

NAPA VALLEY - 5th PLAT

Street, Stormwater, Master Drainage Plan

LOTS 166-196

PART OF THE NW 1/4 SECTION 36. TOWNSHIP 47 N, RANGE 32 W
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

CONSTRUCTION AND DESIGN NOTES:

STREET & STORM SEWERS:

1 ~ STREET PAVEMENT SHALL CONSIST OF TYPE CG-2 CURBS WITH PAVEMENT PER TABLE LS-2 OF THE LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL

RESIDENTIAL LOCAL STREET SEE BELOW FOR TYPICAL SECTION.

OPTION 1) 4" TYPE 5 ASPHALT BASE AND 2" TYPE 5 OR 6 ASPHALT SURFACE OVER A 6" MoDOT TYPE 5 BASE AND A SUBGRADE MIXTURE OF 6" FLY ASH

STABILIZED SUBGRADE IN ACCORDANCE WITH THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.

OPTION 2) 4" TYPE 5 ASPHALT BASE AND 2" TYPE 5 OR 6 ASPHALT SURFACE OVER 10" MoDOT TYPE 5 BASE OVERTOP A BIAXIAL GEOGRID PER THE CITY'S APPROVED PRODUCT LIST.

2 ~ STORM SEWER PIPE SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) AS APPROVED BY CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.

3 ~ JUNCTION BOXES SHALL BE PER CITY OF LEE'S SUMMIT STANDARD DRAWING NO. STM-3. FIELD INLETS SHALL BE PER CITY OF LEE'S SUMMIT STANDARD DRAWING

STM-2. TOEWALLS SHALL BE PER CITY OF LEE'S SUMMIT DRAWING NO. STM-5. JUNCTION BOXES SHALL BE PER CITY OF LEE'S SUMMIT STM-3. ROCK LINING AND RIP

RAP SHALL BE PER CITY OF LEE'S SUMMIT.

GENERAL NOTES:

1 ~ ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.

2 ~ ALL REQUIRED EASEMENTS WITHIN THE BOUNDARY OF THIS PROJECT SHALL BE PROVIDED FOR ON THE FINAL PLAT.

3 ~ ANY REQUIRED EASEMENT LOCATED OUTSIDE OF THE BOUNDARY OF THIS PROJECT SHALL BE PROVIDED FOR BY SEPARATE INSTRUMENT PRIOR TO ISSUANCE OF CONSTRUCTION PERMITS.

4 ~ THE CONTRACTOR SHALL CONTACT THE CITY'S DEVELOPMENT SERVICES ENGINEERING INSPECTION TO SCHEDULE A PRE-CONSTRUCTION MEETING WITH A FIELD ENGINEERING INSPECTOR PRIOR TO ANY LAND DISTURBANCE WORK AT (816) 969-1200.

5 ~ THE CONTRACTOR SHALL NOTIFY ENGINEERING SOLUTIONS AT 816.623.9888 OF ANY CONFLICT WITH THE IMPROVEMENTS PROPOSED BY THESE PLANS AND SITE CONDITIONS.

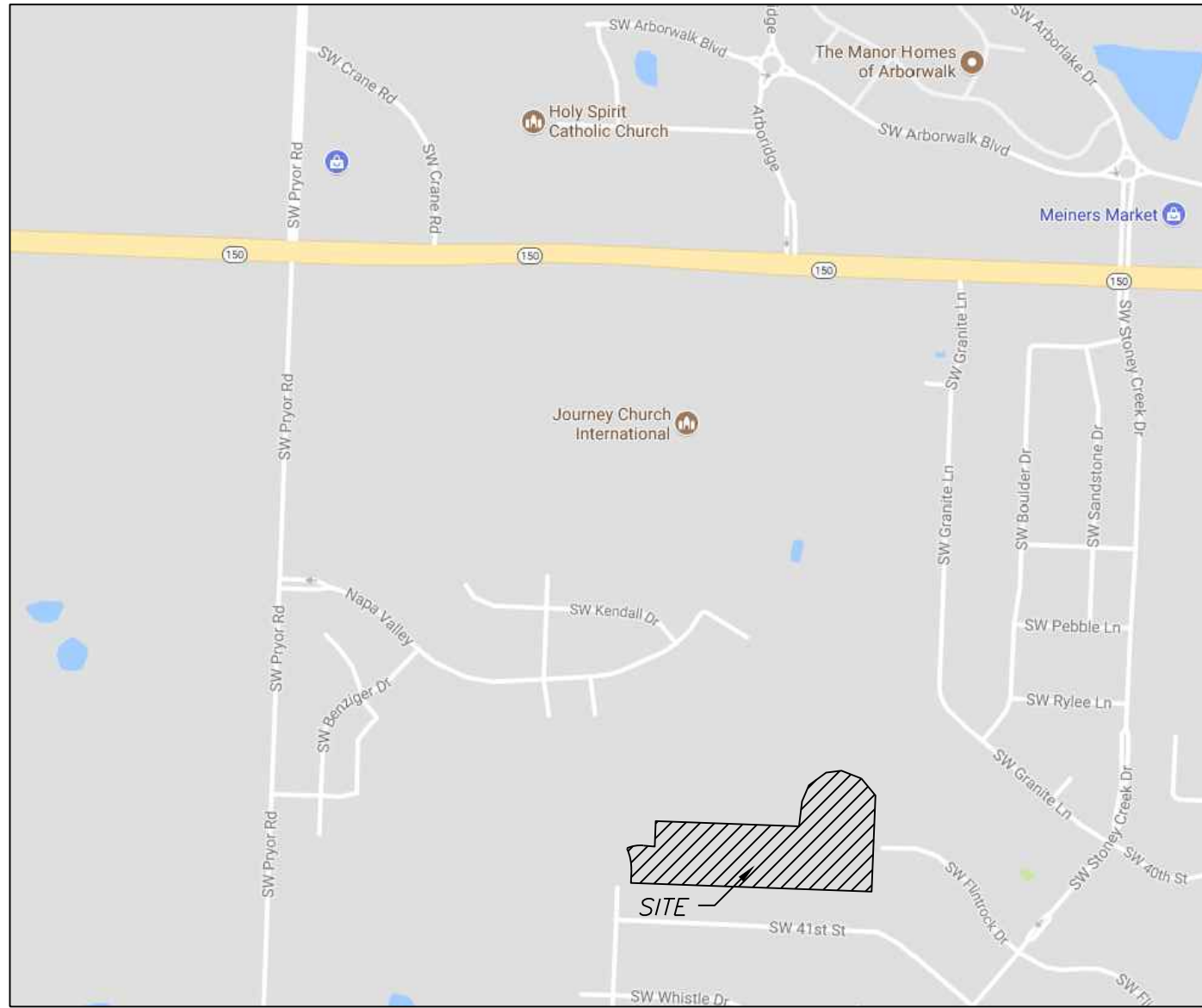
6 ~ THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND OBTAIN THE APPROPRIATE BLASTING PERMITS FOR A REQUIRED BLASTING. IF BLASTING IS ALLOWED, ALL BLASTING SHALL CONFORM TO STATE REGULATIONS AND LOCAL ORDINANCES.

OIL - GAS WELLS

ACCORDING TO EDWARD ALTON MAY JR'S ENVIRONMENTAL IMPACT STUDY OF ABANDONED OIL AND GAS WELLS IN LEE'S SUMMIT, MISSOURI IN 1995, THERE ARE NOT OIL AND GAS WELLS WITHIN 185 FEET OF THE PROPERTY AS SURVEYED HEREON.

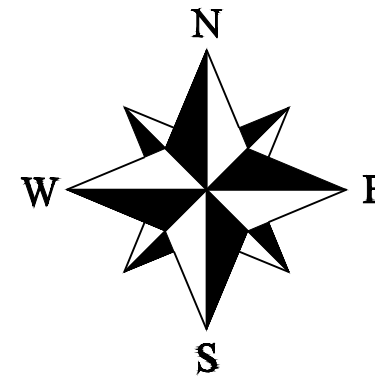
FLOOD INFORMATION:

THE SUBJECT PROPERTY SURVEYED LIES WITHIN A FLOOD ZONE DESIGNATED ZONE (X), AREAS LOCATED OUTSIDE THE 100 YEAR FLOOD PLAIN, PER F.E.M.A. MAP, COMMUNITY PANEL NO. 29095C0412G EFFECTIVE DATE: JANUARY 20, 2017.



SITE LOCATION MAP

NOT TO SCALE



INDEX OF SHEETS:

C.001 ~ STREET & STORM COVER SHEET
C.100 ~ SITE PLAN
C.101 ~ STREET SIGNAGE
C.102 ~ STREET SIGNAGE STANDARD DETAILS
C.200 ~ MASTER DRAINAGE PLAN SHEET 1 OF 3 GRADING PLAN - SWPPP
C.201 ~ MASTER DRAINAGE PLAN SHEET 2 OF 3 SPOT ELEVATIONS
C.202 ~ MASTER DRAINAGE PLAN SHEET 3 OF 3 DRAINAGE AREA MAP
C.203 ~ STREET PLAN & PROFILE
C.204 ~ STREET PLAN & PROFILE
C.205 ~ SIDEWALK AND INTERSECTION PLAN
C.300 ~ STORM SEWER GENERAL LAYOUT
C.301 ~ STORM SEWER PLAN & PROFILE
C.302 ~ STORM SEWER PLAN & PROFILE
C.303 ~ STORM SEWER TABLES 10 AND 100 YEAR
C.600 ~ CONSTRUCTION DETAILS
C.601 ~ CONSTRUCTION DETAILS

UTILITY COMPANIES:

THE FOLLOWING LIST OF UTILITY COMPANIES IS PROVIDED FOR INFORMATION ONLY. WE DO NOT OFFER ANY GUARANTEE OR WARRANTY THAT THIS LIST IS COMPLETE OR ACCURATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES THAT MAY BE AFFECTED BY THE PROPOSED CONSTRUCTION AND VERIFYING THE ACTUAL LOCATION OF EACH UTILITY LINE. THE CONTRACTOR SHALL NOTIFY ENGINEERING SOLUTIONS AT 816.623.9888 OF ANY CONFLICT WITH PROPOSED IMPROVEMENTS.

EVERGY ~ 298-1196
MISSOURI GAS ENERGY ~ 756-5261
SOUTHWESTERN BELL TELEPHONE ~ 761-5011
COMCAST CABLE ~ 795-1100
WILLIAMS PIPELINE ~ 422-6300
CITY OF LEE'S SUMMIT PUBLIC WORKS ~ 969-1800
CITY OF LEE'S SUMMIT DEVELOPMENT ENGINEERING INSPECTION AT 816.969.1200
CITY OF LEE'S SUMMIT WATER UTILITIES ~ 969-1900
MISSOURI ONE CALL (DIG RITE) ~ 1-800-344-7483

LEGEND:

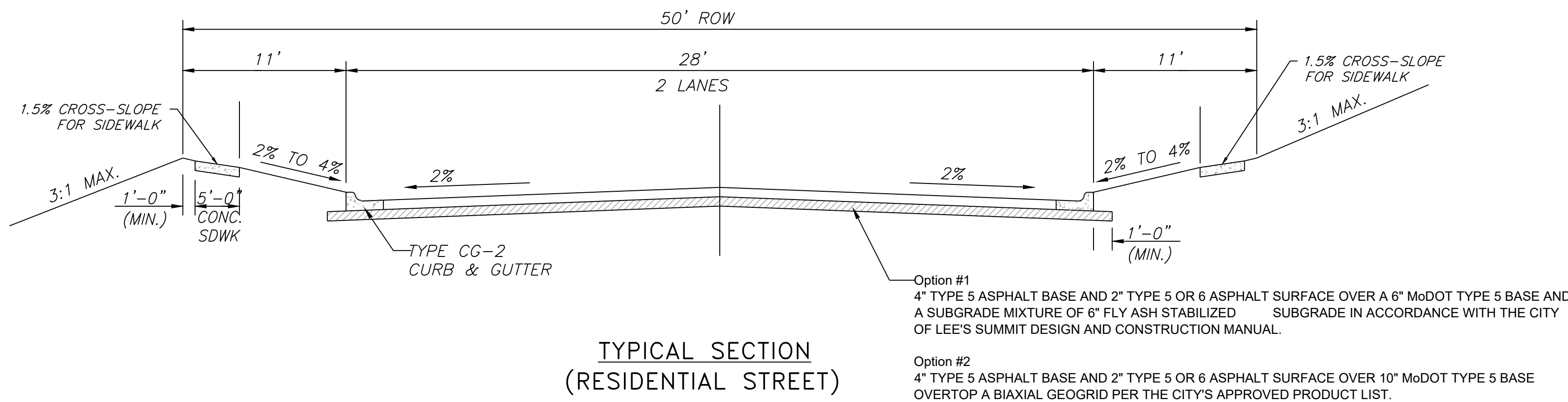
B/L - BUILDING SET-BACK
C/A - COMMON AREA
D/E - DRAINAGE EASEMENT
FND. - FOUND
L/E - LANDSCAPE EASEMENT
L.N.A. - LIMITS OF NO ACCESS
R/W - RIGHT OF WAY
SAN - SANITARY SEWER LINE
S/W - SIDEWALK
U/E - UTILITY EASEMENT
W - WATER LINE
ST - STORM SEWER LINE

Summary of Quantities:

