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North Las Vegas Airport Master Plan

Utilities Plan

Prepared By: HNTB

March 2025

Utilities Plan

Background

The existing utility infrastructure locations, please see **Figure – E1,** in relation to the proposed North Las Vegas Airport improvements and partial Carey Avenue closure and vacation (the proposed "Carey re-route") are documented in this section, along with new proposed alternative alignments. Carey Avenue is a 100-foot-wide right-of-way road along the proposed Carey-re-route segment. GCW, Inc. is preparing a traffic study for the proposed Carey re-route which will include the proposed new roadway alignment for the Carey re-route. Please note that the Carey re-route alignment shown on the Overall Proposed Utilities, please see **Figure – P1,** is preliminary and does not reflect the final recommended alignment by GCW, Inc. The utility services that may be impacted by the proposed improvements include:

- Potable water
- Sanitary Sewer
- Stormwater
- Natural Gas
- Electrical
- Communications

The objectives of the utility investigations were to:

1. Identify existing utilities in the vicinity of the proposed Airport improvements to determine whether any conflicts would occur with future development and operations of the proposed improvements.
2. Determine if the existing utilities could be protected in place in the vicinity of the proposed Airport improvements.
3. Determine utility alignments to relocate existing utilities from the proposed area of Airport improvements and reroute these utilities around the future Airport improvements.
4. Prepare preliminary cost estimates for the relocation of utility services around the proposed Airport improvements.

During the review, the type of utility, the provider or source of the utility, the size of the utility, the approximate length of utility in conflict with the proposed Airport improvements were identified. Each utility provider was contacted to obtain the latest information on the existing utility infrastructure, as-builts, and the findings are documented herein.

Summary of Utilities

Utility	Owner	Size	Material	Approx. Length
Water	**SNWA**	**24-inch**	**MLCP**	**2,000 ft**
Water	**SNWA**	**24-inch**	**ACP**	**2,800 ft**
Water	**CNLV**	**24-inch**	**Steel**	**3,000 ft**
Water	**CNLV**	**16-inch**	**ACP**	**4,000 ft**
Water	**CNLV**	**12-inch**	**ACP**	**2,000 ft**
Sanitary Sewer	**CNLV**	**12-inch**	**PVC**	**2,700 ft**
Sanitary Sewer	**CNLV**	**8-inch**	**PVC**	**2,600 ft**
Storm Drain	**CNLV**	**66-inch**	**RCP**	**700 ft**
Storm Drain	**CNLV**	**60-inch**	**RCP**	**1,700 ft**
Storm Drain	**CNLV**	**54-inch**	**RCP**	**1,200 ft**
Storm Drain	**CNLV**	**24-inch**	**RCP**	**1,200 ft**
Storm Drain	**CNLV**	**18-inch**	**RCP**	**1,400 ft**
Storm Drain	**CCRFCD**	**14 ft x 8 ft**	**RCB**	**750 ft**

Utility	Owner	Size	Material	Approx. Length
Storm Drain	CCRFCD	11 ft x 11 ft	RCB	1,700 ft
Flood Channel	CCRFCD	14 ft w x 8 ft d trapezoid	Concrete Lined	2,400 ft
Gas	SW Gas	8-inch High Pressure	Steel	4,500 ft
Gas	SW Gas	4-inch	PE	6,300 ft
Gas	SW Gas	2-inch	PE	500 ft
Electrical Power	NV Energy	Overhead	Cable	5,200 ft
Electrical Power	NV Energy	Underground	Cable/Conduit	12,000 ft
CATV	Cox	Overhead	Cable	4,500 ft
CATV	Cox	Underground	Cable/Conduit	2,500 ft

Potable Water

Existing Conditions

There are several potable waterlines located in the vicinity of the North Las Vegas Airport future improvements. The potable waterlines are currently located in Carey Avenue. The City of North Las Vegas (CNLV) operates and maintains two (2) potable waterlines, a 24-inch Steel transmission waterline and a 12-inch increasing to 16-inch Asbestos Cement Pipe (ACP) distribution waterline in the northside of Carey Avenue. The Southern Nevada Water Authority (SNWA) operates and maintains a 24-inch Mortar Lined and Coated Pipe (MLCP) waterline that transitions to a 24-inch ACP waterline in southside of Carey Avenue. The existing water lines are shown on **Figure – E2**. There is existing right of way easement for the SNWA 24-inch MLCP waterline; the easement is 30 ft wide along the southside of Carey Avenue.

Proposed Conditions

From discussions with CNLV, it was determined that the city will consider allowing the 24-inch steel transmission waterline to be protected in place, provided that CNLV would have 24-hour accessibility to maintain the facility. The 12-inch increasing to 16-inch ACP distribution waterline, per CNLV will most probably need to be relocated as the waterline requires to be maintained at a more frequent interval due to the age and condition of the pipeline. If this pipeline, was not relocated then access to the line could present the possibility of requiring runway closures more frequently impacting Airport operations. Please note, the 12-inch to 16-inch ACP waterline consists of an asbestos material and will need to be handled per local and state safety guidelines and disposed of appropriately at a landfill that accepts asbestos material. This will require special permitting and standard third-party observation to confirm asbestos is handled appropriately. Any ACP material not exposed will need to be abandoned per CNLV and Uniform Design and Construction Standards for Potable Water Systems (UDACS) guidelines and requirements. The relocation of the 12-inch to 16-inch ACP waterline will consist of abandoning in place the 16- inch ACP existing waterline and realigning a new segment in the proposed reroute of Carey Avenue south along the old Allen Road alignment and connecting to Lake Mead Boulevard. In the proposed new Carey Avenue roadway alignment, a new 16-inch PVC waterline, approximately 2,000 feet in length, will need to be constructed and connected to an existing 12-inch waterline located in Lake Mead Boulevard. Please see **Figure – P2**.

