

RESIDENCES AT BLACKWELL

JACKSON COUNTY, MO

Development Services Department
Lee's Summit, Missouri

02/02/2024

- ACCESS EASEMENT
- BACK OF CURB
- BACK TO BACK
- BENCHMARK
- BUILDING LINE
- CLEANOUT
- TELEPHONE JUNCTION BOX
- CURB AND GUTTER
- DRAINAGE EASEMENT
- ELECTRICAL EASEMENT
- ELEVATION
- FLOW LINE
- GAS LINE EASEMENT
- HIGH-DENSITY POLYETHYLENE
- LANDSCAPE EASEMENT
- MINIMUM SERVICEABLE FLOOR ELEVATION
- POLYVINYL CHLORIDE
- PROPERTY LINE
- PUBLIC EASEMENT
- REINFORCED CONCRETE PIPE
- RIGHT-OF-WAY
- SANITARY SEWER EASEMENT
- SERVICE LINE
- SIDEWALK
- TOP ELEVATION
- UTILITY EASEMENT
- WATER SURFACE ELEVATION
- WATERLINE EASEMENT



LOCATION MAP

MISSOURI DEPARTMENT OF
TRANSPORTATION (MODOT)

SPIRE

EVERGY

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

AT&T

COMCAST CABLE

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

MISSOURI ONE CALL SYSTEM

811 or

	ITEM	QUANTITY	UNITS
1	INSTALL 2" TYPE 5 OR 6 ASPHALT PAVEMENT	3,910	SY
2	INSTALL 5.5" TYPE 5 ASPHALT PAVEMENT	3,910	SY
3	INSTALL 6" TYPE 5 BASE	4,603	SY
4	INSTALL 9" SUBGRADE STABILIZATION	4,603	SY
5	INSTALL CONCRETE COMMERCIAL DRIVE	312	SY
6	INSTALL TYPE CG-1 CURB AND GUTTER	1,965	LF
7	INSTALL 5" CONCRETE SIDEWALK	1697	LF
8	INSTALL TYPE A SIDEWALK RAMPS	7	EA
9	INSTALL TYPE B SIDEWALK RAMPS	3	EA
10	INSTALL "END OF ROAD" MARKERS (5 LOCATIONS)	15	EA
11	INSTALL 6" X 4" CURB INLET	10	EA
12	INSTALL 18" HDPE STORM SEWER PIPE	43	LF
13	INSTALL 15" HDPE STORM SEWER PIPE	534	LF
14	TRENCHING UNDER FUTURE STREET	204	LF
15	CLEARING, GRUBBING & DISPOSAL	1	LS
16	EARTHWORK (FINAL GRADING)	1	LS
17	EROSION CONTROL (MAINTENANCE & REMOVAL)	2,490	LF
19	SEED & MULCH DISTURBED AREAS	1	LS
20	STRIPING & SIGNAGE	1	LS

3

1. ALL CONSTRUCTION SHALL FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 581.
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 UNEXPLORED 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, 800-368-5868, TO LOCATE ANY CABLE 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. AFTER APPROVAL OF THE SHOP DRAWINGS, A COPY OF THE APPROVED AND SIGNED SHOP DRAWINGS SHALL BE PROVIDED TO THE CITY INSPECTOR UPON REQUEST.
8. THE CONTRACTOR SHALL PROTECT ALL MAJOR TREES FROM DAMAGE. NO TREE SHALL BE REMOVED WITHOUT FIRST REMOVAL OF THE TREE 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.
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. ALL MANHOLES, CATCH BASINS, UTILITY VALVES AND METER PITS TO BE ADJUSTED OR REBUILT TO GRADE AS REQUIRED.
14. THE CONTRACTOR SHALL CONTACT DEVELOPMENT SERVICES INSPECTIONS AT: 816-969-1200 TO OBTAIN A DEVELOPMENT SERVICES CONSTRUCTION PERMIT. A MINIMUM 48 HOUR NOTICE SHALL BE GIVEN PRIOR TO PERMIT ISSUANCE.
15. 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.
16. 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).

1. ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL. ALL APPLICABLE AASHTO STANDARDS HAVE BEEN MET.
2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
3. ALL INSPECTION OF STREET CONSTRUCTION TO BE PERFORMED BY THE CITY OF LEE'S SUMMIT DEVELOPMENT ENGINEERING.
4. CURB RETURN RADI SHALL BE 30' AT BACK OF CURB UNLESS OTHERWISE NOTED.
5. SUBGRADE TO BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
6. ASSUMED DESIGN SPEED = 30 MPH (RESIDENTIAL COLLECTOR).
7. MINIMUM STOPPING SIGHT DISTANCE = 200 FEET.
8. MINIMUM K, SAG CURVE = 37' (20 WITH LIGHTING), CREST CURVE = 19.
9. GRADE INTERSECTIONS TO DRAIN AS SHOWN.
10. SSD = STOPPING SIGHT DISTANCE.
11. ALL ADA SIDEWALK RAMPS SHALL BE CONSTRUCTED BY THE DEVELOPER WITH THE PUBLIC INFRASTRUCTURE.

1. IT IS RECOMMENDED THAT A GEOTECHNICAL ENGINEER OBSERVE AND DOCUMENT ALL EARTHWORK ACTIVITIES.
2. CONTOURS HAVE BEEN SHOWN AT 1-FOOT OR 2-FOOT INTERVALS, AS INDICATED. GRADING SHALL CONSIST OF COMPLETING THE EARTHWORK REQUIRED TO BRING THE PHYSICAL GROUND ELEVATIONS OF THE EXISTING SITE TO THE FINISHED GRADE (OR SUB-GRADE) ELEVATIONS PROVIDED ON THE PLANS AS SPOT GRADES, CONTOURS OR OTHERS MEANS AS INDICATED ON THE PLANS.
3. THE EXISTING SITE TOPOGRAPHY DEPICTED ON THE PLANS BY CONTOURING HAS BEEN ESTABLISHED BY AERIAL PHOTOGRAPHY AND FIELD VERIFICATION BY G.P.S. OBSERVATION NEAR 11/11/2021. THE CONTOUR ELEVATIONS PROVIDED MAY NOT BE EXACT GROUND ELEVATIONS, BUT RATHER INTERPRETATIONS OF SUCH. ACCURACY SHALL BE CONSIDERED TO BE SUCH THAT NOT MORE THAN 10 PERCENT OF SPOT ELEVATION CHECKS SHALL BE IN ERROR BY MORE THAN ONE-HALF THE CONTOUR INTERVAL PROVIDED. AS DEFINED BY THE NATIONAL MAP ACCURACY STANDARDS. ANY QUANTITIES PROVIDED FOR EARTHWORK VOLUMES ARE ESTABLISHED USING THIS TOPOGRAPHY CONTOUR ACCURACY, AND THEREFORE THE INHERENT ACCURACY OF ANY EARTHWORK QUANTITY IS ASSUMED FROM THE TOPOGRAPHY ACCURACY.
4. PROPOSED CONTOURS ARE TO APPROXIMATE FINISHED GRADE.
5. UNLESS OTHERWISE NOTED, PAYMENT FOR EARTHWORK SHALL INCLUDE BACKFILLING OF THE CURB AND GUTTER, SIDEWALK AND FURTHER MANIPULATION OF UTILITY TRENCH SPOILS. THE SITE SHALL BE LEFT IN A MOWABLE CONDITION AND POSITIVE DRAINAGE MAINTAINED THROUGHOUT.
6. UNLESS OTHERWISE NOTED, ALL EARTHWORK IS CONSIDERED UNCHARGED. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR ROCK OR SHALE EXCAVATION, UNLESS SPECIFICALLY STATED OTHERWISE.
7. 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.
8. ALL TOPSOIL SHALL BE STRIPPED FROM ALL AREAS TO BE GRADED AND STOCKPILED ADJACENT TO THE SITE AT AN AREA SPECIFIED BY THE PROJECT OWNER OR HIS APPOINTED REPRESENTATIVE. VEGETATION, TRASH, TREES, BRUSH, TREE ROOTS AND LIMBS, ROCK FRAGMENTS GREATER THAN 6-INCHES AND OTHER DELETERIOUS MATERIALS SHALL BE REMOVED AND PROPERLY DISPOSED OF OFFSITE OR AS DIRECTED BY THE OWNER OR HIS APPOINTED REPRESENTATIVE.
9. UNLESS OTHERWISE SPECIFIED IN THE GEOTECHNICAL REPORT, ALL FILLS SHALL BE PLACED IN MAXIMUM 6-INCH LIFTS AND COMPACTED TO 95-PERCENT OF MAXIMUM DENSITY AS DEFINED USING A STANDARD PROCTOR TEST (AASHTO T99/ASTM 698).
10. SUBGRADE FOR PAVEMENTS SHALL BE PROOF-ROLLED PRIOR TO PAVING OPERATIONS UTILIZING A FULLY LOADED TANDUM AXLE DUMP TRUCK. ALL AREAS EXHIBITING EXCESSIVE PUMPING AND HEAVING SHALL BE REMOVED, FILLED AND COMPACTED WITH SUITABLE MATERIALS AND RETESTED UNTIL ACCEPTABLE RESULTS ARE ACHIEVED AND FINAL APPROVAL. HAS BEEN OBTAINED FROM THE GEOTECHNICAL ENGINEER.
11. SUBGRADE FOR BUILDING PAD SHALL INCLUDE A MINIMUM OF 18-INCHES OF LOW VOLUME CHANGE (LVC) MATERIAL AS IDENTIFIED IN THE SITE SPECIFIC GEOTECHNICAL REPORT.
12. FILL MATERIALS SHALL BE PER GEOTECHNICAL REPORT AND SHALL NOT INCLUDE ORGANIC MATTER, DEBRIS OR TOPSOIL. ALL FILLS PLACED ON SLOPES GREATER THAN 6:1 SHALL BE BENCHED.
13. 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.
14. 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
 - B. PAVED AREAS ~ 1.2% MINIMUM, 5% MAXIMUM
15. ALL PAVING AREAS SHALL NOT BE SLOPED GREATER THAN 2% IN ANY DIRECTION AND CONSTRUCTED PER A.D. REQUIREMENTS.
16. ALL DISTURBED AREAS SHALL BE FERTILIZED, SEEDDED AND MULCHED IMMEDIATELY AFTER EARTHWORK 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 EARTHWORK AND GRADING ACTIVITIES.
17. ALL DISTURBED AREAS IN THE RIGHT-OF-WAY SHALL BE SOODED.
18. UNDERDRAINS ARE RECOMMENDED FOR ALL PAVED AREAS ADJACENT TO IRRIGATED TURF AND LANDSCAPED BEDS.
19. 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.

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 IDENTIFYING 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 VERTICAL SEPARATION FROM ALL SANITARY SEWER LINES, MANHOLES, AND SANITARY SEWER SERVICE LATERALS, AS MEASURED FROM EDGE TO EDGE. IF MINIMUM SEPARATIONS CAN NOT BE OBTAINED, CONCRETE ENCASEMENT OF THE SANITARY LINE SHALL BE REQUIRED 10 FEET IN EACH DIRECTION OF THE CONFLICT. 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, EXCESS 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.
8. ALL EXCAVATION IS CONSIDERED UNCLASSIFIED, UNLESS NOTED OTHERWISE. UNCLASSIFIED EXCAVATION FOR UTILITY TRENCHING IS SUBSIDIARY TO THE UNIT PRICE PROVIDED FOR THE PIPE. ANY QUANTITY PROVIDED FOR ROCK EXCAVATION IS ESTIMATED BASED ON THE BEST INFORMATION PROVIDED TO THE PROJECT ENGINEER. THE ENGINEER SHALL BE THE AUTHORITY TO IDENTIFY AND DEFINE THE PHYSICAL CHARACTERISTICS TO DETERMINE THE CLASSIFICATION. UNIT PRICE QUANTITIES FOR ROCK EXCAVATION WILL BE PAID AT A TRENCH WIDTH OF THE NOMINAL PIPE DIAMETER OF THE INSTALLED MAIN PLUS 18 INCHES. CONTRACTOR IS REQUIRED TO DISPOSE OF EXCESS ROCK FROM THEIR TRENCHES BY DISPOSING IT IN AREAS AS SPECIFIED BY THE PROJECT ENGINEER.

APPROVED BY:

OWNER/DEVELOPER:

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

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

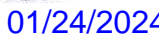
ELEV. 997.045

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

PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES AT BLACKWELL
STREET, STORMWATER AND EROSION &
SEDIMENT CONTROL
SEE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
11/02/2022	PER CITY COMMENTS
03/24/2023	PER CITY COMMENTS
11/29/2023	STORM SEWER REVISIONS
01/17/2024	PER CITY COMMENTS

COVER SHEET

SHEET

1

RELEASED FOR CONSTRUCTION
As Noted on Plan Review

Development Services Department
Lee's Summit, Missouri
02/02/2024

NW CORNER, NW 1/4
SEC. 11-47-31
W. LINE, NW 1/4, SEC. 11-47-31

S87°55'11"E 1316.24'

S. LINE, SE 1/4, SEC. 2-47N-43W
N. LINE, NE 1/4, SEC. 11-47N-43W

NE CORNER, NW 1/4
SEC. 11-47-31

UNPLATTED
PARCEL #
60-500-01-02-02-0-00-000
FURRY, MICHAEL E
PIERSON, ARMINDA K
FURRY, BLAKE
WEST 1/2, WEST 1/2, NE 1/4

STREET NOTES:

- ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL. ALL APPLICABLE AASHTO STANDARDS HAVE BEEN MET.
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- MINIMUM K, SAG CURVE = 37 (20 WITH LIGHTING), CREST CURVE = 19.
- GRADE INTERSECTIONS TO DRAIN AS SHOWN.
- SSD = STOPPING SIGHT DISTANCE.
- ALL ADA SIDEWALK RAMPS SHALL BE CONSTRUCTED BY THE DEVELOPER WITH THE PUBLIC INFRASTRUCTURE.

MO GRS BENCHMARK:

STATION NAME - JA-90

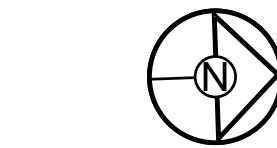
KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988"
LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD
LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD
ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD.
N:1001052.8503, E:2845604.8272

ELEV. 997.045

PROJECT BENCHMARK:

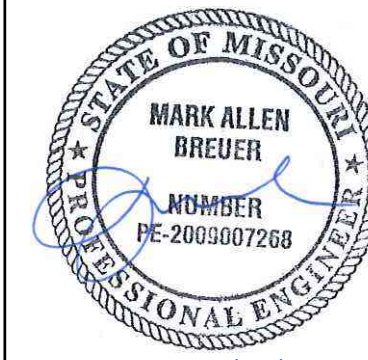
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N:996874.9690, E:2840937.1365

ELEV. 1005.719



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

PREPARED BY:



01/24/2024

SCHLAGEL & ASSOCIATES, P.A.

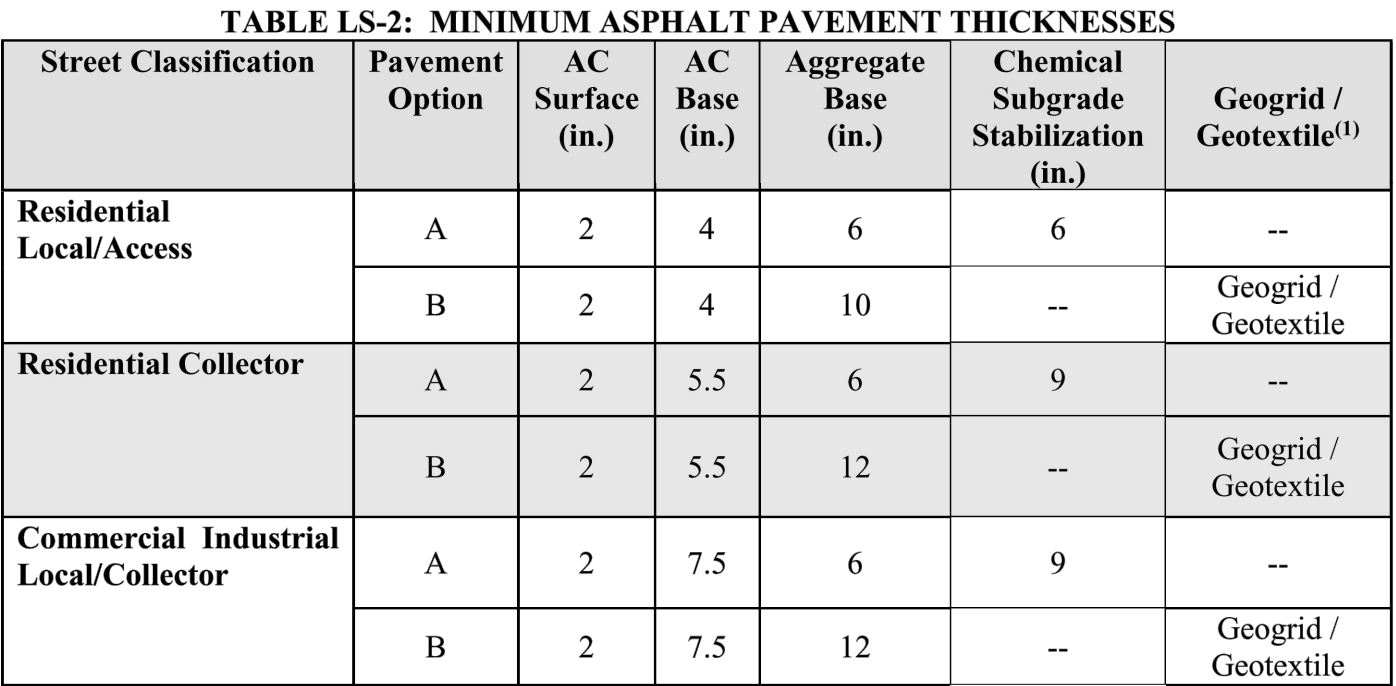
RESIDENCES AT BLACKWELL
STREET, STORMWATER AND EROSION &
SEDIMENT CONTROL
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
01/23/2023	PER CITY COMMENTS
03/24/2023	PER CITY COMMENTS
11/29/2023	STORM SEWER REVISIONS
01/17/2024	PER CITY COMMENTS
01/23/2024	DATE PREPARED:
11/30/2022	PROJ. NUMBER:
22-102	

GENERAL
LAYOUT -
OVERALL

SHEET

2



STREET NOTES:

1. ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL. ALL APPLICABLE AASHTO STANDARDS HAVE BEEN MET.
2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
3. INFRASTRUCTURE CONSTRUCTION TO BE PERFORMED BY THE CITY OF LEE'S SUMMIT DEVELOPMENT ENGINEERING.
4. CURB RETURN RADI SHALL BE 30' AT BACK OF CURB UNLESS OTHERWISE NOTED.
5. SUBGRADE TO BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
6. ASSUMED DESIGN SPEED = 30 MPH (RESIDENTIAL COLLECTOR).
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11. ALL ADA SIDEWALK RAMPS SHALL BE CONSTRUCTED BY THE DEVELOPER WITH THE PUBLIC INFRASTRUCTURE.

