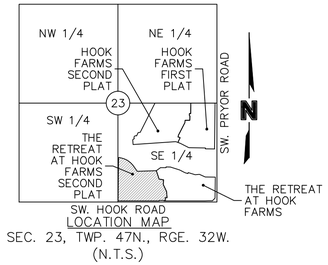
THE RETREAT AT HOOK FARMS
SECOND PLAT
STREET & STORM SEWER PLANS

SECTION 23, TOWNSHIP 47 N, RANGE 32 W
IN LEE'S SUMMIT, JACKSON COUNTY, MO

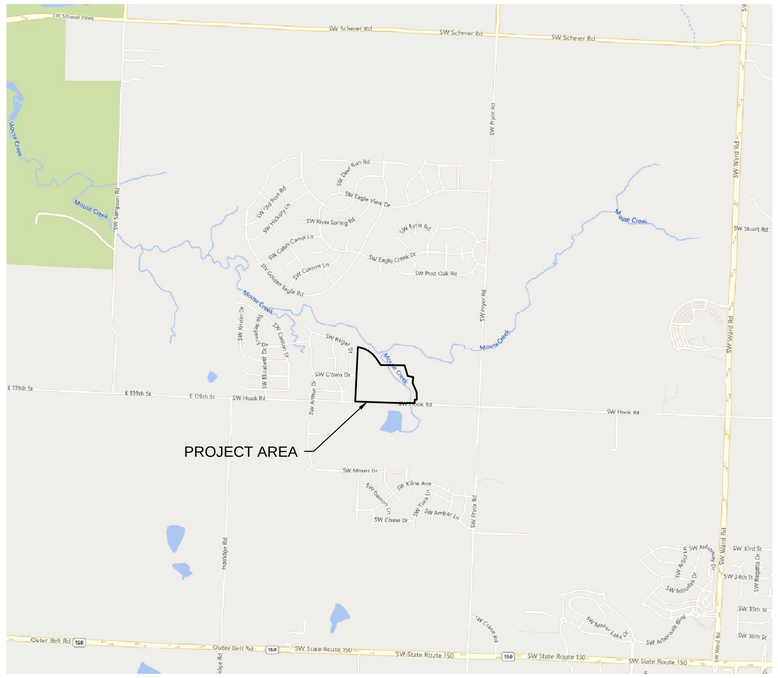


LOCATION MAP
SEC. 23, TWP. 47N., RGE. 32W.
(N.T.S.)

PROJECT TEAM & UTILITY CONTACT LIST	
OWNER / DEVELOPER HUNT MIDWEST REAL ESTATE DEVELOPMENT, INC. 8300 NE UNDERGROUND DRIVE KANSAS CITY, MO 64161 CONTACT: AARON SCHMIDT PHONE: 816.455.2500	UTILITY SERVICE NUMBERS NAME: LEE'S SUMMIT PUBLIC WORKS PHONE: 816-969-1800 NAME: LEE'S SUMMIT WATER & SERVICES DEPARTMENT PHONE: 816-969-1940 NAME: SPIRE (MGE) PHONE: 314-342-0500 NAME: AT&T PHONE: 800-286-8313 NAME: EVERGY PHONE: 816-471-5275 NAME: SPECTRUM (TWC) PHONE: 877-772-2253 NAME: GOOGLE FIBER PHONE: 877-454-6959
ENGINEER OLSSON 1301 BURLINGTON, SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: JULIE E. SELLERS, P.E. PHONE: 816.361.1177 EMAIL: JSELLERS@OLSSON.COM	
SURVEYOR OLSSON 1301 BURLINGTON, SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: JASON ROUDEBUSH, P.L.S. PHONE: 816.361.1177 EMAIL: JROUDEBOUSH@OLSSON.COM	

☐ NOT FOR CONSTRUCTION

☐ REVIEWED FOR CONSTRUCTION



PROPERTY DESCRIPTION

A TRACT OF LAND IN THE SOUTHEAST QUARTER OF SECTION 23, TOWNSHIP 47 NORTH, RANGE 32 WEST OF THE 5TH PRINCIPAL MERIDIAN IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI BEING BOUNDED AND DESCRIBED BY OR UNDER THE DIRECT SUPERVISION OF JASON S. ROUDEBUSH, P.L.S. 2002014092 AS FOLLOWS: COMMENCING AT THE SOUTHEAST CORNER OF SAID SOUTHEAST QUARTER; THENCE NORTH 87°58'53" WEST, ON THE SOUTH LINE OF SAID SOUTHEAST QUARTER, 2,651.35 FEET TO THE SOUTHEAST CORNER OF MONARCH VIEW 1ST PLAT, A SUBDIVISION OF LAND IN SAID LEE'S SUMMIT RECORDED AS INSTRUMENT NUMBER 98 I 69637 IN BOOK I63 AT PAGE 62 IN JACKSON COUNTY RECORDER OF DEEDS OFFICE, ALSO BEING THE SOUTHWEST CORNER OF SAID SOUTHEAST QUARTER; THENCE NORTH 02°43'00" EAST, ON THE WEST LINE OF SAID SOUTHEAST QUARTER, ALSO BEING THE EAST LINE OF SAID MONARCH VIEW 1ST PLAT, 30.00 FEET TO THE NORTHWEST CORNER OF SW HOOK ROAD AS ESTABLISHED BY RIGHT-OF-WAY DEED RECORDED AS INSTRUMENT NUMBER 1999I 00776.39 IN SAID JACKSON COUNTY RECORDER OF DEEDS OFFICE, ALSO BEING THE POINT OF BEGINNING OF THE TRACT OF LAND TO BE HEREIN DESCRIBED; THENCE NORTH 02°43'00" EAST, ON SAID WEST AND EAST LINES, AND ALSO BEING EAST LINE OF MONARCH VIEW 2ND PLAT, A SUBDIVISION OF LAND IN SAID LEE'S SUMMIT, RECORDED AS INSTRUMENT NUMBER 2000I 0047892 IN BOOK I67 AT PAGE 87 IN SAID JACKSON COUNTY RECORDER OF DEEDS OFFICE, 1,163.24 FEET; THENCE LEAVING SAID WEST AND EAST LINES, SOUTH 87°16'25" EAST, 25.54 FEET; THENCE SOUTH 73°15'30" EAST, 121.46 FEET; THENCE SOUTH 62°39'56" EAST, 102.90 FEET; THENCE SOUTH 52°04'22" EAST, 102.90 FEET; THENCE SOUTH 41°28'48" EAST, 102.90 FEET; THENCE SOUTH 33°05'07" EAST, 195.12 FEET; THENCE NORTH 90°00'00" EAST, 510.19 FEET TO A POINT ON THE WESTERLY LINE OF PROPOSED THE RETREAT AT HOOK FARMS; THENCE SOUTH 16°31'39" EAST, ALONG SAID WESTERLY LINE, 238.84 FEET; THENCE SOUTH 78°36'20" EAST, ALONG SAID WESTERLY LINE, 118.51 FEET; THENCE SOUTH 04°39'35" WEST, ALONG SAID WESTERLY LINE, 128.06 FEET; THENCE SOUTH 23°04'06" EAST, ALONG SAID WESTERLY LINE, 206.79 FEET; THENCE SOUTH 02°38'45" EAST, ALONG SAID WESTERLY LINE, 164.78 FEET; THENCE NORTH 87°58'48" WEST, ALONG SAID WESTERLY LINE, 45.85 FEET; THENCE SOUTH 01°54'56" WEST, ALONG SAID WESTERLY LINE, 76.13 FEET; THENCE NORTH 87°58'53" WEST, ALONG SAID WESTERLY LINE, 38.61 FEET TO A POINT ON THE EXISTING NORTHERLY RIGHT-OF-WAY LINE OF SW HOOK ROAD, AS ESTABLISHED BY RIGHT OF WAY DEED RECORDED AS INSTRUMENT NUMBER 2007E0016663 IN SAID JACKSON COUNTY RECORDER OF DEEDS OFFICE; THENCE LEAVING SAID WESTERLY LINE, CONTINUING NORTH 87°58'53" WEST, ALONG SAID EXISTING NORTHERLY RIGHT-OF-WAY LINE, 125.00 FEET; THENCE SOUTH 02°01'07" WEST, ALONG SAID EXISTING NORTHERLY RIGHT-OF-WAY LINE, 10.00 FEET; THENCE NORTH 87°58'53" WEST, ALONG SAID EXISTING NORTHERLY RIGHT-OF-WAY LINE, 853.20 FEET TO THE NORTHWEST CORNER OF SAID RIGHT-OF-WAY DEED, ALSO BEING THE NORTHEAST CORNER OF SW HOOK ROAD, AS ESTABLISHED BY SAID RIGHT-OF-WAY DEED INSTRUMENT NUMBER 1999 I0077639; THENCE CONTINUING NORTH 87°58'53" WEST ALONG THE EXISTING NORTHERLY RIGHT-OF-WAY LINE OF SAID SW HOOK ROAD, 252.00 FEET TO THE POINT OF BEGINNING. CONTAINING 1,085,519 SQUARE FEET OR 24.92 ACRES, MORE OR LESS.

BENCHMARK

JA-74
ELEVATION: 1058.10
N: 978461.2779
E: 2809447.9650
DESCRIPTION: KC METRO ALUMINUM GRS DISK SET IN CONCRETE. THE STATION IS STAMPED JA-74, 1988, AND PROJECTS ABOUT 1 INCH

SHEET LIST	
NUMBER	TITLE
C101	TITLE SHEET
C102	GENERAL NOTES
C103	GENERAL LAYOUT
C104	TYPICAL SECTIONS
C105	GRADING PLAN
C106	GRADING PLAN (FOR REFERENCE)
C107	SWALE 1 PLAN & PROFILE
C108	SWALE 2 PLAN & PROFILE
C109	SW HEARTLAND ROAD PLAN & PROFILE
C110	SW HEARTLAND ROAD PLAN & PROFILE
C111	SW HEARTLAND ROAD PLAN & PROFILE
C112	SW CROWN DRIVE PLAN & PROFILE
C113	SW HEARTLAND COURT PLAN & PROFILE
C114	TRAFFIC CONTROL PLAN
C115	SW HOOK ROAD & SW HEARTLAND ROAD DETAILS
C116	SW HEARTLAND ROAD & SW CROWN DRIVE DETAILS
C117	SW HEARTLAND ROAD & SW HEARTLAND COURT DETAILS
C118	SW HEARTLAND ROAD CUL-DE-SAC DETAILS
C119	SW HEARTLAND COURT CUL-DE-SAC DETAILS
C120	STORM SEWER PLAN & PROFILE (LINE 1)
C121	STORM SEWER PLAN & PROFILE (LINE 1)
C122	STORM SEWER PLAN & PROFILE (LINE 2)
C123	STORM SEWER PLAN & PROFILE (LINE 3)
C124	STORM SEWER PLAN & PROFILE (LINE 4)
C125	STORM SEWER PLAN & PROFILE (LINE 5)
C126	STORM SEWER PLAN & PROFILE (LINE 6)
C127	STORM SEWER PLAN & PROFILE (LINE 6)
C128	WATER QUALITY BASIN PLAN
C129	MASTER DRAINAGE PLAN
C130	DRAINAGE PLAN
C131	DRAINAGE TABLES
C132	DETAIL SHEET
C133	DETAIL SHEET
C134	DETAIL SHEET

OLSSON HAS BEEN RETAINED TO PROVIDE AS-BUILT DRAWINGS FOR THIS PROJECT.

JULIE E. SELLERS, P.E.
CIVIL ENGINEER
MO # PE-2017000367

9/24/21
DATE

CALL BEFORE YOU DIG 1-800-DIG-RITE MISSOURI ONE CALL SYSTEM

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
9/24/21
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	09-20-2021	REVISED PER CITY COMMENTS	

REVISIONS

TITLE SHEET
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
date: 05-05-2021

SHEET
C101

DWG: F:\2019\4001-4500\019-4059-01\40-design\AutoCAD\final plans\Sheets\GNCV\Street & Storm Sewer Plans\C_TTL01_A194059.dwg USER: aabdigoliyev
DATE: Sep 21, 2021 2:26pm XREFS: C_PTBLK_A194059 C_PBNDY_A194059

GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE PLANS IN THEIR POSSESSION ARE THE MOST CURRENT VERSION ISSUED, ARE FULLY COORDINATED WITH ALL SUBCONTRACTORS, AND PRESENT ON SITE AT ALL TIMES. CURRENT PLANS PREPARED BY OLSSON MAY BE OBTAINED AT THE DIRECTION OF OLSSON'S CLIENT. DIRECT REQUESTS TO OLSSON MAY REQUIRE ADDITIONAL AUTHORIZATIONS, AGREEMENTS, AND/OR FEES. PLEASE CONTACT THE ENGINEER FOR INFORMATION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEVIATIONS FROM THESE PLANS UNLESS WRITTEN APPROVAL FROM ENGINEER, OWNER, AND DEVELOPER.
3. ALL WORK AND MATERIALS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE OWNER OR THE OWNER'S REPRESENTATIVE.
4. ALL ESTIMATES OF QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING QUANTITIES AND ITEMS OF WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED TO COMPLETE THE WORK SHOWN IN THE PLANS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS, PAYING ALL FEES, AND FOR OTHERWISE COMPLYING WITH ALL APPLICABLE REGULATIONS GOVERNING THE WORK.
7. THE CONTRACTOR SHALL NOT ENGAGE IN ACTIVITIES THAT MAY ENCROACH ON WATERS OF THE U.S., INCLUDING WETLANDS, UNTIL ANY NECESSARY PERMITS MAY BE OBTAINED. THE CONTRACTOR SHALL REVIEW AND COMPLY WITH ALL CONDITIONS DESCRIBED IN THE PERMIT.
8. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, THE SAFETY OF ALL PERSONS INCLUDING VISITORS AND THE GENERAL PUBLIC, AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY THROUGHOUT THE PROJECT AND NOT BE LIMITED BY WORKING HOURS. ANY CONSTRUCTION OBSERVATION BY THE ENGINEER OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES.
9. PRIOR TO COMMENCEMENT OF WORK THE CONTRACTOR SHALL NOTIFY AND COORDINATE WITH ALL UTILITY COMPANIES AND OBTAIN ANY RELEVANT INFORMATION. NOTIFY ENGINEER OF ANY DISCREPANCIES.
10. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL BOUNDARY CORNERS AND SECTION CORNERS. ANY BOUNDARY CORNER AND/OR SECTION CORNER DISTURBED OR DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE RESET BY A LAND SURVEYOR LICENSED IN THE STATE OF MISSOURI, AT THE CONTRACTOR'S EXPENSE.
11. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ADJACENT PROPERTIES AND SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE DURING CONSTRUCTION. THE CONTRACTOR IS ALSO RESPONSIBLE FOR REPAIRING ANY DAMAGE RESULTING FROM CONSTRUCTION ACTIVITIES.
12. PRIOR TO MOVING OFF THE JOB THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER TO PERFORM A FINAL WALK-THROUGH OF THE CONSTRUCTION SITE.

REFERENCES

1. UNLESS EXPLICITLY DESCRIBED OTHERWISE WITHIN THESE PLANS THE FOLLOWING SHALL APPLY;
   A. ALL CONSTRUCTION, INCLUDING THOSE LISTED BELOW, SHALL CONFORM TO THE LATEST CODES AND ORDINANCES OF LEE'S SUMMIT, MISSOURI.
   B. ALL CONSTRUCTION IN MODOT RIGHT-OF-WAY SHALL CONFORM TO THE LATEST SPECIFICATIONS ADOPTED BY U.S. DEPARTMENT OF TRANSPORTATION AND MODOT.
   C. ALL TRAFFIC CONTROL SIGNAGE SHALL CONFORM WITH THE CURRENT EDITION OF THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
   D. ALL UTILITY EXTENSIONS AND CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE UTILITY COMPANIES..
   E. ALL EXTERIOR PAVEMENT (PCC, ASPHALT, ETC.) SHALL BE IN CONFORMANCE WITH THE SPECIFICATIONS OF LEE'S SUMMIT, MISSOURI AND THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.
4. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE DELIVERY MANAGER AND COORDINATING ANY MAILBOXES THAT MAY BE DISTURBED. FAILURE TO DO SO MAY SUBJECT THE CONTRACTOR TO PROSECUTION BY THE FEDERAL GOVERNMENT.

EXISTING CONDITIONS

1. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS OF THE PROJECT AREA.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING THEIR OWN INVESTIGATIONS AND MAKING THEIR OWN ASSUMPTIONS REGARDING SITE SURFACE AND SUBSURFACE CONDITIONS. THIS INCLUDES THE LOCATION AND CONSISTENCY OF ANY EXISTING ROCK LAYERS UNDERLYING THE PROJECT SITE. CONTACT THE ENGINEER REGARDING ANY DISCREPANCIES THAT MAY AFFECT THE ABILITY TO CONSTRUCT FROM THESE PLANS AS DESIGNED.
3. EXISTING CONDITIONS WERE DETERMINED THROUGH A VARIETY OF METHODS THAT MAY INCLUDE SURVEY, AERIAL IMAGERY, AVAILABLE RECORDS, GIS DATA, ETC. SUBSURFACE CONDITIONS ARE APPROXIMATE AND MAY NOT INCLUDE ALL UTILITIES AND OTHER SITE IMPROVEMENTS PRESENT ON SITE. THE CONTRACTOR SHALL MAKE EXPLORATION EXCAVATIONS AND LOCATE EXISTING UNDERGROUND UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS WHEN CONFLICTS AND DISCREPANCIES ARE FOUND.

CONSTRUCTION

1. THE CONTRACTOR SHALL INSTALL TRAFFIC CONTROL WHILE WORKING IN THE PUBLIC RIGHT-OF-WAY AS SHOWN IN THESE PLANS. IF PLANS ARE NOT PROVIDED, CONTRACTOR SHALL COORDINATE AND PROVIDE CONTROLS TO THE SATISFACTION OF THE RIGHT-OF-WAY OWNER.
2. THE CONTRACTOR SHALL PROTECT ALL TREES OVER 3" CALIPER FROM DAMAGE. NO TREE SHALL BE REMOVED WITHOUT PERMISSION OF THE OWNER, UNLESS SHOWN OTHERWISE ON THESE PLANS.
3. THE CONTRACTOR SHALL DISPOSE ALL WASTE MATERIAL RESULTING FROM THE PROJECT OFF-SITE AND IN STRICT CONFORMANCE WITH ALL LOCAL CODES AND ORDINANCES.
4. ALL MANHOLES, CATCH BASINS, UTILITY VALVES AND METER PITS ARE TO BE ADJUSTED OR REBUILT TO GRADE AS REQUIRED. NOT ALL ADJUSTMENTS ARE INDICATED IN THE PLANS.
5. THE CONTRACTOR SHALL STREET SWEEP OR OTHERWISE CLEAN ALL ACCESS ROUTES TO THE SITE AT CONCLUSION OF THE PROJECT.

SHOP DRAWINGS

1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS A MINIMUM OF 7 DAYS PRIOR TO THE REQUESTED DATE OF APPROVAL. ENGINEER SHALL REVIEW SHOP DRAWINGS OR SAMPLES IN CONFORMANCE WITH THE DESIGN FOR THIS PROJECT AS DESCRIBED IN THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ERRORS OR OMISSIONS IN SHOP DRAWINGS. THE ENGINEER'S REVIEW SHALL NOT EXTEND TO MEANS OR METHODS OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY VARIATION FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS UNLESS CONTRACTOR HAS NOTIFIED ENGINEER OF EACH SUCH VARIATION AT THE TIME OF SUBMISSION, AND OBTAINED ENGINEER'S WRITTEN APPROVAL OF EACH SUCH VARIATION. PRIOR TO SUBMITTING EACH SHOP DRAWING OR SAMPLE, CONTRACTOR SHALL HAVE REVIEWED AND VERIFIED:
   A. ALL FIELD MEASUREMENTS, QUANTITIES, DIMENSIONS, SPECIFIED PERFORMANCE CRITERIA, INSTALLATION REQUIREMENTS, MATERIALS, CATALOG NUMBERS AND SIMILAR INFORMATION WITH RESPECT THERETO;
   B. ALL MATERIALS WITH RESPECT TO INTENDED USE, FABRICATION, SHIPPING, HANDLING, STORAGE, ASSEMBLY AND INSTALLATION PERTAINING TO THE PERFORMANCE OF THE WORK;
   C. ALL INFORMATION RELATIVE TO MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION AND SAFETY PRECAUTIONS AND PROGRAMS INCIDENT THERETO;
   D. CONTRACTOR SHALL ALSO HAVE REVIEWED AND COORDINATED EACH SHOP DRAWING OR SAMPLE WITH OTHER SHOP DRAWINGS AND SAMPLES, AND WITH THE REQUIREMENTS OF THE WORK AND THE CONTRACT DOCUMENTS.
   E. ALL SUBMITTED SHOP DRAWINGS SHALL BEAR A STAMP OR SPECIFIC WRITTEN INDICATION AND SIGNATURE THAT CONTRACTOR HAS FULLY COMPLETED THE ABOVE TASKS.
2. SHOP DRAWINGS AS DESCRIBED ABOVE ARE REQUIRED FOR, BUT NOT LIMITED TO, THE FOLLOWING:
   A. ALL STORM SEWER STRUCTURES TO BE INSTALLED WITH THIS PROJECT.
   B. ANY ITEMS IN THESE PLANS THAT ALLOW FOR AN "APPROVED EQUAL" ALTERNATIVE.

STORM SEWER GENERAL NOTES:

1. STORM STRUCTURES SHALL BE PER CURRENT CITY DETAILS. IF CITY DOES NOT HAVE PUBLISHED DETAILS STRUCTURES SHALL BE PER CURRENT APWA SPECIFICATIONS.
2. PRIOR TO COMMENCEMENT OF WORK THE CONTRACTOR SHALL NOTIFY AND COORDINATE CONSTRUCTION WITH CITY OF LEE'S SUMMIT, MISSOURI.
3. ALL PIPE LENGTHS AND ELEVATIONS ARE CALCULATED LINEARLY FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
4. ALL STRUCTURE DIMENSIONS ARE TO INSIDE FACE OF STRUCTURE.
5. COORDINATES ARE PROVIDED AT THE CENTER OF STRUCTURE. ADDITIONAL COORDINATES PROVIDED ARE PER LOCAL CODES AND ORDINANCES OR AS AN AID WHEN ORIENTING THE BOX DURING INSTALLATION.
6. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT LOCATIONS OF POSSIBLE CONFLICT AND POINTS OF CONNECTION PRIOR TO ANY CONSTRUCTION OF STORM SEWER.
7. STORM SEWER TRENCHES SHALL BE CONSTRUCTED SUCH THAT UNDISTURBED EXISTING SOIL OR FILL COMPACTED TO 95% PROCTOR DENSITY IS AT A DEPTH THAT IS 18" ABOVE TOP OF PROPOSED PIPE.
8. STRUCTURE INVERT CHANNELS SHALL BE SMOOTH, CIRCULAR, AND CONFORMING TO ½ THE ADJACENT PIPE SECTION (INVERT TO CENTER). CHANGES IN DIRECTION OF FLOW SHALL BE MADE WITH A SMOOTH CURVE AND MAINTAIN SHAPE THROUGHOUT. CHANGES IN GRADE OF ADJACENT PIPES SHALL BE TRANSITIONED SMOOTHLY AND EVENLY THROUGH THE STRUCTURE.
9. PIPE PENETRATIONS SHALL BE GROUTED TO ENSURE WATERTIGHT SEALS.
10. MAINTAIN MINIMUM DEPTH OF COVER PER APWA 5606.06

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	AS-BUILT
	STREET			
	EXCAVATION	C.Y.	4389	
	EMBANKMENT	C.Y.	9192	
	SUBGRADE STABILIZATION (6" FLYASH TREATMENT)	S.Y.	8579	
	6" ASPHALT PAVEMENT	S.Y.	6895	
	CONCRETE CURB & GUTTER (CG-2)	L.F.	4467	
	CONCRETE CURB & GUTTER (CG-1 DRY) 1	L.F.	153	
	MILL & OVERLAY	S.Y.	68	
	CONCRETE SIDEWALK	L.F.	88	1
	ADA RAMP	EA.	8	
	STOP SIGNS	EA.	3	
	STREET NAME SIGNS	EA.	6	1
	STORM			
	STD. CURB INLET (5'x3' INSIDE)	EA.	14	
	STD. CURB INLET (5'x4' INSIDE)	EA.	1	
	STD. STORM MANHOLE (4' DIA. INSIDE)	EA.	1	
	STD. FIELD INLET (4'x4' INSIDE)	EA.	6	
	WATER QUALITY BASIN OUTLET STRUCTURE	EA.	1	
	12" PVC	L.F.	82.41	
	15" HDPE	L.F.	1,460.89	
	18" HDPE	L.F.	436.92	
	24" HDPE	L.F.	422.15	
	30" HDPE	L.F.	200.93	
	12" HDPE END SECTION	EA.	1	
	24" HDPE END SECTION	EA.	1	
	30" HDPE END SECTION	EA.	1	
	RIPRAP	S.Y.	44.45	
	TURF REINFORCEMENT MAT	S.Y.	91	

SUMMARY OF QUANTITIES AS INDICATED ABOVE AND ANY QUANTITIES AS SHOWN WITHIN THE PLANS HAVE BEEN PROVIDED FOR PERMITTING PURPOSES ONLY AND ARE NOT INTENDED FOR USE IN PREPARATION OF CONTRACT DOCUMENTS. QUANTITIES INTENDED FOR, BUT NOT LIMITED TO, THE PREPARATION OF PROPOSALS AND BID DOCUMENTS SHALL BE INDEPENDENTLY EVALUATED BY THE ESTIMATING PARTY BASED UPON THE CONTENTS OF THESE PLANS.

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
9/24/21
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	08-26-2021	REVISED PER CITY COMMENTS	

REVISIONS

GENERAL NOTES
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

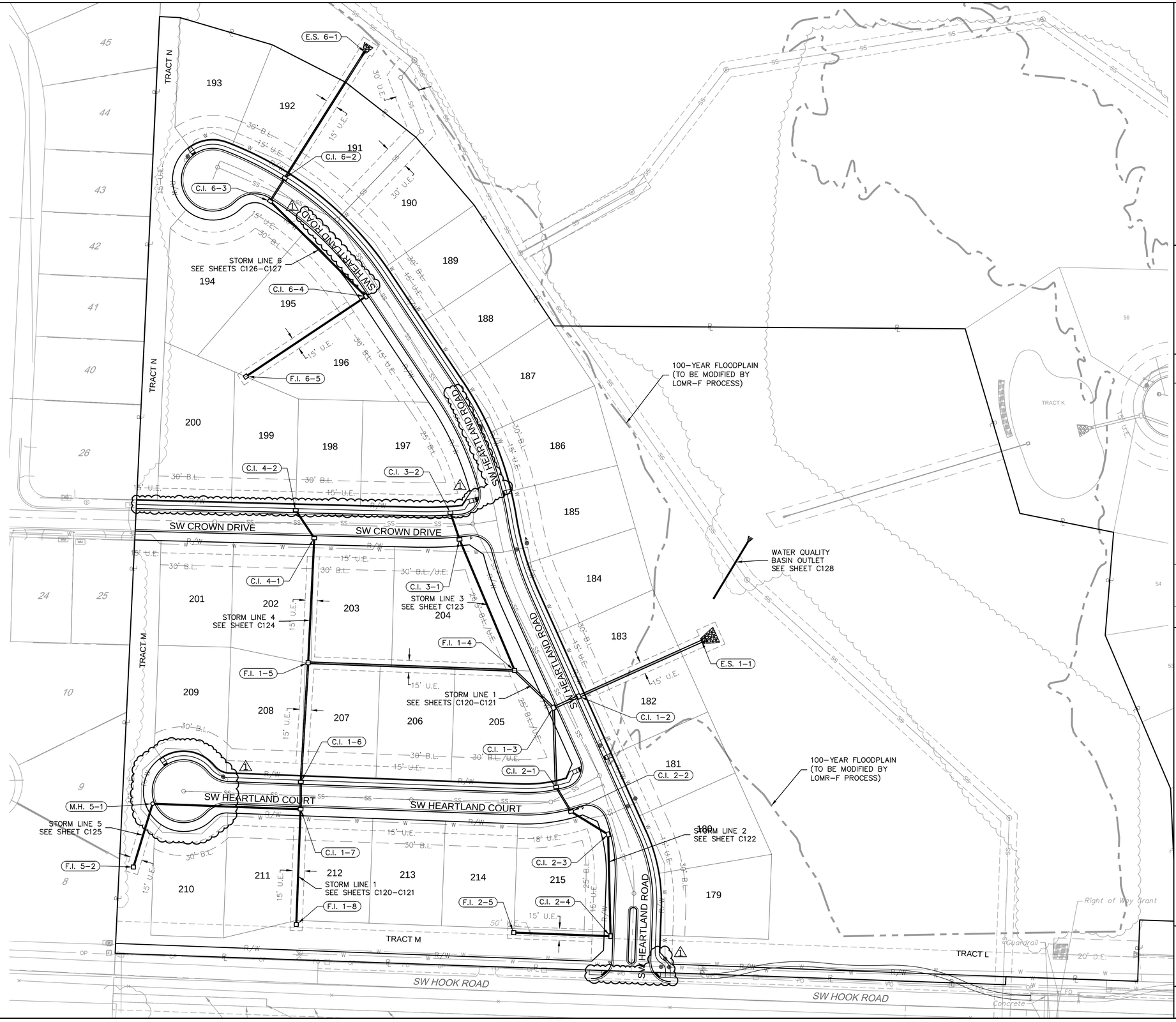
LEE'S SUMMIT, MO

2021

drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
date: 05-05-2021

SHEET
C102

DWG: F:\2019\4001-4500\019-4059-a\40-design\AutoCAD\final plans\Sheets\GNCV\Street & Storm Sewer Plans\C_TTL01_A194059.dwg USER: aabdigaliyev
DATE: Sep 21, 2021 2:26pm XREFS: C_PTBLK_A194059 C_PBNDY_A194059



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REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	08-26-2021	REVISED PER CITY COMMENTS	

REVISIONS

GENERAL LAYOUT
STREET & STORM SEWER PLANS

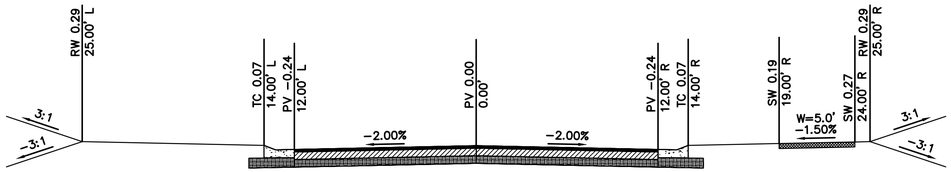
THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by:	B.M.W./A.A.
checked by:	B.M.W.
designed by:	B.M.W./A.A.
QA/QC by:	J.E.S.
project no.:	A19-4059
date:	05-05-2021

SHEET
C103

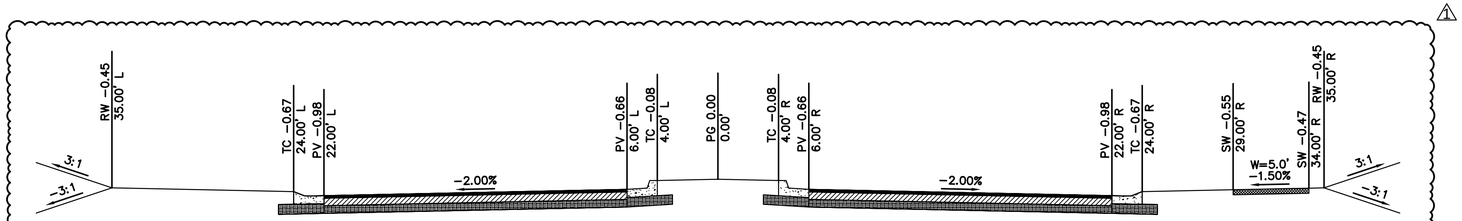


SW HEARTLAND ROAD, SW HEARTLAND COURT & SW CROWN DRIVE

RESIDENTIAL LOCAL

N.T.S.

