—— P/L —— PROPERTY LINES ——— SANITARY SEWER MAIN —— SANITARY SEWER MAIN - EXIST. —— STO—— STORM SEWER STORM SEWER - EXISTING ---- CATV_x ---- CABLE TV - EXISTING FIBER OPTIC CABLE - EXISTING ——Tx—— TELEPHONE LINE - EXIST. —— E_x — ELECTRIC LINE - EXISTING ----- OHP_x ----- OVERHEAD POWER LINE - EXIST ----- UGE_x ----- UNDERGROUND ELECTRIC - EX. GAS LINE - EXISTING WATERLINE - EXISTING LIGHT - EXISTING **EXISTING MANHOLE** CLEANOUT

EXISTING SANITARY MANHOLE

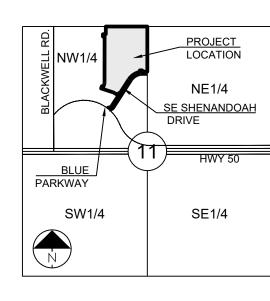
EXISTING AREA INLET **EXISTING CURB INLET**

EXISTING GRATE INLET

EXISTING JUNCTION BOX

EXISTING STORM MANHOLE

PROPOSED SANITARY MANHOLE



SECTION 11-47-31

LOCATION MAP

MISSOURI DEPARTMENT OF TRANSPORTATION (MODOT)

(816) 399-0663brent.jones@spireenergy.com

CITY OF LEES SUMMIT PUBLIC WORKS

220 SE Green Street Lee's Summit, MO 64063 (816) 969-1800

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 (816) 795-2257

CITY OF LEE'S SUMMIT WATER UTILITIES Mark Schaufler 1200 SE Hamblen Road Lee's Summit, MO 64081



811 or 1-800-344-7483 mo1call.com

SUMMARY OF QUANTITIES					
	ITEM	QUANTITY	UNITS		
1	INSTALL 8" PVC SDR-26	2,034	LF		
2	INSTALL 6" PVC SDR-26	1,048	LF		
3	INSTALL STANDARD 4' DIAMETER MANHOLE	8	EA		
4	EXTRA DEPTH IN MANHOLES	47	VF		
5	TRENCHING UNDER FUTURE STREET	2,546	LF		
6	INSTALL REINFORCED CONCRETE ENCASEMENT	20	LF		
7	POST-CONSTRUCTION MANHOLE BARREL ADJUSTMENTS (EST.)	2	EA		
8	POST-CONSTRUCTION RING (3"-12") ADJUSTMENT (EST.)	2	EA		

PUBLIC SANITARY SEWER PLANS REUNION AT BLACKWELL

IN THE CITY OF LEE'S SUMMIT JACKSON COUNTY, MO

GENERAL NOTES:

- ALL CONSTRUCTION TO FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
- ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE ENGINEERING DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI.
- LINEAL FOOT MEASUREMENTS SHOWN ON THE PLANS ARE HORIZONTAL MEASUREMENTS, NOT SLOPE
- MEASUREMENTS. ALL PAYMENTS SHALL BE MADE ON HORIZONTAL MEASUREMENTS.
- NO GEOLOGICAL INVESTIGATION HAS BEEN PERFORMED ON THE SITE. 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
- 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.
- 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.
- THE CONTRACTOR SHALL PROTECT ALL MAJOR TREES FROM DAMAGE. NO TREE SHALL BE REMOVED NITHOUT PERMISSION OF THE OWNER, UNLESS SHOWN OTHERWISE
- 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
- 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
- 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
- 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).

UTILITIES:

- 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.
- 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. 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. 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.
- 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 has 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.

Sheet List Table				
Sheet Number	Sheet Title			
1	COVER SHEET			
2	GENERAL LAYOU			
3	GRADING PLAN			
4	TRIB MAP			
5	LINE A			
6	LINE C			
7	DETAILS			
8	DETAILS			



PREPARED BY



SCHLAGEL & ASSOCIATES, P.A

CITY ENGINEER APPROVED FOR ONE YEAR FROM THIS DATE

OWNER/DEVELOPER:

APPROVED BY

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

SEWER PL

 \Box

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

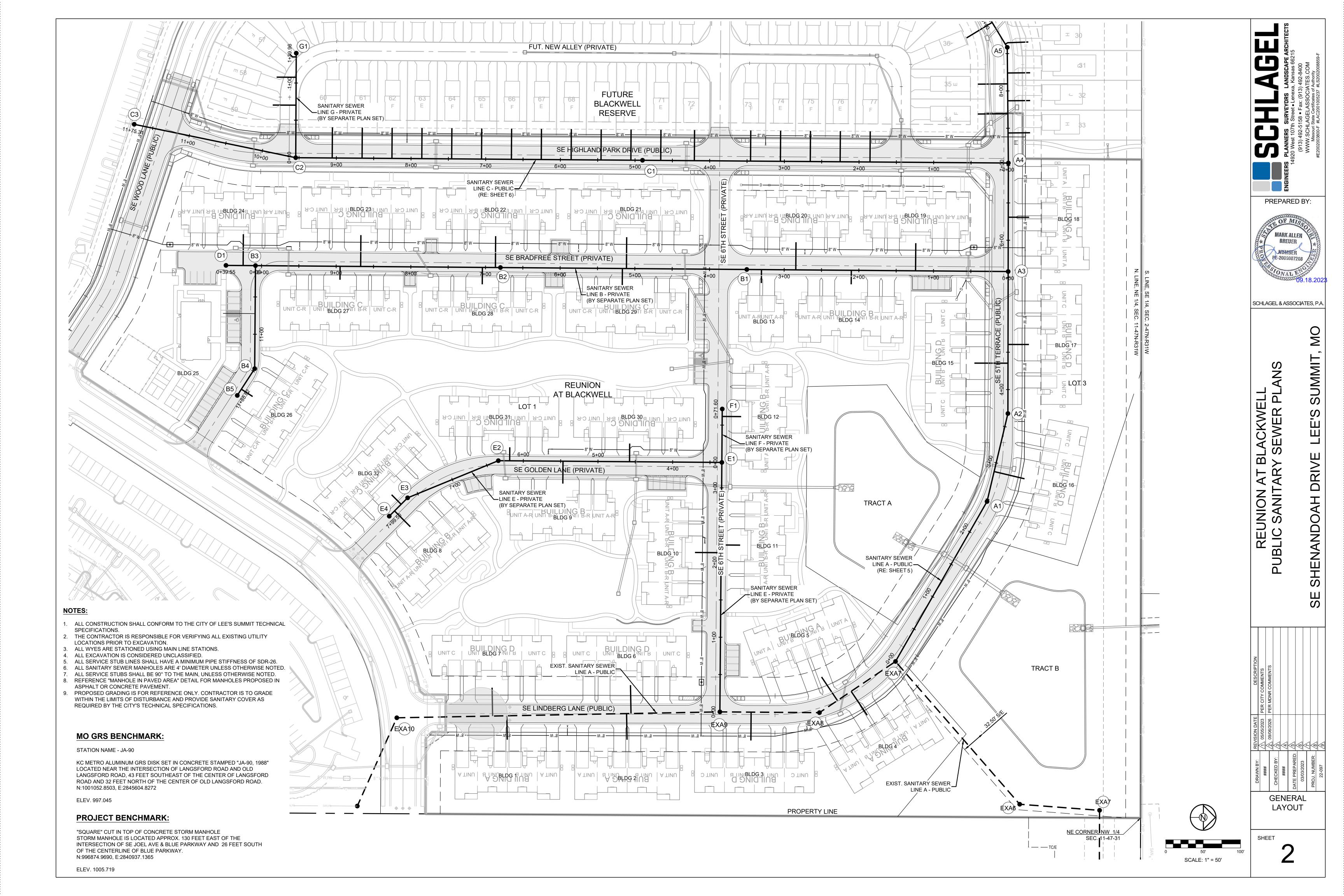
PROJECT BENCHMARK:

