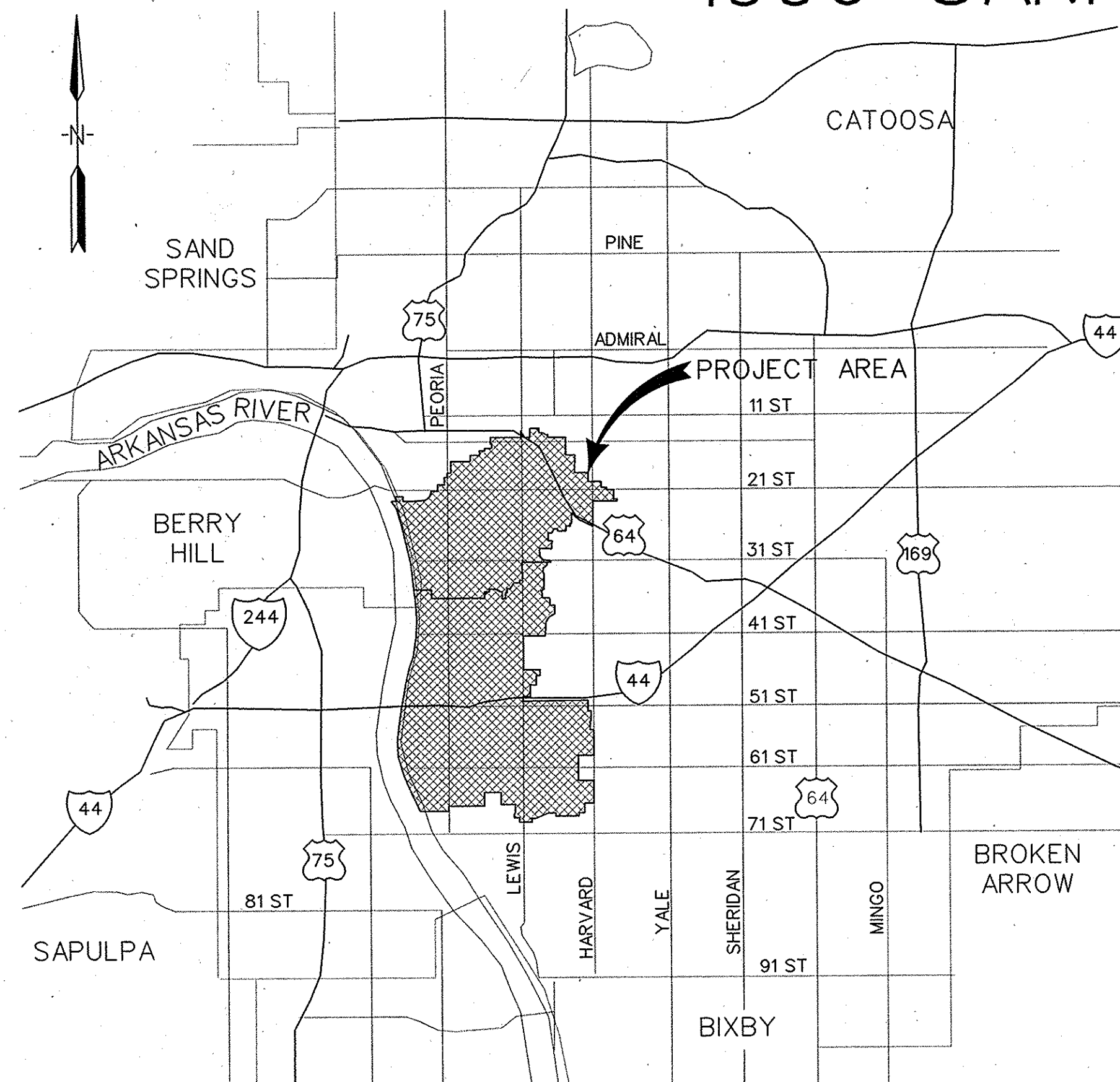


TULSA METROPOLITAN UTILITY AUTHORITY

1996 SANITARY SEWER PROJECT NO. ES 96-07



LOCATION MAP
NOT TO SCALE

SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108
Contract No.5
POINT REPAIRS,
CURED IN PLACE PIPE LINING
AND MANHOLE REHABILITATION

APPROVED BY:

Charles Hardt
MR. CHARLES HARDT, P.E.
DIRECTOR OF PUBLIC WORKS

5/3/00
DATE

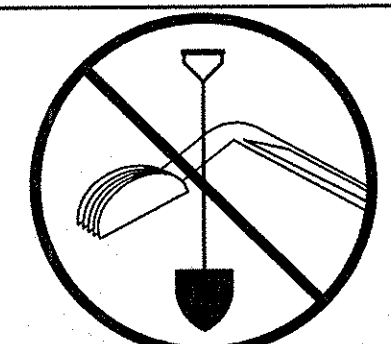


04/26/00

ENGINEERS
ARCHITECTS
CONSULTANTS

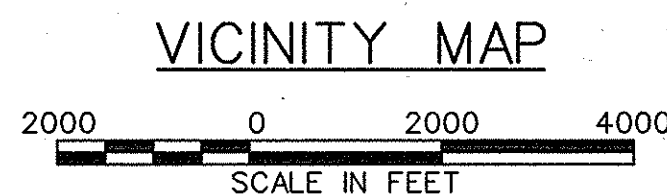
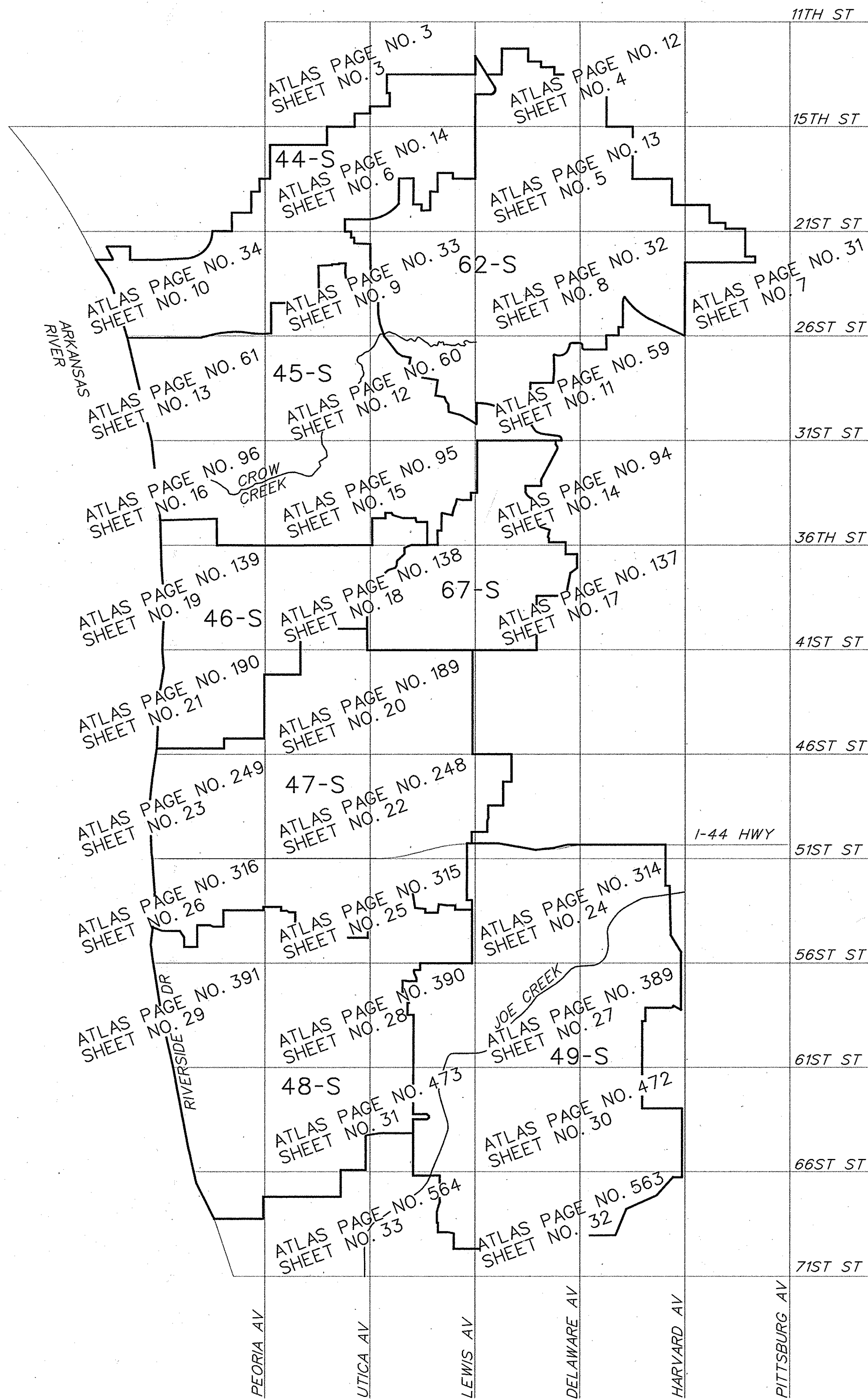
Burns
&
McDonnell

6450 SOUTH LEWIS AVENUE
SUITE 220
TULSA, OKLAHOMA 74136



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SHEET 1 OF 37 SHEETS

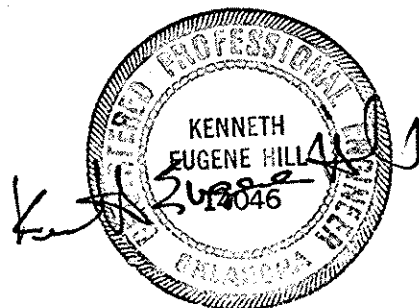


REHABILITATION GENERAL NOTES

1. ALL MANHOLES, PIPE SIZES, OBSERVATIONS, DEFECTS, UTILITIES (ABOVE AND BELOW GROUND) AND THEIR LOCATIONS ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE TO THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY ALL INFORMATION BEFORE ANY CONSTRUCTION MATERIALS ARE ORDERED. UTILITIES DAMAGED THROUGH THE NEGLIGENCE OF THE CONTRACTOR TO OBTAIN THE LOCATION OF SAME SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT HIS EXPENSE.
2. THE CONTRACTOR SHALL VERIFY PRIOR TO CONSTRUCTION ALL LIVE SERVICE CONNECTIONS AND RESTORE ONLY THOSE LIVE CONNECTIONS. CONTRACTOR SHALL SUBMIT STATIONING, FROM DOWNSTREAM MANHOLE, AND HOUSE/BUILDING ADDRESS FOR AS BUILT DRAWINGS. SERVICE CONNECTIONS ARE SHOWN ACCORDING TO TELEVISION INSPECTION INFORMATION.
3. PRIOR TO PIPELINE REPAIR, CONTRACTOR SHALL REMOVE ALL DEBRIS AND BLOCKAGES IN ORDER TO CLEAN AND RE-TELEVISION, IN COLOR, ALL LINES DESIGNATED FOR REHABILITATION.
4. IF INVERSION LINING OR SLIPLINING IS USED, THE CONTRACTOR SHALL REMOVE THAT PORTION OF PROTRUDING TAPS EXTENDING INTO THE PIPE BY SAW CUTTING. BREAKING OF THE PROTRUDING TAP WILL NOT BE ALLOWED.
5. EMBEDMENT FOR ALL PIPES WILL BE AS SHOWN IN THE CITY STANDARD DETAILS EXCEPT WHERE NOTED OTHERWISE ON DRAWINGS.
6. THE CONTRACTOR SHALL HAVE, AT A MINIMUM, ONE (1) EXECUTED COPY OF THE CONTRACT DOCUMENTS AT THE JOB SITE AT ALL TIMES.
7. DRIVEWAYS, SIDEWALKS, FENCES, SHRUBS, ORNAMENTAL AND FRUIT TREES AND OTHER AREAS DISTURBED BY THE CONTRACTOR SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THAT EXISTING BEFORE DAMAGE OCCURRED.
8. SAW-CUTS REQUIRED FOR REMOVAL AND REPLACEMENT ITEMS SHALL BE THE FULL DEPTH OF THE EXISTING SURFACE MATERIAL. SAW-CUTS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS REMOVAL AND REPLACEMENT ITEMS REQUIRED.
9. THE CONTRACTOR SHALL PROVIDE ALL CONSTRUCTION STAKING FOR THE PROJECT AND SUCH STAKING SHALL BE CONSIDERED SUBSIDIARY TO THE CONTRACT AMOUNT. ENGINEER TO BE PROVIDED WITH COPIES OF ALL SURVEY FIELD NOTES.
10. ALL UNSUITABLE MATERIALS REMOVED DURING TRENCHING AND EXCAVATION SHALL BE DISPOSED OF AT A SITE APPROVED BY THE OWNER. STOCKPILING OF EXCAVATED MATERIAL IN STREET OR ALLEY RIGHTS-OF-WAY MAY BE ALLOWED UPON APPROVAL BY THE OWNER.
11. ALL VITRIFIED CLAY PIPE USED FOR CONSTRUCTION SHALL BE EXTRA STRENGTH.
12. SIDEWALKS, CURBS AND PAVEMENTS SHALL BE FINISHED TO MATCH EXISTING SURROUNDING SURFACES.
13. IF CURED-IN-PLACE SECTIONAL AND SPOT REPAIR IS USED, THE CONTRACTOR SHALL REMOVE THAT PORTION OF PROTRUDING TAPS EXTENDING INTO THE PIPE IN ACCORDANCE WITH THE CITY OF TULSA SPECIFICATION.

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4	BASE SHEET (ATLAS PAGE 12)
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35-36	MANHOLE REHABILITATION SCHEDULE
37	CURED IN PLACE PIPE LINING SCHEDULE



NOTES, DRAWING INDEX, VICINITY MAP

Contract No. 5
TRENCHLESS POINT REPAIRS,
CURED IN PLACE PIPE LINING
& MANHOLE REHABILITATION

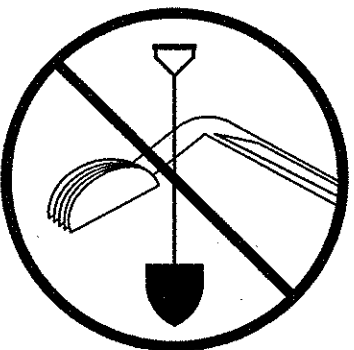
SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108



TULSA METROPOLITAN
UTILITY AUTHORITY
PROJECT NO. ES 96-07

PLANS AND ESTIMATES PREPARED BY: Burns & McDonnell

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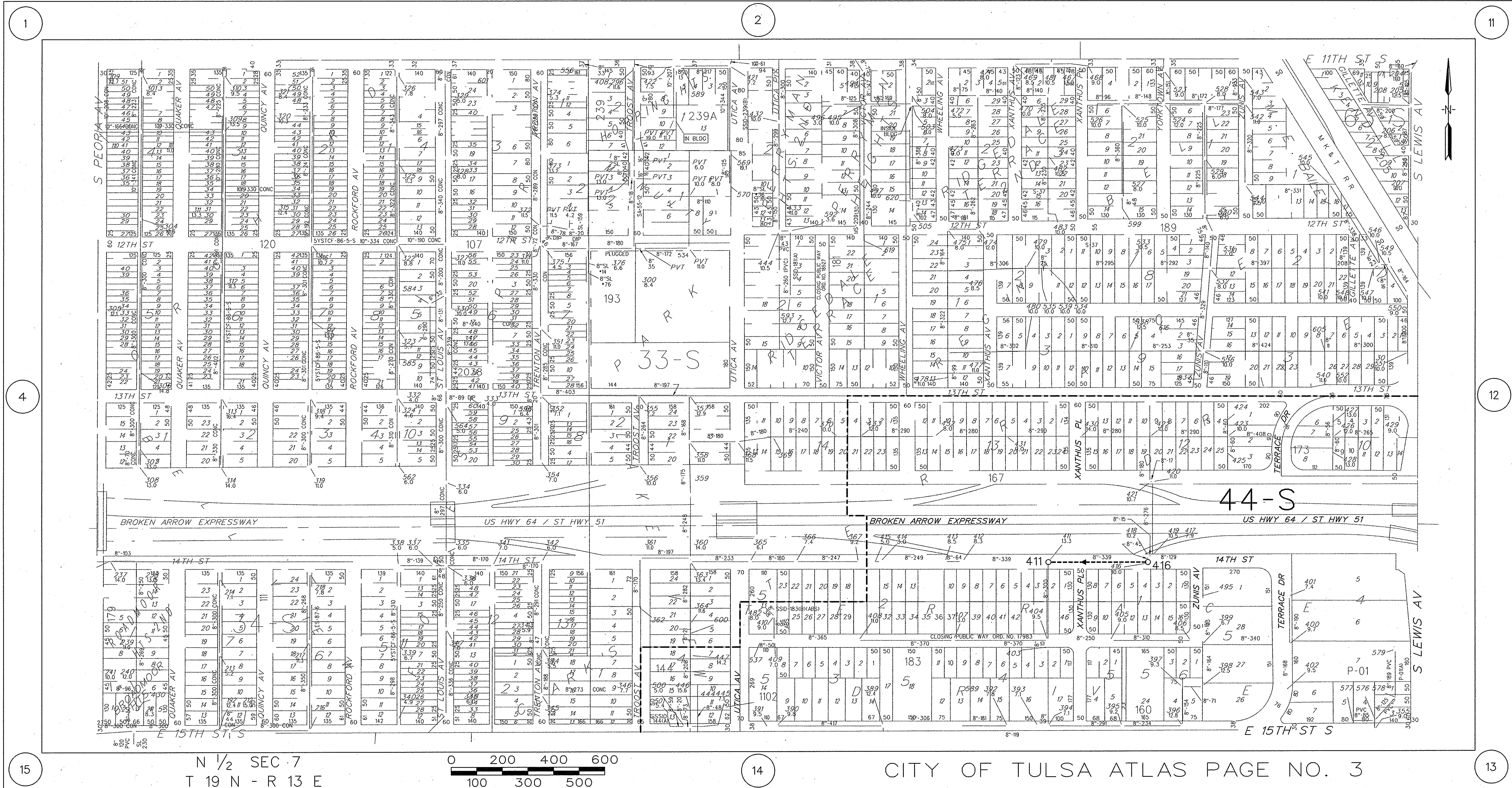
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DATE 5/3/00

SHEET 2 OF 37 SHEETS



LEGEND

44-S

MAINTENANCE AREA

MAINTENANCE AREA BOUNDARY

EXISTING MANHOLE

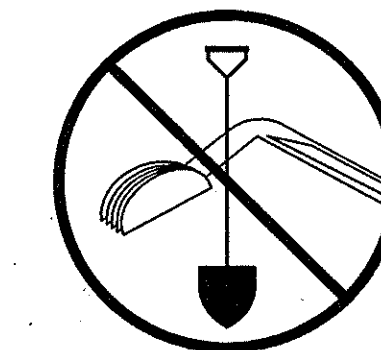
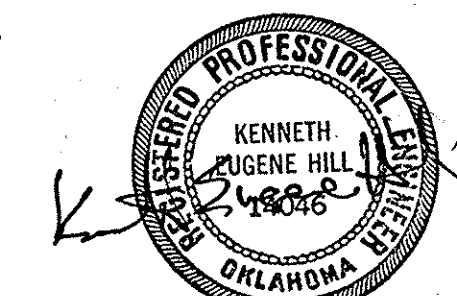
MANHOLE REHABILITATION - SEE SCHEDULE