Per discussion with SNWA it was determined that the existing waterline will most probably need to be relocated due to accessibility requirements. Further discussion discovered the portion of the 24-inch waterline to be ACP material, which is conflict with the proposed pavement section for airfield taxiways and runways. Special consideration will need to be taken as any exposure will require the asbestos to be mitigated and disposed at approved landfills. If ACP is exposed, it will need to be properly disposed of along with additional permitting. Any ACP material not exposed will need to be abandoned per SNWA guidelines and requirements. A relocation of the 24-inch ACP waterline would consist of abandoning in place the 24-inch ACP and 24-inch MLCP existing waterlines in Carey Avenue and Simmons Street. The new 24-inch MLCP waterline would be constructed in the reroute of Carey Avenue south along the old Allen Road

alignment, approximately 2,000 ft, then east in Lake Mead Boulevard, approximately 2,680 ft then north in Simmons Street, approximately 300 ft and connecting to the 24-inch SNWA Twin Lakes discharge pipeline. Please see **Figure – P2**. SNWA also expressed interest in replacing or relocating an additional ACP waterline not impacted by the future North Las Vegas Airport improvement project. This additional work would be funded by SNWA and not CCDOA.

Sanitary Sewer

Existing Conditions

Several sanitary sewer pipelines and manholes are in the vicinity of the North Las Vegas Airport future improvements. The sanitary sewer pipelines and manholes are currently located in Carey Avenue. The City of North Las Vegas (CNLV) operates and maintains two (2) sanitary sewer main pipelines, 8-inch and 12-inch polyvinyl chloride (PVC), and multiple 48-inch manholes in Carey Avenue. In addition, the 8-inch sewer pipeline terminates in Carey Avenue just south of Runway 12R-30L turning south to follow the old alignment of Allen Road and connecting to an existing 12-inch PVC sanitary sewer pipeline in Lake Mead Boulevard. The existing sewer lines are shown on **Figure – E3**.

Proposed Conditions

From discussion with CNLV it was determined that the 8-inch and the 12-inch PVC sanitary sewer pipelines will most probably need to be relocated as the sanitary sewer pipelines require maintenance and 24-hour access for any emergency repair. A relocation of 12-inch PVC sanitary sewer pipeline would consist of abandoning in place for approximately 2,640 ft in Carey Avenue to Simmons Street. A portion of the existing 8-inch PVC sewer pipeline, approximately 450 ft, would need to be abandoned. A new 12-inch sanitary sewer pipeline would be constructed, to replace the 8-inch and 12-inch sewer pipeline, in the reroute of Carey Avenue, beginning just south of Runway 12R-30L, south along the old Allen Road alignment, approximately 2,000 ft, then connecting to the existing 12-inch sanitary sewer pipeline in Lake Mead Boulevard. Please note: the existing 12-inch PVC sanitary sewer pipeline in Lake Mead Boulevard and in Simmons Street would need to be analyzed for capacity and possible upsizing to a 15-inch sanitary sewer pipeline due to the relocation and increased flows. Also, new 48-inch manholes would need to be constructed with the new 12-inch sanitary sewer pipeline. If it is determined that the existing12-inch sanitary sewer pipeline will need to be increased to a 15-inch pipeline for additional capacity, 60-inch manholes would need to be constructed per CNLV and the Uniform and Construction Standards for Wastewater Collection Systems (UCSWCS) Guidelines. An additional option would be to install a parallel 12-inch sewer pipeline in Lake Mead Boulevard and Simmons Street to protect the existing 12-inch sewer pipeline and prevent the need for bypass pumping of sewage effluent would be mitigated. Please see **Figure – P3**.

Storm Water

Existing Conditions

There are several stormwater facilities located in the vicinity of the North Las Vegas Airport future improvements. The stormwater facilities are located in Carey Avenue. The City of North Las Vegas (CNLV) has two (2) storm drains, a 1,400 ft long 18-inch in diameter reinforced concrete pipe (RCP) storm drain, aligned in the center median that transitions into a 1,200 ft long 24-inch RCP and a 1,700 ft long 60-inch RCP storm drain, in the southside of Carey Avenue, that transitions into a 700 ft long 66-inch RCP and also into a 1,200 ft long 54-inch RCP closer to Simmons Street. Clark County Regional Flood Control District (CCRFCD) has a 2,400 ft long 14-foot wide 8 ft deep 1.5 to 1 side slope concrete lined trapezoid channel along the north side of Carey Avenue on Airport property. The storm water conveyance facilities drain into the existing CCRFCD Carey-Lake Mead Detention Basin (facility ID no. LVLM0228). The detention basin is categorized as 607-acre-foot facility and the CCRFCD 2023 Master Plan Update (MPU) does not require additional capacity at this facility. Please see **Figure – E4**.

Proposed Conditions

The existing storm water facilities, mentioned above, are in conflict with the future North Las Vegas Airport runway extension improvements. From discussion with CNLV it was determined that the city will consider protecting in place the 2 storm drains in the Carey Avenue alignment, however CNLV would need access to maintain the facilities. At this stage of planning, it has not been determined what kind of protection is needed. With protection of the storm drains, further analysis will need to be performed to determine the loads of future aircraft and runway grading for structural integrity of the storm drain pipelines. If it is determined that the existing storm drains cannot handle the future loads, the existing storm drains would need to be replaced with higher class RCP storm drainpipe. Please see **Figure** – **P4.**

Per discussion with CCRFCD it was determined that there are alternatives for the existing concrete lined trapezoid channel. Depending on the vertical alignment and grading of the runway extension, all or portions of the 14 ft wide by 8 ft deep 1.5 to 1 side slope trapezoid channel that are in conflict can be replaced with a 14 ft by 8 ft aircraft load rated reinforced concrete box culvert (RCBC) in its current location and alignment. The next alternative is to realign and construct a new 14ft wide 8 ft deep 1.5 to 1 side slope concrete lined trapezoid channel or construct a 14 ft by 8 ft RCBC along the reroute of Carey Avenue, beginning just south of Runway12R-30L, south along the old Allen Road alignment and then directly southeast, approximately 1,500 ft in length, connecting to the existing Lake Mead detention basin through a 14 ft by 8 ft RCBC inlet structure north of Lake Mead Boulevard on future airport air operations area (AOA) property. **Please see Figure – P4**.

