

DS #:

5039.5

APN:

137-33-610-002, 137-33-610-003

PROJECT:

Bristle Vale - update # 5

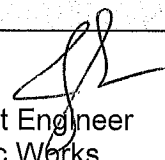
SUBMITTAL:

8th

SCANNED BY/DATE:

CHECKED BY/DATE:



CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM		DATE: May 14, 2020
TO: Land Development Services Department of Building & Safety		FROM: Jennifer Shinn, P.E.  Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for: Bristle Vale – Update #5	
Cross Streets:	SEC of Crossbridge Drive & Alta Drive	
File Number:	F:\Depot\DSMemos\DS5039I.doc	
Parcel Number:	137-33-610-002, 137-33-610-003	
Zoning Action:	TMP-74073 & VAC-74072	
FEMA Flood Zone	YES	NO X
Proposed Storm Drain	YES X	NO
COPIES TO: Slater Hanifan Group		
		KB Home
		Bart Anderson, P.E., DevCo

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 st Submittal	9/20/2018 & 10/1/2018	10/4/2018	Not Approved	\$400.00	499179: \$400
2 nd Submittal	10/25/2018	11/14/2018	Conditional Approval	\$400.00	500514: \$400
CCRFGD	12/18/2018	12/26/2018	Concurrence Recv'd	N/C	N/C
3 rd Submittal	1/14/2019	1/28/2019	Approved	\$100.00	502363: \$100
4 th Submittal	2/21/2019	3/7/2019	Approved	\$100.00	503305: \$100
5 th Submittal	3/18/2019	4/1/2019	Approved	N/C	N/C
6 th Submittal	6/20/2019	7/19/2019	See Comments Below	\$100.00	3461026: \$100
7 th Submittal	4/23/2020	5/14/2020	Approved	\$100.00	3824059: \$100
8 th Submittal	4/23/2020	5/14/2020	Approved	\$100.00	3824060: \$100
TOTAL FEES (LDDRS):				\$1,300.00	----

REMARKS:

8th Submittal: Update #5 for storm drain and drop inlet revisions based on as-built conditions.

7th Submittal: Update #4 for storm drain revision based on as-built conditions.

6th Submittal: Update #3 to extend storm drains in Island Bells Avenue & Wind Poppy Street

4th & 5th Submittals: Update #2 for Unit 2 Development

3rd Submittal: Update to add an 18"-RCP system in C.E. "M"

The 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 Clark County Public Works Department concurrence.

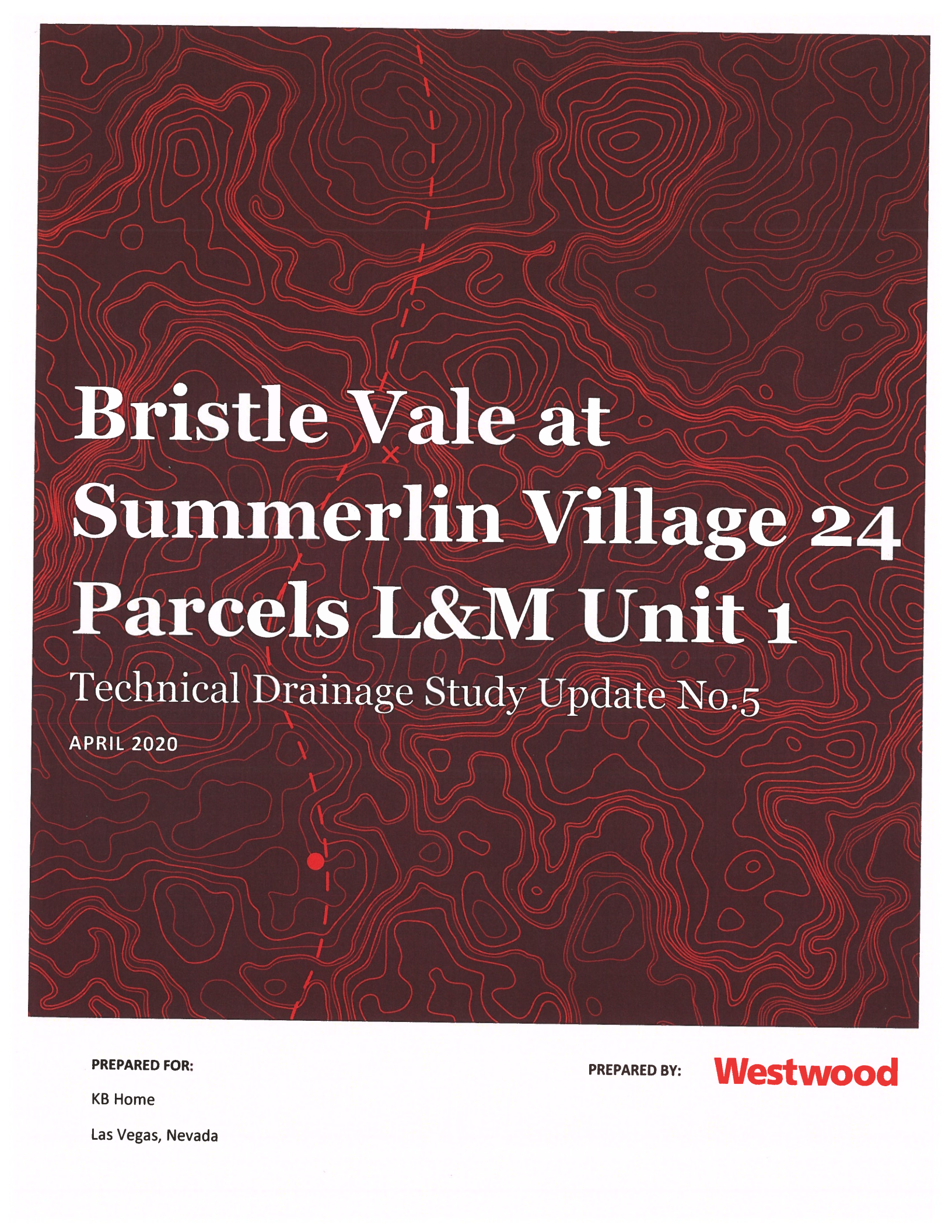
NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Update and accepted by the *City of Las Vegas Flood Control Section*. Additionally, conditional 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
WSP/AYS/JKS

T/R/S: T20S/R61E/34
AREA K-34



Bristle Vale at Summerlin Village 24 Parcels L&M Unit 1

Technical Drainage Study Update No.5

APRIL 2020

PREPARED FOR:

KB Home

Las Vegas, Nevada

PREPARED BY:

Westwood

Westwood

Bristle Vale at Summerlin Village 24 Parcels L&M Unit 1

Technical Drainage Study Update No.5

City of Las Vegas, Nevada

Prepared For:

KB Home
5795 W. Badura Avenue, Suite 180
Las Vegas, NV 89118
Phone: (702) 266-8451

Prepared By:

Westwood Professional Services
5740 S. Arville Street, Suite 216
Las Vegas, NV 89118
Phone: (702) 284-5300
Fax: (702) 284-5339

Project Number: KBH1804.000
Date: April 2020



Stanley Okey Amadi, P.E., CFM
NV Professional Engineer No. 21724
Assisted by: Caitlyn Alcantara, E.I.

April 23, 2020

Ms. Jennifer Shinn, P.E.
Engineering Associate
City of Las Vegas Department of Public Works – Flood Control
333 N. Rancho Drive
Las Vegas, Nevada 89106

**Subject: Technical Drainage Study Update No.5 for Bristle Vale at Summerlin Village 24
Parcels L&M Unit 1 (DS 5039)**

Dear Ms. Shinn:

This letter certifies that all items provided on the Technical Drainage Study Update No.5 for Bristle Vale at Summerlin Village 24 Parcels L&M submittal CD match the paper version bound into the study.

Please contact me if you have any questions.

Sincerely,

WESTWOOD PROFESSIONAL SERVICES



 Caitlyn Alcantara, E.I.
Graduate Engineer II – Flood Control

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL
DRAINAGE STUDY INFORMATION FORM

Name of Development: Bristle Vale at Summerlin Village 24 Parcels L&M Update 5 (Unit 1) Date: April 2020
 Location of Development: a) Descriptive (Cross Streets): North/South: Crossbridge Drive
East/West: Alta Drive
 b) Section: 33 Township: 20 S. Range: 59 E.
 c) APN: 137-33-595-002, 137-33-695-003 & 137-33-614-124

Name of Owner: KB Home
 Telephone No.: 702-266-8451 Fax No.: 702-266-8623 E-mail Address: Pchao@kbhome.com
 Address: 5795 Badura Avenue Las Vegas NV 89118

Contact Person – Name: Stanley Okey Amadi, P.E., CFM Telephone No.: (702) 284-5300
 *E-mail Address: stanley.amadi@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	☐ Subdivision 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: +/-37.56 ac Being Developed/Disturbed: +/-37.56 ac

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.): Residential

5. Approximate upstream land area which drains to the subject site: approx. 52 ac

6. Has the site drainage been evaluated in the past? ☒ Yes** ☐ No If yes, please identify documentation: _____

Conceptual Master Drainage Study for Summerlin Village 24 (DS3505), Technical Drainage Study for Bristle Vale (DS5039),

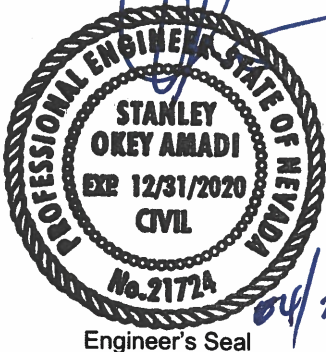
Technical Drainage Study for Bristle Vale Unit 1 - Update #1 (DS5039D), Technical Drainage Study for Bristle Vale Unit 2 - Update #2 (DS5039F),

Technical Drainage Study for Bristle Vale Unit 2 - Update #3 (DS5039G)

7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: _____

To the storm drain in Crossbridge Drive thru the existing stubs.

8. Briefly describe your proposed schedule for the subject project: Single Phase - 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

KBH1804-000

April 23, 2020

Ms. Jennifer Shinn, P.E.
Engineering Associate
City of Las Vegas Public Works – Flood Control
333 N. Ranch Drive
Las Vegas, Nevada 89106

Subject: Technical Drainage Study Update No.5 for Bristle Vale at Summerlin Village 24 Parcels L&M Unit 1 (Prev. DS 5039)

Dear Ms. Shinn:

This letter is intended to serve as the *Technical Drainage Study Update No. 5 for Bristle Vale at Summerlin Village 24 Parcels L&M Unit 1* (hereinafter referred to as the Update 5 Study). The proposed improvements for the site have been fully installed. However, several segments of the storm drain and drop inlets were incorrectly installed. Hence CLV staff has requested that an update to the approved study be provided to reflect the as-built condition. Revisions have been made to hydraulic computations to account for the following as-built design changes.

- SDDI L6 was installed as a 10' Type CM2 drop inlet rather than a 7.5' Type CM2 drop inlet.
- Inverts changed for SDMH 6, SDMH 2, SDDI L3, and SDDI L6.
- Two lengths of pipe changed on either ends of SDMH 3.

The purpose of this Update 5 Study is to revise the storm drain WSPGW hydraulic model, SD1.WSW, and the lateral loss computations to reflect the surveyed as-built data and to ensure that the system still has adequate capacity to convey the designed discharge while meeting all design criteria.

Storm Drain Hydraulics

Since Facility SDDI L6 is in sump and the approaching flow remains unchanged, the increase in length by 2.5-ft lowers the ponding depth of the inlet. No drop inlet computations have been provided and the flow introduced to the storm drain (SD1) has not been revised.

The WSPGW model SD1 and lateral computations have been updated to reflect the revised pipe lengths and invert elevations. The revised hydraulic computations indicate that the storm drain mainline and lateral systems have adequate capacity to convey the design discharges. Please refer to Appendix B for the updated WSPGW models and lateral computations. Highlighted copies of the reference materials that include the prior approved WSPGW models, lateral computations, and the approved storm drain profiles have been included in Appendix C for reference. Note that

though the original TDS has had three previous updates, this Update 5 Study references the first update since it is the most pertinent as Unit 1 was last revised in the first update.

Conclusions

Based on the revised hydraulic models, the installed storm drain facilities are still in compliance with the CCRFCD Manual and will function as intended.

The revised (as-built) plans including the storm drain plan and profiles sheets have been included in Appendix E to support the hydraulic computations and conclusions detailed in this update study. If you have any questions or require additional information, please do not hesitate to contact us at (702) 284-5300.

Respectfully Submitted,
WESTWOOD PROFESSIONAL SERVICES



 Caitlyn Alcantara, E.I.
Graduate Engineer II – Flood Control

pc: Stanley Okey Amadi, P.E., CFM – Westwood PS
Mark Failla, P.E., CFM – Westwood PS
Tim Mulrooney, P.E. – Westwood PS
Dan Poll, E.I – Westwood PS

Appendices

Appendix A: Approval Letters

Appendix B: Drainage Exhibit

Appendix C: Storm Drain Computations

Appendix D: Reference Material

Technical Drainage Study Update No.1 for Bristle Vale at Summerlin Village 24
Parcels L&M Unit 1

- WSPGW Models
- Drainage Exhibit
- Improvement Plans

Appendix E: CD of Electronic Files & Improvement Plans

APPENDIX A

Approval Letters

CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		July 19, 2019
TO: Land Development Services Department of Building & Safety		FROM: Jennifer Shinn, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for:	
	Bristle Vale – Update #2	
Cross Streets:	SEC of Crossbridge Drive & Alta Drive	
File Number:	F:\Depot\DSMemos\DS5039G.doc	
Parcel Number:	137-33-610-002, 137-33-610-003	
Zoning Action:	TMP-74073 & VAC-74072	
FEMA Flood Zone	YES	NO X
Proposed Storm Drain	YES X	NO
		COPIES TO: Slater Hanifan Group KB Home Bart Anderson, P.E., DevCo

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 st Submittal	9/20/2018 & 10/1/2018	10/4/2018	Not Approved	\$400.00	499179: \$400
2 nd Submittal	10/25/2018	11/14/2018	Conditional Approval	\$400.00	500514: \$400
CCRFCD	12/18/2018	12/26/2018	Concurrence Recv'd	N/C	N/C
3 rd Submittal	1/14/2019	1/28/2019	Approved	\$100.00	502363: \$100
4 th Submittal	2/21/2019	3/7/2019	Approved	\$100.00	503305: \$100
5 th Submittal	3/18/2019	4/1/2019	Approved	N/C	N/C
6 th Submittal	6/20/2019	7/19/2019	See Comments Below	\$100.00	3461026: \$100
TOTAL FEES (LDDRS):				\$1,100.00	----

REMARKS:

6th Submittal: Update #3 to extend storm drains in Island Bells Avenue & Wind Poppy Street

4th & 5th Submittals: Update #2 for Unit 2 Development

3rd Submittal: Update to add an 18"-RCP system in C.E. "M"

The 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 Clark County Public Works Department concurrence.

In an effort to increase administrative efficiency, for all original and re-submittal packages including updates and the addenda, the City of Las Vegas Public Works Department requires both a hardcopy and a digital copy (PDF) on CD for the drainage study.

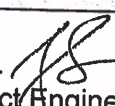
A letter sealed and signed by a Nevada registered civil engineer must be included in every submittal certifying documents on the electronic CD matches 100% of the hardcopy submittal. The new submittal requirement is effective on May 1, 2019. If there are any questions regarding these new requirements, please contact Albert Sung in the City Flood Control Section at (702) 229-6541.

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.

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END OF REMARKS
WSP/AYS/JKS

T/R/S: T20S/R61E/34
AREA K-34

CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		April 1, 2019
TO: Land Development Services Department of Building & Safety		FROM: Jennifer Shinn, P.E.  Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for: Bristle Vale – Update #2	COPIES TO: Slater Hanifan Group KB Home Bart Anderson, P.E., DevCo
Cross Streets:	SEC of Crossbridge Drive & Alta Drive	
File Number:	F:\Depot\DSMemos\DS5039F.doc	
Parcel Number:	137-33-610-002, 137-33-610-003	
Zoning Action:	TMP-74073 & VAC-74072	
FEMA Flood Zone	YES NO X	
Proposed Storm Drain	YES X NO	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
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TOTAL FEES (LDDRS):				\$1,000.00	----

REMARKS:

4th Submittal: Update #2 for Unit 2 Development

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END OF REMARKS
WSP/AYS/JKS

T/R/S: T20S/R61E/34
AREA K-34

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM		DATE: January 28, 2019
TO: Land Development Services Department of Building & Safety		FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for: Bristle Vale – Update #1	
Cross Streets:	SEC of Crossbridge Drive & Alta Drive	COPIES TO: Slater Hanifan Group
File Number:	F:\Depot\DSMemos\DS5039D.doc	KB Home
Parcel Number:	137-33-610-002, 137-33-610-003	Bart Anderson, P.E., DevCo
Zoning Action:	TMP-74073 & VAC-74072	
FEMA Flood Zone	YES	NO X
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3 rd Submittal	1/14/2019	1/28/2019	See Comments Below	\$100.00	502363: \$100
TOTAL FEES (LDDRS):				\$900.00	----

REMARKS:

3rd Submittal: Update to add an 18"-RCP system in C.E. "M"

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- Sheet D-3:** Clearly show that the proposed wrought iron fence is to be constructed per **Standard Drawing 425.S1**.
- Show clearly all existing storm drains and the associated facilities such as inlets, laterals and storm drain manholes on the grading plans. Label with *City of Las Vegas* recorded drawing numbers as well.
- Sheets G-6 & G-7:** The cross sections along Crossbridge Drive should show that the wall for Lots 5 to 9 shall be solid grouted.
- Provide a barrier rail around the riprap lined ditch for pedestrian protection.
- This drainage study assumes that the project will be constructed in one phase. If improvement plans are submitted to break the project into separate phases, a drainage study update will be required for each phase addressing the interim condition.

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END OF REMARKS
WSP/AYS

T/R/S: T20S/R61E/34
AREA K-34

REGIONAL FLOOD CONTROL DISTRICT



Steven C. Parrish, P.E.
General Manager/Chief
Engineer

BOARD OF DIRECTORS

Lawrence L. Brown, III
Chairman
Clark County

Mayor Debra March
Vice-Chairman
City of Henderson

David Ballweg
City of Mesquite

Chris Giunchigliani
Clark County

Mayor Carolyn Goodman
City of Las Vegas

Mayor John J. Lee
City of North Las Vegas

Dr. Lois Tarkanian
City of Las Vegas

Mayor Rodney Woodbury
City of Boulder City

December 13, 2018

Mr. Oh Sang Kwon, P.E.
City of Las Vegas Department of Public Works
333 North Rancho Drive
Las Vegas, NV 89106

**DISTRICT CONCURRENCE: BRISTLE VALE
(DS5039B) (RFCD No. 18-11170)**

Dear Mr. Kwon:

Clark County Regional Flood Control District (District) reviewed Technical Drainage Study dated September 17, 2018, and Addendum No. 1 dated October 25, 2018 for above-mentioned project as submitted by SLATER HANIFAN GROUP, INC. In addition, District is in receipt of the Conditional Letter of Acceptance from City of Las Vegas Department of Public Works dated November 14, 2018.

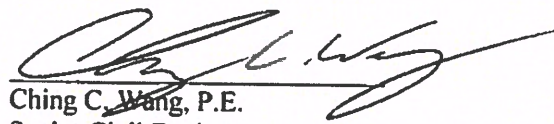
District concurs with acceptance of this Technical Drainage Study by City of Las Vegas Department of Public Works.

District's review of this project was limited to issues of Regional Flood Control Significance as defined in *Uniform Regulations for the Control of Drainage*.

Please be aware that as additional information becomes available and/or restudies of Flood Insurance Studies are performed, information submitted by SLATER HANIFAN GROUP, INC. may be superseded. Compliance with regulatory elements and design standards specified in *Uniform Regulations for the Control of Drainage* does not imply a guarantee that properties will be free from flooding or flood damage. The District, its officials, or employees assume no liability for information, data, or conclusions presented by consulting engineers. We, therefore, make no warranties, either expressed or implied, in conducting this review.

STEVEN C. PARRISH, P.E.
General Manager/Chief Engineer

BY:


Ching C. Wang, P.E.
Senior Civil Engineer

CCW:dd

c: Stanley Okey Amadi, P.E., Slater Hanifan Group, Inc.

P:\Letters and Memos\Local Drainage\Land Development & Drainage\2018\L-18-11170.doc

APPENDIX B

Drainage Exhibit

APPENDIX C

Storm Drain Computations

Proposed Condition WSPG Summary										
STORM DRAIN SYSTEM 1 (SD1): LOCATED IN WESTERN HALF OF PROJECT SITE AND CONNECTS TO EXISTING CROSSBRIDGE MAINLINE										
WSPG Station	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	N/A	SD-1	36" RCP	3503.40	44.10	3504.77	14.04	3517.40	Existing Stub	OK
1061.53	1+11.53	SD-1	36" RCP	3505.68	44.10	3507.68	8.81	3520.69	Connection to Existing	OK
1186.62	13+40.92	SD-1	7.5' x 7' RCB	3506.57	44.10	3508.73	8.08	3513.07	Wall Exit	OK
1186.62	13+40.92	SD-1	7.5' x 7' RCB	3506.57	44.10	3510.30	1.58	3513.07	Facility L1	OK
1189.62	13+40.92	SD-1	7.5' x 7' RCB	3506.59	42.10	3510.31	1.51	3513.07		OK
1189.62	13+40.92	SD-1	7.5' x 7' RCB	3506.59	42.10	3510.31	1.51	3513.07		OK
1192.62	13+40.92	SD-1	7.5' x 7' RCB	3506.61	42.10	3510.31	1.52	3513.07		OK
1269.14	12+82.61	SD-1	36" RCP	3507.20	42.10	3510.70	5.96	3516.28	Wall Entrance	OK
1412.65	15+28.57	SD-1	36" RCP	3508.30	42.10	3511.27	5.97	3515.27	Wall Exit	OK
1412.65	15+28.57	SD-1	7.5' x 7' RCB	3508.30	42.10	3512.31	1.40	3515.27	Facility L2	OK
1415.65	15+28.57	SD-1	7.5' x 7' RCB	3508.32	39.10	3512.32	1.30	3515.27		OK
1415.65	15+28.57	SD-1	7.5' x 7' RCB	3508.32	39.10	3512.32	1.30	3515.27		OK
1418.65	15+28.57	SD-1	7.5' x 7' RCB	3508.35	39.10	3512.32	1.31	3515.27		OK
1418.65	15+28.57	SD-1	7.5' x 7' RCB	3508.35	39.10	3512.32	5.53	3515.27	Wall Entrance	OK
1434.01	15+27.72	SD-1	36" RCP	3508.50	39.10	3512.51	5.53	3516.46	Facility L3	OK
1434.01	15+27.72	SD-2	36" RCP	3508.82	25.10	3512.02	7.99	3516.46		OK
1483.81	14+80.18	SD-2	24" RCP	3510.00	25.10	3512.97	7.99	3518.51	Facilities L4 & L5	OK
1522.82	4+95.86	SD-2	24" RCP	3510.39	25.10	3513.53	7.99	3519.01		OK
1522.82	4+95.86	PP-5	24" RCP	3510.89	18.10	3514.39	10.24	3519.01		OK
1574.22	10+90.78	PP-5	18" RCP	3514.57	18.10	3515.70	12.70	3520.68		OK
1574.22	12+65.29	PP-5	18" RCP	3515.12	18.00	3516.57	10.29	3524.24	Facility L6	OK
1748.80	10+50.	SD-3	18" RCP	3517.66	18.00	3521.81	10.19	3538.43		OK
2014.09	10+50.	SD-3	18" RCP	3531.14	18.00	3532.59	10.29	3538.43		OK

T1 BRISTLE VALE UNIT 1 UPDATE NO. 5									
T2 STORM DRAIN SYSTEM 1 (SD1)									
T3 LOCATED IN WESTERN HALF OF PROJECT SITE AND CONNECTS TO EXISTING CROSSBRIDGE MAINLINE									
SO	1000.0003503.400	36	.013	1				3506.400	
R	1061.5303505.680	36	.013	1					
R	1186.6203506.569	36	.013	1					
WE	1186.6203506.569	2	.013						
R	1189.6203506.590	2	.013						
JX	1189.6203506.590	2	.013	2.0			3506.590	90.0	
R	1192.6203506.613	2	.013					-42.0	
WX	1192.6203506.613	36	.013						
R	1269.1403507.200	36	.013						
R	1412.6503508.297	36	.013	1				32.0	1
WE	1412.6503508.297	2	.013						
R	1415.6503508.320	2	.013						
JX	1415.6503508.320	2	.013	3.0			3508.320	90.0	
R	1418.6503508.349	2	.013						
WX	1418.6503508.349	36	.013						
R	1434.0103508.500	36	.013					-90.0	
JX	1434.0103508.820	24	.013	14.0			3508.710	30.0	
R	1483.8103510.000	24	.013					87.0	1
R	1522.8203510.390	24	.013					24.0	
JX	1522.8203510.890	24	.013	4.0		3.0	3510.8903510.890	49.0	53.0
R	1574.2203514.570	18	.013					8.0	
JX	1574.2203515.120	18	.013	0.1			3515.120		
R	1748.8003517.660	18	.013					-89.0	1
R	2014.0903531.140	18	.013						
SH	2014.0903531.140	18	.013						
CD	18	4	1	0.000	1.500	0.000	0.000	0.000	0.000
CD	24	4	1	0.000	2.000	0.000	0.000	0.000	0.000
CD	36	4	1	0.000	3.000	0.000	0.000	0.000	0.000
CD	2	3	0	0.000	7.000	7.500	0.000	0.000	0.000
CD	1	3	0	0.000	15.000	15.000	0.000	0.000	0.000
Q									18.000

FILE: SD1.WSW

SD1.EDT

W S P G W - EDIT LISTING - Version 14.10

Date: 4-20-2020 Time: 5: 6:26

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

PAGE 1

CARD	SECT	CHN	NO OF	AVE	PIER	HEIGHT	1	BASE	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CODE	NO	TYPE	PIER/PIP	WIDTH	DIAMETER	WIDTH					DROP										