MANHOLE NUMBER

DIRECTION OF FLOW

SEWER LINE, POINT REPAIR - SEE SCHEDULE

CURED IN PLACE PIPE LINING - SEE SCHEDULE



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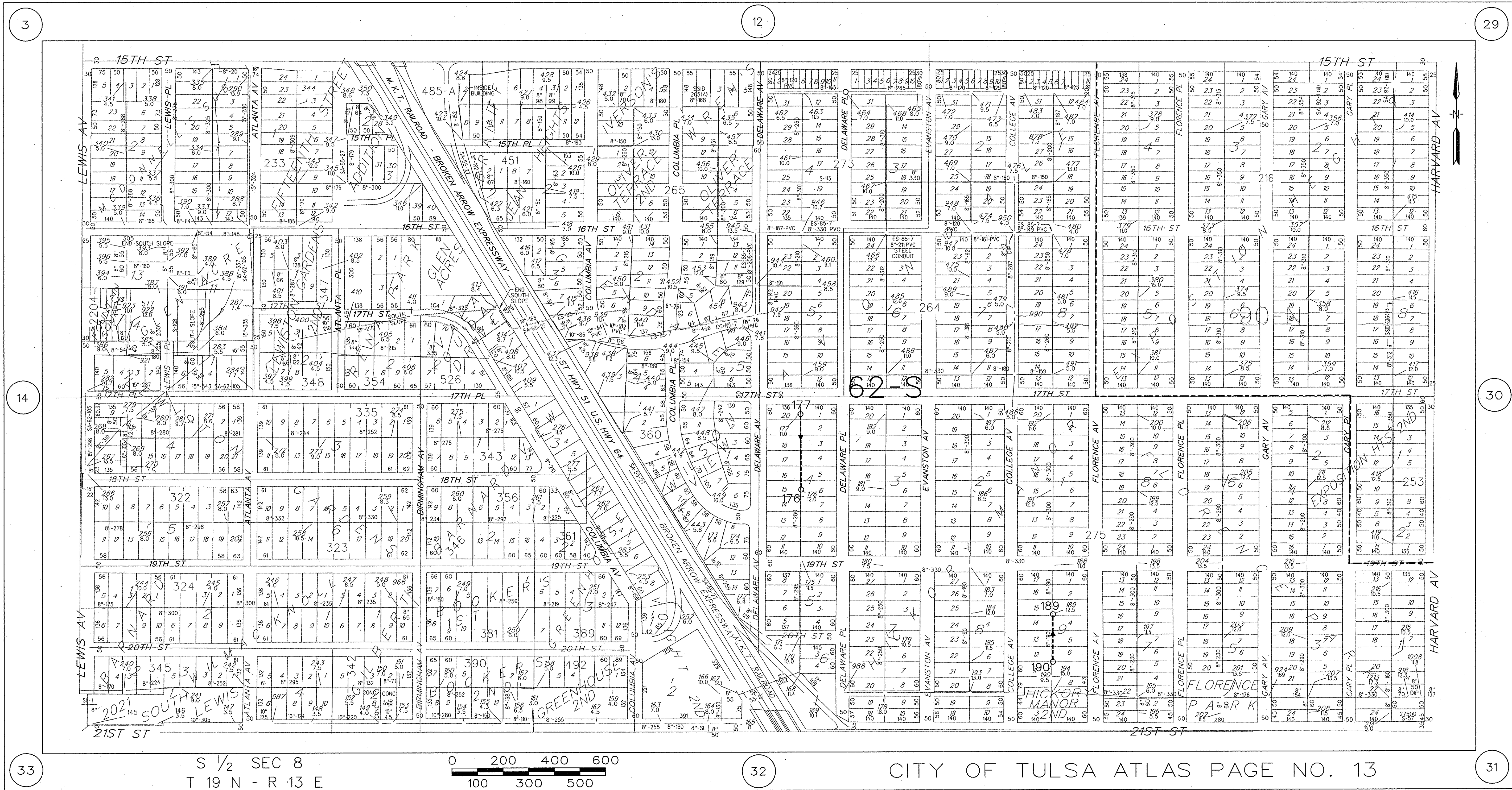
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TRENCHLESS POINT REPAIRS,
CURED IN PLACE PIPE LINING
& MANHOLE REHABILITATION

SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108

TULSA METROPOLITAN
UTILITY AUTHORITY
PROJECT NO. ES 96-07

PLANS AND ESTIMATES PREPARED BY: Burns & McDonnell

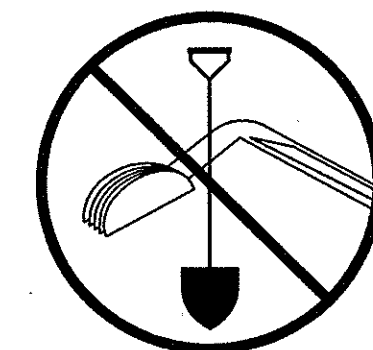
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**LEGEND****44-S**

- MAINTENANCE AREA
- MAINTENANCE AREA BOUNDARY
- EXISTING MANHOLE
- MANHOLE REHABILITATION - SEE SCHEDULE
- MANHOLE NUMBER
- DIRECTION OF FLOW
- SEWER LINE, POINT REPAIR - SEE SCHEDULE
- CURED IN PLACE PIPE LINING - SEE SCHEDULE

0 200 400 600
100 300 500

CITY OF TULSA ATLAS PAGE NO. 13



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Contract No. 5
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CURED IN PLACE PIPE LINING
& MANHOLE REHABILITATION
SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108
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PROJECT NO. ES 96-07

PLANS AND ESTIMATES PREPARED BY: Burns & McDonnell

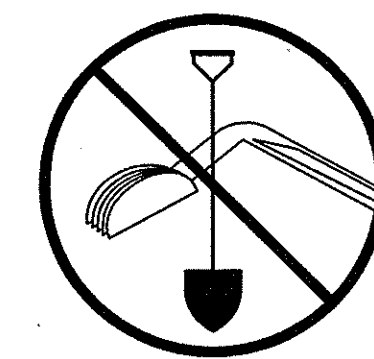
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PUBLIC WORKS DIRECTOR
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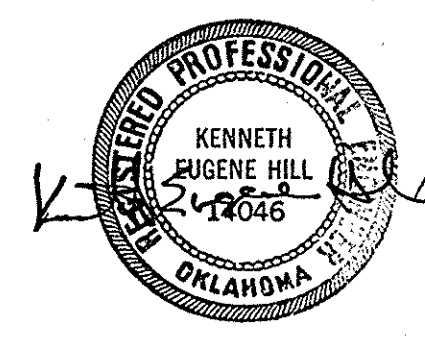


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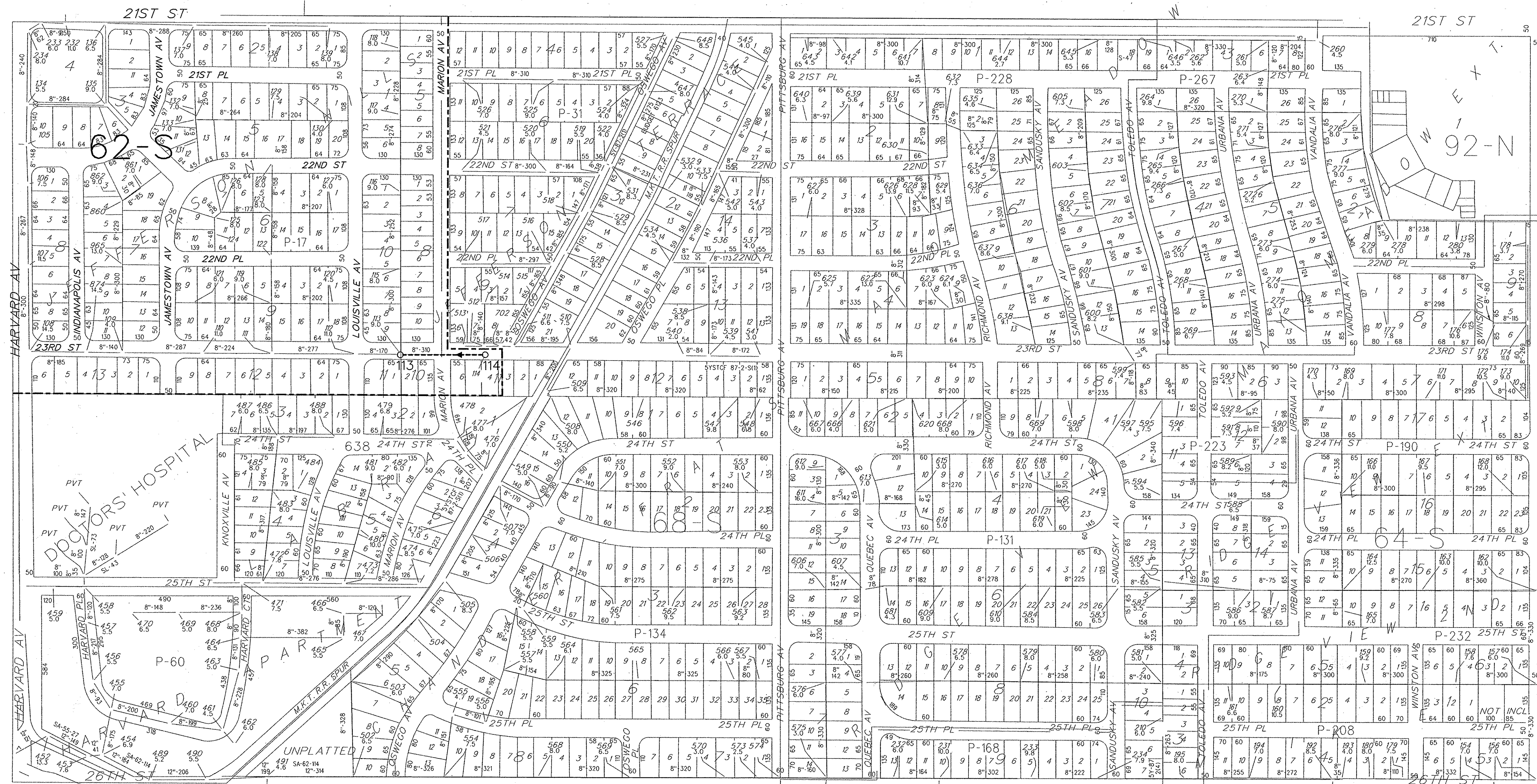
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- EXISTING MANHOLE
- MANHOLE REHABILITATION - SEE SCHEDULE
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- ▲ DIRECTION OF FLOW
- X --- SEWER LINE, POINT REPAIR - SEE SCHEDULE
- CURED IN PLACE PIPE LINING - SEE SCHEDULE



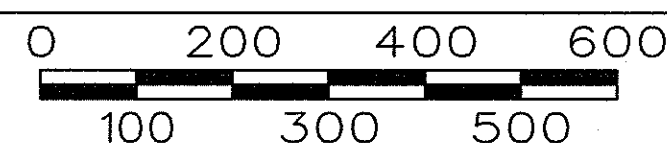
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Contract No. 5 TRENCHLESS POINT REPAIRS, CURED IN PLACE PIPE LINING & MANHOLE REHABILITATION			
SOUTHSIDE BASIN REHABILITATION ACCOUNT NO. 6311-5455603-040522960108			
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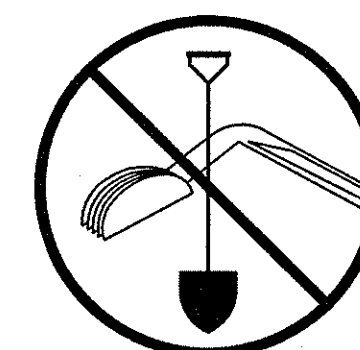
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44-S

MAINTENANCE AREA
MAINTENANCE AREA BOUNDARY
EXISTING MANHOLE
MANHOLE REHABILITATION - SEE SCHEDULE
MANHOLE NUMBER
DIRECTION OF FLOW
SEWER LINE, POINT REPAIR - SEE SCHEDULE
CURED IN PLACE PIPE LINING - SEE SCHEDULE

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Contract No. 5
TRENCHLESS POINT REPAIRS,
CURED IN PLACE PIPE LINING
& MANHOLE REHABILITATION

SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108

TULSA METROPOLITAN
UTILITY AUTHORITY
PROJECT NO. ES 96-07

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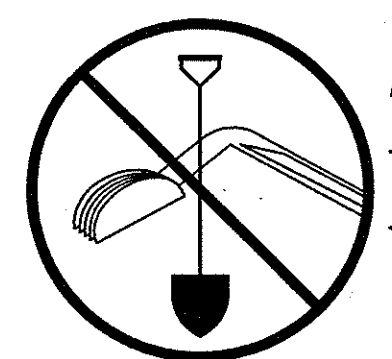
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LEGEND

- 44-S MAINTENANCE AREA
- MAINTENANCE AREA BOUNDARY
- EXISTING MANHOLE
- MANHOLE REHABILITATION - SEE SCHEDULE
- 432 MANHOLE NUMBER
- ▲ DIRECTION OF FLOW
- X— SEWER LINE, POINT REPAIR - SEE SCHEDULE
- CURED IN PLACE PIPE LINING - SEE SCHEDULE



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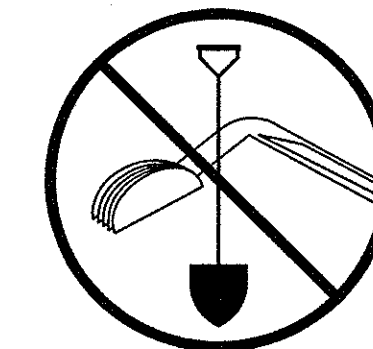
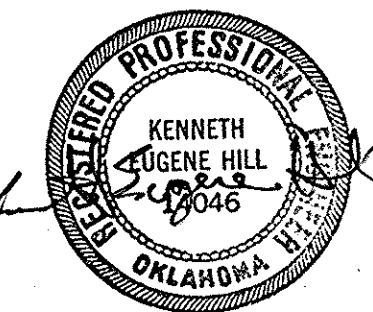
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SOUTHIDE BASIN REHABILITATION		ACCOUNT NO. 6311-5455603-040522960108	
TULSA METROPOLITAN UTILITY AUTHORITY		PROJECT NO. ES 96-07	
PLANS AND ESTIMATES PREPARED BY:		Burns & McDonnell	
CONTRACT NO. 5		TRENCHLESS POINT REPAIRS, CURED IN PLACE PIPE LINING & MANHOLE REHABILITATION	
PUBLIC WORKS DIRECTOR		DATE 5/3/02	
SHEET 8 OF 37 SHEETS			



LEGEND

- 44-S MAINTENANCE AREA
- MAINTENANCE AREA BOUNDARY
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- MANHOLE REHABILITATION - SEE SCHEDULE
- MANHOLE NUMBER
- DIRECTION OF FLOW
- SEWER LINE, POINT REPAIR - SEE SCHEDULE
- CURED IN PLACE PIPE LINING - SEE SCHEDULE



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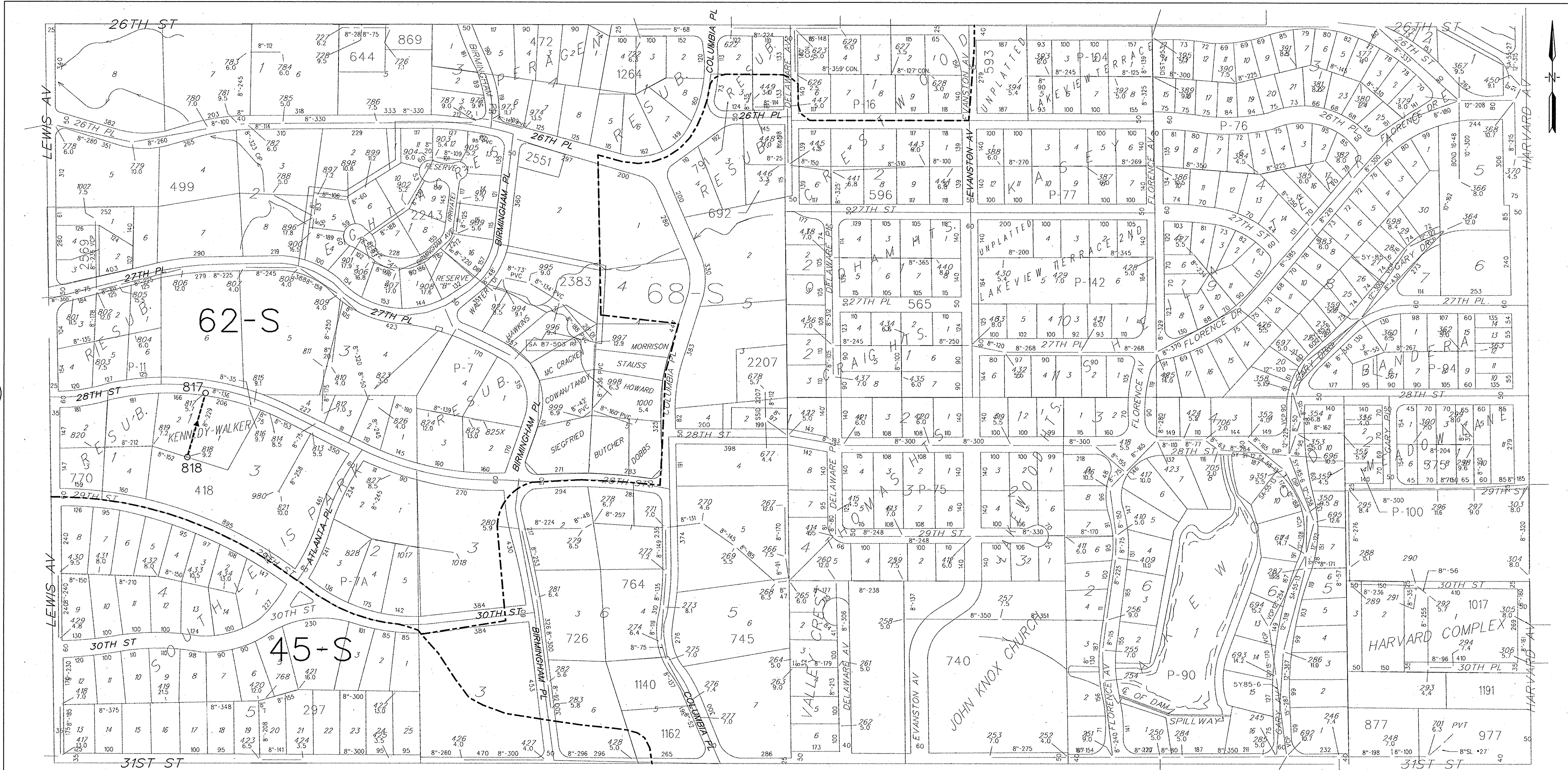
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Contract No. 5
TRENCHLESS POINT REPAIRS,
CURED IN PLACE PIPE LINING
& MANHOLE REHABILITATION

SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108

TULSA METROPOLITAN
UTILITY AUTHORITY
PROJECT NO. ES 96-07

PLANS AND ESTIMATES PREPARED BY: Burns & McDonnell



S 1/2 SEC 17
T 19 N - R 13 E

CITY OF TULSA ATLAS PAGE NO. 59

LEGEND

44-S

MAINTENANCE AREA

MAINTENANCE AREA BOUNDARY

EXISTING MANHOLE

MANHOLE REHABILITATION - SEE SCHEDULE

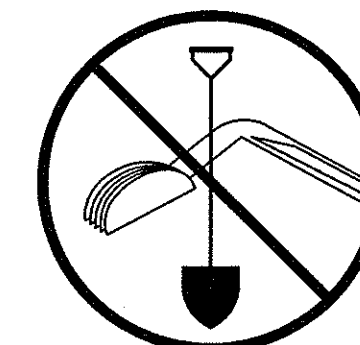
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MANHOLE NUMBER

DIRECTION OF FLOW

SEWER LINE, POINT REPAIR - SEE SCHEDULE

CURED IN PLACE PIPE LINING - SEE SCHEDULE



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Contract No. 5
TRENCHLESS POINT REPAIRS,
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SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108

TULSA METROPOLITAN
UTILITY AUTHORITY

PROJECT NO. ES 96-07

PLANS AND ESTIMATES PREPARED BY

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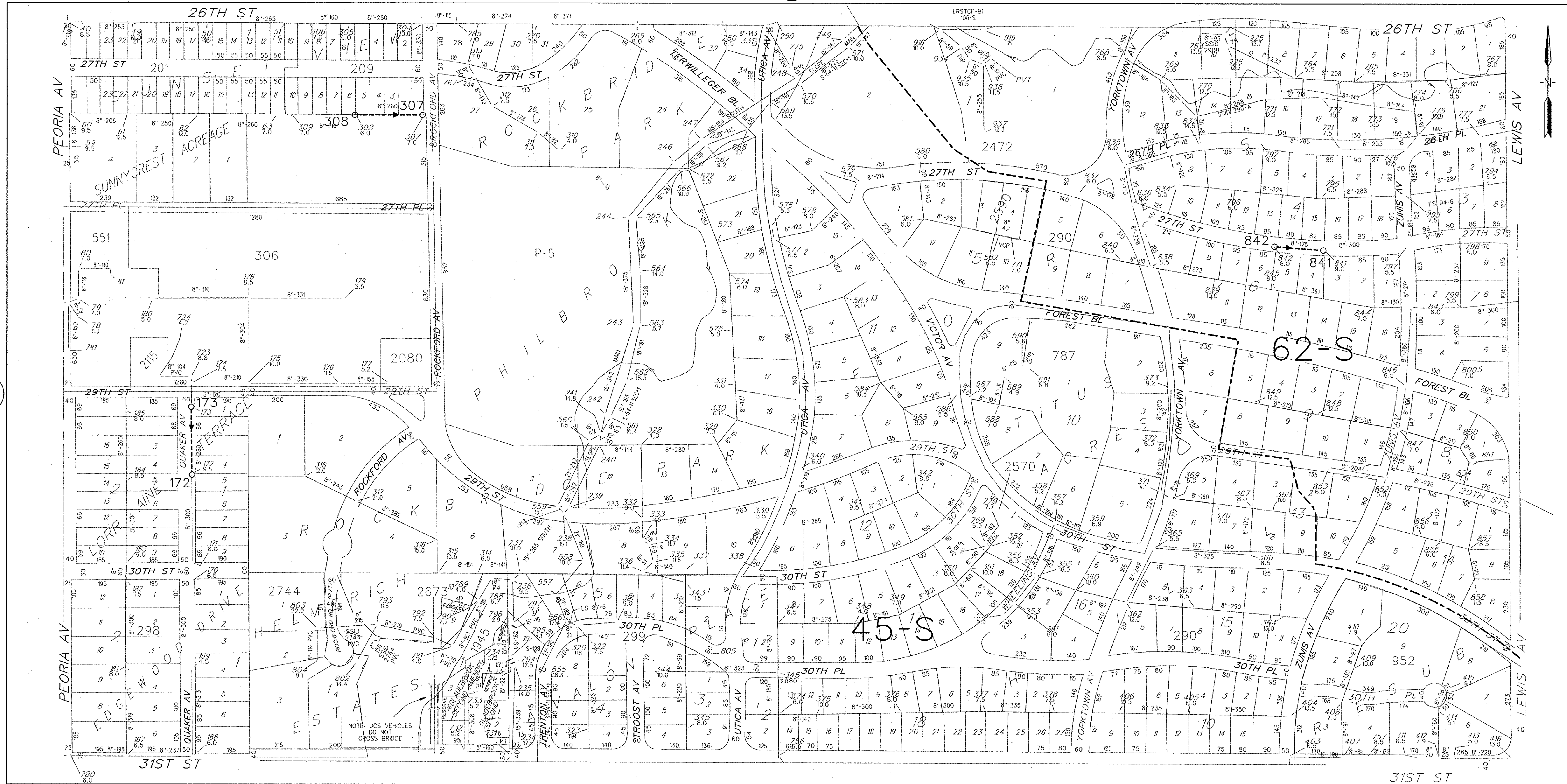
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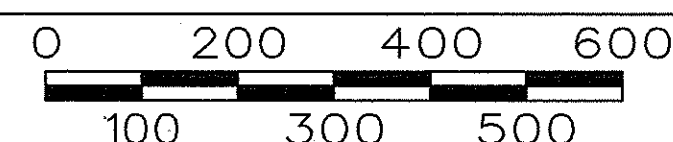
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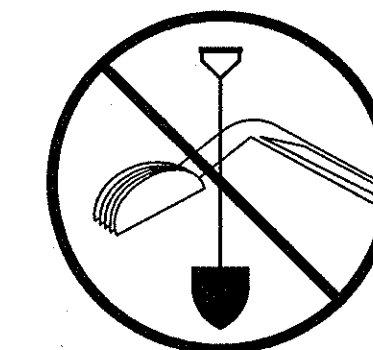
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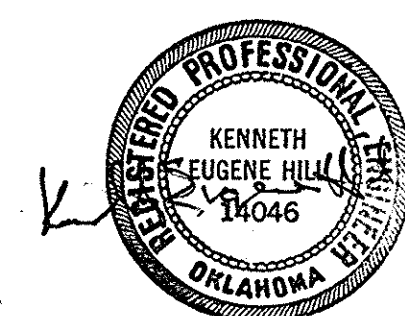
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- MAINTENANCE AREA
- MAINTENANCE AREA BOUNDARY
- EXISTING MANHOLE
- MANHOLE REHABILITATION - SEE SCHEDULE
- MANHOLE NUMBER
- DIRECTION OF FLOW
- SEWER LINE, POINT REPAIR - SEE SCHEDULE
- CURED IN PLACE PIPE LINING - SEE SCHEDULE

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Contract No. 5
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CURED IN PLACE PIPE LINING
& MANHOLE REHABILITATION

SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108

TULSA METROPOLITAN
UTILITY AUTHORITY
PROJECT NO. ES 96-07

PLANS AND ESTIMATES PREPARED BY: Burns & McDonnell

REVISION	BY	DATE	PLAN SCALE:	DRAWN	RAH	7/8/99	APPROVED:
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SHEET 12 OF 37 SHEETS

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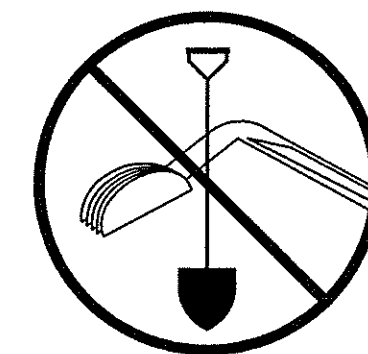
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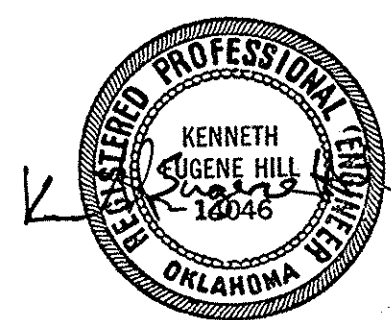
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- MANHOLE REHABILITATION - SEE SCHEDULE
- MANHOLE NUMBER
- DIRECTION OF FLOW
- SEWER LINE, POINT REPAIR - SEE SCHEDULE
- CURED IN PLACE PIPE LINING - SEE SCHEDULE

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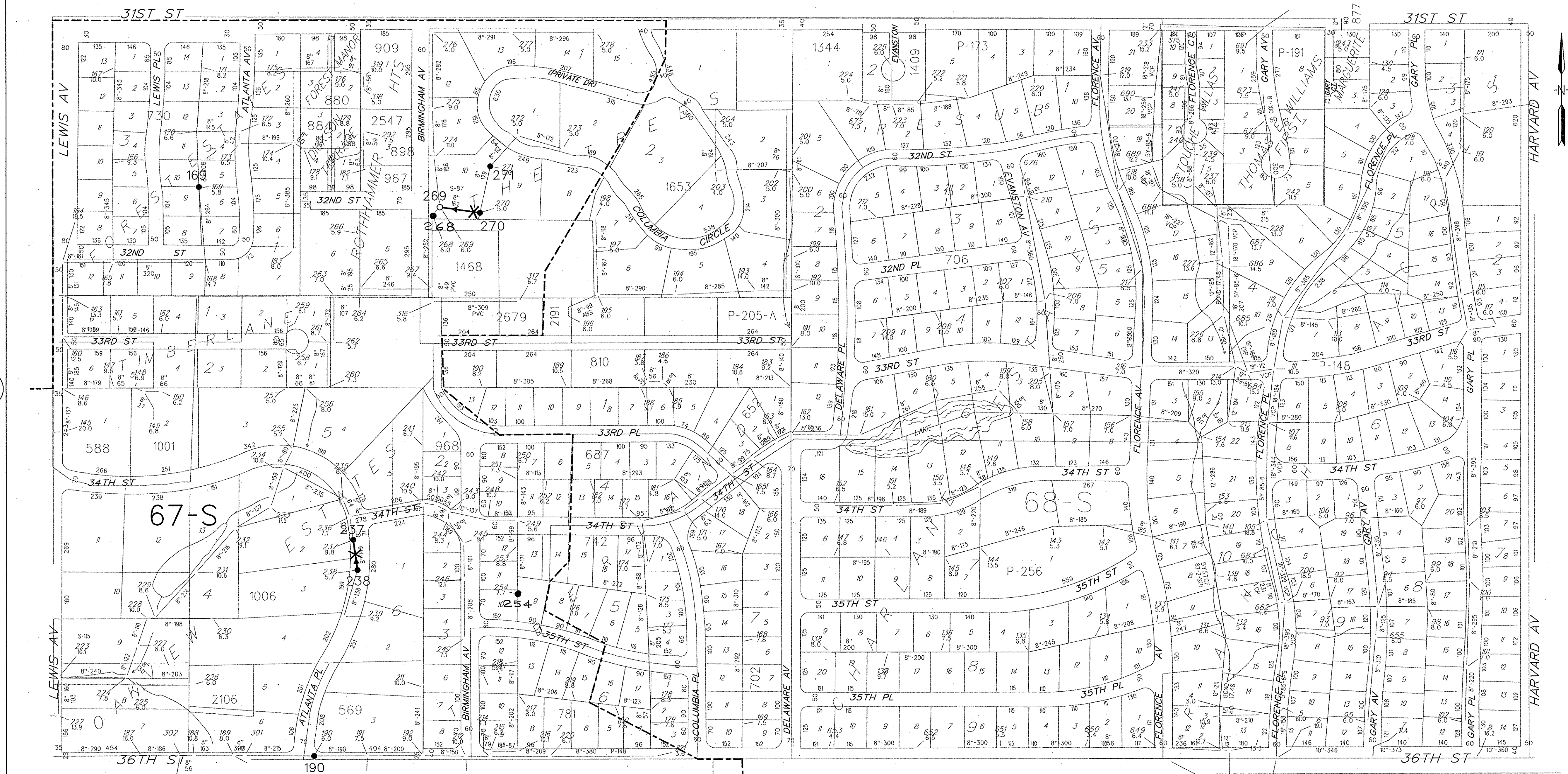


Contract No. 5 TRENCHLESS POINT REPAIRS, CURED IN PLACE PIPE LINING & MANHOLE REHABILITATION			
SOUTHSIDE BASIN REHABILITATION ACCOUNT NO. 6311-5455603-040522960108			
TULSA METROPOLITAN UTILITY AUTHORITY PROJECT NO. ES 96-07			
PLANS AND ESTIMATES PREPARED BY: Burns & McDonnell			
REVISION	BY	DATE	APPROVED:
PLAN SCALE:	DRAWN	RAH 7/8/99	
DESIGNED:		7/12/99	
SURVEY			
PROFILE SCALE:	FIELD MNGR.	RAH 5-00	
HORIZONTAL:	SECT. MNGR.	RAH 5-00	
1"	PROJ. MNGR.	TPK 05/00	
VERTICAL:	RECOMMENDED:		
1"	DEPUTY DIRECTOR		
FILE:	DRAWING:		
ATLAS PAGE NO:	61	DATE: 5/3/00	
			SHEET 13 OF 37 SHEETS

60

59

58



N 1/2 SEC 20
T 19 N - R 13 E

0 200 400 600
100 300 500

CITY OF TULSA ATLAS PAGE NO. 94

LEGEND

44-S

MAINTENANCE AREA

MAINTENANCE AREA BOUNDARY

EXISTING MANHOLE

MANHOLE REHABILITATION - SEE SCHEDULE

MANHOLE NUMBER

DIRECTION OF FLOW

SEWER LINE, POINT REPAIR - SEE SCHEDULE

CURED IN PLACE PIPE LINING - SEE SCHEDULE



Contract No. 5
TRENCHLESS POINT REPAIRS,
CURED IN PLACE PIPE LINING
& MANHOLE REHABILITATION

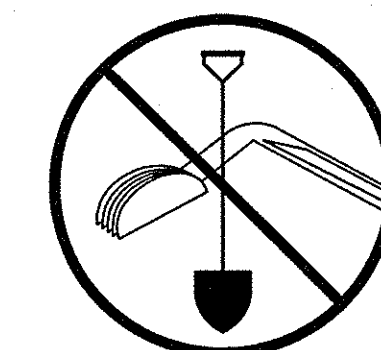
SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108

TULSA METROPOLITAN
UTILITY AUTHORITY
PROJECT NO. ES 96-07

PLANS AND ESTIMATES PREPARED BY:

Burns
&
McDonnell

REVISION	BY	DATE	PLAN SCALE:	DRAWN	RAH	2/21/00	APPROVED:
			1" = 200'	DESIGNED	VSM	2/18/00	
				SURVEY			
			PROFILE SCALE:	FIELD MNGR.	ASM	5-00	
			HORIZONTAL:	SECT. MNGR.	TRK	5/60	
				PROJ. MNGR.	TRK	05/00	
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			FILE:	DRAWING:			
			ATLAS PAGE NO:	94			



BEFORE
YOU DIG...

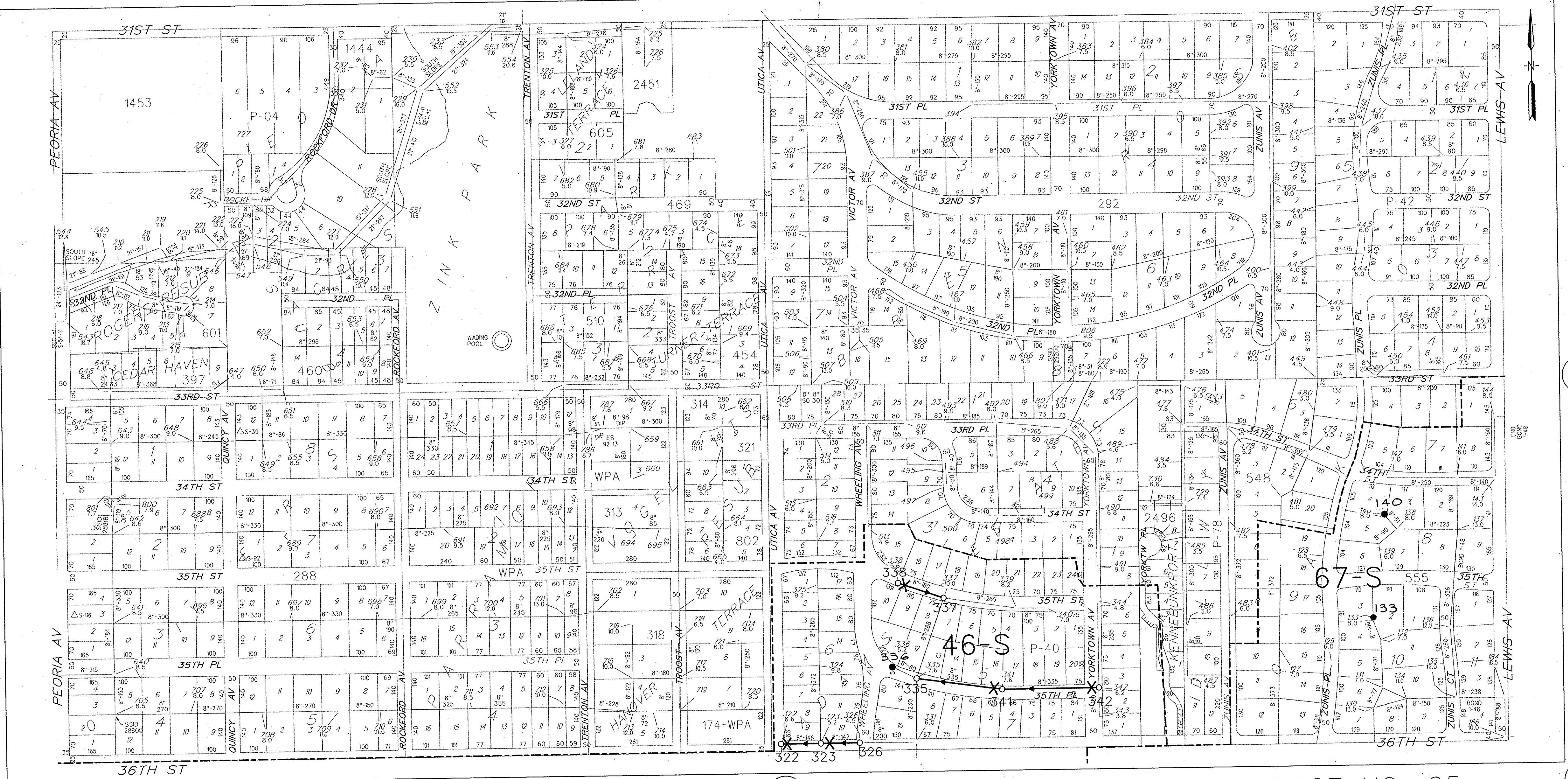
1-800-522-6543

CALL OKIE

PUBLIC WORKS DIRECTOR

DATE 5/3/00

SHEET 14 OF 37 SHEETS



N 1/2 SEC 19
T 19 N - R 13 E

CITY OF TULSA ATLAS PAGE NO. 95

LEGEND

44-S

MAINTENANCE AREA

MAINTENANCE AREA BOUNDARY

EXISTING MANHOLE

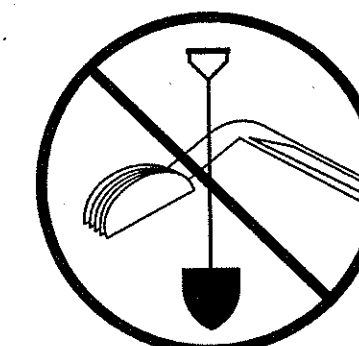
MANHOLE REHABILITATION - SEE SCHEDULE

MANHOLE NUMBER

DIRECTION OF FLOW

SEWER LINE, POINT REPAIR - SEE SCHEDULE

CURED IN PLACE PIPE LINING - SEE SCHEDULE



BEFORE
YOU DIG...

