CONSTRUCTION PLANS FOR
IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION
PROJECT NO. ES 2020-02
FY 2022

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

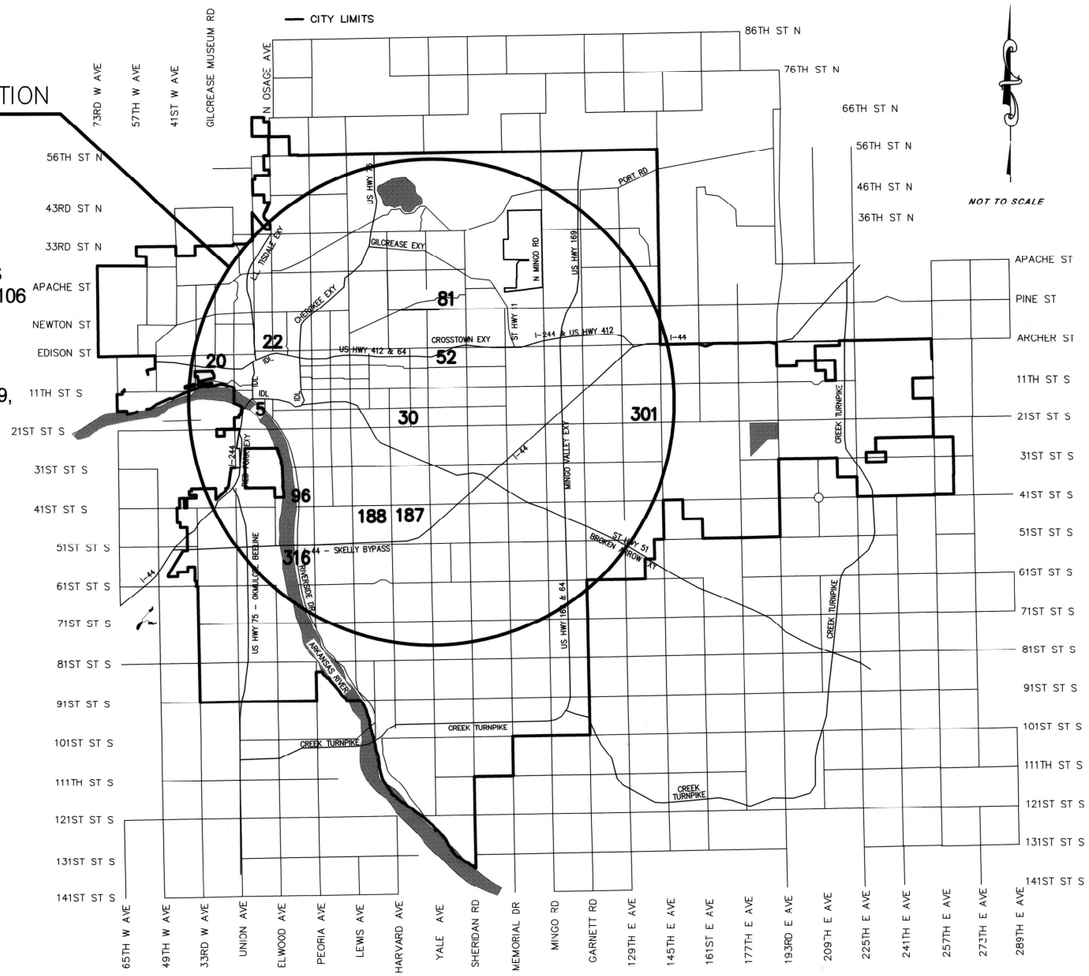
LEGEND

8"	PROPOSED SEWER LINE
T	EXISTING TELEPHONE
TEL. MH	EXISTING TELEPHONE MANHOLE
TCB	EXISTING TELEPHONE CONTROL BOX
CABLE PED.	EXISTING CABLE PEDESTAL
GM	EXISTING GAS METER
GV	EXISTING GAS VALVE
G	EXISTING GAS LINE
EX. 8" SS	EXISTING SEWER LINE
SSMH	EXISTING SS MANHOLE
	EXISTING MANHOLE REMOVAL
WV	EXISTING WATER VALVE
ICV	EXISTING IRRIGATION CONTROL VALVE
FH	EXISTING FIRE HYDRANT
WM	EXISTING WATER METER
8" W	EXISTING WATER
SDMH	EXISTING STORM MANHOLE
24" RCP	EXISTING STORM LINE
CHAIN LINK FENCE	CHAIN LINK FENCE
WIRE FENCE	WIRE FENCE
FENCE OTHER	FENCE OTHER
WOOD FENCE	WOOD FENCE
ELEC. PED.	EXISTING ELECTRICAL PEDESTAL
FO	EXISTING FIBER OPTIC LINE
	EXISTING EASEMENT LINE
EM	EXISTING ELECTRIC METER
PP	EXISTING POWER POLE
ELEC MH	EXISTING ELECTRIC MANHOLE
LP	EXISTING LIGHT POLE
FL	EXISTING LIGHT (FLOOD, YARD ETC.)
E	EXISTING UNDERGROUND ELECTRIC CABLE
OE	EXISTING OVERHEAD ELECTRIC WIRE
	ASPHALT
	CONCRETE PATTERN
SIGN	STREET SIGN
MB	MAILBOX
½" PIPE	IRON ROD/PIPE FOUND
BUSH / 8" PECAN	TREE OR BUSH
BM	BENCHMARK
CP	CONTROL POINT
SSMH	PROPOSED NEW MANHOLE
SSMH	REMOVE AND REPLACE MANHOLE
	ROW LINE
	PROPERTY LINE
	BRICK PAVEMENT REMOVAL & REPLACEMENT
	CONCRETE PAVEMENT REMOVAL & REPLACEMENT
	ASPHALT PAVEMENT REMOVAL & REPLACEMENT
	GRAVEL DRIVEWAY REMOVAL & REPLACEMENT
	LIMITS OF FLOOD ZONE BOUNDARY

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

PROJECT LOCATION

ATLAS PAGES



NOT TO SCALE

PREPARED BY

rjngroup

CONSULTING ENGINEERS
4150 S. 100th E. AVE, SUITE 106
TULSA, OKLAHOMA 74146
(918) 627-9737

CERTIFICATE OF AUTHORIZATION NO. CA1979, EXP. 6/30/2023

UTILITY COORDINATION BOX

	NUMBER	NOTIFIED
CITY OF TULSA UTILITIES COORDINATOR	918-596-9649	
WATER DESIGN	918-596-9566	
WASTEWATER DESIGN	918-596-9564	
TRANSPORTATION DESIGN	918-596-9636	
TRAFFIC ENGINEERING DESIGN	918-596-9749	
STORMWATER DESIGN	918-596-9498	
COT IT NETWORK SERVICES	918-596-7070	
OKLAHOMA NATURAL GAS CO.	918-831-8261	
PUBLIC SERVICE CO.	918-599-2757	
AT&T	918-596-6702	
COX COMMUNICATIONS	918-669-4866	

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APPROVED BY:

CITY ENGINEER — DATE 10.17.22

APPROVED BY:

CITY OF TULSA OKLAHOMA

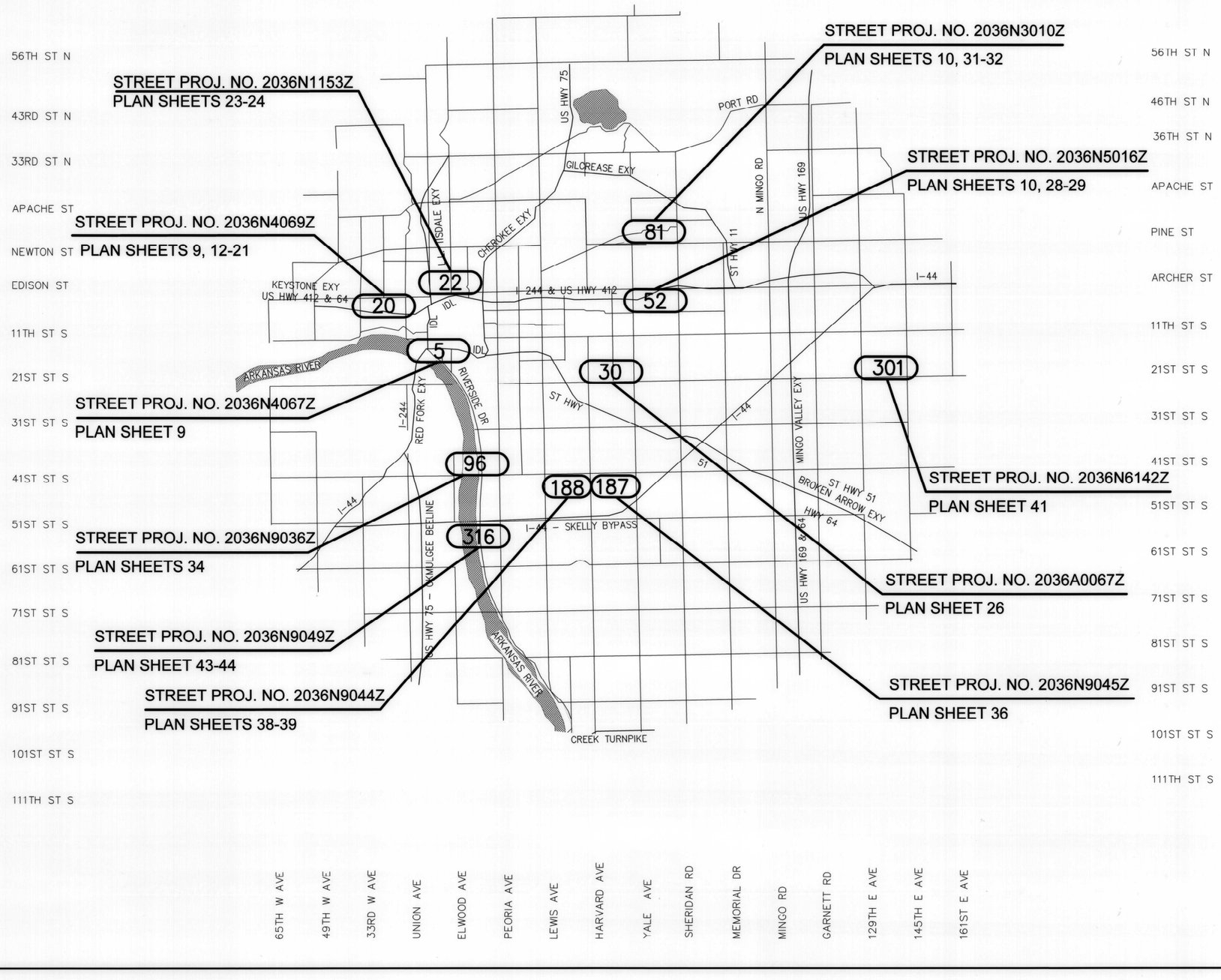
DIRECTOR, WATER AND SEWER DEPT. — DATE Clayton Edwards 10-12-22

ENGINEER'S CERTIFICATION:

REGISTERED PROFESSIONAL ENGINEER — RANDALL J. BRODNER — 26761 — OKLAHOMA

PROJECT MANAGER — DATE 9-16-22

IMPROVE OUR TULSA 2 AREAWIDE SEWER REHABILITATION - PROJECT ES 2020-02 FY2022



NOT TO SCALE

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9-16-22

REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

LOCATION MAP & SHEET INDEX

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE. SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE: NA
PROFILE SCALE: NA
HORIZONTAL: NA
VERTICAL: NA

DRAWN	RLP	...	APPROVED
DESIGNED	RJB	...	
SURVEY	NA	...	
PROJ. MGR.			
LEAD ENGR.	RJB	5/22	
FIELD MGR.	RJB	9/22	
RECOMMENDED	HRS	10-22	
DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:		DATE: September 2022
ATLAS PAGE NO.:			SHEET 2 OF 47

GENERAL NOTES

1. THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION SAFETY PLAN TO THE CITY OF TULSA FIELD ENGINEERING DEPARTMENT PRIOR TO COMMENCEMENT OF WORK. THE SAFETY PLAN SHALL ADDRESS, BUT BE LIMITED TO ISSUES SUCH AS TRAFFIC CONTROL, WORK SITE SAFETY, MANHOLE VENTILATION, WORK EQUIPMENT, FIRST AID, HYGIENE, AND OTHER RELATED TOPICS. THE CONTRACTOR SHALL BE EXPECTED TO PERFORM THE WORK IN A MANNER THAT BEST PROTECTS THE SAFETY OF WORKERS, INSPECTORS, BYSTANDERS, AND OTHERS WHO MAY BE IN THE VICINITY OF THE PROJECT. FAILURE TO PERFORM THE WORK AND MAINTAIN THE SITE IN A SAFE MANNER, IN THE OPINION OF THE ENGINEER OR OWNER, SHALL BE SUFFICIENT CAUSE TO STOP ALL WORK UNTIL SAFETY PROBLEMS ARE CORRECTED.
2. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE CITY OF TULSA ENGINEERING SERVICES STANDARDS AND SPECIFICATIONS AND IN ACCORDANCE WITH THE SPECIAL PROVISIONS OF THIS CONTRACT.
3. THE CONTRACTOR SHALL HAVE ONE (1) EXECUTED COPY OF THE CONTRACT DOCUMENTS AT THE JOB SITE AT ALL TIMES.
4. THE CONTRACTOR SHALL, IN COOPERATION WITH THE CITY, DEVELOP AND SUBMIT FOR APPROVAL A TRAFFIC CONTROL PLAN (TCP), TO THE CITY OF TULSA ENGINEERING SERVICES, FIELD ENGINEERING. THIS TCP SHALL DETAIL SUCH MEASURES AS MAY BE REQUIRED TO ESTABLISH, INSTALL, MAINTAIN, AND OPERATE A COMPLETE, ADEQUATE, AND SAFE TRAFFIC CONTROL SYSTEM DURING THE ENTIRE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL PLACE TRAFFIC CONTROL FLAGMEN, BARRICADES, SIGNS, SIGNALS, OR OTHER DEVICES AS MAY BE REQUIRED.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMPLEMENTATION, PERMITTING, AND EXECUTION OF A STORMWATER POLLUTION PREVENTION PLAN (SWP3). THE CONTRACTOR SHALL PROVIDE ALL DOCUMENTATION REQUIRED OF SWP3 FOR REVIEW AND APPROVAL OF THE PLAN BY FEDERAL, STATE, AND LOCAL AUTHORITIES. THIS INCLUDES, BUT IS NOT LIMITED TO, THE NOTICE OF INTENT AND THE NOTICE OF TERMINATION.
6. THE CONTRACTOR SHALL PROVIDE TEMPORARY ORANGE SAFETY FENCING AROUND ALL EXCAVATION, INCLUDING TRENCHES, PITS, VAULTS, ETC. TO MAINTAIN SECURITY AND SAFETY FOR ANIMALS, CHILDREN OR ANY BYSTANDER. THE COST OF ORANGE SAFETY FENCING SHALL BE INCLUDED IN OTHER PAY ITEMS.
7. PRIOR TO EXCAVATING, THE CONTRACTOR IS RESPONSIBLE FOR BRACING OR SUPPORTING ANY POWER POLE OR GUY WIRE WITHIN 5 FEET OF EXCAVATION TO THE SATISFACTION OF THE OWNER AND THE UTILITY COMPANY, AT NO ADDITIONAL COST TO THE OWNER.
8. ALL EXCAVATED MATERIAL REMOVED DURING TRENCHING OR EXCAVATION SHALL BE DISPOSED OF AT A SITE APPROVED BY THE OWNER. PRIOR TO TRENCHING AND EXCAVATION, THE CONTRACTOR SHALL SUBMIT THE PROPOSED DISPOSAL SITE TO THE ENGINEER FOR HIS REVIEW. STOCKPILING EXCAVATED MATERIALS IN STREET OR ALLEY RIGHT-OF-WAY MAY BE ALLOWED UPON APPROVAL BY THE ENGINEER. MAINTENANCE OF STOCKPILE SITE IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR MUST MAINTAIN STOCKPILE SITES IN A SAFE, POLLUTION FREE CONDITION THROUGHOUT THE PROJECT. THE CONTRACTOR SHALL NOT STOCKPILE MATERIAL OR STORE ANY EQUIPMENT OVERNIGHT IN THE TULSA REGULATORY FLOODPLAIN.
9. BACKFILL UNDER ALL PAVED SURFACES SHALL BE TYPE "A" AGGREGATE BASE PLACED IN 8" MAXIMUM LIFTS AND COMPACTED BY A VIBRATORY HAND TAMPER TO 95% OF THE STANDARD PROCTOR DENSITY, AS MEASURED BY THE NUCLEAR DENSITY METHOD.
10. THE CONTRACTOR SHALL PROVIDE A DETAILED ACCESS PLAN FOR THE CONSTRUCTION OF THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS, CONSTRUCTION ACTIVITIES, AND PERMITS THAT MAY BE NEEDED FOR THE IMPLEMENTATION OF THIS PLAN.
11. CONTRACTOR MUST NOTIFY THE HOMEOWNER A MINIMUM OF 48 HOURS (SPECIFICATION 400) PRIOR TO BEGINNING ANY REHAB WORK OR CONSTRUCTION ON HOMEOWNER'S PROPERTY.
12. IN ALL AREAS WHERE EXCAVATION WILL OCCUR, CONTRACTOR SHALL VIDEOTAPE ALL CONCRETE PAVEMENT, BUILDINGS, FOUNDATIONS, LANDSCAPING, LAWNS AND TREES PRIOR TO CONSTRUCTION AND SUBMIT TO THE ENGINEER FOR PROJECT RECORDS.
13. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND RESTORATION OF ANY EXISTING STORAGE SHEDS, LOCATED WITHIN THE CONSTRUCTION AREA, THAT ARE DAMAGED DURING CONSTRUCTION, AT NO ADDITIONAL COST TO THE CITY OF TULSA OR THE HOMEOWNER.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF THE LOCATION OF ALL EXISTING SANITARY SEWER SERVICE LATERALS IN THE PROJECT AREA. IF ENCOUNTERED OR DAMAGED DURING CONSTRUCTION, EXISTING SERVICE LATERALS SHALL BE REMOVED AND REPLACED USING PIPE OF THE SAME SIZE AND MATERIAL AS THE EXISTING SEWER AT THE CONTRACTORS EXPENSE.
15. ALL DAMAGED PAVEMENT OUTSIDE OF THE TRENCH PAY LINE SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE.
16. ALL PAVEMENT REMOVAL SHALL BE SAW CUT AT THE NEAT LINES AS INDICATED IN THE SPECIFICATIONS AND STANDARD DETAILS. SAW CUTS REQUIRED FOR REMOVAL AND REPLACEMENT ITEMS SHALL BE FULL DEPTH OF THE EXISTING PAVEMENT. SAW CUTS SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS.
17. ALL CONCRETE PAVEMENTS, FLEXIBLE PAVEMENTS, CURB AND GUTTER, AND UNPAVED SURFACES SHALL BE FINISHED TO MATCH EXISTING SURROUNDING SURFACES.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR TRENCH DEWATERING, NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK.
19. CONTRACTOR SHALL REPAIR ANY IRRIGATION SYSTEMS DAMAGED DURING THE COURSE OF CONSTRUCTION, PAYMENT SHALL BE INCLUDED IN RIGHT-OF-WAY CLEARING AND RESTORING. NO ADDITIONAL PAYMENTS SHALL BE MADE.
20. ALL SANITARY SEWER AND STORM SEWER MANHOLE CASTING AND LIDS THAT ARE DISTURBED BY THE CONTRACTOR SHALL BE REPLACED WITH NEW ONES, AND THE OLD CASTINGS AND LIDS SHALL BE DELIVERED TO THE SEWER BASE AT 9319 E. 42nd STREET N. AND PLACED IN THE METAL RECYCLE BIN IN THE STOCKROOM AREA 918-669-6130, BETWEEN THE HOURS OF 7:30 AM AND 3:00 PM MONDAY THROUGH FRIDAY.
21. NO FILL, SPOIL, BEDDING MATERIAL OR EQUIPMENT MAY BE STORED OVERNIGHT WITHIN THE FLOOD PLAIN LIMITS.
22. ALL SANITARY SEWER MANHOLES LOCATED IN THE FLOODPLAIN SHALL BE BUILT IN ACCORDANCE WITH THE FLOODPLAIN MANHOLE SPECIFICATION WITH PADDLE- LOCK LID.
23. REFLECTORIZED SHEETING ON SIGNS AND BARRICADES SHALL BE OF A CUBIC PRISMATIC TYPE AND SHALL EET THE SPECIFICATIONS ESTABLISHED FOR ASTM D 4956-01 TYPE IX RETROREFLECTIVE SHEETING REFLECTORIZED SHEETING ON DRUMS AND TUBE CHANNELIZERS SHALL BE OF A HIGH-INTENSITY TYPE AND SHALL MEET THE SPECIFICATIONS ESTABLISHED FOR ASTM D 4956-01 TYPE III RETROREFLECTIVE SHEETING.
24. IF WARNING LIGHTS TO BE USED ON TRAFFIC CONTROL DEVICES, TYPE "A" LIGHTS SHALL ONLY BE USED ON DEVICES WARNING OF UNEXPECTED HAZARDS, AND SHALL NOT BE USED FOR DELINEATION OF THE TRAVELED WAY. ONLY TYPE "C" WARNING LIGHTS SHALL BE USED FOR DELINEATION OF THE TRAVELED WA, AND TYPE "C" LIGHTS SHALL NOT BE USED FOR ANY OTHER PURPOSE.

MANHOLE REHABILITATION NOTES

1. ALL MANHOLES, PIPE SIZES AND LENGTH, DEFECTS, SURFACE TYPES AND THEIR LOCATIONS SHOWN IN THE PLANS ARE ACCORDING TO THE BEST INFORMATION AVAILABLE TO THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY ALL INFORMATION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO PERFORMING THE WORK.
2. REPLACEMENT MANHOLES SHALL HAVE FLOW LINE AND RIM ELEVATIONS SET TO MATCH THOSE OF EXISTING MANHOLES UNLESS OTHERWISE NOTED BY THE ENGINEER. FRAMES AND COVERS SHALL BE PROVIDED IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS.
3. CONTRACTOR SHALL ENSURE THAT ALL MANHOLE FRAME AND COVER CASTINGS HAVE MACHINED SEATING SURFACES WITH A TIGHT FIT AND COMPLY WITH THE OTHER PROVISIONS OF THE MATERIALS SPECIFICATION.
4. ACTIVE LEAKING JOINTS OR OTHER DEFECTS OBSERVED BY THE CONTRACTOR, BUT NOT SCHEDULED FOR REHABILITATION, SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY UPON DETECTION.
5. IN AREAS OF MANHOLE REPAIRS, CONTRACTOR SHALL PLACES SPOILS ON PLASTIC SHEETS, PLYWOOD OR OTHER SUITABLE GROUND PROTECTION.
6. THE MANHOLE DEPTHS SHOWN ON THE PLANS ARE FROM SURVEY. HOWEVER, ACCURATE FIELD MEASUREMENTS SHALL BE UTILIZED FOR ANY MANHOLE REPLACEMENT OR REHABILITATION.
7. AT THE TIME OF MANHOLE REHABILITATION, MANHOLE STEPS SHALL BE EVALUATED AND ALL OR NONE SHALL BE REPLACED. NO STEPS SHALL BE INSTALLED IN EPOXY-COATED MANHOLES.
8. CONTRACTOR SHALL BE REQUIRED TO VACUUM TEST ALL NEW MANHOLE INSTALLATIONS AND EXISTING MANHOLES WHERE COMPLETE REHABILITATION IS PERFORMED, IN ACCORDANCE WITH THE CITY OF TULSA ENGINEERING SERVICES DEPARTMENT STANDARDS AND SPECIFICATIONS.
9. ALL NEW MANHOLE FRAMES AND COVERS INSTALLED ON THE PROJECT SHALL HAVE A MINIMUM CLEAR OPENING OF 30-INCHES REGARDLESS OF MANHOLE SIZE. NEW MANHOLE FRAMES AND COVERS INSTALLED ON EXISTING MANHOLES MAY HAVE CLEAR OPENING LESS THAN 30-INCHES WITH ENGINEER APPROVAL.

PIPELINE REHABILITATION NOTES

1. POST REHABILITATION TELEVISION INSPECTION OF LINES INSTALLED BY TRENCHLESS METHODS SHALL BE PERFORMED BY THE CONTRACTOR AND SHALL BE INCLUDED IN THE COST OF OTHER PAY ITEMS.
2. POINT REPAIR LOCATIONS ARE APPROXIMATE AND SHALL BE DETERMINED BY THE CONTRACTOR'S PRE-TELEVISION INSPECTION.
3. QUANTITIES SHOWN IN THE SUMMARY TABLE ARE AN ESTIMATE OF QUANTITIES FOR THE WORK SHOWN AND DO NOT REFLECT FINAL WORK ITEM QUANTITIES NECESSARY TO REHABILITATE PIPELINE SEGMENTS.
4. POINT REPAIR(S) SHALL BE PERFORMED USING LIKE PIPE ACCORDING TO CITY OF TULSA CONSTRUCTION SPECIFICATION SECTION 412.2.1. (I.E. EXISTING VCP WILL BE REPAIRED USING VCP, EXISTING PVC WILL BE REPAIRED USING PVC, AND EXISTING DIP WILL BE REPAIRED USING DIP). IF AN OBSTRUCTION IS ENCOUNTERED DURING CLEANING AND TELEVISION INSPECTION PRIOR TO OR DURING THE INSERTION OF THE NEW LINE THROUGH THE HOST PIPE, THE CONTRACTOR HAS THE OPTION OF USING VCP OR PVC TO REPAIR THE HOST PIPE AT THE LOCATION OF THE OBSTRUCTION. IN ALL CASES, CONCRETE PIPE SHALL BE REPLACED WITH PVC.
5. PIPELINE REHABILITATION PLANS ARE FOR REFERENCE ONLY AND DO NOT DEPICT ALL OF THE EXISTING UTILITIES.
6. PIPE EMBEDMENT WILL BE AS SHOWN IN THE STANDARD DETAIL EXCEPT WHERE SPECIFICALLY NOTED ON THE PLANS.
7. CONTRACTOR SHALL SUBMIT A PROFESSIONALLY ENGINEERED TRENCH EXCAVATION SAFETY PLAN FOR ALL EXCAVATIONS IN EXCESS OF 20 FEET OF DEPTH.
8. WHERE THERE IS DISCREPANCY BETWEEN THE PIPELINE LENGTHS TAKEN FROM ACTUAL FIELD MEASUREMENTS AND THOSE SHOWN ON THE PLANS, THE FIELD MEASUREMENTS SHALL GOVERN.
9. CONTRACTOR SHALL SUPPLY WITH HIS MONTHLY PAY REQUEST, A LIST SHOWING ALL SEWER LINES REPAIRED, THE ADDRESS OF ANY SERVICE LINES THAT ARE RECONNECTED, AND THE FOOTAGE OF THE RECONNECTION FROM THE NEAREST DOWNSTREAM MANHOLE.
10. THE TERM "PIPE BURSTING" THAT IS USED THROUGHOUT THE CONSTRUCTION DRAWINGS IS INTENDED TO INCLUDE OTHER SIMILAR TRENCHLESS PIPE REPLACEMENT METHODS, SUCH AS PIPE REAMING AND PIPE CRUSHING. IT DOES NOT INCLUDE SLIPLINING OR INSTALLATION OF CURED-IN-PLACE PIPE.
11. CONTRACTOR MUST EXERCISE DILIGENCE WHEN WORKING AROUND TREES. HOWEVER, IF DAMAGE OCCURS TO TREES LOCATED WITHIN AN EASEMENT CONTRACTOR SHALL NOT BE RESPONSIBLE.

TRAFFIC CONTROL

1. ALL TRAFFIC CONTROL DEVICES, CONSTRUCTION SIGNAGE, BARRICADING, ETC. SHALL BE IN ACCORDANCE WITH THE LATEST REVISED EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). CONTRACTOR SHALL PREPARE AND SUBMIT FOR APPROVAL A TRAFFIC CONTROL PLAN (TCP).
2. THE CONTRACTOR SHALL PROVIDE 48 HOURS NOTIFICATION FOR ANY AND ALL STREET / LANE CLOSURES, MODIFICATION, OR CHANGES TO THE TRAFFIC CONTROL MEASURES TO:

POLICE	918-596-9222
FIRE	918-596-9977
COT TRAFFIC	918-596-9744
EMSA	918-596-3043
MTTA	918-585-1195

3. THE CONTRACTOR SHALL NOTIFY TRAFFIC OPERATIONS 48 HOURS PRIOR TO STARTING WORK OR PRIOR TO REMOVING OR RELOCATING ANY TRAFFIC SIGNS. ALL SIGNS SHALL BE HANDLED SO AS TO AVOID ANY DAMAGE TO THE SIGN OR POST. ALL SIGNS REMOVED DUE TO CONSTRUCTION SHALL BE REINSTALLED BY THE CONTRACTOR.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL CONSTRUCTION SIGNAGE AND BARRICADING, INCLUDING, BUT NOT LIMITED TO, WASHING, REPLACEMENT, REPOSITIONING OF DEVICES. WHEN AND WHERE IT IS DEEMED NECESSARY BY THE CITY OR THE ENGINEER, THE CONTRACTOR SHALL FURNISH AND INSTALL ANY ADDITIONAL TRAFFIC CONTROL DEVICES.
5. LOCAL AND THROUGH TRAFFIC SHALL BE MAINTAINED THROUGH THE PROJECT AREA AT ALL TIMES. LOCAL TRAFFIC TO ALL PUBLIC AND PRIVATE STREETS SHALL BE ACCESSIBLE FROM ANY DETOURS DURING THE CONSTRUCTION OF THIS PROJECT. CONTRACTOR SHALL MAINTAIN ACCESS TO DRIVEWAYS AT ALL TIMES.
6. ROADSIDE HAZARDS SHALL BE COMPLETELY BARRICADED AROUND THEIR PERIMETER FOR SAFETY OF PEDESTRIANS AND VEHICLES. NO BARRICADES SHALL BE PLACED UNTIL ALL ADVANCED SIGNING IS IN PLACE.
7. ALL CHANNELING DEVICES, TYPE III BARRICADES, ETC., SHALL BE WEIGHTED DOWN WITH A NON-HAZARDOUS MATERIAL WHEN NECESSARY OR WHEN DIRECTED BY THE CITY OR THE ENGINEER.
8. ALL ADVANCE WARNING SIGNS SHALL BE PROVIDED WITH TYPE "A" WARNING LIGHTS.
9. ALL TYPE III BARRICADES SHALL BE FURNISHED WITH A MINIMUM OF TWO (2) TYPE "A" WARNING LIGHTS.
10. ALL CHANNELING DEVICES SHALL BE PROVIDED WITH TYPE "C" WARNING LIGHTS.

UTILITIES

1. THE LOCATIONS OF THE UTILITY LINES, AS SHOWN ON THESE DRAWINGS, ARE BASED ON ATLAS INFORMATION, UTILITY COMPANY COMMENTS, AND OBSERVED FEATURES. NEITHER THE CITY NOR THE ENGINEER ASSUMES OR IMPLIES ANY RESPONSIBILITY FOR THE ACCURACY OF THIS DATA. SERVICE LINES FROM THE MAIN UTILITY LINES TO ANY BUILDING OR FACILITY MAY NOT BE SHOWN. CONTRACTOR SHALL OBTAIN THE LOCATION OF THESE FROM THE UTILITY COMPANY AND SHALL BE HELD RESPONSIBLE FOR ANY DAMAGES TO THESE LINES OR ANY OTHER LINES OR UTILITIES DURING THE CONSTRUCTION OF THIS PROJECT.
2. THE CONTRACTOR SHALL GIVE NOTIFICATION CENTER OF THE OKLAHOMA ONE-CALL SYSTEM, INC., A MINIMUM OF TWO (2) WORKING DAYS AND A MAXIMUM OF TEN (10) WORKING DAYS PRIOR TO BEGINNING WORK IN ANY AREA. **PHONE: 1-800-522-6543**.
3. CONTRACTOR SHALL BRACE UTILITY POLES AND GUY WIRES WITHIN 5 FEET OF AN EXCAVATION. CONTRACTOR SHALL CONTACT AND COORDINATE WITH THE PUBLIC SERVICE OF OKLAHOMA/AMERICAN ELECTRIC POWER (PSO/AEP) A MINIMUM OF THREE(3) WEEKS PRIOR TO ANY REQUIRED BRACING, REMOVAL, OR RELOCATION OF EXISTING UTILITY POLES.

PLAN & PROFILE SHEET NOTES

1. CONTRACTOR MUST FIELD VERIFY ALL DEPTHS, DISTANCE ANGLES, AND GRADES OF EXISTING SANITARY SEWER PRIOR TO START OF CONSTRUCTION. (NO SEPARATE PAY ITEM).
2. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING, SUPPORTING, AND PROTECTING THE INTEGRITY OF UNDERGROUND UTILITIES AND POWER POLES DURING CONSTRUCTION.
3. THE CONTRACTOR SHALL EXCAVATE ALL BURIED UTILITY CROSSINGS AHEAD OF PIPE LAYING OR THE INSTALLATION OF SHEETING OR SHORING TO AVOID UTILITY CONFLICTS. ALL COSTS ASSOCIATED WITH THIS WORK IS CONSIDERED INCIDENTAL.
4. IF DAMAGED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING, STRUCTURES, ETC. TO ITS ORIGINAL OR BETTER CONDITION. NO SEPARATE PAY ITEM IF LOCATED OUTSIDE OF STANDARD CONSTRUCTION PAY LIMITS.
5. TRENCH EXCAVATION PROTECTION SHALL BE ACCOMPLISHED AS REQUIRED BY THE PROVISIONS OF PART 1926, SUBPART P-EXCAVATION, TRENCHING, AND SHORING OF THE OCCUPATIONAL SAFETY AND HEALTH'S STANDARDS AND INTERPRETATIONS.
6. CONTRACTOR SHALL VERIFY AND REINSTATE ALL ACTIVE SERVICE CONNECTIONS.
7. CONTRACTOR SHALL REPLACE ALL SERVICES TO WITHIN 2' OF THE EASEMENT LINE OR RIGHT-OF-WAY LINE.
8. DISTANCE FROM DOWNSTREAM MANHOLE TO SERVICE CONNECTION IS APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY PRIOR TO CONSTRUCTION.
9. CONTRACTOR SHALL MAINTAIN ACCESS TO PRIVATE RESIDENCES AT ALL TIMES.
10. WHEN REHABILITATING OR REPLACING MANHOLES, CONTRACTOR SHALL MATCH GRADE OF EXISTING OR FINISHED CONDITIONS.
11. FOR ABANDONMENT, REMOVE TOP 3 VF OF EXISTING MANHOLE/LAMPHOLE AND FILL EXISTING SANITARY SEWER AND MANHOLE/LAMPHOLE WITH CELLULAR CONCRETE. ABANDONMENT SHALL BE PERFORMED AFTER CONSTRUCTION OF ALL NEW SEWER MAINS.
12. CONTRACTOR SHALL TELEVISE ANY SANITARY SEWER LINES CALLED OUT FOR ABANDONMENT TO DETERMINE LOCATION OF ACTIVE SERVICES. ANY ACTIVE SERVICES ON AN ABANDONED LINE SHALL BE RECONNECTED TO AN EXISTING OR PROPOSED SEWER MAIN IN THE IMMEDIATE VICINITY. ENGINEER SHALL BE NOTIFIED IMMEDIATELY IF THERE IS NO SEWER MAIN IN THE VICINITY TO CONNECT THE SERVICE.

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

GENERAL CONSTRUCTION NOTES

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

rjngroup
PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE. SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE: NA
PROFILE SCALE: NA
HORIZONTAL: NA
VERTICAL: NA

DRAWN	RLP	...	APPROVED
DESIGNED	RJB	...	
SURVEY	NA	...	
PROJ. MGR.			
LEAD ENGR.	ADS	9/22	
FIELD MGR.	DRM	9/22	
RECOMMENDED	HAS	10-22	
DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:		DATE: September 2022
ATLAS PAGE NO.:			SHEET 3 OF 47

PAY ITEM NOTES

1. CONTRACTOR IS RESPONSIBLE FOR SUBMITTING AN EROSION CONTROL PLAN BASED ON CONSTRUCTION SEQUENCING. COST TO INCLUDE SILT REMOVAL AND ANY RE-GRADING NECESSARY DUE TO EROSION.

2. PRICE TO INCLUDE ANY AND ALL ROCK EXCAVATION. NO BLASTING WILL BE ALLOWED. NO ADDITIONAL PAYMENT WILL BE MADE FOR ROCK EXCAVATION.

3. CONSTRUCTION TELEVISION INSPECTION OF SANITARY SEWER QUANTITY CALCULATED BASED ON EXISTING MANHOLE LOCATIONS. CONTRACTOR SHALL USE VIDEO TO CONFIRM LOCATIONS AND DETERMINE POSITIONS OF SERVICE CONNECTIONS. ANY CLEANING REQUIRED, INCLUDING HEAVY CLEANING, SHALL BE INCLUDED IN UNIT PRICE BID FOR VIDEOTAPE INSPECTION. NO ADDITIONAL PAYMENT SHALL BE MADE.

4. FOR THE WORK BID UNDER "OPEN CUT", SURFACE RESTORATION ITEMS SHALL BE PAID FOR IN ACCORDANCE WITH SPECIFICATION SECTION 402.17 ONLY WHEN THE OPEN CUT METHOD OF REPLACEMENT IS USED. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE PAID FOR IN SQUARE YARDS. THE PAY QUANTITY SHALL BE COMPUTED AS THE LENGTH ALONG THE CENTERLINE OF PIPE BEING REPLACED BY THE STANDARD PAY WIDTH (SEE CITY OF TULSA STANDARD DETAIL # 315 FOR PAY WIDTH). ALL RESTRIPING OF ARTERIAL ROADWAYS SHALL BE CONSIDERED INCIDENTAL.

5. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE BYPASS PUMPING IF NECESSARY. THE PUMP AND BYPASS LINES SHALL BE OF ADEQUATE CAPACITY AND SIZE TO HANDLE THE ANTICIPATED WET WEATHER FLOW. THE COST OF THE BYPASS INCLUDING THE PUMPS, LINES, LABOR AND OTHER MISCELLANEOUS ITEMS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PIPE INSTALLATION. NO ADDITIONAL PAYMENT WILL BE MADE.

