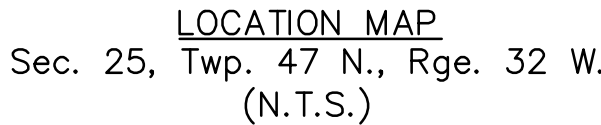


NW 1/4 SECTION 25, TOWNSHIP 47 N, RANGE 32 W  
IN LEE'S SUMMIT, JACKSON COUNTY, MO

1/18/2022



<p><b><u>OWNER / DEVELOPER</u></b>          CLAYTON PROPERTIES GROUP, INC.          D.B.A. SUMMIT HOMES          120 SE 30TH STREET          CONTACT: VINCENT WALKER          LEE'S SUMMIT, MO 64082          PHONE: 816.246.1177          EMAIL: VINCENT@SUMMITHOMESKC.COM</p>	<p><b><u>UTILITY SERVICE NUMBERS</u></b>          NAME: LEE'S SUMMIT PUBLIC WORKS          PHONE: 816-969-1800</p>
<p><b><u>ENGINEER</u></b>          OLSSON          1301 BURLINGTON ST. SUITE 100          NORTH KANSAS CITY, MO 64116          CONTACT: BROCK M. WORTHLEY          PHONE: 816.361.1177          EMAIL: BWORTHLEY@OLSSON.COM</p>	<p>NAME: LEE'S SUMMIT WATER &amp; SERVICES          DEPARTMENT          PHONE: 816-969-1940</p>
<p><b><u>SURVEYOR</u></b>          OLSSON          1301 BURLINGTON ST. SUITE 100          NORTH KANSAS CITY, MO 64116          CONTACT: JASON ROUDEBUSH          PHONE: 816.361.1177          EMAIL: JROUDEBUSH@OLSSON.COM</p>	<p>NAME: SPIRE (MGE)          PHONE: 314-342-0500</p> <p>NAME: AT&amp;T          PHONE: 800-286-8313</p> <p>NAME: KCP&amp;L          PHONE: 816-471-5275</p>
	<p>NAME: SPECTRUM (TWC)          PHONE: 877-772-2253</p> <p>NAME: GOOGLE FIBER          PHONE: 877-454-6959</p>



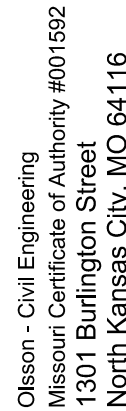
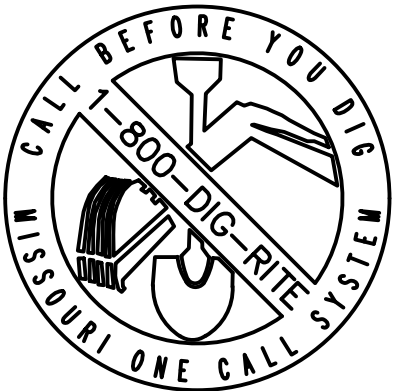
Sheet Number	Sheet Title
C100	COVER SHEET
C101	GENERAL NOTES
C102	GENERAL LAYOUT
C103	TYPICAL SECTIONS
C104	GRADING PLAN (FOR REFERENCE ONLY)
C105	SWALE PLAN AND PROFILE
C106	SWALE PLAN AND PROFILE (CONT)
C107	ROADWAY PLAN AND PROFILE (BUCKTHORN STREET)
C108	ROADWAY PLAN AND PROFILE (BUCKTHORN STREET CONT)
C109	ROADWAY PLAN AND PROFILE (ARBORWAY TERRACE)
C110	ROADWAY PLAN AND PROFILE (ARBORWAY TERRACE CONT)
C111	ROADWAY PLAN AND PROFILE (ARBORWAY TERRACE CONT)
C112	ROADWAY PLAN AND PROFILE (ARBORIDGE CIRCLE)
C113	TRAFFIC CONTROL PLAN
C114	SPOT ELEVATIONS
C115	SPOT ELEVATIONS
C116	SPOT ELEVATIONS
C117	SPOT ELEVATIONS
C118	STORM SEWER PLAN & PROFILE (LINE 1 & 1A)
C119	STORM SEWER PLAN & PROFILE (LINE 2)
C120	STORM SEWER PLAN & PROFILE (LINE 3)
C121	STORM SEWER PLAN & PROFILE (LINE 5)
C122	STORM SEWER PLAN & PROFILE (LINE 4 & 6)
C123	DRAINAGE PLAN
C124	DRAINAGE TABLES
C125	MASTER DRAINAGE PLAN
C126	SIGN DETAILS
C127	STORM SEWER DETAILS
C128	STORM SEWER DETAILS
C129	ROADWAY MARKING DETAILS

A TRACT OF LAND IN THE NORTHWEST QUARTER OF SECTION 25, TOWNSHIP 47 NORTH, RANGE 32 WEST OF THE 5TH PRINCIPAL MERIDIAN IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, AND A PORTION OF TRACT E, OF HAWTHORN RIDGE 1ST PLAT, A SUBDIVISION OF LAND RECORDED AS DOCUMENT 2019E0020897 IN BOOK 182 AT PAGE 83, IN THE OFFICE OF RECORDER OF DEEDS FOR JACKSON COUNTY, MISSOURI ALL BEING BOUNDED AND DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHWEST CORNER OF SAID NORTHWEST QUARTER OF SECTION 25; THENCE SOUTH 87°46'49" EAST ON THE SOUTH LINE OF SAID NORTHWEST QUARTER, 2,653.29 FEET TO THE SOUTHEAST CORNER OF SAID NORTHWEST QUARTER, (CENTER OF SECTION) AND THE POINT OF BEGINNING OF THE TRACT OF LAND TO BE HEREIN DESCRIBED; THENCE ON SAID SOUTH LINE OF SAID NORTHWEST QUARTER, NORTH 87°46'49" WEST, 577.0 FEET; THENCE LEAVING SAID SOUTH LINE, NORTH 02°13'11" EAST, 135.05 FEET; THENCE NORTH 87°46'49" WEST, 50.0 FEET; THENCE NORTH 02°18'36" EAST, 596.57 FEET; THENCE SOUTH 47°30'07" EAST, 37.00 FEET; THENCE NORTH 02°18'36" EAST, 192.00 FEET; THENCE NORTH 87°41'24" EAST, 75.53 FEET; THENCE NORTH 02°18'36" EAST, 39.05 FEET; THENCE NORTH 33°13'50" WEST, 218.11 FEET TO THE SOUTHWESTERLY CORNER OF LOT 21 OF SAID HAWTHORN RIDGE 1ST PLAT; THENCE ON THE SOUTHERLY LINE OF SAID HAWTHORN RIDGE 1ST PLAT THE FOLLOWING 9 CALLS, NORTH 54°57'38" EAST, 130.00 FEET; THENCE SOUTH 35°02'22" EAST, 58.00 FEET; THENCE NORTH 54°57'38" EAST, 175.90 FEET; THENCE SOUTH 65°30'07" EAST, 95.33 FEET; THENCE SOUTH 87°41'24" EAST, 121.73 FEET; THENCE NORTH 02°18'36" EAST, 78.00 FEET; THENCE SOUTH 87°41'24" EAST, 175.00 FEET; THENCE NORTH 02°18'36" EAST, 72.00 FEET; THENCE SOUTH 87°41'24" EAST, 130.00 FEET TO THE SOUTHEASTERLY CORNER OF LOT 28 OF SAID HAWTHORN RIDGE 1ST PLAT AND A POINT ON THE EAST LINE OF SAID NORTHWEST QUARTER; THENCE ON SAID EAST LINE, SOUTH 02°18'36" WEST, 1,392.58 FEET TO THE POINT OF BEGINNING. CONTAINING 827.409 SQUARE FEET OR 19.00 ACRES, MORE OR LESS.

RR SPIKE IN SOUTH FACE OF POWER POLE ON NORTH SIDE OF SW. HOOK ROAD, IMMEDIATELY WEST OF DRIVEWAY FOR HOUSE#1622. ELEVATION= 1024.63'

Brook Wootton

1/18/2022  
DATE



REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	11/23/2020	REVISED PER CITY COMMENTS	
2	12/10/2020	REVISED PER CITY COMMENTS	

2020

WTHORN RIDGE  
THIRD PLAT

2020

drawn by: \_\_\_\_\_ OLS  
checked by: \_\_\_\_\_ BMW  
approved by: \_\_\_\_\_ BMW  
QA/QC by: \_\_\_\_\_ JES  
project no.: \_\_\_\_\_ A19-1605  
drawing no.: C TTL01 A191605  
date: \_\_\_\_\_ 10/02/2020

SHEET  
C100



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 ENROACH 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

CONTROL POINT TABLE

Point Number	Northing	Easting	Point Elevation	Raw Description
90009	981383.7330'	2813865.4520'	1064.23'	CP 60D
90012	981431.6120'	2813832.1000'	1062.71'	CP 60D
90033	981440.4750'	2814063.8700'	1047.98'	CP 60D
90044	981710.8560'	2814198.8050'	1027.00'	CP 60D
90052	981859.5430'	2814200.2150'	1017.51'	CP 60D
90056	981975.4580'	2814144.8570'	1011.69'	CP 60D
90080	981971.2190'	2814027.5570'	1016.72'	CP 60D

VERTICAL CONTROL IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). THE DEVELOPER IS ADVISED TO USE BENCHMARK INFORMATION FOR VERTICAL CONTROL.  
HORIZONTAL CONTROL (CONTROL POINT INFORMATION) IS BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAVD83). THE DEVELOPER IS ADVISED TO USE CONTROL POINT INFORMATION FOR HORIZONTAL CONTROL.

ASBUILT  
1/18/2022

ESTIMATE OF QUANTITIES				
ITEM NO.	DESCRIPTION	UNIT	QUANTITY	AS-BUILT
STREET				
	EXCAVATION	C.Y.	5712	
	EMBANKMENT	C.Y.	12363	
	SUBGRADE STABILIZATION (6" FLYASH TREATMENT)	S.Y.	5481	
	SUBGRADE STABILIZATION (9" FLYASH TREATMENT)	S.Y.	2962	
	6" ASPHALT PAVEMENT	S.Y.	4540	
	7.5" ASPHALT PAVEMENT	S.Y.	2625	
	CONCRETE CURB & GUTTER (CG-1)	L.F.	1371	
	CONCRETE CURB & GUTTER (CG-2)	L.F.	2771	
	MILL & OVERLAY	S.Y.	31	
	ADA RAMP	EA.	4	
	STOP SIGNS	EA.	2	
	STREET NAME SIGNS	EA.	6	
	END OF ROAD TREATMENT	EA.	1	
STORM				
	STD. CURB INLET (5'x3' INSIDE)	EA.	11	
	STD. CURB INLET (5'x4' INSIDE)	EA.	1	
	STD. FIELD INLET (4'x4' INSIDE)	EA.	1	
	RAISE EXISTING JUNCTION BOX (6'x6' INSIDE)	V.F.	5.0	
	15" RCP	L.F.	103.79	
	15" HDPE	L.F.	1296.05	
	24" HDPE	L.F.	85.20	
	48" HDPE	L.F.	123.79	
	60" HDPE	L.F.	186.95	
	15" HDPE END SECTION	EA.	1	
	60" CMP END SECTION	EA.	1	
	RIPRAP	S.Y.	147.98	
	CONNECTION TO EXISTING STRUCTURE	EA.	1	
	CONNECTION TO EXISTING PIPE	EA.	1	

olsson

Olsson - Civil Engineering

Missouri Certificate of Authority #001592

1301 Burlington Street

North Kansas City, MO 64116

TEL 816.361.1177

www.olsson.com

STATE OF MISSOURI

BROCK M. WORTHLEY

*Brock M. Worthley*

NUMBER

PE-2019000237

1/18/2022

PROFESSIONAL ENGINEER

BY

REVISIONS DESCRIPTION

DATE

REV. NO.

2020

REVISIONS

GENERAL NOTES  
STREET & STORM SEWER PLANS

HAWTHORN RIDGE  
THIRD PLAT

LEE'S SUMMIT, MO

drawn by: OLS

checked by: BMW

approved by: BMW

QA/QC by: JES

project no.: A19-1605

drawing no.: C\_TLL01\_A191605

date: 10/02/2020

SHEET

C101





REV. NO.	DATE	REVISIONS DESCRIPTION	BY
2	12/10/2020	REVISED PER CITY COMMENTS	
REVISIONS			

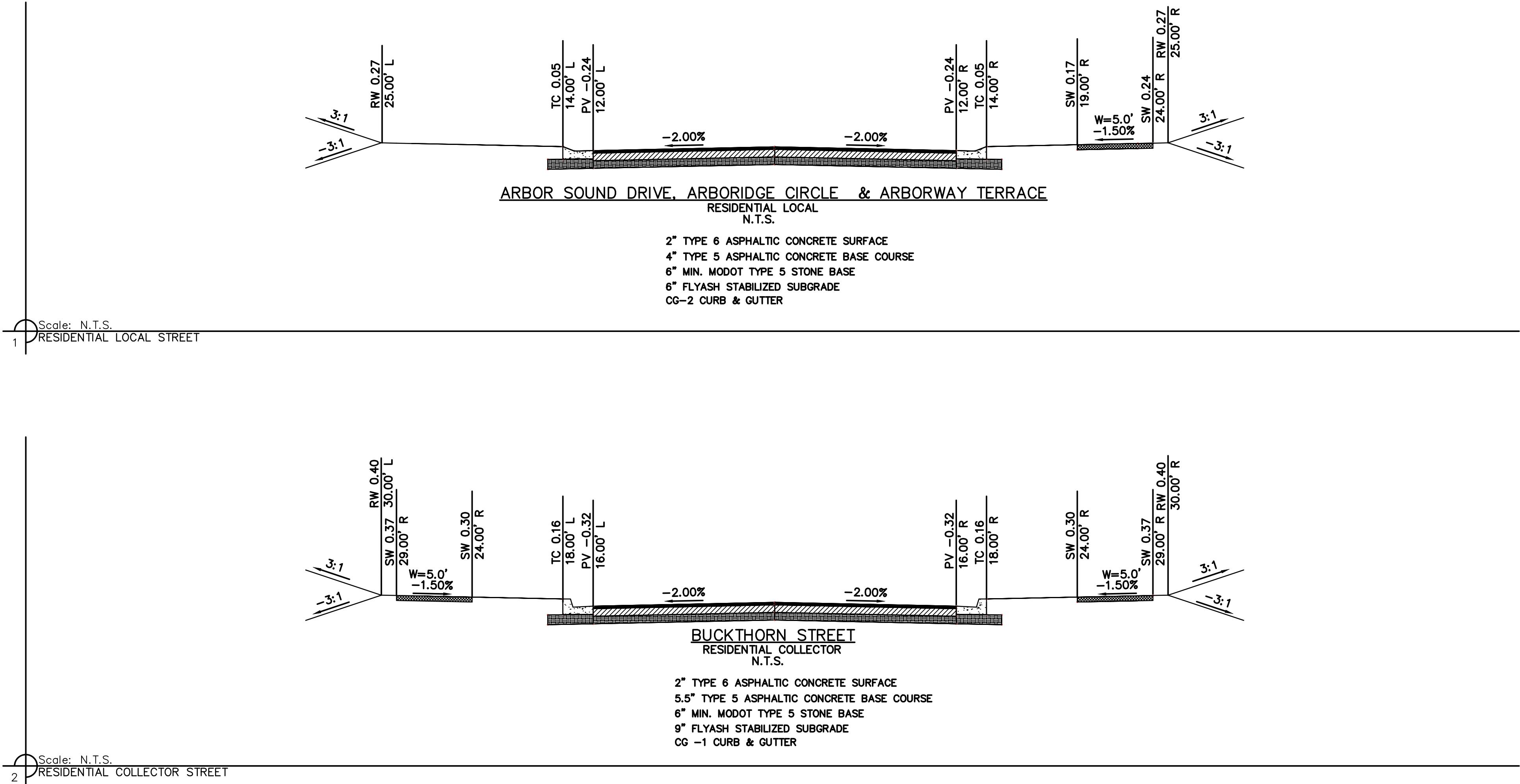
GENERAL LAYOUT STREET & STORM SEWER PLANS	
HAWTHORN RIDGE THIRD PLAT	
LEE'S SUMMIT, MO	2020

drawn by: \_\_\_\_\_ OLS  
checked by: \_\_\_\_\_ BMW  
approved by: \_\_\_\_\_ BMW  
QA/QC by: \_\_\_\_\_ JES  
project no.: \_\_\_\_\_ A19-1605  
drawing no.: C GEN01 A191605  
date: \_\_\_\_\_ 10/02/2020

SHEET  
C102



DWG: F:\2019\1501-2000\019-1605-A\40-Design\AutoCAD\Final Plans - As-Built\Sheets\GNCV\STREET & STORM\C\_TYP01\_0191605.dwg  
DATE: Jan 18, 2022 3:30pm XREFS: C\_PTBULK\_0191605 USER: bworthley



NOT ASBUILT

TYPICAL SECTIONS  
STREET & STORM SEWER PLANS

HAWTHORN RIDGE  
THIRD PLAT

LEE'S SUMMIT, MO

2020

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

drawn by: OLS

checked by: BMW

approved by: BMW

QA/QC by: JES

project no.: A19-1605

drawing no.: C\_TYP01\_0191605

date: 10/02/2020

SHEET  
C103

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Missouri Certificate of Authority #001592  
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TEL 816.361.1177  
www.olsson.com

STATE OF MISSOURI  
BROCK M. WORTHLEY  
NUMBER  
PE-2019000237  
1/18/2020  
PROFESSIONAL ENGINEER



DWG: F:\2019\1501-2000\019-1605-A\140-Design\AutoCAD\Final Plans - As-Built\Sheets\GNCA\STREET & STORM\AC\_GRD01\_A191605.dwg USER: bwerthley  
DATE: Jan 18, 2022 3:30pm XREFS: C\_PBASE\_A191605 C\_PUTIL\_A191605 C\_PBN DY\_A191605



**WARNING**  
HIGH-PRESSURE PIPELINE  
EXCAVATION AND/OR CONSTRUCTION PROHIBITED  
WITHOUT COMPLIANCE WITH STATE ONE-CALL, AND  
WITHOUT WRITTEN PERMISSION FROM  
MAGELLAN PIPELINE COMPANY, L.P.

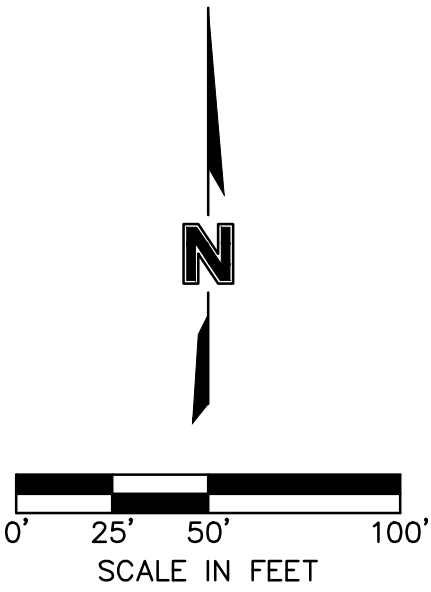
NOT ASBUILT

REFER TO MASTER DRAINAGE PLAN FOR AS-BUILT SURFACE

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.

LOT FILL INFORMATION			
LOT NUMBER	MAX DEPTH OF FILL (OVER 2' PLACED)	FILL PLACED ON EXISTING SLOPES > 5:1	PROPOSED SLOPES > 3:1
160			
161	17.3	X	
162	19.5	X	
163	20.4	X	
164	12.5	X	
165	10.2		
166	10.3		
167	10.1		
168	9.1		
169			
170			
171			
172			
173			
174			
175			
176			
177			
178			
179			
180			
181			
182			
183			
184			
185			
186	3.9	X	
187	7.3	X	
188	10.8	X	
189	12.9	X	
190	13.4		
191	11.0		
192	6.1		
193	4.9		
194			
195	3.6		
196	3.6		
197			
198			
199			
200			
201		X	
202	6.8	X	
203	6.8	X	
204	5.8	X	
X Indicates condition applies to lot			



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

EARTHWORK QUANTITIES		
LOCATION	CUT (C.Y.)	FILL (C.Y.)
STREET	10,423	8,630
SITE	50,641	44,871
TOTAL	61,064	53,501

- 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.

GRADING PLAN (FOR REFERENCE ONLY)  
STREET & STORM SEWER PLANS

HAWTHORN RIDGE  
THIRD PLAT

LEE'S SUMMIT, MO

2020

REVISIONS

BY

REVISIONS DESCRIPTION

DATE

REV. NO.

