LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

SEC. 10, TWP. 47N, RNG. 32W

VICINITY MAP

SECTION 10, TOWNSHIP 47, RANGE 32 LEE'S SUMMIT, JACKSON COUNTY, MISSOURI NOT TO SCALE

LEGAL DESCRIPTION:

SECTION 10, TOWNSHIP 47 NORTH, RANGE 32 WEST, EXCEPT THOSE PARTS PLATTED AS HIGHLAND MEADOWS FIRST PLAT, HIGHLAND MEADOWS SECOND PLAT, HIGHLANDS MEADOWS THIRD PLAT, HIGHLAND MEADOWS 4TH PLAT, SUBDIVISIONS IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI.

OIL AND GAS WELL NOTES.

NO ABANDONED OIL OR GAS WELLS HAVE BEEN IDENTIFIED WITHIN THE PROPERTY LIMITS OF THE PROPOSED CONSTRUCTION ACTIVITIES, PER THE MISSOURI DEPARTMENT OF NATURAL RESOURCES (MDNR) PERMITTED OIL AND GAS DATABASE, DATED JUNE 2, 2020.





UTILITY CONTACTS:

SANITARY & WATER: CITY OF LEE'S SUMMIT JEFF THORN 220 SE GREEN STREET LEE'S SUMMIT, MO 64063 PHONE (816) 969-1900

<u>STREETS:</u> CITY OF LEE'S SUMMIT MICHAEL PARK 220 SE GREEN STREET LEE'S SUMMIT, MO 64063 PHONE (816) 275-1550

PHONE (816) 969-1900

EVERGY: DOUG DAVIN 1300 SE HAMBLEN ROAD LEE'S SUMMIT, MO 64081 PHONE (816) 347-4320

LEE'S SUMMIT, MO 64063 PHONE (816) 969-1800 RONALD GIPFERT

KANSAS CITY, MO 64106

500 E 8TH STREET

CITY OF LEE'S SUMMIT

220 SE GREEN STREET

STORMWATER:

PUBLIC WORKS

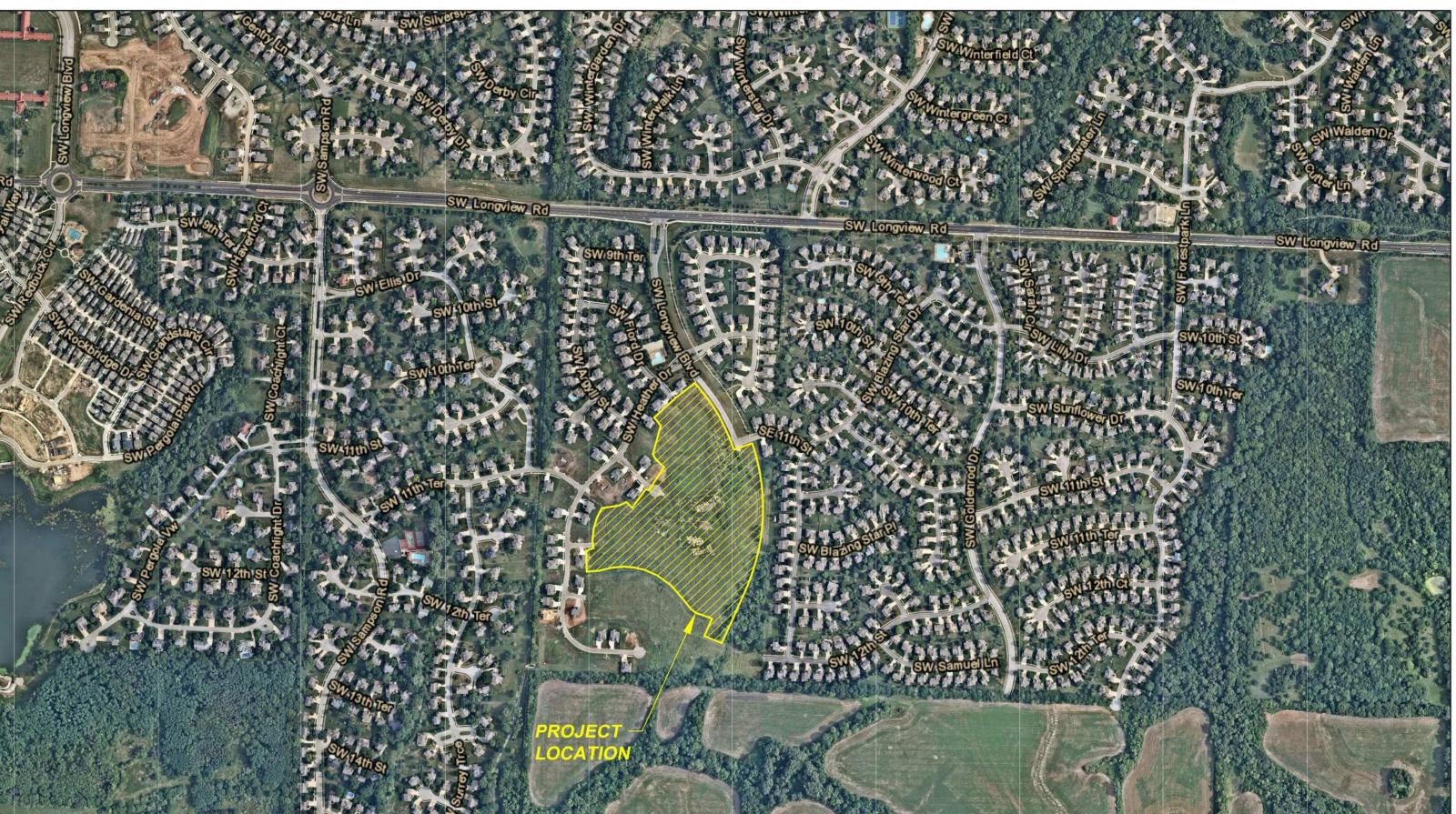
MISSOURI GAS ENERGY: RICHARD FROCK 3025 SW CLOVER DRIVE LEE'S SUMMIT, MO 64082 PHONE (816) 472-3489

FEMA FLOOD INFORMATION:

THE SITE IS LOCATED IN ZONE X, AREA OF MINIMAL FLOOD HAZARD, PER FEMA FIRM MAP 29095C0418G: EFFECTIVE DATE OF JANUARY 20, 2017. NO LETTERS OF MAP AMENDMENT OR REVISIONS ARE BEING PROPOSED.

BM #1 N=999843.9665 E=2898946.9717 ELEV=935.04 DESCRIPTION = "JA-148" REFERENCE SYSTEM MONUMENT

DATE: 2/11/2021



WATERSHED: LITTLE BLUE RIVER

SURVEY CONTROL.

COORDINATES ARE BASED ON THE MISSOURI STATE PLANE COORDINATE SYSTEM, WEST ZONE, USING JACKSON COUNTY, MISSOURI, GEOGRAPHIC REFERENCE SYSTEM MONUMENT JA-148 (2003) ADJUSTMENT) AND ARE MODIFIED FROM GRIS COORDINATÉS TO GROUND COORDINATES BY UTILIZING A GRID SCALE FACTOR OF 0.9999020 AT REFERENCE MONUMENT JA-148.

PROJECT ELEVATIONS ARE BASED ON JACKSON COUNTY, MISSOURI, GEOGRAPHIC REFERENCE SYSTEM MONUMENT JA-148 (2003 ADJUSTMENT).

"JA-148" - STANDARD KC METRO ALUMINUM GRS DISK SET IN CONCRETE FLUSH WITH THE GROUND AND STAMPED "JA-148, 2002" LOCATED ON THE NORTH SIDE OF 3RD STREET, 12.5 FEET NORTH OF A SIDEWALK AND 102.5 FEET WEST OF THE PARKING LOT EXIT OF CEDAR CREEK ELEMENTARY SCHOOL.

- AS TO THE EXISTING CONDITIONS OF THE SITE AND HAVE ALL UTILITIES MARKED PRIOR TO COMMENCING CONSTRUCTION.
- AND POTENTIAL UTILITY CONFLICT IF CONFLICT OR DISCREPANCY EXISTS.
- 3. CONTRACTOR SHALL PROTECT EXISTING ANY DAMAGE SHALL BE REPAIRED/ REPLACED TO PRE-CONSTRUCTION
- 4. CONTRACTOR SHALL CONTACT THE CITY'S DEVELOPMENT SERVICES ENGINEERING DISTURBANCE WORK AT (816) 969-1200.

SHEET INDEX

C111 — SW 11TH TERR. STA.5+50—9+06 PLAN & PROFILE

- PRE-CLEARING EROSION CONTROL PLAN C302 — INTERMEDIATE EROSION CONTROL PLAN C303 - FINAL STABILIZATION EROSION CONTROL PLAN

C403 - MATCH EXISTING PAVEMENT DETAILS

C405 - ADA RAMP CROSS SECTIONS

C506 - ROCK DITCH CHECK DETAILS C507 - DIVERSION BERM DETAILS C508 - OUTLET PROTECTION DETAILS

PROJECT SPECIFICATIONS:

THE SPECIFICATIONS FOR THIS PROJECT SHALL BE THE FOLLOWING:

MOST CURRENT VERSION OF THE DESIGN AND CONSTRUCTION MANUAL OF THE CITY OF LEE'S SUMMIT AS ADOPTED BY ORDINANCE 5813.

THE STANDARD SPECIFICATIONS THROUGH AND INCLUDING THE LATEST AMENDMENTS SHALL BE PART OF THESE PROJECT DRAWINGS AND SPECIFICATIONS AND ARE INCORPORATED HEREIN BY REFERENCE. THE MORE STRINGENT OF THESE STANDARD SPECIFICATIONS AND THOSE PREPARED BY THE ENGINEER PREPARING THESE PLANS SHALL GOVERN.

PREPARED & SUBMITTED BY:

ANDERSON ENGINEERING INC. KANSAS CITY, MISSOURI

ZACH MYERS, P.E. MISSOURI P.E. NO. 2012009232

> Digitally signed by Kent Monter

CONSTRUCTION AS NOTED ON PLANS REVIEW Reason: I am **DEVELOPMENT SERVICES** LEE'S SUMMIT, MISSOURI 04/16/2021

DATE



SH

SHEET NUMBER

BENCHMARK:

GENERAL NOTES:

- CONTRACTOR SHALL SATISFY THEMSELVES
- 2. CONTRACTOR SHALL POTHOLE ALL CONNECTION POINTS TO EXISTING UTILITIES LOCATIONS PRIOR TO ANY CONSTRUCTION ACTIVITIES. NOTIFY ENGINEER IMMEDIATELY
- STRUCTURES TO REMAIN FROM DAMAGE DURING DEMOLITION AND CONSTRUCTION. CONDITION AT CONTRACTOR'S EXPENSE.
- INSPECTORS 48 HOURS PRIOR TO ANY LAND

DEVELOPER:

BRAD KEMPF SUMMIT HOMES KC 120 SE 30TH STREET LEE'S SUMMIT, MO 64082 BRADLEY@SUMMITHOMESKC.COM (816) 927–9711

CIVIL ENGINEER:

ZACH MYERS ANDERSON ENGINEERING, INC. 941 W 141ST TERR KANSAS CITY, MO 64145 ZMYERS@ANDERSONENGINEERINGINC.COM (816) 380-4821

DISTURBED AREA: 14.9 AC

en field verified. Date: 03/24/2022 Certified by: GRC Title: Project Engineer Firm: Anderson Engineering Inc

Kent Monter approving this Date: 2021.04.16 15:30:42-05'00'

- 1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ACQUIRE ALL STATE AND CITY PERMITS. INCLUDING PERMITS REQUIRED BY OTHER GOVERNING BODIES, REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT.
- 2. PRIOR TO BEGINNING CONSTRUCTION, THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND NOTIFYING ALL UTILITY COMPANIES AND SHALL FIELD VERIFY ALL UTILITIES THAT MAY BE ENCOUNTERED. THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR COMPLETE. IN THE EVENT THAT EXISTING UTILITIES ARE CONTACTED, DISRUPTED, OR IN ANY WAY ALTERED, CONTACT THE RESPECTIVE UTILITY COMPANY IMMEDIATELY. IN CASE OF EMERGENCY, DIAL 911.
- 3. THE CONTRACTOR SHALL PROVIDE EROSION AND SILT PROTECTION AS REQUIRED DURING CONSTRUCTION AND SHALL BE RESPONSIBLE FOR KEEPING EXISTING STREET AND ADJACENT LAND FEATURES AND PROPERTY FREE OF MUD AND SILT. SEE "EROSION CONTROL PLAN" FOR MINIMUM EROSION CONTROL MEASURES REQUIRED BY THESE PLANS. EROSION CONTROLS SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ONCE CONSTRUCTION BEGINS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL EROSION CONTROL MEASURES AND SHALL PROMPTLY REPAIR ANY AREA REQUIRING ATTENTION UNTIL SUBSTANTIAL COMPLETION.
- 4. WARRANTY/DISCLAIMER: THE DESIGNS REPRESENTED IN THESE PLANS ARE IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING FOR THE DESIGN FUNCTIONS AND USES INTENDED BY THE OWNER AT THIS TIME. HOWEVER, NEITHER THE ENGINEER NOR ITS PERSONNEL CAN OR DO CERTIFY THESE DESIGNS OR PLANS AS CONSTRUCTED EXCEPT IN THE SPECIFIC CASES WHERE THE ENGINEER OBSERVES AND CONTROLS THE PHYSICAL CONSTRUCTION AND THE CONTINUAL BASIS AT THE SITE.
- 5. ALL CONSTRUCTION SHALL FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813. WHERE DISCREPANCIES EXIST BETWEEN THESE PLANS AND THE DESIGN AND CONSTRUCTION MANUAL. THE DESIGN AND CONSTRUCTION MANUAL SHALL PREVAIL.
- 6. THE CONTRACTOR SHALL PROVIDE AT LEAST ONE (1) CHEMICALLY TREATED PORTABLE TOILET UNIT, "SATELLITE CORPORATION", OR EQUAL FOR EVERY 20 WORKMEN ON THE JOB SITE. IN NO CASE SHALL LESS THAN ONE (1) BE PROVIDED. THE UNITS(S) SHALL REMAIN ON THE SITE DURING ALL ACTIVE PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL ENFORCE THE USE OF THE PUBLIC VIEW TO THE GREATEST EXTENT PRACTICABLE.
- 7. ALL AREA TO BE FILLED AND SUBGRADES UNDER PAVEMENTS SHALL BE PROOF-ROLLED WITH A LOADED, RUBBER TIRED TRUCK PRIOR TO FILL PLACEMENT OR ROADWAY PAVING OPERATIONS BEGIN. SOFT OR UNSTABLE AREA SHALL BE REMOVED AND REPLACED WITH STRUCTURAL FILL.
- 8. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN A COPY OF AND BECOME FAMILIAR WITH THE GEOTECHNICAL REPORT BY ANDERSON ENGINEERING INC., UNLESS SPECIFICALLY NOTED ON THE PLANS. THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT ARE HEREBY INCORPORATED INTO THE PROJECT REQUIREMENTS AND SPECIFICATIONS.
- 9. THE CONTRACTOR SHALL PROVIDE ALL CONSTRUCTION LAYOUT AND STAKING FOR THIS PROJECT.
- 10. ALL PIPE LENGTHS ARE SHOWN FROM STRUCTURE CENTER TO STRUCTURE CENTER.
- 11. ALL STRUCTURE STATION AND OFFSET CALLOUTS ARE TO THE CENTER OF STRUCTURE.
- 12. ALL CURB STATIONS, OFFSETS AND ELEVATIONS ARE TO THE TOP BACK OF CURB UNLESS OTHERWISE NOTED.
- 13. ALL CONNECTIONS TO EXISTING DRAINAGE STRUCTURES SHALL BE <u>SUBSIDIARY</u> TO NEW DRAINAGE
- 14. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ACCESS TO ALL PROPERTIES IS AVAILABLE DURING CONSTRUCTION OF THE PROJECT.
- 15. ALL SAW CUTS SHOWN ON THE PLANS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS OF THE CONTRACT. THE DEPTH OF THE CUT SHALL BE FULL DEPTH.
- 16. EXISTING CONCRETE PAVEMENT AND EXISTING BITUMINOUS PAVEMENT THAT IS REMOVED WILL BECOME THE PROPERTY OF THE CONTRACTOR & DISPOSED OF AT HIS EXPENSE.
- 17. EXISTING DRAINAGE STRUCTURES THAT ARE REMOVED, INCLUDING END SECTIONS, SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE NOTED ON THE PLANS.
- 18. CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE ELEVATIONS.
- 19. CHANNELS SHALL BE CUT AT BOX CULVERTS (UNLESS OTHERWISE NOTED) TO FLOW LINE ELEVATIONS AND TO A WIDTH OF ONE FOOT OUTSIDE OF EACH OUTSIDE WALL AND WITH SLOPES OF 2 TO 1 PRIOR TO CONSTRUCTION OF THE CULVERT.

- 20. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE UTILITY OWNERS TO LOCATE AND FLAG ALL RELOCATED UNDERGROUND UTILITIES PRIOR TO EXCAVATION TO AVOID DAMAGING THE UTILITIES. THE LOCATIONS SHOWN ON THE PLANS ARE THE ORIGINAL SURVEYED LOCATION, PRIOR TO RELOCATION IN SOME CASES. THE INFORMATION SHOWN IN THESE PLANS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE UTILITY COMPANIES PROVIDED FOR FIELD LOCATION OF ALL UNDERGROUND FACILITIES PRIOR TO ANY EXCAVATION. THE CONTRACTOR SHALL COORDINATE WITH THE PROPER UTILITY OWNERS DURING CONSTRUCTION OF THE PROPOSED STORM SEWER SYSTEM TO AVOID DAMAGES TO EXISTING FACILITIES. DAMAGE TO ANY FACILITIES WILL BE PAID FOR AT THE CONTRACTOR'S EXPENSE.
- 21. ALL TREES. SHRUBS. BUSHES. AND BRUSH WITHIN THE GRADING LIMITS SHALL BE REMOVED BY THE CONTRACTOR UNLESS SPECIFICALLY INDICATED TO BE SAVED ON THE PLANS.
- 22. ALL SIGNS REMOVED BY THE CONTRACTOR SHALL BECOME PROPERTY OF THE CITY, UNLESS NOT DESIRED BY CITY. IF NOT DESIRED BY CITY, CONTRACTOR SHALL REMOVE AND DISPOSE OF SIGNS
- 23. DRAINAGE STRUCTURES WHICH ARE TO REMAIN, WHETHER EXTENDED OR NOT, SHALL BE CLEANED OUT BY THE CONTRACTOR, AS DIRECTED BY THE CITY.
- 24. CONTRACTOR SHALL ACCOMPANY A DESIGNATED CITY REPRESENTATIVE DURING A PHOTOGRAPHY & VIDEO TOUR BEFORE ANY CONSTRUCTION BEGINS TO RECORD EXISTING CONDITIONS.
- 25. THE CONTRACTOR SHALL THOROUGHLY REVIEW AND BECOME FAMILIAR WITH THE PROJECT PLANS, SPECIFICATIONS AND ANY SPECIAL CONDITIONS OF THE CONTRACT DOCUMENTS PRIOR TO BEGINNING CONSTRUCTION OF THIS PROJECT.
- 26. DRIVEWAYS, SIDEWALKS, PARKING LOTS, YARD LIGHTS, FENCES, SPRINKLER SYSTEMS, UTILITY SERVICE LINE CONNECTIONS, LANDSCAPING, SEPTIC SYSTEMS, AND OTHER AREAS OUTSIDE THE CONSTRUCTION EASEMENTS THAT ARE DAMAGED BY THE CONTRACTOR SHALL BE RESTORED AT HIS EXPENSE TO A CONDITION EQUAL TO OR BETTER THAN EXISTING BEFORE DAMAGE OCCURRED.
- 27. ALL WORK SHALL BE CONFINED WITHIN THE EASEMENTS AND/OR GRADING LIMITS AS DIRECTED BY THE ENGINEER. ALL TEMPORARY CONSTRUCTION EASEMENTS SHALL BE STAKED BY THE CONTRACTOR PRIOR TO BEGINNING OF CONSTRUCTION. ALL GRADING LIMITS SHOWN ARE APPROXIMATE AND MAY BE EXTENDED OR REDUCED AT THE DIRECTION OF THE ENGINEER.
- 28. THE CONTRACTOR SHALL PROVIDE ADEQUATE SEDIMENT AND EROSION CONTROL TO PREVENT SEDIMENT AND/OR DEBRIS FROM ENTERING STREETS OPEN TO TRAFFIC THE COMPLETED STORM SEWER SYSTEM, OR YARDS OF ADJACENT RESIDENCES AND BUSINESSES.
- 29. ALL TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE LATEST M.U.T.C.D. THE TRAFFIC CONTROL PLANS SHOWN ARE MINIMUM REQUIREMENTS ONLY AND DO NOT ATTEMPT TO ADDRESS IN DEPTH THE VARIETY OF SITUATIONS THAT MAY OCCUR ONCE CONSTRUCTION BEGINS. THE REQUIREMENTS SHOWN IN NO WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR SELECTING & IMPLEMENTING THE PROPER DEVICES AND PROCEDURES THAT WILL ASSURE THE SAFETY OF MOTORISTS, PEDESTRIANS, & WORKERS AT ALL
- 30. LABOR, TOOLS, MATERIALS, AND EQUIPMENT REQUIRED FOR TEMPORARY CONNECTIONS TO MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION SHALL BE <u>SUBSIDIARY</u> TO OTHER PAY ITEMS.
- 31. REMOVAL OF EXISTING STRUCTURES SHALL INCLUDE, BUT NOT BE LIMITED TO, THE ITEMS NOTED IN THE PLANS AND IN THE SUMMARY OF QUANTITIES. WORK SHALL BE PAID FOR UNDER BID ITEM "REMOVAL OF EXISTING STRUCTURES". CONTRACTOR WILL DISPOSE OF EXISTING STRUCTURES AT HIS EXPENSE.
- 32. THE CONTRACTOR WILL BE RESPONSIBLE FOR SUPPORTING AND PROTECTING ALL EXPOSED UTILITIES IN OPEN TRENCHES. WORK SHALL BE <u>SUBSIDIARY</u> TO OTHER PAY ITEMS.
- 33. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF THE EXISTING STORM SEWER PIPES AND ADJUST THE PROPOSED FLOWLINE ELEVATIONS, PIPE LENGTHS, AND STRUCTURES AS EACH SECTION OF THE EXISTING DRAINAGE STRUCTURE IS REMOVED AND UNCOVERED.
- 34. EXCESS MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR FOR DISPOSAL.
- 35. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY AT ALL TIMES.
- 36. CONTRACTOR RESPONSIBLE FOR CONSTRUCTION OF ALL ADA-ACCESSIBLE RAMPS, AS WELL AS ANY SIDEWALK ADJACENT TO TRACTS OR UNPLATTED LAND, AT THE TIME OF INFRASTRUCTURE



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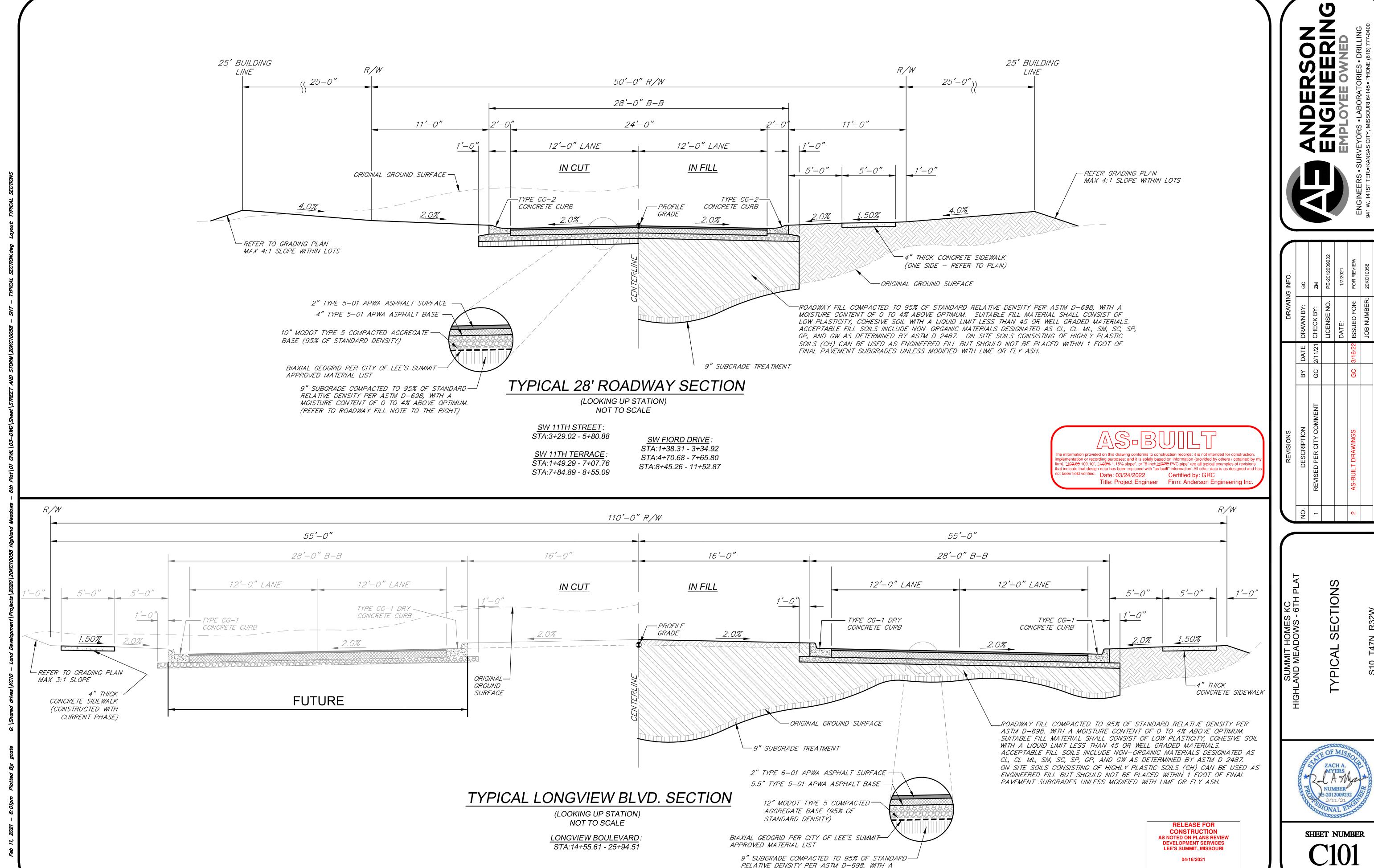
RELEASE FOR **CONSTRUCTION**

AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES LEE'S SUMMIT. MISSOURI

04/16/2021

entation or recording purposes; and it is solely based on information (provided by others / obtained by n}. "100.00 100.10", "1.00% 1.15% slope", or "8-inch HDPE PVC pipe" are all typical examples of revision indicate that design data has been replaced with "as-built" information. All other data is as designed and I been field verified. Date: 03/24/2022 Certified by: GRC

