LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

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

DATE: 12/2/2020

#### **VICINITY MAP**

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

#### LEGAL DESCRIPTION:

THE EAST HALF OF THE SOUTHEAST QUARTER OF SECTION 10, TOWNSHIP 47 NORTH, RANGE 32 WEST EXCEPT THOSE PARTS PLATTED AS HIGHLAND PLAT, HIGHLANDS MEADOWS THIRD PLAT, HIGHLAND MEADOWS 4TH PLAT, SUBDIVISIONS IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI.





#### UTILITY CONTACTS:

SANITARY & WATER: CITY OF LEE'S SUMMIT JEFF THORN 220 SE GREEN STREET LEE'S SUMMIT, MO 64063

PHONE (816) 969-1900

STREETS: CITY OF LEE'S SUMMIT MICHAEL PARK 220 SE GREEN STREET

PHONE (816) 969-1900 KCP&L: DOUG DAVIN 1300 SE HAMBLEN ROAD LEE'S SUMMIT, MO 64081 PHONE (816) 347-4320

# RONALD GIPFERT

KANSAS CITY, MO 64106 LEE'S SUMMIT. MO 64063 PHONE (816) 275-1550

> 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.

#### **BENCHMARK:**

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



#### STORMWATER:

CITY OF LEE'S SUMMIT GENE WILLIAMS 220 SE GREEN STREET LEE'S SUMMIT, MO 64063 PHONE (816) 969-1900

# 500 E 8TH STREET

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.

WATERSHED: LITTLE BLUE RIVER

SURVEY CONTROL.

#### 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.

#### GENERAL NOTES:

- 1. CONTRACTOR SHALL SATISFY THEMSELVES AS TO THE EXISTING CONDITIONS OF THE SITE AND HAVE ALL UTILITIES MARKED PRIOR TO COMMENCING CONSTRUCTION.
- 2. CONTRACTOR SHALL POTHOLE ALL CONNECTION POINTS TO EXISTING UTILITIES AND POTENTIAL UTILITY CONFLICT LOCATIONS PRIOR TO ANY CONSTRUCTION ACTIVITIES. NOTIFY ENGINEER IMMEDIATELY IF CONFLICT OR DISCREPANCY EXISTS.
- 3. CONTRACTOR SHALL PROTECT EXISTING STRUCTURES TO REMAIN FROM DAMAGE DURING DEMOLITION AND CONSTRUCTION. ANY DAMAGE SHALL BE REPAIRED/ REPLACED TO PRE-CONSTRUCTION CONDITION AT CONTRACTOR'S EXPENSE.

#### DISTURBED AREA: 14.9 AC

DEVELOPER:

VINCENT WALKER SUMMIT HOMES KC 120 SE 30TH STREET LEE'S SUMMIT, MO 64082 VINCENT@SUMMITHOMESKC.COM (816) 246-6700

LOTS: 134-159 (26 TOTAL)

#### CIVIL ENGINEER:

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

SHEET INDEX: CVR — COVER SHEET - GENERAL NOTES C101 — TYPICAL SECTIONS - 12TH STREET PLAN & PROFILE

#### PROJECT SPECIFICATIONS.

C413 - AREA INLET PROTECTION DETAILS

THE SPECIFICATIONS FOR THIS PROJECT SHALL BE

1. 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

C414 - SEDIMENT TRAP DETAILS C415 - SEDIMENT BASIN DETAILS

THE FOLLOWING:

THESE PLANS SHALL GOVERN.

#### PREPARED & SUBMITTED BY:

ANDERSON ENGINEERING INC. KANSAS CITY, MISSOURI

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

APPROVED BY: CITY OF LEE'S SUMMIT, MISSOURI

AUTHORIZING POSITION

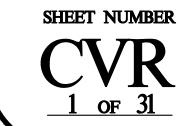
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				DATE:	12/2/2020
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	© COPYRIGHT ANDERSON ENGINEERING, INC. 2020	020		MO COA NO.	000062

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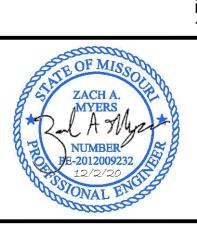
#### GENERAL NOTES

- 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 CONSTRUCTION.
- 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 <u>SUBSIDIARY</u> 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.

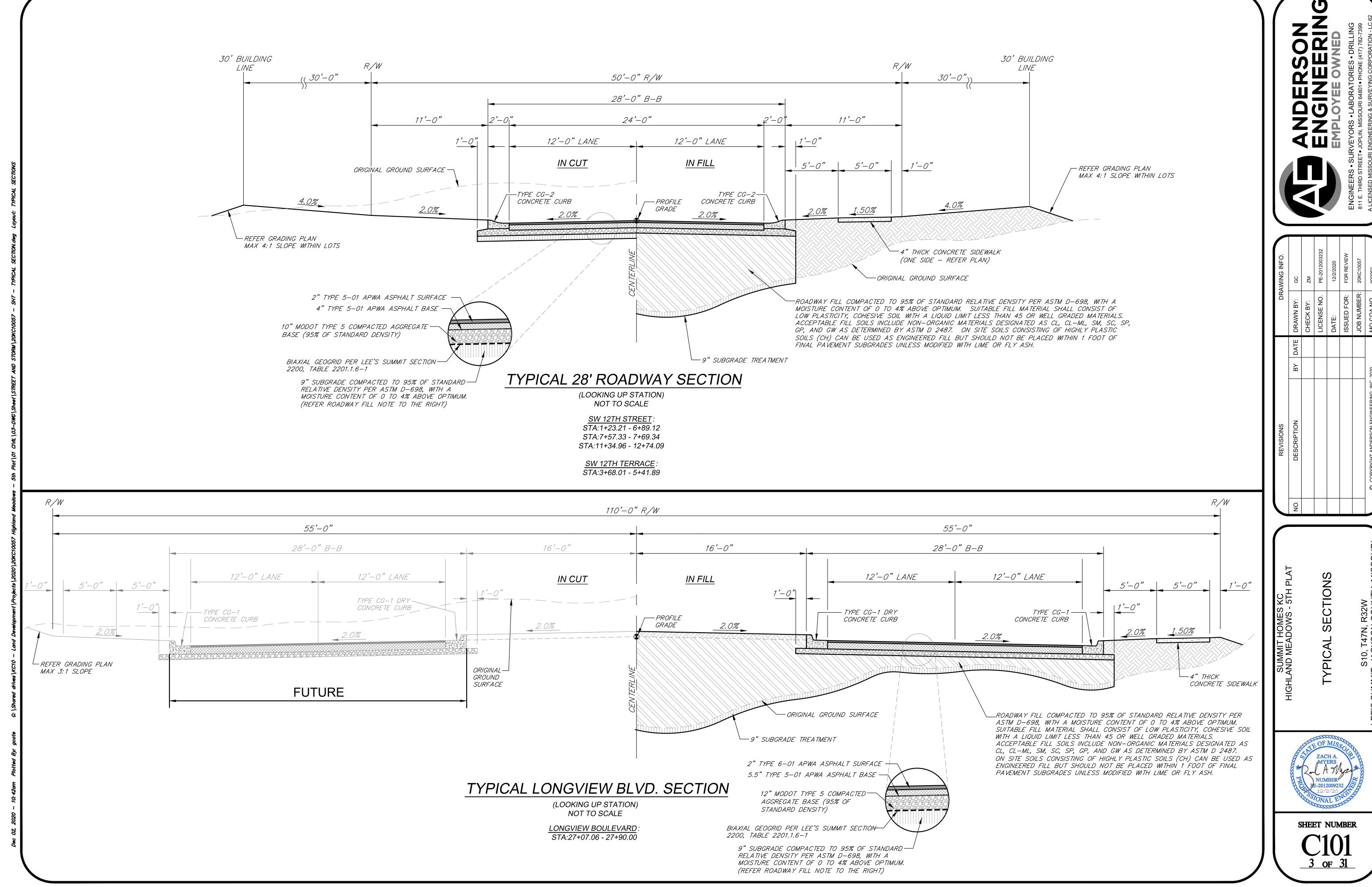
- 20. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE UTILITY OWNERS TO LOCATE AND FLAG ALL RELOCATED UNDERGROUND UTILITIES PRIOR TO EXCAVATION TO AVOID DAMAGING THE UTILITIES. THE LOCATIONS SHOWN ON THE PLANS ARE THE ORIGINAL SURVEYED LOCATION, PRIOR TO RELOCATION IN SOME CASES. THE 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 AT HIS EXPENSE.
- 23. DRAINAGE STRUCTURES WHICH ARE TO REMAIN, WHETHER EXTENDED OR NOT, SHALL BE CLEANED OUT BY THE CONTRACTOR, AS DIRECTED BY THE ENGINEER.
- 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 TIMES.
- 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.



ENERAL NOTES



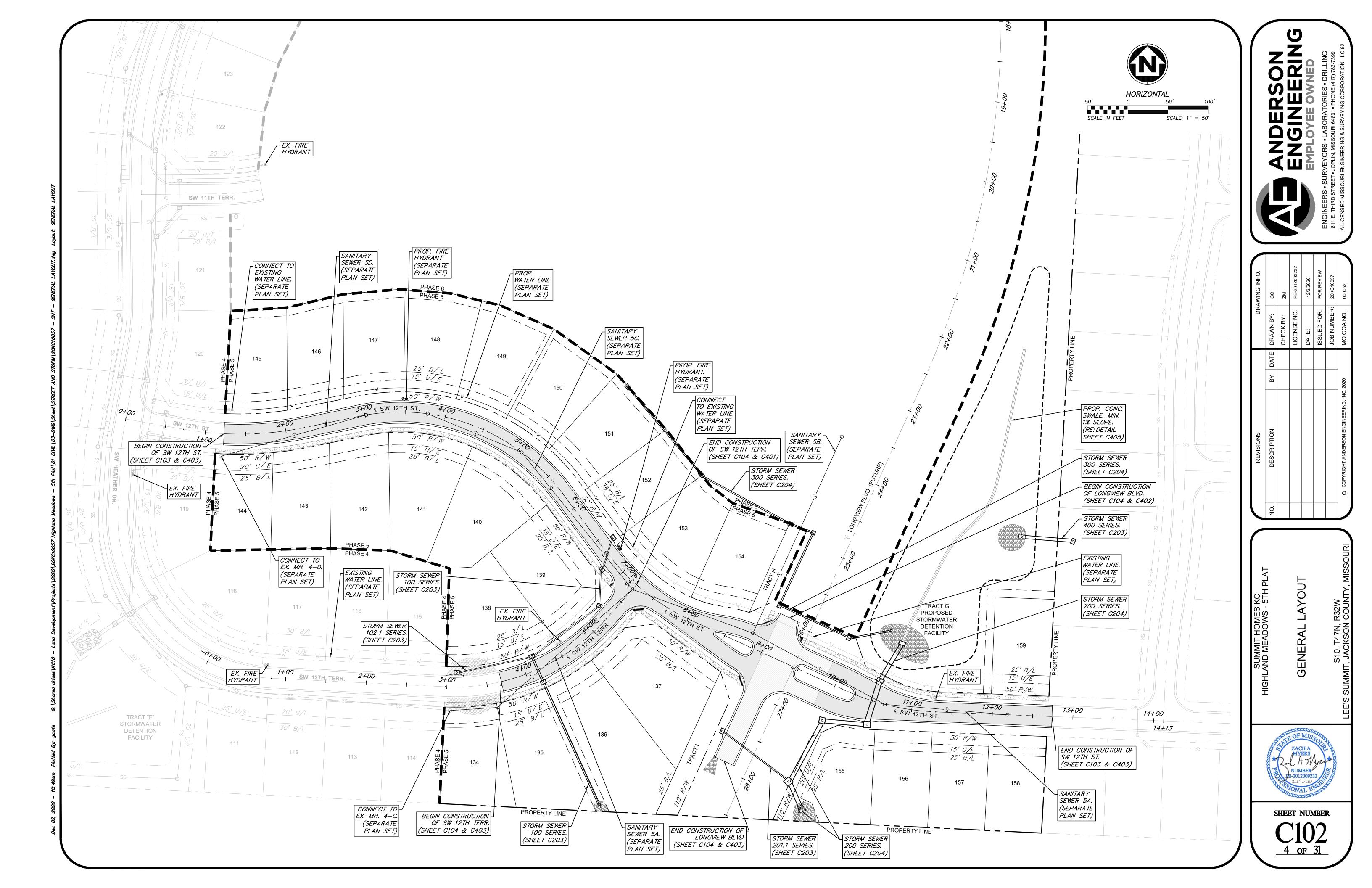
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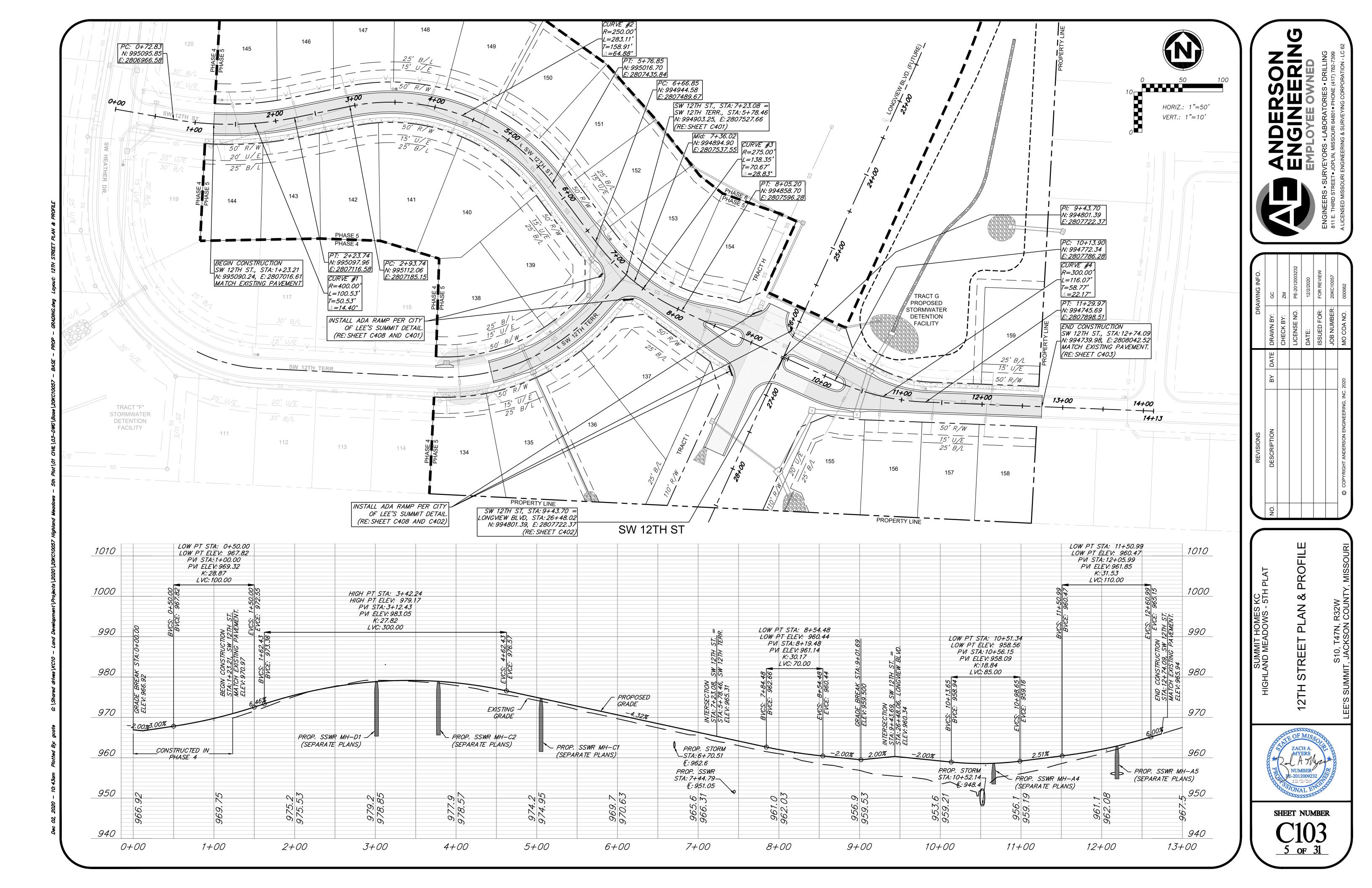