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As Noted on Plan Review

Development Services Department
Lee's Summit, Missouri

02/02/2024



RESIDENCES AT BLACKWELL
STREET, STORMWATER AND EROSION &
SEDIMENT CONTROL
LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
01/23/2023	PER CITY COMMENTS
02/24/2023	PER CITY COMMENTS
11/29/2023	STORM SEWER REVISIONS
01/17/2024	PER CITY COMMENTS

GENERAL
LAYOUT -
SHENANDOAH
DRIVE

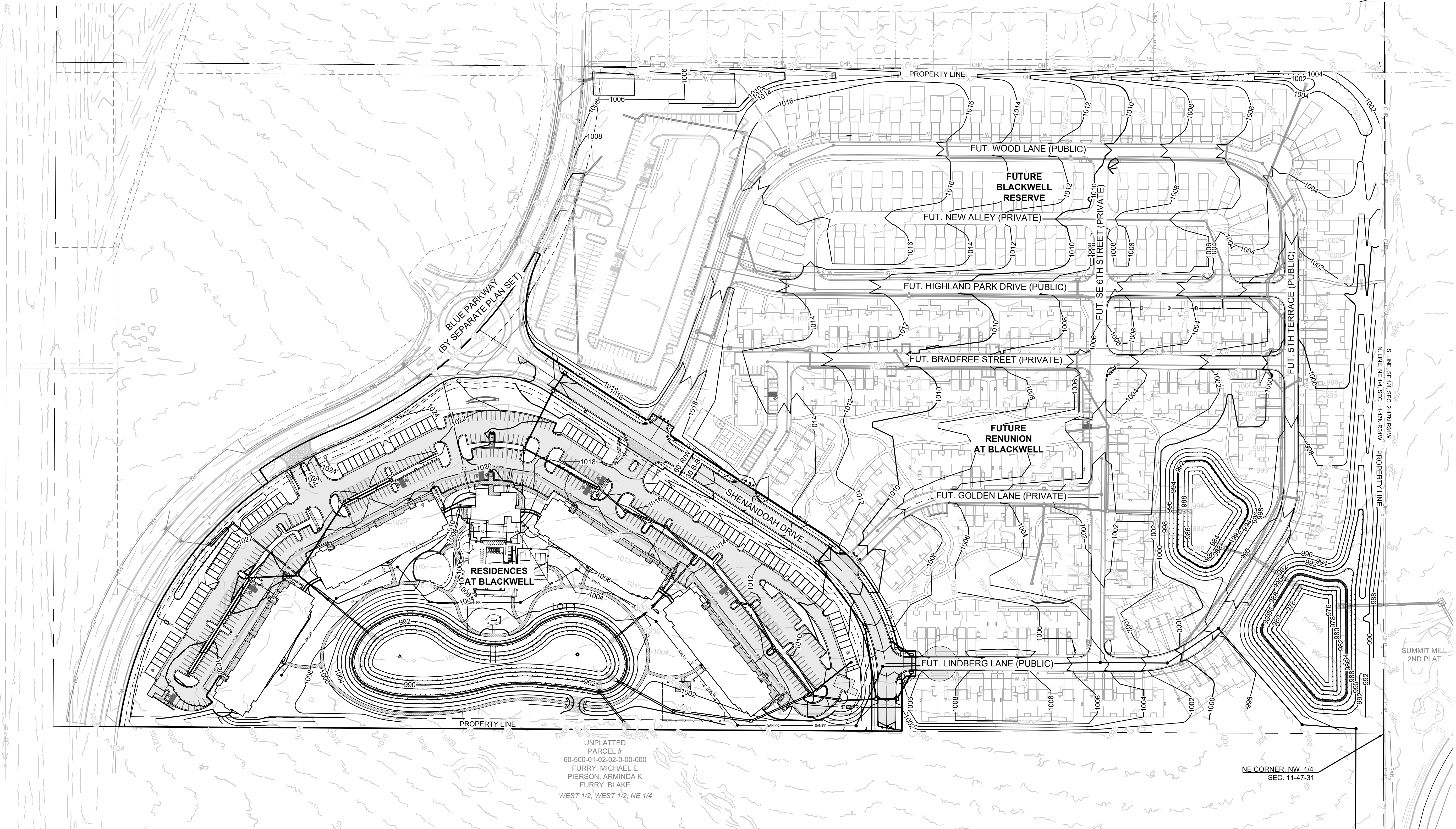
SHEET

3

RELEASED FOR CONSTRUCTION
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Development Services Department
Lee's Summit, Missouri
02/02/2024

NW CORNER, NW 1/4
SEC. 11-47-31
W. LINE, NW 1/4, SEC. 11-47-31
S87°55'11"E 1316.24'



UNPLATTED
PARCEL #
60-500-01-02-02-0-00-000
FURRY, MICHAEL E
PIERSON, ARMINDA K
FURRY, BLAKE
WEST 1/2, WEST 1/2, NE 1/4

GRADING LEGEND:
--- 1000 --- EXISTING CONTOUR
—— 1000 —— PROPOSED CONTOUR
(FINISHED GRADE)

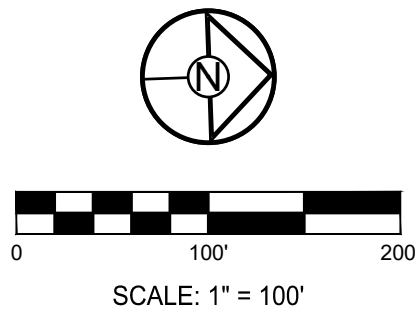
- NOTES:
- ALL CONSTRUCTION ON THIS PROJECT SHALL CONFORM TO THE CITY OF LEE'S SUMMIT TECHNICAL SPECIFICATIONS.
 - THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.

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
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STREET, STORMWATER AND EROSION &
SEDIMENT CONTROL
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
1 01/23/2023	PER CITY COMMENTS
2 03/24/2023	PER CITY COMMENTS
3 11/29/2023	STORM SEWER REVISIONS
4 01/17/2024	PER CITY COMMENTS
5	
6	
DATE PREPARED:	11/30/2022
PROJ. NUMBER:	22-102

OVERALL
GRADING PLAN

RELEASED FOR CONSTRUCTION
As Noted on Plan Review

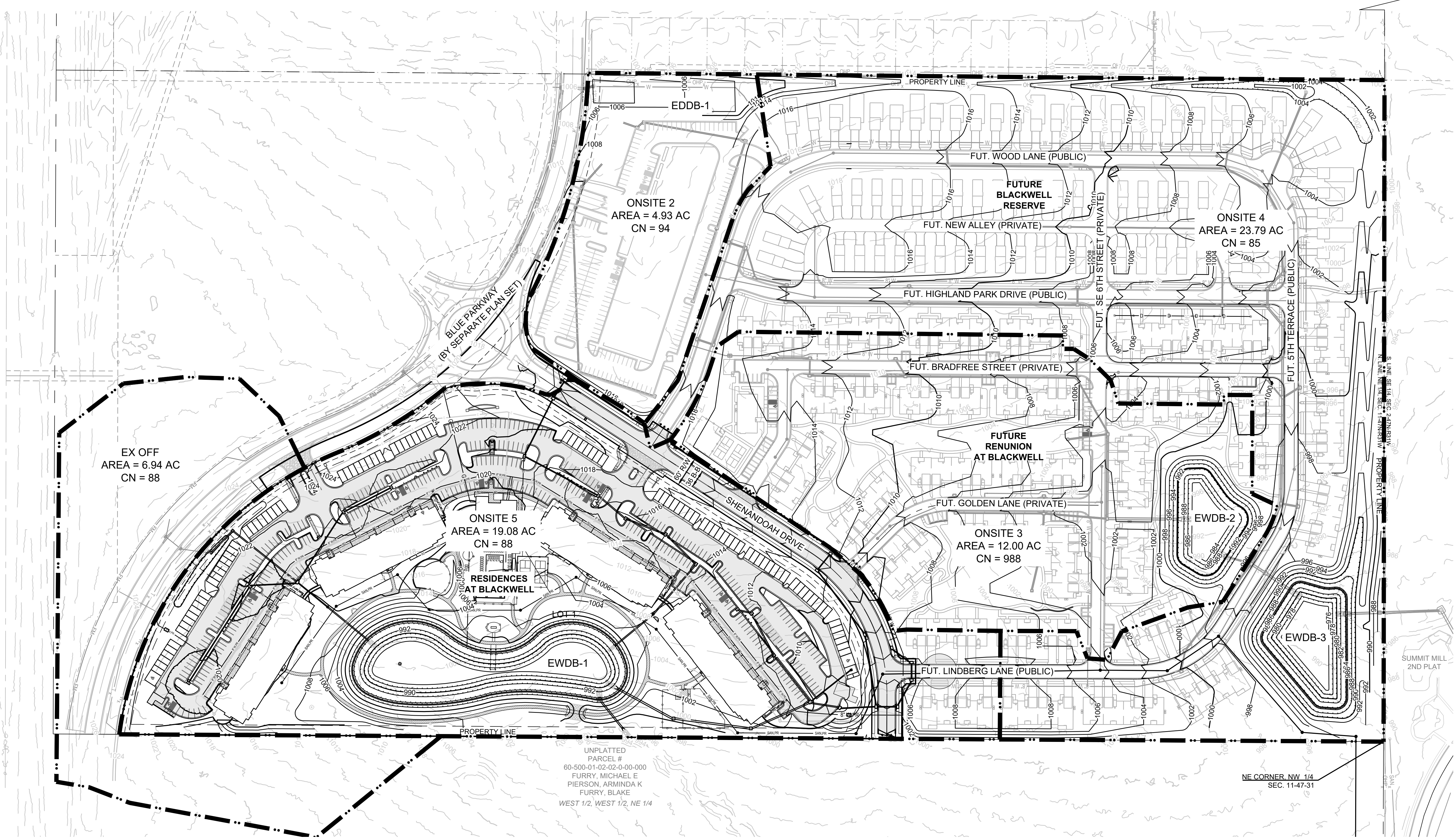
Development Services Department
Lee's Summit, Missouri

02/02/2024

NW CORNER, NW 1/4
SEC. 11-47-31

W. LINE, NW 1/4, SEC. 11-47-31

S87°55'11"E 1316.24'



EX OFF
AREA = 6.94 AC
CN = 88

ONSITE 5
AREA = 19.08 AC
CN = 88

RESIDENCES
AT BLACKWELL

ONSITE 2
AREA = 4.93 AC
CN = 94

ONSITE 3
AREA = 12.00 AC
CN = 988

ONSITE 4
AREA = 23.79 AC
CN = 85

UNPLATTED
PARCEL #
60-500-01-02-02-0-00-000
FURRY, MICHAEL E
PIERSON, ARMINDA K
FURRY, BLAKE
WEST 1/2, WEST 1/2, NE 1/4

GRADING LEGEND:

--- 1000 --- EXISTING CONTOUR

— 1000 — PROPOSED CONTOUR
(FINISHED GRADE)

- NOTES:**
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 - THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.

MO GRS BENCHMARK:

STATION NAME - JA-90

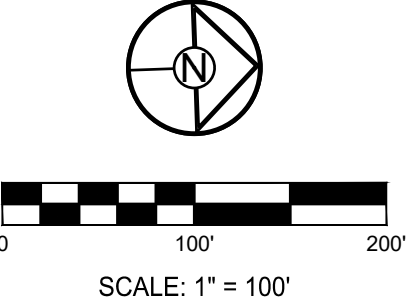
KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988" LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD.
N:1001052.8503, E:2845604.8272

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



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Missouri State Certificate of Authority
#E2002003600-F #LAC2001005237 #LS2002008659-F

PREPARED BY:

STATE OF MISSOURI
MARK ALLEN BREUER
JANUARY
PE-2003607268
01/24/2024

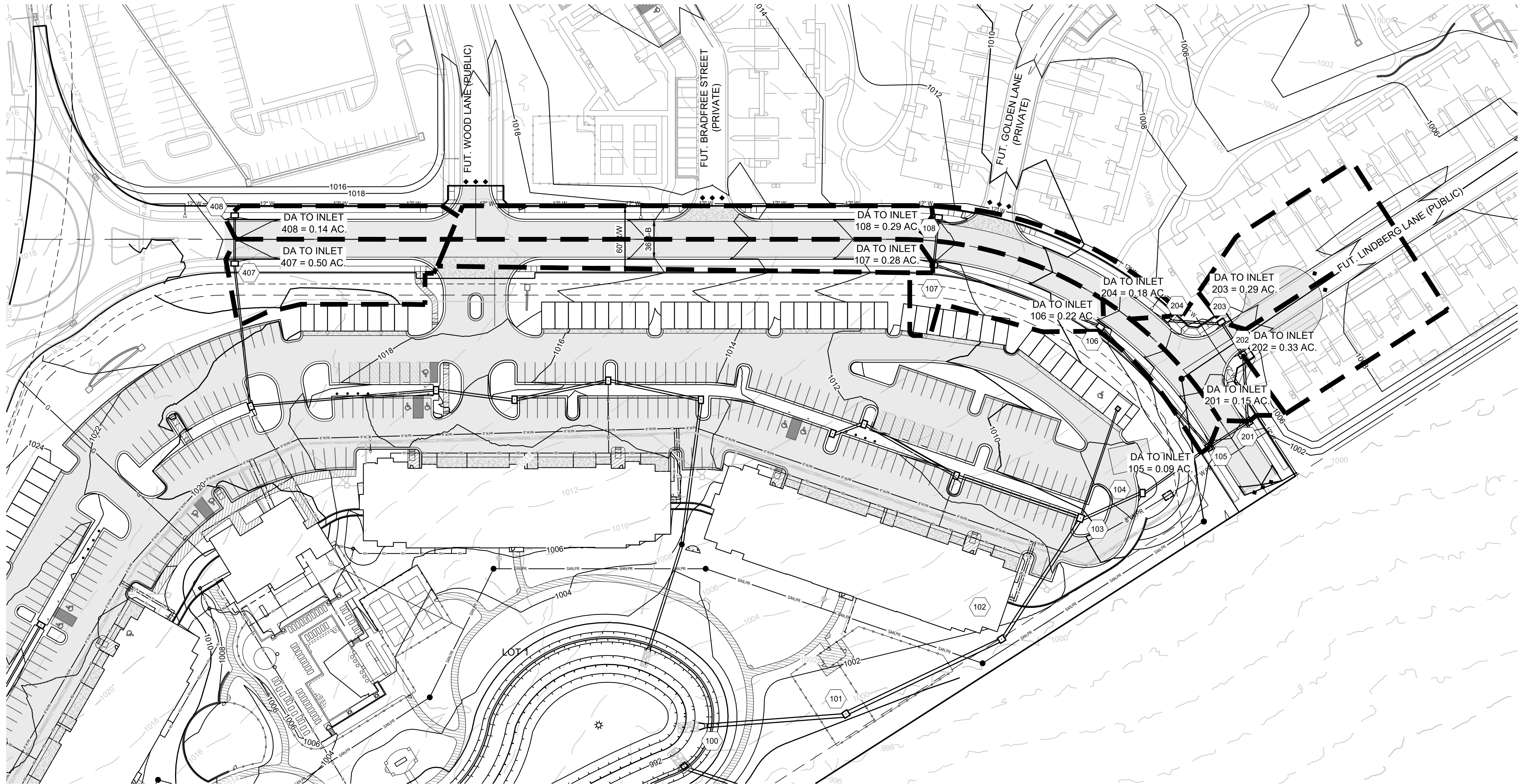
SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES AT BLACKWELL
STREET, STORMWATER AND EROSION &
SEDIMENT CONTROL
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
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11/29/2023	STORM SEWER REVISIONS
01/17/2024	PER CITY COMMENTS
01/23/2023	DATE PREPARED
11/30/2022	PROJ. NUMBER:
22-102	

OVERALL
DRAINAGE MAP

SHEET
5



GRADING LEGEND:
--- 1000 --- EXISTING CONTOUR
—— 1000 —— PROPOSED CONTOUR (FINISHED GRADE)

- NOTES:**
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N:996874.9690, E:2840937.1365
ELEV. 1005.719



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As Noted on Plan Review

Development Services Department
Lee's Summit, Missouri

02/02/2024

RESIDENCES AT BLACKWELL
STREET, STORMWATER AND EROSION &
SEDIMENT CONTROL
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

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8. 01/17/2024	PER CITY COMMENTS
9. 01/17/2024	PER CITY COMMENTS
10. 01/17/2024	PER CITY COMMENTS

DRAWN BY: ###	CHECKED BY: ###	DATE PREPARED: 11/30/2022	PROJ. NUMBER: 22-102
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SHENANDOAH
DRIVE -
DRAINAGE MAP

RELEASED FOR CONSTRUCTION
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Development Services Department
Lee's Summit, Missouri

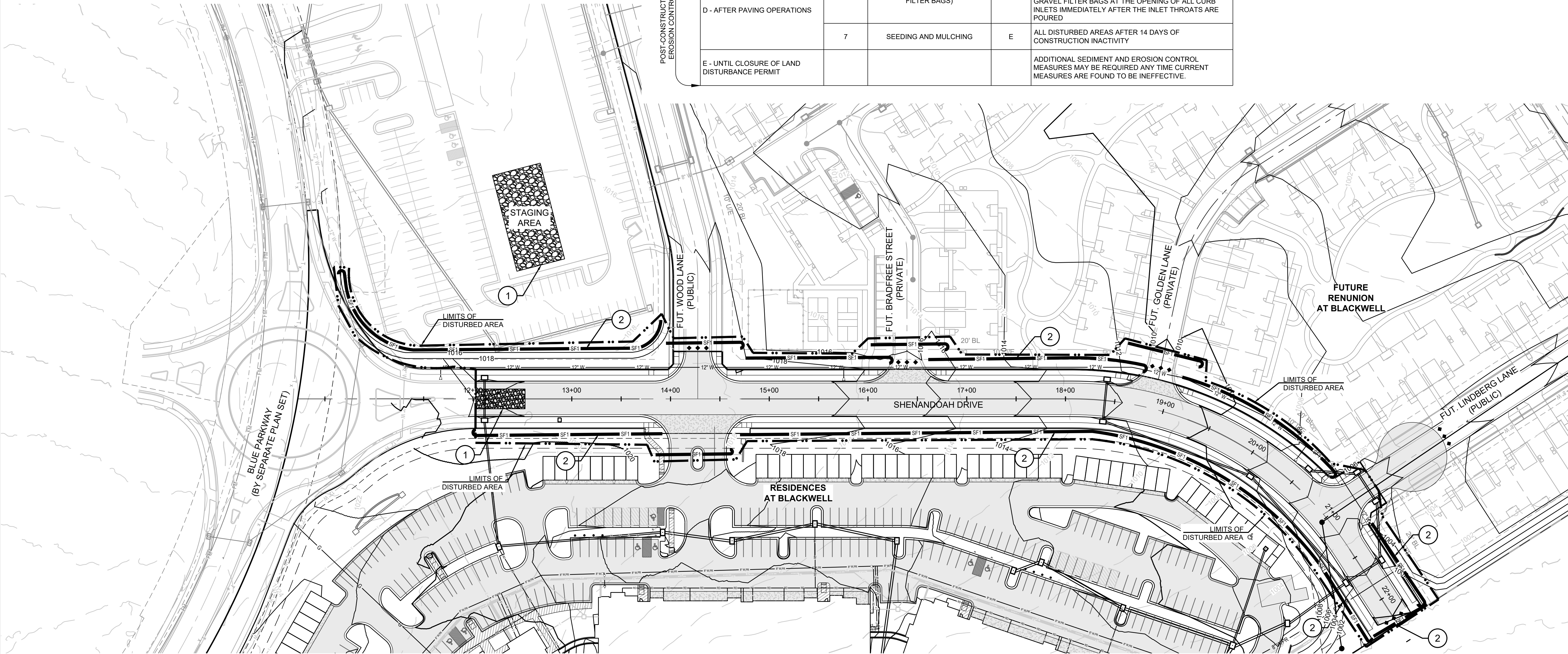
02/02/2024

EROSION AND SEDIMENT CONTROL STAGING CHART

		EROSION AND SEDIMENT CONTROL STAGING CHART			
		PROJECT STAGE	BMP PLAN REF. NO	BMP DESCRIPTION	REMOVE AFTER STAGE
PRE-CONSTRUCTION EROSION CONTROL	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
	B - MASS GRADING	3	SILT FENCE (DURING CONSTRUCTION)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
		4	CONCRETE WASHOUT AREA	E	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
POST-CONSTRUCTION EROSION CONTROL	C - UTILITY CONSTRUCTION	5	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
		6	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
	D - AFTER PAVING OPERATIONS	7	SEEDING AND MULCHING	E	ALL DISTURBED AREAS AFTER 14 DAYS OF CONSTRUCTION INACTIVITY
		E - UNTIL CLOSURE OF LAND DISTURBANCE PERMIT			

LEGEND

	TEMP. CONSTRUCTION ENTRANCE AND STAGING AREA		SUPER SEDIMENT SILT FENCE (PRIOR TO LAND DISTURBANCE)
	CONCRETE WASHOUT AREA		SILT FENCE (PRIOR TO LAND DISTURBANCE)
	SILT FOAM DIKE - STAKED & INSTALL PER MFR'S RECOMMENDATIONS		SILT FENCE (DURING CONSTRUCTION)
	BMP PLAN REF. NO.		LIMITS OF DISTURBANCE
	SILT FENCE FOR INLET PROTECTION PRIOR TO STRUCTURE TOP		EXISTING CONTOURS
			PROPOSED CONTOURS
			GRAVEL FILTER FOR STORM SEWER STRUCTURES ONLY



DISTURBED AREA = 2.37 A.C.

SITE SPECIFIC NOTES:

- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
- THERE ARE NO WETLANDS, NATURAL OR ARTIFICIAL WATER STORAGE DETENTION AREAS IN THE PROJECT AREA.
- 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.
- ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IMPLEMENTED ACCORDING TO THE BMP STAGING CHART.

- 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.
- 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.

- ALL PERIMETER SILT FENCE, EARTH DIKES, SEDIMENT BASINS, AND ROCK CONSTRUCTION ENTRANCES WILL BE INSTALLED BEFORE GRADING OPERATIONS BEGIN.
- SILT FENCE AND EARTH DIKES THAT ARE PLACED BEFORE GRADING BEGINS WILL BE MAINTAINED BY THE GRADING CONTRACTOR.
- AREAS WITHIN PUBLIC RIGHT-OF-WAY SHALL BE SODDED IMMEDIATELY AFTER CONSTRUCTION IS COMPLETE.