CD	18	4	1			1.500															
CD	24	4	1			2.000															
CD	36	4	1			3.000															
CD	2	3	0		.000	7.000		.000		.000	.000										
CD	1	3	0		.000	15.000		.000		.000	.000										

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

PAGE NO 1

HEADING LINE NO 1 IS -

BRISTLE VALE UNIT 1 UPDATE NO. 5

HEADING LINE NO 2 IS -

STORM DRAIN SYSTEM 1 (SD1)

HEADING LINE NO 3 IS -

LOCATED IN WESTERN HALF OF PROJECT SITE AND CONNECTS TO EXISTING CROSSBRID

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

PAGE NO 2

ELEMENT NO	1	IS A	SYSTEM OUTLET	*	STATION	INVERT	SECT														
			U/S DATA																		
ELEMENT NO	2	IS A	REACH	*	1000.000	3503.400	36														
			U/S DATA																		
ELEMENT NO	3	IS A	REACH	*	1061.530	3505.680	36														
			U/S DATA																		
ELEMENT NO	4	IS A	WALL ENTRANCE	*	1186.620	3506.569	36														
			U/S DATA																		
ELEMENT NO	5	IS A	REACH	*	1186.620	3506.569	2														
			U/S DATA																		
ELEMENT NO	6	IS A	JUNCTION	*	1189.620	3506.590	2														
			U/S DATA																		

W S ELEV
3506.400

RADIUS	ANGLE	ANG PT	MAN H
.000	.000	.000	0

RADIUS	ANGLE	ANG PT	MAN H
.000	.000	.000	0

RADIUS	ANGLE	ANG PT	MAN H
.000	.000	.000	0

INVERT-3	INVERT-4	PHI 3	PHI 4
.000	.000	90.000	.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

RADIUS	ANGLE	ANG PT	MAN H
.000	.000	-42.000	0

RADIUS	ANGLE	ANG PT	MAN H
.000	.000	32.000	1

SD1.EDT

ELEMENT NO 10 IS A REACH
 U/S DATA STATION INVERT SECT * * * * *
 1412.650 3508.297 36 N .013
 ELEMENT NO 11 IS A WALL ENTRANCE
 U/S DATA STATION INVERT SECT * * * * *
 1412.650 3508.297 2 FP .013

PAGE NO 3

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 12 IS A REACH
 U/S DATA STATION INVERT SECT * * * * *
 1415.650 3508.320 2 N .013
 ELEMENT NO 13 IS A JUNCTION
 U/S DATA STATION INVERT SECT LAT-1 LAT-2 Q3 Q4 INVERT-3 INVERT-4 PHI 3 PHI 4
 1415.650 3508.320 2 2 0 .013 3.000 .000 3508.320 .000 90.000 .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 * * * * *
 1418.650 3508.349 2 N .013
 ELEMENT NO 15 IS A WALL EXIT
 U/S DATA STATION INVERT SECT * * * * *
 1418.650 3508.349 36

ELEMENT NO 16 IS A REACH
 U/S DATA STATION INVERT SECT * * * * *
 1434.010 3508.500 36 N .013
 ELEMENT NO 17 IS A JUNCTION
 U/S DATA STATION INVERT SECT LAT-1 LAT-2 Q3 Q4 INVERT-3 INVERT-4 PHI 3 PHI 4
 1434.010 3508.820 24 18 0 .013 14.000 .000 3508.710 .000 30.000 .000

ELEMENT NO 18 IS A REACH
 U/S DATA STATION INVERT SECT * * * * *
 1483.810 3510.000 24 N .013

ELEMENT NO 19 IS A REACH
 U/S DATA STATION INVERT SECT * * * * *
 1522.820 3510.390 24 N .013

ELEMENT NO 20 IS A JUNCTION
 U/S DATA STATION INVERT SECT LAT-1 LAT-2 Q3 Q4 INVERT-3 INVERT-4 PHI 3 PHI 4
 1522.820 3510.890 24 18 18 .013 4.000 3.000 3510.890 3510.890 49.000 53.000

PAGE NO 4

WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS
 ELEMENT NO 21 IS A REACH

U/S DATA STATION INVERT SECT * * * * *
 1574.220 3514.570 18 N .013
 ELEMENT NO 22 IS A JUNCTION
 U/S DATA STATION INVERT SECT LAT-1 LAT-2 Q3 Q4 INVERT-3 INVERT-4 PHI 3 PHI 4
 * * * * *

Page 2

ELEMENT NO	23 IS A REACH	U/S DATA	STATION	INVERT	SECT	18	18	0	SD1. EDT	.100	.000	3515.120	RADIUS	.000	ANGLE	.000	ANG PT	MAN H	.000
ELEMENT NO 23	IS A REACH	U/S DATA	1748.800	3517.660	18	*	*	0	.013	.100	.000	3515.120	RADIUS	.000	ANGLE	.000	ANG PT	MAN H	.000
ELEMENT NO 24	IS A REACH	U/S DATA	2014.090	3531.140	18	*	*	0	.013	.100	.000	3515.120	RADIUS	.000	ANGLE	.000	ANG PT	MAN H	.000
ELEMENT NO 25	IS A SYSTEM HEADWORKS	U/S DATA	2014.090	3531.140	18	*	*	0	.013	.100	.000	3515.120	RADIUS	.000	ANGLE	.000	ANG PT	MAN H	.000
			2014.090	3531.140	18	*	*	0	.013	.100	.000	3515.120	RADIUS	.000	ANGLE	.000	ANG PT	MAN H	.000
			2014.090	3531.140	18	*	*	0	.013	.100	.000	3515.120	RADIUS	.000	ANGLE	.000	ANG PT	MAN H	.000

WATER SURFACE PROFILE LISTING
BRISTLE VALE UNIT 1 UPDATE NO. 5
STORM DRAIN SYSTEM 1 (SD1)

Date: 4-20-2020 Time: 5: 6:30

LOCATED IN WESTERN HALF OF PROJECT SITE AND CONNECTS TO EXISTING CROSS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Head	Vel	Energy Grd.El.	Super Elev	Critical Depth	Flow Width	Height Dia.	Base Wt	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude	Norm Dp	"N"	X-Fall	ZR	Type Ch	
1000.000	3503.400	1.368	3504.768	44.10	14.04	3.06	3507.83	.00	2.16	2.99	3.000	.000	.00	1	.0
12.859	.0371	-	-	-	-	.0229	.29	1.37	2.41	1.21	.013	.00	.00	PIPE	
1012.859	3503.876	1.409	3505.285	44.10	13.52	2.84	3508.12	.00	2.16	2.99	3.000	.000	.00	1	.0
12.301	.0371	-	-	-	-	.0204	.25	1.41	2.28	1.21	.013	.00	.00	PIPE	
1025.159	3504.332	1.462	3505.794	44.10	12.89	2.58	3508.38	.00	2.16	3.00	3.000	.000	.00	1	.0
9.370	.0371	-	-	-	-	.0179	.17	1.46	2.13	1.21	.013	.00	.00	PIPE	
1034.529	3504.679	1.518	3506.197	44.10	12.29	2.35	3508.54	.00	2.16	3.00	3.000	.000	.00	1	.0
7.291	.0371	-	-	-	-	.0158	.12	1.52	1.98	1.21	.013	.00	.00	PIPE	
1041.820	3504.949	1.576	3506.525	44.10	11.72	2.13	3508.66	.00	2.16	3.00	3.000	.000	.00	1	.0
5.732	.0371	-	-	-	-	.0139	.08	1.58	1.84	1.21	.013	.00	.00	PIPE	
1047.553	3505.162	1.637	3506.799	44.10	11.18	1.94	3508.74	.00	2.16	2.99	3.000	.000	.00	1	.0
4.512	.0371	-	-	-	-	.0123	.06	1.64	1.71	1.21	.013	.00	.00	PIPE	
1052.065	3505.329	1.702	3507.031	44.10	10.66	1.76	3508.79	.00	2.16	2.97	3.000	.000	.00	1	.0
3.515	.0371	-	-	-	-	.0109	.04	1.70	1.59	1.21	.013	.00	.00	PIPE	
1055.580	3505.459	1.770	3507.230	44.10	10.16	1.60	3508.83	.00	2.16	2.95	3.000	.000	.00	1	.0
2.678	.0371	-	-	-	-	.0096	.03	1.77	1.48	1.21	.013	.00	.00	PIPE	
1058.258	3505.559	1.842	3507.401	44.10	9.69	1.46	3508.86	.00	2.16	2.92	3.000	.000	.00	1	.0
1.957	.0371	-	-	-	-	.0085	.02	1.84	1.37	1.21	.013	.00	.00	PIPE	

SD1.OUT

BRISTLE VALE UNIT 1 UPDATE NO. 5
STORM DRAIN SYSTEM 1 (SD1)

LOCATED IN WESTERN HALF OF PROJECT SITE AND CONNECTS TO EXISTING CROSS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Width	Top Dia.-FT	Base Wt 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
1060.215	3505.631	1.919	3507.550	44.10	9.24	1.32	3508.87	.00	2.16	2.88	3.000	.000	.00	1 .0
1.315	.0371	-	-	-	-	.0076	.01	1.92	1.26	1.21	.013	.00	.00	PIPE
1061.530	3505.680	2.001	3507.680	44.10	8.81	1.20	3508.88	.00	2.16	2.83	3.000	.000	.00	1 .0
55.834	.0071	-	-	-	-	.0071	.40	2.00	1.17	2.00	.013	.00	.00	PIPE
1117.364	3506.077	2.001	3508.077	44.10	8.81	1.20	3509.28	.00	2.16	2.83	3.000	.000	.00	1 .0
60.269	.0071	-	-	-	-	.0068	.41	2.00	1.17	2.00	.013	.00	.00	PIPE
1177.633	3506.505	2.069	3508.574	44.10	8.48	1.12	3509.69	.00	2.16	2.78	3.000	.000	.00	1 .0
8.987	.0071	-	-	-	-	.0061	.06	2.07	1.09	2.00	.013	.00	.00	PIPE
1186.620	3506.569	2.163	3508.732	44.10	8.08	1.01	3509.75	.00	2.16	2.69	3.000	.000	.00	1 .0
WALL ENTRANCE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1186.620	3506.569	3.731	3510.300	44.10	1.58	.04	3510.34	.00	1.02	7.50	7.000	7.500	.00	.0
3.000	.0070	-	-	-	-	.0001	.00	3.73	.14	.81	.013	.00	.00	BOX
JUNCT STR	.0000	-	-	-	-	.0001	.00	3.71	.15		.013	.00	.00	BOX
1189.620	3506.590	3.716	3510.306	42.10	1.51	.04	3510.34	.00	.99	7.50	7.000	7.500	.00	.0
3.000	.0076	-	-	-	-	.0001	.00	3.72	.14	.76	.013	.00	.00	BOX
1192.620	3506.613	3.693	3510.306	42.10	1.52	.04	3510.34	.00	.99	7.50	7.000	7.500	.00	.0
WALL EXIT	-	-	-	-	-	-	-	-	-	-	-	-	-	-

FILE: SD1.WSW

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Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING

Date: 4-20-2020 Time: 5: 6:30

PAGE 3

BRISTLE VALE UNIT 1 UPDATE NO. 5

STORM DRAIN SYSTEM 1 (SD1)

LOCATED IN WESTERN HALF OF PROJECT SITE AND CONNECTS TO EXISTING CROSS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Width	Top Dia.-FT	Base Wt I.D.	ZL	No Wth Prs/Pip
1189.620	3506.590	3.716	3510.306	42.10	1.51	.04	3510.34	.00	.99	7.50	7.000	7.500	.00	.0
3.000	.0076	-	-	-	-	.0001	.00	3.72	.14	.76	.013	.00	.00	BOX
1192.620	3506.613	3.693	3510.306	42.10	1.52	.04	3510.34	.00	.99	7.50	7.000	7.500	.00	.0
WALL EXIT	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SD1.OUT

L/Elem	Ch Slope	Depth	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1192.620	3506.613	3.694	3510.307	42.10	5.96	.55	3510.86	.00	2.11	.00	3.000	.000	.00	1 .0
76.520	.0077	-	-	-	-	.0040	.30	3.69	.00	1.89	.013	.00	.00	PIPE
1269.140	3507.200	3.498	3510.698	42.10	5.96	.55	3511.25	.00	2.11	.00	3.000	.000	.00	1 .0
135.956	.0076	-	-	-	-	.0040	.54	3.50	.00	1.89	.013	.00	.00	PIPE
1405.096	3508.239	3.000	3511.239	42.10	5.96	.55	3511.79	.00	2.11	.00	3.000	.000	.00	1 .0
7.554	.0076	-	-	-	-	.0038	.03	3.00	.00	1.89	.013	.00	.00	PIPE
1412.650	3508.297	2.968	3511.265	42.10	5.97	.55	3511.82	.00	2.11	.62	3.000	.000	.00	1 .0
WALL ENTRANCE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1412.650	3508.297	4.011	3512.308	42.10	1.40	.03	3512.34	.00	.99	7.50	7.000	7.500	.00	0 .0
3.000	.0076	-	-	-	-	.0001	.00	4.01	.12	.76	.013	.00	.00	BOX
JUNCT STR	.0000	-	-	-	-	.0001	.00	3.99	.12	.013	.013	.00	.00	BOX
1415.650	3508.320	3.996	3512.316	39.10	1.30	.03	3512.34	.00	.95	7.50	7.000	7.500	.00	0 .0
3.000	.0097	-	-	-	-	.0001	.00	4.00	.12	.67	.013	.00	.00	BOX
1418.650	3508.349	3.967	3512.316	39.10	1.31	.03	3512.34	.00	.95	7.50	7.000	7.500	.00	0 .0
WALL EXIT	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1418.650	3508.349	3.967	3512.316	39.10	5.53	.48	3512.79	.00	2.04	.00	3.000	.000	.00	1 .0
15.360	.0098	-	-	-	-	.0034	.05	3.97	.00	1.66	.013	.00	.00	PIPE
FILE: SD1.WSW	-	-	-	-	-	-	-	-	-	-	-	-	-	PAGE 4

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Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING

Date: 4-20-2020 Time: 5: 6:30

BRISTLE VALE UNIT 1 UPDATE NO. 5

STORM DRAIN SYSTEM 1 (SD1)

LOCATED IN WESTERN HALF OF PROJECT SITE AND CONNECTS TO EXISTING CROSS

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	ZL	No Wth Prs/Pip
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
L/Elem	Ch Slope	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	Type Ch
1434.010	3508.500	4.010	3512.510	39.10	5.53	.48	3512.99	.00	2.04	.00	3.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SD1.OUT													
JUNCT STR	0000	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1574.220	3515.120	1.451	3516.572	18.00	10.29	1.64	3518.21	.00	1.13	2.13	.013	.00	PIPE
1.377	.0145	- -	- -	- -	- -	.0266	.04	1.45	1.00	1.50	.013	.00	PIPE
1575.597	3515.140	1.500	3516.640	18.00	10.19	1.61	3518.25	.00	1.45	.00	1.500	.00	1 .0
173.203	.0145	- -	- -	- -	- -	.0284	4.91	1.50	.00	1.50	.013	.00	PIPE
1748.800	3517.660	4.146	3521.806	18.00	10.19	1.61	3523.42	.00	1.45	.00	1.500	.00	1 .0
77.528	.0508	- -	- -	- -	- -	.0294	2.28	4.15	.00	.98	.013	.00	PIPE
1826.328	3521.599	2.482	3524.081	18.00	10.19	1.61	3525.69	.00	1.45	.00	1.500	.00	1 .0
HYDRAULIC JUMP													
1826.328	3521.599	.978	3522.578	18.00	14.74	3.38	3525.95	.00	1.45	1.43	1.500	.00	1 .0
90.097	.0508	- -	- -	- -	- -	.0492	4.44	.98	2.81	.98	.013	.00	PIPE
1916.425	3526.178	1.001	3527.179	18.00	14.36	3.20	3530.38	.00	1.45	1.41	1.500	.00	1 .0
42.844	.0508	- -	- -	- -	- -	.0450	1.93	1.00	2.69	.98	.013	.00	PIPE
1959.269	3528.355	1.045	3529.400	18.00	13.70	2.91	3532.31	.00	1.45	1.38	1.500	.00	1 .0
20.432	.0508	- -	- -	- -	- -	.0402	.82	1.04	2.47	.98	.013	.00	PIPE

W S P G W - CIVILDESIGN Version 14.08
 Program Package Serial Number: 7189
 WATER SURFACE PROFILE LISTING
 BRISTLE VALE UNIT 1 UPDATE NO. 5
 STORM DRAIN SYSTEM 1 (SD1)
 LOCATED IN WESTERN HALF OF PROJECT SITE AND CONNECTS TO EXISTING CROSS

Date: 4-20-2020 Time: 5: 6:30

♣ FILE: SD1.WSW
 W S P G W - CIVILDESIGN Version 14.08
 Program Package Serial Number: 7189
 WATER SURFACE PROFILE LISTING
 BRISTLE VALE UNIT 1 UPDATE NO. 5
 STORM DRAIN SYSTEM 1 (SD1)
 LOCATED IN WESTERN HALF OF PROJECT SITE AND CONNECTS TO EXISTING CROSS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Width	Top Height/Dia.-FT	Base Wt I.D.	No Wth Prs/pip
L/Elem	Ch Slope	*****	*****	*****	*****	SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1979.702	3529.393	1.092	3530.485	18.00	13.06	2.65	3533.13	.00	1.45	1.33	1.500	.000	1 .0
12.741	.0508	- -	- -	- -	- -	.0360	.46	1.09	2.26	.98	.013	.00	PIPE
1992.443	3530.040	1.144	3531.184	18.00	12.45	2.41	3533.59	.00	1.45	1.28	1.500	.000	1 .0
8.776	.0508	- -	- -	- -	- -	.0324	.28	1.14	2.06	.98	.013	.00	PIPE

2001.219	3530.486	1.201	3531.687	18.00	11.87	2.19	3533.88	.00	1.45	1.20	1.500	.000	.00	1	.0
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
6.263	.0508					.0293	.18	1.20	1.86	.98	.013	.00	.00	PIPE	
2007.481	3530.804	1.265	3532.069	18.00	11.32	1.99	3534.06	.00	1.45	1.09	1.500	.000	.00	1	.0
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4.363	.0508					.0270	.12	1.27	1.65	.98	.013	.00	.00	PIPE	
2011.844	3531.026	1.342	3532.368	18.00	10.79	1.81	3534.18	.00	1.45	.92	1.500	.000	.00	1	.0
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2.246	.0508					.0259	.06	1.34	1.41	.98	.013	.00	.00	PIPE	
2014.090	3531.140	1.451	3532.591	18.00	10.29	1.64	3534.23	.00	1.45	.53	1.500	.000	.00	1	.0
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

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▲

BRISTLE VALE UNIT 1 UPDATE NO. 5

STORM DRAIN SYSTEM 1 (SD1)

LOCATED IN WESTERN HALF OF PROJECT SITE AND CONNECTS TO EXISTING CROSS

1000.00	.I	W	C	H	E		.	R
1010.45	.					.		
1020.91	.I	W	C	H	E		.	R
1031.36	.I	W	C	H	E		.	R
1041.82	.I	W	C	H	E		.	R
1052.27	.	I	W	C	H	E	.	R
1062.73	.	I	W	C	H	E	.	R
1073.18	.	I	W	C	H	E	.	R

SD1.OUT

1083.64	.	I	WC	HE	.	R
1094.09	.	I	W	C	HE	R
1104.55	.	I	WC	HE	.	R
1115.00	.	I	WC	H	.	R
1125.45	.	I	W	HE	.	R
1135.91	.				.	
1146.36	.				.	
1156.82	.				.	
1167.27	.				.	
1177.73	.	I	WC	HE	.	R
1188.18	.	I	Y	Y	Y	Y
1198.64	.	I	C	W	H	R
1209.09	.	I	C	W	H	R
1219.55	.	I	Y	Y	Y	Y
1230.00	.	I	C	H	W	E
1240.45	.				.	
1250.91	.				.	

SD1.OUT

1261.36	.				.
1271.82	.	I	C	HW	E R
1282.27	.				.
1292.73	.				.
1303.18	.				.
1313.64	.				.
1324.09	.				.
1334.55	.				.
1345.00	.				.
1355.45	.				.
1365.91	.				.
1376.36	.				.
1386.82	.				.
1397.27	.				.
1407.73	.	I	C	H	E R
1418.18	.	I	W	W	W
1428.64	.	I	C	W	H R

SD1.OUT

1439.09	.	I	C	WE	H	.	R
1449.55	.	IYYCYYYYYYYYYWEYYYYYYYYH					. WX
1460.00	.	I	C	H	WE	.	R
1470.45	.	I	C	H	WE	.	JX
1480.91	.	I	CH	W	E	.	R
1491.36	.	I	H	W	E	.	R
1501.82	.						.
1512.27	.						.
1522.73	.						.
1533.18	.	I	CH	W	E	.	JX
1543.64	.	I	H	W	E	.	R
1554.09	.	I	H	W	E	.	R
1564.54	.	I	WH	E		.	R
1575.00	.	I	WH	E		.	R
1585.45	.	I	WH	E		.	R
1595.91	.	I	WH	E		.	R
1606.36	.	I	WCH	E		.	JX

SD1.0UT

1616.82	.	I	H	E	.	R
1627.27	.	I	H	E	.	R
1637.73	.				.	
1648.18	.				.	
1658.64	.				.	
1669.09	.				.	
1679.54	.				.	
1690.00	.				.	
1700.45	.				.	
1710.91	.				.	
1721.36	.				.	
1731.82	.				.	
1742.27	.				.	
1752.73	.	I	CH	W	E	R
1763.18	.				.	
1773.64	.				.	
1784.09	.				.	

1972.27	.				.		
1982.73	.	I	W	H	E	.	R
1993.18	.	I	W	H	E	.	R
2003.64	.	I	W	H	E	.	R
2014.09	.	I	W	H	E	.	R

3503.400 3506.483 3509.567 3512.650 3515.734 3518.817 3521.901 3524.984 3528.068 3531.151 3534.234

Y = WALL ENTRANCE OR EXIT

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APPENDIX D

Reference Material

*Technical Drainage Study Update No. 1 for Bristle Vale
at Summerlin Village 24 Parcels L&M Unit 1
(by Slater Hanifan Group, DS5039)*

**TECHNICAL DRAINAGE STUDY
UPDATE
Bristle Vale at Summerlin Village 24
Parcels L&M Unit 1**

City of Las Vegas, Nevada

Job No.: KBH1804.000

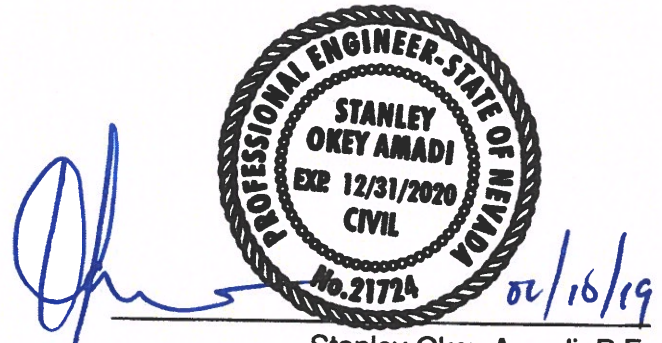
Date: January 2019

Prepared By:

Slater Hanifan Group, Inc.
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Phone: 702-284-5300 • Fax: 702-284-5399

Prepared For:

KB Home
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Phone: 702-266-8451 • Fax: 702-266-8623



Stanley Okey Amadi, P.E.
NV Professional Engineer No. 21724

Assisted by: Caitlyn Alcantara, E.I.