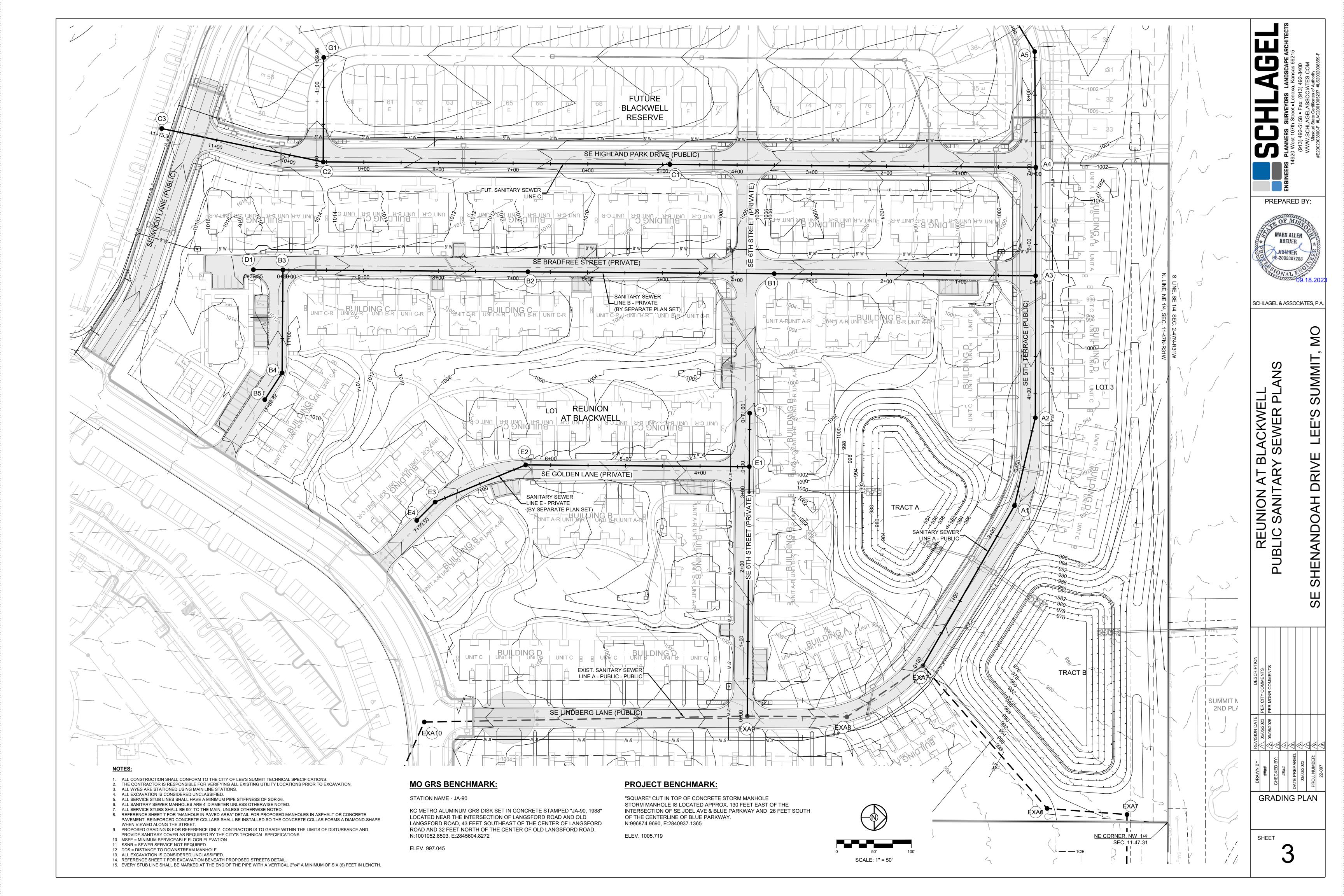
"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH OF THE CENTERLINE OF BLUE PARKWAY. N:996874.9690, E:2840937.1365

