

WATER & SEWER LINE REPLACEMENT PROJECT

Downtown Tempe Neighborhoods

NEIGHBORHOOD MEETING

Wednesday, February 10, 2016

6:00 – 7:00 p.m.

Childsplay, 900 S. Mitchell Drive, Tempe, AZ



Neighborhood Meeting



Welcome, Goals and Introductions

Marilyn DeRosa

City of Tempe

Deputy Director - Water Utilities Division

Neighborhood Meeting



- ❑ Welcome, Goals and Introductions
- ❑ Overview of WUD CIP Project Development
- ❑ Project Specifics
- ❑ Ongoing Communications
- ❑ Contacts
- ❑ Questions

Neighborhood Meeting

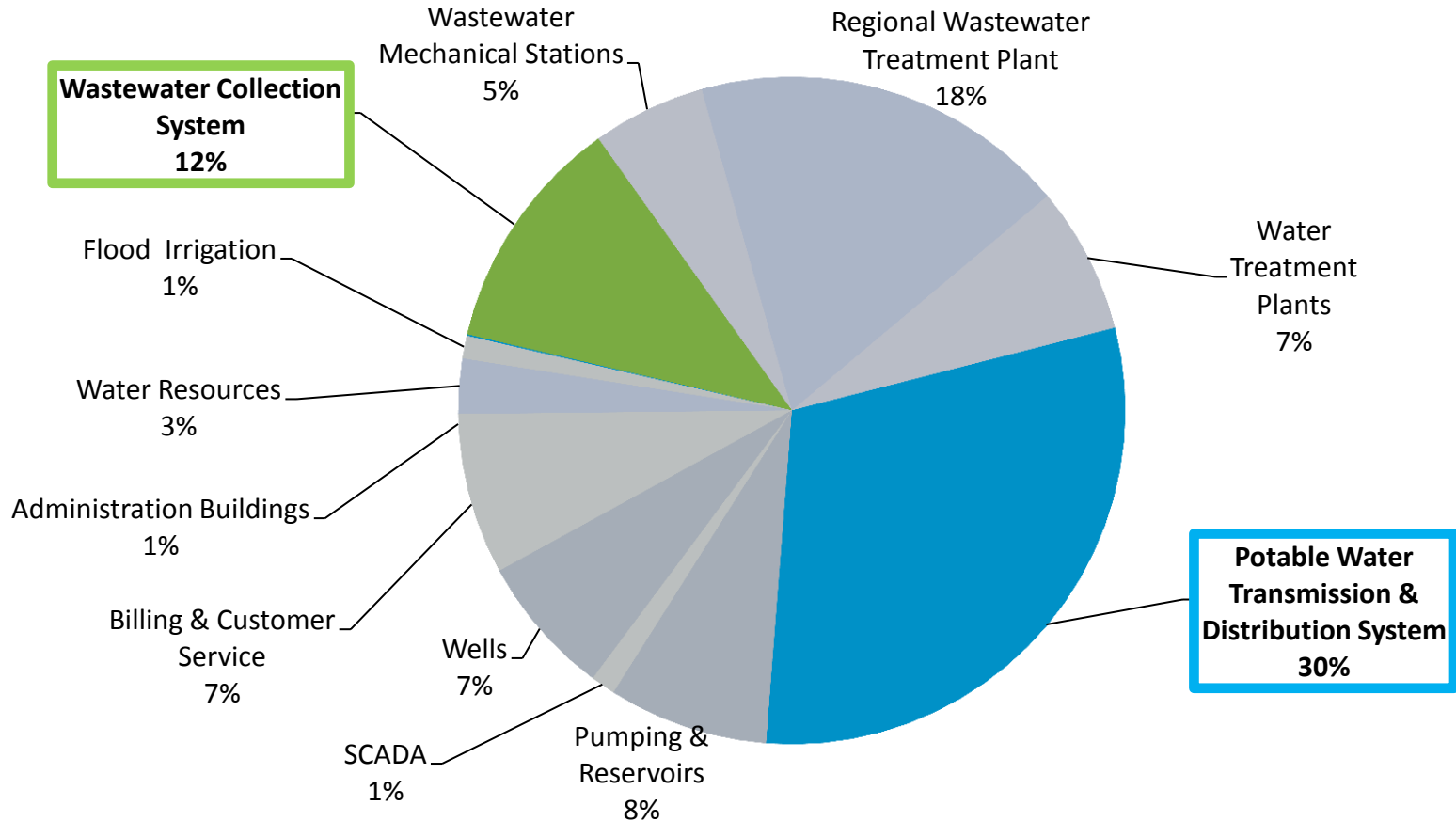
Project Development

Philip Brown, P.E.

City of Tempe

Sr. Civil Engineer – Water Utilities Division

Water Utilities Division 5-Year Capital Improvements Plan



Pipeline Criticality

Size: 6" 48" (sewer) 66" (water)

