Kimley-Horn
and Associates, Inc.

7740 N. 16th Street
Suite 300
Phoenix, Arizona
85020

February 11, 2014

JDM Partners
2400 E. Biltmore Circle, Bldg 2 #1270
Phoenix, AZ 85016

RE: Wigwam Resort Redevelopment - Parcel A– Utilities Research
Northwest corner of Litchfield Road and Village Parkway
Litchfield Park, AZ

EXECUTIVE SUMMARY

This report was prepared for a proposed high density residential development on a 31.16-acre parcel located at the Northwest corner of Litchfield Road and Village Parkway in Litchfield, Arizona. The site is bounded on the south by Village Parkway, on the west by the Village at Litchfield Park Phase 1 Residential neighborhood, on the north by the Wigwam "Red" Golf Course, and on the east by Litchfield Road.

The sources of information include readily available as-built records, Liberty Utility reference manuals, and site visits by Kimley-Horn and Associates, Inc. A summary of our investigation follows:

- Water service is available to the site. A 12" line is located in Village Parkway as well as in Litchfield Road, along the perimeter of the project.
- Sewer service is available to the site from Village Parkway, south of the site and Cloverfield Street, west of the site.

I. WATER INFRASTRUCTURE

There is an existing 12" water main serving the Litchfield Park Phase 1 subdivision located in Village Parkway. A 12"ACP main is also located in Litchfield Road and Wigwam Boulevard. It is assumed that these mains have sufficient capacity to provide the required fire flows to serve the project. Although upsizing of offsite facilities is not anticipated, it is recommended that pressure and fire flow tests should be performed during the initial site design phase to verify that adequate pressure is available. Multiple points of connection are assumed to be incorporated into final site design to meet proposed demands.

An exhibit showing the approximate location of the existing lines is attached to this memo.

The existing water lines are owned and operated by Liberty Utilities.