6. ALL TRENCHES EXCAVATED ACROSS ANY ROADWAY, SIDEWALKS, DRIVEWAYS, PARKING LOTS, ALLEYWAYS OR OTHER PAVED AREAS, SHALL BE BEDDED AND BACKFILLED IN ACCORDANCE WITH THE CITY OF TULSA STANDARD DETAIL # 713. BACKFILL IN STREET RIGHT-OF-WAY AND IN FRONT YARDS SHALL BE COMPACTED TO 95% PROCTOR DENSITY. PRICE OF AGGREGATE BASE IS CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PIPE INSTALLATION. NO ADDITIONAL PAYMENT WILL BE MADE.

7. RESTORATION WILL NOT BE PAID FOR TRENCHLESS CONSTRUCTION METHODS. RESTORATION WILL BE PAID FOR OPEN CUT CONSTRUCTION METHODS.

8. IF A LINE CANNOT BE REPLACED BY TRENCHLESS METHODS, OPEN CUT MAY BE USED UPON ENGINEER'S APPROVAL. WORK AND RESTORATION SHALL THEN BE PAID USING THE UNIT PRICE BID FOR OPEN OF THE CORRESPONDING PIPE SIZE AND THE UNIT PRICE BID FOR THE APPROPRIATE RESTORATION ITEMS.

9. CONNECTIONS TO ALL EXISTING MANHOLES SHALL BE CORED AND NOT BROKEN OR HAMMERED AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PIPE REPLACEMENT.

10. ALL EXTERNAL DROPS CONNECTED TO A MANHOLE WHICH IS CALLED OUT FOR REPLACEMENT SHALL BE REPLACED AND INCLUDED IN THE UNIT PRICE BID FOR "COMPLETE DROP MANHOLE REPLACEMENT". ALL DROP CONNECTIONS CALLED OUT ON THE PLANS FOR INSTALLATION TO AN EXISTING MANHOLE THAT IS NOT BEING REPLACED SHALL BE PAID FOR UNDER THE UNIT PRICE BID FOR "REPLACE MANHOLE OUTSIDE DROP CONNECTION". EXTERNAL DROPS SHALL BE CONSTRUCTED OF LIKE MATERIAL TO THE PIPE INCOMING.

11. POST REHABILITATION TELEVISION INSPECTION OF ALL LINES INSTALLED SHALL BE PERFORMED BY THE CONTRACTOR. THE COST OF PRE CONSTRUCTION TELEVISION INSPECTION WILL NOT BE PAID FOR SEPARATELY.

12. NUMBER OF SERVICE CONNECTIONS ARE APPROXIMATE, CONTRACTOR TO VERIFY WITH THE USE OF PRE-TELEVISION INSPECTION PER SPECIFICATION 415.

13. SERVICE LATERALS LOCATED UNDER PAVEMENT SHALL BE REPLACED TO WITHIN 2' OF THE EASEMENT/RIGHT-OF-WAY LINE. ANY ADDITIONAL PIPE OR FITTINGS REQUIRED TO MAKE A GOOD CONNECTION TO THE MAIN LINE OUTSIDE OF PAVEMENT SHALL BE INCLUDED IN THE COST OF SERVICE RECONNECTION.

14. PAYMENT FOR SERVICE LATERALS SHALL INCLUDE ALL INCIDENTAL COSTS ASSOCIATED WITH THE INSTALLATION, INCLUDING, BUT NOT LIMITED TO RESTORATION, PAVEMENT REMOVAL AND REPLACEMENT, EXCAVATION, BEDDING, BACKFILL, PIPE AND FITTINGS.

15. THE MANHOLE RING, COVER, GROUT, WATERTIGHT SEAL, 80 MILS OF RAVEN 405 EPOXY OR APPROVED EQUAL AND OTHER MATERIALS INCIDENTAL TO THE CONSTRUCTION OF MANHOLES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH ASSOCIATED MANHOLE PAY ITEM; NO ADDITIONAL PAYMENT SHALL BE MADE. 4' I.D. MANHOLES SHALL NOT BE EPOXY COATED.

16. IF ANY BRICK SANITARY MANHOLES/STRUCTURES ASSOCIATED WITH THE IDENTIFIED SEWER LINES ARE FOUND, THE CITY SHALL BE NOTIFIED BEFORE WORK COMMENCES FOR AN EVALUATION OF REHABILITATION. REHABILITATION OF ANY BRICK SANITARY MANHOLES/STRUCTURES SHALL BE BY COMPLETED MANHOLE/STRUCTURE REPLACEMENT OR BY METHODS DESCRIBED IN SPECIFICATION 418.

17. GRASSED AREAS DISTURBED BY CONSTRUCTION SHALL BE RESTORED BY SODDING. HYDROMULCH SEEDING WILL BE ALLOWED IN UNDEVELOPED LOTS. MAXIMUM PAY LIMIT FOR SODDING AND SEEDING SHALL BE STANDARD 10-FEET ON EITHER SIDE OF THE CENTERLINE OF PIPE. MAXIMUM PAY WIDTH OF 20-FEET.

18. IF REQUIRED, PAYMENT FOR OBSTRUCTION REMOVAL SHALL BE UTILIZED TO REMOVE CONCRETE ENCASED OR DUCTILE IRON PIPE SEGMENTS DURING TRENCHLESS REPLACEMENT AND SHALL BE APPROVED BY ENGINEER. THIS PAY ITEM SHALL NOT BE PAID WHEN THE INSERTION / REMOVAL PIT IS LOCATED AT THE POINT OF OBSTRUCTION REMOVAL.

19. THE CONTRACTOR SHALL DEVELOP A TRAFFIC CONTROL PLAN IN ACCORDANCE WITH THE GENERAL NOTES. TRAFFIC CONTROL SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

20. THE UNIT PRICE BID FOR CONSTRUCTION TRAFFIC CONTROL SHALL INCLUDE INSTALLATION, MAINTENANCE AND SUBSEQUENT REMOVAL OF ALL NECESSARY CONSTRUCTION TRAFFIC CONTROL DEVICES REQUIRED FOR COMPLETION OF THIS PROJECT.

21. ABANDONMENT SHALL BE PERFORMED AFTER CONSTRUCTION OF ALL NEW SANITARY SEWER MAINS.

22. CONTRACTOR SHALL CCTV (CLOSED CIRCUIT TELEVISION INSPECTION) ALL SEWER LINES PRIOR TO ABANDONMENT TO DETERMINE LOCATION OF EXISTING SERVICE CONNECTIONS. SERVICE CONNECTIONS SHALL BE RECONNECTED TO PROPOSED SANITARY SEWER LOCATED IN THE IMMEDIATE VICINITY OF THE ABANDONED LINE. ENGINEER SHALL BE NOTIFIED IMMEDIATELY IF THERE IS NO PROPOSED SEWER TO COLLECT THE SERVICE.

23. IN LIEU OF PIPE BURSTING, CONTRACTOR MAY ELECT TO INSTALL PIPE BY PIPE REAMING OR PIPE CRUSHING PER CITY OF TULSA STANDARD SPECIFICATIONS 406 AND 407 RESPECTIVELY.

24. REINFORCED CONCRETE PIPE TO BE CLASS III. ALL REINFORCED CONCRETE PIPE AND MANHOLES TO BE SUPPLIED WITH OMNI-FLEX JOINT GASKET OR APPROVED EQUAL. MASTIC JOINT SEALANT SHALL NOT BE ALLOWED.

25. QUICK SET CELLULAR CONCRETE OR FLOWABLE FILL TO BE USED TO BACKFILL AROUND STREET CURB INLETS AND PIPES AS DIRECTED BY THE ENGINEER.

PAY ITEM	SPEC NO.	DESCRIPTION	PAY ITEM NOTE NOS.	UNIT	BASE BID QTY	ADD ALT NO. 1 QTY	ADD ALT NO. 2 QTY
1	302	EXCAVATION AND BACKFILL, UNCLASSIFIED	2	CY	300	0	0
2	313	INSTALL 8" SEWER PIPE, SDR 26 PVC	4,5,6,7,9	LF	355	0	0
3	319	INSTALL FLOWABLE FILL	25	CY	10	0	0
4	333	REMOVE EXISTING MANHOLE		EA	1	0	0
5	333, SP-1	ABANDON 8" DIA. SANITARY SEWER PIPE	21,22	LF	250	0	0
6	333, SP-1	CUT AND PLUG EXISTING SEWER LINE	21,22	EA	1	0	0
7	400	MOBILIZATION		EA	1	0	0
8	400	PHOTOGRAPHIC DOCUMENTATION		EA	1	0	0
9	402	ASPHALT PAVEMENT REMOVAL & REPLACEMENT	4	SY	230	0	170
10	402	CONCRETE DRIVEWAY REMOVAL & REPLACEMENT	4	SY	20	0	0
11	402	GRAVEL DRIVEWAY REMOVAL & REPLACEMENT	4	SY	15	0	0
12	402	CURB & GUTTER REPLACEMENT	4	LF	0	0	185
13	402	SOD REPLACEMENT	17	SY	30	0	70
14	405, SP-2	8" OPEN CUT REPLACEMENT, SDR 26 PVC	1,2,4,5,6,7,8,9,11,16	LF	70	0	300
15	405, SP-2	8" OPEN CUT REPLACEMENT, DR 17 DIPS HDPE	1,2,4,5,6,7,8,9,11,16	LF	15	0	0
16	408, SP-7	8" PIPE BURSTING REPLACEMENT, DR 17 DIPS HDPE	5,7,8,9,11,16,23	LF	5,950	670	0
17	405, 408	REMOVE AND REPLACE EXTERNAL DROP CONNECTION	10	EA	1	0	0
18	405, 408	SERVICE RECONNECTIONS	12,13,14	EA	149	13	8
19	405, 408	SERVICE LINE REPLACEMENT	13,14	LF	1,770	130	80
20	409, SP-7	7.125" SLIPLINING INSTALLATION, DR 19 IPS HDPE	1,2,4,5,6,7,8,9,11,16	LF	310	0	0
21	409, SP-7	7.125" SLIPLINING INSTALLATION, DR 21 IPS HDPE	1,2,4,5,6,7,8,9,11,16	LF	820	0	240
22	409, SP-7	8.625" SLIPLINING INSTALLATION, DR 19 IPS HDPE	1,2,4,5,6,7,8,9,11,16	LF	0	0	320
23	415	CONSTRUCTION TELEVISION INSPECTION OF SANITARY SEWER	3,11,16,22	LF	7,770	670	860
24	416	COMPLETE MANHOLE REPLACEMENT, 4' I.D. (0-6' DEPTH)	10,15,16	EA	32	3	3
25	416	EXTRA DEPTH OVER 6' FOR 4' I.D. MANHOLE	10,15,16	VF	95	3	19
26	416	COMPLETE DROP MANHOLE REPLACEMENT, 4' I.D. (0-6' DEPTH)	10,15,16	EA	4	0	1
27	416	EXTRA DEPTH OVER 6' FOR 4' I.D. DROP MANHOLE	10,15,16	VF	15	0	9
28	416	COMPLETE SHALLOW MANHOLE REPLACEMENT, 5' I.D. (0-6' DEPTH)	10,15,16	EA	3	0	0
29	418	MANHOLE REHABILITATION COVER, FRAME AND FRAME SEAL REPLACEMENT (TYPE A REPAIR)	10,15,16	EA	1	2	0
30	418	MANHOLE REHABILITATION FRAME SEAL REPLACEMENT (TYPE B REPAIR)	10,15,16	EA	3	0	1
31	418	MANHOLE REHABILITATION WALL REHABILITATION (TYPE Gg REPAIR)	10,15,16	SF	310	310	140
32	418	MANHOLE REHABILITATION SEAL PRECAST JOINTS (TYPE Gp REPAIR)	10,15,16	EA	1	0	0
33	423	OBSTRUCTION REMOVAL	18	EA	7	0	3
34	ODOT 611 (A)	12" R.C. PIPE CLASS III, ROUND	24,25	LF	30	0	10
35	ODOT 611 (A)	15" R.C. PIPE CLASS III, ROUND	24,25	LF	20	0	0
36	ODOT 611 (A)	18" R.C. PIPE CLASS III, ROUND	24,25	LF	20	0	0
37	ODOT 611 (A)	COMPLETE REPLACEMENT STD. 4' I.D. STORM MANHOLE, 0-5'	24	EA	1	0	0
38	ODOT 611 (A)	EXTRA DEPTH OVER 5' FOR 4' I.D. STORM MANHOLE	24	VF	0.4	0	0
39	ODOT 880, SP-8	CONSTRUCTION TRAFFIC CONTROL	19,20	LS	1	0	0
40	SP-4	OWNER'S ALLOWANCE		EA	1	0	0

9-16-22

REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

PAY QUANTITIES & NOTES

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

rjngroup

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE. SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE: NA
PROFILE SCALE: HORIZONTAL: NA VERTICAL: NA

DRAWN	RLP	...	APPROVED
DESIGNED	RJB	...	
SURVEY	NA	...	
PROJ. MGR.			
LEAD ENGR.	AJS	9/22	
FIELD MGR.		9/22	
RECOMMENDED	HAS 10.7.22		
DESIGN MANAGER			CITY ENGINEER

FILE: DRAWING: DATE: September 2022

ATLAS PAGE NO.: SHEET 4 OF 47

ITEM NO.	CITY OF TULSA SPEC. NO.	ITEM DESCRIPTION	UNIT	TOTAL BASE BID	ADDITIVE ALTNERATE NO. 1	ADDITIVE ALTERNATE NO. 2	PLAN SHEET NO.																								
							9-10	12	13	14	15	16	17	18	19	20	21	23	24	26	28	29	31	32	34	36	38	39	41	43	44
							Slipline	A	A	B	B	C	D	E	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	T
1	302	EXCAVATION AND BACKFILL, UNCLASSIFIED	CY	300	0	0						293																			
2	313	INSTALL 8" SEWER PIPE, SDR 26 PVC	LF	355	0	0						355																			
3	319	INSTALL FLOWABLE FILL	CY	10	0	0																									
4	333	REMOVE EXISTING MANHOLE	EA	1	0	0									1																
5	333, SP-1	ABANDON 8" DIA. SANITARY SEWER PIPE	LF	250	0	0						250																			
6	333, SP-1	CUT AND PLUG EXISTING SEWER LINE	EA	1	0	0						1																			
7	400	MOBILIZATION	EA	1	0	0																									
8	400	PHOTOGRAPHIC DOCUMENTATION	EA	1	0	0																									
9	402	ASPHALT PAVEMENT REMOVAL & REPLACEMENT	SY	230	0	170						200		21														170		
10	402	CONCRETE DRIVEWAY REMOVAL & REPLACEMENT	SY	20	0	0								20																	
11	402	GRAVEL DRIVEWAY REMOVAL & REPLACEMENT	SY	15	0	0								14																	
12	402	CURB & GUTTER REPLACEMENT	LF	0	0	185																						182		
13	402	SOD REPLACEMENT	SY	30	0	70									24													67		
14	405, SP-2	8" OPEN CUT REPLACEMENT, SDR 26 PVC	LF	70	0	300								70														300		
15	405, SP-2	8" OPEN CUT REPLACEMENT, DR 17 DIPS HDPE	LF	15	0	0									11															
16	408, SP-7	8" PIPE BURSTING REPLACEMENT, DR 17 DIPS HDPE	LF	5,950	670	0		400	419	400	255		333	280	314	299	108	371	288	320	318	180	330	351	426	219	242	190		400	176
17	405, 408	REMOVE AND REPLACE EXTERNAL DROP CONNECTION	EA	1	0	0												1													
18	405, 408	SERVICE RECONNECTIONS	EA	149	13	8	20	8	8	10	8	1	12	13	11	4	2	1	5	11	2	1	6	15	12		1		1	7	5
19	405, 408	SERVICE LINE REPLACEMENT	LF	1,770	130	80	200	80	80	100	80	50	120	130	110	40	20	25	50	110	20	10	110	385	120		10		10	70	50
20	409, SP-7	7.125" SLIPLINING INSTALLATION, DR 19 IPS HDPE	LF	310	0	0	305																								
21	409, SP-7	7.125" SLIPLINING INSTALLATION, DR 21 IPS HDPE	LF	820	0	240	1,051																								
22	409, SP-7	8.625" SLIPLINING INSTALLATION, DR 19 IPS HDPE	LF	0	0	320	315																								
23	415	CONSTRUCTION TELEVISION INSPECTION OF SANITARY SEWER	LF	7,770	670	860	1,671	400	419	400	255	605	333	350	325	299	108	371	288	320	318	180	330	351	426	219	242	190	300	400	176
24	416	COMPLETE MANHOLE REPLACEMENT, 4' I.D. (0-6' DEPTH)	EA	32	3	3	7	2	2	2	1	1	2	2	2	3	1		1	2		2		2	3			1	1	1	
25	416	EXTRA DEPTH OVER 6' FOR 4' I.D. MANHOLE	VF	95	3	19	33.5	2.3	2.6	5.0	6.7	2.2	12.7	7.5	10.0	3.5	0.6		1.2	9.0		2.8		0.2	2.4			0.2	9.0			
26	416	COMPLETE DROP MANHOLE REPLACEMENT, 4' I.D. (0-6' DEPTH)	EA	4	0	1	2																2						1		
27	416	EXTRA DEPTH OVER 6' FOR 4' I.D. DROP MANHOLE	VF	15	0	9	10.0																4.5						9.0		
28	416	COMPLETE SHALLOW MANHOLE REPLACEMENT, 5' I.D. (0-6' DEPTH)	EA	3	0	0													1											1	1
29	418	MANHOLE REHABILITATION COVER, FRAME AND FRAME SEAL REPLACEMENT (TYPE A REPAIR)	EA	1	2	0																					2	1			
30	418	MANHOLE REHABILITATION FRAME SEAL REPLACEMENT (TYPE B REPAIR)	EA	3	0	1	1														2					1					
31	418	MANHOLE REHABILITATION WALL REHABILITATION (TYPE Gg REPAIR)	SF	310	310	140	138.2														133.2					167.1	305.4				
32	418	MANHOLE REHABILITATION SEAL PRECAST JOINTS (TYPE Gp REPAIR)	EA	1	0	0																				1					
33	423	OBSTRUCTION REMOVAL	EA	7	0	3																									
34	ODOT 611 (A)	12" R.C. PIPE CLASS III, ROUND	LF	30	0	10			8					8		8												8			
35	ODOT 611 (A)	15" R.C. PIPE CLASS III, ROUND	LF	20	0	0						18																			
36	ODOT 611 (A)	18" R.C. PIPE CLASS III, ROUND	LF	20	0	0				8		8																			
37	ODOT 611 (A)	COMPLETE REPLACEMENT STD. 4' I.D. STORM MANHOLE, 0-5'	EA	1	0	0						1																			
38	ODOT 611 (A)	EXTRA DEPTH OVER 5' FOR 4' I.D. STORM MANHOLE	VF	0.4	0	0						0.4																			
39	ODOT 880, SP-8	CONSTRUCTION TRAFFIC CONTROL	LS	1	0	0																									
40	SP-4	OWNER'S ALLOWANCE	EA	1	0	0																									

9-16-22

REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

PAY ITEM SUMMARY

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

rjngroup

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE. SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE: NA
PROFILE SCALE: HORIZONTAL: NA VERTICAL: NA

DRAWN	RLP	...
DESIGNED	RJB	...
SURVEY	NA	...
PROJ. MGR.		
LEAD ENGR.	ADJ	9/22
FIELD MGR.		9/22
RECOMMENDED		10.22
DESIGN MANAGER		CITY ENGINEER
FILE:	DRAWING:	DATE: September 2022
ATLAS PAGE NO.:		SHEET 5 OF 47

APPROVED

MANHOLE REHABILITATION TABLE

ITEM NO.	COT MH ID	MH DEPTH (VF)	RELATED LINE ID	PLAN SHEET NO.	COMPLETE MANHOLE REPLACEMENT, 4' I.D.	EXTRA DEPTH OVER 6' FOR 4' I.D. MANHOLE REPLACEMENT	COMPLETE DROP MANHOLE REPLACEMENT, 4' I.D.	EXTRA DEPTH OVER 6' FOR 4' I.D. DROP MANHOLE REPLACEMENT	COMPLETE SHALLOW MANHOLE REPLACEMENT, 5' I.D.	REMOVE AND REPLACE EXTERNAL DROP	REMOVE ESISTING MANHOLE	COVER, FRAME, AND FRAME SEAL REPLACEMENT TYPE A REPAIR	FRAME SEAL REPLACEMENT TYPE B REPAIR	MANHOLE WALL REHABILITATION TYPE Gg REPAIR	SEAL PRECAST JOINTS TYPE Gp REPAIR
					416	416	416	416	416	405, 408	404	418	418	418	418
					EA	VF	EA	VF	EA	EA	EA	EA	EA	SF	EA
BASE BID															
1	025-0007	12.0	SL01	9	1	6.0									
2	097-0447	14.4	SL03	10			1	8.4							
3	097-0448	10.6	SL03	10	1	4.6									
4	097-0598	7.6	SL04	10			1	1.6							
5	095-0587	9.7	SL05, SL06	10	1	3.7									
6	095-0589	10.8	SL05	10	1	4.8									
7	095-0583	10.9	SL06	10	1	4.9									
8	025-0066	7.4	A	12	1	1.4									
9	025-0067	6.9	A	12	1	0.9									
10	025-0068	6.5	A	13	1	0.5									
11	025-0317	8.1	A	13	1	2.1									
12	025-0060	7.2	B	14	1	1.2									
13	025-0061	9.8	B,C	14,16	1	3.8									
14	025-0062	12.7	B	15	1	6.7									
15	026-0189	8.2	C	16	1	2.2									
16	025-0036	12.7	D	17	1	6.7									
17	025-0037	12.0	D	17	1	6.0									
18	025-0008	10.5	E,SL01	9,18	1	4.5									
19	025-0031	9.0	E	18	1	3.0									
20	025-0032	9.4	E	19	1	3.4									
21	025-0033	12.4	E	19							1				
22	025-0297	12.6	E	19	1	6.6									
23	025-0299	7.8	F	20	1	1.8									
24	025-0027	5.4	F	20	1										
25	025-0025	7.7	F,G	20,21	1	1.7									
26	025-0026	6.6	G	21	1	0.6									
27	028-0117	13.5	H	23						1					
28	028-0105	7.2	I	24	1	1.2									
29	028-0110	3.4	I	24					1						
30	090-0432	8.2	J	26	1	2.2									
31	090-0433	12.8	J	26	1	6.8									
32	095-0590	6.1	K	28									1	76.7	
33	095-0592	4.5	K	28									1	56.5	
34	095-0514	6.8	L	29	1	0.8									
35	095-0515	8.0	L	29	1	2.0									
36	099-0269	9.9	M,SL07	31			1	3.9							
37	099-0360	6.6	M	31			1	0.6							
38	099-0365	5.9	N	32	1										
39	099-0366	6.2	N	32	1	0.2									
40	069-0312	13.3	P	36									1	167.1	
41	069-0489	10.4	P	36											1
42	066-0079	6.2	R	39	1	0.2									
43	066-0082	8.8	R	39								1			
44	048-0115	5.5	T	43	1										
45	048-0116	3.8	T	43					1						
46	048-0117	3.1	T	44					1						
ADDITIVE ALTERNATE NO. 1															
47	045-0139	7.3	O	34	1	1.3									
48	045-0140	7.0	O	34	1	1.0									
49	045-0141	6.1	O	34	1	0.1									
50	066-0099	13.9	Q	38								1		174.7	
51	066-0100	10.4	Q	38								1		130.7	
ADDITIVE ALTERNATE NO. 2															
52	029-0128	15.2	SL02	9	1	9.2									
53	029-0129	11.0	SL02	9									1	138.2	
54	099-0622	6.3	SL07	10	1	0.3									
55	082-0382	15.0	S	41			1	9.0							
56	082-0385	15.0	S	41	1	9.0									

9-14-22

REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

MANHOLE WORK ITEM TABLE

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE. SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE: NA
PROFILE SCALE: HORIZONTAL: NA VERTICAL: NA

DRAWN	RLP	...	APPROVED
DESIGNED	RJB	...	
SURVEY	NA	...	
PROJ. MGR.			
LEAD ENGR.	AOS	9/22	
FIELD MGR.		9/22	
RECOMMENDED	HAS	10.22	
DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:		DATE: September 2022
ATLAS PAGE NO.:			SHEET 6 OF 47

PIPE REHABILITATION WORK ITEM TABLE

BASE BID

ITEM NO.	PIPE REPLACEMENT ID	PLAN SHEET NUMBER	ATLAS PAGE	MAINTENANCE AREA	DOWNSTREAM MANHOLE	UPSTREAM MANHOLE	LENGTH (FT)	PROPOSED PIPE DIAMETER (IN)	PROPOSED PIPE MATERIAL	PROPOSED REPLACEMENT METHOD	STANDARD SPECIFICATION NO.
1	A	12	20	25	025-0066	025-0067	360	8	DR-17 DIPS HDPE	PIPE BURSTING	408
2	A	12,13	20	25	025-0067	025-0068	360	8	DR-17 DIPS HDPE	PIPE BURSTING	408
3	A	13	20	25	025-0068	025-0317	99	8	DR-17 DIPS HDPE	PIPE BURSTING	408
4	B	14	20	25	025-0060	025-0061	360	8	DR-17 DIPS HDPE	PIPE BURSTING	408
5	B	14,15	20	25	025-0061	025-0062	295	8	DR-17 DIPS HDPE	PIPE BURSTING	408
6	C	16	20	25,26	025-0061	026-0189	355	8	SDR 26 D3034 PVC	OPEN CUT	313
7	C	16	20	26	026-0188	026-0189	250	8		ABANDON	333,SP-1
8	D	17	20	25	025-0036	025-0037	333	8	DR-17 DIPS HDPE	PIPE BURSTING	408
9	E	18	20	25	025-0008	025-0031	70	8	SDR 26 D3034 PVC	OPEN CUT	405
10	E	18,19	20	25	025-0031	025-0032	308	8	DR-17 DIPS HDPE	PIPE BURSTING	408
11	E	19	20	25	025-0032	025-0297	297	8	DR-17 DIPS HDPE	PIPE BURSTING/OPEN CUT	405,408
12	F	20	20	25	025-0299	025-0025	139	8	DR-17 DIPS HDPE	PIPE BURSTING	408
13	F	20	20	25	025-0025	025-0027	160	8	DR-17 DIPS HDPE	PIPE BURSTING	408
14	G	21	20	25	025-0025	025-0026	108	8	DR-17 DIPS HDPE	PIPE BURSTING	408
15	H	23	22	28	028-0117	028-0120	371	8	DR-17 DIPS HDPE	PIPE BURSTING	408
16	I	24	22	28	028-0105	028-0110	288	8	DR-17 DIPS HDPE	PIPE BURSTING	408
17	J	26	30	90	090-0432	090-0433	320	8	DR-17 DIPS HDPE	PIPE BURSTING	408
18	K	28	52	95	095-0590	095-0592	318	8	DR-17 DIPS HDPE	PIPE BURSTING	408
19	L	29	52	95	095-0514	095-0515	180	8	DR-17 DIPS HDPE	PIPE BURSTING	408
20	M	31	81	99	099-0269	099-0360	330	8	DR-17 DIPS HDPE	PIPE BURSTING	408
21	N	32	81	99	099-0365	099-0366	351	8	DR-17 DIPS HDPE	PIPE BURSTING	408
22	P	36	187	69	069-0312	069-0489	219	8	DR-17 DIPS HDPE	PIPE BURSTING	408
23	R	39	188	66	066-0079	066-0082	190	8	DR-17 DIPS HDPE	PIPE BURSTING	408
24	T	43	316	48	048-0115	048-0116	330	8	DR-17 DIPS HDPE	PIPE BURSTING	408
25	T	43,44	316	48	048-0116	048-0117	246	8	DR-17 DIPS HDPE	PIPE BURSTING	408
ADDITIVE ALTERNATE NO. 1											
26	O	34	96	45	045-0139	045-0140	323	8	DR-17 DIPS HDPE	PIPE BURSTING	408
27	O	34	96	45	045-0140	045-0141	103	8	DR-17 DIPS HDPE	PIPE BURSTING	408
28	Q	38	188	66	066-0099	066-0100	242	8	DR-17 DIPS HDPE	PIPE BURSTING	408
ADDITIVE ALTERNATE NO. 2											
29	S	41	301	82	082-0382	082-0385	300	8	SDR 26 D3034 PVC	OPEN CUT	405

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

PIPE WORK ITEM TABLE

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

rjngroup
PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE. SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE: NA
PROFILE SCALE: HORIZONTAL: NA VERTICAL: NA

DRAWN	RLP	...	APPROVED
DESIGNED	RJB	...	
SURVEY	NA	...	
PROJ. MGR.			
LEAD ENGR.	ADS	9/22	
FIELD MGR.		9/22	
RECOMMENDED	HAS	10.22	
DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:		DATE: September 2022
ATLAS PAGE NO.:			SHEET 7 OF 47

SLIPLINE/CURED-IN-PLACE PIPE (CIPP) REHABILITATION WORK ITEM TABLE												
BASE BID												
PIPE ID	**PLAN SHEET NUMBER**	**ATLAS PAGE**	**MAINTENANCE AREA**	**DOWNSTREAM MANHOLE ID**	**DOWNSTREAM MANHOLE DEPTH (FT)**	**UPSTREAM MANHOLE ID**	**UPSTREAM MANHOLE DEPTH (FT)**	**NUMBER OF SERVICE RECONNECTIONS**	**EXISTING PIPE**		**PROPOSED PIPE**	
									LENGTH (FT)	**EXISTING NOMINAL DIAMETER (IN)**	**PROPOSED OUTSIDE PIPE DIAMETER (IN)**	**PROPOSED PIPE MATERIAL**
SL01	9	20	25	025-0007	12.0	025-0008	10.5	5	245	8	7.125	SDR 21 IPS HDPE OR CURED-IN-PLACE-PIPE (CIPP)
SL03	10	52	97	097-0447	14.4	097-0448	10.6	3	305	8	7.125	SDR 19 IPS HDPE OR CURED-IN-PLACE-PIPE (CIPP)
SL04	10	52	97	097-0598	7.6	097-0602	7.1	1	100	8	7.125	SDR 21 IPS HDPE OR CURED-IN-PLACE-PIPE (CIPP)
SL05	10	52	95	095-0587	9.7	095-0589	10.8	4	146	8	7.125	SDR 21 IPS HDPE OR CURED-IN-PLACE-PIPE (CIPP)
SL06	10	52	95	095-0583	10.9	095-0587	9.7	0	327	8	7.125	SDR 21 IPS HDPE OR CURED-IN-PLACE-PIPE (CIPP)
ADDITIVE ALTERNATE NO. 2												
SL02	9	5	29	029-0128	11.0	029-0129	15.2	6	315	10	8.625	SDR 19 IPS HDPE OR CURED-IN-PLACE-PIPE (CIPP)
SL07	10	81	99	099-0269	9.9	099-0622	6.3	1	233	8	7.125	SDR 21 IPS HDPE OR CURED-IN-PLACE-PIPE (CIPP)

9-14-22

REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

SLIPLINE WORK ITEM TABLE

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

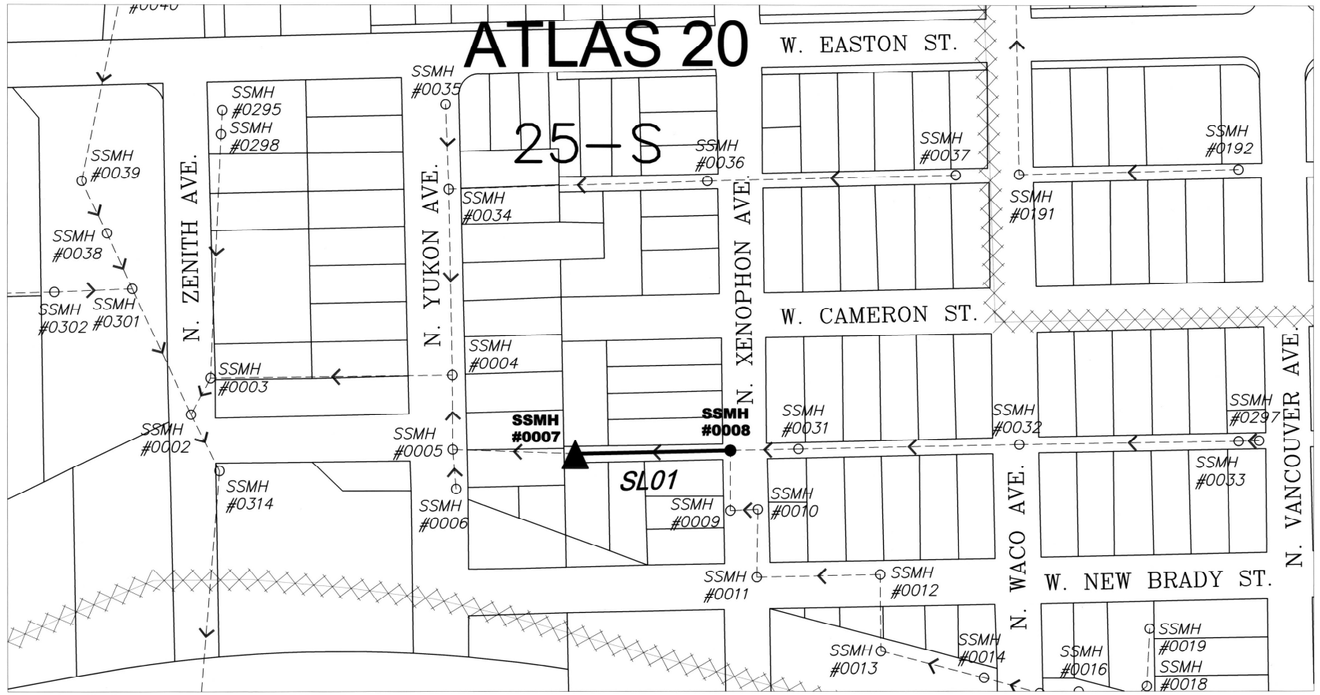
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

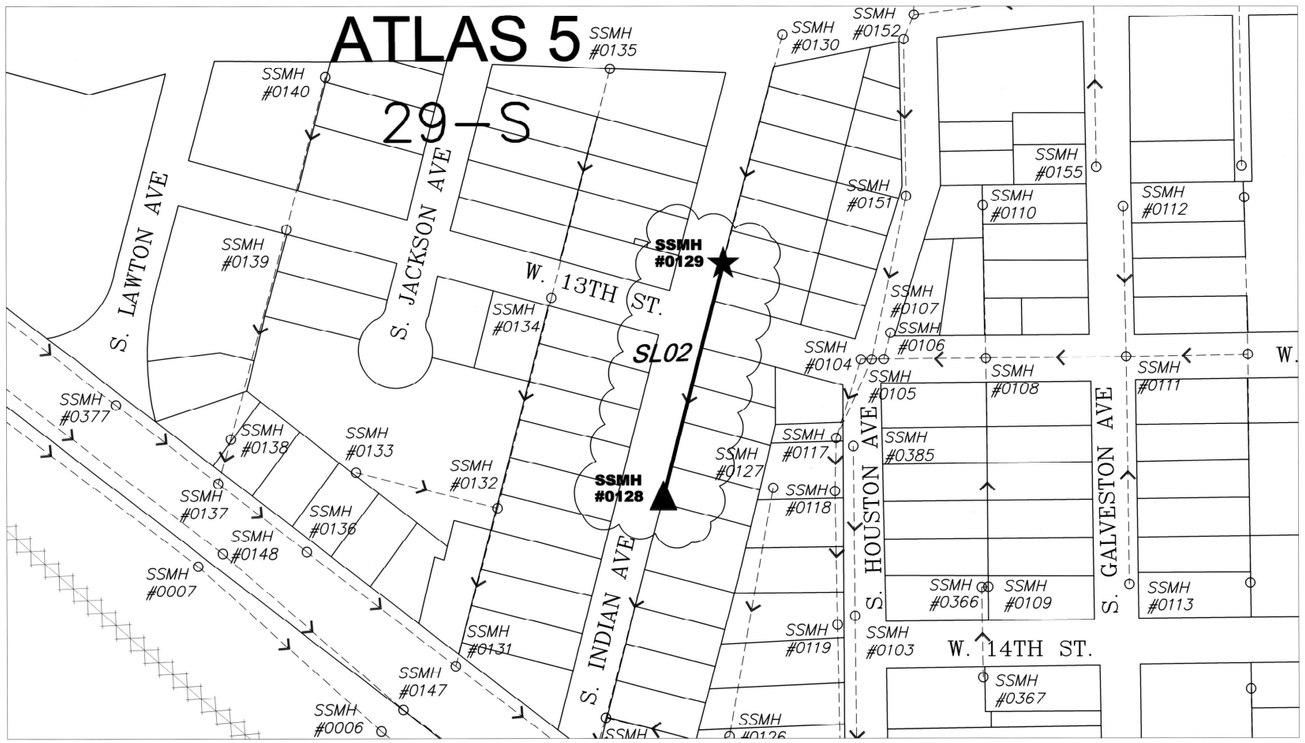
PLANS AND ESTIMATES PREPARED BY:
rjngroup RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE
NTS.
PROFILE SCALE:
HORIZONTAL:
NA
VERTICAL:
NA

DRAWN	RLP	...	APPROVED
DESIGNED	RJB	...	
SURVEY	H&A	...	
PROJ. MGR.			
LEAD ENGR.	AOJ 9/22		
FIELD MGR.	9/22		
RECOMMENDED	HAS 10.22		
DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:		DATE: September 2022
ATLAS PAGE NO.: 49,80			SHEET 8 OF 47





NOTES

1. CONTRACTOR SHALL INSTALL CURED-IN-PLACE PIPE IN ACCORDANCE WITH PART 410 OF CITY OF TULSA'S MOST RECENT STANDARD SPECIFICATIONS. SLIPLINING SHALL BE IN ACCORDANCE WITH PART 409 OF CITY OF TULSA'S MOST RECENT STANDARD SPECIFICATIONS.
2. DESIGN PARAMETERS FOR CURED-IN-PLACE PIPE (CIPP) REHABILITATION SHALL BE BASED ON FULLY DETERIORATED DESIGN WITH A SAFETY FACTOR OF 2 IN ACCORDANCE WITH ASTM F1216. CONTRACTOR SHALL SUBMIT DESIGN TO ENGINEER FOR APPROVAL PRIOR TO BEGINNING WORK AND DESIGN SHALL BE INCLUDED WITH COMPLETE SUBMITTAL PACKAGE FOR CIPP SCOPE OF WORK. FLEXURAL MODULUS FOR THE RESIN SHALL BE A MINIMUM OF 400,000 PSI.
3. ANY SURFACE OBSTRUCTION REMOVAL & REPLACEMENT REQUIRED TO ACCESS MANHOLES SHALL BE INCLUDED IN THE BID ITEM FOR CURED-IN-PLACE OR SLIPLINE PIPE REHABILITATION. THIS INCLUDES, BUT IS NOT LIMITED TO, CLEARING AND GRUBBING AND FENCE REMOVAL AND REPLACEMENT.
4. CONTRACTOR SHALL VERIFY ALL ACTIVE SERVICE LOCATIONS AND POSITIONS PRIOR TO CURED-IN-PLACE OR SLIPLINE PIPE REHABILITATION. ANY CLEANING REQUIRED, INCLUDING HEAVY CLEANING, SHALL BE INCLUDED IN UNIT PRICE BID FOR PRE-REHABILITATION CCTV PIPE INSPECTION.
5. SERVICE LATERALS LOCATED UNDER PAVEMENT SHALL BE REPLACED TO WITHIN 2' OF THE EASEMENT/RIGHT-OF-WAY BOUNDARY WITH POLYVINYL CHLORIDE PIPE (PVC). SERVICE LATERALS LOCATED OUTSIDE OF PAVEMENT SHALL BE RECONNECTED TO THE MAIN LINE WITH AN ADDITIONAL 10 LINEAR FEET OF REPLACEMENT. ANY ADDITIONAL PIPE OR FITTINGS REQUIRED TO MAKE A GOOD CONNECTION TO THE MAIN LINE OUTSIDE OF PAVEMENT SHALL BE INCLUDED IN THE COST OF SERVICE RECONNECTION.
6. ALL SERVICE RECONNECTIONS ON CIPP/SLIPLINE REHABILITATED PIPE SEGMENTS SHALL BE MADE EXTERNALLY AND IN ACCORDANCE WITH PART 409.17 OR 410.12.4 OF CITY OF TULSA'S MOST RECENT STANDARD SPECIFICATIONS.
7. ADDITIONAL SERVICE RECONNECTIONS, REPAIRS, AND/OR OBSTRUCTION REMOVALS MAY BE REQUIRED FOLLOWING PRE-CONSTRUCTION CCTV INSPECTION PRIOR TO CURED-IN-PLACE OR SLIPLINE PIPE REHABILITATION.
8. DETAILS REGARDING THE MANHOLES SCHEDULED FOR REHABILITATION ARE IN THE MANHOLE REHABILITATION WORK ITEM TABLE ON SHEET 6.