2" TYPE 5 OR 6 ASPHALTIC CONCRETE SURFACE
4" TYPE 5 ASPHALTIC CONCRETE BASE COURSE
6" MIN. MODOT TYPE 5 STONE BASE
6" MIN. FLYASH STABILIZED SUBGRADE
CG-2 CURB AND GUTTER



SW HEARTLAND ROAD ENTRY

RESIDENTIAL LOCAL

N.T.S.

2" TYPE 5 OR 6 ASPHALTIC CONCRETE SURFACE
4" TYPE 5 ASPHALTIC CONCRETE BASE COURSE
6" MIN. MODOT TYPE 5 STONE BASE
6" MIN. FLYASH STABILIZED SUBGRADE
CG-2 CURB AND GUTTER (AT OUTSIDE EDGE OF LANE)
CG-1 DRY CURB AND GUTTER (AT MEDIAN)

DWG: F:\2019\4001-4500\019-4059-a\40-design\AutoCAD\final plans\Sheets\GNCV\Street & Storm Sewer Plans\C_TYP01_A194059.dwg USER: aabdigaliyev
DATE: Sep 21, 2021 2:27pm XREFS: C_PTBLK_A194059

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
9/24/21
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	08-26-2021	REVISED PER CITY COMMENTS	

REVISIONS

TYPICAL SECTIONS
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
date: 05-05-2021

SHEET
C104

GENERAL NOTES:

1. CONTRACTOR SHALL ADHERE TO THE "DESIGN AND CONSTRUCTION MANUAL" SECTION 2100 AS ADOPTED BY THE CITY OF LEE'S SUMMIT (LATEST EDITION), FOR EXCAVATION AND EMBANKMENT WORK WITHIN THE PROPOSED RIGHT-OF-WAY.

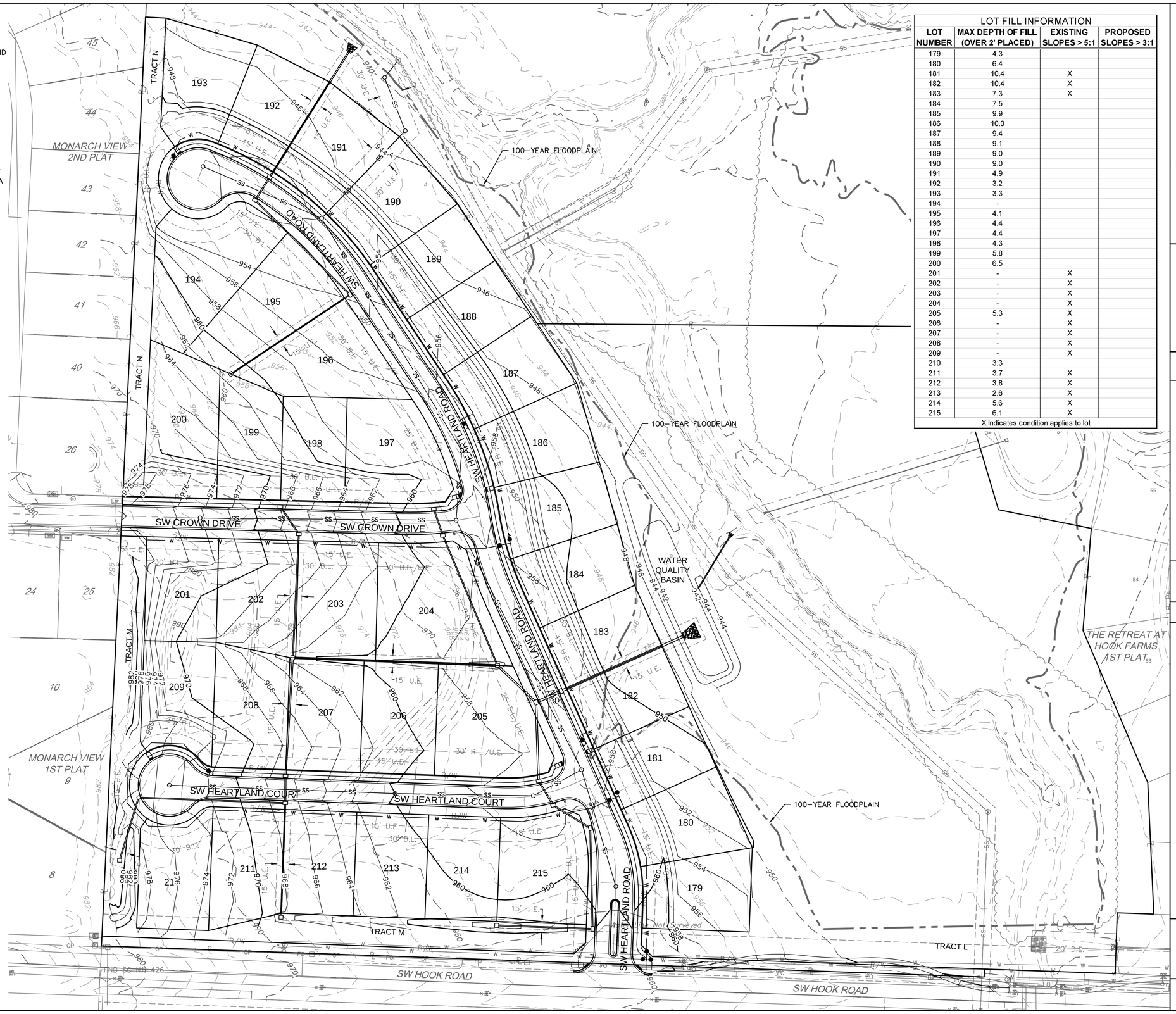
2. AREAS OF CONSTRUCTION SHALL BE STRIPPED OF ALL VEGETATION, ORGANIC MATTER AND TOPSOIL TO A DEPTH AS RECOMMENDED BY GEOTECHNICAL ENGINEER AND OR TESTING AGENCY. SOILS REMOVED DURING SITE STRIPPING SHOULD BE EVALUATED TO DETERMINE IF PORTIONS OF THE TOPSOIL STRATUM MAY BE UTILIZED AS STRUCTURAL FILL WITHIN PAVEMENT AREAS. ANY MATERIAL NOT DEEMED AS SUITABLE FILL MATERIAL BY THE GEOTECHNICAL ENGINEER AND OR TESTING AGENCY SHALL BE REMOVED FROM THE JOB SITE BY THE CONTRACTOR AT HIS EXPENSE.

3. ALL EMBANKMENT OUTSIDE OF RIGHT-OF-WAY SHOULD BE PLACED IN CONTROLLED LIFTS HAVING A MAXIMUM LOOSE LIFT THICKNESS OF 8". EMBANKMENT SHOULD BE COMPACTED TO A MINIMUM OF 95% OF THE MATERIALS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 (STANDARD PROCTOR COMPACTION). MOISTURE CONTENT OF THE FILL AT THE TIME OF COMPACTION SHALL BE WITHIN A RANGE OF -0 TO +4 PERCENT OF OPTIMUM MOISTURE CONTENT.

EARTHWORK QUANTITIES		
LOCATION	CUT (C.Y.)	FILL (C.Y.)
STREET	4,389	9,192
SITE	45,873	31,198
TOTAL	50,262	40,390

EARTHWORK QUANTITIES NOTES:
1. EARTHWORK QUANTITIES BASED ON FINISHED GRADE SURFACE AND DO NOT INCLUDE ADJUSTMENTS FOR TOPSOIL AND SHRINKAGE.

2. EARTHWORK QUANTITIES DO NOT TAKE INTO CONSIDERATION EXCAVATION, REMOVAL AND DISPOSAL OF MATERIAL DEEMED UNSUITABLE BY A GEOTECHNICAL ENGINEER. THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR EXCAVATION, REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL AND FOR REPLACING IT WITH SUITABLE MATERIAL.



LOT FILL INFORMATION			
LOT NUMBER	MAX DEPTH OF FILL (OVER 2' PLACED)	EXISTING SLOPES > 5:1	PROPOSED SLOPES > 3:1
179	4.3		
180	6.4		
181	10.4	X	
182	10.4	X	
183	7.3	X	
184	7.5		
185	9.9		
186	10.0		
187	9.4		
188	9.1		
189	9.0		
190	9.0		
191	4.9		
192	3.2		
193	3.3		
194	-		
195	4.1		
196	4.4		
197	4.4		
198	4.3		
199	5.8		
200	6.5		
201	-	X	
202	-	X	
203	-	X	
204	-	X	
205	5.3	X	
206	-	X	
207	-	X	
208	-	X	
209	-	X	
210	3.3		
211	3.7	X	
212	3.8	X	
213	2.6	X	
214	5.6	X	
215	6.1	X	

X Indicates condition applies to lot

0' 30' 60' 120'
SCALE IN FEET

LEGEND	
100	EXISTING INDEX CONTOURS
100	EXISTING INTERMEDIATE CONTOURS
100	PROPOSED INDEX CONTOURS
100	PROPOSED INTERMEDIATE CONTOURS

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
9/24/21
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	08-26-2021	REVISED PER CITY COMMENTS	

REVISIONS

GRADING PLAN
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
date: 05-05-2021

SHEET
C105

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GENERAL NOTES:

1. CONTRACTOR SHALL ADHERE TO THE "DESIGN AND CONSTRUCTION MANUAL" SECTION 2100 AS ADOPTED BY THE CITY OF LEE'S SUMMIT (LATEST EDITION), FOR EXCAVATION AND EMBANKMENT WORK WITHIN THE PROPOSED RIGHT-OF-WAY.

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4. REFER TO HOOK FARMS 2ND PLAT PLANS FOR MORE DETAILS ABOUT EARTHWORK SHOWN ON THIS SHEET. ⚠1

EARTHWORK QUANTITIES		
LOCATION	CUT (C.Y.)	FILL (C.Y.)
FUTURE PHASE	0	54,547

FUTURE PHASE EARTHWORK CONTRIBUTIONS	
LOCATION	FILL (C.Y.)
HOOK FARMS 2ND PLAT	42,194
RETREAT AT HOOK FARMS 2ND PLAT	9,872
EXCESS	2,481

EARTHWORK QUANTITIES NOTES:
1. EARTHWORK QUANTITIES BASED ON FINISHED GRADE SURFACE AND DO NOT INCLUDE ADJUSTMENTS FOR TOPSOIL AND SHRINKAGE.

2. EARTHWORK QUANTITIES DO NOT TAKE INTO CONSIDERATION EXCAVATION, REMOVAL AND DISPOSAL OF MATERIAL DEEMED UNSUITABLE BY A GEOTECHNICAL ENGINEER. THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR EXCAVATION, REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL AND FOR REPLACING IT WITH SUITABLE MATERIAL.

N

0' 30' 60' 120'
SCALE IN FEET

Ex. Sanitary Esmt. Doc.# 1999I 0090582

SW FARMHOUSE ROAD

SW FARMHOUSE ROAD

SW TRACKER LANE

SW HAYLOFT LANE

SW SILO CIRCLE

SW HOOK FARM DRIVE

HOOK FARMS 2ND PLAT

TRACT N

TRACT O

100-YEAR FLOODPLAIN

FLOODPLAIN ELEVATION 938.55

LEGEND	
100	EXISTING INDEX CONTOURS
100	EXISTING INTERMEDIATE CONTOURS
100	PROPOSED INDEX CONTOURS
100	PROPOSED INTERMEDIATE CONTOURS
100	HOOK FARMS 2ND PLAT INDEX CONTOURS
100	HOOK FARMS 2ND PLAT INTERMEDIATE CONTOURS

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PROFESSIONAL ENGINEER

REVISIONS		
REV. NO.	DATE	REVISIONS DESCRIPTION
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GRADING PLAN (FOR REFERENCE)
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by:	B.M.W./A.A.
checked by:	B.M.W.
designed by:	B.M.W./A.A.
QA/QC by:	J.E.S.
project no.:	A19-4059
date:	05-05-2021

SHEET
C106

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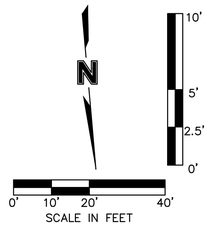
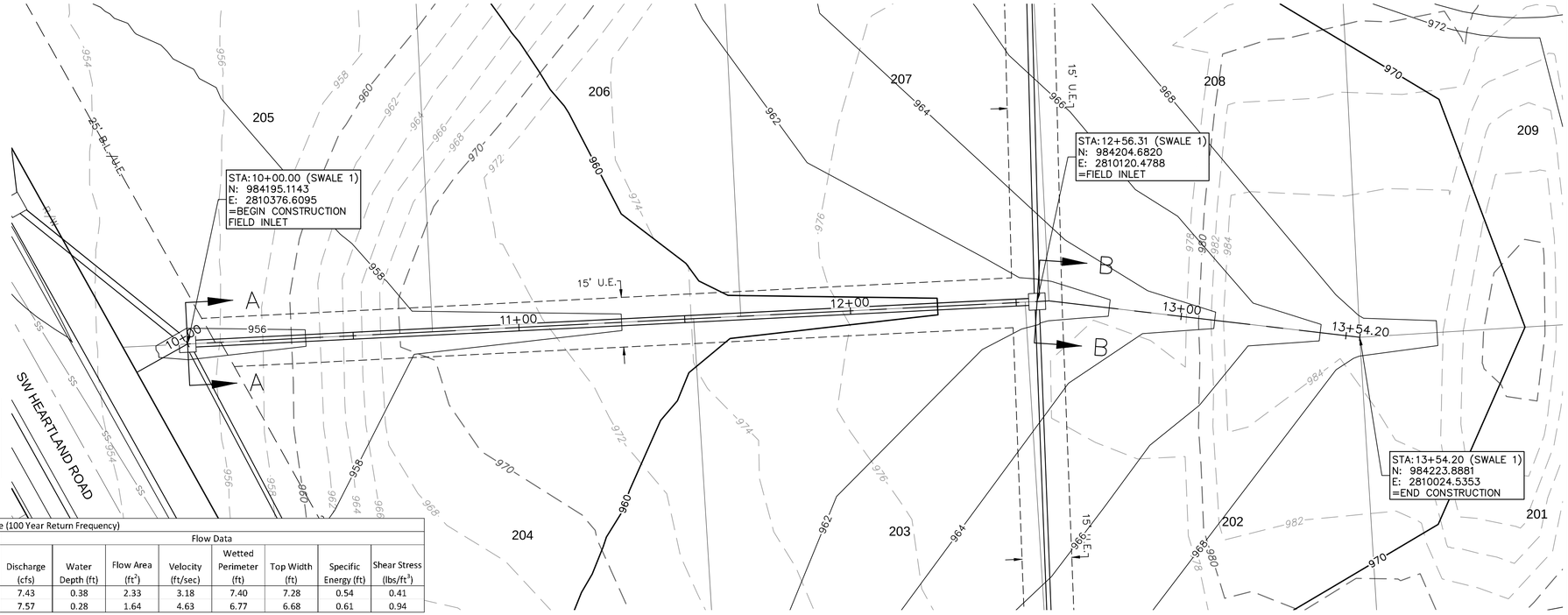
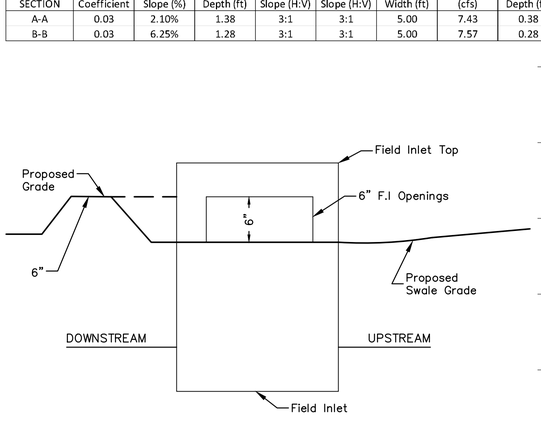




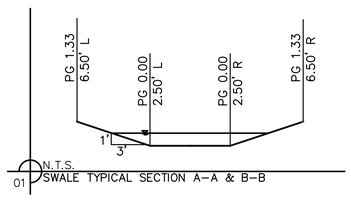
Swale Drainage Area Table (100 year Return Frequency)						
Section	Drainage Area (ac.)	C	Tc (min)	i (in/hr)	K	Peak Flow (cfs)
A-A	1.13	0.51	5	10.32	1.25	7.43
B-B	1.15	0.51	5	10.32	1.25	7.57

Swale Design Table (100 Year Return Frequency)													
Section Data							Flow Data						
SECTION	Mannings Coefficient	Channel Slope (%)	Swale Depth (ft)	Left Side Slope (H:V)	Right Side Slope (H:V)	Bottom Width (ft)	Discharge (cfs)	Water Depth (ft)	Flow Area (ft^2)	Velocity (ft/sec)	Wetted Perimeter (ft)	Top Width (ft)	Specific Energy (ft)	Shear Stress (lbs/ft^3)
A-A	0.03	2.10%	1.38	3:1	3:1	5.00	7.43	0.38	2.33	3.18	7.40	7.28	0.54	0.41
B-B	0.03	6.25%	1.28	3:1	3:1	5.00	7.57	0.28	1.64	4.63	6.77	6.68	0.61	0.94



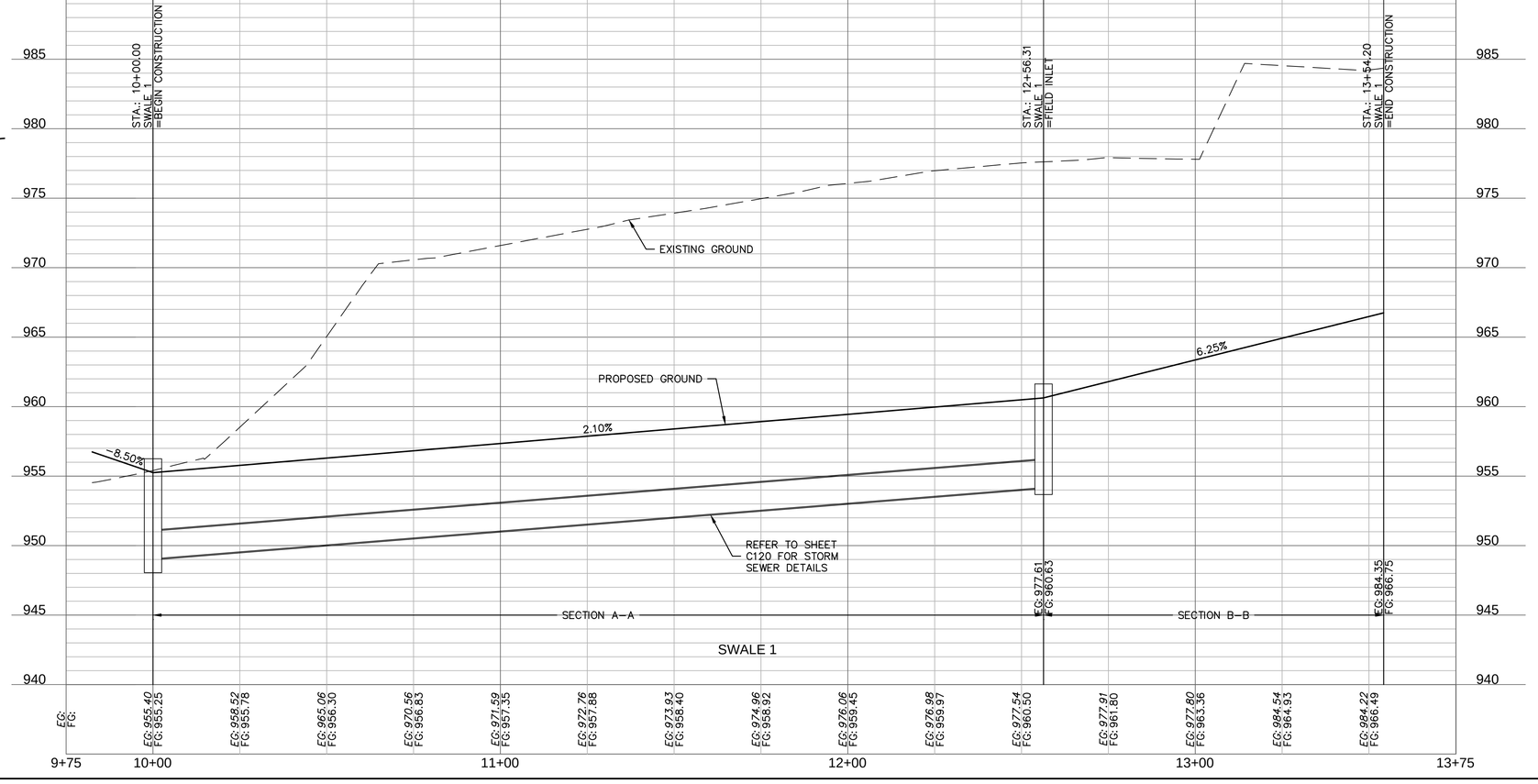
NOTE: INCLUDE SUMP PER ABOVE DETAIL WHERE FIELD INLETS ARE LOCATED WITHIN SWALES.

SUMP DETAIL
N.T.S.



SWALE GRADING NOTES:

1. CONTRACTOR SHALL CONSTRUCT SWALES WITH MINIMUM SLOPE, WIDTH AND DEPTH AS SHOWN IN THE SWALE DESIGN TABLES.
2. AS–BUILT SURVEY IS REQUIRED/APPROVED BY CITY FOR ALL SWALES AND PRIOR TO APPROVAL FOR ANY BUILDING FOUNDATION PERMIT. CONTRACTOR SHALL BE REQUIRED TO REGRADE SWALES AT CONTRACTOR'S EXPENSE IF ABOVE REQUIREMENTS ARE NOT MET.



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JULIE ELAINE SELLERS
NUMBER PE-2017000367
9/24/21
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	08-26-2021	REVISED PER CITY COMMENTS	

REVISIONS

SWALE 1 PLAN & PROFILE
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
date: 05-05-2021

SHEET
C107

DWG: F:\2019\4001-4500\019-4059-a\40-design\AutoCAD\final plans\Sheets\GNCV\Street & Storm Sewer Plans\C_SWL01_A194059.dwg USER: aabdigaliyev
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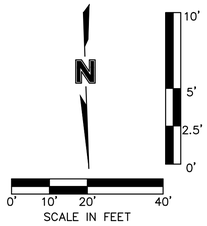
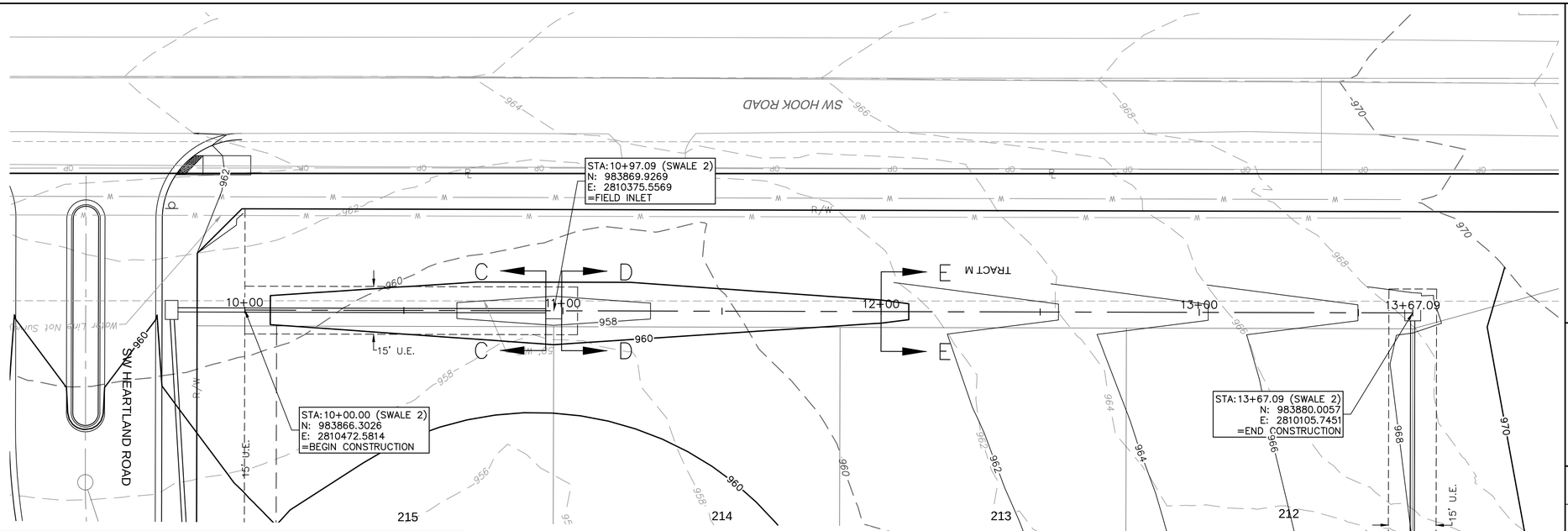


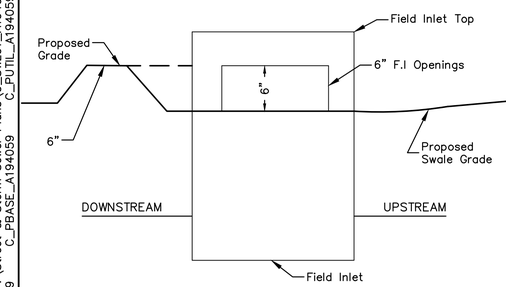


Swale Design Table (100 Year Return Frequency)

Section Data							Flow Data							
SECTION	Mannings Coefficient	Channel Slope (%)	Swale Depth (ft)	Left Side Slope (H:V)	Right Side Slope (H:V)	Bottom Width (ft)	Discharge (cfs)	Water Depth (ft)	Flow Area (ft^2)	Velocity (ft/sec)	Wetted Perimeter (ft)	Top Width (ft)	Specific Energy (ft)	Shear Stress (lbs/ft^3)
C-C	0.03	2.25%	1.14	3:1	3:1	5.00	1.38	0.14	0.76	1.82	5.89	5.84	0.19	0.18
D-D	0.03	2.25%	1.24	3:1	3:1	5.00	3.62	0.24	1.39	2.60	6.67	6.60	0.35	0.29
E-E	0.03	4.25%	1.14	3:1	3:1	5.00	1.97	0.14	0.76	2.60	5.89	5.84	0.24	0.34

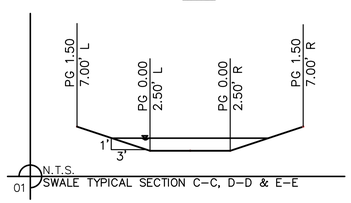
Swale Drainage Area Table (100 year Return Frequency)

Section	Drainage Area (ac.)	C	Tc (min)	i (in/hr)	K	Peak Flow (cfs)
C-C	0.21	0.51	5	10.32	1.25	1.38
D-D	0.55	0.51	5	10.32	1.25	3.62
E-E	0.30	0.51	5	10.32	1.25	1.97



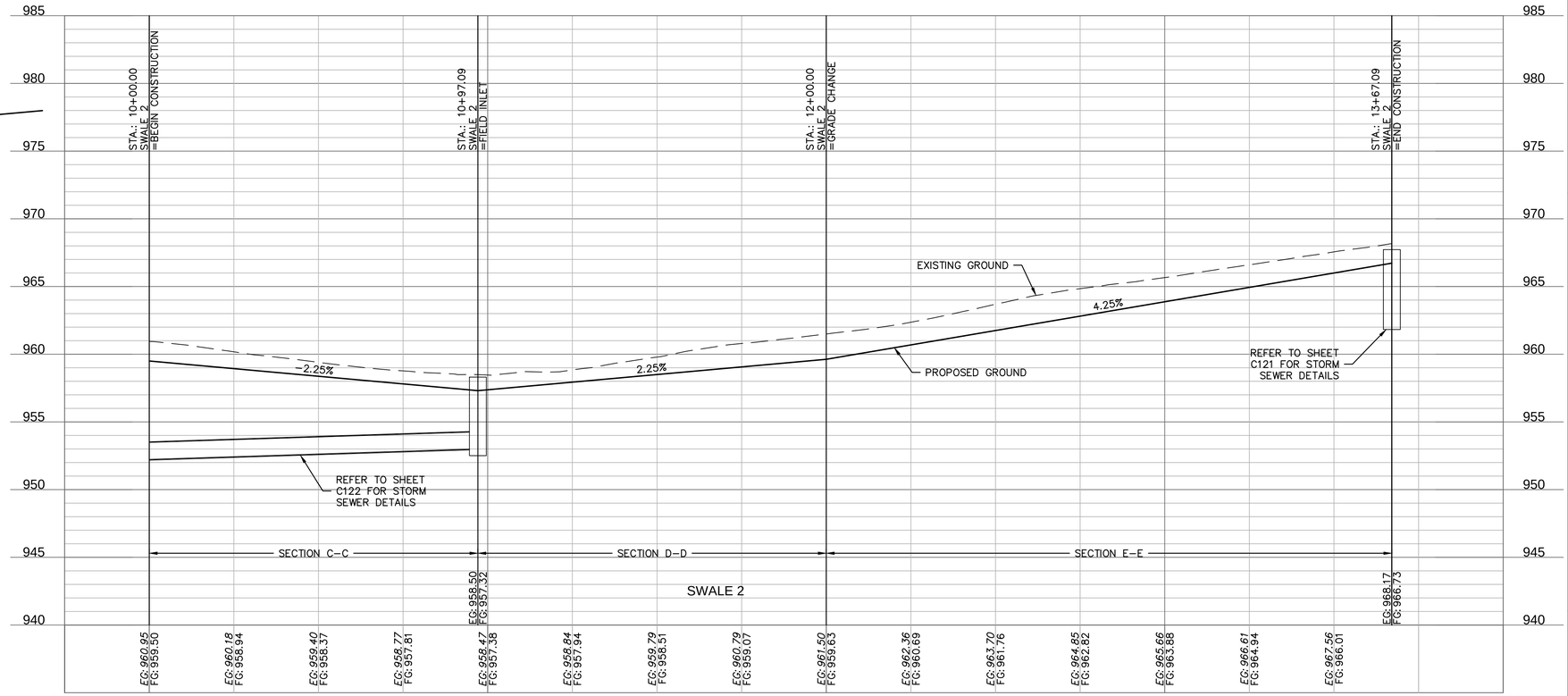
NOTE: INCLUDE SUMP PER ABOVE DETAIL WHERE FIELD INLETS ARE LOCATED WITHIN SWALES.