II. SEWER INFRASTRUCTURE

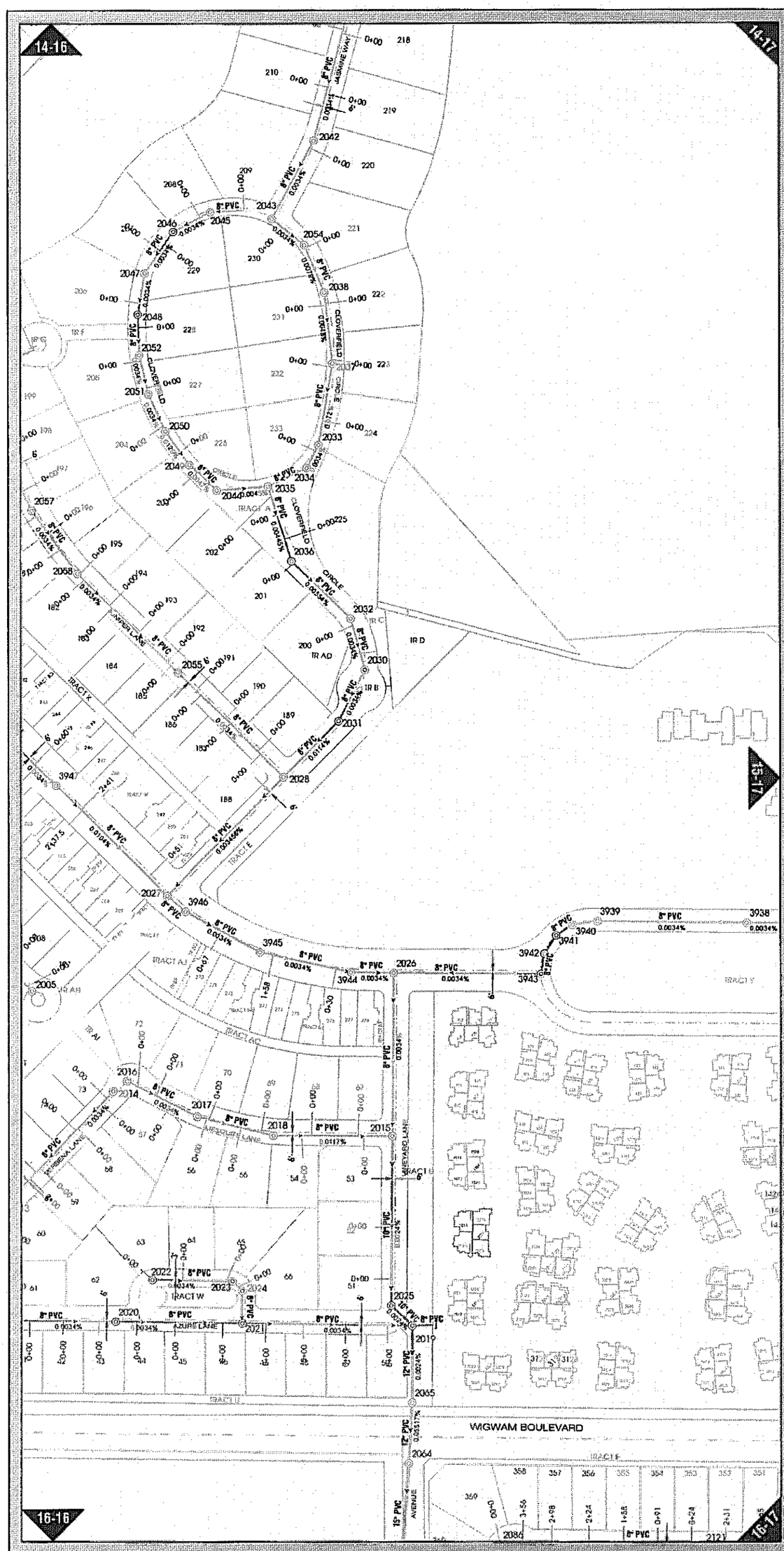
There is an existing 8" sewer main in Village Parkway that flows east from Cloverfield Street towards Vineyard Lane. There is also sewer in Village Parkway that flows west from a point approx. 100 feet west of Litchfield Road towards Vineyard Lane. There is an 8" sewer in Vineyard Lane that flows south towards Wigwam Boulevard. It is approximately 9 feet deep with an invert elevation of 1011 +/- .

There are no wastewater lines within Litchfield Road or Wigwam Boulevard available to serve the site. The Vineyard Lane sewer increases in size from 8" to 12" as it flows towards Wigwam Boulevard where it increases again to 15".

The existing sewer lines are owned and operated by Liberty Utilities.

If there are any questions, please contact Michael Delmarter at (602) 906-1374 mike.delmarter@kimley-horn.com for additional information.

Attachments:
Water and Sewer quarter sections maps



50 25 0 50 100 150 200
scale in feet

Legend
Sewer Utilities

SEWER CONTROL VALVE
- Air Release Valve

SEWER SYSTEM VALVE
- Gate

SEWER CLEANOUT
- Cleanout
- Double Cleanout

SEWER FITTING
- Cap
- Coupling

SEWER MANHOLE
- Manhole

SEWER NETWORK STRUCTURE
- Treatment Plant
- Lift Station

SEWER GRAVITY MAIN-ACTIVE
- Collector 1"-4"
- Collector 6"-8"
- Collector 10"-12"
- Collector 15"-18"
- Collector 20"-24"
- Collector 30"-36"

SEWER GRAVITY MAIN-PRIVATE
- Collector 1"-4"
- Collector 6"-8"
- Collector 10"-12"
- Collector 15"-18"
- Collector 20"-24"
- Collector 30"-36"

SEWER GRAVITY MAIN-ABANDONED
- Collector 1"-4"
- Collector 6"-8"
- Collector 10"-12"
- Collector 15"-18"
- Collector 24"-30"

SEWER SERVICE
- Lateral Line

SEWER FORCE MAIN
- Force Main 1"-2.5"
- Force Main 3"-4"
- Force Main 6"-8"
- Force Main 12"-16"