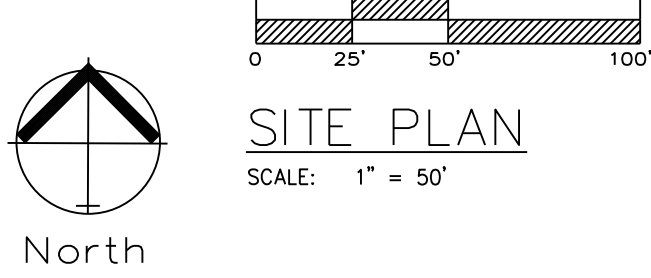
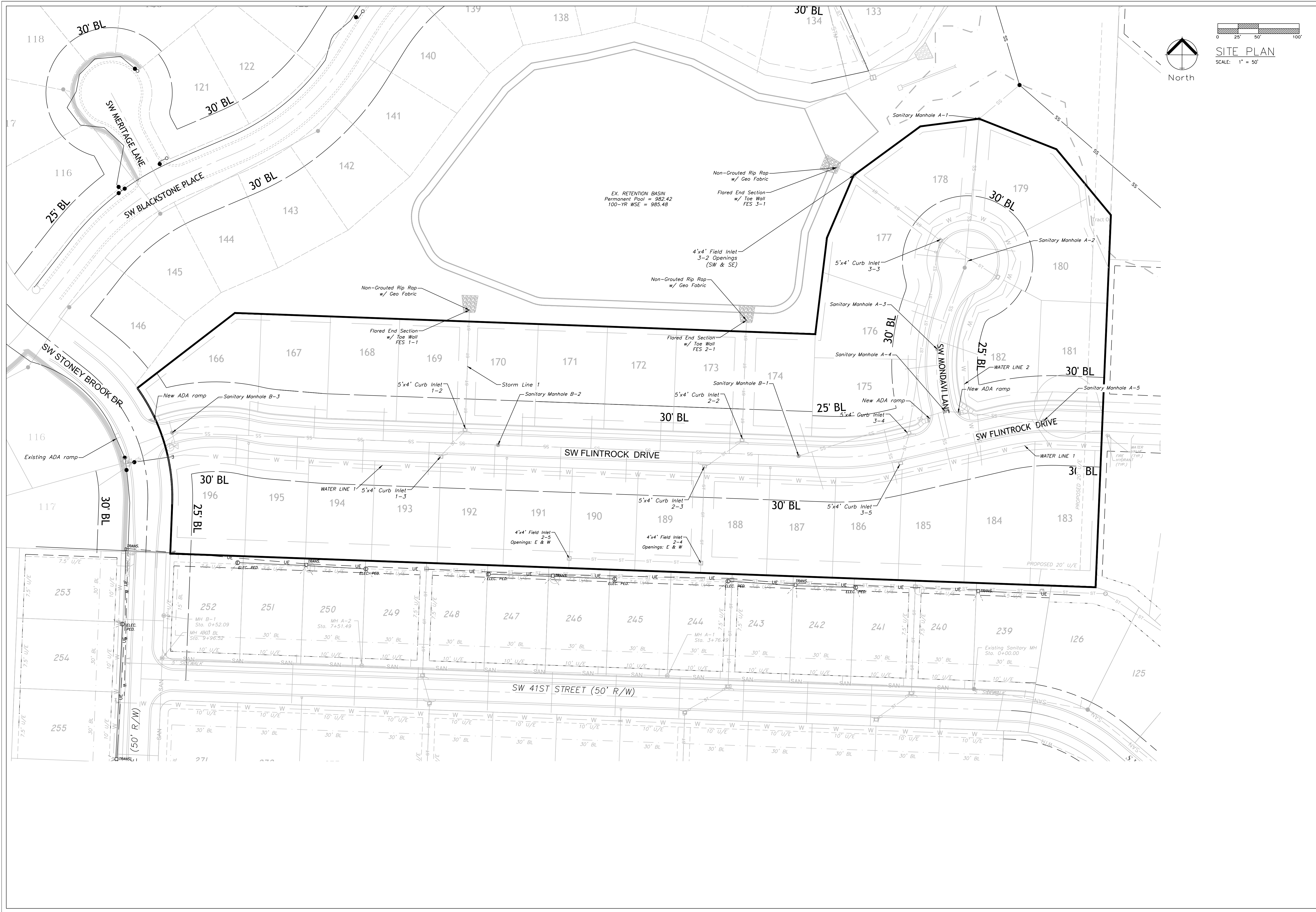
ITEM AND DESCRIPTION	UNIT	ESTIMATED QUANTITY
ASPHALT PAVING	S.Y.	4,062.00
CURBING	FT	2,810.00
5' SIDEWALK	S.F.	6,895.00
MoDOT Type 5 Base	S.Y.	4,997.00
GEOGRID	S.Y.	4,997.00
ADA SIDEWALK RAMP	UNIT	3
STREET SIGNAGE	UNIT	2
STORM		
15" HDPE END SECTION / TOE WALL	LS	2.00
24" HDPE END SECTION / TOE WALL	LS	1.00
24" HDPE	FT	323.02
18" HDPE	FT	161.68
15" HDPE	FT	626.39
4' x 4' STORM FIELD INLET	EA	3.00
5' x 4' STORM CURB INLET	EA	7.00

ENGINEER'S CERTIFICATION:

I HEREBY CERTIFY THAT THIS PROJECT HAS BEEN DESIGNED AND THESE PLANS PREPARED IN ACCORDANCE WITH THE CURRENT DESIGN CRITERIA OF THE CITY OF LEE'S SUMMIT, MISSOURI AND THE STATE OF MISSOURI. I FURTHER CERTIFY THAT THESE PLANS WERE DESIGNED IN ACCORDANCE TO AASHTO STANDARDS.



TYPICAL SECTION
(RESIDENTIAL STREET)



ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING
50 SE 30TH STREET
LEE'S SUMMIT, MO 64082
P: (816) 623-9888 F: (816) 623-9849

Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

SITE PLAN
Street, Stormwater, Master Drainage Plans for:
Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri

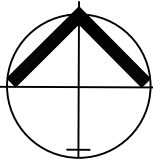
Project: NAPA VALLEY LS MO
Issue Date: August 2, 2021

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

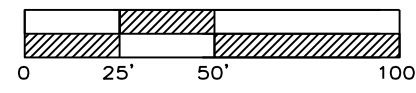
REVISIONS
REV. 9/28/2021
REV. 12/6/2021
REV. 12/17/2021

C.100





North



0 25' 50' 100'

STREET SIGNAGE

SCALE: 1" = 50'



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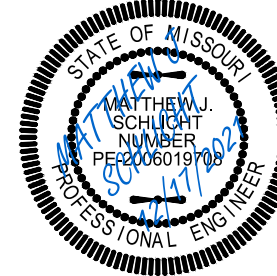
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Nebraska
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Street, Stormwater, Master Drainage Plans for:
Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri

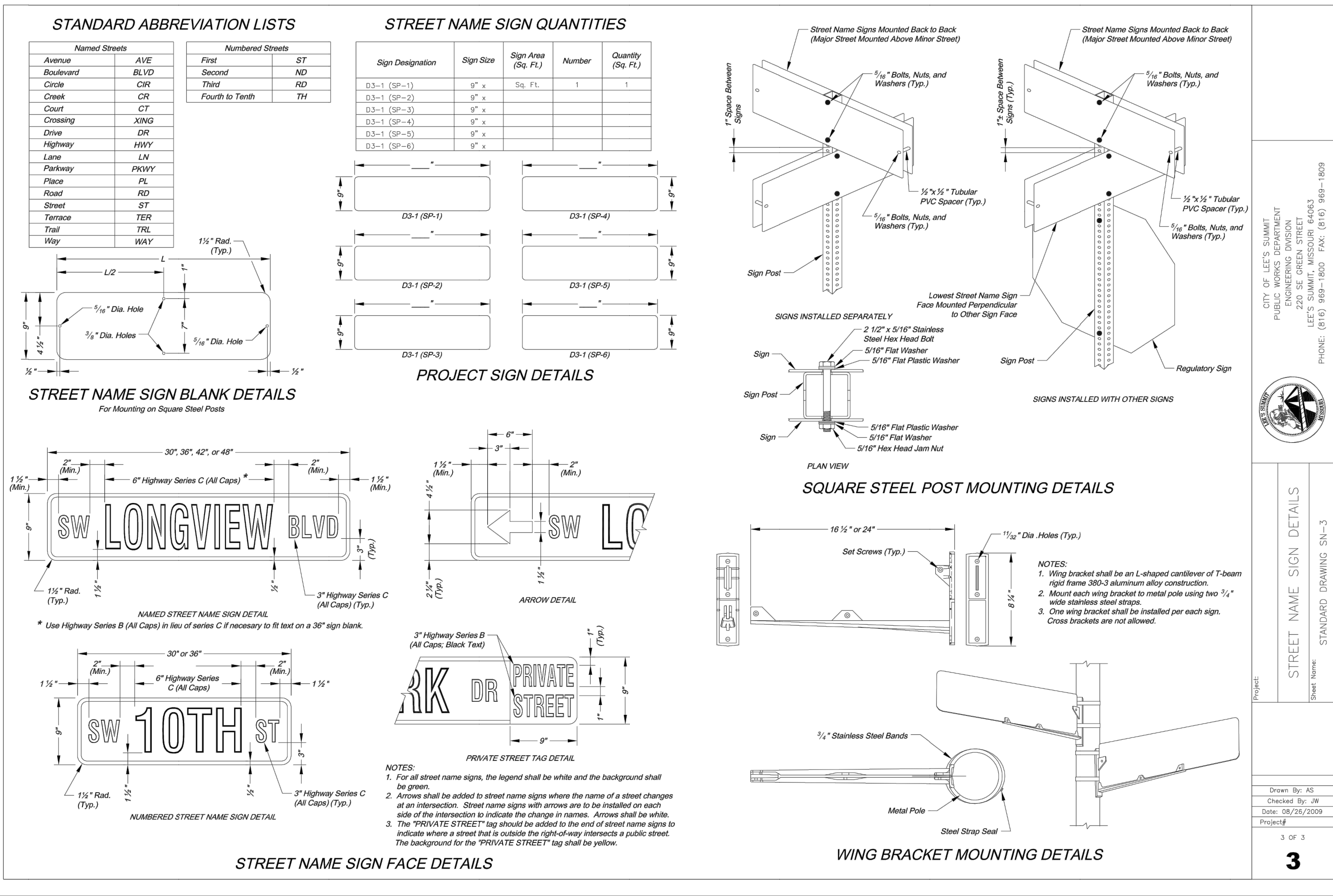
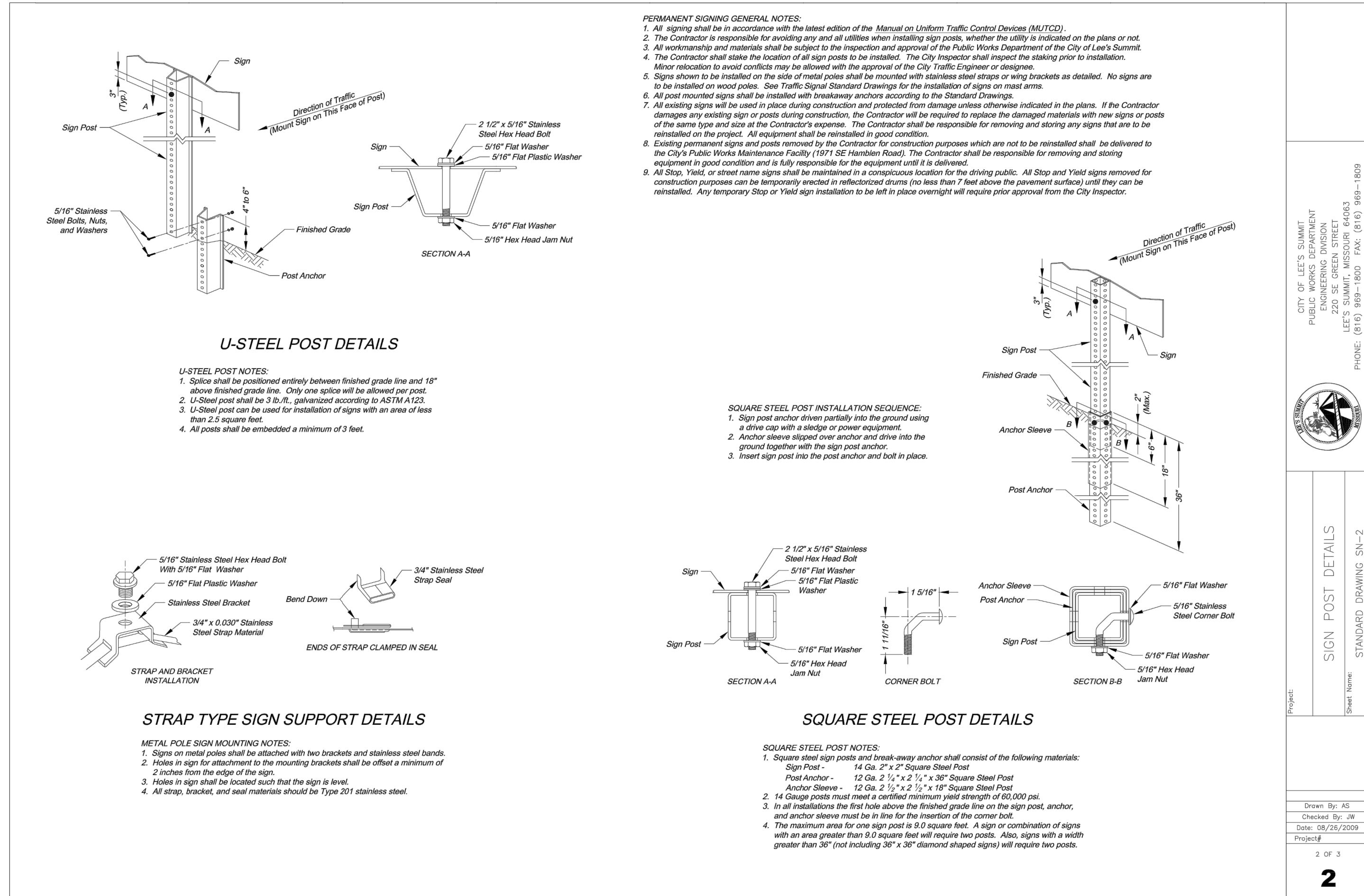
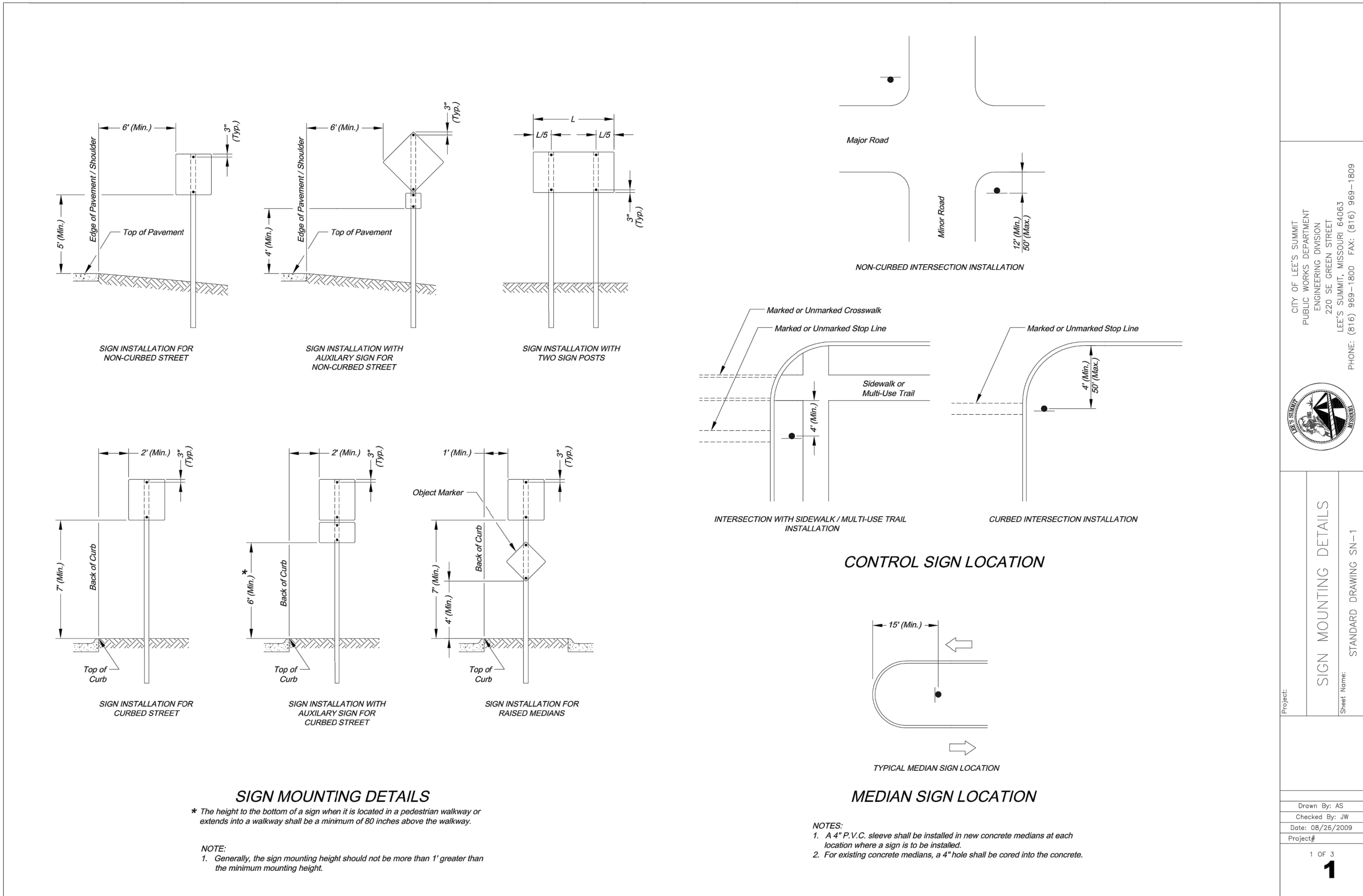