WSPGW Models

Proposed Condition WSPG Summary

STORM DRAIN SYSTEM 1 (SD1): LOCATED IN WESTERN HALF OF PROJECT SITE AND CONNECTS TO EXISTING CROSSBRIDGE MAINLINE

WSPG Station	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	N/A	SD-1	36" RCP	3503.40	44.00	3504.77	14.04	3517.40	Existing Stub	OK
1061.53	1+11.53	SD-1	36" RCP	3505.68	44.00	3507.68	8.80	3520.69	Connection to Existing Wall Exit	OK
1186.62	13+40.92	SD-1	7.5' x 7' RCB	3506.57	44.00	3508.73	8.07	3513.07	Facility L1	OK
1186.62	13+40.92	SD-1	7.5' x 7' RCB	3506.57	44.00	3510.29	1.58	3513.07		OK
1189.62	13+40.92	SD-1	7.5' x 7' RCB	3506.59	42.00	3510.30	1.51	3513.07		OK
1189.62	13+40.92	SD-1	7.5' x 7' RCB	3506.59	42.00	3510.30	1.51	3513.07		OK
1192.62	13+40.92	SD-1	7.5' x 7' RCB	3506.61	42.00	3510.30	1.52	3513.07	Wall Entrance	OK
1269.14	12+82.61	SD-1	36" RCP	3507.20	42.00	3510.69	5.94	3516.28		OK
1412.65	15+28.57	SD-1	36" RCP	3508.30	42.00	3511.25	5.96	3515.27	Wall Exit	OK
1412.65	15+28.57	SD-1	7.5' x 7' RCB	3508.30	42.00	3512.29	1.40	3515.27		OK
1415.65	15+28.57	SD-1	7.5' x 7' RCB	3508.32	39.00	3512.30	1.31	3515.27	Facility L2	OK
1415.65	15+28.57	SD-1	7.5' x 7' RCB	3508.32	39.00	3512.30	1.31	3515.27		OK
1418.65	15+28.57	SD-1	7.5' x 7' RCB	3508.35	39.00	3512.30	1.32	3515.27		OK
1418.65	15+28.57	SD-1	7.5' x 7' RCB	3508.35	39.00	3512.30	5.52	3515.27		OK
1434.01	15+27.72	SD-1	36" RCP	3508.50	39.00	3512.51	5.52	3516.46	Wall Entrance	OK
1434.01	15+27.72	SD-2	36" RCP	3509.50	25.00	3512.03	7.96	3516.46	Facility L3	OK
1481.69	14+80.18	SD-2	24" RCP	3509.97	25.00	3512.91	7.96	3518.51		OK
1517.72	4+95.86	SD-2	24" RCP	3510.39	25.00	3513.49	7.96	3519.01	Facilities L4 & L5	OK
1517.72	4+95.86	PP-5	24" RCP	3510.89	18.00	3514.35	10.19	3519.01		OK
1569.12	10+90.78	PP-5	18" RCP	3512.94	18.00	3515.98	10.19	3520.68		OK
1743.70	12+65.29	PP-5	18" RCP	3517.66	18.00	3521.58	10.19	3524.24		OK
2008.99	10+50.	SD-3	18" RCP	3530.99	18.00	3532.44	10.29	3538.43	Facility L6	OK
2008.99	10+50.	SD-3	18" RCP	3530.99	18.00	3532.44	10.29	3538.43		OK

SD1.WSW									
T1	BRISTLE VALE PHASE 1 UPDATE								
T2	STORM DRAIN SYSTEM 1 (SD1)								
T3	LOCATED IN WESTERN HALF OF PROJECT SITE AND CONNECTS TO EXISTING CROSSBRIDGE MAINLINE								
SO	1000.0003503.400 36	.013	1					3506.400	
R	1061.5303505.680 36	.013	1						
R	1186.6203506.569 36	.013	1						
WE	1186.6203506.569 2	.013							
R	1189.6203506.590 2	.013							
JX	1189.6203506.590 2	.013	2.0				3506.590	90.0	
R	1192.6203506.613 2	.013						-42.0	
WX	1192.6203506.613 2	.013							
R	1269.1403507.200 36	.013							
R	1412.6503508.297 36	.013	1					32.0	1
WE	1412.6503508.297 2	.013							
R	1415.6503508.320 2	.013							
JX	1415.6503508.320 2	.013	3.0				3508.320	90.0	
R	1418.6503508.349 2	.013							
WX	1418.6503508.349 2	.013							
R	1434.0103508.500 36	.013							
JX	1434.0103509.500 24 18	.013	14.0				3510.000	-88.0	1
R	1481.6903509.970 24	.013						30.0	
R	1517.7203510.390 24	.013						79.0	1
JX	1517.7203510.890 24 18 18.013	.013	4.0				3510.8903510.890	28.0	1
R	1569.1203512.940 18	.013						45.0	57.0
R	1743.7003517.660 18	.013						8.0	1
R	2008.9903530.990 18	.013						-89.0	
SH	2008.9903530.990 18	.013							
CD	18 4 1 0.000 1.500	0.000	0.000	0.000	0.000	0.000	0.000		
CD	24 4 1 0.000 2.000	0.000	0.000	0.000	0.000	0.000	0.000		
CD	36 4 1 0.000 3.000	0.000	0.000	0.000	0.000	0.000	0.000		
CD	2 3 0 0.000 7.000	7.500	0.000	0.000	0.000	0.000	0.000		
CD	1 3 0 0.000 15.000	15.000	0.000	0.000	0.000	0.000	0.000		
Q		18.000							

FILE: SD1.WSW

SD1.EDT

Date: 1- 3-2019 Time: 5:22:50

W S P G W - EDIT LISTING - Version 14.10
WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD	SECT	CHN	NO OF	AVE PIER	HEIGHT 1	BASE	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CODE	NO	TYPE	PIER/PIP	WIDTH	DIAMETER	WIDTH			DROP										

CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	36	4	1		3.000														
CD	2	3	0	.000	7.000	7.500	.000	.000	.00										
CD	1	3	0	.000	15.000	15.000	.000	.000	.00										

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

PAGE NO 1

HEADING LINE NO 1 IS -

BRISTLE VALE PHASE 1 UPDATE

HEADING LINE NO 2 IS -

STORM DRAIN SYSTEM 1 (SD1)

HEADING LINE NO 3 IS -

LOCATED IN WESTERN HALF OF PROJECT SITE AND CONNECTS TO EXISTING CROSSBRID

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

PAGE NO 2

ELEMENT NO 1 IS A SYSTEM OUTLET *
U/S DATA STATION INVERT SECT

ELEMENT NO	2	IS A REACH	* STATION	INVERT	SECT	36													
			1000.000	3503.400															

W S ELEV
3506.400

ELEMENT NO 3 IS A REACH *
U/S DATA STATION INVERT SECT

ELEMENT NO	4	IS A WALL ENTRANCE	* STATION	INVERT	SECT	36													
			1186.620	3506.569															

ELEMENT NO 5 IS A REACH *
U/S DATA STATION INVERT SECT

ELEMENT NO	6	IS A JUNCTION	* STATION	INVERT	SECT	2													
			1189.620	3506.590															

ELEMENT NO 7 IS A REACH *
U/S DATA STATION INVERT SECT

			1189.620	3506.590															

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 WALL EXIT *
U/S DATA STATION INVERT SECT

ELEMENT NO	9	IS A REACH	* STATION	INVERT	SECT	2													
			1192.620	3506.613															

WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS
ELEMENT NO 9 IS A REACH *
U/S DATA STATION INVERT SECT

Page 1

ELEMENT NO 10 IS A REACH
U/S DATA
1269.140 3507.200 36 *
STATION INVERT SECT
1412.650 3508.297 36
WALL ENTRANCE
U/S DATA
1412.650 3508.297 2
FP
SD1.EDT
.013
N
.013
RADIUS
.000
ANGLE
.000
ANG PT
.000
MAN H
0
1
PAGE NO 3

ELEMENT NO 12 IS A REACH
U/S DATA
1415.650 3508.320 2 *
STATION INVERT SECT
1415.650 3508.320 2 *
JUNCTION
U/S DATA
1415.650 3508.320 2 *
Q3
3.000
Q4
3508.320
INVERT-3
RADIUS
.000
ANGLE
.000
ANG PT
.000
MAN H
0
PAGE NO 3

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

ELEMENT NO 15 IS A WALL EXIT
U/S DATA
1418.650 3508.349 2 *
STATION INVERT SECT
1418.650 3508.349 2
U/S DATA
1418.650 3508.349 2
WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS
ELEMENT NO 16 IS A REACH

ELEMENT NO 17 IS A JUNCTION
U/S DATA
1434.010 3508.500 36 *
STATION INVERT SECT
1434.010 3509.500 24 18 0
LAT-1
LAT-2
Q3
14.000
Q4
3510.000
INVERT-3
RADIUS
.000
ANGLE
.000
ANG PT
-88.000
MAN H
1
PAGE NO 4

ELEMENT NO 18 IS A REACH
U/S DATA
1481.690 3509.970 24 *
STATION INVERT SECT
1517.720 3510.390 24 *
JUNCTION
U/S DATA
1517.720 3510.890 24 18 18
LAT-1
LAT-2
Q3
4.000
Q4
3510.890
INVERT-3
RADIUS
.000
ANGLE
.000
ANG PT
79.000
MAN H
1
PAGE NO 4

ELEMENT NO 21 IS A REACH
U/S DATA
1569.120 3512.940 18
STATION INVERT SECT
W S P G W
WATER SURFACE PROFILE - ELEMENT CARD LISTING
WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS
ELEMENT NO 21 IS A REACH
U/S DATA
1569.120 3512.940 18
STATION INVERT SECT
RADIUS
.000
ANGLE
.000
ANG PT
8.000
MAN H
1
PAGE NO 2

Date: 1- 3-2019 Time: 5:23: 1

WATER SURFACE PROFILE LISTING

BRISTLE VALE PHASE 1 UPDATE

STORM DRAIN SYSTEM 1 (SD1)

LOCATED IN WESTERN HALF OF PROJECT SITE AND CONNECTS TO EXISTING CROSS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.E.	Super Elev	Critical Depth	Flow Width	Top Dia.-FT	Height/ Base Wt or I.D.	No Wth Prs/Pip
L/Elem	Ch Slope												
1000.000	3503.400	1.367	3504.766	44.00	14.04	3.06	3507.83	.00	2.16	2.99	3.000	.000	.00
12.854	.0371					.0229	.29	1.37	2.42	1.21	.013	.00	.00
1012.854	3503.876	1.407	3505.283	44.00	13.52	2.84	3508.12	.00	2.16	2.99	3.000	.000	.00
12.300	.0371					.0204	.25	1.41	2.28	1.21	.013	.00	.00
1025.154	3504.332	1.460	3505.792	44.00	12.89	2.58	3508.37	.00	2.16	3.00	3.000	.000	.00
9.368	.0371					.0180	.17	1.46	2.13	1.21	.013	.00	.00
1034.522	3504.679	1.515	3506.194	44.00	12.29	2.34	3508.54	.00	2.16	3.00	3.000	.000	.00
7.289	.0371					.0158	.12	1.52	1.98	1.21	.013	.00	.00
1041.812	3504.949	1.574	3506.523	44.00	11.72	2.13	3508.65	.00	2.16	3.00	3.000	.000	.00
5.731	.0371					.0139	.08	1.57	1.84	1.21	.013	.00	.00
1047.543	3505.161	1.635	3506.796	44.00	11.17	1.94	3508.73	.00	2.16	2.99	3.000	.000	.00
4.510	.0371					.0123	.06	1.64	1.71	1.21	.013	.00	.00
1052.053	3505.329	1.700	3507.028	44.00	10.65	1.76	3508.79	.00	2.16	2.97	3.000	.000	.00
3.518	.0371					.0109	.04	1.70	1.59	1.21	.013	.00	.00
1055.572	3505.459	1.768	3507.227	44.00	10.16	1.60	3508.83	.00	2.16	2.95	3.000	.000	.00
2.681	.0371					.0096	.03	1.77	1.48	1.21	.013	.00	.00
1058.253	3505.558	1.840	3507.398	44.00	9.68	1.46	3508.85	.00	2.16	2.92	3.000	.000	.00
1.960	.0371					.0085	.02	1.84	1.37	1.21	.013	.00	.00

FILE: SD1.MSW

WATER SURFACE PROFILE LISTING

Date: 1- 3-2019 Time: 5:23: 1

SD1-OUT

BRISTLE VALE PHASE 1 UPDATE
STORM DRAIN SYSTEM 1 (SD1)

LOCATED IN WESTERN HALF OF PROJECT SITE AND CONNECTS TO EXISTING CROSS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Width	Top Dia.-FT	Height or I.D.	Base Wt	ZL	No Wth Prs/pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	
1060.213	3505.631	1.916	3507.547	44.00	9.23	1.32	3508.87	.00	2.16	2.88	3.000	.000	.00	1	.0
1.317	.0371					.0076	.01	1.92	1.27	1.21	.013				PIPE
1061.530	3505.680	1.997	3507.677	44.00	8.80	1.20	3508.88	.00	2.16	2.83	3.000	.000	.00	1	.0
55.842	.0071					.0071	.40	2.00	1.17	2.00	.013				PIPE
1117.372	3506.077	1.997	3508.074	44.00	8.80	1.20	3509.28	.00	2.16	2.83	3.000	.000	.00	1	.0
60.515	.0071					.0068	.41	2.00	1.17	2.00	.013				PIPE
1177.887	3506.507	2.067	3508.574	44.00	8.47	1.11	3509.69	.00	2.16	2.78	3.000	.000	.00	1	.0
8.733	.0071					.0061	.05	2.07	1.09	2.00	.013				PIPE
1186.620	3506.569	2.161	3508.730	44.00	8.07	1.01	3509.74	.00	2.16	2.69	3.000	.000	.00	1	.0
WALL ENTRANCE															
1186.620	3506.569	3.724	3510.293	44.00	1.58	.04	3510.33	.00	1.02	7.50	7.000	7.500	.00	0	.0
3.000	.0070					.0001	.00	3.72	.14	.81	.013				BOX
JUNCT STR	.0000					.0001	.00	3.70	.15		.013				BOX
1189.620	3506.590	3.710	3510.300	42.00	1.51	.04	3510.34	.00	.99	7.50	7.000	7.500	.00	0	.0
3.000	.0076					.0001	.00	3.71	.14	.76	.013				BOX
1192.620	3506.613	3.687	3510.300	42.00	1.52	.04	3510.34	.00	.99	7.50	7.000	7.500	.00	0	.0
WALL EXIT															

FILE: SD1.MSW

W S P G W - CIVILDESIGN Version 14.08
Program Package Serial Number: 7189

WATER SURFACE PROFILE LISTING

Date: 1- 3-2019 Time: 5:23: 1

PAGE 3

BRISTLE VALE PHASE 1 UPDATE

STORM DRAIN SYSTEM 1 (SD1)

LOCATED IN WESTERN HALF OF PROJECT SITE AND CONNECTS TO EXISTING CROSS

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

SD1.OUT													
L/Elem	Ch Slope	Depth	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top	Height Dia.	Base Wt	No Wth
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1192.620	3506.613	3.687	3510.300	42.00	5.94	.55	3510.85	.00	2.11	.00	3.000	.000	.00
76.520	.0077	-	-	-	-	.0040	.30	3.69	.00	1.88	.013	.00	.00
1269.140	3507.200	3.489	3510.689	42.00	5.94	.55	3511.24	.00	2.11	.00	3.000	.000	.00
132.897	.0076	-	-	-	-	.0039	.52	3.49	.00	1.89	.013	.00	.00
1402.037	3508.216	3.000	3511.216	42.00	5.94	.55	3511.76	.00	2.11	.00	3.000	.000	.00
10.613	.0076	-	-	-	-	.0037	.04	3.00	.00	1.89	.013	.00	.00
1412.650	3508.297	2.955	3511.252	42.00	5.96	.55	3511.80	.00	2.11	.73	3.000	.000	.00
WALL ENTRANCE	-	-	-	-	-	-	-	-	-	-	-	-	-
1412.650	3508.297	3.994	3512.291	42.00	1.40	.03	3512.32	.00	.99	7.50	7.000	7.500	.00
3.000	.0076	-	-	-	-	.0001	.00	3.99	.12	.76	.013	.00	.00
JUNCT STR	.0000	-	-	-	-	.0001	.00	3.97	.12	.013	.013	.00	.00
1415.650	3508.320	3.978	3512.299	39.00	1.31	.03	3512.33	.00	.94	7.50	7.000	7.500	.00
3.000	.0097	-	-	-	-	.0001	.00	3.98	.12	.67	.013	.00	.00
1418.650	3508.349	3.949	3512.299	39.00	1.32	.03	3512.33	.00	.94	7.50	7.000	7.500	.00
WALL EXIT	-	-	-	-	-	-	-	-	-	-	-	-	-
1418.650	3508.349	3.950	3512.299	39.00	5.52	.47	3512.77	.00	2.03	.00	3.000	.000	.00
15.360	.0098	-	-	-	-	.0034	.05	3.95	.00	1.66	.013	.00	.00
FILE: SD1.WSW	-	-	-	-	-	-	-	-	-	-	-	-	-

Date: 1- 3-2019 Time: 5:23: 1

BRISTLE VALE PHASE 1 UPDATE

STORM DRAIN SYSTEM 1 (SD1)
LOCATED IN WESTERN HALF OF PROJECT SITE AND CONNECTS TO EXISTING CROSS

W S P G W - CIVILDESIGN Version 14.08
Program Package Serial Number: 7189

PAGE 4

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top	Height Dia.	Base Wt	No Wth
L/Elem	Ch Slope	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1434.010	3508.500	4.012	3512.512	39.00	5.52	.47	3512.98	.00	2.03	.00	3.000	.000	.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-

[illegible]

Date: 1- 3-2019 Time: 5:23: 1

WATER SURFACE PROFILE LISTING

BRISTLE VALE PHASE 1 UPDATE

STORM DRAIN SYSTEM 1 (SD1)

LOCATED IN WESTERN HALF OF PROJECT SITE AND CONNECTS TO EXISTING CROSS

***** PIPES TO EAST AND CROSS *****														
Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Width	Top Dia.	Height/FT or I.D.	Base Wt	No Wth PPS/pip
L/Elem	Ch Slope													
*****	*****	*****	*****	*****	*****	SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1904.427	3525.736	1.001	3526.737	18.00	14.36	3.20	3529.94	.00	1.45	1.41	1.500	.000	.00	1 .0
47.488	.0502	-	-	-	-	.0450	2.14	1.00	2.69	.98	.013	.00	.00	PIPE
1951.916	3528.122	1.045	3529.167	18.00	13.70	2.91	3532.08	.00	1.45	1.38	1.500	.000	.00	1 .0

SD1.OUT

[illegible]

[illegible]