SHEET  
C104

drawn by: OLS  
checked by: BMW  
approved by: BMW  
QA/QC by: JES  
project no.: A19-1605  
drawing no.: C\_GRD01\_A191605  
date: 10/22/2020

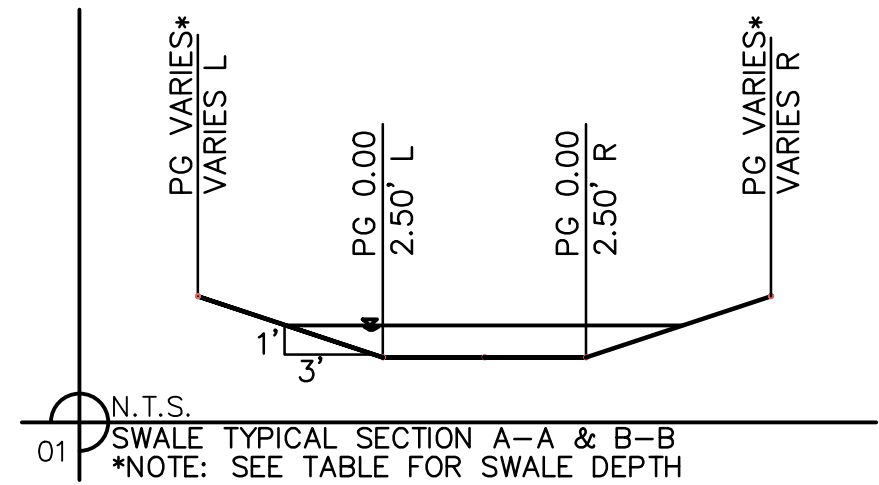


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1301 Burlington Street  
North Kansas City, MO 64116  
TEL 816.361.1177  
www.olson.com



DWG: F:\2019\1501-2000\019-1605-A\40-Design\AutoCAD\Final Plans - As-Built\Sheets\GNCA\STREET & STORM\AC\_SWL01\_A191605.dwg  
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USER: bwerthley  
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C\_PSTRM\_A191605  
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C\_XBASE\_A191605  
C\_PUTIL\_A191605

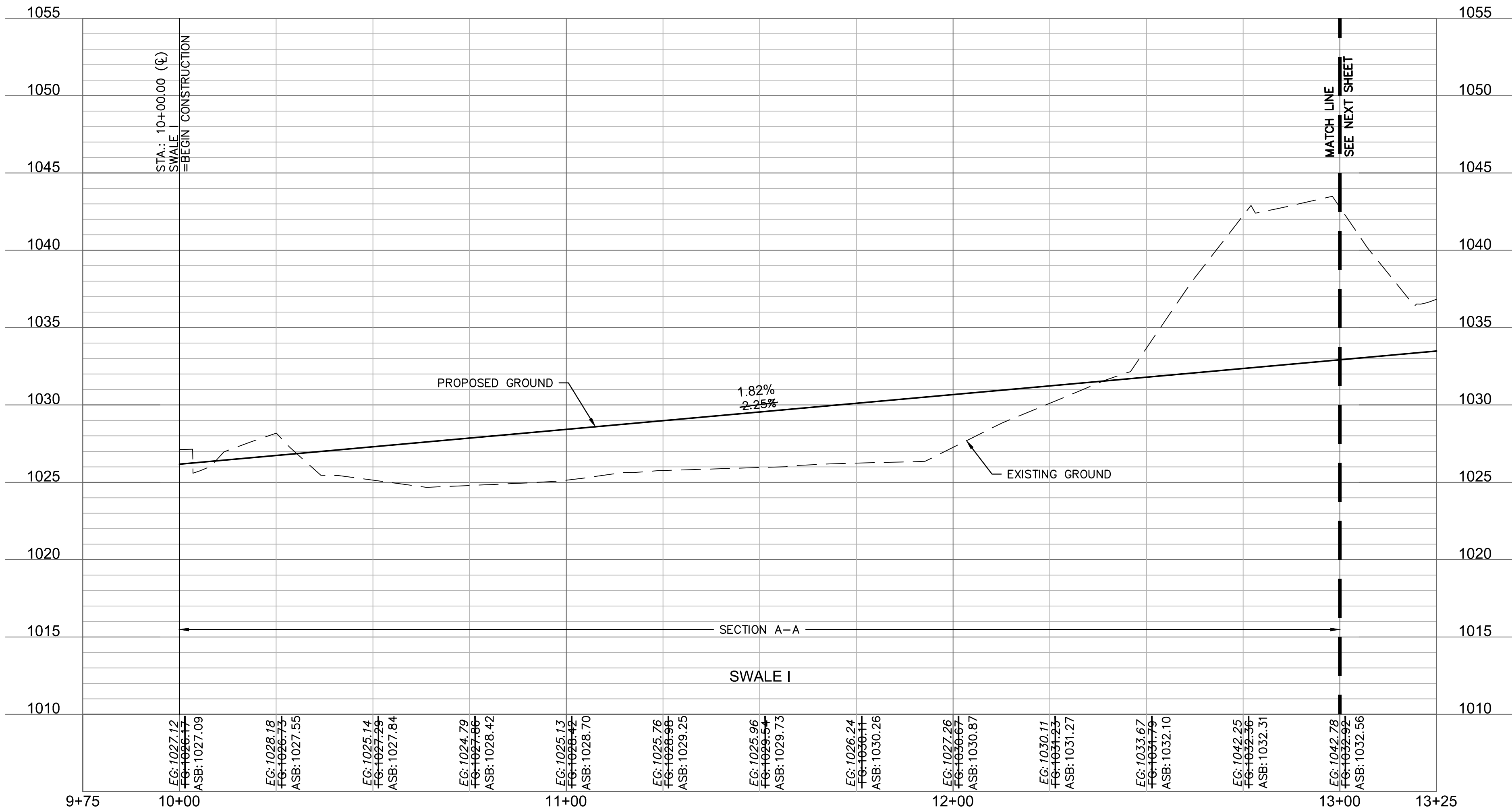
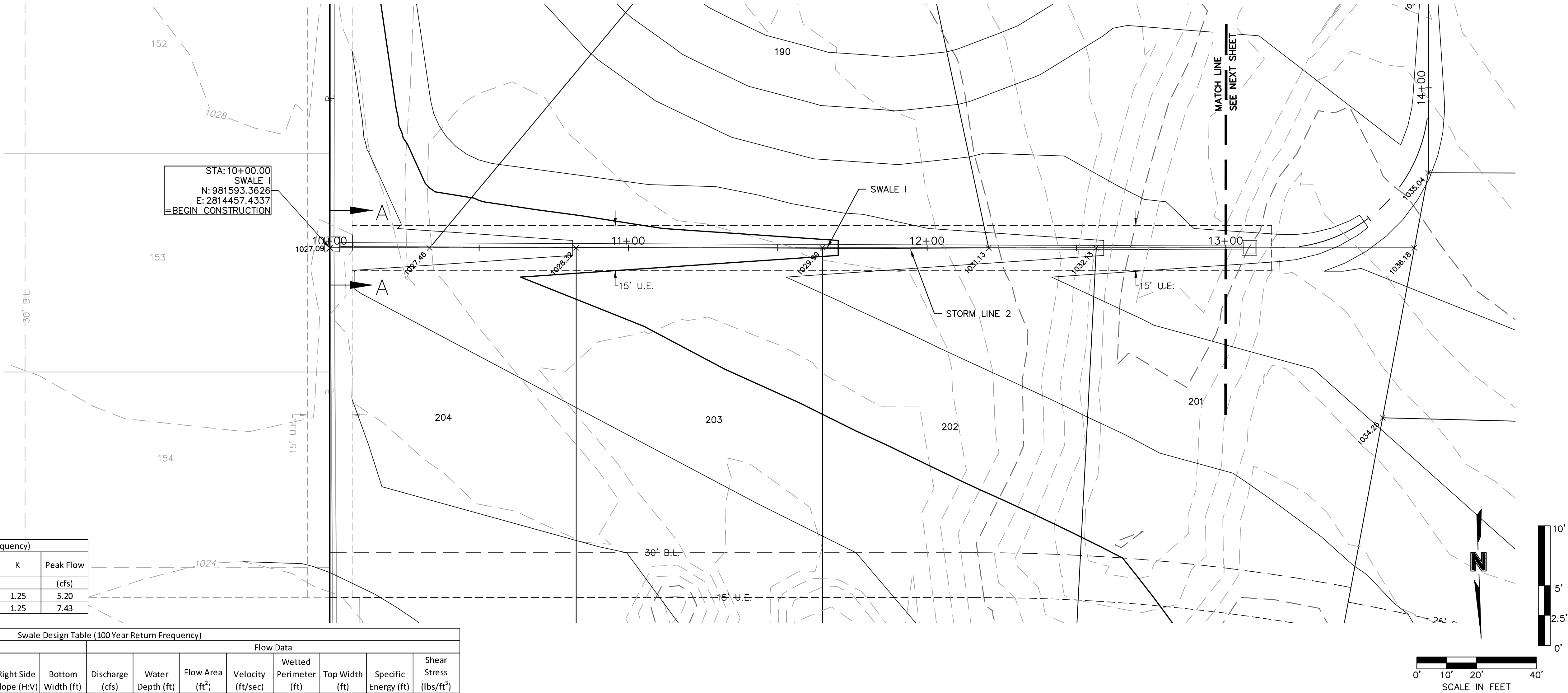


SWALE GRADING NOTES:

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.

Swale Drainage Area Table (100 year Return Frequency)						
Section	Drainage Area (ac.)	C	Tc (min)	i (in/hr)	K	Peak Flow (cfs)
A-A	0.79	0.51	5	10.32	1.25	5.20
B-B	1.13	0.51	5	10.32	1.25	7.43

Swale Design Table (100 Year Return Frequency)														
Section Data							Flow Data							
SECTION	Mannings Coefficient	Channel Slope (%)	Min. Swale Depth (ft)	Left Side Slope (H:V)	Right Side Slope (H:V)	Bottom Width (ft)	Discharge (cfs)	Water Depth (ft)	Flow Area (ft <sup>2</sup> )	Velocity (ft/sec)	Wetted Perimeter (ft)	Top Width (ft)	Specific Energy (ft)	Shear Stress (lbs/ft <sup>2</sup> )
A-A	0.03	1.82%	1.32	3:1	3:1	5.00	5.20	0.32	1.91	2.73	7.02	6.92	0.44	0.31
B-B	0.03	2.23%	1.39	3:1	3:1	5.00	7.43	0.39	2.41	3.09	7.47	7.34	0.54	0.45



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STATE OF MISSOURI  
BROCK M. WORTHLEY  
NUMBER  
PE-2019000237  
1/18/2022  
PROFESSIONAL ENGINEER

BY

REVISIONS DESCRIPTION

DATE

REV. NO.

2020

SWALE PLAN AND PROFILE  
STREET & STORM SEWER PLANS

HAWTHORN RIDGE  
THIRD PLAT

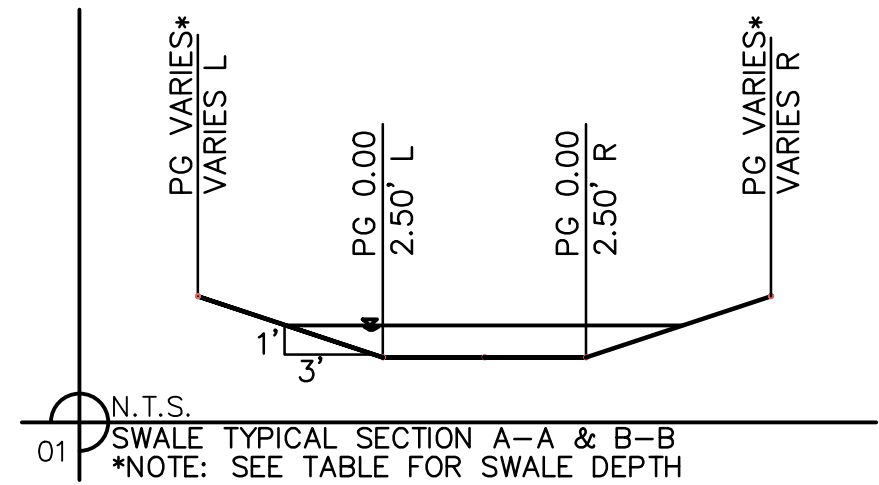
LEE'S SUMMIT, MO

drawn by: OLS  
checked by: BMW  
approved by: BMW  
QA/QC by: JES  
project no.: A19-1605  
drawing no.: C\_SWL01\_A191605  
date: 10/22/2020

SHEET  
C105



DWG: F:\2019\1501-2000\019-1605-A\40-Design\AutoCAD\Final Plans - As-Built\191605-SWL01\_A191605.dwg USER: bwerthley C:\PSTRM\_A191605 C:\PSURF\_A191605  
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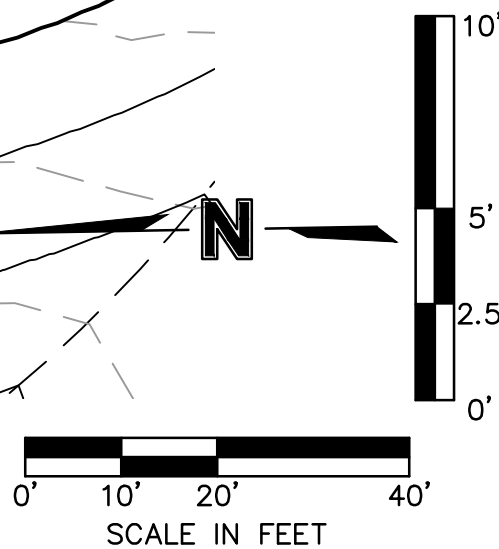
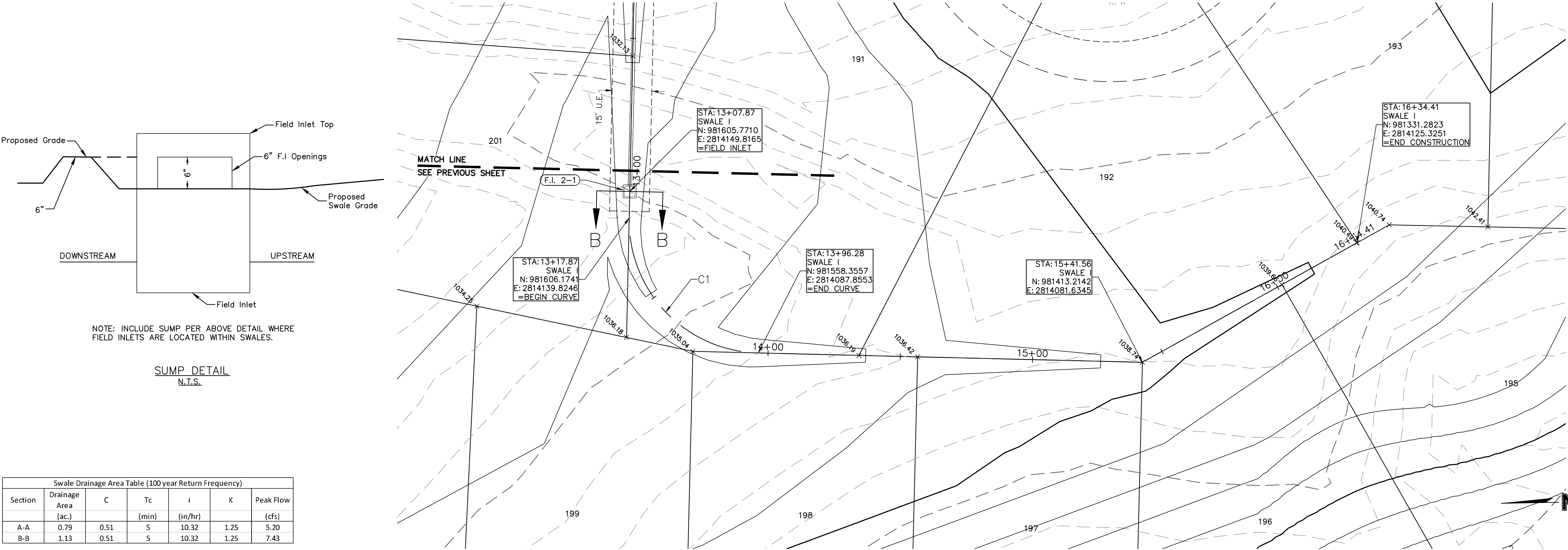


SWALE GRADING NOTES:

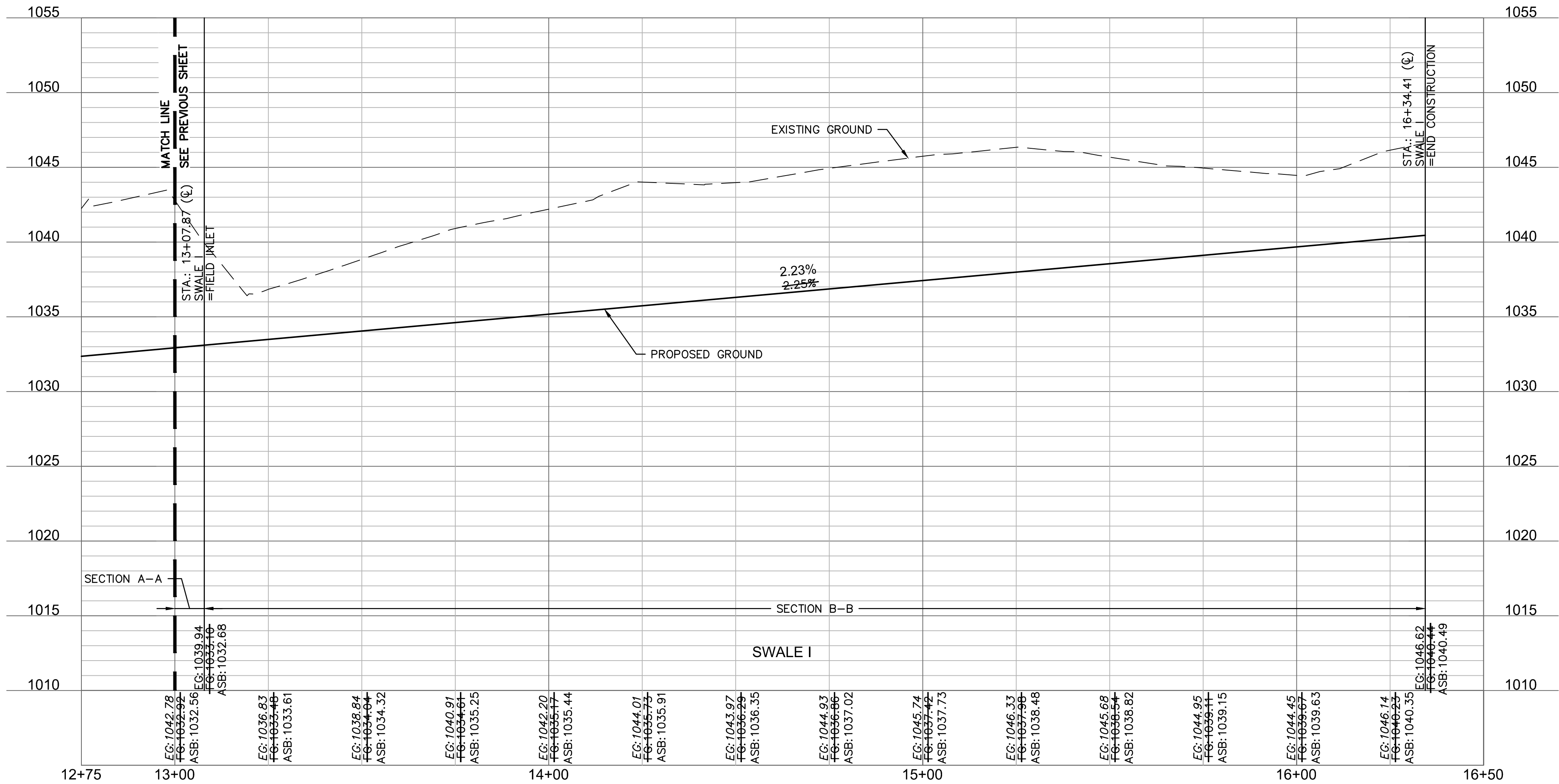
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2. AS-BUILT SURVEY IS REQUIRED/APPROVED BY CITY FOR ALL SWALES AND PRIOR TO APPROVAL FOR ANY BUILDING FOUNDATION PERMIT. CONTRACTOR SHALL BE REQUIRED TO REGRADE SWALES AT CONTRACTOR'S EXPENSE IF ABOVE REQUIREMENTS ARE NOT MET.

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B-B	0.03	2.23%	1.39	3:1	3:1	5.00	7.43	0.39	2.41	3.09	7.47	7.34	0.54



ALIGNMENT CURVES								
CURVE ID #	STATION RANGE	START COORD.	END COORD.	RADIUS (FT)	LENGTH (FT)	DELTA	CHORD BEARING	CHORD LENGTH (FT)
C1	13+17.87 13+96.28	N: 981606.17 E: 2814139.82	N: 981558.36 E: 2814087.86	50.00	78.41	089°51'21"	S47°22'55"W	70.62



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STATE OF MISSOURI  
BROCK M. WORTHLEY  
Professional Engineer  
PE-2019000237  
1/18/2022

BY

REVISIONS DESCRIPTION

DATE

REV. NO.

SWALE PLAN AND PROFILE (CONT)  
STREET & STORM SEWER PLANS

HAWTHORN RIDGE  
THIRD PLAT

LEE'S SUMMIT, MO

2020

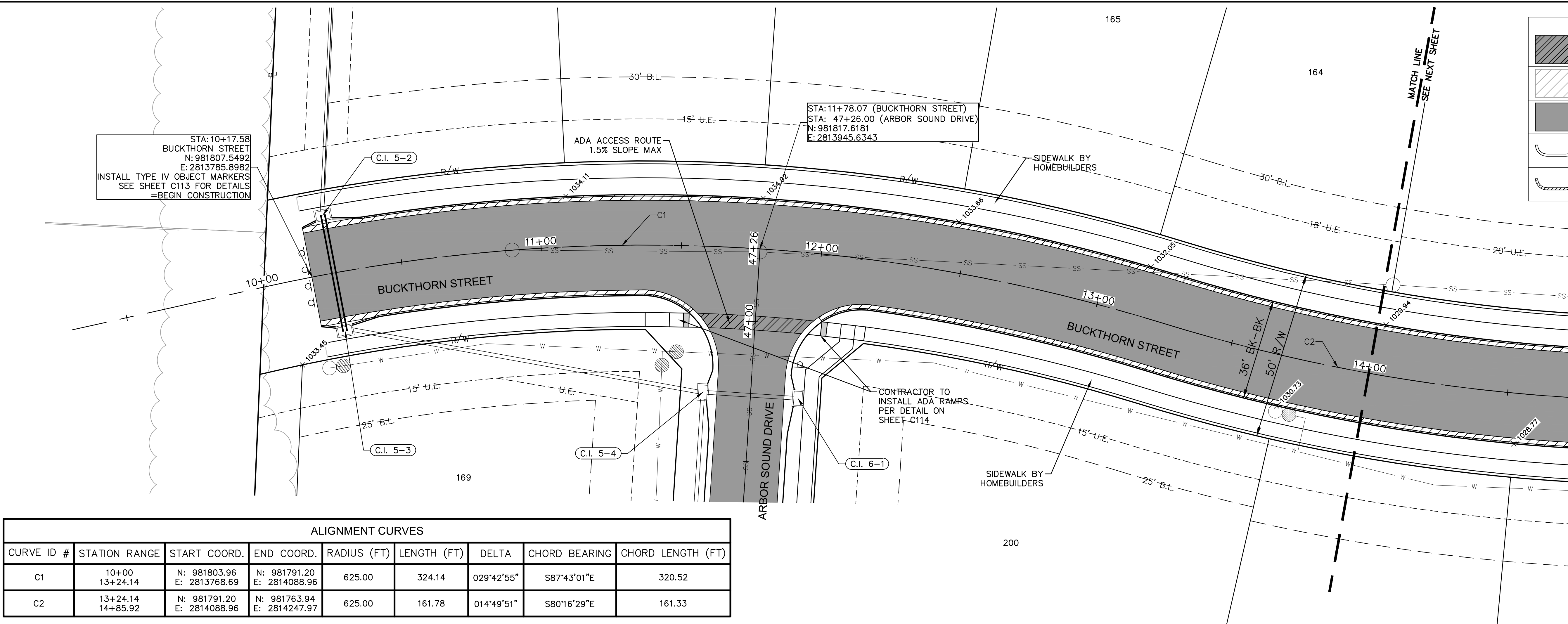
REVISIONS

drawn by: OLS  
checked by: BMW  
approved by: BMW  
QA/QC by: JES  
project no.: A19-1605  
drawing no.: C\_SWL01\_A191605  
date: 10/22/2022