GRADING LEGEND:

	EXISTING CONTOUR
	PROPOSED CONTOUR (FINISHED GRADE)

NOTES:

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STATION NAME - JA-90

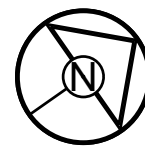
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ELEV. 997.045

PROJECT BENCHMARK:

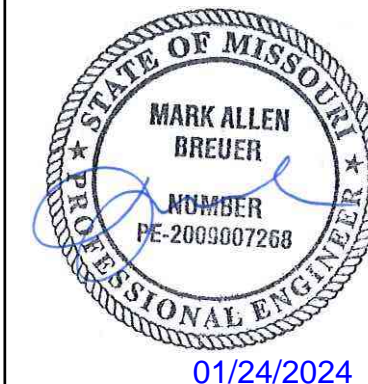
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ELEV. 1005.719



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

PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES AT BLACKWELL
STREET, STORMWATER AND EROSION &
SEDIMENT CONTROL
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

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22-102	PROJ. NUMBER

PRE-CONSTRUCTION
EROSION
CONTROL PLAN

SHEET

7

RELEASED FOR CONSTRUCTION

As Noted on Plan Review

Development Services Department
Lee's Summit, Missouri

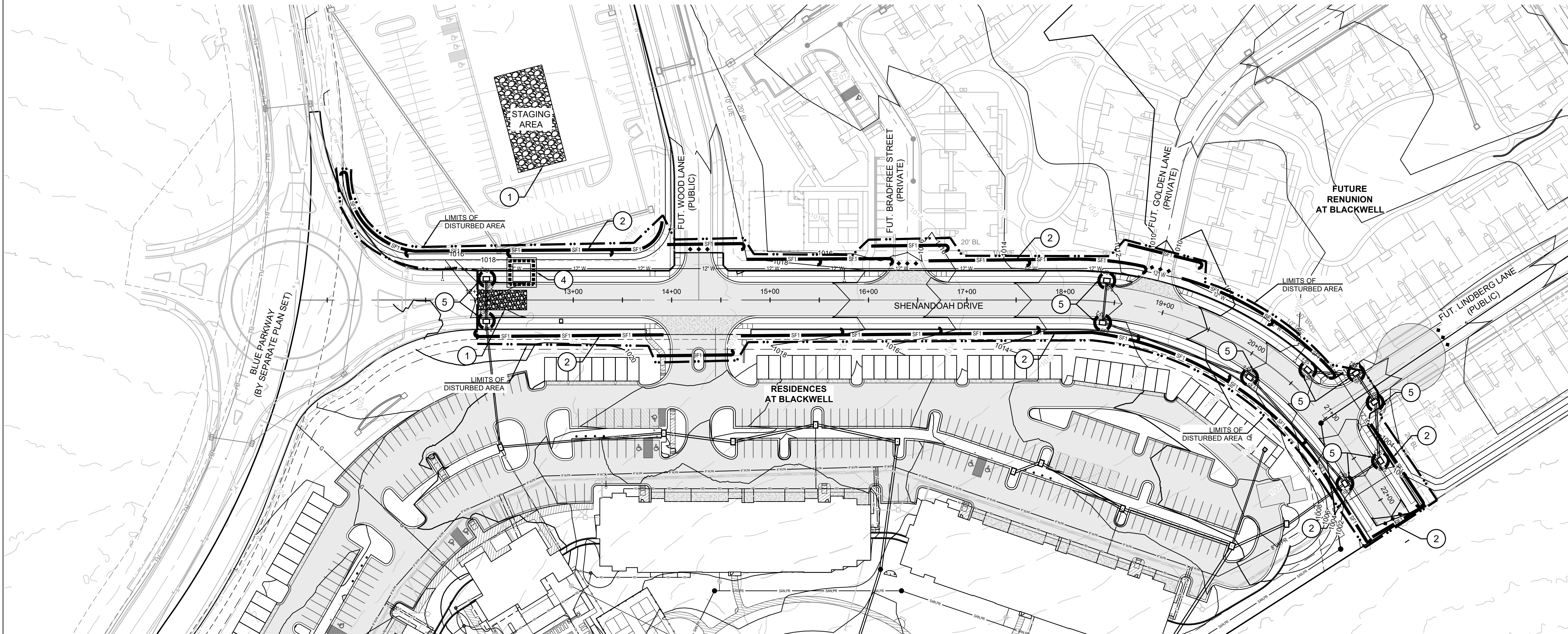
02/02/2024

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GRADING LEGEND:

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EROSION CONTROL NOTE:

1. SEE SHEET 7 FOR EROSION AND SEDIMENT LEGEND,
NOTES AND STAGING CHART.

MO GRS BENCHMARK:

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REVISION DATE	DESCRIPTION
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DRAWN BY:	TRC
CHECKED BY:	MAB
DATE PREPARED:	11/30/2022
PROJ. NUMBER:	22-102

EROSION
CONTROL PLAN

SHEET

8



GRADING LEGEND:

--- 1000 --- EXISTING CONTOUR
—— 1000 —— PROPOSED CONTOUR
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EROSION CONTROL NOTE:

- SEE SHEET 7 FOR EROSION AND SEDIMENT LEGEND, NOTES AND STAGING CHART.

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ELEV. 1005.719



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Lee's Summit, Missouri

02/02/2024

PREPARED BY:



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STREET, STORMWATER AND EROSION &
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SE SHENANDOAH DRIVE LEE'S SUMMIT, MO**

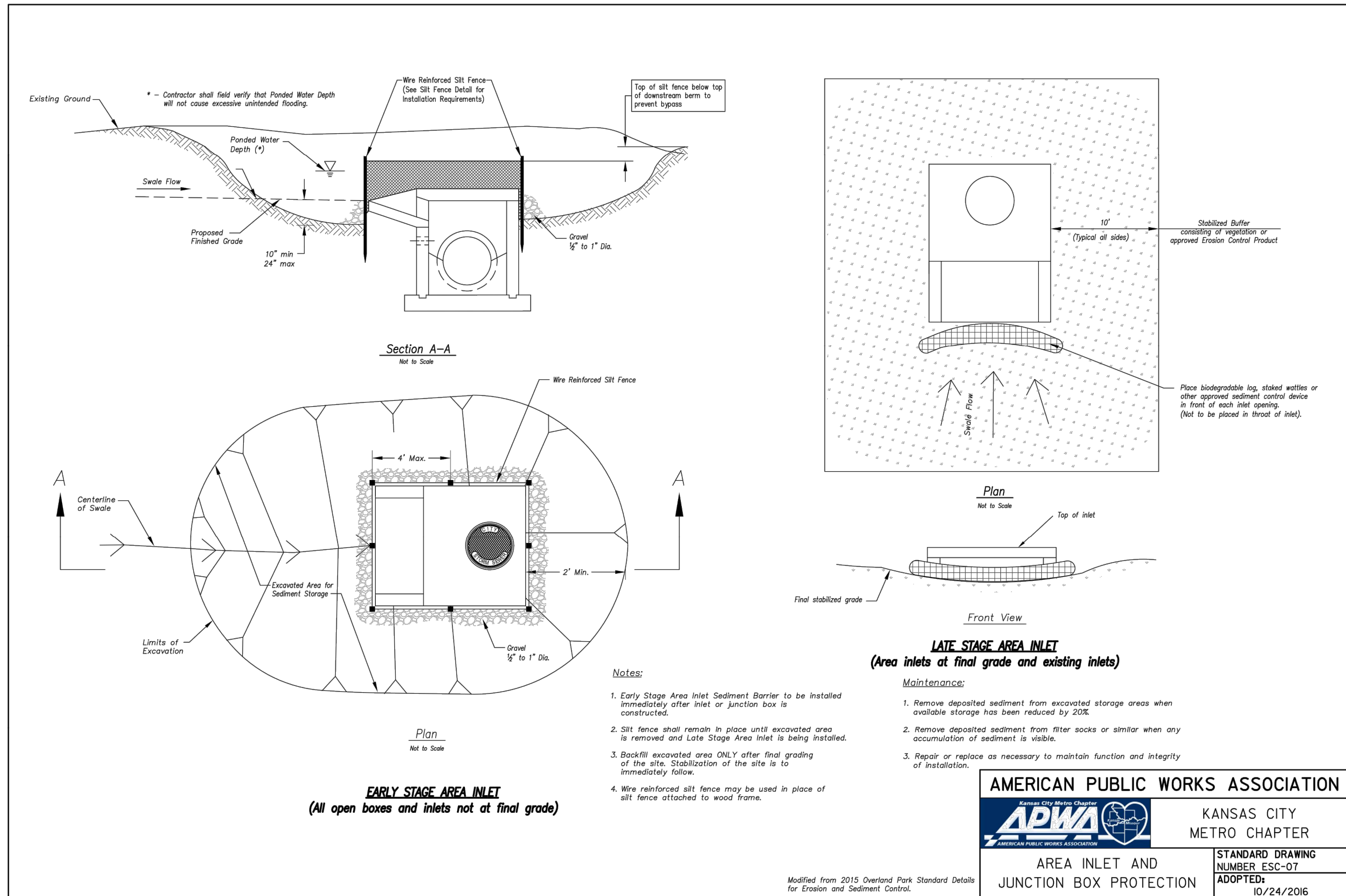
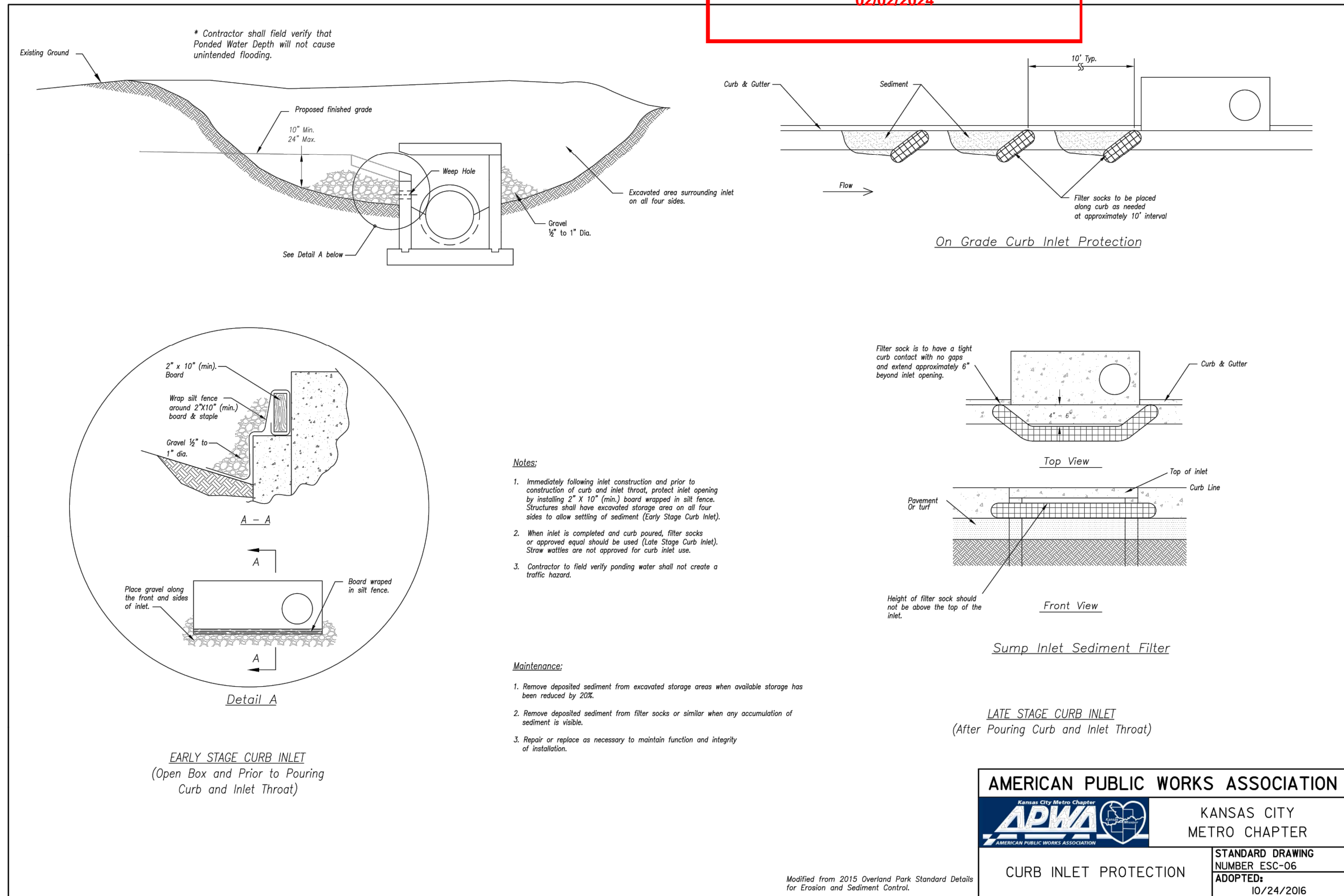
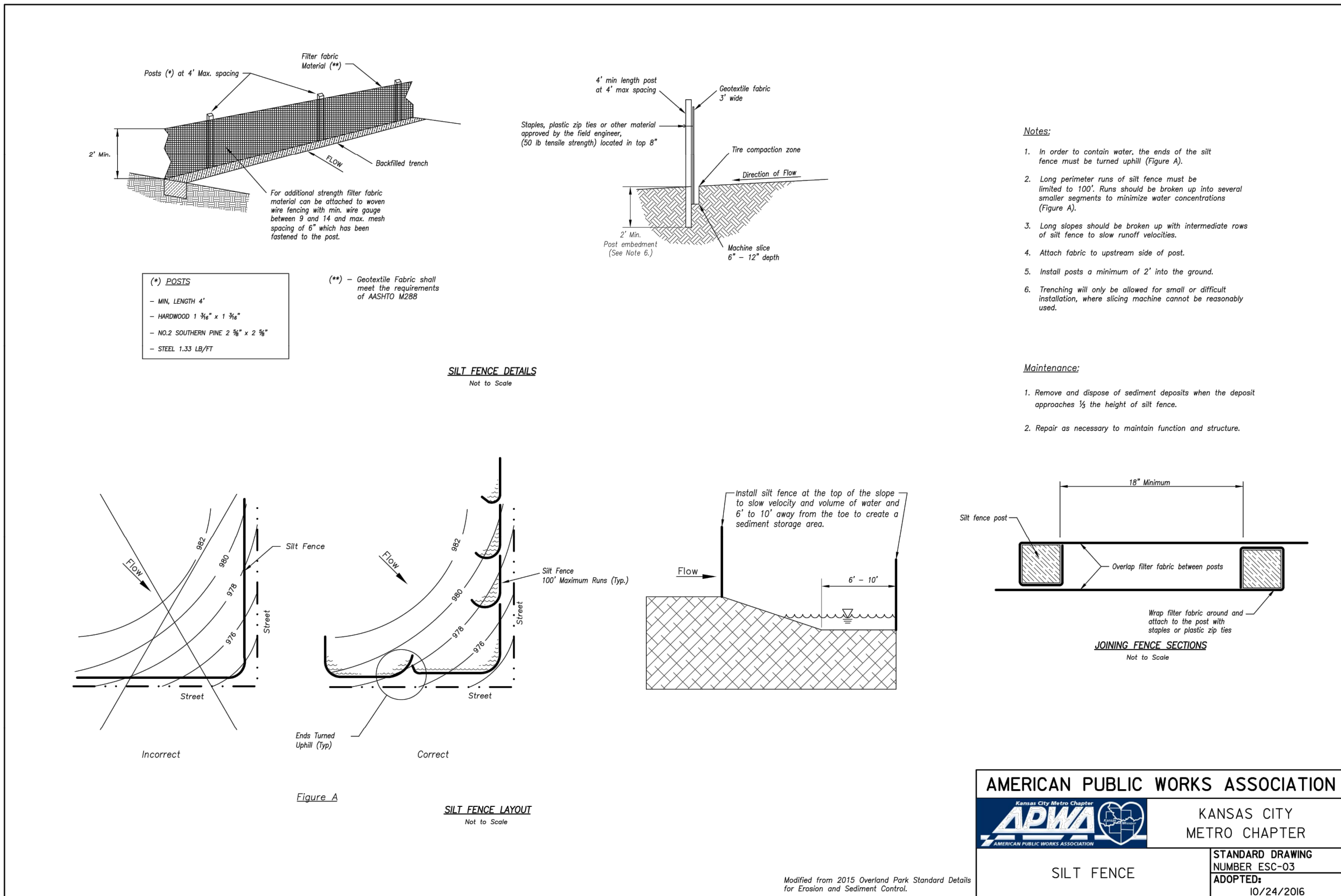
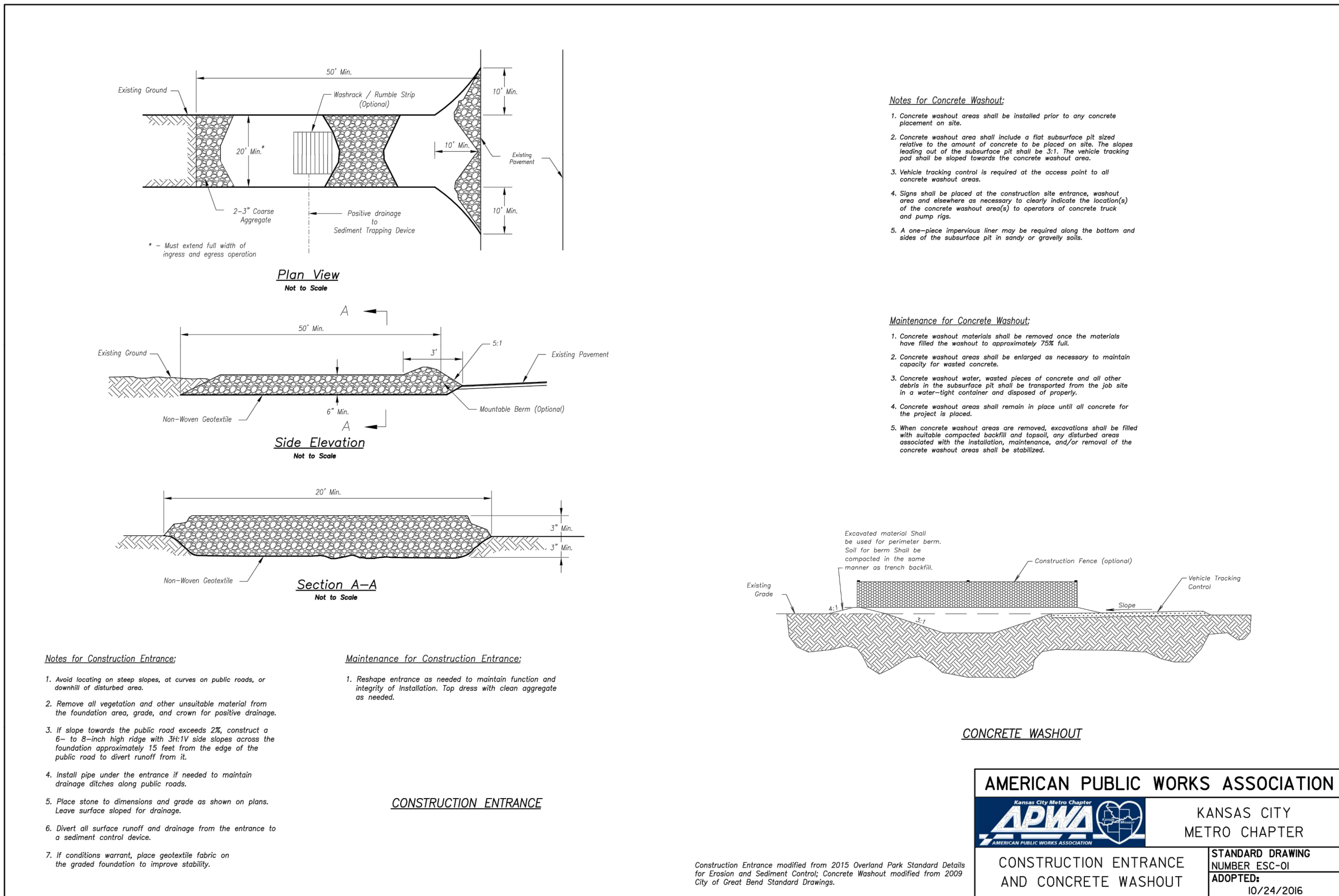
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20. 01/17/2024	PER CITY COMMENTS
21. 01/17/2024	PER CITY COMMENTS
22. 01/17/2024	PER CITY COMMENTS