SUMP DETAIL
N.T.S.



SWALE GRADING NOTES:

1. CONTRACTOR SHALL CONSTRUCT SWALES WITH MINIMUM SLOPE, WIDTH AND DEPTH AS SHOWN IN THE SWALE DESIGN TABLES.
2. AS-BUILT SURVEY IS REQUIRED/APPROVED BY CITY FOR ALL SWALES AND PRIOR TO APPROVAL FOR ANY BUILDING FOUNDATION PERMIT. CONTRACTOR SHALL BE REQUIRED TO REGRADE SWALES AT CONTRACTOR'S EXPENSE IF ABOVE REQUIREMENTS ARE NOT MET.



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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
9/24/21
PROFESSIONAL ENGINEER

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1	09-29-2021	REVISED PER CITY COMMENTS	

REVISIONS

SWALE 2 PLAN & PROFILE
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
date: 05-05-2021

SHEET
C108

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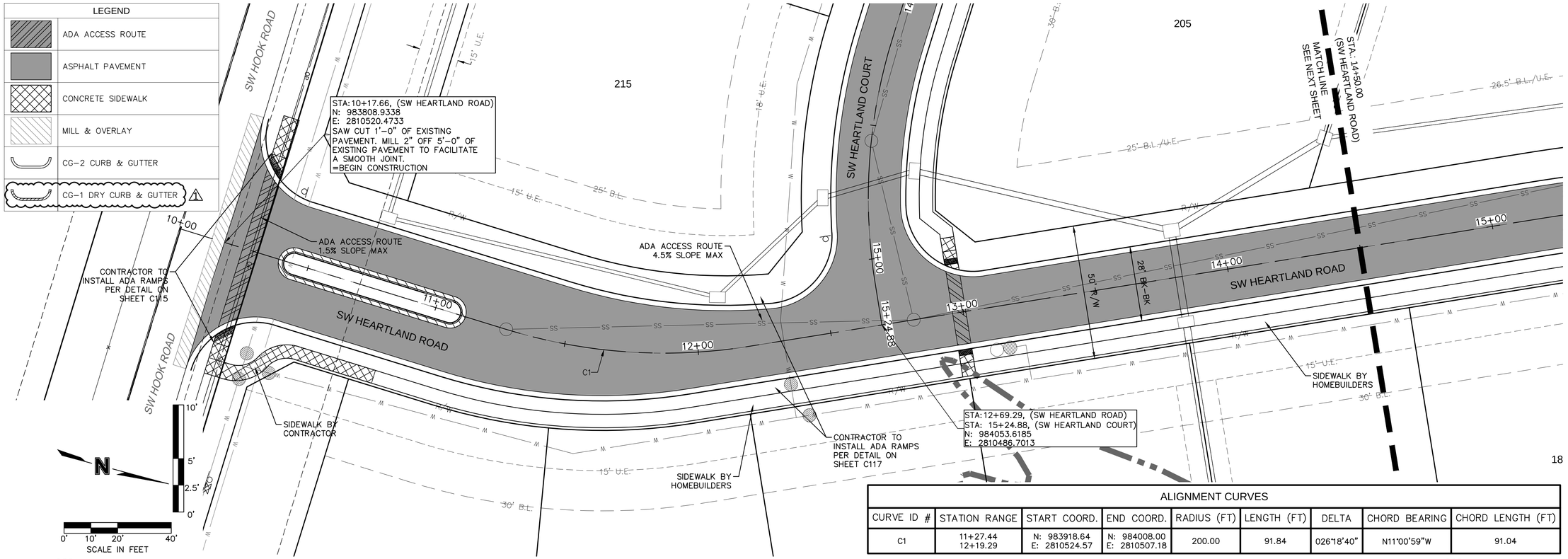
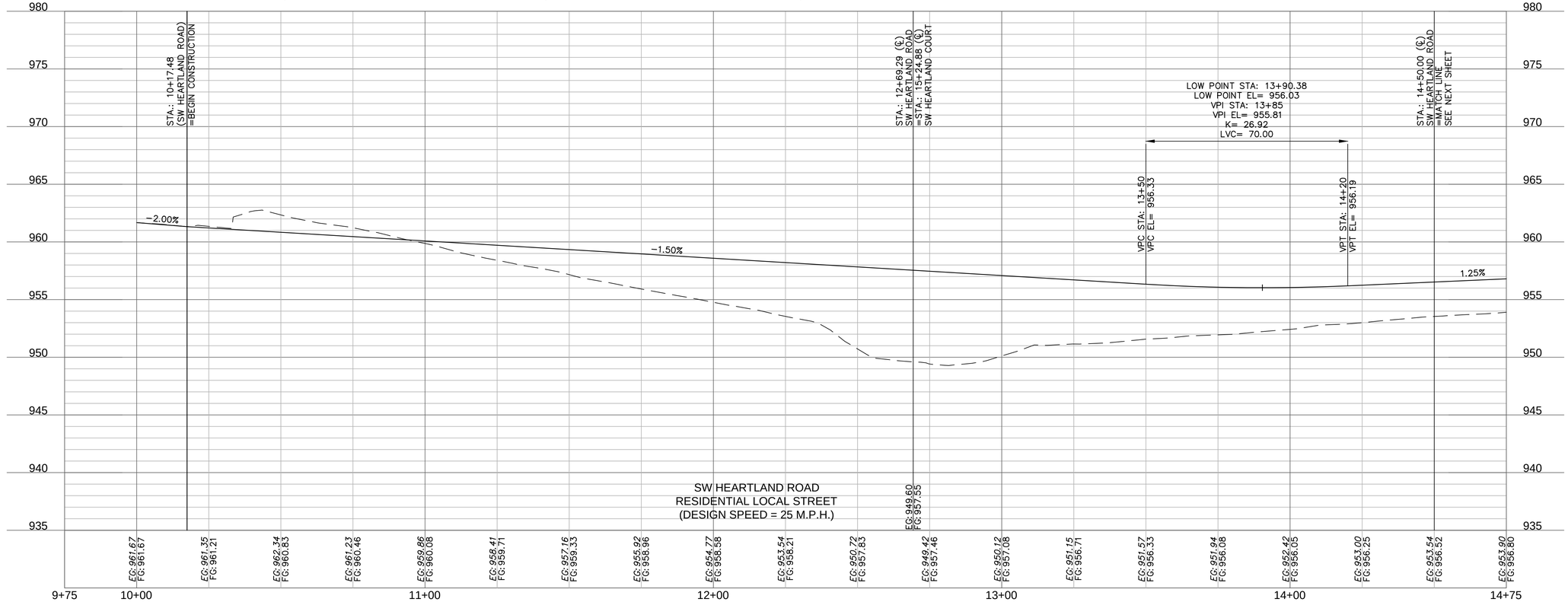
DATE: Sep 21, 2021 2:29pm XREFS: C_PTBLK_A194059 C_PSURF_A194059 C_PBASE_A194059 C_PUTIL_A194059 C_XBASE_A194059
USER: aabdigaliyev C_PBNDY_A194059

LEGEND	
	ADA ACCESS ROUTE
	ASPHALT PAVEMENT
	CONCRETE SIDEWALK
	MILL & OVERLAY
	CG-2 CURB & GUTTER
	CG-1 DRY CURB & GUTTER ⚠1



ALIGNMENT CURVES								
CURVE ID #	STATION RANGE	START COORD.	END COORD.	RADIUS (FT)	LENGTH (FT)	DELTA	CHORD BEARING	CHORD LENGTH (FT)
C1	11+27.44 12+19.29	N: 983918.64 E: 2810524.57	N: 984008.00 E: 2810507.18	200.00	91.84	026°18'40"	N11°00'59"W	91.04



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REVISIONS

SW HEARTLAND ROAD PLAN & PROFILE
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

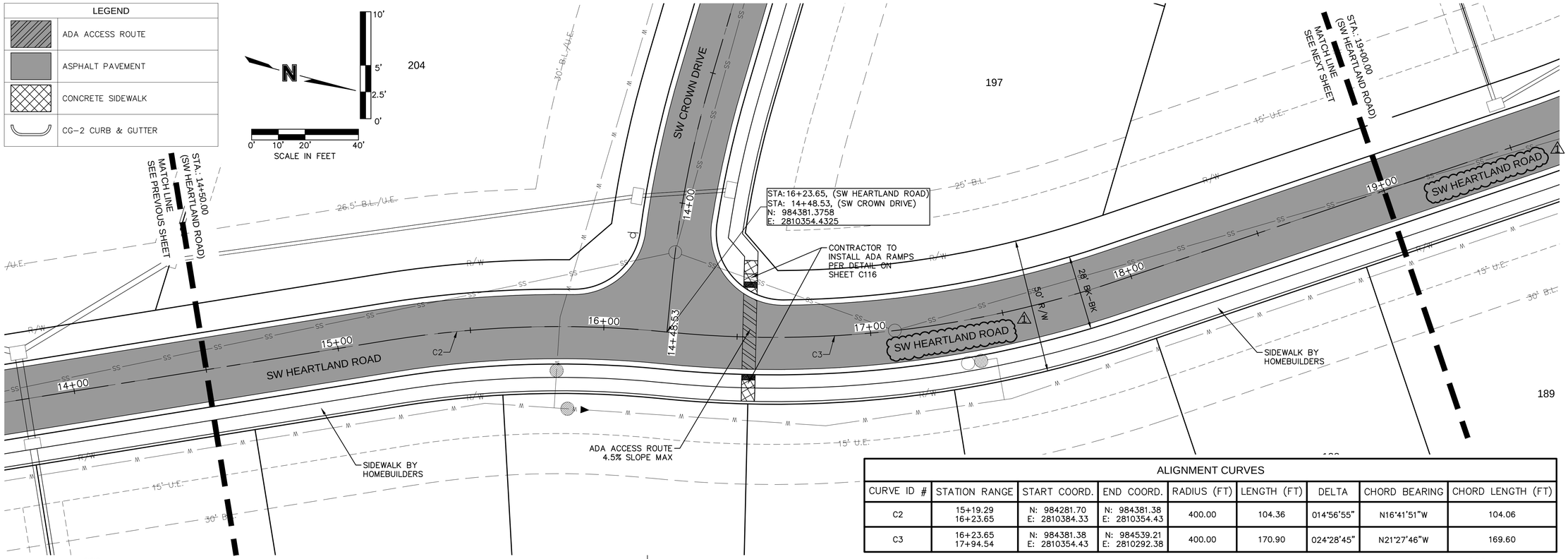
2021

drawn by:	B.M.W./A.A.
checked by:	B.M.W.
designed by:	B.M.W./A.A.
QA/QC by:	J.E.S.
project no.:	A19-4059
date:	05-05-2021

SHEET
C109

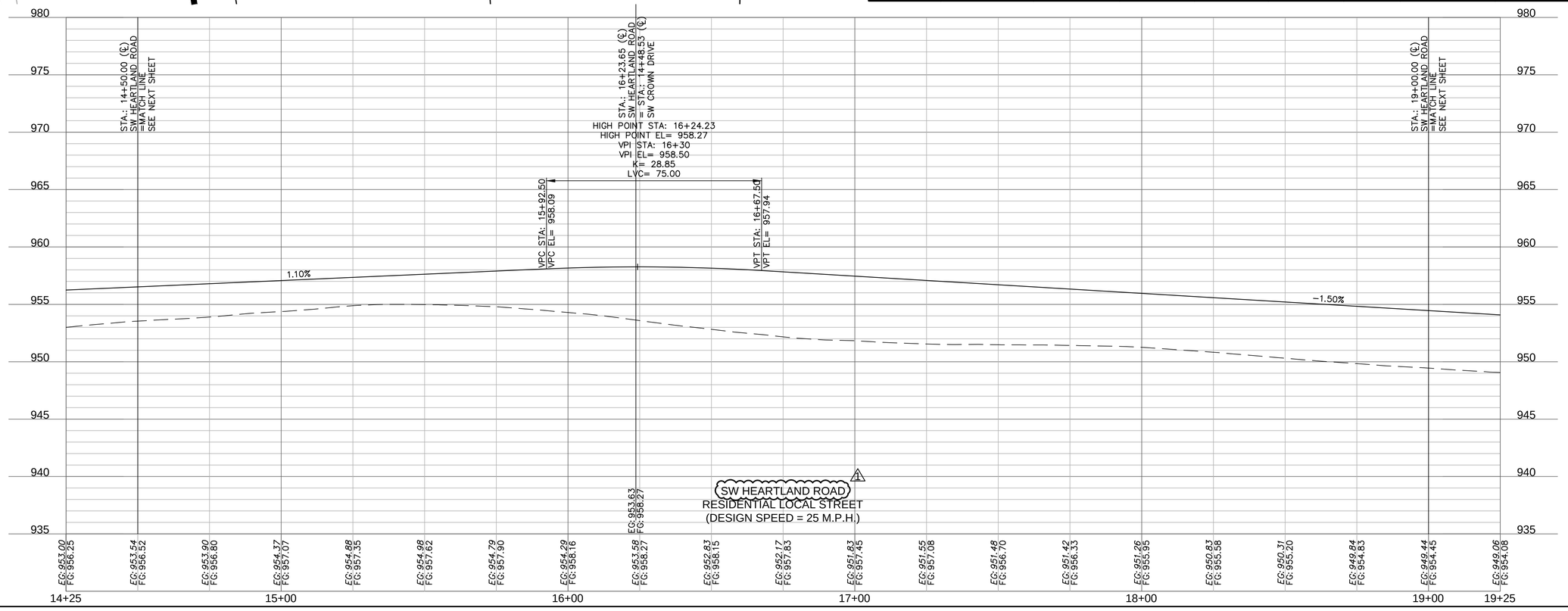
DWG: F:\2019\4001-4500\019-4059-01\40-design\AutoCAD\final plans\Sheets\GNCV\Street & Storm Sewer Plans\C_RPP01_A194059.dwg
DATE: Sep 21, 2021 2:29pm
XREFS: C_PTBLK_A194059 C_PSURF_A194059 C_PBASE_A194059 C_PUTIL_A194059
USER: aabdigaliyev
C_PBNDY_A194059
C_PPATT_A194059

LEGEND	
	ADA ACCESS ROUTE
	ASPHALT PAVEMENT
	CONCRETE SIDEWALK
	CG-2 CURB & GUTTER



ALIGNMENT CURVES

CURVE ID #	STATION RANGE	START COORD.	END COORD.	RADIUS (FT)	LENGTH (FT)	DELTA	CHORD BEARING	CHORD LENGTH (FT)
C2	15+19.29 16+23.65	N: 984281.70 E: 2810384.33	N: 984381.38 E: 2810354.43	400.00	104.36	014°56'55"	N16°41'51"W	104.06
C3	16+23.65 17+94.54	N: 984381.38 E: 2810354.43	N: 984539.21 E: 2810292.38	400.00	170.90	024°28'45"	N21°27'46"W	169.60



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JULIE ELAINE SELLERS
NUMBER PE-2017000367
9/24/21
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	09-29-2021	REVISED PER CITY COMMENTS	

REVISIONS

SW HEARTLAND ROAD PLAN & PROFILE
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

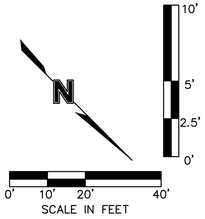
2021

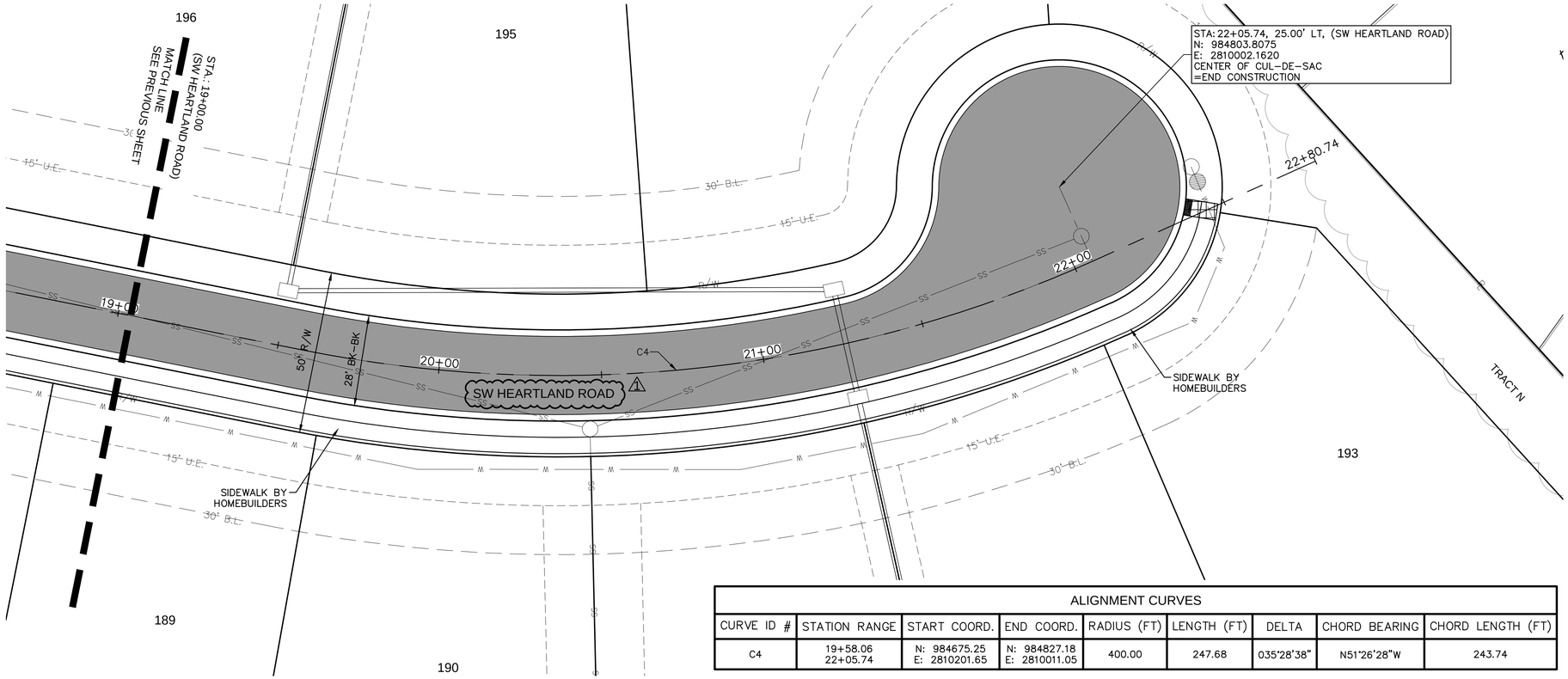
drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
date: 05-05-2021

SHEET
C110

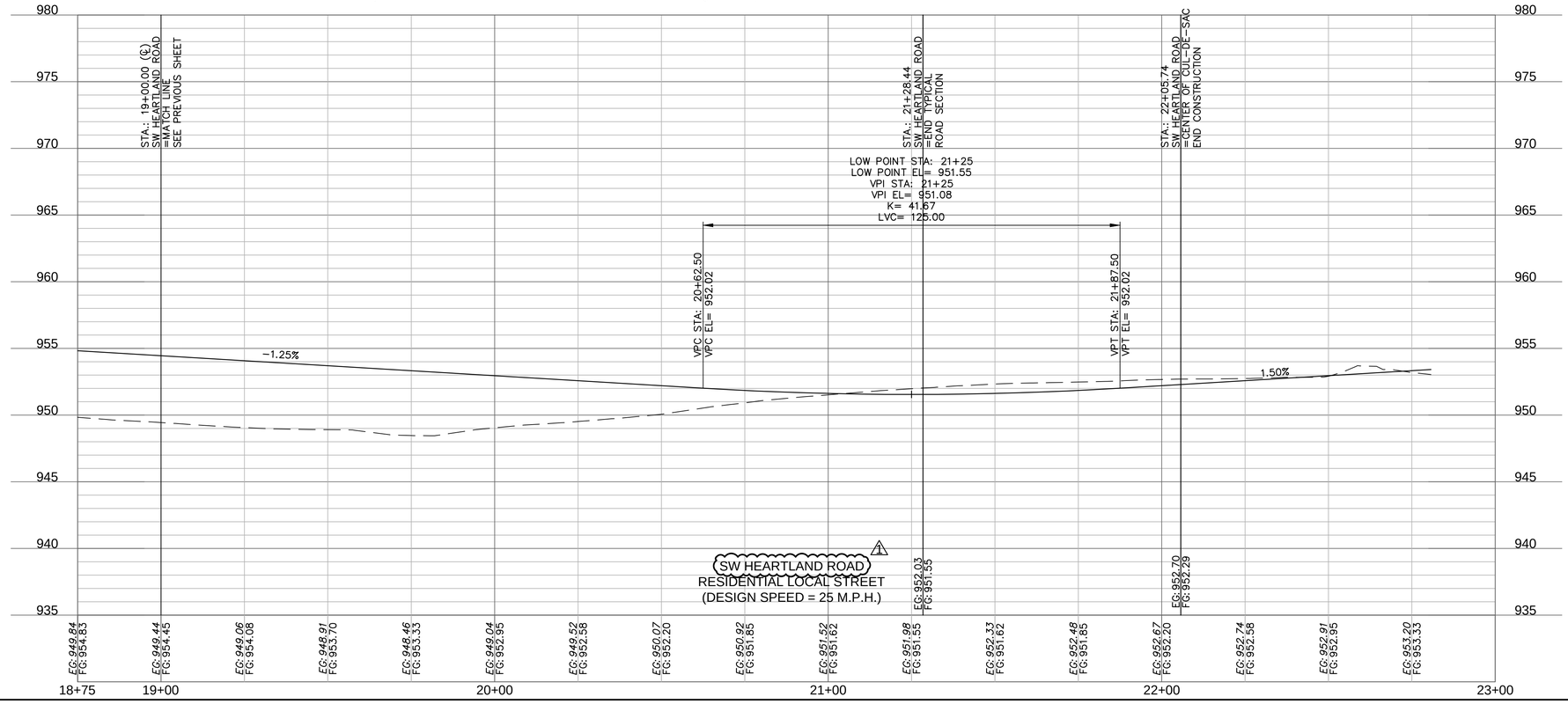
DWG: F:\2019\4001-4500\019-4059-a\40-design\AutoCAD\final plans\Sheets\GNCV\Street & Storm Sewer Plans\C_RPP01_A194059.dwg
DATE: Sep 21, 2021 2:30pm XREFS: C_PTBLK_A194059 C_PSURF_A194059 C_PBASE_A194059 C_PUTIL_A194059
USER: aabdigaliyev C_PBNDY_A194059 C_XBASE_A194059 C_PPATT_A194059

LEGEND	
	ASPHALT PAVEMENT
	CONCRETE SIDEWALK
	CG-2 CURB & GUTTER





ALIGNMENT CURVES								
CURVE ID #	STATION RANGE	START COORD.	END COORD.	RADIUS (FT)	LENGTH (FT)	DELTA	CHORD BEARING	CHORD LENGTH (FT)
C4	19+58.06 22+05.74	N: 984675.25 E: 2810201.65	N: 984827.18 E: 2810011.05	400.00	247.68	035°28'38"	N51°26'28"W	243.74



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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
9/24/21
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
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REVISIONS

SW HEARTLAND ROAD PLAN & PROFILE
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
date: 05-05-2021

SHEET
C111

DWG: F:\2019\4001-4500\019-4059-01\40-design\AutoCAD\final plans\Sheets\GNCV\Street & Storm Sewer Plans\C_RPP01_A194059.dwg
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C_XBASE_A194059 C_PBNDY_A194059 C_PPATT_A194059
USER: aabdigaliyev

LEGEND	
	ADA ACCESS ROUTE
	ASPHALT PAVEMENT
	CONCRETE SIDEWALK
	MILL & OVERLAY
	CG-2 CURB & GUTTER

N

0' 10' 20' 40'
SCALE IN FEET

10'
5'
2.5'
0'

198 197 18

SIDEWALK BY HOMEBUILDERS

SIDEWALK BY HOMEBUILDERS

SIDEWALK BY CONTRACTOR

SW CROWN DRIVE

SW HEARTLAND ROAD

10+00 11+00 12+00 13+00 14+00 14+48.53 16+00 17+00

50' R/W

28' BACK TO BACK

30' B.L.

15' U.E.

R/W

STA:10+00.00, (SW CROWN DRIVE)
N: 984381.9813
E: 2809906.5721
SAW CUT 1'-0" OF EXISTING PAVEMENT. MILL 2" OFF 5'-0" OF EXISTING PAVEMENT TO FACILITATE A SMOOTH JOINT.
=BEGIN CONSTRUCTION

STA:14+48.53, (SW CROWN DRIVE)
STA: 16+23.65, (SW HEARTLAND ROAD)
N: 984381.3758
E: 2810354.4325
=END CONSTRUCTION

C1

ALIGNMENT CURVES								
CURVE ID #	STATION RANGE	START COORD.	END COORD.	RADIUS (FT)	LENGTH (FT)	DELTA	CHORD BEARING	CHORD LENGTH (FT)
C1	13+52.38 14+27.08	N: 984372.90 E: 2810258.83	N: 984377.94 E: 2810333.26	400.00	74.70	010°42'01"	N86°07'37"E	74.59

VPI STA: 10+50
VPI EL= 977.23
K= 17.46
LVC= 75.00

STA.: 10+00.00
SW CROWN DRIVE
=BEGIN CONSTRUCTION

VPC STA: 10+12.50
VPC EL= 977.89

VPT STA: 10+87.50
VPT EL= 974.96

VPI STA: 13+45
VPI EL= 959.40
K= 28.61
LVC= 130.00

VPC STA: 12+80
VPC EL= 963.33

VPT STA: 14+10
VPT EL= 958.42

STA.: 14+36.53 (℄)
SW CROWN DRIVE
=GRADE BREAK

STA.: 14+48.53 (℄)
SW CROWN DRIVE

STA.: 16+23.65 (℄)
SW HEARTLAND ROAD
=END CONSTRUCTION

-1.75% -1.75% -6.04% -1.50% 2.00%

SW CROWN DRIVE
RESIDENTIAL LOCAL STREET
(DESIGN SPEED = 25 M.P.H.)

