

10-18-06
Hests 11
Pg

BOX: 162

DATE: 10/17/06

RECORD DRAWING SUBMITTAL

JOB NUMBER: ES 98-1 cont 3 PROJECT NAME: Mid town East District Rehab

ATLAS PAGE NO.: 2,3,9,10,11,12,24,25 LOCATION: Various

PROJECT ENGINEER: USI PROJECT CONTRACTOR: T+G

DATE RELEASED FROM INSPECTION: 11/29/04

CONSTRUCTION COST: \$ _____ CITY COST: \$ 1,913,706.⁶¹

LIFT STATION INFORMATION		PIPE SIZE	PIPE TYPE	PIPE LENGTH
NAME OF STATION: _____		<u>8"</u>	<u>Various</u>	<u>24286</u>
USE FEES: \$ _____		<u>10"</u>	<u>Various</u>	<u>731</u>
RELIEF FEES: \$ _____		<u>12"</u>	<u>Various</u>	<u>665</u>
ACRES SERVED: _____		_____	_____	_____
FORCE MAIN: TYPE PIPE _____		_____	_____	_____
SIZE PIPE _____		_____	_____	_____
LENGTH _____		_____	_____	_____
COMMENTS: <u>point Repairs, sliplines</u>		ABANDONED LINE		
<u>CIPP, Bursting, manhole Repairs</u>		_____	_____	_____
_____		_____	_____	_____

DATE SENT TO GRAPHICS: _____

DATE POSTED TO ATLAS: _____

CHECKED BY: _____

REQUESTED BY: Gm

CONSTRUCTION PLANS FOR MIDTOWN EAST DISTRICT SANITARY SEWER REHABILITATION AND REPLACEMENT CONTRACT 3 (MIDTOWN)

SEWER LINE AND MANHOLE REHABILITATION

TULSA METROPOLITAN UTILITY AUTHORITY NO. ES 98-1

ACCOUNT NO. 6039-5455603-040522012120

PUBLIC WORKS DEPARTMENT

CITY OF TULSA, OKLAHOMA

INDEX TO DRAWINGS

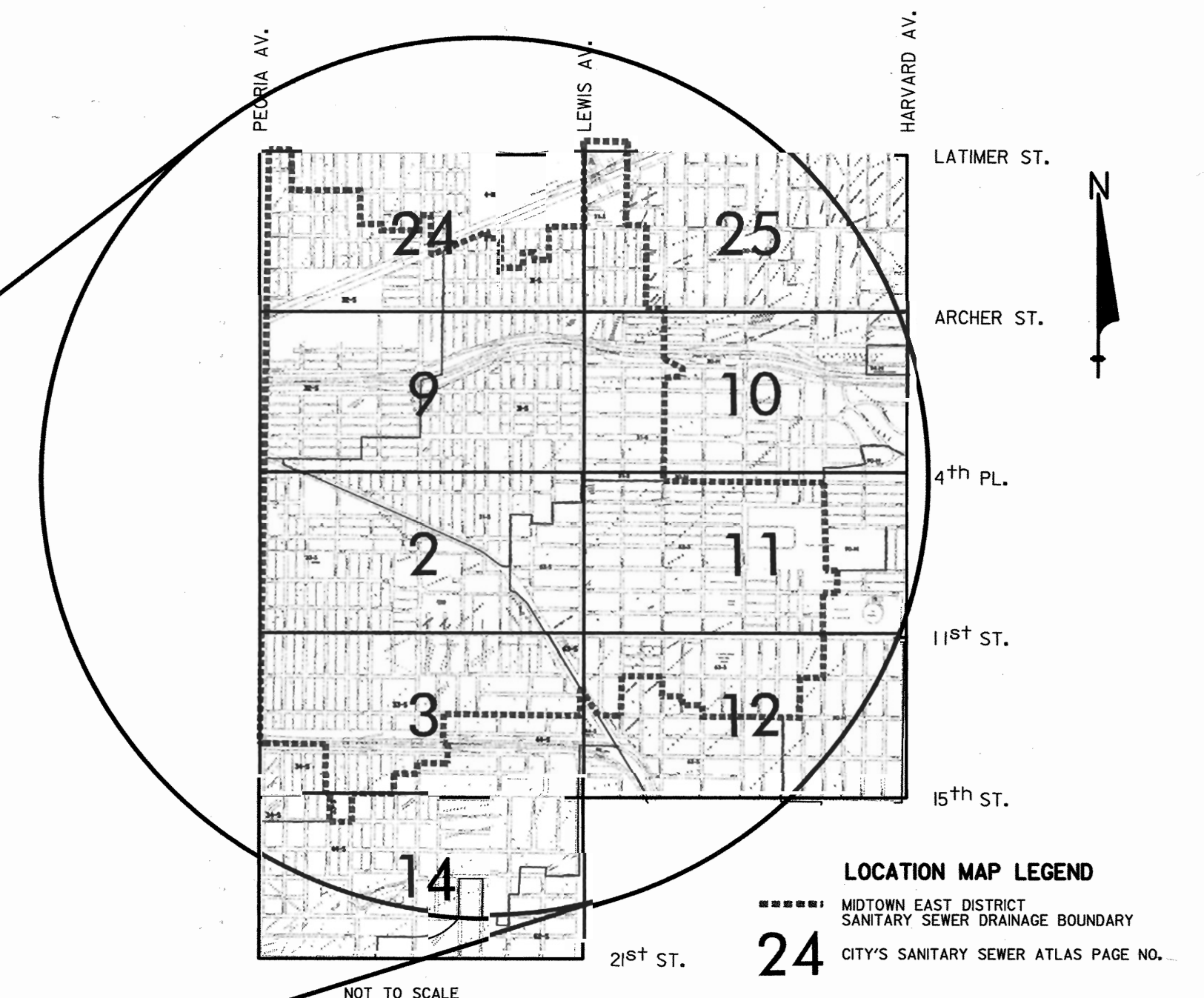
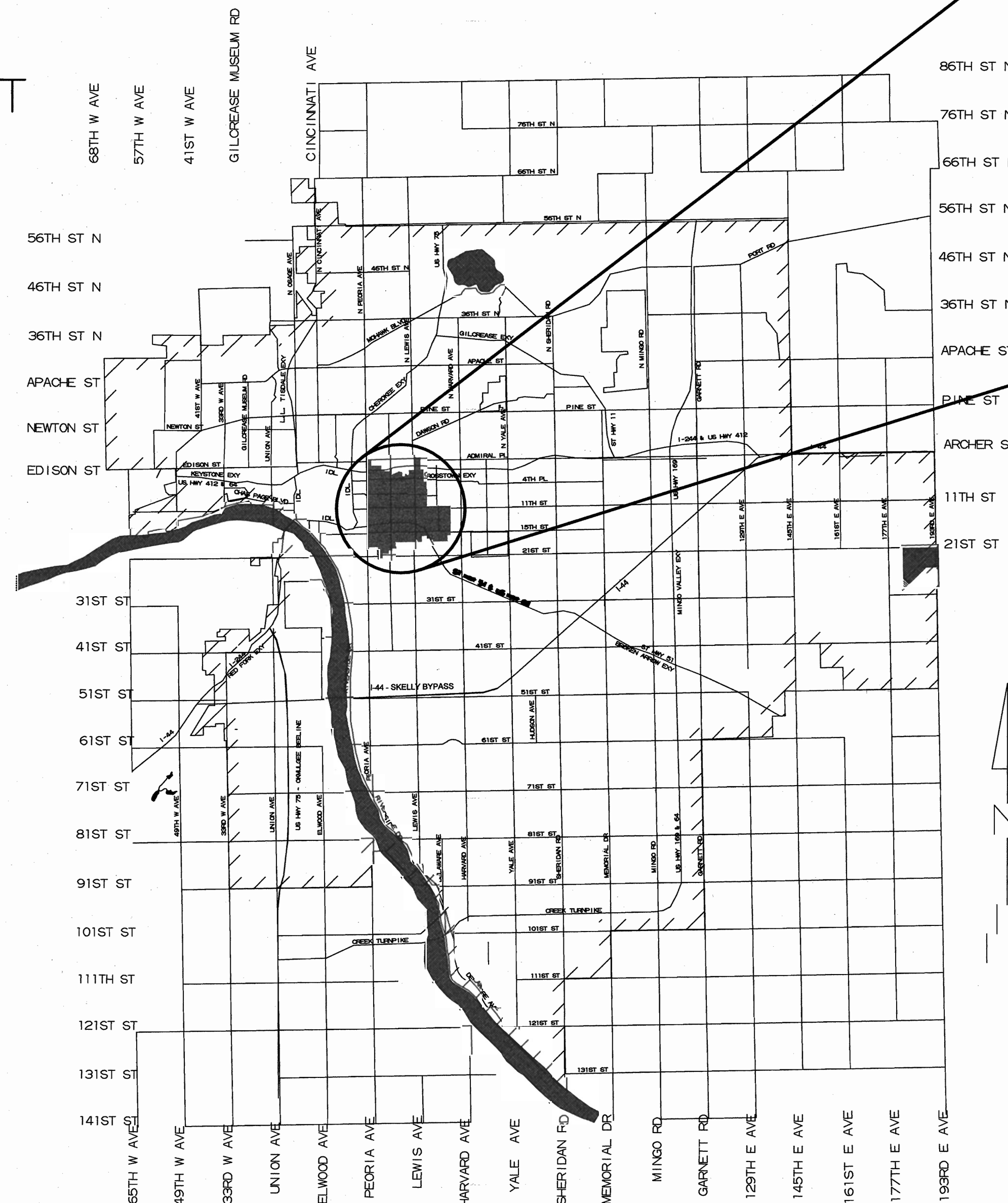
SHT. NO.	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES AND QUANTITY SCHEDULES (1)
3	QUANTITY SCHEDULES (2)
4	SEWER ATLAS PAGE 2
5	SEWER ATLAS PAGE 3
6	SEWER ATLAS PAGE 9
7	SEWER ATLAS PAGE 10
8	SEWER ATLAS PAGE 11
9	SEWER ATLAS PAGE 12
10	SEWER ATLAS PAGE 24
11	SEWER ATLAS PAGE 25

MIDTOWN EAST
DISTRICT



UTILITY COORDINATION BOX

	NUMBER
PUBLIC WORKS	
WATER DESIGN	596-9577
WASTEWATER DESIGN	596-7832
TRANSPORTATION DESIGN	596-9636
TRAFFIC ENGINEERING DESIGN	596-9741
STORMWATER DESIGN	596-7836
OKLAHOMA GAS & ELECTRIC	
OKLAHOMA NATURAL GAS CO.	831-8261
THERMAL SYSTEM, INC (TRIGEN)	
COX COMMUNICATIONS	669-4866
PUBLIC SERVICE CO.	599-2757
GENERAL TELEPHONE	451-3441
SOUTHWESTERN BELL TELEPHONE	596-6702
AT&T	
SPRINT	



APPROVED BY

PUBLIC WORKS DEPARTMENT
CITY OF TULSA, OKLAHOMA

Charles L. Hardt September 26, 2003
CHARLES L. HARDT, P.E. DATE
PUBLIC WORKS DIRECTOR

PLANS & ESTIMATES PREPARED BY:

US INFRASTRUCTURE OF OKLAHOMA, INC.
CONSULTING ENGINEERS
7666 EAST 61ST STREET, SUITE 475
TULSA, OKLAHOMA 74133
PHONE: (918) 249-2208
FAX: (918) 249-9192