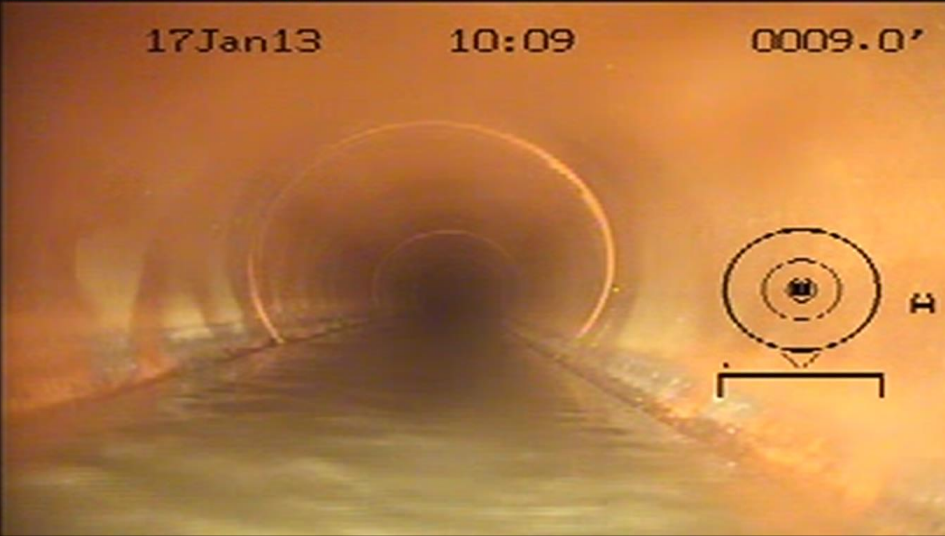
Location: Neighborhood cul-de-sac Railways, waterways, freeways, hospitals, major commercial, etc.

Depth: 4 ft. 30 ft.

17Jan13

10:09

0009.0'



26f eb 15

05:27

0062.8'



Project Prioritization



- **Public Health & Safety**
- **Asset Preservation**
- **Capacity Expansion**

Level of Use

Regulatory Obligations

Risk of Deferral

Operating budget impact

Neighborhood Meeting

Project Specifics

Ken Halloran, P.E.

City of Tempe

Sr. Civil Engineer – Engineering Division

Neighborhood Meeting

Sanitary Sewer Replacement
Maple - Ash Neighborhood

Waterline Replacement and
Sanitary Sewer Replacement/Rehabilitation
Farmer Avenue
From Broadway Rd to 1st Street to Mill Ave

Neighborhood Meeting

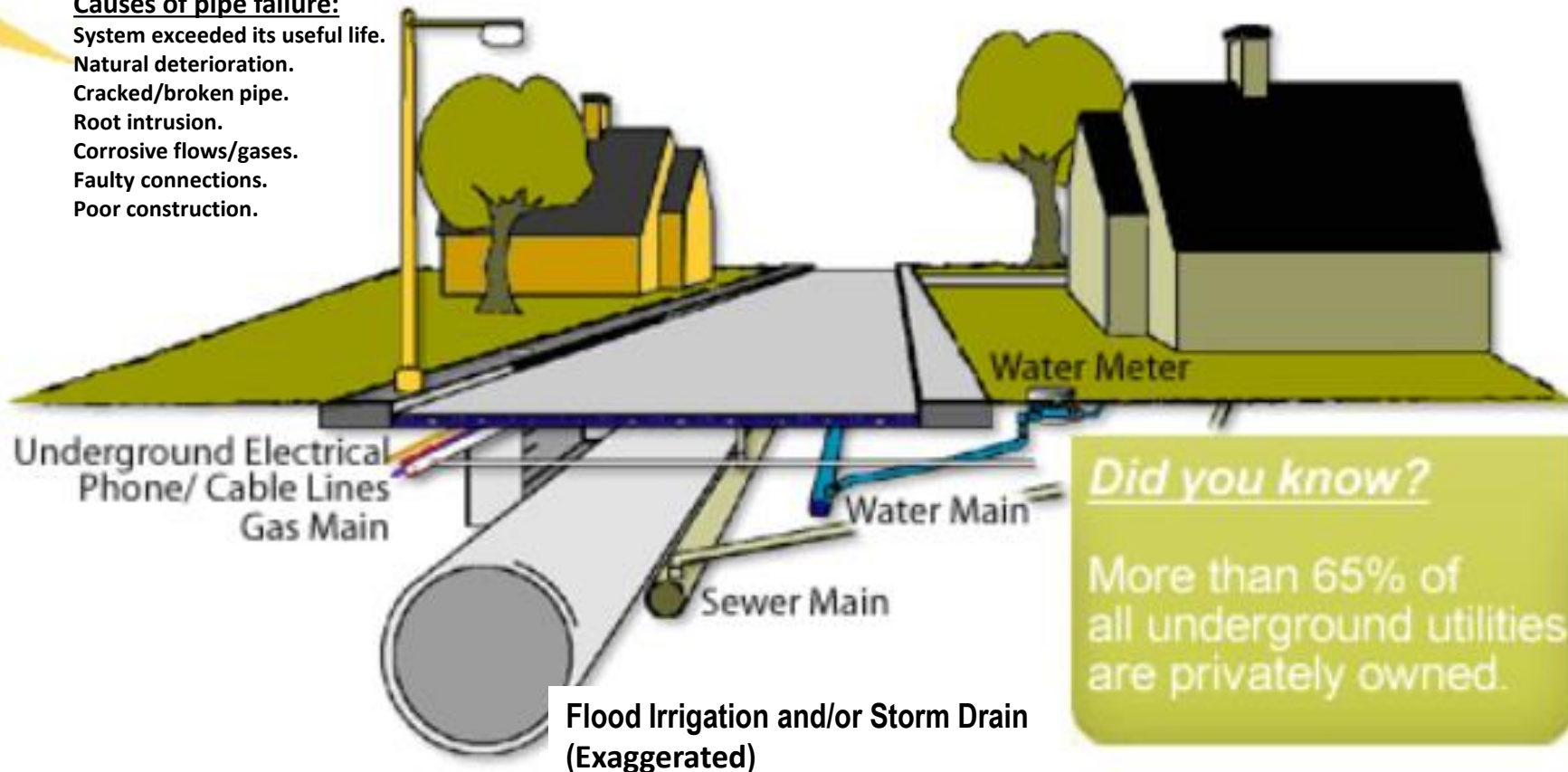


- Typical Street Section showing:
 - Sanitary Sewer, Water, and other Underground Utilities
- Work Locations
- Sewer Line Design
- Water Line Design
- Tentative Construction Schedules
- What to expect to see during construction

TYPICAL STREET SECTION: SANITARY SEWER, WATER and OTHER UNDERGROUND UTILITIES

Causes of pipe failure:


- System exceeded its useful life.
- Natural deterioration.
- Cracked/broken pipe.
- Root intrusion.
- Corrosive flows/gases.
- Faulty connections.
- Poor construction.





