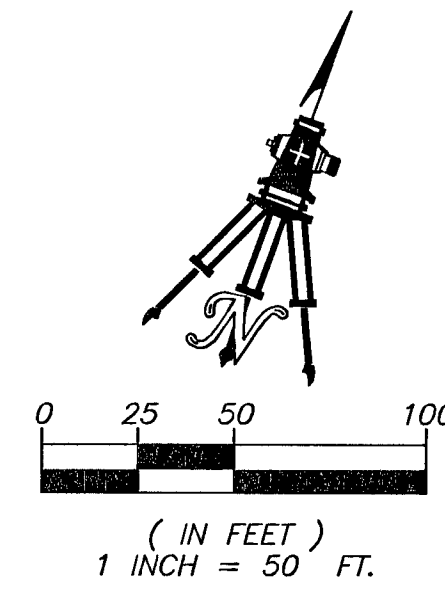
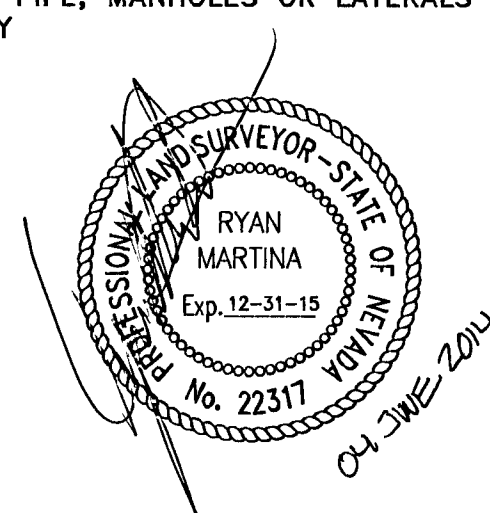


SANITARY SEWER FINAL LOCATION MAP FOR ESPERANZA PHASE 2



SURVEYORS STATEMENT

- 1) SURVEY WAS COMPLETED ON FEBRUARY 28, 2013
- 2) THE POSITIONAL CERTAINTY FOR THIS SURVEY IS 0.3' HORIZONTAL AND 0.3' VERTICAL BASED ON NAD83, CORS 96, EPOCH 2002
- 3) THE POSITIONAL CERTAINTY STATED DOES NOT TAKE INTO ACCOUNT ANY MODIFICATIONS TO THE PIPE, MANHOLES OR LATERALS COMPLETED AFTER THE DATE OF SURVEY



RYAN MARTINA
PROFESSIONAL LAND SURVEYOR
NEVADA LICENSE No. 22317

BASIS OF BEARINGS

GRID NORTH AS DEFINED BY THE CENTRAL MERIDIAN OF THE NEVADA COORDINATE REFERENCE SYSTEM, NEVADA EAST ZONE (2701) , NORTH AMERICAN DATUM OF 1983 (NAD83) CORS96, EPOCH 2002.

PROJECTION:
TRANSVERSE MERCATOR
ORIGIN LATITUDE N34°45'00.00000"
ORIGIN LONGITUDE W115°35'00.00000"
FALSE NORTHING 26,246,666.667 FEET
FALSE EASTING 656,166.667 FEET

BENCHMARK

7LV0934SW6A - BEING A RIVET AND PLATE IN TOP OF CURB SE CORNER DESERT MOON RD. & DESERT SUNRISE RD

NAVD88 ELEVATION (2008 CLV ADJUSTMENT)