POST-CONSTRUCTION
EROSION
CONTROL PLAN

SHEET

9

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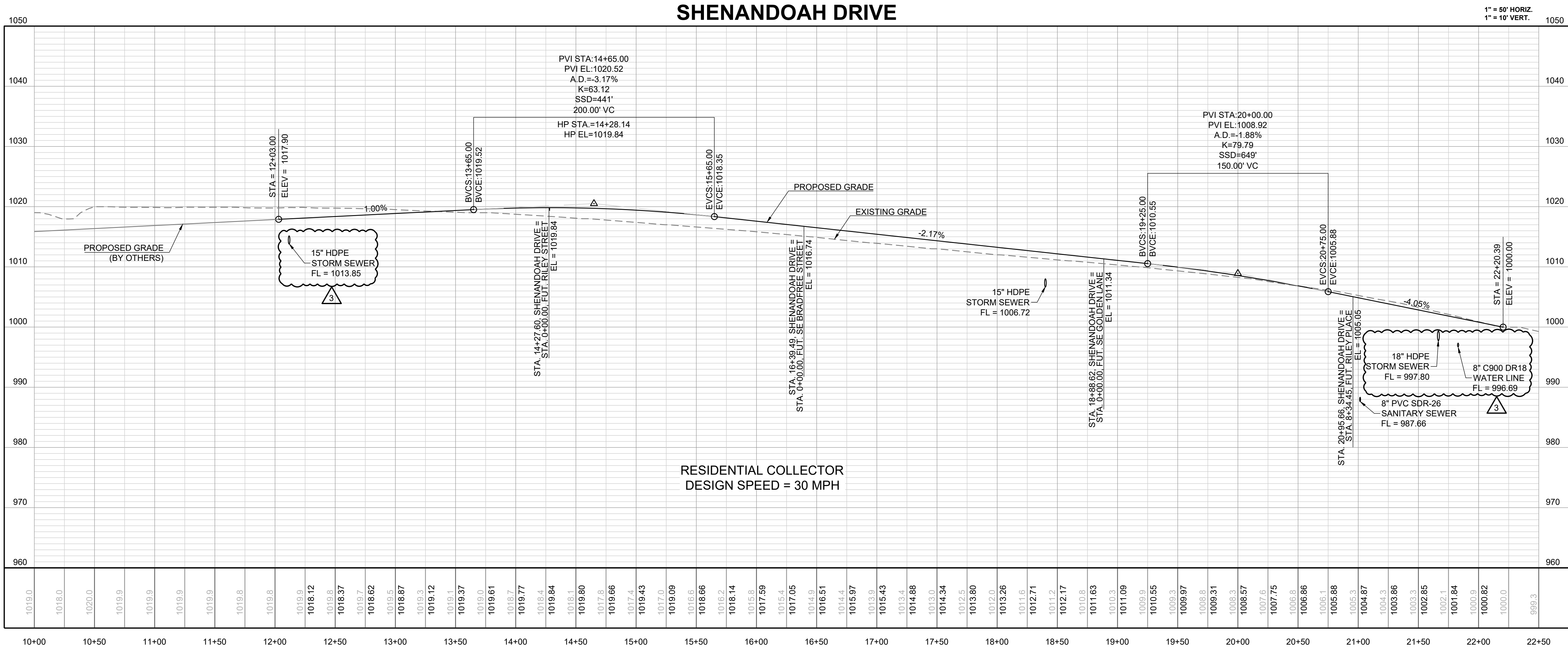
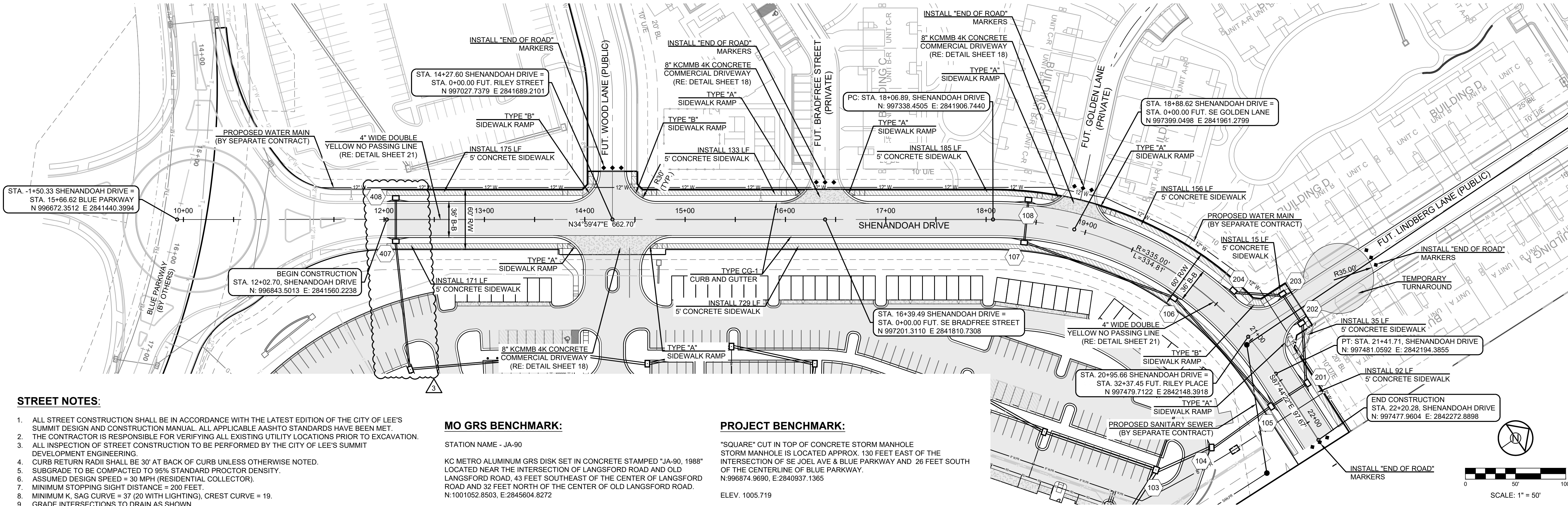
RESIDENCES AT BLACKWELL STREET, STORMWATER AND EROSION & SEDIMENT CONTROL
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EROSION CONTROL DETAILS

SHEET

10



PREPARED BY:



01/24/2024

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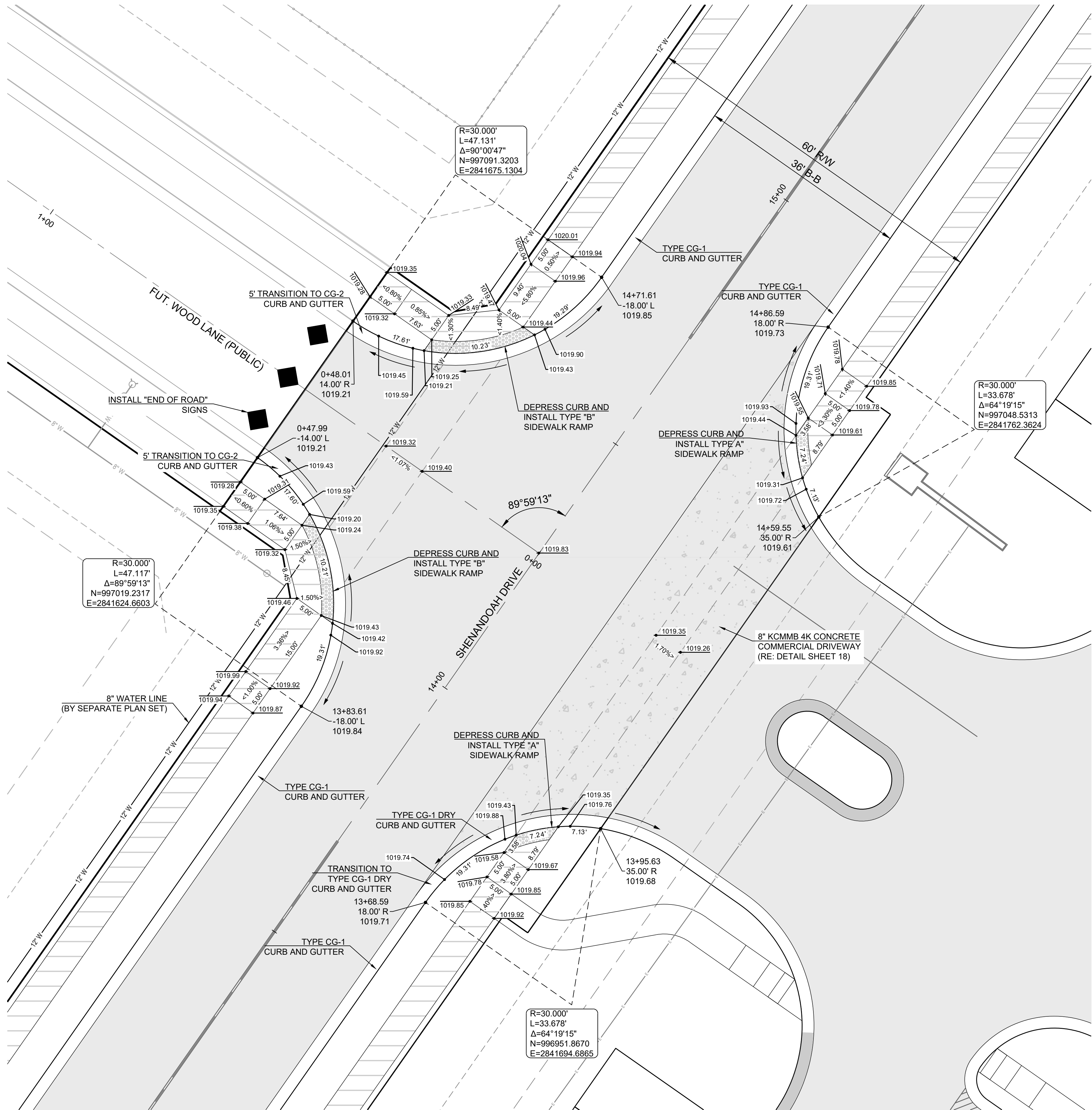
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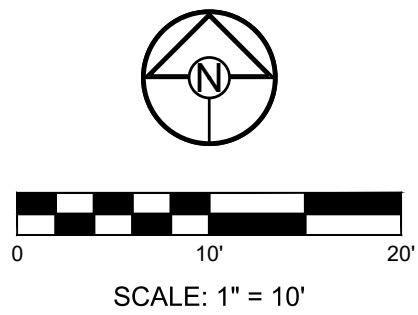
SHENANDOAH
DRIVE - PLAN &
PROFILE

SHEET

11



SCHENANDOAH DRIVE & FUT. WOOD LANE



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02/02/2024

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ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS

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PREPARED BY:



01/24/2024

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DRAWN BY:

TRC

CHECKED BY:

MAB

DATE PREPARED:

11/30/2022

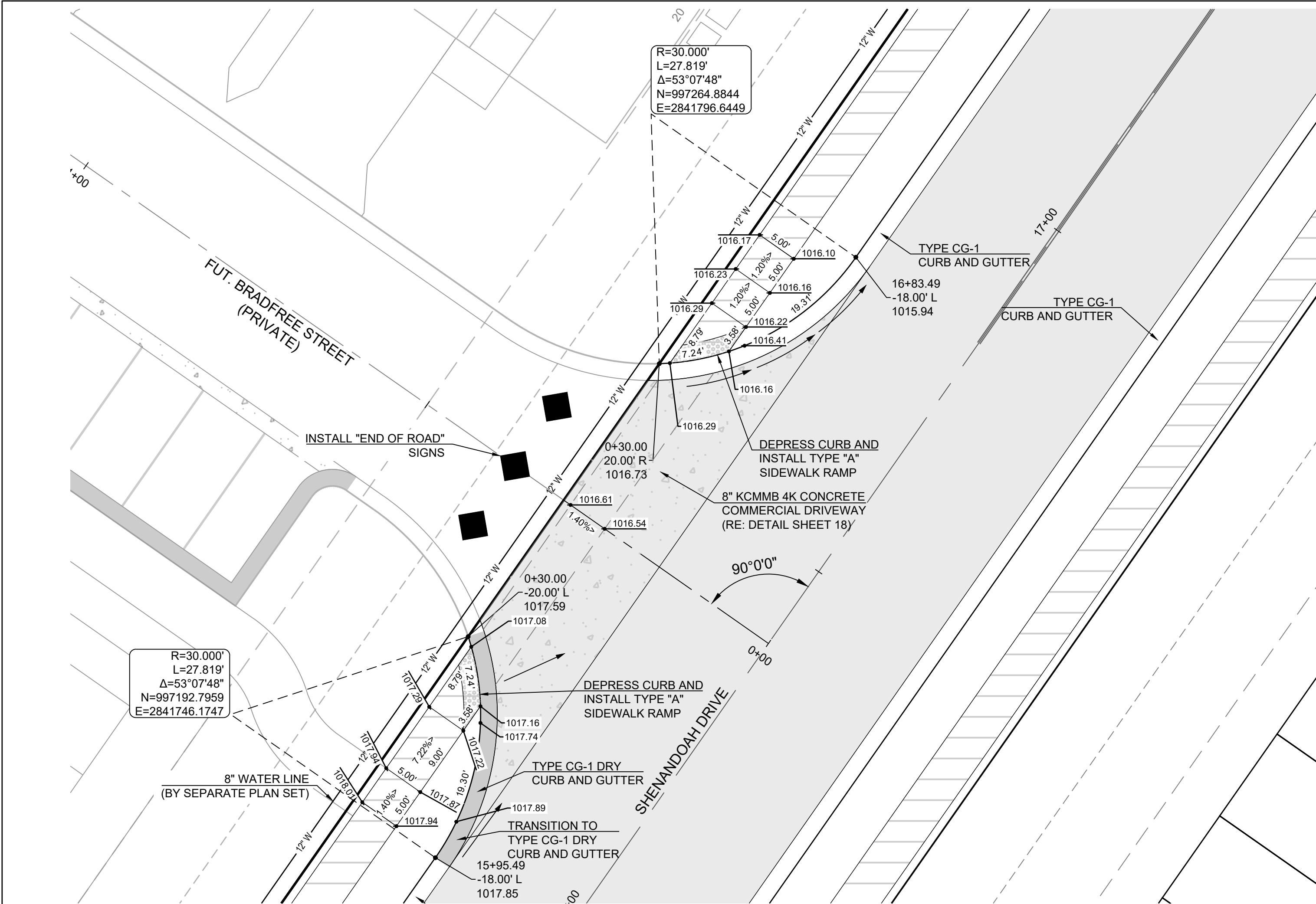
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22-102

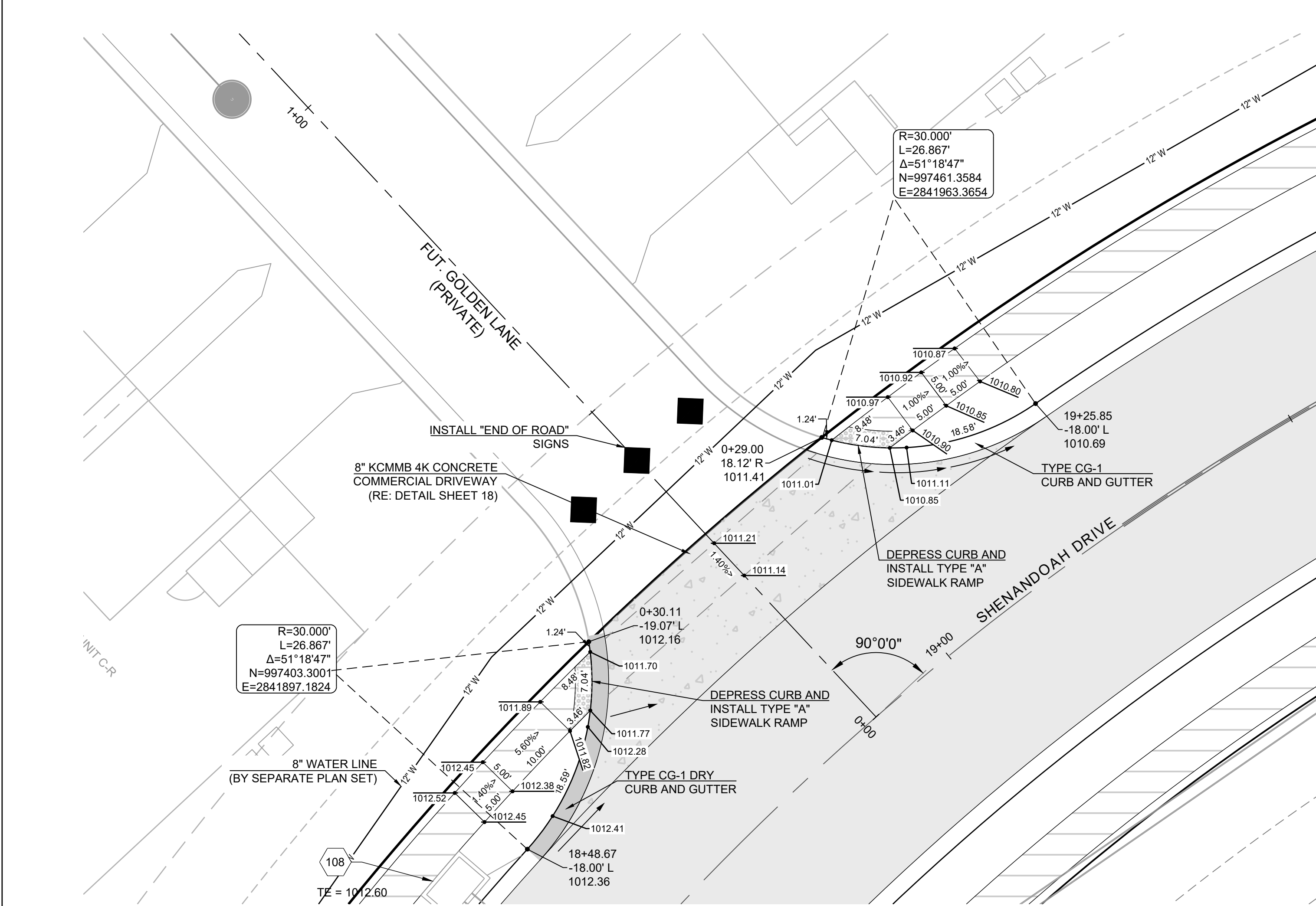
INTERSECTION
DETAILS

SHEET

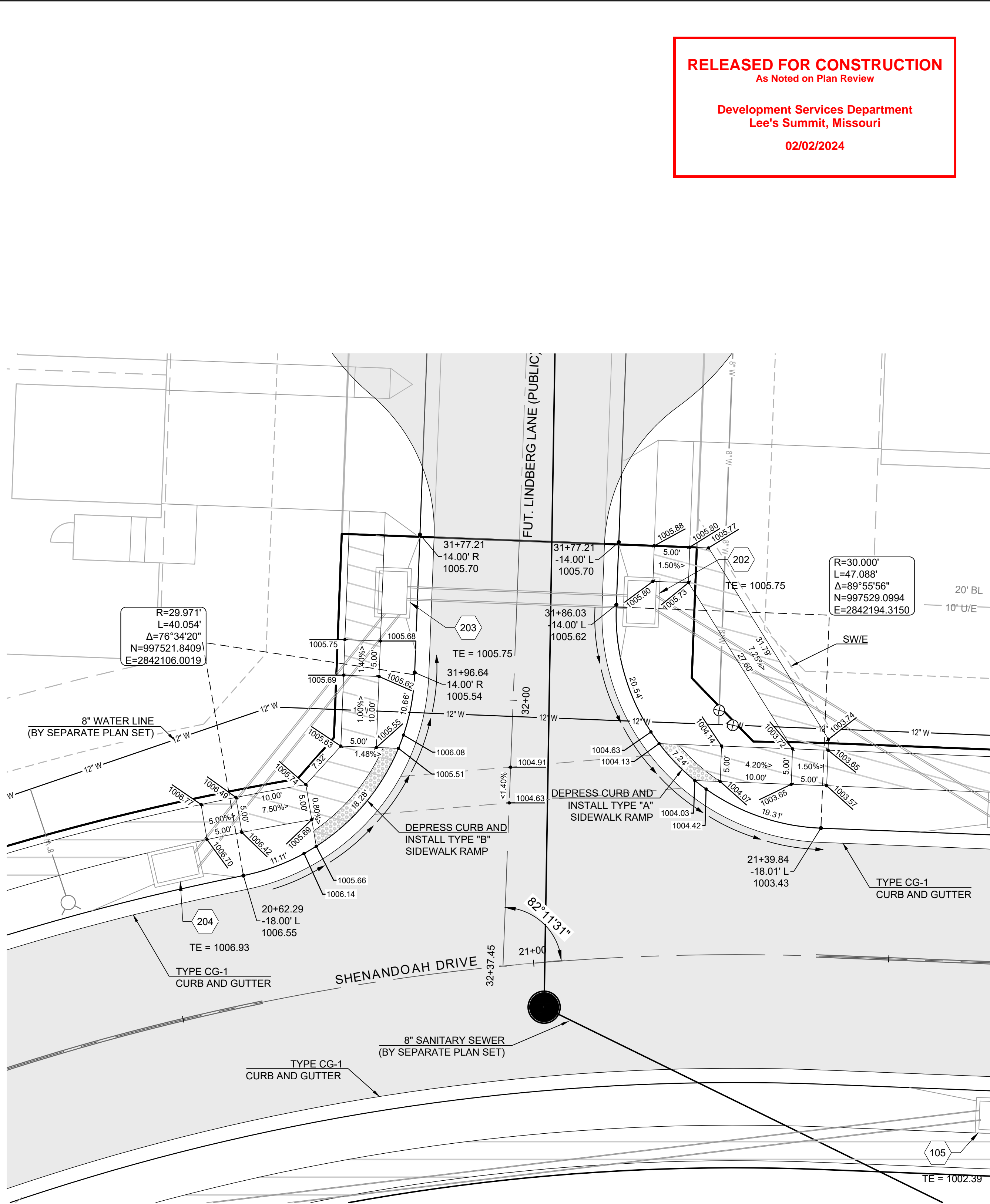
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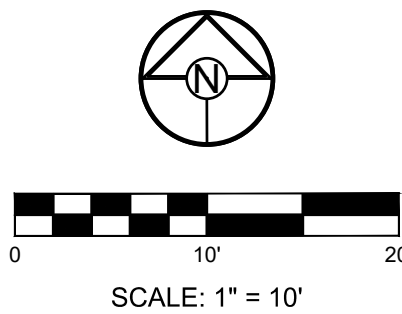
SHENANDOAH DRIVE & FUT. BRADFREET STREET



