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BID ADVERTISE DATE \_\_\_\_\_

PLANS PREPARED BY

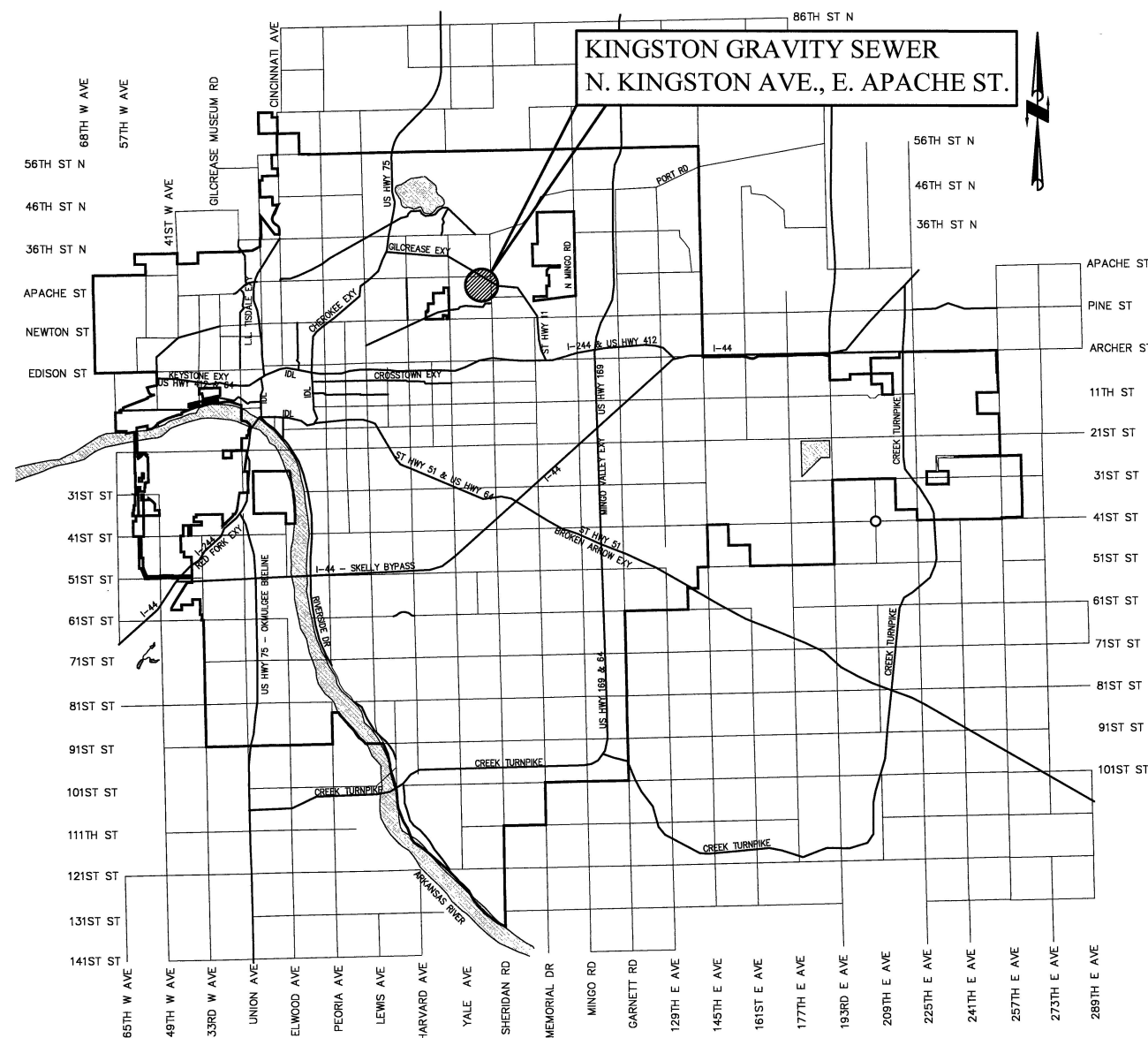
Holloway, Updike and Bellen, Inc.

Muskogee — Broken Arrow, Oklahoma  
2001 N WILLOW AVE, BROKEN ARROW, OK. 74012  
918-251-0717, FAX 918-251-0754



(C.A. No. 219, EXP. 6-30-25)

PROJECT LOCATION — CITY LIMITS



CITY OF TULSA STANDARD					
STD	305	BEDDING DETAIL - FLEXIBLE PIPE	STD	367	WATER TABLE CRADLE
STD	307	BORE/OPEN CUT CONDUIT DETAIL	STD	402	COVER, FRAME, AND FRAME SEAL
STD	331	6'-8" PRE-CAST SANITARY SEWER MANHOLES	STD	409	CONCRETE MANHOLE COLLAR
STD	351	BEDDING DETAIL PVC FLEXIBLE SANITARY SEWER PIPE	STD	419	MANHOLE OUTSIDE DROP CONNECTION
STD	354	FRAME & LID FOR 4' I.D. AND LARGER	STD	713	PAVEMENT REMOVAL & REPLACEMENT
STD	358	PRE-CAST SANITARY SEWER MANHOLES	STD	714	STD. DETAIL FOR PAVEMENT CUTS
STD	359	FLOODPLAIN FRAME AND COVER DETAIL	STD	730	STD. ASPHALT PAVEMENT CUT AND REPAIR
STD	366	MANHOLE STEP LOCATION AND INVERT DETAILS			



APPROVED BY



DIRECTOR, WATER AND SEWER DEPT.

5.15.2025

DATE \_\_\_\_\_

Dale Seaton

DALE SEATON, P.E.

HOLLOWAY, UPDIKE &amp; BELLEN INC.

3.17.25

DATE \_\_\_\_\_



SURVEY DATUM:  
HORIZONTAL - OKLAHOMA STATE PLANE COORDINATE (NAD 1983)  
VERTICAL - (NAVD 1988)

UTILITY COORDINATION INFORMATION	
TULSA ENGINEERING SERVICES DEPARTMENT	
WATER DESIGN	596-9566
WASTEWATER DESIGN	596-9564
TRANSPORTATION DESIGN	596-9636
TRAFFIC ENGINEERING DESIGN	596-9741
STORMWATER DESIGN	596-9498
COT UTILITY COORDINATION	596-9649
OKLAHOMA NATURAL GAS CO.	831-8215
COX COMMUNICATIONS	286-4716
AEP/PSO	250-6257
AT&T	596-4237
MITTA	830-0024

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**KINGSTON GRAVITY SEWER-PROJECT NO. ES 2020-07**



GENERAL NOTES



1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, RULES AND REGULATIONS GOVERNING SAFETY, HEALTH, AND SANITATION. THE CONTRACTOR SHALL PROVIDE ALL SAFEGUARDS, SAFETY DEVICES AND PROTECTIVE EQUIPMENT REQUIRED AND SHALL TAKE ANY OTHER NEEDED ACTIONS ON HIS OWN RESPONSIBILITY OR AS MAY BE REQUIRED AS DETERMINED BY THE CITY OR THE ENGINEER TO PROTECT PROPERTY OR THE PUBLIC IN CONNECTION WITH THE WORK COVERED BY THIS CONTRACT.
2. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE CITY OF TULSA STANDARDS AND SPECIFICATIONS, CURRENT EDITION OF THE OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS, AND IN ACCORDANCE WITH THE SPECIAL PROVISIONS OF THIS CONTRACT.
3. THE CONTRACTOR SHALL, IN COOPERATION WITH THE CITY, DEVELOP AND SUBMIT FOR APPROVAL A TRAFFIC CONTROL PLAN (TCP), TO THE CITY OF TULSA PUBLIC WORKS, 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.
4. 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.
5. THE CONTRACTOR SHALL SUBMIT A TRENCH EXCAVATION PLAN, SEALED BY A PROFESSIONAL ENGINEER IN THE STATE OF OKLAHOMA, FOR ALL LOCATIONS WHERE TRENCH OR SHAFT EXCAVATION EXCEEDS 20 FEET DEEP.
6. BORING LOGS FOR THIS PROJECT ARE AVAILABLE FOR REVIEW AT THE OFFICE OF THE CITY OF TULSA, WASTEWATER DESIGN. NEITHER THE CITY NOR THE ENGINEER MAKES OR ACCEPTS, EXPRESS OR IMPLIES ANY WARRANTIES ABOUT THE INFORMATION SHOWN ON THESE BORING LOGS.
7. IF ROCK IS ENCOUNTERED, AND THE CONTRACTOR CHOOSES TO BLAST, BLASTING WILL CONFORM TO THE CITY OF TULSA BLASTING ORDINANCE. NO ADDITIONAL PAYMENTS SHALL BE MADE.
8. ALL EXCAVATED MATERIAL NOT NEEDED OR DEEMED UNSUITABLE FOR BACKFILL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF IN A LOCATION AND MANNER APPROVED BY THE CITY. THE CONTRACTOR WILL BE REQUIRED TO OBTAIN AN EARTH CHANGE PERMIT IF THIS MATERIAL IS TO BE DISPOSED OF WITHIN THE CITY OF TULSA.
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 98% OF THE MODIFIED PROCTOR DENSITY, AS MEASURED BY THE NUCLEAR DENSITY METHOD.
10. ALL NEW MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH THE CITY OF TULSA STANDARDS AND SPECIFICATIONS.
11. 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.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF THE LOCATIONS 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.
13. NO FILL, SPOIL, BEDDING MATERIAL OR EQUIPMENT MAY BE STORED OVERNIGHT WITHIN THE FLOOD PLAIN LIMITS.
14. ALL SEWERS SCHEDULED FOR ABANDONMENT AS PART OF THIS PROJECT SHALL BE FILLED WITH FLOWABLE FILL, SAND, OR CELLULAR CONCRETE AND THEN PLUGGED.
15. ALL DAMAGED PAVEMENT OUTSIDE OF THE TRENCH PAYLINE SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR TRENCH DEWATERING. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK.
17. 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.
18. ALL SANITARY SEWER MANHOLE CASTINGS AND LIDS THAT ARE LOCATED IN THE STREET AND ARE DISTURBED BY THE CONTRACTOR SHALL BE REPLACED WITH NEW ONES, AND THE OLD CASTINGS AND LIDS SHALL BE DELIVERED TO THE SEWER OPERATIONS AND MAINTENANCE AT 9319 E. 42ND STREET N. AND PLACED IN THE METAL RECYCLE BIN IN THE STOCKROOM AREA BETWEEN THE HOURS OF 7:30 AM AND 3:00 PM MONDAY THROUGH FRIDAY. PHONE: 918-669-6130.
19. STRAW OR HAY BALES AS STORMWATER MANAGEMENT BEST PRACTICES ARE NO LONGER ALLOWED ON CONSTRUCTION PROJECTS.
20. ALL HYDRANTS, VALVES, AND FITTINGS FROM ABANDONED WATER MAINS SHALL BE SALVAGED AND DELIVERED BY THE CONTRACTOR TO THE SOUTH YARD AT 2317 S. JACKSON AVE. CONTRACTOR WILL COORDINATE THE RETURN OF SUCH ITEMS WITH THE SOUTH YARD PERSONNEL AT 918-596-9401.
21. PAY ITEMS SHALL BE AS SPECIFIED ON THE CITY OF TULSA OR ON THE ODOT STANDARDS DRAWINGS EXCEPT AS MODIFIED BY THE CONTRACT.
22. THE CONTRACTOR SHALL TAKE REASONABLE PRECAUTIONS TO PREVENT EXCESS MOISTURE FROM INCMLEMENT WEATHER OR OTHER SOURCES FROM ENTERING ANY STREET EXCAVATION. IF EXCESS MOISTURE DOES ENTER THE EXCAVATION THROUGH THE NEGLIGENCE OF THE CONTRACTOR AND THE ADJOINING PAVEMENT IS ADVERSELY EFFECTED BY THE EXCESS MOISTURE, THE CONTRACTOR SHALL REPLACE THE ADJOINING PAVEMENT AND SUBBASAE AT HIS SOLE EXPENSE.

23. THE CONTRACTOR SHALL PRESERVE THE INTEGRITY OF THE SANITARY SEWER STRUCTURES AND ALL OTHER UTILITY STRUCTURES WITHIN THE PROJECT EXTENTS.
24. CONSTRUCTION SIGNAGE WILL BE INSTALLED IN A MANNER APPROVED BY THE BY THE ENGINEER, IN ACCORDANCE WITH CHAPTER VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT ADDITION, AND APPLICABLE ODOT STANDARD DRAWINGS. THE CONTRACTOR SHALL PROVIDE A PROPOSED TRAFFIC CONTROL PLAN FOR APPROVAL BY THE ENGINEER PRIOR TO BEGINNING WORK.
25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF ALL EXISTING TRAFFIC SIGNS AND MARKINGS REMOVED OR DAMAGED AS LISTED IN THE SIGNAGE SCHEDULE FOR THE PROJECT. ALL SIGNS AND POLES PROVIDED SHALL BE NEW AND UNDAMAGED AND SHALL MEET THE REQUIREMENTS OF COT SPECIFICATION 608 TRAFFIC SIGNS. ALL TRAFFIC MATERIALS REMOVED SHALL BE HANDLED PER COT SPECIFICATION 625 REMOVAL OF TRAFFIC ITEMS.
26. ALL BROKEN CONCRETE, WASTE MATERIAL, AND OTHER DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE LIMITS OF THE PROJECT AND DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE MADE FOR THE DISPOSAL OF THIS MATERIAL.
27. ALL TREES, BRUSH AND OTHER DEBRIS THAT MIGHT INTERFERE WITH THE FLOW OF WATER IS TO BE CLEANED OUT TO THE RIGHT-OF-WAY LINE IN A MANNER APPROVED BY THE ENGINEER. ALL COST TO BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF WORK. TREES OUTSIDE THE FILL SLOPES AND THE TOP OF CUT SLOPES SHALL NOT BE DISTURBED EXCEPT WITH THE WRITTEN APPROVAL OF THE ENGINEER.
28. WHERE MATERIALS ARE TRANSPORTED IN THE PROSECUTION OF WORK, VEHICLES SHALL NOT BE LOADED BEYOND THE CAPACITY RECOMMENDED BY THE VEHICLE MANUFACTURER OR AS PRESCRIBED BY ANY FEDERAL, STATE OR LOCAL LAW OR REGULATION.
29. ANY DAMAGE TO THE ROADWAY PAVEMENT, CURB, DRIVEWAYS OR SIDEWALK CAUSED BY THE CONTRACTOR'S OPERATION SHALL BE REPAIRED TO THE ENGINEER'S SATISFACTION AND SHALL BE ACCOMPLISHED AT THE CONTRACTOR'S SOLE EXPENSE. ALL DISTURBED ITEMS SHALL BE REPAIRED TO MATCH EXISTING MATERIALS AND PATTERNING.
30. IF THE CONTRACTOR ENCOUNTERS VOIDS WHEN PATCHING STREETS, THE CONTRACTOR SHALL CALL FIELD ENGINEERING AT 918-596-7814 FOR AN INSPECTION BEFORE PROCEEDING WITH WORK.
31. THE PROJECT SHALL BE CONSTRUCTED WITH CONTINUOUS FLOW OF MATERIAL SUPPLIED TO THE PROJECT SUCH THAT THE LAYDOWN MACHINE WILL REMAIN IN MOTION. ANY DELAY IN FORWARD PROGRESSION OF THE LAYDOWN MACHINE MAY REQUIRE A TRANSVERSE JOINT AS DIRECTED BY THE ENGINEER.
32. NO FLY ASH IS ALLOWED TO BE USED ON THIS PROJECT.
33. PHYSICAL TESTING FOR QUALITY ASSURANCE SHALL BE FURNISHED BY THE CITY.
34. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY QUALITY CONTROL TESTING TO ENSURE THAT PROJECT REQUIREMENTS ARE MET.
35. MASONRY STRUCTURES SHALL NOT BE CONSTRUCTED WITHIN THE STREET RIGHT-OF-WAY.
36. ALL CONCRETE CURB AND GUTTERS SHALL BE MONOLITHIC POURS. DOWELED-ON CURBS WILL NOT BE ALLOWED.
37. NO LIFTING HOLES WILL BE ALLOWED ON ANY REINFORCED CONCRETE PIPES OR REINFORCED CONCRETE BOXES.
38. CURB RAMP CONSTRUCTION SHALL COMPLY WITH THE CURRENT AMERICANS WITH DISABILITIES ACT STANDARDS.
39. REFLECTORIZED SHEETING ON SIGNS AND BARRICADES SHALL BE OF A CUBIC PRISMATIC TYPE AND SHALL MEET 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.
40. THE SIGN PLACEMENT STATIONING AND LOCATIONS SHOWN ON THE PLAN SHEETS AND SUMMARY SHEETS ARE APPROXIMATE. EXACT STATIONING AND LOCATIONS SHALL BE VERIFIED BY THE CONTRACTOR SO THAT THE SIGN IS INSTALLED IN ACCORDANCE WITH CITY OF TULSA STANDARDS, CURRENT AMERICANS WITH DISABILITIES ACT STANDARDS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES IN ORDER TO PROVIDE OPTIMUM VISIBILITY TO THE ONCOMING/APPROACHING MOTORIST. IF A PROPOSED LOCATION CONFLICTS WITH OTHER SIGNS, UTILITIES, OR OTHER ROADWAY FEATURES, THE ENGINEER SHALL BE NOTIFIED.
41. POST LENGTHS SHOWN ON SIGN SUMMARY ARE APPROXIMATE. EXACT LENGTHS SHALL BE DETERMINED BY A FIELD SURVEY CONDUCTED BY THE CONTRACTOR.
42. ALL ASPHALT STREETS THAT ARE TO BE RECONSTRUCTED SHALL BE LEFT WITH A DRIVABLE SURFACE AT ALL TIMES. THE CONTRACTOR WILL NOT BE ALLOWED TO MILL OFF ALL THE ASPHALT BEFORE EXCAVATION BEGINS.
43. THE CONTRACTOR SHALL REPLACE ANY SECTION CORNERS OR OTHER PERMANENT RIGHT OF WAY MARKERS REMOVED OR DISTURBED AS A RESULT OF THE CONSTRUCTION OF THIS PROJECT. REPLACEMENT OF SECTION CORNERS OR ANY OTHER MONUMENTS SHALL BE PERFORMED BY A LICENSED LAND SURVEYOR AUTHORIZED TO PERFORM WORK IN THE STATE OF OKLAHOMA.
44. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL AND MAINTENANCE OF THE STORMWATER DRAINAGE. STORMWATER PONDING ON THE CONSTRUCTION SITE THAT IS THE RESULT OF CONSTRUCTION WILL NOT BE ALLOWED.
45. STRAW OR HAY BALES AS STORMWATER BEST MANAGEMENT PRACTICES ARE NO LONGER ALLOWED ON CONSTRUCTION PROJECTS.
46. THE CONTRACTOR MUST CALL 1-800-458-4251 IMMEDIATELY IF A NATURAL GAS PIPELINE IS CUT, DAMAGED, OR OTHERWISE DISTURBED.

47. PRIOR TO FINAL ACCEPTANCE, ALL EXPOSED CURB SURFACES SHALL BE CLEANED OF ALL DISCOLORATION SUCH AS ASPHALT STAIN, TIRE MARKS, OR OTHER DISFIGUREMENT.
48. ALL FEATURES OF THIS PROJECT INCLUDING, BUT NOT LIMITED TO, SIDEWALKS, CURB RAMPS, AND CROSSWALKS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT, ACCESSIBILITY GUIDELINES, AND THE PROPOSED ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES IN THE PUBLIC RIGHT-OF-WAY, PUBLISHED ON JULY 26, 2011 BY THE U.S. ACCESS BOARD. WHERE SPATIAL LIMITATIONS OR EXISTING FEATURES WITHIN THE LIMITS OF THE PROJECT PREVENT FULL COMPLIANCE WITH THIS ACT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER UPON DISCOVERY OF SUCH FEATURES. THE CONTRACTOR SHALL NOT PROCEED WITH ANY ASPECT OF THE WORK, WHICH IS NOT IN FULL COMPLIANCE WITH THE ADA WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER. ANY WORK WHICH IS NOT PERFORMED WITHIN THE GUIDELINES OF THE ADA, FOR WHICH THE CONTRACTOR DOES NOT HAVE WRITTEN APPROVAL, SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
49. ALL TRENCH WIDTHS & BEDDING MATERIAL SHALL BE AS SHOWN ON COT STANDARD PIPE BEDDING DETAIL, STANDARD NO. 751. SPECIFIED TRENCH WIDTHS SHALL BE MAINTAINED FULL DEPTH FROM THE FLOWLINE TO THE GRADING TEMPLATE. THE CONTRACTOR SHALL KEEP THE OPEN TRENCH DRAINED.
50. THE CONTRACTOR SHALL NOTIFY THE METROPOLITAN TULSA TRANSIT AUTHORITY (MTTA), ERIC SMITH 918-830-0024, A MINIMUM OF 48 HOURS PRIOR TO COMMENCING WORK, LANE CLOSURES OR PRIOR TO DETOURING TRAFFIC.
51. CONTRACTOR SHALL NOT STORE EQUIPMENT OR MATERIAL IN THE FLOODPLAIN.



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REVISION			BY	DATE
GENERAL NOTES(1)				
TMUA PROJECT NUMBER ES 2020-07				
CITYWIDE LIFT STATION IMPROVEMENTS GRAVITY SEWER				
CITY OF TULSA, OKLAHOMA WATER AND SEWER DEPARTMENT				
PLANS AND ESTIMATES PREPARED BY:				
<div><b>HOLLOWAY, UPDIKE + BELLEN, Inc.</b> 2001 N WILLOW AVE. SPENCER, ARK. OKLAHOMA 74062 (918)285-0777, FAX (918)285-0764</div>				
PLAN SCALE:	DRAWN	PGM	03/2025	APPROVED:
	DESIGNED	TJR	03/2025	
PROFILE SCALE:	SURVEY	CWC	03/2025	 DESIGN MANAGER
HORIZONTAL:	PROJ. MGR.	DN	05/2025	
VERTICAL:	LEAD ENGR.	DN	05/25	
	FIELD MGR.	DN	05/25	
FILE:	DRAWING:	21TMUAKINGST	DATE: 2025	
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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, MODIFICATIONS, 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

918-596-1195

COT FIELD ENGINEERING

918-596-9404
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 MAINTENANCE OF ALL CONSTRUCTION SIGNAGE AND BARRICADING, INCLUDING BUT NOT LIMITED TO, WASHING, REPLACEMENT, AND REPOSITIONING OF DEVICES.WHEN AND WHERE IT IS DEEMED NECESSARY BY THE CITY OR 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.
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.
11.

CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PRIVATE RESIDENCES AND BUSINESSES AT ALL TIMES.
12.

ALL SIGNAL AND ELECTRICAL WORK TO BE DONE BY A LICENSED ELECTRICAL CONTRACTOR.

UTILITIES

1.

THE LOCATION OF THE UTILITY LINES, AS SHOWN ON THESE DRAWINGS, ARE BASED ON ATLAS INFORMATION AND OBSERVED FEATURES. NEITHER THE CITY NOR THE ENGINEER 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 THE NOTIFICATION CENTER OF 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.

SPECIAL NOTES

1.

SEQUENTIAL RESTORATION  
THIS RESTORATION SHALL INCLUDE BUT IS NOT LIMITED TO, SUCH ITEMS AS SODDING, REPLACEMENT OF SIDEWALKS, FENCES, DRIVEWAYS, AND STREET PAVEMENT, GROUTING OF SEWER SCHEDULED TO BE ABANDONED, AND ANY OTHER ITEMS SPECIFICALLY SHOWN ON THE PLANS.  
  
ANY RESTORATION WORK DAMAGED OR DESTROYED BY THE CONTRACTOR'S SUBSEQUENT WORK SHALL BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE. NO ADDITIONAL PAYMENT SHALL BE MADE FOR SEQUENTIAL RESTORATION.
2.

PROPERTY OWNER NOTIFICATIONS  
ALL PROPERTY OWNERS ADJACENT TO THE ALIGNMENT SHALL BE NOTIFIED OF THE PROJECT WITHIN SEVEN (7) CALENDAR DAYS BEFORE CONSTRUCTION ON OR ADJACENT TO THE PROPERTY, AND A MINIMUM OF 48 HOURS BEFORE CONSTRUCTION.
3.

TRANSITIONS BETWEEN PIPE TYPES  
TRANSITION BETWEEN PIPE TYPES MAY ONLY BE MADE AT MANHOLES. IN THE EVENT THE CONTRACTOR DESIRES TO MAKE A TRANSITION BETWEEN PIPE TYPES AT ANY OTHER POINT, THEY SHALL INSTALL AN ADDITIONAL MANHOLE AT THE POINT OF TRANSITION BETWEEN THE PIPE TYPES. THIS TRANSITION MANHOLE WILL BE CONSIDERED AS INCIDENTAL WORK AND WILL NOT BE MEASURED FOR PAYMENT.
4.

ASPHALT STREET REPAIR  
AFTER PIPE INSTALLATION, THE CONTRACTOR SHALL BACKFILL & PATCH EXISTING ASPHALT STREETS IN ACCORDANCE WITH THE CITY OF TULSA STANDARDS DRAWING NO. 733.

5.

CONCRETE STREET REPAIR  
ALL CONCRETE PAVEMENT CUTS SHALL BE IN ACCORDANCE WITH DETAIL NO. 714 AND STD. DRAWING NO. 733. LIMITS OF PAYMENT ARE APPROXIMATE. CONTRACTOR SHALL BE RESPONSIBLE FOR EXACT LOCATION OF CONSTRUCTION JOINTS.
6.

TRENCH SAFETY  
CONTRACTOR SHALL FOLLOW REQUIREMENTS FOR EXCAVATION AND TRENCH SAFETY PER CITY OF TULSA SPECIFICATION NO. 112 AND GUIDELINES SET BY THE US DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA). TRENCH SAFETY SHALL BE CONSIDERED INCIDENTAL WORK AND WILL NOT BE MEASURED FOR PAYMENT. CONTRACTOR SHALL SUBMIT SHORING AND ENGINEERING TRENCH PLAN FOR APPROVAL.
7.