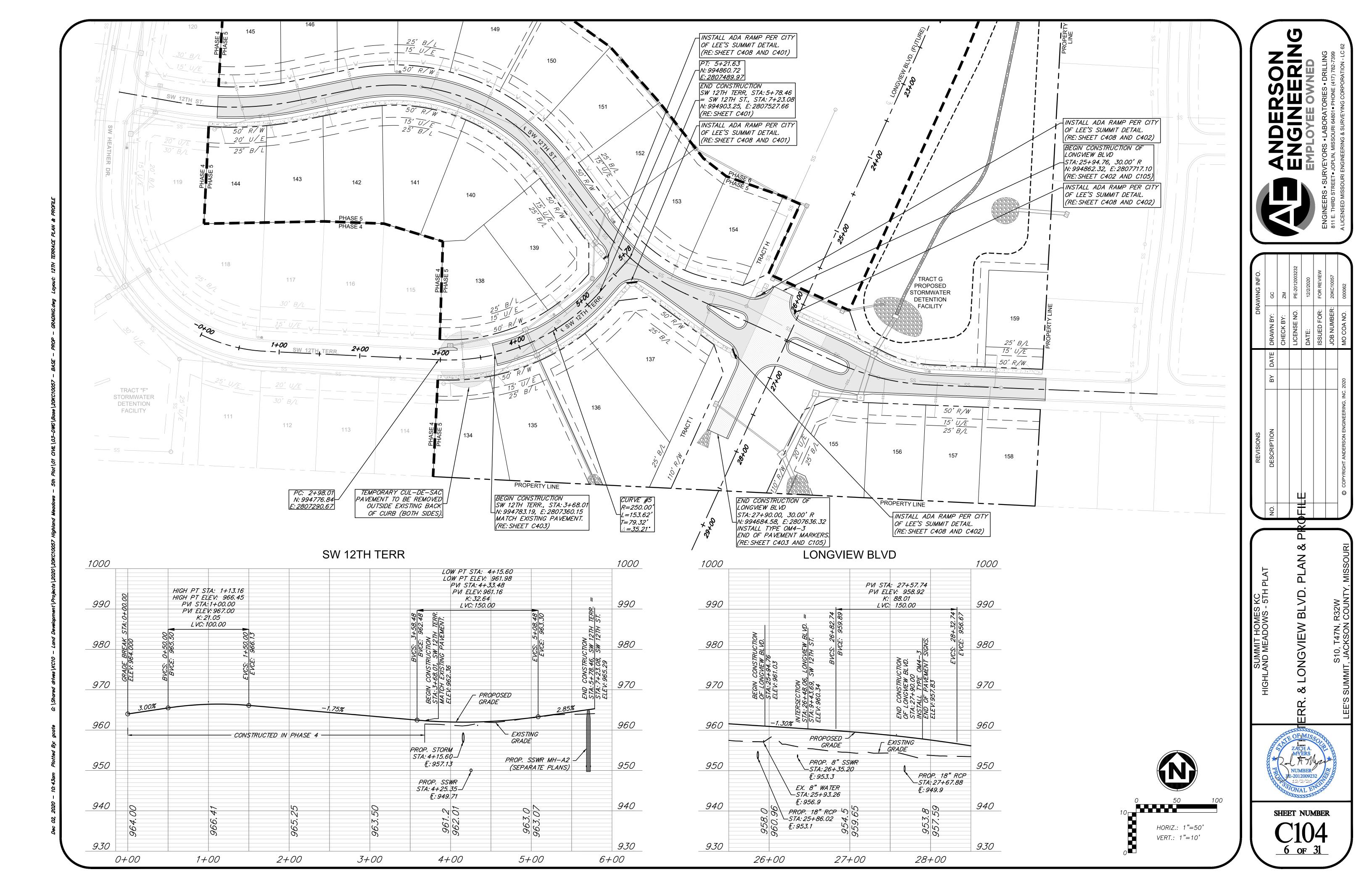
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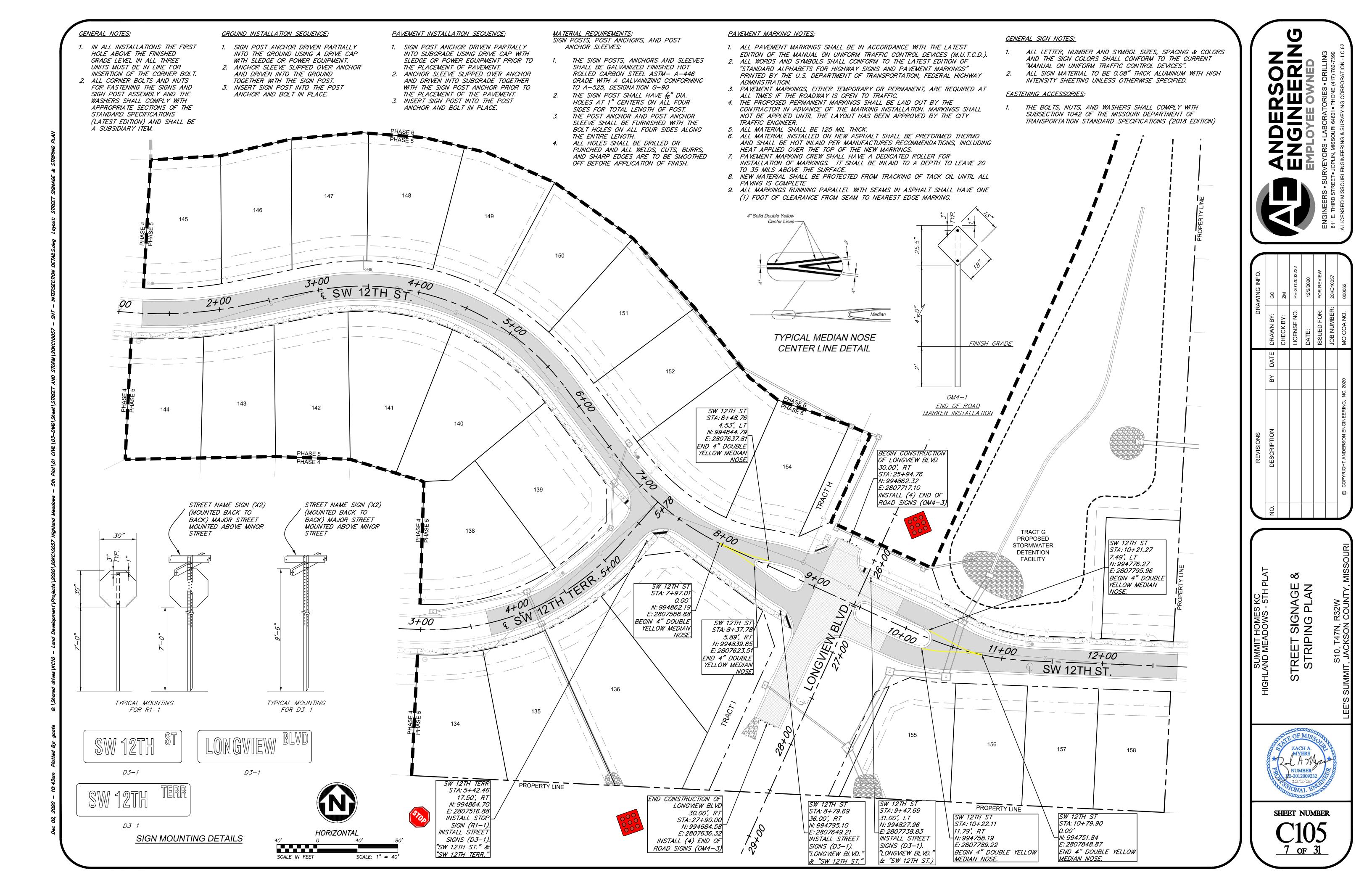


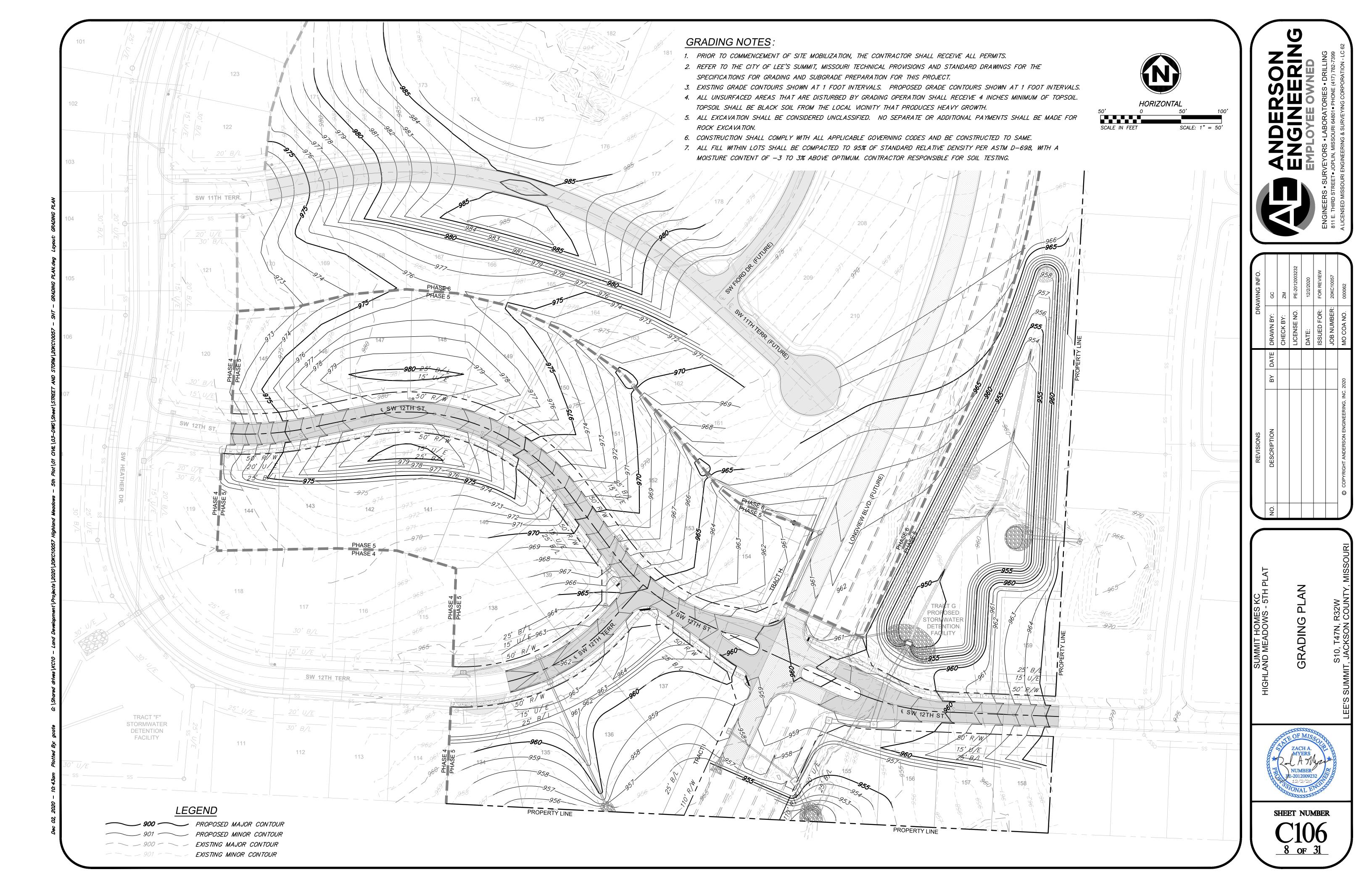
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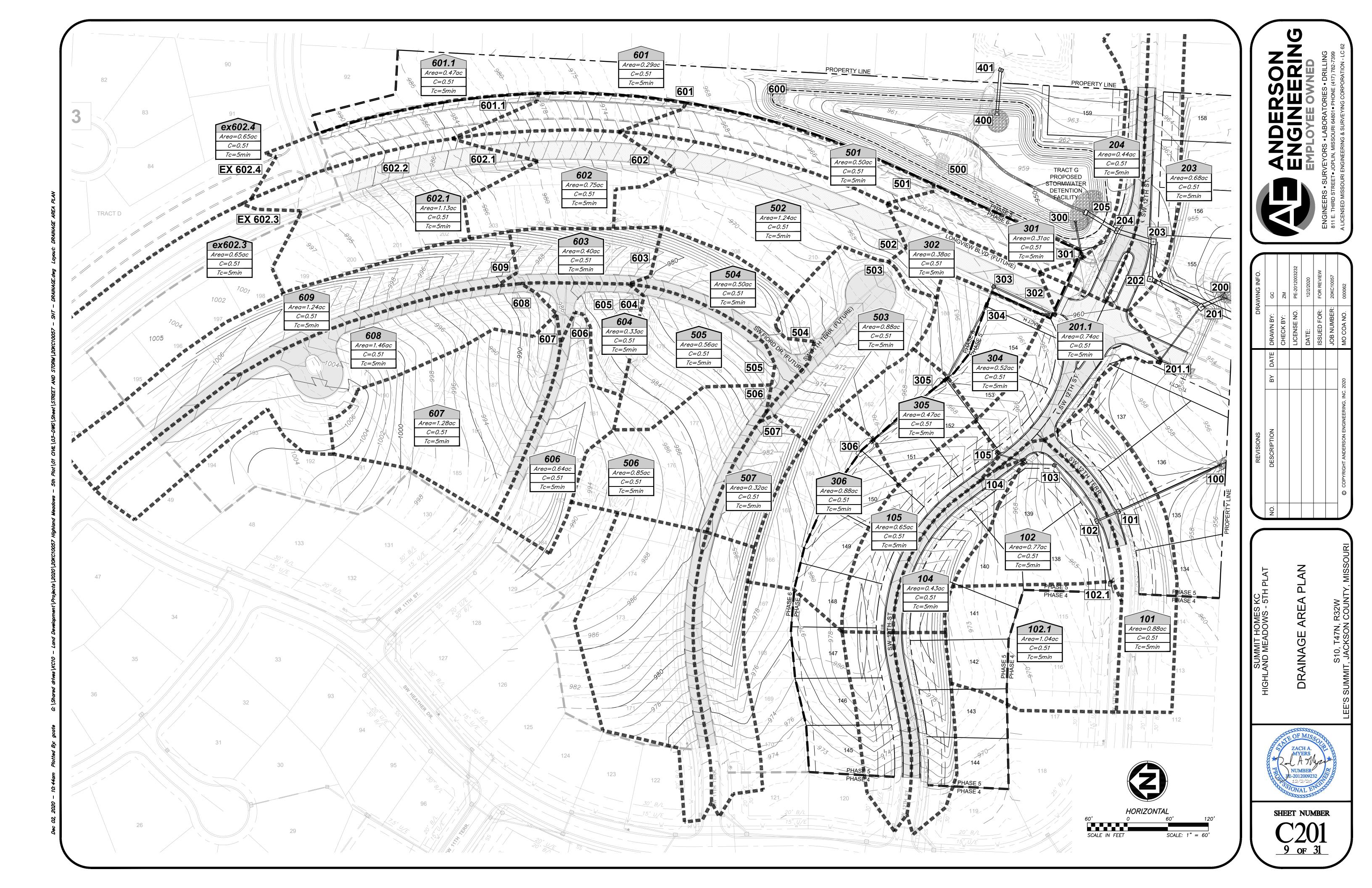










