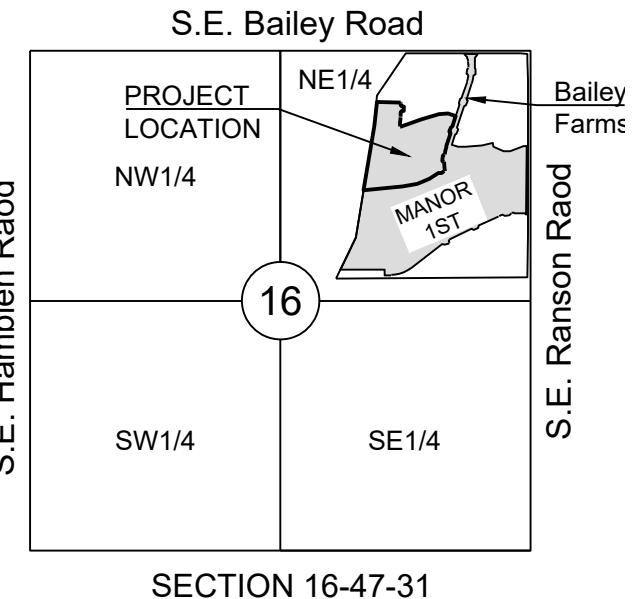


LEGEND:	
A/E	- ACCESS EASEMENT
BC	- BACK OF CURB
B/B	- BACK TO BACK
BM	- BENCHMARK
BL or B.L.	- BUILDING LINE
CO	- CLEANOUT
TJB	- TELEPHONE JUNCTION BOX
C&G	- CURB AND GUTTER
D/E	- DRAINAGE EASEMENT
E/E	- ELECTRICAL EASEMENT
EL	- ELEVATION
FL	- FLOW LINE
G/E	- GAS LINE EASEMENT
HDPE	- HIGH-DENSITY POLYETHYLENE
UE	- LANDSCAPE EASEMENT
MSFE	- MINIMUM SERVICEABLE FLOOR ELEVATION
PVC	- POLYVINYL CHLORIDE
P/L	- PROPERTY LINE
PUB/E	- PUBLIC EASEMENT
RCP	- REINFORCED CONCRETE PIPE
ROW or R/W	- RIGHT-OF-WAY
S/E	- SANITARY SEWER EASEMENT
SL	- SERVICE LINE
S/W	- SIDEWALK
TE	- TOP ELEVATION
U/E	- UTILITY EASEMENT
WSE	- WATER SURFACE ELEVATION
W/E	- WATERLINE EASEMENT
ASPHALT PAVEMENT - EXISTING	
ASPHALT PAVEMENT - PROPOSED	
CONCRETE PAVEMENT - EXISTING	
CONCRETE SIDEWALK - EXISTING	
CONCRETE SIDEWALK - PROPOSED	
CURB & GUTTER	
CURB & GUTTER - EXISTING	
TREELINE	
EXISTING LOT AND R/W LINES	
EXISTING PLAT LINES	
PROPERTY LINES	
RIGHT-OF-WAY	
SANITARY SEWER MAIN	
SANITARY SEWER MAIN - EXIST.	
STORM SEWER	
STORM SEWER - EXISTING	
CABLE TV - EXISTING	
FIBER OPTIC CABLE - EXISTING	
TELEPHONE LINE - EXIST.	
ELECTRIC LINE - EXISTING	
OVERHEAD POWER LINE - EXIST.	
UNDERGROUND ELECTRIC - EX.	
GAS LINE - EXISTING	
WATERLINE - EXISTING	
LIGHT - EXISTING	
EXISTING MANHOLE	
CLEANOUT	
EXISTING SANITARY MANHOLE	
PROPOSED SANITARY MANHOLE	
EXISTING AREA INLET	
EXISTING CURB INLET	
EXISTING GRATE INLET	
EXISTING JUNCTION BOX	
EXISTING STORM MANHOLE	



**LOCATION MAP**  
SCALE 1" = 2000'  
BASIS OF BEARINGS:  
MISSOURI COORDINATE SYSTEM 1983,  
WEST ZONE

#### GENERAL NOTES:

- ALL CONSTRUCTION TO FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
- ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE ENGINEERING DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI.
- LINEAL FOOT MEASUREMENTS SHOWN ON THE PLANS ARE HORIZONTAL MEASUREMENTS, NOT SLOPE MEASUREMENTS. ALL PAYMENTS SHALL BE MADE ON HORIZONTAL MEASUREMENTS.
- NO GEOLOGICAL INVESTIGATION HAS BEEN PERFORMED ON THE SITE.
- THE UTILITY LOCATIONS SHOWN ON THESE PLANS ARE TAKEN FROM UTILITY COMPANY RECORDS AND APPARENT FIELD LOCATIONS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL ADHERE TO THE PROVISIONS OF THE SENATE BILL NUMBER 583, 78TH GENERAL ASSEMBLY OF THE STATE OF MISSOURI. THE BILL REQUIRES THAT ANY PERSON OR FIRM DOING EXCAVATION ON PUBLIC RIGHT OF WAY DO SO ONLY AFTER GIVING NOTICE TO, AND OBTAINING INFORMATION FROM, UTILITY COMPANIES. STATE LAW REQUIRES 48 HOURS ADVANCE NOTICE. THE CONTRACTOR MAY ALSO UTILIZE THE FOLLOWING TOLL FREE PHONE NUMBER PROVIDED BY "MISSOURI ONE CALL SYSTEM, INC." 1-800-DIG-RITE. THIS PHONE NUMBER IS APPLICABLE ANYWHERE WITHIN THE STATE OF MISSOURI. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL NOTIFY ALL THOSE COMPANIES WHICH HAVE FACILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION TO BE PERFORMED.
- PRIOR TO ORDERING PRECAST STRUCTURES, SHOP DRAWING SHALL BE SUBMITTED TO THE DESIGN ENGINEER FOR APPROVAL. AFTER APPROVAL OF THE SHOP DRAWINGS, A COPY OF THE APPROVED AND SIGNED SHOP DRAWINGS SHALL BE PROVIDED TO THE CITY INSPECTOR UPON REQUEST.
- THE CONTRACTOR SHALL PROTECT ALL MAJOR TREES FROM DAMAGE. NO TREE SHALL BE REMOVED WITHOUT PERMISSION OF THE OWNER, UNLESS SHOWN OTHERWISE.
- CLEARING AND GRUBBING OPERATIONS AND DISPOSAL OF ALL DEBRIS THEREFROM SHALL BE PERFORMED BY THE CONTRACTOR IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES.
- ALL WASTE MATERIAL RESULTING FROM THE PROJECT SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR, OR AS DIRECTED BY THE OWNER.
- ALL EXCAVATIONS SHALL BE UNCLASSIFIED. NO SEPARATE PAYMENT WILL BE MADE FOR ROCK EXCAVATION.
- THE CONTRACTOR SHALL CONTROL THE EROSION AND SILTATION DURING ALL PHASED OF CONSTRUCTION, AND SHALL KEEP THE STREETS CLEAN OF MUD AND DEBRIS.
- ALL MANHOLES, CATCH BASINS, UTILITY VALVES AND METER PITS TO BE ADJUSTED OR REBUILT TO GRADE AS REQUIRED.
- THE CONTRACTOR SHALL CONTACT DEVELOPMENT SERVICES INSPECTIONS AT: 816-969-1200 TO OBTAIN A DEVELOPMENT SERVICES CONSTRUCTION PERMIT. A MINIMUM 48 HOUR NOTICE SHALL BE GIVEN PRIOR TO PERMIT ISSUANCE.
- THE CONTRACTOR SHALL CONTACT THE RIGHT OF WAY INSPECTOR AT 816-969-1800 PRIOR TO ANY LAND DISTURBANCE ACTIVITIES WITHIN THE RIGHT OF WAY. THESE ACTIVITIES MAY REQUIRE A PERMIT.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL TRAFFIC HANDLING MEASURES NECESSARY TO ENSURE THAT THE GENERAL PUBLIC IS PROTECTED AT ALL TIMES. TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD-LATEST EDITION).

**UTILITY CONTACTS:**

**MISSOURI DEPARTMENT OF TRANSPORTATION (MODOT)**  
Steve Holloway  
600 NE Colbern Road  
Lee's Summit, MO 64086  
(816) 607-2186

**MISSOURI GAS ENERGY (MGE)**  
Brent Jones  
3025 SE Clover Drive  
Lee's Summit, MO 64082  
(816) 399-9633  
brent.jones@mgeenergy.com

**KANSAS CITY POWER & LIGHT COMPANY (KCP&L)**  
Ron Dejarnette  
1300 SE Hamblin Road  
Lee's Summit, MO 64081  
Office: (816) 347-4316  
Cell: (816) 810-5234  
ron.dejarnette@kcp.com

**CITY OF LEES SUMMIT PUBLIC WORKS**  
Dena Mezger  
220 SE Green Street  
Lee's Summit, MO 64063  
(816) 969-1800

**AT&T**  
Mark Marion or Marty Loper  
500 E. 8th Street, Room 370  
Kansas City, MO 64106  
(816) 275-2341 or (816) 275-1550

**COMCAST CABLE**  
John Meadows  
4700 Little Blue Parkway  
Independence, MO 64057  
(816) 795-2257

**CITY OF LEE'S SUMMIT WATER UTILITIES**  
Mark Schaufler  
1200 SE Hamblen Road  
Lee's Summit, MO 64081  
(816) 969-1900

#### STREET NOTES:

- ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL. ALL APPLICABLE AASHTO STANDARDS HAVE BEEN MET.
- ALL INSPECTION OF STREET CONSTRUCTION TO BE PERFORMED BY THE CITY OF LEE'S SUMMIT DEVELOPMENT ENGINEERING.
- CURB RETURN RADII SHALL BE 25' AT BACK OF CURB UNLESS OTHERWISE NOTED.
- SUBGRADE TO BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- ASSUMED DESIGN SPEED = 25 MPH (COLLECTOR).
- MINIMUM STOPPING SIGHT DISTANCE = 155 FEET.
- MINIMUM K, SAG CURVE = .26 (WITH LIGHTING), CREST CURVE = 12.
- GRADE INTERSECTIONS TO DRAIN AS SHOWN.
- SSD = STOPPING SIGHT DISTANCE.
- ALL ADA SIDEWALK RAMPS SHALL BE CONSTRUCTED BY THE DEVELOPER WITH THE PUBLIC INFRASTRUCTURE.

ITEM	QUANTITY	UNITS
1 CLEARING AND GRUBBING	1	LS
2 GRADING	1	LS
3 8" ASPHALT PAVEMENT - LOCAL-RESIDENTIAL STREET	5025	SY
4 FLY ASH OR COMPACTED AGGREGATE BASE	6150	SY
5 CURB AND GUTTER (INLET TRANSITIONS NOT INCLUDED) SUBSIDIARY TO CG-2 IS ALL CG-2 DRY NEEDED)	3024	LF
6 5' CONC. SIDEWALK	57	LF
7 TYPE A SIDEWALK RAMP	2	EA
8 TYPE M SIDEWALK RAMP	4	EA
9 6'X4' CURB INLET	12	EA
10 6'X5' CURB INLET	1	EA
11 6'X6' CURB INLET	2	EA
12 8'X4' CURB INLET	1	EA
13 4'X4' JUNCTION BOX	1	EA
14 4'X5' JUNCTION BOX	1	EA
15 5'X5' JUNCTION BOX	1	EA
16 4'X4' AREA INLET WITH ONE OPENING	1	EA
17 4'X4' AREA INLET WITH TWO OPENINGS	1	EA
18 WATER QUALITY STRUCTURE (STRUCTURE 3901) STRUCTURE TO INCLUDE, 8" PVC, RISER PIPE, CONCRETE BLOCK, TRASH RACK, ETC.	1	LS

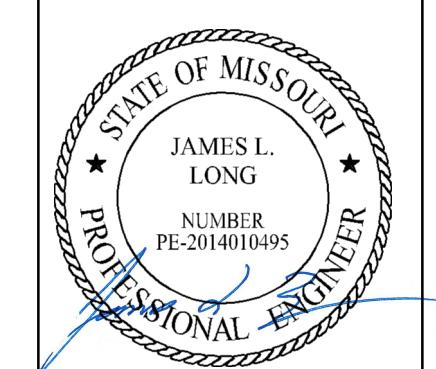
19 FAIRCLOTH SKIMMER - INCLUDE SKIMMER, CONCRETE BLOCK, RISER PIPE, REMOVAL AND REPLACEMENT WITH PERMANENT STRUCTURE	1	LS
20 24" END SECTION WITH TOE WALL	1	EA
21 30" END SECTION WITH TOE WALL	2	EA
22 36" END SECTION WITH TOE WALL	1	EA
23 50# STONE RIPRAP WITH FILTER FABRIC	12	EA
24 100# STONE RIPRAP WITH FILTER FABRIC	12	CY
25 150# STONE RIPRAP WITH FILTER FABRIC	7	CY
26 15" HDPE	460	LF
27 18" HDPE	150	LF
28 24" HDPE	425	LF
29 30" HDPE	385	LF
30 36" HDPE	670	LF
31 TURF REINFORCEMENT MAT	412	SY
32 EROSION CONTROL	1	LS
33 END OF ROAD MARKERS (OM 4-1)	6	EA
34 SEEDING AND MULCHING ALL DISTURBED AREAS	1	LS
THESE QUANTITIES ARE SUPPLIED FOR THE CONTRACTOR'S BENEFIT. CONTRACTOR SHALL VERIFY QUANTITIES AND DISCREPANCIES WHEN PLACING THEIR BID		

# STREET, STORMWATER, AND MASTER DRAINAGE PLAN FOR CORNERSTONE AT BAILEY FARMS, FIRST PLAT IN THE CITY OF LEE'S SUMMIT JACKSON COUNTY, MISSOURI

Sheet List Table	
Sheet Number	Sheet Title
1	COVER SHEET
2	GENERAL LAYOUT
3	MASTER DRAINAGE PLAN-GRADING PLAN
4	SWALE GRADING PLAN
5	SE CRONIN ST PLAN AND PROFILE
6	SE SILO ST PLAN AND PROFILE
7	SE WINDBREAK DR (WEST) AND ARBORETUM DR PLAN AND PROFILE
8	INTERSECTION DETAILS
9	MASTER DRAINAGE PLAN-DRAINAGE AREA MAP
10	MASTER DRAINAGE PLAN-DRAINAGE CALCULATIONS
11	STORM PLAN
12	STORM PROFILE 1
13	STORM PROFILE 2
14	DETENTION BASIN DESIGN
15	STREET DETAILS 1
16	STREET DETAILS 2
17	STORM DETAILS
18	STORM DETAILS 2
19	STREET SIGN PLAN
20	SIGN DETAILS

**SCHLAGEL**  
ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS  
1420 West 107th Street • Lenexa Kansas 66215  
(913) 482-5158 • Fax: (913) 492-2400  
WWW.SCHLAGELASSOCIATES.COM  
#E202003000F BLCC201000495

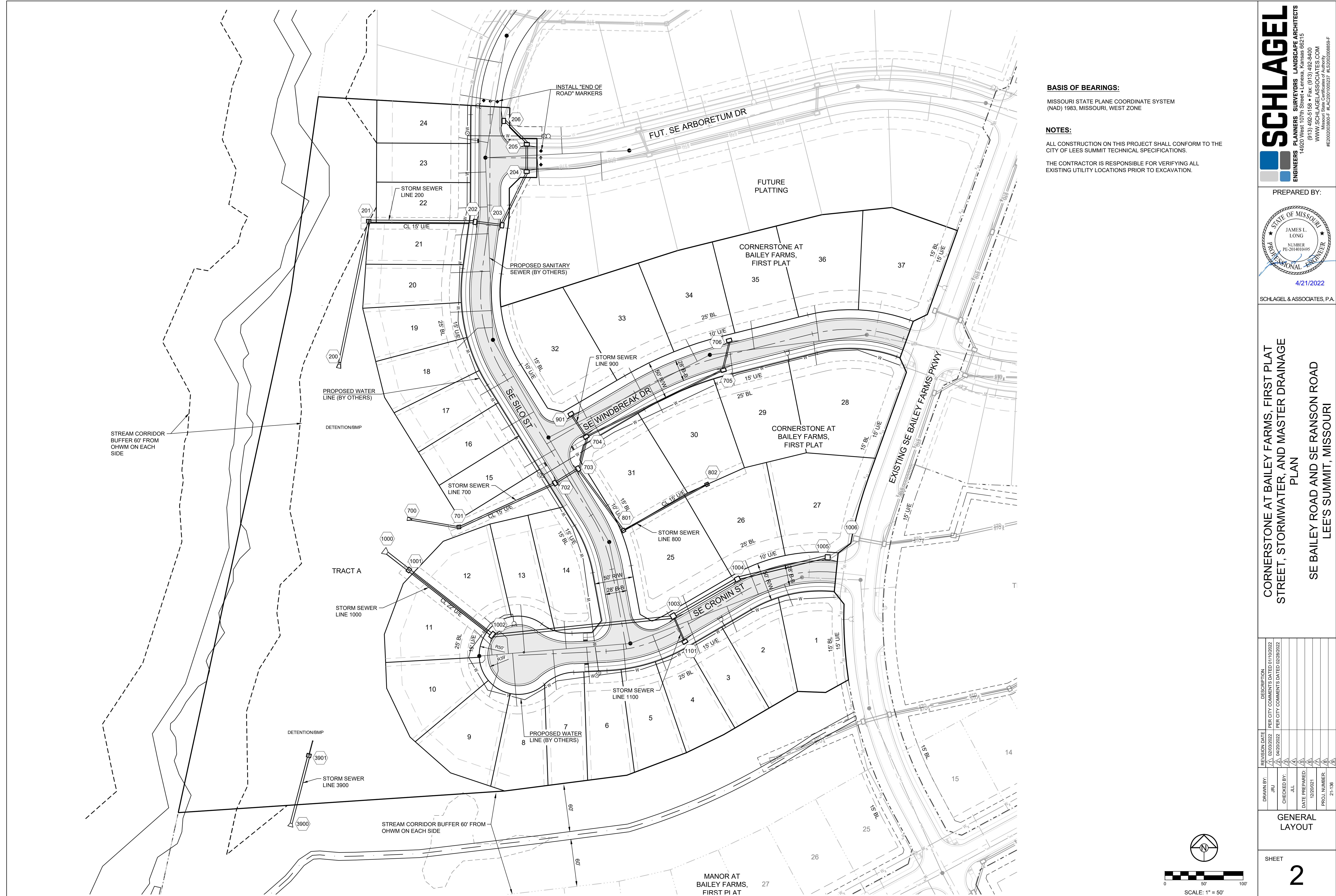
**PREPARED BY:**

  
JAMES L. LONG  
NUMBER PE-204010495  
4/21/2022  
SCHLAGEL & ASSOCIATES, P.A.

**CORNERSTONE AT BAILEY FARMS, FIRST PLAT  
STREET, STORMWATER, AND MASTER  
DRAINAGE PLAN**  
**SE BAILEY ROAD AND SE RANSON ROAD  
LEE'S SUMMIT, MISSOURI**

**MISSOURI ONE CALL SYSTEM**  
STOP CALL BEFORE YOU DIG!  
MISSOURI ONE CALL SYSTEM, INC.  
1-800-344-7453

DRAWN BY:	REVISION DATE:	02/05/2022	PER CITY COMMENTS DATED 01/10/2022
checked by:	checked by:	04/20/2022	PER CITY COMMENTS DATED 02/28/2022
DATE PREPARED:	JUL	4	
DATE CHECKED:	JUL	4	
PROJ. NUMBER:	21-136		
SHEET:	1		





## **BASIS OF BEARINGS:**

MISSOURI STATE PLANE COORDINATE SYSTEM  
(NAD) 1983, MISSOURI, WEST ZONE

## **NOTES:**

ALL CONSTRUCTION ON THIS PROJECT SHALL CONFORM  
TO THE CITY OF LEES SUMMIT TECHNICAL  
SPECIFICATIONS.

**THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.**

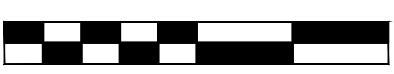
## **GRADING LEGEND**

— — — 1023 — — EXISTING CONTOUR  
— — — 1023 — — PROPOSED CONTOUR

## **NOTES:**

1. MBOE = MINIMUM BUILDING OPENING ELEVATION FOR HOUSES ADJACENT TO ENGINEERED OVERFLOW SWALES SHALL BE MINIMUM 2 FEET ABOVE THE 100-YEAR WATER SURFACE ELEVATION.
  2. EGL = ENERGY GRADE LINE (100-YEAR)
  3. WSE = WATER SURFACE ELEVATION (100-YEAR)
  4. ENGINEERED SWALES TO BE GRADED TO NORMAL DEPTH OF FLOW (WATER SURFACE ELEVATION) OR 1.0 FT, WHICHEVER IS GREATER. MINIMUM SLOPE OF ENGINEERED SWALES SHALL BE AS NOTED.
  5. MINIMUM BUILDING OPENING ELEVATIONS (MBOEs) ADJACENT TO SUMPED INLETS SHALL BE A MINIMUM OF 1' ABOVE TOP OF ADJACENT BERM

LOT TYPE TABLE		
LOT NUMBER	BASEMENT TYPE	MBOE
1	STANDARD	
2	DAYLIGHT	
3	DAYLIGHT	
4	DAYLIGHT	
5	WALKOUT	
6	WALKOUT	
7	WALKOUT	
8	WALKOUT	
9	DAYLIGHT	
10	STANDARD	1012.00
11	STANDARD	1014.00
12	STANDARD	1014.00
13	STANDARD	1015.00
14	STANDARD	1015.00
15	STANDARD	1012.00
16	STANDARD	1012.00
17	STANDARD	1012.00
18	STANDARD	1012.00
19	DAYLIGHT	1012.00
20	DAYLIGHT	
21	DAYLIGHT	1014.00
22	DAYLIGHT	1014.00
23	DAYLIGHT	
24	DAYLIGHT	
25	STANDARD	1018.00
26	STANDARD	1019.00
27	STANDARD	
28	STANDARD	
29	STANDARD	
30	STANDARD	1019.00
31	STANDARD	1018.00
32	STANDARD	
33	STANDARD	
34	STANDARD	
35	STANDARD	
36	STANDARD	
37	STANDARD	

DRAWN BY:		REVISION DATE	DESCRIPTION
		1 02/03/2022	PER CITY COMMENTS DATED 01/10/2022
		2 04/20/2022	PER CITY COMMENTS DATED 02/28/2022
CHECKED BY:		3	
		4	
DATE PREPARED:		5	
		6	
PROJ. NUMBER:		7	
		8	
		9	
<b>MASTER DRAINAGE PLAN-GRADING PLAN</b>			
SHEET			
3			
 SCALE: 1" = 50'			
			



MEET



**BASIS OF BEARINGS:**

MISSOURI STATE PLANE COORDINATE SYSTEM  
 (NAD) 1983, MISSOURI, WEST ZONE

**NOTES:**

ALL CONSTRUCTION ON THIS PROJECT SHALL CONFORM  
 TO THE CITY OF LEES SUMMIT TECHNICAL  
 SPECIFICATIONS.

THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL  
 EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.

**GRADING LEGEND:**

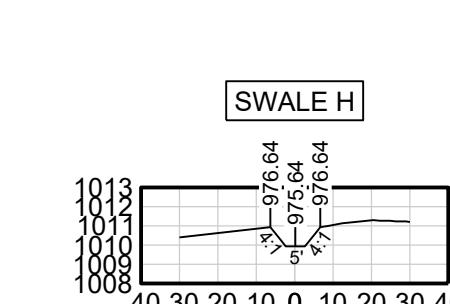
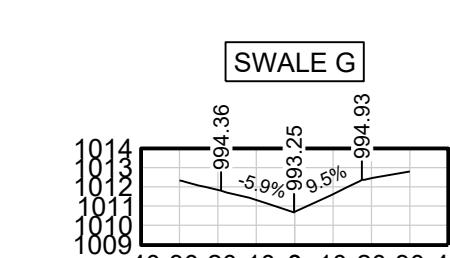
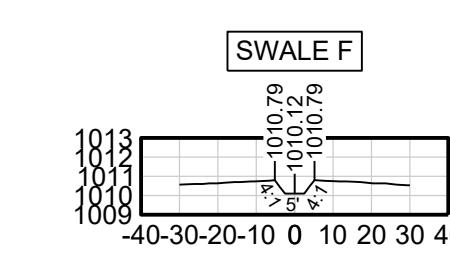
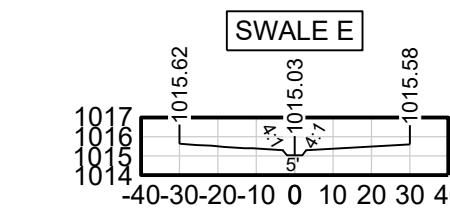
- Existing Contour
- Proposed Contour

A A  
 DENOTES OVERFLOW SWALE

EL:000.00 DENOTES FINISHED GRADE ELEVATION

EL:000.00 (EX.) DENOTES EXISTING GRADE ELEVATION

HP 000.00 DENOTES LOT HIGH POINT ELEVATION



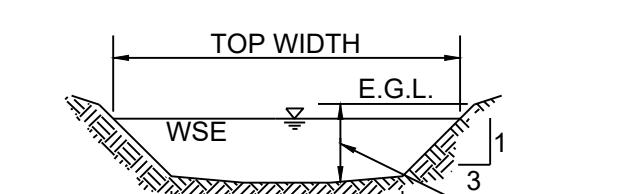
**NOTES:**

1. MBOE = MINIMUM BUILDING OPENING ELEVATION FOR HOUSES ADJACENT TO ENGINEERED OVERFLOW SWALES SHALL BE MINIMUM 2 FEET ABOVE THE 100-YEAR WATER SURFACE ELEVATION.
2. EGL = ENERGY GRADE LINE (100-YEAR)
3. WSE = WATER SURFACE ELEVATION (100-YEAR)
4. ENGINEERED SWALES TO BE GRADED TO NORMAL DEPTH OF FLOW (WATER SURFACE ELEVATION) OR 1.0 FT. WHICHEVER IS GREATER. MINIMUM SLOPE OF ENGINEERED SWALES SHALL BE AS NOTED.
5. MINIMUM BUILDING OPENING ELEVATIONS (MBOEs) ADJACENT TO SUMPED INLETS SHALL BE A MINIMUM OF 1' ABOVE TOP OF ADJACENT BERM

WEIR CALCULATIONS ( $Q = CLH^{(2)}$ )									
SECTION	DRAINAGE AREA (AC.)	Q100 (CFS)	Q10 (CFS)	DESIGN OVERFLOW (CFS)	WEIR ELEVATION	WEIR COEFFICIENT	LENGTH (FT.)	HEAD REQUIRED (FT.)	WSE
1	0.60	5.11	2.91	2.20	1016.30	3.33	10	0.16	1016.46

100 YEAR OVERFLOW SWALES										
SECTION	DRAINAGE AREA (AC.)	Q100 (CFS)	Q10 (CFS)	DESIGN OVERFLOW (CFS)	BED SLOPE (%)	BASE WIDTH (FT.)	SIDE SLOPE	TOP WIDTH (FT.)	NORMAL DEPTH (FT.)	VELOCITY (FPS)
A-A	0.76	6.47	3.69	2.78	2.2	5	4:1	4.00	0.50	2.78
B-B	3.21	27.33	15.57	11.76	2.0	5	4:1	8.84	0.48	3.54
C-C	3.56	30.31	17.27	13.04	2.4	0	4:1	6.96	0.87	4.31
D-D	8.77	74.67	42.54	32.12	5.3	5	4:1	10.04	0.63	6.78
										0.71
										1.34

RUNOFF CALCULATIONS:  
 $Q = K * C * I * A$   
 $K_{10} = 1.0 \quad K_{100} = 1.25 \quad C = 0.66 \quad I = INTENSITY$   
 DESIGN OVERFLOW =  $Q_{OVERFLOW} = Q_{100} - Q_{10}$   
 MANNINGS "n" = 0.030 FOR SWALES



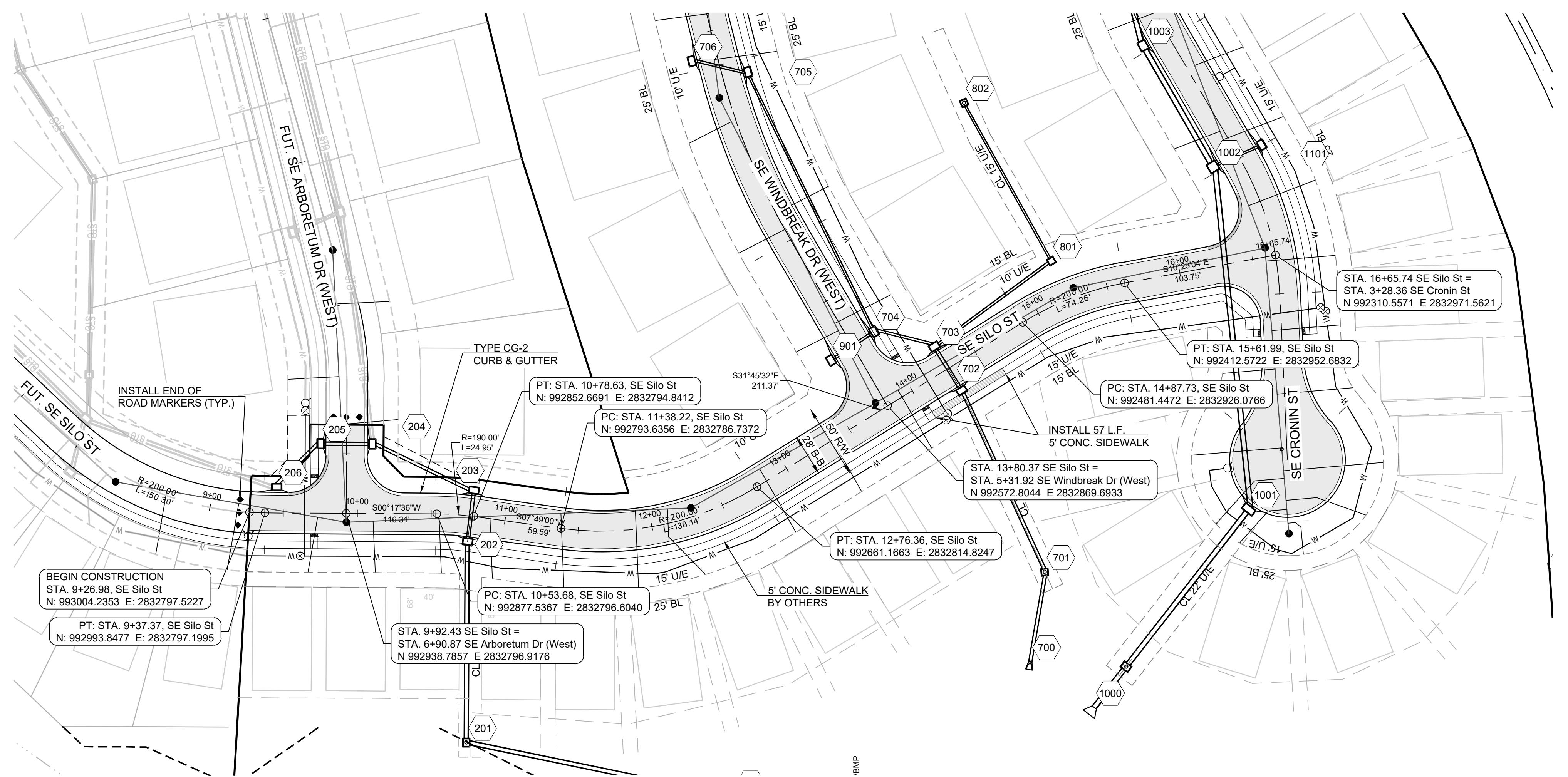
100 YEAR OVERFLOW SWALE SECTIONS  
 SECTION A-D

**CORNERSTONE AT BAILEY FARMS, FIRST PLAT  
 STREET, STORMWATER, AND MASTER DRAINAGE  
 PLAN**  
**SE BAILEY ROAD AND SE RANSON ROAD  
 LEE'S SUMMIT, MISSOURI**

DRAWN BY: JRJ	REVISION DATE: 02/05/2022	PER CITY COMMENTS DATED 01/10/2022
CHECKED BY: JLL	04/20/2022	PER CITY COMMENTS DATED 02/28/2022
DATE PREPARED: 1/20/2021	PROJ. NUMBER: 21-136	
SWALE GRADING PLAN		
SHEET 4		

0 50' 100'  
 SCALE: 1" = 50'





# **MISSOURI GEOGRAPHIC REFERENCE SYSTEM ENCHMARK:**

JA-45, IS A KC METRO ALUMINUM GRS DISK SET IN CONCRETE AND  
ABOUT 3 INCHES BELOW THE PAVEMENT ON THE SHOULDER OF SE  
ANSON ROAD. IT IS STAMPED JA45, 1987.

FV = 1046.25

## OTES:

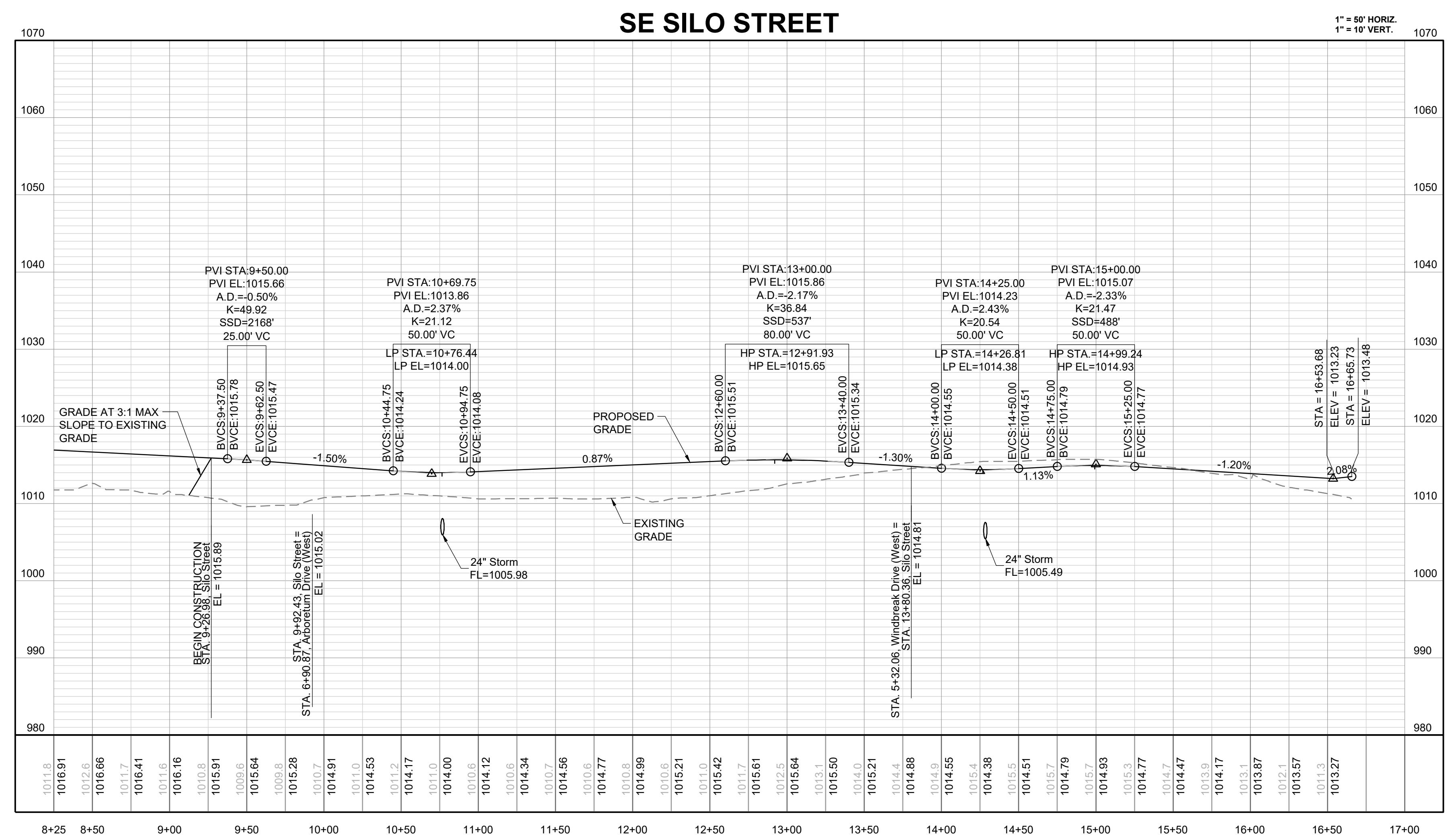
CONSTRUCTION ON THIS PROJECT SHALL CONFORM TO THE  
Y OF LEES SUMMIT TECHNICAL SPECIFICATIONS.

THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.