Title: Project Engineer Firm: Anderson Engineering Inc



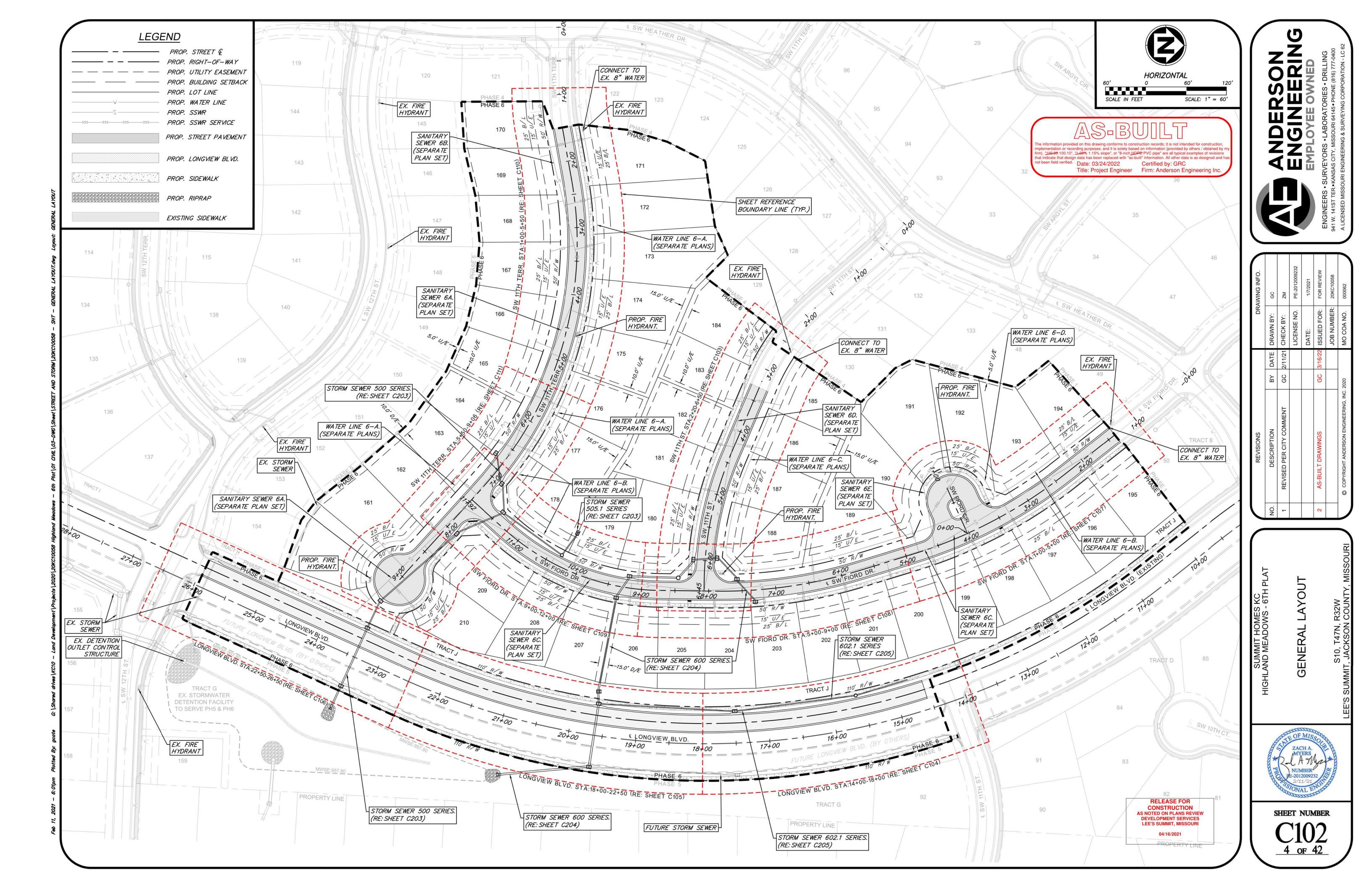
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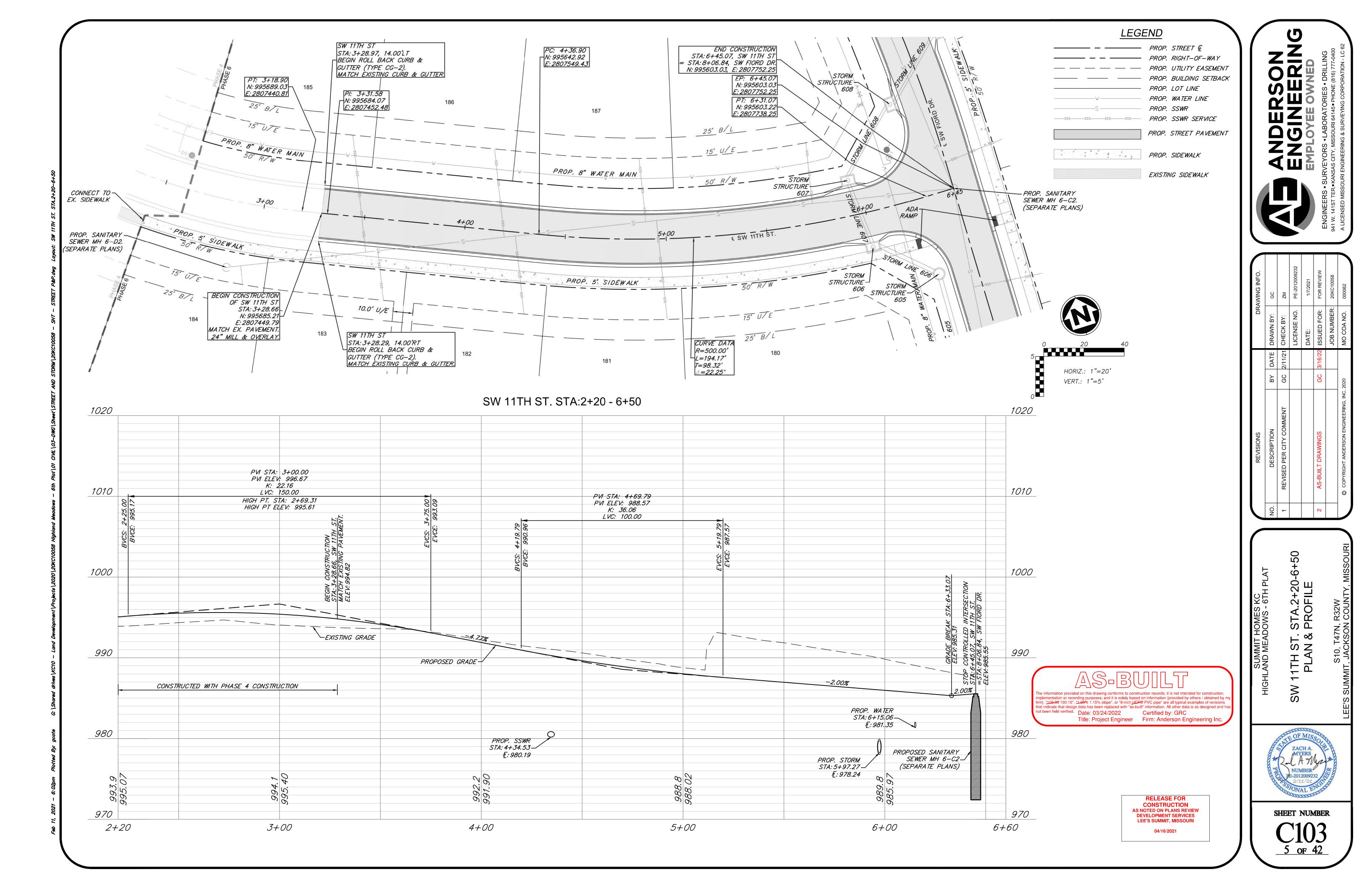
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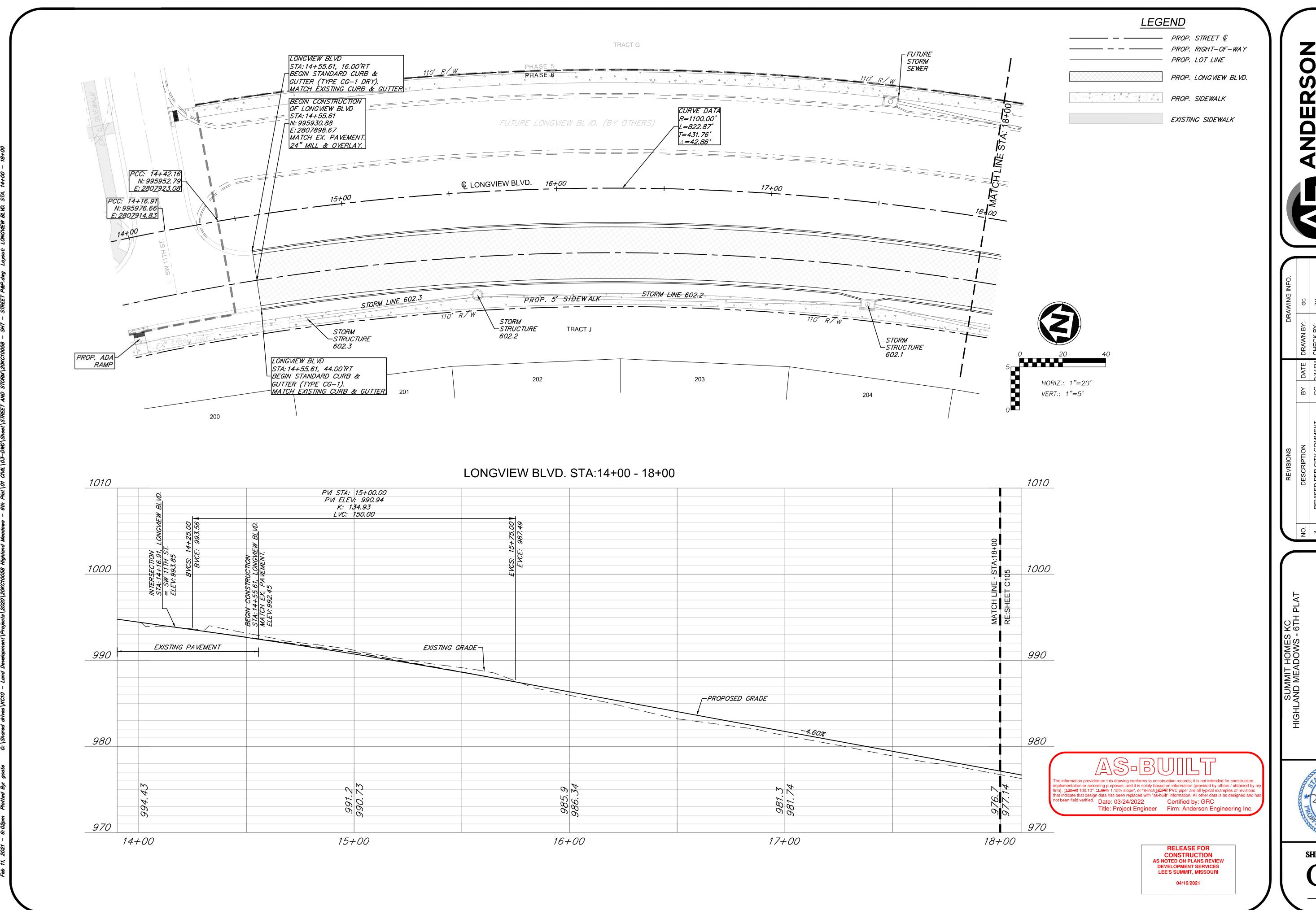


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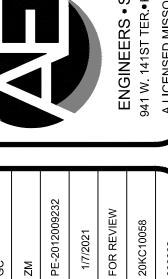
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11ST TER.• KANSAS CITY, MISSOURI 64145 • PHONE (816) 777-0400



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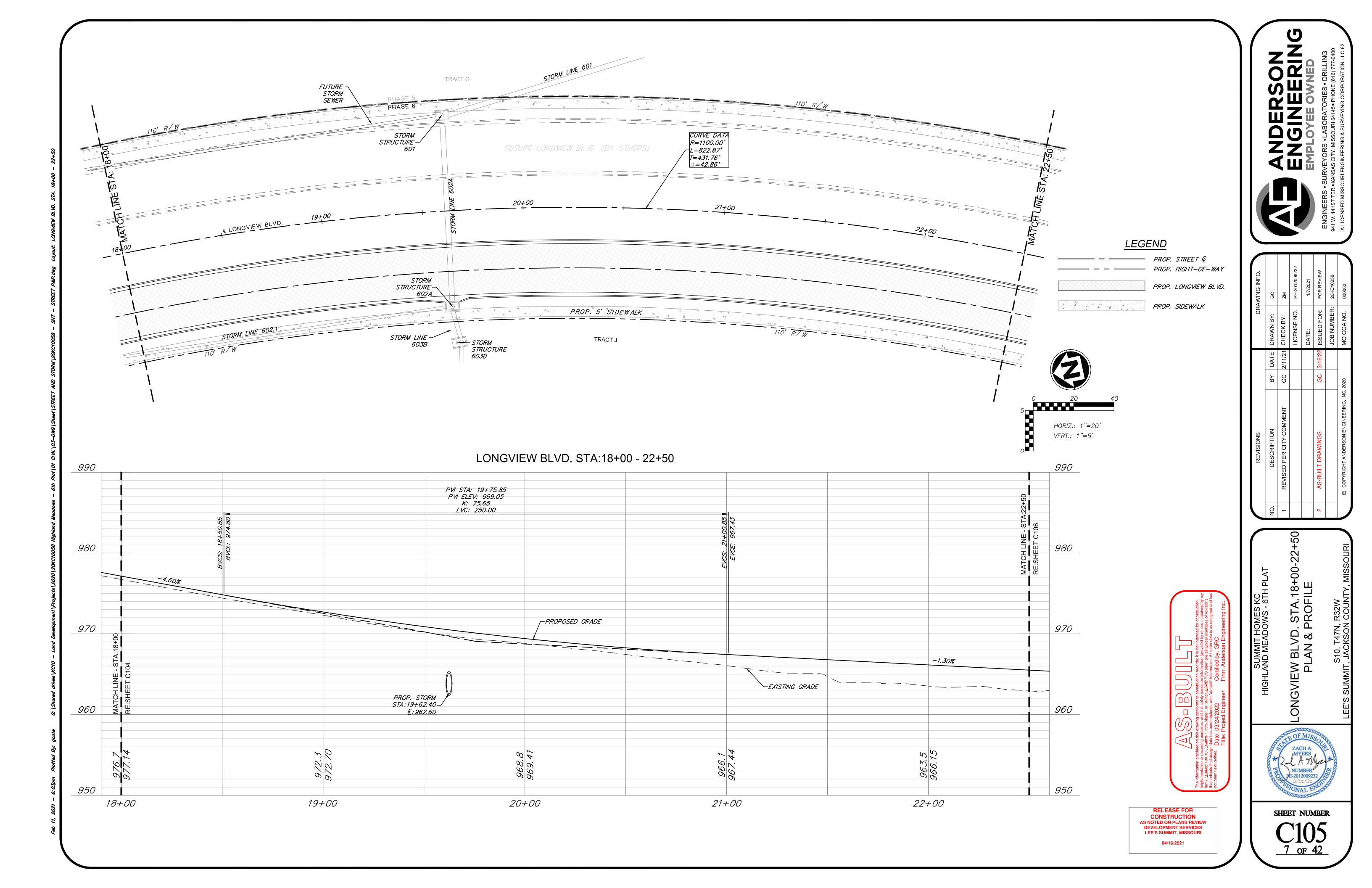
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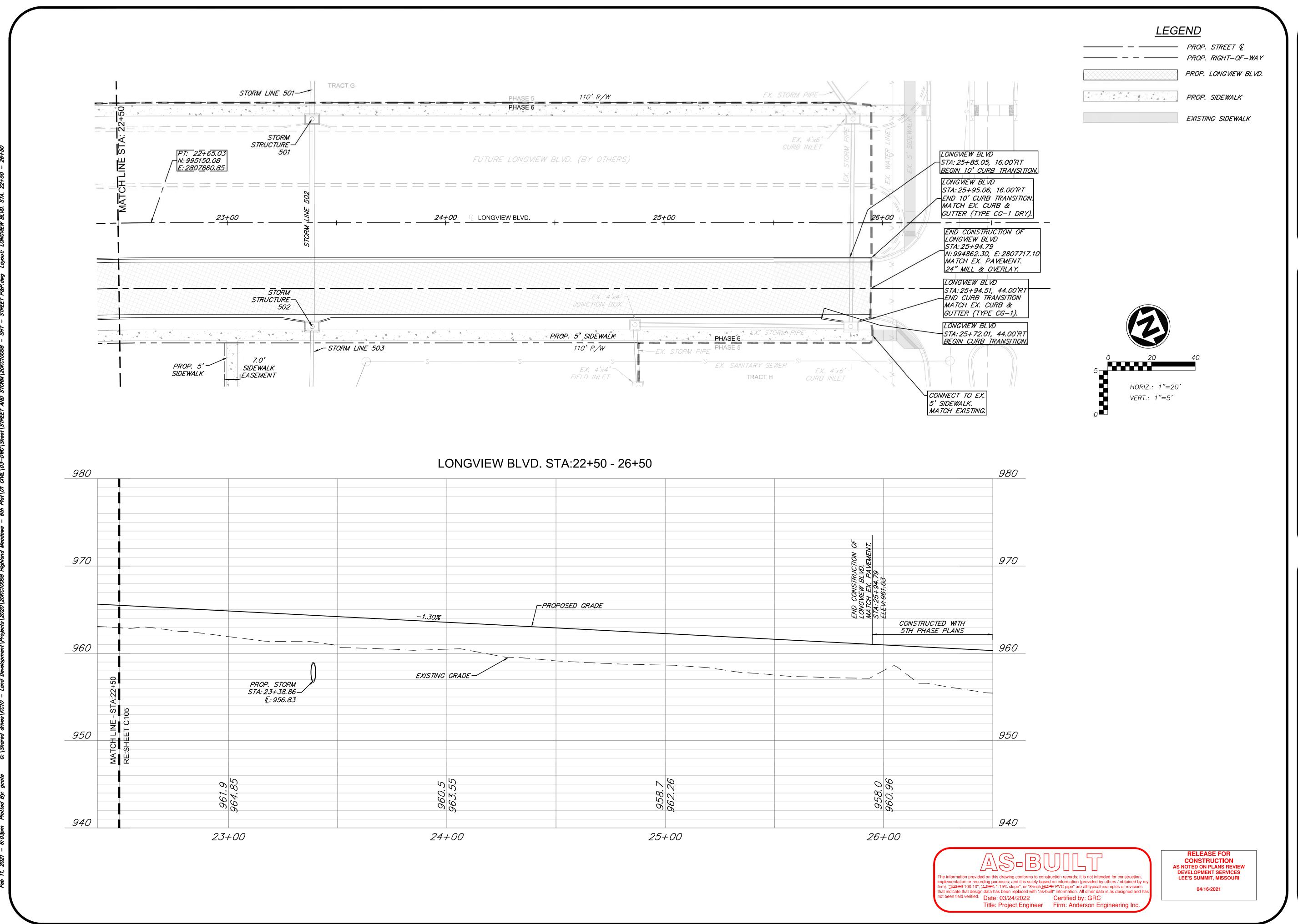


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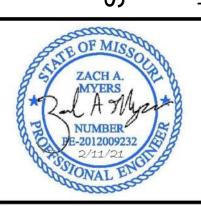


ANDERSON ENGINEERING EMPLOYEE OWNED SURVEYORS - LABORATORIES - DRILLING



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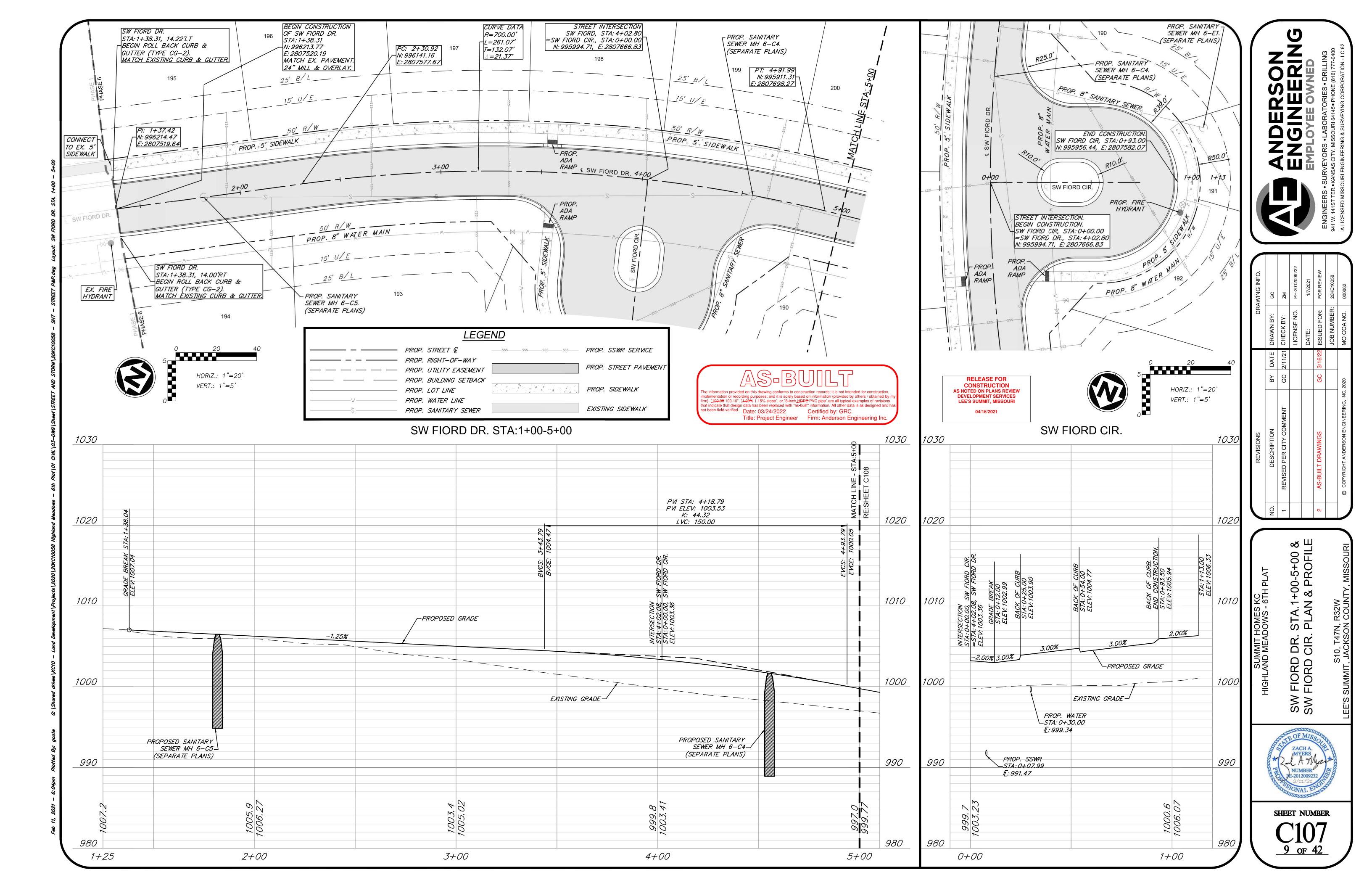
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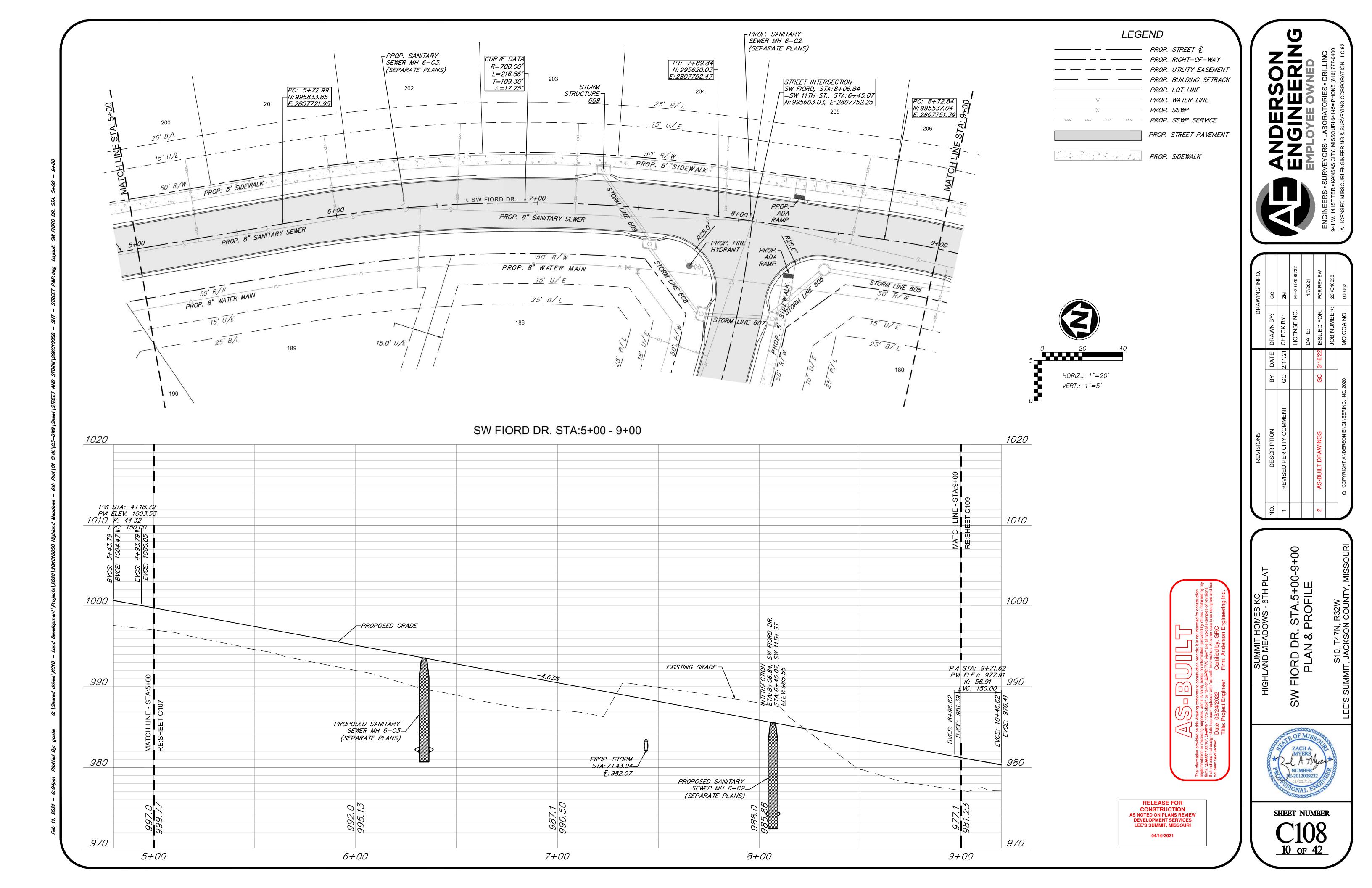


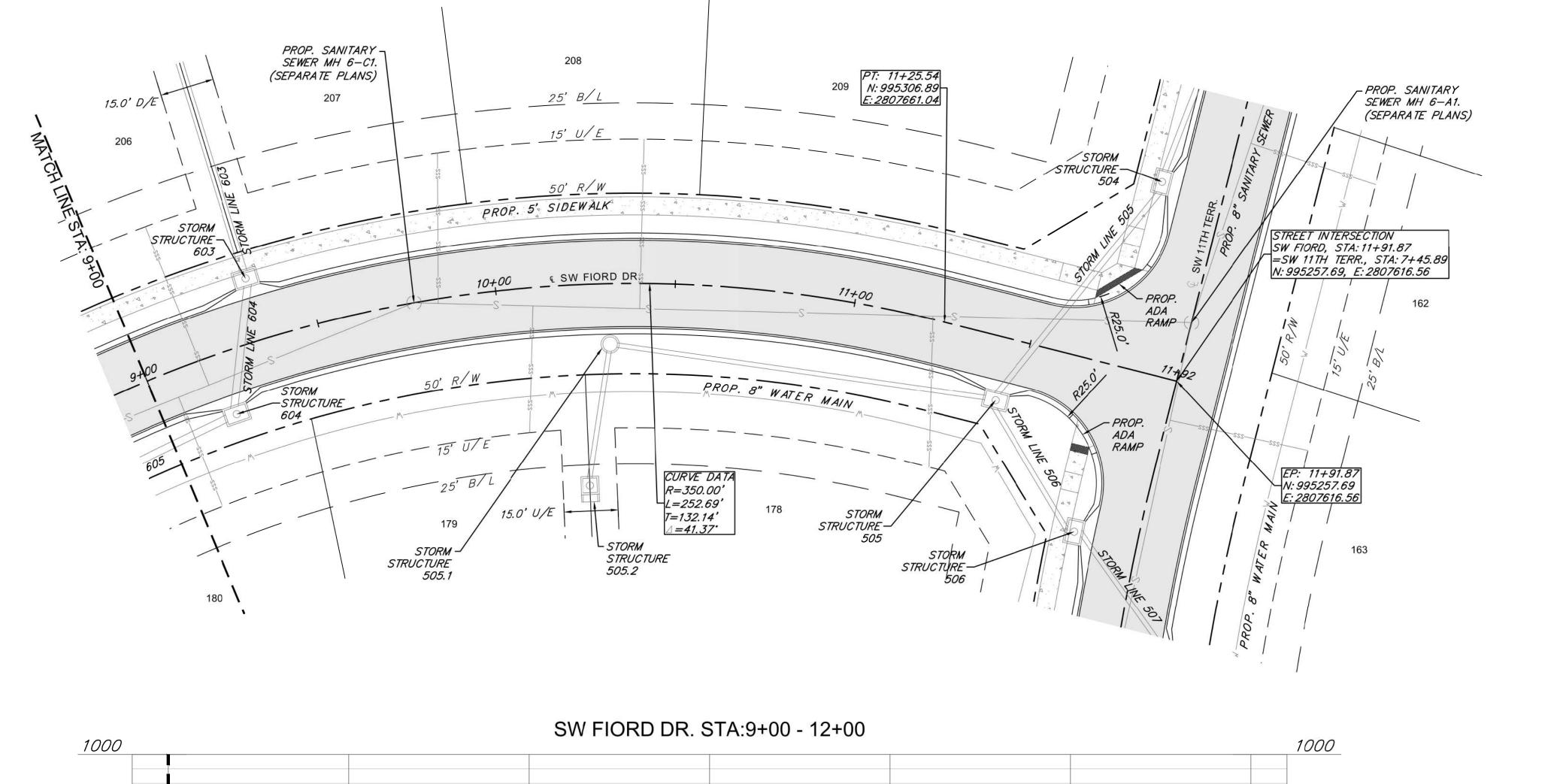
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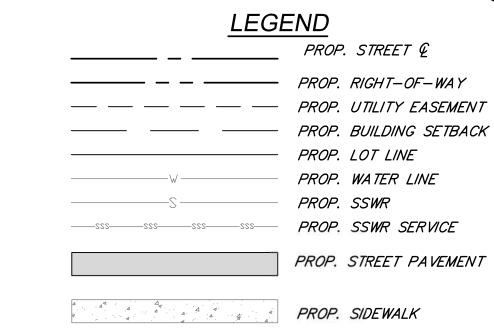
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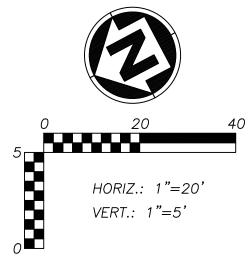
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RELEASE FOR CONSTRUCTION AS NOTED ON PLANS REVIEW

DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI

04/16/2021

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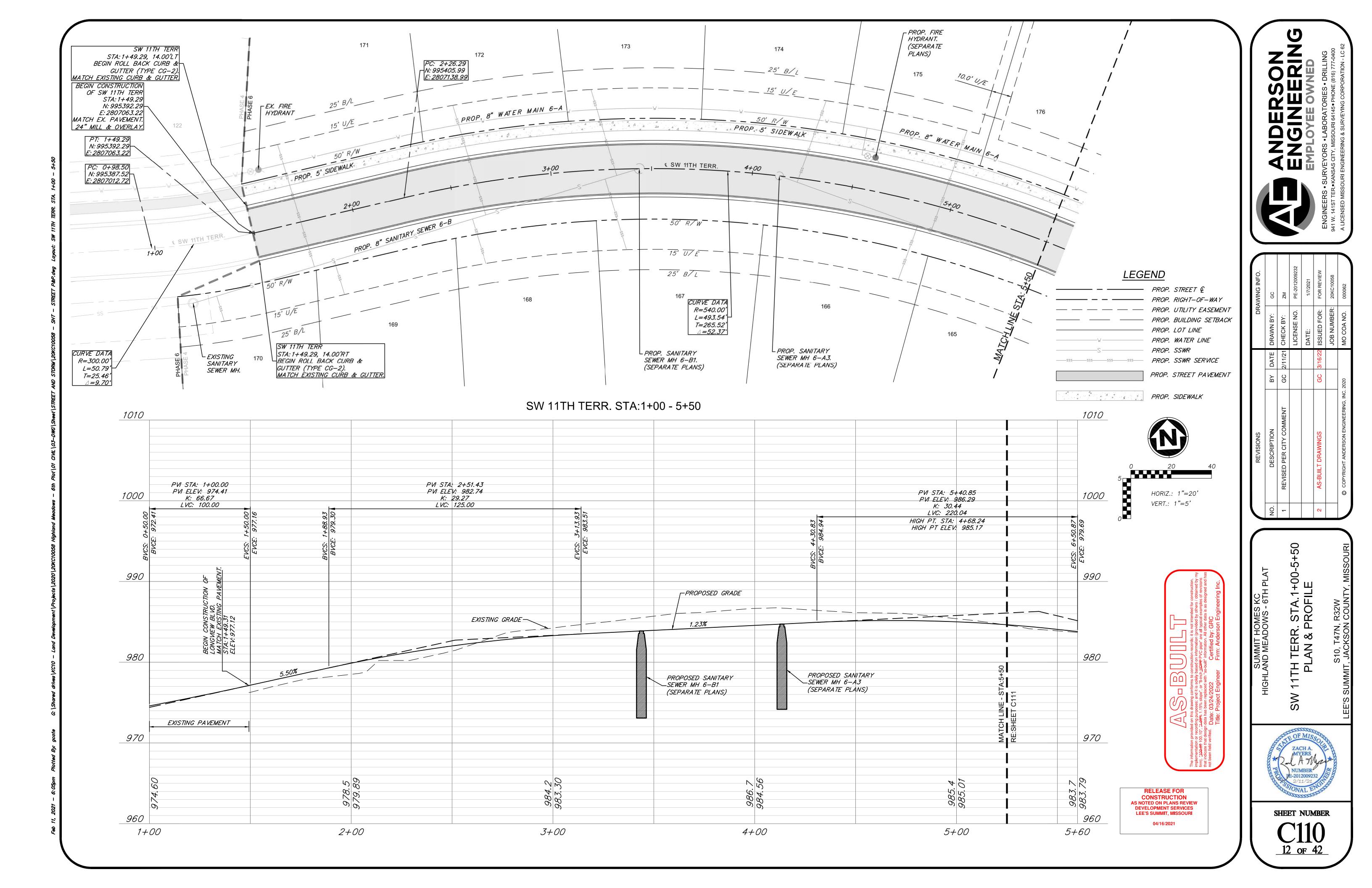


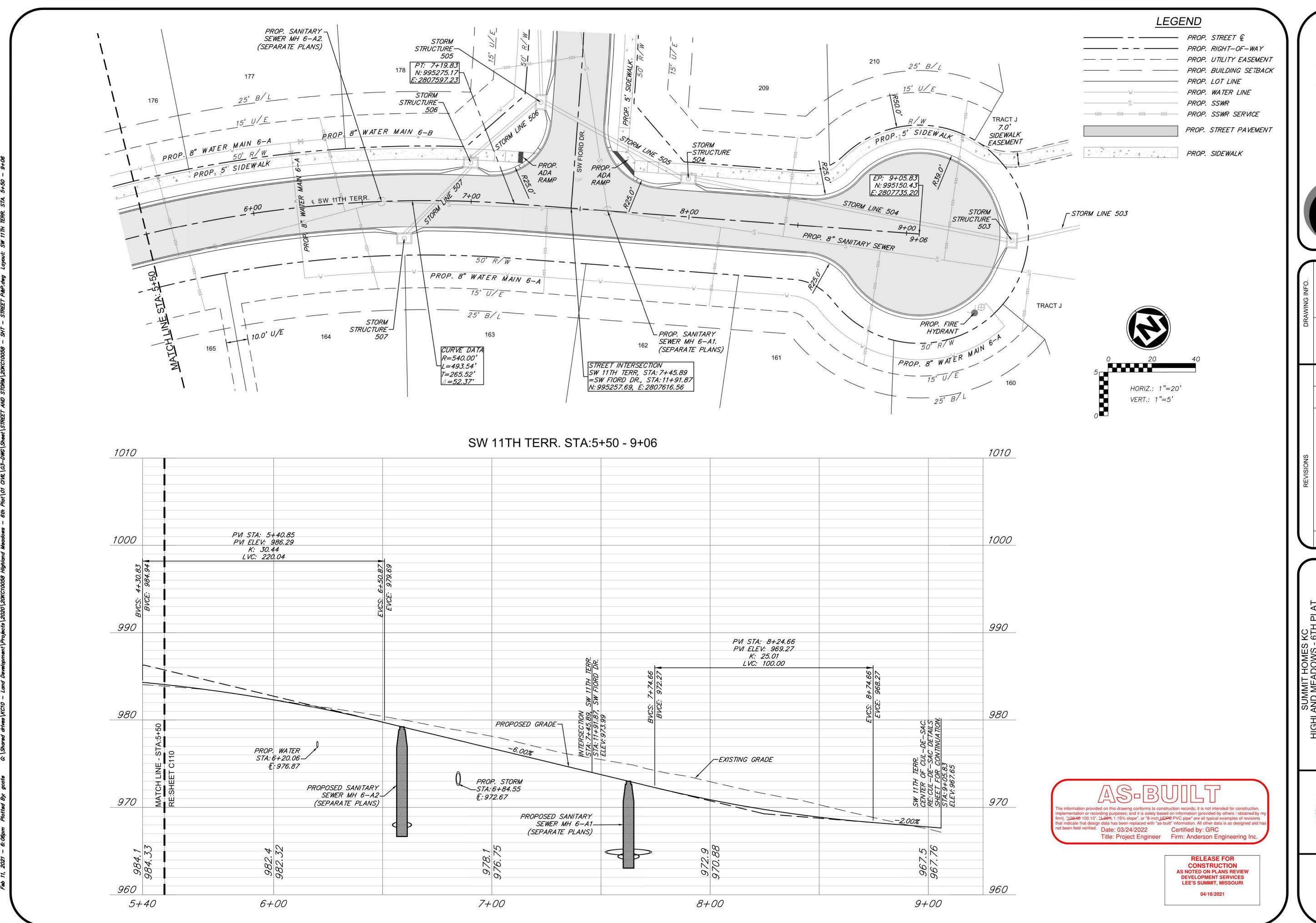
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information provided on this drawing conforms to construction records; it is not intended for construction,

implementation or recording purposes; and it is solely based on information (provided by others / obtained by m firm). <u>"100-00</u> 100.10", <u>"1-00%</u> 1.15% slope", or "8-inch HDPE PVC pipe" are all typical examples of revisions that indicate that design data has been replaced with "as-built" information. All other data is as designed and ha ot been field verified. Date: 03/24/2022 Certified by: GRC Title: Project Engineer Firm: Anderson Engineering Inc



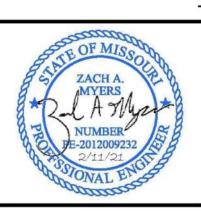




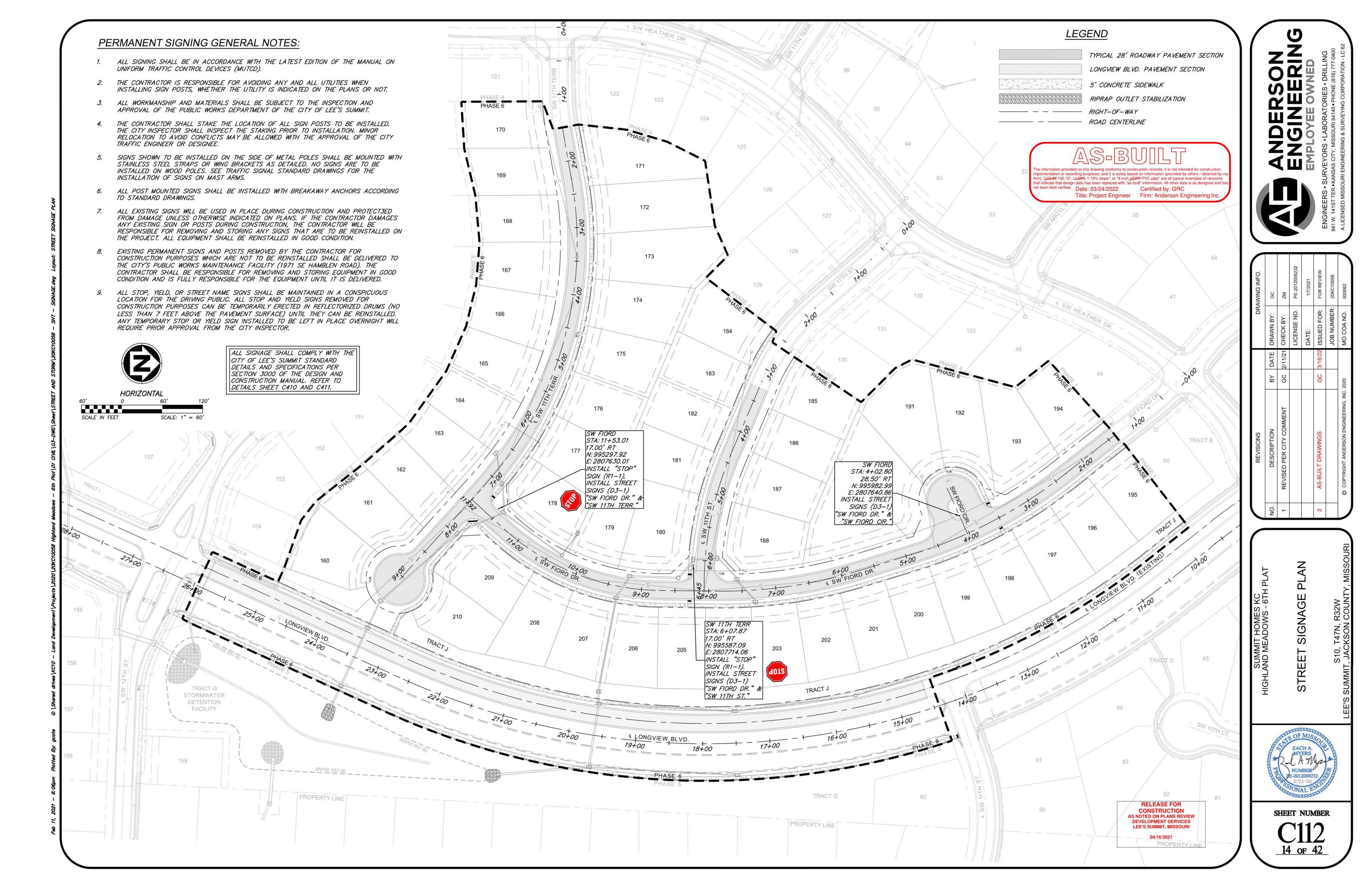


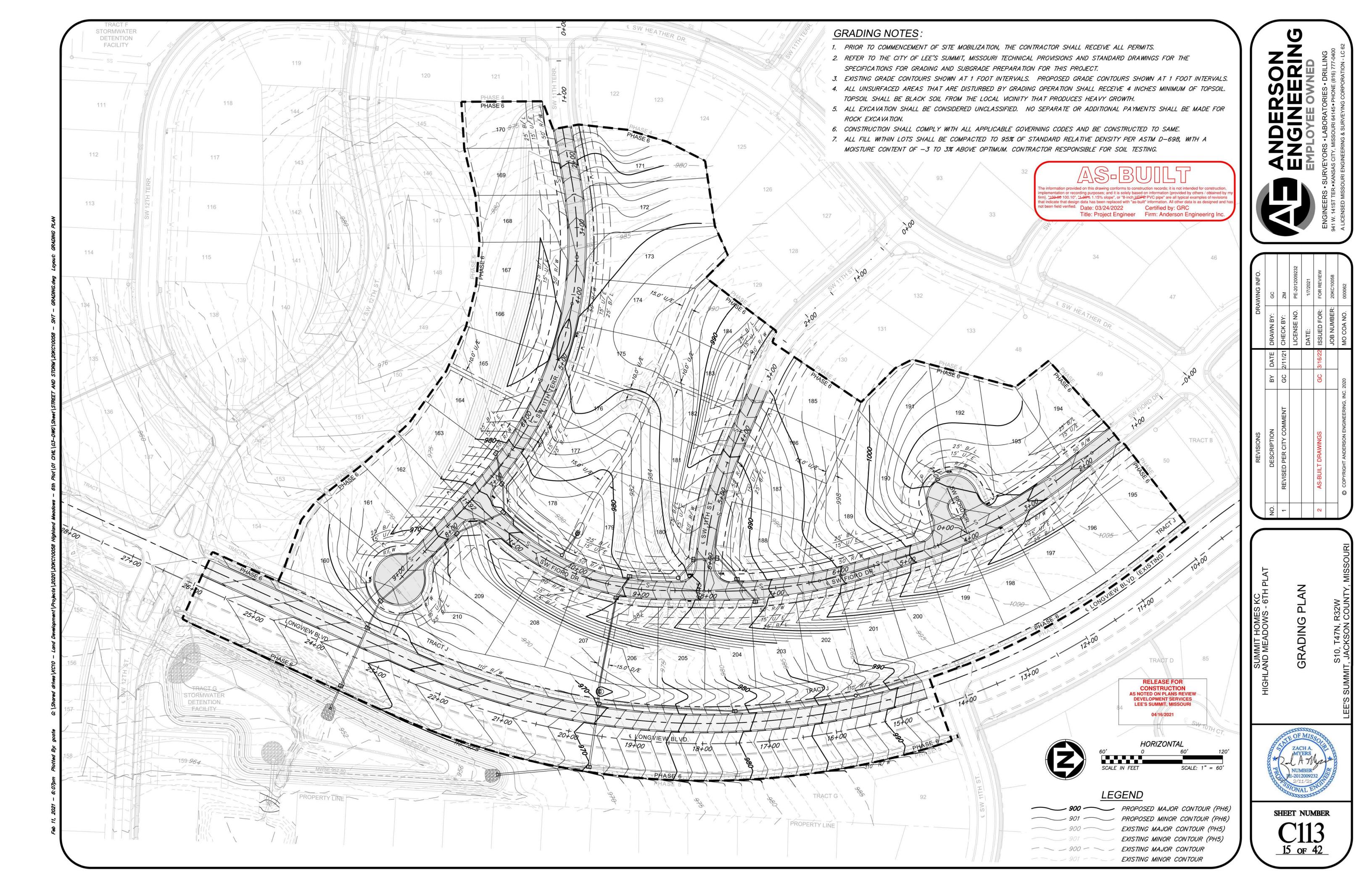
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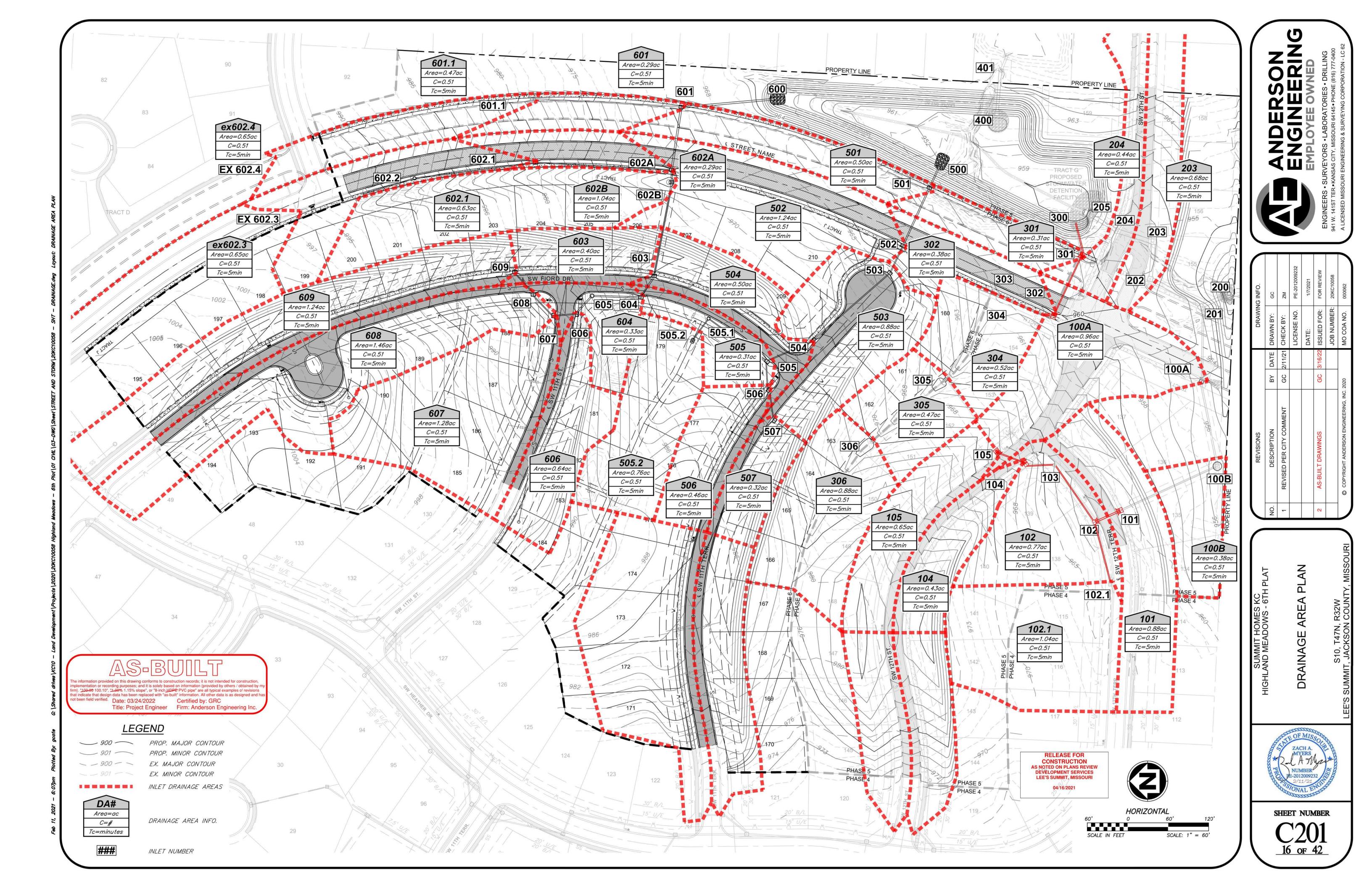
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PLAN & PROFILE



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STORM SEWER DRAINAGE CALCULATIONS:

10-Y	/EAR																															
					HYDROLOG	Ϋ́				-								HYD	RAULICS	3								GL	JTTER/INLE	T DESIGN		
Line No.	Inlet ID	Downstream Line No.	Drainage Area	Runoff Coefficient	Local CxA	System CxA	Тс	Local Intensity	System Intensity	Incremental Flow	Total Runoff	Line No.	Line	U/S Ground Elev.	U/S Invert	D/S Invert	Length	Slope	Size	n	Capacity Full	Total Runoff	Velocity	Velocity Out	HGLUp	HGLDn	Line ID	Local Q	QBypass	Gutter Slope	Gutter Spread	Gutter Width
	-		(ac)	(C)			(min)	(in/hr)	(in/hr)	(cfs)	(cfs)			(ft)	(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)	(ft/s)	(ft/s)	(ft)	(ft)		(cfs)	(cfs)	(ft/ft)	(ft)	(ft)
1	601	Outfall	0.29	0.51	0.15	0.15	8.5	7.24	6.36	1.07	28.36	1	LINE 601	969.92	961.32	958.14	131.62	2.42	30	0.013	64.84	28.36	10.10	12.76	963.43	959.49	LINE 601	1.07	0.00	0.013	5.71	2.00
2	602A	1	0.29	0.51	0.15	0.15	8.2	7.24	6.42	1.07	27.68	2	LINE 602A	970.19	962.99	962.12	95.00	0.92	30	0.013	41.01	27.68	8.16	8.97	964.86	963.62	LINE 602A	1.07	0.00	0.013	5.71	2.00
3	602.1	2	1.13	0.51	0.58	0.58	7.3	7.24	6.64	4.17	6.03	3	LINE 602.1	979.08	973.48	963.34	202.76	5.00	18	0.012	25.44	6.03	4.42	3.72	974.66	964.86	LINE 602.1	2.96	1.21	0.013	10.38	2.00
4	602.2	3	0.00	0.00	0.00	0.00	5.7	0.00	7.05	0.00	2.34	4	LINE 602.2	987.84	981.64	973.58	181.23	4.45	15	0.012	14.15	2.34	4.92	5.91	982.23	974.66	LINE 602.2					
5	602.3	4	0.65	0.51	0.33	0.33	5.0	7.24	7.24	2.40	2.40	5	LINE 602.3	989.41	987.98	982.11	79.70	7.37	15	0.012	18.97	2.40	7.27	10.58	988.60	982.42	LINE 602.3					••••
6	602B	2	1.04	0.51	0.53	0.53	6.2	7.24	6.90	3.84	22.50	6	LINE 602B	968.91	963.86	963.29	18.00	3.16	24	0.012	34.65	22.49	9.21	10.48	965.62	964.86	LINE 602B	3.84	****			
7	603	6	0.40	0.51	0.20	0.20	5.8	7.24	7.01	1.48	19.13	7	LINE 603	979.99	971.99	964.21	142.00	5.48	24	0.012	57.46	19.12	8.52	9.82	973.81	965.62	LINE 603	2.72	0.88	0.013	9.76	2.00
8	604	7	0.33	0.51	0.17	0.17	5.7	7.24	7.04	1.22	17.77	8	LINE 604	980.54	973.63	972.47	37.71	3.08	24	0.013	42.32	17.77	8.66	10.37	975.58	973.81	LINE 604	3.83	2.98	0.013	12.64	2.00
9	605	8	0.00	0.00	0.00	0.00	5.5	0.00	7.10	0.00	16.74	9	LINE 605	983.99	975.19	974.04	73.00	1.58	24	0.012	24.50	16.74	7.57	8.39	976.76	975.77	LINE 605					
10	606	9	0.64	0.51	0.33	0.33	5.4	7.24	7.14	2.36	16.81	10	LINE 606	986.20	976.75	975.79	35.29	2.72	24	0.012	42.47	16.81	8.92	11.07	978.33	976.76	LINE 606	1.72	0.64	0.020	7.44	2.00
11	607	10	1.28	0.51	0.65	0.65	5.3	7.24	7.16	4.73	14.53	11	LINE 607	986.64	978.94	977.15	35.33	5.07	18	0.013	23.50	14.53	10.20	11.92	980.51	978.33	LINE 607	2.50	2.23	0.020	10.00	2.00
12	608	11	1.46	0.51	0.74	0.74	5.2	7.24	7.18	5.39	9.89	12	LINE 608	988.04	980.29	979.44	43.04	1.97	15	0.012	9.89	9.89	8.71	9.18	981.66	980.64	LINE 608	2.67	2.72	0.020	10.55	2.00
13	609	12	1.24	0.51	0.63	0.63	5.0	7.24	7.24	4.58	4.58	13	LINE 609	989.30	983.10	980.94	43.36	4.98	15	0.013	14.45	4.58	5.87	6.70	984.02	981.66	LINE 609	2.46	2.12	0.020	9.87	2.00
14	501	Outfall	0.50	0.51	0.26	0.26	7.3	7.24	6.62	1.85	16.78	14	LINE 501	963.85	954.85	952.65	35.12	6.26	24	0.013	59.74	16.78	11.54	16.32	956.62	953.42	LINE 501	1.75	0.09	0.013	7.34	2.00
15	502	14	1.24	0.51	0.63	0.63	7.0	7.24	6.70	4.58	15.28	15	LINE 502	963.94	957.94	955.50	95.00	2.44	24	0.012	38.78	15.28	8.25	10.04	959.43	956.62	LINE 502	3.11	1.47	0.013	10.78	2.00
16	503	15	0.88	0.51	0.45	0.45	6.9	7.24	6.73	3.25	11.09	16	LINE 503	966.82	958.82	958.39	44.61	2.72	18	0.012	11.43	11.09	7.15	7.37	960.24	959.71	LINE 503	6.41				
1/	504	16	0.50	0.51	0.26	0.26	6.3	7.24	6.87	1.85	8.23	17	LINE 504	9/1.10	965.75	959.32	151.01	4.92	18	0.013	21.24	8.23	7.42	8.96	966.76	960.24	LINE 504	2.11	2.92	0.060	8.14	2.00
18	505	17	0.31	0.51	0.16	0.16	6.1	7.24	6.93	1.14	6.54	18	LINE 505	975.28	968.53	965.95	76.10	3.39	15	0.013	11.18	6.54	7.76	9.46	969.46	966.84	LINE 505	2.33	1.79	0.020	9.45	2.00
19	506	18	0.46	0.51	0.23	0.23	5.8	7.24	7.01	1.70	2.79	19	LINE 506	9//.0/	9/1.5/	968.98	42.38	5.85	15	0.012	17.13	2.79	4.91	5.65	972.14	969.46	LINE 506	1.19	0.51	0.060	4.90	2.00
20	507	19	0.32	0.51	0.16	0.16	5.0	7.24	7.24	1.18	1.18	20	LINE 507	978.80	9/3.30	9/2.0/	46.24	2.66	15	0.013	11.20	1.18	4.55	5.92	973.79	972.24	LINE 507	0.95	0.24	0.060	4.02	2.00
21	505.1	18	0.00	0.00	0.00	0.00	5.3	0.00	7.15	0.00	2.77	21	LINE 505.1	9/6./2	969.42	909.09	107.92	0.31	15	0.012	4.95	2.77	4.14	4.14	970.14	969.60	LINE 505.1	0.01	****		3000	••••
22	505.2	21	0.76	0.51	0.39	0.39	5.0	7.24	7.24	2.81	2.81	22	LINE 505.2	9/1.13	970.13	909.92	39.58	0.53	15	0.012	4.97	2.81	4.16	4.17	970.85	970.64	LINE 505.2	2.81				