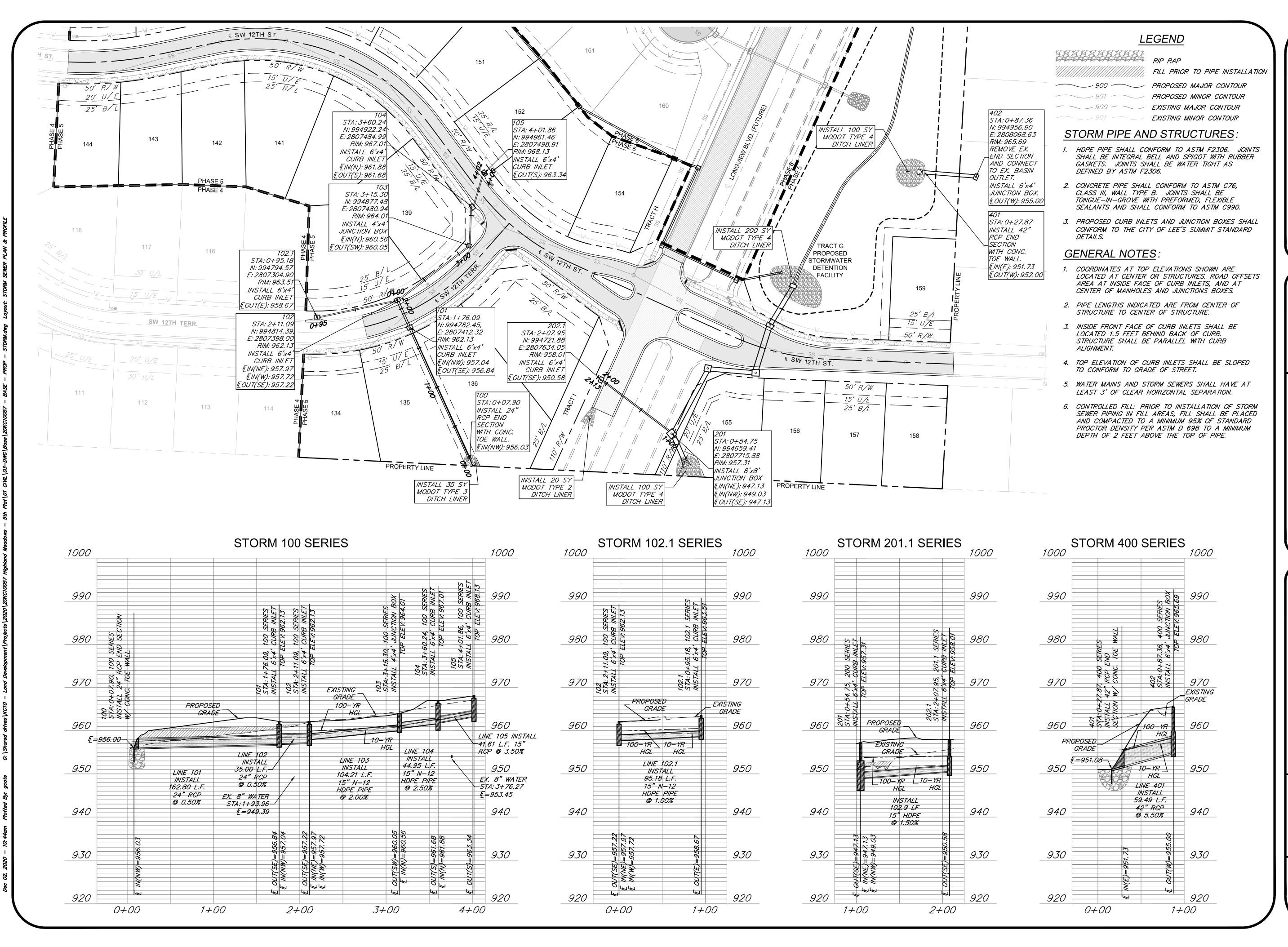


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					HYDROLOG	Υ												HYDR	RAULICS									GU	JTTER/INLE	DESIGN		
Line No.	Inlet ID	Downstream Line No.	DrainageA rea	Runoff Coefficient	Local CxA	System CxA	Тс	Local Intensity	System Intensity	Incremental Flow	Total Runoff	Line No.	Line	U/S Ground 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)
1	101	Outfall	0.88	0.51	0.45	1.9	6.4	7.35	7.12	3.30	13.50	LINE 101	101	962.13	956.84	956.03	162.80	0.50	24	0.013	15.95	13.50	5.49	5.13	958.22	957.59	101	3.30	0.00	Sag		
2	102	1	0.77	0.51	0.39	1.45	6.2	7.35	7.15	2.89	10.35	LINE 102	102	962.13	957.22	957.04	35.00	0.50	24	0.013	16.22	10.35	4.52	4.26	958.52	958.48	102	2.89	0.00	Sag		
3	103	2	0.00	0.00	0	0.53	5.6	0.00	7.24	0.00	3.80	LINE 103	103	964.01	960.05	957.97	104.20	2.00	15	0.012	9.88	3.80	4.03	3.39	960.84 j	959.04	103	0.00				
4	104	3	0.43	0.51	0.22	0.53	5.4	7.35	7.28	1.61	3.83	LINE 104	104	967.01	961.68	960.56	44.95	2.50	15	0.012	11.04	3.83	6.43	8.18	962.47	961.07	104	1.61	1.12	5.000	1.40	2.00
5	105	4	0.60	0.51	0.31	0.31	5.0	7.35	7.35	2.25	2.25	LINE 105	105	968.11	963.34	961.88	41.61	3.50	15	0.013	12.10	2.25	3.91	3.95	963.94	962.47	105	2.25	0.56	0.050	5.90	2.00
6	102.1	2	1.04	0.51	0.53	0.53	5.0	7.35	7.35	3.90	3.90	LINE 102.1	102.1	963.51	958.67	957.97	95.18	0.75	15	0.012	6.00	3.90	4.09	3.47	959.47 j	959.04	102.1	3.90	1.23	0.020	9.23	2.00
7	302	Outfall	0.31	0.51	0.16	1.31	7.5	7.35	6.92	1.16	9.03	LINE 301	302	960.82	953.42	951.64	44.29	4.00	18	0.013	21.05	9.03	7.51	8.87	954.58	952.48	302	1.16	0.00	0.010	6.32	2.00
8	303	7	0.38	0.51	0.19	1.15	7.2	7.35	6.98	1.42	8.01	LINE 302	303	960.60	954.57	953.62	95.00	1.00	18	0.013	10.50	8.01	6.17	6.54	955.67	954.60	303	1.42	0.09	0.010	8.02	2.00
9	304	8	0.00	0.00	0	0.95	6.8	0.00	7.05	0.00	6.72	LINE 303	304	962.00	956.05	954.57	98.86	1.50	18	0.012	13.92	6.72	5.11	4.86	957.05 j	955.67	304	0.00				
10	305	9	0.52	0.51	0.27	0.95	6.6	7.35	7.07	1.95	6.74	LINE 304	305	960.27	956.34	956.05	28.60	1.00	18	0.012	11.46	6.74	5.37	5.37	957.34	957.05	305	1.95	0.00	Sag		
11	306	10	0.47	0.51	0.24	0.69	5.9	7.35	7.20	1.76	4.95	LINE 305	306	964.97	959.07	956.54	126.66	2.00	18	0.012	16.08	4.95	4.95	5.14	959.93	957.34	306	1.76	0.00	Sag		••••
12	307	11	0.88	0.51	0.45	0.45	5.0	7.35	7.35	3.30	3.30	LINE 306	307	969.98	965.15	959.47	141.99	4.00	15	0.012	13.99	3.30	6.29	8.16	965.88	959.93	307	3.30	0.00	Sag		
13	402 201	Outfall Outfall	0.00	0.00	0	0.95	5.0	0.00	0.00	54.51 0.00	0.00	LINE 401 LINE 201	402 201	965.44 957.24	955.00 947.13	951.73	59.49	5.50	54	0.013	235.88 127.34	0.00 6.85	0.00	5.67	957.31 951.12	955.56	402	54.51			••••	
14		+	0.00		0		5.0	0.00	7.22	KOO NJ 5902 (502	6.85	<del>                                     </del>		<b>_</b>		947.00	31.01	0.42	+	0.013	<b>.</b>	F-900000 40-00 (1990)	6.73	6.00	704 Unit (Mayor II) 15	951.06 951.72	201	0.00				
15 16	202	14	0.00	0.00 0.51	0.35	0.57 0.57	5.3	0.00	7.30 7.32	0.00	4.17 4.18	LINE 202 LINE 203	202	959.11 959.00	947.56 948.04	947.13 947.76	86.54 55.83	0.50	54 54	0.013	138.63 139.26	4.17 4.18	6.21	6.10	951.91 952.61	951.72	202	0.00	0.00	 Soa		
17	203	16	0.68	0.51	0.33	0.37	5.2	7.35	7.35	1.65	1.65	LINE 203	203	959.00	948.53	948.24	57.20	0.50	42 x 68	0.013	133.62	1.65	6.14	6.14	954.23	952.48	203	1.65	0.00	Sag Sag		
18	204	17	0.44	0.00	0.22	0.22	0.0	0.00	0.00	94.04	0.00	LINE 204	205	958.30	949.00	948.73	53.16	0.50	5/1	0.013	140.16	0.00	5.91	5.01	954.25	954.53	204	94.04		Ť		
19	202.1	14	0.74	0.51	0.38	0.38	5.0	7.35	7.35	2 77	2.77	LINE 202.1	202.1	958.01	950.58	949.03	102 84	1.50	15	0.013	7 93	2 77	2.26	2.26	954.03	951.72	202.1	2.77	0.41	0.010	9.38	2.00
		1 ''	0.1.1	0.01	0.00	0.00	0.0	1	, .00					1 000.01	300.00	5 10.00	102.01	1.00		0.0.0	, ,,,,,	<b>-</b> ··· ·	0		301.01	501.72			0.11	3.010		

1 101 2 102 3 103 4 104 5 105 6 102.1 7 302 8 303 9 304 10 305 11 306 12 307	Columbia   Columbia	Oownstream Line No.  Outfall 1 2 3 4 2 Outfall	DrainageA rea  (ac) 0.88 0.77 0.00 0.43 0.60 1.04	Runoff Coefficient (C) 0.51 0.51 0.00 0.51 0.51	0.45 0.39 0 0.22 0.31 0.53	1.9 1.45 0.53 0.53 0.31	Tc (min) 6.0 5.8 5.4 5.3 5.0	Local Intensity (in/hr) 10.31 10.31 0.00 10.31	System Intensity (in/hr) 9.95 10.00 10.14 10.21	Incremental Flow (cfs) 4.63 4.05 0.00	Total Runoff (cfs) 18.88 14.48	Line No.  LINE 101 LINE 102	Line 101 102	U/S Ground Elev. (ft) 962.13	U/S Invert (ft) 956.84	D/S Invert (ft) 956.03	Length (ft) 162.80	Slope (%)	Size (in)	n	Capacity Full (cfs)	Total Runoff (cfs)	Velocity (ft/s) 6.59	Velocity Out (ft/s)	HGLUp (ft)	HGLDn (ft) 957.59	Line ID		QBypass (cfs) 0.00	Gutter Slope (%) Sag	Gutter Spread (ft)	Gutter Width (ft)
2 102 3 103 4 104 5 105 6 102.1 7 302 8 303 9 304 10 305 11 306	02 03 04 05 02.1	1 2 3 4 2	0.88 0.77 0.00 0.43 0.60 1.04	0.51 0.00 0.51 0.51	0.39 0 0.22 0.31	1.45 0.53 0.53 0.31	6.0 5.8 5.4 5.3	10.31 10.31 0.00 10.31	9.95 10.00 10.14	4.63 4.05 0.00	18.88 14.48	<del></del>		962.13	(ft) 956.84	(1.4)	(ft) 162.80	(70)	\/	0.040	( /	(cfs)	(/	(ft/s)	(ft)	(ft)	101	` '	` '	· ,	(11)	(ft)
2 102 3 103 4 104 5 105 6 102.1 7 302 8 303 9 304 10 305 11 306	02 03 04 05 02.1	1 2 3 4 2	0.77 0.00 0.43 0.60 1.04	0.51 0.00 0.51 0.51	0.39 0 0.22 0.31	1.45 0.53 0.53 0.31	5.8 5.4 5.3	10.31 0.00 10.31	10.00 10.14	4.05 0.00	14.48	<del></del>			956.84	956.03	162.80	0.50	24	0.040	45.05	10 00	6 50	7 17	959 02	957 59	101	4 63	0.00	Sag	·	
3     103       4     104       5     105       6     102.1       7     302       8     303       9     304       10     305       11     306	03  04  05  02.1	1 2 3 4 2 Outfall	0.00 0.43 0.60 1.04	0.00 0.51 0.51	0 0.22 0.31	0.53 0.53 0.31	5.4 5.3	0.00 10.31	10.14	0.00		LINE 102	102	000 40			102.00	0.00	24	0.013	15.95	10.00	0.00	7.17	333.02	331.33	101	1.00	\$100 miles (\$100 m			
4 104 5 105 6 102.1 7 302 8 303 9 304 10 305 11 306	04 105 02.1 302	2 3 4 2 Outfall	0.43 0.60 1.04	0.51 0.51	0.22 0.31	0.53 0.31	5.3	10.31			522		102	962.13	957.22	957.04	35.00	0.50	24	0.013	16.22	14.48	4.61	4.61	959.44	959.30	102	4.05	0.00	Sag		
5     105       6     102.1       7     302       8     303       9     304       10     305       11     306	05 02.1 802	3 4 2 Outfall	0.60 1.04	0.51	0.31	0.31			l 10-21 l		5.33	LINE 103	103	964.01	960.05	957.97	104.20	2.00	15	0.012	9.88	5.33	4.88	4.34	960.99 j	959.93	103	0.00				
6 102.1 7 302 8 303 9 304 10 305 11 306	02.1 802	4 2 Outfall	1.04				50			2.26	5.36	LINE 104	104	967.01	961.68	960.56	44.95	2.50	15	0.012	11.04	5.36	7.18	8.93	962.62	961.17	104	2.26	1.66	5.000	1.59	2.00
7 302 8 303 9 304 10 305 11 306	302	2 Outfall	<del> </del>	0.51	0.53		5.0	10.31	10.31	3.16	3.16	LINE 105	105	968.11	963.34	961.88	41.61	3.50	15	0.013	12.10	3.16	4.27	4.19	964.05 j	962.62	105	3.16	1.10	0.050	6.90	2.00
8 303 9 304 10 305 11 306		Outfall I				0.53	5.0	10.31	10.31	5.47	5.47	LINE 102.1	102.1	963.51	958.67	957.97	95.18	0.75	15	0.012	6.00	5.47	4.46	4.46	960.51	959.93	102.1	5.47	2.28	0.020	10.62	2.00
9 304 10 305 11 306	nna I	- Juliun	0.31	0.51	0.16	1.31	6.8	10.31	9.65	1.63	12.60	LINE 301	302	960.82	953.42		44.29	4.00	18	0.013	21.05	12.60	9.98	12.38	954.76	952.48	302	1.63	0.00	0.010	7.37	2.00
10     305       11     306		7	0.38	0.51	0.19	1.15	6.6	10.31	9.74	2.00	11.18	LINE 302	303	960.60	954.57	953.62	95.00	1.00	18	0.013	10.50	11.18	6.69	6.69	955.91	954.97	303	2.00	0.53	0.010	9.69	2.00
11 306		8	0.00	0.00	0	0.95	6.3	0.00	9.85	0.00	9.39	LINE 303	304	962.00	956.05	954.57	98.86	1.50	18	0.012	13.92	9.39	5.32	5.32	957.63	956.96	304	0.00				
		9	0.52	0.51	0.27	0.95	6.2	10.31	9.88	2.73	9.42	LINE 304	305	960.27	956.34	956.05	28.60	1.00	18	0.012	11.46	9.42	5.33	5.33	958.27	958.07	305	2.73	0.00	Sag		
12 307		10	0.47	0.51	0.24	0.69	5.6	10.31	10.08	2.47	6.94	LINE 305	306	964.97	959.07	956.54	126.66	2.00	18	0.012	16.08	6.94	4.68	3.93	960.09 j	958.49	306	2.47	0.00	Sag		
400		11	0.88	0.51	0.45	0.45	5.0	10.31	10.31	4.63	4.63	LINE 306	307	969.98	965.15	1	141.99	4.00	15	0.012	13.99	4.63	6.36	7.64	966.02	960.09	307	4.63	0.00	Sag		
13 402		Outfall	0.00	0.00	0	0	0.0	0.00	0.00	112.38	0.00	LINE 401	402	965.44	955.00	951.73	59.49	5.50	42	0.013	211.54	0.00	12.21	12.21	958.19	955.56	402	112.38				
14 201		Outfall	0.00	0.00	0	0.95	5.5	0.00	10.11	0.00	9.59	LINE 201	201	957.24	947.13	947.00	31.01	0.42	54	0.013	127.34	9.59	13.14	13.48	951.63	951.06	201	0.00	****	••••		
15 202		14	0.00	0.00	0	0.57	5.1	0.00	10.25	0.00	5.86	LINE 202	202	959.11	947.56	947.13	86.54	0.50	54	0.013	138.63	5.86	12.57	12.57	954.69	953.80	202	0.00				
16 203		15	0.68	0.51	0.35	0.57	5.1	0.00	10.28	0.00	5.87	LINE 203	203	959.00	948.04		55.83	0.50	54	0.013	139.26	5.87	12.57	12.57	957.55	956.98	203	0.00	0.00	Sag		
17 204		16	0.44	0.51	0.22	0.22	5.0	10.31	10.31	2.31	2.31	LINE 204	204	959.00	948.53	948.24	57.20	0.50	42 x 68	0.013	133.62	2.31	12.61	12.61	964.27	963.65	204	2.31	0.00	Sag		
18 205 19 202.1	)OF	17	0.00 0.74	0.00 0.51	0.38	0.38	0.0 5.0	0.00 10.31	0.00	194.07 3.89	0.00 3.89	LINE 205 LINE 202.1	205 202.1	958.30 958.01	949.00 950.58	948.73	53.16 102.84	1.50	54	0.013	7 93	3.89	12.20 3.17	12.20 3.17	966.03 954.17	965.51 953.80	205	194.07 3.89	1.24	0.010	11.20	2.00

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 FOR REVIEW

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STORM SEWER PLAN & PROFILE

ZACH A.