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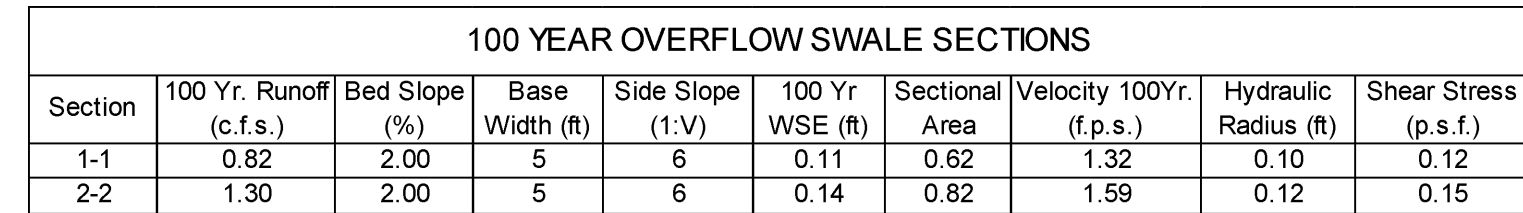
REVISIONS

REV. 9/28/2021
REV. 12/6/2021
REV. 12/17/2021

C.101



1. Contractor is responsible for verifying all existing utility locations prior to excavation
2. There are no known natural or artificial water storage detention areas, or wetlands in the area designated for construction
3. No part of the project lies within the 100 year flood plain
4. All erosion and sediment control measures need to be implemented prior to construction
5. Additional erosion control may be required by the City Engineer, Design Engineer or Owner at any time problematic areas are noted in the field or existing measures are found to be ineffective
6. Soil Stabilization of disturbed areas shall be completed within 14 days of construction inactivity
7. Contractor responsible for all density testing of roadway subgrade and granular base.



Note: See Table 8.10 of the APWA / MARC BMP Manual for design Summary for Native Vegetation Swales.



Site Area	9.65 Acres
Cut Volume (Unadjusted)	17,287 c.y.
Fill Volume (Unadjusted)	20,068 c.y.
Street & Sidewalk Cut Volume	1,680 c.y.
Net Fill	1,101 c.y. (Unadjusted)

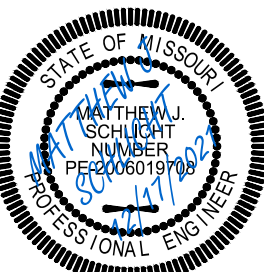
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Surveying 2005008319-D
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Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri

Project: NAPA VALLEY LSMO

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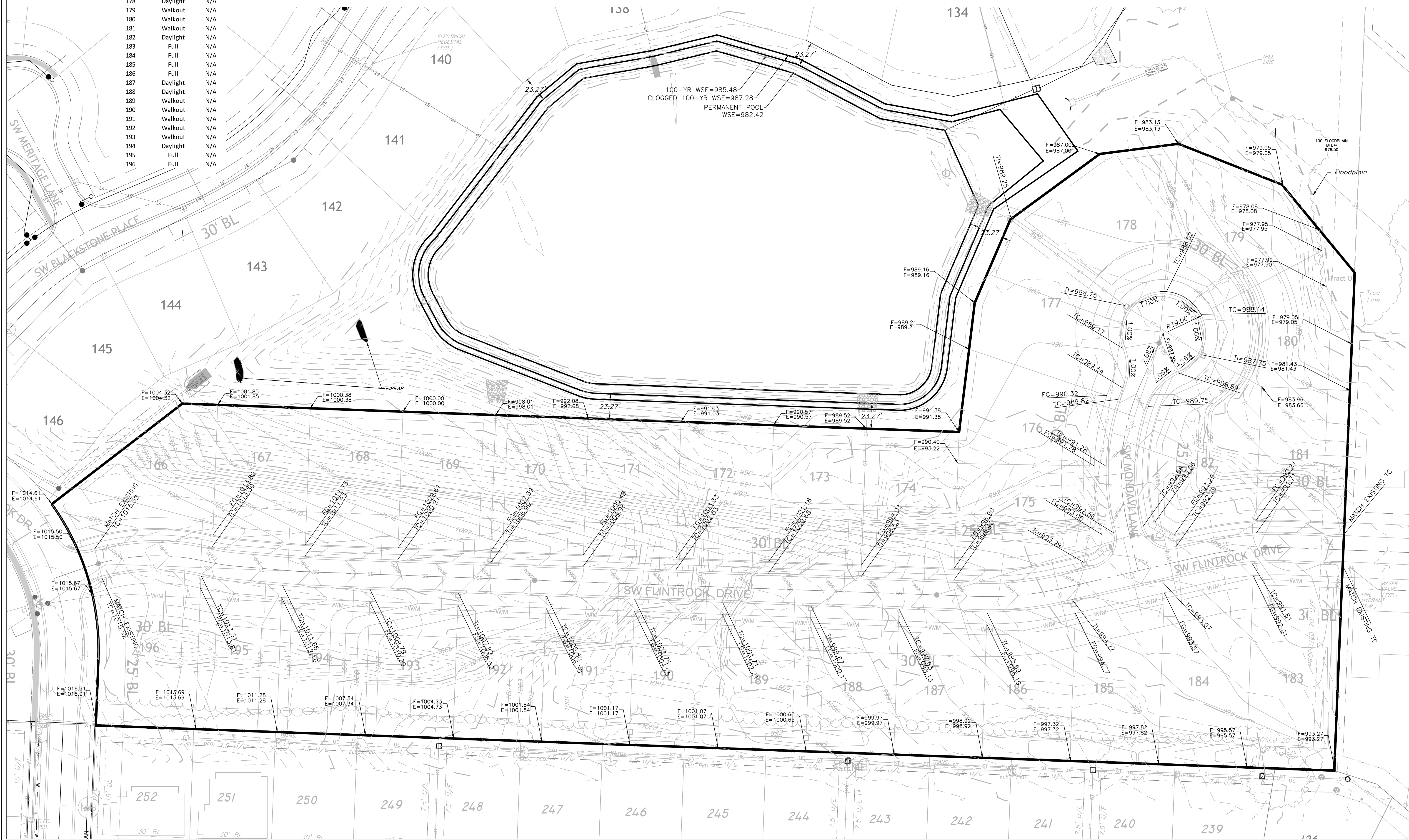
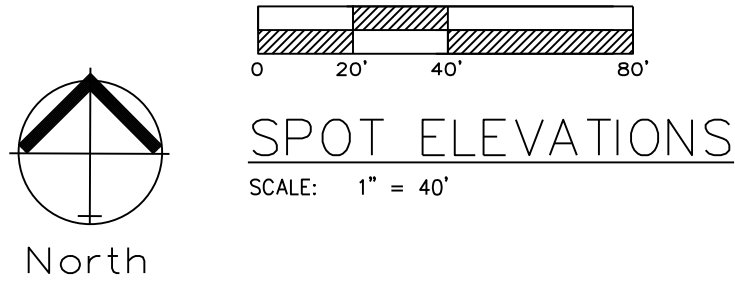
Sheet, Stormwater, Master Drainage Plans for:
Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri



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REVISIONS	
1	REV. 9/28/2021
2	REV. 12/6/2021
3	REV. 12/17/2021

Lot Number	Basement Type	MBOE
166	Walkout	N/A
167	Walkout	N/A
168	Walkout	N/A
169	Walkout	N/A
170	Walkout	N/A
171	Walkout	N/A
172	Walkout	N/A
173	Walkout	N/A
174	Walkout	N/A
175	Full	N/A
176	Full	N/A
177	Full	N/A
178	Daylight	N/A
179	Walkout	N/A
180	Walkout	N/A
181	Walkout	N/A
182	Daylight	N/A
183	Full	N/A
184	Full	N/A
185	Full	N/A
186	Full	N/A
187	Daylight	N/A
188	Daylight	N/A
189	Walkout	N/A
190	Walkout	N/A
191	Walkout	N/A
192	Walkout	N/A
193	Walkout	N/A
194	Daylight	N/A
195	Full	N/A
196	Full	N/A



