Invert (ft)	Slope (%)	Diameter (in)	Manning's n	Total Flow (cfs)	Velocity (ft/s)	Capacity (cfs)	Flow Depth (ft)	Upstream Struct. HGL (ft)	Upstream Top Elev. (ft)
1-2	EX. 1-1	152.90	1026.89	1024.76	1.39	18	0.012	19.11	10.82	13.43	1.50	1032.44	1033.41
1-3	1-2	73.91	1028.42	1027.39	1.39	18	0.012	19.11	10.82	13.43	1.50	1035.26	1033.50
2-2	2-1	57.00	1030.75	1030.00	1.32	24	0.012	28.19	9.23	28.11	1.92	1032.58	1039.93
2-3	2-2	34.00	1031.69	1031.25	1.29	24	0.012	26.54	9.51	27.87	1.56	1033.49	1039.93
2-4	2-3	61.06	1033.41	1032.19	2.00	24	0.012	26.15	10.47	34.64	1.30	1035.20	1041.90
2-5	2-4	34.00	1034.59	1033.91	2.00	24	0.012	23.25	9.49	34.65	1.29	1036.30	1041.90
2-6	2-5	45.26	1036.00	1035.10	1.99	18	0.012	14.11	7.89	16.04	1.20	1037.38	1044.71
2-7	2-6	123.87	1045.33	1039.01	5.10	15	0.012	13.45	12.73	15.80	0.89	1046.56	1053.79