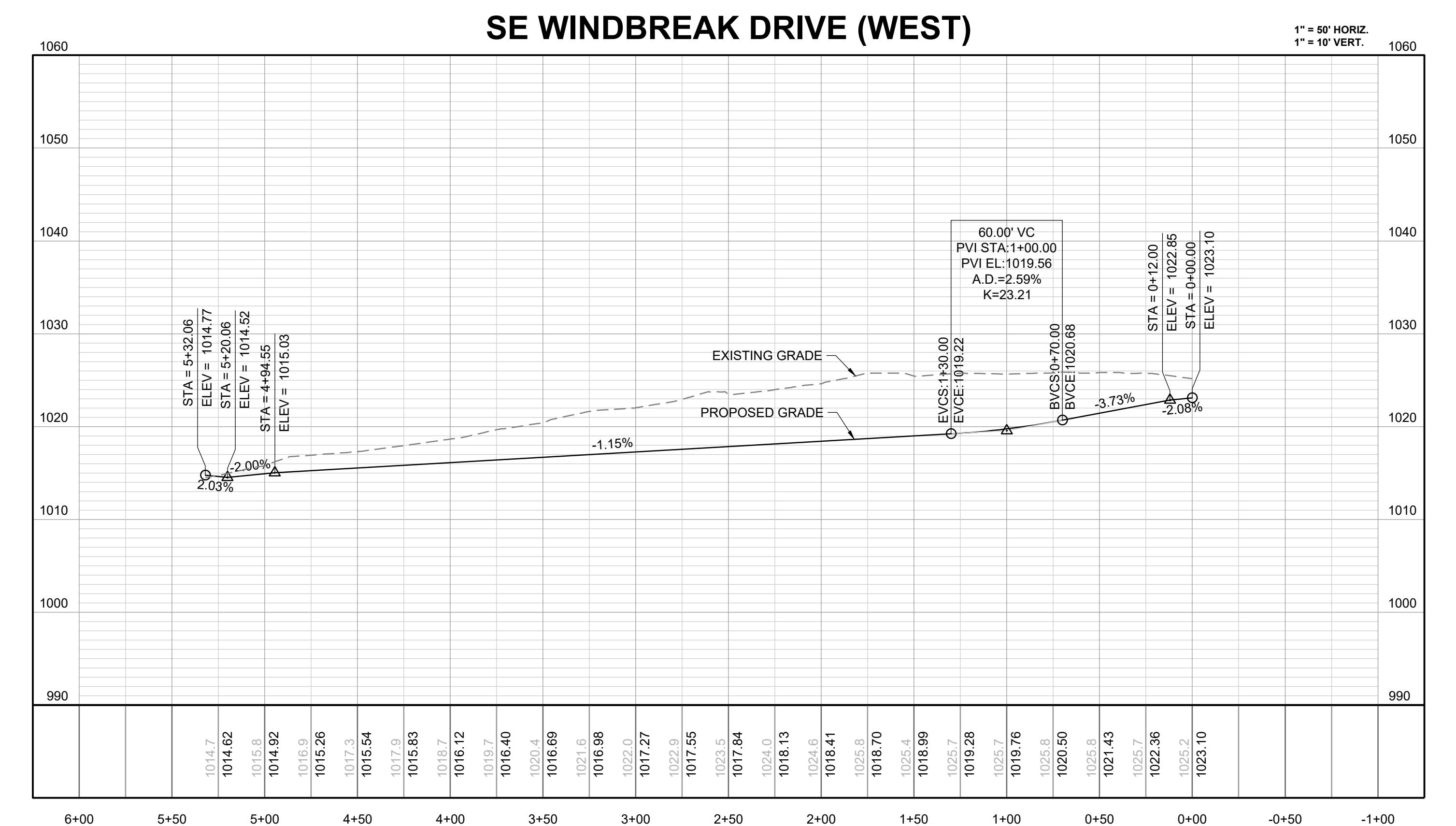
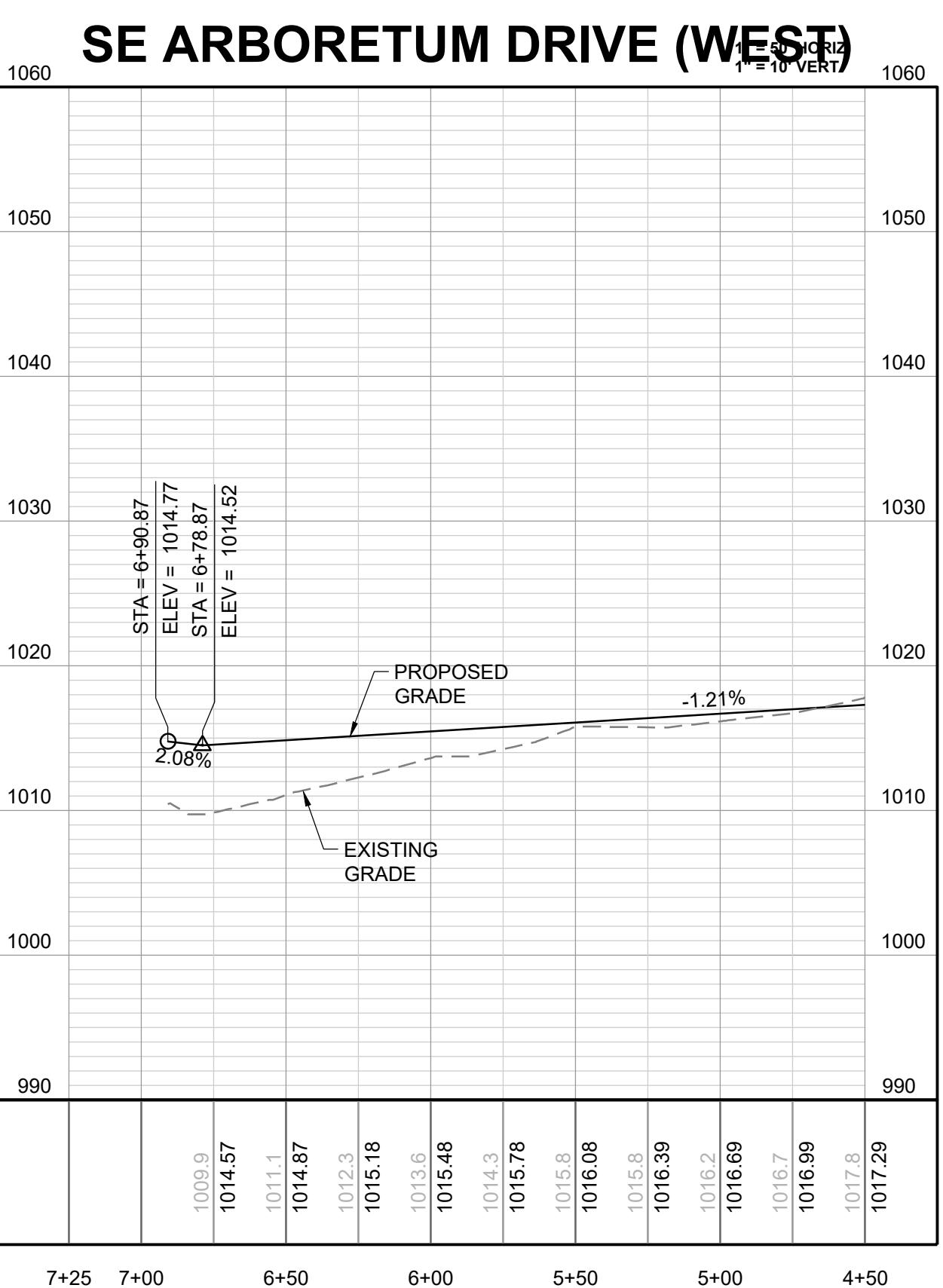
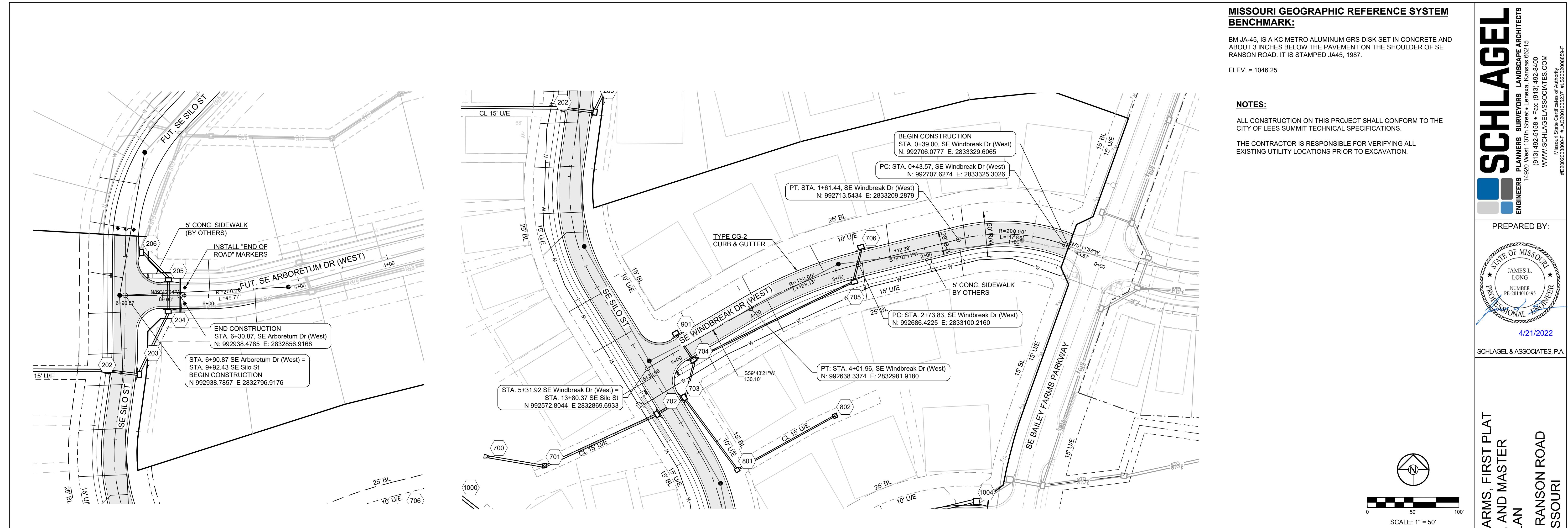


CORNERSTONE AT BAILEY FARMS, FIRST PLAT  
STREET, STORMWATER, AND MASTER DRAINAGE  
PLAN

SE BAILEY ROAD AND SE RANSON ROAD  
LEE'S SUMMIT, MISSOURI



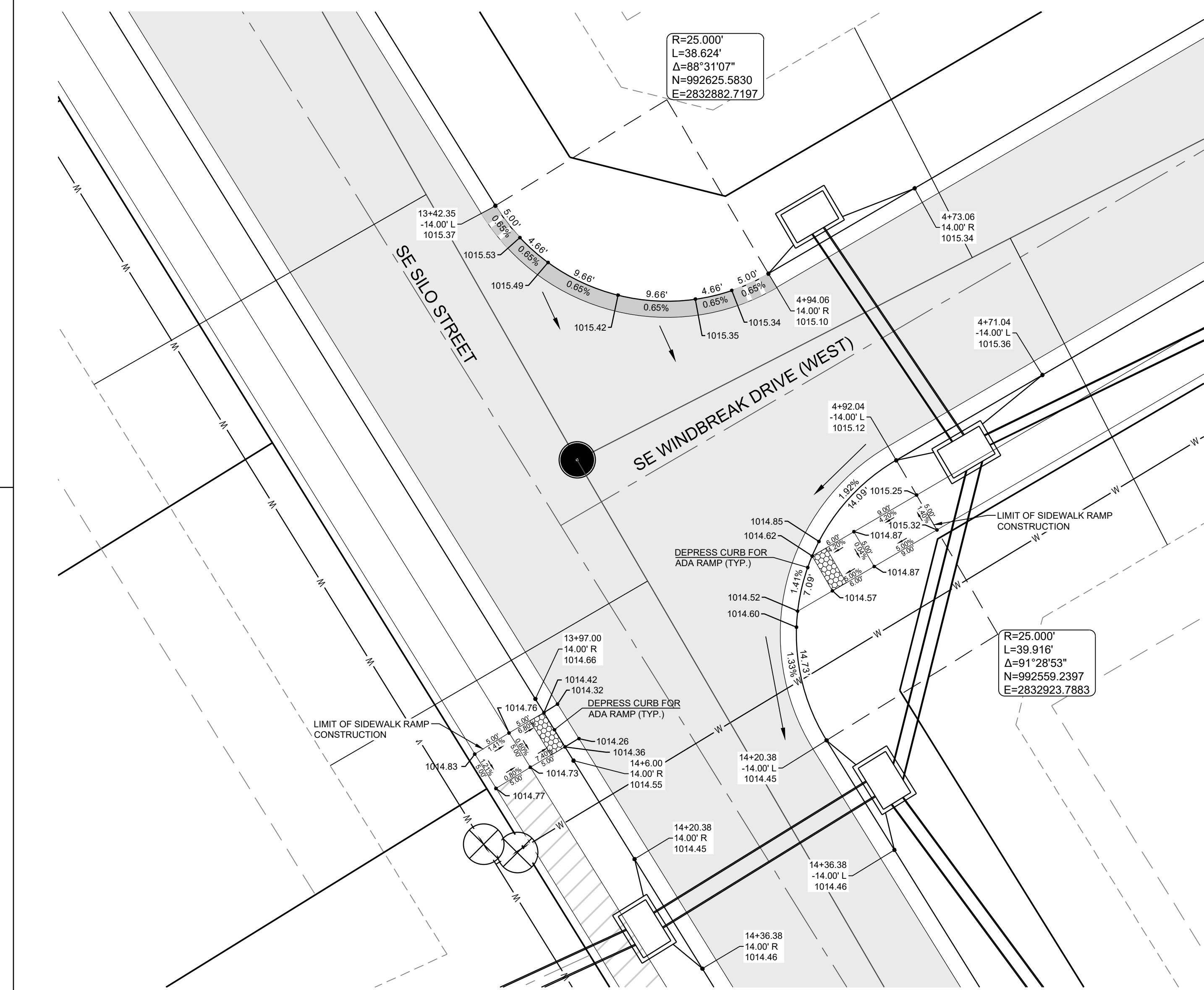
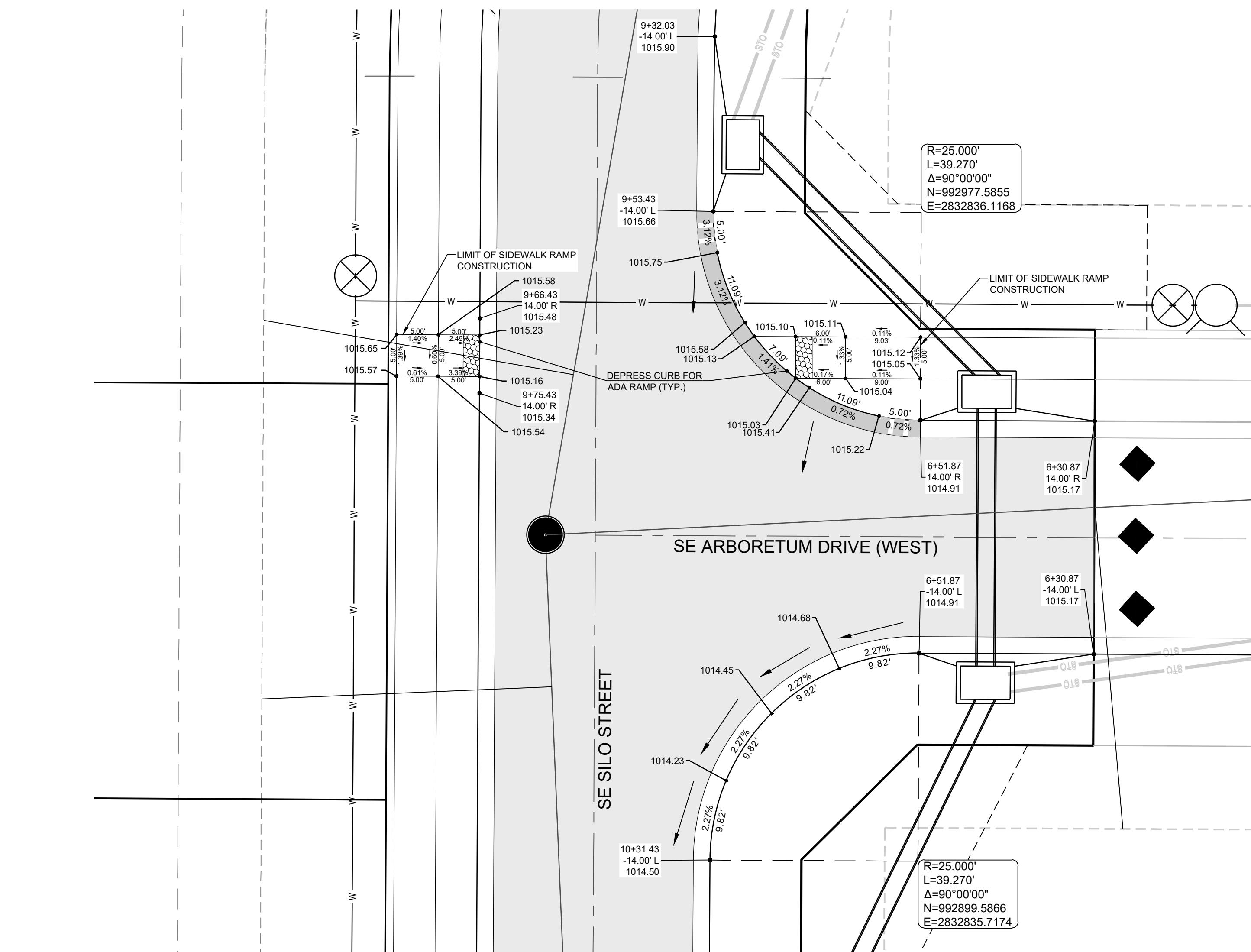
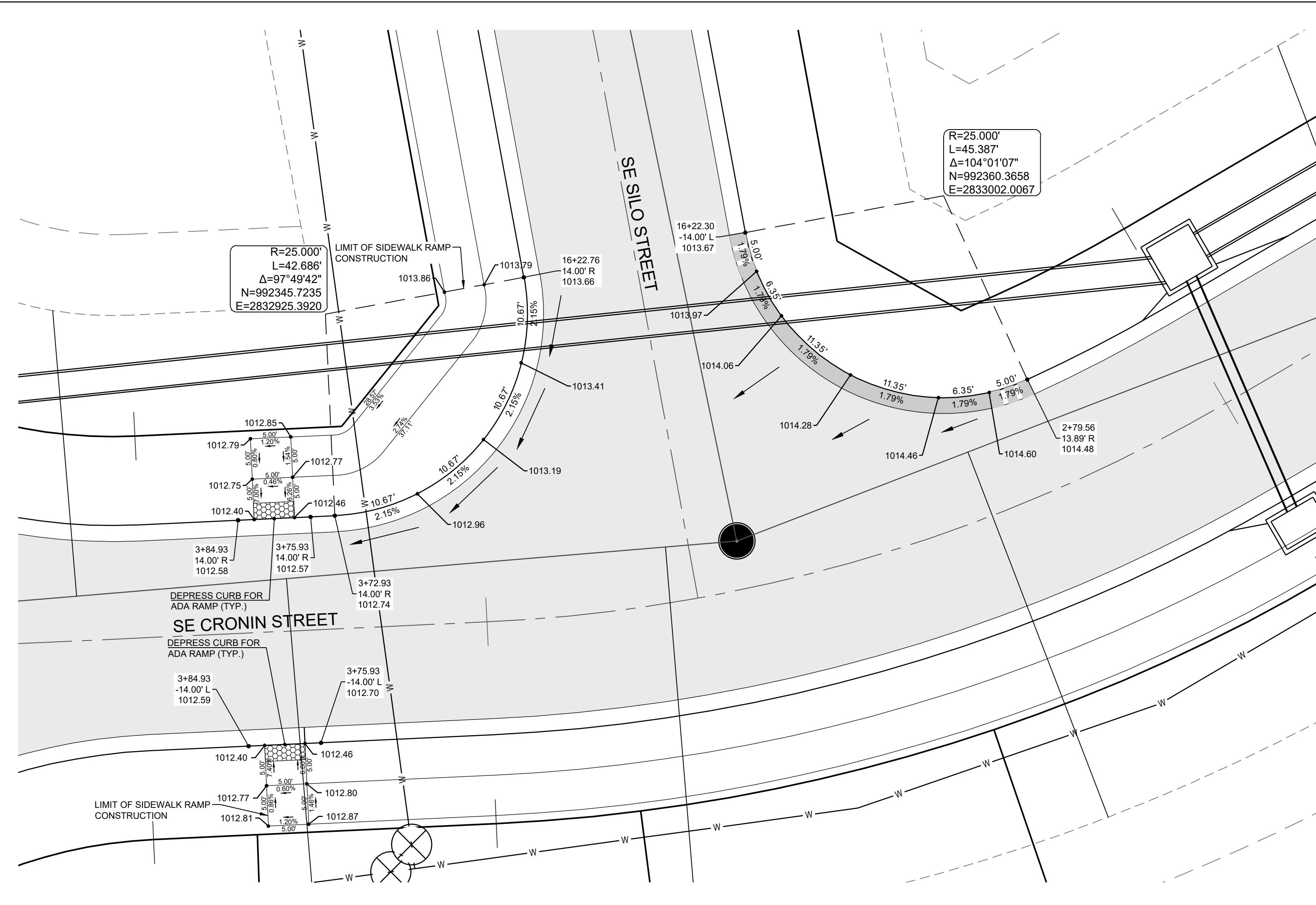
DRAWN BY:	REVISION DATE	DESCRIPTION
JRJ	1 02/03/2022 2 04/20/2022	PER CITY COMMENTS DATED 01/10/2022 PER CITY COMMENTS DATED 02/28/2022
CHECKED BY:	3 4	
JLL		
DATE PREPARED:	5 6 7	
	12/20/2021	
PROJ. NUMBER:	8 9	
SE SILO ST PLAN AND PROFILE		
SHEET <b>6</b>		



SE WINDBREAK DR (WEST) AND ARBORETUM DR PLAN AND PROFILE SHEET  
7

CORNERSTONE AT BAILEY FARMS, FIRST PLAT STREET, STORMWATER, AND MASTER DRAINAGE PLAN  
SE BAILEY ROAD AND SE RANSON ROAD LEE'S SUMMIT, MISSOURI

DRAWN BY:	REVISION DATE	DESCRIPTION
DR. J.R.Q	02/20/2022	PER CITY COMMENTS DATED 01/10/2022
CHECKED BY:	04/20/2022	PER CITY COMMENTS DATED 02/20/2022
APPROVED BY:	4/1/2022	
DATE PREPARED:	4/1/2022	
PROJ. NUMBER:	6	
2-1-36	9	



**CORNERSTONE AT BAILEY FARMS, FIRST PLAT  
STREET, STORMWATER, AND MASTER DRAINAGE  
PLAN**

**SE BAILEY ROAD AND SE RANSON ROAD  
LEE'S SUMMIT, MISSOURI**

The seal is circular with a rope-like border. Inside, the words "STATE OF MISSOURI" are written at the top, "JAMES L. LONG" in the center, and "NUMBER PE-2014010495" below it. The bottom half contains the words "PROFESSIONAL ENGINEER" flanking a signature that has been crossed out with blue ink. The entire seal is set against a white background.