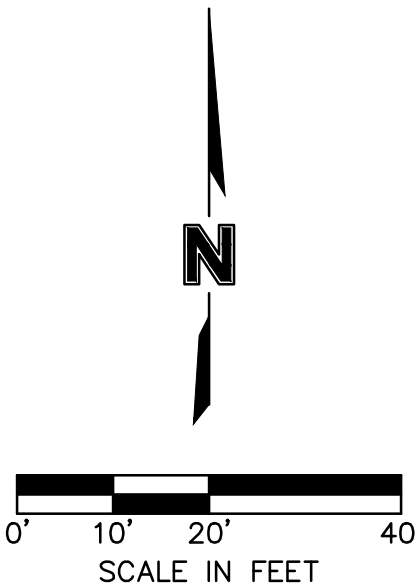
SHEET  
C106



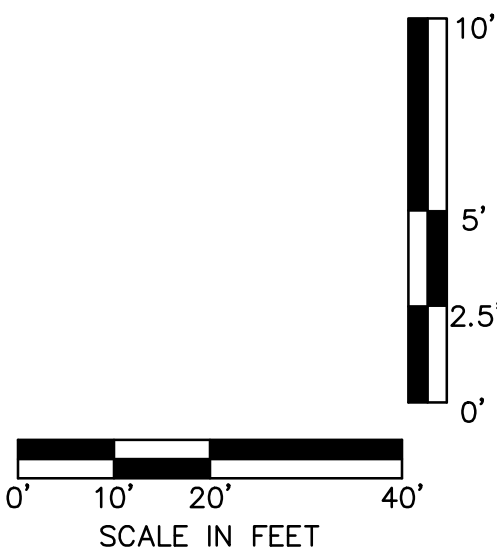
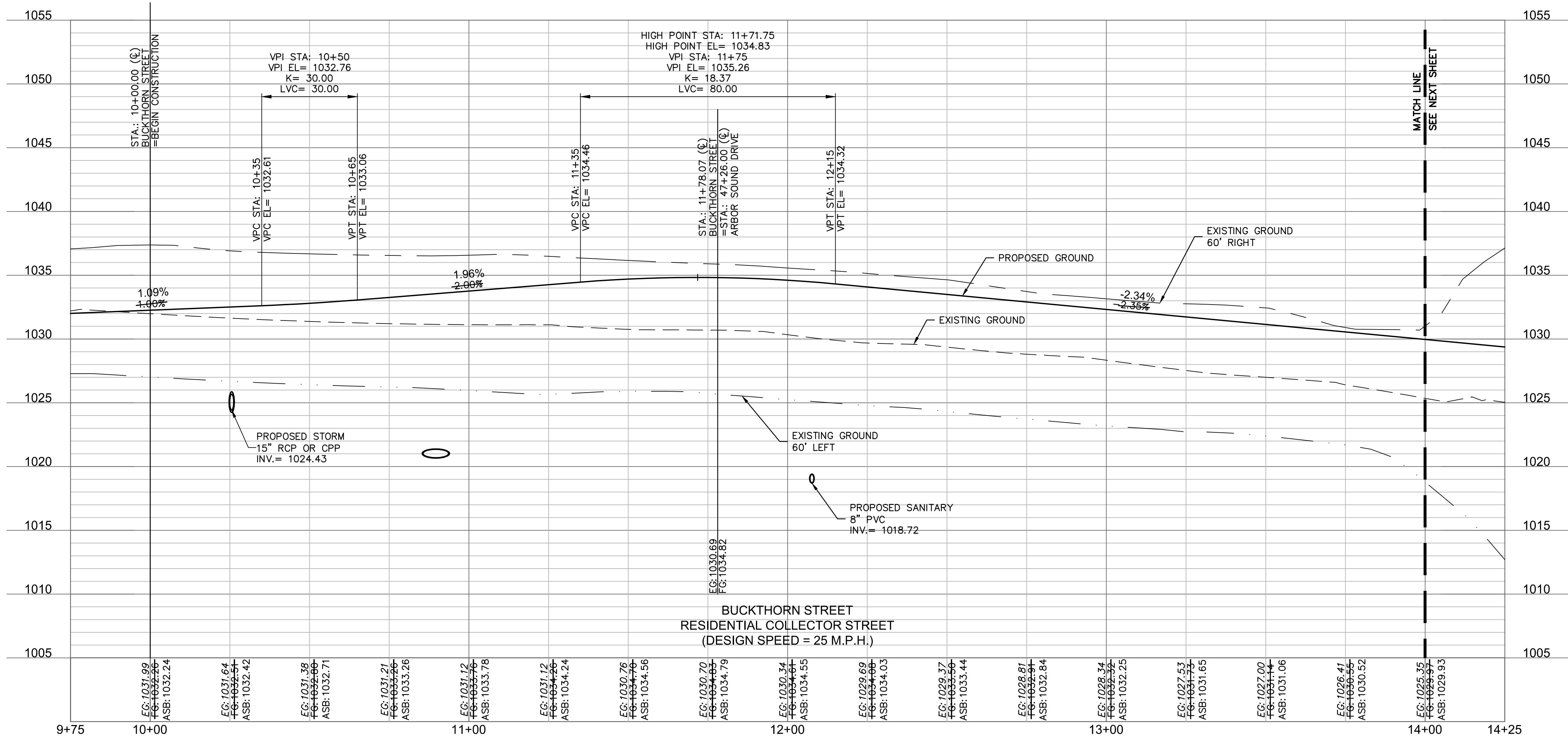
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LEGEND	
	ADA ACCESS ROUTE
	MILL & OVERLAY
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER
	CG-1 CURB & GUTTER



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BROCK M. WORTHLEY  
NUMBER  
PE-2019000237  
1/18/2022  
PROFESSIONAL ENGINEER

BY

REVISIONS DESCRIPTION  
REV. NO. DATE  
11/23/2020 REVISED PER CITY COMMENTS

REVISIONS

ROADWAY PLAN AND PROFILE (BUCKTHORN STREET)  
STREET & STORM SEWER PLANS

HAWTHORN RIDGE  
THIRD PLAT

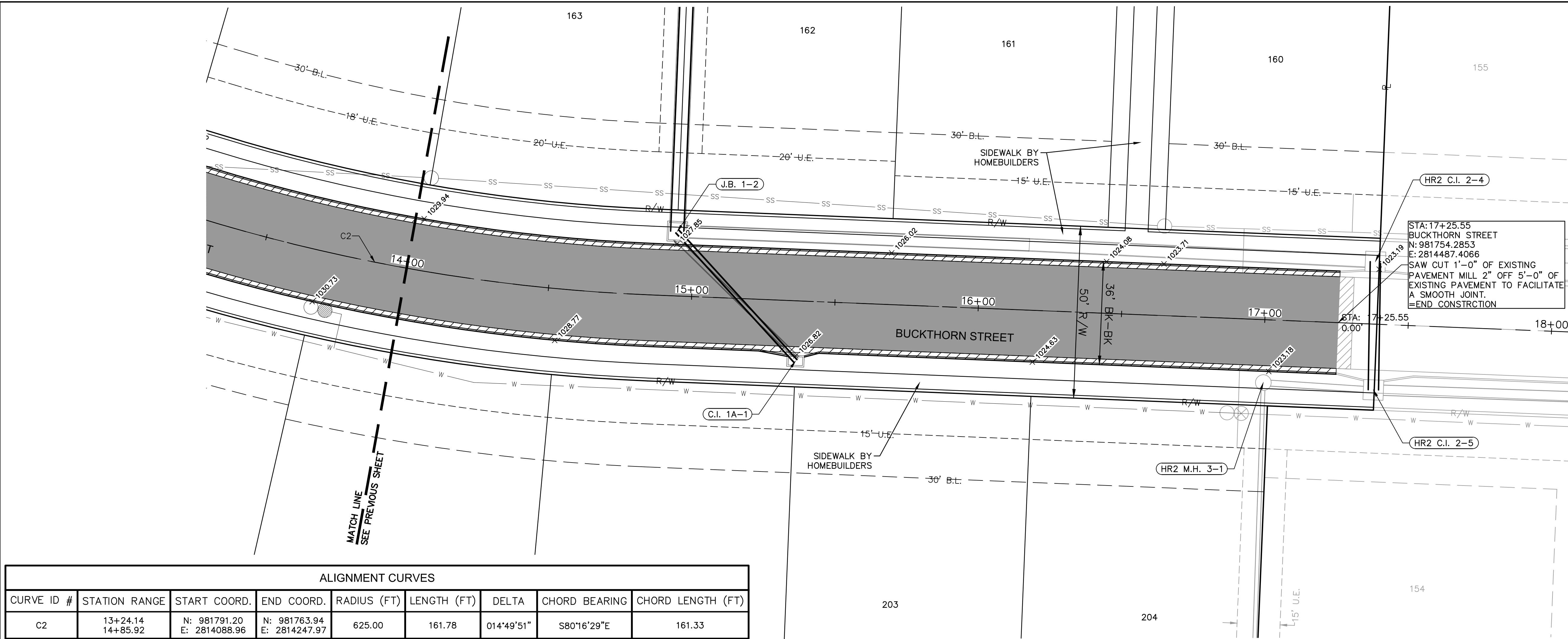
LEE'S SUMMIT, MO

drawn by: OLS  
checked by: BMW  
approved by: BMW  
QA/QC by: JES  
project no.: C\_RPP01\_A191605  
drawing no.: 10/02/2022

SHEET  
C107



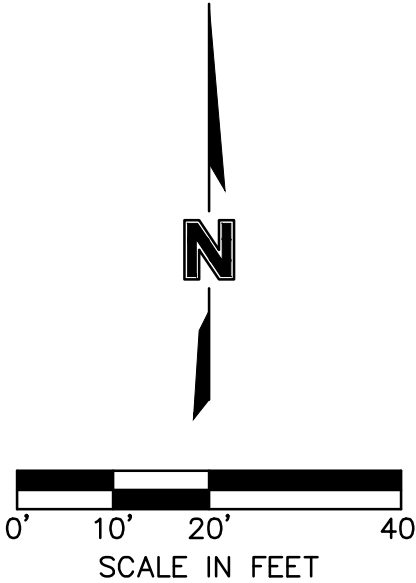
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USER: bwerthley  
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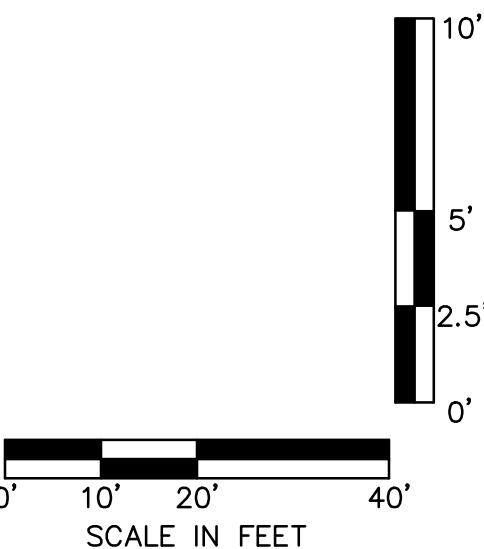
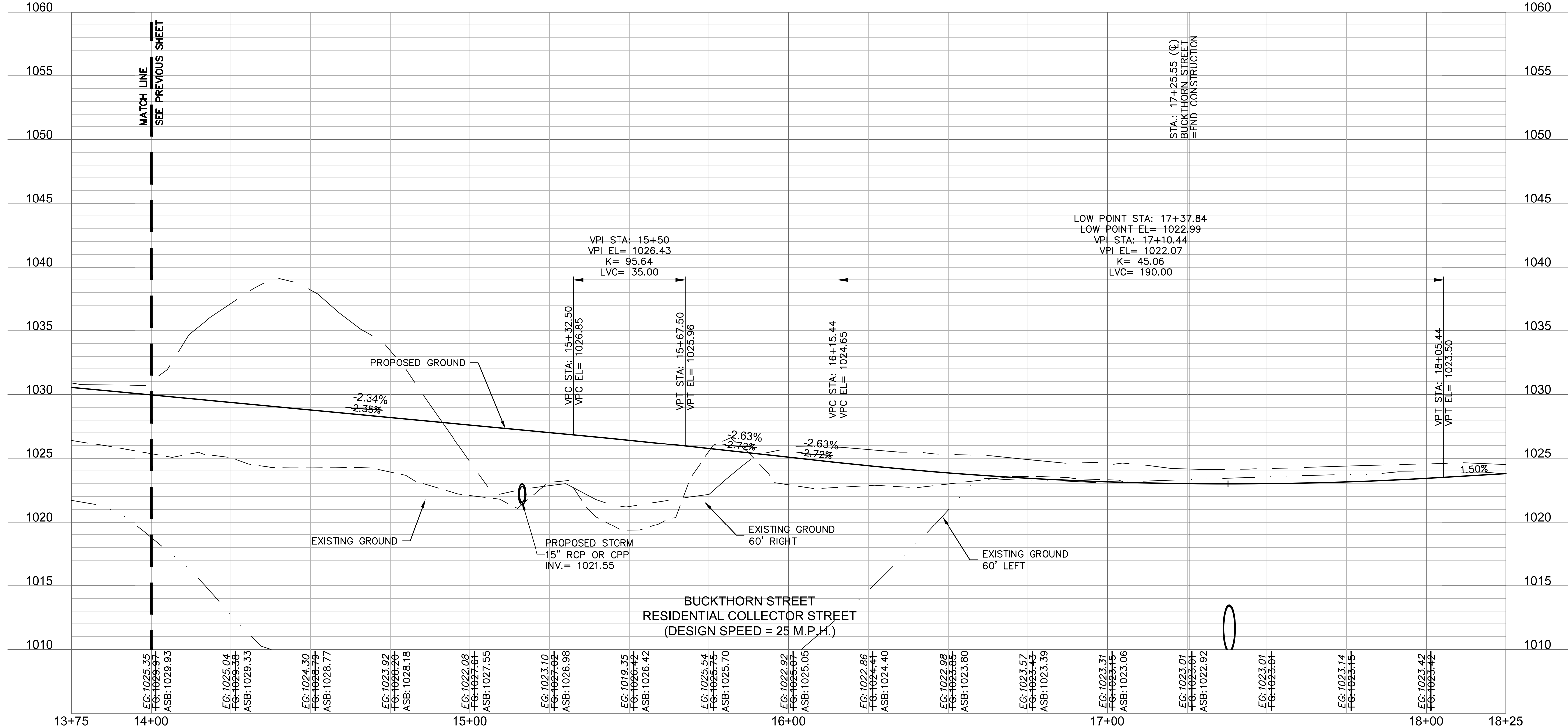
LEGEND	
	ADA ACCESS ROUTE
	MILL & OVERLAY
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER
	CG-1 CURB & GUTTER

STA: 17+25.55  
BUCKTHORN STREET  
N: 981754.2853  
E: 2814487.4066  
SAW CUT 1'-0" OF EXISTING  
PAVEMENT MILL 2" OFF 5'-0" OF  
EXISTING PAVEMENT TO FACILITATE  
A SMOOTH JOINT.  
=END CONSTRUCTION

ALIGNMENT CURVES								
CURVE ID #	STATION RANGE	START COORD.	END COORD.	RADIUS (FT)	LENGTH (FT)	DELTA	CHORD BEARING	CHORD LENGTH (FT)
C2	13+24.14 14+85.92	N: 981791.20 E: 2814088.96	N: 981763.94 E: 2814247.97	625.00	161.78	014°49'51"	S80°16'29"E	161.33



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REVISIONS DESCRIPTION	
REV. NO.	DATE
1	11/23/2020

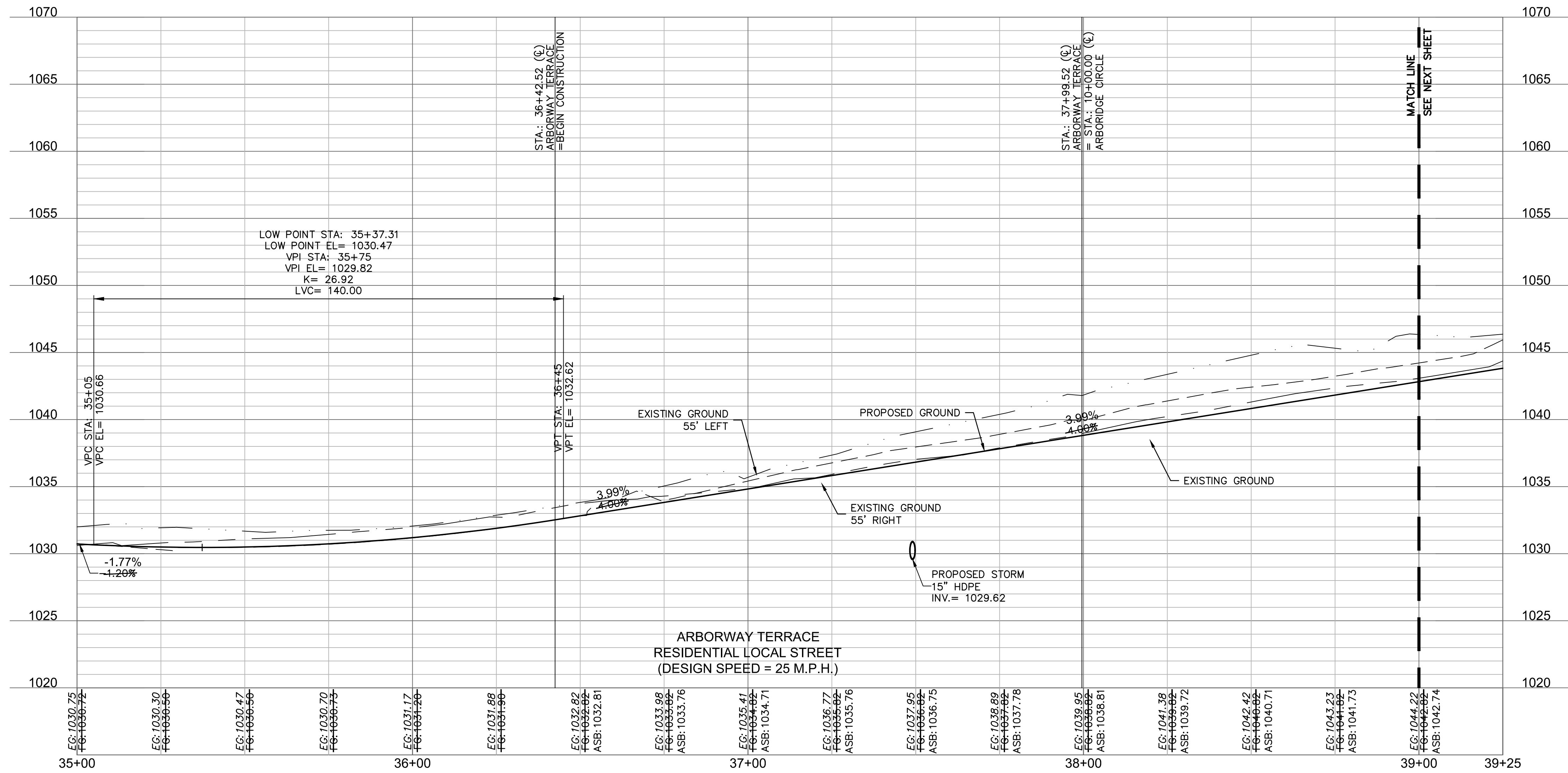
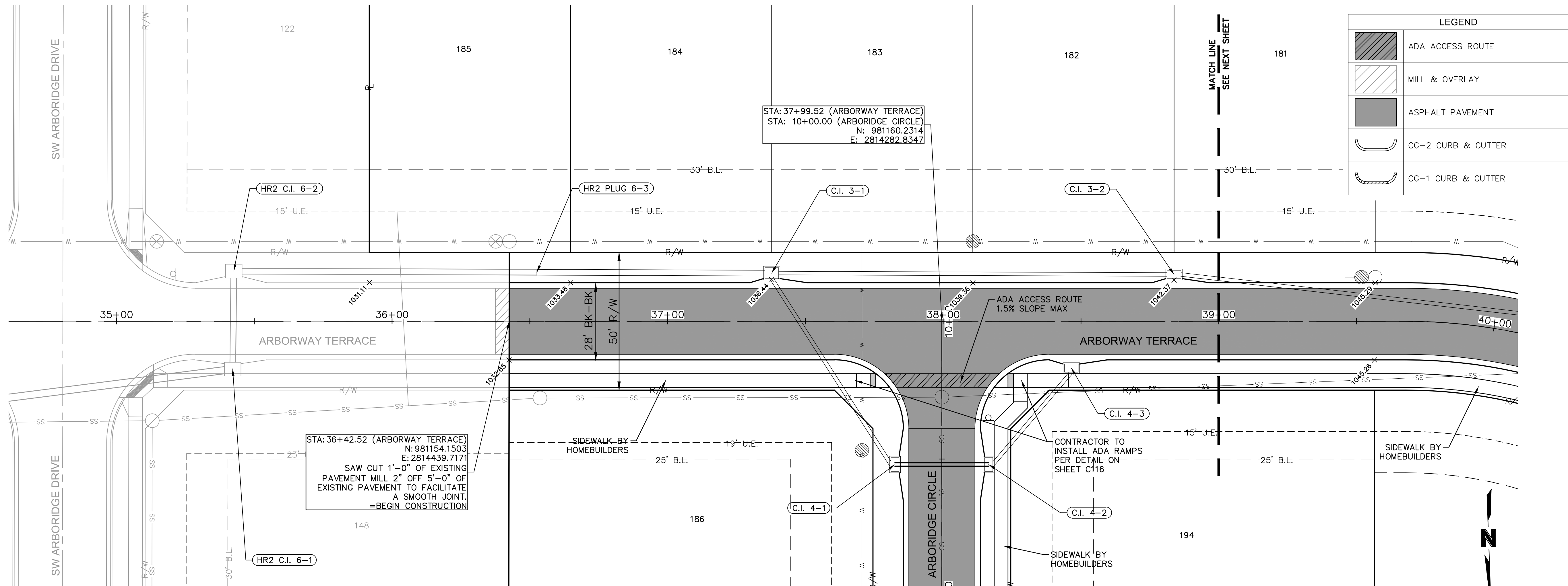
ROADWAY PLAN AND PROFILE (BUCKTHORN STREET CONT)	REVISIONS
STREET & STORM SEWER PLANS	
HAWTHORN RIDGE THIRD PLAT	
LEE'S SUMMIT, MO	2020

drawn by: OLS	checked by: BMW
approved by: BMW	QA/QC by: JES
project no.: A19-1605	drawing no.: C_RPP01_A191605
date: 10/22/2020	

SHEET  
C108



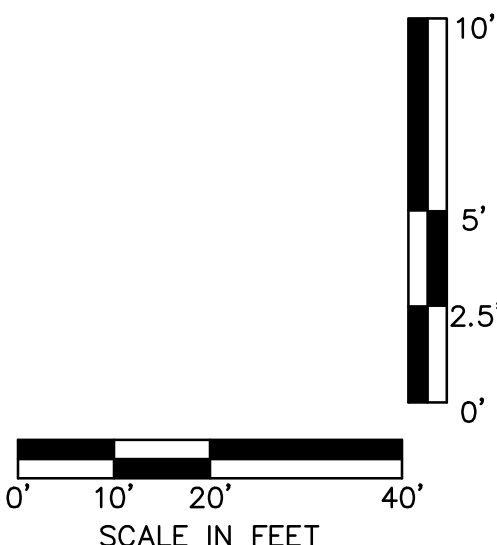
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ASBUILT  
1/18/2022