MYERS

NUMBER

FE-2012009232

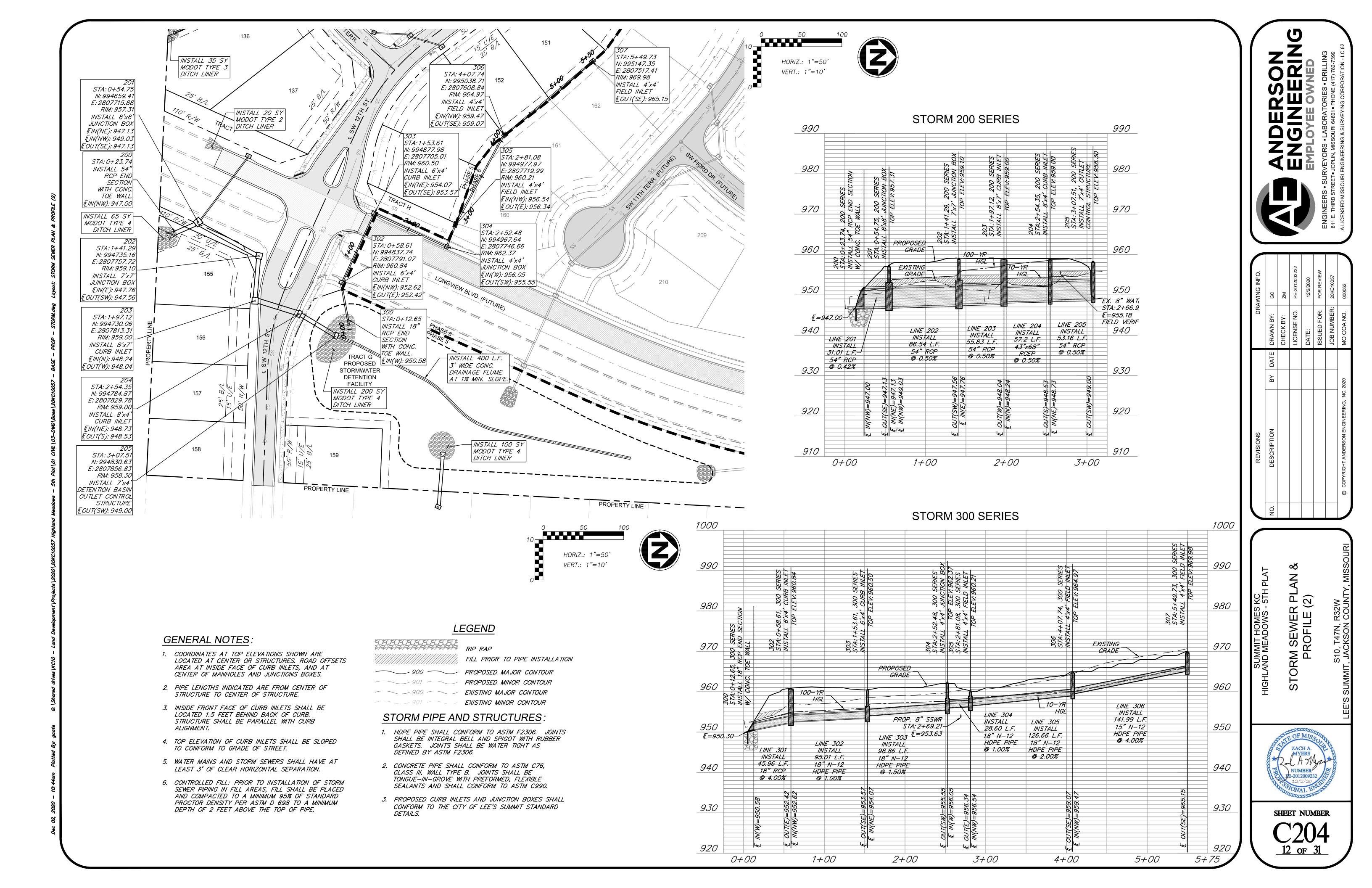
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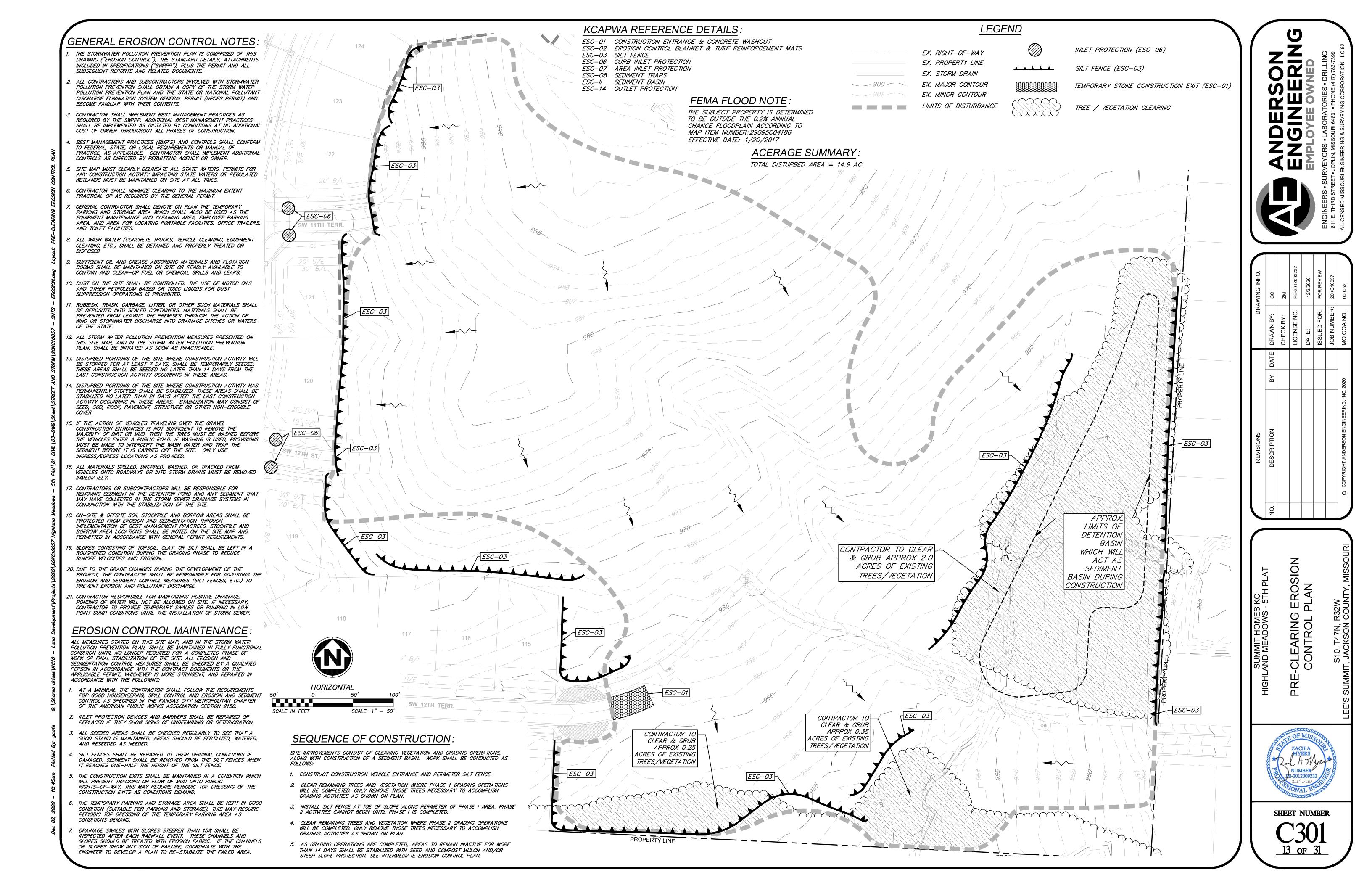
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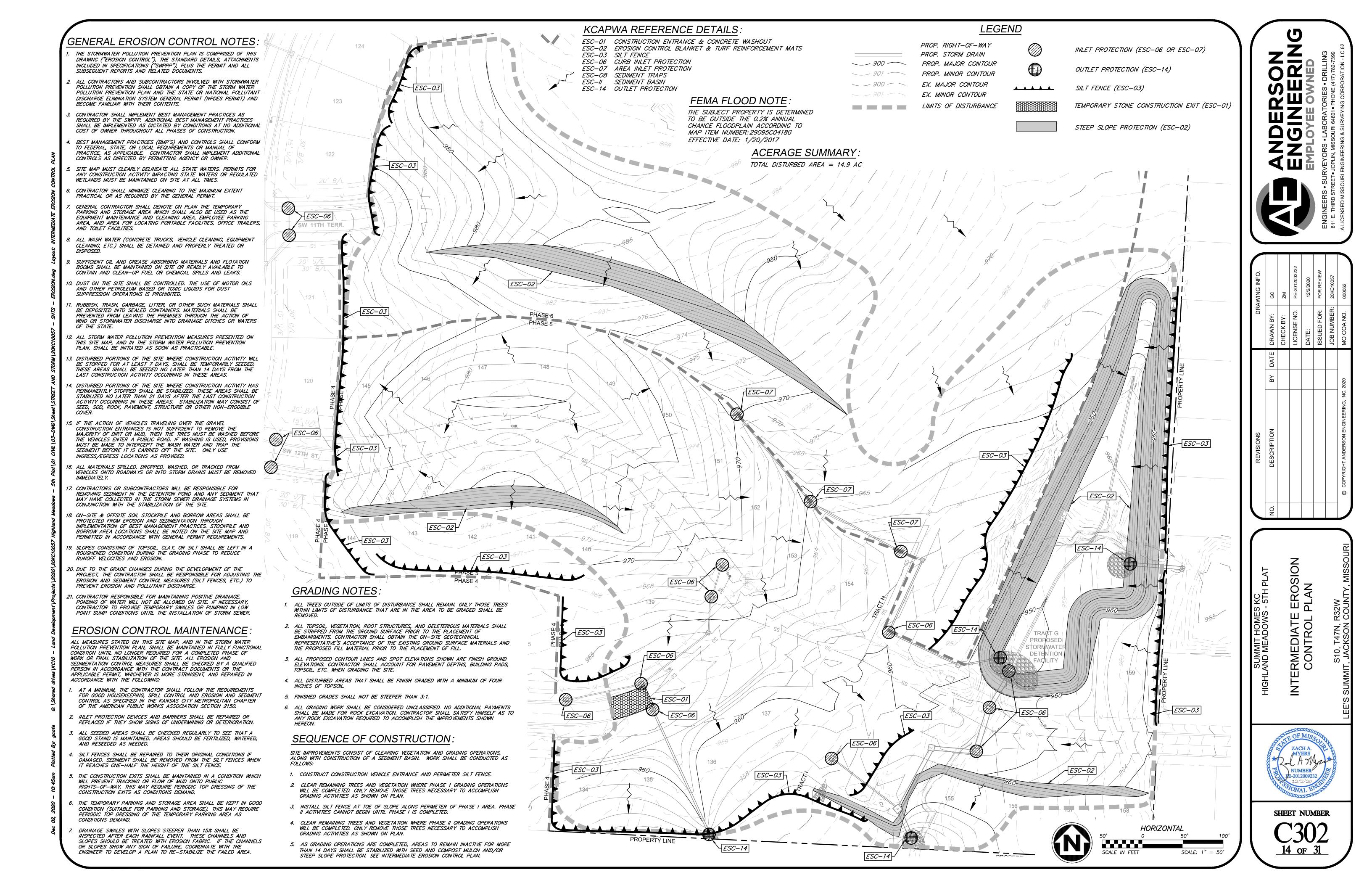
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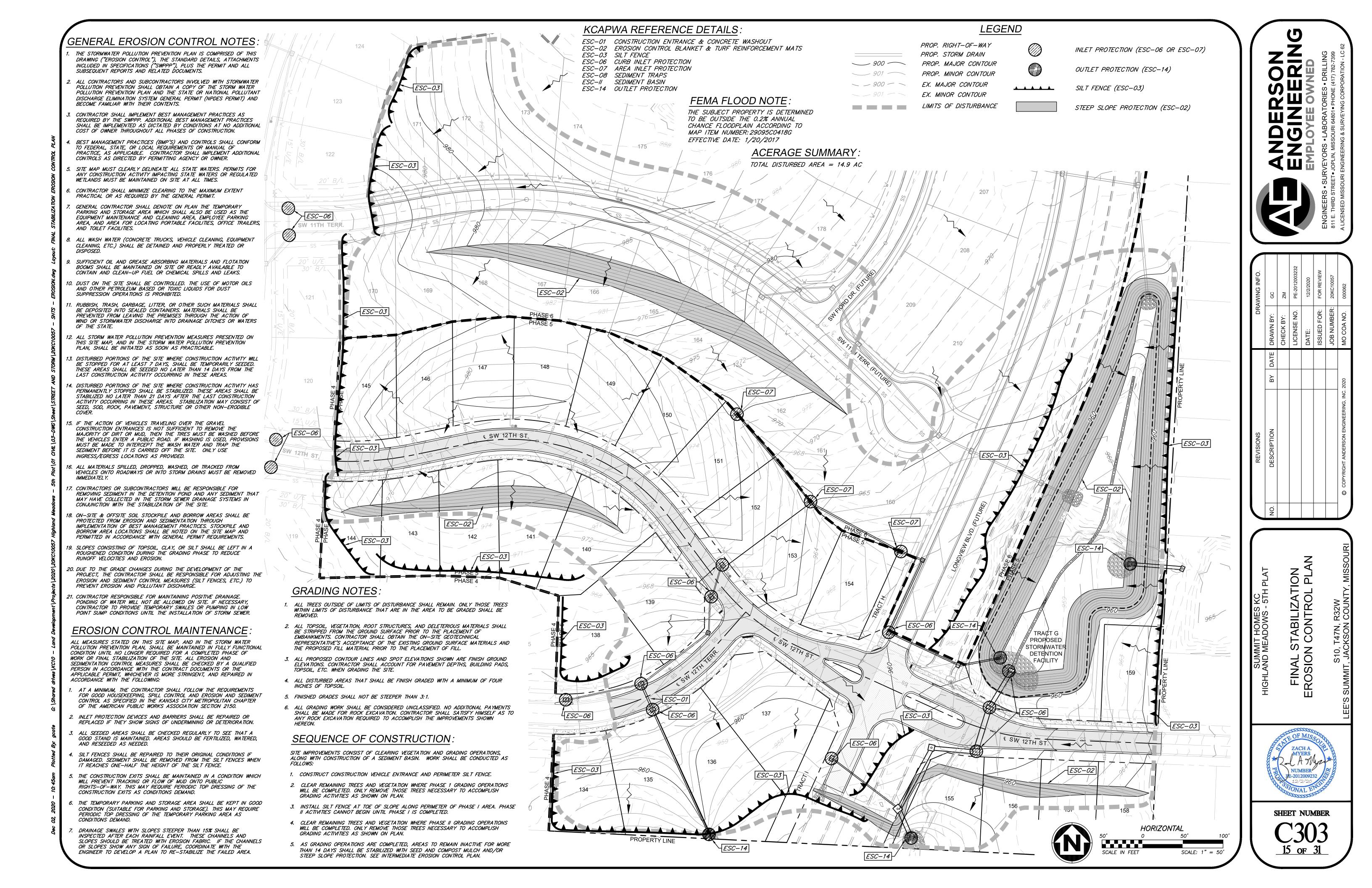
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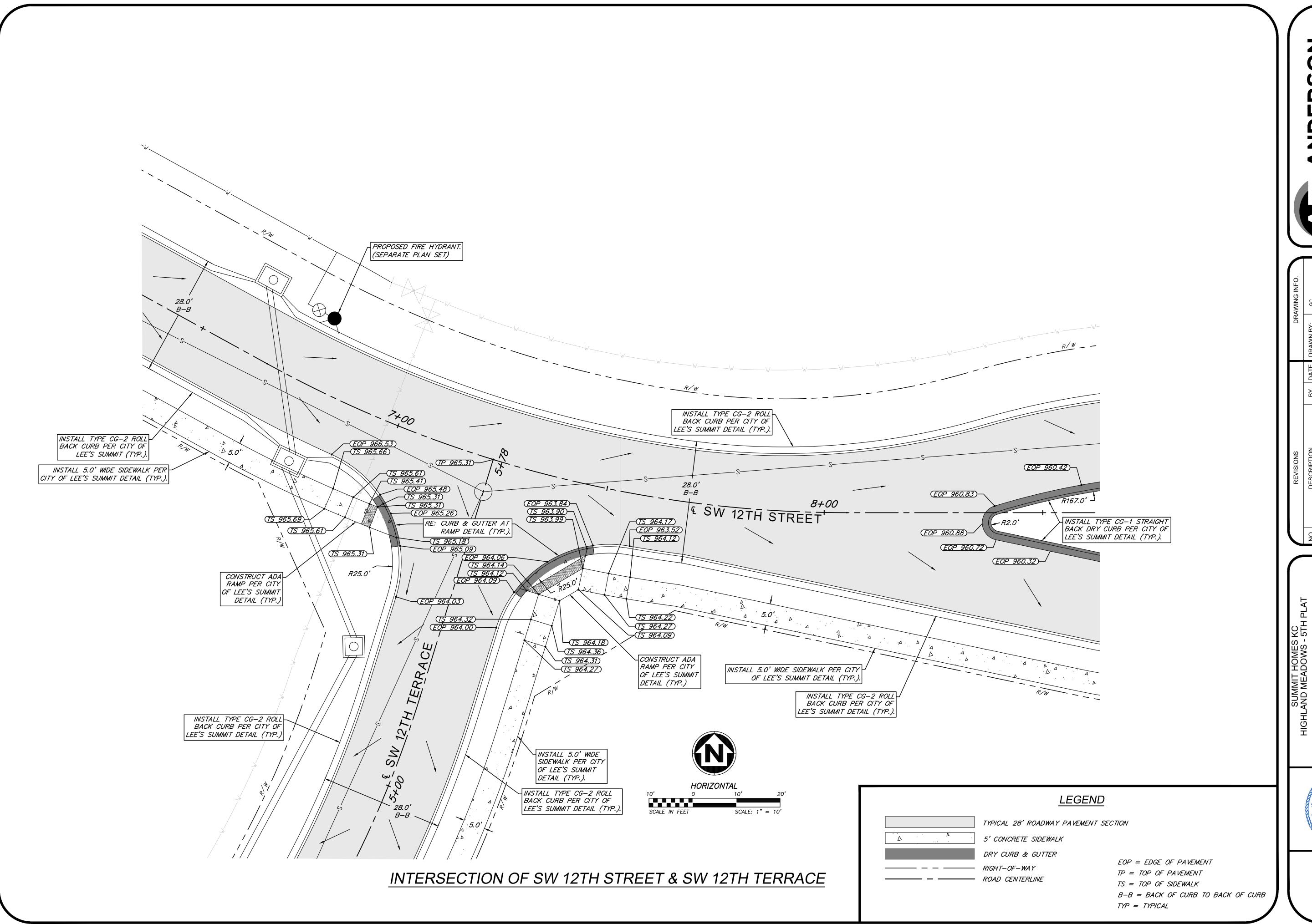
11 of 31







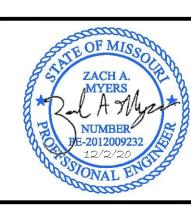




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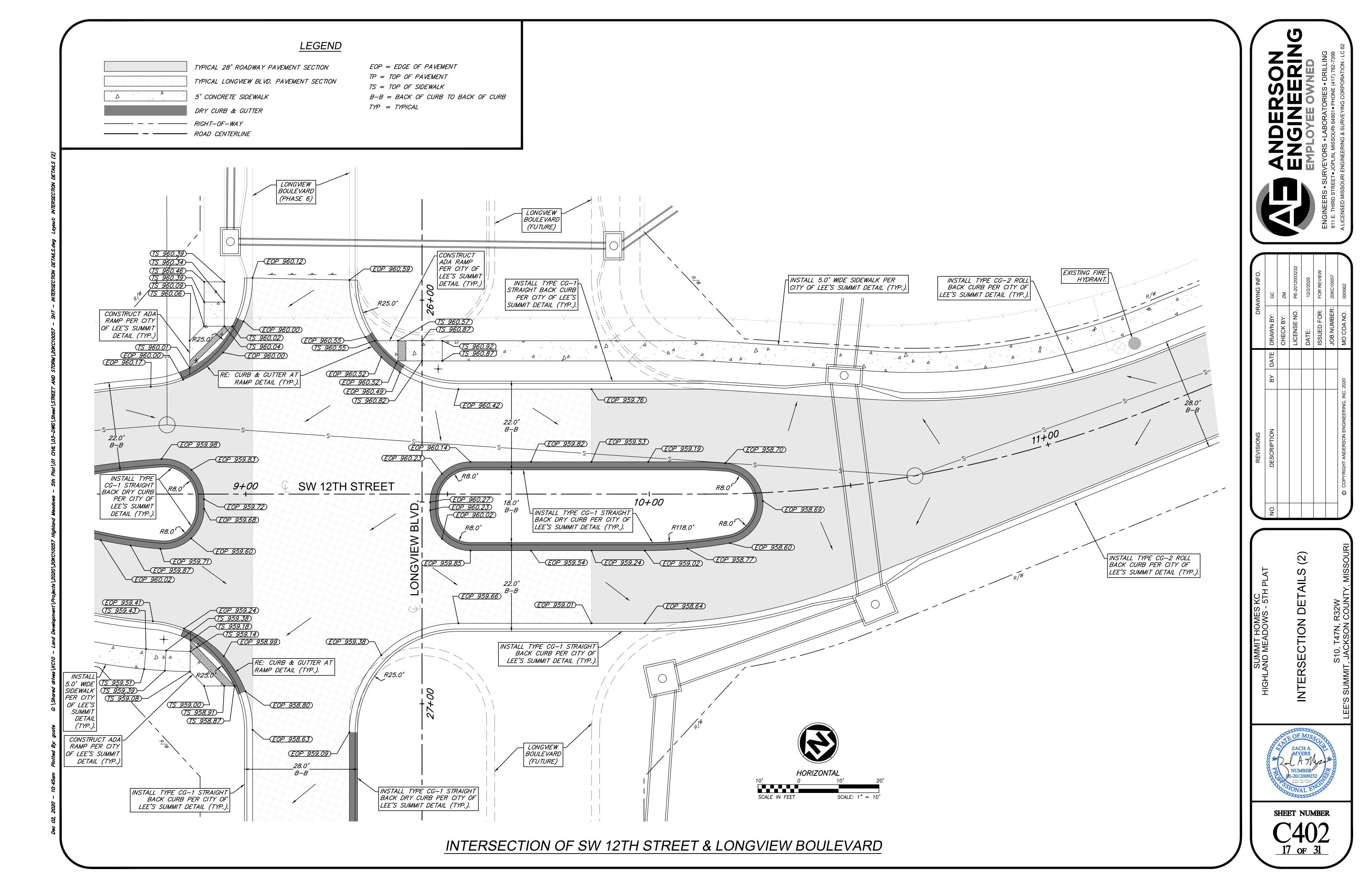
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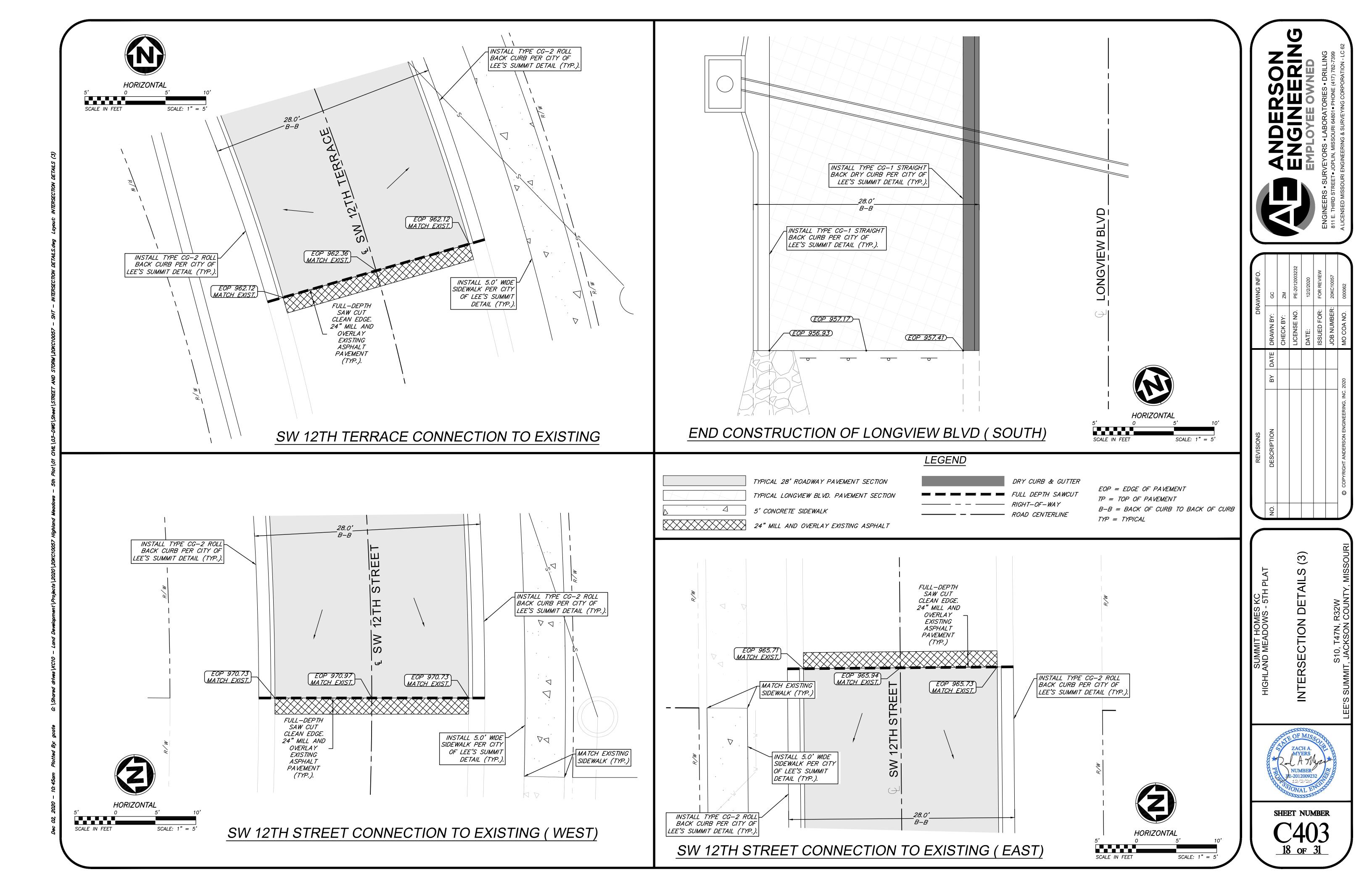