RE-USE NETWORK STRUCTURE
- Enclosed Storage Facility

RE-USE FITTING
- Cap
- Corp Stop
- Coupling
- Reducer

RE-USE CONTROL VALVE
- Air Release

RE-USE SYSTEM VALVE
- Gate

RE-USE PRESSURE MAIN
- Distribution Main up to 4"
- Distribution Main 6"-8"
- Distribution Main 10"-12"
- Distribution Main 16"
- Distribution Main 20"-24"

STREET CENTERLINE
- Centerline

PARCELS
- Parcel Boundary

SEWER SERVICE AREA
- CCN Boundary

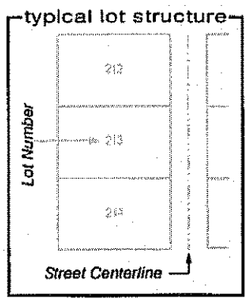
Liberty Utilities
12500 Sewer System

Engineering • GIS Mapping **Liberty Utilities**

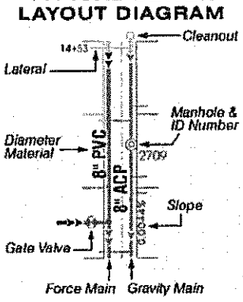
15-16
Right

50 25 0 50 100 150 200
scale in feet

typical lot structure



TYPICAL SEWER LAYOUT DIAGRAM

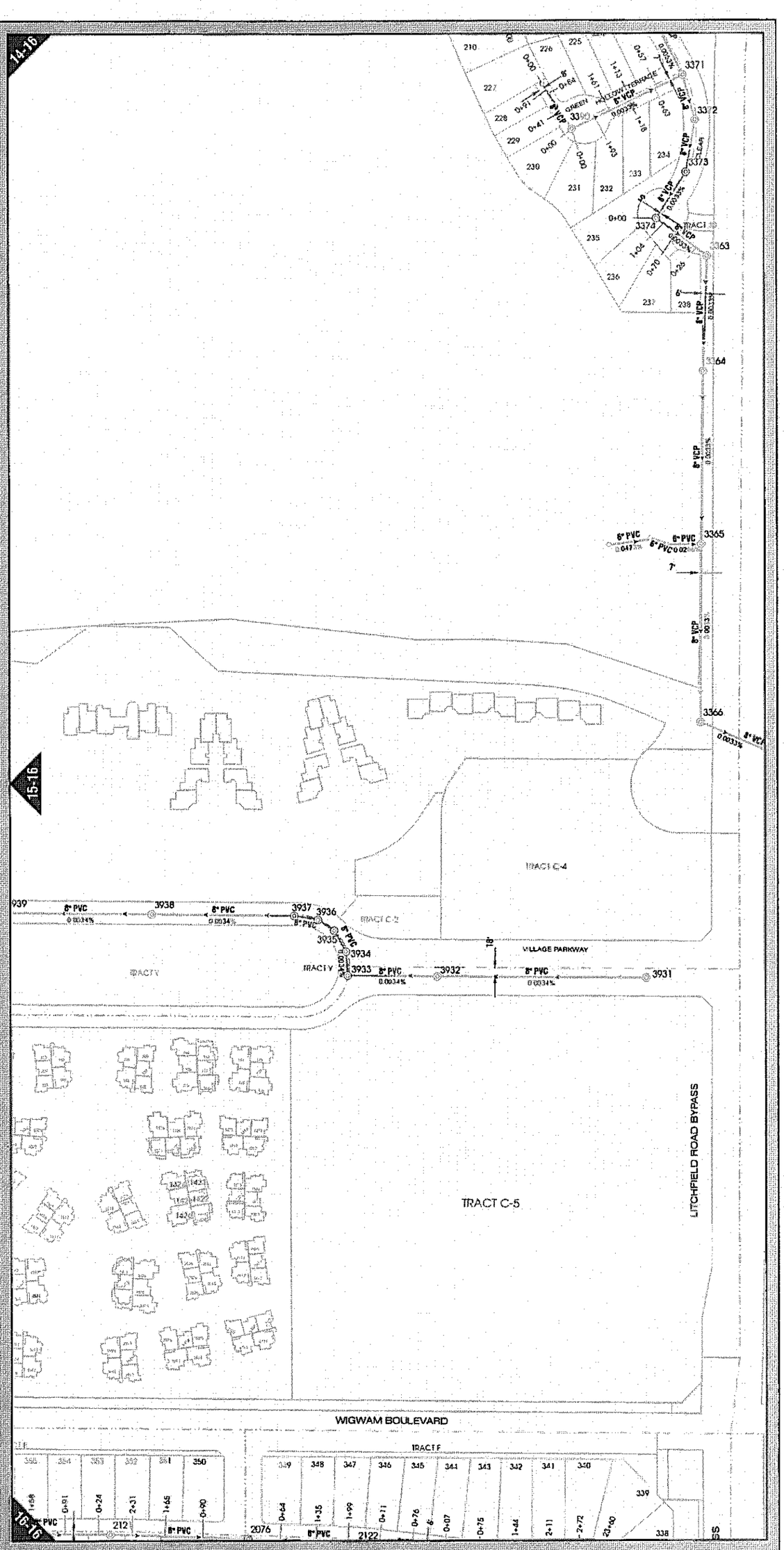


14-16	14-17	14-18
15-16	15-17	15-18
16-16	16-17	16-18

quarter sections

SE 1/4 Section 21
Township/Range: T2N R1W

Liberty Utilities
LPSCO Sewer System



15-17
Left

LPSCO Sewer System

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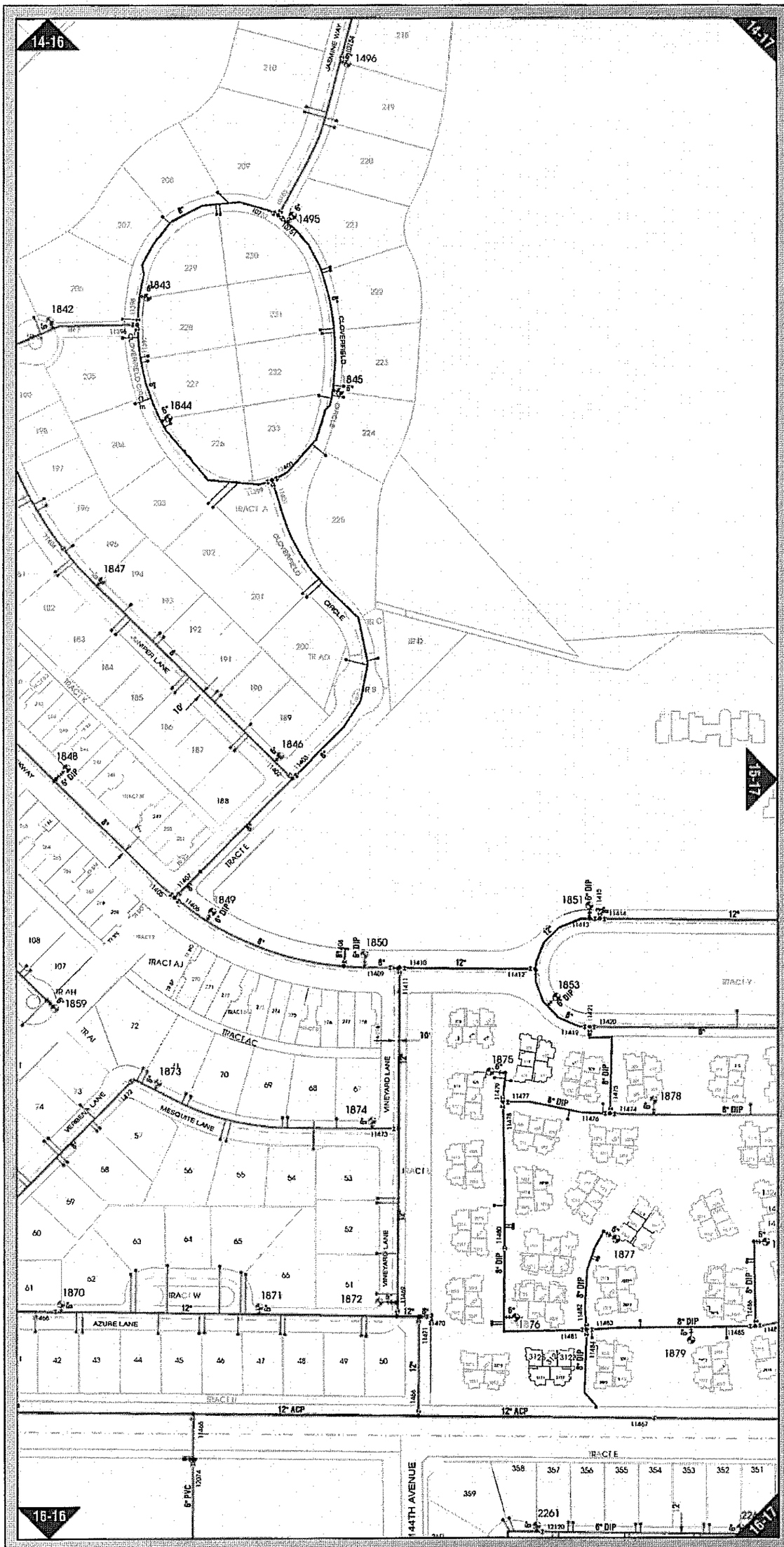