MANHOLES  
MANHOLES 1 - 10 SHALL REQUIRE A FLOOD PLAIN FRAME & COVER PER STD 359. MANHOLES 11-17 SHALL REQUIRE STD 402. NO STEPS ON ANY MANHOLE. ALL MANHOLE LIDS SHALL BE IN ACCORDANCE WITH STD 354, WITH 30-INCH LIDS
8.

BYPASS PUMPING  
THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ALL NECESSARY BYPASS PUMPING DURING SANITARY SEWER CONSTRUCTION. NO ADDITIONAL PAYMENT SHALL BE MADE. CONTRACTOR MUST ENSURE PROPER PROTOCOLS IN PLACE FOR 24-HOUR MONITOR BYPASS PUMPING AND THAT THE CONTRACTOR MUST COMPLETE A SOM BYPASS PUMPING FORM BEFORE COMPLETING ANY BYPASS PUMPING.
9.

CONSTRUCTION LIMITS  
ALL CONSTRUCTION AND SPOILS ON PRIVATE PROPERTY SHALL BE CONFINED TO THE PERMANENT AND TEMPORARY CONSTRUCTION EASEMENTS. ALL CONSTRUCTION AND SPOILS IN THE CITY OR STATE RIGHT-OF-WAY SHALL BE CONFINED TO THE ROW LIMITS AND NOT EXCEED 28 L.F. FROM PROPOSED ALIGNMENT.



BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

REVISION	BY	DATE
GENERAL NOTES(2)		
TMUA PROJECT NUMBER ES 2020-07		
CITYWIDE LIFT STATION IMPROVEMENTS GRAVITY SEWER		
CITY OF TULSA, OKLAHOMA WATER AND SEWER DEPARTMENT		
PLANS AND ESTIMATES PREPARED BY:  HOLLOWAY, UPDIKE + BELLEN, Inc. 2201 N WILLOW AVE, BROKEN ARROW, OKLAHOMA 74012 (918)281-0770, FAX (918)281-0764		
PLAN SCALE:	DRAWN PGM 03/2025	APPROVED:
	DESIGNED TJR 03/2025	
PROFILE SCALE:	SURVEY CWC 03/2025	
HORIZONTAL:	PROJ. MGR. <i>EB</i> 05/2025	
	LEAD ENGR. <i>AS</i> 5/25	
VERTICAL:	FIELD MGR. <i>for</i> 5/26	
FILE:	DRAWING: 21TMUAKINGST	DATE: 2025
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### SURVEY SYMBOLS

SYMBOL	ABBREV.	DESCRIPTION	SYMBOL	DESCRIPTION
021 S 12	PF	PARSHALL FLUME		AIR RELEASE VALVE
	LL	LINE LABELS		FENCE
	FM	FLOW METER		SECTION LINE
	GV	GATE VALVE		PROPERTY LINE
	BFV	BUTTERFLY VALVE		POWER POLE
	BV	BALL VALVE		TRAFFIC SIGN
	BCV	BALL CHECK VALVE		LIGHT POLE
	CV	CHECK VALVE		PROPOSED CONTOUR
	PV	PLUG VALVE		EXIST. CONTOUR
	PRV	PRESSURE RELIEF VALVE		TREES
	PCV	PRESSURE CONTROL VALVE		SWALE & FLOW
		VALVE w/ MECHANICAL OPERATOR		CREEK OR DITCH SWALE
	DV	DIAPHRAGM VALVE		DRIVES & MINOR ROADS
	BFP	BACK FLOW PREVENTER		RAILROAD
	ARV	AIR RELIEF VALVE		EXIST. RIGHT OF WAY
	SW	STRUCTURE WALL		REFERENCE POINT
	ES	EXISTING STRUCTURE		BORING LOCATION
	B	BLOWER		SURVEY BASE LINE
	P	PUMPS		PROPOSED LINE
	MV	MUD VALVE		CONDUIT
	FC	FLEXIBLE COUPLING		IRON PIN
	FC	FLEXIBLE METAL COUPLING		EXISTING TREE LINE
		SAMPLER		PROPOSED CLEARING LIMIT
	TV	TELESCOPIC VALVE		PIPING (TO BE ABANDONED)
		MOTOR OPERATOR		MATCHLINE
		PRESSURE GAUGE		SECTION NUMBER OR DETAIL LETTER
		TEMPERATURE GAUGE		SHEET NUMBER WHERE SECTION OR DETAIL APPEARS
	SA	SURFACE AERATOR		
	PT	PRESSURE TRANSDUCER		
	BF	BLIND FLANGE		
		HOSE CONNECTION		
		"Y" TYPE STRAINER		
		EXPANSION JOINT		

SYMBOL	DESCRIPTION
	WATER METER
	WATER VALVE
	FIRE HYDRANT
	IRON PIN FOUND
	SANITARY SEWER MANHOLE
	TELEPHONE PEDESTAL
	FIBER OPTIC PEDESTAL
	ELECTRIC BOX
	BENCH MARK
	POWER POLE
	GUY WIRE
	LIGHT POLE
	STORM SEWER MANHOLE
	SIGN
	SANITARY SEWER CLEANOUT



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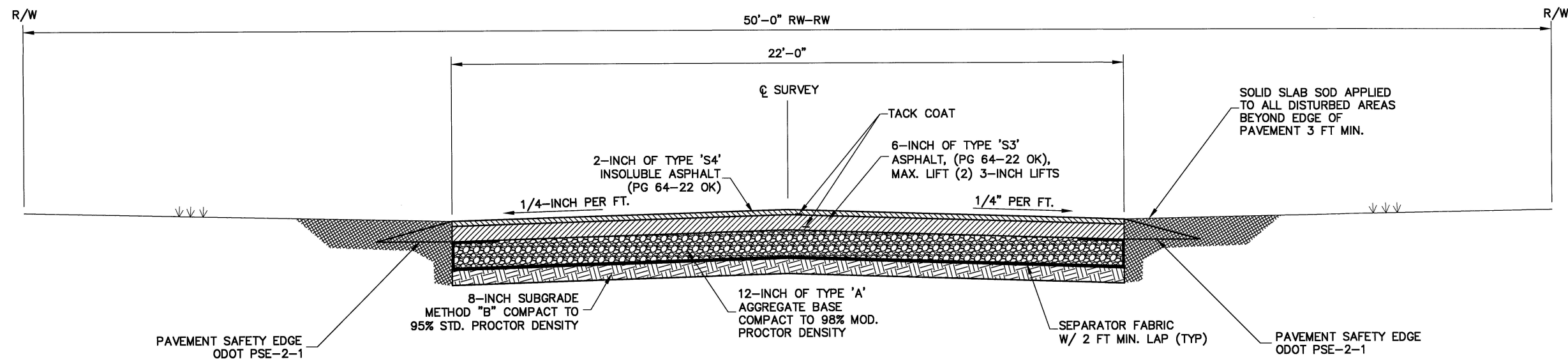
DOUBLE LINE      SINGLE LINE

DESCRIPTION	ABBREV.	DOUBLE LINE	SINGLE LINE	DESCRIPTION	ABBREV.
WELDED JOINT				LATERAL DOWN	
GROOVED END JOINT				CONCENTRIC REDUCER	CONC. RED.
BELL & SPIGOT JOINT				ECCENTRIC REDUCER	ECC. RED.
FLANGED COUPLING ADAPTER WITH THRUST TIES				UNION	UN
FLEXIBLE COUPLING	FLW. CPLG.			CAP	
FLEXIBLE COUPLING WITH THRUST TIES				FLANGED JOINT	FLG
ELASTOMETER BELLOWS EXP. JOINT	EXP. JT.			FLANGED COUPLING ADAPTER	FCA
ELBOW UP	ELL			MECHANICAL JOINT	MJ
ELBOW DOWN	ELL			MJ w/ RETAINER GLAND	RJ
ELBOW 90 DEGREE	ELL				
ELBOW 45 DEGREE					
LATERAL					
TEE	TEE				
TEE UP	TEE				
TEE DOWN	TEE				
CROSS	CROSS				
Y-STRAINER	YS				
COUPLING	CPLG				
LATERAL UP					

[illegible]




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**A**  
**5** TYPICAL ASPHALT SECTION "A"  
SCALE: 1/2" = 1'-0"



REVISION		BY	DATE
TYPICAL SECTIONS			
TMUA PROJECT NUMBER ES 2020-07			
CITYWIDE LIFT STATION IMPROVEMENTS GRAVITY SEWER			
CITY OF TULSA, OKLAHOMA WATER AND SEWER DEPARTMENT			
PLANS AND ESTIMATES PREPARED BY:  HOLLOWAY, UPDIKE + BELLEN, Inc. 3001 N WILLOW AVE., SUITE 100, TULSA, OKLAHOMA 74102 (918) 438-0777 FAX (918) 438-0754			
PLAN SCALE: 1/2" = 1'-0"	DRAWN DESIGNED	PGM TJR	03/2025 03/2025
PROFILE SCALE:	SURVEY	CWC	03/2025
HORIZONTAL:	PROJ. MGR. LEAD ENGR. FIELD MGR.	SV 5/24/25 5/24/25	05/2025 5/24/25 5/24/25
VERTICAL:			
FILE:	DRAWING: 21TMUAKINGST	DATE: 2025	
ATLAS PAGE NO: 120, 167		SHEET 5 OF 32 SHEETS	



Project: 2021-11 TulsaOKIST Design/Construct: Tulsa/Engineering Company, Inc. Date: 5/9/2025 2:41:18 PM

SUMMARY OF QUANTITIES - SANITARY SEWER					
ITEM NO.	SPEC. NO	ITEM DESCRIPTION	PAY ITEM NOTE	UNIT	QUANTITY
SANITARY SEWER (BASE BID)					
1	COT 101	PROJECT SIGN (CITY OF TULSA)		EA	1
2	COT 220	SWPPP DOCUMENTATION & MANAGEMENT		EA	1
3	COT 301	RIGHT-OF-WAY CLEARING & RESTORING	1, 2, 3, 11	SY	8,027
4	COT 302	UNCLASSIFIED EXCAVATION AND BACKFILL		CY	2,993
5	COT 303	MOBILIZATION		EA	1
6	ODOT 303(A)	AGGREGATE BASE TYPE (A)		CY	2,433
7	COT 304	CONTRACTOR CONSTRUCTION STAKING		EA	1
8	COT 307	20 INCH STEEL CASING BY BORE & JACK	8	LF	310
9	COT 307	20 INCH CONCRETE CASING		LF	30
10	COT 309	6 INCH PVC AWWA C900 CLASS 200, DR 14 (WATER LINE)	13	LF	50
11	COT 313	8 INCH DIA. PVC SDR 26	3, 4, 6, 12	LF	3,730
12	COT 314	4.0 FOOT DIA. STANDARD MANHOLE (0-6 FEET)	14, 15, 16, 17	EA	16
13	COT 314	4.0 FOOT DIA. STANDARD MANHOLE EXTRA DEPTH OVER 6 FEET	14, 15, 16, 17	VF	54
14	COT 314	4.0 FOOT DIA. DROP MANHOLE (0-6 FEET)	14, 15, 16, 17	EA	1
15	COT 314	4.0 FOOT DIA. DROP MANHOLE EXTRA DEPTH OVER 6 FEET	14, 15, 16, 17	VF	8
16	COT 325	SODDING	5	SY	157
17	COT 325	HYDROMULCHING	5	SY	2,559
18	COT 327	TRENCH SAFETY PLAN		EA	1
19	COT 327	FLAG PERSON	10	FLAG DAY	50
20	COT 327	WARNING SIGNS W/LIGHTS 16 SF AND BELOW	10	SD	110
21	COT 327	WARNING SIGNS W/LIGHTS OVER 16 SF	10	SD	55
22	COT 327	TYPE I, II, III BARRICADES	10	SD	220
23	COT 330	SILT FENCE		LF	3,265
24	COT 331	WATER TABLE CRADLE	6	LF	1,027
25	COT 334	CONSTRUCTION AS-BUILTS		LS	1
26	COT 335	ACCEPTANCE SAMPLING/TESTING REQUIREMENTS		LS	1
27	COT 400.7.5	PHOTOGRAPHIC DOCUMENTATION		EA	1
28	COT 404	DEMOLISH EXISTING LIFT STATION	7	LS	1
29	COT 404	ABANDON EXISTING 6 INCH C.I. FORCE MAIN		LS	1
30	ODOT 601(E)	LAID UP RIP RAP		TON	210
31	ODOT 601(E)	TURF REINFORCEMENT MAT		SY	7,745
32	ODOT 601(B)	FILTER FABRIC		SY	419
33	SPECIAL	OWNER'S ALLOWANCE	9	ALLOW	100,000
ROADWAY (BASE BID)					
34	ODOT 202(A)	UNCLASSIFIED EXCAVATION AND BACKFILL	E-1, E-2	CY	2540
35	ODOT 230(A)	SOLID SLAB SODDING	E-10, E-11	SY	850
36	ODOT 303(A)	AGGREGATE BASE TYPE (A)	S-1,S-2,S-23	CY	995
37	ODOT 310(B)	SUBGRADE METHOD "B" - 8 INCHES		SY	2965
38	COT 325	SEPARATOR FABRIC	S-3	SY	3111
39	ODOT 411(C)	SUPERPAVE, INSOLUBLE TYPE S4 (PG 64-22 OK)	S-5,S-6,S-7,S-8	TON	272
40	ODOT 411(C)	SUPERPAVE, TYPE S3 (PG 64-22 OK)	S-5,S-6,S-7,S-8,G-1	TON	1177
41	ODOT 610(B)	CONCRETE DRIVEWAY (6 INCH -H.E.S.)	S-12,S-13,S-16,S-17	SY	9
42	ODOT 610(G)	ASPHALT DRIVEWAY (6 INCH)	S-12,S-13,S-16,S-17	SY	73
43	ODOT 619(B)	REMOVAL OF PAVEMENT	R-1, R-2, R-5, R-6	SY	3111
44	ODOT 619(B)	REMOVAL OF ASPHALT DRIVEWAY	R-1, R-2, R-5, R-6	SY	73
45	ODOT 619(B)	REMOVAL OF CONCRETE DRIVEWAY	R-1, R-2, R-5, R-6	SY	9
SANITARY SEWER (ADDITIVE ALTERNATE NO. 1)					
46	COT 301	RIGHT-OF-WAY CLEARING & RESTORING (DEDUCT)	1, 2, 3, 11	SY	-250
47	COT 302	UNCLASSIFIED EXCAVATION AND BACKFILL (DEDUCT)		CY	-88
48	COT 307	20 INCH STEEL CASING BY BORE & JACK	8	LF	60

PAY ITEM NOTES (SANITARY SEWER)

1. ITEM INCLUDES THE COST FOR REMOVAL OF TREES AND SHRUBS WITHIN EASEMENTS AND REMOVING AND REPLACING EXISTING FENCE AND SIDEWALK IF DISTURBED BY CONSTRUCTION. NO ADDITIONAL PAYMENT WILL BE MADE.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR TRENCH DEWATERING, NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK.
3. 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.
4. ITEM INCLUDES THE COST OF RELOCATING, ADJUSTING AND BRACING OF EXISTING UTILITIES IF NECESSARY. NO ADDITIONAL PAYMENTS SHALL BE MADE.
5. DEVELOPED AREAS DISTURBED BY CONSTRUCTION SHALL BE RESTORED BY SODDING. HYDROMULCH SEEDING WILL BE ALLOWED IN UNDEVELOPED LOTS AT NO ADDITIONAL COST TO THE CITY OF TULSA. MAXIMUM PAY LIMIT FOR SODDING AND SEEDING SHALL BE STANDARD 10 FEET ON EITHER SIDE OF CENTERLINE OF PIPE. MAXIMUM PAY WIDTH OF 20 FEET.
6. WATER TABLE CRADLE SHALL BE USED WHERE TRENCH CONDITIONS WARRANT ITS USE AS APPROVED BY THE ENGINEER. SHALL BE INSTALLED PER STANDARD DRAWING NO. 367.
7. ITEM INCLUDES THE DEMOLITION OF STRUCTURES, CONCRETE PAVEMENT, CONCRETE DRIVEWAY, LIFT STATION FENCING, PIPE CULVERT, RE-GRADING LIFT STATION AREA AND RE-ESTABLISHING THE DITCH, REPLACE EXISTING PRIVATE FENCE IN AREA WHERE LIFT STATION WAS WITH LIKE KIND, AND SODDING OF ALL DISTURBED AREAS. IT ALSO INCLUDES DELIVERY OF ALL SALVAGED ITEMS, DISPOSAL OF REMAINING ITEMS. ALSO INCLUDES COST OF PUMPING SEWAGE AROUND THE EXISTING LIFT STATION DURING THE TIME OF THE LIFT STATION'S REMOVAL FROM SERVICE UNTIL CONSTRUCTION OF THE NEW GRAVITY LINE IS COMPLETED AND IN SERVICE.
8. ITEM INCLUDES THE COST OF EXCAVATING AND BACKFILLING BORE PIT AND RECEIVING PIT. INCLUDES REMOVAL OF EXISTING 8" SEWER MAIN AND MANHOLES IN PROPOSED ALIGNMENT. NO SEPARATE PAYMENT SHALL BE MADE.
9. ITEM INCLUDES THE COST OF ALL COMPONENTS AS SPECIFIED IN THE SPECIAL PROVISIONS.
10. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN SIGNED AND SEALED BY A LICENSED ENGINEER IN THE STATE OF OKLAHOMA FOR APPROVAL.
11. ALL TREES DISTURBED IN THE DESIGNATED "UP WITH TREES" AREA SHALL BE REMOVED AND REPLANTED OR REPLACED IN LIKE-KIND AS REQUIRED BY THE CITY OF TULSA URBAN FORESTER. DO NOT REPLANT TREES WITHIN 20 FEET FROM THE CENTERLINE OF THE SEWER LINE IN EITHER DIRECTION.
12. PAY ITEM SHALL INCLUDE ALL COSTS FOR FLOWABLE FILL TO SEPARATE 24" STORM SEWER FROM PROPOSED SANITARY SEWER.
13. PAY ITEM SHALL INCLUDE ALL COSTS ASSOCIATED TO LOWER WATERLINE. INCLUDING, BUT NOT LIMITED TO, BENDS, SLEEVES, EXCAVATION, AND BACKFILL.
14. 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-FOOT I.D. MANHOLES AND 5-FOOT I.D. SHALLOW MANHOLES SHALL NOT BE EPOXY COATED.
15. ALL RISER RINGS INSTALLED ON EXISTING AND NEW MANHOLES SHALL BE CRETEX PRO-RING OR ENGINEER APPROVED EQUAL. NO CONCRETE RISER RINGS ARE PERMITTED FOR USE UNLESS APPROVED BY ENGINEER.
16. ALL NEW MANHOLES SHALL HAVE WALL JOINTS WRAPPED WITH 9-INCH INFI-SHIELD GATOR WRAP AS MANUFACTURED BY SEALING SYSTEMS INC. OR ENGINEER APPROVED EQUAL. (NO SEPARATE PAYMENT).
17. ALL NEW MANHOLES SHALL HAVE 30-INCH LIDS.



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REVISION	BY	DATE

SUMMARY OF QUANTITIES


TMUA PROJECT NUMBER ES 2020-07

CITYWIDE LIFT STATION IMPROVEMENTS  
GRAVITY SEWER

CITY OF TULSA, OKLAHOMA  
WATER AND SEWER DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:

 **HOLLOWAY, UPDIKE + BELLEN, Inc.**  
2001 N WILLOW AVE, SUITE 100, TULSA, OKLAHOMA 74102  
(918) 265-0770, FAX (918) 265-0784

PLAN SCALE:	DRAWN	PGM	03/2025	APPROVED:
	DESIGNED	TJR	03/2025	
PROFILE SCALE:	SURVEY	CWC	03/2025	 DESIGN MANAGER
HORIZONTAL:	PROJ. MGR.	DV	05/2025	
VERTICAL:	LEAD ENGR.	AK	5/8/5	
	FIELD MGR.			
FILE:	DRAWING:	21TMUAKINGST	DATE:	2025
ATLAS PAGE NO: 120.167				SHEET 6 OF 32 SHEETS





## EARTHWORK / EROSION CONTROL / SITE PREPARATION (E1 - E11)

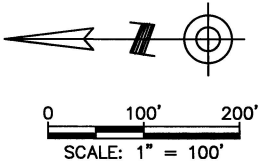
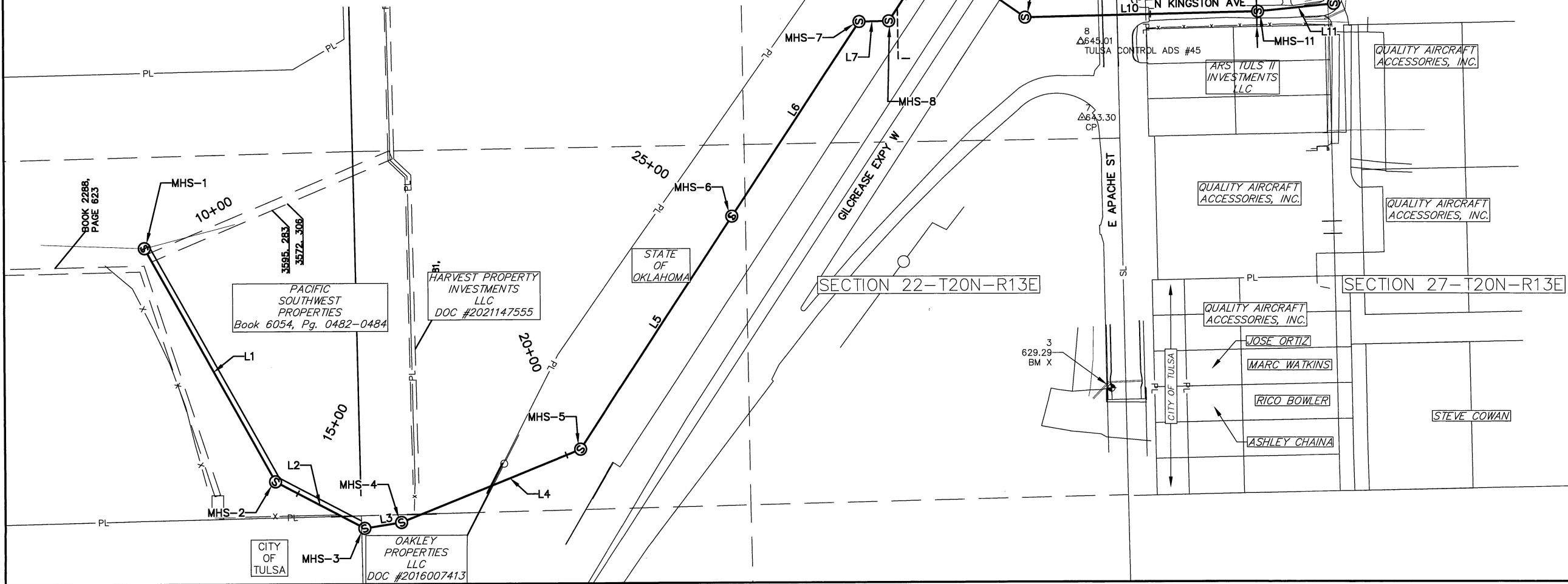
SUMMARY OF SANITARY SEWER MANHOLES			
STR NO.	STATION	NORTHING	EASTING
MHS-1	10+00.00	442066.09	2584554.45
MHS-2	14+56.68	441842.98	2584155.99
MHS-3	16+29.47	441689.82	2584076.00
MHS-4	16+93.52	441626.54	2584085.90
MHS-5	20+26.40	441317.35	2584209.26
MHS-6	25+01.94	441055.92	2584606.48
MHS-7	29+01.94	440836.02	2584940.61
MHS-8	29+52.96	440785.02	2584941.71
MHS-9	30+92.17	440708.49	2585057.99
MHS-10	32+84.73	440550.79	2584947.49
MHS-11	36+84.71	440150.92	2584957.17
MHS-12	38+16.51	440019.80	2584970.59
MHS-13	39+65.17	440013.88	2585119.12
MHS-14	44+13.39	440024.55	2585567.22
MHS-15	44+71.25	439988.97	2585612.85
MHS-16	47+20.36	439739.93	2585618.19

PROPOSED SAN SEWER ALIGNMENT: LINE TABLE				
ID	LENGTH	LINE DIRECTION	START POINT (N,E)	END POINT (N,E)
L1	456.68	S60° 45' 13.74"W	442066.09, 2584554.45	441842.98, 2584155.99
L2	172.79	S27° 34' 36.71"W	441842.98, 2584155.99	441689.82, 2584076.00
L3	64.05	S08° 53' 24.33"E	441689.82, 2584076.00	441626.54, 2584085.90
L4	332.89	S21° 45' 05.80"E	441626.54, 2584085.90	441317.35, 2584209.26
L5	400.00	S56° 38' 59.01"E	441275.83, 2584272.35	441055.92, 2584606.48
L6	400.00	S56° 38' 59.01"E	441055.92, 2584606.48	440836.02, 2584940.61
L7	51.02	S01° 13' 45.41"E	440836.02, 2584940.61	440785.02, 2584941.71
L8	139.21	S56° 38' 59.01"E	440785.02, 2584941.71	440708.49, 2585057.99
L9	192.56	S35° 01' 18.26"W	440708.49, 2585057.99	440550.79, 2584947.49
L10	399.99	S01° 23' 15.97"E	440550.79, 2584947.49	440150.92, 2584957.17
L11	131.79	S05° 50' 30.54"E	440150.92, 2584957.17	440019.80, 2584970.59
L12	148.65	S87° 42' 59.79"E	440019.80, 2584970.59	440013.88, 2585119.12
L13	448.23	N88° 38' 08.83"E	440013.88, 2585119.12	440024.55, 2585567.22
L14	57.86	S52° 03' 05.32"E	440024.55, 2585567.22	439988.97, 2585612.85
L15	249.10	S01° 13' 45.41"E	439988.97, 2585612.85	439739.93, 2585618.19