10 Mag	000.2	4 3//2	0.70	0.01	0.00	0.00	0.0	1.21	7.2	2.01	2.01		L 12 000.2		010.10		00.00	0.00	10	0.012		2.01	11.10		070.00	0.0.0.		2.01	10,500		0,000,000	2 200.00
100-Y	'EAR																															
					HYDROLOG	iΥ												HYD	RAULICS									GL	ITTER/INLE	T DESIGN		
Line No.	Inlet ID	Downstream Line No.	Drainage Area	Runoff Coefficient	Local CxA	System CxA	Tc	Local Intensity	System Intensity	Incremental Flow	Total Runoff	Line No.	Line	U/S Ground Elev.	U/S Invert	D/S Invert	Length	Slope	Size	n	Capacity Full	Total Runoff	Velocity	Velocity Out	HGLUp	HGLDn	Line ID	Local Q	QBypass	Gutter Slope	Gutter Spread	Gutter Width
			(ac)	(C)			(min)	(in/hr)	(in/hr)	(cfs)	(cfs)			(ft)	(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)	(ft/s)	(ft/s)	(ft)	(ft)		(cfs)	(cfs)	(ft/ft)	(ft)	(ft)
1	601	Outfall	0.29	0.51	0.15	0.15	7.6	9.83	9.01	1.45	40.22	1	LINE 601	969.92	961.32	958.14	131.62	2.42	30	0.013	64.84	40.22	9.02	9.02	963.75	960.46	LINE 601	1.44	0.01	0.013	6.59	2.00
2	602A	1	0.29	0.51	0.15	0.15	7.4	9.83	9.07	1.45	39.14	2	LINE 602A	970.19	962.99	962.12	95.00	0.92	30	0.013	41.01	39.14	9.18	9.51	965.18	964.07	LINE 602A	1.44	0.01	0.013	6.59	2.00
3	602.1	2	1.13	0.51	0.58	0.58	6.7	9.83	9.28	5.67	8.43	3	LINE 602.1	979.08	973.48	963.34	202.76	5.00	18	0.012	25.44	8.43	5.35	4.77	974.83	965.18	LINE 602.1	3.49	2.18	0.013	11.75	2.00
4	602.2	3	0.00	0.00	0.00	0.00	5.5	0.00	9.66	0.00	3.20	4	LINE 602.2	987.84	981.64	973.58	181.23	4.45	15	0.012	14.15	3.20	4.81	5.24	982.34	974.83	LINE 602.2					
5	602.3	4	0.65	0.51	0.33	0.33	5.0	9.83	9.83	3.26	3.26	5	LINE 602.3	989.41	987.98	982.11	79.70	7.37	15	0.012	18.97	3.26	7.98	11.56	988.71	982.47	LINE 602.3					****
6	602B	2	1.04	0.51	0.53	0.53	5.9	9.83	9.53	5.22	31.06	6	LINE 602B	968.91	963.86	963.29	18.00	3.16	24	0.012	34.65	31.06	10.81	11.47	965.81	965.18	LINE 602B	5.22				****
7	603	6	0.40	0.51	0.20	0.20	5.6	9.83	9.63	2.01	26.27	7	LINE 603	979.99	971.99	964.21	142.00	5.48	24	0.012	57.46	26.27	10.12	11.39	974.03	965.81	LINE 603	3.39	1.98	0.013	11.49	2.00
8	604	7	0.33	0.51	0.17	0.17	5.5	9.83	9.66	1.65	24.37	8	LINE 604	980.54	973.63	972.47	37.71	3.08	24	0.013	42.32	24.37	9.88	11.37	975.80	974.03	LINE 604	4.75	5.82	0.013	15.04	2.00
9	605	8	0.00	0.00	0.00	0.00	5.3	0.00	9.71	0.00	22.89	9	LINE 605	983.99	975.19	974.04	73.00	1.58	24	0.012	24.50	22.89	8.45	8.86	976.99	976.09	LINE 605		****			
10	606	9	0.64	0.51	0.33	0.33	5.3	9.83	9.74	3.21	22.95	10	LINE 606	986.20	976.75	975.79	35.29	2.72	24	0.012	42.47	22.95	9.85	11.64	978.55	976.99	LINE 606	2.04	1.17	0.020	8.50	2.00
11	607	10	1.28	0.51	0.65	0.65	5.2	9.83	9.76	6.42	19.81	11	LINE 607	986.64	978.94	977.15	35.33	5.07	18	0.013	23.50	19.81	12.15	13.03	980.59	978.55	LINE 607	2.91	3.51	0.020	11.32	2.00
12	608	11	1.46	0.51	0.74	0.74	5.1	9.83	9.78	7.32	13.47	12	LINE 608	988.04	980.29	979.44	43.04	1.97	15	0.012	9.89	13.47	10.98	10.98	982.47	980.87	LINE 608	3.09	4.23	0.020	11.94	2.00
13	609	12	1.24	0.51	0.63	0.63	5.0	9.83	9.83	6.22	6.22	13	LINE 609	989.30		980.94	43.36	4.98	15	0.013	14.45	6.22	5.47	5.07	984.16	983.40	LINE 609	2.86	3.36	0.020	11.18	2.00
14	501	Outfall	0.50	0.51	0.26	0.26	6.7	9.83	9.27	2.51	23.49	14	LINE 501	963.85	001100	952.65	35.12	6.26	24	0.013	59.74	23.49	8.18	8.18	956.86	954.41	LINE 501	2.18	0.34	0.013	8.40	2.00
15	502	14	1.24	0.51	0.63	0.63	6.5	9.83	9.34	6.22	21.30	15	LINE 502	000.01	001.01	955.50	95.00	2.44	24	0.012	38.78	21.30	9.15	10.62	959.67	956.86	LINE 502	3.66	2.57	0.013	12.20	2.00
16	503	15	0.88	0.51	0.45	0.45	6.4	9.83	9.37	4.41	15.44	16	LINE 503	966.82	958.82	958.39	44.61	2.72	18	0.012	11.43	15.44	8.74	8.74	960.84	960.02	LINE 503	11.66				
17	504	16	0.50	0.51	0.26	0.26	6.0	9.83	9.50	2.51	11.38	17	LINE 504	971.10	965.75	959.32	151.01	4.92	18	0.013	21.24	11.38	6.75	6.44	966.94 j	961.63	LINE 504	2.85	6.79	0.060	10.69	2.00
18	505	17	0.31	0.51	0.16	0.16	5.8	9.83	9.55	1.55	9.01	18	LINE 505	975.28	968.53	965.95	76.10	3.39	15	0.013	11.18	9.01	8.87	10.13	969.59	967.00	LINE 505	3.10	4.27	0.020	11.97	2.00
19	506	18	0.46	0.51	0.23	0.23	5.6	9.83	9.63	2.31	3.83	19	LINE 506	977.07	971.57	968.98	42.38	5.85	15	0.012	17.13	3.83	5.28	5.88	972.26	969.59	LINE 506	1.41	0.89	0.060	5.72	2.00
20	507	19	0.32	0.51	0.16	0.16	5.0	9.83	9.83	1.60	1.60	20	LINE 507	978.80	973.30	972.07	46.24	2.66	15	0.013	11.20	1.60	4.98	6.47	973.86	972.29	LINE 507	1.15	0.46	0.060	4.76	2.00
21	505.1	18	0.00	0.00	0.00	0.00	5.2	0.00	9.76	0.00	3.78	21	LINE 505.1	976.72	969.42	969.09	107.92	0.31	15	0.012	4.95	3.78	4.44	4.44	970.29	969.75	LINE 505.1	200	3000		****	
22	505.2	21	0.76	0.51	0.39	0.39	5.0	9.83	9.83	3.81	3.81	22	LINE 505.2	977.13	970.13 9	969.92	39.58	0.53	15	0.012	4.97	3.81	4.46	4.47	970.99	970.79	LINE 505.2	3.81				

The information provided on this drawing conforms to construction records; it is not intended for construction, implementation or recording purposes; and it is solely based on information {provided by others / obtained by my firm}. "100.00" 10.10", "1.00% 1.15% slope", or "8-inch HDPF PVC pipe" are all typical examples of revisions that indicate that design data has been replaced with "as-built" information. All other data is as designed and has not been field verified.

Date: 03/24/2022

Certified by: GRC

Title: Project Engineer

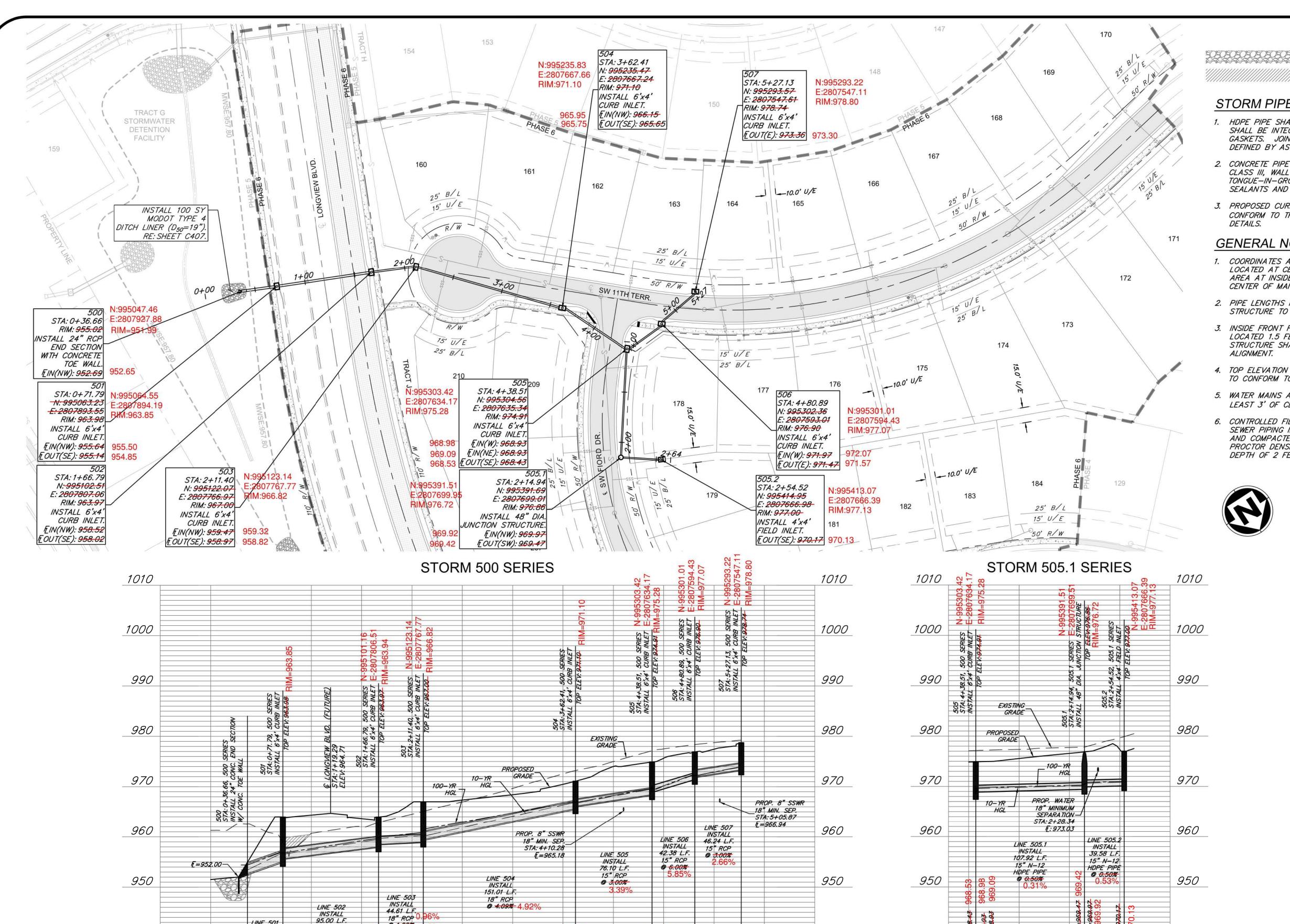
Firm: Anderson Engineering Inc.

CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI 04/16/2021

CALCUL DRAINAGE



SHEET NUMBER



940

930

920

940

930

1+00

2+00

18" RCP 0.

2+00

3+00

4+00

5+00

LINE 501 INSTALL 35.12 L.F.

24" RCP

940

930

920

0+00

24" RCP @ 2.50%

1+00



RIP RAP

FILL PRIOR TO PIPE INSTALLATION

STORM PIPE AND STRUCTURES.

- HDPE PIPE SHALL CONFORM TO ASTM F2306. JOINTS SHALL BE INTEGRAL BELL AND SPIGOT WITH RUBBER GASKETS. JOINTS SHALL BE WATER TIGHT AS DEFINED BY ASTM F2306.
 - 2. CONCRETE PIPE SHALL CONFORM TO ASTM C76, CLASS III, WALL TYPE B. JOINTS SHALL BE TONGUE-IN-GROVE WITH PREFORMED, FLEXIBLE SEALANTS AND SHALL CONFORM TO ASTM C990.
 - 3. PROPOSED CURB INLETS AND JUNCTION BOXES SHALL CONFORM TO THE CITY OF LEE'S SUMMIT STANDARD

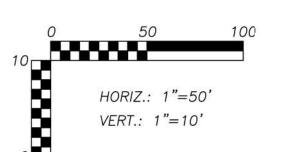
GENERAL NOTES.

940

930

3+00

- 1. COORDINATES AT TOP ELEVATIONS SHOWN ARE LOCATED AT CENTER OR STRUCTURES. ROAD OFFSETS AREA AT INSIDE FACE OF CURB INLETS, AND AT CENTER OF MANHOLES AND JUNCTIONS BOXES.
- 2. PIPE LENGTHS INDICATED ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
- 3. INSIDE FRONT FACE OF CURB INLETS SHALL BE LOCATED 1.5 FEET BEHIND BACK OF CURB. STRUCTURE SHALL BE PARALLEL WITH CURB
- 4. TOP ELEVATION OF CURB INLETS SHALL BE SLOPED TO CONFORM TO GRADE OF STREET.
- 5. WATER MAINS AND STORM SEWERS SHALL HAVE AT LEAST 3' OF CLEAR HORIZONTAL SEPARATION.
- 6. CONTROLLED FILL: PRIOR TO INSTALLATION OF STORM SEWER PIPING IN FILL AREAS, FILL SHALL BE PLACED AND COMPACTED TO A MINIMUM 95% OF STANDARD PROCTOR DENSITY PER ASTM D 698 TO A MINIMUM DEPTH OF 2 FEET ABOVE THE TOP OF PIPE.



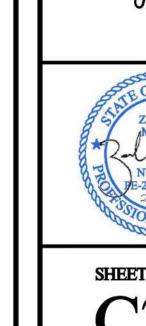


RELEASE FOR

CONSTRUCTION AS NOTED ON PLANS REVIEW

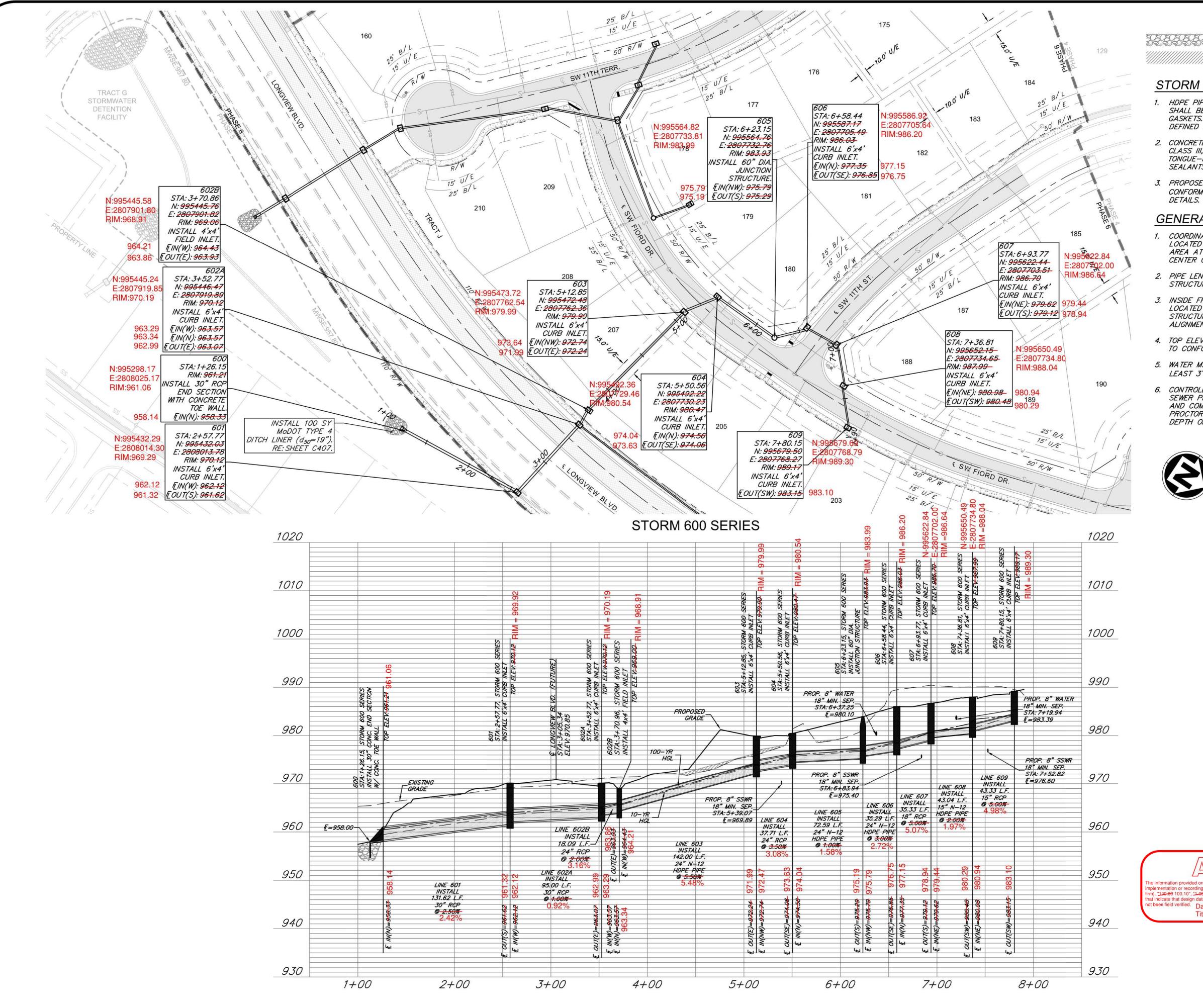
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI

04/16/2021



SEWER 500 SE AN & PROFILE

SHEET NUMBER 18 of 42



LEGEND

RIP RAP FILL PRIOR TO PIPE INSTALLATION

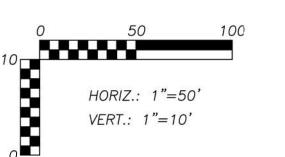
STORM PIPE AND STRUCTURES.

- HDPE PIPE SHALL CONFORM TO ASTM F2306. JOINTS SHALL BE INTEGRAL BELL AND SPIGOT WITH RUBBER GASKETS. JOINTS SHALL BE WATER TIGHT AS DEFINED BY ASTM F2306.
- 2. CONCRETE PIPE SHALL CONFORM TO ASTM C76, CLASS III, WALL TYPE B. JOINTS SHALL BE TONGUE-IN-GROVE WITH PREFORMED, FLEXIBLE SEALANTS AND SHALL CONFORM TO ASTM C990.
- 3. PROPOSED CURB INLETS AND JUNCTION BOXES SHALL CONFORM TO THE CITY OF LEE'S SUMMIT STANDARD

GENERAL NOTES:

- 1. COORDINATES AT TOP ELEVATIONS SHOWN ARE LOCATED AT CENTER OR STRUCTURES. ROAD OFFSETS AREA AT INSIDE FACE OF CURB INLETS, AND AT CENTER OF MANHOLES AND JUNCTIONS BOXES.
- 2. PIPE LENGTHS INDICATED ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
- 3. INSIDE FRONT FACE OF CURB INLETS SHALL BE LOCATED 1.5 FEET BEHIND BACK OF CURB. STRUCTURE SHALL BE PARALLEL WITH CURB ALIGNMENT.
- 4. TOP ELEVATION OF CURB INLETS SHALL BE SLOPED TO CONFORM TO GRADE OF STREET.
- 5. WATER MAINS AND STORM SEWERS SHALL HAVE AT LEAST 3' OF CLEAR HORIZONTAL SEPARATION.
- 6. CONTROLLED FILL: PRIOR TO INSTALLATION OF STORM SEWER PIPING IN FILL AREAS, FILL SHALL BE PLACED AND COMPACTED TO A MINIMUM 95% OF STANDARD PROCTOR DENSITY PER ASTM D 698 TO A MINIMUM DEPTH OF 2 FEET ABOVE THE TOP OF PIPE.









2	DESCRIPTION	٥	DAIE	BY DAIE DRAWN BY:	29
1	REVISED PER CITY COMMENT	29	2/11/21	GC 2/11/21 CHECK BY:	ZM
				LICENSE NO.	PE-2012
				DATE:	1/7/202
શ્વ	AS-BUILT REABIDIOS	38	3/26/22	GC 3/24/22 ISSUED FOR:	FOR RE
				JOB NUMBER:	20KC100
	© COPYRIGHT ANDERSON ENGINEERING, INC. 2020	2020		MO COA NO.	000062

SEWE AN &

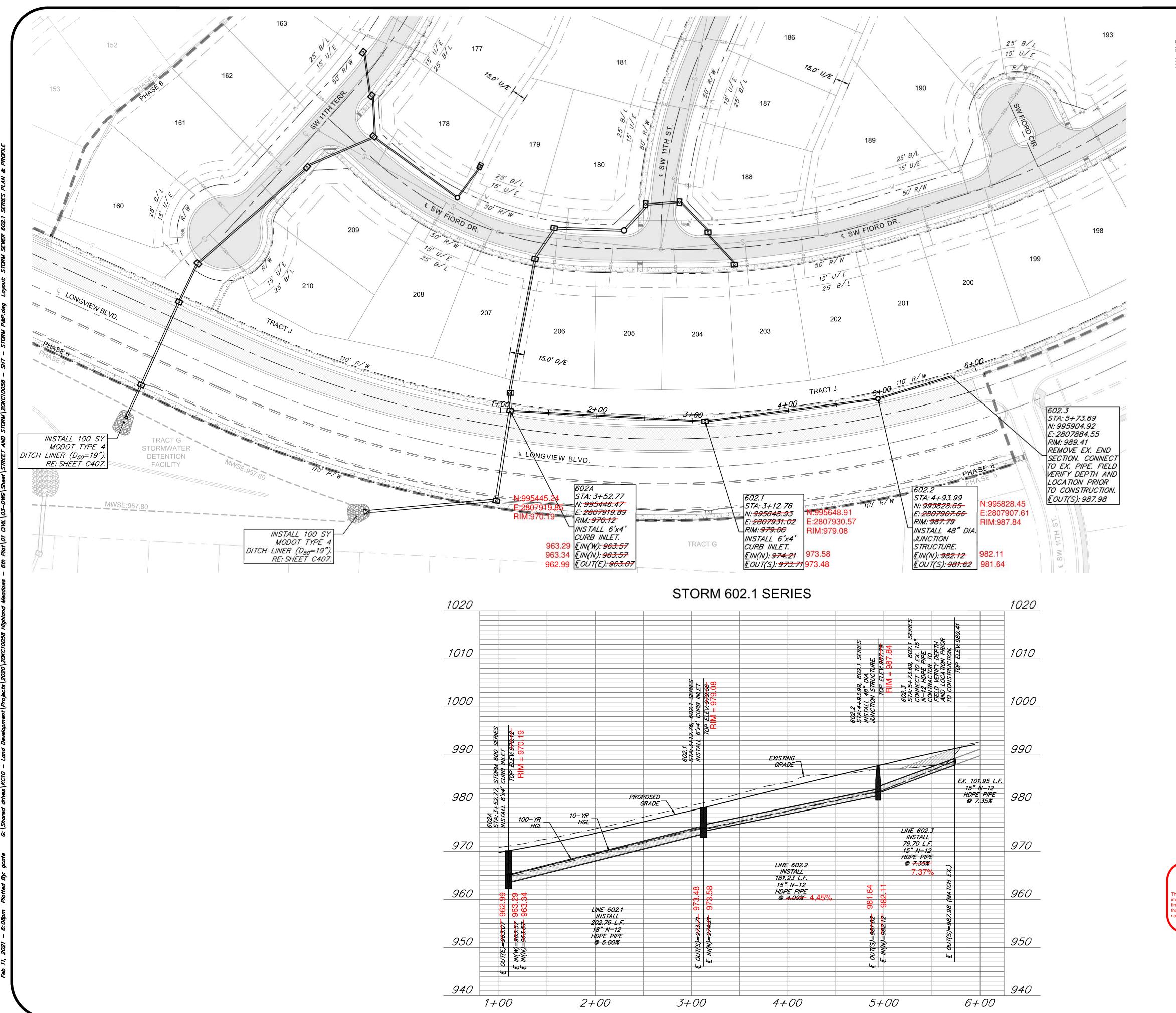
STORM PL



SHEET NUMBER 19 of 42

n}. <u>"100-96</u> 100.10", <u>"1-99%</u> 1.15% slope", or "8-inch HDPE PVC pipe" are all typical examples of revisions t indicate that design data has been replaced with "as-built" information. All other data is as designed and h t been field verified. Date: 03/24/2022 Certified by: GRC Title: Project Engineer Firm: Anderson Engineering Inc

> RELEASE FOR CONSTRUCTION AS NOTED ON PLANS REVIEW **DEVELOPMENT SERVICES** LEE'S SUMMIT, MISSOURI 04/16/2021



LEGEND

FILL PRIOR TO PIPE INSTALLATION

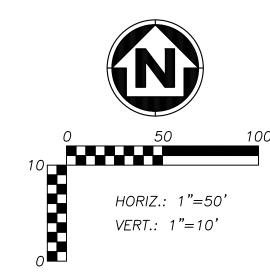
STORM PIPE AND STRUCTURES:

RIP RAP

- 1. HDPE PIPE SHALL CONFORM TO ASTM F2306. JOINTS SHALL BE INTEGRAL BELL AND SPIGOT WITH RUBBER GASKETS. JOINTS SHALL BE WATER TIGHT AS DEFINED BY ASTM F2306.
- 2. CONCRETE PIPE SHALL CONFORM TO ASTM C76, CLASS III, WALL TYPE B. JOINTS SHALL BE TONGUE—IN—GROVE WITH PREFORMED, FLEXIBLE SEALANTS AND SHALL CONFORM TO ASTM C990.
- 3. PROPOSED CURB INLETS AND JUNCTION BOXES SHALL CONFORM TO THE CITY OF LEE'S SUMMIT STANDARD DETAILS.

GENERAL NOTES:

- 1. COORDINATES AT TOP ELEVATIONS SHOWN ARE LOCATED AT CENTER OR STRUCTURES. ROAD OFFSETS AREA AT INSIDE FACE OF CURB INLETS, AND AT CENTER OF MANHOLES AND JUNCTIONS BOXES.
- 2. PIPE LENGTHS INDICATED ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
- 3. INSIDE FRONT FACE OF CURB INLETS SHALL BE LOCATED 1.5 FEET BEHIND BACK OF CURB. STRUCTURE SHALL BE PARALLEL WITH CURB ALIGNMENT.
- 4. TOP ELEVATION OF CURB INLETS SHALL BE SLOPED TO CONFORM TO GRADE OF STREET.
- 5. WATER MAINS AND STORM SEWERS SHALL HAVE AT LEAST 3' OF CLEAR HORIZONTAL SEPARATION.
- 6. CONTROLLED FILL: PRIOR TO INSTALLATION OF STORM SEWER PIPING IN FILL AREAS, FILL SHALL BE PLACED AND COMPACTED TO A MINIMUM 95% OF STANDARD PROCTOR DENSITY PER ASTM D 698 TO A MINIMUM DEPTH OF 2 FEET ABOVE THE TOP OF PIPE.

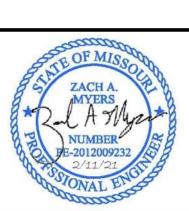




DOWS-61H PLAT ER 602.1 SERIES R PROFILE

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STORM SEWER 602.1



SHEET NUMBER

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20 of 42

AS-BUILT

'he information provided on this drawing conforms to construction records; it is not intended for construction, nplementation or recording purposes; and it is solely based on information (provided by others / obtained by m rm). "100-00 100.10", "1-00% 1.15% slope", or "8-inch_HDPE PVC pipe" are all typical examples of revisions hat indicate that design data has been replaced with "as-built" information. All other data is as designed and ha not been field verified.

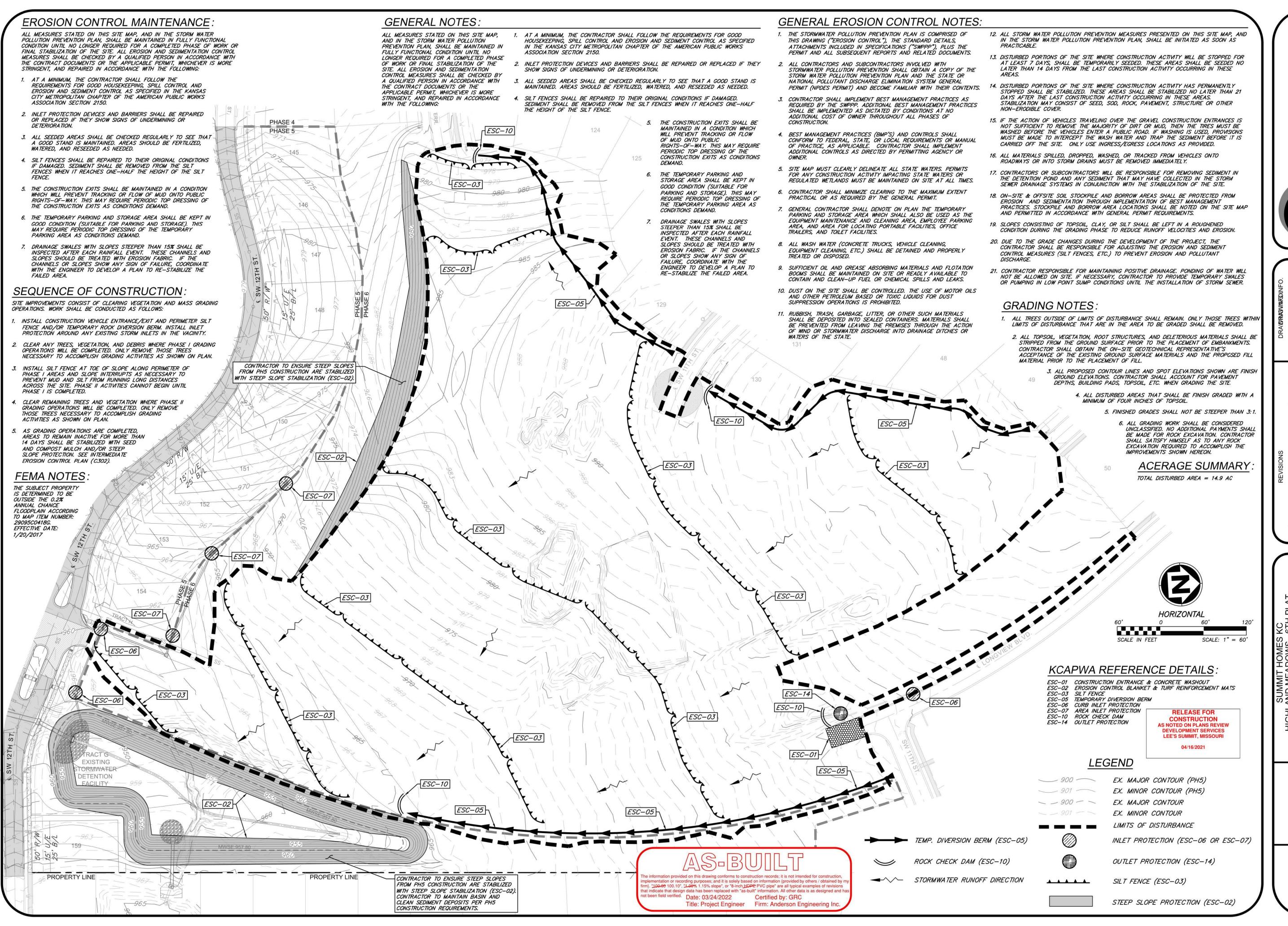
Date: 03/24/2022

Certified by: GRC

Title: Project Engineer

Firm: Anderson Engineering Inc.