The logo for Schlage Landscaping features a large, bold, black sans-serif font where the letter 'S' is uniquely designed. It is formed by two horizontal bars: a blue bar on top and a grey bar on the bottom, which are slightly offset from each other. To the right of the 'S', the company name 'SCHLAGE' is written vertically in a smaller, all-caps black font. Below the 'S', the words 'PLANNERS SURVEYORS LANDSCAPE ARCHITECTS' are stacked in a smaller black font. At the bottom, the address '14920 West 107th Street • Lenexa, Kansas 66215' is followed by the phone number '(913) 492-5158 • Fax: (913) 492-8400'. The website 'WWW.SCHLAGEASSOCIATES.COM' is also listed. A small note at the bottom right indicates 'Missouri State Certificates of Authority #E200203800-F #LAC2001005237 #LS2002008859-F'.

CURB LEGEND	
	CURB & GUTTER - EXISTING
	TYPE "CG-2" CURB & GUTTER
	TYPE "CG-2" DRY CURB & GUTTER
	TRANSITION "CG-2" TO "CG-2 DRY"

SCALE: 1" = 10'

**INTERSECTION DETAILS**

SHEET **8**

**MISSOURI GEOGRAPHIC REFERENCE SYSTEM  
BENCHMARK:**

BM JA-45, IS A KC METRO ALUMINUM GRS DISK SET IN CONCRETE AND  
ABOUT 3 INCHES BELOW THE PAVEMENT ON THE SHOULDER OF SE  
RANSON ROAD. IT IS STAMPED JA45, 1987.

ELEV. = 1046.25

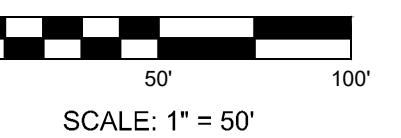
PREPARED BY:  
 STATE OF MISSOURI  
 JAMES L. LONG  
 NUMBER PE-2014010495  
 PROFESSIONAL ENGINEER  
 4/21/2022

SCHLAGEL & ASSOCIATES, P.A.

**CORNERSTONE AT BAILEY FARMS, FIRST PLAT  
STREET, STORMWATER, AND MASTER DRAINAGE  
PLAN**  
**SE BAILEY ROAD AND SE RANSON ROAD  
LEE'S SUMMIT, MISSOURI**

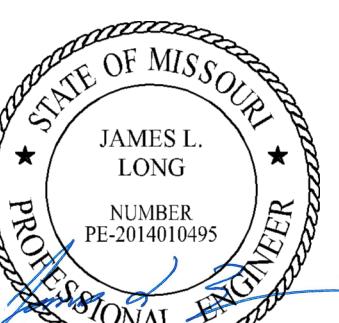
MASTER DRAINAGE PLAN-DRAINAGE AREA MAP		DESCRIPTION
DRAWN BY: JRL	REVISION DATE: 02/05/2022	PER CITY COMMENTS DATED 01/10/2022
CHECKED BY: JLL	4/20/2022	PER CITY COMMENTS DATED 02/28/2022
DATE PREPARED: 12/20/2021		
PROJ. NUMBER: 21-136		

N



9



PREPARED BY:  
  
 JAMES L.  
LONG  
NUMBER  
PE-2014010495  
4/21/2022

SCHLAGEL & ASSOCIATES, P.A.

CORNERSTONE AT BAILEY FARMS, FIRST PLAT  
STREET, STORMWATER, AND MASTER DRAINAGE  
PLAN  
SE BAILEY ROAD AND SE RANSON ROAD  
LEE'S SUMMIT, MISSOURI

10-YEAR RUNOFF CALCULATIONS

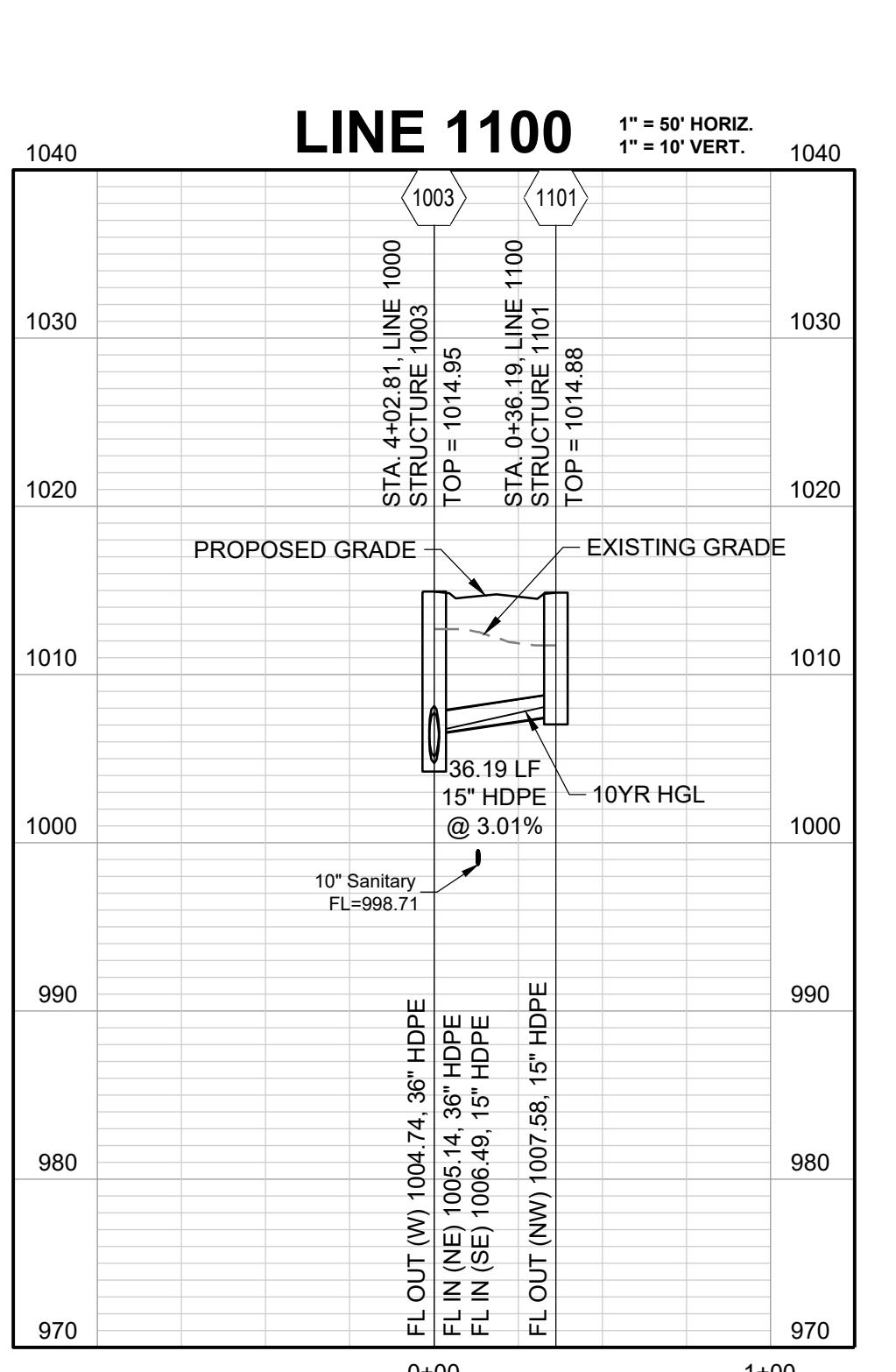
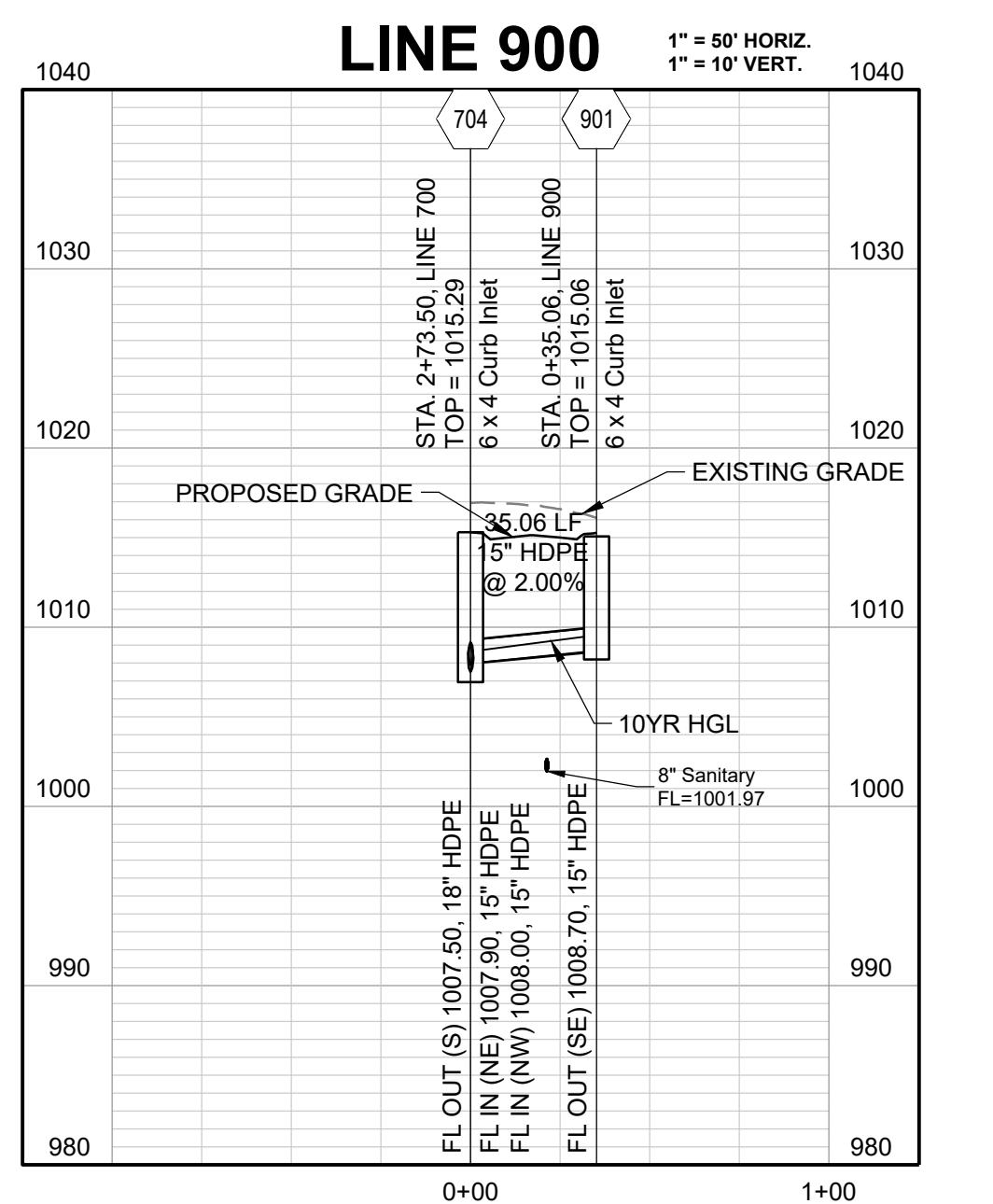
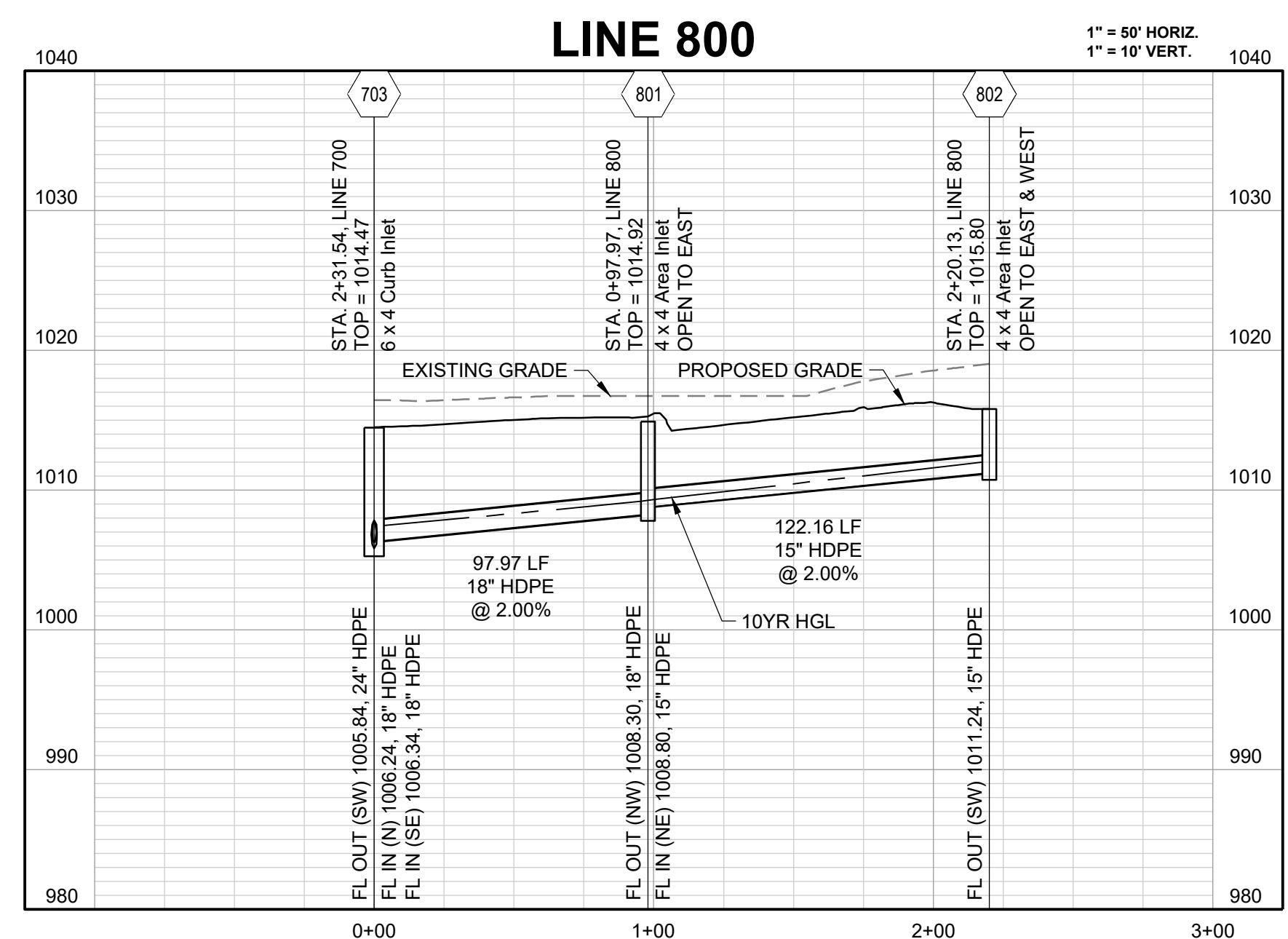
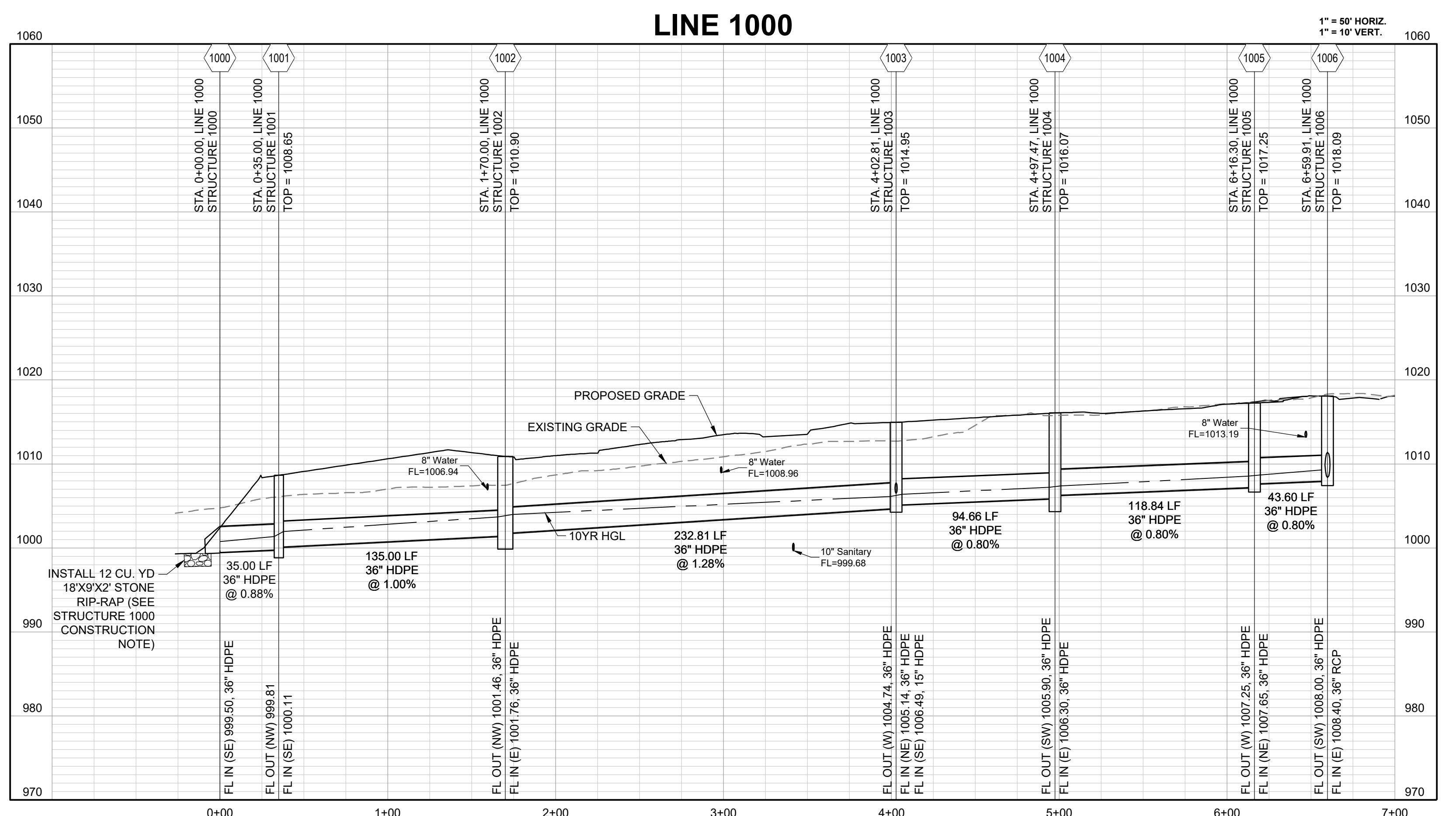
Design Storm:		10	"K" Value:		1.00	"F" Factor:		1.00																
<b>Runoff Calculations</b>																								
Inlet # Area "C" Value Cumul. Area Cumul. Cx A Tc Intensity Runoff To Inlet Cumul. Runoff Pipe Cap. Pipe Vel. Up Piped Inlet 1 Up Piped Inlet 2 Up Area Cx A Up Inlet Pipe Type "n" Value Pipe Size Length Slope % Drop Inlet FL Up FL Down Inlet Top																								
DS TAILWATER @ STR #200																								
LINE 200																								
201	0.00	0.66	8.09	5.34	7.7	6.60	0.00	35.27	34.42	7.01	0.00	201	200	HDPE	0.012	30	184.94	0.60	0.20	1002.61	1001.50	1008.75		
202	0.69	0.66	8.09	5.34	7.4	6.68	3.04	35.64	39.74	8.10	0.00	202	201	HDPE	0.012	30	135.90	0.80	1.50	1003.90	1002.81	1013.49		
203	0.39	0.66	7.40	4.88	7.3	6.70	1.72	32.71	21.92	6.98	0.00	203	202	HDPE	0.012	24	35.04	0.80	1.50	1005.68	1005.40	1013.50		
204	0.51	0.66	7.01	4.63	7.2	6.74	2.27	31.20	21.92	6.98	301	1.85	1.22	204	HDPE	0.012	24	75.49	0.80	0.50	1006.78	1006.18	1015.11	
205	0.55	0.66	4.65	3.07	7.1	6.76	2.46	20.76	21.92	6.98	0.00	205	204	HDPE	0.012	24	35.00	0.80	0.50	1007.56	1007.28	1015.11		
206	0.14	0.66	4.10	2.71	7.0	6.79	0.63	18.38	21.92	6.98	0.00	206	205	HDPE	0.012	24	41.74	0.80	0.20	1008.40	1008.06	1015.83		
DS TAILWATER @ STR #700																								
701	0.00	0.66	1.98	1.31	5.7	7.14	0.00	9.33	21.92	6.98	0.00	701	700	HDPE	0.012	24	61.51	0.80	0.50	1000.13	999.64	1009.24		
702	0.24	0.66	1.98	1.31	5.5	7.20	1.14	9.40	34.66	11.03	0.00	702	701	HDPE	0.012	24	135.04	2.00	0.30	1003.33	1003.63	1014.47		
703	0.32	0.66	1.74	1.15	5.5	7.21	1.52	8.28	34.66	11.03	901	0.74	0.49	703	702	HDPE	0.012	24	35.00	2.00	0.40	1004.33	1003.63	1014.47
704	0.30	0.66	0.68	0.45	5.4	7.23	1.43	3.24	19.71	11.15	0.00	704	703	HDPE	0.012	18	41.96	3.00	0.40	1005.99	1004.73	1015.29		
705	0.38	0.66	0.38	0.25	5.0	7.35	1.84	1.84	9.90	8.06	0.00	705	704	HDPE	0.012	15	195.23	2.00	0.40	1010.30	1006.39	1017.49		
706	0.88	0.66	0.88	0.58	5.0	7.35	4.27	4.27	9.90	8.06	0.00	706	705	HDPE	0.012	15	38.73	2.00	N/A	1011.47	1010.70	1017.78		
Drop in Inlet 703																								
801	0.41	0.66	1.12	0.74	5.3	7.28	1.97	5.38	16.09	9.11	0.00	801	703	HDPE	0.012	18	97.97	2.00	0.50	1006.79	1004.83	1014.92		
802	0.71	0.66	0.71	0.47	5.0	7.35	3.45	3.45	9.90	8.06	0.00	802	801	HDPE	0.012	15	122.16	2.00	N/A	1009.74	1007.29	1015.80		
Drop in Inlet 704																								
901	0.74	0.66	0.74	0.49	5.0	7.35	3.59	3.59	9.90	8.06	0.00	901	704	HDPE	0.012	15	35.06	2.00	N/A	1007.19	1006.49	1015.06		
Drop in Inlet 704																								
DS TAILWATER @ STR #1000																								
1001	0.00	0.66	14.65	10.02	8.3	6.45	0.00	64.59	67.78	9.59	0.00	1001	1000	HDPE	0.012	36	35.00	0.88	0.30	999.49	999.18	1010.90		
1002	1.18	0.66	14.65	10.02	8.1	6.50	0.00	65.12	72.26	10.22	0.00	1002	1001	HDPE	0.012	36	135.00	1.00	0.30	999.79	999.70	1010.90		
1003	0.11	0.66	14.65	10.02	7.7	6.60	5.14	66.16	64.63	9.14	1101	0.30	0.20	1003	1002	HDPE	0.012	36	232.81	0.80	0.40	1003.30	1001.44	1014.95
1004	0.15	0.66	13.17	9.04	7.5	6.65	0.48	60.10	64.63	9.14	0.00	1004	1003	HDPE	0.012	36	94.66	0.80	0.40	1004.46	1003.70	1016.07		
1005	0.06	0.66	13.06	8.97	7.3	6.70	0.66	60.11	64.63	9.14	0.00	1005	1004	HDPE	0.012	36	118.84	0.80	0.40	1005.81	1004.66	1017.25		
Drop in Inlet 1002																								
1101	0.30	0.66	0.30	0.20	5.0	7.35	1.46	1.46	12.12	9.88	0.00	1101	1002	HDPE	0.012	15	36.19	3.00	N/A	1003.97	1002.89	1014.88		

