# CONSTRUCTION PLANS FOR SANITARY SEWER IMPROVEMENTS TO SERVE STREETS OF WEST PRYOR LEE'S SUMMIT, MISSOURI

JANUARY 2019

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CALL BEFORE YOU DIG — DRILL — BLAST

(TOLL FREE)

1-800-344-7483

MISSOURI ONE CALL SYSTEM, INC.

THE UNDERGROUND UTILITIES SHOWN HEREON ARE FROM FIELD SURVEY INFORMATION OF ONE—CALL LOCATED UTILITIES, FIELD SURVEY INFORMATION OF ABOVE GROUND OBSERVABLE EVIDENCE, AND/OR THE SCALING AND PLOTTING OF EXISTING UTILITY MAPS AND DRAWINGS AVAILABLE TO THE SURVEYOR AT THE TIME OF SURVEY. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. FURTHERMORE, THE SURVEYOR DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES BY EXCAVATION UNLESS OTHERWISE NOTED ON THIS SURVEY.

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CAUTION - NOTICE TO CONTRACTOR

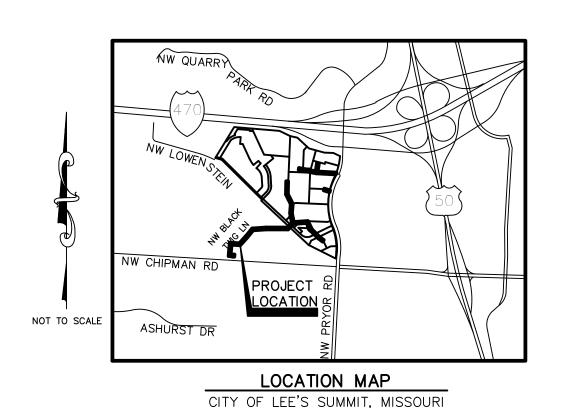
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT LOCATIONS OF POSSIBLE CONFLICTS PRIOR TO ANY CONSTRUCTION.

SAFETY NOTICE TO CONTRACTOR

IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

WARRANTY / DISCLAIMER

THE DESIGNS REPRESENTED IN THESE PLANS ARE IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING FOR THE DESIGN FUNCTIONS AND USES INTENDED BY THE OWNER AT THIS TIME. HOWEVER, NEITHER KAW VALLEY ENGINEERING, INC NOR ITS PERSONNEL CAN OR DO WARRANTY THESE DESIGNS OR PLANS AS CONSTRUCTED, EXCEPT IN THE SPECIFIC CASES WHERE KAW VALLEY ENGINEERING PERSONNEL INSPECT AND CONTROL THE PHYSICAL CONSTRUCTION ON A CONTEMPORARY BASIS AT THE SITE.





OWNER:
STREETS OF WEST PRYOR, LLC
12701 METCALF AVENEUE
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CONTACT: MATT PENNINGTON
email: matt@drakekc.com

CONTACT: LEON D OSBOURN

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OVERLAND PARK, KS 66213
CONTACT: MATT PENNINGTON
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PREPARED BY:
KAW VALLEY ENGINEERING, INC.
2319 N. JACKSON
JUNCTION CITY, KS 66441

12701 METCALF AVENEUE

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SANITARY SEWER LINE C — PLAN & PROFILE

C-8 SANITARY SEWER LINE D - PLAN & PROFILE

C-1 TITLE SHEET

DATUM BENCHMARK: VERTICAL DATUM IS NAVD 88 ESTABLISHED USING OPUS PROJECTS ON PROJECT CONTROL

BENCHMARKS:

BM #1: CHISELED "SQUARE" ON TOP OF CURB POINT OF INTERSECTION OF WEST PARK PARKING LOT AT EAST DRIVE ENTRANCE.

BM #2: CHISELED "SQUARE" ON NORTHWEST CORNER AREA INLET, 25'± EAST OF CURB LINE AND ON—LINE WITH SOUTH CURB OF LOWENSTEIN DRIVE AT 90° BEND IN ROAD.

0 1-4-19 INITIAL ISSUE LDO
REV DATE DESCRIPTION DSN

LEON D. OSBOURN ENGINEER MO # 021726

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jc@kveng.com | www.kveng.com



YOR LOWENSTEIN DRIVE

S OF WEST PRYPRYOR ROAD & NW LAWIT, MISSOURI

STREETS OF NWQ NW PRYOF LEE'S SUMMIT, I SANITARY SEWITTLE SHEET

PROJ. NO.

