



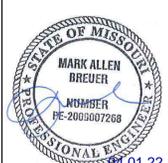








PREPARED BY:



04.01.22

SCHLAGEL & ASSOCIATES, P.A.

**PERGOLA PARK 5TH PLAT  
 STREET, STORMWATER, MASTER DRAINAGE  
 PLAN & EROSION AND SEDIMENT CONTROL**  
 - LEE'S SUMMIT, MISSOURI

REVISION	DATE	DESCRIPTION
1	2-4-22	CITY COMMENTS
2	3-30-22	CITY COMMENTS
3		
4		
5		
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9		
10		

DRAWN BY: BAL  
 CHECKED BY: MAB  
 DATE PREPARED: 11-18-2021  
 PROJ. NUMBER: 20-189

**MASTER DRAINAGE PLAN - DRAINAGE CALCS**

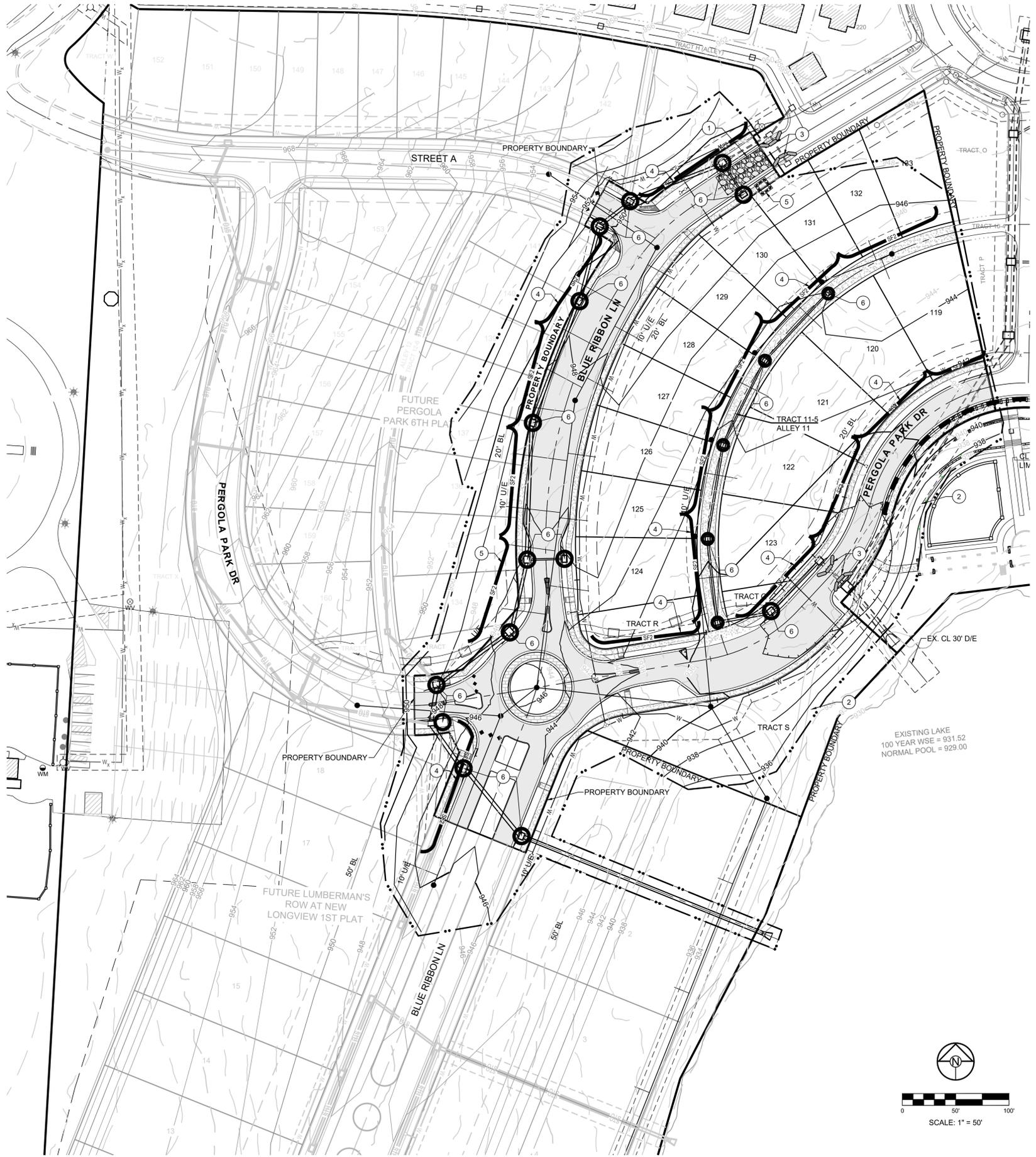
SHEET **6**

**10-YEAR RUNOFF CALCULATIONS**

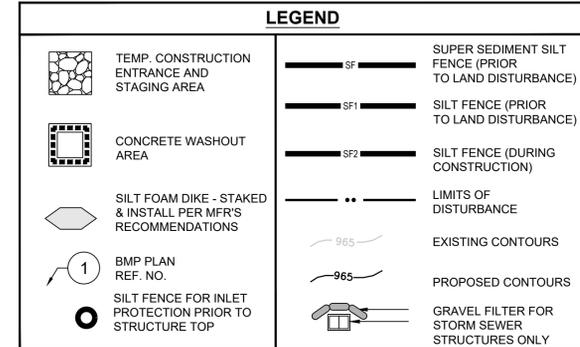
Design Storm: 10																											
"K" Value: 1.00																											
"F" Factor: 1.00																											
Runoff Calculations																											
Inlet #	Area (acres)	"C" Value	Cumul. Area (acres)	Cumul. CxA	Cumul. Tc	Intensity	To Inlet	Cumul. Runoff	Pipe Cap.	Pipe Vel.	Up Piped Inlet 1	Up Piped Inlet 2	Up Area (acres)	Up CxA	Up Down Inlet	Pipe Type	"n"	Pipe Size	Length	Slope %	Drop In Inlet	FL Up	FL Down	Inlet Top	HGL Elev.		
EXISTING LINE 400																											
401	2.40	0.66	46.76	30.86	5.7	7.13	11.29	220.00	220.20	9.27	501		3.38	2.23	401	400	RCP	0.013	66	53.87	0.43	0.50	927.98	927.75	DS TAILWATER @ STR #400	939.00	939.00
402	0.04	0.66	40.98	27.05	5.4	7.24	0.19	195.88	286.92	12.08			0.00	0.00	402	401	RCP	0.013	66	279.37	0.73	0.50	930.42	928.38		941.97	935.25
403	0.07	0.66	40.94	27.02	5.3	7.27	0.34	196.43	300.36	12.64	601		0.90	0.59	403	402	RCP	0.013	66	68.66	0.80	0.50	931.17	930.62		944.37	936.00
404	0.06	0.66	39.97	26.38	5.1	7.32	0.29	193.18	270.74	11.40	701		1.41	0.93	404	403	RCP	0.013	66	119.40	0.65	1.00	932.35	931.57		948.40	937.14
405	38.50	0.66	38.50	25.41	5.0	7.35	186.84	186.84	251.06	15.79			0.00	0.00	405	404	RCP	0.013	54	92.89	1.63	N/A	934.86	933.35		947.96	940.04
EXISTING LINE 600																											
601	0.36	0.66	0.90	0.59	5.1	7.33	1.74	4.35	19.45	11.00			0.00	0.00	601	403	HDPE	0.012	18	36.00	2.92	0.50	936.02	934.97		944.39	937.04
602	0.54	0.66	0.54	0.36	5.0	7.35	2.62	2.62	13.70	11.16			0.00	0.00	602	601	HDPE	0.012	15	55.86	3.83	N/A	938.53	936.39		946.23	939.31
EXISTING LINE 700																											
701	1.14	0.66	1.41	0.93	5.1	7.32	5.51	6.82	9.26	7.59			0.00	0.00	701	404	PEP	0.012	15	102.48	1.75	0.50	941.69	939.90		949.19	943.04
702	0.27	0.66	0.27	0.18	5.0	7.35	1.31	1.31	7.00	5.74			0.00	0.00	702	701	PEP	0.012	15	102.48	1.75	N/A	942.48	942.14		949.13	943.04
LINE 800																											
801	1.06	0.66	3.38	2.23	6.2	7.01	4.90	15.64	28.10	5.73			0.00	0.00	801	401	PEP	0.012	30	35.50	0.40	0.45	931.12	930.98		936.98	933.39
802	0.57	0.66	2.32	1.53	6.0	7.05	2.65	10.79	24.51	7.80			0.00	0.00	802	801	PEP	0.012	24	65.53	1.00	0.50	933.23	931.57		937.83	933.65
803	0.26	0.66	1.75	1.16	5.9	7.08	1.22	8.18	24.51	7.80			0.00	0.00	803	802	PEP	0.012	24	51.05	1.00	0.50	933.24	932.73		939.40	934.46
804	0.29	0.66	1.49	0.98	5.7	7.13	1.37	7.02	12.47	7.05			0.00	0.00	804	803	PEP	0.012	18	78.60	1.20	0.50	934.68	933.74		940.30	935.94
805	0.33	0.66	1.20	0.79	5.5	7.20	1.57	5.70	11.38	6.44			0.00	0.00	805	804	PEP	0.012	18	88.86	1.00	0.50	936.07	935.18		941.62	937.19
806	0.29	0.66	0.87	0.57	5.3	7.28	1.39	4.18	7.34	5.98			0.00	0.00	806	805	PEP	0.012	15	87.96	1.10	0.50	937.54	936.57		942.92	938.55
807	0.58	0.66	0.58	0.38	5.0	7.35	2.81	2.81	7.00	5.70			0.00	0.00	807	806	PEP	0.012	15	86.70	1.00	N/A	938.90	938.04		943.98	939.71
LINE 800 DS TAILWATER @ STR #800																											
801	0.49	0.51	7.40	4.60	6.6	6.89	1.72	31.72	66.70	9.44			0.00	0.00	801	800	RCP	0.013	36	243.24	1.00	2.50	930.93	928.50		944.84	934.14
802	1.38	0.51	6.91	4.35	6.5	6.93	4.88	30.17	68.55	9.70			0.00	0.00	802	801	PEP	0.012	36	83.38	0.90	0.50	934.18	933.43		944.41	936.33
803	0.12	0.66	5.53	3.65	6.3	6.96	0.55	25.41	51.09	7.23	1101		2.32	1.53	803	802	PEP	0.012	36	51.75	0.50	0.50	934.94	934.68		948.20	936.90
804	0.22	0.66	3.09	2.04	6.2	6.99	1.01	14.26	31.42	6.40	1201		1.13	0.75	804	803	PEP	0.012	30	36.23	0.50	0.50	935.62	935.44		948.20	937.14
805	0.12	0.66	1.74	1.15	6.0	7.05	0.56	8.10	31.42	6.40			0.00	0.00	805	804	PEP	0.012	30	84.51	0.50	0.50	936.55	936.12		946.57	937.67
806	0.40	0.66	1.62	1.07	5.8	7.10	1.88	7.59	31.42	6.40	1001		0.31	0.20	806	805	PEP	0.012	30	69.15	0.50	0.50	937.39	937.05		945.85	938.48
807	0.40	0.66	0.91	0.60	5.5	7.20	1.90	4.32	31.42	6.40			0.00	0.00	807	806	PEP	0.012	30	127.94	0.50	0.50	938.53	937.89		947.25	939.34
808	0.19	0.66	0.51	0.34	5.2	7.30	0.91	2.46	31.42	6.40			0.00	0.00	808	807	PEP	0.012	30	121.88	0.50	0.50	939.64	939.03		948.73	940.24
809	0.32	0.66	0.32	0.21	5.0	7.35	1.55	1.55	31.42	6.40			0.00	0.00	809	808	PEP	0.012	30	72.14	0.50	0.50	940.50	940.14		950.54	941.13
810	0.21	0.66	0.21	0.14	5.0	7.35	1.02	1.02	31.42	6.40			0.00	0.00	810	809	PEP	0.012	30	37.09	0.50	0.50	941.19	941.00		950.13	941.70
811	2.32	0.66	2.63	1.74	5.1	7.31	11.19	12.69	31.42	6.40			0.00	0.00	811	810	PEP	0.012	30	93.67	0.50	1.25	942.15	941.69		948.43	943.58
812	0.13	0.66	0.13	0.09	5.0	7.35	0.63	0.63	4.95	4.03			0.00	0.00	812	811	PEP	0.012	15	35.50	0.50	N/A	943.58	943.40		948.43	943.94
LINE 1000																											
1001	0.31	0.66	0.31	0.20	5.0	7.35	1.50	1.50	4.95	4.03			0.00	0.00	1001	806	PEP	0.012	15	35.00	0.50	N/A	938.82	938.64		945.85	939.39
LINE 1100																											
1101	0.55	0.66	2.32	1.53	6.0	7.05	2.56	10.79	30.32	17.16	1301		0.17	0.11	1101	803	PEP	0.012	15	127.32	1.10	0.50	945.48	936.44		954.50	947.88
1102	0.34	0.66	1.60	1.06	5.8	7.11	1.60	7.51	13.28	10.82			0.00	0.00	1102	1101	PEP	0.012	15	155.72	3.60	0.50	951.59	945.98		961.72	954.32
1103	0.56	0.66	1.26	0.83	5.6	7.17	2.65	5.96	12.12	9.88	1401		0.15	0.10	1103	1102	PEP	0.012	15	117.18	3.00	0.50	955.60	952.09		964.38	956.85
1104	0.30	0.66	0.55	0.36	5.3	7.26	1.44	2.63	11.61	9.46	1501		0.09	0.06	1104	1103	PEP	0.012	15	161.35	2.75	0.50	960.54	956.10		966.89	961.31
1105	0.09	0.66	0.16	0.11	5.1	7.32	0.43	0.77	9.26	7.54			0.00	0.00	1105	1104	PEP	0.012	15	93.36	1.75	0.50	962.67	961.04		969.80	963.07
1106	0.07	0.66	0.07	0.05	5.0	7.35	0.34	0.34	7.00	5.70			0.00	0.00	1106	1105	PEP	0.012	15	37.07	1.00	N/A	963.54	963.17		969.53	963.81
LINE 1200																											
1201	0.35	0.66	1.13	0.75	5.6	7.18	1.66	5.35	18.52	15.09			0.00	0.00	1201	804	PEP	0.012	15	67.70	7.00	0.50	941.61	936.87		950.33	942.78
1202	0.38	0.66	0.78	0.51	5.4	7.23	1.81	3.72	13.09	10.87			0.00	0.00	1202	1201	PEP	0.012	15	113.91	3.50	0.50	946.10	942.11		952.68	947.04
1203	0.25	0.66	0.40	0.26	5.2	7.30	1.20	1.93	11.06	9.02			0.00	0.00	1203	1202	PEP	0.012	15	125.72	2.50	0.50	949.74	946.60		955.28	950.40
1204	0.15	0.66	0.15	0.10	5.0	7.35	0.73	0.73	11.06	9.02			0.00	0.00	1204	1203	PEP	0.012	15	88.30	2.50	N/A	952.45	950.24		957.10	952