100-YEAR RUNOFF CALCULATIONS

Design Storm:		100	"K" Value:		1.25	"F" Factor:		1.00														
<b>Runoff Calculations</b>																						
Inlet # Area "C" Value Cumul. Area Cumul. Cx A Tc Intensity Runoff To Inlet Cumul. Runoff Pipe Cap. Pipe Vel. Up Piped Inlet 1 Up Piped Inlet 2 Up Area Cx A Up Inlet Pipe Type "n" Value Pipe Size Length Slope % Drop Inlet FL Up FL Down Inlet Top																						
DS TAILWATER @ STR #200																						
LINE 200																						
201	0.00	0.66	8.09	5.34	7.7	6.60	0.00	35.27	34.42	7.01	0.00	201	200	HDPE	0.012	30	184.94	0.60	0.20	1002.61	1001.50	1008.75
202	0.69	0.66	8.09	5.34	7.4	6.68	3.04	35.64	39.74	8.10	0.00	202	201	HDPE	0.012	30	135.90	0.80	1.50	1003.90	1002.81	







**CORNERSTONE AT BAILEY FARMS, FIRST PLAT  
STREET, STORMWATER, AND MASTER DRAINAGE  
PLAN**

**SE BAILEY ROAD AND SE RANSON ROAD  
LEE'S SUMMIT, MISSOURI**

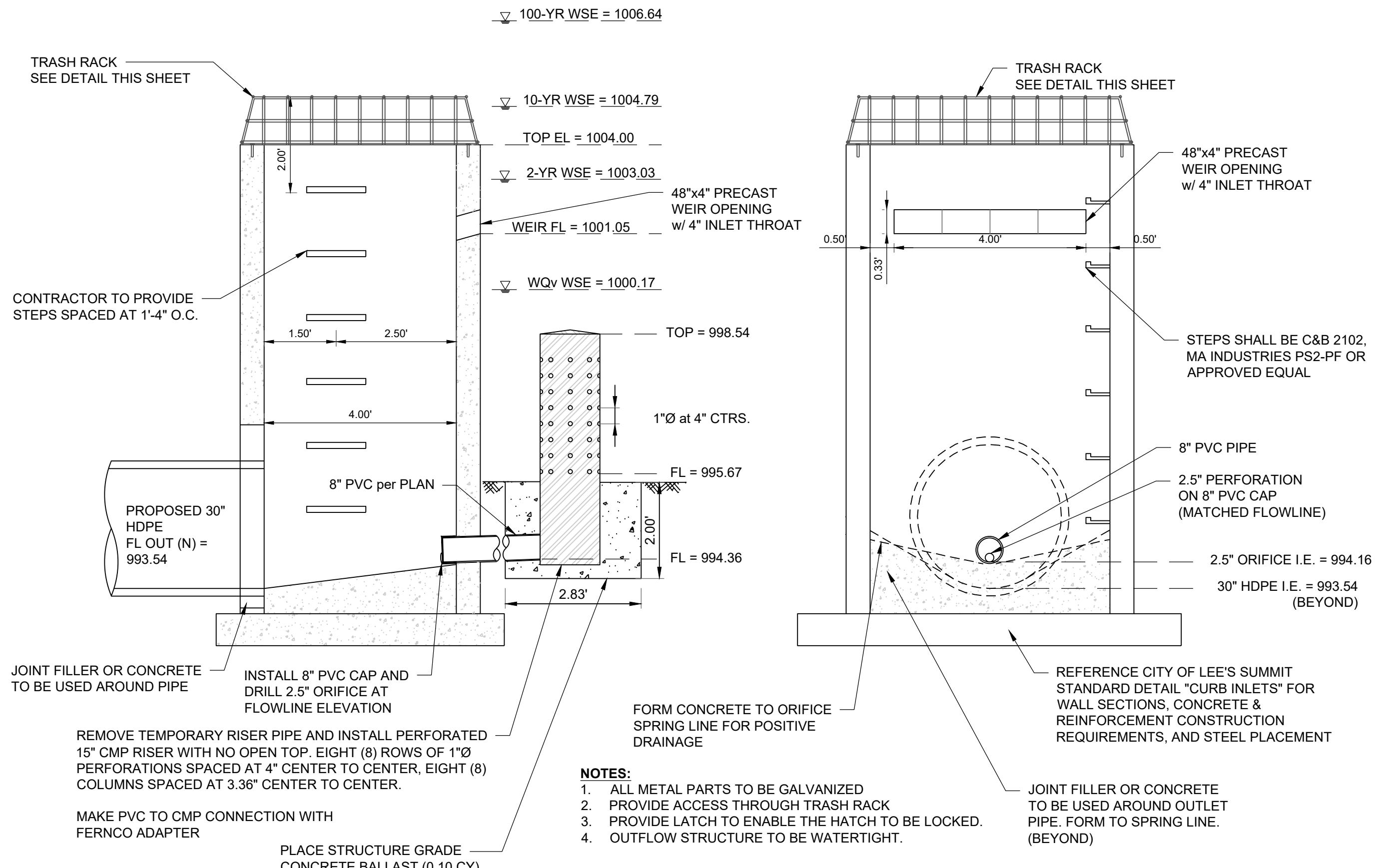
# SE BAILEY ROAD AND SE RANSON ROAD LEE'S SUMMIT, MISSOURI

Dr

13

**SCHLAGE**  
ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS  
14920 West 107th Street • Lenexa, Kansas 66215  
(913) 492-5158 • Fax: (913) 492-8400  
[WWW.SCHLAGELASSOCIATES.COM](http://WWW.SCHLAGELASSOCIATES.COM)  
Missouri State Certificates of Authority  
#E2002003800-F #LAC2001005237 #LS20020083859-F

CHLAGEL & ASSOCIATES, P.A.



# **WATER QUALITY STRUCTURE 3901**

---

**(NOT TO SCALE)**

**DETENTION STORAGE:**  
100 YEAR, 24 HR. RAINFALL - MAXIMUM WSE = 1006.64  
(SEE FINAL STORMWATER MGMT. PLAN)

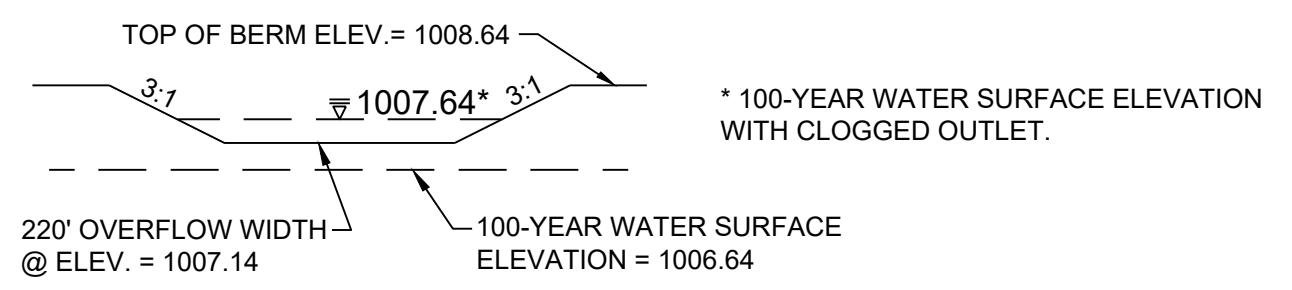
EMERGENCY SPILLWAY FLOWLINE SET AT  
0.5 FEET ABOVE MAX. WSE, SPILLWAY ELEV. = 1007.14

**EMERGENCY SPILLWAY DESIGN:**  
Q(100)= 260.19 CFS, Q=CLH<sup>(3/2)</sup>, C=3.33,  
L= 220 FT., 260.19 CFS = 3.33 \* 220 FT. \* (H<sup>(3/2)</sup>), H= 0.5 FT.

## WATER SURFACE ELEVATION THROUGH SPILLWAY = OUTLET HEAD + FRICTION HEAD

+ ONE (1) FOOT OF FREEBOARD = 1008.64  
SET BASIN TOP AT 1008.64

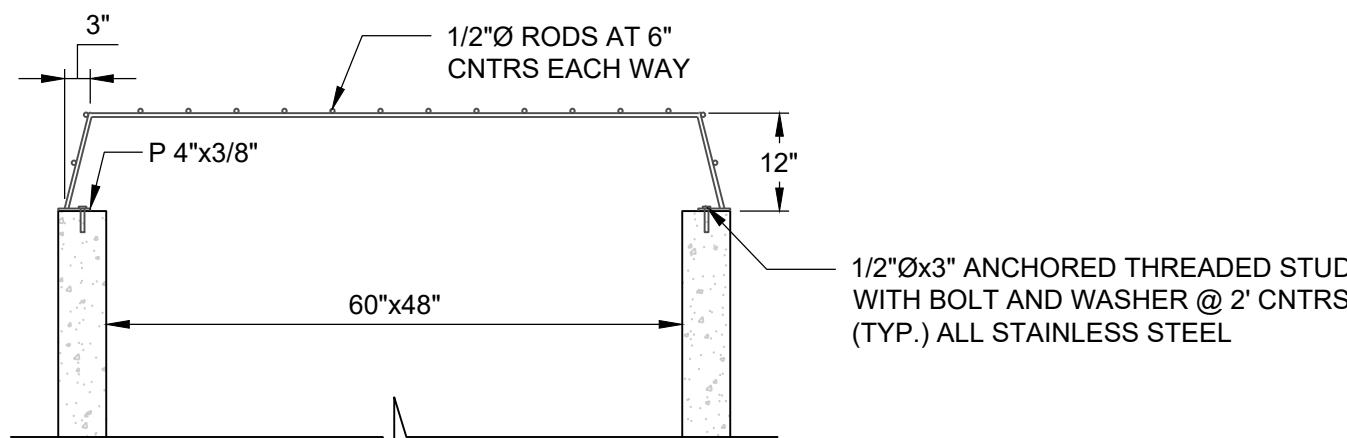
DETENTION BASIN STORAGE VOLUME	
DESIGN STORM	VOLUME (CUBIC FEET)
2-YEAR	164,409
10-YEAR	249,634
100-YEAR	352,702



## EMERGENCY SPILLWAY DESIGN

**NOTE:**

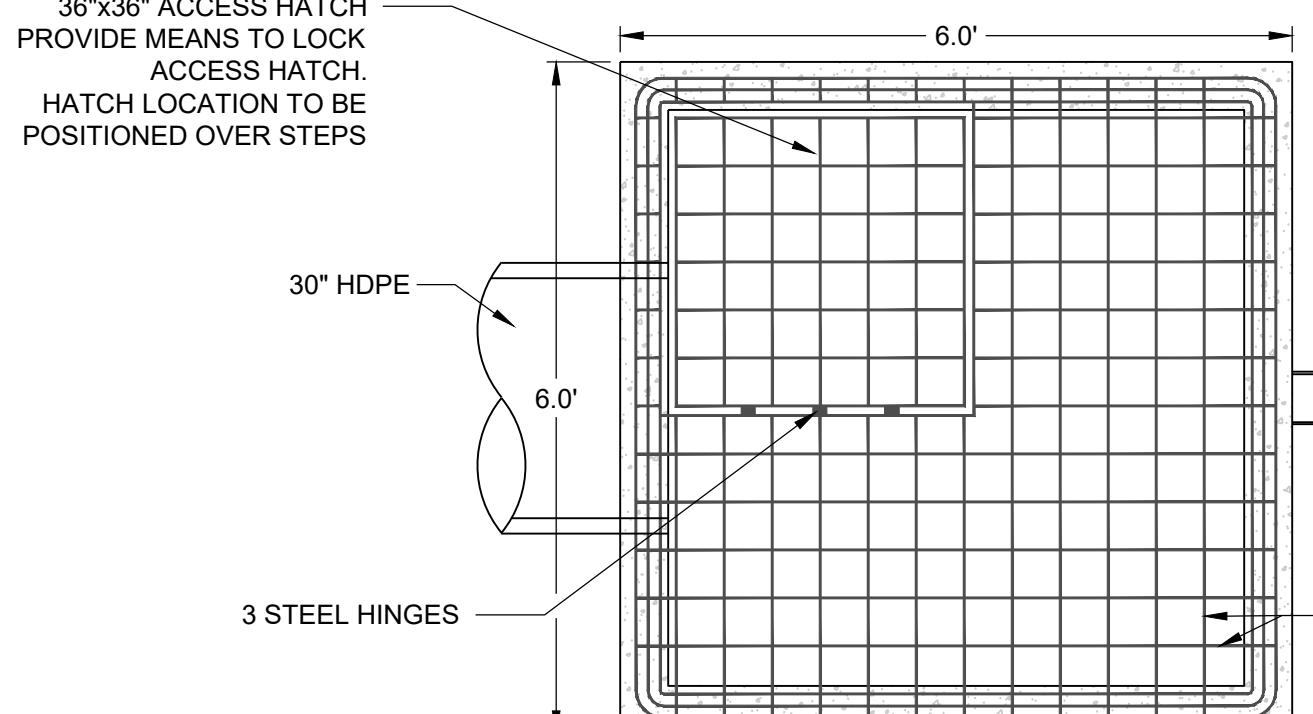
DETENTION / SEDIMENT BASIN SHALL BE CONSTRUCTED ALONG WITH ALL OTHER EROSION CONTROL AND SEDIMENT CONTROL DEVICES AND PRIOR TO ANY INFRASTRUCTURE BEING CONSTRUCTED