Kenley R. Williams 09/03/03
KENLEY R. WILLIAMS, P.E. DATE
OKLAHOMA REG. P.E. NO. 12451

 **USI** INFRASTRUCTURE
OF OKLAHOMA, INC.
CERTIFICATE OF AUTHORIZATION NO. 3522 (PE/LS)
EXPIRATION DATE: JUNE 30, 2005

G E N E R A L N O T E S

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF TULSA PUBLIC WORKS DEPARTMENT ENGINEERING AND DESIGN STANDARDS, "WATER AND WASTEWATER CONSTRUCTION SPECIFICATIONS" (REVISED 8-17-98), SPECIAL CONDITIONS, AND SPECIAL DETAIL DRAWINGS FOR THIS CONTRACT.
- THE CONTRACTOR SHALL GIVE THE NOTIFICATION CENTER OF THE OKLAHOMA ONE-CALL SYSTEM, INC. NOTICE OF ANY EXCAVATION NO SOONER THAN 10 DAYS NOR LATER THAN 48 HOURS, EXCLUDING SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS, PRIOR TO COMMENCEMENT OF WORK (CALL 1-800-522-6543).
- THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK IN EACH AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT RESULT FROM HIS FAILURE TO LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
- ALL MANHOLES, PIPE LENGTHS, OBSERVATIONS, DEFECTS AND THEIR LOCATIONS ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE TO THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL INFORMATION BEFORE ANY CONSTRUCTION MATERIALS ARE ORDERED.
- SERVICE CONNECTION LOCATIONS ARE SHOWN ACCORDING TO TELEVISION INSPECTION INFORMATION. PRIOR TO BEGINNING CONSTRUCTION THE CONTRACTOR SHALL VERIFY ALL LIVE SERVICE CONNECTIONS AND RESTORE ONLY THOSE LIVE CONNECTIONS.
- ALL PIPE REPLACEMENT AND ALL PIPE RECONSTRUCTION FOOTAGE LYING WITHIN STREET RIGHT-OF-WAY SHALL BE REPLACED WITH DUCTILE IRON PIPE.
- PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL CLEAN AND RE-TELEVIEW, IN COLOR, ALL LINES DESIGNATED FOR REHABILITATION. PRE-INSTALLATION TELEVISION INSPECTION AND CLEANING SHALL BE PAID FOR AT THE UNIT PRICE BID PER LINEAR FOOT OF SEWER LINE INSPECTED. IN ACCORDANCE WITH SPECIAL PROVISION SP-1, THIS PAYMENT SHALL INCLUDE ALL WORK INCIDENTAL TO THE PREPARATION OF THE ACCEPTABLE PRE-CONSTRUCTION COLOR AUDIO-VIDEO SURVEY. CONTRACTOR SHALL PROVIDE POST-CONSTRUCTION TV INSPECTION AS REQUIRED BY SPECIFICATION D2-15.
- DISTANCES SHOWN BETWEEN MANHOLES AS WELL AS NUMBERS AND LOCATIONS OF SERVICES AND POINT REPAIRS ARE FROM VIDEO RECORDS OF TELEVISED LINES. MANHOLE DEPTHS ON SCHEDULE SHEETS WERE TAKEN FROM MANHOLE INSPECTION SHEETS AND ARE MORE ACCURATE THAN THE ATLAS SHEET.
- ESTIMATED CONSTRUCTION QUANTITIES LISTED IN THE BID DOCUMENTS ARE NOT GUARANTEED QUANTITIES AND ARE LISTED ONLY FOR CONVENIENCE IN COMPARING BIDS. PAYMENT FOR ALL ITEMS WILL BE MADE ON THE BASIS OF THE ACTUAL WORK PERFORMED, MATERIAL PLACED, OR ITEMS COMPLETED IN PLACE.
- THE CONTRACTOR WILL PLACE APPROPRIATE EROSION CONTROL DEVICES TO CONTROL EROSION AND SEDIMENTATION PER CITY OF TULSA STORM WATER MANAGEMENT REQUIREMENTS. THE COST OF THIS WORK SHALL BE INCLUDED IN OTHER ITEMS OF WORK.
- ANY COSTS OF BYPASS PUMPING INCURRED DURING CONSTRUCTION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OTHER ITEMS OF WORK.
- NO PAVEMENT MAY BE DISTURBED IN AREAS OF RECENT STREET REHABILITATION. AREAS UNDER NEW OR REHABILITATED PAVEMENT FOR PIPE LINING, PIPE REPLACEMENT, AND POINT REPAIRS SHALL BE REQUIRED TO USE THE NON-DISRUPTIVE OPTIONAL REHABILITATION. HOWEVER, IN THE EVENT THAT AN OBSTRUCTION IS ENCOUNTERED BENEATH THE NEW OR REHABILITATED PAVEMENT, THE CONTRACTOR SHALL CONTACT THE CITY ENGINEER AND A SPECIAL DETAIL FOR PAVEMENT REMOVAL AND REPLACEMENT WILL BE PROVIDED.
- THE CONTRACTOR SHALL CONTACT THE APPROPRIATE LEAD ENGINEER, CITY OF TULSA PUBLIC WORKS DEPARTMENT, ENGINEERING SERVICES DIVISION PRIOR TO PERFORMING ANY WORK ON MANHOLES WHICH ARE FOUND TO HAVE WATER LINES OR STORMWATER LINES PASSING THROUGH THEM.

WATER DESIGN: ANTHONY G. WILKINS, P.E. (918) 596-9566
STORMWATER DESIGN: DEBORAH K. STOWERS, P.E. (918) 596-9498
- MANHOLES WITH INVERTS IDENTIFIED AS "C.N.L." (COULD NOT LOCATE) OR "C.N.A." (COULD NOT ACCESS) IN SEWER LINE REHABILITATION QUANTITY SCHEDULES ARE TO BE LOCATED AS PART OF THE LINE REHABILITATION, AFTER EXPOSING MANHOLE AND PRIOR TO PERFORMING ANY REHABILITATION WORK, THE MANHOLE SHALL BE INSPECTED BY THE FIELD ENGINEER TO DETERMINE IF ANY ADDITIONAL MANHOLE REHABILITATION IS NECESSARY. PAYMENT WILL BE MADE ON THE BASIS OF THE ACTUAL WORK PERFORMED, MATERIAL PLACED, OR ITEMS COMPLETED IN PLACE.
- CONTRACTOR SHALL VACUUM TEST ALL NEW AND REHABILITATED MANHOLES ACCORDING TO CITY OF TULSA, PUBLIC WORKS DEPARTMENT STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL WORK IN COOPERATION WITH THE CITY TO ESTABLISH, INSTALL, MAINTAIN, AND OPERATE COMPLETE, ADEQUATE, AND SAFE TRAFFIC CONTROL DURING THE ENTIRE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL PLACE TRAFFIC CONTROL FLAGMEN, BARRICADES, AND OTHER DEVICES WITHIN THE VICINITY OF THE CONSTRUCTION AS REQUIRED. BARCADES, SIGNS, LIGHTS AND FLAGS SHALL BE APPROVED BY THE TRAFFIC ENGINEER OF THE CITY OF TULSA.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR FULL RESTORATION OF THE WORK AREA. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO ORIGINAL GRADE AND SURFACE. ALL DAMAGE OUTSIDE THE EASEMENT OR RIGHT-OF-WAY SHALL BE REPLACED AND/OR REPAIRED BY THE CONTRACTOR TO PRE-EXISTING CONDITIONS OR BETTER.
- NO ADDITIONAL PAYMENT WILL BE MADE FOR FLAGMEN OR SIGNAGE REQUIRED WITH RAILROAD RIGHT-OF-WAY.

CHANGED TO
RECONSTRUCT W/ DIP
CHANGED TO
DIP BURST

DELETED

ESTIMATED CONSTRUCTION QUANTITIES - PIPE LINING
BY SLIP-LINING OR CURED-IN-PLACE METHODS

FOR INFORMATION ONLY

SHEET NO.	ATLAS PAGE NO.	UPSTREAM MANHOLE	DOWNSTREAM MANHOLE	MANHOLE TYPE	* LENGTH (FT)	**UPSTREAM INVERT (FT.)	DOWNSTREAM INVERT (FT.)	PIPE DIAMETER (IN.)	* NO. OF SERVICES	PIPE MATERIAL	GROUND SURFACE CONDITION	NO. OF OBSTRUCTIONS
4	2	0330226	0330566		191	11.3	14.1	8	6	CONC	5	1
4	2	0330262	0330261		250	10.1	12.7	8	6	CONC/VCP	1	1
4	2	0330266	0330261		200	9.1	12.7	8	5	CONC	1	
4	2	0330284	0330283		298	9.3	6.4	12	0	VCP	12	
4	2	0330318	0330227		130	12.2	13.3	8	6	CONC/VCP	5	
4	2	0330380	0330567		245	9.9	10.5	8	7	CONC/VCP	5	
4	2	0330382	0330379		336	9.9	10.3	8	3	CONC	1	2
4	2	0330405	0330404		260	11.2	10.1	8	16	VCP	5	1
4	2	0330410	0330409		206	12.4	7.9	8	7	VCP	12	
4	2	0330411	0330410		169	C.N.L.	12.4	8	6	VCP	12	1
4	2	0330588	0330587		89	13.0	12.0	8	1	VCP	11	
4	2	0630022	0630021		135	8.7	9.2	10	0	VCP	12	
4	2	0630042	0630041		393	8.3	14.3	8	16	VCP	12	
5	3	0330312	0330311	D	392	12.3	9.5	8	14	CONC/VCP	5	
5	3	0330533	0330532		324	10.7	8.0	8	10	VCP	12	
5	3	0330569	0330421		344	19.1	7.2	10	3	VCP	1	
5	3	0330570	0330569		125	19.7	19.1	8	1	VCP	1	
6	9	0310015	0310013		350	10.6	10.7	8	1	VCP	1	1
6	9	0310027	0310026		31	12.4	12.2	8	2	CONC/VCP	5	1
6	9	0310040	0310039	D	245	9.1	10.2	8	4	VCP	5	
6	9	0310041	0310040		243	10.1	9.1	8	10	VCP	5	
6	9	0310044	0310042		384	6.9	8.9	8	8	VCP	5	
6	9	0310050	0310049		325	9.8	9.9	8	16	VCP	5	
6	9	0310051	0310050	L	316	6.9	9.8	8	16	VCP	5	
6	9	0310057	0310056		223	10.3	10.4	8	11	CONC/VCP	5	
6	9	0310058	0310054		244	9.2	9.5	8	9	VCP	5	1
6	9	0310071	0310070	D	215	12.5	13.0	8	10	CONC	5	
6	9	0310092	0310091		150	9.6	6.7	8	5	CONC/VCP	5	
6	9	0310093	0310092		280	8.9	9.6	8	11	CONC	5	
6	9	0310121	0310119		154	9.5	9.5	8	3	CONC/VCP	12	
6	9	0310124	0310099	L	312	11.5	8.8	8	15	CONC	5	
6	9	0320132	0320131		280	10.7	11.3	8	8	CONC/VCP	5	
6	9	0320181	0320180		180	4.9	4.9	8	3	VCP	1	1
7	10	0310131	0310130	L,D	98	8.0	8.6	8	4	VCP	7	1
7	10	0310134	0310133		355	8.1	9.6	8	8	VCP	12	
7	10	0310150	0310303		242	9.8	7.4	8	8	VCP	12	
7	10	0310151	0310150		365	8.5	9.8	8	14	CONC/VCP	12	
7	10	0310164	0310155	D	300	8.4	8.8	8	8	VCP	5	
7	10	0310165	0310164		265	9.4	8.4	8	8	VCP	5	
7	10	0310166	0310165		278	11.5	9.4	8	11	VCP	5	
7	10	0310173	0310172		414	10.5	12.5	8	17	VCP	5	
7	10	0310175	0310175		441	10.2	11.2	8	18	VCP	5	1
7	10	0310301	0310166	L	325	11.5	11.5	8	10	VCP	5	
7	10	0310302	0310155	D	340	7.5	10.6	8	11	VCP	5	
7	10	0310303	0310149		125	7.4	10.0	8	3	VCP	12	
8	11	0630018	0630017		300	11.1	9.8	8	19	VCP	12	
8	11	0630019	0630018		300	9.4	11.1	8	11	VCP	12	
8	11	0630034	0630033		330	9.1	10.1	8	11	VCP	12	1
8	11	0630036	0630035		318	8.0	7.0	8	13	VCP	12	1
8	11	0630063	0630062		150	10.4	11.5	8	5	VCP	12	1
8	11	0630064	0630062		275	7.4	11.5	8	20	VCP	12	1
8	11	0630071	0630072		291	12.1	10.8	8	10	VCP	5	1
8	11	0630085	0630079		350	3.5	8.2	8	1	VCP	11	
8	11	0630095	0630094		327	8.0	13.9	8	6	VCP	7	
8	11	0630096	0630095	L	118	8.1	8.0	8	3	VCP	7	1
8	11	0630161	0630241		104	10.8		8	0	VCP	1	
8	11	0630226	0630170		186	C.N.L.	13.9	8	7	VCP	12	
9	12	0630118	0630117	D	302	10.5	6.2	8	14	VCP	12	1
9	12	0630119	0630118	D	299	8.9	9.1	8	15	VCP	12	
9	12	0630145	0630144	D	128	5.1	8.8	8	2	VCP	12	
9	12	0630150	0630228	D	96	7.1	9.5	8	0	VCP	1	
9	12	0630152	0630151		260	C.N.L.	12.9	8	11	VCP	12	1
9	12	0630154	0630153		325	9.8	6.8	8	11	VCP	12	
9	12	0630155	0630154		254	9.5	9.8	8	7	VCP	12	
9	12	0630157	0630156		314	8.9	8.5	8	8	VCP	12	
9	12	0630159	0630158		323	9.1	6.1	8	10	VCP	12	
9	12	0630175	0630174		297	9.6	8.1	8	8	VCP	12	1
9	12	0630179	0630178	D	200	12.5	10.9	8	7	VCP	12	
9	12	0630181	0630180		275	11.7	9.4	8	14	VCP	12	1
9	12	0630193	0630190	D	162	7.2	5.6	8	0	VCP	12	
9	12	0630228	0630147	D	234	9.6	8.3	8	0	VCP	1	
9	12	0630229	0630201		309	8.8	9.3	8	11	VCP	12	
9	12	0630232	0630193	D	315	7.6	5.1	8	12	VCP	12	3
10	24	0310088	0310087		325	5.4	9.1	8	15	CONC	5	2
10	24	0310298	0310218	L	113	3.3	8.0	8	1	VCP	1	
10	24	0320249	0320248	D	300	11.0	9.2	8	11	VCP	5	
10	24	0320258	0320257		360	11.5	13.2	8	11	VCP	5	1
10	24	0320301	0320300		228	6.0	10.0	8	13	VCP	5	
11	25	0310190	0310305		237	C.N.L.	4.0	8	2	VCP	11	