Natural Gas (Southwest Gas)

Existing Conditions

There are several natural pipelines are in the vicinity of the North Las Vegas Airport future improvements. The natural gas pipelines are currently located in parts of Carey Avenue and Simmons Street. Southwest Gas operates and maintains a 4-inch polyethylene (PE) pipeline in Carey Avenue. In addition, there is a 4-inch PE pipeline stub-out that terminates 50 ft west of the Carey Avenue and Simmons Street intersection and an 8-inch High Pressure steel pipeline in a north/south alignment in Simmons Street. The existing natural gas pipelines are shown on **Figure – E5**.

Proposed Conditions

In review of the as-builts, there is a low likelihood of required Southwest Gas facility relocations under proposed conditions as current existing facilities lay outside the area proposed for the North Las Vegas Airport improvements.

Electrical (NV Energy Transmission and Distribution)

Existing Conditions

Several overhead and underground electrical power lines are in the vicinity of the North Las Vegas Airport future improvements. There are overhead and underground electrical transmission and distribution power lines currently located in Carey Avenue and Simmons Street. NV Energy operates and maintains overhead electrical transmission powerlines, one in south side of Carey Avenue 500 ft west of Simmons Street and transitioning to underground cables for 2,800 ft in 2 sets of three (3) 6-inch conduits that transition back to overhead powerlines 800 ft south of Carey Avenue. The overhead electrical transmission lines then traverse northwest 1,500 ft through a Walmart parking lot to Carey Avenue, then traversing west 1,600 ft in the south side of Carey to the existing Tonopah Substation just north of Carey Avenue and East of Rancho Drive. In addition, there is also an underground distribution line for 5,800 ft in 1 set of two (2) 6-inch conduits in the north side of Carey Avenue from the Tonopah Substation that provides power to the SNWA Simmons pumping station 500 ft north of the Carey Avenue and Simmons Street intersection. There are underground distribution lines in two (2) 4-inch conduits in south side of Carey and streetlights for the entire stretch of Carey Avenue on the north and south sides from Rancho Drive to Simmons Street. Overhead distribution powerlines are located on wood poles on the east side of Simmons Street north of Carey Avenue and also located on wood poles on the west side of Simmons Street South of Carey Avenue.

NV Energy also has several switch gears, fuse cabinets, ground mounted transformers, streetlight pedestals and numerous pull boxes along the Carey Avenue alignment. The existing electrical power lines are shown on **Figure – E6**.

Proposed Conditions

In review of the as-builts from NV Energy it was determined that there will not be a need to relocate any NV Energy facilities under proposed conditions as current existing facilities lay outside the area of the proposed North Las Vegas Airport improvements. Please note: Further coordination would be needed for the underground transmission facilities due to City of North Las Vegas having jurisdiction as NV Energy is under franchise agreement with the facilities located in the City of North Las Vegas right-of -way and CCDOA desire to vacate a portion of Carey Avenue.

Communications (Cox)

Existing Conditions

There are several Cox Communications facilities in the vicinity of the North Las Vegas Airport future improvements. The Cox Communications facilities are currently located in parts of Carey Avenue and Simmons Street. Cox Communications operates and maintains an underground cable television communications line in Carey Avenue. In addition, there is an overhead cable television communications line in a north/south alignment in Simmons Street. The existing Cox Communications cable television lines are shown on **Figure – E7**.

Proposed Conditions

In review of the as-builts, there is a low likelihood of required Cox Communications facility relocations under proposed conditions as current existing facilities lay outside the area of the proposed North Las Vegas Airport improvements.

Planning Information

Coordination meetings and as-built information were used to develop the proposed alternatives for each utility system that are in conflict with the proposed North Las Vegas Airport improvements. List of as-builts includes:

- Westside Transmission System Improvements West Valley Lateral, Carollo, Black & Veatch, October 1997
- Carey Avenue Widening, Rancho Drive to Clayton Street, The Keith Companies, August 2002
- Lake Mead Boulevard, Rancho to Tonopah, VTN Nevada, September 1990
- Carey / Lake Mead Detention Basin, VTN Nevada, June 1991
- Simmons Street Improvements, Carey to Cheyenne, VTN Nevada, May 2011
- 2023 Las Vegas Valley Flood Control District Master Plan Update, Atkins Realis Westwood, July 2023

Cost Analysis

Potable Water Cost Analysis

The potable water cost analysis incorporates material and construction costs per linear foot, which varies by pipe diameter. The cost per linear foot is based on the latest bid information from recent LVVWD projects. The table below summarizes the relocation pipe costs. Please note this cost includes full installation of the pipeline to include excavation, backfill up to pavement subgrade and appurtenances.

Pipe Diameter (inches)	Pipe Length (linear feet)	Costs Per Linear Foot	Total Estimated Cost
16	6,700	$400	$2,680,000
24 CNLV	6,700	$800	$5,360,000
24 SNWA	5,000	$800	$4,000,000
		Total	$12,040,000

Sanitary Sewer Cost Analysis

The sanitary sewer cost analysis incorporates material and construction costs per linear foot, which varies by pipe diameter. The cost per linear foot is based on the latest bid information from recent Clark County Public Works projects. The table below summarizes the relocation pipe costs and upsizing for capacity. Please note this cost includes full installation of the pipeline to include excavation, backfill up to pavement subgrade and appurtenances.

Pipe Diameter (inches)	Pipe Length (linear feet)	Costs Per Linear Foot	Installed Cost of Pipe
12	2,000	$240	$480,000
15	4,500	$500	$2,250,000
		Total	$2,730,000
Manholes (diameter inches)	Number (each)	Unit Cost	Installed Cost of Manholes
48	5	$8,000	$40,000
60	5	$15,000	$75,000
		Total	$115,000

Storm Water Cost Analysis

The storm water cost analysis incorporates material and construction costs per linear foot, which varies by pipe diameter. The cost per linear foot is based on the latest bid information from recent Clark County Public Works projects. The table below summarizes the relocation pipe costs. Please note this cost includes full installation of the pipeline to include excavation, backfill up to pavement subgrade and appurtenances.