LEGEND	
	ADA ACCESS ROUTE
	MILL & OVERLAY
	ASPHALT PAVEMENT
	CG-2 CURB & GUTTER
	CG-1 CURB & GUTTER

0' 10' 20' 40'  
SCALE IN FEET



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STATE OF MISSOURI  
BROCK M. WORTHLEY  
PE-2019000237  
1/18/2022  
PROFESSIONAL ENGINEER

BY  
REVISIONS DESCRIPTION  
DATE  
REV. NO.  
11/23/2020  
REVISED PER CITY COMMENTS

ROADWAY PLAN AND PROFILE (ARBORWAY TERRACE)  
STREET & STORM SEWER PLANS  
HAWTHORN RIDGE  
THIRD PLAT  
LEE'S SUMMIT, MO  
2020

drawn by: OLS  
checked by: BMW  
approved by: BMW  
QA/QC by: JES  
project no.: A19-1605  
drawing no.: C\_RPP02\_A191605  
date: 10/02/2020

SHEET  
C109

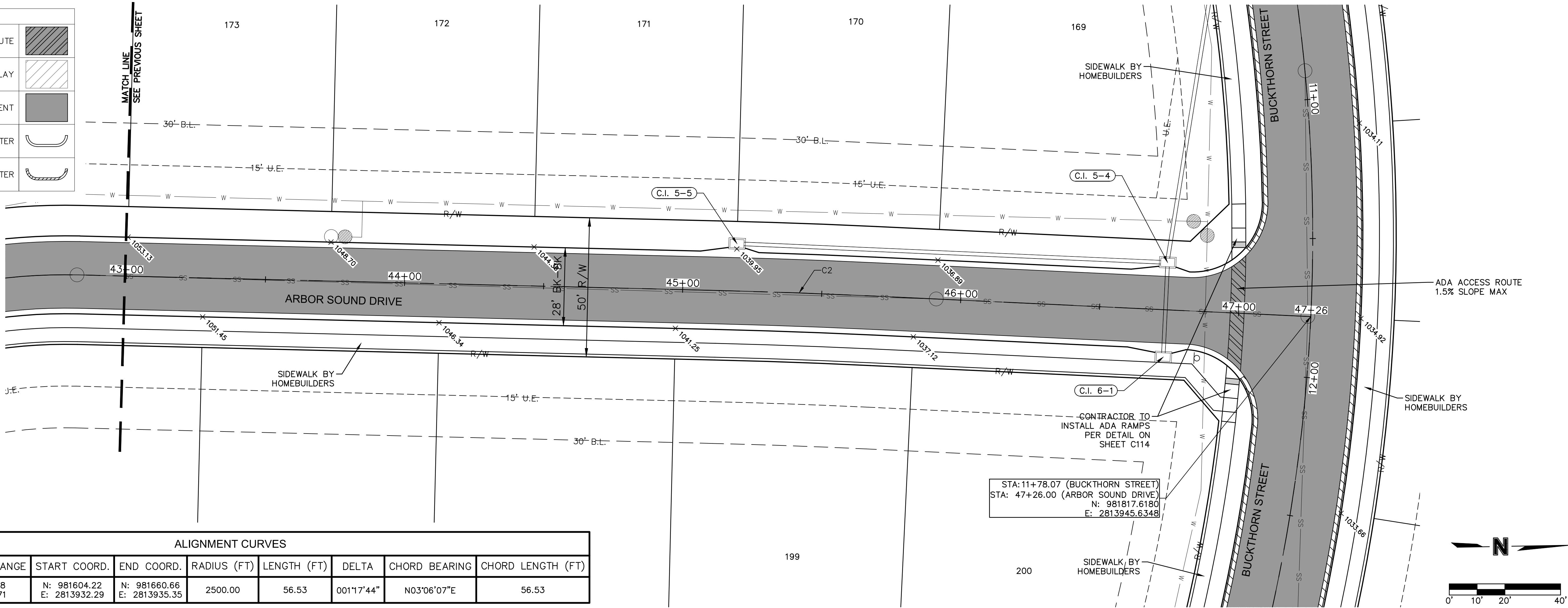




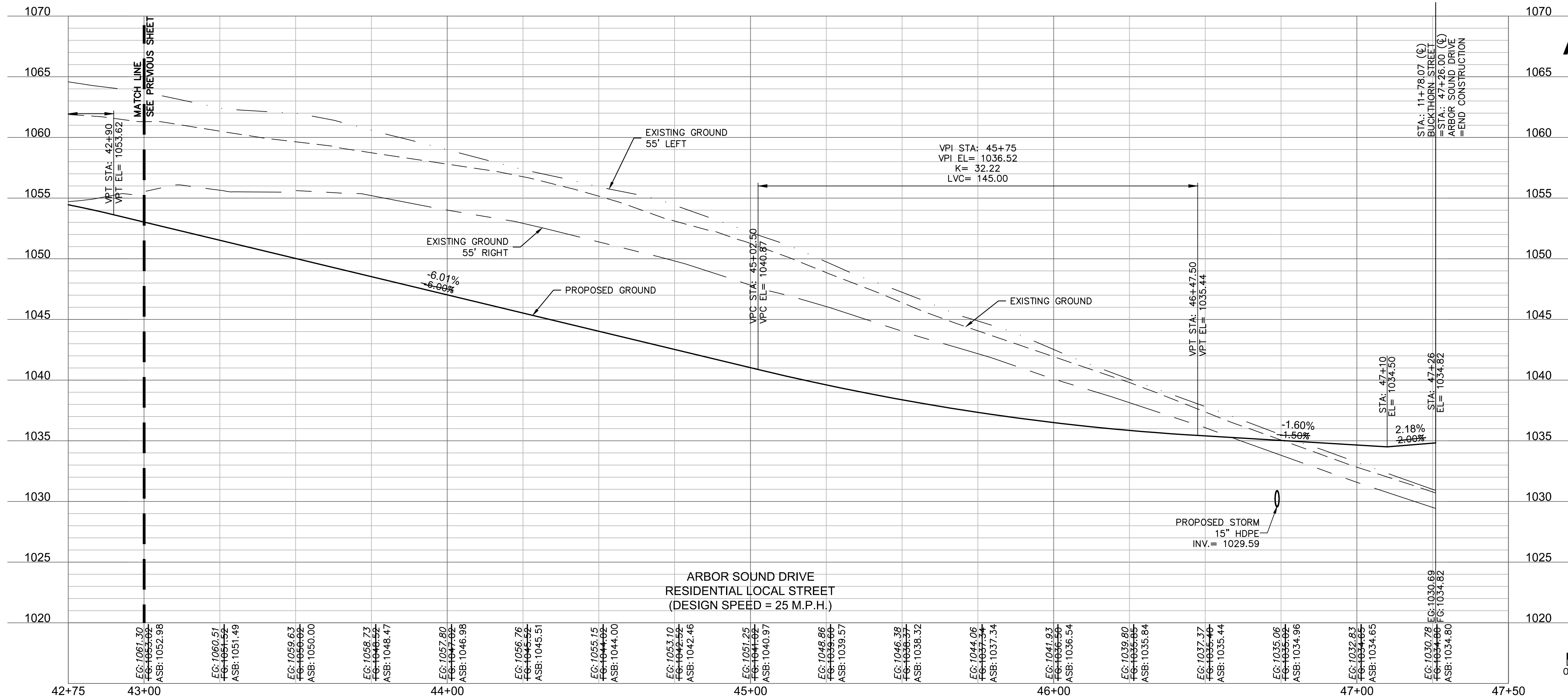


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LEGEND	
ADA ACCESS ROUTE	
MILL & OVERLAY	
ASPHALT PAVEMENT	
CG-2 CURB & GUTTER	
CG-1 CURB & GUTTER	



ALIGNMENT CURVES								
CURVE ID #	STATION RANGE	START COORD.	END COORD.	RADIUS (FT)	LENGTH (FT)	DELTA	CHORD BEARING	CHORD LENGTH (FT)
C2	45+12.18 45+68.71	N: 981604.22 E: 2813932.29	N: 981660.66 E: 2813935.35	2500.00	56.53	001°17'44"	N03°06'07"E	56.53



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1/18/2022

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	REVISED PER CITY COMMENTS	11/23/2020		

ROADWAY PLAN AND PROFILE (ARBORWAY TERRACE CONT)  
STREET & STORM SEWER PLANS

HAWTHORN RIDGE  
THIRD PLAT

LEE'S SUMMIT, MO

drawn by: OLS  
checked by: BMW  
approved by: BMW  
QA/QC by: JES  
project no.: A19-1605  
drawing no.: C\_RPP02\_A191605  
date: 10/02/2020

SHEET  
C111







ED  
k E Fleming

R:  
il A Porter  
t No.  
79219

Teresa Moore

Apparent  
Fence  
Encroachment

FENCE

GRAVE

UNPLATTED

OWNER:



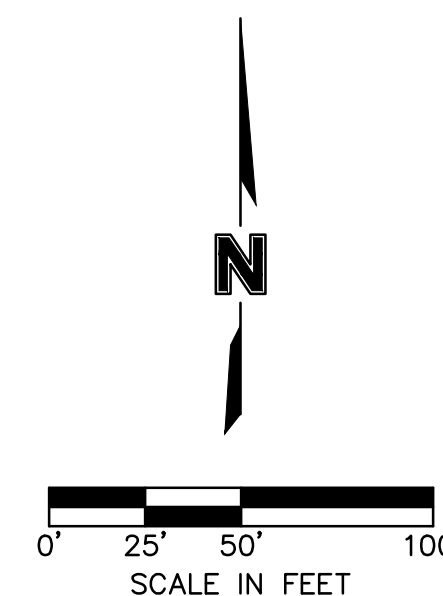
END OF ROAD TREATMENT  
N.T.S.

OBJECT MARKERS (TYPE OM4-3, 18"X18")  
ARE TO BE INSTALLED 2' FROM END OF  
PROPOSED PAVEMENT.



ARBOR SOUND DRIVE & ARBORWAY TERRACE SIGN DETAILS  
N.T.S.

NOT ASBUILT



## TRAFFIC CONTROL PLAN STREET & STORM SEWER PLANS

HAWTHORN RIDGE  
THIRD PLAT

LEE'S SUMMIT. MO

SHEET  
C113

REVISIONS DESCRIPTION

DATE \_\_\_\_\_

REV. 11/01

BY

## REVISIONS

LEE'S SUMMIT, MO

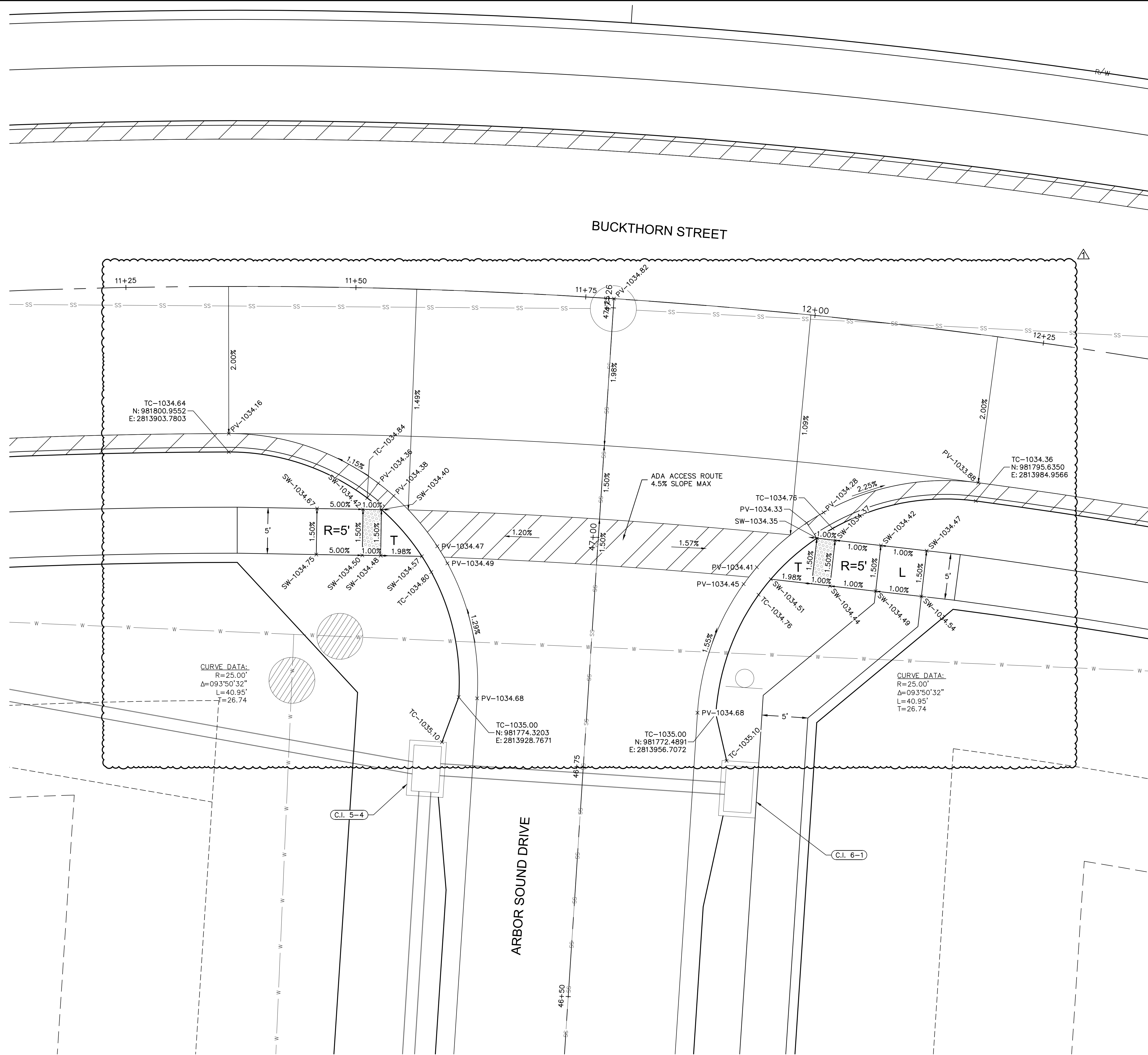
STATE OF MISSOURI  
BROCK M. WORTHLEY  
NUMBER  
PE-2019000237  
1/18/2022  
PROFESSIONAL ENGINEER

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Missouri Certificate of Authority #001592  
1301 Burlington Street  
North Kansas City, MO 64116


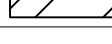

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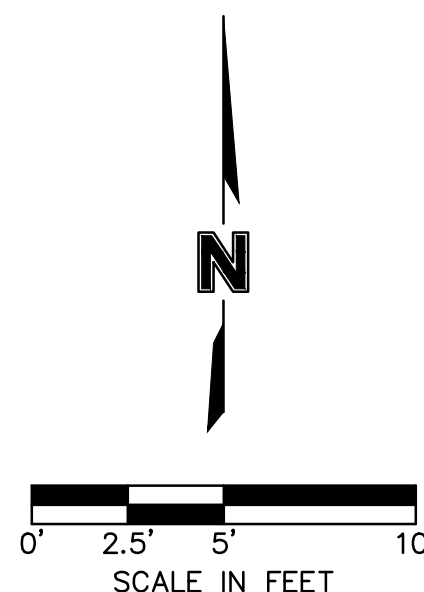
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- INTERSECTION AND ADA DETAIL NOTES:
1. ALL ADA CURB RAMPS SHALL BE BUILT PER CURRENT MUNICIPALITY ADOPTED ADA STANDARDS.
2. CURB RAMP FLARES SHALL NOT BE STEEPER THAN 1:10 MAX SLOPES.
3. LANDING SHALL BE PROVIDED WHERE INDICATED ON PLAN SHEET AND PER AASHTO STANDARD. 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, OR PAVEMENT IF CONTRACTOR'S PERSONAL 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
	CG-2 CURB & GUTTER
	CG-1 CURB & GUTTER

NOT ASBUILT



SPOT ELEVATIONS  
STREET & STORM SEWER PLANS

HAWTHORN RIDGE  
THIRD PLAT

LEE'S SUMMIT, MO

drawn by: \_\_\_\_\_ OLS  
checked by: \_\_\_\_\_ BMW  
approved by: \_\_\_\_\_ BMW  
QA/QC by: \_\_\_\_\_ JES  
project no.: \_\_\_\_\_ A19-1605  
drawing no.: C SPT01 A191605  
date: \_\_\_\_\_ 10/02/2020

SHEET  
C114

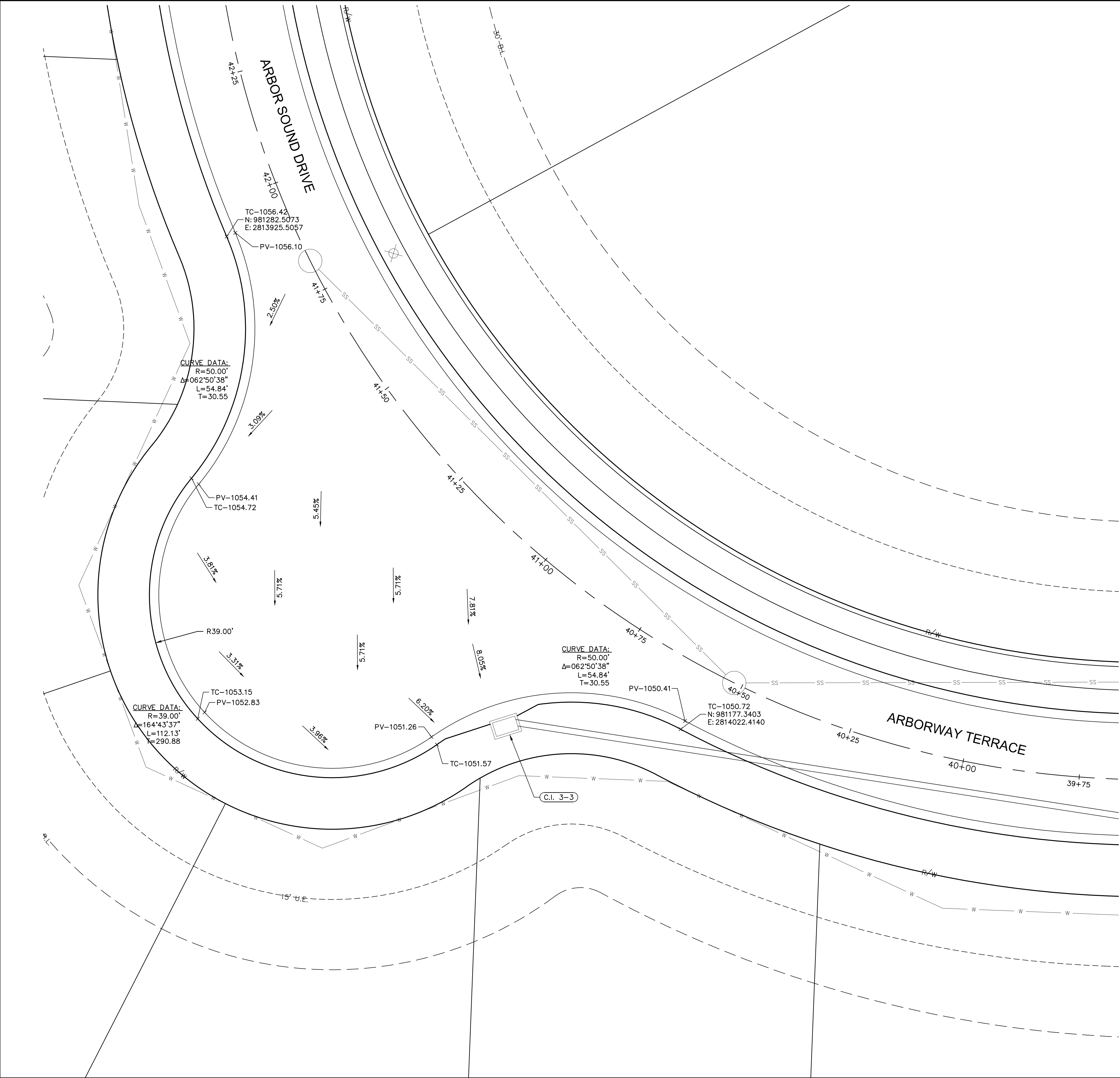
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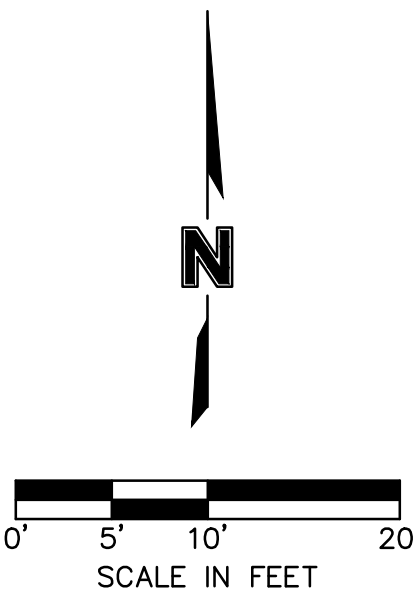
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- INTERSECTION AND ADA DETAIL NOTES:
1. ALL ADA CURB RAMPS SHALL BE BUILT PER CURRENT MUNICIPALITY ADOPTED ADA STANDARDS.
  2. CURB RAMP FLARES SHALL NOT BE STEEPER THAN 1:10 MAX SLOPES.
  3. LANDING SHALL BE PROVIDED WHERE INDICATED ON PLAN SHEET 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
L	LANDING AREA
R	RAMP AREA
T	TRANSITION AREA
	ADA ACCESS ROUTE
	CG-2 CURB & GUTTER
	CG-1 CURB & GUTTER

NOT ASBUILT



STATE OF MISSOURI  
BROCK M. WORTHLEY  
PROFESSIONAL ENGINEER  
PE-2019000237  
1/18/2022

BY  
REV. NO.  
DATE  
REVISIONS DESCRIPTION

SPOT ELEVATIONS  
STREET & STORM SEWER PLANS  
HAWTHORN RIDGE  
THIRD PLAT  
LEE'S SUMMIT, MO

drawn by: OLS  
checked by: BMW  
approved by: BMW  
QA/QC by: JES  
project no.: A19-1605  
drawing no.: C\_SPT01\_A191605  
date: 10/02/2022