N.T.S.

LEGEND

- *MANHOLE REPLACEMENT (SEE MANHOLE WORK ITEM TABLE)* ▲
- *CURED-IN-PLACE (CIPP) OR SLIPLINING PIPE REHABILITATION* ———
- *MANHOLE REHABILITATION (SEE MH REHABILITATION WORK ITEM TABLE)* ★
- *SLIPLINING ID* SL05
- *EXISTING SEWER* - - - - -
- *MAINTENANCE AREA ID* 94–N
- *MAINTENANCE AREA BOUNDARY* ××××
- *ADDITIVE ALTERNATE* ⬭

9-14-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

SLIPLINE ATLAS PAGE 5 & 20 KEY MAP

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

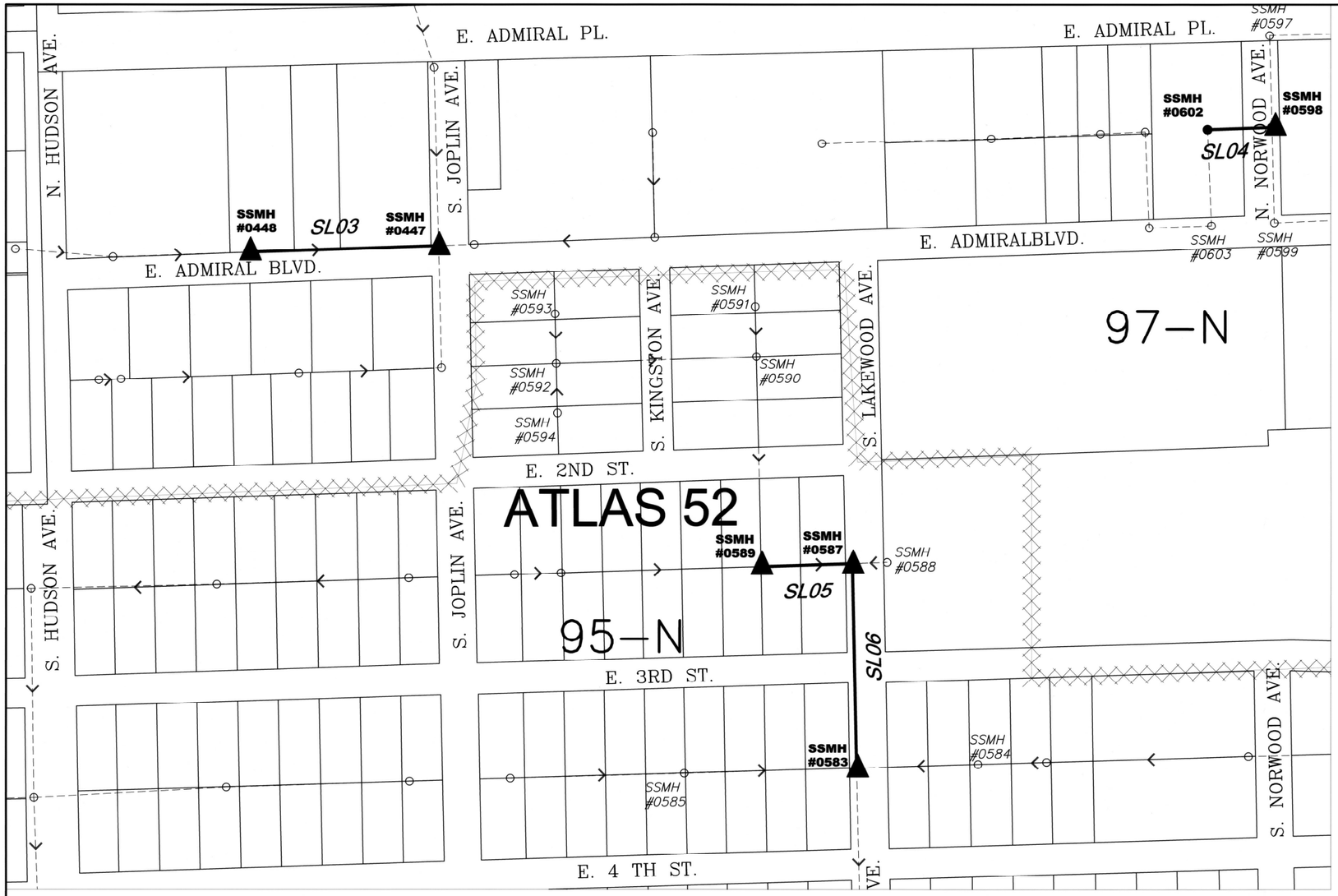
PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE, SUITE 106, TULSA, OKLAHOMA 74146

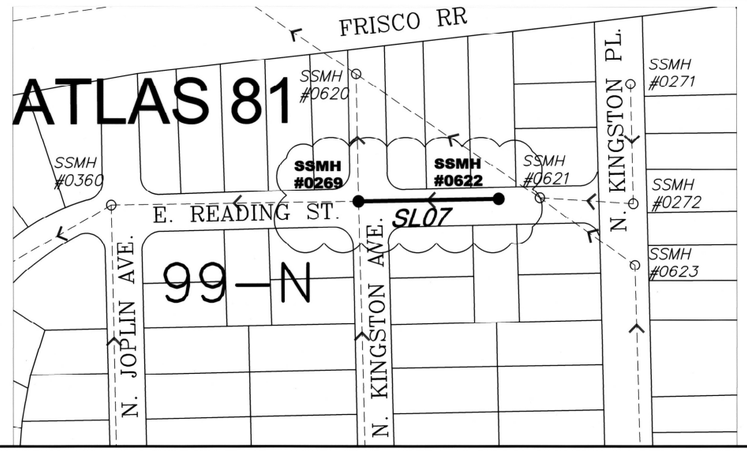
REVISION	BY	DATE

PLAN SCALE: NTS.
PROFILE SCALE: HORIZONTAL: NA VERTICAL: NA

DRAWN	RLP	...	APPROVED
DESIGNED	RJB	...	
SURVEY	H&A	...	
PROJ. MGR.			
LEAD ENGR.	ADS	9/22	
FIELD MGR.		9/22	
RECOMMENDED	HAS 10.22		
DESIGN MANAGER			CITY ENGINEER

FILE: DRAWING: DATE: September 2022
ATLAS PAGE NO.: 5,20 SHEET 9 OF 47





NOTES

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8. DETAILS REGARDING THE MANHOLES SCHEDULED FOR REHABILITATION ARE IN THE MANHOLE REHABILITATION WORK ITEM TABLE ON SHEET 6.

LEGEND

MANHOLE REPLACEMENT (SEE MANHOLE WORK ITEM TABLE)	▲
CURED-IN-PLACE (CIPP) OR SLIPLINING PIPE REHABILITATION	———
MANHOLE REHABILITATION (SEE MH REHABILITATION WORK ITEM TABLE)	★
SLIPLINING ID	*SL05*
EXISTING SEWER	- - - - - -
MAINTENANCE AREA ID	94–N
MAINTENANCE AREA BOUNDARY	XXXX
ADDITIVE ALTERNATE	⬭

N.T.S.

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

SLIPLINE ATLAS PAGE
52 & 81 KEY MAP

TMUA PROJECT NO. ES 2020–02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

rjngroup
PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE, SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE
NTS.
PROFILE SCALE:
HORIZONTAL:
NA
VERTICAL:
NA

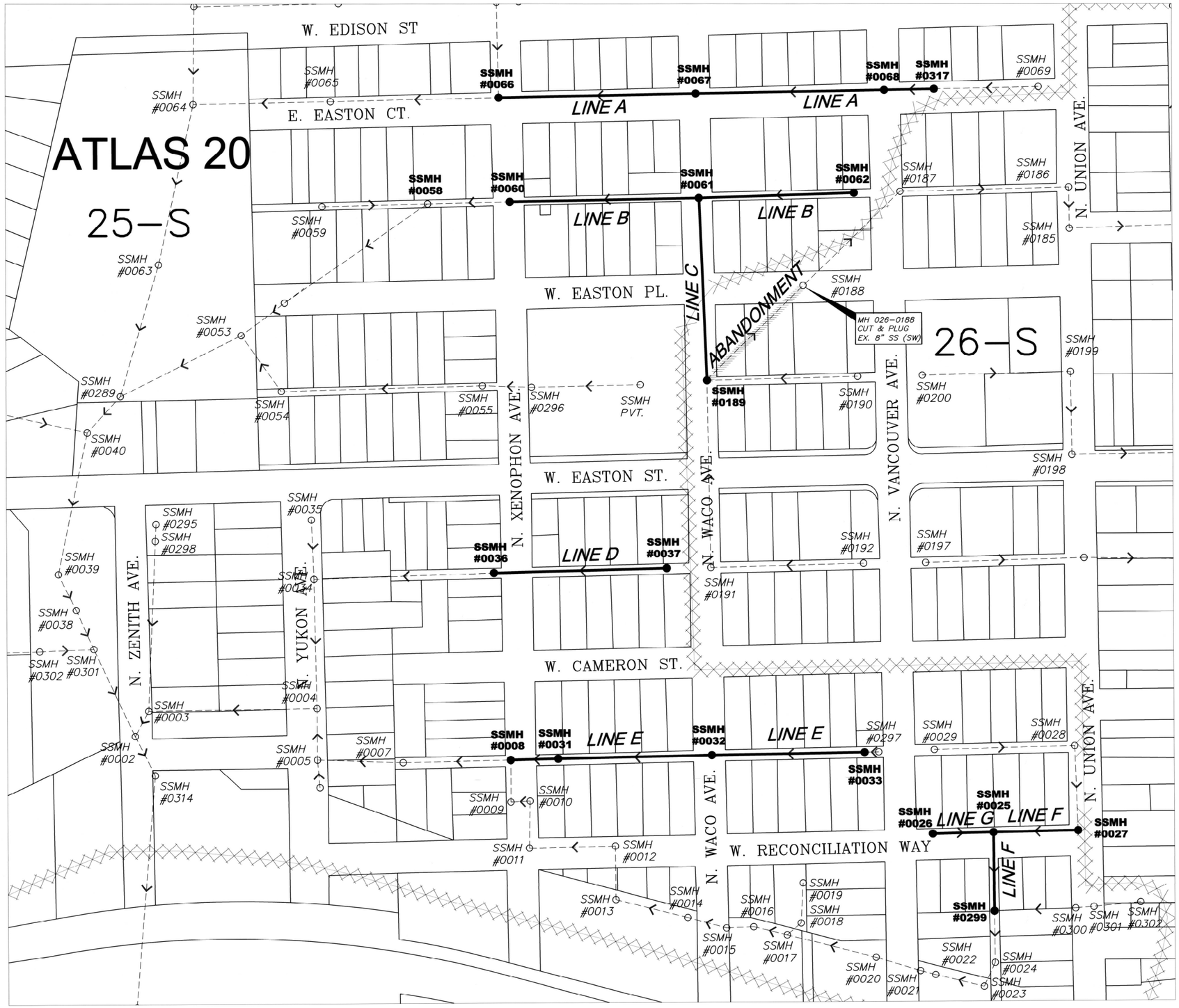
DRAWN	RLP	...
DESIGNED	RJB	...
SURVEY	H&A	...
PROJ. MGR.		
LEAD ENGR.	ADJ	9/22
FIELD MGR.		9/22
RECOMMENDED	HAS	10.22
DESIGN MANAGER		
FILE:	DRAWING:	
ATLAS PAGE NO.: 52		

APPROVED

CITY ENGINEER

DATE: September 2022

SHEET 10 OF 47



N.T.S.

LINE A - SHEET 12-13
LINE B - SHEET 14-15
LINE C - SHEET 16
LINE D - SHEET 17
LINE E - SHEET 18-19
LINE F - SHEET 20
LINE G - SHEET 21

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

ATLAS PAGE 20 KEY MAP

TMUA PROJECT NO. ES 2020–02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE, SUITE 106, TULSA, OKLAHOMA 74146

rjngroup

REVISION	BY	DATE

PLAN SCALE
NTS.
PROFILE SCALE:
HORIZONTAL:
NA
VERTICAL:
NA

DRAWN	RLP	...
DESIGNED	RJB	...
SURVEY	H&A	...
PROJ. MGR.		
LEAD ENGR.	AOT	9/22
FIELD MGR.		9/22
RECOMMENDED	HAS	10.22
DESIGN MANAGER		
FILE:	DRAWING:	
ATLAS PAGE NO.: 20		

APPROVED

CITY ENGINEER

DATE: September 2022

SHEET 11 OF 47

REPLACE 400 LF OF 8" SEWER PIPE BY PIPE BURSTING

WARNING!!! OVERHEAD ELECTRIC USE CAUTION!!!

N. XENOPHON AVE. ASPHALT PAVEMENT

IRVING PLACE BLOCK 3

LOT 6 CHANEY, W R REVOCABLE TRUST 1923 W. EASTON CT.

LOT 5 WOLFE, JUDY ANN 1919 W. EASTON CT.

LOT 4 LYNCH FORSYTHE LLC 1915 W. EASTON CT.

LOT 3 DECKLER, JULIE 1911 W. EASTON CT.

LOT 2 DARK BLUE INVESTMENTS LLC 1905 W. EASTON CT.

LOT 1 COOK, KENNETH H. 1903 W. EASTON CT.

WARNING!!! OVERHEAD ELECTRIC USE CAUTION!!!

0+73 SVC, 0+79 SVC, 1+36 SVC, 1+84 SVC, 1+94 SVC, 2+30 SVC, 2+83 SVC, 2+94 SVC

RETAINING WALLS (STONE)

3' CHAIN LINK

2-15" TREES

8" TREE, 12" TREE, 12" TREE

3' WOOD

CONC 16" TREE

4' CHAIN LINK FENCE

RETAINING WALL (0.5' WIDE CONC)

58" MAPLE

SIDEWALK

SIGN "STOP"

SIGN "DEAD END"

EX. 8" SS

SSMH

UMS (ONC)

5/8" BOLT

BENCHMARKS:

BM-552
IRON PIN SET 30' WEST AND 33' SOUTH OF EX. MH 025-0066

N=428545.24
E=2554353.78
EL=712.94

1. SEE SHEET 3 FOR GENERAL NOTES.

0 10' 20' 40'
SCALE: 1" = 20'

0+00 1+00 2+00 3+00 4+00

LINE A

8"

MATCH LINE STA. 4+00

W. EASTON CT. ASPHALT PAVEMENT

ROW 60.00'

15" RCP

12" RCP

BM-552

STA. 0+00.00 ~ 8" SS
REMOVE & REPLACE
EX. MH 025-0066 W/
STD. 4' DIA. MH
N=428578.70
E=2554384.42

STA. 3+60.01 ~ 8" SS
REMOVE & REPLACE
EX. MH 025-0067 W/
STD. 4' DIA. MH
N=428586.83
E=2554744.33

CONTRACTOR SHALL BRACE POWER POLE DURING CONSTRUCTION (NO SEPARATE PAYMENT)

N. WACO AVE. ASPHALT PAVEMENT

LOT 5 NICHOLSON, LINDA M REV TRUST 1920 W. EASTON CT.

LOT 4 THIERRY, LOLA JEAN 1916 W. EASTON CT.

LOT 3 BECERRA, URIEL & MARIA ELENE GAYTAN 1912 W. EASTON CT.

S.40' LOTS 1-2 YANDELL, WINNIE M 544 N. WACO AVE.

S.35' LOT 6 JONES, JAY INVESTMENTS LLC 545 N. XENOPHON AVE.

IRVING PLACE BLOCK 6

MAGF W/SHINER

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543

730 725 720 715 710 705 700 695 690

0+00.00 ~ REMOVE & REPLACE EX. MH 025-0066 W/ STD. 4' DIA. MH RIM=713.54

0+31.44 ~ EX. 2" WATER

EX. GRADE @ C/L OF PROPOSED SANITARY SEWER

3+40.79 ~ EX. GAS

3+60.01 ~ REMOVE & REPLACE EX. MH 025-0067 W/ STD. 4' DIA. MH RIM=720.94

3+77.79 ~ EX. 12" STORM FL =716.7±

3+84.41 ~ EX. 6" WATER

8" ON 2.51%

EX. 8" SS

8" ON 2.19%

EX. 8" SS

REPLACE 40 LF OF 8" PIPE W/ 40 LF OF DR-17 DIPS HDPE 8" SEWER PIPE @ 2.51% BY PIPE BURSTING

REPLACE 360 LF OF 8" PIPE W/ 360 LF OF DR-17 DIPS HDPE 8" SEWER PIPE @ 2.19% BY PIPE BURSTING

EXIST. FL. 8" OUT (W)=706.21
EXIST. FL. 8" IN (E)=706.21
EXIST. FL. 8" IN (N)=706.21

EXIST. FL. 8" OUT (W)=714.10
EXIST. FL. 8" IN (E)=714.10

EXIST. FL. 8"=715.10

-0+30 0+00 0+50 1+00 1+50 2+00 2+50 3+00 3+50 4+00

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

LINE A STA. 0+00 TO STA. 4+00

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE: 1" = 20'
PROFILE SCALE: HORIZONTAL: 1"= 20' VERTICAL: 1"= 4'

DRAWN	RLP	...
DESIGNED	RJB	...
SURVEY	H&A	...
PROJ. MGR.		
LEAD. ENGR.	ADS	9/22
FIELD MGR.		9/22
RECOMMENDED DESIGN MANAGER	HAS	10-22

APPROVED CITY ENGINEER

FILE: DRAWING: DATE: September 2022

ATLAS PAGE NO.: 20 SHEET 12 OF 47

\\TUL-FANZURA\OFFICE~2\TULSA\PROJECTS\35-3608-01 TULSA 1012 AREAWIDE SEWER REHABILITATION FY 2022\CADD\DRAWINGS\12-13 LINE A 4+00- END.DWG
Tuesday, September 06, 2022
2:14:45 PM

REPLACE 419 LF OF 8" SEWER PIPE BY PIPE BURSTING

IRVING PLACE BLOCK 2

LOT 6 GOODMAN, WAYNE AND SAMMIE 1822 W. EDISION ST.

LOT 5 MARTINDALE PROPERTY CO 1819 W. EASTON CT.

LOT 4 SELLERS, JEREMY W & BRANDY L 1815 W. EASTON CT.

LOT 3 JEFFERSON, KEVIN 1811 W. EASTON CT.

LOT 2 WILLIAMSON, TERRI L & ELIJAH & SPARKLE MARTIN 1803 W. EASTON CT.

LOT 1 TULSA HOME RENTALS LLC C/O J PATRICK CARTER 1801 W. EASTON CT.

IRVING PLACE BLOCK 1

LOT 6 NIX TRUST 1723 W. EASTON CT.

LOT 5 SHARRER, EDWARD A JR & HOLLY E WALL 1719 W. EASTON CT.

N. VANCOUVER AVE. ASPHALT PAVEMENT

W. EASTON CT. ASPHALT PAVEMENT

ROW 60.00'

MATCH LINE STA. 4+00

LINE A

4+39 SVC

4+46 SVC

5+04 SVC

5+53 SVC

6+38 SVC

6+99 SVC

7+55 SVC

8+07 SVC

8+19

WARNING!!! OVERHEAD ELECTRIC USE CAUTION!!!

WARNING!!! OVERHEAD ELECTRIC USE CAUTION!!!

CONTRACTOR SHALL BRACE POWER POLE DURING CONSTRUCTION (NO SEPARATE PAYMENT)

CONTRACTOR SHALL BRACE POWER POLE DURING CONSTRUCTION (NO SEPARATE PAYMENT)

GRAVEL

1-STORY METAL FINISHED FLOOR EL=724.10

RETAINING WALL (CONC BLOCK)

CONC HANDRAIL

RETAINING WALL (BRICK)

RETAINING WALL (PLANTER, ARC

CONC

SIDEWALK

3/8" UPR

GM

GUY

SSMH #0068

SSMH #317

EX. 8" SS

8"

WM

1" TREE

6" TREE

SIGN "STOP"

15" RCP

12" RCP

REMOVE & REPLACE 8 LF OF 12" RCP

BM-553

STA. 7+20.37 ~ 8" SS
REMOVE & REPLACE
EX. MH 025-0068 W/
STD. 4' DIA. MH
N=428591.88
E=2555104.66

STA. 8+18.52 ~ 8" SS
REMOVE & REPLACE
EX. 025-0317 W/
STD. 4' DIA. MH
N=428597.13
E=2555202.66

IRVING PLACE BLOCK 7

LOT 6 PADILLA, JAIME & VIRGINIA AGUIRRE 1824 W. EASTON CT.

LOT 5 PADILLA, JAIME & VIRGINIA AGUIRRE 1824 W. EASTON CT.

LOT 4 LAIZURE, LACY LEIGH 1816 W. EASTON CT.

LOT 3 ZIEGLER, ANDREW EDWARD 1812 W. EASTON CT.

LOT 2 REESE, ANDREA LEIGH 1808 W. EASTON CT.

LOT 1 RSDI LP 1802 W. EASTON CT.

IRVING PLACE BLOCK 7

ROW 60.00'

BENCHMARKS:

BM-553
IRON PIN SET 41' SOUTH AND 12' WEST OF EX. MH 025-0068

N=428551.11
E=2555091.51
EL=731.27

1. SEE SHEET 3 FOR GENERAL NOTES.

0 10' 20' 40'
SCALE: 1" = 20'

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543

745
740
735
730
725
720
715
710
705

EXIST. FL. 8"=715.10

EX. GRADE @ C/L OF PROPOSED SANITARY SEWER

7+16.48 ~ EX. 12" STORM
FL = 726.0±

7+20.37 ~ REMOVE & REPLACE EX. MH 025-0068 W/ STD. 4' DIA. MH
RIM=729.56

7+33.16 ~ EX. 12" STORM
FL = 726.2±

8+18.52 ~ REMOVE & REPLACE EX. MH 025-0317 W/ STD. 4' DIA. MH
RIM=732.51

8" ON 2.51%

EX. 8" SS

8" ON 1.36%

EX. 8" SS

EX. 8" SS

REPLACE 320 LF OF 8" VCP PIPE W/ 320 LF OF DR-17 DIPS HDPE 8" SEWER PIPE @ 2.51% BY PIPE BURSTING

REPLACE 99 LF OF 8" VCP PIPE W/ 99 LF OF DR-17 DIPS HDPE 8" SEWER PIPE @ 1.36% BY PIPE BURSTING

EXIST. FL. 8" OUT (W)=723.15
EXIST. FL. 8" IN (E)=723.15

EXIST. FL. 8" OUT (W)=724.48
EXIST. FL. 8" IN (E)=724.48

4+00 4+50 5+00 5+50 6+00 6+50 7+00 7+50 8+00 8+50

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

LINE A 4+00 TO STA. 8+19

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE 1" = 20'	DRAWN	RLP	...
	DESIGNED	RJB	...
	SURVEY	H&A	...
PROFILE SCALE: HORIZONTAL: 1"= 20' VERTICAL: 1"= 4'	PROJ. MGR.		
	LEAD. ENGR.	ADJ	9/22
	FIELD MGR.	BDM	9/22
	RECOMMENDED DESIGN MANAGER	HAS	10-22
FILE:	DRAWING:		DATE: September 2022
ATLAS PAGE NO.: 20			SHEET 13 OF 47

APPROVED CITY ENGINEER

\\TUL-FANZUR1\OFFICE-3D\TULSA\PROJECTS\3D-3608-31 TULSA I2T2 AREAWIDE SEWER REHABILITATION FY 2022\CADD\DRAWINGS\12-13 LINE A 4+00- END.DWG
Tuesday, September 13, 2022
2:14:59 PM

REPLACE 400 LF OF 8" SEWER PIPE BY PIPE BURSTING

STA. 0+00.00 ~ 8" SS
REMOVE & REPLACE
EX. MH 025-0060 W/
STD. 4' DIA. MH
N=428380.44
E=2554389.62

CONTRACTOR SHALL BRACE POWER POLE DURING CONSTRUCTION (NO SEPARATE PAYMENT)

STA. 3+59.57 ~ 8" SS LINE B
STA. 0+00.00 ~ 8" SS LINE C
REMOVE & REPLACE
EX. MH 025-0061 W/
STD. 4' DIA. MH
N=428386.85
E=2554749.13

REMOVE & REPLACE 8 LF OF 18" RCP

WARNING!!! GAS MAIN USE CAUTION!!!

WARNING!!! GAS MAIN USE CAUTION!!!

MATCH LINE STA. 4+00

BENCHMARKS:

BM-554
IRON PIN SET 23' EAST AND 16' NORTH OF EX. MH 025-0061
N=428403.69
E=2554771.99
EL=726.54

1. SEE SHEET 3 FOR GENERAL NOTES.

SCALE: 1"= 20'

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!! EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543

9-14-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

LINE B STA. 0+00 TO STA. 4+00

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

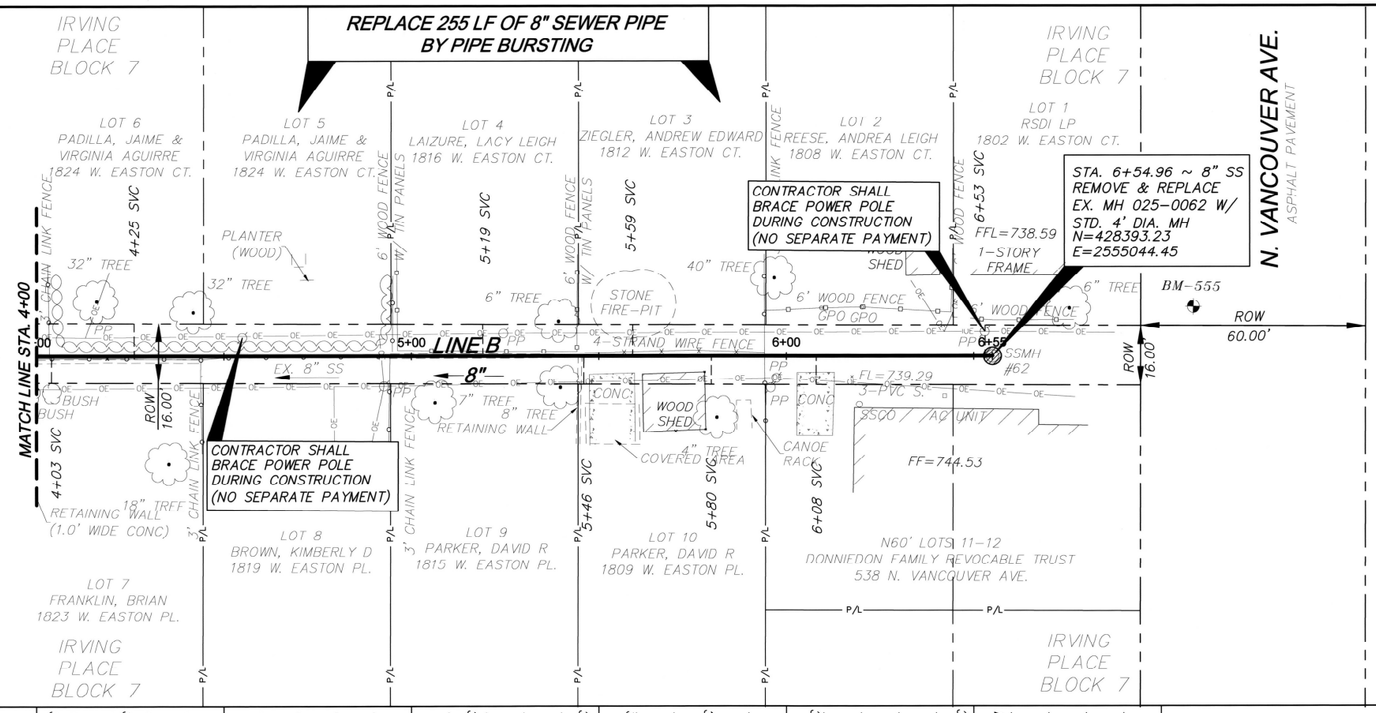
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

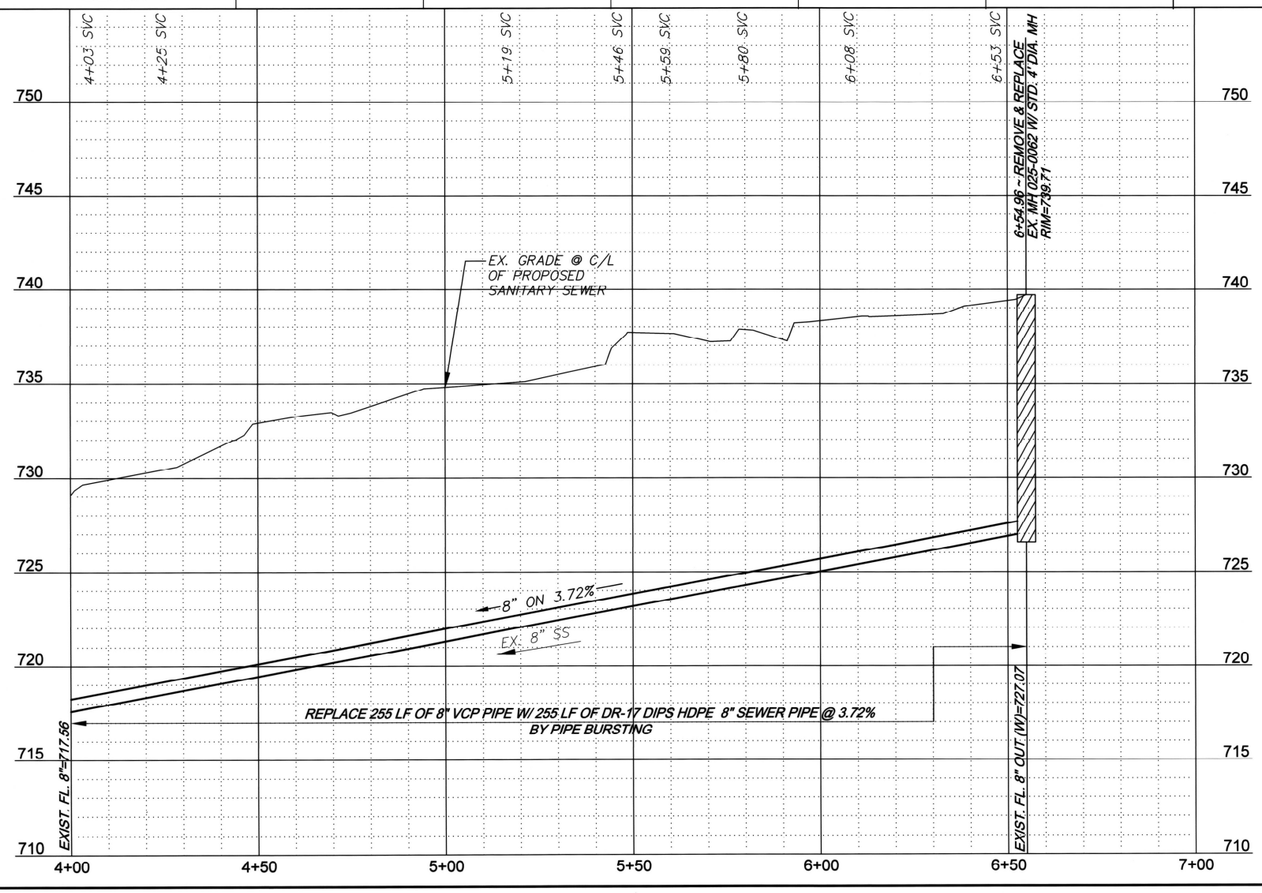
PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE	DRAWN	RLP	...	APPROVED
1" = 20'	DESIGNED	RJB	...	
	SURVEY	H&A	...	
PROFILE SCALE:	PROJ. MGR.			
HORIZONTAL: 1"= 20'	LEAD. ENGR.	AOT	9/22	
VERTICAL: 1"= 4'	FIELD MGR.	RLW	9/22	
	RECOMMENDED	HAS	10-22	
	DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:			DATE: September 2022
ATLAS PAGE NO.: 20				SHEET 14 OF 47

\\TUL-FPANZER\A\OFFICE-2D\TULSA\PROJECTS\20-3608-01 TULSA IQ72 AREAWIDE SEWER REHABILITATION FY 2022\CAD\DRAWINGS\14-15 LINE B 4+00-END.DWG
Thursday, September 15, 2022
2:15:38 PM





BENCHMARKS:

BM-555
IRON PIN SET 54' EAST AND 13' NORTH OF EX. MH 025-0062

N=428407.49
E=2555097.77
EL=738.53

1. SEE SHEET 3 FOR GENERAL NOTES.

0 10' 20' 40'
SCALE: 1" = 20'

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

LINE B STA. 4+00 TO STA. 6+55

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE	DRAWN	RLP	...	APPROVED
1" = 20'	DESIGNED	RJB	...	
	SURVEY	H&A	...	
PROFILE SCALE:	PROJ. MGR.			
HORIZONTAL: 1"= 20'	LEAD. ENGR.	ADS	9/22	
VERTICAL: 1"= 4'	FIELD MGR.	RLM	9/22	
	RECOMMENDED	HAS	10-7-22	
	DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:			DATE: September 2022
ATLAS PAGE NO.: 20				SHEET 15 OF 47

\\TUL-PANZURAT\OFFICE-2\TULSA\PROJECTS\3C-3608-01 TULSA IOT2 AREAWIDE SEWER REHABILITATION FY 2021\CADD\DRAWINGS\14-15 LINE B 4+00-END.DWG
Thursday, September 15, 2022
2:15:52 PM

CONSTRUCT 355 LF OF 8" SEWER PIPE BY OPEN CUT

STA. 0+00.00 ~ 8" SS LINE C
STA. 3+59.57 ~ 8" SS LINE B
CONNECT TO
NEW MH 025-0061
N=428386.85
E=2554749.13

REMOVE & REPLACE EXIST. 4' DIA. STORM MANHOLE

REMOVE & REPLACE 200 SY OF ASPHALT PAVEMENT

ABANDON 250 LF EX. 8" SS TO EX. MH 026-0188 (NOT SHOWN) SEE SHEET 11

CONNECT EX. SERVICE TO PROP. 8" SS

REMOVE & REPLACE 18 LF OF 15" RCP & 8 LF OF 18" RCP

STA. 3+54.79 ~ 8" SS
REMOVE & REPLACE
EX. MH 026-0189 W/
STD. 4' DIA. MH
N=428032.28
E=2554761.55

WARNING!!! OVERHEAD ELECTRIC USE CAUTION!!!

WARNING!!! GAS MAIN USE CAUTION!!!

N. WACO AVE.

W. EASTON PL.

LINE B

LINE C

IRVING PLACE BLOCK 7

IRVING PLACE BLOCK 6

IRVING PLACE BLOCK 10

LOT 7 FRANKLIN, BRIAN 1823 W. EASTON PL.

LOT 6 TRAMONTE, VALLORY JOHN & KATIE MAY 1824 W. EASTON PL.

E.46' LOT 5 RITCHLY, JOSH AND JULIAN MORGAN 1820 W. EASTON PL.

N87' LOT 12 MCCASLIN, STEVEN V & JAMIE M 536 N. WACO AVE.