SHENANDOAH DRIVE & FUT. GOLDEN LANE



SHENANDOAH DRIVE & FUT. LINDBERG LANE



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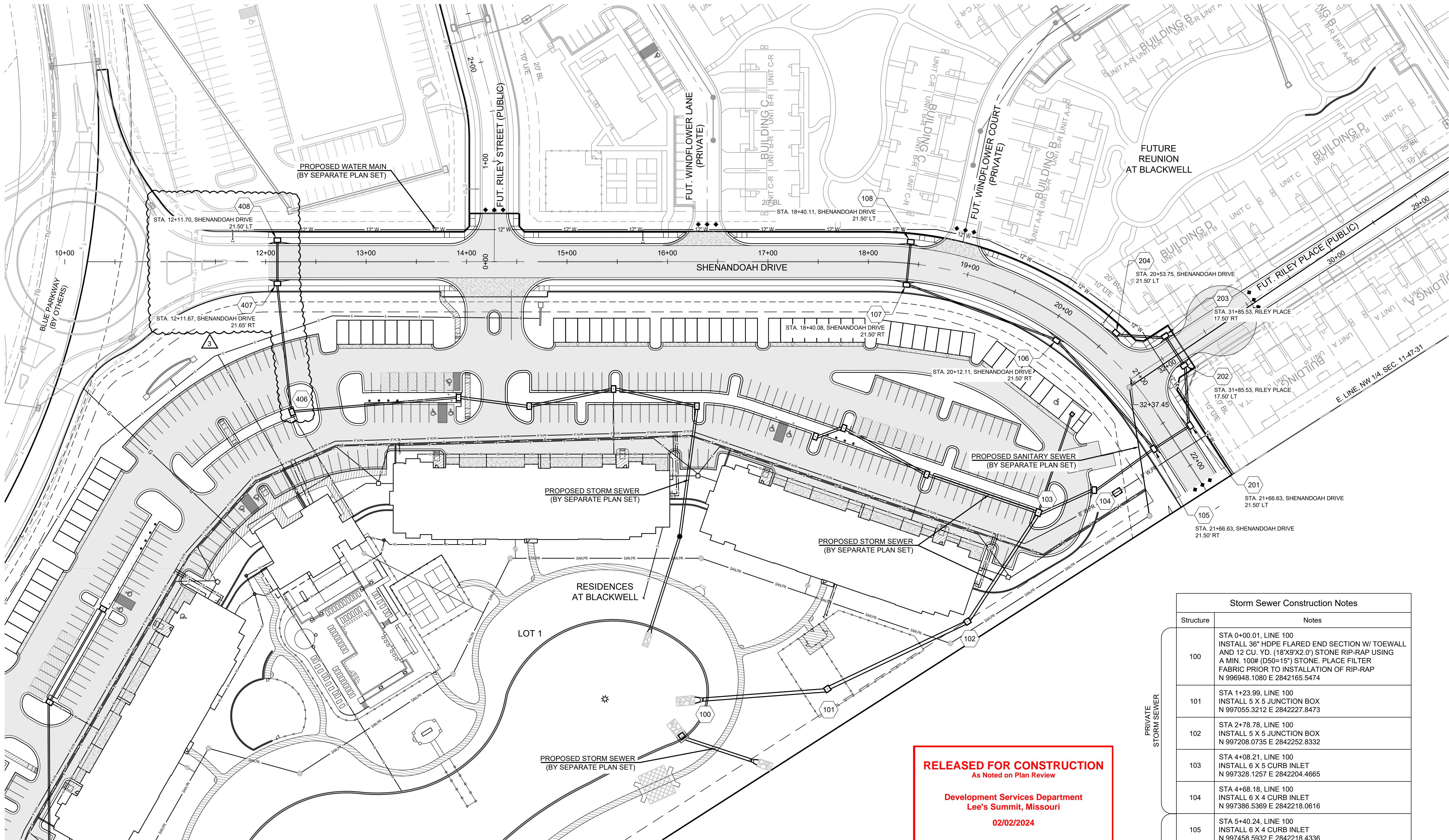
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INTERSECTION
DETAILS

SHEET
13



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MO GRS BENCHMARK:

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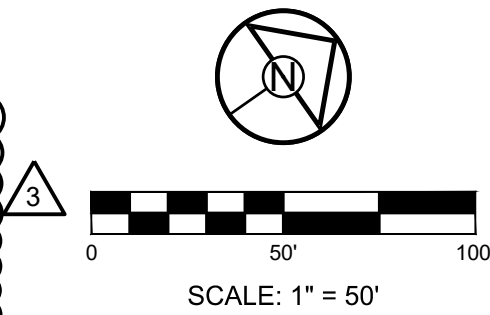
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Storm Sewer Construction Notes	
Structure	Notes
PRIVATE STORM SEWER	100 STA 0+00.01, LINE 100 INSTALL 36" HDPE FLARED END SECTION W/ TOEWALL AND 12 CU. YD. (18'X9'X2.0') STONE RIP-RAP USING A MIN. 100# (D50=15") STONE. PLACE FILTER FABRIC PRIOR TO INSTALLATION OF RIP-RAP N 996948.1080 E 2842165.5474
	101 STA 1+23.99, LINE 100 INSTALL 5 X 5 JUNCTION BOX N 997055.3212 E 2842227.8473
	102 STA 2+78.78, LINE 100 INSTALL 5 X 5 JUNCTION BOX N 997208.0735 E 2842252.8332
	103 STA 4+08.21, LINE 100 INSTALL 6 X 5 CURB INLET N 997328.1257 E 2842204.4665
PUBLIC STORM SEWER	104 STA 4+68.18, LINE 100 INSTALL 6 X 4 CURB INLET N 997386.5369 E 2842218.0616
	105 STA 5+40.24, LINE 100 INSTALL 6 X 4 CURB INLET N 997458.5932 E 2842218.4336
	106 STA 6+85.29, LINE 100 INSTALL 6 X 4 CURB INLET N 997441.0920 E 2842074.4403
	107 STA 8+44.52, LINE 100 INSTALL 6 X 4 CURB INLET N 997350.6401 E 2841943.3993
	108 STA 8+87.52, LINE 100 INSTALL 6 X 4 CURB INLET N 997378.6818 E 2841910.8017
	201 STA 0+43.00, LINE 200 - PUBLIC INSTALL 6 X 4 CURB INLET N 997501.5598 E 2842220.1297
	202 STA 1+02.95, LINE 200 - PUBLIC INSTALL 6 X 4 CURB INLET N 997530.9285 E 2842167.8656
	203 STA 1+37.95, LINE 200 - PUBLIC INSTALL 6 X 4 CURB INLET N 997532.2676 E 2842132.9913
	204 STA 1+86.96, LINE 200 - PUBLIC INSTALL 6 X 4 CURB INLET N 997493.9804 E 2842102.2912
	407 STA 7+62.31, LINE 400 INSTALL 6 X 4 CURB INLET N 996838.4352 E 2841583.1060
	408 STA 8+05.46, LINE 400 INSTALL 6 X 4 CURB INLET N 996863.2048 E 2841547.7730



RESIDENCES AT BLACKWELL
STREET, STORMWATER AND EROSION &
SEDIMENT CONTROL
SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

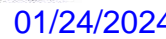
REVISION DATE	DESCRIPTION	PER CITY COMMENTS
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01/17/2024	MAB	PER CITY COMMENTS
11/30/2022	DATE PREPARED	
22-102	PROJ. NUMBER	

Development Services Department
Lee's Summit, Missouri
02/02/2024

Design Storm:	100																										
"K" Value:	1.25																										
"F" Factor:	1.00																										
Runoff Calculations													Pipe Properties														
In#	Area (acres)	"C" Value	Cumul. Area (acres)	Cum. 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																											
101	0.00	0.66	3.81	2.81	6.9	9.58	0.00	33.63	51.09	7.23			0.00	0.00	101	100	HDPE	0.012	36	124.00	0.50	0.50	DS TAILWATER @ STR #100				998.94
102	0.00	0.66	3.81	2.81	6.6	9.70	0.00	34.09	51.09	7.23			0.00	0.00	102	101	HDPE	0.012	36	154.78	0.50	0.50	992.62	992.00	1000.27	999.39	
103	0.27	0.66	3.81	2.81	6.3	9.83	2.19	34.51	32.65	6.65	301	901	1.28	0.83	103	102	HDPE	0.012	30	129.43	0.54	0.50	995.09	994.39	1010.59	1001.08	
104	0.90	0.66	2.26	1.80	6.1	9.88	7.34	22.26	20.06	6.39			0.00	0.00	104	103	HDPE	0.012	24	59.97	0.67	0.50	995.99	995.59	1007.66	1001.97	
105	0.09	0.66	1.36	1.21	5.9	9.96	0.74	15.03	20.36	6.48	201		0.48	0.63	105	104	HDPE	0.012	24	72.06	0.69	0.75	996.99	996.49	1002.39	1002.42	
106	0.22	0.66	0.79	0.52	5.6	10.08	1.83	6.57	9.63	7.85			0.00	0.00	106	105	HDPE	0.012	15	145.05	1.90	0.50	1000.49	997.74	1008.39	1003.89	
107	0.29	0.66	0.57	0.38	5.3	10.18	2.44	4.79	12.31	10.03			0.00	0.00	107	106	HDPE	0.012	15	159.23	3.10	0.50	1005.92	1000.99	1012.60	1007.01	
108	0.28	0.66	0.28	0.18	5.2	10.23	2.36	2.36	8.07	6.58			0.00	0.00	108	107	HDPE	0.012	15	43.00	1.33	N/A	1006.99	1006.42	1012.60	1007.73	
LINE 200																											
201	0.15	0.66	0.48	0.63	5.1	10.27	1.27	8.05	12.43	7.03			0.00	0.00	201	105	RCP	0.013	18	43.00	1.40	0.50	998.09	997.49	1002.39	1002.80	
202	0.33	0.66	0.33	0.53	5.0	10.32	2.81	6.81	9.47	7.71			0.00	0.00	202	201	HDPE	0.012	15	59.95	1.83	0.50	999.69	998.59	1005.75	1003.20	
203	0.29	0.66	0.29	0.31	5.0	10.32	2.47	6.00	9.15	7.46			0.00	0.00	203	202	HDPE	0.012	15	35.00	1.71	0.50	1000.79	1000.19	1005.75	1003.40	
204	0.18	0.66	0.18	0.12	5.3	10.18	1.51	1.51	8.37	6.82			0.00	0.00	204	203	HDPE	0.012	15	49.01	1.43	N/A	1001.99	1001.29	1006.93	1003.44	
LINE 300																											
301	0.29	0.66	1.18	0.78	5.2	10.25	2.45	9.98	14.65	11.93			0.00	0.00	301	103	HDPE	0.012	15	117.50	4.38	0.50	1001.49	996.34	1011.97	1003.99	
302	0.60	0.66	0.89	0.59	5.0	10.30	5.10	7.57	14.39	11.73			0.00	0.00	302	301	HDPE	0.012	15	94.54	4.23	0.50	1005.99	1001.99	1012.47	1007.42	
303	0.29	0.66	0.29	0.19	5.0	10.32	2.47	2.47	14.14	11.52			0.00	0.00	303	302	HDPE	0.012	15	29.41	4.08	N/A	1007.69	1006.49	1013.19	1008.44	
LINE 400																											
401	0.00	0.66	3.66	2.42	7.6	9.36	0.00	28.26	30.81	9.81			0.00	0.00	401	400	HDPE	0.012	24	95.00	1.58	0.50	996.50	995.00	1003.35	1000.83	
402	0.39	0.66	3.66	2.42	7.4	9.40	3.02	28.38	60.23	19.17			0.00	0.00	402	401	HDPE	0.012	24	130.82	6.04	0.50	1004.90	997.00	1014.83	1007.42	
403	0.24	0.66	3.27	2.16	7.3	9.45	1.87	25.49	30.31	9.65			0.00	0.00	403	402	HDPE	0.012	24	84.77	1.53	0.50	1006.70	1005.40	1015.55	1009.05	
404	0.34	0.66	3.03	2.00	7.1	9.51	2.67	23.77	26.51	8.44			0.00	0.00	404	403	HDPE	0.012	24	85.59	1.17	0.50	1008.20	1007.10	1015.36	1010.46	
405	0.81	0.66	2.69	1.78	7.0	9.56	6.39	24.38	7.76	7.76			0.00	0.00	405	404	HDPE	0.012	24	70.79	0.99	0.50	1009.40	1008.70	1016.46	1011.51	
406	1.24	0.66	1.88	1.24	6.6	9.71	9.93	15.06	12.15	6.88			0.00	0.00	406	405	HDPE	0.012	18	166.47	1.14	0.50	1011.80	1009.90	1018.71	1016.12	
407	0.50	0.66	0.64	0.42	6.1	9.88	4.07	5.22	5.86	4.77			0.00	0.00	407	406	HDPE	0.012	15	128.88	0.70	0.50	1013.20	1012.30	1018.20	1017.53	
408	0.14	0.66	0.14	0.09	6.0	9.93	1.15	1.15	5.86	4.77			0.00	0.00	408	407	HDPE	0.012	15	43.15	0.70	0.50	1014.00	1013.70	1018.20	1017.55	
LINE 500																											
501	0.00	0.66	8.44	5.57	5.8	10.00	0.00	69.63	69.31	9.80			0.00	0.00	501	500	HDPE	0.012	36	98.00	0.92	2.10	995.70	994.80	1008.99	1000.60	
502	0.00	0.66	8.44	5.57	5.8	10.02	0.00	69.75	138.18	28.15	601	701	6.56	4.33	502	501	HDPE	0.012	30	78.57	9.67	3.00	1005.40	997.80	1020.75	1009.47	
503	1.20	0.66	1.88	1.24	5.6	10.07	9.97	15.63	13.30	10.83			0.00	0.00	503	502	HDPE	0.012	15	94.25	3.61	0.50	1011.80	1008.40	1019.78	1015.61	
504	0.68	0.66	0.68	0.45	5.0	10.32	5.79	5.79	7.63	6.22			0.00	0.00	504	503	HDPE	0.012	15	227.50	1.19	N/A	1015.01	1012.30	1019.06	1017.34	
LINE 600																											
601	0.58	0.66	1.21	0.80	5.2	10.23	4.89	10.21	13.93	11.35			0.00	0.00	601	502	HDPE	0.012	15	168.79	3.96	0.50	1015.00	1008.40	1021.46	1016.75	
602	0.63	0.66	0.63	0.42	5.0	10.32	5.37	5.37	9.57	7.80			0.00	0.00	602	601	HDPE	0.012	15	107.00	1.87	N/A	1017.51	1015.50	1021.34	1018.67	
LINE 700																											
701	0.12	0.66	5.35	3.53	5.1	10.29	1.02	45.41	62.21	12.67			0.00	0.00	701	502	HDPE	0.012	30	163.48	1.96	0.50	1011.60	1008.40	1020.82	1014.58	
702	5.23	0.66	5.23	3.45	5.0	10.32	44.54	44.54	62.21	12.67			0.00	0.00	702	701	HDPE	0.012	30	61.13	1.96	N/A	1013.30	1012.10	1019.00	1016.25	
LINE 900																											
901	0.10	0.51	0.10	0.05	5.0	10.32	0.66	0.66	19.02	15.50			0.00	0.00	901	103	HDPE	0.012	15	103.55	7.39	1.25	1004.00	996.34	1008.68	1004.36	

3

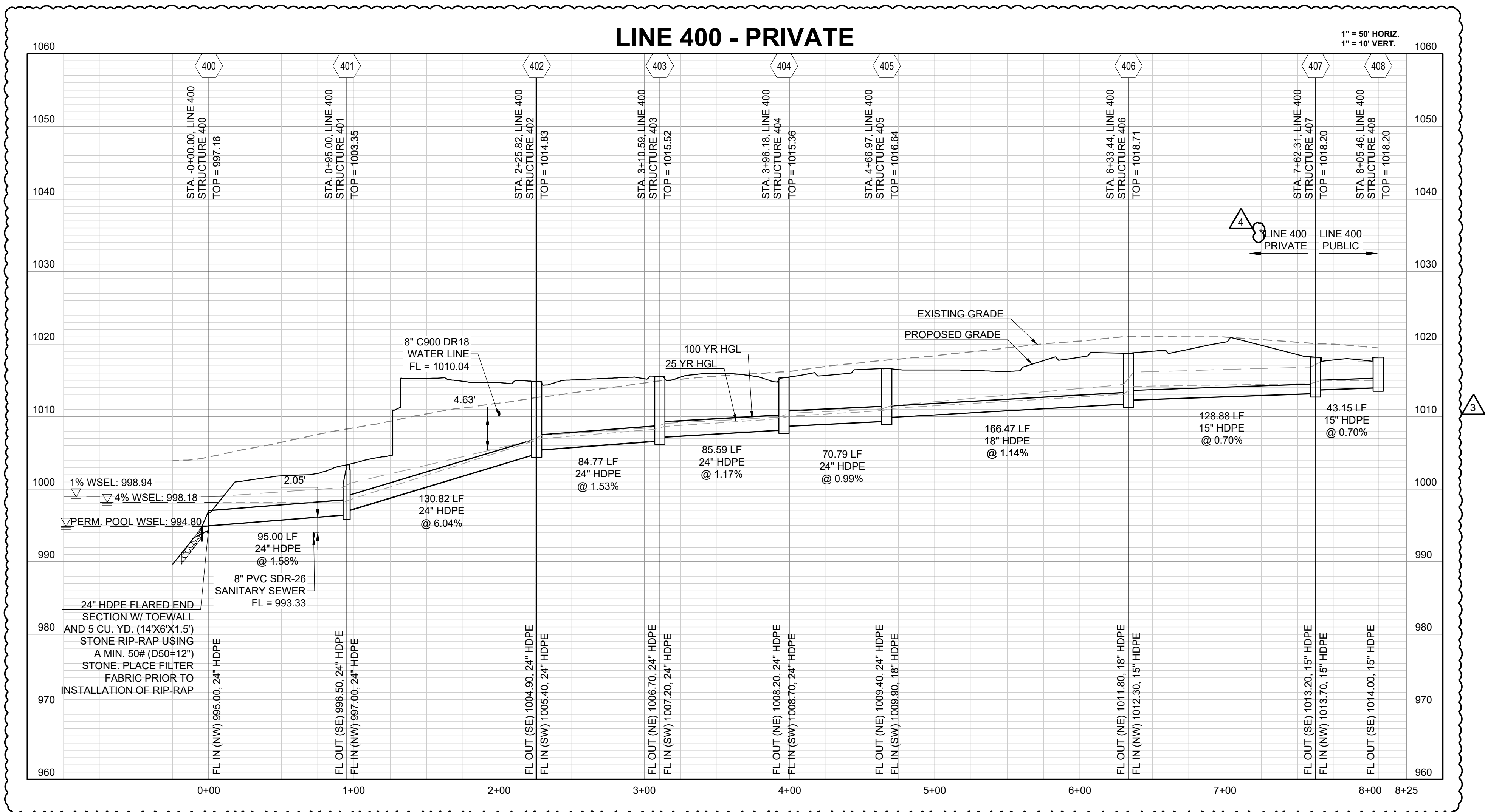
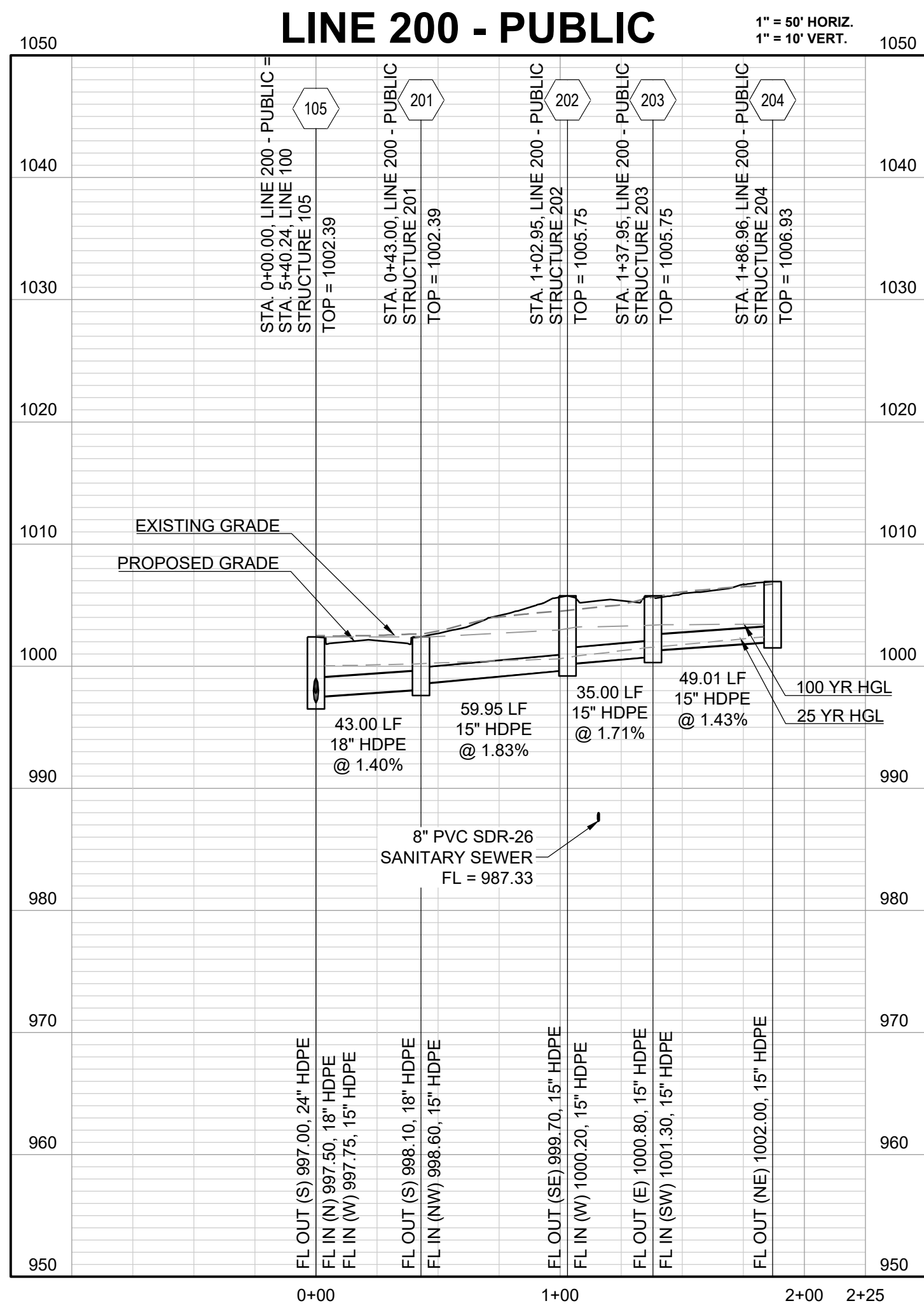
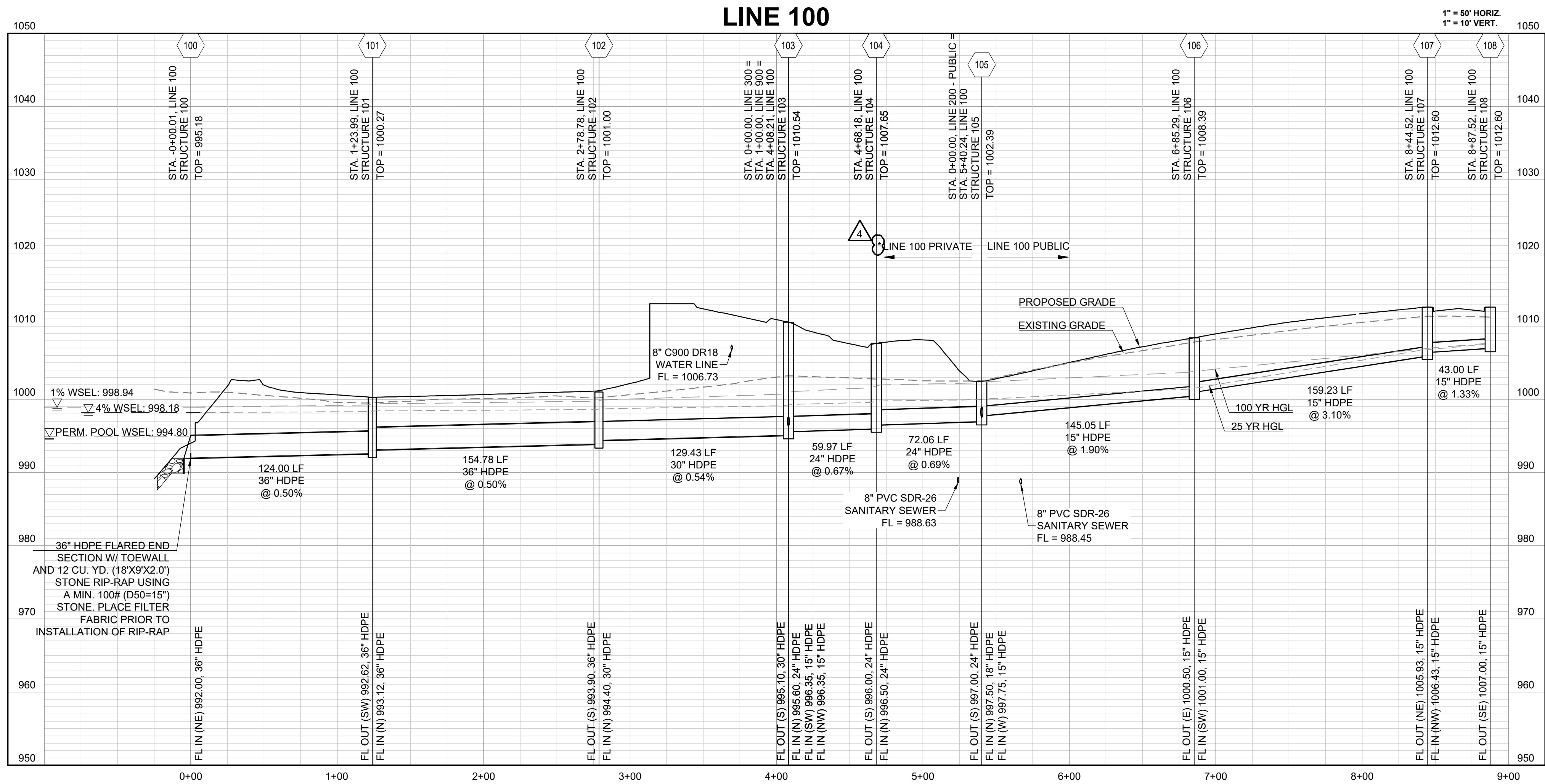
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RESIDENCES AT BLACKWELL
STREET, STORMWATER AND EROSION &
SEDIMENT CONTROL
SE SHENANDOAH DRIVE LEE'S SUMMIT, M