A14\_

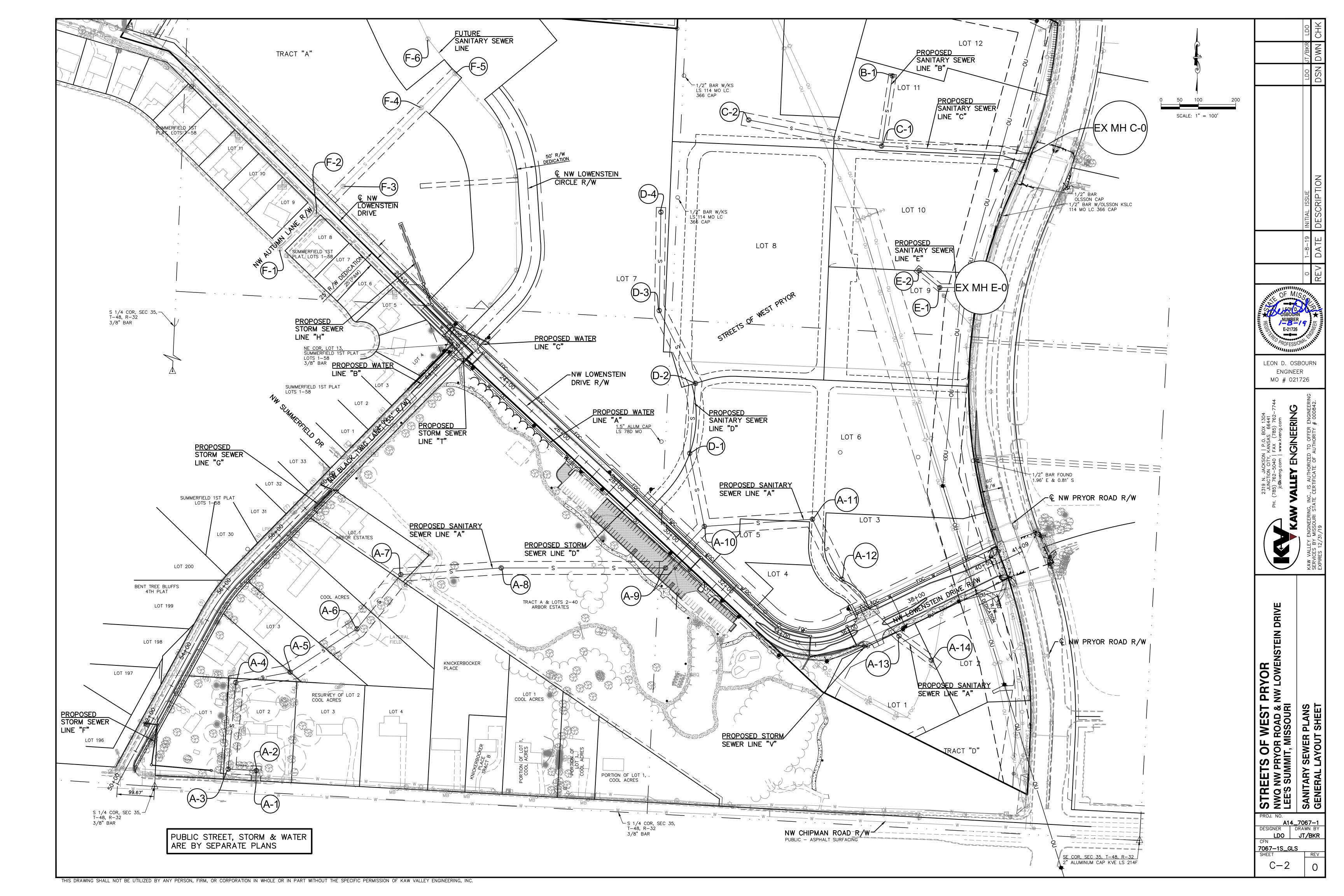
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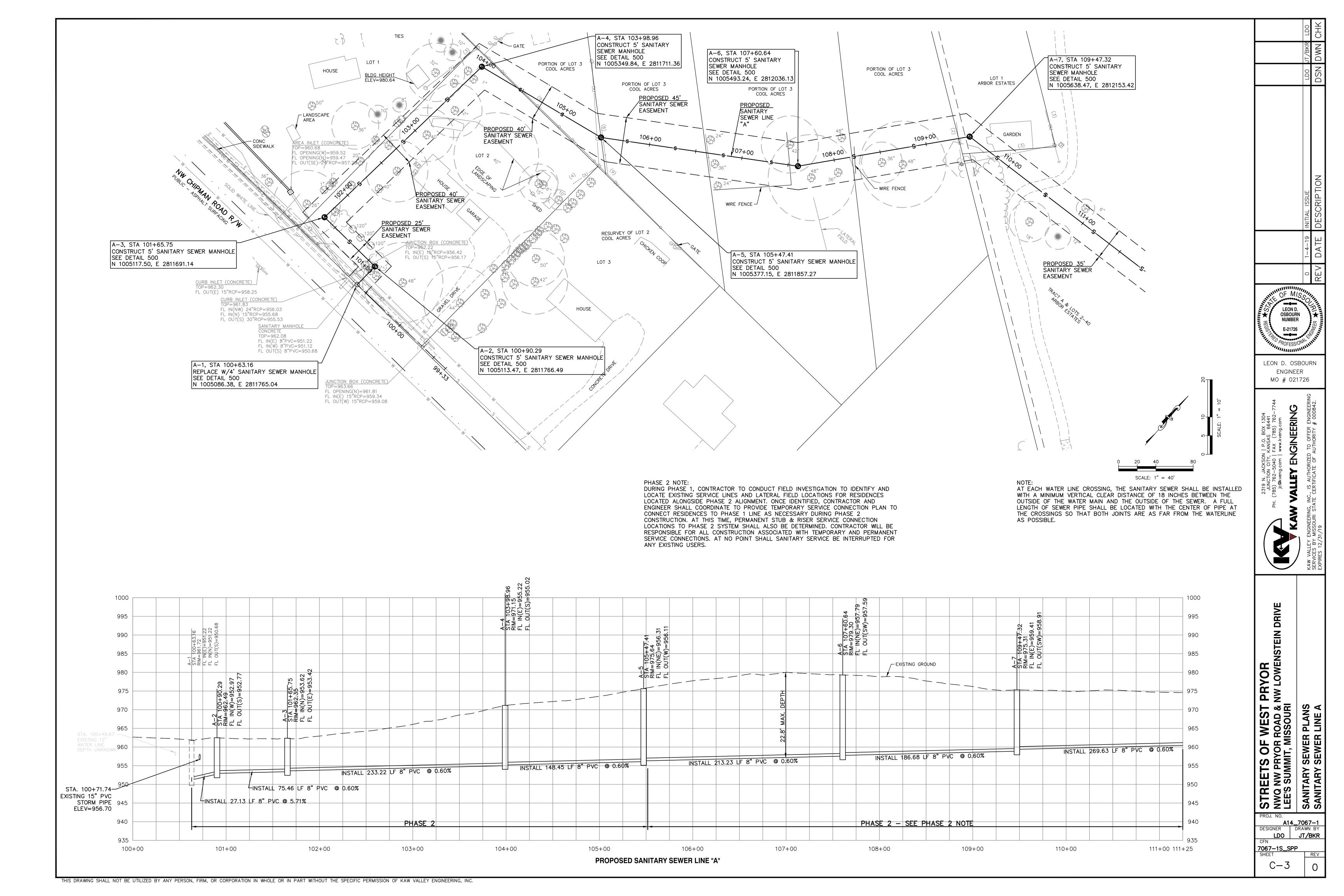
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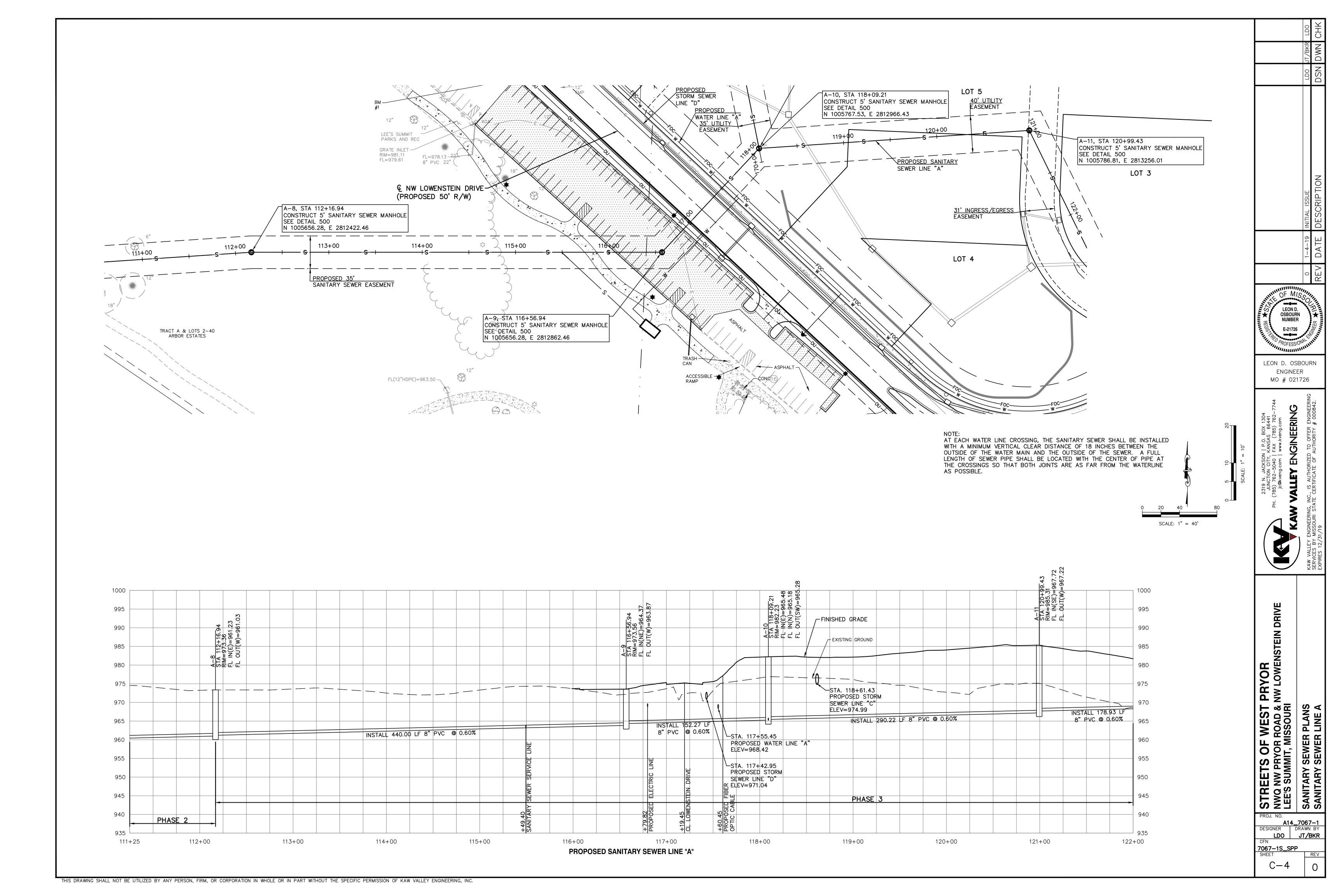
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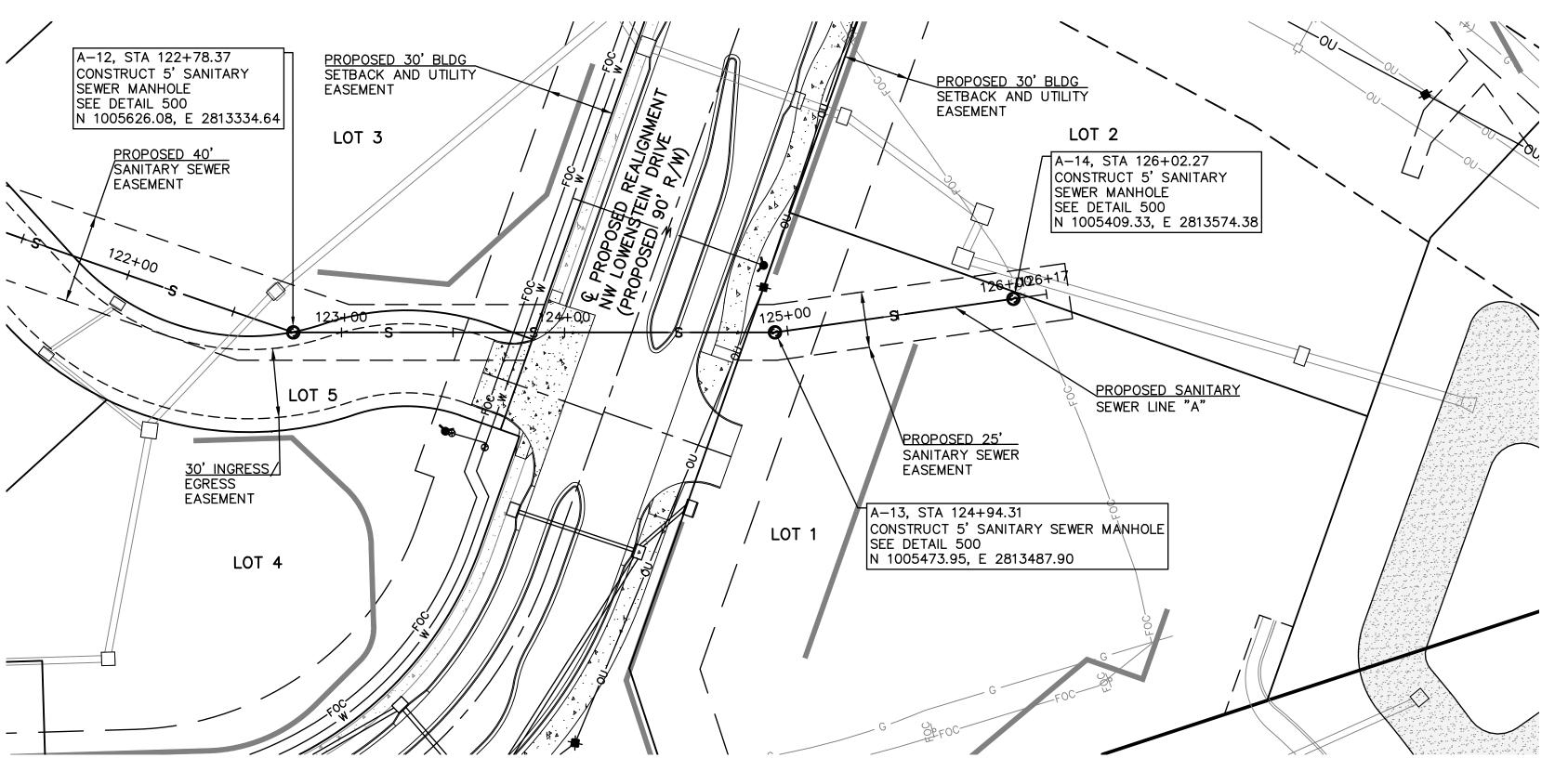
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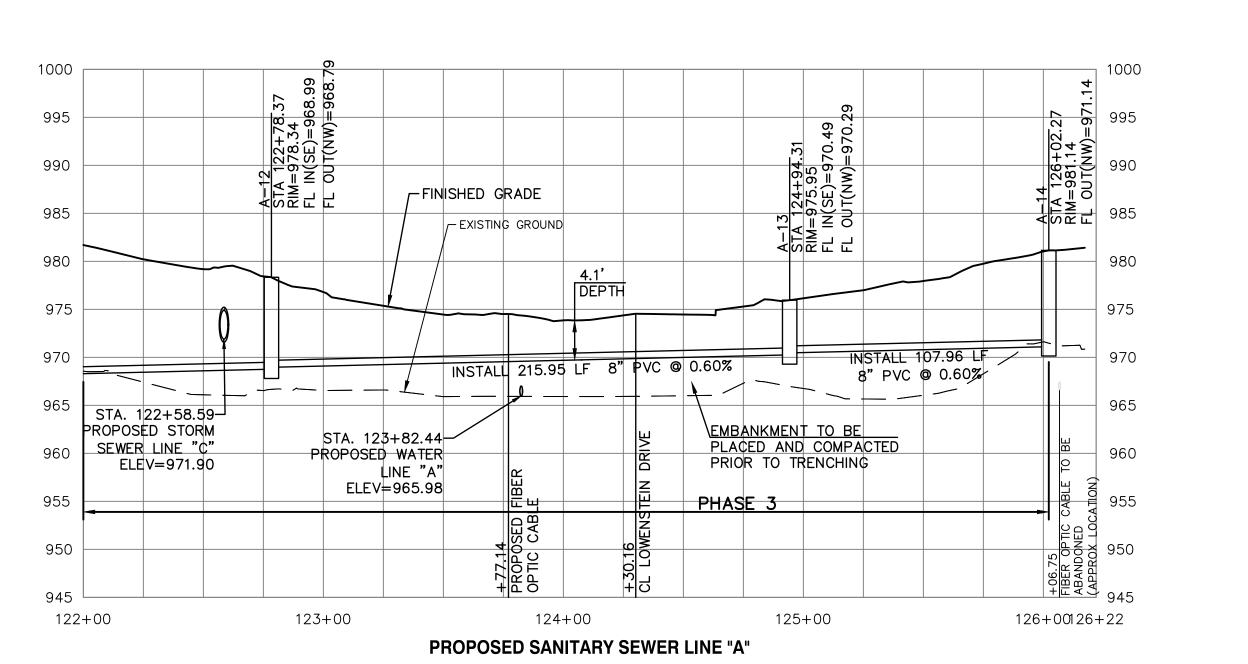
LEON D. OSBOURN
PROFESSIONAL ENGINEER

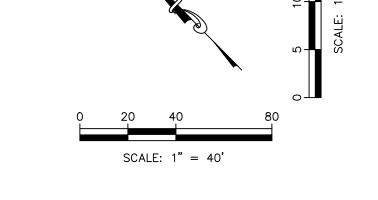






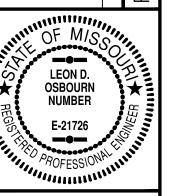






NOTE:
AT EACH WATER LINE CROSSING, THE SANITARY SEWER SHALL BE INSTALLED WITH A MINIMUM VERTICAL CLEAR DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER. A FULL LENGTH OF SEWER PIPE SHALL BE LOCATED WITH THE CENTER OF PIPE AT THE CROSSINGS SO THAT BOTH JOINTS ARE AS FAR FROM THE WATERLINE AS POSSIBLE.

