LEGEND:

A/E	-	ACCESS EASEMENT
BC	-	BACK OF CURB
B/B	-	BACK TO BACK
BM	-	BENCHMARK
BL or B.L.	-	BUILDING LINE
CO	-	CLEANOUT
TJB	-	TELEPHONE JUNCTION BOX
C&G	-	CURB AND GUTTER
D/E	-	DRAINAGE EASEMENT
E/E	-	ELECTRICAL EASEMENT
EL	-	ELEVATION
FL	-	FLOW LINE
G/E	-	GAS LINE EASEMENT
HDPE	-	HIGH-DENSITY POLYETHYLENE
L/E	-	LANDSCAPE EASEMENT
MSFE	-	MINIMUM SERVICEABLE FLOOR ELEVATION
PVC	-	POLYVINYL CHLORIDE
P/L	-	PROPERTY LINE
PUB/E	-	PUBLIC EASEMENT
RCP	-	REINFORCED CONCRETE PIPE
ROW or R/W	-	RIGHT-OF-WAY
S/E	-	SANITARY SEWER EASEMENT
SL	-	SERVICE LINE
S/W	-	SIDEWALK
TE	-	TOP ELEVATION
U/E	-	UTILITY EASEMENT
WSE	-	WATER SURFACE ELEVATION
W/E	-	WATERLINE EASEMENT

ASPHALT PAVEMENT - EXISTING
ASPHALT PAVEMENT - PROPOSED
CONCRETE PAVEMENT - EXISTING
ASPHALT PAVEMENT - EXISTING
CONCRETE SIDEWALK - EXISTING
CONCRETE SIDEWALK - PROPOSED
CURB & GUTTER
CURB & GUTTER - EXISTING
TREELINE
EXISTING LOT AND R/W LINES
EXISTING PLAT LINES
P/L — PROPERTY LINES
ROW — RIGHT-OF-WAY
SANITARY SEWER MAIN
SANITARY SEWER MAIN - EXIST.
STO — STORM SEWER
STORM SEWER - EXISTING
$CATV_X$ — CABLE TV - EXISTING
FOC_X — FIBER OPTIC CABLE - EXISTING
T_X — TELEPHONE LINE - EXIST.
E_X — ELECTRIC LINE - EXISTING
OHP_X — OVERHEAD POWER LINE - EXIST.
UGE_X — UNDERGROUND ELECTRIC - EX.
G_X — GAS LINE - EXISTING
W_X — WATERLINE - EXISTING
LIGHT - EXISTING
EXISTING MANHOLE
CLEANOUT
EXISTING SANITARY MANHOLE
PROPOSED SANITARY MANHOLE
AI — EXISTING AREA INLET
CI — EXISTING CURB INLET
GI — EXISTING GRATE INLET
JB — EXISTING JUNCTION BOX
EXISTING STORM MANHOLE

UTILITY CONTACTS:

MISSOURI DEPARTMENT OF TRANSPORTATION (MODOT)
Steve Holloway
600 NE Colbern Road
Lee's Summit, MO 64086
(816) 607-2186

SPIRE
Brent Jones
3025 SE Clover Drive
Lee's Summit, MO 64082
(816) 399-0663
brent.jones@spireenergy.com

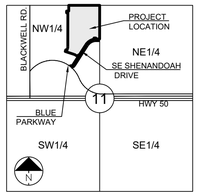
EVERGY
Philip Ingram
1300 SE Hamblin Road
Lee's Summit, MO 64081
Office: (816) 347-347-4339
philip.ingram@evergy.com

CITY OF LEES SUMMIT PUBLIC WORKS
Dena Mezger
220 SE Green Street
Lee's Summit, MO 64063
(816) 969-1800

AT&T
Mark Manion or Marty Loper
500 E. 8th Street, Room 370
Kansas City, MO 64106
(816) 275-2341 or (816) 275-1550

COMCAST CABLE
John Meadows
4700 Little Blue Parkway
Independence, MO 64057
(816) 795-2257

CITY OF LEE'S SUMMIT WATER UTILITIES
Mark Schaufler
1200 SE Hamblen Road
Lee's Summit, MO 64081
(816) 969-1900



SECTION 11-47-31

LOCATION MAP
SCALE 1" = 2000'

SUMMARY OF QUANTITIES

	ITEM	QUANTITY	UNITS
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

NOTE:
QUANTITIES SHALL BE PROVIDED WITH SECOND SUBMITTAL.

MISSOURI ONE CALL SYSTEM
811 or
1-800-344-7483
mo1call.com

FEMA NOTE:

NO PART OF THE PROJECT LIES WITHIN THE 100 YEAR FLOOD PLAIN PER FEMA FLOOD INSURANCE RATE MAP NUMBERS 29095C0441G, 29095C0445G, 29095C0437G AND 29095C0439G DATED JANUARY 20TH, 2017.

OIL/GAS NOTE:

THERE ARE NOT OIL/GAS WELLS PRESENT ON THE PROJECT PER MISSOURI DEPARTMENT OF NATURAL RESOURCES - MISSOURI GEOLOGICAL SURVEY GeoSTRAT MAPPING.

GENERAL NOTES:

1. ALL CONSTRUCTION TO FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
2. ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE ENGINEERING DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI.
3. LINEAL FOOT MEASUREMENTS SHOWN ON THE PLANS ARE HORIZONTAL MEASUREMENTS, NOT SLOPE MEASUREMENTS. ALL PAYMENTS SHALL BE MADE ON HORIZONTAL MEASUREMENTS.
4. NO GEOLOGICAL INVESTIGATION HAS BEEN PERFORMED ON THE SITE.
5. THE UTILITY LOCATIONS SHOWN ON THESE PLANS ARE TAKEN FROM UTILITY COMPANY RECORDS AND APPARENT FIELD LOCATIONS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
6. THE CONTRACTOR SHALL ADHERE TO THE PROVISIONS OF THE SENATE BILL NUMBER 583, 78TH GENERAL ASSEMBLY OF THE STATE OF MISSOURI. THE BILL REQUIRES THAT ANY PERSON OR FIRM DOING EXCAVATION ON PUBLIC RIGHT OF WAY DO SO ONLY AFTER GIVING NOTICE TO, AND OBTAINING INFORMATION FROM, UTILITY COMPANIES. STATE LAW REQUIRES 48 HOURS ADVANCE NOTICE. THE CONTRACTOR MAY ALSO UTILIZE THE FOLLOWING TOLL FREE PHONE NUMBER PROVIDED BY "MISSOURI ONE CALL SYSTEM, INC.": 1-800-DIG-RITE. THIS PHONE NUMBER IS APPLICABLE ANYWHERE WITHIN THE STATE OF MISSOURI. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL NOTIFY ALL THOSE COMPANIES WHICH HAVE FACILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION TO BE PERFORMED.
7. PRIOR TO ORDERING PRECAST STRUCTURES, SHOP DRAWING SHALL BE SUBMITTED TO THE DESIGN ENGINEER FOR APPROVAL.
8. THE CONTRACTOR SHALL PROTECT ALL MAJOR TREES FROM DAMAGE. NO TREE SHALL BE REMOVED WITHOUT PERMISSION OF THE OWNER, UNLESS SHOWN OTHERWISE.
9. CLEARING AND GRUBBING OPERATIONS AND DISPOSAL OF ALL DEBRIS THEREFROM SHALL BE PERFORMED BY THE CONTRACTOR IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES.
10. ALL WASTE MATERIAL RESULTING FROM THE PROJECT SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR, OR AS DIRECTED BY THE OWNER AT NO ADDITIONAL COST.
11. ALL EXCAVATIONS SHALL BE UNCLASSIFIED. NO SEPARATE PAYMENT WILL BE MADE FOR ROCK EXCAVATION.
12. THE CONTRACTOR SHALL CONTROL THE EROSION AND SILTATION DURING ALL PHASED OF CONSTRUCTION AND SHALL KEEP THE STREETS CLEAN OF MUD AND DEBRIS.
13. THE CONTRACTOR SHALL CONTACT DEVELOPMENT SERVICES INSPECTIONS AT: 816-969-1800 TO OBTAIN A DEVELOPMENT SERVICES CONSTRUCTION PERMIT. A MINIMUM 48 HOUR NOTICE SHALL BE GIVEN PRIOR TO PERMIT ISSUANCE.
14. THE CONTRACTOR SHALL CONTACT THE RIGHT OF WAY INSPECTOR AT 816-969-1800 PRIOR TO ANY LAND DISTURBANCE ACTIVITIES WITHIN THE RIGHT OF WAY. THESE ACTIVITIES MAY REQUIRE A PERMIT.
15. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL TRAFFIC HANDLING MEASURES NECESSARY TO ENSURE THAT THE GENERAL PUBLIC IS PROTECTED AT ALL TIMES. TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD-LATEST EDITION).
16. ALL SANITARY SEWER LATERALS SHALL HAVE A TRENCH CHECK, CONSISTING OF FLOWABLE BACKFILL, INSTALLED DURING CONSTRUCTION. TRENCH CHECK SHALL EXTEND TO BOTTOM OF TRENCH, TO WIDTH OF TRENCH, TO 12 INCHES ABOVE PIPE, FOR A MINIMUM LENGTH OF 12 INCHES. TRENCH CHECK SHALL BE LOCATED AT LEAST 5 FEET FROM SANITARY MAIN.

EARTHWORK:

1. PRIOR TO EARTHWORK ACTIVITIES, PRE-DISTURBANCE EROSION AND SEDIMENT CONTROL DEVICES SHALL BE IN PLACE PER THE STORM WATER POLLUTION PREVENTION PLAN AND/OR THE EROSION AND SEDIMENT CONTROL PLAN PREPARED FOR THIS SITE.
2. ALL BACKFILL MATERIAL SHALL BE PLACED IN MAXIMUM 6-INCH LIFTS AND COMPACTED TO 95-PERCENT OF MAXIMUM DENSITY AS DEFINED USING A STANDARD PROCTOR TEST (AASHITO T99/ASTM 698).
3. BACKFILL MATERIALS SHALL NOT INCLUDE ORGANIC MATTER, DEBRIS OR TOPSOIL.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REDISTRIBUTING THE TOPSOIL OVER PROPOSED TURF AND LANDSCAPED AREAS TO A MINIMUM DEPTH OF 6-INCHES BELOW FINAL GRADE.
5. ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE. UNLESS NOTED OTHERWISE THE FOLLOWING GRADES SHALL APPLY:
   A. TURF AREAS – 2.5% MINIMUM, 4H:1V MAXIMUM
6. ALL DISTURBED AREAS SHALL BE FERTILIZED, SEEDED AND MULCHED IMMEDIATELY AFTER EXCAVATION ACTIVITIES HAVE CEASED. SEEDING SHALL BE PER THE EROSION AND SEDIMENT CONTROL PLAN AND/OR LANDSCAPE PLAN. IF NOT SPECIFIED SEEDING SHALL BE PER APWA SECTION 2400, LATEST EDITION. UNLESS OTHERWISE NOTED, SEEDING SHALL BE SUBSIDIARY TO THE CONTRACT PRICE FOR PIPE INSTALLATION.
7. CONTRACTOR SHALL ADHERE TO THE REPORTING REQUIREMENTS OUTLINED IN THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED FOR THIS PROJECT. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE PROPERLY MAINTAINED AND KEPT CLEAN OF SILT AND DEBRIS AND IN GOOD WORKING ORDER. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AS REQUIRED.

UTILITIES:

1. EXISTING UTILITIES HAVE BEEN SHOWN TO THE GREATEST EXTENT POSSIBLE BASED UPON INFORMATION PROVIDED TO THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE RESPECTIVE UTILITY COMPANIES AND FIELD LOCATING UTILITIES PRIOR TO CONSTRUCTION AND IDENTIFYING ANY POTENTIAL CONFLICTS. ALL CONFLICTS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ANY REQUIRED UTILITY RELOCATIONS. UTILITIES DAMAGED THROUGH THE NEGLIGENCE OF THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
3. CONTRACTOR SHALL VERIFY FLOW-LINES AND STRUCTURE TOPS PRIOR TO CONSTRUCTION, AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES. PROVIDE SHOP DRAWINGS FOR ALL PRECAST AND MANUFACTURED UTILITY STRUCTURES FOR REVIEW BY THE ENGINEER PRIOR TO CONSTRUCTION OF THE STRUCTURES.
4. UTILITY SEPARATION: WATERLINES SHALL HAVE A MINIMUM OF 10 FEET HORIZONTAL AND 2 FEET (MINIMUM OF 1.5 FEET) VERTICAL SEPARATION FROM ALL SANITARY AND STORM SEWER LINES. IF MINIMUM SEPARATIONS CAN NOT BE OBTAINED, DUCTILE IRON PIPE, DIP, SHALL BE REQUIRED 10 FEET IN EACH DIRECTION OF THE CONFLICT ON THE WATER LINE.
5. PAYMENT FOR TRENCHING, BACKFILLING, PIPE EMBEDMENT, FLOWABLE FILL, BACKFILL MATERIALS, CLEAN UP, SEEDING, SODDING AND ANY OTHER ITEMS NECESSARY FOR THE CONSTRUCTION OF THE UTILITY LINE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE UTILITY INSTALLATION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING RESPECTIVE UTILITY COMPANIES 48-HOURS IN ADVANCE FOR THE INSPECTION OF ANY PROPOSED UTILITY MAIN EXTENSION OR SERVICE LINE OR SERVICE CONNECTION TO ANY EXISTING MAIN.
7. TRENCH SPOILS SHALL BE NEATLY PLACED ONSITE ADJACENT TO THE TRENCH, AND COMPACTED TO PREVENT SATURATION AND EXCESS SEDIMENT RUNOFF. UNSUITABLE MATERIALS, ROCK AND SHALE, ASPHALT, CONCRETE, TREES, BRUSH ETC. SHALL BE PROPERLY DISPOSED OF OFFSITE. MATERIALS MAY BE WASTED ONSITE AT THE DIRECTION OF THE OWNER OR HIS APPOINTED REPRESENTATIVE.

MO GRS BENCHMARK:

STATION NAME - JA-90

KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988" LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD.
N:1001052.8503, E:2845604.8272

ELEV. 997.045

PROJECT BENCHMARK:

"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE
STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH OF THE CENTERLINE OF BLUE PARKWAY.
N:996874.9690, E:2840937.1365

ELEV. 1005.719

OWNER/DEVELOPER:

GRIFFIN RILEY PROPERTY GROUP
JAKE LOVELESS, VICE PRESIDENT
21 SE 29TH TERRACE
LEE'S SUMMIT
p 816-366-7900
JAKE@GRIFFINRILEY.COM

Sheet List Table	
Sheet Number	Sheet Title
C100	GENERAL NOTES
C101	GENERAL LAYOUT
C201	GRADING PLAN
C300	PRE-CONSTRUCTION EROSION CONTROL PLAN
C301	EROSION CONTROL PLAN
C302	POST-CONSTRUCTION EROSION CONTROL PLAN
C303	EROSION CONTROL DETAILS
C304	EROSION CONTROL DETAILS
C305	OUTLET STRUCTURE 201
C306	OUTLET STRUCTURE 2501
C400	WINDFLOWER LANE - PLAN & PROFILE
C401	WINDFLOWER COURT - PLAN & PROFILE
C402	SE 6TH TERRACE - PLAN & PROFILE
C403	INTERSECTION DETAILS
C500	UTILITY PLAN
C501	FIRE PROTECTION PLAN
C601	OVERALL DRAINAGE MAP
C602	REUNION - DRAINAGE MAP
C603	STORM CALCS
C604	STORM CALCS
C605	STORM SEWER LINE 500
C606	STORM SEWER LINE 1700
C607	STORM SEWER LINES 1800 & 1900
C608	STORM SEWER LINES 2000 - 2200
C609	STORM SEWER LINES 2300 - 2400
C610	STORM DETAILS
C611	STORM DETAILS
C700	SANITARY SEWER LINE B
C701	SANITARY SEWER LINES D & E
C702	SANITARY SEWER LINES F & G
C703	SANITARY SEWER DETAILS
C800	WATER LINE C - PRIVATE
C801	WATER LINE D & E - PRIVATE
C802	WATER DETAILS
C803	WATER DETAILS
C900	GENERAL DETAILS
C901	GENERAL DETAILS
L100	OVERALL LANDSCAPE PLAN
L200	LANDSCAPE DETAIL PLAN
L201	LANDSCAPE DETAIL PLAN
L202	LANDSCAPE DETAIL PLAN
L203	LANDSCAPE DETAIL PLAN
L204	LANDSCAPE DETAIL PLAN
L205	UNDERSTORY LANDSCAPE PLAN
L206	UNDERSTORY LANDSCAPE PLAN
L300	LANDSCAPE DETAILS
L301	LANDSCAPE DETAILS

DESCRIPTION:

A tract of land lying in the Northwest One-Quarter of Section 11, Township 47 North, Range 31 West in the City of Lee's Summit, Jackson County, Missouri being more particularly described as follows:

Beginning at the Northeast Corner of said Northwest One-Quarter; thence along the East line of said Northwest One-Quarter, South 02 degrees 19 minutes 49 seconds West, a distance of 958.03 feet to the Northeast Corner of the Final Plat of Residences at Blackwell, a subdivision in the City of Lee's Summit, Jackson County, Missouri, said point being on Northerly right-of-way line of NE Shenandoah Drive; thence along the Northerly line of said Residences at Blackwell for the following twelve courses North 87 degrees 44 minutes 22 seconds West, a distance of 88.60 feet to a point of curvature; thence Northwesterly on a curve to the left being tangent to the previous course having a radius of 365.00 feet, a central angle of 01 degree 52 minutes 36 seconds and an arc length of 11.96 feet; thence North 44 degrees 03 minutes 48 seconds West, a distance 12.45 feet; thence North 02 degrees 11 minutes 34 seconds East, a distance of 18.39 feet; thence North 87 degrees 48 minutes 26 seconds West, a distance of 50.00 feet; thence South 02 degrees 11 minutes 34 seconds West, a distance of 28.69 feet; thence South 41 degrees 25 minutes 38 seconds West, a distance of 7.75 feet to a point of curvature; thence Southwesterly along a curve to the left having an initial tangent bearing of South 80 degrees 16 minutes 09 seconds West, a radius of 365.00 feet, a central angle of 45 degrees 16 minutes 22 seconds and an arc length of 288.41 feet; thence South 34 degrees 59 minutes 47 seconds West, a distance of 349.20 feet; thence South 79 degrees 59 minutes 47 seconds West, a distance of 7.20 feet; thence North 54 degrees 59 minutes 26 seconds West, a distance of 12.91 feet; thence South 35 degrees 00 minutes 34 seconds West, a distance of 50.00 feet; thence North 54 degrees 59 minutes 26 seconds West, a distance of 73.81 feet to a point of curvature; thence Northwesterly along a curve to the left being tangent to the previous course having a radius of 175.00 feet, a central angle of 14 degrees 43 minutes 33 seconds and an arc length of 44.98 feet; thence North 69 degrees 42 minutes 59 seconds West, a distance of 262.42 feet; thence North 20 degrees 16 minutes 04 seconds East, a distance of 50.00 feet; thence South 69 degrees 42 minutes 59 seconds East, a distance of 31.72 feet; thence North 65 degrees 17 minutes 01 second East, a distance of 6.06 feet; thence North 20 degrees 17 minutes 01 second East, a distance of 41.33 feet to a point of curvature; thence Northeasterly on a curve to the left being tangent to the previous course having a radius of 175.00 feet, a central angle of 17 degree 51 minutes 20 seconds and an arc length of 54.54 feet; thence North 02 degrees 25 minutes 41 seconds East, a distance of 964.02 feet; thence North 42 degrees 44 minutes 24 seconds West, a distance of 8.44 feet; thence North 87 degrees 53 minutes 59 seconds West, a distance of 29.47 feet; thence North 02 degrees 06 minutes 01 second East, a distance of 50.00 feet; thence South 87 degrees 53 minutes 59 seconds East, a distance of 60.75 feet; thence North 02 degrees 25 minutes 41 seconds East, a distance of 159.36 feet to a point on the North line of the said Northeast One-Quarter; thence along said North line, South 87 degrees 55 minutes 11 seconds East, a distance of 881.87 feet to the Point of Beginning and containing 24.906 acres more or less.

SCHLAGEL
ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS
14920 West 107th Street • Lenexa, Kansas 66215
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WWW.SCHLAGEL-ASSOCIATES.COM
Missouri State Certificates of Authority
#E2000030800-F #LA2001005237 #LS2000208859-F

PREPARED BY:

STATE OF MISSOURI
MARK ALLEN BREUER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

FOR REVIEW ONLY

SCHLAGEL & ASSOCIATES, P.A.

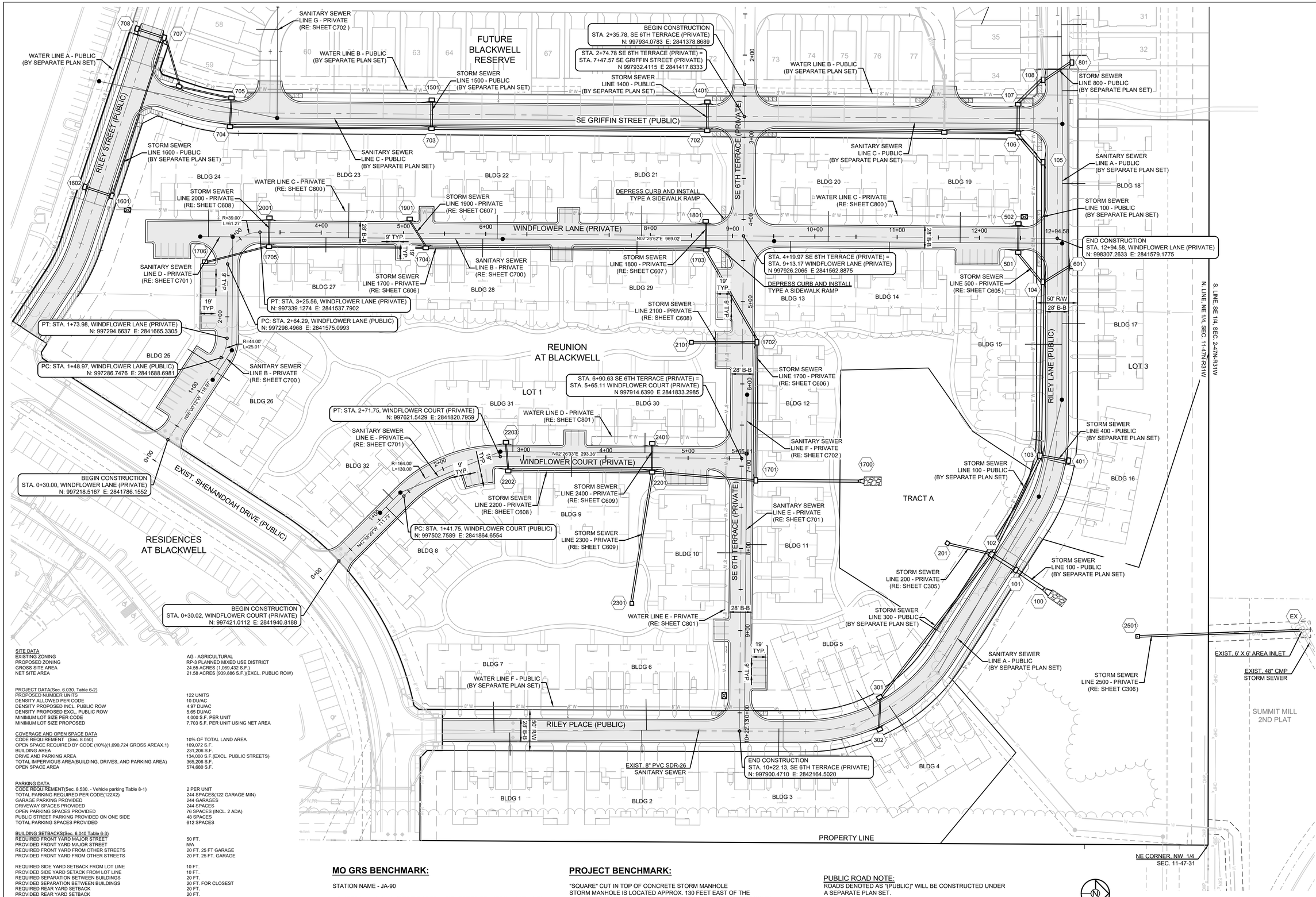
REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

DESCRIPTION	REVISION DATE

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22-007

GENERAL NOTES

SHEET
C100



SITE DATA	
EXISTING ZONING	AG - AGRICULTURAL
PROPOSED ZONING	RP-3 PLANNED MIXED USE DISTRICT
GROSS SITE AREA	24.55 ACRES (1,069,432 S.F.)
NET SITE AREA	21.58 ACRES (939,886 S.F.)(EXCL. PUBLIC ROW)
PROJECT DATA(Sec. 6.030, Table 6-2)	
PROPOSED NUMBER UNITS	122 UNITS
DENSITY ALLOWED PER CODE	10 DU/AC
DENSITY PROPOSED INCL. PUBLIC ROW	4.97 DU/AC
DENSITY PROPOSED EXCL. PUBLIC ROW	5.65 DU/AC
MINIMUM LOT SIZE PER CODE	4,000 S.F. PER UNIT
MINIMUM LOT SIZE PROPOSED	7,703 S.F. PER UNIT USING NET AREA
COVERAGE AND OPEN SPACE DATA	
CODE REQUIREMENT (Sec. 8.050)	10% OF TOTAL LAND AREA
OPEN SPACE REQUIRED BY CODE (10%)(1,090,724 GROSS AREAX.1)	109,072 S.F.
BUILDING AREA	231,206 S.F.
DRIVE AND PARKING AREA	134,000 S.F.(EXCL. PUBLIC STREETS)
TOTAL IMPERVIOUS AREA(BUILDING, DRIVES, AND PARKING AREA)	365,206 S.F.
OPEN SPACE AREA	574,680 S.F.
PARKING DATA	
CODE REQUIREMENT(Sec. 8.530. - Vehicle parking Table 8-1)	2 PER UNIT
TOTAL PARKING REQUIRED PER CODE(122X2)	244 SPACES(122 GARAGE MIN)
GARAGE PARKING PROVIDED	244 GARAGES
DRIVEWAY SPACES PROVIDED	244 SPACES
OPEN PARKING SPACES PROVIDED	76 SPACES (INCL. 2 ADA)
PUBLIC STREET PARKING PROVIDED ON ONE SIDE	48 SPACES
TOTAL PARKING SPACES PROVIDED	612 SPACES
BUILDING SETBACKS(Sec. 6.040 Table 6-3)	
REQUIRED FRONT YARD MAJOR STREET	50 FT.
PROVIDED FRONT YARD MAJOR STREET	N/A
REQUIRED FRONT YARD FROM OTHER STREETS	20 FT. 25 FT GARAGE
PROVIDED FRONT YARD FROM OTHER STREETS	20 FT. 25 FT. GARAGE
REQUIRED SIDE YARD SETBACK FROM LOT LINE	10 FT.
PROVIDED SIDE YARD SETACK FROM LOT LINE	10 FT.
REQUIRED SEPARATION BETWEEN BUILDINGS	20 FT.
PROVIDED SEPARATION BETWEEN BUILDINGS	20 FT. FOR CLOSEST
REQUIRED REAR YARD SETBACK	20 FT.
PROVIDED REAR YARD SETBACK	20 FT.
PARKING SETBACKS(Sec. 8.620)	
REQUIRED FROM PUBLIC RIGHT OF WAY	20 FT.
PROVIDED FROM PUBLIC RIGHT OF WAY	20 FT.
REQUIRED FROM RESIDENTIAL USE	20 FT.
PROVIDED FROM RESIDENTIAL USE	20 FT. (IN MOST AREAS MORE)
REQUIRED FROM SIDE AND REAR PROPERTY	20 FT.
PROVIDED FROM SIDE AND REAR PROPERTY	20 FT. (IN MOST AREAS MORE)

MO GRS BENCHMARK:

STATION NAME - JA-90

KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988" LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD.
N:1001052.8503, E:2845604.8272

ELEV. 997.045

PROJECT BENCHMARK:

"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE
STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH OF THE CENTERLINE OF BLUE PARKWAY.
N:996874.9690, E:2840937.1365

ELEV. 1005.719

PUBLIC ROAD NOTE:
ROADS DENOTED AS "(PUBLIC)" WILL BE CONSTRUCTED UNDER A SEPARATE PLAN SET.

SIDEWALK NOTE:
SIDEWALKS AT BUILDINGS WILL BE INSTALLED BY OTHERS, UNLESS NOTED OTHERWISE.

SCALE: 1" = 50'

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Missouri State Certificate of Authority #LSA2001055237 #LSA2002008859-F
#E2002003800-F #LAC2001055237 #LS2002008859-F

PREPARED BY:

STATE OF MISSOURI
MARK ALLEN BREUER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

SCHLAGEL & ASSOCIATES, P.A.

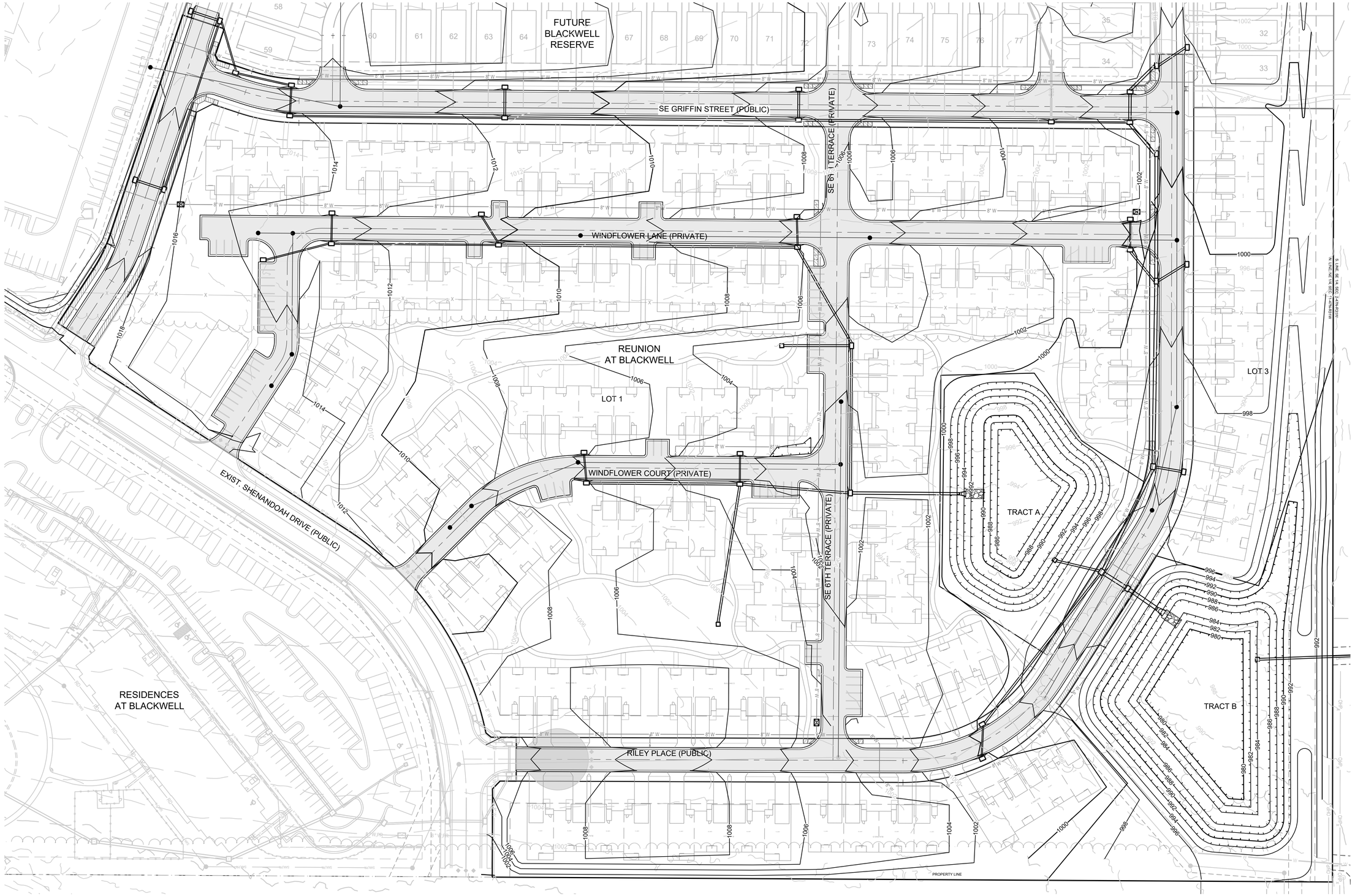
REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE & LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22-097

GENERAL LAYOUT

SHEET
C101



PUBLIC ROAD NOTE:
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ELEV. 1005.719

0 50' 100'
SCALE: 1" = 50'

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PREPARED BY:

STATE OF MISSOURI
MARK ALLEN BREUER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

SCHLAGEL & ASSOCIATES, P.A.

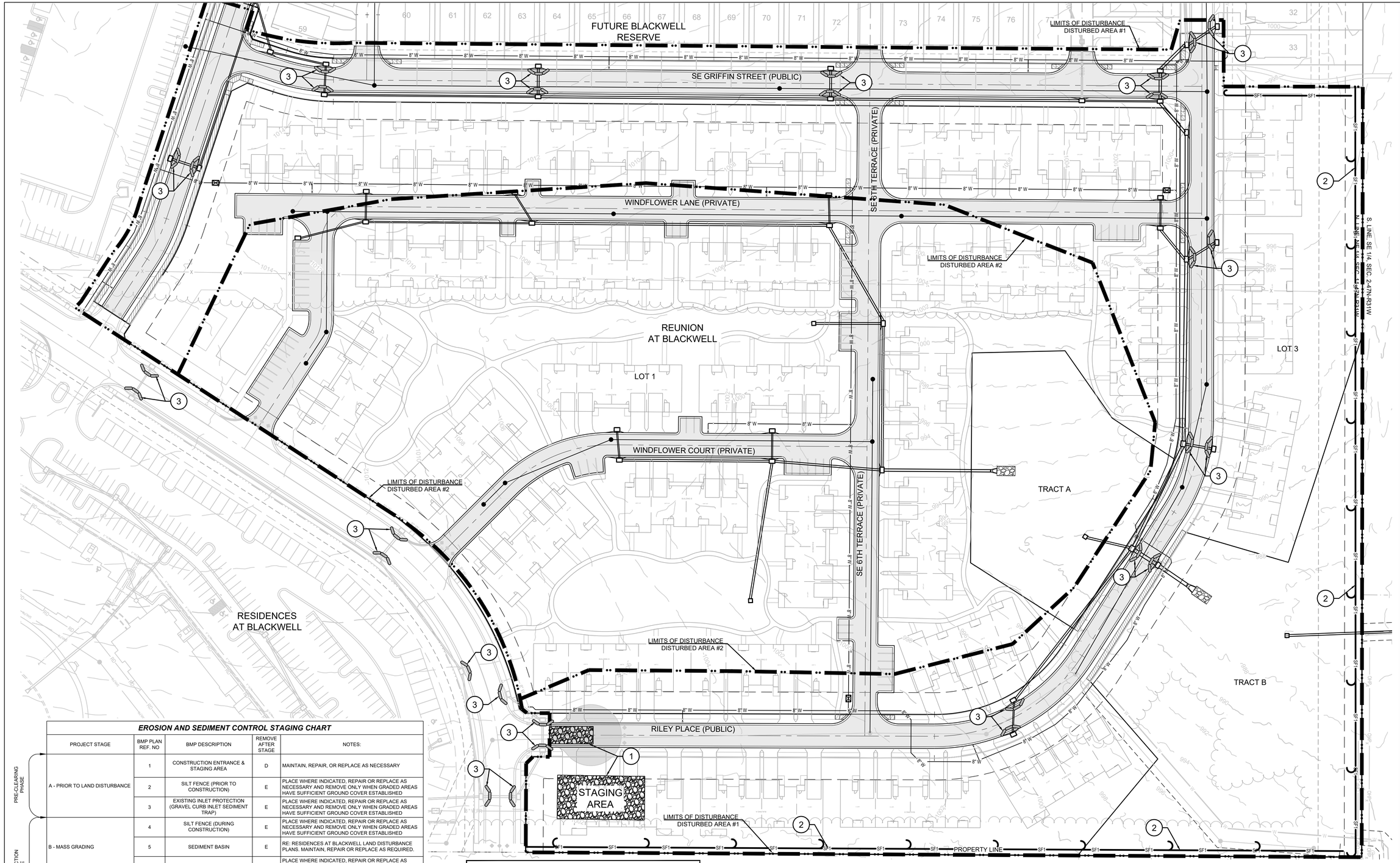
REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22-097

GRADING PLAN

SHEET
C201



EROSION AND SEDIMENT CONTROL STAGING CHART

	PROJECT STAGE	BMP PLAN REF. NO	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
PRE-CLEARING PHASE	A - PRIOR TO LAND DISTURBANCE	1	CONSTRUCTION ENTRANCE & STAGING AREA	D	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
		2	SILT FENCE (PRIOR TO CONSTRUCTION)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
		3	EXISTING INLET PROTECTION (GRAVEL CURB INLET SEDIMENT TRAP)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
CONSTRUCTION PHASE	B - MASS GRADING	4	SILT FENCE (DURING CONSTRUCTION)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
		5	SEDIMENT BASIN	E	RE: RESIDENCES AT BLACKWELL LAND DISTURBANCE PLANS. MAINTAIN, REPAIR OR REPLACE AS REQUIRED.
		6	ROCK DITCH CHECK	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	C - UTILITY CONSTRUCTION	7	CONCRETE WASHOUT AREA	E	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
		8	INLET PROTECTION (SILT FENCE)	D/E	PLACE SILT FENCE AROUND ALL STORM SEWER STRUCTURES / YARD AREA STORM STRUCTURES TO HAVE SILT FENCE REMOVED ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
FINAL STABILIZATION PHASE	D - AFTER PAVING OPERATIONS	9	INLET PROTECTION (GRAVEL FILTER BAGS)	E	BOARDS SHALL BE PLACED IN FRONT OF INLET OPENING FROM THE TIME SILT FENCE IS REMOVED UNTIL SUCH TIME THAT THE CURB / THROAT IS POURED. PLACE GRAVEL FILTER BAGS AT THE OPENING OF ALL CURB INLETS IMMEDIATELY AFTER THE INLET THROATS ARE POURED
		10	SEEDING AND MULCHING	E	ALL DISTURBED AREAS AFTER 14 DAYS OF CONSTRUCTION INACTIVITY
	E - UNTIL CLOSURE OF LAND DISTURBANCE PERMIT				ADDITIONAL SEDIMENT AND EROSION CONTROL MEASURES MAY BE REQUIRED ANY TIME CURRENT MEASURES ARE FOUND TO BE INEFFECTIVE.

LEGEND

- TEMP. CONSTRUCTION ENTRANCE AND STAGING AREA
- CONCRETE WASHOUT AREA
- ROCK DITCH CHECK
- BMP PLAN REF. NO.
- SILT FENCE FOR INLET PROTECTION PRIOR TO STRUCTURE TOP
- SUPER SEDIMENT SILT FENCE (PRIOR TO LAND DISTURBANCE)
- SILT FENCE (PRIOR TO LAND DISTURBANCE)
- SILT FENCE (DURING CONSTRUCTION)
- LIMITS OF DISTURBANCE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- GRAVEL FILTER FOR STORM SEWER STRUCTURES ONLY

DISTURBED AREA #1 = 14.34 A.C.
DISTURBED AREA #2 = 11.02 A.C.

SITE SPECIFIC NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
2. THERE ARE NO WETLANDS, NATURAL OR ARTIFICIAL WATER STORAGE DETENTION AREAS IN THE PROJECT AREA.
3. NO PART OF THE PROJECT LIES WITHIN THE 100 YEAR FLOOD PLAIN PER FEMA FLOOD INSURANCE RATE MAP NUMBERS 29095C0441G, 29095C0445G, 29095C0437G AND 29095C0439G DATED JANUARY 20TH, 2017.
4. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IMPLEMENTED ACCORDING TO THE BMP STAGING CHART.
5. ADDITIONAL EROSION CONTROL MAY BE REQUIRED BY THE CITY ENGINEER AT ANY TIME EXISTING MEASURES ARE FOUND TO BE INEFFECTIVE OR PROBLEMATIC AREAS ARE NOTED IN THE FIELD.
6. STABILIZATION OF DISTURBED AREAS MUST, AT A MINIMUM, BE INITIATED IMMEDIATELY WHENEVER ANY CLEARING, GRADING, EXCAVATING, OR OTHER SOIL DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE, OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. THE DISTURBED AREAS SHALL BE PROTECTED FROM EROSION BY STABILIZING THE AREA WITH MULCH OR OTHER SIMILARLY EFFECTIVE SOIL STABILIZING BMPS. INITIAL STABILIZATION ACTIVITIES MUST BE COMPLETED WITHIN 14 DAYS AFTER SOIL DISTURBING ACTIVITIES CEASE.
7. ALL PERIMETER SILT FENCE, EARTH DIKES, SEDIMENT BASINS, AND ROCK CONSTRUCTION ENTRANCES WILL BE INSTALLED BEFORE GRADING OPERATIONS BEGIN.
8. SILT FENCE AND EARTH DIKES THAT ARE PLACED BEFORE GRADING BEGINS WILL BE MAINTAINED BY THE GRADING CONTRACTOR.
9. AREAS WITHIN PUBLIC RIGHT-OF-WAY SHALL BE SODDED IMMEDIATELY AFTER CONSTRUCTION IS COMPLETE.

NOTES:

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

SCALE: 1" = 100'

SCHLAGEL
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Missouri State Certificate of Authority #E2002003800-F #LA2001005237 #LS2002008859-F

PREPARED BY:

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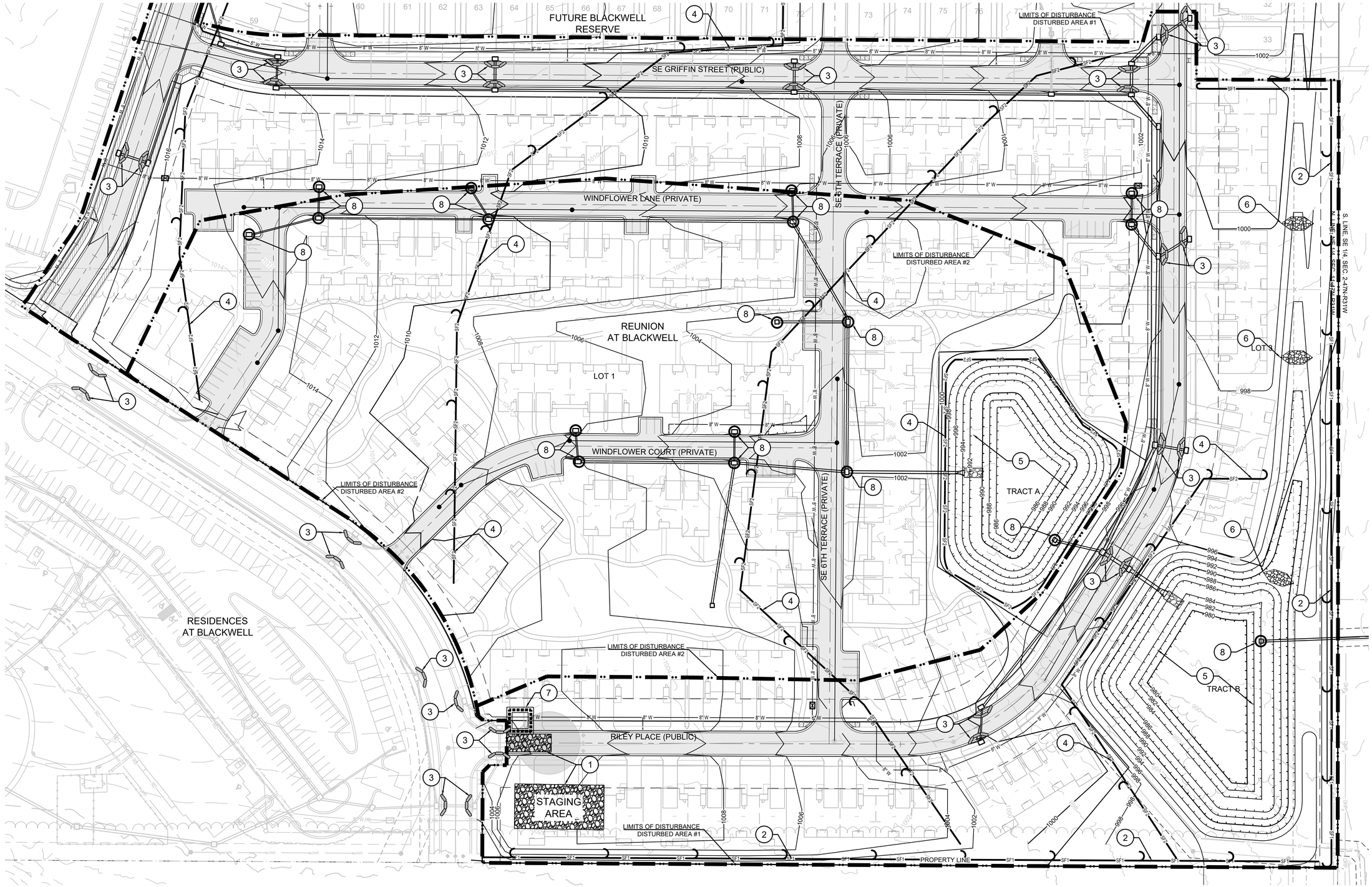
REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

DESCRIPTION	REVISION DATE

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22.007

PRE-CONSTRUCTION EROSION CONTROL PLAN

SHEET
C300



NOTE:

SEE SHEET C300 FOR EROSION CONTROL NOTES, LEGEND AND STAGING CHART.