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Contract No. 5
TRENCHLESS POINT REPAIRS,
CURED IN PLACE PIPE LINING
& MANHOLE REHABILITATION

SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108



TULSA METROPOLITAN
UTILITY AUTHORITY

PROJECT NO. ES 96-07

PLANS AND ESTIMATES PREPARED BY:

REVISION	BY	DATE	PLAN SCALE:	DRAWN:	RAH 2/27/00	APPROVED: <i>clh</i> PUBLIC WORKS DIRECTOR DATE <u>5/3/00</u> SHEET 15 of 37 SHEETS
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				SURVEY		
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			HORIZONTAL:	SECT. MNGR.	PDD 5/00	
			F =	PROJ. MNGR.	TPK 05/00	
			VERTICAL	RECOMMENDED:		
			F =	DEPUTY DIRECTOR		
			FILE:	DRAWING:		
			ATLAS PAGE NO: 95			



LEGEND

44-S

MAINTENANCE AREA

MAINTENANCE AREA BOUNDARY

EXISTING MANHOLE

MANHOLE REHABILITATION - SEE SCHEDULE

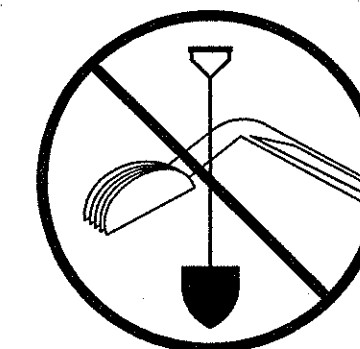
432 MANHOLE NUMBER

MANHOLE NUMBER

DIRECTION OF FLOW

SEWER LINE, POINT REPAIR - SEE SCHEDULE

CURED IN PLACE PIPE LINING - SEE SCHEDULE



BEFORE
YOU DIG...

CALL OKIE



Contract No. 5
TRENCHLESS POINT REPAIRS,
CURED IN PLACE PIPE LINING
& MANHOLE REHABILITATION

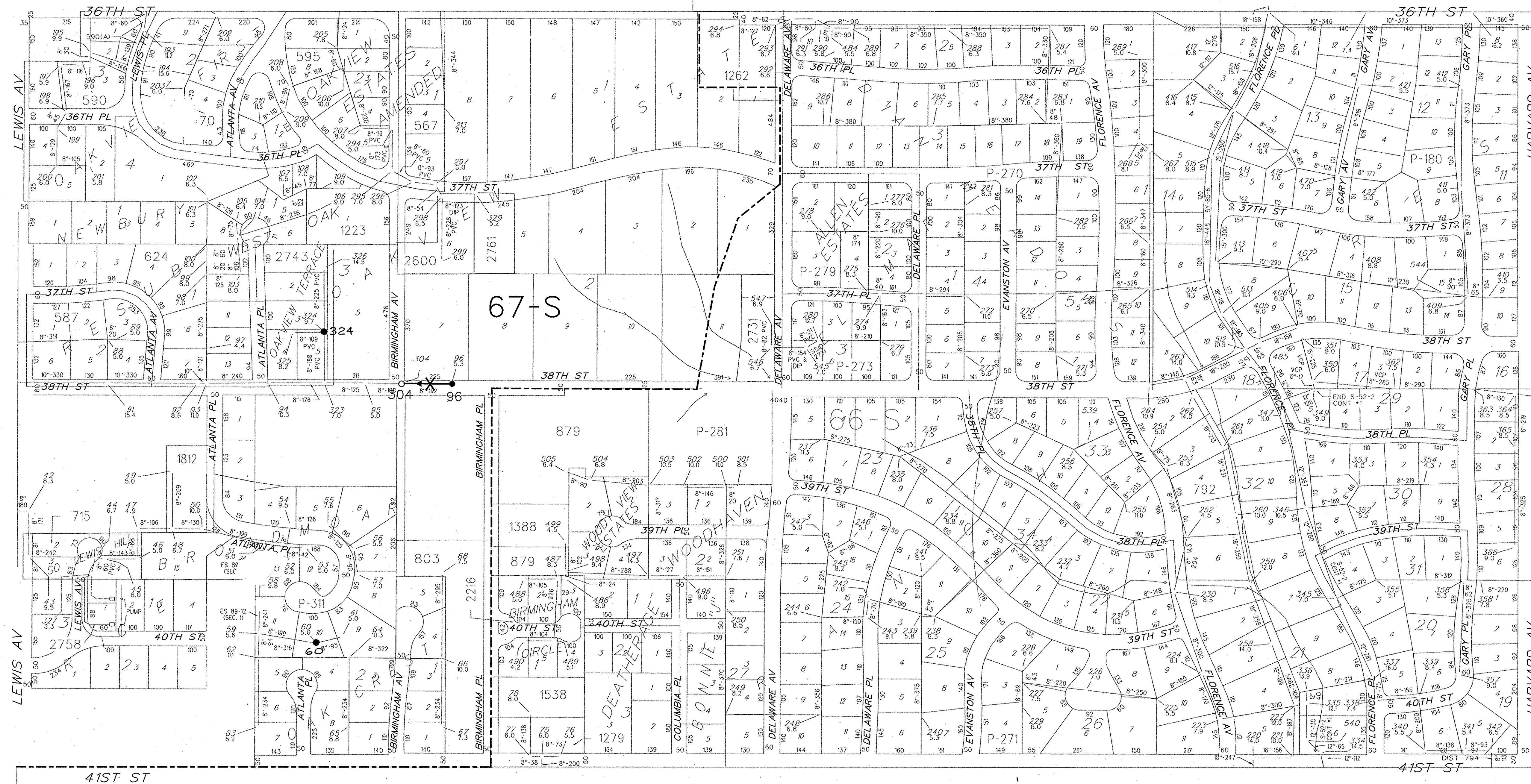
SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108

TULSA METROPOLITAN
UTILITY AUTHORITY
PROJECT NO. ES 96-07

PLANS AND ESTIMATES PREPARED BY

**Burns
&
McDonne**

REVISION	BY	DATE	PLAN SCALE:	DRAWN	RAH	2/21/00	APPROVED:
			" 200	DESIGNED	VSM	2/18/00	
				SURVEY			
			PROFILE SCALE:	FIELD MNGR.	ASH	5-00	
			HORIZONTAL:	SECT. MNGR.	PTD	5/00	
			"	PROJ. MNGR.	TPK	05/00	
			VERTICAL	RECOMMENDED:			
			"	PTD	5/4/00		
				DEPUTY DIRECTOR			PUBLIC WORKS DIRECTOR
			FILE:	DRAWING:			DATE 5/3/00
			ATLAS PAGE NO:	96			SHEET 16 OF 37 SHEET



0 200 400 600
100 300 500

CITY OF TULSA ATLAS PAGE NO. 137

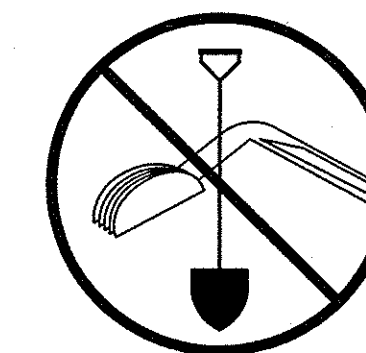
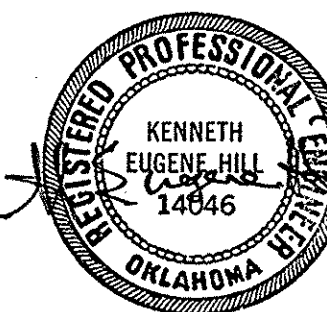
LEGEND

44-S

- MAINTENANCE AREA
- MAINTENANCE AREA BOUNDARY
- EXISTING MANHOLE
- MANHOLE REHABILITATION - SEE SCHEDULE
- MANHOLE NUMBER
- DIRECTION OF FLOW
- SEWER LINE, POINT REPAIR - SEE SCHEDULE
- CURED IN PLACE PIPE LINING - SEE SCHEDULE

432

X



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

REVISION	BY	DATE	PLAN SCALE:	DRAWN	RAH 2/21/00	APPROVED:
			T = 200	DESIGNED	VSM 2/18/00	
			PROFILE SCALE:	FIELD MNGR.	AB 5-00	
			HORIZONTAL:	SECT. MNGR.	BB 5/00	
				PROJ. MNGR.	TPK 05/00	
			VERTICAL:	RECOMMENDED:	DD 5/4/00	
				DEPUTY DIRECTOR		
			FILE:	DRAWING:		
			ATLAS PAGE NO:	137		

Contract No. 5
TRENCHLESS POINT REPAIRS,
CURED IN PLACE PIPE LINING
& MANHOLE REHABILITATION

SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108

TULSA METROPOLITAN
UTILITY AUTHORITY
PROJECT NO. ES 96-07

PLANS AND ESTIMATES PREPARED BY: Burns & McDonnell

DATE 5/3/00
SHEET 17 OF 37 SHEETS



CITY OF TULSA ATLAS PAGE NO. 138

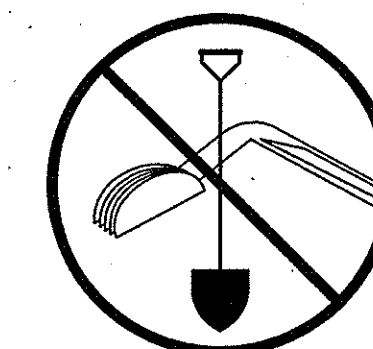
MAINTENANCE AREA
MAINTENANCE AREA BOUNDARY
EXISTING MANHOLE
MANHOLE REHABILITATION - SEE SCHEDULE
MANHOLE NUMBER
DIRECTION OF FLOW
SEWER LINE, POINT REPAIR - SEE SCHEDULE
CURED IN PLACE PIPE LINING - SEE SCHEDULE



TULSA METROPOLITAN
UTILITY AUTHORITY
PROJECT NO. ES 96-07

PLANS AND ESTIMATES PREPARED BY:	Burns
	&
	McDonnell

REVISION		BY	DATE	PLAN SCALE:	DRAWN	RAH	2/21/00	APPROVED: <u>CPH</u> PUBLIC WORKS DIRECTOR
				1" = 200'	DESIGNED	VSM	2/18/00	
					SURVEY			
				PROFILE SCALE:	FIELD MNGR.	VSM	5' = 00'	
				HORIZONTAL:	SECT. MNGR.	PRD	5' = 00'	
				1" =	PROJ. MNGR.	THL	65' = 00'	
				VERTICAL:	RECOMMENDED:			
				1" =	PRD	5' = 40'		
				FILE:	DRAWING:		DATE	5/3/00
				ATLAS PAGE NO:	138		SHEET	18 OF 37 SHEETS



*BEFORE
YOU DIG...*

1-800-522-6543

CALL OKIE

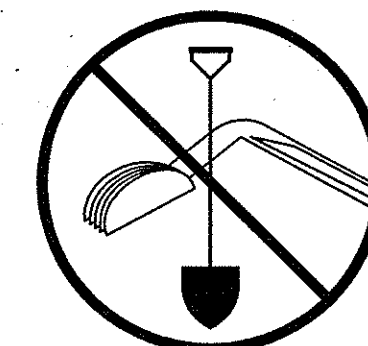


LEGEND

44-S

- MAINTENANCE AREA
- MAINTENANCE AREA BOUNDARY
- EXISTING MANHOLE
- MANHOLE REHABILITATION - SEE SCHEDULE
- MANHOLE NUMBER
- DIRECTION OF FLOW
- SEWER LINE, POINT REPAIR - SEE SCHEDULE
- CURED IN PLACE PIPE LINING - SEE SCHEDULE


432

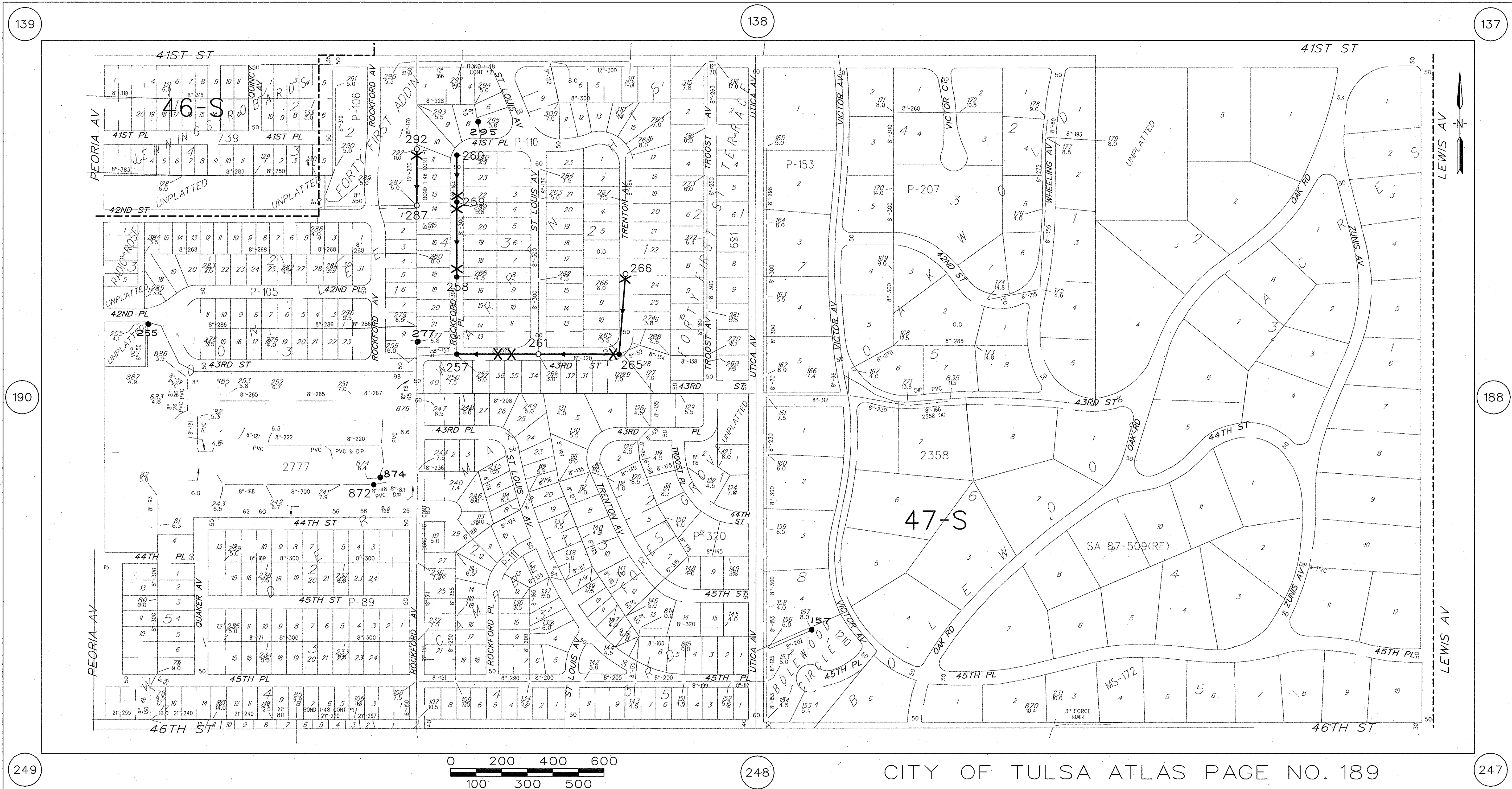


BEFORE
YOU DIG...
1-800-522-6543
CALL OKIE



REVISION		BY	DATE	PLAN SCALE:		DRAWN	RAH	2/21/00	APPROVED:	
				1" = 200'		DESIGNED	VSM	2/18/00		
						SURVEY				
				PROFILE SCALE:		FIELD MNGR.	Don	5-00		
				HORIZONTAL:		SECT. MNGR.	Don	5/60		
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				FILE:		DRAWING:				
				ATLAS PAGE NO:		139				

Contract No. 5 TRENCHLESS POINT REPAIRS, CURED IN PLACE PIPE LINING & MANHOLE REHABILITATION	
SOUTHSIDE BASIN REHABILITATION ACCOUNT NO. 6311-5455603-04052296108	
TULSA METROPOLITAN UTILITY AUTHORITY PROJECT NO. ES 96-07	
PLANS AND ESTIMATES PREPARED BY: Burns & McDonnell	
APPROVED:  PUBLIC WORKS DIRECTOR	
DATE: 5/3/02	
SHEET 19 OF 37 SHEETS	



44-S

MAINTENANCE AREA

MAINTENANCE AREA BOUNDARY

EXISTING MANHOLE

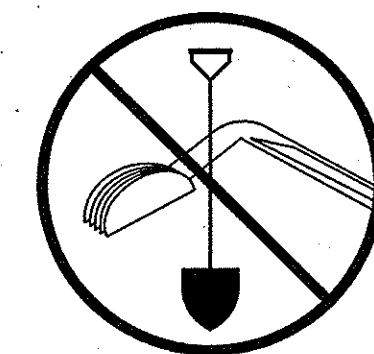
MANHOLE REHABILITATION - SEE SCHEDULE

MANHOLE NUMBER

DIRECTION OF FLOW

SEWER LINE, POINT REPAIR - SEE SCHEDULE

CURED IN PLACE PIPE LINING - SEE SCHEDULE



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

REVISION	BY	DATE	PLAN SCALE:	DRAWN	RAH	2/21/00	APPROVED:
			1" = 200'	DESIGNED	YSM	2/18/00	
				SURVEY			
			PROFILE SCALE:	FIELD MNGR.	AS	5/00	
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			FILE:	DRAWING:			
			ATLAS PAGE NO:	189			