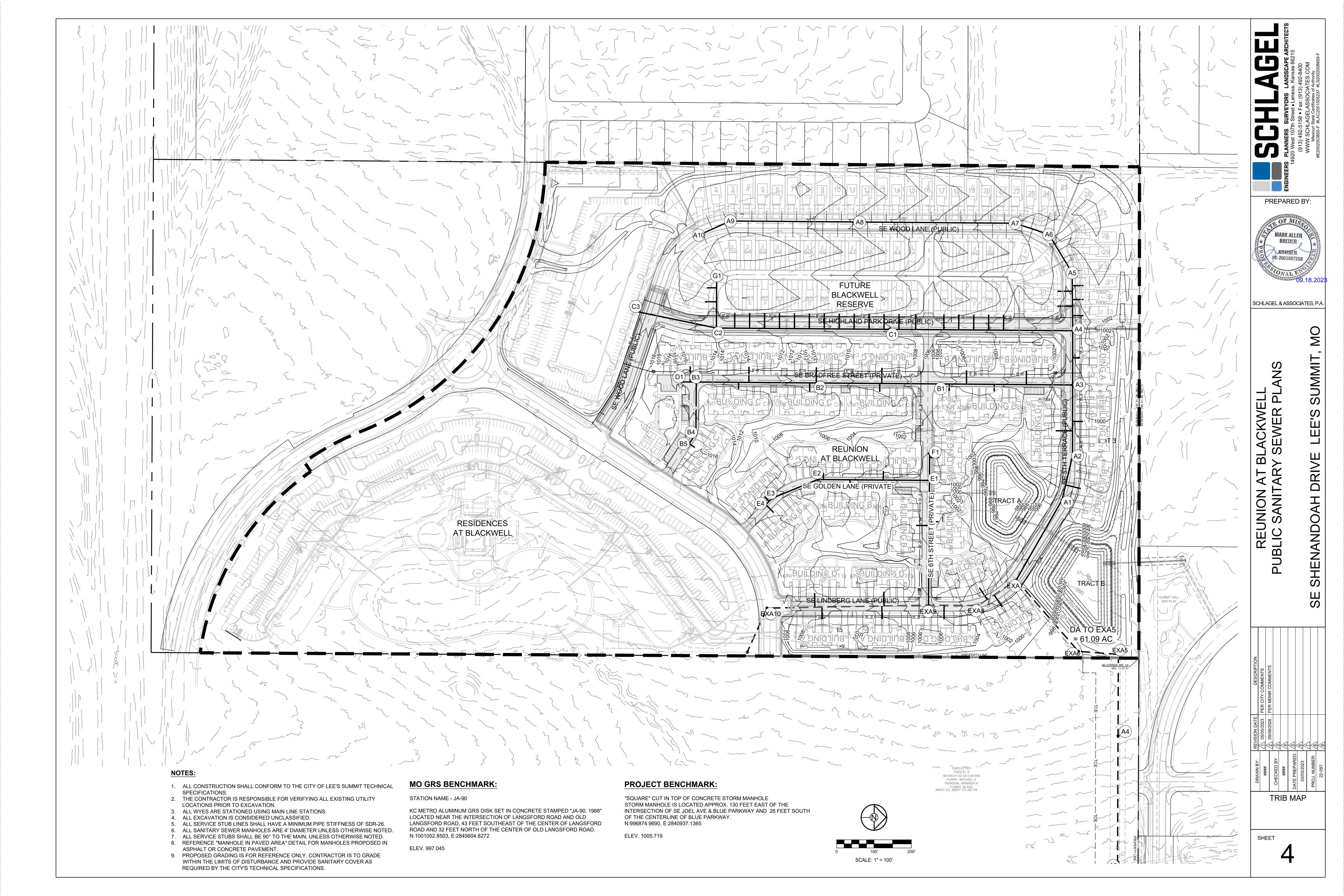
ELEV. 1005.719

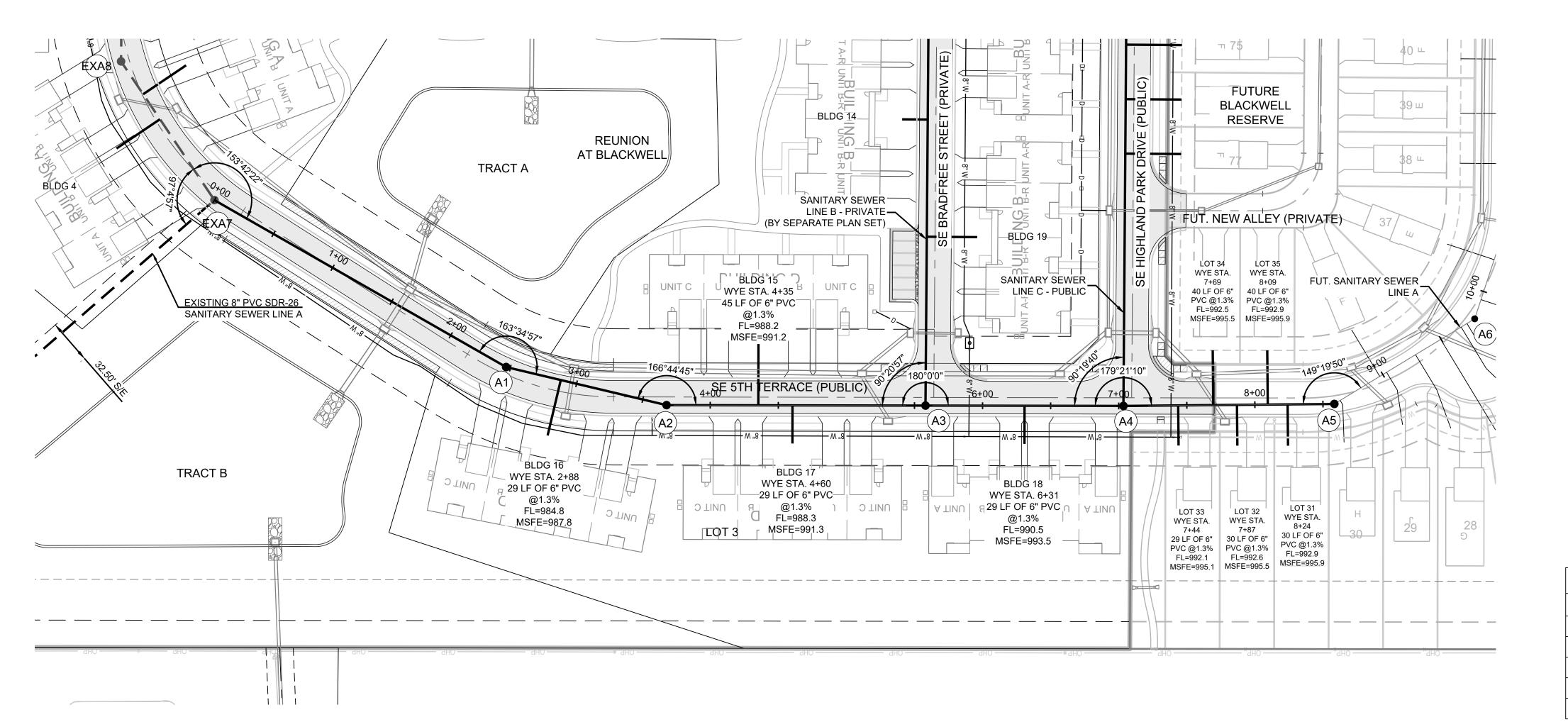
COVER SHEET

SHEET









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ELEV. 997.045

PROJECT BENCHMARK:

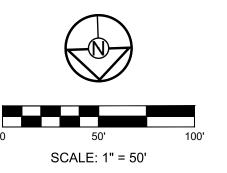
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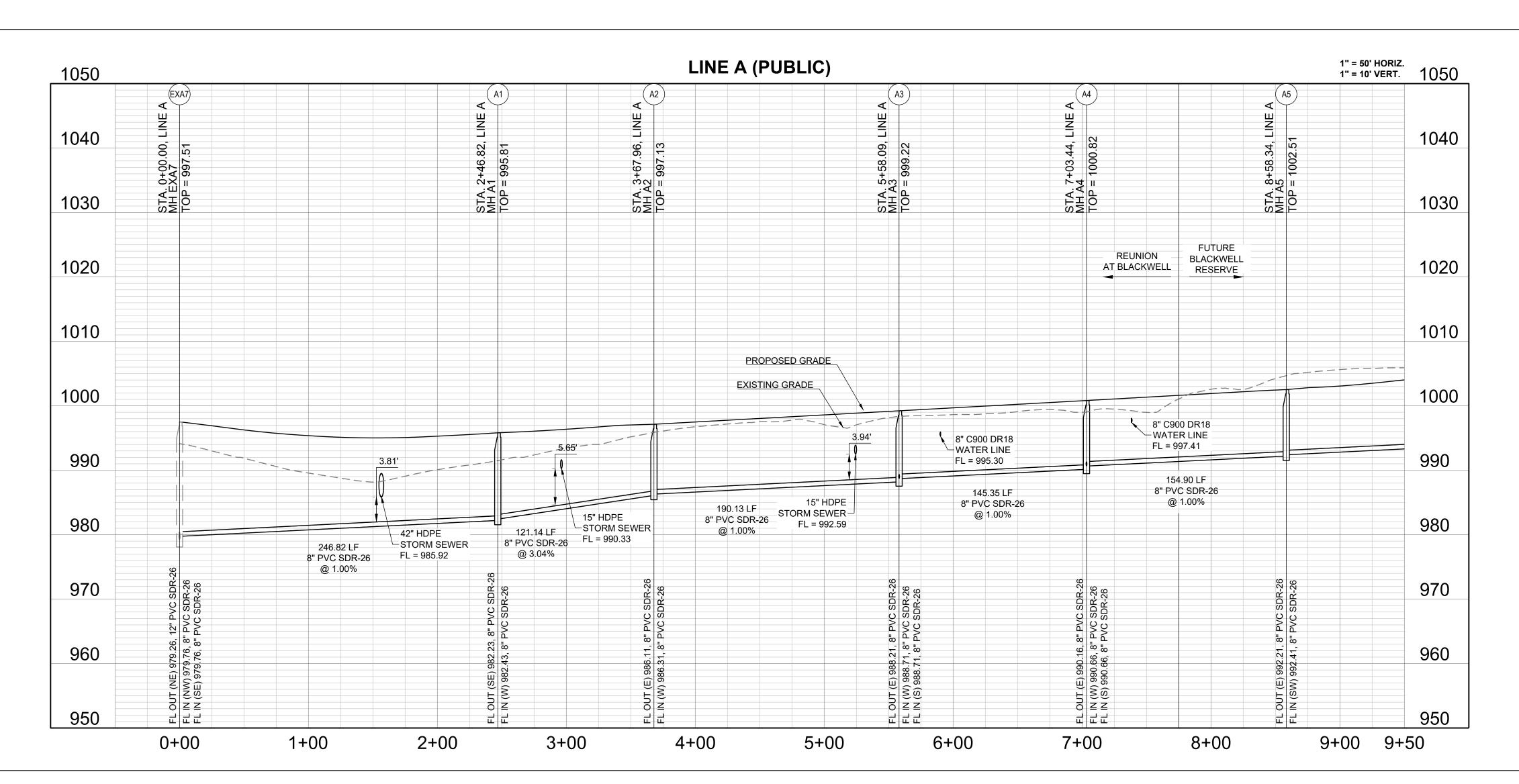
ELEV. 1005.719

NOTES:

- 1. ALL CONSTRUCTION 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.
- 3. ALL WYES ARE STATIONED USING MAIN LINE STATIONS.
- 4. ALL EXCAVATION IS CONSIDERED UNCLASSIFIED.
- 5. ALL SERVICE STUB LINES SHALL HAVE A MINIMUM PIPE STIFFNESS OF SDR-26. 6. ALL SANITARY SEWER MANHOLES ARE 4' DIAMETER UNLESS OTHERWISE NOTED. 7. ALL SERVICE STUBS SHALL BE 90° TO THE MAIN, UNLESS OTHERWISE NOTED.
- 8. REFERENCE SHEET 7 FOR "MANHOLE IN PAVED AREA" DETAIL FOR PROPOSED MANHOLES IN ASPHALT OR CONCRETE PAVEMENT. REINFORCED CONCRETE COLLARS SHALL BE INSTALLED SO THE CONCRETE COLLAR FORMS A DIAMOND-SHAPE WHEN VIEWED ALONG THE STREET.
- 9. PROPOSED GRADING IS FOR REFERENCE ONLY. CONTRACTOR IS TO GRADE WITHIN THE LIMITS OF DISTURBANCE AND PROVIDE SANITARY COVER AS
- REQUIRED BY THE CITY'S TECHNICAL SPECIFICATIONS. 10. MSFE = MINIMUM SERVICEABLE FLOOR ELEVATION.
- 11. SSNR = SEWER SERVICE NOT REQUIRED. 12. DDS = DISTANCE TO DOWNSTREAM MANHOLE.
- 13. ALL EXCAVATION IS CONSIDERED UNCLASSIFIED.
- 14. REFERENCE SHEET 7 FOR EXCAVATION BENEATH PROPOSED STREETS DETAIL. 15. 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.

Structure Table					
Structure Name	Structure Northing	Structure Easting			
A1	998273.9990	2841892.2817			
A2	998306.0691	2841775.4637			
A3	998313.0371	2841585.4577			
A4	998318.3639	2841440.2036			
A5	998322.2917	2841285.3534			





