DS #: 5135-1

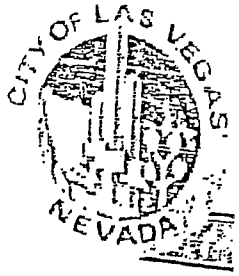
APN: 125.06.501.001

PROJECT: Sunstone Phase 1 Infrastructure Update #1

SUBMITTAL: 3rd

SCANNED BY/DATE:

CHECKED BY/DATE:



CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: May 15, 2020
TO: **Land Development Services** Department of Public Works				FROM: Jennifer Shinn, P.E. Flood Control, Engr. Associate Department of Public Works
SUBJECT:	Drainage Study for:			**COPIES TO:**
SUNSTONE - Phase 1 Infrastructure Update #1				Slater Hanifan Group
Cross Streets:	Fort Apache Road & Moccasin Road			Eastland Co., LLC
File Number:	F:\PW_Flood\DSMEMOS\DS5135C.docx			Bart Anderson, P.E., DevCo
Parcel Number:	125-06-501-001			CCRFCD
Zoning Action:	Eastland Development Agreement			CCPW
FEMA Flood Zone	YES	NO **X**		NDOT
Proposed Storm Drain	YES **X**	NO		NVEnergy

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Transaction #
1st Submittal	5/6/2019	6/24/2019	See Comments Below	$400.00	3122585: $400
2nd Submittal	8/8/2019	9/5/2019	See Comments Below	$400.00	3524616: $400
3rd Submittal	2/4/2020 & 4/15/2020	3/3/2020 & 5/15/2020	Approved	$100.00	3732002: $100
			TOTAL FEES (LDDRS):	**$900.00**	**----**

REMARKS:

3rd Submittal: Update #1 to revise storm drain to avoid conflict with future sewer.

SUNSTONE – Phase 1 Infrastructure Improvements as well as the Master Study (DS5081) are predicated upon the completion of the ultimate condition offsite drainage facilities impacting the SUNSTONE development being in place prior to issuance of certificates of occupancy. Permits for development within Designated Builder Parcels shall not be issued if the associated Master Plan facilities are not under construction.

The Master Drainage Study for the subject project has been reviewed and:

X	is approved subject to conformance to all City standards and the following conditions:
	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.
	is conditionally approved subject to Nevada Department of Transportation concurrence.

The SUNSTONE – Phase 1 Infrastructure includes storm drain facilities that are sized based upon the design parameter of US-95 being a flow cut-off. **This Study assumes ultimate condition offsite drainage facilities impacting the SUNSTONE development will be in place prior to issuance of certificates of occupancy**. The ultimate condition infrastructure drainage facilities that are assumed to be in place include:

- The Moccasin Master Plan Regional Facility – Upper Las Vegas Wash to west of US-95. This includes the Interim Collection Facility west of US-95.

- Skye Canyon Detention Basin #2.
- Skye Canyon Phase 3A regional Facility – Skye Canyon Park Dr. to Iron Mountain Rd.
- The US-95 Local Facility – Brent Lane to Kyle Canyon Interchange. This connects into the existing MPU Facility along US-95.

The construction of these Ultimate Facilities will make the west side of US 95 a 100-yr cutoff through the reach south of the Moccasin Master Plan Regional Facility crossing, thereby meeting the full intent of the CCRFCD Master Plan.

Changes and timing of the corresponding infrastructure improvements that protect the SUNSTONE Development shall require Updating the Master Drainage Study Phasing.

1. The SUNSTONE - Phase 1 Infrastructure Improvements include the following roadways:
    - Sky Point Drive (Edgestone Dr.) – Log Cabin to Hualapai
    - Log Cabin Way (Sunstone Parkway) – US-95 to Skye Canyon Park Dr.
    - North Connector (Sunbridge Point Dr.) – Log Cabin to Moccasin
    - Skye Canyon Park Drive (Sun Park Dr.) – Iron Mountain to Log Cabin
    - O'Hare Road – Log Cabin to Skye Canyon Park Dr.
    - South Park – (Entry Roads 1 & 2) adjacent to the South Park
2. The Storm Drain System design includes lateral stubs at most Designated Builder Parcels that will convey the 100-year Ultimate flows from each parcel. Technical Drainage Studies are required for each of the Designated Builder Parcels and shall provide on-site collection for the 100-year facilities

3. The project proposed to construct facilities and/or increase flows within *Nevada Department of Transportation* (NDOT) right-of-way. Therefore, NDOT concurrence is required prior to final approval of the Phase 1 Infrastructure Drainage Study.

4. Structural plans for the storm drain improvements including special junction structures and deep manholes must be submitted for review. Provide a soils report, structural calculations and specifications, two wet stamped structural sets, and a grading plan to the Building Department for processing. The engineer must provide a copy of Building Department approval of the structures to *Flood Control* prior to final acceptance of the drainage study.

5. The engineer must provide a table on the Grading Plans that show a quantity estimate of all drainage improvements within Public Drainage Easements and Public Right-of-Way. All drainage improvements within Public Drainage Easements and Right-of-Way must be bonded and inspected.

6. Final approval of the Master Drainage Study shall be obtained prior to final approval of the subject infrastructure drainage study.

7. Technical drainage studies are required for each of the Designated Builder Parcels. The technical drainage studies for the Designated Builder Parcels shall not be submitted until the conditional approval of the pertinent infrastructure drainage study is obtained. Final approval for the infrastructure drainage study shall be obtained prior to conditional approval of the impacted Builder Parcels drainage studies.

8. Building permits for the homes within the individual Designated Builder Parcels shall not be issued until construction of the street and flood control infrastructure around the Designated Builder Parcels is substantially complete or interim protection is provided per the approved technical drainage study.

9. The interim channels adjacent to the infrastructure roadways are the Maintenance responsibility of the Master Developer.

10. Provide a legal description of the proposed drainage facilities located outside of dedicated public right-of-way prior to recordation of the parent final map.

11. The project proposes to build temporary drainage facilities including drainage berms/swales over the *Phase 1 Infrastructure* site. Interim drainage facilities are normally shown on the Improvement Plans, bonded for construction, and bonded under a separate Maintenance Agreement. As an alternative to including interim drainage improvements that are privately maintained as a part of the *Phase I Infrastructure*, and prior to the final plan approval for each set of improvement plans that will be bonded separately, the Improvement Plans shall show concrete pads and rip-rap berms at the culvert stubs for interim flows, and the developer must complete a ***Maintenance and Liability Agreement*** and bond for 100% of the costs. The Maintenance Bond shall include exhibits showing the interim drainage improvements at each culvert and the associated costs to complete the improvements. This shall be in the form of a 50% cash bond and a 50% standard bond for Maintenance. The cash bond gives the City the ability to perform work and draw down funds as needed in the interim condition. The engineer must submit an estimate of the quantities for the construction of the facilities and an exhibit that adequately shows the location and limits of the drainage facilities to *City Flood Control* for approval. Once the drainage study is conditionally approved, the engineer/developer should contact the *City's Land Development Section* (702-229-6371) to begin the agreement process.

    In order for the maintenance bond to be released in the future, a drainage update/letter will be required to justify that the berms/swales are no longer necessary and can be removed.

A. Skye Canyon Park Drive Improvement Plans:

SD-Sheets: Label the proposed sewer and water lines on the profiles (typ)

SD-3: Label water crossing at approximate Station 29+85. With clearance of 0.7', verify if storm drain must be C900.

B. O'Hare Road Improvement Plans:

SD-Sheets: Label the proposed sewer and water lines on the profiles (typ)

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Update and accepted by the *City of Las Vegas Flood Control Section*. Additionally, conditional acceptance of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the *City of Las Vegas* reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction of a project.

NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the Nevada Division of Environmental Protection a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For more information, including forms and applications see http://ndep.nv.gov/bwpc/storm01.htm or call (775) 687-9429.

END OF REMARKS
PBJ/JKS

T/R/S: T19S/R60E/6 & 7
AREA G-6 & 7

Westwood

TECHNICAL DRAINAGE STUDY UPDATE

Sunstone Phase 1 Infrastructure

City of Las Vegas, Nevada

February 2020

Prepared For:

Eastland Company, LLC
9275 Russell Road, Suite 400
Las Vegas, NV 89148
Phone: 702-736-9100 • Fax: 702-736-9200

TECHNICAL DRAINAGE STUDY
UPDATE #1

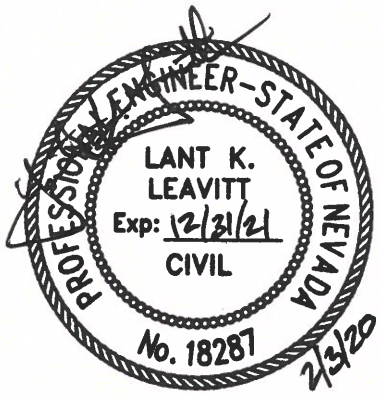
Sunstone Phase 1 Infrastructure

City of Las Vegas, Nevada

Job No.: EST1905.000
Date: February 2020

Prepared By:
Westwood Professional Services, Inc.
5740 S. Arville Street, Ste 216
Las Vegas, Nevada 89118
Phone: 702-281-5300 ▪ Fax: 702-284-5399

Prepared For:
Eastland Company, LLC
9275 Russell Road, Suite 400
Las Vegas, NV 89148
Phone: 702-736-9100 • Fax: 702-736-9200



Lant Leavitt, P.E.
NV Professional Engineer No. 18287

Assisted by Caitlyn Alcantara, E.I.

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: Sunstone Phase 1 Infrastucture Update Date: 2/3/2020

Location of Development: a) Descriptive (Cross Streets): North/South: Kyle Canyon Road

East/West: US 95

b) Section: 6 & 7 Township: 19 S. Range: 60 E.

c) APN: 125-06-501-001, 125-06-701-001 & 125-07-501-005

Name of Owner: Eastland Company, LLC

Telephone No.: (702) 736-9100 Fax No.: (702) 736-9200 E-mail Address: Efraim.Balizan@Lennar.com

Address: 9275 W. Russell Road, Suite 400 Las Vegas, NV 89148

Contact Person – Name: Lant Leavitt Telephone No.: (702) 284-5300

*E-mail Address: Lant.Leavitt@westwoodps.com Fax No.: (702) 284-5399

Firm: Westwood Professional Services

Address: 5740 S. Arville #216 Las Vegas NV 89118

Type of Land Development/Land Disturbance Process:

☐	Rezoning	☐	Subdivison Map	☐	Clearing and grading Only
☐	Parcel Map	☐	Planned Unit Development	☒	Other (Please specify below)
☐	Large Parcel Map	☐	Building Permit	☐	

1. Total Owned Land Area: At Site: approx 600 acres Being Developed/Disturbed: approx 10 acres

2. Is a portion or all of the subject property located in a FEMA Flood Hazard Area? ☐ Yes** ☒ No

3. Is the property bordered or crossed by an existing or proposed Clark County Regional Flood Control District Master Planned Facility? ☒ Yes** ☐ No

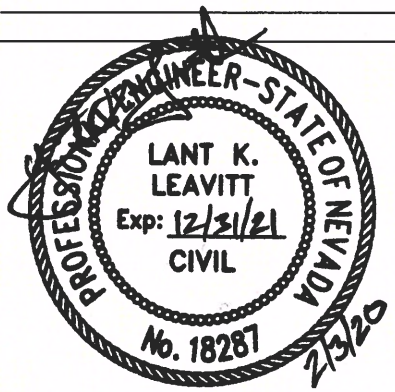
4. Proposed type of development (Residential, Commercial, Etc.): Master planned community infrastructure improvements

5. Approximate upstream land area which drains to the subject site: approximately 7.8 square miles

6. Has the site drainage been evaluated in the past? ☒ Yes** ☐ No If yes, please identify documentation: Skye Canyon Master Drainage Study Update #5 (Sunstone MDS), CLV# DS5081

7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Moccasin Regional Storm Drain Facility, Iron Mountain Road, Brent Lane

8. Briefly describe your proposed schedule for the subject project: ASAP



Engineer's Seal

Submit this form as part of the required drainage study to the local entity which has jurisdiction over The subject property. This form may provide sufficient information to serve as the Conceptual Drainage Study.

*Newly Required Field

**Review and concurrence of the Clark County Regional Flood Control District is required

Revision	Date

Local Entity File No.

REFERENCE: STANDARD FORM 1

Updated 05/01/2008

Westwood

5740 S. Arville St., Suite 216
Las Vegas, NV 89118

Main (702) 284-5300

westwoodps.com
(888) 937-5150

EST1905.000

February 3, 2020

Albert Sung, P.E.
Flood Control Project Engineer
City of Las Vegas Department of Public Works
333 N. Rancho Drive
Las Vegas, NV 89106

Subject: Technical Drainage Study Update No. 1 for Sunstone Phase 1 Infrastructure (DS 5135)

Mr. Sung:

Submitted for your review is this *Technical Drainage Study Update for Sunstone Phase 1 Infrastructure* (hereinafter referred to as the Update Study). The original *Technical Drainage Study for Sunstone Phase 1 Infrastructure* (hereinafter referred to as the Original Study) prepared by Slater Hanifan Group (SHG) was conditionally approved by the City of Las Vegas (City) on September 9, 2019. The conditional approval letter for the Original Study is provided in Appendix A. The Original Study addressed the development of roadway and infrastructure improvements intended to support the development of the Phase 1 area in the Sunstone master planned development. Since the approval of the Original Study, preparation of the improvement plans has progressed and coordination with other disciplines has taken place. Coordination with the proposed sewer line in Log Cabin Way at Skye Canyon Park Drive revealed a conflict with the profile of the proposed storm drain. To resolve that conflict, the storm drain in Skye Canyon Park Drive is proposed to be raised. In addition, a proposed lateral storm drain in O'Hare Road is proposed to be moved approximately 90-ft to the west to align with a revised parcel entrance location.

Purpose: The purpose of this Update Study is to provide hydraulic analysis of changes to the proposed storm drain facility in Skye Canyon Park Drive and O'Hare Avenue. The following revisions to the storm drain are proposed with this update:

- Skye Canyon Park Drive – to resolve a conflict with a proposed sanitary sewer line in Log Cabin Way, the storm drain alignment in Skye Canyon Park Drive is proposed to be raised 0.5-ft from approximately Skye Canyon Park Drive "SCP" Station 20+99 to approximately Log Cabin Way "LCW" Station 69+84. The reach of storm drain connecting to the regional facility in Log Cabin Way up to Manhole # 1 in Skye Canyon Park Drive is proposed to remain unchanged. Although the conflict with the proposed sewer occurs at the intersection with Log Cabin Way, the proposed upstream storm drain in Skye Canyon Park Drive is at 0.5% slope, so the proposed pipe slope cannot be reduced to accommodate the change. Therefore, the majority of that storm drain mainline profile is proposed to be raised 0.5-ft. A portion of the upstream O'Hare Road profile is proposed to be raised as well. Although the

above mentioned storm drain profiles are proposed to be raised 0.5-ft, the proposed storm drain slope will remain the same (0.5%) for the majority of the alignment, and therefore there is little to no change in storm drain hydraulics, only a corresponding minor increase in the proposed hydraulic grade line.

- O'Hare Road – the raised profile of the proposed storm drain in Skye Canyon Park Drive continues up O'Hare Road to Station "OH" 39+80.57. Similar to the hydraulic performance of the revisions in Skye Canyon Park Drive, the O'Hare Road profile revision does not adversely affect hydraulic function, only results in a minor increase in the hydraulic grade line (HGL.) Both of these facilities still meet required criteria for HGL depth below finished grade.
  Additionally, the storm drain lateral in O'Hare Road at Station 32+16.02 is proposed to be revised to Station 31+27.10 to accommodate a revision to the proposed entrance location for the adjacent individual parcel.

Hydraulics

The WSPGW models for the storm drain revisions proposed above have been revised and are included in Appendix B. Markups of the original approved drainage plans are provided in Appendix C to illustrate the changes proposed with this Update Study. The proposed storm drain hydraulic changes are relatively minimal and still meet original requirements for the storm drain, including maintaining the HGL at least 1-ft below finished grade.

Conclusion

This Update Study provides hydraulic analysis of changes to the conditionally approved storm drain facility in Skye Canyon Park Drive, including portion which extend into Log Cabin Way and O'Hare Road. The proposed storm drain facility profile is proposed to be raised 0.5-ft to provide the required clearance with a proposed sewer line in Log Cabin Way. Required storm drain hydraulic criteria is still met with this profile change, and the proposed facility conforms to the requirements of the Original Study. In addition, this Update Study and the proposed improvements are in conformance with the following:

- This project is in compliance with all the applicable drainage laws as recognized by the state of Nevada as well as all the applicable design standards stipulated in the CCRFCD "*Hydrologic Criteria and Drainage Design Manual*".

- This project is in compliance with the 2018 CCRFCD "Master Plan Update."

- The entire project site is located outside of the FEMA designated Special Flood Hazard Area (SFHA). The site and the proposed improvements are located within a FEMA flood Zone "X" (unshaded). Therefore, notification and/or coordination with FEMA are not required for this project.

The revised improvement plans are included with this submittal to support the conclusions detailed in this study. If you have any questions or require additional information, please contact us at (702) 284-5300.

Respectfully Submitted,

WESTWOOD PROFESSIONAL SERVICES

Lant Leavitt, P.E.,
Flood Control Division

cc: Mark Failla, P.E., CFM
Jerry Slater, P.E.
Joshua Johnson, P.E.

APPENDIX

Appendix A – Approval Letter

Appendix B – WSPGW Hydraulic Models
- Skye Canyon Park Drive
- O'Hare Road

Appendix A – Approval Letter

Appendix B – WSPGW Hydraulic Models

APPENDIX A

Approval Letter

APPENDIX B

WSPGW Hydraulic Models:

- Skye Canyon Park Drive
- O'Hare Road

Skye Canyon Park Drive

Project Name:	SUNSTONE PHASE 1
Project Number:	EST1905-000
Date:	12/31/2019
By:	CAA

a Westwood team

STORM SEWER HYDRAULIC CALCULATIONS: SKYE CANYON PARK

CONDUIT DATA						FLOW DATA							LOSS	HGL		COMMENTS	
STATION		SIZE / TYPE	INVERTS		LENGTH	A	R	Φ	Q	V	$H_V = V^2/2g$	S_f	PIPE	PIPE		PRESS. FLOW?	OTHER
FROM	TO		D / S ELEV.	U / S ELEV.		(FT^2)	(FT)		(CFS)	(FPS)	(FT)	(FT/FT)	H_f (FT)	D/S HGL ELEV.	U/S HGL ELEV.		
1000	1064.79	Round 24" RCP	2650.35	2655.22	64.79	3.141593	0.5	0.004925	14.5	4.615493	0.330789	0.00409544	0.265	2664.62	2664.885	Yes	SC2
1000	1054.32	Round 18" RCP	2652.25	2656.83	54.32	1.767146	0.375	0.004925	2	1.131769	0.01989	0.000361034	0.020	2659.47	2659.490	Yes	SC3
1000	1044.55	Round 18" RCP	2655.15	2660.91	44.55	1.767146	0.375	0.004925	2	1.131769	0.01989	0.000361034	0.016	2656.42	2656.436	No	SC4

$Sf = \Phi Hv / R^{1.33}$

$\Phi = 2g (n^2) / 2.21$

1 - Where pipes are not under pressure, assume U/S HGL is at top of pipe

Ultimate Condition WSPG Summary

Mainline in Skye Canyon Park from Connection to Ohare Mainline to Existing Regional Mainline (SCP.WSW)

WSPG Station	Plan Set Project No. *	Equivalent Roadway Station	Improvement Plan Sheet	Storm Drain Dimension	Invert Elevation (ft)	Q_{100} (cfs)	WSE (ft)	Velocity (ft/s)	FG Elevation	Facility Description	HGL Check[1]
1000.00	LCD: EST1906	N/A	SD-9	66" RCP	2645.75	294	2653.00	12.37	2655.00	Connection to Existing Regional Mainline	OK
1016.65	LCD: EST1906	69+87.58		66" RCP	2646.92	294	2653.47	12.37	2663.84	Existing 66" RCP	OK
1064.02	LCD: EST1906	69+84.36		66" RCP	2648.77	294	2653.50	13.53	2664.12		OK
1381.53	SCP: EST1908	36+74.89	SD-4	66" RCP	2650.35	294	2656.36	12.37	2665.70	Junction with SC4 Drop Inlet Facility	OK
1381.53	SCP: EST1908			66" RCP	2650.35	292	2656.42	12.29	2665.70		OK
1760.62	SCP: EST1908	33+30.7		66" RCP	2652.25	292	2659.41	12.29	2667.50	Junction with SC3 Drop Inlet Facility	OK
1760.62	SCP: EST1908			66" RCP	2652.25	290	2659.47	12.21	2667.50		OK
2054.30	SCP: EST1908	30+37.04	SD-3	66" RCP	2653.72	290	2661.84	12.21	2668.90		OK
2187.94	SCP: EST1908	29+05.17		66" RCP	2654.39	290	2663.03	12.21	2669.00		OK
2339.09	SCP: EST1908	27+54.02		66" RCP	2655.15	290	2664.27	12.21	2668.80	Junction with SC2 Drop Inlet Facility	OK
2339.09	SCP: EST1908			66" RCP	2655.15	276	2664.62	11.60	2668.80		OK
2397.02	SCP: EST1908	26+96.09		66" RCP	2655.44	276	2665.50	11.60	2668.80	Junction with CLAT Lateral Line	OK
2397.02	SCP: EST1908			66" RCP	2655.44	273	2665.58	11.49	2668.80		OK
2460.08	SCP: EST1908	26+61.63	SD-6	66" RCP	2655.76	273	2666.10	11.49	2668.70	Continution into OHA Mainline	OK
2460.08	SCP: EST1908			66" RCP	2655.76	273	2666.10	11.49	2668.70		OK

```
T1 EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE
T2 SKYE CANYON PARK STORM DRAIN SYSTEM (SCP)
T3 FROM FACILITY OH3 DROP INLETS THRU SKYE CANYON PARK TO REGIONAL MAINLINE
SO   1000.0002645.750 66                          2653.000
R    1016.6502646.920 66      .013                                    29.0   1
R    1064.0202648.770 66      .013                                     0.0   1
R    1381.5302650.350 66      .013                                     0.0   1
JX   1381.5302650.350 66 18   .013    2.0           2650.350         60.0
R    1760.6202652.250 66      .013                                     0.0   1
JX   1760.6202652.250 66 18   .013    2.0           2652.250         46.0
R    2054.3002653.720 66      .013                                     9.0   1
R    2187.9402654.390 66      .013                                   -10.0   1
R    2339.0902655.150 66      .013                                     0.0   1
JX   2339.0902655.150 66 18   .013   14.5           2655.150         45.0
R    2397.0202655.440 66      .013                                    57.0   1
JX   2397.0202655.440 66 24   .013    2.5           2655.440        -24.0
R    2460.0802655.760 66      .013                                           1
SH   2460.0802655.760 66
CD   3  3   0   0.000  12.000    7.500 0.000 0.000  0.0000.00  0.00
CD  18  4   1   0.000   1.500    0.000 0.000 0.000  0.0000.00  0.00
CD  24  4   1   0.000   2.000    0.000 0.000 0.000  0.0000.00  0.00
CD  30  4   1   0.000   2.500    0.000 0.000 0.000  0.0000.00  0.00
CD  36  4   1   0.000   3.000    0.000 0.000 0.000  0.0000.00  0.00
CD  42  4   1   0.000   3.500    0.000 0.000 0.000  0.0000.00  0.00
CD  48  4   1   0.000   4.000    0.000 0.000 0.000  0.0000.00  0.00
CD  54  4   1   0.000   4.500    0.000 0.000 0.000  0.0000.00  0.00
CD  60  4   1   0.000   5.000    0.000 0.000 0.000  0.0000.00  0.00
CD  66  4   1   0.000   5.500    0.000 0.000 0.000  0.0000.00  0.00
CD  72  4   1   0.000   6.000    0.000 0.000 0.000  0.0000.00  0.00
Q           273.000
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FILE: SCP.WSW W S P G W - EDIT LISTING - Version 14.10 Date:12-30-2019 Time: 3:16:43

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	3	3	0	.000	12.000	7.500	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	66	4	1		5.500														
CD	72	4	1		6.000														

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE

HEADING LINE NO 2 IS -

SKYE CANYON PARK STORM DRAIN SYSTEM (SCP)

HEADING LINE NO 3 IS -

FROM FACILITY OH3 DROP INLETS THRU SKYE CANYON PARK TO REGIONAL MAINLINE

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

	STATION	INVERT	SECT	W S ELEV
U/S DATA	1000.000	2645.750	66	2653.000

ELEMENT NO 2 IS A REACH * * *

	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
U/S DATA	1016.650	2646.920	66	.013	.000	.000	29.000	1

ELEMENT NO 3 IS A REACH * * *

	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
U/S DATA	1064.020	2648.770	66	.013	.000	.000	.000	1

ELEMENT NO 4 IS A REACH * * *

	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
U/S DATA	1381.530	2650.350	66	.013	.000	.000	.000	1

ELEMENT NO 5 IS A JUNCTION * * * * * * *

	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
U/S DATA	1381.530	2650.350	66	18	0	.013	2.000	.000	2650.350	.000	60.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 6 IS A REACH * * *

	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
U/S DATA	1760.620	2652.250	66	.013	.000	.000	.000	1

ELEMENT NO 7 IS A JUNCTION * * * * * * *

	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
U/S DATA	1760.620	2652.250	66	18	0	.013	2.000	.000	2652.250	.000	46.000	.000

```
                                                                                                    RADIUS    ANGLE
                                                                                                      .000     .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
 ELEMENT NO   8 IS A REACH                *         *     *
                    U/S DATA   STATION    INVERT  SECT               N                           RADIUS    ANGLE     ANG PT  MAN H
                               2054.300 2653.720   66               .013                            .000     .000     9.000     1
 ELEMENT NO   9 IS A REACH                *         *     *
                    U/S DATA   STATION    INVERT  SECT               N                           RADIUS    ANGLE     ANG PT  MAN H
                               2187.940 2654.390   66               .013                            .000     .000   -10.000     1
                                                    W S P G W                                                                PAGE NO   3
                                WATER SURFACE PROFILE - ELEMENT CARD LISTING
 ELEMENT NO  10 IS A REACH                *         *     *
                    U/S DATA   STATION    INVERT  SECT               N                           RADIUS    ANGLE     ANG PT  MAN H
                               2339.090 2655.150   66               .013                            .000     .000      .000     1
 ELEMENT NO  11 IS A JUNCTION             *         *     *     *                 *                  *                *
                    U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                               2339.090 2655.150   66    18     0   .013    14.500      .000  2655.150      .000  45.000     .000
                                                                                                    RADIUS    ANGLE
                                                                                                      .000     .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
 ELEMENT NO  12 IS A REACH                *         *     *
                    U/S DATA   STATION    INVERT  SECT               N                           RADIUS    ANGLE     ANG PT  MAN H
                               2397.020 2655.440   66               .013                            .000     .000    57.000     1
 ELEMENT NO  13 IS A JUNCTION             *         *     *     *                 *                  *                *
                    U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                               2397.020 2655.440   66    24     0   .013     2.500      .000  2655.440      .000 -24.000     .000
                                                                                                    RADIUS    ANGLE
                                                                                                      .000     .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
 ELEMENT NO  14 IS A REACH                *         *     *
                    U/S DATA   STATION    INVERT  SECT               N                           RADIUS    ANGLE     ANG PT  MAN H
                               2460.080 2655.760   66               .013                            .000     .000      .000     1
 ELEMENT NO  15 IS A SYSTEM HEADWORKS                 *                         *
                    U/S DATA   STATION    INVERT  SECT                                    W S ELEV
                               2460.080 2655.760   66                                        .000
```

EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE
SKYE CANYON PARK STORM DRAIN SYSTEM (SCP)
FROM FACILITY OH3 DROP INLETS THRU SKYE CANYON PARK TO REGIONAL MAINLI

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2645.750	7.250	2653.000	294.00	12.37	2.38	2655.38	.00	4.73	.00	5.500	.000	.00	1 .0
16.650	.0703					.0077	.13	7.25	.00	2.18	.013	.00	.00	PIPE
1016.650	2646.920	6.554	2653.474	294.00	12.37	2.38	2655.85	.00	4.73	.00	5.500	.000	.00	1 .0
36.499	.0391					.0076	.28	6.55	.00	2.56	.013	.00	.00	PIPE
1053.149	2648.345	5.500	2653.845	294.00	12.37	2.38	2656.22	.00	4.73	.00	5.500	.000	.00	1 .0
3.667	.0391					.0072	.03	5.50	.00	2.56	.013	.00	.00	PIPE
1056.816	2648.489	5.342	2653.831	294.00	12.48	2.42	2656.25	.00	4.73	1.83	5.500	.000	.00	1 .0
HYDRAULIC JUMP														
1056.816	2648.489	4.134	2652.623	294.00	15.35	3.66	2656.28	.00	4.73	4.75	5.500	.000	.00	1 .0
2.972	.0391					.0089	.03	4.13	1.35	2.56	.013	.00	.00	PIPE
1059.788	2648.605	4.260	2652.865	294.00	14.89	3.44	2656.31	.00	4.73	4.60	5.500	.000	.00	1 .0
3.108	.0391					.0082	.03	4.26	1.27	2.56	.013	.00	.00	PIPE
1062.896	2648.726	4.477	2653.203	294.00	14.20	3.13	2656.33	.00	4.73	4.28	5.500	.000	.00	1 .0
1.124	.0391					.0074	.01	4.48	1.14	2.56	.013	.00	.00	PIPE
1064.020	2648.770	4.727	2653.497	294.00	13.53	2.84	2656.34	.00	4.73	3.82	5.500	.000	.00	1 .0
24.737	.0050					.0069	.17	4.73	1.00	5.50	.013	.00	.00	PIPE
1088.757	2648.893	5.033	2653.926	294.00	12.90	2.59	2656.51	.00	4.73	3.07	5.500	.000	.00	1 .0
126.519	.0050					.0070	.89	5.03	.83	5.50	.013	.00	.00	PIPE

EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE
SKYE CANYON PARK STORM DRAIN SYSTEM (SCP)
FROM FACILITY OH3 DROP INLETS THRU SKYE CANYON PARK TO REGIONAL MAINLI

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1215.276	2649.523	5.500	2655.023	294.00	12.37	2.38	2657.40	.00	4.73	.00	5.500	.000	.00	1 .0
166.254	.0050					.0075	1.25	5.50	.00	5.50	.013	.00	.00	PIPE
1381.530	2650.350	6.009	2656.359	294.00	12.37	2.38	2658.74	.00	4.73	.00	5.500	.000	.00	1 .0
JUNCT STR	.0000					.0076	.00	6.01	.00		.013	.00	.00	PIPE
1381.530	2650.350	6.072	2656.422	292.00	12.29	2.35	2658.77	.00	4.71	.00	5.500	.000	.00	1 .0
379.090	.0050					.0076	2.87	6.07	.00	5.50	.013	.00	.00	PIPE
1760.620	2652.250	7.156	2659.406	292.00	12.29	2.35	2661.75	.00	4.71	.00	5.500	.000	.00	1 .0
JUNCT STR	.0000					.0075	.00	7.16	.00		.013	.00	.00	PIPE
1760.620	2652.250	7.218	2659.468	290.00	12.21	2.31	2661.78	.00	4.70	.00	5.500	.000	.00	1 .0
293.680	.0050					.0075	2.19	7.22	.00	5.50	.013	.00	.00	PIPE
2054.300	2653.720	8.123	2661.843	290.00	12.21	2.31	2664.16	.00	4.70	.00	5.500	.000	.00	1 .0
133.640	.0050					.0075	1.00	8.12	.00	5.50	.013	.00	.00	PIPE
2187.940	2654.390	8.641	2663.031	290.00	12.21	2.31	2665.34	.00	4.70	.00	5.500	.000	.00	1 .0
151.150	.0050					.0075	1.13	8.64	.00	5.50	.013	.00	.00	PIPE
2339.090	2655.150	9.124	2664.274	290.00	12.21	2.31	2666.59	.00	4.70	.00	5.500	.000	.00	1 .0
JUNCT STR	.0000					.0071	.00	9.12	.00		.013	.00	.00	PIPE
2339.090	2655.150	9.465	2664.615	275.50	11.60	2.09	2666.70	.00	4.60	.00	5.500	.000	.00	1 .0
57.930	.0050					.0067	.39	9.47	.00	5.50	.013	.00	.00	PIPE

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2397.020	2655.440	10.062	2665.502	275.50	11.60	2.09	2667.59	.00	4.60	.00	5.500	.000	.00	1 .0
JUNCT STR	.0000					.0067	.00	10.06	.00		.013	.00	.00	PIPE
2397.020	2655.440	10.135	2665.575	273.00	11.49	2.05	2667.63	.00	4.59	.00	5.500	.000	.00	1 .0
63.060	.0051					.0066	.42	10.14	.00	5.50	.013	.00	.00	PIPE
2460.080	2655.760	10.335	2666.095	273.00	11.49	2.05	2668.15	.00	4.59	.00	5.500	.000	.00	1 .0

EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE

SKYE CANYON PARK STORM DRAIN SYSTEM (SCP)

FROM FACILITY OH3 DROP INLETS THRU SKYE CANYON PARK TO REGIONAL MAINLI

```
1000.00    .I                C  H      W        E                                  .    R
1029.80    .    I                C  H    W         E                              .    R
1059.60    .         I                C   H         E                             .    R
1089.39    .          I                C  H         E                             .    R
1119.19    .          I               W  C  H         E                           .    R
1148.99    .          I               W C   H         E                           .    R
1178.79    .           I                WC  H         E                          .    R
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1208.58   .          I              W  H       E                    .   R
1238.38   .           I             CW H       E                    .   R
1268.18   .            I              C  H       E                  .   R
1297.98   .                                                         .
1327.77   .                                                         .
1357.57   .                                                         .
1387.37   .               I             C  H W       E              .   JX
1417.17   .               I             C  H W        E             .   R
1446.96   .                                                         .
1476.76   .                                                         .
1506.56   .                                                         .
1536.36   .                                                         .
1566.15   .                                                         .
1595.95   .                                                         .
1625.75   .                                                         .
1655.55   .                                                         .
1685.34   .                                                         .
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1715.14    .                                                                .

1744.94    .                                                                .

1774.74    .                    I                C  H      W         E      .   JX

1804.53    .                    I                C  H      W         E      .   R

1834.33    .                                                                .

1864.13    .                                                                .

1893.93    .                                                                .

1923.72    .                                                                .

1953.52    .                                                                .

1983.32    .                                                                .

2013.12    .                                                                .

2042.91    .                                                                .

2072.71    .                         I              C   H         W         E      .   R

2102.51    .                                                                .

2132.31    .                                                                .

2162.10    .                                                                .

2191.90    .                              I            C   H          W         E      .   R
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   2221.70    .                                                                .

   2251.50    .                                                                .

   2281.29    .                                                                .

   2311.09    .                                                                .

   2340.89    .                          I          C   H          W       E    .   JX

   2370.69    .                          I          C   H            W     E    .   R

   2400.48    .                           I         C   H              W     E  .   JX

   2430.28    .                           I         C   H              W     E  .   R

   2460.08    .                            I          C   H            W      E.   R

            2645.750  2647.990  2650.229  2652.469  2654.708  2656.948  2659.187  2661.427  2663.666  2665.906  2668.145
```

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

Ultimate Condition WSPG Summary
Lateral Line From Facility SC1 to Skye Canyon Park Model (CLAT.WSW)

WSPG Station	Plan Set Project No. *	Equivalent Roadway Station	Improvement Plan Sheet	Storm Drain Dimension	Invert Elevation (ft)	Q_{100} (cfs)	WSE (ft)	Velocity (ft/s)	FG Elevation	Facility Description	HGL Check[1]
1000.00	SCP: EST1908	26+96.09	P-3	24" RCP	2655.44	3	2665.58	0.80	2668.83	Connection to SCP Mainline Model	OK
1030.30	SCP: EST1908	26+68.27		24" RCP	2655.59	3	2665.58	0.80	2669.15		OK
1245.07	SCP: EST1908	26+70.26	P-2	24" RCP	2658.20	3	2665.61	0.80	2670.26		OK
1602.74	SCP: EST1908	20+95.83		24" RCP	2662.92	3	2665.65	0.80	2671.82		OK
1650.12	SCP: EST1908	20+62.33		18" RCP	2663.55	3	2665.66	0.80	2670.97	Addition of Flow from SC1 Drop Inlet Facility	OK
1650.12	SCP: EST1908			18" RCP	2663.55	3	2665.66	0.80	2670.97		OK

```
T1 EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE
T2 SKY CANYON PARK STORM DRAIN SYSTEM LATERAL (CLAT)
T3 FROM FACILITY SC1 TO STORM DRAIN MODEL SCP
SO   1000.0002655.440 24                          2665.575
R    1030.3002655.590 24      .013                                    24.0   1
R    1245.0702658.200 24      .013                                     0.0   1
R    1602.7402662.920 24      .013                                    45.0   1
R    1650.1202663.550 24      .013
SH   1650.1202663.550 24
CD   3  3   0   0.000  12.000    7.500 0.000 0.000  0.0000.00  0.00
CD  18  4   1   0.000   1.500    0.000 0.000 0.000  0.0000.00  0.00
CD  24  4   1   0.000   2.000    0.000 0.000 0.000  0.0000.00  0.00
CD  30  4   1   0.000   2.500    0.000 0.000 0.000  0.0000.00  0.00
CD  36  4   1   0.000   3.000    0.000 0.000 0.000  0.0000.00  0.00
CD  42  4   1   0.000   3.500    0.000 0.000 0.000  0.0000.00  0.00
CD  48  4   1   0.000   4.000    0.000 0.000 0.000  0.0000.00  0.00
CD  54  4   1   0.000   4.500    0.000 0.000 0.000  0.0000.00  0.00
CD  60  4   1   0.000   5.000    0.000 0.000 0.000  0.0000.00  0.00
CD  66  4   1   0.000   5.500    0.000 0.000 0.000  0.0000.00  0.00
CD  72  4   1   0.000   6.000    0.000 0.000 0.000  0.0000.00  0.00
Q            2.500
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FILE: CLAT.WSW W S P G W - EDIT LISTING - Version 14.10 Date:12-31-2019 Time:10:21:40

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	3	3	0	.000	12.000	7.500	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	66	4	1		5.500														
CD	72	4	1		6.000														

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE

HEADING LINE NO 2 IS -

SKY CANYON PARK STORM DRAIN SYSTEM LATERAL (CLAT)

HEADING LINE NO 3 IS -

FROM FACILITY SC1 TO STORM DRAIN MODEL SCP

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA STATION INVERT SECT W S ELEV

1000.000 2655.440 24 2665.575

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1030.300	2655.590	24	.013	.000	.000	24.000	1

ELEMENT NO 3 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1245.070	2658.200	24	.013	.000	.000	.000	1

ELEMENT NO 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1602.740	2662.920	24	.013	.000	.000	45.000	1

ELEMENT NO 5 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1650.120	2663.550	24	.013	.000	.000	.000	0

ELEMENT NO 6 IS A SYSTEM HEADWORKS * *

U/S DATA STATION INVERT SECT W S ELEV

1650.120 2663.550 24 .000

Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING Date:12-31-2019 Time:10:21:43

EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE

SKY CANYON PARK STORM DRAIN SYSTEM LATERAL (CLAT)

FROM FACILITY SC1 TO STORM DRAIN MODEL SCP

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS) / SF Ave	Vel Head / HF	Energy Grd.El. / SE Dpth	Super Elev / Froude N	Critical Depth / Norm Dp	Flow Top Width	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip Type Ch
1000.000	2655.440	10.135	2665.575	2.50	.80	.01	2665.58	.00	.55	.00	2.000	.000	.00	1 .0
30.300	.0050					.0001	.00	10.14	.00	.54	.013	.00	.00	PIPE
1030.300	2655.590	9.990	2665.580	2.50	.80	.01	2665.59	.00	.55	.00	2.000	.000	.00	1 .0
214.770	.0122					.0001	.03	9.99	.00	.43	.013	.00	.00	PIPE
1245.070	2658.200	7.407	2665.606	2.50	.80	.01	2665.62	.00	.55	.00	2.000	.000	.00	1 .0
357.670	.0132					.0001	.04	7.41	.00	.42	.013	.00	.00	PIPE
1602.740	2662.920	2.732	2665.652	2.50	.80	.01	2665.66	.00	.55	.00	2.000	.000	.00	1 .0
47.380	.0133					.0001	.01	2.73	.00	.42	.013	.00	.00	PIPE
1650.120	2663.550	2.108	2665.658	2.50	.80	.01	2665.67	.00	.55	.00	2.000	.000	.00	1 .0

EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE

SKY CANYON PARK STORM DRAIN SYSTEM LATERAL (CLAT)

FROM FACILITY SC1 TO STORM DRAIN MODEL SCP

1000.00 .I C H W . R

1013.27 . .

1026.54 . .

1039.80 . I C H W . R

1053.07 . .

1066.34 . .

1079.61 . .

1092.87 . .

1106.14 . .

1119.41 . .

1132.68 . .

1145.95 . .

1159.21 . .

1172.48 . .

1185.75 . .

1199.02 . .

1212.28 . .

1225.55 . .

1238.82 . .

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1252.09    .                    I    C          H                              W .   R
1265.36    .                                                                    .
1278.62    .                                                                    .
1291.89    .                                                                    .
1305.16    .                                                                    .
1318.43    .                                                                    .
1331.69    .                                                                    .
1344.96    .                                                                    .
1358.23    .                                                                    .
1371.50    .                                                                    .
1384.76    .                                                                    .
1398.03    .                                                                    .
1411.30    .                                                                    .
1424.57    .                                                                    .
1437.84    .                                                                    .
1451.10    .                                                                    .
1464.37    .                                                                    .
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1477.64    .                                                                .
1490.91    .                                                                .
1504.17    .                                                                .
1517.44    .                                                                .
1530.71    .                                                                .
1543.98    .                                                                .
1557.25    .                                                                .
1570.51    .                                                                .
1583.78    .                                                                .
1597.05    .                                                                .
1610.32    .                                          I    C          H     W .    R
1623.58    .                                                                .
1636.85    .                                                                .
1650.12    .                                               I    C           HW .    R

         2655.440  2656.463  2657.485  2658.508  2659.531  2660.553  2661.576  2662.599  2663.622  2664.644  2665.668
```

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION

C = CRITICAL DEPTH
W = WATER SURFACE ELEVATION
S = SUPER-ELEVATION
H = HEIGHT OF CHANNEL
E = ENERGY GRADE LINE
X = CURVES CROSSING OVER
B = BRIDGE ENTRANCE OR EXIT
Y = WALL ENTRANCE OR EXIT

2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

Ultimate Condition WSPG Summary

Lateral Line From Facility SC1 to Skye Canyon Park Model with Proposed Condition Flows (CLAT-P.WSW)

WSPG Station	Plan Set Project No. *	Equivalent Roadway Station	Improvement Plan Sheet	Storm Drain Dimension	Invert Elevation (ft)	Q_{100} (cfs)	WSE (ft)	Velocity (ft/s)	FG Elevation	Facility Description	HGL Check[1]
1000.00	SCP: EST1908	26+96.09	P-3	24" RCP	2655.44	14	2665.58	4.30	2668.83	Connection to SCP Mainline Model	OK
1030.30	SCP: EST1908	26+68.27		24" RCP	2655.59	14	2665.72	4.30	2669.15		OK
1245.07	SCP: EST1908	26+70.26	P-2	24" RCP	2658.20	14	2666.50	4.30	2670.26		OK
1602.74	SCP: EST1908	20+95.83		24" RCP	2662.92	14	2667.83	4.30	2671.82		OK
1647.62	SCP: EST1908	20+62.33		5' x 10' RCB	2663.52	14	2668.03	4.30	2670.97	Wall Entrance	OK
1647.62	SCP: EST1908			5' x 10' RCB	2663.52	14	2664.05	20.35	2670.97		OK
1650.12	SCP: EST1908	16+68.21		5' x 10' RCB	2663.55	11	2668.04	0.49	2673.38	Addition of Flow from SC1 Drop Inlet Facility	OK
1650.12	SCP: EST1908	13+64.25		5' x 10' RCB	2663.55	11	2668.04	0.49	2674.94		OK
1652.62	SCP: EST1908	10+60.28		5' x 10' RCB	2663.59	11	2668.04	0.49	2670.97		OK
1652.62	SCP: EST1908			5' x 10' RCB	2663.59	11	2668.04	3.50	2670.97	Wall Exit	OK
1702.97	SCP: EST1908	8+64.87	P-6	24" RCP	2664.30	11	2668.16	3.50	2673.38		OK
1702.97	SCP: EST1908	6+26.04		24" RCP	2664.30	11	2668.16	3.50	2674.94		OK

```
T1 EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE
T2 SKY CANYON PARK STORM DRAIN SYSTEM LATERAL (CLAT-P)
T3 FROM FACILITY SC1 TO STORM DRAIN MODEL SCP (PROPOSED FLOW)
SO   1000.0002655.440 24                          2665.575
R    1030.3002655.590 24      .013                                    24.0   1
R    1245.0702658.200 24      .013                                     0.0   1
R    1602.7402662.920 24      .013                                    45.0   1
R    1647.6202663.517 24      .013                                    45.0
WE   1647.6202663.517 24      .013
R    1650.1202663.550  1      .013                                           1
JX   1650.1202663.550  1  1   .013    2.5           2663.550
R    1652.6202663.585  1      .013                                           1
WX   1652.6202663.585  1      .013
R    1702.9702664.300 24      .013                                           1
SH   1702.9702664.300 24
CD   1  3   0   0.000  10.000    5.000 0.000 0.000  0.0000.00  0.00
CD  18  4   1   0.000   1.500    0.000 0.000 0.000  0.0000.00  0.00
CD  24  4   1   0.000   2.000    0.000 0.000 0.000  0.0000.00  0.00
CD  30  4   1   0.000   2.500    0.000 0.000 0.000  0.0000.00  0.00
CD  36  4   1   0.000   3.000    0.000 0.000 0.000  0.0000.00  0.00
CD  42  4   1   0.000   3.500    0.000 0.000 0.000  0.0000.00  0.00
CD  48  4   1   0.000   4.000    0.000 0.000 0.000  0.0000.00  0.00
CD  54  4   1   0.000   4.500    0.000 0.000 0.000  0.0000.00  0.00
CD  60  4   1   0.000   5.000    0.000 0.000 0.000  0.0000.00  0.00
CD  66  4   1   0.000   5.500    0.000 0.000 0.000  0.0000.00  0.00
CD  72  4   1   0.000   6.000    0.000 0.000 0.000  0.0000.00  0.00
Q           11.000
```

FILE: CLAT-P.WSW W S P G W - EDIT LISTING - Version 14.10 Date:12-31-2019 Time:10:22:40

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	1	3	0	.000	10.000	5.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	66	4	1		5.500														
CD	72	4	1		6.000														

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE

HEADING LINE NO 2 IS -

SKY CANYON PARK STORM DRAIN SYSTEM LATERAL (CLAT-P)

HEADING LINE NO 3 IS -

FROM FACILITY SC1 TO STORM DRAIN MODEL SCP (PROPOSED FLOW)

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2655.440	24	2665.575

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1030.300	2655.590	24	.013	.000	.000	24.000	1

ELEMENT NO 3 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1245.070	2658.200	24	.013	.000	.000	.000	1

ELEMENT NO 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1602.740	2662.920	24	.013	.000	.000	45.000	1

ELEMENT NO 5 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1647.620	2663.517	24	.013	.000	.000	45.000	0

ELEMENT NO 6 IS A WALL ENTRANCE *

U/S DATA	STATION	INVERT	SECT	FP
	1647.620	2663.517	24	.013

WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS

ELEMENT NO 7 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1650.120	2663.550	1	.013	.000	.000	.000	1

ELEMENT NO 8 IS A JUNCTION * * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1650.120	2663.550	1	1	0	.013	2.500	.000	2663.550	.000	.000	.000

```
                                                                                                    RADIUS    ANGLE
                                                                                                     .000     .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
 ELEMENT NO   9 IS A REACH              *         *     *
                    U/S DATA   STATION    INVERT  SECT               N                          RADIUS    ANGLE     ANG PT  MAN H
                               1652.620 2663.585    1               .013                         .000     .000      .000     1
 ELEMENT NO  10 IS A  WALL  EXIT                       *
                    U/S DATA   STATION    INVERT  SECT
                               1652.620 2663.585    1
WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS
 ELEMENT NO  11 IS A REACH              *         *     *
                    U/S DATA   STATION    INVERT  SECT               N                          RADIUS    ANGLE     ANG PT  MAN H
                               1702.970 2664.300   24               .013                         .000     .000      .000     1
                                                      W S P G W                                                      PAGE NO   3
                          WATER SURFACE PROFILE - ELEMENT CARD LISTING
 ELEMENT NO  12 IS A SYSTEM HEADWORKS                  *                         *
                    U/S DATA   STATION    INVERT  SECT                                    W S ELEV
                               1702.970 2664.300   24                                       .000
```

Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING Date:12-31-2019 Time:10:22:43

EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE
SKY CANYON PARK STORM DRAIN SYSTEM LATERAL (CLAT-P)
FROM FACILITY SC1 TO STORM DRAIN MODEL SCP (PROPOSED FLOW)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip Type Ch
1000.000	2655.440	10.135	2665.575	13.50	4.30	.29	2665.86	.00	1.32	.00	2.000	.000	.00	1 .0
30.300	.0050					.0036	.11	10.14	.00	1.41	.013	.00	.00	PIPE
1030.300	2655.590	10.130	2665.720	13.50	4.30	.29	2666.01	.00	1.32	.00	2.000	.000	.00	1 .0
214.770	.0122					.0036	.76	10.13	.00	1.05	.013	.00	.00	PIPE
1245.070	2658.200	8.299	2666.499	13.50	4.30	.29	2666.79	.00	1.32	.00	2.000	.000	.00	1 .0
357.670	.0132					.0036	1.27	8.30	.00	1.02	.013	.00	.00	PIPE
1602.740	2662.920	4.910	2667.830	13.50	4.30	.29	2668.12	.00	1.32	.00	2.000	.000	.00	1 .0
44.880	.0133					.0036	.16	4.91	.00	1.02	.013	.00	.00	PIPE
1647.620	2663.517	4.515	2668.032	13.50	4.30	.29	2668.32	.00	1.32	.00	2.000	.000	.00	1 .0
HYDRAULIC JUMP														
1647.620	2663.517	.528	2664.045	13.50	20.35	6.43	2670.48	.00	1.32	1.76	2.000	.000	.00	0 .0
HYDRAULIC DROP														
1647.620	2663.517	4.515	2668.032	13.50	.60	.01	2668.04	.00	.61	5.00	10.000	5.000	.00	0 .0
2.500	.0132					.0000	.00	4.52	.05	.41	.013	.00	.00	BOX
JUNCT STR	.0000					.0000	.00	4.48	.05		.013	.00	.00	BOX
1650.120	2663.550	4.485	2668.035	11.00	.49	.00	2668.04	.00	.53	5.00	10.000	5.000	.00	0 .0
2.500	.0140					.0000	.00	4.48	.04	.35	.013	.00	.00	BOX

Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING Date:12-31-2019 Time:10:22:43

EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE
SKY CANYON PARK STORM DRAIN SYSTEM LATERAL (CLAT-P)
FROM FACILITY SC1 TO STORM DRAIN MODEL SCP (PROPOSED FLOW)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS) / SF Ave	Vel Head / HF	Energy Grd.El. / SE Dpth	Super Elev / Froude N	Critical Depth / Norm Dp	Flow Top Width / "N"	Height/ Dia.-FT / X-Fall	Base Wt or I.D. / ZR	ZL	No Wth Prs/Pip / Type Ch
1652.620	2663.585	4.450	2668.035	11.00	.49	.00	2668.04	.00	.53	5.00	10.000	5.000	.00	0 .0
WALL	EXIT													
1652.620	2663.585	4.451	2668.036	11.00	3.50	.19	2668.23	.00	1.19	.00	2.000	.000	.00	1 .0
50.350	.0142				.0024	.12	4.45	.00	.89	.013	.00	.00	PIPE	
1702.970	2664.300	3.864	2668.164	11.00	3.50	.19	2668.35	.00	1.19	.00	2.000	.000	.00	1 .0

EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE

SKY CANYON PARK STORM DRAIN SYSTEM LATERAL (CLAT-P)

FROM FACILITY SC1 TO STORM DRAIN MODEL SCP (PROPOSED FLOW)

1000.00 .I C H W E . R

1014.35 . .

1028.69 . .

1043.04 .I C H W E . R

1057.39 . .

1071.73 . .

1086.08 . .

1100.42 . .

1114.77 . .

1129.12 . .

1143.46 . .

1157.81 . .

1172.16 . .

1186.50 . .

1200.85 . .

1215.19 . .

1229.54 . .

1243.89 . .

1258.23 . I C H W E . R

1272.58 . .

1286.93 . .

1301.27 . .

1315.62 . .

1329.97 . .

1344.31 .

1358.66 .

1373.00 .

1387.35 .

1401.70 .

1416.04 .

1430.39 .

1444.74 .

1459.08 .

1473.43 .

1487.78 .

1502.12 .

1516.47 .

1530.81 .

1545.16 .

1559.51 .

1573.85 .