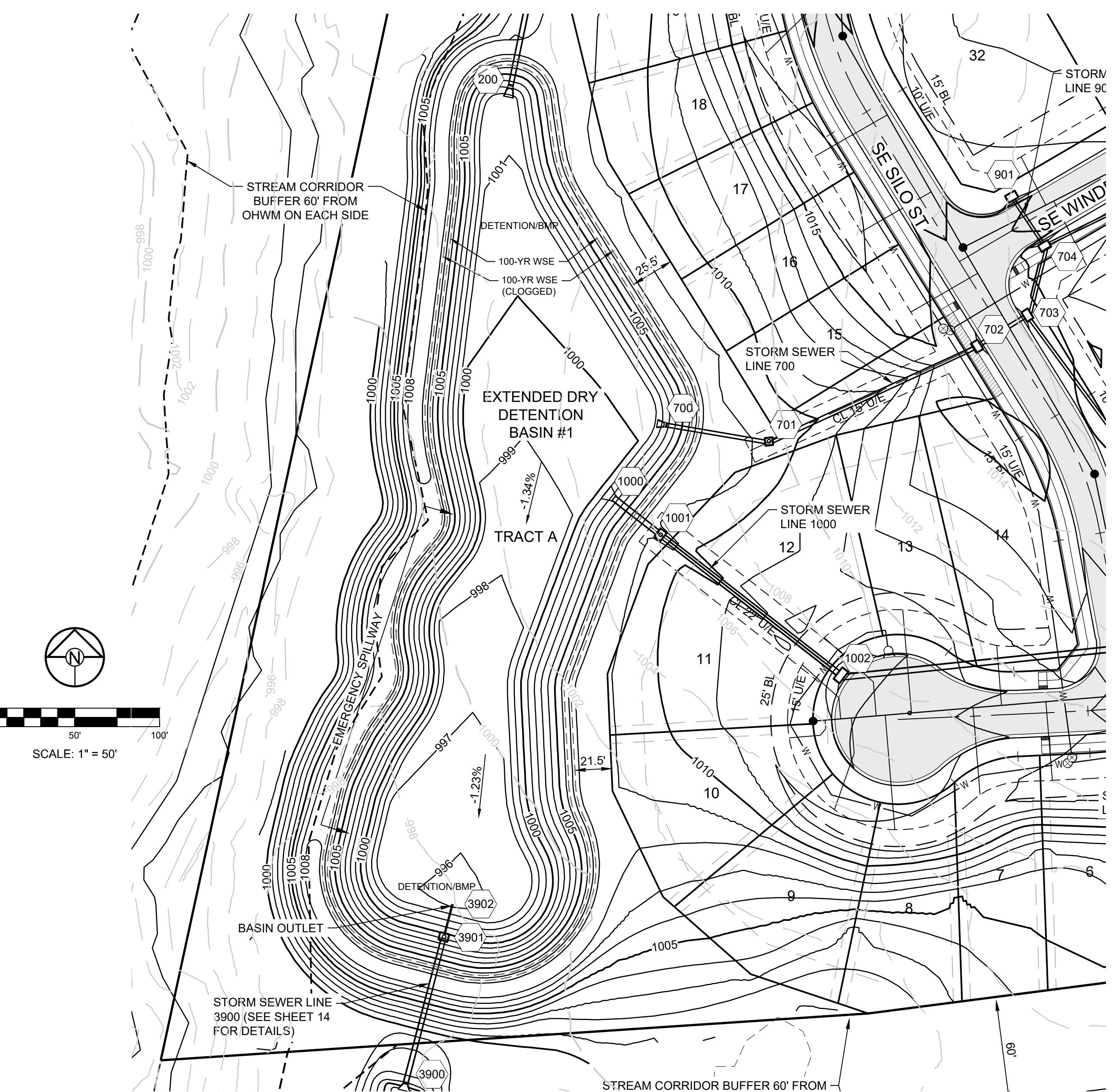
## **TRASH RACK DETAIL (NOT TO SCALE)**

**NOTES:**

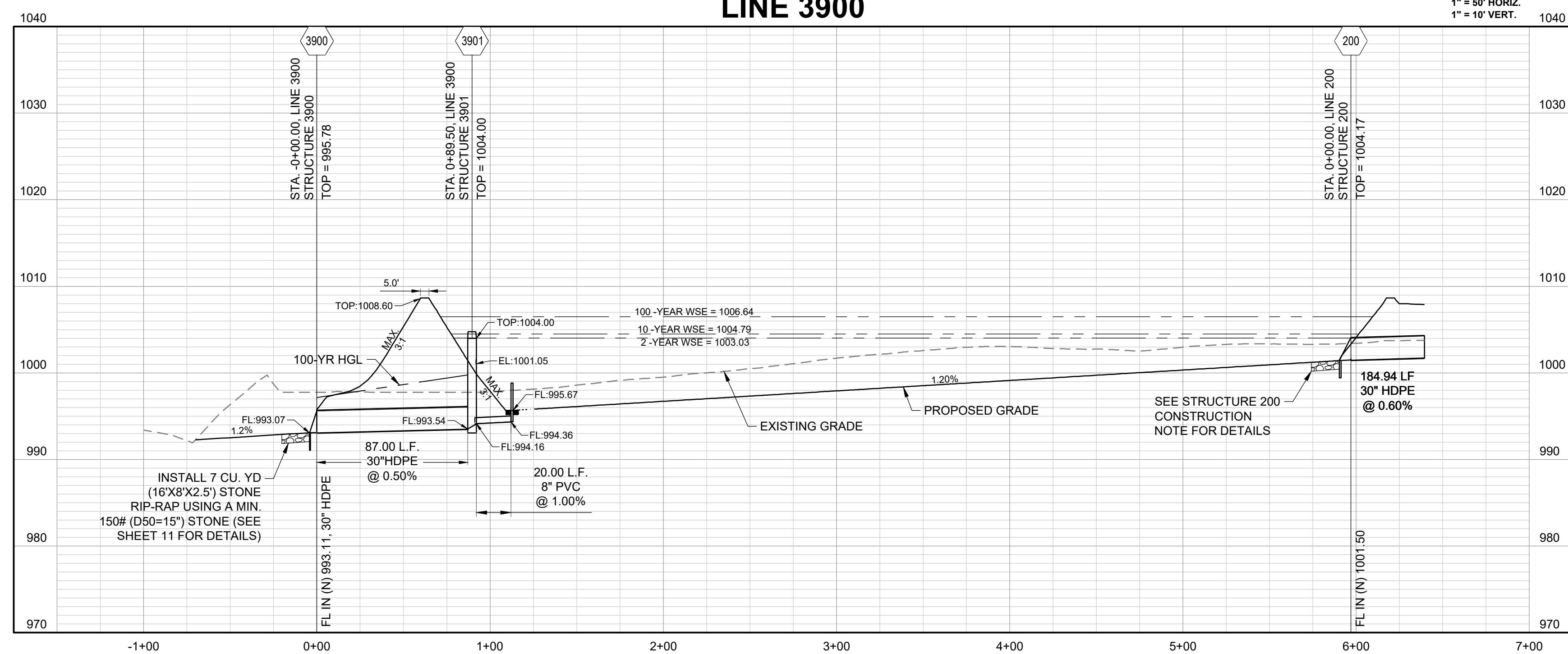
1. ALL METAL PARTS TO BE GALVANIZED.
2. PROVIDE ACCESS THROUGH TRASH RACK.
3. PROVIDE LATCH TO ENABLE THE HATCH TO BE LOCKED.
4. OUTFLOW STRUCTURE TO BE WATERTIGHT.
5. BAR GRATING TO BE INSTALLED OVER V-NOTCH CASTING AFTER THE REMOVAL OF THE TEMPORARY SEDIMENT PERFORATED STEEL PLATE. (RE: EROSION CONTROL PLAN)



8" PVC  
WELDED 1/2"Ø  
RODS AT 6"  
INRS EACH WAY



# **LINE 3900**



CORNERSTONE AT BAILEY FARMS, FIRST PLAT  
STREET, STORMWATER, AND MASTER DRAINAGE  
PLAN

SE BAILEY ROAD AND SE RANSON ROAD

The seal is circular with a rope-like outer border. Inside, the words "STATE OF MISSOURI" are written at the top, flanked by two stars. In the center, it says "JAMES L. LONG" above "NUMBER PE-2014010495". Below the number, there is handwritten blue ink that appears to read "James L. Long, P.E." The bottom half of the seal contains the words "PROFESSIONAL ENGINEER" in large letters.

**SCHLAGEL**

**PLANNERS SURVEYORS LANDSCAPE ARCHITECTS**

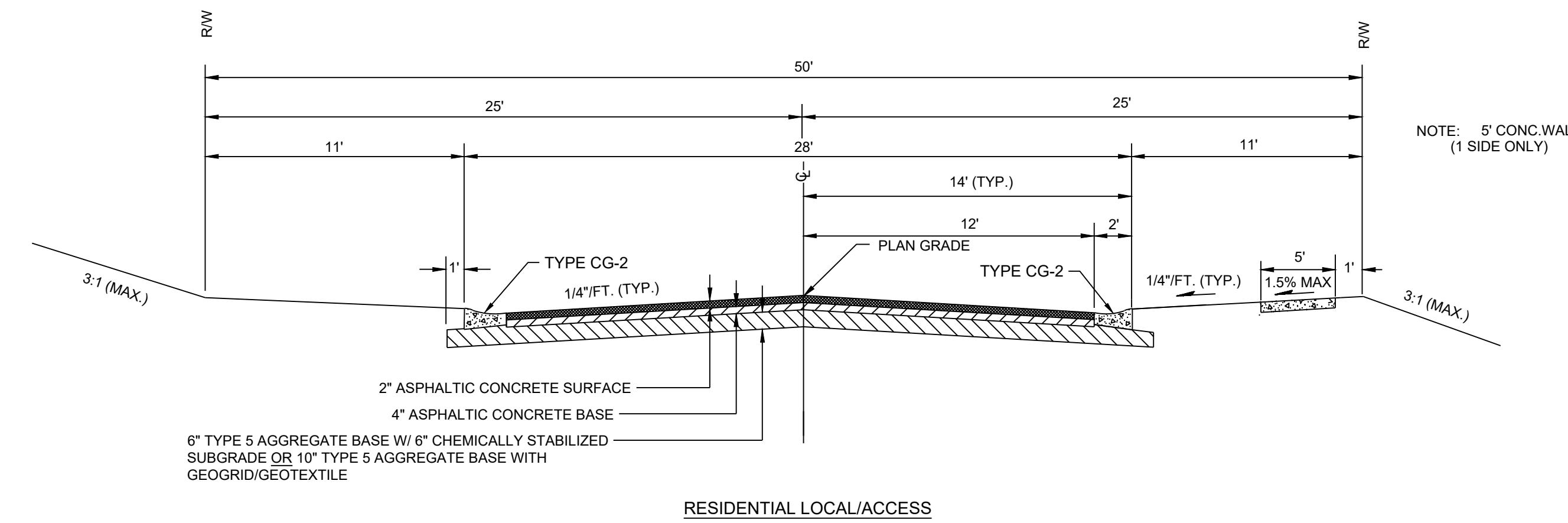
14920 West 107th Street • Lenexa, Kansas 66215  
(913) 492-5158 • Fax: (913) 492-8400  
[WWW.SCHLAGELASSOCIATES.COM](http://WWW.SCHLAGELASSOCIATES.COM)  
Missouri State Certificates of Authority

TABLE LS-2: MINIMUM ASPHALT PAVEMENT THICKNESSES

Street Classification	Pavement Option	AC Surface (in.)	AC Base (in.)	Aggregate Base (in.)	Chemical Subgrade Stabilization (in.)	Geogrid / Geotextile <sup>(1)</sup>
Residential Local/Access	A	2	4	6	6	--
	B	2	4	10	--	Geogrid / Geotextile
Residential Collector	A	2	5.5	6	9	--
	B	2	5.5	12	--	Geogrid / Geotextile
Commercial Industrial Local/Collector	A	2	7.5	6	9	--
	B	2	7.5	12	--	Geogrid / Geotextile

## Notes:

(1) Geogrid shall be polypropylene material and Geotextile shall be woven, polypropylene as shown in the City's Approved Products List