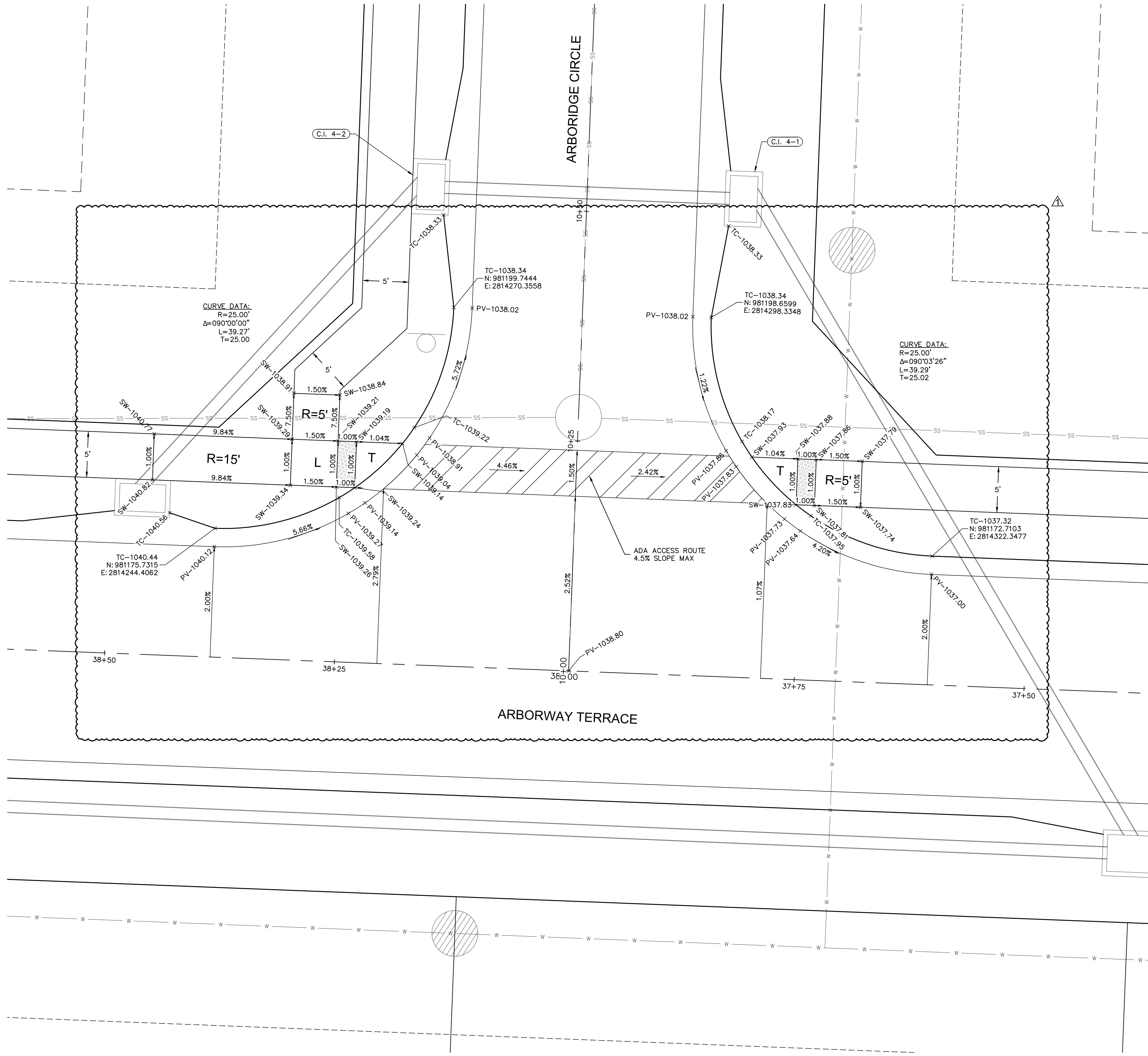
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DWG: F:\2019\1501-2000\019-1605-A\40-Design\AutoCAD\Final Plans - As-Built\Sheets\GNCV\STREET & STORM\AC\_SPT01\_A191605.dwg C:\PSTRM\_A191605 USER: bworthley  
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R	RAMP AREA
T	TRANSITION AREA
	ADA ACCESS ROUTE
	CG-2 CURB & GUTTER
	CG-1 CURB & GUTTER

NOT ASBUILT

drawn by: OLS  
checked by: BMW  
approved by: BMW  
QA/QC by: JES  
project no.: A19-1605  
drawing no.: C\_SPT01\_A191605  
date: 10/02/2020

SHEET  
C116

SPOT ELEVATIONS  
STREET & STORM SEWER PLANS

HAWTHORN RIDGE  
THIRD PLAT

LEE'S SUMMIT, MO

REV. NO. 1  
DATE 07/29/2021  
REVISED PER CITY COMMENTS

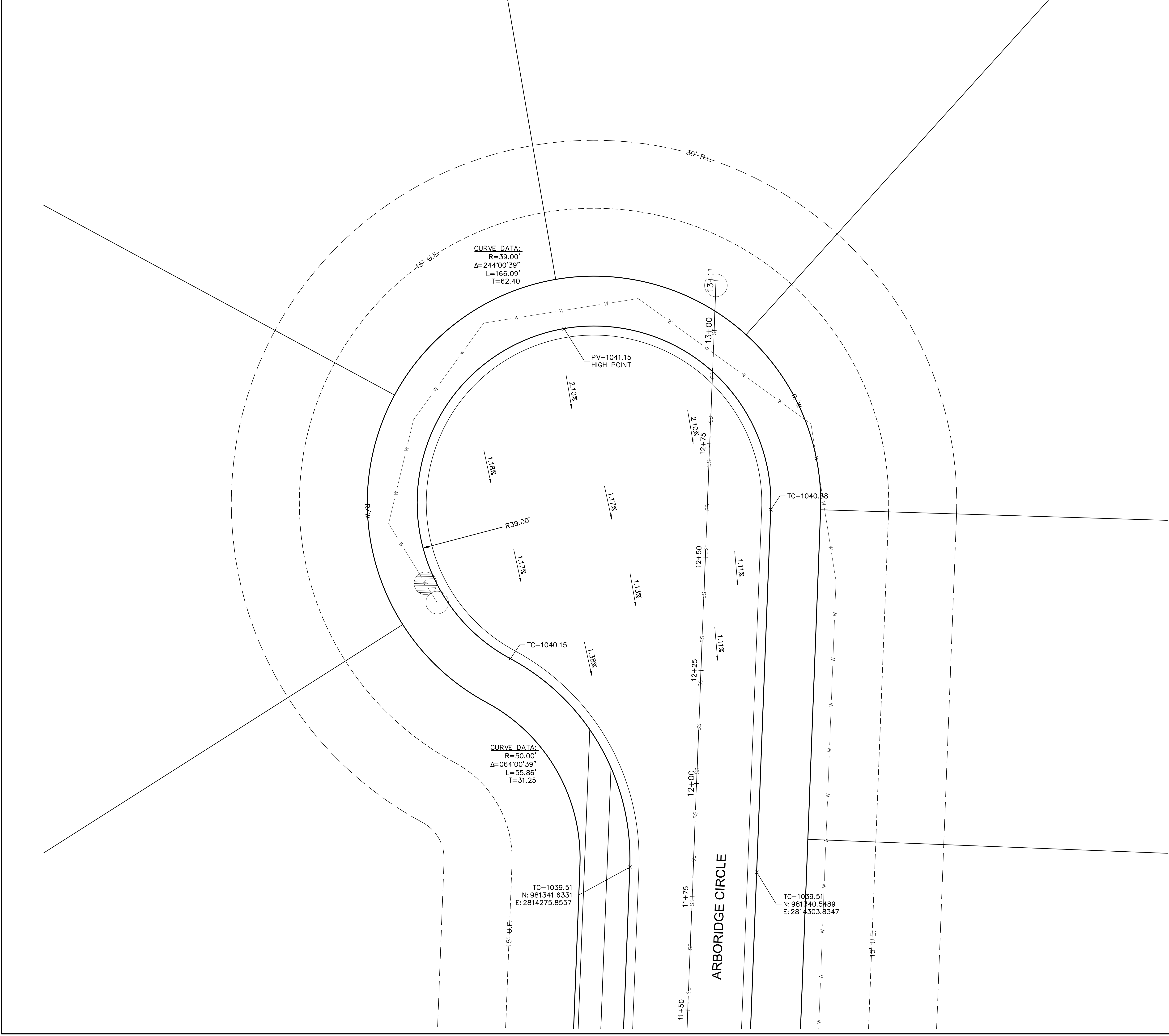
BY

REVISIONS

STATE OF MISSOURI  
BROCK M. WORTHLEY  
PROFESSIONAL ENGINEER  
PE-2019000237  
1/18/2020

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L	LANDING AREA
R	RAMP AREA
T	TRANSITION AREA
	ADA ACCESS ROUTE
	CG-2 CURB & GUTTER
	CG-1 CURB & GUTTER

NOT ASBUILT

drawn by: OLS  
checked by: BMW  
approved by: BMW  
QA/QC by: JES  
project no.: A19-1605  
drawing no.: C\_SPT01\_A191605  
date: 10/02/2020

SHEET  
C117

SPOT ELEVATIONS  
STREET & STORM SEWER PLANS

HAWTHORN RIDGE  
THIRD PLAT

LEE'S SUMMIT, MO

REV. NO.

DATE

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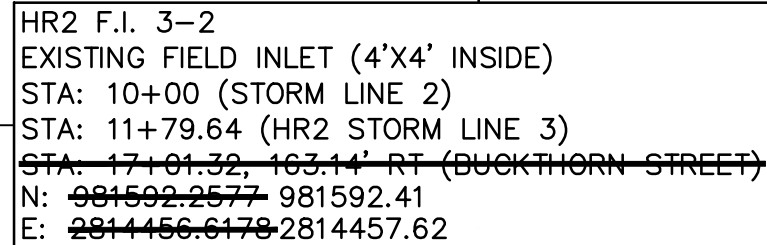
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BROCK M. WORTHLEY  
Professional Engineer  
PE-2019000237  
1/18/2020







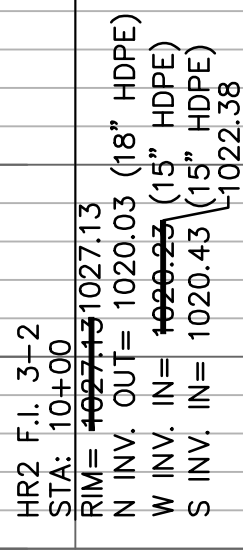
USER: bworthley  
A191605



STA: ~~13+07.10~~ (STORM LINE 2) 13+08.23

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.

STORM LINE 2 (9+75 - 13+25)



	F.I. 2-1
	STA: <del>43+07.10</del> 13+08.23
	RIM= <del>1034.10</del> 1033.98
	WEIR= <del>1033.10</del> 1032.98
	E INV. OUT= <del>1027.91</del> (15" HDPE)

1/18/2022

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

LEE'S SUMMIT MO

drawn by: \_\_\_\_\_ OLS  
checked by: \_\_\_\_\_ BMW  
approved by: \_\_\_\_\_ BMW  
QA/QC by: \_\_\_\_\_ JES  
project no.: \_\_\_\_\_ A19-1605  
drawing no.: C STM01 A191605  
date: \_\_\_\_\_ 10/02/2020

SHEET  
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STATE OF MISSOURI  
BROCK M. WORTHLEY  
NUMBER  
PE-2019000237  
1/18/2022  
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	11/23/2020	REVISED PER CITY COMMENTS	

2020



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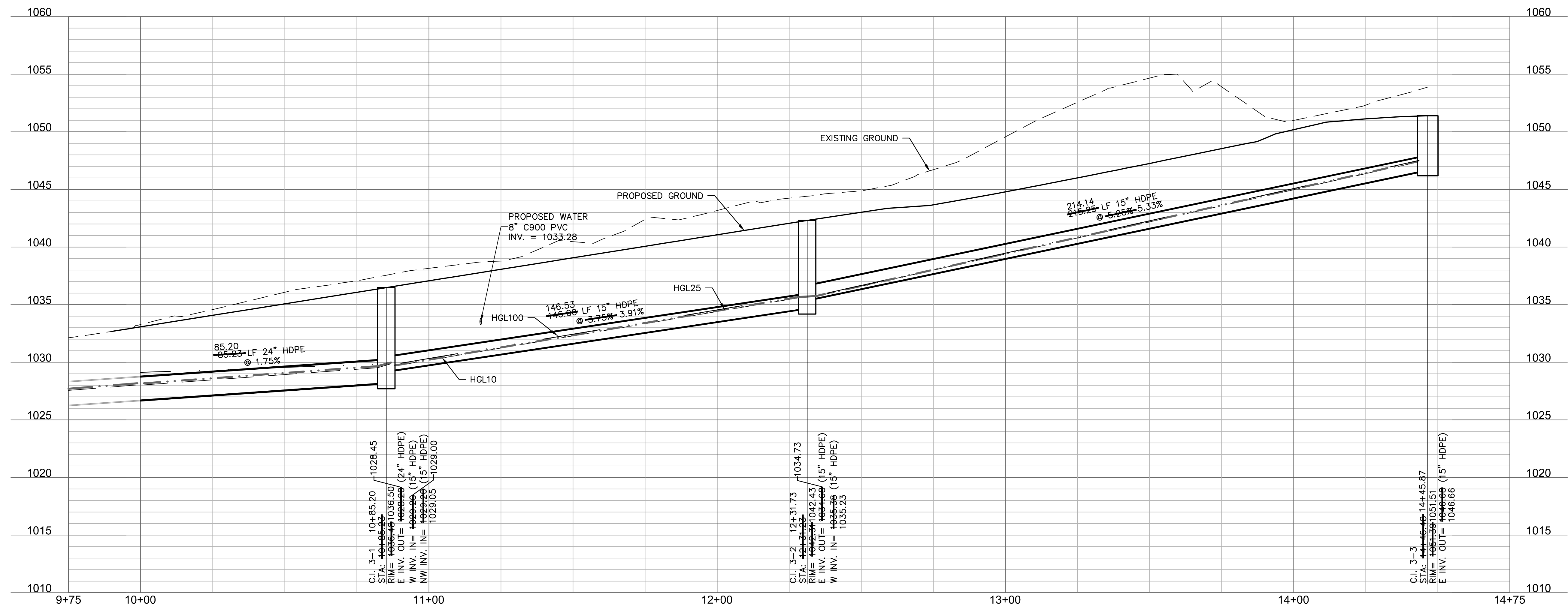
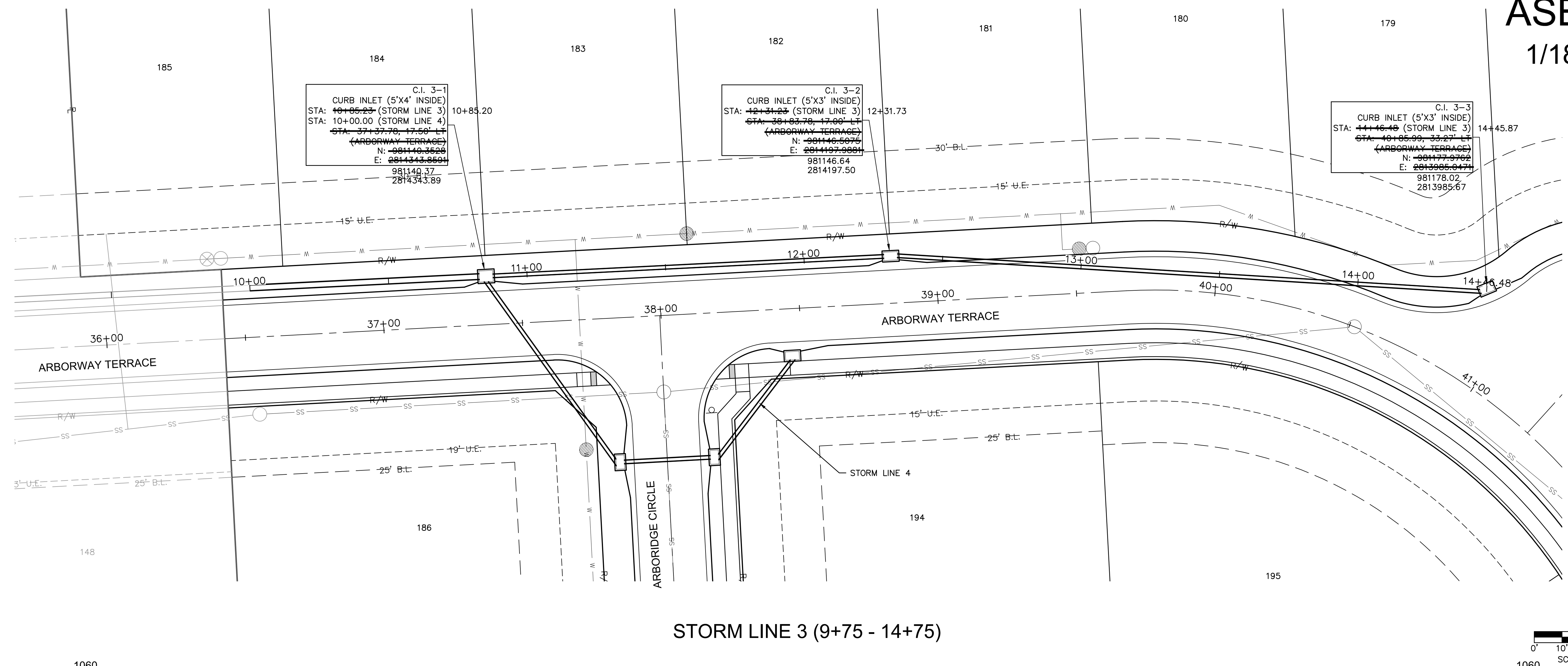
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[illegible]

STORM SEWER PLAN & PROFILE (LINE 3) STREET & STORM SEWER PLANS	2020
HAWTHORN RIDGE THIRD PLAT	
LEE'S SUMMIT, MO	

drawn by: \_\_\_\_\_ OLS  
checked by: \_\_\_\_\_ BMW  
approved by: \_\_\_\_\_ BMW  
QA/QC by: \_\_\_\_\_ JES  
project no.: \_\_\_\_\_ A19-1605  
drawing no.: C STM01 A191605  
date: \_\_\_\_\_ 10/02/2020

SHEET  
C120

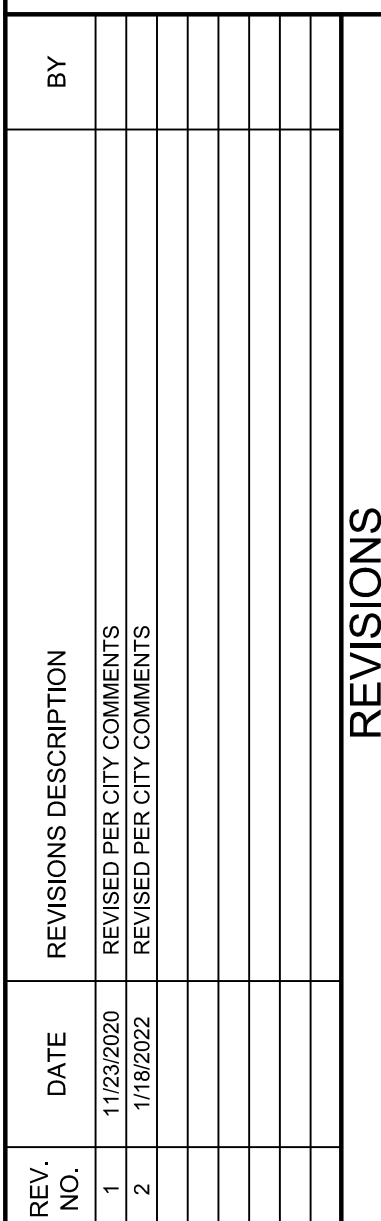


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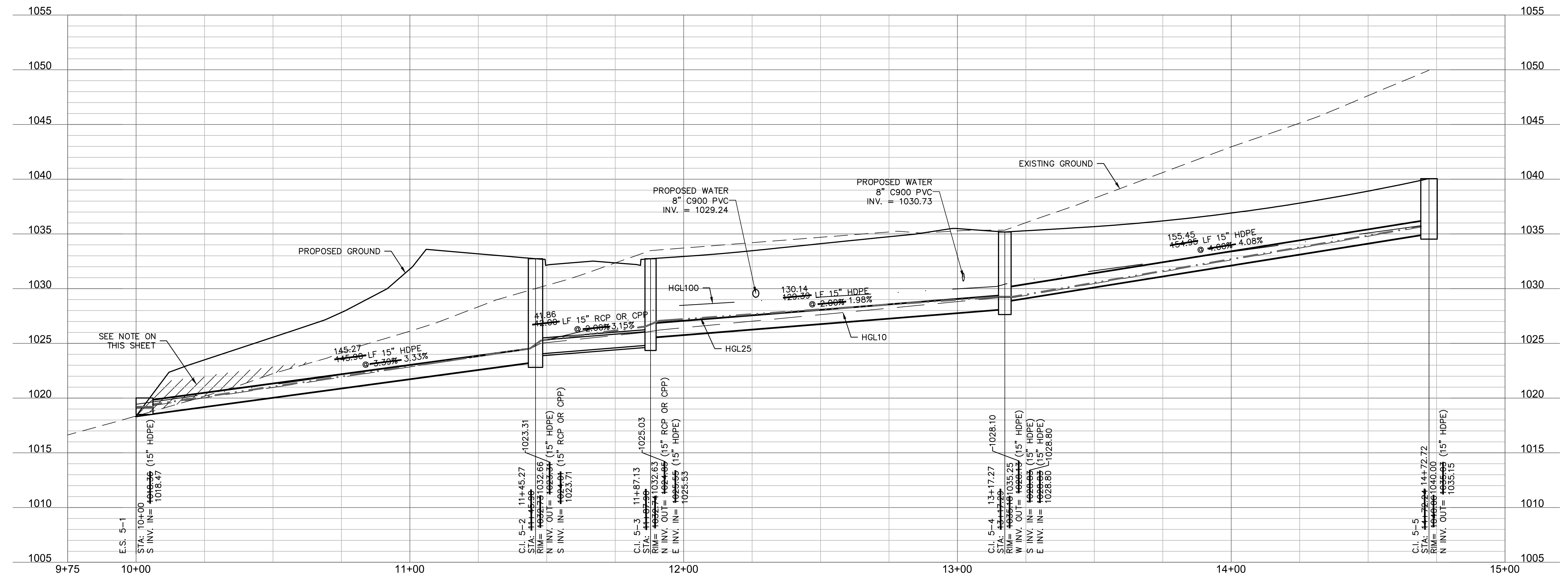
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STORM SEWER PLAN & PROFILE (LINE 5) STREET & STORM SEWER PLANS	2020
HAWTHORN RIDGE THIRD PLAT	
LEE'S SUMMIT, MO	

SHEET C121
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LEGEND	
	FINISHED INDEX CONTOURS
	FINISHED INTERMEDIATE CONTOURS
	RIDGE LINE
A	DRAINAGE AREA
C	RUNOFF COEFFICIENT
<u>C.I. 0-0</u>	STORM STRUCTURE NUMBER

DWG: F:\2019\1501-2000\019-1605-A\40-Design\AutoCAD\Final Plans - As-Builts\Sheets\GNCV\STREET & STORM\C\_DRN01\_A191605.dwg USER: bworthley  
DATE: Jan 18, 2022 3:34pm XREFS: C\_PTBULK\_A191605 C\_XBASE\_A191605 C\_PBASE\_A191605 C\_PUTIL\_A191605 C\_PBNDY\_A191605 C\_PSTRM\_A191605

DRAINAGE PLAN  
STREET & STORM SEWER PLANS

drawn by: \_\_\_\_\_ OLS  
checked by: \_\_\_\_\_ BMW  
approved by: \_\_\_\_\_ BMW  
QA/QC by: \_\_\_\_\_ JES  
project no.: \_\_\_\_\_ A19-1603  
drawing no.: C DRN01 A191603  
date: \_\_\_\_\_ 10/02/2020