```
   1588.20    .                                                                .
   1602.55    .                                                                .
   1616.89    .                                I     C   H            WE       .    R
   1631.24    .                                                                .
   1645.58    .                                                                .
   1659.93    .                                   IYYYYYYCYYYH          WE      .    WE
   1674.28    .                                   IYYWYYYCYYYH                E .    WE
   1688.62    .                                   I  C                  W       H .    R
   1702.97    .                                   I  C                  W       H .    R

            2655.440  2657.254  2659.069  2660.883  2662.698  2664.512  2666.327  2668.141  2669.956  2671.770  2673.585
```

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

O'Hare Road

Project Name:	SUNSTONE PHASE 1
Project Number:	EST1905-000
Date:	12/31/2019
By:	CAA

a Westwood team

STORM SEWER HYDRAULIC CALCULATIONS: OHARE ROAD

CONDUIT DATA						FLOW DATA							LOSS	HGL		COMMENTS	
STATION		SIZE / TYPE	INVERTS		LENGTH	A	R	Φ	Q	V	$H_V = V^2/2g$	S_f	PIPE	PIPE		PRESS. FLOW?	OTHER
FROM	TO		D / S ELEV.	U / S ELEV.		(FT^2)	(FT)		(CFS)	(FPS)	(FT)	(FT/FT)	H_f (FT)	D/S HGL ELEV.	U/S HGL ELEV.		
1000	1032.80	Round 18" RCP	2705.93	2709.21	32.80	1.767146	0.375	0.004925	18	10.18592	1.61107	0.029243751	0.959	2710.02	2710.978	Yes	OH1a
1000	1011.18	Round 18" RCP	2705.93	2708.17	11.18	1.767146	0.375	0.004925	18	10.18592	1.61107	0.029243751	0.327	2710.02	2710.346	Yes	OH1b
1000	1009.76	Round 18" RCP	2686.79	2688.74	9.76	1.767146	0.375	0.004925	6	3.395306	0.179008	0.003249306	0.032	2692.162	2692.194	Yes	OH2b
1000	1012.13	Round 18" RCP	2660.16	2660.88	12.13	1.767146	0.375	0.004925	14	7.92238	0.974598	0.017690664	0.215	2667.01	2667.224	Yes	**OH3b**

$Sf = \Phi Hv / R^{1.33}$ $\Phi = 2g (n^2) / 2.21$

1 - Where pipes are not under pressure, assume U/S HGL is at top of pipe

Ultimate Condition WSPG Summary

Mainline in Ohare Road from from Basin EPJ to SD in Skye Canyon Park (OHA.WSW)

WSPG Station	Plan Set Project No. *	Equivalent Roadway Station	Improvement Plan Sheet	Storm Drain Dimension	Invert Elevation (ft)	Q_{100} (cfs)	WSE (ft)	Velocity (ft/s)	FG Elevation	Facility Description	HGL Check[1]
1000.00	SCP: EST1908	26+96.09	P-5	66" RCP	2655.44	273.10	2665.58	11.49	2668.80	Connection to SCP Model	OK
1063.06		26+61.63		66" RCP	2655.76	273.10	2666.33	11.49	2668.70		OK
1143.76		26+64.		66" RCP	2656.16	273.10	2667.01	11.49	2669.80	Junction with OH3 Inlets	OK
1143.76				48" RCP	2657.66	216.10	2665.49	17.20	2669.80		OK
1369.51	OHA: EST1909	39+80.57	P-4	48" RCP	2663.94	216.10	2670.89	17.20	2677.02		OK
1541.23		38+10.5	P-3	48" RCP	2670.52	216.10	2673.33	22.90	2683.40		OK
1702.52		36+51.28		48" RCP	2676.51	216.10	2679.66	20.38	2689.40		OK
1879.81		34+76.41		48" RCP	2681.07	216.10	2684.37	19.47	2694.40		OK
2003.15		33+53.14		48" RCP	2684.29	216.10	2688.18	17.34	2697.20	Junction with OH2 Inlets	OK
2003.15				48" RCP	2684.29	148.10	2692.16	11.79	2697.20		OK
2228.14		32+16.02		48" RCP	2692.17	148.10	2695.75	12.48	2706.30	Junction with Basin EPF2	OK
2228.14				36" RCP	2693.17	91.10	2697.96	12.89	2706.30		OK
2424.78		31+24.62	P-2	36" RCP	2699.08	91.10	2701.19	17.12	2712.30		OK
2612.70		29+27.48		36" RCP	2704.43	91.10	2707.28	13.13	2712.30	Junction with OH1 Inlets	OK
2612.70		27+17.32		36" RCP	2704.43	55.10	2710.02	7.80	2717.30		OK
2694.32				36" RCP	2705.75	55.10	2710.79	7.80	2717.32		OK
2814.90	ENT: EST1910	14+86.	P-3	36" RCP	2707.78	55.00	2711.66	7.78	2717.32		OK
2814.90		13+65.42		36" RCP	2707.78	55.00	2711.66	7.78	2721.39		OK
3122.16				36" RCP	2710.85	55.00	2713.94	7.78	2721.39		OK
3177.90		10+58.16		36" RCP	2711.41	55.00	2714.50	7.78	2723.09		OK
3224.20		10+18.75			2711.87	55.00	2714.86	7.78	2723.56	Addition of Flow from Basin EPJ	OK
3224.20		10+18.75	P-4	36" RCP	2711.87	55.00	2714.86	7.78	2725.00		OK

```
T1 EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE
T2 OHARE STORM DRAIN SYSTEM (OHA)
T3 OHARE ROAD SYSTEM FROM PARCEL EPJ TO MAINLINE IN SKYE CANYON PARK DRIVE
SO   1000.0002655.440 66                          2665.575
R    1063.0602655.760 66      .013                                    35.0   1
R    1143.7602656.160 66      .013                                     6.0   1
JX   1143.7602657.660 48 18 30.013   14.0     43.0  2660.1602656.160 56.0-48.0
R    1369.5102663.940 48      .013                                    -4.0   1
R    1541.2302670.520 48      .013                                   -11.5   1
R    1702.5202676.510 48      .013                                   -11.5   1
R    1879.8102681.070 48      .013                                    -7.0   1
R    2003.1502684.290 48      .013                                     0.0   1
JX   2003.1502684.290 48 18 36.013    6.0     62.0  2686.7902684.290 60.0-45.0
R    2228.1402692.170 48      .013                                    13.0   1
JX   2228.1402693.170 36 36   .013   57.0           2693.170        -90.0
R    2424.7802699.080 36      .013                                    15.0   1
R    2612.7002704.430 36      .013                                    27.0   1
JX   2612.7002704.430 36 18 18.013   18.0     18.0  2705.9302705.930 65.0-67.0
R    2694.3202705.750 36      .013                                   -52.0   1
R    2814.9002707.780 36      .013                                     0.0   1
JX   2814.9002707.780 36 18   .013    0.1           2709.280         90.0
R    3122.1602710.850 36      .013                                    45.0   1
R    3177.9002711.410 36      .013                                    45.0   1
R    3224.2002711.870 36      .013                                           1
SH   3224.2002711.870 36
CD  18  4   1   0.000   1.500    0.000 0.000 0.000  0.0000.00  0.00
CD  24  4   1   0.000   2.000    0.000 0.000 0.000  0.0000.00  0.00
CD  30  4   1   0.000   2.500    0.000 0.000 0.000  0.0000.00  0.00
CD  36  4   1   0.000   3.000    0.000 0.000 0.000  0.0000.00  0.00
CD  42  4   1   0.000   3.500    0.000 0.000 0.000  0.0000.00  0.00
CD  48  4   1   0.000   4.000    0.000 0.000 0.000  0.0000.00  0.00
CD  54  4   1   0.000   4.500    0.000 0.000 0.000  0.0000.00  0.00
CD  60  4   1   0.000   5.000    0.000 0.000 0.000  0.0000.00  0.00
CD  66  4   1   0.000   5.500    0.000 0.000 0.000  0.0000.00  0.00
Q           55.000
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FILE: OHA.WSW W S P G W - EDIT LISTING - Version 14.10 Date: 1-24-2020 Time:11:36:51

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	66	4	1		5.500														

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE

HEADING LINE NO 2 IS -

OHARE STORM DRAIN SYSTEM (OHA)

HEADING LINE NO 3 IS -

OHARE ROAD SYSTEM FROM PARCEL EPJ TO MAINLINE IN SKYE CANYON PARK DRIVE

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2655.440	66	2665.575

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1063.060	2655.760	66	.013	.000	.000	35.000	1

ELEMENT NO 3 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1143.760	2656.160	66	.013	.000	.000	6.000	1

ELEMENT NO 4 IS A JUNCTION * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1143.760	2657.660	48	18	30	.013	14.000	43.000	2660.160	2656.160	56.000	-48.000

RADIUS	ANGLE
.000	.000

ELEMENT NO 5 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1369.510	2663.940	48	.013	.000	.000	-4.000	1

ELEMENT NO 6 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1541.230	2670.520	48	.013	.000	.000	-11.500	1

ELEMENT NO 7 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1702.520	2676.510	48	.013	.000	.000	-11.500	1

ELEMENT NO 8 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1879.810	2681.070	48	.013	.000	.000	-7.000	1

ELEMENT NO 9 IS A REACH * * *

```
                    U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                               2003.150 2684.290   48              .013                           .000     .000      .000     1
 ELEMENT NO  10 IS A JUNCTION          *         *     *     *                 *                    *                *
                    U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                               2003.150 2684.290   48    18    36   .013     6.000    62.000  2686.790  2684.290  60.000  -45.000
                                                                                                RADIUS    ANGLE
                                                                                                  .000     .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
                                                W S P G W                                                              PAGE NO   3
                                WATER SURFACE PROFILE - ELEMENT CARD LISTING
 ELEMENT NO  11 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                               2228.140 2692.170   48              .013                           .000     .000    13.000     1
 ELEMENT NO  12 IS A JUNCTION          *         *     *     *                 *                    *                *
                    U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                               2228.140 2693.170   36    36     0   .013    57.000      .000  2693.170      .000 -90.000     .000
                                                                                                RADIUS    ANGLE
                                                                                                  .000     .000
 ELEMENT NO  13 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                               2424.780 2699.080   36              .013                           .000     .000    15.000     1
 ELEMENT NO  14 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                               2612.700 2704.430   36              .013                           .000     .000    27.000     1
 ELEMENT NO  15 IS A JUNCTION          *         *     *     *                 *                    *                *
                    U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                               2612.700 2704.430   36    18    18   .013    18.000    18.000  2705.930  2705.930  65.000  -67.000
                                                                                                RADIUS    ANGLE
                                                                                                  .000     .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
 ELEMENT NO  16 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                               2694.320 2705.750   36              .013                           .000     .000    -52.000    1
 ELEMENT NO  17 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                               2814.900 2707.780   36              .013                           .000     .000      .000     1
 ELEMENT NO  18 IS A JUNCTION          *         *     *     *                 *                    *                *
                    U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                               2814.900 2707.780   36    18     0   .013      .100      .000  2709.280      .000  90.000     .000
                                                                                                RADIUS    ANGLE
                                                                                                  .000     .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
                                                W S P G W                                                              PAGE NO   4
                                WATER SURFACE PROFILE - ELEMENT CARD LISTING
 ELEMENT NO  19 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                               3122.160 2710.850   36              .013                           .000     .000    45.000     1
 ELEMENT NO  20 IS A REACH             *         *     *
```

	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
		3177.900	2711.410	36	.013	.000	.000	45.000	1
ELEMENT NO 21 IS A REACH		*	*	*					
	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
		3224.200	2711.870	36	.013	.000	.000	.000	1
ELEMENT NO 22 IS A SYSTEM HEADWORKS				*	*				
	U/S DATA	STATION	INVERT	SECT		W S ELEV			
		3224.200	2711.870	36		.000			

Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING Date: 1-24-2020 Time:11:36:54

EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE

OHARE STORM DRAIN SYSTEM (OHA)

OHARE ROAD SYSTEM FROM PARCEL EPJ TO MAINLINE IN SKYE CANYON PARK DRIV

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2655.440	10.135	2665.575	273.10	11.49	2.05	2667.63	.00	4.59	.00	5.500	.000	.00	1 .0
63.060	.0051					.0066	.42	10.14	.00	5.50	.013	.00	.00	PIPE
1063.060	2655.760	10.572	2666.332	273.10	11.49	2.05	2668.38	.00	4.59	.00	5.500	.000	.00	1 .0
80.700	.0050					.0066	.53	10.57	.00	5.50	.013	.00	.00	PIPE
1143.760	2656.160	10.849	2667.009	273.10	11.49	2.05	2669.06	.00	4.59	.00	5.500	.000	.00	1 .0
JUNCT STR	.0000					.0146	.00	10.85	.00		.013	.00	.00	PIPE
1143.760	2657.660	7.825	2665.485	216.10	17.20	4.59	2670.08	.00	3.89	.00	4.000	.000	.00	1 .0
225.750	.0278					.0226	5.11	7.83	.00	2.97	.013	.00	.00	PIPE
1369.510	2663.940	6.944	2670.885	216.10	17.20	4.59	2675.48	.00	3.89	.00	4.000	.000	.00	1 .0
40.528	.0383					.0226	.92	6.94	.00	2.63	.013	.00	.00	PIPE
1410.038	2665.493	6.402	2671.895	216.10	17.20	4.59	2676.49	.00	3.89	.00	4.000	.000	.00	1 .0
HYDRAULIC JUMP														
1410.038	2665.493	2.710	2668.203	216.10	23.84	8.83	2677.03	.00	3.89	3.74	4.000	.000	.00	1 .0
131.192	.0383					.0336	4.41	2.71	2.70	2.63	.013	.00	.00	PIPE
1541.230	2670.520	2.811	2673.331	216.10	22.90	8.15	2681.48	.00	3.89	3.66	4.000	.000	.00	1 .0
47.823	.0371					.0312	1.49	2.81	2.51	2.66	.013	.00	.00	PIPE
1589.053	2672.296	2.867	2675.163	216.10	22.42	7.81	2682.97	.00	3.89	3.60	4.000	.000	.00	1 .0
69.203	.0371					.0288	1.99	2.87	2.42	2.66	.013	.00	.00	PIPE

EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE
OHARE STORM DRAIN SYSTEM (OHA)
OHARE ROAD SYSTEM FROM PARCEL EPJ TO MAINLINE IN SKYE CANYON PARK DRIV

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1658.256	2674.866	3.000	2677.866	216.10	21.38	7.10	2684.96	.00	3.89	3.46	4.000	.000	.00	1 .0
44.264	.0371					.0259	1.15	3.00	2.21	2.66	.013	.00	.00	PIPE
1702.520	2676.510	3.146	2679.656	216.10	20.38	6.45	2686.11	.00	3.89	3.28	4.000	.000	.00	1 .0
177.290	.0257					.0234	4.15	3.15	2.00	3.08	.013	.00	.00	PIPE
1879.810	2681.070	3.303	2684.373	216.10	19.47	5.89	2690.26	.00	3.89	3.04	4.000	.000	.00	1 .0
38.383	.0261					.0219	.84	3.30	1.79	3.06	.013	.00	.00	PIPE
1918.193	2682.072	3.381	2685.453	216.10	19.07	5.65	2691.10	.00	3.89	2.89	4.000	.000	.00	1 .0
57.206	.0261					.0207	1.19	3.38	1.70	3.06	.013	.00	.00	PIPE
1975.400	2683.566	3.587	2687.153	216.10	18.19	5.14	2692.29	.00	3.89	2.43	4.000	.000	.00	1 .0
27.750	.0261					.0200	.55	3.59	1.45	3.06	.013	.00	.00	PIPE
2003.150	2684.290	3.885	2688.175	216.10	17.34	4.67	2692.84	.00	3.89	1.34	4.000	.000	.00	1 .0
JUNCT STR	.0000					.0153	.00	3.89	1.00		.013	.00	.00	PIPE
2003.150	2684.290	7.872	2692.162	148.10	11.79	2.16	2694.32	.00	3.58	.00	4.000	.000	.00	1 .0
113.578	.0350					.0106	1.21	7.87	.00	2.12	.013	.00	.00	PIPE
2116.728	2688.268	5.216	2693.484	148.10	11.79	2.16	2695.64	.00	3.58	.00	4.000	.000	.00	1 .0
HYDRAULIC JUMP														
2116.728	2688.268	2.392	2690.660	148.10	18.89	5.54	2696.20	.00	3.58	3.92	4.000	.000	.00	1 .0
21.058	.0350					.0228	.48	2.39	2.35	2.12	.013	.00	.00	PIPE

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
2137.786	2689.005	2.459	2691.464	148.10	18.28	5.19	2696.65	.00	3.58	3.89	4.000	.000	.00	1 .0
25.696	.0350					.0206	.53	2.46	2.23	2.12	.013	.00	.00	PIPE
2163.482	2689.905	2.561	2692.466	148.10	17.43	4.72	2697.18	.00	3.58	3.84	4.000	.000	.00	1 .0
19.153	.0350					.0183	.35	2.56	2.06	2.12	.013	.00	.00	PIPE
2182.635	2690.576	2.670	2693.246	148.10	16.62	4.29	2697.53	.00	3.58	3.77	4.000	.000	.00	1 .0
14.588	.0350					.0163	.24	2.67	1.90	2.12	.013	.00	.00	PIPE
2197.223	2691.087	2.787	2693.874	148.10	15.84	3.90	2697.77	.00	3.58	3.68	4.000	.000	.00	1 .0
11.145	.0350					.0145	.16	2.79	1.75	2.12	.013	.00	.00	PIPE
2208.367	2691.477	2.913	2694.390	148.10	15.11	3.54	2697.93	.00	3.58	3.56	4.000	.000	.00	1 .0
8.401	.0350					.0130	.11	2.91	1.60	2.12	.013	.00	.00	PIPE
2216.768	2691.771	3.050	2694.822	148.10	14.40	3.22	2698.04	.00	3.58	3.40	4.000	.000	.00	1 .0
6.049	.0350					.0117	.07	3.05	1.46	2.12	.013	.00	.00	PIPE
2222.817	2691.983	3.202	2695.185	148.10	13.73	2.93	2698.11	.00	3.58	3.20	4.000	.000	.00	1 .0
3.859	.0350					.0106	.04	3.20	1.32	2.12	.013	.00	.00	PIPE
2226.676	2692.119	3.374	2695.493	148.10	13.10	2.66	2698.16	.00	3.58	2.91	4.000	.000	.00	1 .0
1.464	.0350					.0098	.01	3.37	1.17	2.12	.013	.00	.00	PIPE
2228.140	2692.170	3.580	2695.750	148.10	12.48	2.42	2698.17	.00	3.58	2.45	4.000	.000	.00	1 .0
JUNCT STR	.0000					.0140	.00	3.58	1.00		.013	.00	.00	PIPE

Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING Date: 1-24-2020 Time:11:36:54

EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE
OHARE STORM DRAIN SYSTEM (OHA)
OHARE ROAD SYSTEM FROM PARCEL EPJ TO MAINLINE IN SKYE CANYON PARK DRIV

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip

L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2228.140	2693.170	4.793	2697.963	91.10	12.89	2.58	2700.54	.00	2.85	.00	3.000	.000	.00	1 .0
67.815	.0301					.0187	1.27	4.79	.00	2.01	.013	.00	.00	PIPE
2295.955	2695.208	4.112	2699.320	91.10	12.89	2.58	2701.90	.00	2.85	.00	3.000	.000	.00	1 .0
HYDRAULIC JUMP														
2295.955	2695.208	2.034	2697.242	91.10	17.85	4.95	2702.19	.00	2.85	2.80	3.000	.000	.00	1 .0
128.825	.0301					.0276	3.55	2.03	2.33	2.01	.013	.00	.00	PIPE
2424.780	2699.080	2.114	2701.194	91.10	17.12	4.55	2705.74	.00	2.85	2.74	3.000	.000	.00	1 .0
59.483	.0285					.0254	1.51	2.11	2.16	2.05	.013	.00	.00	PIPE
2484.263	2700.773	2.167	2702.940	91.10	16.66	4.31	2707.25	.00	2.85	2.69	3.000	.000	.00	1 .0
56.128	.0285					.0233	1.31	2.17	2.06	2.05	.013	.00	.00	PIPE
2540.391	2702.371	2.268	2704.640	91.10	15.89	3.92	2708.56	.00	2.85	2.58	3.000	.000	.00	1 .0
32.471	.0285					.0209	.68	2.27	1.88	2.05	.013	.00	.00	PIPE
2572.861	2703.296	2.380	2705.676	91.10	15.15	3.56	2709.24	.00	2.85	2.43	3.000	.000	.00	1 .0
20.811	.0285					.0190	.39	2.38	1.70	2.05	.013	.00	.00	PIPE
2593.673	2703.888	2.506	2706.394	91.10	14.44	3.24	2709.63	.00	2.85	2.23	3.000	.000	.00	1 .0
13.182	.0285					.0174	.23	2.51	1.51	2.05	.013	.00	.00	PIPE
2606.854	2704.263	2.654	2706.917	91.10	13.77	2.94	2709.86	.00	2.85	1.92	3.000	.000	.00	1 .0
5.845	.0285					.0164	.10	2.65	1.31	2.05	.013	.00	.00	PIPE

Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING Date: 1-24-2020 Time:11:36:54

EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE

OHARE STORM DRAIN SYSTEM (OHA)

OHARE ROAD SYSTEM FROM PARCEL EPJ TO MAINLINE IN SKYE CANYON PARK DRIV

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch

2612.700	2704.430	2.852	2707.282	91.10	13.13	2.68	2709.96	.00	2.85	1.30	3.000	.000	.00	1	.0
JUNCT STR	.0000					.0115	.00	2.85	1.00		.013	.00	.00	PIPE	
2612.700	2704.430	5.589	2710.019	55.10	7.80	.94	2710.96	.00	2.41	.00	3.000	.000	.00	1	.0
81.620	.0162					.0068	.56	5.59	.00	1.76	.013	.00	.00	PIPE	
2694.320	2705.750	5.035	2710.785	55.10	7.80	.94	2711.73	.00	2.41	.00	3.000	.000	.00	1	.0
120.580	.0168					.0068	.82	5.04	.00	1.74	.013	.00	.00	PIPE	
JUNCT STR	.0000					.0068	.00	3.88	.00		.013	.00	.00	PIPE	
2814.900	2707.780	3.882	2711.662	55.00	7.78	.94	2712.60	.00	2.41	.00	3.000	.000	.00	1	.0
307.260	.0100					.0068	2.09	3.88	.00	2.08	.013	.00	.00	PIPE	
3122.160	2710.850	3.088	2713.938	55.00	7.78	.94	2714.88	.00	2.41	.00	3.000	.000	.00	1	.0
55.740	.0100					.0068	.38	3.09	.00	2.07	.013	.00	.00	PIPE	
3177.900	2711.410	3.094	2714.504	55.00	7.78	.94	2715.44	.00	2.41	.00	3.000	.000	.00	1	.0
44.219	.0099					.0067	.30	3.09	.00	2.08	.013	.00	.00	PIPE	
3222.119	2711.849	3.000	2714.849	55.00	7.78	.94	2715.79	.00	2.41	.00	3.000	.000	.00	1	.0
2.081	.0099					.0066	.01	3.00	.00	2.08	.013	.00	.00	PIPE	
3224.200	2711.870	2.992	2714.862	55.00	7.78	.94	2715.80	.00	2.41	.31	3.000	.000	.00	1	.0

EST1902: SUNSTONE PHASE 1 INFRASTRUCTURE

OHARE STORM DRAIN SYSTEM (OHA)

OHARE ROAD SYSTEM FROM PARCEL EPJ TO MAINLINE IN SKYE CANYON PARK DRIV

1000.00 .I C H W E . R

1025.57 . .

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1051.13   .                                                                .
1076.70   .I      CH       W  E                                            .   R
1102.26   .                                                                .
1127.83   .                                                                .
1153.39   . I     C H      W  E                                            .   JX
1178.96   .  I     H    W      E                                            .   R
1204.52   .                                                                .
1230.09   .                                                                .
1255.66   .                                                                .
1281.22   .                                                                .
1306.79   .                                                                .
1332.35   .                                                                .
1357.92   .                                                                .
1383.48   .            I    H   W      E                                   .   R
1409.05   .                                                                .
1434.61   .              I     H  W     E                                   .   R
1460.18   .              I   W H         E                                  .   R
```

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1485.74    .                                                                .
1511.31    .                                                                .
1536.88    .                                                                .
1562.44    .                    I   W H          E                          .   R
1588.01    .                                                                .
1613.57    .                      I   W H         E                         .   R
1639.14    .                                                                .
1664.70    .                        I   WH        E                         .   R
1690.27    .                                                                .
1715.83    .                          I    WH       E                       .   R
1741.40    .                                                                .
1766.97    .                                                                .
1792.53    .                                                                .
1818.10    .                                                                .
1843.66    .                                                                .
1869.23    .                                                                .
1894.79    .                               I   WCH      E                   .   R
```

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1920.36    .                    I    WH        E                    .    R
1945.92    .                                                        .
1971.49    .                                                        .
1997.06    .                     I     WH       E                   .    R
2022.62    .                      I      H      E                   .    JX
2048.19    .                      I     CH     W   E                .    R
2073.75    .                                                        .
2099.32    .                                                        .
2124.88    .                          I     CH W  E                 .    R
2150.45    .                          I   W CH     E                .    R
2176.01    .                           I   W CH     E               .    R
2201.58    .                             I   W H     E              .    R
2227.14    .                              I   W H    E              .    R
2252.71    .                                I   WCH    E           .    R
2278.28    .                                I    WCH   E           .    R
2303.84    .                                  I    WH   E          .    R
2329.41    .                                  I    WCH  E          .    R
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2354.97    .                I     WH  E                        .    R

2380.54    .                I     WH  E                        .    JX

2406.10    .                  I    H  W   E                    .    R

2431.67    .                     I    H W   E                  .    R

2457.23    .                     I   WH      E                .    R

2482.80    .                           I  W H     E            .    R

2508.37    .                              I  WCH    E          .    R

2533.93    .                                                   .

2559.50    .                                 I   WH     E      .    R

2585.06    .                                   I   WH    E     .    R

2610.63    .                                    I   WH   E     .    R

2636.19    .                                    I    H   E     .    R

2661.76    .                                    I   WH   E     .    JX

2687.32    .                                    I   CH   WE    .    R

2712.89    .                                      I   CH  W E   .    R

2738.46    .                                                   .

2764.02    .                                                   .
```

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2789.59    .                                                                .
2815.15    .                                          I   CH WE     .    R
2840.72    .                                                                .
2866.28    .                                                                .
2891.85    .                                                                .
2917.41    .                                                                .
2942.98    .                                                                .
2968.54    .                                                                .
2994.11    .                                                                .
3019.68    .                                                                .
3045.24    .                                                                .
3070.81    .                                                                .
3096.37    .                                                                .
3121.94    .                                                                .
3147.50    .                                              I   CH E  .    R
3173.07    .                                                                .
3198.63    .                                              I   CH E  .    R
```

3224.20 . I CHE . R

2655.440 2661.476 2667.512 2673.548 2679.584 2685.621 2691.657 2697.693 2703.729 2709.765 2715.802

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

Ultimate Condition WSPG Summary

Lateral Line From Basin EPE1 to Ohare Road Mainline Model (OLAT1.WSW)

WSPG Station	Plan Set Project No. *	Equivalent Roadway Station	Improvement Plan Sheet	Storm Drain Dimension	Invert Elevation (ft)	Q_{100} (cfs)	WSE (ft)	Velocity (ft/s)	FG Elevation	Facility Description	HGL Check[1]
1000.00	OHA: EST1909	42+06.75	P-4	30" RCP	2656.16	43.00	2656.63	66.88	2669.80	Connection to SCP Model	OK
1035.07		41+83.87		20' x 13' RCB	2659.80	43.00	2660.12	6.70	2669.67		OK
1035.07				20' x 13' RCB	2659.80	43.00	2660.12	6.70	2669.67	Wall Entrance	OK
1037.57				20' x 13' RCB	2660.06	43.00	2660.58	4.11	2669.67	Junction with OH3a Drop Inlet Facility	OK
1037.57				20' x 13' RCB	2660.06	29.00	2660.87	1.78	2669.67		OK
1040.07				20' x 13' RCB	2660.14	29.00	2660.86	2.02	2669.67		OK
1040.07				20' x 13' RCB	2660.14	29.00	2660.86	2.01	2669.67	Wall Exit	OK
1073.75		41+83.37		30" RCP	2661.24	29.00	2663.08	7.51	2670.00	Addition of Flow from EPE1	OK
1073.75				30" RCP	2661.24	29.00	2663.08	7.51	2670.00		OK

```
T1 EST1905: SUNSTONE PHASE 1 INFRASTRUCTURE
T2 OHARE STORM DRAIN SYSTEM LATERAL 1 (OLAT1)
T3 FROM PARCEL EPE1 TO OHARE MAINLINE SD (OHA)
SO   1000.0002656.160 30                        2667.009
R    1035.0702659.800 30      .013                                  37.0
WE   1035.0702659.800 30      .013
R    1037.5702660.060  1      .013                                   0.0
JX   1037.5702660.060  1  1   .013   14.0           2660.060         90.0
R    1040.0702660.142  1      .013                                   0.0
WX   1040.0702660.142  1      .013
R    1073.7502661.240 30      .013
SH   1073.7502661.240 30
CD   1  3   0   0.000  13.000   20.000 0.000 0.000  0.0000.00  0.00
CD   2  3   0   0.000  12.000   12.500 0.000 0.000  0.0000.00  0.00
CD   3  3   0   0.000  12.000    7.500 0.000 0.000  0.0000.00  0.00
CD   4  3   0   0.000  17.000    5.000 0.000 0.000  0.0000.00  0.00
CD  18  4   1   0.000   1.500    0.000 0.000 0.000  0.0000.00  0.00
CD  24  4   1   0.000   2.000    0.000 0.000 0.000  0.0000.00  0.00
CD  30  4   1   0.000   2.500    0.000 0.000 0.000  0.0000.00  0.00
CD  36  4   1   0.000   3.000    0.000 0.000 0.000  0.0000.00  0.00
CD  42  4   1   0.000   3.500    0.000 0.000 0.000  0.0000.00  0.00
CD  48  4   1   0.000   4.000    0.000 0.000 0.000  0.0000.00  0.00
Q           29.000
```

FILE: OLAT1.WSW W S P G W - EDIT LISTING - Version 14.10 Date:12-31-2019 Time:11:18: 1

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	1	3	0	.000	13.000	20.000	.000	.000	.00										
CD	2	3	0	.000	12.000	12.500	.000	.000	.00										
CD	3	3	0	.000	12.000	7.500	.000	.000	.00										
CD	4	3	0	.000	17.000	5.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

EST1905: SUNSTONE PHASE 1 INFRASTRUCTURE

HEADING LINE NO 2 IS -

OHARE STORM DRAIN SYSTEM LATERAL 1 (OLAT1)

HEADING LINE NO 3 IS -

FROM PARCEL EPE1 TO OHARE MAINLINE SD (OHA)

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2656.160	30	2667.009

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1035.070	2659.800	30	.013	.000	.000	37.000	0

ELEMENT NO 3 IS A WALL ENTRANCE *

U/S DATA	STATION	INVERT	SECT	FP
	1035.070	2659.800	30	.013

WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS

ELEMENT NO 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1037.570	2660.060	1	.013	.000	.000	.000	0

ELEMENT NO 5 IS A JUNCTION * * * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1037.570	2660.060	1	1	0	.013	14.000	.000	2660.060	.000	90.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 6 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1040.070	2660.142	1	.013	.000	.000	.000	0

ELEMENT NO 7 IS A WALL EXIT *

U/S DATA	STATION	INVERT	SECT
	1040.070	2660.142	1

WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS

ELEMENT NO 8 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1073.750	2661.240	30	.013	.000	.000	.000	0

ELEMENT NO 9 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1073.750	2661.240	30	.000

Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING Date:12-31-2019 Time:11:18: 4

EST1905: SUNSTONE PHASE 1 INFRASTRUCTURE
OHARE STORM DRAIN SYSTEM LATERAL 1 (OLAT1)
FROM PARCEL EPE1 TO OHARE MAINLINE SD (OHA)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT or "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2656.160	.472	2656.632	43.00	66.88	69.46	2726.09	.00	2.19	1.96	2.500	.000	.00	1 .0
2.823	.1038					1.9160	5.41	.47	20.56	.98	.013	.00	.00	PIPE
WARNING: POSSIBLE ERROR IN CALCULATIONS, PROGRAM USES MANNINGS, EQUATION, AVERAGE FRICTION SLOPE = 1.91595														
1002.823	2656.453	.460	2656.913	43.00	69.40	74.80	2731.71	.00	2.19	1.94	2.500	.000	.00	1 .0
3.626	.1038					2.1623	7.84	.46	21.63	.98	.013	.00	.00	PIPE
WARNING: POSSIBLE ERROR IN CALCULATIONS, PROGRAM USES MANNINGS, EQUATION, AVERAGE FRICTION SLOPE = 2.16230														
1006.449	2656.829	.445	2657.274	43.00	72.79	82.28	2739.55	.00	2.19	1.91	2.500	.000	.00	1 .0
3.463	.1038					2.4754	8.57	.44	23.08	.98	.013	.00	.00	PIPE
WARNING: POSSIBLE ERROR IN CALCULATIONS, PROGRAM USES MANNINGS, EQUATION, AVERAGE FRICTION SLOPE = 2.47541														
1009.912	2657.189	.430	2657.619	43.00	76.34	90.50	2748.12	.00	2.19	1.89	2.500	.000	.00	1 .0
3.310	.1038					2.8341	9.38	.43	24.63	.98	.013	.00	.00	PIPE
WARNING: POSSIBLE ERROR IN CALCULATIONS, PROGRAM USES MANNINGS, EQUATION, AVERAGE FRICTION SLOPE = 2.83411														
1013.222	2657.532	.416	2657.948	43.00	80.07	99.55	2757.50	.00	2.19	1.86	2.500	.000	.00	1 .0
3.165	.1038					3.2452	10.27	.42	26.28	.98	.013	.00	.00	PIPE
WARNING: POSSIBLE ERROR IN CALCULATIONS, PROGRAM USES MANNINGS, EQUATION, AVERAGE FRICTION SLOPE = 3.24517														
1016.387	2657.861	.403	2658.263	43.00	83.98	109.51	2767.77	.00	2.19	1.84	2.500	.000	.00	1 .0
3.028	.1038					3.7164	11.25	.40	28.04	.98	.013	.00	.00	PIPE
WARNING: POSSIBLE ERROR IN CALCULATIONS, PROGRAM USES MANNINGS, EQUATION, AVERAGE FRICTION SLOPE = 3.71641														
1019.415	2658.175	.390	2658.565	43.00	88.08	120.46	2779.02	.00	2.19	1.81	2.500	.000	.00	1 .0
2.898	.1038					4.2564	12.33	.39	29.92	.98	.013	.00	.00	PIPE
WARNING: POSSIBLE ERROR IN CALCULATIONS, PROGRAM USES MANNINGS, EQUATION, AVERAGE FRICTION SLOPE = 4.25642														
1022.312	2658.476	.377	2658.853	43.00	92.38	132.51	2791.36	.00	2.19	1.79	2.500	.000	.00	1 .0
2.775	.1038					4.8750	13.53	.38	31.92	.98	.013	.00	.00	PIPE

WARNING: POSSIBLE ERROR IN CALCULATIONS, PROGRAM USES MANNINGS, EQUATION, AVERAGE FRICTION SLOPE = 4.87500

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1025.087	2658.764	.365	2659.129	43.00	96.88	145.76	2804.89	.00	2.19	1.77	2.500	.000	.00	1 .0
2.658	.1038					5.5837	14.84	.36	34.05	.98	.013	.00	.00	PIPE

WARNING: POSSIBLE ERROR IN CALCULATIONS, PROGRAM USES MANNINGS, EQUATION, AVERAGE FRICTION SLOPE = 5.58372

EST1905: SUNSTONE PHASE 1 INFRASTRUCTURE
OHARE STORM DRAIN SYSTEM LATERAL 1 (OLAT1)
FROM PARCEL EPE1 TO OHARE MAINLINE SD (OHA)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1027.745	2659.040	.353	2659.393	43.00	101.61	160.33	2819.72	.00	2.19	1.74	2.500	.000	.00	1 .0
2.546	.1038					6.3959	16.29	.35	36.33	.98	.013	.00	.00	PIPE

WARNING: POSSIBLE ERROR IN CALCULATIONS, PROGRAM USES MANNINGS, EQUATION, AVERAGE FRICTION SLOPE = 6.39592

1030.291	2659.304	.342	2659.646	43.00	106.57	176.36	2836.01	.00	2.19	1.72	2.500	.000	.00	1 .0
2.440	.1038					7.3270	17.88	.34	38.75	.98	.013	.00	.00	PIPE

WARNING: POSSIBLE ERROR IN CALCULATIONS, PROGRAM USES MANNINGS, EQUATION, AVERAGE FRICTION SLOPE = 7.32696

1032.731	2659.557	.331	2659.888	43.00	111.78	194.00	2853.89	.00	2.19	1.69	2.500	.000	.00	1 .0
2.339	.1038					8.3946	19.63	.33	41.33	.98	.013	.00	.00	PIPE

WARNING: POSSIBLE ERROR IN CALCULATIONS, PROGRAM USES MANNINGS, EQUATION, AVERAGE FRICTION SLOPE = 8.39456

1035.070	2659.800	.321	2660.121	43.00	6.70	.70	2660.82	.00	.52	20.00	13.000	20.000	.00	0 .0
.145	.1040					.0160	.00	.32	2.09	.18	.013	.00	.00	BOX
1035.214	2659.815	.324	2660.140	43.00	6.63	.68	2660.82	.00	.52	20.00	13.000	20.000	.00	0 .0
.516	.1040					.0146	.01	.32	2.05	.18	.013	.00	.00	BOX
1035.730	2659.869	.340	2660.209	43.00	6.32	.62	2660.83	.00	.52	20.00	13.000	20.000	.00	0 .0
.434	.1040					.0125	.01	.34	1.91	.18	.013	.00	.00	BOX
1036.164	2659.914	.357	2660.271	43.00	6.02	.56	2660.83	.00	.52	20.00	13.000	20.000	.00	0 .0
.362	.1040					.0107	.00	.36	1.78	.18	.013	.00	.00	BOX
1036.526	2659.952	.374	2660.326	43.00	5.74	.51	2660.84	.00	.52	20.00	13.000	20.000	.00	0 .0

.298	.1040					.0091	.00	.37	1.65	.18	.013	.00	.00	BOX				
1036.824	2659.983	.393	2660.375	43.00	5.48	.47	2660.84	.00	.52	20.00	13.000	20.000	.00	0	.0			
.241	.1040					.0078	.00	.39	1.54	.18	.013	.00	.00	BOX				

EST1905: SUNSTONE PHASE 1 INFRASTRUCTURE
OHARE STORM DRAIN SYSTEM LATERAL 1 (OLAT1)
FROM PARCEL EPE1 TO OHARE MAINLINE SD (OHA)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1037.065	2660.008	.412	2660.420	43.00	5.22	.42	2660.84	.00	.52	20.00	13.000	20.000	.00	0 .0
.189	.1040					.0067	.00	.41	1.43	.18	.013	.00	.00	BOX
1037.254	2660.027	.432	2660.459	43.00	4.98	.38	2660.84	.00	.52	20.00	13.000	20.000	.00	0 .0
.141	.1040					.0057	.00	.43	1.33	.18	.013	.00	.00	BOX
1037.395	2660.042	.453	2660.495	43.00	4.75	.35	2660.84	.00	.52	20.00	13.000	20.000	.00	0 .0
.098	.1040					.0049	.00	.45	1.24	.18	.013	.00	.00	BOX
1037.493	2660.052	.475	2660.527	43.00	4.53	.32	2660.85	.00	.52	20.00	13.000	20.000	.00	0 .0
.057	.1040					.0042	.00	.48	1.16	.18	.013	.00	.00	BOX
1037.550	2660.058	.498	2660.556	43.00	4.31	.29	2660.85	.00	.52	20.00	13.000	20.000	.00	0 .0
.020	.1040					.0036	.00	.50	1.08	.18	.013	.00	.00	BOX
1037.570	2660.060	.524	2660.584	43.00	4.11	.26	2660.85	.00	.52	20.00	13.000	20.000	.00	0 .0
JUNCT STR	.0000					.0018	.00	.52	1.00		.013	.00	.00	BOX
1037.570	2660.060	.814	2660.874	29.00	1.78	.05	2660.92	.00	.40	20.00	13.000	20.000	.00	0 .0
1.015	.0328					.0004	.00	.81	.35	.20	.013	.00	.00	BOX
1038.585	2660.093	.776	2660.869	29.00	1.87	.05	2660.92	.00	.40	20.00	13.000	20.000	.00	0 .0
.948	.0328					.0004	.00	.78	.37	.20	.013	.00	.00	BOX

1039.533	2660.124	.740	2660.864	29.00	1.96	.06	2660.92	.00	.40	20.00	13.000	20.000	.00	0	.0
.537	.0328					.0005	.00	.74	.40	.20	.013	.00	.00	BOX	

Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING Date:12-31-2019 Time:11:18: 4

EST1905: SUNSTONE PHASE 1 INFRASTRUCTURE
OHARE STORM DRAIN SYSTEM LATERAL 1 (OLAT1)
FROM PARCEL EPE1 TO OHARE MAINLINE SD (OHA)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1040.070	2660.142	.719	2660.861	29.00	2.02	.06	2660.92	.00	.40	20.00	13.000	20.000	.00	0	.0
WALL	EXIT														
1040.070	2660.142	.720	2660.862	29.00	2.01	.06	2660.92	.00	.40	20.00	13.000	20.000	.00	0	.0
1040.070	2660.142	1.274	2661.416	29.00	11.53	2.06	2663.48	.00	1.84	2.50	2.500	.000	.00	1	.0
9.211	.0326					.0176	.16	1.27	2.03	1.09	.013	.00	.00	PIPE	
1049.281	2660.442	1.323	2661.765	29.00	11.00	1.88	2663.64	.00	1.84	2.50	2.500	.000	.00	1	.0
6.980	.0326					.0156	.11	1.32	1.89	1.09	.013	.00	.00	PIPE	
1056.261	2660.670	1.375	2662.044	29.00	10.48	1.71	2663.75	.00	1.84	2.49	2.500	.000	.00	1	.0
5.340	.0326					.0137	.07	1.37	1.75	1.09	.013	.00	.00	PIPE	
1061.602	2660.844	1.429	2662.273	29.00	10.00	1.55	2663.82	.00	1.84	2.47	2.500	.000	.00	1	.0
4.088	.0326					.0121	.05	1.43	1.63	1.09	.013	.00	.00	PIPE	
1065.689	2660.977	1.487	2662.464	29.00	9.53	1.41	2663.87	.00	1.84	2.45	2.500	.000	.00	1	.0
3.084	.0326					.0107	.03	1.49	1.51	1.09	.013	.00	.00	PIPE	
1068.774	2661.078	1.547	2662.625	29.00	9.09	1.28	2663.91	.00	1.84	2.43	2.500	.000	.00	1	.0
2.252	.0326					.0095	.02	1.55	1.40	1.09	.013	.00	.00	PIPE	
1071.025	2661.151	1.612	2662.763	29.00	8.67	1.17	2663.93	.00	1.84	2.39	2.500	.000	.00	1	.0
1.536	.0326					.0084	.01	1.61	1.29	1.09	.013	.00	.00	PIPE	

```
 1072.561  2661.201    1.681  2662.882     29.00    8.26    1.06  2663.94     .00    1.84     2.35    2.500     .000   .00   1   .0
       -|-       -|-      -|-       -|-       -|-     -|-     -|-       -|-     -|-      -|-      -|-     -|-     -|-     -|-     |-
    .891    .0326                                          .0075      .01     1.68    1.19    1.09    .013       .00   .00  PIPE
```


Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING Date:12-31-2019 Time:11:18: 4

EST1905: SUNSTONE PHASE 1 INFRASTRUCTURE
OHARE STORM DRAIN SYSTEM LATERAL 1 (OLAT1)
FROM PARCEL EPE1 TO OHARE MAINLINE SD (OHA)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS) / SF Ave	Vel Head / HF	Energy Grd.El. / SE Dpth	Super Elev / Froude N	Critical Depth / Norm Dp	Flow Top Width / "N"	Height/ Dia.-FT / X-Fall	Base Wt or I.D. / ZR	ZL	No Wth Prs/Pip / Type Ch
1073.452	2661.230	1.755	2662.985	29.00	7.88	.96	2663.95	.00	1.84	2.29	2.500	.000	.00	1 .0
.298	.0326				.0067	.00	1.75	1.09	1.09	.013	.00	.00		PIPE
1073.750	2661.240	1.836	2663.076	29.00	7.51	.87	2663.95	.00	1.84	2.21	2.500	.000	.00	1 .0

EST1905: SUNSTONE PHASE 1 INFRASTRUCTURE

OHARE STORM DRAIN SYSTEM LATERAL 1 (OLAT1)

FROM PARCEL EPE1 TO OHARE MAINLINE SD (OHA)

```
   1000.00    .WH                              E                                                    .    R

   1000.96    .                                                                                     .

   1001.92    .                                                                                     .

   1002.87    .WH                                E                                                  .    R

   1003.83    .                                                                                     .
```

```
1004.79    .                                                                .

1005.75    .                                                                .

1006.70    .WH                          E                                   .   R

1007.66    .                                                                .

1008.62    .                                                                .

1009.58    .                                                                .

1010.54    .WH                            E                                 .   R

1011.49    .                                                                .

1012.45    .                                                                .

1013.41    .WH                               E                              .   R

1014.37    .                                                                .

1015.32    .                                                                .

1016.28    .                                                                .

1017.24    .IWH                                 E                           .   R

1018.20    .                                                                .

1019.16    .                                                                .

1020.11    . WH                                    E                        .   R
```

```
1021.07    .                                                                .
1022.03    .                                                                .
1022.99    . WH                                  E                          .    R
1023.94    .                                                                .
1024.90    .                                                                .
1025.86    . WH                                       E                     .    R
1026.82    .                                                                .
1027.78    . WH                                            E                .    R
1028.73    .                                                                .
1029.69    .                                                                .
1030.65    . WH                                                 E           .    R
1031.61    .                                                                .
1032.56    .                                                                .
1033.52    . WH                                                             E.   R
1034.48    .                                                                .
1035.44    . IW     H                                                       .    R
1036.40    . IW     H                                                       .    R
```

```
1037.35    . IW     H                                                    .    R

1038.31    . IW     H                                                    .    R

1039.27    . IW     H                                                    .    R

1040.23    . IW     H                                                    .    R

1041.19    . IW     H                                                    .    R

1042.14    . IW     H                                                    .    R

1043.10    . IW     H                                                    .    R

1044.06    . IW     H                                                    .    R

1045.02    . IW     H                                                    .    R

1045.97    . IW     H                                                    .    JX

1046.93    . IW     H                                                    .    R

1047.89    . IW     H                                                    .    R

1048.85    .  W     H                                                    .    R

1049.81    .  WYYYYYH                                                    .    WX

1050.76    .  WYYYYYH                                                    .    WX

1051.72    .  WH                                                         .    R

1052.68    .  WH                                                         .    R
```

1053.64 . .