RELEASE FOR CONSTRUCTION AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI 04/16/2021

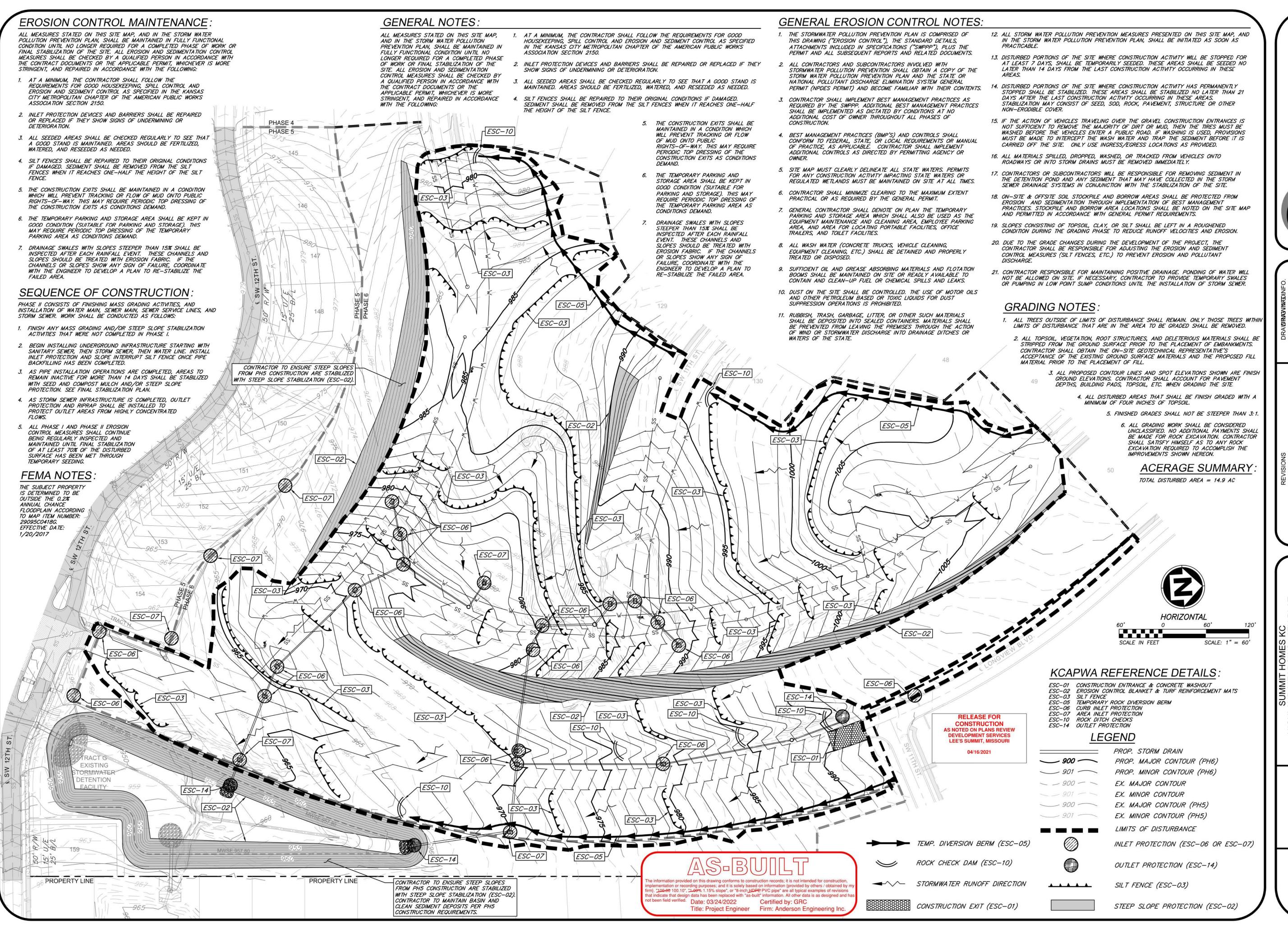


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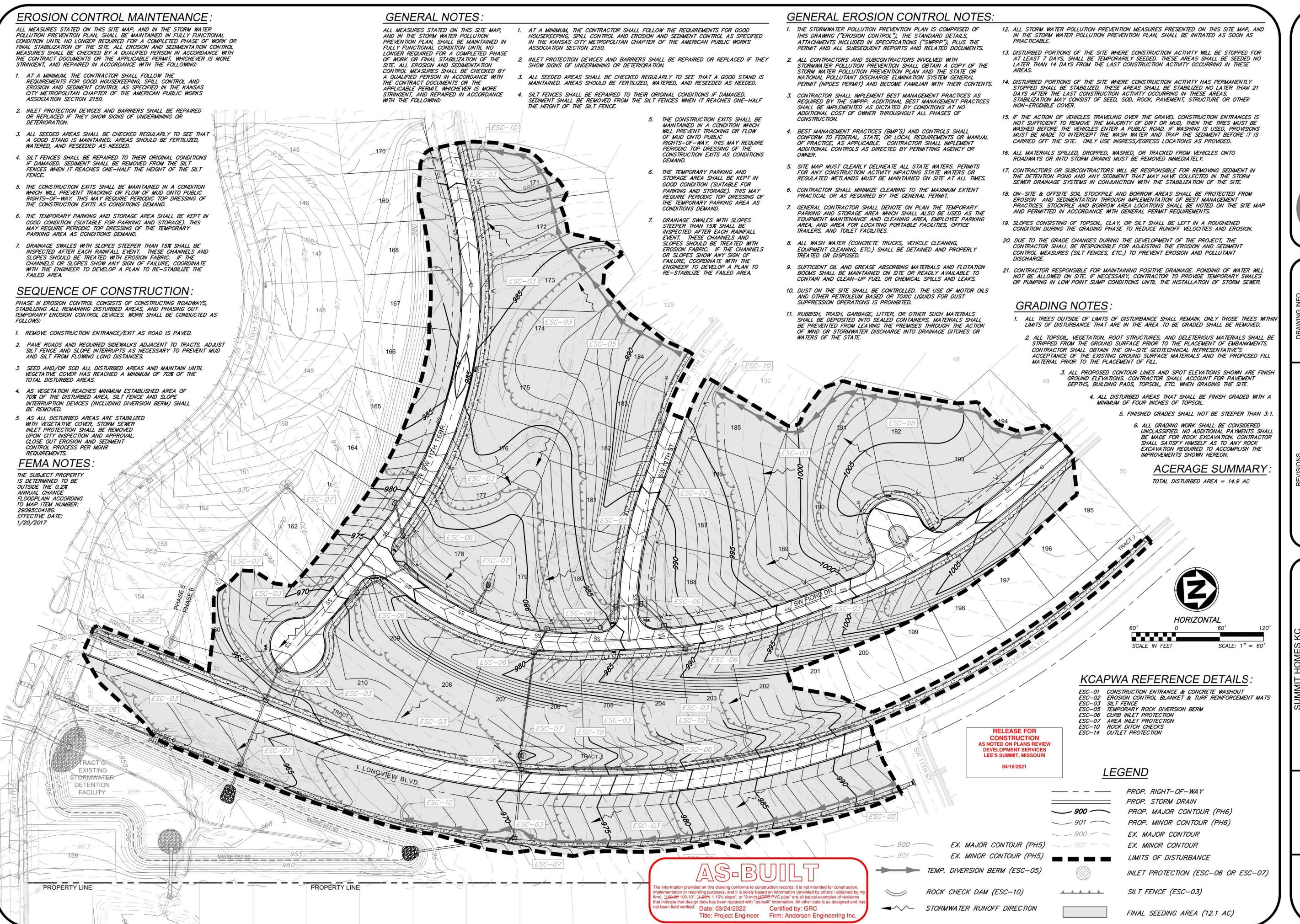
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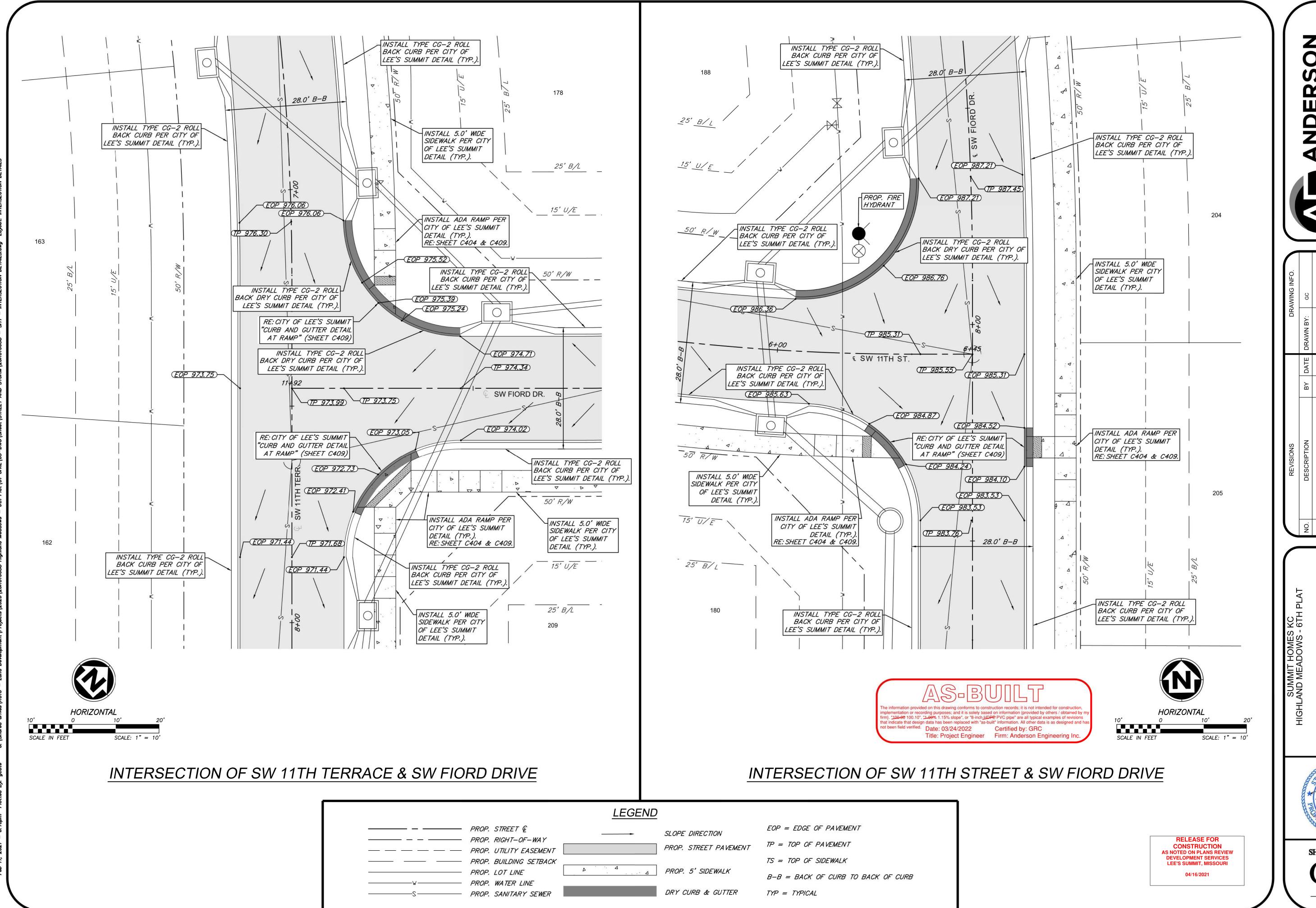
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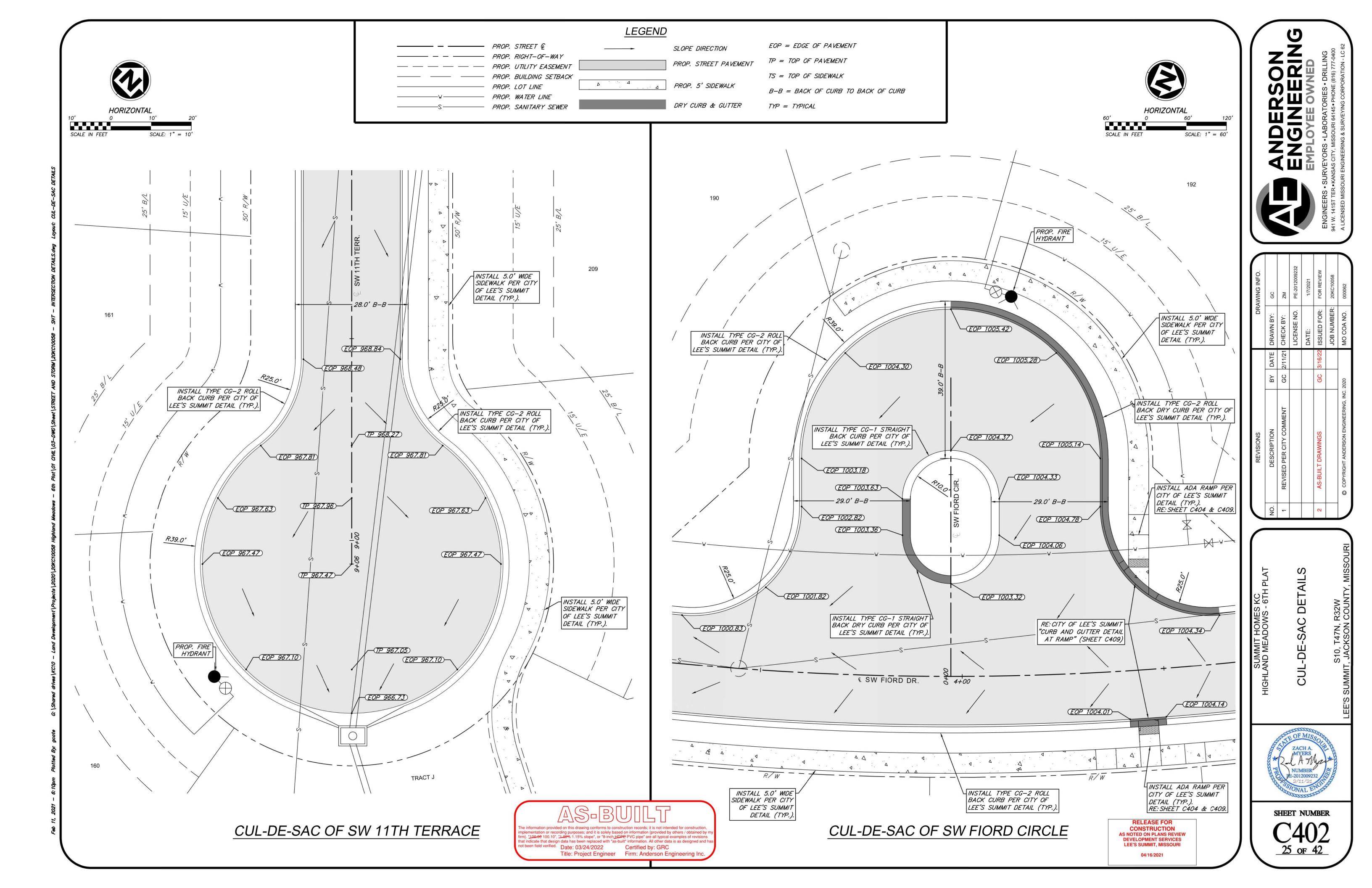
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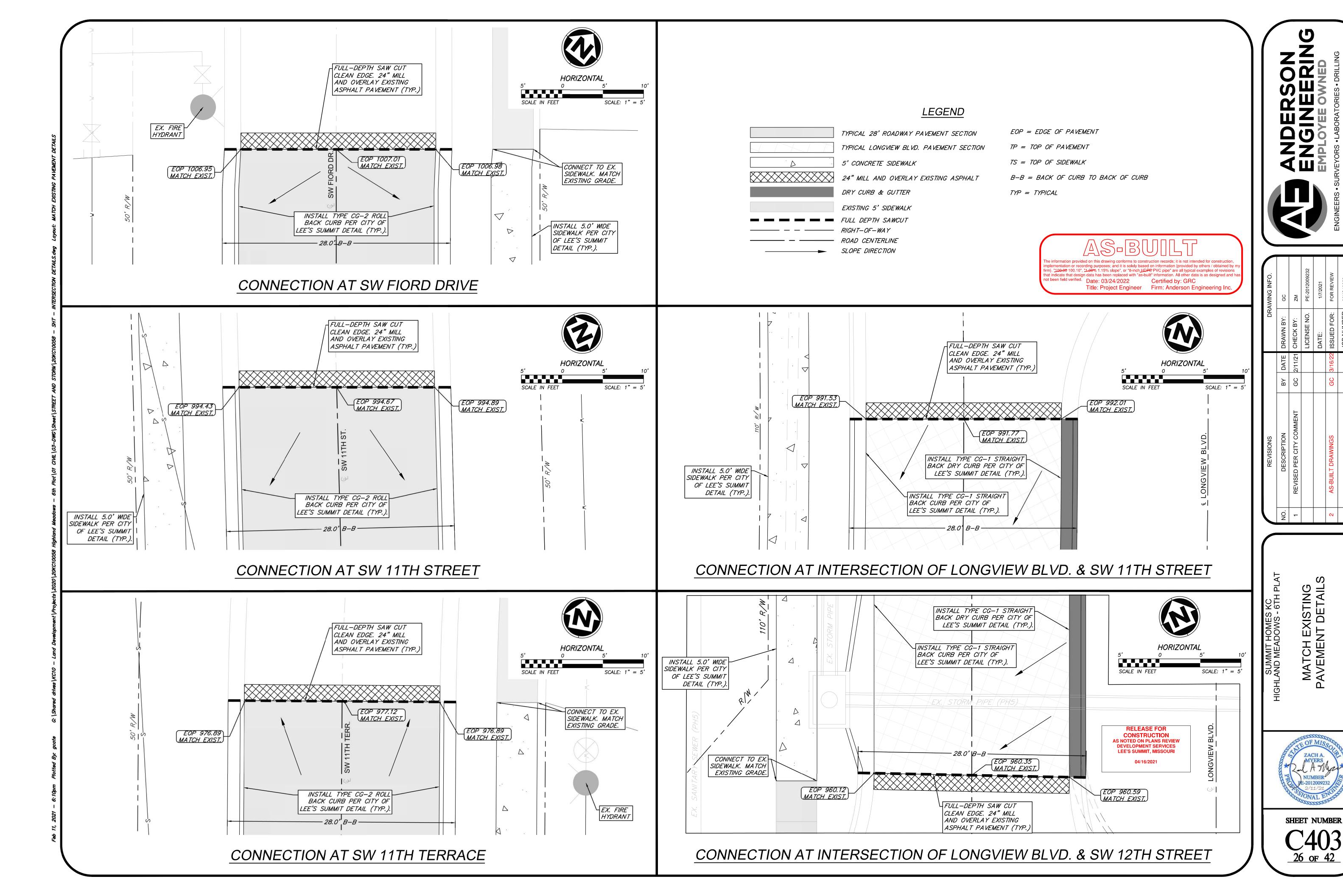


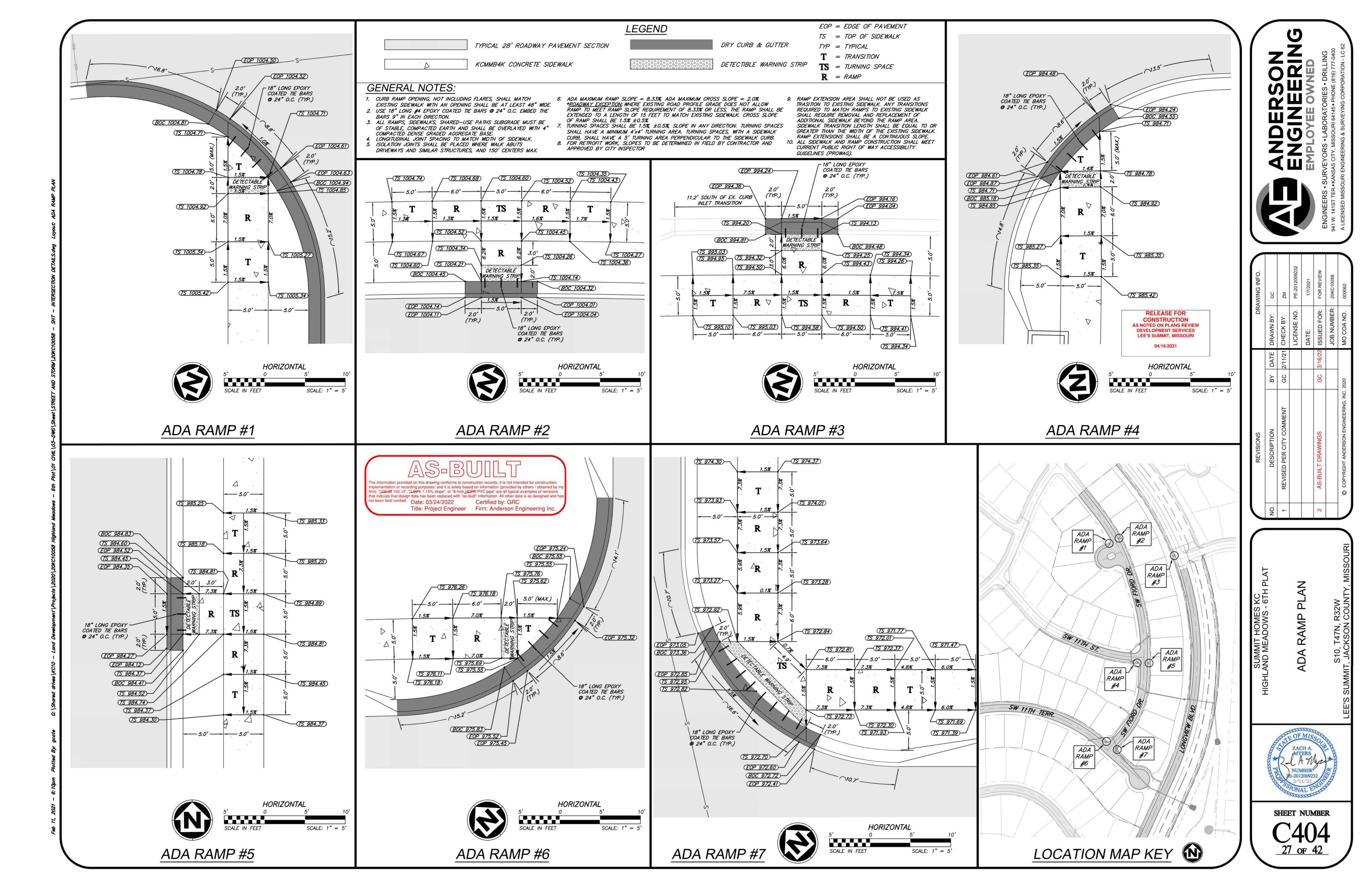
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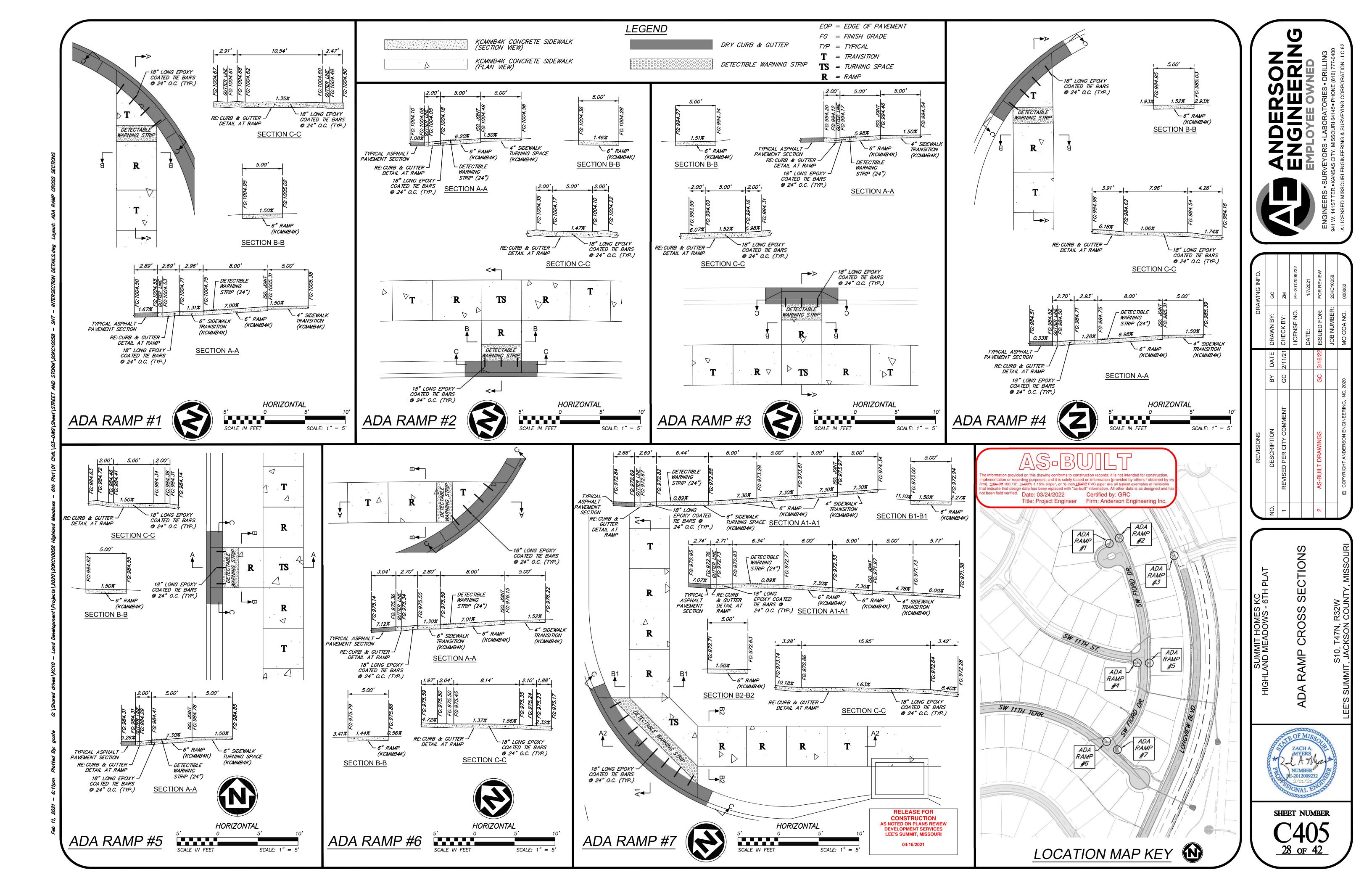
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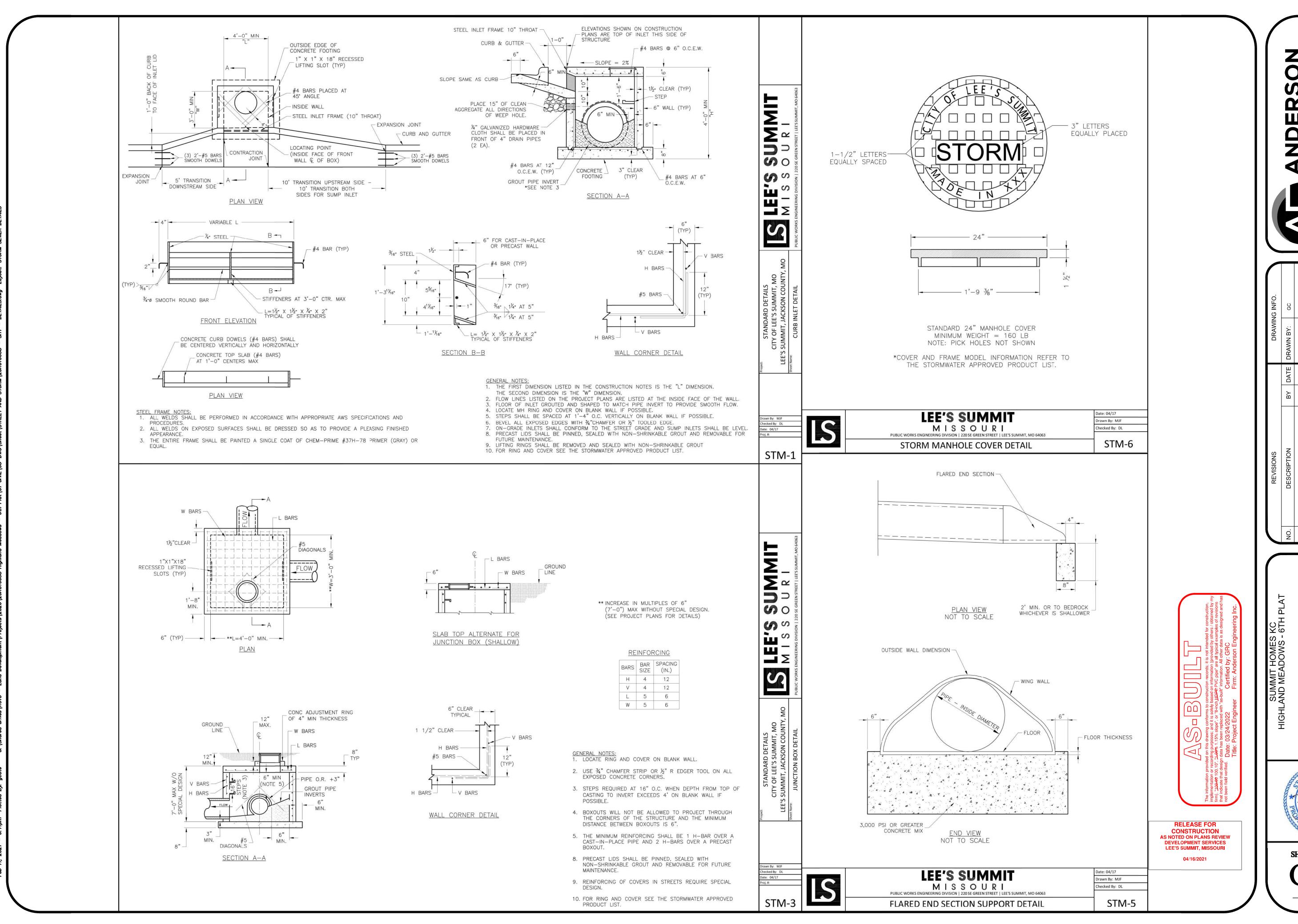
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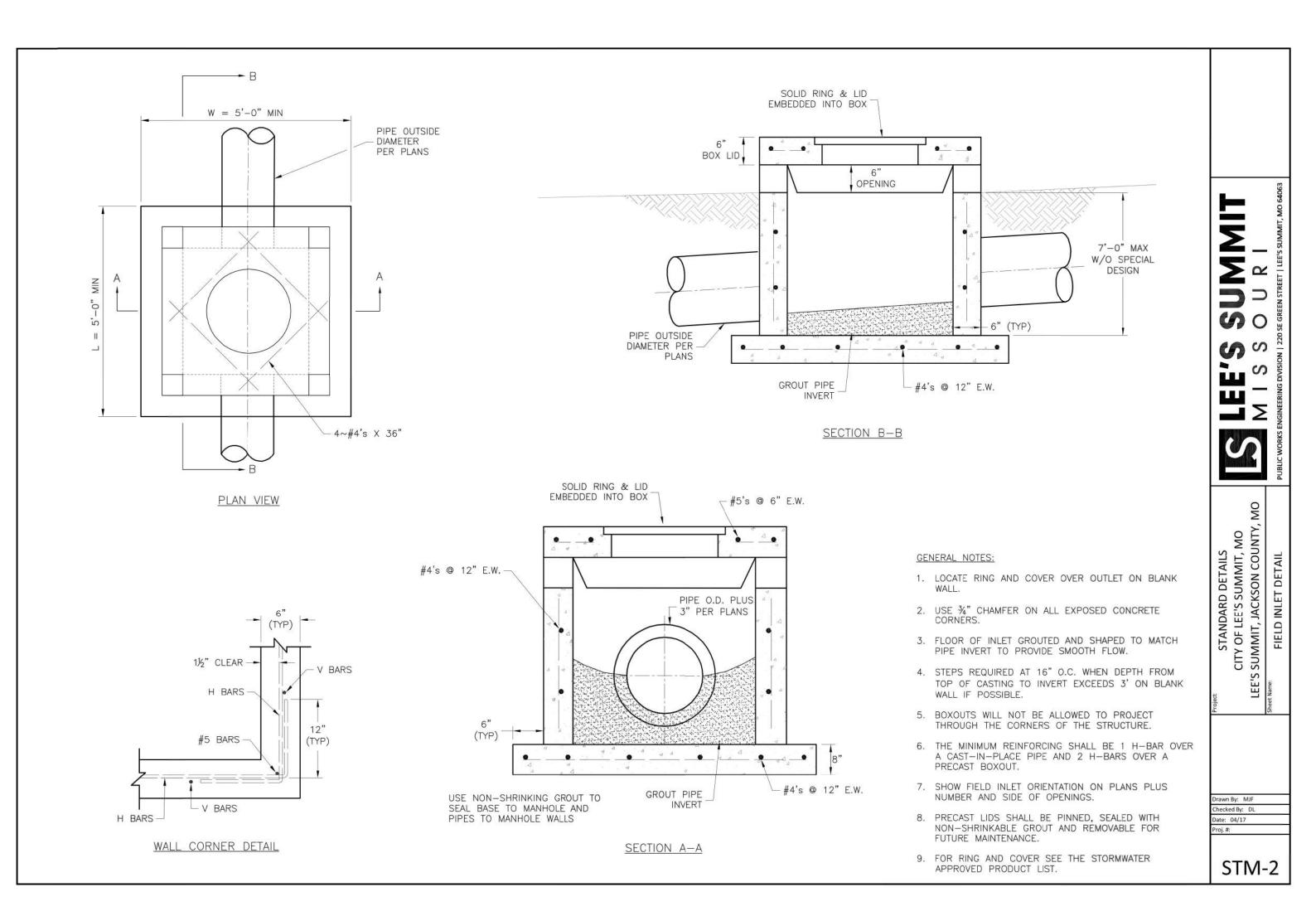