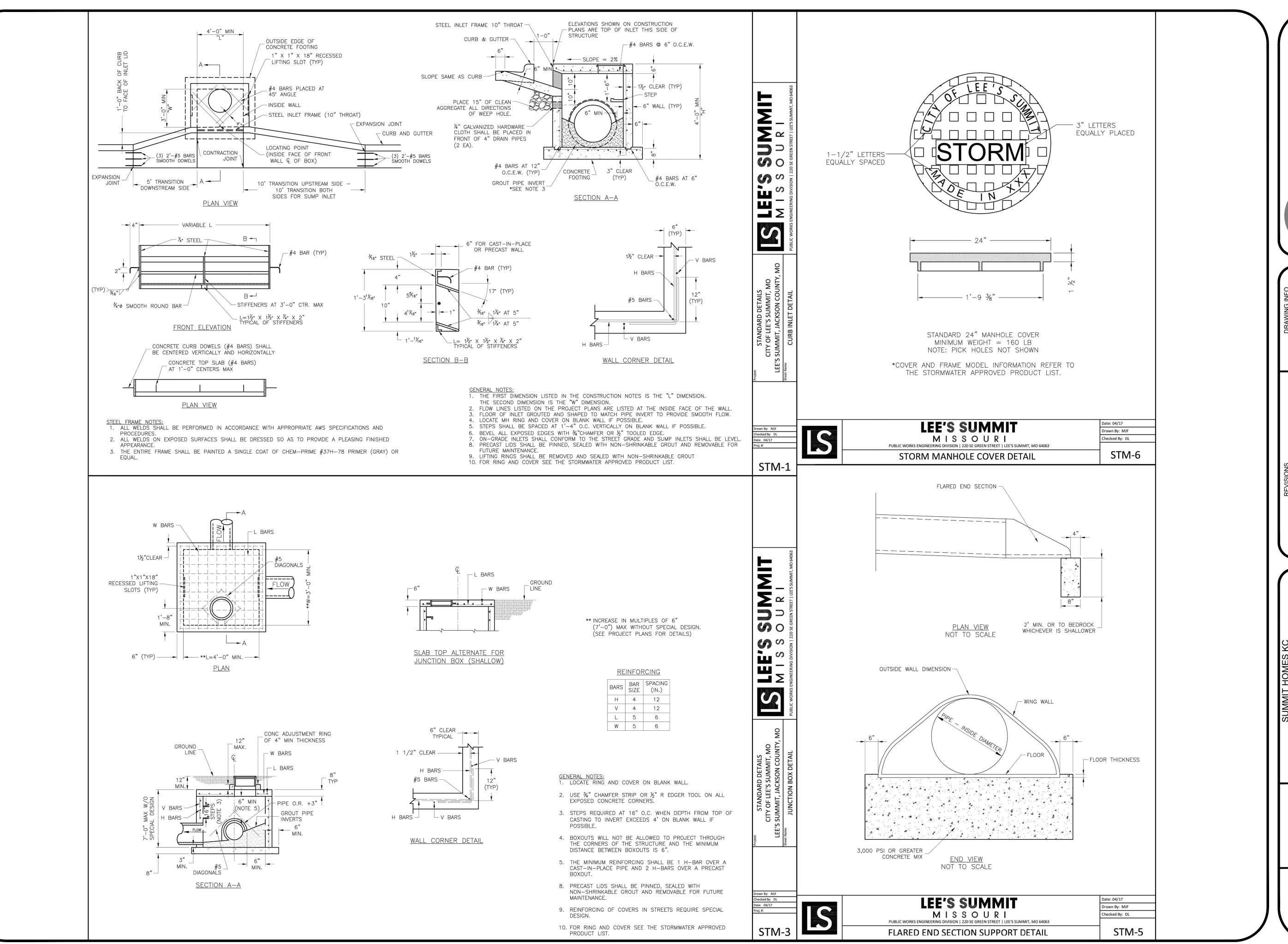
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16 OF 31







ANDERSON ENGINEERING EMPLOYEE OWNED

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ORM SEWER DETAILS

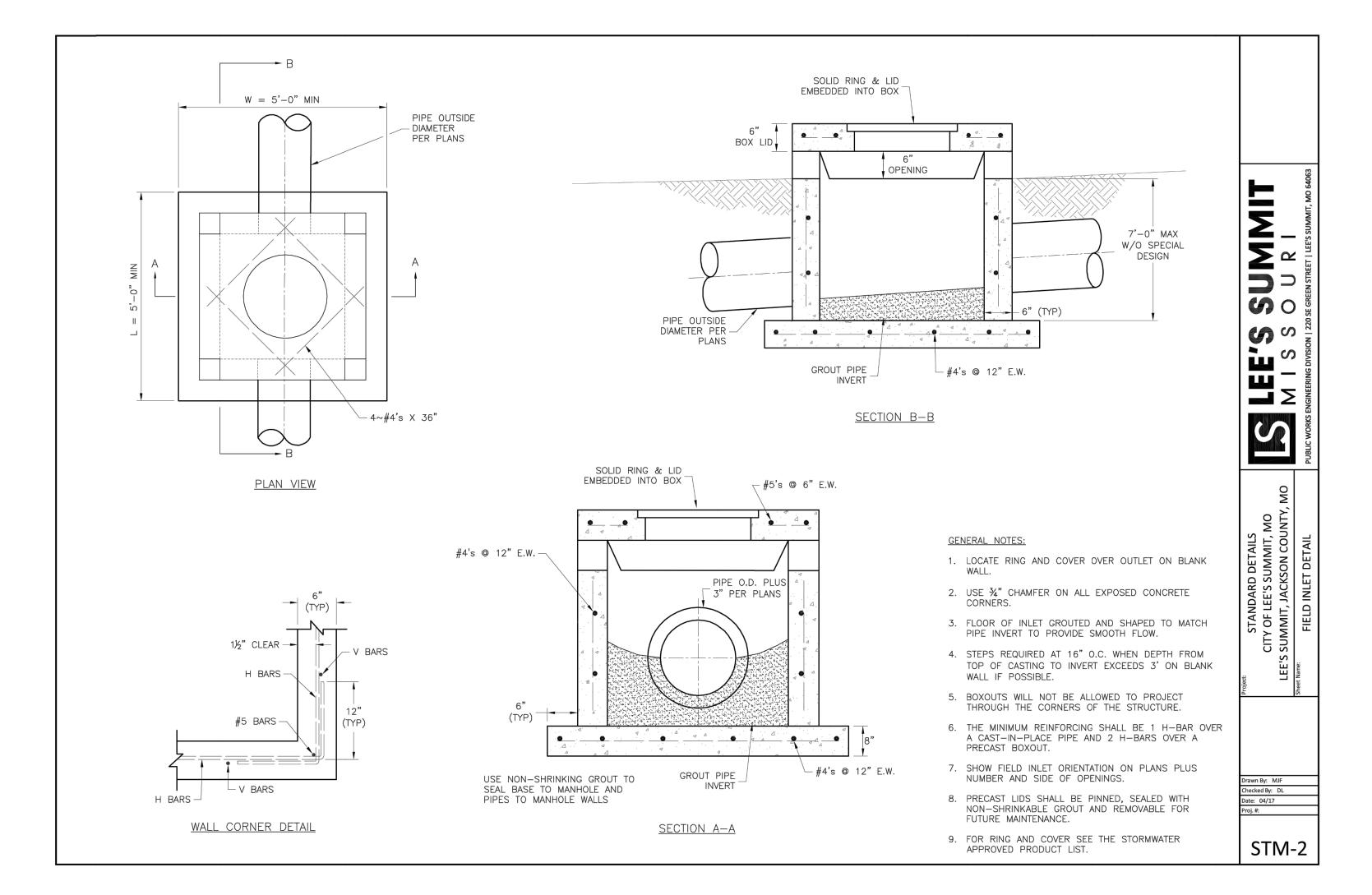
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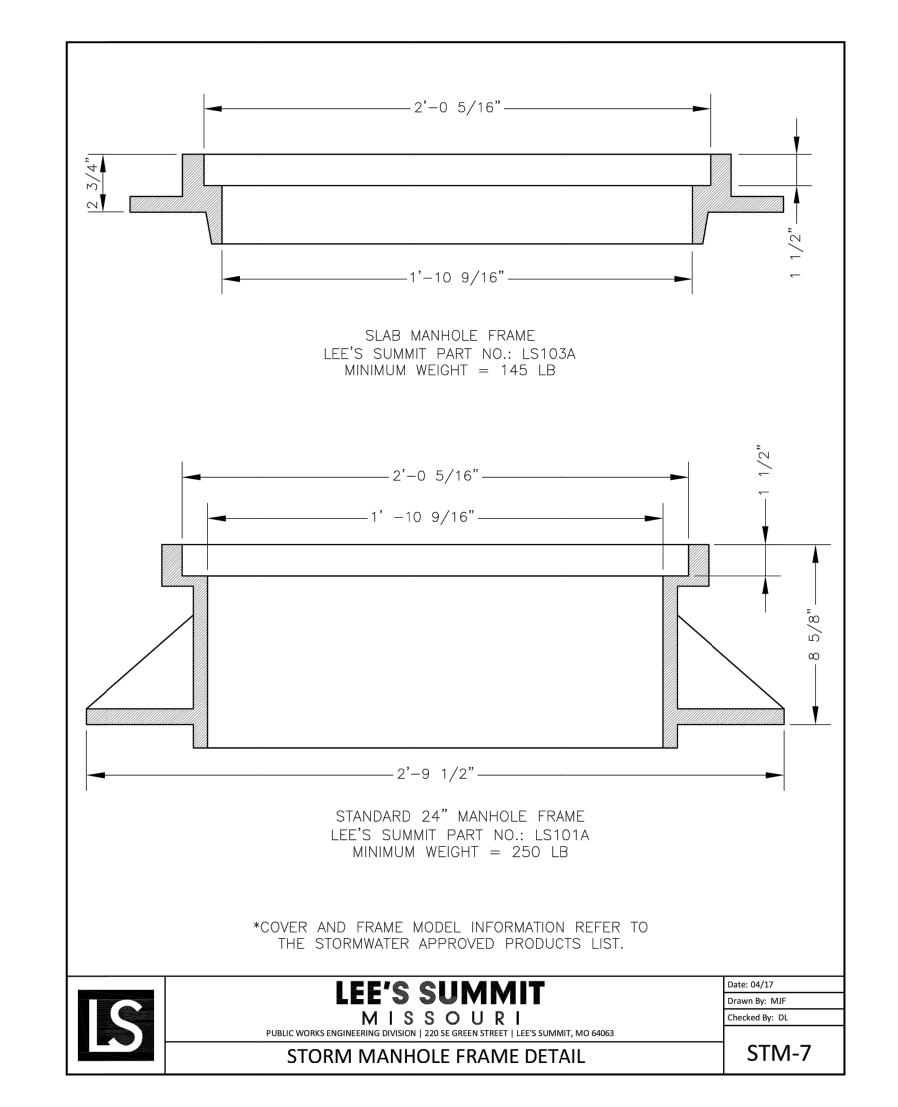


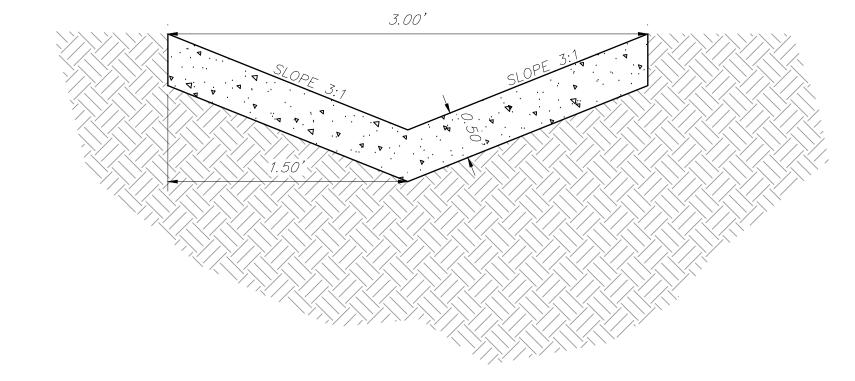
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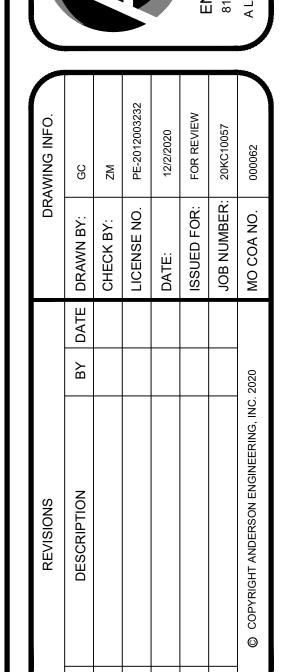
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CONCRETE FLUME DETAIL
NOT TO SCALE



HIGHLAND MEADOWS - 5TH PLAT
STORM SEWER DETAILS (2)

ZACH A.

MYERS

NUMBER

PE-2012009232

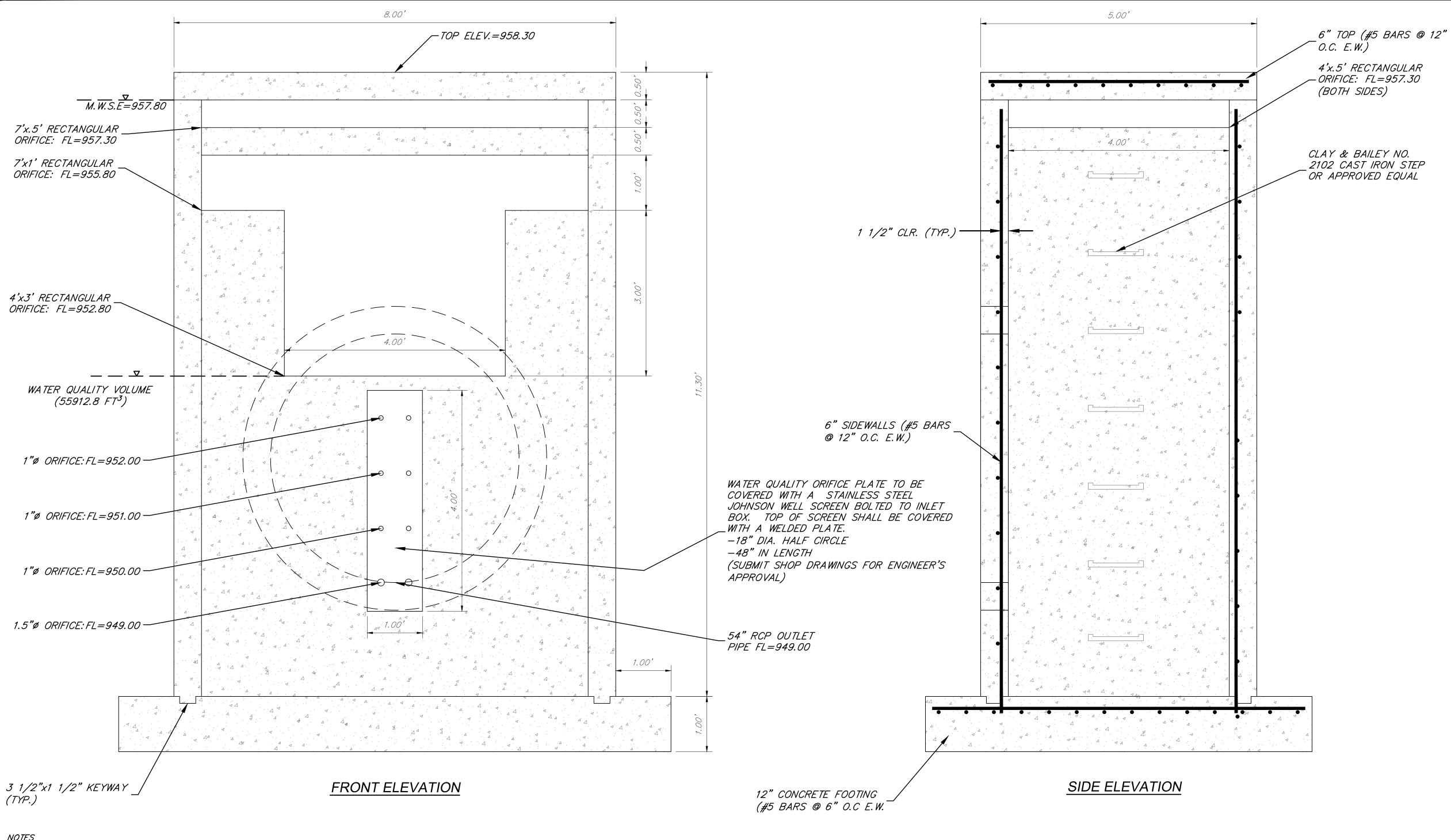
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STONAL ENGINEER

SHEET NUMBER

C405

20 of 31



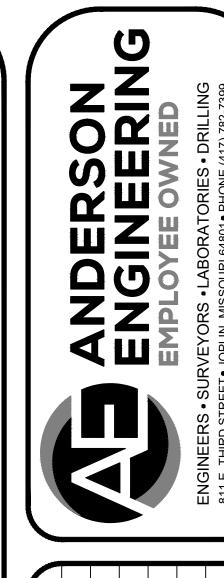
1. ALL CONCRETE SHALL BE 4000 PSI.