1054.59 . .

1055.55 . .

1056.51 . WH . R

1057.47 . .

1058.43 . .

1059.38 . .

1060.34 . .

1061.30 . .

1062.26 . IH . R

1063.21 . .

1064.17 . .

1065.13 . .

1066.09 . IH . R

1067.05 . .

1068.00 . .

1068.96 . IH . R

```
   1069.92    .                                                                .

   1070.88    .                                                                .

   1071.83    .  IH                                                            .    R

   1072.79    .  IH                                                            .    R

   1073.75    .  IH                                                            .    R

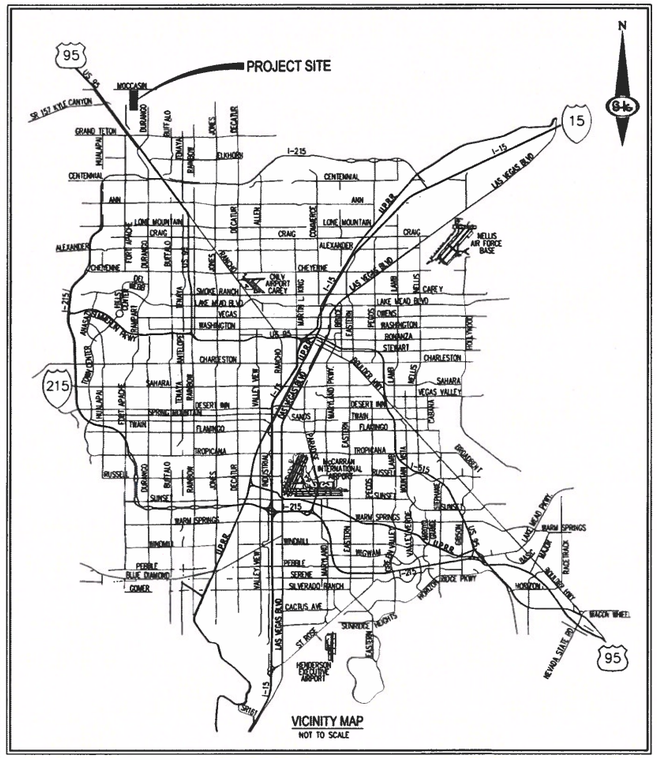
            2656.160  2675.933  2695.706  2715.479  2735.252  2755.025  2774.798  2794.571  2814.344  2834.116  2853.889
```

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

APPENDIX C

Original Study Plans with Changes Denoted

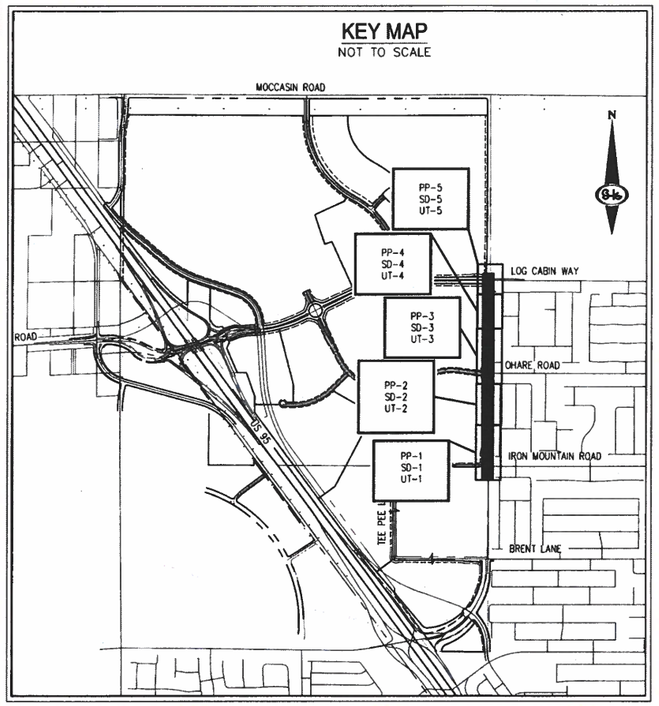
PREVIOUS PLANS EXCERPT FROM TDS COND APPROVED BY CLV 9/9/19



VICINITY MAP
NOT TO SCALE

IMPROVEMENT PLANS
FOR
SUNSTONE PHASE 1
N SKYE CANYON PARK DR

CITY OF LAS VEGAS, NEVADA



SHEET INDEX		
NO.	SHEET	TITLE
1	CS-1	COVER SHEET
2	CS-2	GENERAL NOTES
3	CS-3	ABBREVIATIONS, LEGEND & QUANTITIES
4	PP-1	PLAN & PROFILE I - "SCP" 11+00.00 TO "SCP" 19+00.00
5	PP-2	PLAN & PROFILE II - "SCP" 19+00.00 TO "SCP" 25+00.00
6	PP-3	PLAN & PROFILE III - "SCP" 25+00.00 TO "SCP" 33+00.00
7	PP-4	PLAN & PROFILE IV - "SCP" 33+00.00 TO "SCP" 38+00.00
8	PP-5	PLAN & PROFILE V - "SCP" 38+00.00 TO "SCP" 42+00.00
9	SD-1	STORM DRAIN I - "SCP" 11+00.00 TO "SCP" 19+00.00
10	SD-2	STORM DRAIN II - "SCP" 19+00.00 TO "SCP" 25+00.00
11	SD-3	STORM DRAIN III - "SCP" 25+00.00 TO "SCP" 33+00.00
12	SD-4	STORM DRAIN IV - "SCP" 33+00.00 TO "SCP" 38+00.00
13	SD-5	STORM DRAIN V - "SCP" 38+00.00 TO "SCP" 42+00.00
14	SD-6	STORM DRAIN LATERAL I
15	UT-1	UTILITY PLAN I - "SCP" 11+00.00 TO "SCP" 19+00.00
16	UT-2	UTILITY PLAN II - "SCP" 19+00.00 TO "SCP" 25+00.00
17	UT-3	UTILITY PLAN III - "SCP" 25+00.00 TO "SCP" 33+00.00
18	UT-4	UTILITY PLAN IV - "SCP" 33+00.00 TO "SCP" 38+00.00
19	UT-5	UTILITY PLAN V - "SCP" 38+00.00 TO "SCP" 42+00.00
20	UT-6	UTILITY LATERAL I
21	DT-1	DETAIL SHEET I
22	ST-1	SIGNING & STRIPING PLAN I
23	ST-1	SIGNING & STRIPING PLAN II
24	LL-1	LIGHTING & INFRASTRUCTURE PLAN I
25	LL-2	LIGHTING & INFRASTRUCTURE PLAN II
26	TS-1	TRAFFIC SIGNAL INFRASTRUCTURE PLAN I

APPROVALS

CITY ENGINEER-ALLEN PAVELKA PE, #9029 DATE

APPROVAL OF THESE PLANS BY THE CITY ENGINEER IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED OF RIGHT-OF-WAY, AND/OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND/OR SPECIFICATIONS EXCEPT THOSE SPECIALLY LISTED UNDER DEVIATIONS FORM STANDARDS. THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN DEVIATIONS FROM STANDARDS IN FAVOR OF THE UNIFORM STANDARD DRAWINGS AND SPECIFICATIONS, CLARK COUNTY AREA, NEVADA.

LAS VEGAS FIRE AND RESCUE DATE

CITY OF LAS VEGAS - PLANNING DEPARTMENT DATE

THIS PLAN MEETS THE APPLICABLE STANDARDS OF THE PLANNING DEPARTMENT.

CENTRAL TELEPHONE CO. DBA CENTURYLINK DATE

THE AFFIXED CENTURYLINK APPROVAL DOES NOT ASSUME OR GUARANTEE LIABILITY FOR KNOWN OR UNKNOWN CONFLICTS WITH EXISTING OR PROPOSED IMPROVEMENTS. RESOLUTION OF ANY CONFLICT WILL BE ACCOMPLISHED PURSUANT TO LOCAL ORDINANCES, NEVADA REVISED STATUES AND / OR PUBLIC UTILITY COMMISSION RULES AND REGULATIONS.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. ###### FIRST APPROVED DATE:
LVVWD APPROVED FIRE FLOW: TOTAL 1,500 GPM / ONSITE 20 GPM

SHEETS: ADD FIELD
LVVWD APPROVAL IS VALID FOR ONE (1) YEAR FROM SIGNATURE DATE. IF CONSTRUCTION IS NOT STARTED, PLANS MUST BE RESUBMITTED FOR REVIEW AND APPROVAL.

NV ENERGY DATE

NV ENERGY ACKNOWLEDGES THAT WE HAVE RECEIVED YOUR PLANS AND WILL PROVIDE SERVICE TO ALL ELECTRICAL NEEDS ASSOCIATED WITH THIS PROJECT. NV ENERGY RESERVES THE RIGHT TO ADDRESS ANY EXISTING OR FUTURE CONFLICTS ONCE THE FINAL DESIGN IS COMPLETED. THE NEW SERVICE AND THE RESOLUTION OF ANY CONFLICTS WILL BE ACCOMPLISHED PURSUANT TO THE NEVADA PUBLIC UTILITY COMMISSION'S RULES AND REGULATIONS.

SOUTHWEST GAS CORPORATION DATE

COX COMMUNICATIONS LAS VEGAS, INC. DATE

OWNER/DEVELOPER	ENGINEER
EASTLAND COMPANY, LLC 9275 RUSSELL RD SUITE 400 LAS VEGAS, NV 89148 PH: 702-821-4808	SLATER HANIFAN GROUP, INC. a WESTWOOD TEAM 5740 S. ARVILLE STREET, SUITE 216 LAS VEGAS, NV 89118 PH: (702) 284-5300 CONTACT: JOSH JOHNSON

BENCHMARK

MONUMENT ID: USDA (1934) 19

U.S. DEPARTMENT OF AGRICULTURE BRASS DISC AT SOUTHWEST CORNER OF U.S. 95 AND KYLE CANYON ROAD

ELEVATION = 2817.61 FEET, 858.810 METERS
NAVD 88 DATUM

PER THE CITY OF LAS VEGAS BENCHMARK BOOK - 2008 ADJUSTMENT (UPDATED 05/24/2010)

BASIS OF BEARINGS

NORTH 00°01'50" WEST, BEING THE BEARING OF THE EAST LINE OF THE NORTHEAST QUARTER (NE1/4) OF SECTION 6, TOWNSHIP 19 SOUTH, RANGE 60 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF IN FILE 151, PAGE 14 OF SURVEYS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA.

FEMA FLOOD ZONE INFORMATION

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE 'X' (AREA OUTSIDE THE 500 YEAR FLOODPLAIN), PER THE FEMA FIRM PANELS ???????? DATED NOVEMBER 16, 2011

PROJECT PLAN APPROVAL CONTINGENT ON

SUNSTONE PHASE 1 XXXXX @XXXXX
SUNSTONE PHASE 1 XXXXX @XXXXX
SUNSTONE PHASE 1 XXXXX @XXXXX

PLAN APPROVAL

SWPPP NOTE

NOTE: ALL LAND SURFACE AREA DISTURBANCES OVER 1 ACRE REQUIRE A STORMWATER DISCHARGE PERMIT ISSUED BY THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP). A PHASED CONSTRUCTION UNIT IN A CONTIGUOUS SUBDIVISION IS CONSIDERED UNDER CONSTRUCTION UNTIL ALL STRIPPED SURFACE AREAS HAVE BEEN COVERED BY PAVING, BUILDING CONSTRUCTION OR PLANTING. A STORMWATER DISCHARGE PERMIT APPLICATION AND ASSOCIATED INFORMATION MAY BE DOWNLOADED FROM THE WEB SITE: HTTP://WWW.STATE.NV.US/BHPC/STORM01.HTM PROJECTS THAT DISTURB MORE THAN ONE ACRE OF LAND MUST SUBMIT TO NDEP A "NOTICE OF INTENT" FOR INCLUSION UNDER STORMWATER PERMIT NO. NVR100000 ALONG WITH THE APPROPRIATE FILLING FEE.

DEVIATIONS FROM STANDARDS

NONE

GEOTECHNICAL ENGINEER

PREPARED BY: FIRM
ADDRESS: ADDRESS
PHONE: PHONE #
PROJECT No. PROJECT NUMBER
DATED: DATE

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DIG OVERHEAD
1-702-227-2929

FAST
Call before you UnderGround
1-702-432-5300
FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T.)

Call before you Dig
AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call 811
OR
1-800-227-2600

SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP DATE	APP

CITY OF LAS VEGAS

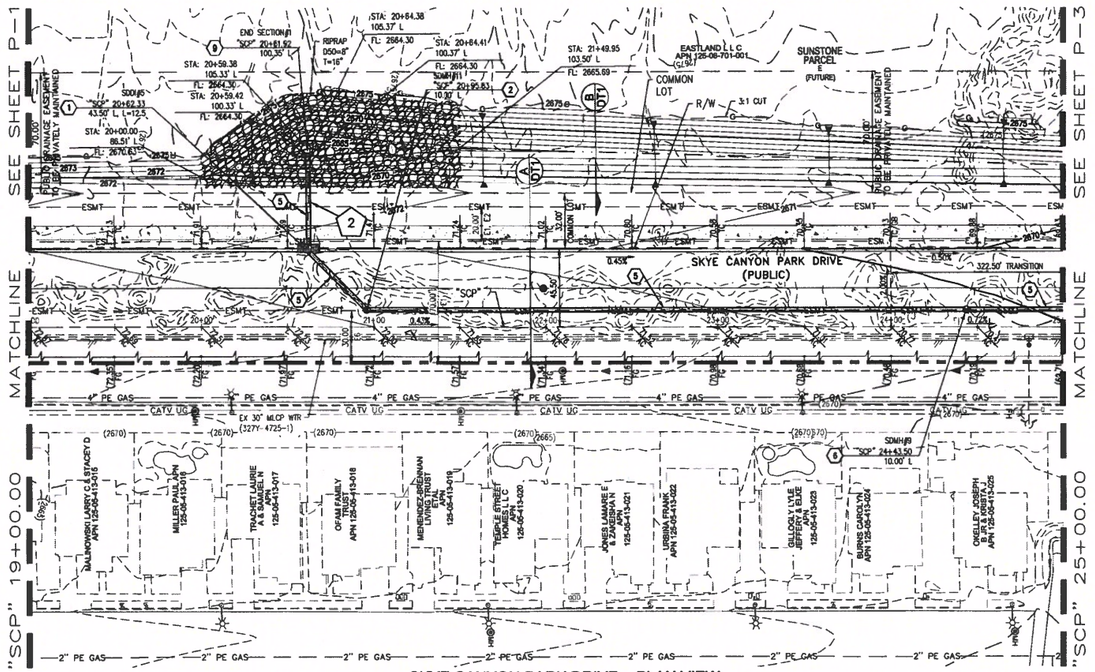
SC EAST LANDCO, LLC
SUNSTONE PHASE 1
COVER SHEET

DATE: 08/07/19
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ
PROJECT NO.
EST1908-000

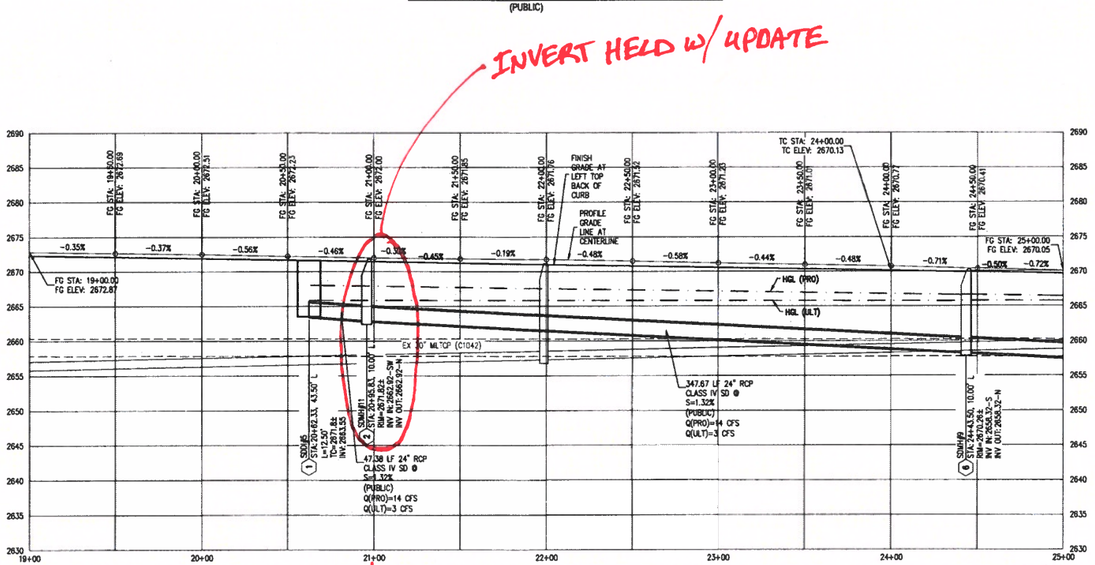
PROFESSIONAL ENGINEER - STATE OF NEVADA
JOSHUA J. JOHNSON
No. 15789
7/12/19

CS-1
SHEET 1 OF 26

L:\est1908-000 sunstone sb-jr_canyon park\dwg\Canyon\est1908-000_cs.dwg, 8/7/2019 1:20 PM, Thomas Dyson

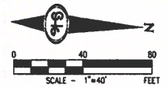


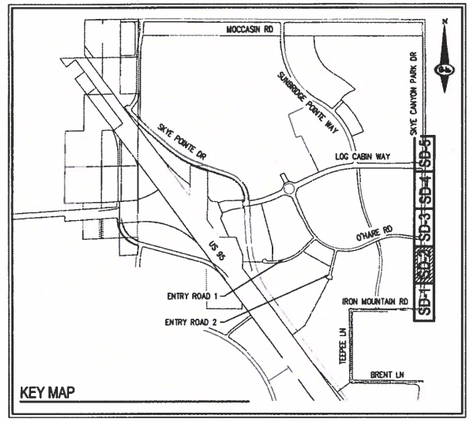
SKYE CANYON PARK DRIVE - PLAN VIEW
(PUBLIC)



SKYE CANYON PARK DRIVE - PROFILE VIEW
HORIZ: 1" = 40'
VERT: 1" = 10'

INVERT RAISED W/ UPDATE





CALL SOUTHWEST GAS AT 702-651-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES

SURVEY NOTE
OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED, DISTURBED, DESTROYED, OR OBSCURED DURING CONSTRUCTION.

ELEVATION NOTE
ADD 2600 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 1801.00)

EASEMENT NOTES
E1 RIGHT-OF-WAY GRANTED BY DECISION, DATED MAY 28, 2003, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-75757 TO CITY OF LAS VEGAS FOR ROADWAY, SANITARY SEWER AND DRAINAGE PURPOSES AND RELATED PURPOSES UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JUNE 30, 2003 IN BOOK 20030630, AS INSTRUMENT NO. 00811 OF OFFICIAL RECORDS.

E2 RIGHT-OF-WAY GRANTED BY DECISION, DATED JUNE 9, 2004, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER 8-75757A TO CITY OF LAS VEGAS FOR ROADWAY, SANITARY SEER AND DRAINAGE PURPOSES UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF THE LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JUNE 18, 2004 IN BOOK 20040618, AS INSTUMENT NO. 01781 OF OFFICIAL RECORDS.

E3 RIGHT-OF-WAY GRANTED BY DECISION, DATED MAY 07, 2003, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-76109 TO CITY OF LAS VEGAS FOR RIGHT FOR PERMANENT RIGHT-OF-WAY FOR ROADWAY, SANITARY SEWER AND DRAINAGE PURPOSES AND RELATED PURPOSES ON PUBLIC LANDS UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF THE LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON SEPTEMBER 09, 2003 IN BOOK 20030909, AS INSTRUMENT NO. 02351 OF OFFICIAL RECORDS.

E4 LAS VEGAS VALLEY WATER DISTRICT RIGHT-OF-WAY PER N-76984 RESERVATIONS, PROVISIONS AND EASEMENTS AS CONTAINED IN PATENT FROM THE UNITED STATES OF AMERICA RECORDED AUGUST 03, 2005, IN BOOK 20050803 OF OFFICIAL RECORDS, AS INSTRUMENT NO. 013598

E5 CITY OF LAS VEGAS RIGHT-OF-WAY PER N-75757/F

E6 RIGHT-OF-WAY GRANTED BY DECISION, DATED SEPTEMBER 25,2001, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-62751 TO LAS VEGAS VALLEY WATER DISTRICT FOR WATER MAIN UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON OCTOBER 12, 2001 IN BOOK 20010112, AS INSTRUMENT NO. 01161 OF OFFICIAL RECORDS.

E7 RIGHT-OF-WAY GRANTED BY DECISION, DATED DECEMBER 05, 2002, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-62751-01 TO LAS VEGAS VALLEY WATER DISTRICT FOR STORAGE OF PIPELINE MATERIAL, PLACEMENT OF EVACUATION SOILS, CONSTRUCTION EQUIPMENT AND TRAFFIC CONTROL FOR THE CONSTRUCTION OF THE PIPELINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JANUARY 16, 2003 IN BOOK 20030116, AS INSTRUMENT NO. 02001 OF OFFICIAL RECORDS.

E8 RIGHT-OF-WAY GRANTED BY DECISION, DATED DECEMBER 05, 2002, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-62751-A TO LAS VEGAS VALLEY WATER DISTRICT FOR WATER MAIN UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LANDS, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JANUARY 16, 2003 IN BOOK 20030116, AS INSTRUMENT NO. 02002 OF OFFICIAL RECORDS.

NOTES
1. ALL RCP SHALL BE CLASS III UNLESS OTHERWISE SHOWN.
2. ALL PIPE LENGTHS ARE MEASURED ALONG PIPE CENTERLINE TO CENTER OF MANHOLE OR INSIDE EDGE OF DI OR RCB/RCA.
3. ALL DROP INLETS SHALL INCLUDE STORM WATER MANAGEMENT STAMP AND DETAIL PER USDCCA STD. DWG. NO. 421.
4. SEE STRUCTURAL PLANS FOR ADDITIONAL STRUCTURAL DETAILS AND CONNECTIONS.
5. ALL PIPES IN PUBLIC ROW ARE PUBLICLY MAINTAINED.
6. ADD SPECIAL INSPECTION REQUIRED FOR PIPE SEGMENTS WITH SACRIFICIAL CONCRETE.
7. SEE UTILITY PLAN AND PROFILE SHEETS FOR UTILITY ADJUSTMENTS AND RELOCATIONS.
8. ALL INTERIM DRAINAGE FACILITIES TO BE PRIVATELY MAINTAINED.
9. PROPERTY OWNER IS RESPONSIBLE TO MAINTAIN THE BEST MANAGEMENT PRACTICES, SUCH AS BUT NOT LIMITED TO, THE REMOVAL OF ACCUMULATED SEDIMENT AND DEBRIS AND CARE OF VEGETATION.
10. WHERE 10 FEET PARALLEL SEPARATION IS NOT PRACTICABLE:
    CAST-IN-PLACE MONOLITHIC POUR WITH WATERSTOP BETWEEN SLAB AND WALLS. BASE, WALLS AND TOP TO BE CONSTRUCTED WITH WATERSTOPS, CENTER BULB, OR FLAT STRIP (VINYLEX, GREENSTREAK PLASTIC PRODUCTS OR APPROVED EQUAL).

FLOOD ZONE
THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE 'X' (OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) ON THE FLOOD INSURANCE RATE MAP (FIRM) PANELS: 32003C1735E AND 32003C1750E BOTH DATED SEPTEMBER 27, 2002

STORM DRAIN NOTES
1. CONSTRUCT TYPE "Cm2" DROP INLET (USDCCA STD. DWG. NO. 412.1 & 421)
2. CONSTRUCT 60" TYPE III MANHOLE (USDCCA STD. DWG. NO. 408.1)
3. CONSTRUCT NDOT TYPE 4 MANHOLE (NDOT STD. PLAN R-4.3.2)
4. INSTALL 18" RCP (USDCCA STD. DWG. NO. 503.2)
5. INSTALL 24" RCP (USDCCA STD. DWG. NO. 503.2)
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8. CONNECT TO STORM DRAIN
9. INSTALL RCP END SECTION (NDOT STD. PLAN R-2.3.1)
10. CUT AND REMOVE PIPE TO THE WEST, CAP REMAINING PIPE.
11. INSTALL 36" RCP (USDCCA STD. DWG. NO. 503.2)
12. REMOVE EX MANHOLE AND 10 FT OF EX 36" RCP
13. CAP EX 36" RCP AND ABANDON LINE

LEGEND
(1) STORM DRAIN LATERAL # (SEE SHEETS SD-6)

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APPROVED FOR CONSTRUCTION
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. ###### FIRST APPROVED DATE:
LVVWD APPROVED FIRE FLOW: TOTAL 1,500 GPM / ONSITE 20 GPM

FLOOD CERTIFICATION
I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY ??????? ON FILE AT CITY OF LAS VEGAS AND CCPW HTE #??-????? FOR THE SUBJECT PROJECT.

JOSH JOHNSON, P.E. 15788 DATE

FAST Call before you UnderGround 1-702-432-5300 FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T.)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DO OVERHEAD 1-702-227-2929

Call before you Dig AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY. Call 811 OR 1-800-227-2600

SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-4300 FAX (702) 284-4399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
SKYE CANYON PARK DRIVE
STORM DRAIN II - "SCP" 19+00.00 TO "SCP" 25+00.00

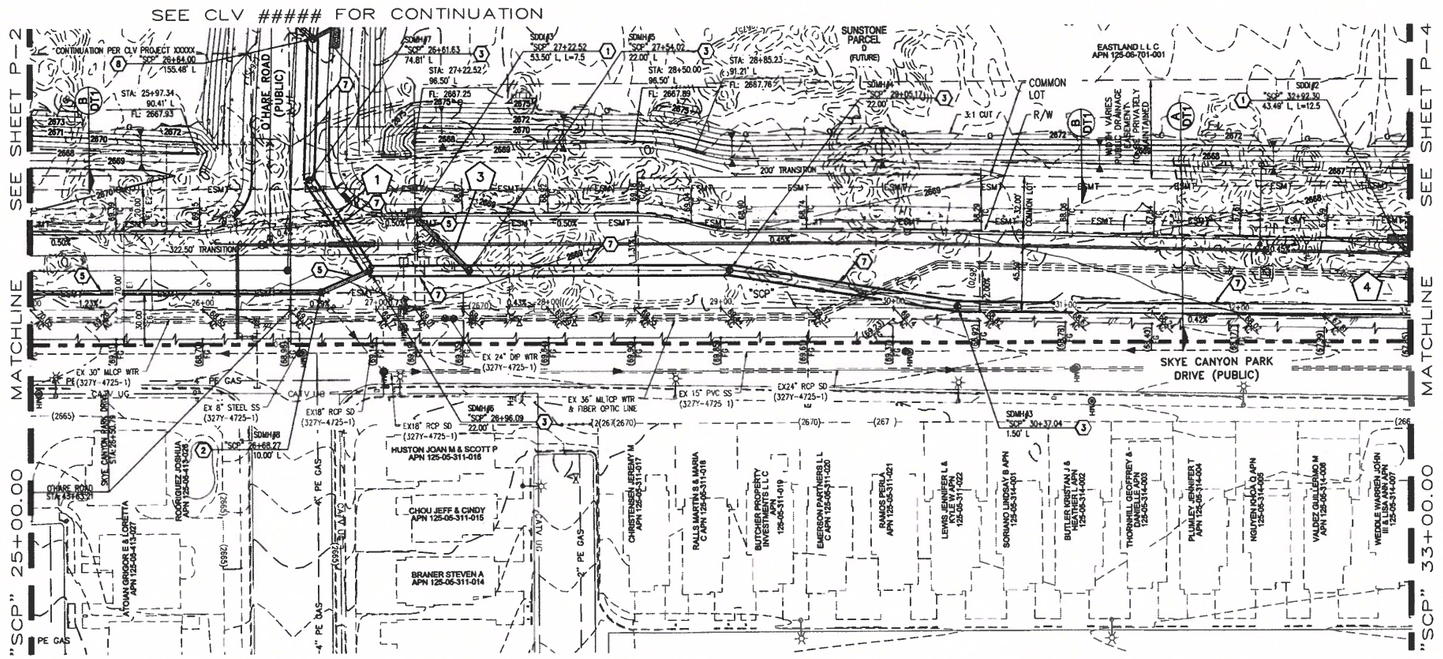
DATE: 08/07/19
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

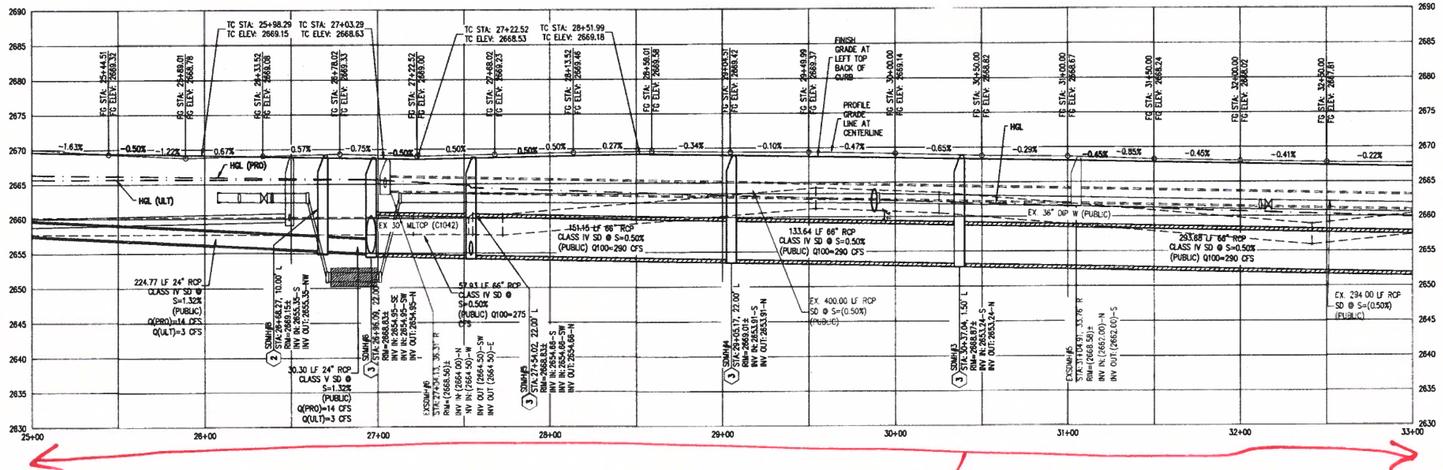
PROJECT NO.
EST1908-000

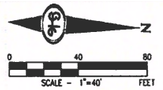
PROFESSIONAL ENGINEER - STATE OF NEVADA - JOSHUA L JOHNSON - No. 15788 - CIVIL - 8/8/19

SD-2
SHEET 10 OF 26

I:\est1908-000 sunstone ph1 skye canyon park\eng\dwg\est1908-000 dra.dwg 8/7/2019 4:52 PM Scott Booth







CALL SOUTHWEST GAS AT 702-451-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES

SURVEY NOTE

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ELEVATION NOTE

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EASEMENT NOTES

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E2 RIGHT-OF-WAY GRANTED BY DECISION, DATED JUNE 9, 2004, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER 9-75757A TO CITY OF LAS VEGAS FOR ROADWAY, SANITARY SEER AND DRAINAGE PURPOSES UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF THE LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JUNE 18, 2004 IN BOOK 20040618, AS INSTRUMENT NO. 01781 OF OFFICIAL RECORDS.

E3 RIGHT-OF-WAY GRANTED BY DECISION, DATED MAY 07, 2003, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-76109 TO CITY OF LAS VEGAS FOR RIGHT FOR PERMANENT RIGHT-OF-WAY FOR ROADWAY, SANITARY SEWER AND DRAINAGE PURPOSES AND RELATED PURPOSES ON PUBLIC LANDS UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF THE LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON SEPTEMBER 09, 2003 IN BOOK 20030909, AS INSTRUMENT NO. 02351 OF OFFICIAL RECORDS.

E4 LAS VEGAS VALLEY WATER DISTRICT RIGHT-OF-WAY PER N-76984 RESERVATIONS, PROVISIONS AND EASEMENTS AS CONTAINED IN PATENT FROM THE UNITED STATES OF AMERICA, RECORDED AUGUST 03, 2005, IN BOOK 20050803 OF OFFICIAL RECORDS, AS INSTRUMENT NO. 013598

E5 CITY OF LAS VEGAS RIGHT-OF-WAY PER N-75757/F

E6 RIGHT-OF-WAY GRANTED BY DECISION, DATED SEPTEMBER 25,2001, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-62751 TO LAS VEGAS VALLEY WATER DISTRICT FOR WATER MAIN UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON OCTOBER 12, 2001 IN BOOK 20010112, AS INSTRUMENT NO. 01161 OF OFFICIAL RECORDS.

E7 RIGHT-OF-WAY GRANTED BY DECISION, DATED DECEMBER 05, 2002, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-62751-01 TO LAS VEGAS VALLEY WATER DISTRICT FOR STORAGE OF PIPELINE MATERIAL, PLACEMENT OF EVACUATION SOILS, CONSTRUCTION EQUIPMENT AND TRAFFIC CONTROL FOR THE CONSTRUCTION OF THE PIPELINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JANUARY 16, 2003 IN BOOK 20030116, AS INSTRUMENT NO. 02001 OF OFFICIAL RECORDS.

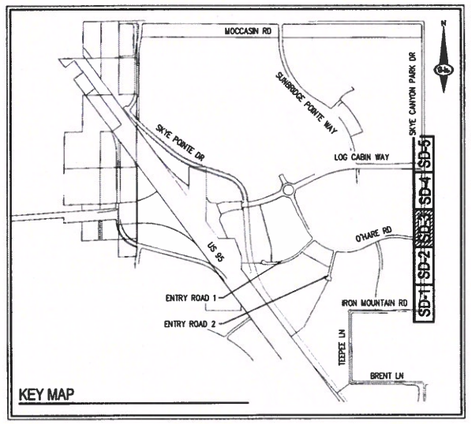
E8 RIGHT-OF-WAY GRANTED BY DECISION, DATED DECEMBER 05, 2002, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-62751-A TO LAS VEGAS VALLEY WATER DISTRICT FOR WATER MAIN UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LANDS, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JANUARY 16, 2003 IN BOOK 20030116, AS INSTRUMENT NO. 02002 OF OFFICIAL RECORDS.

NOTES

1. ALL RCP SHALL BE CLASS III UNLESS OTHERWISE SHOWN.
2. ALL PIPE LENGTHS ARE MEASURED ALONG PIPE CENTERLINE TO CENTER OF MANHOLE OR INSIDE EDGE OF DI OR RCB/RCA.
3. ALL DROP INLETS SHALL INCLUDE STORM WATER MANAGEMENT STAMP AND DETAIL PER USDCCA STD. DWG. NO. 421.
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7. SEE UTILITY PLAN AND PROFILE SHEETS FOR UTILITY ADJUSTMENTS AND RELOCATIONS.
8. ALL INTERIM DRAINAGE FACILITIES TO BE PRIVATELY MAINTAINED.
9. PROPERTY OWNER IS RESPONSIBLE TO MAINTAIN THE BEST MANAGEMENT PRACTICES, SUCH AS BUT NOT LIMITED TO, THE REMOVAL OF ACCUMULATED SEDIMENT AND DEBRIS AND CARE OF VEGETATION.
10. WHERE 10 FEET PARALLEL SEPARATION IS NOT PRACTICABLE:
    CAST-IN-PLACE MONOLITHIC POUR WITH WATERSTOP BETWEEN SLAB AND WALLS. BASE, WALLS AND TOP TO BE CONSTRUCTED WITH WATERSTOPS, CENTER BULB,
    OR FLAT STRIP (WINYLEX, GREENSTREAK PLASTIC PRODUCTS OR APPROVED EQUAL)

FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE 'X' (OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) ON THE FLOOD INSURANCE RATE MAP (FIRM) PANELS:32003C1735E AND 32003C1750E BOTH DATED SEPTEMBER 27, 2002



STORM DRAIN NOTES

1. CONSTRUCT TYPE "CM2" DROP INLET (USDCCA STD. DWG. NO. 412.1 & 421)
2. CONSTRUCT 60" TYPE III MANHOLE (USDCCA STD. DWG. NO. 406.1)
3. CONSTRUCT NDOT TYPE 4 MANHOLE (NDOT STD. PLAN R-4.3.2)
4. INSTALL 18" RCP (USDCCA STD. DWG. NO. 503.2)
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9. INSTALL RCP END SECTION (NDOT STD. PLAN R-2.3.1)
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LEGEND

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APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. ###### FIRST APPROVED DATE: _____
LVVWD APPROVED FIRE FLOW: TOTAL 1,500 GPM / ONSITE 20 GPM

FLOOD CERTIFICATION

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JOSH JOHNSON, P.E. 15789 DATE

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PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

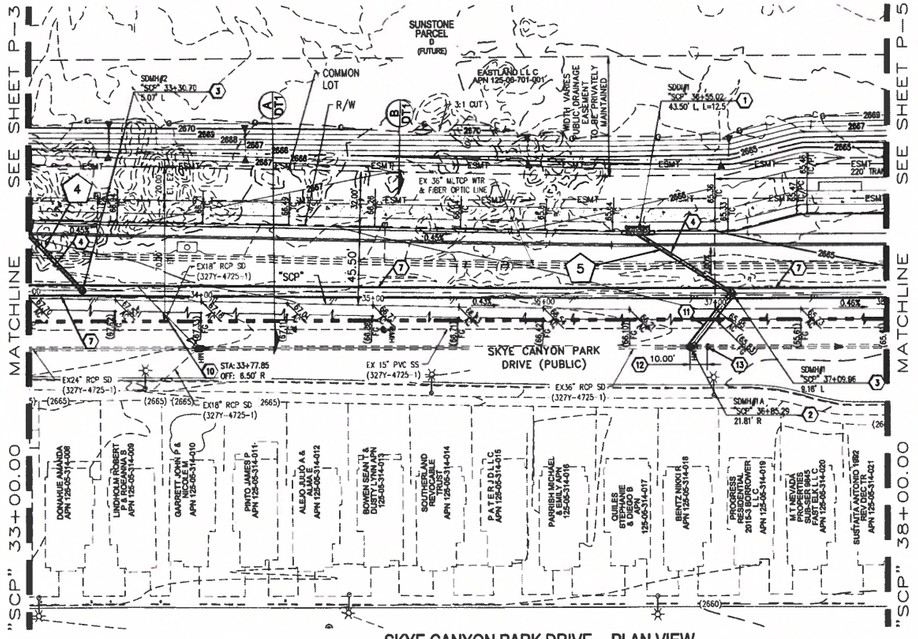
SUNSTONE PHASE 1
SKYE CANYON PARK DRIVE
STORM DRAIN III - "SCP" 25+00.00 TO "SCP" 33+00.00

DATE: 08/07/19
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ
PROJECT NO. EST1908-000

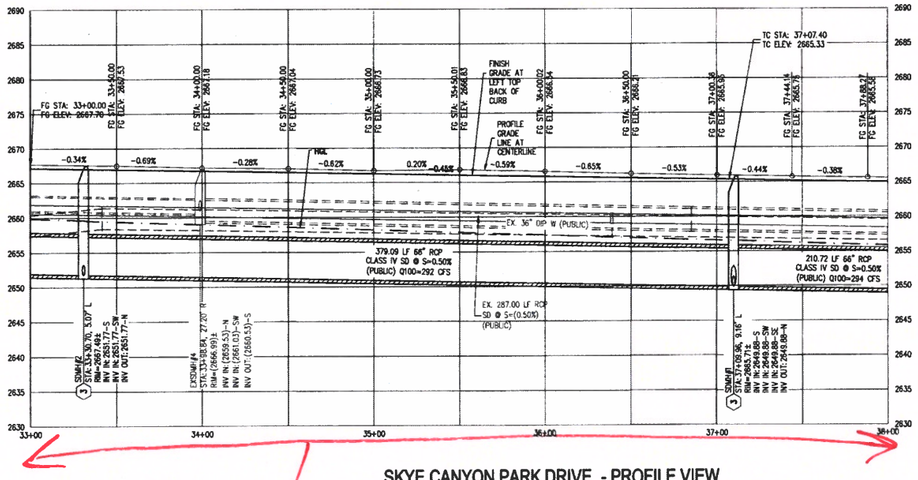
JOSHUA A. JOHNSON — No. 15789 — STATE OF NEVADA — PROFESSIONAL ENGINEER — Exp. 06/30/2021 — CIVIL
8/8/19

SD-3
SHEET 11 OF 26

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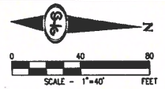


SKYE CANYON PARK DRIVE - PLAN VIEW
(PUBLIC)



SKYE CANYON PARK DRIVE - PROFILE VIEW
HORIZ: 1" = 40'
VERT: 1" = 10'

INVERT RAISED 6" W/ UPDATE



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E5 CITY OF LAS VEGAS RIGHT-OF-WAY PER N-75757/F

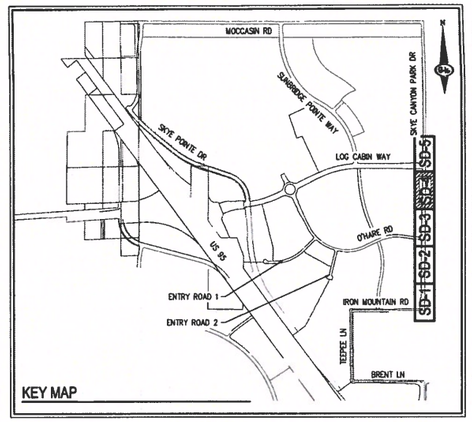
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KEY MAP

STORM DRAIN NOTES
1. CONSTRUCT TYPE "CM2" DROP INLET (USDCCA STD. DWG. NO. 412.1 & 421)
2. CONSTRUCT 60" TYPE III MANHOLE (USDCCA STD. DWG. NO. 406.1)
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PROJECT NO. ###### FIRST APPROVED DATE:
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JOSH JOHNSON, P.E. 15789 DATE

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Call before you Dig AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY. Call 811 OR 1-800-227-2600

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a Westwood team
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PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
SKYE CANYON PARK DRIVE
STORM DRAIN IV - "SCP" 33+00.00 TO "SCP" 38+00.00

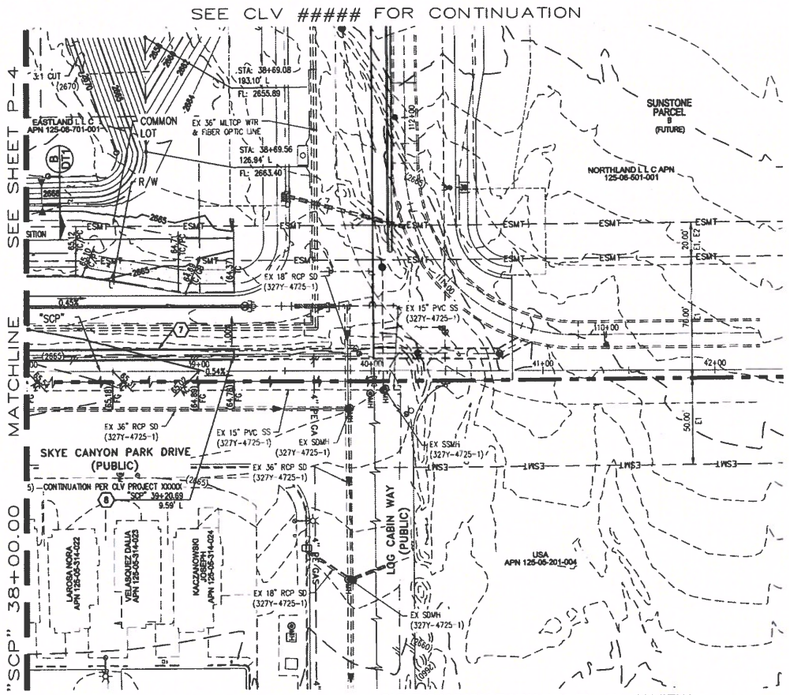
DATE: 08/07/19
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

PROJECT NO.
EST1908-000

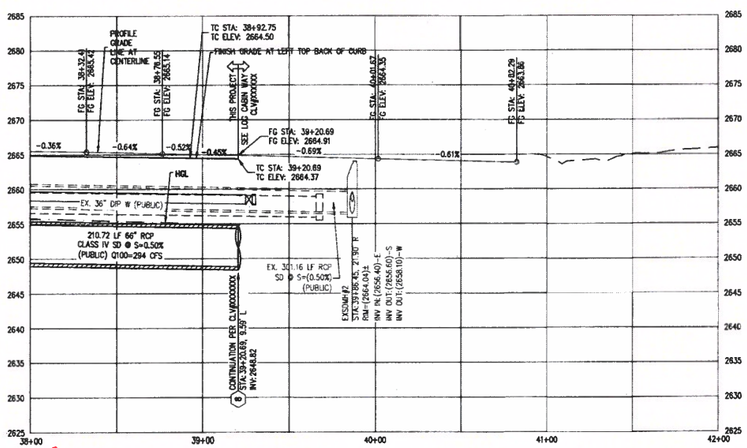
PROFESSIONAL ENGINEER - STATE OF NEVADA - JOSHUA L. JOHNSON - No. 15789 - 7/8/19

SD-4
SHEET 12 OF 26

K:\est1908-000 sunstone skye canyon park v\engr\est1908-000.dwg 8/7/2019 4:53 PM Scott Booth

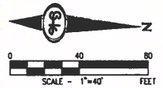


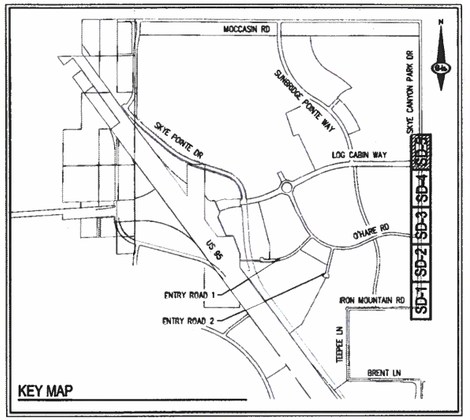
SKYE CANYON PARK DRIVE - PLAN VIEW
(PUBLIC)



SKYE CANYON PARK DRIVE - PROFILE VIEW
HORIZ: 1" = 40'
VERT: 1" = 10'

INVERT RAISED 6" W/ UPDATE





CALL SOUTHWEST GAS AT 702-651-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES

SURVEY NOTE
OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED, DISTURBED, DESTROYED, OR OBSCURED DURING CONSTRUCTION.