FF=727.06 1-STORY FRAME

FF=728.47 1-STORY FRAME AC UNIT

FF=745.76 2-STORY FRAME

FF=743.36 2-STORY FRAME

BM-554

BM-556

SSMH #61

SSMH #189

EX. 8" SS

ROW 60.00'

ROW 16.00'

0+00 1+00 2+00 3+00 3+55

BENCHMARKS:

BM-554
IRON PIN SET 16' NORTH AND 23' EAST OF EX. MH 025-0061

N=428403.69
E=2554771.99
EL=726.54

BM-556
IRON PIN SET 38' SOUTH AND 20' EAST OF EX. MH 026-0189

N=427994.95
E=2554781.65
EL=741.77

1. SEE SHEET 3 FOR GENERAL NOTES.
2. CONTRACTOR SHALL CALL OKLAHOMA NATURAL GAS AT 918-732-8405 PRIOR TO CONSTRUCTION CROSSING GAS LINES.
3. CONTRACTOR SHALL SUPPORT GAS LINES AT 5-FOOT OR LESS INTERVALS DURING CONSTRUCTION.

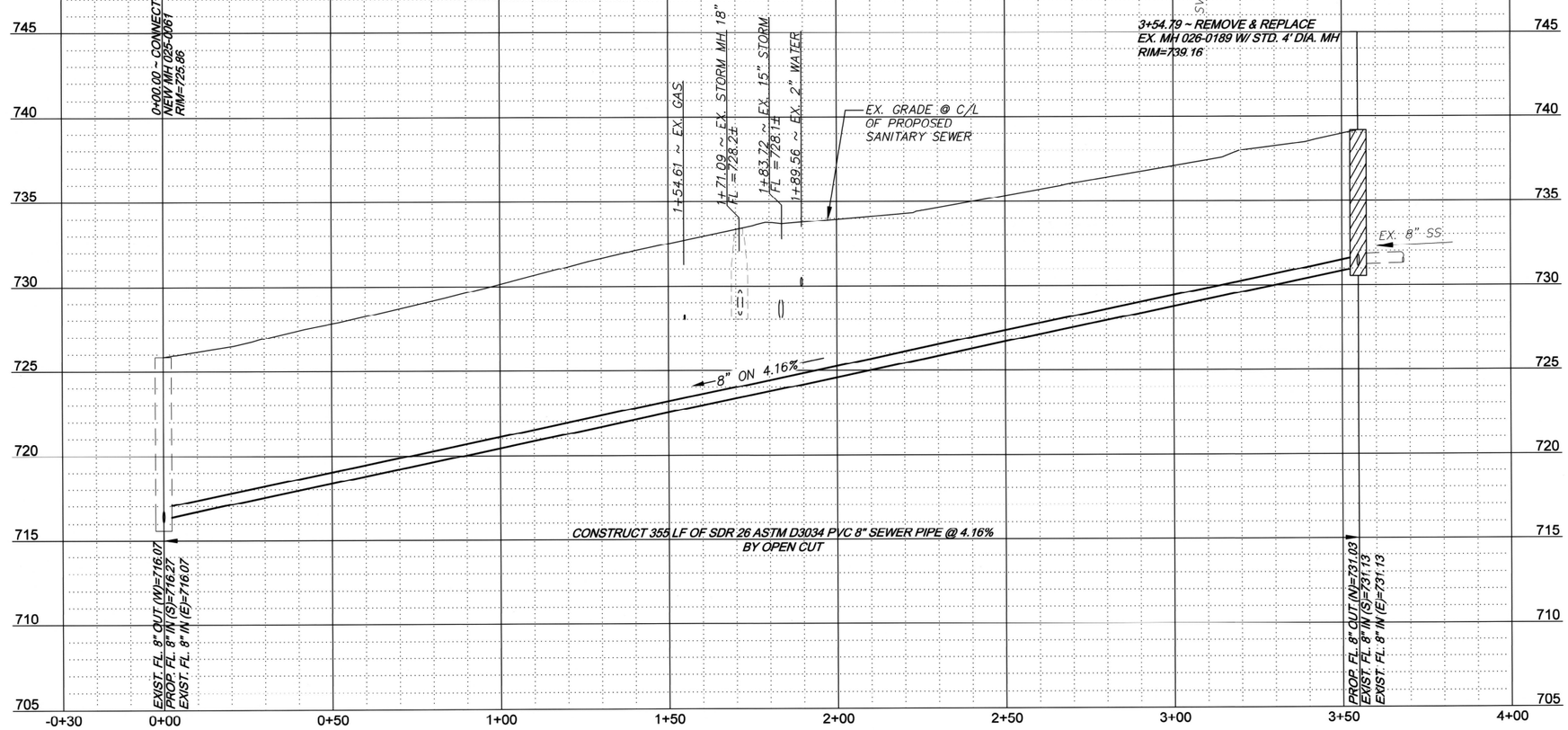
LEGEND

- ABANDONMENT OF EXISTING SEWER
- ASPHALT PAVEMENT REMOVAL & REPLACEMENT

0 10' 20' 40'
SCALE: 1"= 20'

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543



9-16-22

REGISTERED PROFESSIONAL ENGINEER
RANDALL J BRODNER
26761
OKLAHOMA

PLAN & PROFILE LINE C

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE	DRAWN	RLP	...
1" = 20'	DESIGNED	RJB	...
	SURVEY	H&A	...
	PROJ. MGR.		
PROFILE SCALE:	LEAD. ENGR.	ADT	9/22
HORIZONTAL: 1"= 20'	FIELD MGR.	RJM	9/22
VERTICAL: 1"= 4'	RECOMMENDED	AAS	10.22
	DESIGN MANAGER		CITY ENGINEER
FILE:	DRAWING:		DATE: September 2022
ATLAS PAGE NO.: 20			SHEET 16 OF 47

APPROVED

\\TUL-FAZUFAT\OFFICE-3D\TULSA\PROJECTS\30-3608-01 TULSA IOT2 AREAWIDE SEWER REHABILITATION FY 2022\CADD\DRAWINGS\16 LINE C.DWG
Thursday, September 15, 2022
11:48:52 AM
rjm

REPLACE 333 LF OF 8" SEWER PIPE BY PIPE BURSTING

STA. 0+00.00 ~ 8" SS
REMOVE & REPLACE
EX. MH 025-0036 W/
STD. 4' DIA. MH
N=427667.32
E=2554364.06

STA. 3+32.92 ~ 8" SS
REMOVE & REPLACE
EX. MH 025-0037 W/
STD. 4' DIA. MH
N=427673.10
E=2554696.93

BENCHMARKS:

BM-547
IRON PIN SET 31' EAST AND 27' NORTH OF EX. MH 025-0036

N=427694.96
E=2554388.78
EL=718.99

1. SEE SHEET 3 FOR GENERAL NOTES.

SCALE: 1"= 20'

N. XENOPHON AVE.

N. WACO AVE.

LINE D

8"

WARNING!!! GAS MAIN USE CAUTION!!!

WARNING!!! OVERHEAD ELECTRIC USE CAUTION!!!

WARNING!!! OVERHEAD ELECTRIC USE CAUTION!!!

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543

0+00.00 - REMOVE & REPLACE EX. MH 025-0036 W/ STD. 4' DIA. MH RIM=717.92

0+17.68 ~ EX. GAS

0+62.47 ~ EX. 2" WATER

3+32.92 ~ REMOVE & REPLACE EX. MH 025-0037 W/ STD. 4' DIA. MH RIM=736.94

EX. GRADE @ C/L OF PROPOSED SANITARY SEWER

8" ON 5.91%

EX. 8" SS

EXIST. FL. 8" OUT (W)=705.30
EXIST. FL. 8" IN (E)=705.30

EXIST. FL. 8" OUT (W)=724.98

REPLACE 333 LF OF 8" VCP PIPE W/ 333 LF OF DR-17 DIPS HDPE 8" SEWER PIPE @ 5.91% BY PIPE BURSTING

-0+30 0+00 0+50 1+00 1+50 2+00 2+50 3+00 3+50

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

PLAN & PROFILE LINE D

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

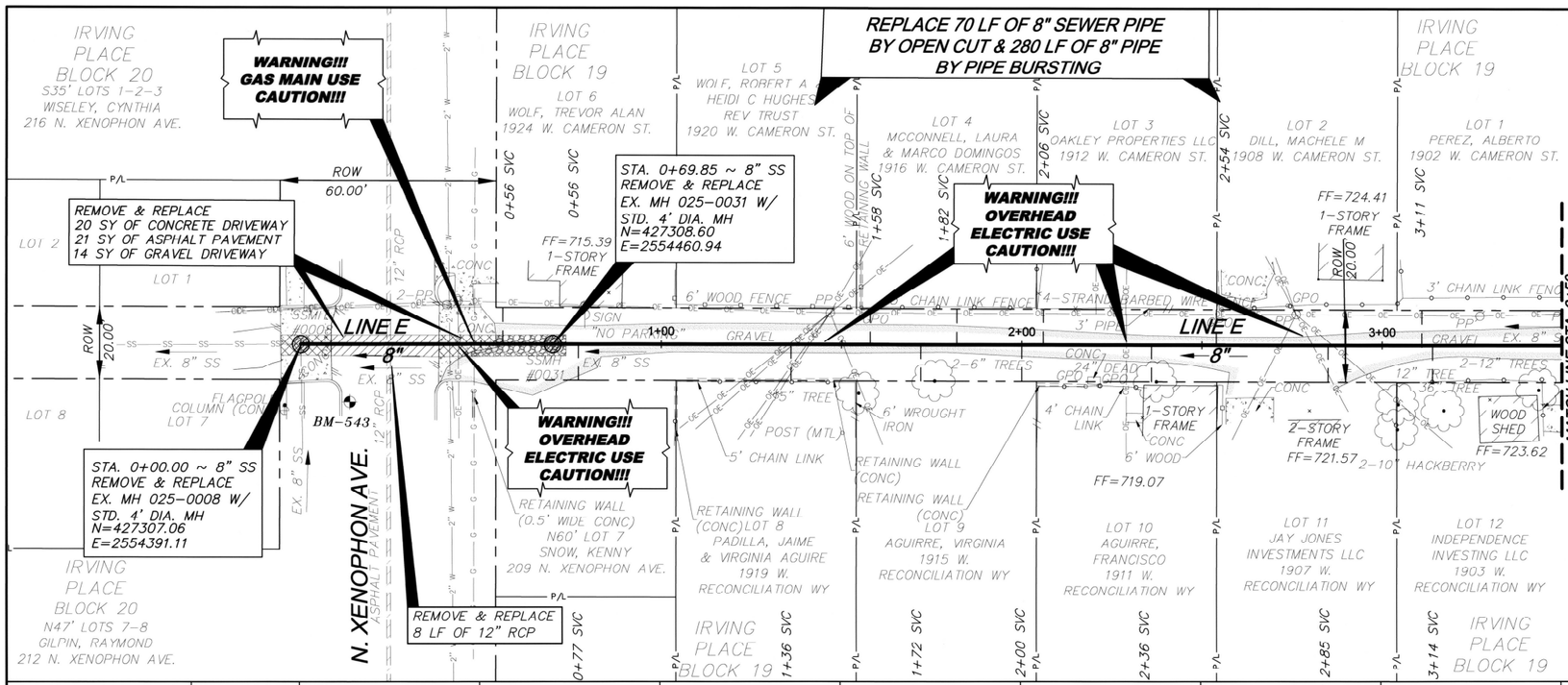
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

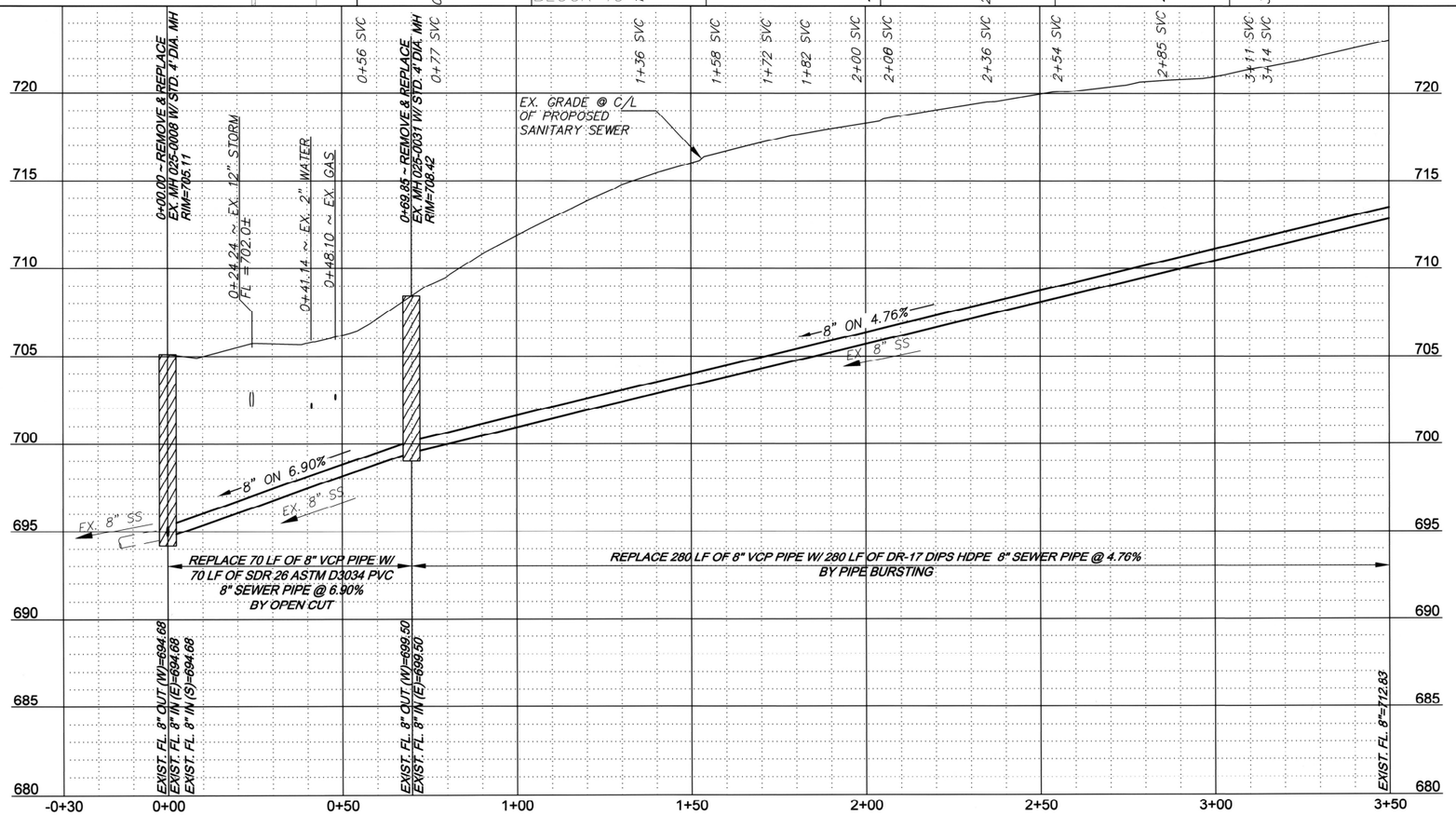
PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE	DRAWN	RLP	...	APPROVED
1" = 20'	DESIGNED	JDM	...	
	SURVEY	H&A	...	
	PROJ. MGR.			
PROFILE SCALE:	LEAD. ENGR.	ADS	9/22	
HORIZONTAL: 1"= 20'	FIELD MGR.	RMM	9/22	
VERTICAL: 1"= 4'	RECOMMENDED	HAS	10.22	
	DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:			DATE: September 2022
ATLAS PAGE NO.: 20				SHEET 17 OF 47

\\TUL-FPANZURA1\OFFICE-2\TULSA\PROJECTS\JC-3608-01 TULSA 1ST2 AREAWIDE SEWER REHABILITATION FY 2022\CADD\DRAWINGS\17 LINE D.DWG
Friday, September 16, 2022
2:17:16 PM





BENCHMARKS:

BM-543
MAG NAIL SET 17' SOUTH AND 14' EAST OF EX. MH 025-0008

N=427291.55
E=2554405.01
EL=704.52

1. SEE SHEET 3 FOR GENERAL NOTES.
2. CONTRACTOR SHALL CALL OKLAHOMA NATURAL GAS AT 918-732-8405 PRIOR TO CONSTRUCTION CROSSING GAS LINES.
3. CONTRACTOR SHALL SUPPORT GAS LINES AT 5-FOOT OR LESS INTERVALS DURING CONSTRUCTION.

0 10' 20' 40'
SCALE: 1"= 20'

LEGEND

- ASPHALT PAVEMENT REMOVAL & REPLACEMENT
- CONCRETE PAVEMENT REMOVAL & REPLACEMENT
- GRAVEL PAVEMENT REMOVAL & REPLACEMENT

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

LINE E STA. 0+00 TO STA. 4+00

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2 AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE. SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

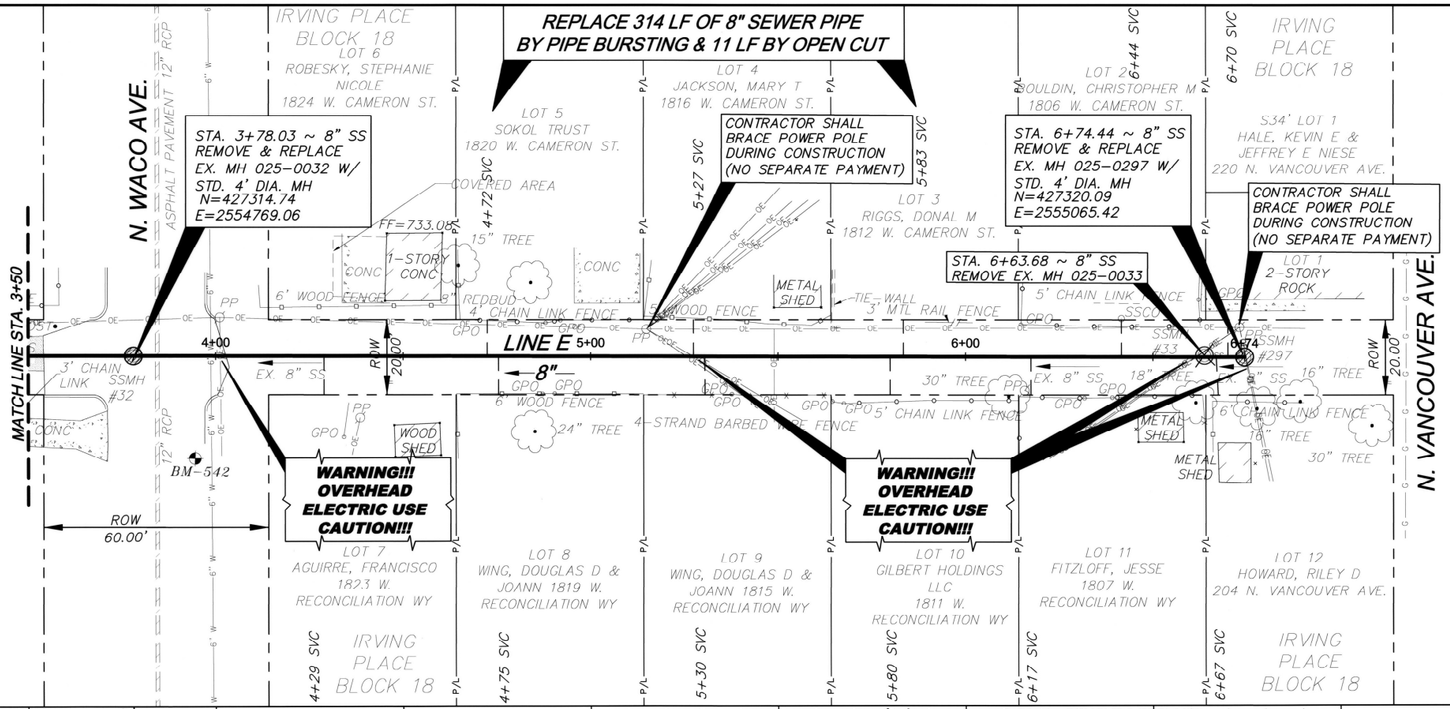
PLAN SCALE: 1" = 20'
PROFILE SCALE: HORIZONTAL: 1"= 20' VERTICAL: 1"= 4'

DRAWN	RLP	...
DESIGNED	RJB	...
SURVEY	H&A	...
PROJ. MGR.		
LEAD. ENGR.	ADS	9/22
FIELD MGR.	ZWM	9/22
RECOMMENDED	HAS	10.22
DESIGN MANAGER		CITY ENGINEER

APPROVED

FILE: DRAWING: DATE: September 2022
ATLAS PAGE NO.: 20 SHEET 18 OF 47

\\TUL-FANZILRIA\OFFICE-2D\TULSA\PROJECTS\20-3608-01 TULSA 1012 AREAWIDE SEWER REHABILITATION FY 2022\CADD\DRAWINGS\18-19 LINE E.DWG
Wednesday, September 14, 2022
2:17:53 PM



BENCHMARKS:

BM-542
MAG NAIL SET 17' EAST AND 27' SOUTH OF EX. MH 025-0032

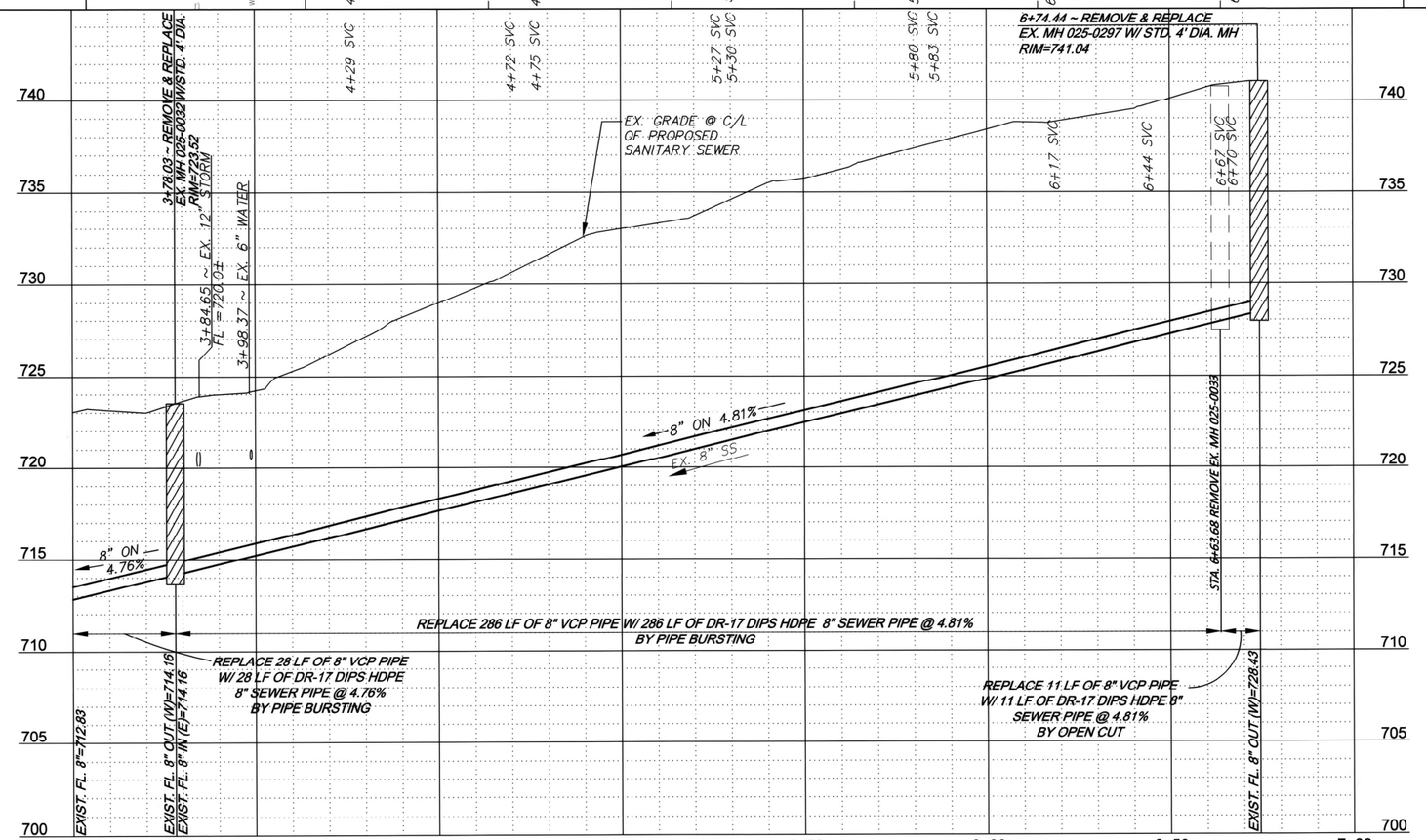
N=427287.77
E=2554786.08
EL=722.58

1. SEE SHEET 3 FOR GENERAL NOTES.

0 10' 20' 40'
SCALE: 1"= 20'

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543



9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

LINE E STA. 4+00 TO STA. 6+74

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE: 1" = 20'
PROFILE SCALE: HORIZONTAL: 1"= 20' VERTICAL: 1"= 4'

DRAWN	RLP	...
DESIGNED	RJB	...
SURVEY	H&A	...
PROJ. MGR.		
LEAD. ENGR.	AOS	9/22
FIELD MGR.		9/22
RECOMMENDED DESIGN MANAGER	HAS	10.22
FILE:	DRAWING:	
ATLAS PAGE NO.: 20		

APPROVED
CITY ENGINEER
DATE: September 2022
SHEET 19 OF 47

\\TUL-FPANZURA\OFFICE-3D\TULSA\PROJECTS\3D-3608-01 TULSA IOT2 AREAWIDE SEWER REHABILITATION FY 2022\CADD\DRAWINGS\18-19 LINE E.DWG
Plotted: September 15, 2022
10:07 AM

REPLACE 299 LF OF 8" SEWER PIPE BY PIPE BURSTING

IRVING PLACE BLOCK 24

LOT 10 1711 W. RECONCILIATION WY

LOT 11 1707 W. RECONCILIATION WY

IRVING PLACE BLOCK 17

LOT 12 1703 W RECONCILIATION WY

LOT 15 BRENNAN, JENNA MARIE & JFREMY SEAN 161 N. VANCOUVER AVE.

E46 2/3' LOTS 16 & 17 ROBISON, MARY DUANE 1716 W. RECONCILIATION WY

W45' LOTS 1-2 DASH PROPERTIES LLC 1712 W. RECONCILIATION WY

W. RECONCILIATION WAY

N. UNION AVE.

LINE G

LINE F

STA. 1+38.68 ~ 8" SS LINE F
STA. 0+00.00 ~ 8" SS LINE G
REMOVE & REPLACE
EX. MH 025-0025 W/
STD. 4' DIA. MH
N=427166.51
E=2555317.61

STA. 0+00.00 ~ 8" SS
REMOVE & REPLACE
EX. MH 025-0299 W
STD. 4' DIA. MH
N=427027.89
E=2555321.73

STA. 2+98.53 ~ 8" SS
REMOVE & REPLACE
EX. MH 025-0027 W
STD. 4' DIA. MH
N=427169.48
E=2555477.43

REMOVE & REPLACE
8 LF OF 12" RCP

BM-545

BM-546

WARNING!!! OVERHEAD ELECTRIC USE CAUTION!!!

WARNING!!! GAS MAIN USE CAUTION!!!

WARNING!!! OVERHEAD ELECTRIC USE CAUTION!!!

WARNING!!! GAS MAIN USE CAUTION!!!

BENCHMARKS:

BM-546
IRON PIN SET 39' EAST AND 10' SOUTH OF EX. MH 025-0027

N=427160.64
E=2555515.92
EL=726.041

BM-545
IRON PIN SET 13' WEST AND 38' SOUTH OF EX. MH 025-0025

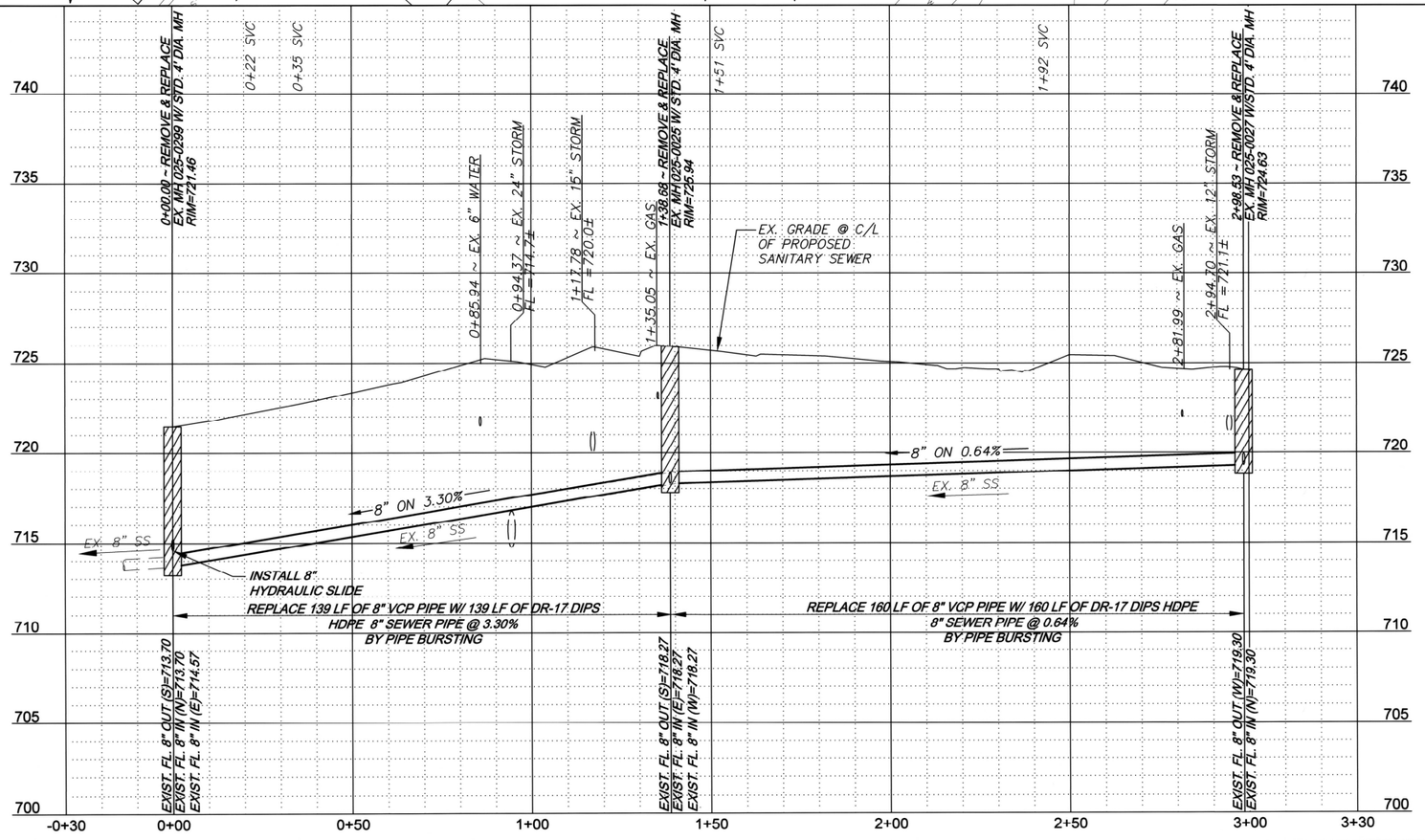
N=427127.87
E=2555605.75
EL=725.53

1. SEE SHEET 3 FOR GENERAL NOTES.
2. CONTRACTOR SHALL CALL OKLAHOMA NATURAL GAS AT 918-732-8405 PRIOR TO CONSTRUCTION CROSSING GAS LINES.
3. CONTRACTOR SHALL SUPPORT GAS LINES AT 5-FOOT OR LESS INTERVALS DURING CONSTRUCTION.

0 10' 20' 40'
SCALE: 1"= 20'

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543



9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

PLAN & PROFILE LINE F

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

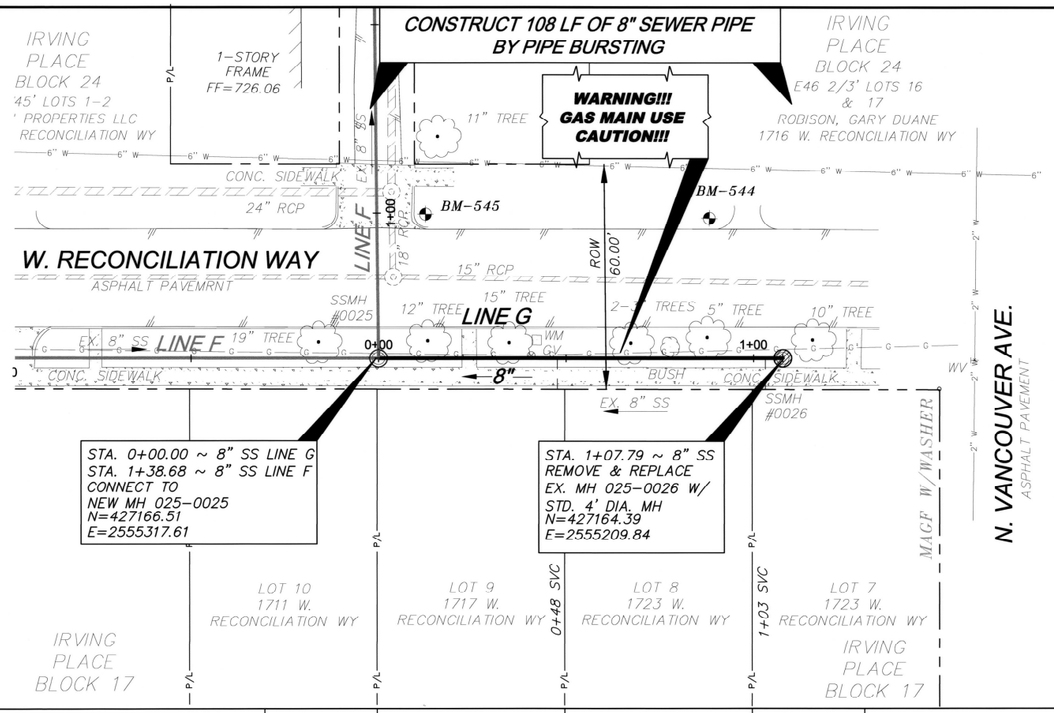
REVISION	BY	DATE

PLAN SCALE: 1" = 20'
PROFILE SCALE: HORIZONTAL: 1"= 20' VERTICAL: 1"= 4'

DRAWN	RLP	...
DESIGNED	RJB	...
SURVEY	H&A	...
PROJ. MGR.		
LEAD. ENGR.	ADT	9/22
FIELD MGR.	RJB	9/22
RECOMMENDED DESIGN MANAGER	HAS	10-22
FILE:	DRAWING:	
ATLAS PAGE NO.: 20		

APPROVED
CITY ENGINEER
DATE: September 2022
SHEET 20 OF 47

\\TUL-FPANZURA\OFFICE-3D\TULSA\PROJECTS\3D-3608-01 TULSA 072 AREAWIDE SEWER REHABILITATION FY 2022\CADD\DRAWINGS\2D LINE F.DWG
Thursday, September 15, 2022
2:18:48 PM



BENCHMARKS:

BM-544
IRON PIN SET 19' EAST AND 38' SOUTH OF EX. MH 025-0026

N=427127.46
E=2555230.05
EL=727.31

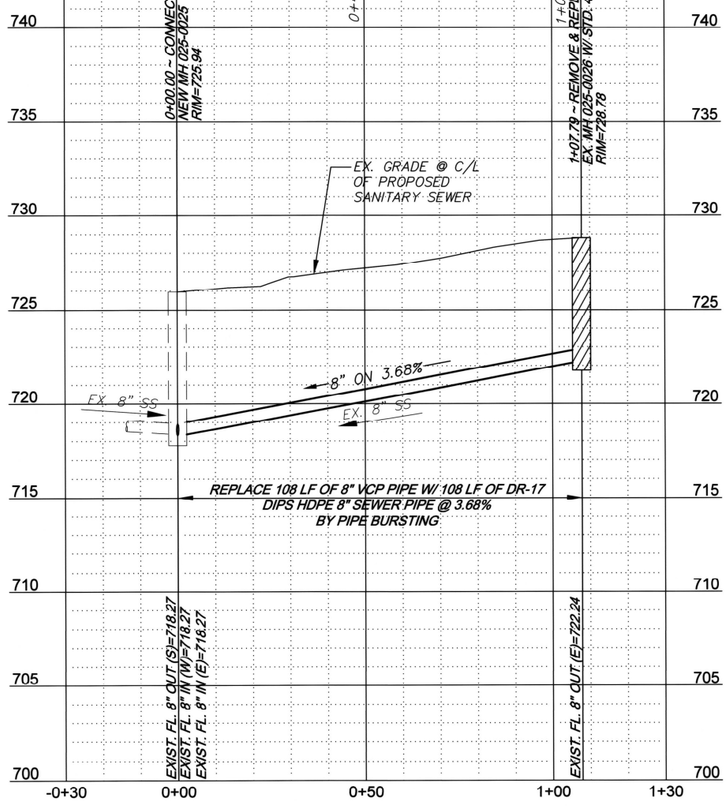
BM-545
IRON PIN SET 12' WEST AND 38' SOUTH OF EX. MH 025-0025
N=427127.87
E=2555605.75
EL=725.53

1. SEE SHEET 3 FOR GENERAL NOTES.
2. CONTRACTOR SHALL CALL OKLAHOMA NATURAL GAS AT 918-732-8405 PRIOR TO CONSTRUCTION CROSSING GAS LINES.
3. CONTRACTOR SHALL SUPPORT GAS LINES AT 5-FOOT OR LESS INTERVALS DURING CONSTRUCTION.