EG: 977.94 FG: 978.11
EG: 977.54 FG: 977.62
EG: 976.46 FG: 976.83
EG: 974.40 FG: 975.67
EG: 973.38 FG: 974.21
EG: 972.38 FG: 972.70
EG: 971.35 FG: 971.19
EG: 972.55 FG: 969.67
EG: 969.63 FG: 968.16
EG: 968.34 FG: 966.65
EG: 967.06 FG: 965.14
EG: 965.53 FG: 963.63
EG: 962.89 FG: 962.19
EG: 961.34 FG: 960.96
EG: 959.90 FG: 959.95
EG: 958.35 FG: 959.16
EG: 956.64 FG: 958.59
EG: 955.03 FG: 958.20
EG: 954.33 FG: 958.03
EG: 953.63 FG: 958.27

990 985 980 975 970 965 960 955 950 945

9+75 10+00 11+00 12+00 13+00 14+00 14+75

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
9/24/21
PROFESSIONAL ENGINEER

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1	09-26-2021	REVISED PER CITY COMMENTS	

REVISIONS

SW CROWN DRIVE PLAN & PROFILE
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by:	B.M.W./A.A.
checked by:	B.M.W.
designed by:	B.M.W./A.A.
QA/QC by:	J.E.S.
project no.:	A19-4059
date:	05-05-2021

SHEET
C112

DWG: F:\2019\4001-4500\019-4059-a\40-design\AutoCAD\final plans\Sheets\GNCV\Street & Storm Sewer Plans\C_RPP02_A194059.dwg USER: aabdigaliyev
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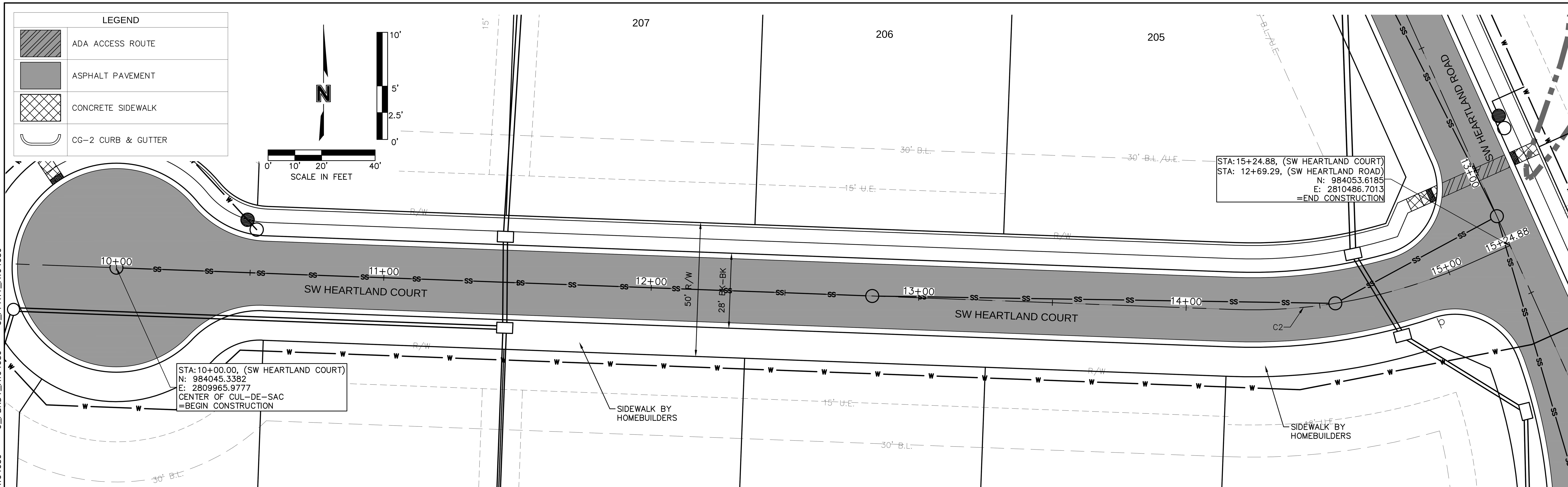
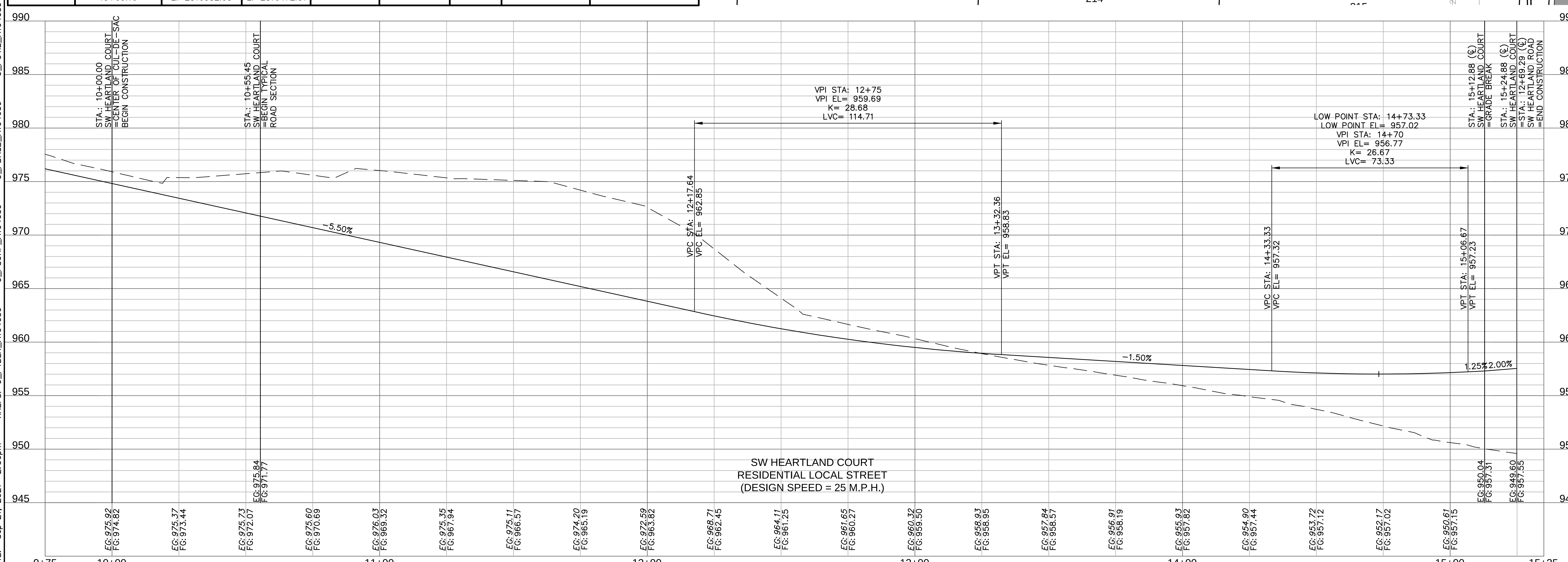


ALIGNMENT CURVES

CURVE ID #	STATION RANGE	START COORD.	END COORD.	RADIUS (FT)	LENGTH (FT)	DELTA	CHORD BEARING	CHORD LENGTH (FT)
C2	14+17.26 15+09.10	N: 984029.76 E: 2810382.95	N: 984047.16 E: 2810472.31	200.00	91.84	026°18'40"	N78°59'01"E	91.04



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USER: aabdigaliyev

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
PROFESSIONAL ENGINEER
9/24/21

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
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SW HEARTLAND COURT PLAN & PROFILE
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

2021

LEE'S SUMMIT, MO

drawn by:	B.M.W./A.A.
checked by:	B.M.W.
designed by:	B.M.W./A.A.
QA/QC by:	J.E.S.
project no.:	A19-4059
date:	05-05-2021

SHEET
C113

DWG: F:\2019\4001-4500\019-4059-a\40-design\AutoCAD\final plans\Sheets\QNCV\Street & Storm Sewer Plans\C_TCP01_A194059.dwg USER: aabdigaliyev
DATE: Sep 21, 2021 2:31pm XREFS: C_PTBLK_A194059 C_PBASE_A194059 C_PBNDY_A194059 C_PUTIL_A194059 C_XBASE_A194059

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REVISIONS

TRAFFIC CONTROL PLAN
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

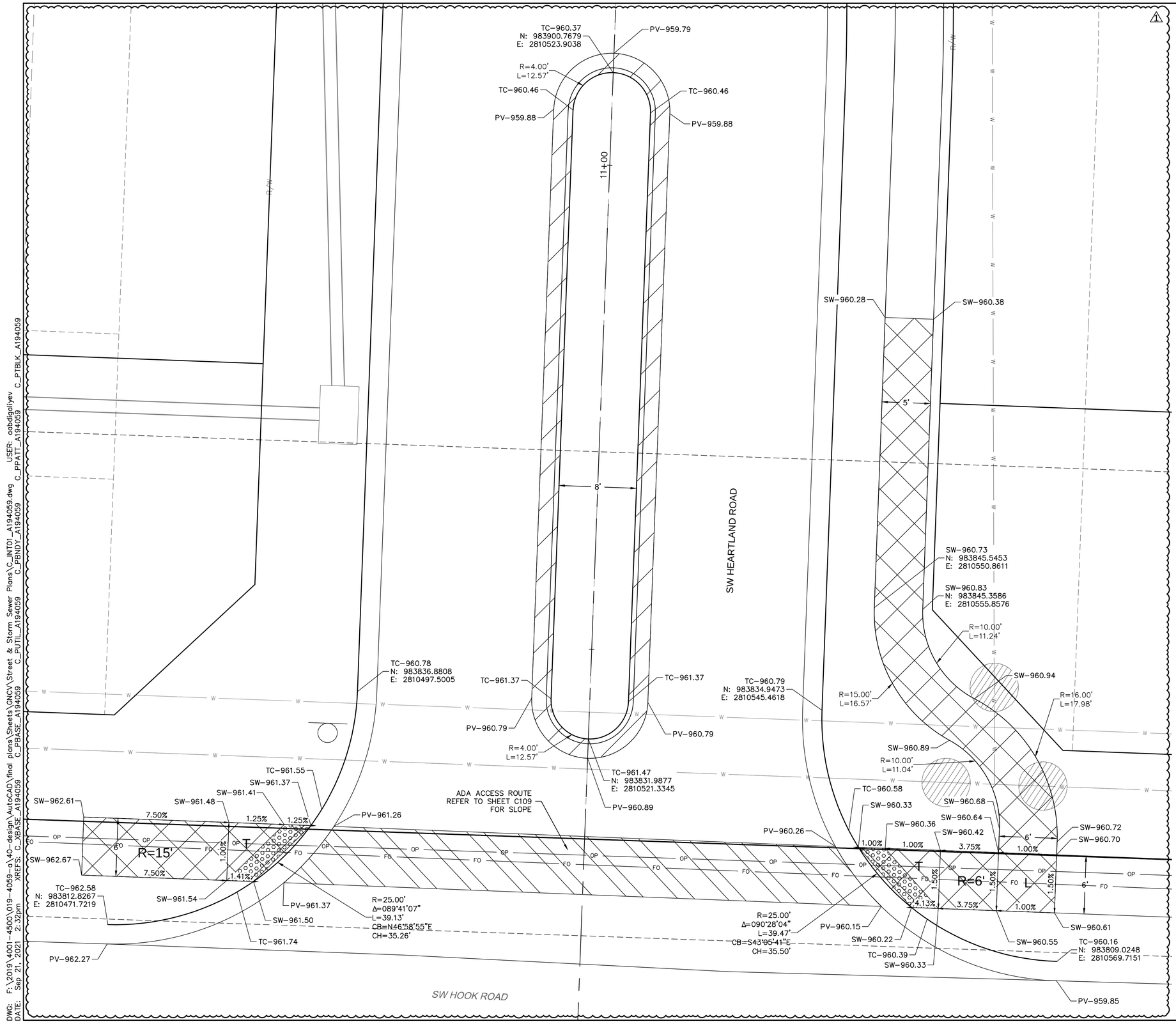
drawn by:	B.M.W./A.A.
checked by:	B.M.W.
designed by:	B.M.W./A.A.
QA/QC by:	J.E.S.
project no.:	A19-4059
date:	05-05-2021

SHEET
C114

INTERSECTION AND ADA DETAIL NOTES:

1. ALL ADA CURB RAMPS SHALL BE BUILT PER CURRENT MUNICIPALITY ADOPTED ADA STANDARDS.
2. CURB RAMP FLARES SHALL NOT BE STEEPER THAN 1:10 MAX SLOPES.
3. LANDING SHALL BE PROVIDED WHERE INDICATED ON PLAN SHEET OR BY PROWAG STANDARDS. LANDING SHALL BE 4'X4' MINIMUM.
4. RAMP RUNS SHALL HAVE A MAXIMUM RUNNING SLOPE OF 1:12 UNLESS THE RAMP LENGTH IS OVER 15 FEET, THEN THE SLOPE CAN BE GREATER AS INDICATED IN DETAILS TO REACH STREET GRADES.
5. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
6. CROSS SLOPE FOR RAMPS AND SIDEWALK SHALL NOT EXCEED 2%.
7. AFTER CURBS HAVE BEEN CONSTRUCTED, AND BEFORE ASPHALT OR CONCRETE PAVEMENT IS POURED, CURBS SHOULD BE MEASURED WITH A LEVEL TO ENSURE CURB ALONG ADA RAMPS AND LANDINGS WILL MEET ADA REQUIREMENTS.
8. ADA RAMP CONSTRUCTION WILL BE INSPECTED THOROUGHLY BY THE CITY INSPECTOR. CONTRACTOR SHALL BE REQUIRED TO RECONSTRUCT RAMPS, CURBS AND/OR PAVEMENT AT CONTRACTOR'S EXPENSE IF ADA RAMPS AND LANDINGS CANNOT MEET THE ADA REQUIREMENTS, PER APPROVED PLAN OR APPROVED ALTERNATIVE.
9. CURVE DATA IS FOR BACK OF CURB.

LEGEND	
TC–	TOP OF CURB
PV–	TOP OF PAVEMENT
SW–	SIDEWALK
L	LANDING AREA
R	RAMP AREA
T	TRANSITION AREA
	ADA ACCESS ROUTE
	CONCRETE SIDEWALK
	CG-2 CURB & GUTTER
	CG-1 DRY CURB & GUTTER ⚠1



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SW HOOK ROAD & SW HEARTLAND ROAD DETAILS
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by:	B.M.W./A.A.
checked by:	B.M.W.
designed by:	B.M.W./A.A.
QA/QC by:	J.E.S.
project no.:	A19-4059
date:	05-05-2021

SHEET
C115

DWG: F:\2019\4001-4500\019-4059-a\40-design\AutoCAD\final plans\Sheets\GNCV\Street & Storm Sewer Plans\C_INTOT_A194059.dwg USER: aabdgaliyev
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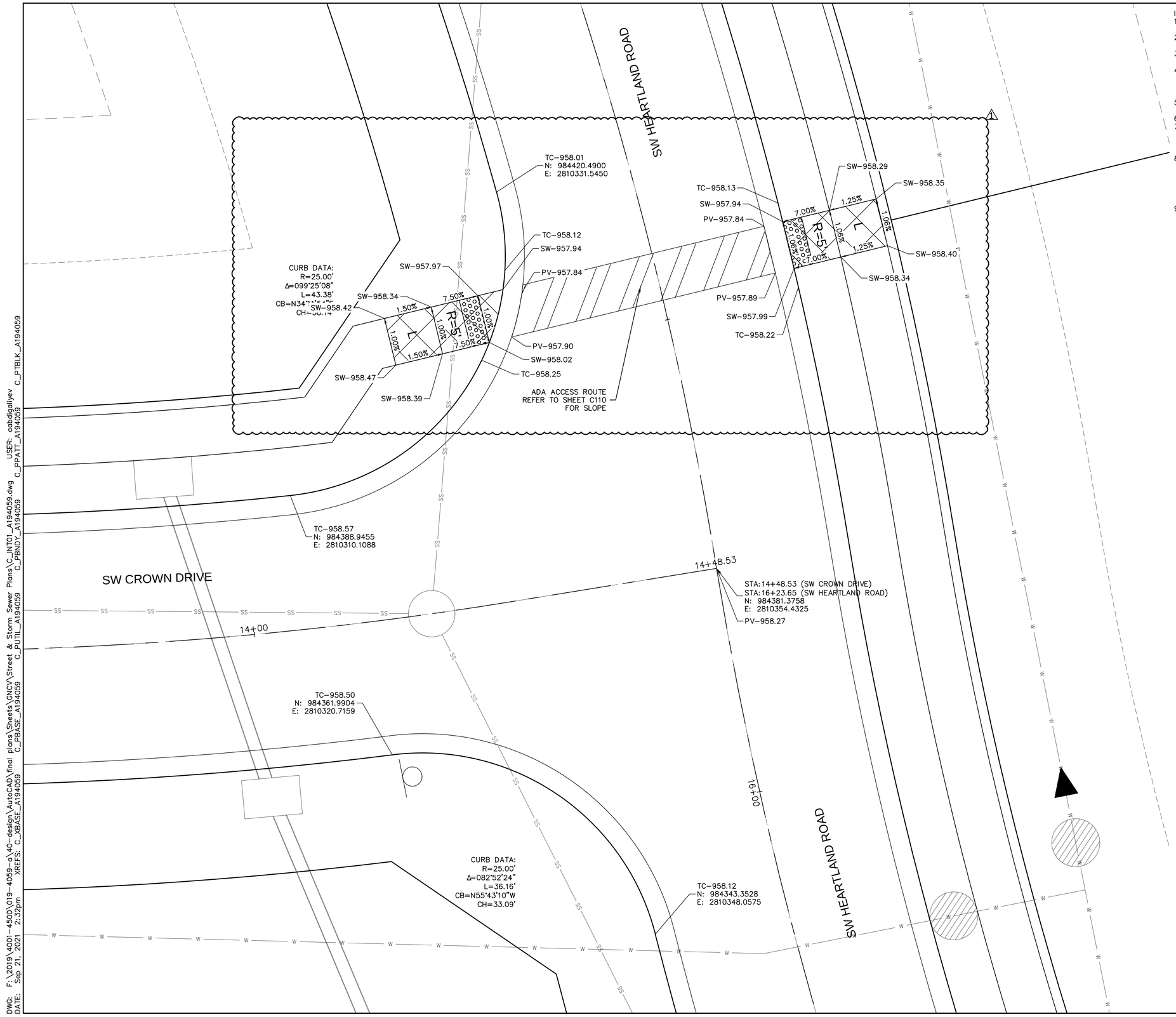

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1. ALL ADA CURB RAMPS SHALL BE BUILT PER CURRENT MUNICIPALITY ADOPTED ADA STANDARDS.
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9. CURVE DATA IS FOR BACK OF CURB.

LEGEND	
TC–	TOP OF CURB
PV–	TOP OF PAVEMENT
SW–	SIDEWALK
L	LANDING AREA
R	RAMP AREA
T	TRANSITION AREA
	ADA ACCESS ROUTE
	CONCRETE SIDEWALK
	CG-2 CURB & GUTTER

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SW HEARTLAND ROAD & SW CROWN DRIVE DETAILS
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

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checked by:	B.M.W.
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project no.:	A19-4059
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SHEET
C116

DWG: F:\2019\4001-4500\019-4059-a\40-design\AutoCAD\final plans\Sheets\GNCV\Street & Storm Sewer Plans\C_INT01_A194059.dwg USER: aabdgaliyev
DATE: Sep 21, 2021 2:32pm XREFS: C_XBASE_A194059 C_PBASE_A194059 C_PUTIL_A194059 C_PBNDY_A194059 C_PPAIT_A194059 C_PTBLK_A194059

INTERSECTION AND ADA DETAIL NOTES:

1. ALL ADA CURB RAMPS SHALL BE BUILT PER CURRENT MUNICIPALITY ADOPTED ADA STANDARDS.
2. CURB RAMP FLARES SHALL NOT BE STEEPER THAN 1:10 MAX SLOPES.
3. LANDING SHALL BE PROVIDED WHERE INDICATED ON PLAN SHEET OR BY PROWAG STANDARDS. LANDING SHALL BE 4'X4' MINIMUM.
4. RAMP RUNS SHALL HAVE A MAXIMUM RUNNING SLOPE OF 1:12 UNLESS THE RAMP LENGTH IS OVER 15 FEET, THEN THE SLOPE CAN BE GREATER AS INDICATED IN DETAILS TO REACH STREET GRADES.
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9. CURVE DATA IS FOR BACK OF CURB.

LEGEND	
TC–	TOP OF CURB
PV–	TOP OF PAVEMENT
SW–	SIDEWALK
L	LANDING AREA
R	RAMP AREA
T	TRANSITION AREA
	ADA ACCESS ROUTE
	CONCRETE SIDEWALK
	CG-2 CURB & GUTTER

SW HEARTLAND ROAD

TC–957.01
N: 984085.0026
E: 2810457.2697

ADA ACCESS ROUTE
REFER TO SHEET C109
FOR SLOPE

CURB DATA:
R=25.00'
Δ=098°17'38"
L=42.89'
CB=N24°58'30"E
CH=37.82'

TC–957.12
SW–956.94
SW–956.97
SW–957.32
SW–957.37
SW–957.44
PV–956.84
PV–956.94
SW–957.04
TC–957.28
SW–957.39

13+00

TC–957.11
SW–956.93
PV–956.83
PV–956.90
SW–957.28
SW–957.34
SW–957.42
SW–957.35
SW–957.00
TC–957.25

SW HEARTLAND COURT

TC–957.10
N: 984050.7196
E: 2810441.3014

15+00

15+24.88

STA:12+69.29 (SW HEARTLAND ROAD)
STA:15+24.88 (SW HEARTLAND COURT)
N: 984053.6185
E: 2810486.7013
PV–957.55

TC–957.32
N: 984026.6597
E: 2810458.2509

CURB DATA:
R=25.00'
Δ=088°34'32"
L=38.65'
CB=N64°11'37"W
CH=34.91'

TC–958.20
N: 984011.4609
E: 2810489.6821

SW HEARTLAND ROAD

N

0' 2.5' 5' 10'
SCALE IN FEET

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SW HEARTLAND ROAD & SW HEARTLAND COURT DETAIL
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

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SHEET
C117

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INTERSECTION AND ADA DETAIL NOTES:

1. ALL ADA CURB RAMPS SHALL BE BUILT PER CURRENT MUNICIPALITY ADOPTED ADA STANDARDS.
2. CURB RAMP FLARES SHALL NOT BE STEEPER THAN 1:10 MAX SLOPES.
3. LANDING SHALL BE PROVIDED WHERE INDICATED ON PLAN SHEET OR BY PROWAG STANDARDS. LANDING SHALL BE 4'X4' MINIMUM.
4. RAMP RUNS SHALL HAVE A MAXIMUM RUNNING SLOPE OF 1:12 UNLESS THE RAMP LENGTH IS OVER 15 FEET, THEN THE SLOPE CAN BE GREATER AS INDICATED IN DETAILS TO REACH STREET GRADES.
5. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
6. CROSS SLOPE FOR RAMPS AND SIDEWALK SHALL NOT EXCEED 2%.
7. AFTER CURBS HAVE BEEN CONSTRUCTED, AND BEFORE ASPHALT OR CONCRETE PAVEMENT IS POURED, CURBS SHOULD BE MEASURED WITH A LEVEL TO ENSURE CURB ALONG ADA RAMPS AND LANDINGS WILL MEET ADA REQUIREMENTS.
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9. CURVE DATA IS FOR BACK OF CURB.

LEGEND	
TC–	TOP OF CURB
PV–	TOP OF PAVEMENT
SW–	SIDEWALK
	CONCRETE SIDEWALK
	CG-2 CURB & GUTTER

SW–953.08
SW–953.16
SW–953.03
SW–952.67
SW–953.10
SW–952.74
TC–952.85
PV–952.57
PV–952.64
TC–952.98
TC–952.36
1.43%
1.10%
7.25%
R=5
15' U/E

TC–953.55
HIGH POINT
N: 984795.7021
E: 2809964.0135

CURB DATA:
R=39.00'
Δ=245°37'51"
L=167.20'
CB=S11°59'43"E
CH=65.55'

TC–952.37

CURB DATA:
R=35.00'
Δ=076°42'11"
L=46.86'
CB=S83°32'27"W
CH=43.43'

TC–951.62
N: 984804.7988
E: 2810087.5991

TC–951.62
N: 984781.0256
E: 2810072.8061

SW HEARTLAND ROAD

SS

W

0' 2.5' 5' 10'
SCALE IN FEET

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9/24/21
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REVISIONS

SW HEARTLAND ROAD CUL-DE-SAC DETAILS
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
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SHEET
C118

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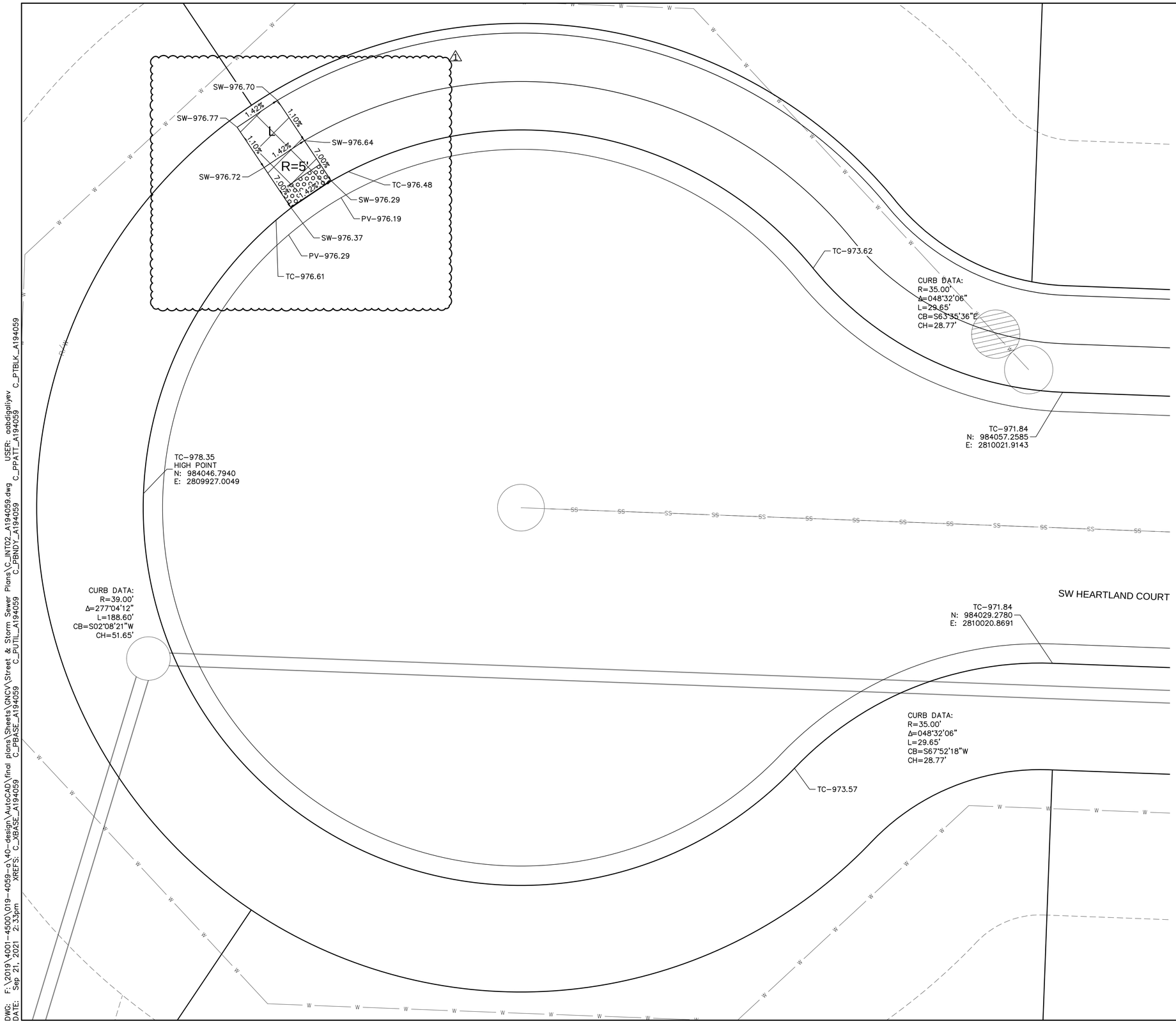

INTERSECTION AND ADA DETAIL NOTES:

1. ALL ADA CURB RAMPS SHALL BE BUILT PER CURRENT MUNICIPALITY ADOPTED ADA STANDARDS.
2. CURB RAMP FLARES SHALL NOT BE STEEPER THAN 1:10 MAX SLOPES.
3. LANDING SHALL BE PROVIDED WHERE INDICATED ON PLAN SHEET OR BY PROWAG STANDARDS. LANDING SHALL BE 4'X4' MINIMUM.
4. RAMP RUNS SHALL HAVE A MAXIMUM RUNNING SLOPE OF 1:12 UNLESS THE RAMP LENGTH IS OVER 15 FEET, THEN THE SLOPE CAN BE GREATER AS INDICATED IN DETAILS TO REACH STREET GRADES.
5. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
6. CROSS SLOPE FOR RAMPS AND SIDEWALK SHALL NOT EXCEED 2%.
7. AFTER CURBS HAVE BEEN CONSTRUCTED, AND BEFORE ASPHALT OR CONCRETE PAVEMENT IS POURED, CURBS SHOULD BE MEASURED WITH A LEVEL TO ENSURE CURB ALONG ADA RAMPS AND LANDINGS WILL MEET ADA REQUIREMENTS.
8. ADA RAMP CONSTRUCTION WILL BE INSPECTED THOROUGHLY BY THE CITY INSPECTOR. CONTRACTOR SHALL BE REQUIRED TO RECONSTRUCT RAMPS, CURBS AND/OR PAVEMENT AT CONTRACTOR'S EXPENSE IF ADA RAMPS AND LANDINGS CANNOT MEET THE ADA REQUIREMENTS, PER APPROVED PLAN OR APPROVED ALTERNATIVE.
9. CURVE DATA IS FOR BACK OF CURB.