ELEVATION NOTE
ADD 2600 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 1801.00)

EASEMENT NOTES
E1 RIGHT-OF-WAY GRANTED BY DECISION, DATED MAY 28, 2003, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-75757 TO CITY OF LAS VEGAS FOR ROADWAY, SANITARY SEWER AND DRAINAGE PURPOSES AND RELATED PURPOSES UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JUNE 30, 2003 IN BOOK 20030630, AS INSTRUMENT NO. 00811 OF OFFICIAL RECORDS.

E2 RIGHT-OF-WAY GRANTED BY DECISION, DATED JUNE 9, 2004, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER B-75757A TO CITY OF LAS VEGAS FOR ROADWAY, SANITARY SEER AND DRAINAGE PURPOSES UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF THE LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JUNE 18, 2004 IN BOOK 20040618, AS INSTUMENT NO. 01781 OF OFFICIAL RECORDS.

E3 RIGHT-OF-WAY GRANTED BY DECISION, DATED MAY 07, 2003, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-76109 TO CITY OF LAS VEGAS FOR RIGHT FOR PERMANENT RIGHT-OF-WAY FOR ROADWAY, SANITARY SEWER AND DRAINAGE PURPOSES AND RELATED PURPOSES ON PUBLIC LANDS UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF THE LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON SEPTEMBER 09, 2003 IN BOOK 20030909, AS INSTRUMENT NO. 02351 OF OFFICIAL RECORDS.

E4 LAS VEGAS VALLEY WATER DISTRICT RIGHT-OF-WAY PER N-76984 RESERVATIONS, PROVISIONS AND EASEMENTS AS CONTAINED IN PATENT FROM THE UNITED STATES OF AMERICA, RECORDED AUGUST 03, 2005, IN BOOK 20050803 OF OFFICIAL RECORDS, AS INSTRUMENT NO. 013598

E5 CITY OF LAS VEGAS RIGHT-OF-WAY PER N-75757/F

E6 RIGHT-OF-WAY GRANTED BY DECISION, DATED SEPTEMBER 25,2001, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-62751 TO LAS VEGAS VALLEY WATER DISTRICT FOR WATER MAIN UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON OCTOBER 12, 2001 IN BOOK 20011012, AS INSTRUMENT NO. 01161 OF OFFICIAL RECORDS.

E7 RIGHT-OF-WAY GRANTED BY DECISION, DATED DECEMBER 05, 2002, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-62751-01 TO LAS VEGAS VALLEY WATER DISTRICT FOR STORAGE OF PIPELINE MATERIAL, PLACEMENT OF EVACUATION SOILS, CONSTRUCTION EQUIPMENT AND TRAFFIC CONTROL FOR THE CONSTRUCTION OF THE PIPELINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JANUARY 16, 2003 IN BOOK 20030116, AS INSTRUMENT NO. 02001 OF OFFICIAL RECORDS.

E8 RIGHT-OF-WAY GRANTED BY DECISION, DATED DECEMBER 05, 2002, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-62751-A TO LAS VEGAS VALLEY WATER DISTRICT FOR WATER MAIN UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LANDS, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JANUARY 16, 2003 IN BOOK 20030116, AS INSTRUMENT NO. 02002 OF OFFICIAL RECORDS.

NOTES
1. ALL RCP SHALL BE CLASS III UNLESS OTHERWISE SHOWN.
2. ALL PIPE LENGTHS ARE MEASURED ALONG PIPE CENTERLINE TO CENTER OF MANHOLE OR INSIDE EDGE OF DI OR RCB/RCA.
3. ALL DROP INLETS SHALL INCLUDE STORM WATER MANAGEMENT STAMP AND DETAIL PER USDCCA STD. DWG. NO. 421.
4. SEE STRUCTURAL PLANS FOR ADDITIONAL STRUCTURAL DETAILS AND CONNECTIONS.
5. ALL PIPES IN PUBLIC ROW ARE PUBLICLY MAINTAINED.
6. ADD SPECIAL INSPECTION REQUIRED FOR PIPE SEGMENTS WITH SACRIFICIAL CONCRETE.
7. SEE UTILITY PLAN AND PROFILE SHEETS FOR UTILITY ADJUSTMENTS AND RELOCATIONS.
8. ALL INTERIM DRAINAGE FACILITIES TO BE PRIVATELY MAINTAINED.
9. PROPERTY OWNER IS RESPONSIBLE TO MAINTAIN THE BEST MANAGEMENT PRACTICES, SUCH AS BUT NOT LIMITED TO, THE REMOVAL OF ACCUMULATED SEDIMENT AND DEBRIS AND CARE OF VEGETATION.
10. WHERE 10 FEET PARALLEL SEPARATION IS NOT PRACTICABLE:
CAST-IN-PLACE MONOLITHIC POUR WITH WATERSTOP BETWEEN SLAB AND WALLS. BASE, WALLS AND TOP TO BE CONSTRUCTED WITH WATERSTOPS, CENTER BULB, OR FLAT STRIP (VINYLEX, GREENSTREAK PLASTIC PRODUCTS OR APPROVED EQUAL).

FLOOD ZONE
THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X" (OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) ON THE FLOOD INSURANCE RATE MAP (FIRM) PANELS 32003C1735E AND 32003C1750E BOTH DATED SEPTEMBER 27, 2002

STORM DRAIN NOTES
1. CONSTRUCT TYPE "CM2" DROP INLET (USDCCA STD. DWG. NO. 412.1 & 421)
2. CONSTRUCT 60" TYPE III MANHOLE (USDCCA STD. DWG. NO. 406.1)
3. CONSTRUCT NDOT TYPE 4 MANHOLE (NDOT STD. PLAN R-4.3.2)
4. INSTALL 18" RCP (USDCCA STD. DWG. NO. 503.2)
5. INSTALL 24" RCP (USDCCA STD. DWG. NO. 503.2)
6. INSTALL 48" TYPE I MANHOLE (USDCCA STD. DWG. NO. 403)
7. INSTALL 66" RCP (USDCCA STD. DWG. NO. 503.2)
8. CONNECT TO STORM DRAIN
9. INSTALL RCP END SECTION (NDOT STD. PLAN R-2.3.1)
10. CUT AND REMOVE PIPE TO THE WEST, CAP REMAINING PIPE.
11. INSTALL 36" RCP (USDCCA STD. DWG. NO. 503.2)
12. REMOVE EX MANHOLE AND 10 FT OF EX 36" RCP
13. CAP EX 36" RCP AND ABANDON LINE

LEGEND
(1) STORM DRAIN LATERAL # (SEE SHEETS SD-6)

DISCLAIMER NOTE
1) EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION.
2) FOR ROADWAY WIDENING AND HALF STREET IMPROVEMENTS THE CONTRACTOR SHALL VERIFY CROSS SLOPES FROM EXISTING PAVEMENT SAWCUT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED LIP OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF PROPOSED CURB LINE. IF MINIMUM OR MAXIMUM CROSS SLOPES DO NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

APPROVED FOR CONSTRUCTION
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. ###### FIRST APPROVED DATE:
LVVWD APPROVED FIRE FLOW: TOTAL 1,500 GPM / ONSITE 20 GPM

FLOOD CERTIFICATION
I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY ??????? ON FILE AT CITY OF LAS VEGAS AND CCFW HTE #??-????? FOR THE SUBJECT PROJECT.

JOSH JOHNSON, P.E. 15789 DATE

EAST
Call before you UnderGround
1-702-432-5300
FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

Call before you Dig
AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call 811
OR
1-800-227-2600

SLATER HANIFAN GROUP
a Westwood team
8740 S. ARVILLE STREET #210, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
SKYE CANYON PARK DRIVE
STORM DRAIN V - "SCP" 38+00.00 TO "SCP" 42+00.00

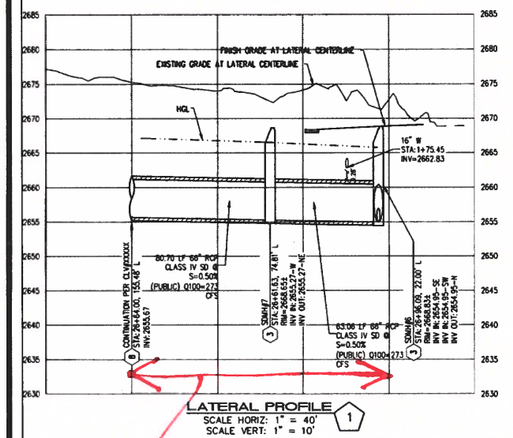
DATE: 08/07/19
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

PROJECT NO.
EST1908-000

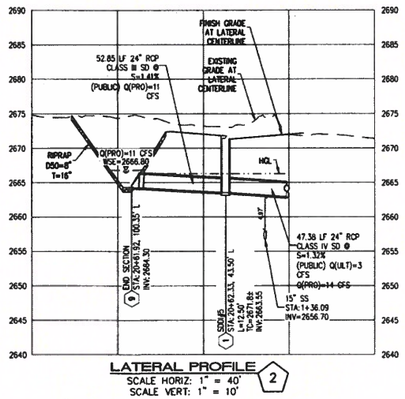
NEVADA ENGINEER - STATE OF NEVADA - JOSHUA L. JOHNSON - No. 15789 - 08/07/19

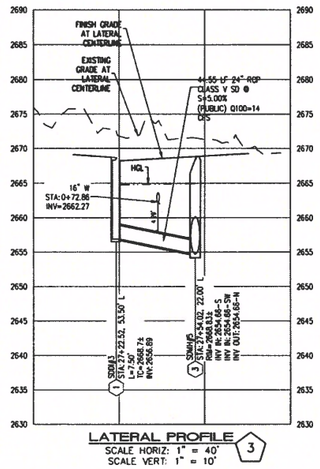
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SHEET 13 OF 26

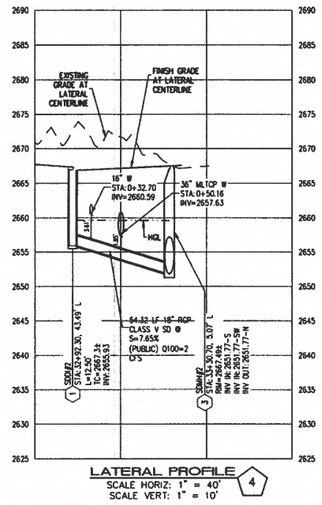
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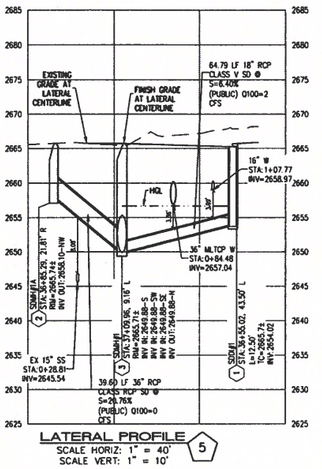


INVERT RAISED 6" w/ UPDATE









SLATER HANIFAN GROUP
a Westwood team
8740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1

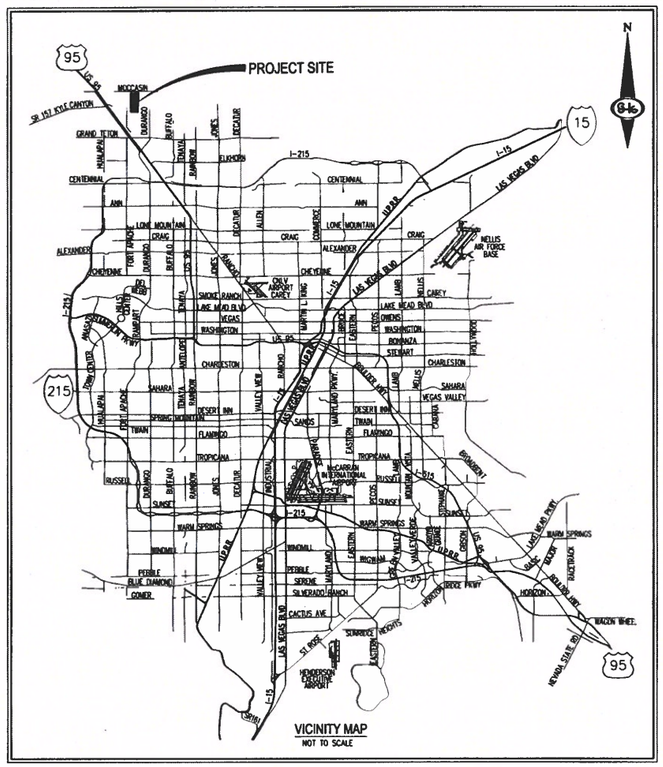
STORM DRAIN LATERAL I

DATE: 08/07/19
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ
PROJECT NO.
EST1908-000

PROFESSIONAL ENGINEER - STATE OF NEVADA
JOSHUA L. JOHNSON
Exp. 06/30/2019
No. 15709
8/8/19

SD-6
SHEET 14 OF 26

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IMPROVEMENT PLANS FOR SUNSTONE PHASE 1 LOG CABIN WAY

CITY OF LAS VEGAS, NEVADA

SHEET INDEX	Sheet List Table	
NO.	SHEET	TITLE
1	CS-1	COVER SHEET
2	CS-2	GENERAL NOTES
3	CS-3	ABBREVIATIONS, LEGEND AND QUANTITIES
6	PP-1	PLAN AND PROFILE 1 - "LCW" 32+00.00 TO "LCW" 41+00.00
7	PP-2	PLAN AND PROFILE 2 - "LCW" 41+00.00 TO "LCW" 46+50.00
8	PP-3	PLAN AND PROFILE 3 - "LCW" 46+50.00 TO "LCW" 55+00.00
9	PP-4	PLAN AND PROFILE 4 - "LCW" 55+00.00 TO "LCW" 63+00.00
10	PP-5	PLAN AND PROFILE 5 - "LCW" 63+00.00 TO "LCW" 71+50.00
11	PP-6	PLAN AND PROFILE 6 - "LCW" 71+00.00 TO "LCW" 76+00.00
12	PP-7	PLAN AND PROFILE 7 - "OR" 7+00.00 TO "OR" 15+00.00
13	RA-1	ROUNDABOUT GRADING PLAN
14	RA-2	ROUNDABOUT PROFILE
15	RA-3	ROUNDABOUT SOUTH CURB PROFILES
16	RA-4	ROUNDABOUT NORTH CURB PROFILES
17	SD-1	STORM DRAIN 1 - "LCW" 32+00.00 TO "LCW" 41+00.00
18	SD-2	STORM DRAIN 2 - "LCW" 41+00.00 TO "LCW" 46+50.00
19	SD-3	STORM DRAIN 3 - "LCW" 46+50.00 TO "LCW" 55+00.00
20	SD-4	STORM DRAIN 4 - "LCW" 55+00.00 TO "LCW" 63+00.00
21	SD-5	STORM DRAIN 5 - "LCW" 63+00.00 TO "LCW" 71+50.00
22	SD-6	STORM DRAIN 6 - "LCW" 71+00.00 TO "LCW" 76+00.00
23	SD-7	STORM DRAIN 7 - "OR" 7+00.00 TO "OR" 15+00.00
24	SD-8	STORM DRAIN LATERAL DETAILS 1
25	SD-9	STORM DRAIN LATERAL DETAILS 2
26	G-1	GRADING PLAN 1
27	G-2	GRADING PLAN 2
28	UT-1	UTILITY PLAN 1 - "LCW" 32+00.00 TO "LCW" 41+00.00
29	UT-2	UTILITY PLAN 2 - "LCW" 41+00.00 TO "LCW" 46+50.00
30	UT-3	UTILITY PLAN 3 - "LCW" 46+50.00 TO "LCW" 55+00.00
31	UT-4	UTILITY PLAN 4 - "LCW" 55+00.00 TO "LCW" 63+00.00
32	UT-5	UTILITY PLAN 5 - "LCW" 63+00.00 TO "LCW" 71+50.00
33	UT-6	UTILITY PLAN 6 - "LCW" 71+00.00 TO "LCW" 76+00.00
34	UT-7	UTILITY PLAN 7 - "OR" 7+00.00 TO "OR" 15+00.00
35	UT-8	UTILITY PLAN 8
36	U-9	WATER LATERAL 1
37	U-10	SEWER LATERAL 1
38	DT-1	DETAIL SHEET 1
39	ST-01	SIGNAGE AND STRIPING LCW 32+00.00 TO LCW 41+00.00
40	ST-02	SIGNAGE AND STRIPING LCW 41+00.00 TO LCW 46+50.00
41	ST-03	SIGNAGE AND STRIPING LCW 46+50.00 TO LCW 55+00.00
42	LL-01	LIGHTING & ITS LCW 32+00.00 TO LCW 41+00.00
43	LL-02	LIGHTING & ITS LCW 41+00.00 TO LCW 46+50.00
44	LL-03	LIGHTING & ITS LCW 46+50.00 TO LCW 55+00.00
45	TS-01	TRAFFIC SIGNAL INFRASTRUCTURE
46	TS-02	PEDESTRIAN FLASHER PLAN 1
47	TS-03	PEDESTRIAN FLASHER PLAN 2

APPROVALS

CITY ENGINEER–ALLEN PAVELKA PE. #9029 DATE

APPROVAL OF THESE PLANS BY THE CITY ENGINEER IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED OF RIGHT-OF-WAY, AND/OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND/OR SPECIFICATIONS EXCEPT THOSE SPECIALLY LISTED UNDER DEVIATIONS FORM STANDARDS. THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN DEVIATIONS FROM STANDARDS IN FAVOR OF THE UNIFORM STANDARD DRAWINGS AND SPECIFICATIONS, CLARK COUNTY AREA, NEVADA.

LAS VEGAS FIRE AND RESCUE DATE

CITY OF LAS VEGAS – PLANNING DEPARTMENT DATE

THIS PLAN MEETS THE APPLICABLE STANDARDS OF THE PLANNING DEPARTMENT.

CENTRAL TELEPHONE CO. DBA CENTURYLINK DATE

THE AFFIXED CENTURYLINK APPROVAL DOES NOT ASSUME OR GUARANTEE LIABILITY FOR KNOWN OR UNKNOWN CONFLICTS WITH EXISTING OR PROPOSED IMPROVEMENTS. RESOLUTION OF ANY CONFLICT WILL BE ACCOMPLISHED PURSUANT TO LOCAL ORDINANCES, NEVADA REVISED STATUES AND / OR PUBLIC UTILITY COMMISSION RULES AND REGULATIONS.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. ###### FIRST APPROVED DATE: _____
LVVWD APPROVED FIRE FLOW 1,500 GPM AT 20 PSI RESIDUAL
MAXIMUM AVAILABLE FIRE SPRINKLER FLOW 20 GPM

SHEETS: ADD FIELD

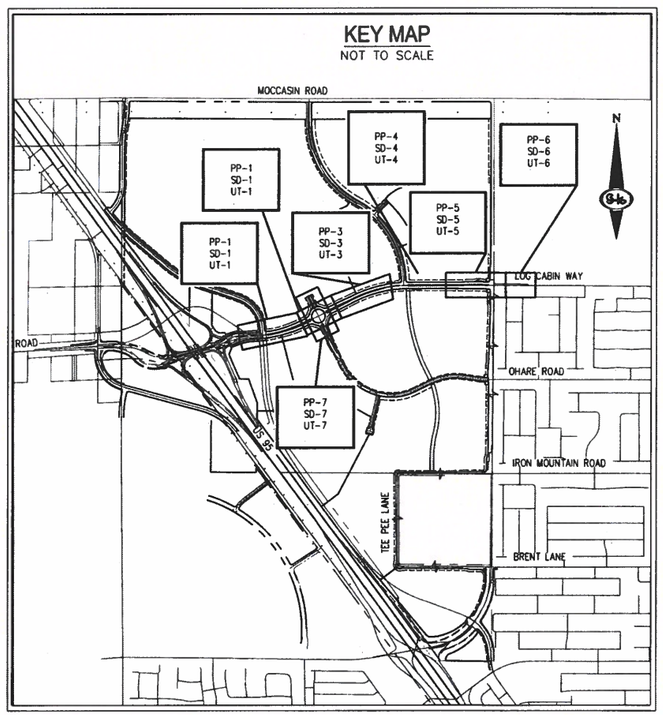
LVVWD APPROVAL IS VALID FOR ONE (1) YEAR FROM SIGNATURE DATE. IF CONSTRUCTION IS NOT STARTED, PLANS MUST BE RESUBMITTED FOR REVIEW AND APPROVAL.

NV ENERGY DATE

NV ENERGY ACKNOWLEDGES THAT WE HAVE RECEIVED YOUR PLANS AND WILL PROVIDE SERVICE TO ALL ELECTRICAL NEEDS ASSOCIATED WITH THIS PROJECT. NV ENERGY RESERVES THE RIGHT TO ADDRESS ANY EXISTING OR FUTURE CONFLICTS ONCE THE FINAL DESIGN IS COMPLETED. THE NEW SERVICE AND THE RESOLUTION OF ANY CONFLICTS WILL BE ACCOMPLISHED PURSUANT TO THE NEVADA PUBLIC UTILITY COMMISSION'S RULES AND REGULATIONS.

SOUTHWEST GAS CORPORATION DATE

COX COMMUNICATIONS LAS VEGAS, INC. DATE



OWNER/DEVELOPER	ENGINEER
EASTLAND COMPANY, LLC 9275 RUSSELL RD SUITE 400 LAS VEGAS, NV 89148 PH: 702-821-4808	SLATER HANIFAN GROUP, INC. a WESTWOOD TEAM 5740 S. ARVILLE STREET, SUITE 216 LAS VEGAS, NV 89118 PH: (702) 284-5300 CONTACT: JOSH JOHNSON

BENCHMARK

MONUMENT ID: USDA (1934) 19

U.S. DEPARTMENT OF AGRICULTURE BRASS DISC AT SOUTHWEST CORNER OF U.S. 95 AND KYLE CANYON ROAD

ELEVATION = 2817.61 FEET, 858.810 METERS
NAVD 88 DATUM

PER THE CITY OF LAS VEGAS BENCHMARK BOOK – 2006 ADJUSTMENT (UPDATED 05/24/2010)

BASIS OF BEARINGS

NORTH 00°01'50" WEST, BEING THE BEARING OF THE EAST LINE OF THE NORTHEAST QUARTER (NE1/4) OF SECTION 6, TOWNSHIP 19 SOUTH, RANGE 60 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF IN FILE 151, PAGE 14 OF SURVEYS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA.

FEMA FLOOD ZONE INFORMATION

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X" (AREA OUTSIDE THE 500 YEAR FLOODPLAIN), PER THE FEMA FIRM PANELS ????????? DATED NOVEMBER 16, 2011

PROJECT PLAN APPROVAL CONTINGENT ON

SUNSTONE PHASE 1 XXXXX @XXXXX
SUNSTONE PHASE 1 XXXXX @XXXXX
SUNSTONE PHASE 1 XXXXX @XXXXX

PLAN APPROVAL

SWPPP NOTE

NOTE: ALL LAND SURFACE AREA DISTURBANCES OVER 1 ACRE REQUIRE A STORMWATER DISCHARGE PERMIT ISSUED BY THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP). A PHASED CONSTRUCTION UNIT IN A CONTIGUOUS SUBDIVISION IS CONSIDERED UNDER CONSTRUCTION UNTIL ALL STRIPPED SURFACE AREAS HAVE BEEN COVERED BY PAVING, BUILDING CONSTRUCTION OR PLANTING. A STORMWATER DISCHARGE PERMIT APPLICATION AND ASSOCIATED INFORMATION MAY BE DOWNLOADED FROM THE WEB SITE: HTTP://WWW.STATE.NV.US/BMPC/STORM01.HTM PROJECTS THAT DISTURB MORE THAN ONE ACRE OF LAND MUST SUBMIT TO NDEP A "NOTICE OF INTENT" FOR INCLUSION UNDER STORMWATER PERMIT NO. NVR100000 ALONG WITH THE APPROPRIATE FILLING FEE.

DEVIATIONS FROM STANDARDS

GEOTECHNICAL ENGINEER

PREPARED BY: FIRM
ADDRESS: ADDRESS
PHONE: PHONE #
PROJECT No. PROJECT NUMBER
DATED: DATE



FAST Call before you UnderGround 1-702-432-5300 FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T.)

Call before you Dig
AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call 811 OR 1-800-227-2600

SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1

COVER SHEET

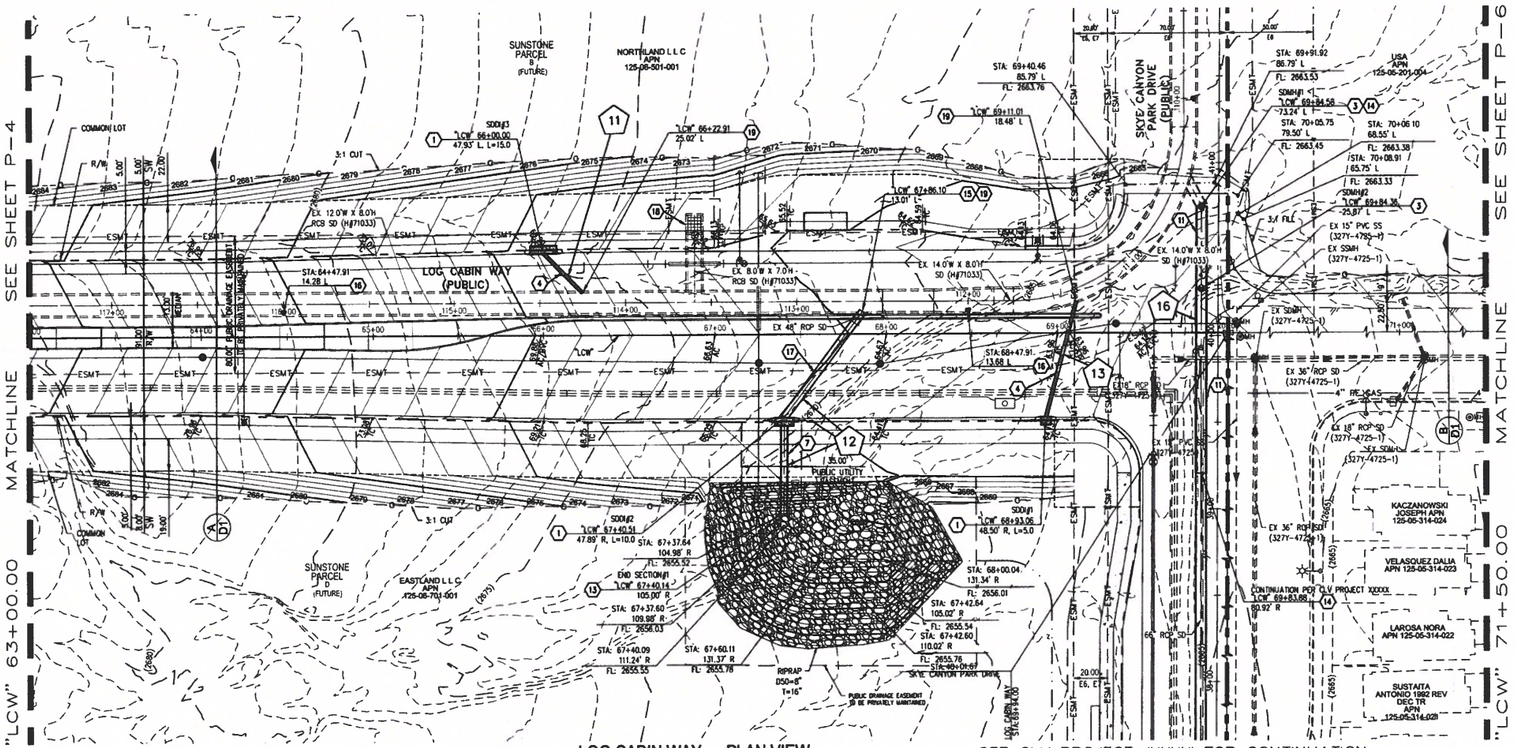
DATE: 08/07/2019
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

PROJECT NO.
EST1906-000

PROFESSIONAL ENGINEER – STATE OF NEVADA – JOSHUA M. JOHNSON – No. 15769 – 8/7/19

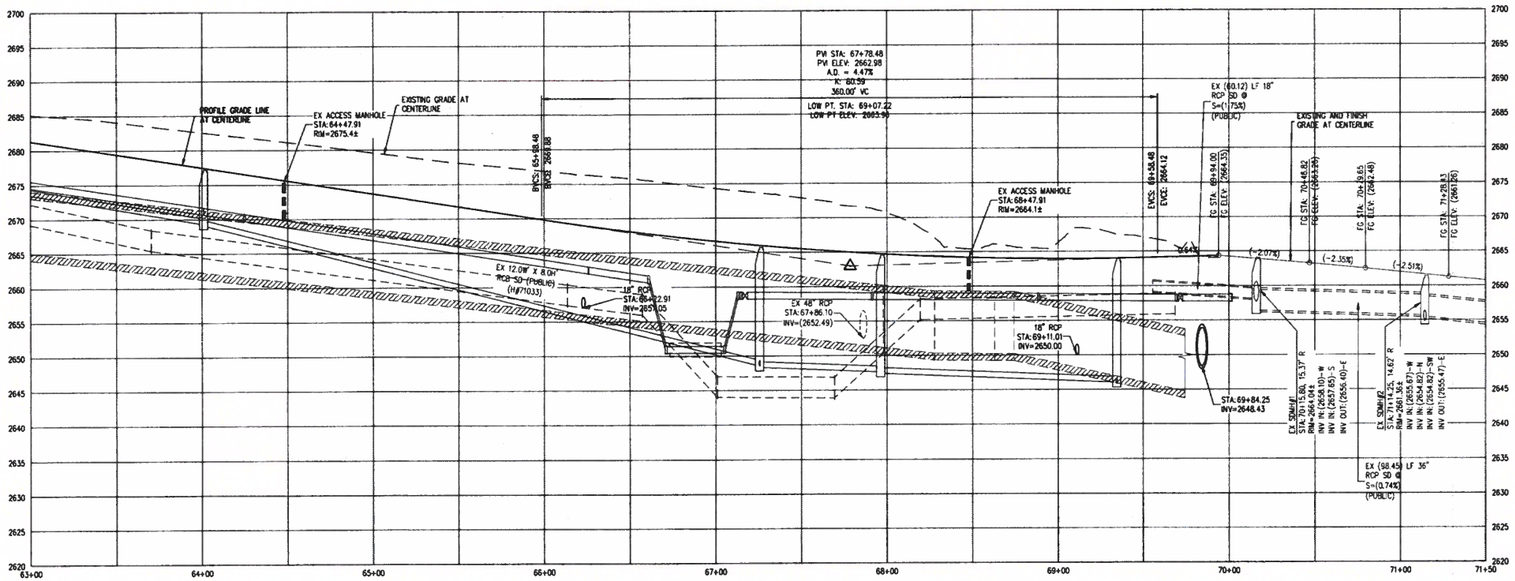
CS-1
SHEET 1 OF 47

J:\est1906-000 sunstone ph1 cabin way\Vectorworks\est1906-000 cvr.dwg 8/7/2019 8:31 AM Thomas Thone



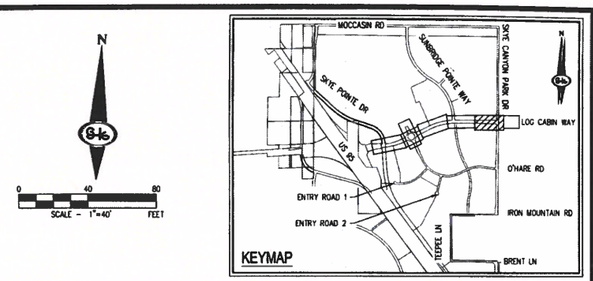
LOG CABIN WAY - PLAN VIEW

PUBLIC



LOG CABIN WAY - PROFILE VIEW

HORIZ: 1" = 40'
VERT: 1" = 10'



EXISTING EASEMENTS

E1 COVENANTS, CONDITIONS, EASEMENTS AND RESTRICTIONS\X IN A FINAL ORDER OF CONDEMNATION RECORDED OCTOBER 2, 2015, IN BOOK 20151002 AS INSTRUMENT NO. 03298 OF OFFICIAL RECORDS.

E2 RIGHT-OF-WAY GRANTED BY DECISION, DATED APRIL 04, 2003, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-75702 TO NEVADA POWER COMPANY FOR UNDERGROUND ELECTRICAL DISTRIBUTION LINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON APRIL 17, 2003 IN BOOK 20030417, AS INSTRUMENT NO. 02746 OF OFFICIAL RECORDS.

E3 A RIGHT-OF-WAY GRANTED BY DECISION, DATED AUGUST 21, 1970, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER NEVADA 1376 ET (N-121) TO STATE OF NEVADA, DEPARTMENT OF HIGHWAYS FOR HIGHWAY (U.S. 95) INCLUDING ACCESS RIGHTS UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON DECEMBER 22, 1972 IN BOOK 288, AS INSTRUMENT NO. 247599 OF OFFICIAL RECORDS.

E4 AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED JUNE 8, 2015 IN BOOK 20150608 AS INSTRUMENT NO. 00947 OF OFFICIAL RECORDS

E6 NDOT EASENT PER NEV-043376, N-43063, CC-018234, CC-018138, CC-018191

RESERVATIONS, PROVISIONS AND EASEMENTS AS CONTAINED IN PATENT FROM THE UNITED STATES OF AMERICA, RECORDED AUGUST 03, 2005, IN BOOK 20050803 OF OFFICIAL RECORDS, AS INSTRUMENT NO. 01359.

E7 RIGHT-OF-WAY GRANTED BY DECISION, DATED JUNE 9, 2004, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER B-75757A TO CITY OF LAS VEGAS FOR ROADWAY, SANITARY SEER AND DRAINAGE PURPOSES UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF THE LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JUNE 18, 2004 IN BOOK 20040618, AS INSTUMENT NO. 01781 OF OFFICIAL RECORDS.

STORM DRAIN NOTES

1. CONSTRUCT TYPE "CM2" DROP INLET (USDCCA STD. DWG. NO 412.1 & 421)
2. CONSTRUCT 60" TYPE III MANHOLE (USDCCA STD. DWG. NO. 406.1)
3. CONSTRUCT NDOT TYPE 4 MANHOLE (NDOT STD. PLAN R-4.3.2)
4. INSTALL 18" RCP (USDCCA STD. DWG. NO 503.2)
5. INSTALL 24" RCP (USDCCA STD. DWG. NO. 503.2)
6. INSTALL 30" RCP (USDCCA STD. DWG. NO 503.2)
7. INSTALL 42" RCP (USDCCA STD. DWG. NO 503.2)
8. INSTALL 48" RCP (USDCCA STD. DWG. NO. 503.2)
9. INSTALL 54" RCP (USDCCA STD. DWG. NO. 503.2)
10. INSTALL 60" RCP (USDCCA STD. DWG. NO 503.2)
11. INSTALL 66" RCP (USDCCA STD. DWG. NO. 503.2)
12. INSTALL 72" RCP (USDCCA STD. DWG. NO. 503.2)
13. INSTALL RCP END SECTION (NDOT STD PLAN R-2.3.1)
14. REMOVE PLUG AND CONNECT TO EXISTING STORM DRAIN
15. REMOVE EXISTING STORM DRAIN LATERAL
16. ADJUST STORM DRAIN MANHOLE TO FIN SH GRADE (USDCCA STD DWG. NO. 403.1 OR 404.1)
17. INSTALL 48" C900 STORM DRAIN
18. ADJUST EXISTING STORM DRAIN ACCESS VAULT TO FINISH GRADE (PER STRUCTURE DETAIL)
19. CONNECT TO EXISTING RCB PER DETAIL E ON SHEET DT-1

LEGEND

(1) STORM DRAIN LATERAL # (SEE SHEETS SD-6)

NOTES

1. ALL RCP SHALL BE CLASS III UNLESS OTHERWISE SHOWN
2. ALL PIPE LENGTHS ARE MEASURED ALONG PIPE CENTERLINE TO CENTER OF MANHOLE OR INSIDE EDGE OF DI OR RCB/RCA.
3. ALL DROP INLETS SHALL INCLUDE STORM WATER MANAGEMENT STAMP AND DETAIL PER USDCCA STD DWG. NO. 421.
4. SEE STRUCTURAL PLANS FOR ADDITIONAL STRUCTURAL DETAILS AND CONNECTIONS.
5. ALL PIPES IN PUBLIC ROW ARE PUBLICLY MAINTAINED
6. ADD SPECIAL INSPECTION REQUIRED FOR PIPE SEGMENTS WITH SACRIFICIAL CONCRETE.
7. SEE UTILITY PLAN AND PROFILE SHEETS FOR UTILITY ADJUSTMENTS AND RELOCATIONS.
8. ALL INTERIM DRAINAGE FACILITIES TO BE PRIVATELY MAINTAINED.
9. PROPERTY OWNER IS RESPONSIBLE TO MAINTAIN THE BEST MANAGEMENT PRACTICES, SUCH AS BUT NOT LIMITED TO, THE REMOVAL OF ACCUMULATED SEDIMENT AND DEBRIS AND CARE OF VEGETATION
10. WHERE 10 FEET PARALLEL SEPARATION IS NOT PRACTICABLE, CAST-IN-PLACE MONOLITHIC POUR WITH WATERSTOP BETWEEN SLAB AND WALLS, BASE, WALLS AND TOP TO BE CONSTRUCTED WITH WATERSTOPS, CENTER BULB, OR FLAT STRIP (VINYLEX, GREENSTREAK PLASTIC PRODUCTS OR APPROVED EQUAL)

DISCLAIMER NOTE

1) EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION.

2) FOR ROADWAY WIDENING AND HALF STREET IMPROVEMENTS THE CONTRACTOR SHALL VERIFY CROSS SLOPES FROM EXISTING PAVEMENT SAWCUT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED LIP OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF PROPOSED CURB LINE. IF MINIMUM OR MAXIMUM CROSS SLOPES DO NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY ??????? ON FILE AT CITY OF LAS VEGAS AND CCPW HTE #??-?????? FOR THE SUBJECT PROJECT.

JOSH JOHNSON, P.E. 15789 — DATE

FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X" (OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) ON THE FLOOD INSURANCE RATE MAP (FIRM) PANELS: 32003C1735E AND 32003C1750E BOTH DATED SEPTEMBER 27, 2002

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. ###### FIRST APPROVED DATE: ____
LVVWD APPROVED FIRE FLOW: TOTAL 1,500 GPM / ONSITE 20 GPM

CALL SOUTHWEST GAS AT 702-651-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES

SURVEY NOTE

OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED, DISTURBED, DESTROYED, OR OBSCURED DURING CONSTRUCTION.

ELEVATION NOTE

ADD 2600 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 1801.00)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2829

FAST
Call before you UnderGround
1-702-432-5300
FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T)

Call before you Dig
AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call 811
OR
1-800-227-2600

SLATER HANIFAN GROUP
a Westwood team
8740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300
FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP DATE	APP

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
LOG CABIN WAY
STORM DRAIN 5 - "LCW" 63+00.00 TO "LCW" 71+50.00

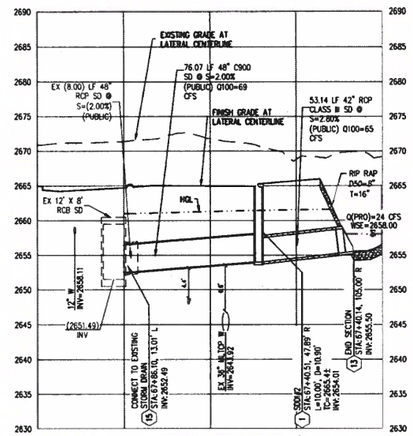
DATE: 08/07/2019
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

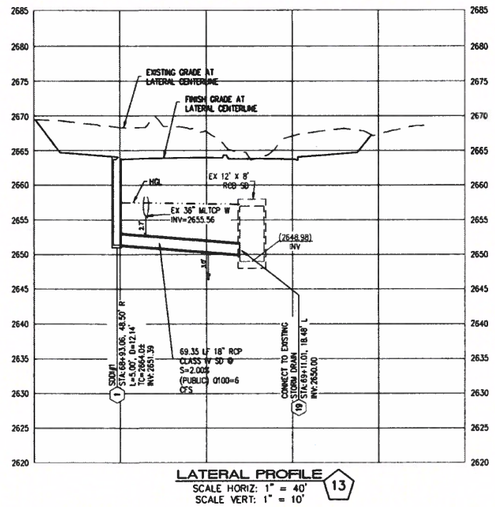
PROJECT NO.
EST1906-000

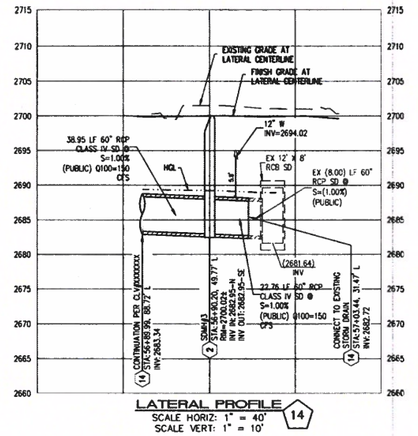
PROFESSIONAL ENGINEER - STATE OF NEVADA
JOSHUA L. JOHNSON
No. 15789
Exp. 12/31/2021
CIVIL
8/7/19

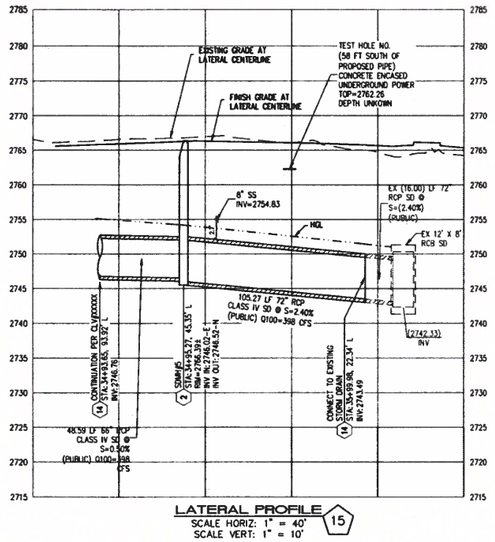
SD-5
SHEET 21 OF 47

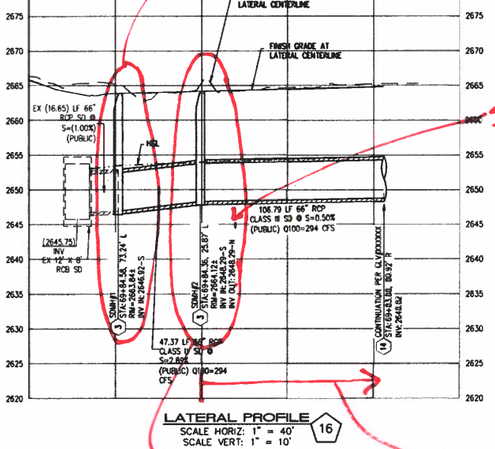
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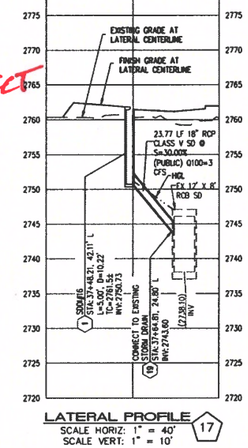


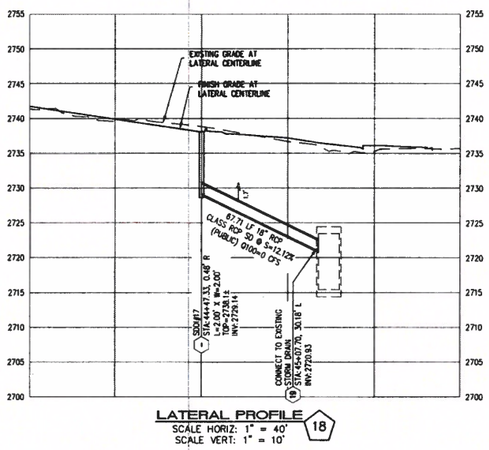












INVERT HELD W/ UPDATE

SS CONFLICT

BEGIN RAISE INVERT 6" W/ UPDATE

INVERT RAISED W/ UPDATE

SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

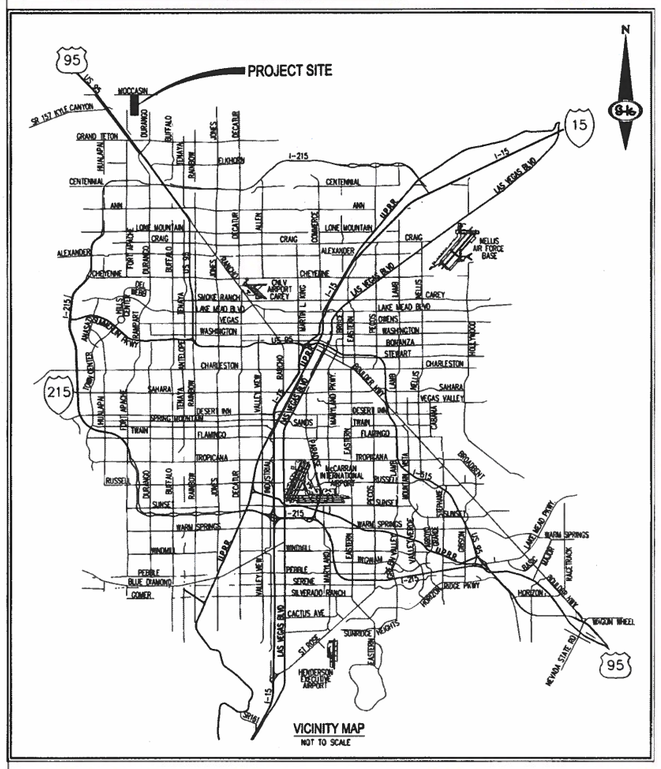
SUNSTONE PHASE 1
LOG CABIN WAY
STORM DRAIN LATERAL DETAILS 2

DATE: 08/07/2019
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ
PROJECT NO. EST1906-000

PROFESSIONAL ENGINEER - STATE OF NEVADA
JOSHUA L. JOHNSON
No. 15789
CIVIL
8/7/19

SD-9
SHEET 25 OF 47

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IMPROVEMENT PLANS FOR SUNSTONE PHASE 1 O'HARE ROAD

CITY OF LAS VEGAS, NEVADA



SHEET INDEX		
NO.	SHEET	TITLE
1	CS-1	COVER SHEET
2	CS-2	GENERAL NOTES
3	CS-3	ABBREVIATIONS, LEGEND, AND QUANTITIES
4	PP-1	PLAN & PROFILE I – "OH" 15+00.00 TO "OH" 23+00.00
5	PP-2	PLAN & PROFILE II – "OH" 23+00.00 TO "OH" 31+50.00
6	PP-3	PLAN & PROFILE III – "OH" 31+50.00 TO "OH" 39+50.00
7	PP-4	PLAN & PROFILE IV – "OH" 39+50.00 TO "OH" 45+00.00
8	PP-5	GRADING PLAN I
9	PP-6	GRADING PLAN II
10	SD-1	STORM DRAIN I – "OH" 15+00.00 TO "OH" 23+00.00
11	SD-2	STORM DRAIN II – "OH" 23+00.00 TO "OH" 31+50.00
12	SD-3	STORM DRAIN III – "OH" 31+50.00 TO "OH" 39+50.00
13	SD-4	STORM DRAIN IV – "OH" 39+50.00 TO "OH" 45+00.00
14	SD-5	STORM DRAIN LATERAL I
15	UT-1	UTILITY PLAN I – "OH" 15+00.00 TO "OH" 23+00.00
16	UT-2	UTILITY PLAN II – "OH" 15+00.00 TO "OH" 23+00.00
17	UT-3	UTILITY PLAN III – "OH" 23+00.00 TO "OH" 31+50.00
18	UT-4	UTILITY PLAN IV – "OH" 31+50.00 TO "OH" 39+50.00
19	UT-5	UTILITY PLAN V – "OH" 39+50.00 TO "OH" 45+00.00
20	UT-6	WATER LATERAL I
21	UT-7	SEWER LATERAL 1
22	DT-1	DETAIL SHEET I

APPROVALS

CITY ENGINEER- ALLEN PAVELKA PE. #9029 DATE

APPROVAL OF THESE PLANS BY THE CITY ENGINEER IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED OF RIGHT-OF-WAY, AND/OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND/OR SPECIFICATIONS EXCEPT THOSE SPECIALLY LISTED UNDER DEVIATIONS FORM STANDARDS. THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN DEVIATIONS FROM STANDARDS IN FAVOR OF THE UNIFORM STANDARD DRAWINGS AND SPECIFICATIONS, CLARK COUNTY AREA, NEVADA.