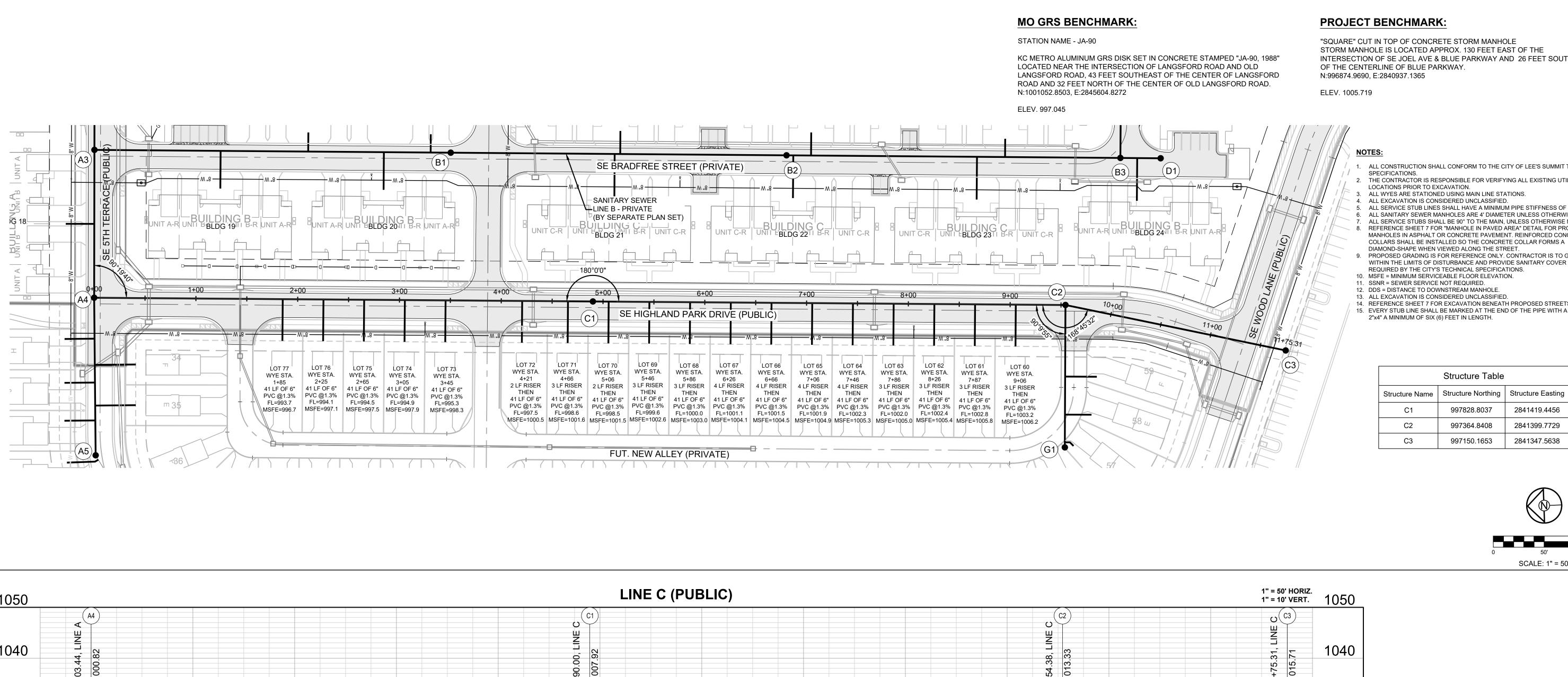
MARK ALLEN BREUER PE-2009007268 SCHLAGEL & ASSOCIATES, P.A. ACKWELL SEWER PL B REUNION AT PUBLIC SANITAR

PREPARED BY:

SHENANDOAH DRIV

LINE A

SHEET



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

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C1

C2

C3

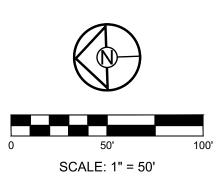
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Structure Name	Structure Northing	Structure Easting

997828.8037

997364.8408

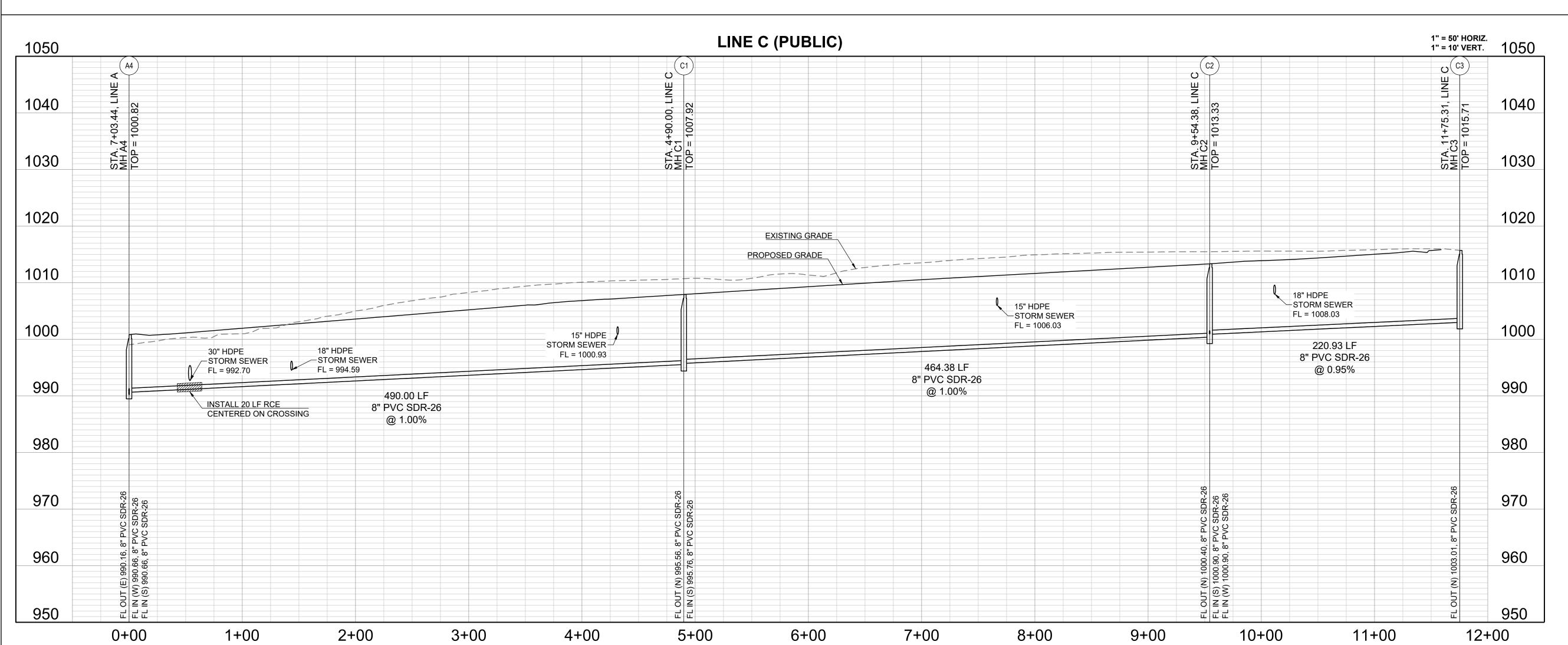
997150.1653



2841419.4456

2841399.7729

2841347.5638



SCHLAGEL & ASSOCIATES, P.A. \Box REUNION AT PUBLIC SANITAR

PREPARED BY:

MARK ALLEN

BREUER

MUMBER

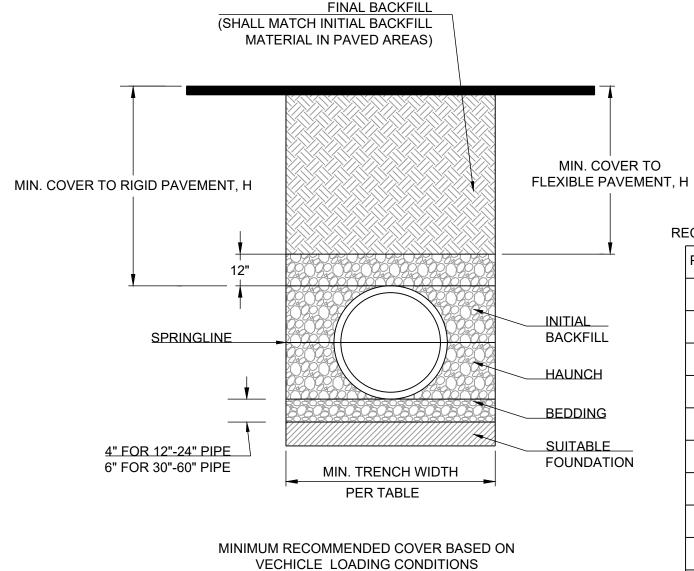
PE-2009007268

SHENANDOAH

LINE C

SHEET

6



SURFACE LIVE LOADING CONDITION

RECOMMENDED MINIMUM TRENCH WIDTHS PIPE DIAM. MIN. TRENCH WIDTH 21" 23" 26" 10" 28" 12" 30" 15" 34" 18" 39" 24" 48" 30" 56" 36" 64" 42" 72" 80" 48" 60" 96"

PIPE DIAM.

12" - 48"

54" - 60"

24"

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

- 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.