NOTES:

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2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.

MO GRS BENCHMARK:

STATION NAME - JA-90

KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988" LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD.
N:1001052.8503, E:2845604.8272

ELEV. 997.045

PROJECT BENCHMARK:

"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE
STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH OF THE CENTERLINE OF BLUE PARKWAY.
N:996874.9690, E:2840937.1365

ELEV. 1005.719

SCALE: 1" = 100'

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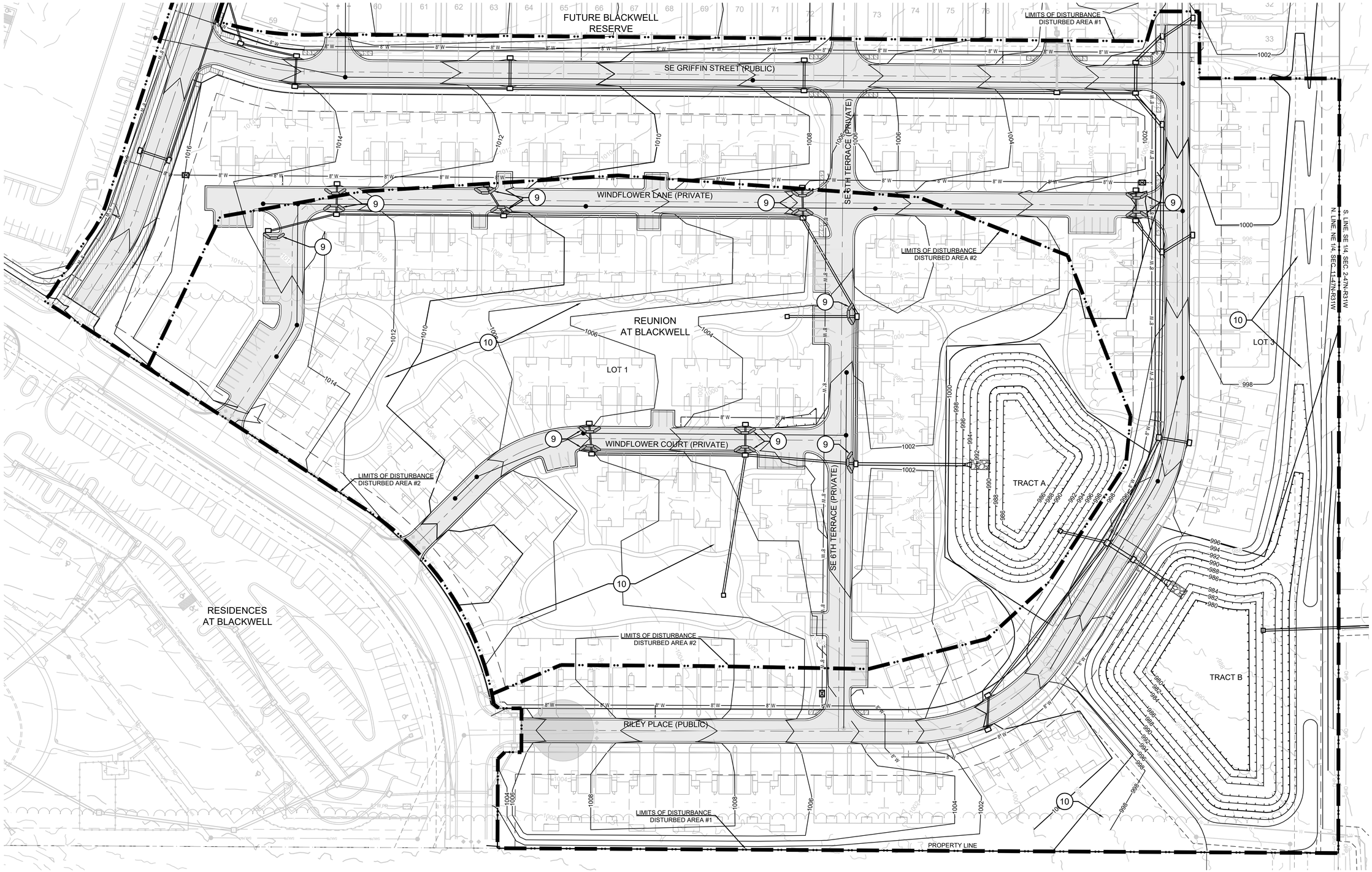
REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
A	
B	
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G	

DRAWN BY:	TRC
CHECKED BY:	MAB
DATE PREPARED:	03/03/2023
PROJ. NUMBER:	22-007

EROSION CONTROL PLAN

SHEET
C301



NOTE:

SEE SHEET C300 FOR EROSION CONTROL NOTES, LEGEND AND STAGING CHART.

NOTES:

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2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.

MO GRS BENCHMARK:

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N:1001052.8503, E:2845604.8272

ELEV. 997.045

PROJECT BENCHMARK:

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N:996874.9690, E:2840937.1365

ELEV. 1005.719

SCALE: 1" = 100'

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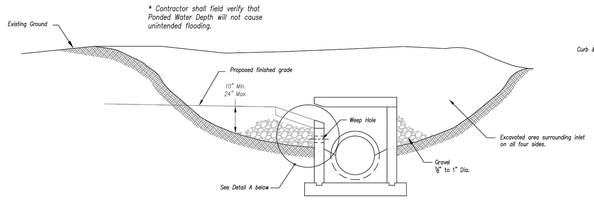
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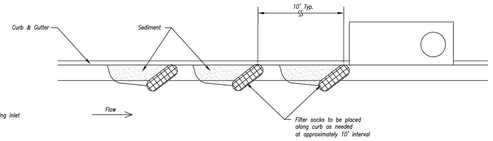
REVISION DATE	DESCRIPTION

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22-097

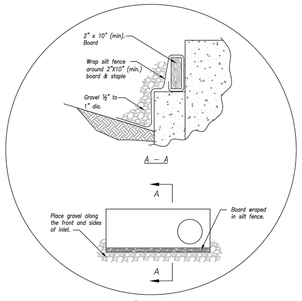
POST-CONSTRUCTION EROSION CONTROL PLAN

SHEET
C302



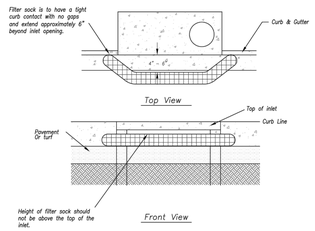


On Grade Curb Inlet Protection



Detail A

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



Sump Inlet Sediment Filter

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

Notes:

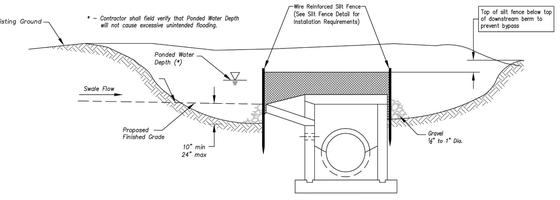
1. Immediately following inlet construction and prior to construction of curb and inlet throat, protect inlet opening by installing 2" x 10" (min.) board wrapped in silt fence. Structures shall have excavated storage area on all four sides to allow settling of sediment (Early Stage Curb Inlet).
2. When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

Maintenance:

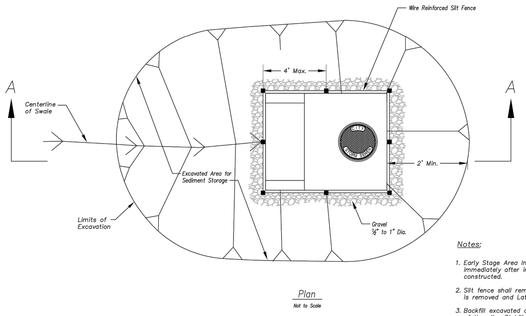
1. Remove deposited sediment from excavated storage areas when available storage has been reduced by 20%.
2. Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.
3. Repair or replace as necessary to maintain function and integrity of installation.

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

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

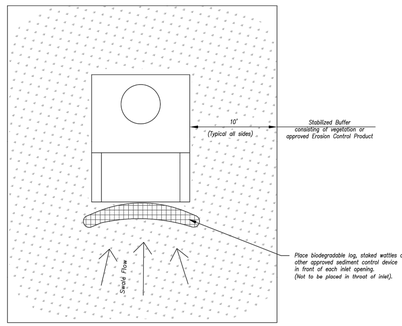


Section A–A
Not to Scale

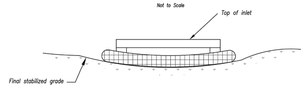


Plan
Not to Scale

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



Plan
Not to Scale



Front View

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

Notes:

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

Maintenance:

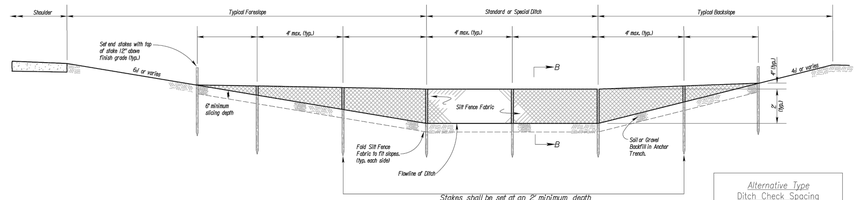
1. Remove deposited sediment from excavated storage areas when available storage has been reduced by 20%.
2. Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.
3. Repair or replace as necessary to maintain function and integrity of installation.

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

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

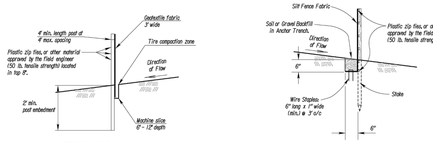
Notes for Silt Fence Ditch Check:

1. Stakes shall be 4" (min.) long and one of the following materials:
   a. Hardwood – 1 ¾" x 1 ¾";
   b. Southern Pine (No. 2) – 2 ⅜" x 2 ⅜";
   c. Steel U, T, L, or C Section – .95 lbs. per 1'-0";
   d. Synthetic – same strength as wood stakes.
2. Cross pieces shall be of same material as stakes.
3. Attach fence fabric securely on 6" centers (max.).
4. Use of high flow material is acceptable.
5. Refer to plan sheets to estimate the length of silt fence required.
6. Use support fencing when tributary area is greater than 2.4 acres or when ditch gradient is greater than 2 percent.
7. Silt fence sliced in to a 6" minimum depth.
8. Elevation at tie in points shall be a minimum of 4" higher than the center.

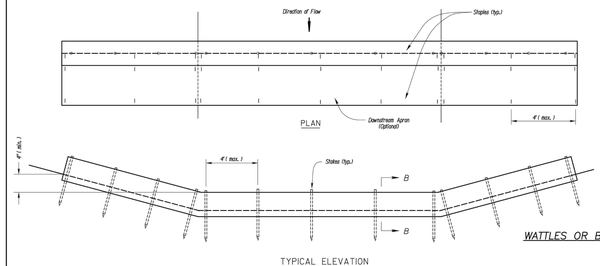


TYPICAL ELEVATION

Alternative Type Ditch Check Spacing	
Ditch Centerline Slope (%)	Spacing Interval (Feet)
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	33
Note: Use this spacing for all except Rock Ditch Checks.	

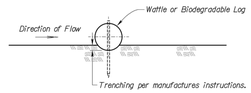


SILT FENCE DITCH CHECK
NO SCALE



Notes for Wattles and Biodegradable Log Ditch Check:

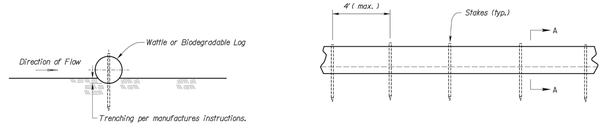
1. Use as many biodegradable log sections as necessary to ensure water does not flow around end of ditch check.
2. Overlap sections a minimum of 18"
3. Stakes shall be per manufacturer's instructions. Length of stakes shall be a minimum of 2 times the diameter of the log or 24" minimum.
4. Use Erosion Control (Class 1) (Type C) as the downstream apron when directed by the Engineer.
5. Use 9" diameter logs when used with Erosion Control (Class 2) (Any Type) channel lining. Smaller diameter logs may be used with Erosion Control (Class 2) (Any Type) channel lining as directed by the Engineer.



WATTLES OR BIODEGRADABLE LOG DITCH CHECKS
OR Filter Sock Ditch Check
NO SCALE

Modified from Kansas Department of Transportation Standard Details for Erosion Control and Sediment Control.

AMERICAN PUBLIC WORKS ASSOCIATION	KANSAS CITY METRO CHAPTER
SILT FENCE AND WATTLE/ BIODEGRADABLE LOG DITCH CHECKS	STANDARD DRAWING NUMBER ESC-09
	ADOPTED: 10/24/2016



WATTLES AND BIODEGRADABLE LOG

Notes for Wattles and Biodegradable Log Slope Protection:

1. The Slope barriers shall be placed along contour lines, with a short section turned upgrade at each end of the barrier. The maximum length of the slope barrier shall not exceed 250 feet, and the barrier ends need to be staggered.
2. Install wattles and biodegradable logs per manufacturer's instructions.
3. Spacing of stakes per manufacturer's instructions with 4' max. spacing. Length of stakes shall be a minimum of 2 times the diameter of the log with minimum of 24".

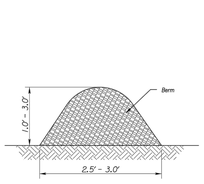


Figure 1
(Perimeter Control)

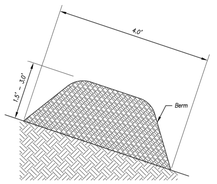


Figure 2
(Steep Slopes)

Notes for Mulch and Compost Filter Beam:

1. The sediment control berm shall be placed uncompacted in a window at locations shown on the plans or as directed by the engineer.
2. Parallel to the base of the slope, or around the perimeter of other affected areas, construct a 1 to 3 foot high by 2.5 to 3 foot wide berm (see Figure 1). For maximum water treatment ability or for steep slopes, construct a 1.5 to 3 foot high trapezoidal berm that is a minimum of 4 feet wide at the base (see Figure 2). In extreme conditions, or where specified by the engineer, a second berm shall be constructed at the top of the slope. Engineer will specify berm requirements.
3. If berm is to be left as permanent or part of the natural landscape, the compost berm may be seeded during application for permanent vegetation.
4. Do not use compost or wood mulch berms in any runoff channels or concentrated flow areas.
5. Wood mulch shall consist of tree and shrub debris resulting from clearing and grubbing and shall be ground by the mechanical means such as a chipper, hammermill, tub grinder or other approved method. Mulch sizing varies with a maximum width of 2" and a maximum length of 10".

Maintenance for Mulch and Compost Filter Beam:

1. Berm shall be restraped and material added as necessary to maintain function and dimensions.
2. Breaches in the berm shall be repaired promptly.

MULCH OR COMPOST FILTER BERMS

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

AMERICAN PUBLIC WORKS ASSOCIATION	KANSAS CITY METRO CHAPTER
WATTLES/BIODEGRADABLE LOG AND MULCH/COMPOST FILTER BERM	STANDARD DRAWING NUMBER ESC-04
	ADOPTED: 10/24/2016

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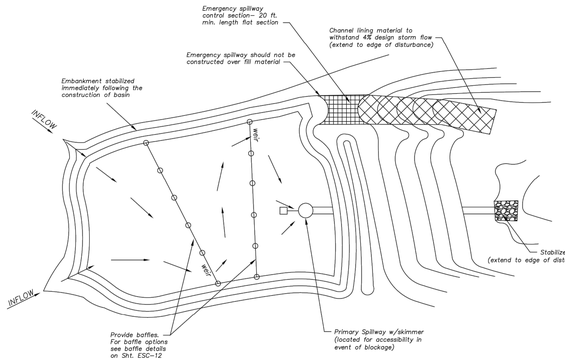
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DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22.007

EROSION CONTROL DETAILS

SHEET
C303

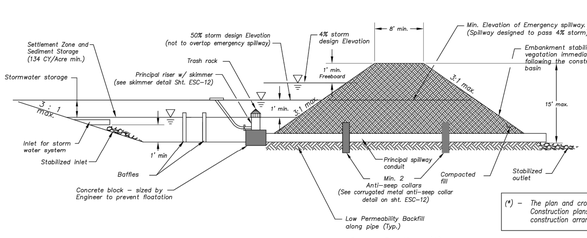


Plan View (*)
Not to Scale

Sediment Basin Design Summary (**)

Design Item	Basin #1	Basin #2	Units	Notes
Site Data:				
Tributary Drainage Area to Pond	35.79		Acres	
50% (2 yr) Design Flow	120.52		cfs	
4% (25 yr) Design Flow	254.44		cfs	
Pond Data:				
Minimum Sediment Storage Volume	4,796		cu yd	134 cy/acre required minimum
Provided Sediment Storage Volume	9,581		cu yd	
Bottom Elevation	979.0		Ft	
Sediment Cleanout Elevation	982.4		Ft	Elevation equal to 20% of original design volume
Top of Riser Elevation	989.1		Ft	Top of dry storage volume
Emergency Spillway Elevation	992.2		Ft	at or above Q-2 elevation. 1.0 ft min above principal spillway
Top of Dam Elevation	994.2		Ft	1.0 ft min above Q-25 elevation
Basin Shape Data:				
A = Area at Normal Pool	36,620		SF	
L = Length of Flow Path	120		Ft	
We = Effective Width = A/L	305.2		Ft	
Length to Width Ratio = L/We	0.4			
Principal Spillway Data:				
Riser Pipe dia	60x60		in	15" min. Size for 2 year flow minimum
Barrel Pipe dia	36		in	15" min. Size for 2 year flow minimum
Concrete Base size for Riser Pipe	N/A		CY	Size to prevent flotation. 1.25 safety factor required
Skimmer Size	6		in	Designer to provide specific details and calculations per application to dewater in 48 to 72 hours
Emergency Spillway Data:				
Design Depth in Spillway	0.7		ft	
Design Velocity in Spillway	3.5		ft/sec	
Lining Material				Designer to provide specific details and calculations per application
				KDOT EROSION CONTROL CLASS 2 TYPE E FLEXIBLE LINER

(**) – Required on all Sediment Basin Plan Sheets



Cross Section (*)
Not to Scale

(*) – The plan and cross section are schematic in nature. Construction plans must provide specific site construction arrangements.

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

Sediment Basin Notes:

1. Interior baffles shall be provided to reduce short-circuiting of the basin. See Sht. ESC-12 for approved baffle options.
2. Emergency spillways to be located in a non-fill location when feasible and shall be lined with a non-erodible material such as Riprap or Turf Reinforcement Mat.
3. When directed, sediment basins shall be fenced using construction fence or other material for safety reasons and include warning signs, reading: "Danger – KEEP OUT".

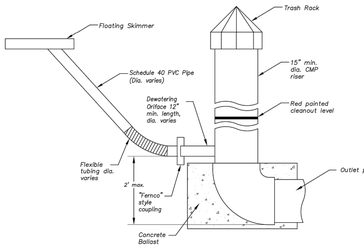
Maintenance:

1. Check temporary sediment basins after periods of significant runoff.
2. Remove sediment and restore the basin to its original dimensions when sediment accumulates to 20% of the storage capacity.
3. Immediately repair any erosion damage to the embankment and outlets.
4. Repair and/or replace baffles as necessary to maintain function and integrity of installation.
5. Keep outlet, skimmer and pool area free of all trash and other debris.

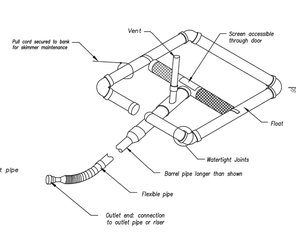
AMERICAN PUBLIC WORKS ASSOCIATION
Kansas City Metro Chapter
KANSAS CITY METRO CHAPTER

SEDIMENT BASIN

STANDARD DRAWING NUMBER ESC-11
ADOPTED: 10/24/2016

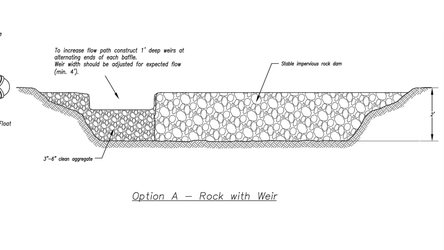


PRINCIPAL SPILLWAY DETAIL

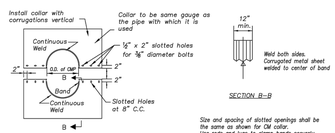


SKIMMER DETAIL (Typ.) *

* Designer to provide specific details per application (e.g. pipe sizes, screen sizes, perforation, etc.) as required.

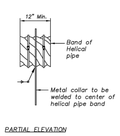


Option A – Rock with Weir

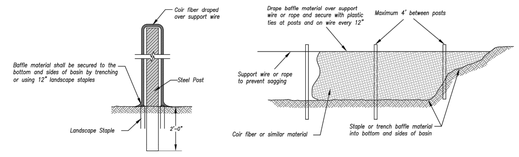


SECTION B–B

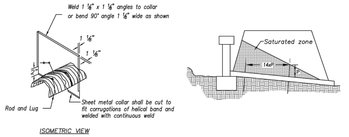
Size and spacing of slotted openings shall be the same as shown for CM collar. Use rods and lugs to clamp bands securely to pipe.



PARTIAL ELEVATION



Option B – Coir Fiber Material



ISOMETRIC VIEW

ANTI-SEEPAGE COLLAR LOCATIONS

CORRUGATED METAL ANTI-SEEPAGE COLLAR DETAIL
Not to Scale

BAFFLE DETAILS
Not to Scale

Anti-Seepage Collar Notes:

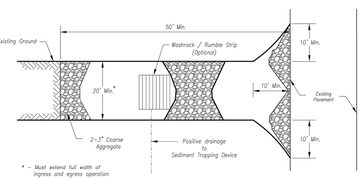
1. Connections between the anti-seepage collar and the barrel must be watertight.
2. P = projection distance. Sized as required to achieve at least a 10% increase in seepage length.
3. 14xP = Max. spacing between collars.
4. Collars shall generally be placed in the middle third of the embankment, and within the saturated zone.
5. All materials to be in accordance with construction material specifications.
6. When specified on the plans, coating of collars shall be in accordance with construction material specifications.
7. Unassembled collars shall be marked by painting or tagging to identify matching pairs.
8. The lap between the two half sections and between the pipe and connecting band shall be caulked with asphalt mastic at the time of installation.
9. Each collar shall be furnished with two (2) ⅝" diameter rods with standard tank lugs for connecting the collars to the pipe.
10. For bands and collars, modification of the details shown may be used providing equal water tightness is maintained and detailed drawings are Submitted and approved by the Engineer prior to delivery.
11. Two other types of anti-seep collars are:
    a. Corrugated metal, similar to above, except shop welded to a 4 ft. section of the pipe and connected to the pipe with connecting bands.
    b. Concrete, 6 inches thick, formed around the pipe with #3 rebar spaced 15".

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

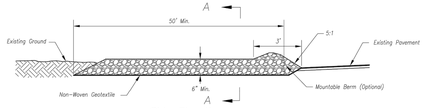
AMERICAN PUBLIC WORKS ASSOCIATION
Kansas City Metro Chapter
KANSAS CITY METRO CHAPTER

SEDIMENT BASIN - DETAILS

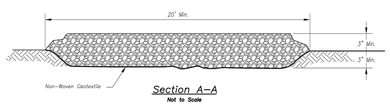
STANDARD DRAWING NUMBER ESC-12
ADOPTED: 10/24/2016



Plan View
Not to Scale



Side Elevation
Not to Scale



Section A–A
Not to Scale

Notes for Construction Entrance:

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

Maintenance for Construction Entrance:

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

CONSTRUCTION ENTRANCE

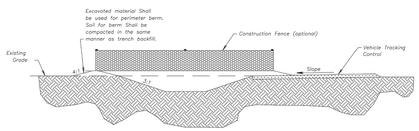
Construction Entrance modified from 2015 Overland Park Standard Details for Erosion and Sediment Control. Concrete Washout modified from 2009 City of Great Bend Standard Drawings.

Notes for Concrete Washout:

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

Maintenance for Concrete Washout:

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



CONCRETE WASHOUT

AMERICAN PUBLIC WORKS ASSOCIATION
Kansas City Metro Chapter
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CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT

STANDARD DRAWING NUMBER ESC-01
ADOPTED: 10/24/2016

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Missouri State Certificates of Authority
#E2000030800-F #LA2001005237 #LS2002008859-F

PREPARED BY:

STATE OF MISSOURI
MARK ALLEN BREWER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

SCHLAGEL & ASSOCIATES, P.A.

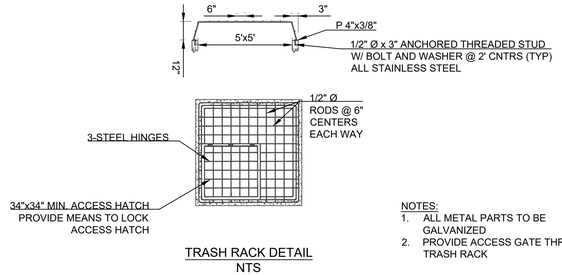
REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

DESCRIPTION	REVISION DATE

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22.407

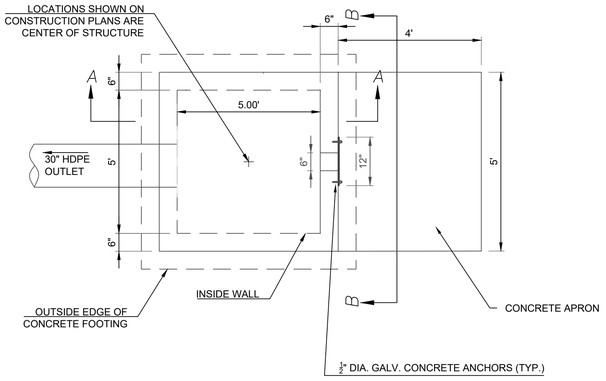
EROSION CONTROL DETAILS

SHEET
C304

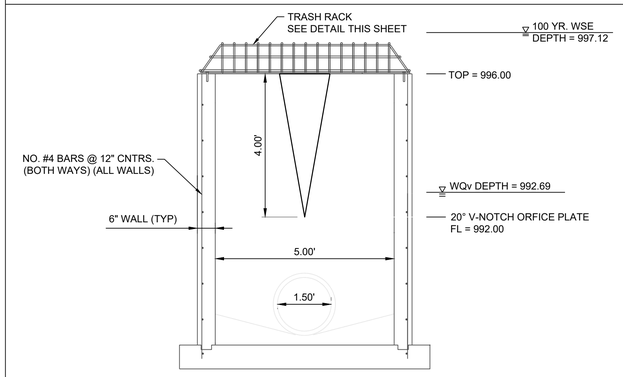


NOTES:
1. ALL METAL PARTS TO BE GALVANIZED
2. PROVIDE ACCESS GATE THRU TRASH RACK

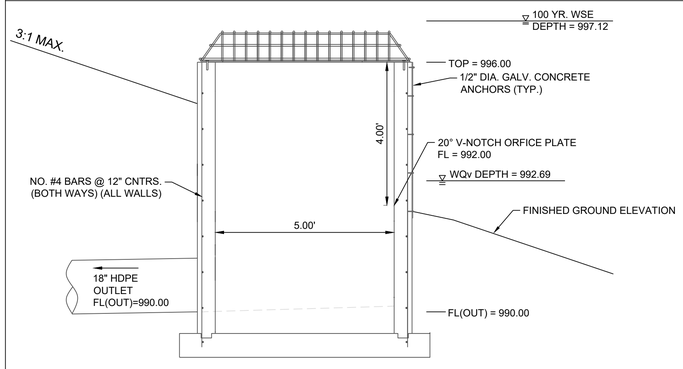
TRASH RACK DETAIL
NTS



STRUCTURE PLAN VIEW
NTS

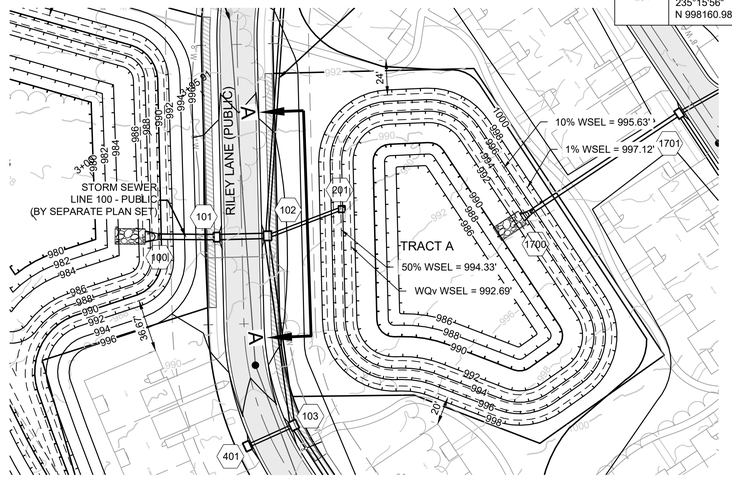


SECTION B-B
NTS

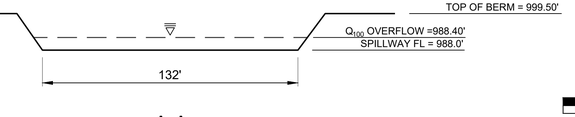


SECTION A-A
NTS

Storm Sewer Construction Notes	
Structure	Notes
102	STA 1+75.50, LINE 100 INSTALL 6 X 5 CURB INLET 145°25'35" N 998213.9579 E 2841960.4357
201	STA 1+55.17, LINE 200 INSTALL 5' X 5' BASIN OUTLET STRUCTURE 235°15'56" N 998160.9834 E 2841945.0390



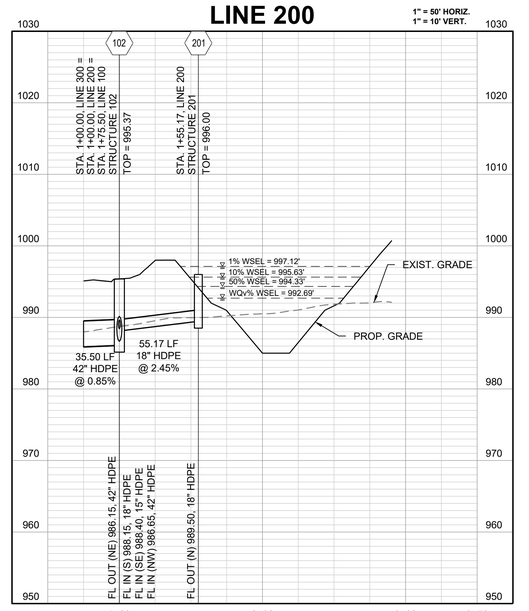
NOTE:
TEMPORARY SEDIMENT BASIN AND OUTLET STRUCTURE W/ SKIMMER AND PLATE SHALL BE CONSTRUCTED WITH THE FIRST PHASE OF THE EROSION CONTROL PLAN. UPON FINAL STABILIZATION THE SKIMMER, PLATE, AND SEDIMENT SHALL BE REMOVED AND FINAL CONVERSION TO DETENTION BASIN COMPLETED. AN AS-BUILT RECORD DRAWING ACCEPTED BY THE CITY SHALL BE REQUIRED PRIOR TO OCCUPANCY.



A-A



SCALE: 1" = 50'



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PREPARED BY:



03.07.2023

SCHLAGEL & ASSOCIATES, P.A.

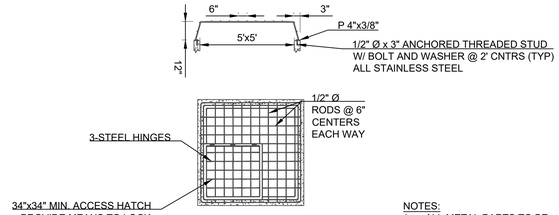
REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
1	
2	
3	
4	
5	
6	
7	

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22-067

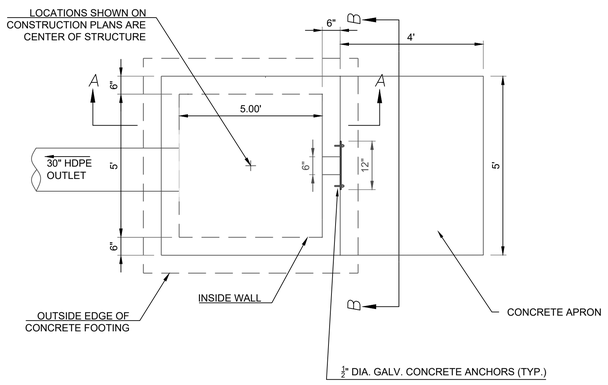
OUTLET
STRUCTURE 201

SHEET
C305

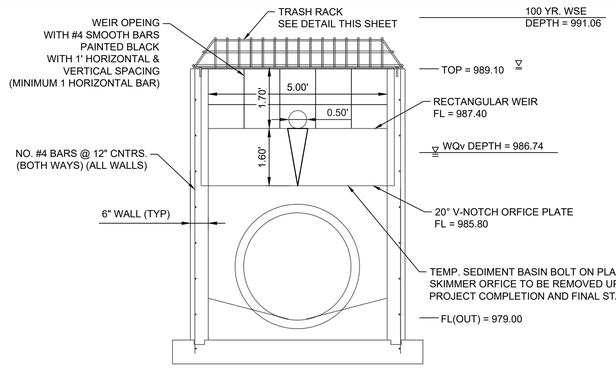


NOTES:
1. ALL METAL PARTS TO BE GALVANIZED
2. PROVIDE ACCESS GATE THRU TRASH RACK

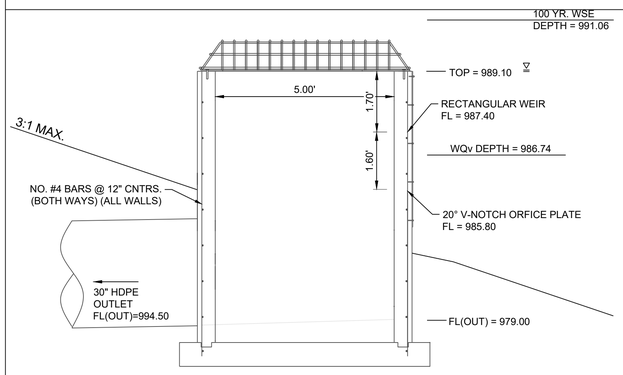
TRASH RACK DETAIL
NTS



STRUCTURE PLAN VIEW
NTS

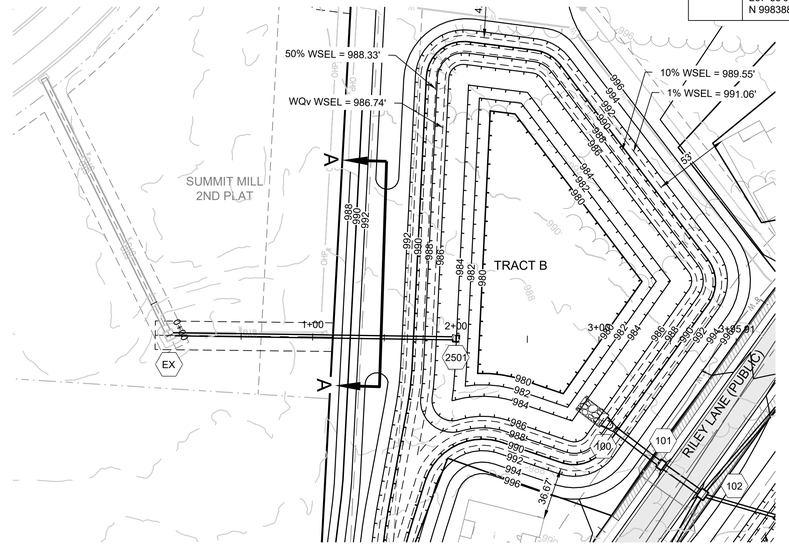


SECTION B-B
NTS

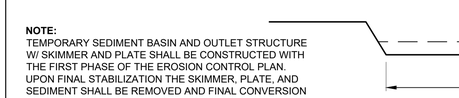


SECTION A-A
NTS

Storm Sewer Construction Notes	
Structure	Notes
2501	STA 2+00.12, LINE 2500 INSTALL 5' X 5' BASIN OUTLET STRUCTURE 267°55'07" N 998388.1266 E 2842066.2888



NOTE:
TEMPORARY SEDIMENT BASIN AND OUTLET STRUCTURE W/ SKIMMER AND PLATE SHALL BE CONSTRUCTED WITH THE FIRST PHASE OF THE EROSION CONTROL PLAN. UPON FINAL STABILIZATION THE SKIMMER, PLATE, AND SEDIMENT SHALL BE REMOVED AND FINAL CONVERSION TO DETENTION BASIN COMPLETED. AN AS-BUILT RECORD DRAWING ACCEPTED BY THE CITY SHALL BE REQUIRED PRIOR TO OCCUPANCY.



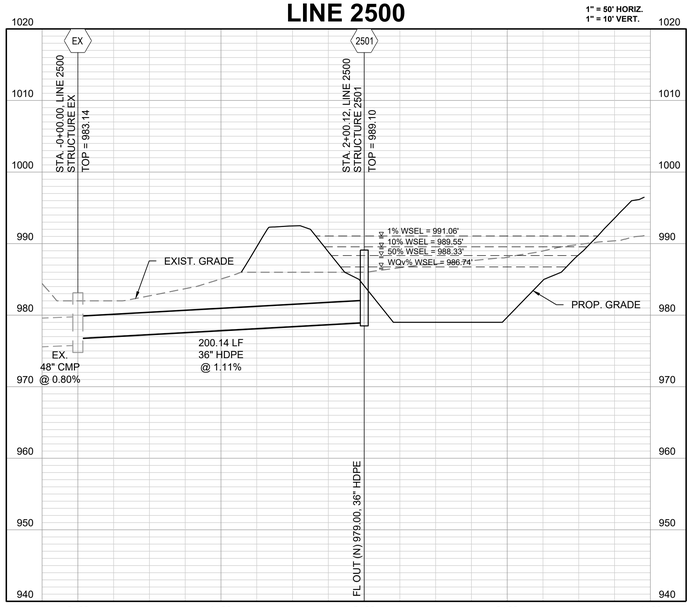
A-A



SCALE: 1" = 50'

LINE 2500

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



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PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

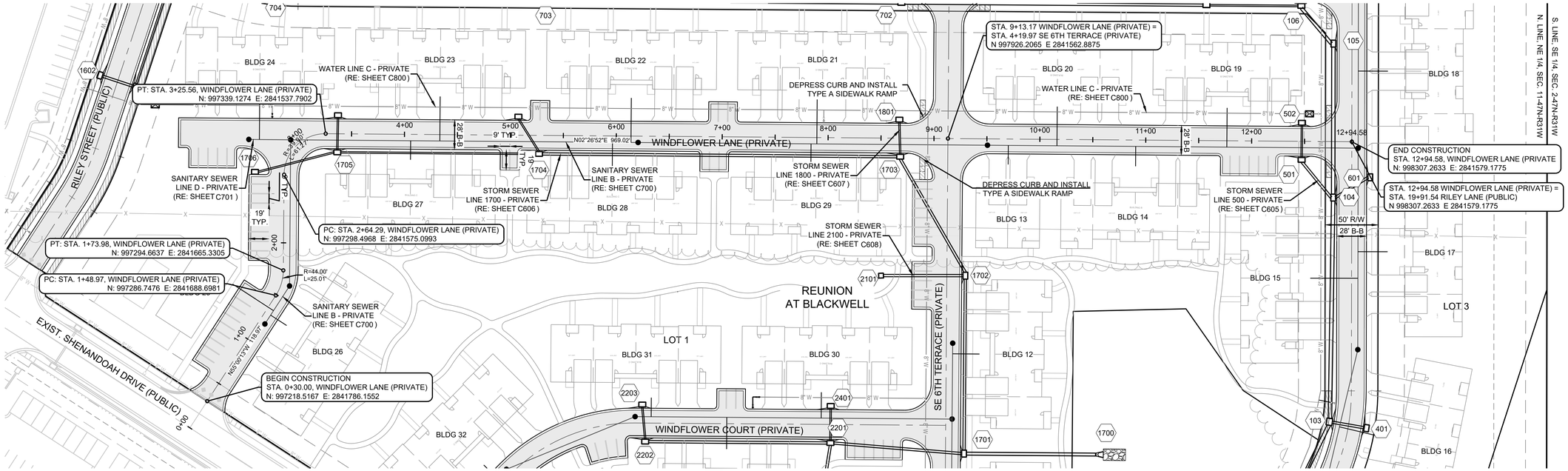
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
1	
2	
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8	

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22-097

OUTLET
STRUCTURE 2501

SHEET
C306



MO GRS BENCHMARK:

STATION NAME - JA-90

KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988" LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD.
N:1001052.8503, E:2845604.8272

ELEV. 997.045

PROJECT BENCHMARK:

"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE
STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH OF THE CENTERLINE OF BLUE PARKWAY.
N:996874.9690, E:2840937.1365

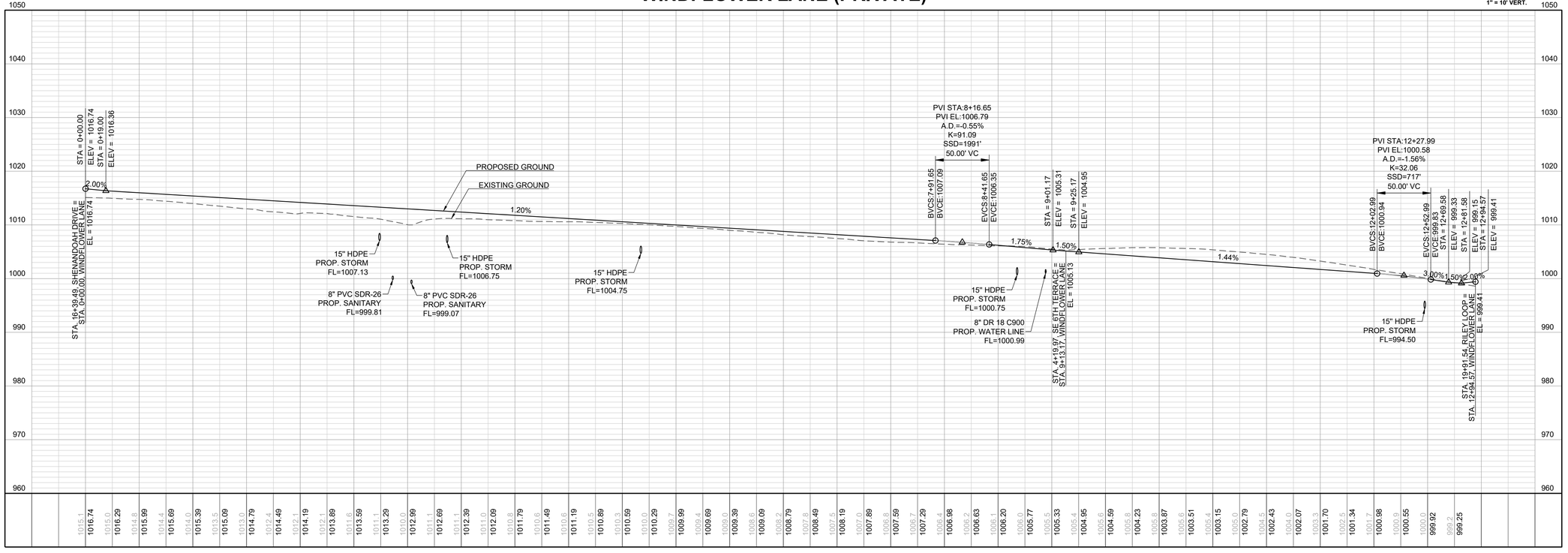
ELEV. 1005.719

SIDEWALK NOTE:
SIDEWALKS AT BUILDINGS WILL BE INSTALLED BY OTHERS, UNLESS NOTED OTHERWISE.