EROSION AND SEDIMENT CONTROL STAGING CHART				
PROJECT STAGE	BMP PLAN REF. NO.	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
A - PRIOR TO LAND DISTURBANCE	1	CONSTRUCTION ENTRANCE & STAGING AREA	D	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
	2	SILT FENCE WITH WOVEN WIRE FENCING	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	3	EXISTING INLET PROTECTION	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
B - MASS GRADING	4	SILT FENCE (DURING CONSTRUCTION)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
C - UTILITY CONSTRUCTION	5	CONCRETE WASHOUT AREA	E	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
	6	INLET PROTECTION (SILT FENCE)	D/E	PLACE SILT FENCE AROUND ALL STORM SEWER STRUCTURES / YARD AREA STORM STRUCTURES TO HAVE SILT FENCE REMOVED ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
D - AFTER PAVING OPERATIONS	7	INLET PROTECTION (GRAVEL FILTER BAGS)	E	BOARDS SHALL BE PLACED IN FRONT OF INLET OPENING FROM THE TIME SILT FENCE IS REMOVED UNTIL SUCH TIME THAT THE CURB / THROAT IS POURED. PLACE GRAVEL FILTER BAGS AT THE OPENING OF ALL CURB INLETS IMMEDIATELY AFTER THE INLET THROATS ARE POURED
	8	SEEDING AND MULCHING	E	ALL DISTURBED AREAS AFTER 14 DAYS OF CONSTRUCTION INACTIVITY
E - UNTIL CLOSURE OF LAND DISTURBANCE PERMIT				ADDITIONAL SEDIMENT AND EROSION CONTROL MEASURES MAY BE REQUIRED ANY TIME CURRENT MEASURES ARE FOUND TO BE INEFFECTIVE.



**DISTURBED AREA = 6.27 A.C.**

**SITE SPECIFIC NOTES:**

- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
- THERE ARE NO WETLANDS, NATURAL OR ARTIFICIAL WATER STORAGE DETENTION AREAS IN THE PROJECT AREA.
- NO PART OF THE PROJECT LIES WITHIN THE 100 YEAR FLOOD PLAIN PER FEMA FLOOD INSURANCE RATE MAP NUMBER 29095C0414G DATED JANUARY 20TH, 2017.
- ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IMPLEMENTED ACCORDING TO THE BMP STAGING CHART.
- ADDITIONAL EROSION CONTROL MAY BE REQUIRED BY THE CITY ENGINEER AT ANY TIME EXISTING MEASURES ARE FOUND TO BE INEFFECTIVE OR PROBLEMATIC AREAS ARE NOTED IN THE FIELD.
- STABILIZATION OF DISTURBED AREAS MUST, AT A MINIMUM, BE INITIATED IMMEDIATELY WHENEVER ANY CLEARING, GRADING, EXCAVATING, OR OTHER SOIL DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE, OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. THE DISTURBED AREAS SHALL BE PROTECTED FROM EROSION BY STABILIZING THE AREA WITH MULCH OR OTHER SIMILARLY EFFECTIVE SOIL STABILIZING BMP'S. INITIAL STABILIZATION ACTIVITIES MUST BE COMPLETED WITHIN 14 DAYS AFTER SOIL DISTURBING ACTIVITIES CEASE.
- ALL PERIMETER SILT FENCE, EARTH DIKES, SEDIMENT BASINS, AND ROCK CONSTRUCTION ENTRANCES WILL BE INSTALLED BEFORE GRADING OPERATIONS BEGIN.
- SILT FENCE AND EARTH DIKES THAT ARE PLACED BEFORE GRADING BEGINS WILL BE MAINTAINED BY THE GRADING CONTRACTOR.
- AREAS WITHIN PUBLIC RIGHT-OF-WAY SHALL BE SODDED IMMEDIATELY AFTER CONSTRUCTION IS COMPLETE.

**MISSOURI GEOGRAPHIC REFERENCE SYSTEM BENCH MARK:**

BM JA-148, IS A STAMPED KC METRO DISK SET IN CONCRETE LOCATED 2 MILES WEST OF THE INTERSECTION OF HIGHWAY 50 AND 3RD ST. IT IS 44 FT NORTH OF THE CENTER OF 3RD ST. AND 102.5 FT WEST OF THE CENTER OF THE EXIT FROM THE ADJACENT PARKING LOT.  
ELEV. 935.18

**PROJECT BENCHMARK:**

CHISELED "SQUARE" ON STORM CURB INLET AT NORTHWEST INTERSECTION OF SW. TOWER PARK DRIVE AND SW. LONGVIEW BOULEVARD.  
NORTHING: 998893.4148  
EASTING: 2803318.5413  
ELEV. 1004.09

REVISION DATE	DESCRIPTION
2-4-22	CITY COMMENTS
3-30-22	CITY COMMENTS

DRAWN BY:	CHECKED BY:	DATE PREPARED:	PROJ. NUMBER:
BAL	MAB	11-18-2021	20-189

**EROSION CONTROL PLAN**

RELEASED FOR CONSTRUCTION  
As Noted on Plans Review  
Development Services Department  
Lee's Summit, Missouri  
08/17/2022



EROSION AND SEDIMENT CONTROL STAGING CHART				
PROJECT STAGE	BMP PLAN REF. NO	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
A - PRIOR TO LAND DISTURBANCE	1	CONSTRUCTION ENTRANCE & STAGING AREA	D	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
	2	SILT FENCE WITH WOVEN WIRE FENCING	E	PLACE WHERE INDICATED. REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	3	EXISTING INLET PROTECTION	E	PLACE WHERE INDICATED. REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
B - MASS GRADING	4	SILT FENCE (DURING CONSTRUCTION)	E	PLACE WHERE INDICATED. REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	5	CONCRETE WASHOUT AREA	E	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
C - UTILITY CONSTRUCTION	6	INLET PROTECTION (SILT FENCE)	D/E	PLACE SILT FENCE AROUND ALL STORM SEWER STRUCTURES / YARD AREA STORM STRUCTURES TO HAVE SILT FENCE REMOVED ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	7	INLET PROTECTION (GRAVEL FILTER BAGS)	E	BOARDS SHALL BE PLACED IN FRONT OF INLET OPENING FROM THE TIME SILT FENCE IS REMOVED UNTIL SUCH TIME THAT THE CURB / THROAT IS POURED. PLACE GRAVEL FILTER BAGS AT THE OPENING OF ALL CURB INLETS IMMEDIATELY AFTER THE INLET THROATS ARE POURED
D - AFTER PAVING OPERATIONS	8	SEEDING AND MULCHING	E	ALL DISTURBED AREAS AFTER 14 DAYS OF CONSTRUCTION INACTIVITY
				ADDITIONAL SEDIMENT AND EROSION CONTROL MEASURES MAY BE REQUIRED ANY TIME CURRENT MEASURES ARE FOUND TO BE INEFFECTIVE.

LEGEND	
	TEMP. CONSTRUCTION ENTRANCE AND STAGING AREA
	CONCRETE WASHOUT AREA
	SILT FOAM DIKE - STAKED & INSTALL PER MFR'S RECOMMENDATIONS
	BMP PLAN REF. NO.
	SILT FENCE FOR INLET PROTECTION PRIOR TO STRUCTURE TOP
	SUPER SEDIMENT SILT FENCE (PRIOR TO LAND DISTURBANCE)
	SILT FENCE (PRIOR TO LAND DISTURBANCE)
	SILT FENCE (DURING CONSTRUCTION)
	LIMITS OF DISTURBANCE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	GRAVEL FILTER FOR STORM SEWER STRUCTURES ONLY

**DISTURBED AREA = 6.27 A.C.**

**SITE SPECIFIC NOTES:**

- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
- THERE ARE NO WETLANDS, NATURAL OR ARTIFICIAL WATER STORAGE DETENTION AREAS IN THE PROJECT AREA.
- NO PART OF THE PROJECT LIES WITHIN THE 100 YEAR FLOOD PLAIN PER FEMA FLOOD INSURANCE RATE MAP NUMBER 29095C0414G DATED JANUARY 20TH, 2017.
- ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IMPLEMENTED ACCORDING TO THE BMP STAGING CHART.
- ADDITIONAL EROSION CONTROL MAY BE REQUIRED BY THE CITY ENGINEER AT ANY TIME EXISTING MEASURES ARE FOUND TO BE INEFFECTIVE OR PROBLEMATIC AREAS ARE NOTED IN THE FIELD.
- STABILIZATION OF DISTURBED AREAS MUST, AT A MINIMUM, BE INITIATED IMMEDIATELY WHENEVER ANY CLEARING, GRADING, EXCAVATING, OR OTHER SOIL DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE, OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. THE DISTURBED AREAS SHALL BE PROTECTED FROM EROSION BY STABILIZING THE AREA WITH MULCH OR OTHER SIMILARLY EFFECTIVE SOIL STABILIZING BMP'S. INITIAL STABILIZATION ACTIVITIES MUST BE COMPLETED WITHIN 14 DAYS AFTER SOIL DISTURBING ACTIVITIES CEASE.
- ALL PERIMETER SILT FENCE, EARTH DIKES, SEDIMENT BASINS, AND ROCK CONSTRUCTION ENTRANCES WILL BE INSTALLED BEFORE GRADING OPERATIONS BEGIN.
- SILT FENCE AND EARTH DIKES THAT ARE PLACED BEFORE GRADING BEGINS WILL BE MAINTAINED BY THE GRADING CONTRACTOR.
- AREAS WITHIN PUBLIC RIGHT-OF-WAY SHALL BE SODDED IMMEDIATELY AFTER CONSTRUCTION IS COMPLETE.

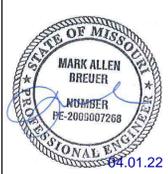
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ELEV. 935.18

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EASTING: 2803318.5413  
ELEV. 1004.09

PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

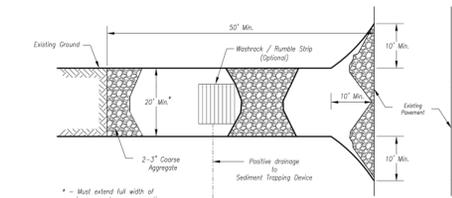
**PERGOLA PARK 5TH PLAT  
STREET, STORMWATER, MASTER DRAINAGE  
PLAN & EROSION AND SEDIMENT CONTROL  
- LEE'S SUMMIT, MISSOURI**

REVISION DATE	DESCRIPTION
2-4-22	CITY COMMENTS
3-30-22	CITY COMMENTS

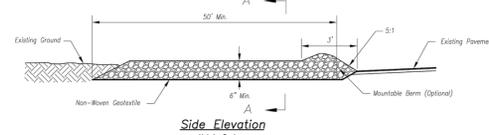
DRAWN BY:	CHECKED BY:	DATE PREPARED:	PROJ. NUMBER:
BAL	MAB	11-8-2021	20-189

**POST CONSTRUCTION EROSION CONTROL**

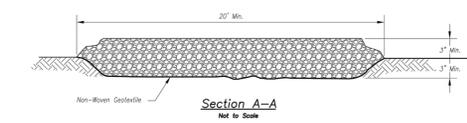
RELEASED FOR CONSTRUCTION  
As Noted on Plans Review  
Development Services Department  
Lee's Summit, Missouri  
08/17/2022



Plan View  
Not to Scale



Side Elevation  
Not to Scale



Section A-A  
Not to Scale

**Notes for Construction Entrance:**

1. Avoid loading on steep slopes, at curves on public roads, or ditches of disturbed areas.
2. Remove all vegetation and other unsuitable material from the foundation area, grade, and crown for positive drainage.
3. If slope towards the public road exceeds 2%, construct a 6- to 8-inch high ridge with 3:1 V side slopes across the foundation approximately 15 feet from the edge of the public road to divert runoff from it.
4. Install pipe under the entrance if needed to maintain drainage distance along public roads.
5. Place stone to dimensions and grade as shown on plans. Leave surface sloped for drainage.
6. Divert all surface runoff and drainage from the entrance to a sediment control device.
7. If conditions warrant, place geotextile fabric on the graded foundation to improve stability.

**Maintenance for Construction Entrance:**

1. Reshape entrance as needed to maintain function and integrity of installation. Top dress with clean aggregate as needed.

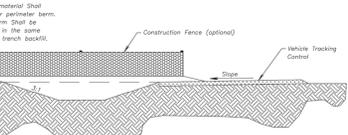
**CONSTRUCTION ENTRANCE**

**Notes for Concrete Washout:**

1. Concrete washout areas shall be installed prior to any concrete placement on site.
2. Concrete washout area shall include a flat subsurface pit sized relative to the amount of concrete to be placed on site. The slope leading out of the subsurface pit shall be 3:1. The vehicle tracking pad shall be sloped towards the concrete washout area.
3. Vehicle tracking control is required at the access point to all concrete washout areas.
4. Slope shall be placed at the construction site entrance, washout area and elsewhere as necessary to clearly indicate the location(s) of the concrete washout area(s) to operators of concrete truck and pump rigs.
5. A one-piece impervious door may be required along the bottom and sides of the subsurface pit in areas of gravelly soils.