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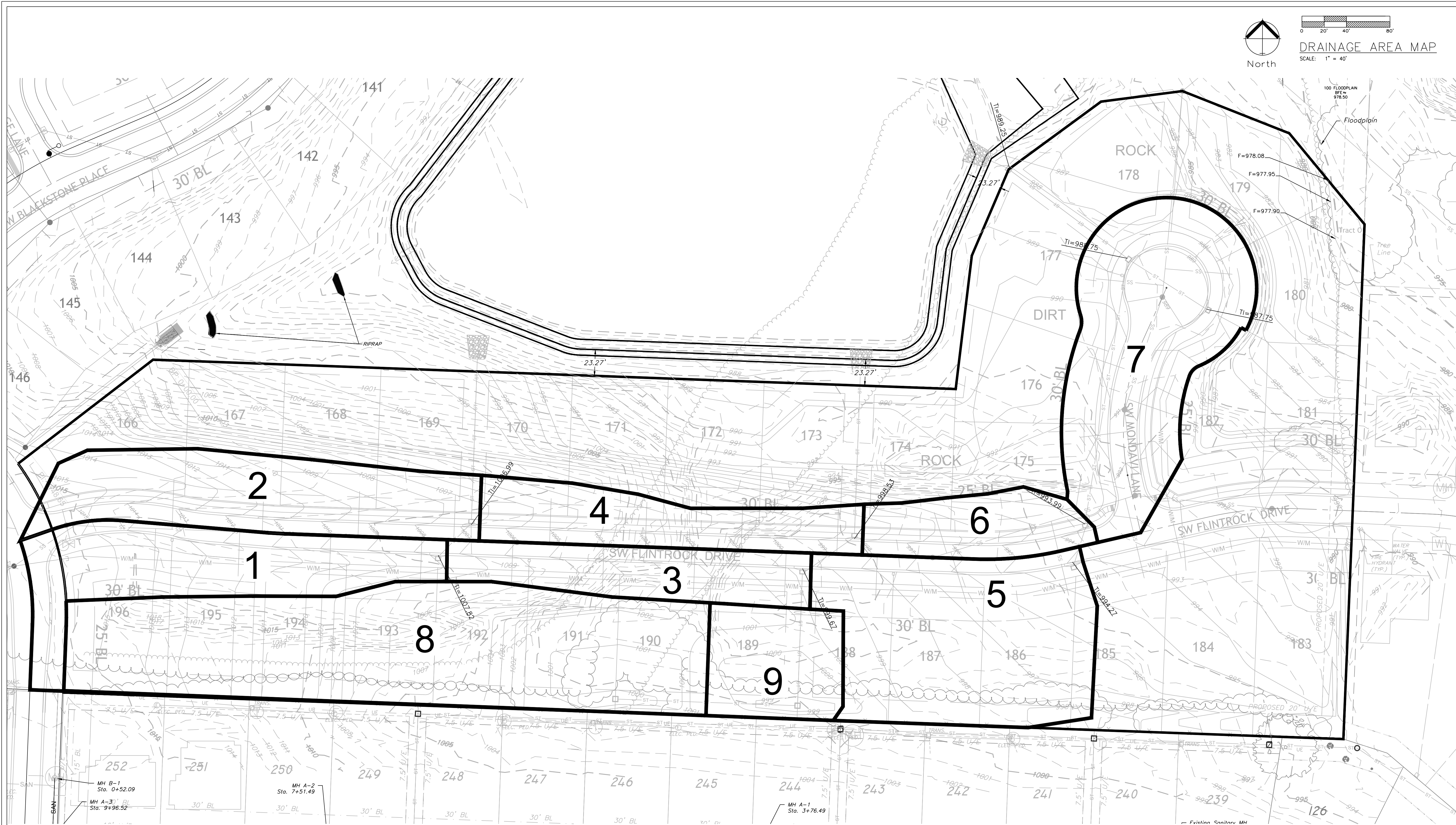
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Master Drainage Plan 2 of 3:
Spot Elevations
Street, Stormwater Master Drainage Plans for:
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REV. 9/28/2021
REV. 12/6/2021
REV. 12/17/2021



APWA STORM DRAINAGE "TC" COMPUTATIONS FOR : NAPA VALLEY 5TH PLAT																											
		yellow areas are self computing overwrite if necessary			Surface types: SURFACE CODES "C" Values		Asph/Conc	B	Dirt	Grass/Park	Lake	M	SnglFam	Undev	Other	TC COMPUTATION											
		TOTAL WATERSHED			SURFACE CODE		0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	SURFACE CODE		P=Paved U=Unpaved		Overwrite Slope or Elevations if necessary		Cal	Used	Cal	Cal	Total	AREA
							0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	P		U=Unpaved		if necessary		Overland	Min 5	Channel	Channel	Tot	ID
							0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	P		U=Unpaved		if necessary		Flow	Max 15	One	Two	10	
							0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	P		U=Unpaved		if necessary		T(I)	T(I)	T(I)	T(I)		
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							0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	P		U=Unpaved		if necessary							
							0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	P		U=Unpaved		if necessary							
							0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	P		U=Unpaved		if necessary							
							0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	P		U=Unpaved		if necessary							
							0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	P		U=Unpaved		if necessary							
							0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	P		U=Unpaved		if necessary							
							0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	P		U=Unpaved		if necessary							
							0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	P		U=Unpaved		if necessary							
							0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	P		U=Unpaved		if necessary							
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							0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	P		U=Unpaved		if necessary							
							0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	P		U=Unpaved		if necessary							
							0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	P		U=Unpaved		if necessary							
							0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	P		U=Unpaved		if necessary							
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							0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	P		U=Unpaved		if necessary							
							0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	P		U=Unpaved		if necessary							
							0.90		0.87	0.60	0.30	0.90	0.66	0.51	0.3	P		U=Unpaved		if necessary							
							0.90		0.87	0.6																	

ENGINEERING
ENGINEERING & SURVEYING
SOLUTIONS

Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

Project
NAPA VALLEY 5TH PLAT

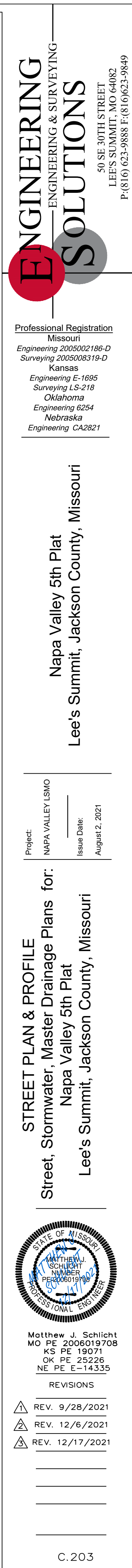
Issue Date
August 2, 2021

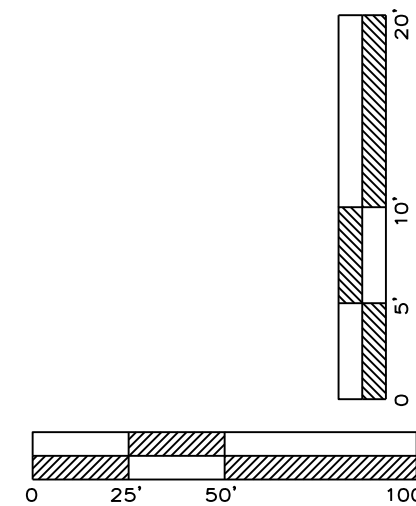
Master Drainage Map 3 of 3:
Drainage Area Map
Street, Stormwater, Master Drainage Plans for:
Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J. SCHLICHT
REGISTERED PROFESSIONAL ENGINEER
NO. 0000019708
EX. 19071
NE PE E-14335

REVISIONS
REV. 9/28/2021
REV. 12/6/2021
REV. 12/17/2021

C.202







Legend:

EX TC = Existing Top of Curb

EX FG = Existing Finished Grade

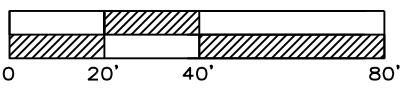
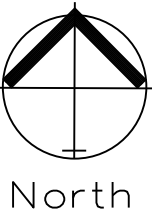
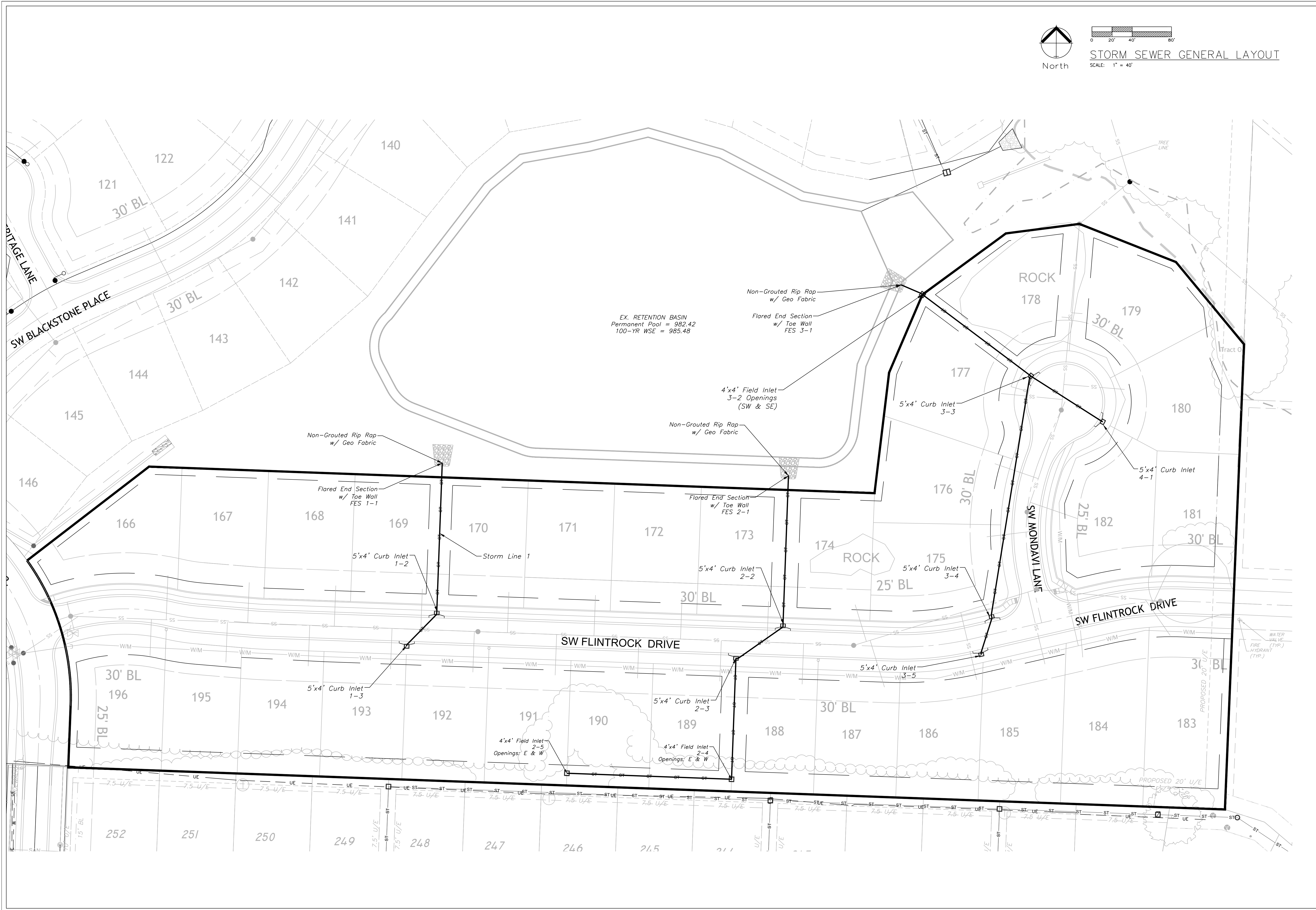
FG = Finished Grade

TC = Top of Curb

TC/FG = Top of Curb/Finished Grade

 Detectable Warning





STORM SEWER GENERAL LAYOUT
SCALE: 1" = 40'

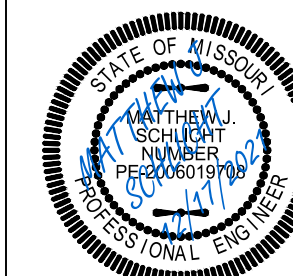


Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

Project: NAPA VALLEY 5th PLAT
Issue Date: August 2, 2021
Storm Sewer General Layout
Street, Stormwater Master Drainage Plans for:
Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri

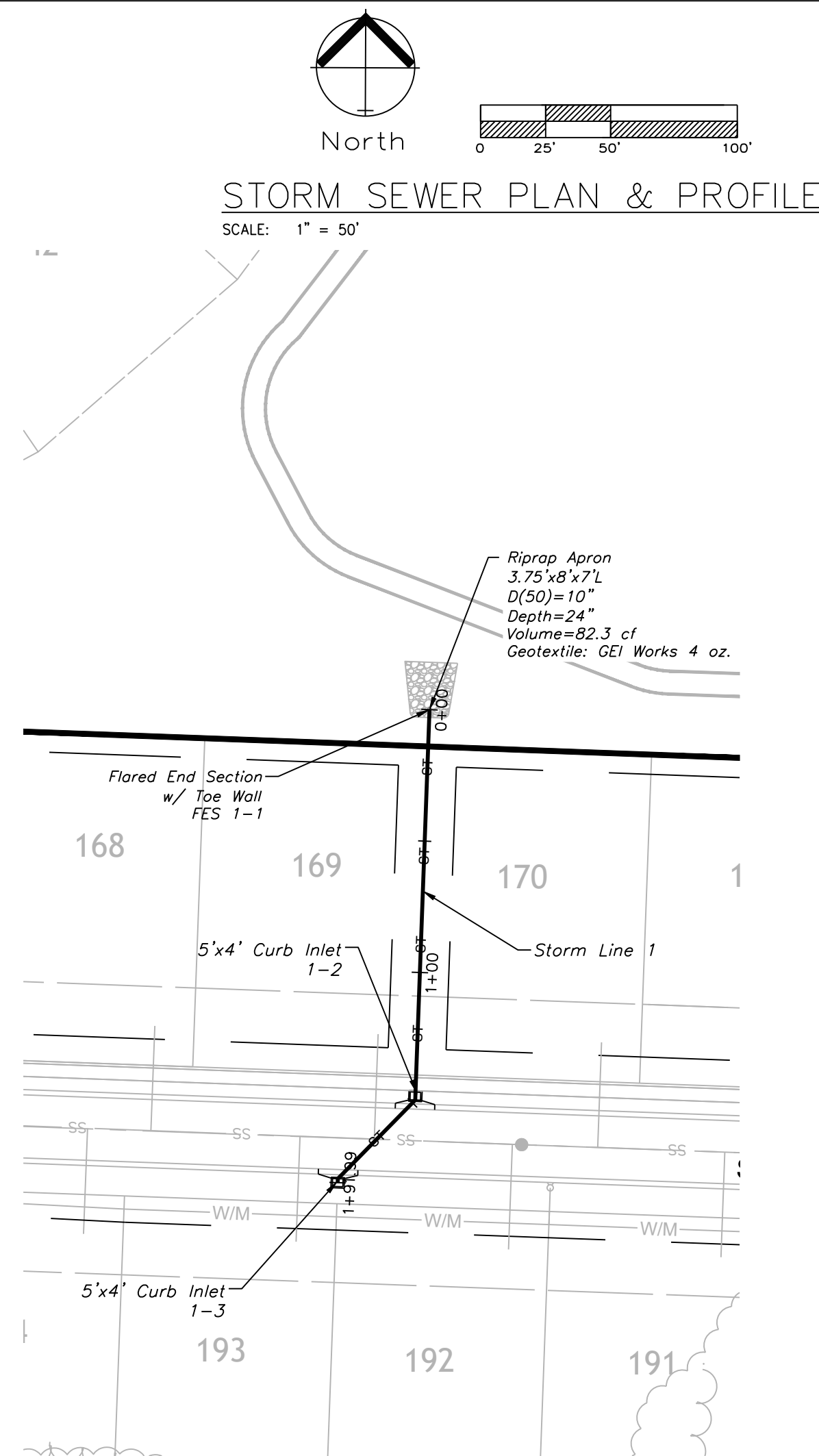
Project: NAPA VALLEY 5th PLAT
Issue Date: August 2, 2021

Storm Sewer General Layout
Street, Stormwater Master Drainage Plans for:
Napa Valley 5th Plat
Lee's Summit, Jackson County, Missouri

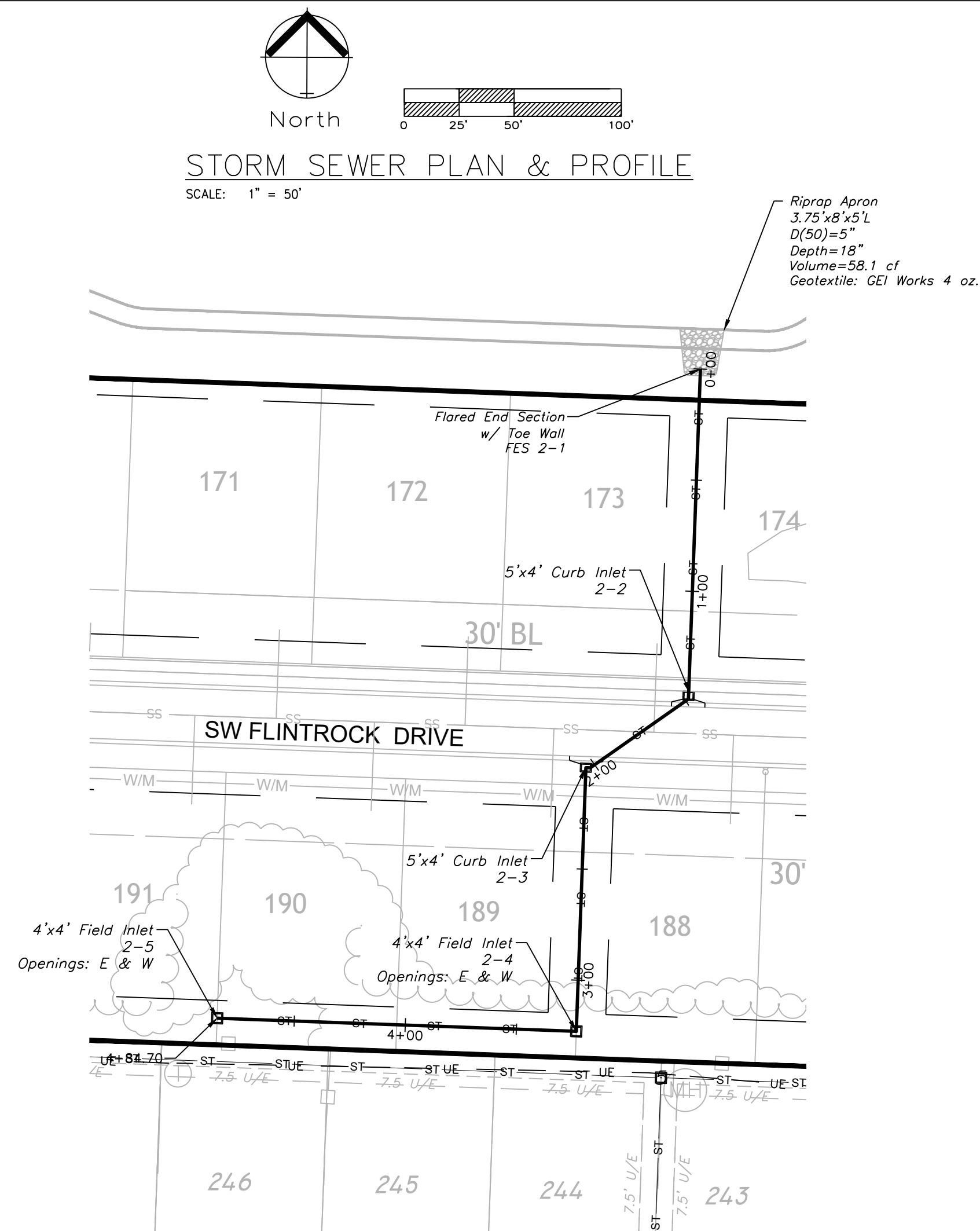
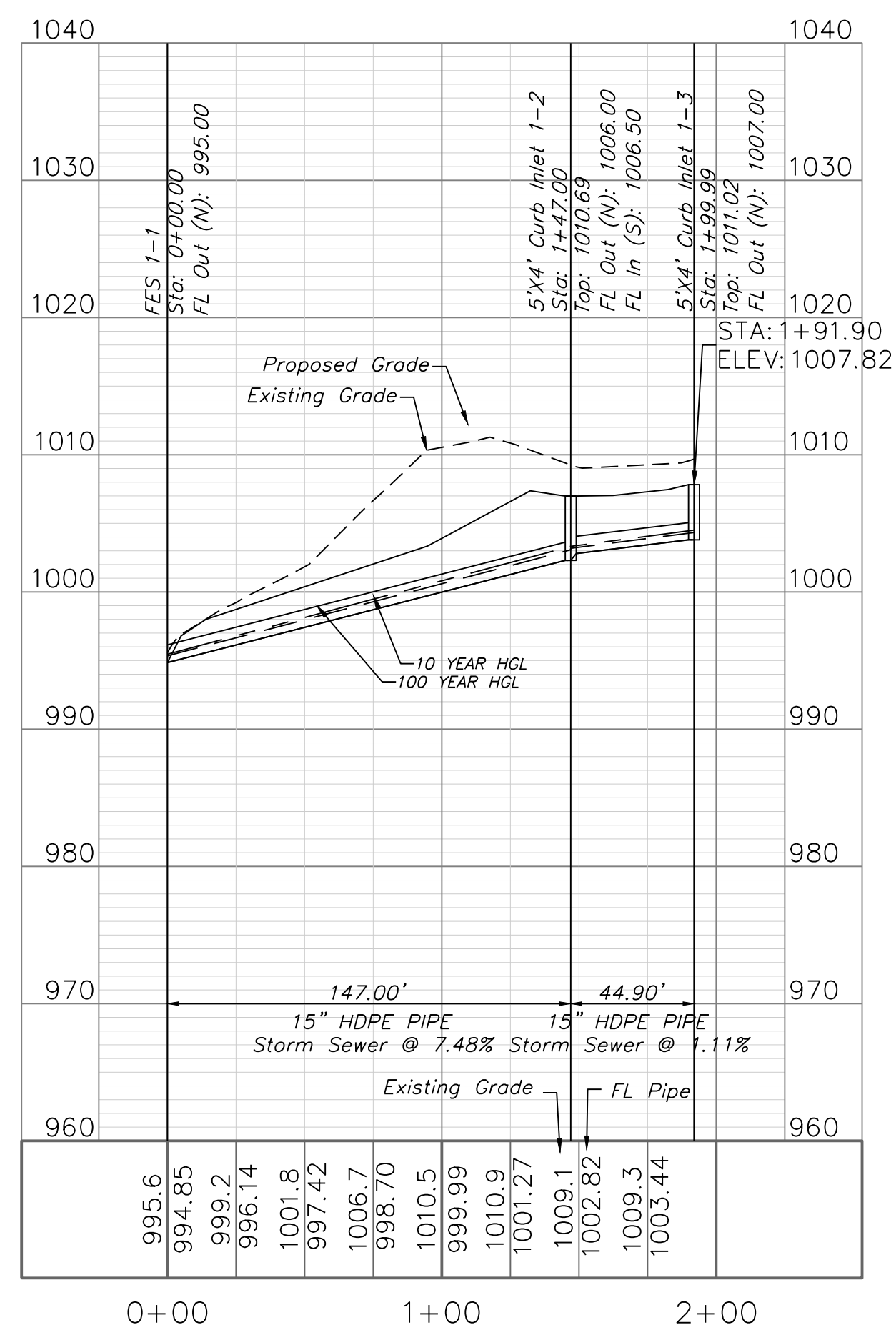


Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

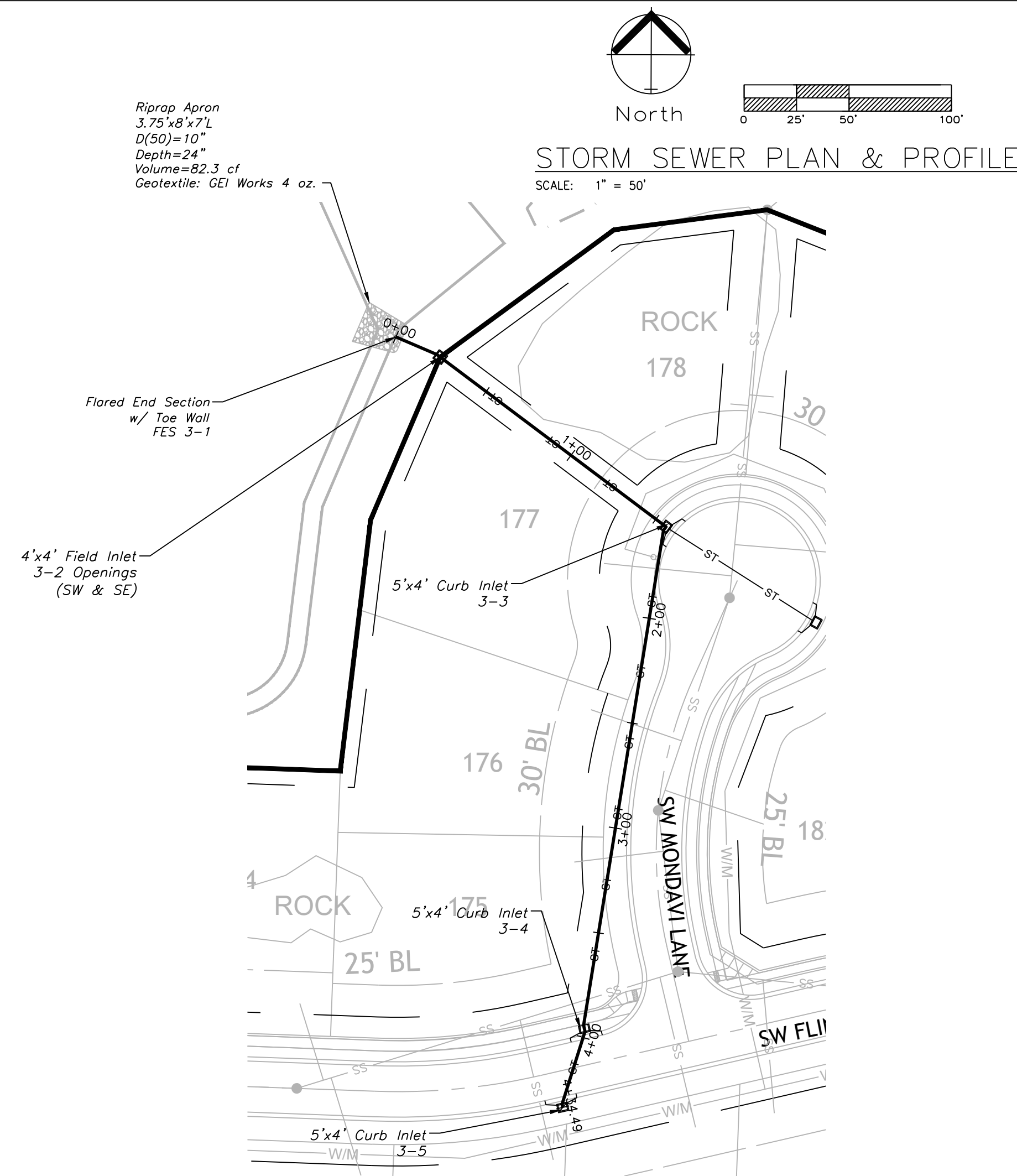
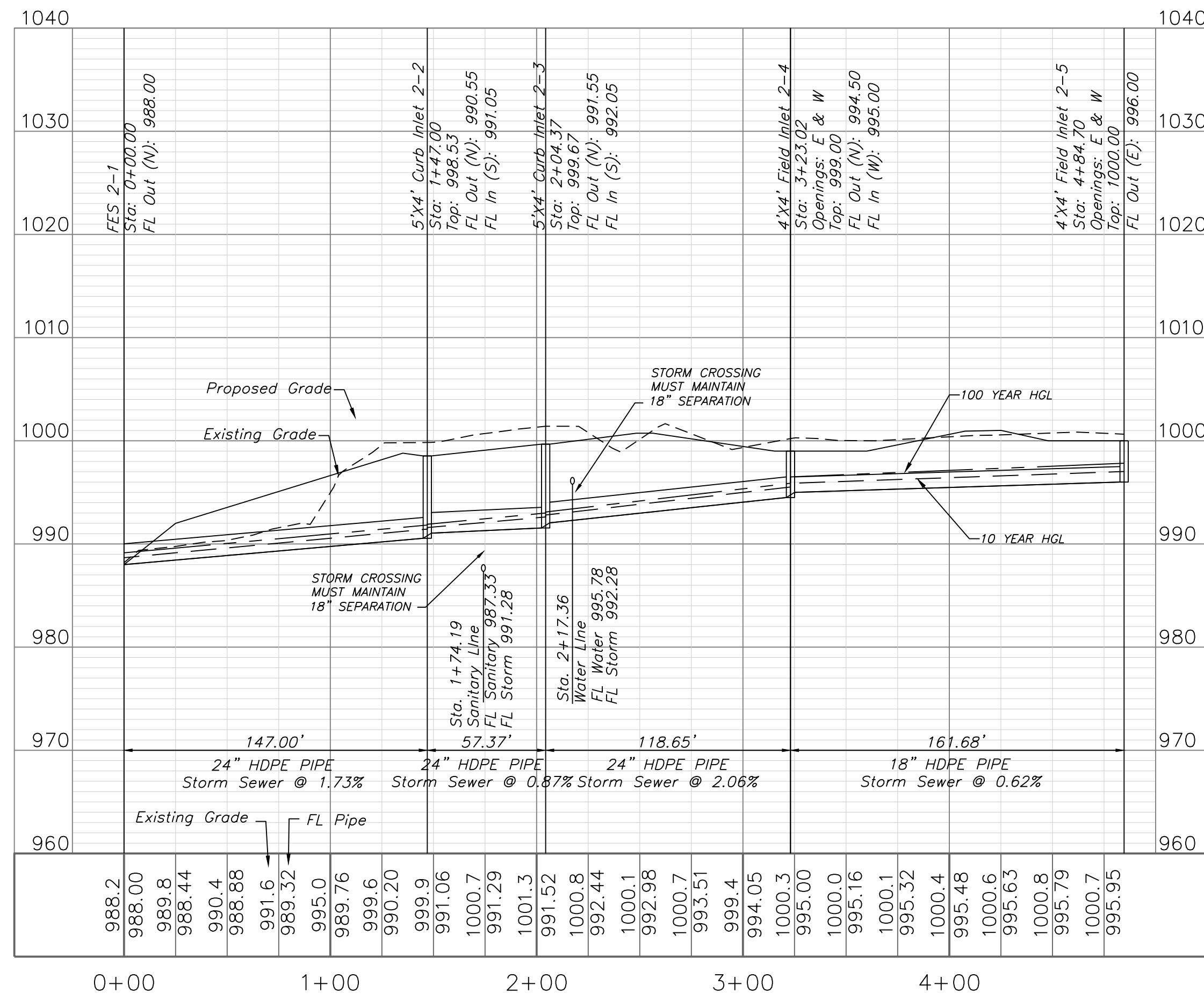
REVISIONS	
REV. 9/28/2021	
REV. 12/6/2021	
REV. 12/17/2021	



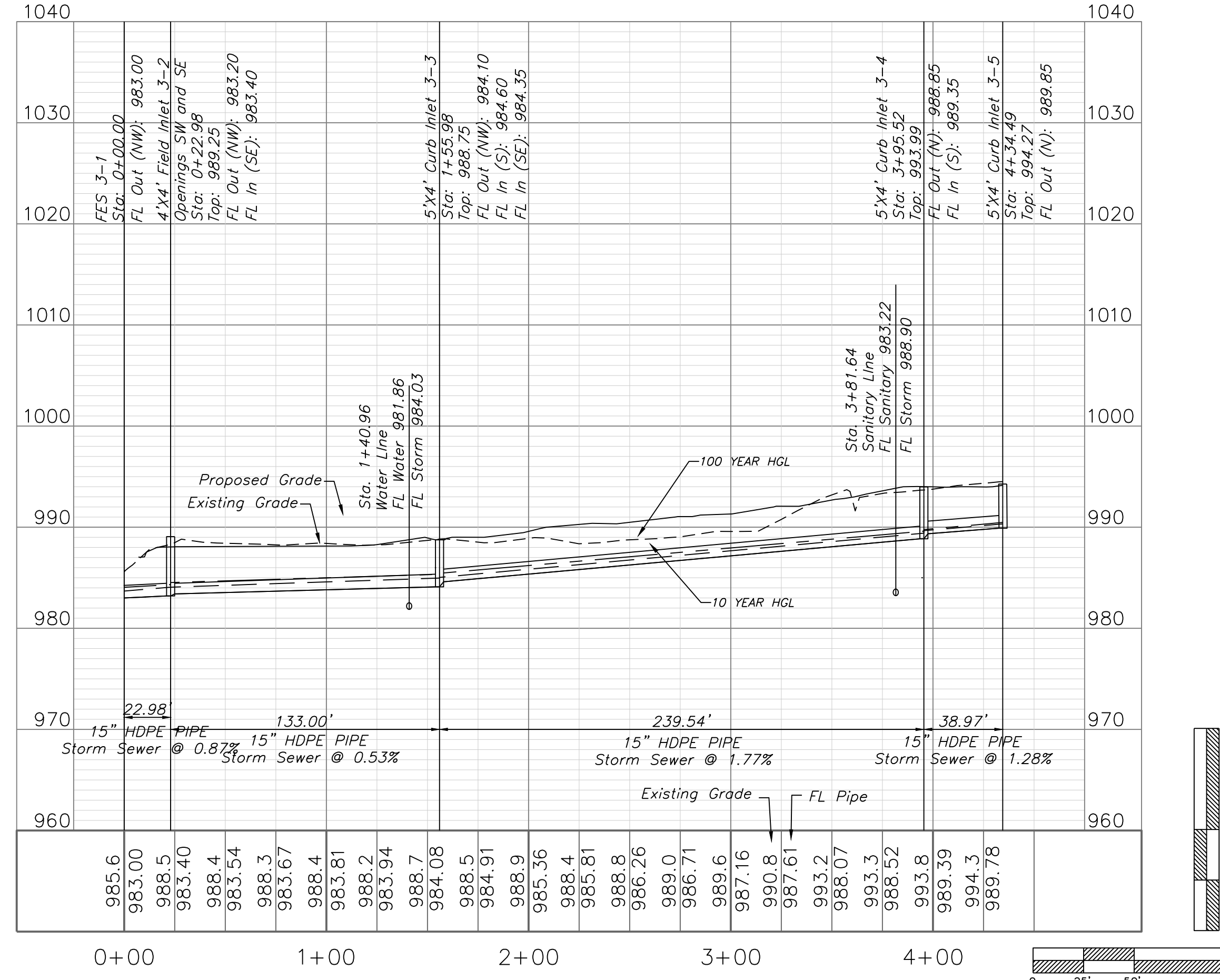
STORM LINE 1



STORM LINE 2



STORM LINE 3



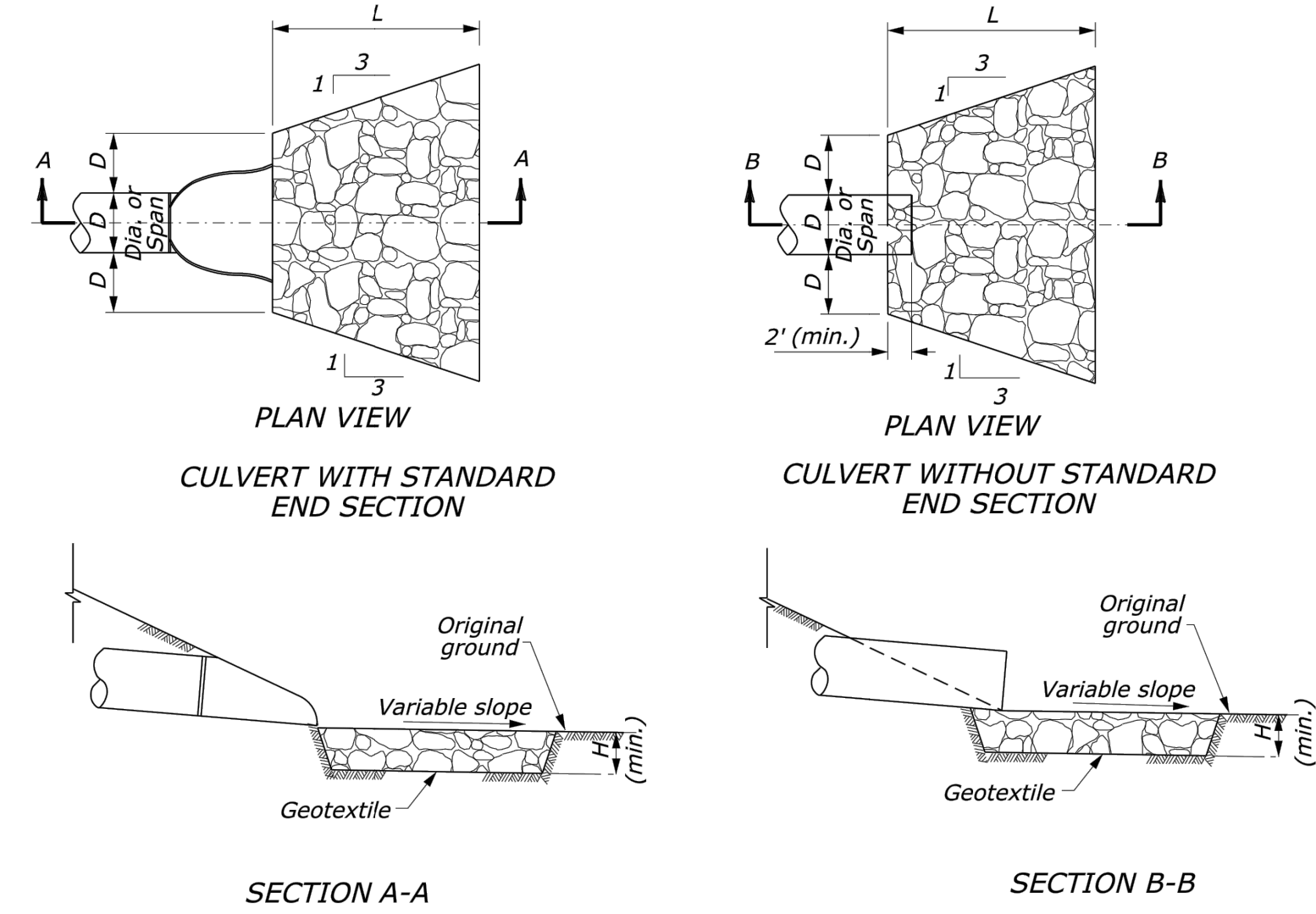
10-YR STRUCTURE																						
D.S. Str.	Str. No.	Area (ac)	InletTime (min)	Int. (in/hr)	RunoffCoeff. (C)	Q =CIA (cfs)	Q Carry-over (cfs)	QCaptured (cfs)	QBypassed (cfs)	JunctType	CurbHeight (in)	CurbLength (ft)	GutterSlope (ft/ft)	GutterWidth (ft)	CrossSlope, Sw (ft/ft)	CrossSlope, Sx (ft/ft)	InletDepth (ft)	BypassDepth (ft)	BypassSpread (ft)	GutterDepth (ft)	GutterSpread (ft)	Bypass Str.
1-1	1-2	0.57	8.2	6.5	0.51	1.89	0	0.78	1.11	Curb	10	5	0.012	2	0.05	0.02	0.21	0.18	5.93	0.21	7.55	2-2
1-2	1-3	0.54	8.7	6.39	0.51	1.76	0	0.75	1.01	Curb	10	5	0.012	2	0.05	0.02	0.21	0.17	5.67	0.21	7.32	2-3
2-1	2-2	0.35	7	6.79	0.51	1.21	1.11	0.63	1.69	Curb	10	5	0.048	2	0.05	0.02	0.18	0.16	5.19	0.18	6.05	3-4
2-2	2-3	0.32	7	6.79	0.51	1.11	1.01	0.6	1.52	Curb	10	5	0.048	2	0.05	0.02	0.18	0.16	4.9	0.18	5.79	3-5
2-3	2-4	0.46	5.4	7.23	0.51	1.7	0	1.7	0	Dp-Curb	6	8	Sag		0.02	0.02	0.17	n/a	n/a	0.17	8.54	Sag
2-4	2-5	2.26	10.6	6	0.51	6.92	0	6.92	0	Dp-Curb	6	8	Sag		0.02	0.02	0.44	n/a	n/a	0.44	21.8	Sag
3-1	3-2	0	0	0	0	0	1.69	1.69	0	Dp-Curb	6	5	Sag		0.02	0.02	0.23	n/a	n/a	0.23	11.67	Sag
3-2	3-3	0.78	6.7	6.87	0.51	2.73	1.91	4.64	0	Curb	10	5	Sag	2	0.05	0.02	0.44	n/a	n/a	0.44	19.01	Sag
3-3	3-4	0.24	5.7	7.14	0.51	0.87	0	0.49	0.39	Curb	10	5	0.014	2	0.05	0.02	0.16	0.12	3.15	0.16	5.07	3-3
3-4	3-5	0.32	5.9	7.08	0.51	1.16	0	0.57	0.58	Curb	10	5	0.014	2	0.05	0.02	0.18	0.14	4.07	0.18	5.82	Offsite

