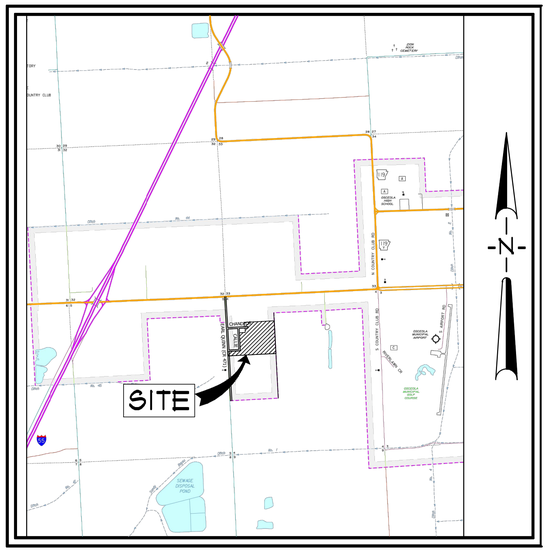
SANITARY SEWER AND WATER DISTRIBUTION PLANS

RIVER BACK ESTATES
EARL QUINN DRIVE & CALLIE DRIVE

PREPARED FOR

MAGAMAN GROUP, LLC

OSCEOLA, ARKANSAS
SEPTEMBER, 2022



VICINITY MAP

NOT TO SCALE

INDEX TO SHEETS

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C003 SANITARYSEWER PLAN
C004 SEWER PROFILE - LINE A
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C007 SEWER PROFILE - LINE D
C008 SEWER PROFILE - LINE F
C009 SEWER PROFILE - LINE G
C010 SEWER PROFILE - LINE H & LINE J
C011 WATER DISTRIBUTION DETAILS
C012 SANITARY SEWER DETAILS

Know what's below. Call before you dig.

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RIVER BACK ESTATES
EARL QUINN DRIVE & CALLIE DRIVE
SECTION 4, T12N, R10E
OSCEOLA, ARKANSAS

ASSOCIATED ENGINEERING, LLC
CIVIL ENGINEERING • LAND SURVEYING
LAND PLANNING
103 SOUTH CHURCH STREET • P.O. BOX 1462
JONESBORO, AR 72403
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CERTIFICATE OF AUTHORIZATION
Associated Engineering & Testing, LLC
NO. 299
ARKANSAS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9815
JOHN M. EASLEY

NO.	DESCRIPTION	DATE
1	REVISE PER ADH COMMENTS	11/21/22

COVER SHEET

DATE:	09/20/2022	DRAWN:	CCH
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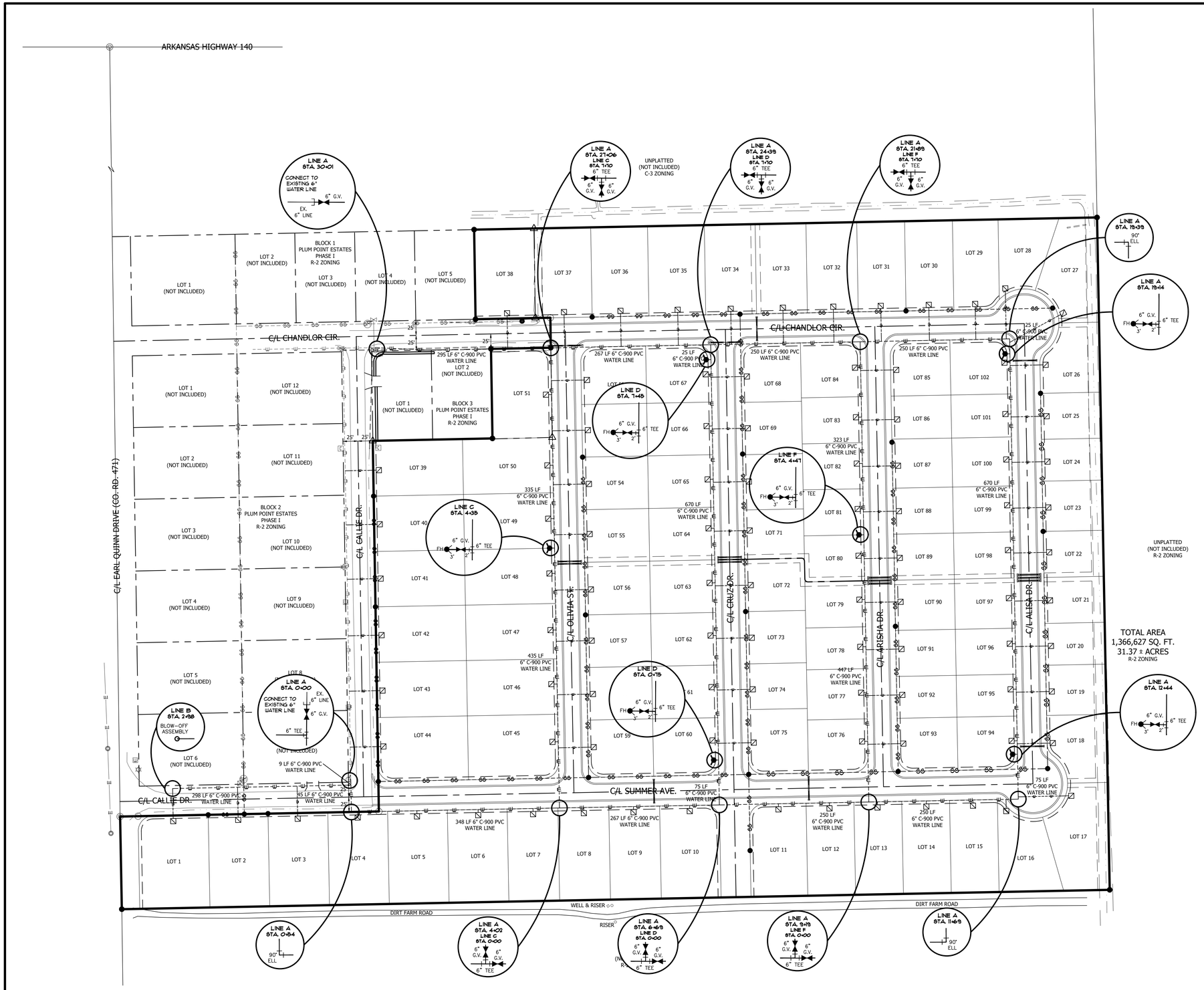

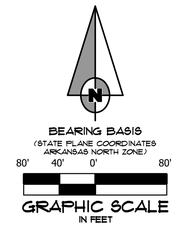

GENERAL UTILITY NOTES

1. ELEVATIONS SHOWN HEREON ARE IN FEET AND DECIMAL PARTS THEREOF AND REFER TO MSL DATUM.
2. VERTICAL DATUM REFERENCED TO NATIONAL GEODETIC VERTICAL DATUM OF 1988 (NAVD 88).
3. 5,609 L.F. 6" AWWA C-900 PRESSURE CL. 150/DR18 WATER LINE

   5,135 L.F. 8" ASTM D3034 SDR-26 SEWER LINE
4. WATER PRESSURE: STATIC PRESSURE = 55 psi, RESIDUAL PRESSURE = 40 psi.
5. PIPE DISTANCE SHOWN ARE TO CENTER OF STRUCTURES.
6. ALL WATER LINES (SERVICE) SHALL BE PVC SCH. 40 WITH 42" MIN. COVER. VALVES, CONNECTIONS AND RELATED APPURTENANCES SHALL BE IN ACCORDANCE WITH NFPA STANDARDS, OSCEOLA WATER AND WASTEWATER SPECIFICATIONS AS WELL AS THE CITY OF OSCEOLA AND INSTALLED WITH REQUIRED BEDDING AND THRUST BLOCKING.
7. CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE GOVERNING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE OWNER'S REPRESENTATIVE.
8. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITY COMPANIES AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF ANY WORK.
9. EXCAVATE AND VERIFY ALL UTILITY CROSSINGS AND INFORM THE OWNER'S REPRESENTATIVE OF ANY CONFLICT OR REQUIRED DEVIATION FROM THE PLAN. NOTIFICATION SHALL BE MADE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION.
8. WHERE SEWER LINES PASS WITHIN 1.5 FT. VERTICALLY OF WATER LINES, THE SEWER LINE SHALL BE ENCASED IN WATERTIGHT PIPE (SEE PART XIV.A OF ADH RULES AND REGULATIONS PERTAINING TO PWS).
10. WATER LINES AND STORM SEWER CROSSINGS SHALL MAINTAIN 36" MIN. SEPARATION IN ALL DIRECTIONS.
11. THE INSTALLER OF THE SANITARY SEWER DISPOSAL SYSTEM MUST BE LICENSED IN THE STATE OF ARKANSAS TO INSTALL LOW PRESSURE PIPE SYSTEMS.
12. WATER AND SEWER LINES SHALL MAINTAIN 10 FEET HORIZONTAL SEPARATION.
13. LOCATION OF UTILITIES SHOWN ON PLANS ARE APPROXIMATE ONLY. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR.
14. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGUARD UTILITIES AND STRUCTURES FROM DAMAGE DURING CONSTRUCTION. THE COSTS OF SUCH PROTECTION IS INCLUDED IN THE BASE BID.