Did you know?

More than 65% of all underground utilities are privately owned.

OVERALL PROJECT MAP

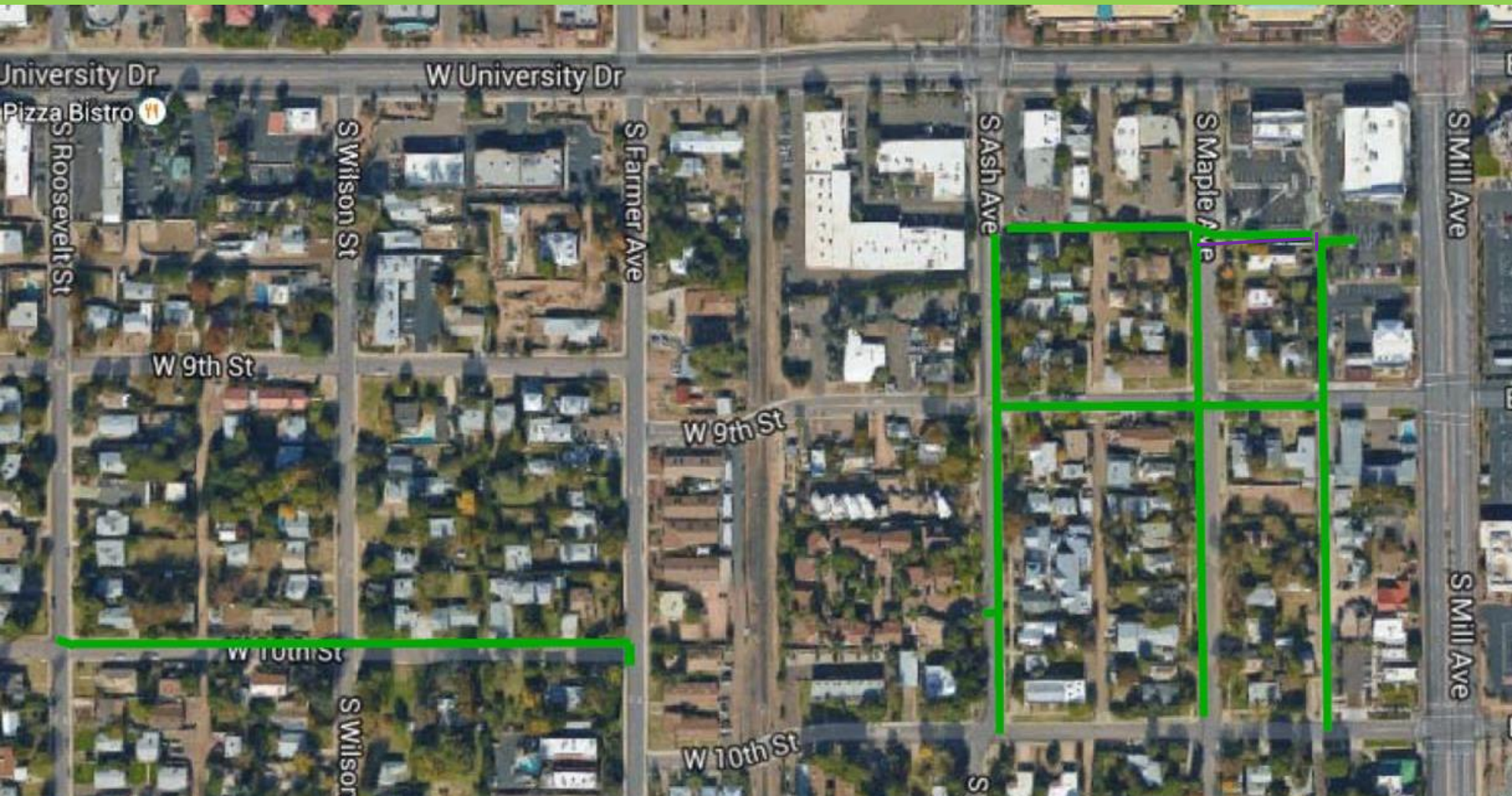
**New Water Line project
by City of Tempe** 