1. GLOSSARY

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B = BRIDGE ENTRANCE OR EXIT
Y = WALL ENTRANCE OR EXIT

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

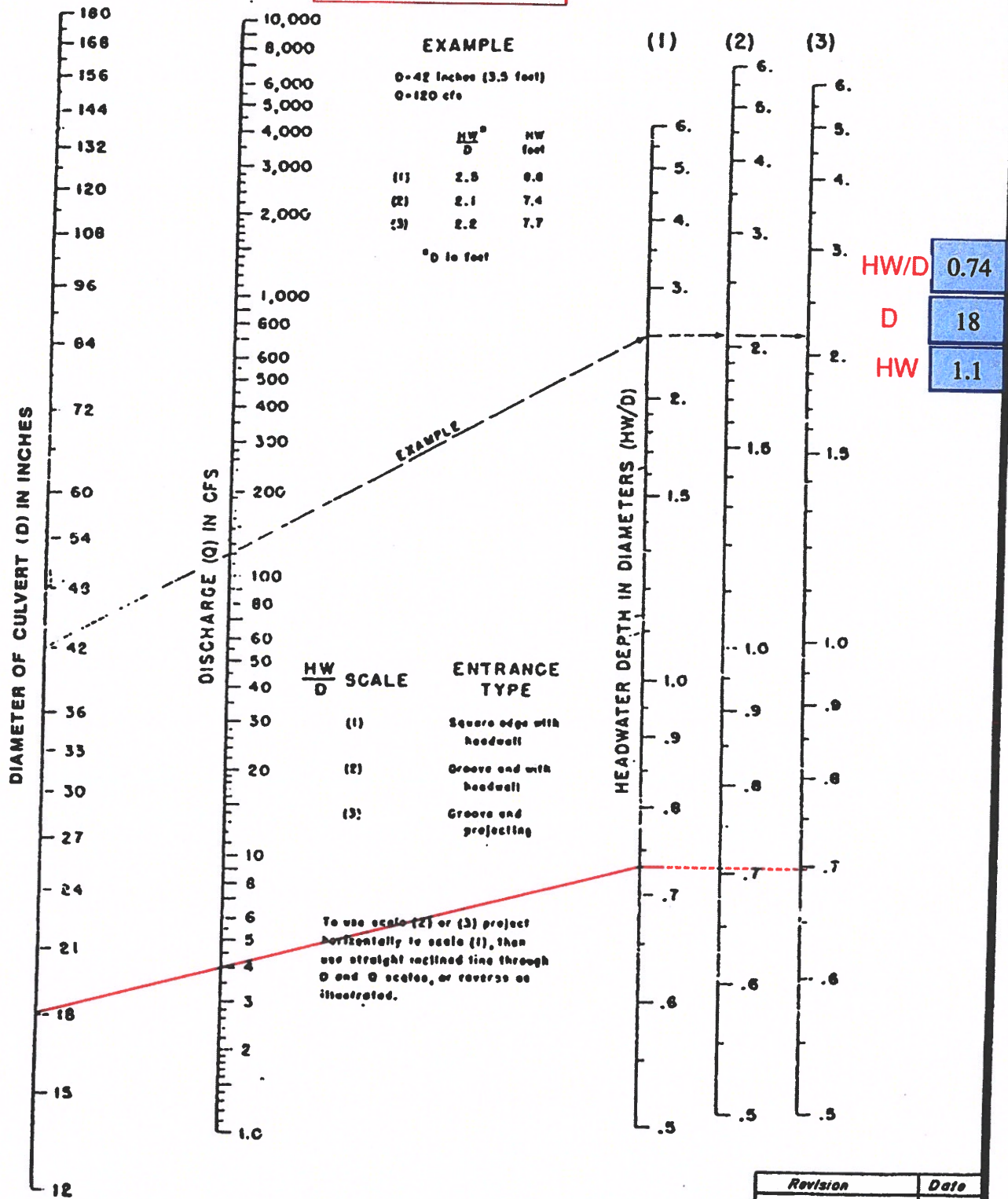
SD1.OUT

Lateral Loss Computations

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

NOMOGRAPH - INLET CONTROL RCP

Facility L4: Q= 4 CFS

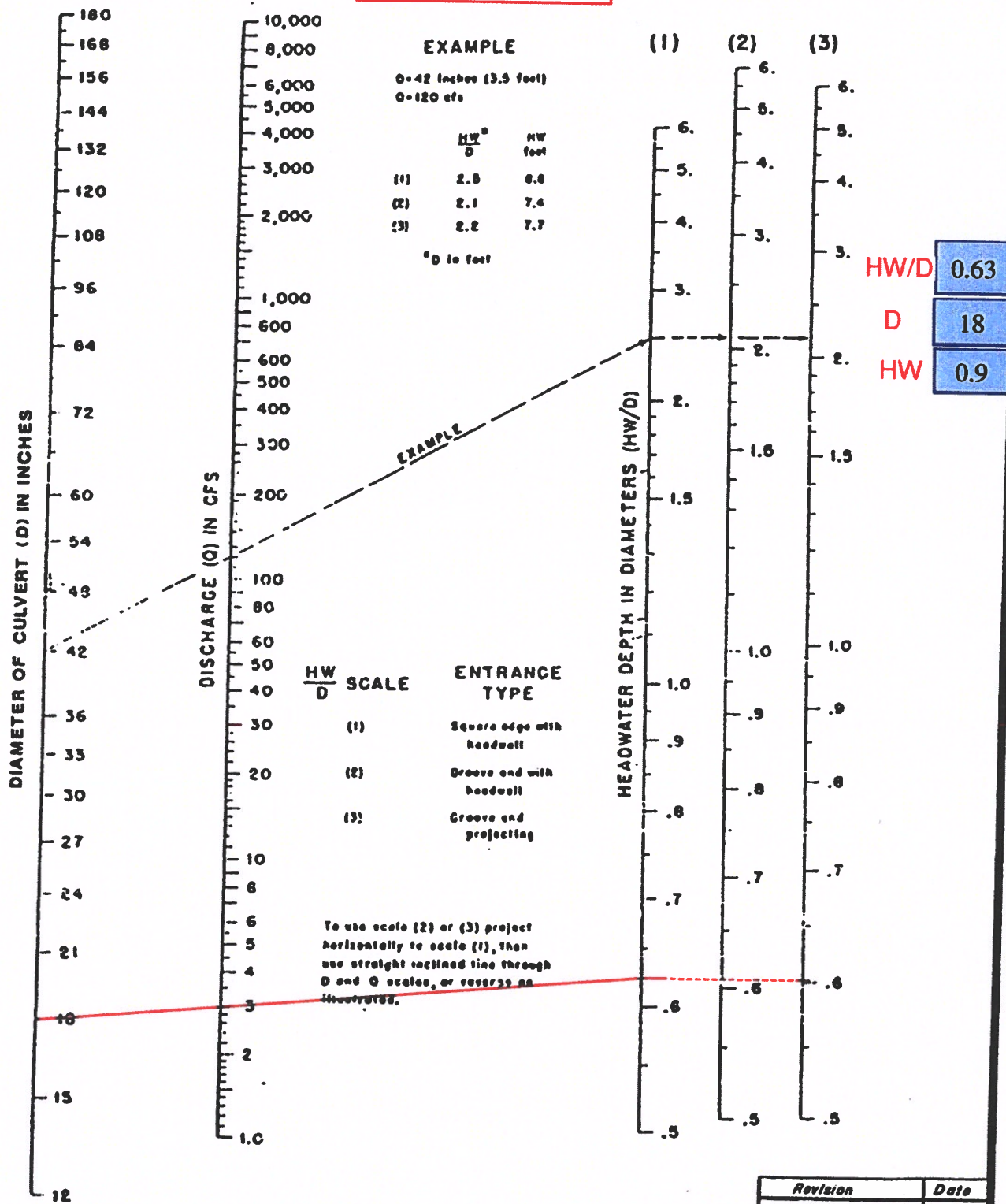


Revision	Date

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

NOMOGRAPH - INLET CONTROL RCP

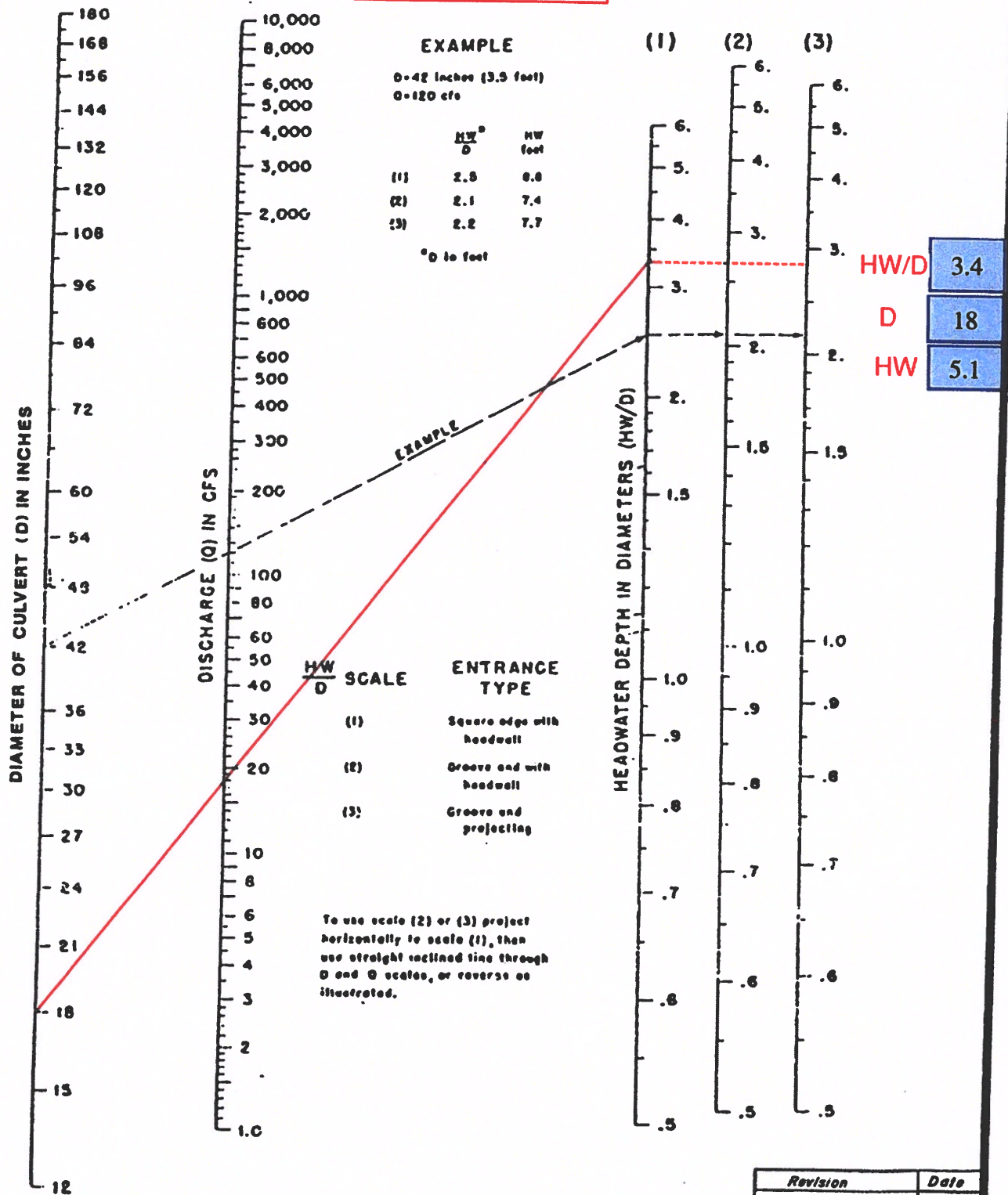
Facility L5: Q= 3 CFS



HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

NOMOGRAPH - INLET CONTROL RCP

Facility L6: Q=18 CFS

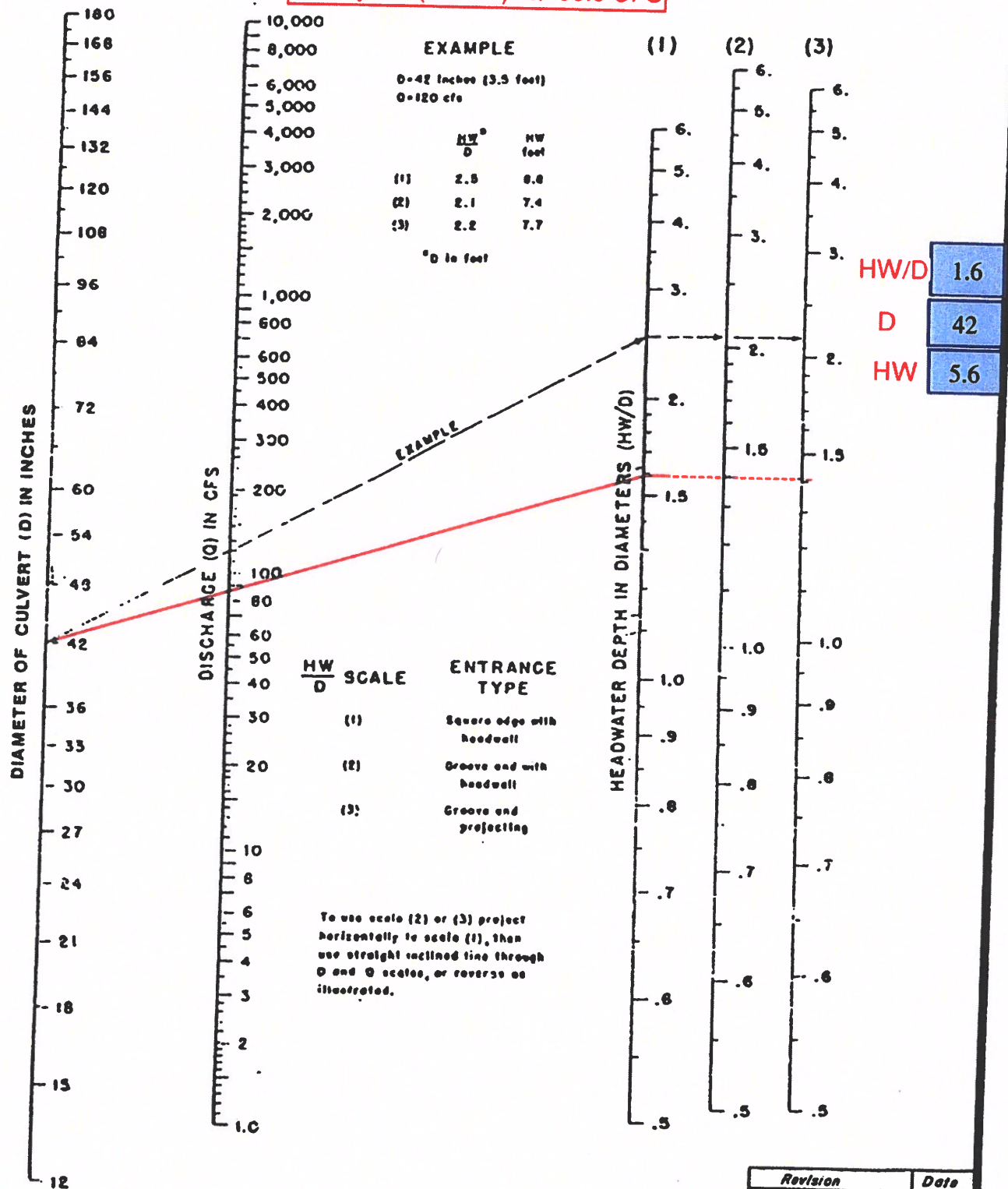


Revision	Date

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

NOMOGRAPH - INLET CONTROL RCP

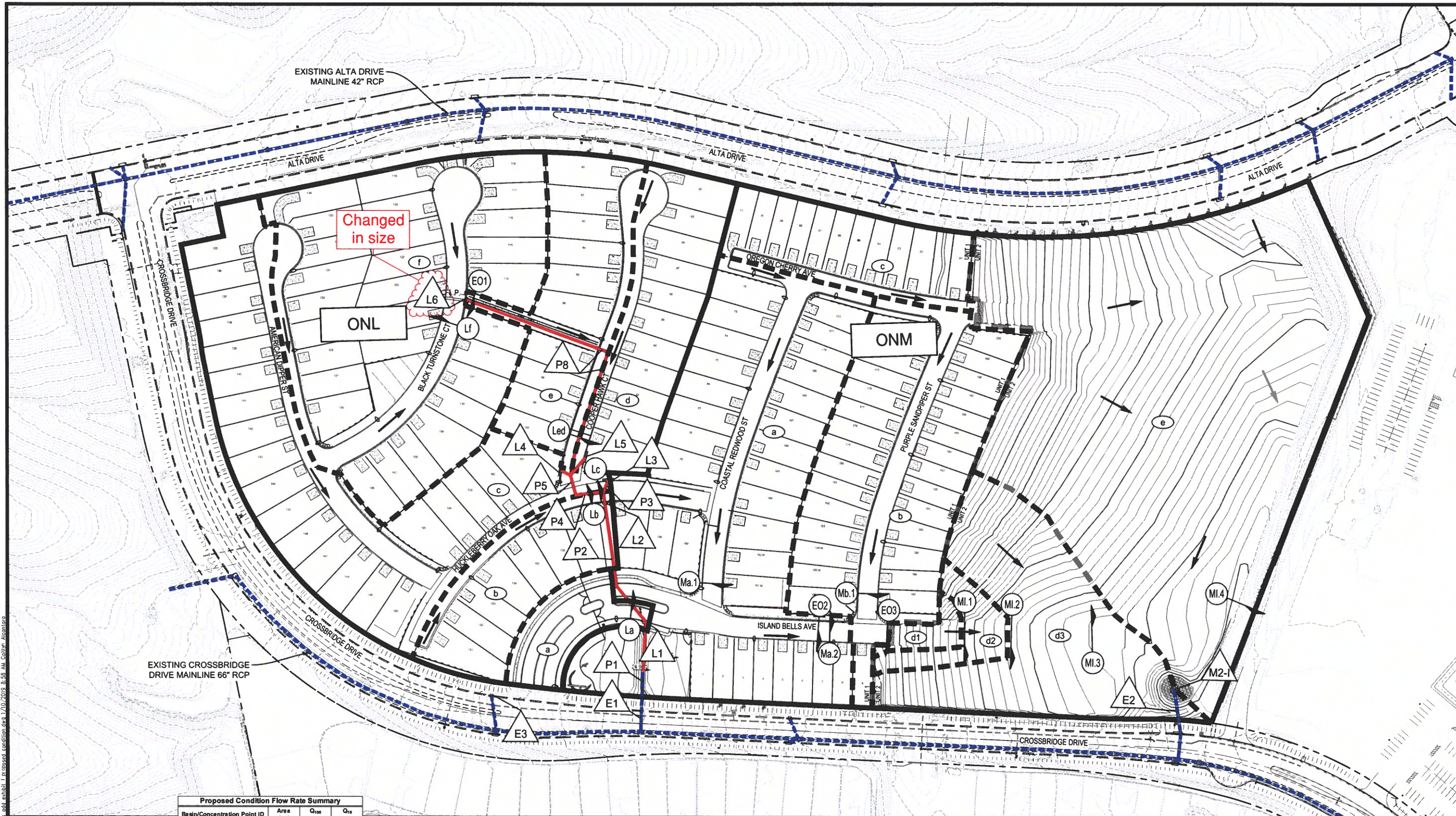
Facility M2 (Interim): Q=85.5 CFS



Revision	Date

Drainage Exhibits

\\slater\projects\1804\1804-000_schematic.dwg - 1804-000_schematic.dwg - 1804-000_schematic.dwg - 1804-000_schematic.dwg - 1804-000_schematic.dwg - 1804-000_schematic.dwg - 1804-000_schematic.dwg - 1804-000_schematic.dwg - 1804-000_schematic.dwg - 1804-000_schematic.dwg



Proposed Condition Flow Rate Summary				
Basin/Concentration Point ID	Area (ac)	Q ₁₀₀ (cfs)	Q ₁₀ (cfs)	
ONL	14.8	49	23	
ONM	22.7	80	40	
CP1	N/A	129	63	
Q = ONL + ONM				

Prorated Flow Summary			
Basin ID	Q ₁₀₀ (cfs)	Area (acres)	100-yr Unit Flow (cfs/acre)
ONL(a)	2	0.60	3.3
ONL(b)	4	1.32	3.3
ONL(c)	13	3.96	3.3
ONL(d)	6	1.75	3.3
ONL(e)	6	1.75	3.3
ONL(f)	18	5.46	3.3
TOTAL	49	14.84	
ONM(a)	20	5.71	3.5
ONM(b)	13	3.58	3.5
ONM(c)	5	1.34	3.5
ONM(d)	0.5	0.18	3.5
ONM(e)	1.5	0.38	3.5
ONM(f)	9	2.53	3.5
ONM(g)	32	9.00	3.5
TOTAL	80	22.72	

Proposed Condition 100-Year Street Flow Summary						
Section ID	Q ₁₀₀ (cfs)	Slope (%)	Depth (ft)	Velocity (fps)	DxV	
La	(Q = ONL (a) + Facility E3 Bypass)	2.5	4.61	0.28	4.0	1.1
Lb	(Q = ONL (b))	4.0	6.50	0.30	5.0	1.5
Lc	(Q = ONL (c) + Facility L4 Bypass + Facility L5 Bypass)	18.0	3.65	0.32	4.0	1.3
Ld	(Q = ONL (d) + Facility L4 Bypass + Facility L5 Bypass)	18.0	5.72	0.48	6.3	3.0
Le	(Q = ONL (e) + Facility L4 Bypass + Facility L5 Bypass)	30.0	0.60	0.59	3.0	1.8
Lf	(Q = ONL (f))	18.0	3.28	0.46	5.0	2.3
Ma.1	(Q = ONM (a) + Facility L2 Bypass + Facility L3 Bypass)	25.0	0.84	0.55	3.2	1.8
Ma.2	(Q = ONM (a) + Facility L1 Bypass + Facility L2 Bypass + Facility L3 Bypass)	25.5	0.60	0.38	5.7	2.2
Mb.1	(Q = ONM (b))	15.0	0.60	0.50	2.4	1.2
			2.85	0.45	4.6	2.1
			0.65	0.54	2.7	1.5
			3.24	0.45	4.8	2.2
			7.80	0.34	6.2	2.1
			1.67	0.42	3.3	1.4

Recommended Flood Control Facility Summary				
Facility ID	Facility Description	Total/Approaching 100-Year Flow (cfs)	100-Year Facility Flow (cfs)	Surface/Bypass 100-Year Flow (cfs)
Storm Drain System 1 (SD1)				
E3	5' Type CM2 Drop Inlet	3	3	0
L1	7.5' Type CM2 Drop Inlet	2.5	2	0.5
L2	7.5' Type CM2 Drop Inlet	4	3	1
L3	20' Type CM2 Drop Inlet with 18" RCP	18	14	4
L4	10' Type CM2 Drop Inlet with 18" RCP	6	4	2
L5	5' Type CM2 Drop Inlet with 18" RCP	6	3	3
L6	7.5' Type CM2 Drop Inlet	18	18	0
Storm Drain System 2 (SD2)				
M2-1	4.5' X 6' NDOT Type 2 Gate Inlet	85.5	85.5	0
100-Year Facility Flow (cfs)				
E1	36" RCP	44		
P1	36" RCP	44		
P2	36" RCP	42		
P3	18" RCP	14		
P4	24" RCP	25		
P5	24" RCP	25		
P6	18" RCP	18		
Storm Drain System 2 (SD2)				
E2	42" RCP	85.5		

Interim Condition Onsite Hydraulic Section Summary				
Section ID	Section Description	Q ₁₀₀ (cfs)	Slope (%)	Depth (ft)
Section EO1	Emergency Overflow (Normal Depth)	18.0	5.60	0.99
Section EO2	Emergency Overflow (Normal Depth)	56.5	0.60	0.68
Section EO3	Emergency Overflow (Normal Depth)	56.5	8.50	0.19
Section M1.1	Trapezoidal Ditch	39.1	8.50	0.15
Section M1.2	Trapezoidal Ditch	40.5	8.00	0.16
Section M1.3	Trapezoidal Ditch	49.5	3.40	0.22
Section M1.4	Trapezoidal Ditch	37.0	1.20	0.86



LEGEND	
	BASIN BOUNDARY
	PRO-RATED SUBBASIN BOUNDARY
	BASIN ID
	PRO-RATED SUBBASIN ID
	CONCENTRATION POINT ID
	FLOW DIRECTION
	FLOWMASTER SECTION
	FACILITY ID
	PROPOSED STORM DRAIN FACILITIES
	EXISTING STORM DRAIN FACILITIES

SLATER
HANIFAN
GROUP

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

DATE: JAN 2019

DRAWN: CAA/DCH

DESIGNER: CAA/DCH

CHECKED: SOA

PROJECT NO.
KBH1804.000

EXHIBIT F

SHEET 1 OF 1

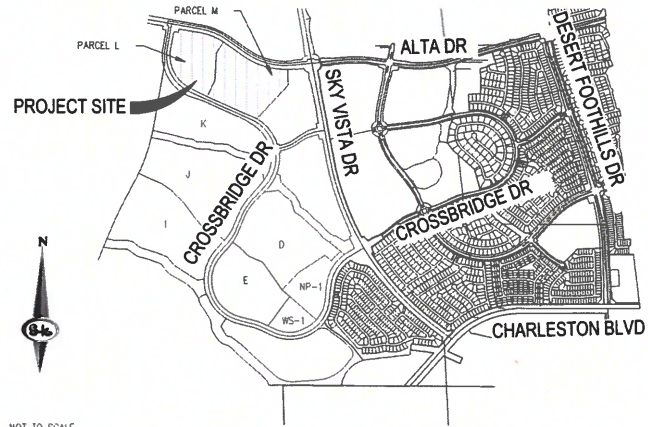
CITY OF LAS VEGAS, NEVADA

KB HOME

BRISTLE VALE AT SUMMERLINE VILLAGE 24 PARCELS L&M UNIT 1 UPDATE
PROPOSED CONDITION DRAINAGE MAP

Improvement Plans

VICINITY MAP



KB HOME

IMPROVEMENT PLANS

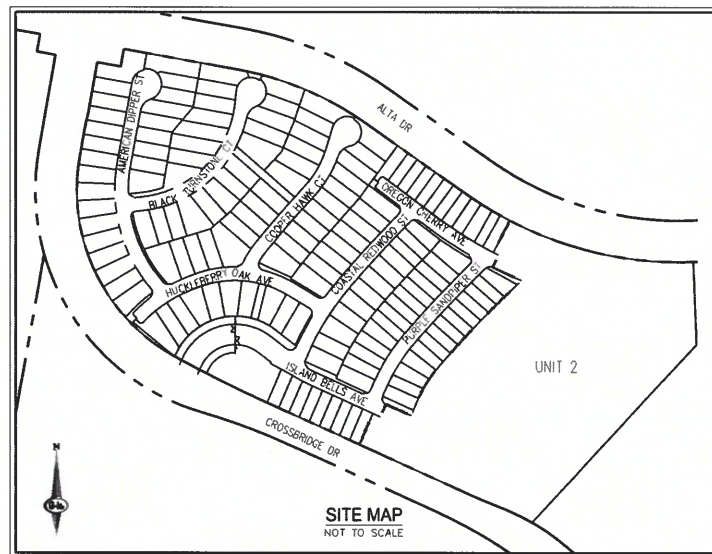
FOR

BRISTLE VALE AT SUMMERLIN

VILLAGE 24 PARCELS L&M -

UNIT 1

CITY OF LAS VEGAS, NEVADA
RESIDENTIAL SUBDIVISION
APN: 137-33-610-002 & 137-33-610-003



Sheet List Table		
NO	SHEET	TITLE
1	C-1	COVER SHEET
2	C-2	GENERAL NOTES
3	C-3	LEGEND, ABBREVIATIONS, AND QUANTITIES
4	G-1	GRADING PLAN I
5	G-2	GRADING PLAN II
6	G-3	GRADING PLAN III
7	G-4	GRADING PLAN IV
8	G-5	GRADING PLAN V
9	G-6	GRADING PLAN VI
10	G-7	GRADING PLAN VII
11	G-8	GRADING PLAN VIII
12	D-1	DETAIL SHEET I
13	D-2	DETAIL SHEET II
14	D-3	DETAIL SHEET III
15	D-4	DETAIL SHEET IV
16	SD-1	SD PLAN & PROFILE - SDOI L1 TO L3
17	SD-2	SD PLAN & PROFILE - SDOI L5 TO SDOI L6 & SDOI L4 TO SDOI L5
18	PP-1	PLAN & PROFILE - AMERICAN DIPPER ST STA 9+50 TO 13+50
19	PP-2	PLAN & PROFILE - AMERICAN DIPPER ST STA 13+50 TO 18+00
20	PP-3	PLAN & PROFILE - BLACK TURNSTONE CT STA 11+50 TO 13+50
21	PP-4	PLAN & PROFILE - BLACK TURNSTONE CT STA 13+50 TO 19+50
22	PP-5	PLAN & PROFILE - COOPER HAWK CT STA 9+00 TO 13+00
23	PP-6	PLAN & PROFILE - COOPER HAWK CT STA 13+00 TO 16+00
24	PP-7	PLAN & PROFILE - COASTAL REDWOOD ST STA 9+50 TO 13+50
25	PP-8	PLAN & PROFILE - COASTAL REDWOOD ST STA 13+50 TO 17+00
26	PP-9	PLAN & PROFILE - HUCKLEBERRY OAK AVE STA 10+50 TO 15+50
27	PP-10	PLAN & PROFILE - HUCKLEBERRY OAK AVE STA 15+50 TO 18+00
28	PP-11	PLAN & PROFILE - ISLAND BELLS AVE STA 9+50 TO 15+00
29	PP-12	PLAN & PROFILE - ISLAND BELLS AVE STA 15+00 TO 19+00
30	PP-13	PLAN & PROFILE - ISLAND BELLS AVE STA 19+00 TO 22+50 AND HW 3
31	PP-14	PLAN & PROFILE - PURPLE SANDPiper ST STA 9+50 TO 13+00
32	PP-15	PLAN & PROFILE - PURPLE SANDPiper ST STA 13+00 TO 16+50
33	PP-16	PLAN & PROFILE - OREGON CHERRY AVE STA 9+50 TO 15+50
34	RW-1	RETAINING WALL PLAN I
35	RW-2	RETAINING WALL PLAN II
36	RW-3	RETAINING WALL PLAN III
37	RW-4	RETAINING WALL PLAN IV
38	RW-5	RETAINING WALL PLAN V
39	RW-6	RETAINING WALL PLAN VI
40	MU	MASTER UTILITY SHEET
41	U-1	UTILITY PLAN I
42	U-2	UTILITY PLAN II
43	U-3	UTILITY PLAN III
44	U-4	UTILITY PLAN IV
45	U-5	UTILITY PLAN V
46	U-6	UTILITY PLAN VI
47	U-7	UTILITY PLAN VII
48	T-1	TRAFFIC PLAN I
49	T-2	TRAFFIC PLAN II
50	T-3	TRAFFIC PLAN III
51	T-4	TRAFFIC PLAN IV
52	T-5	TRAFFIC PLAN V
53	T-6	TRAFFIC PLAN VI

APPROVALS

CITY ENGINEER-ALLEN PAVELAK PC, #9029	DATE
APPROVAL OF THESE PLANS BY THE CITY ENGINEER IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED 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
THIS PLAN MEETS THE APPLICABLE STANDARDS OF THE PLANNING DEPARTMENT.	
CITY OF LAS VEGAS - PLANNING DEPARTMENT	DATE
THIS PLAN MEETS THE APPLICABLE STANDARDS OF THE PLANNING DEPARTMENT.	
CENTRAL TELEPHONE CO. DBA CENTURYLINK	DATE
THE ATTACHED 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 STATUTES AND / OR PUBLIC UTILITY COMMISSION RULES AND REGULATIONS.	
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES	DATE
PROJECT NO. 138020	FIRST APPROVED DATE
LVWD APPROVED FLOW 1.500 GPM AT 20 PS RESIDUAL	MAXIMUM AVAILABLE FIRE SPRINKLER FLOW 30 GPM
SHEETS	
APPROVAL BY THE FIRE DEPARTMENT HAVING JURISDICTION IS REQUIRED PRIOR TO OBTAINING FINAL APPROVAL FROM LAS VEGAS VALLEY WATER DISTRICT.	
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

PROJECT INFORMATION

EXISTING ZONING:	P-C
ACREAGE (GROSS):	37.56 AC
ACREAGE (NET):	25.44 AC
TOTAL DWELLING UNITS:	149 (UNIT 1)
TOTAL COMMON ELEMENTS:	13
MIN LOT WIDTH:	35'
MIN LOT 50 FT:	3,647 SF
MAX LOT 50 FT:	9,944 SF
DENSITY (NET ACREAGE):	5.86 DU/AC
EARTHWORKS SUMMARY (UNADJUSTED)	
CUT	266,400 CY
FILL	367,400 CY
NET	81,000 (FILL)

FLOOD ZONE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (UNSHADED) AS DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANEL 320032C2125E & 320032C2150, DATED SEPTEMBER 27, 2002. A ZONE X (UNSHADED) IS DESCRIBED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.

BASIS OF BEARINGS

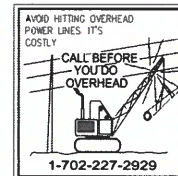
NORTH 05°59'55" WEST, BEING THE BEARING OF THE WEST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN THE CLARK COUNTY, NEVADA RECORDER'S OFFICE IN BOOK 135, PAGE 71 OF PLATS.

BENCHMARK

CITY OF LAS VEGAS BENCHMARK 7LV09 345NG
RIVET AND ROUND PLATE IN THE TOP OF CURB AT THE SOUTHEAST CORNER OF DESERT MOON RD AND SKY VISTA DR
ELEVATION = 1011.422 METERS (NAVD '88)
ELEVATION = 3318.31 US SURVEY FEET (NAVD '88)

LEGAL DESCRIPTION

A PORTION OF THE NORTHEAST QUARTER (NE 1/4) OF SECTION 33, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA DESCRIBED AS FOLLOWS:
LOTS L AND M OF "SUMMERLIN VILLAGE 24 - UNIT 4", AS SHOWN BY MAP THEREOF ON FILE IN BOOK 154 OF PLATS PAGE 83 IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA
CONTAINING 37.56 ACRES



SLATER
HANIFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5398

LAS VEGAS, NV

KB HOME

BRISTLE VALE AT SUMMERLIN VILLAGE 24 PARCELS L&M - UNIT 1

COVER SHEET

93
97
205
R
59E

DATE: 1/10/19

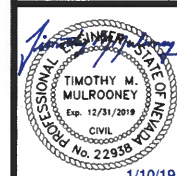
DRAFTER: OIQ

DESIGNER: OIQ

CHECKED: DP

PROJECT NO.