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WATER PLAN

DATE:	09/02/2022	DRAWN:	CCH
CADD FILE:	22105-SDP-R1	CHECKED:	JME
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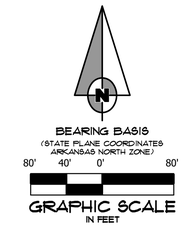

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8. WHERE SEWER LINES PASS WITHIN 2 FT. VERTICALLY OF WATER LINES, THE SEWER LINE SHALL BE ENCASED IN WATERTIGHT PIPE (SEE PART XIV.A OF ADH RULES AND REGULATIONS PERTAINING TO PWS).
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ARKANSAS DEPARTMENT OF HEALTH RULES AND REGULATIONS APPLICABLE TO SEWER AND WATER SEPARATION

A. SANITARY AND SAFETY HAZARDS

THE OPERATING ROUTINE SHALL INCLUDE NECESSARY PROTECTIVE MEASURES TO DETECT AND REMOVE OR DESTROY ANY CONTAMINANT OF CONCERN OR REGULATION THAT MIGHT ENTER THE DISTRIBUTION SYSTEM. EVERY PRECAUTION MUST BE TAKEN AGANINST THE POSSIBILITY OF SEWAGE CONTAMINATION OF THE WATER IN THE DISTRIBUTION SYSTEM. WATER MAINS AND SANITARY SEWERS SHALL BE CONSTRUCTED AS FAR APART AS PRACTICABLE, AND SHALL BE SEPARATED BY UNDISTURBED AND COMPACTED EARTH. A MINIMUM HORIZONTAL DISTANCE OF TEN FEET SHOULD BE MAINTAINED BETWEEN WATER LINES AND SEWER LINES OR OTHER SOURCES OF CONTAMINATION.

WATER LINES AND SEWERS SHALL NOT BE LAID IN THE SAME TRENCH EXCEPT ON THE WRITTEN APPROVAL OF THE ARKANSAS DEPARTMENT OF HEALTH. WATER MAINS NECESSARILY IN CLOSE PROXIMITY TO SEWERS MUST BE PLACED SO THAT THE BOTTOM OF THE WATER LINE WILL BE AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER LINE AT ITS HIGHEST POINT. IF THIS DISTANCE MUST UNAVOIDABLY BE REDUCED, THE WATER LINE OR THE SEWER LINE MUST BE ENCASED IN WATERTIGHT PIPE WITH SEALED WATERTIGHT ENDS EXTENDING AT LEAST TEN FEET EITHER SIDE OF THE CROSSING. ANY JOINT IN THE ENCASEMENT PIPE IS TO BE MECHANICALLY RESTRAINED. THE ENCASEMENT PIPE MAY BE VENTED TO THE SURFACE IF CARRYING WATER OR SEWER UNDER PRESSURE. WHERE A WATER LINE MUST UNAVOIDABLY PASS BENEATH THE SEWER LINE, AT LEAST 18 INCHES OF SEPARATION MUST BE BE MAINTAINED BETWEEN THE OUTSIDE OF THE TWO PIPES IN ADDITION TO THE PRECEEDING ENCASEMENT REQUIREMENT. EXCEPTIONS TO THIS MUST BE APPROVED IN WRITING BY THE ARKANSAS DEPARTMENT OF HEALTH.

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RIVER BACK ESTATES

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No. 9815

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SEWER PLAN

DATE:	09/02/2022	DRAWN:	CCH
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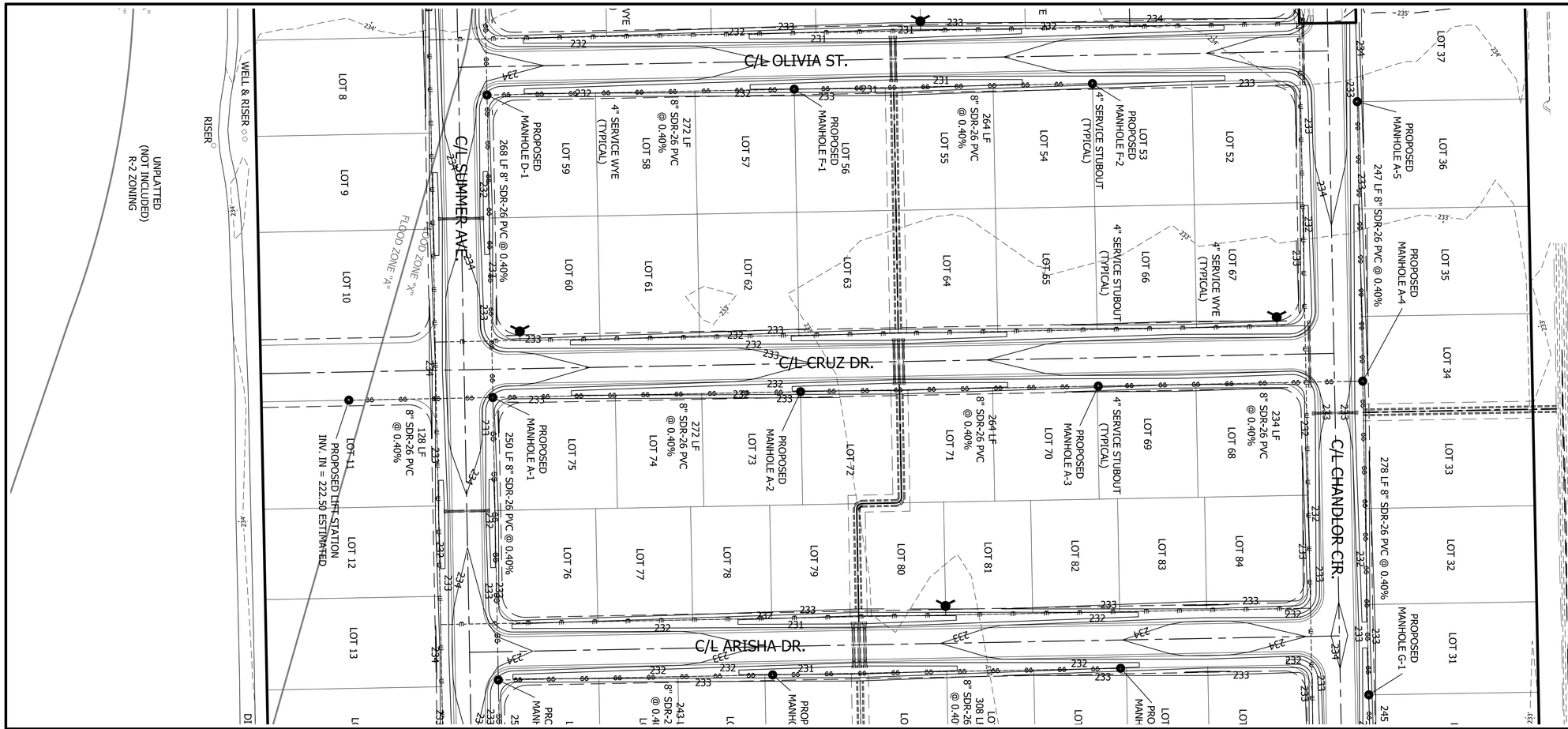