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2020

BY

REVISIONS DESCRIPTION

DATE \_\_\_\_\_

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DATE: Jan 18, 2022 3:33pm XREFS: C:\PBLK\_A191605 C:\XBASE\_A191605

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. 1A-1	1.21	0.51	5.00	7.35	1.00	4.54
F.I. 2-1	1.13	0.51	5.00	7.35	1.00	4.24
C.I. 3-1	0.43	0.51	5.00	7.35	1.00	1.61
C.I. 3-2	0.56	0.51	5.00	7.35	1.00	2.10
C.I. 3-3	1.16	0.51	5.00	7.35	1.00	4.35
C.I. 4-1(L)	0.32	0.51	5.00	7.35	1.00	1.20
C.I. 4-1(R)	0.00	0.51	5.00	7.35	1.00	0.00
C.I. 4-1(B)	0.09	0.51	5.00	7.35	1.00	0.34
C.I. 4-1	0.41	0.51	5.00	7.35	1.00	1.54
C.I. 4-2(L)	0.00	0.51	5.00	7.35	1.00	0.00
C.I. 4-2(R)	0.38	0.51	5.00	7.35	1.00	1.43
C.I. 4-2(B)	0.57	0.51	5.00	7.35	1.00	2.14
C.I. 4-2	0.95	0.51	5.00	7.35	1.00	3.56
C.I. 4-3	0.37	0.51	5.00	7.35	1.00	1.39
C.I. 5-2	0.21	0.51	5.00	7.35	1.00	0.79
C.I. 5-3	0.42	0.51	5.00	7.35	1.00	1.58
C.I. 5-4	0.81	0.51	5.00	7.35	1.00	3.04
C.I. 5-5	0.72	0.51	5.00	7.35	1.00	2.70
C.I. 6-1	0.58	0.51	5.00	7.35	1.00	2.18
HR2 F.I. 3-2	1.15	0.51	5.00	7.35	1.00	4.31
HR2 F.I. 3-3	0.52	0.51	5.00	7.35	1.00	1.95

Drainage Area Design Table						
25 Year Return Frequency						
Inlet ID	Drainage Area	C	Tc	i	K	Peak Flow
	(ac)		(min)	(in/hr)		(cfs)
C.I. 1A-1	1.21	0.51	5.00	8.53	1.10	5.79
F.I. 2-1	1.13	0.51	5.00	8.53	1.10	5.41
C.I. 3-1	0.43	0.51	5.00	8.53	1.10	2.06
C.I. 3-2	0.56	0.51	5.00	8.53	1.10	2.68
C.I. 3-3	1.16	0.51	5.00	8.53	1.10	5.55
C.I. 4-1(L)	0.32	0.51	5.00	8.53	1.10	1.53
C.I. 4-1(R)	0.00	0.51	5.00	8.53	1.10	0.00
C.I. 4-1(B)	0.09	0.51	5.00	8.53	1.10	0.43
C.I. 4-1	0.41	0.51	5.00	8.53	1.10	1.96
C.I. 4-2(L)	0.00	0.51	5.00	8.53	1.10	0.00
C.I. 4-2(R)	0.38	0.51	5.00	8.53	1.10	1.82
C.I. 4-2(B)	0.57	0.51	5.00	8.53	1.10	2.73
C.I. 4-2	0.95	0.51	5.00	8.53	1.10	4.55
C.I. 4-3	0.37	0.51	5.00	8.53	1.10	1.77
C.I. 5-2	0.21	0.51	5.00	8.53	1.10	1.00
C.I. 5-3	0.42	0.51	5.00	8.53	1.10	2.01
C.I. 5-4	0.81	0.51	5.00	8.53	1.10	3.88
C.I. 5-5	0.72	0.51	5.00	8.53	1.10	3.45
C.I. 6-1	0.58	0.51	5.00	8.53	1.10	2.78
HR2 F.I. 3-2	1.15	0.51	5.00	8.53	1.10	5.50
HR2 F.I. 3-3	0.52	0.51	5.00	8.53	1.10	2.49

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. 1A-1	1.21	0.51	5.00	10.32	1.25	7.96
F.I. 2-1	1.13	0.51	5.00	10.32	1.25	7.44
C.I. 3-1	0.43	0.51	5.00	10.32	1.25	2.83
C.I. 3-2	0.56	0.51	5.00	10.32	1.25	3.69
C.I. 3-3	1.16	0.51	5.00	10.32	1.25	7.63
C.I. 4-1(L)	0.32	0.51	5.00	10.32	1.25	2.11
C.I. 4-1(R)	0.00	0.51	5.00	10.32	1.25	0.00
C.I. 4-1(B)	0.09	0.51	5.00	10.32	1.25	0.59
C.I. 4-1	0.41	0.51	5.00	10.32	1.25	2.70
C.I. 4-2(L)	0.00	0.51	5.00	10.32	1.25	0.00
C.I. 4-2(R)	0.38	0.51	5.00	10.32	1.25	2.50
C.I. 4-2(B)	0.57	0.51	5.00	10.32	1.25	3.75
C.I. 4-2	0.95	0.51	5.00	10.32	1.25	6.25
C.I. 4-3	0.37	0.51	5.00	10.32	1.25	2.43
C.I. 5-2	0.21	0.51	5.00	10.32	1.25	1.38
C.I. 5-3	0.42	0.51	5.00	10.32	1.25	2.76
C.I. 5-4	0.81	0.51	5.00	10.32	1.25	5.33
C.I. 5-5	0.72	0.51	5.00	10.32	1.25	4.74
C.I. 6-1	0.58	0.51	5.00	10.32	1.25	3.82
HR2 F.I. 3-2	1.15	0.51	5.00	10.32	1.25	7.57
HR2 F.I. 3-3	0.52	0.51	5.00	10.32	1.25	3.42

Inlet Design Table													
10 Year Return Frequency													
Inlet ID	Inlet Location	Peak Flow	Upstream Bypass	Total Flow	Clogging Factor	Inlet Capacity	Sag Inlet Capacity (Note 1)	Captured Flow	Bypass Flow	Inlet Efficiency (Note 2)	Gutter Depth	Gutter Spread	Ponding Depth
		(cfs)	(cfs)	(cfs)		(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)
C.I. 1A-1	GRADE	4.54	0.35	4.89	1.00	3.82	3.82	3.82	1.07	78.16%	0.21	9.77	...
F.I. 2-1	SAG	4.24	0.00	4.24	0.80	18.67	14.93	4.24	0.00	100.00%	...	...	0.19
C.I. 3-1	GRADE	1.61	1.41	3.02	1.00	1.87	1.87	1.87	1.15	62.03%	0.16	7.78	...
C.I. 3-2	GRADE	2.10	1.31	3.41	1.00	2.00	2.00	2.00	1.41	58.64%	0.16	8.14	...
C.I. 3-3	GRADE	4.35	0.00	4.35	1.00	3.04	3.04	3.04	1.31	69.90%	0.21	10.67	...
C.I. 4-1(L)	SAG	1.20	...	...	...	...	...	...	...	...	0.14	7.01	...
C.I. 4-1(R)	SAG	0.00	...	...	...	...	...	...	...	...	0.00	0.00	...
C.I. 4-1(B)	SAG	0.34	...	...	...	...	...	...	...	...	...	...	...
C.I. 4-1	SAG	1.54	0.00	1.54	0.80	19.40	15.52	1.54	0.00	100.00%	...	...	...
C.I. 4-2(L)	SAG	0.00	...	...	...	...	...	...	...	...	0.09	4.34	...
C.I. 4-2(R)	SAG	1.43	...	...	...	...	...	...	...	...	0.15	7.48	...
C.I. 4-2(B)	SAG	2.14	...	...	...	...	...	...	...	...	...	...	...
C.I. 4-2	SAG	3.56	0.33	3.90	0.80	19.40	15.52	3.90	0.00	100.00%	...	...	...
C.I. 4-3	GRADE	1.39	0.00	1.39	1.00	1.05	1.05	1.05	0.33	76.01%	0.11	5.51	...
C.I. 5-2	GRADE	0.79	0.00	0.79	1.00	0.79	0.79	0.79	0.00	99.69%	0.13	5.83	...
C.I. 5-3	GRADE	1.58	0.90	2.47	1.00	2.37	2.37	2.37	0.10	95.95%	0.19	8.86	...
C.I. 5-4	GRADE	3.04	0.53	3.57	1.00	2.67	2.67	2.67	0.90	74.83%	0.20	9.96	...
C.I. 5-5	GRADE	2.70	0.00	2.70	1.00	2.17	2.17	2.17	0.53	80.31%	0.18	8.97	...
C.I. 6-1	GRADE	2.18	0.00	2.18	1.00	1.82	1.82	1.82	0.35	83.89%	0.17	8.27	...
HR2 F.I. 3-2	SAG	4.31	0.00	4.31	0.80	18.67	14.93	4.31	0.00	100.00%	...	...	0.19
HR2 F.I. 3-3	SAG	1.95	0.00	1.95	0.80	18.67	14.93	1.95	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 capacity to 80% capacity, as required per APWA Section 5600.  
Both theoretical capacity and reduced capacity are shown.  
2. Inlet efficiency shown in the tables is Captured Flow/Total Flow, denoting the actual percentage of flow captured after the capacity has been reduced to 80% of theoretical capacity.

Inlet Design Table													
25 Year Return Frequency													
Inlet ID	Inlet Location	Peak Flow	Upstream Bypass	Total Flow	Clogging Factor	Inlet Capacity	Sag Inlet Capacity (Note 1)	Captured Flow	Bypass Flow	Inlet Efficiency (Note 2)	Gutter Depth	Gutter Spread	Ponding Depth
		(cfs)	(cfs)	(cfs)		(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)
C.I. 1A-1	GRADE	5.79	0.56	6.35	1.00	4.54	4.54	4.54	1.81	71.43%	0.23	10.78	...
F.I. 2-1	SAG	5.41	0.00	5.41	0.80	18.67	14.93	5.41	0.00	100.00%	...	...	0.22
C.I. 3-1	GRADE	2.06	2.39	4.44	1.00	2.26	2.26	2.26	2.18	50.84%	0.18	8.99	...
C.I. 3-2	GRADE	2.68	2.02	4.70	1.00	2.31	2.31	2.31	2.39	49.18%	0.18	9.18	...
C.I. 3-3	GRADE	5.55	0.00	5.55	1.00	3.53	3.53	3.53	2.02	63.67%	0.23	11.69	...
C.I. 4-1(L)	SAG	1.53	...	...	...	...	...	...	...	...	0.15	7.68	...
C.I. 4-1(R)	SAG	0.00	...	...	...	...	...	...	...	...	0.00	0.00	...
C.I. 4-1(B)	SAG	0.43	...	...	...	...	...	...	...	...	...	...	...
C.I. 4-1	SAG	1.96	0.00	1.96	0.80	19.40	15.52	1.96	0.00	100.00%	...	...	...
C.I. 4-2(L)	SAG	0.00	...	...	...	...	...	...	...	...	0.10	5.13	...
C.I. 4-2(R)	SAG	1.82	...	...	...	...	...	...	...	...	0.16	8.19	...
C.I. 4-2(B)	SAG	2.73	...	...	...	...	...	...	...	...	...	...	...
C.I. 4-2	SAG	4.55	0.52	5.07	0.80	19.40	15.52	5.07	0.00	100.00%	...	...	...
C.I. 4-3	GRADE	1.77	0.00	1.77	1.00	1.25	1.25	1.25	0.52	70.59%	0.12	6.03	...
C.I. 5-2	GRADE	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	100.00%	0.14	6.39	...
C.I. 5-3	GRADE	2.01	1.49	3.50	1.00	3.22	3.22	3.22	0.28	92.07%	0.22	10.09	...
C.I. 5-4	GRADE	3.88	0.84	4.72	1.00	3.22	3.22	3.22	1.49	68.37%	0.22	11.05	...
C.I. 5-5	GRADE	3.45	0.00	3.45	1.00	2.60	2.60	2.60	0.84	75.58%	0.20	9.83	...
C.I. 6-1	GRADE	2.78	0.00	2.78	1.00	2.22	2.22	2.22	0.56	79.81%	0.18	9.06	...
HR2 F.I. 3-2	SAG	5.50	0.00	5.50	0.80	18.67	14.93	5.50	0.00	100.00%	...	...	0.22
HR2 F.I. 3-3	SAG	2.49	0.00	2.49	0.80	18.67	14.93	2.49	0.00	100.00%	...	...	0.13

Notes:  
1. Inlet capacity at sag location has been reduced by a clogging factor of 0.80, reducing theoretical capacity to 80% capacity, as required per APWA Section 5600.  
Both theoretical capacity and reduced capacity are shown.  
2. Inlet efficiency shown in the tables is Captured Flow/Total Flow, denoting the actual percentage of flow captured after the capacity has been reduced to 80% of theoretical capacity.

Inlet Design Table													
100 Year Return Frequency													
Inlet ID	Inlet Location	Peak Flow	Upstream Bypass	Total Flow	Clogging Factor	Inlet Capacity	Sag Inlet Capacity (Note 1)	Captured Flow	Bypass Flow	Inlet Efficiency (Note 2)	Gutter Depth	Gutter Spread	Ponding Depth
		(cfs)	(cfs)	(cfs)		(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)
C.I. 1A-1	GRADE	7.96	1.02	8.98	1.00	5.50	5.50	5.50	3.48	61.22%	0.27	12.28	...
F.I. 2-1	SAG	7.44	0.00	7.44	0.80	18.67	14.93	7.44	0.00	100.00%	...	...	0.27
C.I. 3-1	GRADE	2.83	4.53	7.36	1.00	2.64	2.64	2.64	4.72	35.82%	0.22	10.87	...
C.I. 3-2	GRADE	3.69	3.46	7.15	1.00	2.62	2.62	2.62	4.53	36.65%	0.22	10.75	...
C.I. 3-3	GRADE	7.63	0.00	7.63	1.00	4.17	4.17	4.17	3.46	54.63%	0.26	13.18	...
C.I. 4-1(L)	SAG	2.11	...	...	...	...	...	...	...	...	0.17	8.66	...
C.I. 4-1(R)	SAG	0.00	...	...	...	...	...	...	...	...	0.00	0.00	...
C.I. 4-1(B)	SAG	0.59	...	...	...	...	...	...	...	...	...	...	...
C.I. 4-1	SAG	2.70	0.00	2.70	0.80	19.40	15.52	2.70	0.00	100.00%	...	...	...
C.I. 4-2(L)	SAG	0.00	...	...	...	...	...	...	...	...	0.13	6.34	...
C.I. 4-2(R)	SAG	2.50	...	...	...	...	...	...	...	...	0.18	9.23	...
C.I. 4-2(B)	SAG	3.75	...	...	...	...	...	...	...	...	...	...	...
C.I. 4-2	SAG	6.25	0.92	7.17	0.80	19.40	15.52	7.17	0.00	100.00%	...	...	...
C.I. 4-3	GRADE	2.43	0.00	2.43	1.00	1.52	1.52	1.52	0.92	62.41%	0.14	6.80	...
C.I. 5-2	GRADE	1.38	0.00	1.38	1.00	1.38	1.38	1.38	0.01	99.56%	0.16	7.20	...
C.I. 5-3	GRADE	2.76	2.84	5.61	1.00	4.73	4.73	4.73	0.88	84.31%	0.26	12.04	...
C.I. 5-4	GRADE	5.33	1.50	6.83	1.00	3.99	3.99	3.99	2.84	58.39%	0.25	12.70	...
C.I. 5-5	GRADE	4.74	0.00	4.74	1.00	3.23	3.23	3.23	1.50	68.26%	0.22	11.07	...
C.I. 6-1	GRADE	3.82	0.00	3.82	1.00	2.80	2.80	2.80	1.02	73.37%	0.20	10.21	...
HR2 F.I. 3-2	SAG	7.57	0.00	7.57	0.80	18.67	14.93	7.57	0.00	100.00%	...	...	0.27
HR2 F.I. 3-3	SAG	3.42	0.00	3.42	0.80	18.67	14.93	3.42	0.00	100.00%	...	...	0.16

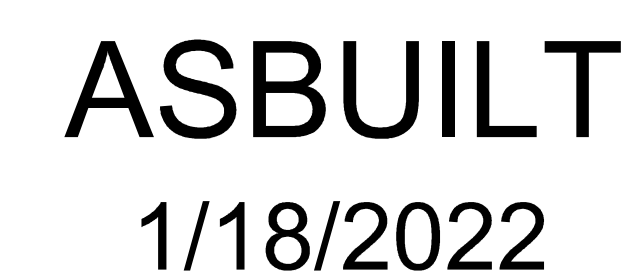
Notes:

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Both theoretical capacity and reduced capacity are shown.

2. Inlet efficiency shown in the tables is Captured Flow/Total Flow, denoting the actual percentage of flow captured after the capacity has been reduced to 80% of theoretical capacity.

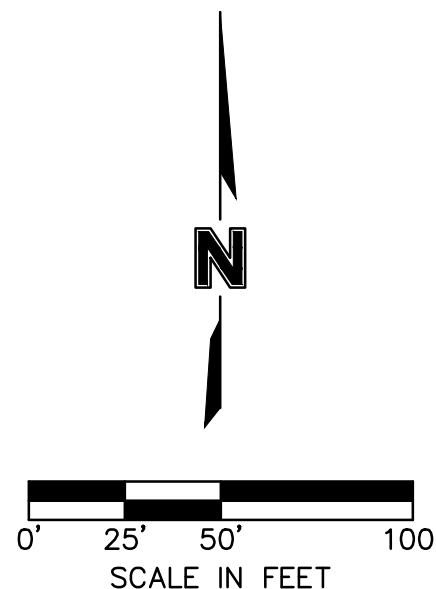




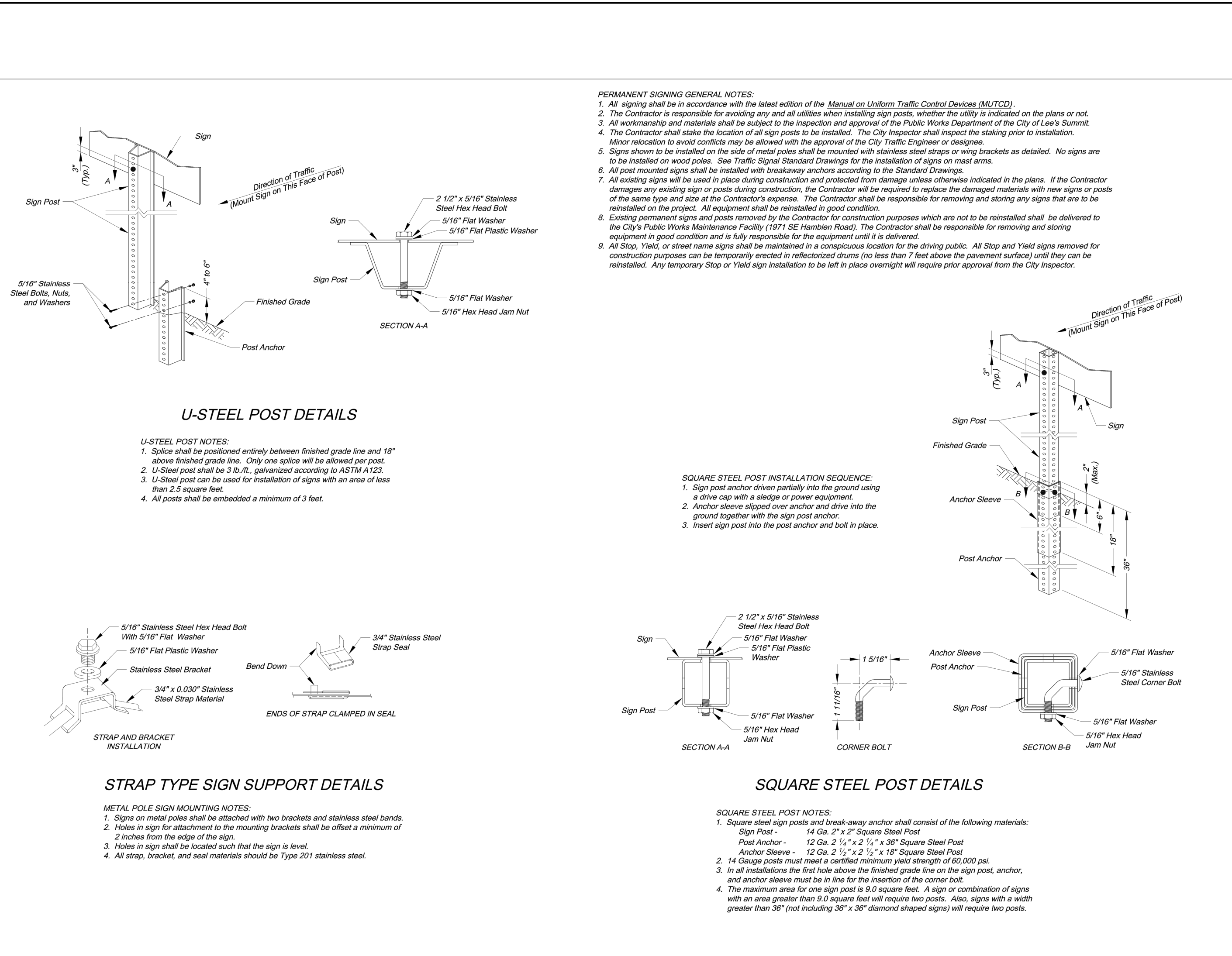
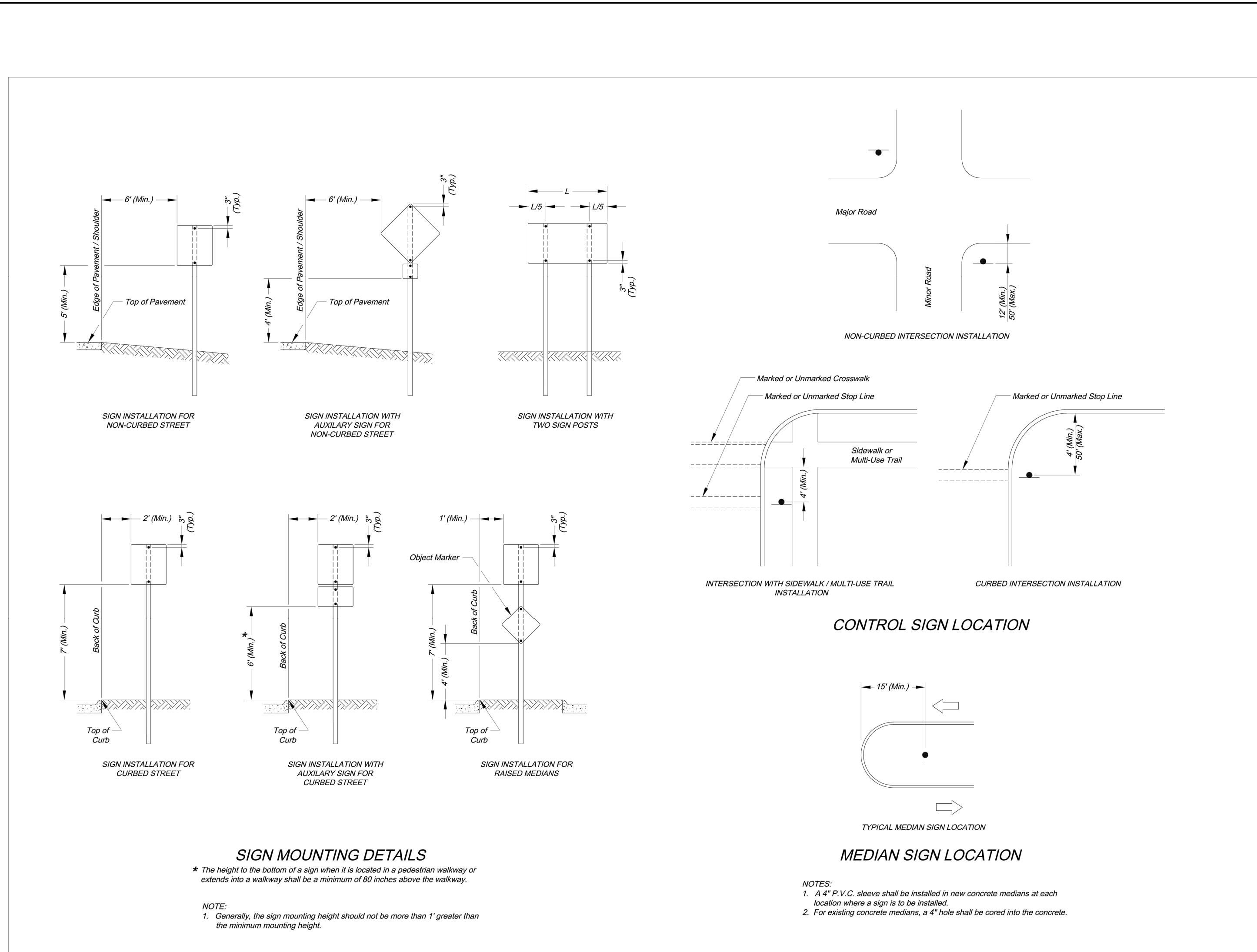
1. INDIVIDUAL LOT OWNERS SHALL NOT CHANGE OR OBSTRUCT THE DRAINAGE FLOW LINES OR PATTERNS OF THE LOTS, AS SHOWN ON THE MASTER DRAINAGE PLAN, UNLESS SPECIFIC APPLICATION IS MADE AND APPROVED BY THE CITY ENGINEER.
2. PLAT IS LOCATION IN ZONE X, "AREAS OUTSIDE THE 1-PERCENT ANNUAL CHANCE FLOODPLAINS, AREAS 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. PLAT IS LOCATED OUTSIDE OF ANY REQUIRED BUFFER ZONES FOR NATURAL STREAMS.
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. REFERENCE TO SHEET C105-C106 FOR SWALE GRADING DETAILS.
6. DRAINAGE PATHS TO BE CONSTRUCTED BETWEEN EACH OF THE LOTS LABELED AS STANDARD LOTS TO DRAIN WEST.
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.