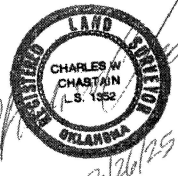
SURVEY COORDINATE TABLE				
ID	DESCRIPTION	NORTHING	EASTING	ELEVATION
2	CP 1\2"	439726.15	2585653.88	652.36
3	BM X	440404.39	2584310.78	629.29
4	BM TOPNUT	439767.73	2585599.52	653.22
7	CP	440453.43	2584774.87	643.30
8	TULSA CONTROL ADS #45	440455.24	2584904.93	645.01

BENCH MARK:  
BM: MON ADS #45 (APACHE ST. & KINGSTON AVE.) ELEV: 645.01

SURVEY DATUM:  
HORIZONTAL - OKLAHOMA STATE PLANE COORDINATE (NAD 1983)  
VERTICAL - (NAVD 1988)



SURVEY DATUM:  
HORIZONTAL - OKLAHOMA STATE PLANE  
COORDINATE (NAD1983)  
VERTICAL - (NAVD 1988)



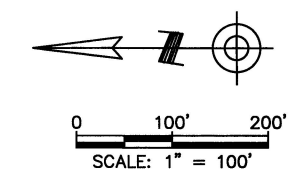
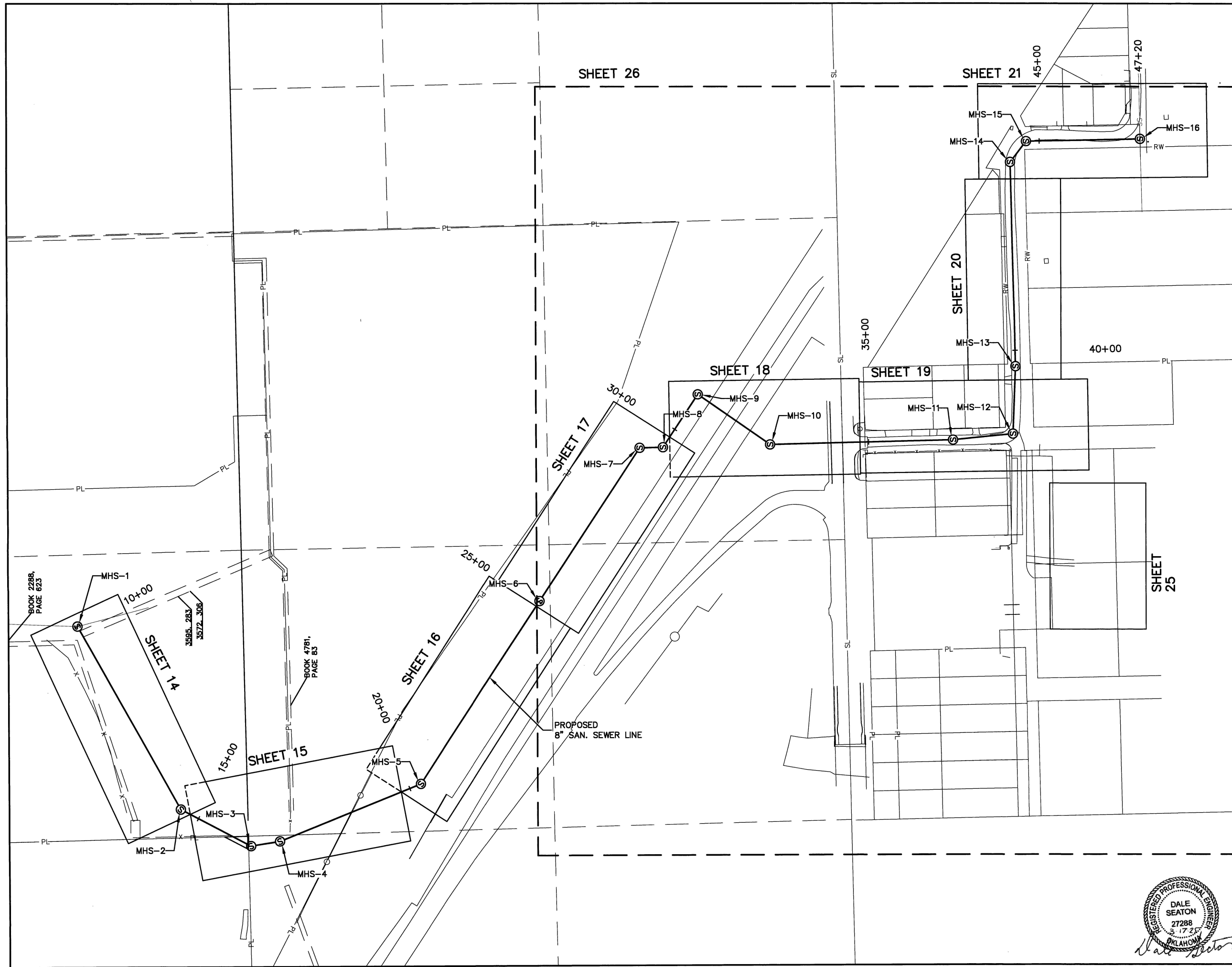
CHARLES W CHASTAIN L.S. #1352  
THE SURVEYS FOR THE  
INFORMATION CONTAINED  
ON THESE SURVEY SHEETS  
WERE CONDUCTED UNDER MY  
SUPERVISION AND THE INFORMATION  
CONTAINED HEREIN IS A CORRECT  
REPRESENTATION OF SAID SURVEY.



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REVISION		BY	DATE
SURVEY DATA - SANITARY SEWER			
TMUA PROJECT NUMBER ES 2020-07			
CITYWIDE LIFT STATION IMPROVEMENTS GRAVITY SEWER			
CITY OF TULSA, OKLAHOMA WATER AND SEWER DEPARTMENT			
PLANS AND ESTIMATES PREPARED BY: HOLLOWAY, UPDIKE + BELLEN, Inc. 3001 N WILLOW AVE, SUITE 100, TULSA, OKLAHOMA 74102 (918) 438-0777 FAX (918) 438-0784			
PLAN SCALE: 1"=100'	DRAWN	PGM	03/2025
	DESIGNED	TJR	03/2025
	SURVEY	CWC	03/2025
PROFILE SCALE:			
HORIZONTAL:	PROJ. MGR.	COI	05/2025
VERTICAL:	LEAD ENGR.		
	FIELD MGR.		
FILE:	DRAWING: 21TMUAKINGST	DATE:	2025
ATLAS PAGE NO: 120.167		SHEET 8 OF 32 SHEETS	





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REVISION	BY	DATE

KEY MAP

TMUA PROJECT NUMBER ES 2020-07

CITYWIDE LIFT STATION IMPROVEMENTS  
GRAVITY SEWER

CITY OF TULSA, OKLAHOMA  
WATER AND SEWER DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:  
 HOLLOWAY, UPDIKE + BELLEN, Inc.  
2001 N WILLOW AVE., BROKEN ARROW, OKLAHOMA 74012  
(918) 259-0777, FAX (918) 259-0784

PLAN SCALE: 1"=100'	DRAWN	PGM	10/2024	APPROVED:
	DESIGNED	TJR	10/2024	
PROFILE SCALE:	SURVEY	CWC	10/2024	
HORIZONTAL:	PROJ. MGR.	2V	05/2025	
VERTICAL:	LEAD ENGR.	5/25		
	FIELD MGR.	5/25		DESIGN MANAGER
FILE:	DRAWING:	21TMUAKINGST	DATE:	2025
ATLAS PAGE NO: 120, 167		SHEET 10 OF 32 SHEETS		







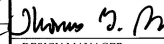
SUMMARY OF SANITARY SEWER MANHOLES							
STR NO.	STRUCTURE STATIONING	DESIGN TYPE	RIM ELEV.	INLET PIPE DIA.	INLET FL	OUTLET PIPE DIA.	OUTLET FL
* MHS-1	10+00.00	STD 4' MH	613.93	8"	603.68		
* MHS-2	14+56.68	STD 4' MH	620.00	8"	605.61	8"	605.51
* MHS-3	16+29.47	STD 4' MH	620.00	8"	606.40	8"	606.30
* MHS-4	16+93.52	STD 4' MH	620.00	8"	606.76	8"	606.66
* MHS-5	20+26.40	STD 4' MH	615.00	8"	608.19	8"	608.09
* MHS-6	25+01.94	STD 4' MH	622.34	8"	610.17	8"	610.07
* MHS-7	29+01.94	STD 4' MH	622.34	8"	611.87	8"	611.77
* MHS-8	29+52.96	STD 4' MH	617.11	8"	612.17	8"	612.07
* MHS-9	30+92.17	STD 4' MH	618.60	8"	612.83	8"	612.73
* MHS-10	32+84.73	4' DROP MH	627.56	8"	623.24	8"	613.66
* MHS-11	36+84.71	STD 4' MH	640.51	8"	627.34	8"	627.24
MHS-12	38+16.51	STD 4' MH	638.63	8"	629.22	8"	629.12
MHS-13	39+65.17	STD 4' MH	636.76	8"	629.96	8"	629.86
MHS-14	44+13.39	STD 4' MH	647.05	8"	641.69	8"	641.59
MHS-15	44+71.25	STD 4' MH	648.62	8"	642.31	8"	642.01
MHS-16	47+20.36	STD 4' MH	651.66			8"	644.28

SUMMARY OF PIPE DESIGN							
START NODE STR NO.	END NODE STR NO.	DIAM (INCH)	LENGTH (LF)	SLOPE (%)	INV UP (FT)	INV DN (FT)	MATERIAL
MHS-2	MHS-1	8	456.68	0.40%	605.51	603.68	PVC SDR-26
MHS-3	MHS-2	8	172.79	0.40%	606.30	605.61	PVC SDR-26
MHS-4	MHS-3	8	64.05	0.40%	606.66	606.40	PVC SDR-26
MHS-5	MHS-4	8	332.89	0.40%	608.09	606.76	PVC SDR-26
MHS-6	MHS-5	8	475.53	0.40%	610.07	608.19	PVC SDR-26
MHS-7	MHS-6	8	400.00	0.40%	611.77	610.17	PVC SDR-26
MHS-8	MHS-7	8	51.02	0.40%	612.07	611.87	PVC SDR-26
MHS-9	MHS-8	8	139.21	0.40%	612.73	612.17	PVC SDR-26
MHS-10	MHS-9	8	192.56	0.43%	613.66	612.83	PVC SDR-26
MHS-11	MHS-10	8	399.99	1.00%	627.24	623.24	PVC SDR-26
MHS-12	MHS-11	8	131.80	1.35%	629.12	627.34	PVC SDR-26
MHS-13	MHS-12	8	148.65	0.43%	629.86	629.22	PVC SDR-26
MHS-14	MHS-13	8	448.23	2.60%	641.59	629.96	PVC SDR-26
MHS-15	MHS-14	8	57.86	0.55%	642.01	641.69	PVC SDR-26
MHS-16	MHS-15	8	249.10	0.79%	644.28	642.31	PVC SDR-26

\* MANHOLE SHALL HAVE A FLOOD PLAIN FRAME & COVER PER STD 359.



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REVISION	BY	DATE
STRUCTURE & PIPE TABLES		
TMUA PROJECT NUMBER ES 2020-07		
CITYWIDE LIFT STATION IMPROVEMENTS GRAVITY SEWER		
CITY OF TULSA, OKLAHOMA WATER AND SEWER DEPARTMENT		
PLANS AND ESTIMATES PREPARED BY:  <b>HOLLOWAY, UPDIKE &amp; BELLEN, Inc.</b> 2801 N WILLOW AVE., SUITE 100, OKLAHOMA CITY, OK 73102 (405) 235-0722, FAX (405) 235-0724		
PLAN SCALE: NTS	DRAWN: PGM 05/2025	APPROVED:
	DESIGNED: TJR 05/2025	
PROFILE SCALE:	SURVEY: CWC 05/2025	
HORIZONTAL: 1"=5'	PROJ. MGR.  05/2025	
	LEAD ENGR.  5/25	
VERTICAL 1"=5'	FIELD MGR.  5/25	 DESIGN MANAGER
FILE:	DRAWING: 21TMUAKINGST	DATE: 2025
ATLAS PAGE NO: 120, 167		SHEET 11 OF 32 SHEETS





# STORMWATER MANAGEMENT PLAN

## SITE DESCRIPTION

PROJECT LIMITS: THE KINGSTON LIFT STATION AT 3600 N. IRVINGTON ALONG THE  
PROPOSED ALIGNMENT TO APPROX. 1000 FT. NORTH OF THE GILCREASE EXPRESSWAY.

PROJECT DESCRIPTION: INSTALLATION OF 8" GRAVITY SANITARY SEWER  
RELIEF LINE AND DEMOLITION OF EXISTING LIFT STATION.

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:

1. CLEAR AND GRUB AREA FROM 10+00.00 – 47+42.00
2. STRIP, STOCKPILE AND STABILIZE TOPSOIL
3. REPLACE SALVAGED TOPSOIL AND DEVICES PRIOR TO INSTALLATION OF PERMANENT SOD AND SEEDING
4. AS SITE CONDITIONS WARRANT, THE CONTRACTOR MAY CHOOSE TO MODIFY THE TYPE OR ARRANGEMENT OF SPECIFIED PRACTICES TO IMPROVE THEIR EFFECTIVENESS AS APPROVED BY THE ENGINEER
5. THE CONTRACTOR SHALL MAINTAIN A LOG OF DATES OF MAJOR SOIL DISTURBANCE ACTIVITIES THE DATES OF INSTALLATION OF EROSION CONTROL MEASURES, RAINFALL EVENTS, ECT. AS PER OKR10.

AREA TO BE DISTURBED: 2.5 AC

OFFSITE AREA TO BE DISTURBED: \_\_\_\_\_  
(FOR CONTRACTOR USE)

WEIGHTED RUNOFF COEFFICIENT	
Before Construction:	<u>0.20</u>
After Construction:	<u>0.20</u>

NAME OF RECEIVING WATERS: COAL CREEK

NOTE: THIS SHEET SHOULD BE USED IN CONJUNCTION WITH THE EROSION  
CONTROL SUMMARIES, PAY ITEMS, & NOTES.

## EROSION AND SEDIMENT CONTROLS

### SOIL STABILIZATION PRACTICES:

- ☐ TEMPORARY SEEDING  
☒ PERMANENT SODDING, SPRIGGING OR SEEDING  
☐ VEGETATIVE MULCHING  
☐ SOIL RETENTION BLANKET  
☐ PRESERVATION OF EXISTING VEGETATION

NOTE: TEMPORARY EROSION CONTROL METHODS MUST BE USED ON ALL DISTURBED AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR OVER 21 DAYS. METHODS USED WILL BE AS SHOWN ON DRAWINGS, OR AS DIRECTED BY THE ENGINEER.

STRUCTURAL PRACTICES:

- ☐ TEMPORARY BRUSH SEDIMENT BARRIERS
- ☒ TEMPORARY SILT FENCE
- ☐ TEMPORARY SILT DIKES
- ☐ DIVERSION, INTERCEPTOR OR PERIMETER DIKES
- ☐ DIVERSION, INTERCEPTOR OR PERIMETER SWALES
- ☐ SANDBAG BERMS
- ☐ ROCK FILTER DAMS
- ☐ TEMPORARY SLOPE DRAIN
- ☐ PAVED DITCH W/ DITCH LINER PROTECTION
- ☐ TEMPORARY DIVERSION CHANNELS
- ☒ RIP RAP
- ☐ TEMPORARY STREAM CROSSINGS
- ☐ TEMPORARY SEDIMENT BASINS
- ☐ TEMPORARY SEDIMENT TRAPS
- ☐ TEMPORARY SEDIMENT FILTERS
- ☐ TEMPORARY SEDIMENT REMOVAL
- ☐ INLET SEDIMENT FILTER
- ☒ STABILIZED CONSTRUCTION EXIT

OFFSITE VEHICLE TRACKING:

- X HAUL ROADS DAMPENED FOR DUST CONTROL
- X LOADED HAUL TRUCKS TO BE COVERED WITH TARP
- X EXCESS DIRT ON ROAD REMOVED DAILY

NOTES:

1. THERE ARE NO ENDANGERED OR THREATENED SPECIES OR CRITICAL HABITAT FOUND IN THE PROXIMITY OF THE PROJECT. CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF SUCH SPECIES LISTED ON THE U.S. FISH AND WILDLIFE'S LIST OF THREATENED OR ENDANGERED SPECIES ARE ENCOUNTERED.

2. THERE ARE NO PROTECTED PROPERTIES SUCH AS FEDERAL, STATE OR LOCAL HISTORIC PRESERVATION SITES IMPACTED BY THIS PROJECT.

GENERAL NOTES:

A STORMWATER POLLUTION PREVENTION PLAN (SW3P) IS REQUIRED TO COMPLY WITH THE OKLAHOMA POLLUTION DISCHARGE ELIMINATION SYSTEM (OPDES) REGULATIONS. THIS PLAN IS INITIATED DURING THE DESIGN PHASE, CONFIRMED IN THE PRE-WORK MEETINGS AND AVAILABLE ON THE JOB SITE ALONG WITH COPIES OF THE NOTICE OF INTENT (NOI) FORMS THAT HAVE BEEN FILED WITH THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ). THE PLAN MUST BE KEPT CURRENT WITH UP-TO-DATE AMENDMENTS DURING THE PROGRESSION OF THE PROJECT. THE BASIC GOAL OF STORMWATER MANAGEMENT IS TO IMPROVE WATER QUALITY BY REDUCING POLLUTANTS IN STORM WATER DISCHARGES. RUNOFF FROM CONSTRUCTION SITES HAS A POTENTIAL FOR POLLUTION DUE TO EXPOSED SOILS AND THE PRESENCE OF HAZARDOUS MATERIALS USED IN THE CONSTRUCTION PROCESS. THE PREVENTION OF SOIL EROSION, CONTAINMENT OF HAZARDOUS MATERIALS AND/OR THE INTERCEPTION OF THESE POLLUTANTS BEFORE LEAVING THE CONSTRUCTION SITE ARE THE BEST PRACTICES FOR CONTROLLING STORMWATER POLLUTION.

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION:

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER FROM THE BEGINNING OF CONSTRUCTION UNTIL AN ACCEPTABLE VEGETATIVE COVER IS ESTABLISHED. INSPECTION BY THE CONTRACTOR AND ANY NECESSARY REPAIRS SHALL BE PERFORMED ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 IN (1.25 CM) AS RECORDED BY A NON-FREEZING RAIN GAUGE TO BE LOCATED ON SITE. POTENTIALLY ERODIBLE AREAS, DRAINAGEWAYS, MATERIAL STORAGE, STRUCTURAL DEVICES, CONSTRUCTION ENTRANCES AND EXITS ALONG WITH EROSION AND SEDIMENT CONTROL LOCATIONS ARE EXAMPLES OF SITES THAT NEED TO BE INSPECTED.

WASTE MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF CONSTRUCTION WASTE MATERIAL IS REQUIRED BY THE CONTRACTOR. MATERIALS INCLUDE STOCKPILES, SURPLUS, DEBRIS AND ALL OTHER BY-PRODUCTS FROM THE CONSTRUCTION PROCESS. PRACTICES INCLUDE DISPOSAL, PROPER MATERIALS HANDLING, SPILL PREVENTION AND CLEANUP MEASURES. CONTROLS AND PRACTICES SHALL MEET THE REQUIREMENTS OF ALL FEDERAL, STATE AND LOCAL AGENCIES.

HAZARDOUS MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF HAZARDOUS WASTE MATERIALS IS REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING MANUFACTURER'S RECOMMENDATIONS, STATE AND FEDERAL REGULATIONS TO ENSURE CORRECT HANDLING, DISPOSAL, SPILL PREVENTION AND CLEANUP MEASURES. EXAMPLES INCLUDE BUT ARE NOT LIMITED TO: PAINTS, ACIDS, CLEANING SOLVENTS, CHEMICAL ADDITIVES, CONCRETE CURING COMPOUNDS AND CONTAMINATED SOILS.

THE FOLLOWING SUBSECTIONS OF ODOT'S STANDARD SPECIFICATIONS BOOK SHOULD BE NOTED:


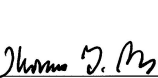
- 104.10 FINAL CLEANING UP  
104.14 CONTRACTOR'S RESPONSIBILITY FOR WORK  
106.08 STORAGE OF MATERIALS  
107.01 LAWS TO BE OBSERVED  
107.15 STORMWATER MANAGEMENT  
220.01—05 TEMPORARY EROSION, SEDIMENTATION AND  
STORMWATER POLLUTION PREVENTION AND CONTROL

IN ADDITION:  
 ODOT SPECIAL PROVISION 220-1 MANAGEMENT OF EROSION  
 SEDIMENTATION, AND STORMWATER POLLUTION PREVENTION AND  
 CONTROL.

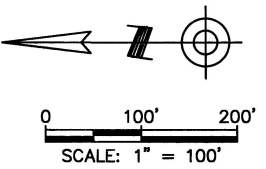
"ODEQ GENERAL PERMIT (OKR10) FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES WITHIN THE STATE OF OKLAHOMA." ODEQ, WATER QUALITY DIVISION, NOVEMBER 1, 2023.



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	REVISION		BY	DATE
STORMWATER MANAGEMENT PLAN				
TMUA PROJECT NUMBER ES 2020-07				
CITYWIDE LIFT STATION IMPROVEMENTS GRAVITY SEWER				
CITY OF TULSA, OKLAHOMA WATER AND SEWER DEPARTMENT				
PLANS AND ESTIMATES PREPARED BY:				
 <b>HOLLOWAY, UPDIKE + BELLEN, Inc.</b> 3001 N WILLOW AVE., BROKEN ARROW, OKLAHOMA 74012 (918)58-0775 FAX (918)58-0764				
PLAN SCALE:	DRAWN	PGM	03/2025	APPROVED:
	DESIGNED	TJR	03/2025	
PROFILE SCALE:	SURVEY	CWC	03/2025	 DESIGN MANAGER
HORIZONTAL:	PROJ. MGR.	BV	05/2025	
VERTICAL	LEAD ENGR.	LJS	5/25	
	FIELD MGR.	RBN	5/25	
FILE:	DRAWING:	21TMAUKINGST		DATE: 2025
ATLAS PAGE NO: 120, 167				SHEET 12 OF 32 SHEETS



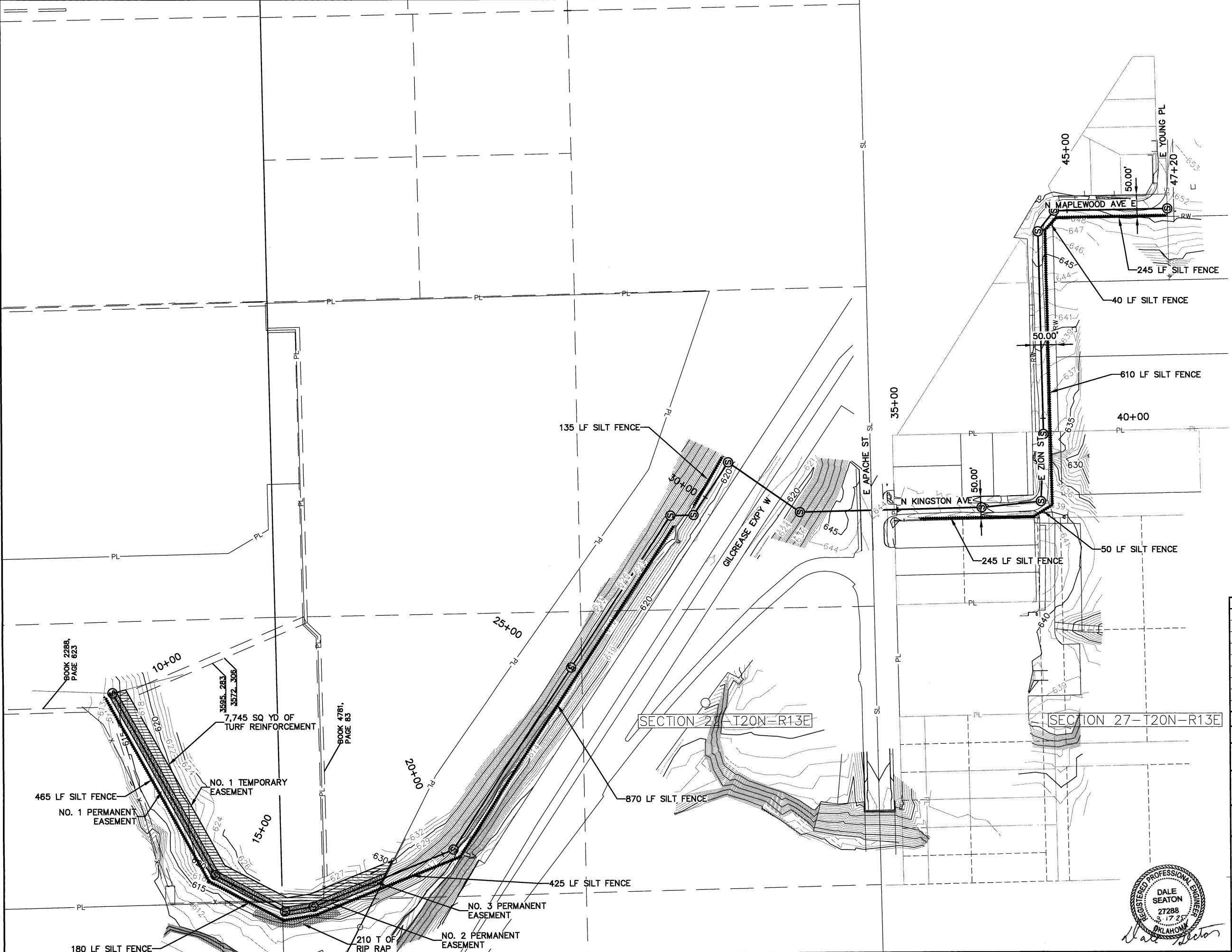


SURVEY DATUM:  
HORIZONTAL - OKLAHOMA STATE PLANE  
COORDINATE (NAD1983)  
VERTICAL - (NAVD 1988)

CHARLES W CHASTAIN L.S. #1352  
THE SURVEYS FOR THE  
INFORMATION CONTAINED  
ON THESE SURVEY SHEETS  
WERE CONDUCTED UNDER MY  
SUPERVISION AND THE INFORMATION  
CONTAINED HEREIN IS A CORRECT  
REPRESENTATION OF SAID SURVEY.