Pipe Dimensions (feet)	Pipe Length (linear feet)	Costs Per Linear Foot	Installed Cost of Pipe
14 x 8	2,200	$2,400	$5,280,000
		Total	$5,280,000

Recommendations

Potable Water Recommendations

Further coordination will be needed with CNLV and SNWA for the 24-inch transmission pipelines due to operations and schedule of construction. It will need to be determined for what duration these facilities maybe taken out of service in order to perform the relocation work and put a plan in place. New pipeline alignments will require new permanent and temporary easements for construction. Also, the asbestos material pipelines should be encountered as minimal as possible as not to become friable. It is highly recommended to reach an agreement with the utility agencies to abandon in place a majority if not all of the pipeline. The timeline for design and construction of the water pipelines is estimated to be:

- Design – 12 months
- Construction – 9 months to 1 year

Sanitary Sewer Recommendations

It is recommended to leave the 8-inch and 12-inch sanitary sewer pipelines in Carey Avenue in service, while construction of the new 12-inch relocated sewer pipeline is installed. This would mitigate the need for temporary bypass pumping of effluent for the duration of construction, however when the new 12-inch sewer pipeline is completed a connect manhole will need to be installed and temporary bypass pumping will be needed to perform the connection. Coordination will be needed with CNLV due to operations and schedule of construction. It will need to be determined for what duration these facilities maybe taken out of service in order to perform the connection. Also, it is recommended to abandon in place the existing 8-inch and 12-inch sewer pipelines and provide a cap where necessary. The timeline for design and construction of the sanitary sewer pipelines is estimated to be:

- Design – 12 months
- Construction – 9 months to 1 year

Storm Water Recommendations

It is recommended to replace portions or all of the existing CCRFCD 14 ft wide 8 ft depth 1.5 to 1 side slope concrete lined channel and replace where the runway extension, taxiway and grading are in conflict with a new aircraft load rated 14 ft x 8 ft RCBC if earthwork, runway, and taxiway elevations permit. It is also recommended to protect in place the 2 existing storm drains in Carey Avenue due to CNLV's desire not to relocate the pipelines. Coordination will be needed with CNLV and CCRFCD with the facilities having some connection with each other as well as a reevaluation of storm water flows and capacity of facilities with hydraulics and schedule of construction. Temporary flood control mitigation will need to be put in place during the installation and seasonal rainfall will also need to be considered. The timeline for design and construction of the storm water pipelines is estimated to be:

- Design – 12 months
- Construction – 1 year

Natural Gas (Southwest Gas)

It is recommended to coordinate for courtesy with Southwest Gas any improvements around the North Las Vegas Airport. The timeline for design and construction of the natural gas pipelines is estimated to be:

- Design – N/A
- Construction – N/A

Electrical (NV Energy, transmission and distribution) Recommendations

It is recommended to work with NV Energy to not relocate the existing underground transmission powerlines if possible. The existing underground transmission lines in Carey Avenue were previously aerial facilities and were relocated underground as a joint effort between CCDOA, the FAA, and NV Energy to improve safety for air travel. Protecting in place the Carey Avenue underground transmission lines is dependent on future airfield grade elevations and NV Energy pull box / fuse cabinet spacing. NV Energy is currently experiencing a high backlog of design and construction workload, so if relocations are needed to occur is it recommended to perform an early work package and prioritize the relocation first as review and acceptance times have been long duration. SNWA has several facilities in the immediate area that are powered by the local NV Energy power infrastructure and coordination with these parties together is also recommended as the SNWA facilities feed adjacent CNLV potable water facilities. The timeline for design and construction of the electrical, if required, is estimated to be:

- Design – NV Energy to determine
- Construction – NV Energy to determine

Communications (Cox Communications)

It is recommended to coordinate for courtesy with Cox Communications any improvements around the North Las Vegas Airport. The timeline for design and construction of the communication lines is estimated to be:

- Design – N/A
- Construction – N/A

DRAWING LEGEND

COMMS LINE — CATV

PROPERTY LINE

R/W 12R-30L

R/W 12L-30R

W CAREY AVE

RANCHO DRIVE

ALLEN RD

W LAKE MEAD BLVD

SIMMONS STREET

CATV

EX OH CATV

EX UG CATV

EX UG CATV

EX UG CATV

EX OH CATV

EX UG CATV

EX UG CATV

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FIGURE - E7

EXISTING COMMUNICATIONS UTILITIES

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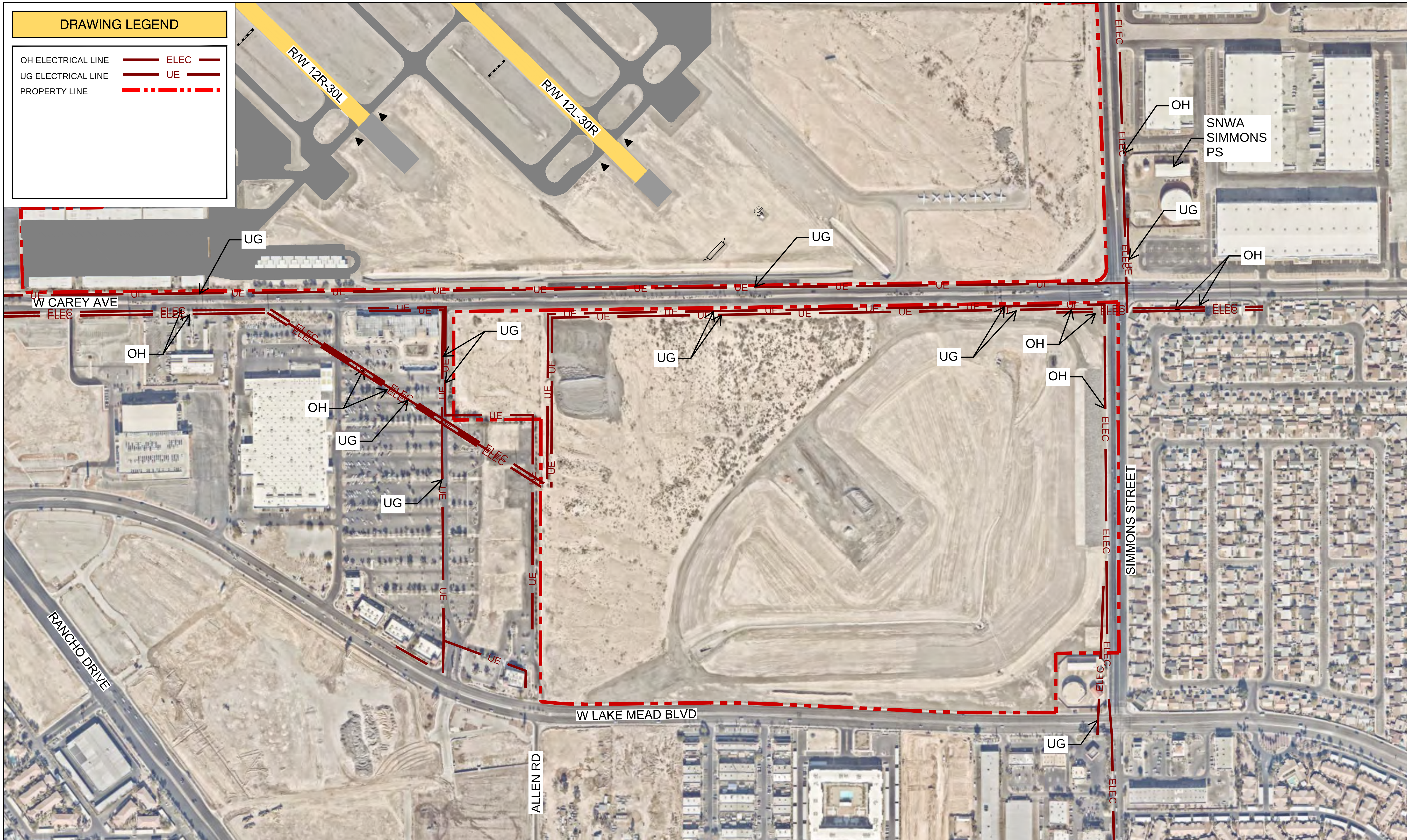

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FIGURE - E6

EXISTING ELECTRICAL UTILITIES

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FIGURE - E5

EXISTING GAS UTILITIES

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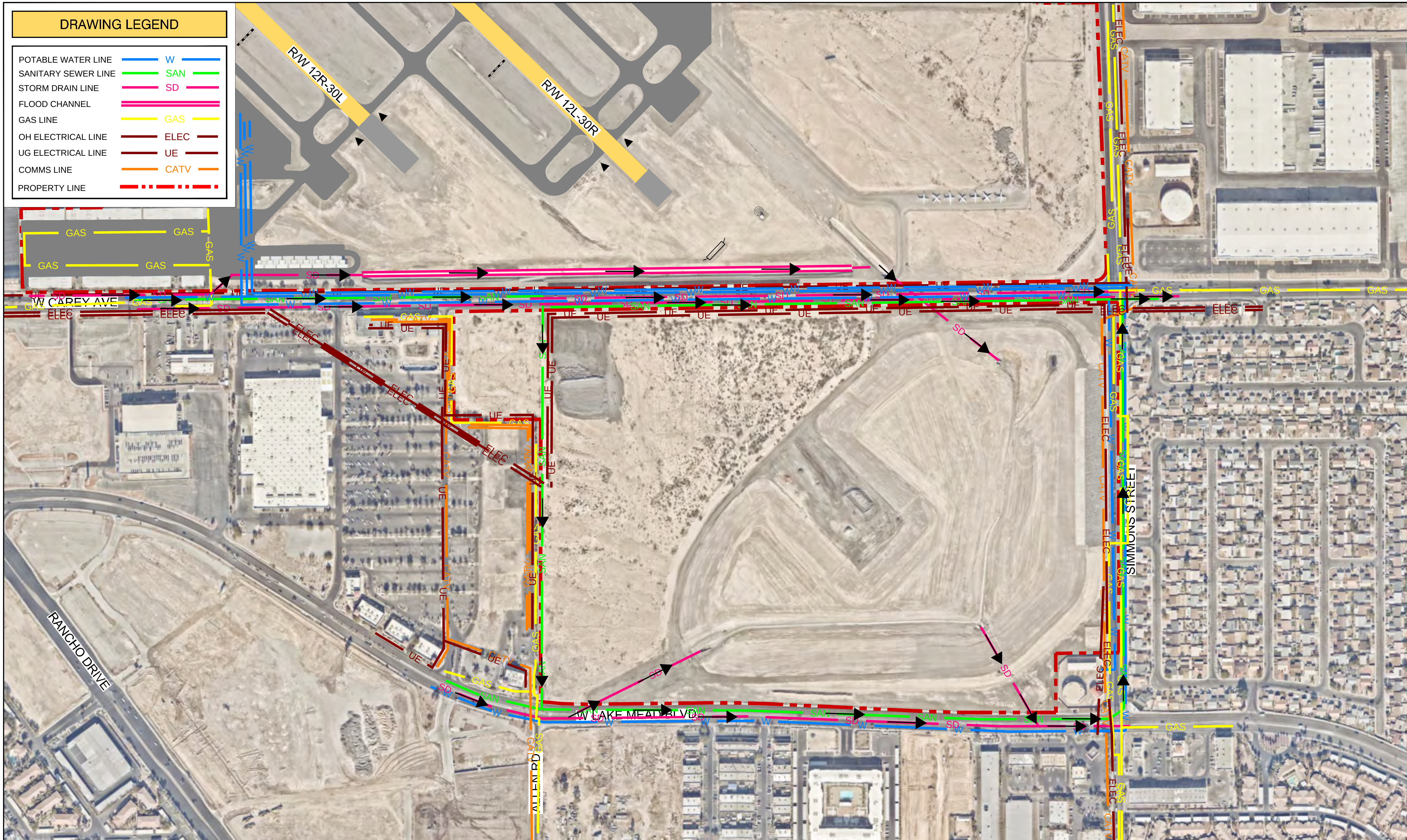