LAS VEGAS FIRE AND RESCUE DATE

CITY OF LAS VEGAS - PLANNING DEPARTMENT DATE

THIS PLAN MEETS THE APPLICABLE STANDARDS OF THE PLANNING DEPARTMENT.

CENTRAL TELEPHONE CO. DBA CENTURYLINK DATE

THE AFFIXED CENTURYLINK APPROVAL DOES NOT ASSUME OR GUARANTEE LIABILITY FOR KNOWN OR UNKNOWN CONFLICTS WITH EXISTING OR PROPOSED IMPROVEMENTS. RESOLUTION OF ANY CONFLICT WILL BE ACCOMPLISHED PURSUANT TO LOCAL ORDINANCES, NEVADA REVISED STATUES AND / OR PUBLIC UTILITY COMMISSION RULES AND REGULATIONS.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. ###### FIRST APPROVED DATE:
LVVWD APPROVED FIRE FLOW: TOTAL 1,500 GPM / ONSITE 20 GPM

SHEETS: ADD FIELD
LVVWD APPROVAL IS VALID FOR ONE (1) YEAR FROM SIGNATURE DATE. IF CONSTRUCTION IS NOT STARTED, PLANS MUST BE RESUBMITTED FOR REVIEW AND APPROVAL.

NV ENERGY DATE

NV ENERGY ACKNOWLEDGES THAT BE HAVE RECEIVED YOUR PLANS AND WILL PROVIDE SERVICE TO ALL ELECTRICAL NEEDS ASSOCIATED WITH THIS PROJECT. NV ENERGY RESERVES THE RIGHT TO ADDRESS ANY EXISTING OR FUTURE CONFLICTS ONCE THE FINAL DESIGN IS COMPLETED. THE NEW SERVICE AND THE RESOLUTION OF ANY CONFLICTS WILL BE ACCOMPLISHED PURSUANT TO THE NEVADA PUBLIC UTILITY COMMISSION'S RULES AND REGULATIONS.

SOUTHWEST GAS CORPORATION DATE

COX COMMUNICATIONS LAS VEGAS, INC. DATE

OWNER/DEVELOPER
EASTLAND COMPANY, LLC
9275 RUSSELL RD SUITE 400
LAS VEGAS, NV 89148
PH: 702-821-4808

ENGINEER
SLATER HANIFAN GROUP, INC.
c WESTWOOD TEAM
5740 S. ARVILLE STREET, SUITE 216
LAS VEGAS, NV 89118
PH: (702) 284-5300
CONTACT: JOSH JOHNSON

BENCHMARK

MONUMENT ID: USDA (1934) 19

U.S. DEPARTMENT OF AGRICULTURE BRASS DISC AT SOUTHWEST CORNER OF U.S. 95 AND KYLE CANYON ROAD

ELEVATION = 2817.61 FEET, 858.810 METERS
NAVD 88 DATUM

PER THE CITY OF LAS VEGAS BENCHMARK BOOK – 2008 ADJUSTMENT (UPDATED 05/24/2010)

BASIS OF BEARINGS

NORTH 00°01'50" WEST, BEING THE BEARING OF THE EAST LINE OF THE NORTHEAST QUARTER (NE1/4) OF SECTION 6, TOWNSHIP 19 SOUTH, RANGE 60 EAST, M.D.B.&M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF IN FILE 151, PAGE 14 OF SURVEYS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA.

FEMA FLOOD ZONE INFORMATION

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X" (AREA OUTSIDE THE 500 YEAR FLOODPLAIN), PER THE FEMA FIRM PANELS ????????? DATED NOVEMBER 16, 2011

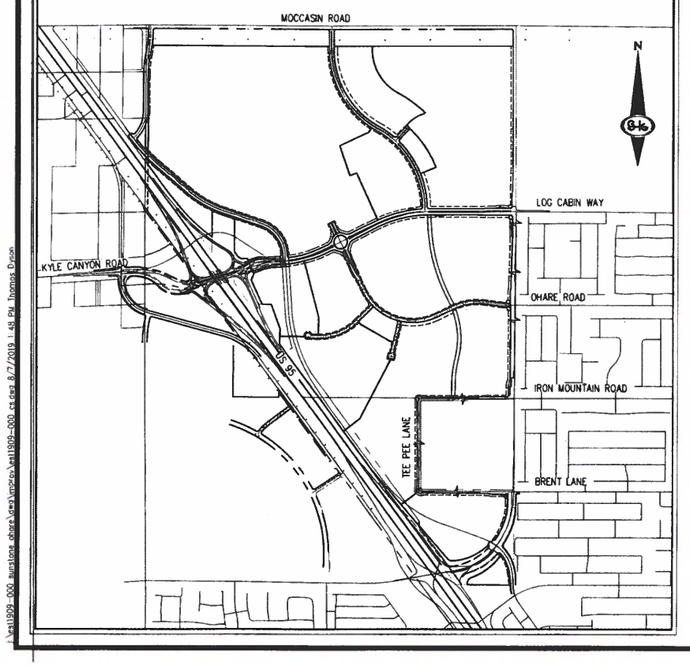
PROJECT PLAN APPROVAL CONTINGENT ON

SUNSTONE PHASE 1 XXXXXX #XXXXX
SUNSTONE PHASE 1 XXXXXX #XXXXX
SUNSTONE PHASE 1 XXXXXX #XXXXX

PLAN APPROVAL

KEY MAP

NOT TO SCALE



SWPPP NOTE

NOTE: ALL LAND SURFACE AREA DISTURBANCES OVER 1 ACRE REQUIRE A STORMWATER DISCHARGE PERMIT ISSUED BY THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP). A PHASED CONSTRUCTION UNIT IN A CONTIGUOUS SUBDIVISION IS CONSIDERED UNDER CONSTRUCTION UNTIL ALL STRIPPED SURFACE AREAS HAVE BEEN COVERED BY PAVING, BUILDING CONSTRUCTION OR PLANTING. A STORMWATER DISCHARGE PERMIT APPLICATION AND ASSOCIATED INFORMATION MAY BE DOWNLOADED FROM THE WEB SITE: HTTP://WWW.STATE.NV.US/BHPC/STORM01.HTM PROJECTS THAT DISTURB MORE THAN ONE ACRE OF LAND MUST SUBMIT TO NDEP A "NOTICE OF INTENT" FOR INCLUSION UNDER STORMWATER PERMIT NO. NVR100000 ALONG WITH THE APPROPRIATE FILLING FEE.

DEVIATIONS FROM STANDARDS

NONE

GEOTECHNICAL ENGINEER

PREPARED BY: FIRM
ADDRESS: ADDRESS
PHONE: PHONE #
PROJECT No. PROJECT NUMBER
DATED: DATE

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

FAST
Call before you UnderGround
1-702-432-5300
FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T.)

Call before you Dig
AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call 811
OR
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SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300
FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1

COVER SHEET

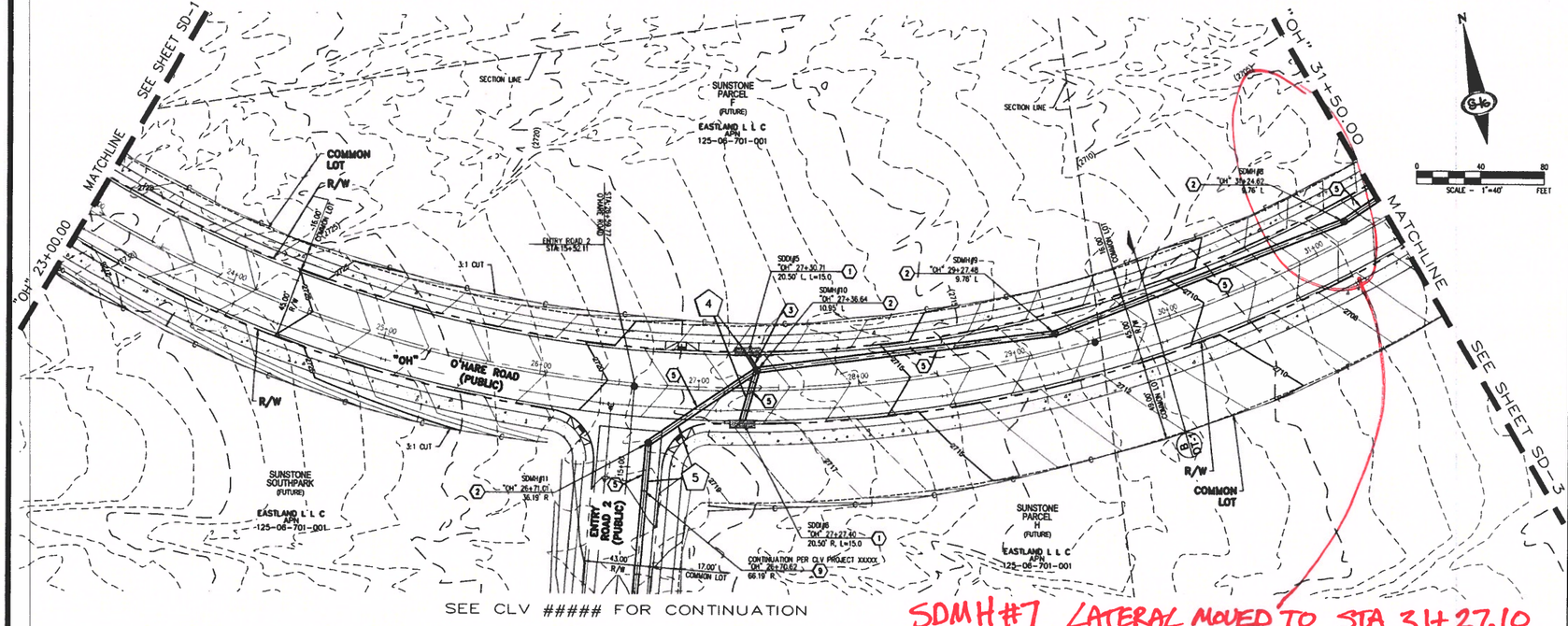
DATE: 08/07/19
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

PROJECT NO.
EST1909-000

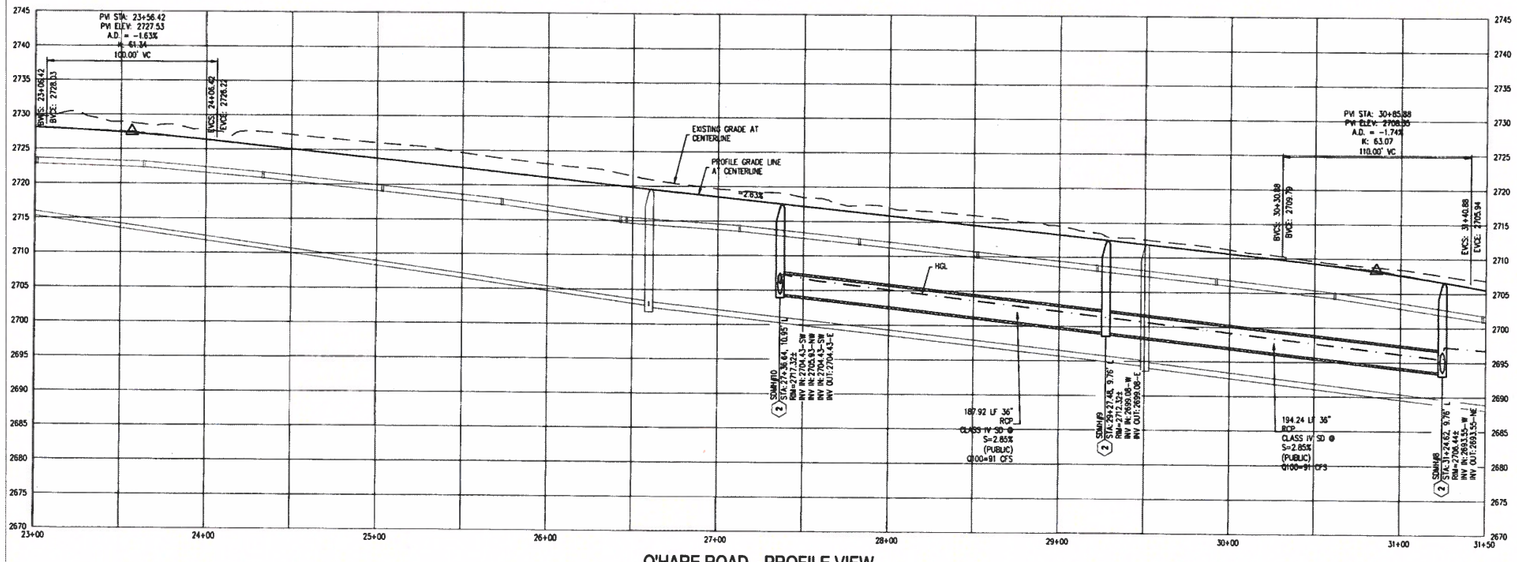
PROFESSIONAL ENGINEER STATE OF NEVADA
JOSHUA L. JOHNSON
No. 15789
8/7/19

CS-1
SHEET 1 OF 22

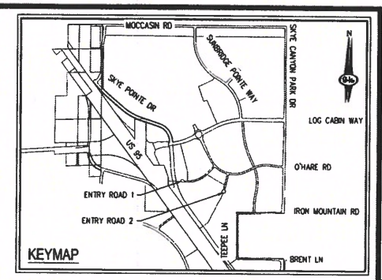
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O'HARE ROAD - PLAN VIEW
(PUBLIC)



O'HARE ROAD - PROFILE VIEW
HORIZ: 1" = 40'
VERT: 1" = 10'



EXISTING EASEMENTS

E1 RIGHT-OF-WAY GRANTED BY DECISION, DATED JANUARY 16, 2003 BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-75502 TO LAS VEGAS VALLEY WATER DISTRICT FOR WATER PIPELINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVERA PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON FEBRUARY 10, 2003 IN BOOK 20030210, AS INSTRUMENT N. 00538 OF OFFICIAL RECORDS.

E2 RIGHT-OF-WAY GRANTED BY DECISION, DATED JANUARY 16, 2003 BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-75502-01 TO LAS VEGAS VALLEY WATER DISTRICT FOR TEMPORARY WORK AREAS FOR A 42" UNDERGROUND WATER PIPELINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON FEBRUARY 10, 2003 IN BOOK 20030210, AS INSTRUMENT NO. 00541 OF OFFICIAL RECORDS

E3 EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL\X PURPOSES IN THE DOCUMENT RECORDED JUNE 8, 2015 IN BOOK 20150608 AS INSTRUMENT NO. 00948 OF OFFICIAL RECORDS.

E4 COVENANTS, CONDITIONS, EASEMENTS AND RESTRICTIONS\X IN A FINAL ORDER OF CONDEMNATION RECORDED OCTOBER 2, 2015, IN BOOK 20151002 AS INSTRUMENT NO. 03298 OF OFFICIAL RECORDS.

E5 RIGHT-OF-WAY GRANTED BY DECISION, DATED APRIL 04, 2003, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-75702 TO NEVADA POWER COMPANY FOR UNDERGROUND ELECTRICAL DISTRIBUTION LINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON APRIL 17, 2003 IN BOOK 20030417, AS INSTRUMENT NO. 02746 OF OFFICIAL RECORDS.

E6 A RIGHT-OF-WAY GRANTED BY DECISION, DATED AUGUST 21, 1970, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER NEV013378 ET (N-121) TO STATE OF NEVADA, DEPARTMENT OF HIGHWAYS FOR HIGHWAY (U.S. 95) INCLUDING ACCESS RIGHTS UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON DECEMBER 22, 1972 IN BOOK 288, AS INSTRUMENT NO. 247599 OF OFFICIAL RECORDS.

E7 AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED JUNE 8, 2015 IN BOOK 20150608 AS INSTRUMENT NO. 00947 OF OFFICIAL RECORDS

E8 NDOT EASENT PER NEV-043376, R-43063, CC-018234, CC-018138, CC-018191

RESERVATIONS, PROVISIONS AND EASEMENTS AS CONTAINED IN PATENT FROM THE UNITED STATES OF AMERICA, RECORDED AUGUST 03, 2005, IN BOOK 20050803 OF OFFICIAL RECORDS, AS INSTRUMENT NO. 01359.

SURVEY NOTE
OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED, DISTURBED, DESTROYED, OR OBSCURED DURING CONSTRUCTION.

CALL SOUTHWEST GAS AT 702-651-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES

STORM DRAIN NOTES
1. CONSTRUCT TYPE "CM2" DROP INLET (USDCCA STD. DWG. NO. 412.1 & 421)
2. CONSTRUCT 60" TYPE III MANHOLE (USDCCA STD. DWG. NO. 406.1)
3. CONSTRUCT NDOT TYPE 4 MANHOLE (NDOT STD. PLAN R-4.3.2)
4. INSTALL 18" RCP (USDCCA STD. DWG. NO. 503.2)
5. INSTALL 24" RCP (USDCCA STD. DWG. NO. 503.2)
6. INSTALL 42" RCP (USDCCA STD. DWG. NO. 503.2)
7. INSTALL 48" RCP (USDCCA STD. DWG. NO. 503.2)
8. INSTALL 66" RCP (USDCCA STD. DWG. NO. 503.2)
9. CONSTRUCT 6' X 6' RCB (NDOT STD. PLAN B-20.1.2)
10. CONSTRUCT 7' X 5' RCB (NDOT STD. PLAN B-20.1.2)

LEGEND
(#) STORM DRAIN LATERAL # (SEE SHEET SD-5)

FLOOD ZONE
THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X" (OUTSIDE THE 500-YEAR FLOOD PLAIN) ON THE FLOOD INSURANCE RATE MAP (FIRM) PANEL 32003C1735E, DATED SEPTEMBER 27, 2002

ELEVATION NOTE
ADD 2600 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 1801.00)

DISCLAIMER NOTE
1) EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION.

2) FOR ROADWAY WIDENING AND HALF STREET IMPROVEMENTS THE CONTRACTOR SHALL VERIFY CROSS SLOPES FROM EXISTING PAVEMENT SAWCUT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED LIP OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF PROPOSED CURB LINE. IF MINIMUM OR MAXIMUM CROSS SLOPES DO NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL NOTIFY THE ENGINEER

NOTES
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3. ALL DROP INLETS SHALL INCLUDE STORM WATER MANAGEMENT STAMP AND DETAIL PER USDCCA STD. DWG NO. 421.
4. SEE STRUCTURAL PLANS FOR ADDITIONAL STRUCTURAL DETAILS AND CONNECTIONS.
5. ALL PIPES IN PUBLIC ROW ARE PUBLICLY MAINTAINED.
6. ADD SPECIAL INSPECTION REQUIRED FOR PIPE SEGMENTS WITH SACRIFICIAL CONCRETE.
7. SEE UTILITY PLAN AND PROFILE SHEETS FOR UTILITY ADJUSTMENTS AND RELOCATIONS.
8. ALL INTERIM DRAINAGE FACILITIES TO BE PRIVATELY MAINTAINED.
9. PROPERTY OWNER IS RESPONSIBLE TO MAINTAIN THE BEST MANAGEMENT PRACTICES, SUCH AS BUT NOT LIMITED TO, THE REMOVAL OF ACCUMULATED SEDIMENT AND DEBRIS AND CARE OF VEGETATION.
10. WHERE 10 FEET PARALLEL SEPARATION IS NOT PRACTICABLE:

    CAST-IN-PLACE MONOLITHIC POUR WITH WATERSTOP BETWEEN SLAB AND WALLS. BASE, WALLS AND TOP TO BE CONSTRUCTED WITH WATERSTOPS, CENTER BULB, OR FLAT STRIP (VINYLEX, GREENSTREAK PLASTIC PRODUCTS OR APPROVED EQUAL).

APPROVED FOR CONSTRUCTION
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. ##### FIRST APPROVED DATE: _____
LVWD APPROVED FIRE FLOW: TOTAL 1,500 GPM / ONSITE 20 GPM

FLOOD CERTIFICATION
I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY ?????? ON FILE AT CITY OF LAS VEGAS AND COPW HTE ??-????? FOR THE SUBJECT PROJECT.

JOSH JOHNSON, P.E. 15789 DATE

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

FAST
Call before you UnderGround
1-702-432-5300
FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T.)

Call before you Dig
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Call 811 OR 1-800-227-2600

SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
O'HARE ROAD
STORM DRAIN II - "OH" 23+00.00 TO "OH" 31+50.00

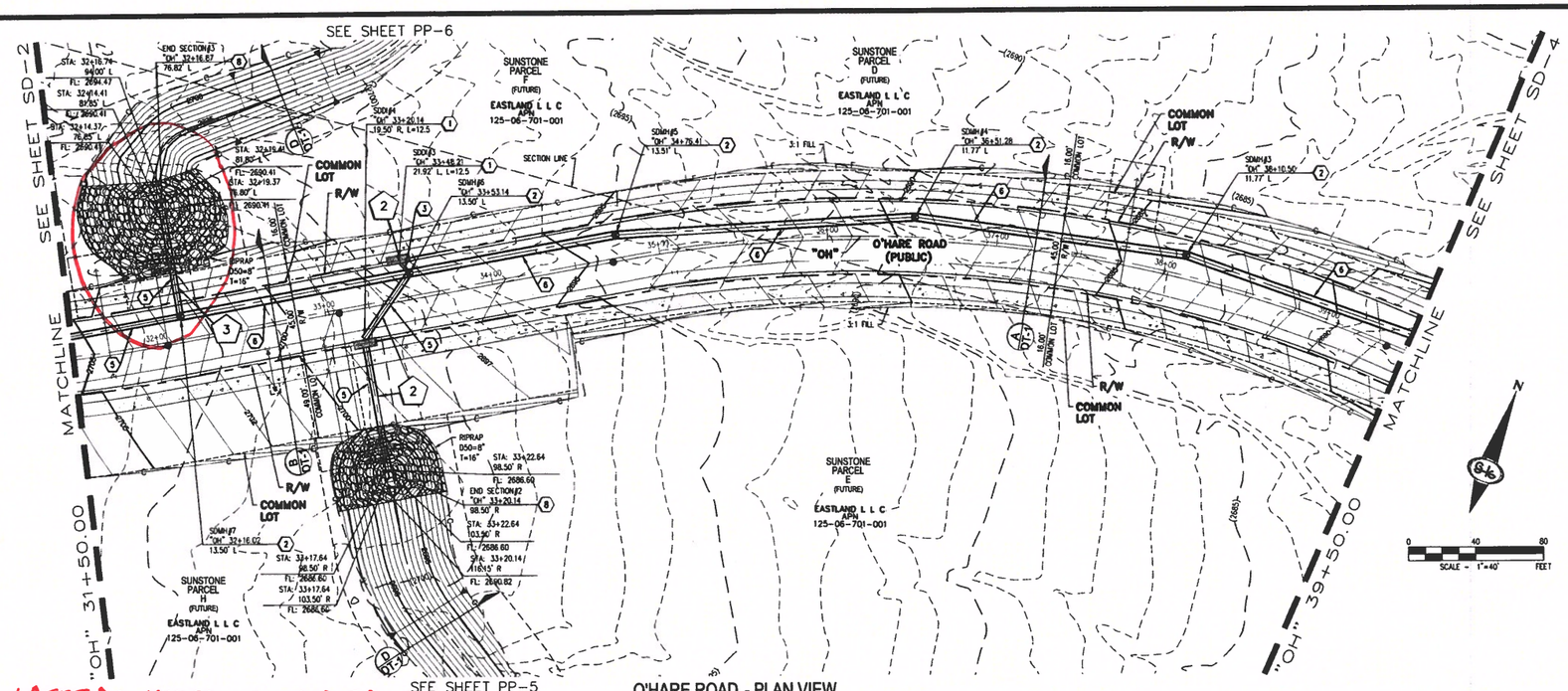
DATE: 08/07/19
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

PROJECT NO.
EST1909-000

PROFESSIONAL ENGINEER - STATE OF NEVADA - JOSHUA D. JOHNSON - No. 15789 - 8/7/19

SD-2
SHEET 11 OF 22

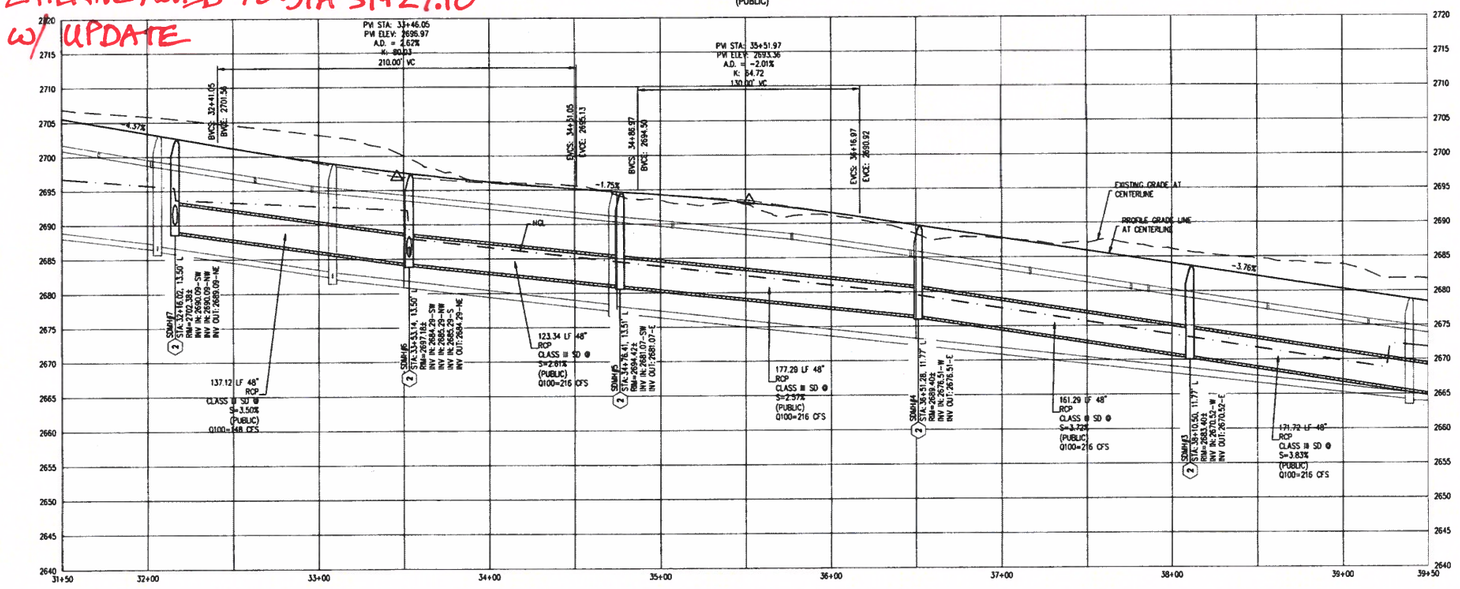
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LATERAL MOVED TO STA 31+27.10 w/ UPDATE

O'HARE ROAD - PLAN VIEW

(PUBLIC)



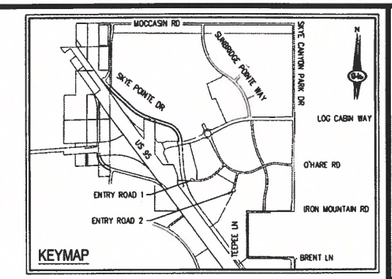
O'HARE ROAD - PROFILE VIEW

HORIZ: 1" = 40'
VERT: 1" = 10'

NOTES

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KEYMAP

EXISTING EASEMENTS

E1 RIGHT-OF-WAY GRANTED BY DECISION, DATED JANUARY 16, 2003 BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-75502 TO LAS VEGAS VALLEY WATER DISTRICT FOR WATER PIPELINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVERA PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON FEBRUARY 10, 2003 IN BOOK 20030210, AS INSTRUMENT N. 00538 OF OFFICIAL RECORDS.

E2 RIGHT-OF-WAY GRANTED BY DECISION, DATED JANUARY 16, 2003 BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-75502-01 TO LAS VEGAS VALLEY WATER DISTRICT FOR TEMPORARY WORK AREAS FOR A 42" UNDERGROUND WATER PIPELINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON FEBRUARY 10, 2003 IN BOOK 20030210, AS INSTRUMENT NO. 00541 OF OFFICIAL RECORDS.

E3 EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL\X PURPOSES IN THE DOCUMENT RECORDED JUNE 8, 2015 IN BOOK 20150608 AS INSTRUMENT NO. 00948 OF OFFICIAL RECORDS.

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E5 RIGHT-OF-WAY GRANTED BY DECISION, DATED APRIL 04, 2003, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-75702 TO NEVADA POWER COMPANY FOR UNDERGROUND ELECTRICAL DISTRIBUTION LINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON APRIL 17, 2003 IN BOOK 20030417, AS INSTRUMENT NO. 02746 OF OFFICIAL RECORDS.

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E7 AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED JUNE 8, 2015 IN BOOK 20150608 AS INSTRUMENT NO. 00947 OF OFFICIAL RECORDS

E8 NDOT EASENT PER NEV-043376, N-43063, CC-018234, CC-018138, CC-018191

RESERVATIONS, PROVISIONS AND EASEMENTS AS CONTAINED IN PATENT FROM THE UNITED STATES OF AMERICA, RECORDED AUGUST 03, 2005, IN BOOK 20050803 OF OFFICIAL RECORDS, AS INSTRUMENT NO. 01359.

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LEGEND

(#) STORM DRAIN LATERAL # (SEE SHEET SD-5)

FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X" (OUTSIDE THE 500-YEAR FLOOD PLAIN) ON THE FLOOD INSURANCE RATE MAP (FIRM) PANEL: 32003C1735E, DATED SEPTEMBER 27, 2002

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APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. ###### FIRST APPROVED DATE:
LVVWD APPROVED FIRE FLOW: TOTAL 1,500 GPM / ONSITE 20 GPM

FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY ??????? ON FILE AT CITY OF LAS VEGAS AND COPW HTE ###-????? FOR THE SUBJECT PROJECT

JOSH JOHNSON, P.E. 15789 DATE

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

EAST Call before you UnderGround 1-702-432-5300 FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T.)

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SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-8300 FAX (702) 284-8399

NO.	DESCRIPTION	DATE	BY	APP.	APP. DATE

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

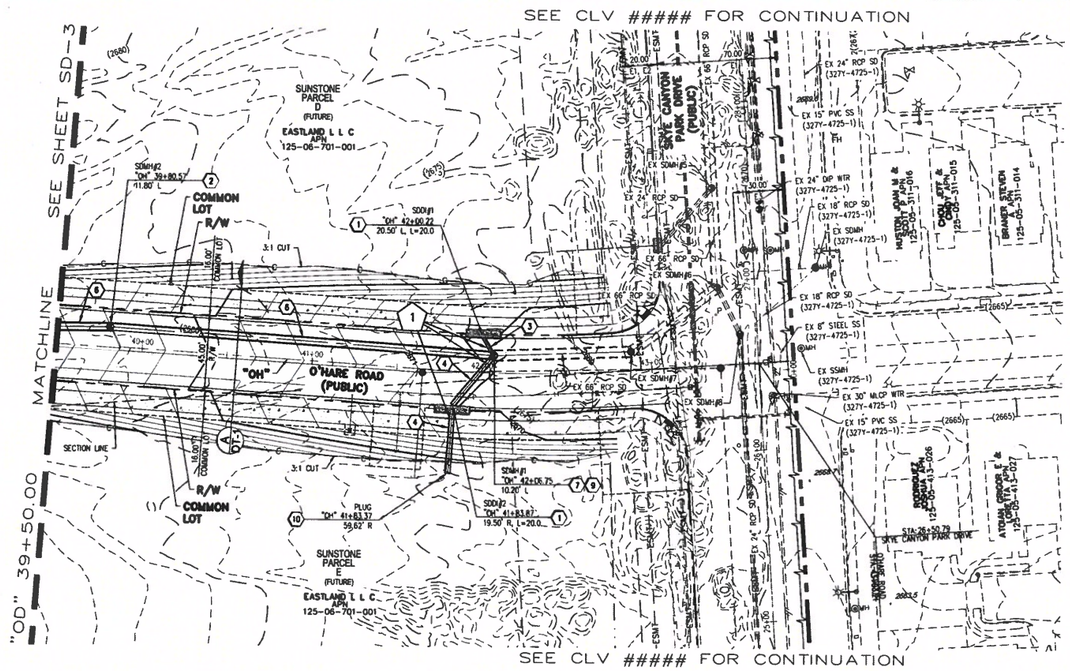
SUNSTONE PHASE 1
O'HARE ROAD
STORM DRAIN III - "OH" 31+50.00 TO "OH" 39+50.00

DATE: 08/07/19
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ
PROJECT NO. EST1909-000

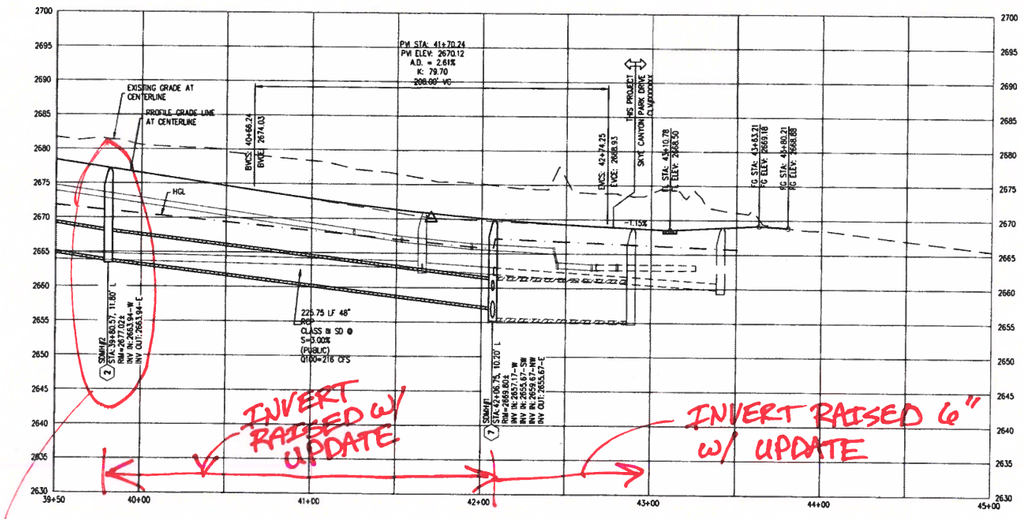
PROFESSIONAL ENGINEER - STATE OF NEVADA - JOSHUA L. JOHNSON - No. 15789 - Exp. 06/30/2021 - CIVIL - 8/7/19

SD-3
SHEET 12 OF 22

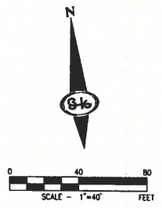
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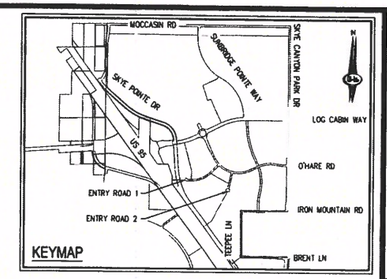


O'HARE ROAD - PLAN VIEW
(PUBLIC)



O'HARE ROAD - PROFILE VIEW
HORIZ: 1" = 40'
VERT: 1" = 10'





EXISTING EASEMENTS

E1 RIGHT-OF-WAY GRANTED BY DECISION, DATED JANUARY 16, 2003 BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-75002 TO LAS VEGAS VALLEY WATER DISTRICT FOR WATER PIPELINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVERA PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON FEBRUARY 10, 2003 IN BOOK 20030210, AS INSTRUMENT N. 00538 OF OFFICIAL RECORDS.

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STORM DRAIN NOTES

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LEGEND

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CAST-IN-PLACE MONOLITHIC POUR WITH WATERSTOP BETWEEN SLAB AND WALLS. BASE, WALLS AND TOP TO BE CONSTRUCTED WITH WATERSTOPS, CENTER BULB, OR FLAT STRIP (VINYLEX, GREENSTREAK PLASTIC PRODUCTS OR APPROVED EQUAL)

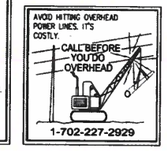
APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. ###### FIRST APPROVED DATE
LVVWD APPROVED FIRE FLOW: TOTAL 1,500 GPM / ONSITE 20 GPM

FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY ?????? ON FILE AT CITY OF LAS VEGAS AND CCFW HTE ???-????? FOR THE SUBJECT PROJECT.

JOSH JOHNSON, P.E. 15789 DATE







SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300
FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
O'HARE ROAD
STORM DRAIN IV - "OH" 39+50.00 TO "OH" 45+00.00

DATE: 08/07/19
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

PROJECT NO.
EST1909-000

PROFESSIONAL ENGINEER - STATE OF NEVADA - Joshua Johnson - Exp. 06/30/2021 - CIVIL - No. 15789

9/19

SD-4
SHEET 13 OF 22

J:\est1909_000 sunstone phase\Civil\vmacro\est1909_000_sd.dwg, 9/17/2019 1:52 PM, Thomas Dyton

APPENDIX D

CD of Electronic Files (PDF)

Westwood

5740 S. Arville St., Suite 216
Las Vegas, NV 89118

Main (702) 284-5300

westwoodps.com
(888) 937-5150

OLY1505.000

February 3, 2020

Albert Sung, P.E.
City of Las Vegas
333 Rancho Drive (7th Floor)
Las Vegas, NV 89101

Subject: Technical Drainage Study Update for Sunstone Phase 1 Infrastructure

Mr. Sung:

This letter certifies that all items provided on electronic submittal CD matches 100% of the *Technical Drainage Study Update for Sunstone Phase 1 Infrastructure* bound paper version.

Respectfully Submitted,
WESTWOOD PROFESSIONAL SERVICES

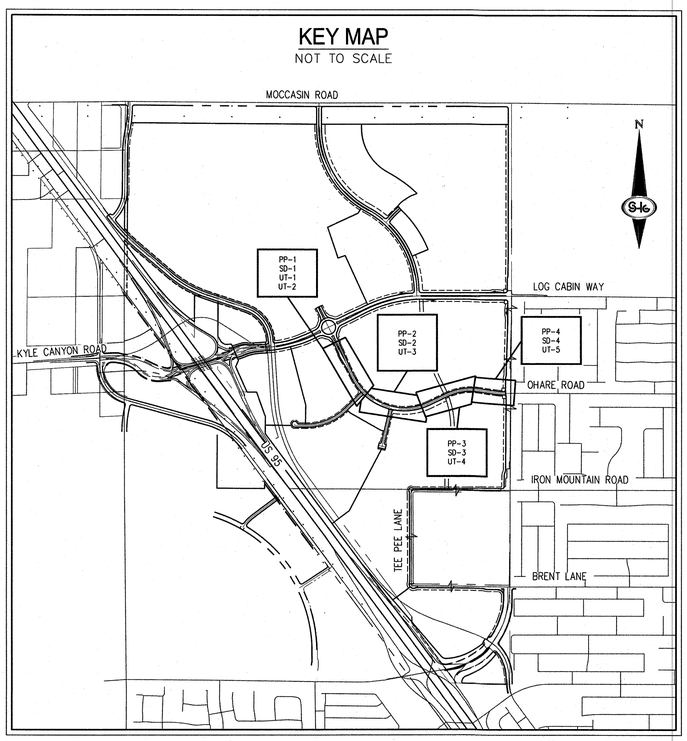
Lant Leavitt, P.E.
Project Manager – Water Resources Department

IMPROVEMENT PLANS
FOR
SUNSTONE PHASE 1
O'HARE ROAD

CITY OF LAS VEGAS, NEVADA

APN: 125-06-701-001





CITY OF LAS VEGAS NEVADA

SHEET INDEX		
NO.	SHEET	TITLE
1	CS-1	COVER SHEET
2	CS-2	GENERAL NOTES
3	CS-3	ABBREVIATIONS, LEGEND, AND QUANTITIES
4	PP-1	PLAN & PROFILE I – "OH" 15+75.00 TO "OH" 23+00.00
5	PP-2	PLAN & PROFILE II – "OH" 23+00.00 TO "OH" 31+50.00
6	PP-3	PLAN & PROFILE III – "OH" 31+50.00 TO "OH" 39+50.00
7	PP-4	PLAN & PROFILE IV – "OH" 39+50.00 TO "OH" 43+00.00
8	GR-1	GRADING PLAN I
9	GR-2	GRADING PLAN II
10	SD-1	STORM DRAIN I – "OH" 15+75.00 TO "OH" 23+00.00
11	SD-2	STORM DRAIN II – "OH" 23+00.00 TO "OH" 31+50.00
12	SD-3	STORM DRAIN III – "OH" 31+50.00 TO "OH" 39+50.00
13	SD-4	STORM DRAIN IV – "OH" 39+50.00 TO "OH" 43+00.00
14	SD-5	STORM DRAIN LATERAL I
15	UT-1	UTILITY PLAN I – "OH" 15+75.00 TO "OH" 23+00.00
16	UT-2	UTILITY PLAN II – "OH" 15+75.00 TO "OH" 23+00.00
17	UT-3	UTILITY PLAN III – "OH" 23+00.00 TO "OH" 31+50.00
18	UT-4	UTILITY PLAN IV – "OH" 31+50.00 TO "OH" 39+50.00
19	UT-5	UTILITY PLAN V – "OH" 39+50.00 TO "OH" 43+00.00
20	UT-6	WATER LATERAL I
21	UT-7	SEWER LATERAL I
22	UT-8	WATER EASEMENT I
23	DT-1	DETAIL SHEET I
24	ST-1	SIGNAGE & STRIPING I – "OH" 15+75.00 TO "OH" 31+50.00
25	ST-2	SIGNAGE & STRIPING II – "OH" 31+50.00 TO "OH" 43+00.00
26	LL-1	LIGHTING & ITS I – "OH" 15+75.00 TO "OH" 31+50.00
27	LL-2	LIGHTING & ITS II – "OH" 31+50.00 TO "OH" 43+00.00
28	HC-1	HORIZONTAL CONTROL PLAN
29	HC-2	HORIZONTAL CONTROL PLAN
30	HC-3	HORIZONTAL CONTROL PLAN
31	HC-4	HORIZONTAL CONTROL PLAN
32	HC-5	HORIZONTAL CONTROL PLAN
33	HC-6	HORIZONTAL CONTROL PLAN
34	HC-7	HORIZONTAL CONTROL PLAN
35	HC-8	HORIZONTAL CONTROL PLAN
36	HC-9	HORIZONTAL CONTROL PLAN
37	HC-10	HORIZONTAL CONTROL PLAN
38	HC-11	HORIZONTAL CONTROL PLAN
39	HC-12	HORIZONTAL CONTROL PLAN
40	HC-13	HORIZONTAL CONTROL PLAN
41	HC-14	HORIZONTAL CONTROL PLAN
42	HC-15	HORIZONTAL CONTROL PLAN
43	HC-16	HORIZONTAL CONTROL PLAN
44	HC-17	HORIZONTAL CONTROL PLAN
45	HC-18	HORIZONTAL CONTROL PLAN
46	HC-19	HORIZONTAL CONTROL PLAN
47	HC-20	HORIZONTAL CONTROL PLAN
48	HC-21	HORIZONTAL CONTROL PLAN
49	HC-22	HORIZONTAL CONTROL PLAN
50	HC-23	HORIZONTAL CONTROL PLAN

APPROVALS

ACTING CITY ENGINEER–ROSA CORTEZ PE, #17505 DATE

APPROVAL OF THESE PLANS BY THE CITY ENGINEER IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED OF RIGHT-OF-WAY, AND/OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND/OR SPECIFICATIONS EXCEPT THOSE SPECIALLY LISTED UNDER DEVIATIONS FORM STANDARDS. THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN DEVIATIONS FROM STANDARDS IN FAVOR OF THE UNIFORM STANDARD DRAWINGS AND SPECIFICATIONS, CLARK COUNTY AREA, NEVADA.

LAS VEGAS FIRE AND RESCUE DATE

CITY OF LAS VEGAS – PLANNING DEPARTMENT DATE

THIS PLAN MEETS THE APPLICABLE STANDARDS OF THE PLANNING DEPARTMENT.

CENTRAL TELEPHONE CO. DBA CENTURYLINK DATE

THE AFFIXED CENTURYLINK APPROVAL DOES NOT ASSUME OR GUARANTEE LIABILITY FOR KNOWN OR UNKNOWN CONFLICTS WITH EXISTING OR PROPOSED IMPROVEMENTS. RESOLUTION OF ANY CONFLICT WILL BE ACCOMPLISHED PURSUANT TO LOCAL ORDINANCES, NEVADA REVISED STATUES AND / OR PUBLIC UTILITY COMMISSION RULES AND REGULATIONS.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. 136914 FIRST APPROVED DATE:
LVVWD APPROVED FIRE FLOW: TOTAL 1,500 GPM / ONSITE 20 GPM

SHEETS: 1, 2, 3, 10, 11, 12, 13, 15, 16, 17, 18, 19

NV ENERGY DATE

NV ENERGY ACKNOWLEDGES THAT WE HAVE RECEIVED YOUR PLANS AND WILL PROVIDE SERVICE TO ALL ELECTRICAL NEEDS ASSOCIATED WITH THIS PROJECT. NV ENERGY RESERVES THE RIGHT TO ADDRESS ANY EXISTING OR FUTURE CONFLICTS ONCE THE FINAL DESIGN IS COMPLETED. THE NEW SERVICE AND THE RESOLUTION OF ANY CONFLICTS WILL BE ACCOMPLISHED PURSUANT TO THE NEVADA PUBLIC UTILITY COMMISSION'S RULES AND REGULATIONS.

SOUTHWEST GAS CORPORATION DATE

COX COMMUNICATIONS LAS VEGAS, INC. DATE

OWNER/DEVELOPER	ENGINEER
EASTLAND COMPANY, LLC 9275 RUSSELL RD SUITE 400 LAS VEGAS, NV 89148 PH: 702-821-4808	SLATER HANIFAN GROUP, INC. A WESTWOOD TEAM 5740 S. ARVILLE STREET, SUITE 216 LAS VEGAS, NV 89118 PH: (702) 284-5300 CONTACT: JOSH JOHNSON

BENCHMARK

MONUMENT ID: USDA (1934) 19

U.S. DEPARTMENT OF AGRICULTURE BRASS DISC AT SOUTHWEST CORNER OF U.S. 95 AND KYLE CANYON ROAD

ELEVATION = 2817.61 FEET, 858.810 METERS
NAVD 88 DATUM

PER THE CITY OF LAS VEGAS BENCHMARK BOOK– 2008 ADJUSTMENT (UPDATED 05/24/2010)

BASIS OF BEARINGS

NORTH 00°01'50" WEST, BEING THE BEARING OF THE EAST LINE OF THE NORTHEAST QUARTER (NE1/4) OF SECTION 6, TOWNSHIP 19 SOUTH, RANGE 60 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF IN FILE 151, PAGE 14 OF SURVEYS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA.

FEMA FLOOD ZONE INFORMATION

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE 'X' (AREA OUTSIDE THE 0.2% CHANCE FLOODPLAIN), ON THE FLOOD INSURANCE RATE MAP (FIRM) PANELS: 32003C1735E AND 32003C1750E BOTH DATED SEPTEMBER 27, 2002

PROJECT PLAN APPROVAL CONTINGENT ON

SUNSTONE PHASE 1 – SKYE CANYON PARK DRIVE (LVVWD #136901, CLV L19-02149 107V8027)
SUNSTONE PHASE 1 – LOG CABIN WAY (LVVWD #136937, CLV L19-02444 107V8032)
SKYE CANYON PARK 2860 ZONE PIPELINE (LVVWD #C1568)

PLAN APPROVAL

M.O.U. ITEMS

TMP-76718, JULY 23, 2019

NONE

DEVIATIONS FROM STANDARDS

NONE

GEOTECHNICAL ENGINEER

PREPARED BY: SOUTHWEST GEOTECHNICAL
ADDRESS: 5279 ARVILLE STREET, SUITE 108
PHONE: 702-323-6000
PROJECT No. 182187
DATED: 04/25/2018

SWPPP NOTE

NOTE: ALL LAND SURFACE AREA DISTURBANCES OVER 1 ACRE REQUIRE A STORMWATER DISCHARGE PERMIT ISSUED BY THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP). A PHASED CONSTRUCTION UNIT IN A CONTIGUOUS SUBDIVISION IS CONSIDERED UNDER CONSTRUCTION UNTIL ALL STRIPPED SURFACE AREAS HAVE BEEN COVERED BY PAVING, BUILDING CONSTRUCTION OR PLANTING. A STORMWATER DISCHARGE PERMIT APPLICATION AND ASSOCIATED INFORMATION MAY BE DOWNLOADED FROM THE WEB SITE: HTTP://WWW.STATE.NV.US/BWPC/STORMO1.HTM PROJECTS THAT DISTURB MORE THAN ONE ACRE OF LAND MUST SUBMIT TO NDEP A "NOTICE OF INTENT" FOR INCLUSION UNDER STORMWATER PERMIT NO. NVR100000 ALONG WITH THE APPROPRIATE FILLING FEE.







SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

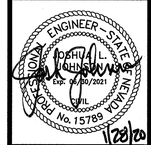
CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
O'HARE ROAD
COVER SHEET

DATE: 08/07/19
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

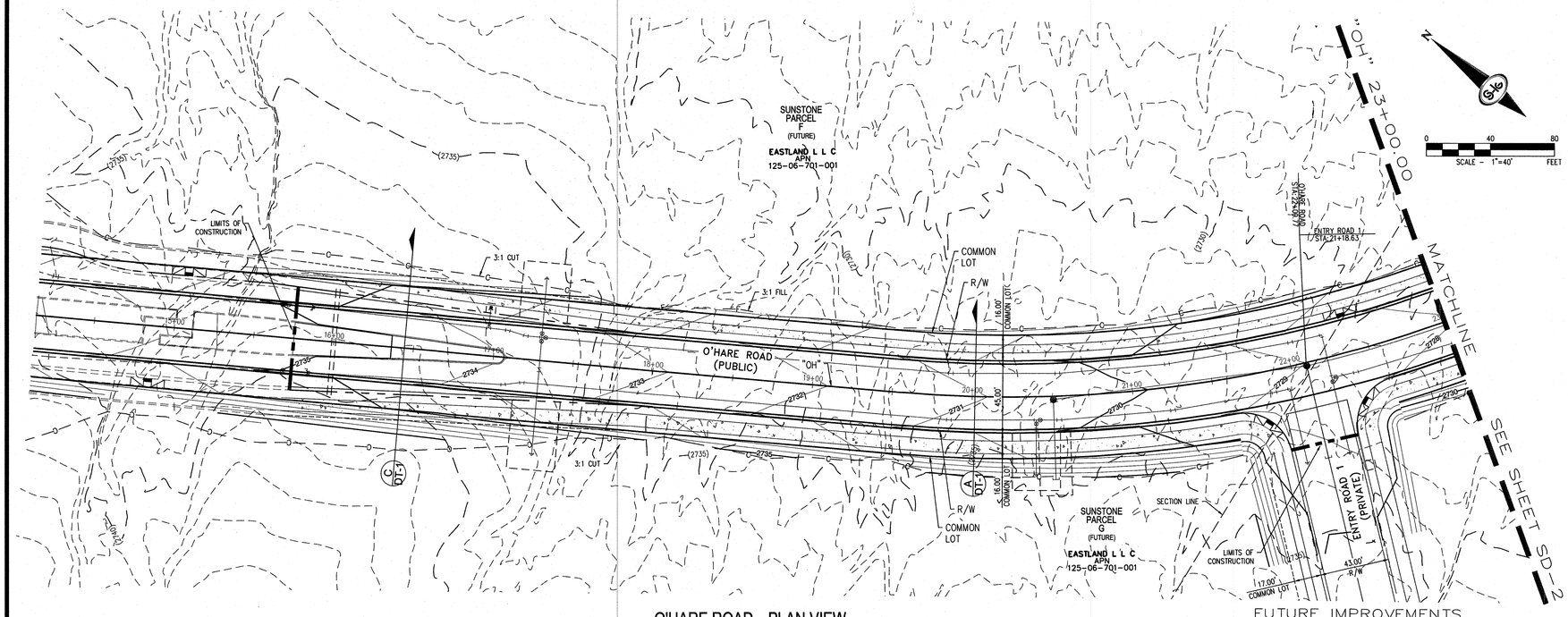
PROJECT NO.
EST1909-000



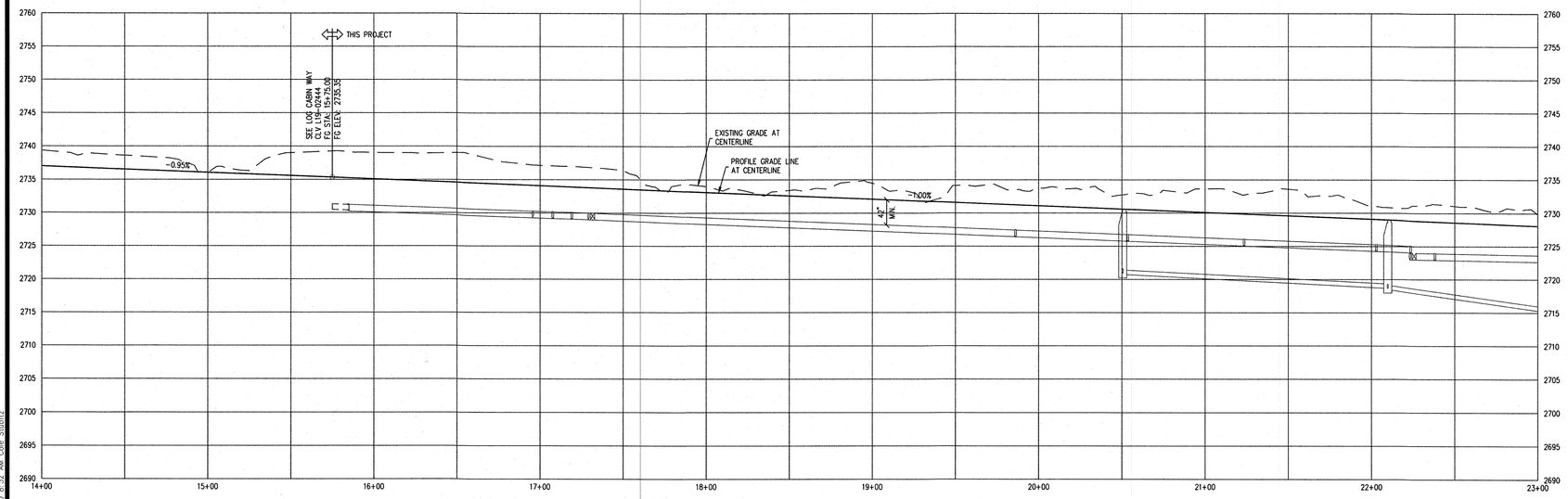
CS-1
SHEET 1 OF 50

L19-02414
107V8031

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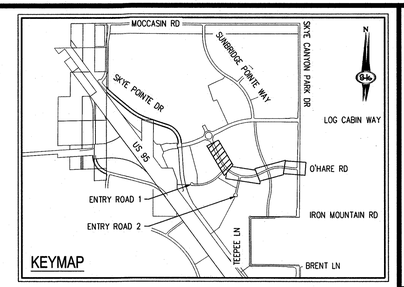
O'HARE ROAD - PLAN VIEW
(PUBLIC)



O'HARE ROAD - PROFILE VIEW
HORIZ: 1" = 40'
VERT: 1" = 10'

NOTES
1. ALL RCP SHALL BE CLASS III UNLESS OTHERWISE SHOWN.
2. ALL PIPE LENGTHS ARE MEASURED ALONG PIPE CENTERLINE TO CENTER OF MANHOLE OR INSIDE EDGE OF DI OR RCB/RCA.
3. ALL DROP INLETS SHALL INCLUDE STORM WATER MANAGEMENT STAMP AND DETAIL PER USDCCA STD. DWG. NO. 421.
4. SEE STRUCTURAL PLANS FOR ADDITIONAL STRUCTURAL DETAILS AND CONNECTIONS.
5. ALL PIPES IN PUBLIC ROW ARE PUBLICLY MAINTAINED.
6. ADD SPECIAL INSPECTION REQUIRED FOR PIPE SEGMENTS WITH SACRIFICIAL CONCRETE.
7. SEE UTILITY PLAN AND PROFILE SHEETS FOR UTILITY ADJUSTMENTS AND RELOCATIONS.
8. ALL INTERIM DRAINAGE FACILITIES TO BE PRIVATELY MAINTAINED.
9. PROPERTY OWNER IS RESPONSIBLE TO MAINTAIN THE BEST MANAGEMENT PRACTICES, SUCH AS BUT NOT LIMITED TO, THE REMOVAL OF ACCUMULATED SEDIMENT AND DEBRIS AND CARE OF VEGETATION.
10. WHERE 10 FEET PARALLEL SEPARATION IS NOT PRACTICABLE:

    CAST-IN-PLACE MONOLITHIC POUR WITH WATERSTOP BETWEEN SLAB AND WALLS. BASE, WALLS AND TOP TO BE CONSTRUCTED WITH WATERSTOPS, CENTER BULB, OR FLAT STRIP (VINYLEX, GREENSTREAK PLASTIC PRODUCTS OR APPROVED EQUAL).



EXISTING EASEMENTS
E1 RIGHT-OF-WAY GRANTED BY DECISION, DATED JANUARY 16, 2003 BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-75502 TO LAS VEGAS VALLEY WATER DISTRICT FOR WATER PIPELINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVERA PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON FEBRUARY 10, 2003 IN BOOK 20030210, AS INSTRUMENT N. 00538 OF OFFICIAL RECORDS.

E2 RIGHT-OF-WAY GRANTED BY DECISION, DATED JANUARY 16, 2003 BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-75502-01 TO LAS VEGAS VALLEY WATER DISTRICT FOR TEMPORARY WORK AREAS FOR A 42" UNDERGROUND WATER PIPELINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON FEBRUARY 10, 2003 IN BOOK 20030210, AS INSTRUMENT NO. 00541 OF OFFICIAL RECORDS

E3 EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL\X PURPOSES IN THE DOCUMENT RECORDED JUNE 8, 2015 IN BOOK 20150608 AS INSTRUMENT NO. 00948 OF OFFICIAL RECORDS.

E4 COVENANTS, CONDITIONS, EASEMENTS AND RESTRICTIONS\X IN A FINAL ORDER OF CONDEMNATION RECORDED OCTOBER 2, 2015, IN BOOK 20151002 AS INSTRUMENT NO. 03298 OF OFFICIAL RECORDS.

E5 RIGHT-OF-WAY GRANTED BY DECISION, DATED APRIL 04, 2003, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-75702 TO NEVADA POWER COMPANY FOR UNDERGROUND ELECTRICAL DISTRIBUTION LINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON APRIL 17, 2003 IN BOOK 20030417, AS INSTRUMENT NO. 02746 OF OFFICIAL RECORDS.

E6 A RIGHT-OF-WAY GRANTED BY DECISION, DATED AUGUST 21, 1970, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER NEV013376 ET (N-121) TO STATE OF NEVADA, DEPARTMENT OF HIGHWAYS FOR HIGHWAY (U.S. 95) INCLUDING ACCESS RIGHTS UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON DECEMBER 22, 1972 IN BOOK 288, AS INSTRUMENT NO. 247599 OF OFFICIAL RECORDS.

E7 AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED JUNE 8, 2015 IN BOOK 20150608 AS INSTRUMENT NO. 00947 OF OFFICIAL RECORDS

E8 NDOT EASENT PER NEV-043376, N-43063, CC-018234, CC-018138, CC-018191

RESERVATIONS, PROVISIONS AND EASEMENTS AS CONTAINED IN PATENT FROM THE UNITED STATES OF AMERICA, RECORDED AUGUST 03, 2005, IN BOOK 20050803 OF OFFICIAL RECORDS, AS INSTRUMENT NO. 01359.

SURVEY NOTE
OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED, DISTURBED, DESTROYED, OR OBSCURED DURING CONSTRUCTION.

CALL SOUTHWEST GAS AT 702-400-1789 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES

STORM DRAIN NOTES
1. CONSTRUCT TYPE "CM2" DROP INLET (CCAUSD STD. DWG. NO. 412.1 & 421)
2. CONSTRUCT 60" TYPE III MANHOLE (CCAUSD STD. DWG. NO. 406.1)
3. CONSTRUCT 60" TYPE II-SD MANHOLE (CCAUSD STD. DWG. NO. 405.2)
4. INSTALL 18" RCP (CCAUSD STD. DWG. NO. 503.2)
5. INSTALL 30" RCP (CCAUSD STD. DWG. NO. 503.2)
6. INSTALL 36" RCP (CCAUSD STD. DWG. NO. 503.2)
7. INSTALL 48" RCP (CCAUSD STD. DWG. NO. 503.2)
8. INSTALL RCP END SECTION (NDOT STD. PLAN R-2.3.1)
9. INSTALL BRICK AND MORTAR PLUG PER DETAIL ON SHEET DT-1
10. PIPE CONTINUATION PER CLV L19-02149

LEGEND
(#) STORM DRAIN LATERAL # (SEE SHEET SD-5)

FLOOD ZONE
THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X" (AREA OUTSIDE THE 0.2% CHANCE FLOODPLAIN), ON THE FLOOD INSURANCE RATE MAP (FIRM) PANELS: 32003C1735E AND 32003C1750E BOTH DATED SEPTEMBER 27, 2002

ELEVATION NOTE
ADD 2600 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 1801.00)

DISCLAIMER NOTE
1) EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION.
2) FOR ROADWAY WIDENING AND HALF STREET IMPROVEMENTS THE CONTRACTOR SHALL VERIFY CROSS SLOPES FROM EXISTING PAVEMENT SAWCUT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED LIP OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF PROPOSED CURB LINE. IF MINIMUM OR MAXIMUM CROSS SLOPES DO NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

APPROVED FOR CONSTRUCTION
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. 136914 FIRST APPROVED DATE: _____

FLOOD CERTIFICATION
I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DS-5135 ON FILE AT CITY OF LAS VEGAS AND CCPW HTE ##?-????? FOR THE SUBJECT PROJECT.

JOSH JOHNSON, P.E. 15789 DATE

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

FAST
Call before you UnderGround
1-702-432-5300
FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T)

Call before you Dig
AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call 811 OR 1-800-227-2600

SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
O'HARE ROAD
STORM DRAIN I - "OH" 15+75.00 TO "OH" 23+00.00

DATE: 08/07/19
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

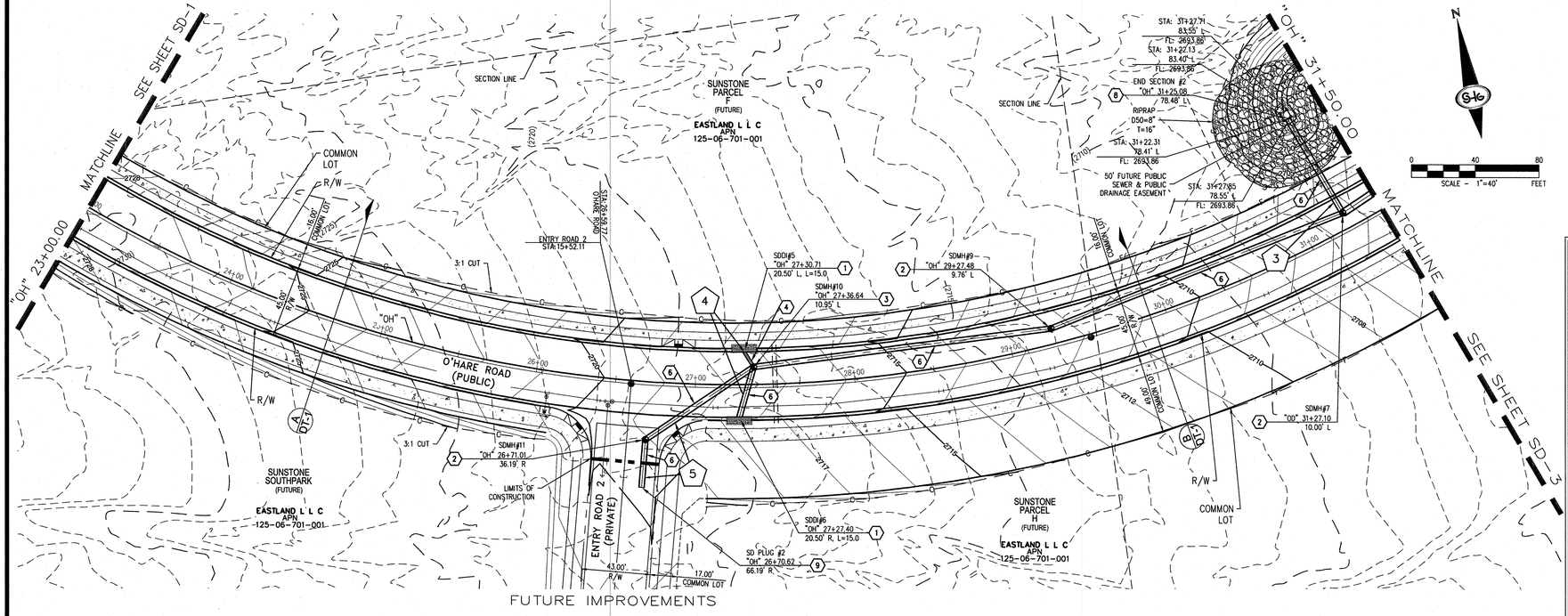
PROJECT NO.
EST1909-000

PROFESSIONAL ENGINEER - STATE OF NEVADA - JOSHUA L. JOHNSON - No. 15789 - CIVIL - EXP. 06/30/2021 - 11/26/20

SD-1
SHEET 10 OF 50

L19-02414
107V8031

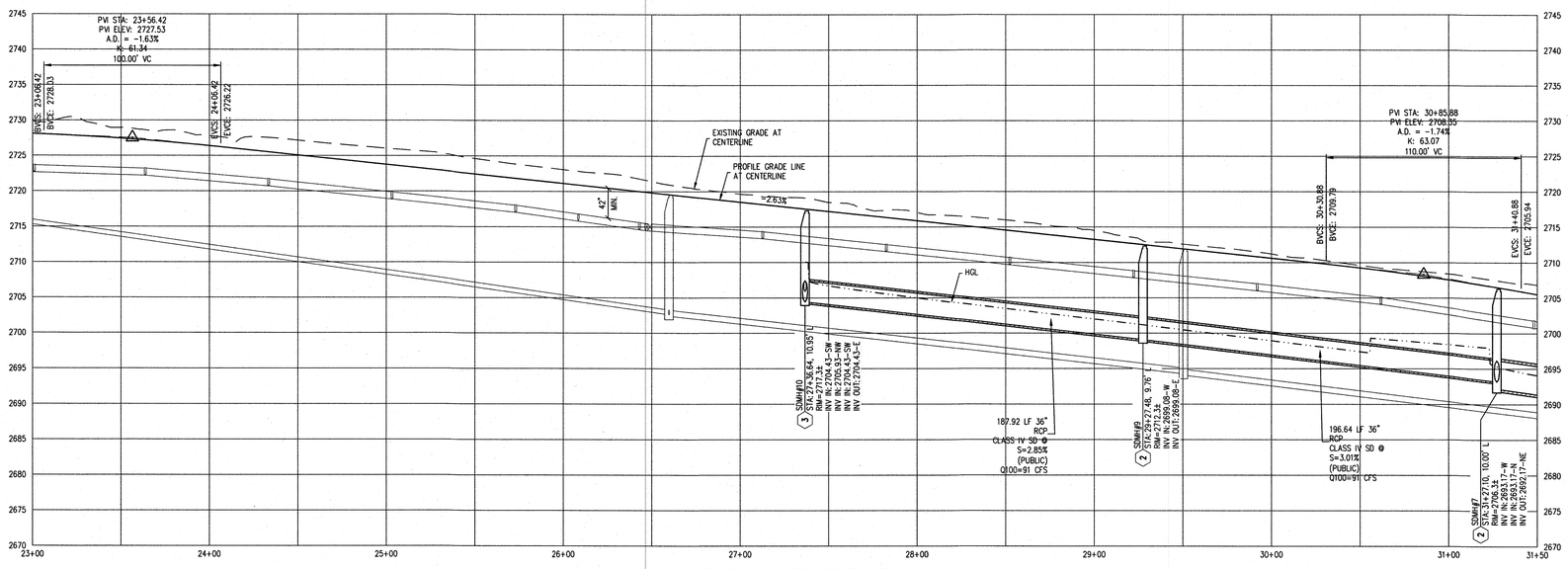
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FUTURE IMPROVEMENTS

O'HARE ROAD - PLAN VIEW

(PUBLIC)



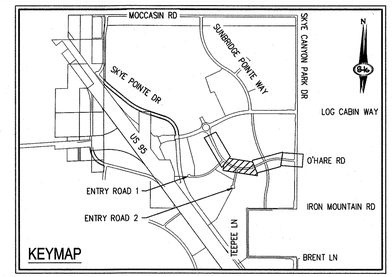
O'HARE ROAD - PROFILE VIEW

HORIZ: 1" = 40'
VERT: 1" = 10'

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KEYMAP

EXISTING EASEMENTS

E1 RIGHT-OF-WAY GRANTED BY DECISION, DATED JANUARY 16, 2003 BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-75502 TO LAS VEGAS VALLEY WATER DISTRICT FOR WATER PIPELINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVERA PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON FEBRUARY 10, 2003 IN BOOK 20030210, AS INSTRUMENT N. 00538 OF OFFICIAL RECORDS.

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SURVEY NOTE

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CALL SOUTHWEST GAS AT 702-400-1789 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES

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9. INSTALL BRICK AND MORTAR PLUG PER DETAIL ON SHEET DT-1
10. PIPE CONTINUATION PER CLV L19-02149

LEGEND

(#) STORM DRAIN LATERAL # (SEE SHEET SD-5)

FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X" (AREA OUTSIDE THE 0.2% CHANCE FLOODPLAIN), ON THE FLOOD INSURANCE RATE MAP (FIRM) PANELS: 32003C1735E AND 32003C1750E BOTH DATED SEPTEMBER 27, 2002

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APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES

PROJECT NO. 136914 FIRST APPROVED DATE: _____

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I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DS-5135 ON FILE AT CITY OF LAS VEGAS AND CCPW WITE #??-????? FOR THE SUBJECT PROJECT.

JOSH JOHNSON, P.E. 15789 DATE

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CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

FAST
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UnderGround
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SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
O'HARE ROAD
STORM DRAIN II - "OH" 23+00.00 TO "OH" 31+50.00

DATE: 08/07/19
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

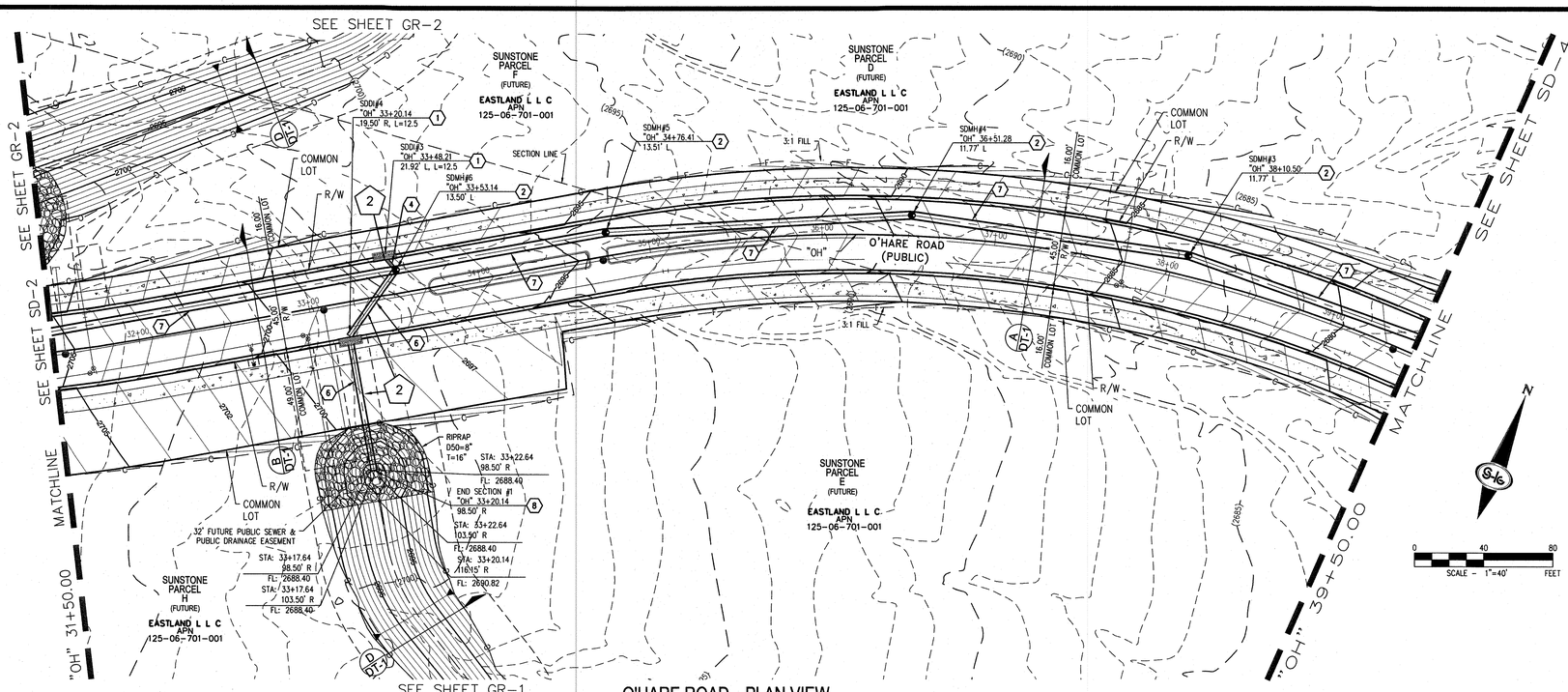
PROJECT NO.
EST1909-000

NATIONAL ENGINEER JOSHUA LEE JOHNSON Cert. No. 15789 STATE OF NEVADA Exp. 07/31/2021

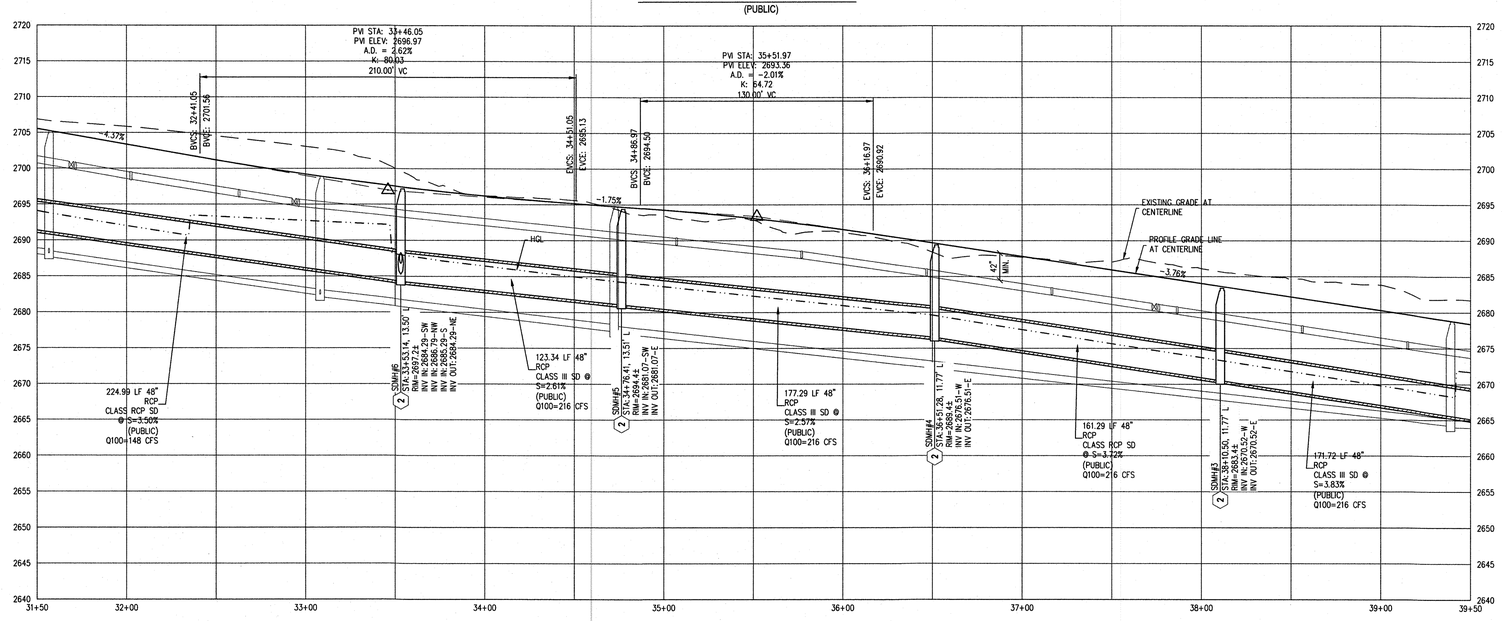
SD-2
SHEET 11 OF 50

L19-02414
107V8031

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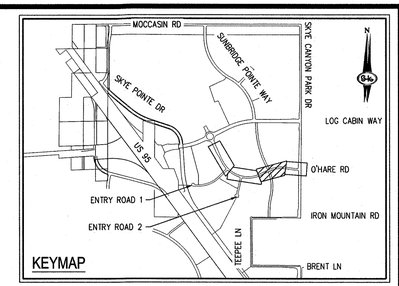
O'HARE ROAD - PLAN VIEW
(PUBLIC)



O'HARE ROAD - PROFILE VIEW
HORIZ: 1" = 40'
VERT: 1" = 10'

NOTES
1. ALL RCP SHALL BE CLASS III UNLESS OTHERWISE SHOWN.
2. ALL PIPE LENGTHS ARE MEASURED ALONG PIPE CENTERLINE TO CENTER OF MANHOLE OR INSIDE EDGE OF DI OR RCB/RCA.
3. ALL DROP INLETS SHALL INCLUDE STORM WATER MANAGEMENT STAMP AND DETAIL PER USDCCA STD. DWG. NO. 421.
4. SEE STRUCTURAL PLANS FOR ADDITIONAL STRUCTURAL DETAILS AND CONNECTIONS.
5. ALL PIPES IN PUBLIC ROW ARE PUBLICLY MAINTAINED.
6. ADD SPECIAL INSPECTION REQUIRED FOR PIPE SEGMENTS WITH SACRIFICIAL CONCRETE.
7. SEE UTILITY PLAN AND PROFILE SHEETS FOR UTILITY ADJUSTMENTS AND RELOCATIONS.
8. ALL INTERIM DRAINAGE FACILITIES TO BE PRIVATELY MAINTAINED.
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LEGEND
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APPROVED FOR CONSTRUCTION
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. 136914 FIRST APPROVED DATE: _____

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PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
O'HARE ROAD
STORM DRAIN III - "OH" 31+50.00 TO "OH" 39+50.00

DATE: 08/07/19
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

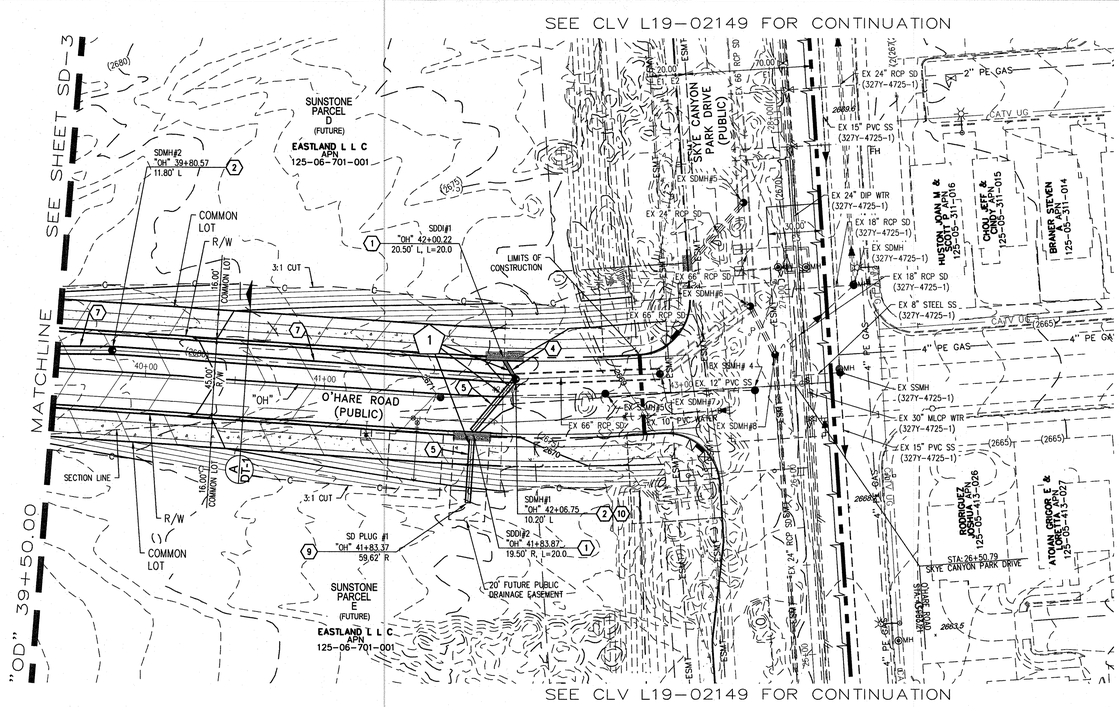
PROJECT NO.
EST1909-000

PROFESSIONAL ENGINEER - STATE OF NEVADA - JOSHUA JOHNSON - No. 15789 - Exp. 06/30/2021 - CIVIL
7/20

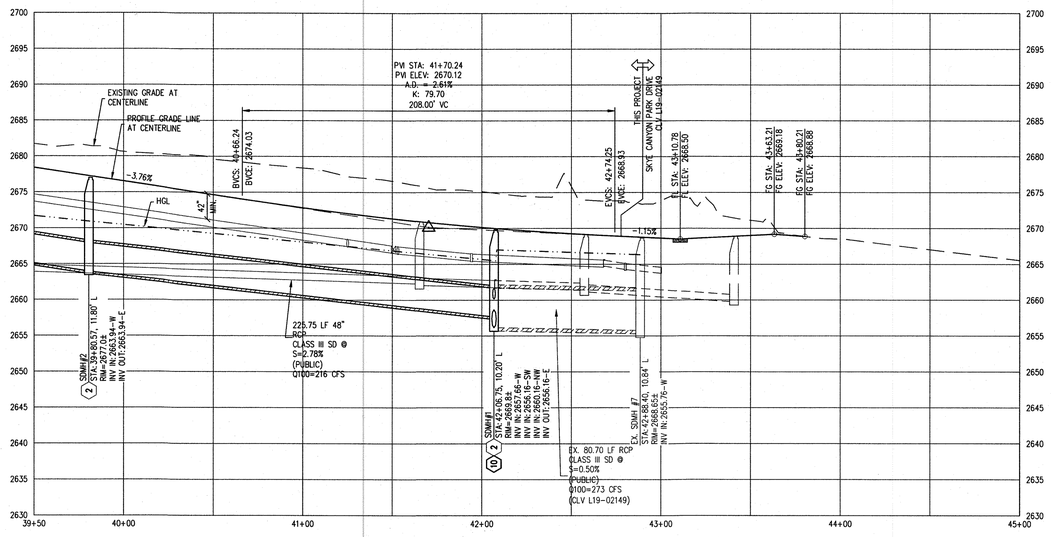
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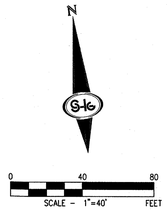
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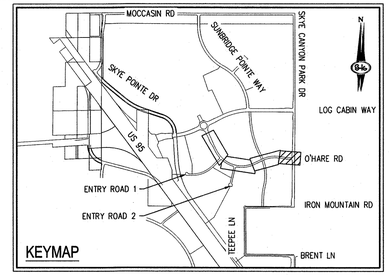


O'HARE ROAD - PLAN VIEW
(PUBLIC)



O'HARE ROAD - PROFILE VIEW
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SOUTHWEST GAS APPROVAL
SOUTHWEST GAS CORPORATION DATE

APPROVED FOR CONSTRUCTION
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. 136914 FIRST APPROVED DATE: _____

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2. ALL PIPE LENGTHS ARE MEASURED ALONG PIPE CENTERLINE TO CENTER OF MANHOLE OR INSIDE EDGE OF DI OR RCB/RCA.
3. ALL DROP INLETS SHALL INCLUDE STORM WATER MANAGEMENT STAMP AND DETAIL PER USDCCA STD. DWG. NO. 421.
4. SEE STRUCTURAL PLANS FOR ADDITIONAL STRUCTURAL DETAILS AND CONNECTIONS.
5. ALL PIPES IN PUBLIC ROW ARE PUBLICLY MAINTAINED.
6. ADD SPECIAL INSPECTION REQUIRED FOR PIPE SEGMENTS WITH SACRIFICIAL CONCRETE.
7. SEE UTILITY PLAN AND PROFILE SHEETS FOR UTILITY ADJUSTMENTS AND RELOCATIONS.
8. ALL INTERIM DRAINAGE FACILITIES TO BE PRIVATELY MAINTAINED.
9. PROPERTY OWNER IS RESPONSIBLE TO MAINTAIN THE BEST MANAGEMENT PRACTICES, SUCH AS BUT NOT LIMITED TO, THE REMOVAL OF ACCUMULATED SEDIMENT AND DEBRIS AND CARE OF VEGETATION.
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    CAST-IN-PLACE MONOLITHIC POUR WITH WATERSTOP BETWEEN SLAB AND WALLS. BASE, WALLS AND TOP TO BE CONSTRUCTED WITH WATERSTOPS, CENTER BULB, OR FLAT STRIP (VINYLEX, GREENSTREAK PLASTIC PRODUCTS OR APPROVED EQUAL).

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

FAST
Call before you UnderGround
1-702-432-5300
FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T)

Call before you Dig
AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call 811 OR 1-800-227-2600

SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP'D DATE	APP

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
O'HARE ROAD
STORM DRAIN IV - "OH" 39+50.00 TO "OH" 43+00.00

DATE: 08/07/19
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

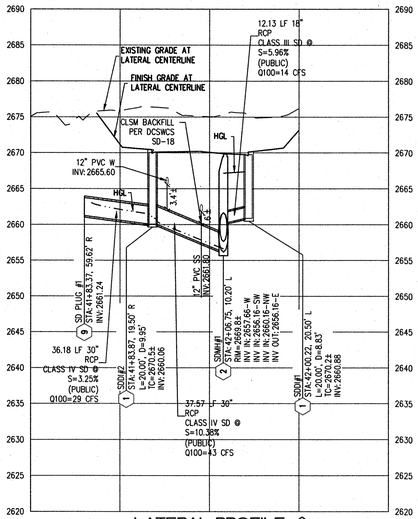
PROJECT NO.
EST1909-000

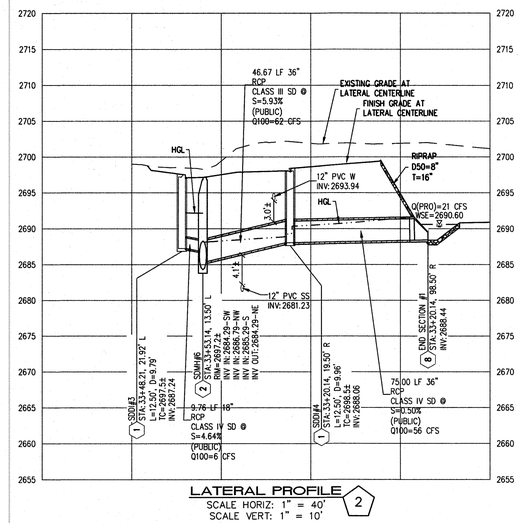
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1/28/20

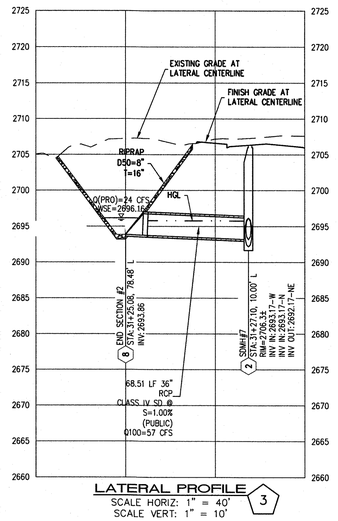
SD-4
SHEET 13 OF 50

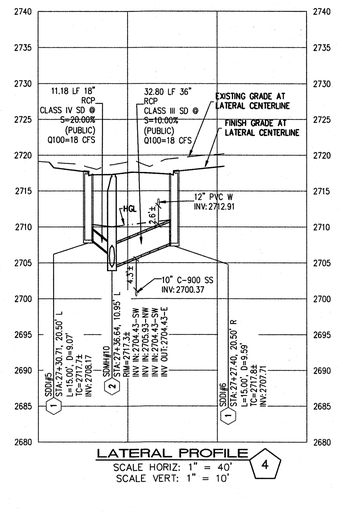
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107V8031

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SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300
FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
O'HARE ROAD
STORM DRAIN LATERAL I

DATE: 08/07/19
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

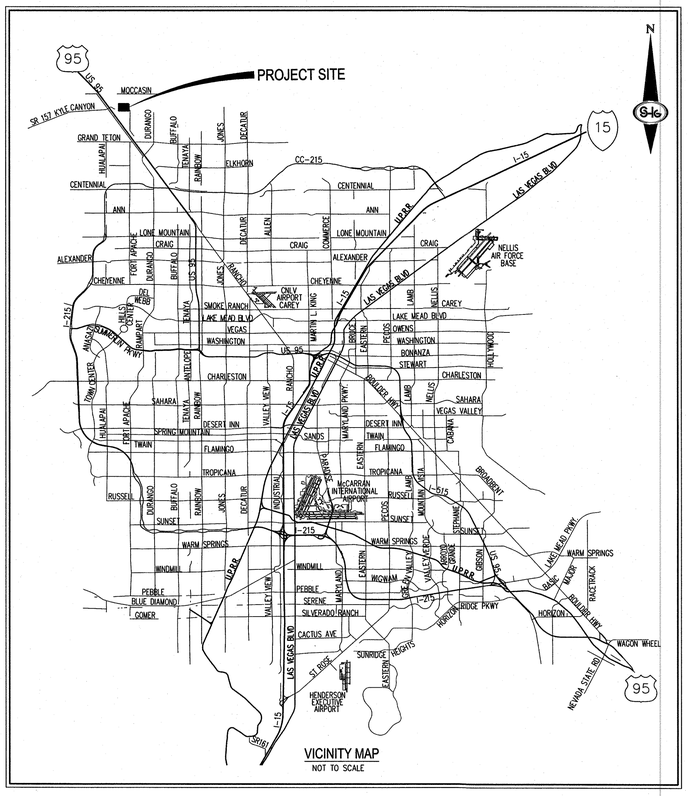
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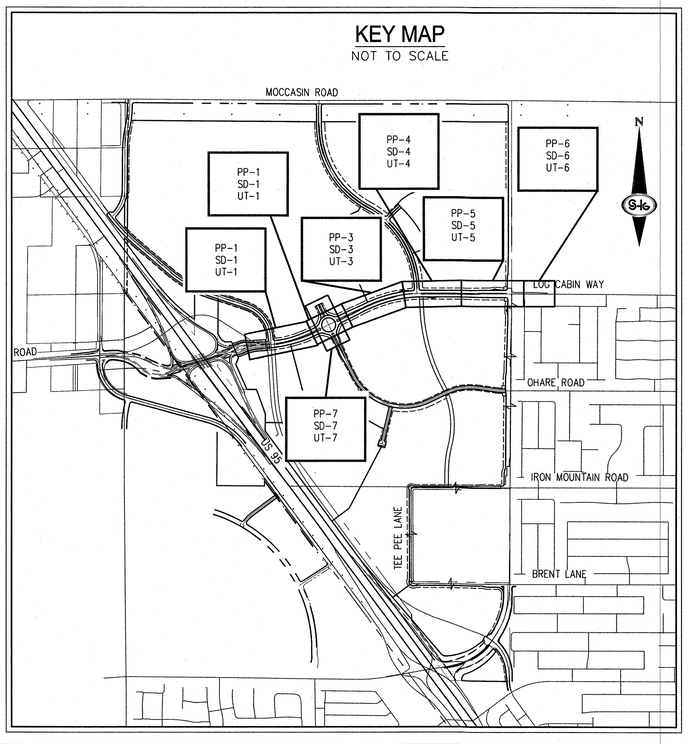
PROFESSIONAL ENGINEER - STATE OF NEVADA
JOSHUA L. JOHNSON
No. 15789
Exp. 12/31/2021
CIVIL

SD-5
SHEET 14 OF 50

L19-02414
107V8031

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IMPROVEMENT PLANS FOR SUNSTONE PHASE 1 LOG CABIN WAY

CITY OF LAS VEGAS, NEVADA

APN: 125-06-501-001, 125-06-701-001

SHEET INDEX

NO.	SHEET	TITLE
1	CS-1	COVER SHEET
2	CS-2	GENERAL NOTES
3	CS-3	ABBREVIATIONS, LEGEND AND QUANTITIES
4	PP-1	PLAN AND PROFILE 1 – "LCW" 32+00.00 TO "LCW" 41+00.00
5	PP-2	PLAN AND PROFILE 2 – "LCW" 41+00.00 TO "LCW" 46+50.00
6	PP-3	PLAN AND PROFILE 3 – "LCW" 46+50.00 TO "LCW" 55+00.00
7	PP-4	PLAN AND PROFILE 4 – "LCW" 55+00.00 TO "LCW" 63+00.00
8	PP-5	PLAN AND PROFILE 5 – "LCW" 63+00.00 TO "LCW" 71+50.00
9	PP-6	PLAN AND PROFILE 6 – "LCW" 71+00.00 TO "LCW" 76+00.00
10	PP-7	PLAN AND PROFILE 7 – "OR" 7+00.00 TO "OR" 15+00.00
11	RA-1	ROUNDABOUT GRADING PLAN
12	RA-2	ROUNDABOUT PROFILE
13	RA-3	ROUNDABOUT SOUTH CURB PROFILES
14	RA-4	ROUNDABOUT NORTH CURB PROFILES
15	SD-1	STORM DRAIN 1 – "LCW" 32+00.00 TO "LCW" 41+00.00
16	SD-2	STORM DRAIN 2 – "LCW" 41+00.00 TO "LCW" 46+50.00
17	SD-3	STORM DRAIN 3 – "LCW" 46+50.00 TO "LCW" 55+00.00
18	SD-4	STORM DRAIN 4 – "LCW" 55+00.00 TO "LCW" 63+00.00
19	SD-5	STORM DRAIN 5 – "LCW" 63+00.00 TO "LCW" 71+50.00
20	SD-6	STORM DRAIN 6 – "LCW" 71+00.00 TO "LCW" 76+00.00
21	SD-7	STORM DRAIN 7 – "OR" 7+00.00 TO "OR" 15+00.00
22	SD-8	STORM DRAIN LATERAL DETAILS 1
23	SD-9	STORM DRAIN LATERAL DETAILS 2
24	G-1	GRADING PLAN 1
25	G-2	GRADING PLAN 2
26	UT-1	UTILITY PLAN 1 – "LCW" 32+00.00 TO "LCW" 41+00.00
27	UT-2	UTILITY PLAN 2 – "LCW" 41+00.00 TO "LCW" 46+50.00
28	UT-3	UTILITY PLAN 3 – "LCW" 46+50.00 TO "LCW" 55+00.00
29	UT-4	UTILITY PLAN 4 – "LCW" 55+00.00 TO "LCW" 63+00.00
30	UT-5	UTILITY PLAN 5 – "LCW" 63+00.00 TO "LCW" 71+50.00
31	UT-6	UTILITY PLAN 6 – "LCW" 71+00.00 TO "LCW" 76+00.00
32	UT-7	UTILITY PLAN 7 – "OH" 7+00.00 TO "OR" 15+00.00
33	UT-8	UTILITY PLAN 8
34	UT-9	WATER LATERAL 1
35	UT-10	SEWER LATERAL 1
36	UT-11	WATER EASEMENT 1
37	DT-1	DETAIL SHEET 1
38	ST-01	SIGNAGE AND STRIPING LCW 32+00.00 TO LCW 41+00.00
39	ST-02	SIGNAGE AND STRIPING LCW 41+00.00 TO LCW 46+50.00
40	ST-03	SIGNAGE AND STRIPING LCW 46+50.00 TO LCW 63+00.00
41	ST-04	SIGNAGE AND STRIPING LCW 63+00.00 TO LCW 75+00.00
42	LL-01	LIGHTING & ITS LCW 32+00.00 TO LCW 41+00.00
43	LL-02	LIGHTING & ITS LCW 41+00.00 TO LCW 47+50.00
44	LL-03	LIGHTING & ITS LCW 47+50.00 TO LCW 63+00.00
45	LL-04	LIGHTING & ITS LCW 63+00.00 TO LCW 75+00.00
46	TS-01	TRAFFIC SIGNAL INFRASTRUCTURE
47	TS-02	PEDESTRIAN FLASHER PLAN 1
48	TS-03	PEDESTRIAN FLASHER PLAN 2
49	TS-04	PEDESTRIAN FLASHER PLAN 3
50	TS-05	PEDESTRIAN FLASHER PLAN 4
51	S-1	MODIFIED TYPE CM2 DROP INLET DETAILS
52	S-2	SPECIAL SEWER MANHOLE BASE DETAILS
53	S-3	PIPE PENETRATION COLLAR DETAILS
54	HC-1	HORIZONTAL CONTROL PLAN
55	HC-2	HORIZONTAL CONTROL PLAN
56	HC-3	HORIZONTAL CONTROL PLAN
57	HC-4	HORIZONTAL CONTROL PLAN
58	HC-5	HORIZONTAL CONTROL PLAN
59	HC-6	HORIZONTAL CONTROL PLAN
60	HC-7	HORIZONTAL CONTROL PLAN
61	HC-8	HORIZONTAL CONTROL PLAN
62	HC-9	HORIZONTAL CONTROL PLAN
63	HC-10	HORIZONTAL CONTROL PLAN
64	HC-11	HORIZONTAL CONTROL PLAN
65	HC-12	HORIZONTAL CONTROL PLAN
66	HC-13	HORIZONTAL CONTROL PLAN
67	HC-14	HORIZONTAL CONTROL PLAN
68	HC-15	HORIZONTAL CONTROL PLAN
69	HC-16	HORIZONTAL CONTROL PLAN
70	HC-17	HORIZONTAL CONTROL PLAN
71	HC-18	HORIZONTAL CONTROL PLAN
72	HC-19	HORIZONTAL CONTROL PLAN
73	HC-20	HORIZONTAL CONTROL PLAN
74	HC-21	HORIZONTAL CONTROL PLAN
75	HC-22	HORIZONTAL CONTROL PLAN
76	HC-23	HORIZONTAL CONTROL PLAN

APPROVALS

ACTING CITY ENGINEER–ROSA CORTEZ PE, #17505 DATE

APPROVAL OF THESE PLANS BY THE CITY ENGINEER IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED OF RIGHT–OF–WAY, AND/OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND/OR SPECIFICATIONS EXCEPT THOSE SPECIALLY LISTED UNDER DEVIATIONS FORM STANDARDS. THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN DEVIATIONS FROM STANDARDS IN FAVOR OF THE UNIFORM STANDARD DRAWINGS AND SPECIFICATIONS, CLARK COUNTY AREA, NEVADA.