**Maintenance for Concrete Washout:**

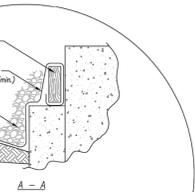
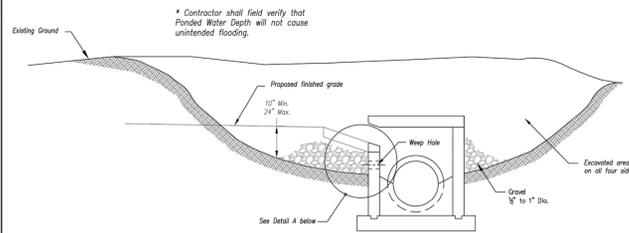
1. Concrete washout materials shall be removed once the materials have filled the washout to approximately 75% full.
2. Concrete washout areas shall be enlarged as necessary to maintain capacity for washed concrete.
3. Concrete washout water, washed pieces of concrete and all other debris in the subsurface pit shall be transported from the job site in a separate container and disposed of properly.
4. Concrete washout areas shall remain in place until all concrete for the project is placed.
5. When concrete washout areas are removed, excavations shall be filled with suitable compacted backfill and sprayed, any disturbed areas associated with the installation, maintenance, and/or removal of the concrete washout areas shall be stabilized.



**CONCRETE WASHOUT**

AMERICAN PUBLIC WORKS ASSOCIATION  
**APWA** KANSAS CITY METRO CHAPTER  
 STANDARD DRAWING NUMBER ESC-01  
 ADOPTED: 10/24/2016  
 CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT

Construction Entrance modified from 2015 Overland Park Standard Details for Erosion and Sediment Control; Concrete Washout modified from 2009 City of Great Bend Standard Drawings.



Detail A

**EARLY STAGE CURB INLET**  
(Open Box and Prior to Pouring Curb and Inlet Throat)

**Notes:**

1. Immediately following inlet construction and prior to construction of curb and inlet throat, protect inlet opening by installing 2' x 10' (min.) board wrapped in silt fence. Structures shall have excavated storage area on all four sides to allow settling of sediment. (Early Stage Curb Inlet).
2. When inlet is completed and curb poured, filter socks or approved equal should be used. (Late Stage Curb Inlet). Straw wattles are not approved for curb inlet use.
3. Contractor is not allowed to pond water that creates a traffic hazard.

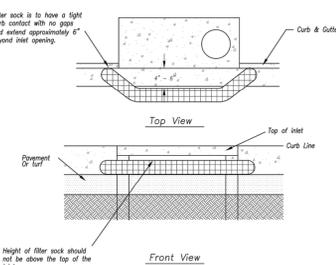
**Maintenance:**

1. Remove deposited sediment from excavated storage areas when available storage has been reduced by 20%.
2. Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.
3. Repair or replace as necessary to maintain function and integrity of installation.

AMERICAN PUBLIC WORKS ASSOCIATION  
**APWA** KANSAS CITY METRO CHAPTER  
 STANDARD DRAWING NUMBER ESC-06  
 ADOPTED: 10/24/2016  
 CURB INLET PROTECTION

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

**LATE STAGE CURB INLET**  
(After Pouring Curb and Inlet Throat)



Sump Inlet Sediment Filter

**SCHLAGEL**  
 ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS  
 14920 West 107th Street • Lenexa, Kansas 66215  
 (913) 492-5158 • Fax: (913) 492-8400  
 WWW.SCHLAGELASSOCIATES.COM  
 Missouri State Certificate of Authority  
 #E200200360P-F #LAC201005237 #LS2002008695-F

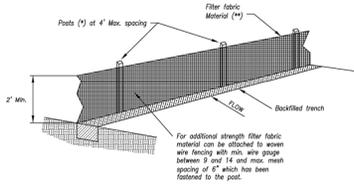
PREPARED BY:

STATE OF MISSOURI  
**MARK ALLEN BREUER**  
 PROFESSIONAL ENGINEER  
 NUMBER PE-2003007268  
 04.01.22

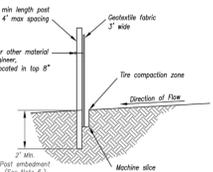
SCHLAGEL & ASSOCIATES, P.A.

PERGOLA PARK 5TH PLAT  
 STREET, STORMWATER, MASTER DRAINAGE  
 PLAN & EROSION AND SEDIMENT CONTROL  
 - LEE'S SUMMIT, MISSOURI

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SILT FENCE DETAILS  
Not to Scale



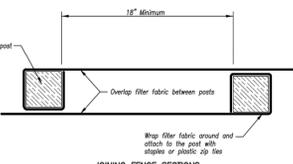
SILT FENCE LAYOUT  
Not to Scale

**Notes:**

1. In order to contain water, the ends of the silt fence must be turned uphill (Figure A).
2. Long perimeter runs of silt fence must be limited to 100'. Runs should be broken up into several smaller segments to minimize water concentrations (Figure A).
3. Long slopes should be broken up with intermediate rows of silt fence to slow runoff velocities.
4. Attach fabric to upstream side of post.
5. Install posts a minimum of 2' into the ground.
6. Trenching will only be allowed for small or difficult installation, where sloping machine cannot be reasonably used.

**Maintenance:**

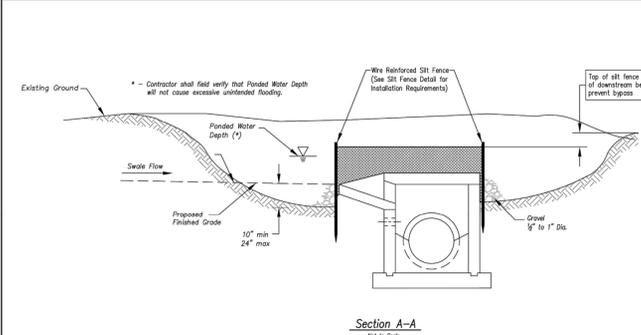
1. Remove and dispose of sediment deposits when the deposit approaches 1/3 the height of silt fence.
2. Repair as necessary to maintain function and structure.



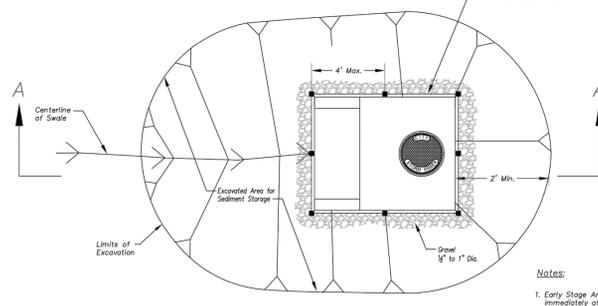
JOINING FENCE SECTIONS  
Not to Scale

AMERICAN PUBLIC WORKS ASSOCIATION  
**APWA** KANSAS CITY METRO CHAPTER  
 STANDARD DRAWING NUMBER ESC-03  
 ADOPTED: 10/24/2016  
 SILT FENCE

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



Section A-A  
Not to Scale



EARLY STAGE AREA INLET  
(All open boxes and inlets not at final grade)

**Notes:**

1. Early Stage Area Inlet Sediment Barrier to be installed immediately after inlet or junction box is constructed.
2. Silt fence shall remain in place until excavated area is removed and Late Stage Area Inlet is fully installed.
3. Backfill excavated area ONLY after final grading of the site. Stabilization of the site is to immediately follow.
4. Wire reinforced silt fence may be used in place of silt fence attached to wood frame.

AMERICAN PUBLIC WORKS ASSOCIATION  
**APWA** KANSAS CITY METRO CHAPTER  
 STANDARD DRAWING NUMBER ESC-07  
 ADOPTED: 10/24/2016  
 AREA INLET AND JUNCTION BOX PROTECTION

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

REVISION DATE	DESCRIPTION
2-4-22	CITY COMMENTS
3-30-22	CITY COMMENTS
5-11-2021	DATE PREPARED
11-18-2021	PROJ. NUMBER:
20-189	

EROSION CONTROL DETAILS

SHEET

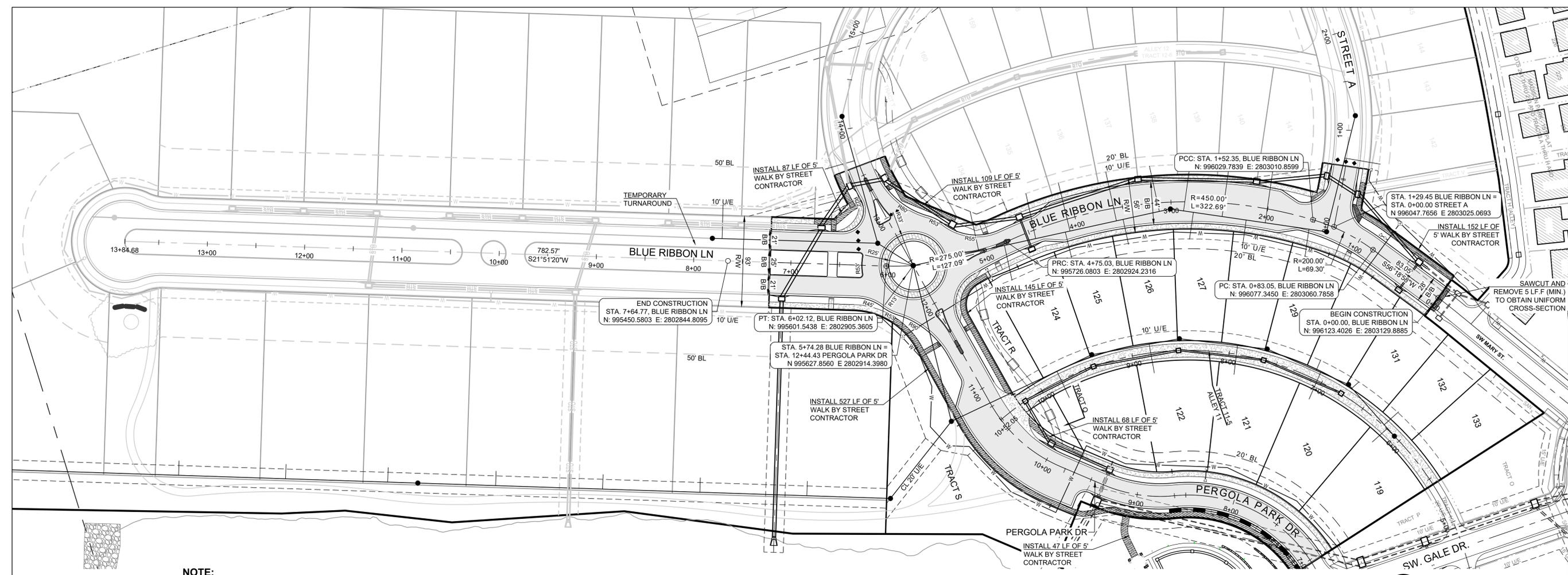
11



**PERGOLA PARK 5TH PLAT  
 STREET, STORMWATER, MASTER DRAINAGE  
 PLAN & EROSION AND SEDIMENT CONTROL  
 - LEE'S SUMMIT, MISSOURI**

REVISION DATE	DESCRIPTION
2-4-22	CITY COMMENTS
3-30-22	CITY COMMENTS

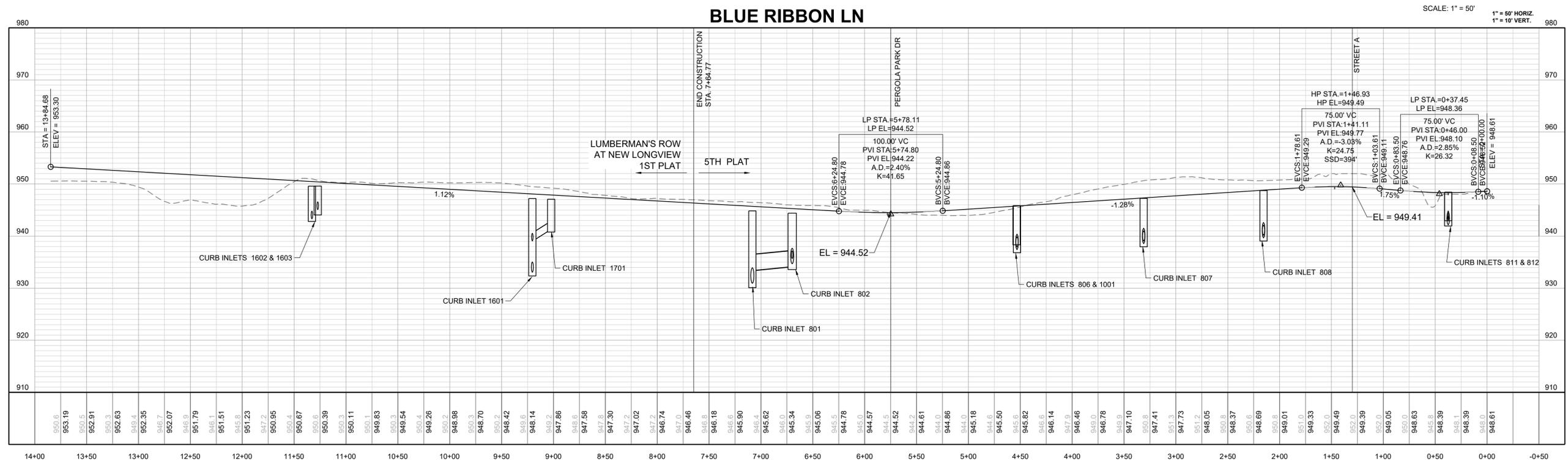
SW MARY ST  
 PLAN & PROFILE



**NOTE:**  
 ALL CONSTRUCTION ON THIS PROJECT SHALL CONFORM TO THE CITY OF LEE'S SUMMIT TECHNICAL SPECIFICATIONS.  
 THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.