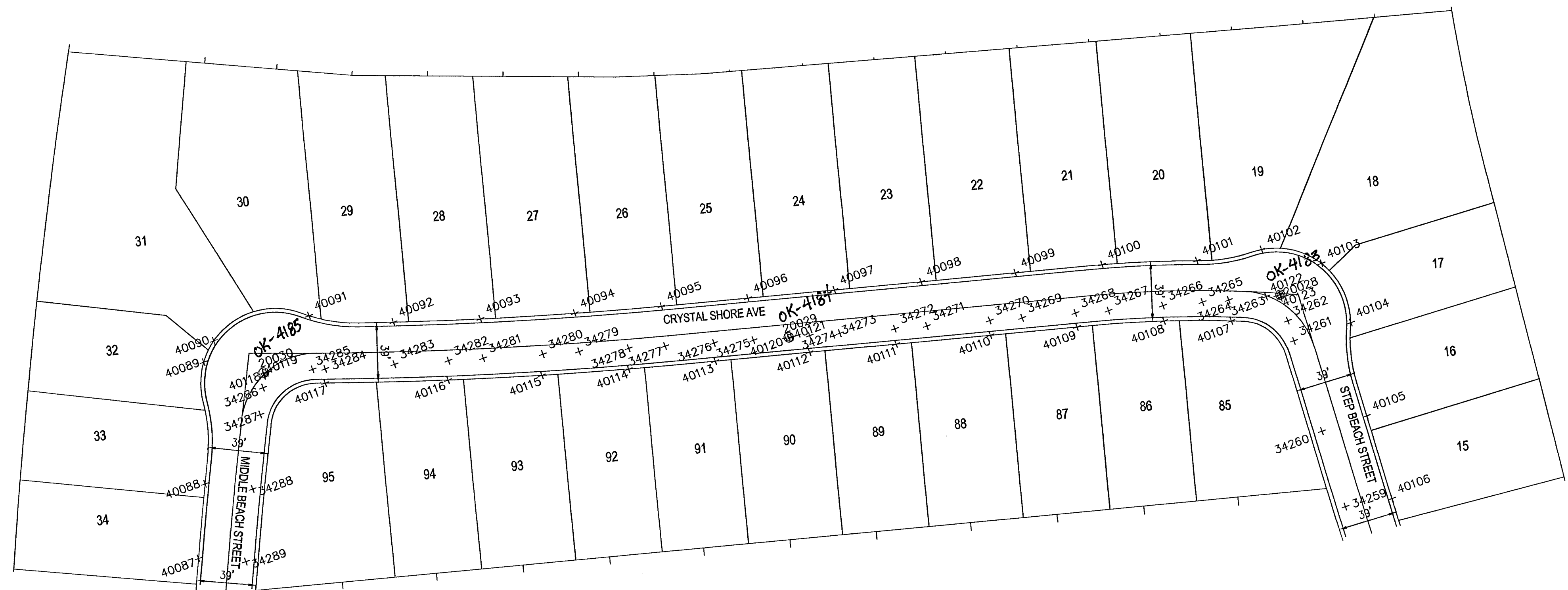
3301.47 US SURVEY FEET
1006.289 METERS

LEGEND

- CENTERLINE
- RIGHT OF WAY
- × 60576 POINT NUMBER
- ⊙ SEWER MANHOLE RIM
- SL Y TOP OF SEWER PIPE AT LATERAL PROJECTION
- LAT BC TOP OF SEWER PIPE LATERAL AT BACK OF CURB/RIGHT-OF-WAY
- TP ● MH TOP OF PIPE AT MANHOLE

NOTES

- 1) SEE TEXT FILE "ESPERANZA-SS-SP-PH2.TXT" FOR COORDINATES



SANITARY SEWER FINAL LOCATION MAP FOR ESPERANZA PHASE 2	
AS SHOWN BY MAP THEREOF ON FILE IN BOOK 145, PAGE 91 OF PLATS IN THE CLARK COUNTY RECORDERS OFFICE, NEVADA. LYING WITHIN A PORTION OF THE WEST HALF (W 1/2) OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA.	
	WALLACE · MORRIS SURVEYING, INC. LAND SURVEY CONSULTING 5740 SOUTH ARVILLE STREET, #206 LAS VEGAS, NEVADA 89118 PH:702.212.3967 FX:702.212.3963

Memorandum

Department of Public Works
City Engineer Division
Survey Section
333 North Rancho Dr., 8th Floor
Las Vegas, Nevada 89106
Phone (702) 229-6217
Fax (702) 804-8582

To: Chris Knight, Director
Building and Safety Department

From: Alan R. Riecki, PLS
City Surveyor

C: Ryan Martina, PLS
Wallace Morris Surveying, Inc.