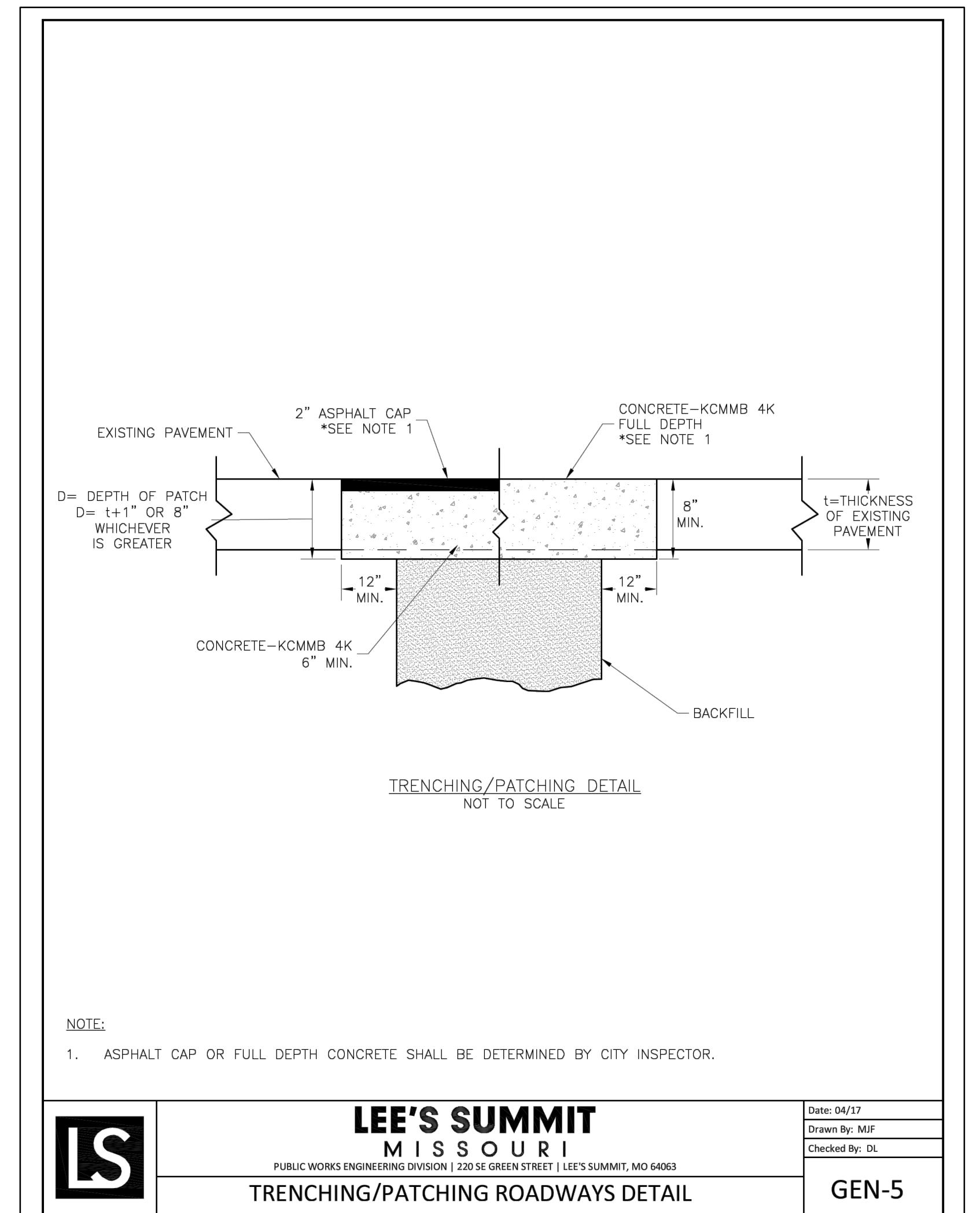


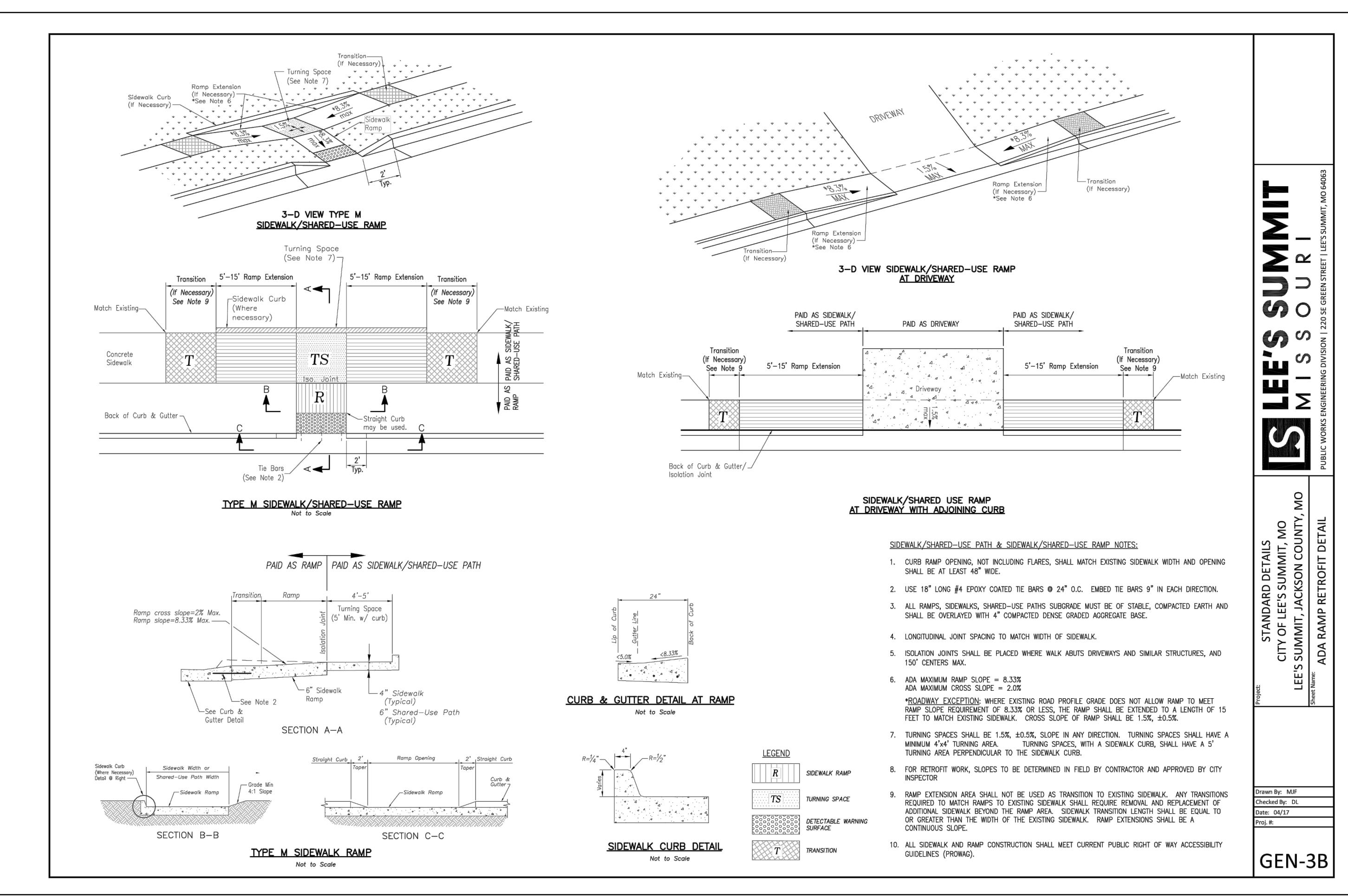
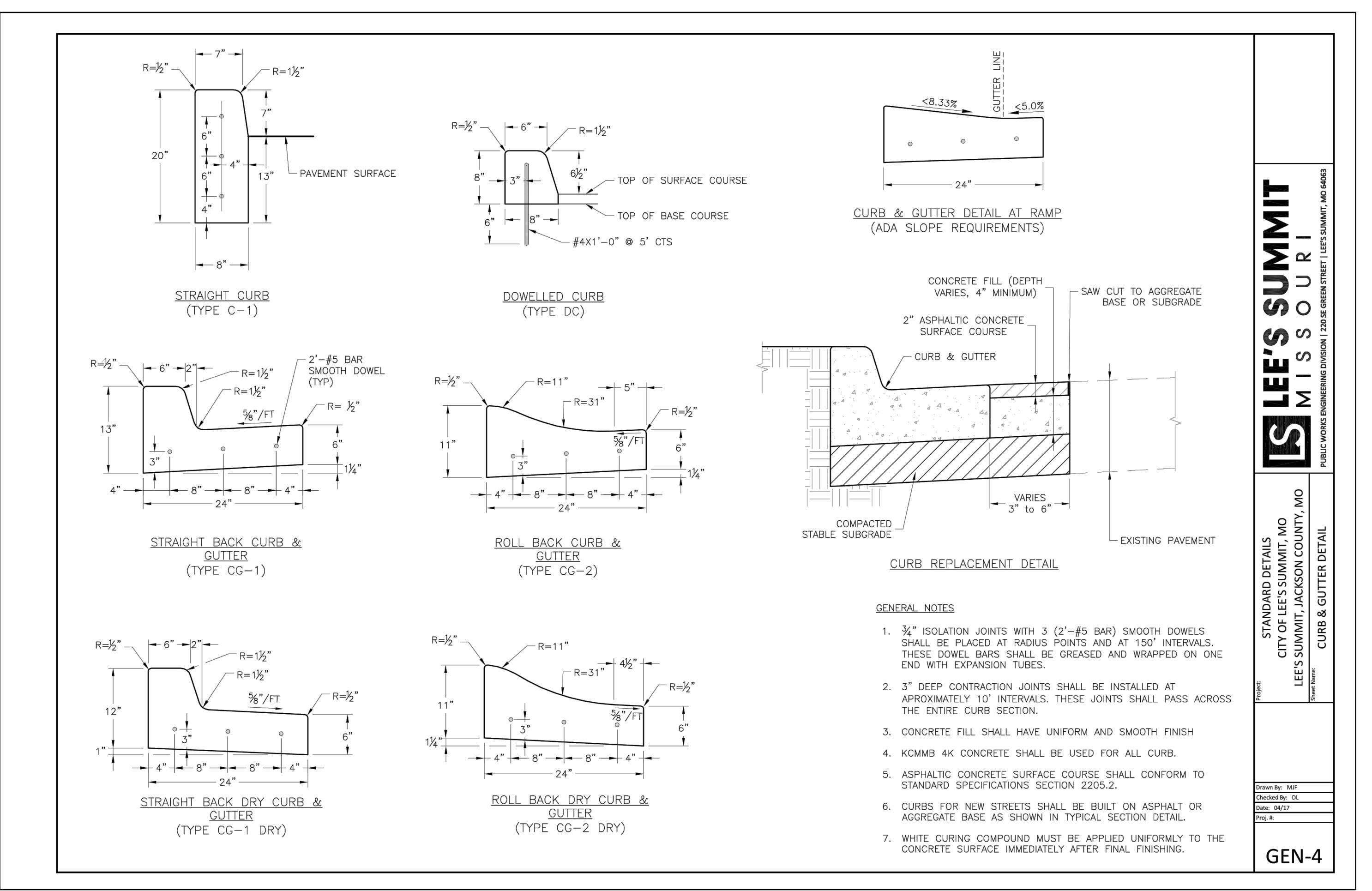
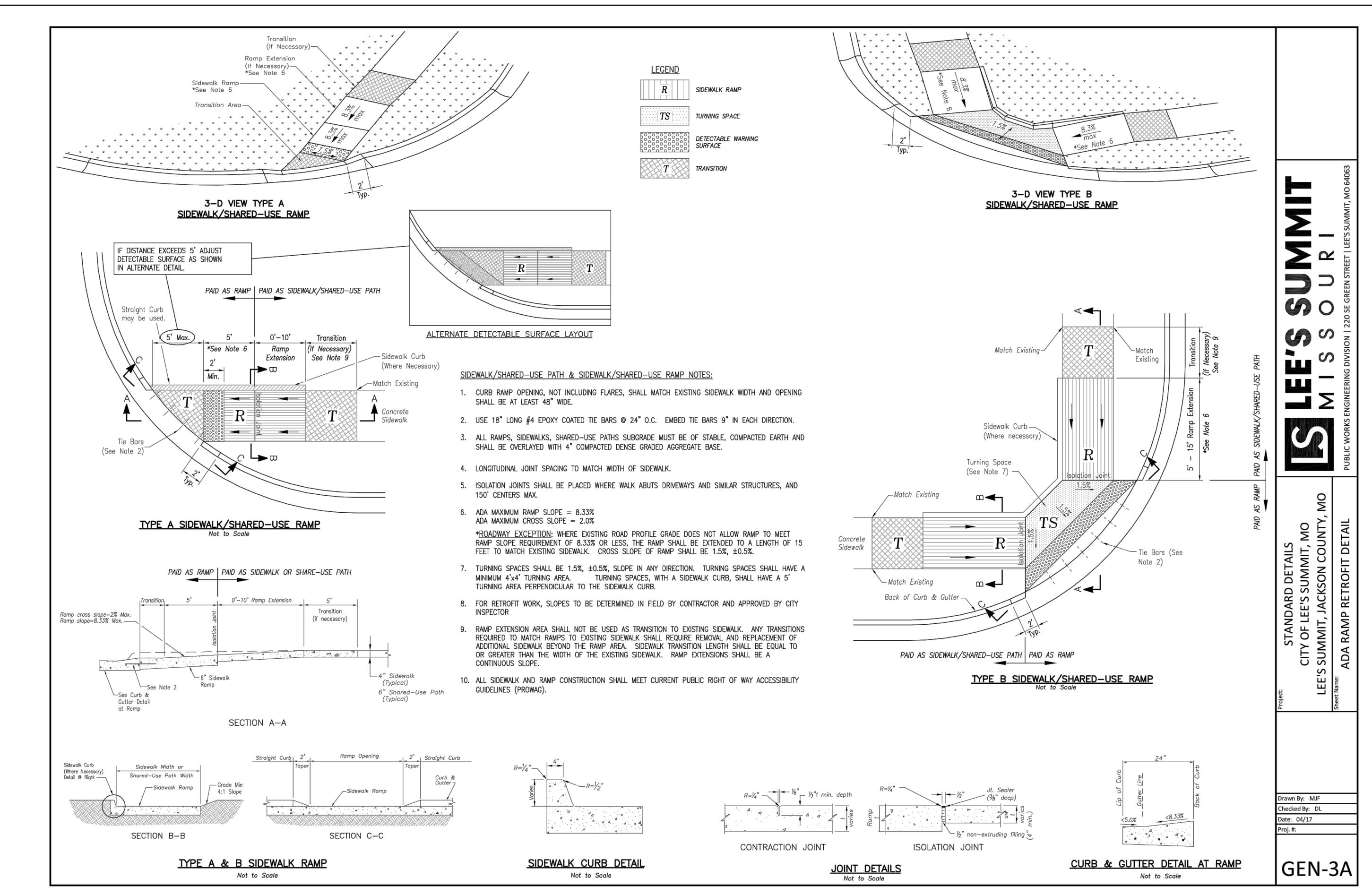
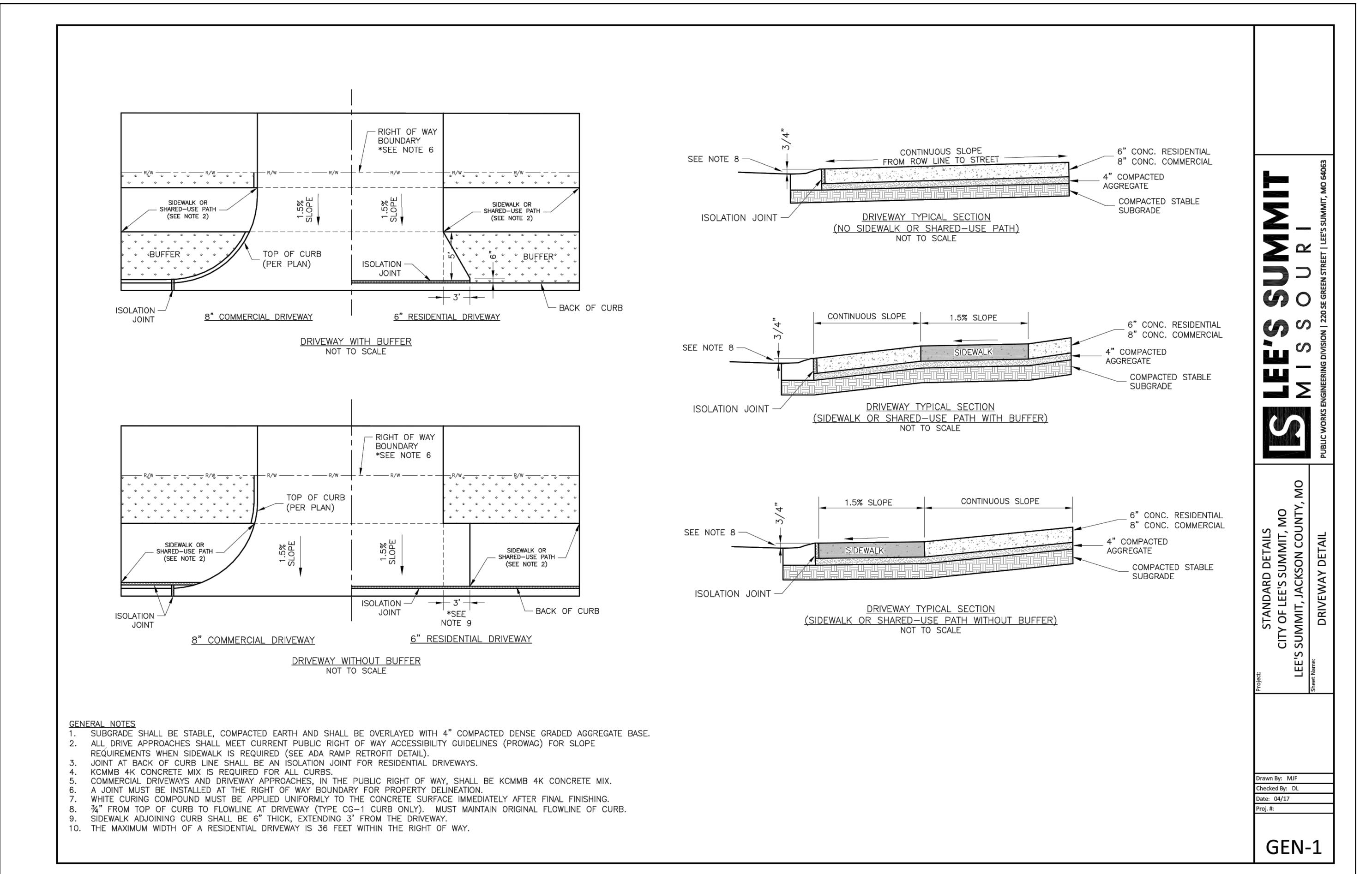
ASPHALT MIX:  
Surface: 5-01  
Base: 5-01

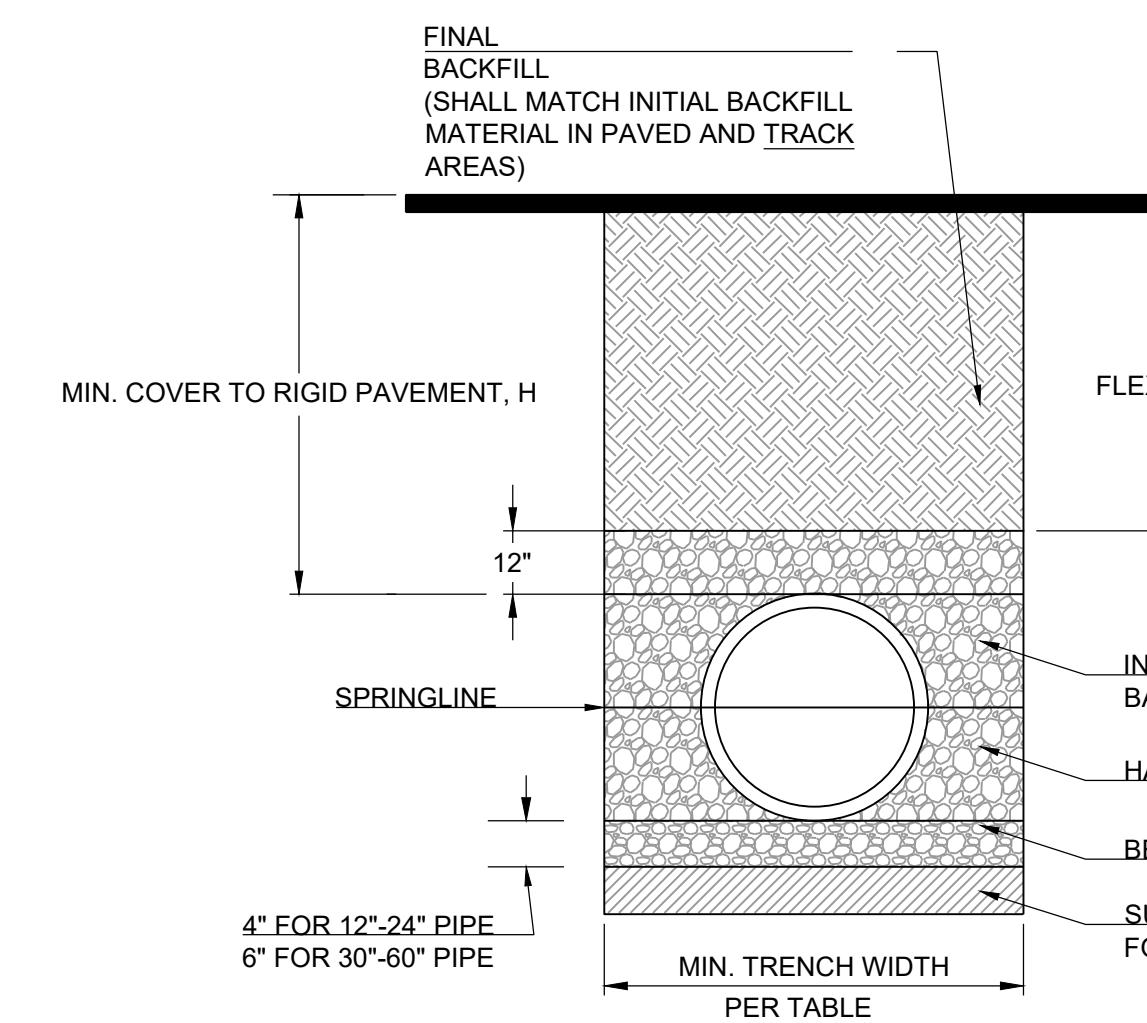
LS5200

17

July 2020







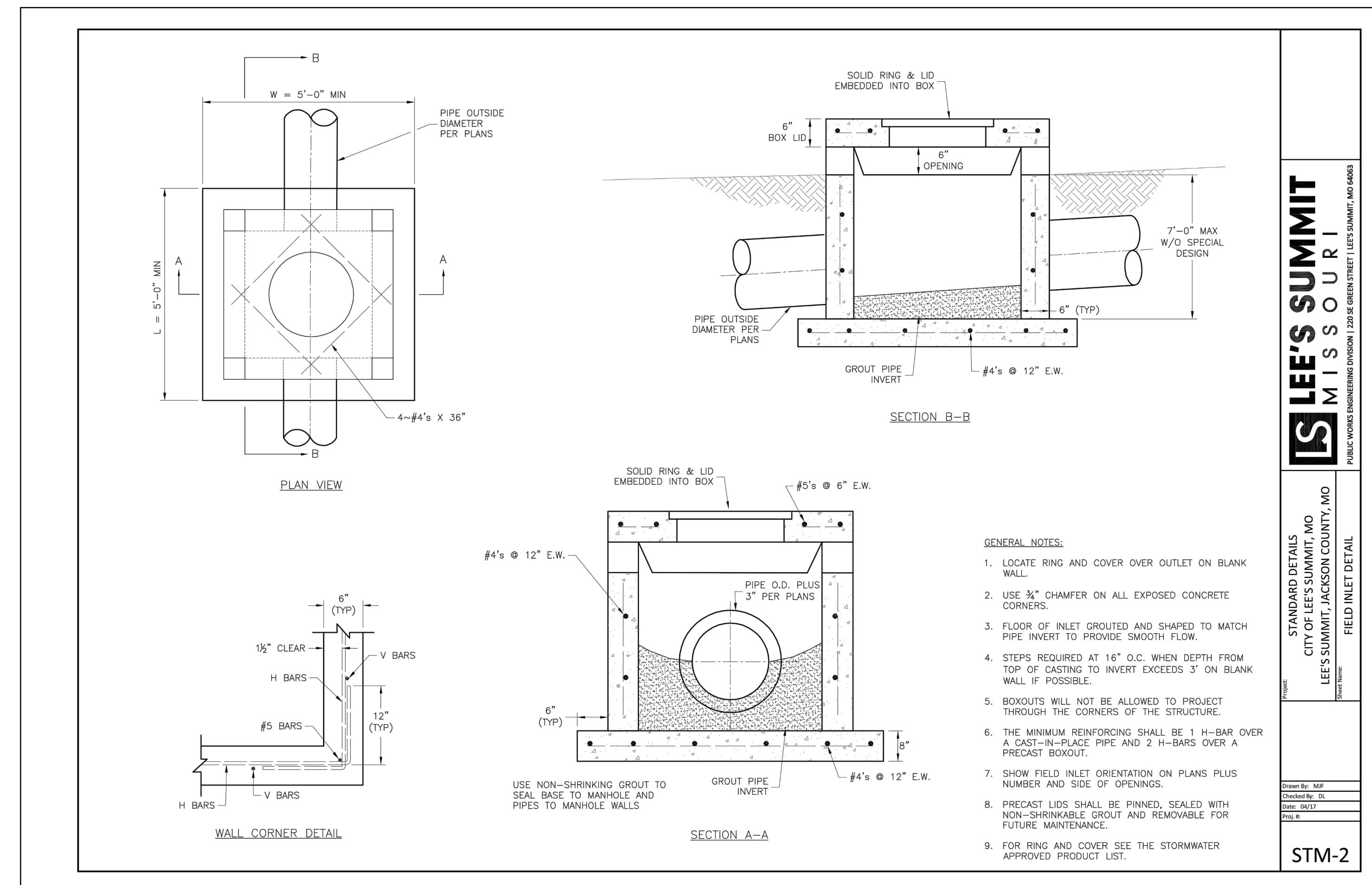
MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS		
SURFACE LIVE LOADING CONDITION		
PIPE DIAM.	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
54" - 60"	24"	60"

\* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

NOTES:

- ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION
- MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
- FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
- BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER, UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).
- INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
- MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