LAS VEGAS FIRE AND RESCUE DATE

CITY OF LAS VEGAS – PLANNING DEPARTMENT DATE

THIS PLAN MEETS THE APPLICABLE STANDARDS OF THE PLANNING DEPARTMENT.

CENTRAL TELEPHONE CO. DBA CENTURYLINK DATE

THE AFFIXED CENTURYLINK APPROVAL DOES NOT ASSUME OR GUARANTEE LIABILITY FOR KNOWN OR UNKNOWN CONFLICTS WITH EXISTING OR PROPOSED IMPROVEMENTS. RESOLUTION OF ANY CONFLICT WILL BE ACCOMPLISHED PURSUANT TO LOCAL ORDINANCES, NEVADA REVISED STATUES AND / OR PUBLIC UTILITY COMMISSION RULES AND REGULATIONS.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. 136937 FIRST APPROVED DATE:
LVVWD APPROVED FIRE FLOW 1,500 GPM AT 20 PSI RESIDUAL
MAXIMUM AVAILABLE FIRE SPRINKLER FLOW 20 GPM

SHEETS: 1, 2, 3, 15, 16, 17, 18, 19, 20, 21, 26, 27, 28, 29, 30, 31, 32, 33

NV ENERGY DATE

NV ENERGY ACKNOWLEDGES THAT WE HAVE RECEIVED YOUR PLANS AND WILL PROVIDE SERVICE TO ALL ELECTRICAL NEEDS ASSOCIATED WITH THIS PROJECT. NV ENERGY RESERVES THE RIGHT TO ADDRESS ANY EXISTING OR FUTURE CONFLICTS ONCE THE FINAL DESIGN IS COMPLETED. THE NEW SERVICE AND THE RESOLUTION OF ANY CONFLICTS WILL BE ACCOMPLISHED PURSUANT TO THE NEVADA PUBLIC UTILITY COMMISSION'S RULES AND REGULATIONS.

SOUTHWEST GAS CORPORATION DATE

COX COMMUNICATIONS LAS VEGAS, INC. DATE

OWNER/DEVELOPER

EASTLAND COMPANY, LLC
9275 RUSSELL RD SUITE 400
LAS VEGAS, NV 89148
PH: 702–821–4808

ENGINEER

SLATER HANIFAN GROUP, INC.
a WESTWOOD TEAM
5740 S. ARVILLE STREET, SUITE 216
LAS VEGAS, NV 89118
PH: (702) 284–5300
CONTACT: JOSH JOHNSON

BENCHMARK

MONUMENT ID: USDA (1934) 19

U.S. DEPARTMENT OF AGRICULTURE BRASS DISC AT SOUTHWEST CORNER OF U.S. 95 AND KYLE CANYON ROAD

ELEVATION = 2817.61 FEET, 858.810 METERS
NAVD 88 DATUM

PER THE CITY OF LAS VEGAS BENCHMARK BOOK–
2008 ADJUSTMENT (UPDATED 05/24/2010)

BASIS OF BEARINGS

NORTH 00°01'50" WEST, BEING THE BEARING OF THE EAST LINE OF THE NORTHEAST QUARTER (NE1/4) OF SECTION 6, TOWNSHIP 19 SOUTH, RANGE 60 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF IN FILE 151, PAGE 14 OF SURVEYS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA.

FEMA FLOOD ZONE INFORMATION

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE 'X' (AREA OUTSIDE THE 0.2% CHANCE FLOODPLAIN), ON THE FLOOD INSURANCE RATE MAP (FIRM) PANELS: 32003C1735E AND 32003C1750E BOTH DATED SEPTEMBER 27, 2002

PROJECT PLAN APPROVAL CONTINGENT ON

PROJECT #136986 SUNSTONE PHASE 1 – SKY POINTE DRIVE
PROJECT #136914 SUNSTONE PHASE 1 – O'HARE ROAD
CONTRACT C–1568 SKYE CANYON PARK 2860 ZONE PIPELINE

PLAN APPROVAL

M.O.U. ITEMS

TMP–76718, JULY 23, 2019

NONE

DEVIATIONS FROM STANDARDS

NONE

GEOTECHNICAL ENGINEER

PREPARED BY: SOUTHWEST GEOTECHNICAL
ADDRESS: 5275 ARVILLE ST, SUITE 108
PHONE: 702–323–6000
PROJECT No. 182187
DATED: 04/25/2018

SWPPP NOTE

NOTE: ALL LAND SURFACE AREA DISTURBANCES OVER 1 ACRE REQUIRE A STORMWATER DISCHARGE PERMIT ISSUED BY THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP). A PHASED CONSTRUCTION UNIT IN A CONTIGUOUS SUBDIVISION IS CONSIDERED UNDER CONSTRUCTION UNTIL ALL STRIPPED SURFACE AREAS HAVE BEEN COVERED BY PAVING, BUILDING CONSTRUCTION OR PLANTING. A STORMWATER DISCHARGE PERMIT APPLICATION AND ASSOCIATED INFORMATION MAY BE DOWNLOADED FROM THE WEB SITE: HTTP://WWW.STATE.NV.US/BMPC/STORM01.HTM PROJECTS THAT DISTURB MORE THAN ONE ACRE OF LAND MUST SUBMIT TO NDEP A "NOTICE OF INTENT" FOR INCLUSION UNDER STORMWATER PERMIT NO. NVR100000 ALONG WITH THE APPROPRIATE FILLING FEE.

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
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FAST
Call before you UnderGround
1-702-432-5300
FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T)

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SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
LOG CABIN WAY
COVER SHEET

DATE: 12/16/2019
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

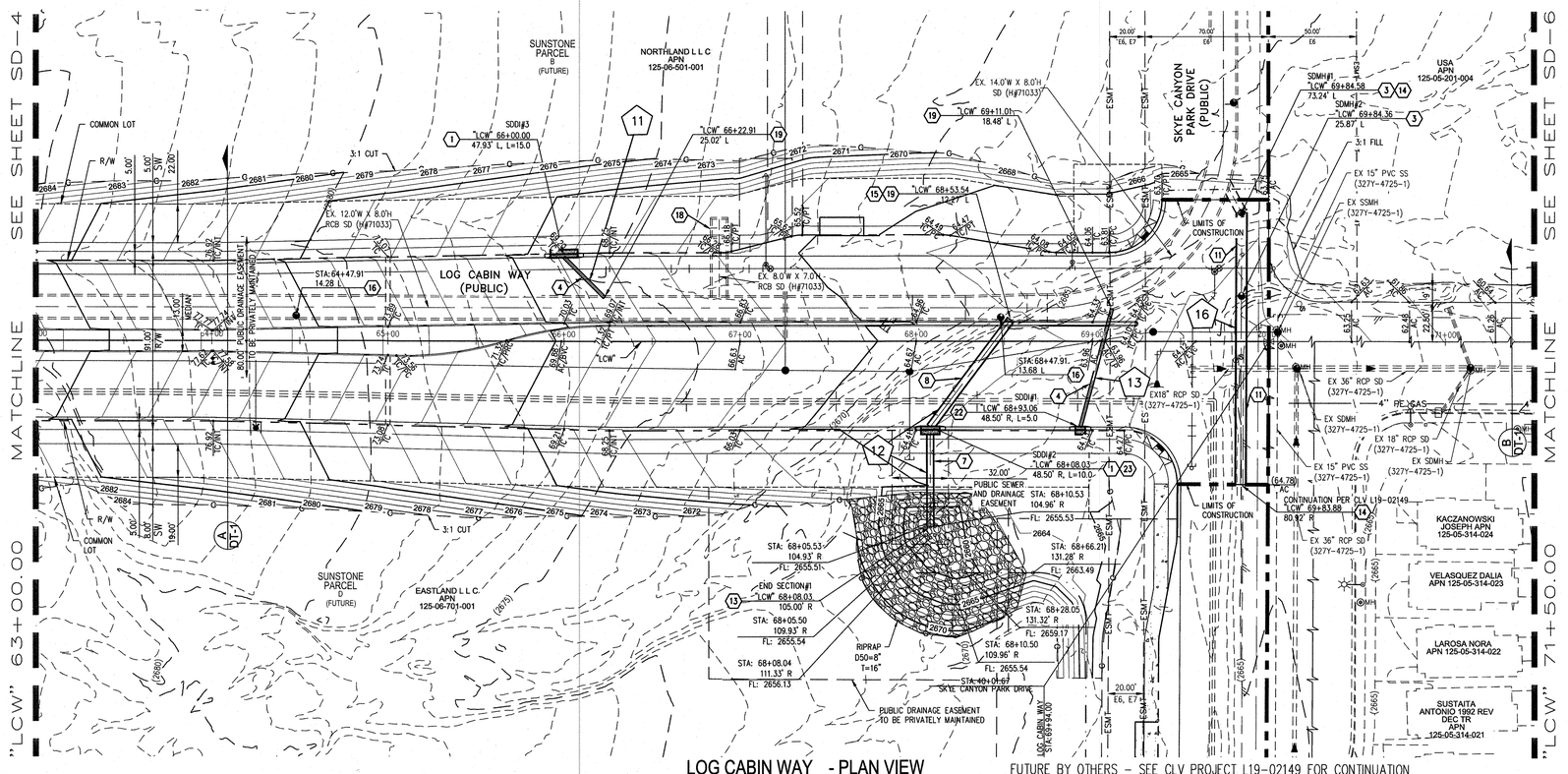
PROJECT NO.
EST1906-000

PROFESSIONAL ENGINEER – STATE OF NEVADA
JOSHUA L. JOHNSON
Exp. 12/31/2021
CIVIL
No. 15789
1/23/20

CS-1
SHEET 1 OF 76

L19–02444
107V8032

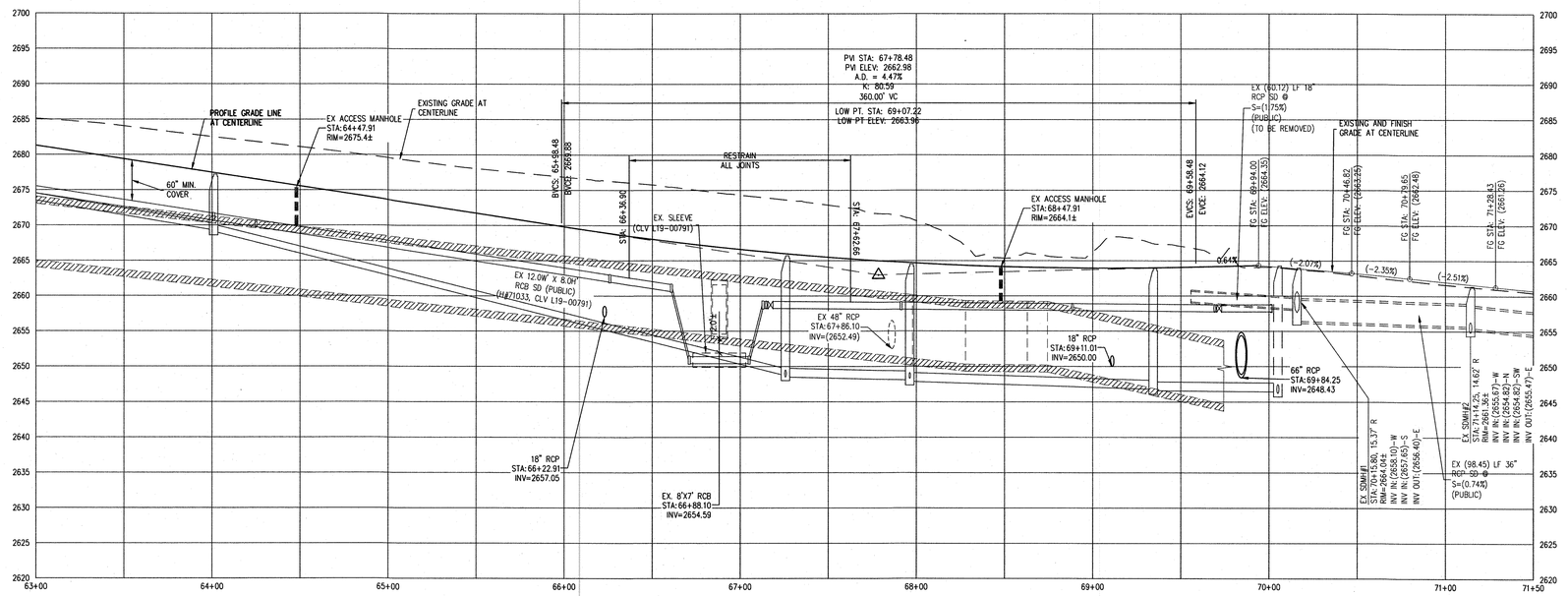
\est1906-000 sunstone log cabin\dwg\master\est1906-000 cvr.dwg 1/23/2020 10:46 AM Cole Stahlke



LOG CABIN WAY - PLAN VIEW

PUBLIC

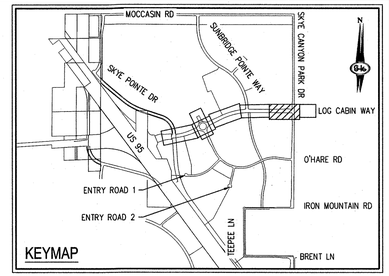
FUTURE BY OTHERS - SEE CLV PROJECT L19-02149 FOR CONTINUATION



LOG CABIN WAY - PROFILE VIEW

HORIZ: 1" = 40'
VERT: 1" = 10'





EXISTING EASEMENTS

E1 COVENANTS, CONDITIONS, EASEMENTS AND RESTRICTIONS\X IN A FINAL ORDER OF CONDEMNATION RECORDED OCTOBER 2, 2015, IN BOOK 20151002 AS INSTRUMENT NO. 03298 OF OFFICIAL RECORDS.

E2 RIGHT-OF-WAY GRANTED BY DECISION, DATED APRIL 04, 2003, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-75702 TO NEVADA POWER COMPANY FOR UNDERGROUND ELECTRICAL DISTRIBUTION LINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON APRIL 17, 2003 IN BOOK 20030417, AS INSTRUMENT NO. 02746 OF OFFICIAL RECORDS.

E3 A RIGHT-OF-WAY GRANTED BY DECISION, DATED AUGUST 21, 1970, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER NEV013376 ET (N-121) TO STATE OF NEVADA, DEPARTMENT OF HIGHWAYS FOR HIGHWAY (U.S. 95) INCLUDING ACCESS RIGHTS UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON DECEMBER 22, 1972 IN BOOK 288, AS INSTRUMENT NO. 247599 OF OFFICIAL RECORDS.

E4 AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED JUNE 8, 2015 IN BOOK 20150608 AS INSTRUMENT NO. 00947 OF OFFICIAL RECORDS

E6 NDOT EASENT PER NEV-043376, N-43063, CC-018234, CC-018138, CC-018191

RESERVATIONS, PROVISIONS AND EASEMENTS AS CONTAINED IN PATENT FROM THE UNITED STATES OF AMERICA, RECORDED AUGUST 03, 2005, IN BOOK 20050803 OF OFFICIAL RECORDS, AS INSTRUMENT NO. 01359.

E7 RIGHT-OF-WAY GRANTED BY DECISION, DATED JUNE 9, 2004, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER B-75757A TO CITY OF LAS VEGAS FOR ROADWAY, SANITARY SEER AND DRAINAGE PURPOSES UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF THE LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JUNE 18, 2004 IN BOOK 20040618, AS INSTUMENT NO. 01781 OF OFFICIAL RECORDS.

STORM DRAIN NOTES

1. CONSTRUCT TYPE "CM2" DROP INLET (USDCCA STD. DWG. NO. 412.1 & 421)
2. CONSTRUCT 60" TYPE III MANHOLE (USDCCA STD. DWG. NO. 406.1)
3. CONSTRUCT NDOT TYPE 4 MANHOLE (NDOT STD. PLAN R-4.3.2)
4. INSTALL 18" RCP (USDCCA STD. DWG. NO. 503.2)
5. INSTALL 24" RCP (USDCCA STD. DWG. NO. 503.2)
6. INSTALL 30" RCP (USDCCA STD. DWG. NO. 503.2)
7. INSTALL 42" RCP (USDCCA STD. DWG. NO. 503.2)
8. INSTALL 48" RCP (USDCCA STD. DWG. NO. 503.2)
9. INSTALL 54" RCP (USDCCA STD. DWG. NO. 503.2)
10. INSTALL 60" RCP (USDCCA STD. DWG. NO. 503.2)
11. INSTALL 66" RCP (USDCCA STD. DWG. NO. 503.2)
12. INSTALL 72" RCP (USDCCA STD. DWG. NO. 503.2)
13. INSTALL RCP END SECTION (NDOT STD. PLAN R-2.3.1)
14. REMOVE PLUG AND CONNECT TO EXISTING STORM DRAIN
15. REMOVE EXISTING STORM DRAIN LATERAL

    ADJUST STORM DRAIN MANHOLE TO FINISH GRADE (USDCCA STD. DWG. NO. 403.1 OR 404.1)
16. INSTALL 48" C900 STORM DRAIN ADJUST EXISTING STORM DRAIN ACCESS
17. VAULT TO FINISH GRADE (PER STRUCTURE DETAIL)
18. CONNECT TO EXISTING RCB PER DETAIL E ON SHEET DT-1
19. INSTALL BRICK AND MORTAR PLUG PER DETAIL ON SHEET DT-1
20. CONSTRUCT TYPE 2B DROP INLET (NDOT STD. PLAN R-4.2.2)
21. CONSTRUCT MODIFIED TYPE CM2 DROP INLET PER DETAIL 3 ON SHEET S-1
22. REFERENCE PIPE PENETRATION DETAIL 1 ON SHEET S-1
23. REFERENCE PIPE PENETRATION DETAIL 1 ON SHEET S-1

LEGEND

(#) STORM DRAIN LATERAL # (SEE SHEETS SD-8 & SD-9)

NOTES

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2. ALL PIPE LENGTHS ARE MEASURED ALONG PIPE CENTERLINE TO CENTER OF MANHOLE OR INSIDE EDGE OF DI OR RCB/RCA.
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6. ADD SPECIAL INSPECTION REQUIRED FOR PIPE SEGMENTS WITH SACRIFICIAL CONCRETE.
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10. WHERE 10 FEET PARALLEL SEPARATION IS NOT PRACTICABLE:

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DISCLAIMER NOTE

1) EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION.
2) FOR ROADWAY WIDENING AND HALF STREET IMPROVEMENTS THE CONTRACTOR SHALL VERIFY CROSS SLOPES FROM EXISTING PAVEMENT SAWCUT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED LIP OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF PROPOSED CURB LINE. IF MINIMUM OR MAXIMUM CROSS SLOPES DO NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DS-5135 ON FILE AT CITY OF LAS VEGAS AND CCPW HTE #??-?????? FOR THE SUBJECT PROJECT.

JOSH JOHNSON, P.E. 15789 DATE

FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X" (OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) ON THE FLOOD INSURANCE RATE MAP (FIRM) PANELS:32003C1735E AND 32003C1750E BOTH DATED SEPTEMBER 27, 2002

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES

PROJECT NO. 136937 FIRST APPROVED DATE:

SOUTHWEST GAS APPROVAL

SOUTHWEST GAS CORPORATION DATE

NOTE

NO WORK WITHIN NDOT RIGHT OF WAY UNTIL NDOT PERMIT IS OBTAINED

SURVEY NOTE

OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED, DISTURBED, DESTROYED, OR OBSCURED DURING CONSTRUCTION.

ELEVATION NOTE

ADD 2600 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 1801.00)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

FAST
Call before you UnderGround
1-702-432-5300
FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T.)

Call before you Dig
AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call 811 OR 1-800-227-2600

SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
LOG CABIN WAY
STORM DRAIN 5 - "LCW" 63+00.00 TO "LCW" 71+50.00

DATE: 12/16/2019
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

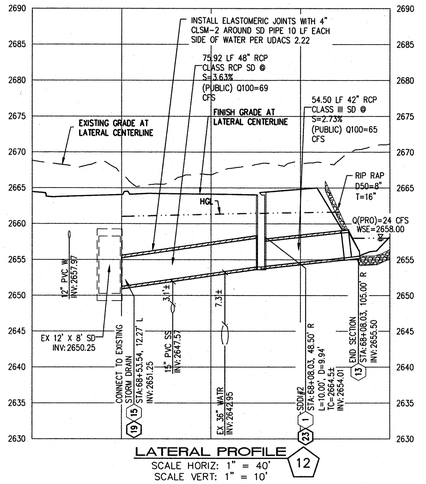
PROJECT NO.
EST1906-000

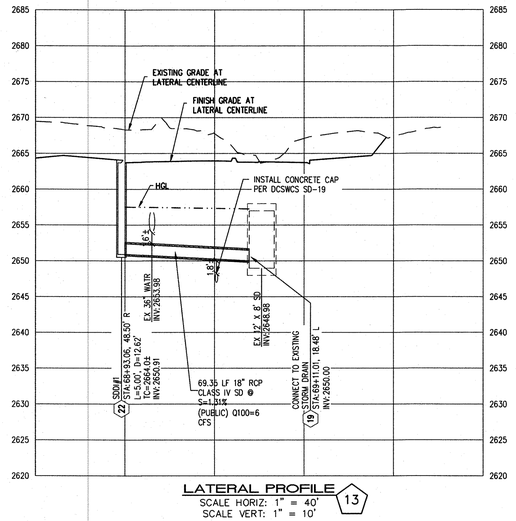
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1/23/20

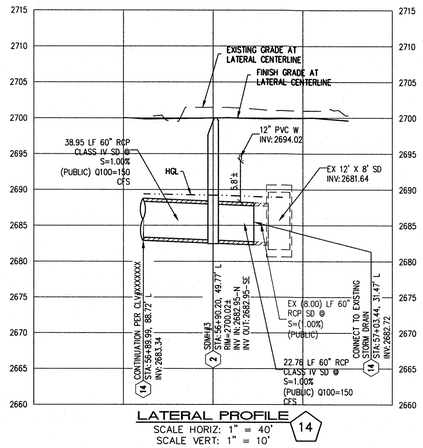
SD-5
SHEET 19 OF 76

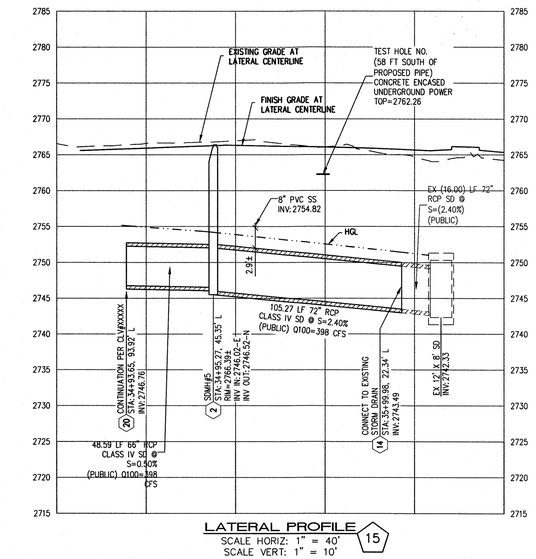
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SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
LOG CABIN WAY
STORM DRAIN LATERAL DETAILS 2

DATE: 12/16/2019
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

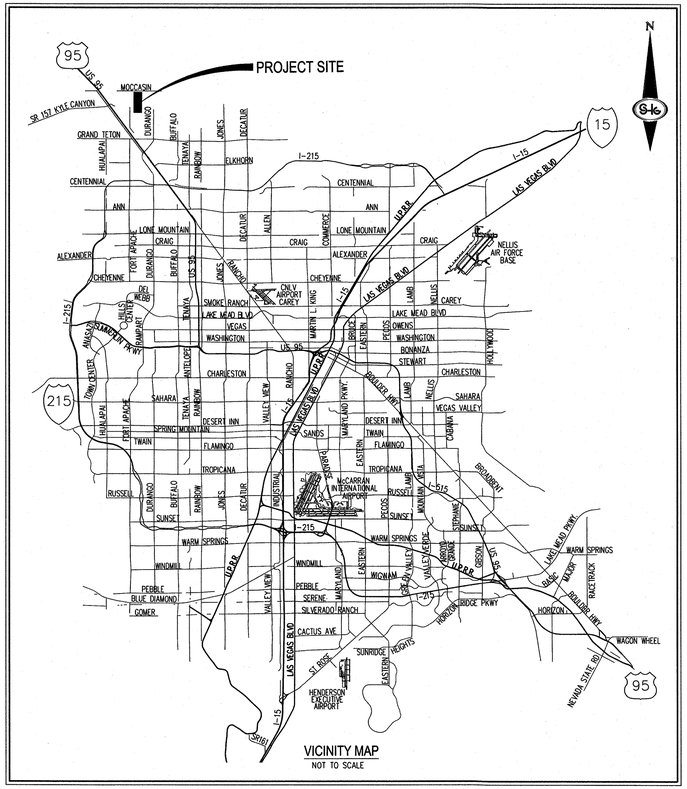
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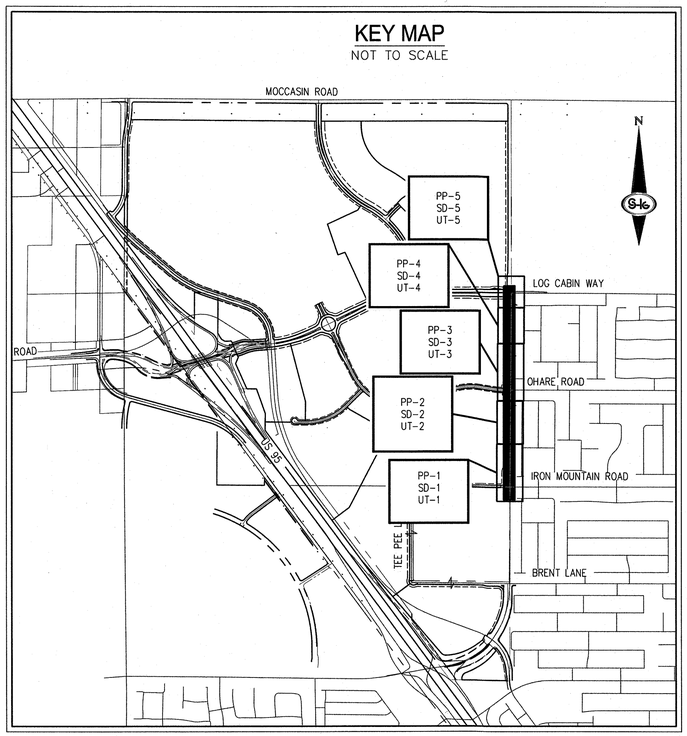
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1/23/20

SD-9
SHEET 23 OF 76

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107V8032

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IMPROVEMENT PLANS FOR SUNSTONE PHASE 1 N SKYE CANYON PARK DR

CITY OF LAS VEGAS, NEVADA

APN: 125-16-701-001, 125-05-499-009

SHEET INDEX		
NO.	SHEET	TITLE
1	CS-1	COVER SHEET
2	CS-2	GENERAL NOTES
3	CS-3	ABBREVIATIONS, LEGEND & QUANTITIES
4	PP-1	PLAN & PROFILE I – "SCP" 11+00.00 TO "SCP" 19+00.00
5	PP-2	PLAN & PROFILE II – "SCP" 19+00.00 TO "SCP" 25+00.00
6	PP-3	PLAN & PROFILE III – "SCP" 25+00.00 TO "SCP" 33+00.00
7	PP-4	PLAN & PROFILE IV – "SCP" 33+00.00 TO "SCP" 38+00.00
8	PP-5	PLAN & PROFILE V – "SCP" 38+00.00 TO "SCP" 42+00.00
9	SD-1	STORM DRAIN I – "SCP" 11+00.00 TO "SCP" 19+00.00
10	SD-2	STORM DRAIN II – "SCP" 19+00.00 TO "SCP" 25+00.00
11	SD-3	STORM DRAIN III – "SCP" 25+00.00 TO "SCP" 33+00.00
12	SD-4	STORM DRAIN IV – "SCP" 33+00.00 TO "SCP" 38+00.00
13	SD-5	STORM DRAIN V – "SCP" 38+00.00 TO "SCP" 42+00.00
14	SD-6	STORM DRAIN LATERAL I
15	UT-1	UTILITY PLAN I – "SCP" 11+00.00 TO "SCP" 19+00.00
16	UT-2	UTILITY PLAN II – "SCP" 19+00.00 TO "SCP" 25+00.00
17	UT-3	UTILITY PLAN III – "SCP" 25+00.00 TO "SCP" 33+00.00
18	UT-4	UTILITY PLAN IV – "SCP" 33+00.00 TO "SCP" 38+00.00
19	UT-5	UTILITY PLAN V – "SCP" 38+00.00 TO "SCP" 42+00.00
20	UT-6	UTILITY PLAN VI – "IMR"24+00 TO "IMR" 26+50
21	UT-7	UTILITY LATERAL I
22	DT-1	DETAIL SHEET I
23	ST-1	SIGNING & STRIPING PLAN I
24	ST-2	SIGNING & STRIPING PLAN II
25	LL-1	LIGHTING & INFRASTRUCTURE PLAN I
26	LL-2	LIGHTING & INFRASTRUCTURE PLAN II
27	TS-1	TRAFFIC SIGNAL INFRASTRUCTURE PLAN I
28	HC-1	HORIZONTAL CONTROL PLAN
29	HC-2	HORIZONTAL CONTROL PLAN
30	HC-3	HORIZONTAL CONTROL PLAN
31	HC-4	HORIZONTAL CONTROL PLAN
32	HC-5	HORIZONTAL CONTROL PLAN
33	HC-6	HORIZONTAL CONTROL PLAN
34	HC-7	HORIZONTAL CONTROL PLAN
35	HC-8	HORIZONTAL CONTROL PLAN
36	HC-9	HORIZONTAL CONTROL PLAN
37	HC-10	HORIZONTAL CONTROL PLAN
38	HC-11	HORIZONTAL CONTROL PLAN
39	HC-12	HORIZONTAL CONTROL PLAN
40	HC-13	HORIZONTAL CONTROL PLAN
41	HC-14	HORIZONTAL CONTROL PLAN
42	HC-15	HORIZONTAL CONTROL PLAN
43	HC-16	HORIZONTAL CONTROL PLAN
44	HC-17	HORIZONTAL CONTROL PLAN
45	HC-18	HORIZONTAL CONTROL PLAN
46	HC-19	HORIZONTAL CONTROL PLAN
47	HC-20	HORIZONTAL CONTROL PLAN
48	HC-21	HORIZONTAL CONTROL PLAN
49	HC-22	HORIZONTAL CONTROL PLAN
50	HC-23	HORIZONTAL CONTROL PLAN

APPROVALS

CITY ENGINEER — DATE

APPROVAL OF THESE PLANS BY THE CITY ENGINEER IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED OF RIGHT-OF-WAY, AND/OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND/OR SPECIFICATIONS EXCEPT THOSE SPECIALLY LISTED UNDER DEVIATIONS FORM STANDARDS. THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN DEVATIONS FROM STANDARDS IN FAVOR OF THE UNIFORM STANDARD DRAWINGS AND SPECIFICATIONS, CLARK COUNTY AREA, NEVADA.

LAS VEGAS FIRE AND RESCUE — DATE

CITY OF LAS VEGAS – PLANNING DEPARTMENT — DATE

THIS PLAN MEETS THE APPLICABLE STANDARDS OF THE PLANNING DEPARTMENT.

CENTRAL TELEPHONE CO. DBA CENTURYLINK — DATE

THE AFFIXED CENTURYLINK APPROVAL DOES NOT ASSUME OR GUARANTEE LIABILITY FOR KNOWN OR UNKNOWN CONFLICTS WITH EXISTING OR PROPOSED IMPROVEMENTS. RESOLUTION OF ANY CONFLICT WILL BE ACCOMPLISHED PURSUANT TO LOCAL ORDINANCES, NEVADA REVISED STATUES AND / OR PUBLIC UTILITY COMMISSION RULES AND REGULATIONS.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. 136901 FIRST APPROVED DATE:
LVVWD APPROVED FIRE FLOW: TOTAL 1,500 GPM / ONSITE 0 GPM

SHEETS: 1,2,3,9,10,11,12,13,15,16,17,18,19

NV ENERGY — DATE

NV ENERGY ACKNOWLEDGES THAT WE HAVE RECEIVED YOUR PLANS AND WILL PROVIDE SERVICE TO ALL ELECTRICAL NEEDS ASSOCIATED WITH THIS PROJECT. NV ENERGY RESERVES THE RIGHT TO ADDRESS ANY EXISTING OR FUTURE CONFLICTS ONCE THE FINAL DESIGN IS COMPLETED. THE NEW SERVICE AND THE RESOLUTION OF ANY CONFLICTS WILL BE ACCOMPLISHED PURSUANT TO THE NEVADA PUBLIC UTILITY COMMISSION'S RULES AND REGULATIONS.

SOUTHWEST GAS CORPORATION — DATE

COX COMMUNICATIONS LAS VEGAS, INC. — DATE

OWNER/DEVELOPER
EASTLAND COMPANY, LLC
9275 RUSSELL RD SUITE 400
LAS VEGAS, NV 89148
PH: 702-821-4808

ENGINEER
SLATER HANIFAN GROUP, INC.
a WESTWOOD TEAM
5740 S. ARVILLE STREET, SUITE 216
LAS VEGAS, NV 89118
PH: (702) 284-5300
CONTACT: JOSH JOHNSON

BENCHMARK

MONUMENT ID: USDA (1934) 19

U.S. DEPARTMENT OF AGRICULTURE BRASS DISC AT SOUTHWEST CORNER OF U.S. 95 AND KYLE CANYON ROAD

ELEVATION = 2817.61 FEET, 858.810 METERS
NAVD 88 DATUM

PER THE CITY OF LAS VEGAS BENCHMARK BOOK – 2008 ADJUSTMENT (UPDATED 05/24/2010)

BASIS OF BEARINGS

NORTH 00°01'50" WEST, BEING THE BEARING OF THE EAST LINE OF THE NORTHEAST QUARTER (NE1/4) OF SECTION 6, TOWNSHIP 19 SOUTH, RANGE 60 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF IN FILE 151, PAGE 14 OF SURVEYS IN THE CLARK COUNTY RECORDER'S OFFICE, NEVADA.

FEMA FLOOD ZONE INFORMATION

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) ON FLOOD INSURANCE RATE MAP (FIRM) PANEL 32003C1735E AND 32003C1750E, BOTH DATED SEPTEMBER 27, 2002.

PROJECT PLAN APPROVAL CONTINGENT ON

SUNSTONE PHASE 2860 ZONE PIPE LINE (LVVWD #C1568)
SUNSTONE PHASE 1 XXXXX #XXXXX
SUNSTONE PHASE 1 XXXXX #XXXXX

PLAN APPROVAL

M.O.U. ITEMS

TMP-76718, JULY 23, 2019

NONE

SWPPP NOTE

NOTE: ALL LAND SURFACE AREA DISTURBANCES OVER 1 ACRE REQUIRE A STORMWATER DISCHARGE PERMIT ISSUED BY THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP). A PHASED CONSTRUCTION UNIT IN A CONTIGUOUS SUBDIVISION IS CONSIDERED UNDER CONSTRUCTION UNTIL ALL STRIPPED SURFACE AREAS HAVE BEEN COVERED BY PAVING, BUILDING CONSTRUCTION OR PLANTING. A STORMWATER DISCHARGE PERMIT APPLICATION AND ASSOCIATED INFORMATION MAY BE DOWNLOADED FROM THE WEB SITE: HTTP://WWW.STATE.NV.US/BWPC/STORMOI.HTM PROJECTS THAT DISTURB MORE THAN ONE ACRE OF LAND MUST SUBMIT TO NDEP A "NOTICE OF INTENT" FOR INCLUSION UNDER STORMWATER PERMIT NO. NVR100000 ALONG WITH THE APPROPRIATE FILING FEE.

NOTE

THIS PROJECT PLAN APPROVAL CONTINGENT ON PROPOSED 36-INCH PIPELINE IN SKYE CANYON PARK DRIVE BEING OPERATIONAL (CONTRACT NO. TO BE DETERMINED)

DEVIATIONS FROM STANDARDS

NONE

GEOTECHNICAL ENGINEER

PREPARED BY: SOUTHWEST GEOTECHNICAL
ADDRESS: 5275 ARVILLE STREET, SUITE 108
PHONE: (702)-323-6000
PROJECT No. 182187
DATED: 04/25/2018







SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
N SKYE CANYON PARK DRIVE
COVER SHEET

DATE: 11/4/2019
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

PROJECT NO.
EST1908-000

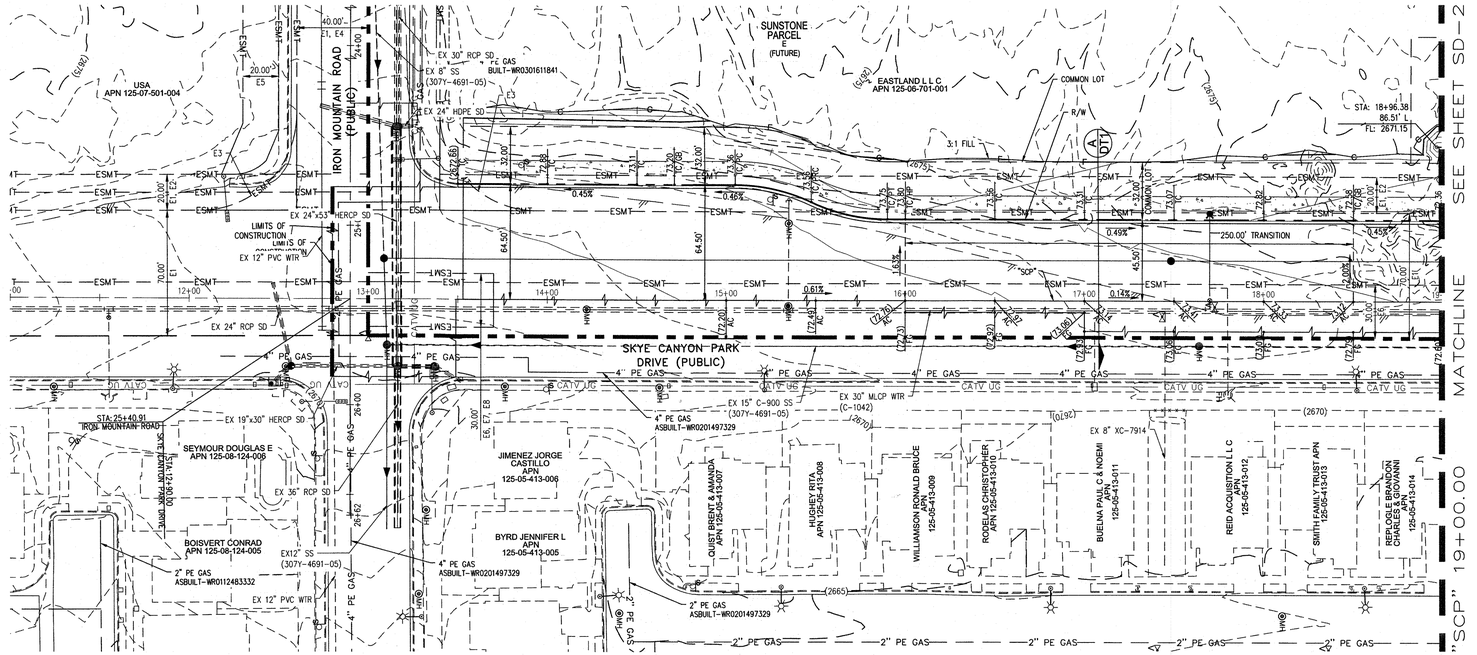
PROFESSIONAL ENGINEER – STATE OF NEVADA – JOSHUA L. JOHNSON – No. 15789 – CIVIL – EXP. 12/31/2021 – 11/23/20

CS-1
SHEET 1 OF 50

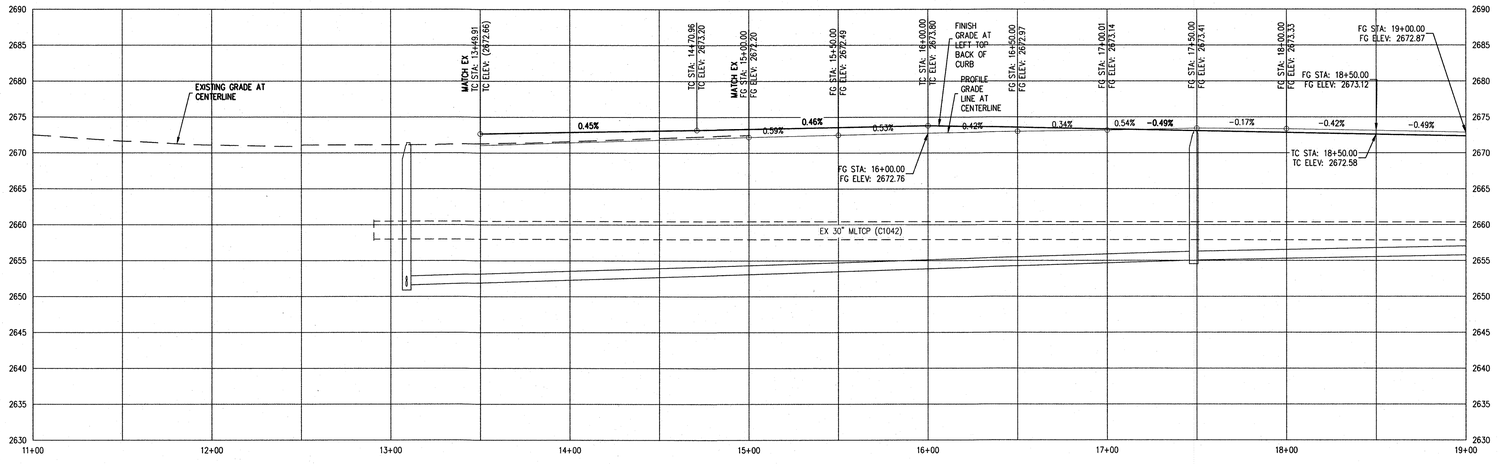
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SEE CLV ##### FOR IMPROVEMENT PLANS

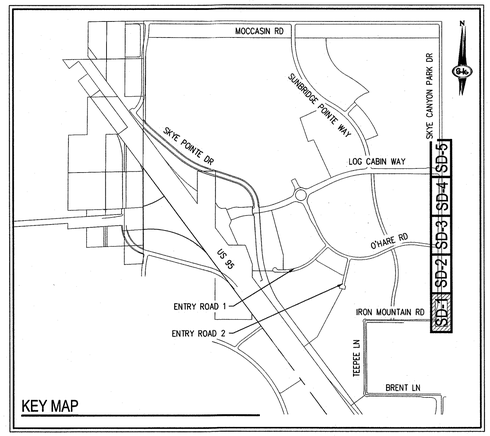


SKYE CANYON PARK DRIVE - PLAN VIEW
(PUBLIC)



SKYE CANYON PARK DRIVE - PROFILE VIEW
HORIZ: 1" = 40'
VERT: 1" = 10'





KEY MAP

SURVEY NOTE
OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED, DISTURBED, DESTROYED, OR OBSCURED DURING CONSTRUCTION.

ELEVATION NOTE
ADD 2600 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 1801.00)

EASEMENT NOTES
E1 RIGHT-OF-WAY GRANTED BY DECISION, DATED MAY 28, 2003, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-75757 TO CITY OF LAS VEGAS FOR ROADWAY, SANITARY SEWER AND DRAINAGE PURPOSES AND RELATED PURPOSES UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AD RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JUNE 30, 2003 IN BOOK 20030630, AS INSTRUMENT NO. 00811 OF OFFICIAL RECORDS.

E2 RIGHT-OF-WAY GRANTED BY DECISION, DATED JUNE 9, 2004, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER B-75757A TO CITY OF LAS VEGAS FOR ROADWAY, SANITARY SEER AND DRAINAGE PURPOSES UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF THE LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JUNE 18, 2004 IN BOOK 20040618, AS INSTUMENT NO. 01781 OF OFFICIAL RECORDS.

E3 RIGHT-OF-WAY GRANTED BY DECISION, DATED MAY 07, 2003, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-76109 TO CITY OF LAS VEGAS FOR RIGHT FOR PERMANENT RIGHT-OF-WAY FOR ROADWAY, SANITARY SEWER AND DRAINAGE PURPOSES AND RELATED PURPOSES ON PUBLIC LANDS UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF THE LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON SEPTEMBER 09, 2003 IN BOOK 20030909, AS INSTRUMENT NO. 02351 OF OFFICIAL RECORDS.

E4 LAS VEGAS VALLEY WATER DISTRICT RIGHT-OF-WAY PER N-76984 RESERVATIONS, PROVISIONS AND EASEMENTS AS CONTAINED IN PATENT FROM THE UNITED STATES OF AMERICA, RECORDED AUGUST 03, 2005, IN BOOK 20050803 OF OFFICIAL RECORDS, AS INSTRUMENT NO. 013598

E5 CITY OF LAS VEGAS RIGHT-OF-WAY PER N-75757/F

E6 RIGHT-OF-WAY GRANTED BY DECISION, DATED SEPTEMBER 25,2001, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-62751 TO LAS VEGAS VALLEY WATER DISTRICT FOR WATER MAIN UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON OCTOBER 12, 2001 IN BOOK 20010112, AS INSTRUMENT NO. 01161 OF OFFICIAL RECORDS.

E7 RIGHT-OF-WAY GRANTED BY DECISION, DATED DECEMBER 05, 2002, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-62751-01 TO LAS VEGAS VALLEY WATER DISTRICT FOR STORAGE OF PIPELINE MATERIAL, PLACEMENT OF EVACUATION SOILS, CONSTRUCTION EQUIPMENT AND TRAFFIC CONTROL FOR THE CONSTRUCTION OF THE PIPELINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JANUARY 16, 2003 IN BOOK 20030116, AS INSTRUMENT NO. 02001 OF OFFICIAL RECORDS.

E8 RIGHT-OF-WAY GRANTED BY DECISION, DATED DECEMBER 05, 2002, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-62751-A TO LAS VEGAS VALLEY WATER DISTRICT FOR WATER MAIN UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LANDS, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JANUARY 16, 2003 IN BOOK 20030116, AS INSTRUMENT NO. 02002 OF OFFICIAL RECORDS.