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

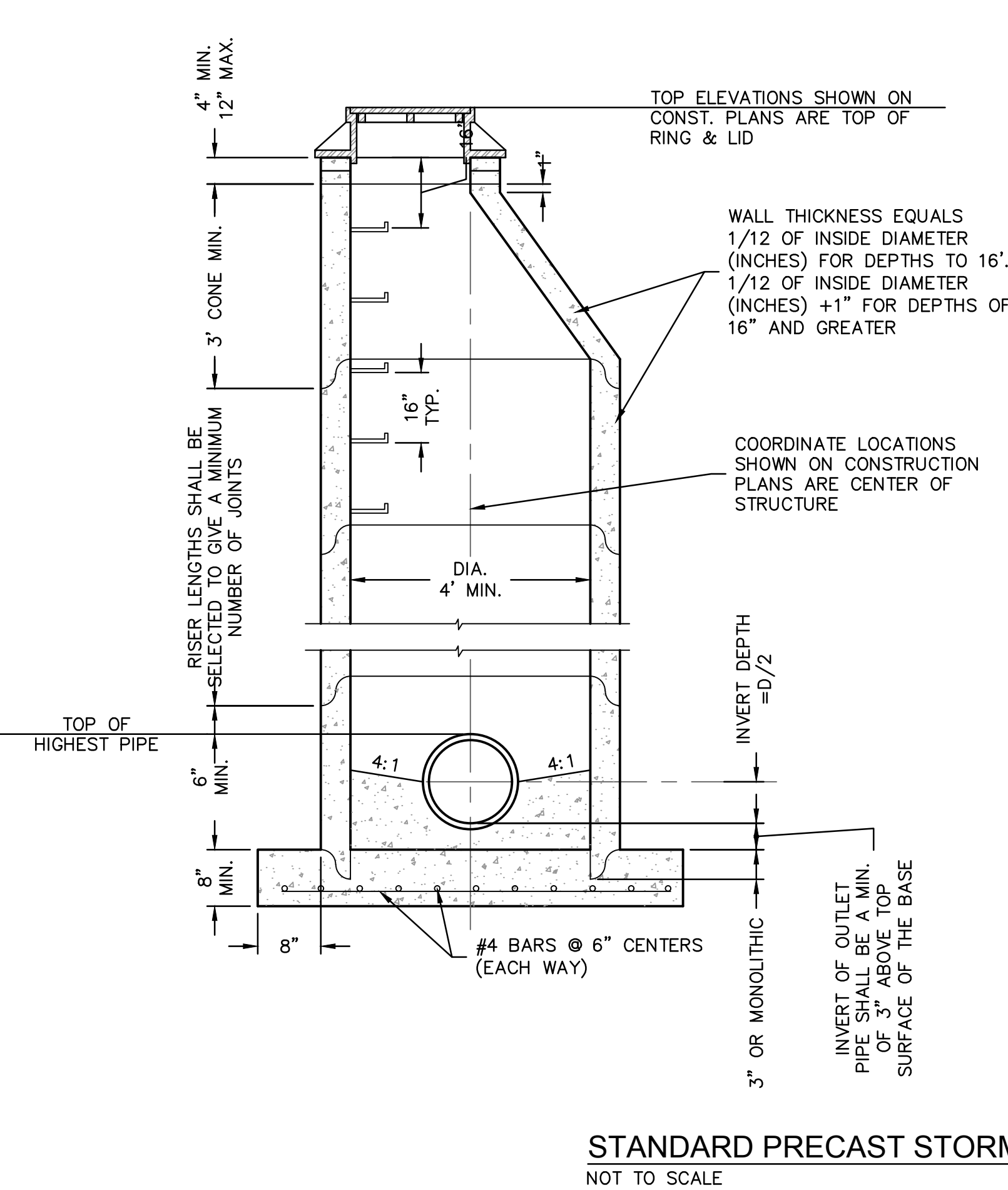
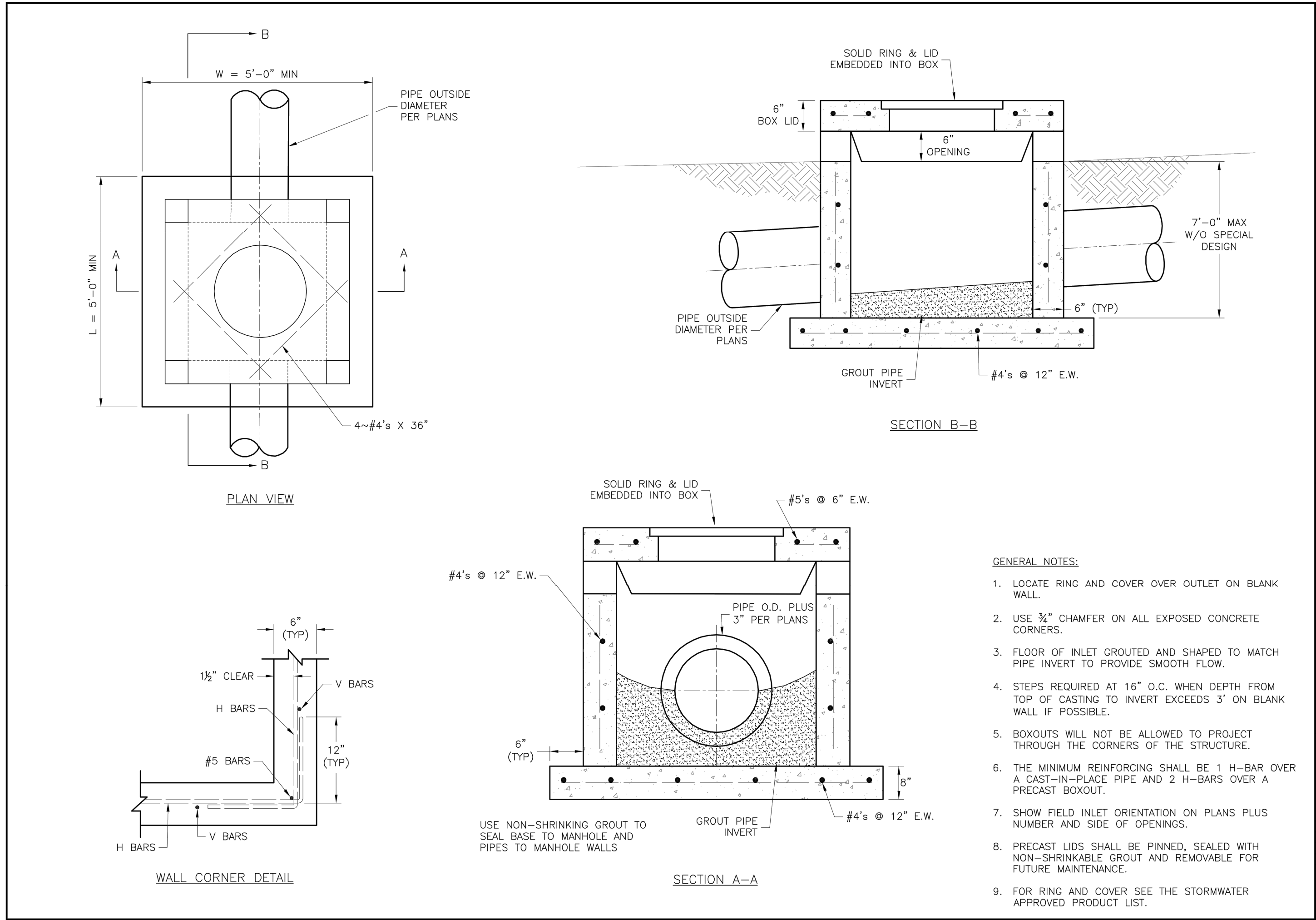
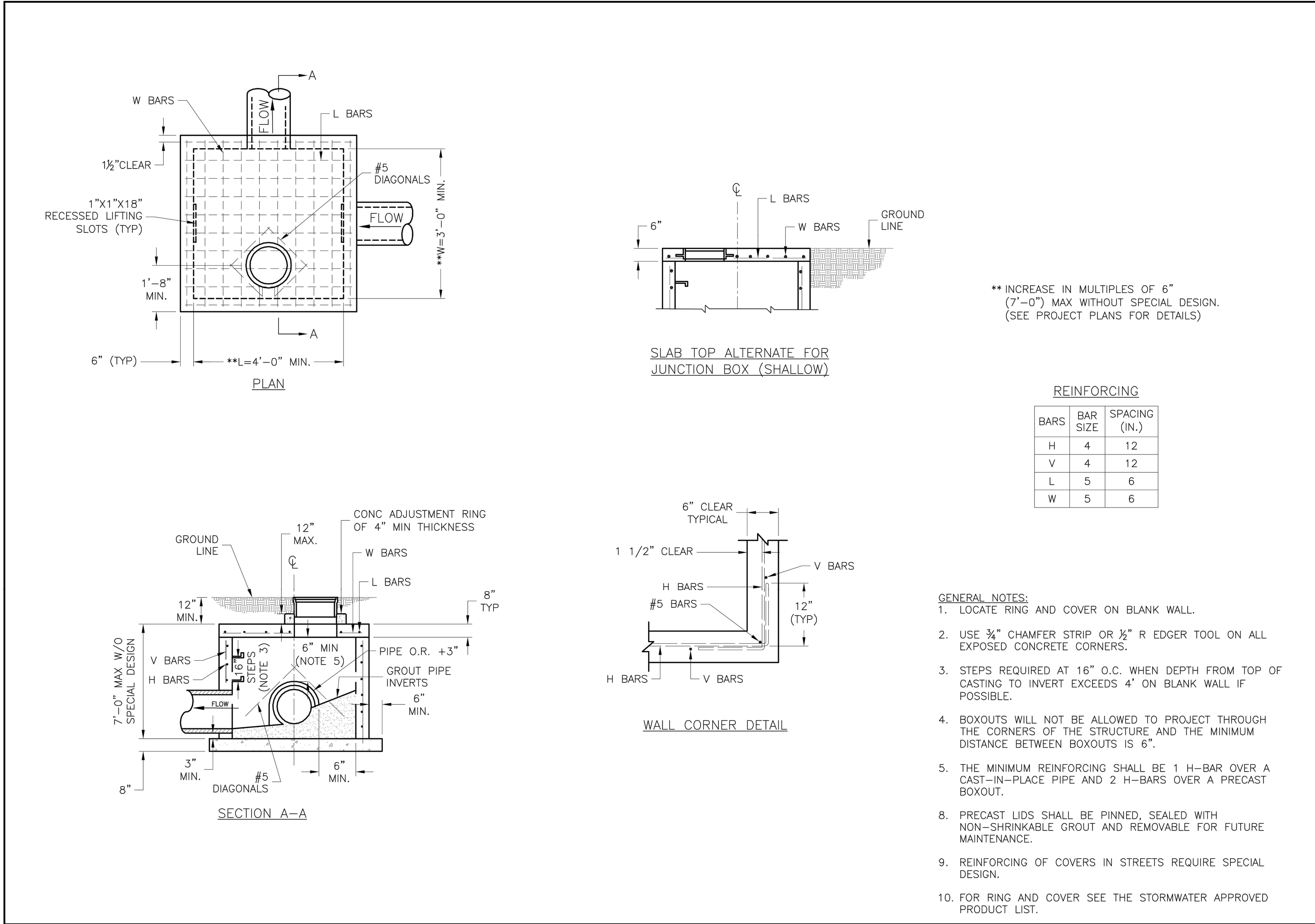
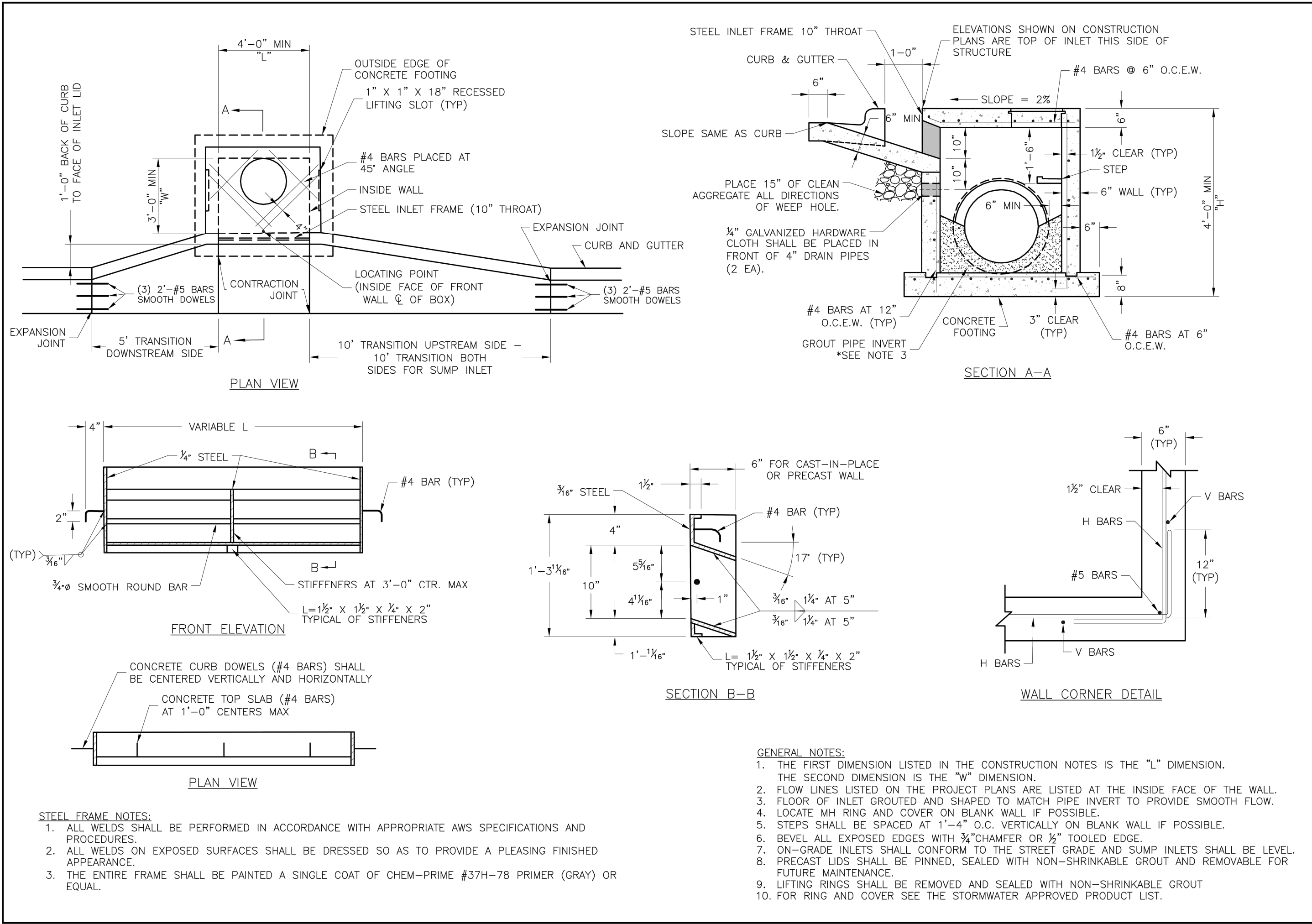
X indicates condition applies to the lot.  
 e been provided per lot lines, facing the lot from the  
 interpolation will be allowed between the right and left  
 s provided, depending on the location of the lowest  
 opening on the proposed structure.











### 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 REINFORCING 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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Missouri Certificate of Authority #001932  
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North Kansas City, MO 64116  
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STATE OF MISSOURI  
BROCK M. WORTHLEY  
NUMBER  
PE-2019000237  
1/18/2020  
PROFESSIONAL ENGINEER

BY

REVISIONS DESCRIPTION

DATE

REV. NO.

2020

STORM SEWER DETAILS  
STREET & STORM SEWER PLANS

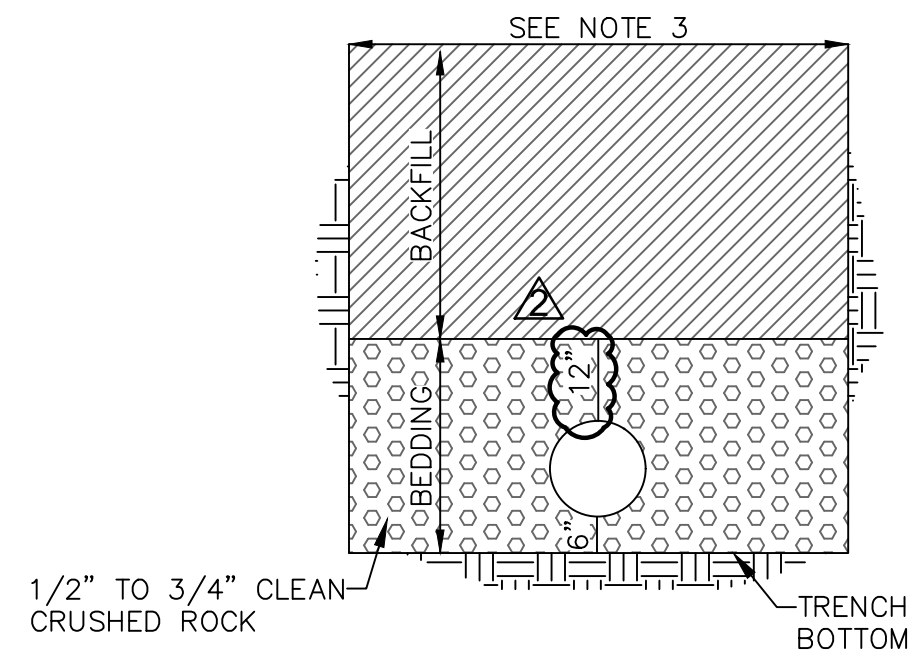
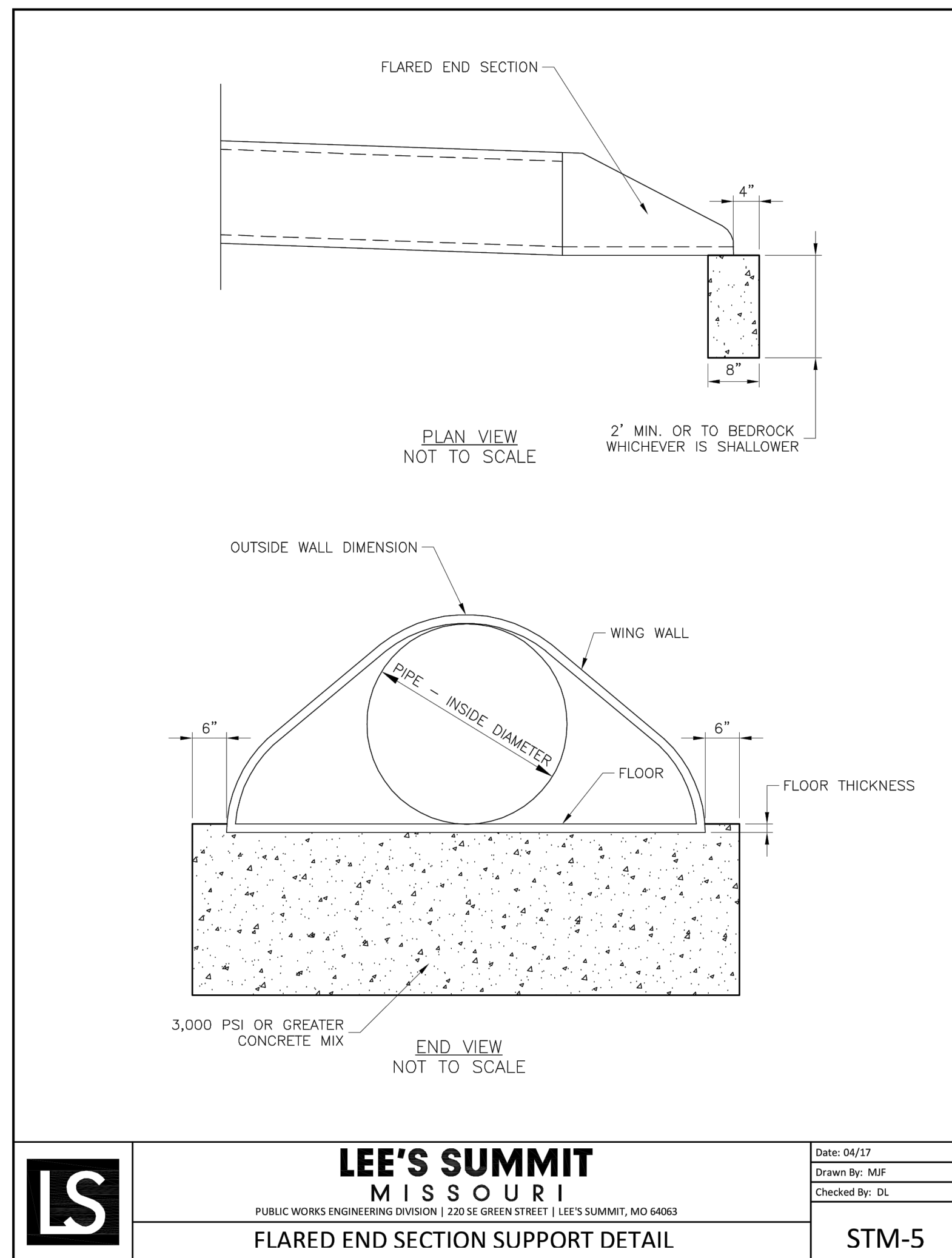
HAWTHORN RIDGE  
THIRD PLAT