Contract No. 5
TRENCHLESS POINT REPAIRS,
CURED IN PLACE PIPE LINING
& MANHOLE REHABILITATION

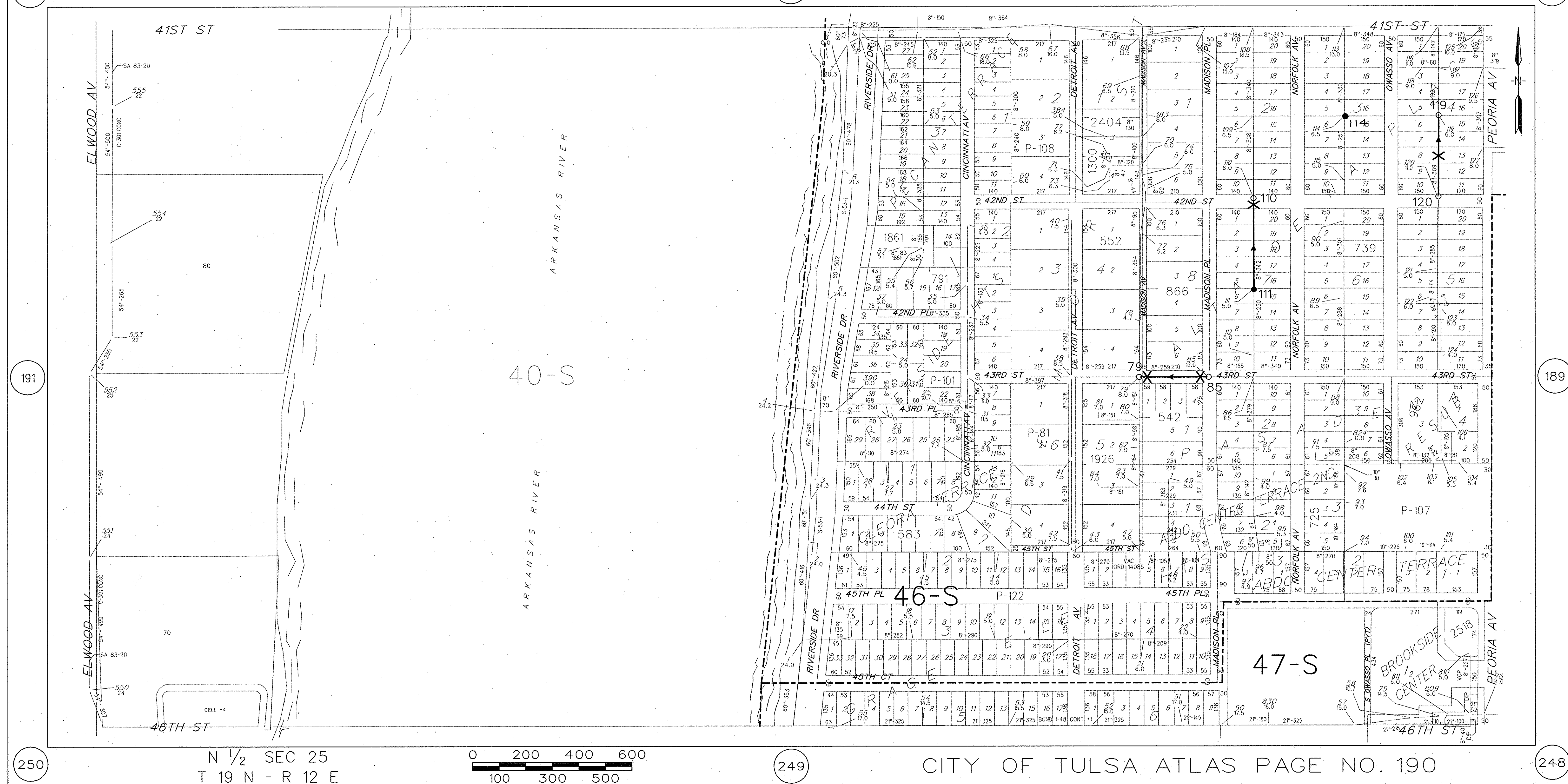
SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108

TULSA METROPOLITAN
UTILITY AUTHORITY
PROJECT NO. ES 96-07

PLANS AND ESTIMATES PREPARED BY: Burns & McDonnell

APPROVED: *cll*
PUBLIC WORKS DIRECTOR

DATE 5/3/00
SHEET 20 OF 37 SHEETS



LEGEND

44-S

MAINTENANCE AREA

MAINTENANCE AREA BOUNDARY

EXISTING MANHOLE

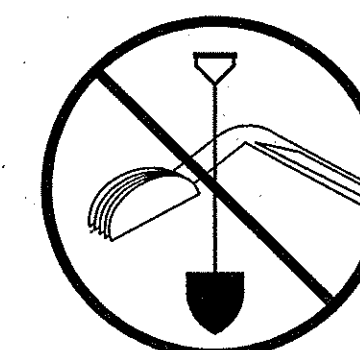
MANHOLE REHABILITATION - SEE SCHEDULE

432 MANHOLE NUMBER

DIRECTION OF FLOW

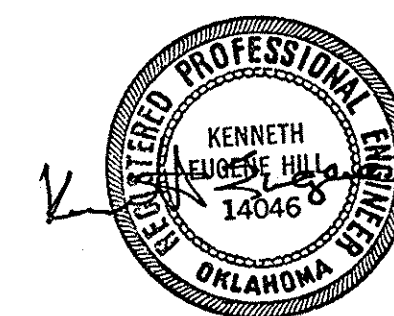
SEWER LINE, POINT REPAIR - SEE SCHEDULE

CURED IN PLACE PIPE LINING - SEE SCHEDULE



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YOU DIG...

CALL OKIE



Contract No. 5
TRENCHLESS POINT REPAIRS,
CURED IN PLACE PIPE LINING
& MANHOLE REHABILITATION

SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108

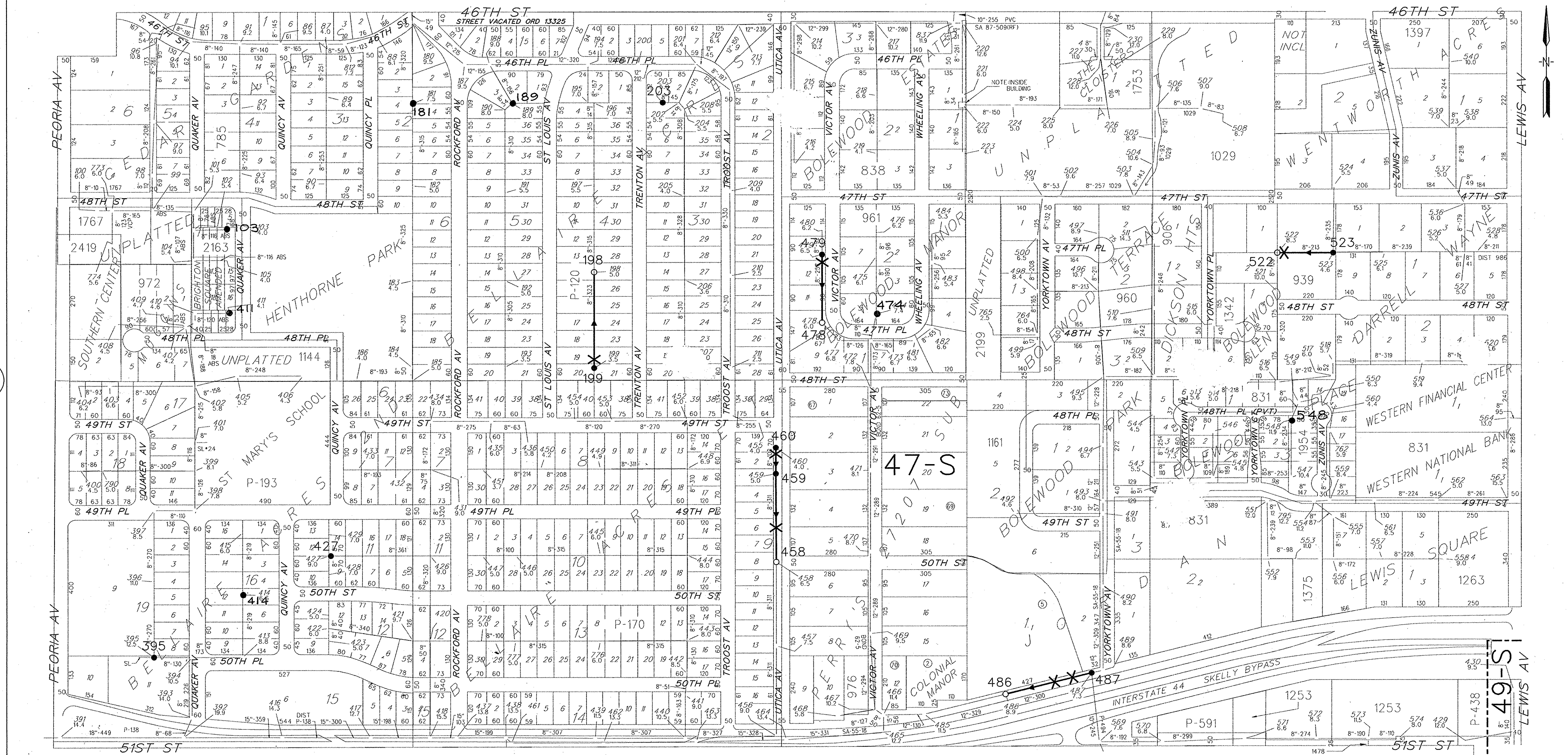


PROJECT NO. ES 96-07

PLANS AND ESTIMATES PREPARED BY:

**Burns
&
McDonne**

REVISION	BY	DATE	PLAN SCALE:	DRAWN	RAH	7/21/00	APPROVED: PUBLIC WORKS DIRECTOR DATE <u>5/3/00</u>
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				SURVEY			
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			HORIZONTAL:	SECT. MNGR.	PDB	5/60	
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			ATLAS PAGE NO:	190			SHEET 21 OF 37 SHEETS



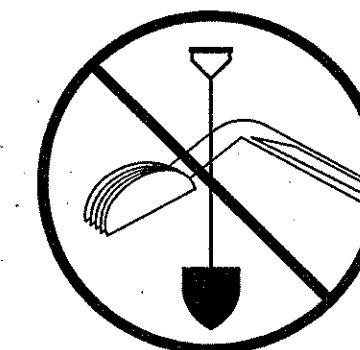
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T 19 N - R 13 E

CITY OF TULSA ATLAS PAGE NO. 248

LEGEND

44-S

- MAINTENANCE AREA
- MAINTENANCE AREA BOUNDARY
- EXISTING MANHOLE
- MANHOLE REHABILITATION - SEE SCHEDULE
- MANHOLE NUMBER
- DIRECTION OF FLOW
- SEWER LINE, POINT REPAIR - SEE SCHEDULE
- CURED IN PLACE PIPE LINING - SEE SCHEDULE



BEFORE
YOU DIG...

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CALL OKIE

[illegible]

Contract No. 5
TRENCHLESS POINT REPAIRS,
CURED IN PLACE PIPE LINING
& MANHOLE REHABILITATION

SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108

TULSA METROPOLITAN
UTILITY AUTHORITY

PROJECT NO. ES 96-07

PLANS AND ESTIMATES PREPARED BY

**Burns
&
McDonnell**

cll
PUBLIC WORKS DIRECTOR

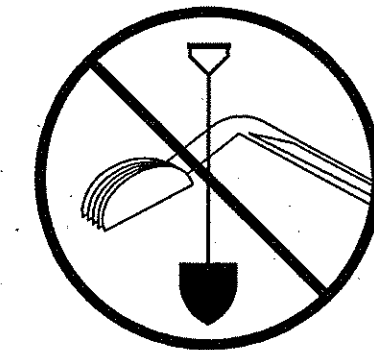
DATE 5/3/00
SHEET 22 OF 37 SHEETS



LEGEND

44-S

- MAINTENANCE AREA
- MAINTENANCE AREA BOUNDARY
- EXISTING MANHOLE
- MANHOLE REHABILITATION - SEE SCHEDULE
- MANHOLE NUMBER
- DIRECTION OF FLOW
- SEWER LINE, POINT REPAIR - SEE SCHEDULE
- CURED IN PLACE PIPE LINING - SEE SCHEDULE

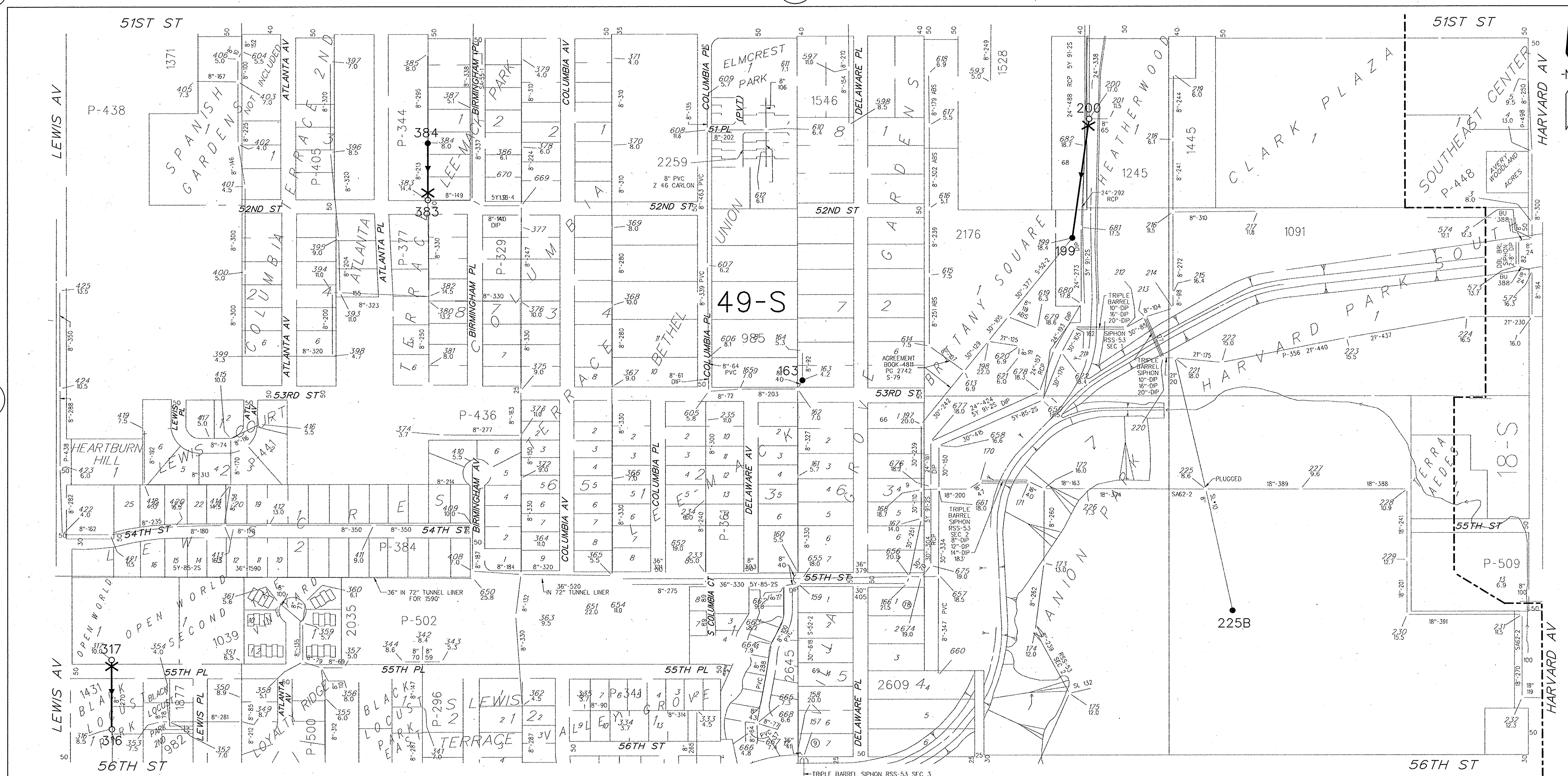


BEFORE
YOU DIG...
1-800-522-6543
CALL OKIE



REVISION				PLAN SCALE:				APPROVED:	
BY	DATE	DESIGNED	DATE	1" = 200'	DRAWN	2/21/00	RAH	PUBLIC WORKS DIRECTOR	
		SURVEY				2/18/00	VSM		
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				ATLAS PAGE NO:	DRAWING:	249			

Contract No. 5
TRENCHLESS POINT REPAIRS,
CURED IN PLACE PIPE LINING
& MANHOLE REHABILITATION
SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108
TULSA METROPOLITAN
UTILITY AUTHORITY
PROJECT NO. ES 96-07
PLANS AND ESTIMATES PREPARED BY: Burns & McDonnell



LEGEND

44-S

MAINTENANCE AREA

MAINTENANCE AREA BOUNDARY

EXISTING MANHOLE

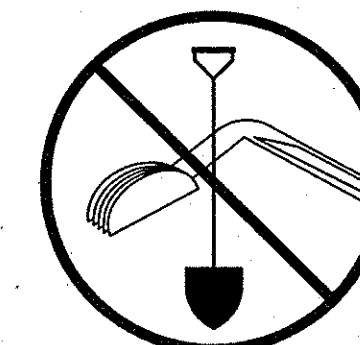
MANHOLE REHABILITATION - SEE SCHEDULE

432 MANHOLE NUMBER

DIRECTION OF FLOW

SEWER LINE, POINT REPAIR - SEE SCHEDULE

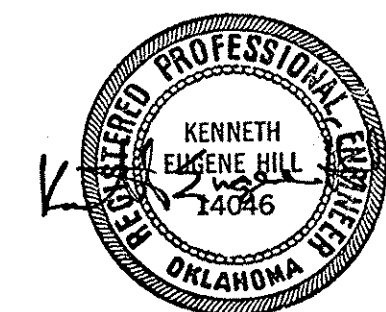
CURED IN PLACE PIPE LINING - SEE SCHEDULE



BEFORE
YOU DIG...