LEGEND	
TC–	TOP OF CURB
PV–	TOP OF PAVEMENT
SW–	SIDEWALK
	CONCRETE SIDEWALK
	CG-2 CURB & GUTTER

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SW HEARTLAND COURT CUL-DE-SAC DETAILS
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
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SHEET
C119

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Riprap Calculations							
End Section	Q_{100} (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. 1-1	83.68	2.5	6	22	20	3.67	31.5

*Per Table 10.1 HEC 14-FHWA-Energy Dissipators Pg. 10-18

E.S. 1–1
END SECTION (30" HDPE)
W/ CONCRETE TOE WALL
INSTALL RIPRAP PER DETAILS ON THIS SHEET
STA: 10+00.00 (STORM LINE 1)
N: 984231.313
E: 2810608.550

C.I. 1–3
CURB INLET (5'X4' INSIDE)
STA: 10+00.00 (STORM LINE 2)
STA: 12+01.43 (STORM LINE 1)
STA: 13+81.51, 17.50' LT
(SW HEARTLAND ROAD)
N: 984148.834
E: 2810424.784

C.I. 1–2
CURB INLET (5'X3' INSIDE)
STA: 11+66.93 (STORM LINE 1)
STA: 13+81.51, 17.00 RT
(SW HEARTLAND ROAD)
N: 984162.961
E: 2810456.259

F.I. 1–4
FIELD INLET (4'X4' INSIDE)
STA: 12+68.23 (STORM LINE 1)
STA: 10+00.00 (STORM LINE 3)
STA: 14+43.46, 42.50' LT
(SW HEARTLAND ROAD)
N: 984195.114
E: 2810376.610

*NOTE: CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 18" MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE

PROPOSED STORM LINE 2
PROPOSED STORM LINE 3
PROPOSED STORM LINE 4
SW HEARTLAND ROAD
STA.: 15+25.00 (STORM LINE 1) MATCH LINE SEE NEXT SHEET
182
183
184
206
207
204
203
180°00'00"
112°15'40"
111°58'37"
138°17'17"
156°41'3"
91°23'27"
89°19'55"
20.83'
20.00'
7.50'
15' U.E.
26.5' B.L./U.E.
36' B.L.C.
R/W
SCALE IN FEET

STORM LINE 1

E.S. 1–1 STA: 10+00
SW INV. IN= 942.00 (30" HDPE)
C.I. 1–2 STA: 11+66.93 RIM= 956.18
NE INV. OUT= 945.50 (30" HDPE)
SW INV. IN= 946.00 (30" HDPE)
C.I. 1–3 STA: 12+01.43 RIM= 956.19
NE INV. OUT= 946.44 (30" HDPE)
S INV. IN= 946.94 (24" HDPE)
NW INV. IN= 946.94 (24" HDPE)
F.I. 1–4 STA: 12+68.23 RIM= 956.25
SE INV. OUT= 948.55 (24" HDPE)
W INV. IN= 949.05 (24" HDPE)
NW INV. IN= 949.30 (15" HDPE)
STA.: 15+00.00 (STORM LINE 1) =MATCH LINE, SEE NEXT SHEET
F.I. 1–5 STA: 15+24.54 RIM= 961.83
E INV. OUT= 954.18 (24" HDPE)
N INV. IN= 954.93 (15" HDPE)
S INV. IN= 954.93 (18" HDPE)

PROPOSED WATER
8" C900 PVC
INV. = 951.81
SEE NOTE*
166.93 LF 30" HDPE @ 2.10%
34.50 LF 30" HDPE @ 1.28%
66.80 LF 24" HDPE @ 2.41%
256.31 LF 24" HDPE @ 2.00%
PROPOSED SANITARY
8" PVC
INV.= 943.20
PROPOSED GROUND
EXISTING GROUND
HGL10

980 975 970 965 960 955 950 945 940 935 930

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STORM SEWER PLAN & PROFILE (LINE 1)
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
date: 05-05-2021

SHEET
C120

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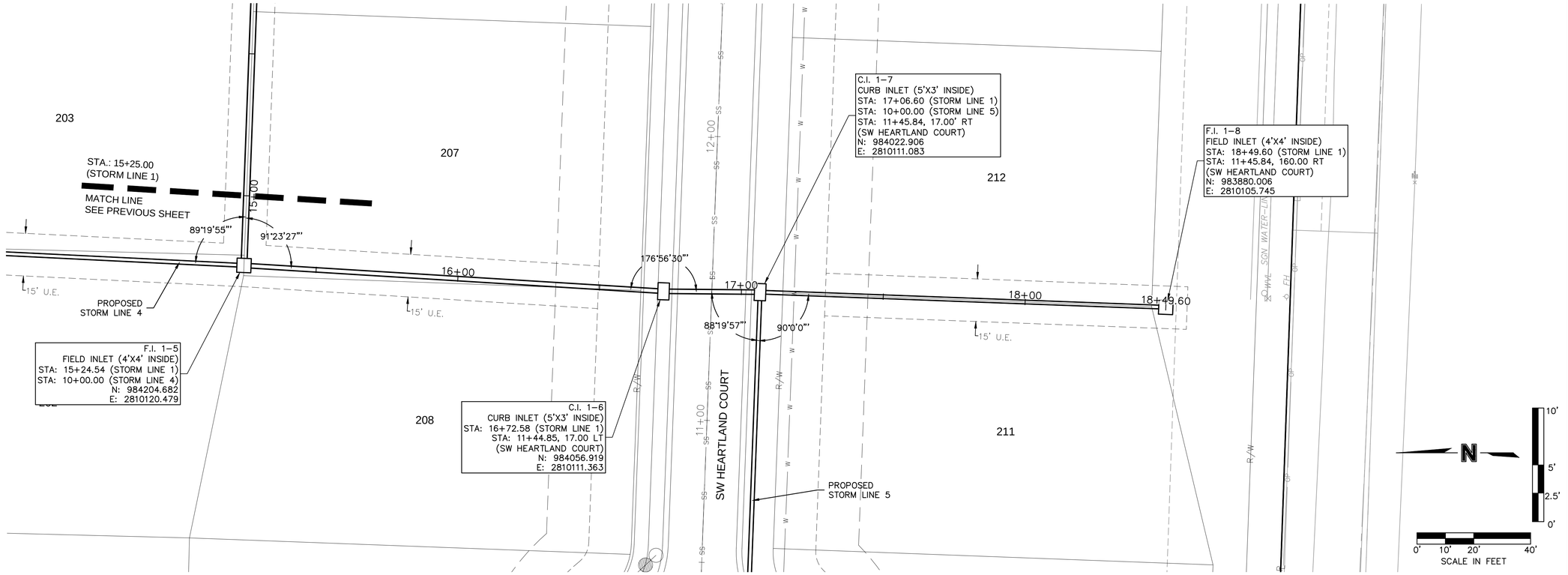

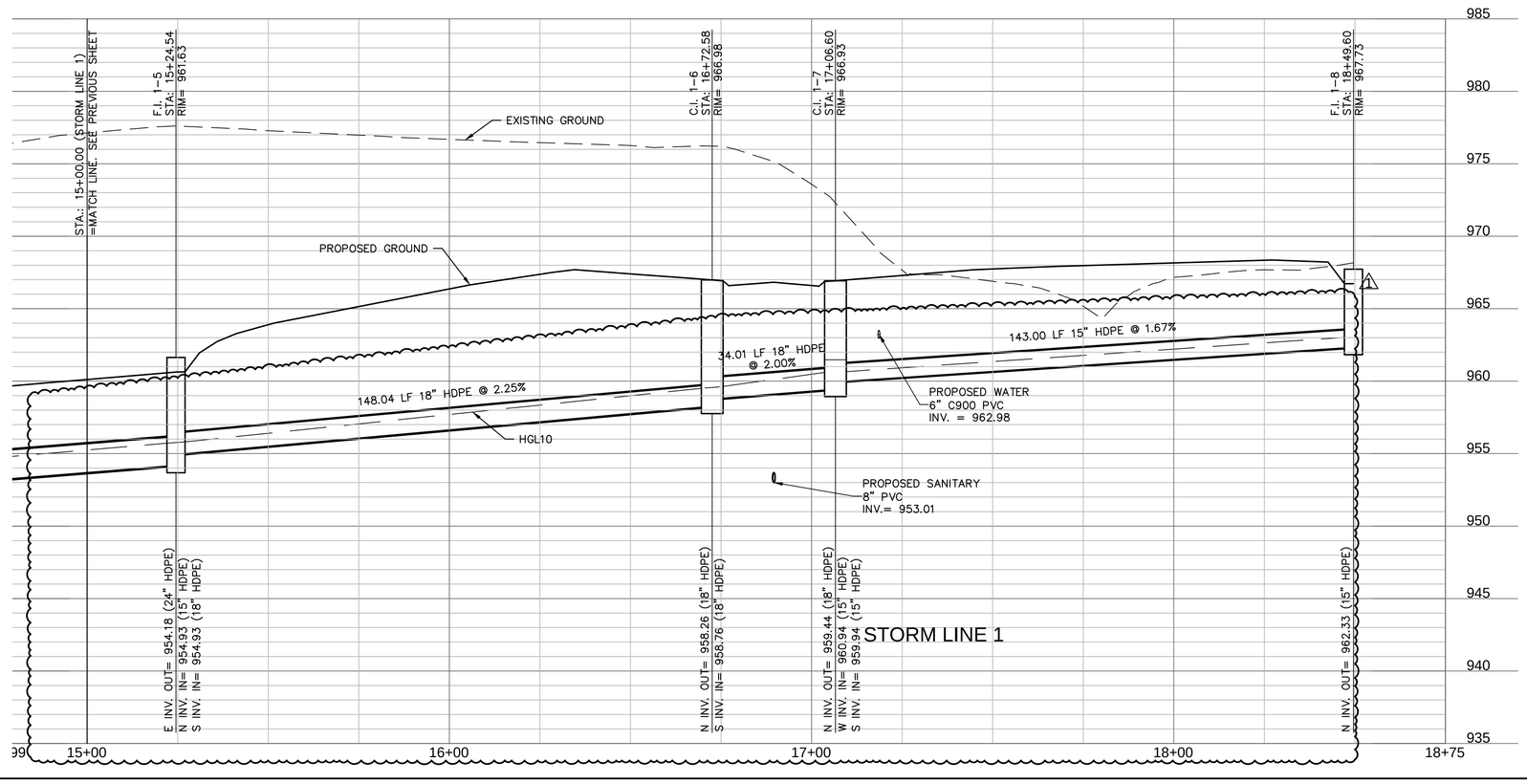

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STORM SEWER PLAN & PROFILE (LINE 1)
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THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by:	B.M.W./A.A.
checked by:	B.M.W.
designed by:	B.M.W./A.A.
QA/QC by:	J.E.S.
project no.:	A19-4059
date:	05-05-2021

SHEET
C121

DWG: F:\2019\4001-4500\019-4059-a\40-design\AutoCAD\final plans\Sheets\GNCV\Street & Storm Sewer Plans\C_STM01_A194059.dwg
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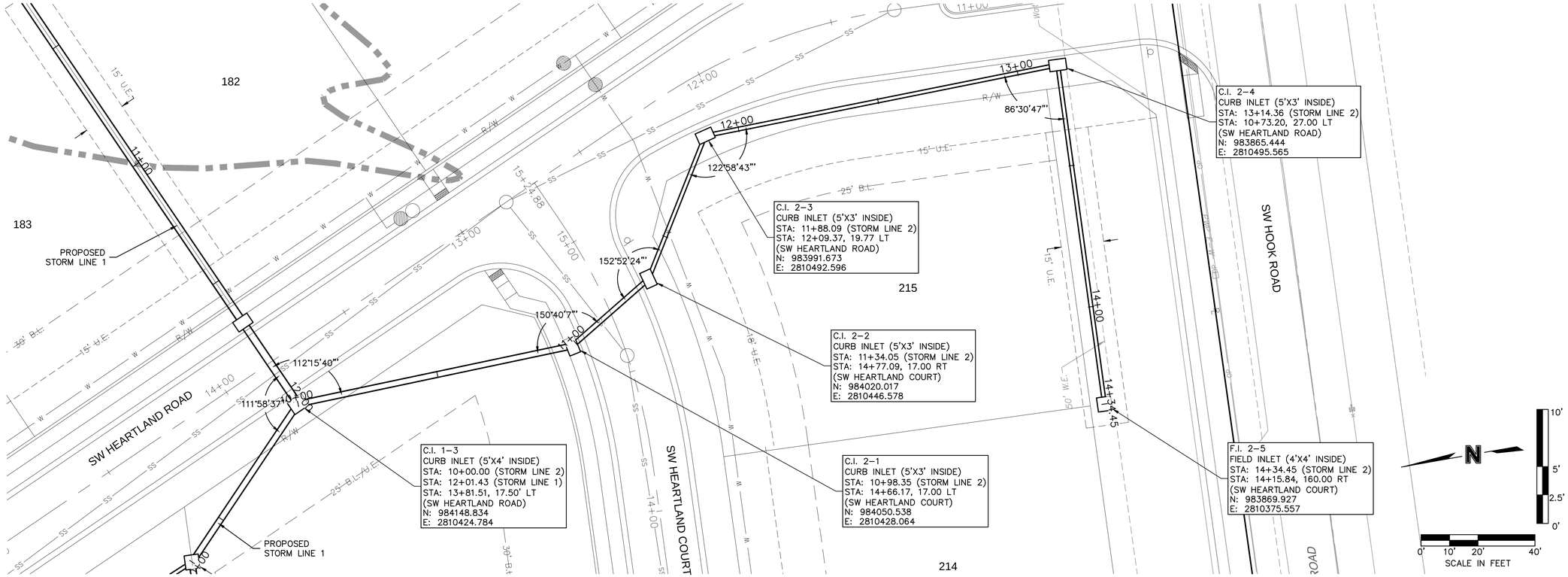

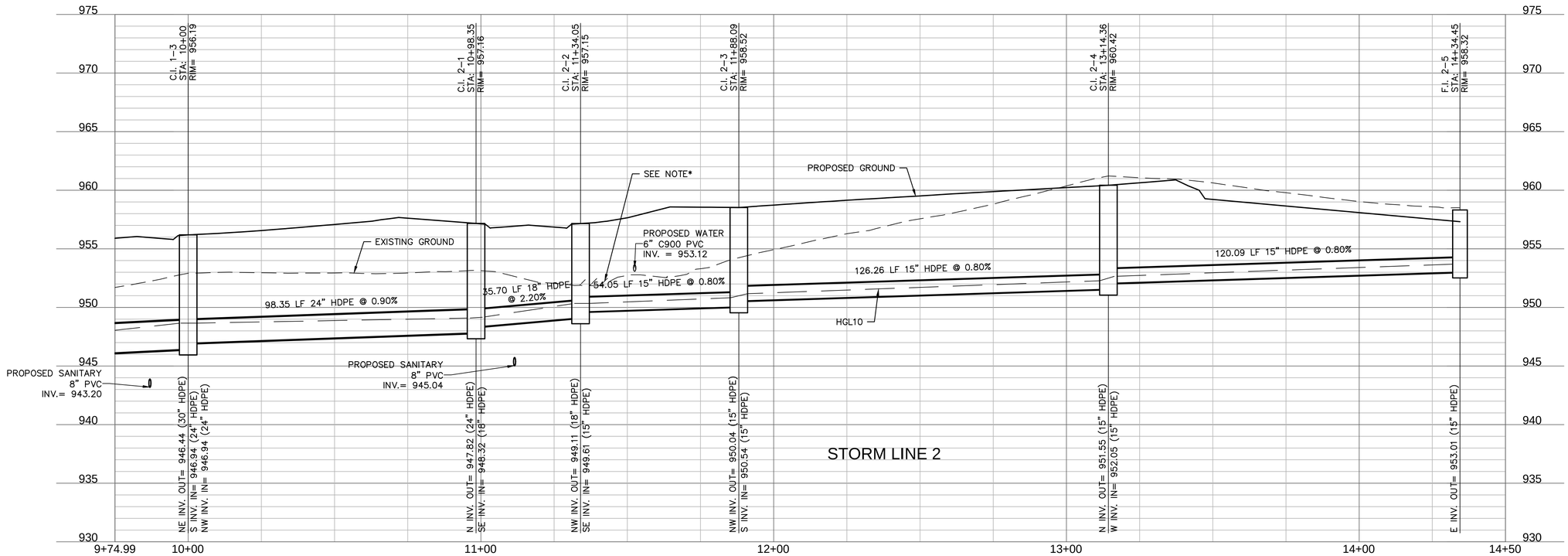

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STORM SEWER PLAN & PROFILE (LINE 2)
STREET & STORM SEWER PLANS

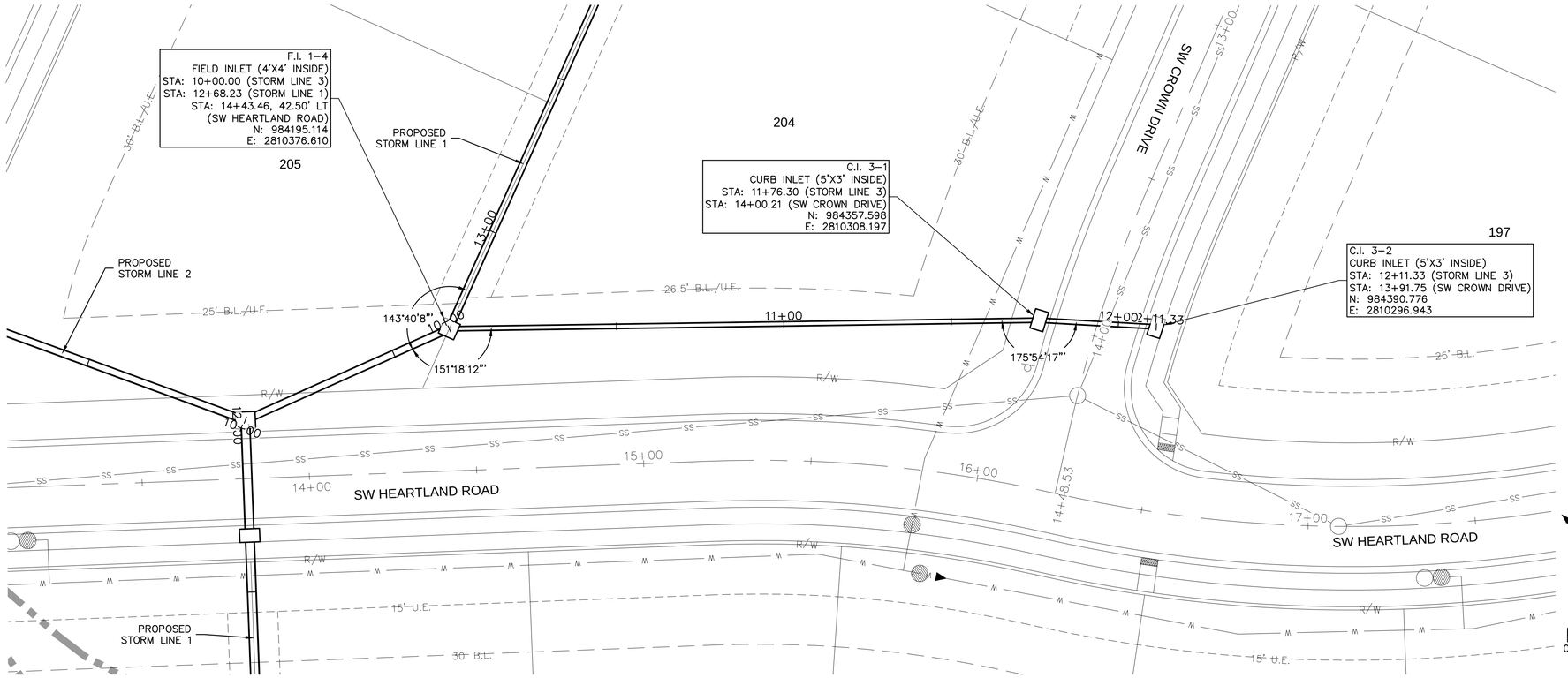
THE RETREAT AT HOOK FARMS
SECOND PLAT

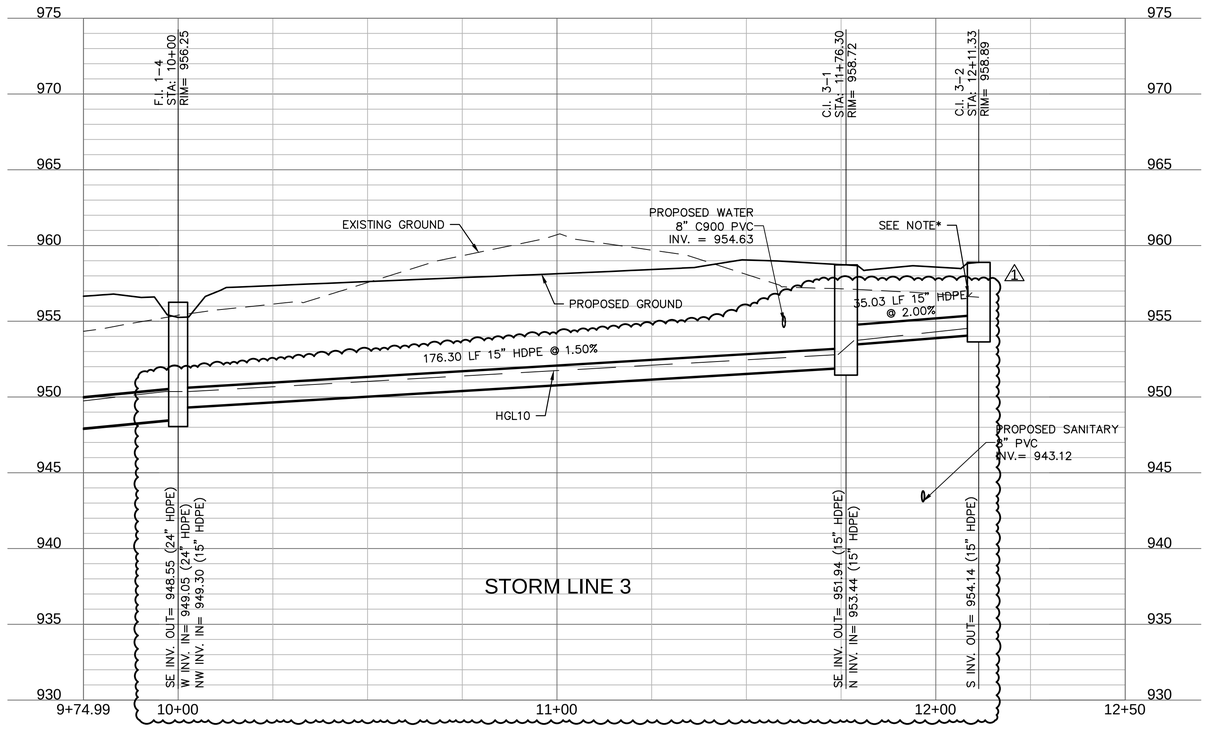
LEE'S SUMMIT, MO

2021

drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
date: 05-05-2021

SHEET
C122





*NOTE: CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 18" MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE

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STORM SEWER PLAN & PROFILE (LINE 3)
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

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checked by: B.M.W.
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QA/QC by: J.E.S.
project no.: A19-4059
date: 05-05-2021

SHEET
C123

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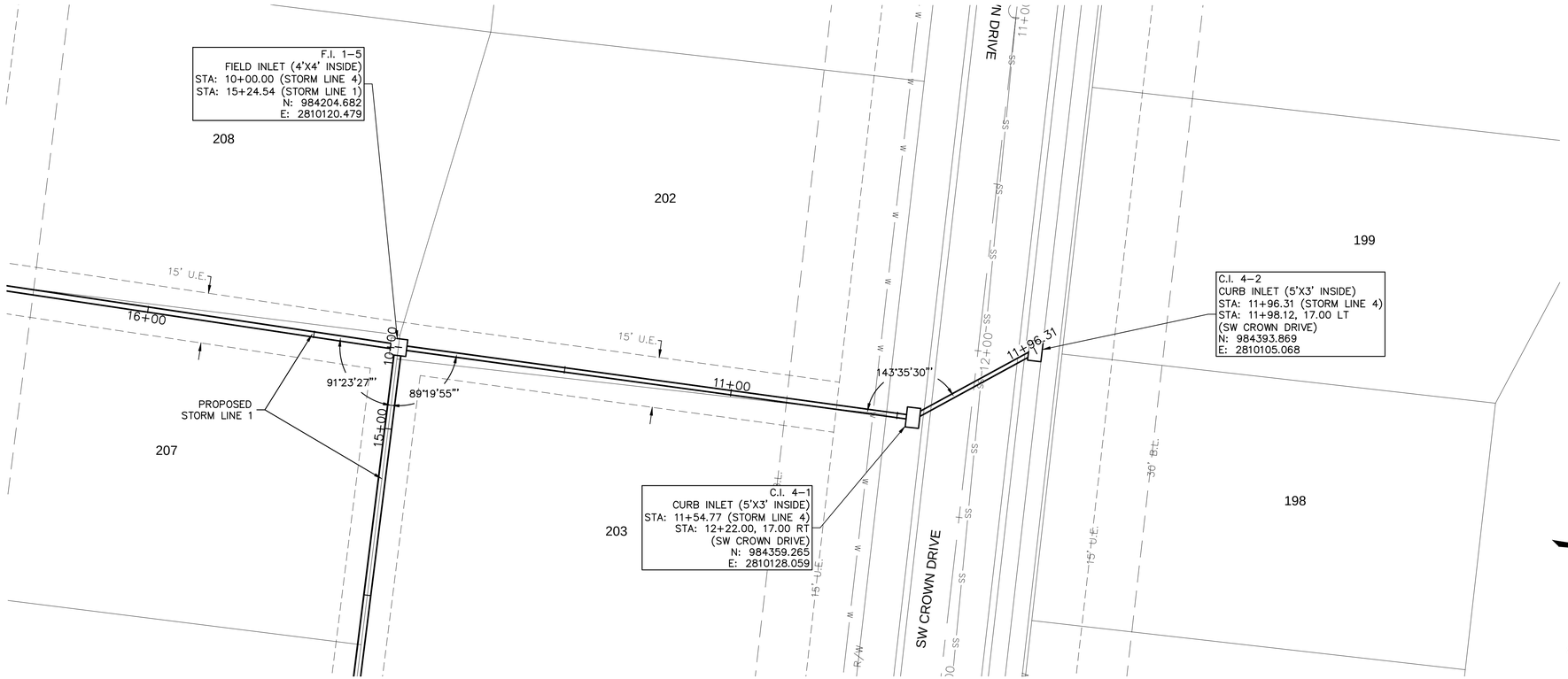

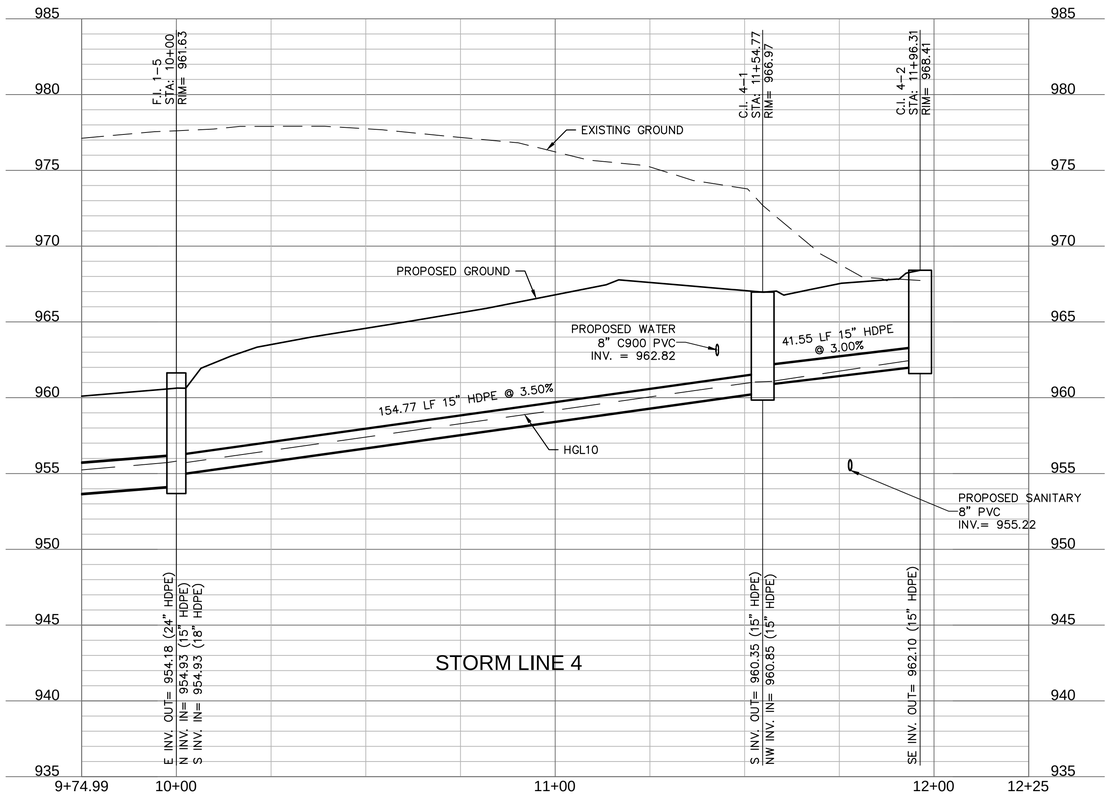

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STORM SEWER PLAN & PROFILE (LINE 4)
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

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designed by:	B.M.W./A.A.
QA/QC by:	J.E.S.
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date:	05-05-2021

SHEET
C124

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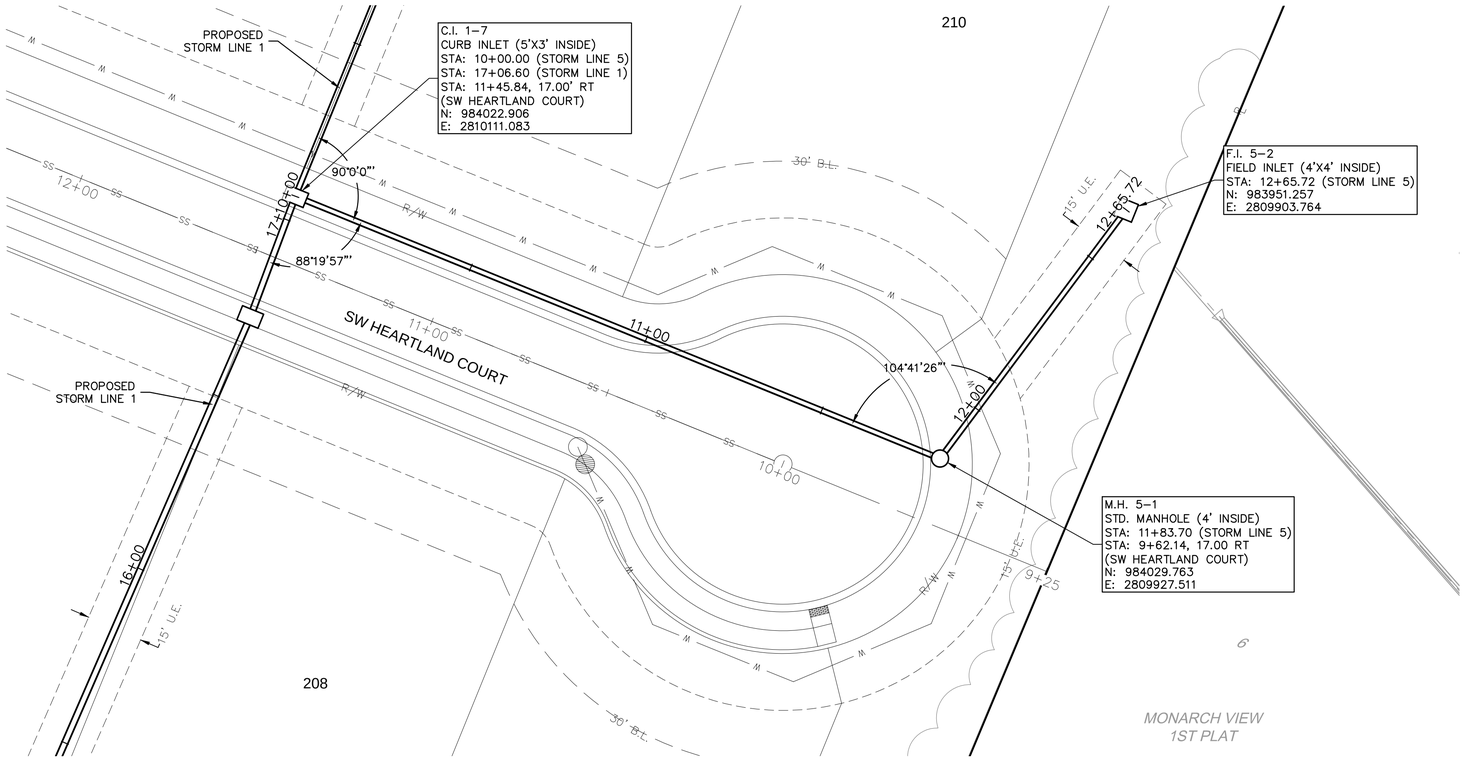