SUMMARY OF ESTIMATED QUANTITIES

FOR INFORMATION ONLY

BASE ITEM	QUANTITY	UNIT	BID DESCRIPTION	SPEC.
1	21	EA	Replacement of Manhole Cover/Frame/Frame Seal(Type A)	D2-18
2	36	EA	Replacement of Frame Seal(Type B)	D2-18
3	2	EA	Replacement of Manhole Cover/Frame/Frame Seal/Chimney (Type C)	D2-18
4	4	EA	Replacement of Manhole Frame Seal/Chimney (Type D)	D2-18
5	7	EA	Manhole Grade Adjustment (Type E)	D2-18
6	392	VF	Interior Manhole Rehabilitation, 4 Ft. Dia. (Type F)	D2-21
7	2	EA	Replace 4 Ft. Dia. Manhole With 5 Ft. Dia. Manhole (0 to 6 Ft. Depth) (Type G)	D2-16
8	4	VF	Replace 4 Ft. Dia. Manhole With 5 Ft. Dia. Manhole (Excess Ft. Depth > 6 Ft.) (Type G)	D2-16
9	6	LF	Additional Pipe Footage to Match for Manhole Replace (Type G)	D2-16
10	647	EA	Replacement of Manhole Steps (Type I)	D2-20
11	1	EA	Seal Joints and Lift Holes, for Each Manhole (Type J)	D2-19, D2-21, and SPECIAL DETAIL PAGE I3 & I5
12	19575	LF	Pipe Lining, 8 Inch Diameter (Slipline or CIPP)	D2-8 or D2-9
13	479	LF	Pipe Lining, 10 Inch Diameter (Slipline or CIPP)	D2-8 or D2-9
14	298	LF	Pipe Lining, 12 Inch Diameter (Slipline or CIPP)	D2-8 or D2-9
15	4875	LF	Pipe Lining, 8 Inch Diameter (CIPP or Reconstruction)	D2-9, D2-6, D2-7 or D2-7a
16	237	LF	Pipe Lining, 10 Inch Diameter (CIPP or Reconstruction)	D2-9, D2-6, D2-7 or D2-7a
17	167	LF	Pipe Lining, 12 Inch Diameter (CIPP or Reconstruction)	D2-9, D2-6, D2-7 or D2-7a
18	128	LF	Reconstruct 8 Inch Dia. With 8 Inch Dia. Ductile Iron Pipe	D2-7 or D2-7a
19	7	LF	Reconstruct 12 Inch Dia. With 12 Inch Dia. Ductile Iron Pipe	D2-7 or D2-7a
20	40	LF	Reconstruct 12 Inch Dia. With 16 Inch Dia. Ductile Iron Pipe	D2-7 or D2-7a
21	38	EA	Remove Obstruction Prior to Lining	D2-23
22	774	EA	Service Reconnections	D2-6, D2-7, D2-7a, D2-8 or D2-9
23	3	EA	Point Repair, 8 Inch Diameter	D2-12 or D2-24
24	25	LF	Point Repair Additional Footage, 8 Inch Diameter	D2-12 or D2-24
25	1	EA	Point Repair, 12 Inch Diameter	D2-12 or D2-24
26	5	LF	Point Repair Additional Footage, 12 Inch Diameter	D2-12 or D2-24
27	27271	LF	Pre-Installation Television	SPECIAL PROVISION SP-1
28	2525	SY	Paving Restoration	SPECIAL PROVISION SP-2
29	1	LS	Mobilization	DI-6
30	2	EA	Project Sign	CITY'S STANDARD DRAWING
31	1	LS	Photographic Documentation	DI-3

* SEE NOTE 8 OF GENERAL NOTES

INDEX TO MANHOLE TYPES

NO CODE LISTING INDICATES STANDARD MANHOLE

CODE	DESCRIPTION
D	DROP MANHOLE
L	LAMPHOLE

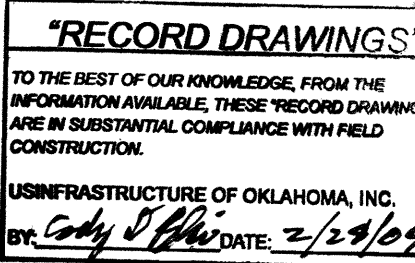
INDEX TO PIPE CONSTRUCTION MATERIAL TYPES

CODE	DESCRIPTION
CONC	CONCRETE PIPE
VCP	VITRIFIED CLAY PIPE
IRON	IRON PIPE
LINER	PREVIOUSLY LINED PIPE

INDEX TO GROUND SURFACE CONDITIONS

CODE	DESCRIPTION
1	PAVED STREET
2	UNPAVED STREET
3	PAVED INTERSECTION
4	UNPAVED INTERSECTION
5	ALLEY
6	SIDEWALK
7	PARKING LOT
8	BACK YARD
9	DITCH
10	CURB/GUTTER
11	EASEMENT
12	PRIVATE RESIDENCE

* NUMBER OF SERVICES WERE ESTIMATED
ACCORDING TO NUMBER OF LOTS FOR THE
LINES OR PORTIONS OF LINES NOT
TV-INSPECTED



ESTIMATED CONSTRUCTION QUANTITIES - MANHOLE REHABILITATION																		
FOR INFORMATION ONLY																		
SHEET NO.	ATLAS PAGE NO.	MANHOLE NO.	MANHOLE TYPE	**MANHOLE DEPTH (FT.)	MANHOLE CONST. MATERIAL	GROUND SURFACE CONDITION	MANHOLE DIAMETER (FT.)	MANHOLE REHABILITATION TYPE										
								A	B	C	D	E	F	G	H	I	J	K
4	2	0330226		11.3	7	5	4											
4	2	0330254		10.5	1	1	4											
4	2	0330261		12.7	1	3	4											
4	2	0330283		6.4	7	6	4											
4	2	0330378		12.2	7	5	4											
4	2	0330380		9.9	7	1	4											
4	2	0330382		9.9	7	1	4											
4	2	0330404		10.1	7	5	4											
4	2	0330409		7.9	7	11	4											
4	2	0330410		12.4	7	11	4											
4	2	0330450		12.7	7	1	4											
4	2	0330451		7.0	7	1	4											
4	2	0330460		8.0	7	7	4											
4	2	0330461		7.4	1	11	4											
4	2	0330567		10.5	7	5	4											
4	2	0330588		13.0	1	11	4											
4	2	0630021		9.2	7	11	4											
4	2	0630022		8.7	7	11	4											
4	2	0630042		8.3	7	8	4											
5	3	0330311	D	13.3	7	5	4											
5	3	0330331	D	10.5	7	11	4											
5	3	0330335		6.2	1	1	4											
5	3	0330336	D	6.8	6	1	4											
5	3	0330421		7.2	7	1	4											
5	3	0330531		7.0	7	1	4											
5	3	0330532		8.0	7	1	4											
5	3	0330533		10.7	7	8	4											
5	3	0330569		19.1	7	6	4											
5	3	0330570		19.7	7	6	4											
6	9	0310041		10.1	7	5	4											
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6	9	0310092		9.6	7	5	4											
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6	9	0310153		11.9	7	3	4											
6	9	0310259		10.7	7	5	4											
6	9	0320131		11.3	7	5	4											
6	9	0320166	D	8.4	7	5	4											
6	9	0320170		7.2	7	11	4											
6	9	0320172		7.8	7	5	4											
6	9	0320181		4.9	7	11	4											
7	10	0310130	D	12.4	7	11	4											
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7	10	0310150		9.8	7	8	4											
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7	10	0310176		10.2	7	5	4											
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9	12	0630173		11.1	1	11	4											
9	12	0630177		9.7	1	1	4											
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9	12	0630181		11.7	7	8	4											
9	12	0630190		5.6	7	1	4											
9	12	0630228	D	9.6	1	1	4											
9	12	0630232		7.6	1	8	4											
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10	24	0310218		8.0	7	11	4											
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10	24	0320257		13.2	7	5	4											
10	24	0320258		11.5	7	5	4											
10	24	0320300		10.0	7	5	4											
10	24	0320301		6.0	7	5	4											

NOTE:
4 foot diameter manhole to be replaced by 5 foot diameter manhole.