2-8	2-7	40.59	1046.64	1045.83	2.00	15	0.012	10.06	8.77	9.88	1.05	1047.83	1053.72
2-9	2-8	152.50	1051.70	1048.65	2.00	15	0.012	5.03	6.68	9.89	0.63	1052.61	1056.36
3-1	2-5	126.00	1040.40	1037.25	2.50	15	0.012	4.47	6.76	11.06	0.55	1041.26	1045.44
4-1	2-7	34.00	1048.50	1047.43	3.15	15	0.012	1.13	4.71	12.41	0.26	1048.92	1053.44

STATE OF MISSOURI
JULIE ELAINE
SELLERS
NUMBER
PE-2017000367
7/12/21
PROFESSIONAL ENGINEER

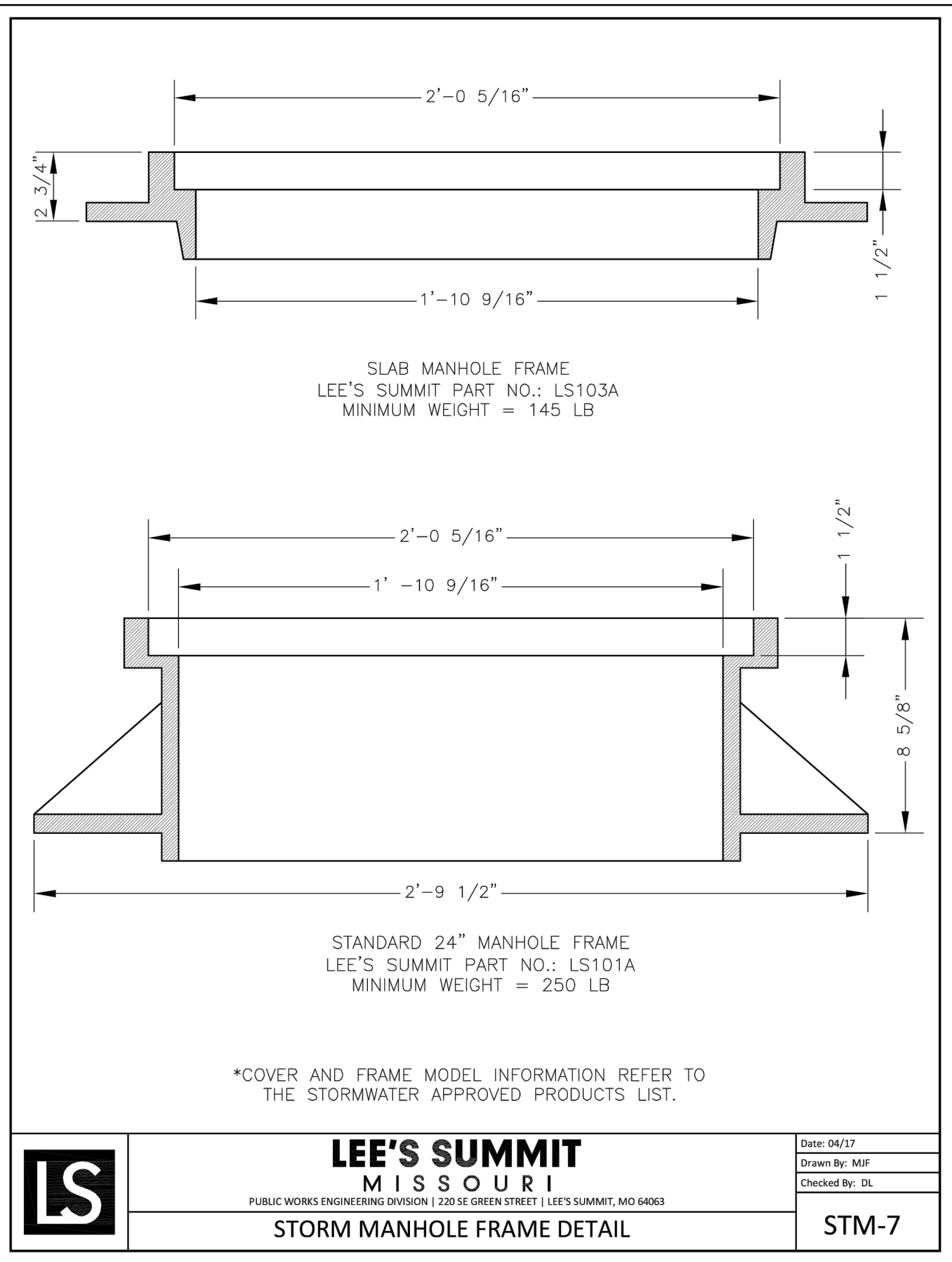
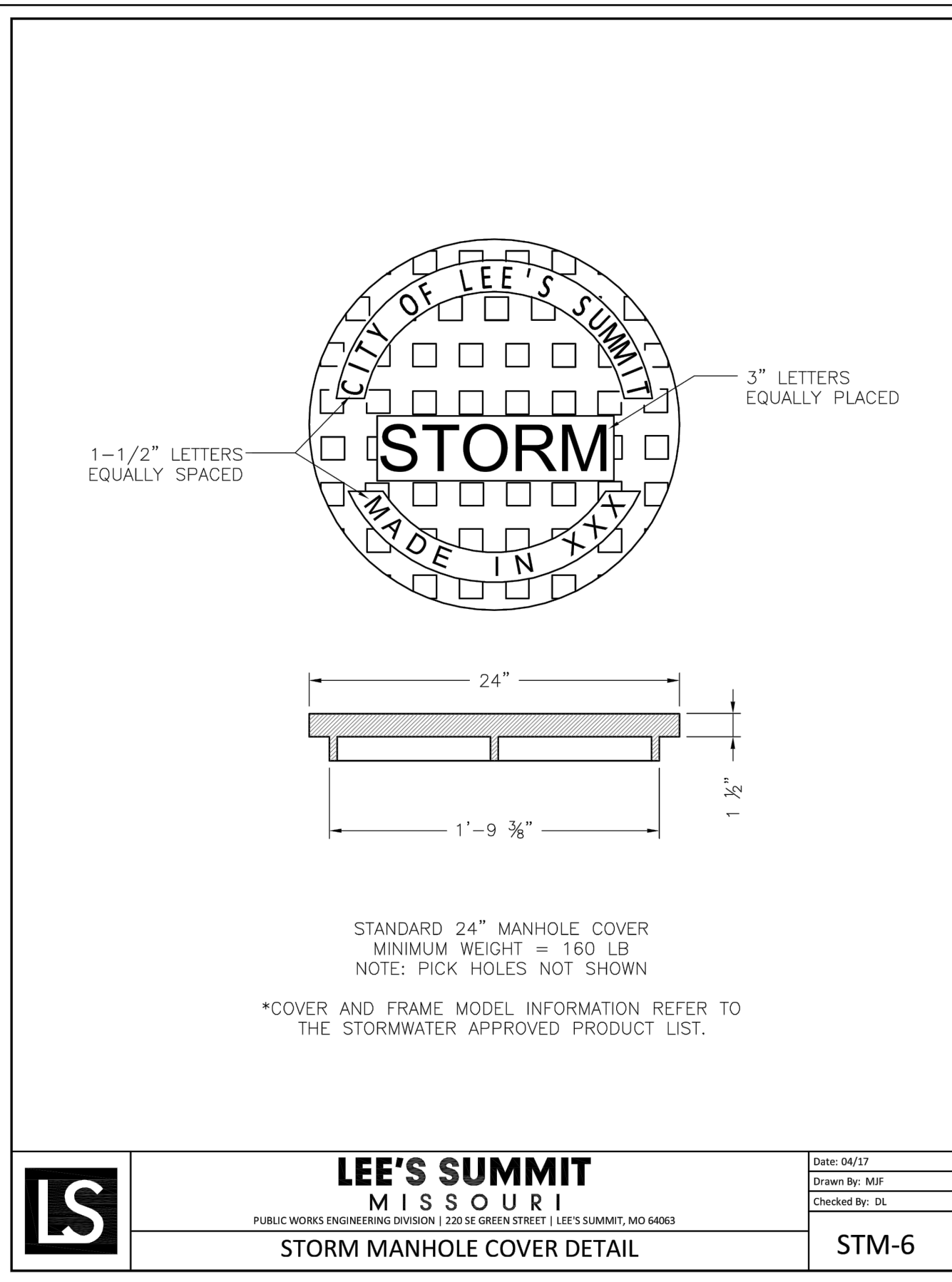
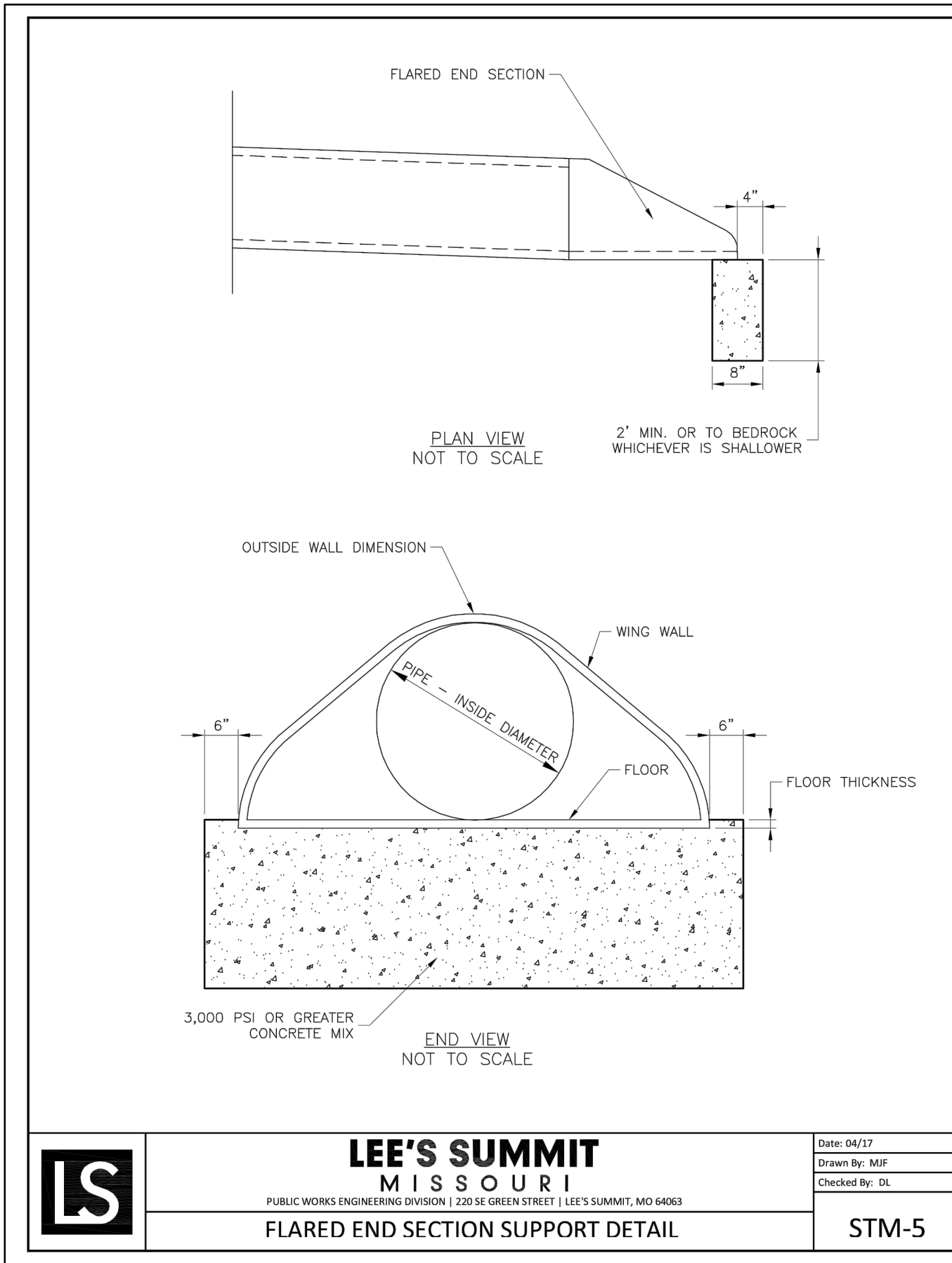