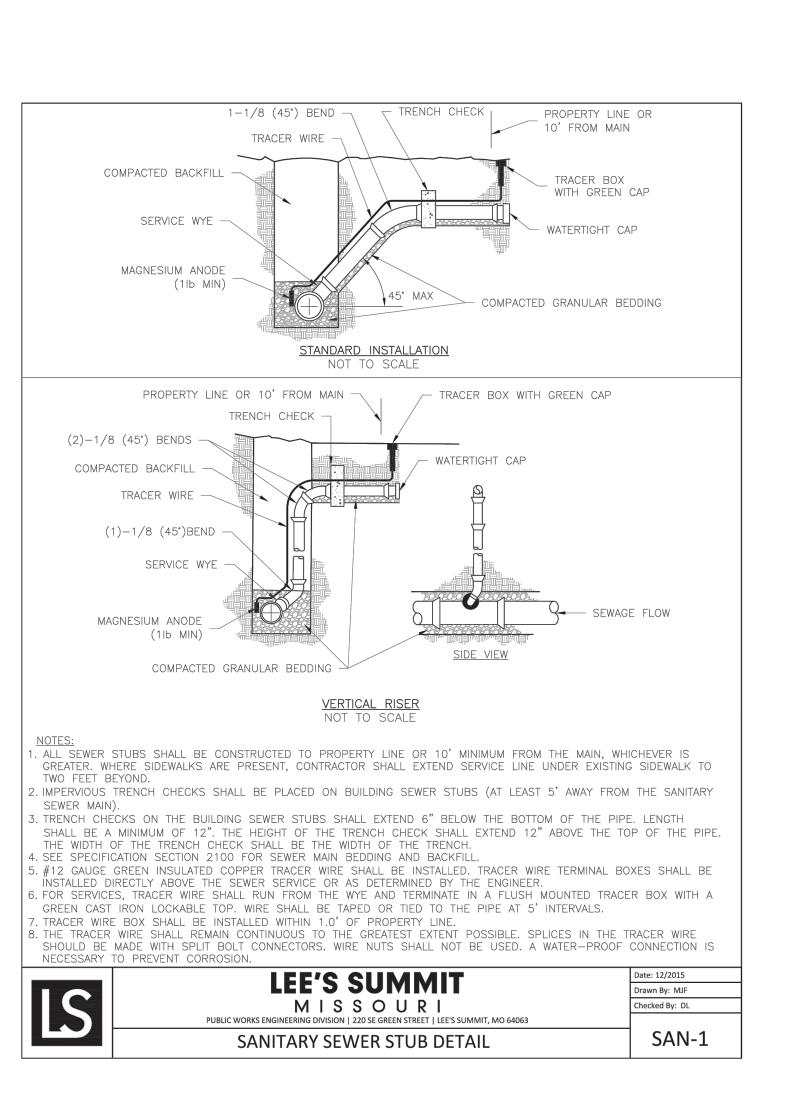
HEAVY CONSTRUCTION

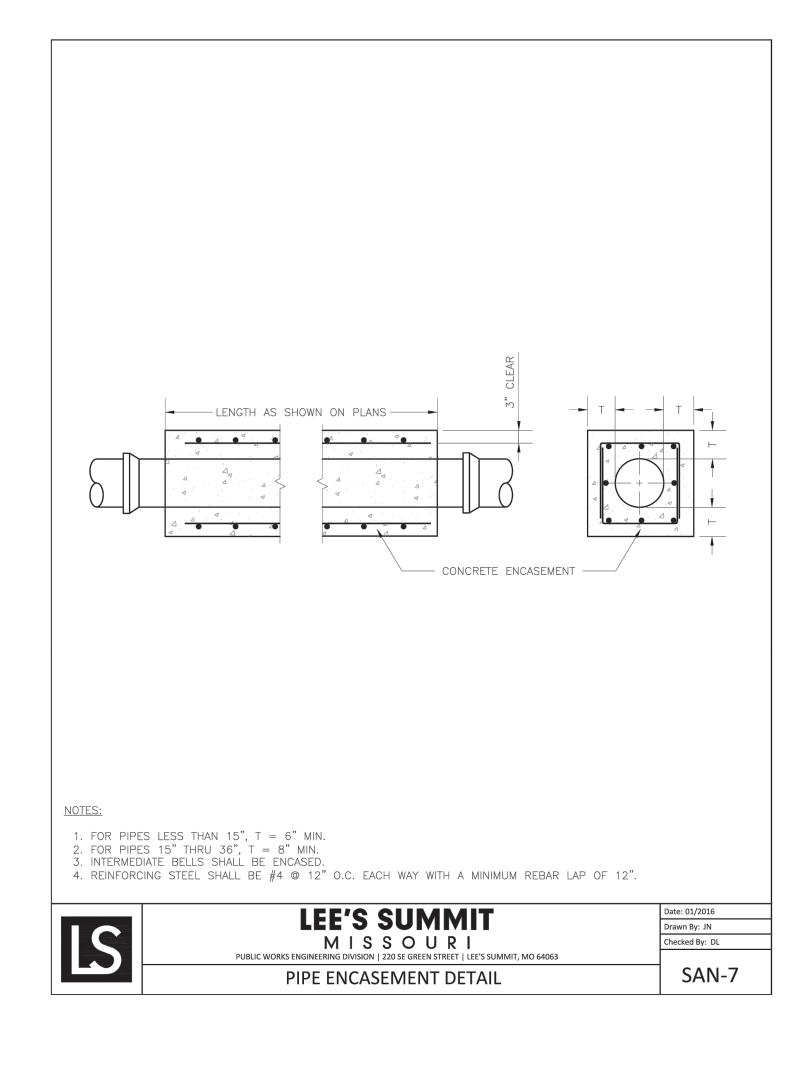
(75T AXLE LOAD) *

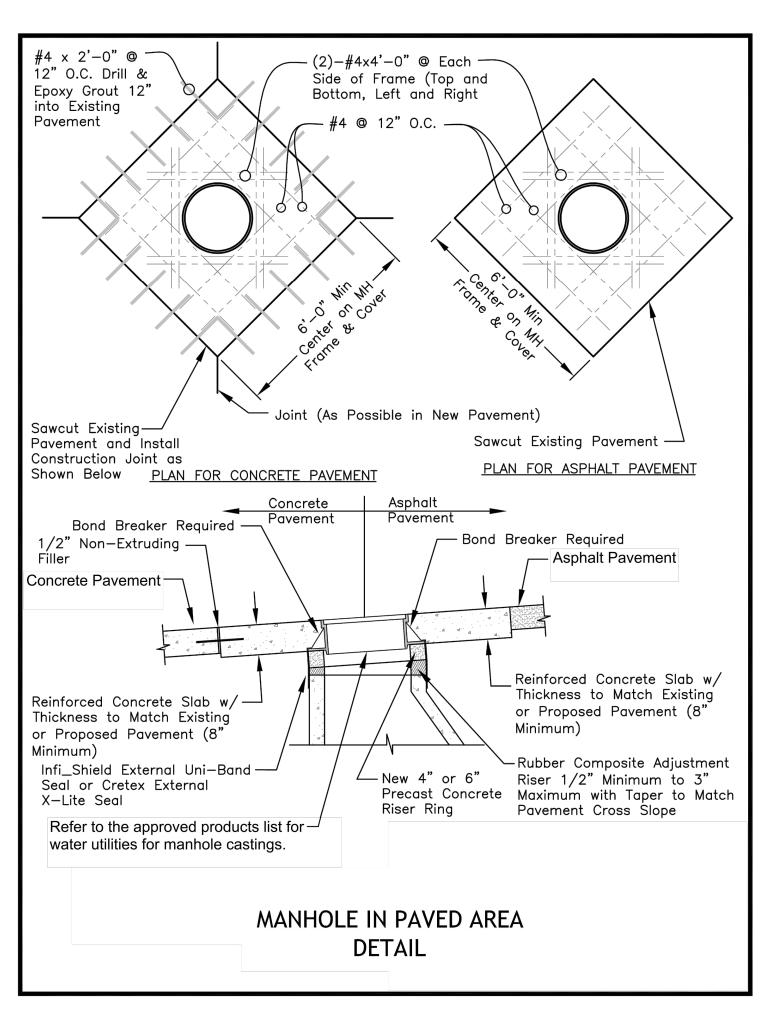
60"

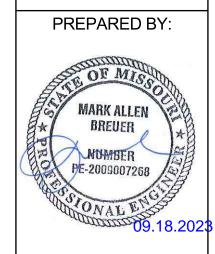
- 3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE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











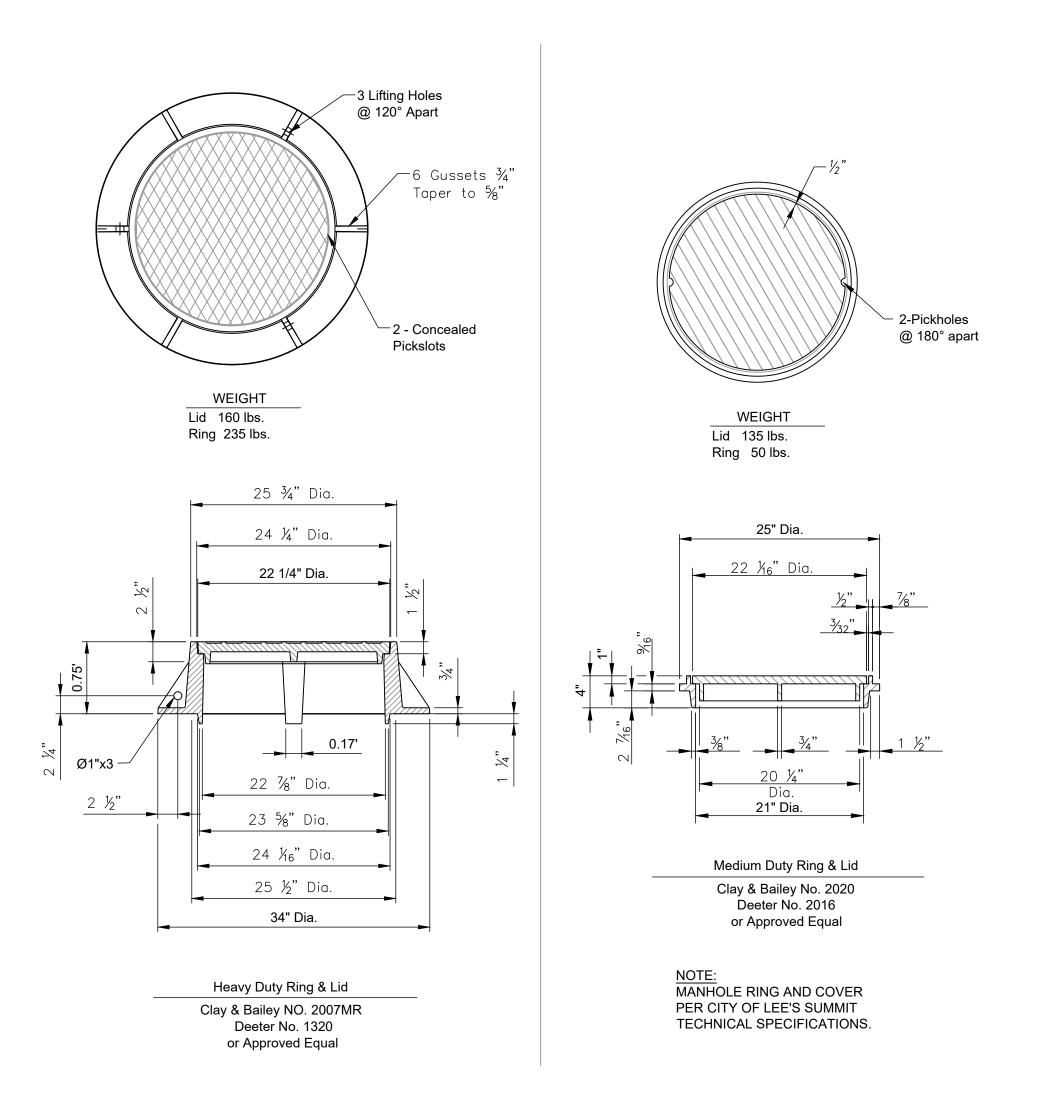
SCHLAGEL & ASSOCIATES, P.A.