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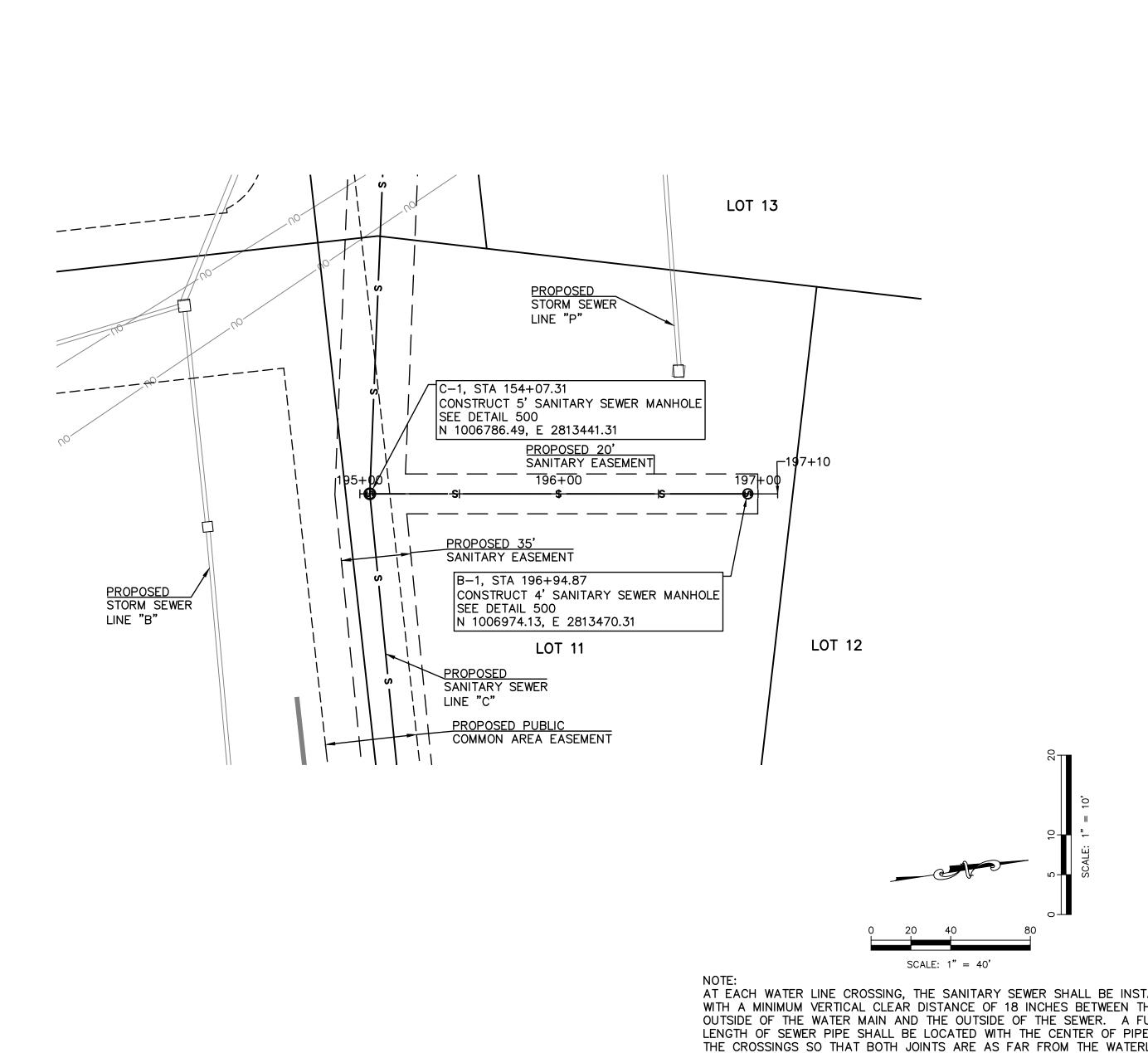
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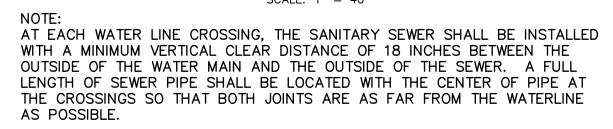


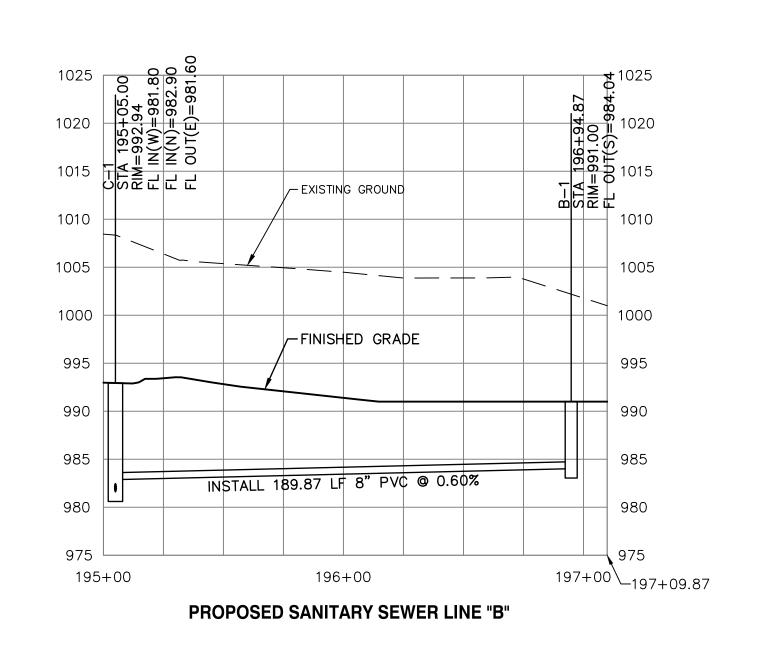
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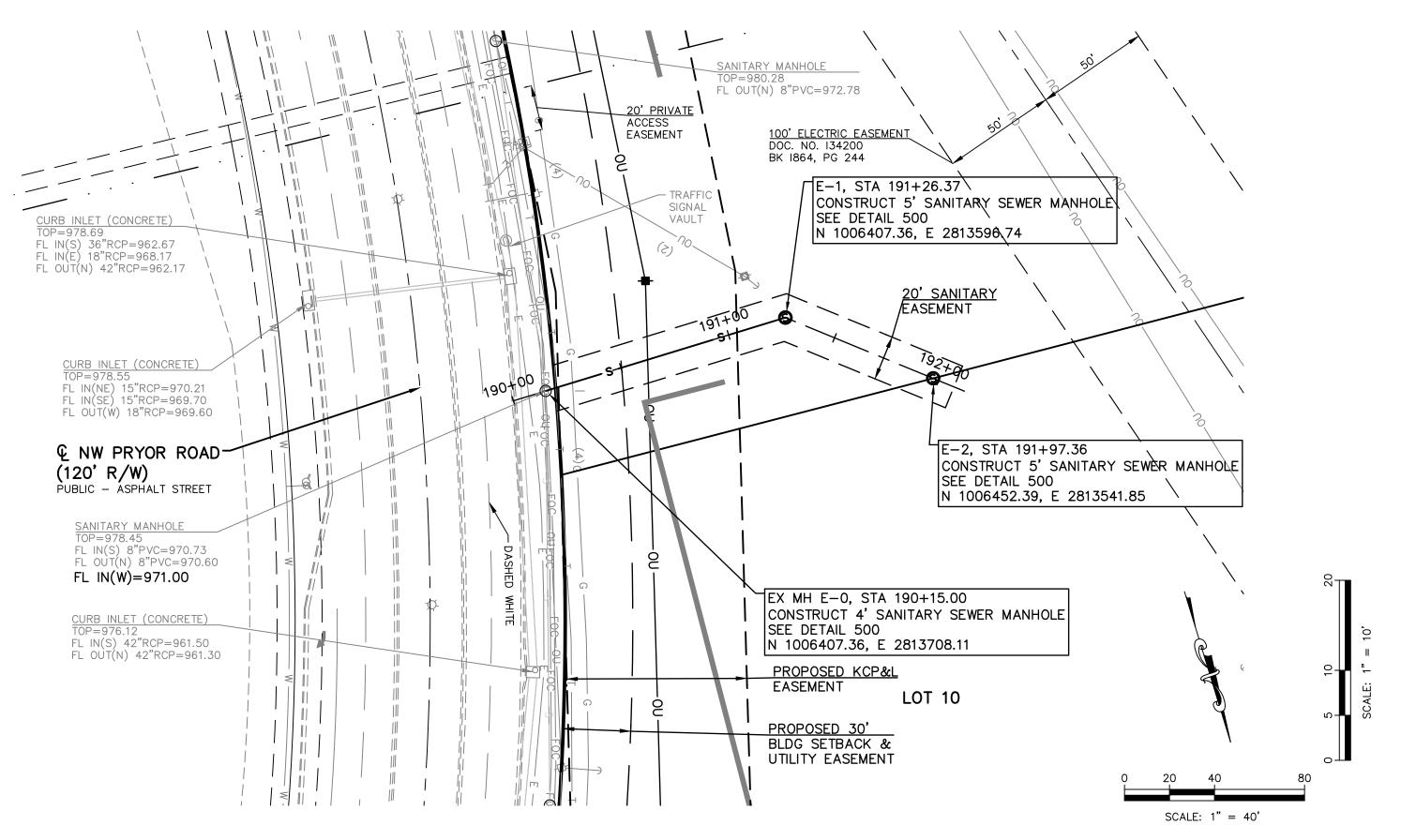
STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DE
LEE'S SUMMIT, MISSOURI
SANITARY SEWER PLANS
SANITARY SEWER LINE A