1-800-522-6543

CALL OKIE



Contract No. 5
TRENCHLESS POINT REPAIRS,
CURED IN PLACE PIPE LINING
& MANHOLE REHABILITATION

SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108



PROJECT NO. ES 96-07

PLANS AND ESTIMATES PREPARED BY

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	PLAN 3
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	PROFILE
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$\lambda = 0.0000000000$

HORIZ
1"

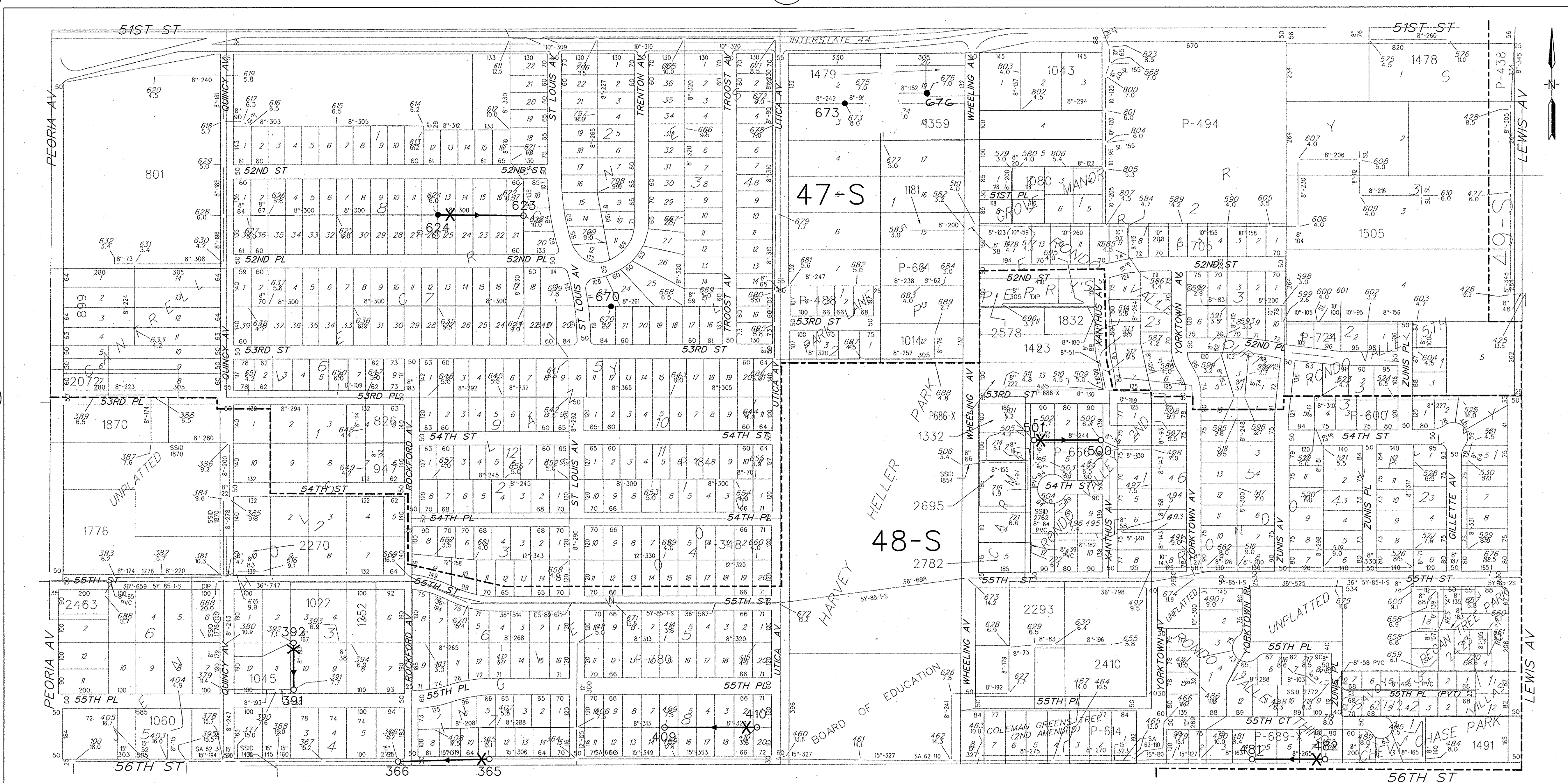
VERTICAL

VERTICAL
1" = 10'

FILE:	
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	ATLAS
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6



N 1/2 SEC. 31
T 19 N - R 13 E

0 200 400 600
100 300 500

CITY OF TULSA ATLAS PAGE NO. 315

LEGEND

44-S

MAINTENANCE AREA

MAINTENANCE AREA BOUNDARY

EXISTING MANHOLE

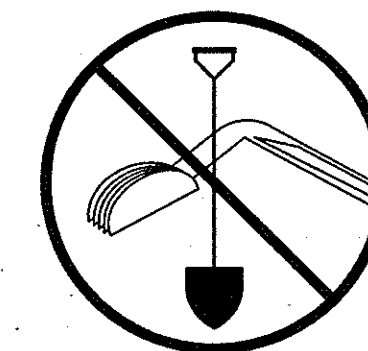
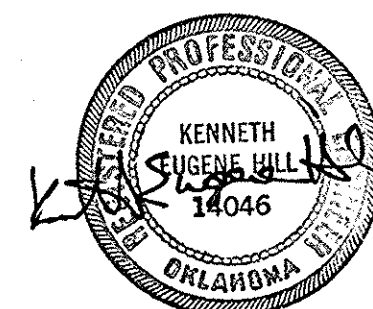
MANHOLE REHABILITATION - SEE SCHEDULE

MANHOLE NUMBER

DIRECTION OF FLOW

SEWER LINE, POINT REPAIR - SEE SCHEDULE

CURED IN PLACE PIPE LINING - SEE SCHEDULE



BEFORE
YOU DIG...

1-800-522-6543

CALL OKIE

REVISION	BY	DATE

PLAN SCALE: 1" = 200'	DRAWN DESIGNED SURVEY	RAH VSM	2/21/00 2/18/00	APPROVED:
PROFILE SCALE: 1" = 10'	FIELD MNGR.	RAH	5/1/00	
HORIZONTAL: 1" = 10'	SECT. MNGR.	RAH	5/1/00	
VERTICAL: 1" = 10'	PROJ. MNGR.	TPK	05/00	
ATLAS PAGE NO:	315			

PLANS AND ESTIMATES PREPARED BY:	Burns & McDonnell
CONTRACT NO. 5	TRENCHLESS POINT REPAIRS, CURED IN PLACE PIPE LINING & MANHOLE REHABILITATION
SOUTHSIDE BASIN REHABILITATION	ACCOUNT NO. 6311-5455603-040522960108
TULSA METROPOLITAN UTILITY AUTHORITY	PROJECT NO. ES 96-07
PUBLIC WORKS DIRECTOR	DATE 5/3/00
SHEET 25 OF 37 SHEETS	



LEGEND

44-S

MAINTENANCE AREA

MAINTENANCE AREA BOUNDARY

EXISTING MANHOLE

MANHOLE REHABILITATION - SEE SCHEDULE

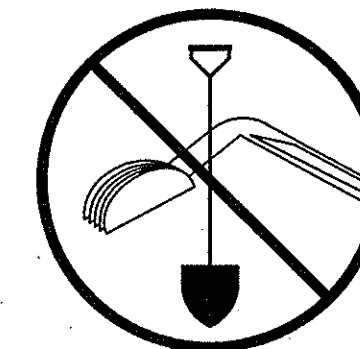
432 MANHOLE NUMBER

DIRECTION OF FLOW

SEWER LINE, POINT

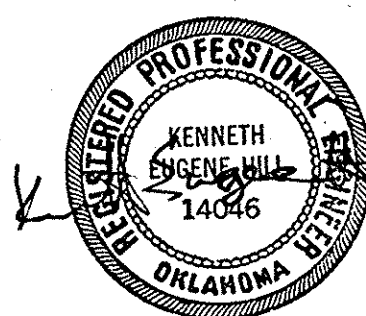
CURED IN PLACE PIPE LINING - SEE SCHEDULE

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BEFORE
YOU DIG...

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Contract No. 5
TRENCHLESS POINT REPAIRS,
CURED IN PLACE PIPE LINING
& MANHOLE REHABILITATION

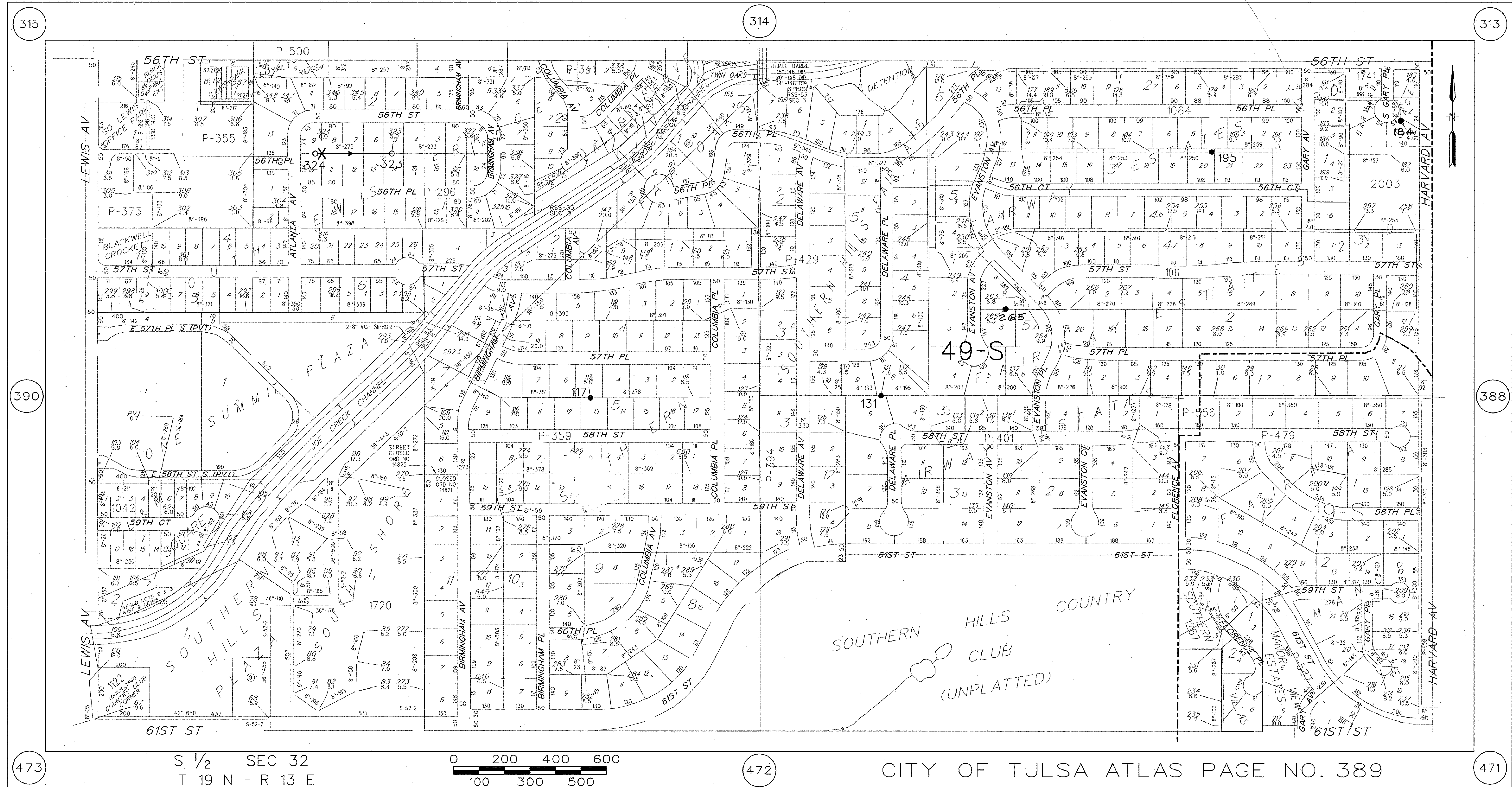
SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108

TULSA METROPOLITAN
UTILITY AUTHORITY
PROJECT NO. ES 96-07

PLANS AND ESTIMATES PREPARED BY:

**Burns
&
cDonnell**

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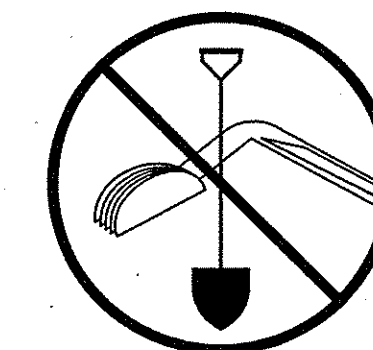
LEGEND

44-S

- MAINTENANCE AREA
- MAINTENANCE AREA BOUNDARY
- EXISTING MANHOLE
- MANHOLE REHABILITATION - SEE SCHEDULE
- MANHOLE NUMBER
- DIRECTION OF FLOW
- SEWER LINE, POINT REPAIR - SEE SCHEDULE
- CURED IN PLACE PIPE LINING - SEE SCHEDULE

432

X



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



Contract No. 5 TRENCHLESS POINT REPAIRS, CURED IN PLACE PIPE LINING & MANHOLE REHABILITATION	
SOUTHSIDE BASIN REHABILITATION ACCOUNT NO. 6311-5455603-040522960108	
TULSA METROPOLITAN UTILITY AUTHORITY PROJECT NO. ES 96-07	
PLANS AND ESTIMATES PREPARED BY: Burns & McDonnell	
REVISION	BY DATE
PLAN SCALE:	DRAWN RAH 2/21/00
DESIGNED VSM 2/18/00	APPROVED:
SURVEY	
PROFILE SCALE:	FIELD MNGR. BSM 5-20
HORIZONTAL:	SECT. MNGR. PEB 5/60
PROJ. MNGR. TPK 05/00	
RECOMMENDED:	
DEPUTY DIRECTOR	
FILE:	DRAWING:
ATLAS PAGE NO: 389	DATE 5/3/00
	SHEET 27 OF 37 SHEETS

316

315

314

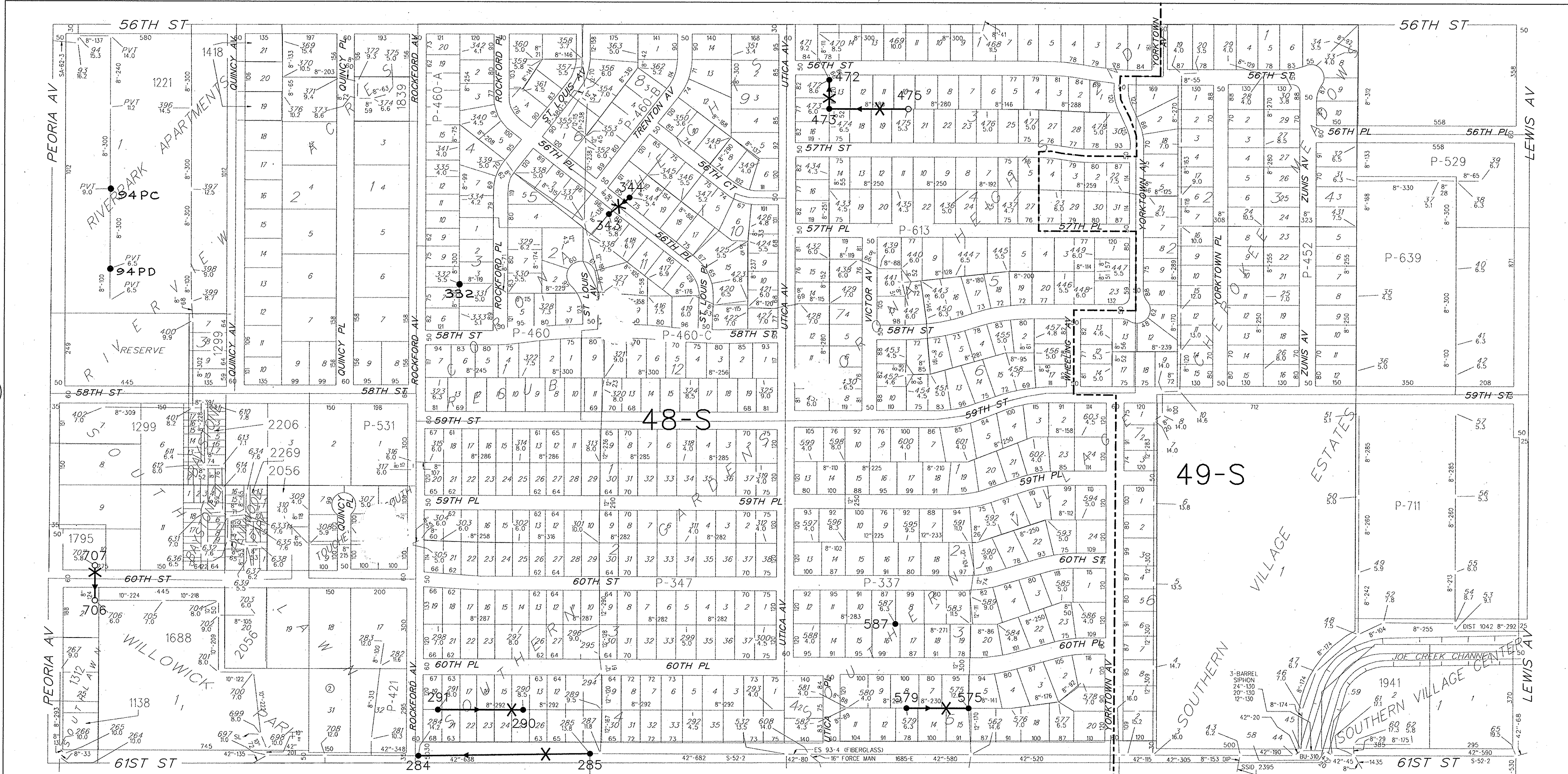
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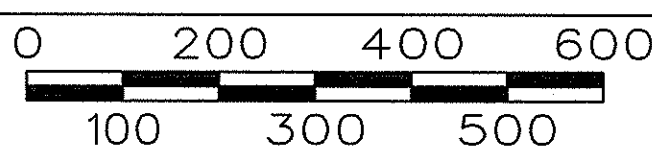
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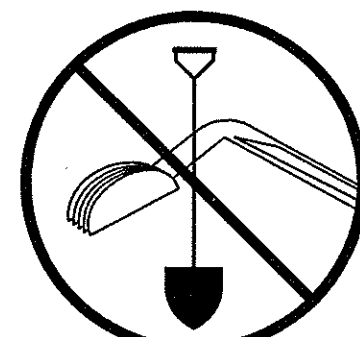
S 1/2 SEC 31
T 19 N - R 13 E



CITY OF TULSA ATLAS PAGE NO. 390

LEGEND

- 44-S MAINTENANCE AREA
- MAINTENANCE AREA BOUNDARY
- EXISTING MANHOLE
- MANHOLE REHABILITATION - SEE SCHEDULE
- MANHOLE NUMBER
- DIRECTION OF FLOW
- SEWER LINE, POINT REPAIR - SEE SCHEDULE
- CURED IN PLACE PIPE LINING - SEE SCHEDULE



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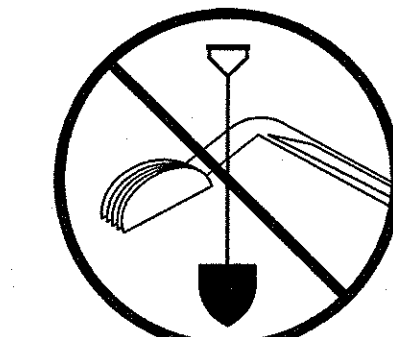
Contract No. 5 TRENCHLESS POINT REPAIRS, CURED IN PLACE PIPE LINING & MANHOLE REHABILITATION			
SOUTHSIDE BASIN REHABILITATION ACCOUNT NO. 6311-5455603-040522960108			
TULSA METROPOLITAN UTILITY AUTHORITY PROJECT NO. ES 96-07			
PLANS AND ESTIMATES PREPARED BY: Burns & McDonnell			
REVISION	BY	DATE	PLAN SCALE: RAH 2/21/00
			DESIGNED: VSM 2/18/00
			SURVEY:
			PROFILE SCALE: FIELD MNGR. ASH 5-00
			HORIZONTAL: SECT. MNGR. PCH 5-00
			PROJ. MNGR. TPK 05-00
			RECOMMENDED: 5/14/00
			DEPUTY DIRECTOR
FILE:			DRAWING:
ATLAS PAGE NO:	390		PUBLIC WORKS DIRECTOR
			DATE: 5/3/00
			SHEET 28 OF 37 SHEETS