10-YR PIPE																						
D.S. Str.	U.S. Str.	LineLength (ft)	Incr.Area (ac)	TotalArea (ac)	RunoffCoeff. (C)	IncrC x A	TotalC x A	InletTime (min)	TimeConc (min)	RnfallInt (in/hr)	TotalRunoff (cfs)	TotalFlow (cfs)	CapacFull (cfs)	Veloc (ft/s)	PipeSize (in)	PipeSlope (%)	Inv ElevDn (ft)	Inv ElevUp (ft)	HGLDn (ft)	HGLUp (ft)	Grnd/RimDn (ft)	Grnd/RimUp (ft)
1-1	1-2	147	0.57	1.11	0.51	0.29	0.57	8.2	8.9	6.4	3.6	3.6	21.9	8.87	15	6.8	996	1006	996.34	1006.77	0	1010.69
1-2	1-3	44.9	0.54	0.54	0.51	0.28	0.28	8.7	8.7	6.4	1.76	1.76	8.86	4.6	15	1.11	1006.5	1007	1006.88	1007.53	1010.69	1011.02
2-1	2-2	147	0.35	3.39	0.51	0.18	1.73	7	11.5	5.8	10.08	10.08	42	8.23	24	2.04	989	992	989.67	993.14	0	1003.09
2-2	2-3	57.37	0.32	3.04	0.51	0.16	1.55	7	11.4	5.9	9.08	9.08	27.45	6.56	24	0.87	992.5	993	993.29	994.07	1003.09	1004.98
2-3	2-4	118.65	0.46	2.72	0.51	0.23	1.39	5.4	11.1	5.9	8.2	8.2	26.99	6.32	24	0.84	993.5	994.5	994.26	995.52	1004.98	1000
2-4	2-5	161.68	2.26	2.26	0.51	1.15	1.15	10.6	10.6	6	6.92	6.92	10.74	5.94	18	0.62	995	996	995.88	997.02	1000	1000
3-1	3-2	22.98	0	1.34	0	0	0.68	0	7.4	6.7	4.58	4.58	7.83	5.84	15	0.87	985	985.2	985.69	986.07	0	989.25
3-2	3-3	133	0.78	1.34	0.51	0.4	0.68	6.7	7	6.8	4.64	4.64	7.63	5.8	15	0.83	985.4	986.5	986.1	987.37	989.25	991
3-3	3-4	239.54	0.24	0.56	0.51	0.12	0.29	5.7	6.1	7	2.01	2.01	7.67	4.5	15	0.83	987	989	987.44	989.56	991	994.14
3-4	3-5	38.97	0.32	0.32	0.51	0.16	0.16	5.9	5.9	7.1	1.16	1.16	8.39	3.98	15	1.28	989.5	990	989.81	990.42	994.14	994.72

100-YR STRUCTURE																						
D.S. Str.	Str. No.	Area (ac)	InletTime (min)	Int. (in/hr)	RunoffCoeff. (C)	Q =CIA (cfs)	Q Carry-over (cfs)	QCaptured (cfs)	QBypassed (cfs)	JunctType	CurbHeight (in)	CurbLength (ft)	GutterSlope (ft/ft)	GutterWidth (ft)	CrossSlope, Sw (ft/ft)	CrossSlope, Sx (ft/ft)	InletDepth (ft)	BypassDepth (ft)	BypassSpread (ft)	GutterDepth (ft)	GutterSpread (ft)	Bypass Str.
1-1	1-2	0.57	8.2	11.53	0.51	3.35	0	1.06	2.29	Curb	10	5	0.012	2	0.05	0.02	0.25	0.22	8.22	0.25	9.64	2-2
1-2	1-3	0.54	8.7	11.34	0.51	3.12	0	1.02	2.11	Curb	10	5	0.012	2	0.05	0.02	0.25	0.22	7.92	0.25	9.36	2-3
2-1	2-2	0.35	7	12	0.51	2.14	2.29	0.88	3.56	Curb	10	5	0.048	2	0.05	0.02	0.22	0.21	7.35	0.22	8.1	3-4
2-2	2-3	0.32	7	12	0.51	1.96	2.11	0.84	3.22	Curb	10	5	0.048	2	0.05	0.02	0.22	0.2	7.03	0.22	7.79	3-5
2-3	2-4	0.46	5.4	12.71	0.51	2.98	0	2.98	0	Dp-Curb	6	8	Sag		0.02	0.02	0.25	n/a	n/a	0.25	12.44	Sag
2-4	2-5	2.26	10.6	10.69	0.51	12.33	0	12.33	0	Dp-Curb	6	8	Sag		0.02	0.02	0.64	n/a	n/a	0.64	32.06	Sag
3-1	3-2	0	0	0	0	0	3.56	3.56	0	Dp-Curb	6	5	Sag		0.02	0.02	0.38	n/a	n/a	0.38	19.14	Sag
3-2	3-3	0.78	6.7	12.13	0.51	4.82	4.09	8.91	0	Curb	10	5	Sag	2	0.05	0.02	0.65	n/a	n/a	0.65	29.38	Sag
3-3	3-4	0.24	5.7	12.57	0.51	1.54	0	0.67	0.87	Curb	10	5	0.014	2	0.05	0.02	0.19	0.16	5.05	0.19	6.65	3-3
3-4	3-5	0.32	5.9	12.48	0.51	2.04	0	0.78	1.25	Curb	10	5	0.014	2	0.05	0.02	0.21	0.18	6.05	0.21	7.54	Offsite

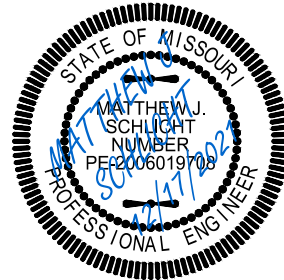
100-YR PIPE																						
D.S. Str.	U.S. Str.	LineLength (ft)	Incr.Area (ac)	TotalArea (ac)	RunoffCoeff. (C)	IncrC x A	TotalC x A	InletTime (min)	TimeConc (min)	RnfallInt (in/hr)	TotalRunoff (cfs)	TotalFlow (cfs)	CapacFull (cfs)	Veloc (ft/s)	PipeSize (in)	PipeSlope (%)	Inv ElevDn (ft)	Inv ElevUp (ft)	HGLDn (ft)	HGLUp (ft)	Grnd/RimDn (ft)	Grnd/RimUp (ft)
1-1	1-2	147	0.57	1.11	0.51	0.29	0.57	8.2	8.8	11.3	6.39	6.39	21.9	10.72	15	6.8	996	1006	996.46	1007.02	0	1010.69
1-2	1-3	44.9	0.54	0.54	0.51	0.28	0.28	8.7	8.7	11.3	3.12	3.12	8.86	5.41	15	1.11	1006.5	1007	1007.02	1007.71	1010.69	1011.02
2-1	2-2	147	0.35	3.39	0.51	0.18	1.73	7	11.4	10.5	18.08	18.08	42	8.39	24	2.04	989	992	990.14	993.53	0	1003.09
2-2	2-3	57.37	0.32	3.04	0.51	0.16	1.55	7	11.2	10.5	16.27	16.27	27.45	7.88	24	0.87	992.5	993	993.61	994.45	1003.09	1004.98
2-3	2-4	118.65	0.46	2.72	0.51	0.23	1.39	5.4	11	10.6	14.67	14.67	26.99	7.56	24	0.84	993.5	994.5	994.55	995.88	1004.98	1000
2-4	2-5	161.68	2.26	2.26	0.51	1.15	1.15	10.6	10.6	10.7	12.33	12.33	10.74	6.98	18	0.62	995	996	996.5	997.82	1000	1000
3-1	3-2	22.98	0	1.34	0	0	0.68	0	7.5	11.8	8.07	8.07	7.83	7.11	15	0.87	985	985.2	986.06	986.32	0	989.25
3-2	3-3	133	0.78	1.34	0.51	0.4	0.68	6.7	7.2	11.9	8.16	8.16	7.63	6.81	15	0.83	985.4	986.5	986.53	987.74	989.25	991
3-3	3-4	239.54	0.24	0.56	0.51	0.12	0.29	5.7	6.1	12.4	3.54	3.54	7.67	3.71	15	0.83	987	989	988.67	989.76	991	994.14
3-4	3-5	38.97	0.32	0.32	0.51	0.16	0.16	5.9	5.9	12.5	2.04	2.04	8.39	4.69	15	1.28	989.5	990	989.92	990.57	994.14	994.72

STANDARD RIPRAP APRON DETAIL



- NOTES:
- ALL RIPRAP APRONS SHALL CONFORM TO THE STANDARD CONFIGURATION SHOWN IN THE STANDARD DETAIL ABOVE UNLESS OTHERWISE NOTED. PLAN VIEW DIMENSIONS SHOWN SHALL BE MET OR EXCEEDED INCLUDING AREAS OF LONGITUDINAL AND/OR TRANSVERSE SLOPE.
 - DIMENSIONS FOR EACH RIPRAP APRON AND ASSOCIATED RIPRAP ARE DETAILED IN THE PLAN SET.
 - GEOTEXTILE SHALL BE "GEI WORKS 4 OUNCE" NON-WOVEN FILTER FABRIC DESIGNED FOR FILTRATION, STABILIZATION AND SEPARATION WRAPPED CONTINUOUSLY ALONG THE SIDEWALLS AND BOTTOM OF THE PREPARED AREA OR SLOPE.
 - WATER FLOW = 120 GPM/SF
 - GRAB STRENGTH (MIN.) = 400 N
 - PUNCTURE STRENGTH (MIN.) = 178 N
 - TRAPEZOIDAL TEAR (MIN.) = 133 N
 - ELONGATION (MIN.) = 15%