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DESIGNER DRAWN BY LDO JT/BKR **7067-1S\_SPP**SHEET

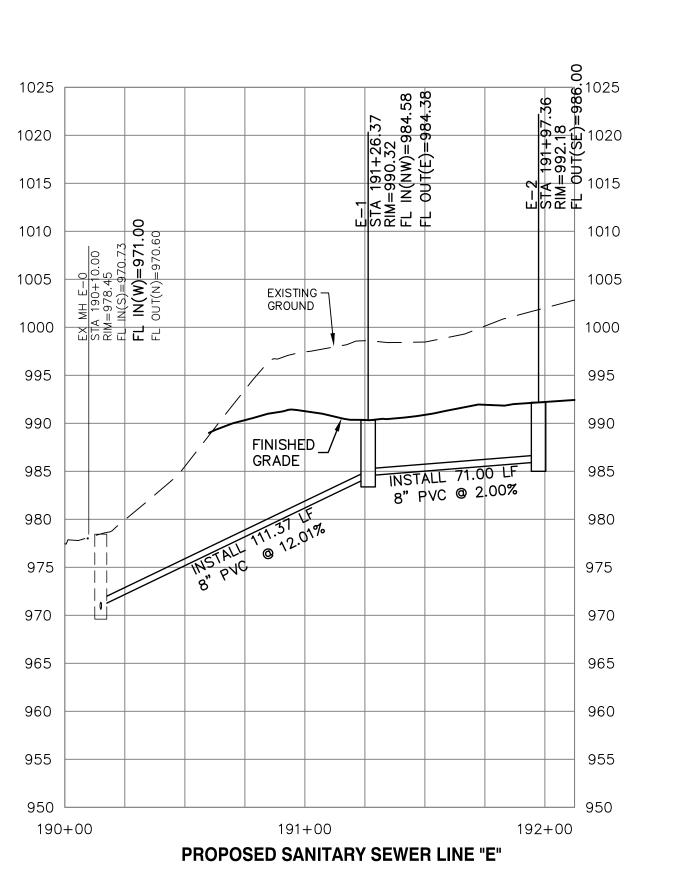








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LEON D. OSBOURN

ENGINEER

MO # 021726

DRIVE

STREETS OF WEST PRYOR

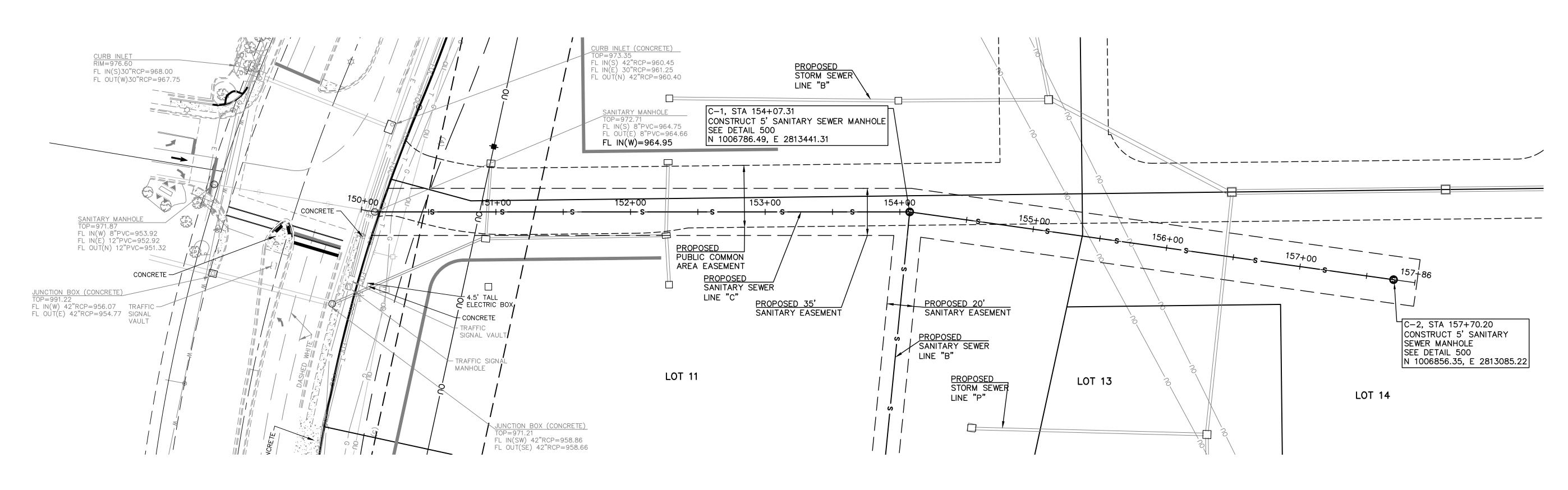
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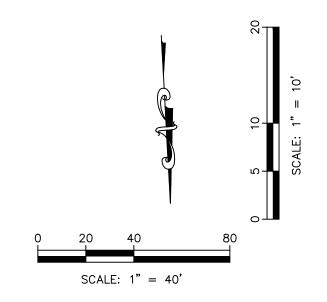
LEE'S SUMMIT, MISSOURI

SANITARY SEWER PLANS

SANITARY SEWER LINE B & E - PLAN & PROFL

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DESIGNER DRAWN BY LDO JT/BKR





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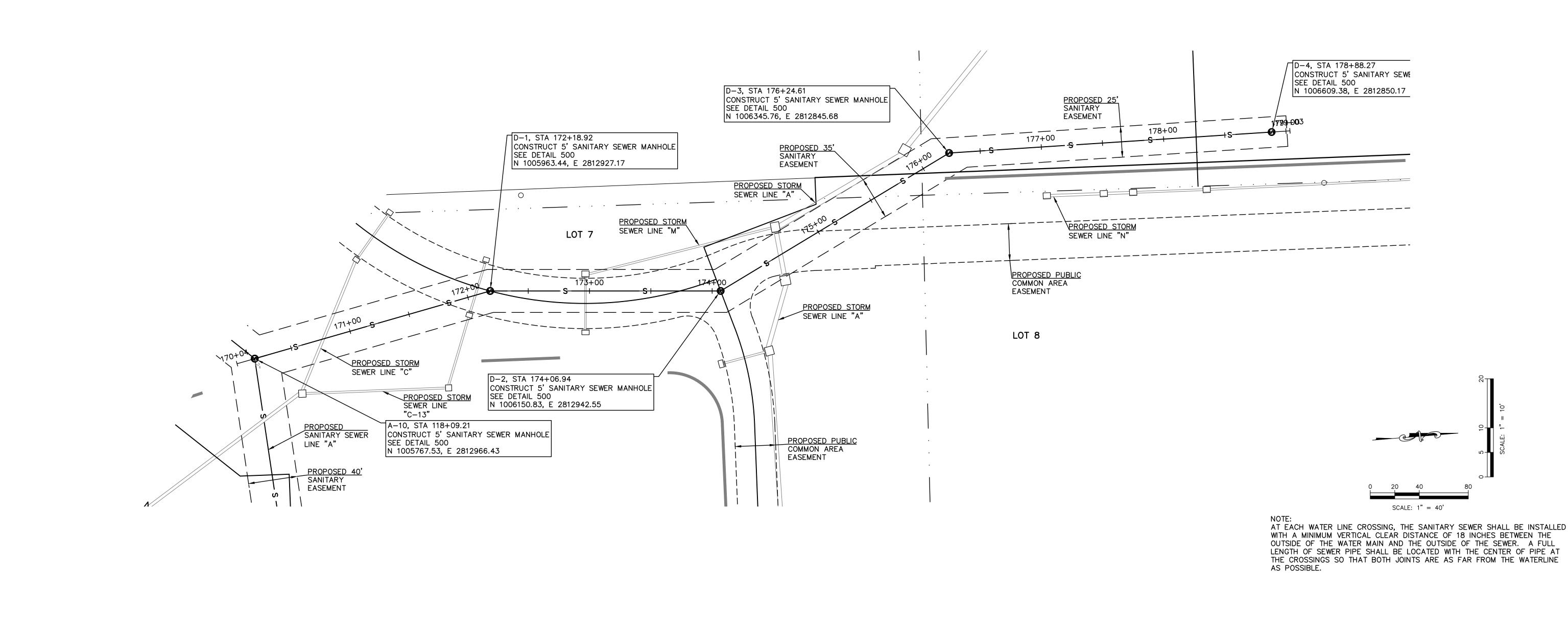
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LEE'S SUMMIT, MISSOURI
SANITARY SEWER PLANS
SANITARY SEWER LINE C - PLAN & PROFILE