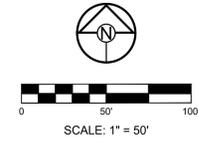
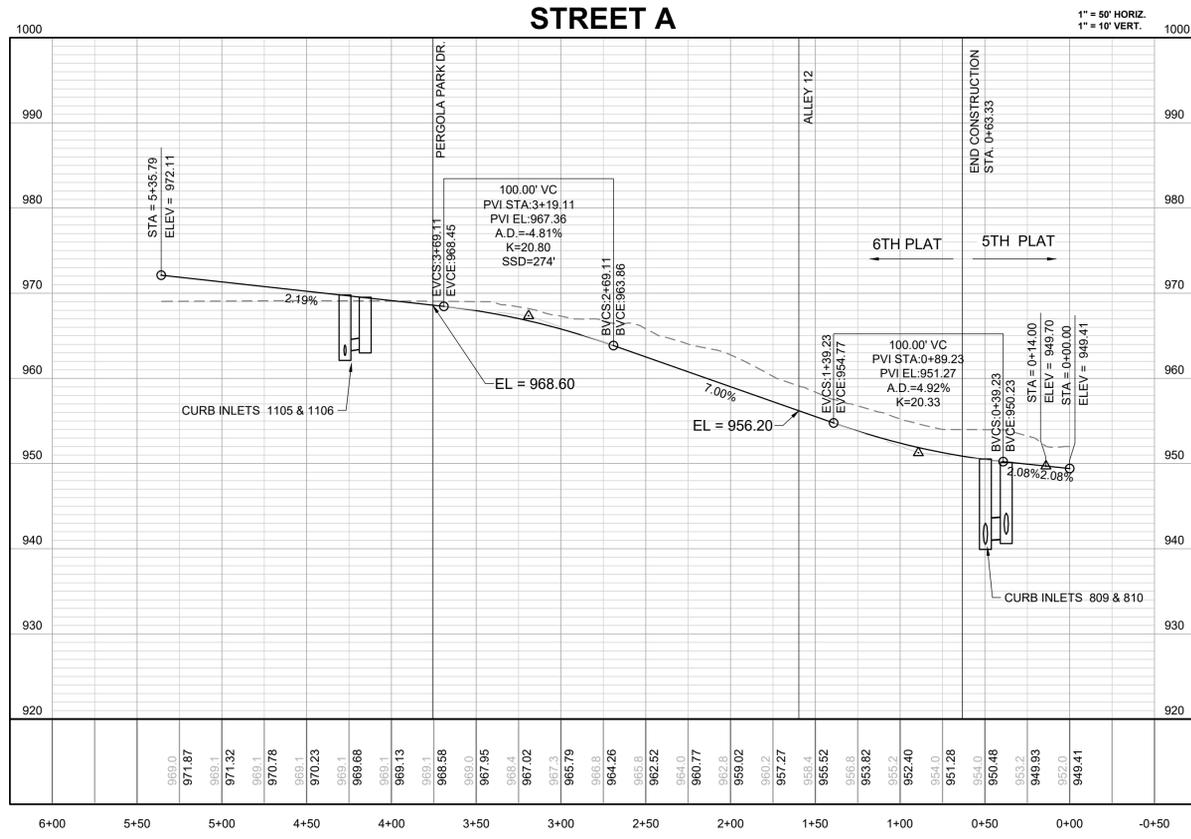
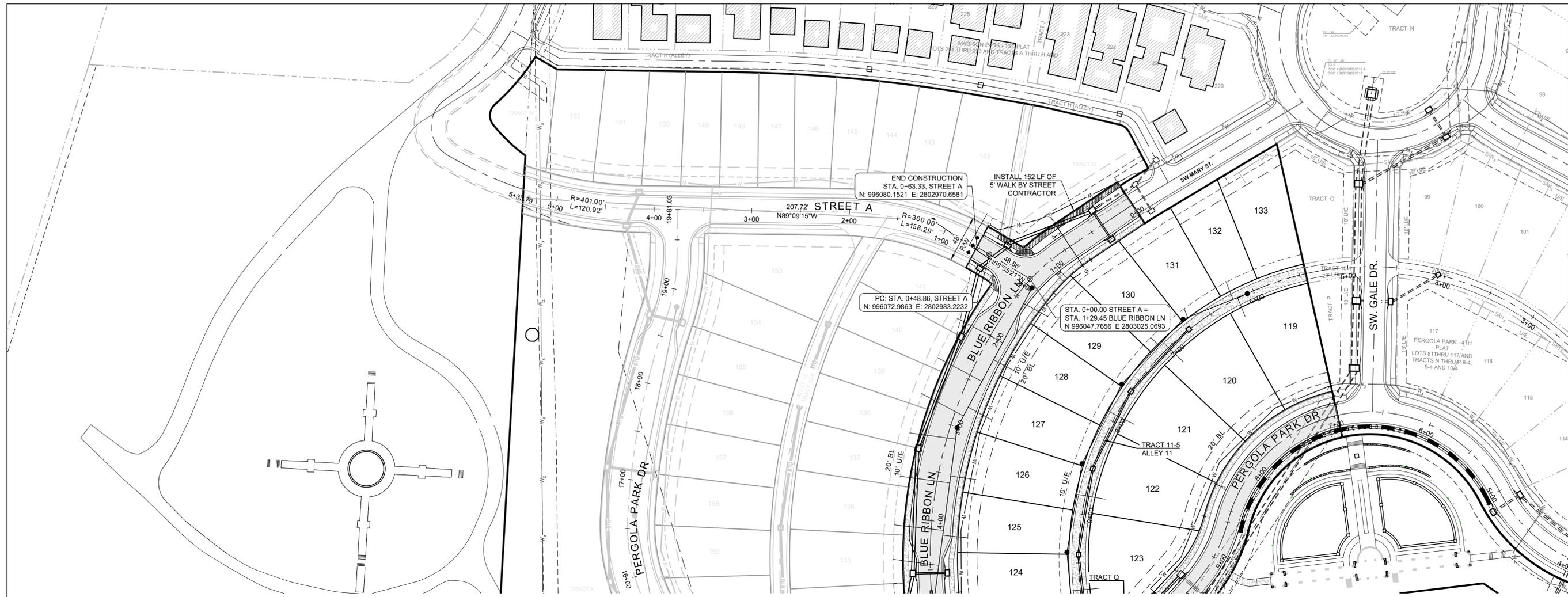
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 08/17/2022

SCALE: 1" = 50'  
 1" = 50' HORIZ.  
 1" = 10' VERT.



STATION	ELEVATION
14+00	953.6
13+50	953.19
13+00	950.5
12+50	952.91
12+00	950.3
11+50	949.4
11+00	951.79
10+50	948.1
10+00	945.6
9+50	951.23
9+00	947.2
8+50	950.95
8+00	950.4
7+50	950.67
7+00	950.6
6+50	950.39
6+00	950.3
5+50	950.1
5+00	949.83
4+50	950.3
4+00	949.54
3+50	949.4
3+00	948.26
2+50	948.98
2+00	950.3
1+50	948.70
1+00	948.2
0+50	948.42
0+00	949.6
-0+50	949.6
-1+00	948.14
-1+50	948.2
-2+00	947.86
-2+50	948.6
-3+00	947.58
-3+50	947.8
-4+00	947.30
-4+50	947.2
-5+00	947.02
-5+50	947.2
-6+00	946.74
-6+50	947.0
-7+00	946.46
-7+50	946.16
-8+00	946.6
-8+50	945.90
-9+00	946.4
-9+50	946.62
-10+00	946.0
-10+50	946.34
-11+00	945.9
-11+50	945.06
-12+00	945.5
-12+50	944.78
-13+00	944.57
-13+50	944.5
-14+00	944.52
-14+50	944.2
-15+00	944.61
-15+50	944.86
-16+00	944.0
-16+50	945.18
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-24+50	951.2
-25+00	948.05
-25+50	950.8
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-28+00	949.01
-28+50	951.0
-29+00	949.33
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-32+00	950.0
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-33+00	948.8
-33+50	948.39
-34+00	948.1
-34+50	948.39
-35+00	948.0
-35+50	946.61





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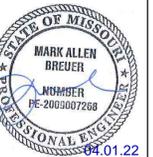
**PERGOLA PARK 5TH PLAT  
 STREET, STORMWATER, MASTER DRAINAGE  
 PLAN & EROSION AND SEDIMENT CONTROL  
 - LEE'S SUMMIT, MISSOURI**

REVISION DATE	DESCRIPTION
2-4-22	CITY COMMENTS
3-30-22	CITY COMMENTS

STREET A PLAN & PROFILE

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 Lee's Summit, Missouri  
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PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

**PERGOLA PARK 5TH PLAT  
 STREET, STORMWATER, MASTER DRAINAGE  
 PLAN & EROSION AND SEDIMENT CONTROL  
 - LEE'S SUMMIT, MISSOURI**

REVISION DATE	DESCRIPTION
2-4-22	CITY COMMENTS
3-30-22	CITY COMMENTS

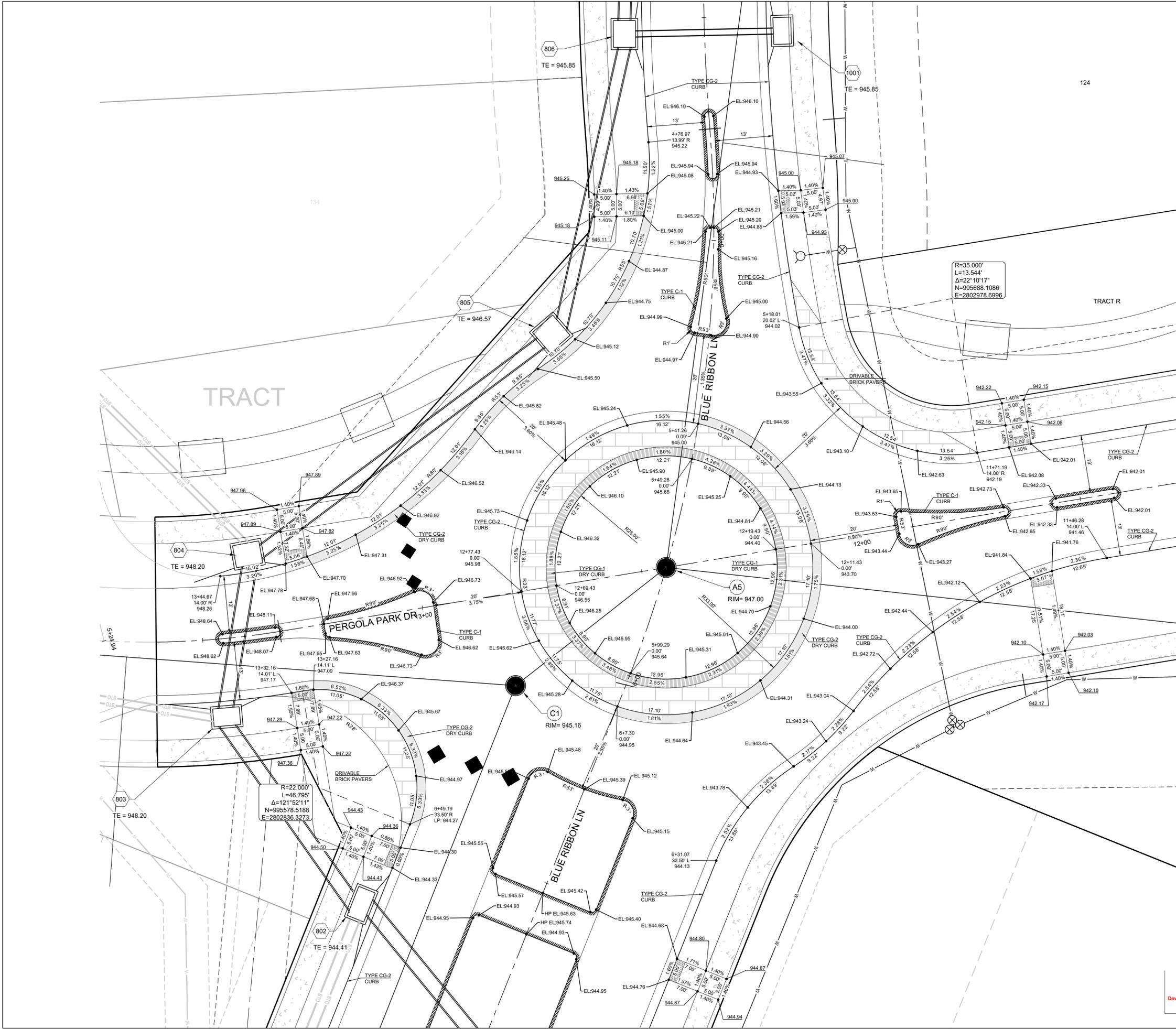
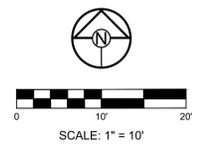
ROUNDABOUT  
 INTERSECTION  
 DETAIL

SHEET  
**16**

**CURB LEGEND**

	TYPE "CG-2" CURB & GUTTER
	TYPE "CG-2" DRY CURB & GUTTER
	TYPE "CG-1" DRY CURB AND GUTTER
	TYPE C-1 CURB
	DRIVABLE BRICK PAVERS

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 CONSTRUCTION  
 As Noted on Plans Review  
 Development Services Department  
 Lee's Summit, Missouri  
 06/17/2022