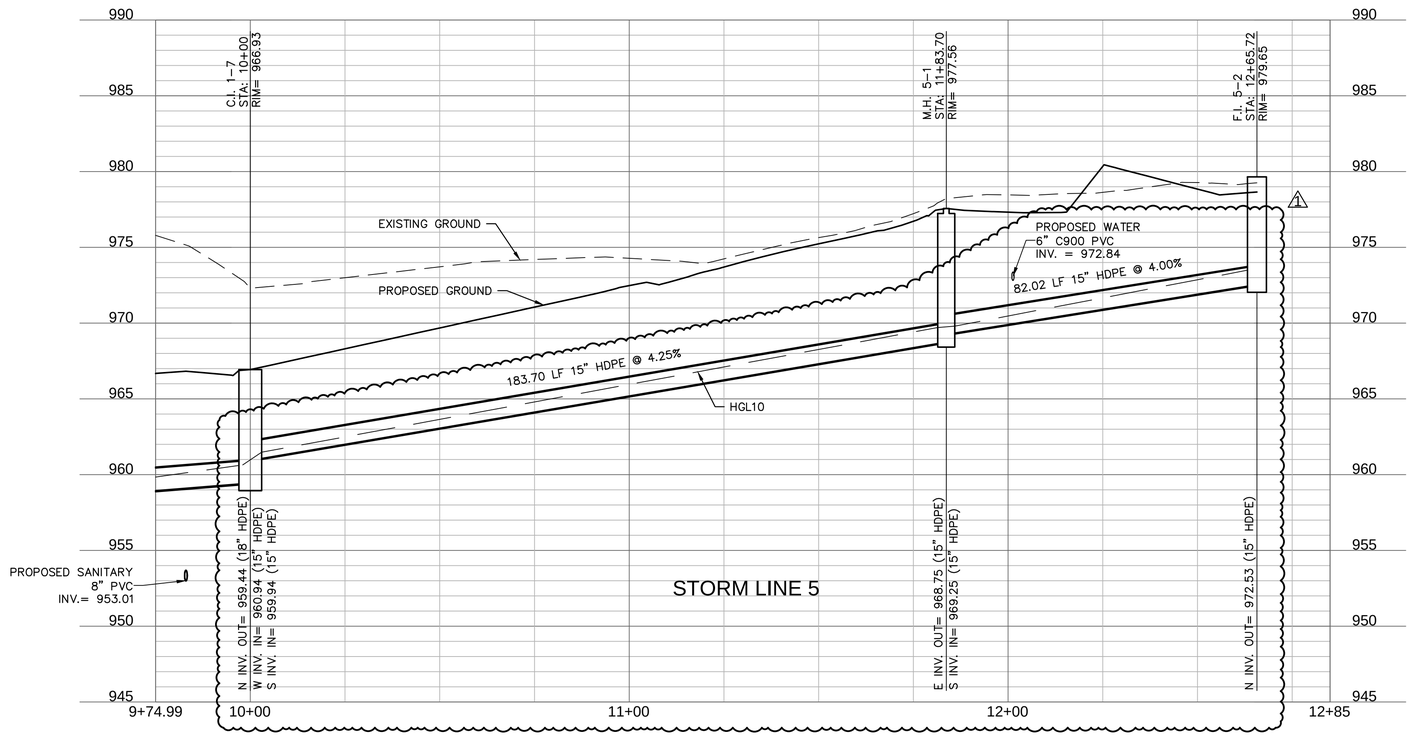

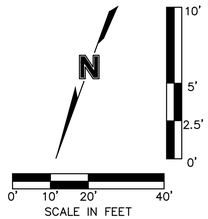

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STORM SEWER PLAN & PROFILE (LINE 5)
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

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SHEET
C125

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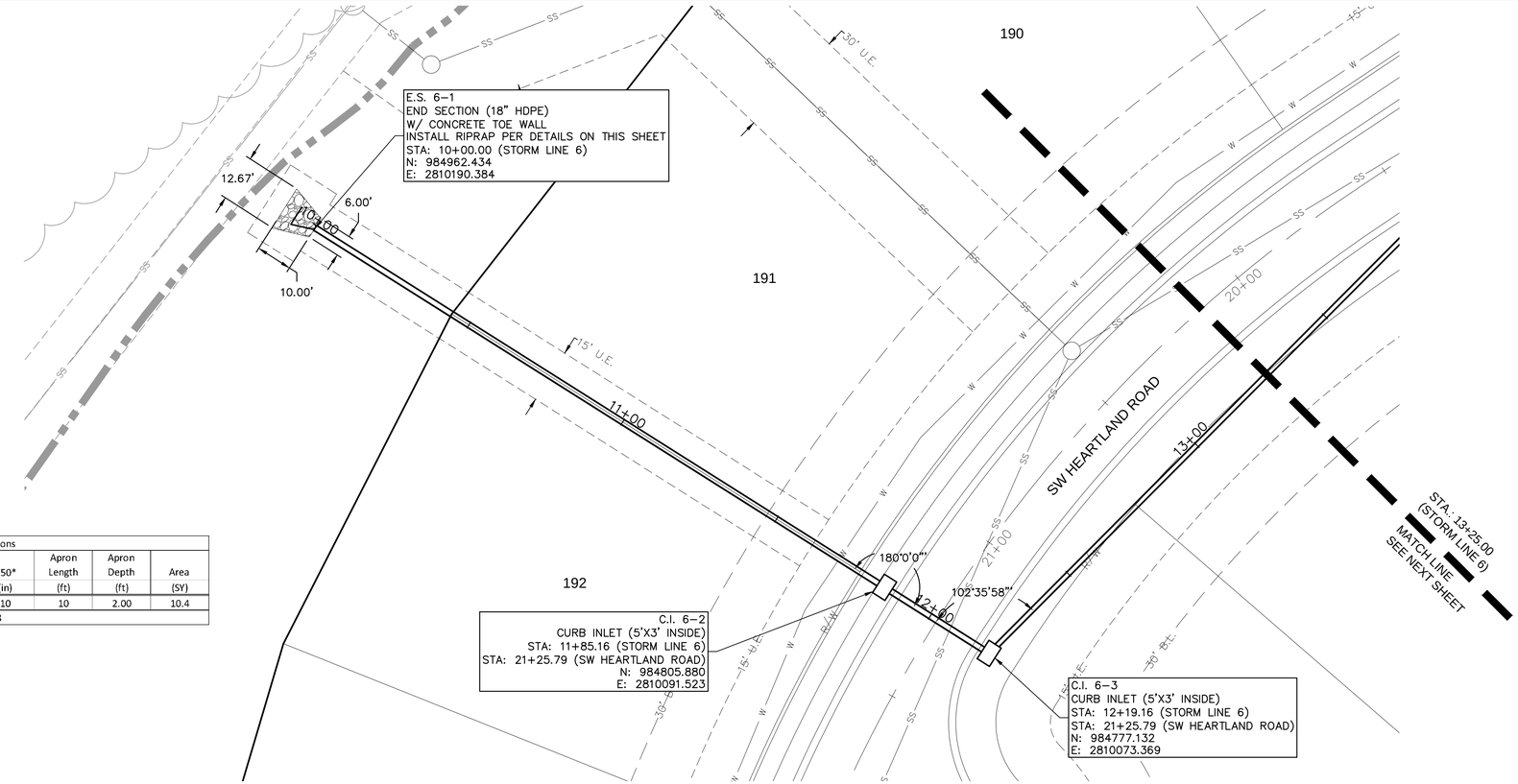
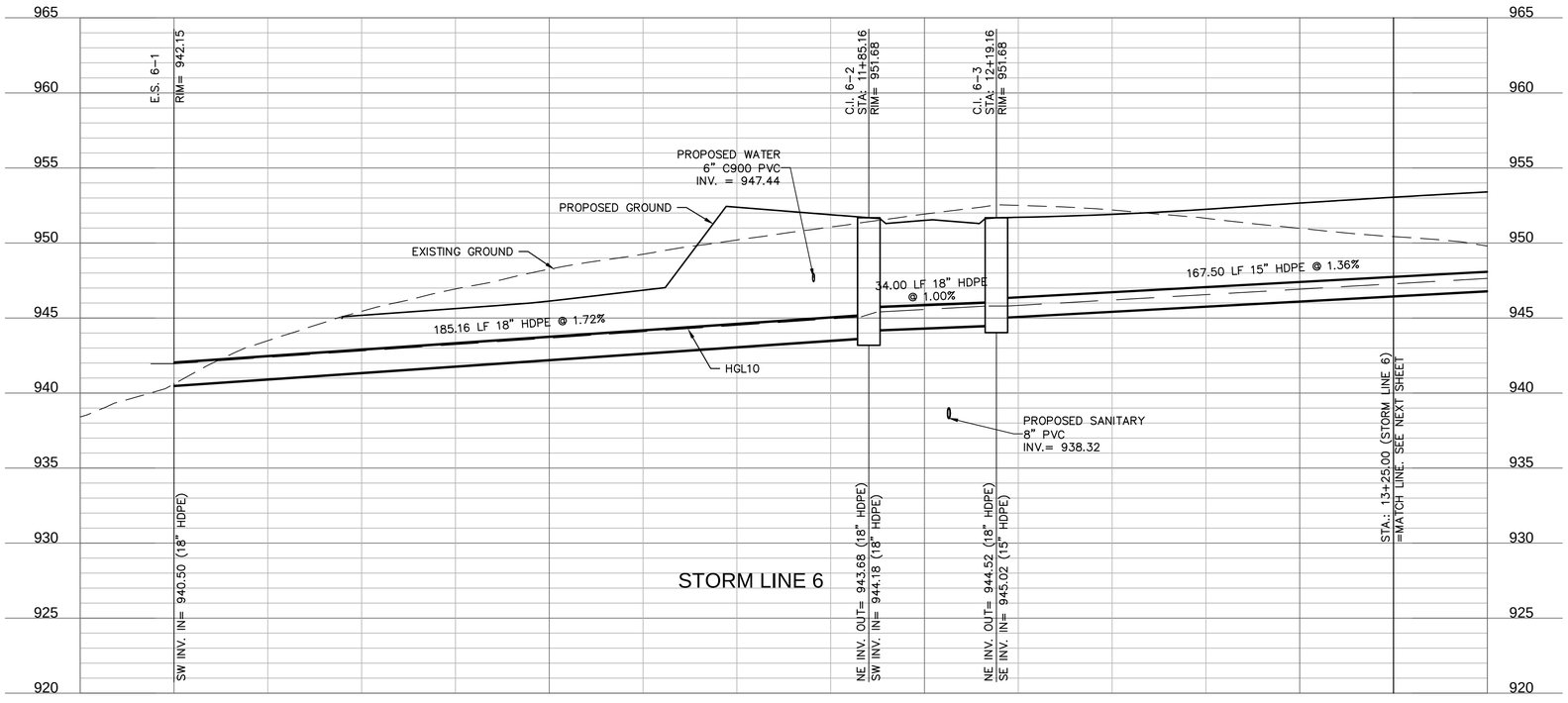


Riprap Calculations							
End Section	Q_{500} (cfs)	Pipe Diameter (ft)	Class*	D50* (in)	Apron Length (ft)	Apron Depth (ft)	Area (SY)
E.S. 6-1	25.96	2	3	10	10	2.00	10.4
*Per Table 10.1 HEC 14-FHWA-Energy Dissipators Pg. 10-18							



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STORM SEWER PLAN & PROFILE (LINE 6)
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

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checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
date: 05-05-2021

SHEET
C126

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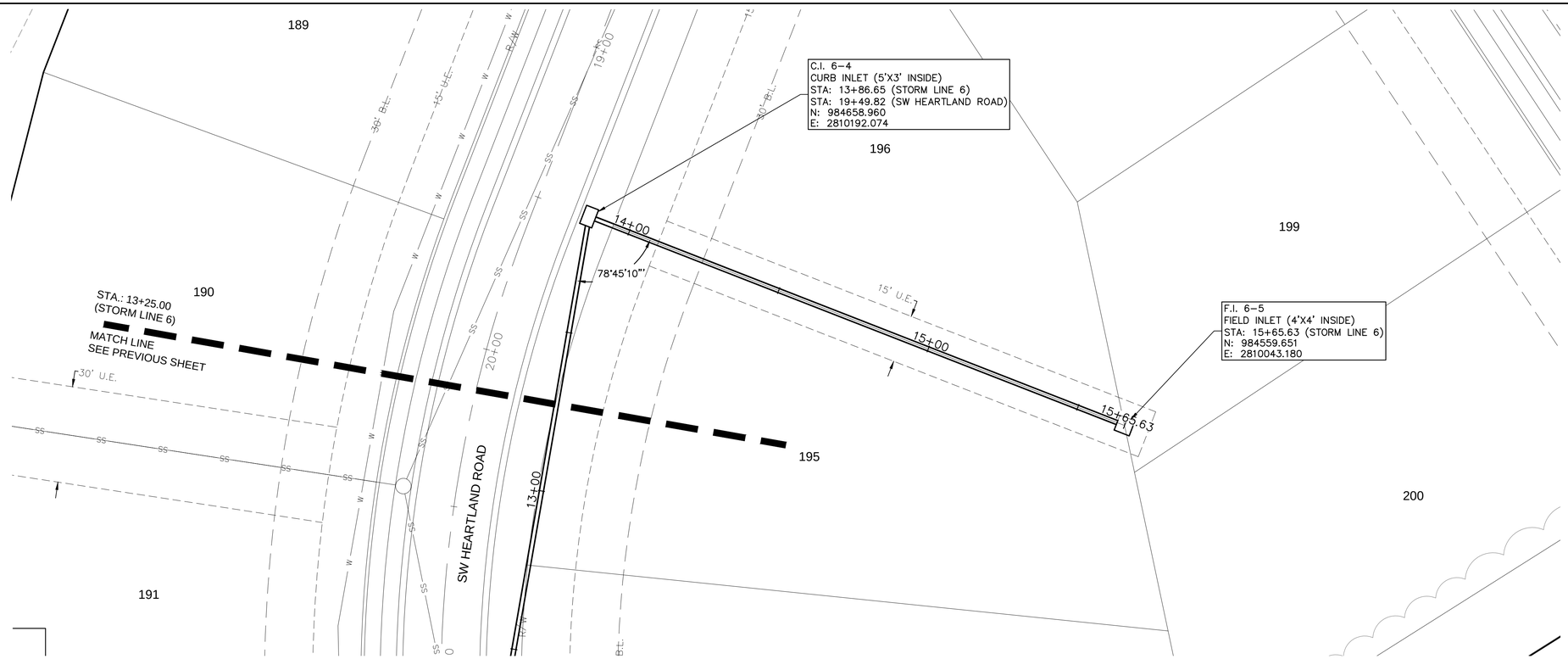

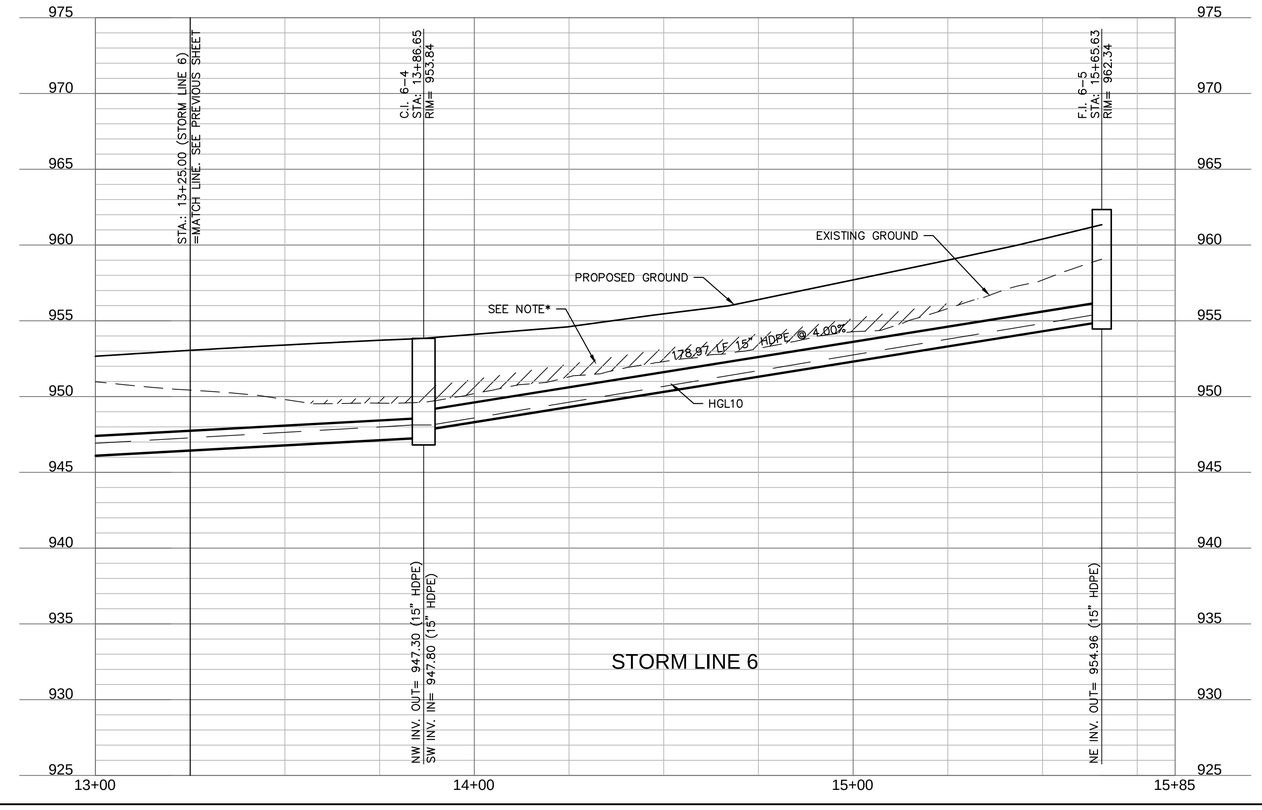

*NOTE: CONTRACTOR SHALL FILL AND COMPACT TO 95% STANDARD DENSITY TO A POINT 18" MINIMUM ABOVE THE TOP OF PIPE PRIOR TO EXCAVATION FOR THE PIPE

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
9/24/21
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	08-25-2021	REVISED PER CITY COMMENTS	

REVISIONS

STORM SEWER PLAN & PROFILE (LINE 6)
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
date: 05-05-2021

SHEET
C127

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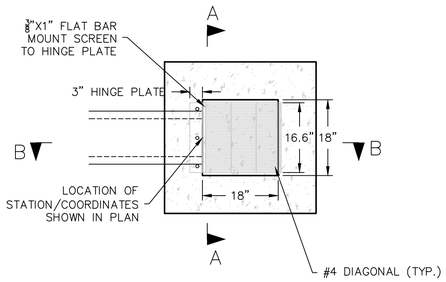
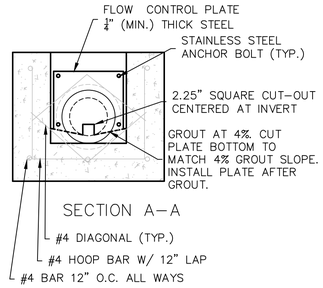
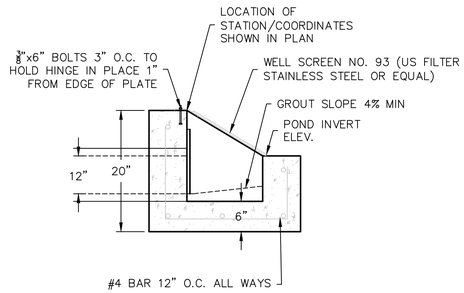
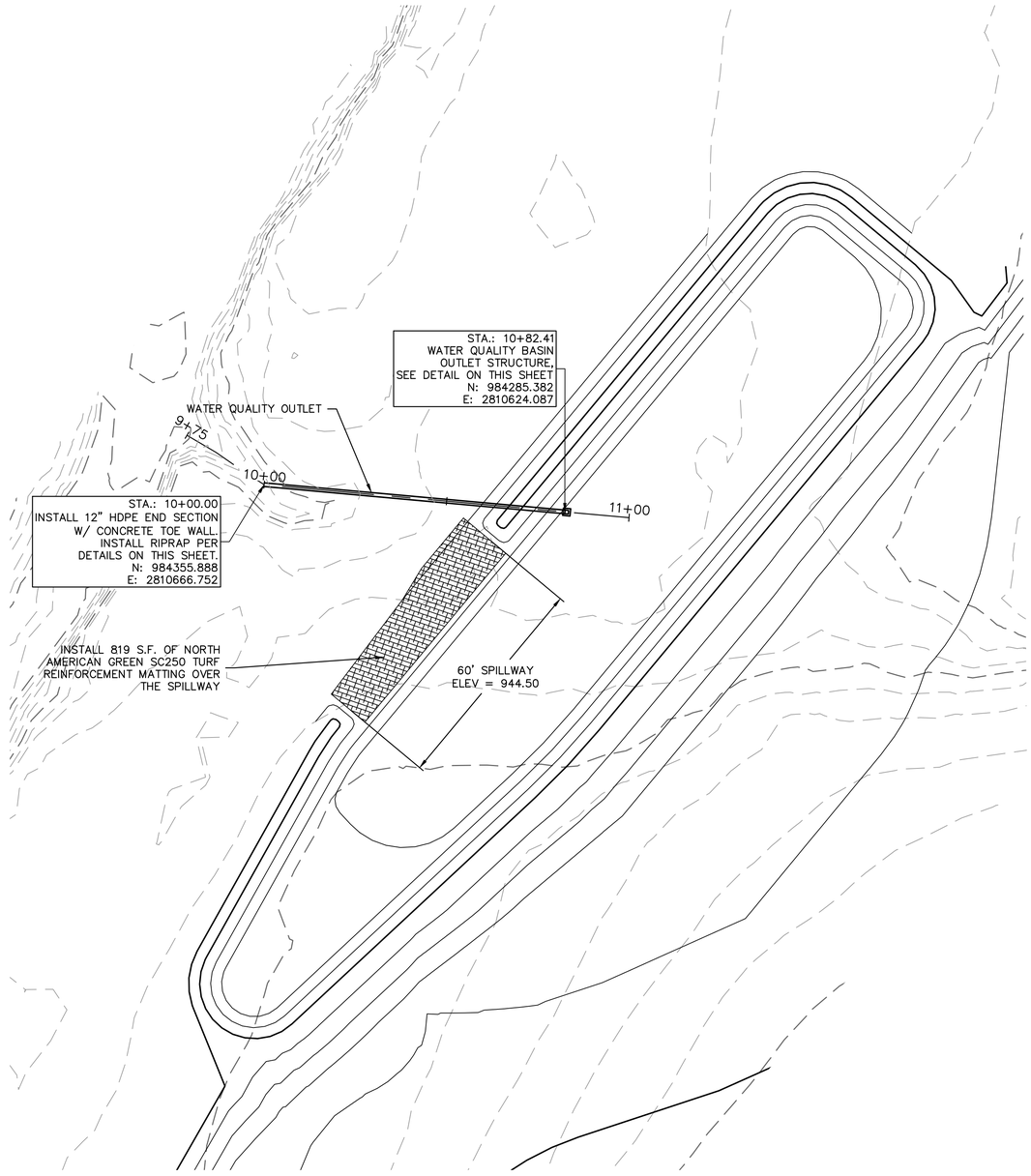


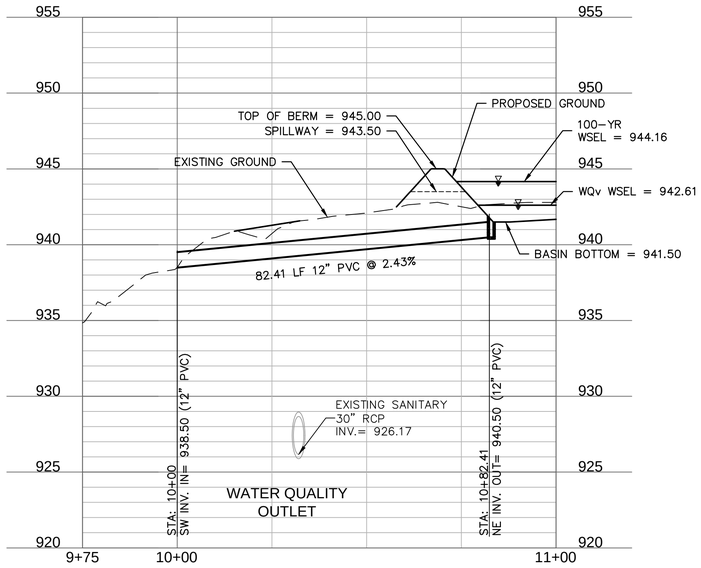


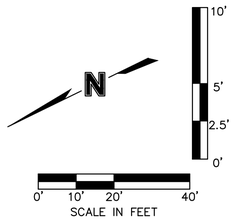
GENERAL NOTES:
1. CONCRETE SHALL BE CLASS B
2. REINFORCING BARS SHALL BE EPOXY COATED AND DEFORMED, AND SHALL HAVE MINIMUM 2" CLEARANCE.
3. ALL MOUNTING HARDWARE TO BE STAINLESS STEEL AND PROVIDED WITH HINGES AND LOCKABLE OR BOLTABLE ACCESS.

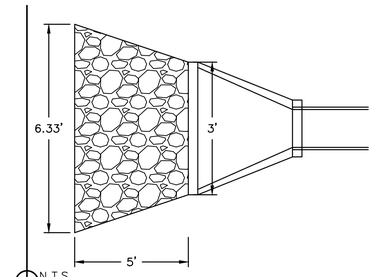


01 N.T.S.
WATER QUALITY BASIN OULET STRUCTURE









02 N.T.S.
RIPRAP OUTLET PROTECTION

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
9/24/21
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	08-26-2021	REVISED PER CITY COMMENTS	

REVISIONS

WATER QUALITY BASIN PLAN
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
date: 05-05-2021

SHEET
C128

DWG: F:\2019\4001-4500\019-4059-a\40-design\AutoCAD\final plans\Sheets\GNCV\Street & Storm Sewer Plans\C_DBP01_A194059.dwg USER: aabdigaliyev
DATE: Sep 21, 2021 2:36pm XREFS: C_PBASE_A194059 C_PBNDY_A194059 C_PUTIL_A194059 C_PTBLK_A194059 C_XBASE_A194059

NOTES:
1. INDIVIDUAL LOT OWNERS SHALL NOT CHANGE OR OBSTRUCT THE DRAINAGE FLOW LINES OR PATHS ON THE LOTS, AS SHOWN ON THE MATER DRAINAGE PLAN, UNLESS SPECIFIC APPLICATION IS MADE AND APPROVED BY THE CITY ENGINEER.

2. PLAT IS LOCATION IN ZONE X, "AREAS OUTSIDE THE 1-PERCENT ANNUAL CHANCE FLOODPLAINS, AREAS OF 1-PERCENT ANNUAL CHANCE SHEET FLOW FLOODING WHERE THE AVERAGE DEPTHS ARE LESS THAN 1 FOOT, AREAS OF 1-PERCENT ANNUAL CHANCE STREAM FLOODING WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 1 SQUARE MILE, OR AREAS PROTECTED FROM THE 1-PERCENT ANNUAL CHANCE FLOOD BY LEVEES. NO BASE FLOOD ELEVATIONS OR DEPTHS ARE SHOWN WITHIN THIS ZONE"

3. REQUIRED BUFFER ZONES FOR NATURAL STREAMS NOTED ON THIS PLAN SHEET. (1)

4. MBOE ELEVATIONS HAVE BEEN PROVIDED AT EACH LOT CORNER. INTERPOLATION WILL BE ALLOWED BETWEEN THE RIGHT AND LEFT SIDE MBOE'S SHOWN ON THE MASTER DRAINAGE PLAN, DEPENDING ON THE LOCATION OF THE LOWEST OPENING ON THE PROPOSED STRUCTURE.

5. REFER TO SHEET C107-C108 FOR SWALE GRADING DETAILS.

6. DRAINAGE PATHS TO BE CONSTRUCTED BETWEEN EACH OF THE LOTS LABELED AS STANDARD LOTS.

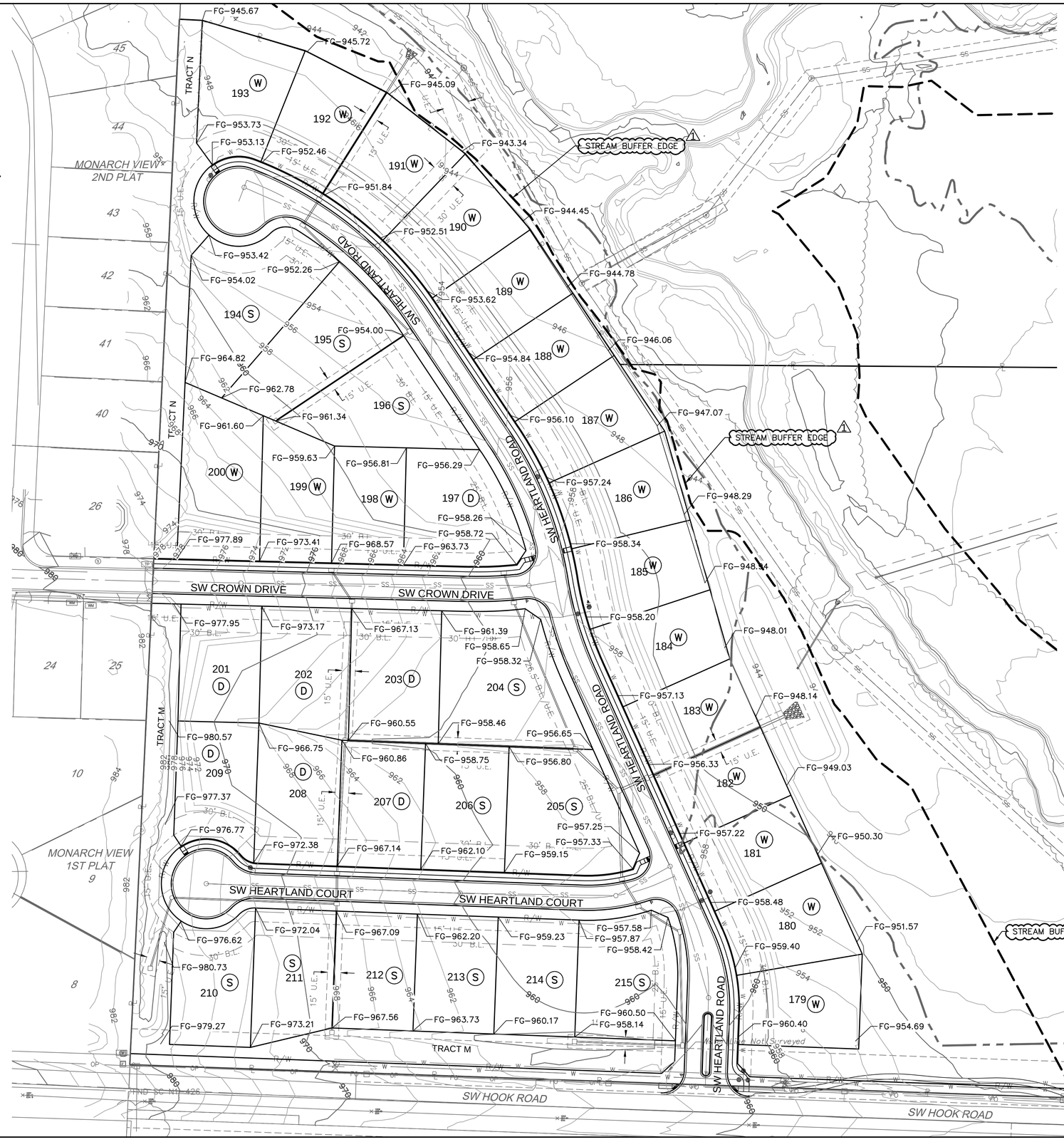
7. NO BUILDING PERMITS WILL BE ISSUED UNTIL AN AS-GRADED MASTER DRAINAGE PLAN HAS BEEN SUBMITTED TO THE CITY AND APPROVED BY THE CITY.