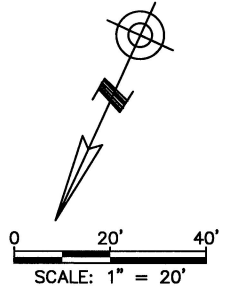
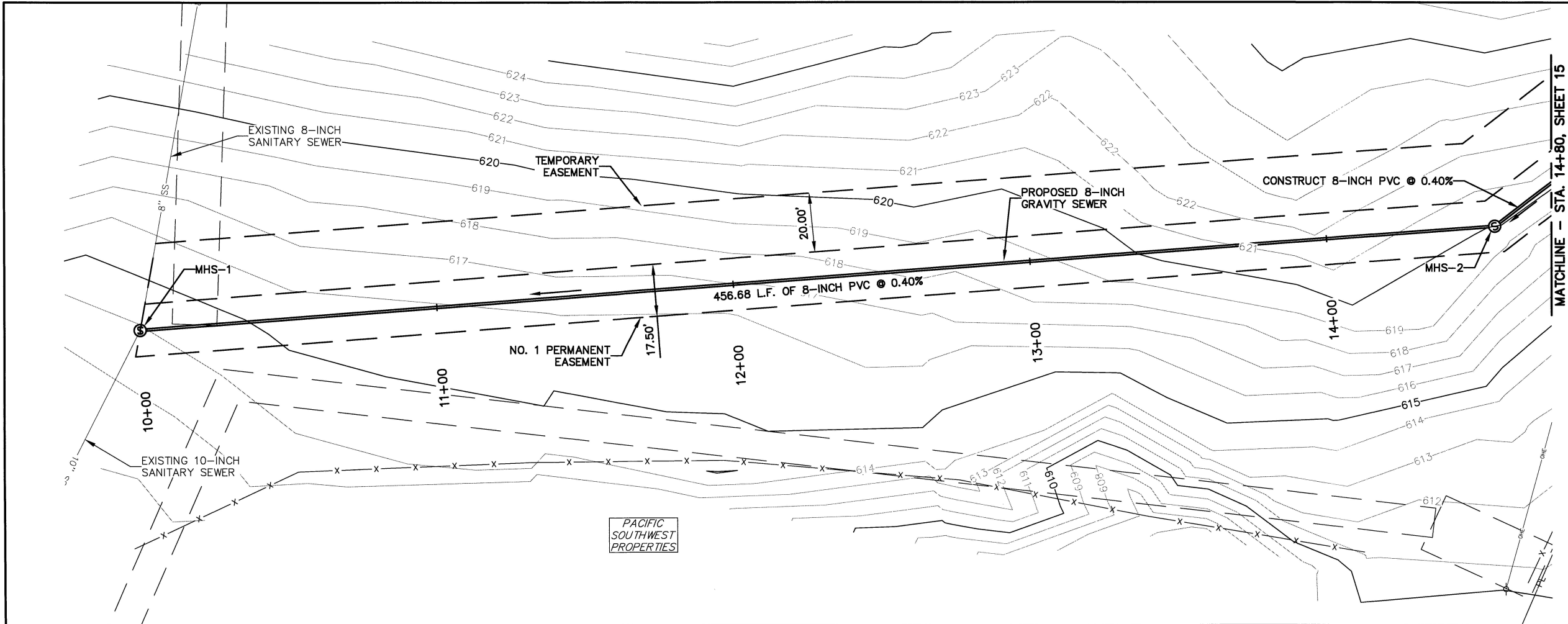


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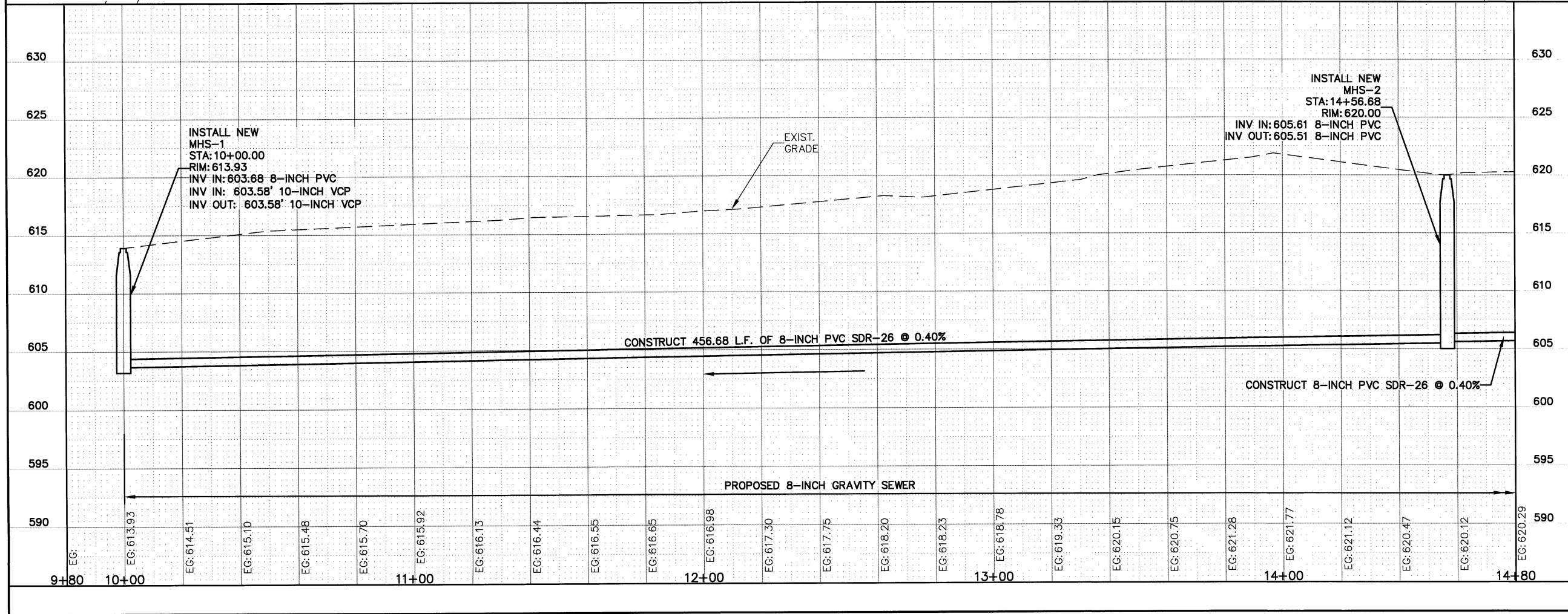



REVISION		BY	DATE
EROSION CONTROL PLAN			
TMUA PROJECT NUMBER ES 2020-07			
CITYWIDE LIFT STATION IMPROVEMENTS GRAVITY SEWER			
CITY OF TULSA, OKLAHOMA WATER AND SEWER DEPARTMENT			
PLANS AND ESTIMATES PREPARED BY: <b>HOLLOWAY, UPDIKE + BELLEN, Inc.</b> 2001 N WILLIAMS AVE., SUITE 200, TULSA, OKLAHOMA 74106 (918) 258-0707, FAX (918) 258-0704			
PLAN SCALE: 1"=100'	DRAWN DESIGNED SURVEY	PJM TJK CWC	02/2025 02/2025 02/2025
PROFILE SCALE:	HORIZONTAL:	PROJ. MGR. LEAD ENGR. FIELD MGR.	05/2015 JLH JLH
FILE:	DRAWING:	21TMUAKINGST	DATE: 2025
ATLAS PAGE NO: 120, 167		SHEET 13 OF 32 SHEETS	





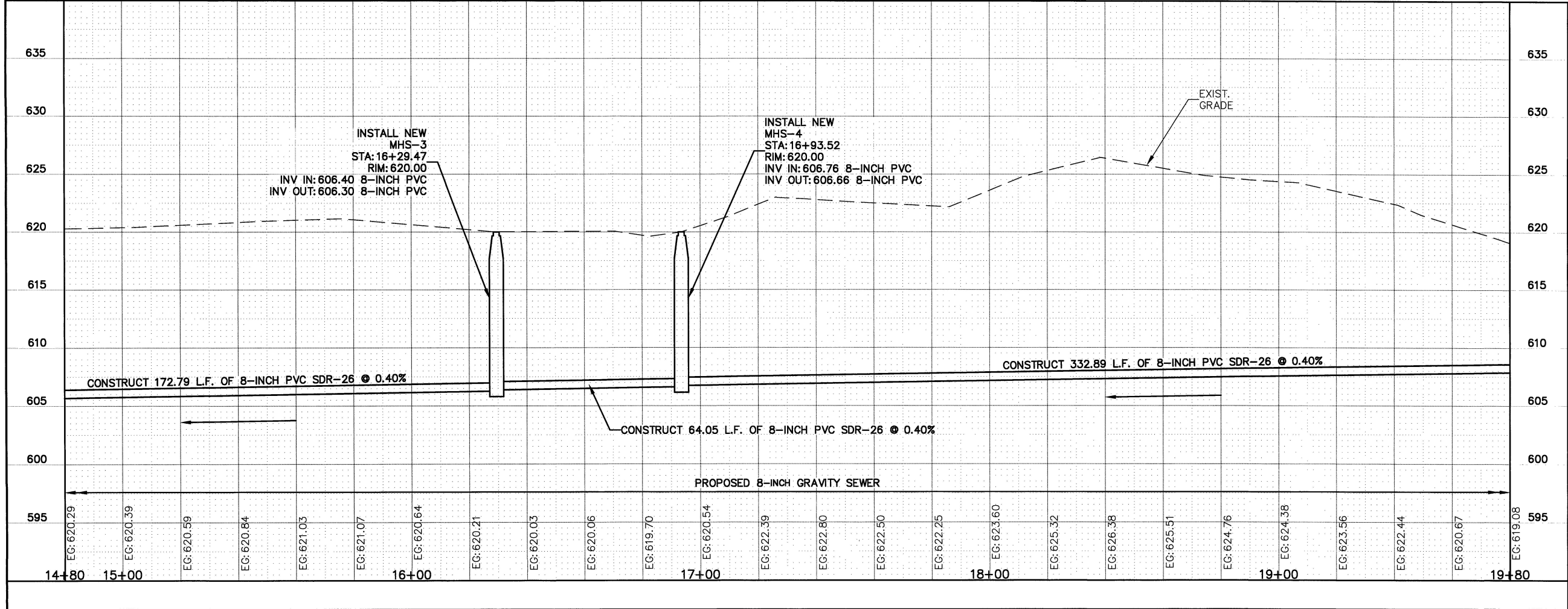
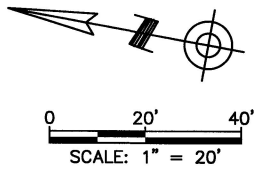
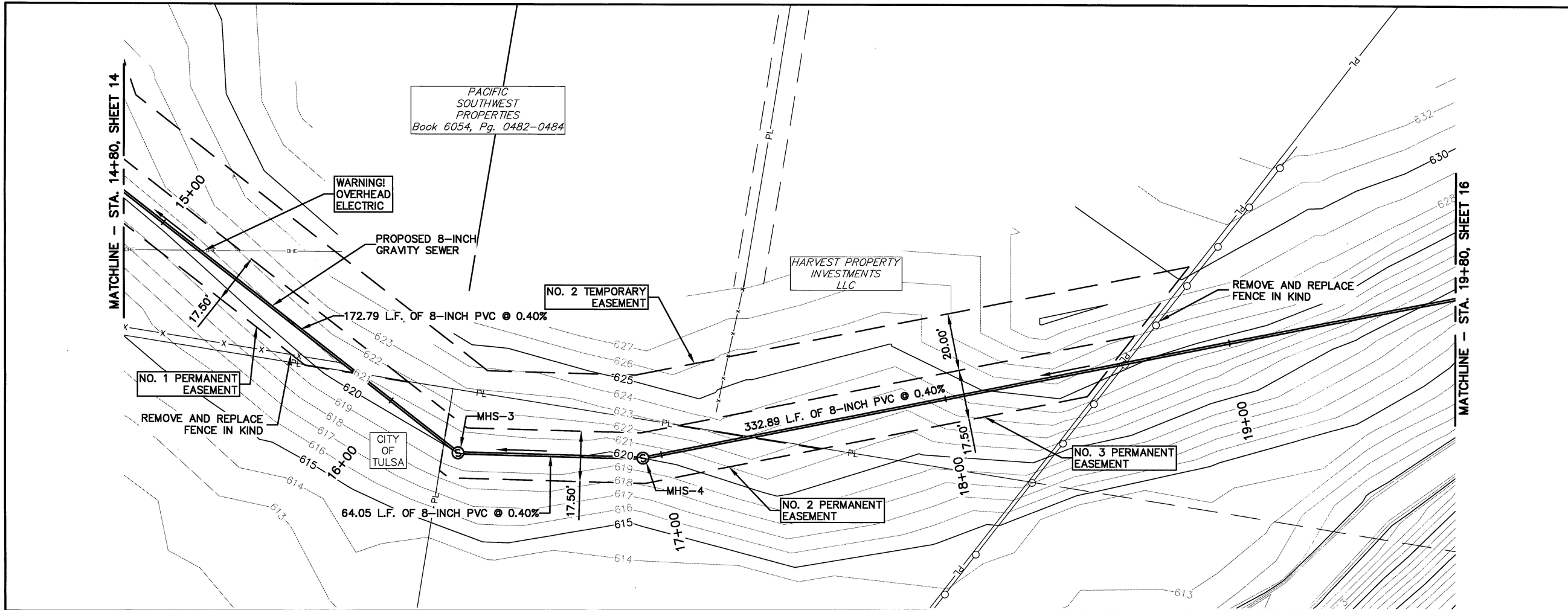
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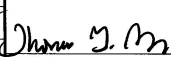





REVISION		BY	DATE
SANITARY SEWER PLAN AND PROFILE (1)			
TMUA PROJECT NUMBER ES 2020-07			
CITYWIDE LIFT STATION IMPROVEMENTS GRAVITY SEWER			
CITY OF TULSA, OKLAHOMA WATER AND SEWER DEPARTMENT			
PLANS AND ESTIMATES PREPARED BY:  <b>HOLLOWAY, UPDIKE &amp; BELLEN, Inc.</b> 2001 N WILLOW AVE., BROKEN ARROW, OKLAHOMA 74012 (918) 251-0777, FAX (918) 251-0784			
PLAN SCALE: 1"=20'	DRAWN	PGM	05/2025
	DESIGNED	TJR	05/2025
	SURVEY	CWC	05/2025
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VERTICAL: 1"=5'	FIELD MGR.	GR	05/2025
FILE:	DRAWING: 21TMUAKINGST	DATE: 2025	DESIGN MANAGER
ATLAS PAGE NO: 120, 167		SHEET 14 OF 32 SHEETS	

Project: 2021-07-17 TulsaCitySanitarySewerPlanAndProfile - Plan View.dwg, Date: 5/19/2025, 2:41:48 PM





REVISION				BY	DATE
SANITARY SEWER PLAN AND PROFILE (2)					
TMUA PROJECT NUMBER ES 2020-07					
CITYWIDE LIFT STATION IMPROVEMENTS GRAVITY SEWER					
CITY OF TULSA, OKLAHOMA WATER AND SEWER DEPARTMENT					
PLANS AND ESTIMATES PREPARED BY:					
<div><div> ENGINEERS</div><div><b>HOLLOWAY, UPDIKE + BELLEN, Inc.</b> 2001 N WILLOW AVE, BROKEN ARROW, OKLAHOMA 74012 (918) 258-0707, FAX (918) 258-0754</div></div>					
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	DESIGNED	TJR	05/2025		
PROFILE SCALE:	SURVEY	CWC	05/2025		
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ATLAS PAGE NO: 120, 167				SHEET 15 OF 32	SHEETS



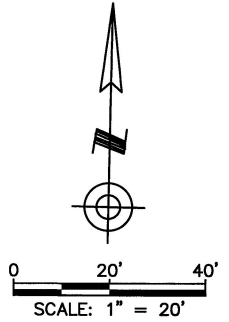
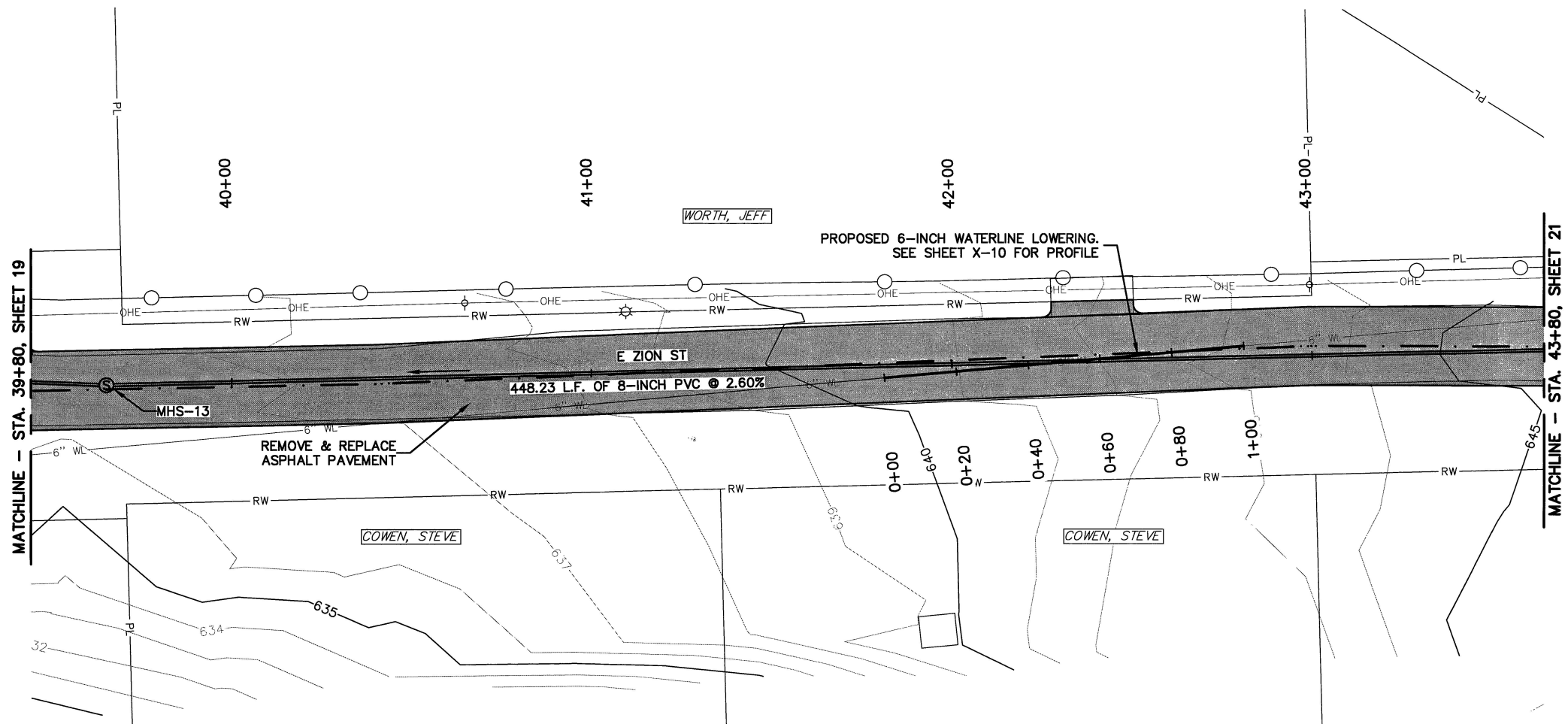




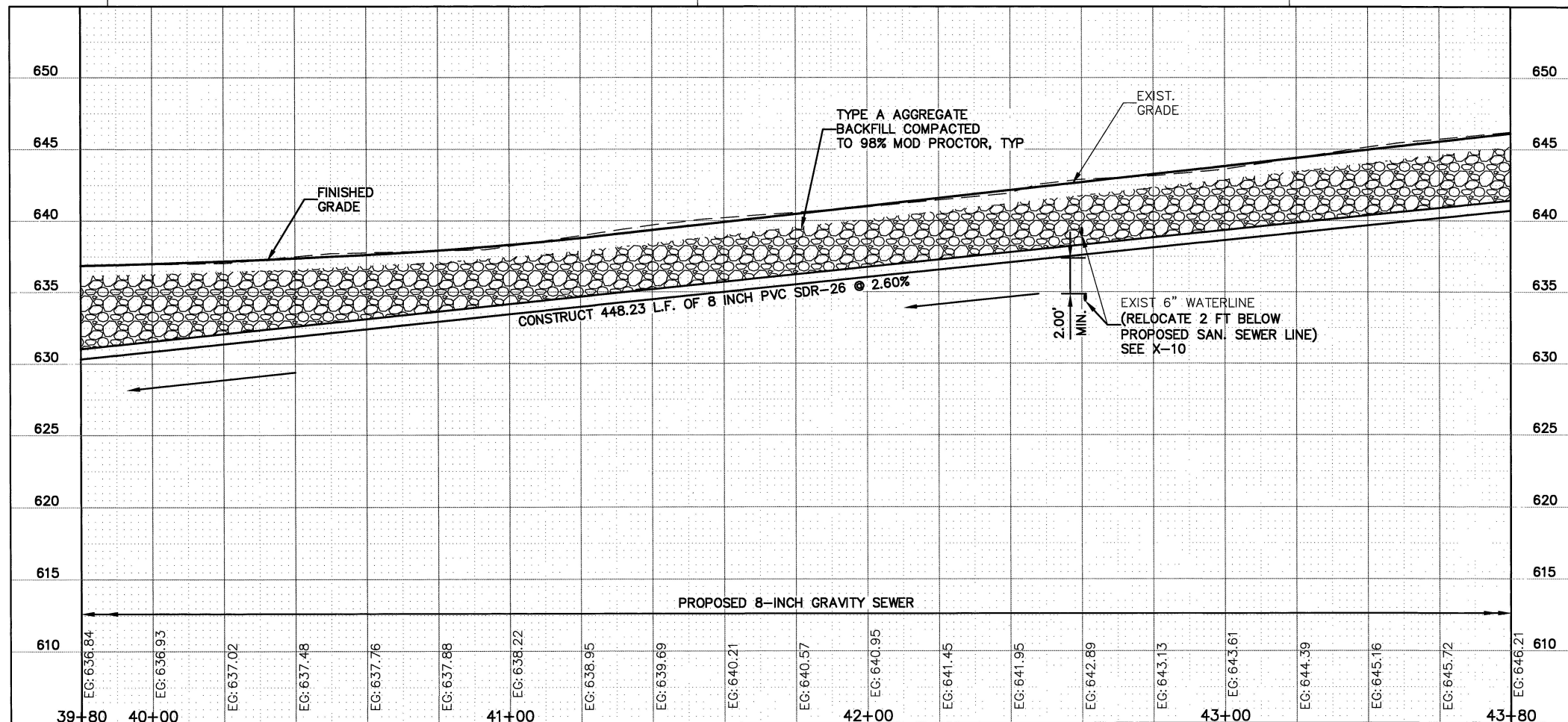










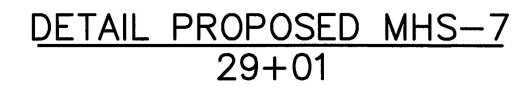
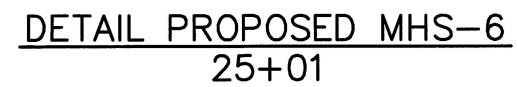
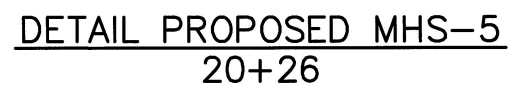
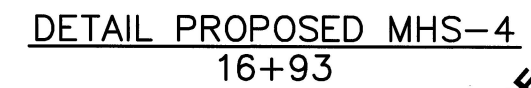
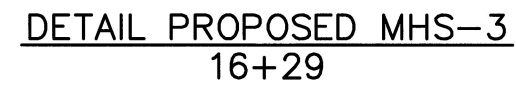
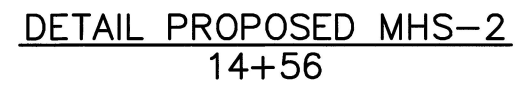
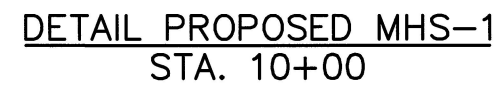
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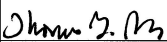


REVISION		BY	DATE
SANITARY SEWER PLAN AND PROFILE (7)			
TMUA PROJECT NUMBER ES 2020-07			
CITYWIDE LIFT STATION IMPROVEMENTS GRAVITY SEWER			
CITY OF TULSA, OKLAHOMA WATER AND SEWER DEPARTMENT			
PLANS AND ESTIMATES PREPARED BY:  HOLLOWAY, UPDIKE + BELLEN, Inc. 2001 N WILLOW AVE, BROKEN ARROW, OKLAHOMA 74012 (918) 251-0770, FAX (918) 251-0754			
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	DESIGNED	TJR	05/2025
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ATLAS PAGE NO: 120, 167		SHEET 20 OF 32 SHEETS	



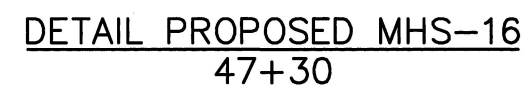
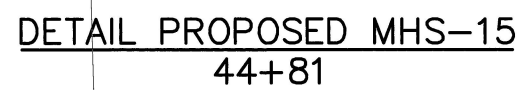
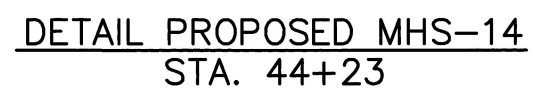