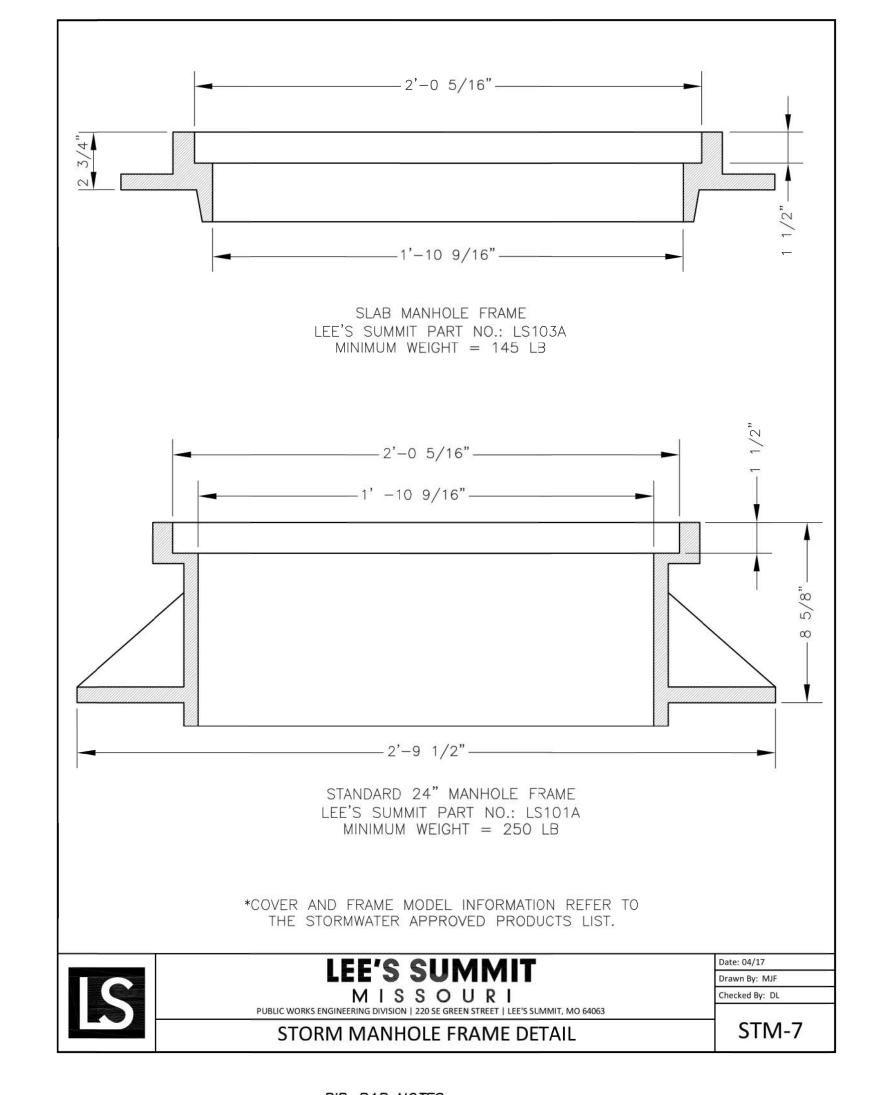


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BEDDING

1/2"-3/4" CLEAN AGGREGATE, HAND TAMPED OR MECHANICALLY COMPACTED IN MAX. 4" LIFTS INITIAL BACKFILL

-UNDER PAVED AREAS OR WITHIN 4' HORIZONTAL OF PAVED AREAS

1/2"-3/4" CLEAN AGGREGATE, HAND TAMPED OR MECHANICALLY

COMPACTED IN MAX. 4" LIFTS

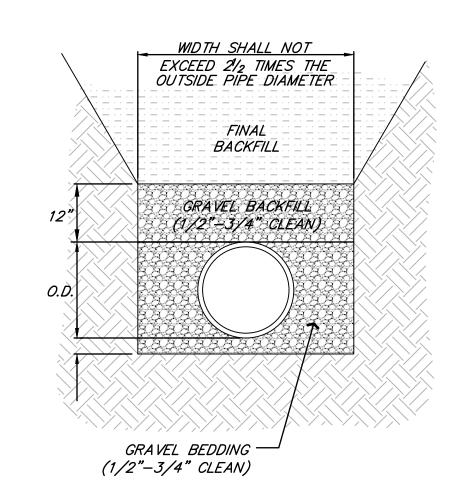
-UNDER OPEN AREAS

1/2"-3/4" CLEAN AGGREGATE, HAND TAMPED OR MECHANICALLY
COMPACTED IN MAX. 4" LIFTS
FINAL BACKFILL

-UNDER PAVED AREAS OR WITHIN 4' HORIZONTAL OF PAVED AREAS
ON-SITE OR IMPORTED MATERIAL FREE OF MUCK, FROZEN
MATERIAL, EXCESS MOISTURE, ORGANICS, TOPSOIL, RUBBISH,
CONSTRUCTION DEBRIS, ROCK OR BRICK LARGER THAN 8",
COMPACTED TO 95% OF STANDARD DENSITY PER ASTM D-698
-UNDER OPEN AREAS

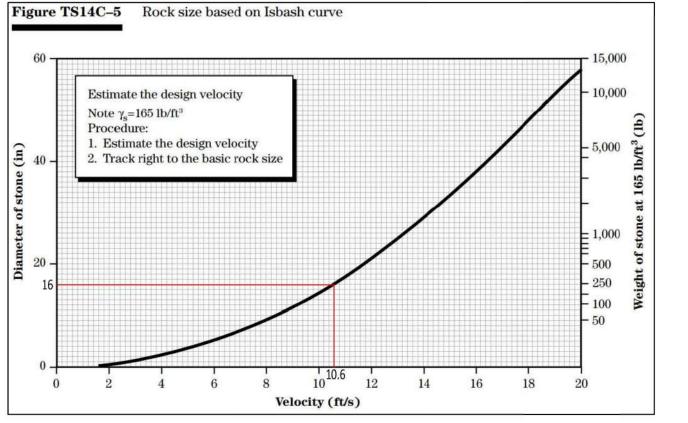
ON-SITE OR IMPORTED MATERIAL FREE OF MUCK, FROZEN MATERIAL, EXCESS MOISTURE, ORGANICS, TOPSOIL, RUBBISH, CONSTRUCTION DEBRIS, ROCK OR BRICK LARGER THAN 8", COMPACTED TO 90% OF STANDARD DENSITY PER ASTM D-698

BEDDING DEPTH	BELOW PI	PE
PIPE DIAMETER	IN SOIL	IN ROCK
24" AND LESS	4"	6"
27" THRU 60"	4"	9"
27" THRU 60"	4"	9"



PIPE BEDDING DETAIL

NOT TO SCALE



MAXIMUM 100-YR OUTLET VELOCITY PER DRAINAGE CALCULATIONS (SHEET C202) ≈ 10.6 FT/S.

PER TABLE ABOVE, 10.6 FT/S = 14.5" STONE.

16" STONE X 1.2 SAFETY FACTOR = 19" STONE

19" STONE ≈ MoDOT TYPE 4 DITCH LINER SPECIFICATION

"TYPE 4 ROCK DITCH LINER SHALL CONSIST OF MATERIAL WITH A PREDOMINAT ROCK SIZE OF 19 INCHES, A MAXIMUM ROCK SIZE OF 28 INCHES AND A GRADATION SUCH THAT NO MORE THAN 15% WILL BE LESS THAN 6 INCHES" PER SECTION 609.60.2.4 OF THE 2018 MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

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RELEASE FOR
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AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
04/16/2021

RIPRAP DETAILS

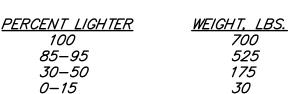
NOT TO SCALE

RIP—RAP NOTES:

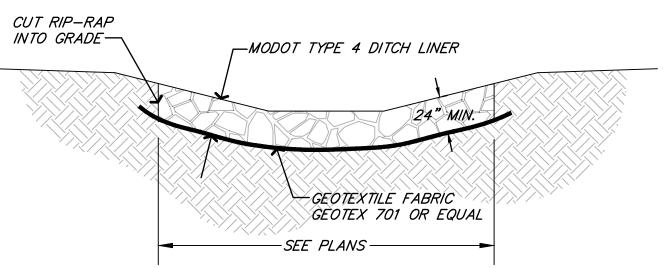
1. ROCK TO BE USED FOR RIP—RAP SHALL CONSIST OF INDIVIDUAL ROCK
FRAGMENTS THAT ARE DENSE, SOUND, AND RESISTANT TO ABRASION. THE
ROCK SHALL BE FREE OF CRACKS, SEAMS, AND OTHER DEFECTS THAT
WOULD TEND TO INCREASE THE DESTRUCTION OF THE INDIVIDUAL ROCK
FRAGMENTS DUE TO WATER AND FRONT ACTION. REFER APWA SECTION

2. RIP—RAP SHALL HAVE A MINIMUM THICKNESS OF 24" AT ALL LOCATIONS SHOWN ON THE PLANS. RIP—RAP SHALL BE PLACED ON GEOTEXTILE FABRIC AS SHOWN IN THE DETAIL.

3. 24" THICK RIP—RAP SHALL BE WELL—GRADED (D50 = 19") AND CONFORM TO THE TABLE BELOW:



- 4. A SAMPLE OF ALL ROCK TO BE PLACED SHALL BE SET ASIDE AT A QUARRY CHOSEN BY THE CONTRACTOR. THE ENGINEER WILL VIST THE QUARRY TO VISUALLY INSPECT THE ROCK PRIOR TO DELIVERY.
- 5. VISUAL OBSERVATION AND TEST SHALL DETERMINE THE ACCEPTABILITY OF THE ROCK USED FOR RIP—RAP. IN GENERAL, LEDGE ROCK USED FOR DUMPED RIP—RAP MATERIALS SHALL MEET THE FOLLOWING REQUIREMENTS WHEN TESTED BY THE SPECIFIED PROCEDURES.



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M SEWER DETAILS (2)

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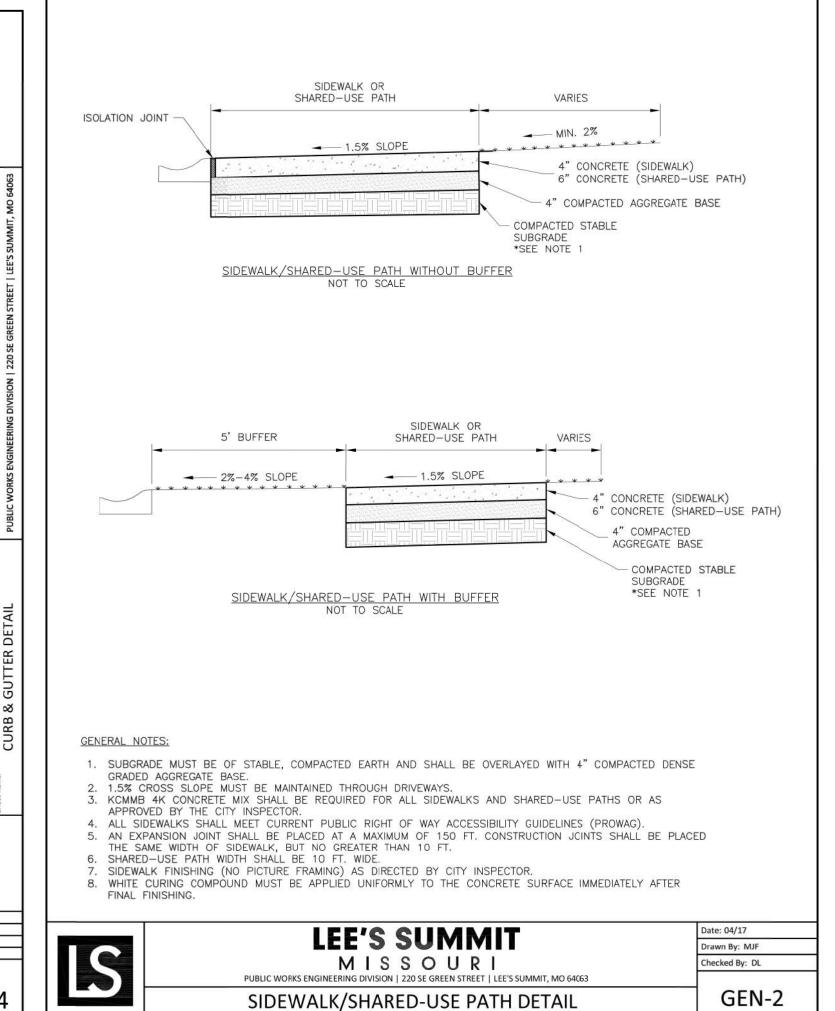
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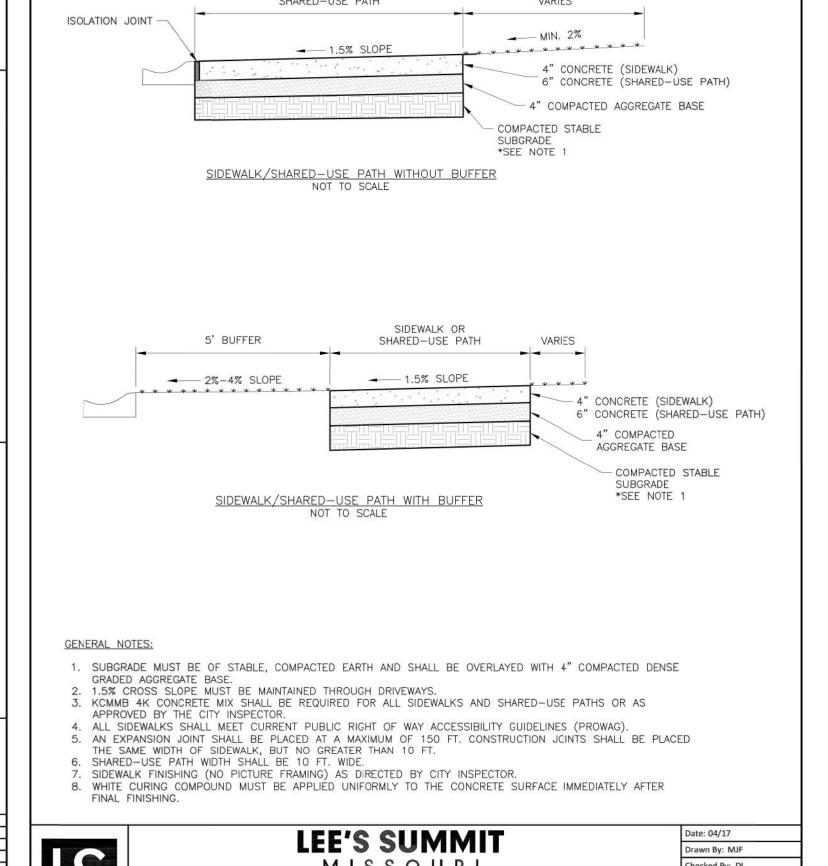
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CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.





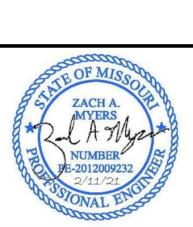
information provided on this drawing conforms to construction records; it is not intended for construction, rm}. <u>"100-06</u> 100.10", <u>"1.00%</u> 1.15% slope", or "8-inch <u>HDPE</u> PVC pipe" are all typical examples of revisions nat indicate that design data has been replaced with "as-built" information. All other data is as designed and ha ot been field verified. Date: 03/24/2022 Certified by: GRC Title: Project Engineer Firm: Anderson Engineering Inc

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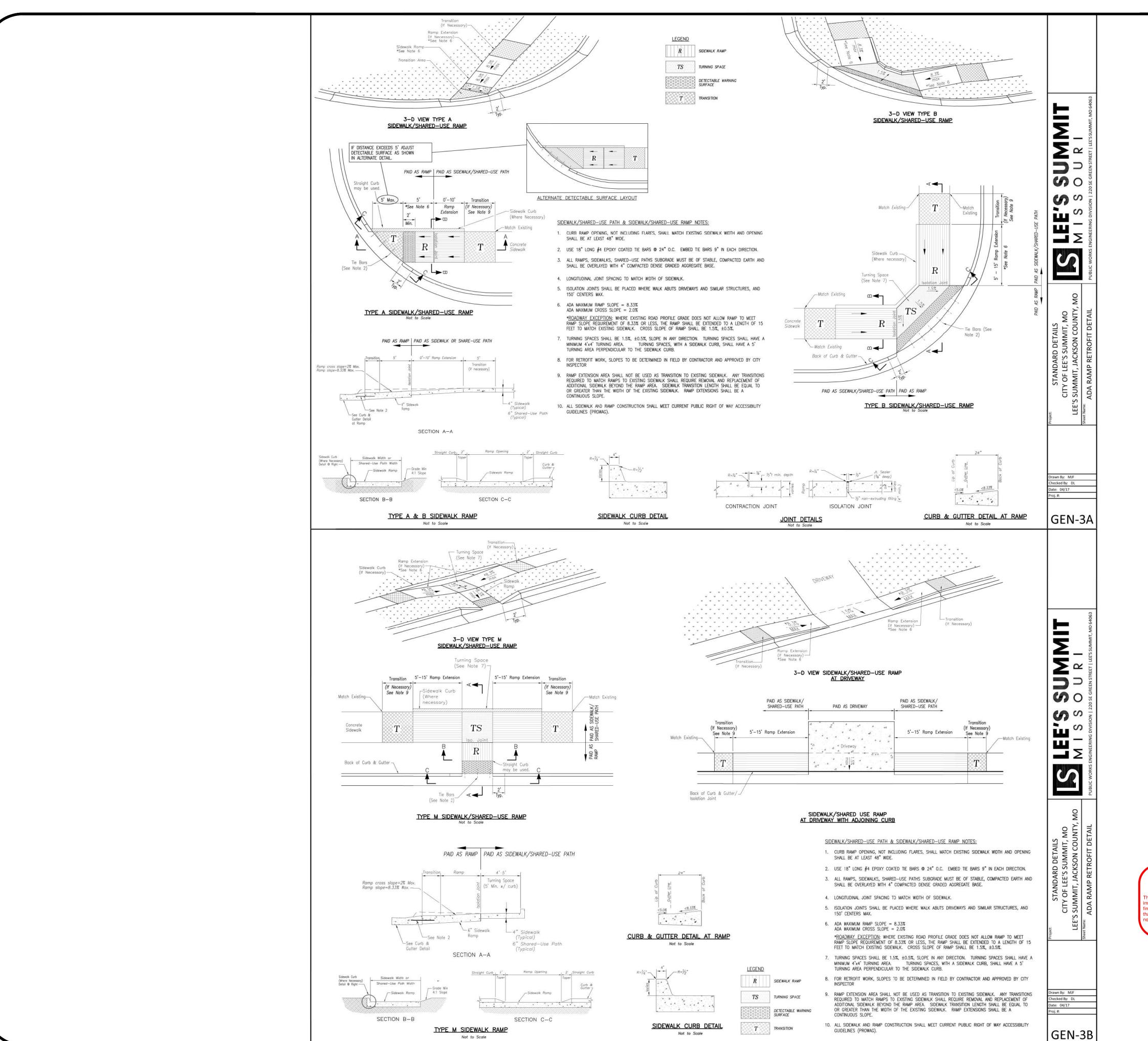
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SIDEWAL

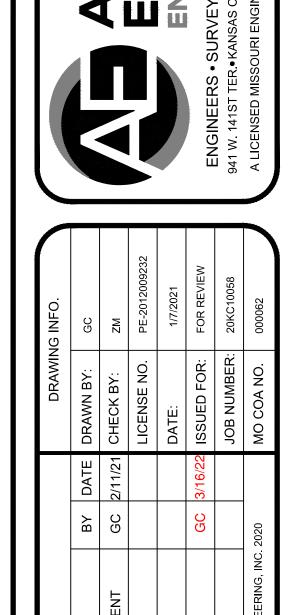
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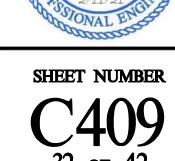
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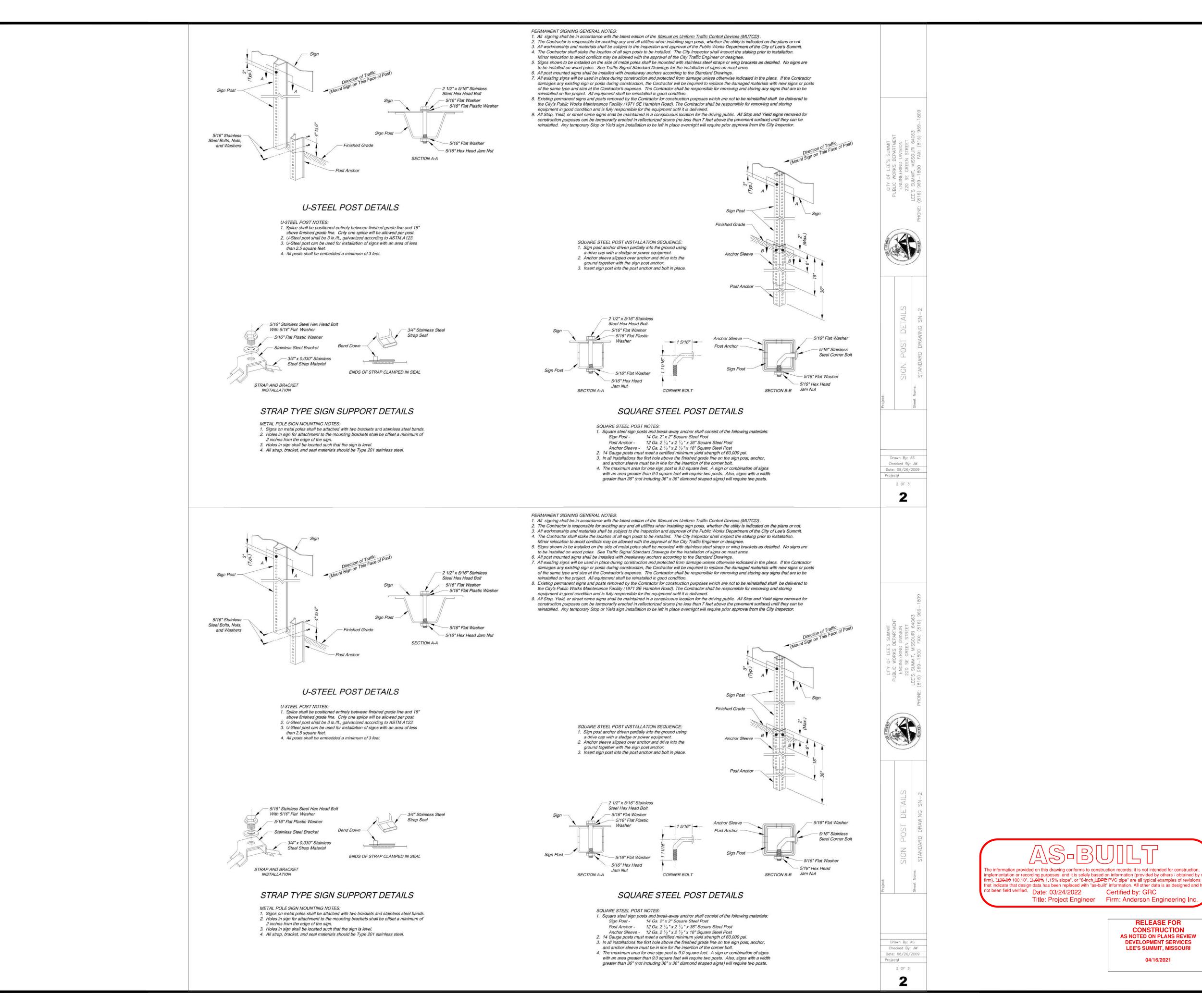