Tim Parks, P.E., Engineering Project Manager
Sanitary Sewers Section, Engineering Planning

Date: June 18, 2014

Re: Sanitary Sewer Final Location Map
Esperanza Phase 2
(Drawing No. 107Y5900-2, L-Civil No. 49392, FMP 49294)

The Survey Section has reviewed the Final Location Map and as far as our jurisdiction of this project is concerned, we find that the map is:

Acceptable: 6/18/2014



Signature

City Surveyor

Title

Public Works/Survey

Department/Division

ARR/OS:sk

*PLEASE SEE REDLINES
FOR FUTURE PROJECTS.*

*PLEASE ✓✓ DATUM
SEE ATTACHED LVND*

A.

CITY OF LAS VEGAS

BUILDING AND SAFETY DEPARTMENT

OFFSITE INSPECTION & TESTING
333 NORTH RANCHO DRIVE
LAS VEGAS, NV 89106
PHONE: (702) 229-6337
FAX: (702) 363-1051

DEVELOPER'S SUBMITTAL OF GPS COORDINATES

- ☒ Sewer
☒ Electronic Comma Delineated File
☒ Final Location Map (2)

☐ Storm Drain

JUN 09 2014

NOTE: THE TOP PART OF THIS FORM MUST BE FILLED OUT IN ITS ENTIRETY

PROJECT NAME: ESPERANZA UNIT: PHASE: 2
PROJECT LOCATION: DESERT MOON RD & DESERT SUNRISE RD
CLV PLAN #: 107Y5900-002 CLV PROJECT #: 49392 SHEET NO. (S): 1
OF MANHOLES 3 PUB. SEWER/STORM DRAIN LIN. FT. +/- 1574 # OF PRIVATE LATERALS 31
DEVELOPER: LENNAR COMMUNITIES NEVADA, LLC PHONE: (702)458-7700 FAX: (702)889-0801
SURVEY CO.: WALLACE MORRIS SURVEYING PHONE: (702)212-3967 FAX:
CONTRACTOR: WESTERN STATES PHONE: (702)644-1117 FAX:
CONTRACTOR'S SUPERVISOR NAME: GENE HOUSTON MOBILE: (702)644-1117
DATE OF REQUEST: 04-15-14

THIS SEWER HAS BEEN SURVEYED BY NEVADA LICENSED LAND SURVEYOR:

Company Name WALLACE MORRIS SURVEYING Surveyor Name RYAN MARTINA
License # 22317 License exp. Date: 12-31-15

CITY USE ONLY

DATE SR. INSPECTOR RECEIVED: 6/6/14 SR. INSPECTOR INITIALS: [Signature]
DATE RECEIVED FROM SR. INSPECTOR AND SENT TO CITY SURVEYOR:
ACCEPTABLE BY CITY SURVEYOR DATE: 6/18/14 NOT ACCEPTABLE BY CITY SURVEYOR DATE
CLV SURVEYOR'S SIGNATURE: [Signature] DATE: 6-18-14

THE CITY OF LAS VEGAS RECOMMENDS THAT ALL DEFICIENCIES NOTED ON THE ATTACHED SURVEY REPORT BE CORRECTED PRIOR TO THE FINAL ACCEPTANCE.