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MANHOLE DETAILS (1)					
TMUA PROJECT NUMBER ES 2020-07					
CITYWIDE LIFT STATION IMPROVEMENTS GRAVITY SEWER					
CITY OF TULSA, OKLAHOMA WATER AND SEWER DEPARTMENT					
PLANS AND ESTIMATES PREPARED BY:					
		 <b>HOLLOWAY, UPDKE &amp; BELLEN, Inc.</b> 2001 N WILLOW AVE., SPOKEN AVENUE, OKLAHOMA 74102 (918)228-0770 FAX (918)228-0754			
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	DESIGNED	TJR	02/2025		
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HORIZONTAL:	PROJ. MGR.	JY	05 / 2025		
VERTICAL	LEAD ENGR.	J22	5 / 2025		
	FIELD MGR.	K24	6 / 2025		
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ATLAS PAGE NO: 120, 167			SHEET 22 OF 32 SHEETS		







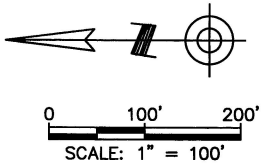
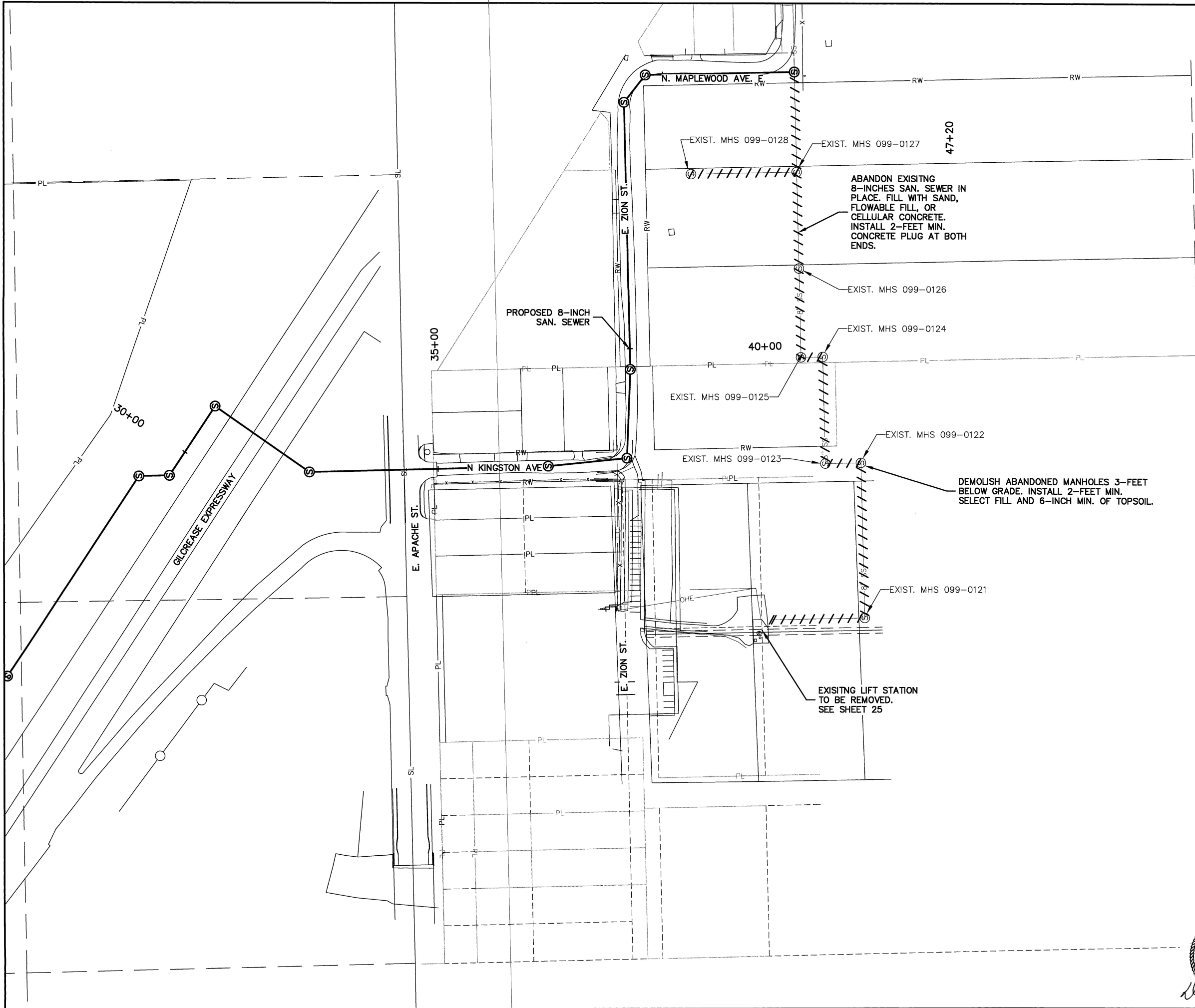
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REVISION			
MANHOLE DETAILS (3)			
TMUA PROJECT NUMBER ES 20			
CITYWIDE LIFT STATION IMPROVE GRAVITY SEWER			
CITY OF TULSA, OKLAHO WATER AND SEWER DEPARTMENT			
PLANS AND ESTIMATES PREPARED BY:			
 <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <b>HOLLOWAY, UDDIKE + BELLEN, Inc.</b>  <small>2001 N WILLOW AVE., BROKEN ARROW, OKLAHOMA 74002  (918)338-0777, FAX (918)338-0756</small> </div>			
PLAN SCALE:	DRAWN	PGM	02/2025
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	FIELD MGR.	Jana	5/16
FILE:	DRAWING: 21TMUAKINGST		DATE: 2025
ATLAS PAGE NO: 120, 167			SHEET 24 OF





Project: 2021\311\TMA\KINGSTON\Design\Production Plans\Kingston Sewer Demo.dwg, 5/7/2025, 2:42:12 PM



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REVISION	BY	DATE

DEMOLITION PLAN - EXISTING SANITARY SEWER

TMUA PROJECT NUMBER ES 2020-07

CITYWIDE LIFT STATION IMPROVEMENTS GRAVITY SEWER

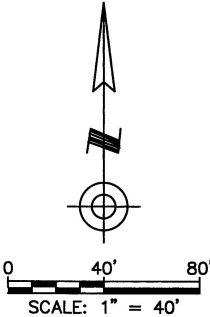
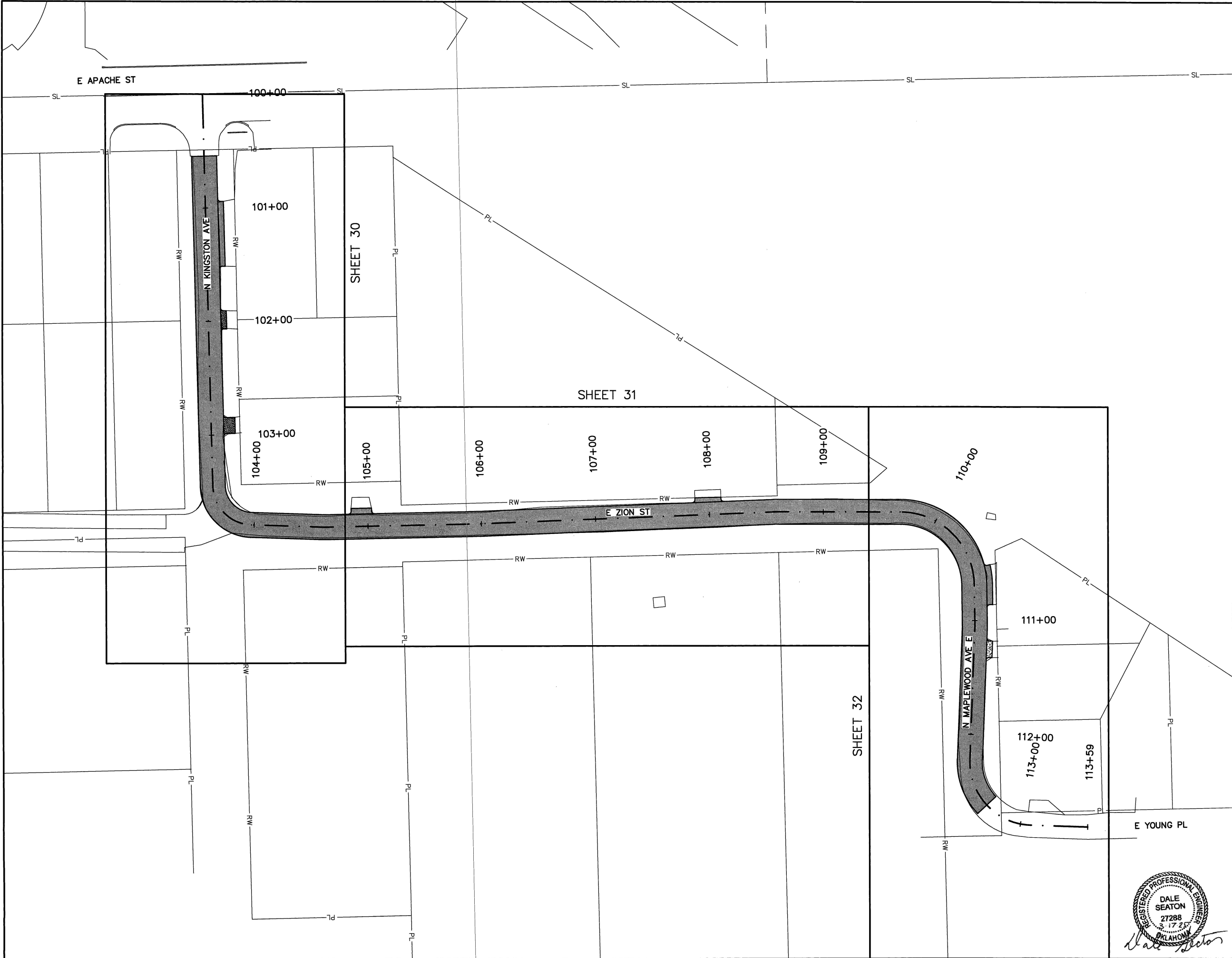
CITY OF TULSA, OKLAHOMA  
WATER AND SEWER DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:  
 **HOLLOWAY, UPDIKE + BELLEN, Inc.**  
2001 N WILLOW AVE, BROKEN ARROW, OKLAHOMA 74012  
(918)281-0772, FAX (918)281-0764

PLAN SCALE: 1"=80'	DRAWN	PGM	10/2024	APPROVED:
	DESIGNED	TJR	10/2024	
PROFILE SCALE:	SURVEY	CWC	10/2024	
	PROJ. MGR.	JV	05/2025	
HORIZONTAL:	LEAD ENGR.	DL 5/25		
	FIELD MGR.	JRM 5/25		
VERTICAL:				DESIGN MANAGER <i>Shannon B. M</i>
FILE:	DRAWING:	21TMUAKINGST	DATE: 2025	
ATLAS PAGE NO: 120, 167				SHEET 26 OF 32 SHEETS







**LEGEND**

	ASPHALT PAVEMENT
	AGGREGATE
	CONCRETE PAVEMENT

SURVEY DATUM:  
HORIZONTAL - OKLAHOMA STATE PLANE  
COORDINATE (NAD1983)  
VERTICAL - (NAVD 1988)

**CHARLES W CHASTAIN L.S. #1352**  
THE SURVEYS FOR THE  
INFORMATION CONTAINED  
ON THESE SURVEY SHEETS  
WERE CONDUCTED UNDER MY  
SUPERVISION AND THE INFORMATION  
CONTAINED HEREIN IS A CORRECT  
REPRESENTATION OF SAID SURVEY.



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REVISION	BY	DATE

**KEY MAP - STREET**

TMUA PROJECT NUMBER ES 2020-07			
CITYWIDE LIFT STATION IMPROVEMENTS GRAVITY SEWER			
CITY OF TULSA, OKLAHOMA WATER AND SEWER DEPARTMENT			
PLANS AND ESTIMATES PREPARED BY: <b>HOLLOWAY, UPDIKE + BELLEN, Inc.</b> 2001 N WILLOW AVE, BROCKEN ARROW, OKLAHOMA 74012 (918) 258-0727, FAX (918) 258-0754			
PLAN SCALE: 1"=40'	DRAWN DESIGNED	PGM TJR	01/2025 01/2025
PROFILE SCALE:	SURVEY	CWC	01/2025
HORIZONTAL:	PROJ. MGR. LEAD ENGR.	DALE SEATON 27288 2-17-25 OKLAHOMA	APPROVED: 05/2025 J. M. M.
VERTICAL:	FIELD MGR.	DALE SEATON	DESIGN MANAGER
FILE:	DRAWING: 21TMUAKINGST	DATE: 2025	
ATLAS PAGE NO: 120, 167	SHEET 28 OF 32 SHEETS		

Project: 2021-01-TMUA-KINGSTON\\Design\\Production\\Plan\\Kingston Gravity Sewer\\Kingston Sewer Site Plan.dwg, 3/9/2025, 2:40:23 PM

DRIVEWAY TABLE											
DRIVEWAY	STATION	RADIUS DOWN (FT)	RADIUS UP (FT)	WIDTH (FT)	DEPTH (FT)	AREA (SY)	AGG. BASE TYPE "A" (CY)	SURFACE	EXIST. SLOPE %	PROP. SLOPE %	ADDRESS
DW-1	101+23.0 LT	2.5	2.5	57.3	5.0	32.1	5.3	ASPHALT	5.6	2.8	6008 E APACHE ST
DW-2	102+00.0 LT	2.5	2.5	16.0	5.0	9.3		AGGREGATE	2.2	2.2	2515 N KINGSTON AVE
DW-3	102+91.7 LT	2.5	2.5	14.0	10.0	15.9		AGGREGATE	0.7	5.7	2513 N KINGSTON AVE
DW-4	104+94.4 LT	2.5	2.5	18.0	5.0	10.3	1.7	ASPHALT	1.7	5.5	2513 N KINGSTON AVE
DW-5	108+00.0 LT	2.5	2.5	23.0	4.2	10.7	1.8	ASPHALT	1.4	1.0	6025 E ZION ST N
DW-6	110+68.7 LT	2.5	2.5	32.5	5.0	19.6	3.3	ASPHALT	1.2	9.1	2465 N MAPLEWOOD AVE
DW-7	111+24.4 LT	2.5	2.5	14.5	5.0	8.4	1.4	CONCRETE	6.4	8.9	2461 N MAPLEWOOD AVE



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REVISION	BY	DATE

DRIVEWAY TABLE


TMUA PROJECT NUMBER ES 2020-07

CITYWIDE LIFT STATION IMPROVEMENTS  
GRAVITY SEWER

CITY OF TULSA, OKLAHOMA  
WATER AND SEWER DEPARTMENT

PLANS AND ESTIMATES PREPARED BY:

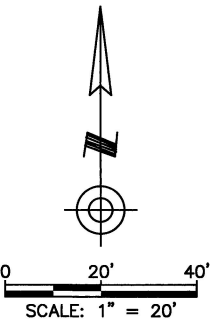
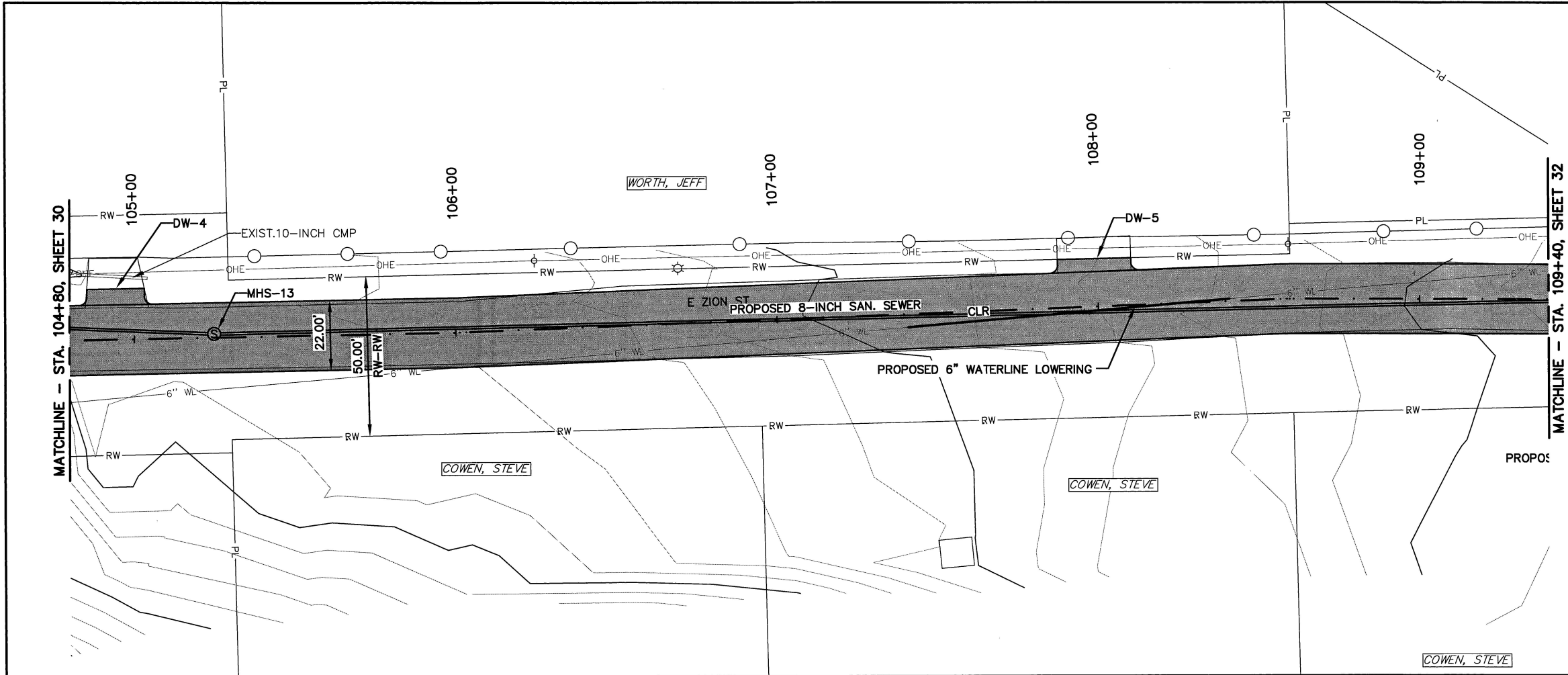
 **HOLLOWAY, UPDIKE + BELLEN, Inc.**  
2001 N WILLOW AVE, BROKEN ARROW, OKLAHOMA 74012  
(918) 259-0770 FAX (918) 259-0764

PLAN SCALE: 1"=20'	DRAWN	PGM	05/2025	APPROVED:
	DESIGNED	TJR	05/2025	
	SURVEY	CWC	05/2025	
PROFILE SCALE:	PROJ. MGR.	DA	05/2025	
HORIZONTAL: 1"=5'	LEAD ENGR.	DA	5/25	
VERTICAL: 1"=5'	FIELD MGR.	DA	5/25	
FILE:	DRAWING:	21TMUAKINGST	DATE: 2025	DESIGN MANAGER
ATLAS PAGE NO: 120, 167				SHEET 29 OF 32 SHEETS









LEGEND	
	ASPHALT PAVEMENT
	AGGREGATE
	CONCRETE PAVEMENT



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REVISION	BY	DATE

ROADWAY PLAN AND PROFILE (2)

TMUA PROJECT NUMBER ES 2020-07

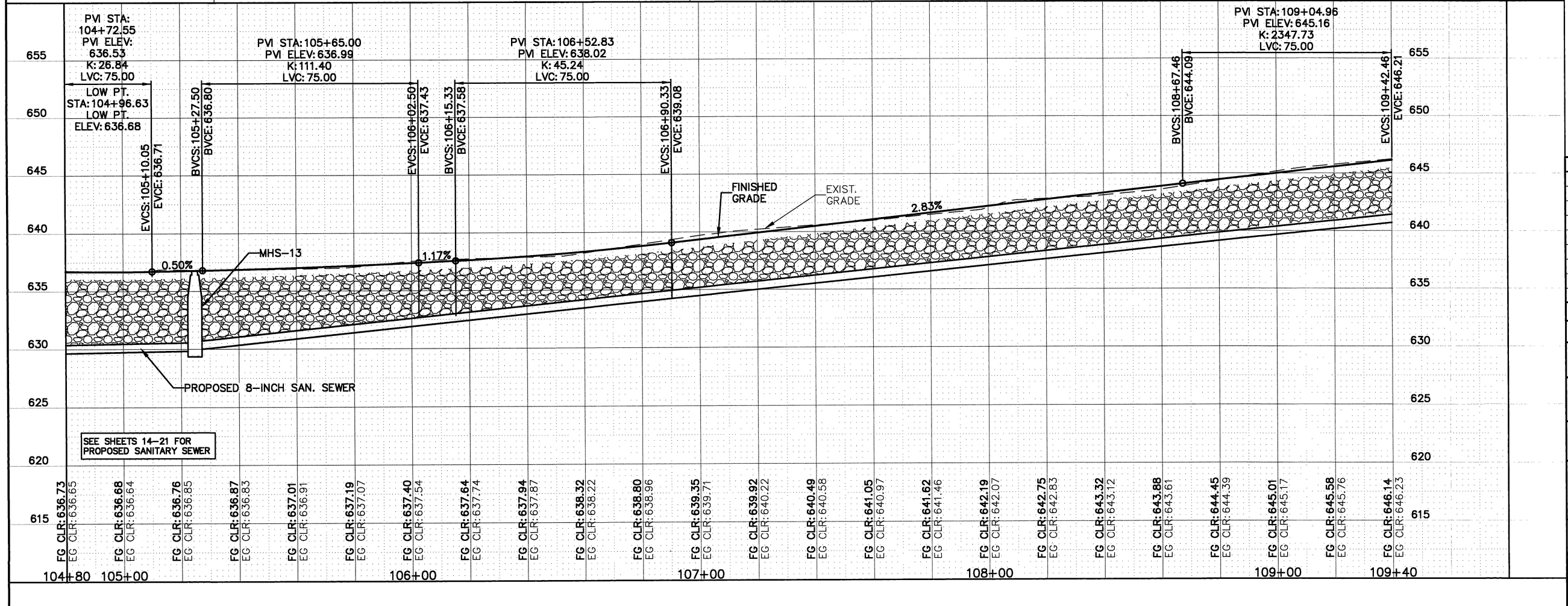
CITYWIDE LIFT STATION IMPROVEMENTS  
GRAVITY SEWER

CITY OF TULSA, OKLAHOMA  
WATER AND SEWER DEPARTMENT

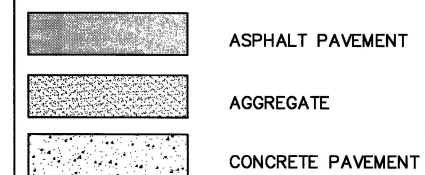
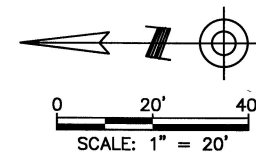
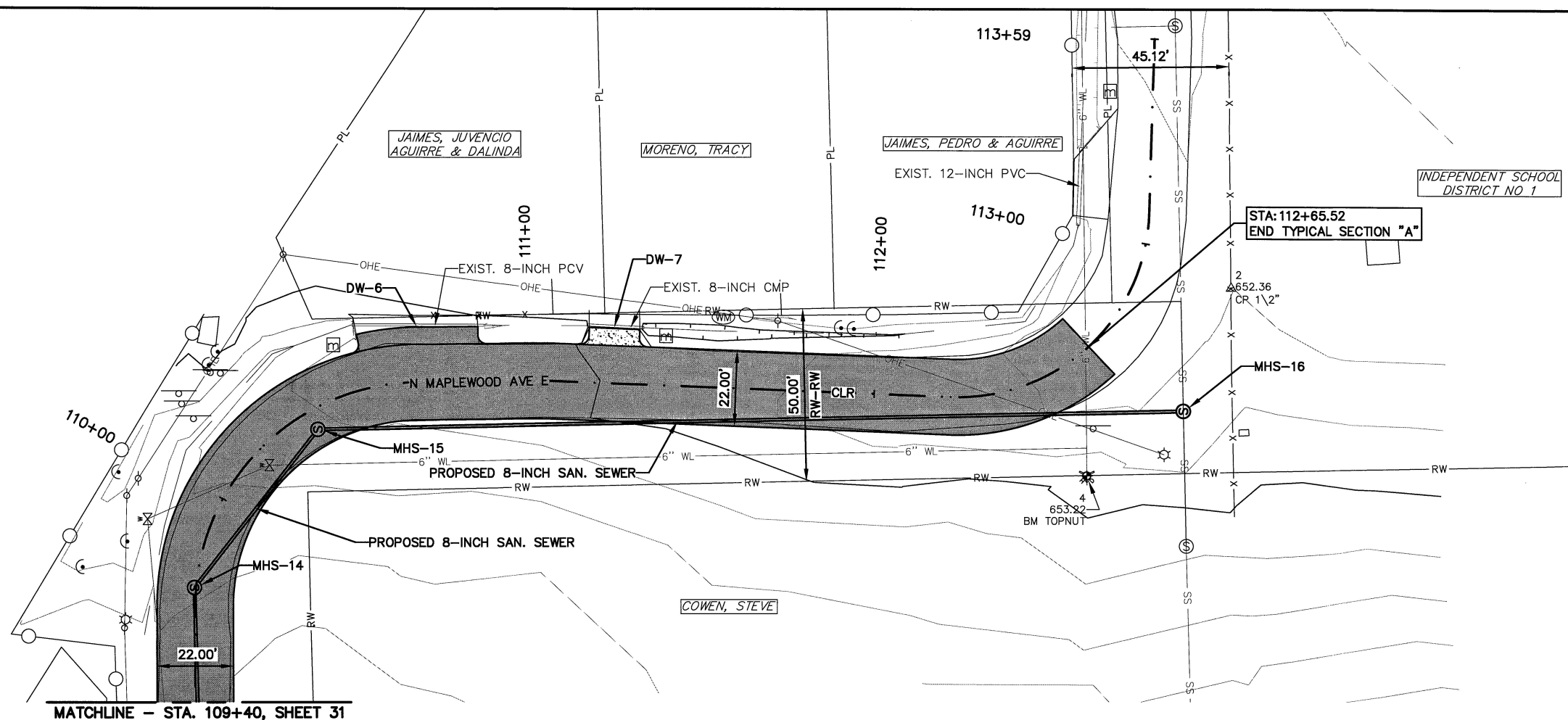
PLANS AND ESTIMATES PREPARED BY:

**HOLLOWAY, UPDIKE + BELLEN, Inc.**  
2001 N WILLOW AVE, SUITE 100, OKLAHOMA CITY, OK 73102  
405-255-0700, FAX 405-255-0704

PLAN SCALE: 1"=20'	DRAWN	PGM	05/2025	APPROVED:
	DESIGNED	TJR	05/2025	
PROFILE SCALE:	SURVEY	CWC	05/2025	
HORIZONTAL: 1"=5'	PROJ. MGR.	SV	05/2025	
VERTICAL: 1"=5'	LEAD ENGR.	SV	5/25	DESIGN MANAGER
	FIELD MGR.	SV	5/25	
FILE:	DRAWING:	21TMUAKINGST	DATE: 2025	
ATLAS PAGE NO: 120, 167				SHEET 31 OF 32 SHEETS







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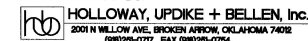
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TMUA PROJECT NUMBER ES 2020-07

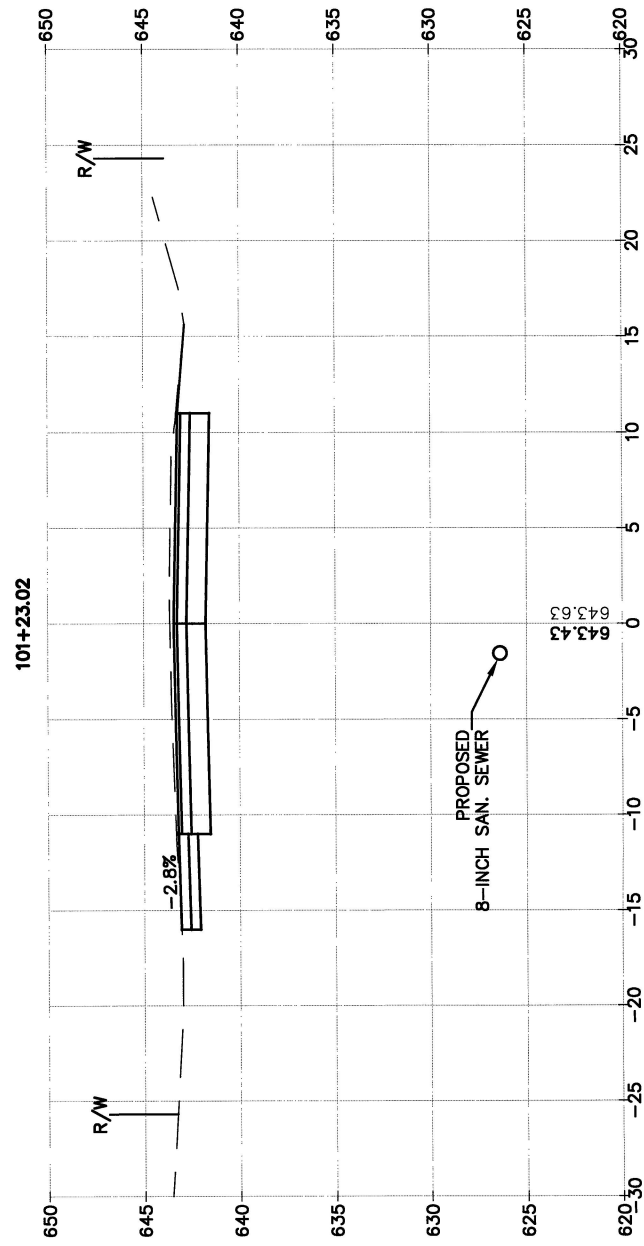
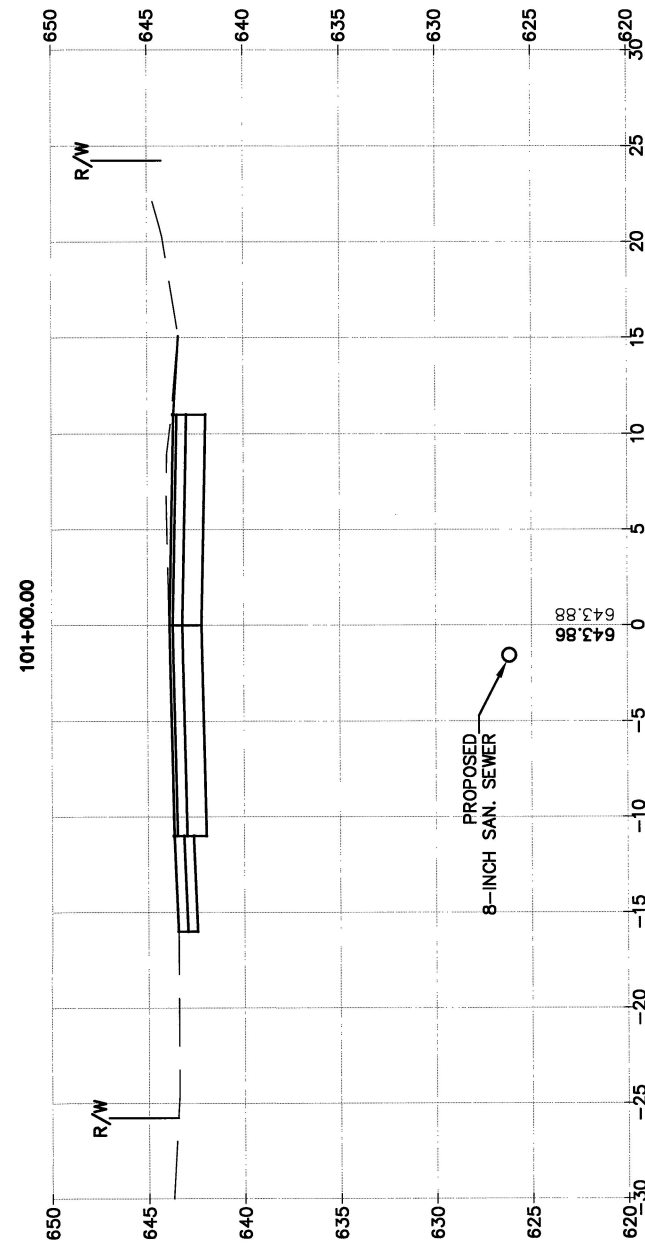
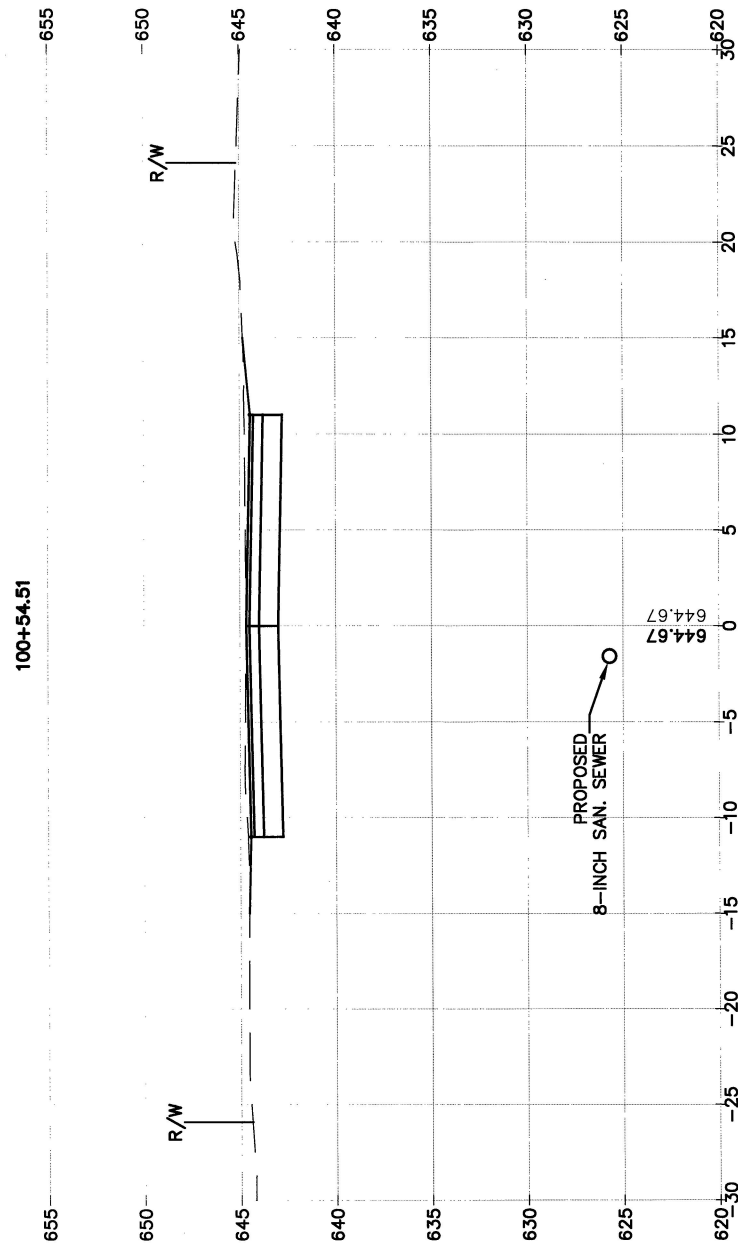
CITYWIDE LIFT STATION IMPROVEMENTS  
GRAVITY SEWER

CITY OF TULSA, OKLAHOMA  
WATER AND SEWER DEPARTMENT

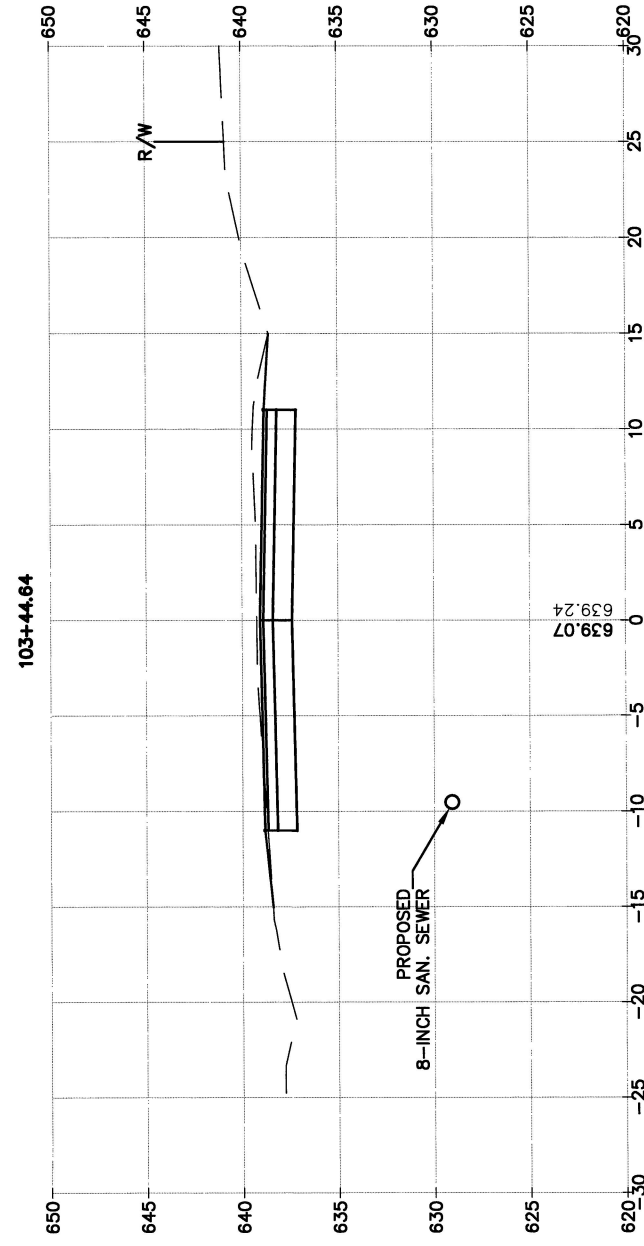
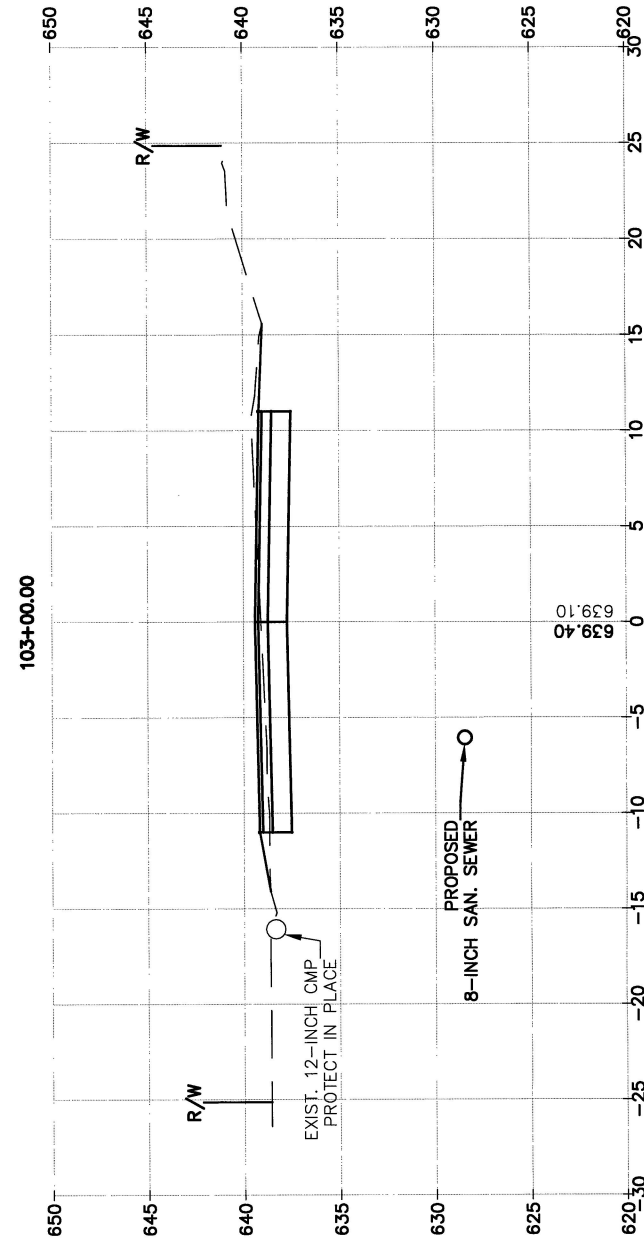
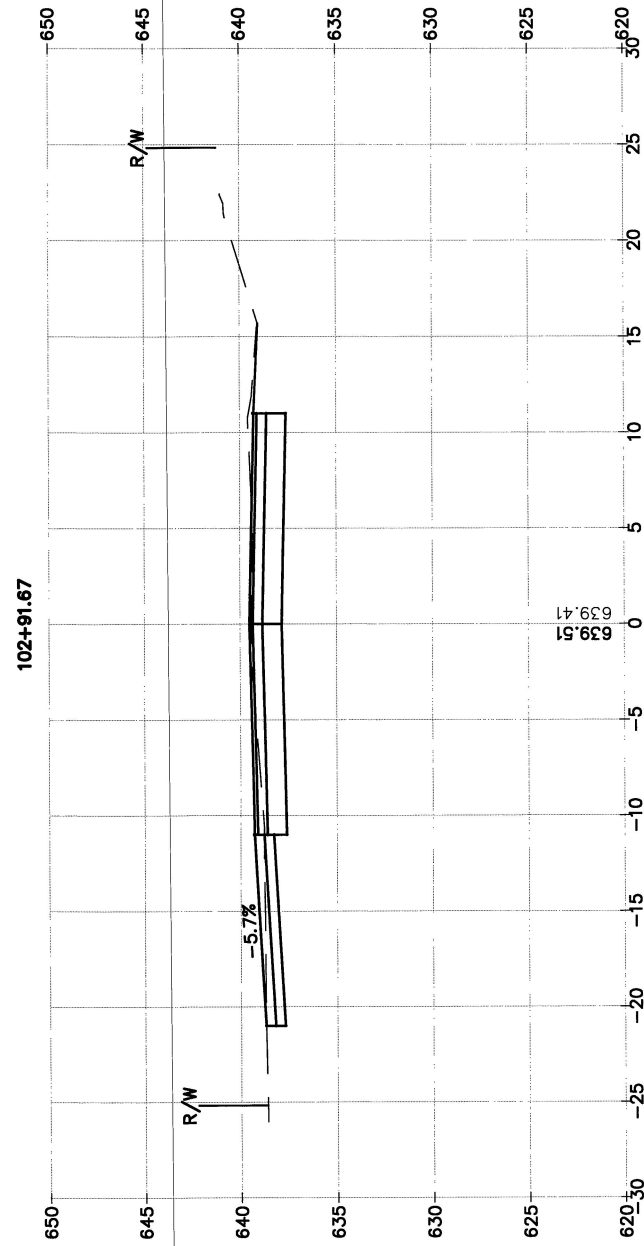
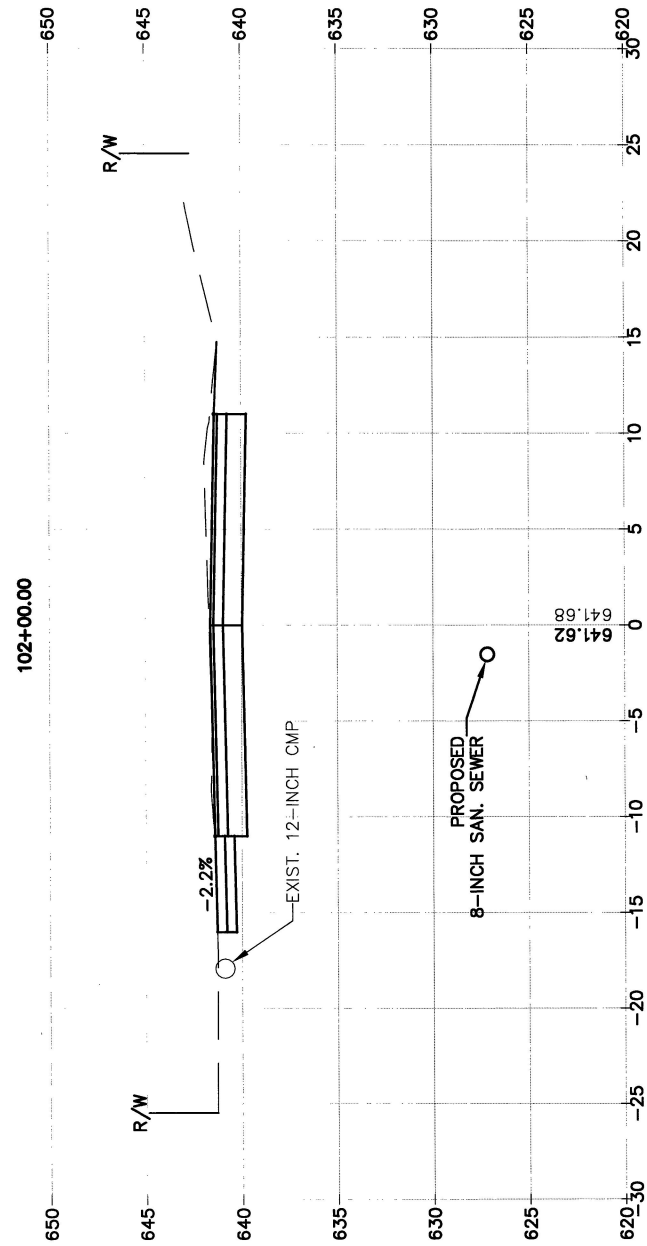
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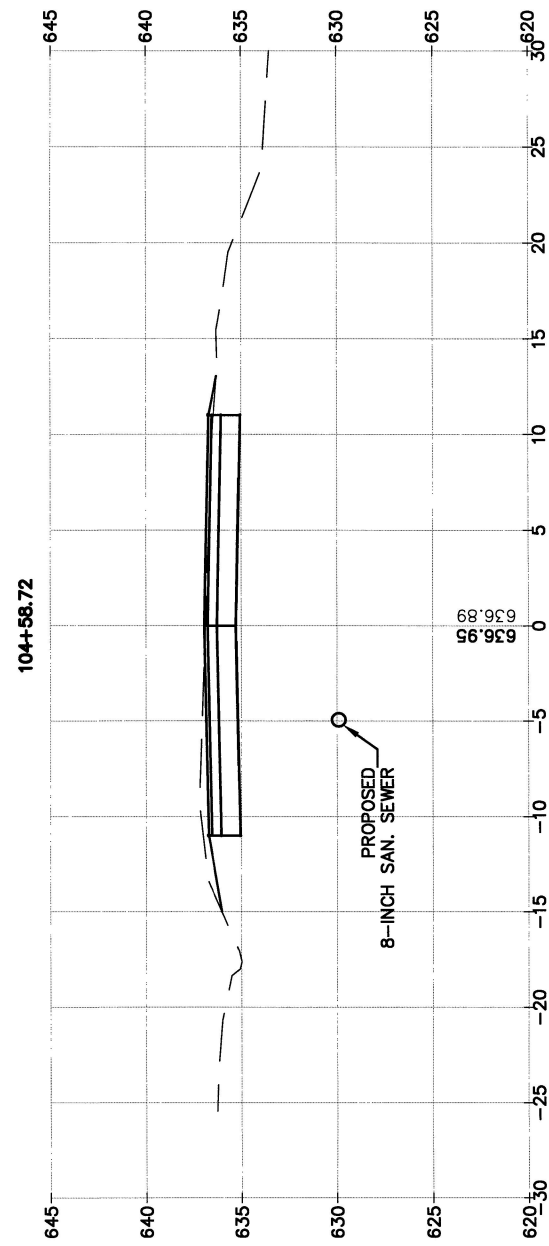
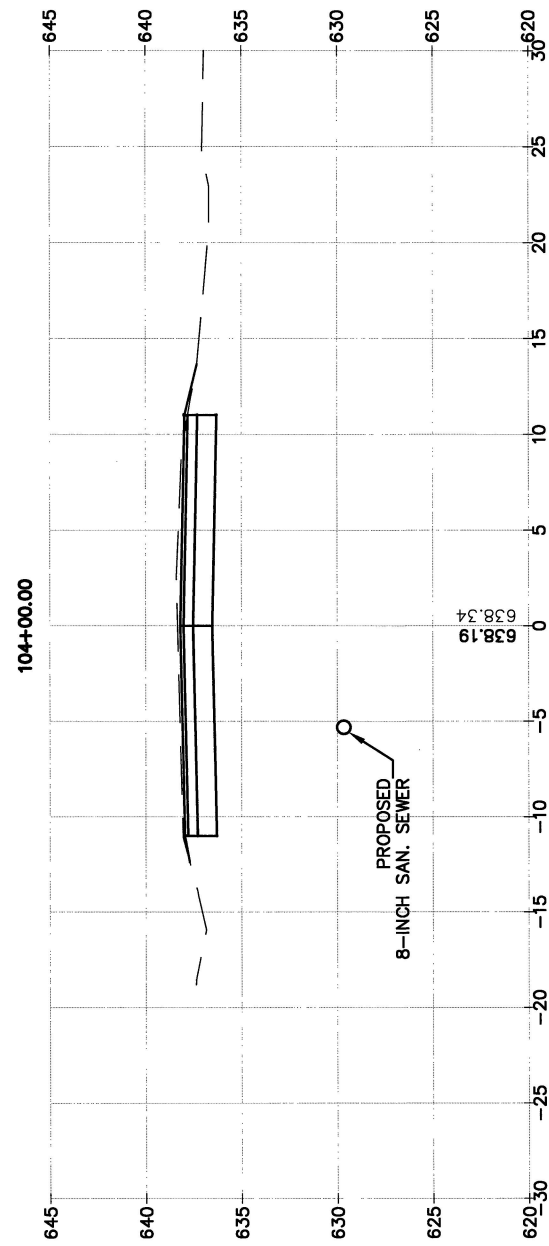
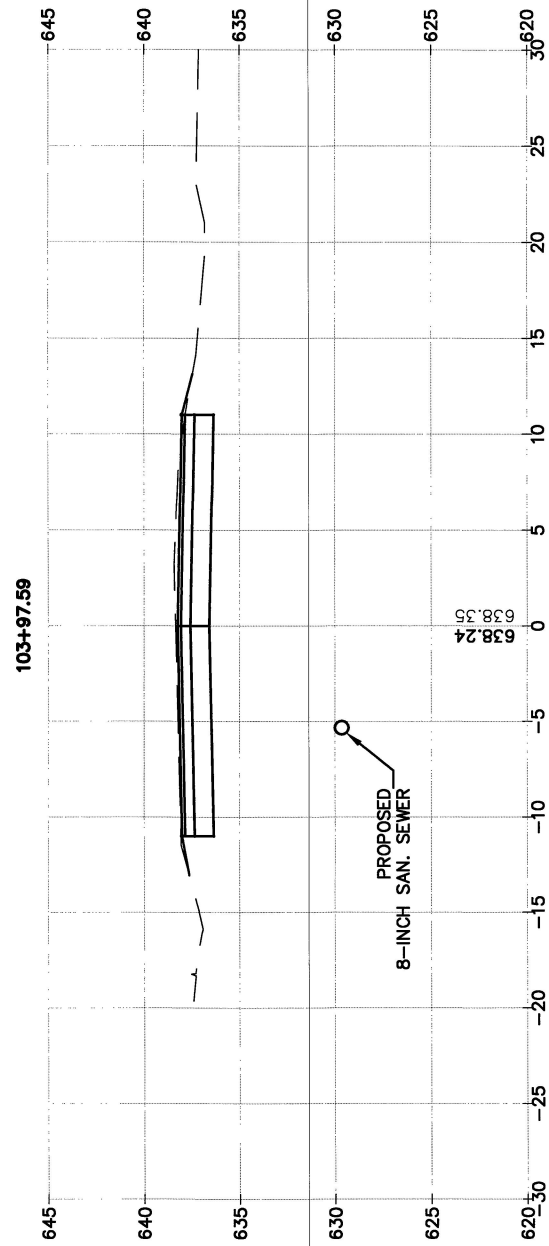
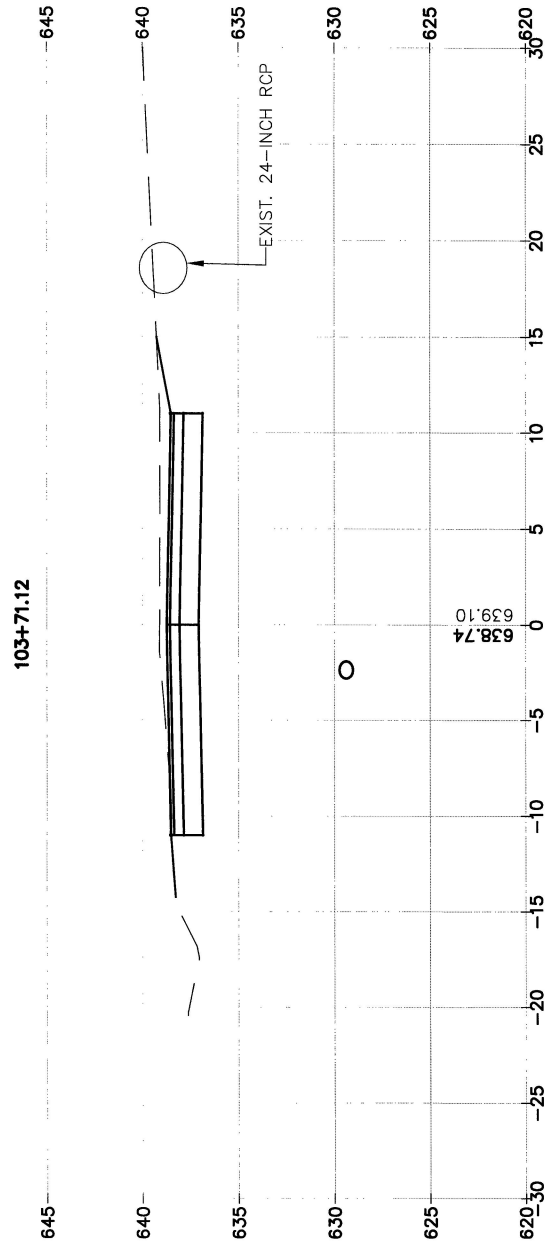