REPLACED LAMPHOLE W/ MANHOLE

INDEX TO MANHOLE CONSTRUCTION MATERIAL TYPES

CODE	DESCRIPTION
1	BRICK
2	PRECAST
3	BLOCK
4	CLAY PIPE
5	CONC PIPE
6	POURED
7	MORTAR MASK
9	PVC
10	PVC COATED
15	OTHER

INDEX TO MANHOLE REHABILITATION TYPES

CODE	SPECIFICATION NO.	DESCRIPTION
A	D2-18	REPLACE COVER/FRAME/FRAME SEAL
B	D2-18	REPLACE FRAME SEAL
C	D2-18	REPLACE COVER/FRAME/FRAME SEAL/CHIMNEY
D	D2-18	REPLACE FRAME SEAL/CHIMNEY
E	D2-16	GRADE ADJUST
F	D2-21	INTERIOR MANHOLE REHABILITATION
G	D2-16	REPLACE MANHOLE
H	D2-17	ADDITIONAL DEPTH, MANHOLE, REPLACEMENT (OVER 6 FT.)
I	D2-20	REPLACE CLEANOUT (LAMPHOLE)
J	D2-19, D2-21	REPLACE STEPS
K	D2-17	SEAL JOINTS AND LIFT HOLES
	D2-17	REPLACE LAMPHOLE COVER/FRAME

NOTE:
Subtotal for Manhole Step Replacement is total number of manholes for which steps shall be replaced as needed. Payment shall be made for the number of steps actually replaced. The number of steps to be replaced has been estimated in the Schedule of Estimated Quantities based upon the total vertical feet of manholes to be rehabilitated and the general condition of the steps.

ESTIMATED CONSTRUCTION QUANTITIES - POINT REPAIRS

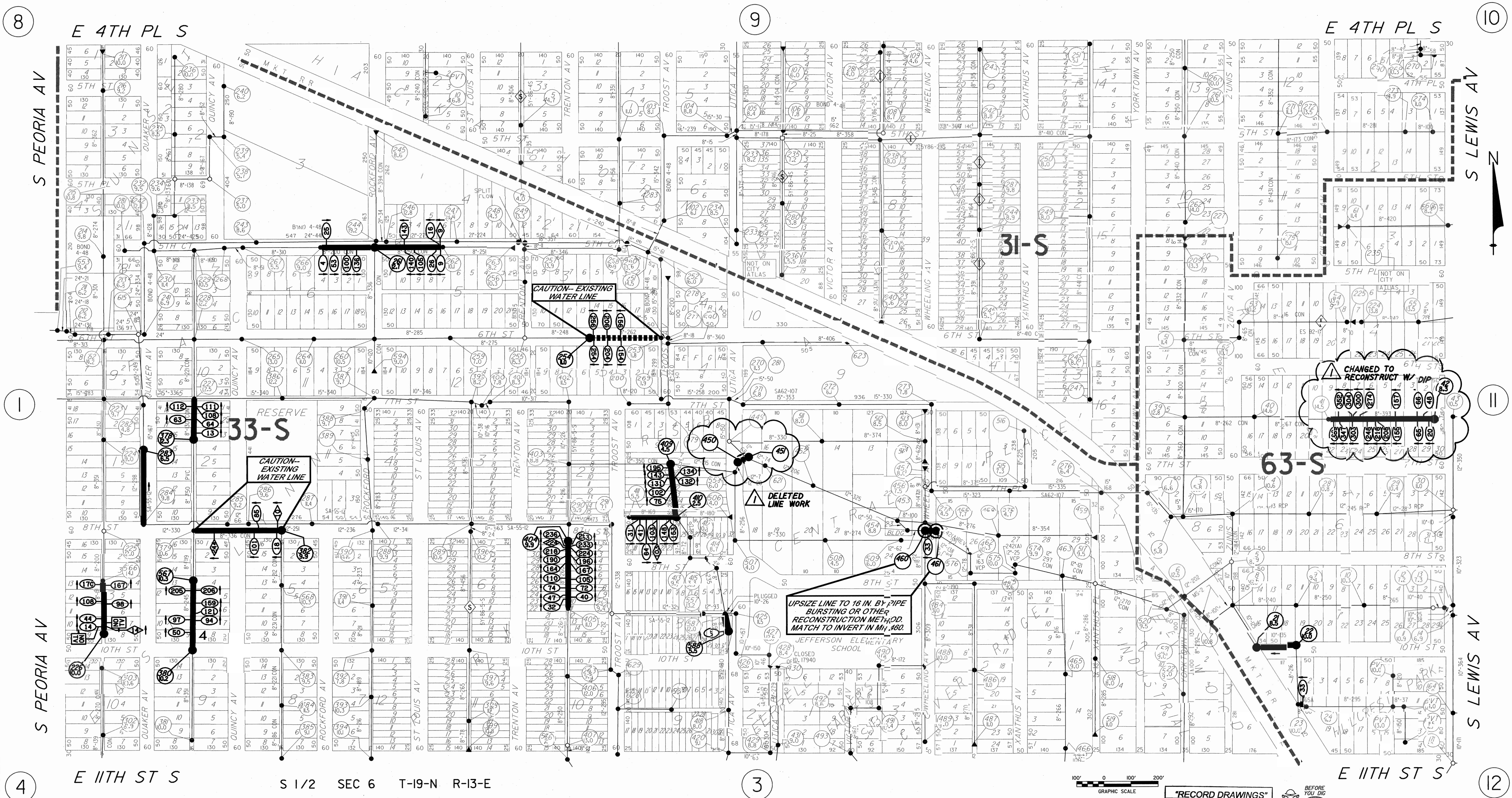
FOR INFORMATION ONLY

SHEET NO.	ATLAS PAGE NO.	UPSTREAM MANHOLE	DOWNSTREAM MANHOLE	MANHOLE TYPE	* LENGTH (FT.)	**UPSTREAM INVERT (FT.)	DOWNSTREAM INVERT (FT.)	PIPE DIAMETER (IN.)	* NO. OF SERVICES	PIPE MATERIAL	GROUND SURFACE CONDITION	** POINT REPAIRS		
												QTY	FIRST	SECOND
6,10	9,24	0310087	0310086		73	9.1	9.9	8	0	CONC	5	1	0-10	
7	10	0310169	0310168		352	15.0	15.2	12	0	IRON	1	1	113-123	
8	11	0630111	0630110		180	11.5	9.9	8	0	VCP	7	1	0-10	
8	11	0630113	0630112		360	10.0	11.6	8	0	VCP	7	1	223-253	

ESTIMATED CONSTRUCTION QUANTITIES - PIPE REPLACEMENT BY TRENCHLESS RECONSTRUCTION METHODS (DUCTILE IRON PIPE ONLY): PIPE CRUSHING OR PIPE BURSTING

FOR INFORMATION ONLY

SHEET NO.	ATLAS PAGE NO.	UPSTREAM MANHOLE	DOWNSTREAM MANHOLE	MANHOLE TYPE	*LENGTH (FT)	**UPSTREAM INVERT (FT.)	DOWNSTREAM INVERT (FT.)	PIPE DIAMETER (IN.)	*NO. OF SERVICES	PIPE MATERIAL	GROUND SURFACE CONDITION	NOTES
4	2	0330461	0330460		7	7.0	12.7	12	0	CONC	I	Up-Size to 16"
4	2	0330461	0330460		40	7.4	8.0	12	1	VCP	I	
5	3	0330336	0330335	D	50	6.8	6.2	8	0	VCP	I	
6	9	0320179	0320178		51	4.9	6.1	8	0	VCP	I	
7	10	0310156	0310302	L	27	7.0	7.5	8	3	VCP	5	



SEWER ATLAS PAGE LEGEND

- MAINTENANCE AREA BOUNDARY
- MAINTENANCE AREA DESIGNATION
- MANHOLE, MANHOLE NO. & MANHOLE DEPTH
- DROP MANHOLE, MANHOLE NO. & MANHOLE DEPTH
- LAMPHOLE, LAMPHOLE NO. & DEPTH
- SEWER LINE (DIAMETER - LENGTH)

SEWER LINE REHABILITATION LEGEND

- RECONSTRUCT LINE WITH DUCTILE IRON PIPE, PIPE CRUSHING OR PIPE BURSTING (DIAMETER-LENGTH IN FEET)
- PIPE LINING - SPLITTED OR CURED-IN-PLACE (DIAMETER-LENGTH IN FEET)
- NOT TELEVIEWED: ARROW INDICATES DIRECTION NOT TELEVIEWED
- POINT REPAIR: DIRECTION OF FLOW AND APPROXIMATE DISTANCE FROM UPSTREAM MANHOLE

MANHOLE REHABILITATION LEGEND

- MANHOLE TO BE REHABILITATED
- DROP MANHOLE TO BE REHABILITATED
- LAMPHOLE TO BE REHABILITATED
- 4 FT DIAMETER MANHOLE TO BE REPLACED WITH A 5 FT DIAMETER MANHOLE

REVISION

REVISION	BY	DATE
RECORD DRAWING	CDB	2/28/05

ES 98-1

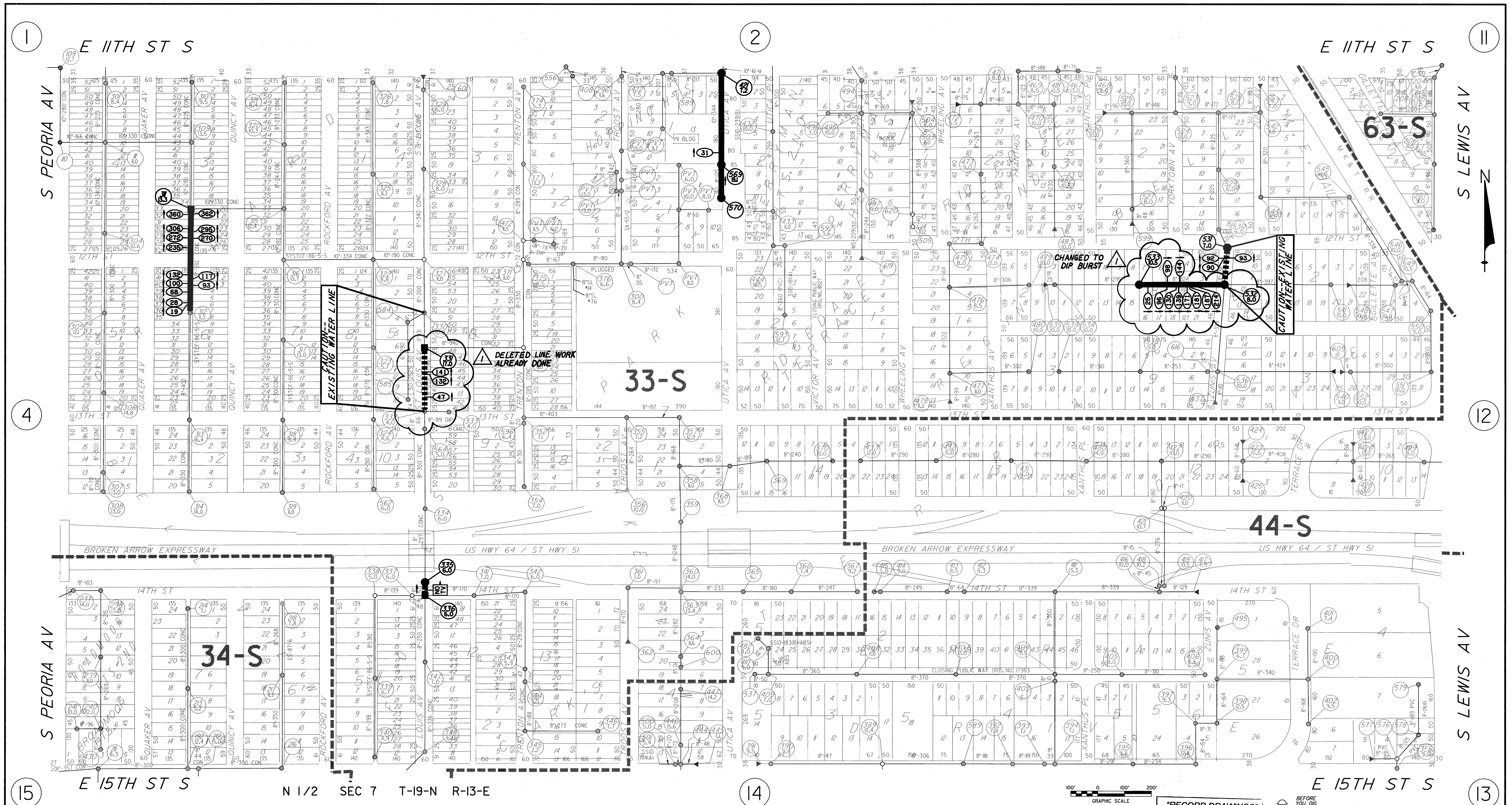
MIDTOWN EAST DISTRICT
SANITARY SEWER REHABILITATION AND REPLACEMENT
CONTRACT 3 - SEWER LINE AND MANHOLE REHABILITATION
ATLAS PAGE 2

PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES DIVISION
CITY OF TULSA, OKLAHOMA

USI OF OKLAHOMA, INC.

7666 E. 61ST ST. SUITE 475
TULSA, OKLAHOMA 74133
PHONE: (918) 249-2208
FAX: (918) 249-9992

DATE September 26, 2003
SHEET 4 OF 11 SHEETS



SEWER ATLAS PAGE LEGEND

- MAINTENANCE AREA BOUNDARY
- MAINTENANCE AREA DESIGNATION
- MANHOLE, MANHOLE NO. & MANHOLE DEPTH
- DROP MANHOLE, MANHOLE NO. & MANHOLE DEPTH
- LAMPHOLE, LAMPHOLE NO. & DEPTH
- SEWER LINE (DIAMETER - LENGTH)

SEWER LINE REHABILITATION LEGEND

- RECONSTRUCT LINE WITH DUCTILE IRON PIPE, PIPE CRUSHING OR PIPE BURSTING (DIAMETER-LENGTH IN FEET)
- PIPE LINING - SPLITTED OR CURED-IN-PLACE (DIAMETER-LENGTH IN FEET)
- NOT TELEVIEWED: ARROW INDICATES DIRECTION NOT TELEVIEWED

MANHOLE REHABILITATION LEGEND

- MANHOLE TO BE REHABILITATED
- DROP MANHOLE TO BE REHABILITATED
- LAMPHOLE TO BE REHABILITATED
- 4 FT DIAMETER MANHOLE TO BE REPLACED WITH A 5 FT DIAMETER MANHOLE

REVISION	BY	DATE
RECORD DRAWING	CDB	2/28/05

ES 98-1
MIDTOWN EAST DISTRICT
SANITARY SEWER REHABILITATION AND REPLACEMENT
CONTRACT 3 - SEWER LINE AND MANHOLE REHABILITATION
ATLAS PAGE 3
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES DIVISION
CITY OF TULSA, OKLAHOMA



PLAN SCALE:	DRAWN	USI	1/03	APPROVED:
P-SCALE	DESIGNED	USI	1/03	
PROFILE SCALE:	SURVEY	N/A	N/A	
HORIZONTAL:	FIELD MGR.	RM	9/03	
H-SCALE	SECT. MGR.	RM	9/03	
VERTICAL:	PROJ. MGR.	RM	9-9-03	
V-SCALE	RECOMMENDED	RM	9-9-03	
FILE:	DATE	September 26, 2003		
ATLAS PAGE NO. 3	SHEET	5	OF 11	SHEETS

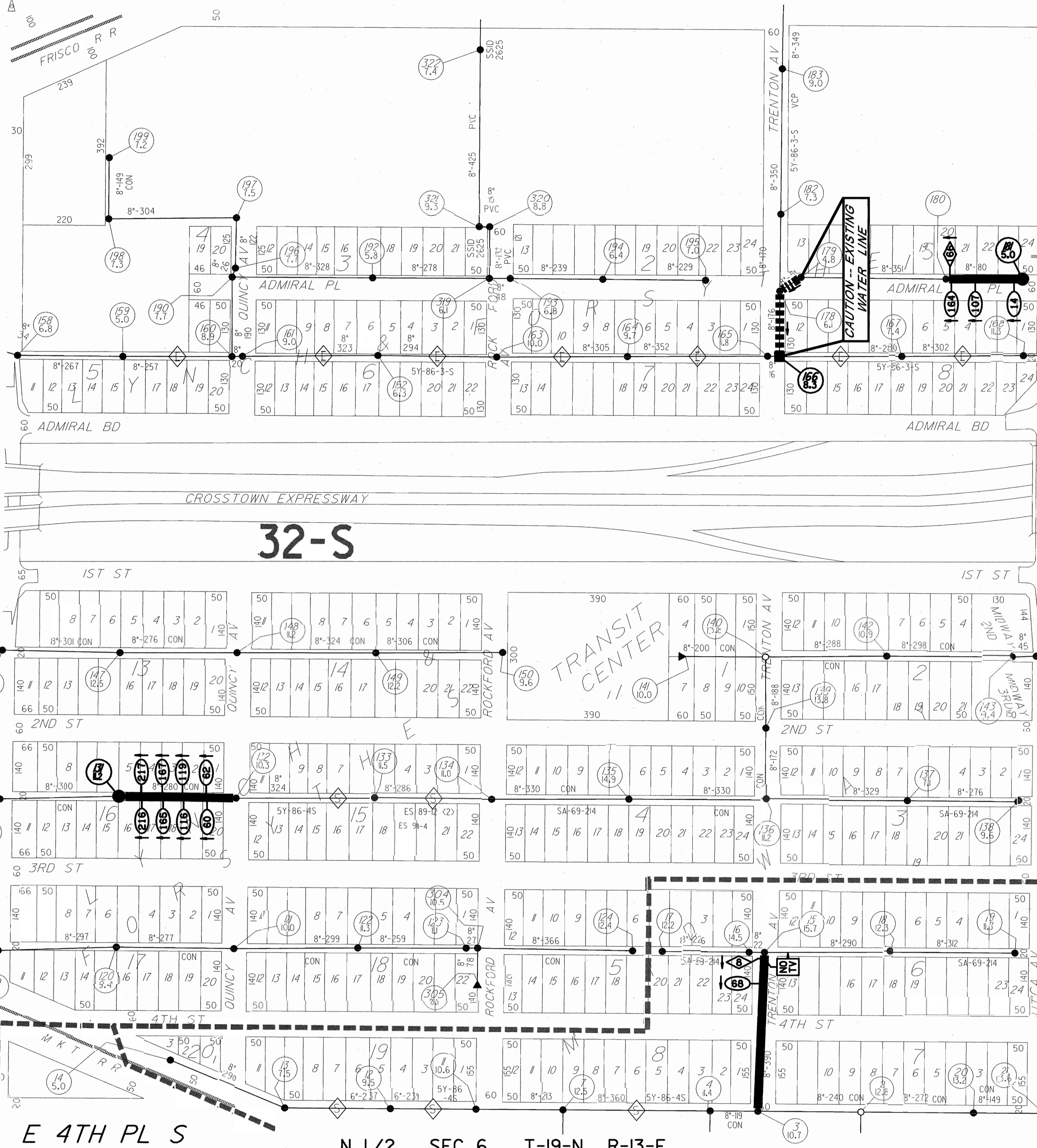
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SEWER ATLAS PAGE LEGEND

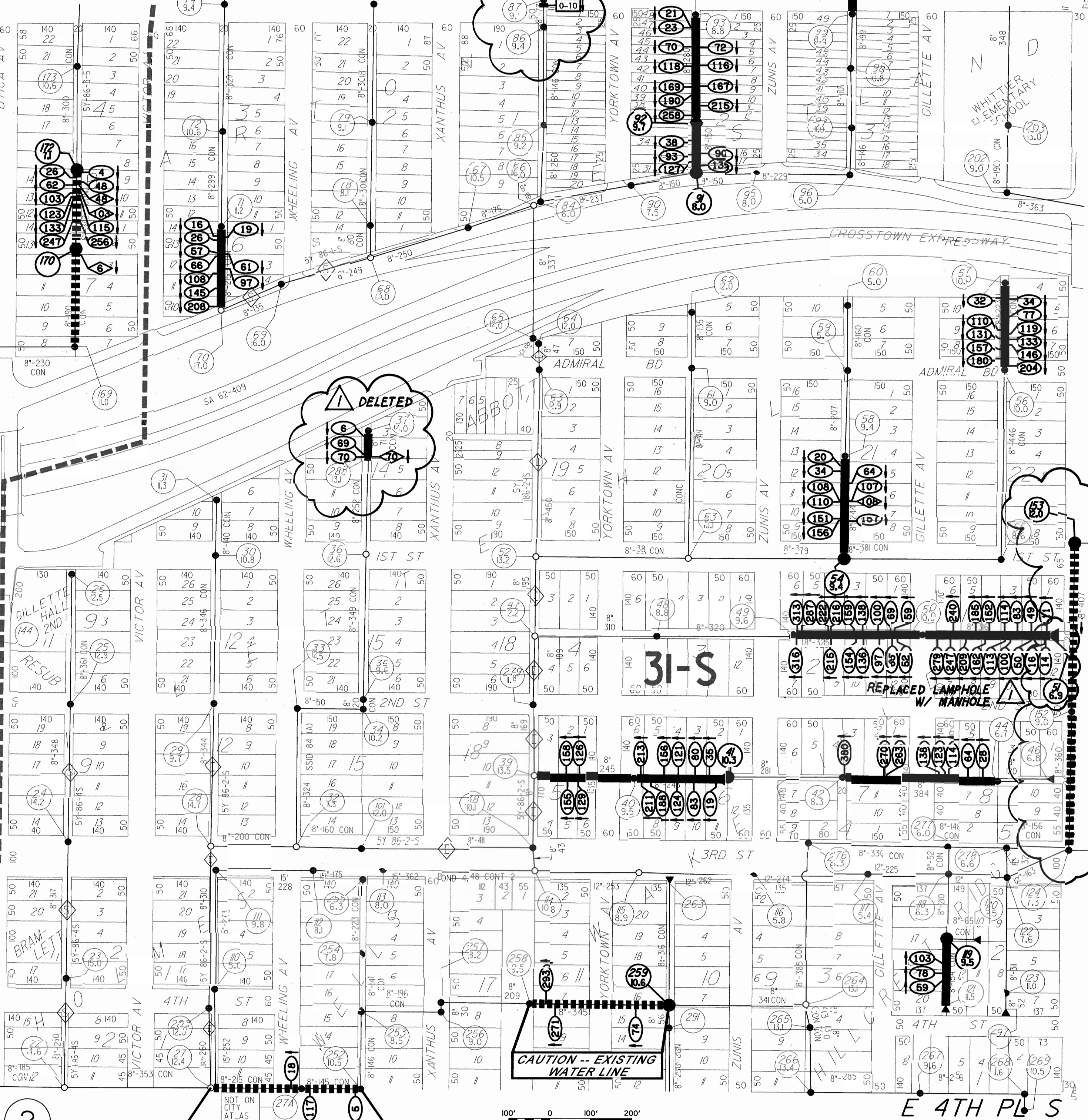
- MAINTENANCE AREA BOUNDARY
- MAINTENANCE AREA DESIGNATION
- MANHOLE, MANHOLE NO. & MANHOLE DEPTH
- DROP MANHOLE, MANHOLE NO. & MANHOLE DEPTH
- LAMPHOLE, LAMPHOLE NO. & DEPTH
- SEWER LINE (DIAMETER - LENGTH)