50 25 0 50 100 150 200
scale in feet

Legend
Water Utilities

WATER CONTROL VALVE
- Air Release
- Back Flow
- Blow Off

WATER METER
- Meter

WATER SYSTEM VALVE
- Gate
- Hydrant

FIRE HYDRANT
- Hydrant

WATER FITTING
- Cap
- Corp Stop
- Coupling
- Reducer

WATER NETWORK STRUCTURE
- Enclosed Storage Facility
- Production Well
- Pump Station
- Tank
- Storage Basin
- Treatment Plant
- Reservoir

WATER SERVICE
- Domestic
- Hydrant Laterals

WATER PRESSURE MAIN: ACTIVE
- Distribution Main 1"-2"
- Distribution Main 3"-4"
- Distribution Main 6"-8"
- Distribution Main 10"-12"
- Distribution Main 16"
- Distribution Main 20"-24"
- Distribution Main 30"-42"

WATER PRESSURE MAIN: BY OTHERS
- Distribution Main: unknown
- Distribution Main 3"-4"
- Distribution Main 6"-8"
- Distribution Main 10"-12"

STREET CENTERLINE
- Centerline

PARCELS
- Parcel Boundary

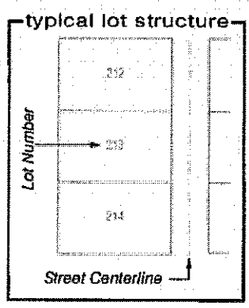
Liberty Utilities
LPSCO Water System

Engineering • GIS Mapping **Liberty Utilities**

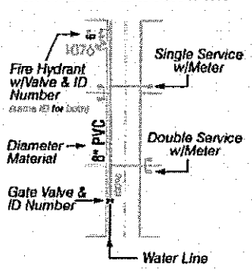
15-16
Right

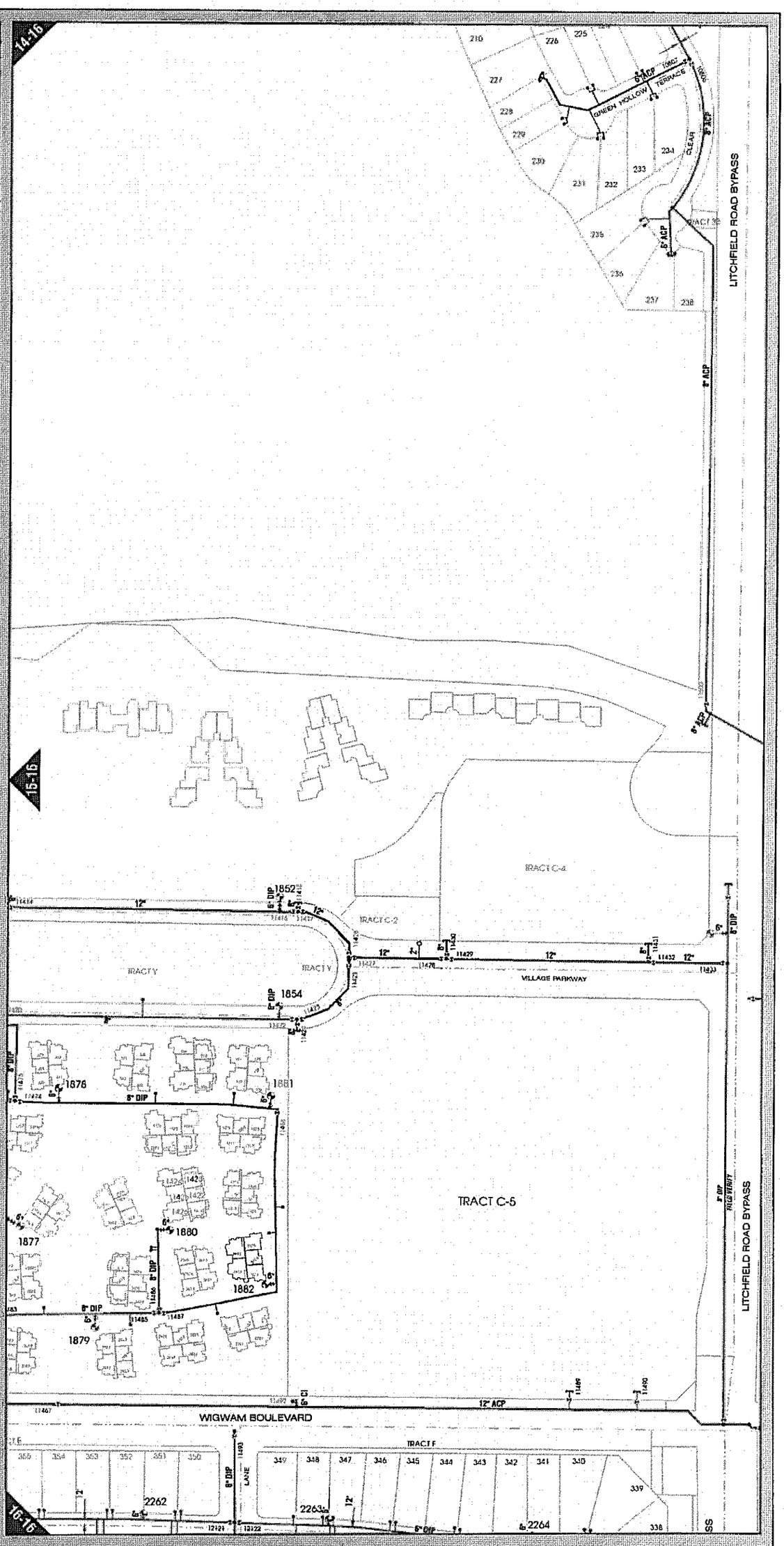
50 25 0 50 100 150 200
scale in feet

typical lot structure



TYPICAL WATER LAYOUT DIAGRAM





14-16	14-17	14-18
15-16	15-17	15-18
16-16	16-17	16-18

quarter sections

SE 1/4 Section 21
Township/Range: T2N-R1W

Liberty Utilities
LPSCO Water System

15-17
Left

LPSCO Water System

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