**New Sewer Line project
by City of Tempe** 

**New Gas Line project
by Southwest Gas** 

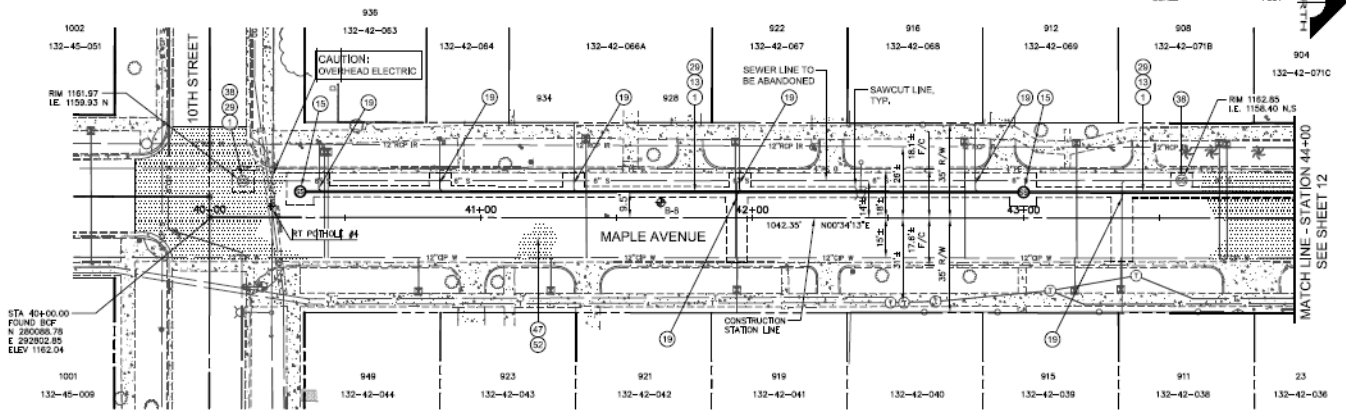


MAPLE-ASH NEIGHBORHOOD SANITARY SEWER REPLACEMENT LOCATION

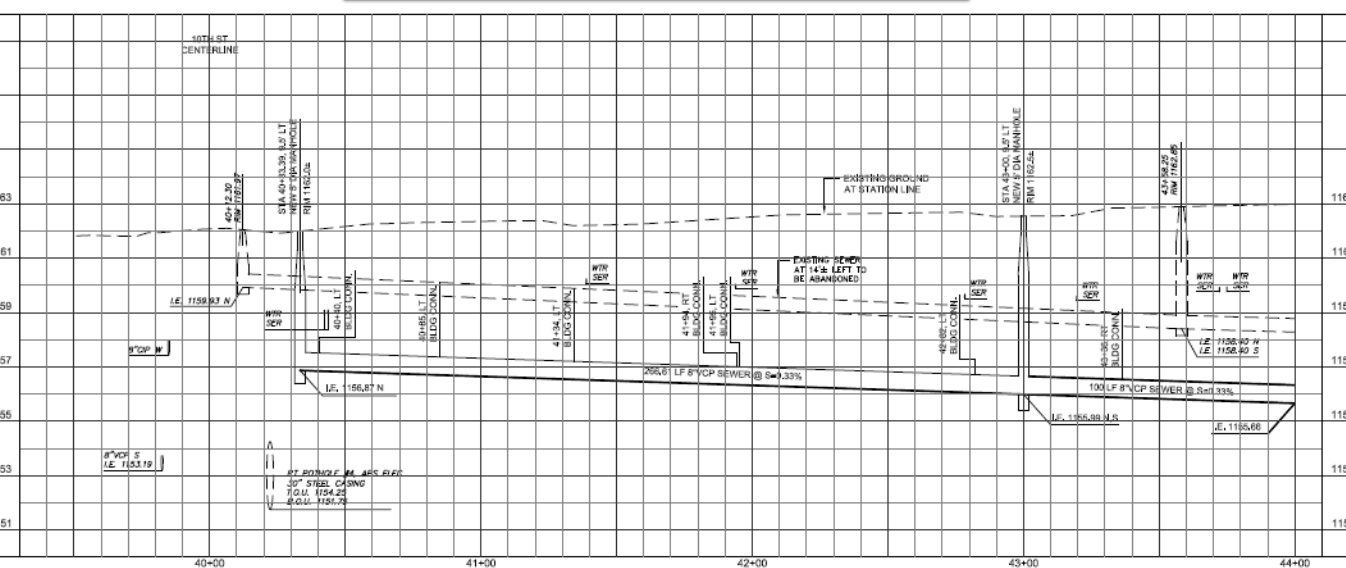


Key points:

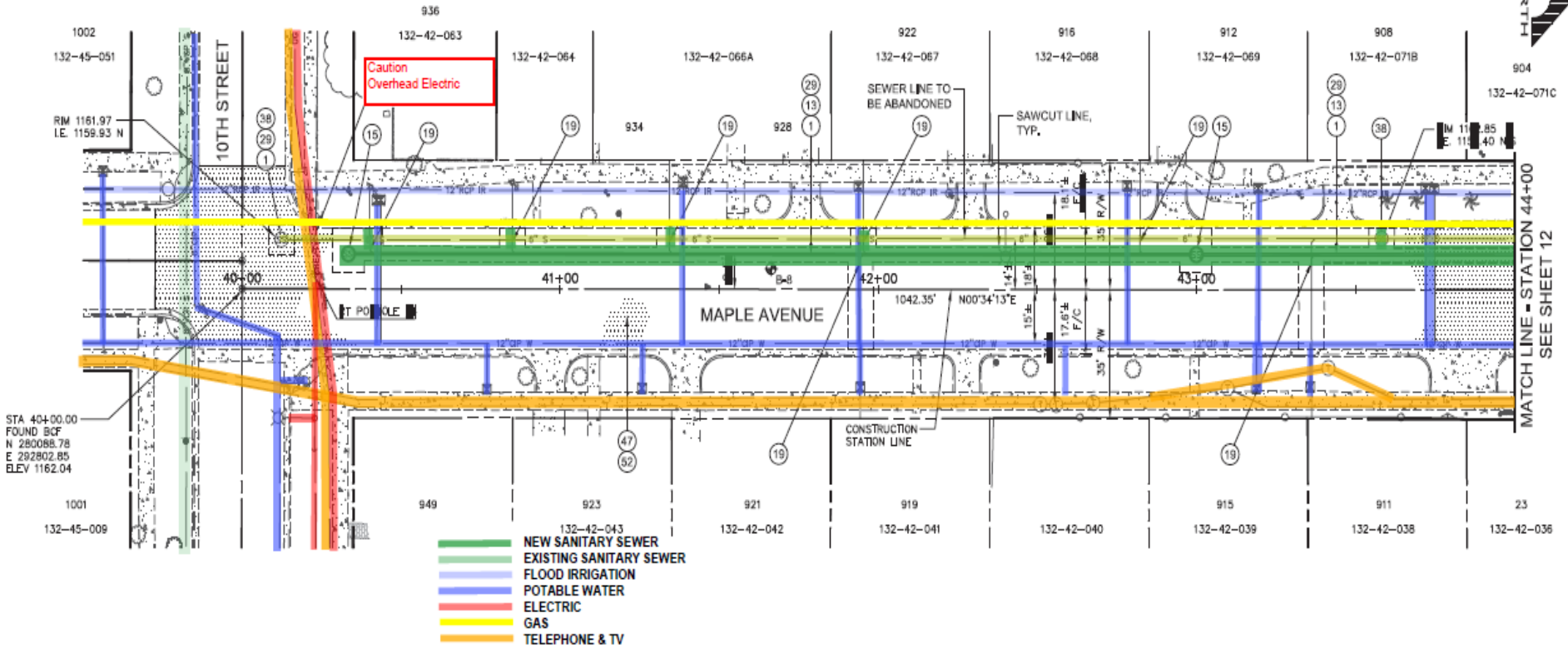
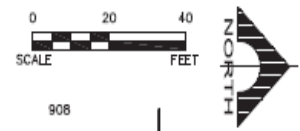
- Design - Nearly 3 years from initial survey to final design.
- A gravity flow Sanitary Sewer system.
- 4,000 LF of Vitrified Clay Pipe (VCP).
- 75 Service connect.; homes/business.
- 20 Manholes.
- 200 LF of Flood Irrigation pipe.
- 12,000 SY of Pmt Slurry Seal.
- Utilize temporary sewer tanks, 250 gal, in lieu of by pass-by piping.
- JOC construction in lieu of Low Bid.