SCALE: 1" = 50'

WINDFLOWER LANE (PRIVATE)

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



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PREPARED BY:

STATE OF MISSOURI
MARK ALLEN BREUER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

SCHLAGEL & ASSOCIATES, P.A.

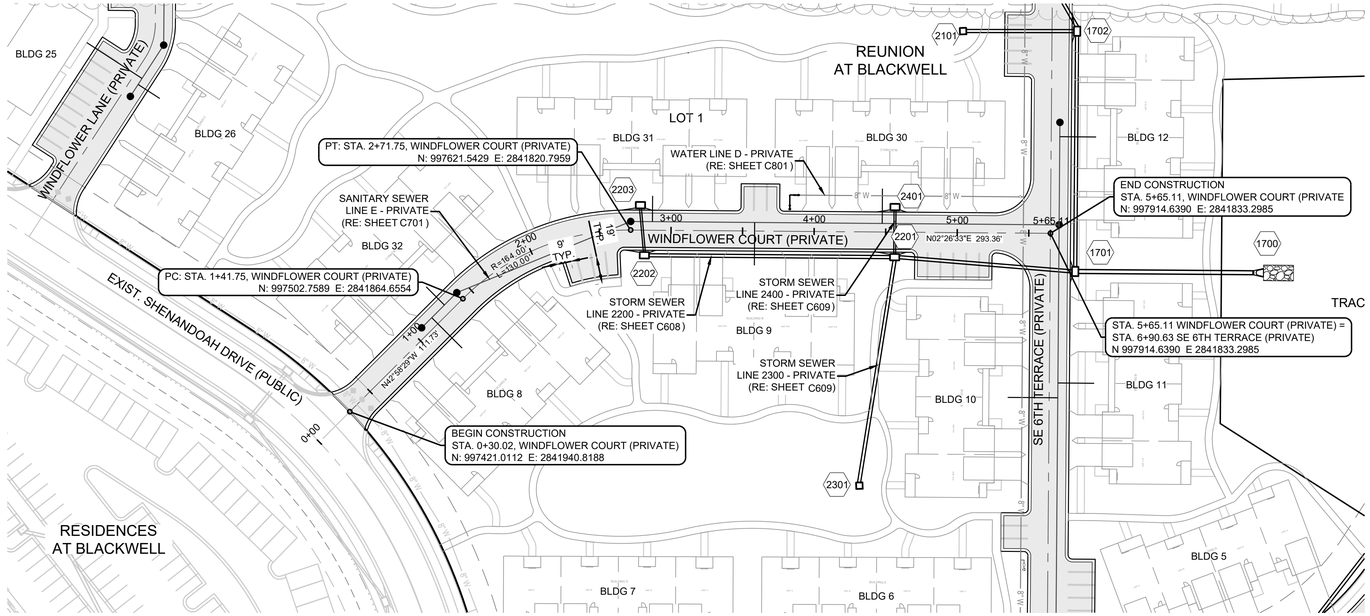
REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION	DATE	DESCRIPTION

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22.007

WINDFLOWER LANE - PLAN & PROFILE

SHEET
C400



MO GRS BENCHMARK:

STATION NAME - JA-90

KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988" LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD.
N:1001052.8503, E:2845604.8272

ELEV. 997.045

PROJECT BENCHMARK:

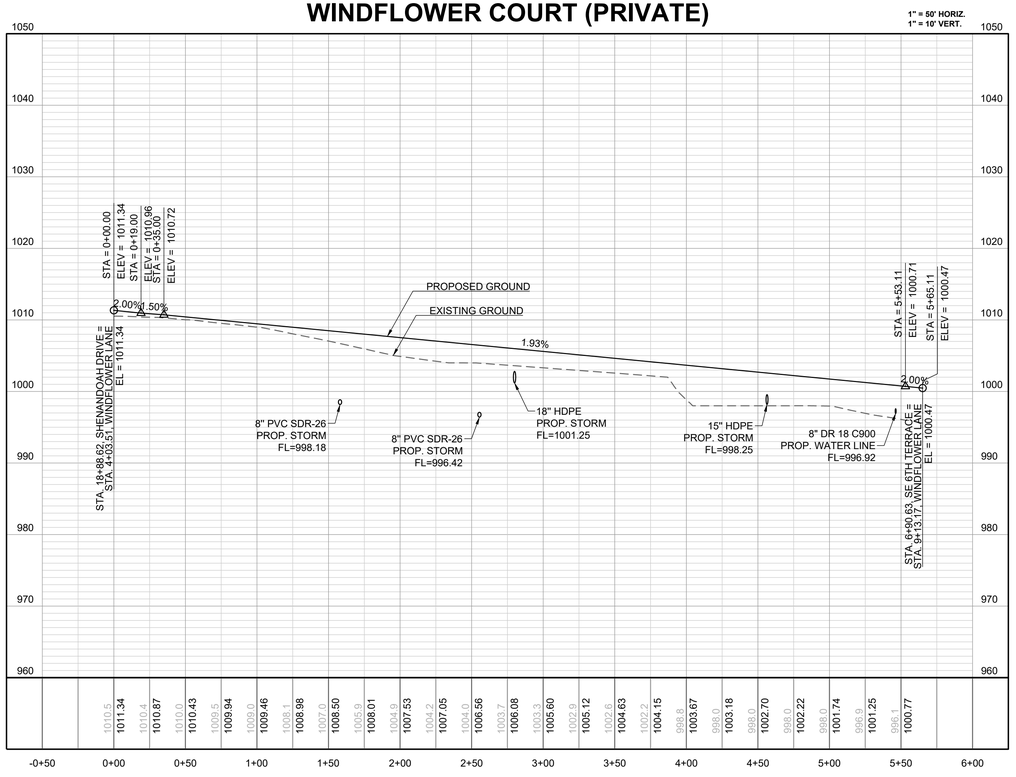
"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE
STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH OF THE CENTERLINE OF BLUE PARKWAY.
N:996874.9690, E:2840937.1365

ELEV. 1005.719

SIDEWALK NOTE:
SIDEWALKS AT BUILDINGS WILL BE INSTALLED BY OTHERS, UNLESS NOTED OTHERWISE.

SCALE: 1" = 50'

WINDFLOWER COURT (PRIVATE)



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Missouri State Certificate of Authority #E2002003800-F #LA2001005237 #LS2002008859-F

PREPARED BY:

STATE OF MISSOURI
MARK ALLEN BREUER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

SCHLAGEL & ASSOCIATES, P.A.

REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

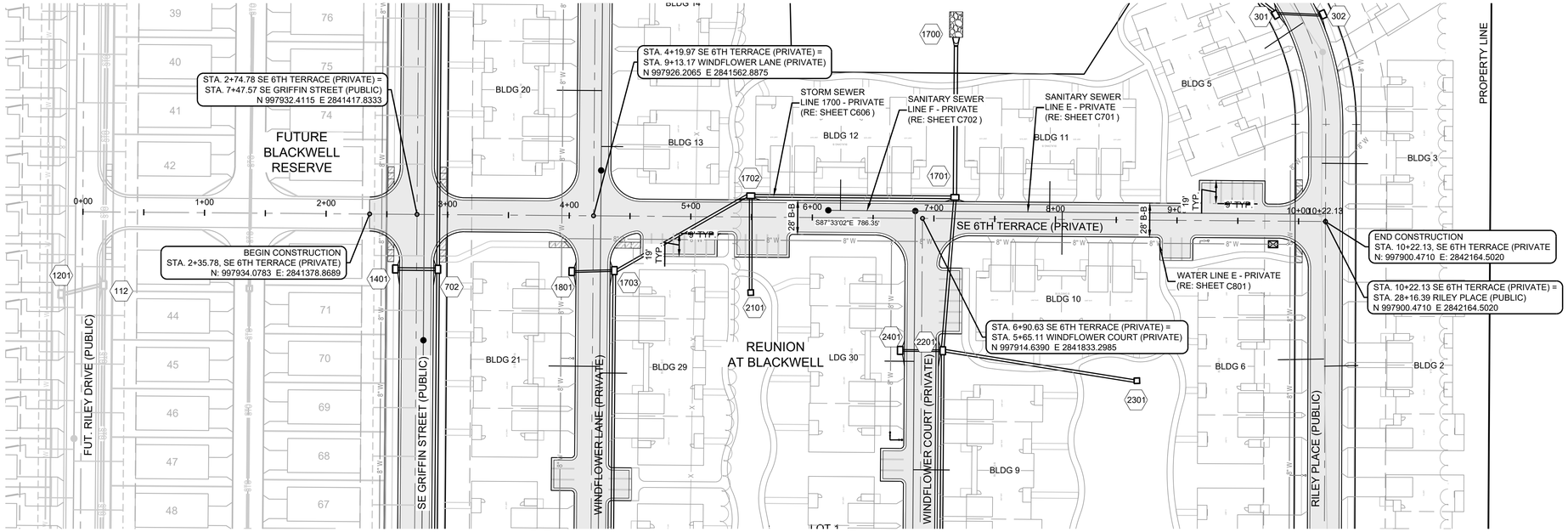
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
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DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22.407

WINDFLOWER COURT - PLAN & PROFILE

SHEET
C401



MO GRS BENCHMARK:

STATION NAME - JA-90

KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988" LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD.
N:1001052.8503, E:2845604.8272

ELEV. 997.045

PROJECT BENCHMARK:

"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE
STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH OF THE CENTERLINE OF BLUE PARKWAY.
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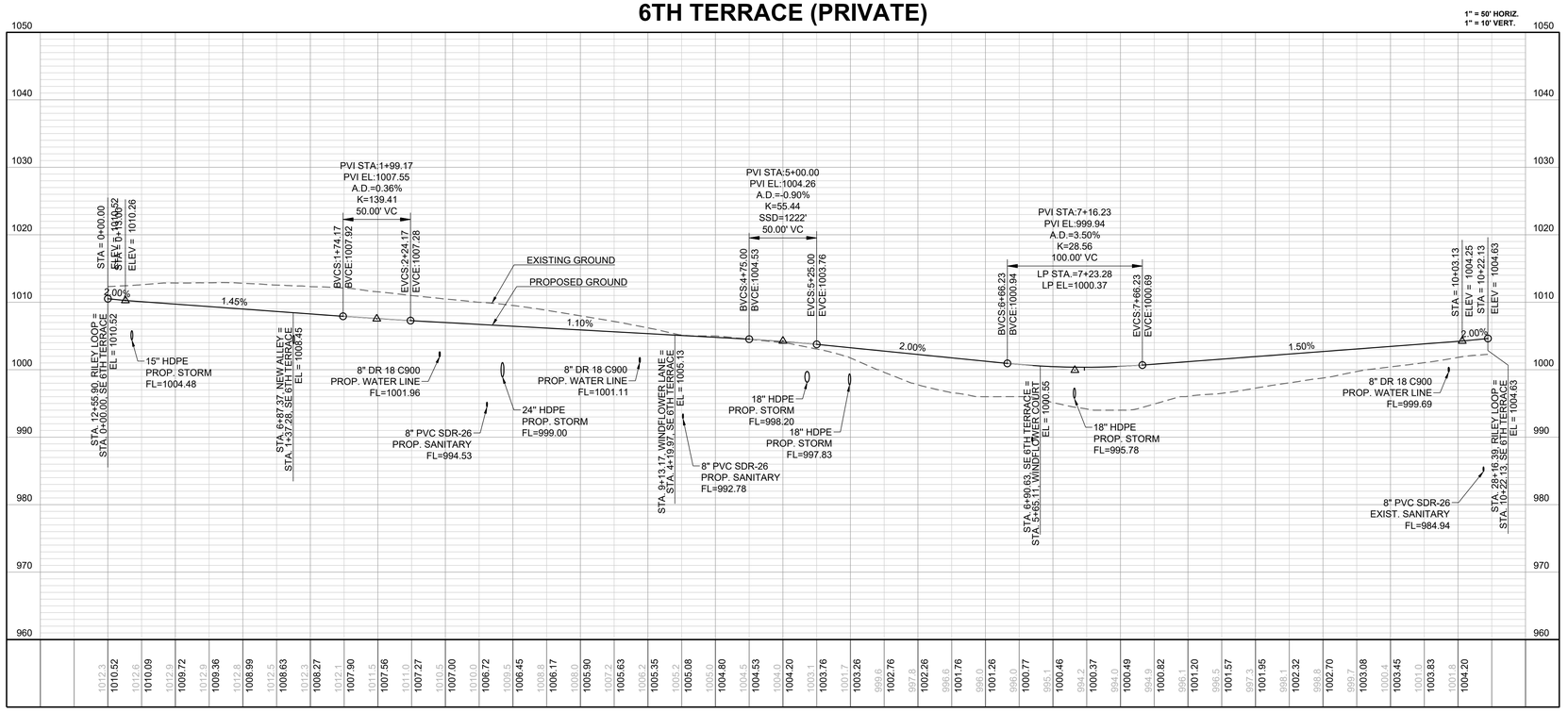
ELEV. 1005.719

SIDEWALK NOTE:
SIDEWALKS AT BUILDINGS WILL BE INSTALLED BY OTHERS, UNLESS NOTED OTHERWISE.

0 50' 100'
SCALE: 1" = 50'

6TH TERRACE (PRIVATE)

1" = 50' HORIZ.
1" = 10' VERTICAL



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03.07.2023

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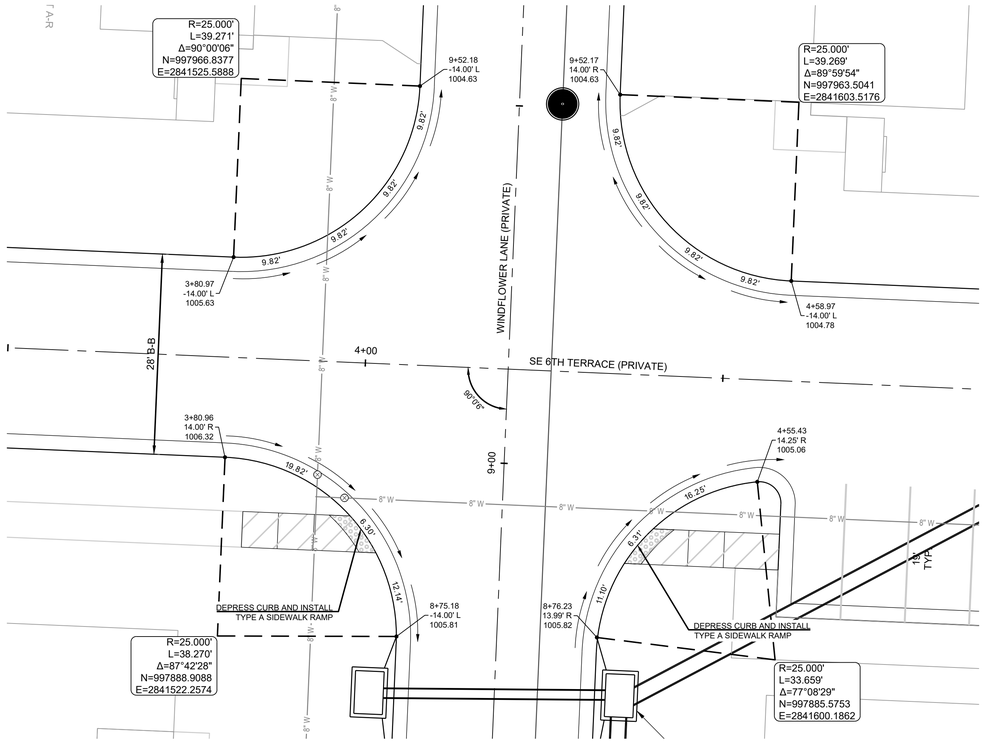
REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
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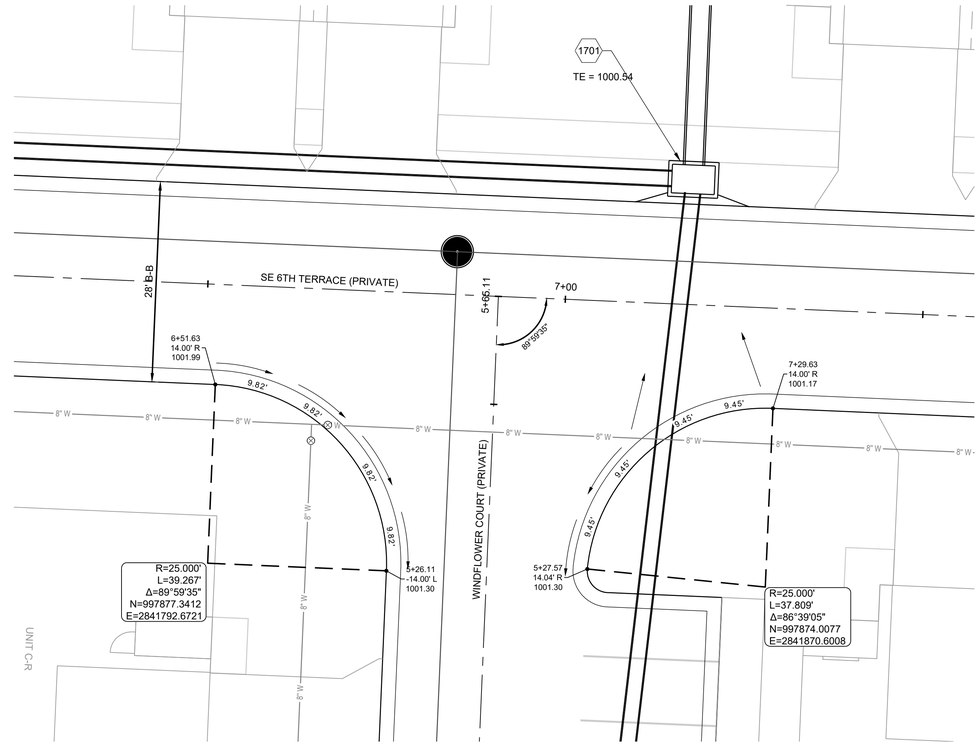
DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22.007

SE 6TH TERRACE - PLAN & PROFILE

SHEET
C402



WIND FLOWER LANE (PRIVATE) & SE 6TH TERRACE (PRIVATE



WINDFLOWER COURT (PRIVATE) & SE 6TH TERRACE (PRIVATE)

0 10' 20'

SCALE: 1" = 10'

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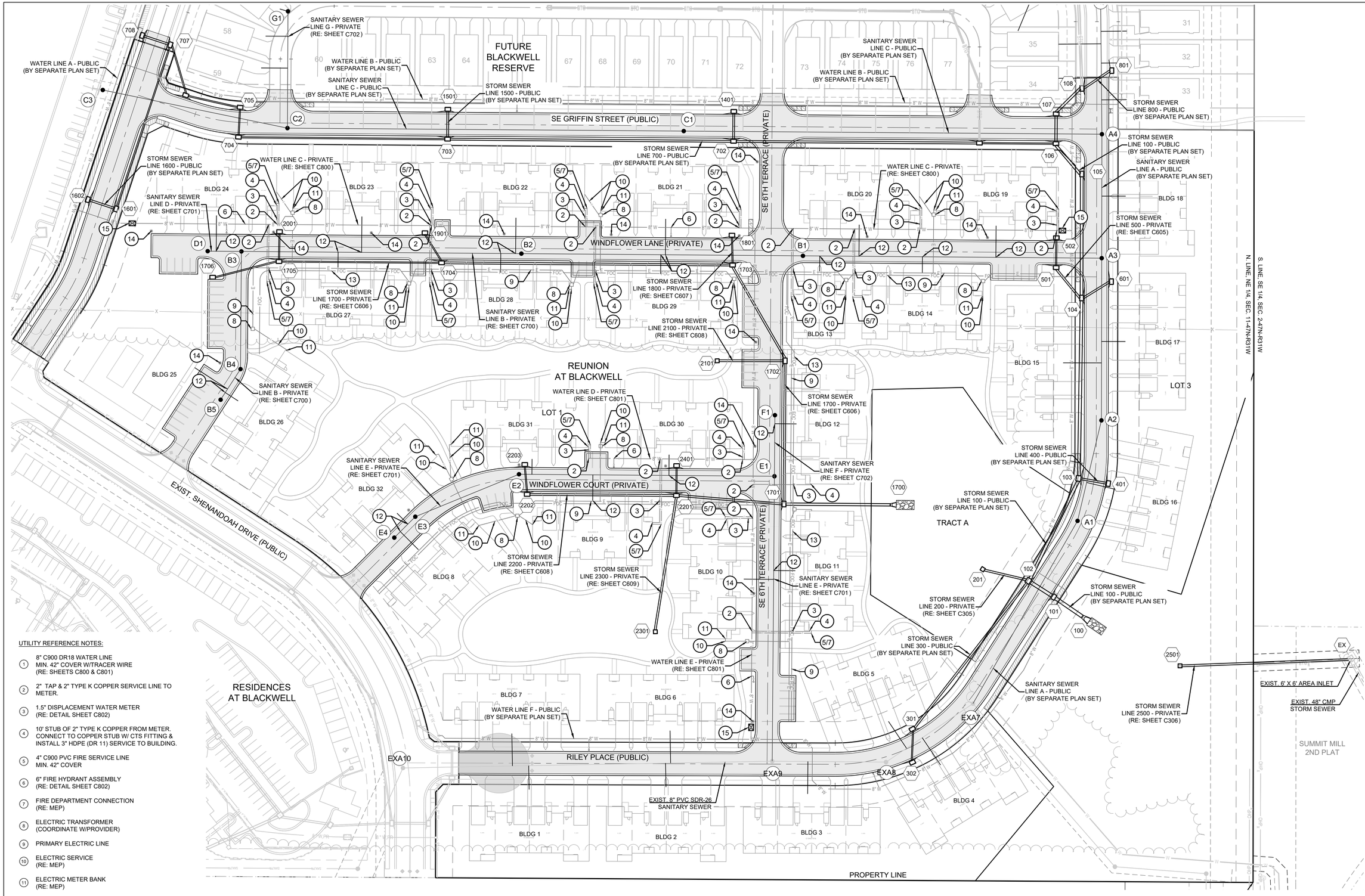
REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

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PROJ. NUMBER: 22-007

INTERSECTION DETAILS

SHEET
C403



UTILITY REFERENCE NOTES:

1. 8" C900 DR18 WATER LINE MIN. 42" COVER W/TRACER WIRE (RE: SHEETS C800 & C801)
2. 2" TAP & 2" TYPE K COPPER SERVICE LINE TO METER.
3. 1.5" DISPLACEMENT WATER METER (RE: DETAIL SHEET C802)
4. 10' STUB OF 2" TYPE K COPPER FROM METER. CONNECT TO COPPER STUB W/ CTS FITTING & INSTALL 3" HDPE (DR 11) SERVICE TO BUILDING.
5. 4" C900 PVC FIRE SERVICE LINE MIN. 42" COVER
6. 6" FIRE HYDRANT ASSEMBLY (RE: DETAIL SHEET C802)
7. FIRE DEPARTMENT CONNECTION (RE: MEP)
8. ELECTRIC TRANSFORMER (COORDINATE W/PROVIDER)
9. PRIMARY ELECTRIC LINE
10. ELECTRIC SERVICE (RE: MEP)
11. ELECTRIC METER BANK (RE: MEP)
12. 6" PVC SDR-26 SANITARY SEWER SERVICE LINE MIN. 1.3% SLOPE
13. FIBER OPTIC - 4" SCH 40 CONDUIT MIN. 36" COVER
14. STREET LIGHT (COORDINATE W/EVERGY)
15. VAULT FOR DOUBLE CHECK DETECTOR VALVE (RE: SHEET C803)

MO GRS BENCHMARK:

STATION NAME - JA-90

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N:1001052.8503, E:2845604.8272

ELEV. 997.045

PROJECT BENCHMARK:

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STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH OF THE CENTERLINE OF BLUE PARKWAY.
N:996874.9690, E:2840937.1365

ELEV. 1005.719

PUBLIC ROAD NOTE:
ROADS DENOTED AS "(PUBLIC)" WILL BE CONSTRUCTED UNDER A SEPARATE PLAN SET.

SIDEWALK NOTE:
SIDEWALKS AT BUILDINGS WILL BE INSTALLED BY OTHERS, UNLESS NOTED OTHERWISE.

0 50' 100'
SCALE: 1" = 50'

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PREPARED BY:

STATE OF MISSOURI
MARK ALLEN BREUER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

SCHLAGEL & ASSOCIATES, P.A.

REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

DESCRIPTION	REVISION DATE

DRAWN BY: TRC
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PROJ. NUMBER: 22-007

UTILITY PLAN

SHEET
C500

FUTURE BLACKWELL RESERVE

SE GRIFFIN STREET (PUBLIC)

SE 6TH TERRACE (PRIVATE)

WINDFLOWER LANE (PRIVATE)

CURB & GUTTER - PAINTED
WITH 6" WIDE RED STRIPE AND
4" HIGH - WHITE "FIRE LANE" LETTERS
@ 15' O.C. (MAX.)

REUNION AT BLACKWELL

LOT 1

LOT 3

TRACT A

TRACT B

WINDFLOWER COURT (PRIVATE)

RILEY PLACE (PUBLIC)

EXIST. SHENANDOAH DRIVE (PUBLIC)

RESIDENCES AT BLACKWELL

PROPERTY LINE

S. LINE SE 1/4, SEC. 2-47N-R31W

N. LINE, NE 1/4, SEC. 11-47N-R31W

SCALE: 1" = 50'

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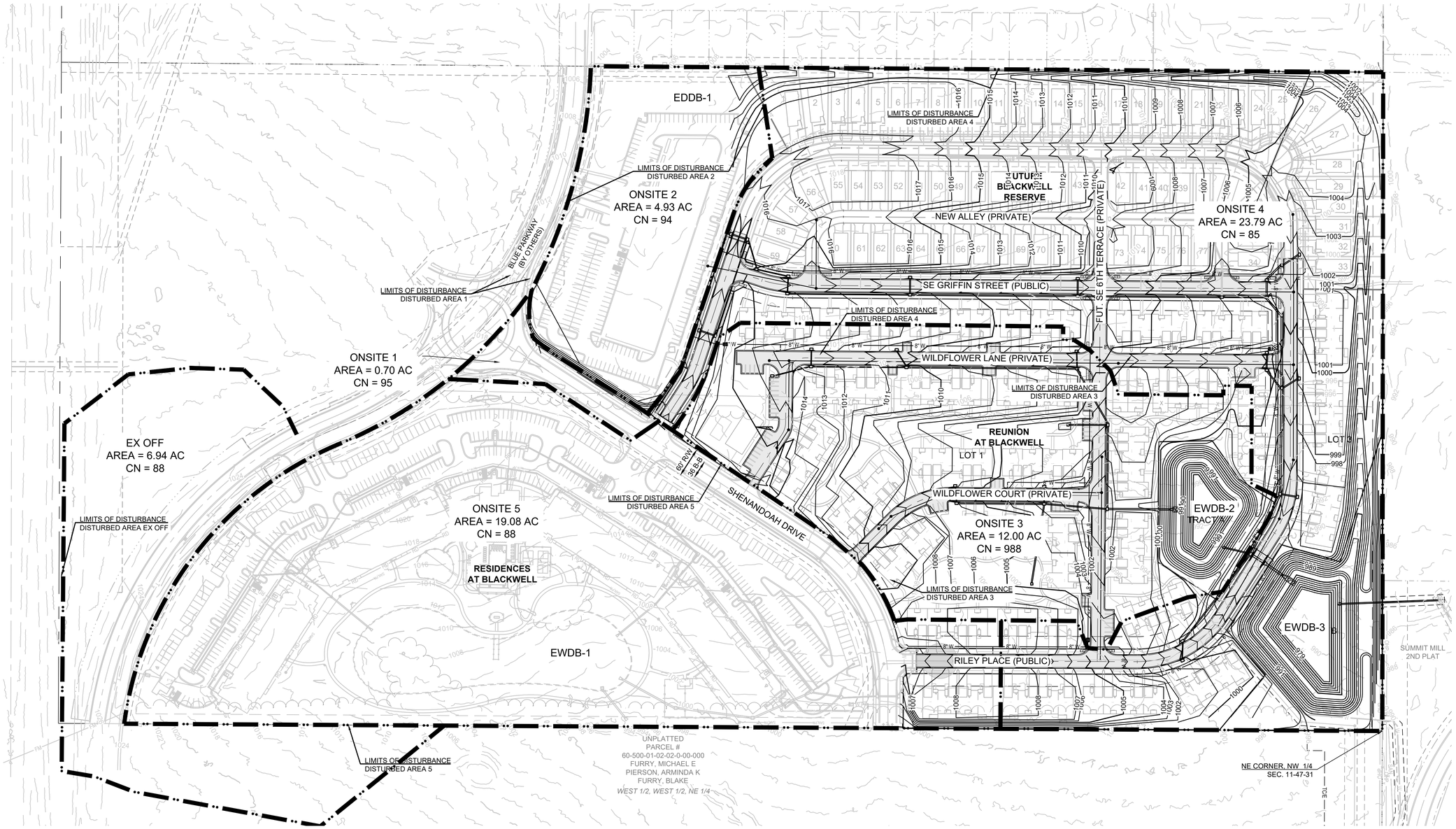
REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

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PROJ. NUMBER: 22-067

FIRE PROTECTION PLAN

SHEET
C501



GRADING LEGEND:

- 1000 — EXISTING CONTOUR
- 1000 — PROPOSED CONTOUR (FINISHED GRADE)

NOTES:

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

MO GRS BENCHMARK:

STATION NAME - JA-90

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N:996874.9690, E:2840937.1365

ELEV. 1005.719

0 100' 200'
SCALE: 1" = 100'

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PREPARED BY:

STATE OF MISSOURI
MARK ALLEN BREUER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

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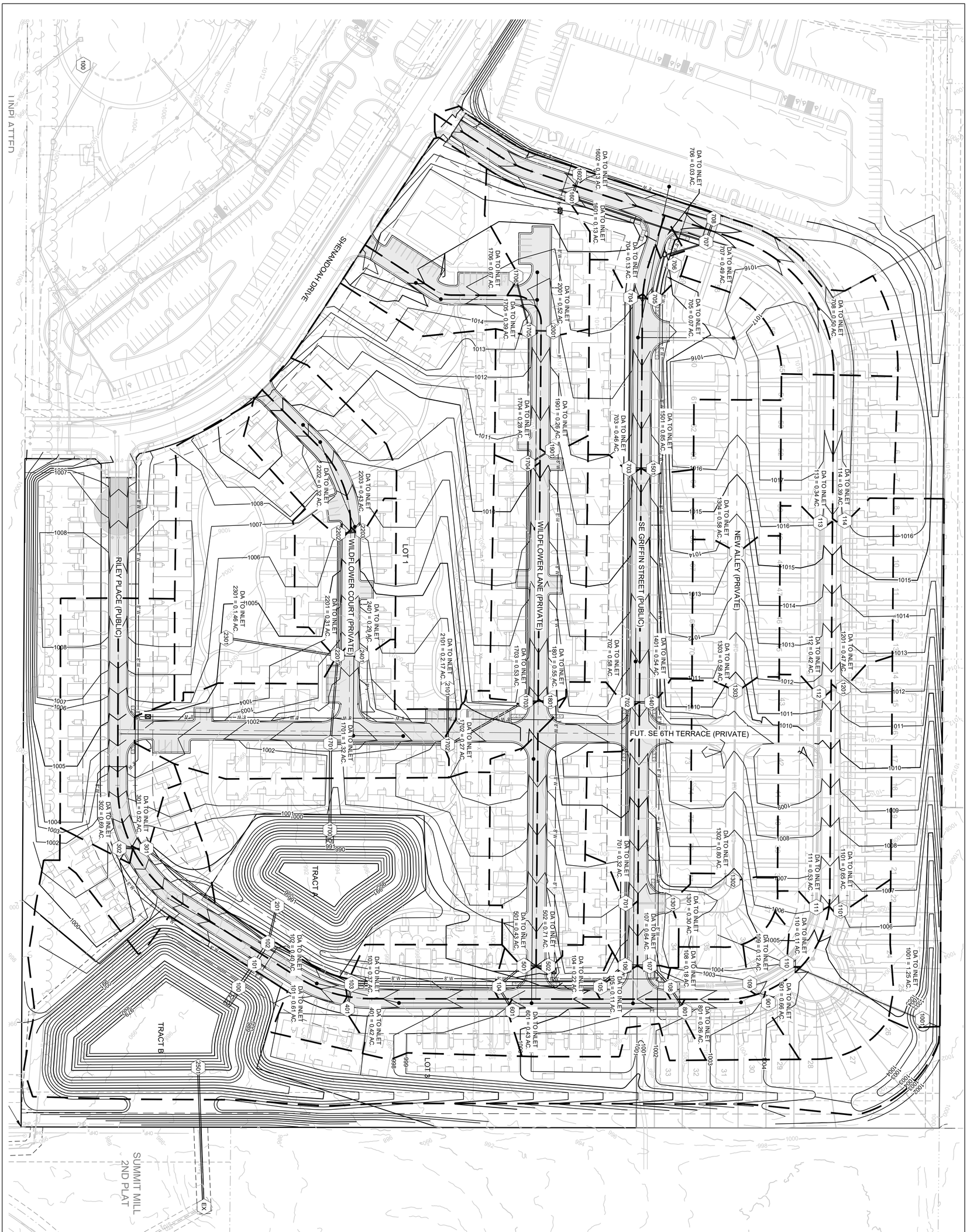
REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

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DRAWN BY: ####
CHECKED BY: ####
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22-097

OVERALL DRAINAGE MAP

SHEET
C601



SHEET	DRAWN BY:	REVISION DATE	DESCRIPTION
C602	####	1	
REUNION - DRAINAGE MAP	CHECKED BY:	2	
	####	3	
	DATE PREPARED:	4	
	03/03/2023	5	
	PROJ. NUMBER:	6	
	22-097	7	

REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

SCHLAGEL & ASSOCIATES, P.A.

PREPARED BY:

MARK ALLEN BREUER
NUMBER PE-2003007758
STATE OF MISSOURI
PROFESSIONAL ENGINEER
3/3/2023

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Design Storm: 10
"K" Value: 1.00
"F" Factor: 1.00

Runoff Calculations															Pipe Properties															
Inlet #	Area (acres)	"C" Value	Cumul. Area (acres)	Cumul. CxA	Tc	Intensity	Runoff To Inlet	Cumul. Runoff	Pipe Cap.	Pipe Vel.	Up Piped Inlet 1	Up Piped Inlet 2	Up Area (acres)	Up CxA	Up Inlet	Down Inlet	Pipe Type	"n" Value	Pipe Size	Length	Slope %	Drop In Inlet	FL Up	FL Down	Inlet Top	HGL Elev.
LINE 100																							DS TAILWATER @ STR #100			986.00
101	0.61	0.66	22.48	14.84	8.6	6.38	2.57	94.63	102.25	10.63			0.00	0.00	101	100	HDPE	0.012	42	40.00	0.88	0.50	985.35	985.00	995.37	989.26
102	0.40	0.66	21.87	14.43	8.6	6.39	1.69	92.25	101.08	10.51	201	301	3.52	2.32	102	101	HDPE	0.012	42	35.00	0.86	0.50	986.15	985.85	995.37	990.16
103	0.37	0.66	17.95	11.85	8.3	6.45	1.57	76.40	87.20	9.06	401		0.42	0.28	103	102	HDPE	0.012	42	133.83	0.64	0.50	987.51	986.65	996.60	991.18
104	0.22	0.66	17.16	11.33	8.0	6.54	0.95	74.08	88.55	9.20	501	601	1.57	1.04	104	103	HDPE	0.012	42	211.67	0.66	0.50	989.41	988.01	998.95	992.78
105	0.11	0.66	15.37	10.14	7.7	6.60	0.48	66.96	70.80	10.02			0.00	0.00	105	104	HDPE	0.012	36	145.31	0.96	0.50	991.30	989.91	1000.55	994.73
106	0.18	0.66	15.26	10.07	7.6	6.62	0.79	66.67	74.74	10.57	701		6.62	4.37	106	105	HDPE	0.012	36	46.74	1.07	0.50	992.30	991.80	1001.44	995.72
107	0.64	0.66	8.46	5.58	6.9	6.80	2.87	37.95	41.21	8.39			0.00	0.00	107	106	HDPE	0.012	30	35.00	0.86	0.50	993.10	992.80	1001.44	996.44
108	0.18	0.66	7.82	5.16	6.9	6.82	0.81	35.20	37.44	7.63	801		0.26	0.17	108	107	HDPE	0.012	30	42.40	0.71	0.50	993.90	993.60	1001.65	997.11
109	0.12	0.66	7.38	4.87	6.6	6.89	0.55	33.55	37.18	7.57	901		0.66	0.44	109	108	HDPE	0.012	30	113.76	0.70	0.50	995.20	994.40	1002.99	998.12
110	0.11	0.66	6.60	4.36	6.5	6.93	0.50	30.17	36.10	7.35	1001		3.69	2.44	110	109	HDPE	0.012	30	60.72	0.66	1.00	996.10	995.70	1004.14	998.62
111	0.53	0.66	2.80	1.85	6.3	6.96	2.44	12.87	19.64	11.12	1101		0.65	0.43	111	110	HDPE	0.012	18	90.66	2.98	0.50	999.80	997.10	1006.03	1001.61
112	0.42	0.66	1.62	1.07	5.6	7.16	1.98	7.65	9.12	7.44	1201		0.47	0.31	112	111	HDPE	0.012	15	306.71	1.70	0.50	1005.52	1000.30	1011.58	1006.96
113	0.34	0.66	0.73	0.48	5.1	7.33	1.64	3.53	8.96	7.30			0.00	0.00	113	112	HDPE	0.012	15	244.59	1.64	0.50	1010.03	1006.02	1015.95	1010.95
114	0.39	0.66	0.39	0.26	5.0	7.35	1.89	1.89	8.34	6.80			0.00	0.00	114	113	HDPE	0.012	15	35.14	1.42	N/A	1011.03	1010.53	1015.99	1011.68
LINE 200																							Drop in Inlet 102			2.00
201	2.31	0.66	2.31	1.52	5.0	7.35	11.21	11.21	17.74	10.04			0.00	0.00	201	102	HDPE	0.012	18	55.64	2.43	N/A	989.51	988.15	994.14	991.16
LINE 300																							Drop in Inlet 102			2.25
301	0.52	0.66	1.21	0.80	5.1	7.32	2.51	5.85	11.63	9.47			0.00	0.00	301	102	HDPE	0.012	15	220.74	2.76	0.50	994.50	988.40	999.81	995.72
302	0.69	0.66	0.69	0.46	5.0	7.35	3.35	3.35	7.92	6.45			0.00	0.00	302	301	HDPE	0.012	15	39.17	1.28	N/A	995.50	995.00	1000.28	996.39
LINE 400																							Drop in Inlet 103			2.25
401	0.42	0.66	0.42	0.28	5.0	7.35	2.04	2.04	13.22	10.77			0.00	0.00	401	103	HDPE	0.012	15	34.98	3.57	N/A	991.01	989.76	996.59	991.68
LINE 500																							Drop in Inlet 104			2.25
501	0.43	0.66	1.14	0.75	5.1	7.33	2.08	5.52	13.96	11.38			0.00	0.00	501	104	HDPE	0.012	15	46.43	3.98	0.50	993.50	991.66	1000.12	994.69
502	0.71	0.66	0.71	0.47	5.0	7.35	3.45	3.45	11.83	9.64			0.00	0.00	502	501	HDPE	0.012	15	35.00	2.86	N/A	995.01	994.00	1000.50	995.91
LINE 600																							Drop in Inlet 104			2.25
601	0.43	0.66	0.43	0.28	5.0	7.35	2.09	2.09	12.38	10.09			0.00	0.00	601	104	HDPE	0.012	15	39.93	3.13	N/A	992.91	991.66	999.16	993.59
LINE 700																							Drop in Inlet 106			1.00
701	0.32	0.66	6.62	4.37	7.6	6.62	1.40	28.92	30.61	9.74	1301		2.26	1.49	701	106	HDPE	0.012	24	89.67	1.56	0.50	994.70	993.30	1002.90	997.63
702	0.58	0.66	4.04	2.67	7.1	6.74	2.58	17.98	30.61	9.74	1401		0.54	0.36	702	701	HDPE	0.012	24	288.09	1.56	0.50	999.69	995.20	1007.44	1001.60
703	0.46	0.66	2.92	1.93	6.4	6.93	2.10	13.36	14.03	7.94	1501		0.85	0.56	703	702	HDPE	0.012	18	335.06	1.52	0.50	1005.29	1000.19	1011.51	1007.14
704	0.26	0.66	1.61	1.06	5.7	7.16	1.23	7.60	9.17	5.19			0.00	0.00	704	703	HDPE	0.012	18	245.08	0.65	0.50	1007.38	1005.79	1014.19	1008.70
705	0.07	0.66	1.35	0.89	5.5	7.19	0.33	6.41	8.59	4.86			0.00	0.00	705	704	HDPE	0.012	18	35.04	0.57	0.50	1008.08	1007.88	1014.20	1009.27
706	0.03	0.66	1.28	0.84	5.3	7.25	0.14	6.13	6.71	5.47			0.00	0.00	706	705	HDPE	0.012	15	65.36	0.92	0.50	1009.18	1008.58	1015.19	1010.50
707	0.49	0.66	1.25	0.83	5.1	7.31	2.36	6.03	6.30	5.13	1601		0.26	0.17	707	706	HDPE	0.012	15	61.70	0.81	0.50	1010.18	1009.68	1015.19	1011.43
708	0.50	0.66	0.50	0.33	5.0	7.35	2.43	2.43	5.28	4.31			0.00	0.00	708	707	HDPE	0.012	15	35.00	0.57	N/A	1010.88	1010.68	1015.19	1011.63
LINE 800																							Drop in Inlet 108			1.25
801	0.26	0.66	0.26	0.17	5.0	7.35	1.26	1.26	9.49	7.74			0.00	0.00	801	108	HDPE	0.012	15	40.76	1.84	N/A	995.90	995.15	1001.88	997.13
LINE 900																							Drop in Inlet 109			1.25
901	0.66	0.66	0.66	0.44	5.0	7.35	3.20	3.20	11.26	9.18			0.00	0.00	901	109	HDPE	0.012	15	38.65	2.59	N/A	997.45	996.45	1003.21	998.32
LINE 1000																							Drop in Inlet 110			0.50
1001	3.69	0.66	3.69	2.44	5.0	7.35	17.91	17.91	20.06	6.39			0.00	0.00	1001	110	HDPE	0.012	24	210.17	0.67	N/A	998.01	996.60	1002.00	999.91
LINE 1100																							Drop in Inlet 111			0.50
1101	0.65	0.66	0.65	0.43	5.0	7.35	3.15	3.15	9.90	8.06			0.00	0.00	1101	111	HDPE	0.012	15	35.07	2.00	N/A	1001.00	1000.30	1006.02	1001.87
LINE 1200																							Drop in Inlet 112			0.50
1201	0.47	0.66	0.47	0.31	5.0	7.35	2.28	2.28	11.69	9.53			0.00	0.00	1201	112	HDPE	0.012	15	35.84	2.79	N/A	1007.02	1006.02	1011.71	1007.74
LINE 1300																							Drop in Inlet 701			0.50
1301	0.30	0.66	2.26	1.49	6.2	7.01	1.39	10.45	12.36	7.00			0.00	0.00	1301	701	HDPE	0.012	18	67.73	1.18	0.50	996.00	995.20	1002.83	998.47
1302	0.80	0.66	1.96	1.29	6.0	7.05	3.72	9.12	12.64	10.30			0.00	0.00	1302	1301	HDPE	0.012	15	92.02	3.26	0.50	999.50	996.50	1004.68	1001.12
1303	0.58	0.66	1.16	0.77	5.4	7.22	2.76	5.53	9.49	7.74			0.00	0.00	1303	1302	HDPE	0.012	15	271.61	1.84	0.50	1005.00	1000.00	1009.51	1006.19
1304	0.58	0.66	0.58	0.38	5.0	7.35	2.81	2.81	9.26	7.54			0.00	0.00	1304	1303	HDPE	0.012	15	200.00	1.75	N/A	1009.00	1005.50	1013.05	1009.81
LINE 1400																							Drop in Inlet 702			0.75
1401	0.54	0.66	0.54	0.36	5.0	7.35	2.62	2.62	16.94	13.80			0.00	0.00	1401	702	HDPE	0.012	15	35.00	5.86	N/A	1002.50	1000.44	1007.43	1003.27
LINE 1500																							Drop in Inlet 703			0.50
1501	0.85	0.66	0.85	0.56	5.0	7.35	4.13	4.13	9.90	8.06			0.00	0.00	1501	703	HDPE	0.012	15	35.00	2.00	N/A	1006.49	1005.79	1011.51	1007.49
LINE 1600																							Drop in Inlet 707			0.50
1601	0.13	0.66	0.26	0.17	5.1	7.31	0.63	1.25	5.60	4.56			0.00	0.00	1601	707	HDPE	0.012	15	182.64	0.64	0.50	1011.85	1010.68	1017.15	1012.37
1602	0.13	0.66	0.13	0.09	5.0	7.35	0.63	0.63	5.28	4.31			0.00	0.00	1602	1601	HDPE	0.012	15	35.00	0.57	N/A	1012.55	1012.35	1017.15	1012.91
LINE 1700																							DS TAILWATER @ STR #1700			992.00
1701	1.32	0.66	9.77	6.45	7.2	6.73	5.86	43.40	48.88	9.96	2201		2.81	1.85	1701	1700	HDPE	0.012	30	124.08	1.21	0.50	994.50	993.00	1000.54	997.40
1702	0.27	0.66	5.64	3.72	6.9	6.82	1.21	25.38	26.73	8.51	2101		2.17	1.43	1702	1701	HDPE	0.012	24	167.90	1.19	0.50	997.00	995.00	1003.40	999.70
1703	0.53	0.66	3.20	2.11	6.6	6.88	2.41	14.53	15.89	8.99	1801		0.55	0.36	1703	1702	HDPE	0.012	18	128.04	1.95	0.50	1000.00	997.50	1006.01	1002.32
1704	0.28	0.66	2.12	1.40	5.8	7.12	1.32	9.97	11.55	6.54	1901		0.26	0.17	1704	1703	HDPE	0.012	18	341.08	1.03	0.50	1004.01	1000.50	1010.39	1005.55
1705	0.39	0.66	1.58	1.04	5.2	7.29	1.88	7.60	10.11	5.72	2001		0.52	0.34	1705	1704	HDPE	0.012	18	190.50	0.79	0.50	1006.01	1004.51	1012.67	1007.33
1706	0.67	0.66	0.67	0.44	5.0	7.35	3.25	3.25	7.82	6.38			0.00	0.00	1706	1705	HDPE	0.012	15	79.90	1.25	N/A	1007.51	1006.51	1013.49	1008.39
LINE 1800																							Drop in Inlet 1703			0.50
1801	0.55	0.66	0.55	0.36	5.0	7.35	2.67	2.67	8.37	6.82			0.00	0.00	1801	1703	HDPE	0.012	15	35.01	1.43	N/A	1001.00	1000.50	1006.03	1002.41
LINE 1900																							Drop in Inlet 1704			0.50
1901	0.26	0.66	0.26	0.17	5.0	7.35	1.26	1.26	7.79	6.35			0.00	0.00	1901	1704	HDPE	0.012	15	40.17	1.24	N/A	1005.01	1004.51	1010.62	1005.53
LINE 2000																							Drop in Inlet 1705			0.50
2001	0.52	0.66	0.52	0.34	5.0	7.35	2.52	2.52	8.37	6.82			0.00	0.00	2001	1705	HDPE	0.012	15	35.01	1.43	N/A	1007.01	1006.51	1012.57	1007.78
LINE 2100																							Drop in Inlet 1702			0.50
2101	2.17	0.66	2.17	1.43	5.0	7.35	10.53	10.53	15.60	8.83			0.00	0.00	2101	1702	HDPE	0.012	18	79.65	1.88	N/A	999.00	997.50	1003.00	1000.59
LINE 2200																							Drop in Inlet 1701			1.00
2201	0.31	0.66	2.81	1.85	5.5	7.20	1.47	13.35	14.30	8.09	2301	2401	1.75	1.16	2201	1701	HDPE	0.012	18	126.53	1.58	0.50	997.50	995.50	1002.70	999.59
2202	0.32	0.66	0.75	0.50	5.1	7.33	1.55	3.63	8.37	6.82			0.00	0.00	2202	2201	HDPE	0.012	15	174.89	1.43	0.50	1000.50	998.00	1006.08	1001.43
2203	0.43	0.66	0.43	0.28	5.0	7.35	2.09	2.09	8.34	6.80			0.00	0.00	2203	2202	HDPE	0.012	15	35.09	1.42	N/A	1001.50	1001.00	1006.14	1002.19
LINE 2300																							Drop in Inlet 2201			0.50
2301	1.46	0.66	1.46	0.96	5.0	7.35	7.09	7.09	8.71	7.10			0.00	0.00	2301	2201	HDPE	0.012	15	161.57	1.55	N/A	1000.50	998.00	1004.89	1001.88
LINE 2400																							Drop in Inlet 2201			0.50
2401	0.29	0.66	0.29	0.19	5.0	7.35	1.41	1.41	8.37	6.82			0.00	0.00	2401	2201	HDPE	0.012	15	35.00	1.43	N/A	998.50	998.00	1002.70	999.61