0 10' 20' 40'
SCALE: 1"= 20'

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543



9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

PLAN & PROFILE LINE G

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

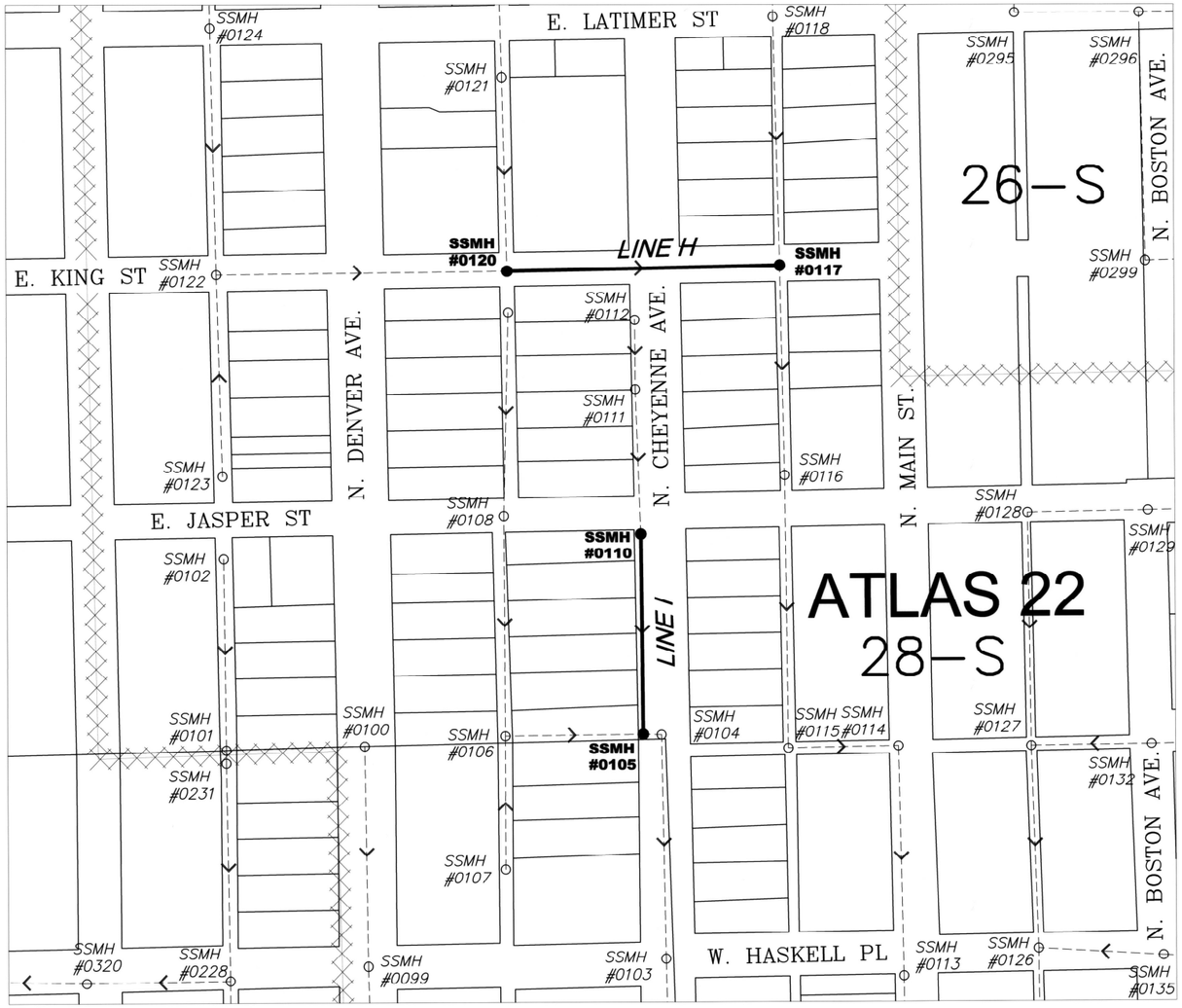
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE 1" = 20'	DRAWN	RLP	...	APPROVED
	DESIGNED	RJB	...	
	SURVEY	H&A	...	
	PROJ. MGR.			
PROFILE SCALE: HORIZONTAL: 1"= 20' VERTICAL: 1"= 4'	LEAD. ENGR.	ADT	9/22	
	FIELD MGR.		9/22	
	RECOMMENDED	HAS 10-7-22		
	DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:			DATE: September 2022
ATLAS PAGE NO.: 20				SHEET 21 OF 47

\\TUL-FANZUFA1\OFFICE-JOV\TULSA\PROJECTS\35-3608-01 TULSA 1072 AREAWIDE SEWER REHABILITATION FY 2022\CADD\DRAWINGS\21 LINE G.DWG
Plotted: September 16, 2022
8:13:23 AM



N.T.S.

LINE H - SHEET 23
LINE I - SHEET 24

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

ATLAS PAGE 22 KEY MAP

TMUA PROJECT NO. ES 2020–02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

rjngroup
PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE., SUITE 106, TULSA, OKLAHOMA 74146

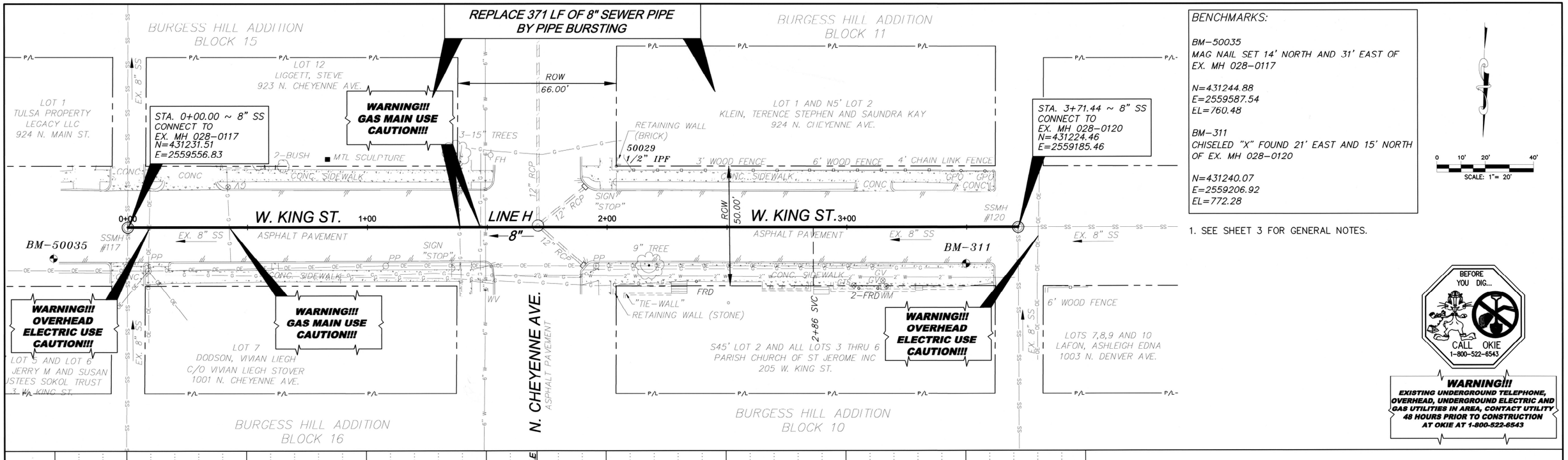
REVISION	BY	DATE

PLAN SCALE
NTS.
PROFILE SCALE:
HORIZONTAL:
NA
VERTICAL:
NA

DRAWN	RLP	...
DESIGNED	RJB	...
SURVEY	H&A	...
PROJ. MGR.		
LEAD ENGR.	ADT	9/22
FIELD MGR.		9/22
RECOMMENDED	HAS	10-22
DESIGN MANAGER		CITY ENGINEER

APPROVED

FILE:
DRAWING:
DATE: September 2022
ATLAS PAGE NO.: 22
SHEET 22 OF 47



BENCHMARKS:

BM-50035
MAG NAIL SET 14' NORTH AND 31' EAST OF EX. MH 028-0117

N=431244.88
E=2559587.54
EL=760.48

BM-311
CHISELED "X" FOUND 21' EAST AND 15' NORTH OF EX. MH 028-0120

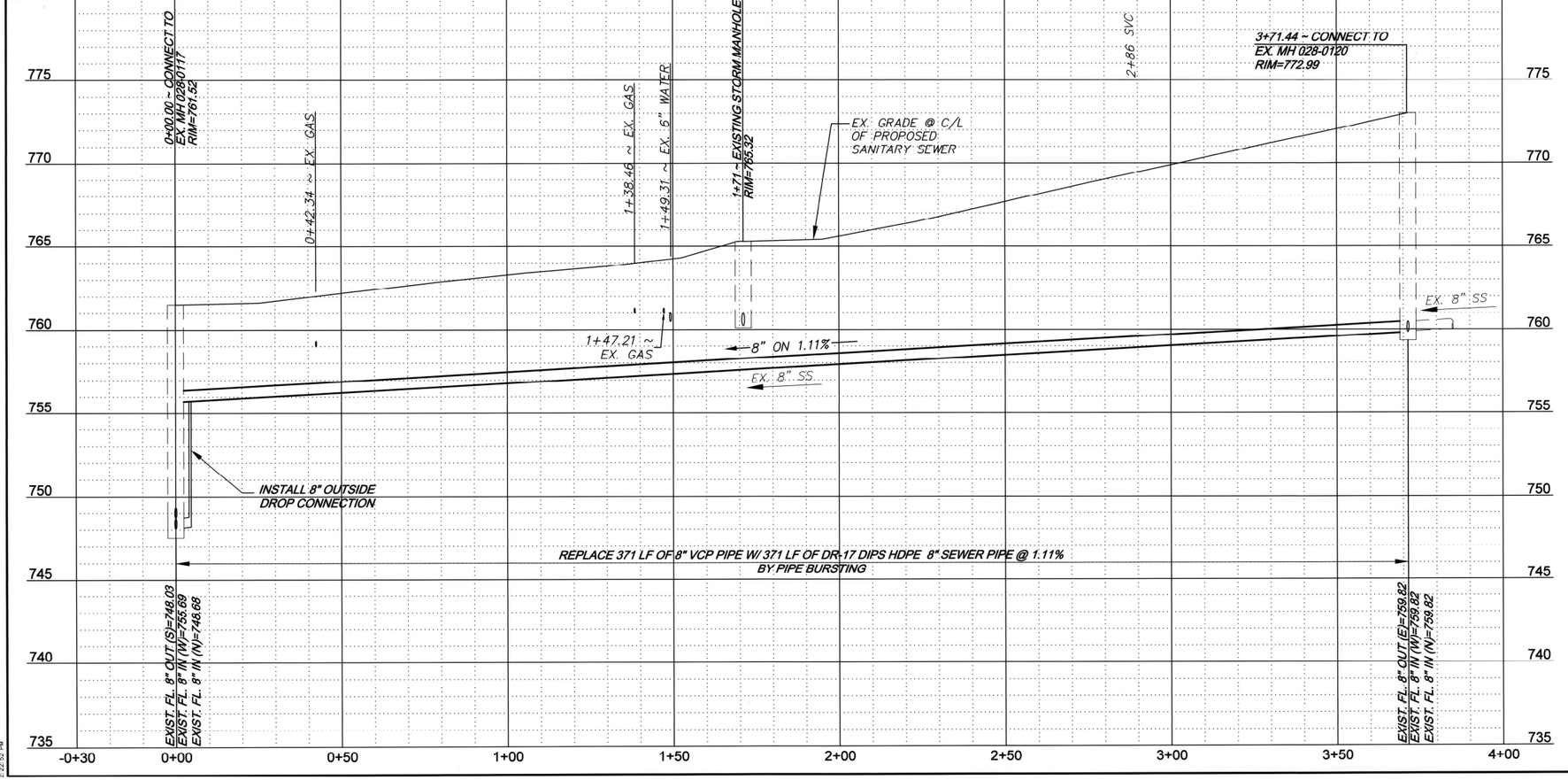
N=431240.07
E=2559206.92
EL=772.28

0 10' 20' 40'
SCALE: 1" = 20'

1. SEE SHEET 3 FOR GENERAL NOTES.

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543



9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

PLAN & PROFILE LINE H

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

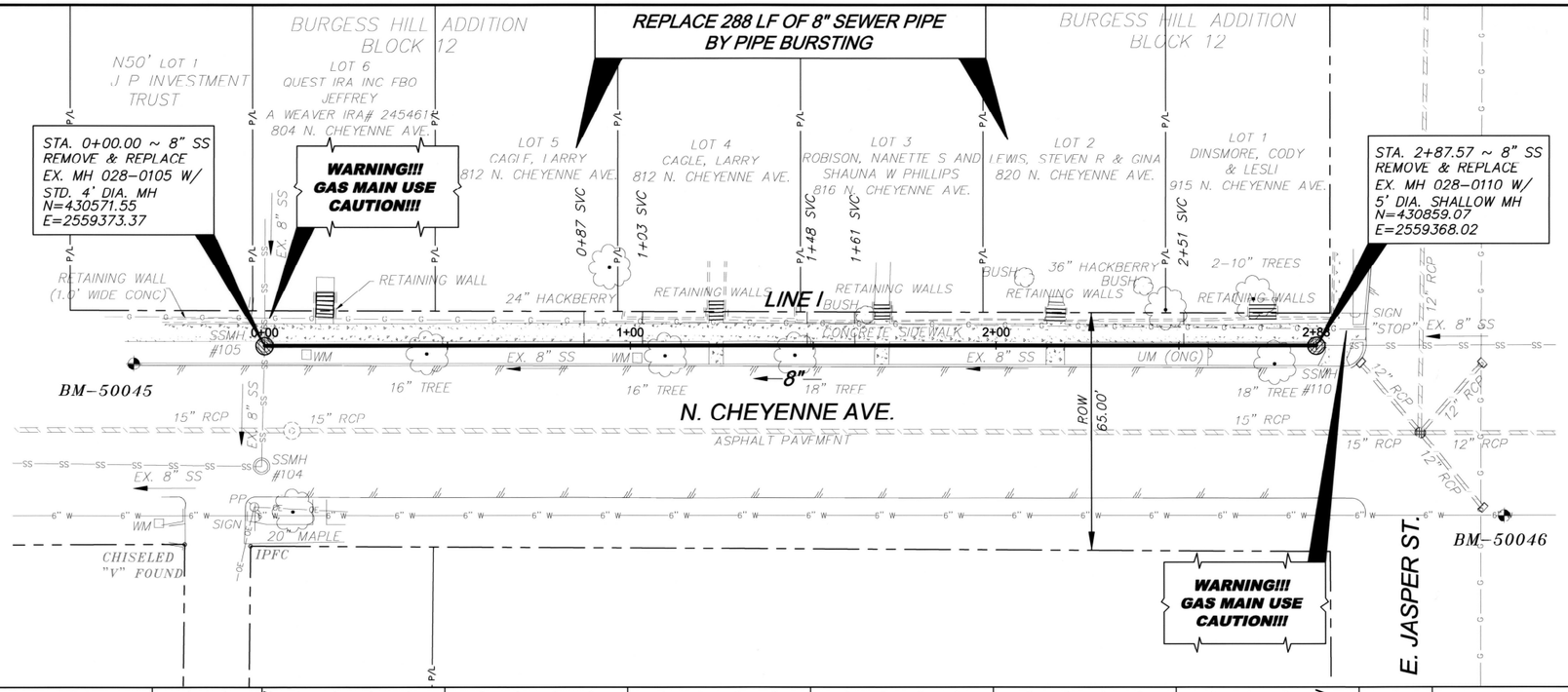
PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE	DRAWN	RLP	...
	DESIGNED	RJB	...
1" = 20'	SURVEY	H&A	...
	PROJ. MGR.		
PROFILE SCALE:	LEAD. ENGR.	ADT	9/22
HORIZONTAL: 1"= 20'	FIELD MGR.	[illegible]	9/22
VERTICAL: 1"= 4'	RECOMMENDED DESIGN MANAGER	HAS	10.22
FILE:	DRAWING:		
ATLAS PAGE NO.: 22			

APPROVED
CITY ENGINEER
DATE: September 2022
SHEET 23 OF 47

\\TUL-PANZUFA1\OFFICE-30\TULSA\PROJECTS\30-36108-01 TULSA IOT2 AREAWIDE SEWER REHABILITATION FY 2022\CADD\DRAWINGS\23 LINE H.DWG
Thursday, September 15, 2022
12:22 PM
rjn



BENCHMARKS:

BM-50045
CHISELED "X" SET 5' EAST AND 35' SOUTH OF EX. MH 028-0105

N=430535.87
E=2559378.79
EL=753.67

BM-50046
MAG NAIL SET 52' NORTH AND 47' EAST OF EX. MH 028-0110

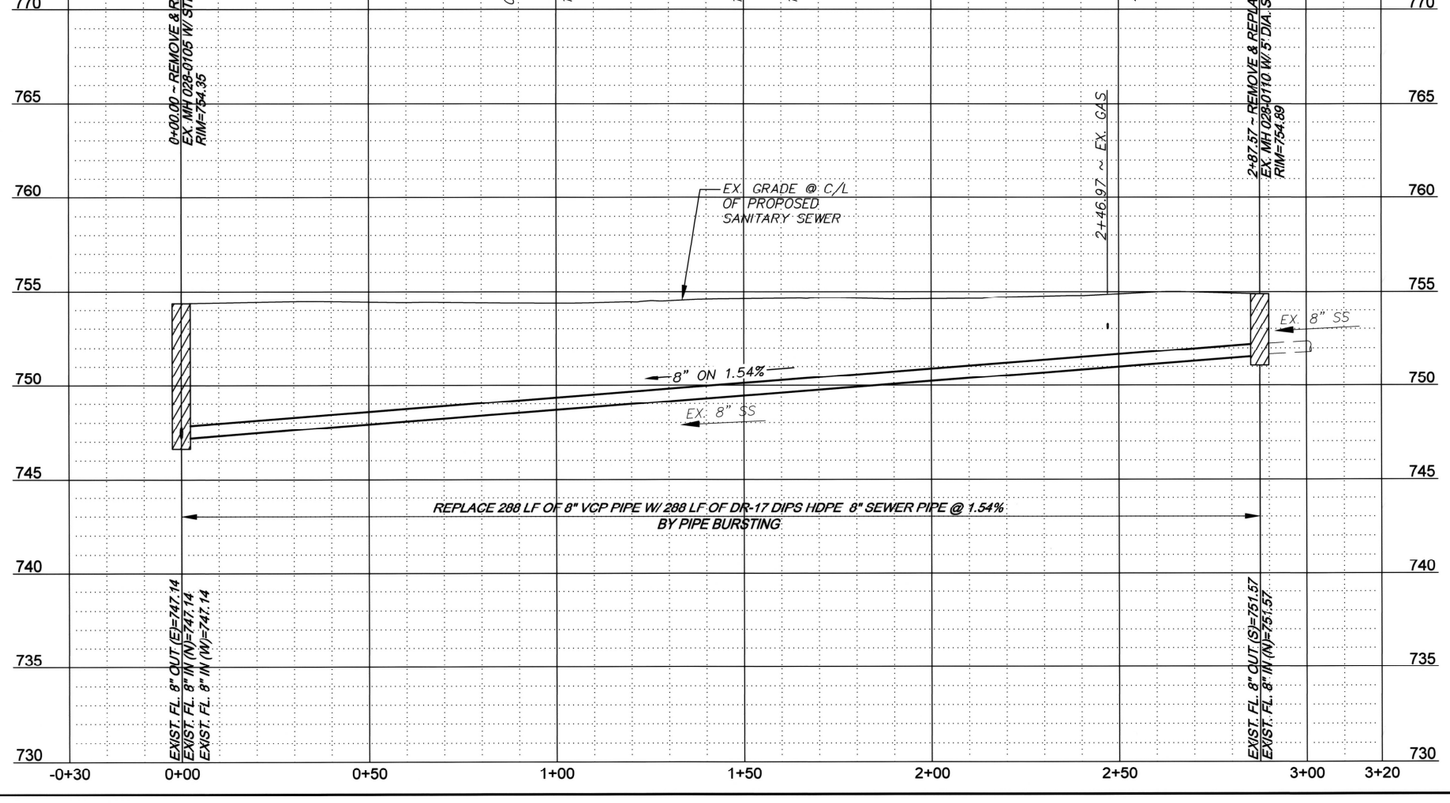
N=430911.26
E=2559413.53
EL=753.35

1. SEE SHEET 3 FOR GENERAL NOTES.

0 10' 20' 40'
SCALE: 1" = 20'

BEFORE YOU DIG...
CALL OKIE
1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543



9-14-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

PLAN & PROFILE LINE I

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE: 1" = 20'
PROFILE SCALE: HORIZONTAL: 1"= 20' VERTICAL: 1"= 4'

DRAWN	RLP	...
DESIGNED	RJB	...
SURVEY	H&A	...
PROJ. MGR.		
LEAD. ENGR.	ADJ	9/22
FIELD MGR.	[illegible]	9/22
RECOMMENDED DESIGN MANAGER	HAS	10-22

APPROVED CITY ENGINEER

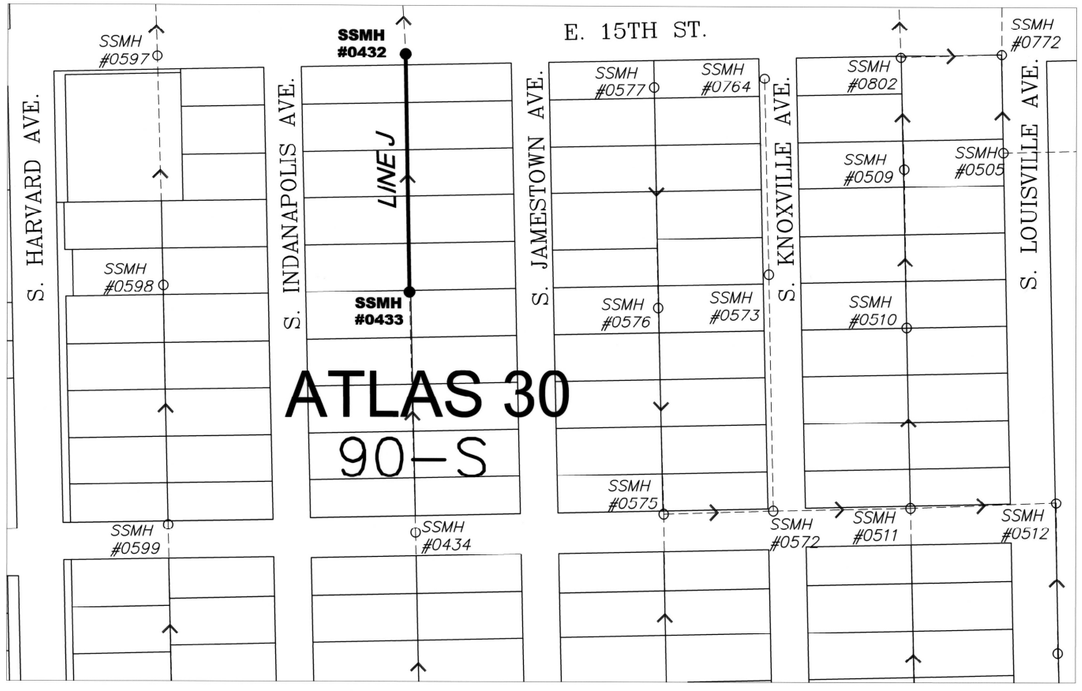
FILE: DRAWING: DATE: September 2022

ATLAS PAGE NO.: 22 SHEET 24 OF 47

\\TUL-PANZURA1\OFFICE-3D\TULSA\PROJECTS\30-3608-01 TULSA IOT2 AREAWIDE SEWER REHABILITATION FY 2022\CADD\DRAWINGS\24 LINE I.DWG
Thursday, September 15, 2022
2:13:57 PM

N.T.S.

LINE J - SHEET 26



9-14-22

REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

ATLAS PAGE 30 KEY MAP

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

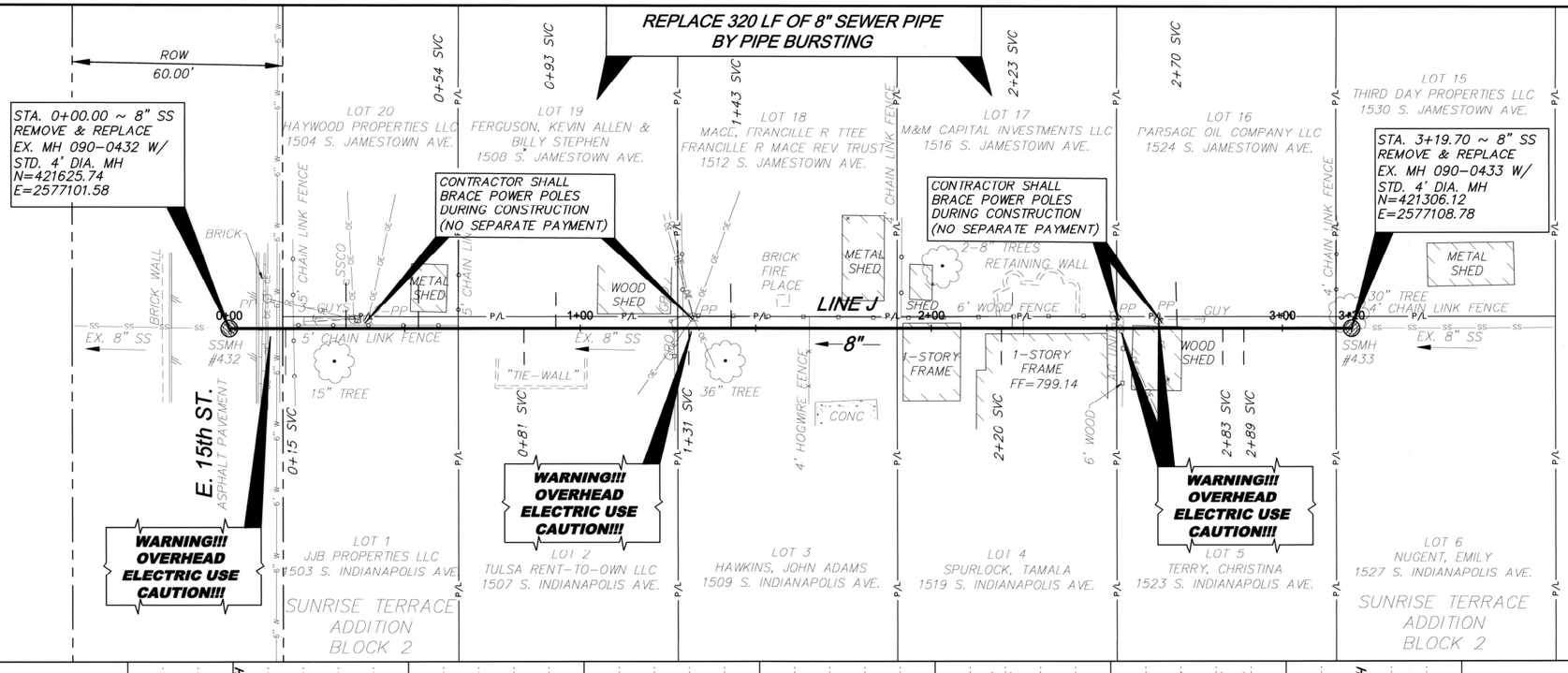
rjngroup

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE	DRAWN	RLP	...
NTS.	DESIGNED	RJB	...
	SURVEY	H&A	...
	PROJ. MGR.		
PROFILE SCALE:	LEAD ENGR.	AOT	9/22
HORIZONTAL: NA	FIELD MGR.	BRM	9/22
VERTICAL: NA	RECOMMENDED	HAS 10.22	
	DESIGN MANAGER		CITY ENGINEER
FILE:	DRAWING:		DATE: September 2022
ATLAS PAGE NO.: 30			SHEET 25 OF 47

APPROVED



BENCHMARKS:

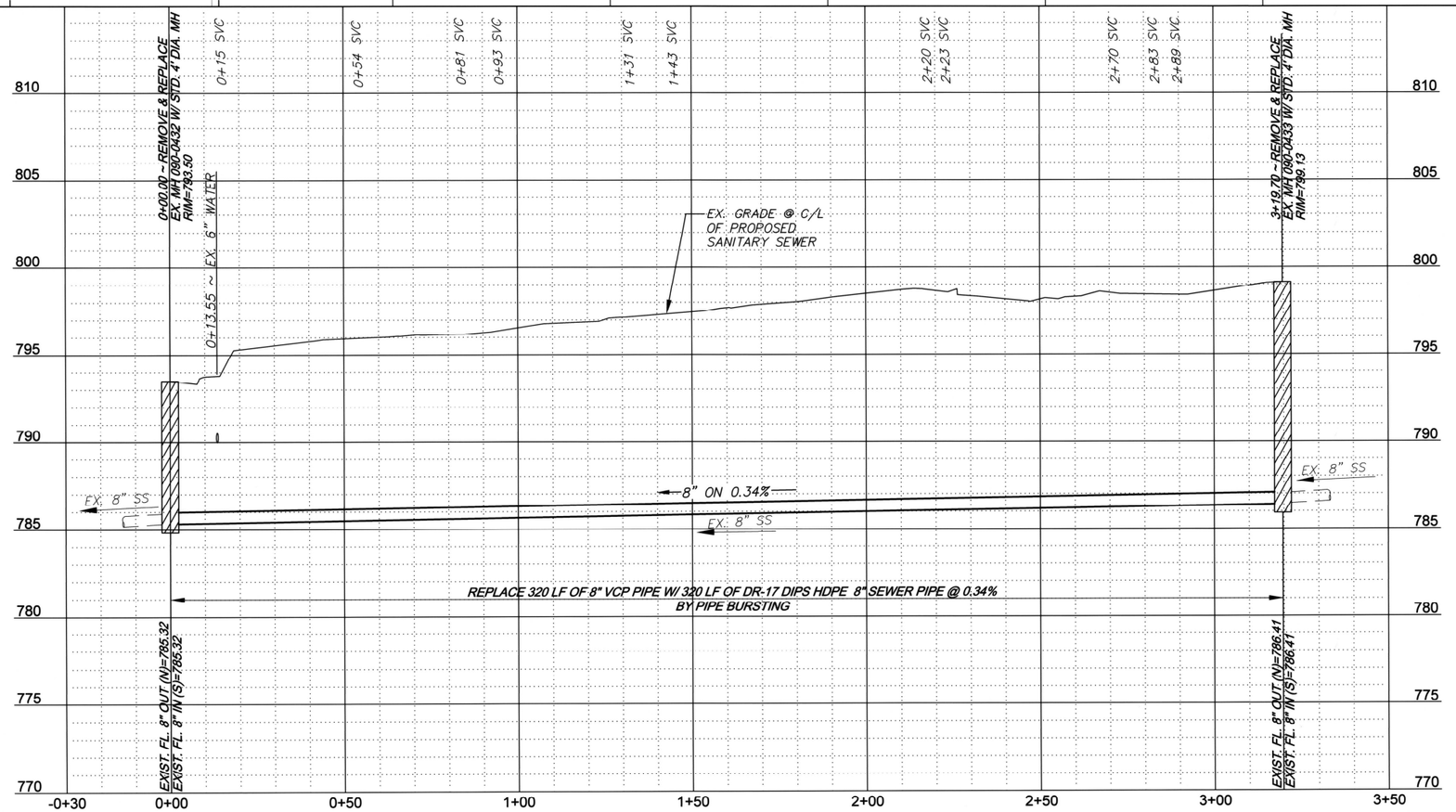
BM-61529
IRON PIN SET 187' WEST AND 65' SOUTH OF EX. MH 090-0432
(NOT SHOWN)
N=421556.25
E=2576919.38
EL=793.05

1. SEE SHEET 3 FOR GENERAL NOTES.

0 10' 20' 40'
SCALE: 1" = 20'

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543



9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

PLAN & PROFILE LINE J

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

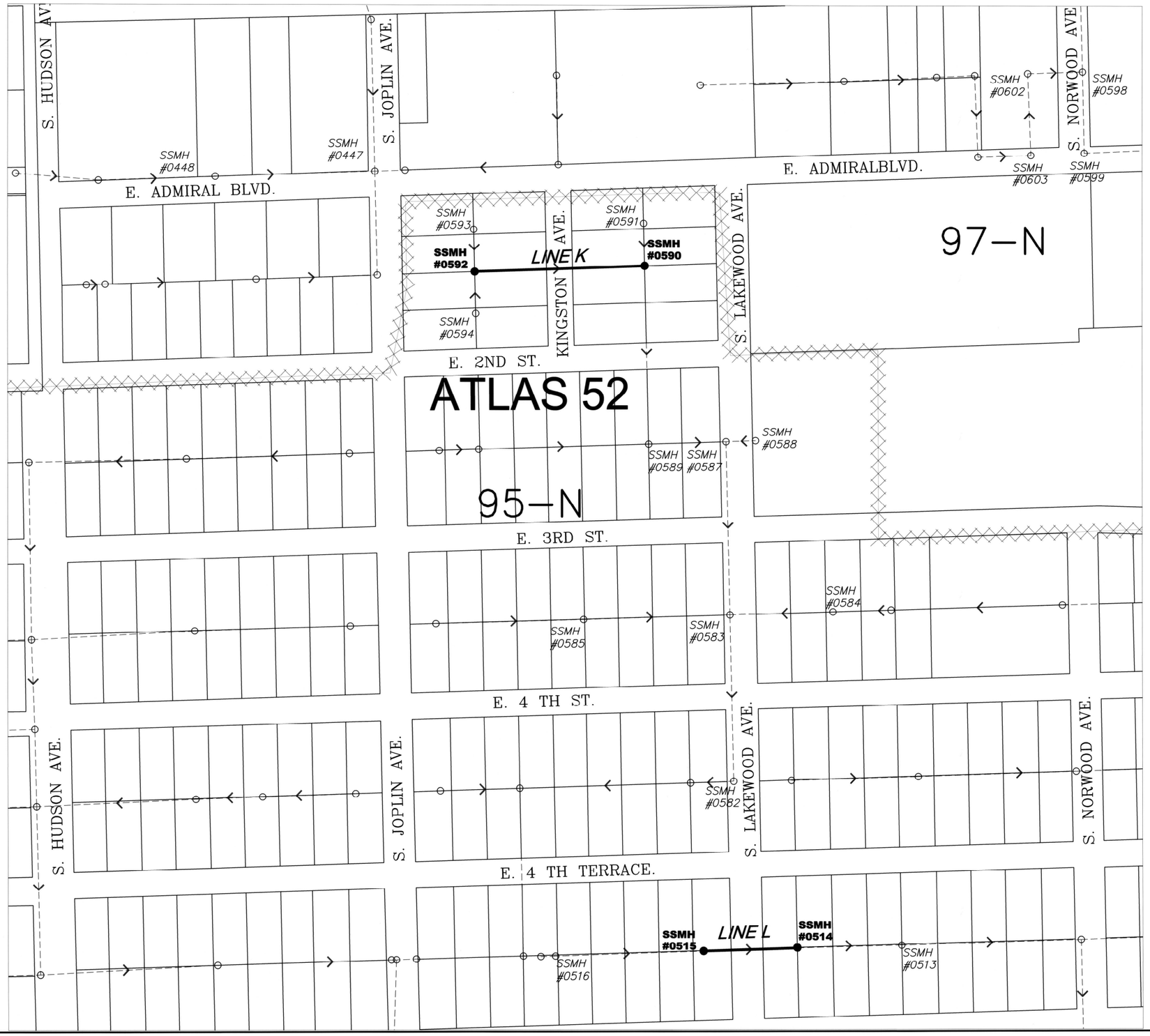
PLANS AND ESTIMATES PREPARED BY:
rjngroup
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE	DRAWN	RLP	...
	DESIGNED	RJB	...
1" = 20'	SURVEY	H&A	...
	PROJ. MGR.		
PROFILE SCALE:	LEAD. ENGR.	ADT	9/22
HORIZONTAL:	FIELD MGR.		9/22
1"= 20'	RECOMMENDED		
VERTICAL:	DESIGN MANAGER		10.22
1"= 4'			CITY ENGINEER
FILE:	DRAWING:		DATE: September 2022
ATLAS PAGE NO.: 30			SHEET 26 OF 47

APPROVED

\\TDL-FS01\DWG\OFFICE_30\TULSA\PROJECTS\30-3608-01 TULSA IOT2 AREAWIDE SEWER REHABILITATION FY 2022\CADD\DRAWINGS\08 LINE J.DWG
Thursday, September 15, 2022
2:24:42 PM



N.T.S.

LINE K - SHEET 28
LINE L - SHEET 29

9-16-22

REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

ATLAS PAGE 52 KEY MAP

TMUA PROJECT NO. ES 2020–02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

rjngroup

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE, SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE	DRAWN	RLP	...	APPROVED
NTS.	DESIGNED	RJB	...	
	SURVEY	H&A	...	
	PROJ. MGR.			
PROFILE SCALE:	LEAD ENGR.	DDT	9/22	
HORIZONTAL: NA	FIELD MGR.	RLM	9/22	
VERTICAL: NA	RECOMMENDED	HAS	10-2-22	
	DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:			DATE: September 2022
ATLAS PAGE NO.: 52				SHEET 27 OF 47

REPLACE 318 LF OF 8" SEWER PIPE BY PIPE BURSTING

TOI HEIGHTS SUB BLOCK 1

LOT 3 TRUCO REAL ESTATE–SINGLE LLC 40 S. LAKEWOOD AVE.

LOT 6 DRAKE, AMY 41 S. KINGSTON AVE.

LOT 1 EILERS, DAWN 35 S. KINGSTON AVE.

LOT 2 MEADOWS, JERRY ET AL 34 S. LAKEWOOD AVE.

S. KINGSTON AVE. ASPHALT PAVEMENT

LOT 2 MASTERSON, DONNA L 34 S. KINGSTON AVE.

LOT 3 TICKEFOOSE, PAMELA JAN 40 S. KINGSTON AVE.

TOI HEIGHTS SUB BLOCK 2

LOT 6 PARKER, JACOB R & JESSICA 41 S. JOPLIN AVE.

LOT 7 JOPLIN PROPERTIES LLC 35 S. JOPLIN AVE.

LINE K

ROW 50.00'

BM–518

SSMH #590

WARNING!!! OVERHEAD ELECTRIC USE CAUTION!!!

WARNING!!! GAS MAIN USE CAUTION!!!