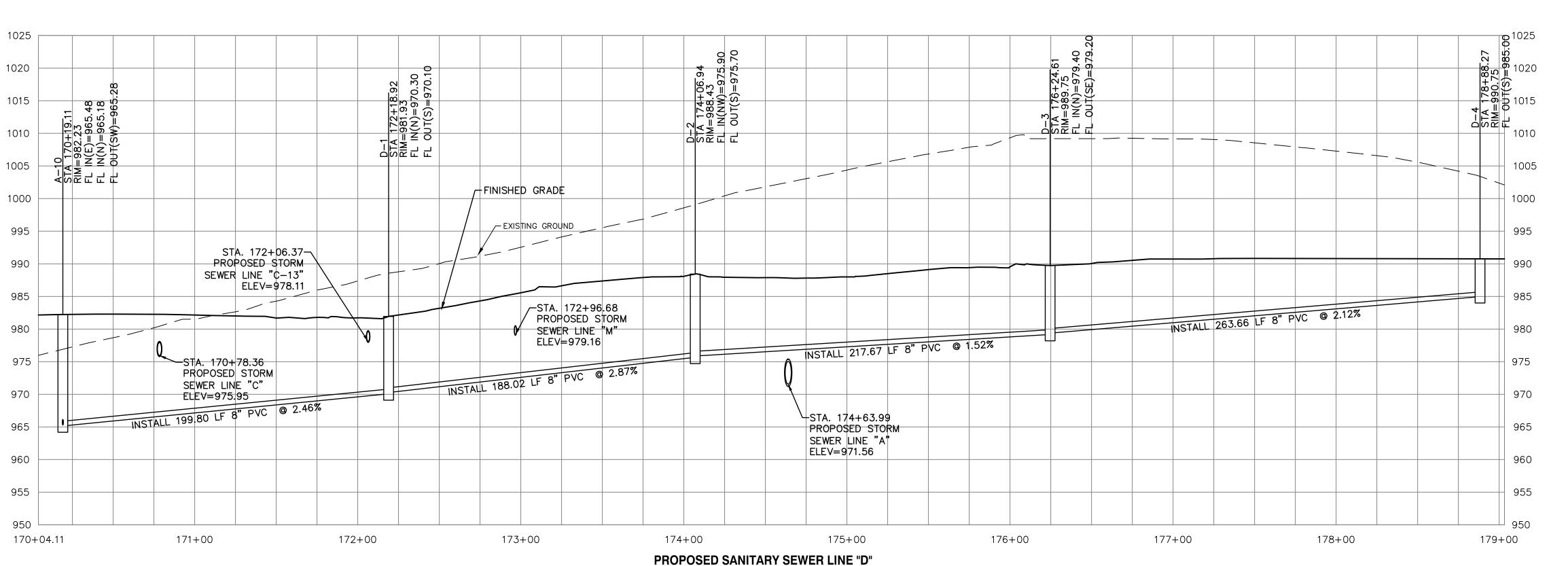
LEON D. OSBOURN ENGINEER

MO # 021726

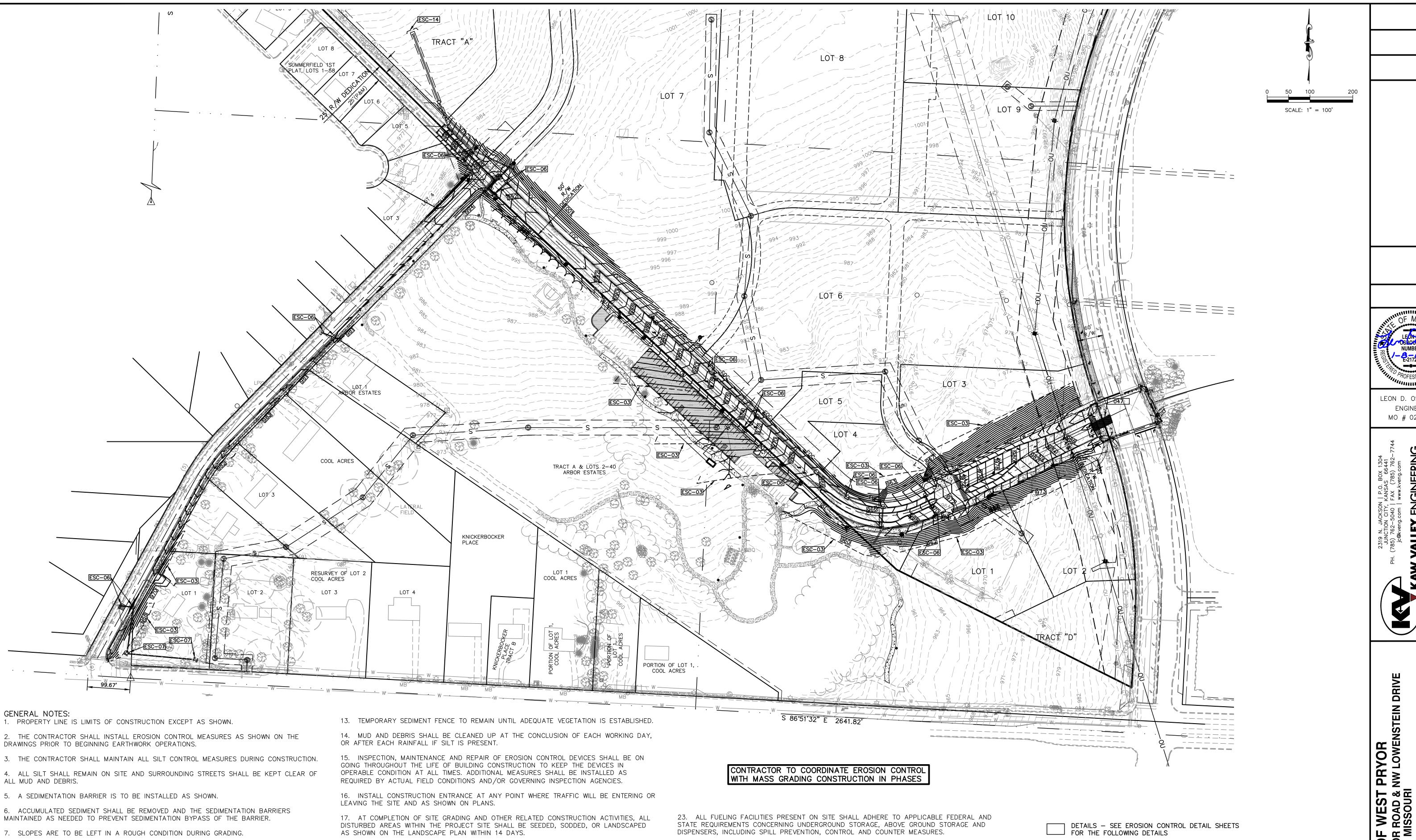
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1005					FINISHED GRADE 1005
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980 ELEV=974	1.81				980
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970	INSTALL 397.31 Li				ELEV=980.29 970
STA. 150+01.03-965					965
EXISTING 42" STORM SEWER ELEV=959.68 960 +23.27 GAS LINE					960
955 (APPROX LOCATION 1854)					955
ELECTRIC LINE (APPROX LOCATION) 950 +14 57					950
150+00 FIBER OPTIC CABLE TO BE ABANDONED (APPROX LOCATION)	151+00 152+00	153+00 <b>PROPOS</b>	154+00 ED SANITARY SEWER LINE "C"	155+00 156+00	157+00 157+86.20









- MAINTAINED AS NEEDED TO PREVENT SEDIMENTATION BYPASS OF THE BARRIER.
- 7. SLOPES ARE TO BE LEFT IN A ROUGH CONDITION DURING GRADING.
- 8. CURB INLET SEDIMENTATION BARRIERS ARE TO BE INSTALLED AROUND INLETS AND WEIRS WHERE SEDIMENTATION IS A CONCERN. INLET BARRIERS SHALL BE EITHER BLOCK AND GRAVEL, OR SECURED STRAW BALES, OR SILT FENCE.
- 9. SEDIMENT IS TO BE REMOVED FROM STORM WATER DRAINAGE SYSTEMS.
- 10. RIPRAP IS TO BE INSTALLED AT AREAS OF CONCENTRATED FLOW (I.E. CULVERT OUTLETS).
- 11. CONTRACTOR IS RESPONSIBLE FOR INSTALLING ANY ADDITIONAL EROSION CONTROL AS HE/SHE DEEMS NECESSARY.
- 12. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, TOOLS, EQUIPMENT AND LABOR AS NECESSARY TO INSTALL AND MAINTAIN ADEQUATE EROSION AND SILTATION CONTROLS REQUIRED TO PREVENT SOIL EROSION FROM LEAVING THE PROJECT SITE. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO ENSURE THAT METHODS UTILIZED ARE ADEQUATE AND COMPLY WITH REQUIREMENTS OF THE SPECIFICATIONS AND GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE WORK.
- 17. AT COMPLETION OF SITE GRADING AND OTHER RELATED CONSTRUCTION ACTIVITIES, ALL DISTURBED AREAS WITHIN THE PROJECT SITE SHALL BE SEEDED, SODDED, OR LANDSCAPED AS SHOWN ON THE LANDSCAPE PLAN WITHIN 14 DAYS.
- 18. TOPSOIL IS TO BE PLACED IN AREAS UNSUITABLE FOR VEGETATIVE GROWTH.
- 19. STRIP TOPSOIL PRIOR TO EXCAVATION, STOCKPILE AND SPREAD ONTO DISKED SUBGRADE (4" MIN) A THICKNESS OF 4 INCHES.
- 20. ROCK LINING (RIPRAP) SHALL BE DURABLE STONE CONTAINING A COMBINED TOTAL OF NOT MORE THAN 10 PERCENT OF EARTH, SAND, SHALE AND NON-DURABLE ROCK. AT LEAST 60 PERCENT OF THE MASS SHALL BE OF PIECES HAVING A MINIMUM WEIGHT OF 150 POUNDS OR MORE PER CUBIC FOOT.
- 21. THE CONTRACTOR SHALL HAVE THE RESPONSIBILITY FOR RESOLVING COMPLAINTS IN THE EVENT THAT COMPLAINTS OR DAMAGE CLAIMS ARE FILED DUE TO DAMAGES OCCURRING ADJACENT TO OR DOWNSTREAM FROM PROPERTY BY SEDIMENT RESULTING FROM EROSION ON THE PROJECT SITE.
- 22. GOOD HOUSEKEEPING PRACTICES SHALL BE MAINTAINED ON SITE TO KEEP SOLID WASTE FROM ENTRY INTO WATERS.

- 23. ALL FUELING FACILITIES PRESENT ON SITE SHALL ADHERE TO APPLICABLE FEDERAL AND STATE REQUIREMENTS CONCERNING UNDERGROUND STORAGE, ABOVE GROUND STORAGE AND DISPENSERS, INCLUDING SPILL PREVENTION, CONTROL AND COUNTER MEASURES.
- 24. RIGHT OF WAY TO BE STABILIZED AS REQUIRED BY APWA SECTION 2400.
- 25. EROSION CONTROL IS TO BE PLACED IN PHASING AS CONSTRUCTION PROGRESSES.
- 26. MINIMAL WASHING OF CONCRETE EQUIPMENT ALLOWED, CHUTE ETC. CONCRETE WASHOUT OF THE DRUM IS NOT ALLOWED. ANY PIT/WASHOUT AREA NEEDS TO BE MAINTAINED IN A NON-DISCHARGING MANNER AND ANY WASTE RESIDUE WILL NEED TO BE CLEANED OUT AND REMOVED AT THE END OF PROJECT.
- 27. EROSION CONTROL SEDIMENT FENCE TO BE INSTALLED 1'-0" BEHIND CURB & GUTTER UPON COMPLETION OF BACKFILL OF CURB IN ALL AREAS WHERE SLOPES FROM LOT DRAIN TOWARDS CURB. UPON COMPLETION OF FINAL GRADING THE TOES OF ALL EMBANKMENTS IN EXCESS OF TWO FEET IN HEIGHT WILL HAVE EROSION CONTROL SEDIMENT FENCE INSTALLED.
- DETAILS SEE EROSION CONTROL DETAIL SHEETS FOR THE FOLLOWING DETAILS
- 047 CONSTRUCTION ENTRANCE DETAIL ESC-03 SILT FENCE

ESC-14 OUTLET PROTECTION

ESC-06 CURB INLET PROTECTION ESC-07 AREA INLET AND JUNCTION BOX PROTECTION

# EROSION & PROPOSED IMPROVEMENTS LEGEND:

INLET PROTECTION

--- - 970--- EXISTING GROUND CONTOUR (1' INTERVALS)