For Sanitary Sewer To Complete and Return to Offsite Inspection & Testing:

RECEIVED BY: Joe Pena
(PLEASE PRINT)
SIGNATURE: [Signature] DATE: 6/23/2014

For Flood Control To Complete and Return to Offsite Inspection & Testing:

RECEIVED BY:
(PLEASE PRINT)
SIGNATURE: DATE:



City of Las Vegas
Department of Public Works
Survey Section

REVIEW CHECKLIST
SANITARY SEWER
FINAL LOCATION MAP

JOB NUMBER 49392-SS1
PROJECT NAME ESPERANZA PH 2
WORK AUTH. NO. P28000
SURVEY FIRM TRI-CORE
PROJECT TYPE CIP ☐ Land Dev ☒ Street Rehab ☐
DATE 6/17/14
REVIEWED BY D. SANTANA

REVIEW DETERMINATION

- ☒ Approved
☐ Not Acceptable

TO BE RE-SUBMITTED

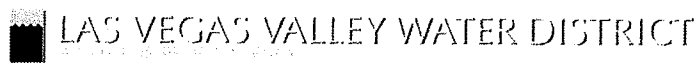
- ☐ Two bond copies (no mylar)
☐ Electronic media with comma-separated coordinate file

REVIEW ITEM	OK	SEE R/L	N/A	COMMENTS
Submittal Contents				
Two bond copies (no mylar)	☒	☐	☐	
Electronic media containing comma-separated coordinate file	☒	☐	☐	
General Map Contents				
Sheet size 24" x 36"	☒	☐	☐	
Sheet number and number of sheets	☒	☐	☐	
North arrow (pointing up, left or right)	☒	☐	☐	
Scale (written & graphic, correctly shown, appropriate scale used)	☒	☐	☐	
Lettering legibility (minimum text size 0.08")	☒	☐	☐	
Map title shown ("Sanitary Sewer Final Location Map")	☒	☐	☐	
CLV project name shown	☒	☐	☐	
CLV Hansen No. shown	☒	☐	☐	
CLV Drawing No. shown	☐	☒	☐	
Survey firm's company name and contact information shown	☒	☐	☐	
Legend (all linetypes and symbols defined)	☒	☐	☐	
Non-standard abbreviations defined	☒	☐	☐	
Distances, coordinates and elevations labeled using decimal feet	☒	☐	☐	
Approximate limits of streets shown (improvements or right-of-way)	☒	☐	☐	
Street names labeled (identified as public or private)	☐	☒	☐	

REVIEW CHECKLIST – SANITARY SEWER FINAL LOCATION MAP

REVIEW ITEM	OK	SEE R/L	N/A	COMMENTS
Sanitary Sewer Improvements Data				
Manhole Lids: (measured horizontally at centerline of lid, vertically at rim; specify diameter of lid)	☒	☐	☐	
*NOTE In the case of a two-piece lid system locate outer lid only (specify diameter of outer lid).				
Manhole Barrel: (measured horizontally at centerline of structure barrel, vertical location does not apply)	☐	☒	☒	MISSING CENTER OF MANHOLE, NOT THE SAME AS LID.
Vaults and Junction Structures: (measured horizontally at all outer extents of structure, vertically at top of structure)	☐	☐	☒	
Lateral/Main/Interceptor Pipes: locate at all connections to other pipes and structures, all horizontal and vertical deflections, points of termination (stubs), point at which pipe exits the public right-of-way or easement (measured horizontally at centerline of pipe, vertically at top of pipe)	☐	☒	☐	LATERALS SHOT AT ALL VERTICAL AND HORIZONTAL DEFLECTIONS.
*NOTE All pipe connections to manholes and other structures should be located at outside face of structure before backfilling due to accuracy limitations of pipe measurements from the structure's surface access point.				
Survey Information				
Survey completion date indicated	☒	☐	☐	UPDATE AS NEEDED
Statement of positional certainty (0.3' horizontally, 0.3' vertically)	☒	☐	☐	
Surveyor's seal (validated and current)	☒	☐	☐	
Basis of bearings and coordinate system indicated (only CLV approved coordinate systems are to be used, basis of bearings must agree with coordinate system used)	☒	☐	☐	
Horizontal datum, datum adjustment, and epoch date indicated (only CLV approved datums are to be used)	☒	☐	☐	VERIFY YOUR DATUM ADJUSTMENT SEE ATTACHED.
Benchmark ID, description, elevation and CLV adjustment indicated	☒	☐	☐	
*NOTE Only benchmarks and benchmark elevations included in the most recent CLV Vertical Control Network adjustment are to be used, this may require using a different benchmark or benchmark elevation than shown on the improvement plans.				
Survey accuracy QA/QC (when available)	☐	☐	☒	