CONTRACTOR SHALL BRACE POWER POLE DURING CONSTRUCTION (NO SEPARATE PAYMENT)

STA. 0+00.00 ~ 8" SS CONNECT TO EX. MH 095–0590 TYPE B & Gg REPAIR N=428632.54 E=2585531.75

STA. 3+18.01 ~ 8" SS CONNECT TO EX. MH 095–0592 TYPE B & Gg REPAIR N=428622.26 E=2585213.90

BENCHMARKS:

BM–518
IRON PIN SET 143' EAST AND 4' NORTH OF EX. MH 095–0592

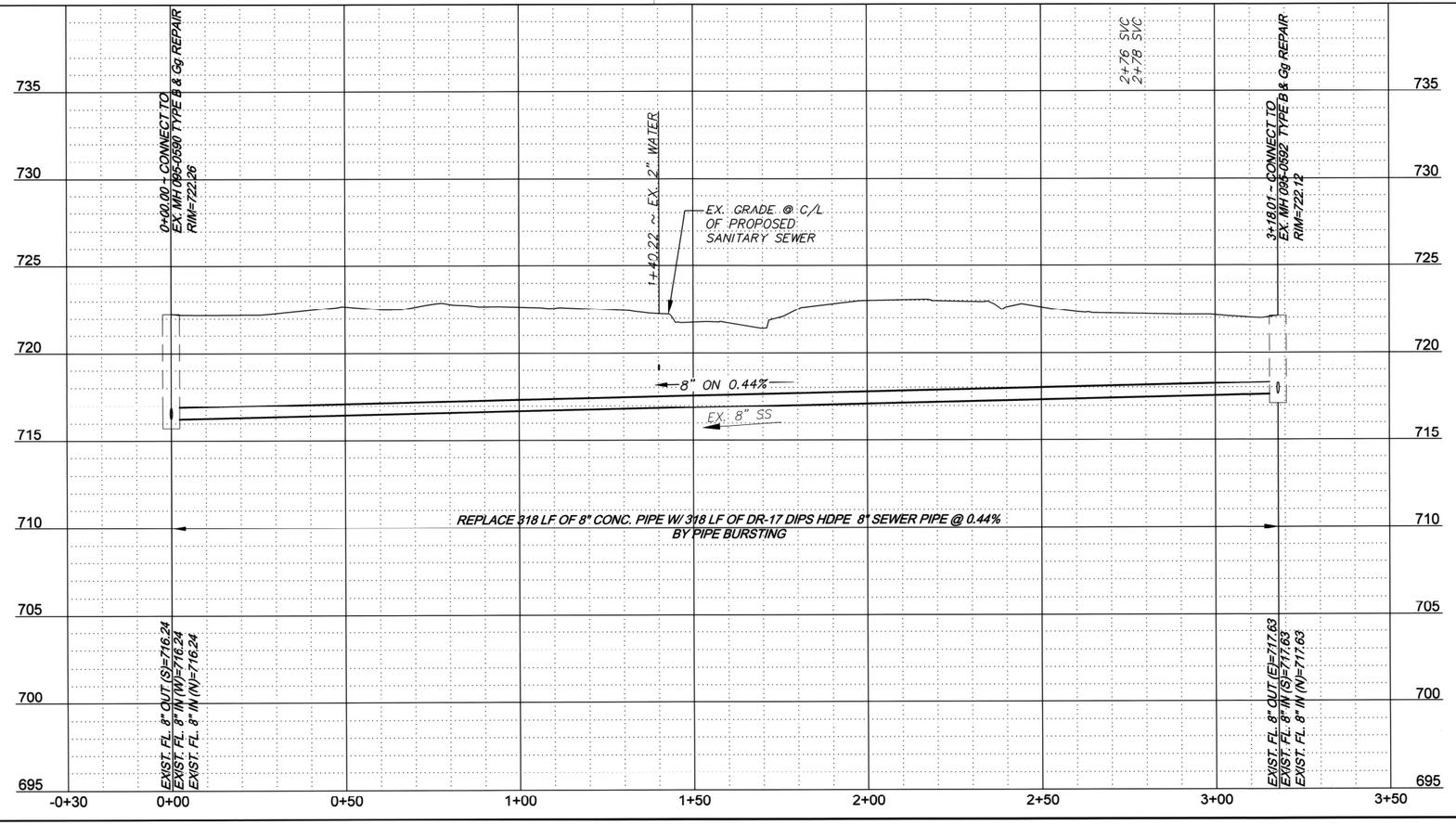
N=428630.55
E=2585356.98
EL=722.34

1. SEE SHEET 3 FOR GENERAL NOTES.

0 10' 20' 40'
SCALE: 1"= 20'

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543



REPLACE 318 LF OF 8" CONC. PIPE W/ 318 LF OF DR-17 DIPS HDPE 8" SEWER PIPE @ 0.44% BY PIPE BURSTING

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

PLAN & PROFILE LINE K

TMUA PROJECT NO. ES 2020–02

IMPROVE OUR TULSA 2 AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

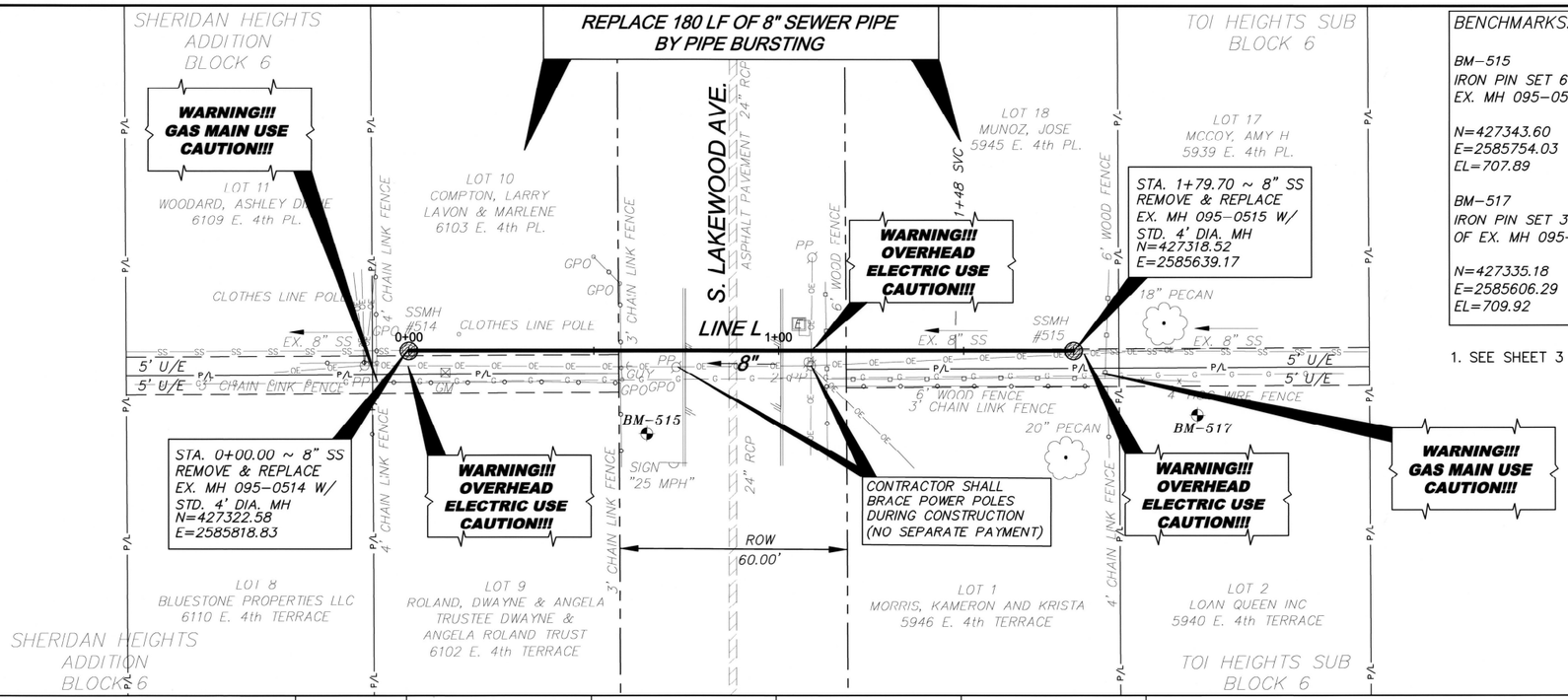
PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE. SUITE 105, TULSA, OKLAHOMA 74146

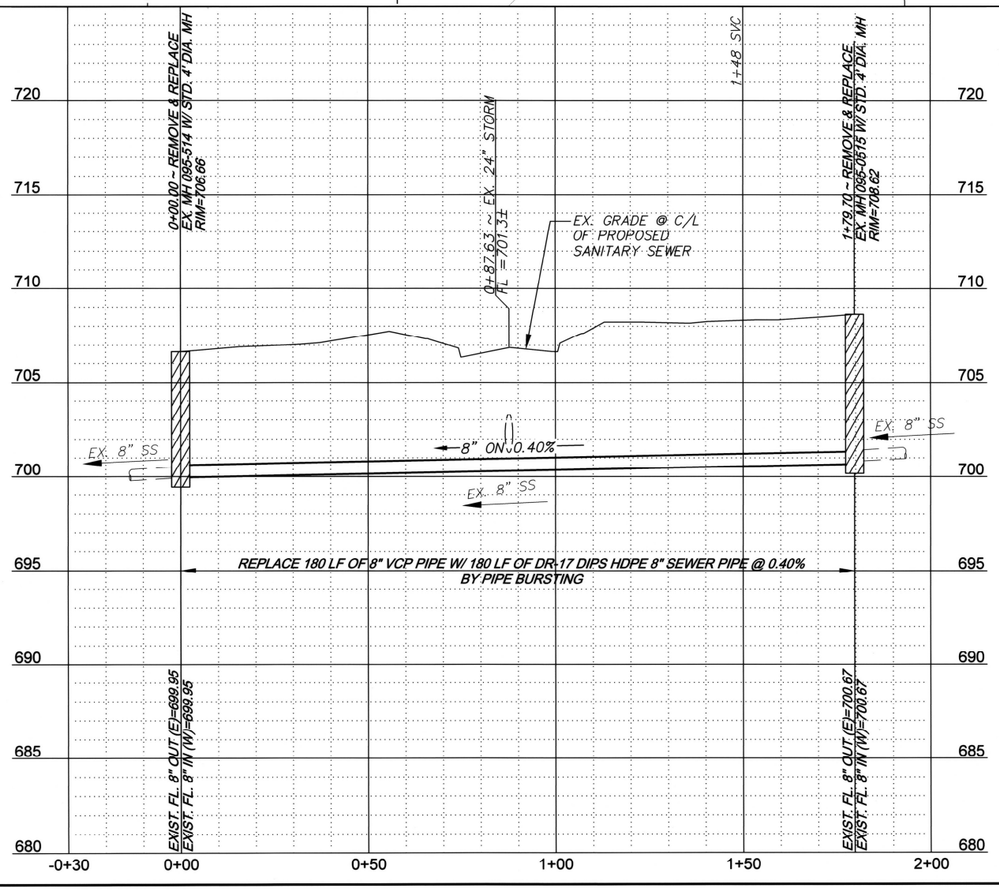
REVISION	BY	DATE

PLAN SCALE	DRAWN	RLP	...
	DESIGNED	RJB	...
1" = 20'	SURVEY	H&A	...
	PROJ. MGR.		
PROFILE SCALE:	LEAD. ENGR.	ADT	9/22
HORIZONTAL:	FIELD MGR.		9/22
1"= 20'	RECOMMENDED	HMS	10-22
VERTICAL:	DESIGN MANAGER		CITY ENGINEER
1"= 4'			
FILE:	DRAWING:		DATE: September 2022
ATLAS PAGE NO.: 52			SHEET 28 OF 47

APPROVED

\\TUL-FAN2\RAY\OFFICE_2021\TULSA\PROJECTS\30-3608-01 TULSA IOT2 AREAWIDE SEWER REHABILITATION FY 2022\CADD\DRAWINGS\28 LINE K.DWG
Thursday, September 15, 2022
2:25:48 PM





BENCHMARKS:

BM-515
IRON PIN SET 65' WEST AND 25' NORTH OF EX. MH 095-0514

N=427343.60
E=2585754.03
EL=707.89

BM-517
IRON PIN SET 34' WEST AND 17' NORTH OF EX. MH 095-0515

N=427335.18
E=2585606.29
EL=709.92

1. SEE SHEET 3 FOR GENERAL NOTES.

0 10' 20' 40'
SCALE: 1"= 20'

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

PLAN & PROFILE LINE L

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

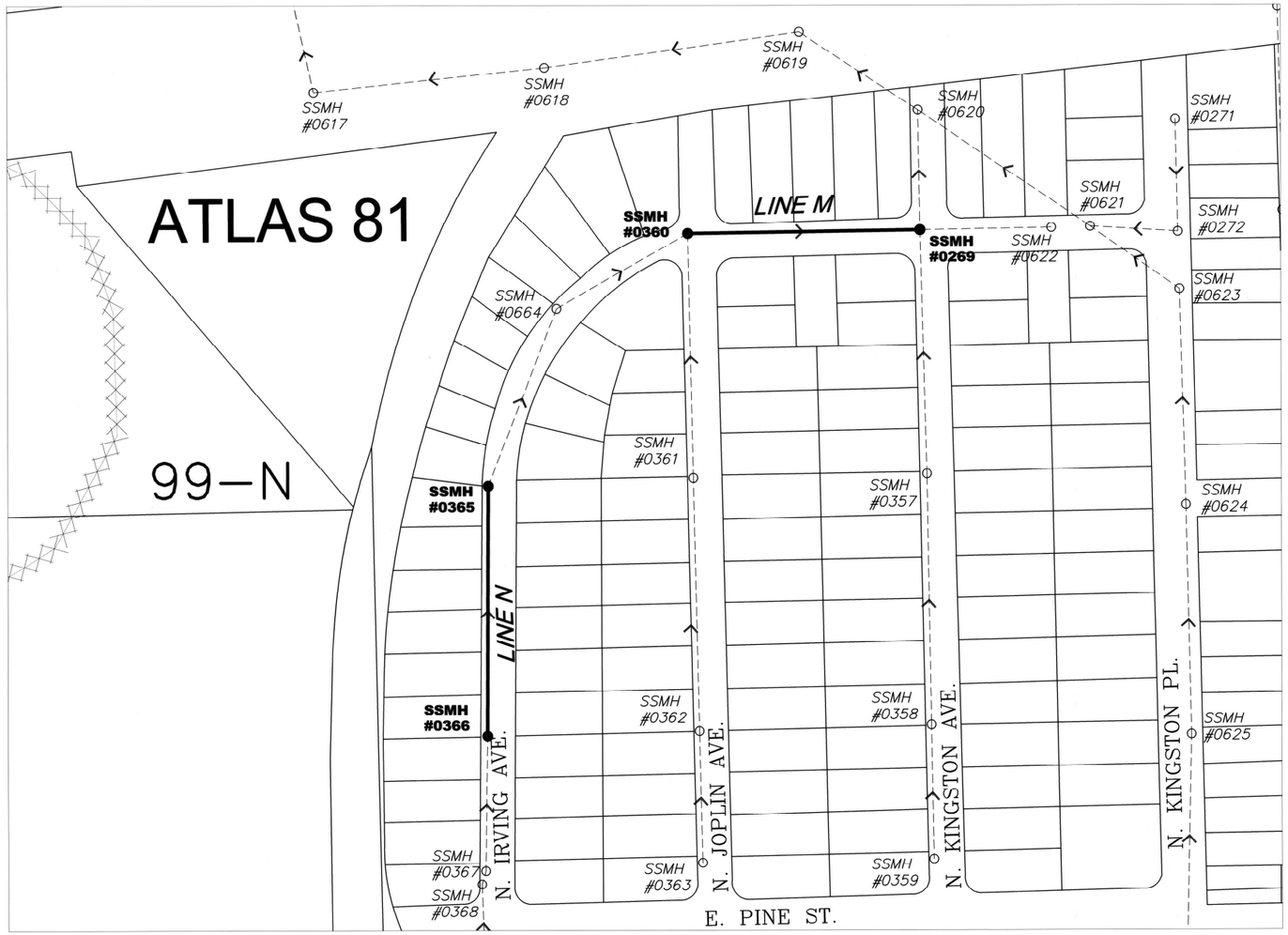
PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE	DRAWN	RLP	...
1" = 20'	DESIGNED	RJB	...
	SURVEY	H&A	...
	PROJ. MGR.		
PROFILE SCALE:	LEAD. ENGR.	ADT	9/22
HORIZONTAL: 1"= 20'	FIELD MGR.		
VERTICAL: 1"= 4'	RECOMMENDED	HAS 10-22	
	DESIGN MANAGER		CITY ENGINEER
FILE:	DRAWING:		DATE: September 2022
ATLAS PAGE NO.: 52			SHEET 29 OF 47

APPROVED

\\TUL-FANZURA\OFFICE-2\TULSA\PROJECTS\JC-3608-01 TULSA IOT2 AREAWIDE SEWER REHABILITATION FY 2022\CADD\DRAWINGS\09 LINE L.DWG
Nov 21, 2022 - 2:56:21 PM



N.T.S.

LINE M - SHEET 31
LINE N - SHEET 32

9-16-22

REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

ATLAS PAGE 81 KEY MAP

TMUA PROJECT NO. ES 2020–02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

rjngroup

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE, SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE	DRAWN	RLP	...	APPROVED
	DESIGNED	RJB	...	
NTS.	SURVEY	H&A	...	
	PROJ. MGR.			
PROFILE SCALE:	LEAD ENGR.	ADT	9/22	
HORIZONTAL. NA	FIELD MGR.	DEM	9/22	
VERTICAL:	RECOMMENDED			
NA	DESIGN MANAGER	HAS	9.22	CITY ENGINEER
FILE:	DRAWING:			DATE: September 2022
ATLAS PAGE NO.: 81				SHEET 30 OF 47

REPLACE 330 LF OF 8" SEWER PIPE BY PIPE BURSTING

N. KINGSTON AVE. ASPHALT PAVEMENT

N. JOPLIN AVE. ASPHALT PAVEMENT

N. IRVINGTON AVE ASPHALT PAVEMENT

E. READING ST. ASPHALT PAVEMENT

LOSEY'S ADDITION BLOCK 5

LOSEY'S ADDITION BLOCK 2

LOT 1 J&J REYNOLDS LLC 1570 N. KINGSTON AVE.

LOT 31 J&J REYNOLDS LLC 5912 E. READING ST.

LOT 30 SVS INVESTMENTS LLC 1569 N. JOPLIN AVE.

LOT 1 BALOGH, ADAM K 5921 E. READING ST.

LOT 2 CRUZ, MARINE 5917 E. READING ST.

LOT 3 REGIER, CONNIE M IRUST 5911 E. READING ST.

LOT 4 T TOWN HOME BUYERS LLC 5907 E. READING ST.

LOT 5 CARROLL, JUSTIN 5903 E. READING ST.

WARNING!!! GAS MAIN USE CAUTION!!!

WARNING!!! GAS MAIN USE CAUTION!!!

50257 60D NAIL FOUND

50260 2" IPPF

LINE M

0+00 1+00 2+00 3+00 3+30

8"

ROW 50.00'

BM-504

BM-505

SSMH #269

SSMH #360

STA. 0+00.00 ~ 8" SS REMOVE & REPLACE EX. DROP MH 099-0269 W/ STD. 4' DIA. DROP MH N=436106.47 E=2585022.86

STA. 3+29.83 ~ 8" SS REMOVE & REPLACE EX. MH 099-0360 W/ STD. 4' DIA. DROP MH N=436096.17 E=2584693.19

0+35 SVC

0+82 SVC

1+51 SVC

1+53 SVC

2+01 SVC

2+56 SVC

BENCHMARKS:

BM-504
MAG NAIL SET 25' EAST AND 5' NORTH OF EX. MH 099-0269

N=436112.03
E=2585047.16
EL=659.63

BM-505
MAG NAIL SET 30' SOUTH AND 1' WEST OF EX. MH 099-0360

N=436065.82
E=2584693.61
EL=665.29

1. SEE SHEET 3 FOR GENERAL NOTES.

0 10' 20' 40'
SCALE: 1"= 20'

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543

0+00.00 - REMOVE & REPLACE EX. MH 099-0269 W/ STD. 4' DIA. DROP MH RIM=639.98

0+12.24 ~ EX. GAS

0+13.38 ~ EX. 15" STORM FL =635.9±

3+29.83 - REMOVE & REPLACE EX. MH 099-0360 W/ STD. 4' DIA. DROP MH RIM=665.09

EX. GRADE @ C/L OF PROPOSED SANITARY SEWER

INSTALL 8" OUTSIDE DROP CONNECTION

INSTALL 8" OUTSIDE DROP CONNECTIONS

8" ON 1.52%

EX. 8" SS

REPLACE 330 LF OF 8" VCP PIPE W/ 330 LF OF DR-17 DIPS HDPE 8" SEWER PIPE @ 1.52% BY PIPE BURSTING

EXIST. FL. 8" OUT (N)=650.17
EXIST. FL. 8" IN (W)=653.31
EXIST. FL. 8" IN (S)=653.31
EXIST. FL. 8" IN (E)=650.17

EXIST. FL. 8" OUT (E)=658.53
EXIST. FL. 8" IN (SW)=658.53
EXIST. FL. 8" IN (S)=661.03

675 670 665 660 655 650 645 640 635

-0+30 0+00 0+50 1+00 1+50 2+00 2+50 3+00 3+50

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

PLAN & PROFILE LINE M

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

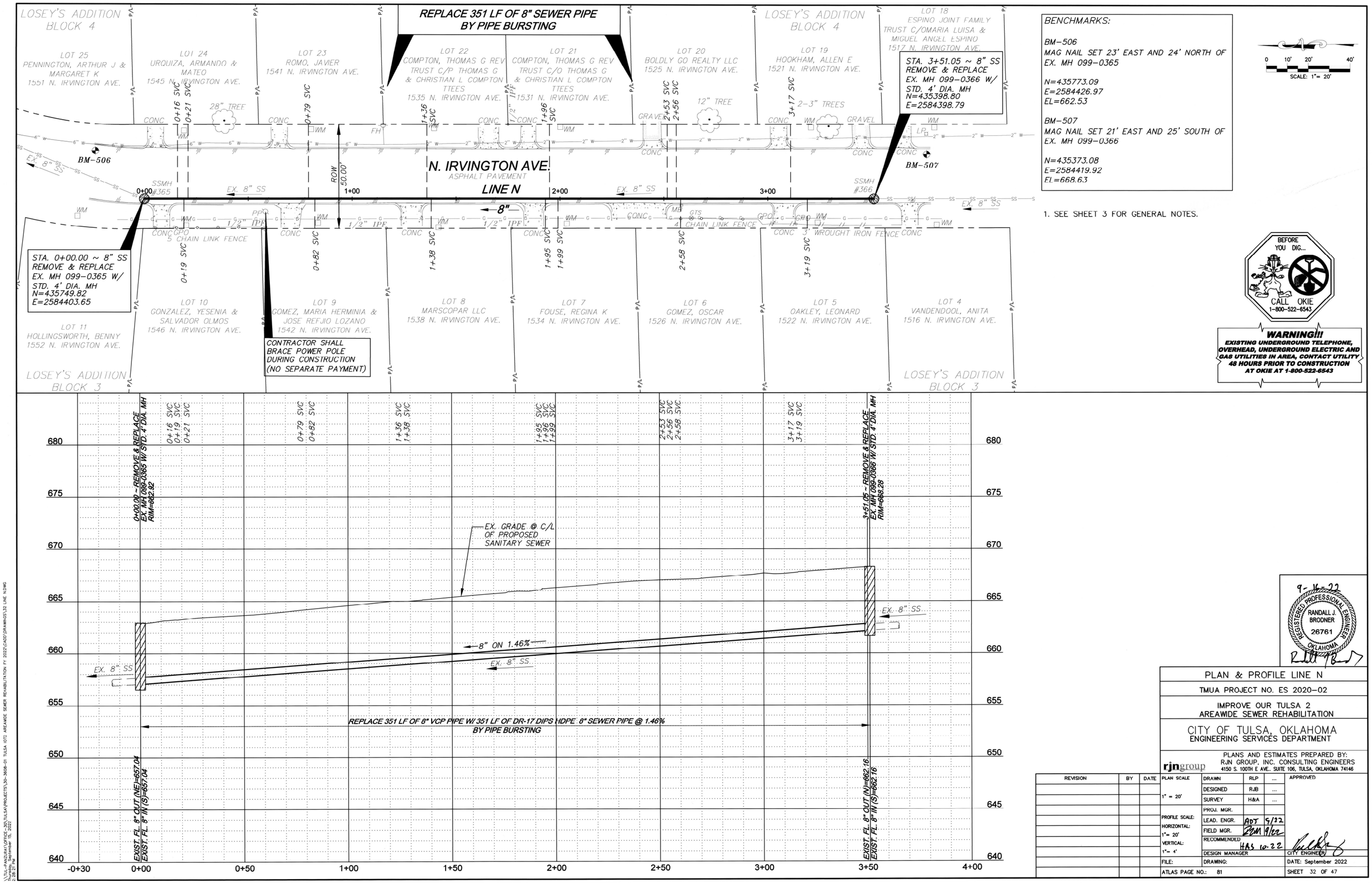
PLAN SCALE
1" = 20'

PROFILE SCALE:
HORIZONTAL: 1"= 20'
VERTICAL: 1"= 4'

DRAWN	RLP	...
DESIGNED	RJB	...
SURVEY	H&A	...
PROJ. MGR.		
LEAD. ENGR.	AOJ	9/22
FIELD MGR.		9/22
RECOMMENDED	HAS 10.2.2	
DESIGN MANAGER		CITY ENGINEER
FILE:	DRAWING:	DATE: September 2022
ATLAS PAGE NO.: 81		SHEET 31 OF 47

APPROVED

\\TUL-SHAUNA\PROJECTS-3\TULSA\PROJECTS\30-3608-01 TULSA 012 AREAWIDE SEWER REHABILITATION FY 2022\CADD\SHEETS\31 LINE M.DWG
Fri, Sep 16, 2022 - 8:20:29 AM



BENCHMARKS:

BM-506
MAG NAIL SET 23' EAST AND 24' NORTH OF EX. MH 099-0365

N=435773.09
E=2584426.97
EL=662.53

BM-507
MAG NAIL SET 21' EAST AND 25' SOUTH OF EX. MH 099-0366

N=435373.08
E=2584419.92
El.=668.6.3

0 10' 20' 40'
SCALE: 1"= 20'

1. SEE SHEET 3 FOR GENERAL NOTES.

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

PLAN & PROFILE LINE N

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

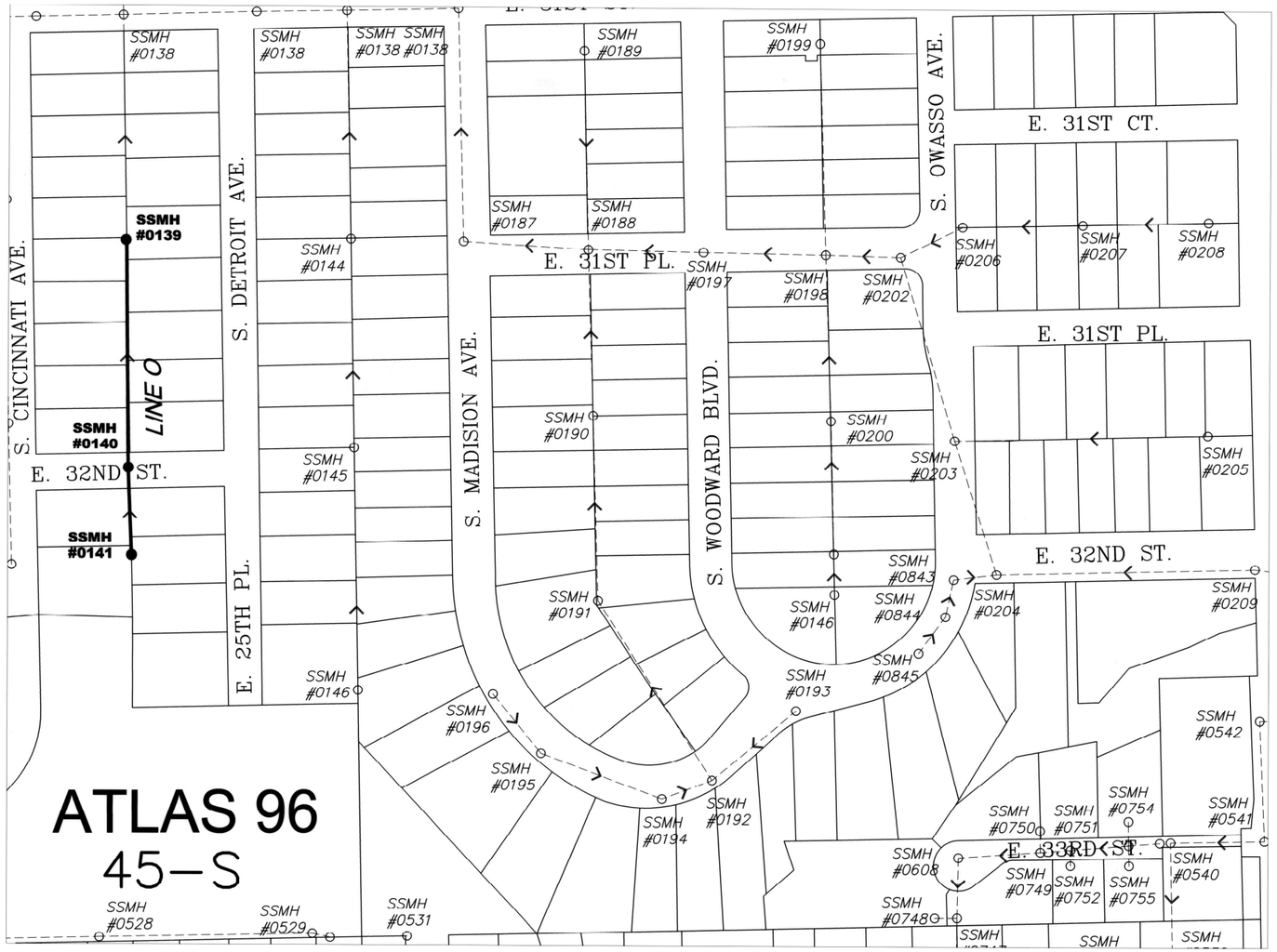
REVISION	BY	DATE

PLAN SCALE: 1" = 20'
PROFILE SCALE: HORIZONTAL: 1"= 20' VERTICAL: 1"= 4'

DRAWN	RLP	...	APPROVED
DESIGNED	RJB	...	
SURVEY	H&A	...	
PROJ. MGR.			
LEAD. ENGR.	ADT	9/22	
FIELD MGR.		9/22	
RECOMMENDED DESIGN MANAGER	HAS	10.22	CITY ENGINEER

FILE: DRAWING: DATE: September 2022
ATLAS PAGE NO.: 81 SHEET 32 OF 47

\\TUL-PANZURA\OFFICE_JOB\TULSA\PROJECTS\JOB-3608-01 TULSA IOT1 AREAWIDE SEWER REHABILITATION FY 2022\CAD\DRAWINGS\32 LINE N.DWG
Thursday, September 15, 2022
2:28:27 PM



N.T.S.

LINE O- SHEET 34

RANDALL J. BRODNER 26761 REGISTERED PROFESSIONAL ENGINEER OKLAHOMA

9-16-22

ATLAS PAGE 96 KEY MAP

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

rjngroup

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE, SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE
NTS.
PROFILE SCALE:
HORIZONTAL:
NA
VERTICAL:
NA

DRAWN	RLP	...
DESIGNED	RJB	...
SURVEY	H&A	...
PROJ. MGR.		
LEAD ENGR.	ADJ	9/22
FIELD MGR.	Sam	9/22
RECOMMENDED	HAS	10.2.2
DESIGN MANAGER		
FILE:	DRAWING:	
ATLAS PAGE NO.: 96		

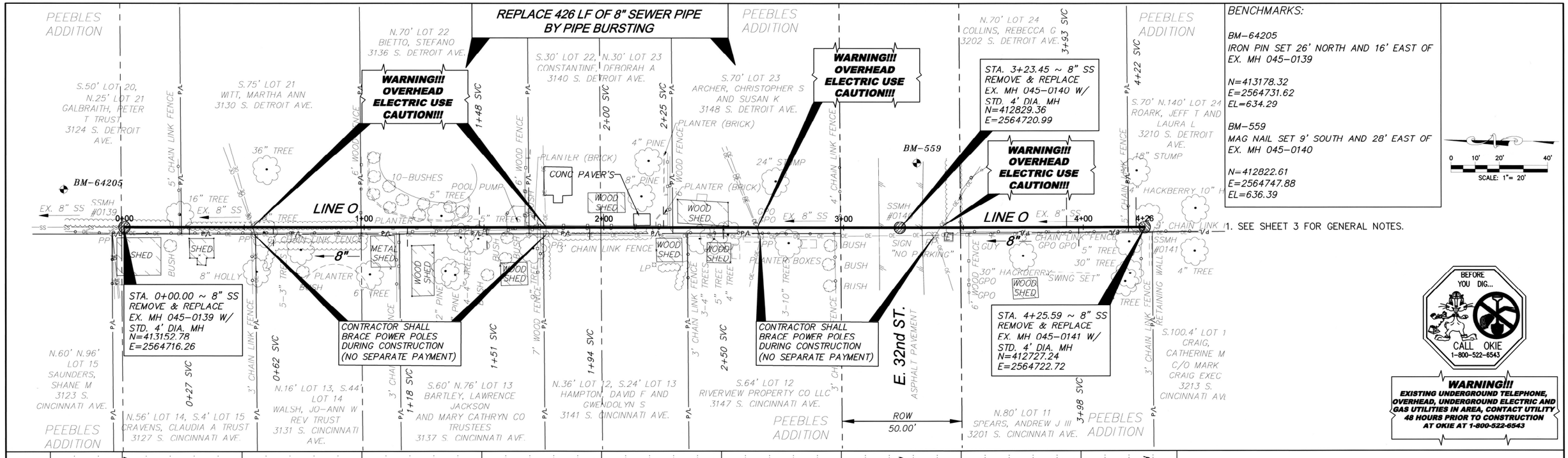
APPROVED

CITY ENGINEER

DATE: September 2022

SHEET 33 OF 47

REPLACE 426 LF OF 8" SEWER PIPE BY PIPE BURSTING



BENCHMARKS:

BM-64205
IRON PIN SET 26' NORTH AND 16' EAST OF EX. MH 045-0139
N=413178.32
E=2564731.62
EL=634.29

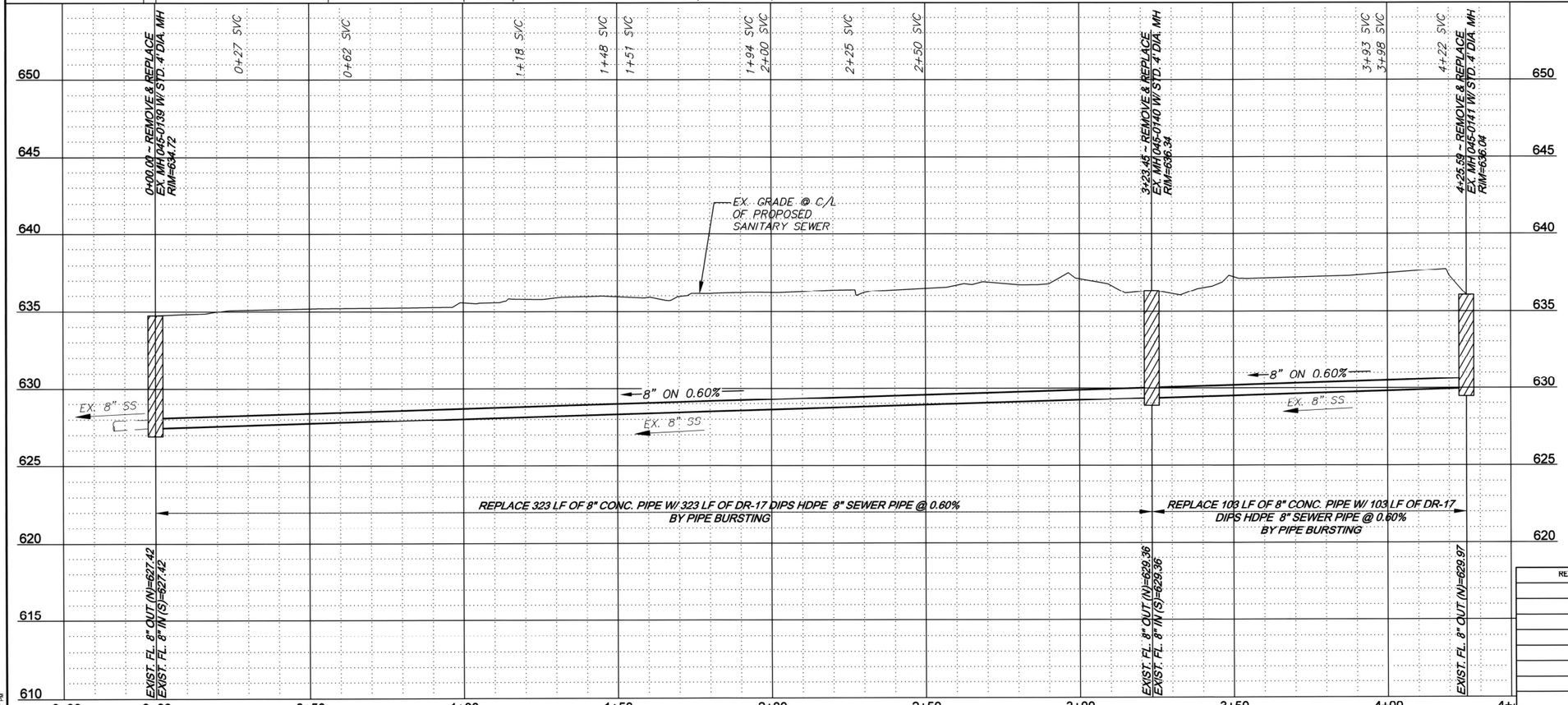
BM-559
MAG NAIL SET 9' SOUTH AND 28' EAST OF EX. MH 045-0140
N=412822.61
E=2564747.88
EL=636.39

SCALE: 1" = 20'

1. SEE SHEET 3 FOR GENERAL NOTES.

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543



9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

REVISION	BY	DATE

PLAN & PROFILE LINE O

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

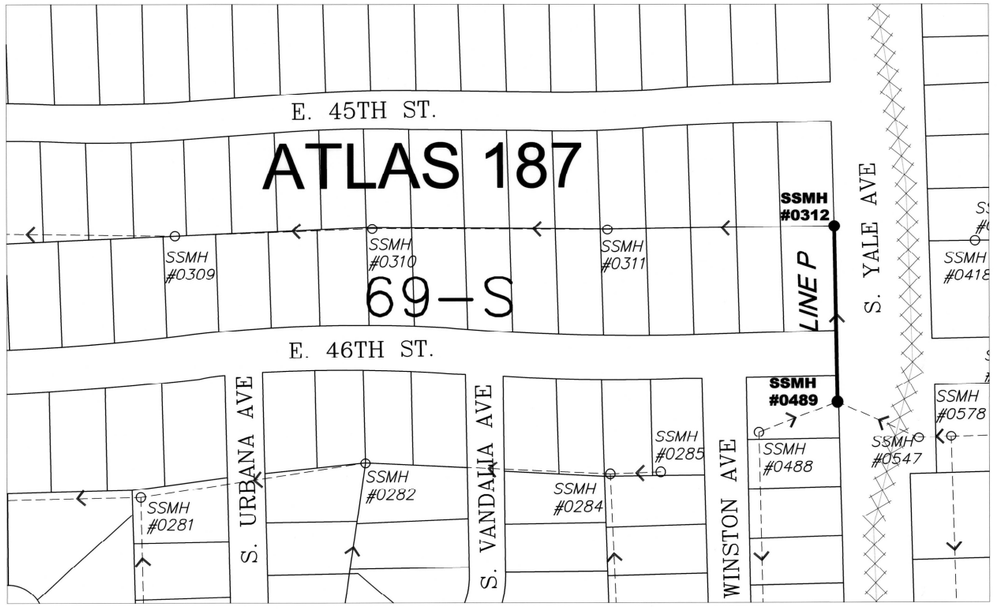
rjngroup

PLAN SCALE 1" = 20'	DRAWN	RLP	...	APPROVED
	DESIGNED	RJB	...	
	SURVEY	H&A	...	
	PROJ. MGR.			
PROFILE SCALE: HORIZONTAL: 1"= 20' VERTICAL: 1"= 4'	LEAD. ENGR.	ADT	9/22	
	FIELD MGR.	RLW	9/22	
	RECOMMENDED	HAS	10.22	
	DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:			DATE: September 2022
ATLAS PAGE NO.: 96				SHEET 34 OF 47

\\TUL-FNAS01\OFFICE_SYS\TULSA\PROJECTS\30-3608-01 TULSA IOT2 AREAWIDE SEWER REHABILITATION FY 2022\CADD\DRAWINGS\34 LINE O.DWG
Thursday, September 15, 2022
2:56:27 PM

N.T.S.