DESIGN PLAN and PIPE PROFILE



PLAN REV	NOTE NO.	PLAN CONSTRUCTION NOTE DESCRIPTION	PRODUCT QUANTITY
	1	8" THICK PAVEMENT REPAIR AREA PER DETAIL 10.1, 10.2 AND 10.3	2742 S.Y.
	2	6" THICK PAVEMENT REPAIR AREA PER DETAIL 10.1, 10.2 AND 10.3	1718 S.Y.
	3	CONSTRUCT VERTICAL CURB & GUTTER PER MAG 810 DET. 10.4	240 S.F.
	4	CONSTRUCT POOL CURB & GUTTER PER MAG 810 DET. 10.4	100 S.F.
	5	CONSTRUCT CONCRETE VALLEY GUTTER PER MAG 810 DET. 10.4	384 S.F.
	6	CONSTRUCT CONCRETE SIDEWALK PER MAG 810 DET. 10.4	182 S.F.
	7	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	138 S.F.
	8	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	18 S.F.
	9	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	138 S.F.
	10	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	411 S.F.
	11	CONSTRUCT SIDEWALK ENTRANCE TYPE 'C' PER MAG 810 DET. 10.4	162 S.F.
	12	CONSTRUCT BRICK SIDEWALK PER DET. 10.4	88 S.F.
	13	INSTALL 12" VCP SEWER LINE AND TRENCH BACKFILL PER DET. 10.4	300 S.F.
	14	INSTALL 12" VCP SEWER LINE AND TRENCH BACKFILL PER DET. 10.4	813 S.F.
	15	INSTALL 12" VCP SEWER LINE AND TRENCH BACKFILL PER DET. 10.4	20 S.F.
	16	CONSTRUCT 24" VCP PER MAG 810 DET. 10.4	13 S.F.
	17	CONSTRUCT 24" VCP PER MAG 810 DET. 10.4	13 S.F.
	18	RECONNECT SEWER BUILDING CONNECTION PER DET. 8, SHEET 20	74 S.F.
	19	RECONNECT SEWER BUILDING CONNECTION PER DET. 8, SHEET 20	88 S.F.
	20	RECONNECT SEWER BUILDING CONNECTION PER DET. 8, SHEET 20	74 S.F.
	21	RECONNECT SEWER BUILDING CONNECTION PER DET. 8, SHEET 20	88 S.F.
	22	RECONNECT SEWER BUILDING CONNECTION PER DET. 8, SHEET 20	74 S.F.
	23	RECONNECT SEWER BUILDING CONNECTION PER DET. 8, SHEET 20	88 S.F.
	24	INSTALL 18" STEEL CASING PER DET. 8, SHEET 20	87 S.F.
	25	INSTALL 18" STEEL CASING PER DET. 8, SHEET 20	12 S.F.
	26	INSTALL SURVEY MARKER PER MAG 810 DET. 10.1, TYPE 'A'	1 S.A.
	27	REMOVE EXISTING CURB	1779 S.F.
	28	REMOVE EXISTING CONCRETE DRIVEWAY	340 S.F.
	29	REMOVE EXISTING CONCRETE DRIVEWAY	340 S.F.
	30	REMOVE EXISTING CONCRETE DRIVEWAY	340 S.F.
	31	REMOVE EXISTING CONCRETE DRIVEWAY	340 S.F.
	32	REMOVE EXISTING CONCRETE DRIVEWAY	340 S.F.
	33	REMOVE EXISTING CONCRETE DRIVEWAY	340 S.F.
	34	REMOVE EXISTING CONCRETE DRIVEWAY	340 S.F.
	35	REMOVE EXISTING CONCRETE DRIVEWAY	340 S.F.
	36	REMOVE EXISTING CONCRETE DRIVEWAY	340 S.F.
	37	CONCRETE FIBER DRAIN STRUCTURE PER DET. 12, SHEET 20	1 S.A.
	38	REMOVE SEWER LINE AND CARRIER PIPE REPAIR EXISTING 22" STORM DRAIN PER DET. 2, SHEET 20	46 S.F.
	39	INSTALL 12" VCP PER MAG 810 DET. 10.4	118 S.F.
	40	REMOVE EXISTING 20" HORIZONTAL PIPE	17 S.F.
	41	INSTALL 12" VCP PER MAG 810 DET. 10.4	17 S.F.
	42	INSTALL 12" VCP PER MAG 810 DET. 10.4	17 S.F.
	43	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	44	INSTALL 12" VCP PER MAG 810 DET. 10.4	17 S.F.
	45	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	46	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	47	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	48	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	49	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	50	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	51	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	52	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	53	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	54	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	55	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	56	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	57	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	58	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	59	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	60	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	61	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	62	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	63	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	64	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	65	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	66	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	67	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	68	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	69	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.
	70	CONSTRUCT BRICK CURB PER MAG 810 DET. 10.4	17 S.F.