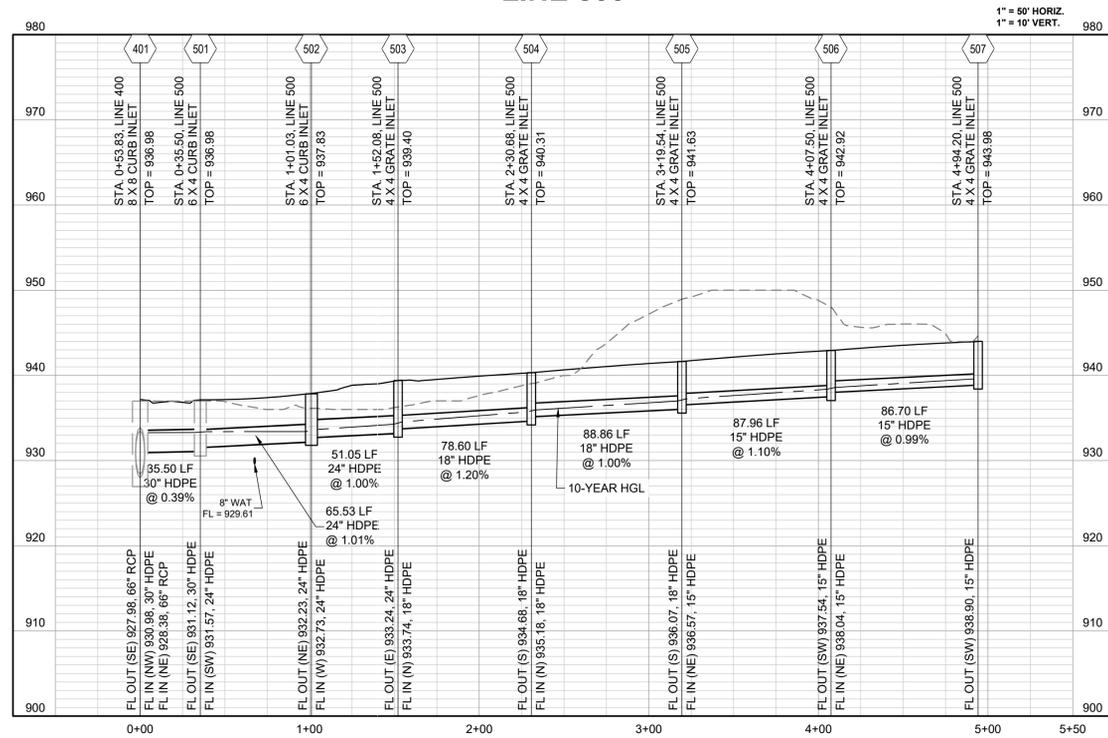




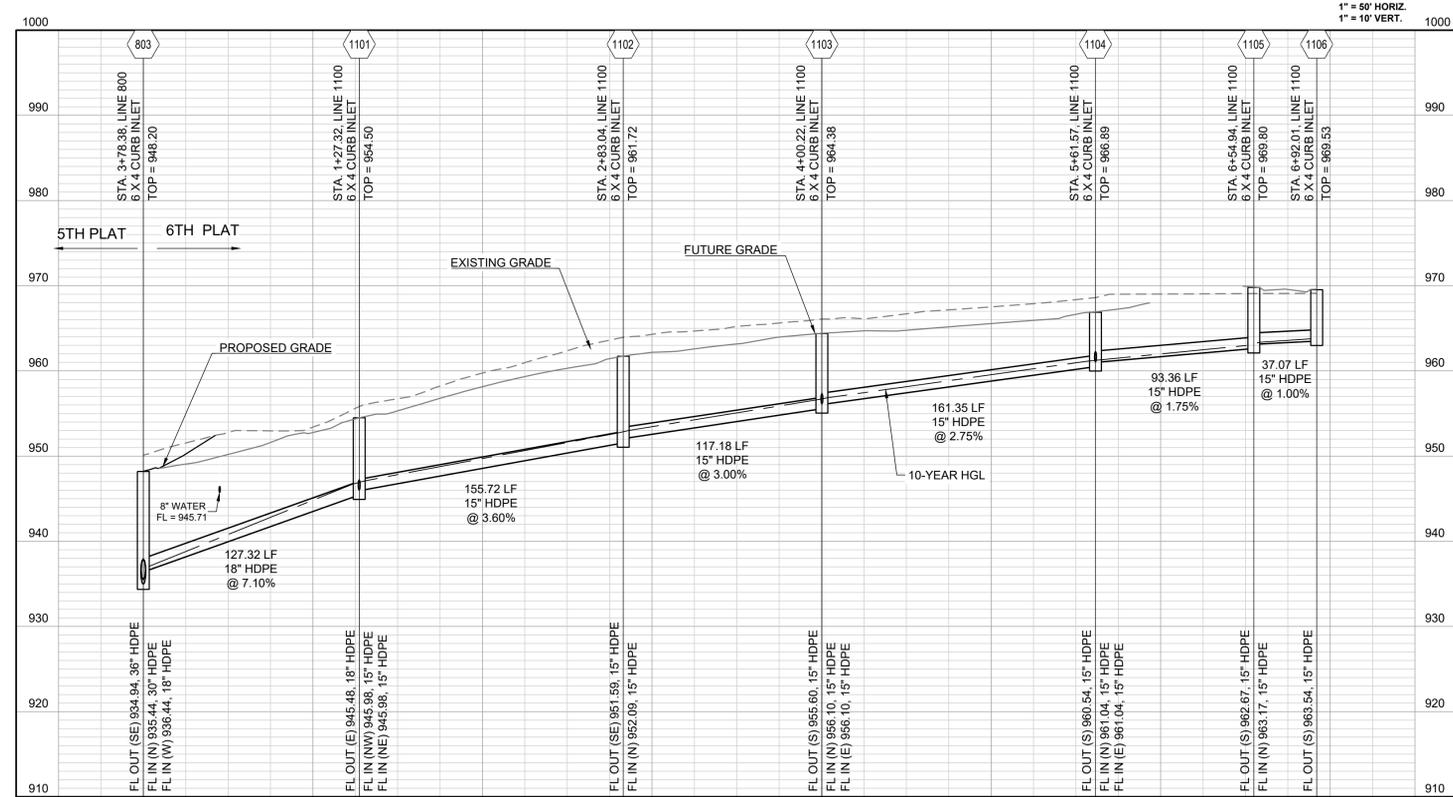




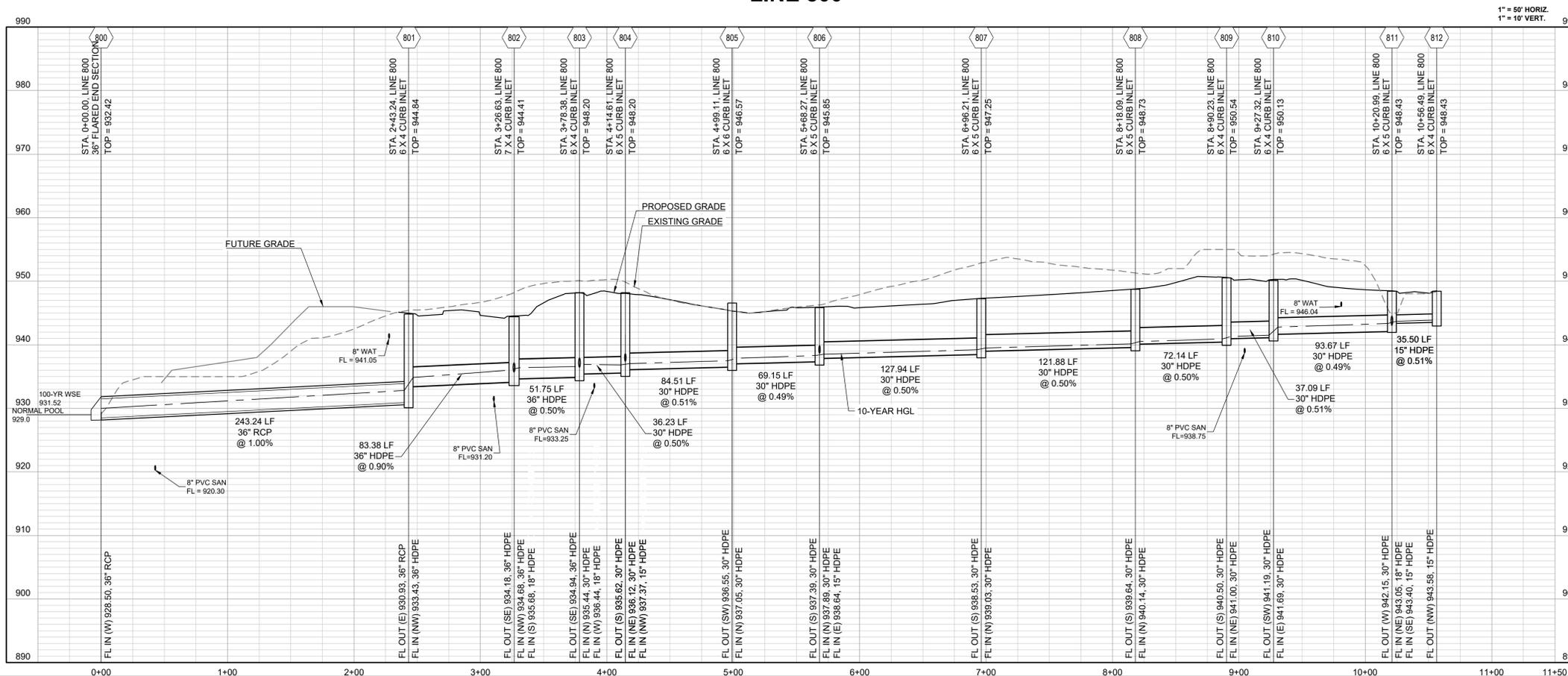
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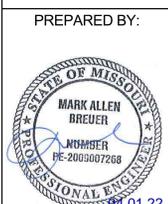
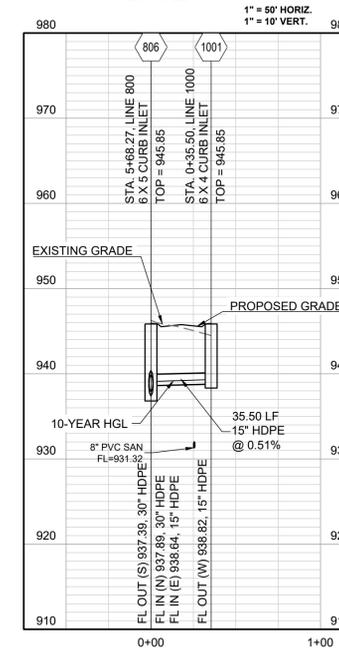
### LINE 1100



### LINE 800



### LINE 1000



PREPARED BY:  
SCHLAGEL & ASSOCIATES, P.A.

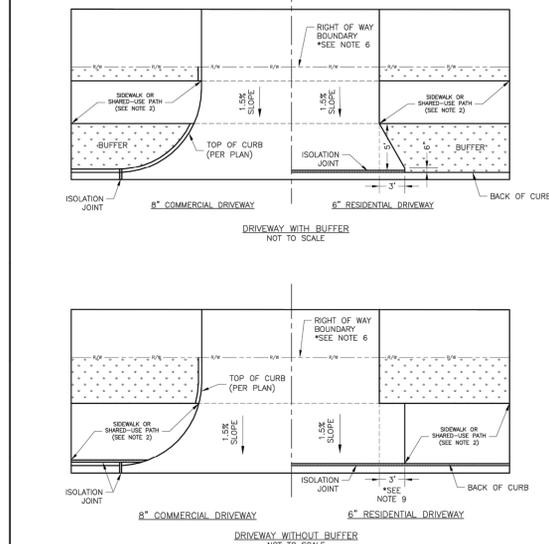
**PERGOLA PARK 5TH PLAT  
STREET, STORMWATER, MASTER DRAINAGE  
PLAN & EROSION AND SEDIMENT CONTROL**  
- LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
2-4-22	CITY COMMENTS
3-30-22	CITY COMMENTS

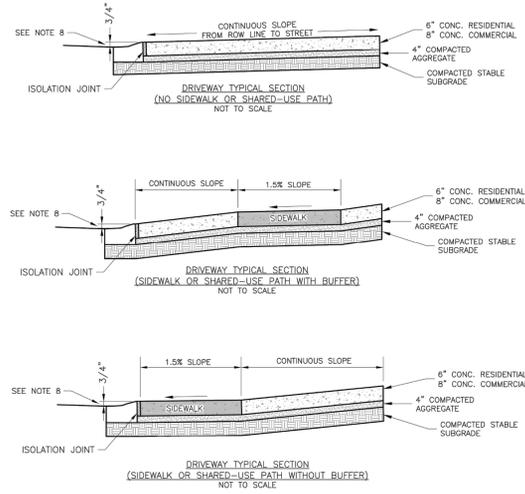
STORM PROFILES

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Development Services Department  
Lee's Summit, Missouri  
08/17/2022