LINE P - SHEET 36



9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

ATLAS PAGE 187 KEY MAP

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

rjngroup

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE	DRAWN	RLP	...	APPROVED
	DESIGNED	RJB	...	
NTS.	SURVEY	H&A	...	
	PROJ. MGR.			
PROFILE SCALE:	LEAD ENGR.	ADJ	9/22	
HORIZONTAL:	FIELD MGR.	RLH	9/22	
NA	RECOMMENDED			
VERTICAL:		HAS	10.22	
NA	DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:			DATE: September 2022
ATLAS PAGE NO.: 187				SHEET 35 OF 47

REPLACE 219 LF OF 8" SEWER PIPE
BY PIPE BURSTING

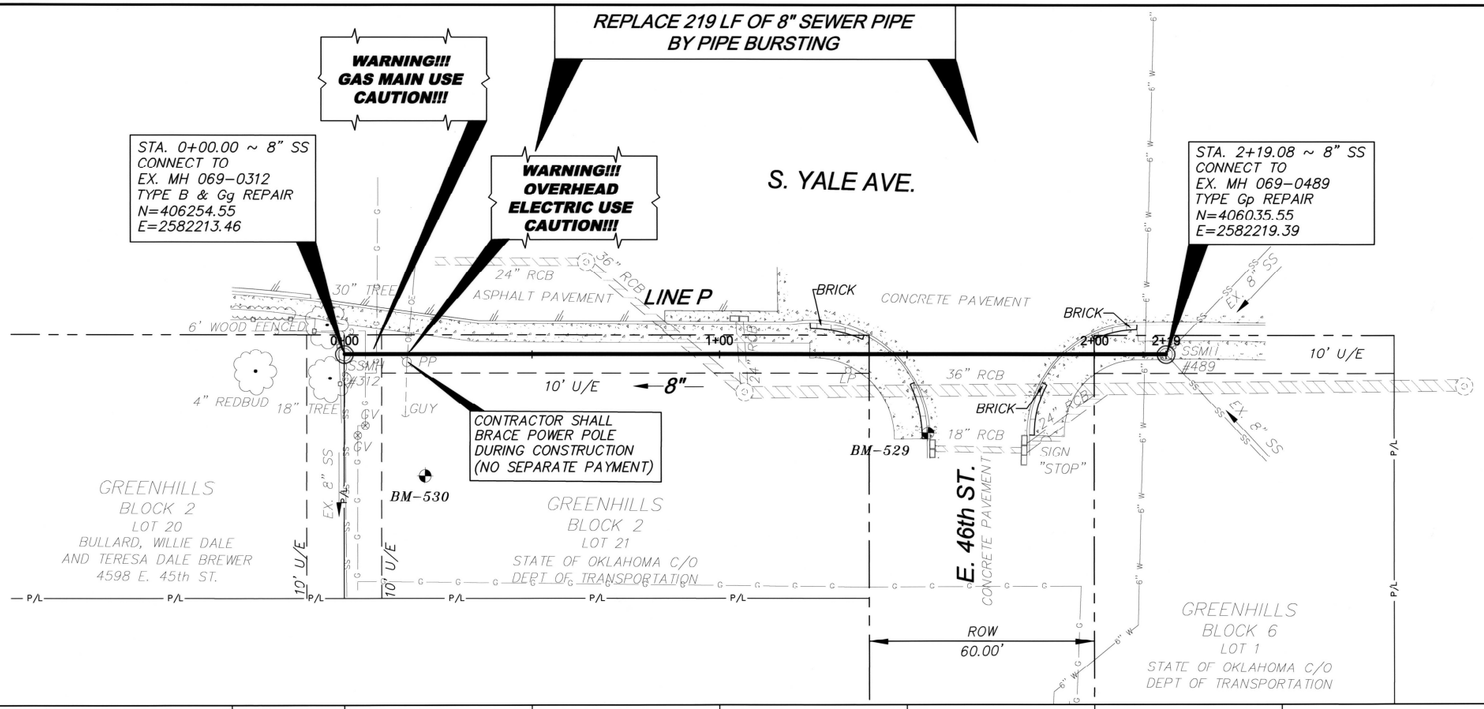
WARNING!!! GAS MAIN USE CAUTION!!!

WARNING!!! OVERHEAD ELECTRIC USE CAUTION!!!

STA. 0+00.00 ~ 8" SS
CONNECT TO
EX. MH 069-0312
TYPE B & Gg REPAIR
N=406254.55
E=2582213.46

STA. 2+19.08 ~ 8" SS
CONNECT TO
EX. MH 069-0489
TYPE Gp REPAIR
N=406035.55
E=2582219.39

S. YALE AVE.



BENCHMARKS:

BM-530
IRON PIN SET 33' WEST AND 21' SOUTH OF
EX. MH 069-0312

N=406232.22
E=2582181.92
EL=717.09

BM-529
MAG NAIL SET 20' WEST AND 64' NORTH OF
EX. MH 069-0489

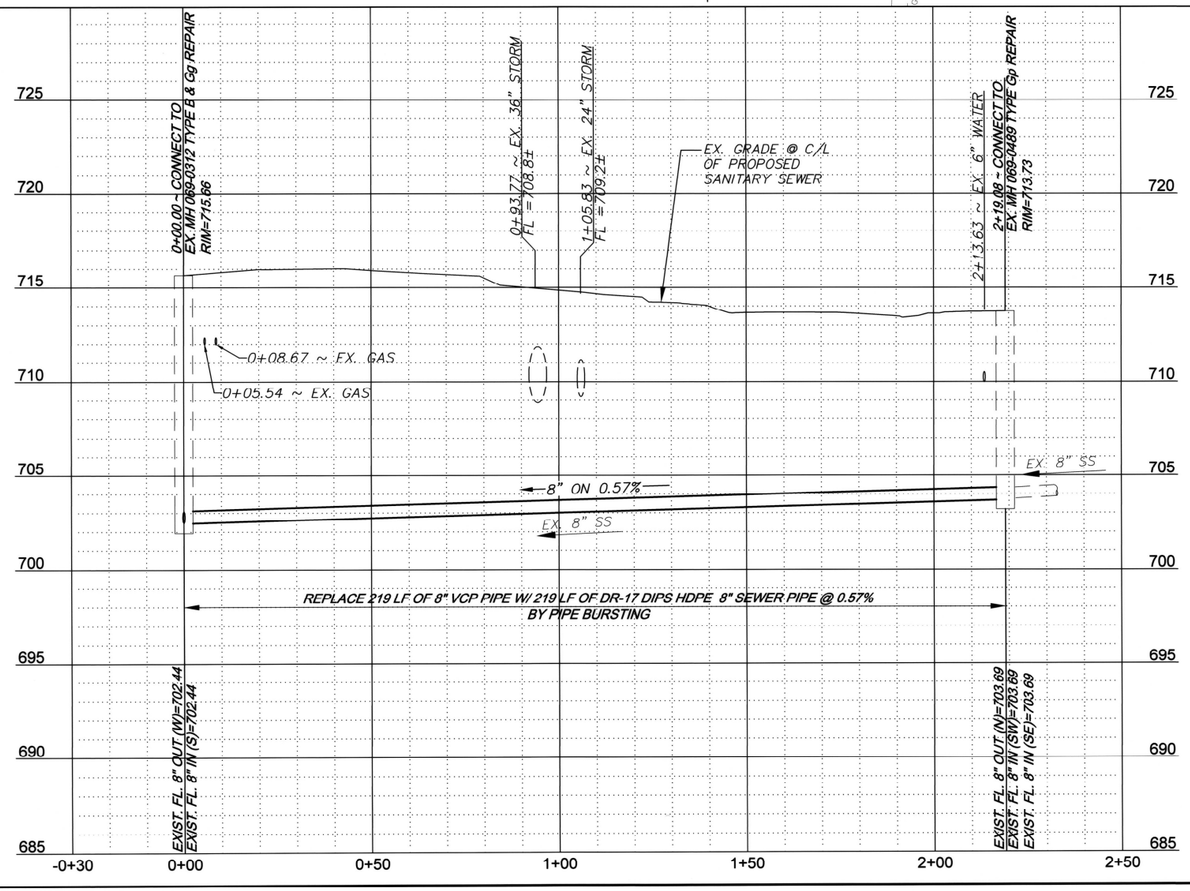
N=406098.46
E=2582196.76
EL=715.04

1. SEE SHEET 3 FOR GENERAL NOTES.

0 10' 20' 40'
SCALE: 1" = 20'

BEFORE YOU DIG...
CALL OKIE
1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543



9-14-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

PLAN & PROFILE LINE P

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

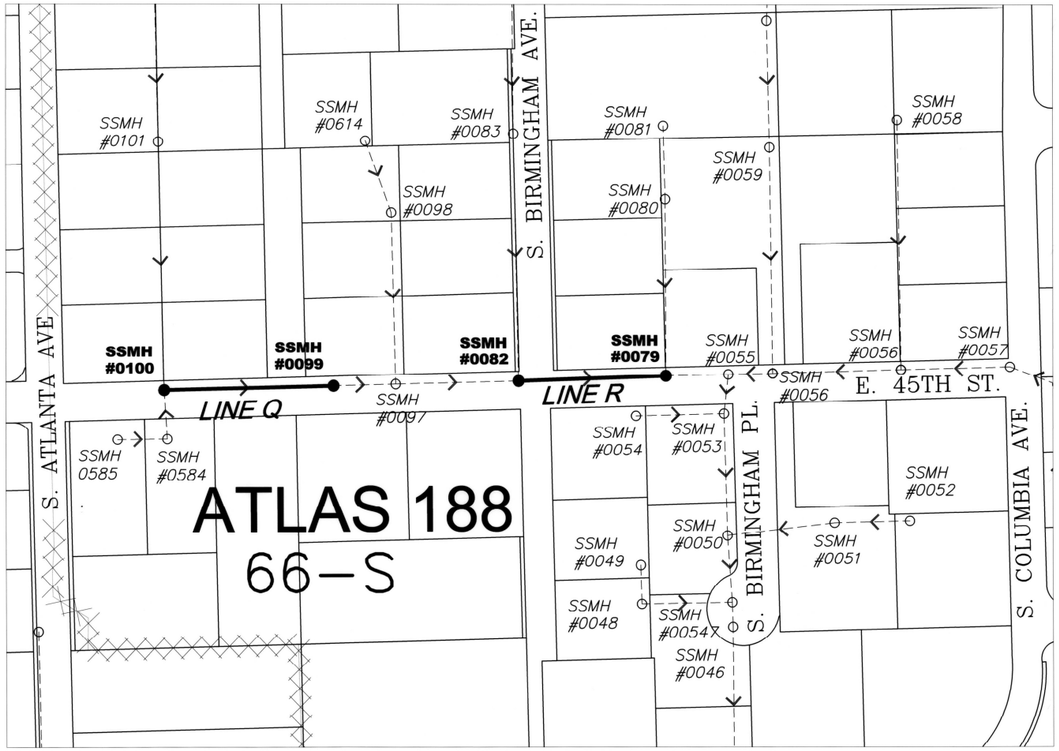
REVISION	BY	DATE

PLAN SCALE	DRAWN	RLP	...
1" = 20'	DESIGNED	RJB	...
	SURVEY	H&A	...
	PROJ. MGR.		
PROFILE SCALE:	LEAD. ENGR.	AJT	9/22
HORIZONTAL:	FIELD MGR.	EWM	9/22
1"= 20'	RECOMMENDED	HAS 10.22	
VERTICAL:	DESIGN MANAGER		CITY ENGINEER
1"= 4'	DRAWING:		DATE: September 2022
FILE:			
ATLAS PAGE NO.: 187			SHEET 36 OF 47

APPROVED

\\TUL-FANZUR1\OFFICE-30\TULSA\PROJECTS\30-3608-01 TULSA OTZ AREAWIDE SEWER REHABILITATION FY 2022\CADD\DRAWINGS\36 LINE P.DWG
3:11:50 PM September 15, 2022

N.T.S.



LINE Q - SHEET 38
LINE R - SHEET 39

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

ATLAS PAGE 188 KEY MAP

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

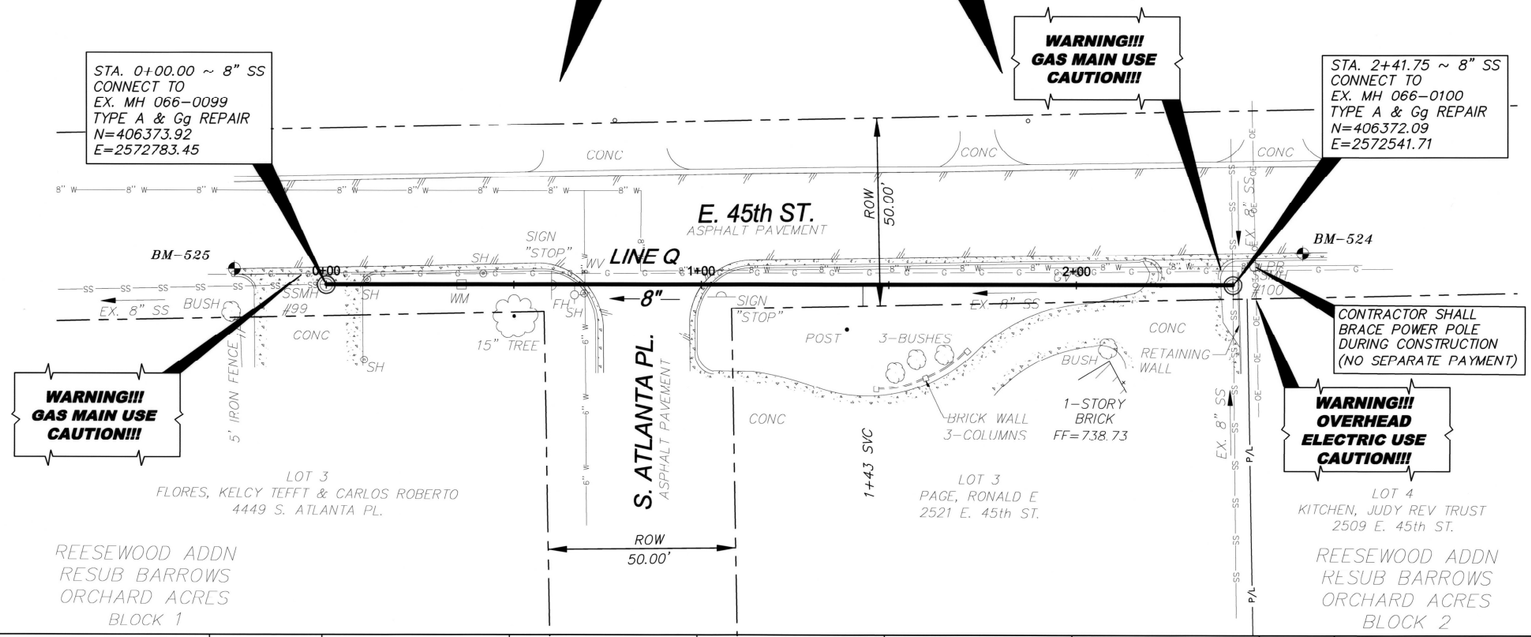
rjngroup
PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE, SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE: NTS.
PROFILE SCALE: HORIZONTAL: NA VERTICAL: NA

DRAWN	RLP	...	APPROVED
DESIGNED	RJB	...	
SURVEY	H&A	...	
PROJ. MGR.			
LEAD ENGR.	ADT	9/22	
FIELD MGR.	RLP	9/22	
RECOMMENDED	HAS	10.22	
DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:		DATE: September 2022
ATLAS PAGE NO.: 188			SHEET 37 OF 47

REPLACE 242 LF OF 8" SEWER PIPE
BY PIPE BURSTING



BENCHMARKS:

BM-525
MAG NAIL SET 4' SOUTH AND 25' EAST OF
EX. MH 066-0099

N=406369.88
E=2572807.98
EL=738.79

BM-524
MAG NAIL SET 9' SOUTH AND 18' WEST OF
EX. MH 066-0100

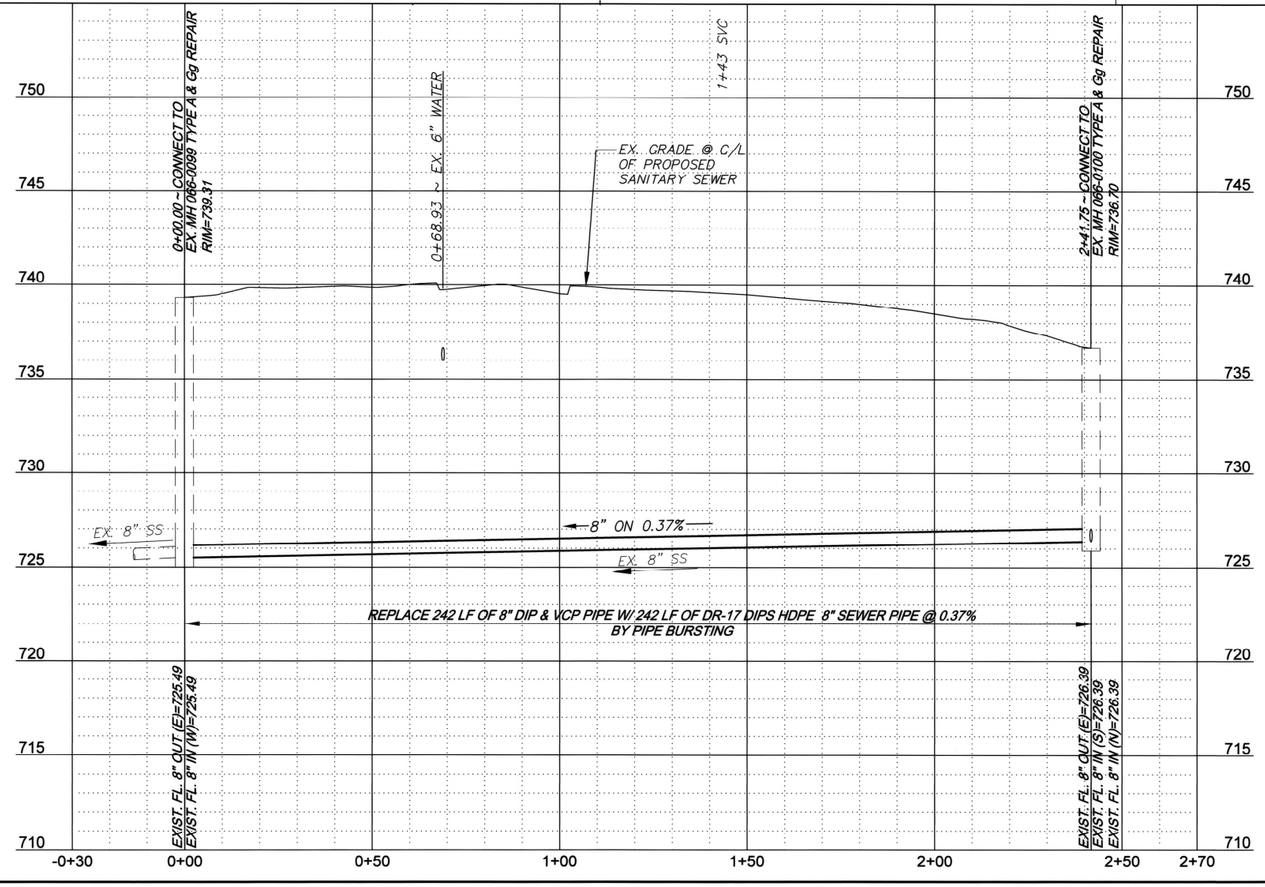
N=406363.40
E=2572523.14
EL=734.56

1. SEE SHEET 3 FOR GENERAL NOTES.

0 10' 20' 40'
SCALE: 1"= 20'

BEFORE YOU DIG...
CALL OKIE
1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543



9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

PLAN & PROFILE LINE Q

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE: 1" = 20'
PROFILE SCALE: HORIZONTAL: 1"= 20' VERTICAL: 1"= 4'

DRAWN	RLP	...	APPROVED
DESIGNED	RJB	...	
SURVEY	H&A	...	
PROJ. MGR.			
LEAD. ENGR.	ADJ	9/22	
FIELD MGR.		9/22	
RECOMMENDED	HAS 10.22		
DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:		DATE: September 2022
ATLAS PAGE NO.: 188			SHEET 38 OF 47

\\TUL-FANZIRA1\OFFICE-3$\TULSA\PROJECTS\30-3608-01 TULSA I/I2 AREAWIDE SEWER REHABILITATION FY 2022\CADD\DRAWINGS\38 LINE Q.DWG
Thursday, September 15, 2022
3:12:25 PM

REPLACE 190 LF OF 8" SEWER PIPE
BY PIPE BURSTING

STA. 0+00.00 ~ 8" SS
REMOVE & REPLACE
EX. MH 066-0079 W/
STD. 4' DIA. MH
N=406385.00
E=2573202.71

WARNING!!!
GAS MAIN USE
CAUTION!!!

STA. 1+89.79 ~ 8" SS
CONNECT TO
EX. MH 066-0082
TYPE A REPAIR
N=406379.98
E=2573012.99

E. 45th ST.
ASPHALT PAVEMENT

LINE R

ROW 50.00'

21" RCP

BM-527

0+00

1+00

8"

EX. 8" SS

SSMH #79

CONC.

8-COLUMNS

GM

BUSH

WARNING!!!
OVERHEAD
ELECTRIC USE
CAUTION!!!

WARNING!!!
GAS MAIN USE
CAUTION!!!

CONTRACTOR SHALL
BRACE POWER POLE
DURING CONSTRUCTION
(NO SEPARATE PAYMENT)

WARNING!!!
OVERHEAD
ELECTRIC USE
CAUTION!!!

IRON PIPE FOUND

BARROWS
ORCHARD ACRES
BLOCK 1
S100' W150' LOT 18 LESS W5'
MCCLURE, WILLIAM WILSON JR
4461 S. BIRMINGHAM AVE.

S. BIRMINGHAM AVE.
ASPHALT PAVEMENT

ROW 60.00'

16" RCP

15" RCP

SIGN "STOP"

GTS

BM-526

SSMH #82

BARROWS
ORCHARD ACRES
BLOCK 1
S105' E/2 LOT 15 LESS E5'
ALDERSON, ROBERT K & ALLIE M
4460 S. BIRMINGHAM AVE.

BENCHMARKS:

BM-527
MAG NAIL SET 20' EAST AND 5' SOUTH OF
EX. MH 066-0079

N=406380.25
E=257322.19
EL=722.49

BM-526
CHISELED "X" SET 10' EAST AND 16' NORTH OF
EX. MH 066-0082

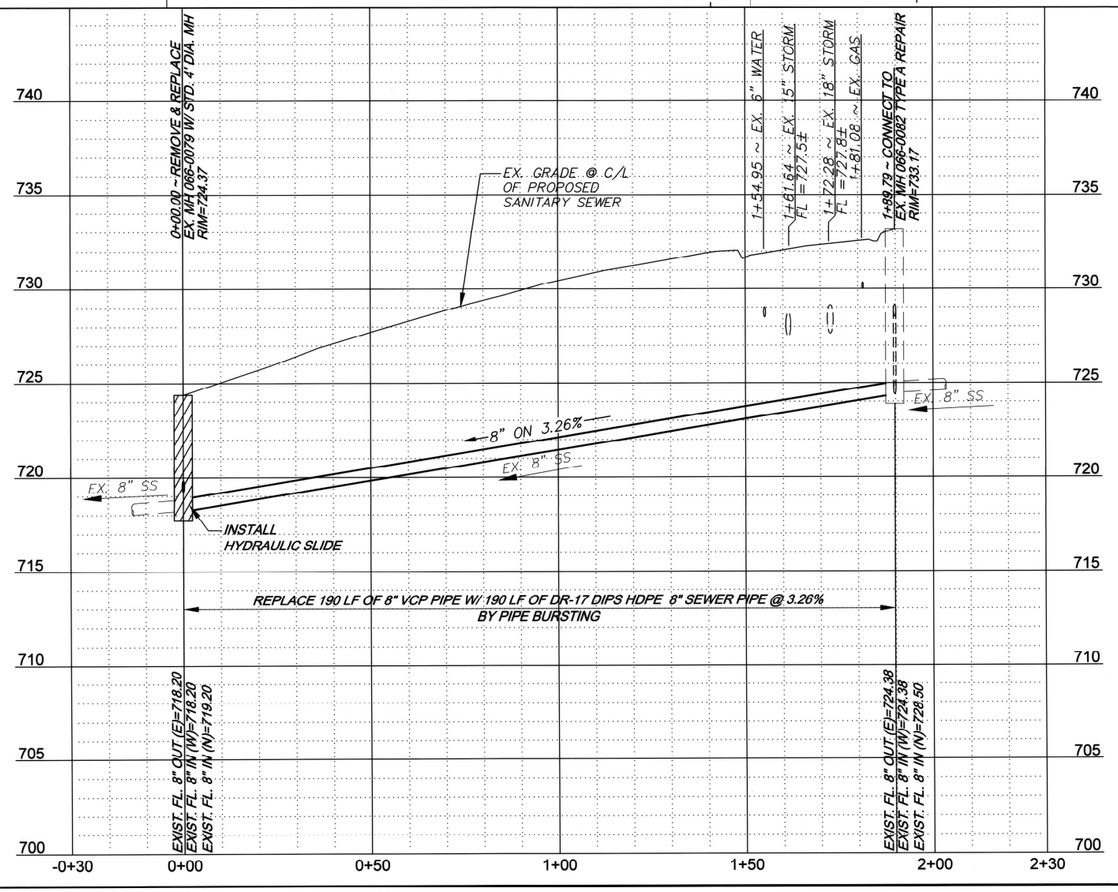
N=406395.54
E=257302231
EL=732.81

1. SEE SHEET 3 FOR GENERAL NOTES.

0 10' 20' 40'
SCALE: 1"= 20'

BEFORE YOU DIG...
CALL OKIE
1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543



9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

PLAN & PROFILE LINE R

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE: 1" = 20'
PROFILE SCALE: HORIZONTAL: 1"= 20' VERTICAL: 1"= 4'

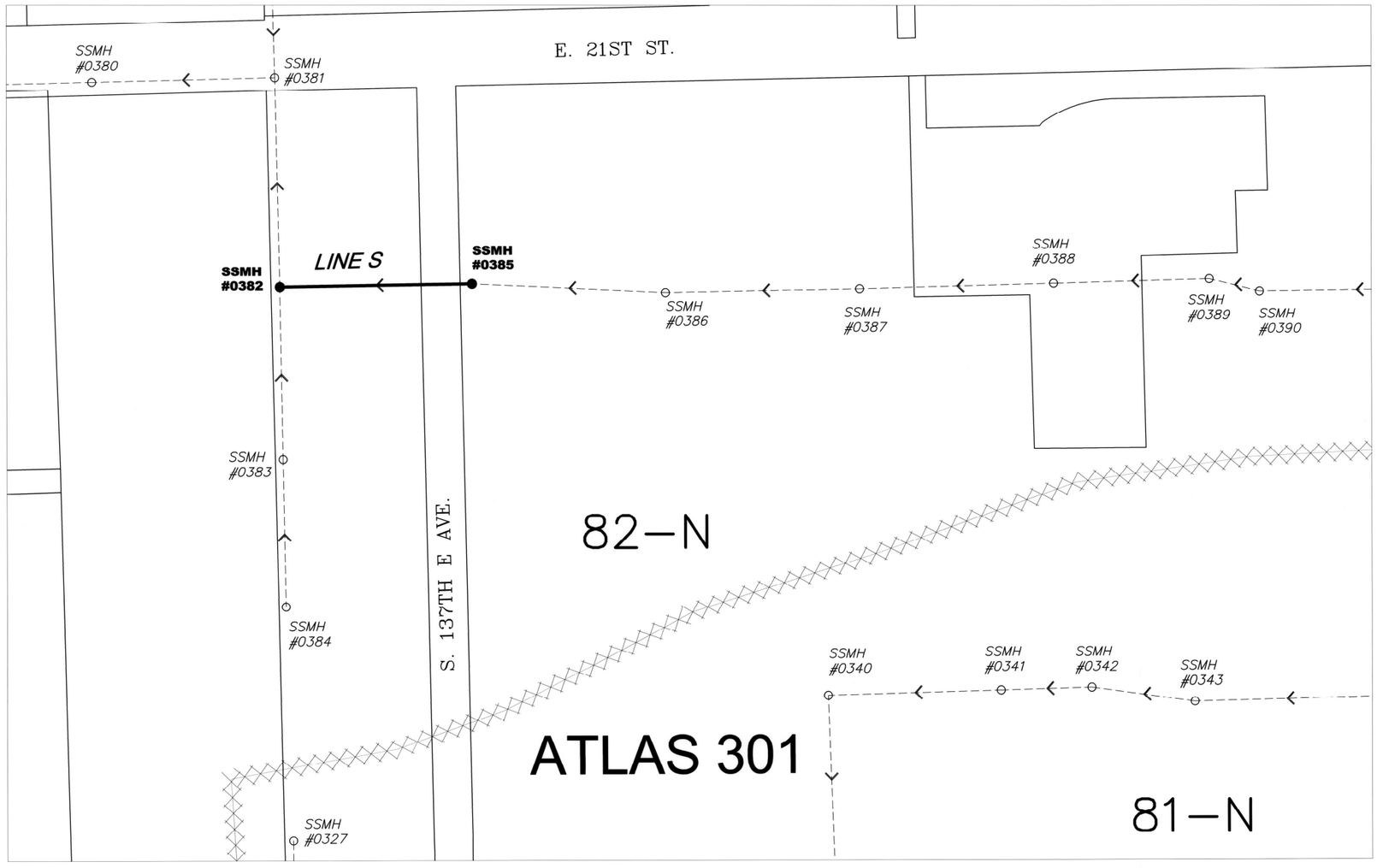
DRAWN	RLP	...
DESIGNED	RJB	...
SURVEY	H&A	...
PROJ. MGR.		
LEAD. ENGR.	ADT	9/22
FIELD MGR.		9/22
RECOMMENDED		10.22
DESIGN MANAGER		CITY ENGINEER

APPROVED

FILE: DRAWING: DATE: September 2022

ATLAS PAGE NO.: 188 SHEET 39 OF 47

\\TULP-RJNDRIVE\OFFICE_30\TULSA\PROJECTS\30-3608-01 TULSA IOT2 AREAWIDE SEWER REHABILITATION FY 2022\CADD\DRAWINGS\39 JNE R.DWG
Thursday, September 15, 2022
3:12:59 PM



N.T.S.

LINE S - SHEET 41

RANDALL J. BRODNER 26761 REGISTERED PROFESSIONAL ENGINEER OKLAHOMA 9-16-22

ATLAS PAGE 301 KEY MAP

TMUA PROJECT NO. ES 2020–02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

rjngroup

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE, SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE	DRAWN	RLP	...	APPROVED
	DESIGNED	RLP	...	
NTS.	SURVEY	H&A	...	
	PROJ. MGR.			
PROFILE SCALE:	LEAD ENGR.	AOT	9/22	
HORIZONTAL: NA	FIELD MGR.	BSH	9/22	
VERTICAL: NA	RECOMMENDED	HAS	10.22	
	DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:			DATE: September 2022
ATLAS PAGE NO.: 301				SHEET 40 OF 47

REPLACE 300 LF OF 8" SEWER PIPE BY OPEN CUT

EASTLAND ACRES
BLOCK 2
LOT 1
GOLD WYNN METROPLEX LLC
2302 S. 137th AVE.

EASTLAND ACRES
BLOCK 1
PRT LOT 1
EG VENTURES LLC
14002 E. 21st ST.

REMOVE & REPLACE 143 SY OF ASPHALT PAVEMENT & 170 LF OF CURB & GUTTER

REMOVE & REPLACE 27 SY OF ASPHALT PAVEMENT & 12 LF OF CURB & GUTTER

ROW 50.00'

STA. 3+00.22 ~ 8" SS
REMOVE & REPLACE
EX. MH 082-0385 W/
STD. 4' DIA. MH
N=419455.63
E=2611238.48

2-STORY BRICK APARTMENTS FF=739.21

COVERED AREA

PLANTER (MTL)

2" TREE

CONC PATIO

CONC PATIO

CONC SIDEWALK

CONC SIDEWALK

LINE S

0+00

1+00

2+00

3+00

SSMH #382

EX. 8" SS

8"

EX. 8" SS

EX. 8" SS

SSMH #385

6' WOOD FENCE

32" TREE

ASPHALT PAVEMENT

ASPHALT PAVEMENT

SIGN "STOP"

18" OAK

BM-508

STA. 0+00.00 ~ 8" SS
REMOVE & REPLACE
EX. MH 082-0382 W/
STD. 4' DIA. DROP MH
N=419448.31
E=2610938.34

REMOVE & REPLACE 8 LF OF 12" RCP

12" RCP

1+85 S/C

S. 137th E. AVE.
ASPHALT PAVEMENT

EASTLAND ACRES
BLOCK 2
LOT 1
GOLD WYNN METROPLEX LLC
2302 S. 137th AVE.

EASTLAND ACRES
BLOCK 1
PRT LOT 1
EG VENTURES LLC
14002 E. 21st ST.

BENCHMARKS:

BM-508
IRON PIN SET 55' EAST AND 38' SOUTH OF EX. MH 082-0385

N=419419.29
E=2611294.73
EL=739.86

1. SEE SHEET 3 FOR GENERAL NOTES.
2. CONTRACTOR SHALL CALL OKLAHOMA NATURAL GAS AT 918-684-4441 PRIOR TO CONSTRUCTION CROSSING GAS LINES.
3. CONTRACTOR SHALL SUPPORT GAS LINES AT 5-FOOT OR LESS INTERVALS DURING CONSTRUCTION.