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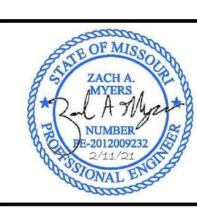
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Title: Project Engineer Firm: Anderson Engineering In

CONSTRUCTION

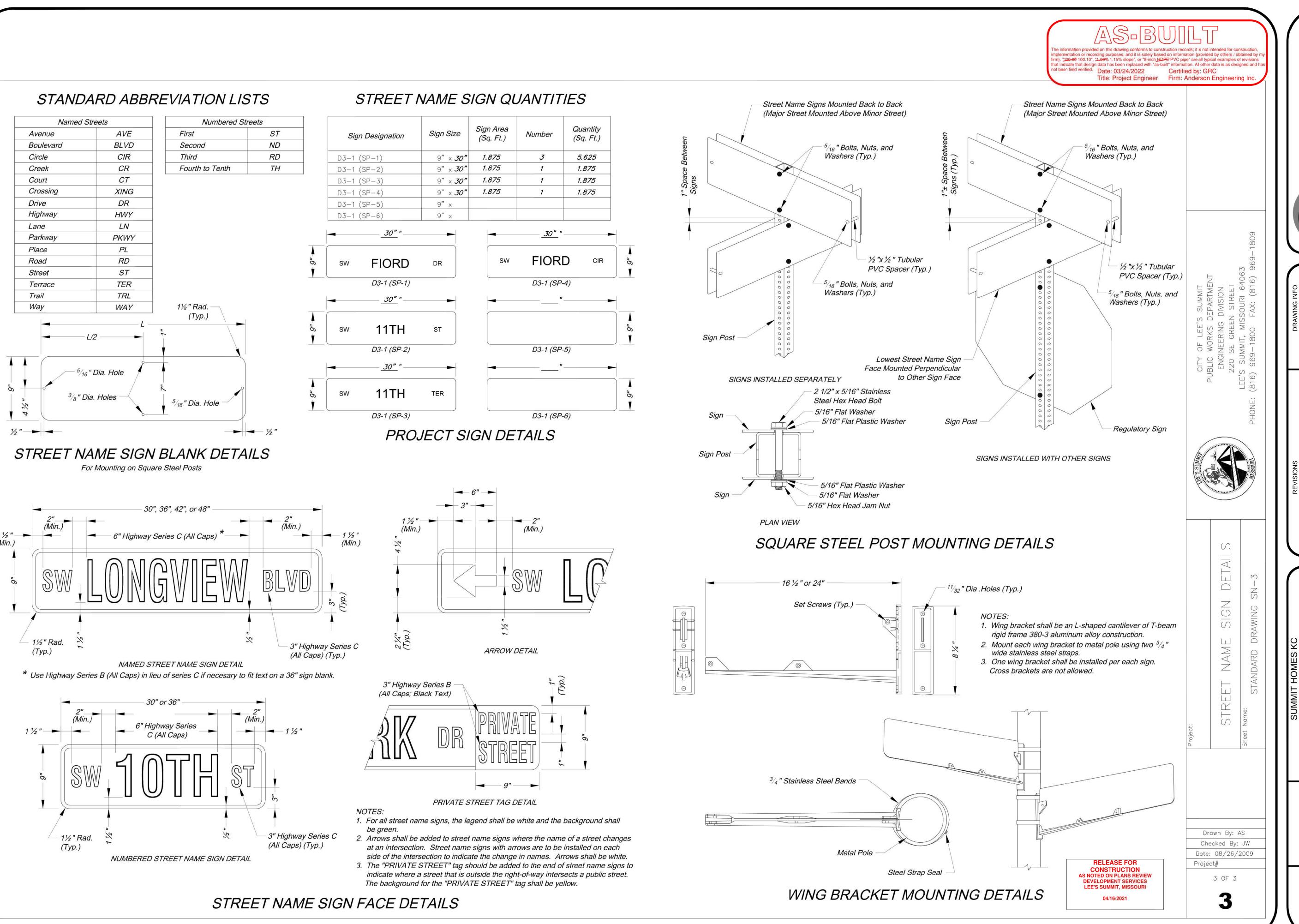
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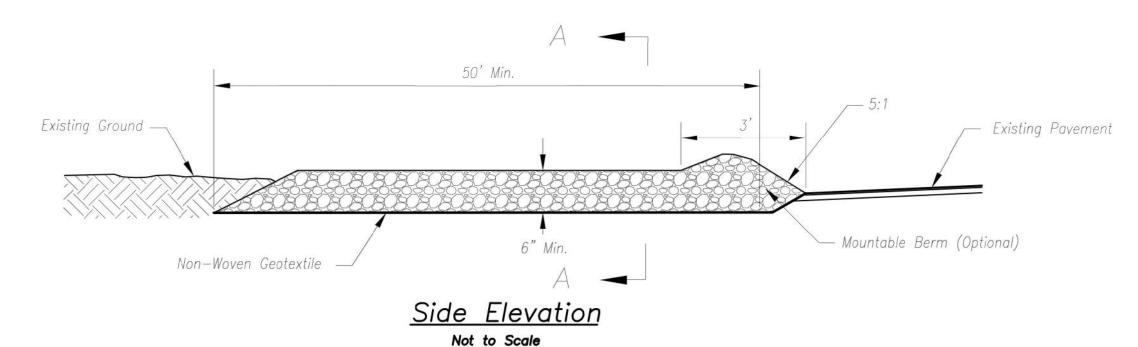


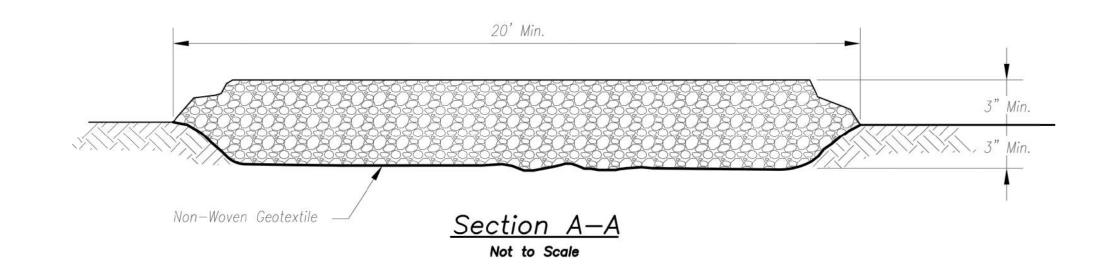
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<u>Plan View</u>





Notes for Construction Entrance:

- Avoid locating on steep slopes, at curves on public roads, or downhill of disturbed area.
- 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 3H:1V side slopes across the foundation approximately 15 feet from the edge of the public road to divert runoff from it.
- Install pipe under the entrance if needed to maintain drainage ditches along public roads.
- 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.
- If conditions warrant, place geotextile fabric on the graded foundation to improve stability.

Maintenance for Construction Entrance:

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

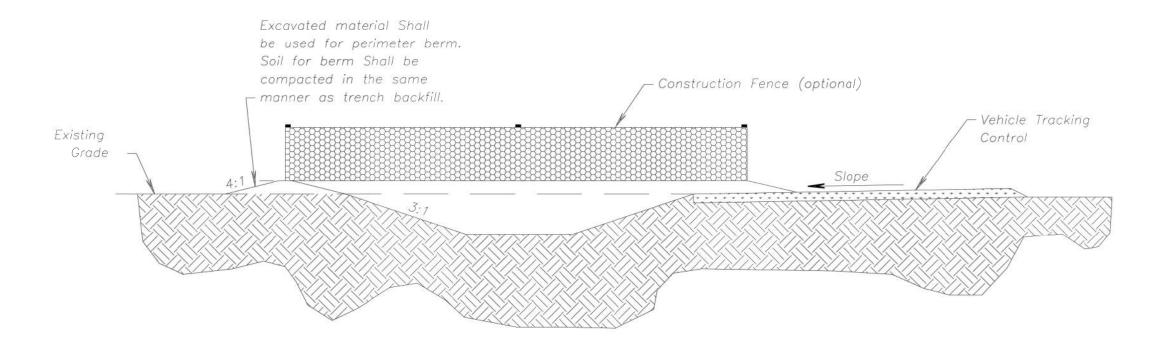
CONSTRUCTION ENTRANCE

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 slopes 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. Signs 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 liner may be required along the bottom and sides of the subsurface pit in sandy or gravelly soils.

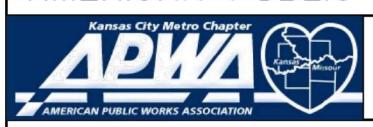
Maintenance for Concrete Washout:

- 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 wasted concrete.
- Concrete washout water, wasted pieces of concrete and all other debris in the subsurface pit shall be transported from the job site in a water—tight container and disposed of properly.
- 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 topsoil, 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



KANSAS CITY METRO CHAPTER

CONSTRUCTION ENTRANCE
AND CONCRETE WASHOUT

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

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CONSTRUCTION
AS NOTED ON PLANS REVIEW

DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI

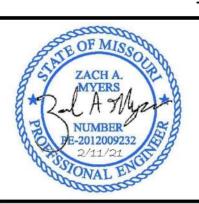
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CONSTRUCTION ENTRANC DETAILS



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The information provided on this drawing conforms to construction records; it is not intended for construction, mplementation or recording purposes; and it is solely based on information (provided by others / obtained by my rm). "100-00 100.10", "1.00% 1.15% slope", or "8-inch HDPE PVC pipe" are all typical examples of revisions hat indicate that design data has been replaced with "as-built" information. All other data is as designed and has

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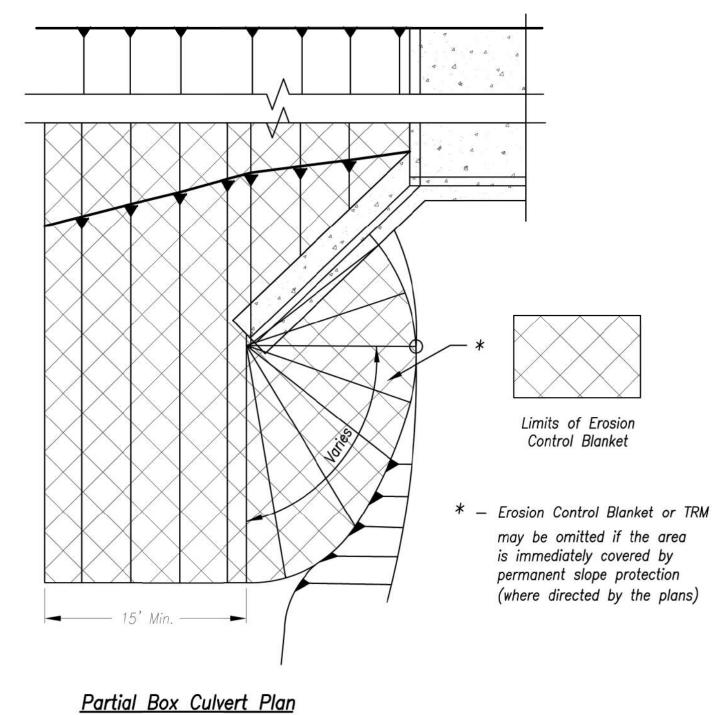
Certified by: GRC

Title: Project Engineer

Firm: Anderson Engineering Inc.

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.



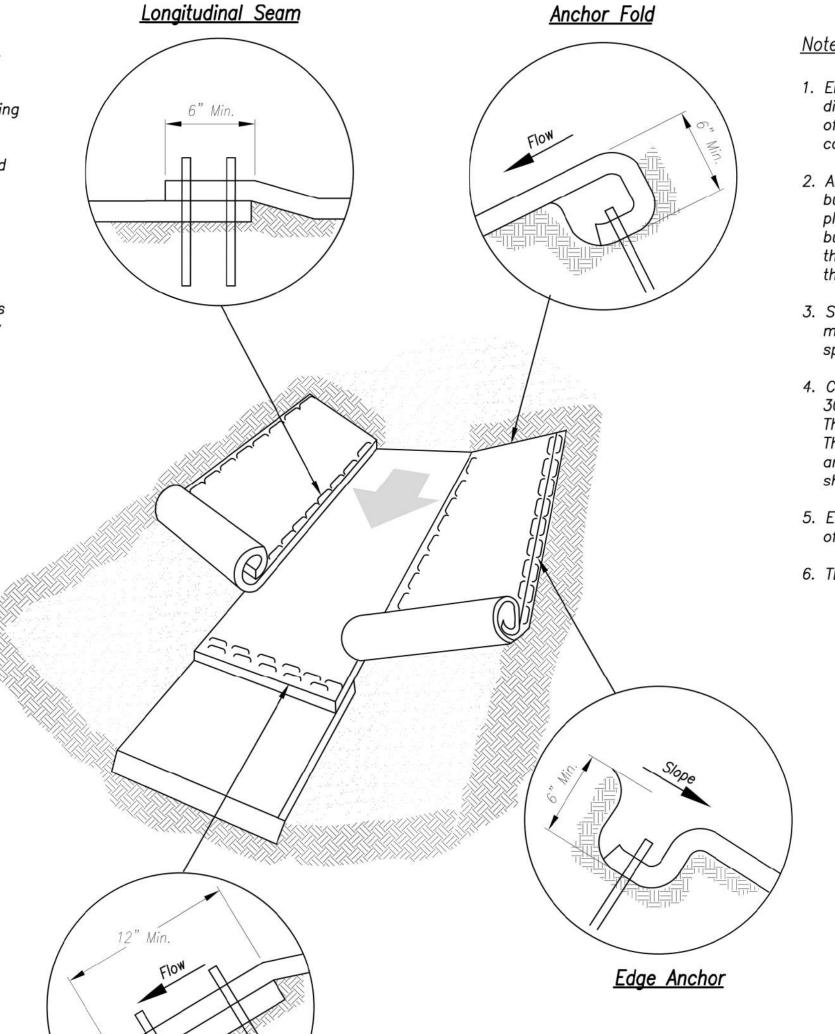


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Installation Around Culvert Slope

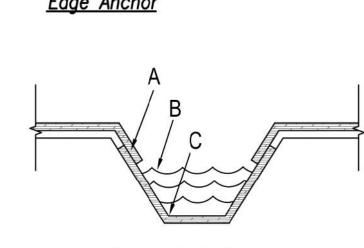
Notes for Installation on Slopes:

- 1. Erosion Control Blankets and TRMs shall be laid in the direction of the slope. In order for blanket to be in contact with the soil, lay blanket loosely, avoiding stretching.
- 2. ANCHOR SLOTS: The top of the blanket should be "slotted in" at the top of the slope and anchored in place with anchors 6 inches apart. The slots should be 6 inches wide x 6 inches deep with the blanket anchored in the bottom of the slot, then backfilled, tamped and seeded.
- 3. SPLICE SEAM: When splices are necessary, overlap end a minimum of 8 inches in direction of water flow. Stagger splice
- 4. TERMINAL FOLD: The bottom edge of the blanket shall be turned under a minimum of 4 inches, then anchored in place with anchors 9 inches apart.



Notes for Installation in Channels:

- 1. Erosion Control Blankets and TRMs shall be laid in the direction of the flow, with the first course at the centerline of channel, where applicable. In order for the mat to be in contact with the soil, lay the mat loosely, avoiding stretching.
- 2. ANCHOR FOLD: The top of the mat should be folded under, buried and secured with wood or other approved anchors placed 6 inches apart. The top edge of the mat should be buried in a slot 6 inches wide x 6 inches deep, anchored in the bottom of the slot, backfilled, and the mat folded over the top as shown in detail.
- 3. SPLICE SEAM: When splices are necessary, overlap end a minimum of 12 inches in direction of water flow. Stagger splice seams.
- 4. CHECK SLOTS: Establish check slots transverse to slope every 30 feet. The slots should be 6 inches wide x 6 inches deep. The mat shall be cut to a length 12 inches beyond the slot. The top of the downstream mat shall be slotted in, secured and buried similar to the edge anchor fold. The upstream mat shall then cover the slot and be anchored as shown.
- 5. EDGE ANCHORS: Lay outside edge of mat into trench at top of the slope and anchor.
- 6. TERMINUS: The bottom edge of the mat shall be anchored.



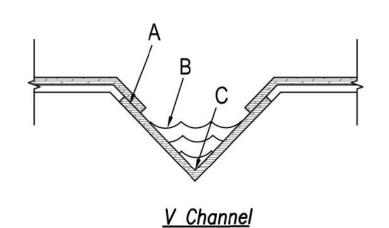
Trapezoidal Channel

Critical Points:

A – Overlaps and seams;

B - Projected water line;

C - Channel bottom / side slope vertices;



Installation in Channels

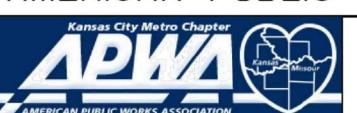
Splice Seam

nplementation or recording purposes; and it is solely based on information (provided by others / obtained by m rm). "100-00 100.10", "1-00% 1.15% slope", or "8-inch HDPE PVC pipe" are all typical examples of revisions ot been field verified. Date: 03/24/2022 Certified by: GRC Title: Project Engineer Firm: Anderson Engineering Inc

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LEE'S SUMMIT, MISSOURI 04/16/2021

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KANSAS CITY METRO CHAPTER

EROSION CONTROL BLANKETS AND TURF REINFORMENT MATS ADOPTED:

STANDARD DRAWING NUMBER ESC-02 10/24/2016

	REVISIONS			DRAWIN	DRAWING INFO.
Ŏ.	DESCRIPTION	ВУ	DATE	BY DATE DRAWN BY:	၁၅
~	REVISED PER CITY COMMENT	29	2/11/21	GC 2/11/21 CHECK BY:	ZM
				LICENSE NO.	PE-2012009232
				DATE:	1/7/2021
2	AS-BUILT DRAWINGS	25	3/16/22	GC 3/16/22 ISSUED FOR:	FOR REVIEW
				JOB NUMBER:	20KC10058
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TECTION SLOPE DETA EP Ш



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4' min length post at 4' max spacing

Geotextile fabric 3' wide

Staples, plastic zip ties or other material approved by the field engineer, (50 lb tensile strength) located in top 8"

Tire compaction zone

Direction of Flow

Post embedment (See Note 6.)

Machine slice 6" - 12" depth

(*) <u>POSTS</u>

Incorrect

- MIN, LENGTH 4'

- STEEL 1.33 LB/FT

- HARDWOOD 1 ⅔6" x 1 ⅔6"

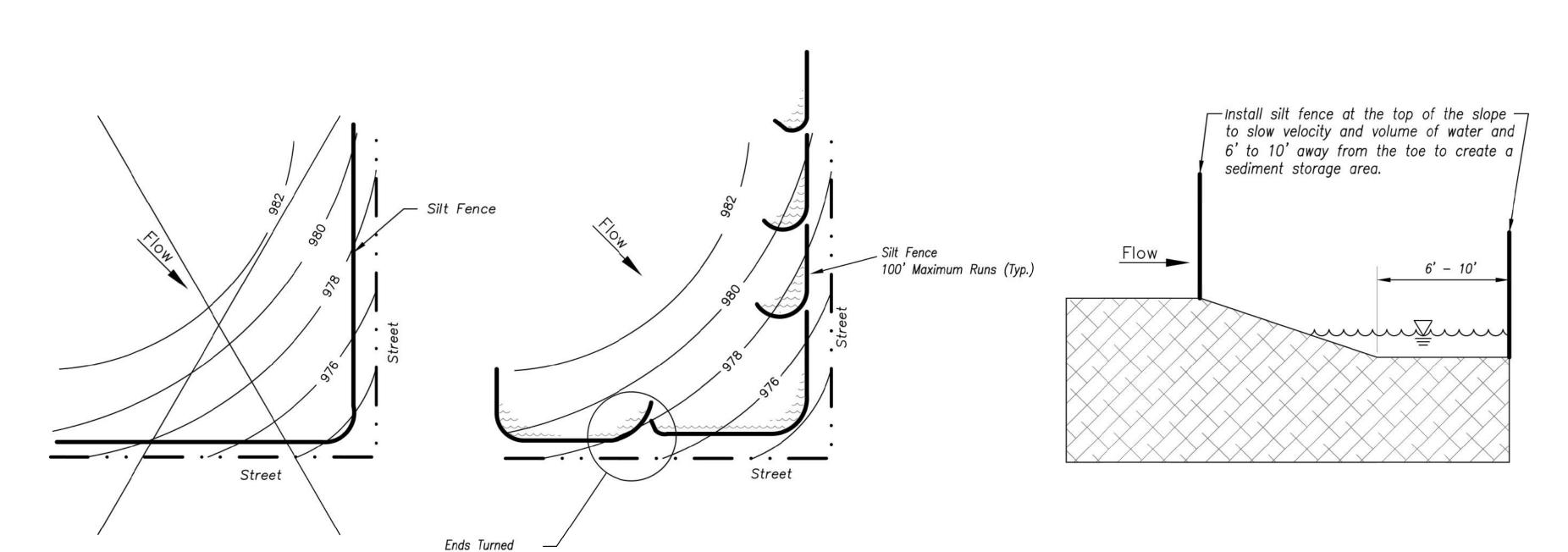
- NO.2 SOUTHERN PINE 2 %" x 2 %"

(**) — Geotextile Fabric shall

meet the requirements of AASHTO M288

SILT FENCE DETAILS

Not to Scale

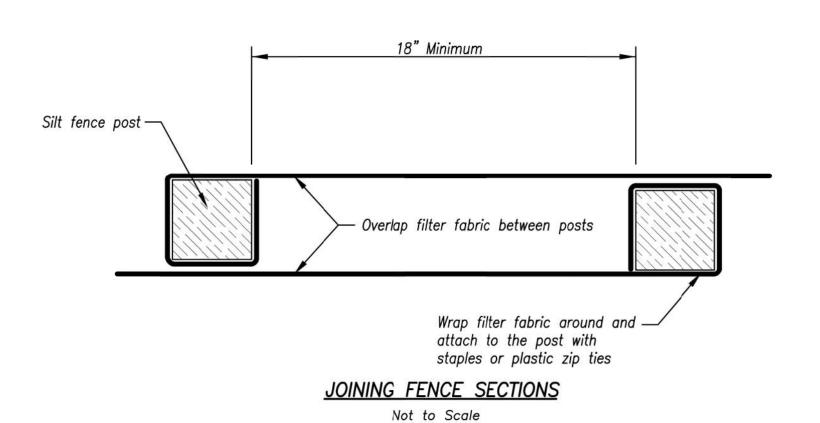


<u>Notes:</u>

- In order to contain water, the ends of the silt fence must be turned uphill (Figure A).
- 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).
- 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.
- Trenching will only be allowed for small or difficult installation, where slicing machine cannot be reasonably used.

Maintenance:

- 1. Remove and dispose of sediment deposits when the deposit approaches ½ the height of silt fence.
- 2. Repair as necessary to maintain function and structure.



<u>Figure A</u>

Uphill (Typ)

SILT FENCE LAYOUT

Not to Scale

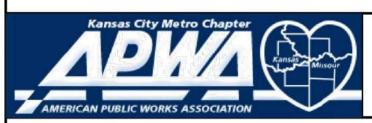
Correct

AS-BUILT

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AS NOTED ON PLANS REVIEW
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KANSAS CITY METRO CHAPTER

SILT FENCE

STANDARD DRAWING
NUMBER ESC-03
ADOPTED:
10/24/2016

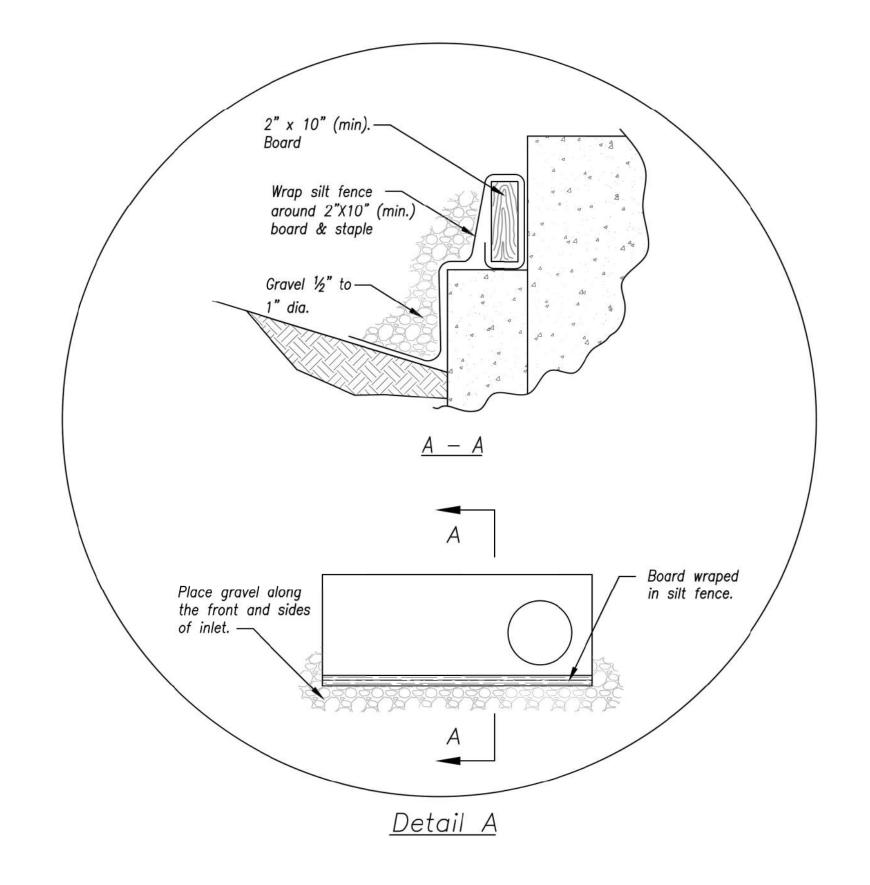
ANDERSON
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90	ZM	PE-2012009232	1/7/2021	FOR REVIEW	20KC10058	000062
BY DATE DRAWN BY:	GC 2/11/21 CHECK BY:	TICENSE NO:	DATE:	GC 3/16/22 ISSUED FOR:	JOB NUMBER:	MO COA NO.
DATE	2/11/21			3/16/22		
ВУ	29			CC		2020
DESCRIPTION	REVISED PER CITY COMMENT			AS-BUILT DRAWINGS		© COPYRIGHT ANDERSON ENGINEERING, INC. 2020

SILT FENCE DETAILS



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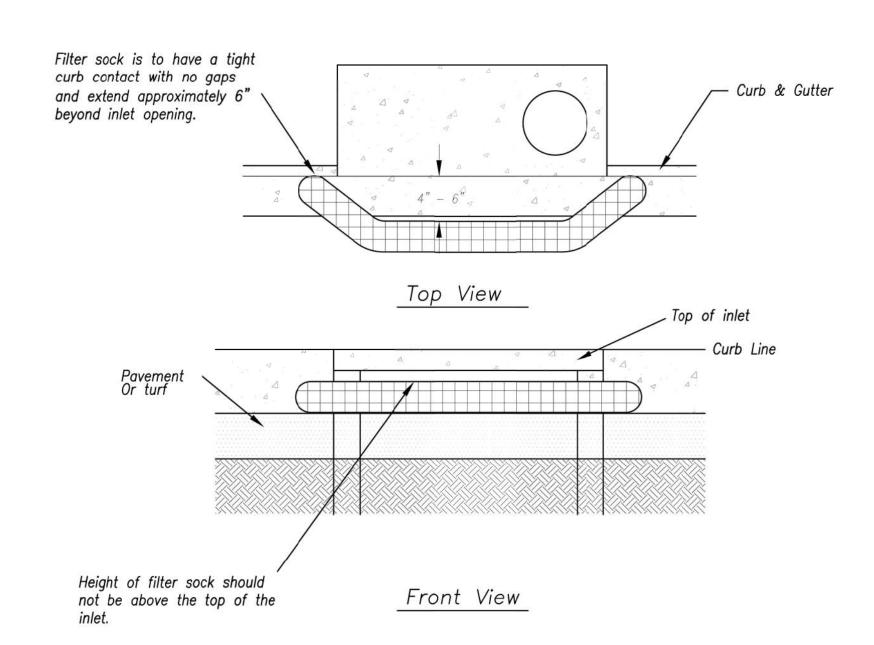
EARLY STAGE CURB INLET (Open Box and Prior to Pouring Curb and Inlet Throat)

Notes:

- 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.
- Contractor to field verify ponding water shall not create a traffic hazard.

Maintenance:

- 1. Remove deposited sediment from excavated storage areas when available storage has
- Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.
- Repair or replace as necessary to maintain function and integrity of installation.