DESIGN PLAN

Utilities highlighted

Design cost approximately \$140,000.

Construction cost approximately \$1.9M.

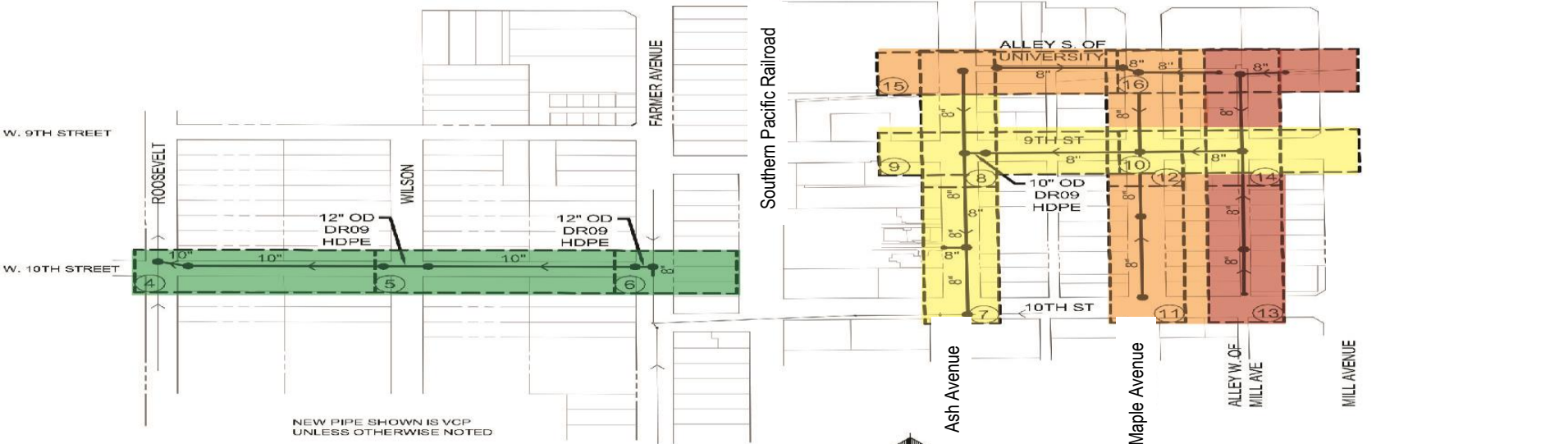
TENTATIVE CONSTRUCTION SCHEDULE

FEB '16 MAR '16 APR '16 MAY '16 JUN '16

- 10TH ST. JACK & BORE
- 10TH STREET SEWER
- 10TH ST. STORM DRAIN STRUCTURE
- ASH AVENUE SEWER
- 9TH STREET SEWER
- MAPLE STREET SEWER
- UNIVERSITY ALLEY
- MILL AVENUE ALLEY