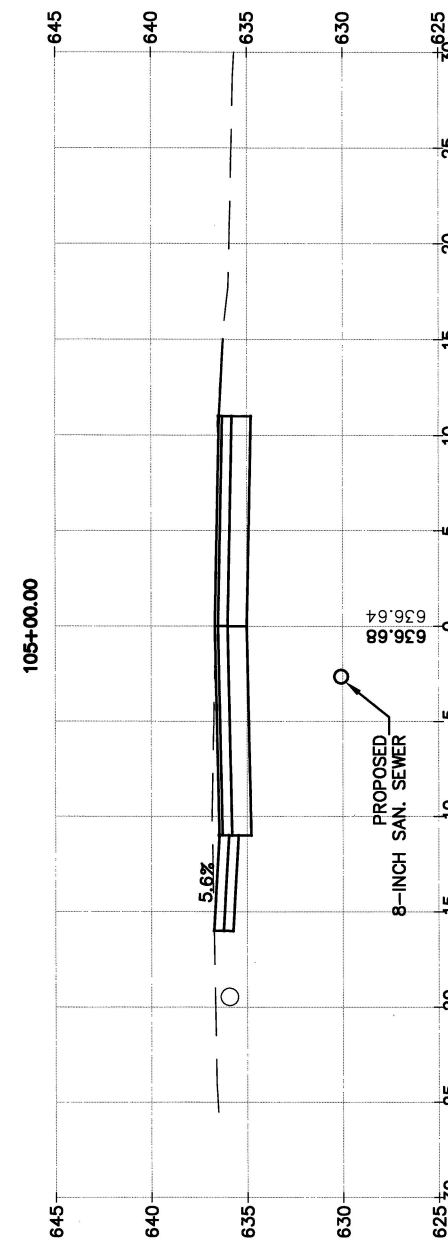
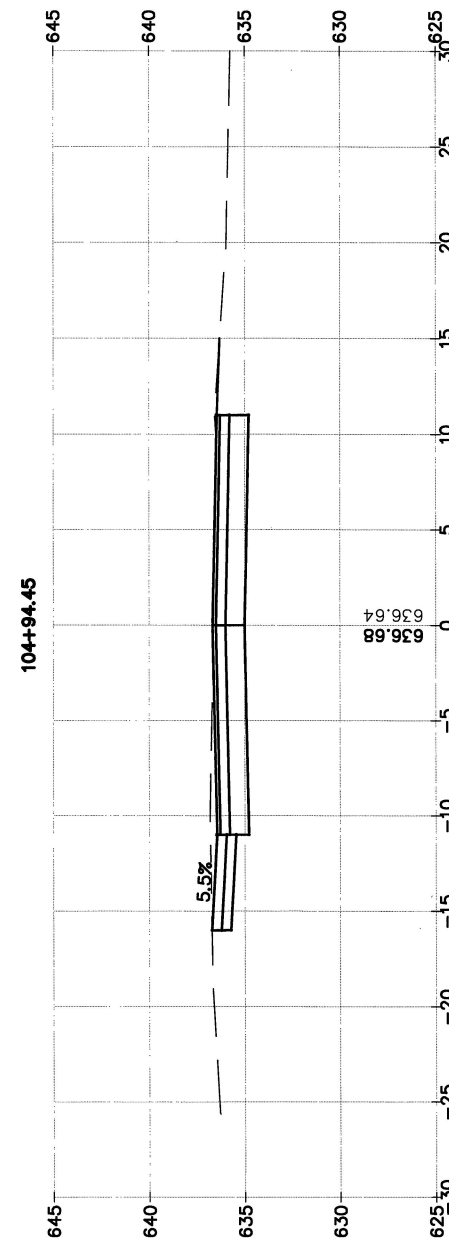
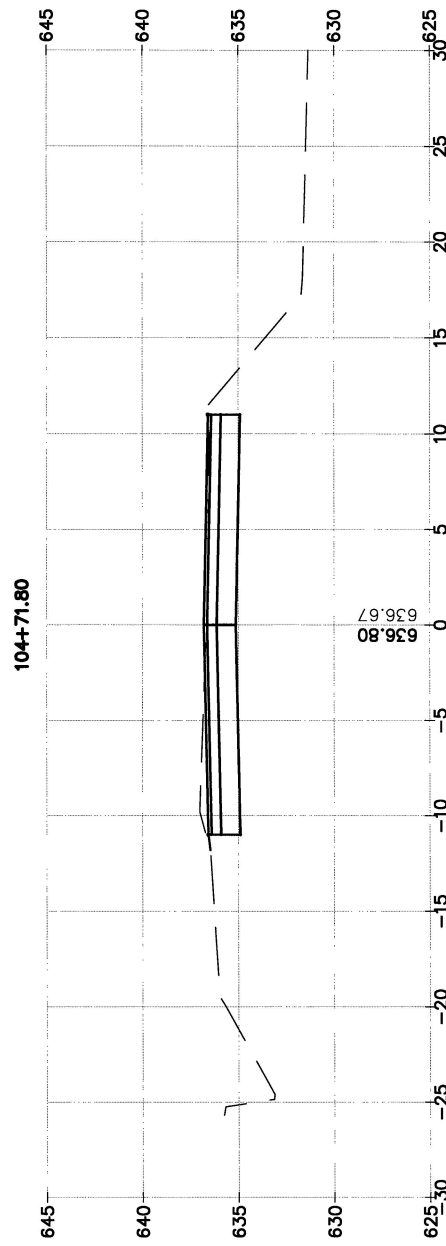
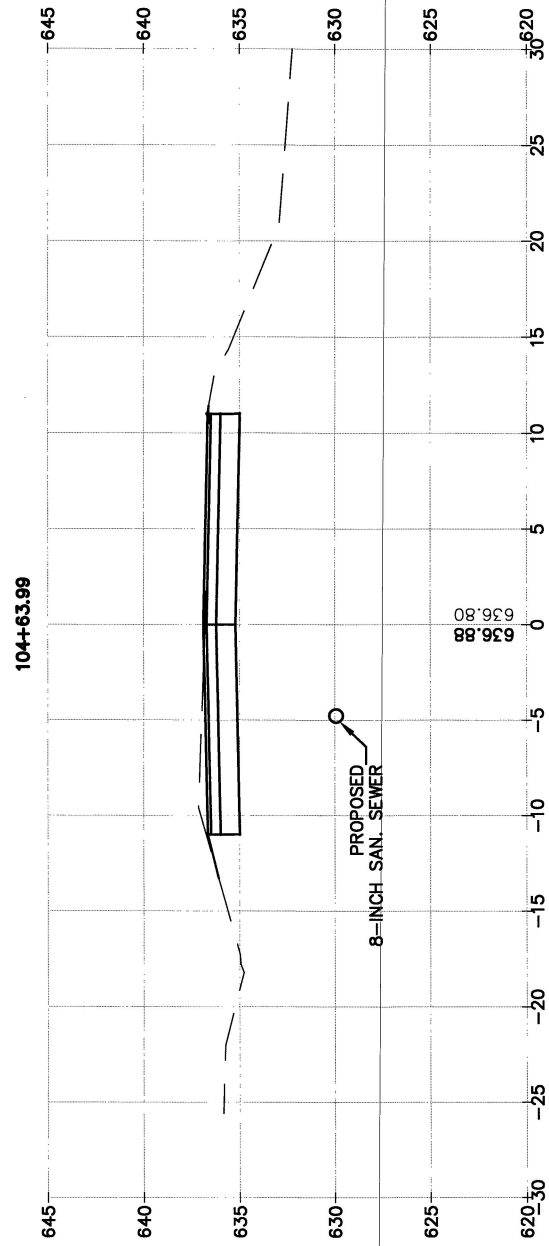
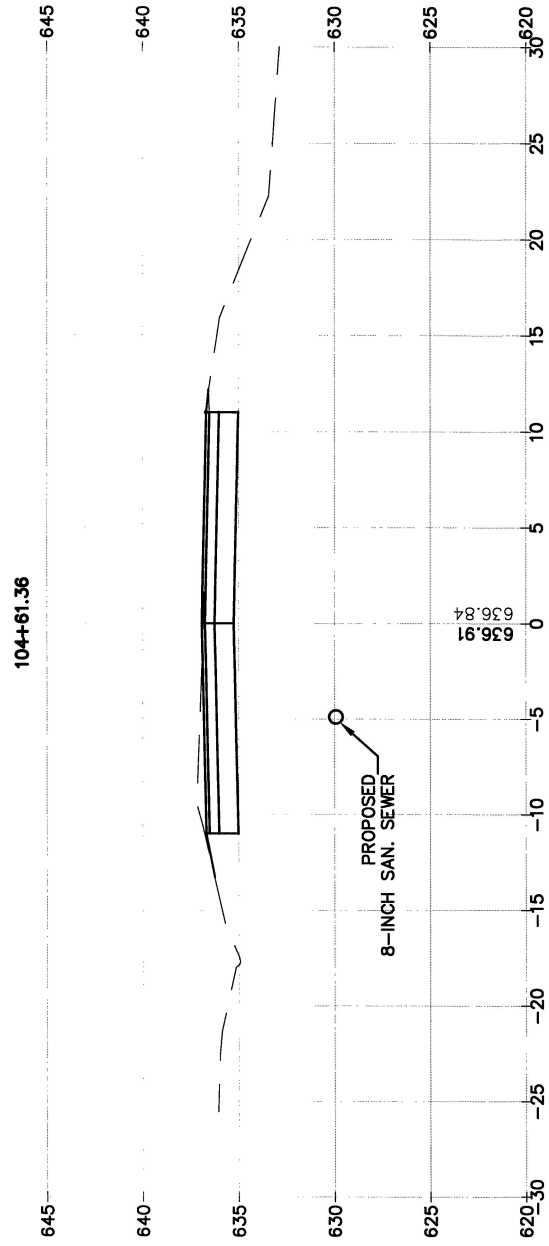
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PROFILE SCALE:		SURVEY	CWC	05/2025	
HORIZONTAL: 1"=5'	PROJ. MGR.	DN	05/2025		
	LEAD ENGR.	6/2	5/25		
VERTICAL: 1"=5'	FIELD MGR.	DN	5/25		
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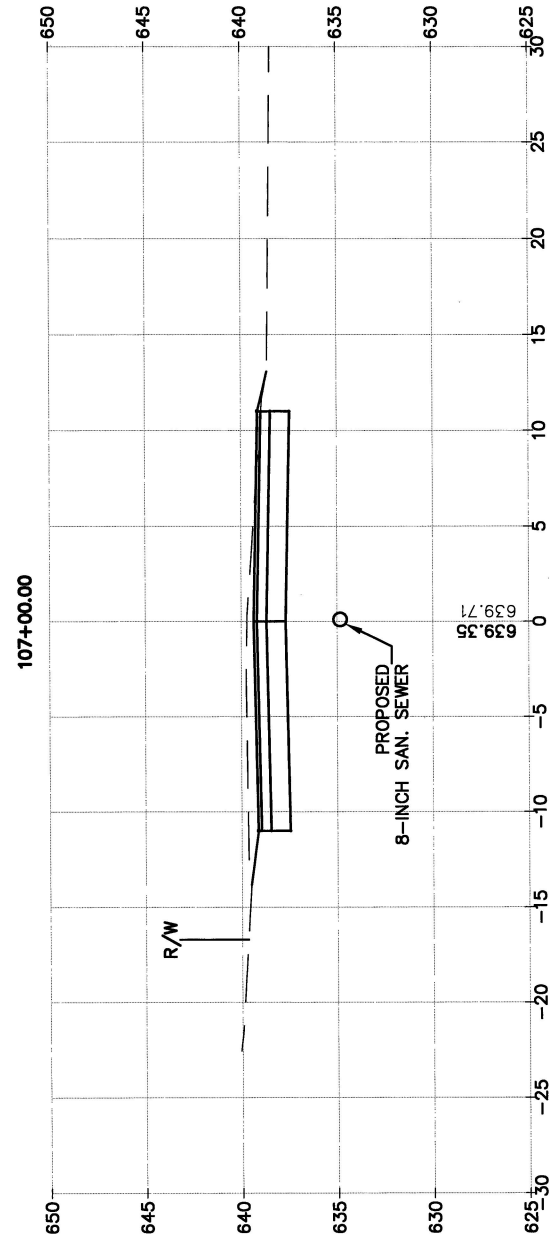
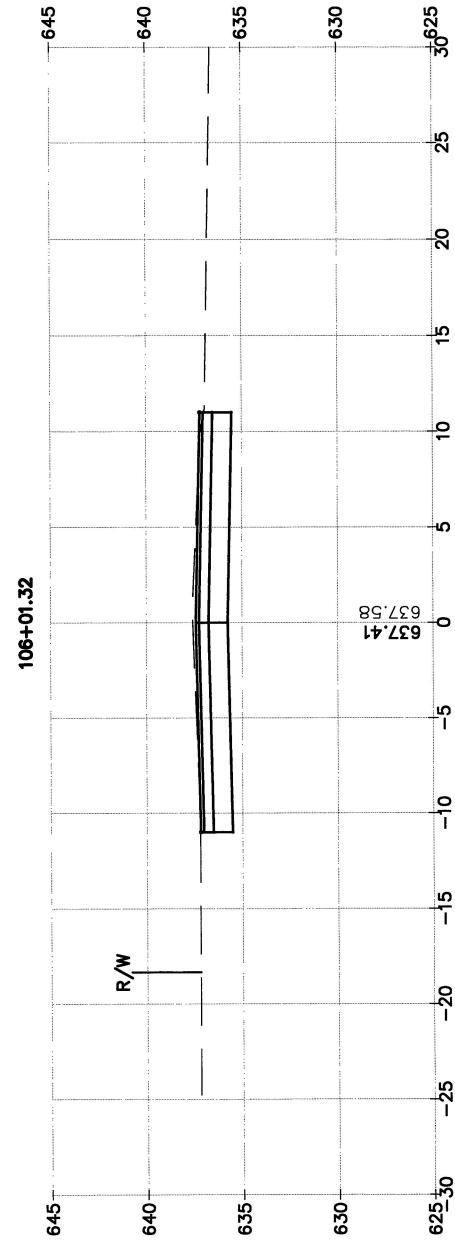
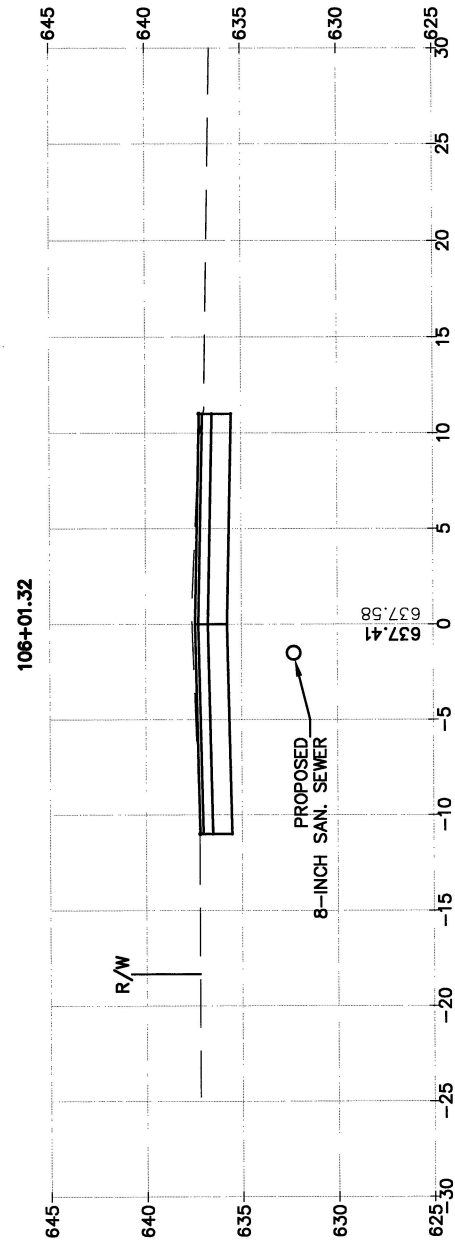
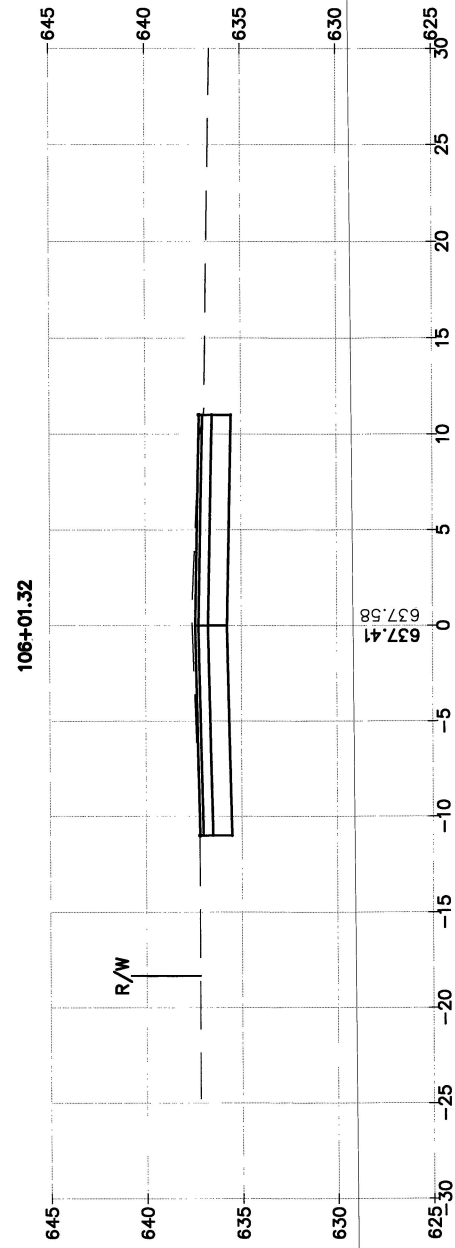
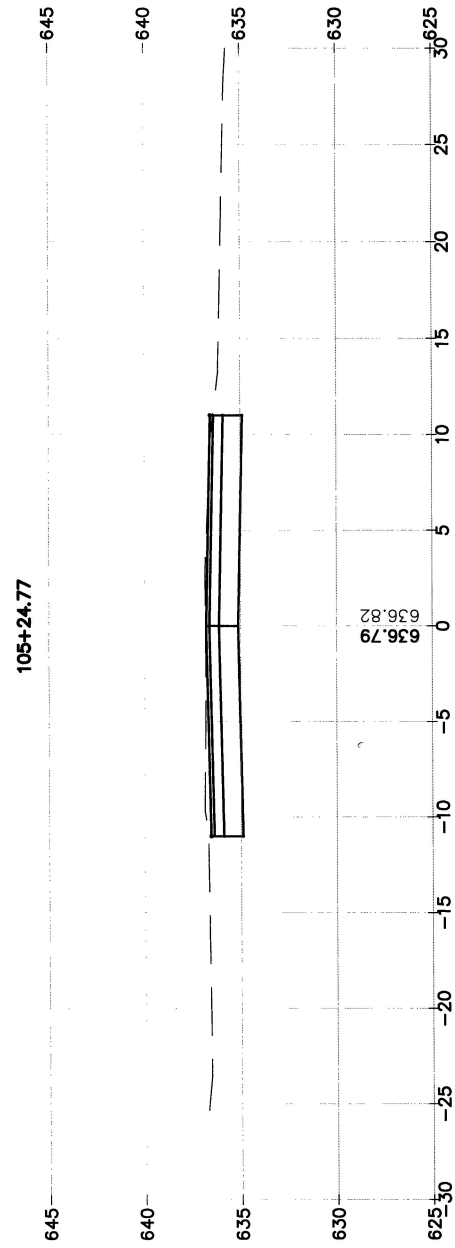




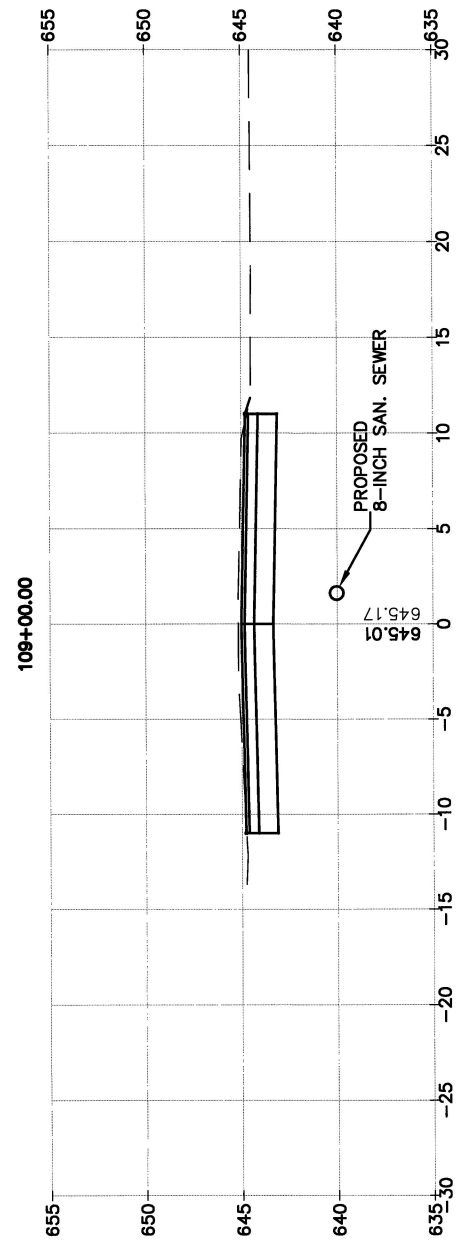
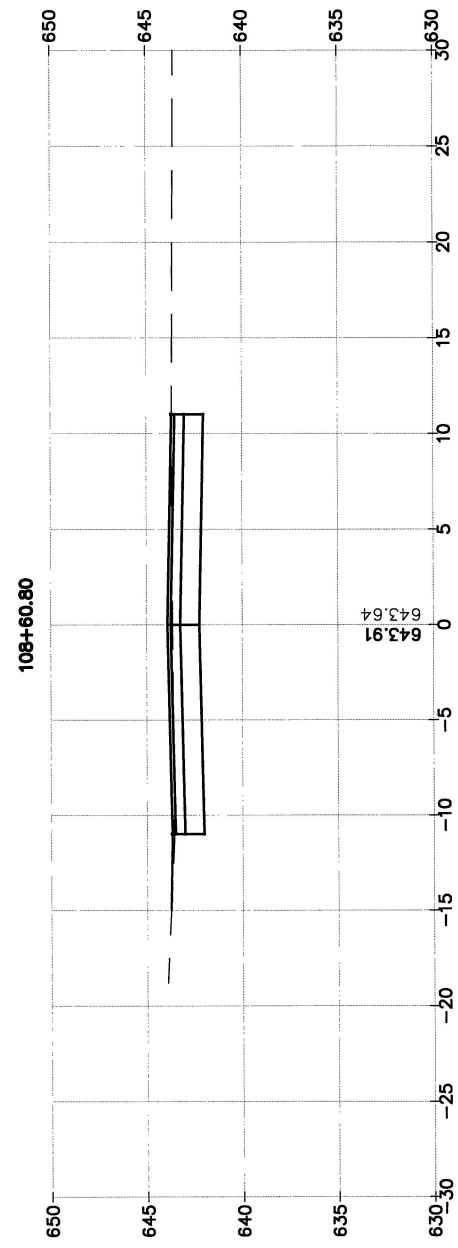
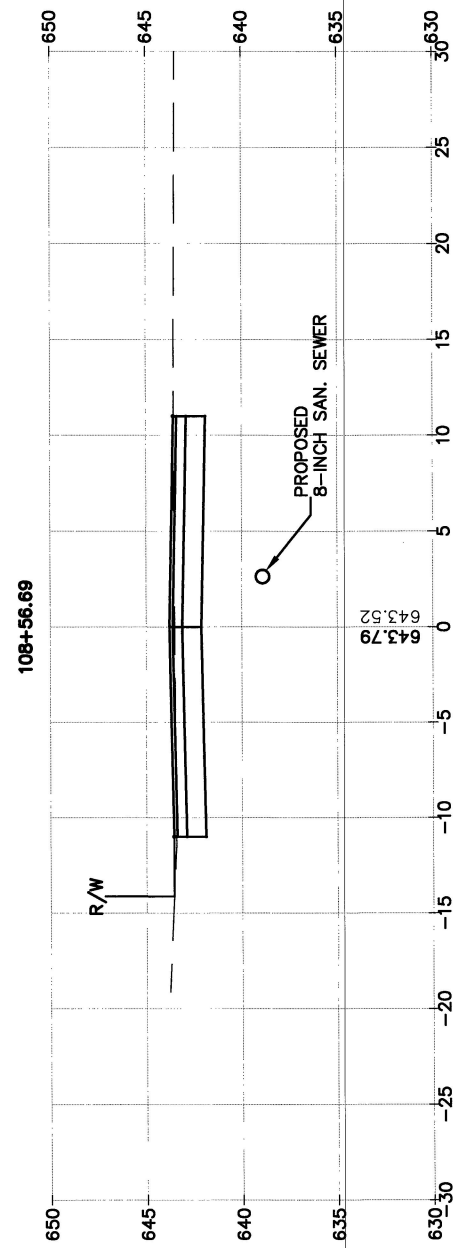