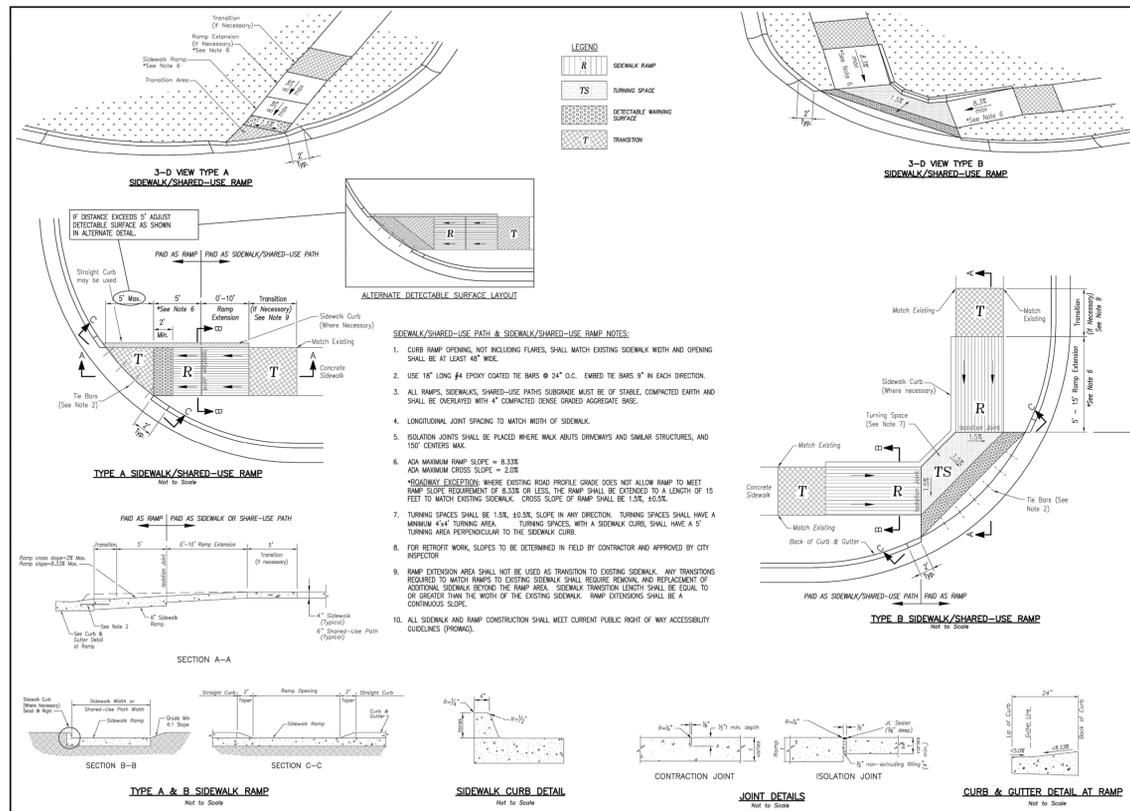
- GENERAL NOTES**
- SUBGRADE SHALL BE STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
  - ALL DRIVE APPROACHES SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG) FOR SLOPE REQUIREMENTS WHEN SIDEWALK IS REQUIRED (SEE ADA RAMP RETROFIT DETAIL).
  - JOINT AT BACK OF CURB LINE SHALL BE AN ISOLATION JOINT FOR RESIDENTIAL DRIVEWAYS.
  - KCMBB 4K CONCRETE MIX IS REQUIRED FOR ALL CURBS.
  - COMMERCIAL DRIVEWAYS AND DRIVEWAY APPROACHES IN THE PUBLIC RIGHT OF WAY, SHALL BE KCMBB 4K CONCRETE MIX. A JOINT MUST BE INSTALLED AT THE RIGHT OF WAY BOUNDARY FOR PROPERTY DELINEATION.
  - WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.
  - 3/4" FROM TOP OF CURB TO FLOWLINE AT DRIVEWAY (TYPE CG-1 CURB ONLY). MUST MAINTAIN ORIGINAL FLOWLINE OF CURB.
  - SIDEWALK ADJOINING CURB SHALL BE 6" THICK, EXTENDING 3" FROM THE DRIVEWAY.
  - THE MAXIMUM WIDTH OF A RESIDENTIAL DRIVEWAY IS 36 FEET WITHIN THE RIGHT OF WAY.



**LEE'S SUMMIT MISSOURI**  
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STANDARD DETAILS  
CITY OF LEE'S SUMMIT, MO  
LEE'S SUMMIT, JACKSON COUNTY, MO  
DRIVEWAY DETAIL

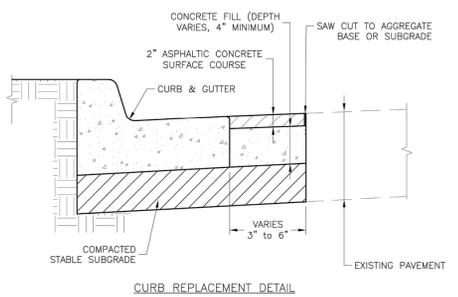
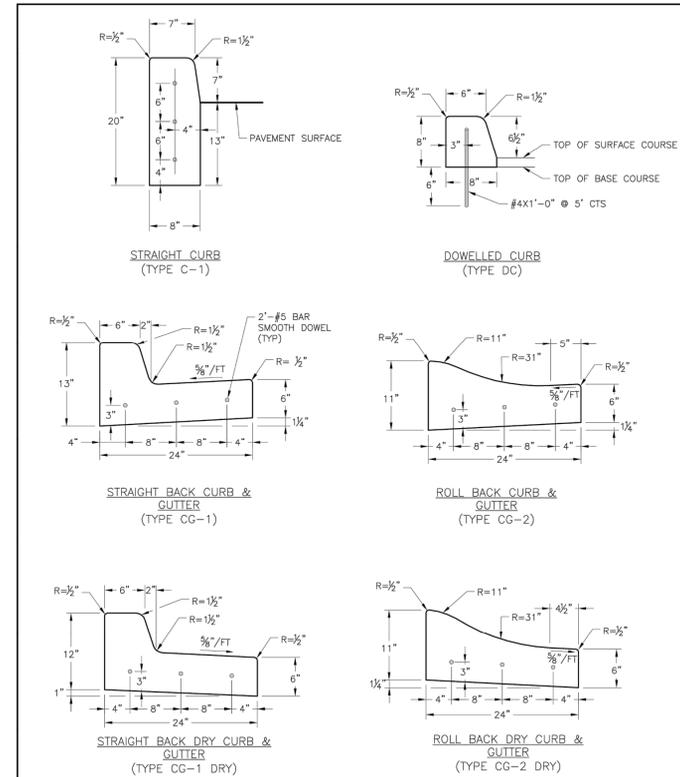
GEN-1



**LEE'S SUMMIT MISSOURI**  
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STANDARD DETAILS  
CITY OF LEE'S SUMMIT, MO  
LEE'S SUMMIT, JACKSON COUNTY, MO  
ADA RAMP RETROFIT DETAIL

GEN-3A

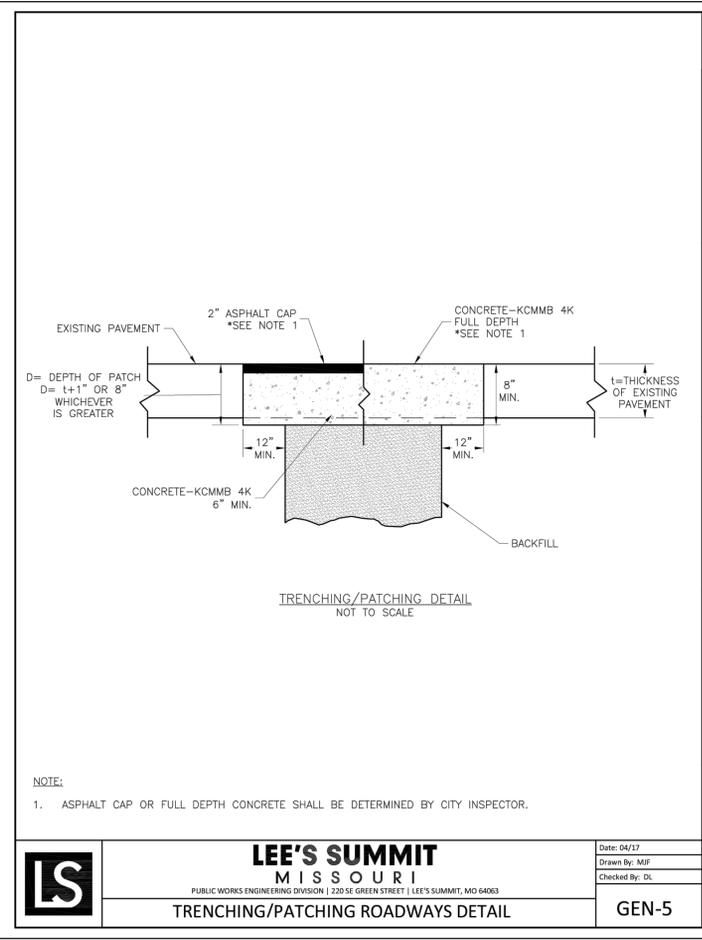


- GENERAL NOTES**
- 3/4" ISOLATION JOINTS WITH 3 (2" - #5 BAR) SMOOTH DOWELS SHALL BE PLACED AT RADIUS POINTS AND AT 15' INTERVALS. THESE DOWEL BARS SHALL BE GREASED AND WRAPPED ON ONE END WITH EXPANSION TUBES.
  - 3" DEEP CONTRACTION JOINTS SHALL BE INSTALLED AT APPROXIMATELY 10' INTERVALS. THESE JOINTS SHALL PASS ACROSS THE ENTIRE CURB SECTION.
  - CONCRETE FILL SHALL HAVE UNIFORM AND SMOOTH FINISH.
  - KCMBB 4K CONCRETE SHALL BE USED FOR ALL CURBS.
  - ASPHALTIC CONCRETE SURFACE COURSE SHALL CONFORM TO STANDARD SPECIFICATIONS SECTION 2205.2.
  - CURBS FOR NEW STREETS SHALL BE BUILT ON ASPHALT OR AGGREGATE BASE AS SHOWN IN TYPICAL SECTION DETAIL.
  - WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.

**LEE'S SUMMIT MISSOURI**  
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STANDARD DETAILS  
CITY OF LEE'S SUMMIT, MO  
LEE'S SUMMIT, JACKSON COUNTY, MO  
CURB & GUTTER DETAIL

GEN-4

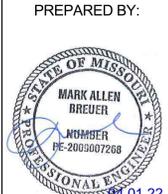


**LEE'S SUMMIT MISSOURI**  
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

DATE: 04/17  
DRAWN BY: MIF  
CHECKED BY: DL  
GEN-5

RELEASED FOR CONSTRUCTION  
As Noted on Plans Review  
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Lee's Summit, Missouri  
08/17/2022

**SCHLAGEL**  
ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS  
14920 West 107th Street • Lenexa, Kansas 66215  
(913) 492-5159 • Fax: (913) 492-8400  
WWW.SCHLAGELASSOCIATES.COM  
Missouri State Certificates of Authority  
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SCHLAGEL & ASSOCIATES, P.A.

PERGOLA PARK 5TH PLAT  
STREET, STORMWATER, MASTER DRAINAGE  
PLAN & EROSION AND SEDIMENT CONTROL  
- LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
2-4-22	CITY COMMENTS
3-30-22	CITY COMMENTS