Design Storm: 100
"K" Value: 1.25
"F" Factor: 1.00

Runoff Calculations															Pipe Properties															
Inlet #	Area (acres)	"C" Value	Cumul. Area (acres)	Cumul. CxA	Tc	Intensity	Runoff To Inlet	Cumul. Runoff	Pipe Cap.	Pipe Vel.	Up Piped Inlet 1	Up Piped Inlet 2	Up Area (acres)	Up CxA	Up Inlet	Down Inlet	Pipe Type	"n" Value	Pipe Size	Length	Slope %	Drop In Inlet	FL Up	FL Down	Inlet Top	HGL Elev.
LINE 100																							DS TAILWATER @ STR #100			986.00
101	0.61	0.66	22.48	14.84	8.6	9.00	4.53	166.95	102.25	10.63			0.00	0.00	101	100	HDPE	0.012	42	40.00	0.88	0.50	985.35	985.00	995.37	991.78
102	0.40	0.66	21.87	14.43	8.6	9.02	2.98	162.74	101.08	10.51	201	301	3.52	2.32	102	101	HDPE	0.012	42	35.00	0.86	0.50	986.15	985.85	995.37	994.78
103	0.37	0.66	17.95	11.85	8.3	9.10	2.78	134.74	87.20	9.06	401		0.42	0.28	103	102	HDPE	0.012	42	133.83	0.64	0.50	987.51	986.65	996.60	998.35
104	0.22	0.66	17.16	11.33	8.0	9.22	1.67	130.58	88.55	9.20	501	601	1.57	1.04	104	103	HDPE	0.012	42	211.67	0.66	0.50	989.41	988.01	998.95	1001.07
105	0.11	0.66	15.37	10.14	7.7	9.31	0.84	117.99	70.80	10.02			0.00	0.00	105	104	HDPE	0.012	36	145.31	0.96	0.50	991.30	989.91	1000.55	1004.99
106	0.18	0.66	15.26	10.07	7.6	9.33	1.39	117.46	74.74	10.57	701		6.62	4.37	106	105	HDPE	0.012	36	46.74	1.07	0.50	992.30	991.80	1001.44	1003.93
107	0.64	0.66	8.46	5.58	6.9	9.57	5.05	66.80	41.21	8.39			0.00	0.00	107	106	HDPE	0.012	30	35.00	0.86	0.50	993.10	992.80	1001.44	1003.67
108	0.18	0.66	7.82	5.16	6.9	9.60	1.43	61.96	37.44	7.63	801		0.26	0.17	108	107	HDPE	0.012	30	42.40	0.71	0.50	993.90	993.60	1001.65	1003.50
109	0.12	0.66	7.38	4.87	6.6	9.69	0.96	59.03	37.18	7.57	901		0.66	0.44	109	108	HDPE	0.012	30	113.76	0.70	0.50	995.20	994.40	1002.99	1004.78
110	0.11	0.66	6.60	4.36	6.5	9.75	0.88	53.07	36.10	7.35	1001		3.69	2.44	110	109	HDPE	0.012	30	60.72	0.66	1.00	996.10	995.70	1004.14	1004.77
111	0.53	0.66	2.80	1.85	6.3	9.80	4.28	22.63	19.64	11.12	1101		0.65	0.43	111	110	HDPE	0.012	18	90.66	2.98	0.50	999.80	997.10	1006.03	1009.00
112	0.42	0.66	1.62	1.07	5.6	10.06	3.49	13.45	9.12	7.44	1201		0.47	0.31	112	111	HDPE	0.012	15	306.71	1.70	0.50	1005.52	1000.30	1011.58	1018.29
113	0.34	0.66	0.73	0.48	5.1	10.29	2.89	6.20	8.96	7.30			0.00	0.00	113	112	HDPE	0.012	15	244.59	1.64	0.50	1010.03	1006.02	1015.95	1013.70
114	0.39	0.66	0.39	0.26	5.0	10.32	3.32	3.32	8.34	6.80			0.00	0.00	114	113	HDPE	0.012	15	35.14	1.42	N/A	1011.03	1010.53	1015.99	1013.84
LINE 200																							Drop in Inlet 102			2.00
201	2.31	0.66	2.31	1.52	5.0	10.32	19.67	19.67	17.74	10.04			0.00	0.00	201	102	HDPE	0.012	18	55.64	2.43	N/A	989.51	988.15	994.14	997.41
LINE 300																							Drop in Inlet 102			2.25
301	0.52	0.66	1.21	0.80	5.1	10.28	4.41	10.26	11.63	9.47			0.00	0.00	301	102	HDPE	0.012	15	220.74	2.76	0.50	994.50	988.40	999.81	1000.07
302	0.69	0.66	0.69	0.46	5.0	10.32	5.88	5.88	7.92	6.45			0.00	0.00	302	301	HDPE	0.012	15	39.17	1.28	N/A	995.50	995.00	1000.28	1000.26
LINE 400																							Drop in Inlet 103			2.25
401	0.42	0.66	0.42	0.28	5.0	10.32	3.58	3.58	13.22	10.77			0.00	0.00	401	103	HDPE	0.012	15	34.98	3.57	N/A	991.01	989.76	996.59	996.76
LINE 500																							Drop in Inlet 104			2.25
501	0.43	0.66	1.14	0.75	5.1	10.30	3.65	9.68	13.96	11.38			0.00	0.00	501	104	HDPE	0.012	15	46.43	3.98	0.50	993.50	991.66	1000.12	1000.33
502	0.71	0.66	0.71	0.47	5.0	10.32	6.05	6.05	11.83	9.64			0.00	0.00	502	501	HDPE	0.012	15	35.00	2.86	N/A	995.01	994.00	1000.50	1000.57
LINE 600																							Drop in Inlet 104			2.25
601	0.43	0.66	0.43	0.28	5.0	10.32	3.66	3.66	12.38	10.09			0.00	0.00	601	104	HDPE	0.012	15	39.93	3.13	N/A	992.91	991.66	999.16	999.13
LINE 700																							Drop in Inlet 106			1.00
701	0.32	0.66	6.62	4.37	7.6	9.33	2.46	50.96	30.61	9.74	1301		2.26	1.49	701	106	HDPE	0.012	24	89.67	1.56	0.50	994.70	993.30	1002.90	1007.36
702	0.58	0.66	4.04	2.67	7.1	9.50	4.55	31.67	30.61	9.74	1401		0.54	0.36	702	701	HDPE	0.012	24	288.09	1.56	0.50	999.69	995.20	1007.44	1008.50
703	0.46	0.66	2.92	1.93	6.4	9.76	3.70	23.50	14.03	7.94	1501		0.85	0.56	703	702	HDPE	0.012	18	335.06	1.52	0.50	1005.29	1000.19	1011.51	1023.11
704	0.26	0.66	1.61	1.06	5.7	10.06	2.16	13.36	9.17	5.19			0.00	0.00	704	703	HDPE	0.012	18	245.08	0.65	0.50	1007.38	1005.79	1014.19	1015.33
705	0.07	0.66	1.35	0.89	5.5	10.10	0.58	11.25	8.59	4.86			0.00	0.00	705	704	HDPE	0.012	18	35.04	0.57	0.50	1008.08	1007.88	1014.20	1014.85
706	0.03	0.66	1.28	0.84	5.3	10.18	0.25	10.75	6.71	5.47			0.00	0.00	706	705	HDPE	0.012	15	65.36	0.92	0.50	1009.18	1008.58	1015.19	1016.34
707	0.49	0.66	1.25	0.83	5.1	10.27	4.15	10.59	6.30	5.13	1601		0.26	0.17	707	706	HDPE	0.012	15	61.70	0.81	0.50	1010.18	1009.68	1015.19	1017.18
708	0.50	0.66	0.50	0.33	5.0	10.32	4.26	4.26	5.28	4.31			0.00	0.00	708	707	HDPE	0.012	15	35.00	0.57	N/A	1010.88	1010.68	1015.19	1015.42
LINE 800																							Drop in Inlet 108			1.25
801	0.26	0.66	0.26	0.17	5.0	10.32	2.21	2.21	9.49	7.74			0.00	0.00	801	108	HDPE	0.012	15	40.76	1.84	N/A	995.90	995.15	1001.88	1001.72
LINE 900																							Drop in Inlet 109			1.25
901	0.66	0.66	0.66	0.44	5.0	10.32	5.62	5.62	11.26	9.18			0.00	0.00	901	109	HDPE	0.012	15	38.65	2.59	N/A	997.45	996.45	1003.21	1003.40
LINE 1000																							Drop in Inlet 110			0.50
1001	3.69	0.66	3.69	2.44	5.0	10.32	31.42	31.42	20.06	6.39			0.00	0.00	1001	110	HDPE	0.012	24	210.17	0.67	N/A	998.01	996.60	1002.00	1008.37
LINE 1100																							Drop in Inlet 111			0.50
1101	0.65	0.66	0.65	0.43	5.0	10.32	5.54	5.54	9.90	8.06			0.00	0.00	1101	111	HDPE	0.012	15	35.07	2.00	N/A	1001.00	1000.30	1006.02	1006.41
LINE 1200																							Drop in Inlet 112			0.50
1201	0.47	0.66	0.47	0.31	5.0

RUNOFF CALCULATIONS												INLET DESIGN							GUTTER DESIGN			
INLET #	COMPOSITE "C"	AREA	INLET Tc	INTENSITY	RUNOFF	UPSTREAM INLET	UPSTREAM INLET	UPSTREAM INLET	UPSTREAM INLET	BYPASS FROM UPSTREAM INLET	TOTAL RUNOFF	STREET GRADE	STREET CROSS SLOPE	CURB TYPE	INLET LENGTH	EFFECTIVE LENGTH 80% CAP	INLET INTERCEPTION	BYPASS TO DOWNSTREAM INLET	STREET GRADE	STREET CROSS SLOPE	DEPTH AT CURB	SPREAD OF FLOW
LINE 1																						
101	0.66	0.61	5	7.35	2.96	302	401			1.31	4.27	SUMP	2.00	A	6	4.8	13.44	0.00	SUMP	2.00	< 0.21	**< 12**
102	0.66	0.40	5	7.35	1.94	103	301			0.82	2.76	SUMP	2.00	A	6	4.8	13.44	0.00	SUMP	2.00	< 0.21	**< 12**
103	0.66	0.37	5	7.35	1.79	104				0.23	2.03	1.20	2.00	A	6	6	1.81	0.22	1.20	2.00	0.18	**9.27**
104	0.66	0.22	5	7.35	1.07	501	502			1.02	2.08	1.20	2.00	A	6	6	1.85	0.23	1.20	2.00	0.18	**9.36**
105	0.66	0.11	5	7.35	0.53	106	107	108		0.86	1.39	1.20	2.00	A	6	6	1.29	0.10	1.20	2.00	0.15	**8.11**
106	0.66	0.18	5	7.35	0.87	701				0.12	1.00	1.20	2.00	A	6	6	0.95	0.05	1.20	2.00	0.13	**7.22**
107	0.66	0.64	5	7.35	3.10	1401				0.68	3.78	1.20	2.00	A	6	6	3.00	0.77	1.20	2.00	0.22	**11.57**
108	0.66	0.18	5	7.35	0.87	109				0.02	0.89	1.20	2.00	A	6	6	0.85	0.03	1.20	2.00	0.13	**6.93**
109	0.66	0.12	5	7.35	0.58	110				0.08	0.66	1.21	2.00	A	6	6	0.64	0.02	1.21	2.00	0.11	**6.25**
110	0.66	0.11	5	7.35	0.53	111				0.58	1.11	1.66	2.00	A	6	6	1.03	0.08	1.66	2.00	0.13	**7.08**
111	0.66	0.53	5	7.35	2.57	112				0.34	2.91	1.66	2.00	A	6	6	2.33	0.58	1.66	2.00	0.19	**9.94**
112	0.66	0.42	5	7.35	2.04	113				0.18	2.22	1.66	2.00	A	6	6	1.88	0.34	1.66	2.00	0.17	**9.03**
113	0.66	0.34	5	7.35	1.65					0.00	1.65	1.66	2.00	A	6	6	1.47	0.18	1.66	2.00	0.15	**8.13**
114	0.66	0.39	5	7.35	1.89					0.00	1.89	1.64	2.00	A	6	6	1.65	0.24	1.64	2.00	0.16	**8.55**
LINE 3																						
301	0.66	0.52	5	7.35	2.52					0.00	2.52	2.70	2.00	A	6	6	1.92	0.60	2.70	2.00	0.16	**8.67**
302	0.66	0.69	5	7.35	3.35					0.00	3.35	2.70	2.00	A	6	6	2.33	1.02	2.70	2.00	0.18	**9.59**
LINE 4																						
401	0.66	0.42	5	7.35	2.04	601				0.30	2.34	1.20	2.00	A	6	6	2.04	0.30	1.20	2.00	0.18	**9.75**
LINE 5																						
501	0.66	0.43	5	7.35	2.09					0.00	2.09	1.09	2.00	A	6	6	1.87	0.22	1.09	2.00	0.18	**9.52**
502	0.66	0.71	5	7.35	3.44	702				0.52	3.97	1.09	2.00	A	6	6	3.17	0.80	1.09	2.00	0.23	**11.98**
LINE 6																						
601	0.66	0.43	5	7.35	2.09	801				0.27	2.35	1.20	2.00	A	6	6	2.05	0.30	1.20	2.00	0.19	**9.77**
LINE 7																						
701	0.66	0.32	5	7.35	1.55					0.00	1.55	1.20	2.00	A	6	6	1.43	0.12	1.20	2.00	0.16	**8.43**
702	0.66	0.58	5	7.35	2.81	703				0.29	3.10	1.19	2.00	A	6	6	2.58	0.52	1.19	2.00	0.21	**10.80**
703	0.66	0.46	5	7.35	2.23	704				0.08	2.31	1.19	2.00	A	6	6	2.02	0.29	1.19	2.00	0.18	**9.72**
704	0.66	0.26	5	7.35	1.26	1601				0.02	1.28	1.19	2.00	A	6	6	1.20	0.08	1.19	2.00	0.15	**7.88**
705	0.66	0.07	5	7.35	0.34					0.00	0.34	1.19	2.00	A	6	6	0.34	0.00	1.19	2.00	0.09	**4.99**
706	0.66	0.03	5	7.35	0.15					0.00	0.15	1.19	2.00	A	6	6	0.15	0.00	1.19	2.00	0.07	**3.77**
707	0.66	0.49	5	7.35	2.38	1601				0.02	2.39	SUMP	2.00	A	6	4.8	13.44	0.00	SUMP	2.00	< 0.21	**< 12**
707	0.66	0.50	5	7.35	2.43					0.00	2.43	SUMP	2.00	A	6	4.8	13.44	0.00	SUMP	2.00	< 0.21	**< 12**
LINE 8																						
801	0.66	0.26	5	7.35	1.26	901				0.95	2.21	1.20	2.00	A	6	6	1.95	0.27	1.20	2.00	0.18	**9.56**
LINE 9																						
901	0.66	0.66	5	7.35	3.20	1101				0.86	4.07	1.33	2.00	A	6	6	3.11	0.95	1.33	2.00	0.22	**11.66**
LINE 11																						
1101	0.66	0.65	5	7.35	3.15	1201				0.44	3.59	1.66	2.00	A	6	6	2.73	0.86	1.66	2.00	0.20	**10.72**
LINE 12																						
1201	0.66	0.47	5	7.35	2.28	114				0.24	2.52	1.66	2.00	A	6	6	2.09	0.44	1.66	2.00	0.18	**9.45**
LINE 14																						
1401	0.66	0.54	5	7.35	2.62	1501				0.91	3.53	1.19	2.00	A	6	6	2.86	0.68	1.19	2.00	0.22	**11.31**
LINE 15																						
1501	0.66	0.85	5	7.35	4.12	705				0.00	4.13	1.19	2.00	A	6	6	3.21	0.91	1.19	2.00	0.23	**11.96**
LINE 16																						
1601	0.66	0.13	5	7.35	0.63					0.00	0.63	1.33	2.00	A	6	6	0.61	0.02	1.33	2.00	0.11	**6.05**
1602	0.66	0.13	5	7.35	0.63					0.00	0.63	1.33	2.00	A	7	7	0.62	0.01	1.33	2.00	0.11	**6.05**
LINE 17																						
1701	0.66	1.32	5	7.35	6.40	1702	2201	2401		0.16	6.56	SUMP	1.50	A	6	4.8	13.44	0.00	SUMP	1.50	< 0.21	**< 12**
1702	0.66	0.27	5	7.35	1.31	1703	1801			0.43	1.74	1.20	1.50	A	6	6	1.58	0.16	1.20	1.50	0.17	**11.54**
1703	0.66	0.53	5	7.35	2.57	1704				0.14	2.71	1.33	2.00	A	6	6	2.28	0.43	1.33	2.00	0.19	**10.08**
1704	0.66	0.28	5	7.35	1.36	1705				0.21	1.57	1.33	2.00	A	6	6	1.43	0.14	1.33	2.00	0.16	**8.30**
1705	0.66	0.39	5	7.35	1.89	1706				0.00	1.89	1.33	2.00	A	6	6	1.69	0.21	1.33	2.00	0.17	**8.88**
1706	0.66	0.67	5	7.35	3.25					0.00	3.25	SUMP	2.00	B	6	4.8	12.00	0.00	SUMP	2.00	< 0.21	**< 12**
LINE 18																						
1801	0.66	0.55	5	7.35	2.67	1901				0.00	2.67	1.33	2.00	A	6	6	2.25	0.42	1.33	2.00	0.19	**10.03**
LINE 19																						
1901	0.66	0.26	5	7.35	1.26	2001				0.00	1.26	1.33	2.00	A	6	6	1.18	0.09	1.33	2.00	0.14	**7.70**
LINE 20																						
2001	0.66	0.52	5	7.35	2.52					0.00	2.52	1.33	2.00	A	6	6	2.15	0.37	1.33	2.00	0.19	**9.83**
LINE 22																						
2201	0.66	0.31	5	7.35	1.50	2202				0.00	1.50	1.99	2.00	A	6	6	1.33	0.17	1.99	2.00	0.14	**7.63**
2202	0.66	0.32	5	7.35	1.55					0.00	1.55	1.99	2.00	A	6	6	1.37	0.19	1.99	2.00	0.14	**7.71**
2203	0.66	0.43	5	7.35	2.09					0.00	2.09	1.99	2.00	A	6	6	1.75	0.34	1.99	2.00	0.16	**8.56**
LINE 24																						
2401	0.66	0.29	5	7.35	1.41	2203				0.00	1.41	1.99	2.00	A	6	6	1.26	0.15	1.99	2.00	0.14	**7.45**

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PREPARED BY:

STATE OF MISSOURI
MARK ALLEN BREUER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

SCHLAGEL & ASSOCIATES, P.A.

REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

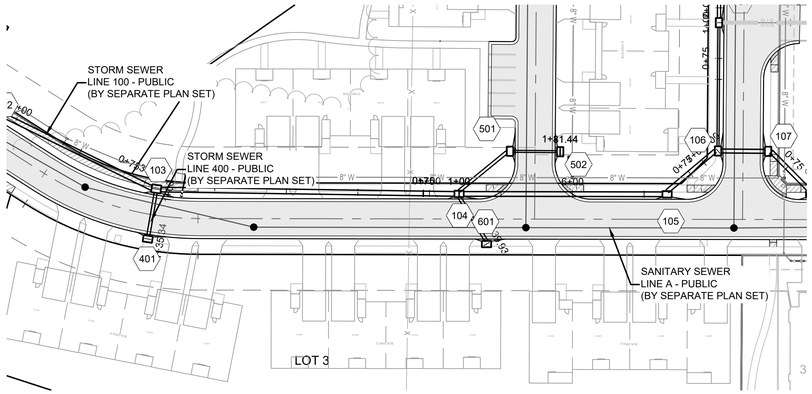
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

DESCRIPTION	REVISION DATE

DRAWN BY: ####
CHECKED BY: ####
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22-007

STORM CALCS

SHEET
C604



MO GRS BENCHMARK:

STATION NAME - JA-90

KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988" LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD.
N:1001052.8503, E:2845604.8272

ELEV. 997.045

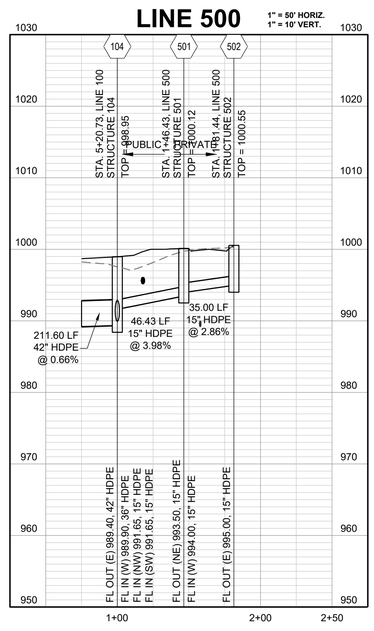
PROJECT BENCHMARK:

"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE
STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH OF THE CENTERLINE OF BLUE PARKWAY.
N:996874.9690, E:2840937.1365

ELEV. 1005.719



SCALE: 1" = 50'



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PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

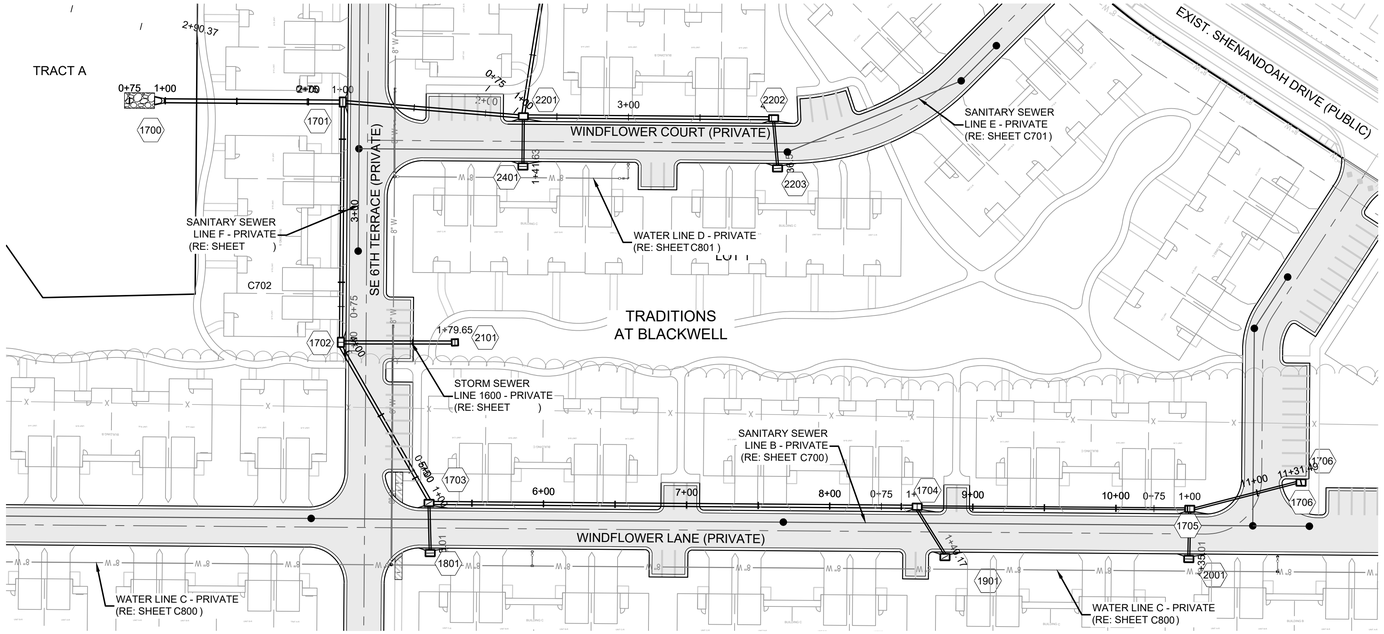
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
1	
2	
3	
4	
5	
6	
7	
8	

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22.067

STORM SEWER
LINE 500

SHEET
C605





SCALE: 1" = 50'

MO GRS BENCHMARK:

STATION NAME - JA-90

KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988" LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD.
N:1001052.8503, E:2845604.8272

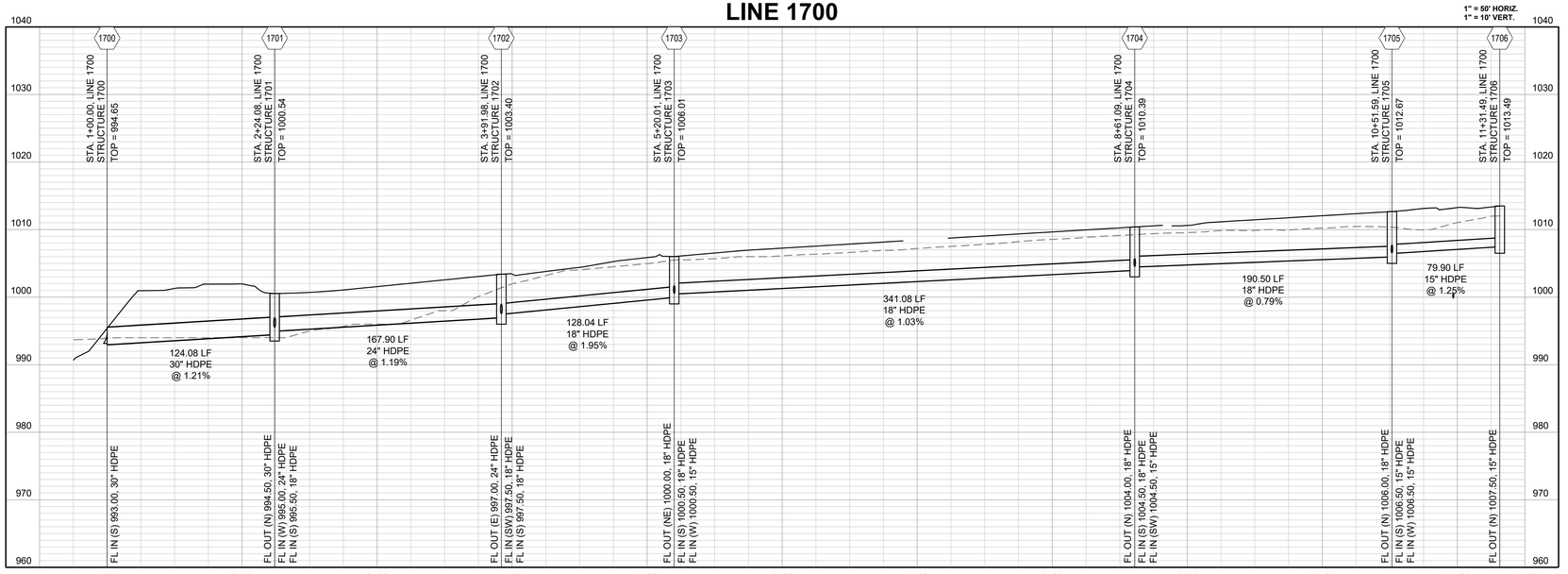
ELEV. 997.045

PROJECT BENCHMARK:

"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE
STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH OF THE CENTERLINE OF BLUE PARKWAY.
N:996874.9690, E:2840937.1365

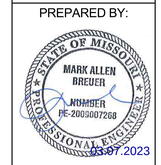
ELEV. 1005.719

LINE 1700



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PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

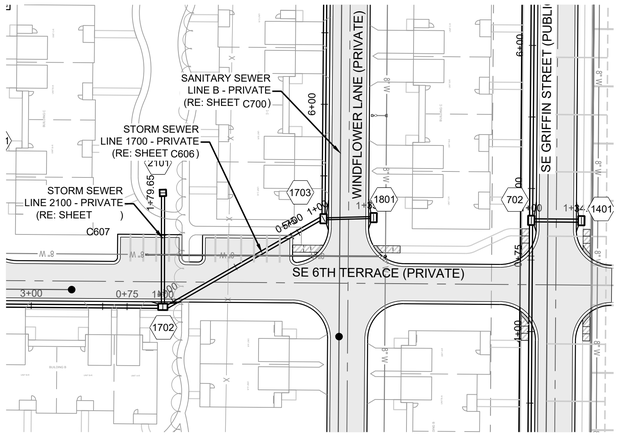
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

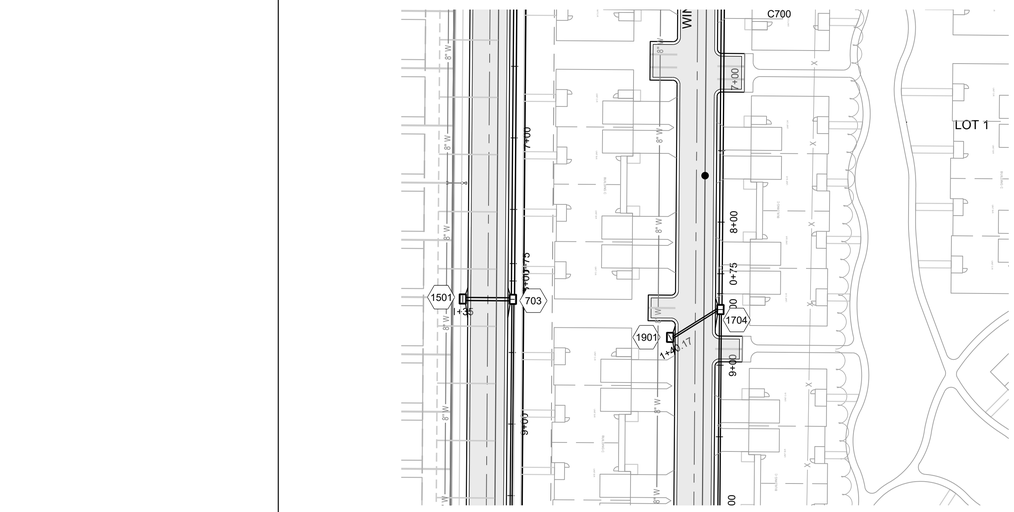
REVISION DATE	DESCRIPTION

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22.067

STORM SEWER LINE 1700

SHEET
C606





MO GRS BENCHMARK:

STATION NAME - JA-90

KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988" LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD.
N:1001052.8503, E:2845604.8272

ELEV. 997.045

PROJECT BENCHMARK:

"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE
STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH OF THE CENTERLINE OF BLUE PARKWAY.
N:996874.9690, E:2840937.1365

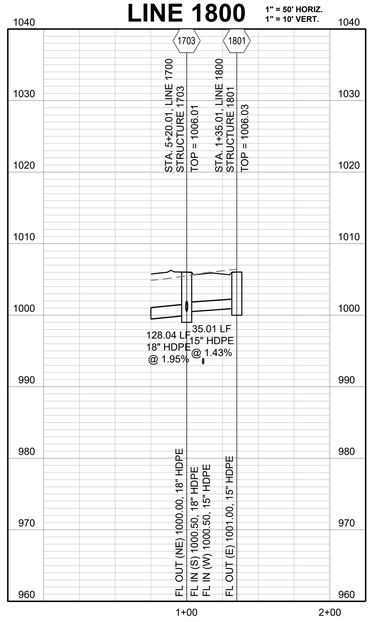
ELEV. 1005.719

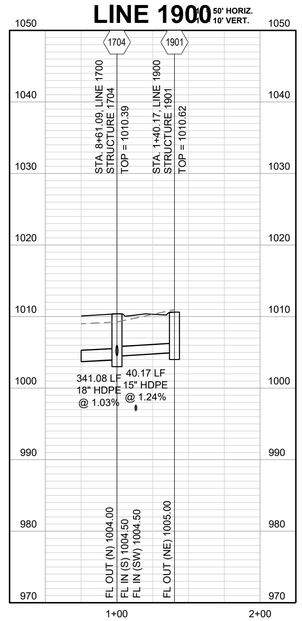


SCALE: 1" = 50'



SCALE: 1" = 50'





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PREPARED BY:

STATE OF MISSOURI
MARK ALLEN BREUER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

SCHLAGEL & ASSOCIATES, P.A.

REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

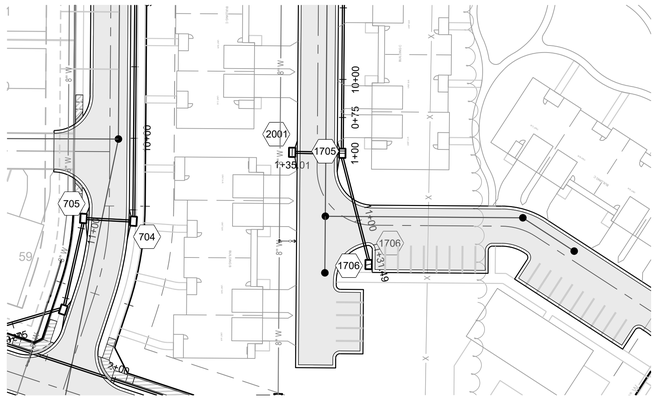
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22.007

STORM SEWER LINES 1800 & 1900

SHEET
C607



0 50' 100'

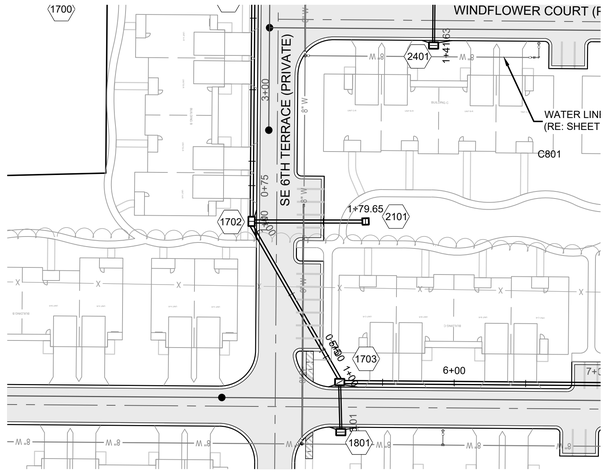
SCALE: 1" = 50'

MO GRS BENCHMARK:

STATION NAME - JA-90

KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988"
LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD
LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD
ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD.
N:1001052.8503, E:2845604.8272

ELEV. 997.045



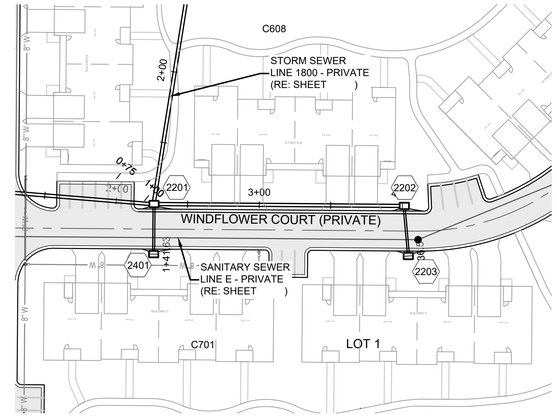
0 50' 100'

SCALE: 1" = 50'

PROJECT BENCHMARK:

"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE
STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE
INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH
OF THE CENTERLINE OF BLUE PARKWAY.
N:996874.9690, E:2840937.1365

ELEV. 1005.719

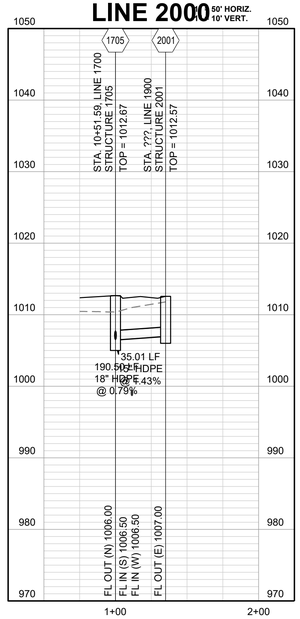


0 50' 100'

SCALE: 1" = 50'

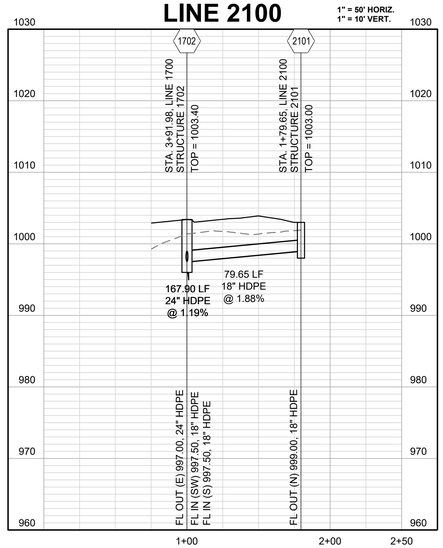
LINE 2000

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



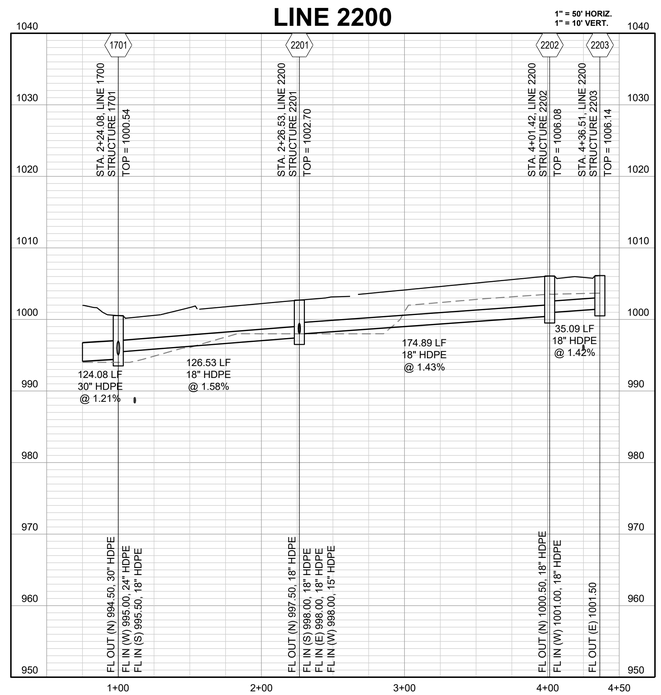
LINE 2100

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



LINE 2200

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



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PREPARED BY:

STATE OF MISSOURI
MARK ALLEN BREUER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

SCHLAGEL & ASSOCIATES, P.A.

REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22.067

STORM SEWER
LINES 2000 - 2200

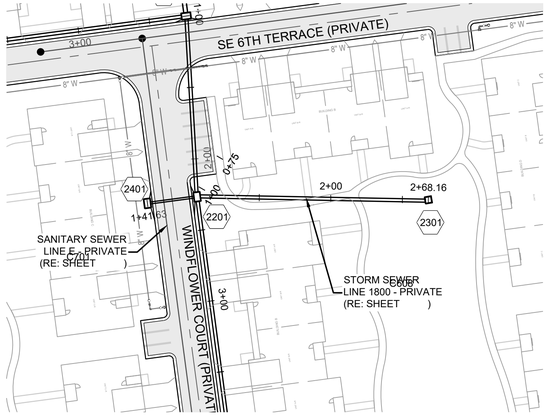
SHEET
C608

MO GRS BENCHMARK:

STATION NAME - JA-90

KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988"
LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD
LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD
ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD.
N:1001052.8503, E:2845604.8272

ELEV. 997.045





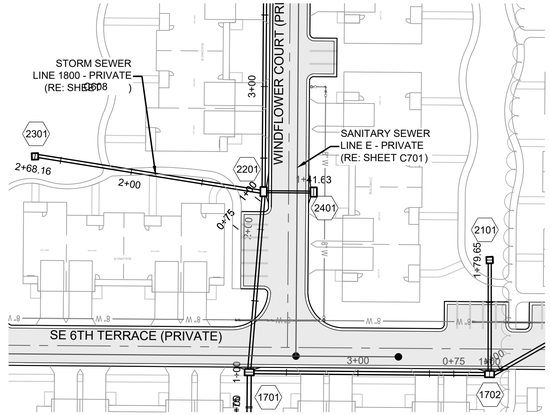
0 50' 100'

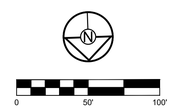
SCALE: 1" = 50'

PROJECT BENCHMARK:

"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE
STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE
INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH
OF THE CENTERLINE OF BLUE PARKWAY.
N:996874.9690, E:2840937.1365

ELEV. 1005.719



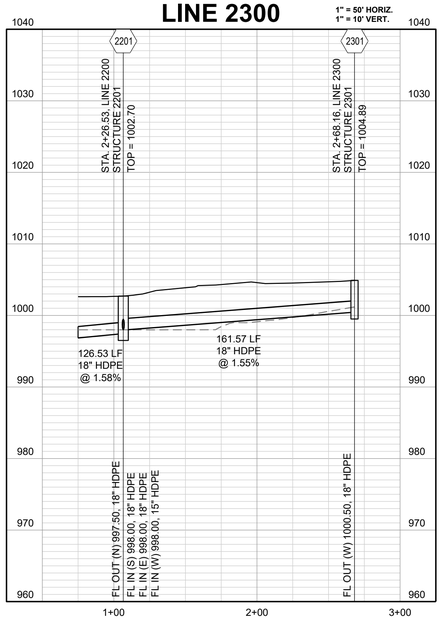


0 50' 100'

SCALE: 1" = 50'

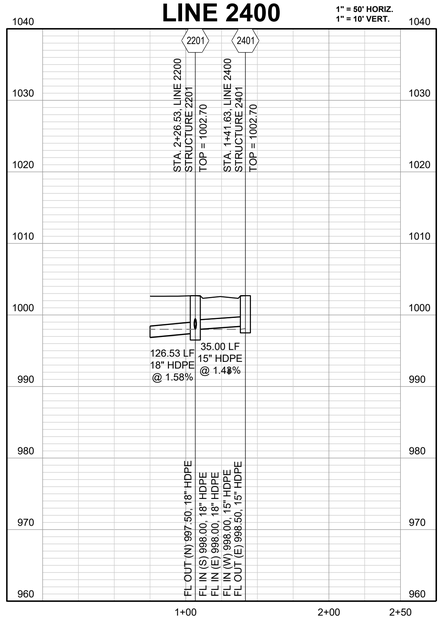
LINE 2300

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



LINE 2400

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



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PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

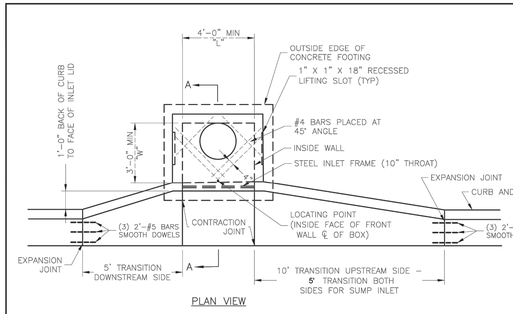
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION

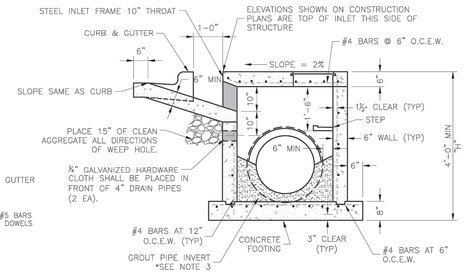
DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22.497

STORM SEWER
LINES 2300 - 2400

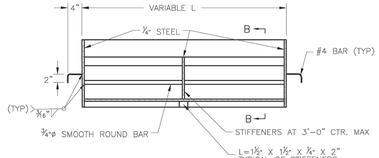
SHEET
C609



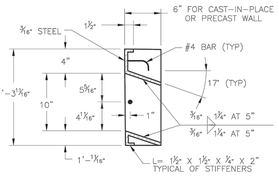
PLAN VIEW



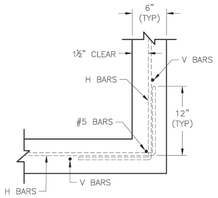
SECTION A–A



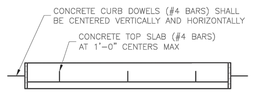
FRONT ELEVATION



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.

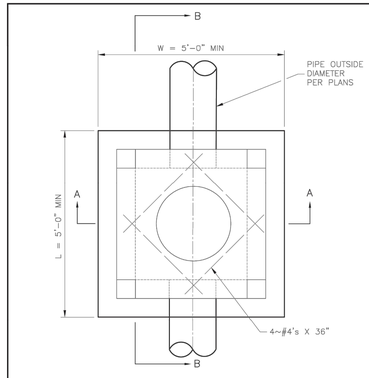
GENERAL NOTES:
1. THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION. THE SECOND DIMENSION IS THE "W" DIMENSION.
2. FLOW LINES LISTED ON THE PROJECT PLANS ARE LISTED AT THE INSIDE FACE OF THE WALL.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
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

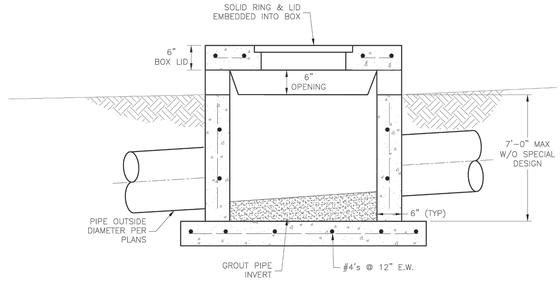
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
Project:
Drawn Name: CURB INLET DETAIL

Drawn By: MJF
Checked By: DL
Date: 05/2021
Proj.#:

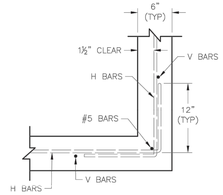
STM-1



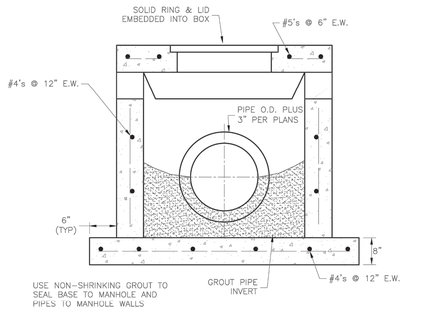
PLAN VIEW



SECTION B–B



WALL CORNER DETAIL



SECTION A–A

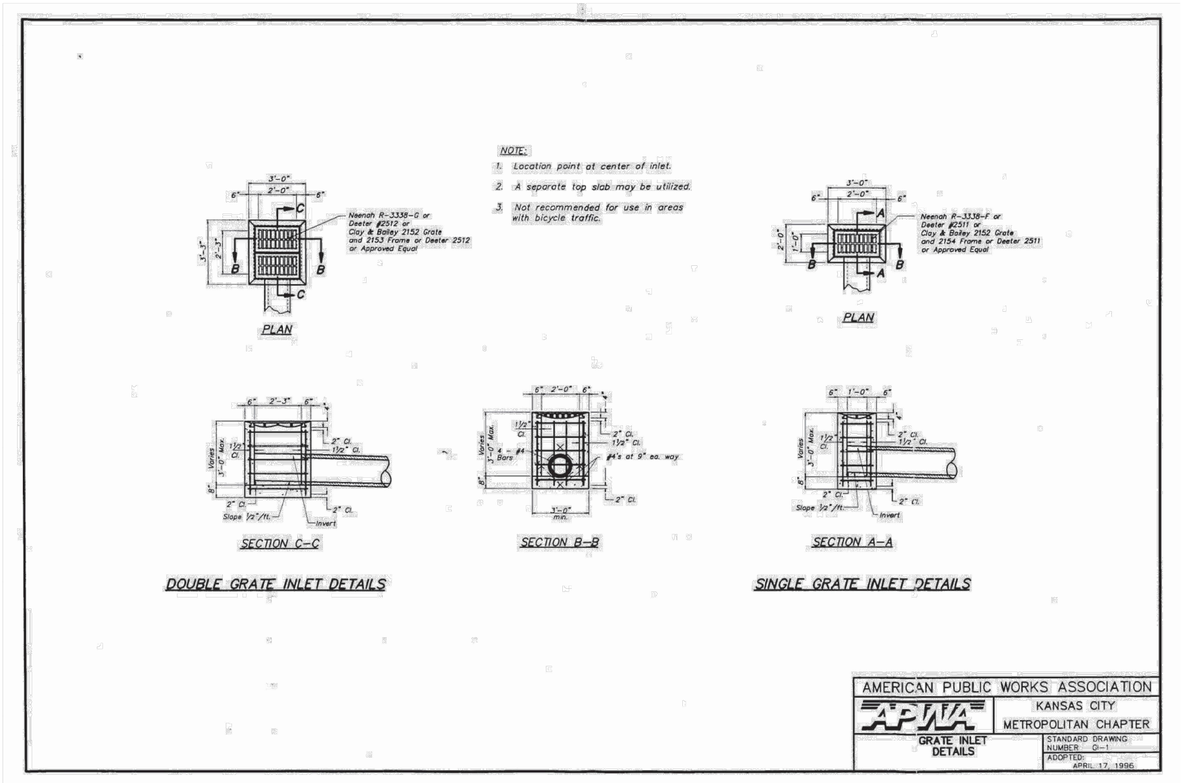
GENERAL NOTES:
1. LOCATE RING AND COVER OVER OUTLET ON BLANK WALL.
2. USE ¾" CHAMFER ON ALL EXPOSED CONCRETE CORNERS.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
4. STEPS REQUIRED AT 16" O.C. WHEN DEPTH FROM TOP OF CASTING TO INVERT EXCEEDS 3' ON BLANK WALL IF POSSIBLE.
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
Project:
Drawn Name: FIELD INLET DETAIL

Drawn By: MJF
Checked By: DL
Date: 05/2021
Proj.#:

STM-2



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PREPARED BY:
STATE OF MISSOURI
MARK ALLEN BREUER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

SCHLAGEL & ASSOCIATES, P.A.

REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

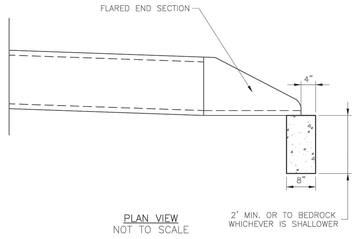
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22.007

STORM DETAILS

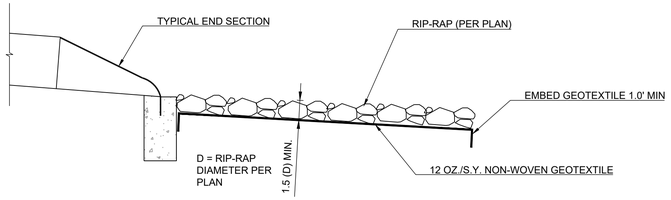
SHEET
C610



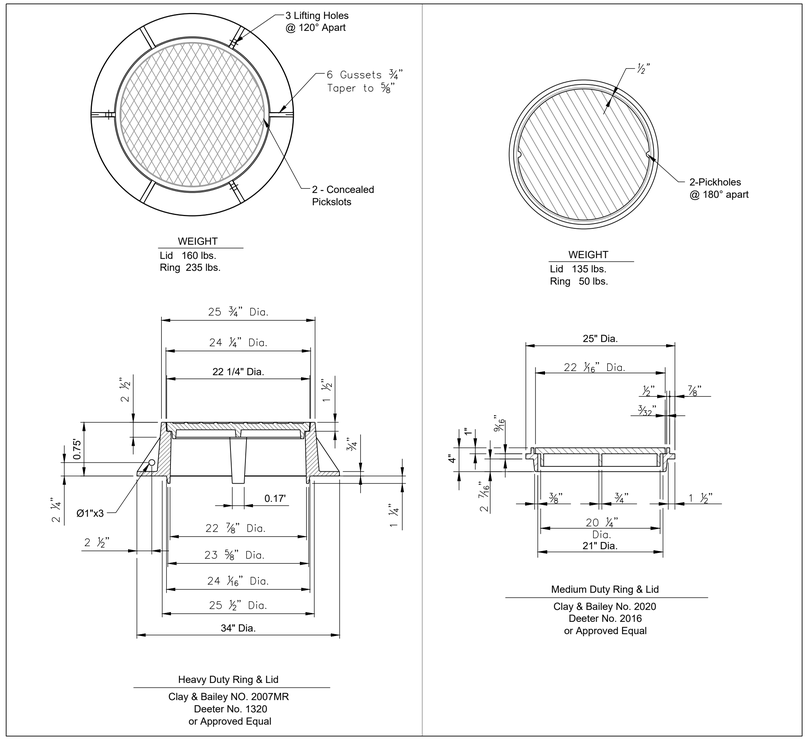
LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Date: 05/2021
Drawn By: MJF
Checked By: DL

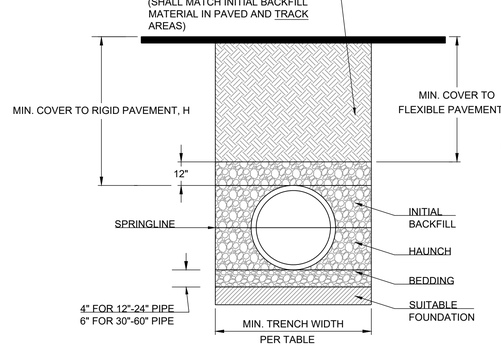
FLARED END SECTION SUPPORT DETAIL — STM-5



RIP-RAP AT OUTLET



MANHOLE RING AND COVER



RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

MINIMUM RECOMMENDED COVER BASED ON VECHICLE LOADING CONDITIONS

	SURFACE LIVE LOADING CONDITION	
PIPE DIAM.	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
54" - 60"	24"	60"

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).

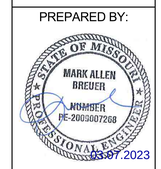
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

7. TESTING: CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL MATERIAL TESTING REQUIRED FOR THEIR WORK. THIS INCLUDES SCHEDULING OF TESTS, COORDINATING AND PROVIDING ACCESS TO SAMPLE LOCATIONS, AND SATISFYING ALL TEST RESULT REPORTING REQUIREMENTS.

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PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

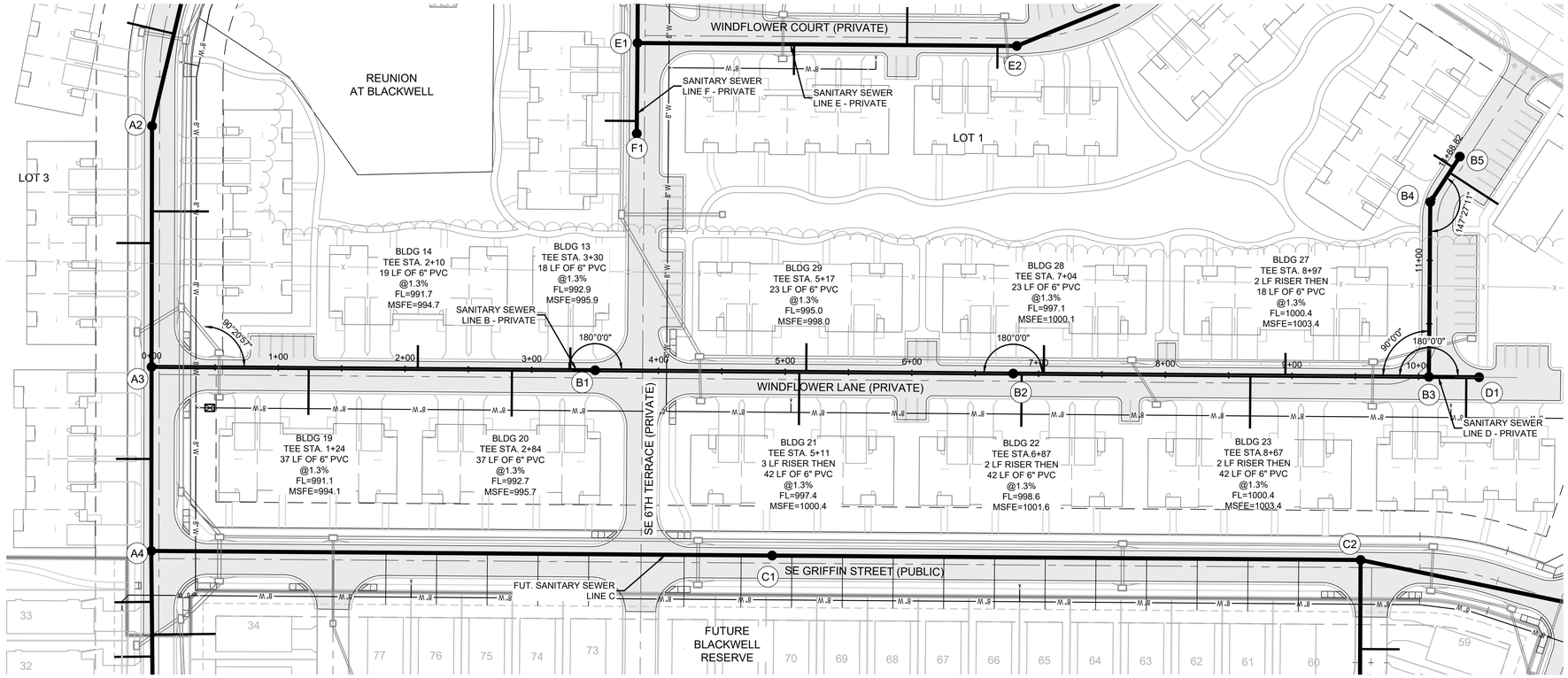
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22-007

STORM DETAILS

SHEET
C611



MO GRS BENCHMARK:

STATION NAME - JA-90

KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988" LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD.
N:1001052.8503, E:2845604.8272

ELEV. 997.045

PROJECT BENCHMARK:

"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE
STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH OF THE CENTERLINE OF BLUE PARKWAY.
N:996874.9690, E:2840937.1365

ELEV. 1005.719

NOTES:

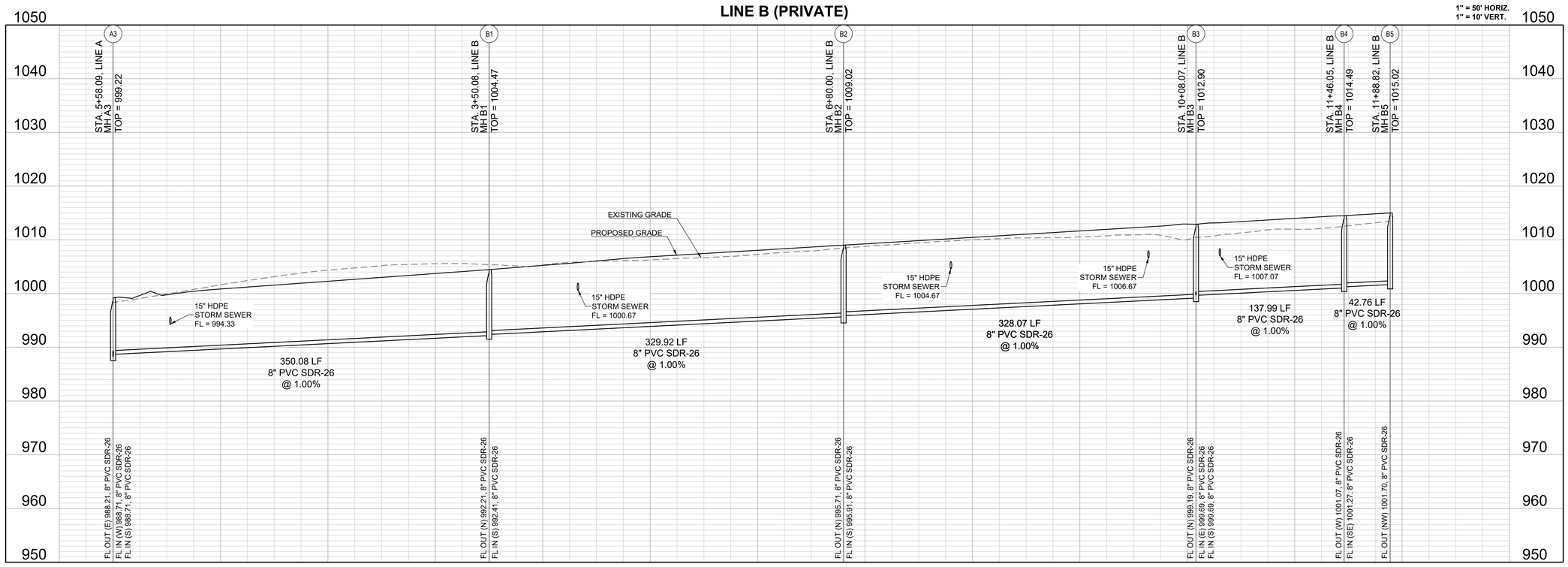
1. MSFE = MINIMUM SERVICEABLE FLOOR ELEVATION.
2. SSNR = SEWER SERVICE NOT REQUIRED.
3. DDS = DISTANCE TO DOWNSTREAM MANHOLE.
4. ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT TECHNICAL SPECIFICATIONS.
5. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
6. ALL EXCAVATION IS CONSIDERED UNCLASSIFIED.
7. ALL EXCAVATION BENEATH PROPOSED STREETS SHALL BE BACKFILLED PER CITY STANDARD DETAIL 40-3 TO FOUR (4) FEET BACK OF CURB.
8. ALL TEES ARE STATIONED USING MAIN LINE STATIONS.
9. ALL SERVICE STUB LINES SHALL HAVE A MINIMUM PIPE STIFFNESS OF SDR 23.5.
10. EVERY STUB LINE SHALL BE MARKED AT THE END OF THE PIPE WITH A VERTICAL 2"x4" A MINIMUM OF SIX (6) FEET IN LENGTH.
11. PRE-BLAST SURVEY LIMITS TO STAY WITHIN THE TC/E.

Structure Table		
Structure Name	Structure Northing	Structure Easting
B1	997963.2724	2841570.4958
B2	997633.6584	2841556.3958
B3	997305.8924	2841542.3749
B4	997299.9950	2841680.2379
B5	997275.4687	2841715.2700

SCALE: 1" = 50'

LINE B (PRIVATE)

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



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PREPARED BY:

STATE OF MISSOURI
MARK ALLEN BREUER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

SCHLAGEL & ASSOCIATES, P.A.

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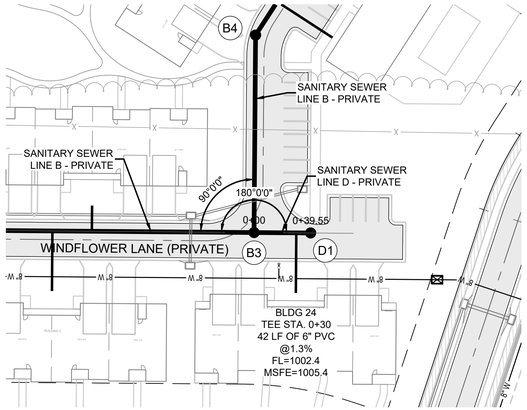
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION

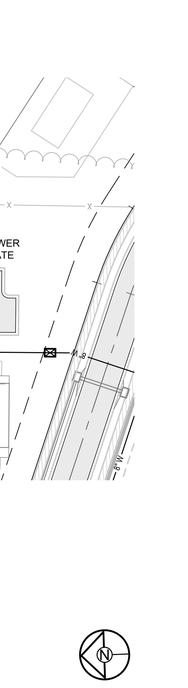
DRAWN BY: TRC
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SANITARY SEWER LINE B

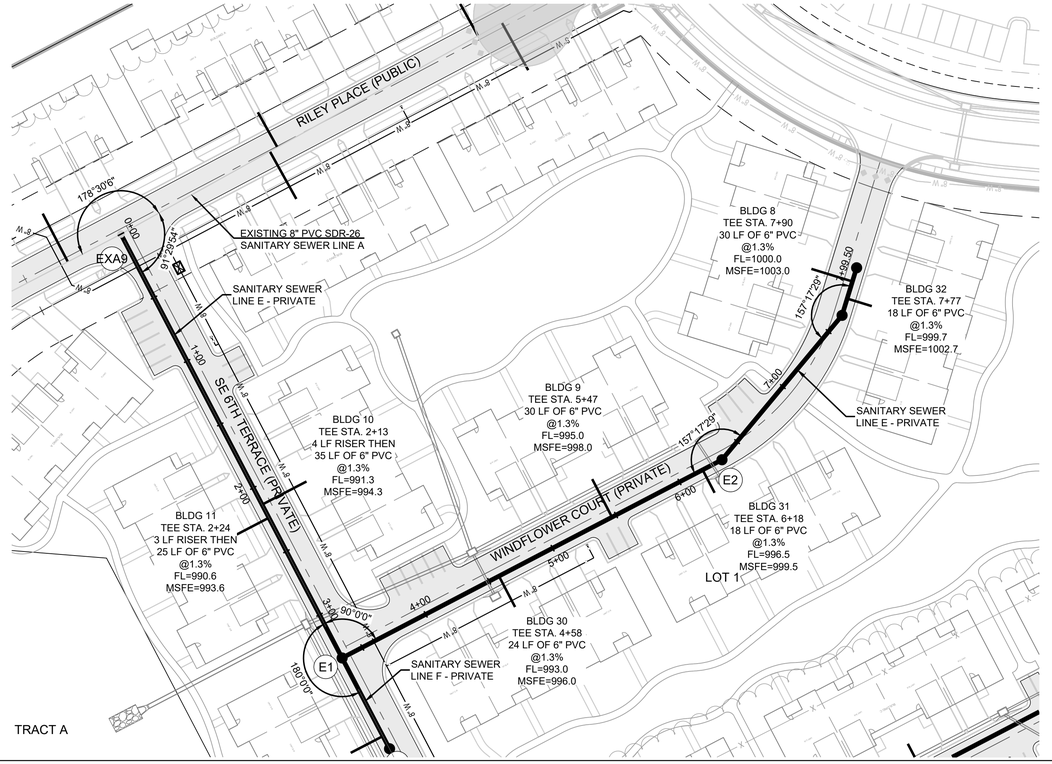
SHEET
C700



Structure Table		
Structure Name	Structure Northing	Structure Easting
D1	997266.3804	2841540.6847



SCALE: 1" = 50'



MO GRS BENCHMARK:

STATION NAME - JA-90

KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988" LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD.
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ELEV. 1005.719

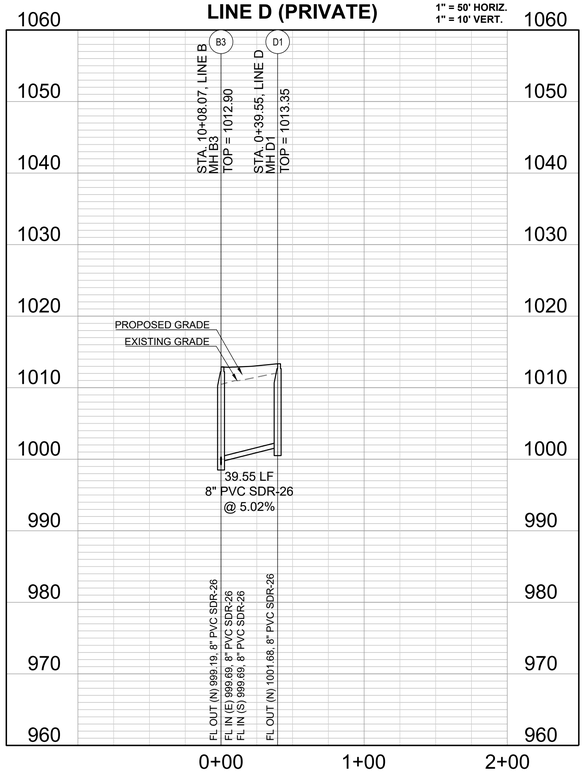
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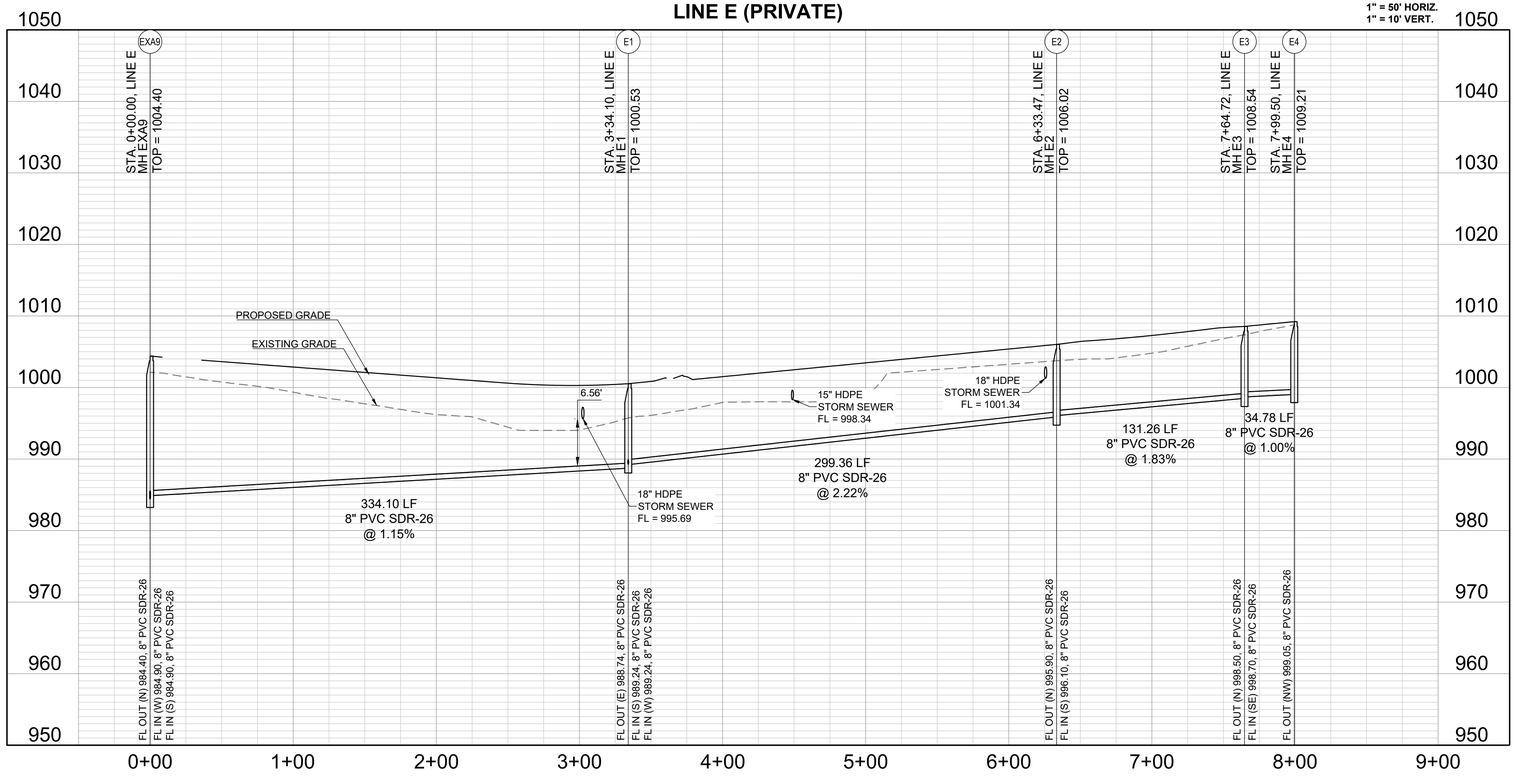
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6. ALL EXCAVATION IS CONSIDERED UNCLASSIFIED.
7. ALL EXCAVATION BENEATH PROPOSED STREETS SHALL BE BACKFILLED PER CITY STANDARD DETAIL 40-3 TO FOUR (4) FEET BACK OF CURB.
8. ALL TEES ARE STATIONED USING MAIN LINE STATIONS.
9. ALL SERVICE STUB LINES SHALL HAVE A MINIMUM PIPE STIFFNESS OF SDR 23.5.
10. EVERY STUB LINE SHALL BE MARKED AT THE END OF THE PIPE WITH A VERTICAL 2"x4" A MINIMUM OF SIX (6) FEET IN LENGTH.
11. PRE-BLAST SURVEY LIMITS TO STAY WITHIN THE TC/E.

Structure Table		
Structure Name	Structure Northing	Structure Easting
E1	997920.8900	2841827.5597
E2	997621.7987	2841814.8014
E3	997498.6689	2841860.2655
E4	997473.2238	2841883.9724



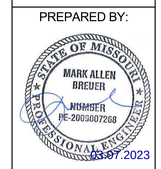
SCALE: 1" = 50'





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Missouri State Certificates of Authority
#E2000030800-F #LA2001055237 #LS2002008859-F

PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

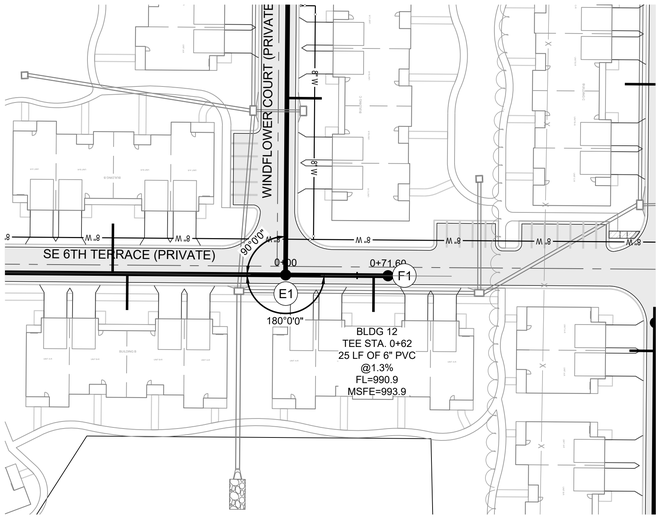
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22.007

SANITARY SEWER LINES D & E

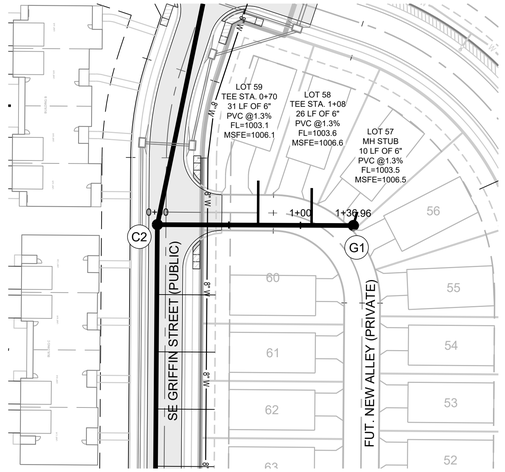
SHEET
C701



Structure Table		
Structure Name	Structure Northing	Structure Easting
F1	997923.9487	2841756.0575



SCALE: 1" = 50'



Structure Table		
Structure Name	Structure Northing	Structure Easting
G1	997370.2482	2841262.9232



SCALE: 1" = 50'

MO GRS BENCHMARK:

STATION NAME - JA-90

KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988" LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD.
N:1001052.8503, E:2845604.8272

ELEV. 997.045

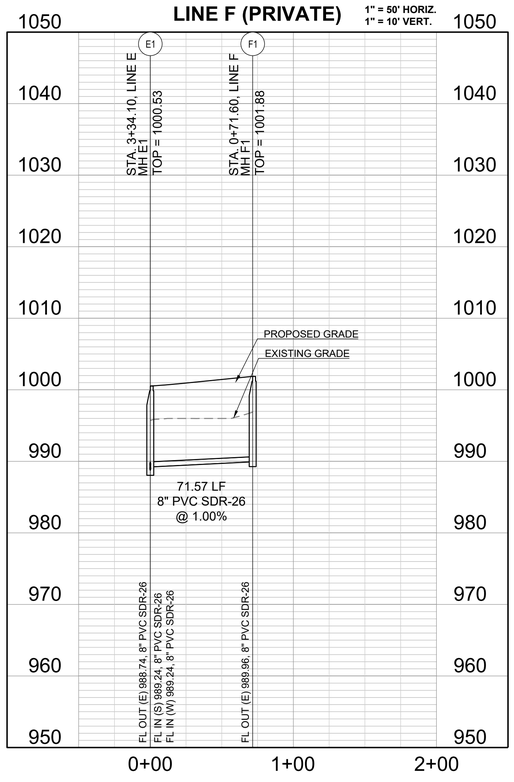
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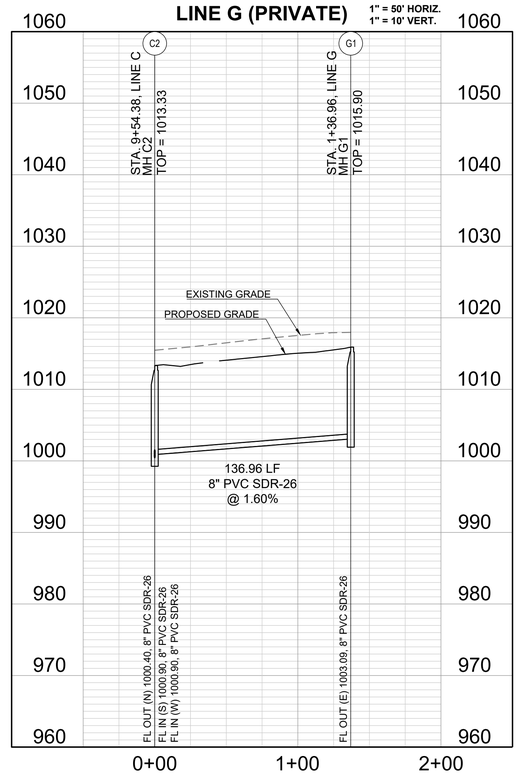
"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE
STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH OF THE CENTERLINE OF BLUE PARKWAY.
N:996874.9690, E:2840937.1365

ELEV. 1005.719

NOTES:

1. MSFE = MINIMUM SERVICEABLE FLOOR ELEVATION.
2. SSNR = SEWER SERVICE NOT REQUIRED.
3. DDS = DISTANCE TO DOWNSTREAM MANHOLE.
4. ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT TECHNICAL SPECIFICATIONS.
5. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
6. ALL EXCAVATION IS CONSIDERED UNCLASSIFIED.
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11. PRE-BLAST SURVEY LIMITS TO STAY WITHIN THE TC/E.





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PREPARED BY:

STATE OF MISSOURI
MARK ALLEN BREUER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

SCHLAGEL & ASSOCIATES, P.A.

REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

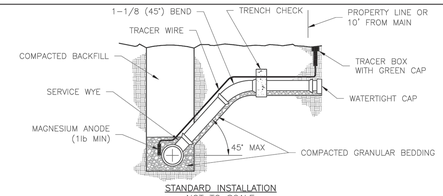
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION

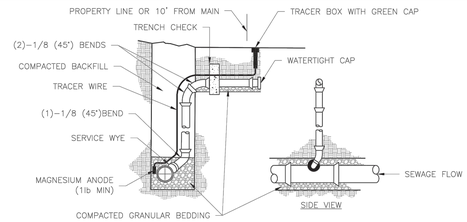
DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22.497

SANITARY SEWER LINES F & G

SHEET
C702



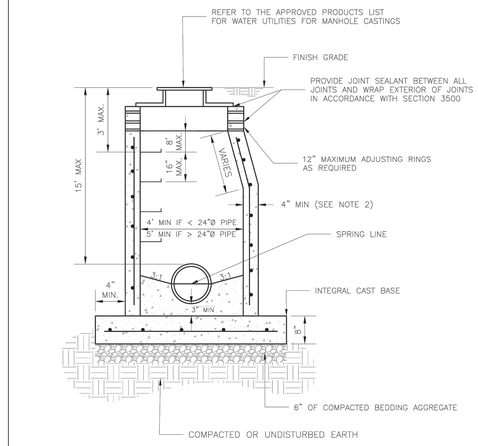
STANDARD INSTALLATION
NOT TO SCALE



VERTICAL RISER
NOT TO SCALE

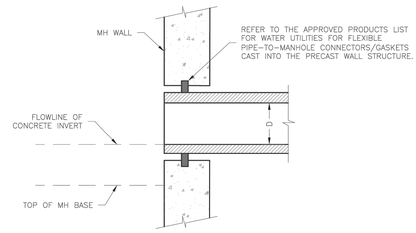
NOTES:
1. ALL SEWER STUBS SHALL BE CONSTRUCTED TO PROPERTY LINE OR 10' MINIMUM FROM THE MAIN, WHICHEVER IS GREATER. WHERE SIDEWALKS ARE PRESENT, CONTRACTOR SHALL EXTEND SERVICE LINE UNDER EXISTING SIDEWALK TO TWO FEET BEYOND.
2. IMPERVIOUS TRENCH CHECKS SHALL BE PLACED ON BUILDING SEWER STUBS (AT LEAST 5' AWAY FROM THE SANITARY SEWER MAIN).
3. TRENCH CHECKS ON THE BUILDING SEWER STUBS SHALL EXTEND 6" BELOW THE BOTTOM OF THE PIPE. LENGTH SHALL BE A MINIMUM OF 12". THE HEIGHT OF THE TRENCH CHECK SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE. THE WIDTH OF THE TRENCH CHECK SHALL BE THE WIDTH OF THE TRENCH.
4. SEE SPECIFICATION SECTION 2100 FOR SEWER MAIN BEDDING AND BACKFILL.
5. #12 GAUGE GREEN INSULATED COPPER TRACER WIRE SHALL BE INSTALLED. TRACER WIRE TERMINAL BOXES SHALL BE INSTALLED DIRECTLY ABOVE THE SEWER SERVICE OR AS DETERMINED BY THE ENGINEER.
6. FOR SERVICES, TRACER WIRE SHALL RUN FROM THE WYE AND TERMINATE IN A FLUSH MOUNTED TRACER BOX WITH A GREEN CAST IRON LOCKABLE TOP. WIRE SHALL BE TAPED OR TIED TO THE PIPE AT 5' INTERVALS.
7. TRACER WIRE BOX SHALL BE INSTALLED WITHIN 1.0' OF PROPERTY LINE.
8. THE TRACER WIRE SHALL REMAIN CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. SPLICES IN THE TRACER WIRE SHOULD BE MADE WITH SPLIT BOLT CONNECTORS. WIRE NUTS SHALL NOT BE USED. A WATER-PROOF CONNECTION IS NECESSARY TO PREVENT CORROSION.

LEE'S SUMMIT MISSOURI	Date: 12/2015
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063	Drawn By: MJF
SANITARY SEWER STUB DETAIL	Checked By: DL
	SAN-1

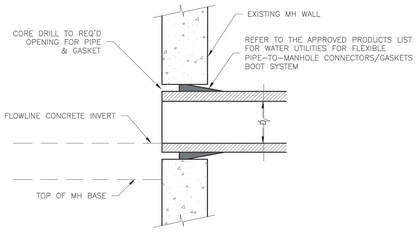


NOTES:
1. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478 EXCEPT AS MODIFIED BY THE SPECIFICATIONS.
2. A WALL THICKNESS NOT LESS THAN ONE-TWELFTH (D_M) OF THE INSIDE DIAMETER OR 4", WHICHEVER IS GREATER, SHALL BE USED WHEN THE MANHOLE DEPTH IS LESS THEN 15'.
3. WATERPROOFING SHALL BE REQUIRED ON THE OUTSIDE OF MANHOLES. THE WATERPROOFING SHALL CONSIST OF A TOTAL DRY FILM THICKNESS OF NOT LESS THAN 14 MILS OF BITUMINOUS COATING.
4. ONLY ECCENTRIC MANHOLE CONES WILL BE ALLOWED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
5. THE FILL CONCRETE FLOW CHANNEL FOR SIDE BRANCHES SHALL BE PLACED TO PROVIDE A SMOOTH TRANSITION INTO THE FLOW LINE.
6. REFER TO THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR APPROVED MANHOLE GASKET MODELS.
7. REFER TO THE APPROVED PRODUCTS LIST FOR APPROVED STEPS.