KBH1804-000

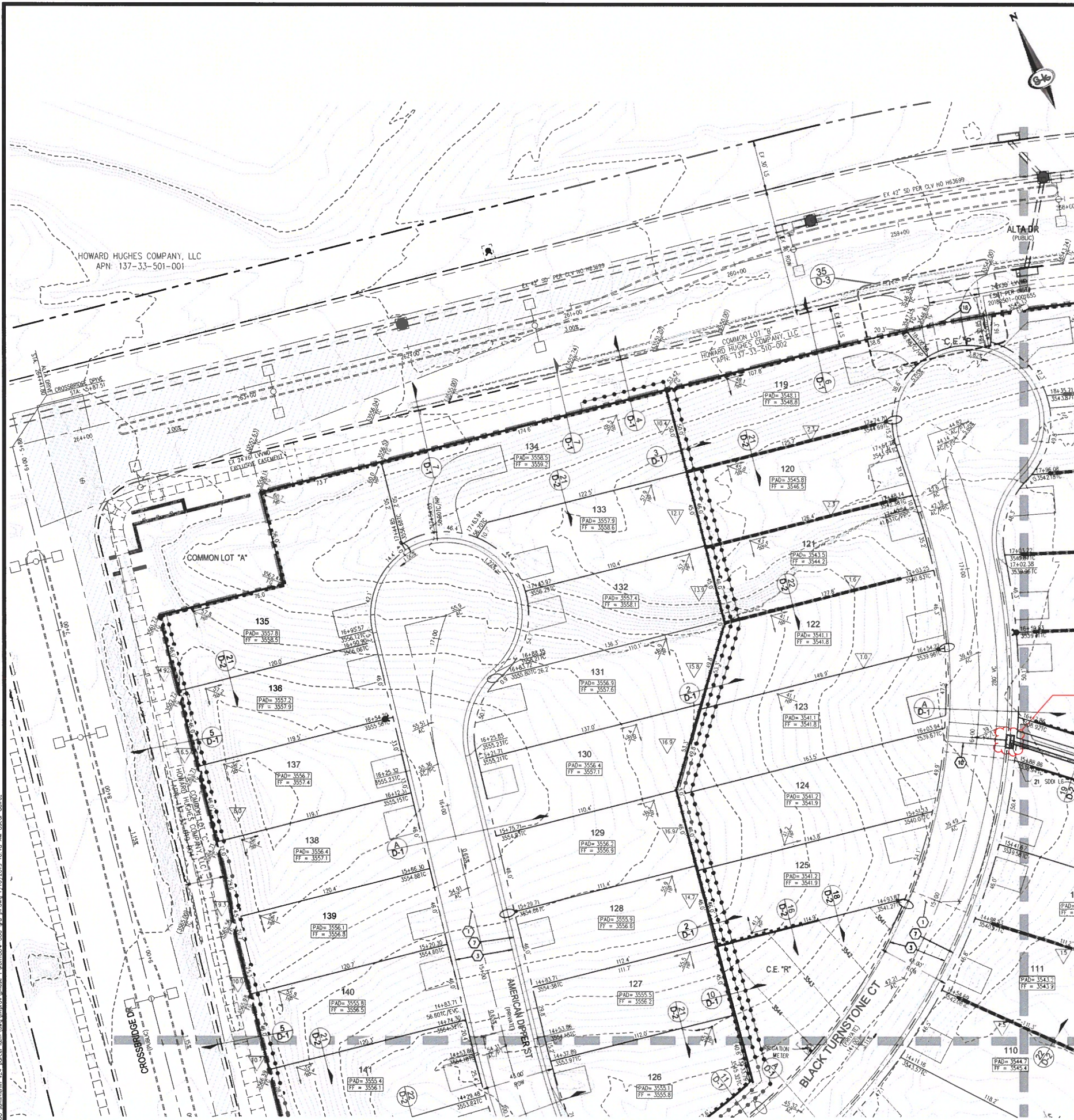


1/10/19

C-1

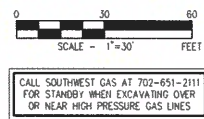
SHEET 1 OF 53

\\bh1804-000_summerlin_village_24_parcels_l&m_grad.dwg 1/10/2019 10:18 AM Owner: Quesada



SEE SHEET G-2 FOR CONTINUATION

Change in size of DI



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

SOILS REPORT
SOILS REPORT BY SOUTHWEST GEOTECHNICAL PROJECT NO. 182267 DATED 7/12/13

EARTHWORKS
EARTHWORK QUANTITIES (CUBIC FEET)
CUT = 286,400 C.Y. CUT VOLS
FILL = 367,400 C.Y. CUT VOLS
EXPORTED MATERIAL TO BE DISPOSED OF AT AN APPROVED LICENSED DISPOSAL FACILITY OR AT A SITE WITH AN APPROVED AND ACTIVE GRADING PERMIT.

DRAINAGE IMPROVEMENT QUANTITIES

1. 18" RCP STORM DRAIN	LF 560
2. 24" RCP STORM DRAIN	LF 84
3. 36" RCP STORM DRAIN	LF 290
4. 18" C-900 PVC STORM DRAIN	LF 21
5. 36" C-900 PVC STORM DRAIN	LF 80
6. 5" TYPE "CM2" DROP INLET	EA 1
7. 7.5" TYPE "CM2" DROP INLET	EA 3
8. 10" TYPE "CM2" DROP INLET	EA 1
9. 20" TYPE "CM2" DROP INLET	EA 1
10. HOOT TYPE II INLET	EA 1
11. 48" TYPE II STORM DRAIN MANHOLE	EA 4
12. 48" TYPE III STORM DRAIN MANHOLE	EA 2
13. 8" WIDE CONCRETE VALLEY CUTTER	EA 8
14. SIDEWALK DRAIN	EA 2
15. D50=8" RP-RAP	SF 780
16. D50=12" RP-RAP	SF 1,900

- GRADING NOTES**
- FINAL GRADES ADJACENT TO STRUCTURES SHALL BE IN CONFORMANCE WITH IBC 2012, SECTION 2304.11.2.2.
 - THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ALL DISCREPANCIES TO THE ENGINEER.
 - ALL IMPROVEMENTS TO BE PROTECTED FROM EROSION BY SWPPP.
 - MAXIMUM MINIMUM SLOPES AND MINIMUM STREET SECTIONS NOT TO EXCEED THAT SHOWN ON GEOTECH REPORT.
 - SEE DETAIL SHEET FOR STREET SECTIONS AND DETAILS.
 - ALL PUBLIC AND PRIVATE DRAINAGE IMPROVEMENTS TO BE BONDED FOR AND INSPECTED.
 - CONSTRUCTION OF BLOCK WALLS REQUIRES A SEPARATE BUILDING PERMIT AND APPROVAL BY THE CITY OF LAS VEGAS BUILDING DEPARTMENT.
 - CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXISTING UTILITY STRUCTURES AND FACILITIES AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. CONTRACTOR TO PROTECT IN PLACE DURING CONSTRUCTION. ENGINEER/OWNER SHALL BE NOTIFIED OF PRIOR DAMAGE TO EXISTING FACILITIES PRIOR TO CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR REPAIR/REPLENISHING FACILITIES IF ENGINEER/OWNER IS NOT NOTIFIED OF EXISTING DAMAGE PRIOR TO CONSTRUCTION COMMENCING.
 - NO STRUCTURE, VEGETATION, OR OBJECTS OF ANY KIND IS PERMITTED OVER TWENTY-FOUR (24) INCHES IN HEIGHT MEASURED FROM THE TOP OF THE ADJACENT CURB IF CURB EXIST) WITHIN THE SIGHT VISIBILITY ZONES.

FLOOD ZONE
THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (UNSHADED) AS DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANEL 320032C2125E & 320032C2150, DATED SEPTEMBER 27, 2002. A ZONE X (UNSHADED) IS DESCRIBED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.

DISCLAIMER NOTE

- 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.
- 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.

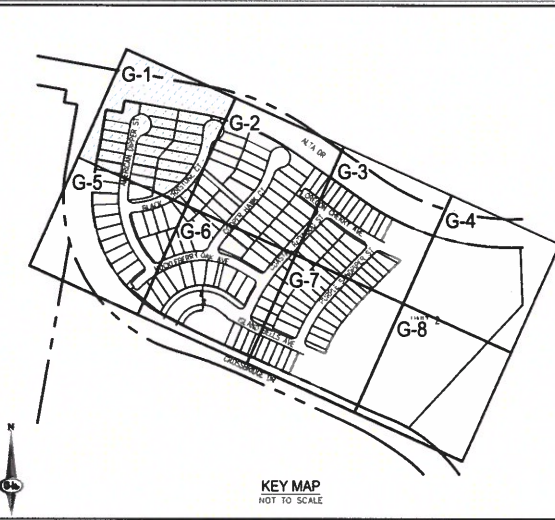
BENCHMARK
CITY OF LAS VEGAS BENCHMARK 7LV09 345W6
RIVET AND ROUND PLATE IN THE TOP OF CURB AT THE SOUTHEAST CORNER OF DESERT WOOD RD. AND SKY VISTA DR.
ELEVATION = 1011.422 METERS (NAVD 88)
ELEVATION = 3318.31 US SURVEY FEET (NAVD 88)

BASIS OF BEARINGS
NORTH 05°59'55" WEST, BEING THE BEARING OF THE WEST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, W.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREON ON FILE IN THE CLARK COUNTY, NEVADA RECORDER'S OFFICE IN BOOK 135, PAGE 71 OF PLATS.

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

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

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



LEGAL DESCRIPTION
LYING WITHIN THE NORTH EAST QUARTER (NE 1/4) OF SECTION 33, TOWNSHIP 20 SOUTH, RANGE 59 EAST, W.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA.

EASEMENT NOTES

- ALL PRIVATE STREETS ARE P.U.E. PUBLIC SEWER EASEMENTS AND PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY HOA.
- ALL COMMON ELEMENTS ARE PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED.

- CONSTRUCTION NOTES**
- INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE.
 - INSTALL 1" TYPE CURB PER CCAUSO NO. 216.
 - INSTALL MODIFIED ROLL TYPE CURB PER CCAUSO NO. 217.1.
 - INSTALL 1" TYPE ISLAND CURB PER CCAUSO NO. 219.
 - INSTALL "A" TYPE ISLAND CURB PER CCAUSO NO. 219.
 - INSTALL 10" 1" TYPE CURB TO MODIFIED ROLL CURB TRANSITION PER DETAIL 31, SHEET D-3.
 - CONSTRUCT 4" WIDE SIDEWALK PER CCAUSO NO. 234.
 - CONSTRUCT 5" WIDE SIDEWALK PER CCAUSO NO. 234.
 - CONSTRUCT SIDEWALK RAMP USING AMPER TLE TRUNCATED EDGES OR EQUIVALENT PER DETAIL 31, SHEET D-3.
 - CONSTRUCT 8" CROSS CUTTER PER CCAUSO NO. 228.
 - CONSTRUCT SIDEWALK DRAIN PER CCAUSO NO. 236.
 - INSTALL 18" RCP STORM DRAIN PIPE.
 - INSTALL 24" RCP STORM DRAIN PIPE.
 - INSTALL 30" RCP STORM DRAIN PIPE.
 - INSTALL 36" RCP STORM DRAIN PIPE.
 - INSTALL 48" RCP STORM DRAIN PIPE.
 - INSTALL 4.5" HOOT TYPE 2A DROP INLET PER DETAIL R-4.2.11, SHEET D-4, CCAUSO NO. 421.
 - INSTALL WROUGHT IRON FENCE WITH VEHICLE ACCESS GATE AND EMERGENCY KNOX PADLOCK PER DETAIL 32, SHEET D-3.
 - INSTALL DROP INLET CONCRETE APRON PER DETAIL R-4.2.7, SHEET D-4 & CCAUSO NO. 421.
 - CUT EXISTING SD PIPE WHERE SHOWN ON PLANS.
 - INSTALL 7.5" TYPE "CM2" DROP INLET.
 - INSTALL 10" TYPE "CM2" DROP INLET.
 - INSTALL 20" TYPE "CM2" DROP INLET.
 - INSTALL 48" TYPE B SDH PER CCAUSO NO. 401, 402 & 405.2.
 - INSTALL 5" TYPE "CM2" DROP INLET.
 - INSTALL 48" TYPE III SDH PER CCAUSO NO. 401, 402 & 406.
 - INSTALL 48" TYPE I SDH PER CCAUSO NO. 401, 402 & 403.
 - INSTALL D50=6" RIPRAP THICKNESS=12" OVER 6" TYPE II AGGREGATE BASE.
 - INSTALL RIPRAP D50=12" THICKNESS=24" OVER 6" TYPE II AGGREGATE BASE.

FLOOD CERTIFICATION
I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY _____ ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.
TIM M. MULROONEY, P.E. 22938 DATE _____

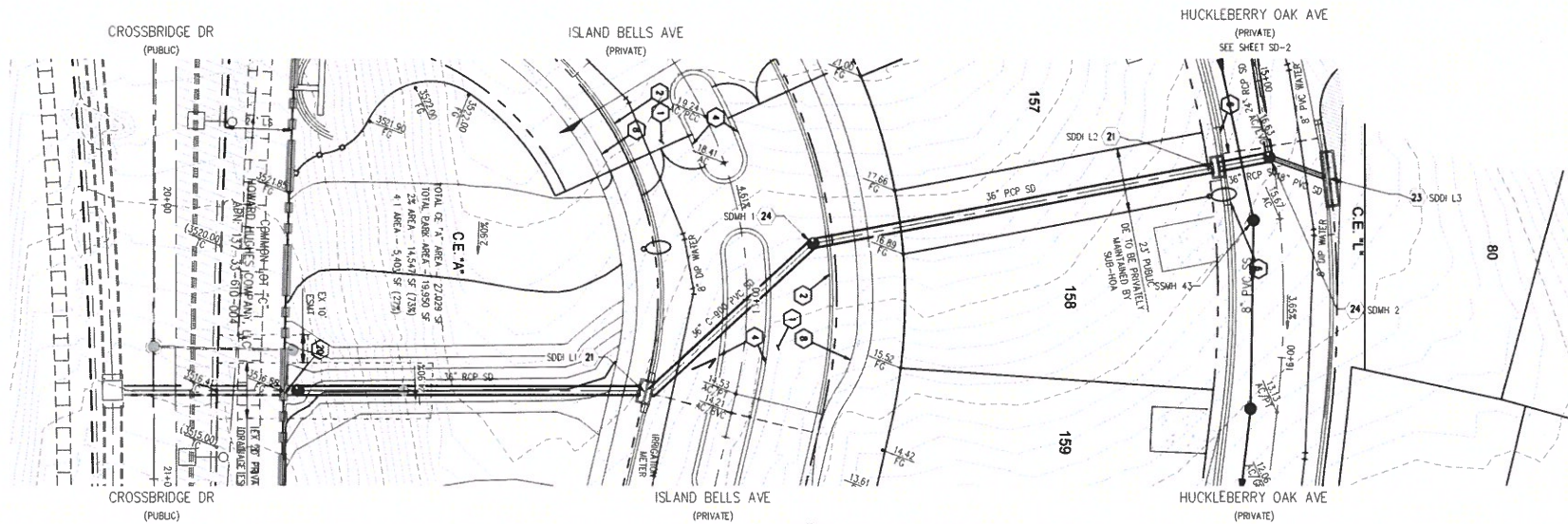
SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5300

KB HOME
BRISTLE VALE AT SUMMERLIN VILLAGE 24 PARCELS L&M - UNIT 1
GRADING PLAN I

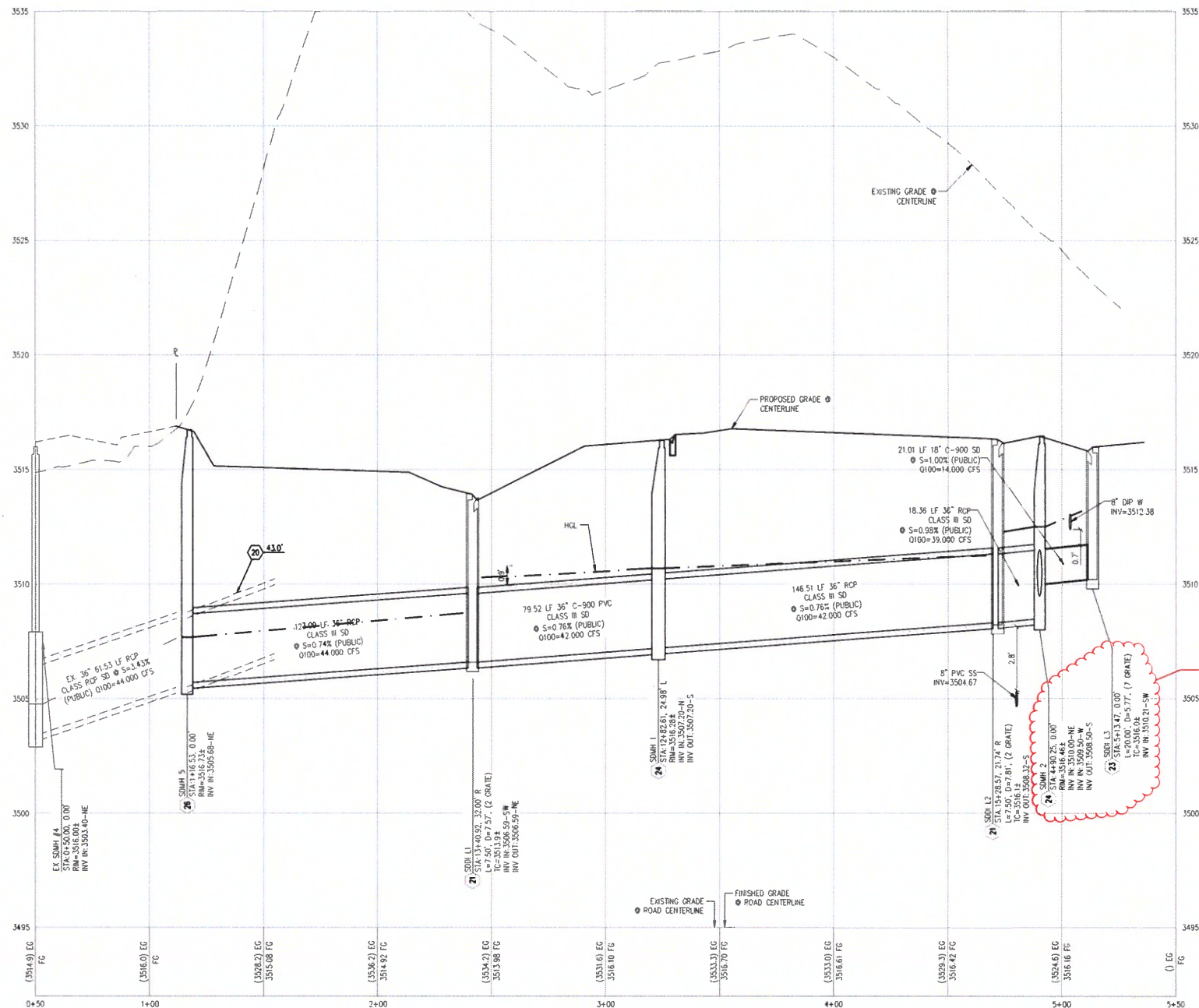
DATE: 1/10/19
DRAFTER: OIQ
DESIGNER: OIQ
CHECKED: DP
PROJECT NO. KBH1804-000

PROFESSIONAL SEAL
TIMOTHY M. MULROONEY
Exp. 12/31/2019
CIVIL
No. 22938
1/10/19

G-1
SHEET 4 OF 53

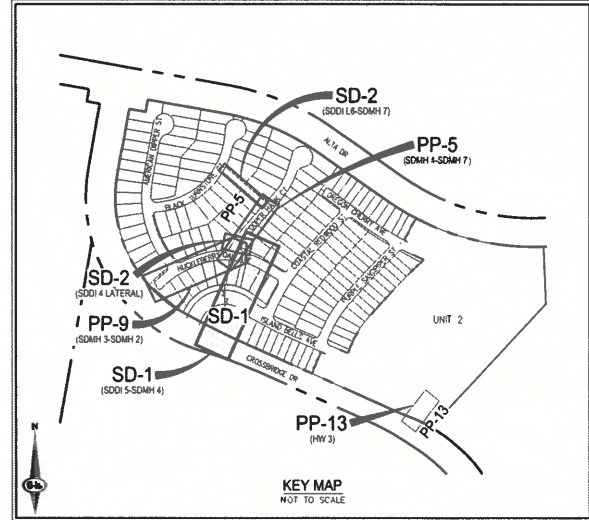
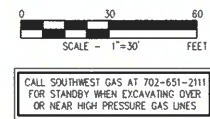


SDDI L1 TO L3 - PLAN VIEW



SDDI L1 TO L3 - PROFILE VIEW

HORIZ 1" = 30'
VERT 1" = 3'



LEGAL DESCRIPTION

LYING WITHIN THE NORTH EAST QUARTER (NE1/4) OF SECTION 33, TOWNSHIP 20 SOUTH, RANGE 59 EAST, N.M.D., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA.

EASEMENT NOTES

1. ALL PRIVATE STREETS ARE P.U.E. PUBLIC SEWER EASEMENTS AND PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY HOUL.
2. ALL COMMON ELEMENTS ARE PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED.

CONSTRUCTION NOTES

1. INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE.
2. INSTALL 12" TYPE CURB PER CCAUSD NO. 216.
3. INSTALL MODIFIED ROLL TYPE CURB PER CCAUSD NO. 217.1.
4. INSTALL 12" TYPE ISLAND CURB PER CCAUSD NO. 219.
5. INSTALL 12" TYPE ISLAND CURB PER CCAUSD NO. 219.
6. INSTALL 10" TYPE CURB TO MODIFIED ROLL CURB TRANSITION PER DETAIL 31, SHEET D-3.
7. CONSTRUCT 4" WIDE SIDEWALK PER CCAUSD NO. 234.
8. CONSTRUCT 5" WIDE SIDEWALK PER CCAUSD NO. 234.
9. CONSTRUCT SIDEWALK RAMP USING ARMOR TILE TRUNCATED DOWNS OR EQUIVALENT PER DETAIL 31, SHEET D-3.
10. CONSTRUCT 8" CROSS GUTTER PER CCAUSD NO. 228.
11. CONSTRUCT SIDEWALK DRAIN PER CCAUSD NO. 236.
12. INSTALL 18" RCP STORM DRAIN PIPE.
13. INSTALL 24" RCP STORM DRAIN PIPE.
14. INSTALL 30" RCP STORM DRAIN PIPE.
15. INSTALL 36" RCP STORM DRAIN PIPE.
16. INSTALL 48" RCP STORM DRAIN PIPE.
17. INSTALL 4.5" NDOT TYPE 2A DROP INLET PER DETAIL R-4.2.1.1, SHEET D-4, CCAUSD NO. 421.
18. INSTALL WROUGHT IRON FENCE WITH VEHICLE ACCESS GATE AND EMERGENCY KNOX PADLOCK PER DETAIL 32, SHEET D-3.
19. INSTALL DROP INLET CONCRETE APRON PER DETAIL R-4.2.7, SHEET D-4 & CCAUSD NO. 421.
20. CUT EXISTING SO PIPE WHERE SHOWN ON PLANS.
21. INSTALL 7.5" TYPE "CM2" DROP INLET.
22. INSTALL 10" TYPE "CM2" DROP INLET.
23. INSTALL 20" TYPE "CM2" DROP INLET.
24. INSTALL 48" TYPE II SDMH PER CCAUSD NO. 401, 402 & 405.2.
25. INSTALL 5" TYPE "CM2" DROP INLET.
26. INSTALL 48" TYPE II SDMH CCAUSD NO. 401, 402 & 406.
27. INSTALL 48" TYPE I SDMH CCAUSD NO. 401, 402 & 403.
28. INSTALL D50=6" RIPRAP THICKNESS=12" OVER 6" TYPE II AGGREGATE BASE.
29. INSTALL RIPRAP D50=12" THICKNESS=24" OVER 6" TYPE II AGGREGATE BASE.

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 TOP 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.