UNIVERSITY DRIVE



NEW PIPE SHOWN IS VCP UNLESS OTHERWISE NOTED

⊙ SEWER PLAN AND PROFILE SHEET

KEY MAP



NTS

SANITARY SEWER uses VITRIFIED CLAY PIPE



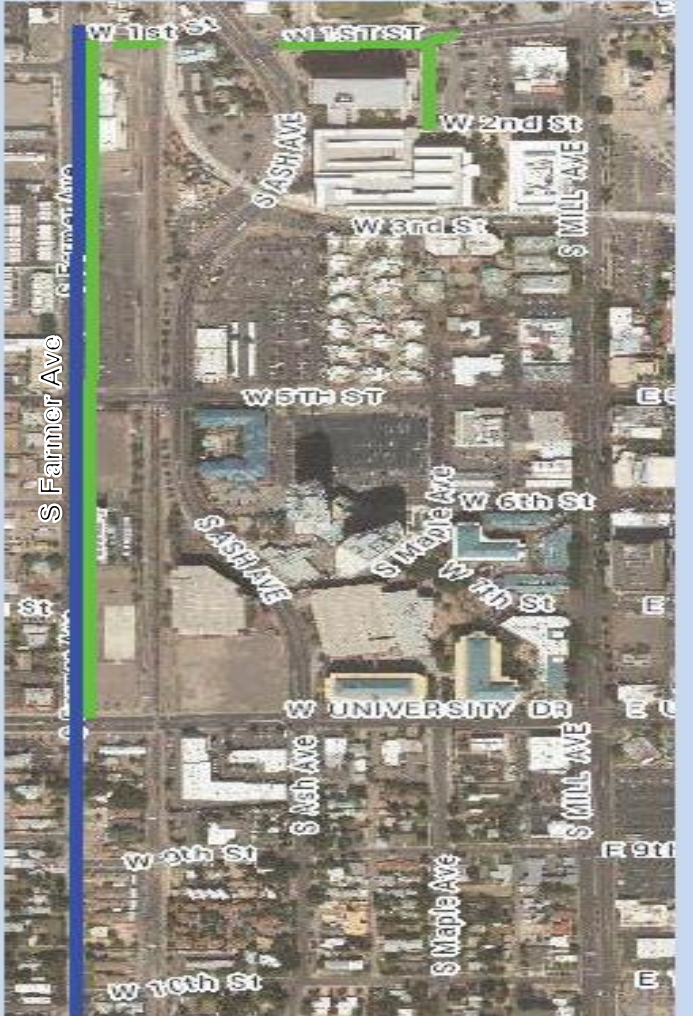
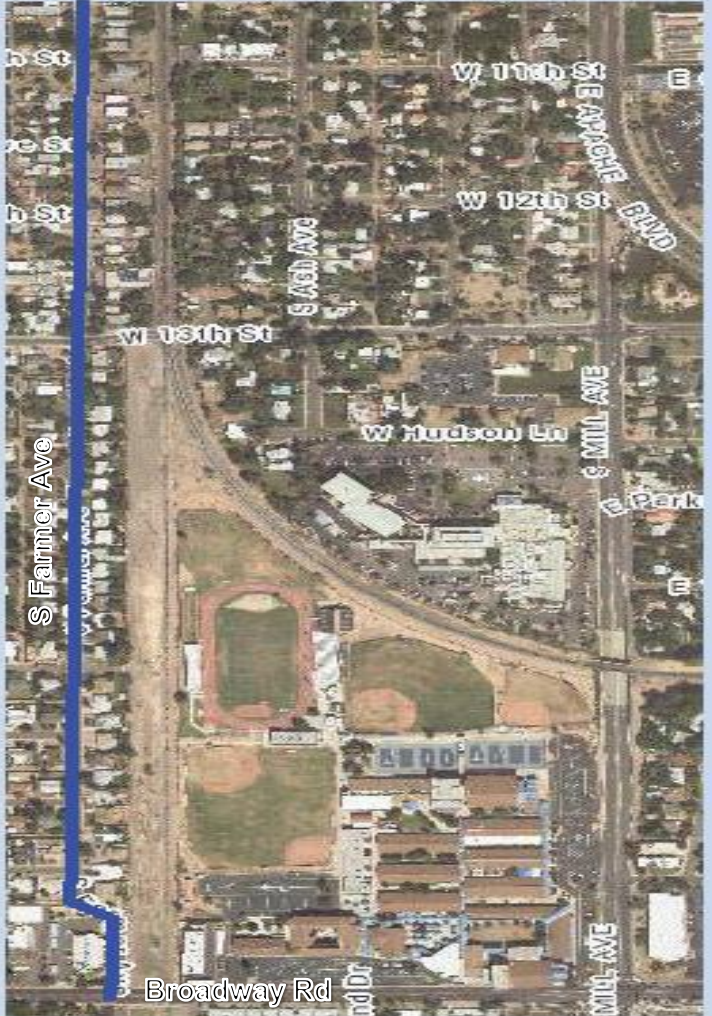
Vitrified Clay Pipe

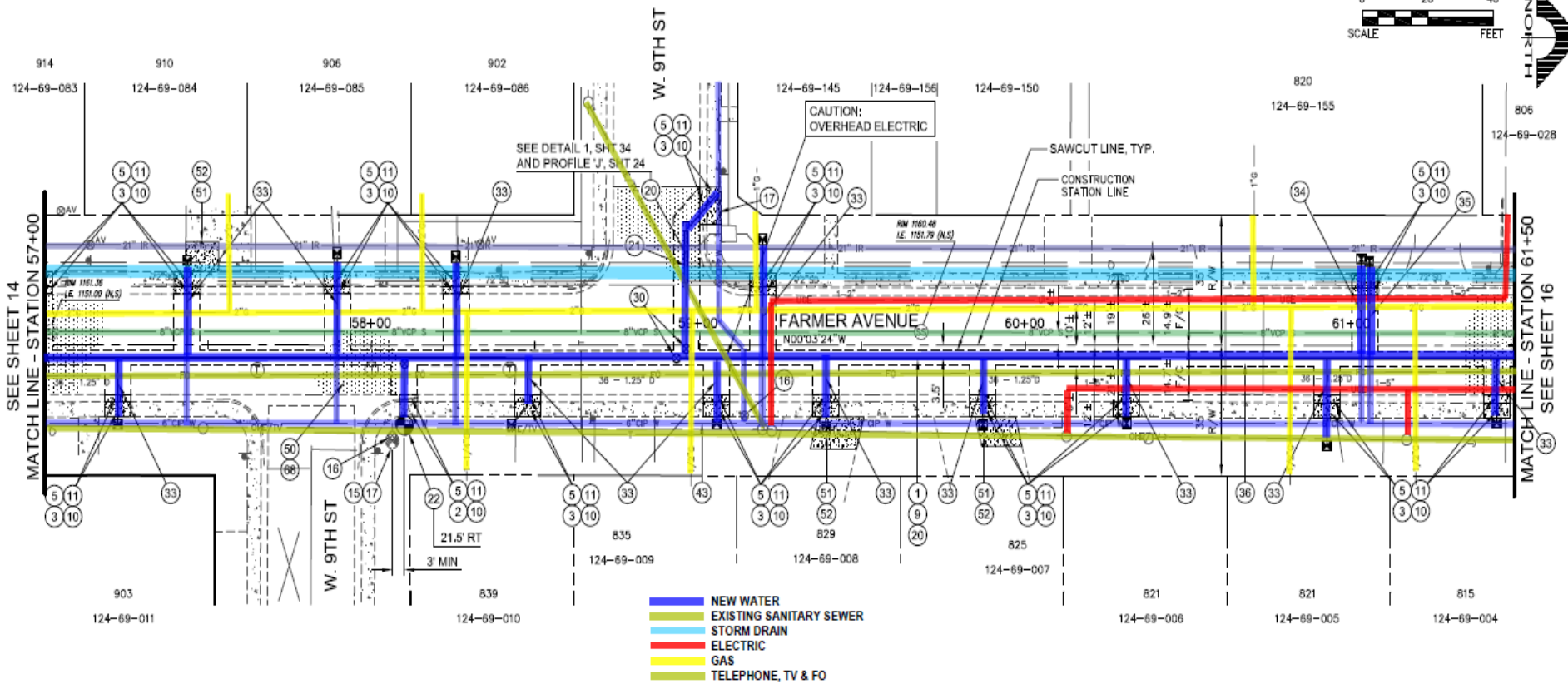
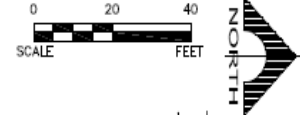
<http://www.southwestbrowneyes.com/>