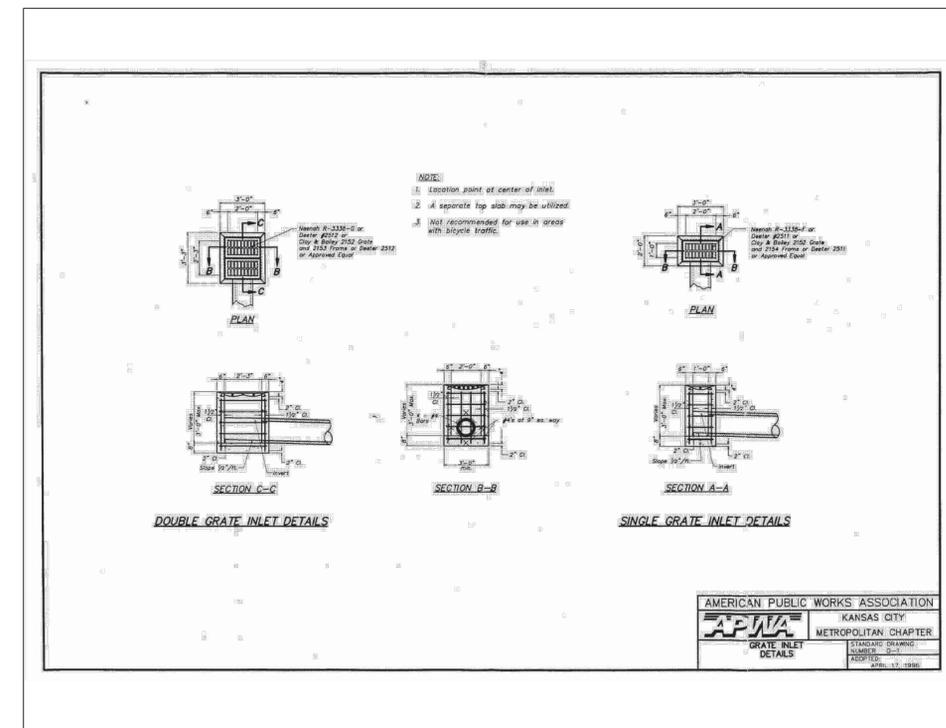
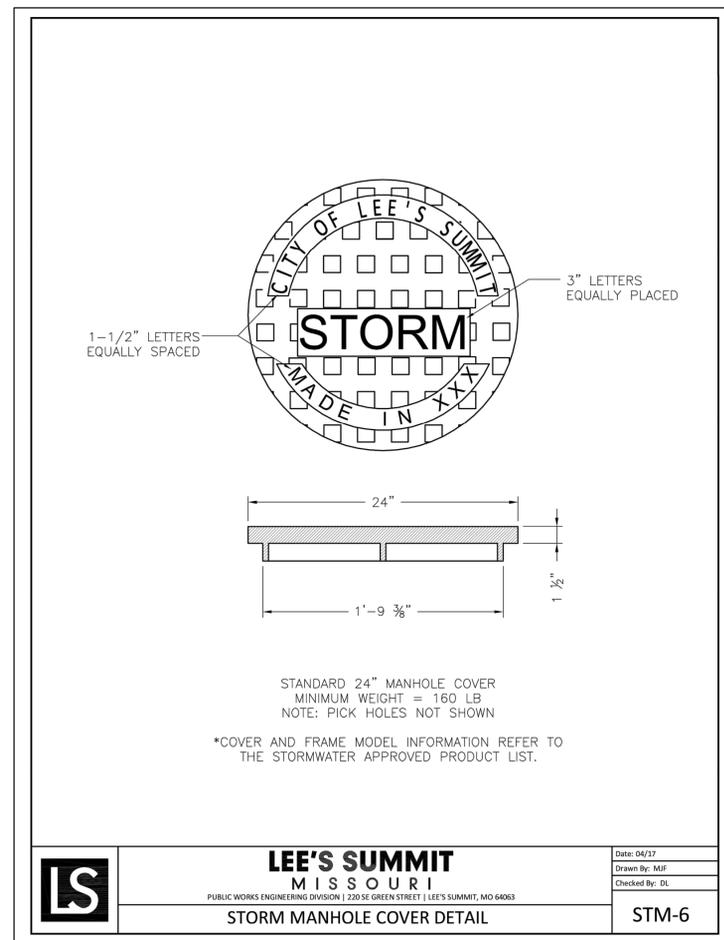
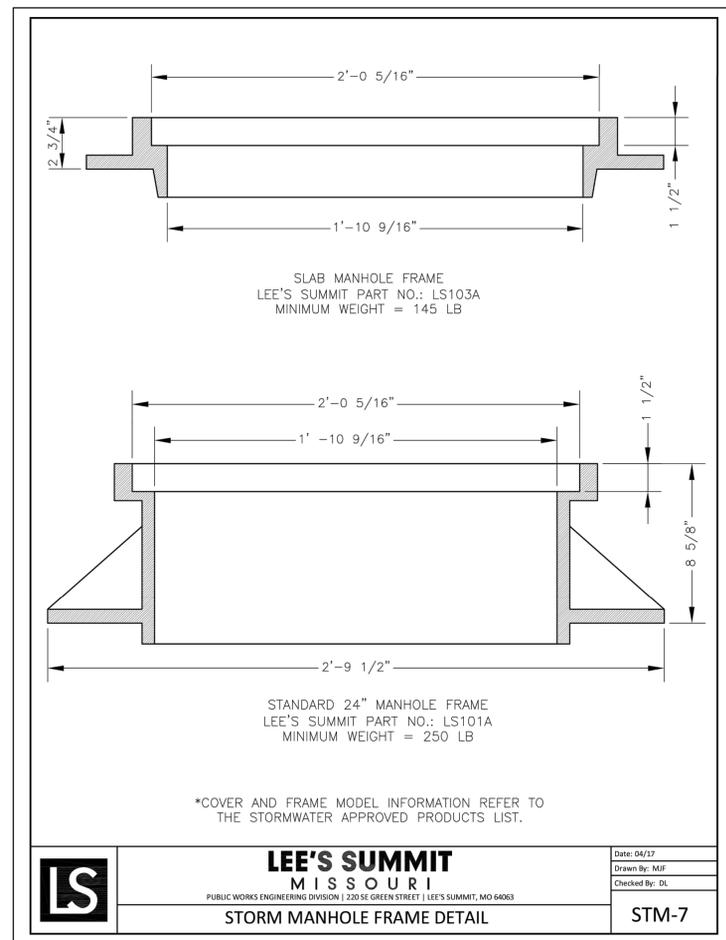
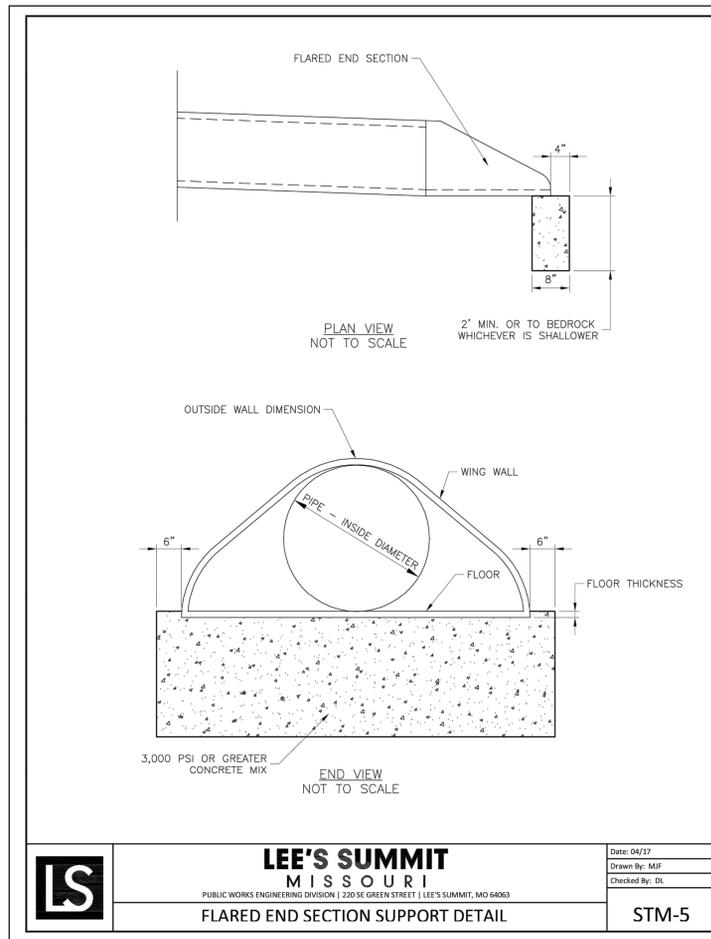
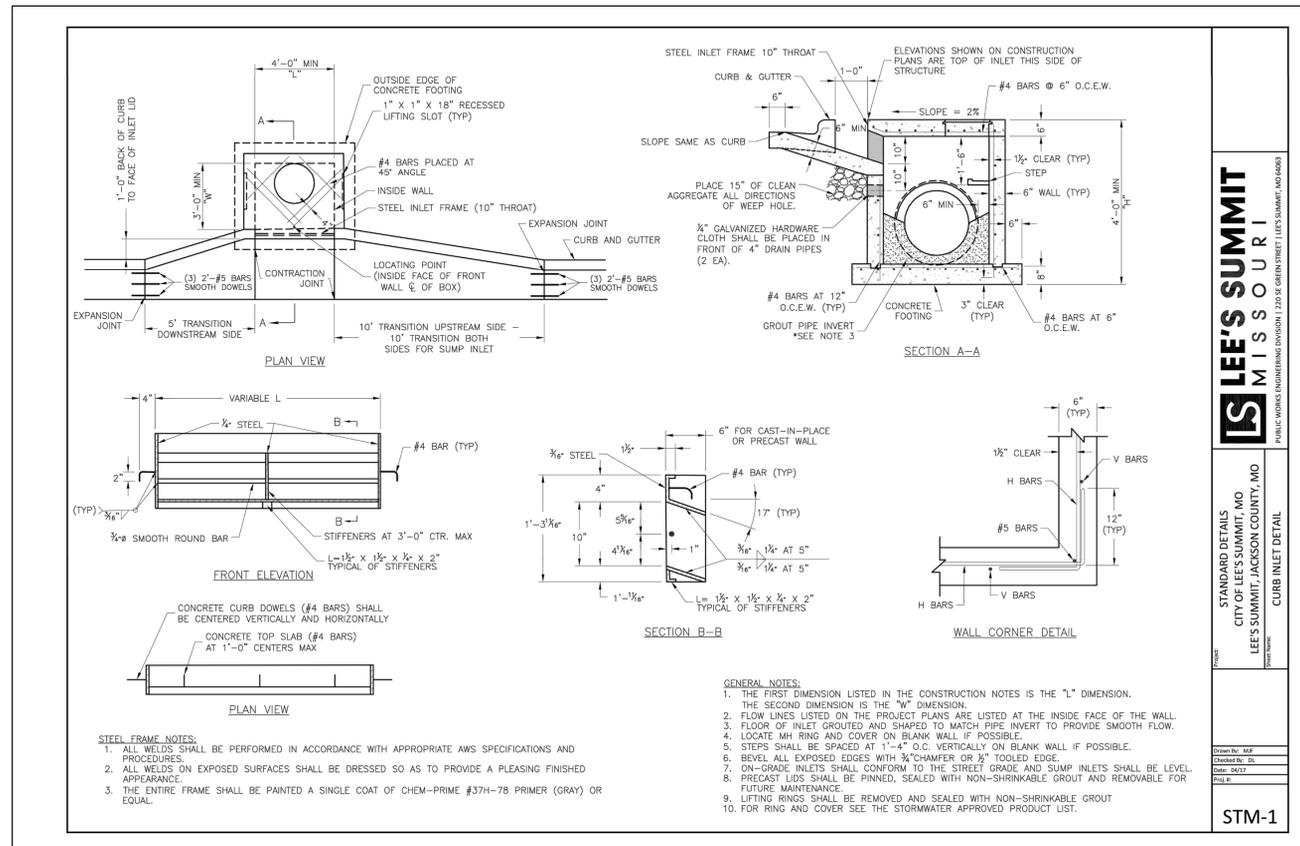
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CHECKED BY: MAB  
DATE PREPARED: 11-8-2021  
PROJ. NUMBER: 200-189

STREET DETAIL SHEET

SHEET  
**22**







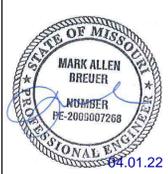
**PERGOLA PARK 5TH PLAT  
STREET, STORMWATER, MASTER DRAINAGE  
PLAN & EROSION AND SEDIMENT CONTROL**  
- LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
2-4-22	CITY COMMENTS
3-30-22	CITY COMMENTS

DRAWN BY:	DESCRIPTION
BAL	CITY COMMENTS
MAB	CITY COMMENTS

DATE PREPARED: 11-8-2021  
PROJ. NUMBER: 20-189

PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

**PERGOLA PARK 5TH PLAT**  
**STREET, STORMWATER, MASTER DRAINAGE**  
**PLAN & EROSION AND SEDIMENT CONTROL**  
 - LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
2-4-22	CITY COMMENTS
3-30-22	CITY COMMENTS

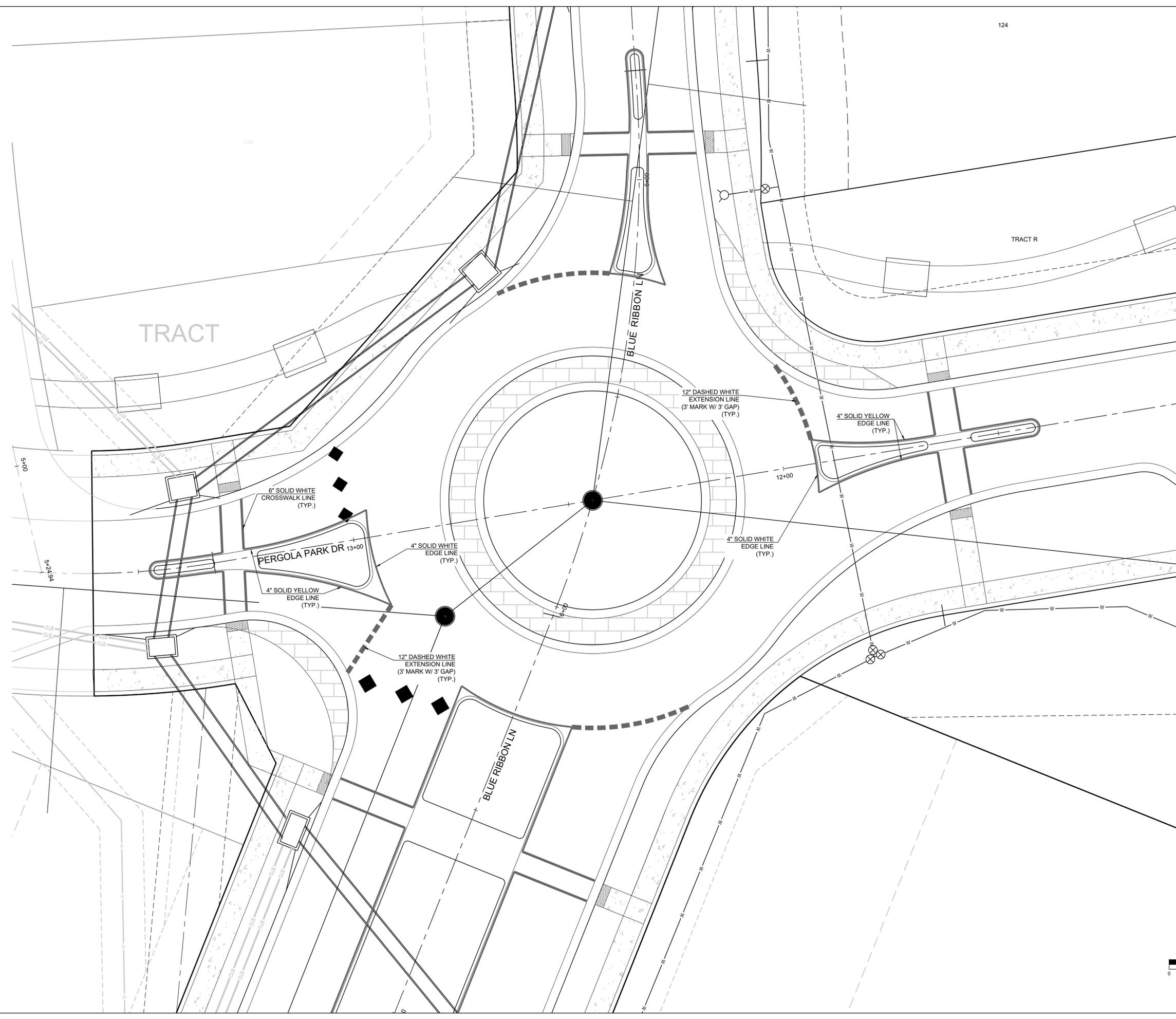
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**RELEASED FOR CONSTRUCTION**  
 As Noted on Plans Review  
 Development Services Department  
 Lee's Summit, Missouri  
 08/17/2022