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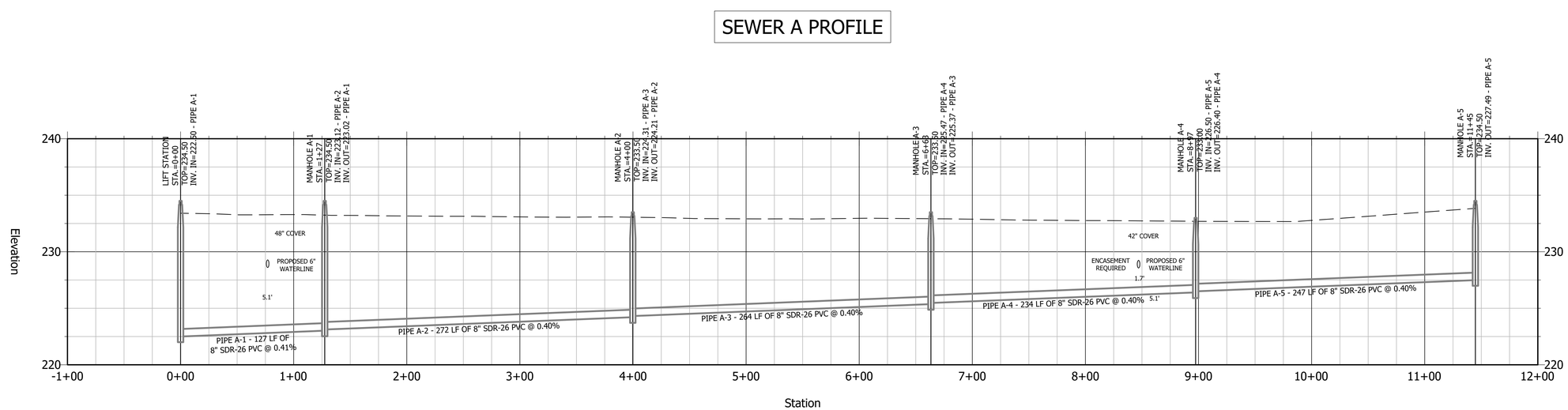

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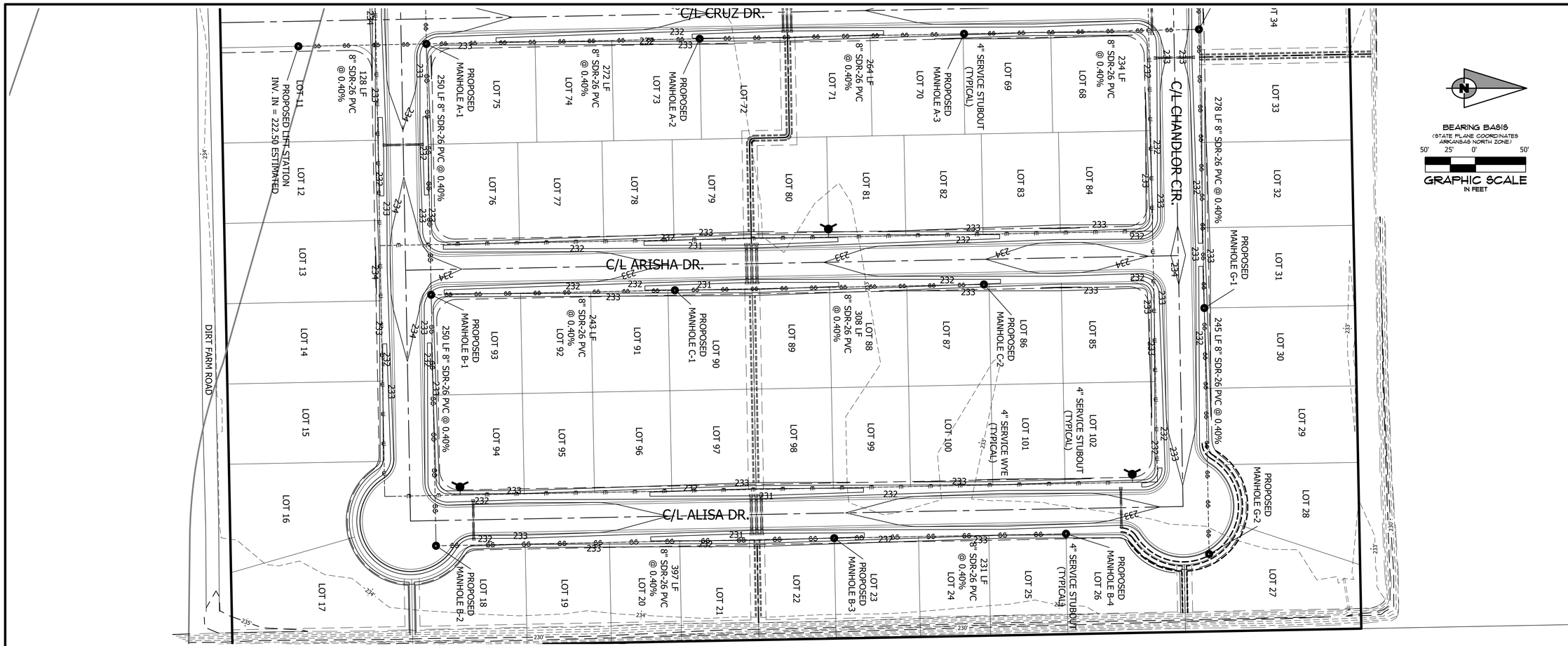

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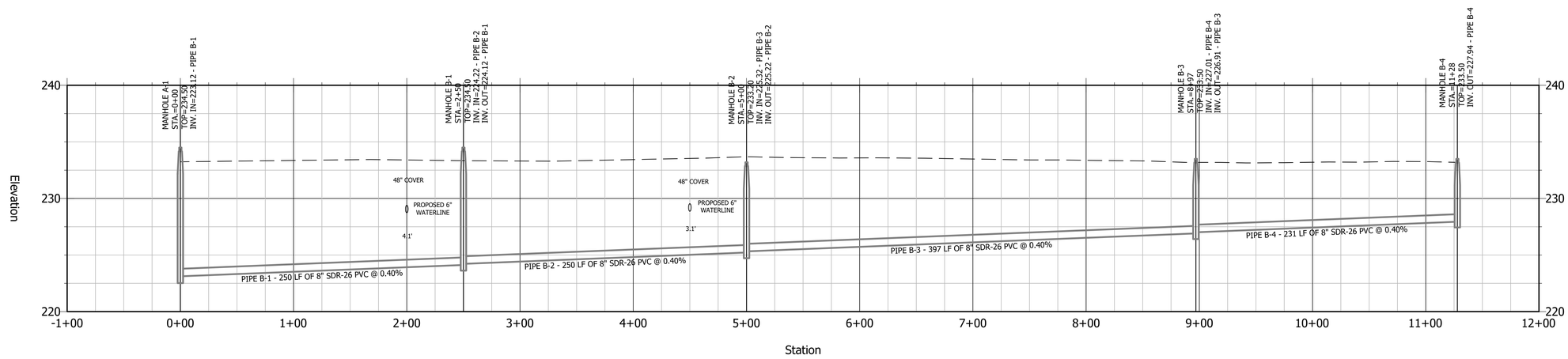
SEWER B PROFILE



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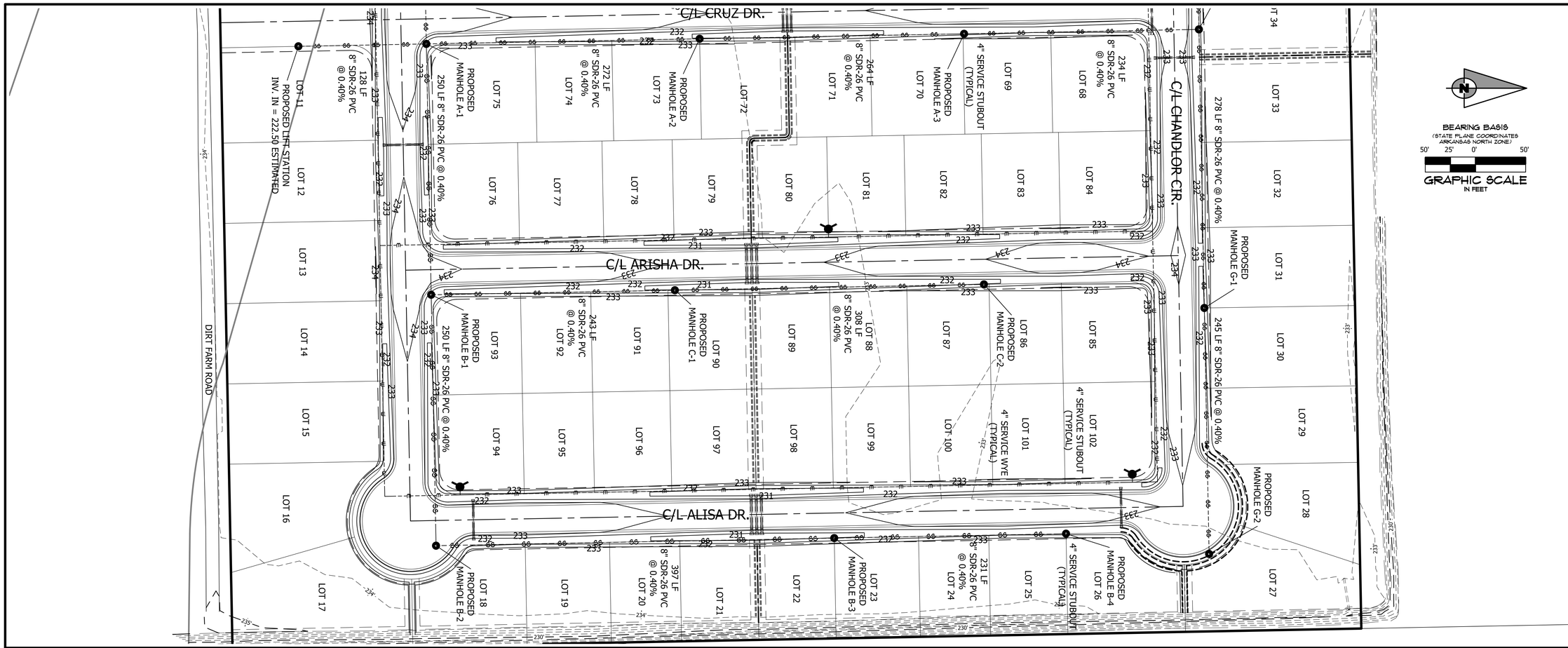