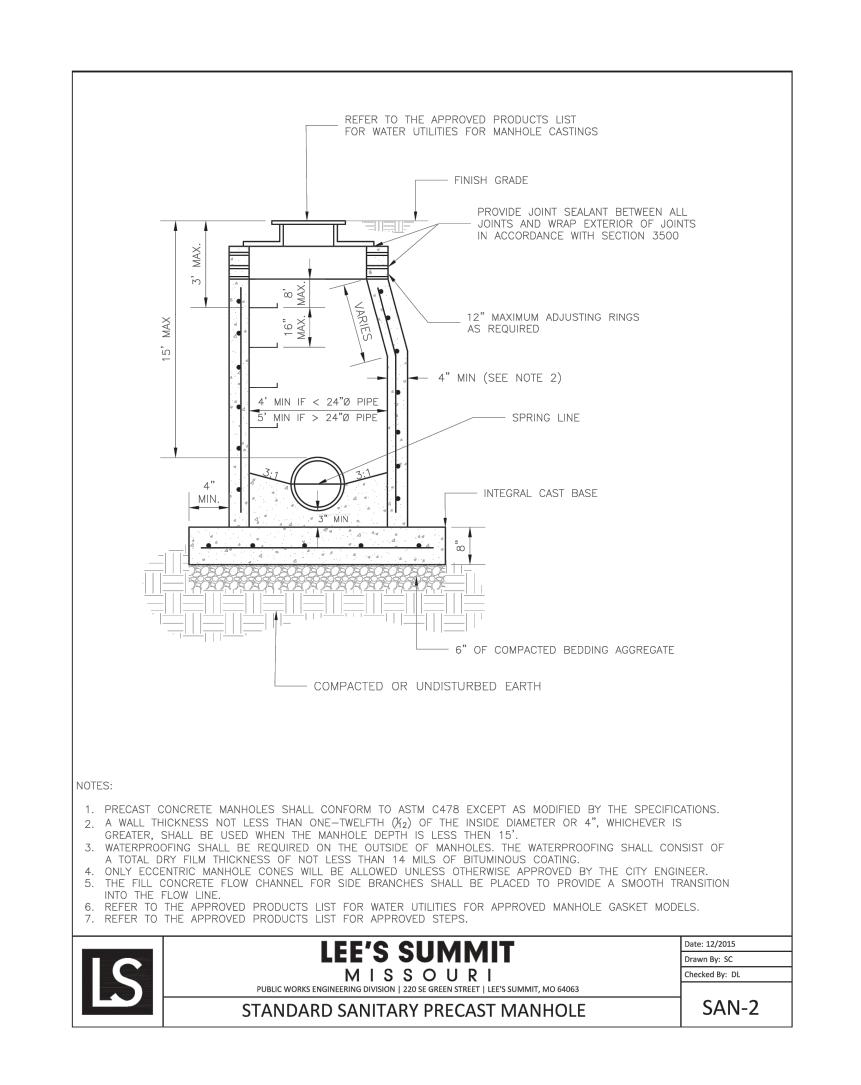
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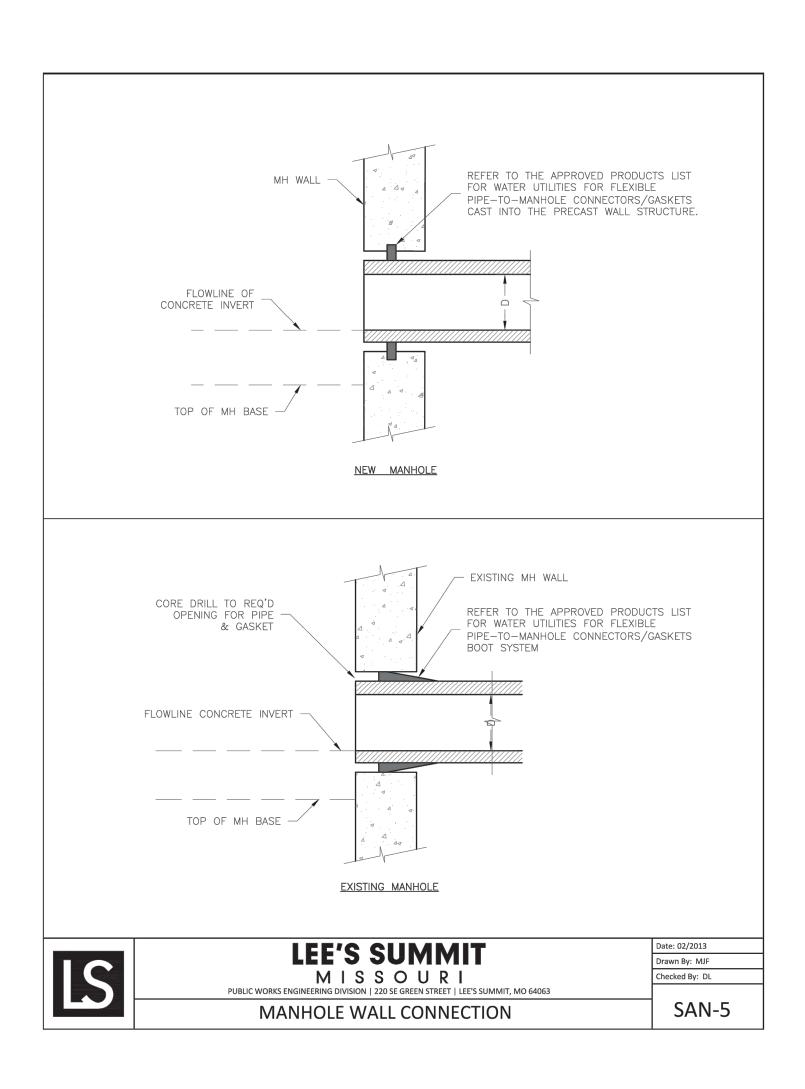
REUNION AT FUBLIC SANITARY HENANDO S

DETAILS

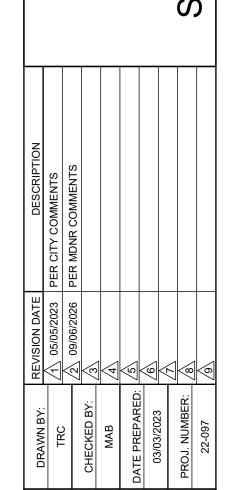
SHEET











PREPARED BY:

MARK ALLEN BREUER

PE-2009007268

SCHLAGEL & ASSOCIATES, P.A.

BLACKWELL
Y SEWER PLA

REUNION AT PUBLIC SANITAR

DRI

SHENANDOAH

SHEET 8

DETAILS