LEE'S SUMMIT MISSOURI	Date: 12/2015
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063	Drawn By: SC
STANDARD SANITARY PRECAST MANHOLE	Checked By: DL
	SAN-2

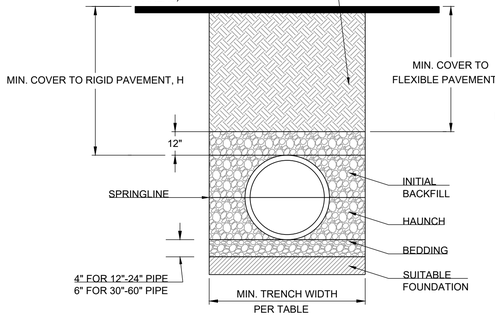


NEW MANHOLE



EXISTING MANHOLE

LEE'S SUMMIT MISSOURI	Date: 02/2013
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063	Drawn By: MJF
MANHOLE WALL CONNECTION	Checked By: DL
	SAN-5



MINIMUM RECOMMENDED COVER BASED ON VECHICLE LOADING CONDITIONS

	SURFACE LIVE LOADING CONDITION	
PIPE DIAM.	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
54" - 60"	24"	60"

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

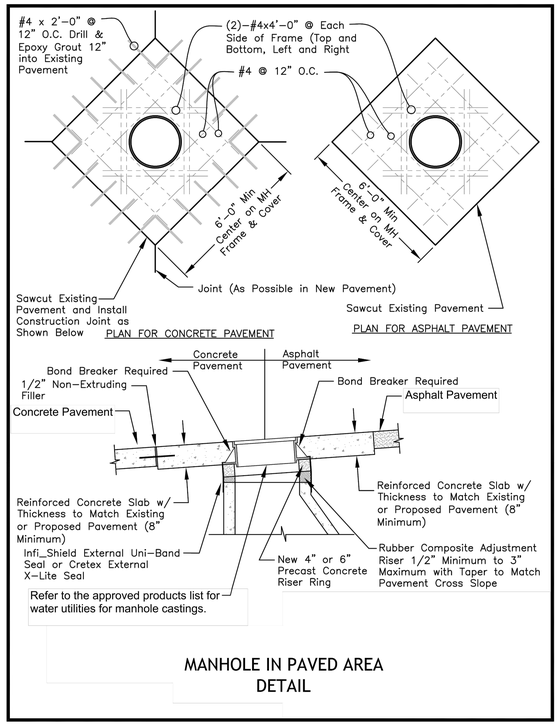
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).

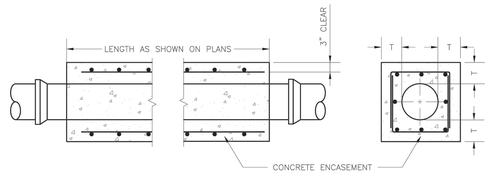
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

7. TESTING: CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL MATERIAL TESTING REQUIRED FOR THEIR WORK. THIS INCLUDES SCHEDULING OF TESTS, COORDINATING AND PROVIDING ACCESS TO SAMPLE LOCATIONS, AND SATISFYING ALL TEST RESULT REPORTING REQUIREMENTS.



MANHOLE IN PAVED AREA
DETAIL



NOTES:
1. FOR PIPES LESS THAN 15", T = 6" MIN.
2. FOR PIPES 15" THRU 36", T = 8" MIN.
3. INTERMEDIATE BELLS SHALL BE ENCASED.
4. REINFORCING STEEL SHALL BE #4 @ 12" O.C. EACH WAY WITH A MINIMUM REBAR LAP OF 12".

LEE'S SUMMIT MISSOURI	Date: 01/2016
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063	Drawn By: JN
PIPE ENCASEMENT DETAIL	Checked By: DL
	SAN-7

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Missouri State Certificates of Authority
#E2000030800-F #LA2001005237 #LS2000208859-F

PREPARED BY:

STATE OF MISSOURI
MARK ALLEN BREUER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

SCHLAGEL & ASSOCIATES, P.A.

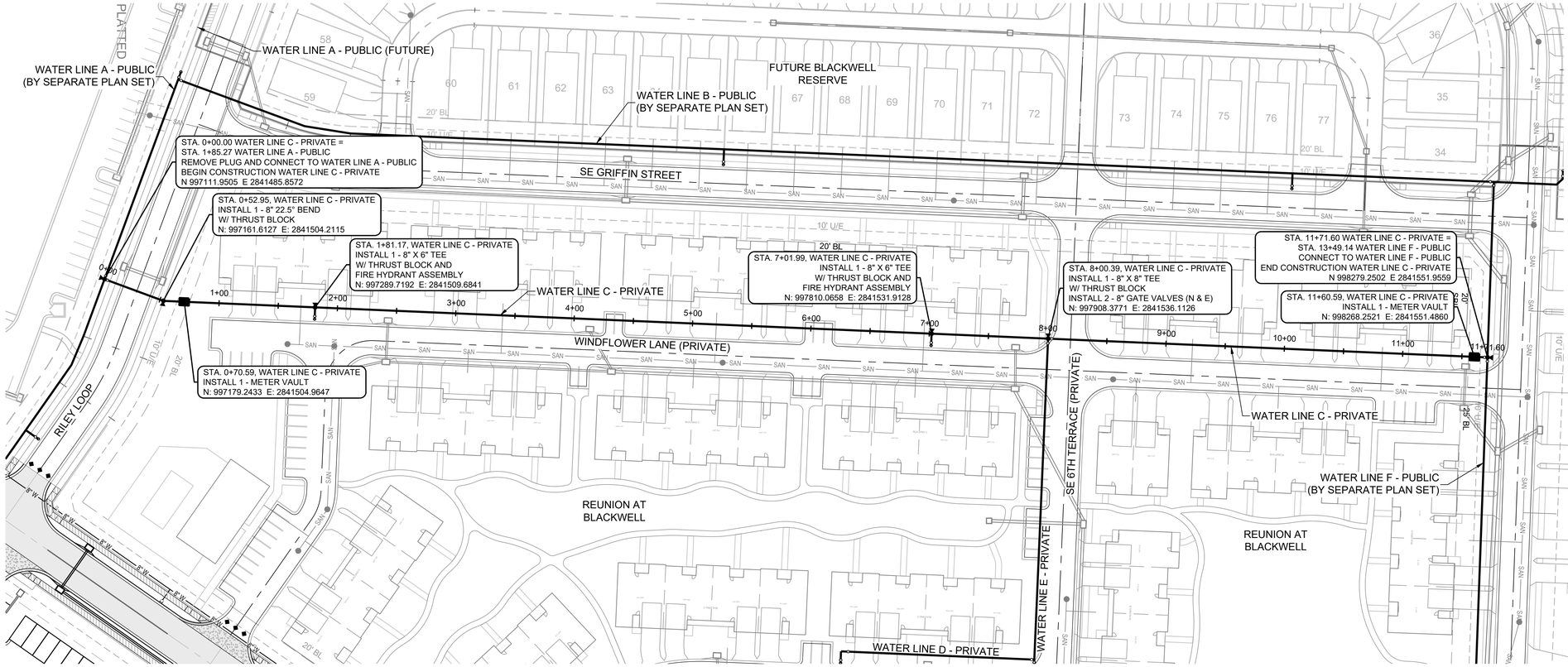
REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

DRAWN BY:	TRC
CHECKED BY:	MAB
DATE PREPARED:	03/03/2023
PROJ. NUMBER:	22-067

REVISION DATE	DESCRIPTION
1	
2	
3	
4	
5	
6	
7	
8	

SANITARY SEWER DETAILS

SHEET
C703



MO GRS BENCHMARK:

STATION NAME - JA-90

KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988" LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD.
N:1001052.8503, E:2845604.8272

ELEV. 997.045

PROJECT BENCHMARK:

"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE
STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH OF THE CENTERLINE OF BLUE PARKWAY.
N:996874.9690, E:2840937.1365

ELEV. 1005.719

NOTES:

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

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PREPARED BY:

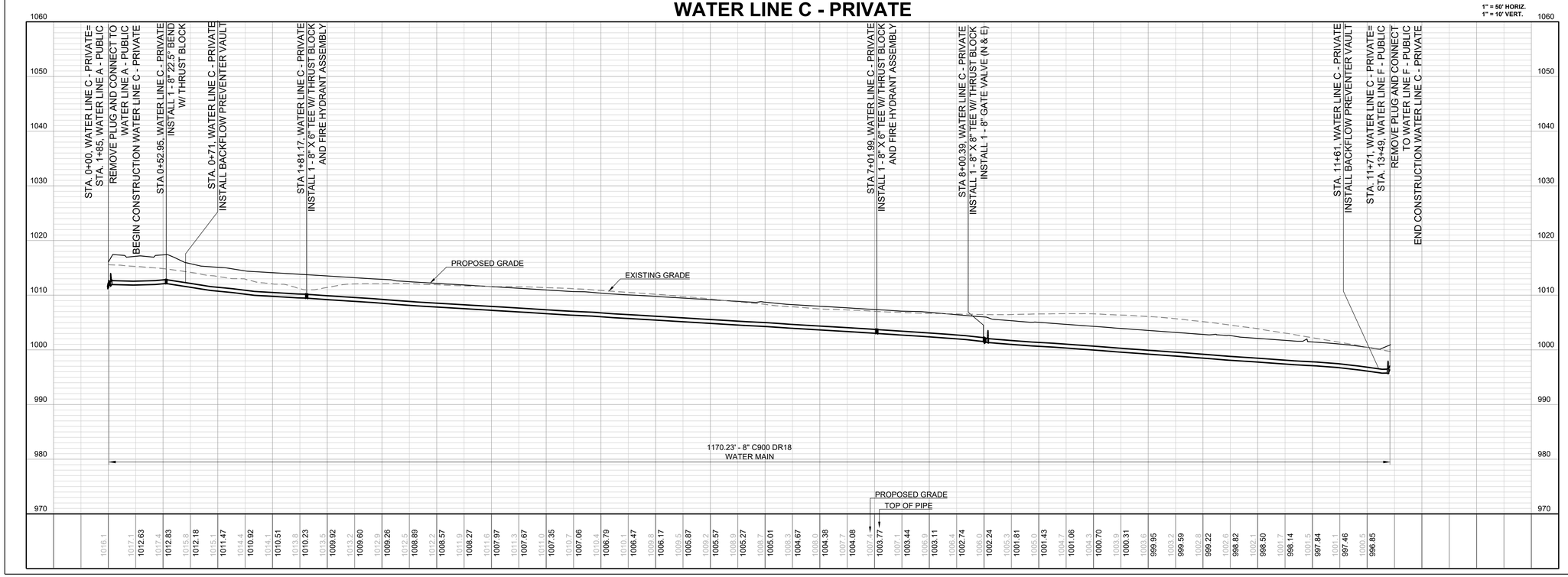
STATE OF MISSOURI
MARK ALLEN BREUER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

SCHLAGEL & ASSOCIATES, P.A.

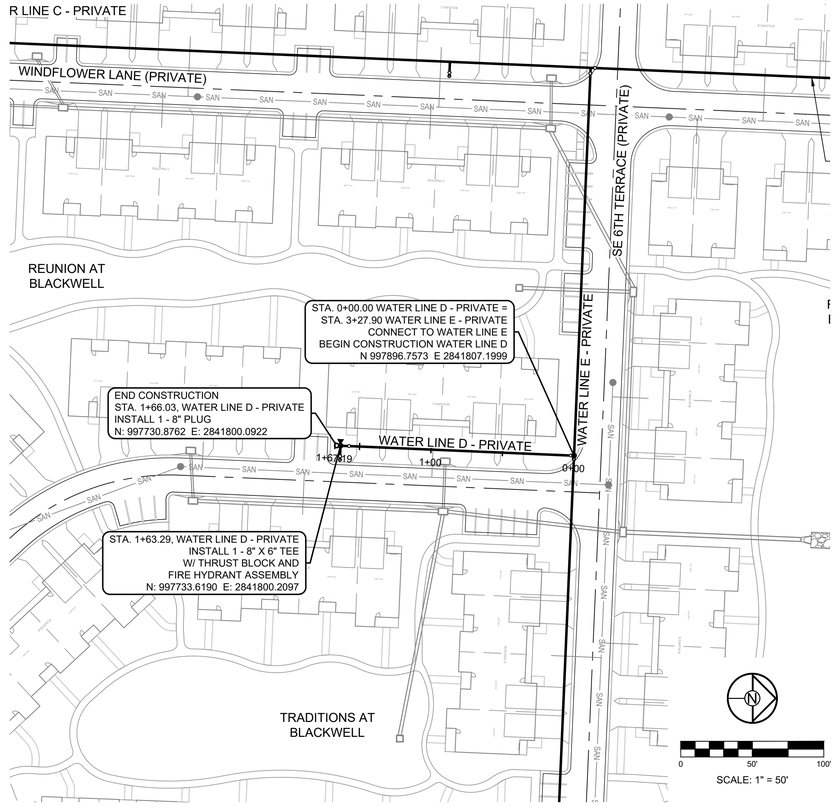
REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

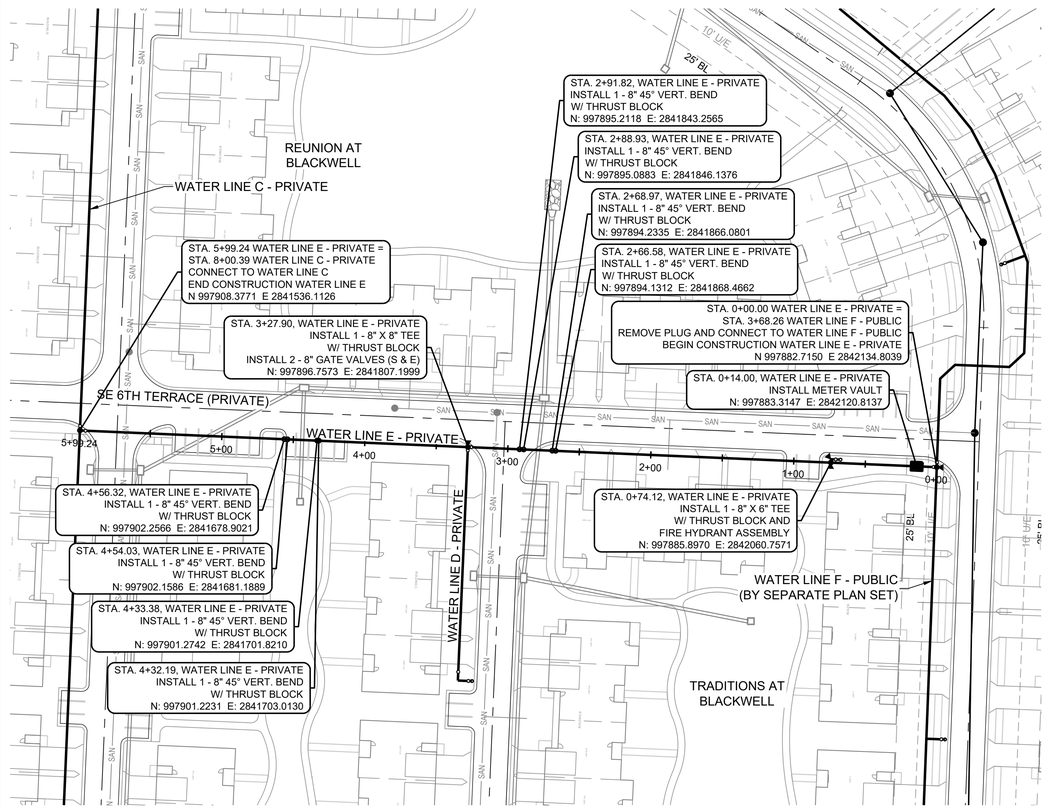
WATER LINE C - PRIVATE

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



| | | |





MO GRS BENCHMARK:

STATION NAME - JA-90

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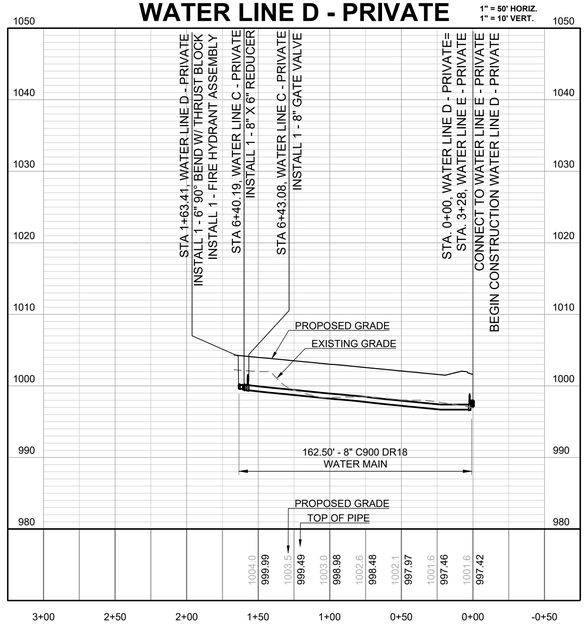
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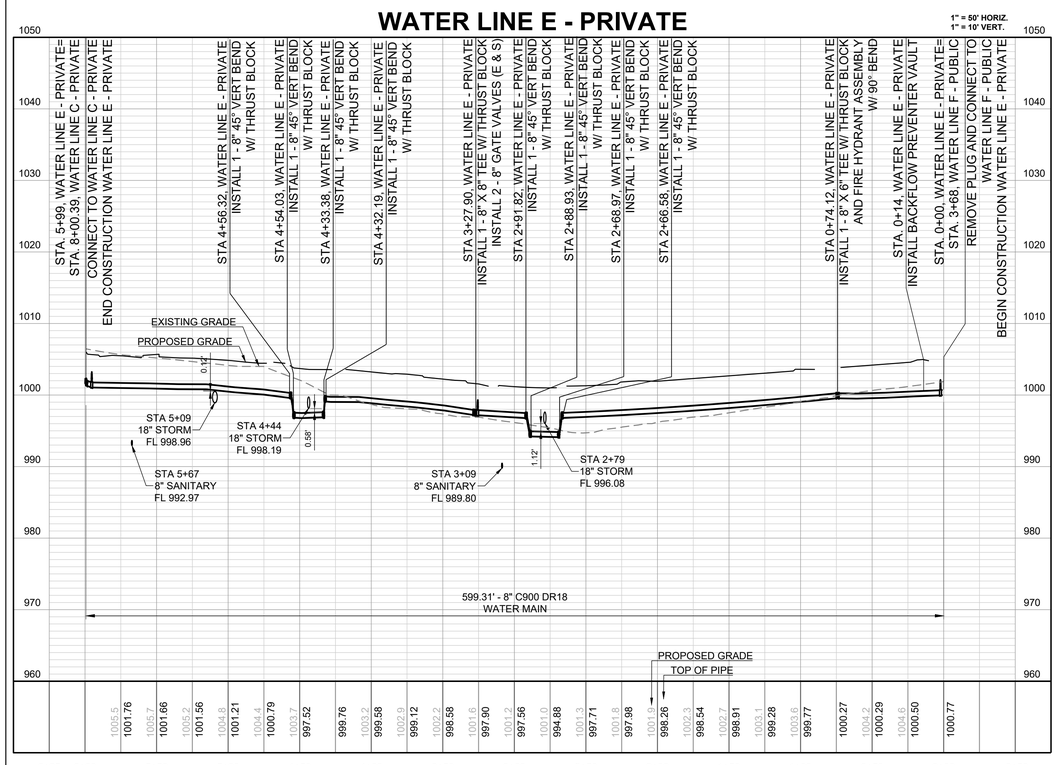
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Missouri State Certificates of Authority: #E2000030800-F #LA2001005237 #LS2000208859-F

PREPARED BY:

STATE OF MISSOURI
MARK ALLEN BREUER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

SCHLAGEL & ASSOCIATES, P.A.

REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22.007

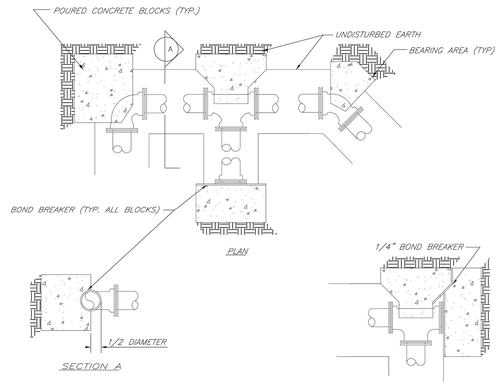
WATER LINE D & E - PRIVATE

SHEET
C801

REQUIRED CONCRETE BEARING AREA (SQUARE FEET – SF)

NOM. DIA. (INCHES)	180 TEE, PLUG	90 BEND	45 BEND	22.5 BEND	11.25 BEND
6	4.7	6.7	4.0	4.0	4.0
8	8.4	11.8	6.4	4.0	4.0
10	13.1	18.5	10.0	5.1	4.0
12	18.8	26.7	14.4	7.4	4.0
14	25.7	36.3	19.6	10.0	5.0
16	33.5	47.4	25.6	13.1	6.6
18	42.4	REST. JT.	32.5	16.5	8.3
20	REST. JT.	REST. JT.	40.1	20.4	10.3
24	REST. JT.	REST. JT.	REST. JT.	29.4	14.8

NOTES:
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
3. BEARING AREA MUST BE AGAINST UNDISTURBED SOIL.
4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.

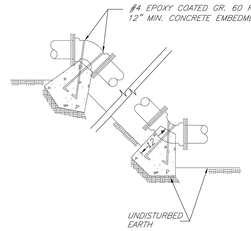


LEE'S SUMMIT MISSOURI	Date: 02/13
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063	Drawn By: JN
HORIZONTAL THRUST BLOCKS	Checked By: DL
	FILE: WAT–1
	Rev: 1/14
	Rev:

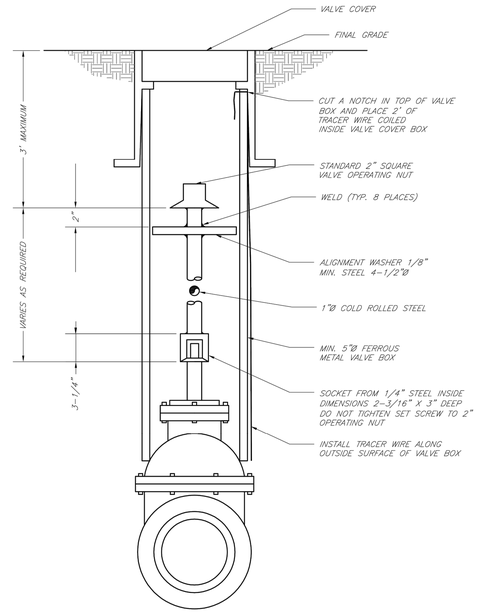
REQUIRED CONCRETE VOLUME (CUBIC FEET – CF)

NOM. DIA. (INCHES)	180 TEE, PLUG	90 BEND	45 BEND	22.5 BEND	11.25 BEND
6	50.5	71.4	38.6	19.7	9.9
8	89.8	126.9	68.7	35.0	17.6
10	140.2	198.3	107.3	54.7	27.5
12	202.0	REST. JT.	154.6	78.8	39.6
14	REST. JT.	REST. JT.	210.4	107.3	53.9
16	REST. JT.	REST. JT.	REST. JT.	140.1	70.4
18	REST. JT.	REST. JT.	REST. JT.	177.3	89.1
20	REST. JT.	REST. JT.	REST. JT.	REST. JT.	110.0
24	REST. JT.	REST. JT.	REST. JT.	REST. JT.	158.4

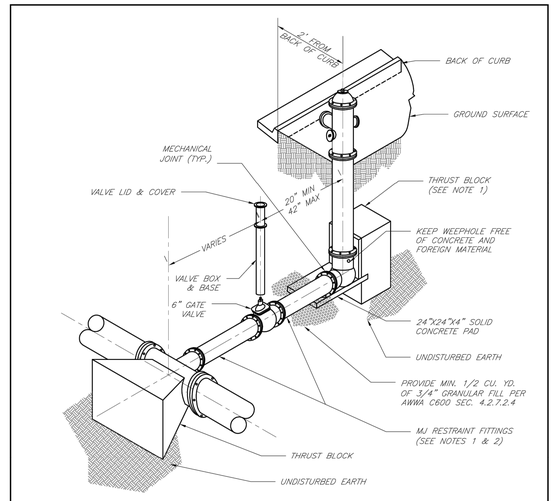
NOTES:
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3. BEARING MUST BE AGAINST UNDISTURBED SOIL.
4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.



LEE'S SUMMIT MISSOURI	Date: 02/13
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063	Drawn By: JN
VERTICAL THRUST BLOCKS	Checked By: DL
	FILE: WAT–2
	Rev: 1/14
	Rev:

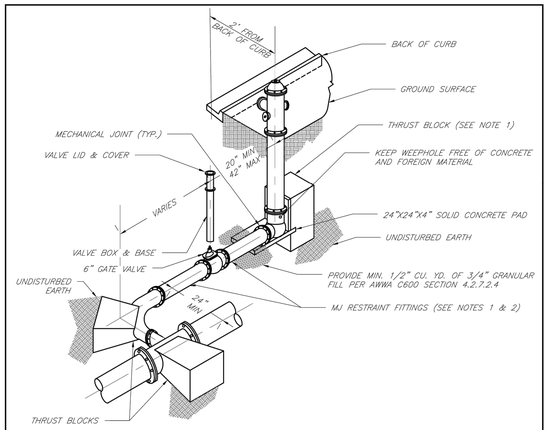


LEE'S SUMMIT MISSOURI	Date: 02/13
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063	Drawn By: JN
VALVE STEM EXTENSION AND VALVE BOX	Checked By: DL
	FILE: WAT–9
	Rev: 1/14
	Rev:



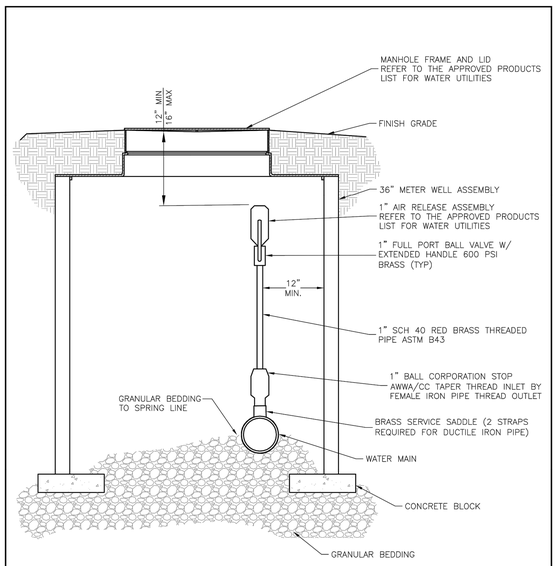
NOTES:
1. WHEN RETAINER GLANDS ARE USED IN LIEU OF MECHANICAL JOINT (MJ) RESTRAINT FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.
2. GATE VALVE MAY BE BOLTED DIRECTLY TO MJ RESTRAINT TEE.
3. SEE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR FIRE HYDRANT, VALVES, VALVE BOX LID, AND COVER.
4. BOTTOM HYDRANT FLANGE SHALL BE 2" TO 6" ABOVE FINISHED GRADE.
5. FOR STREETS WITHOUT CURBS FIRE HYDRANTS SHALL BE PLACED WITHIN 1 FOOT OF THE R/W LINE, BUT NOT MORE THAN 10' FROM EDGE OF PAVEMENT. FIRE HYDRANT SHALL NOT BE PLACED IN BOTTOM OF DITCH.
6. HYDRANT SHALL BE ROTATED AS DIRECTED BY INSPECTOR.

LEE'S SUMMIT MISSOURI	Date: 02/13
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063	Drawn By: JN
HYDRANT INSTALLATION – STRAIGHT SET	Checked By: DL
	FILE: WAT–7
	Rev: 1/14
	Rev:



NOTES:
1. WHEN RETAINER GLANDS ARE USED IN LIEU OF MECHANICAL JOINT (MJ) RESTRAINT FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.
2. GATE VALVE MAY BE BOLTED DIRECTLY TO MJ RESTRAINT TEE.
3. SEE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR FIRE HYDRANT, VALVES, VALVE BOX LID, AND COVER.
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6. HYDRANT SHALL BE ROTATED AS DIRECTED BY INSPECTOR.

LEE'S SUMMIT MISSOURI	Date: 02/13
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063	Drawn By: JN
HYDRANT WITH 90 DEGREE BEND	Checked By: DL
	FILE: WAT–8
	Rev: 1/14
	Rev:



AIR RELEASE ASSEMBLY
NOT TO SCALE

LEE'S SUMMIT MISSOURI	Date: 04/17
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063	Drawn By: MJF
AIR RELEASE ASSEMBLY	Checked By: DL
	WAT-10

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WWW.SCHLAGEL-ASSOCIATES.COM
Missouri State Certificate of Authority #E2000030800-F #LA2001005237 #LS2000208859-F

PREPARED BY:

STATE OF MISSOURI
MARK ALLEN BREUER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

SCHLAGEL & ASSOCIATES, P.A.

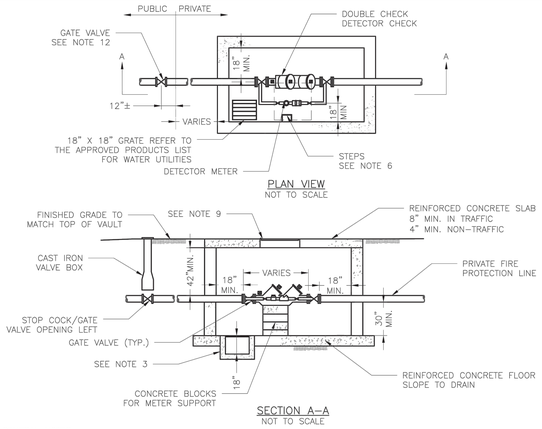
REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION

DRAWN BY:	TRC
CHECKED BY:	MAB
DATE PREPARED:	03/03/2023
PROJ. NUMBER:	22.407

WATER DETAILS

SHEET
C802



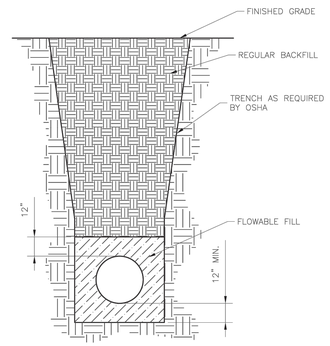
GENERAL NOTES:

1. METER VAULT WALLS TO BE POURED OR PRECAST CONCRETE.
2. METER VAULT ROOF TO BE REINFORCED CONCRETE OPENING CENTERED OVER DETECTOR METER.
3. METER VAULT TO BE LOCATED, WHEN POSSIBLE, OUTSIDE TRAFFIC AREA WHERE SURFACE WATER WILL NOT DRAIN INTO IT. VAULT MUST BE KEPT FREE OF WATER. PROVIDE CONCRETE SUMP AS A MINIMUM. WHERE PRACTICAL, PROVIDE A 2" PIPE DRAIN WITH AN ABOVE–GROUND DISCHARGE POINT. PROJECT OWNER MAY DESIRE A PERMANENTLY INSTALLED SUMP PUMP.
4. ALL PIPE SHALL BE DUCTILE IRON CLASS 50. ALL PIPE FITTINGS FROM THE CITY WATER MAIN THROUGH THE VAULT SHALL BE PROVIDED WITH RESTRAINED JOINT FITTINGS.
5. ALL FITTINGS TO BE BRASS.
6. STEPS SHALL BE IN ACCORDANCE WITH THE APPROVED PRODUCTS LIST FOR WATER UTILITIES AND SHALL BE ON 16" CENTERS.
7. A DEPARTMENT OF NATURAL RESOURCES APPROVED DOUBLE CHECK DETECTOR CHECK BACKFLOW PREVENTER MUST BE USED. FOR A COPY OF THE MISSOURI DEPARTMENT OF NATURAL RESOURCES APPROVED BACKFLOW PREVENTION ASSEMBLIES, CONTACT THE WATER UTILITIES OPERATIONS DIVISION AT 816–969–1940. AS OF JANUARY 1, 1987, THE DNR REQUIRES FIRE SPRINKLER SYSTEMS USING CHEMICALS TO HAVE A DNR APPROVED PRESSURE BACKFLOW PREVENTER INSTALLED, PRIOR TO THE MIXING POINT.
8. ALL VALVES SHALL HAVE RISING STEMS.
9. FOR MANHOLE COVERS, SELECT A MANHOLE FOUND ON THE APPROVED PRODUCTS LIST FOR WATER UTILITIES SUITABLE FOR EITHER TRAFFIC OR NON–TRAFFIC CONDITIONS.
10. A MINIMUM OF 18" CLEARANCE SHALL BE PROVIDED AROUND ALL PIPING, VALVES, APPURTENANCES, ETC.
11. METER SHALL BE OWNED AND MAINTAINED BY THE WATER UTILITIES DEPARTMENT.
12. IF PUBLIC WATER IS LOCATED ON THE OPPOSITE SIDE OF THE STREET, THEN THE PUBLIC WATER MAIN RESPONSIBILITY OF THE WATER UTILITIES DEPARTMENT ENDS AT THE GATE VALVE NEAREST THE VAULT.

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

VAULT FOR DOUBLE CHECK DETECTOR CHECK

Date: 02/2016 | Drawn By: JN | Checked By: DL | WAT-12



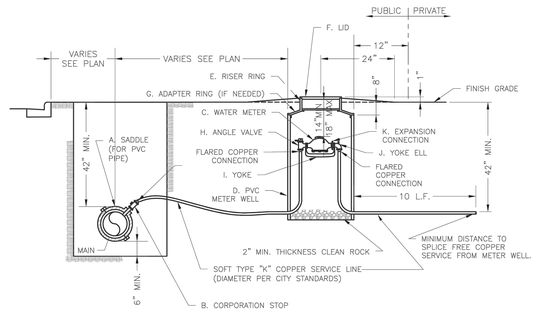
NOTES:

1. FLOWABLE FILL SHALL MEET THE REQUIREMENTS OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.
2. REGULAR BACKFILL ABOVE THE TRENCH CHECK SHALL BE FREE OF DEBRIS, ORGANIC MATTER, AND STONES > 6" IN ANY DIMENSION.
3. TOP OF FLOWABLE BACKFILL SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE.
4. LENGTH OF TRENCH CHECK SHALL BE A MINIMUM OF 12".

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

WATER TRENCH CHECK DETAIL

Date: 01/2016 | Drawn By: JN | Checked By: DL | WAT-6



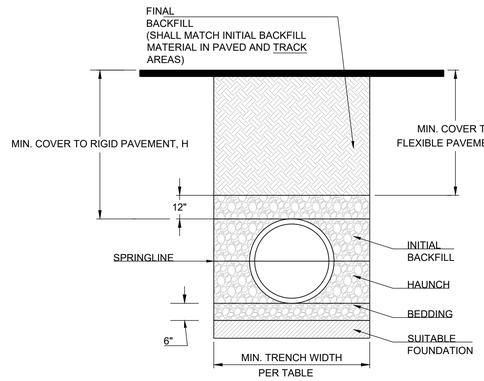
NOTES:

1. METER INSTALLATION SHALL NOT BE LOCATED IN AREAS SUBJECT TO VEHICULAR TRAFFIC OR IN CONCRETE PAVEMENT WITHOUT CITY APPROVAL.
2. IF METER IS TO BE LOCATED OTHER THAN IN FRONT OF PROPERTY LINE, CITY APPROVAL SHALL BE OBTAINED.
3. CITY TO FURNISH ITEMS A–K.
4. NO OTHER EQUIPMENT SHALL BE INSTALLED IN THIS PIT.
5. 42" MINIMUM BURY DEPTH FOR ALL SERVICE LINES.
6. EXCAVATION FOR TAP TO EXPOSE 4 LINEAR FEET OF MAIN.
7. NO SPLICES ALLOWED BETWEEN METER AND MAIN.
8. SERVICE CONNECTION TAP AT APPROXIMATELY 45 DEGREES.
9 LID AND RISER RING SHALL BE SET SO THAT GROUND WATER WILL DRAIN AWAY FROM THE WELL.
10. CONTACT WATER UTILITIES, 816–969–1900, FOR REQUIREMENTS OF A METER LARGER THAN 2"

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

SERVICE CONNECTION WITH METER WELL

Date: 06/2015 | Drawn By: JN | Checked By: DL | WAT-11



MINIMUM RECOMMENDED COVER BASED ON VECHICLE LOADING CONDITIONS

	SURFACE LIVE LOADING CONDITION	
PIPE DIAM.	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
54" - 60"	24"	60"

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 6" (100mm) .

5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

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Missouri State Certificates of Authority
#E2000030800-F #LA2001005237 #LS2000208859-F

PREPARED BY:

STATE OF MISSOURI
MARK ALLEN BREUER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

SCHLAGEL & ASSOCIATES, P.A.

REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

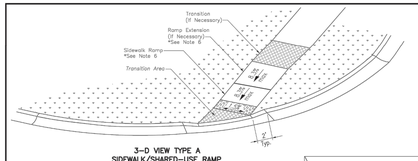
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION

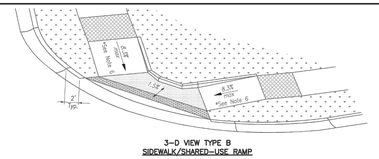
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CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22-007

WATER DETAILS

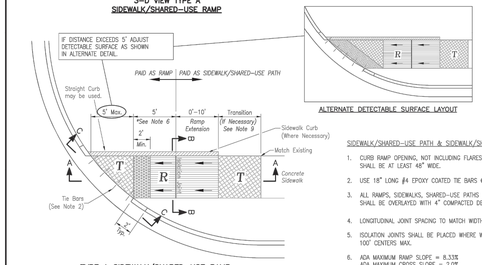
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C803



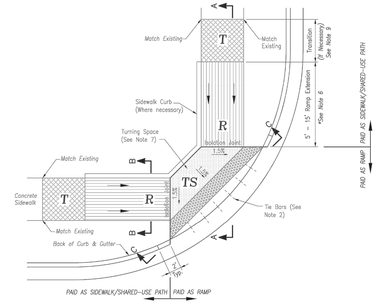
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SIDEWALK/SHARED-USE RAMP



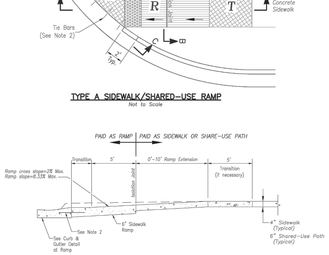
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SIDEWALK/SHARED-USE RAMP



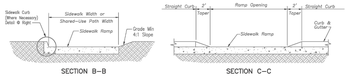
TYPE A SIDEWALK/SHARED-USE RAMP
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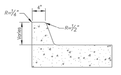
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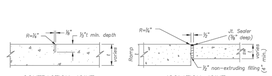
SECTION A-A



TYPE A & B SIDEWALK RAMP
Not to Scale

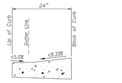


SIDEWALK CURB DETAIL
Not to Scale



CONTRACTION JOINT ISOLATION JOINT

JOINT DETAILS
Not to Scale



CURB & GUTTER DETAIL AT RAMP
Not to Scale

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 100' 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).

LEGEND

- R — SIDEWALK RAMP
- TS — TURNING SPACE
- DETECTABLE WARNING SURFACE
- T — TRANSITION

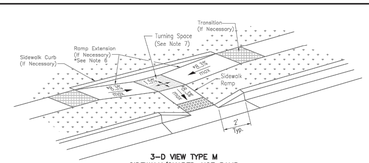
LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Project: STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

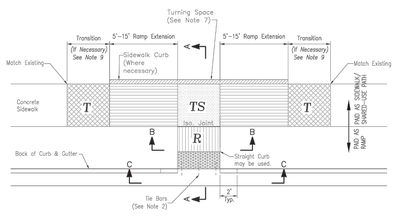
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Drawn By: MJF
Checked By: DL
Date: 05/2021
Proj. #:

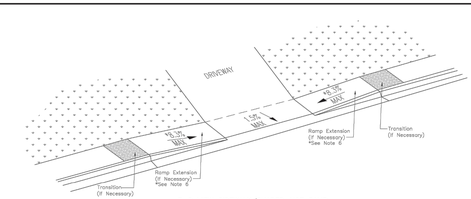
GEN-3A



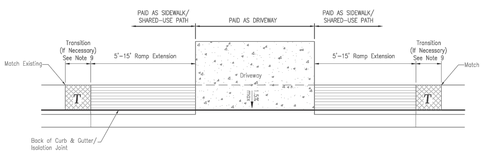
3-D VIEW TYPE M
SIDEWALK/SHARED-USE RAMP



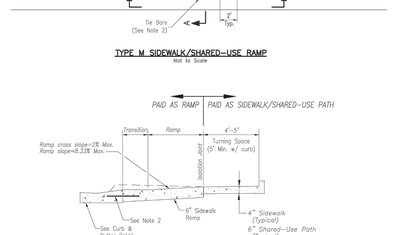
TYPE M SIDEWALK/SHARED-USE RAMP
Not to Scale



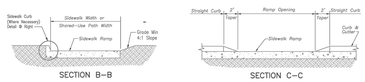
3-D VIEW SIDEWALK/SHARED-USE RAMP
AT DRIVEWAY



SIDEWALK/SHARED USE RAMP
AT DRIVEWAY WITH ADJOINING CURB



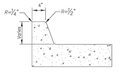
SECTION A-A



TYPE M SIDEWALK RAMP
Not to Scale



CURB & GUTTER DETAIL AT RAMP
Not to Scale



SIDEWALK CURB DETAIL
Not to Scale

LEGEND

- R — SIDEWALK RAMP
- TS — TURNING SPACE
- DETECTABLE WARNING SURFACE
- T — TRANSITION

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 100' 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).

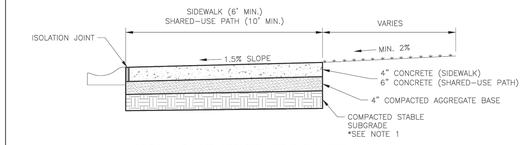
LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Project: STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

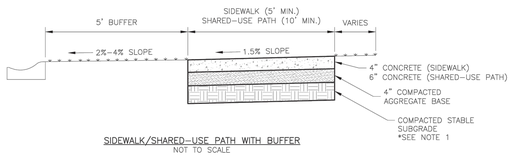
Sheet Name: ADA RAMP RETROFIT DETAIL

Drawn By: MJF
Checked By: DL
Date: 05/2021
Proj. #:

GEN-3B



SIDEWALK/SHARED-USE PATH WITHOUT BUFFER
NOT TO SCALE



SIDEWALK/SHARED-USE PATH WITH BUFFER
NOT TO SCALE

GENERAL NOTES:

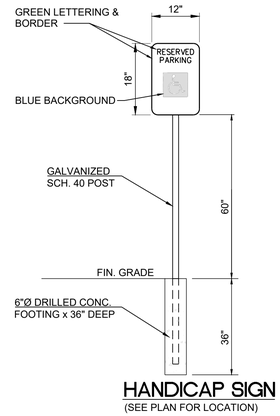
1. SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
2. 1.5% CROSS SLOPE MUST BE MAINTAINED THROUGH DRIVEWAYS.
3. KCMMB 4K CONCRETE MIX SHALL BE REQUIRED FOR ALL SIDEWALKS/SHARED-USE PATHS.
4. ALL SIDEWALK/SHARED-USE PATHS SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
5. AN ISOLATION JOINT SHALL BE PLACED AT A MAXIMUM OF 100 FT. CONSTRUCTION JOINTS SHALL BE PLACED THE SAME WIDTH OF SIDEWALK/SHARED-USE PATHS, BUT NO GREATER THAN 10 FT.
6. AN ISOLATION JOINT SHALL BE PLACED WHERE THE SIDEWALK/SHARED-USE PATHS MEETS A RESIDENTIAL DRIVEWAY.
7. SHARED-USE PATHS WIDTH SHALL BE 10 FT. WIDE.
8. SIDEWALK/SHARED-USE PATHS FINISHING SHALL BE FULL BROOM FINISH OR AS DIRECTED BY CITY INSPECTOR.
9. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.