2. ALL REINFORCING STEEL SHALL BE 60 KSI.

- 3. THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION. THE SECOND DIMENSION IS THE "W" DIMENSION.
- 4. FLOOR OF INLET SHALL BE SHAPED WITH NON—REINFORCED CONCRETE INVERT TO PROVIDE SMOOTH FLOW.
- 5. EXPANSION JOINTS SHALL BE EITHER HOT OR COLD POURED JOINT SEALING COMPOUND, OR PREMOLDED EXPANSION JOINT FILLER.
- 6. BEVEL ALL EXPOSED EDGES WITH TRIANGULAR MOLDING.
- 7. ALL DIMENSIONS RELATIVE TO REINFORCING STEEL ARE TO CENTERLINE OF BARS. 2" CLEARANCE SHALL BE PROVIDED THROUGHOUT UNLESS NOTED OTHERWISE. TOLERANCE OF ±1/8" SHALL BE PERMITTED.
- 8. ALL LAP SPLICES NOT SHOWN SHALL BE A MINIMUM OF 40 BAR DIAMETERS IN LENGTH.
- 9. ALL DOWELS SHALL BE ACCURATELY PLACED AND SECURELY TIED IN PLACE PRIOR TO PLACEMENT OF BOTTOM SLAB CONCRETE. STICKING OF DOWELS INTO FRESH OR PARTIALLY HARDENED CONCRETE WILL NOT BE ACCEPTABLE.
- 10. ALL REINFORCING STEEL SHALL BE SUPPORTED ON FABRICATED STEEL BAR SUPPORTS @ 3'-0" MAXIMUM SPACING.
- 11. DO NOT SCALE THESE DRAWINGS FOR DIMENSIONS OR CLEARANCES. ANY QUESTIONS REGARDING DIMENSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION.
- 12. THE BOTTOM SLAB SHALL BE AT LEAST 24 HOURS OLD BEFORE PLACING SIDEWALL CONCRETE. ALL SIDEWALL FORMS SHALL REMAIN IN PLACE A MINIMUM OF 24 HOURS AFTER SIDEWALLS ARE POURED BEFORE REMOVAL, AND AFTER REMOVAL SHALL BE IMMEDIATELY TREATED WITH MEMBRANE CURING COMPOUND.
- 13. RCP CONNECTIONS TO PRECAST STRUCTURES SHALL HAVE A MINIMUM OF 6" OF CONCRETE AROUND THE ENTIRE PIPE WITHIN 2' OF THE STRUCTURE.

#### DETENTION OUTLET CONTROL STRUCTURE

SCALE: 1"=1'

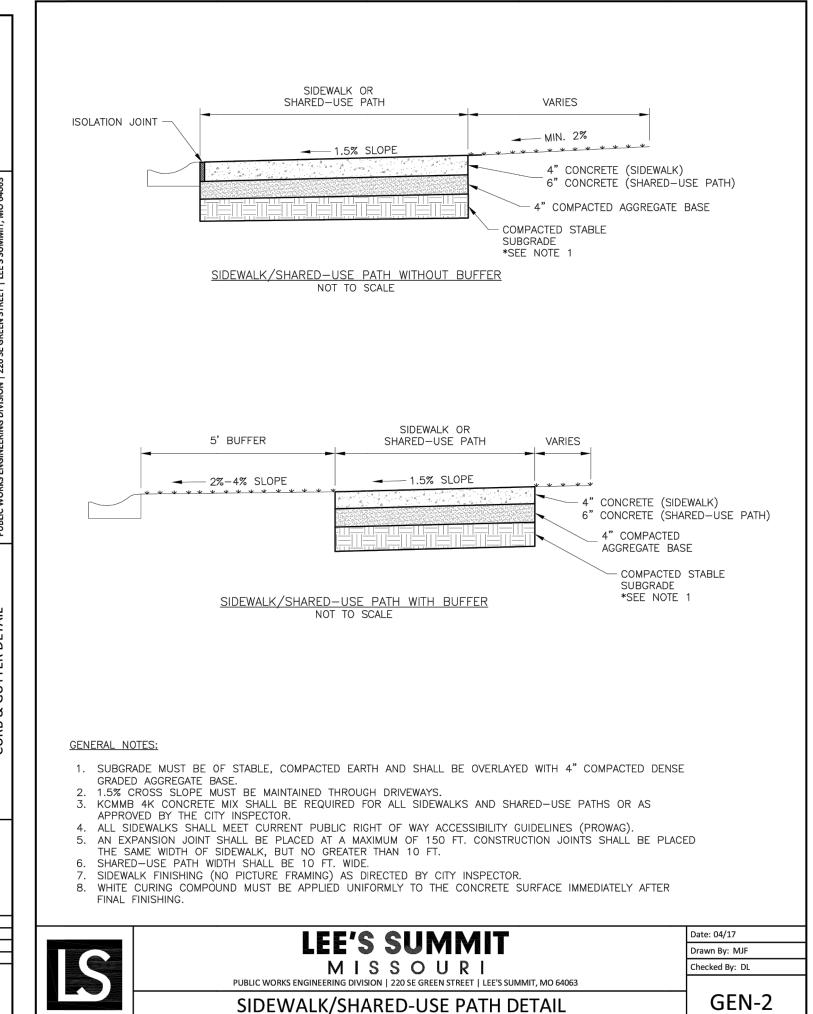


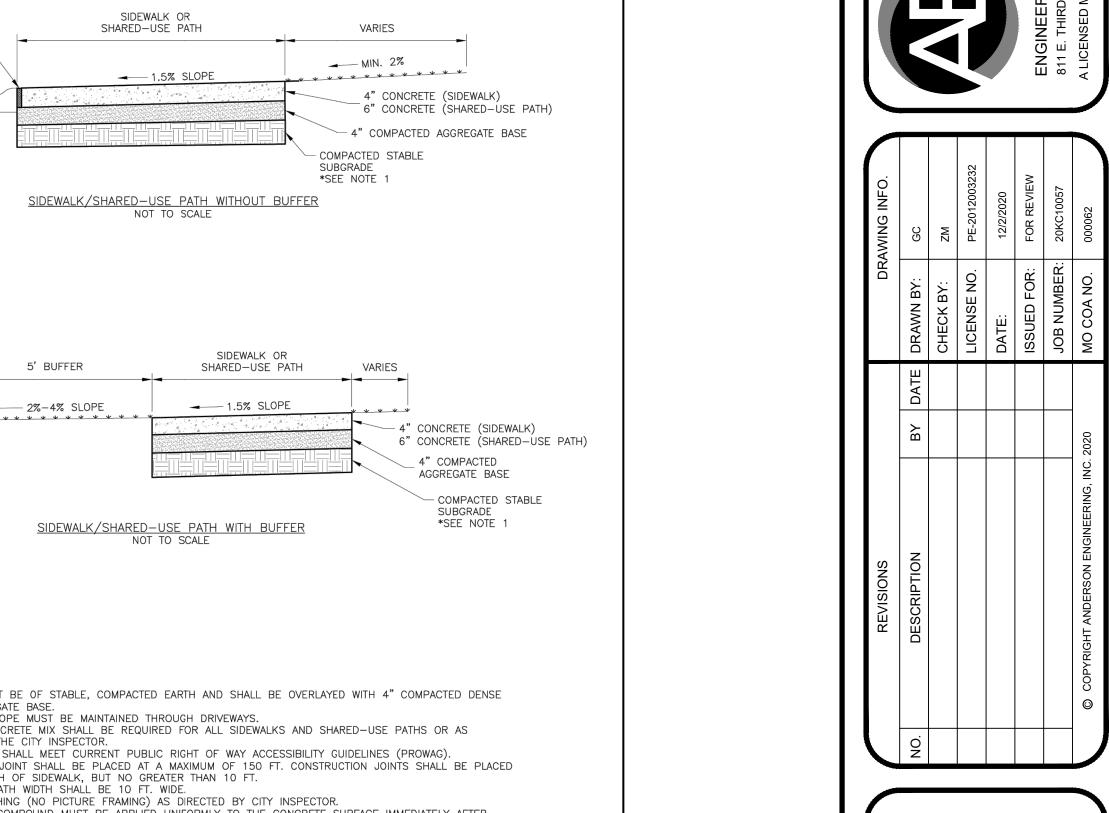
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7. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.



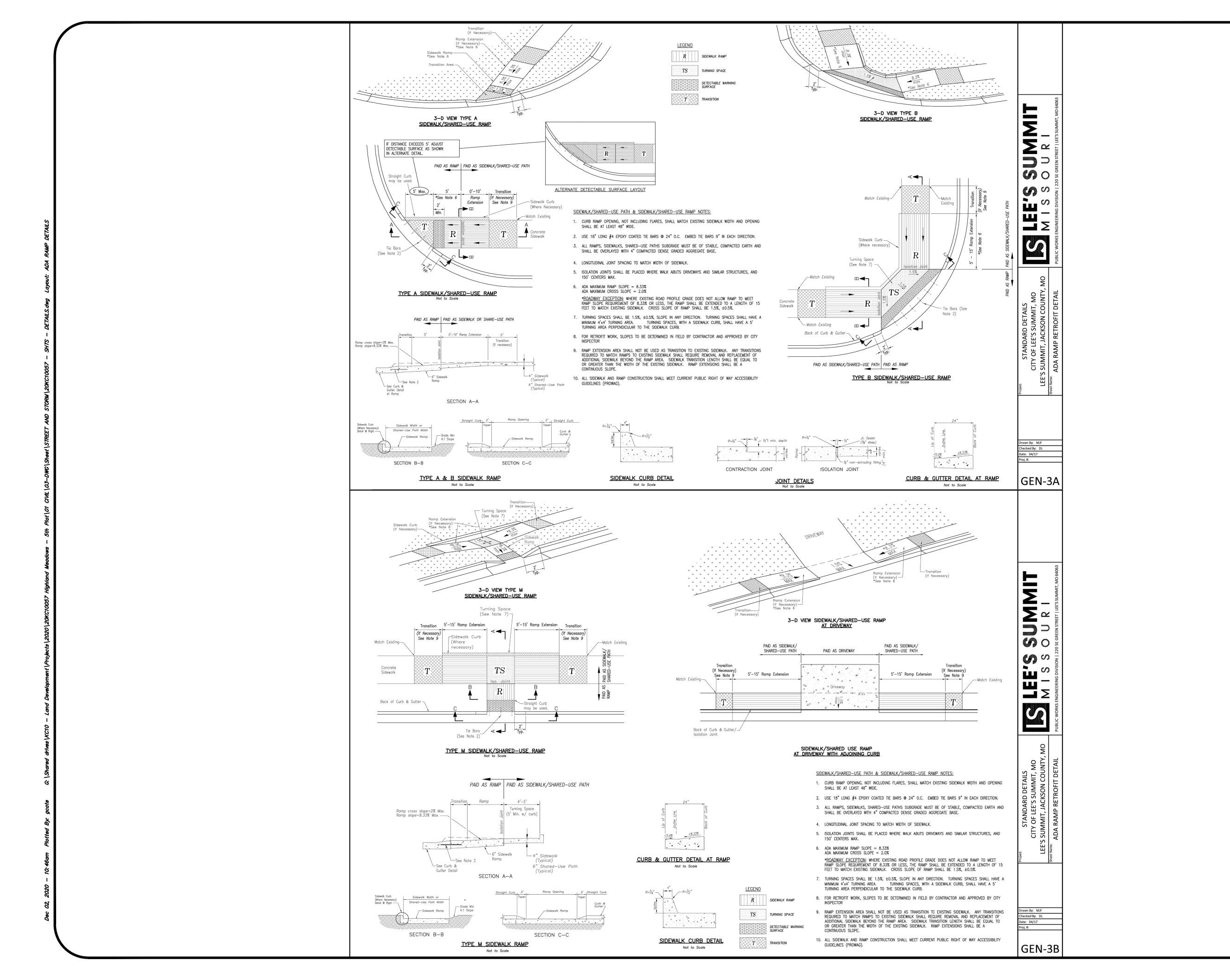


SIDEWAL

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HIGHLAND MEADOWS - 5TH PLAT

ZACH A.

MYERS

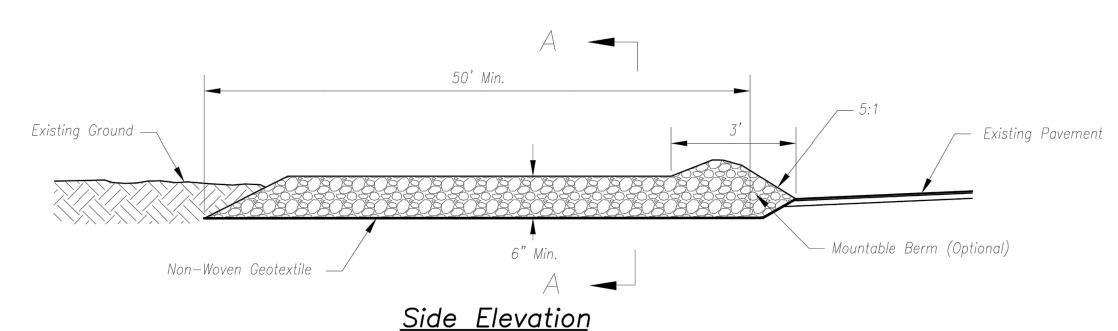
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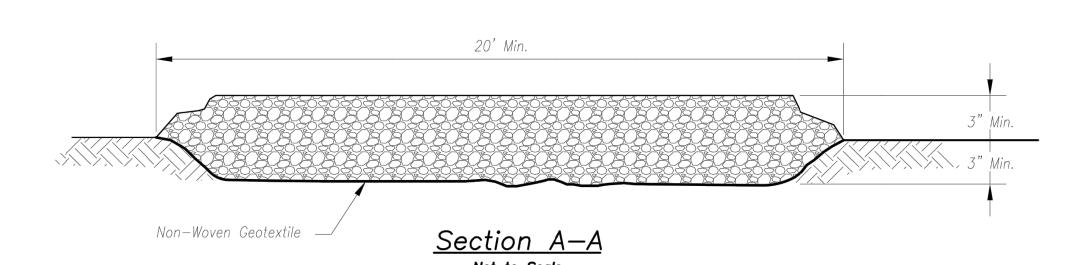
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#### Plan View





Not to Scale

#### 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.
- 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:

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

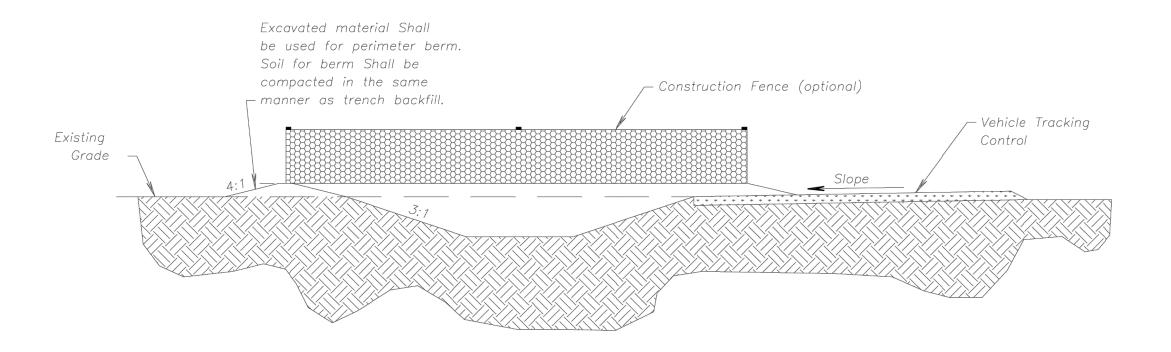
#### CONSTRUCTION ENTRANCE

#### 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.

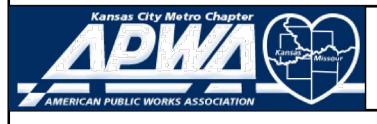
#### Maintenance for Concrete Washout:

- 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 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-0I
ADOPTED:
10/24/2016

ANDERSON ENGINEERIN EMPLOYEE OWNED

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CONSTRUCTION NTRANCE DETAILS

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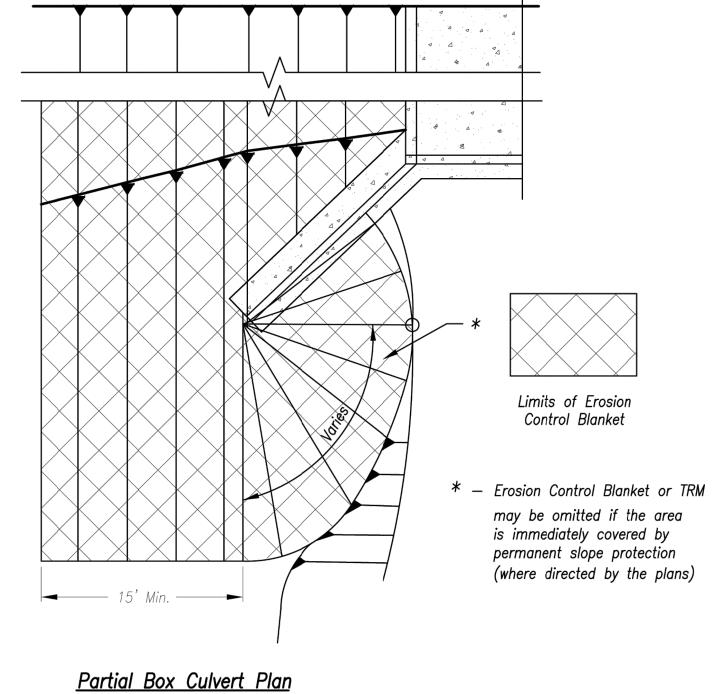
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24 OF 31

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.