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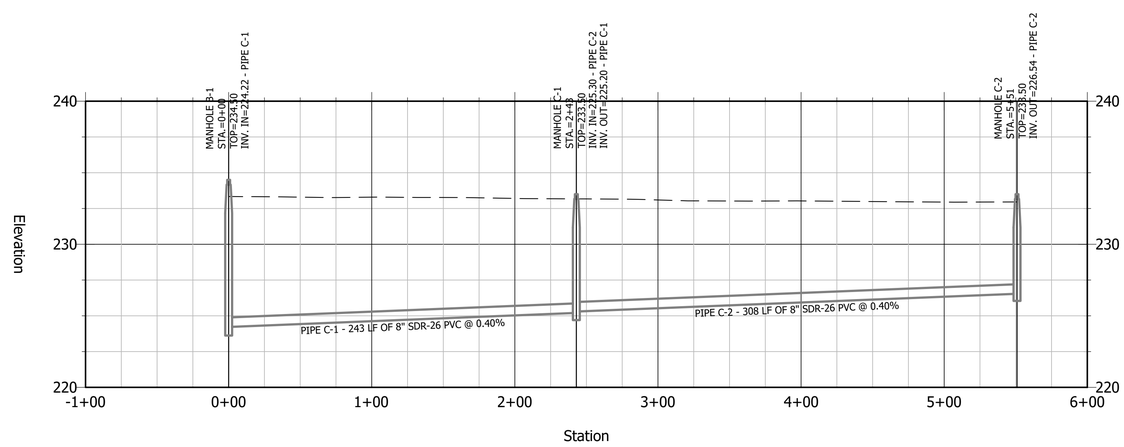
SEWER C PROFILE



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DWG#:	1012044.XXXX	SHEET	
SCALE:	AS SHOWN		C009

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SEWER D PROFILE

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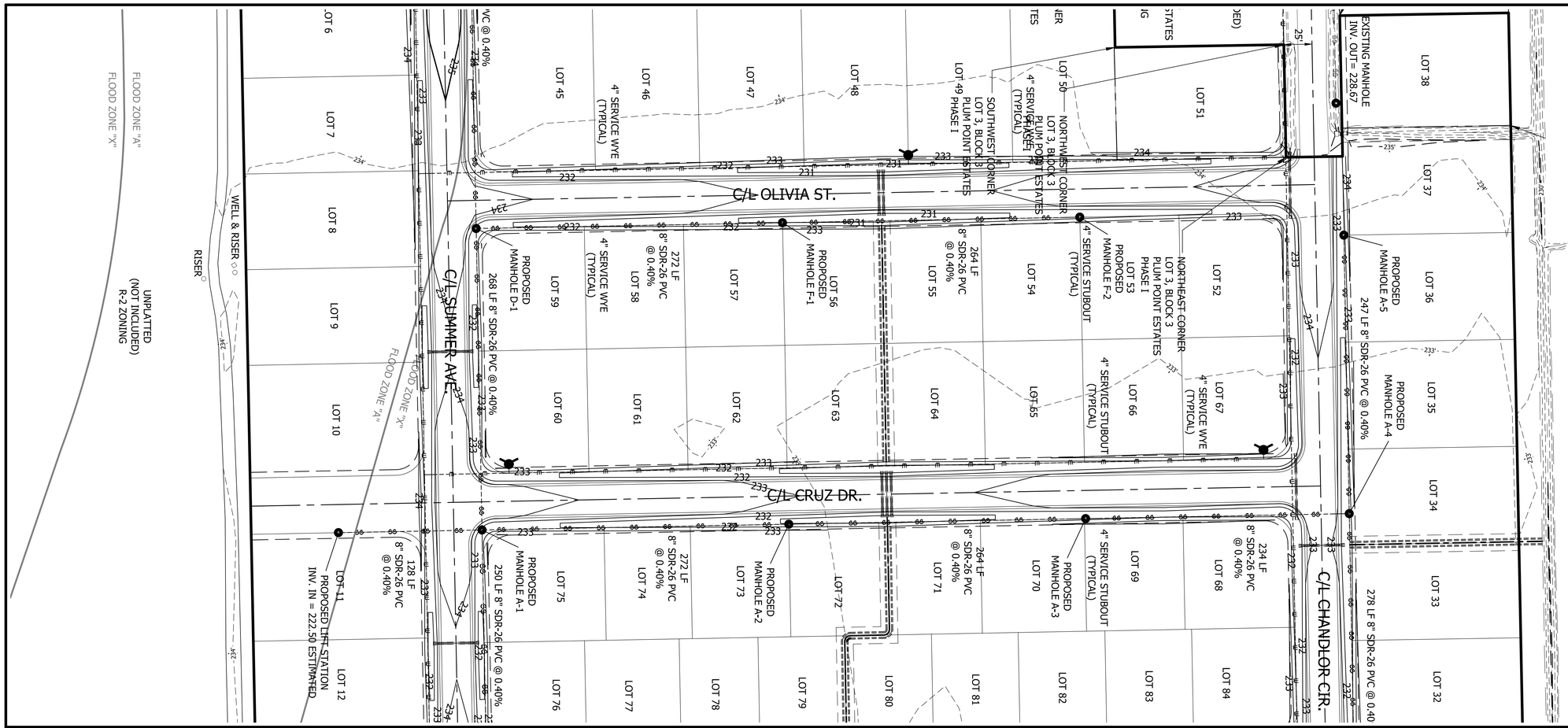

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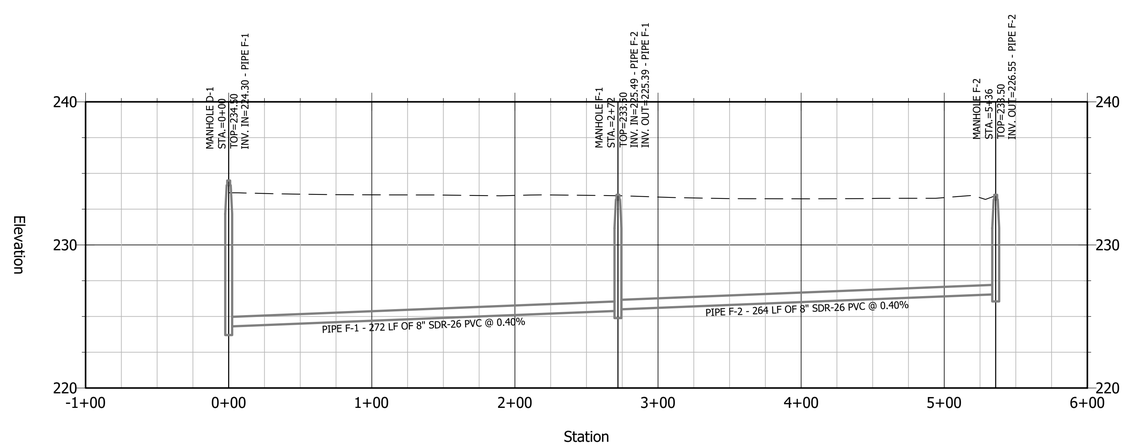