SEWER LINE REHABILITATION LEGEND

- RECONSTRUCT LINE WITH DUCTILE IRON PIPE
- PIPE LINING - SLIPLINED OR CURED-IN-PLACE
- NOT TELEVIEWED
- POINT REPAIR

24

2



MANHOLE REHABILITATION LEGEND

- MANHOLE TO BE REHABILITATED
- DROP MANHOLE TO BE REHABILITATED
- LAMPHOLE TO BE REHABILITATED
- 4 FT DIAMETER MANHOLE TO BE REPLACED WITH A 5 FT DIAMETER MANHOLE

REVISION	BY	DATE
RECORD DRAWING	CDB	2/28/05

ES 98-1
MIDTOWN EAST DISTRICT
SANITARY SEWER REHABILITATION AND REPLACEMENT
CONTRACT 3 - SEWER LINE AND MANHOLE REHABILITATION
ATLAS PAGE 9
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES DIVISION
CITY OF TULSA, OKLAHOMA



PLAN SCALE:	DRAWN	USI	I/O3	APPROVED:
P-SCALE:	DESIGNED	USI	I/O3	
PROFILE SCALE:	SURVEY	N/A	N/A	
HORIZONTAL:	FIELD MNGR.	ASR	9-02	
H-SCALE:	SECT. MNGR.	MB	9/03	
VERTICAL:	PROJ. MNGR.	MB	9-03	
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ATLAS PAGE NO. 9				

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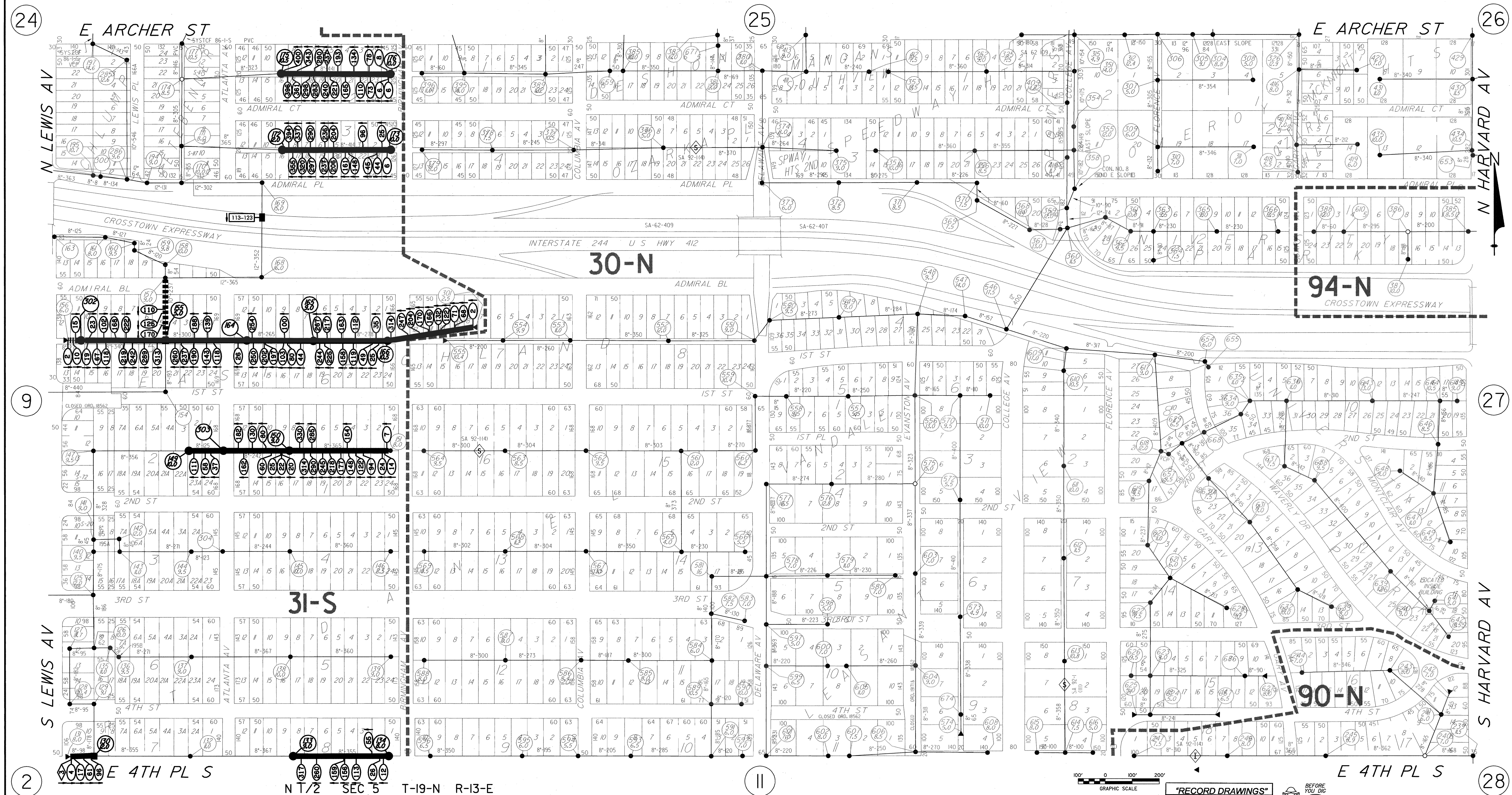
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11

UP-SIZED TO 12" BY BURSTING







SEWER ATLAS PAGE LEGEND

- 
-  MAINTENANCE AREA BOUNDARY
28-S
 MANHOLE, MANHOLE NO. & MANHOLE DEPTH
 DROP MANHOLE, MANHOLE NO. & MANHOLE DEPTH
 LAMPHOLE, LAMPHOLE NO. & DEPTH
 SEWER LINE (DIAMETER - LENGTH)

SEWER LINE REHABILITATION LEGEND

- | | | | |
|--|------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------|
| | <p>RECONSTRUCT LINE WITH
DUCTILE IRON PIPE -
PIPE CRUSHING OR PIPE BURSTING
(DIAMETER-LENGTH IN FEET)</p> | | <p>PIPE LINING -
SLIPLINED OR CURED-IN-PLACE
(DIAMETER-LENGTH IN FEET)</p> |
| | <p>PIPE LINING OR RECONSTRUCTION -
CURED-IN-PLACE, PIPE RAMMED,
PIPE CRUSHING OR PIPE BURSTING
(DIAMETER-LENGTH IN FEET)</p> | | <p>NOT TELEVISED:
ARROW INDICATES
DIRECTION NOT TELEVISED</p> |

MANHOLE REHABILITATION LEGEND

-  MANHOLE TO BE REHABILITATED
 DROP MANHOLE TO BE REHABILITATED
 LAMPHOLE TO BE REHABILITATED
 4 FT DIAMETER MANHOLE TO BE REPLACED WITH A 5 FT DIAMETER MANHOLE

REVISION	BY	DATE



"RECORD DRAWINGS"


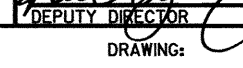
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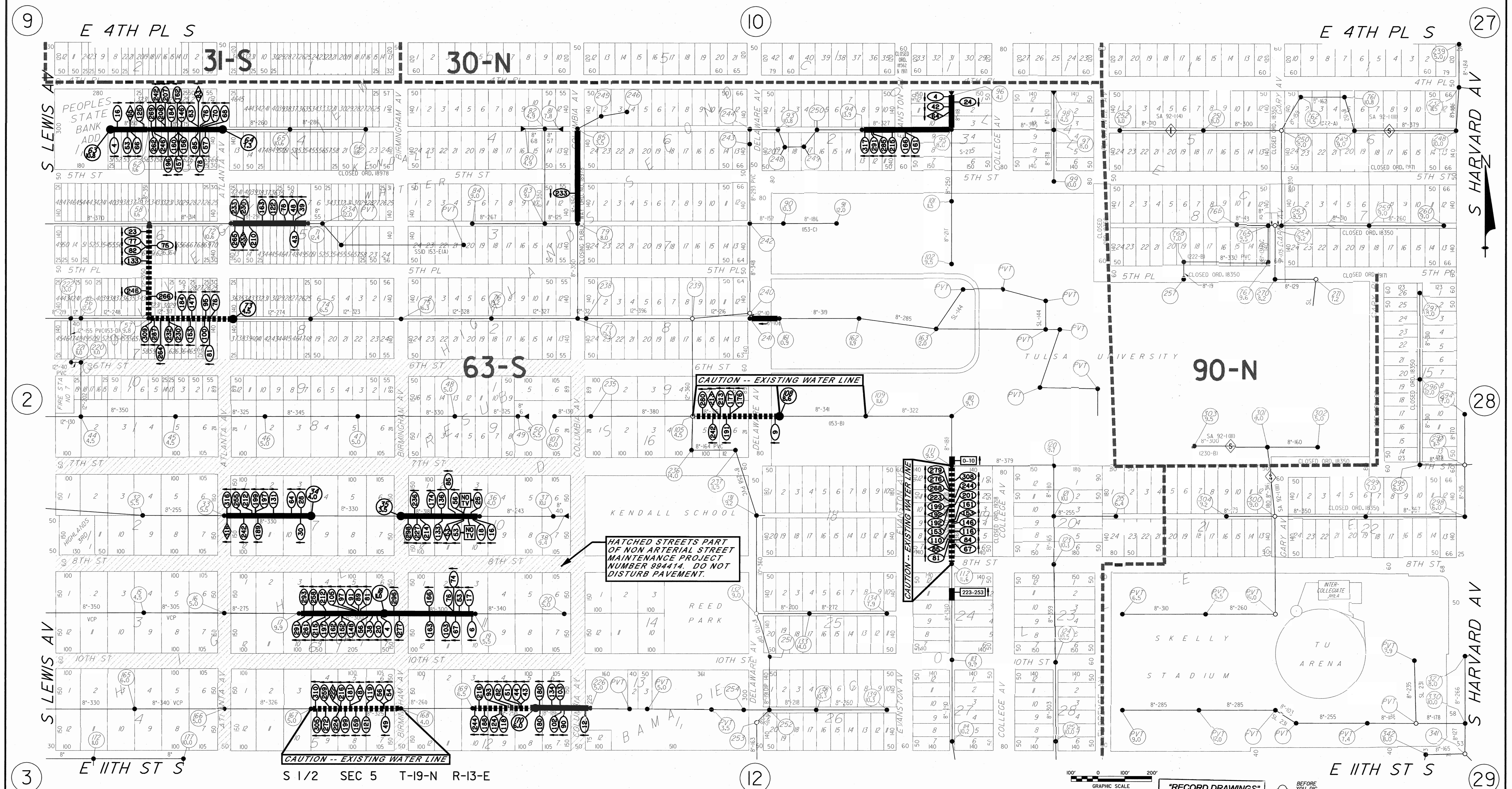
USINFRASTRUCTURE OF OKLAHOMA, INC.