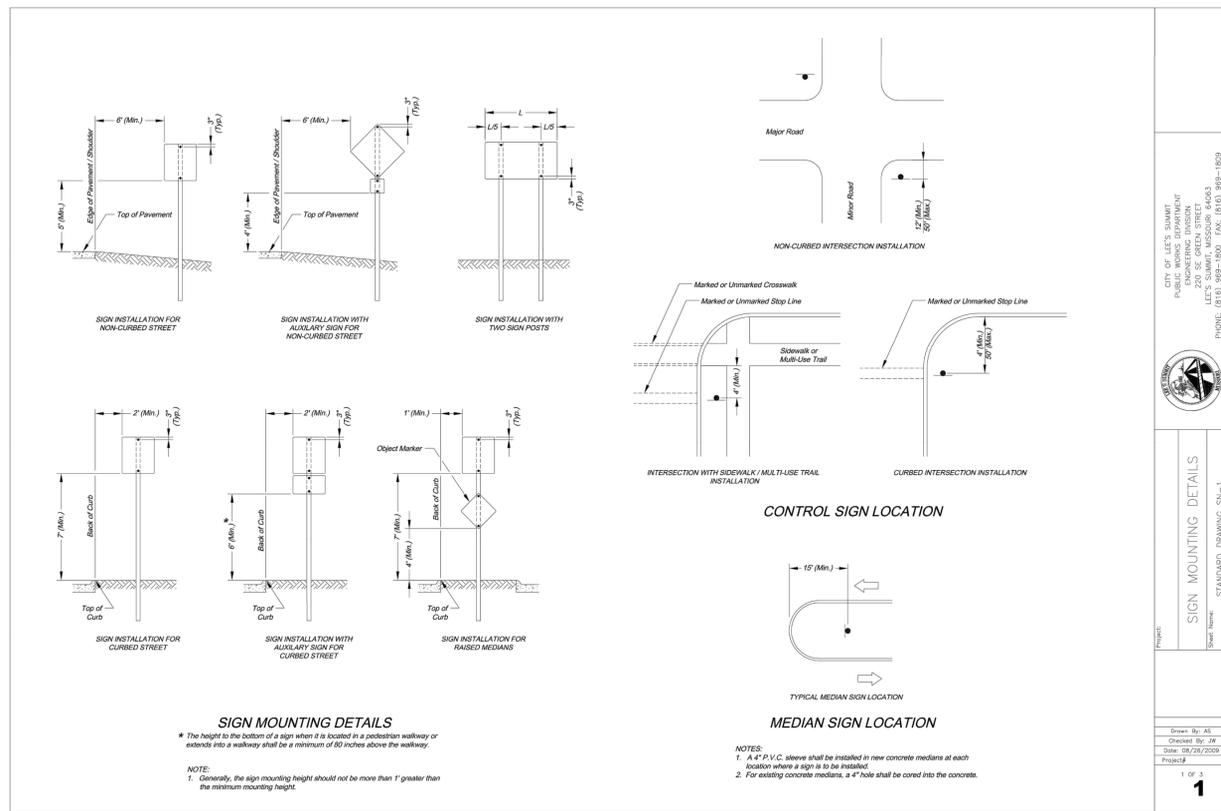
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SHEET **26**





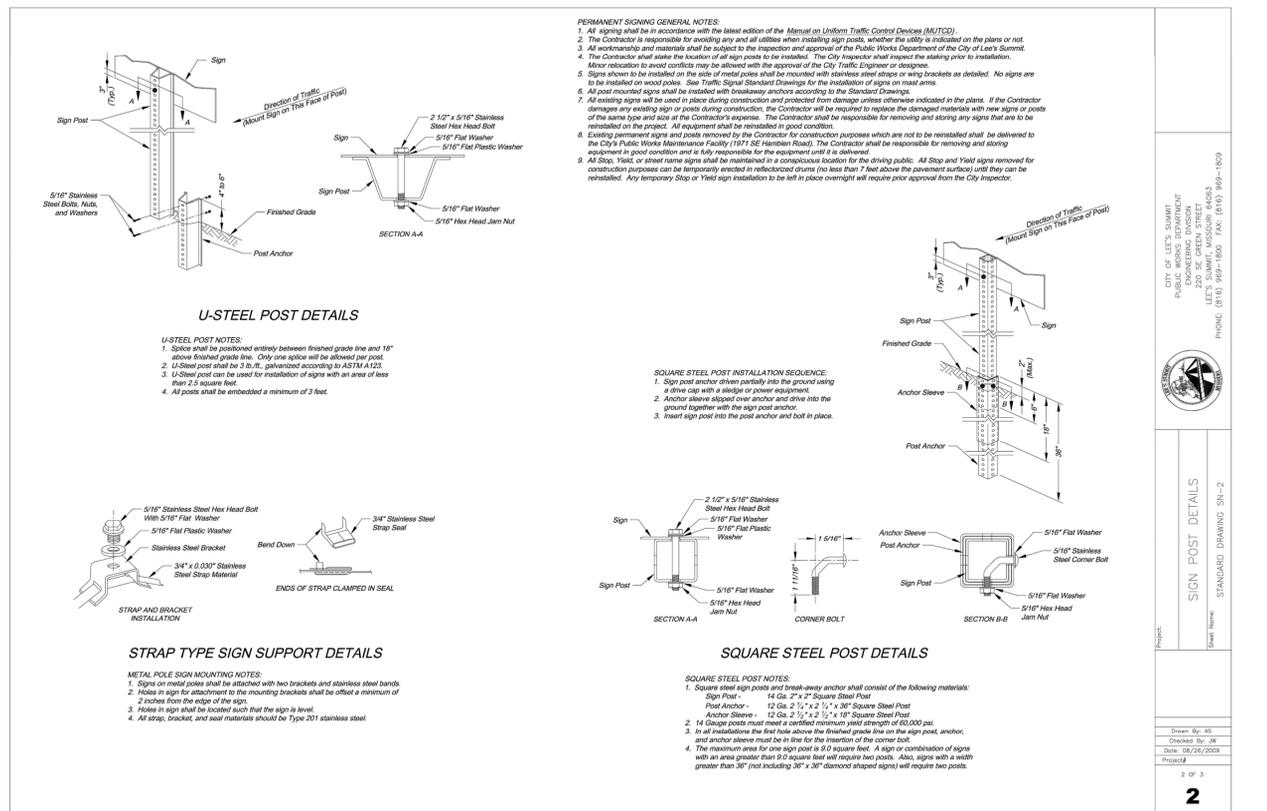




CITY OF LEE'S SUMMIT  
PUBLIC WORKS DEPARTMENT  
ENGINEERING DIVISION  
LEE'S SUMMIT, MISSOURI 64003  
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**SIGN MOUNTING DETAILS**  
STANDARD DRAWING SN-1

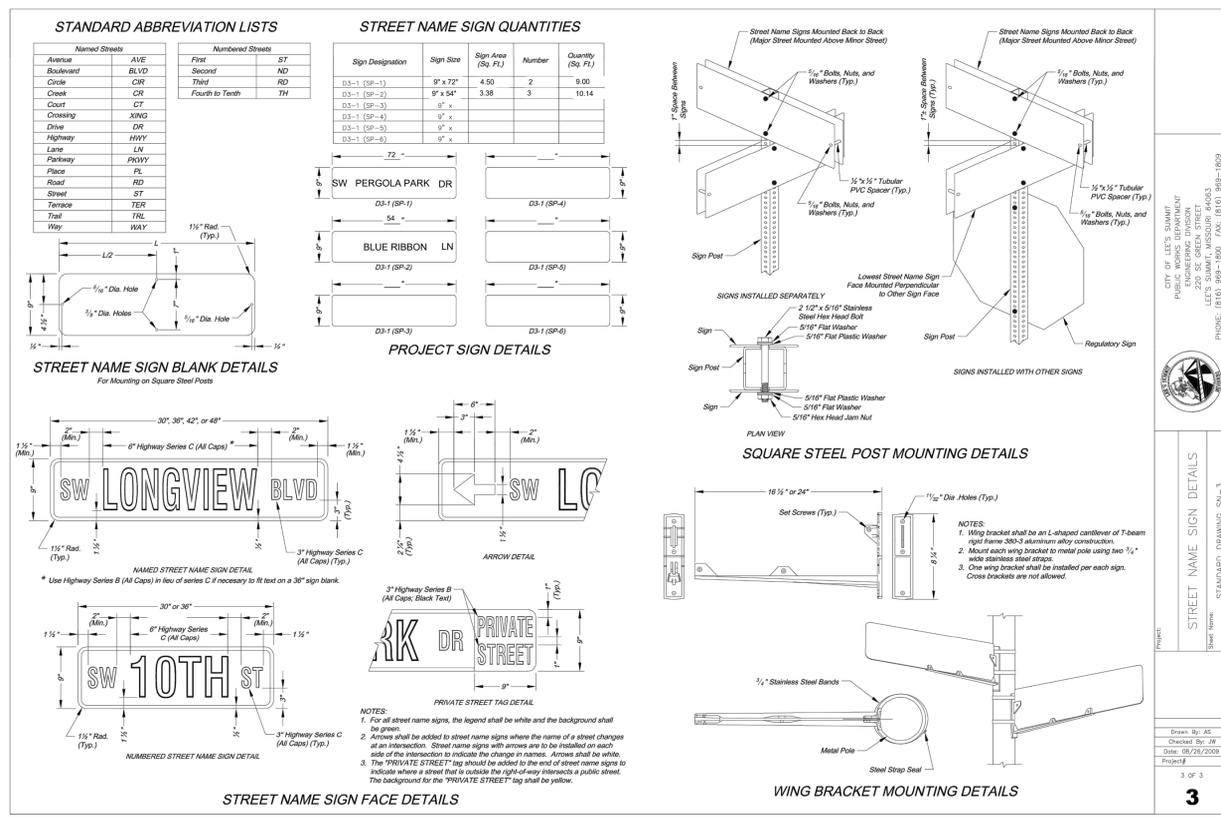
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Checked By: AS  
Date: 08/28/2009  
Project: 1



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ENGINEERING DIVISION  
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**SIGN POST DETAILS**  
STANDARD DRAWING SN-2

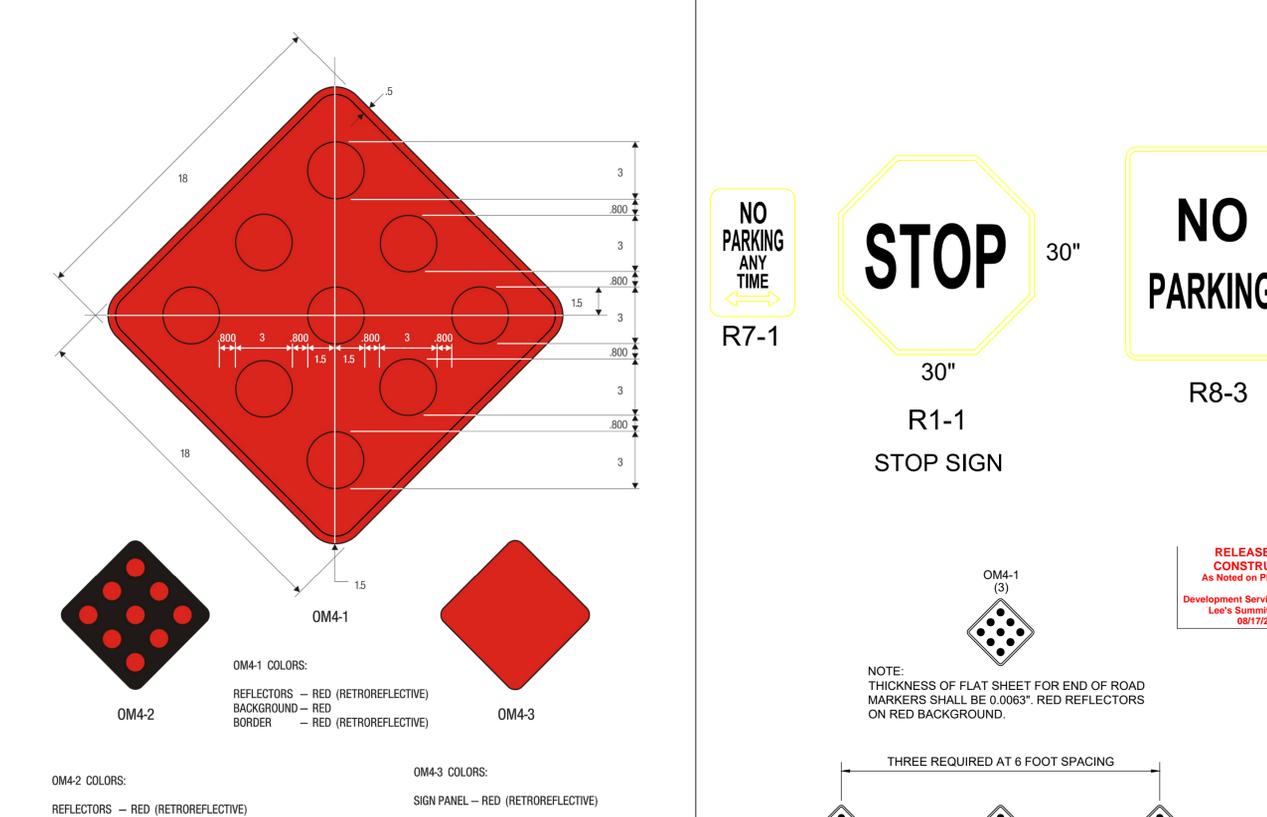
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Date: 08/28/2009  
Project: 2



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**STREET NAME SIGN DETAILS**  
STANDARD DRAWING SN-3

Drawn By: AS  
Checked By: AS  
Date: 08/28/2009  
Project: 3



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Lee's Summit, Missouri  
08/17/2022

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ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS  
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Missouri State Certificate of Authority  
#E200200360P #LAC001000523 #LS200200859F

PREPARED BY:  
**MARK ALLEN BREUER**  
REGISTERED PROFESSIONAL ENGINEER  
NUMBER PE-2003007268  
08.01.22

SCHLAGEL & ASSOCIATES, P.A.

**PERGOLA PARK 5TH PLAT STREET, STORMWATER, MASTER DRAINAGE PLAN & EROSION AND SEDIMENT CONTROL**  
- LEE'S SUMMIT, MISSOURI

REVISION DATE	DESCRIPTION
2-4-22	CITY COMMENTS
3-30-22	CITY COMMENTS

STREET SIGN DETAILS  
SHEET  
**29**