LEON D. OSBOURN ENGINEER MO # 021726

RETS OF NW PRYOF SUMMIT, I

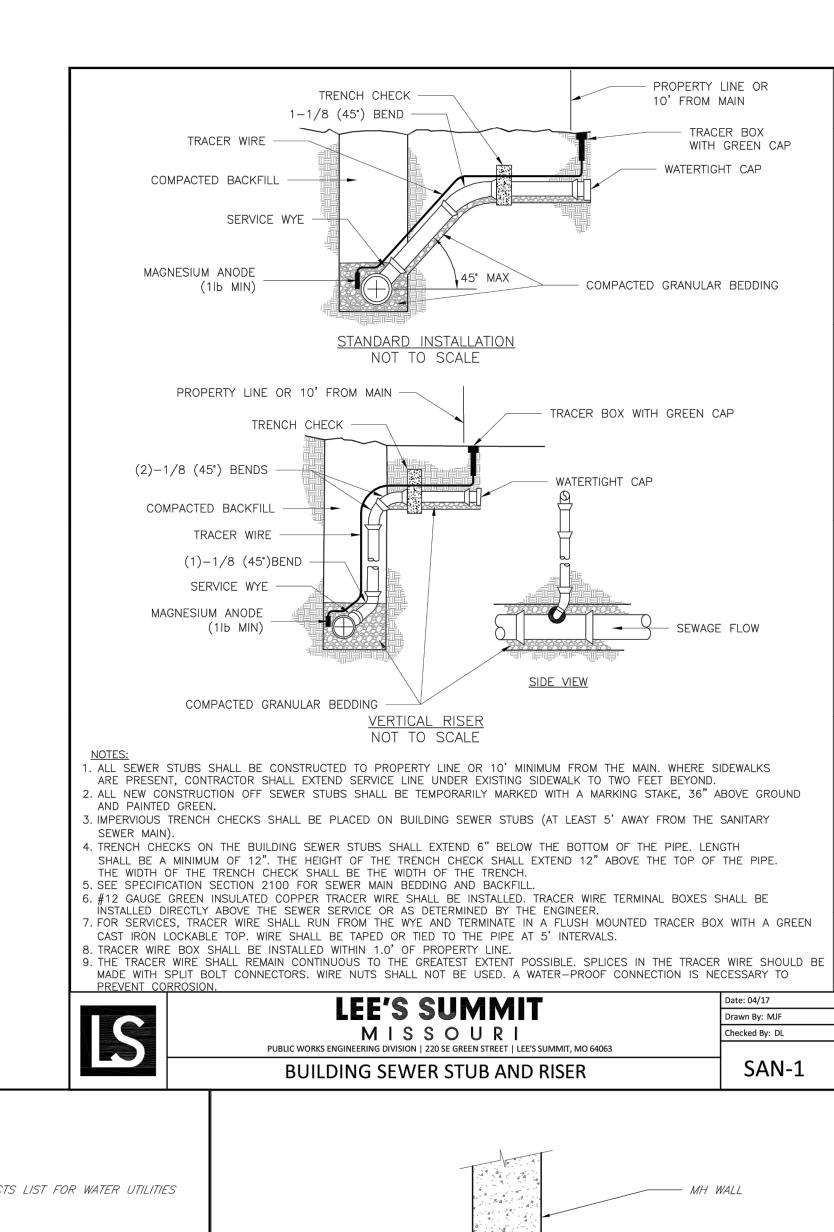
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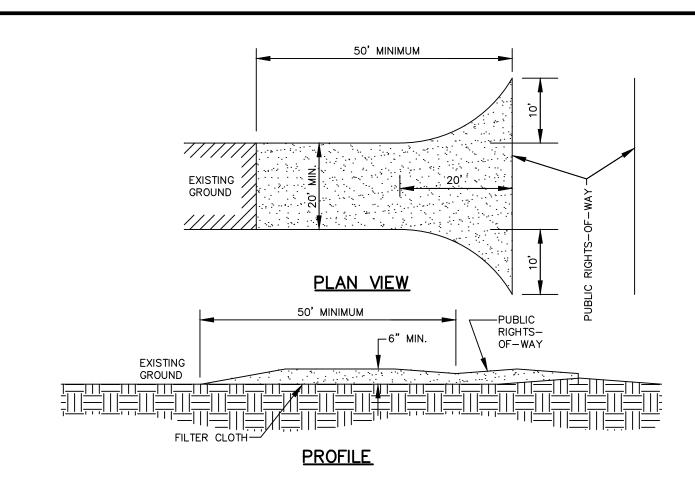
7067-1S\_ECP SHEET

LDO JT/BKR

SANITA EROSI

PROPOSED FINISHED GROUND CONTOUR (1' INTERVALS)





CONSTRUCTION ENTRANCE NOTES: 1. STONE SIZE - USE 2" STONE OR RECLAIMED OR RECYCLED EQUIVALENT. 2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FEET.

3. THICKNESS - NOT LESS THAN (6) INCHES. 4. WIDTH - TWENTY (20) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE

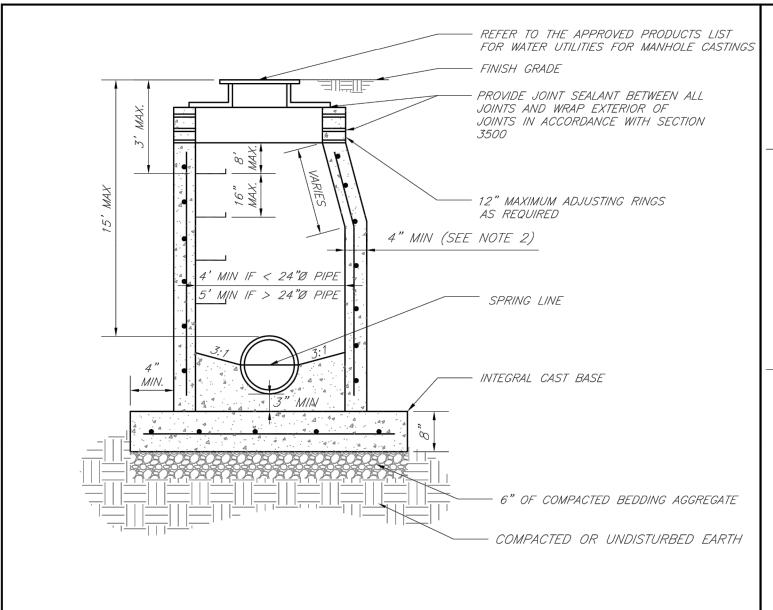
INGRESS OR EGRESS OCCURS. 5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.

6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 3:1 SLOPES WILL BE PERMITTED. 7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT

TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF WAY MUST BE REMOVED IMMEDIATELY. 8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC

RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. 9. PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED AFTER EACH RAIN.

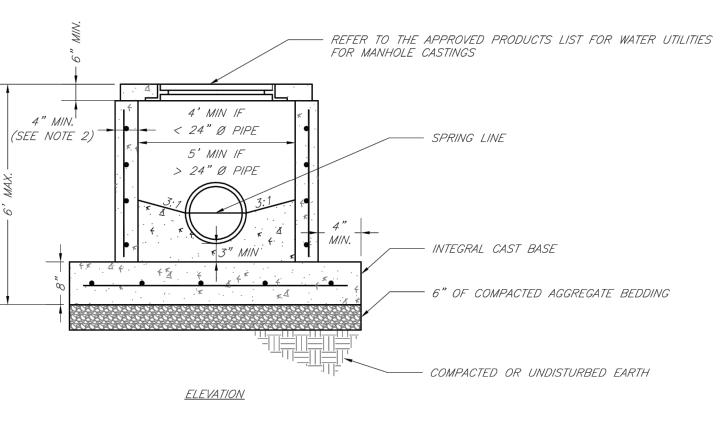
> CONSTRUCTION ENTRANCE DETAIL



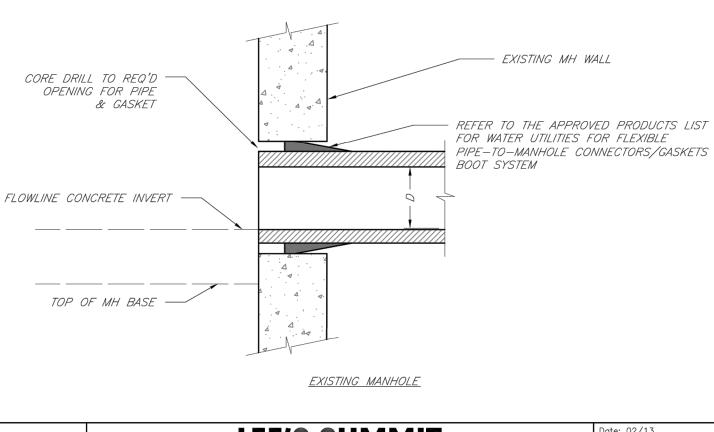
1. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478 EXCEPT AS MODIFIED BY THE SPECIFICATIONS. 2. A WALL THICKNESS NOT LESS THAN ONE—TWELFTH ( $^{1}\!\!/_{12}$ ) OF THE INSIDE DIAMETER OR 4", WHICHEVER IS GREATER, SHALL BE USED WHEN THE MANHOLE DEPTH IS LESS THEN 15'.

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

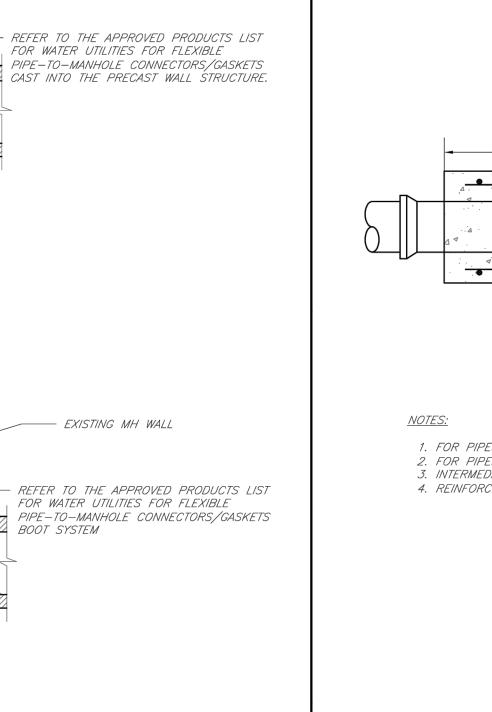
6. REFER TO THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR APPROVED MANHOLE GASKET MODELS. 7. REFER TO THE APPROVED PRODUCTS LIST FOR APPROVED STEPS.

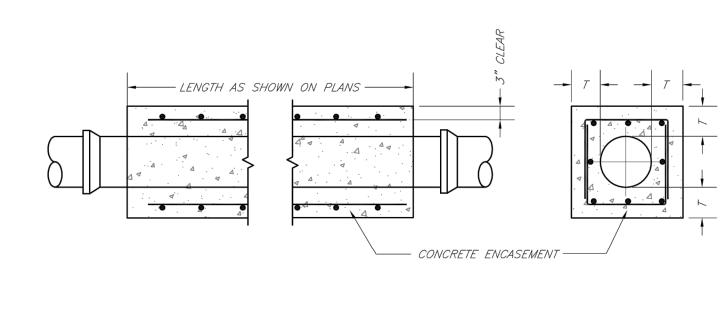


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- INTO THE FLOW LINE. 5. REFER TO THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR MANHOLE GASKET MODELS. 6. PROVIDE STEPS AS SHOWN ON THE APPROVED PRODUCTS LIST FOR MANHOLE DEPTHS GREATER THAN 4'.



NEW MANHOLE





- 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".