NOTES:

MBOE – MINIMUM BUILDING OPENING ELEVATION
FG – FINISHED GRADE

BASEMENT TYPES

(S) STANDARD
(W) WALKOUT
(D) DAYLIGHT



0' 30' 60' 120'
SCALE IN FEET

LEGEND

100	FINISHED INDEX CONTOURS
100	FINISHED INTERMEDIATE CONTOURS

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
9/24/21
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	08-26-2021	REVISED PER CITY COMMENTS	

REVISIONS

MASTER DRAINAGE PLAN
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
date: 05-05-2021

SHEET
C129

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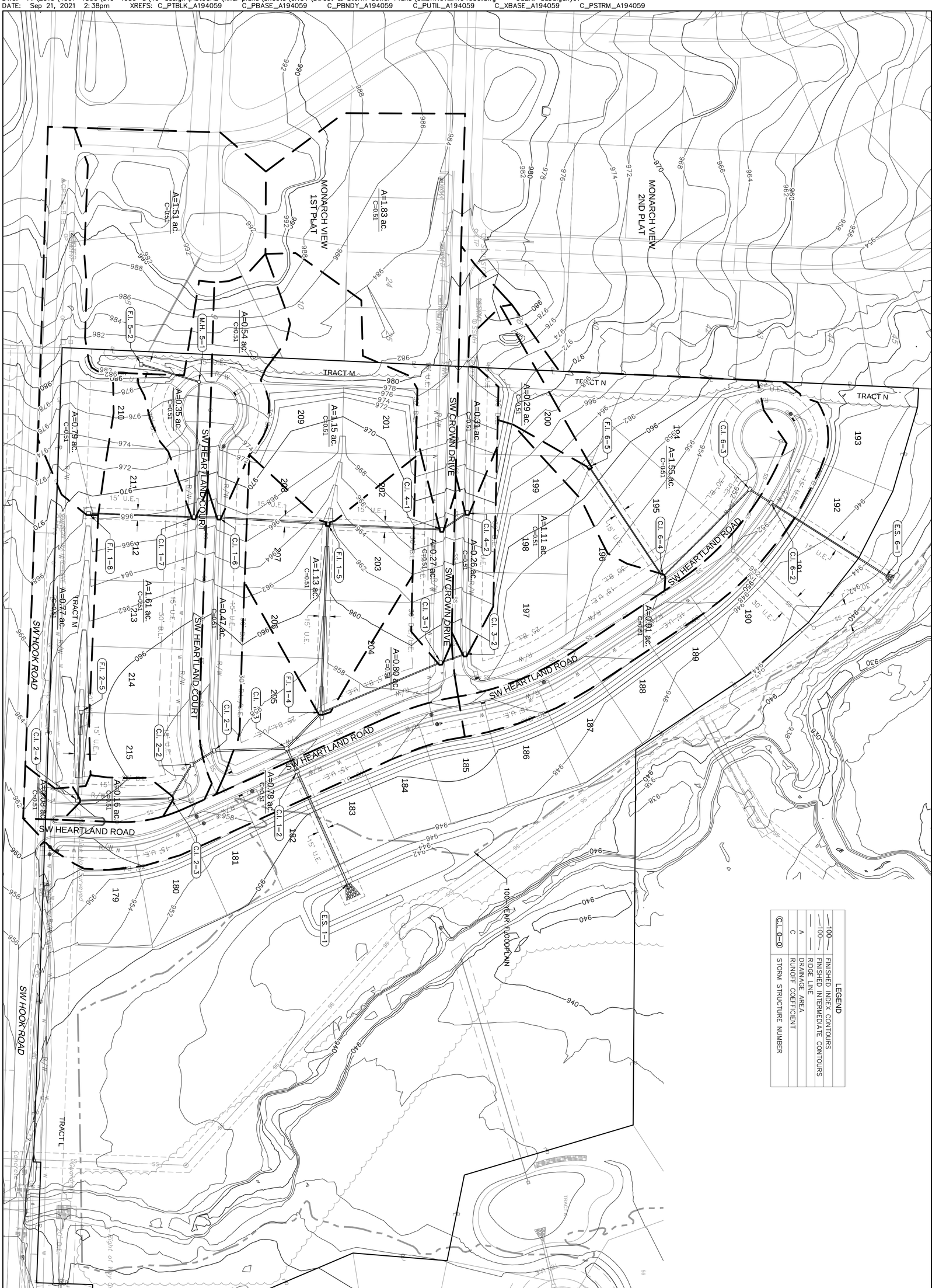

LEGEND

100	FINISHED INDEX CONTOURS
100	FINISHED INTERMEDIATE CONTOURS
	RIDGE LINE
A	DRAINAGE AREA
C	RUNOFF COEFFICIENT
C.I. 6-3	STORM STRUCTURE NUMBER

SHEET C130

drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A194059
date: 09-09-2021

DRAINAGE PLAN
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO 2021

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	08-26-2021	REVISED PER CITY COMMENTS	

REVISIONS

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2010006397
9/24/21
PROFESSIONAL ENGINEER

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www.olsson.com

Inlet Design Table						
10 Year Return Frequency						
Inlet ID	Captured Flow	Bypass Flow	Inlet Efficiency (Note 2)	Gutter Depth	Gutter Spread	Ponding Depth
	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)
C.I. 1-2(L)	0.75	0.10	100.00%	0.12	5.88	...
C.I. 1-2(R)	1.58	0.14	100.00%	0.15	7.63	...
C.I. 1-2	2.93	1.40	100.00%	...	...	...
C.I. 1-3(L)	0.15	0.00	100.00%	0.06	3.16	...
C.I. 1-3(R)	3.73	0.00	100.00%	0.21	10.73	...
C.I. 1-3	5.35	0.00	100.00%	...	...	...
F.I. 1-4	4.24	0.00	100.00%	...	...	0.19
F.I. 1-5	4.31	0.00	100.00%	...	...	0.19
C.I. 1-6	1.35	0.67	66.75%	0.13	6.31	...
C.I. 1-7	1.01	0.31	76.72%	0.11	5.36	...
F.I. 1-8	2.96	0.00	100.00%	...	...	0.15
C.I. 2-1(L)	2.02	0.00	100.00%	0.16	8.05	...
C.I. 2-1(R)	0.00	0.00	...	...	...	...
C.I. 2-1	2.44	0.00	100.00%	...	...	...
C.I. 2-2(L)	0.06	0.00	100.00%	0.04	2.03	...
C.I. 2-2(R)	4.58	0.00	100.00%	0.22	11.03	...
C.I. 2-2	6.33	0.00	100.00%	...	...	...
C.I. 2-3	0.58	0.02	96.23%	0.10	5.19	...
C.I. 2-4	0.30	0.00	98.51%	0.08	3.93	...
F.I. 2-5	2.89	0.00	100.00%	...	...	0.14
C.I. 3-1	3.48	2.35	59.75%	0.23	11.61	...
C.I. 3-2	1.08	0.15	87.91%	0.12	6.21	...
C.I. 4-1	2.05	4.81	29.85%	0.20	9.80	...
C.I. 4-2	0.90	0.26	77.83%	0.10	5.04	...
F.I. 5-2	5.66	0.00	100.00%	...	...	0.23
C.I. 6-2(L)	0.64	0.00	100.00%	0.11	5.52	...
C.I. 6-2(R)	2.18	0.00	100.00%	0.17	8.68	...
C.I. 6-2	3.41	0.00	100.00%	...	...	...
C.I. 6-3(L)	3.26	0.00	100.00%	0.19	9.73	...
C.I. 6-3(R)	1.01	0.00	100.00%	0.13	6.56	...
C.I. 6-3	7.08	0.00	100.00%	...	...	...
C.I. 6-4	3.04	1.27	70.56%	0.21	10.69	...
F.I. 6-5	1.09	0.00	100.00%	...	...	0.08

Notes:
1. Inlet capacity at sag location has been reduced by a clogging factor of 0.80, reducing theoretical Both theoretical capacity and reduced capacity are shown.
2. Inlet efficiency shown in the tables is Captured Flow/Total Flow, denoting the actual percentage

Drainage Area Design Table						
10 Year Return Frequency						
Inlet ID	Drainage Area	C	Tc	i	K	Peak Flow
	(ac)		(min)	(in/hr)		(cfs)
C.I. 1-2(L)	0.20	0.51	5.00	7.35	1.00	0.75
C.I. 1-2(R)	0.42	0.51	5.00	7.35	1.00	1.58
C.I. 1-2(B)	0.16	0.51	5.00	7.35	1.00	0.60
C.I. 1-2	0.78	0.51	5.00	7.35	1.00	2.93
C.I. 1-3(L)	0.04	0.51	5.00	7.35	1.00	0.15
C.I. 1-3(R)	0.37	0.51	5.00	7.35	1.00	1.39
C.I. 1-3(B)	0.39	0.51	5.00	7.35	1.00	1.46
C.I. 1-3	0.80	0.51	5.00	7.35	1.00	3.00
F.I. 1-4	1.13	0.51	5.00	7.35	1.00	4.24
F.I. 1-5	1.15	0.51	5.00	7.35	1.00	4.31
C.I. 1-6	0.54	0.51	5.00	7.35	1.00	2.03
C.I. 1-7	0.35	0.51	5.00	7.35	1.00	1.31
F.I. 1-8	0.79	0.51	5.00	7.35	1.00	2.96
C.I. 2-1(L)	0.36	0.51	5.00	7.35	1.00	1.35
C.I. 2-1(R)	0.00	0.51	5.00	7.35	1.00	0.00
C.I. 2-1(B)	0.11	0.51	5.00	7.35	1.00	0.41
C.I. 2-1	0.47	0.51	5.00	7.35	1.00	1.76
C.I. 2-2(L)	0.01	0.51	5.00	7.35	1.00	0.04
C.I. 2-2(R)	1.14	0.51	5.00	7.35	1.00	4.28
C.I. 2-2(B)	0.45	0.51	5.00	7.35	1.00	1.69
C.I. 2-2	1.60	0.51	5.00	7.35	1.00	6.00
C.I. 2-3	0.16	0.51	5.00	7.35	1.00	0.60
C.I. 2-4	0.08	0.51	5.00	7.35	1.00	0.30
F.I. 2-5	0.77	0.51	5.00	7.35	1.00	2.89
C.I. 3-1	0.27	0.51	5.00	7.35	1.00	1.01
C.I. 3-2	0.26	0.51	5.00	7.35	1.00	0.98
C.I. 4-1	1.83	0.51	5.00	7.35	1.00	6.86
C.I. 4-2	0.31	0.51	5.00	7.35	1.00	1.16
F.I. 5-2	1.51	0.51	5.00	7.35	1.00	5.66
C.I. 6-2(L)	0.17	0.51	5.00	7.35	1.00	0.64
C.I. 6-2(R)	0.58	0.51	5.00	7.35	1.00	2.18
C.I. 6-2(B)	0.16	0.51	5.00	7.35	1.00	0.60
C.I. 6-2	0.91	0.51	5.00	7.35	1.00	3.41
C.I. 6-3(L)	0.53	0.51	5.00	7.35	1.00	1.99
C.I. 6-3(R)	0.27	0.51	5.00	7.35	1.00	1.01
C.I. 6-3(B)	0.75	0.51	5.00	7.35	1.00	2.81
C.I. 6-3	1.55	0.51	5.00	7.35	1.00	5.81
C.I. 6-4	1.11	0.51	5.00	7.35	1.00	4.16
F.I. 6-5	0.29	0.51	5.00	7.35	1.00	1.09

1

Storm Sewer Design Calculation Table													
10 Year Return Frequency													
Upstream Structure	Downstream Structure	Length	Upstream Invert	Downstream Invert	Slope	Diameter	Manning's n	Total Flow	Velocity	Capacity	Flow Depth	Upstream Struct. HGL	Upstream Top Elev.
		(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(ft/s)	(cfs)	(ft)	(ft)	(ft)
C.I. 1-2	E.S. 1-1	166.93	945.50	942.00	2.10	30	0.012	47.90	10.08	64.33	2.27	947.77	956.18
C.I. 1-3	C.I. 1-2	34.50	946.44	946.00	1.28	30	0.012	44.97	10.65	50.18	2.22	948.66	956.19
F.I. 1-4	C.I. 1-3	66.80	948.55	946.94	2.41	24	0.012	27.04	9.22	38.04	1.81	950.36	956.25
F.I. 1-5	F.I. 1-4	256.31	954.18	949.05	2.00	24	0.012	18.24	7.71	34.66	1.54	955.72	961.63
C.I. 1-6	F.I. 1-5	148.04	958.26	954.93	2.25	18	0.012	10.98	8.57	17.06	1.27	959.53	966.98
C.I. 1-7	C.I. 1-6	34.01	959.44	958.76	2.00	18	0.012	9.63	7.94	16.09	1.20	960.64	966.93
F.I. 1-8	C.I. 1-7	143.00	962.33	959.94	1.67	15	0.012	2.96	4.23	9.04	0.69	963.02	967.73
C.I. 2-1	C.I. 1-3	98.35	947.82	946.94	0.89	24	0.012	12.58	5.16	23.18	1.27	949.09	957.16
C.I. 2-2	C.I. 2-1	35.70	949.11	948.32	2.21	18	0.012	10.14	8.28	16.92	1.23	950.34	957.15
C.I. 2-3	C.I. 2-2	54.05	950.04	949.61	0.80	15	0.012	3.77	4.88	6.24	0.78	950.82	958.52
C.I. 2-4	C.I. 2-3	126.26	951.55	950.54	0.80	15	0.012	3.19	4.74	6.26	0.72	952.27	960.42
F.I. 2-5	C.I. 2-4	120.09	953.01	952.05	0.80	15	0.012	2.89	4.61	6.25	0.68	953.69	958.32
C.I. 3-1	F.I. 1-4	176.30	951.94	949.30	1.50	15	0.012	4.56	4.58	8.56	0.86	952.80	958.72
C.I. 3-2	C.I. 3-1	35.03	954.14	953.44	2.00	15	0.012	1.08	4.19	9.89	0.41	954.55	958.89
C.I. 4-1	F.I. 1-5	154.77	960.35	954.93	3.50	15	0.012	2.95	3.94	13.09	0.69	961.04	966.97
C.I. 4-2	C.I. 4-1	41.55	962.10	960.85	3.01	15	0.012	0.90	4.36	12.13	0.37	962.47	968.41
M.H. 5-1	C.I. 1-7	183.70	968.75	960.94	4.25	15	0.012	5.66	8.31	14.42	0.96	969.71	977.56
F.I. 5-2	M.H. 5-1	82.02	972.53	969.25	4.00	15	0.012	5.66	8.19	13.99	0.96	973.49	979.65
C.I. 6-2	E.S. 6-1	185.16	943.68	940.50	1.72	18	0.012	14.62	8.45	14.91	1.40	945.08	951.68
C.I. 6-3	C.I. 6-2	34.00	944.52	944.18	1.00	18	0.012	11.21	7.16	11.38	1.28	945.80	951.68
C.I. 6-4	C.I. 6-3	167.50	947.30	945.02	1.36	15	0.012	4.13	4.98	8.16	0.82	948.12	953.84
F.I. 6-5	C.I. 6-4	178.97	954.96	947.80	4.00	15	0.012	1.09	3.73	13.99	0.41	955.37	962.34

Inlet Design Table						
100 Year Return Frequency						
Inlet ID	Captured Flow	Bypass Flow	Inlet Efficiency (Note 2)	Gutter Depth	Gutter Spread	Ponding Depth
	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)
C.I. 1-2(L)	1.32	0.46	100.00%	0.15	7.26	...
C.I. 1-2(R)	2.76	0.70	100.00%	0.19	9.42	...
C.I. 1-2	5.13	3.62	100.00%	...	...	...
C.I. 1-3(L)	0.26	0.00	100.00%	0.08	3.90	...
C.I. 1-3(R)	9.56	0.00	100.00%	0.31	15.27	...
C.I. 1-3	12.39	0.00	100.00%	...	...	...
F.I. 1-4	7.44	0.00	100.00%	...	...	0.27
F.I. 1-5	7.57	0.00	100.00%	...	...	0.27
C.I. 1-6	1.81	1.75	50.86%	0.16	7.79	...
C.I. 1-7	1.46	0.84	63.36%	0.13	6.62	...
F.I. 1-8	5.20	0.00	100.00%	...	...	0.21
C.I. 2-1(L)	4.12	0.00	100.00%	0.21	10.50	...
C.I. 2-1(R)	0.00	0.00	...	...	...	...
C.I. 2-1	4.84	0.00	100.00%	...	...	...
C.I. 2-2(L)	0.14	0.00	100.00%	0.06	2.83	...
C.I. 2-2(R)	8.35	0.00	100.00%	0.28	13.82	...
C.I. 2-2	11.45	0.00	100.00%	...	...	...
C.I. 2-3	0.99	0.08	92.61%	0.13	6.43	...
C.I. 2-4	0.51	0.02	96.62%	0.10	4.86	...
F.I. 2-5	5.07	0.00	100.00%	...	...	0.21
C.I. 3-1	4.57	7.13	39.04%	0.30	15.08	...
C.I. 3-2	1.87	0.56	77.13%	0.16	8.01	...
C.I. 4-1	2.12	9.92	17.63%	0.24	12.10	...
C.I. 4-2	1.32	0.72	64.85%	0.12	6.22	...
F.I. 5-2	9.94	0.00	100.00%	...	...	0.33
C.I. 6-2(L)	1.12	0.00	100.00%	0.14	6.82	...
C.I. 6-2(R)	3.82	0.00	100.00%	0.21	10.71	...
C.I. 6-2	5.99	0.00	100.00%	...	...	...
C.I. 6-3(L)	7.08	0.00	100.00%	0.26	13.02	...
C.I. 6-3(R)	1.78	0.00	100.00%	0.16	8.10	...
C.I. 6-3	13.79	0.00	100.00%	...	...	...
C.I. 6-4	4.27	3.59	54.31%	0.27	13.39	...
F.I. 6-5	1.91	0.00	100.00%	...	...	0.11

Notes:
1. Inlet capacity at sag location has been reduced by a clogging factor of 0.80, reducing theoretical Both theoretical capacity and reduced capacity are shown.
2. Inlet efficiency shown in the tables is Captured Flow/Total Flow, denoting the actual percentage

Drainage Area Design Table						
100 Year Return Frequency						
Inlet ID	Drainage Area	C	Tc	i	K	Peak Flow
	(ac)		(min)	(in/hr)		(cfs)
C.I. 1-2(L)	0.20	0.51	5.00	10.32	1.25	1.32
C.I. 1-2(R)	0.42	0.51	5.00	10.32	1.25	2.76
C.I. 1-2(B)	0.16	0.51	5.00	10.32	1.25	1.05
C.I. 1-2	0.78	0.51	5.00	10.32	1.25	5.13
C.I. 1-3(L)	0.04	0.51	5.00	10.32	1.25	0.26
C.I. 1-3(R)	0.37	0.51	5.00	10.32	1.25	2.43
C.I. 1-3(B)	0.39	0.51	5.00	10.32	1.25	2.57
C.I. 1-3	0.80	0.51	5.00	10.32	1.25	5.26
F.I. 1-4	1.13	0.51	5.00	10.32	1.25	7.44
F.I. 1-5	1.15	0.51	5.00	10.32	1.25	7.57
C.I. 1-6	0.54	0.51	5.00	10.32	1.25	3.55
C.I. 1-7	0.35	0.51	5.00	10.32	1.25	2.30
F.I. 1-8	0.79	0.51	5.00	10.32	1.25	5.20
C.I. 2-1(L)	0.36	0.51	5.00	10.32	1.25	2.37
C.I. 2-1(R)	0.00	0.51	5.00	10.32	1.25	0.00
C.I. 2-1(B)	0.11	0.51	5.00	10.32	1.25	0.72
C.I. 2-1	0.47	0.51	5.00	10.32	1.25	3.09
C.I. 2-2(L)	0.01	0.51	5.00	10.32	1.25	0.07
C.I. 2-2(R)	1.14	0.51	5.00	10.32	1.25	7.50
C.I. 2-2(B)	0.45	0.51	5.00	10.32	1.25	2.96
C.I. 2-2	1.60	0.51	5.00	10.32	1.25	10.53
C.I. 2-3	0.16	0.51	5.00	10.32	1.25	1.05
C.I. 2-4	0.08	0.51	5.00	10.32	1.25	0.53
F.I. 2-5	0.77	0.51	5.00	10.32	1.25	5.07
C.I. 3-1	0.27	0.51	5.00	10.32	1.25	1.78
C.I. 3-2	0.26	0.51	5.00	10.32	1.25	1.71
C.I. 4-1	1.83	0.51	5.00	10.32	1.25	12.04
C.I. 4-2	0.31	0.51	5.00	10.32	1.25	2.04
F.I. 5-2	1.51	0.51	5.00	10.32	1.25	9.94
C.I. 6-2(L)	0.17	0.51	5.00	10.32	1.25	1.12
C.I. 6-2(R)	0.58	0.51	5.00	10.32	1.25	3.82
C.I. 6-2(B)	0.16	0.51	5.00	10.32	1.25	1.05
C.I. 6-2	0.91	0.51	5.00	10.32	1.25	5.99
C.I. 6-3(L)	0.53	0.51	5.00	10.32	1.25	3.49
C.I. 6-3(R)	0.27	0.51	5.00	10.32	1.25	1.78
C.I. 6-3(B)	0.75	0.51	5.00	10.32	1.25	4.94
C.I. 6-3	1.55	0.51	5.00	10.32	1.25	10.20
C.I. 6-4	1.11	0.51	5.00	10.32	1.25	7.30
F.I. 6-5	0.29	0.51	5.00	10.32	1.25	1.91

1

Storm Sewer Design Calculation Table													
100 Year Return Frequency													
Upstream Structure	Downstream Structure	Length	Upstream Invert	Downstream Invert	Slope	Diameter	Manning's n	Total Flow	Velocity	Capacity	Flow Depth	Upstream Struct. HGL	Upstream Top Elev.
		(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(ft/s)	(cfs)	(ft)	(ft)	(ft)
C.I. 1-2	E.S. 1-1	166.93	945.50	942.00	2.10	30	0.012	83.75	17.08	64.33	2.50	950.17	956.18
C.I. 1-3	C.I. 1-2	34.50	946.44	946.00	1.28	30	0.012	78.62	16.02	50.18	2.50	953.06	956.19
F.I. 1-4	C.I. 1-3	66.80	948.55	946.94	2.41	24	0.012	43.30	13.78	38.04	2.00	956.75	956.25
F.I. 1-5	F.I. 1-4	256.31	954.18	949.05	2.00	24	0.012	29.42	9.37	34.66	2.00	961.62	961.63
C.I. 1-6	F.I. 1-5	148.04	958.26	954.93	2.25	18	0.012	18.41	10.42	17.06	1.50	966.05	966.98
C.I. 1-7	C.I. 1-6	34.01	959.44	958.76	2.00	18	0.012	16.60	9.39	16.09	1.50	967.28	966.93
F.I. 1-8	C.I. 1-7	143.00	962.33	959.94	1.67	15	0.012	5.20	4.24	9.04	1.25	968.62	967.73
C.I. 2-1	C.I. 1-3	98.35	947.82	946.94	0.89	24	0.012	22.93	7.30	23.18	2.00	955.52	957.16
C.I. 2-2	C.I. 2-1	35.70	949.11	948.32	2.21	18	0.012	18.09	10.24	16.92	1.50	956.67	957.15
C.I. 2-3	C.I. 2-2	54.05	950.04	949.61	0.80	15	0.012	6.57	5.35	6.24	1.25	957.64	958.52
C.I. 2-4	C.I. 2-3	126.26	951.55	950.54	0.80	15	0.012	5.58	4.55	6.26	1.25	958.62	960.42
F.I. 2-5	C.I. 2-4	120.09	953.01	952.05	0.80	15	0.012	5.07	4.13	6.25	1.25	959.38	958.32
C.I. 3-1	F.I. 1-4	176.30	951.94	949.30	1.50	15	0.012	6.44	5.25	8.56	1.25	959.42	958.72
C.I. 3-2	C.I. 3-1	35.03	954.14	953.44	2.00	15	0.012	1.87	1.52	9.89	1.25	959.57	958.89
C.I. 4-1	F.I. 1-5	154.77	960.35	954.93	3.50	15	0.012	3.44	2.80	13.09	1.25	962.54	966.97
C.I. 4-2	C.I. 4-1	41.55	962.10	960.85	3.01	15	0.012	1.32	2.17	12.13	0.46	962.56	968.41
M.H. 5-1	C.I. 1-7	183.70	968.75	960.94	4.25	15	0.012	9.94	8.10	14.42	1.25	971.54	977.56
F.I. 5-2	M.H. 5-1	82.02	972.53	969.25	4.00	15	0.012	9.94	8.19	13.99	1.18	973.71	979.65
C.I. 6-2	E.S. 6-1	185.16	943.68	940.50	1.72	18	0.012	25.96	14.70	14.91	1.50	951.30	951.68
C.I. 6-3	C.I. 6-2	34.00	944.52	944.18	1.00	18	0.012	19.97	11.30	11.38	1.50	953.35	951.68
C.I. 6-4	C.I. 6-3	167.50	947.30	945.02	1.36	15	0.012	6.18	5.04	8.16	1.25	955.45	953.84
F.I. 6-5	C.I. 6-4	178.97	954.96	947.80	4.00	15	0.012	1.91	1.93	13.99	0.80	955.76	962.34

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JULIE ELAINE SELLERS
NUMBER PE-2017000367
9/24/21
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	08-26-2021	REVISED PER CITY COMMENTS	

REVISIONS

DRAINAGE TABLES
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
date: 05-05-2021

SHEET
C131

DWG: F:\2019\4001-4500\019-4059-a\40-design\AutoCAD\final plans\Sheets\GNCV\Street & Storm Sewer Plans\C_TAB01_A194059.dwg
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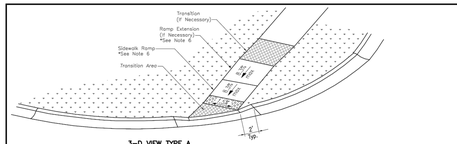
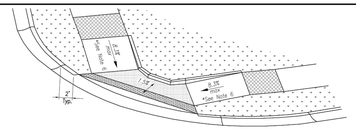


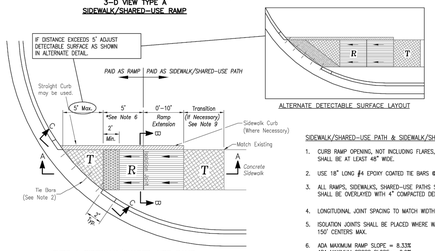
3-D VIEW TYPE A
SIDEWALK/SHARED-USE RAMP



3-D VIEW TYPE B
SIDEWALK/SHARED-USE RAMP

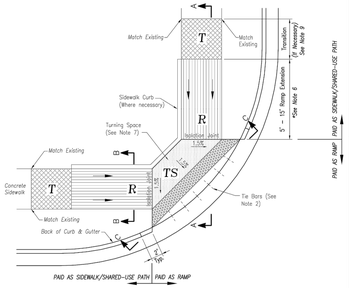
LEGEND

R	SIDEWALK RAMP
TS	TURNING SPACE
	DETECTABLE WARNING SURFACE
T	TRANSITION



TYPE A SIDEWALK/SHARED-USE RAMP
Not to Scale

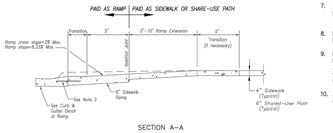
ALTERNATE DETECTABLE SURFACE LAYOUT



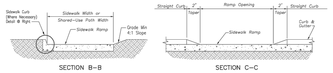
TYPE B SIDEWALK/SHARED-USE RAMP
Not to Scale

SIDEWALK/SHARED-USE PATH & SIDEWALK/SHARED-USE RAMP NOTES:

1. CURB RAMP OPENING, NOT INCLUDING FLARES, SHALL MATCH EXISTING SIDEWALK WIDTH AND OPENING SHALL BE AT LEAST 48" WIDE.
2. USE 18" LONG #4 EPOXY COATED TIE BARS @ 24" O.C. EMBED TIE BARS 9" IN EACH DIRECTION.
3. ALL RAMPS, SIDEWALKS, SHARED-USE PATHS SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
4. LONGITUDINAL JOINT SPACING TO MATCH WIDTH OF SIDEWALK.
5. ISOLATION JOINTS SHALL BE PLACED WHERE WALK ABUTS DRIVEWAYS AND SIMILAR STRUCTURES, AND 150' CENTERS MAX.
6. ADA MAXIMUM RAMP SLOPE = 8.33%
   ADA MAXIMUM CROSS SLOPE = 2.0%
   *ROADWAY EXCEPTION: WHERE EXISTING ROAD PROFILE GRADE DOES NOT ALLOW RAMP TO MEET RAMP SLOPE REQUIREMENT OF 8.33% OR LESS, THE RAMP SHALL BE EXTENDED TO A LENGTH OF 15 FEET TO MATCH EXISTING SIDEWALK. CROSS SLOPE OF RAMP SHALL BE 1.5%, ±0.5%.
7. TURNING SPACES SHALL BE 1.5%, ±0.5%, SLOPE IN ANY DIRECTION. TURNING SPACES SHALL HAVE A MINIMUM 4'x4' TURNING AREA. TURNING SPACES, WITH A SIDEWALK CURB, SHALL HAVE A 5' TURNING AREA PERPENDICULAR TO THE SIDEWALK CURB.
8. FOR RETROFIT WORK, SLOPES TO BE DETERMINED IN FIELD BY CONTRACTOR AND APPROVED BY CITY INSPECTOR
9. RAMP EXTENSION AREA SHALL NOT BE USED AS TRANSITION TO EXISTING SIDEWALK. ANY TRANSITIONS REQUIRED TO MATCH RAMPS TO EXISTING SIDEWALK SHALL REQUIRE REMOVAL AND REPLACEMENT OF ADDITIONAL SIDEWALK BEYOND THE RAMP AREA. SIDEWALK TRANSITION LENGTH SHALL BE EQUAL TO OR GREATER THAN THE WIDTH OF THE EXISTING SIDEWALK. RAMP EXTENSIONS SHALL BE A CONTINUOUS SLOPE.
10. ALL SIDEWALK AND RAMP CONSTRUCTION SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).