BY: Andy D. Bink DATE: 2/26/05



ES 98-1	
MIDTOWN EAST DISTRICT SANITARY SEWER REHABILITATION AND REPLACEMENT CONTRACT 3 - SEWER LINE AND MANHOLE REHABILITATION ATLAS PAGE 10	
PUBLIC WORKS DEPARTMENT ENGINEERING SERVICES DIVISION CITY OF OKLAHOMA	
PLANS AND ESTIMATES PREPARED BY:	
	7666 E. GIST ST. SUITE 475 TULSA, OKLAHOMA 74033 PHONE: (918) 249-2208 FAX: (918) 249-9992
 INFRASTRUCTURE OF OKLAHOMA, INC.	

PLAN SCALE:	DRAWN	USI	1/03	APPROVED:
P-SCALE	DESIGNED	USI	1/03	
	SURVEY	N/A	N/A	
PROFILE SCALE:	FIELD MNGR.	ASR	9-03	 PUBLIC WORKS DIRECTOR
HORIZONTAL:	SECT. MNGR.	ASR	9/03	
H-SCALE	PROJ. MNGR.	MM	9.9.03	
VERTICAL:	RECOMMENDED			
V-SCALE	 DEPUTY DIRECTOR			
FILE:	DRAWINGS	DATE September 26 2003		
ATLAS PAGE NO. 10		SHEET 7	OF 11	SHEETS



SEWER ATLAS PAGE LEGEND

- MAINTENANCE AREA BOUNDARY
- MAINTENANCE AREA DESIGNATION
- MANHOLE, MANHOLE NO. & MANHOLE DEPTH
- DROP MANHOLE, MANHOLE NO. & MANHOLE DEPTH
- LAMPHOLE, LAMPHOLE NO. & DEPTH
- SEWER LINE (DIAMETER - LENGTH)

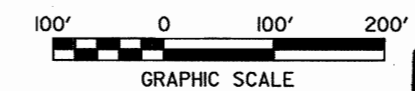
SEWER LINE REHABILITATION LEGEND

- RECONSTRUCT LINE WITH DUCTILE IRON PIPE, PIPE CRUSHING OR PIPE BURSTING (DIAMETER-LENGTH IN FEET)
- PIPE LINING - SLIPLINED OR CURED-IN-PLACE (DIAMETER-LENGTH IN FEET)
- PIPE LINING OR RECONSTRUCTION - CURED-IN-PLACE, PIPE REAMING, PIPE CRUSHING OR PIPE BURSTING (DIAMETER-LENGTH IN FEET)
- NOT TELEVIEWED: ARROW INDICATES DIRECTION NOT TELEVIEWED

MANHOLE REHABILITATION LEGEND

- MANHOLE TO BE REHABILITATED
- DROP MANHOLE TO BE REHABILITATED
- LAMPHOLE TO BE REHABILITATED
- 4 FT DIAMETER MANHOLE TO BE REPLACED WITH A 5 FT DIAMETER MANHOLE

REVISION	BY	DATE

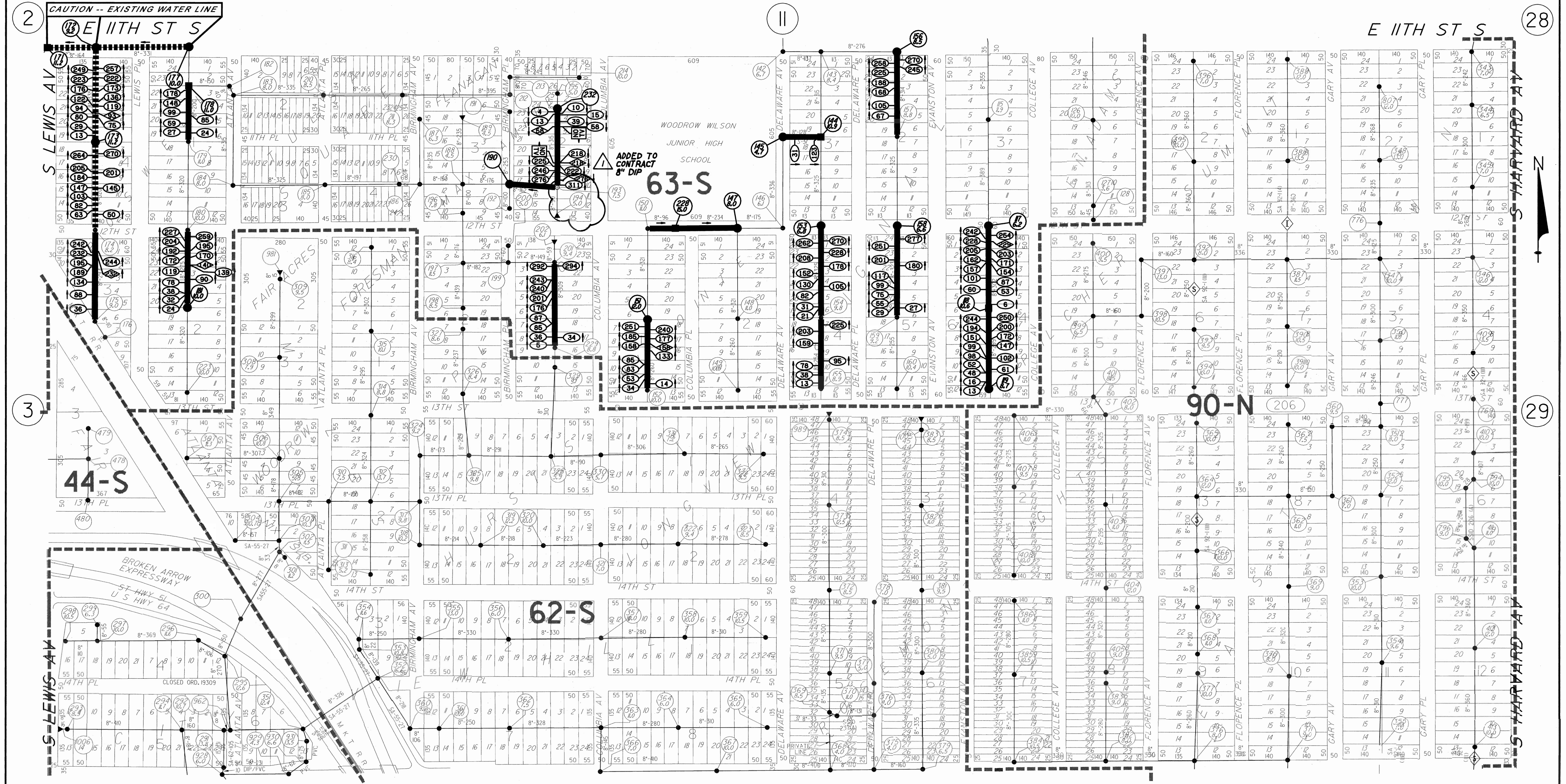


"RECORD DRAWINGS"
TO THE BEST OF OUR KNOWLEDGE FROM THE INFORMATION AVAILABLE, THESE RECORD DRAWINGS ARE IN SUBSTANTIAL COMPLIANCE WITH FIELD CONSTRUCTION.
USINFRASTRUCTURE OF OKLAHOMA, INC.
BY: *[Signature]* DATE: 2/24/05
CALL ONE 1-800-522-6543

ES 98-1
MIDTOWN EAST DISTRICT
SANITARY SEWER REHABILITATION AND REPLACEMENT
CONTRACT 3 - SEWER LINE AND MANHOLE REHABILITATION
ATLAS PAGE II
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES DIVISION
CITY OF TULSA, OKLAHOMA
PLANS AND ESTIMATES PREPARED BY:
USINFRASTRUCTURE OF OKLAHOMA, INC.
7666 E. 61ST ST. SUITE 475
TULSA, OKLAHOMA 74133
PHONE: 1981 249-2208
FAX: 1981 249-9992



PLAN SCALE:	DRAWN	USI	I/O3	APPROVED:
P-SCALE:	DESIGNED	USI	I/O3	
PROFILE SCALE:	SURVEY	N/A	N/A	
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H-SCALE:	SECT. MNGR.			
VERTICAL:	PROJ. MNGR.			
V-SCALE:				
FILE:				
ATLAS PAGE NO. II				
DATE	September 26, 2003			
SHEET	8	OF	11	SHEETS



28-S

MAINTENANCE AREA BOUNDARY

MAINTENANCE AREA DESIGNATION

MANHOLE, MANHOLE NO. & MANHOLE DEPTH

DROP MANHOLE, MANHOLE NO. & MANHOLE DEPTH

LAMPHOLE, LAMPHOLE NO. & DEPTH

SEWER LINE (DIAMETER - LENGTH)

SEWER ATLAS PAGE LEGEND

62-S

RECONSTRUCT LINE WITH DUCTILE IRON PIPE, PIPE CRUSHING OR PIPE BURSTING (DIAMETER-LENGTH IN FEET)

PIPE LINING OR RECONSTRUCTION - CURED-IN-PLACE, PIPE REAMING, PIPE CRUSHING OR PIPE BURSTING (DIAMETER-LENGTH IN FEET)

PIPE LINING - SPLITLINED OR CURED-IN-PLACE (DIAMETER-LENGTH IN FEET)

NOT TELEVIEWED: ARROW INDICATES DIRECTION NOT TELEVIEWED

SERVICE RECONNECTION: DIRECTION OF FLOW AND APPROXIMATE DISTANCE FROM UPSTREAM MANHOLE

OBSTRUCTION: DIRECTION OF FLOW AND APPROXIMATE DISTANCE FROM UPSTREAM MANHOLE

POINT REPAIR: DIRECTION OF FLOW AND APPROXIMATE DISTANCE FROM UPSTREAM MANHOLE

SEWER LINE REHABILITATION LEGEND

MANHOLE TO BE REHABILITATED

DROP MANHOLE TO BE REHABILITATED

LAMPHOLE TO BE REHABILITATED

4 FT DIAMETER MANHOLE TO BE REPLACED WITH A 5 FT DIAMETER MANHOLE

MANHOLE REHABILITATION LEGEND

REVISION

RECORD DRAWING

BY

CDB

DATE

2/28/05

REVISION

RECORD DRAWING

BY

CDB

DATE

2/28/05

ES 98-1

MIDTOWN EAST DISTRICT

SANITARY SEWER REHABILITATION AND REPLACEMENT

CONTRACT 3 - SEWER LINE AND MANHOLE REHABILITATION

ATLAS PAGE 12

PUBLIC WORKS DEPARTMENT

ENGINEERING SERVICES DIVISION

CITY OF TULSA, OKLAHOMA

PLANS AND ESTIMATES PREPARED BY:

USI INFRASTRUCTURE OF OKLAHOMA, INC.

7666 E. 61ST ST., SUITE 475

TULSA, OKLAHOMA 74133

PHONE: (918) 249-2208

FAX: (918) 249-9922

PLAN SCALE:

P-SCALE:

PROFILE SCALE:

HORIZONTAL:

V-SCALE:

ATLAS PAGE NO. 12

DRAWN

DESIGNED

SURVEY

FIELD MGR.

SECT. MGR.