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FIGURE - E1

EXISTING OVERALL UTILITIES

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DRAWING LEGEND

SANITARY SEWER LINE — SAN

PROPERTY LINE

R/W 12R-30L

R/W 12L-30R

W CAREY AVE

8-INCH SEWERLINE

12-INCH SEWERLINE

15-INCH SEWERLINE

8-INCH SEWERLINE

SIMMONS STREET

12-INCH SEWERLINE

RANCHO DRIVE

12-INCH SEWERLINE

W LAKE MEAD BLVD

12-INCH SEWERLINE

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FIGURE - E3

EXISTING SANITARY SEWER UTILITIES

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DRAWING LEGEND
STORM DRAIN LINE
SD
FLOOD CHANNEL
PROPERTY LINE
R/W 12R-30L
R/W 12L-30R
14 FT X 8 FT RCBC
11 FT X 11 FT RCBC
14 FT X 8 FT 1.5 : 1 SS CONCRETE TRAP CHANNEL
W CAREY AVE
60-INCH STORM DRAIN
18-INCH STORM DRAIN
66-INCH STORM DRAIN
24-INCH STORM DRAIN
54-INCH STORM DRAIN
(3) 8 FT X 5 FT RCBC
Carey-Lake Mead Detention Basin
(Facility ID no. LVLM0228)
607-AC-FT
SIMMONS STREET
RANCHO DRIVE
90-INCH STORM DRAIN
90-INCH STORM DRAIN
48-INCH STORM DRAIN
W LAKE MEAD BLVD
36-INCH STORM DRAIN
ALLEN RD

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FIGURE - E4

EXISTING STORM WATER UTILITIES

DRAWING LEGEND

POTABLE WATER LINE — W

PROPERTY LINE

R/W 12R-30L

R/W 12L-30R

14-INCH ACP WATERLINE

24-INCH STEEL WATERLINE

24-INCH MLCP WATERLINE

16-INCH ACP WATERLINE

24-INCH STEEL WATERLINE

SNWA SIMMONS PS

W CAREY AVE

12-INCH ACP WATERLINE

24-INCH ACP WATERLINE

24-INCH MLCP WATERLINE

24-INCH STEEL WATERLINE

SIMMONS STREET

12-INCH WATERLINE

RANCHO DRIVE

12-INCH WATERLINE

W LAKE MEAD BLVD

12-INCH WATERLINE

SNWA TWIN LAKES PS

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FIGURE - E2

EXISTING POTABLE WATER UTILITIES

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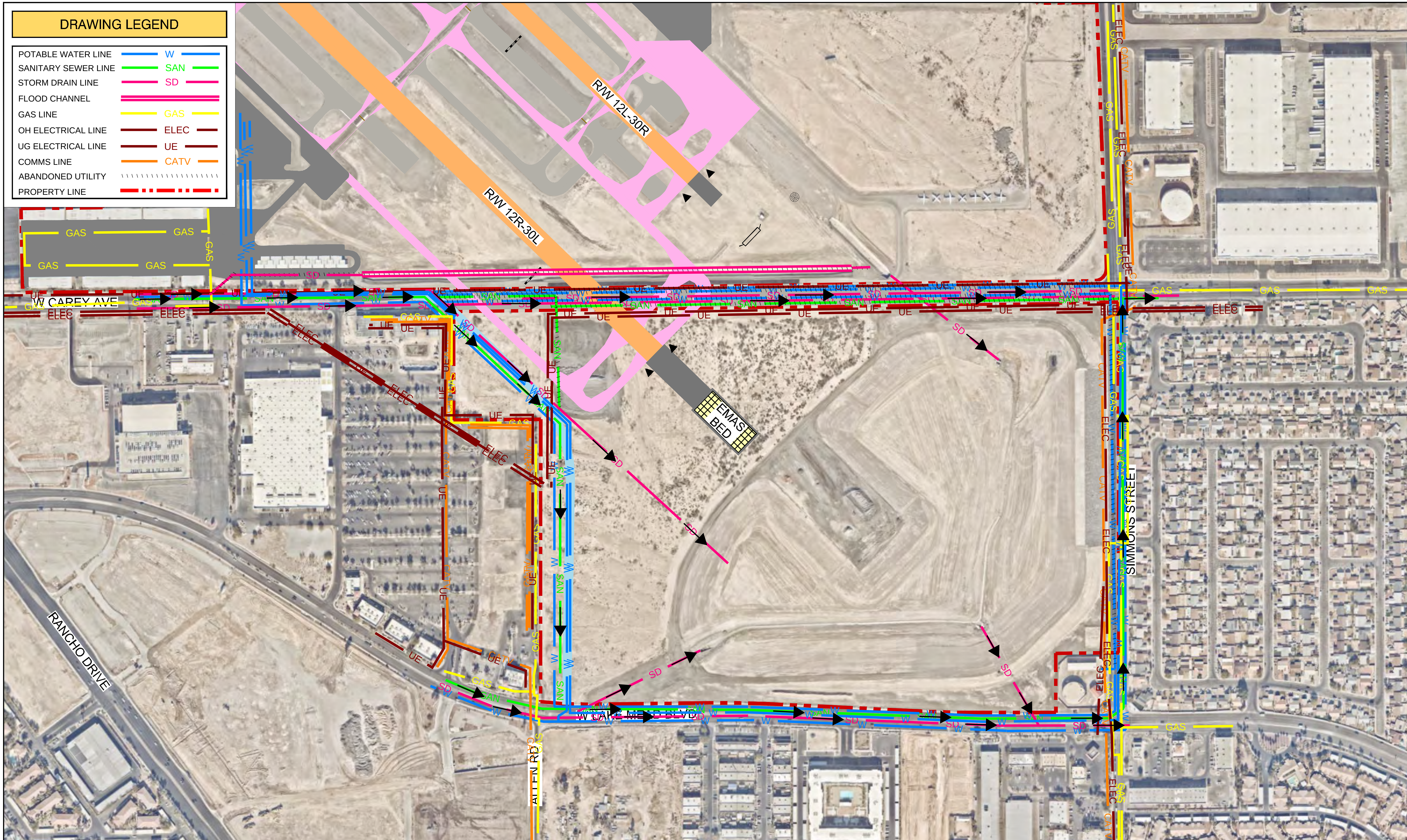