LEE'S SUMMIT, MO

drawn by: OLS  
checked by: BMW  
approved by: BMW  
QA/QC by: JES  
project no.: A19-1605  
drawing no.: C-DTL01\_A191605  
date: 10/02/2020

SHEET  
C127



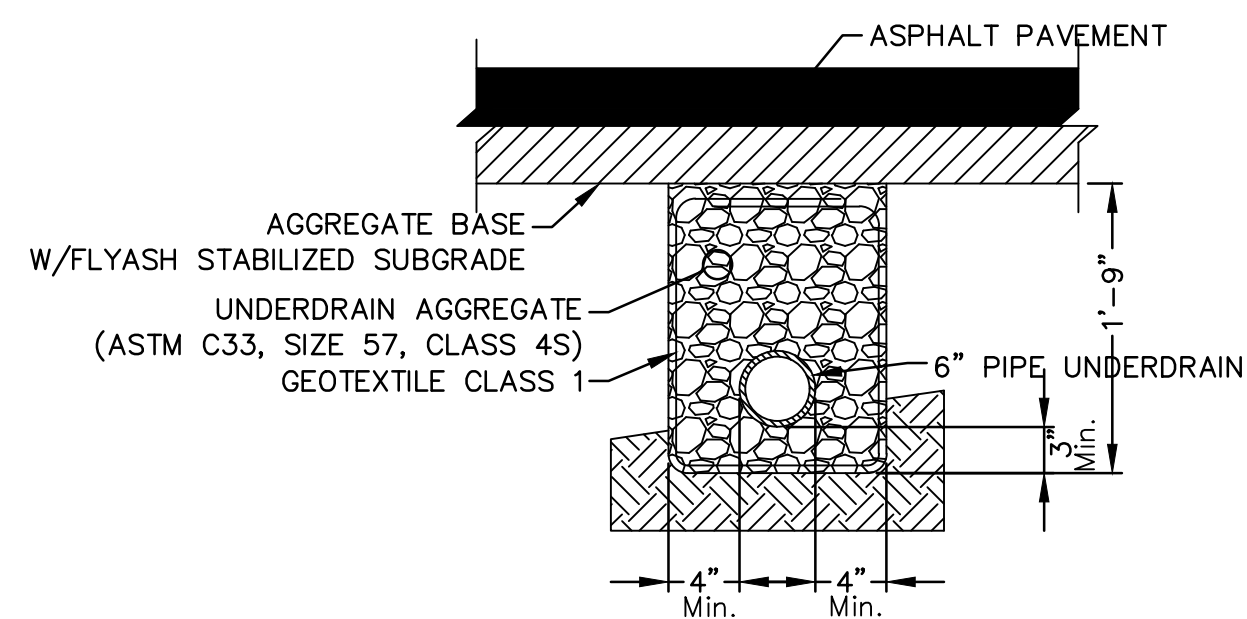
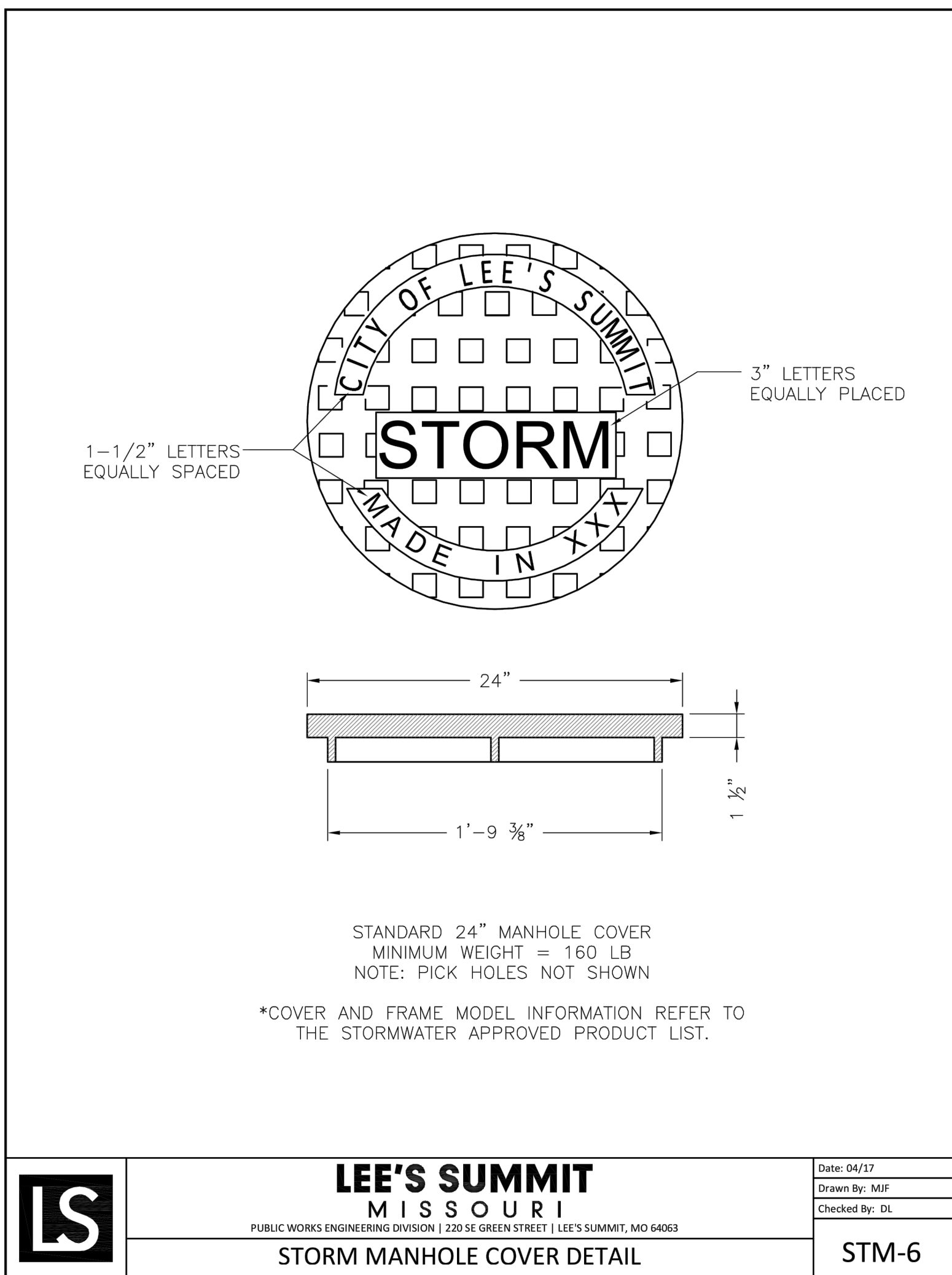


TYPICAL SECTION FOR PLASTIC PIPE  
(IN ROCK OR SOIL)

## UNDERGROUND PIPE INSTALLATION FOR STORM SEWER LINES

N.T.S.

1. BACKFILL SHALL BE JOB EXCAVATED 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.

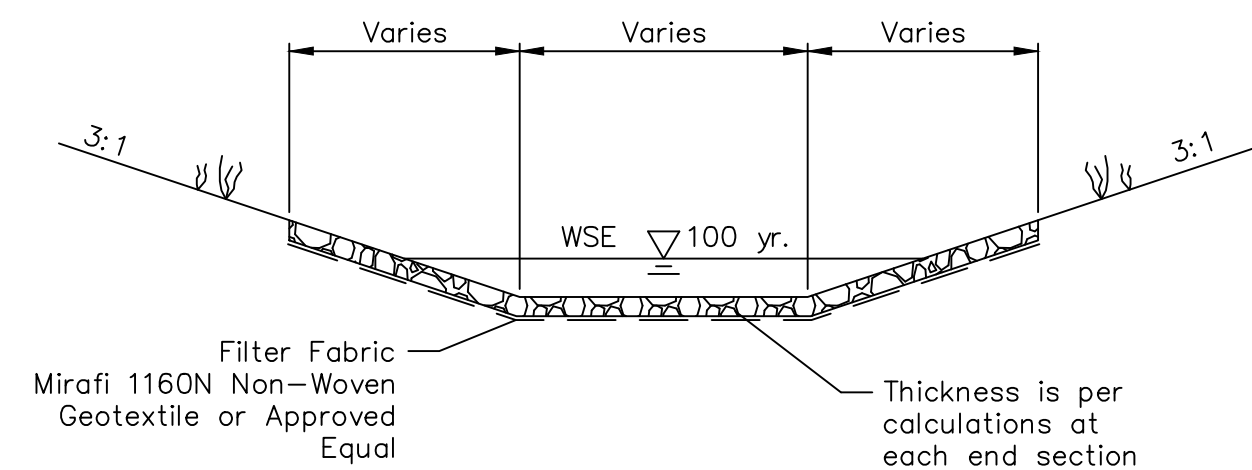
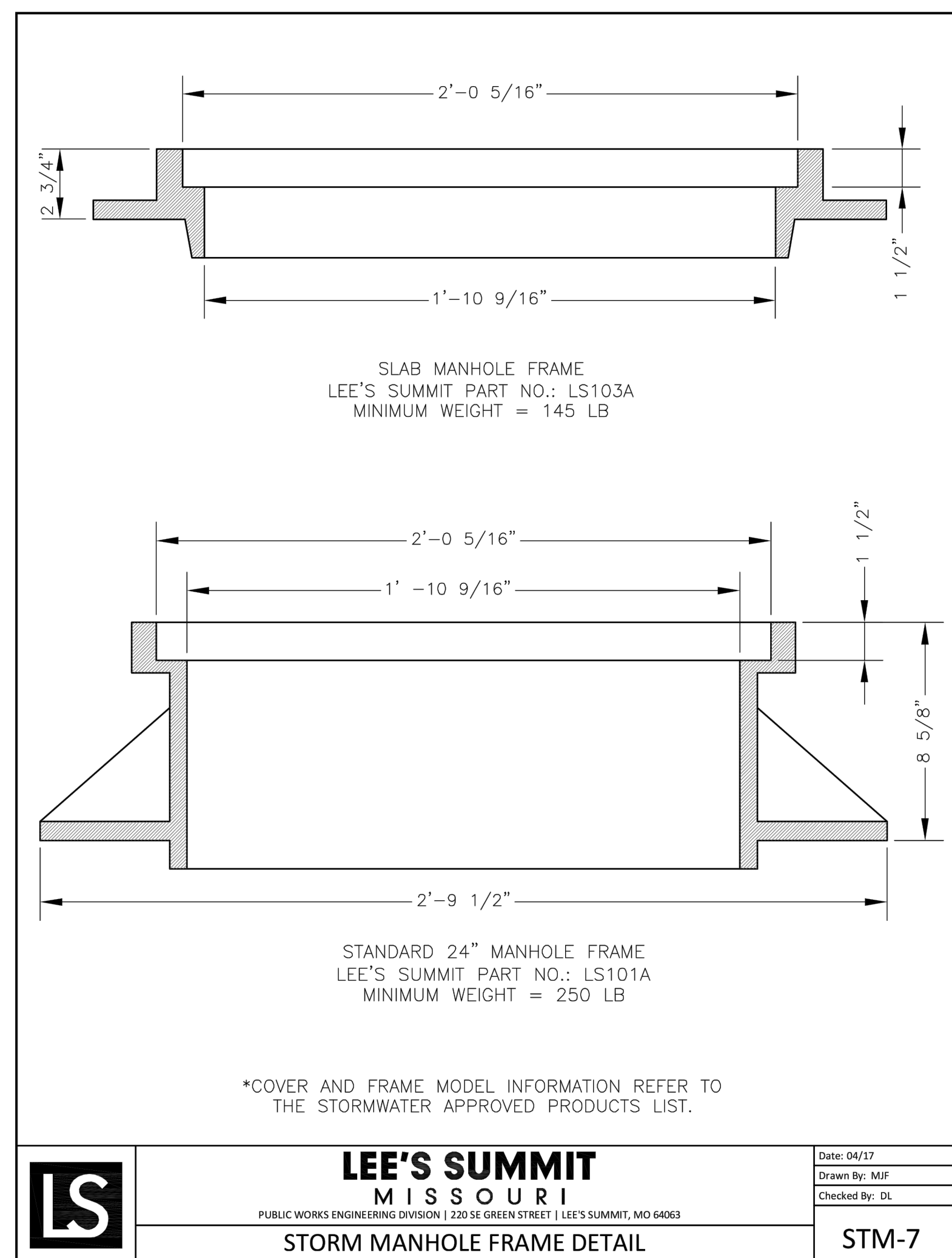


PIPE UNDERDRAIN LATERAL

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 layout.
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, Underdrain Underdrain, and Outlet Pipe shall conform to City of Lee's Summit Specifications.
5. Overlap geotextile at top of trench a minimum of 12".



NOTE: DIMENSIONS ARE PER  
CALCULATIONS AT EACH END SECTION

## RIPRAP DETAIL

N.T.S.

NOT ASBUILT

[illegible]

## REVISIONS

2020

LEE'S SUMMIT, MO

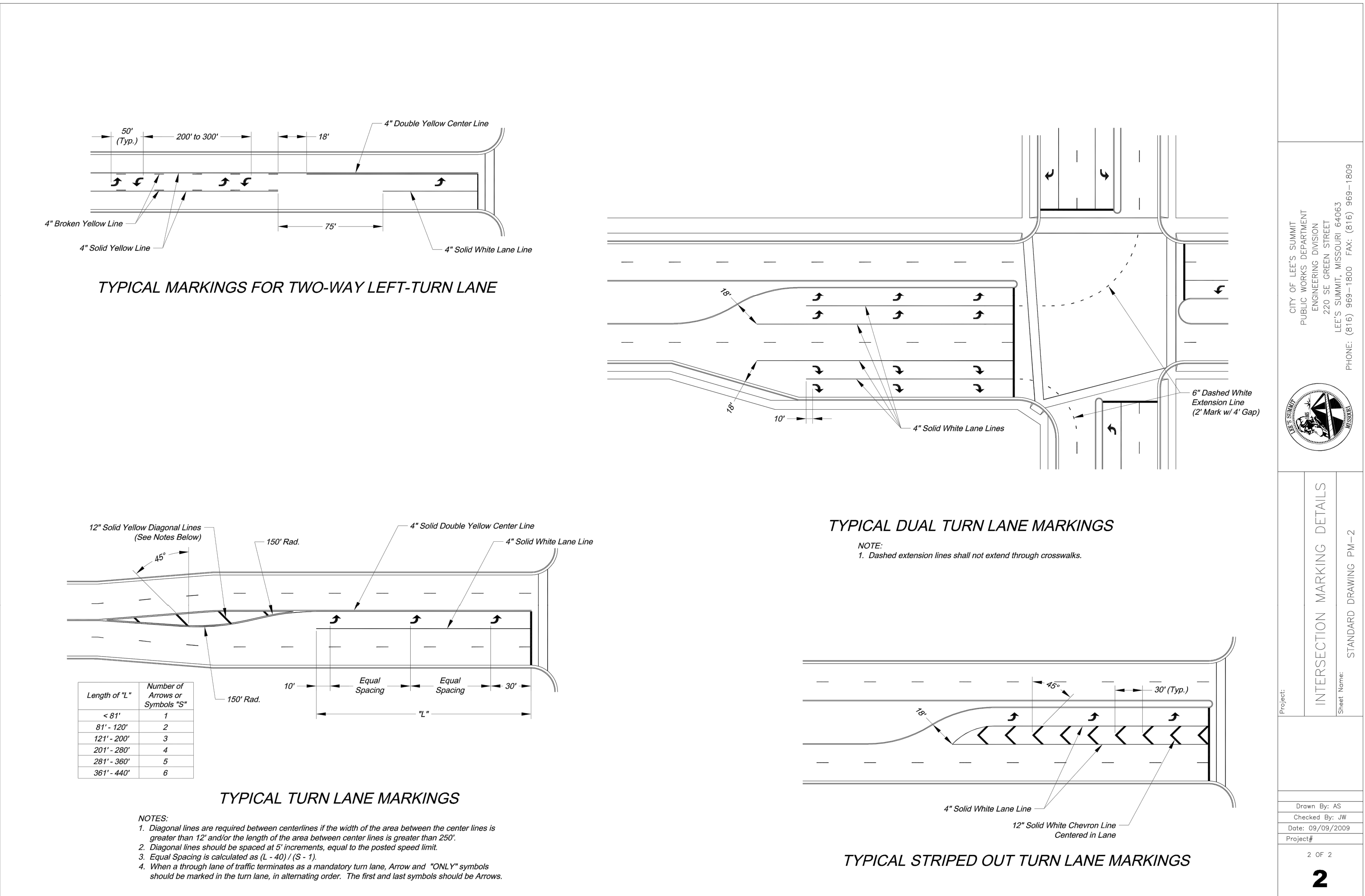
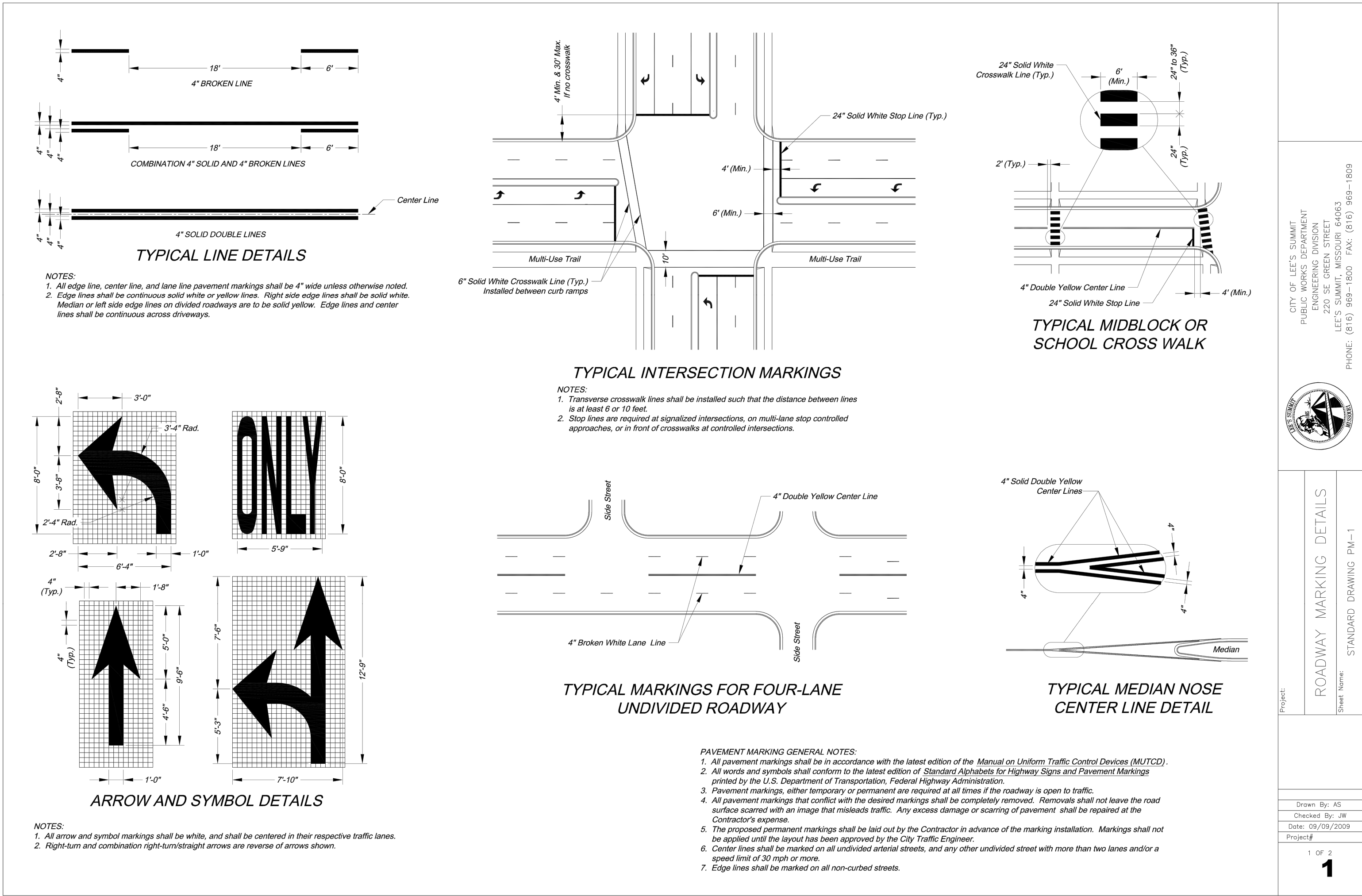
## STORM SEWER DETAILS STREET & STORM SEWER PLANS

HAWTHORN RIDGE  
THIRD PLAT

drawn by: \_\_\_\_\_ OLS  
checked by: \_\_\_\_\_ BMW  
approved by: \_\_\_\_\_ BMW  
QA/QC by: \_\_\_\_\_ JES  
project no.: \_\_\_\_\_ A19-1605  
drawing no.: C DTL01 A191605  
date: \_\_\_\_\_ 10/02/2020

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STATE OF MISSOURI  
BROCK M. WORTHLEY  
Professional Engineer  
PE-2019000237  
1/16/2020

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION

ROADWAY MARKING DETAILS  
STREET & STORM SEWER PLANS

HAWTHORN RIDGE  
THIRD PLAT

LEE'S SUMMIT, MO

2020

drawn by: OLS  
checked by: BMW  
approved by: BMW  
QA/QC by: JES  
project no.: A19-1605  
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C129