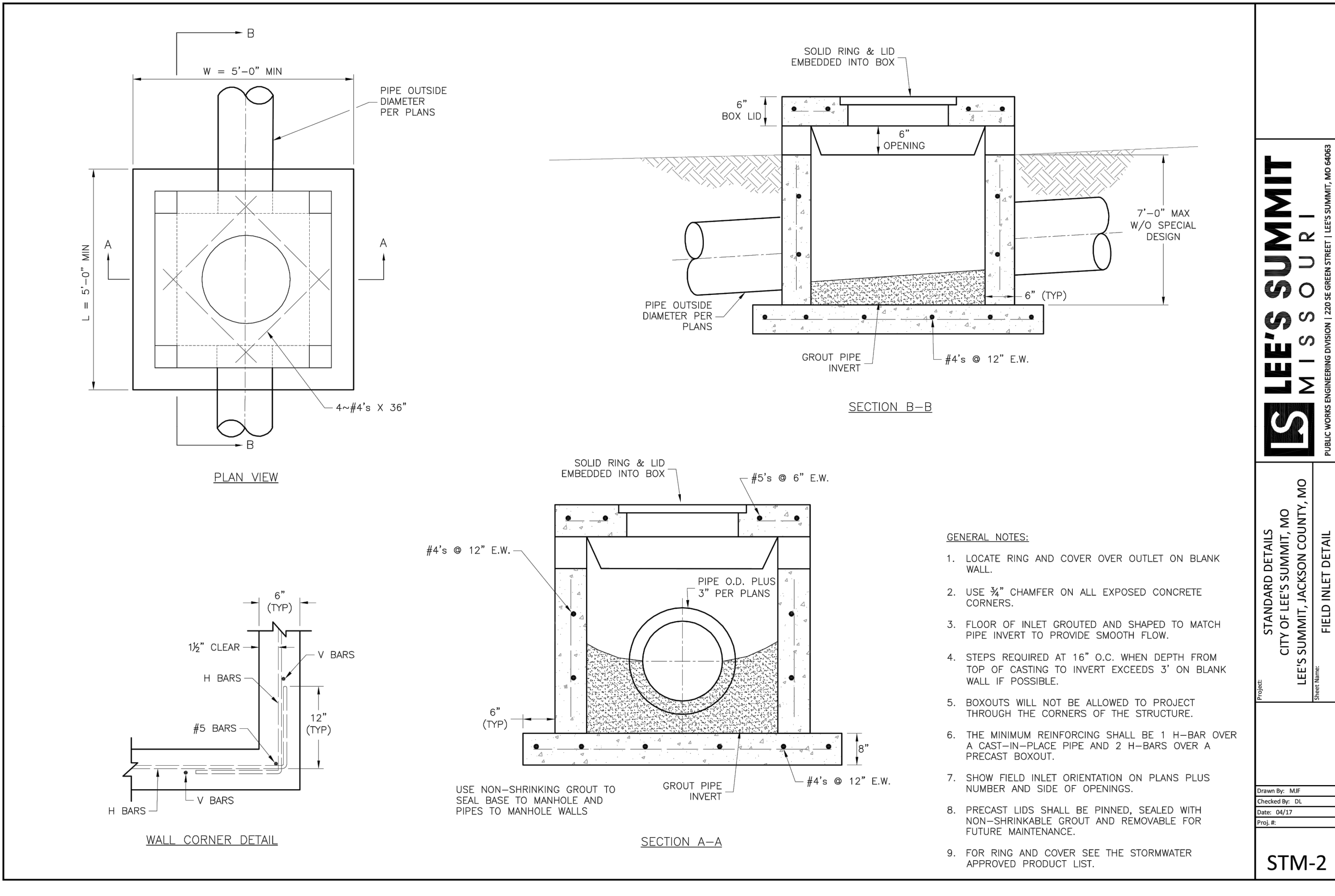
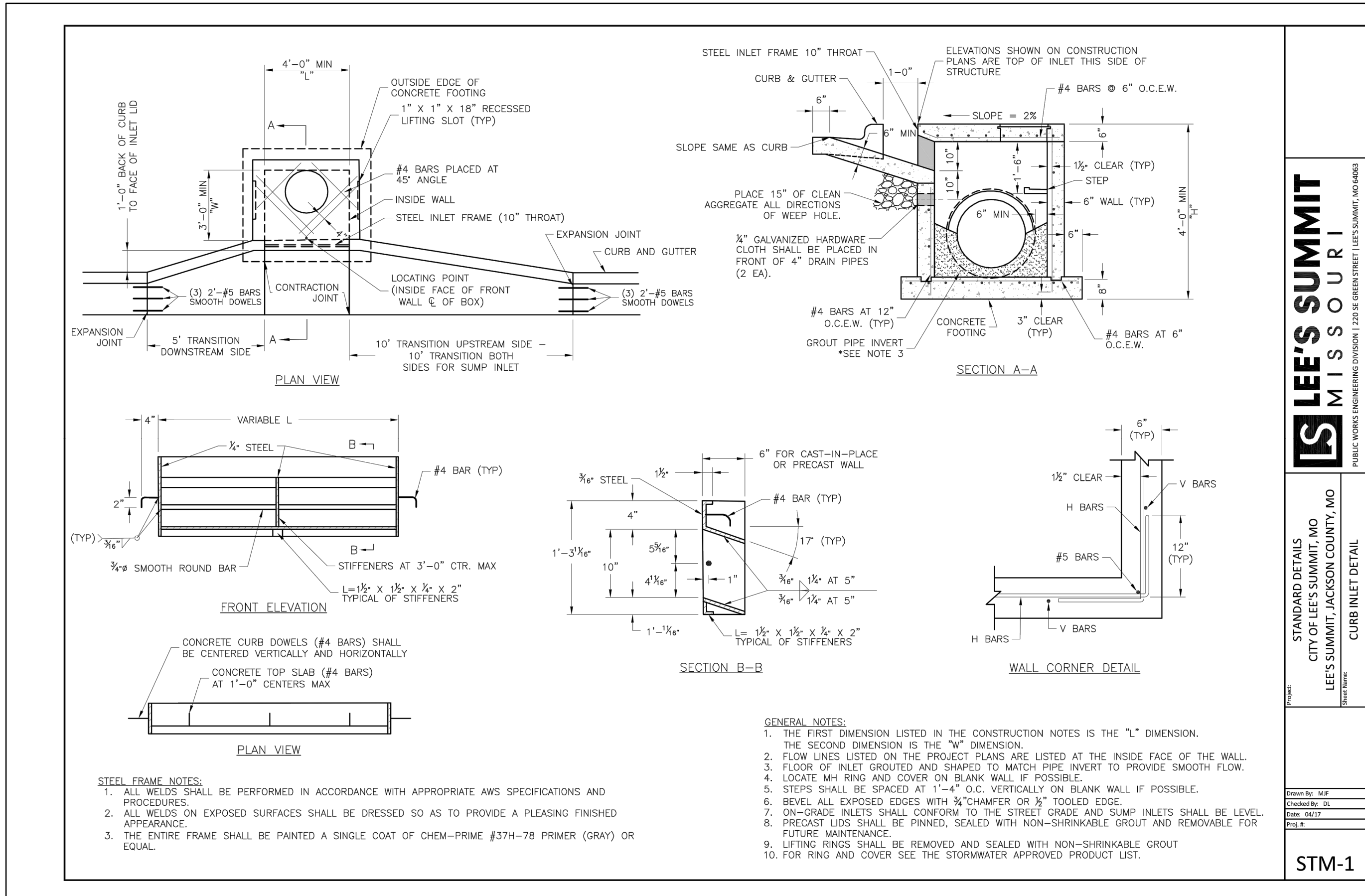
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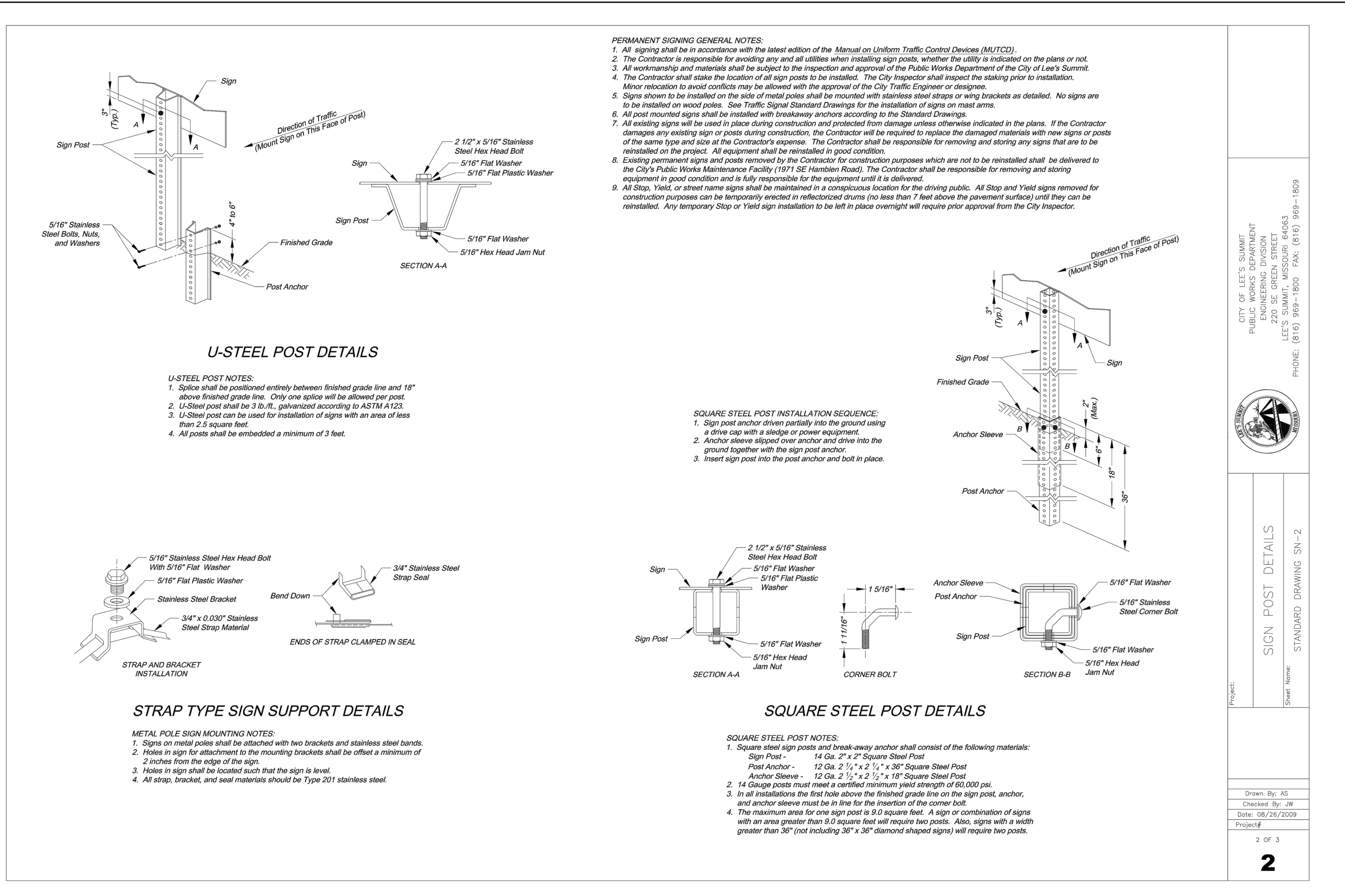
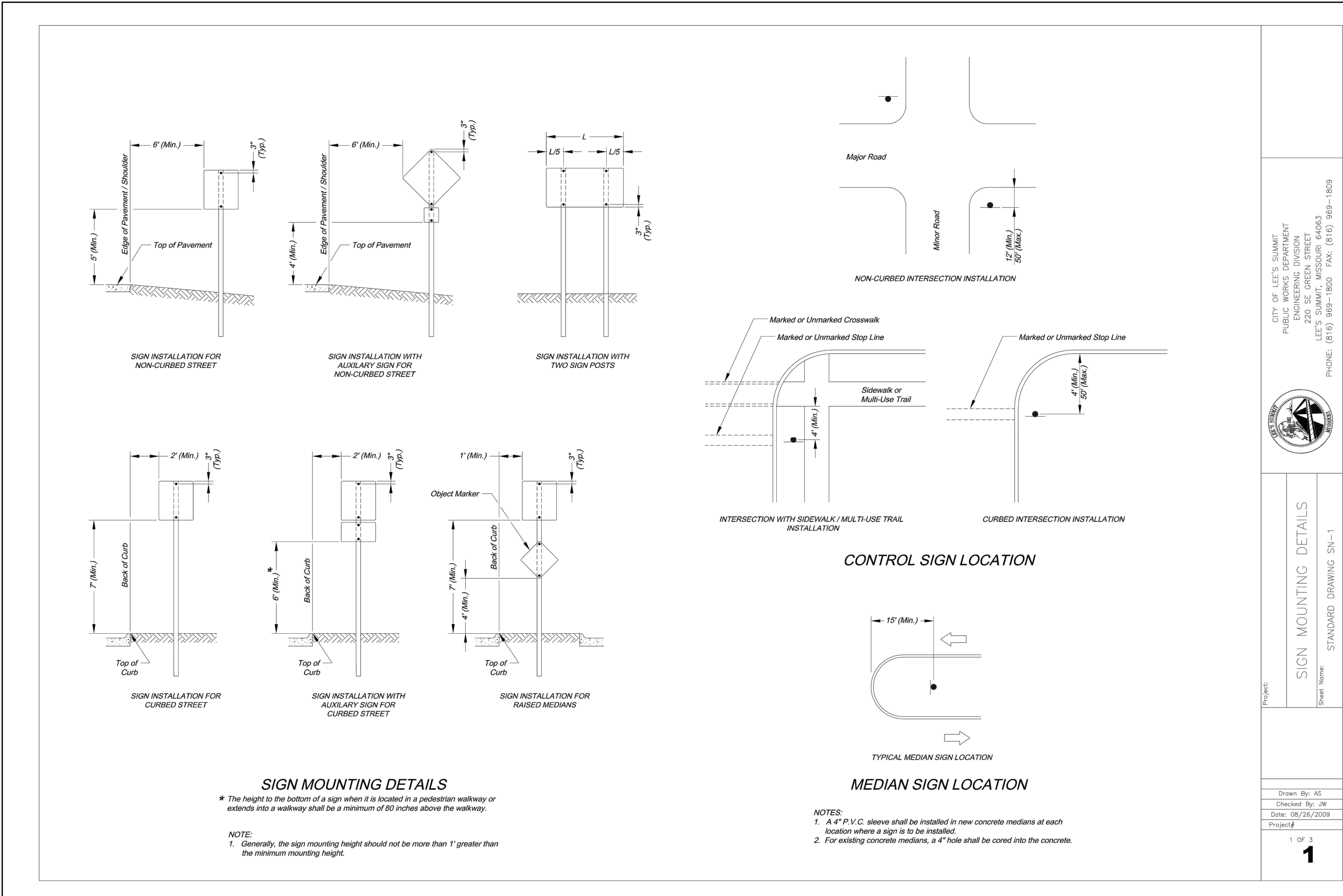
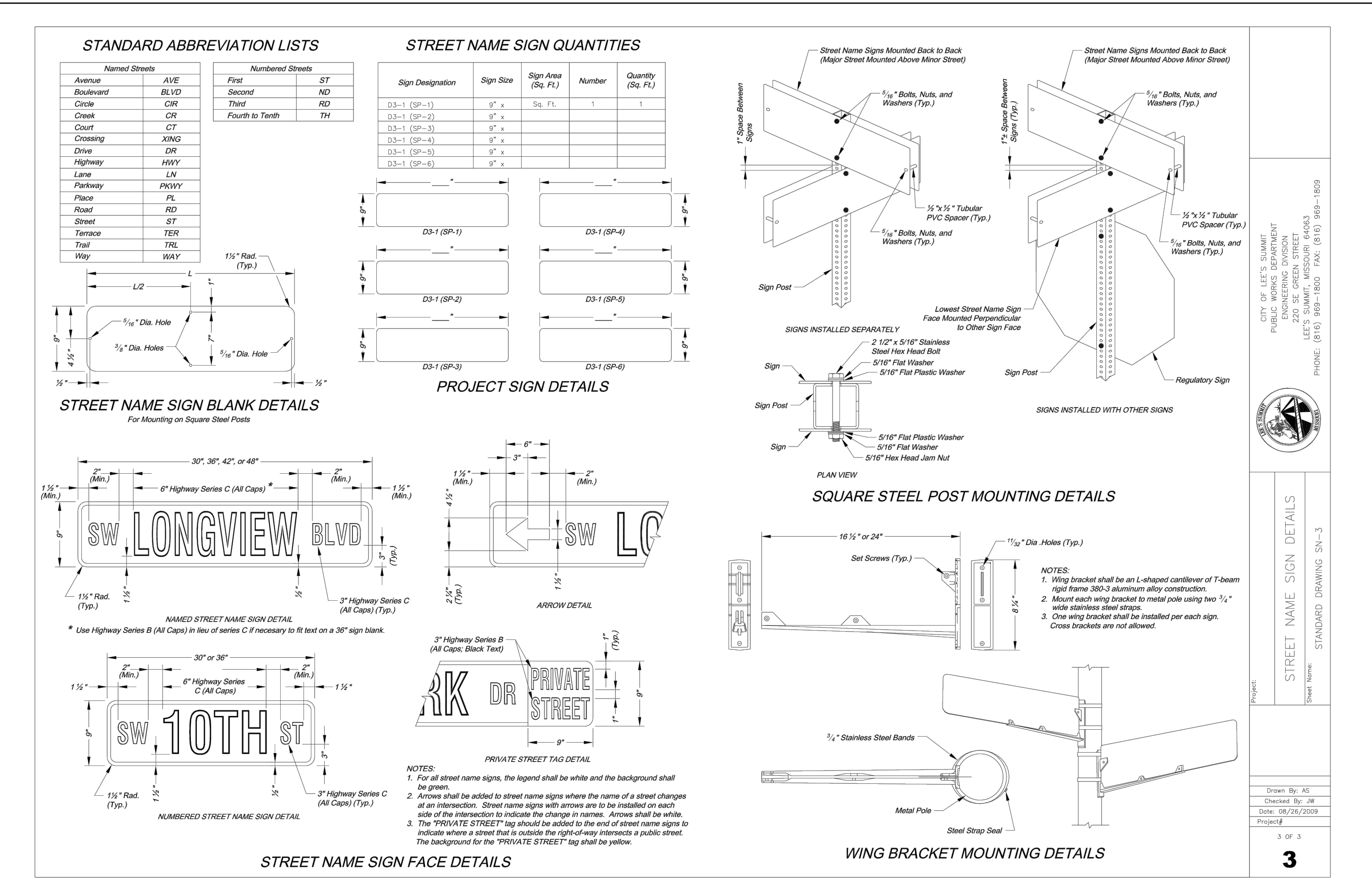
DRAINAGE TABLES STREET & STORM SEWER PLANS	2021
OSAGE 3RD PLAT	
EE'S SUMMIT MO	

drawn by: _____ MJD
checked by: _____ JES
designed by: _____ MJD
QA/QC by: _____ JES
project no.: _____ D19-2339
drawing no.: C DRN02 D192339
date: _____ 6/24/2021



- 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 in the street profile.
 - 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, Edge Underdrain and Outlet Pipe shall conform to City of Lee's Summit Specifications.
 - Overlap geotextile at top of trench a minimum of 12".





STANDARD PRECAST STORM SEWER MANHOLE
NOT TO SCALE