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FIGURE - P1

PROPOSED OVERALL UTILITIES

DRAWING LEGEND

SANITARY SEWER LINE — SAN

ABANDONED UTILITY

PROPERTY LINE

W CAREY AVE

8-INCH SEWERLINE

12-INCH SEWERLINE

15-INCH SEWERLINE

RW 12L-30R

RW 12R-30L

EMAS BED

12-INCH SEWERLINE

12-INCH SEWERLINE

SIMMONS STREET

12-INCH SEWERLINE

RANCHO DRIVE

12-INCH SEWERLINE

W LAKE MEAD BLVD

12-INCH SEWERLINE

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FIGURE - P3

PROPOSED SANITARY SEWER UTILITIES

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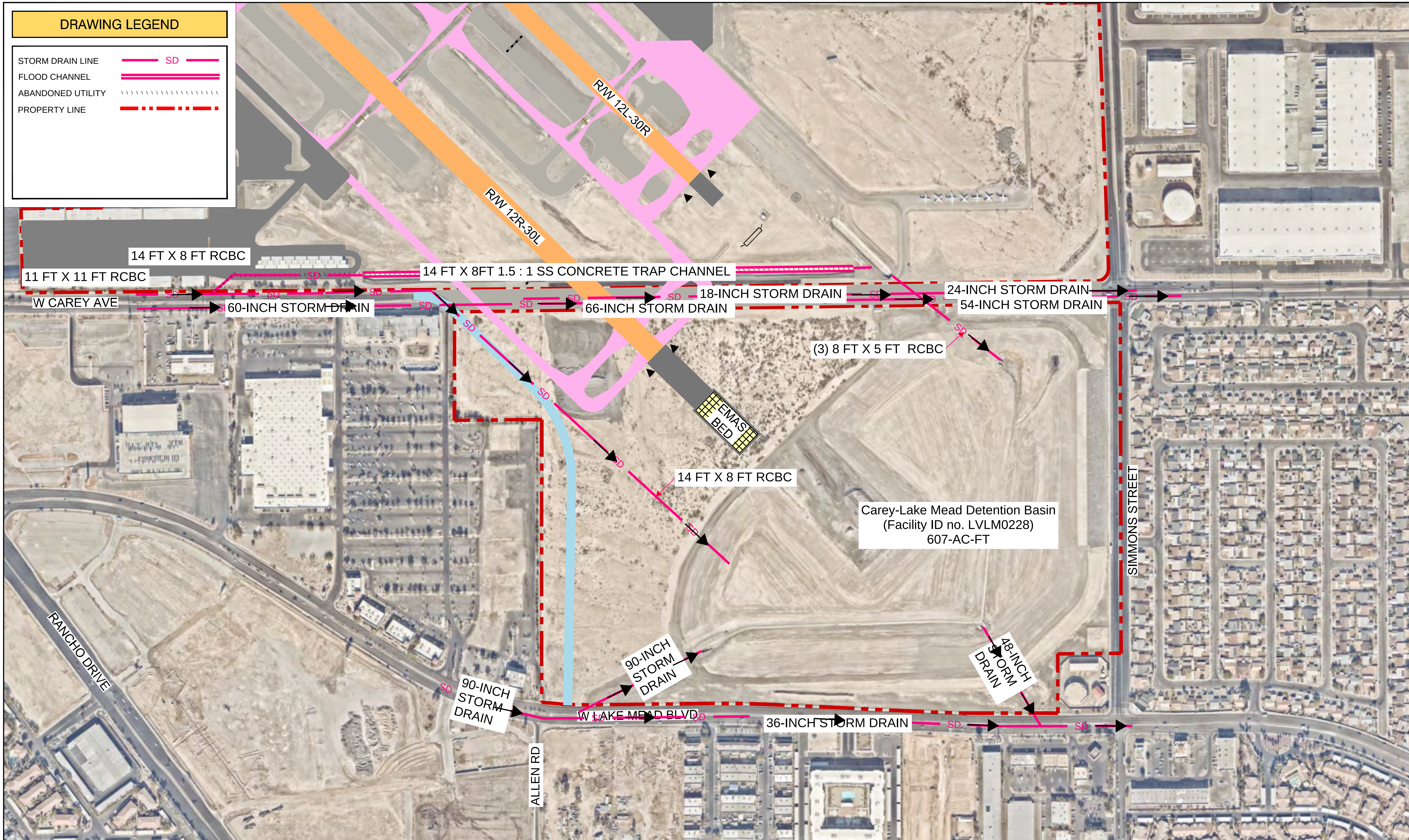
DRAWING LEGEND
STORM DRAIN LINE
SD
FLOOD CHANNEL
ABANDONED UTILITY
PROPERTY LINE
RW 12L-30R
RW 12R-30L
14 FT X 8 FT RCBC
11 FT X 11 FT RCBC
14 FT X 8FT 1.5 : 1 SS CONCRETE TRAP CHANNEL
W CAREY AVE
60-INCH STORM DRAIN
66-INCH STORM DRAIN
18-INCH STORM DRAIN
24-INCH STORM DRAIN
54-INCH STORM DRAIN
(3) 8 FT X 5 FT RCBC
EMAS BED
14 FT X 8 FT RCBC
Carey-Lake Mead Detention Basin
(Facility ID no. LVLM0228)
607-AC-FT
SIMMONS STREET
RANCHO DRIVE
90-INCH STORM DRAIN
90-INCH STORM DRAIN
48-INCH STORM DRAIN
W LAKE MEAD BLVD
36-INCH STORM DRAIN
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FIGURE - P4