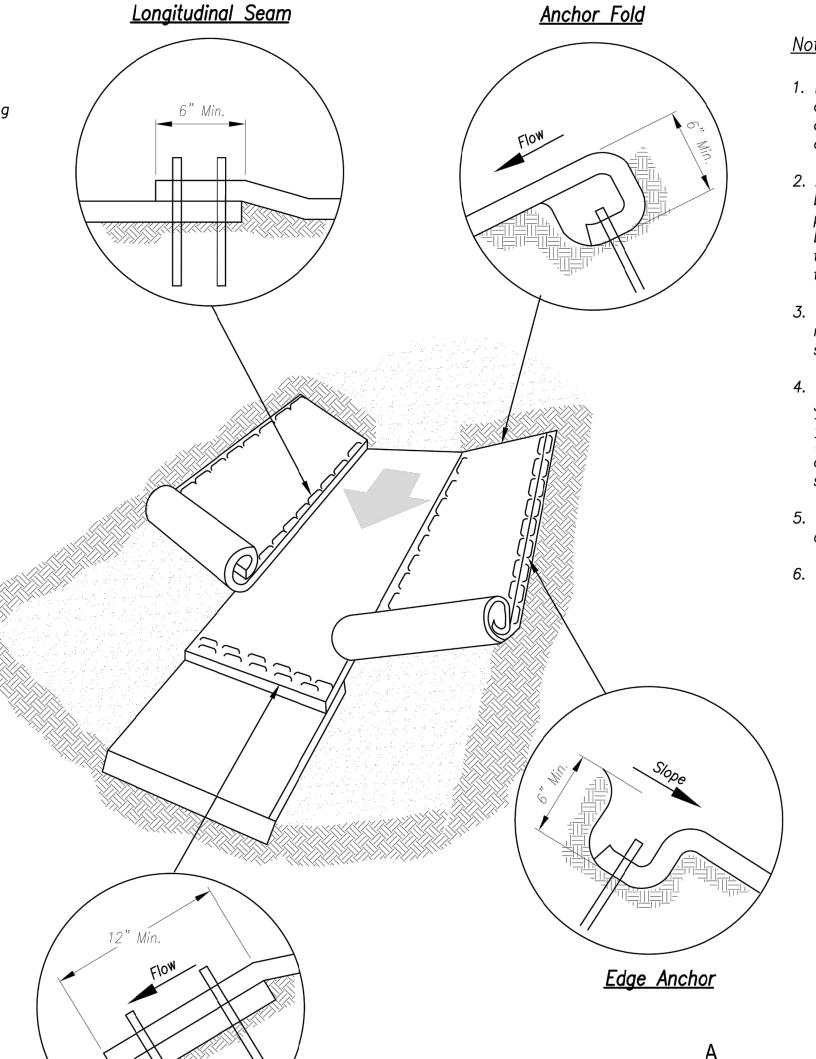


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<u>Installation Around Culvert Slope</u>

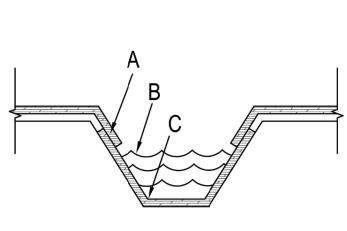
#### Notes for Installation on Slopes:

- 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:

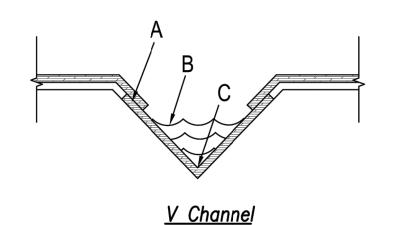
- 1. Erosion Control Blankets and TRMs shall be laid in the direction of the flow, with the first course at the centerline of channel, where applicable. In order for the mat to be in contact with the soil, lay the mat loosely, avoiding stretching.
- 2. ANCHOR FOLD: The top of the mat should be folded 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;



<u>Installation in Channels</u>

for Erosion and Sediment Control.

Modified from 2015 Overland Park Standard Details

Splice Seam



KANSAS CITY METRO CHAPTER

> STANDARD DRAWING NUMBER ESC-02

10/24/2016

STEEP SLOPE ROTECTION DETAI

SHEET NUMBER 25 of 31

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EROSION CONTROL BLANKETS AND TURF REINFORMENT MATS ADOPTED:

4' min length post Geotextile fabric at 4' max spacing 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 2' Min. Post embedment Machine slice (See Note 6.) 6" — 12" depth

(\*) <u>POSTS</u> - MIN, LENGTH 4' - HARDWOOD 1 3/6" x 1 3/6" - NO.2 SOUTHERN PINE 2 %" x 2 %"

- STEEL 1.33 LB/FT

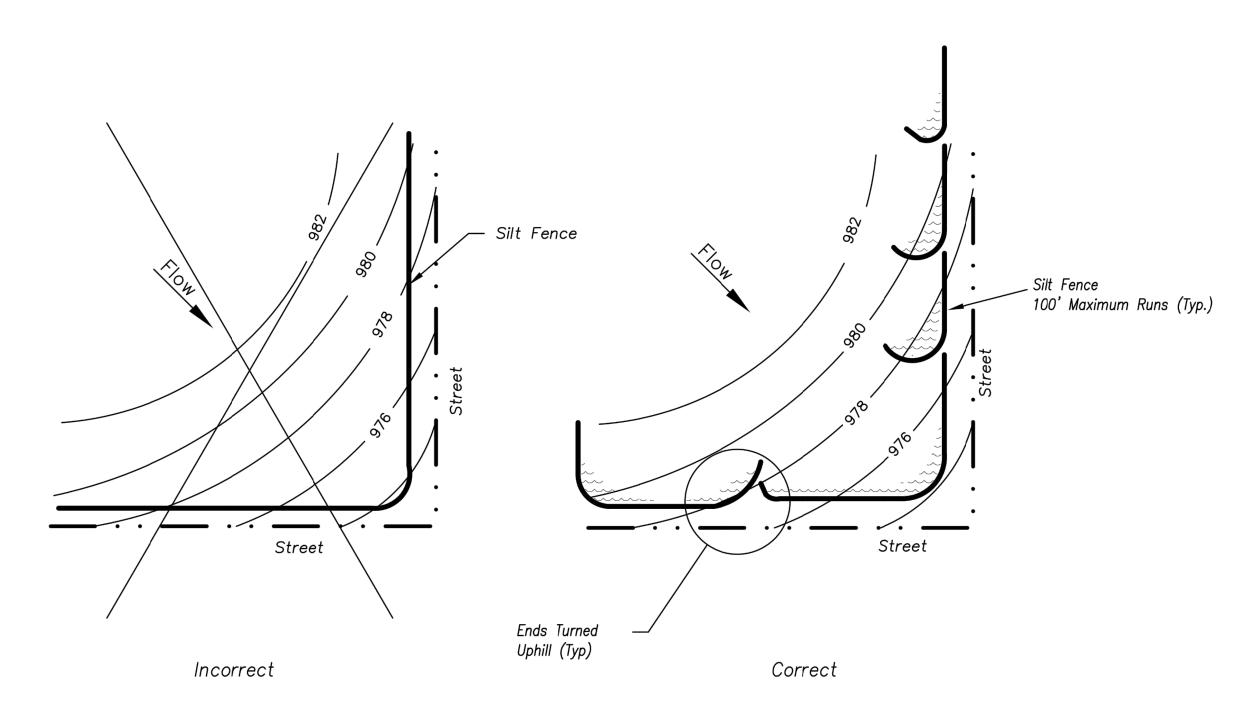
(\*\*) — Geotextile Fabric shall meet the requirements of AASHTO M288

SILT FENCE DETAILS

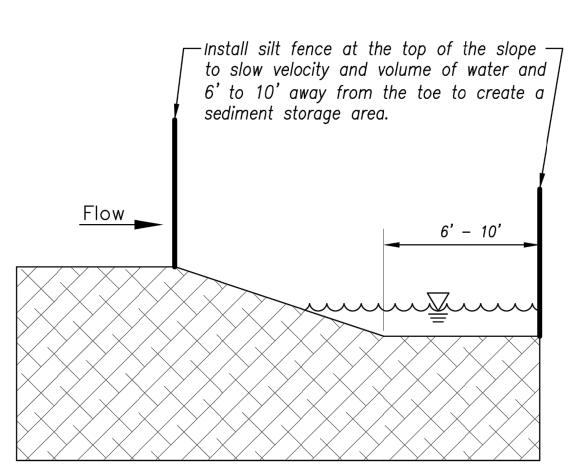
Not to Scale

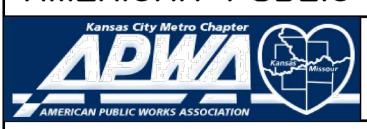
SILT FENCE LAYOUT

Not to Scale



<u>Figure A</u>





KANSAS CITY

SILT FENCE

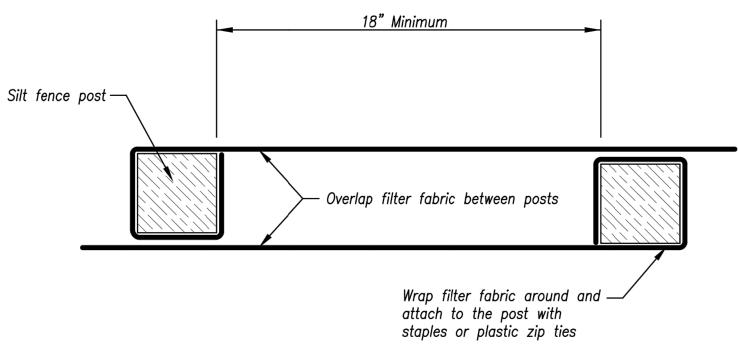
STANDARD DRAWING 10/24/2016

#### <u>Notes:</u>

- 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).
- 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 slicing machine cannot be reasonably

#### <u>Maintenance:</u>

- 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

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METRO CHAPTER

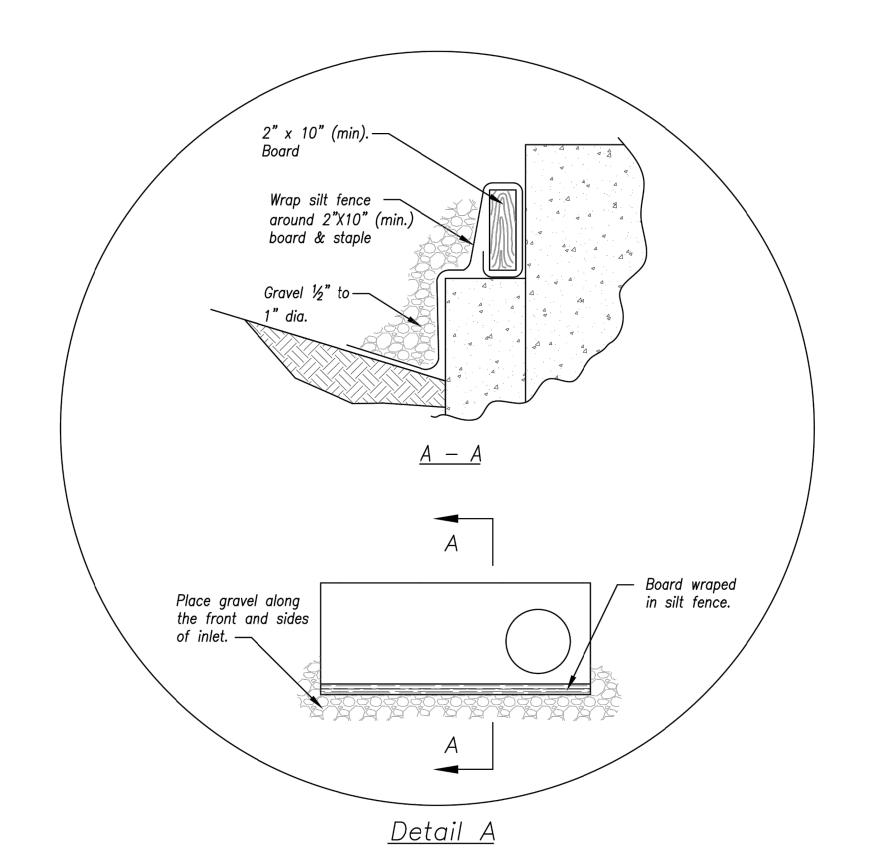
NUMBER ESC-03 ADOPTED:

DET,

FENCE

SHEET NUMBER <u>26 of 31</u>

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



See Detail A below

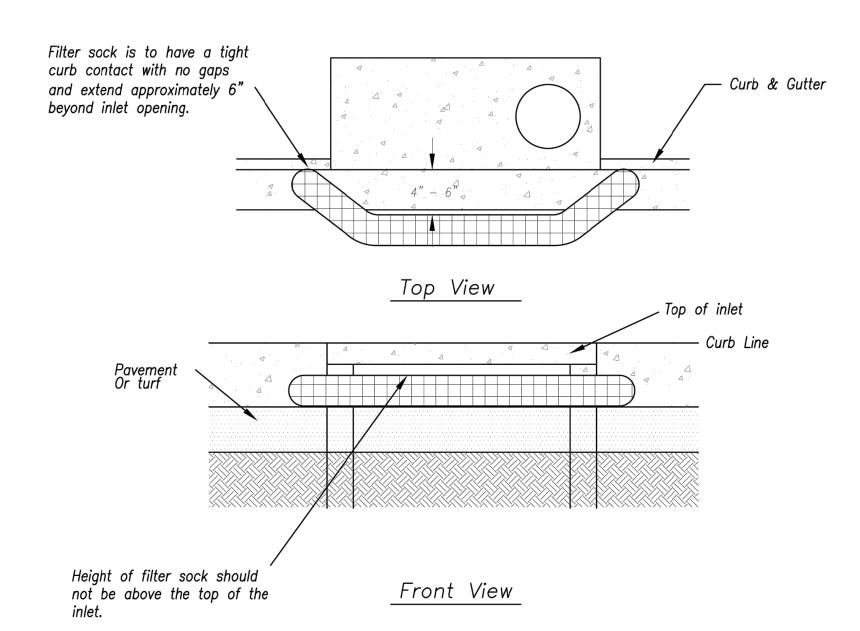
EARLY STAGE CURB INLET (Open Box and Prior to Pouring Curb and Inlet Throat)

#### <u>Notes:</u>

- 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.

#### <u>Maintenance:</u>

- 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.



Sump Inlet Sediment Filter

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

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CURB INLET PROTECTION

STANDARD DRAWING NUMBER ESC-06 ADOPTED: 10/24/2016

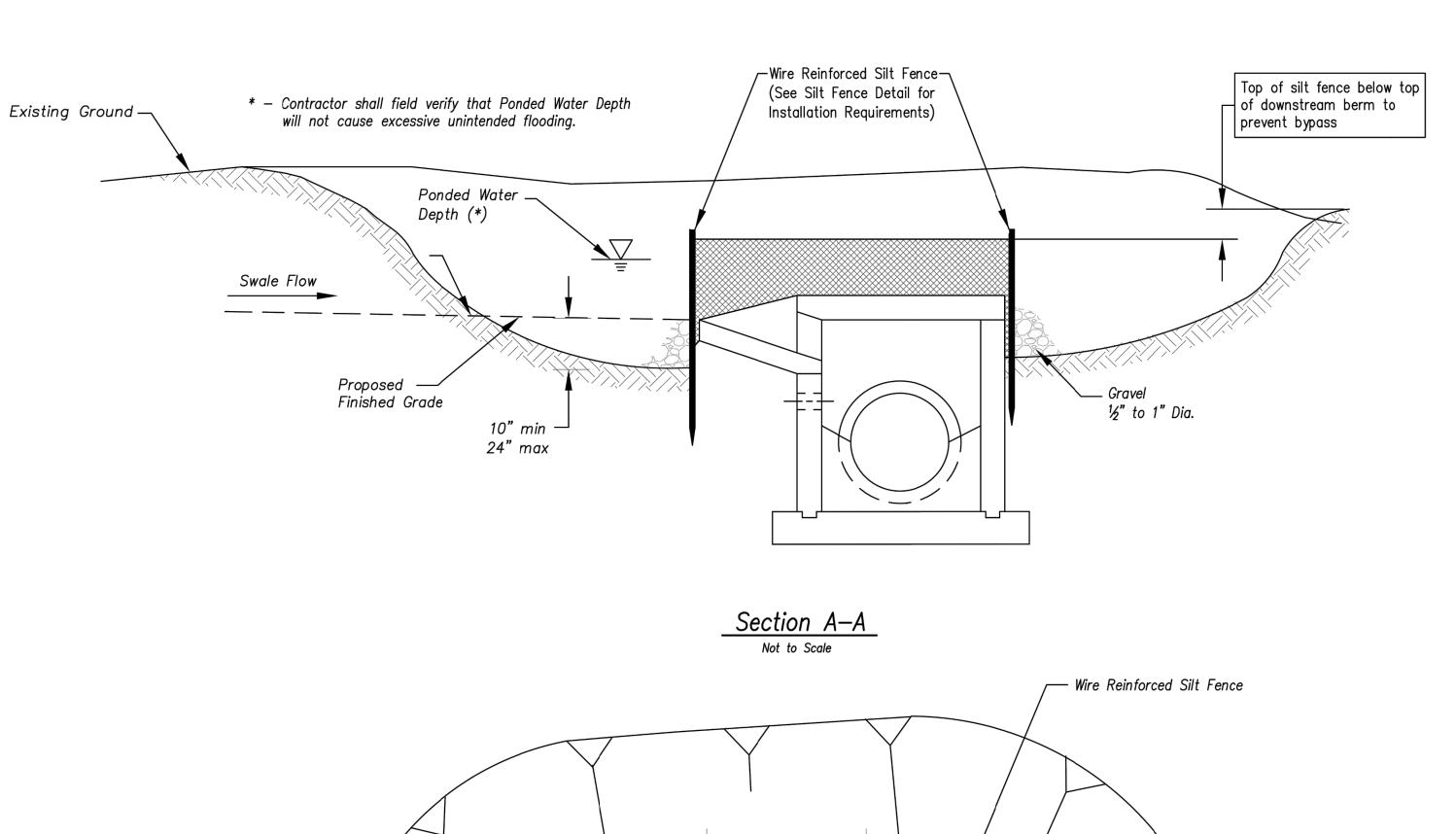
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CURB INLET
PROTECTION DET,



SHEET NUMBER 27 of 31



Centerline of Swale

Limits of Excavated Area for Sediment Starage

Limits of Excavation

Cancel 12 to 1" Dia.