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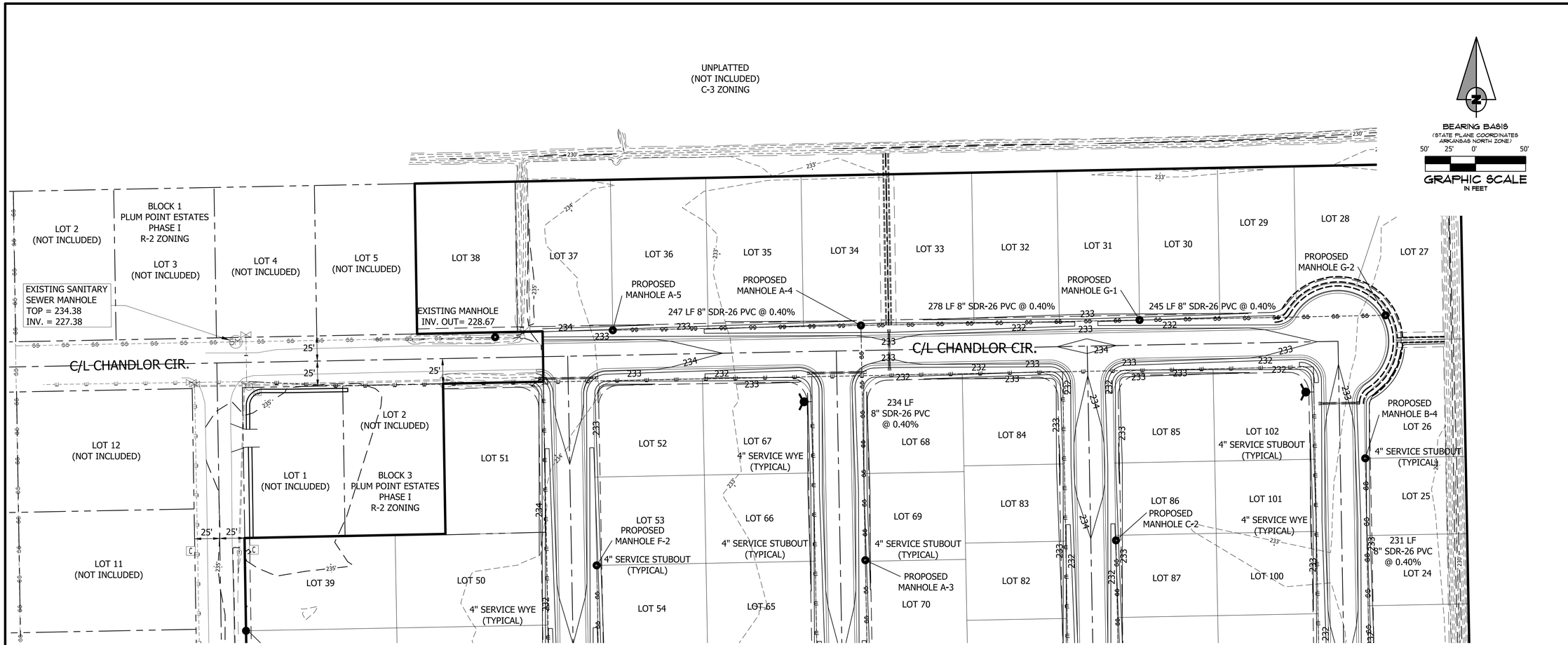

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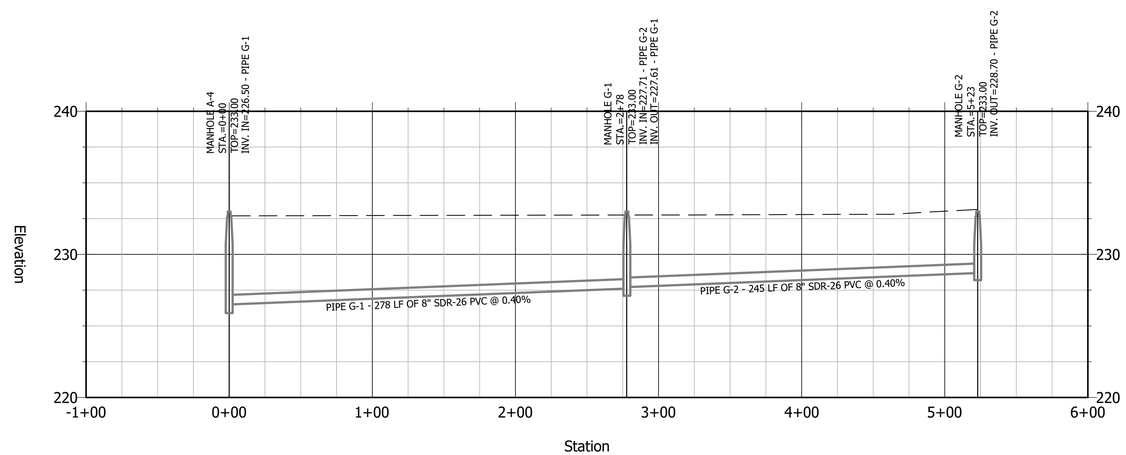

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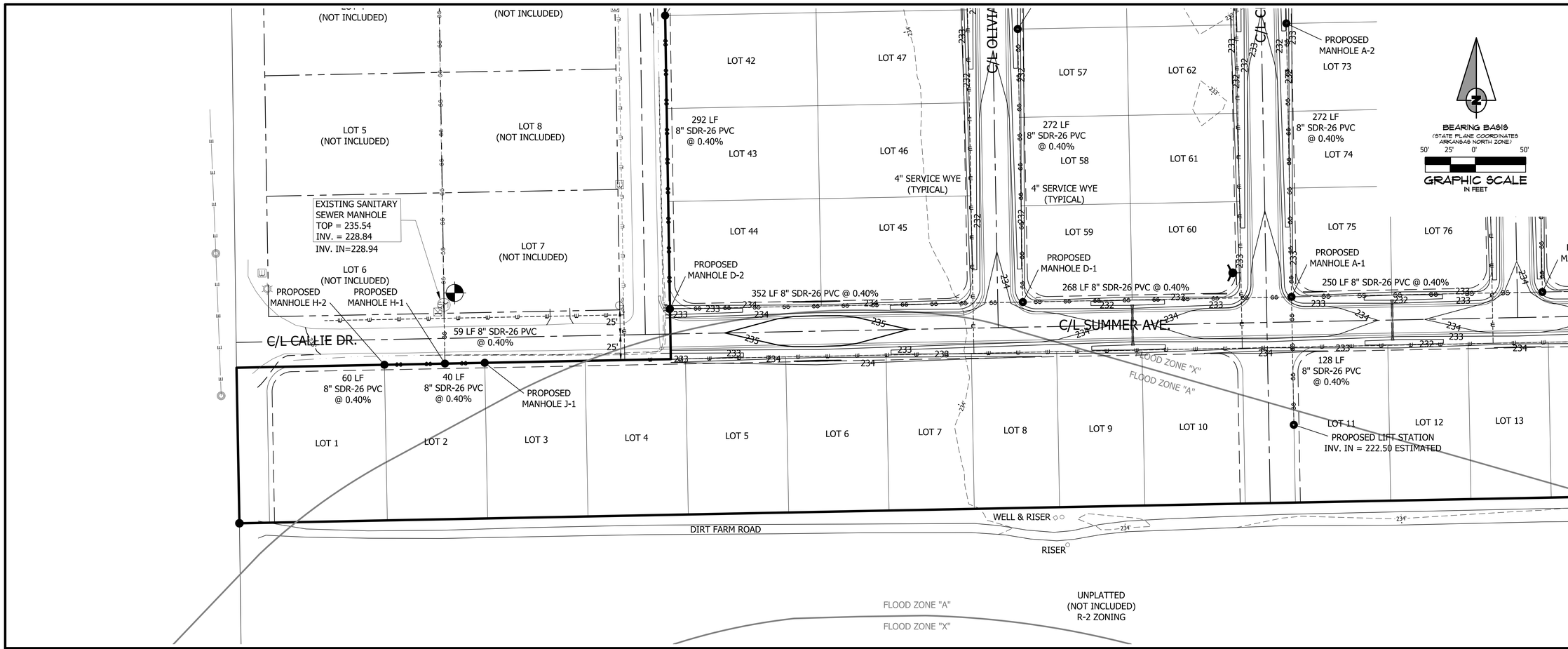

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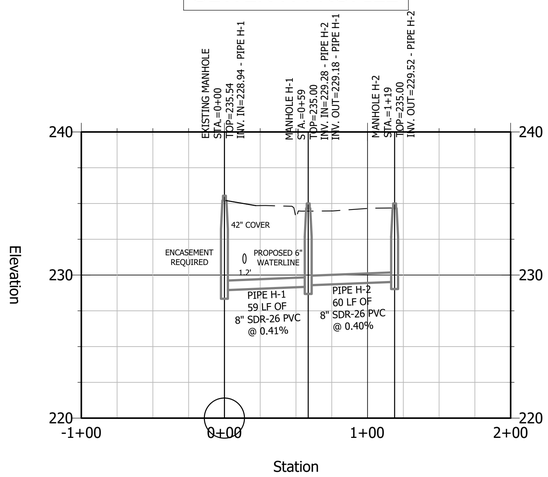