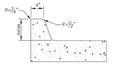


SECTION A–A

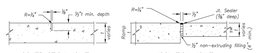


SECTION B–B SECTION C–C

TYPE A & B SIDEWALK RAMP
Not to Scale

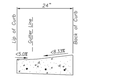


SIDEWALK CURB DETAIL
Not to Scale

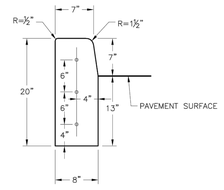


CONTRACTION JOINT ISOLATION JOINT

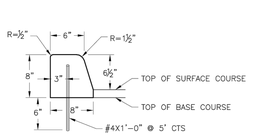
JOINT DETAILS
Not to Scale



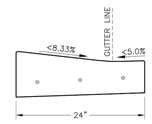
CURB & GUTTER DETAIL AT RAMP
Not to Scale



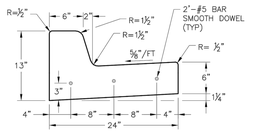
STRAIGHT CURB
(TYPE C-1)



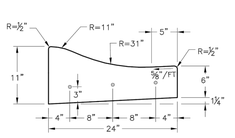
DOWELLED CURB
(TYPE DC)



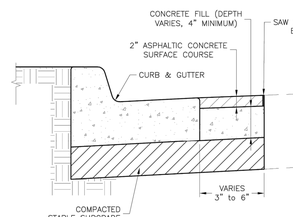
CURB & GUTTER DETAIL AT RAMP
(ADA SLOPE REQUIREMENTS)



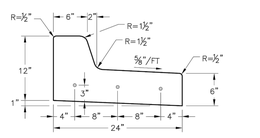
STRAIGHT BACK CURB & GUTTER
(TYPE CG-1)



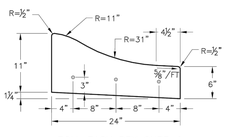
ROLL BACK CURB & GUTTER
(TYPE CG-2)



CURB REPLACEMENT DETAIL



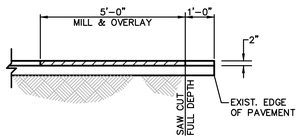
STRAIGHT BACK DRY CURB & GUTTER
(TYPE CG-1 DRY)



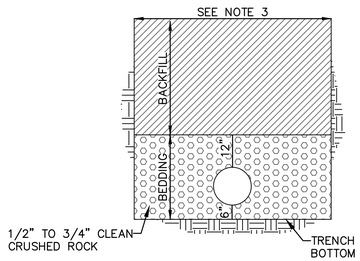
ROLL BACK DRY CURB & GUTTER
(TYPE CG-2 DRY)

GENERAL NOTES

1. ¾" ISOLATION JOINTS WITH 3 (2'-#5 BAR) SMOOTH DOWELS SHALL BE PLACED AT RADIUS POINTS AND AT 150' INTERVALS. THESE DOWEL BARS SHALL BE GREASED AND WRAPPED ON ONE END WITH EXPANSION TUBES.
2. 3" DEEP CONTRACTION JOINTS SHALL BE INSTALLED AT APPROXIMATELY 10' INTERVALS. THESE JOINTS SHALL PASS ACROSS THE ENTIRE CURB SECTION.
3. CONCRETE FILL SHALL HAVE UNIFORM AND SMOOTH FINISH
4. KCMMB 4K CONCRETE SHALL BE USED FOR ALL CURB.
5. ASPHALTIC CONCRETE SURFACE COURSE SHALL CONFORM TO STANDARD SPECIFICATIONS SECTION 2205.2.
6. CURBS FOR NEW STREETS SHALL BE BUILT ON ASPHALT OR AGGREGATE BASE AS SHOWN IN TYPICAL SECTION DETAIL.
7. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.
8. ALL DOWELS & TIE BARS SHALL BE EPOXY COATED.



MILL & OVERLAY DETAIL
N.T.S.



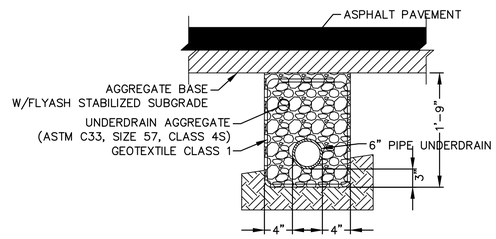
TYPICAL SECTION FOR PLASTIC PIPE
(IN ROCK OR SOIL)

UNDERGROUND PIPE INSTALLATION FOR STORM SEWER LINES
N.T.S.

1. BACKFILL SHALL BE JOB EXECAVATED MATERIAL FREE FROM DEBRIS AND STONES COMPACTED TO 90% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698. BACKFILL UNDER PAVEMENT (EXISTING OR PROPOSED), SHALL BE FLOWABLE FILL.

2. TRENCH BANKS MAY BE CUT BACK ON SLOPES IN ACCORDANCE WITH CURRENT OSHA REGULATIONS, BUT ONLY IN AREAS WHERE THE INCREASED TRENCH WIDTH WILL NOT INTERFERE WITH SURFACE FEATURES. SLOPES MUST NOT EXTEND BELOW TOP OF BEDDING.

3. MINIMUM AND MAXIMUM WIDTHS SHALL BE IN ACCORDANCE WITH PIPE MANUFACTURER'S RECOMMENDATION AS APPROVED ON ENGINEERING PLANS.



PIPE UNDERDRAIN LATERAL
N.T.S.

NOTES:
1. Where Pipe Underdrains are used, all Underdrain Outlet Pipes shall be solid wall with watertight joints. All Outlets Pipes shall be tied into the nearest storm sewer inlets at roadway sag locations as indicated in the street profile.
2. All Underdrain Pipes shall be installed at a minimum slope of 1%.
3. Underdrain Pipe shall be installed with the perforations placed down.
4. Blanket Underdrain Aggregate, Pipe Underdrain Aggregate, Pipe Underdrain, Edge Underdrain and Outlet Pipe shall conform to City of Lee's Summit Specifications.
5. Overlap geotextile at top of trench a minimum of 12".

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

Project: STANDARD DETAILS CITY OF LEE'S SUMMIT, MO
Client: LEE'S SUMMIT, JACKSON COUNTY, MO
Sheet Name: ADA RAMP RETROFIT DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #:

GEN-3A

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

Project: STANDARD DETAILS CITY OF LEE'S SUMMIT, MO
Client: LEE'S SUMMIT, JACKSON COUNTY, MO
Sheet Name: CURB & GUTTER DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #:

GEN-4

olsson
Olsson - Civil Engineering
Missouri Certificate of Authority #001592
1301 Burlington Street
North Kansas City, MO 64116
TEL 816.361.1177
FAX 816.361.1888
www.olsson.com

STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
9/24/21
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	09-26-2021	REVISED PER CITY COMMENTS	

REVISIONS

DETAIL SHEET
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
date: 05-05-2021

SHEET
C132

DWG: F:\2019\4001-4500\019-4059-01\40-design\AutoCAD\final plans\Sheets\GNCV\Street & Storm Sewer Plans\C_DTL01_A194059.dwg
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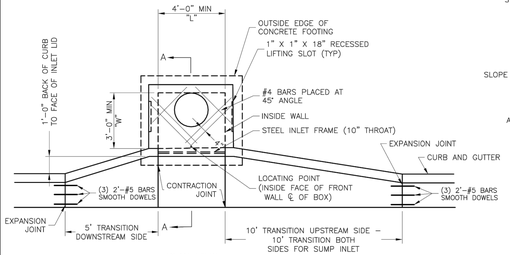
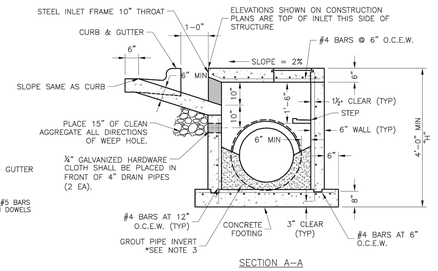
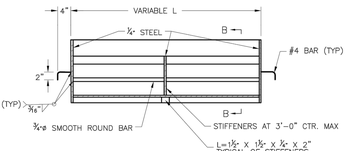
USER: aabdigaliyev



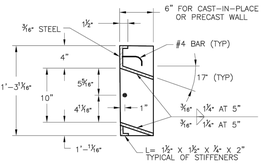
PLAN VIEW



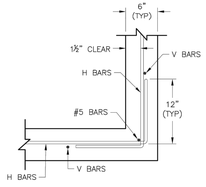
SECTION A–A



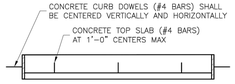
FRONT ELEVATION



SECTION B–B



WALL CORNER DETAIL



PLAN VIEW

STEEL FRAME NOTES:
1. ALL WELDS SHALL BE PERFORMED IN ACCORDANCE WITH APPROPRIATE AWS SPECIFICATIONS AND PROCEDURES.
2. ALL WELDS ON EXPOSED SURFACES SHALL BE DRESSED SO AS TO PROVIDE A PLEASING FINISHED APPEARANCE.
3. THE ENTIRE FRAME SHALL BE PAINTED A SINGLE COAT OF CHEM–PRIME #37H–78 PRIMER (GRAY) OR EQUAL.

GENERAL NOTES:
1. THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION. THE SECOND DIMENSION IS THE "W" DIMENSION.
2. FLOW LINES LISTED ON THE PROJECT PLANS ARE LISTED AT THE INSIDE FACE OF THE WALL.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
4. LOCATE MH RING AND COVER ON BLANK WALL IF POSSIBLE.
5. STEPS SHALL BE SPACED AT 1'–4" O.C. VERTICALLY ON BLANK WALL IF POSSIBLE.
6. BEVEL ALL EXPOSED EDGES WITH ¾"CHAMFER OR ½" TOOLED EDGE.
7. ON–GRADE INLETS SHALL CONFORM TO THE STREET GRADE AND SUMP INLETS SHALL BE LEVEL.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON–SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. LIFTING RINGS SHALL BE REMOVED AND SEALED WITH NON–SHRINKABLE GROUT
10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

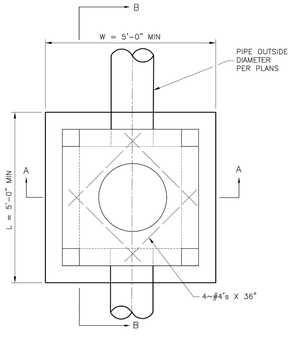
LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

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

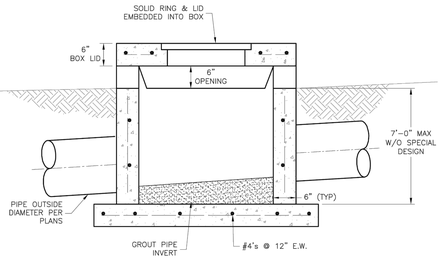
Finish
Date/Name

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj #:

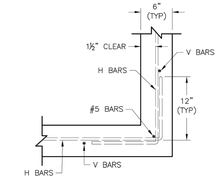
STM-1



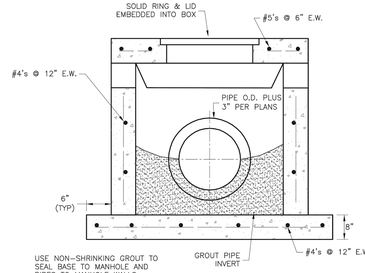
PLAN VIEW



SECTION B–B



WALL CORNER DETAIL



SECTION A–A

GENERAL NOTES:
1. LOCATE RING AND COVER OVER OUTLET ON BLANK WALL.
2. USE ¾" CHAMFER ON ALL EXPOSED CONCRETE CORNERS.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
4. STEPS REQUIRED AT 16" O.C. WHEN DEPTH FROM TOP OF CASTING TO INVERT EXCEEDS 3' ON BLANK WALL IF POSSIBLE.
5. BOXOUTS WILL NOT BE ALLOWED TO PROJECT THROUGH THE CORNERS OF THE STRUCTURE.
6. THE MINIMUM REINFORCING SHALL BE 1 H–BAR OVER A CAST–IN–PLACE PIPE AND 2 H–BARS OVER A PRECAST BOXOUT.
7. SHOW FIELD INLET ORIENTATION ON PLANS PLUS NUMBER AND SIDE OF OPENINGS.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON–SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

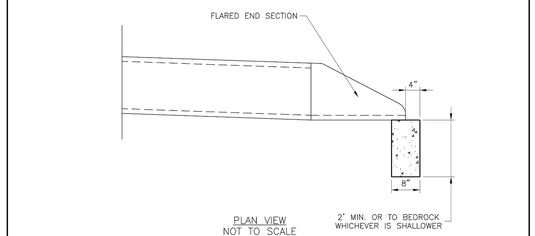
LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

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

Finish
Date/Name

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj #:

STM-2

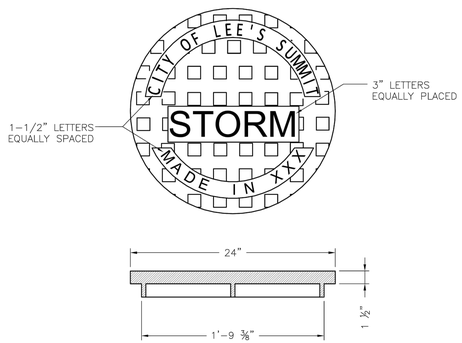


LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

FLARED END SECTION SUPPORT DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

STM-5



STANDARD 24" MANHOLE COVER
MINIMUM WEIGHT = 160 LB
NOTE: PICK HOLES NOT SHOWN

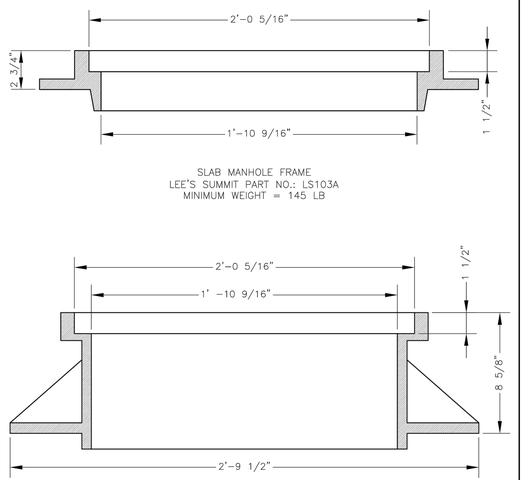
*COVER AND FRAME MODEL INFORMATION REFER TO THE STORMWATER APPROVED PRODUCT LIST.

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

STORM MANHOLE COVER DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

STM-6



SLAB MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS103A
MINIMUM WEIGHT = 145 LB

STANDARD 24" MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS101A
MINIMUM WEIGHT = 250 LB

*COVER AND FRAME MODEL INFORMATION REFER TO THE STORMWATER APPROVED PRODUCTS LIST.

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

STORM MANHOLE FRAME DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

STM-7

olsson
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North Kansas City, MO 64116
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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
9/24/21
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	08-26-2021	REVISED PER CITY COMMENTS	

REVISIONS

DETAIL SHEET
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
date: 05-05-2021

SHEET
C133

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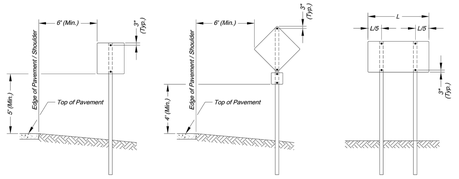
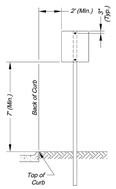


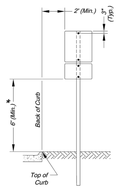
SIGN INSTALLATION FOR NON-CURBED STREET

SIGN INSTALLATION WITH AUXILARY SIGN FOR NON-CURBED STREET

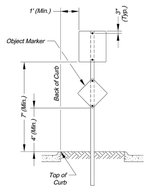
SIGN INSTALLATION WITH TWO SIGN POSTS



SIGN INSTALLATION FOR CURBED STREET



SIGN INSTALLATION WITH AUXILARY SIGN FOR CURBED STREET

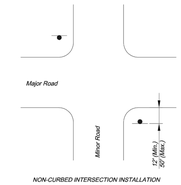


SIGN INSTALLATION FOR RAISED MEDIANS

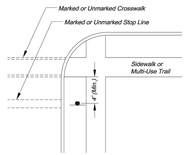
SIGN MOUNTING DETAILS

★ *The height to the bottom of a sign when it is located in a pedestrian walkway or extends into a walkway shall be a minimum of 80 inches above the walkway.*

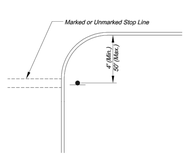
NOTE:
1. *Generally, the sign mounting height should not be more than 1' greater than the minimum mounting height.*



NON-CURBED INTERSECTION INSTALLATION

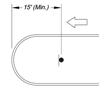


INTERSECTION WITH SIDEWALK / MULTI-USE TRAIL INSTALLATION



CURBED INTERSECTION INSTALLATION

CONTROL SIGN LOCATION



TYPICAL MEDIAN SIGN LOCATION

MEDIAN SIGN LOCATION

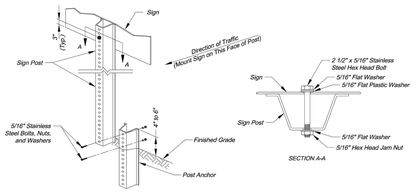
NOTES:
1. *A 4" P.V.C. sleeve shall be installed in new concrete medians at each location where a sign is to be installed.*
2. *For existing concrete medians, a 4" hole shall be cored into the concrete.*

CITY OF LEE'S SUMMIT
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
220 SE GREEN STREET
LEE'S SUMMIT, MISSOURI 64063
PHONE: (816) 969-1800 FAX: (816) 969-1809

Project:
SIGN MOUNTING DETAILS
Sheet Name:
STANDARD DRAWING SN-1

Drawn By: AS
Checked By: JW
Date: 08/26/2009
Project#

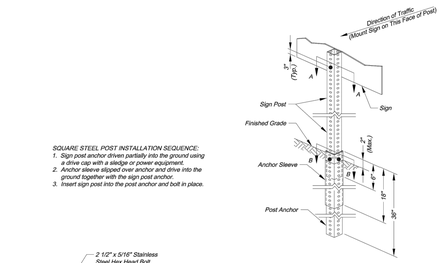
1 OF 3
1



U-STEEL POST DETAILS

U-STEEL POST NOTES:
1. *Splice shall be positioned entirely between finished grade line and 18" above finished grade line. Only one splice will be allowed per post.*
2. *U-Steel post shall be 3 lb./ft., galvanized according to ASTM A123.*
3. *U-Steel post can be used for installation of signs with an area of less than 2.5 square feet.*
4. *All posts shall be embedded a minimum of 3 feet.*

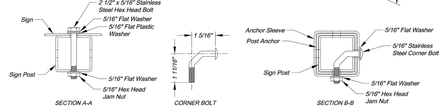
PERMANENT SIGNING GENERAL NOTES:
1. *All signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD) .*
2. *The Contractor is responsible for avoiding any and all utilities when installing sign posts, whether the utility is indicated on the plans or not.*
3. *All workmanship and materials shall be subject to the inspection and approval of the Public Works Department of the City of Lee's Summit. Minor relocation to avoid conflicts may be allowed with the approval of the City Traffic Engineer or designee.*
4. *The Contractor shall stake the location of all sign posts to be installed. The City Inspector shall inspect the staking prior to installation.*
5. *Signs shown to be installed on the side of metal poles shall be mounted with stainless steel straps or wing brackets as detailed. No signs are to be installed on wood poles. See Traffic Signal Standard Drawings for the installation of signs on mast arms.*
6. *All post mounted signs shall be installed with breakaway anchors according to the Standard Drawings.*
7. *All existing signs will be used in place during construction and protected from damage unless otherwise indicated in the plans. If the Contractor damages any existing sign or posts during construction, the Contractor will be required to replace the damaged materials with new signs or posts of the same type and size at the Contractor's expense. The Contractor shall be responsible for removing and storing any signs that are to be reinstalled on the project. All equipment shall be reinstalled in good condition.*
8. *Existing permanent signs and posts removed by the Contractor for construction purposes which are not to be reinstalled shall be delivered to the City's Public Works Maintenance Facility (1971 SE Hamblen Road). The Contractor shall be responsible for removing and storing equipment in good condition and is fully responsible for the equipment until it is delivered.*
9. *All Stop, Yield, or street name signs shall be maintained in a conspicuous location for the driving public. All Stop and Yield signs removed for construction purposes can be temporarily erected in reflectorized drums (no less than 7 feet above the pavement surface) until they can be reinstalled. Any temporary Stop or Yield sign installation to be left in place overnight will require prior approval from the City Inspector.*



SQUARE STEEL POST INSTALLATION SEQUENCE:
1. *Sign post anchor driven partially into the ground using a drive cap with a sledge or power equipment.*
2. *Anchor sleeve slipped over anchor and drive into the ground together with the sign post anchor.*
3. *Insert sign post into the post anchor and bolt in place.*

STRAP TYPE SIGN SUPPORT DETAILS

METAL POLE SIGN MOUNTING NOTES:
1. *Signs on metal poles shall be attached with two brackets and stainless steel bands.*
2. *Holes in sign for attachment to the mounting brackets shall be offset a minimum of 2 inches from the edge of the sign.*
3. *Holes in sign shall be located such that the sign is level.*
4. *All strap, bracket, and seal materials should be Type 201 stainless steel.*



SQUARE STEEL POST DETAILS

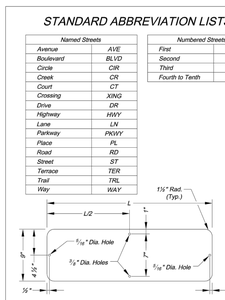
SQUARE STEEL POST NOTES:
1. *Square steel sign posts and break-away anchor shall consist of the following materials:*
   Sign Post - 14 Ga. 2" x 2" Square Steel Post
   Post Anchor - 12 Ga. 2 1/2" x 2 1/2" x 36" Square Steel Post
   Anchor Sleeve - 12 Ga. 2 1/2" x 2 1/2" x 18" Square Steel Post
2. *14 Gauge posts must meet a certified minimum yield strength of 60,000 psi.*
3. *In all installations the first hole above the finished grade line on the sign post, anchor, and anchor sleeve must be in line for the insertion of the corner bolt.*
4. *The maximum area for one sign post is 9.0 square feet. A sign or combination of signs with an area greater than 9.0 square feet will require two posts. Also, signs with a width greater than 36" (not including 36" x 36" diamond shaped signs) will require two posts.*

CITY OF LEE'S SUMMIT
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
220 SE GREEN STREET
LEE'S SUMMIT, MISSOURI 64063
PHONE: (816) 969-1800 FAX: (816) 969-1809

Project:
SIGN POST DETAILS
Sheet Name:
STANDARD DRAWING SN-2

Drawn By: AS
Checked By: JW
Date: 08/26/2009
Project#

2 OF 3
2



STREET NAME SIGN BLANK DETAILS
For Mounting on Square Steel Posts

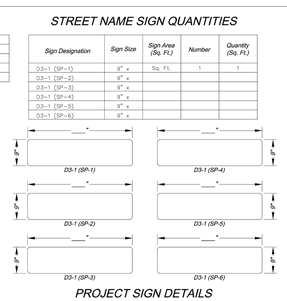
STANDARD ABBREVIATION LISTS

Named Streets	
Avenue	AVE
Boulevard	BLVD
Circle	CIR
Creek	CR
Court	CT
Crossing	XING
Drive	DR
Highway	HWY
Lane	LN
Parkway	PKWY
Place	PL
Road	RD
Street	ST
Terrace	TER
Trail	TRL
Way	WAY

Numbered Streets	
First	ST
Second	ND
Third	RD
Fourth to Tenth	TH

STREET NAME SIGN QUANTITIES

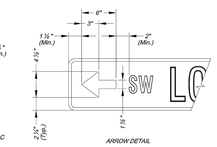
Sign Designation	Sign Size	Sign Area (Sq. Ft.)	Number	Quantity (Sq. Ft.)
D3-1 (SP-1)	9" x	Sq. Ft.	1	1
D3-1 (SP-2)	9" x			
D3-1 (SP-3)	9" x			
D3-1 (SP-4)	9" x			
D3-1 (SP-5)	9" x			
D3-1 (SP-6)	9" x			



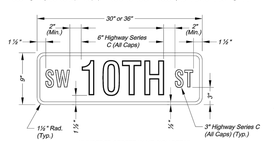
PROJECT SIGN DETAILS

NAMED STREET NAME SIGN DETAIL

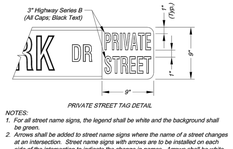
* Use Highway Series B (All Caps) in lieu of series C if necessary to fit text on a 36" sign blank.



ARROW DETAIL



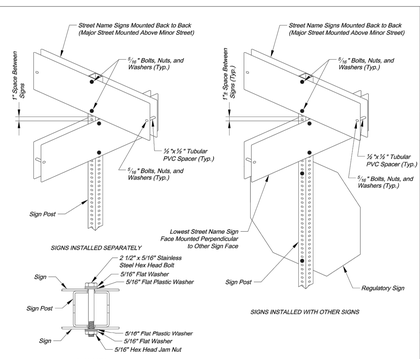
NUMBERED STREET NAME SIGN DETAIL



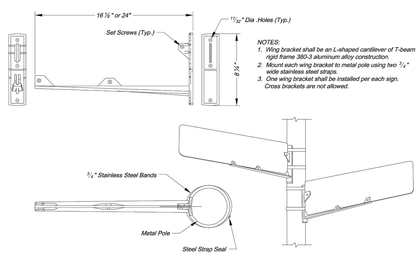
PRIVATE STREET TAG DETAIL

NOTES:
1. *For all street name signs, the legend shall be white and the background shall be green.*
2. *Arrows shall be added to street name signs where the name of a street changes at an intersection. Street name signs with arrows are to be installed on each side of the intersection to indicate the change in names. Arrows shall be white.*
3. *The "PRIVATE STREET" tag should be added to the end of street name signs to indicate where a street that is outside the right-of-way intersects a public street. The background for the "PRIVATE STREET" tag shall be yellow.*

STREET NAME SIGN FACE DETAILS



SQUARE STEEL POST MOUNTING DETAILS



WING BRACKET MOUNTING DETAILS

CITY OF LEE'S SUMMIT
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
220 SE GREEN STREET
LEE'S SUMMIT, MISSOURI 64063
PHONE: (816) 969-1800 FAX: (816) 969-1809

Project:
STREET NAME SIGN DETAILS
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STANDARD DRAWING SN-3

Drawn By: AS
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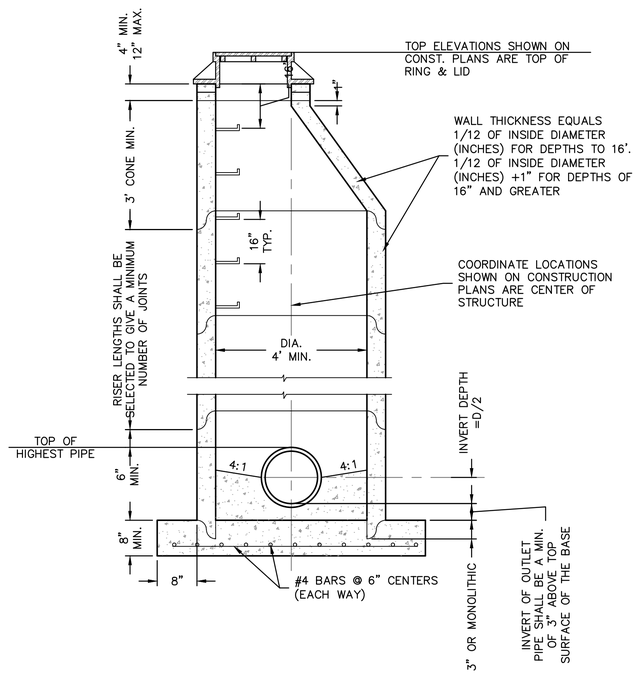
3



STANDARD PRECAST STORM SEWER MANHOLE
NOT TO SCALE

STORM MANHOLE NOTES

1. ALL MANHOLES ARE TO BE PRECAST CONCRETE AND OF ECCENTRIC CONE TYPE UNLESS OTHERWISE SPECIFIED.
2. MANHOLE TOP ADJUSTMENTS SHALL BE ACCOMPLISHED BY THE USE OF CONCRETE ADJUSTMENT RINGS.
3. TOP OF MANHOLE CASTING SHALL BE SET FLUSH AND ON SAME SLOPE AS FINISHED SURFACE OR AS DIRECTED BY THE ENGINEER.
4. REINFORCEMENT IN ALL SECTIONS SHALL EQUAL OR EXCEED A.S.T.M. C–478 SPECIFICATIONS.
5. THE ENGINEER SHALL DESIGNATE MODIFICATIONS FOR MANHOLES WITH SPECIAL DESIGNS.
6. THE INSIDE DIAMETER OF THE MANHOLE SHALL BE 4'–0" FOR PIPE DIAMETERS FROM 12" THRU 24", 5'–0" FOR PIPE DIAMETERS FROM 27" THRU 36", AND 6'–0" FOR PIPE DIAMETERS 42" THRU 48".
7. CLEARANCE TOLERANCE OF PIPE OPENINGS: THE MAXIMUM ALLOWABLE PIPE OPENING ON A HORIZONTAL AXIS SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 12". THE MAXIMUM ALLOWABLE PIPE OPENING ON VERTICAL AXIS SHALL BE THE OUTSIDE DIAMETER PLUS 8". THE MAXIMUM CLEARANCE BETWEEN THE OUTSIDE SURFACE OF AN INSTALLED PIPE AND THE CONCRETE OF THE MANHOLE SHALL BE 2".
8. INSTALLATION OF PIPE OPENINGS: ALL REQUIRED PIPE OPENINGS SHALL BE PLANT CAST IN MANHOLE UNITS. FIELD ALTERATIONS OF OPENINGS WILL BE PERMITTED PROVIDED WALLS ARE SCORED WITH A MASONRY SAW TO A DEPTH SUFFICIENT TO SEVER REINFOECING STEEL. A CHIPPING HAMMER MAY THEN BE USED TO REMOVE THE CONCRETE. MINIMUM DISTANCE BETWEEN ANY TWO ADJACENT PIPES SHALL BE 2".
9. NO DIRECT PAYMENT FOR SHAPING FLOOR OR CONNECTING PIPES AS SHOWN ON PLANS.
10. RING AND COVER TO BE NEENAH R–1736, CLAY & BAILEY #2008, DEETER # 1316, OR APPROVED EQUAL. (CASTING MAY VARY BY MUNICIPALITY, REFER TO PLANS & CONTRACT DOCUMENTS.)

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STATE OF MISSOURI
JULIE ELAINE SELLERS
NUMBER PE-2017000367
9/24/21
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	08-26-2021	REVISED PER CITY COMMENTS	

REVISIONS

DETAIL SHEET
STREET & STORM SEWER PLANS

THE RETREAT AT HOOK FARMS
SECOND PLAT

LEE'S SUMMIT, MO

2021

drawn by: B.M.W./A.A.
checked by: B.M.W.
designed by: B.M.W./A.A.
QA/QC by: J.E.S.
project no.: A19-4059
date: 05-05-2021

SHEET
C134

DWG: F:\2019\4001-4500\019-4059-01\40-design\AutoCAD\final plans\Sheets\GNCV\Street & Storm Sewer Plans\C_DTL01_A194059.dwg
DATE: Sep 21, 2021 2:38pm XREFS: C_PTBLK_A194059 USER: aabdigoliyev