BENCHMARK

CITY OF LAS VEGAS BENCHMARK 7LV09 345W6
RIVET AND ROUND PLATE IN THE TOP OF CURB AT THE SOUTHEAST CORNER OF DESERT MOON RD AND SKY VISTA DR.
ELEVATION = 1011.422 METERS (NAVD 88)
ELEVATION = 3318.31 US SURVEY FEET (NAVD 88)

BASIS OF BEARINGS

NORTH 05°59'55" WEST BEING THE BEARING OF THE WEST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, N.M.D., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN THE CLARK COUNTY, NEVADA RECORDER'S OFFICE IN BOOK 135, PAGE 71 OF PLATS.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES MANAGER
PROJECT NO. 136070 DATE:



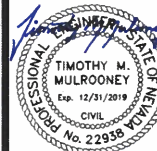
LAS VEGAS, NV

KB HOME

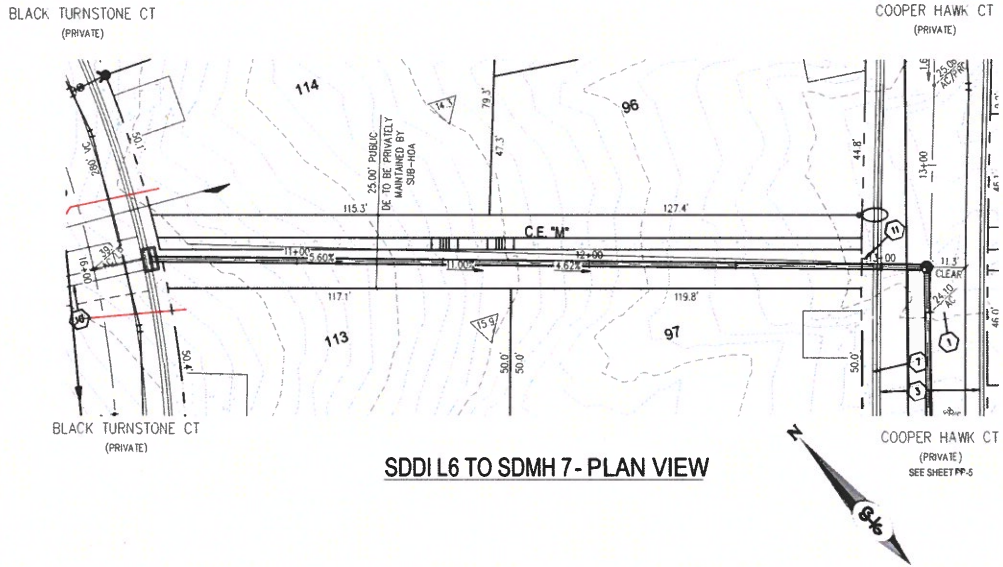
BRISTLE VALE AT SUMMERLIN VILLAGE 24 PARCELS L&M - UNIT 1

SD PLAN & PROFILE - SDDI L1 TO L3

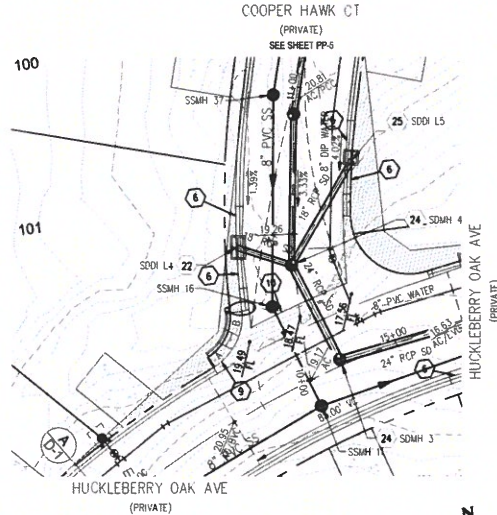
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DRAFTER: OIQ
DESIGNER: OIQ
CHECKED: DF
PROJECT NO. KBH1804-000



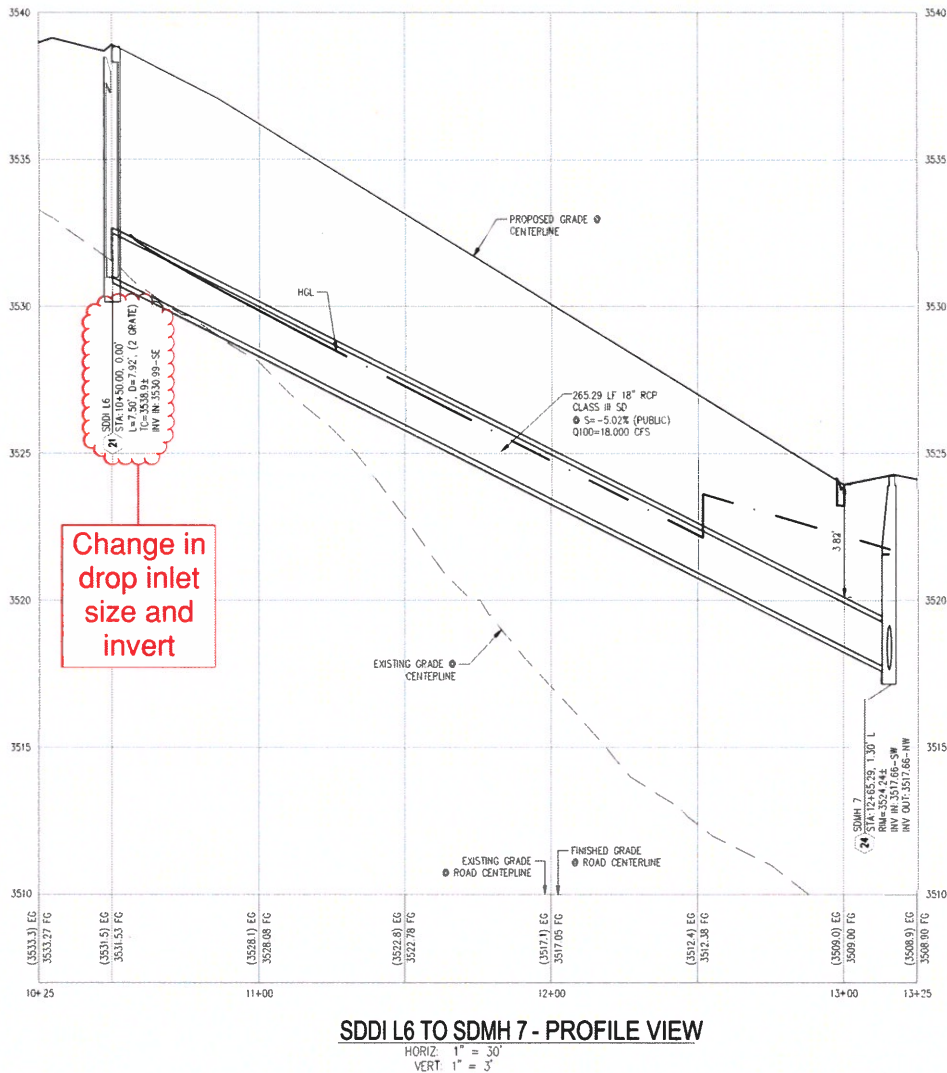
SD-1
SHEET 16 OF 53



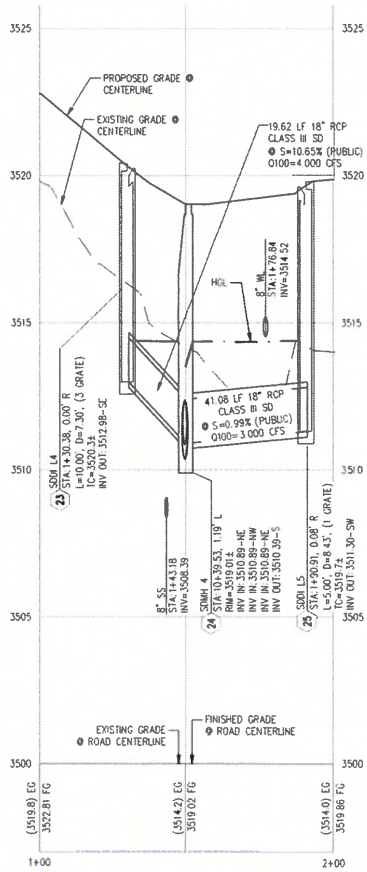
SDDI L6 TO SDMH 7 - PLAN VIEW



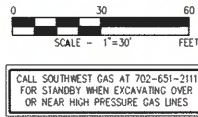
SDDI L4 TO SDDI L5 - PLAN VIEW



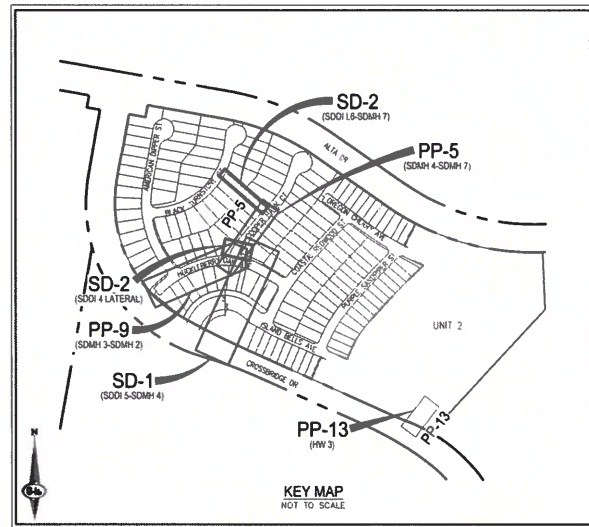
SDDI L6 TO SDMH 7 - PROFILE VIEW



SDDI L4 TO SDDI L5 - PROFILE VIEW



CALL SOUTHWEST GAS AT 702-631-2111 FOR STANDBY WHEN EXCAVATING OVER OR NEAR HIGH PRESSURE GAS LINES



LEGAL DESCRIPTION

LYING WITHIN THE NORTH EAST QUARTER (NE1/4) OF SECTION 33, TOWNSHIP 20 SOUTH, RANGE 59 EAST M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA.

EASEMENT NOTES

1. ALL PRIVATE STREETS ARE P.U.E. PUBLIC SEWER EASEMENTS AND PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY HOA.
2. ALL COMMON ELEMENTS ARE PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED.

CONSTRUCTION NOTES

1. INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
2. INSTALL 1" TYPE CURB PER CCAUSD NO. 216
3. INSTALL MODIFIED ROLL TYPE CURB PER CCAUSD NO. 217.1
4. INSTALL 1" TYPE ISLAND CURB PER CCAUSD NO. 219
5. INSTALL 1" TYPE ISLAND CURB PER CCAUSD NO. 219
6. INSTALL 10' 7" TYPE CURB TO MODIFIED ROLL CURB TRANSITION PER DETAIL 31, SHEET D-3
7. CONSTRUCT 4" WIDE SIDEWALK PER CCAUSD NO. 234
8. CONSTRUCT 5' WIDE SIDEWALK PER CCAUSD NO. 234
9. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT PER DETAIL 31, SHEET D-3
10. CONSTRUCT 8" CROSS GUTTER PER CCAUSD NO. 228
11. CONSTRUCT SIDEWALK DRAIN PER CCAUSD NO. 236
12. INSTALL 18" RCP STORM DRAIN PIPE
13. INSTALL 24" RCP STORM DRAIN PIPE
14. INSTALL 30" RCP STORM DRAIN PIPE
15. INSTALL 36" RCP STORM DRAIN PIPE
16. INSTALL 48" RCP STORM DRAIN PIPE
17. INSTALL 4.5'x6' NDOT TYPE 2A DROP INLET PER DETAIL R-4.2.1, SHEET D-4, CCAUSD NO. 421
18. INSTALL WOODRIDGE IRON FENCE WITH VEHICLE ACCESS GATE AND EMERGENCY KNOX PADLOCK PER DETAIL 32, SHEET D-3
19. INSTALL DROP INLET CONCRETE APRON PER DETAIL R-4.2.7, SHEET D-4 & CCAUSD NO. 421
20. CUT EXISTING SD PIPE WHERE SHOWN ON PLANS
21. INSTALL 7.5' TYPE "CM2" DROP INLET
22. INSTALL 10' TYPE "CM2" DROP INLET
23. INSTALL 20' TYPE "CM2" DROP INLET
24. INSTALL 48" TYPE II SDMH PER CCAUSD NO. 401, 402 & 405.2
25. INSTALL 5' TYPE "CM2" DROP INLET
26. INSTALL 48" TYPE II SDMH CCAUSD NO. 401, 402 & 406
27. INSTALL 48" TYPE I SDMH CCAUSD NO. 401, 402 & 403
28. INSTALL 60"x6" RIPRAP THICKNESS=12" OVER 6" TYPE II AGGREGATE BASE
29. INSTALL RIPRAP 250=12" THICKNESS=24" OVER 6" TYPE II AGGREGATE BASE

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.

BENCHMARK

CITY OF LAS VEGAS BENCHMARK 7LV09 345W6
ROVET AND ROUND PLATE IN THE TOP OF CURB AT THE SOUTHEAST CORNER OF DESERT MOON RD AND SKY VISTA DR.
ELEVATION = 1011.422 METERS (NAVD '88)
ELEVATION = 3318.31 US SURVEY FEET (NAVD '88)

BASIS OF BEARINGS

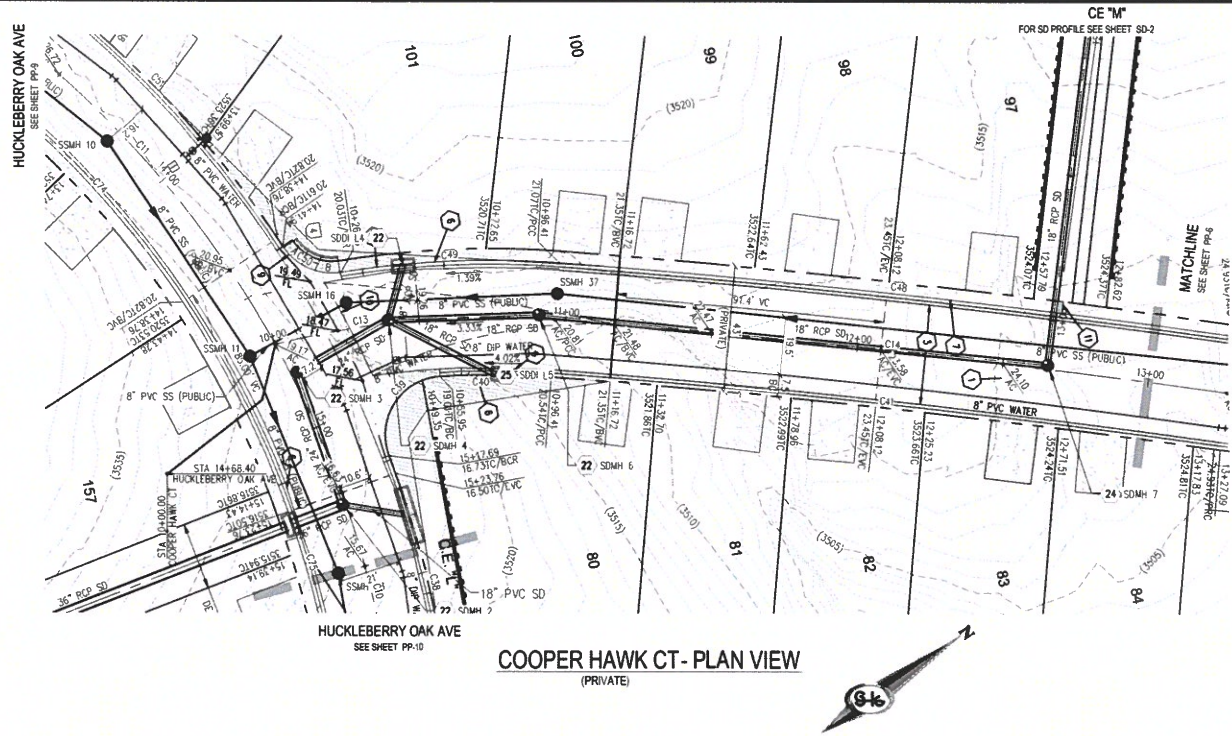
NORTH 05°59'35" WEST, BEING THE BEARING OF THE WEST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN THE CLARK COUNTY, NEVADA RECORDER'S OFFICE IN BOOK 135, PAGE 71 OF PLATS.

APPROVED FOR CONSTRUCTION

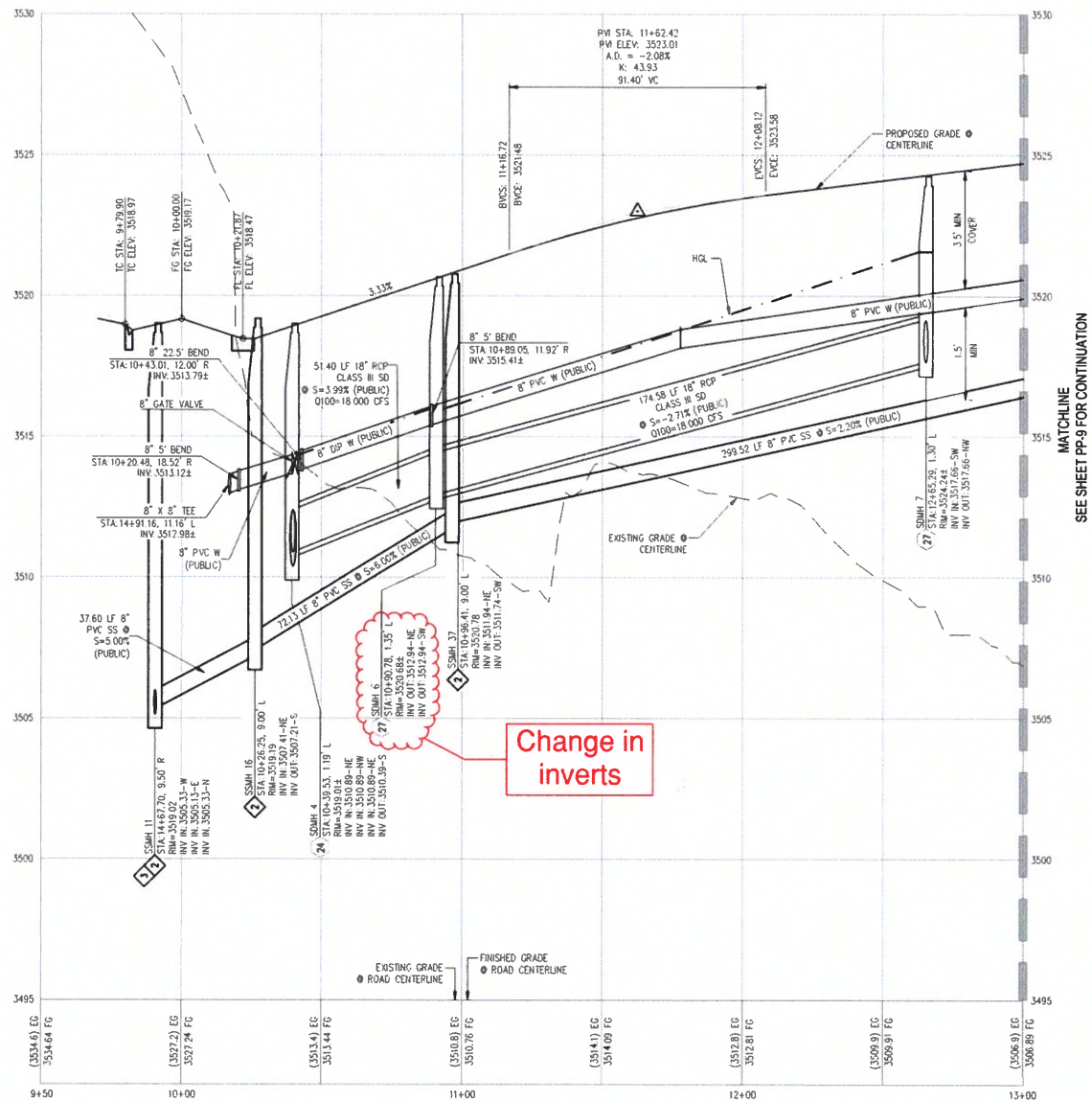
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES MANAGER
PROJECT NO. 136072 DATE: 1/10/19



I:\Projects\1804-000 Summerlin\24-Profile\1804-000 Summerlin.dwg, 11/10/2019 10:24 AM, User: daniel

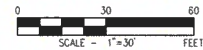


COOPER HAWK CT - PLAN VIEW
(PRIVATE)



COOPER HAWK CT - PROFILE VIEW

HORIZ: 1" = 30'
VERT: 1" = 3'



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

RAMP TRANSITION LENGTHS FOR 1:12 SIDE SLOPES				
CASE NO.	GRADE %	"A" MIN.	"B" MIN.	"C" MIN.
1	-6 TO -5.01	4.5'	21.5'	
2	-5 TO -4.01	4.5'	15.0'	
3	-4 TO -3.01	4.5'	12.0'	
4	-3 TO -2.01	4.5'	9.5'	
5	-2 TO 2	8.0'	8.0'	
6	2.01 TO 3	9.5'	4.5'	
7	3.01 TO 4	12.0'	4.5'	
8	4.01 TO 5	15.0'	4.5'	
9	5.01 TO 6	21.5'	4.5'	

SEWALK RAMP USING ARMOR TILE
TRUNCATED DOWNS OR EQUIVALENT PER
CCAUSS NO. 235, CASE 1

CURVE TABLE				
CURVE	LENGTH	RADIUS	DELTA	TANGENT
C10	151.99'	343.00'	25°23'20"	77.26'
C11	160.25'	343.00'	26°46'07"	81.61'
C13	96.41'	296.00'	18°39'42"	48.64'
C14	230.68'	3496.00'	3°46'50"	115.38'
C38	107.65'	362.50'	17°00'54"	54.22'
C39	37.41'	20.00'	107°10'20"	27.11'
C40	37.79'	276.50'	7°49'52"	18.93'
C41	229.39'	3476.50'	3°46'50"	114.74'
C48	231.96'	3515.50'	3°46'50"	116.02'
C49	74.79'	315.50'	13°34'52"	37.57'
C50	23.01'	30.00'	65°55'28"	12.97'
C51	142.28'	362.50'	22°29'19"	72.07'
C74	151.14'	323.50'	26°46'07"	76.97'
C75	143.35'	323.50'	25°23'20"	72.87'

LEGAL DESCRIPTION

LYING WITHIN THE NORTH EAST QUARTER
(NE1/4) OF SECTION 33, TOWNSHIP 20 SOUTH,
RANGE 50 EAST, M.D.M., CITY OF LAS VEGAS,
CLARK COUNTY, NEVADA.

EASEMENT NOTES

- ALL PRIVATE STREETS ARE P.U.E. PUBLIC
SEWER EASEMENTS AND PUBLIC DRAINAGE
EASEMENTS TO BE PRIVATELY MAINTAINED
BY HOA.
- ALL COMMON ELEMENTS ARE PUBLIC
DRAINAGE EASEMENTS TO BE PRIVATELY
MAINTAINED.

COVER DURING CONSTRUCTION

MAINTAIN MINIMUM TWENTY-FOUR (24") INCH COVER PER
UDACS SEC. 2.08.04. GRADING MUST BE COMPLETED PRIOR
TO WATERLINE INSTALLATION.

WATER PRESSURE ZONE

WATER PRESSURE ZONE 3665

CONSTRUCTION NOTES

- INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE
BASE.
- INSTALL 1" TYPE CURB PER CCAUSS NO. 216
- INSTALL MODIFIED ROLL TYPE CURB PER CCAUSS NO. 217.1
- INSTALL 1" TYPE ISLAND CURB PER CCAUSS NO. 219
- INSTALL 4" TYPE ISLAND CURB PER CCAUSS NO. 219
- INSTALL 10" 1" TYPE CURB TO MODIFIED ROLL CURB
TRANSITION PER DETAIL 31, SHEET D-3
- CONSTRUCT 4' WIDE SIDEWALK PER CCAUSS NO. 234
- CONSTRUCT 5' WIDE SIDEWALK PER CCAUSS NO. 234
- CONSTRUCT SIDEWALK RAMP USING ARMOR TILE TRUNCATED
DOWNS OR EQUIVALENT PER DETAIL 31, SHEET D-3
- CONSTRUCT 8' CROSS GUTTER PER CCAUSS NO. 228
- CONSTRUCT SIDEWALK DRAIN PER CCAUSS NO. 236
- INSTALL 18" RCP STORM DRAIN PIPE
- INSTALL 24" RCP STORM DRAIN PIPE
- INSTALL 30" RCP STORM DRAIN PIPE
- INSTALL 36" RCP STORM DRAIN PIPE
- INSTALL 48" RCP STORM DRAIN PIPE
- INSTALL 4.5'x6' HOOT TYPE 2A DROP INLET PER DETAIL
R-4.2.1.1, SHEET D-4, CCAUSS NO. 421
- INSTALL WROUGHT IRON FENCE WITH VEHICLE ACCESS GATE
AND EMERGENCY KNOX PARKING PER DETAIL 32, SHEET D-3
- INSTALL DROP INLET CONCRETE APRON PER DETAIL R-4.2.7,
SHEET D-4 & CCAUSS NO. 421
- CUT EXISTING SD PIPE WHERE SHOWN ON PLANS
- INSTALL 7.5" TYPE "CM2" DROP INLET
- INSTALL 10" TYPE "CM2" DROP INLET
- INSTALL 20" TYPE "CM2" DROP INLET
- INSTALL 48" TYPE II SDMH PER CCAUSS NO. 401, 402 & 405.2
- INSTALL 5' TYPE "CM2" DROP INLET
- INSTALL 48" TYPE II SDMH CCAUSS NO. 401, 402 & 406
- INSTALL 48" TYPE II SDMH CCAUSS NO. 401, 402 & 403
- INSTALL D50=6" RIPRAP THICKNESS=12" OVER 6" TYPE II
AGGREGATE BASE
- INSTALL RIPRAP D50=12" THICKNESS=24" OVER 6" TYPE II
AGGREGATE BASE

DISCLAIMER NOTE

- 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.
- 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 TOP 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.

BENCHMARK

CITY OF LAS VEGAS BENCHMARK 7LV09 345W6
RIVET AND ROUND PLATE IN THE TOP OF CURB AT THE SOUTHEAST CORNER OF DESERT
MOUNTAIN RD. AND S41 W51A DR.
ELEVATION = 1011.422 METERS (NAVD '88)
ELEVATION = 3318.31 US SURVEY FEET (NAVD '88)

BASIS OF BEARINGS

NORTH 05°59'55" WEST, BEING THE BEARING OF THE WEST LINE OF SECTION 34,
TOWNSHIP 20 SOUTH, RANGE 50 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY,
NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN THE CLARK COUNTY, NEVADA
RECORDER'S OFFICE IN BOOK 135, PAGE 71 OF PLATS.

SEWER NOTES

- INSTALL 8" PVC SANITARY SEWER PER DCSWCS SD-15 &
SD-17
 - INSTALL 48" DIAMETER SANITARY SEWER MANHOLE WITH
PRECAST BASE PER DCSWCS SD-1A, SD-1B, SD-1C, SD-1D, SD-1E,
AND SINGLE UD (24")
 - MANHOLE SHALL BE CORROSION PROTECTED WITH FIELD
APPLIED COATING PER DCSWCS SECTION 1.16.8B
 - INSTALL 4" PVC SEWER LATERAL PER DCSWCS SD-22 &
SD-25
 - REMOVE CAP AND CONNECT TO EXISTING 8" SS
 - INSTALL 4" 3000 PSI SEWER LATERAL PER DCSWCS SD-22
& SD-25 FOR LOTS 123 AND 124 ONLY
 - INSTALL 8" 3000 PSI SANITARY SEWER PER DCSWCS SD-15
& SD-17 FOR LOTS 123 AND 124 ONLY
- SEE SHEET C-3 FOR QUANTITIES AND ABBREVIATIONS

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES MANAGER
PROJECT NO. 136070 DATE: 11/10/19



LAS VEGAS, NV

KB HOME

BRISTLE VALE AT SUMMERLIN VILLAGE 24 PARCELS L&M - UNIT 1
PLAN & PROFILE - COOPER HAWK CT STA 9+00 TO 13+00

11/10/19

DATE: 11/10/19

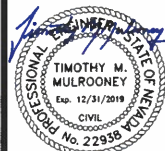
DRAFTER: DIO

DESIGNER: DIO

CHECKED: DP

PROJECT NO.