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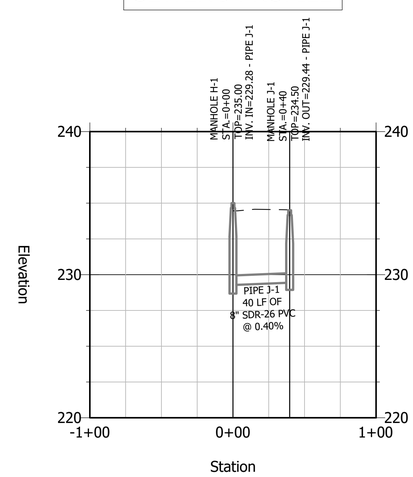

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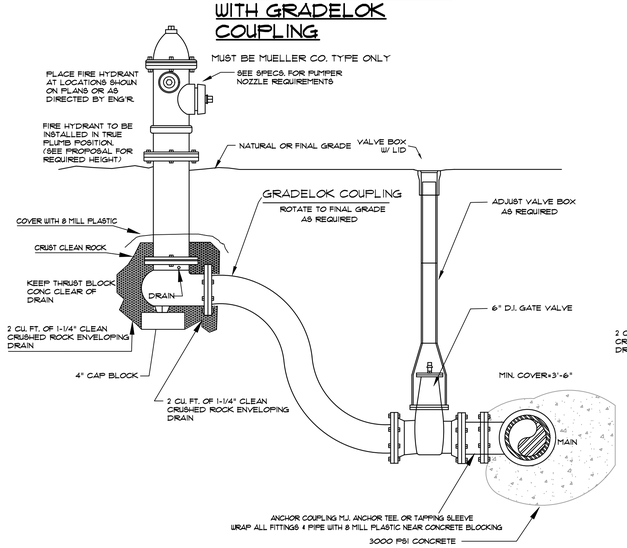
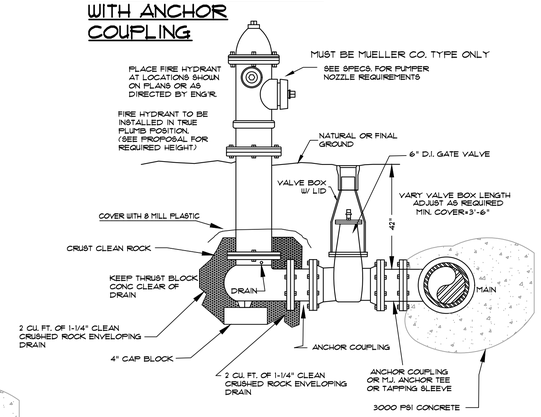
FIRE HYDRANT DETAIL WITH GRADELOK COUPLING



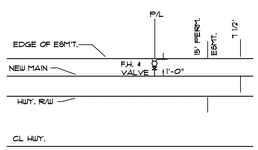
FIRE HYDRANT DETAIL WITH ANCHOR COUPLING



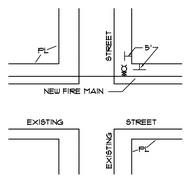
NOTES:

(1) PROVIDE TWO (2) MECHANICAL JOINT ANCHORING COUPLINGS

(2) CUL. WILL PROVIDE FIRE HYDRANTS, ANCHORING COUPLINGS, VALVES, VALVE BOXES AND TEES WITHIN CITY LIMITS.

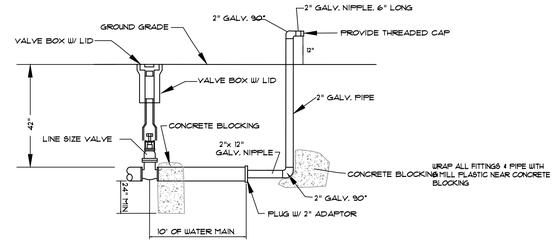


TYPICAL FIRE HYDRANT LOCATION ALONG HWY. RIGHT-OF-WAY

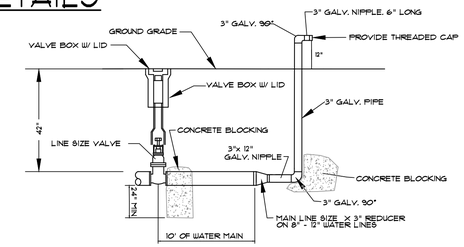


TYPICAL FIRE HYDRANT LOCATION

BLOW-OFF ASSEMBLY DETAILS

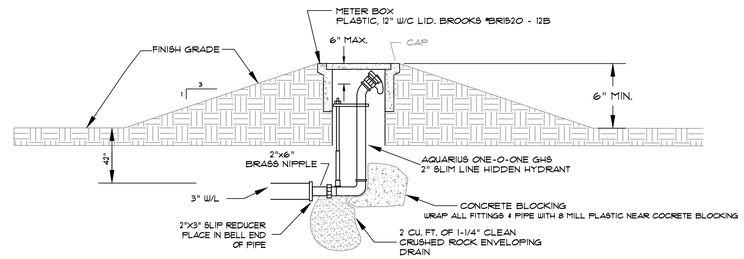


2" B.O. ASSEMBLY FOR 2" THRU 6" LINES WITH FUTURE EXPANSION



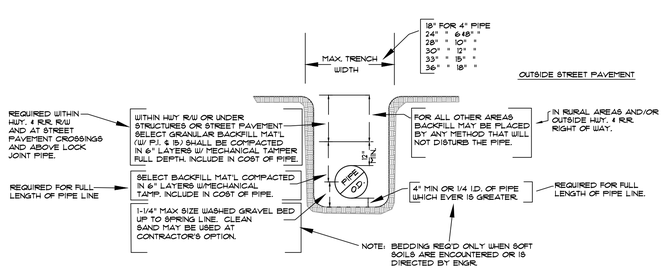
3" B.O. ASSEMBLY FOR 8" THRU 12" LINES WITH FUTURE EXPANSION

NOTE:
OTHER BLOW-OFF ASSEMBLIES CAN BE USED AS APPROVED BY LOCAL UTILITY COMPANY.



NOTE: ALL 2", OR 3" GALVANIZED PIPE AND FITTINGS ARE TO BE SCH 40

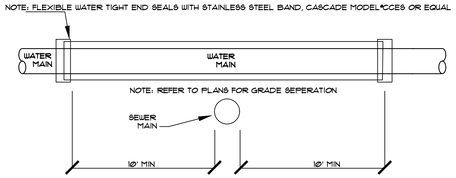
UNDERGROUND WASHOUT ASSEMBLY FOR COVES AND DEAD END LINES WITH NO FUTURE EXTENSION



TYPICAL WATER PIPE BEDDING AND BACKFILL DETAIL

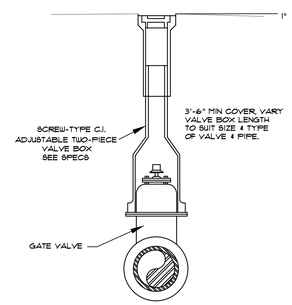
NOTE: Ø.25 THICKNESS STEEL ENCASEMENT PIPE SHALL EXTEND 10' MINIMUM EACH SIDE OF SEWER MAIN

NOTE: FLEXIBLE WATER TIGHT END SEALS WITH STAINLESS STEEL BAND, CASCADE MODEL"CCES OR EQUAL



ENCASEMENT FOR WATER MAINS AT SEWER CROSSINGS

NOTE: WHEN 18" VERTICAL SEPERATION CANNOT BE MAINTAINED



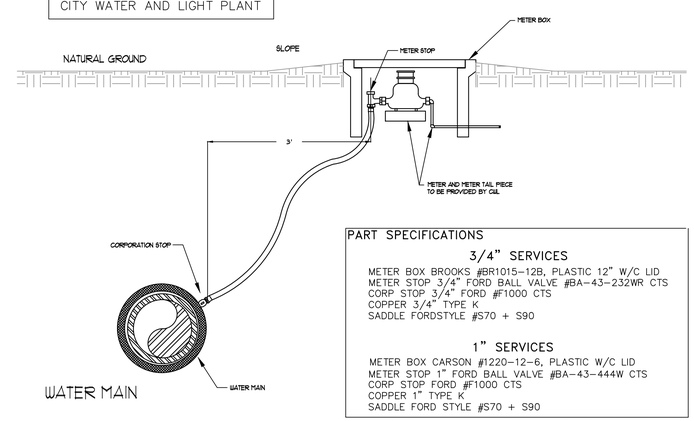
VALVE BOX DETAIL

SERVICE CONNECTION AND METER SETTING

NOTE: ONLY 3/4" SERVICES TO BE USED OUTSIDE CITY LIMITS

NOTE: 1" SERVICES TO BE USED WHEN WATER PRESSURE IS BELOW 60 PSI

UNDERGROUND SERVICE LINE
MINIMUM REQUIREMENTS
CITY WATER AND LIGHT PLANT



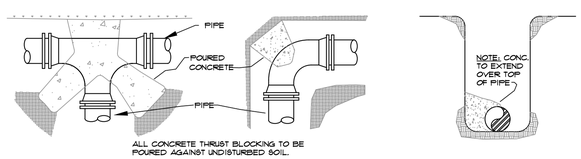
PART SPECIFICATIONS

3/4" SERVICES

METER BOX BROOKS #BR1015-12B, PLASTIC 12" W/C LID
METER STOP 3/4" FORD BALL VALVE #BA-43-232WR CTS
CORP STOP 3/4" FORD #F1000 CTS
COPPER 3/4" TYPE K
SADDLE FORDSTYLE #S70 + S90