0 10' 20' 40'
SCALE: 1"= 20'

LEGEND

ASPHALT PAVEMENT REMOVAL & REPLACEMENT

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543

745
740
735
730
725
720
715
710
705

0+00.00 ~ REMOVE & REPLACE EX. MH 082-0382 W/ STD. 4' DIA. DROP MH RIM=736.49

1+15 S/C

EX. GRADE @ C/L OF PROPOSED SANITARY SEWER

2+70.00 ~ EX. 12" STORM FL.=732.04±
2+73.92 ~ EX. 12" WATER

3+00.22 ~ REMOVE & REPLACE EX. MH 082-0385 W/ STD. 4' DIA. MH RIM=737.51

INSTALL 8" OUTSIDE DROP CONNECTION

8" ON 0.35%

EX. 8" SS

EX. 8" SS

REPLACE 300 LF OF 8" PIPE W/ 300 LF OF SDR 26 ASTM D3034 PVC 8" SEWER PIPE @ 0.35% BY OPEN CUT

EXIST. FL. 8" OUT (N)=721.54
EXIST. FL. 8" IN (E)=721.54
EXIST. FL. 8" IN (S)=731.37

EXIST. FL. 8" OUT (W)=722.58
EXIST. FL. 8" IN (E)=722.58

-0+30 0+00 0+50 1+00 1+50 2+00 2+50 3+00 3+30

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

PLAN & PROFILE LINE S

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

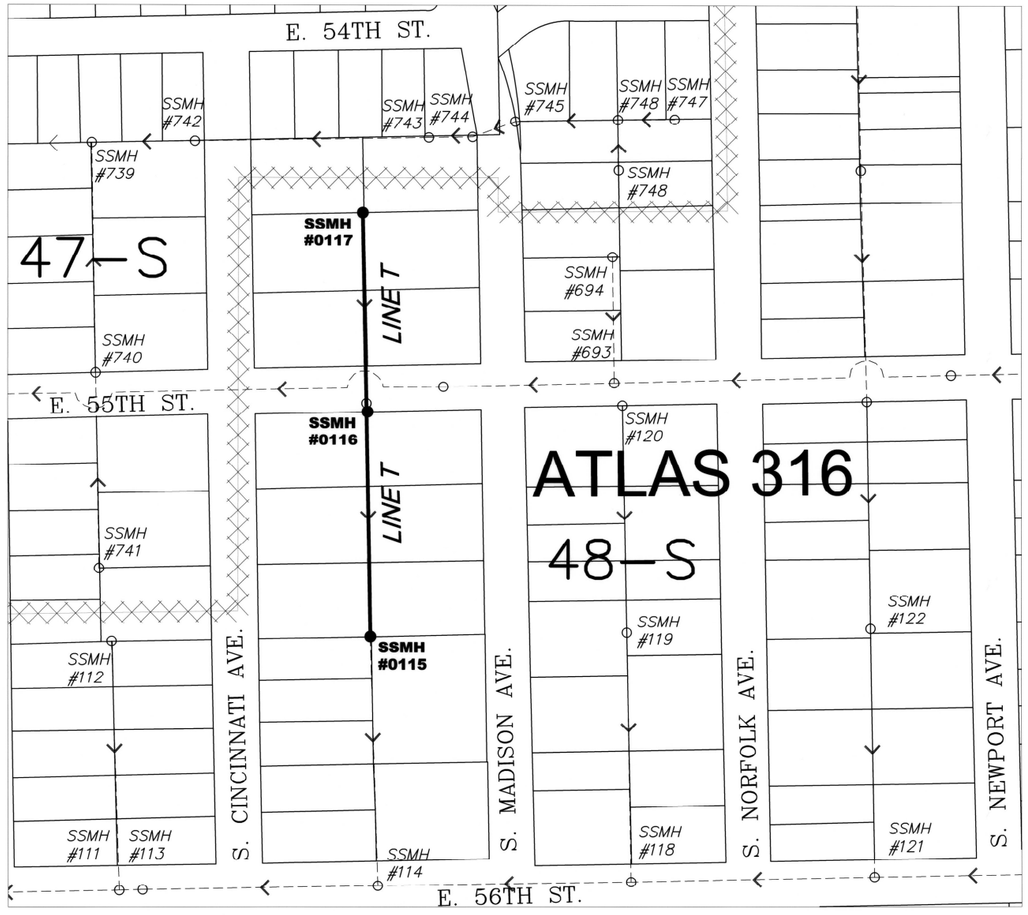
REVISION	BY	DATE

PLAN SCALE	DRAWN	RLP	...
1" = 20'	DESIGNED	RJB	...
	SURVEY	H&A	...
	PROJ. MGR.		
PROFILE SCALE:	LEAD. ENGR.	AOJ	9/27
HORIZONTAL: 1"= 20'	FIELD MGR.	RLM	9/22
VERTICAL: 1"= 4'	RECOMMENDED	HAS	10.22
	DESIGN MANAGER		CITY ENGINEER
FILE:	DRAWING:		DATE: September 2022
ATLAS PAGE NO.: 301			SHEET 41 OF 47

APPROVED

\\TUL-PANZURA\OFFICE-3D\TULSA\PROJECTS\30-36018-01 TULSA IOT2 AREAWIDE SEWER REHABILITATION FY 2022\CADD\DRAWINGS\41 LINE S.DWG
Thursday, September 15, 2022
3:13:38 PM

LINE T - SHEET 43-44



N.T.S.

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

ATLAS PAGE 316 KEY MAP

TMUA PROJECT NO. ES 2020–02

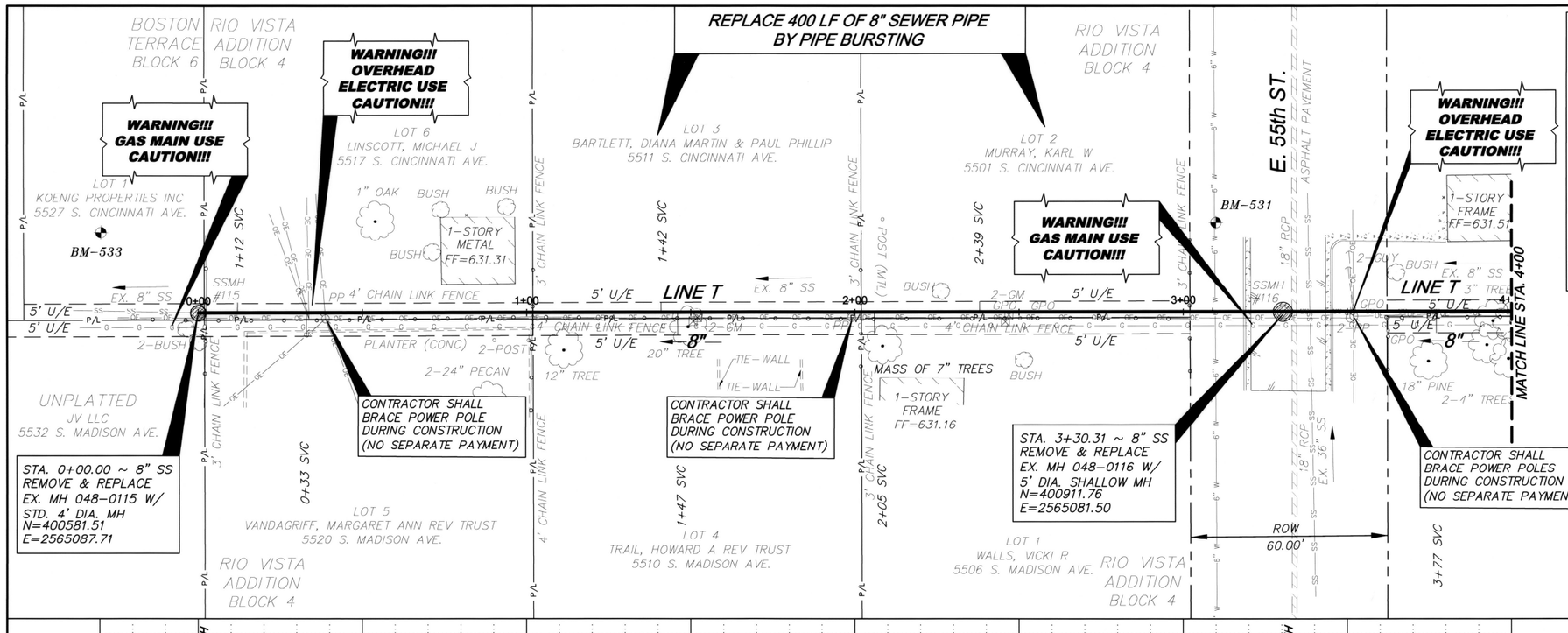
IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

rjngroup
PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE, SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE	DRAWN	RLP	...	APPROVED
	DESIGNED	RJB	...	
NTS.	SURVEY	H&A	...	
	PROJ. MGR.			
PROFILE SCALE:	LEAD ENGR.	ADT	9/22	
HORIZONTAL: NA	FIELD MGR.	EAM	9/22	
VERTICAL: NA	RECOMMENDED	HAS	10-22	
	DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:			DATE: September 2022
ATLAS PAGE NO.: 316				SHEET 42 OF 47



BENCHMARKS:

BM-533
IRON PIN SET 23' WEST AND 30' SOUTH OF EX. MH 048-0115
N=400551.38
E=2565063.76
EL=630.02

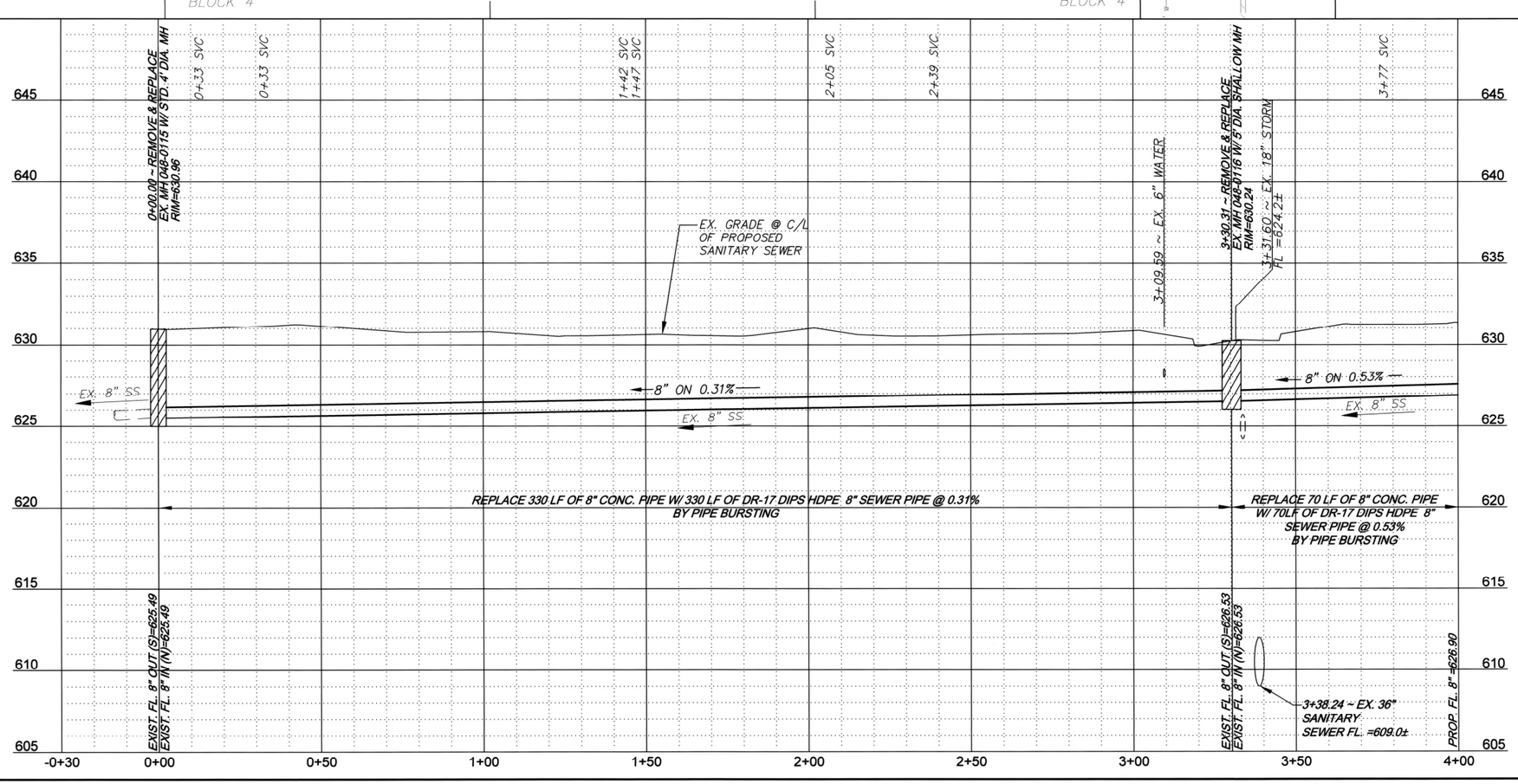
BM-531
IRON PIN SET 28' WEST AND 20' SOUTH OF EX. MH 048-0116
N=400890.93
E=2565054.66
EL=630.98

1. SEE SHEET 3 FOR GENERAL NOTES.

0 10' 20' 40'
SCALE: 1"= 20'

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543



9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

LINE T STA. 0+00 TO STA. 4+00

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

rjngroup

REVISION	BY	DATE

PLAN SCALE: 1" = 20'
PROFILE SCALE: HORIZONTAL: 1"= 20' VERTICAL: 1"= 4'

DRAWN	RLP	...
DESIGNED	RJB	...
SURVEY	H&A	...
PROJ. MGR.		
I.F.A.D. ENGR.	ADS	9/22
FIELD MGR.	ZM	9/22
RECOMMENDED DESIGN MANAGER	HAS	10-22

APPROVED
CITY ENGINEER

FILE: DRAWING: DATE: September 2022
ATLAS PAGE NO.: 316 SHEET 43 OF 47

\\TUL-PANZURA1\OFFICE~3C\TULSA\PROJECTS\3C-3608-01 TULSA I072 AREAWIDE SEWER REHABILITATION FY 2021\CADD\DRAWINGS\43-44 LINE T 0+00-44+00.DWG
Thursday, September 15, 2022
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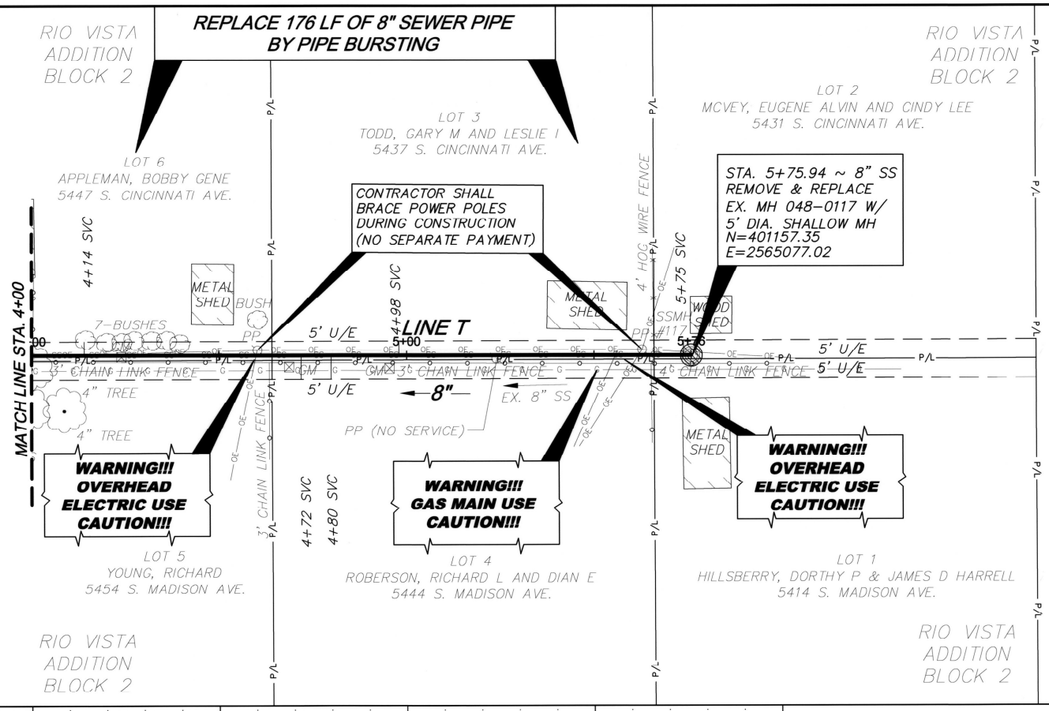
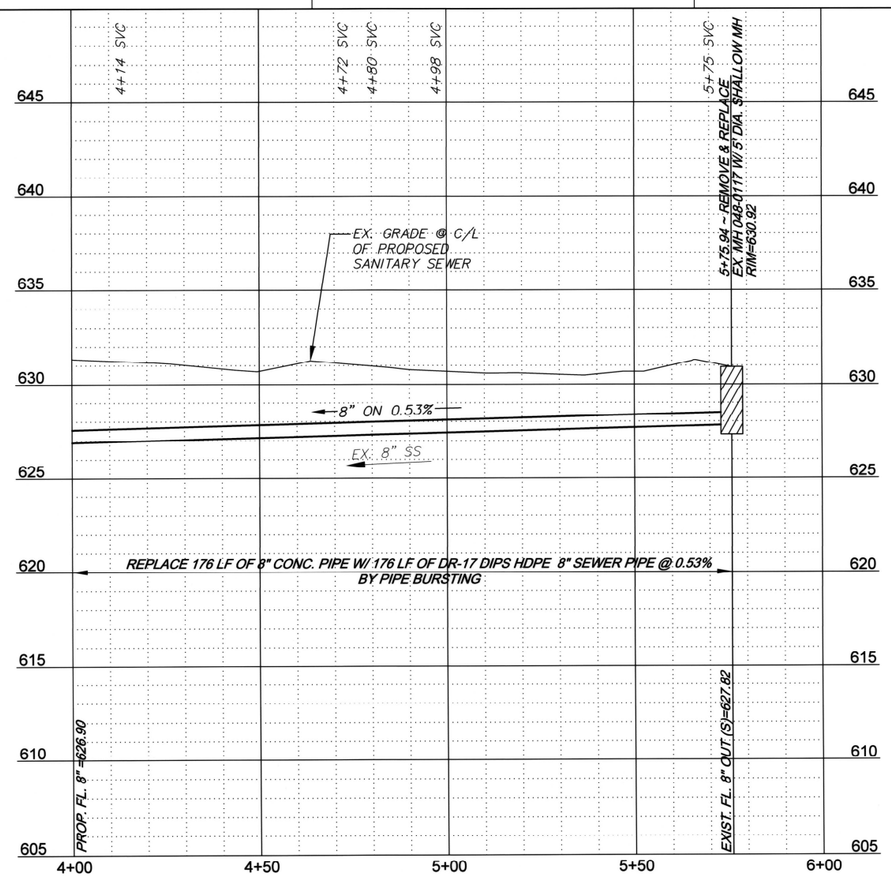




BENCHMARKS:

BM–533
IRON PIN SET 23' WEST AND 30' SOUTH OF EX. MH 048–0115

N=400551.38
E=2565063.76
EL=630.02
(SEE PREVIOUS SHEET)

BM–531
IRON PIN SET 28' WEST AND 20' SOUTH OF EX. MH 048–0116

N=400890.93
E=2565054.66
EL=630.98
(SEE PREVIOUS SHEET)

1. SEE SHEET 3 FOR GENERAL NOTES.

0 10' 20' 40'
SCALE: 1"= 20'

BEFORE YOU DIG... CALL OKIE 1-800-522-6543

WARNING!!!
EXISTING UNDERGROUND TELEPHONE, OVERHEAD, UNDERGROUND ELECTRIC AND GAS UTILITIES IN AREA, CONTACT UTILITY 48 HOURS PRIOR TO CONSTRUCTION AT OKIE AT 1-800-522-6543

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

LINE T STA. 4+00 TO STA. 5+76

TMUA PROJECT NO. ES 2020–02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100TH E AVE., SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

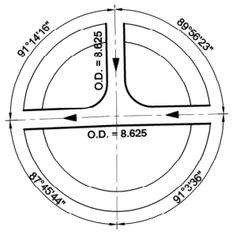
PLAN SCALE: 1" = 20'
PROFILE SCALE: HORIZONTAL: 1"= 20' VERTICAL: 1"= 4'

DRAWN	RLP	...
DESIGNED	RJB	...
SURVEY	H&A	...
PROJ. MGR.		
LEAD. ENGR.	AJS	9/22
FIELD MGR.	RJW	9/22
RECOMMENDED	HAS	10-22
DESIGN MANAGER		CITY ENGINEER
FILE:	DRAWING:	DATE: September 2022
ATLAS PAGE NO.: 316		SHEET 44 OF 47

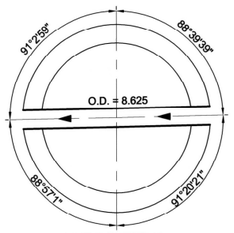
APPROVED

\\TDL-PWDSRV1\OFFICE-3D\TULSA\PROJECTS\3D-3608-01 TULSA IOT2 AREAWIDE SEWER REHABILITATION FY 2022\CADD\DRAWINGS\43-44 LINE T 04+00-44+00.DWG
Thursday, September 15, 2022
3:16:16 PM

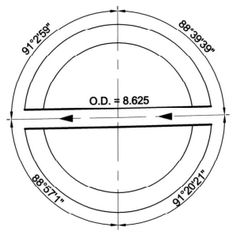
NEW & REPLACEMENT MANHOLES



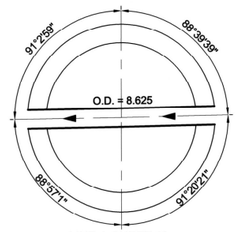
LINE A SHEET 12
MANHOLE 025-0066 DIA. = 4.0'



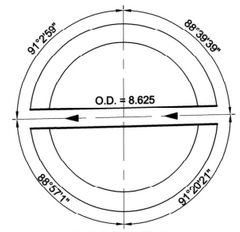
LINE A SHEET 12
MANHOLE 025-0067 DIA. = 4.0'



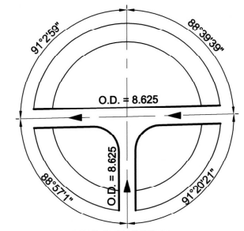
LINE A SHEET 13
MANHOLE 025-0068 DIA. = 4.0'



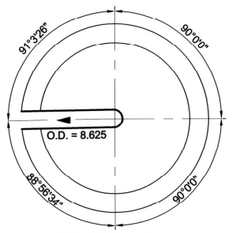
LINE A SHEET 13
MANHOLE 025-0317 DIA. = 4.0'



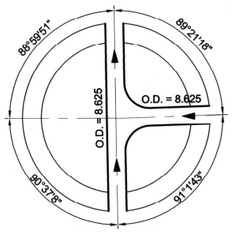
LINE B SHEET 14
MANHOLE 025-0060 DIA. = 4.0



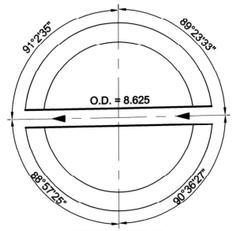
LINE B SHEET 14
MANHOLE 025-0061 DIA. = 4.0



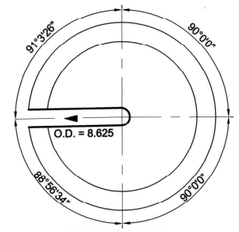
LINE B SHEET 15
MANHOLE 025-0062 DIA. = 4.0



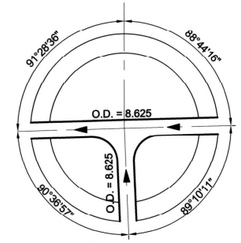
LINE C SHEET 16
MANHOLE 026-0189 DIA. = 4.0



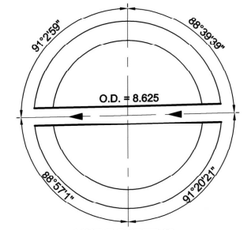
LINE D SHEET 17
MANHOLE 025-0036 DIA. = 4.0



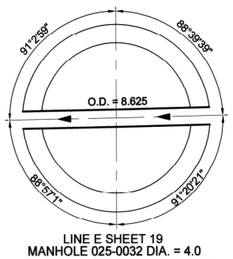
LINE D SHEET 17
MANHOLE 025-0037 DIA. = 4.0



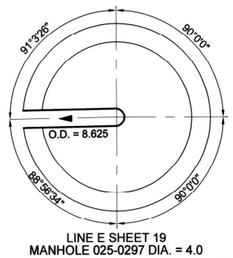
LINE E SHEET 18
MANHOLE 025-0008 DIA. = 4.0



LINE E SHEET 18
MANHOLE 025-0031 DIA. = 4.0



LINE E SHEET 19
MANHOLE 025-0032 DIA. = 4.0



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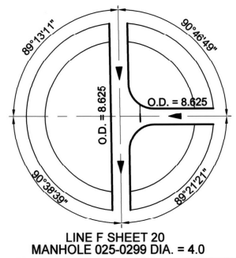
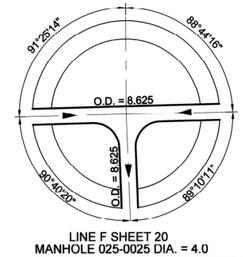
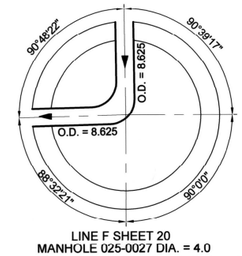
MANHOLE 025-0297 DIA. = 4.0



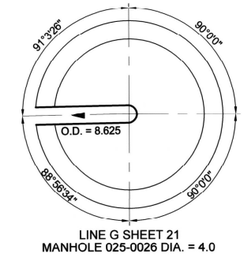
LINE F SHEET 20
MANHOLE 025-0299 DIA. = 4.0



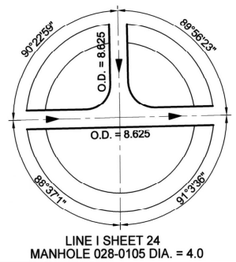
LINE J SHEET 20
MANHOLE 025-0025 DIA. = 4.0



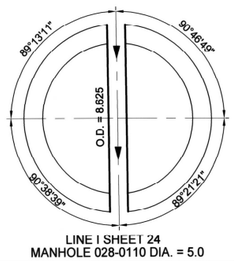
LINE F SHEET 20
MANHOLE 025-0027 DIA. = 4.0



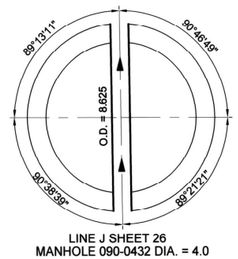
LINE G SHEET 21
MANHOLE 025-0026 DIA. = 4.0



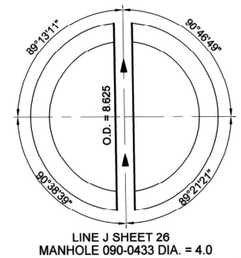
LINE I SHEET 24
MANHOLE 028-0105 DIA. = 4.0



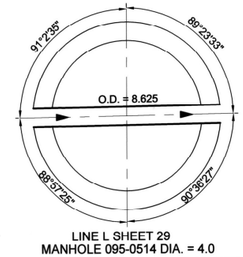
LINE I SHEET 24
MANHOLE 028-0110 DIA. = 5.0



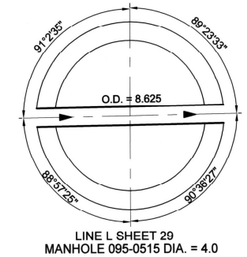
LINE J SHEET 26
MANHOLE 090-0432 DIA. = 4.0



LINE J SHEET 26
MANHOLE 090-0433 DIA. = 4.0



LINE L SHEET 29
MANHOLE 095-0514 DIA. = 4.0



LINE L SHEET 29
MANHOLE 095-0515 DIA. = 4.0

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

MANHOLE LAYOUT 1

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

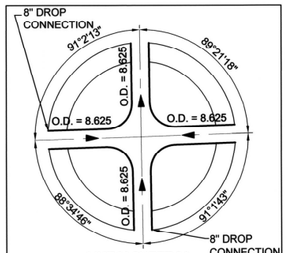
CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

rjngroup
PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE. SUITE 106, TULSA, OKLAHOMA 74146

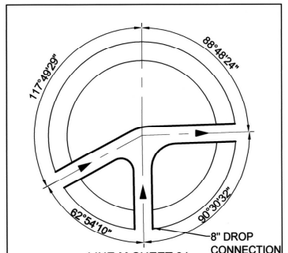
REVISION	BY	DATE

PLAN SCALE	DRAWN	RLP	...	APPROVED
1" = 3'	DESIGNED	RJB	...	
	SURVEY	H&A	...	
	PROJ. MGR.			
	LEAD ENGR.	ADS	9/22	
	FIELD MGR.		9/22	
	RECOMMENDED	HAS 10.22		
	DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:			DATE: September 2022
ATLAS PAGE NO.:				SHEET 45 OF 47

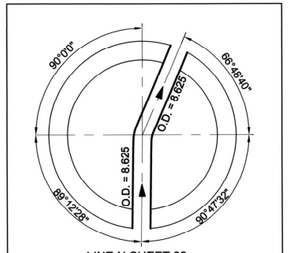
NEW & REPLACEMENT MANHOLES



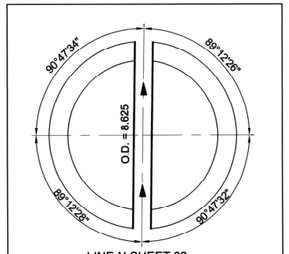
LINE M SHEET 31
DROP MANHOLE 099-0269 DIA. = 4.0



LINE M SHEET 31
DROP MANHOLE 099-0360 DIA. = 4.0



LINE N SHEET 32
MANHOLE 099-0365 DIA. = 4.0



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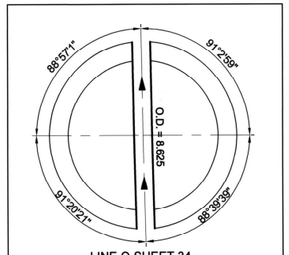

LINE O SHEET 34
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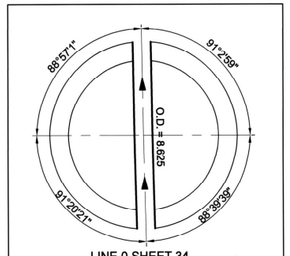
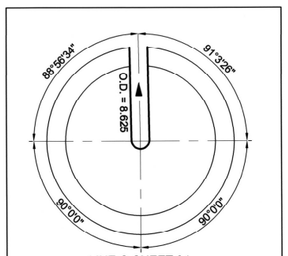
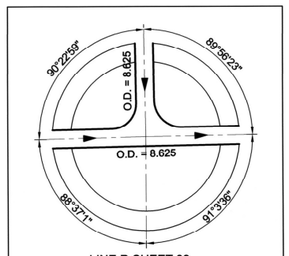


LINE O SHEET 34
MANHOLE 045-0140 DIA. = 4.0



LINE O SHEET 34
MANHOLE 045-0141 DIA. = 4.0



LINE R SHEET 39
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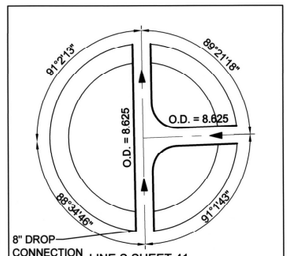
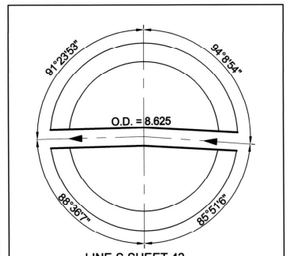


LINE S SHEET 41
DROP MANHOLE 082-0382 DIA. = 4.0



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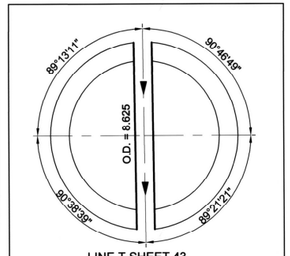

LINE T SHEET 43
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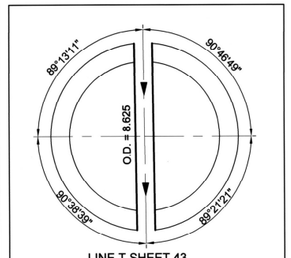

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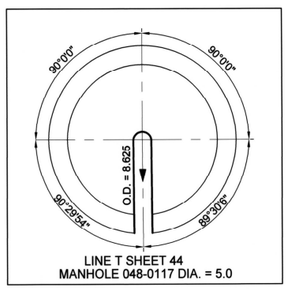
MANHOLE 048-0116 DIA. = 5.0



LINE T SHEET 44
MANHOLE 048-0117 DIA. = 5.0

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

MANHOLE LAYOUT 2

TMUA PROJECT NO. ES 2020-02

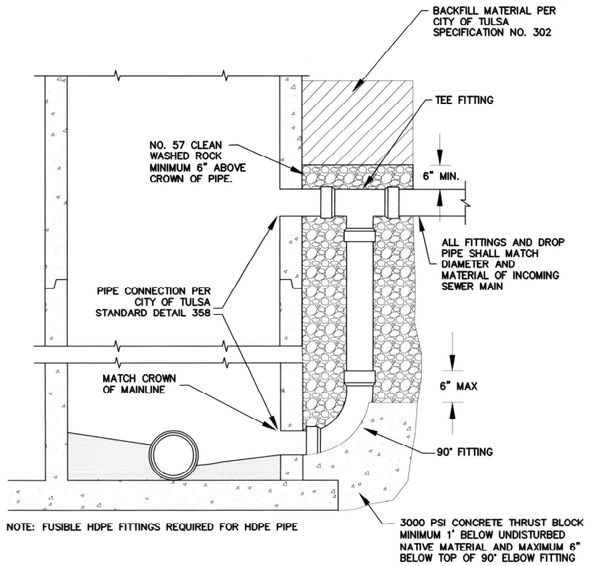
IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE. SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

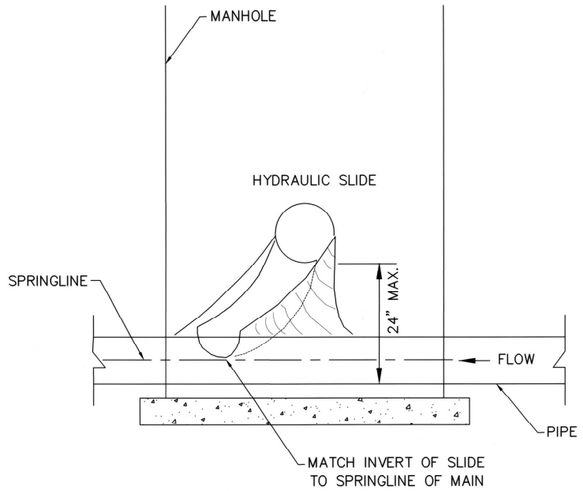
PLAN SCALE	DRAWN	RLP	...	APPROVED
1" = 3'	DESIGNED	RJB	...	
	SURVEY	H&A	...	
	PROJ. MGR.			
	LEAD ENGR.	AOS	9/22	
	FIELD MGR.	EZW	9/22	
	RECOMMENDED	AAS 10.22		
	DESIGN MANAGER			CITY ENGINEER
FILE:	DRAWING:			DATE: September 2022
ATLAS PAGE NO.:				SHEET 46 OF 47

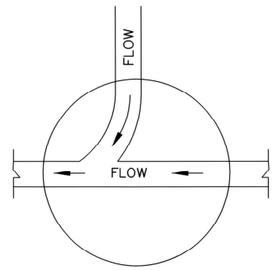


NOTE: FUSIBLE HDPE FITTINGS REQUIRED FOR HDPE PIPE

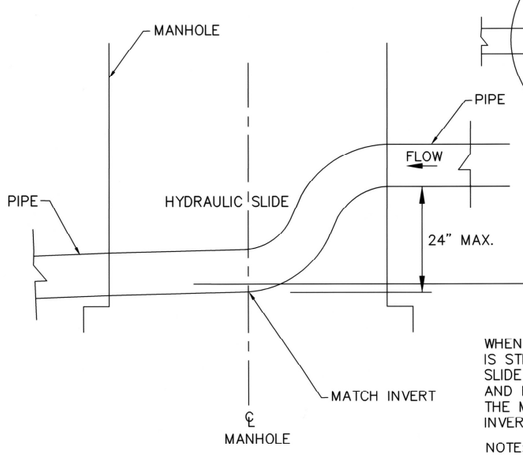
OUTSIDE DROP CONNECTION DETAIL

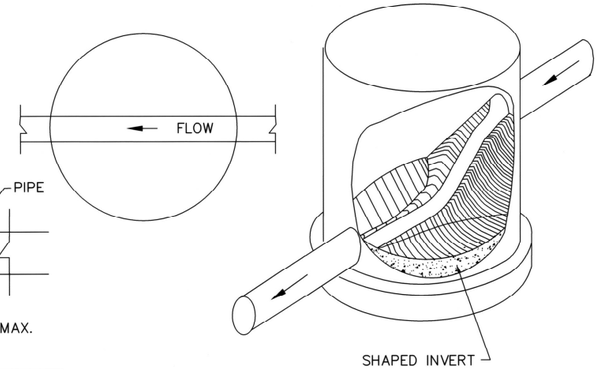
NTS





WHEN INSTALLING HYDRAULIC SLIDE THAT INTERCEPTS AN EXISTING SEWER AT A RIGHT ANGLE, THE CONNECTING INVERT OF THE HYDRAULIC SLIDE IS TO INTERCEPT THE EXISTING SEWER SLIGHTLY ABOVE THE SPRINGLINE AS SHOWN. DISTANCE MEASURED FROM INVERT TO INVERT.



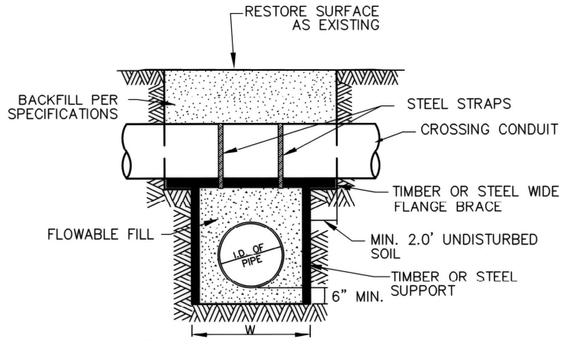


WHEN INSTALLING HYDRAULIC SLIDE WHERE THE FLOW IS STRAIGHT THROUGH THE MANHOLE, THE HYDRAULIC SLIDE IS TO MATCH THE INVERT OF EXISTING LINE AND NOT EXTEND MORE THAN HALF-WAY THROUGH THE MANHOLE. DISTANCE MEASURED FROM INVERT TO INVERT.

NOTE:
1. PREMIX MORTAR IS PROHIBITED
2. HYDRAULIC SLIDES ARE NOT A SEPARATE PAY ITEM.

HYDRAULIC SLIDE MANHOLE DETAIL

NTS



NOTE:
1. W= TRENCH WIDTH STANDARD PLUS WIDTH OF SUPPORTS.
2. PLACE A MINIMUM OF 10 LINEAR FEET OF FLOWABLE FILL IN TRENCH EACH WAY OF CROSSING UTILITY OUTSIDE WALL. FLOWABLE FILL SHALL BE INCLUDED IN PAY ITEM FOR UTILITY CROSSING SUPPORT.

UTILITY CROSSING SUPPORT

9-16-22
REGISTERED PROFESSIONAL ENGINEER
RANDALL J. BRODNER
26761
OKLAHOMA

MISCELLANEOUS DETAILS

TMUA PROJECT NO. ES 2020-02

IMPROVE OUR TULSA 2
AREAWIDE SEWER REHABILITATION

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:
rjngroup
RJN GROUP, INC. CONSULTING ENGINEERS
4150 S. 100th E. AVE, SUITE 106, TULSA, OKLAHOMA 74146

REVISION	BY	DATE

PLAN SCALE	DRAWN	RLP	...
	DESIGNED	RJB	...
NA	SURVEY	NA	...
	PROJ. MGR.		
PROFILE SCALE:	LEAD ENGR.	ADJ	9/22
HORIZONTAL:	FIELD MGR.	JWM	9/22
NA	RECOMMENDED	HBS	10-2-22
VERTICAL:	DESIGN MANAGER		CITY ENGINEER
NA	FILE:	DRAWING:	DATE: September 2022
	ATLAS PAGE NO.: NA		SHEET 47 OF 47

APPROVED