PROJ. MGR.

RECOMMENDED

DATE

September 26, 2003

SHEET

9

OF

11

SHEETS

46

E LATIMER ST

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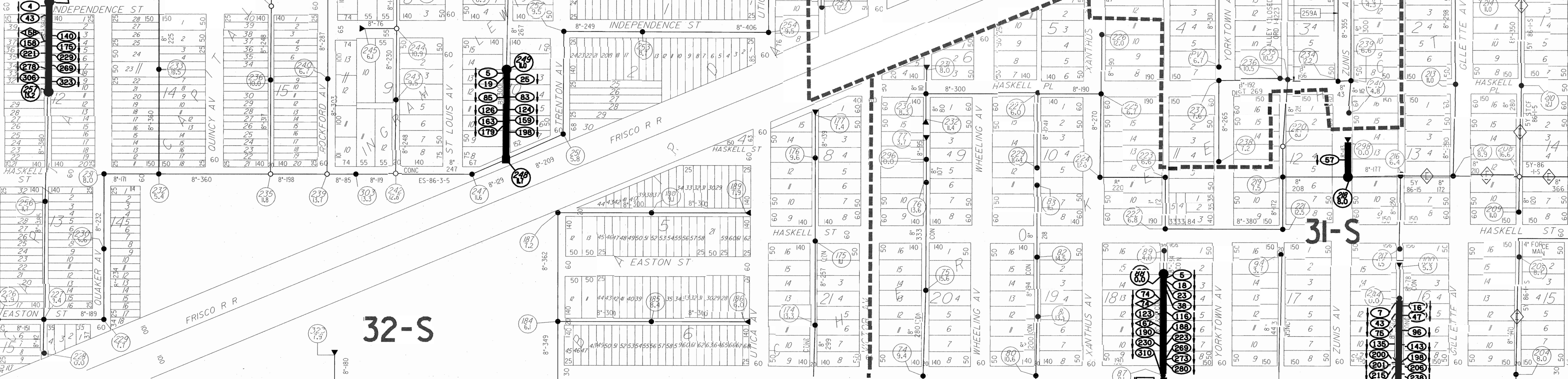
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E LATIMER ST

N LEWIS AV

23

N PEORIA AV



25

8

E ARCHER ST

S 1/2 SEC 31 T-20-N R-13-E

9

E ARCHER ST

10

SEWER ATLAS PAGE LEGEND

- MAINTENANCE AREA BOUNDARY
- MAINTENANCE AREA DESIGNATION
- MANHOLE, MANHOLE NO. & MANHOLE DEPTH
- DROP MANHOLE, MANHOLE NO. & MANHOLE DEPTH
- LAMPHOLE, LAMPHOLE NO. & DEPTH
- SEWER LINE (DIAMETER - LENGTH)

SEWER LINE REHABILITATION LEGEND

- RECONSTRUCT LINE WITH DUCTILE IRON PIPE, PIPE CRUSHING OR PIPE BURSTING (DIAMETER-LENGTH IN FEET)
- PIPE LINING - SLIPLINED OR CURED-IN-PLACE (DIAMETER-LENGTH IN FEET)
- PIPE LINING OR RECONSTRUCTION - CURED-IN-PLACE, PIPE REAMING, PIPE CRUSHING OR PIPE BURSTING (DIAMETER-LENGTH IN FEET)
- NOT TELEVIEWED; DIRECTION NOT TELEVIEWED

MANHOLE REHABILITATION LEGEND

- MANHOLE TO BE REHABILITATED
- DROP MANHOLE TO BE REHABILITATED
- LAMPHOLE TO BE REHABILITATED
- 4 FT DIAMETER MANHOLE TO BE REPLACED WITH A 5 FT DIAMETER MANHOLE

SERVICE RECONNECTION:
DIRECTION OF FLOW AND APPROXIMATE DISTANCE FROM UPSTREAM MANHOLE

OBSTRUCTION:
DIRECTION OF FLOW AND APPROXIMATE DISTANCE FROM UPSTREAM MANHOLE

POINT REPAIR:
DIRECTION OF FLOW AND APPROXIMATE DISTANCE FROM UPSTREAM MANHOLE

"RECORD DRAWINGS"

TO THE BEST OF OUR KNOWLEDGE, FROM THE INFORMATION AVAILABLE, THESE RECORD DRAWINGS ARE IN SUBSTANTIAL COMPLIANCE WITH FIELD CONSTRUCTION.

USINFRASTRUCTURE OF OKLAHOMA, INC.
DATE: 2/26/05

ES 98-1
MIDTOWN EAST DISTRICT
SANITARY SEWER REHABILITATION AND REPLACEMENT
CONTRACT 3 - SEWER LINE AND MANHOLE REHABILITATION
ATLAS PAGE 24

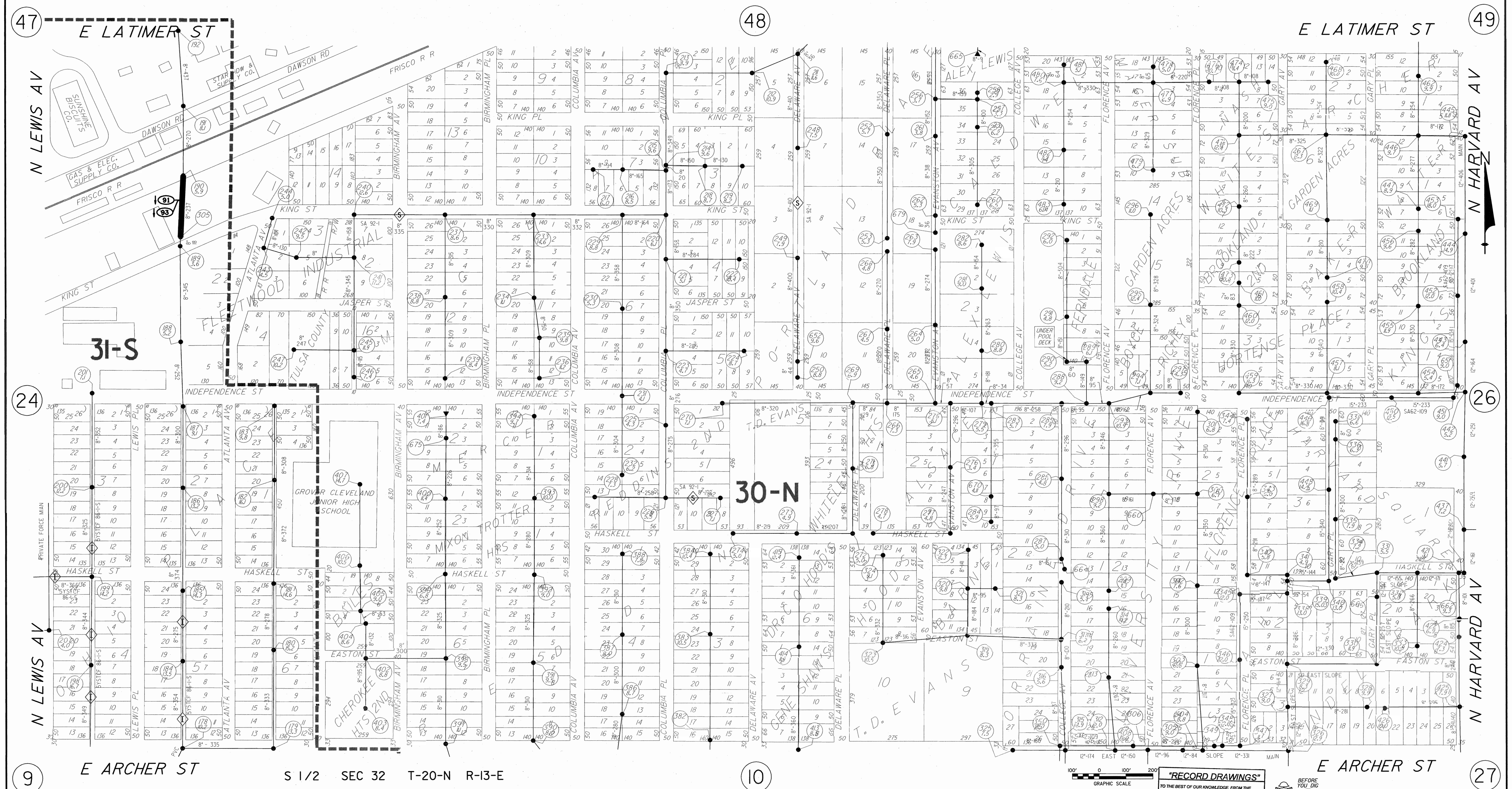
PUBLIC WORKS DEPARTMENT
ENGINEERING SERVICES DIVISION
CITY OF TULSA, OKLAHOMA

PLANS AND ESTIMATES PREPARED BY:
USINFRASTRUCTURE OF OKLAHOMA, INC.

7666 E. 61ST ST., SUITE 475
TULSA, OKLAHOMA 74133
PHONE: (918) 249-2208
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PLAN SCALE: DRAWN: USI 1/03
P-SCALE: DESIGNED: USI 1/03
PROFILE SCALE: SURVEY: N/A N/A
HORIZONTAL: FIELD MGR.: ASH 9/03
H-SCALE: SECT. MGR.: JEB 7/02
VERTICAL: PROJ. MGR.: MW 9.9.03
V-SCALE: RECOMMENDED: [Signature]
FILE: DRAWING: [Signature]
ATLAS PAGE NO. 24

APPROVED:
DATE: September 26, 2003
SHEET 10 OF 11 SHEETS



SEWER ATLAS PAGE LEGEND

- MAINTENANCE AREA BOUNDARY
- MAINTENANCE AREA DESIGNATION
- MANHOLE, MANHOLE NO. & MANHOLE DEPTH
- DROP MANHOLE, MANHOLE NO. & MANHOLE DEPTH
- LAMPHOLE, LAMPHOLE NO. & DEPTH
- SEWER LINE (DIAMETER - LENGTH)

SEWER LINE REHABILITATION LEGEND

- RECONSTRUCT LINE WITH DUCTILE IRON PIPE
- PIPE LINING - SLIPLINED OR CURED-IN-PLACE
- NOT TELEVIEWED
- POINT REPAIR

MANHOLE REHABILITATION LEGEND

- MANHOLE TO BE REHABILITATED
- DROP MANHOLE TO BE REHABILITATED
- LAMPHOLE TO BE REHABILITATED
- 4 FT DIAMETER MANHOLE TO BE REPLACED WITH A 5 FT DIAMETER MANHOLE

REVISION	BY	DATE

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MIDTOWN EAST DISTRICT

SANITARY SEWER REHABILITATION AND REPLACEMENT CONTRACT 3 - SEWER LINE AND MANHOLE REHABILITATION ATLAS PAGE 25

PUBLIC WORKS DEPARTMENT

ENGINEERING SERVICES DIVISION

CITY OF TULSA, OKLAHOMA

USI OF OKLAHOMA, INC.

BEFORE YOU DIG

CALL OKIE 1-800-522-6543

PLAN SCALE:	DRAWN	USI	1/03	APPROVED:
P-SCALE:	DESIGNED	USI	1/03	
PROFILE SCALE:	SURVEY	N/A	N/A	
HORIZONTALS:	FIELD MNGR.			
H-SCALE:	SECT. MNGR.			
V-SCALE:	PROJ. MNGR.			
FILE:	RECOMMENDED			
ATLAS PAGE NO. 25	DATE	September 26, 2003	SHEET	11 OF 11 SHEETS