1" SERVICES

METER BOX CARSON #1220-12-6, PLASTIC W/C LID
METER STOP 1" FORD BALL VALVE #BA-43-444W CTS
CORP STOP FORD #F1000 CTS
COPPER 1" TYPE K
SADDLE FORD STYLE #S70 + S90



THRUST BLOCK DETAILS

NOTES:

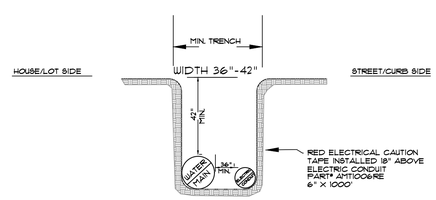
1. ALL BLOCKING SHALL BE AGAINST UNDISTURBED HAND DUG SOIL.
2. WHERE SOIL CONDITIONS MAKE IT NECESSARY TO POUR CONCRETE BLOCKING OVER JOINTS. THE ENDS OF THE ADJACENT PIPES MUST HAVE A BRACE BLOCK TO RESIST MOVEMENT OF THESE JOINTS.
3. ALL FITTINGS & PIPE SHALL BE COVERED WITH 8 MILL PLASTIC WHEN BLOCKING TO PREVENT BONDING OF CONCRETE.
4. WHERE SHEAR IS HIGH PROPER REINFORCING MUST BE INSTALLED INTO THE BLOCKING AS DIRECTED BY ENGINEER.
5. COVER SHALL BE A MINIMUM OF 3' BELOW NATURAL GRADE.
6. CLEARANCE FROM OIL & GAS COMPANY LINES SHALL BE A MINIMUM OF 18".
7. THRUST BLOCKING DIMENSIONS SHALL BE 150% OF THE THRUST CALCULATED FROM THE FORMULA (THRUST=2 AP SIN½ WHERE A=PIPE END AREA, P=PRESSURE PRODUCED BY PUMPING LIQUID, & (½=ANGLE OF BEND TO BE BLOCKED) AND SOIL BEARING CAPACITY OF 1500 PSF.
8. ALL CONCRETE SHALL BE 3000 PSI AT 28 DAY STRENGTH.

BEARING AREA OF THRUST BLOCKS:

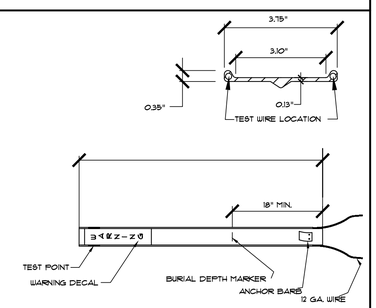
12" TEE: 13.1 S.F.
8" TEE: 5.8 S.F.
6" TEE: 3.28 S.F.

12" 90° ELL: 9.3 S.F.
8" 90° ELL: 4.1 S.F.
6" 90° ELL: 2.32 S.F.

12" 45° ELL: 5.0 S.F.
8" 45° ELL: 2.2 S.F.



TYPICAL WATER/ELECTRIC COMBO DETAIL



WATER LINE & FORCE MAIN MARKER DETAIL

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RIVER BACK ESTATES

EARL QUINN DRIVE & CALLIE DRIVE
SECTION 4, T12N, R10E
OSCEOLA, ARKANSAS

ASSOCIATED ENGINEERING, LLC
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LAND PLANNING
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CERTIFICATE OF AUTHORIZATION
Associated Engineering & Testing, LLC
NO. 299
ARKANSAS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9815
JOHN M. EASLEY

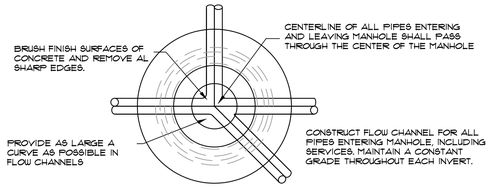
NO.	DESCRIPTION	DATE
1	REVISE PER ADH COMMENTS	11/21/22

WATER DETAILS

DATE:	09/02/2022	DRAWN:	CCH
CADD FILE:	22105-SDP-R1	CHECKED:	JME
DWG#:	1012044.XXXX	SHEET	
SCALE:	AS SHOWN	C023	

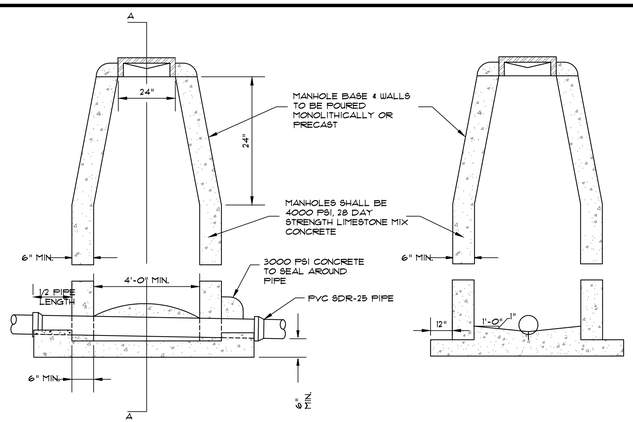
NOTES TYPICAL TO ALL MANHOLES

1. MANHOLE BASES TO BE 4000 PSI, 28 DAY STRENGTH, LIMESTONE MIX CONCRETE ON UNDISTURBED SUB-GRADE OR ON COMPACTED SELECT FILL MATERIAL AS AUTHORIZED.
2. MANHOLE SIDEWALL MATERIAL TO BE CONCRETE IN ACCORDANCE WITH PROPOSAL FORM REQUIREMENTS.
   a. 4' I.D. FOR SEWER SIZES 6" THRU 24"
   b. 5' I.D. FOR SEWER SIZES 24" THRU 30"
   c. 6' I.D. FOR SEWER SIZES 36" THRU 42"
3. SET MANHOLE TOPS AS FOLLOWS:
   a. IN STREETS, ROADS, HIGHWAYS, AND OTHER PAVED AREAS: FLUSH WITH FINISHED PAVING GRADE.
   b. UNDEVELOPED AREAS, SUCH AS FIELDS, WOODS, ETC.: 6" ABOVE GROUND.
   c. OTHER AREAS: 6" ABOVE GROUND.
4. MANHOLE FRAMES SHALL HAVE MIN. OPENING OF 22" DIA.



PLAN

NOT TO SCALE



SIDE ELEVATION

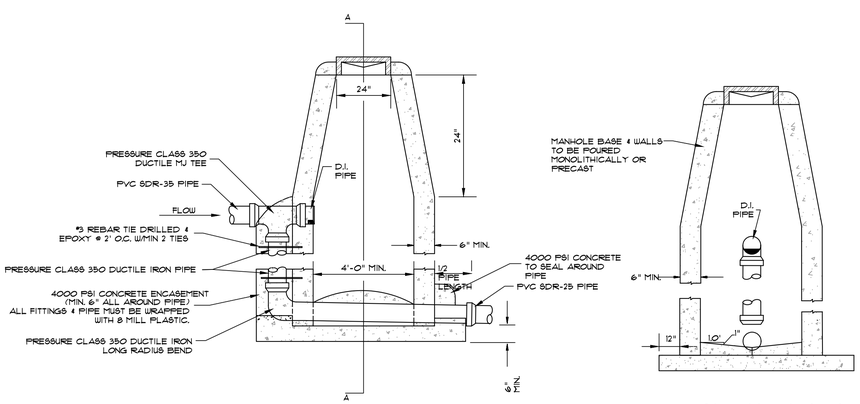
NOT TO SCALE

SECTION A-A

NOT TO SCALE

NOTE: MANHOLES SHALL BE PRECAST W/ NEOPRENE GASKETS AS APPROVED BY ENGINEER AND/OR UTILITY COMPANY.