F WEST OR ROAD & D MISSOURI EETS OF NW PRYOF SUMMIT, I

SANIT, DETAII

LEON D. OSBOURN

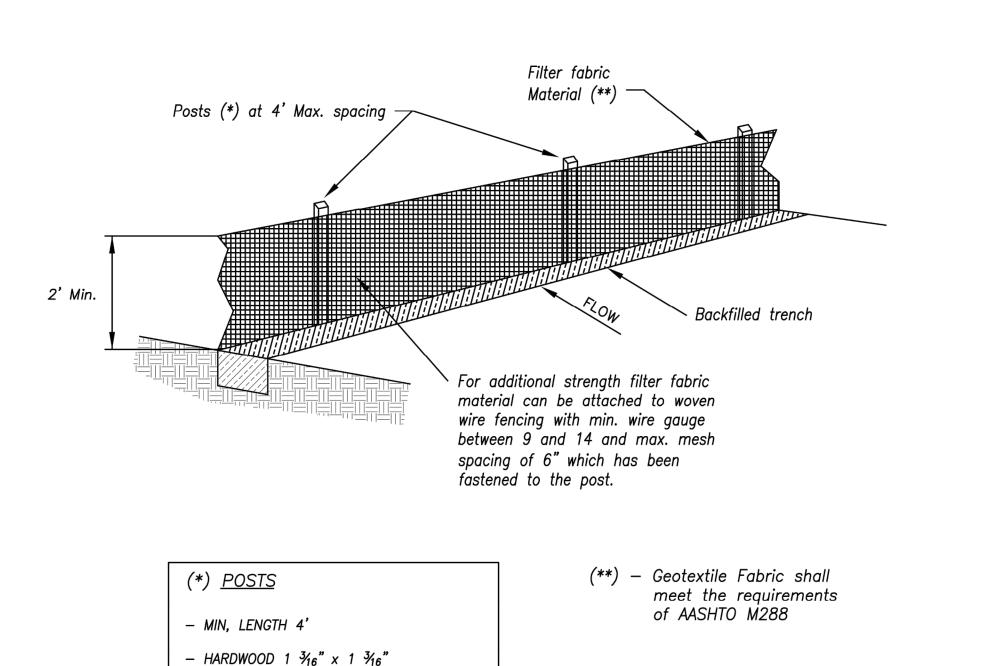
ENGINEER

MO # 021726

**A14\_7067-1**DESIGNER DRAWN BY LDO | JT/BKR **LEE'S SUMMIT LEE'S SUMMIT LEE'S SUMMIT LEE'S SUMMIT 7067-1S\_DET**SHEET MISSOURI MISSOURI MISSOURI hecked By: DL MISSOURI necked By: DL PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063 PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063 PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063 PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063 STANDARD PRECAST MANHOLE - SANITARY SEWER SHALLOW PRECAST MANHOLE - SANITARY SEWER SANITARY PIPE ENCASEMENT MANHOLE WALL CONNECTIONS

FLOWLINE OF ---CONCRETE INVERT

TOP OF MH BASE ---



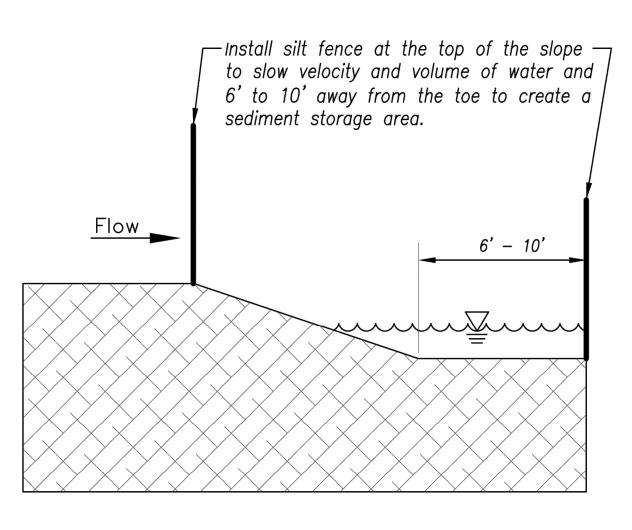
- NO.2 SOUTHERN PINE 2 %" x 2 %"

- STEEL 1.33 LB/FT

4' min length post Geotextile fabric at 4' max spacing Staples, plastic zip ties or other material — approved by the field engineer, (50 lb tensile strength) located in top 8" Tire compaction zone Direction of Flow 2' Min. Post embedment ` Machine slice (See Note 6.) 6" - 12" depth

### SILT FENCE DETAILS Not to Scale

\_ Silt Fence 100' Maximum Runs (Typ.) Street Street Ends Turned Uphill (Typ)



<u>Figure A</u>

SILT FENCE LAYOUT Not to Scale

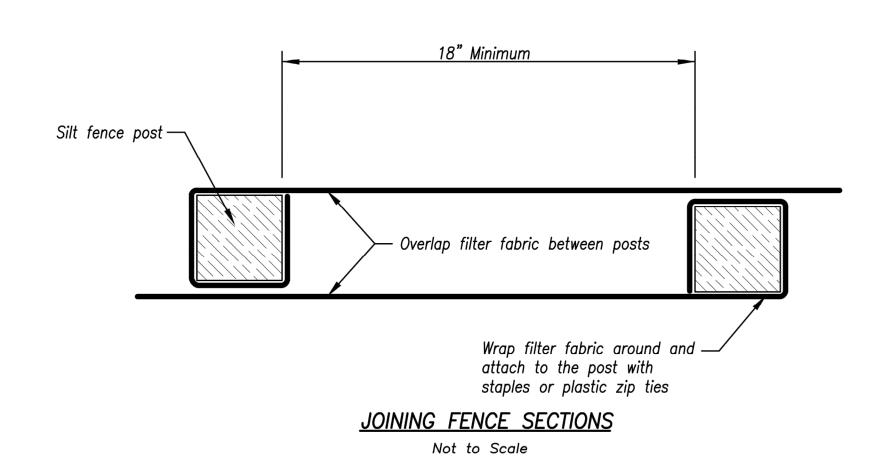
Correct

### <u>Notes:</u>

- 1. In order to contain water, the ends of the silt fence must be turned uphill (Figure A).
- 2. Long perimeter runs of silt fence must be limited to 100'. Runs should be broken up into several smaller segments to minimize water concentrations (Figure A).
- 3. Long slopes should be broken up with intermediate rows of silt fence to slow runoff velocities.
- 4. Attach fabric to upstream side of post.
- 5. Install posts a minimum of 2' into the ground.
- 6. Trenching will only be allowed for small or difficult installation, where slicing machine cannot be reasonably

### <u>Maintenance:</u>

- 1. Remove and dispose of sediment deposits when the deposit approaches 1/3 the height of silt fence.
- 2. Repair as necessary to maintain function and structure.







KANSAS CITY METRO CHAPTER

STANDARD DRAWING NUMBER ESC-03 ADOPTED: 10/24/2016

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

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LEON D. OSBOURN

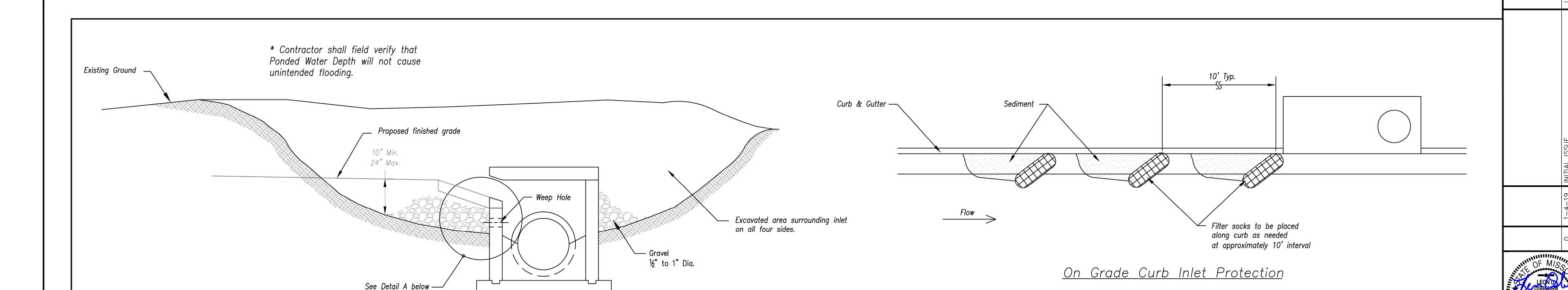
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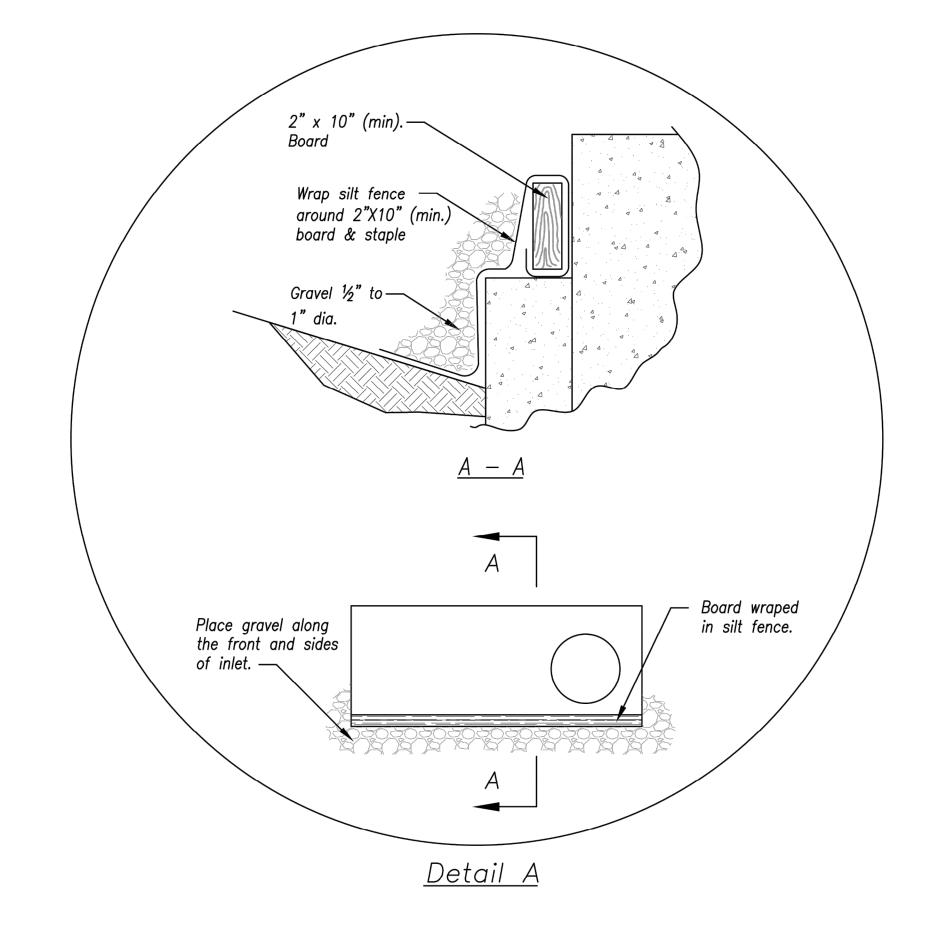
MO # 021726

STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DF
LEE'S SUMMIT, MISSOURI
SANITARY SEWER PLANS
DETAIL SHEET

A14\_7067-1
DESIGNER DRAWN BY

LDO JT/BKR 7067-1S\_DET
SHEET





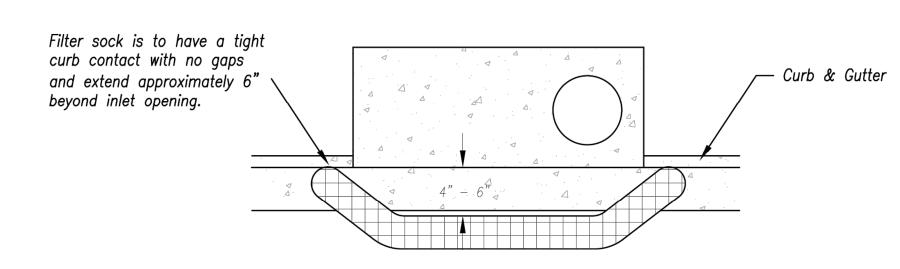
EARLY STAGE CURB INLET (Open Box and Prior to Pouring Curb and Inlet Throat)

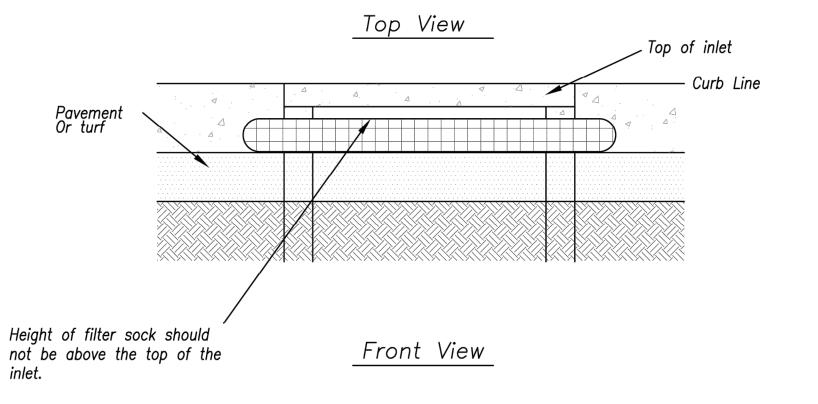
## <u>Notes:</u>

- 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.
- Contractor to field verify ponding water shall not create a traffic hazard.

## <u>Maintenance:</u>

- 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
- 3. Repair or replace as necessary to maintain function and integrity





Sump Inlet Sediment Filter

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



CURB INLET PROTECTION

NUMBER ESC-06 ADOPTED:

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METRO CHAPTER STANDARD DRAWING 10/24/2016

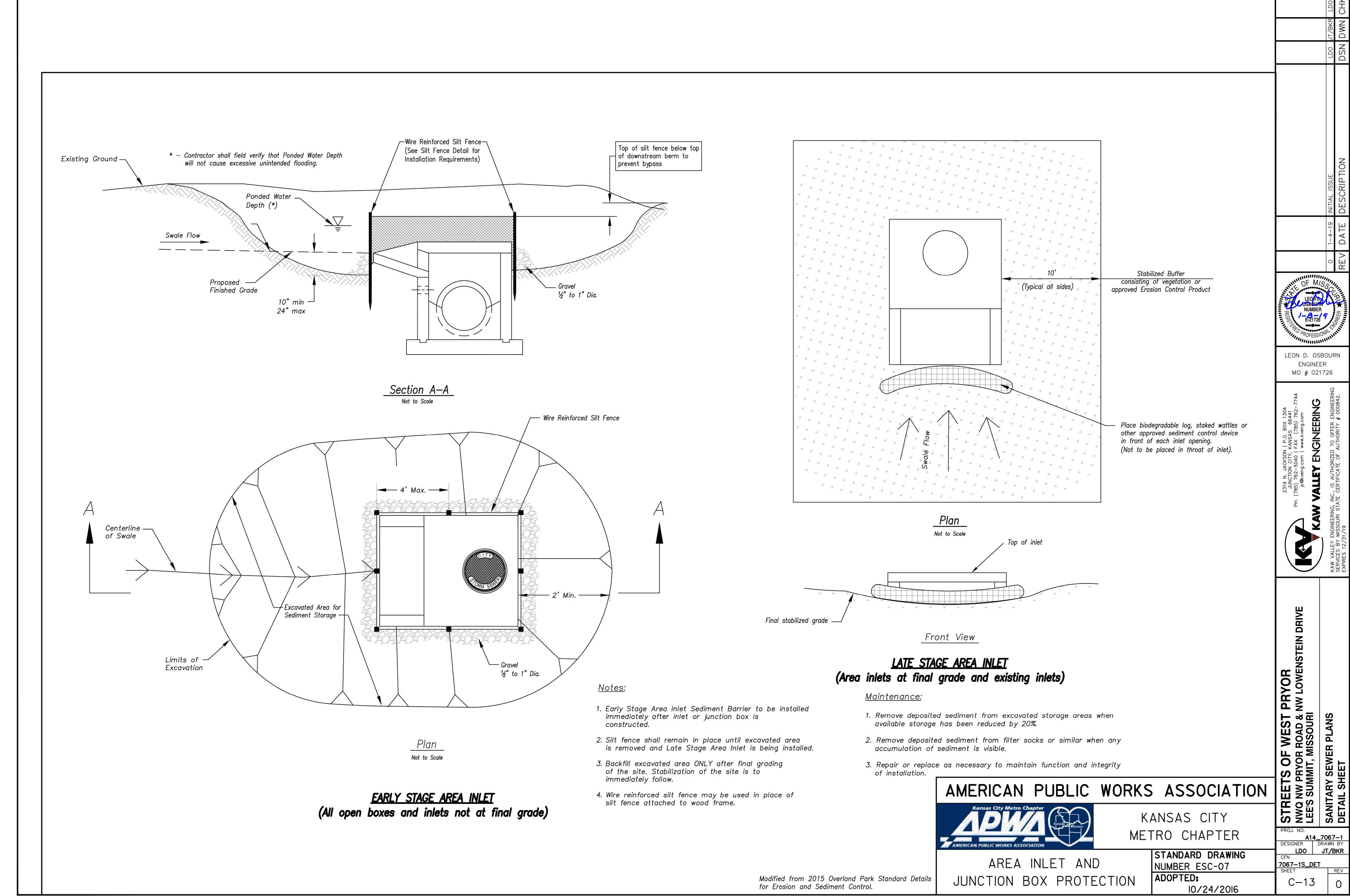
STREETS OF WEST PRYOR
NWQ NW PRYOR ROAD & NW LOWENSTEIN DE
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DETAIL SHEET A14\_7067-1
DESIGNER DRAWN BY LDO JT/BKR 7067-1S\_DET

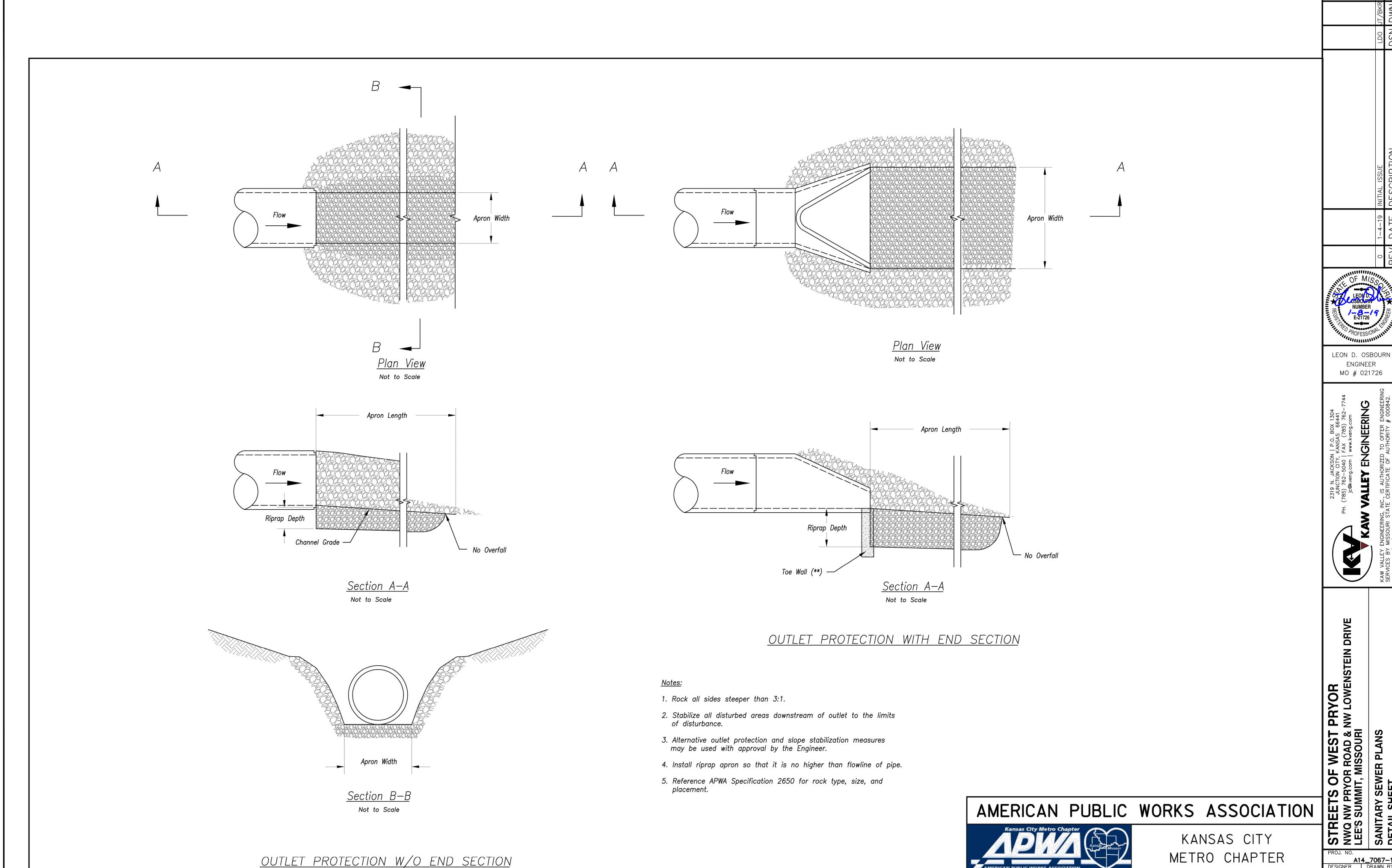
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