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

SIDEWALK/SHARED-USE PATH DETAIL

Date: 05/2021
Drawn By: MJF
Checked By: DL

GEN-2



HANDICAP SIGN
(SEE PLAN FOR LOCATION)

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#E2000030800-F #LA2001005237 #LS2000208859-F

PREPARED BY:

STATE OF MISSOURI
MARK ALLEN BREUER
NUMBER PE-2009007268
PROFESSIONAL ENGINEER
03.07.2023

SCHLAGEL & ASSOCIATES, P.A.

REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

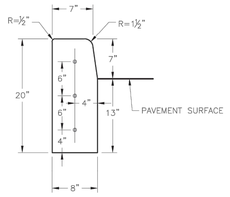
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION

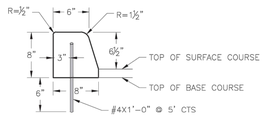
DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22.497

GENERAL DETAILS

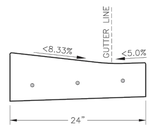
SHEET
C900



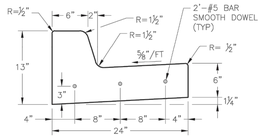
STRAIGHT CURB
(TYPE C-1)



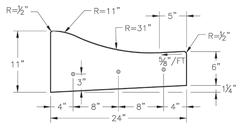
DOWELLED CURB
(TYPE DC)



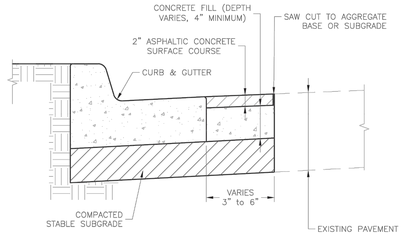
CURB & GUTTER DETAIL AT RAMP
(ADA SLOPE REQUIREMENTS)



STRAIGHT BACK CURB & GUTTER
(TYPE CG-1)



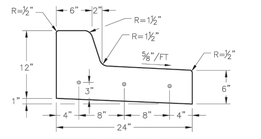
ROLL BACK CURB & GUTTER
(TYPE CG-2)



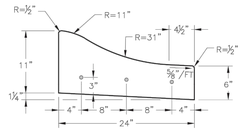
CURB REPLACEMENT DETAIL

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.



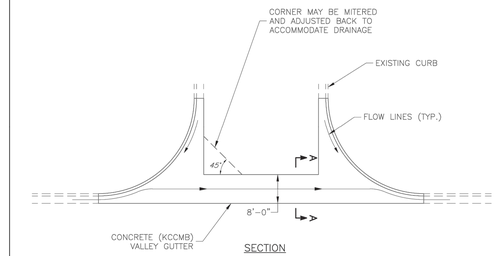
STRAIGHT BACK DRY CURB & GUTTER
(TYPE CG-1 DRY)



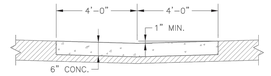
ROLL BACK DRY CURB & GUTTER
(TYPE CG-2 DRY)

Publish:	STANDARD DETAILS CITY OF LEE'S SUMMIT, MO LEE'S SUMMIT, JACKSON COUNTY, MO
Description:	CURB & GUTTER DETAIL
Drawn By: MJF Checked By: DL Date: 05/2021 Proj. #	
	GEN-4

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



SECTION



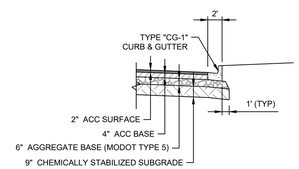
SECTION
Scale: 1" = 1'-0"

VALLEY GUTTER DETAIL
Intersection of Two Public Streets

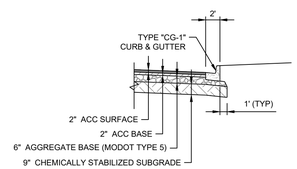
LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

VALLEY GUTTER DETAIL

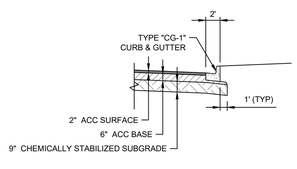
Date: 05/2021	
Drawn By: MJF	
Checked By: DL	
	GEN-7



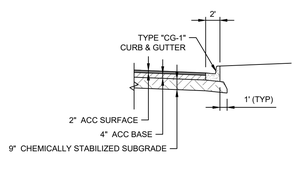
HEAVY DUTY ASPHALT
ACC OVER AGGREGATE BASE



LIGHT DUTY ASPHALT
ACC OVER AGGREGATE BASE



HEAVY DUTY ASPHALT
FULL DEPTH ACC



LIGHT DUTY ASPHALT
FULL DEPTH ACC

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PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

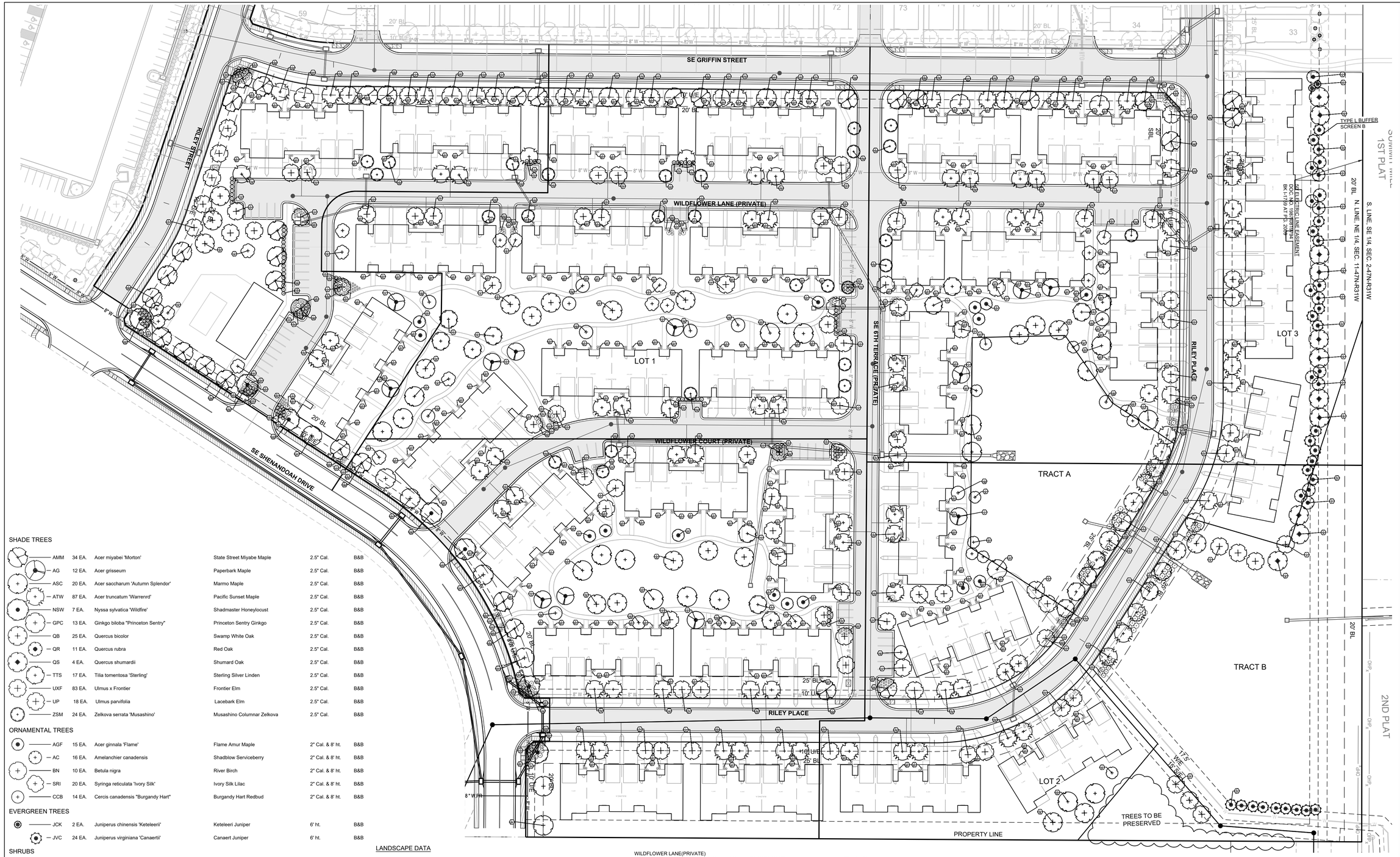
REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
1	
2	
3	
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7	
8	

DRAWN BY:	TRC
CHECKED BY:	MAB
DATE PREPARED:	03/03/2023
PROJ. NUMBER:	22-097

GENERAL DETAILS

SHEET
C901



SHADE TREES

AMM	34 EA.	Acer miyabei 'Morton'	State Street Miyabe Maple	2.5" Cal.	B&B
AG	12 EA.	Acer grisseum	Paperbark Maple	2.5" Cal.	B&B
ASC	20 EA.	Acer saccharum 'Autumn Splendor'	Marmo Maple	2.5" Cal.	B&B
ATW	87 EA.	Acer truncatum 'Warrenrd'	Pacific Sunset Maple	2.5" Cal.	B&B
NSW	7 EA.	Nyssa sylvatica 'Wildfire'	Shadmaster Honeylocust	2.5" Cal.	B&B
GPC	13 EA.	Ginkgo biloba "Princeton Sentry"	Princeton Sentry Ginkgo	2.5" Cal.	B&B
QB	25 EA.	Quercus bicolor	Swamp White Oak	2.5" Cal.	B&B
QR	11 EA.	Quercus rubra	Red Oak	2.5" Cal.	B&B
QS	4 EA.	Quercus shumardii	Shumard Oak	2.5" Cal.	B&B
TTS	17 EA.	Tilia tomentosa 'Sterling'	Sterling Silver Linden	2.5" Cal.	B&B
UXF	83 EA.	Ulmus x Frontier	Frontier Elm	2.5" Cal.	B&B
UP	18 EA.	Ulmus parvifolia	Lacebark Elm	2.5" Cal.	B&B
ZSM	24 EA.	Zelkova serrata 'Musashino'	Musashino Columnar Zelkova	2.5" Cal.	B&B

ORNAMENTAL TREES

AGF	15 EA.	Acer ginnala 'Flame'	Flame Amur Maple	2" Cal. & 8' ht.	B&B
AC	16 EA.	Amelanchier canadensis	Shadblow Serviceberry	2" Cal. & 8' ht.	B&B
BN	10 EA.	Betula nigra	River Birch	2" Cal. & 8' ht.	B&B
SRI	20 EA.	Syringa reticulata 'Ivory Silk'	Ivory Silk Lilac	2" Cal. & 8' ht.	B&B
CCB	14 EA.	Cercis canadensis "Burgandy Hart"	Burgandy Hart Redbud	2" Cal. & 8' ht.	B&B

EVERGREEN TREES

JCK	2 EA.	Juniperus chinensis 'Keteleerii'	Keteleeri Juniper	6' ht.	B&B
JVC	24 EA.	Juniperus virginiana 'Canaertii'	Canaert Juniper	6' ht.	B&B

SHRUBS

BGV	966 EA.	Buxus x 'Green Velvet'	Green Velvet Boxwood	5 gal.	Cont.
BSW	141 EA.	Buxus sinica var. insularis 'Wintergreen'	Wintergreen Boxwood	5 gal.	Cont.
RAG	171 EA.	Rhus aromatica 'Gro-Low'	Gro-Low Fragrant sumac	5 gal.	Cont.
SPM	30 EA.	Syringa patula 'Miss Kim'	Miss Kim Lilac	5 gal.	Cont.
SXP	27 EA.	Syringa x 'Penda'	Bloomerang Lilac	5 gal.	Cont.
VCK	44 EA.	Viburnum carlesii 'Korean Spice'	Koreanspice Viburnum	7 gal.	Cont.
VPS	26 EA.	Viburnum plicatum tomentosum 'Summer Snowflake'	Summer Snowflake Viburnum	7 gal.	Cont.
JHH	117 EA.	Juniperus horizontalis 'Hughes'	Hughes Juniper	5 gal.	Cont.
JVG	54 EA.	Juniperus virginana 'Grey Owl'	Grey Owl Juniper	5 gal.	Cont.

MODIFICATIONS REQUESTED:
1. REDUCE THE CALIPER OF THE SHADE TREES FROM 3 INCHES TO 2.5 INCHES FOR THE BUFFER SCREENING AREA.
2. REDUCE THE HEIGHT OF THE EVERGREEN TREES FROM 8 FEET TO 6 FEET.
3. REDUCE THE CALIPER OF THE ORNAMENTAL TREES FROM 3" TO 2".

LANDSCAPE DATA

STREET FRONTAGE LANDSCAPE(Sec. 8.790.A)

SE SHENANDOAH DRIVE(PUBLIC)
COLLECTOR PUBLIC TREES REQUIRED (1 PER 30')(792.68'/30') 26 TREES
COLLECTOR PUBLIC TREES PROVIDED 22 TREES*
COLLECTOR PUBLIC STREET SHRUBS REQUIRED (1 PER 20')(792.68'/20') 40 SHRUBS
COLLECTOR PUBLIC STREET SHRUBS PROVIDED 40 SHRUBS

SE GRIFFIN STREET(PUBLIC)
COLLECTOR PUBLIC TREES REQUIRED (1 PER 30')(1123.09'/30') 37 TREES
COLLECTOR PUBLIC TREES PROVIDED 37 TREES
COLLECTOR PUBLIC STREET SHRUBS REQUIRED (1 PER 20')(1123.09'/20') 56 SHRUBS
COLLECTOR PUBLIC STREET SHRUBS PROVIDED 56 SHRUBS

RILEY PLACE(PUBLIC)
RESIDENTIAL PUBLIC STREET TREES REQUIRED (1 PER 30')(1391.92'/30') 46 TREES
RESIDENTIAL PUBLIC STREET TREES PROVIDED 40 TREES*
RESIDENTIAL PUBLIC STREET SHRUBS REQUIRED (1 PER 20')(1391.92'/20') 70 SHRUBS
RESIDENTIAL PUBLIC STREET SHRUBS PROVIDED 70 SHRUBS

RILEY STREET(PUBLIC)
RESIDENTIAL PUBLIC STREET TREES REQUIRED (1 PER 30')(326.64'/30') 11 TREES
RESIDENTIAL PUBLIC STREET TREES PROVIDED 11 TREES
RESIDENTIAL PUBLIC STREET SHRUBS REQUIRED (1 PER 20')(326.64'/20') 16 SHRUBS
RESIDENTIAL PUBLIC STREET SHRUBS PROVIDED 16 SHRUBS

WILDFLOWER LANE(PRIVATE)
RESIDENTIAL STREET TREES REQUIRED (1 PER 30')(1264.58'/30') 42 TREES
RESIDENTIAL STREET TREES PROVIDED 23 TREES* SHRUBS REQUIRED (2 PER 5,000 S.F. OF LOT AREA EXCL BLDG.)(705,985.63/5000X2) 282 SHRUBS
RESIDENTIAL STREET SHRUBS REQUIRED (1 PER 20')(1264.58'/20') 63 SHRUBS SHRUBS PROVIDED 282 SHRUBS
RESIDENTIAL STREET SHRUBS PROVIDED 63 SHRUBS (INCL. PARKING LOT SCREEN)

WILDFLOWER COURT(PRIVATE)
RESIDENTIAL STREET TREES REQUIRED (1 PER 30')(535.09'/30') 18 TREES
RESIDENTIAL STREET TREES PROVIDED 10 TREES* LANDSCAPE AREA REQUIRED (5% OF PARKING AREA)(X.05) N/A
RESIDENTIAL STREET SHRUBS REQUIRED (1 PER 20')(535.09'/20') 27 SHRUBS LANDSCAPE AREA PROVIDED N/A
RESIDENTIAL STREET SHRUBS PROVIDED 27 SHRUBS TREES REQUIRED 1 PER ISLAND
TREES PROVIDED 1 ON EACH END
OF PARKING ROW
SE 6TH TERRACE(PRIVATE) SCREENING REQUIRED (2.5 FT. HT
RESIDENTIAL STREET TREES REQUIRED (1 PER 30')(747.35'/30') 25 TREES SCREENING PROVIDED
RESIDENTIAL STREET TREES PROVIDED 20 TREES* ALONG ENTIRE FRONTAGE ADJ. TO STREET)
RESIDENTIAL STREET SHRUBS REQUIRED (1 PER 20')(747.35'/20') 37 SHRUBS SCREENING PROVIDED AS REQUIRED BY
RESIDENTIAL STREET SHRUBS PROVIDED 37 SHRUBS CODE

OPEN YARD/SITE LANDSCAPE REQUIRED(Sec. 8.790.B)

LOT AREA 939,885.56 S.F.
BUILDING AREA 233,899.93 S.F.
TREES REQUIRED (1 PER 5,000 S.F. OF LOT AREA EXCL BLDG.)(705,985.63/5000) 141 TREES
TREES PROVIDED 188 TREES
(12 ADD FOR PRIVATE STREET TREES)

PARKING LOT LANDSCAPE(Sec. 8.810)

BUFFER SCREENING & LANDSCAPE(Sec. 8.890 Table 8.890&Sec. 8.900)

MODIFICATION REQUESTED SINCE USES ARE WITHIN THE SAME PROJECT

*STREET INTERSECTIONS AND DRIVEWAYS PREVENT MEETING REQUIREMENT

0 50' 100'
SCALE: 1" = 50'

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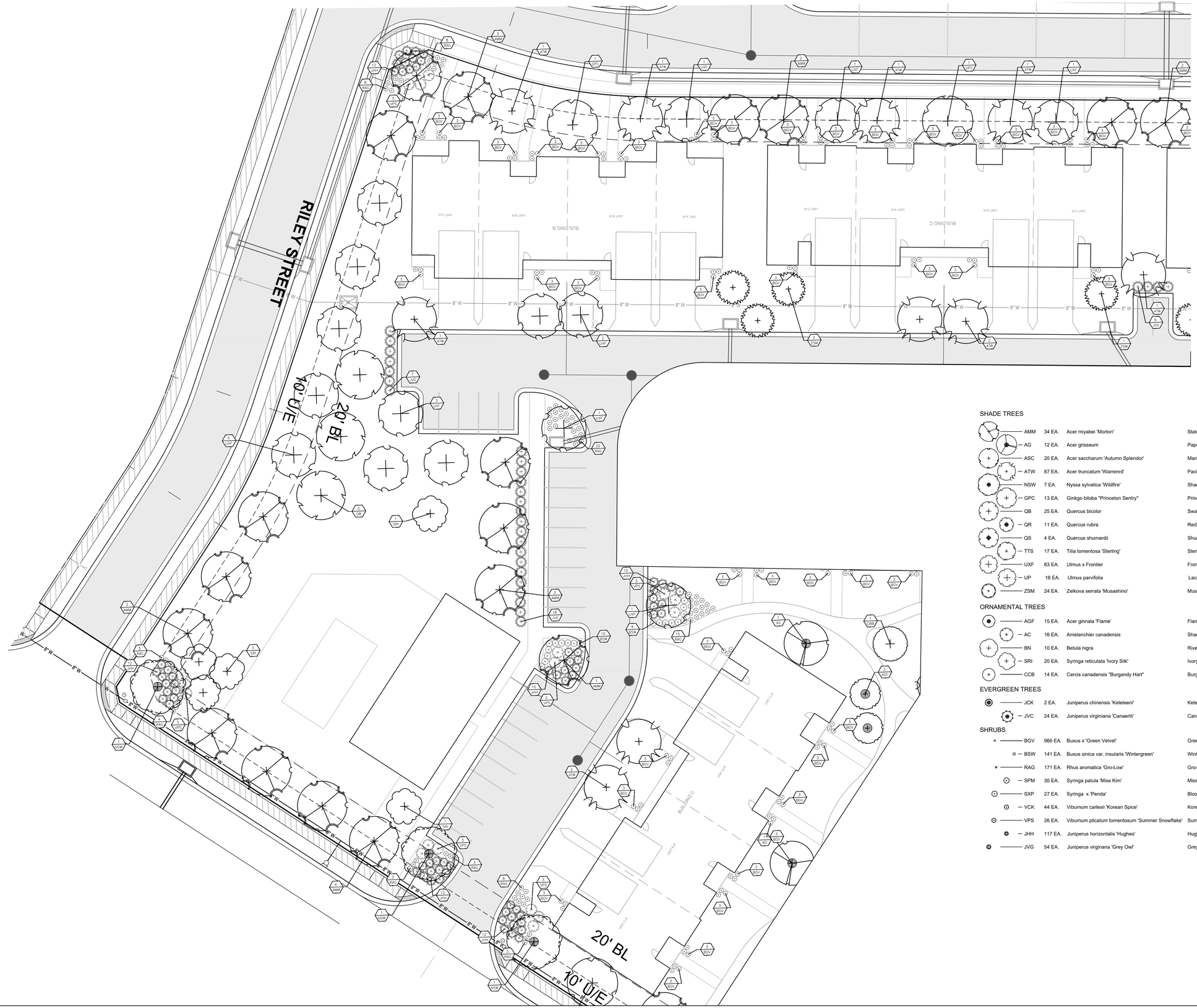
REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22-097

OVERALL LANDSCAPE PLAN

SHEET
L100



SHADE TREES

AMM	34 EA.	Acer miyabei 'Morton'	State Street Miyabe Maple	2.5" Cal.	B&B
AG	12 EA.	Acer grisseum	Paperbark Maple	2.5" Cal.	B&B
ASC	20 EA.	Acer saccharum 'Autumn Splendor'	Marmo Maple	2.5" Cal.	B&B
ATW	87 EA.	Acer truncatum 'Warrenrd'	Pacific Sunset Maple	2.5" Cal.	B&B
NSW	7 EA.	Nyssa sylvatica 'Wildfire'	Shadmaster Honeylocust	2.5" Cal.	B&B
GPC	13 EA.	Ginkgo biloba "Princeton Sentry"	Princeton Sentry Ginkgo	2.5" Cal.	B&B
QB	25 EA.	Quercus bicolor	Swamp White Oak	2.5" Cal.	B&B
QR	11 EA.	Quercus rubra	Red Oak	2.5" Cal.	B&B
QS	4 EA.	Quercus shumardii	Shumard Oak	2.5" Cal.	B&B
TTS	17 EA.	Tilia tomentosa 'Sterling'	Sterling Silver Linden	2.5" Cal.	B&B
UXF	83 EA.	Ulmus x Frontier	Frontier Elm	2.5" Cal.	B&B
UP	18 EA.	Ulmus parvifolia	Lacebark Elm	2.5" Cal.	B&B
ZSM	24 EA.	Zelkova serrata 'Musashino'	Musashino Columnar Zelkova	2.5" Cal.	B&B

ORNAMENTAL TREES

AGF	15 EA.	Acer ginnala 'Flame'	Flame Amur Maple	2" Cal. & 8' ht.	B&B
AC	16 EA.	Amelanchier canadensis	Shadblow Serviceberry	2" Cal. & 8' ht.	B&B
BN	10 EA.	Betula nigra	River Birch	2" Cal. & 8' ht.	B&B
SRI	20 EA.	Syringa reticulata 'Ivory Silk'	Ivory Silk Lilac	2" Cal. & 8' ht.	B&B
CCB	14 EA.	Cercis canadensis "Burgandy Hart"	Burgandy Hart Redbud	2" Cal. & 8' ht.	B&B

EVERGREEN TREES

JCK	2 EA.	Juniperus chinensis 'Keteleerii'	Keteleeri Juniper	6' ht.	B&B
JVC	24 EA.	Juniperus virginiana 'Canaertii'	Canaert Juniper	6' ht.	B&B

SHRUBS

BGV	966 EA.	Buxus x 'Green Velvet'	Green Velvet Boxwood	5 gal.	Cont.
BSW	141 EA.	Buxus sinica var. insularis 'Wintergreen'	Wintergreen Boxwood	5 gal.	Cont.
RAG	171 EA.	Rhus aromatica 'Gro-Low'	Gro-Low Fragrant sumac	5 gal.	Cont.
SPM	30 EA.	Syringa patula 'Miss Kim'	Miss Kim Lilac	5 gal.	Cont.
SXP	27 EA.	Syringa x 'Penda'	Bloomerang Lilac	5 gal.	Cont.
VCK	44 EA.	Viburnum carlesii 'Korean Spice'	Koreanspice Viburnum	7 gal.	Cont.
VPS	26 EA.	Viburnum plicatum tomentosum 'Summer Snowflake'	Summer Snowflake Viburnum	7 gal.	Cont.
JHH	117 EA.	Juniperus horizontalis 'Hughes'	Hughes Juniper	5 gal.	Cont.
JVG	54 EA.	Juniperus virginana 'Grey Owl'	Grey Owl Juniper	5 gal.	Cont.

0 20' 40'

SCALE: 1" = 20'

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PREPARED BY:

SCHLAGEL & ASSOCIATES, P.A.

REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
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7	

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22-097

LANDSCAPE DETAIL PLAN

SHEET
L200

SHADE TREES

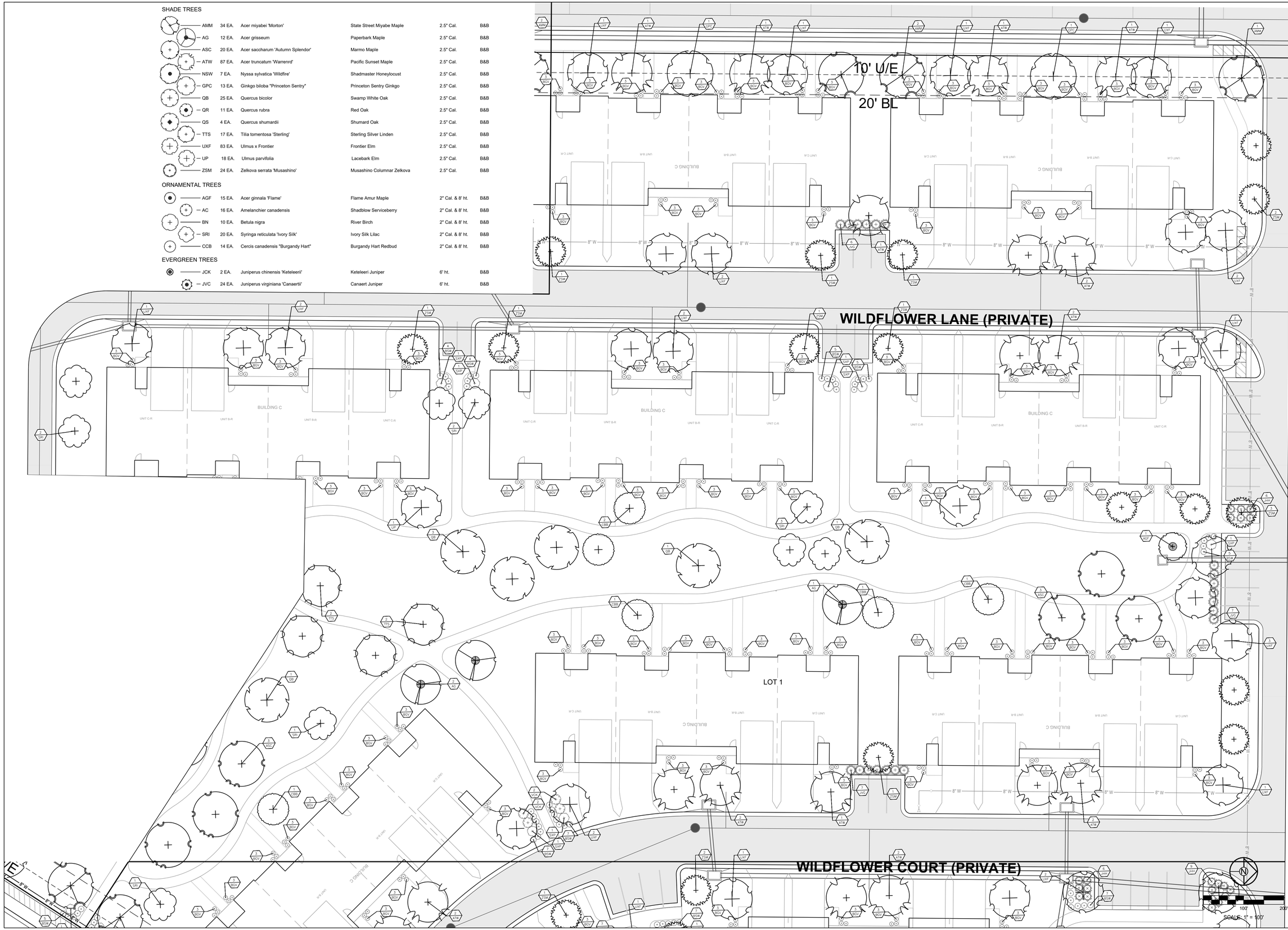
AMM	34 EA.	Acer miyabei 'Morton'	State Street Miyabe Maple	2.5" Cal.	B&B
AG	12 EA.	Acer grisseum	Paperbark Maple	2.5" Cal.	B&B
ASC	20 EA.	Acer saccharum 'Autumn Splendor'	Marmo Maple	2.5" Cal.	B&B
ATW	87 EA.	Acer truncatum 'Warrenrd'	Pacific Sunset Maple	2.5" Cal.	B&B
NSW	7 EA.	Nyssa sylvatica 'Wildfire'	Shadmaster Honeylocust	2.5" Cal.	B&B
GPC	13 EA.	Ginkgo biloba "Princeton Sentry"	Princeton Sentry Ginkgo	2.5" Cal.	B&B
QB	25 EA.	Quercus bicolor	Swamp White Oak	2.5" Cal.	B&B
QR	11 EA.	Quercus rubra	Red Oak	2.5" Cal.	B&B
QS	4 EA.	Quercus shumardii	Shumard Oak	2.5" Cal.	B&B
TTS	17 EA.	Tilia tomentosa 'Sterling'	Sterling Silver Linden	2.5" Cal.	B&B
UXF	83 EA.	Ulmus x Frontier	Frontier Elm	2.5" Cal.	B&B
UP	18 EA.	Ulmus parvifolia	Lacebark Elm	2.5" Cal.	B&B
ZSM	24 EA.	Zelkova serrata 'Musashino'	Musashino Columnar Zelkova	2.5" Cal.	B&B

ORNAMENTAL TREES

AGF	15 EA.	Acer ginnala 'Flame'	Flame Amur Maple	2" Cal. & 8' ht.	B&B
AC	16 EA.	Amelanchier canadensis	Shadblow Serviceberry	2" Cal. & 8' ht.	B&B
BN	10 EA.	Betula nigra	River Birch	2" Cal. & 8' ht.	B&B
SRI	20 EA.	Syringa reticulata 'Ivory Silk'	Ivory Silk Lilac	2" Cal. & 8' ht.	B&B
CCB	14 EA.	Cercis canadensis "Burgandy Hart"	Burgandy Hart Redbud	2" Cal. & 8' ht.	B&B

EVERGREEN TREES

JCK	2 EA.	Juniperus chinensis 'Keteleerii'	Keteleeri Juniper	6' ht.	B&B
JVC	24 EA.	Juniperus virginiana 'Canaertii'	Canaert Juniper	6' ht.	B&B



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REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
A	
A	
A	
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A	

DRAWN BY:	TRC
CHECKED BY:	MAB
DATE PREPARED:	03/03/2023
PROJ. NUMBER:	22-097

LANDSCAPE DETAIL PLAN

SHEET
L201

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REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

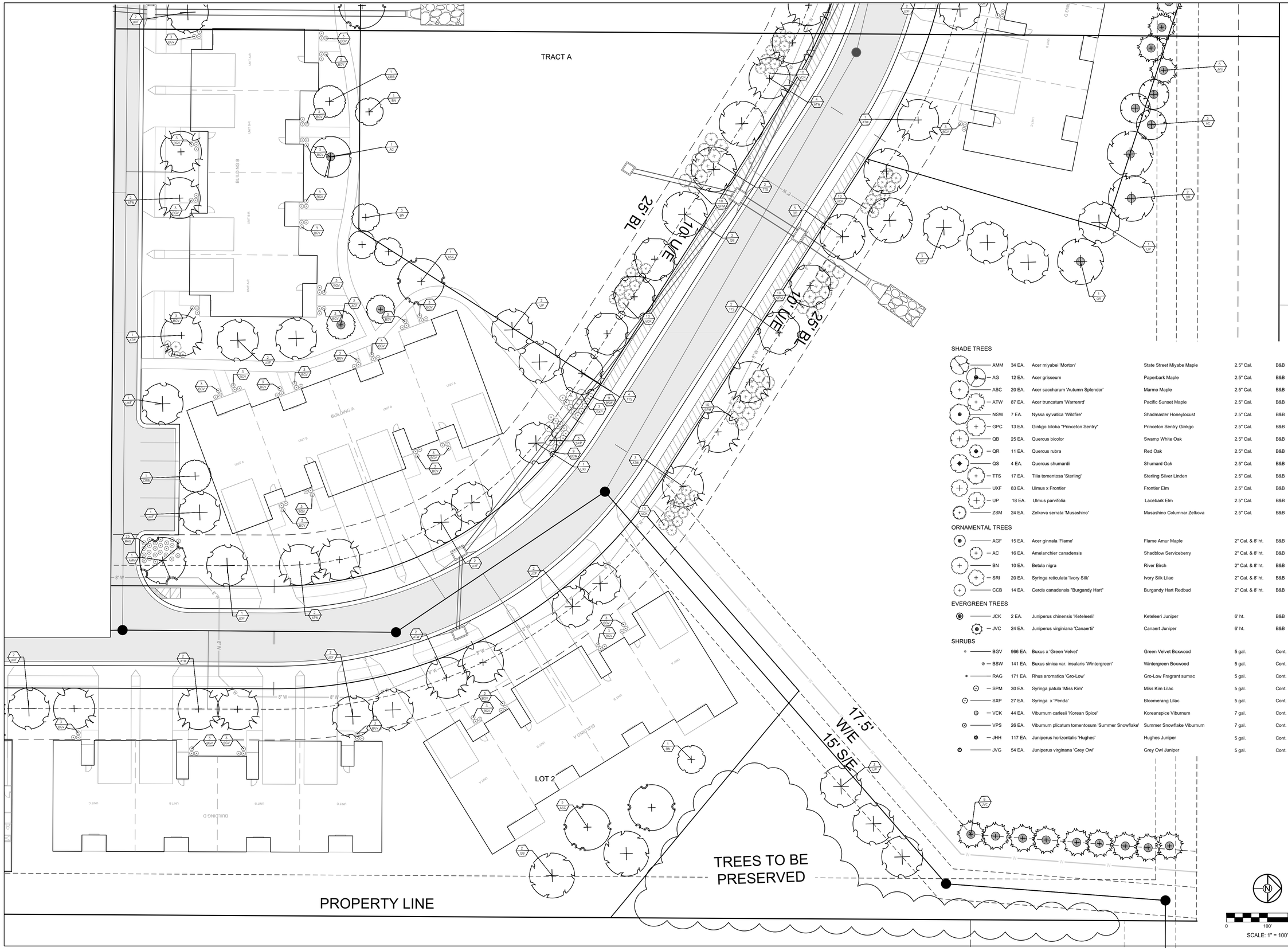
REVISION DATE	DESCRIPTION

DRAWN BY:	TRC
CHECKED BY:	MAB
DATE PREPARED:	03/03/2023
PROJ. NUMBER:	22-007

LANDSCAPE DETAIL PLAN

SHEET
L202

0 100' 200'
SCALE: 1" = 100'



SHADE TREES

AMM	34 EA.	Acer miyabei 'Morton'	State Street Miyabe Maple	2.5" Cal.	B&B
AG	12 EA.	Acer grisseum	Paperbark Maple	2.5" Cal.	B&B
ASC	20 EA.	Acer saccharum 'Autumn Splendor'	Marmo Maple	2.5" Cal.	B&B
ATW	87 EA.	Acer truncatum 'Warrenrd'	Pacific Sunset Maple	2.5" Cal.	B&B
NSW	7 EA.	Nyssa sylvatica 'Wildfire'	Shadmaster Honeylocust	2.5" Cal.	B&B
GPC	13 EA.	Ginkgo biloba "Princeton Sentry"	Princeton Sentry Ginkgo	2.5" Cal.	B&B
QB	25 EA.	Quercus bicolor	Swamp White Oak	2.5" Cal.	B&B
QR	11 EA.	Quercus rubra	Red Oak	2.5" Cal.	B&B
QS	4 EA.	Quercus shumardii	Shumard Oak	2.5" Cal.	B&B
TTS	17 EA.	Tilia tomentosa 'Sterling'	Sterling Silver Linden	2.5" Cal.	B&B
UXF	83 EA.	Ulmus x Frontier	Frontier Elm	2.5" Cal.	B&B
UP	18 EA.	Ulmus parvifolia	Lacebark Elm	2.5" Cal.	B&B
ZSM	24 EA.	Zelkova serrata 'Musashino'	Musashino Columnar Zelkova	2.5" Cal.	B&B

ORNAMENTAL TREES

AGF	15 EA.	Acer ginnala 'Flame'	Flame Amur Maple	2" Cal. & 8' ht.	B&B
AC	16 EA.	Amelanchier canadensis	Shadblow Serviceberry	2" Cal. & 8' ht.	B&B
BN	10 EA.	Betula nigra	River Birch	2" Cal. & 8' ht.	B&B
SRI	20 EA.	Syringa reticulata 'Ivory Silk'	Ivory Silk Lilac	2" Cal. & 8' ht.	B&B
CCB	14 EA.	Cercis canadensis "Burgandy Hart"	Burgandy Hart Redbud	2" Cal. & 8' ht.	B&B

EVERGREEN TREES

JCK	2 EA.	Juniperus chinensis 'Keteleerii'	Keteleeri Juniper	6' ht.	B&B
JVC	24 EA.	Juniperus virginiana 'Canaertii'	Canaert Juniper	6' ht.	B&B

SHRUBS

BGV	966 EA.	Buxus x 'Green Velvet'	Green Velvet Boxwood	5 gal.	Cont.
BSW	141 EA.	Buxus sinica var. insularis 'Wintergreen'	Wintergreen Boxwood	5 gal.	Cont.
RAG	171 EA.	Rhus aromatica 'Gro-Low'	Gro-Low Fragrant sumac	5 gal.	Cont.
SPM	30 EA.	Syringa patula 'Miss Kim'	Miss Kim Lilac	5 gal.	Cont.
SXP	27 EA.	Syringa x 'Penda'	Bloomerang Lilac	5 gal.	Cont.
VCK	44 EA.	Viburnum carlesii 'Korean Spice'	Koreanspice Viburnum	7 gal.	Cont.
VPS	26 EA.	Viburnum plicatum tomentosum 'Summer Snowflake'	Summer Snowflake Viburnum	7 gal.	Cont.
JHH	117 EA.	Juniperus horizontalis 'Hughes'	Hughes Juniper	5 gal.	Cont.
JVG	54 EA.	Juniperus virginana 'Grey Owl'	Grey Owl Juniper	5 gal.	Cont.

0 100' 200'

SCALE: 1" = 100'

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REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

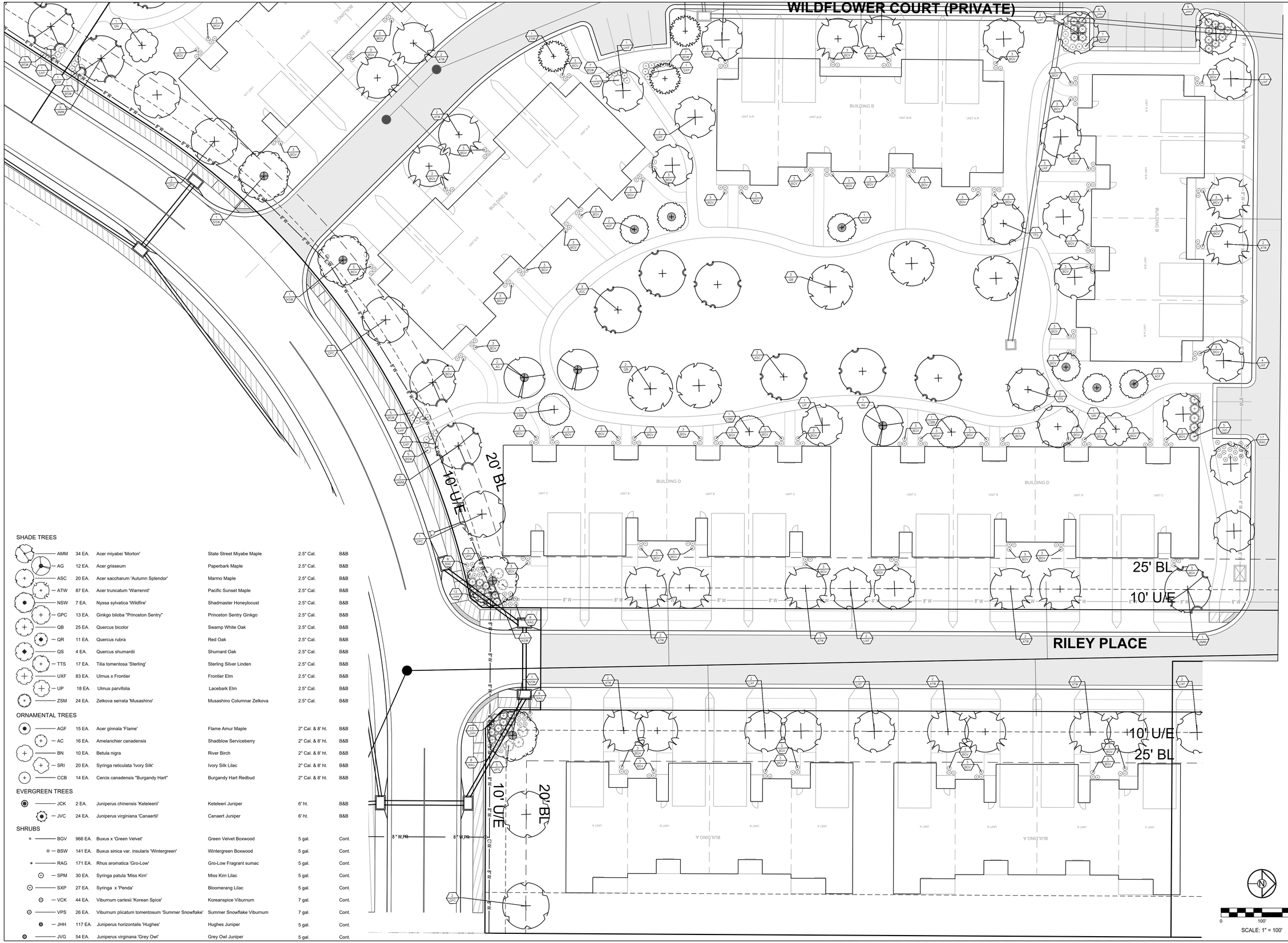
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22-087

LANDSCAPE DETAIL PLAN

SHEET
L203



SHADE TREES

AMM	34 EA.	Acer miyabei 'Morton'	State Street Miyabe Maple	2.5" Cal.	B&B
AG	12 EA.	Acer grisseum	Paperbark Maple	2.5" Cal.	B&B
ASC	20 EA.	Acer saccharum 'Autumn Splendor'	Marmo Maple	2.5" Cal.	B&B
ATW	87 EA.	Acer truncatum 'Warrenrd'	Pacific Sunset Maple	2.5" Cal.	B&B
NSW	7 EA.	Nyssa sylvatica 'Wildfire'	Shadmaster Honeylocust	2.5" Cal.	B&B
GPC	13 EA.	Ginkgo biloba "Princeton Sentry"	Princeton Sentry Ginkgo	2.5" Cal.	B&B
QB	25 EA.	Quercus bicolor	Swamp White Oak	2.5" Cal.	B&B
QR	11 EA.	Quercus rubra	Red Oak	2.5" Cal.	B&B
QS	4 EA.	Quercus shumardii	Shumard Oak	2.5" Cal.	B&B
TTS	17 EA.	Tilia tomentosa 'Sterling'	Sterling Silver Linden	2.5" Cal.	B&B
UXF	83 EA.	Ulmus x Frontier	Frontier Elm	2.5" Cal.	B&B
UP	18 EA.	Ulmus parvifolia	Lacebark Elm	2.5" Cal.	B&B
ZSM	24 EA.	Zelkova serrata 'Musashino'	Musashino Columnar Zelkova	2.5" Cal.	B&B

ORNAMENTAL TREES

AGF	15 EA.	Acer ginnala 'Flame'	Flame Amur Maple	2" Cal. & 8' ht.	B&B
AC	16 EA.	Amelanchier canadensis	Shadblow Serviceberry	2" Cal. & 8' ht.	B&B
BN	10 EA.	Betula nigra	River Birch	2" Cal. & 8' ht.	B&B
SRI	20 EA.	Syringa reticulata 'Ivory Silk'	Ivory Silk Lilac	2" Cal. & 8' ht.	B&B
CCB	14 EA.	Cercis canadensis "Burgandy Hart"	Burgandy Hart Redbud	2" Cal. & 8' ht.	B&B

EVERGREEN TREES

JCK	2 EA.	Juniperus chinensis 'Keteleerii'	Keteleeri Juniper	6' ht.	B&B
JVC	24 EA.	Juniperus virginiana 'Canaertii'	Canaert Juniper	6' ht.	B&B

SHRUBS

BGV	966 EA.	Buxus x 'Green Velvet'	Green Velvet Boxwood	5 gal.	Cont.
BSW	141 EA.	Buxus sinica var. insularis 'Wintergreen'	Wintergreen Boxwood	5 gal.	Cont.
RAG	171 EA.	Rhus aromatica 'Gro-Low'	Gro-Low Fragrant sumac	5 gal.	Cont.
SPM	30 EA.	Syringa patula 'Miss Kim'	Miss Kim Lilac	5 gal.	Cont.
SXP	27 EA.	Syringa x 'Penda'	Bloomerang Lilac	5 gal.	Cont.
VCK	44 EA.	Viburnum carlesii 'Korean Spice'	Koreanspice Viburnum	7 gal.	Cont.
VPS	26 EA.	Viburnum plicatum tomentosum 'Summer Snowflake'	Summer Snowflake Viburnum	7 gal.	Cont.
JHH	117 EA.	Juniperus horizontalis 'Hughes'	Hughes Juniper	5 gal.	Cont.
JVG	54 EA.	Juniperus virginana 'Grey Owl'	Grey Owl Juniper	5 gal.	Cont.