STORM CALCS

15



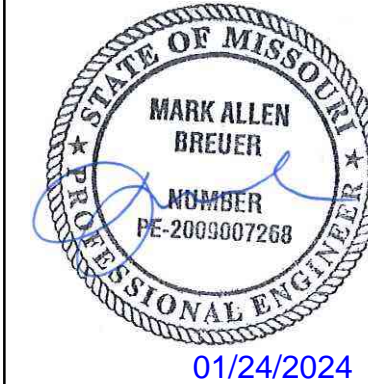
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Development Services Department
Lee's Summit, Missouri
02/02/2024

4

TO BE CONSTRUCTED BY
OTHERS IN THE FINAL
DEVELOPMENT PLAN

PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

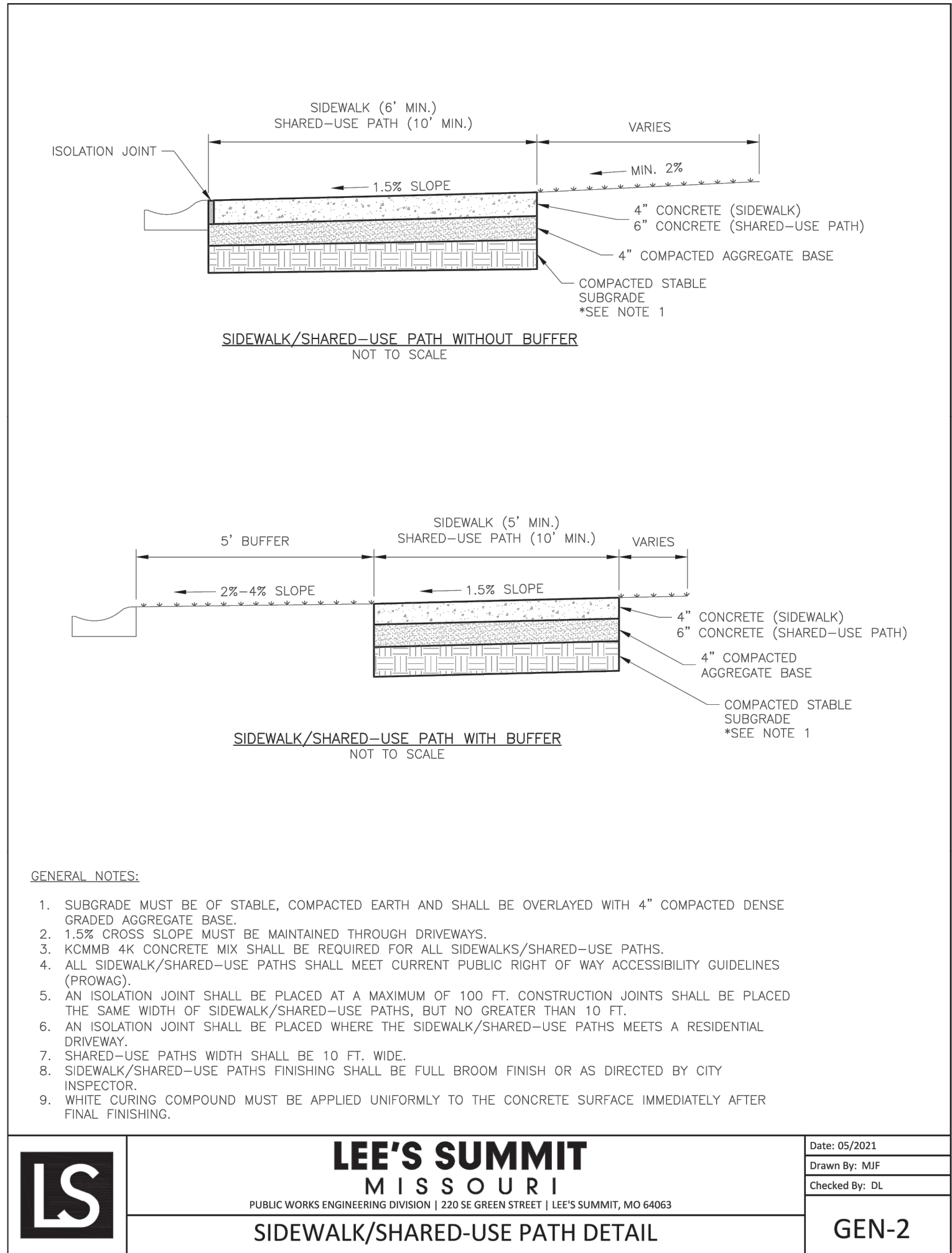
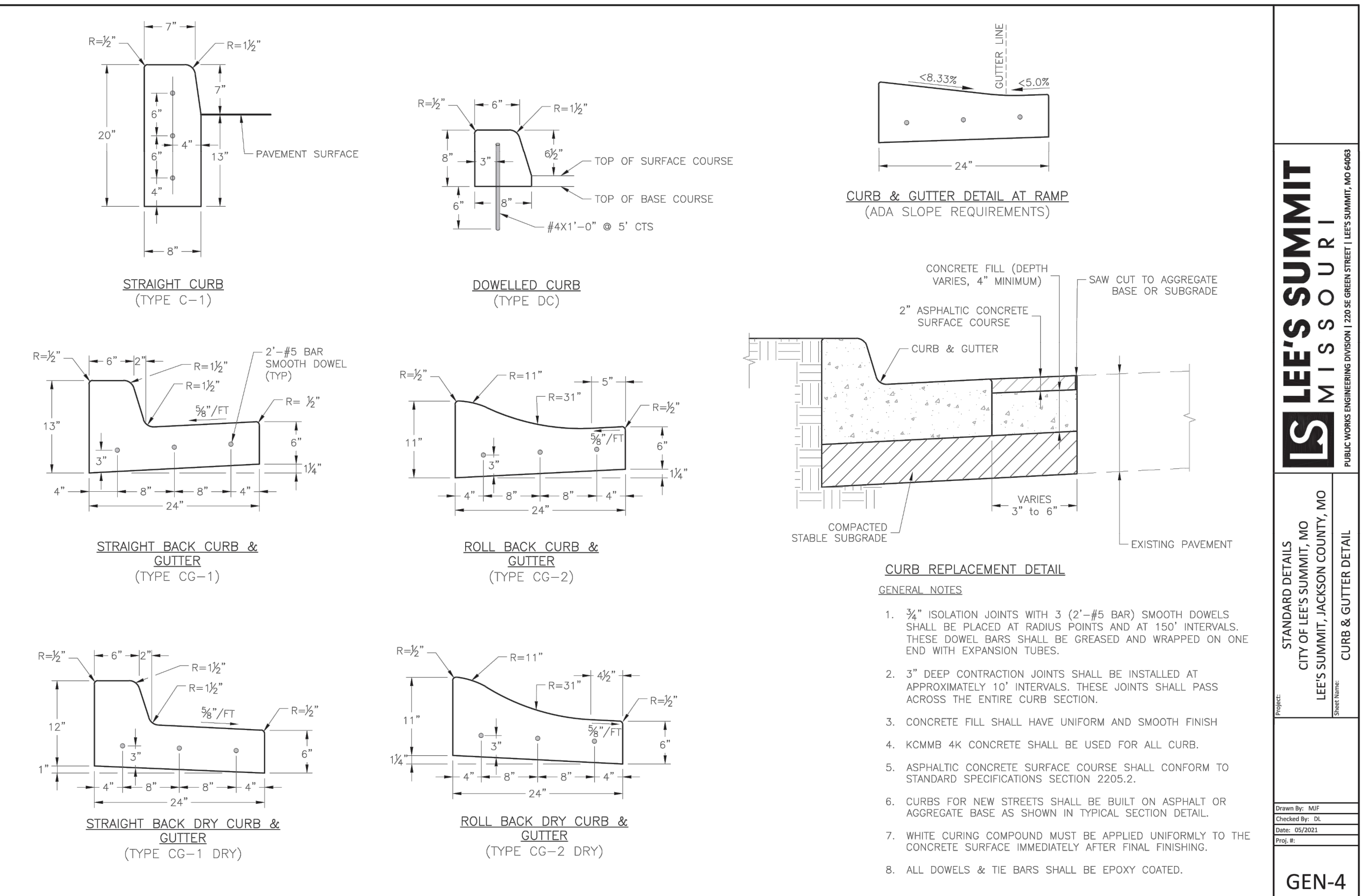
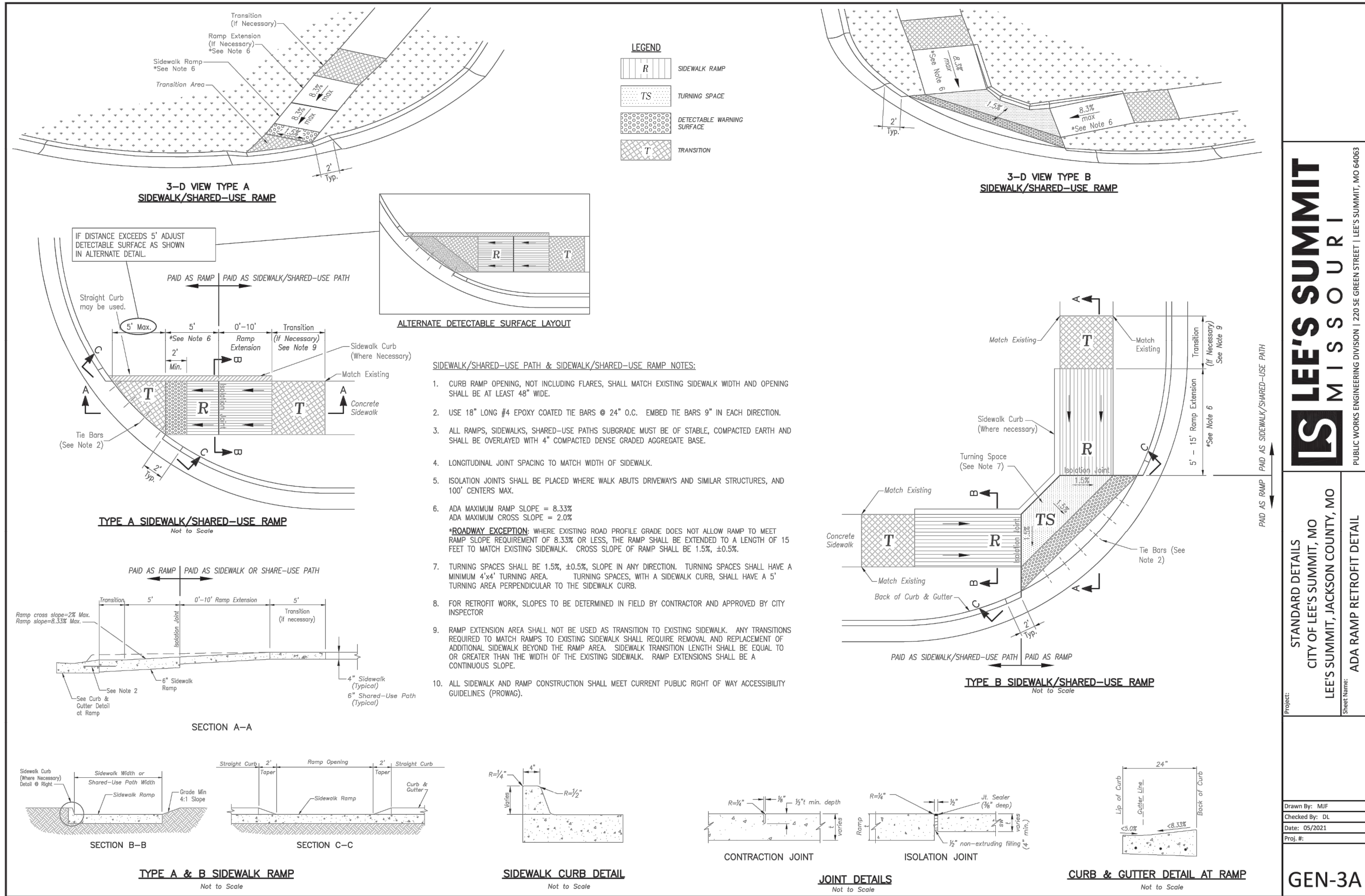
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SE SHENANDOAH DRIVE LEE'S SUMMIT, MO

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11/30/2022	DATE PREPARED
22-102	PROJ. NUMBER

DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 11/30/2022
PROJ. NUMBER: 22-102

STORM
PROFILES

SHEET



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02/02/2024

SCHLAGEL

ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS

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#E2002003600-F #LAC2001005237 #LS2002008659-F

PREPARED BY:

MARK ALLEN BREUER

PROFESSIONAL ENGINEER

01/24/2024

SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES AT BLACKWELL STREET, STORMWATER AND EROSION & SEDIMENT CONTROL

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STREET DETAILS

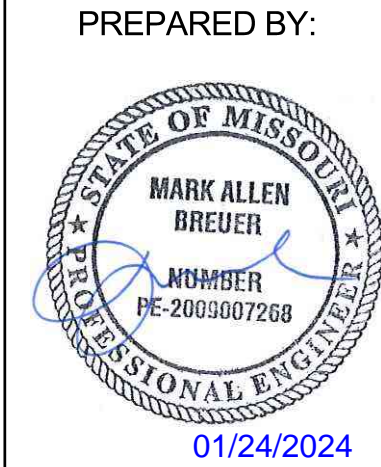
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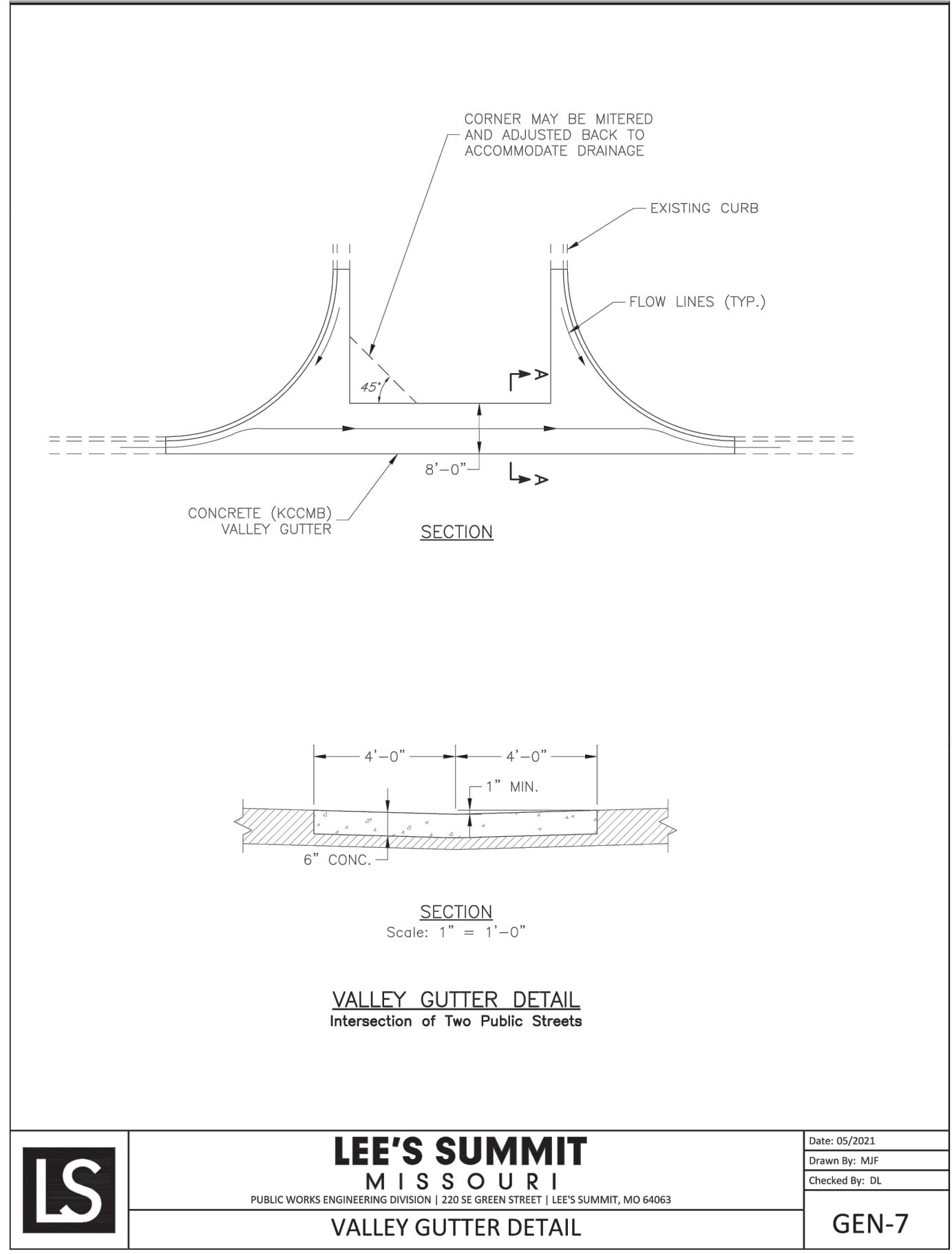
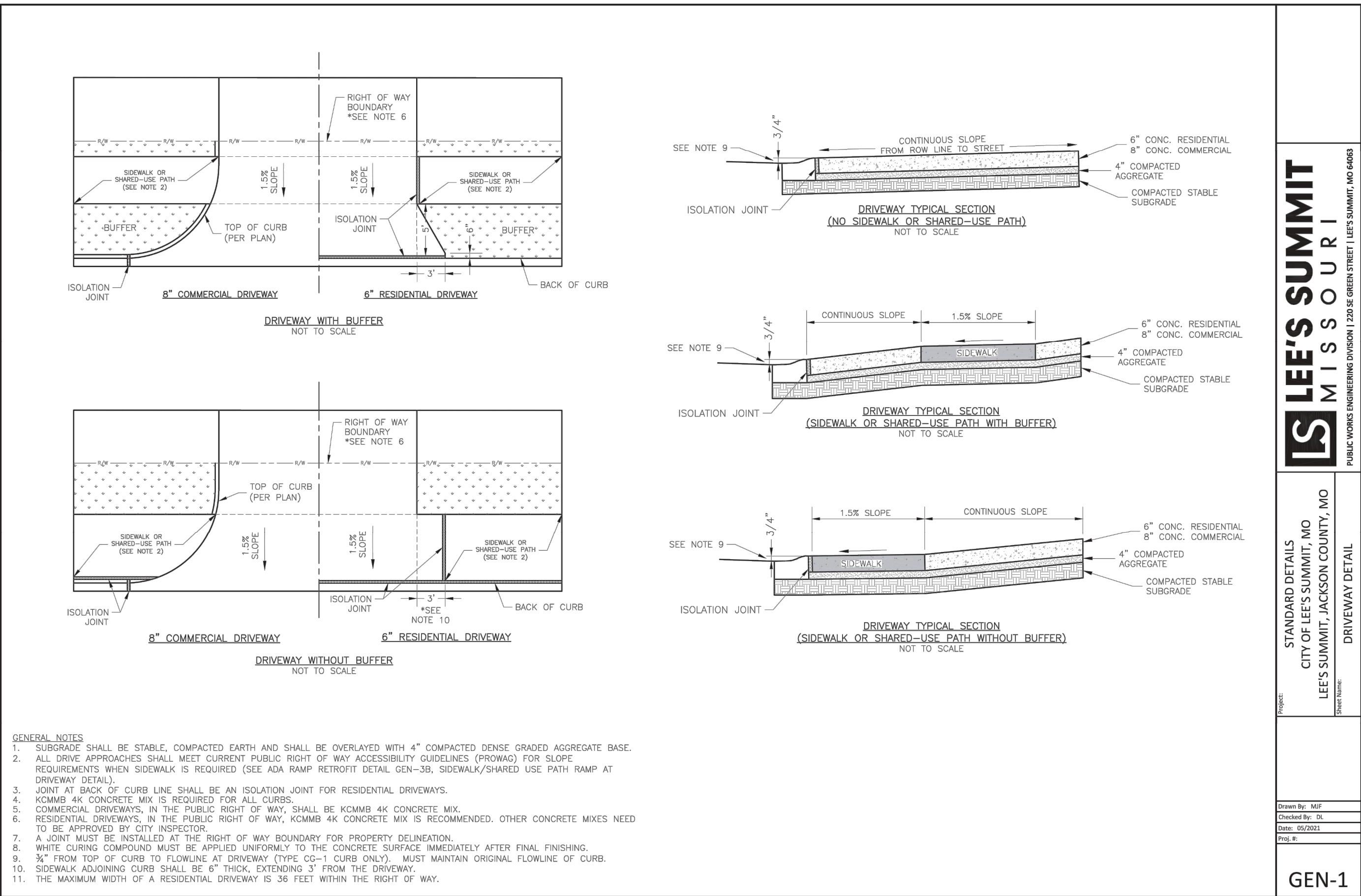
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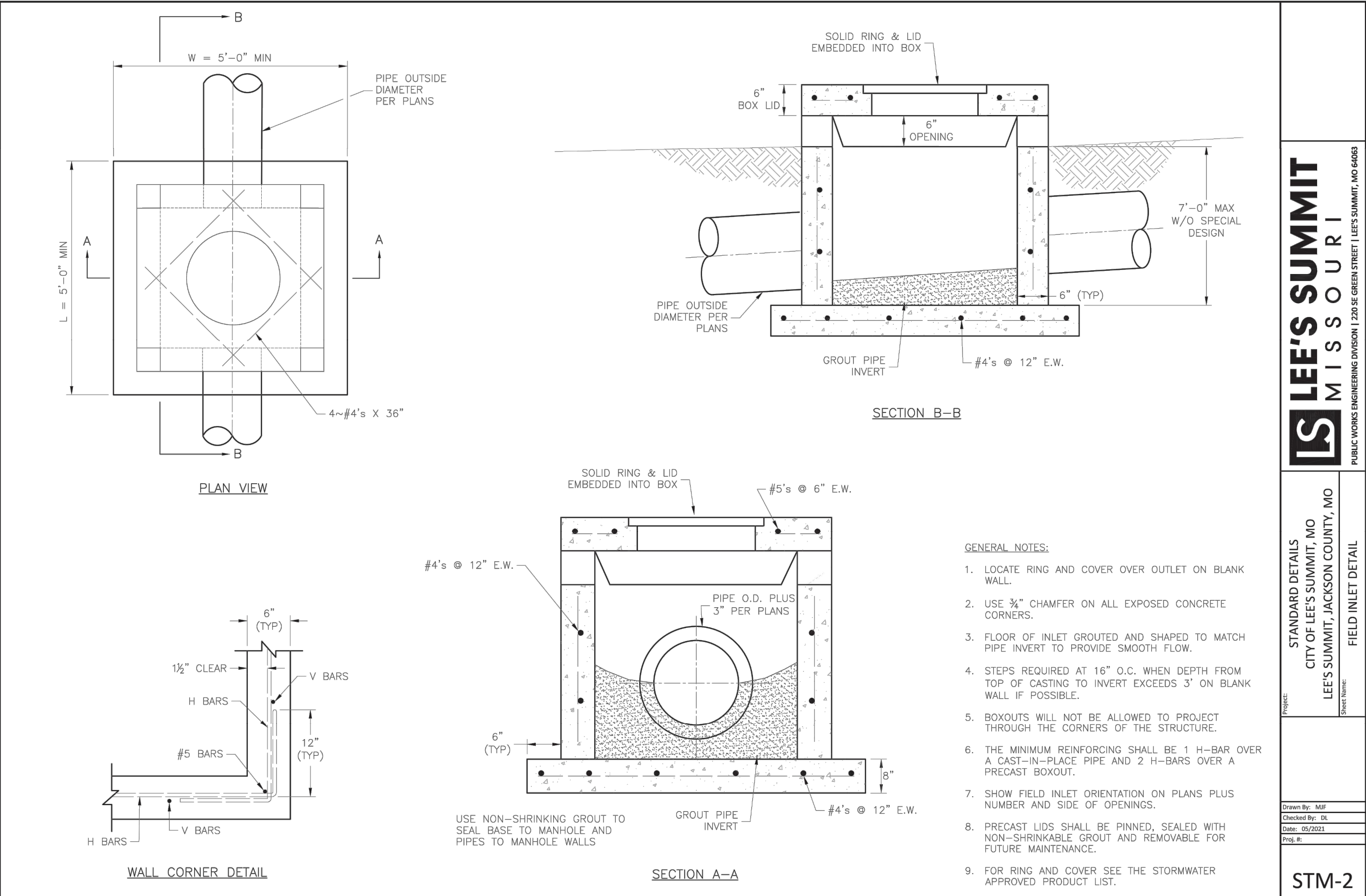
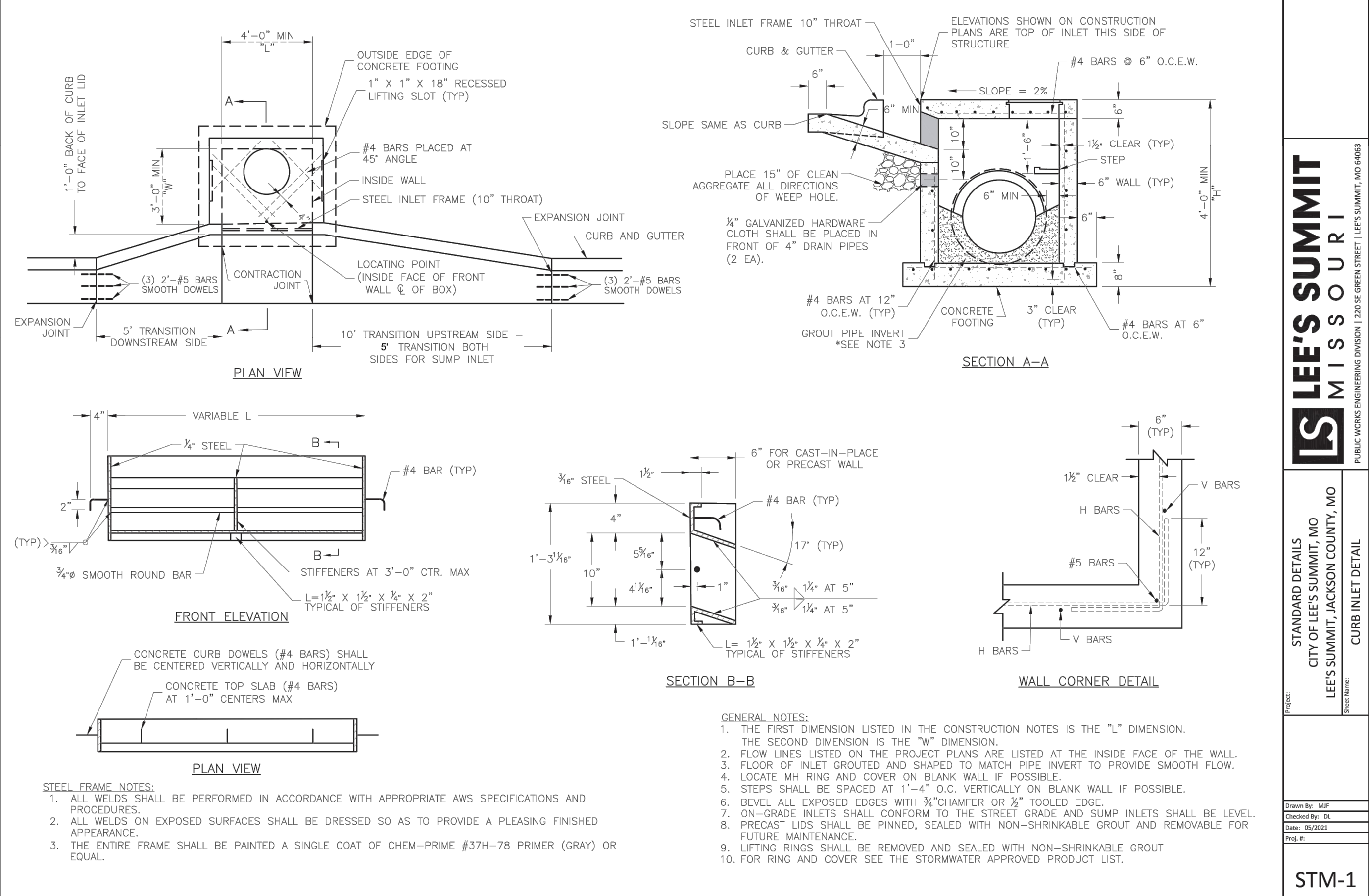
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STREET DETAILS