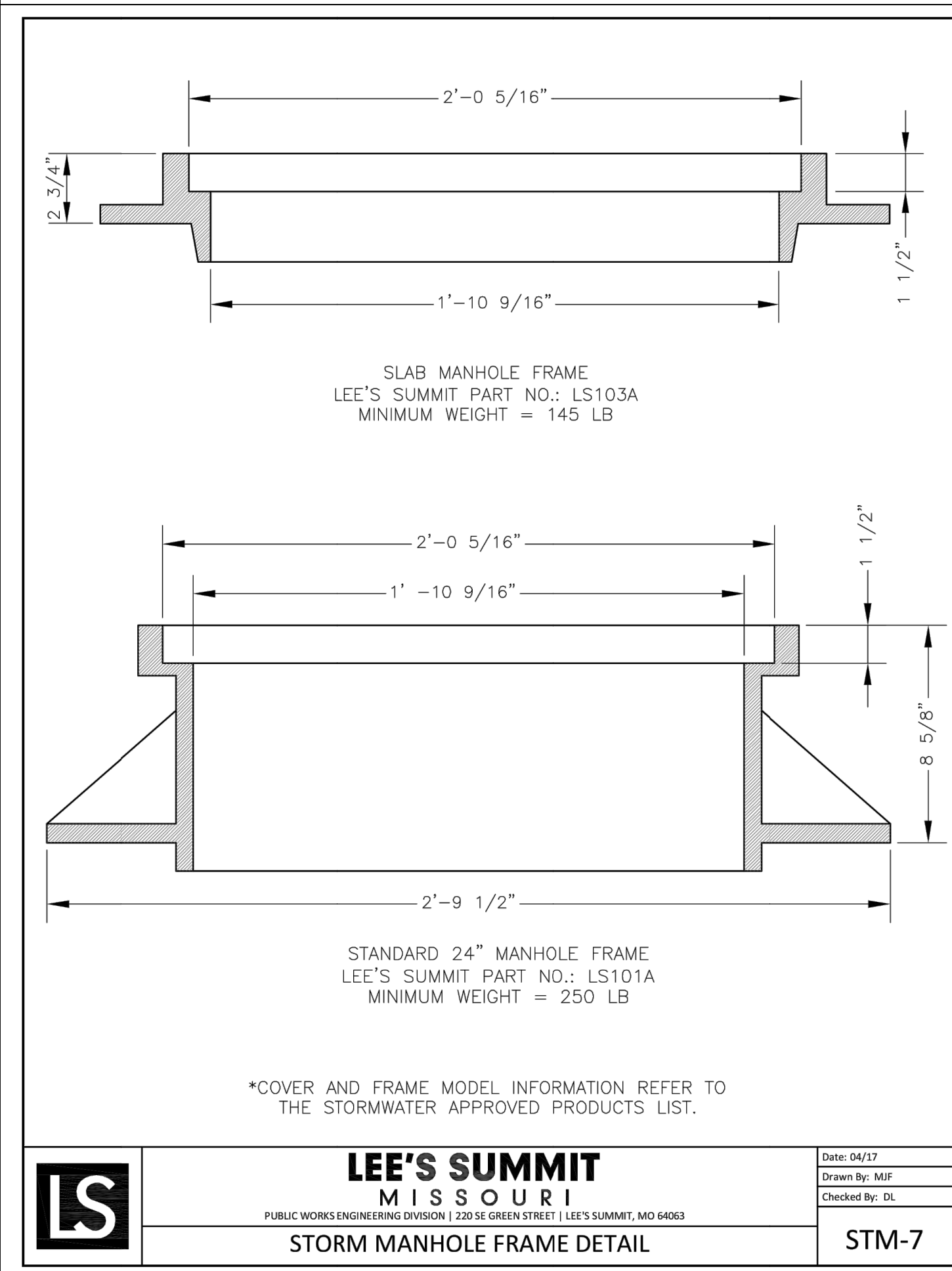
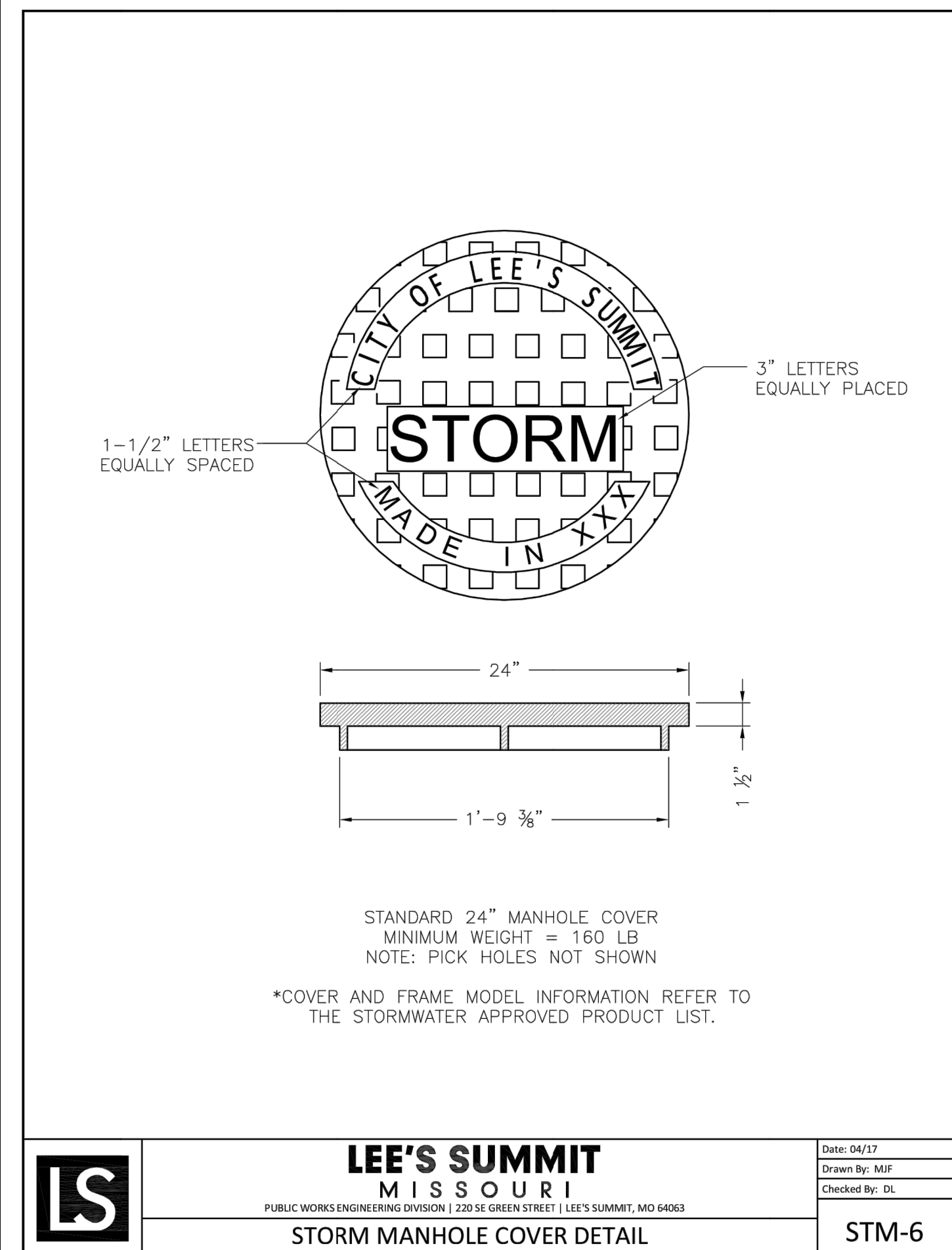
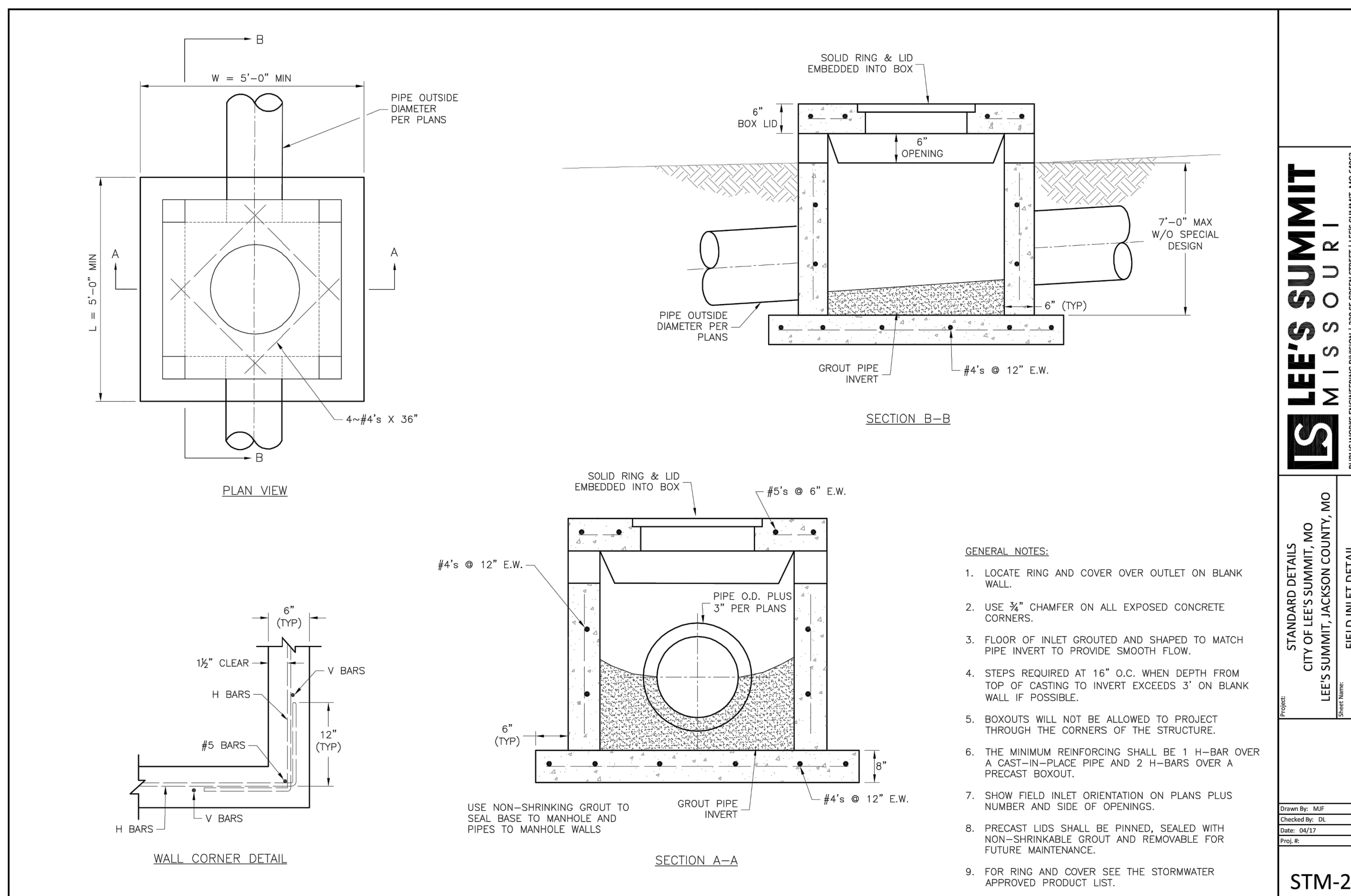
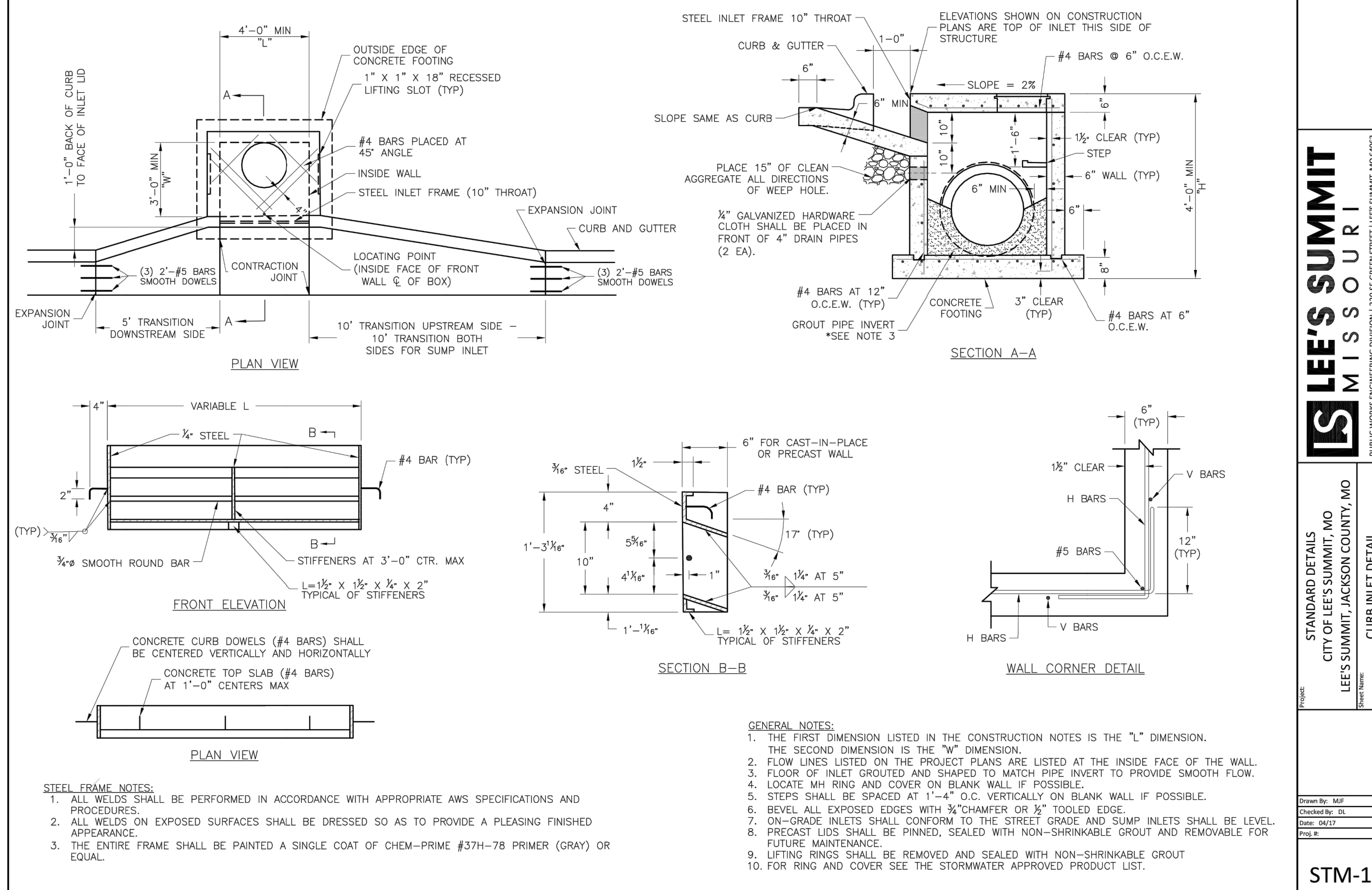
10 YR & 100 YR STORM TABLES
 Street, Stormwater Master Drainage Plans for:
 Napa Valley 5th Plat
 Lee's Summit, Jackson County, Missouri



Matthew J. Schlicht
 MO PE 2006019708
 KS PE 19071
 OK PE 25226
 NE PE E-14335

REVISIONS

REV.	9/28/2021
REV.	12/6/2021
REV.	12/17/2021



GENERAL NOTE:
1 ~ ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S
SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY
ORDINANCE 5813.