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LEGEND

- 44-S**
- MAINTENANCE AREA
 - MAINTENANCE AREA BOUNDARY
 - EXISTING MANHOLE
 - MANHOLE REHABILITATION - SEE SCHEDULE
 - MANHOLE NUMBER
 - DIRECTION OF FLOW
 - SEWER LINE, POINT REPAIR - SEE SCHEDULE
 - CURED IN PLACE PIPE LINING - SEE SCHEDULE

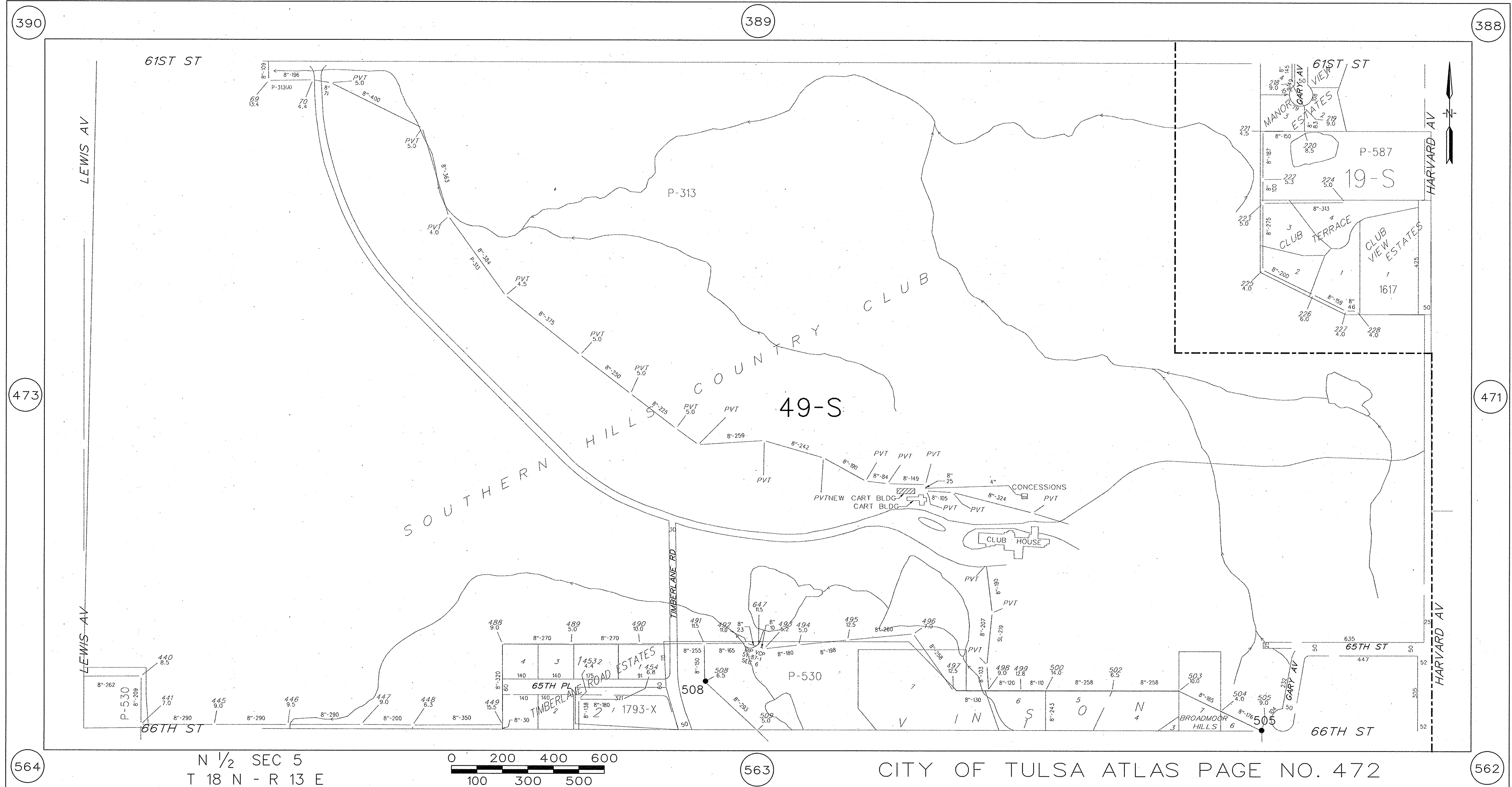


BEFORE
YOU DIG...
1-800-522-6543
CALL OKIE

REVISION	BY	DATE	PLAN SCALE:	DRAWN	RAH	2/21/00	APPROVED:
			DESIGNED	VSM	2/18/00		
			SURVEY				
			PROFILE SCALE:	FIELD MNGR.	ARM	5-00	
			HORIZONTAL:	SECT. MNGR.	TPK	5/00	
			VERTICAL:	PROJ. MNGR.	TPK	05/00	
				RECOMMENDED:			
				DEPUTY DIRECTOR			
			FILE:	DRAWING:			
			ATLAS PAGE NO:	391			

PLANS AND ESTIMATES PREPARED BY:	Burns & McDonnell
Contract No. 5 TRENCHLESS POINT REPAIRS, CURED IN PLACE PIPE LINING & MANHOLE REHABILITATION	
SOUTHSIDE BASIN REHABILITATION ACCOUNT NO. 6311-5455603-040522960108	
TULSA METROPOLITAN UTILITY AUTHORITY PROJECT NO. ES 96-07	
APPROVED:	DATE: 5/3/00
PUBLIC WORKS DIRECTOR	SHEET 29 OF 37 SHEETS

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LEGEND

- 44-S
- MAINTENANCE AREA
- MAINTENANCE AREA BOUNDARY
- EXISTING MANHOLE
- MANHOLE REHABILITATION - SEE SCHEDULE
- MANHOLE NUMBER
- DIRECTION OF FLOW
- SEWER LINE, POINT REPAIR - SEE SCHEDULE
- CURED IN PLACE PIPE LINING - SEE SCHEDULE



Contract No. 5
TRENCHLESS POINT REPAIRS,
CURED IN PLACE PIPE LINING
& MANHOLE REHABILITATION

SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108



TULSA METROPOLITAN
UTILITY AUTHORITY
PROJECT NO. ES 96-07

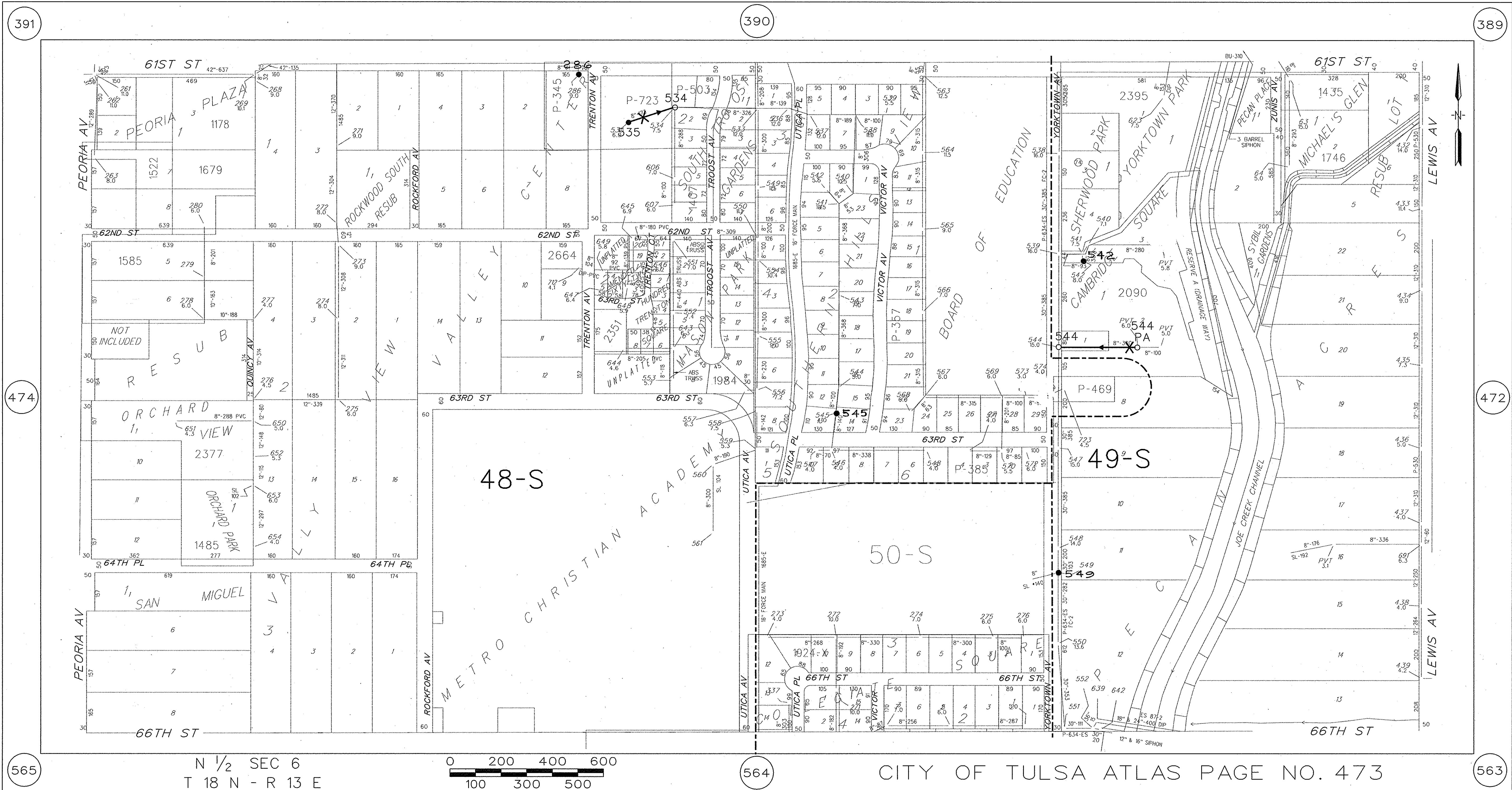
PLANS AND ESTIMATES PREPARED BY: Burns & McDonnell

REVISION	BY	DATE	PLAN SCALE:	DRAWN	RAH	7/16/99	APPROVED:
			DESIGNED	CWD	7/9/99		
			SURVEY	JH	2/28/98		
			PROFILE SCALE:	FIELD MNGR.	ASR	5-00	
			HORIZONTAL:	SECT. MNGR.	PD	5/00	
				PROJ. MNGR.	TPK	10/5/00	
			VERTICAL	RECOMMENDED:	PD	5/4/00	
			FILE:	DEPUTY DIRECTOR			
			ATLAS PAGE NO:	472			

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

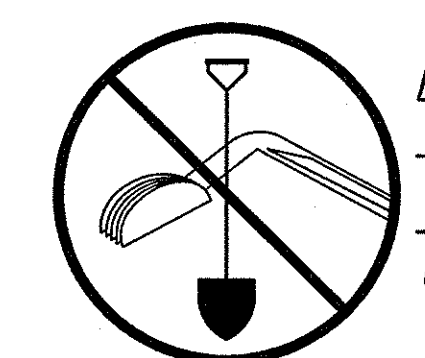
PUBLIC WORKS DIRECTOR
DATE 5/3/00
SHEET 30 OF 37 SHEETS

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LEGEND

44-S MAINTENANCE AREA
--- MAINTENANCE AREA BOUNDARY
○ EXISTING MANHOLE
● MANHOLE REHABILITATION - SEE SCHEDULE
▲ MANHOLE NUMBER
---> DIRECTION OF FLOW
---X--- SEWER LINE, POINT REPAIR - SEE SCHEDULE
--- CURED IN PLACE PIPE LINING - SEE SCHEDULE



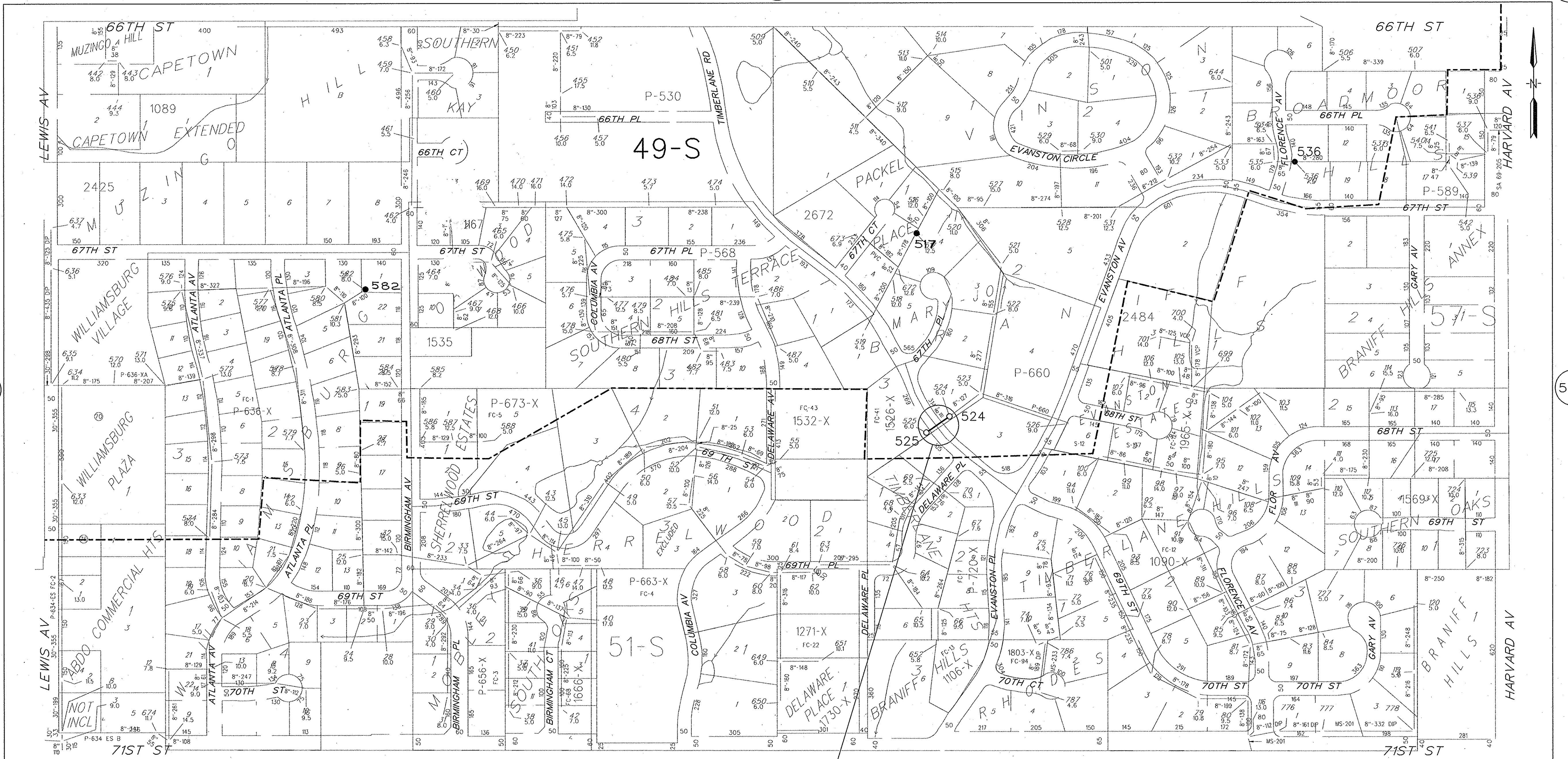
BEFORE YOU DIG...
1-800-522-6543
CALL OKIE



REVISION			BY	DATE

PLAN SCALE: 1" = 200'	DRAWN: RAH 2/21/00	APPROVED: [Signature]
PROFILE SCALE: 1" = 20'	DESIGNED: VSM 2/18/00	
HORIZONTAL: 1" = 40'	FIELD MNGR: AJS 5/00	
	SECT. MNGR: DJS 5/00	
	PROJ. MNGR: TPK 05/00	
	RECOMMENDED: [Signature] 5/4/00	
	DEPUTY DIRECTOR	
FILE: 66346-5	DRAWING: 5473	DATE: 5/3/00
ATLAS PAGE NO: 473		SHEET 31 OF 37 SHEETS

Contract No. 5
TRENCHLESS POINT REPAIRS,
CURED IN PLACE PIPE LINING
& MANHOLE REHABILITATION
SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108
TULSA METROPOLITAN
UTILITY AUTHORITY
PROJECT NO. ES 96-07
PLANS AND ESTIMATES PREPARED BY: Burns & McDonnell



S 1/2 SEC 5
T 18 N - R 13 E

CITY OF TULSA ATLAS PAGE NO. 563

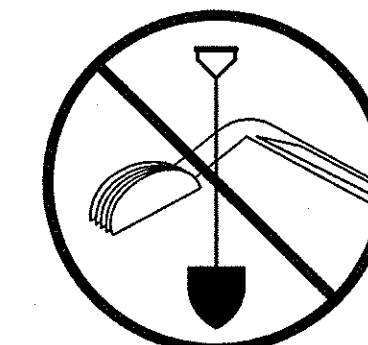
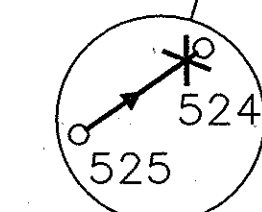
LEGEND

44-S

MAINTENANCE AREA
MAINTENANCE AREA BOUNDARY
EXISTING MANHOLE
MANHOLE REHABILITATION - SEE SCHEDULE
MANHOLE NUMBER
DIRECTION OF FLOW
SEWER LINE, POINT REPAIR - SEE SCHEDULE
CURED IN PLACE PIPE LINING - SEE SCHEDULE

662

61)



Contract No. 5
TRENCHLESS POINT REPAIRS,
CURED IN PLACE PIPE LINING
& MANHOLE REHABILITATION



SOUTHSIDE BASIN REHABILITATION
ACCOUNT NO. 6311-5455603-040522960108

PROJECT NO. ES 96-07

PLANS AND ESTIMATES PREPARED BY:

10

PLAN SCALE:	DRAWN	RAH	2/21/00	APPROVED:
	DESIGNED	VSM	2/18/00	

100			
200	SURVEY		
PROFILE SCHE	FIELD MNGR		

PROFILE SCALE:	FIELD MNGR.	DOB 8-00
HORIZONTAL:	SECT. MNGR.	DOB 5/00

VERTICAL	RECOMMENDED:	TPK	05/00
	TPB	5/4/00	cll

564 SHEET 33 OF 34

Sheet No.	ATLAS SHEET	BasinID	MHID	MHAddress	MHPreDir	MHStName	MHSfx	MHDiameter	MHDepth	SurfaceMaterial	MHMWall	TYPE A	TYPE E	TYPE F	TYPE I	TYPE L
14	094	67S	169	3143	S	LEWIS	PL	48		S				1	1	
14	094	67S	190	3457	S	ATLANTA	PL	48		A			1	1	1	
14	094	67S	237	3404	S	ATLANTA	PL	48	9.86	S	B				1	
14	094	67S	238	3424	S	ATLANTA	PL	48	5.68	S	B				1	
14	094	67S	254	2615	E	35TH	ST			S						1
14	094	67S	268	3113	S	COLUMBIA	CR			S						1
14	094	67S	270	3115	S	COLUMBIA	CR	48	5.43	D	B			1	1	
14	094	67S	271	3115	S	COLUMBIA	CR	UNKNOWN	UNKNOWN	D						1
15	095	46S	336	1909	E	35TH	PL	48		S						1
15	095	67S	133	2218	E	35TH	ST									1
15	095	67S	140	2244	E	34TH	ST									1
17	137	67S	60	3919	S	ATLANTA	PL			C						1
17	137	67S	96	2615	E	38TH	ST	48	5.76	A	B			1	1	
17	137	67S	324	2545	E	38TH	ST			S						1
18	138	46S	187	1411	E	41ST	ST	8		A						1
18	138	46S	222	3848	S	TROOST	AV	48	5.76	S	B				1	
18	138	46S	287	1424	E	36TH	PL	48	4.70	C	B			1	1	
18	138	46S	307	3651	S	UTICA	AV	48	10.40	S	B				1	
18	138	46S	319	3631	S	UTICA	AV	48	8.84	S	B			1	1	
18	138	46S	320	3623	S	UTICA	AV	48	8.72	S	B				1	
18	138	46S	327	3608	S	WHEELING	AV	48	3.62	S	B				1	
18	138	46S	328	3614	S	WHEELING	AV	48	6.64	C	B	1		1	1	
18	138	67S	34	2023	E	38TH	ST	48	10.82	S	B			1	1	
18	138	67S	35	2211	E	39TH	ST	48	8.62	S	B				1	
18	138	67S	37	2263	E	39TH	ST	48	8.90	S	B			1	1	
18	138	67S	41	2287	E	39TH	ST	48	12.22	S	B				1	
19	139	46S	138	3920	S	DETROIT	AV	48		S			1	1	1	
19	139	46S	163	1111	E	39TH	ST	48	10.47	C	C			1	1	
19	139	46S	168	1104	E	38TH	PL					1		1	1	
19	139	46S	237	901	E	37TH	PL	48	7.10	S	B			1	1	
19	139	46S	241	921	E	37TH	ST	48	6.68	A	B			1	1	
19	139	46S	243	929	E	37TH	ST	48	5.76	A	B			1	1	
19	139	46S	355	1136	E	36TH	PL			S				1	1	
20	189	47S	157	4360	S	VICTOR	AV			S						1
20	189	47S	255	4401	S	PEORIA	AV			G						1
20	189	47S	257	1514	E	43RD	ST	48	5.27	C	C			1	1	
20	189	47S	258	4166	S	ROCKFORD	PL	48	4.68	C	C			1	1	
20	189	47S	259	4146	S	ROCKFORD	PL	48	4.88	C	C			1	1	
20	189	47S	260	4130	S	ROCKFORD	PL	48	5.36	C	C				1	
20	189	47S	265	1562	E	43RD	ST	48	4.66	C	C		1			
20	189	47S	277	1505	E	43RD	ST			S						1
20	189	47S	295	4120	S	ST LOUIS	AV									1
20	189	47S	872	4401	S	PEORIA	AV							1		
20	189	47S	874	4401	S	PEORIA	AV									1
21	190	46S	111	4228	S	NORFOLK	AV	48	5.38	S	B				1	
21	190	46S	114	4119	S	NORFOLK	AV									1
22	248	47S	103	4808	S	QUAKER	AV			S						1
22	248	47S	181	4617	S	QUINCY	PL									1
22	248	47S	189	4624	S	ST LOUIS	AV									1
22	248	47S	199	4698	S	TRENTON	AV	48	3.70	S	B				1	
22	248	47S	203	4625	S	TRENTON	AV							1		
22	248	47S	395	5018	S	QUAKER	AV	48	12.72	A	B		1		1	
22	248	47S	411	1369	E	48TH	PL									1
22	248	47S	414	4947	S	QUAKER	AV									1
22	248	47S	427	1411	E	49TH	PL	48						1	1	
22	248	47S	459	4909	S	UTICA	AV	48	6.32	S	B			1	1	
22	248	47S	460	4905	S	UTICA	AV	48	5.86	S	B				1	
22	248	47S	474	4735	S	VICTOR	AV									1
22	248	47S	479	4718	S	VICTOR	AV	48	5.80	S	B			1	1	
22	248	47S	487	4920	S	YORKTOWN	AV	48	11.00	S	B				1	
22	248	47S	523	2136	E	47TH	ST	48	4.59	S	B				1	
22	248	47S	548	4814	S	ZUNIS	AV									1
23	249	47S	20	4712	S	BOSTON	PL			S		1		1	1	
23	249	47S	30	4834	S	DETROIT	AV			S		1		1	1	
23	249	47S	33	4807	S	DETROIT	AV	48	5.26	S	B				1	
23	249	47S	45	1007	E	48TH	ST			S		1		1	1	
23	249	47S	327	4958	S	BOSTON	PL			S		1		1	1	
23	249	47S	329	4912	S	BOSTON	PL			S		1		1	1	
23	249	47S	342	4962	S	MADISON	AV	UNKNOWN	UNKNOWN	S						1
23	249	47S	359	4961	S	NORFOLK	AV			S						1
24	314	49S	163	5246	S	DELAWARE	PL			D			1	1	1	
24	314	49S	199	2900	E	51ST	ST			S				1	1	

Legend for Rehabilitation Methods

TYPE A Replace Casting (Frame And Lid)

TYPE E Raise Casting to or Above Grade and Install a Solid Lid

TYPE F Stop I/I, Clean Manhole, Repair as Needed & Coat

TYPE I Clean Manhole, Repair Steps as Needed & Coat Area Around Steps

TYPE L Locate and Expose Manhole

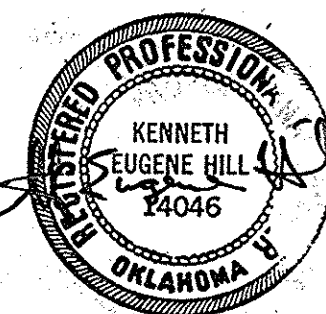
Legend for Manhole Materials

Surface Material - Type of surface material at manhole

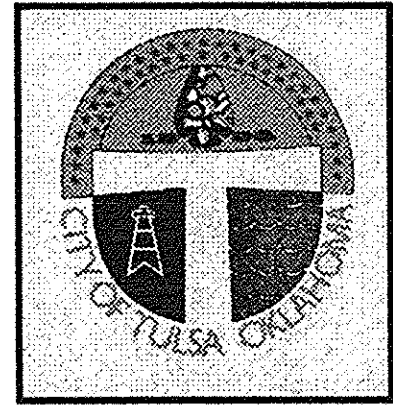
A - Asphalt
C - Concrete
D - Dirt
O - Other
S - Sod

MHMWall - Manhole wall material

B - Brick
C - Concrete



msc
5/3/00

 Burns & McDonnell 6450 South Lewis Avenue Suite 220 Tulsa, Oklahoma 74136 Tel: 918 744-7111 Fax: 918 712-9554		CONTRACT NO. 5 MANHOLE REHABILITATION SCHEDULE			
		SOUTHSIDE BASIN REHABILITATION ORF PROJECT NO. C01211-11 ACCOUNT NO. 6311-5455603-040522960108 TULSA METROPOLITAN UTILITY AUTHORITY PROJECT NUMBER : ES 96-07			
Plans and Estimates Prepared by Burns & McDonnell		DRAWN DESIGNED SURVEY		RH JAM 04/25/00 04/25/00	APPROVED:
		FIELD MNGR. SECT. MNGR. PROJ. MNGR.		5-00 5/3/00 5/3/00	APPROVED:
PLAN SCALE: NTS		RECOMMENDED:		DEPUTY DIRECTOR	
		FILE:		DATE: 5/3/00	
SOUTHIDE BASIN REHABILITATION		SHEET 35 OF 37 SHEETS		SHEET 35 OF 37 SHEETS	

Sheet No.	ATLAS SHEET	BasinID	MHID	MHAddress	MHPreDir	MHStName	MHSfx	MHDiameter	MHDepth	SurfaceMaterial	MHMTWall	TYPE A	TYPE E	TYPE F	TYPE I	TYPE L
24	314	49S	384	5133	S	ATLANTA	PL	48	11.50	S	C			1	1	
24	314	49S	225B	3112	E	56TH	ST	48		C				1	1	
25	315	47S	624	1455	E	52ND	ST	48	6.24	S	B				1	
25	315	47S	670	5173	S	TRENTON	AV						1	1	1	
25	315	47S	673	5153	S	UTICA	AV							1	1	
25	315	47S	676	1810	E	SKELLY	DR									1
26	316	47S	380	114	E	SKELLY	DR	UNKNOWN	UNKNOWN	S						1
26	316	47S	747	5404	S	NORFOLK	AV			S						1
27	389	49S	117	2641	E	58TH	ST	48						1	1	
27	389	49S	131	5687	S	DELAWARE	PL			S				1	1	
27	389	49S	184	5619	S	GARY	PL			C						1
27	389	49S	195	2977	E	56TH	CT							1	1	
27	389	49S	265	5671	S	EVANSTON	AV			S						1
28	390	48S	284	6043	S	ROCKFORD	AV	96	14.32	S	B			1	1	
28	390	48S	285	1609	E	61ST	ST	96	13.20	S	B				1	
28	390	48S	290	1531	E	61ST	ST	48	8.90	S	C				1	
28	390	48S	291	6043	S	ROCKFORD	AV	48	7.90	S	B				1	
28	390	48S	332	3717	S	ROCKFORD	AV									1
28	390	48S	343	1606	E	56TH	PL	48	7.68	S	C				1	
28	390	48S	344	5641	E	56TH	PL	48	7.35	S	B			1	1	
28	390	48S	472	1716	E	56TH	ST	48	5.18	S	B			1	1	
28	390	48S	473	1715	E	57TH	ST	48	4.61	S	B			1	1	
28	390	48S	575	1749	E	61ST	ST	48	11.48	S	C				1	
28	390	48S	579	1735	E	61ST	ST	48	5.20	S	B				1	
28	390	48S	587	1736	E	60TH	ST			C				1	1	
28	390	48S	094PC	5619	S	PEORIA	PL			A						1
28	390	48S	094PD	5629	S	PEORIA	PL			A						1
29	391	48S	51	5601	S	NEWPORT	AV			S				1	1	
29	391	48S	150	1003	E	60TH	ST	48	10.48	S	B				1	
29	391	48S	070PA	1090	E	57TH	PL									1
29	391	48S	070PB	1032	E	57TH	PL									1
30	472	49S	505	6601	S	FLORENCE	AV			S				1	1	
30	472	49S	508	6617	S	TIMBERLANE	RD			S				1	1	
31	473	48S	286	6102	S	TRENTON	AV									1
31	473	48S	535	6121	S	TRENTON	AV	48	5.60	S	B				1	
31	473	48S	545	6261	S	UTICA	PL									1
31	473	49S	542	6219	S	YORKTOWN	AV									1
31	473	49S	549	6529	S	YORKTOWN	AV									1
32	563	49S	517	2820	E	67TH	CT			S						1
32	563	49S	536	3133	E	67TH	ST			O			1	1	1	
32	563	49S	582	6720	S	BIRMINGHAM	AV	48		C						1
33	564	49S	564	6720	S	LEWIS	AV	48	9.52	A	B			1	1	
33	564	49S	566	6720	S	LEWIS	AV	48	9.22	A	B			1	1	
TOTAL												7	7	49	72	40

Legend for Rehabilitation Methods

TYPE A Replace Casting (Frame And Lid)

TYPE E Raise Casting to or Above Grade and Install a Solid Lid

TYPE F Stop //, Clean Manhole, Repair as Needed & Coat

TYPE I Clean Manhole, Repair Steps as Needed & Coat Area Around Steps

TYPE L Locate and Expose Manhole

Legend for Manhole Materials

Surface Material - Type of surface material at manhole

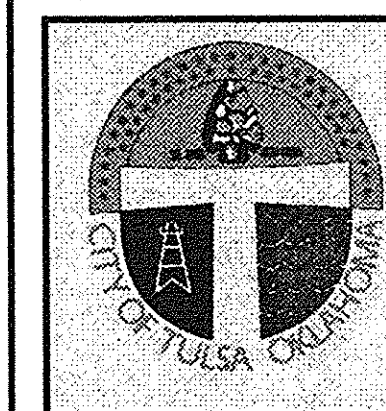
A - Asphalt
C - Concrete
D - Dirt
O - Other
S - Sod

MHMTWall - Manhole wall material

B - Brick
C - Concrete



gms
5/12/00



**Burns
&
McDonnell**

6450 South Lewis Avenue
Suite 220
Tulsa, Oklahoma 74136
Tel: 918 744-7111
Fax: 918 712-9554

CONTRACT NO. 5 MANHOLE REHABILITATION SCHEDULE

SOUTHSIDE BASIN REHABILITATION
ORF PROJECT NO. C01211-11
ACCOUNT NO. 6311-5455603-040522960108
TULSA METROPOLITAN UTILITY AUTHORITY
PROJECT NUMBER : ES 96-07

			DRAWN	RH	04/25/00	APPROVED:
			DESIGNED	JAM	04/25/00	
			SURVEY			
			FIELD MNGR.	ASM	5-00	
			SECT. MNGR.	DD	5/00	
			PROJ. MNGR.	TPK	05/00	
			PLAN SCALE:			
			NTS			
			RECOMMENDED:			
			PPS 5/14/00			
			DEPUTY DIRECTOR			
			FILE: DRAWING:			
			SOUTHSIDE BASIN REHABILITATION			
			DATE			
			SHEET 36 OF 37 SHEETS			

Sheet Number	Atlas Sheet	BasinID	MHID	USMHID	DSMHLenght	MHAddress	MHPreDir	MHSName	MHSfx	PipeSize	PipeDepth	SurfaceMat	PipeMatrl	Remarks
3	003	44S	416	416-411	339	2020	E	14TH	ST	8	9.6	S	VC	CIPP ONLY
4	012	62S	332	332-331	265	2748	E	13TH	ST	8	7.1	S	VC	CIPP ONLY
4	012	62S	358	358-357	280	2723	E	14TH	PL	8	11.1	S	VC	CIPP ONLY
4	012	62S	362	362-361	250	2627	E	15TH	ST	8	9.6	S	VC	CIPP ONLY
4	012	62S	381	381-380	300	2814	E	14TH	ST	8	8.7	S	VC	CIPP ONLY
5	013	62S	177	177-176	300	1704	S	DELAWARE	PL	8	12.1	S	VC	CIPP ONLY
5	013	62S	190	190-189	190	1931	S	COLLEGE	AV	8	9.7	S	VC	CIPP ONLY
6	14	44S	350	350-349	230	2324	E	17TH	ST	8	9.8	S	VC	CIPP ONLY
6	14	44S	353	353-352	434	1535	S	GILLETTE	AV	8	10.9	S	VC	CIPP ONLY
6	14	44S	469	469-468	227	1621	S	ST LOUIS	AV	8	12.0	A	VC	CIPP ONLY
7	31	62S	114	114-113	310	3808	E	23RD	ST	8	1.5	S	VC	CIPP ONLY
8	32	62S	105	105-100	140	3303	E	22ND	ST	8	5.2	A	VC	CIPP ONLY
8	32	62S	756	756-752	390	2405	E	24TH	ST	8	11.6	S	VC	CIPP ONLY
9	33	62S	760	760-759	313	2223	E	24TH	ST	8	9.3	S	VC	CIPP ONLY
10	34	44S	93	093-092	220	1270	E	25TH	ST	8	12.6	S	VC	CIPP ONLY
10	34	44S	101	101-98	104	2538	S	NORFOLK	AV	8	11.7	S	VC	CIPP ONLY
10	34	44S	102	102-101	85	2617	S	OWASSO	AV	8	11.7	S	VC	CIPP ONLY
10	34	44S	473	473-100	100	2530	S	NORFOLK	AV	8	9.3	S	VC	CIPP ONLY
11	59	62S	818	818-817	229	2436	E	28TH	ST	8	9.6	S	VC	CIPP ONLY
12	60	45S	173	173-172	262	2905	S	QUAKER	AV	8	6.7	S	VC	CIPP ONLY
12	60	45S	308	308-307	245	1382	E	27TH	ST	8	7.7	S	VC	CIPP ONLY
12	60	62S	842	842-841	175	2138	E	27TH	ST	8	5.3	S	VC	CIPP ONLY
13	61	45S	159	159-158	111	1207	E	31ST	ST	8	5.3	S	VC	CIPP ONLY
16	96	45S	603	603-602	335	250	E	33RD	PL	8	9.5	S	VC	CIPP ONLY

Legend for Rehabilitation Methods

Clean Line, Install Cured- in - Place
Pipe Liner and Reconnect Services

This Rehabilitation Method is specified for those lines with numerous defects in congested areas where it is not desired or appropriate to excavate and relay a sewer line. The cost basis for this rehabilitation method will be a price per foot and will vary depending upon the diameter of the existing line.

Pipe depth is the depth at upstream manhole (USMHID) location.

Legend for Manhole Materials

Surface Type of material at Manhole Surface

A – Asphalt
C – Concrete
D - Dirt
O – Other
S – Sod

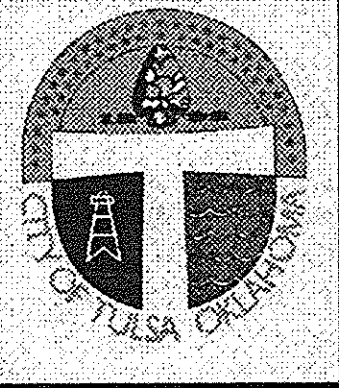
Legend for Pipe Materials

Pipe Material Type of material for pipe construction

VC – Vitrified Clay
CO – Concrete
PV – Polyvinylchloride
OT – Other
LI – Lined
CI – Cast Iron



5/12/00

 Burns & McDonnell 6450 South Lewis Avenue Suite 220 Tulsa, Oklahoma 74136 Tel: 918 744-7111 Fax: 918 712-9554	CONTRACT NO.5 CURED IN PLACE PIPE LINING SCHEDULE			
	TULSA SOUTHSIDE PLANT INFLUENT SANITARY SEWERS IMPROVEMENTS CROW CREEK BASIN REHABILITATION ACCOUNT NO. 6311-5455603-040522960108 TULSA METROPOLITAN UTILITY AUTHORITY PROJECT NUMBER : ES 96-07			
	DRAWN	SA	02/21/00	APPROVED:
	DESIGNED	VSM	02/21/00	
	SURVEY			
	FIELD MNGR.			
	SECT. MNGR.			
	PROJ. MNGR.			
	PLANS SCALE: NTS			
	RECOMMENDED: 5/4/00 DEPUTY DIRECTOR			
PUBLIC WORKS DIRECTOR				
DATE 02/21/00				
SHEET 37 OF 37 SHEETS				