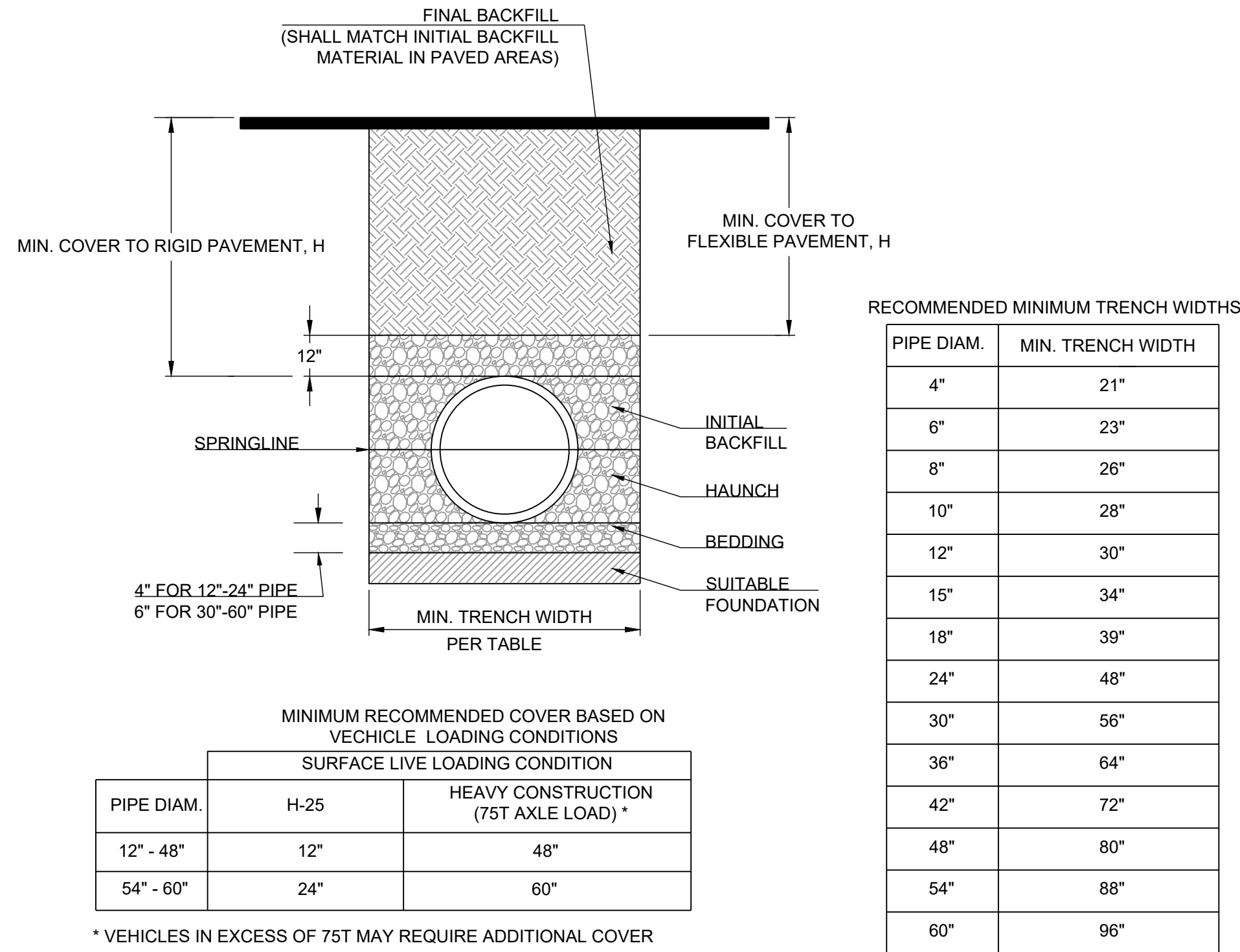
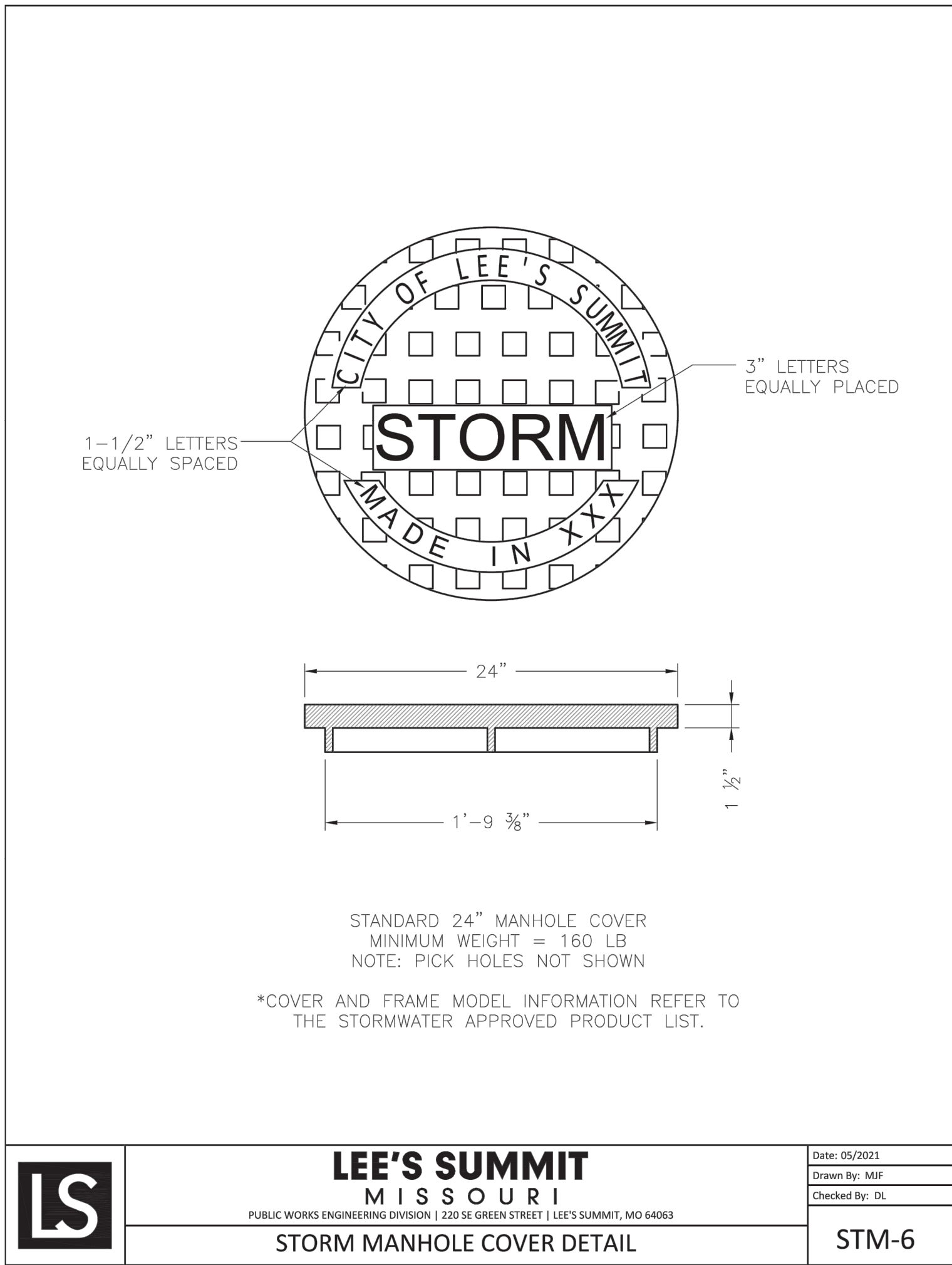
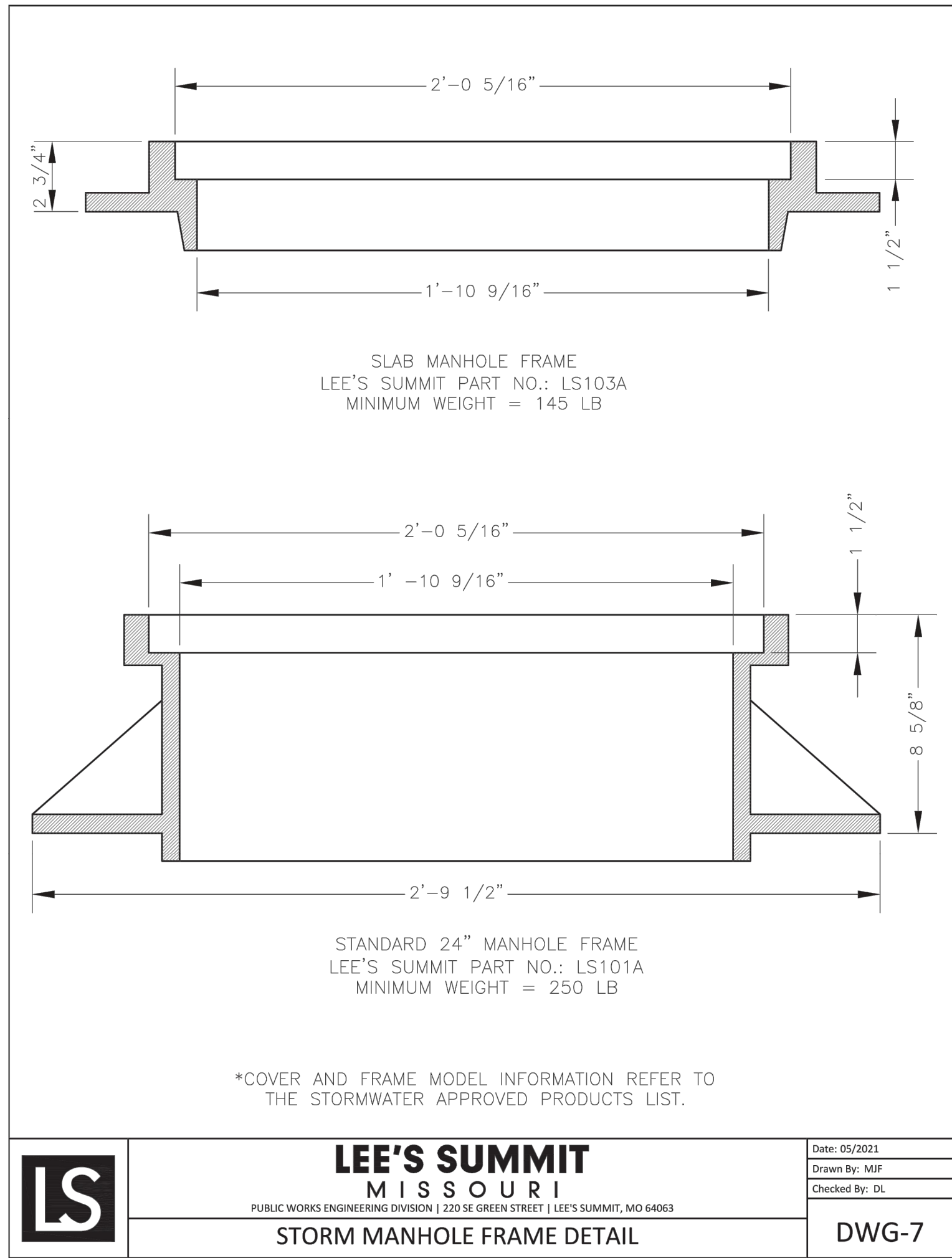
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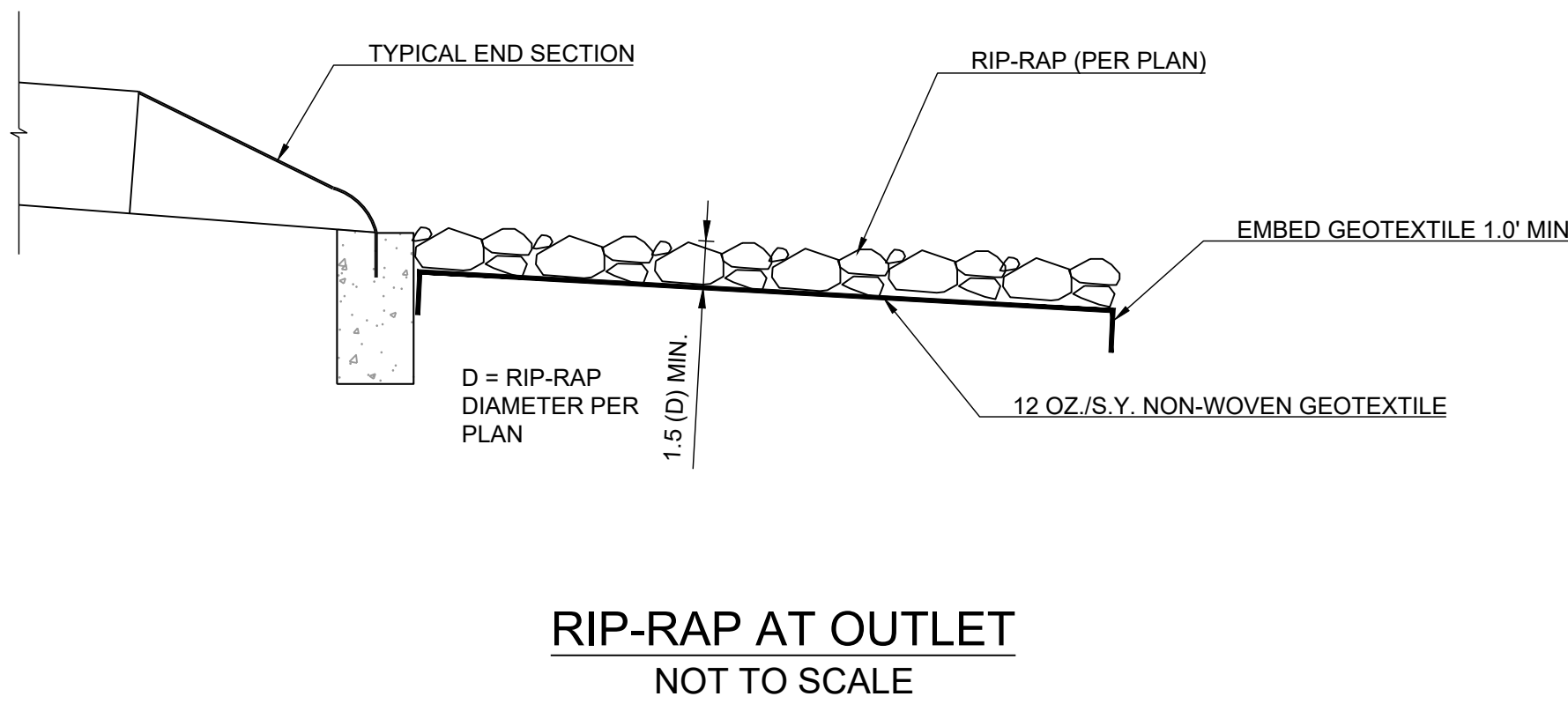
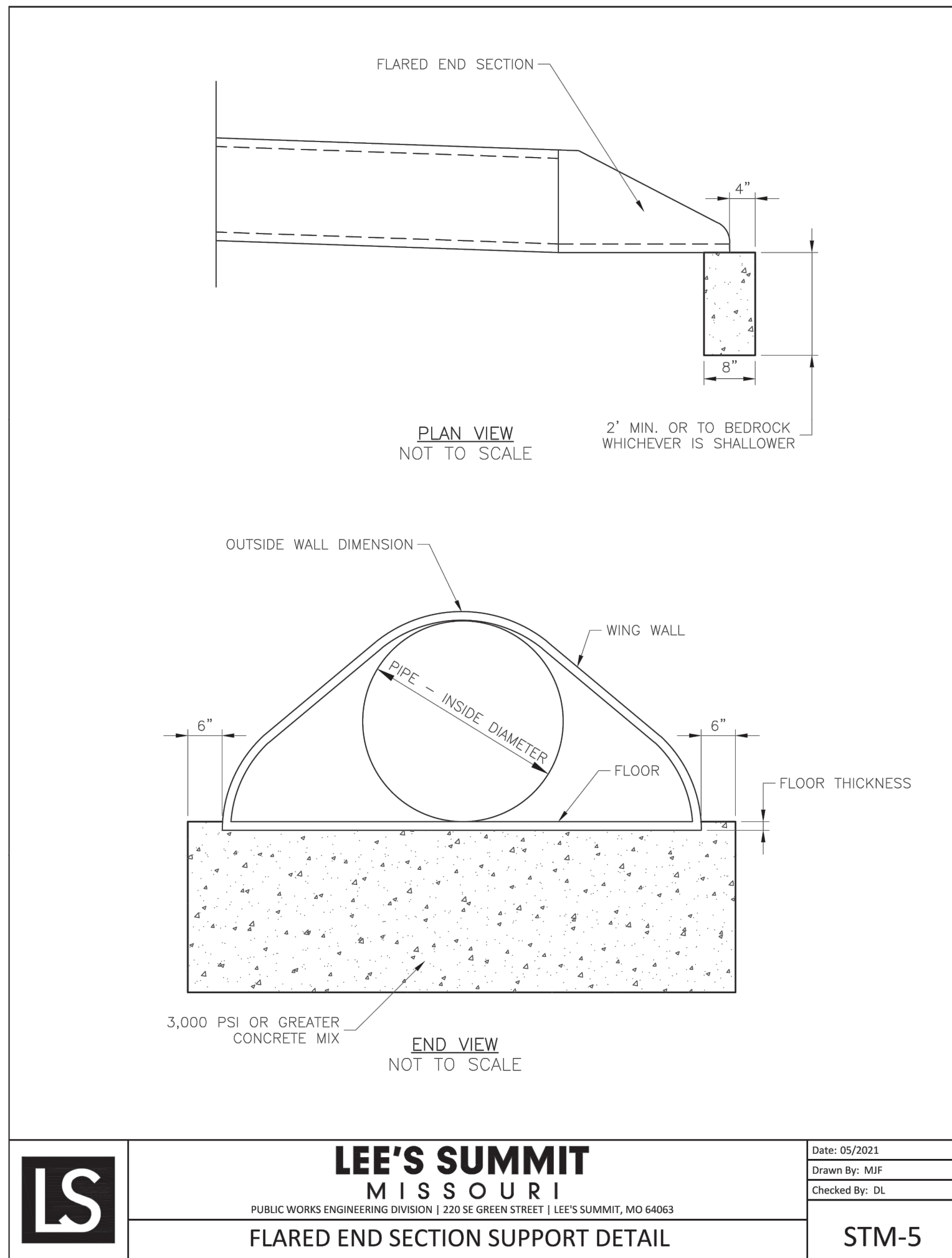


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- NOTES:
- ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION
 - MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
 - 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.
 - 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).
 - 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.
 - 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 FLOATATION. 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.
 - 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.

PIPE EMBEDMENT
NOT TO SCALE



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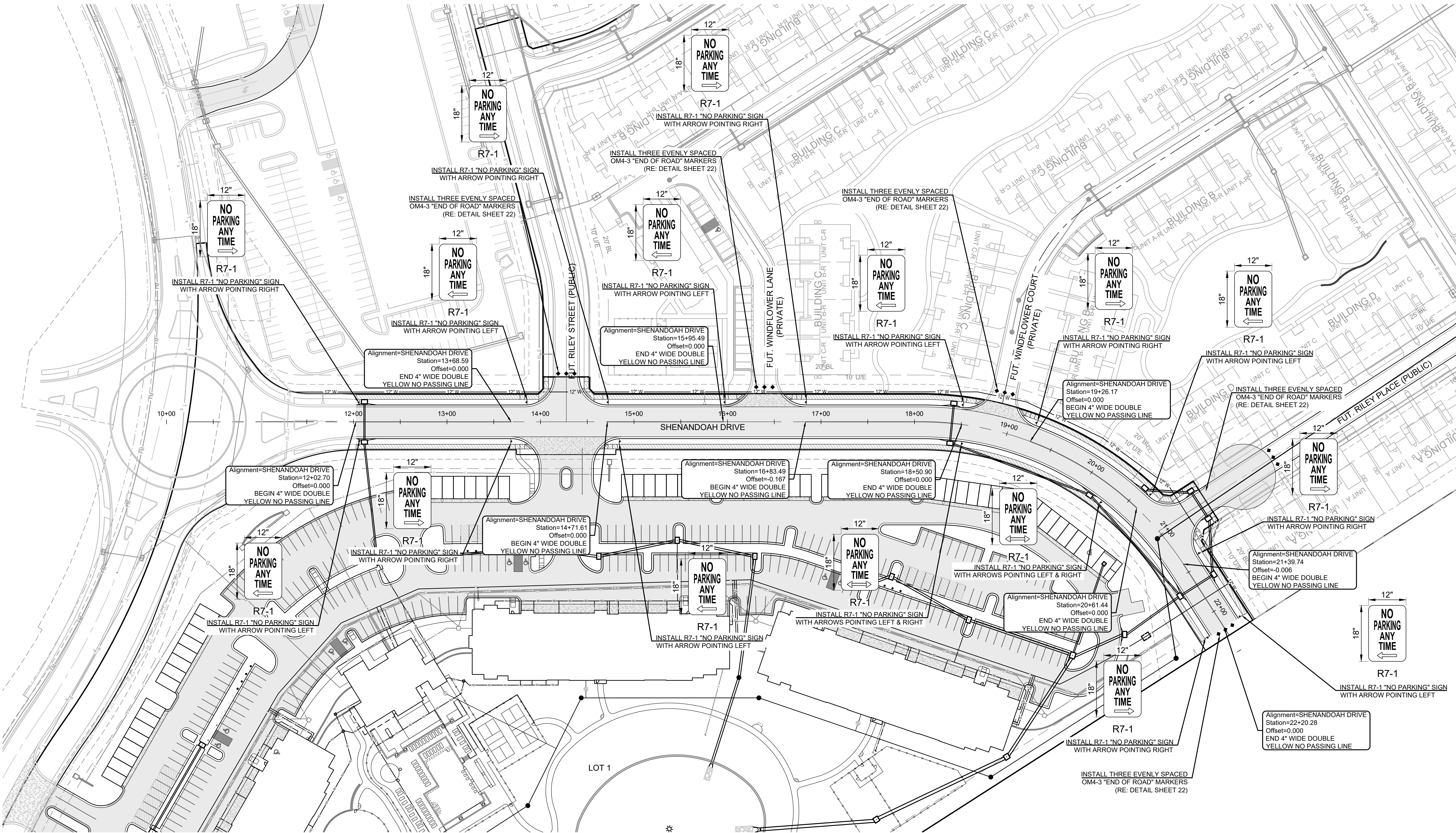
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Lee's Summit, Missouri

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STORM DETAILS



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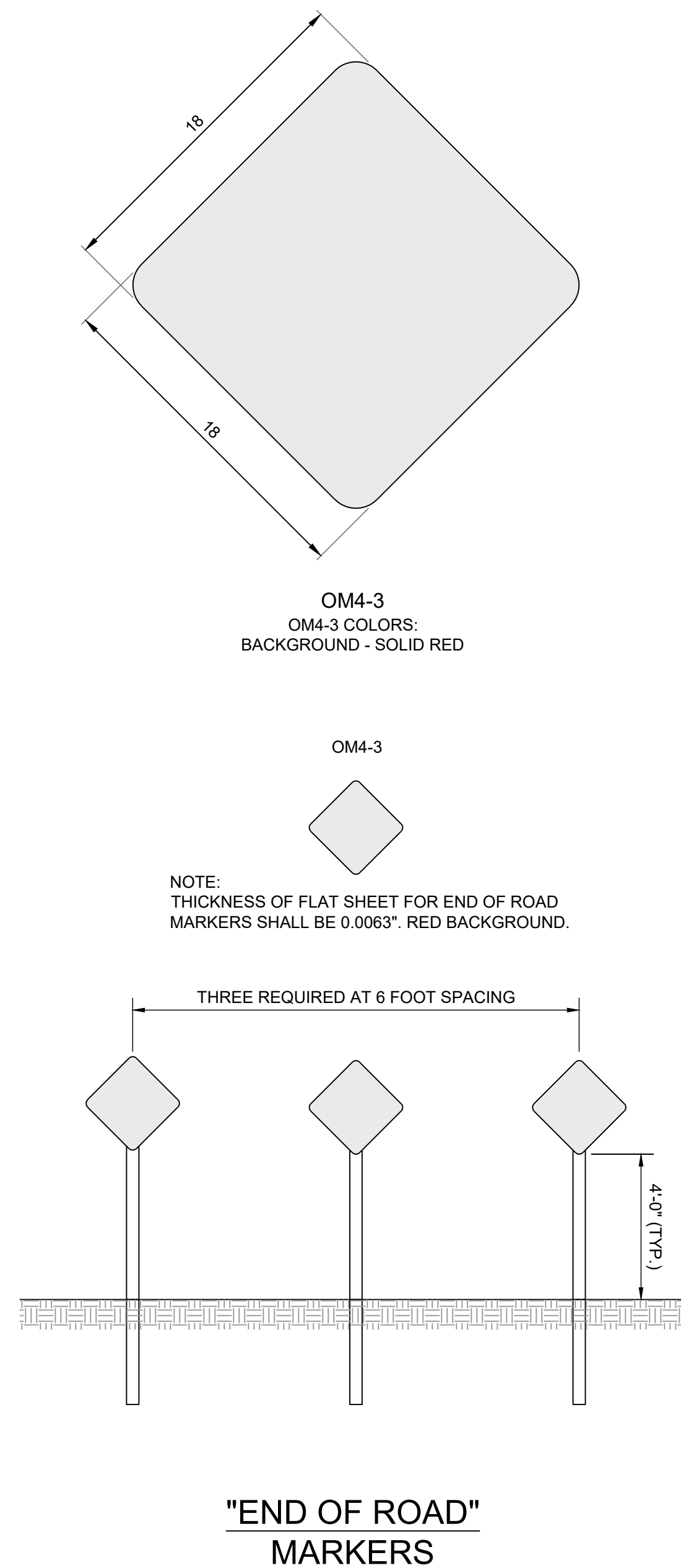
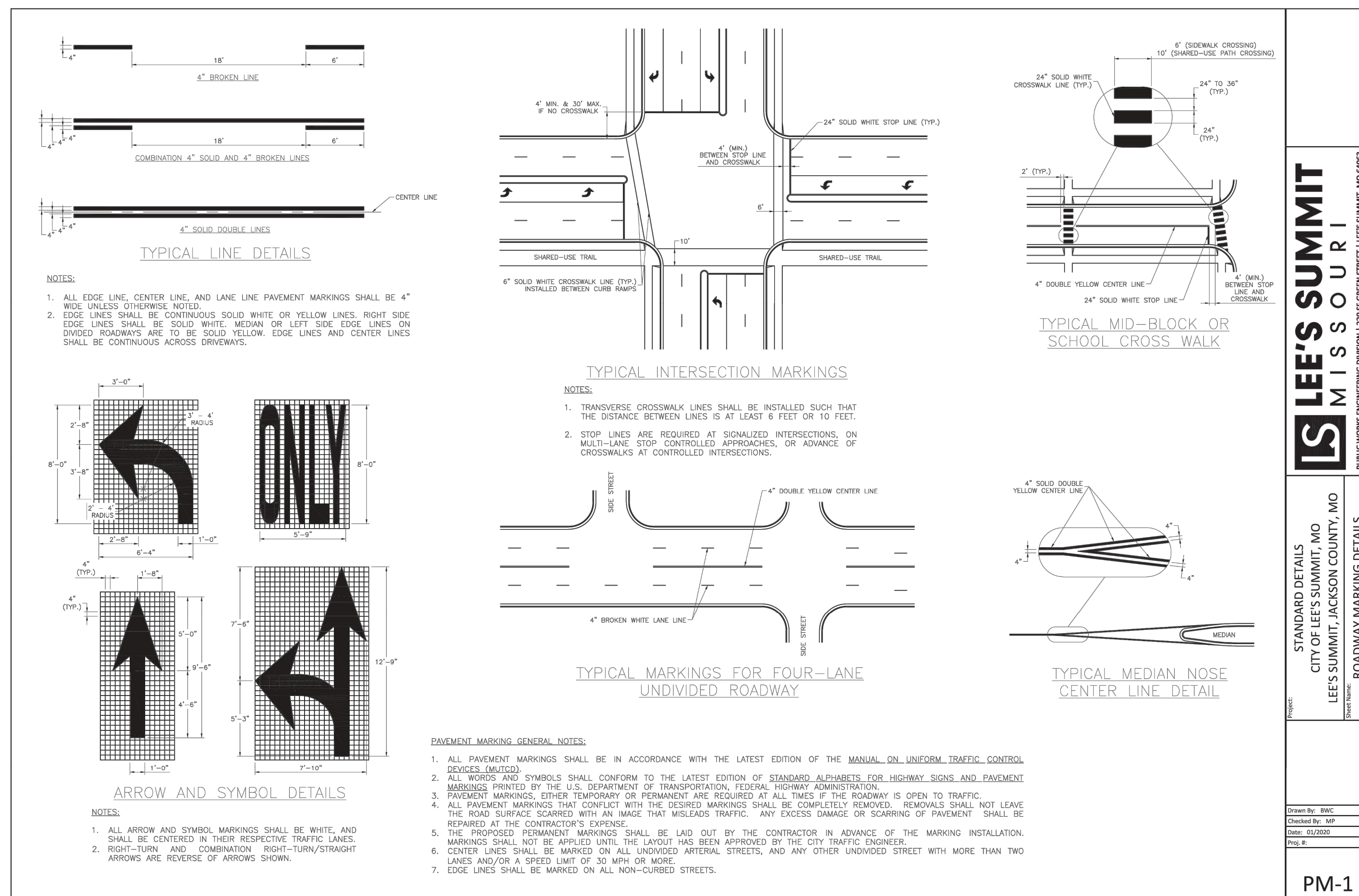


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STREET SIGN &
PAVEMENT
MARKING PLAN

Development Services Department
Lee's Summit, Missouri
02/02/2024



PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

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TRC	01/23/2023	PER CITY COMMENTS
CHECKED BY:	03/24/2023	PER CITY COMMENTS
MAB	11/29/2023	STORM SEWER REVISIONS
	01/17/2024	PER CITY COMMENTS
DATE PREPARED		
11/30/2022		
PROJ. NUMBER		
22-102		

STREET SIGN & PAVEMENT MARKING DETAILS

SHEET