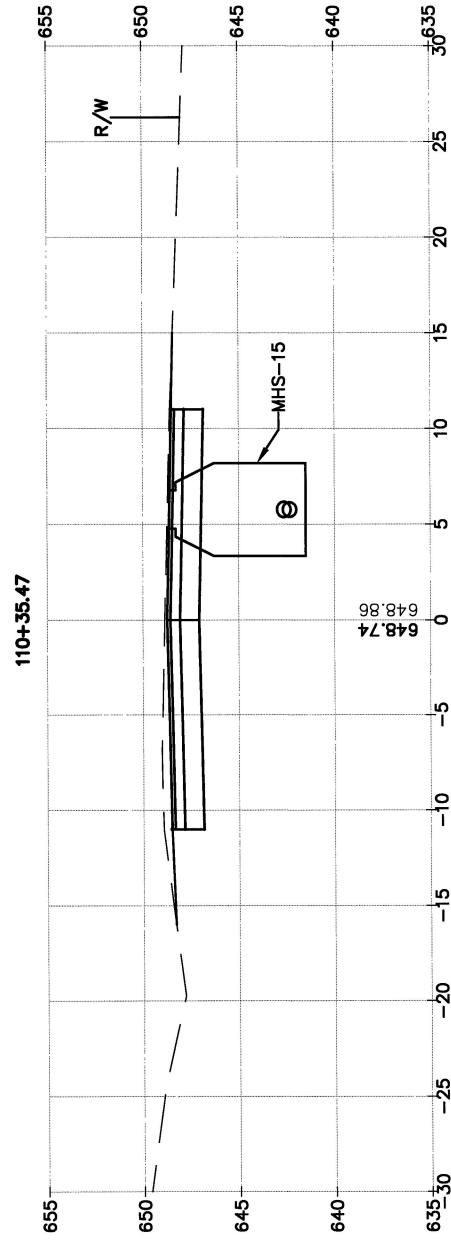
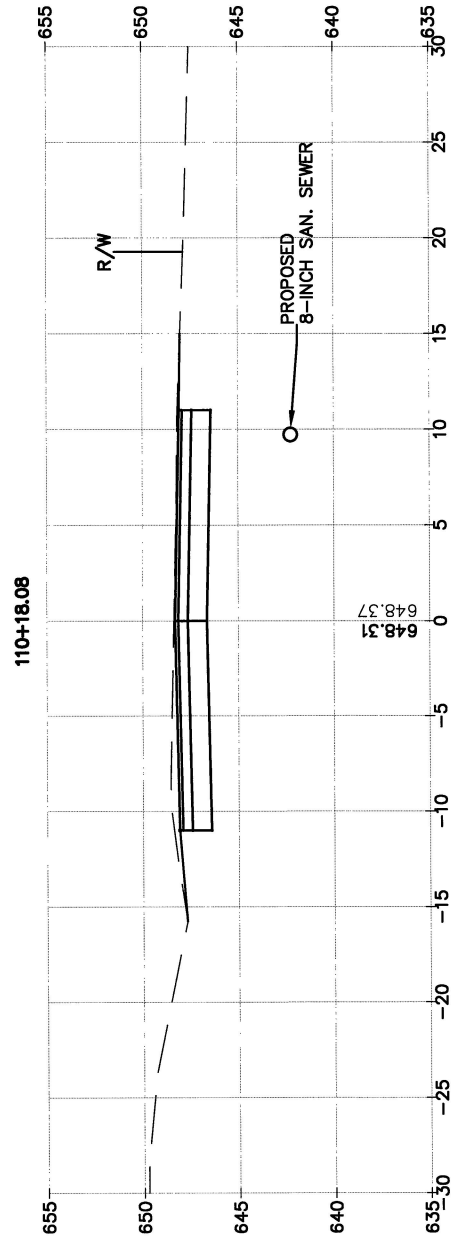
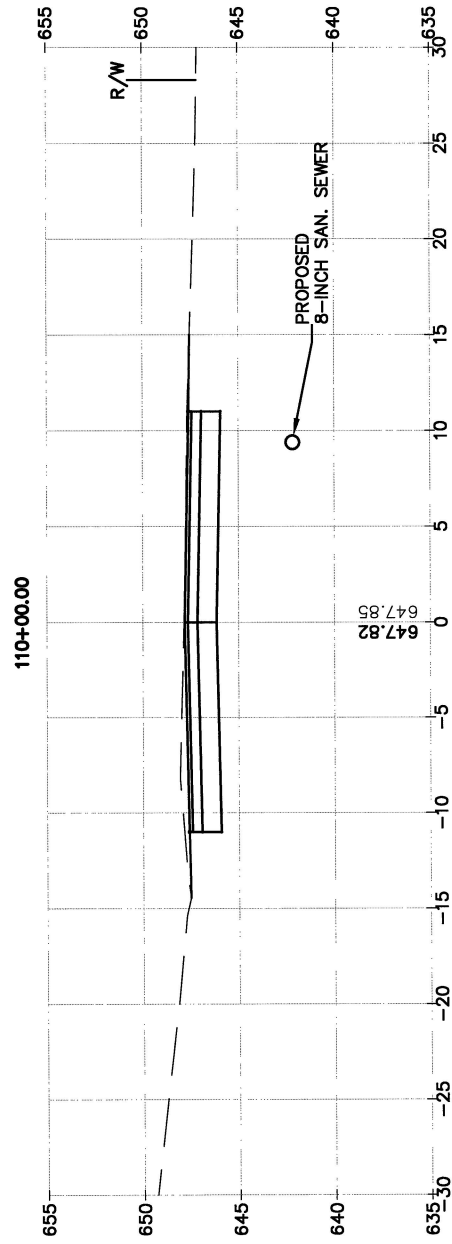
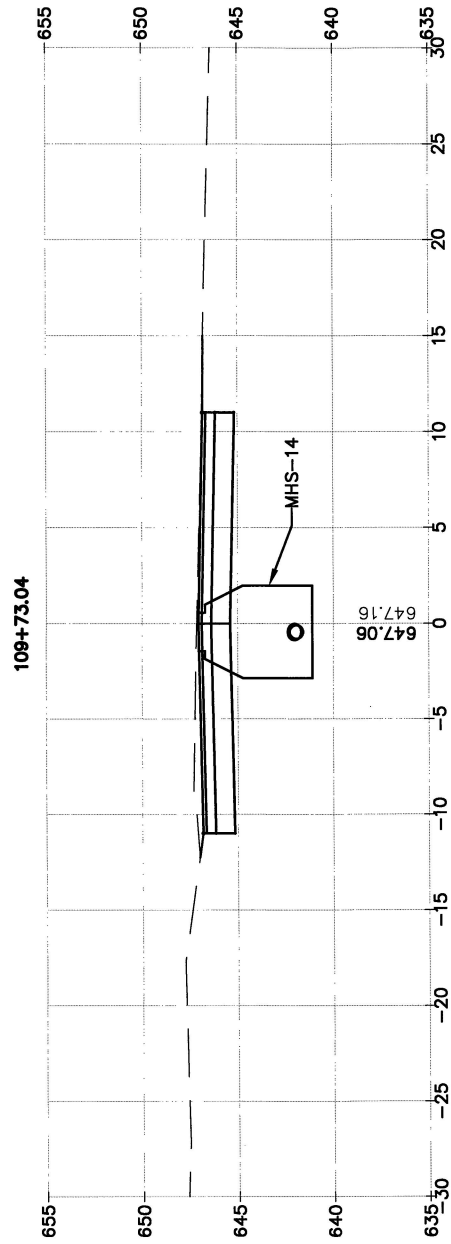
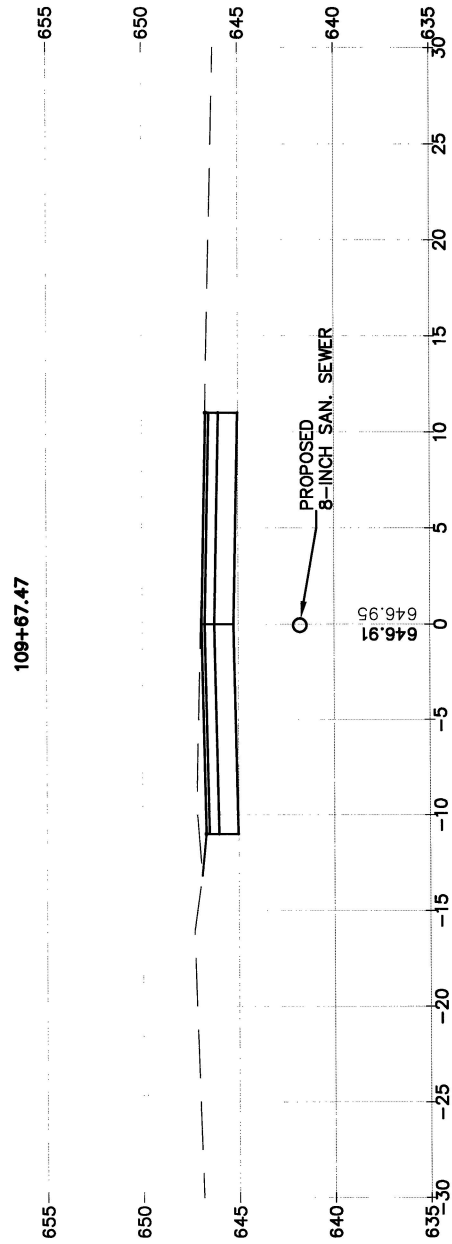




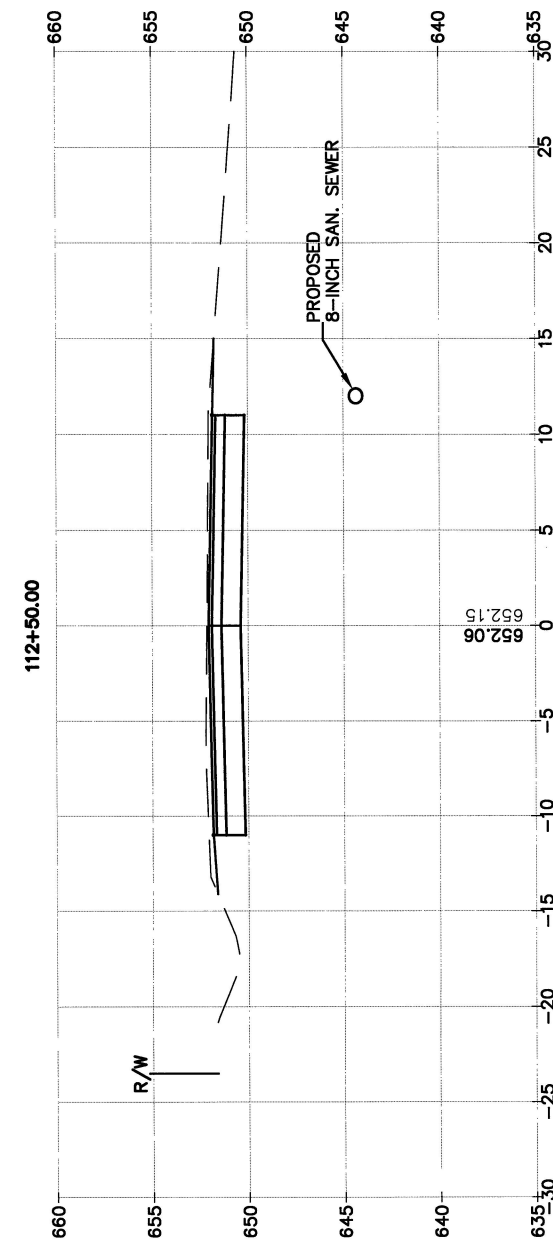
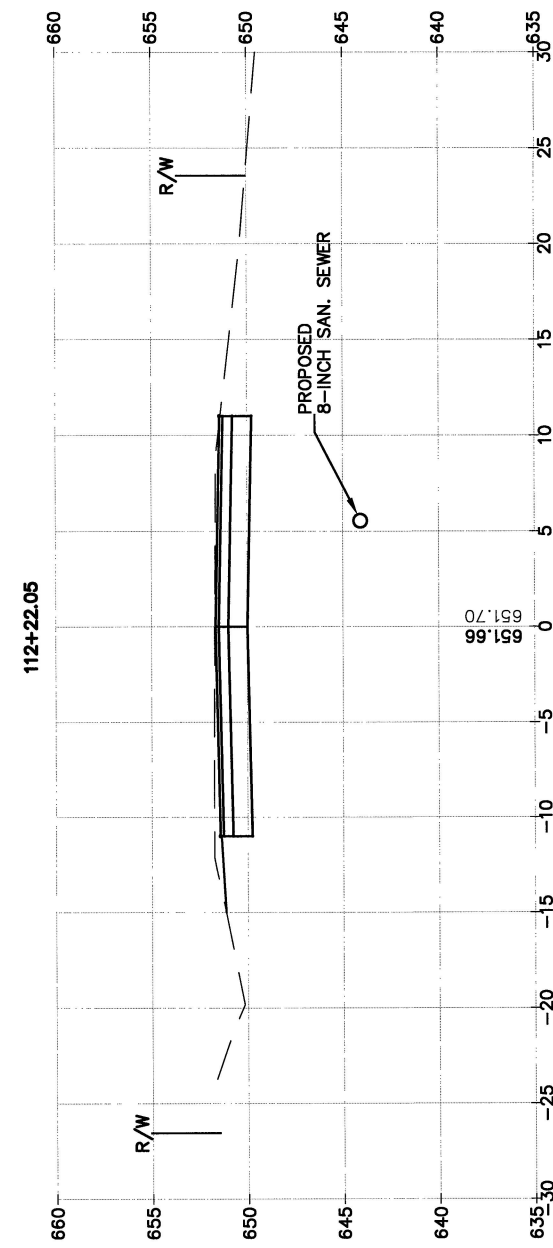
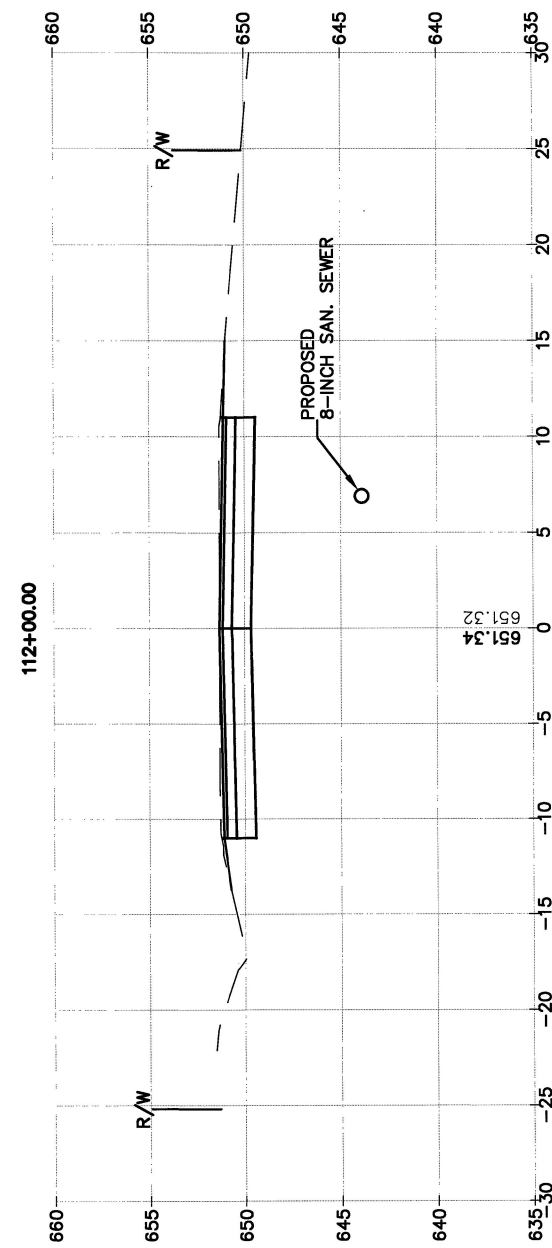
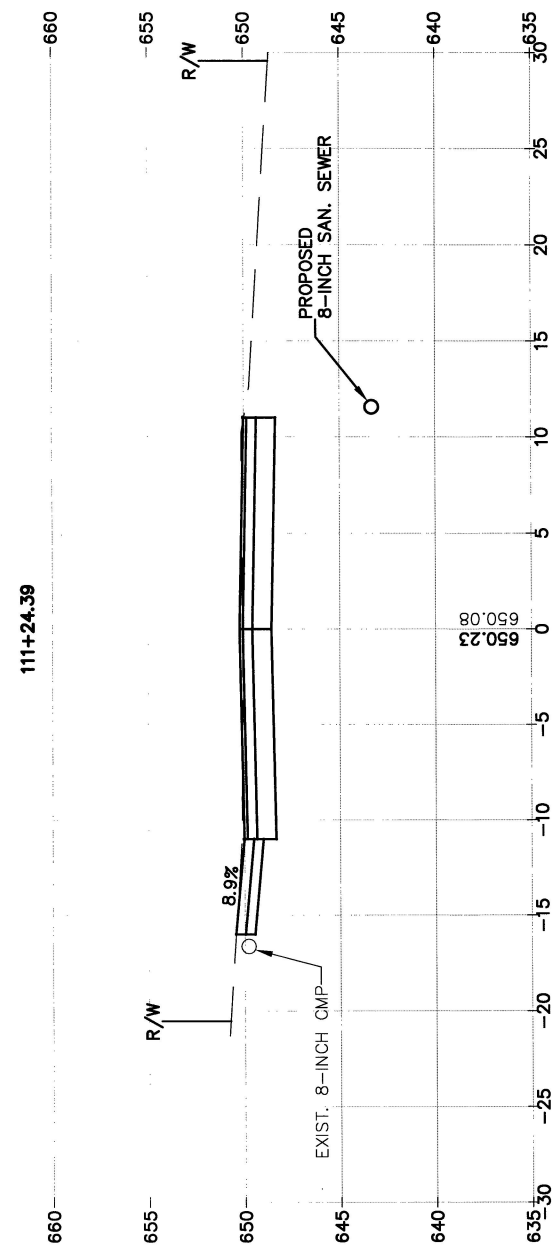




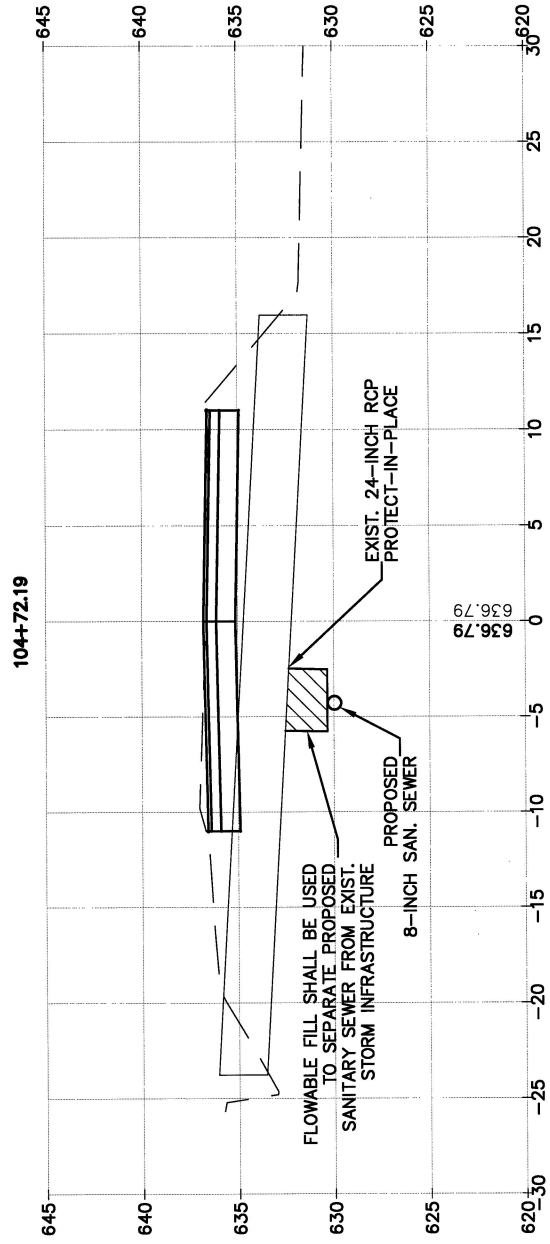
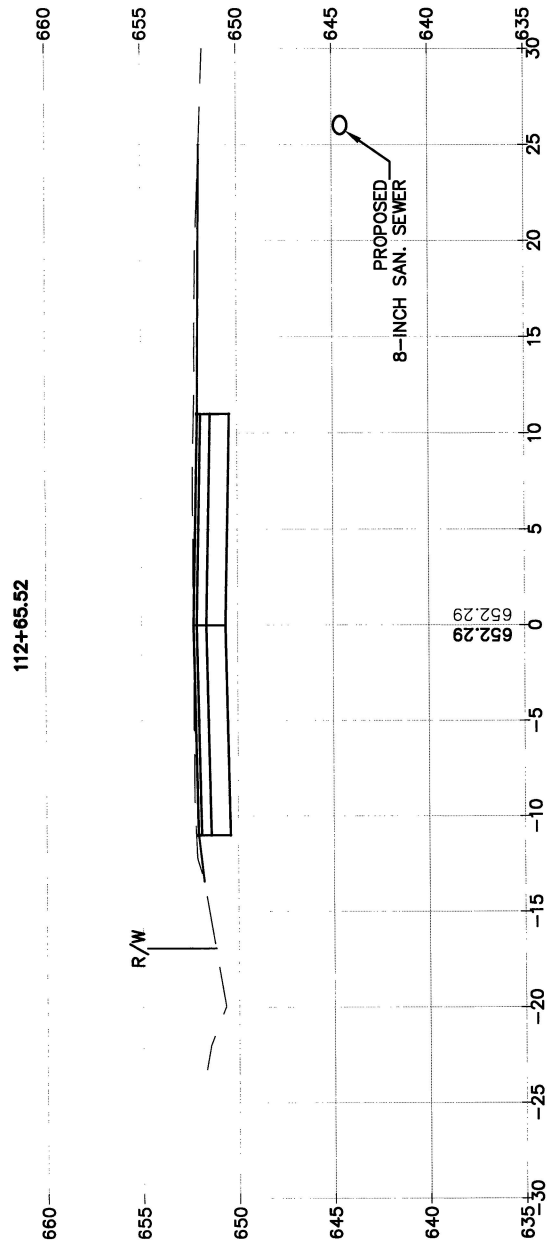




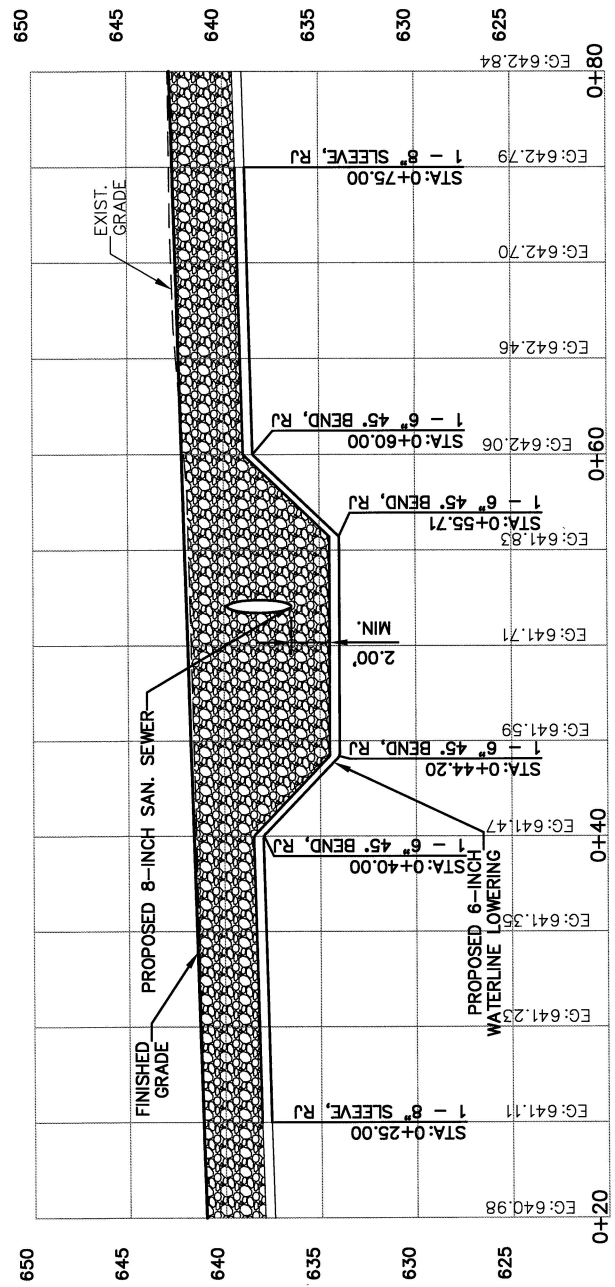








### STORMWATER CROSSING



### WATERLINE PROFILE