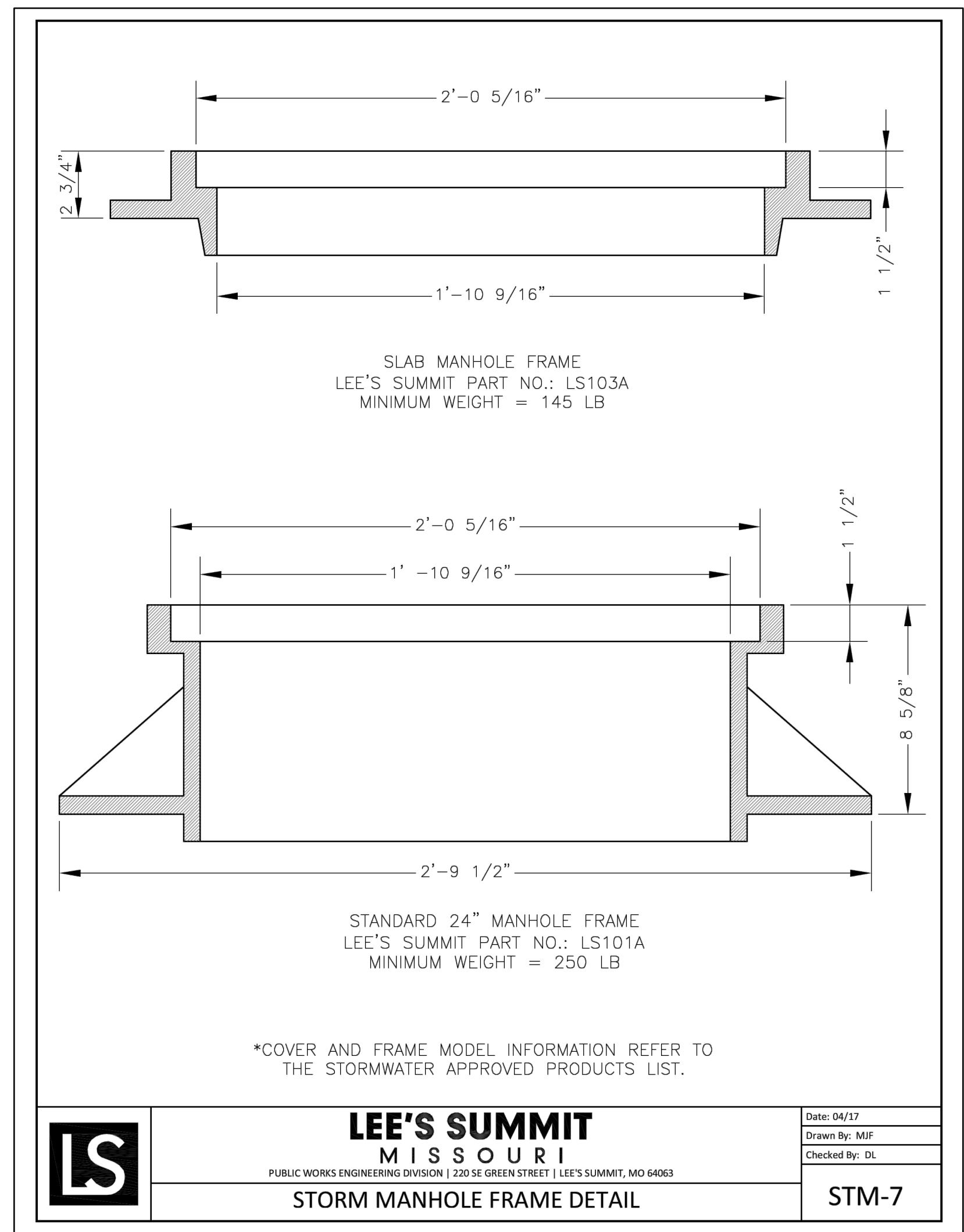


CORNERSTONE AT BAILEY FARMS, FIRST PLAT  
STREET, STORMWATER AND MASTER  
DRAINAGE PLAN  
SE BAILEY ROAD AND SE RANSON ROAD  
LEE'S SUMMIT, MISSOURI

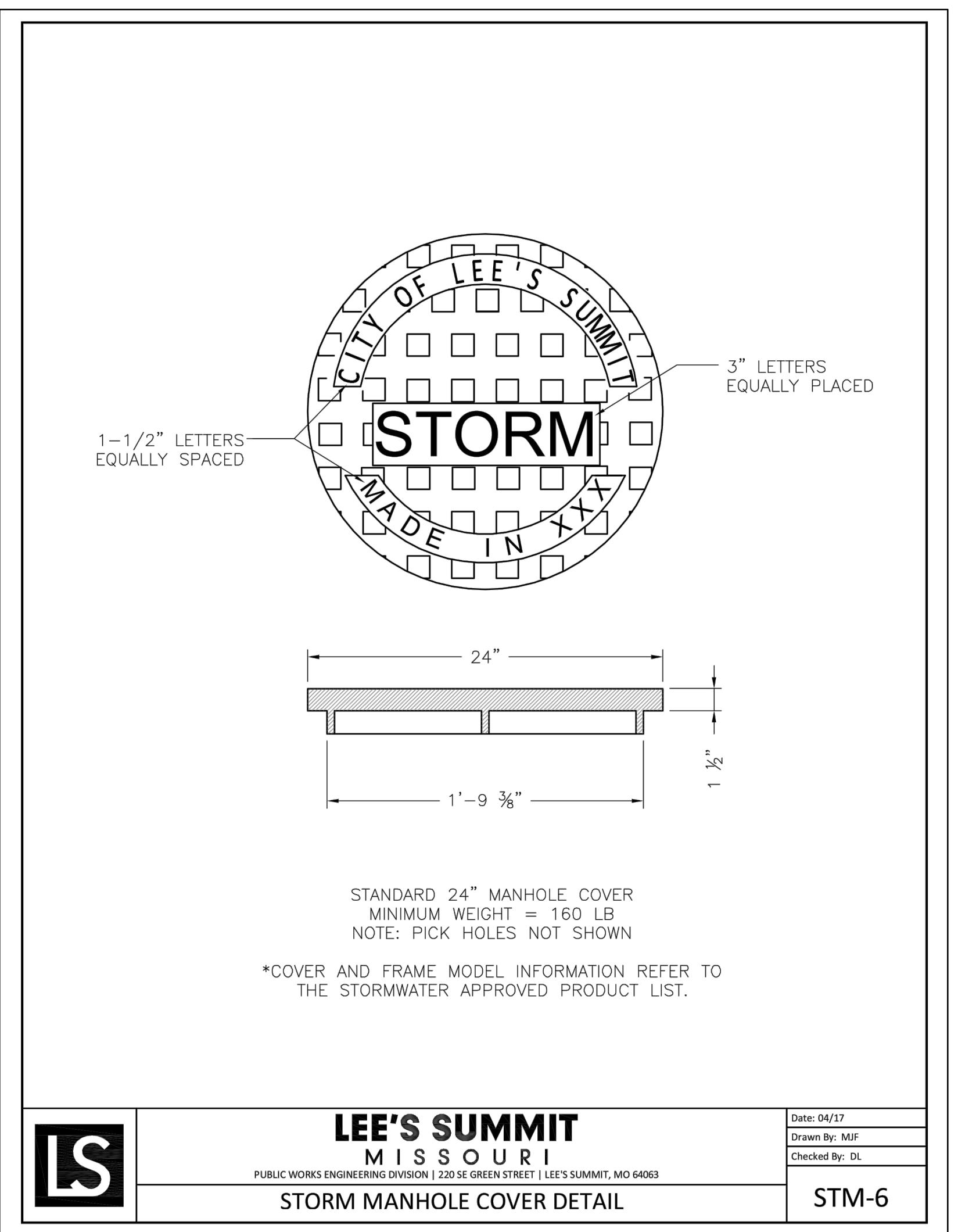
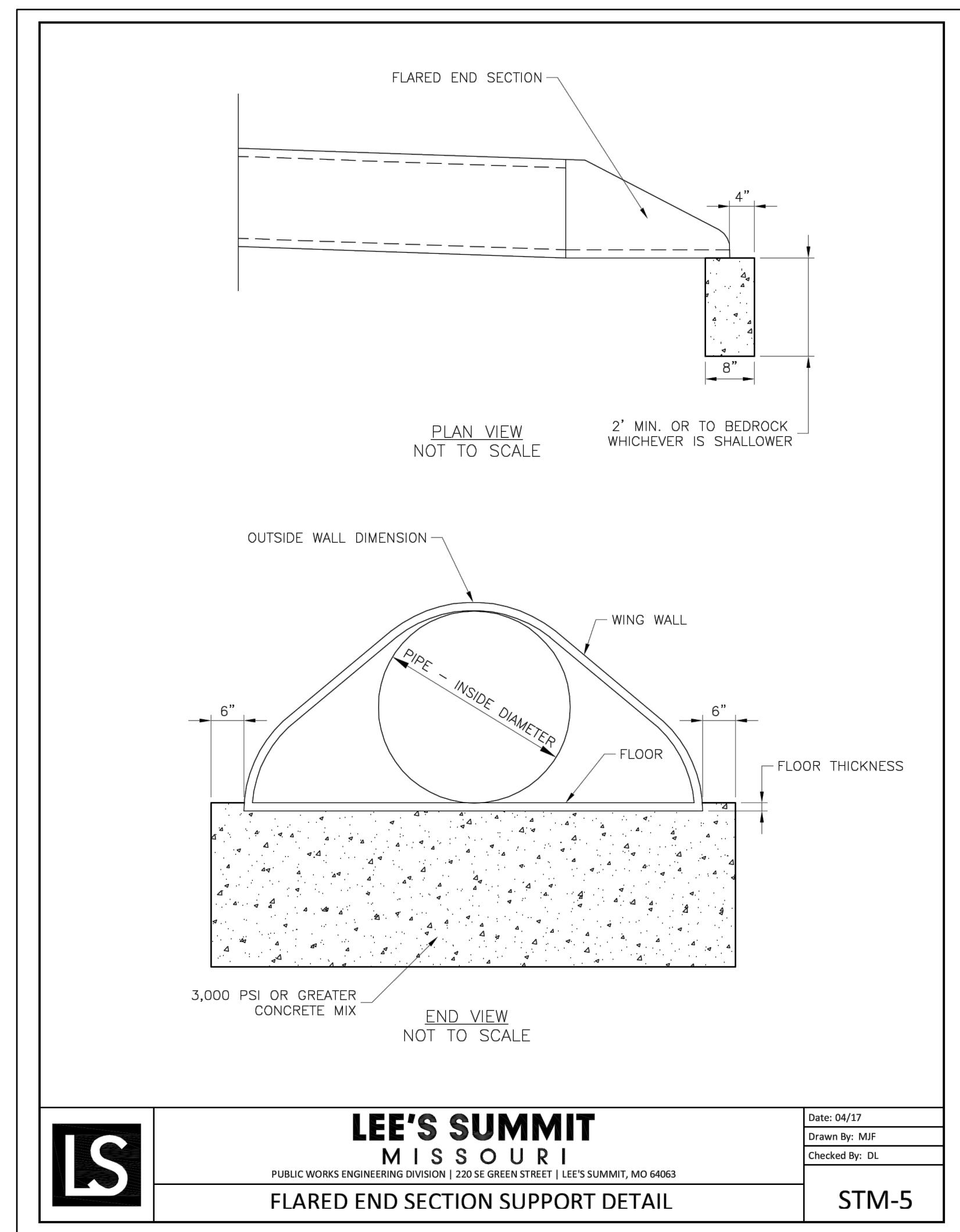
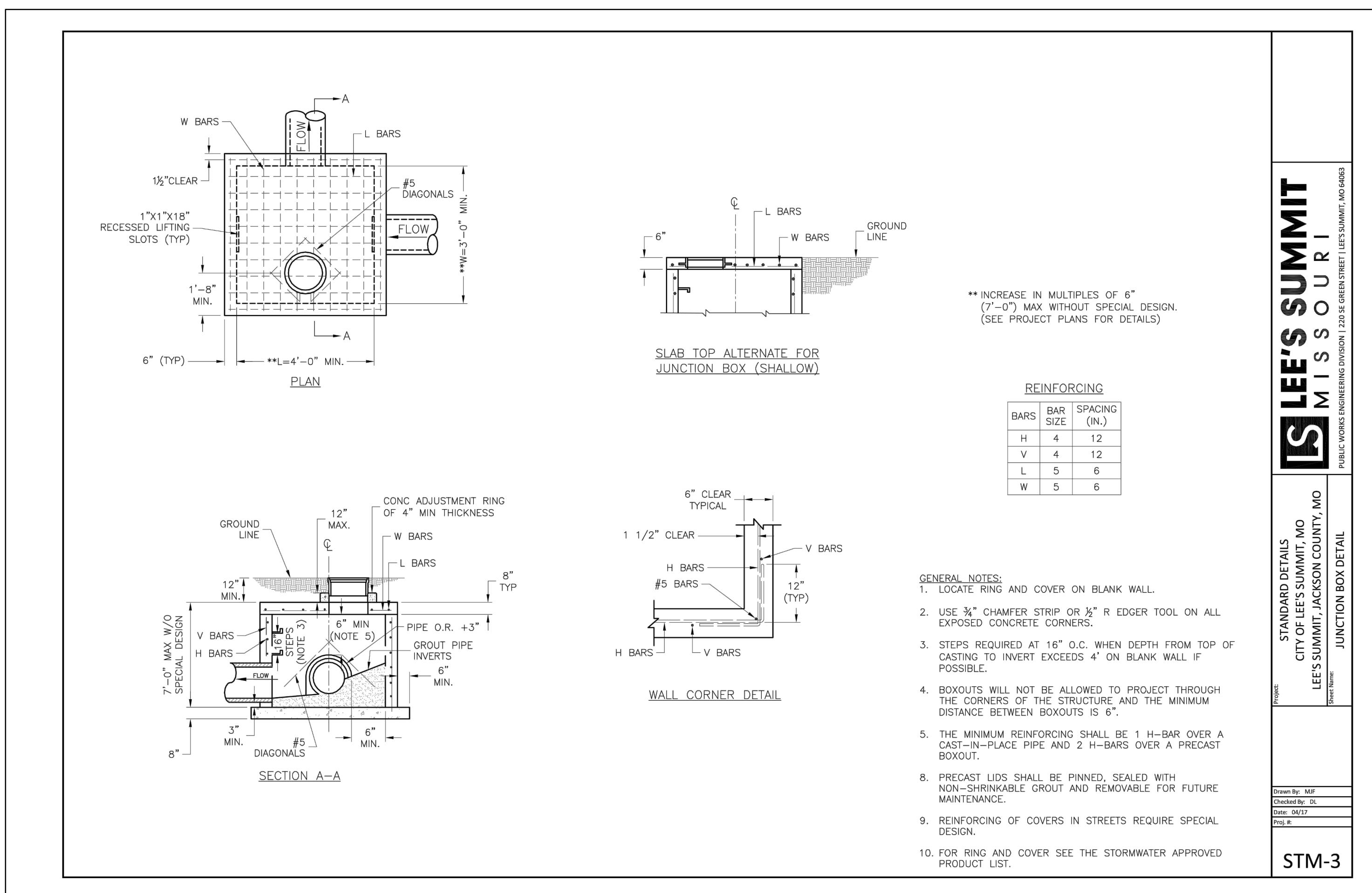
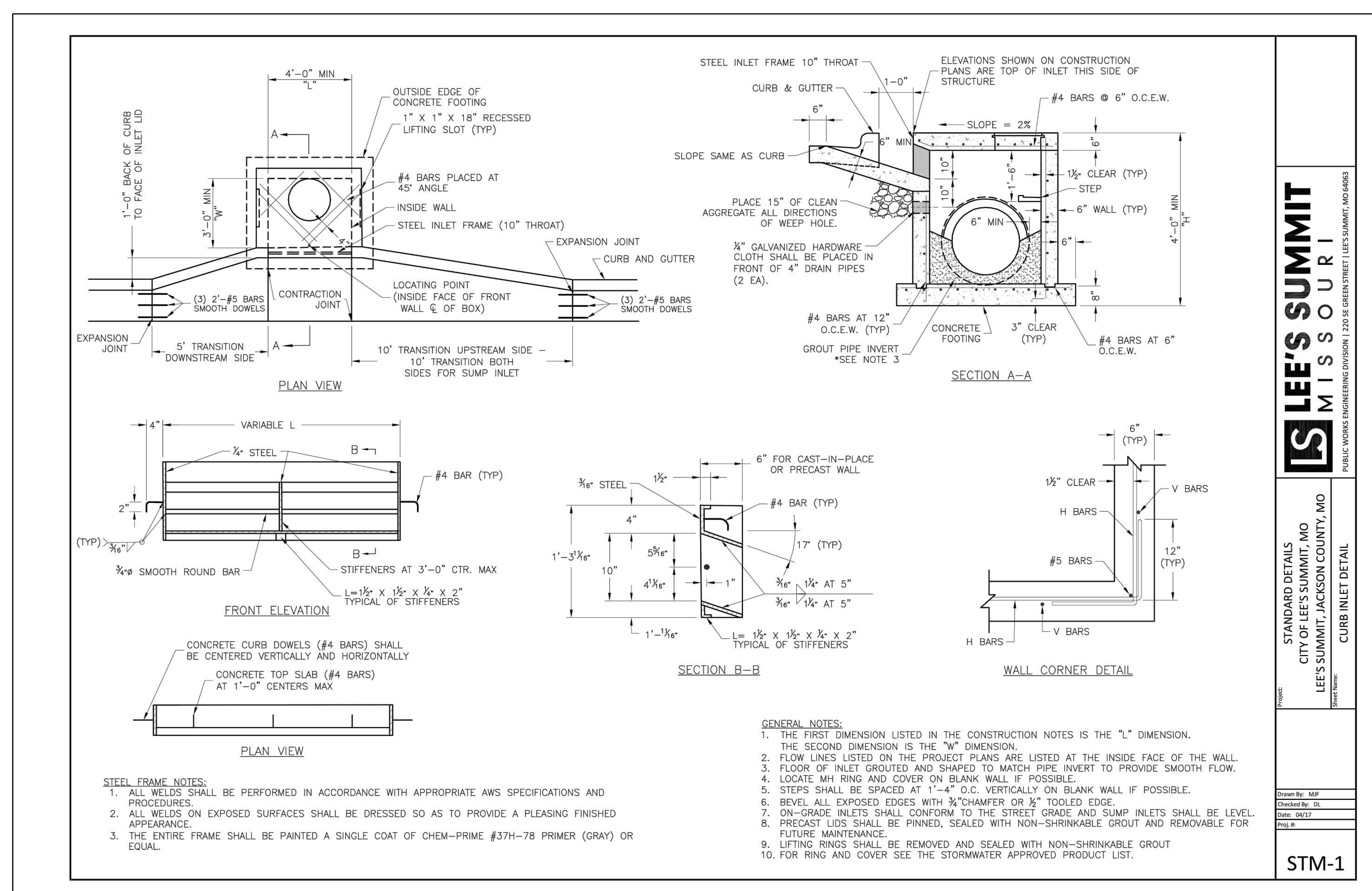
STANDARD DETAILS	CITY OF LEE'S SUMMIT, MO
Drawn By:	JAMES L. LONG
Checked By:	PE-2014010495
Date:	04/17
Proj. #:	LS
FIELD INLET DETAIL	
4/21/2022	

STATE OF MISSOURI	
PROFESSIONAL ENGINEER	
JAMES L. LONG	
NUMBER	PE-2014010495
4/21/2022	

**SCHLAGEL**  
ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS  
14920 West 107th Street • Lenexa Kansas 66215  
(913) 492-5158 • Fax: (913) 492-2400  
WWW.SCHLAGEL.COM  
Master Certified Civil Engineer of Missouri  
#E202003800-F BLCC20100237 MS202008859-F



STORM DETAILS		
DRAWN BY: JRD	REVISION DATE: 04/20/2022	DESCRIPTION: PER CITY COMMENTS DATED 01/10/2022
CHECKED BY: JLL	04/20/2022	PER CITY COMMENTS DATED 02/28/2022
DATE PREPARED: 04/20/2022	STORM DETAILS	
PROJ. NUMBER: 21-136		
LEE'S SUMMIT MISSOURI PUBLIC WORKS ENGINEERING DIVISION   220 SE GREEN STREET   LEE'S SUMMIT, MO 64063		
STORM MANHOLE FRAME DETAIL		
STM-7		



**SCHLAGEL**  
ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS  
1420 West 107th Street • Lenexa Kansas 66215  
(913) 492-5158 • Fax: (913) 492-2400  
WWW.SCHLAGELASSOCIATES.COM  
#E202003800-F BLCC20100237 MS202009859-F