Sump Inlet Sediment Filter

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

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KANSAS CITY METRO CHAPTER

CURB INLET PROTECTION

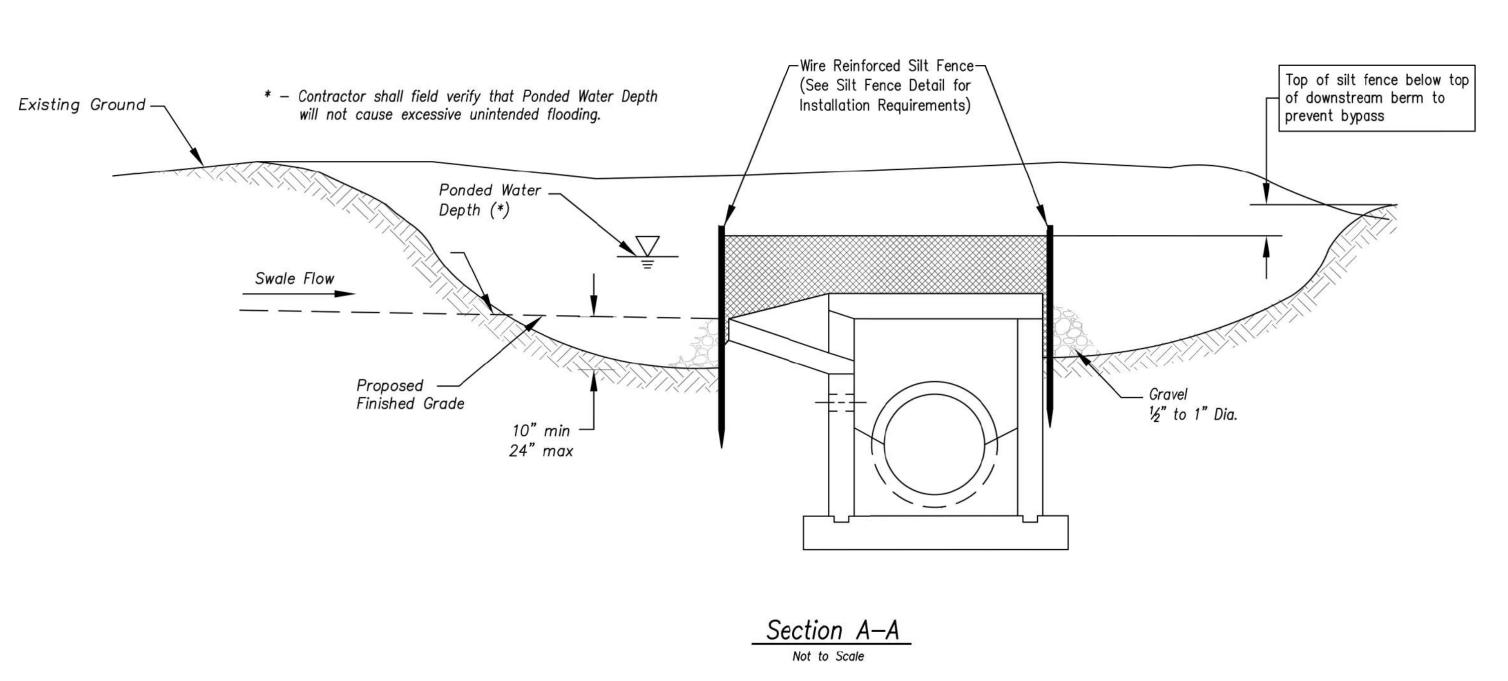
STANDARD DRAWING NUMBER ESC-06 ADOPTED:

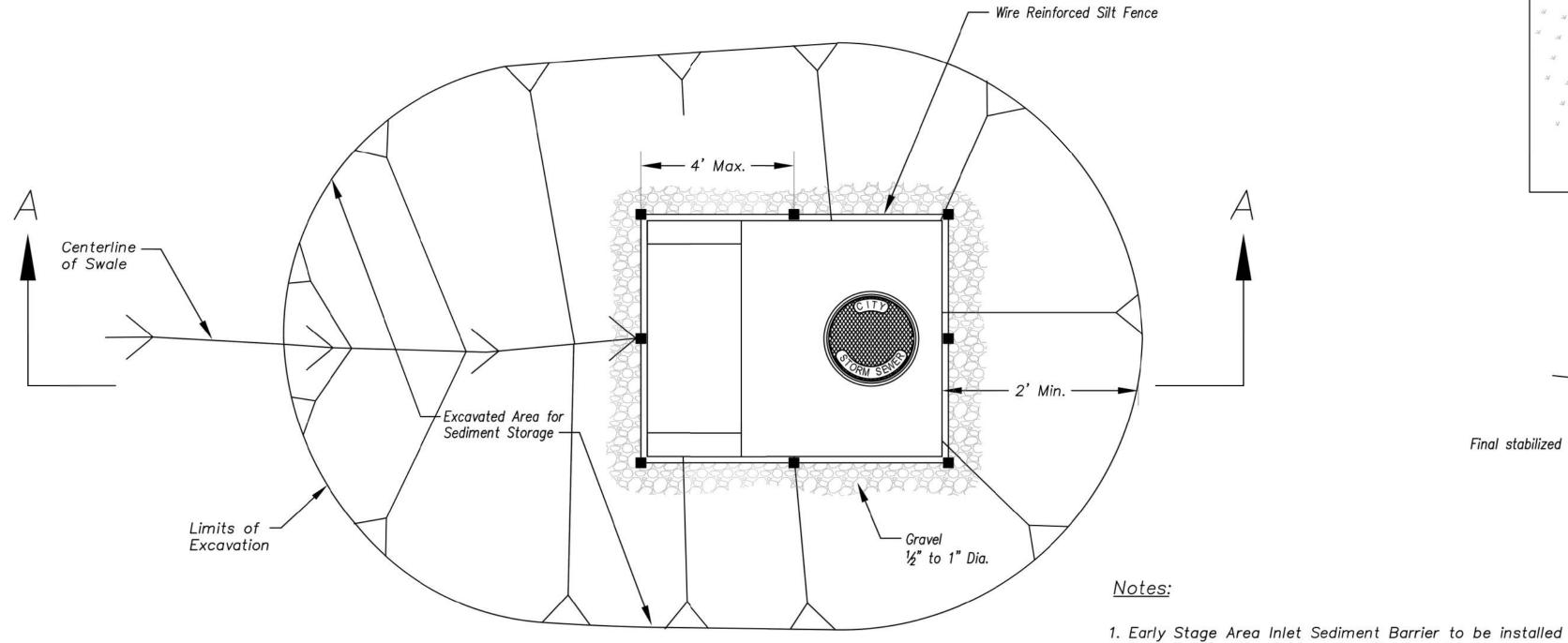
10/24/2016

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1	REVISED PER CITY COMMENT	29	2/11/21	GC 2/11/21 CHECK BY:	ZM
				LICENSE NO.	PE-20120092
				DATE:	1/7/2021
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CURB INLET PROTECTION DETAILS

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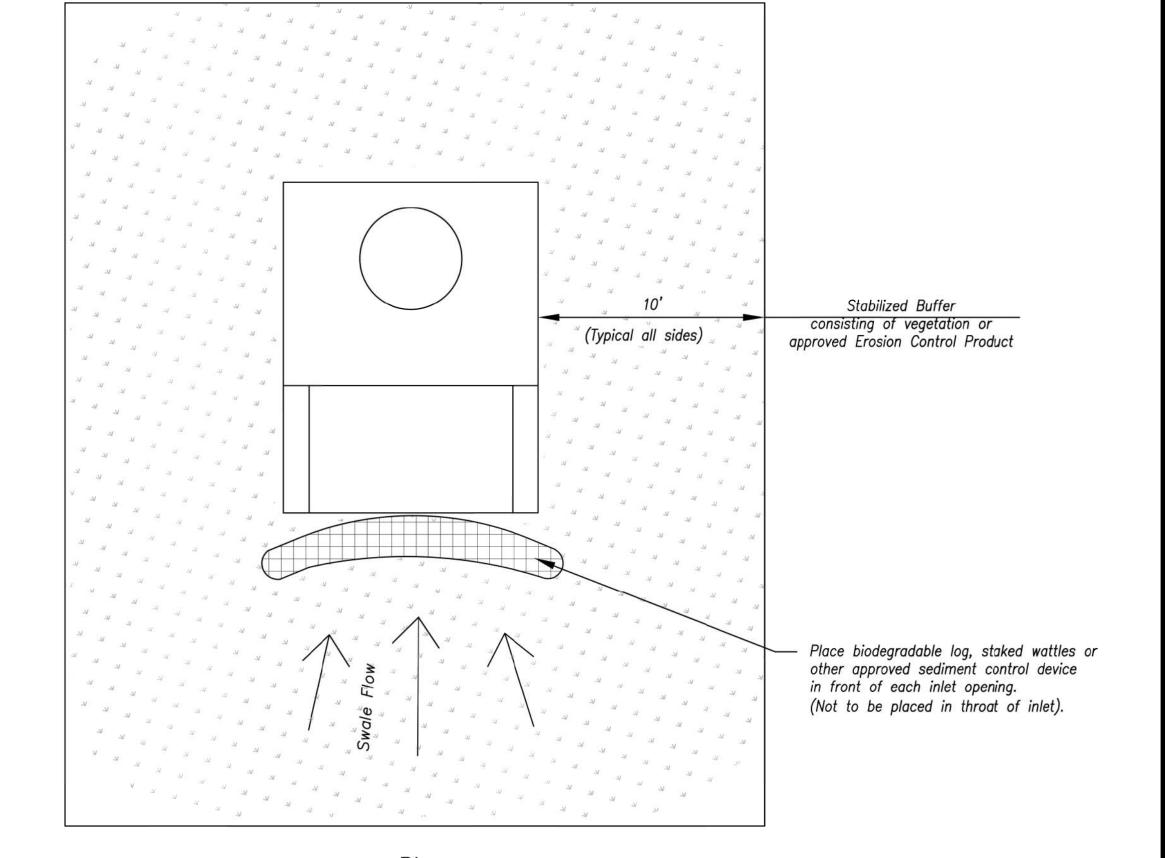


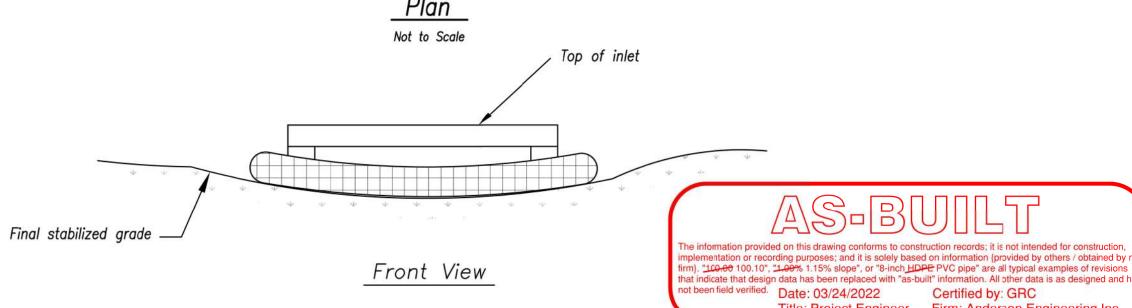


EARLY STAGE AREA INLET (All open boxes and inlets not at final grade)

Plan

Not to Scale





LATE STAGE AREA INLET (Area inlets at final grade and existing inlets)

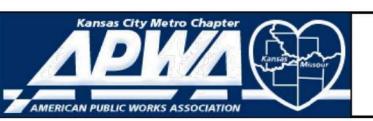
Maintenance:

- 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.

CONSTRUCTION AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI

Title: Project Engineer Firm: Anderson Engineering Inc

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KANSAS CITY METRO CHAPTER

AREA INLET AND JUNCTION BOX PROTECTION

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

AREA

INLET PROTECTION DETAILS

SHEET NUMBER <u>39</u> of 42

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immediately after inlet or junction box is

Backfill excavated area ONLY after final grading of the site. Stabilization of the site is to

Wire reinforced silt fence may be used in place of silt fence attached to wood frame.

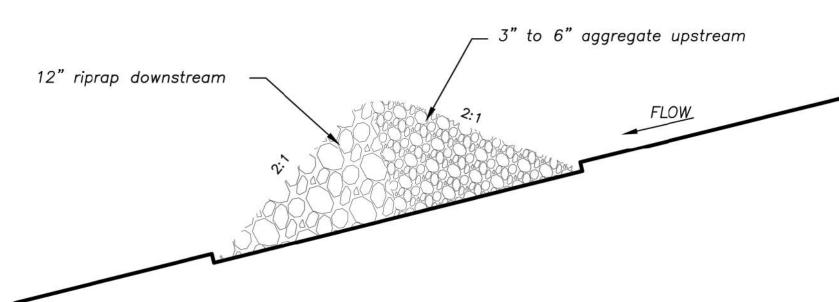
Silt fence shall remain in place until excavated area is removed and Late Stage Area Inlet is being installed.

constructed.

immediately follow.

<u>Type |</u>
(2 Acres or less of Drainage Area)

Not to Scale



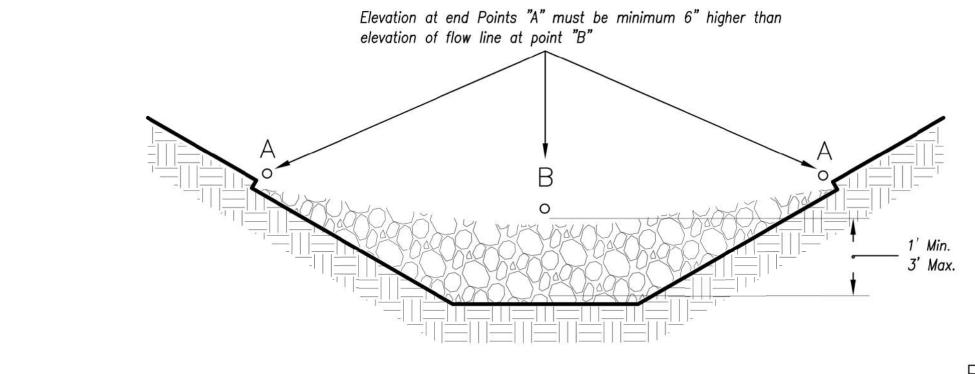
Type II

(2–10 Acres of Drainage Area)

Not to Scale

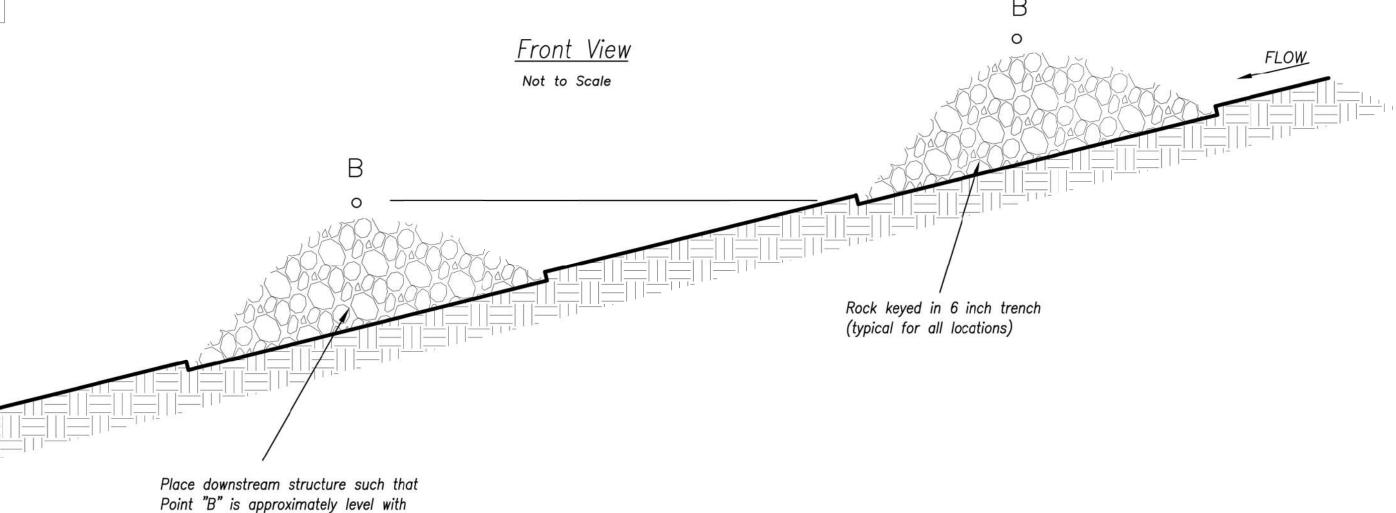
ROCK DITCH CHECK

Temporary Rock	k Ditch Check
<u>Spac</u>	
Ditch Centerline Slope (%)	Spacing Interval (Feet)
5.0	60
6.0	50
7.0	43
8.0	36
9.0	33
10.0	29
Note: Use this spac Rock Ditch Cl	



the toe elevation of the upstream

structure



Spacing Between Check Dams (all types)

Not to Scale

<u>Notes:</u>

- Rock check dams shall be used only for drainage areas less that 10 acres unless approved by the City Engineer.
- Use rock checks only in situations where the ditch slope exceeds 6%.

<u>Maintenance:</u>

- Remove and dispose of sediment deposits when the deposit approaches ½ the height of the ditch check.
- Replace and reshape as necessary to maintain function and integrity of installation.



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DITCH CHECKS

| STANDARD DRAW | NUMBER ESC-10 | ADOPTED:

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ROCK DITCH CHECKS

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

×

SHEET NUMBER

C506

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S -

DET

CHECK

DITCH

ROCK

TYPICAL PLAN VIEW OF DIVERSION BERM AND SLOPE DRAIN

Notes for Diversion Berm:

- 1. Slope drains are optional, but may be required by the engineer if the berm is at the top of a steep slope.
- Diversion berms must be installed as a first step in the land—disturbing activity and must be functional prior to upslope land disturbance.
- 3. The berm should be adequately compacted to prevent failure.
- 4. Temporary or permanent seeding and mulch shall be applied to the berm immediately following its construction.
- Place the berm so to minimize damages by construction operations and traffic.
- The berm must discharge to a temporary sediment trap or stabilized area.
- All trees, brush, stumps, obstructions and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of diversion.
- The diversion shall be excavated or shaped to line, grade and cross—section as required to meet the criteria specified herein, free of irregularities which will impede flow.
- Fills shall be compacted as needed to prevent unequal settlement that would cause damage in the completed diversion. Fill shall be composed of soil which is free from excessive organic debris, rocks or other objectionable materials.

Maintenance:

- Berm shall be reshaped, compacted, and stabilized as necessary to maintain its function.
- 2. Breaches in the berm shall be repaired immediately.

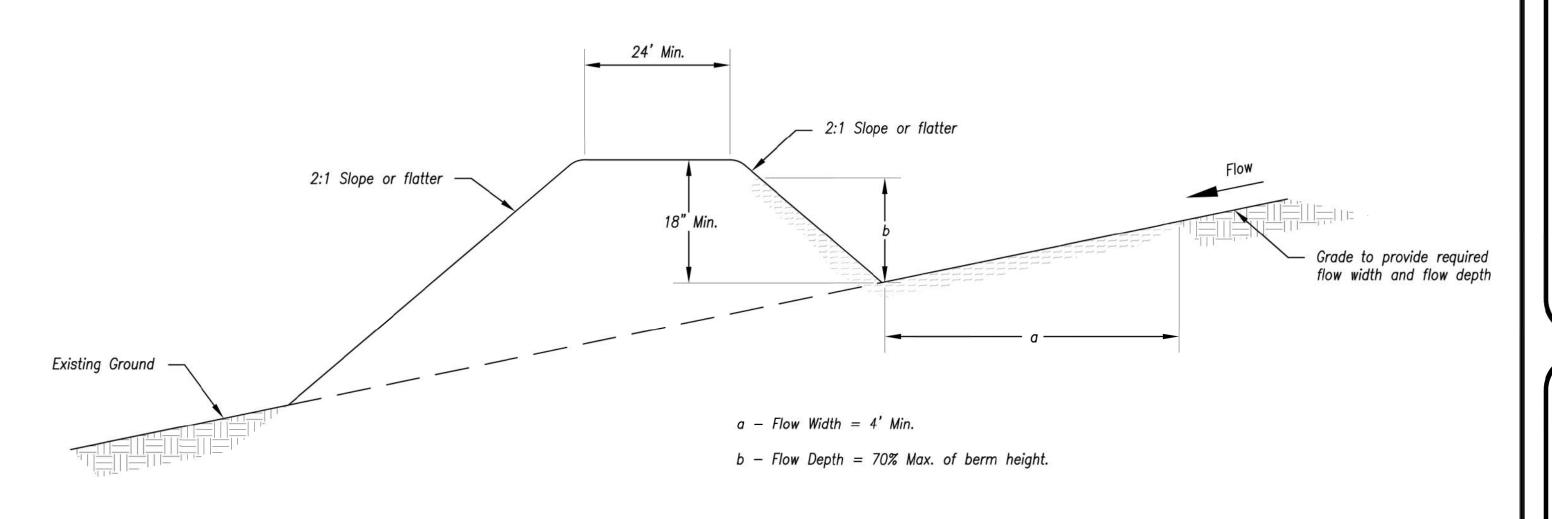
Notes for Slope Drain:

- Slope Drain and Diversion Berm may be used on either project foreslopes or project backslopes.
- 2. Discharge of Slope Drains shall be into stabilized ditch or area. or into Sediment Basin.
- 3. Pipe shall be secured in place as approved by Engineer.

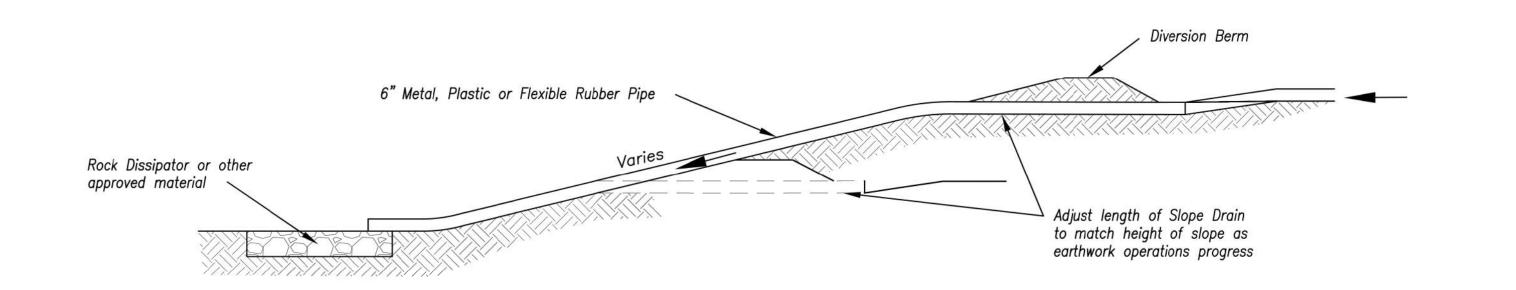
<u>Maintenance:</u>

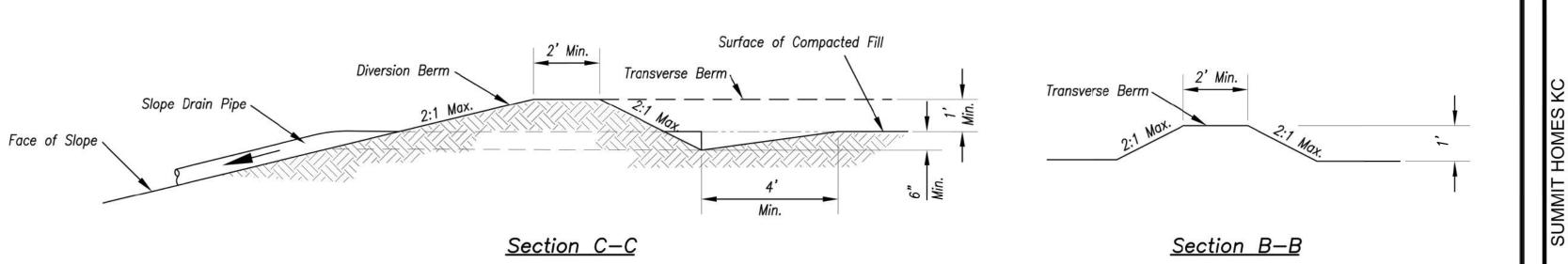
- Accumulation of any visible sediment at the inlet and outlet shall be removed promptly.
- Outlet conditions shall be repaired if scour is observed.
 Leaking or damaged section of pipe shall be repaired immediately.
- Barriers directing water to the inlet shall be monitored for continuity and effectiveness.

TYPICAL PROFILE OF DIVERSION BEAM Not to Scale



TYPICAL PROFILE OF DIVERSION BERM





TYPICAL PROFILE OF DIVERSION BERM WITH SLOPE DRAIN



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DIVERSION BERMS AND SLOPE DRAINS

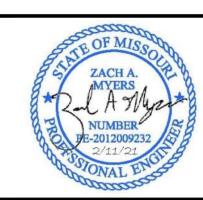
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STANDARD DRAWING NUMBER ESC-05 ADOPTED: 10/24/2016 ENGINEERS • SURVEYORS • LABORATORIES • DRILLII
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			JOB NUMBER:	20KC10058
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DIVERSION BERM DETAILS

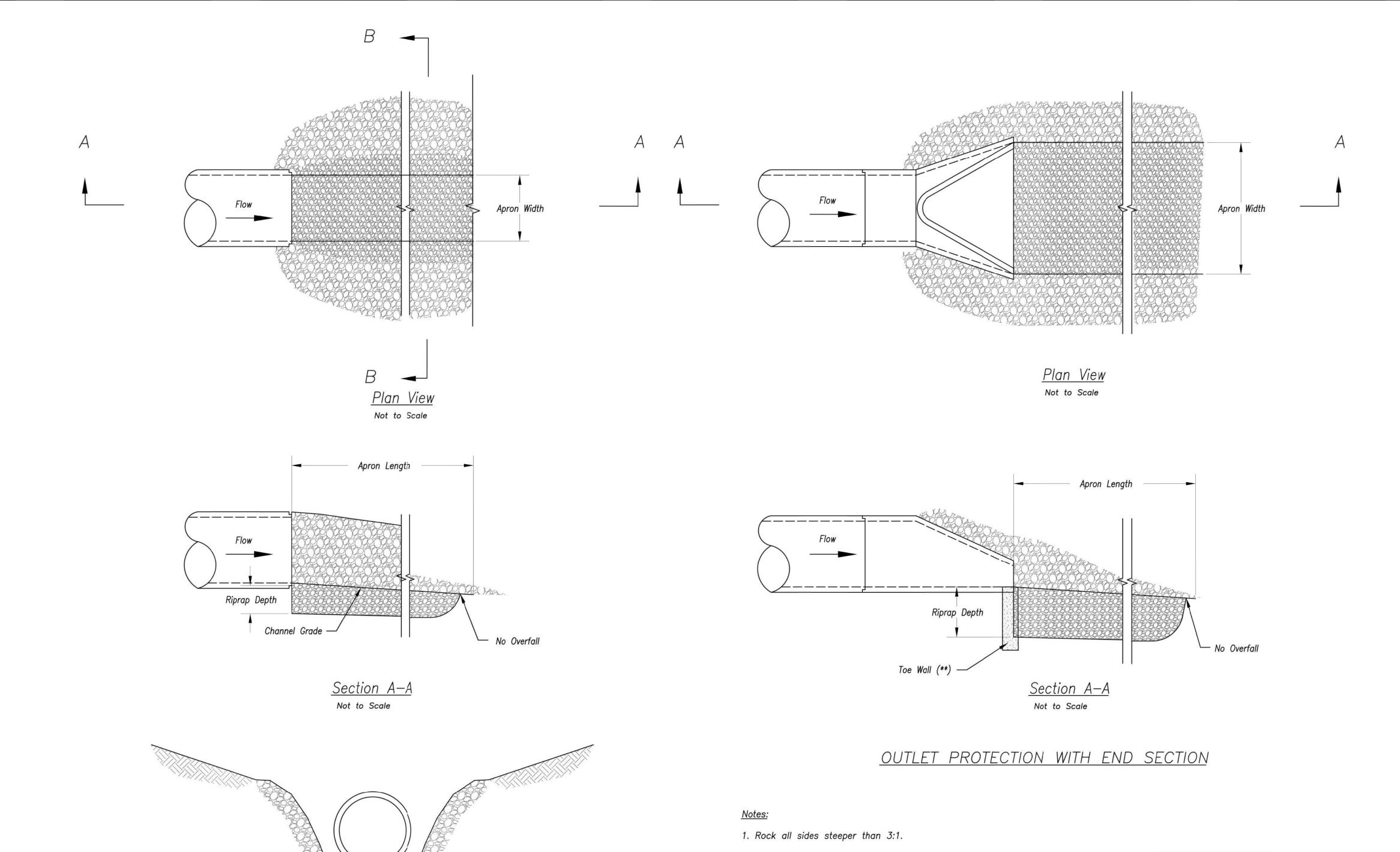


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Apron Width

Section B-B

Not to Scale

OUTLET PROTECTION W/O END SECTION

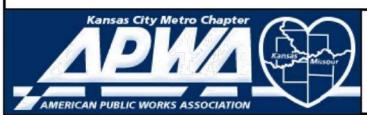
- 2. Stabilize all disturbed areas downstream of outlet to the limits of disturbance.
- Alternative outlet protection and slope stabilization measures may be used with approval by the Engineer.
- 4. Install riprap apron so that it is no higher than flowline of pipe.
- Reference APWA Specification 2650 for rock type, size, and placement.



Title: Project Engineer Firm: Anderson Engineering In

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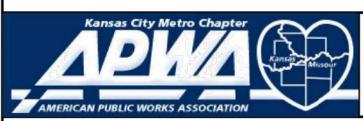
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KANSAS CITY METRO CHAPTER

OUTLET PROTECTION

NUMBER ESC-14 ADOPTED:



STANDARD DRAWING

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