KBH1804-000



11/10/19

PP-5

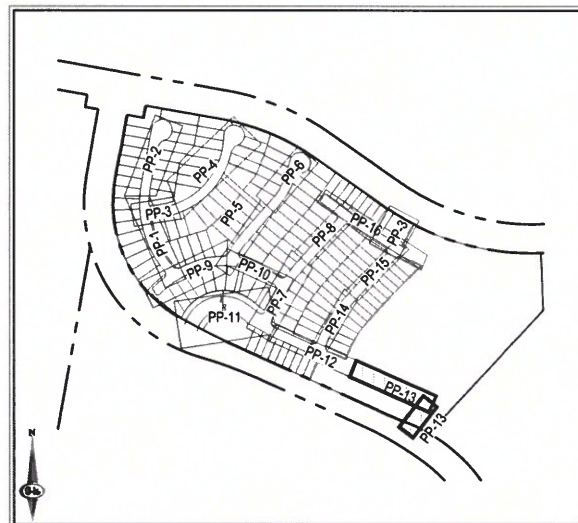
SHEET 22 OF 53





CASE NO.	GRADE % "B" TO "A"	"A" MIN.	"B" MIN.
1	-6 TO -5.01	4.5'	21.5'
2	-5 TO -4.01	4.5'	15.0'
3	-4 TO -3.01	4.5'	12.0'
4	-3 TO -2.01	4.5'	9.5'
5	-2 TO -1	8.0'	8.0'
6	2.01 TO 3	9.5'	4.5'
7	3.01 TO 4	12.0'	4.5'
8	4.01 TO 5	15.0'	4.5'
9	5.01 TO 6	21.5'	4.5'

SIDEWALK RAMP USING AMOR TRE TRUNCATED DOWNS OR EQUIVALENT PER CAUSD NO. 235, CASE 1



LEGAL DESCRIPTION

LYING WITHIN THE NORTH EAST QUARTER
(NE1/4) OF SECTION 33, TOWNSHIP 20 SOUTH,
RANGE 59 EAST M.D.M. CITY OF LAS VEGAS,
CLARK COUNTY, NEVADA.

EASEMENT NOTES

1. ALL PRIVATE STREETS ARE P.U.E., PUBLIC SEWER EASEMENTS AND PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY HOA.
2. ALL COMMON ELEMENTS ARE PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED.

COVER DURING CONSTRUCTION

MAINTAIN MINIMUM TWENTY-FOUR (24") INCH COVER PER
UDACS SEC. 2.08.04. GRADING MUST BE COMPLETED PRIOR
TO WATERLINE INSTALLATION

WATER PRESSURE ZONE

WATER PRESSURE ZONE 366.5

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 SLOPE FROM EXISTING PAVEMENT SAVOIT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED LINE OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF NEW PAVEMENT OR MAINTENANCE OF EXISTING PAVEMENT. DOES NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

BENCHMARK

CITY OF LAS VEGAS BENCHMARK 71Y09 345W6
RIVET AND ROUND PLATE IN THE TOP OF CURB AT THE SOUTHEAST CORNER OF DESERT
MOON RD AND SKY VISTA DR.
ELEVATION = 1011.422 METERS (NAVD '88)
ELEVATION = 3318.31 US SURVEY FEET (NAVD '88)

BASIS OF BEARINGS

NORTH 05°59'55" WEST, BEING THE BEARING OF THE WEST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN THE CLARK COUNTY NEVADA RECORDER'S OFFICE IN BOOK 135, PAGE 71 OF PLATS.



Call before you Dig
AVOID CUTTING UNDERGROUND
UTILITY LINES. IT'S COSTLY.
Call

OR
1-800-227-2600

CONSTRUCTION NOTES

- 1) INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
- 2) INSTALL "L" TYPE CURB PER CCAUSD NO. 216
- 3) INSTALL MODIFIED ROLL TYPE CURB PER CCAUSD NO. 217.1
- 4) INSTALL "T" TYPE ISLAND CURB PER CCAUSD NO. 219
- 5) INSTALL "A" TYPE ISLAND CURB PER CCAUSD NO. 219
- 6) INSTALL "O" 3" TYPE CURB TO MODIFIED ROLL CURB TRANSITION PER DETAIL 31, SHEET D-3
- 7) CONSTRUCT 4' WIDE SIDEWALK PER CCAUSD NO. 234
- 8) CONSTRUCT 5' WIDE SIDEWALK PER CCAUSD NO. 234
- 9) CONSTRUCT SIDEWALK RAMPS USING ARMOR THE TRUNCATED DORIES OR EQUIVALENT PER DETAIL 31, SHEET D-3
- 10) CONSTRUCT 8" CROSS CUTTER PER CCAUSD NO. 228
- 11) CONSTRUCT SIDEWALK DRAIN PER CCAUSD NO. 236
- 12) INSTALL 18" RCP STORM DRAIN PIPE
- 13) INSTALL 24" RCP STORM DRAIN PIPE
- 14) INSTALL 30" RCP STORM DRAIN PIPE
- 15) INSTALL 36" RCP STORM DRAIN PIPE
- 16) INSTALL 48" RCP STORM DRAIN PIPE
- 17) INSTALL 45"X16" NDOT TYPE 2A DROP INLET PER DETAIL R-4.211, SHEET D-4, CCAUSD NO. 421
- 18) INSTALL 45"X16" NDOT TYPE 2A DROP INLET PER DETAIL R-4.211, SHEET D-4, CCAUSD NO. 421
- 19) INSTALL DROP INLET CONCRETE APRON PER DETAIL R-4.2.7, CCAUSD NO. 421
- 20) CUT EXISTING SO PIPE WHERE SHOWN ON PLANS
- 21) INSTALL 7.5" TYPE "CM2" DROP INLET
- 22) INSTALL 10" TYPE "CM2" DROP INLET
- 23) INSTALL 20" TYPE "CM2" DROP INLET
- 24) INSTALL 48" TYPE I SDMH PER CCAUSD NO. 401, 402 & 405
- 25) INSTALL 5" TYPE "CM2" DROP INLET
- 26) INSTALL 48" TYPE III SDMH CCAUSD NO. 401, 402 & 406
- 27) INSTALL 48" TYPE I SDMH CCAUSD NO. 401, 402 & 403
- 28) INSTALL 1050#6" RIBRAP THICKNESS=12" OVER 6" TYPE II AGGREGATE BASE
- 29) INSTALL RIBRAP D50=12" THICKNESS=24" OVER 6" TYPE II AGGREGATE BASE

SEWER NOTES

1. INSTALL 48" PVC SANITARY SEWER PER DCSWCs 50-15 & 50-17 FOR LOTS 123 AND 124 ONLY
2. INSTALL 48" DIAMETER SANITARY SEWER MANHOLE WITH PRECAST BASE PER DCSWCs 50-1A, 50-1B, 50-4, 50-4, 50-9, 50-10, 50-11, 50-12, 50-13, 50-14, 50-15, 50-16, 50-17, 50-18, 50-19, 50-20, 50-21, 50-22, 50-23, 50-24, 50-25, 50-26, 50-27, 50-28, 50-29, 50-30, 50-31, 50-32, 50-33, 50-34, 50-35, 50-36, 50-37, 50-38, 50-39, 50-40, 50-41, 50-42, 50-43, 50-44, 50-45, 50-46, 50-47, 50-48, 50-49, 50-50, 50-51, 50-52, 50-53, 50-54, 50-55, 50-56, 50-57, 50-58, 50-59, 50-60, 50-61, 50-62, 50-63, 50-64, 50-65, 50-66, 50-67, 50-68, 50-69, 50-70, 50-71, 50-72, 50-73, 50-74, 50-75, 50-76, 50-77, 50-78, 50-79, 50-80, 50-81, 50-82, 50-83, 50-84, 50-85, 50-86, 50-87, 50-88, 50-89, 50-90, 50-91, 50-92, 50-93, 50-94, 50-95, 50-96, 50-97, 50-98, 50-99, 50-100, 50-101, 50-102, 50-103, 50-104, 50-105, 50-106, 50-107, 50-108, 50-109, 50-110, 50-111, 50-112, 50-113, 50-114, 50-115, 50-116, 50-117, 50-118, 50-119, 50-120, 50-121, 50-122, 50-123, 50-124, 50-125, 50-126, 50-127, 50-128, 50-129, 50-130, 50-131, 50-132, 50-133, 50-134, 50-135, 50-136, 50-137, 50-138, 50-139, 50-140, 50-141, 50-142, 50-143, 50-144, 50-145, 50-146, 50-147, 50-148, 50-149, 50-150, 50-151, 50-152, 50-153, 50-154, 50-155, 50-156, 50-157, 50-158, 50-159, 50-160, 50-161, 50-162, 50-163, 50-164, 50-165, 50-166, 50-167, 50-168, 50-169, 50-170, 50-171, 50-172, 50-173, 50-174, 50-175, 50-176, 50-177, 50-178, 50-179, 50-180, 50-181, 50-182, 50-183, 50-184, 50-185, 50-186, 50-187, 50-188, 50-189, 50-190, 50-191, 50-192, 50-193, 50-194, 50-195, 50-196, 50-197, 50-198, 50-199, 50-200, 50-201, 50-202, 50-203, 50-204, 50-205, 50-206, 50-207, 50-208, 50-209, 50-210, 50-211, 50-212, 50-213, 50-214, 50-215, 50-216, 50-217, 50-218, 50-219, 50-220, 50-221, 50-222, 50-223, 50-224, 50-225, 50-226, 50-227, 50-228, 50-229, 50-230, 50-231, 50-232, 50-233, 50-234, 50-235, 50-236, 50-237, 50-238, 50-239, 50-240, 50-241, 50-242, 50-243, 50-244, 50-245, 50-246, 50-247, 50-248, 50-249, 50-250, 50-251, 50-252, 50-253, 50-254, 50-255, 50-256, 50-257, 50-258, 50-259, 50-260, 50-261, 50-262, 50-263, 50-264, 50-265, 50-266, 50-267, 50-268, 50-269, 50-270, 50-271, 50-272, 50-273, 50-274, 50-275, 50-276, 50-277, 50-278, 50-279, 50-280, 50-281, 50-282, 50-283, 50-284, 50-285, 50-286, 50-287, 50-288, 50-289, 50-290, 50-291, 50-292, 50-293, 50-294, 50-295, 50-296, 50-297, 50-298, 50-299, 50-300, 50-301, 50-302, 50-303, 50-304, 50-305, 50-306, 50-307, 50-308, 50-309, 50-310, 50-311, 50-312, 50-313, 50-314, 50-315, 50-316, 50-317, 50-318, 50-319, 50-320, 50-321, 50-322, 50-323, 50-324, 50-325, 50-326, 50-327, 50-328, 50-329, 50-330, 50-331, 50-332, 50-333, 50-334, 50-335, 50-336, 50-337, 50-338, 50-339, 50-340, 50-341, 50-342, 50-343, 50-344, 50-345, 50-346, 50-347, 50-348, 50-349, 50-350, 50-351, 50-352, 50-353, 50-354, 50-355, 50-356, 50-357, 50-358, 50-359, 50-360, 50-361, 50-362, 50-363, 50-364, 50-365, 50-366, 50-367, 50-368, 50-369, 50-370, 50-371, 50-372, 50-373, 50-374, 50-375, 50-376, 50-377, 50-378, 50-379, 50-380, 50-381, 50-382, 50-383, 50-384, 50-385, 50-386, 50-387, 50-388, 50-389, 50-390, 50-391, 50-392, 50-393, 50-394, 50-395, 50-396, 50-397, 50-398, 50-399, 50-400, 50-401, 50-402, 50-403, 50-404, 50-405, 50-406, 50-407, 50-408, 50-409, 50-410, 50-411, 50-412, 50-413, 50-414, 50-415, 50-416, 50-417, 50-418, 50-419, 50-420, 50-421, 50-422, 50-423, 50-424, 50-425, 50-426, 50-427, 50-428, 50-429, 50-430, 50-431, 50-432, 50-433, 50-434, 50-435, 50-436, 50-437, 50-438, 50-439, 50-440, 50-441, 50-442, 50-443, 50-444, 50-445, 50-446, 50-447, 50-448, 50-449, 50-450, 50-451, 50-452, 50-453, 50-454, 50-455, 50-456, 50-457, 50-458, 50-459, 50-460, 50-461, 50-462, 50-463, 50-464, 50-465, 50-466, 50-467, 50-468, 50-469, 50-470, 50-471, 50-472, 50-473, 50-474, 50-475, 50-476, 50-477, 50-478, 50-479, 50-480, 50-481, 50-482, 50-483, 50-484, 50-485, 50-486, 50-487, 50-488, 50-489, 50-490, 50-491, 50-492, 50-493, 50-494, 50-495, 50-496, 50-497, 50-498, 50-499, 50-500, 50-501, 50-502, 50-503, 50-504, 50-505, 50-506, 50-507, 50-508, 50-509, 50-510, 50-511, 50-512, 50-513, 50-514, 50-515, 50-516, 50-51

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES MANAGER
PROJECT NO.: 136070 DATE:

SLATER
HANIFAN
GROUP
a Westwood team

S | E

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

LAS VEGAS, NV

KB HOME

BRISTLE VALE AT SUMMERLIN VILLAGE 24 PARCELS L&M - UNIT 1
PLAN & PROFILE - ISLAND BELLS AVE STA 19+00 TO 22+50 AND HW 3

DATE: 1/10/19

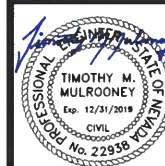
DRAFTER: OIQ

DESIGNER: OIQ

CHECKED: DF

PROJECT NO.

KBH1804-000



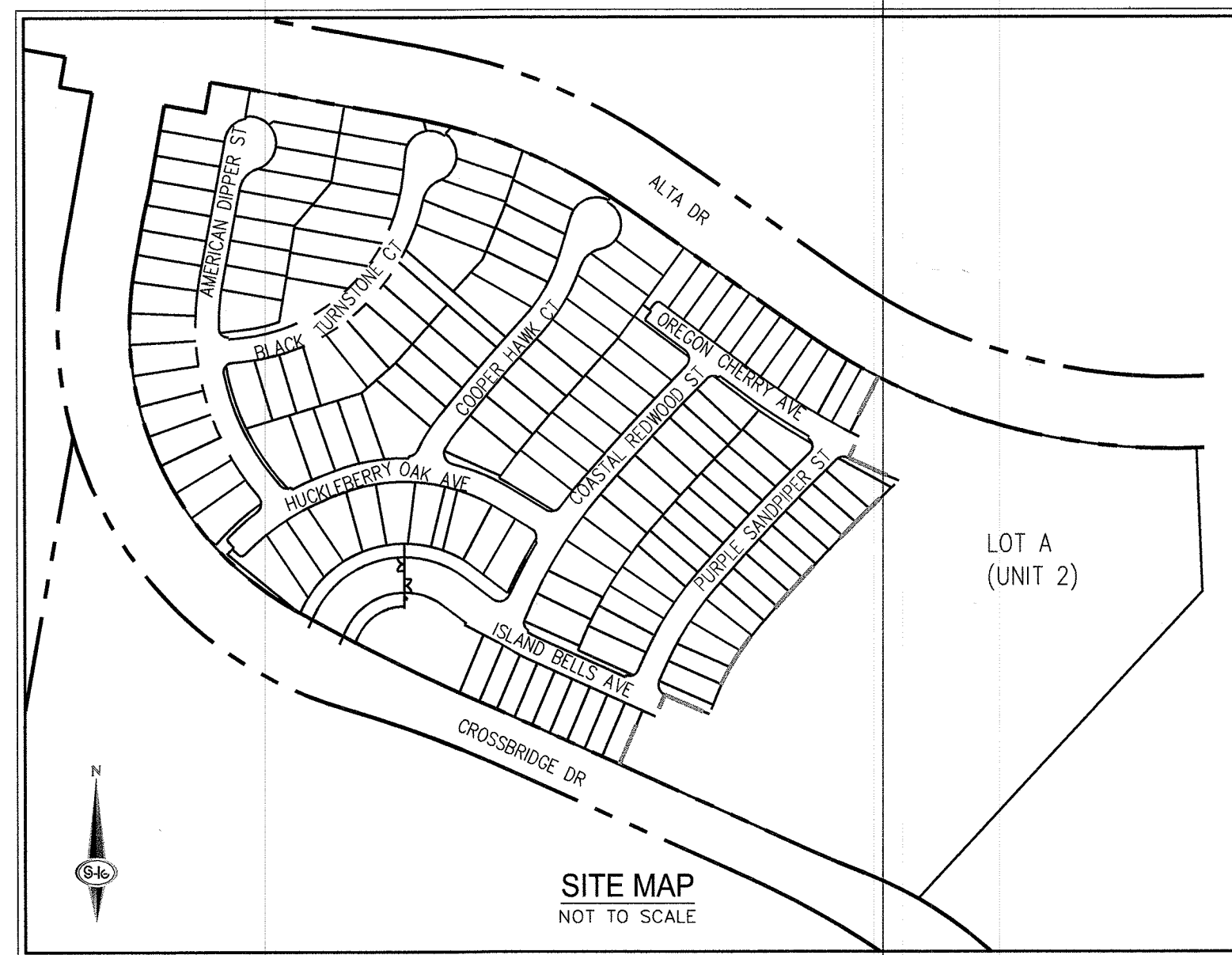
PP-13
SHEET 30 OF 53

APPENDIX E

CD of Electronic Files and Improvement Plans

Map of the project site and surrounding area. The map shows a network of roads including Sky Vista Dr, Crossbridge Dr, Alta Dr, Desert Foot Hills Dr, and Charleston Blvd. The project site is indicated by a black arrow pointing to a shaded area labeled 'PROJECT SITE'. Other labels include 'PARCEL L', 'PARCEL M', 'K', 'J', 'I', 'D', 'E', 'NP-1', 'WS-1', and a north arrow pointing up. A scale bar at the bottom left indicates 'NOT TO SCALE'.

CITY OF LAS VEGAS, NEVADA
RESIDENTIAL SUBDIVISION
APN: 137-33-610-002 & 137-33-610-003



Sheet List Table		
NO.	SHEET	TITLE
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2	C-2	GENERAL NOTES
3	C-3	LEGEND, ABBREVIATIONS, AND QUANTITIES
4	G-1	GRADING PLAN I
5	G-2	GRADING PLAN II
6	G-3	GRADING PLAN III
7	G-4	GRADING PLAN IV
8	G-5	GRADING PLAN V
9	G-6	GRADING PLAN VI
10	G-7	GRADING PLAN VII
11	G-8	GRADING PLAN VIII
12	D-1	DETAIL SHEET I
13	D-2	DETAIL SHEET II
14	D-3	DETAIL SHEET III
15	D-4	DETAIL SHEET IV
16	D-5	DETAIL SHEET V
17	SD-1	SD PLAN & PROFILE - SDDI L1 TO L3
18	SD-2	SD PLAN & PROFILE - SDDI L6 TO SDHW 7 & SDDI L4 TO SDDI L5
19	PP-1	PLAN & PROFILE - AMERICAN DIPPER ST STA 9+50 TO 13+50
20	PP-2	PLAN & PROFILE - AMERICAN DIPPER ST STA 13+50 TO 18+00
21	PP-3	PLAN & PROFILE - BLACK TURNSTONE CT STA 11+50 TO 13+50
22	PP-4	PLAN & PROFILE - BLACK TURNSTONE CT STA 13+50 TO 19+50
23	PP-5	PLAN & PROFILE - COOPER HAWK CT STA 9+00 TO 13+00
24	PP-6	PLAN & PROFILE - COOPER HAWK CT STA 13+00 TO 16+00
25	PP-7	PLAN & PROFILE - COASTAL REDWOOD ST STA 9+50 TO 13+50
26	PP-8	PLAN & PROFILE - COASTAL REDWOOD ST STA 13+50 TO 17+00
27	PP-9	PLAN & PROFILE - HUCKLEBERRY OAK AVE STA 10+50 TO 15+50
28	PP-10	PLAN & PROFILE - HUCKLEBERRY OAK AVE STA 15+50 TO 18+00
29	PP-11	PLAN & PROFILE - ISLAND BELLS AVE STA 9+50 TO 15+00
30	PP-12	PLAN & PROFILE - ISLAND BELLS AVE STA 15+00 TO 19+00
31	PP-13	PLAN & PROFILE - ISLAND BELLS AVE STA 19+00 TO 22+50 AND HWY 1
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37	RW-3	RETAINING WALL PLAN III
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39	RW-5	RETAINING WALL PLAN V
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54B	T-7	TRAFFIC PLAN VII

ACTING CITY ENGINEER-ROSA CORTIZ 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	
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 STATUTES AND / OR PUBLIC UTILITY COMMISSION RULES AND REGULATIONS.	
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES PROJECT NO. 136070 FIRST APPROVED DATE: 11/15/07 LIVID APPROVED FIRE FLOW 1,500 GPM AT 20 PS RESIDUAL MAXIMUM ALLOWABLE FIRE SPRINKLER FLOW 30 GPM SHEETS: C-1, C-2, C-3, D-1 - D-5, SD-1, SD-2, PP-1 - PP-16, MU, U-1 - U-16	
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

		SOUTHWEST GAS
55	SW-1	COVER SHEET
56	SW-2	SIGNATURE SHEET
57	SW-3	NOTES AND STANDARD DETAILS
58	SW-4	NOTES AND STANDARD DETAILS
59	SW-5	NOTES AND STANDARD DETAILS
60	SW-6	PLAN SHEET
61	SW-7	PLAN SHEET
62	SW-8	PLAN SHEET
63	SW-9	PLAN SHEET
64	SW-10	PLAN SHEET
		NV ENERGY
65	NVE-1	SHEET 1 OF 6
66	NVE-2	SHEET 2 OF 6
67	NVE-3	SHEET 3 OF 6
68	NVE-4	SHEET 4 OF 6
69	NVE-5	SHEET 5 OF 6
70	NVE-6	SHEET 6 OF 6
		COX
71	COX-1	SHEET 1 OF 5
72	COX-2	SHEET 2 OF 5
73	COX-3	SHEET 3 OF 5
74	COX-4	SHEET 4 OF 5
75	COX-5	SHEET 5 OF 5

EXISTING ZONING:	P-C
ACREAGE (GROSS):	37.56 AC
ACREAGE (NET):	25.51 AC
TOTAL DWELLING UNITS:	149 (UNIT 1)
TOTAL COMMON ELEMENTS:	13
MIN. LOT WIDTH	35'
MIN. LOT SQ.FT.	3,647 SF
MAX LOT SQ.FT.	9,944 SF
DENSITY (NET ACREAGE):	5.86 DU/AC

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (UNSHADED) AS DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANEL 320032C2125E & 320032C2150E, DATED SEPTEMBER 27, 2002. A ZONE X (UNSHADED) IS DESCRIBED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.

NORTH 05°59'55" WEST, BEING THE BEARING OF THE WEST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN THE CLARK COUNTY, NEVADA RECORDER'S OFFICE IN BOOK 135, PAGE 71 OF PLATS.

CITY OF LAS VEGAS BENCHMARK 7LV09 34SW6

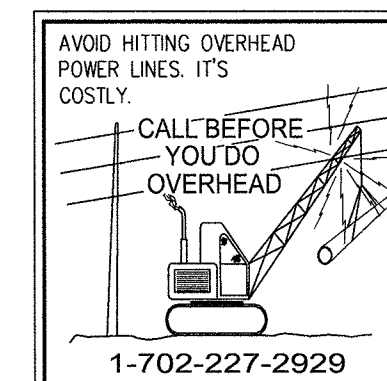
RIVET AND ROUND PLATE IN THE TOP OF CURB AT THE
SOUTHEAST CORNER OF DESERT MOON RD. AND SKY VISTA
DR.