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REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

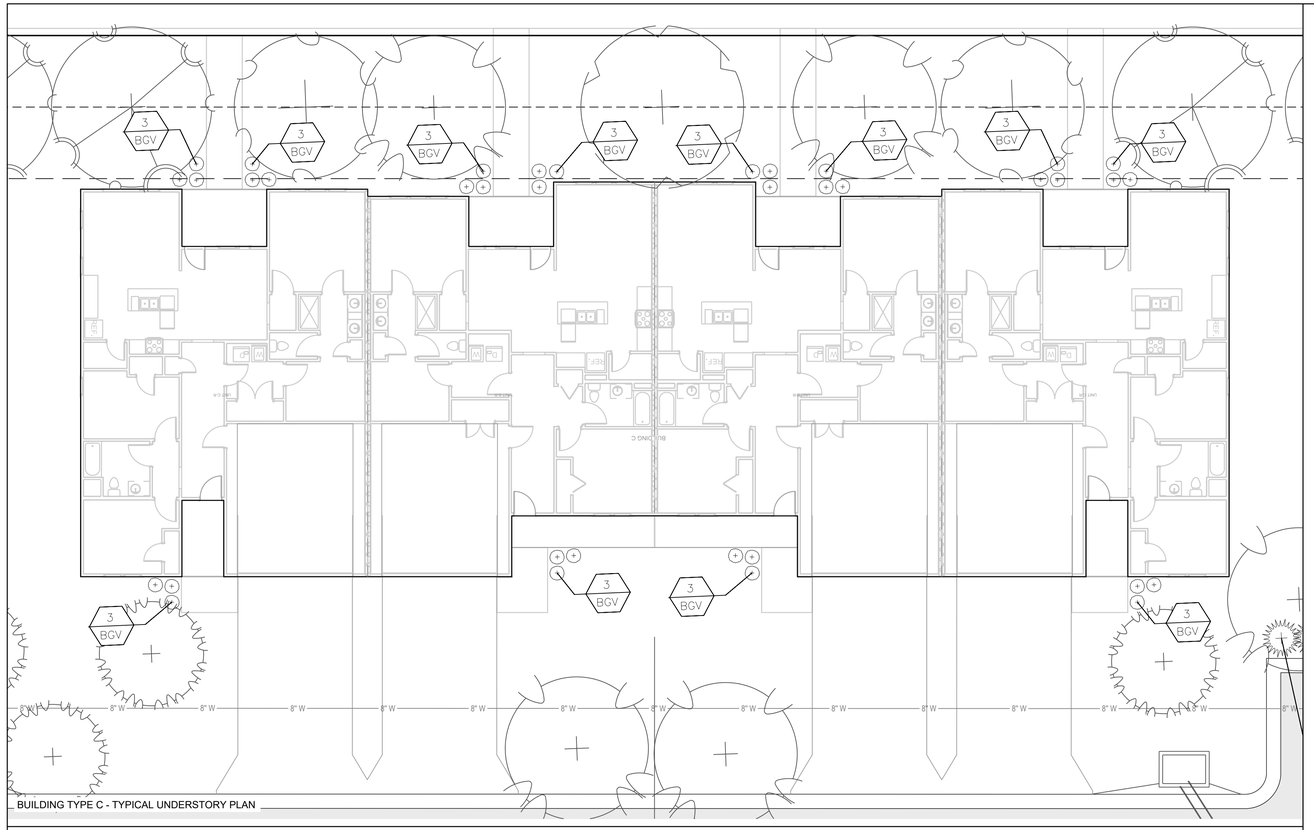
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

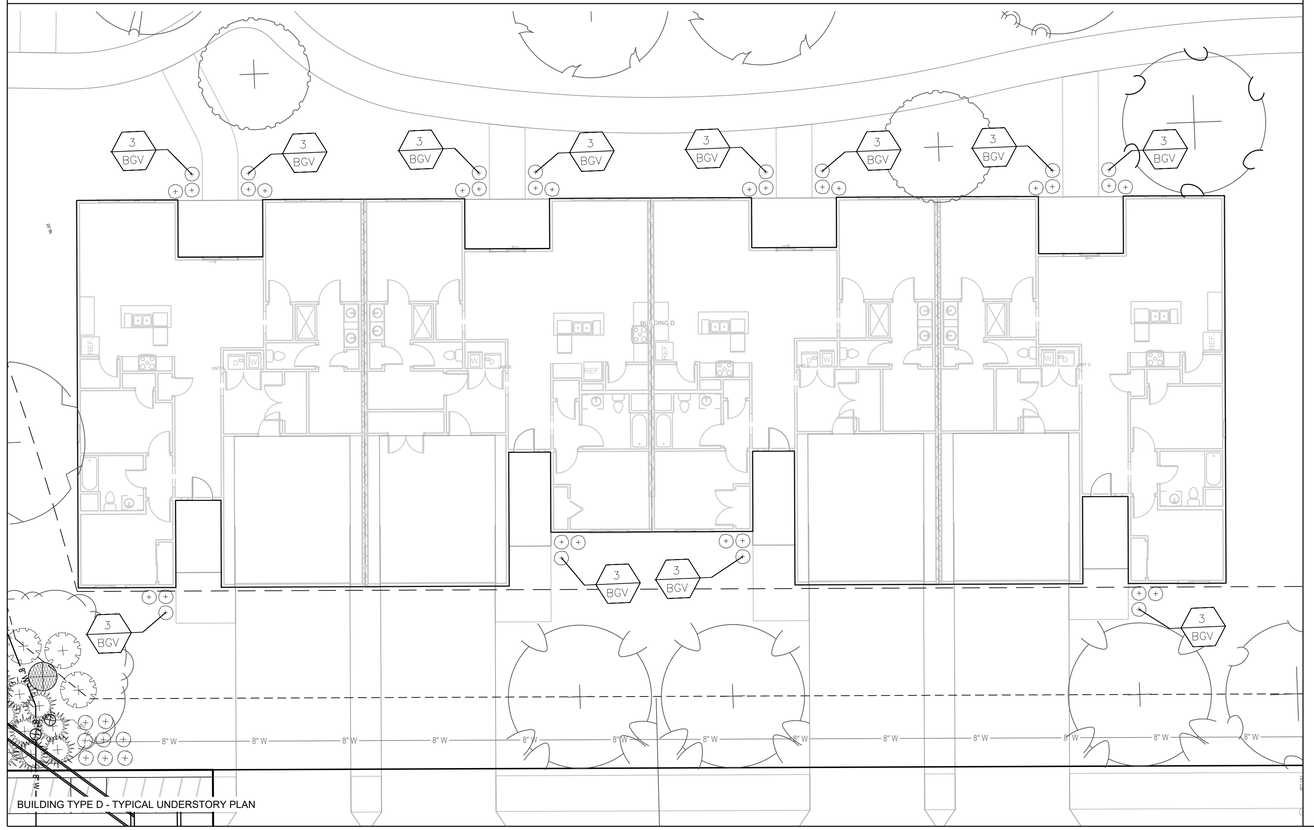
REVISION DATE	DESCRIPTION
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DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22-097

LANDSCAPE DETAIL PLAN

SHEET
L200





SHADE TREES

AMM	34 EA.	Acer miyabei 'Morton'	State Street Miyabe Maple	2.5" Cal.	B&B
AG	12 EA.	Acer grisseum	Paperbark Maple	2.5" Cal.	B&B
ASC	20 EA.	Acer saccharum 'Autumn Splendor'	Marmo Maple	2.5" Cal.	B&B
ATW	87 EA.	Acer truncatum 'Warrenrd'	Pacific Sunset Maple	2.5" Cal.	B&B
NSW	7 EA.	Nyssa sylvatica 'Wildfire'	Shadmaster Honeylocust	2.5" Cal.	B&B
GPC	13 EA.	Ginkgo biloba "Princeton Sentry"	Princeton Sentry Ginkgo	2.5" Cal.	B&B
QB	25 EA.	Quercus bicolor	Swamp White Oak	2.5" Cal.	B&B
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QS	4 EA.	Quercus shumardii	Shumard Oak	2.5" Cal.	B&B
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UXF	83 EA.	Ulmus x Frontier	Frontier Elm	2.5" Cal.	B&B
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ZSM	24 EA.	Zelkova serrata 'Musashino'	Musashino Columnar Zelkova	2.5" Cal.	B&B

ORNAMENTAL TREES

AGF	15 EA.	Acer ginnala 'Flame'	Flame Amur Maple	2" Cal. & 8' ht.	B&B
AC	16 EA.	Amelanchier canadensis	Shadblow Serviceberry	2" Cal. & 8' ht.	B&B
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SRI	20 EA.	Syringa reticulata 'Ivory Silk'	Ivory Silk Lilac	2" Cal. & 8' ht.	B&B
CCB	14 EA.	Cercis canadensis "Burgandy Hart"	Burgandy Hart Redbud	2" Cal. & 8' ht.	B&B

EVERGREEN TREES

JCK	2 EA.	Juniperus chinensis 'Keteleerii'	Keteleeri Juniper	6' ht.	B&B
JVC	24 EA.	Juniperus virginiana 'Canaertii'	Canaert Juniper	6' ht.	B&B

SHRUBS

BGV	966 EA.	Buxus x 'Green Velvet'	Green Velvet Boxwood	5 gal.	Cont.
BSW	141 EA.	Buxus sinica var. insularis 'Wintergreen'	Wintergreen Boxwood	5 gal.	Cont.
RAG	171 EA.	Rhus aromatica 'Gro-Low'	Gro-Low Fragrant sumac	5 gal.	Cont.
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SXP	27 EA.	Syringa x 'Penda'	Bloomerang Lilac	5 gal.	Cont.
VCK	44 EA.	Viburnum carlesii 'Korean Spice'	Koreanspice Viburnum	7 gal.	Cont.
VPS	26 EA.	Viburnum plicatum tomentosum 'Summer Snowflake'	Summer Snowflake Viburnum	7 gal.	Cont.
JHH	117 EA.	Juniperus horizontalis 'Hughes'	Hughes Juniper	5 gal.	Cont.
JVG	54 EA.	Juniperus virginiana 'Grey Owl'	Grey Owl Juniper	5 gal.	Cont.

0 10' 20'

SCALE: 1" = 10'

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REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

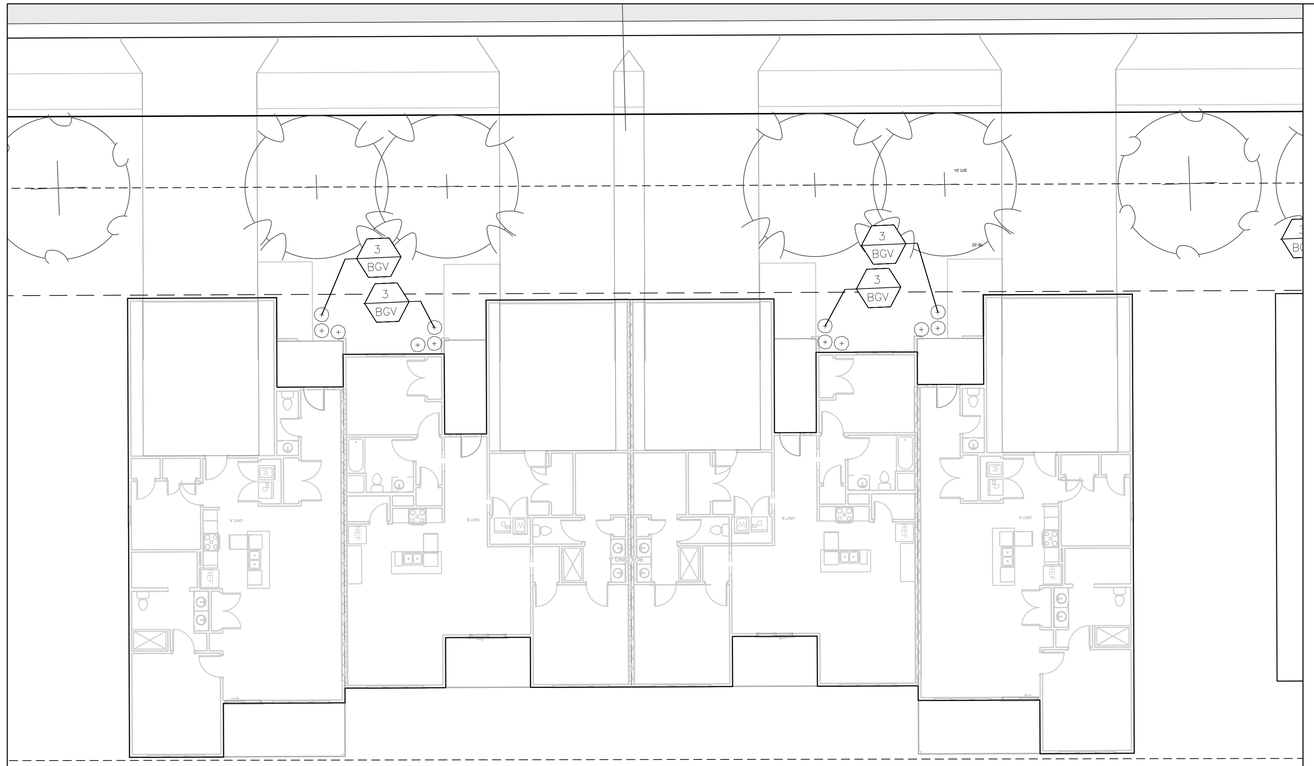
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION

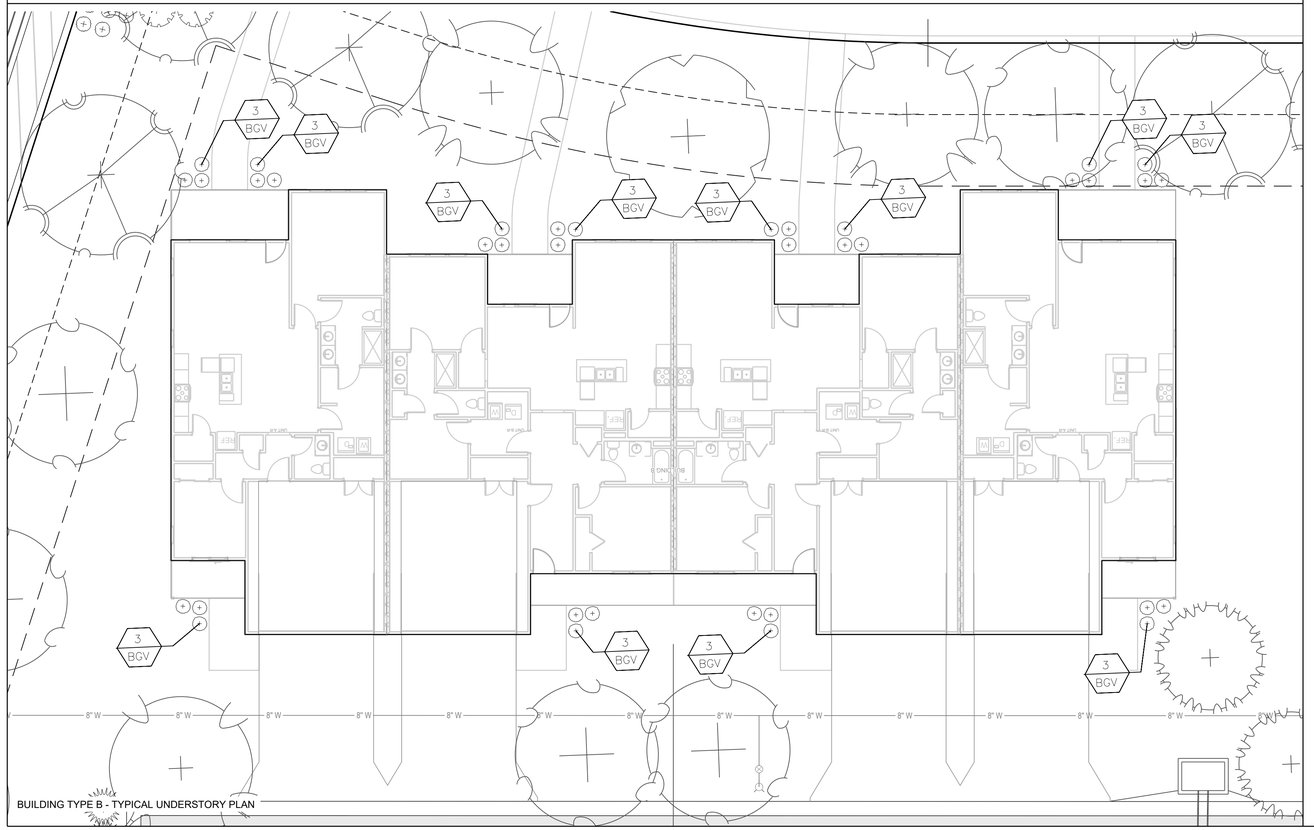
DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22-007

UNDERSTORY LANDSCAPE PLAN

SHEET
L205



BUILDING TYPE A - TYPICAL UNDERSTORY PLAN



BUILDING TYPE B - TYPICAL UNDERSTORY PLAN

SHADE TREES

AMM	34 EA.	Acer miyabei 'Morton'	State Street Miyabe Maple	2.5" Cal.	B&B
AG	12 EA.	Acer grisseum	Paperbark Maple	2.5" Cal.	B&B
ASC	20 EA.	Acer saccharum 'Autumn Splendor'	Marmo Maple	2.5" Cal.	B&B
ATW	87 EA.	Acer truncatum 'Warrenrd'	Pacific Sunset Maple	2.5" Cal.	B&B
NSW	7 EA.	Nyssa sylvatica 'Wildfire'	Shadmaster Honeylocust	2.5" Cal.	B&B
GPC	13 EA.	Ginkgo biloba "Princeton Sentry"	Princeton Sentry Ginkgo	2.5" Cal.	B&B
QB	25 EA.	Quercus bicolor	Swamp White Oak	2.5" Cal.	B&B
QR	11 EA.	Quercus rubra	Red Oak	2.5" Cal.	B&B
QS	4 EA.	Quercus shumardii	Shumard Oak	2.5" Cal.	B&B
TTS	17 EA.	Tilia tomentosa 'Sterling'	Sterling Silver Linden	2.5" Cal.	B&B
UXF	83 EA.	Ulmus x Frontier	Frontier Elm	2.5" Cal.	B&B
UP	18 EA.	Ulmus parvifolia	Lacebark Elm	2.5" Cal.	B&B
ZSM	24 EA.	Zelkova serrata 'Musashino'	Musashino Columnar Zelkova	2.5" Cal.	B&B

ORNAMENTAL TREES

AGF	15 EA.	Acer ginnala 'Flame'	Flame Amur Maple	2" Cal. & 8' ht.	B&B
AC	16 EA.	Amelanchier canadensis	Shadblow Serviceberry	2" Cal. & 8' ht.	B&B
BN	10 EA.	Betula nigra	River Birch	2" Cal. & 8' ht.	B&B
SRI	20 EA.	Syringa reticulata 'Ivory Silk'	Ivory Silk Lilac	2" Cal. & 8' ht.	B&B
CCB	14 EA.	Cercis canadensis "Burgandy Hart"	Burgandy Hart Redbud	2" Cal. & 8' ht.	B&B

EVERGREEN TREES

JCK	2 EA.	Juniperus chinensis 'Keteleerii'	Keteleeri Juniper	6' ht.	B&B
JVC	24 EA.	Juniperus virginiana 'Canaertii'	Canaert Juniper	6' ht.	B&B

SHRUBS

BGV	966 EA.	Buxus x 'Green Velvet'	Green Velvet Boxwood	5 gal.	Cont.
BSW	141 EA.	Buxus sinica var. insularis 'Wintergreen'	Wintergreen Boxwood	5 gal.	Cont.
RAG	171 EA.	Rhus aromatica 'Gro-Low'	Gro-Low Fragrant sumac	5 gal.	Cont.
SPM	30 EA.	Syringa patula 'Miss Kim'	Miss Kim Lilac	5 gal.	Cont.
SXP	27 EA.	Syringa x 'Penda'	Bloomerang Lilac	5 gal.	Cont.
VCK	44 EA.	Viburnum carlesii 'Korean Spice'	Koreanspice Viburnum	7 gal.	Cont.
VPS	26 EA.	Viburnum plicatum tomentosum 'Summer Snowflake'	Summer Snowflake Viburnum	7 gal.	Cont.
JHH	117 EA.	Juniperus horizontalis 'Hughes'	Hughes Juniper	5 gal.	Cont.
JVG	54 EA.	Juniperus virginana 'Grey Owl'	Grey Owl Juniper	5 gal.	Cont.

0 10' 20'

SCALE: 1" = 10'

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PREPARED BY:

SCHLAGEL & ASSOCIATES, P.A.

REUNION AT BLACKWELL
FINAL DEVELOPMENT PLAN

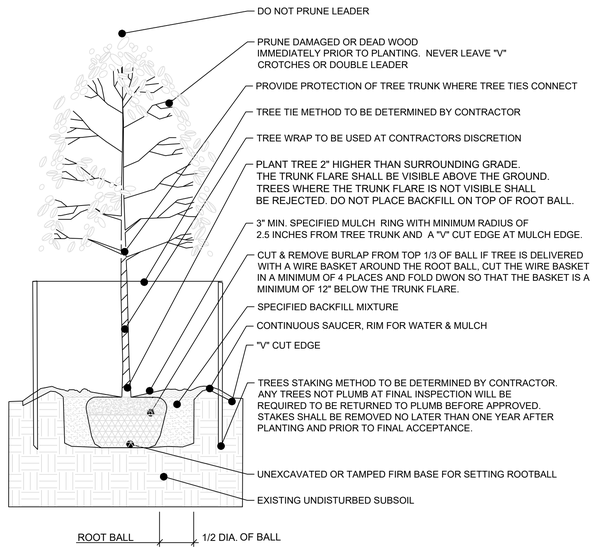
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 03/03/2023
PROJ. NUMBER: 22-007

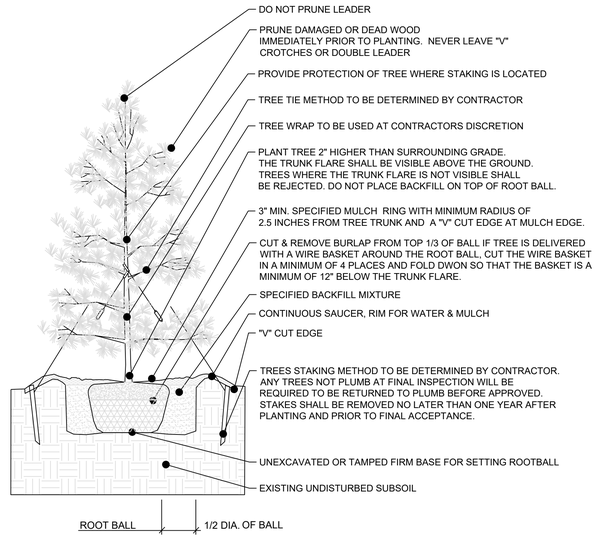
UNDERSTORY LANDSCAPE PLAN

SHEET
L205



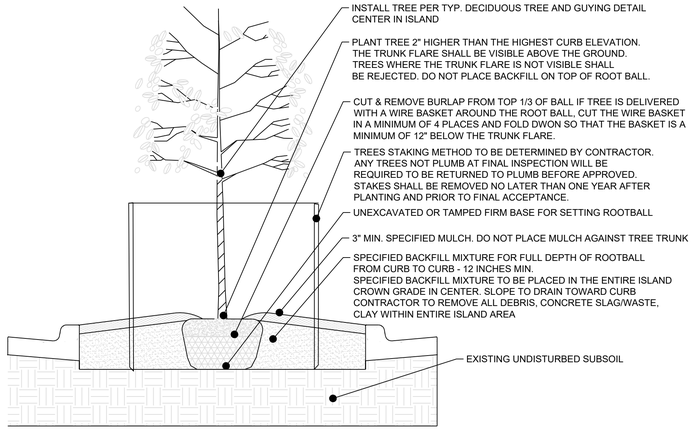
TYP. DECIDUOUS PLANTING & GUYING

NO SCALE



TYP. EVERGREEN PLANTING & GUYING

NO SCALE



TYP. PARKING LOT ISLAND PLANTING

NO SCALE

Shade trees that grow to be large shall have one relatively straight central leader (Figure 1). Heading the tree is acceptable provided the central leader is reestablished in the nursery.

Main branches (Figure 2) shall be well distributed along the central leader, not clustered together. They shall form a balanced crown appropriate for the cultivar or species.

The diameter of branches (Figure 3) that grow from the central leader, or trunk, shall be no larger than two-thirds (one-half is preferred) the diameter of the trunk measured just above the branch.

The largest branches shall be free of bark inclusions that extend into the branch union (Figure 4 A and B).

Small-diameter branches (Figure 5, left), particularly on trees less than 1 inch caliper, should be present along the lower trunk below the lowest main branch. These branches shall be no larger than 3/8 inch in diameter.

The trunk shall be free of wounds, sunburned areas, conks (fungal fruiting bodies), wood cracks, bleeding areas, signs of boring insects, cankers, or lesions. Properly made recent or closed pruning cuts are acceptable.

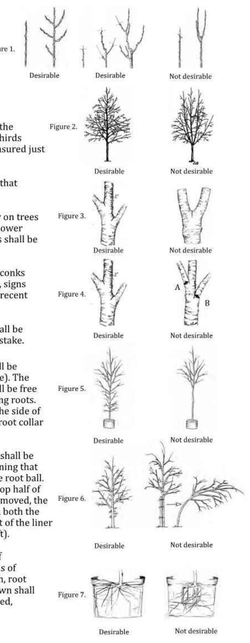
The trunk caliper (diameter) and taper (Figure 6) shall be sufficient so that the tree remains vertical without a stake.

The root collar (the uppermost roots) (Figure 7) shall be within the upper 2 inches of the soil media (substrate). The root collar and the inside portion of the root ball shall be free of defects, including circling, kinked, and stem-girdling roots. Roots at the surface should grow mostly straight to the side of the container. You may need to remove soil near the root collar to inspect for root defects.

The tree shall be well rooted in the soil media. Roots shall be uniformly distributed throughout the container, meaning that roots should not be concentrated at the bottom of the root ball. Some roots should contact the container wall in the top half of the root ball (Figure 7, left). When the container is removed, the root ball shall remain intact. When the trunk is lifted, both the trunk and root system shall move as one. The imprint of the liner or smaller container shall not be visible (Figure 7, left).

The root ball shall be moist throughout at the time of inspection and delivery. The roots shall show no signs of excess soil moisture as indicated by poor root growth, root discoloration, distortion, death, or foul odor. The crown shall show no signs of moisture stress as indicated by wilted, shriveled, or dead leaves or branch dieback.

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NOTES:

1. UTILITY INFORMATION SHOWN IS DESIGNED LOCATION OR LOCATIONS BASED ON UTILITY LOCATES. AS BUILT LOCATIONS MAY VARY. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO COMMENCING LANDSCAPE INSTALLATION. NOTIFY THE LANDSCAPE ARCHITECT OF ANY CONFLICTS OR OBSTRUCTIONS.
2. QUANTITIES INDICATED ON THE PLAN ARE FOR CONVENIENCE ONLY. CONTRACTOR SHALL VERIFY ALL PLANT QUANTITIES PRIOR TO PLANTING. NOTIFY THE LANDSCAPE ARCHITECT OF ANY DISCREPANCIES. THE PLAN QUANTITIES AND NUMBER OF SYMBOLS SHALL SUPERSEDED QUANTITIES IN THE SCHEDULE
3. ALL PLANT MATERIAL SHALL COMPLY WITH CITY STANDARDS AND ANSI A60.1 THE AMERICAN STANDARD FOR NURSERY STOCK.
4. ALL TREES SHALL MEET THE SIZE REQUIREMENTS OF CITY ORDINANCE. ALL TREES SHALL BE CALLIPERED AND UNDERSIZED TREES SHALL BE REJECTED.
5. ALL SHRUBS TO BE UTILIZED FOR SCREENING SHALL BE 24" HEIGHT AT TIME OF PLANTING.
6. ALL PLANTING BEDS CONTAINING SHRUBS, GROUND COVER, PERENNIALS, ANNUALS SHALL BE IN A PLANTING BED WITH 3" MIN. DEPTH OF MULCH AND A "V-CUT" EDGE.
7. ALL TREES SHALL HAVE A MIN. 3 FT. DIA. AREA THAT HAS 3" MIN. DEPTH OF WOOD MULCH.
8. ALL AREAS BETWEEN THE APARTMENT BUILDING AND THE SIDE WALK FROM THE DIRVEWAY TO THE FRONT DOORS SHALL BE MULCHED.
9. THE SMALL ISLANDS BETWEEN THE APARTMENT BUILDING DRIVEWAYS SHALL CONTAIN 2" COBBLE ROCK.
10. ALL TURF AREAS SHALL BE SODDED UNLESS INDICATED ON THE PLANS.
11. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN SHALL REQUIRE WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT AND THE CITY, PRIOR TO INSTALLATION.
12. THE LANDSCAPE ARCHITECT AND OWNER SHALL APPROVE GRADES AND CONDITION OF SITE PRIOR TO SODDING OPERATIONS.
13. INSTALLATION AND MAINTENANCE OF LANDSCAPING SHALL COMPLY WITH THE CITY STANDARDS
14. ALL PLANT MATERIAL SHALL BE INSTALLED TO ALLOW A MINIMUM CLEARANCE BETWEEN PLANT AND ADJACENT PAVEMENT OF 1 FT. FOR PERENNIALS AND GROUNDCOVER AND 1.5 FT. FOR SHRUBS. A 2 FT. CLEARANCE(4 FEET FROM BACK OF CURB TO THE CENTER OF SHRUB)FOR CAR OVERHANG IS REQUIRED AT ALL PARKING ISLANDS AND PERIMETERS.
15. AFTER COMPLETE INSTALLATION OF ALL PLANT MATERIAL AND SOD THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT THAT THE WORK IS COMPLETE AND READY FOR REVIEW. THE LANDSCAPE ARCHITECT SHALL REVIEW THE LANDSCAPE INSTALLATION TO DETERMINE COMPLIANCE WITH THE APPROVED PLANS. WHEN THE LANDSCAPE INSTALLATION MEETS THE REQUIREMENTS OF THE APPROVED PLAN, THE LANDSCAPE ARCHITECT SHALL PROVIDE A SIGNED AND SEALED LETTER TO THE CITY STATING THAT ALL LANDSCAPE PLANTINGS HAVE BEEN INSTALLED PER THE APPROVED PLAN.
16. AN IRRIGATION SYSTEM OR HOSE BIBS MUST BE WITHIN 100 FEET OF ANY LANDSCAPE AREA IS REQUIRED BY CODE. CONTRACTOR TO PROVIDE IRRIGATION/WATERING PLAN AS DESIGN BUILD.
17. IN THE EVENT OF WORK IN OR ON THE SANITARY MAIN, ANY TREES OR PLANTINGS PLACED WITHIN THE SEWER EASEMENT MAY BE REMOVED WITHOUT REPLACEMENT OR COMPENSATION THERE-OF AND SHALL BE REPLACED BY THE PROPERTY OWNER AS REQUIRED BY THE CITY.
18. ALL LANDSCAPE PLANTINGS AND LAWN AREAS SHALL BE MAINTAINED AS REQUIRED BY CITY CODE. ALL LANDSCAPE PLANTING AND TURF AREAS WITHIN THE RIGHT OF WAY SHALL BE MAINTAINED BY THE ADJACENT OWNER AS REQUIRED BY THE CITY CODE.
19. LANDSCAPEING ADJACENT TO THE FIRE DEPARTMENT CONNECTION SHALL ALLOW FOR UNOBSTRUCTED ACCESS TO THE CONNECTION, WITH NO SHRUBS/TREES WITHIN A 3 FOOT RADIUS OF THE CONNECTION.

1. All trees shall comply with State and Federal regulations. Trees should be obtained from local sources but must meet the quaility quidelines herein. Trees transported from out of the region shall meet all State and Federal regulations and be certified to be disease and insect free.
2. Provide healthy stock, grown in a nursery and reasonably free of die-back, disease, insects, eggs, bores, and larvae. At the time of planting all plants shall have a root system, stem, and branch form that will not restrict normal growth, stability and health for the expected life of the plant.
3. All trees shall be nursery-grown.
4. Plants shall be healthy with the color, shape, size and distribution of trunk, stems, branches, buds and leaves normal to the plant type specified. Tree quality above the soil line shall comply with the following:
5. Crown: The form and density of the crown shall be typical for a young specimen of the species or cultivar pruned to a central and dominant leader.
6. Crown specifications do not apply to plants that have been specifically trained in the nursery as topiary, espalier, multi-stem, clump, or unique selections such as contorted or weeping cultivars.
7. Leaves: The size, color, and appearance of leaves shall be typical for the time of year and stage of growth of the species or cultivar. Trees shall not show signs of prolonged moisture stress or over watering as indicated by wilted, shriveled, or dead leaves.
8. Branches: Shoot growth (length and diameter) throughout the crown should be appropriate for the age and size of the species or cultivar. Trees shall not have dead, diseased, broken, distorted, or otherwise injured branches.
   a.) Main branches shall be distributed along the central leader not clustered together. Potential main branches shall be evenly spaced and have appropriate space between them. They shall form a balanced crown appropriate for the cultivar/species.
   b.) Branch diameter shall be no larger than two-thirds (one-half is preferred) the diameter of the central leader measured 1 inch above the branch union.
   c.) The attachment of the largest branches (scaffold branches) shall be free of included bark.
   d.) Branches shall be distributed radially around and vertically along the trunk, forming a generally symmetrical crown typical for the species.
   e.) The attachment of scaffold branches shall be free of included bark.
9. Branch structure: The better quality, large-maturing shade trees (lower extreme left) have all branches less than about two-thirds the trunk diameter. Poor quality shade trees (lower left center) have larger upright branches. Trees such as crape myrtle and other small-maturing trees can have several trunks. Trees with extensive defects in branches such as cracks and included bark (lower right) represent lesser quality than trees free of these potential problems. Included bark can be seen between the two arrows below. Branches with bark inclusions are weakly attached to the tree and can split easy.
10. Evergreen branch structure: The branch pattern should dense, symmetrical and the branch stems should be evenly spaced completely around the trunk. The branches shall extend to within 12 inches of the ground and be along the full length of the trunk. Trees which are not symmetrical or that have an "open area" will be rejected. For structural integrity on evergreen trees, all side branches should be less than half the diameter of the adjacent trunk (less than one-third is preferred).
11. Trunk: The tree trunk shall be relatively straight, vertical, and free of wounds that penetrate to the wood (properly made pruning cuts, closed or not, are acceptable and are not considered wounds), sunburned areas, conks (fungal fruiting bodies), wood cracks, sap leakage, signs of boring insects, galls, cankers, girdling ties, or lesions (mechanical injury).
12. Evergreen tree trunk: Evergreen trees shall have a single trunck that isstraight, vertical, and free of wounds that penetrate to the wood (properly made pruning cuts, closed or not, are acceptable and are not considered wounds), sunburned areas, conks (fungal fruiting bodies), wood cracks, sap leakage, signs of boring insects, galls, cankers, girdling ties, or lesions (mechanical injury). Codominant trunks (trunks of similar size) will not be accepted.
13. Temporary branches, unless otherwise specified, can be present along the lower trunk below the lowest main (scaffold) branch, particularly for trees less than 1 inch in caliper. These branches should be no greater than 3/8-inch diameter. Clear trunk should be no more than 40% of the total height of the tree.
14. Central Leader: **Trees shall have a single(one), relatively straight central leader** and tapered trunk, free of co-dominant stems and vigorous, upright branches that compete with the central leader. Preferably, the central leader should not have been headed. However, in cases where the original leader has been removed, an upright branch at least ½ (one-half) the diameter of the original leader just below the pruning point shall be present. All trees are assumed to have one central leader trees unless a different form is specified in the plant list or drawings. If the central leader is broken or damaged during delivery or installation the tree shall be rejected and removed from the site. If the central leader dies whin the warranty period the tree shall be replaced at the end of the warranty period.
15. All graft unions, where applicable, shall be completely closed without visible sign of graft rejection. All grafts shall be visible above the soil line.
16. Trunk caliper and taper shall be sufficient so that the lower five feet of the trunk remains vertical without a stake. Auxiliary stake may be used to maintain a straight leader in the upper half of the tree.
17. Plant roots shall be normal to the plant type specified. Root observations shall take place without impacting tree health. Root quality at or below the soil line shall comply with the project Root Acceptance details and the following:
18. The roots shall be reasonably free of scrapes, broken or split wood.
19. The root system shall be reasonably free of injury from biotic (e.g., insects and pathogens) and abiotic (e.g., herbicide toxicity and salt injury) agents. Wounds resulting from root pruning used to produce a high quality root system are not considered injuries.
20. A minimum of three structural roots reasonably distributed around the trunk (not clustered on one side) shall be found in each plant. Root distribution shall be uniform throughout the root ball, and growth shall be appropriate for the species.
21. Plants with structural roots on only one side of the trunk (J roots) shall be rejected.
22. The root collar shall be within the upper 1 inch of the substrate/soil. Two structural roots shall reach the side of the root ball near the top surface of the root ball. The grower may request a modification to this requirement for species with roots that rapidly descend, provided that the grower removes all stem girdling roots above the structural roots across the top of the root ball. Any excess soil shall be removed from the root ball so that the root flare is visible as indicated in the "Planting Depth Detail". The root collar shall be visible above the mulch layer.
23. The root system shall be free of stem girdling roots over the root collar or kinked roots from nursery production practices.
24. Plant Grower Certification: The final plant grower shall be responsible to have determined that the plants have been root pruned at each step in the plant production process to remove stem girdling roots and kinked roots, or that the previous production system used practices that produce a root system throughout the root ball that meets these specifications. Regardless of the work of previous growers, the plant's root system shall be modified at the final production stage, if needed, to produce the required plant root quality. The final grower shall certify in writing that all plants are reasonably free of stem girdling and kinked roots as defined in this specification, and that the tree has been grown and harvested to produce a plant that meets these specifications.
25. At time of observations and delivery, the root ball shall be moist throughout. Roots shall not show signs of excess soil moisture conditions as indicated by stunted, discolored, distorted, or dead roots.

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FINAL DEVELOPMENT PLAN

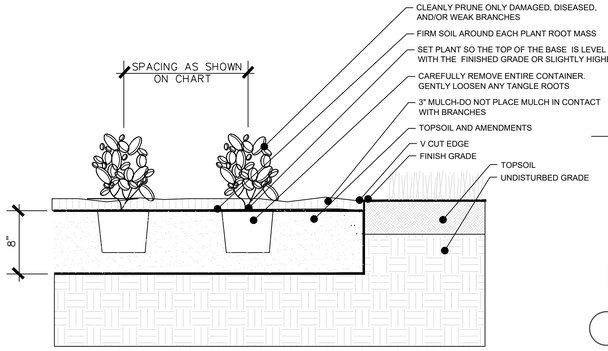
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

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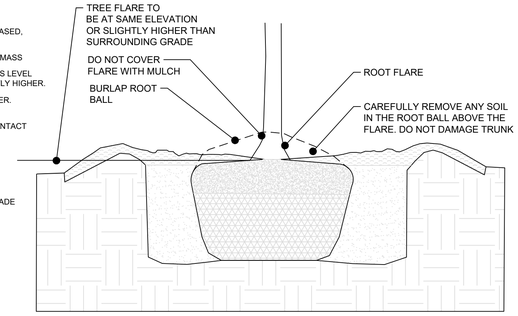
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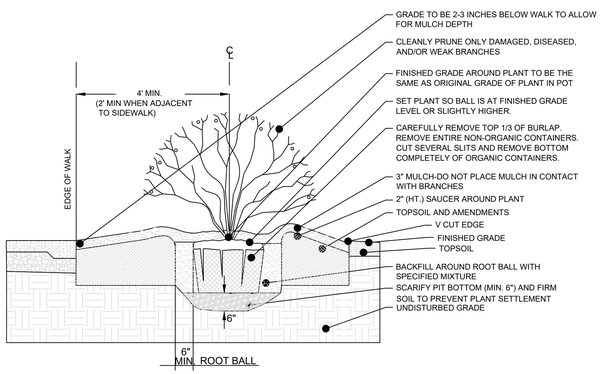
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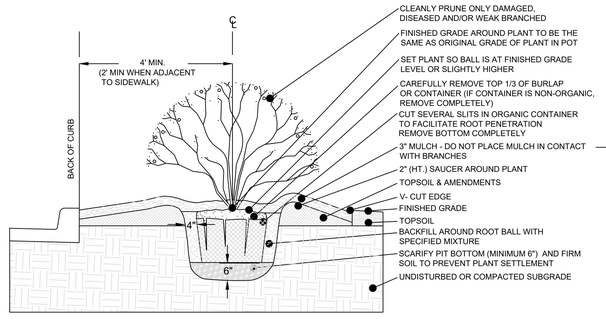
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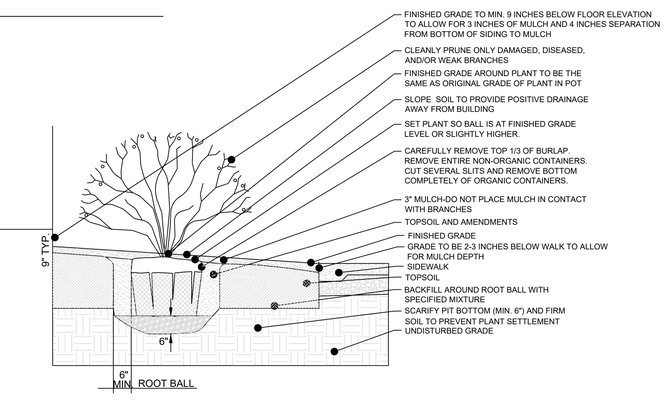
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TYP. SHRUB PLANTING ADJACENT TO WALK
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TYP. SHRUB PLANTING ADJACENT TO CURB
NO SCALE



TYP. SHRUB PLANTING ADJACENT TO BUILDING
NO SCALE

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DESCRIPTION	REVISION DATE

DRAWN BY:	CHECKED BY:	DATE PREPARED:	PROJ. NUMBER:
TRC	MAB	03/03/2023	22-097

LANDSCAPE DETAILS

SHEET
L301