NOTES
1. ALL RCP SHALL BE CLASS III UNLESS OTHERWISE SHOWN.
2. ALL PIPE LENGTHS ARE MEASURED ALONG PIPE CENTERLINE TO CENTER OF MANHOLE OR INSIDE EDGE OF DI OR RCB/RCA.
3. ALL DROP INLETS SHALL INCLUDE STORM WATER MANAGEMENT STAMP AND DETAIL PER USDCCA STD. DWG. NO. 421.
4. SEE STRUCTURAL PLANS FOR ADDITIONAL STRUCTURAL DETAILS AND CONNECTIONS.
5. ALL PIPES IN PUBLIC ROW ARE PUBLICLY MAINTAINED.
6. ADD SPECIAL INSPECTION REQUIRED FOR PIPE SEGMENTS WITH SACRIFICIAL CONCRETE.
7. SEE UTILITY PLAN AND PROFILE SHEETS FOR UTILITY ADJUSTMENTS AND RELOCATIONS.
8. ALL INTERIM DRAINAGE FACILITIES TO BE PRIVATELY MAINTAINED.
9. PROPERTY OWNER IS RESPONSIBLE TO MAINTAIN THE BEST MANAGEMENT PRACTICES, SUCH AS BUT NOT LIMITED TO, THE REMOVAL OF ACCUMULATED SEDIMENT AND DEBRIS AND CARE OF VEGETATION.
10. WHERE 10 FEET PARALLEL SEPARATION IS NOT PRACTICABLE:

    CAST-IN-PLACE MONOLITHIC POUR WITH WATERSTOP BETWEEN SLAB AND WALLS. BASE, WALLS AND TOP TO BE CONSTRUCTED WITH WATERSTOPS, CENTER BULB, OR FLAT STRIP (VINYLEX, GREENSTREAK PLASTIC PRODUCTS OR APPROVED EQUAL).

FLOOD ZONE
THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X" (OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) ON THE FLOOD INSURANCE RATE MAP (FIRM) PANELS: 32003C1735E AND 32003C1750E BOTH DATED SEPTEMBER 27, 2002

STORM DRAIN NOTES
1. CONSTRUCT TYPE "CM2" DROP INLET (USDCCA STD. DWG. NO. 412.1 & 421)
2. CONSTRUCT 60" TYPE III MANHOLE (USDCCA STD. DWG. NO. 406.1)
3. CONSTRUCT NDOT TYPE 4 MANHOLE (NDOT STD. PLAN R-4.3.2)
4. INSTALL 18" RCP (USDCCA STD. DWG. NO. 503.2)
5. INSTALL 24" RCP (USDCCA STD. DWG. NO. 503.2)
6. INSTALL 48" TYPE I MANHOLE (USDCCA STD. DWG. NO. 403)
7. INSTALL 66" RCP (USDCCA STD. DWG. NO. 503.2)
8. CONNECT TO STORM DRAIN
9. INSTALL RCP END SECTION (NDOT STD. PLAN R-2.3.1)
10. CUT AND REMOVE PIPE TO THE WEST, CAP REMAINING PIPE.
11. INSTALL 36" RCP (USDCCA STD. DWG. NO. 503.2)
12. REMOVE AND REPLACE EX MANHOLE
13. REMOVE EX STORM DRAIN

LEGEND
(#) STORM DRAIN LATERAL # (SEE SHEETS SD-6)

DISCLAIMER NOTE
1) EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION.
2) FOR ROADWAY WIDENING AND HALF STREET IMPROVEMENTS THE CONTRACTOR SHALL VERIFY CROSS SLOPES FROM EXISTING PAVEMENT SAWCUT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED LIP OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF PROPOSED CURB LINE. IF MINIMUM OR MAXIMUM CROSS SLOPES DO NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

SOUTHWEST GAS APPROVAL
SOUTHWEST GAS CORPORATION DATE

APPROVED FOR CONSTRUCTION
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. 136901 FIRST APPROVED DATE:
LVVWD APPROVED FIRE FLOW: TOTAL 1,500 GPM / ONSITE 0 GPM

FLOOD CERTIFICATION
I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DSS13580N FILE AT CITY OF LAS VEGAS AND CCPW HTE #??-????? FOR THE SUBJECT PROJECT.

JOSH JOHNSON, P.E. 15789 DATE

FAST Call before you UnderGround 1-702-432-5300 FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DO OVERHEAD 1-702-227-2929

Call before you Dig AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY. Call 811 OR 1-800-227-2600

SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

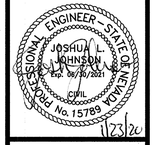
NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
N SKYE CANYON PARK DRIVE
STORM DRAIN I - "SCP" 11+00.00 TO "SCP" 19+00.00

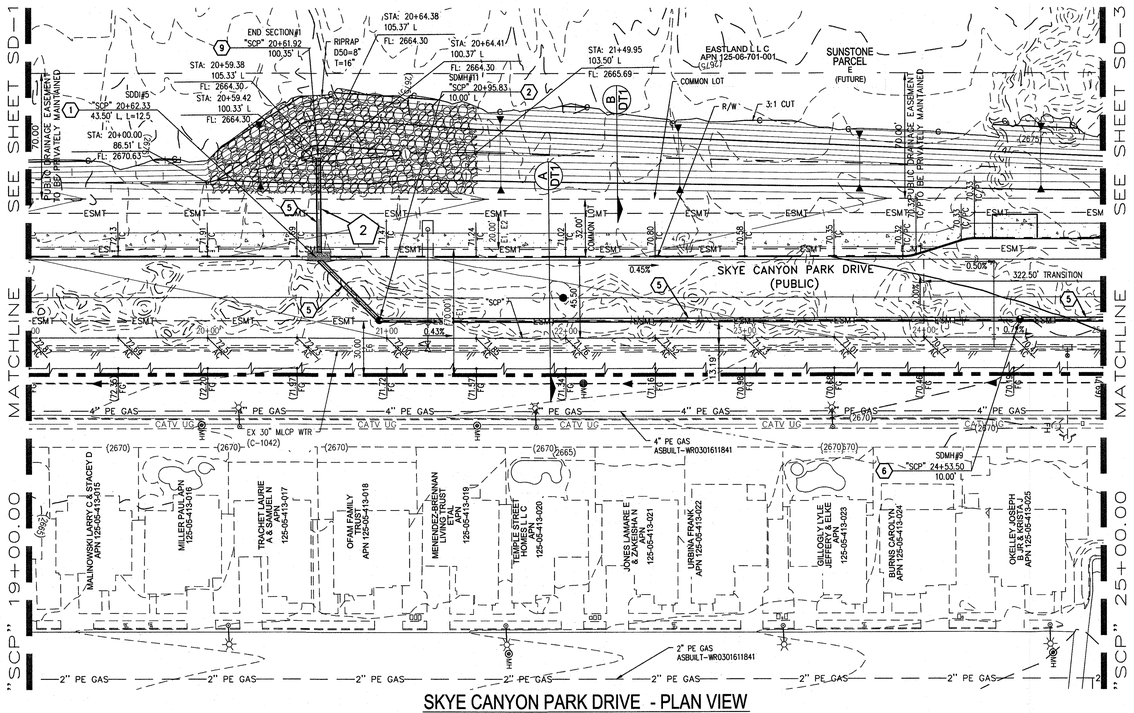
DATE: 11/4/2019
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ
PROJECT NO.
EST1908-000



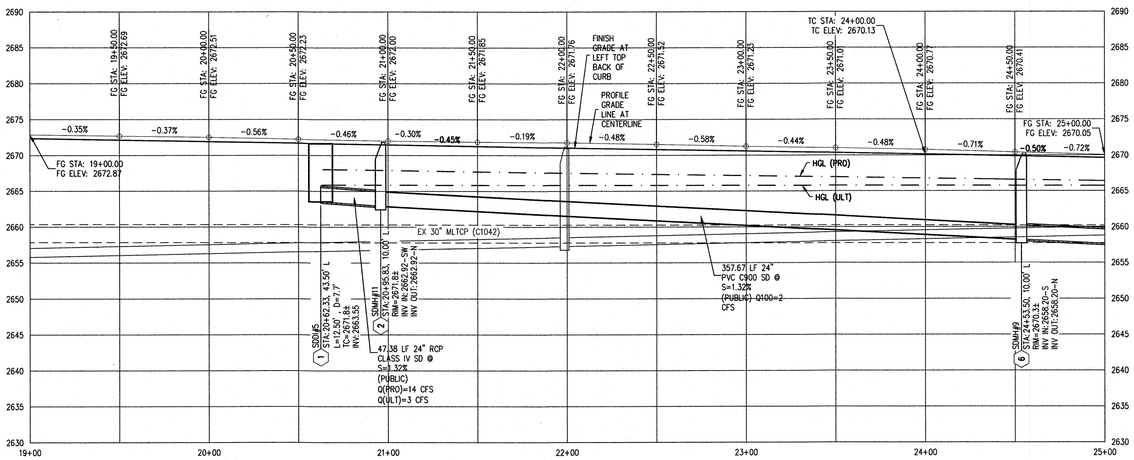
SD-1
SHEET 9 OF 50

L19-02149
107V8027

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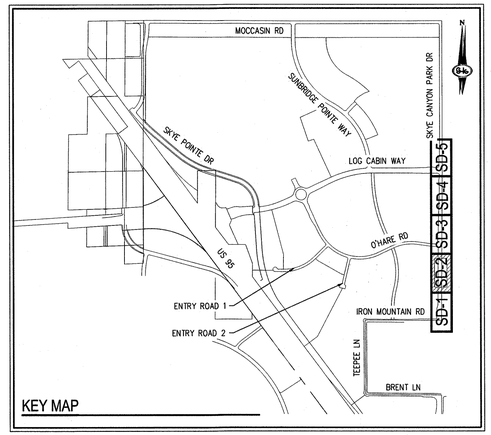


SKYE CANYON PARK DRIVE - PLAN VIEW
(PUBLIC)



SKYE CANYON PARK DRIVE - PROFILE VIEW
HORIZ: 1" = 40'
VERT: 1" = 10'





KEY MAP

SURVEY NOTE
OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED, DISTURBED, DESTROYED, OR OBSCURED DURING CONSTRUCTION.

ELEVATION NOTE
ADD 2600 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 1801.00)

EASEMENT NOTES
E1 RIGHT-OF-WAY GRANTED BY DECISION, DATED MAY 28, 2003, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-75757 TO CITY OF LAS VEGAS FOR ROADWAY, SANITARY SEWER AND DRAINAGE PURPOSES AND RELATED PURPOSES UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AD RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JUNE 30, 2003 IN BOOK 20030630, AS INSTRUMENT NO. 00811 OF OFFICIAL RECORDS.

E2 RIGHT-OF-WAY GRANTED BY DECISION, DATED JUNE 9, 2004, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER B-75757A TO CITY OF LAS VEGAS FOR ROADWAY, SANITARY SEER AND DRAINAGE PURPOSES UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF THE LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JUNE 18, 2004 IN BOOK 20040618, AS INSTUMENT NO. 01781 OF OFFICIAL RECORDS.

E3 RIGHT-OF-WAY GRANTED BY DECISION, DATED MAY 07, 2003, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-76109 TO CITY OF LAS VEGAS FOR RIGHT FOR PERMANENT RIGHT-OF-WAY FOR ROADWAY, SANITARY SEWER AND DRAINAGE PURPOSES AND RELATED PURPOSES ON PUBLIC LANDS UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF THE LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON SEPTEMBER 09, 2003 IN BOOK 20030909, AS INSTRUMENT NO. 02351 OF OFFICIAL RECORDS.

E4 LAS VEGAS VALLEY WATER DISTRICT RIGHT-OF-WAY PER N-76984 RESERVATIONS, PROVISIONS AND EASEMENTS AS CONTAINED IN PATENT FROM THE UNITED STATES OF AMERICA, RECORDED AUGUST 03, 2005, IN BOOK 20050803 OF OFFICIAL RECORDS, AS INSTRUMENT NO. 013598

E5 CITY OF LAS VEGAS RIGHT-OF-WAY PER N-75757/F

E6 RIGHT-OF-WAY GRANTED BY DECISION, DATED SEPTEMBER 25,2001, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-62751 TO LAS VEGAS VALLEY WATER DISTRICT FOR WATER MAIN UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON OCTOBER 12, 2001 IN BOOK 20010112, AS INSTRUMENT NO. 01161 OF OFFICIAL RECORDS.

E7 RIGHT-OF-WAY GRANTED BY DECISION, DATED DECEMBER 05, 2002, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-62751-01 TO LAS VEGAS VALLEY WATER DISTRICT FOR STORAGE OF PIPELINE MATERIAL, PLACEMENT OF EVACUATION SOILS, CONSTRUCTION EQUIPMENT AND TRAFFIC CONTROL FOR THE CONSTRUCTION OF THE PIPELINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JANUARY 16, 2003 IN BOOK 20030116, AS INSTRUMENT NO. 02001 OF OFFICIAL RECORDS.

E8 RIGHT-OF-WAY GRANTED BY DECISION, DATED DECEMBER 05, 2002, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-62751-A TO LAS VEGAS VALLEY WATER DISTRICT FOR WATER MAIN UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LANDS, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JANUARY 16, 2003 IN BOOK 20030116, AS INSTRUMENT NO. 02002 OF OFFICIAL RECORDS.

NOTES
1. ALL RCP SHALL BE CLASS III UNLESS OTHERWISE SHOWN.
2. ALL PIPE LENGTHS ARE MEASURED ALONG PIPE CENTERLINE TO CENTER OF MANHOLE OR INSIDE EDGE OF DI OR RCB/RCA.
3. ALL DROP INLETS SHALL INCLUDE STORM WATER MANAGEMENT STAMP AND DETAIL PER USDCCA STD. DWG. NO. 421.
4. SEE STRUCTURAL PLANS FOR ADDITIONAL STRUCTURAL DETAILS AND CONNECTIONS.
5. ALL PIPES IN PUBLIC ROW ARE PUBLICLY MAINTAINED.
6. ADD SPECIAL INSPECTION REQUIRED FOR PIPE SEGMENTS WITH SACRIFICIAL CONCRETE.
7. SEE UTILITY PLAN AND PROFILE SHEETS FOR UTILITY ADJUSTMENTS AND RELOCATIONS.
8. ALL INTERIM DRAINAGE FACILITIES TO BE PRIVATELY MAINTAINED.
9. PROPERTY OWNER IS RESPONSIBLE TO MAINTAIN THE BEST MANAGEMENT PRACTICES, SUCH AS BUT NOT LIMITED TO, THE REMOVAL OF ACCUMULATED SEDIMENT AND DEBRIS AND CARE OF VEGETATION.
10. WHERE 10 FEET PARALLEL SEPARATION IS NOT PRACTICABLE:
CAST-IN-PLACE MONOLITHIC POUR WITH WATERSTOP BETWEEN SLAB AND WALLS. BASE, WALLS AND TOP TO BE CONSTRUCTED WITH WATERSTOPS, CENTER BULB, OR FLAT STRIP (VINYLEX, GREENSTREAK PLASTIC PRODUCTS OR APPROVED EQUAL).

FLOOD ZONE
THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X" (OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) ON THE FLOOD INSURANCE RATE MAP (FIRM) PANELS: 32003C1735E AND 32003C1750E BOTH DATED SEPTEMBER 27, 2002

STORM DRAIN NOTES
1. CONSTRUCT TYPE "CM2" DROP INLET (USDCCA STD. DWG. NO. 412.1 & 421)
2. CONSTRUCT 60" TYPE III MANHOLE (USDCCA STD. DWG. NO. 406.1)
3. CONSTRUCT NDOT TYPE 4 MANHOLE (NDOT STD. PLAN R-4.3.2)
4. INSTALL 18" RCP (USDCCA STD. DWG. NO. 503.2)
5. INSTALL 24" RCP (USDCCA STD. DWG. NO. 503.2)
6. INSTALL 48" TYPE I MANHOLE (USDCCA STD. DWG. NO. 403)
7. INSTALL 66" RCP (USDCCA STD. DWG. NO. 503.2)
8. CONNECT TO STORM DRAIN
9. INSTALL RCP END SECTION (NDOT STD. PLAN R-2.3.1)
10. CUT AND REMOVE PIPE TO THE WEST, CAP REMAINING PIPE.
11. INSTALL 36" RCP (USDCCA STD. DWG. NO. 503.2)
12. REMOVE AND REPLACE EX MANHOLE
13. REMOVE EX STORM DRAIN

LEGEND
(#) STORM DRAIN LATERAL # (SEE SHEETS SD-6)

DISCLAIMER NOTE
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2) FOR ROADWAY WIDENING AND HALF STREET IMPROVEMENTS THE CONTRACTOR SHALL VERIFY CROSS SLOPES FROM EXISTING PAVEMENT SAWCUT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED LIP OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF PROPOSED CURB LINE. IF MINIMUM OR MAXIMUM CROSS SLOPES DO NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

SOUTHWEST GAS APPROVAL
SOUTHWEST GAS CORPORATION DATE

APPROVED FOR CONSTRUCTION
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. 136901 FIRST APPROVED DATE:
LVVWD APPROVED FIRE FLOW: TOTAL 1,500 GPM / ONSITE 0 GPM

FLOOD CERTIFICATION
I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DSS13820N FILE AT CITY OF LAS VEGAS AND CCPW HTE #??-????? FOR THE SUBJECT PROJECT.

JOSH JOHNSON, P.E. 15789 DATE

FAST
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1-702-432-5300
FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T.)

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5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
N SKYE CANYON PARK DRIVE
STORM DRAIN II - "SCP" 19+00.00 TO "SCP" 25+00.00

DATE: 11/4/2019
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

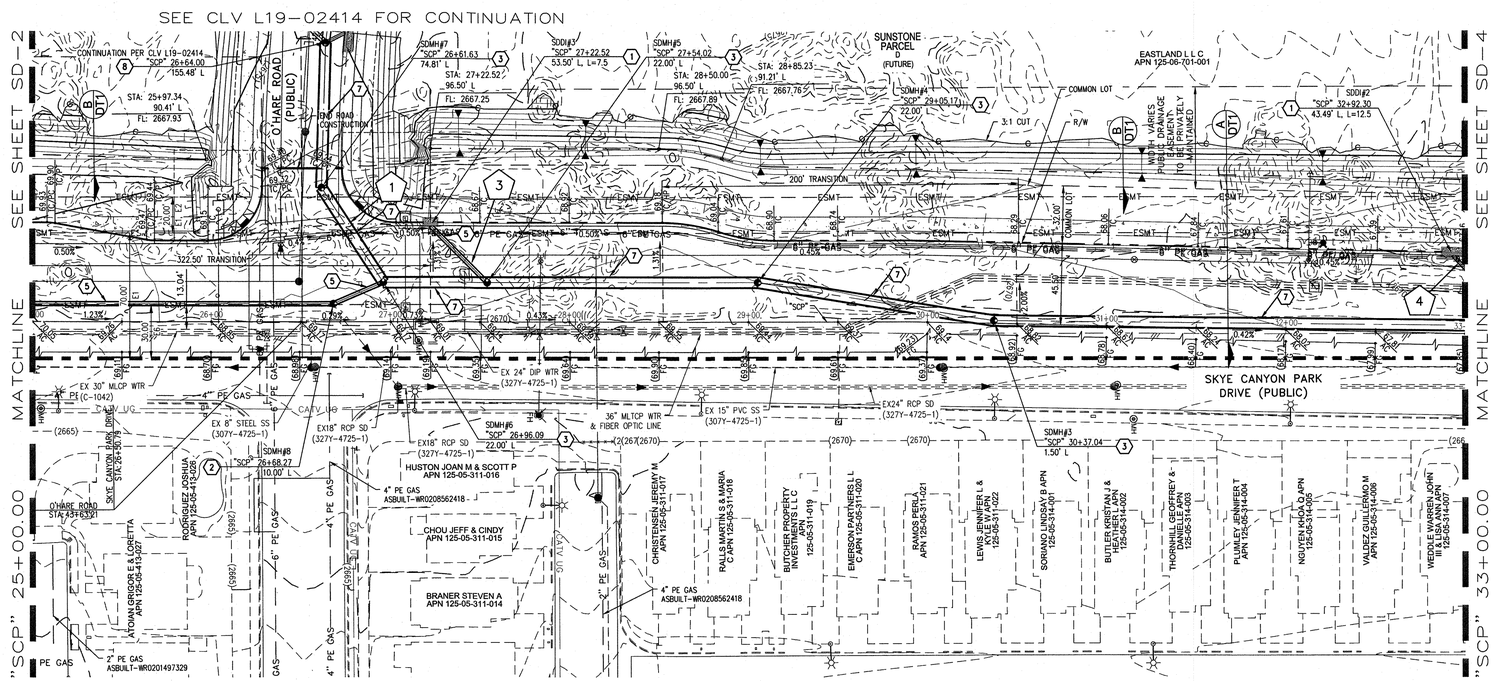
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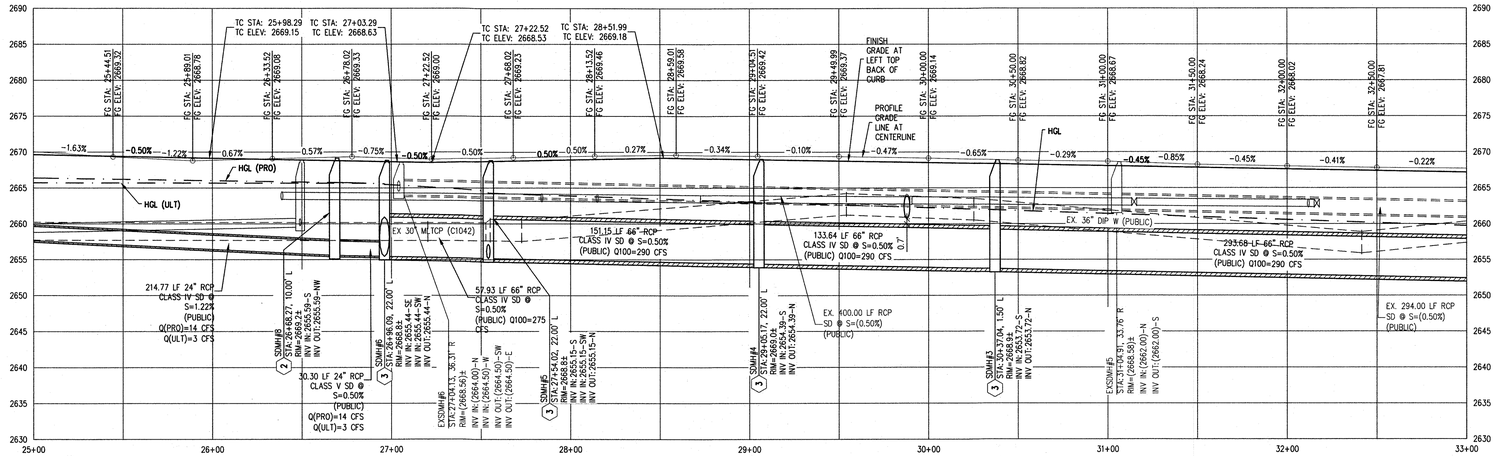
NEVADA ENGINEER JOSHUA L. JOHNSON No. 15789 Exp. 06/30/2021 CIVIL
1/23/20

SD-2
SHEET 10 OF 50

L19-02149
107V8027

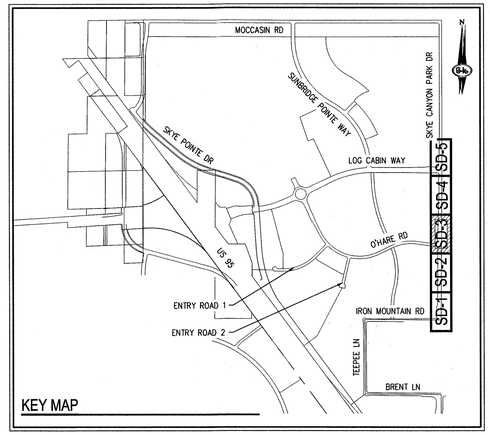
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SKYE CANYON PARK DRIVE - PLAN VIEW
(PUBLIC)

SKYE CANYON PARK DRIVE - PROFILE VIEW
HORIZ: 1" = 40'
VERT: 1" = 10'



KEY MAP

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SOUTHWEST GAS APPROVAL
SOUTHWEST GAS CORPORATION DATE

APPROVED FOR CONSTRUCTION
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. 156901 FIRST APPROVED DATE:
LVVWD APPROVED FIRE FLOW: TOTAL 1,500 GPM / ONSITE 0 GPM

FLOOD CERTIFICATION
I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DSS1358ON FILE AT CITY OF LAS VEGAS AND CCPW HTE #??-????? FOR THE SUBJECT PROJECT.
JOSH JOHNSON, P.E. 15789 DATE

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AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DO OVERHEAD 1-702-227-2929
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SLATER HANIFAN GROUP a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

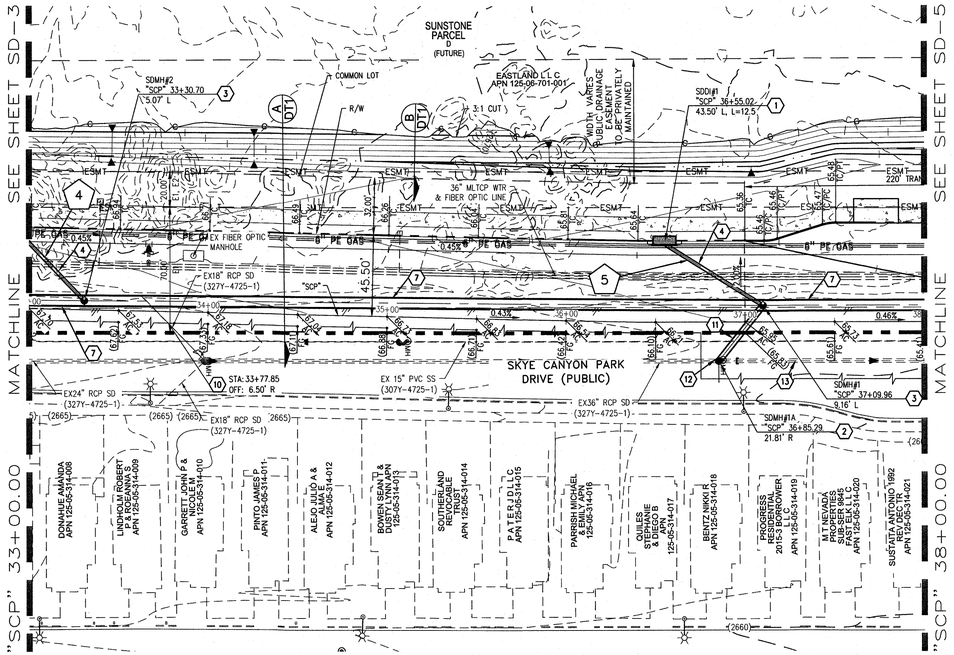
SUNSTONE PHASE 1
N SKYE CANYON PARK DRIVE
STORM DRAIN III - "SCP" 25+00.00 TO "SCP" 33+00.00

DATE: 11/4/2019
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ
PROJECT NO. EST1908-000

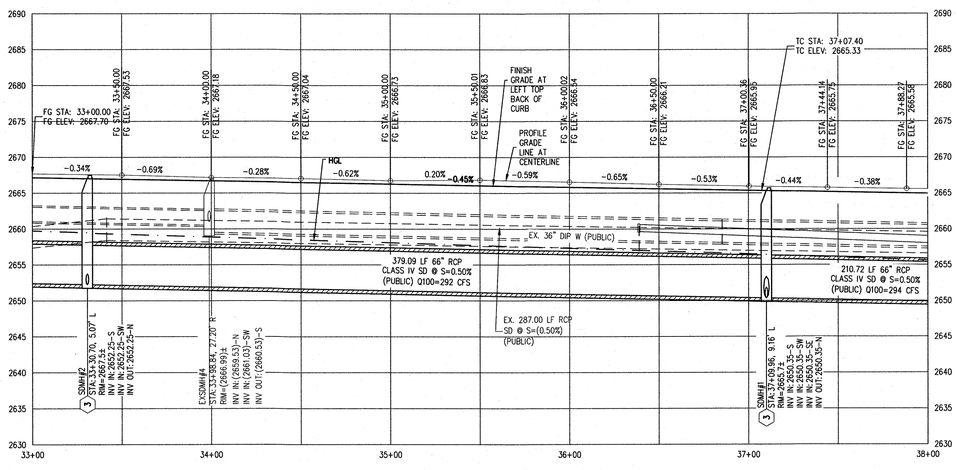
PROFESSIONAL ENGINEER - STATE OF NEVADA - JOSHUA L. JOHNSON - Exp. 06/30/2021 - CIVIL - No. 15789 - 12/3/20

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107V8027

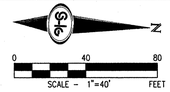
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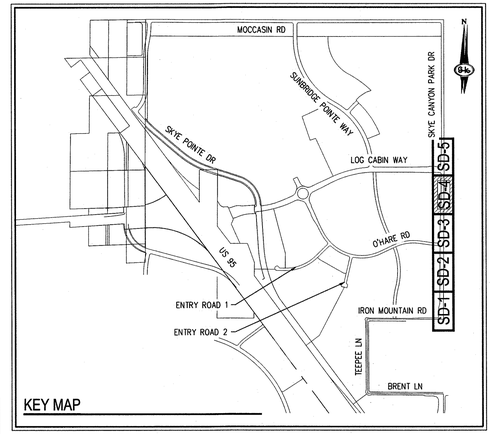


SKYE CANYON PARK DRIVE - PLAN VIEW
(PUBLIC)



SKYE CANYON PARK DRIVE - PROFILE VIEW
HORIZ: 1" = 40'
VERT: 1" = 10'





SURVEY NOTE
OWNER RESPONSIBLE TO PROVIDE SURVEY MONUMENTATION AS SHOWN AND TO REPLACE ALL SURVEY MONUMENTATION DAMAGED, DISTURBED, DESTROYED, OR OBSCURED DURING CONSTRUCTION.

ELEVATION NOTE
ADD 2600 TO ALL SPOT GRADES WHERE THE HUNDREDS AND THOUSANDS PLACES ARE OMITTED FOR ACTUAL ELEVATION (I.E. 01.00 REPRESENTS 1801.00)

EASEMENT NOTES
- E1 RIGHT-OF-WAY GRANTED BY DECISION, DATED MAY 28, 2003, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-75757 TO CITY OF LAS VEGAS FOR ROADWAY, SANITARY SEWER AND DRAINAGE PURPOSES AND RELATED PURPOSES UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AD RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JUNE 30, 2003 IN BOOK 20030630, AS INSTRUMENT NO. 00811 OF OFFICIAL RECORDS.
- E2 RIGHT-OF-WAY GRANTED BY DECISION, DATED JUNE 9, 2004, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER B-75757A TO CITY OF LAS VEGAS FOR ROADWAY, SANITARY SEER AND DRAINAGE PURPOSES UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF THE LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JUNE 18, 2004 IN BOOK 20040618, AS INSTUMENT NO. 01781 OF OFFICIAL RECORDS.
- E3 RIGHT-OF-WAY GRANTED BY DECISION, DATED MAY 07, 2003, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-76109 TO CITY OF LAS VEGAS FOR RIGHT FOR PERMANENT RIGHT-OF-WAY FOR ROADWAY, SANITARY SEWER AND DRAINAGE PURPOSES AND RELATED PURPOSES ON PUBLIC LANDS UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF THE LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON SEPTEMBER 09, 2003 IN BOOK 20030909, AS INSTRUMENT NO. 02351 OF OFFICIAL RECORDS.
- E4 LAS VEGAS VALLEY WATER DISTRICT RIGHT-OF-WAY PER N-76984 RESERVATIONS, PROVISIONS AND EASEMENTS AS CONTAINED IN PATENT FROM THE UNITED STATES OF AMERICA, RECORDED AUGUST 03, 2005, IN BOOK 20050803 OF OFFICIAL RECORDS, AS INSTRUMENT NO. 013598
- E5 CITY OF LAS VEGAS RIGHT-OF-WAY PER N-75757/F
- E6 RIGHT-OF-WAY GRANTED BY DECISION, DATED SEPTEMBER 25,2001, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-62751 TO LAS VEGAS VALLEY WATER DISTRICT FOR WATER MAIN UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON OCTOBER 12, 2001 IN BOOK 20010912, AS INSTRUMENT NO. 01161 OF OFFICIAL RECORDS.
- E7 RIGHT-OF-WAY GRANTED BY DECISION, DATED DECEMBER 05, 2002, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-62751-01 TO LAS VEGAS VALLEY WATER DISTRICT FOR STORAGE OF PIPELINE MATERIAL, PLACEMENT OF EVACUATION SOILS, CONSTRUCTION EQUIPMENT AND TRAFFIC CONTROL FOR THE CONSTRUCTION OF THE PIPELINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JANUARY 16, 2003 IN BOOK 20030116, AS INSTRUMENT NO. 02001 OF OFFICIAL RECORDS.
- E8 RIGHT-OF-WAY GRANTED BY DECISION, DATED DECEMBER 05, 2002, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-62751-A TO LAS VEGAS VALLEY WATER DISTRICT FOR WATER MAIN UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER A PORTION OF SAID LANDS, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JANUARY 16, 2003 IN BOOK 20030116, AS INSTRUMENT NO. 02002 OF OFFICIAL RECORDS.

NOTES
1. ALL RCP SHALL BE CLASS III UNLESS OTHERWISE SHOWN.
2. ALL PIPE LENGTHS ARE MEASURED ALONG PIPE CENTERLINE TO CENTER OF MANHOLE OR INSIDE EDGE OF DI OR RCB/RCA.
3. ALL DROP INLETS SHALL INCLUDE STORM WATER MANAGEMENT STAMP AND DETAIL PER USDCCA STD. DWG. NO. 421.
4. SEE STRUCTURAL PLANS FOR ADDITIONAL STRUCTURAL DETAILS AND CONNECTIONS.
5. ALL PIPES IN PUBLIC ROW ARE PUBLICLY MAINTAINED.
6. ADD SPECIAL INSPECTION REQUIRED FOR PIPE SEGMENTS WITH SACRIFICIAL CONCRETE.
7. SEE UTILITY PLAN AND PROFILE SHEETS FOR UTILITY ADJUSTMENTS AND RELOCATIONS.
8. ALL INTERIM DRAINAGE FACILITIES TO BE PRIVATELY MAINTAINED.
9. PROPERTY OWNER IS RESPONSIBLE TO MAINTAIN THE BEST MANAGEMENT PRACTICES, SUCH AS BUT NOT LIMITED TO, THE REMOVAL OF ACCUMULATED SEDIMENT AND DEBRIS AND CARE OF VEGETATION.
10. WHERE 10 FEET PARALLEL SEPARATION IS NOT PRACTICABLE:
    CAST-IN-PLACE MONOLITHIC POUR WITH WATERSTOP BETWEEN SLAB AND WALLS. BASE, WALLS AND TOP TO BE CONSTRUCTED WITH WATERSTOPS, CENTER BULB, OR FLAT STRIP (VINYLEX, GREENSTREAK PLASTIC PRODUCTS OR APPROVED EQUAL).

FLOOD ZONE
THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE 'X' (OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) ON THE FLOOD INSURANCE RATE MAP (FIRM) PANELS: 32003C1735E AND 32003C1750E BOTH DATED SEPTEMBER 27, 2002

STORM DRAIN NOTES
1. CONSTRUCT TYPE "CM2" DROP INLET (USDCCA STD. DWG. NO. 412.1 & 421)
2. CONSTRUCT 60" TYPE III MANHOLE (USDCCA STD. DWG. NO. 406.1)
3. CONSTRUCT NDOT TYPE 4 MANHOLE (NDOT STD. PLAN R-4.3.2)
4. INSTALL 18" RCP (USDCCA STD. DWG. NO. 503.2)
5. INSTALL 24" RCP (USDCCA STD. DWG. NO. 503.2)
6. INSTALL 48" TYPE I MANHOLE (USDCCA STD. DWG. NO. 403)
7. INSTALL 66" RCP (USDCCA STD. DWG. NO. 503.2)
8. CONNECT TO STORM DRAIN
9. INSTALL RCP END SECTION (NDOT STD. PLAN R-2.3.1)
10. CUT AND REMOVE PIPE TO THE WEST, CAP REMAINING PIPE.
11. INSTALL 36" RCP (USDCCA STD. DWG. NO. 503.2)
12. REMOVE AND REPLACE EX MANHOLE
13. REMOVE EX STORM DRAIN

LEGEND
(#) STORM DRAIN LATERAL # (SEE SHEETS SD-6)

DISCLAIMER NOTE
1) EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION.
2) FOR ROADWAY WIDENING AND HALF STREET IMPROVEMENTS THE CONTRACTOR SHALL VERIFY CROSS SLOPES FROM EXISTING PAVEMENT SAWCUT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED LIP OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF PROPOSED CURB LINE. IF MINIMUM OR MAXIMUM CROSS SLOPES DO NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

SOUTHWEST GAS APPROVAL
SOUTHWEST GAS CORPORATION DATE

APPROVED FOR CONSTRUCTION
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. 136901 FIRST APPROVED DATE:
LVVWD APPROVED FIRE FLOW: TOTAL 1,500 GPM / ONSITE 0 GPM

FLOOD CERTIFICATION
I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DSS13580N FILE AT CITY OF LAS VEGAS AND COPW HTE #??-????? FOR THE SUBJECT PROJECT.

JOSH JOHNSON, P.E. 15789 DATE

FAST Call before you UnderGround 1-702-432-5300 FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T.)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DO OVERHEAD 1-702-227-2929

Call before you Dig AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY. Call 811 OR 1-800-227-2600

SLATER HANIFAN GROUP a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
N SKYE CANYON PARK DRIVE
STORM DRAIN IV - "SCP" 33+00.00 TO "SCP" 38+00.00

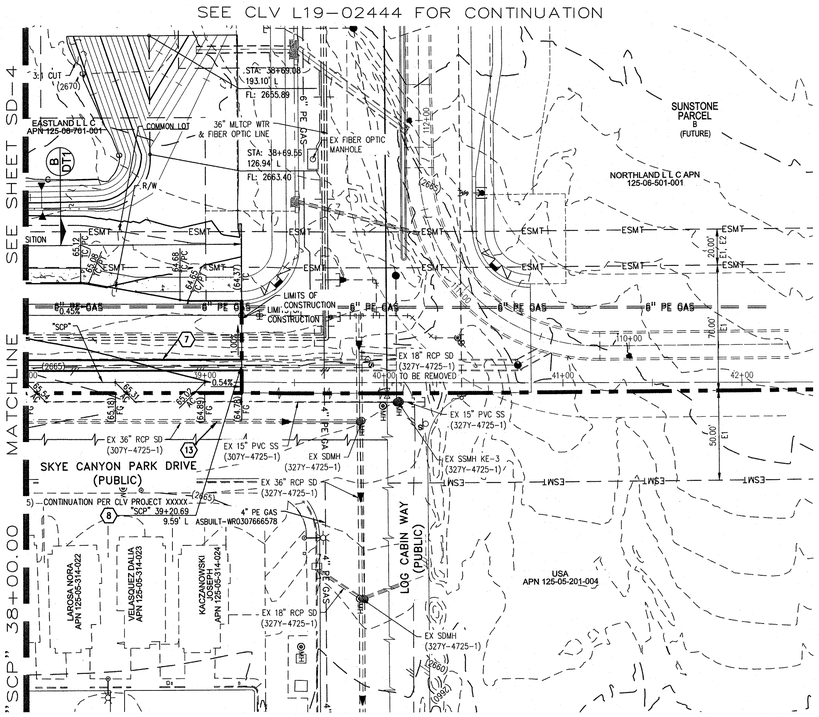
DATE: 11/4/2019
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ
PROJECT NO.
EST1908-000

PROFESSIONAL ENGINEER STATE OF NEVADA JOSHUA L. JOHNSON No. 15789 CIVIL 11/23/20

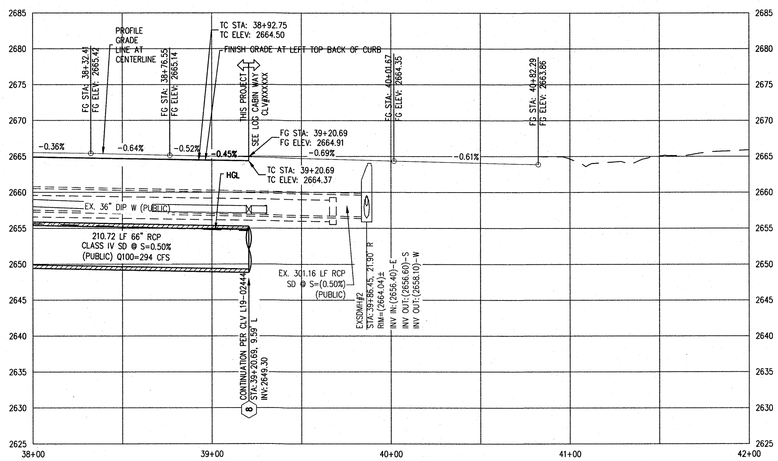
SD-4
SHEET 12 OF 50

L19-02149
107V8027

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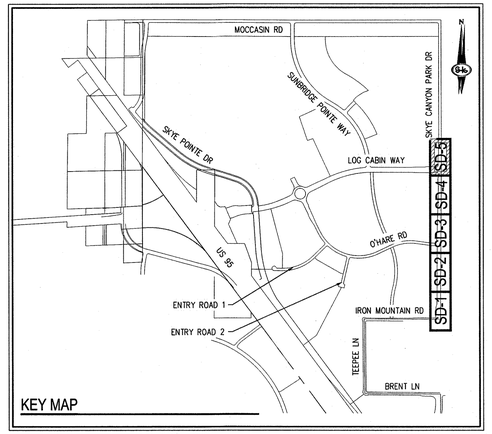


SKYE CANYON PARK DRIVE - PLAN VIEW
(PUBLIC)



SKYE CANYON PARK DRIVE - PROFILE VIEW
HORIZ: 1" = 40'
VERT: 1" = 10'





SURVEY NOTE

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E7 RIGHT-OF-WAY GRANTED BY DECISION, DATED DECEMBER 05, 2002, BY THE BUREAU OF LAND MANAGEMENT UNDER SERIAL NUMBER N-62751-01 TO LAS VEGAS VALLEY WATER DISTRICT FOR STORAGE OF PIPELINE MATERIAL, PLACEMENT OF EVACUATION SOILS, CONSTRUCTION EQUIPMENT AND TRAFFIC CONTROL FOR THE CONSTRUCTION OF THE PIPELINE UNDER RIGHT-OF-WAY GRANT FILED IN THE OFFICE OF THE BUREAU OF LAND MANAGEMENT OVER PORTION OF SAID LAND, AS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA ON JANUARY 16, 2003 IN BOOK 20030116, AS INSTRUMENT NO. 02001 OF OFFICIAL RECORDS.

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NOTES

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FLOOD ZONE

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STORM DRAIN NOTES

1. CONSTRUCT TYPE "CM2" DROP INLET (USDCCA STD. DWG. NO. 412.1 & 421)
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4. INSTALL 18" RCP (USDCCA STD. DWG. NO. 503.2)
5. INSTALL 24" RCP (USDCCA STD. DWG. NO. 503.2)
6. INSTALL 48" TYPE I MANHOLE (USDCCA STD. DWG. NO. 403)
7. INSTALL 66" RCP (USDCCA STD. DWG. NO. 503.2)
8. CONNECT TO STORM DRAIN
9. INSTALL RCP END SECTION (NDOT STD. PLAN R-2.3.1)
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12. REMOVE AND REPLACE EX MANHOLE
13. REMOVE EX STORM DRAIN

LEGEND

(#) STORM DRAIN LATERAL # (SEE SHEETS SD-6)

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SOUTHWEST GAS APPROVAL

SOUTHWEST GAS CORPORATION DATE

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO. 136901 FIRST APPROVED DATE:
LVVWD APPROVED FIRE FLOW: TOTAL 1,500 GPM / ONSITE 0 GPM

FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY DSS1358ON FILE AT CITY OF LAS VEGAS AND CCPW HTE #??-????? FOR THE SUBJECT PROJECT.

JOSH JOHNSON, P.E. 15789 DATE

FAST Call before you UnderGround 1-702-432-5300 FREEWAY & ARTERIAL SYSTEM OF TRANSPORTATION (F.A.S.T.)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DO OVERHEAD 1-702-227-2929

Call before you Dig AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY. Call 811 OR 1-800-227-2600

SLATER HANIFAN GROUP a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
N SKYE CANYON PARK DRIVE
STORM DRAIN V - "SCP" 38+00.00 TO "SCP" 42+00.00

DATE: 11/4/2019
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

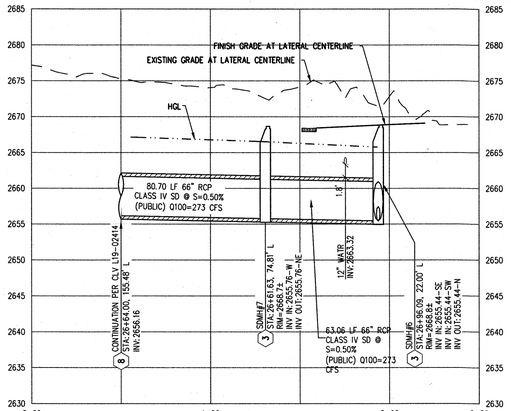
PROJECT NO.
EST1908-000

PROFESSIONAL ENGINEER STATE OF NEVADA JOSHUA L. JOHNSON EXP. 06/30/2021 CIVIL NO. 15789
12/3/20

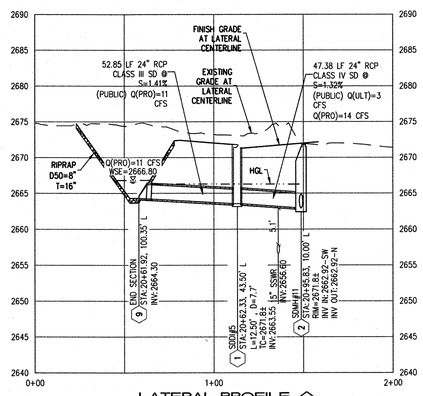
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SHEET 13 OF 50

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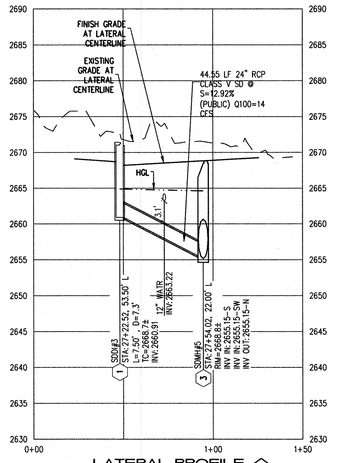
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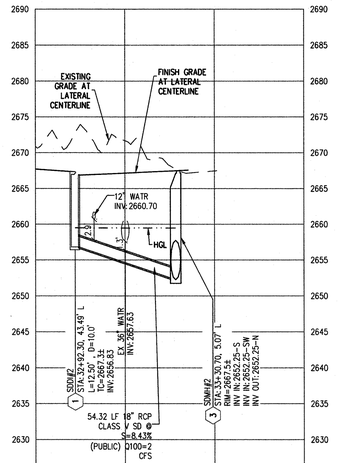
LATERAL PROFILE 1
SCALE HORIZ: 1" = 40'
SCALE VERT: 1" = 10'



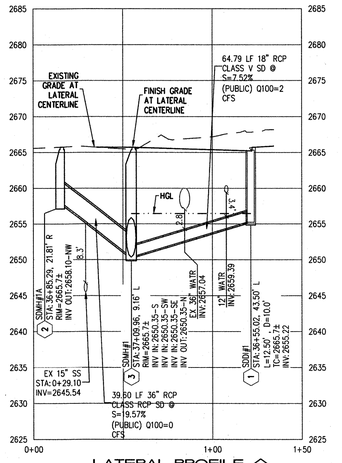
LATERAL PROFILE 2
SCALE HORIZ: 1" = 40'
SCALE VERT: 1" = 10'



LATERAL PROFILE 3
SCALE HORIZ: 1" = 40'
SCALE VERT: 1" = 10'



LATERAL PROFILE 4
SCALE HORIZ: 1" = 40'
SCALE VERT: 1" = 10'



LATERAL PROFILE 5
SCALE HORIZ: 1" = 40'
SCALE VERT: 1" = 10'

SLATER HANIFAN GROUP
a Westwood team
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

NO.	DESCRIPTION	DATE	BY	APP. DATE	APP.

CITY OF LAS VEGAS

SC EAST LANDCO, LLC

SUNSTONE PHASE 1
N SKYE CANYON PARK DRIVE
STORM DRAIN LATERAL I

DATE: 11/4/2019
DRAFTER: SB/JR
DESIGNER: BC
CHECKED: JJ

PROJECT NO.
EST1908-000

PROFESSIONAL ENGINEER - STATE OF NEVADA
JOSHUA L. JOHNSON
No. 15789
Exp. 06/30/2021
CIVIL
12/3/20

SD-6
SHEET 14 OF 50

L19-02149
107V8027

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