ADDITIONAL COMMENTS



Engineering & Construction » Technical References » GPS »

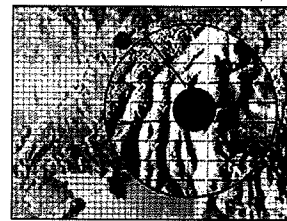
RTK GPS Position Information

The Las Vegas Valley Water District's GPS Base Station Network is comprised of fourteen sites, eight of which are NGS CORS sites. The remaining site values were established using post processed static gps techniques holding the eight NGS CORS site fixed and using a least squares network adjustment on the remaining six sites. Beginning April 22, 2013, the Water District has converted all Base Station Antenna positions from NAD 83, CORS 96, epoch 2002 to NAD 83 (2011) epoch 2010.00 in an effort to conform with the datum changes requested by NGS.

Static GPS Position Information

File Availability and Roll-Over

The Water District stores static gps files for all LVVWD base station network sites. It is available at a 5-second epoch rate, stored as 1-hour files in a zipped Rinex (Receiver Information Network Exchange) data format, beginning and ending at 0:00 and 24:00 GMT (Greenwich Mean Time) respectively. The 24-hour roll-over is at GMT and is compatible with PDT (Pacific Daylight Savings Time) or PSD (Pacific Standard Time) by subtracting 7 or 8 hours respectively. This equates to local roll-over at 4 p.m. PST or 5 p.m. PDT. The standard for this file type is: (xxxxyyy0.zip), where xxxx = site name, yyy = julian day and 0 = 24-hour file name.



The LVVWD has established permanent base stations in the valley.

Real-Time Kinematic (RTK) Data Link

The current Water District radio transmission frequencies, pursuant to FCC licenses, FRN 0001585561, expire 06-16-2015 and FRN 0001588623, expire 05-25-2017 as follows:

NVCA	465.300 mhz	NVWS	464.550 mhz
NVBM	465.375 mhz	NVCO	469.500 mhz
NVTR	460.375 mhz	NVLA	460.300 mhz
NVLM	465.100 mhz	NVSV	460.350 mhz
NVSL	460.100 mhz		

LVVWD currently provides an RTK data-link at the frequencies listed above. The code format is "CMR". The over-the-air measurement record is analog, using PacCrest ADL Advantage radios, modulated to TT 450 S radio encryption. The current protocol, settings are; 8-bit coding, none parity and one stop bit (8-none-1) running at 4800 bits-per-second baud rate.

The Water District also provides an RTK data-link via the internet at IP address **205.159.85.60:9899**. For GPS users using NTRIP or TCP/IP connections, the Water District provides the following real-time products:

RT Product Name	Solution
RTCM 18 & 19 (v 2.x)	Single baseline
Leica (Leica proprietary)	Single baseline
CMR (Trimble proprietary)	Single baseline
Automax	Network
IMax Trimble	Network

Above products are available using NTRIP Caster, at connection port 9899, with NTRIP Mount Point named same as the site name. i.e. NVBM Single Baseline at NTRIP Mount Point nvbm.

View the maps below for approximate locations of the Water District's base station network:

Greater Las Vegas Valley Base Stations

Base Stations Outside the Greater Las Vegas Valley

Note: To obtain access via the internet using NTRIP, prospective users must contact the **District Surveyor** at (702) 258-7163 to establish an account with a unique user name and password.