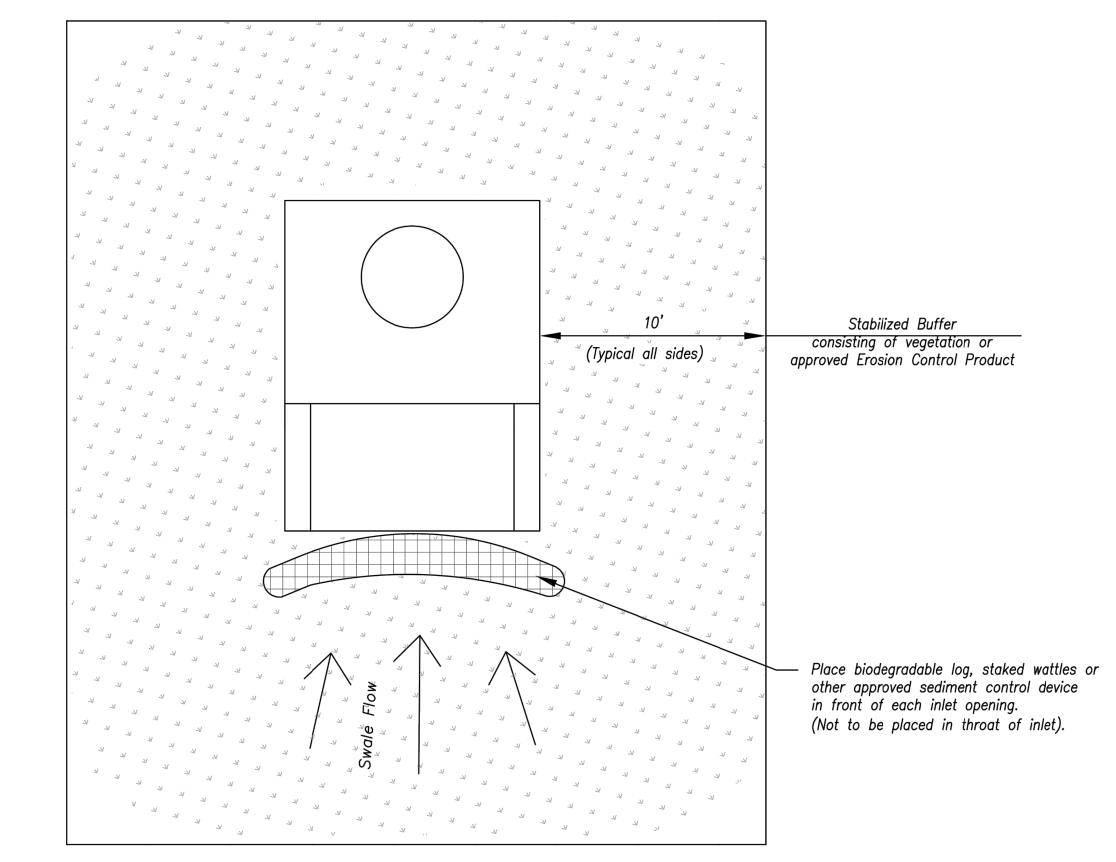
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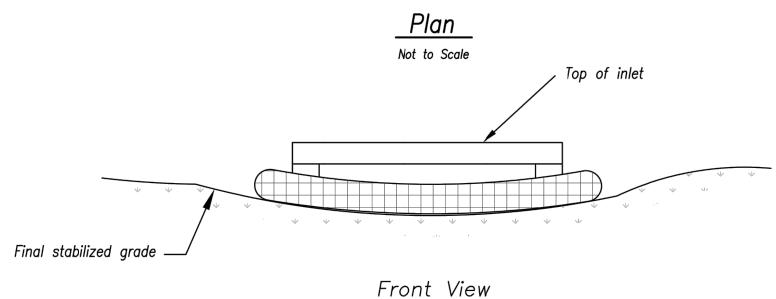
Plan

Not to Scale

<u>EARLY STAGE AREA INLET</u>
(All open boxes and inlets not at final grade)

- Early Stage Area Inlet Sediment Barrier to be installed immediately after inlet or junction box is
- 2. Silt fence shall remain in place until excavated area is removed and Late Stage Area Inlet is being installed.
- 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.





# <u>LATE STAGE AREA INLET</u> (Area inlets at final grade and existing inlets)

#### <u>Maintenance:</u>

- Remove deposited sediment from excavated storage areas when available storage has been reduced by 20%.
- 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.

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KANSAS CITY METRO CHAPTER

AREA INLET AND JUNCTION BOX PROTECTION

STANDARD DRAWING
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10/24/2016

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AREA INLET OTECTION DETAILS

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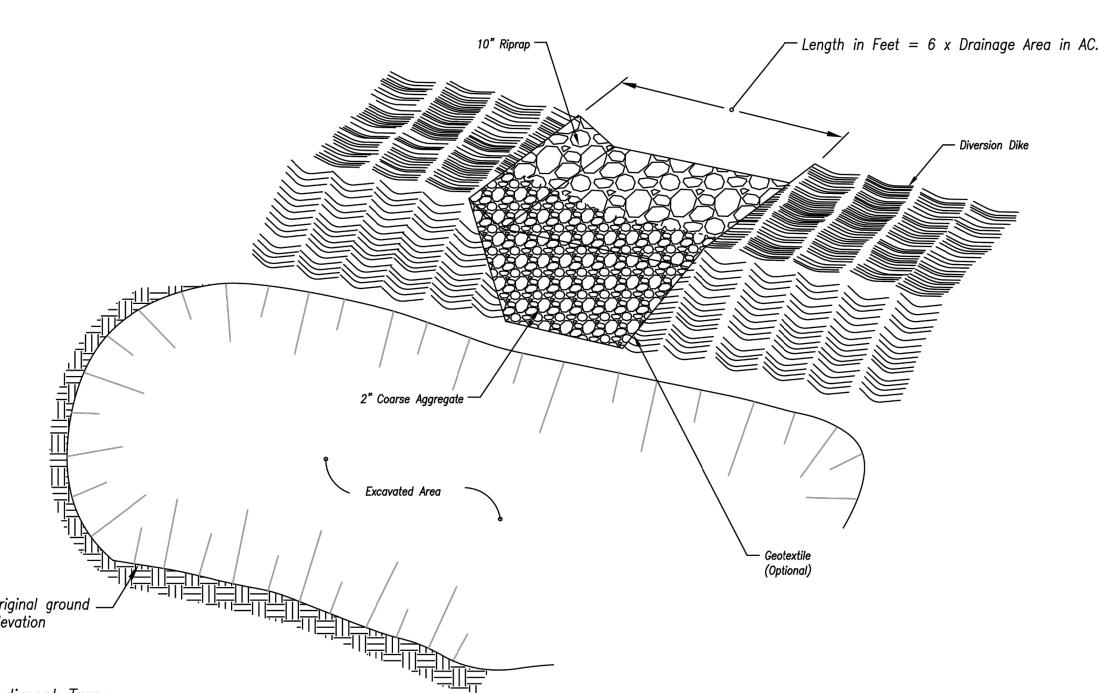
TONAL ENGINEER

SHEET NUMBER

C413

28 of 31

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



Notes for Sediment Trap:

1. The area under the embankment shall be cleared, grubbed, and stripped of any vegetation and root mat.

- 2. Fill material for the embankment shall be free of roots or other woody vegetation, organic material, large stones, and other objectionable material. The embankment should be compacted in 6-inch layers by traversing with construction equipment.
- 3. The earthen embankment shall be stabilized immediately after installation.
- 4. Construction operations shall be carried out to minimize erosion and water pollution.
- 5. The structure shall be removed and the area stabilized when the upslope drainage area has been stabilized.
- 6. All cut and fill slopes shall be 2H : 1V or flatter, except for excavated, wet storage areas which may be at a maximum 1H : 1V grade.

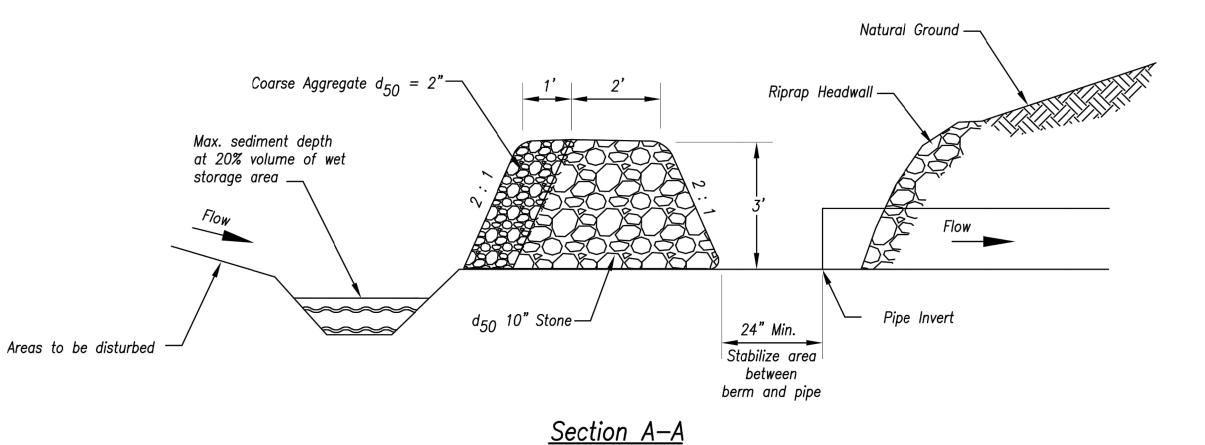
SEDIMENT TRAP

(\*) Perspective View of Outlet

(\*) — The perspective view and cross section are schematic in nature. Construction plans must provide specific site construction arrangements.

#### Maintenance for Sediment Trap:

- 1. Check sediment traps after periods of significant runoff.
- 2. Remove sediment and restore the trap to its original dimensions when sediment accumulates to 20% of the storage capacity.
- 3. Immediately repair any erosion damage to the embankment and outlet.
- 4. Keep outlet and pool area free of all trash and other debris.



# Not to Scale d<sub>50</sub> 10" Stone Coarse Aggregate d<sub>50</sub> = 2"

Plan View

Not to Scale

#### Notes for Sediment Trap at Culvert Opening:

- 1. The inlet protection device shall be constructed in a manner that will facilitate clean-out and disposal of trapped sediment and minimize interference with construction activities.
- 2. The inlet protection devices shall be constructed in such manner that any resultant ponding stormwater will not cause excessive inconvenience or damage to adjacent areas or structures.
- 3. Geometry of the design will be a horseshoe shape around the culvert inlet.
- 4. The toe of the riprap shall be no closer than 24" from the culvert opening to provide an acceptable emergency outlet for flows from larger storm events.
- 5. Storage requirements equivalent to that of temporary
- 6. 67 C.Y./Acre wet storage below base of stone.
- 7. 67 C.Y./Acre dry storage from base of stone to top of stone berm.

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

#### Maintenance for Sediment Trap at Culvert Opening:

- 1. Check sediment traps after periods of significant runoff.
- 2. Remove sediment and restore the trap to its original dimensions when sediment accumulates to 20% of the storage capacity.
- 3. Immediately repair any erosion damage to the embankment and outlet.
- 4. Keep outlet and pool area free of all trash and other debris.

## AMERICAN PUBLIC WORKS ASSOCIATION



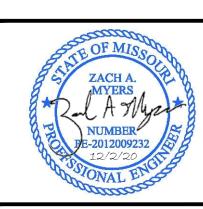
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STANDARD DRAWING SEDIMENT TRAPS ADOPTED:

NUMBER ESC-08 10/24/2016

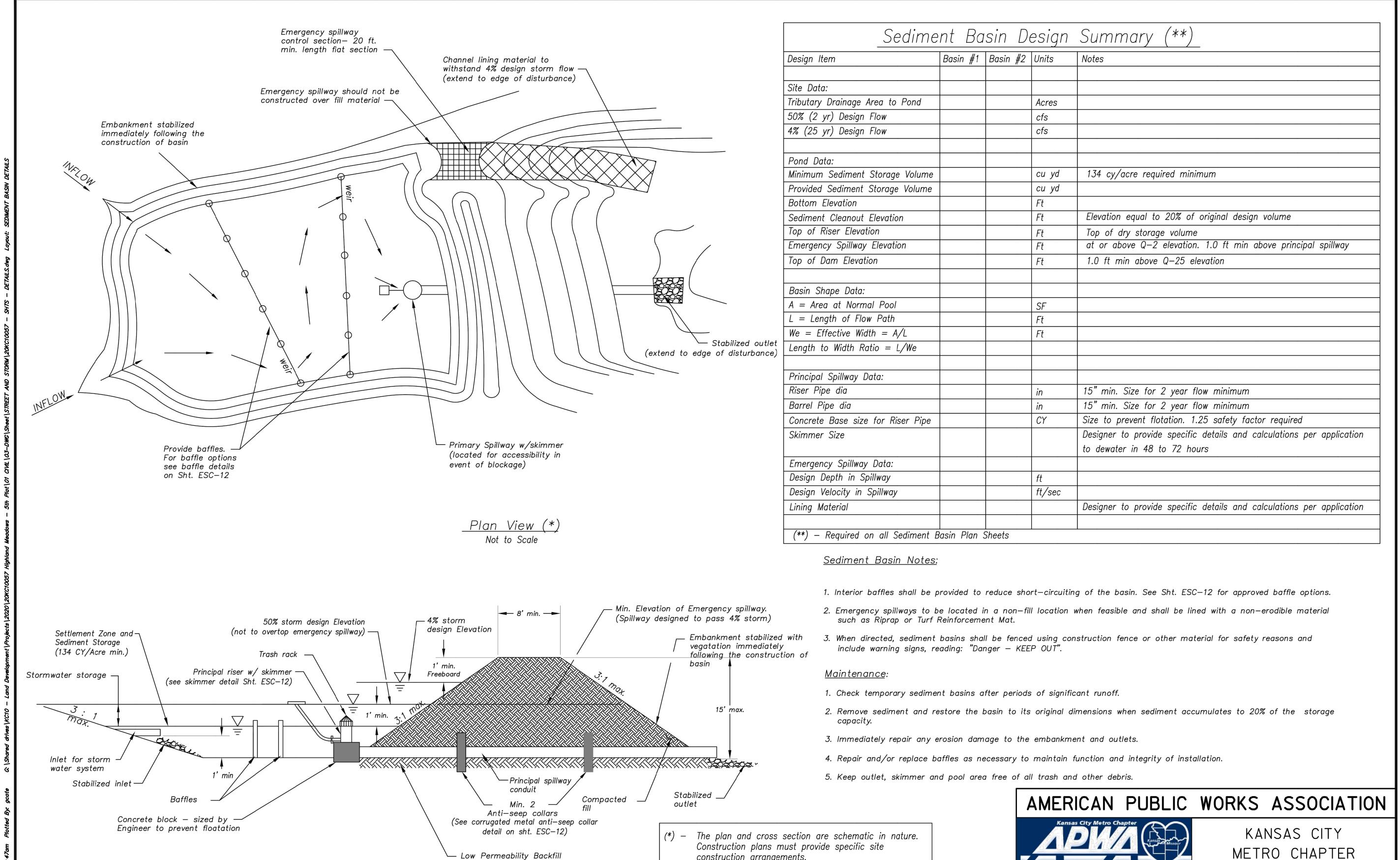
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**EDIMENT** 



SHEET NUMBER 29 of 31

SEDIMENT TRAP AT CULVERT OPENING



construction arrangements.

Modified from 2015 Overland Park Standard Details

for Erosion and Sediment Control.

– Low Permeability Backfill

<u> Cross Section (\*)</u>

Not to Scale

along pipe (Typ.)

BASIN **EDIMENT** 

SHEET NUMBER 30 of 31

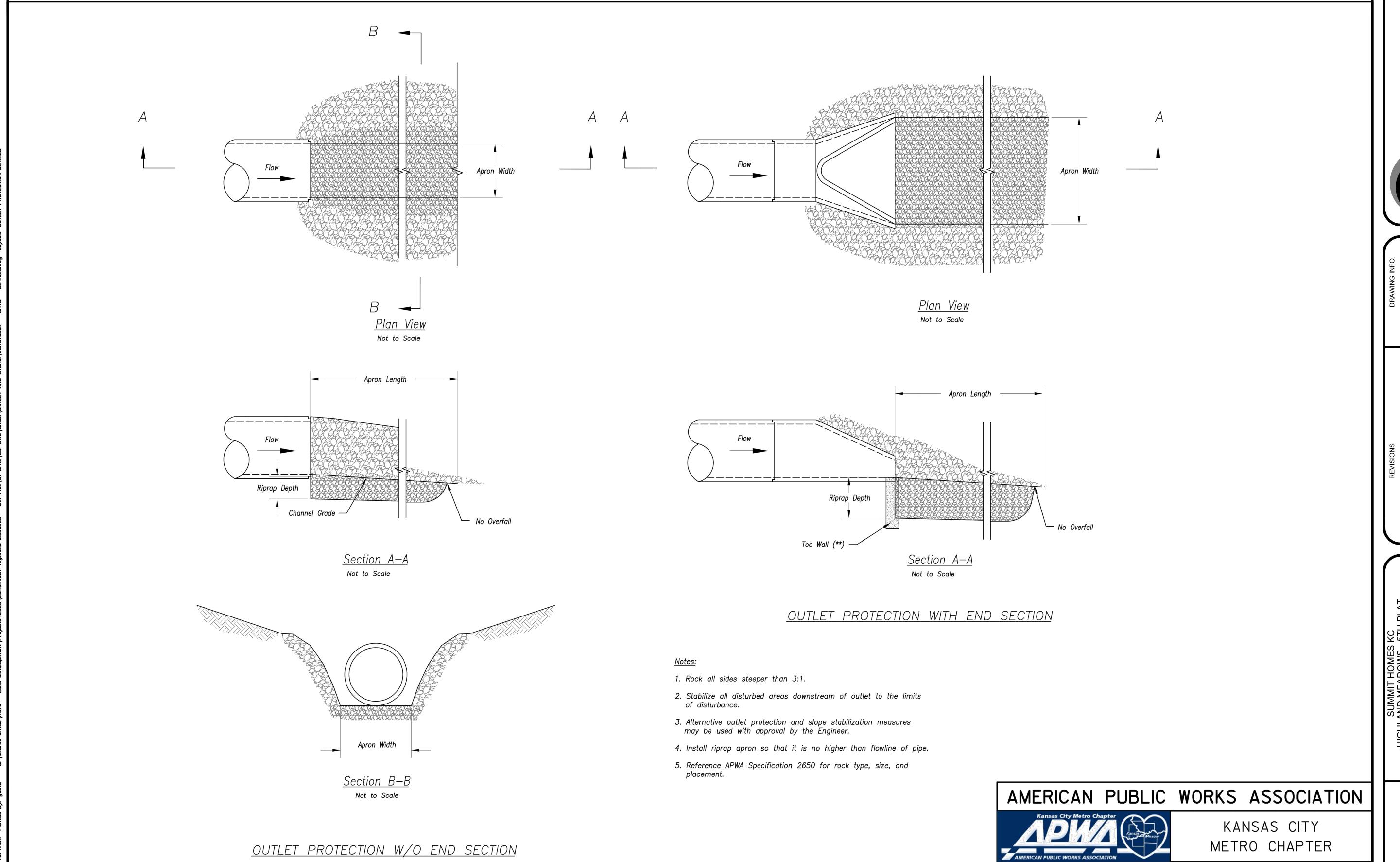
STANDARD DRAWING

10/24/2016

NUMBER ESC-II

ADOPTED:

SEDIMENT BASIN



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LET PROTECTION DETAIL



OUTLET PROTECTION

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STANDARD DRAWING NUMBER ESC-14 ADOPTED:

10/24/2016

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