PROPOSED STORM WATER UTILITIES

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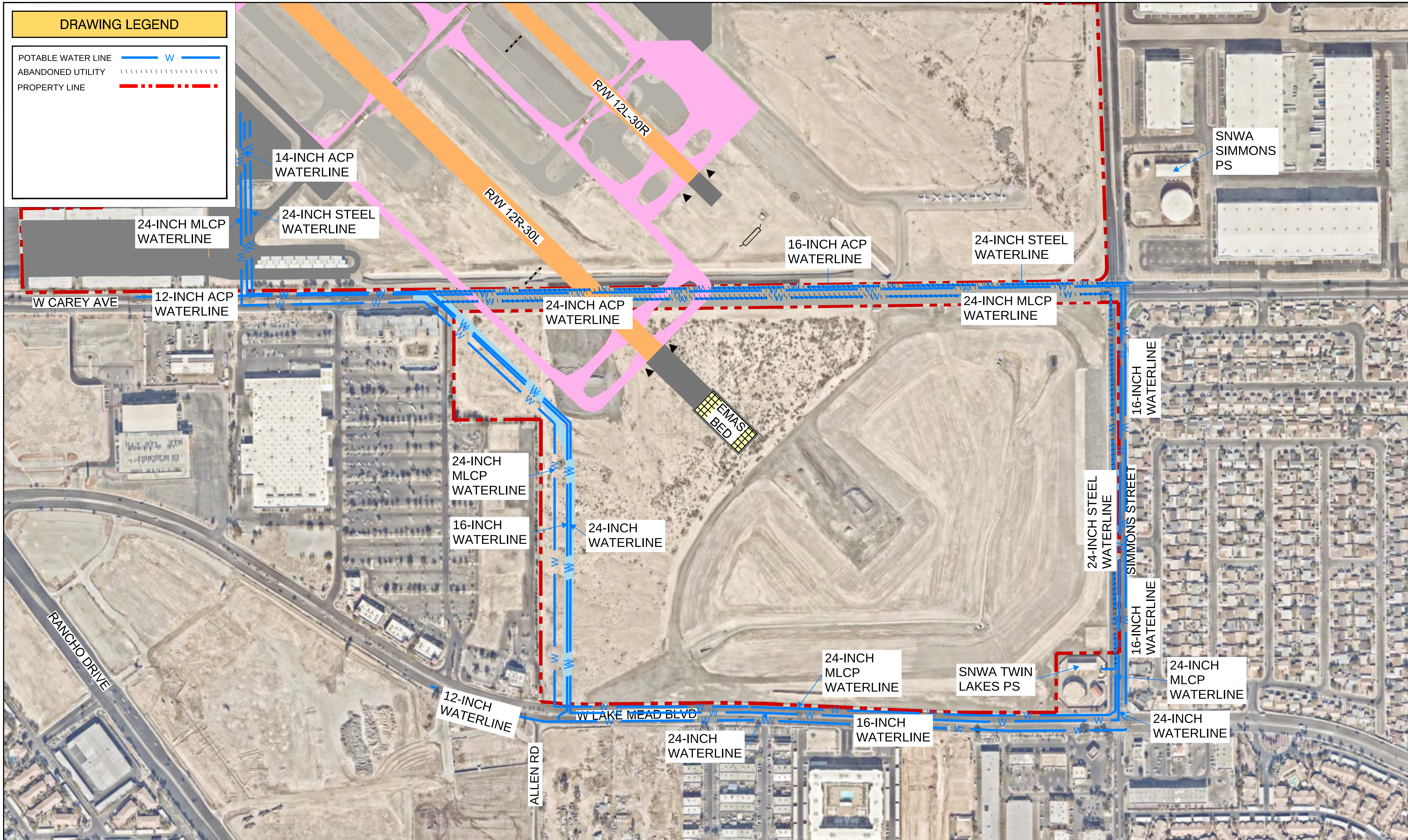

DRAWING LEGEND
POTABLE WATER LINE
W
ABANDONED UTILITY
PROPERTY LINE
14-INCH ACP WATERLINE
24-INCH STEEL WATERLINE
24-INCH MLCP WATERLINE
RW 12L-30R
RW 12R-30L
SNWA SIMMONS PS
16-INCH ACP WATERLINE
24-INCH STEEL WATERLINE
W CAREY AVE
12-INCH ACP WATERLINE
24-INCH ACP WATERLINE
24-INCH MLCP WATERLINE
16-INCH WATERLINE
EMAS BED
24-INCH MLCP WATERLINE
16-INCH WATERLINE
24-INCH WATERLINE
24-INCH STEEL WATERLINE
SIMMONS STREET
16-INCH WATERLINE
RANCHO DRIVE
24-INCH MLCP WATERLINE
SNWA TWIN LAKES PS
24-INCH MLCP WATERLINE
12-INCH WATERLINE
W LAKE MEAD BLVD
16-INCH WATERLINE
24-INCH WATERLINE
24-INCH WATERLINE
ALLEN RD

VGT

NORTH LAS VEGAS AIRPORT
MASTER PLAN PHASING

VGT NORTH LAS VEGAS AIRPORT

N

0 400' 800'

HNTB

DRAFT WORKING DOCUMENT | NOT FOR DISSEMINATION

FIGURE - P2

PROPOSED POTABLE WATER UTILITIES