https://en.wikipedia.org/wiki/Vitrified_clay_pipe#/

FARMER AVENUE WATER LINE & SANITARY SEWER REPLACEMENT & REHABILITATION LOCATION





DESIGN PLAN

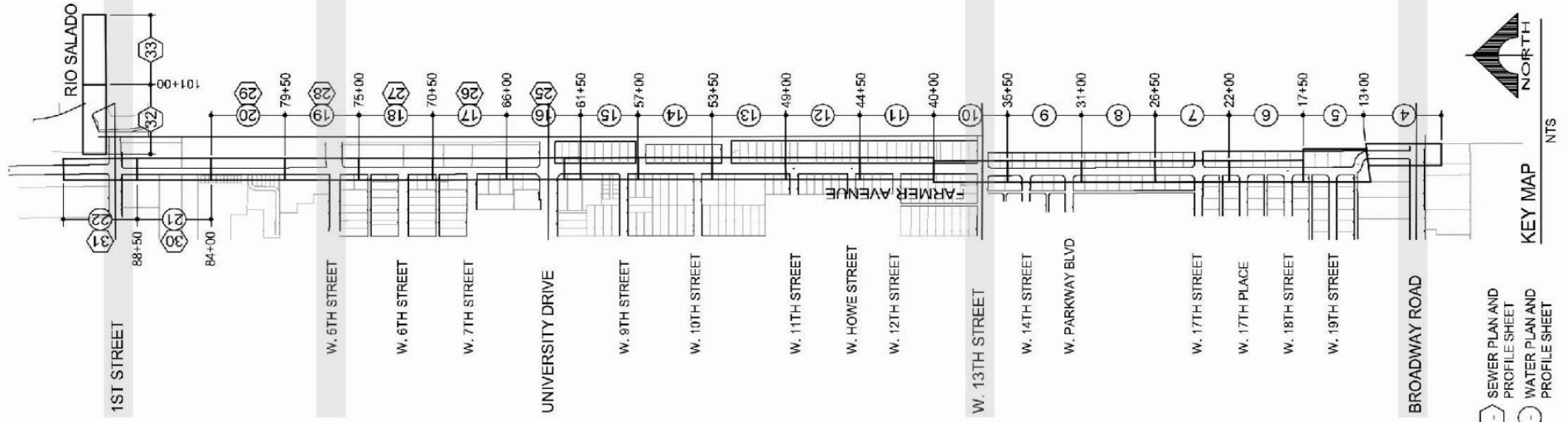
Utilities highlighted

Design cost approximately \$195,000.

Construction cost approximately \$3.2M.

■ WATERLINE INSTALLATION
■ SEWERLINE INSTALLATION

TENTATIVE CONSTRUCTION SCHEDULE





Ductile Iron Pipes have higher tensile strength, yield strength, ductility and impact resistance which are the reasons why the use of Ductile Iron Pipes has grown up at a rapid rate over the last 50 years or so replacing pipes of other materials for water supplies and sewage lines.

<http://jrkgroup.co/dipipe.html>



PAVEMENT SAWCUTTING





TRENCH



TRENCH SHORING



INSIDE TRENCH



EXISTING UTILITIES



10/22/2012 11:48

SMALL SEWER CONNECTION



PLACING WATER PIPE



NEW FIRE HYDRANT



WATER SERVICE CONNECTION



WATER LINE UNDER EXISTING UTILITIES



WATER LINE IN TRENCH



TRENCH BACKFILL



TRENCH PLATES





FINISHED WATER VALVE



FINISHED MANHOLE



PAVEMENT SLURRY SEAL



Neighborhood Meeting

Neighborhood Contact

Laura Kajfez

City of Tempe

Neighborhood Services Specialist

Stay connected...

- ❑ Look for postcard updates
- ❑ Sign up for email updates
- ❑ Facebook posts to neighborhoods' pages
- ❑ Project Hotline: 480.898.4110
- ❑ City webpage:



www.tempe.gov/downtown-neighborhoods-water-sewer

Project Contacts

City of Tempe
Neighborhood Services
Laura Kajfez
480-350-2840
Laura_Kajfez@tempe.gov

Hunter Contracting
Project Manager
Erik Paulsen
480-892-0521
erikp@huntercontracting.com

City of Tempe
Construction Manager
Jerome Guzman
480-250-5110
Jerome_Guzman@tempe.gov

CWCE
Construction Manager
Cliff Williams
602-677-4351
cliff@cwceinc.com

Neighborhood Meeting



Questions?

Neighborhood Meeting



THANK YOU FOR ATTENDING!

From YOUR PROJECT TEAM