STANDARD MANHOLE DETAILS



SIDE ELEVATION

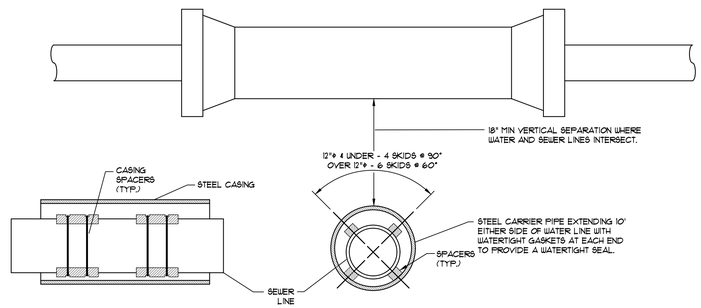
NOT TO SCALE

SECTION A-A

NOT TO SCALE

DROP MANHOLE DETAILS

NOTE: WHEN 18" VERTICAL SEPARATION CANNOT BE MAINTAINED, JOINTS SHALL BE LOCATED SUCH THAT THEY ARE EQUAL DISTANCE BEFORE AND AFTER CROSSING.



CARRIER PIPE	CASING PIPE
4"	8"
6"	12"
8"	16"
10"	20"
12"	24"
16"	32"
18"	36"
20"	40"
24"	48"
VERIFY CASING PIPE SIZE WITH CASING INSULATORS MFG.	

SEWER CROSSING DETAIL WHERE ENCASEMENT REQUIRED

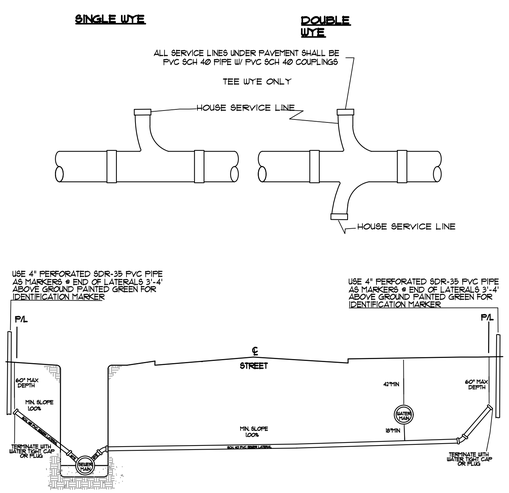
NOT TO SCALE

ARKANSAS DEPARTMENT OF HEALTH RULES AND REGULATIONS
APPLICABLE TO SEWER AND WATER SEPARATION

A. SANITARY AND SAFETY HAZARDS

THE OPERATING ROUTINE SHALL INCLUDE NECESSARY PROTECTIVE MEASURES TO DETECT AND REMOVE OR DESTROY ANY CONTAMINANT OF CONCERN OR REGULATION THAT MIGHT ENTER THE DISTRIBUTION SYSTEM. EVERY PRECAUTION MUST BE TAKEN AGANINST THE POSSIBILITY OF SEWAGE CONTAMINATION OF THE WATER IN THE DISTRIBUTION SYSTEM. WATER MAINS AND SANITARY SEWERS SHALL BE CONSTRUCTED AS FAR APART AS PRACTICABLE, AND SHALL BE SEPARATED BY UNDISTURBED AND COMPACTED EARTH. A MINIMUM HORIZONTAL DISTANCE OF TEN FEET SHOULD BE MAINTAINED BETWEEN WATER LINES AND SEWER LINES OR OTHER SOURCES OF CONTAMINATION.

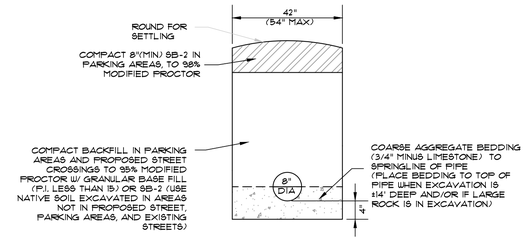
WATER LINES AND SEWERS SHALL NOT BE LAID IN THE SAME TRENCH EXCEPT ON THE WRITTEN APPROVAL OF THE ARKANSAS DEPARTMENT OF HEALTH. WATER MAINS NECESSARILY IN CLOSE PROXIMITY TO SEWERS MUST BE PLACED SO THAT THE BOTTOM OF THE WATER LINE WILL BE AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER LINE AT ITS HIGHEST POINT. IF THIS DISTANCE MUST UNAVOIDABLY BE REDUCED, THE WATER LINE OR THE SEWER LINE MUST BE ENCASED IN WATERTIGHT PIPE WITH SEALED WATERTIGHT ENDS EXTENDING AT LEAST TEN FEET EITHER SIDE OF THE CROSSING. ANY JOINT IN THE ENCASEMENT PIPE IS TO BE MECHANICALLY RESTRAINED. THE ENCASEMENT PIPE MAY BE VENTED TO THE SURFACE IF CARRYING WATER OR SEWER UNDER PRESSURE. WHERE A WATER LINE MUST UNAVOIDABLY PASS BENEATH THE SEWER LINE, AT LEAST 18 INCHES OF SEPARATION MUST BE BE MAINTAINED BETWEEN THE OUTSIDE OF THE TWO PIPES IN ADDITION TO THE PRECEEDING ENCASEMENT REQUIREMENT. EXCEPTIONS TO THIS MUST BE APPROVED IN WRITING BY THE ARKANSAS DEPARTMENT OF HEALTH.



SEWER LATERAL STUBOUT PERMITS REQUIRED BEFORE INSTALLATION

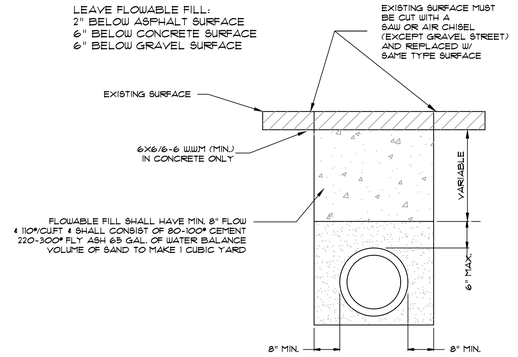
USE SAME CONFIGURATION FOR MANHOLE STUBOUTS

NOTE: 1. COARSE AGGREGATE SHALL BE MECHANICALLY TAMPED WHEN USED.
2. PIPE IN TRENCH SHALL BE PLACED ON NO LESS THAN 4" OF 3/4" MINUS LIMESTONE. ALL OVER EXCAVATION SHALL BE COMPACTED BACK TO GRADE W/ BEDDING MATERIAL.
3. PVC PIPE SHALL BE SDR-25 AND INSTALLED IN ACCORDANCE WITH UNI-BELL PVC PIPE ASSOCIATION'S RECOMMENDATIONS FOR CONSTRUCTION.



TRENCH DETAIL (NON-EXISTING STREET LOCATIONS)

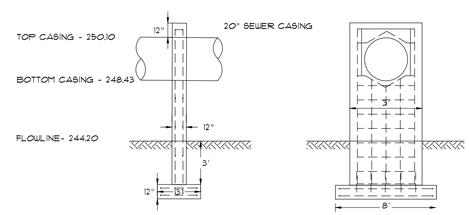
NOT TO SCALE



TRENCH DETAIL (EXISTING STREET LOCATIONS)

NOT TO SCALE

NOTE: (1) CONTRACTOR SHALL OBTAIN A STREET CROSSING PERMIT FROM THE CITY OF JONESBORO PRIOR TO CUTTING STREET.
(2) EXCAVATED MATERIAL SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
(3) THIS REPAIR DETAIL IS REQUIRED FOR ALL EXCAVATION WITHIN 5' OF PAVED EDGE AND ALL TRANSVERSE EXCAVATIONS TO EXTEND 3' BEYOND PAVED EDGE.



NOTE: 1. CONCRETE PIERS SHALL BE INSTALLED IF CASING LENGTH IS LESS THAN 10 INTO DITCH BANK OR IN ORDER TO STABILIZE CROSSING.
2. USE IF CONCRETE PIERS TO BE DETERMINED BY PROJECT ENGINEER AND CUL.
3. PLACE #5 BARS AT 12" O/C BOTH WAYS ON EACH FACE OF PIER. PLACE #5 BARS AT 12" O/C IN FOOTING.

AERIAL PIPE CROSSING - PIERS

NOT TO SCALE

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RIVER BACK ESTATES

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No. 9815
JOHN M. EASLEY

NO.	DESCRIPTION	DATE
1	REVISE PER ADH COMMENTS	11/21/22

SEWER DETAILS

DATE:	09/02/2022	DRAWN:	CCH
CADD FILE:	22105-SDP-R1	CHECKED:	JME
DWG#:	1012044.XXXX	SHEET	
SCALE:	AS SHOWN	C024	