ELEVATION = 1011.422 METERS (NAVD '88)
ELEVATION = 3318.31 US SURVEY FEET (NAVD '88)

A PORTION OF THE NORTHEAST QUARTER (NE 1/4) OF SECTION 33, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA DESCRIBED AS FOLLOWS:

LOTS L AND M OF "SUMMERLIN VILLAGE 24 - UNIT 4", AS SHOWN BY MAP THEREOF ON FILE IN BOOK 154 OF PLATS PAGE 83 IN THE OFFICE OF THE COUNTY RECORDER OF CLARK COUNTY, NEVADA

CONTAINING 37.56 ACRES



S-I-G **SLATER**
HANIFAN **GROUP**
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #216, LAS VEGAS, NV 89118
PHONE (702) 284-5300 FAX (702) 284-5399

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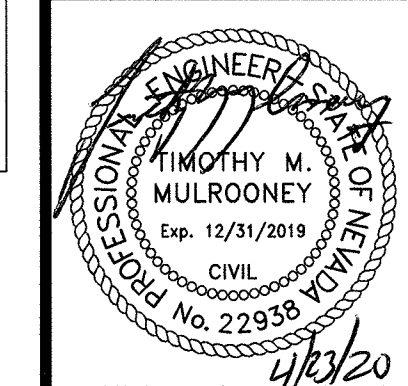
LAS VEGAS, NV	
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KB HOME
BRISTLE VALE - UNIT 1
COVER SHEET

DATE: 3/14/19

DRAFTER: OIQ
DESIGNER: OIQ
CHECKED: DP

PROJECT NO.
KBH1804-000



C-1
SHEET 1 OF 54
L19-00027
107Y5102

-EXISTING UTILITY LOCATIONS SHOWN HEREIN 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 OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATIONS. CALL BEFORE YOU DIG: (800) 227-2600

QUANTITIES		PRIVATE	PUBLIC
DRAINAGE			
1.	48" TYPE II STORM DRAIN MANHOLE	EA	4
2.	48" TYPE III STORM DRAIN MANHOLE	EA	2
3.	5" TYPE "CM2" DROP INLET	EA	1
4.	7.5" TYPE "CM2" DROP INLET	EA	2
5.	10" TYPE "CM2" DROP INLET	EA	2
6.	20" TYPE "CM2" DROP INLET	EA	1
7.	18" RCP CLASS III STORM DRAIN	LF	560
8.	24" RCP CLASS III STORM DRAIN	LF	84
9.	36" RCP CLASS III STORM DRAIN	LF	290
10.	18" C-900 PVC STORM DRAIN	LF	21
11.	36" C-900 PVC STORM DRAIN	LF	80
12.	8" WIDE CONCRETE VALLEY GUTTER W/10" TYPE I AGGREGATE BASE	EA	8
13.	NDOT TYPE II DROP INLET	EA	1
14.	SIDEWALK DRAIN	EA	2
15.	RIPRAP D50=6", THK=12"	SF	780
16.	RIPRAP D50=12", THK=24"	SF	1,900
			-
SEWER SYSTEM			
1.	4" PVC SEWER LATERAL (PRIVATE)	LF	4,300
2.	8" PVC SEWER PIPE (PUBLIC)	LF	-
3.	STANDARD 48" SEWER MANHOLE (PUBLIC)	EA	35
4.	BACK WATER VALVE (PRIVATE)	EA	45
5.	8" C-900 SEWER (PUBLIC)	LF	-
6.	8" C-900 SEWER LATERAL (PRIVATE)	LF	300
7.	ABANDON 8" SEWER	LF	-
8.	MODIFY MANHOLE BASE (PUBLIC)	EA	-
			50
			1
WATER SYSTEM			
1.	FIRE HYDRANT ASSEMBLY W/6" GATE VALVE PER UDACS PLATE NO. 40	EA	-
2.	6" PVC WATER PIPE (CLASS 150)	LF	-
3.	8" PVC WATER PIPE (CLASS 150)	LF	-
4.	8" DIP WATER PIPE (CLASS 153)	LF	-
5.	8" GATE VALVE WITH VALVE BOX PER UDACS PLATE NO. 30 & 39	EA	-
6.	8" X 6" TEE PER UDACS PLATE NO. 31	EA	-
7.	8" X 8" TEE PER UDACS PLATE NO. 31	EA	-
8.	6" 5 DEGREE BEND WITH RESTRAINED JOINTS	EA	-
9.	6" 11.25 DEGREE BEND PER UDACS PLATE NO. 31	EA	-
10.	6" 22.5 DEGREE BEND PER UDACS PLATE NO. 31	EA	-
11.	6" 45 DEGREE BEND PER UDACS PLATE NO. 31	EA	-
12.	8" 5 DEGREE BEND WITH RESTRAINED JOINTS	EA	-
13.	8" 11.25 DEGREE BEND PER UDACS PLATE NO. 31	EA	-
14.	8" 22.5 DEGREE BEND PER UDACS PLATE NO. 31	EA	-
15.	8" 45 DEGREE BEND PER UDACS PLATE NO. 31	EA	-
16.	8" 90 DEGREE BEND PER UDACS PLATE NO. 31	EA	-
17.	CAP AND 2" BLOW-OFF ASSEMBLY W/CAP PER UDACS PLATE NO. 36	EA	-
18.	1" COPPER SERVICE W/ 3/4" METER PER UDACS PLATE NO. 1	EA	-
19.	1.5" COPPER SERVICE W/ 3/4" METER PER UDACS PLATE NO. 1	EA	-
20.	1" COPPER SERVICE W/ 3/4" METER & 1" RPPA PER UDACS PLATE NO. 4 & 8	EA	-
21.			-
22.			-
STREET IMPROVEMENTS			
1.	2" A.C. PAVEMENT W/ 4" TYPE II OVER 6" TYPE I AGGREGATE BASE	SY	20,100
2.	STANDARD 18" TYPE "L" ISLAND CURB & GUTTER W/6" TYPE I AGGREGATE BASE	LF	700
3.	STANDARD 8" TYPE "A" ISLAND CURB W/6" TYPE I AGGREGATE BASE	LF	600
4.	STANDARD 30" TYPE "ROLL" CURB & GUTTER W/6" TYPE I AGGREGATE BASE	LF	8,500
5.	4" WIDE CONCRETE SIDEWALK W/4" TYPE II AGGREGATE BASE	SF	18,400
6.	5" WIDE CONCRETE SIDEWALK W/4" TYPE II AGGREGATE BASE	SF	3,400
7.	8" WIDE CONCRETE VALLEY GUTTER W/10" TYPE II AGGREGATE BASE	SF	3,000
8.	SIDEWALK RAMP	EA	10
			-
TRAFFIC SIGNS			
1.	36" STOP SIGN WITH POST (R1-1)	EA	-
2.	12" STREET NAME SIGN (D-3, BROWN W/ WHITE LETTERS) (2 PER POLE)	EA	-
3.	30" STOP SIGN WITH POST (R1-1)	EA	-
4.	9" STREET NAME SIGN (D-3, BROWN W/ WHITE LETTERS)(6 POLES x 2 PER POLE=12)	EA	-
5.	BLUE COLORED REFLECTIVE RAISED PAVEMENT MARKER	EA	-
6.	TYPE III BARRICADE	EA	-
7.			-
8.			-
DRY UTILITIES			
1.	100W H.P.S. LUMINAIRE STREET LIGHT W/DECORATIVE POLE	EA	34
2.	1-1/4" PVC STREET LIGHT CONDUIT WITH #2 #4 AND (1) #8 CONDUCTORS	LF	4,700
3.	NO. 3-1/2 PULL BOX W/METAL COVER	EA	8
4.	150 AMP SERVICE PEDESTAL (RRR)	EA	1
5.	200 AMP SERVICE PEDESTAL (SILT)	EA	2

KBHOME
BRISTLE VALE - UNIT 1
LEGEND, ABBREVIATIONS, AND QUANTITIES

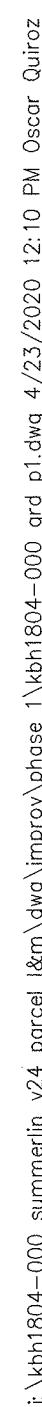
C-3
SHEET 3 OF 54
L19-00027
107Y5102

APPROVED FOR CONSTRUCTION

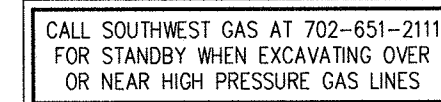
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES

PROJECT NO.: 136070 FIRST APPROVED DATE: _____





SEE SHEET G-2 FOR CONTINUATION



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

SOILS REPORT BY SOUTHWEST GEOTECHNICAL
PROJECT NO. 182267 DATED 7/12/18

EARTHWORK QUANTITIES (RAW):
CUT= 278,300 CU YDS
FILL= 300,400 CU YDS

EXPORTED MATERIAL TO BE DISPOSED OF AT AN APPROVED LICENSED DISPOSAL FACILITY OR AT A SITE WITH AN APPROVED AND ACTIVE GRADING PERMIT.

GRADING NOTES

1. FINAL GRADES ADJACENT TO STRUCTURES SHALL BE IN CONFORMANCE WITH IBC 2012, SECTION 2304.11.2.2.

1. FINAL GRADES ADJUSTED TO STRUCTURES SHALL BE IN CONFORMANCE WITH IBC 2012, SECTION 2304.11.2.2.
 2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND REPORT ALL DISCREPANCIES TO THE ENGINEER.
 3. ALL IMPROVEMENTS TO BE PROTECTED FROM EROSION BY SWPPP.
 4. MAXIMUM/MINIMUM SLOPES AND MINIMUM STREET SECTIONS NOT TO EXCEED THAT SHOWN ON GEOTECH REPORT.
 5. SEE DETAIL SHEET FOR STREET SECTIONS AND DETAILS.
 6. ALL PUBLIC AND PRIVATE DRAINAGE IMPROVEMENTS TO BE BONDED FOR AND INSPECTED.
 7. CONSTRUCTION OF BLOCK WALLS REQUIRES A SEPARATE BUILDING PERMIT AND APPROVAL BY THE CITY OF LAS VEGAS BUILDING DEPARTMENT.
 8. CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXISTING UTILITY STRUCTURES AND UTILITIES. THE UTILITY ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. CONTRACTOR TO PROTECT IN PLACE DURING CONSTRUCTION. ENGINEER/OWNER SHALL BE NOTIFIED OF PRIOR DAMAGE TO EXISTING FACILITIES PRIOR TO CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR REPAIR/REPLEYING FACILITIES IF ENGINEER/OWNER IS NOT NOTIFIED OF EXISTING DAMAGE PRIOR TO CONSTRUCTION COMMENCING.
 9. NO STRUCTURE, VEGETATION, OR OBJECTS OF ANY KIND IS PERMITTED OVER TWENTY FEET ABOVE THE HEIGHT (MEASURED FROM THE TOP OF THE ADJACENT CURB OR CURB EASE) WITHIN THE SIGHT VISIBILITY ZONES.
- * WATER TIGHT MANHOLE

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (UNSHADED) AS
DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANEL 320032C2125E & 320032C2150
DATED SEPTEMBER 27, 2002. A ZONE X (UNSHADED) IS DESCRIBED AS AN AREA
DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.

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 JUMP OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF NEW PAVEMENT. MINIMUM OR MAXIMUM CROSS SLOPES DO NOT MEET OF PRECISE STANDARDS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

CITY OF LAS VEGAS BENCHMARK 7LV09 34SW6
RIVET AND ROUND PLATE IN THE TOP OF CURB AT THE SOUTHEAST CORNER OF DESERT
MOON RD. AND SKY VISTA DR.
ELEVATION = 1011.422 METERS (NAVD '88)
ELEVATION = 3318.31 US SURVEY FEET (NAVD '88)

NORTH 05°59'55" WEST, BEING THE BEARING OF THE WEST LINE OF SECTION 34 TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN THE CLARK COUNTY, NEVADA RECORDER'S OFFICE IN BOOK 135, PAGE 71 OF PLATS.



FLOOD CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY D55039 ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.

Tim M. Mulrooney 4/23/20
TIM M. MULROONEY, P.E. 22938 DAT



LYING WITHIN THE NORTH EAST QUARTER
(NE1/4) OF SECTION 33, TOWNSHIP 20 SOUTH,
RANGE 59 EAST M.D.M., CITY OF LAS VEGAS,
CLARK COUNTY, NEVADA.

- ## EASEMENT NOTES
1. ALL PRIVATE STREETS ARE P.U.E., PUBLIC SEWER EASEMENTS AND PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY HOA.
 2. ALL COMMON ELEMENTS ARE PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED.

- 1 INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
- 2 INSTALL "L" TYPE CURB PER CCAUSD NO. 216
- 3 INSTALL MODIFIED ROLL TYPE CURB PER CCAUSD NO. 217.1
- 4 INSTALL "T" TYPE ISLAND CURB PER CCAUSD NO. 219
- 5 INSTALL "A" TYPE ISLAND CURB PER CCAUSD NO. 219
- 6 INSTALL 10" 1" TYPE CURB TO MODIFIED ROLL CURB TRANSITION PER DETAIL 31, SHEET D-3
- 7 CONSTRUCT 4' WIDE SIDEWALK PER CCAUSD NO. 234
- 8 CONSTRUCT 5' WIDE SIDEWALK PER CCAUSD NO. 234
- 9 CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DORIES OR EQUIVALENT PER DETAIL 33, SHEET D-3
- 10 CONSTRUCT 8' CROSS GUTTER PER CCAUSD NO. 228
- 11 CONSTRUCT SIDEWALK DRAIN PER CCAUSD NO. 236
- 12 INSTALL 18" RCP STORM DRAIN PIPE
- 13 INSTALL 24" RCP STORM DRAIN PIPE
- 14 INSTALL 30" RCP STORM DRAIN PIPE
- 15 INSTALL 36" RCP STORM DRAIN PIPE
- 16 INSTALL 48" RCP STORM DRAIN PIPE
- 17 INSTALL 4.5% SLOOT TYPE 2A DROP INLET PER DETAIL R-4.2.1, 5% SLOOT TYPE 4A, CCAUSD NO. 421
- 18 INSTALL WROUGHT IRON FENCE WITH VEHICLE ACCESS GATE AND EMERGENCY WALKER RAILGATE PER CCAUSD NO. 425.51
- 19 INSTALL DROP INLET CONCrete APRON PER DETAIL R-4.2.7, SHEET D-4 & CCAUSD NO. 421
- 20 CUT EXISTING SOI PIPE WHERE SHOWN ON PLANS
- 21 INSTALL 7.5" TYPE "CM2" DROP INLET PER CCAUSD NO. 421
- 22 INSTALL 10" TYPE "CM2" DROP INLET PER CCAUSD NO. 421
- 23 INSTALL 20" TYPE "CM2" DROP INLET PER CCAUSD NO. 421
- 24 INSTALL 48" TYPE II SDMH PER CCAUSD NO. 401, 402 & 405.2
- 25 INSTALL 48" TYPE "CM2" DROP INLET PER CCAUSD NO. 421
- 26 INSTALL 48" TYPE II SDMH CCAUSD NO. 401, 402 & 406
- 27 INSTALL 48" TYPE I SDMH CCAUSD NO. 402 & 403
- 28 INSTALL D50=6" RIRAP THICKNESS=12" OVER 6" TYPE II AGGREGATE BASE
- 29 INSTALL RIRAP D50=12" THICKNESS=24" OVER 6" TYPE II AGGREGATE BASE
- 30 CONSTRUCT RESIDENTIAL DRIVEWAY PER CCAUSD NO. 223.1
- 31 INSTALL 6" MINUS DECORATIVE ROCK (1" THICK)
- 32 INSTALL 5'-WIDE 6"-THICK CONCrete PATH FOR EMERGENCY ACCESS OVER 105'
- 33 CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DORIES OR EQUIVALENT PER CCAUSD NO. 233
- 34 CONSTRUCT SIDEWALK DRAIN PER CCAUSD NO. 236
- 35 APPROVED EROSION PREVENTION PLAN FOR LANDSCAPE PLANS
- 36 INSTALL 2" WIDE CONCrete STRIP PER DETAIL 48 SHEET D-5

SEE SHEET C-3 FOR LEGEND, ABBREVIATIONS, & QUANTITIES

NO.	DESCRIPTION	DATE	BY	APP. DATE
1	REVIEW WALLS, CONSTRUCTION NOTES, AND EMERGENCY ACCESS	4/25/19	00	
2	REVIEW AND ADD GRADING INFORMATION	10/30/19	PA	
3	REVIEW STORM DRAIN TO MATCH	04/13/20	00	
4	AS-BUILT PLANS			

KB HOME
BRISTLE VALE - UNIT
GRADING PLAN I

S 33
T 20S
R 59E

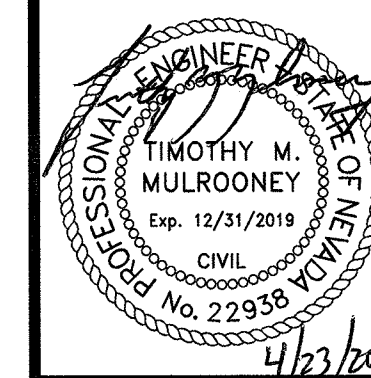
DATE: 3/14/19

DRAFTER: OIQ

DESIGNER: 010

CHECKED: DP

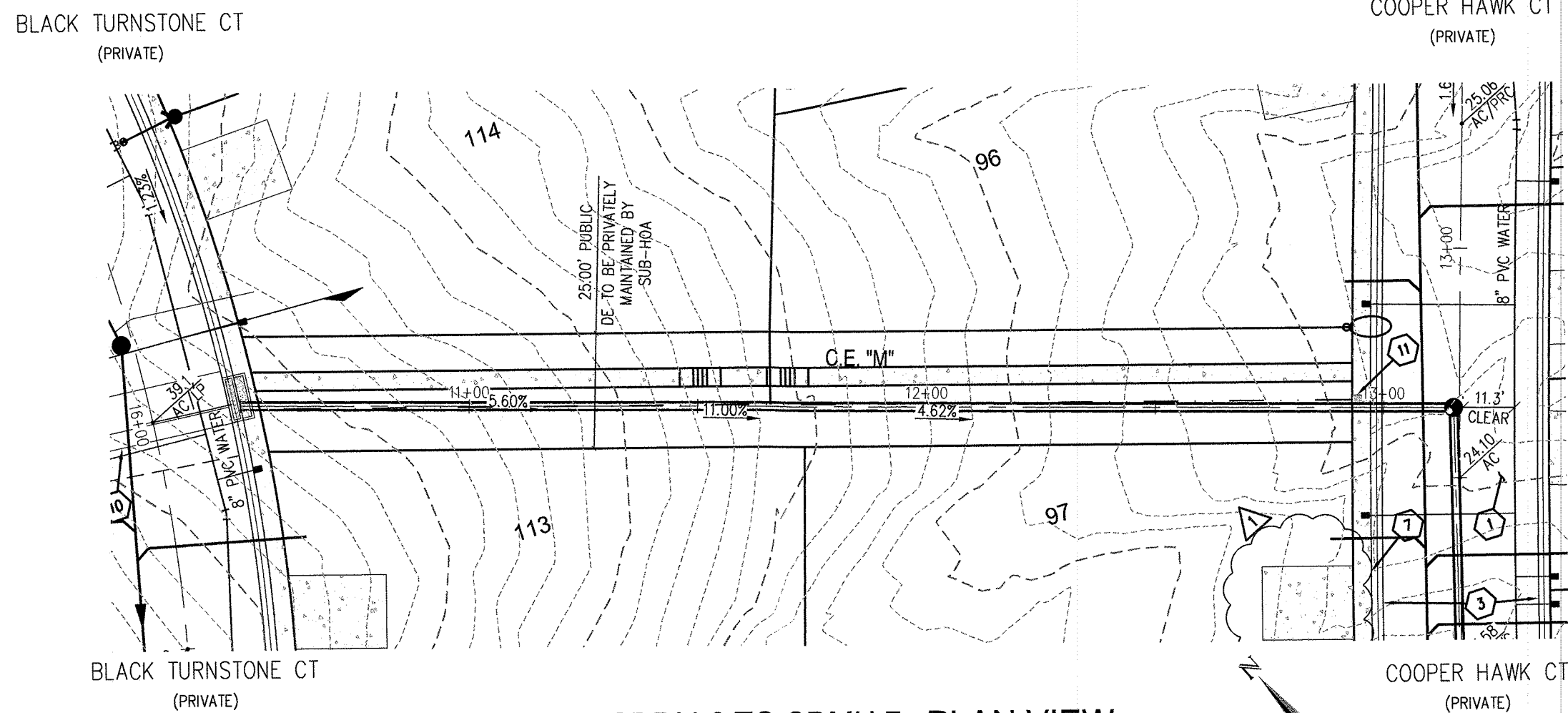
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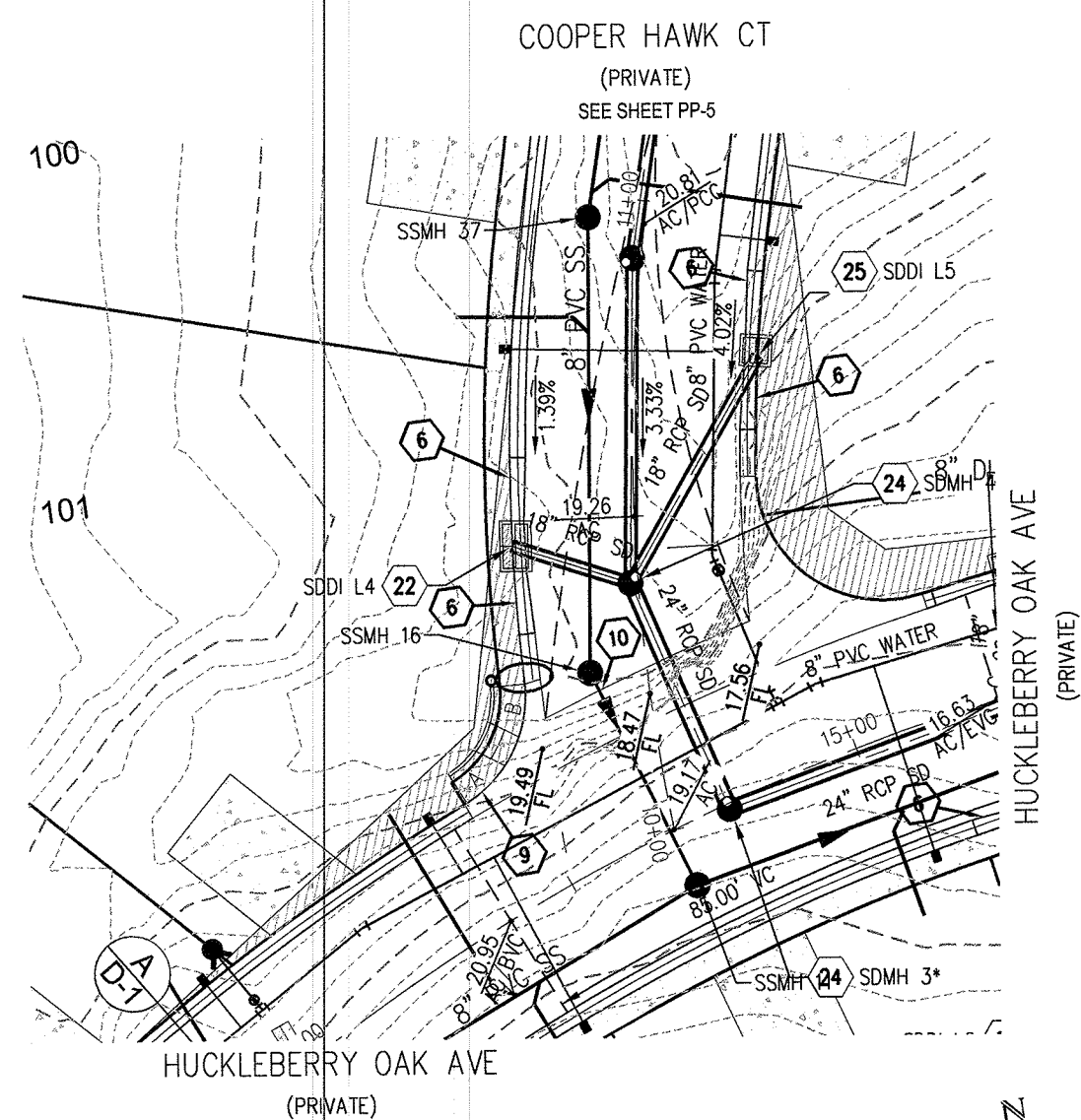
G-1

SHEET 4 OF 54

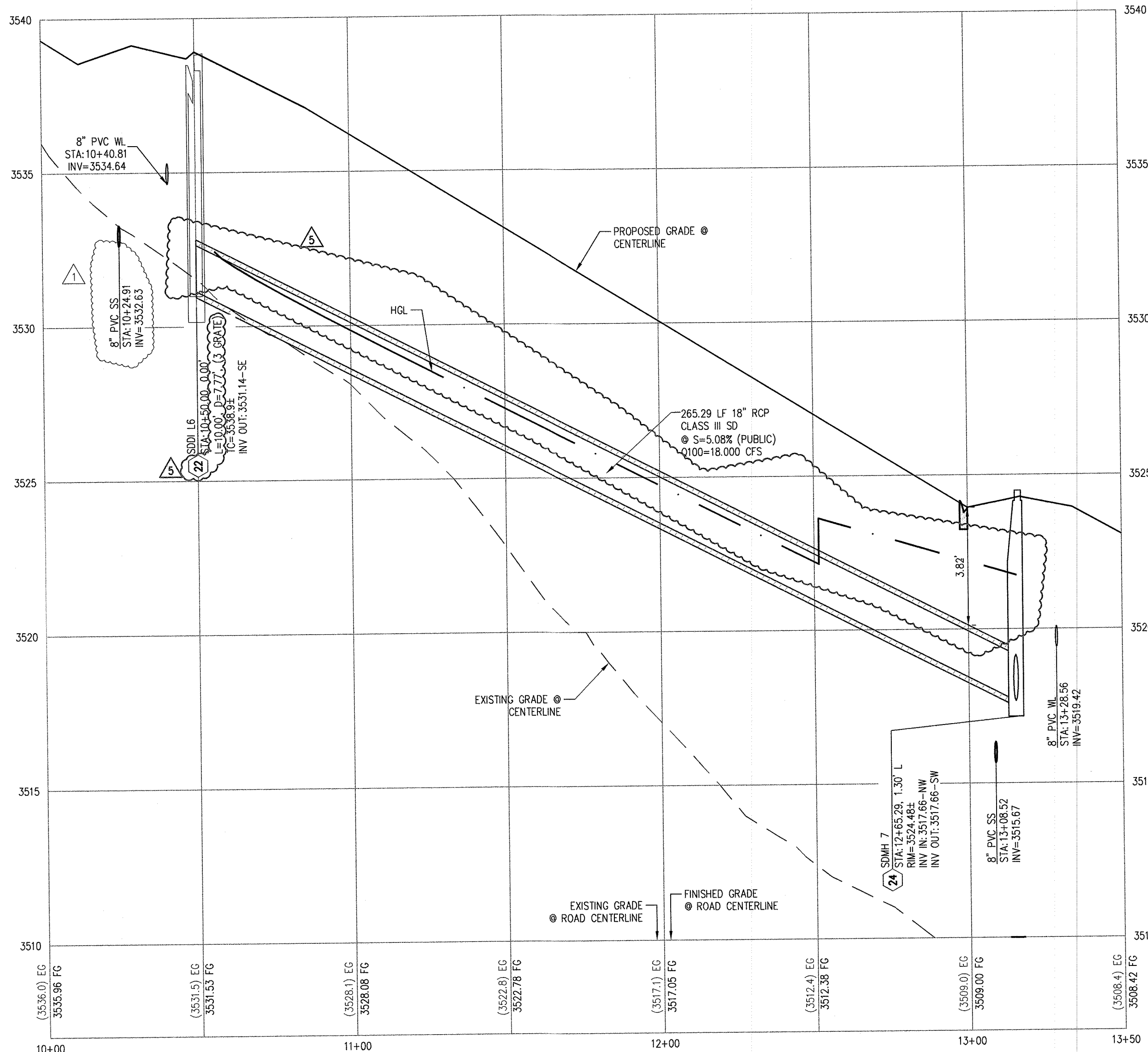
L19-00027



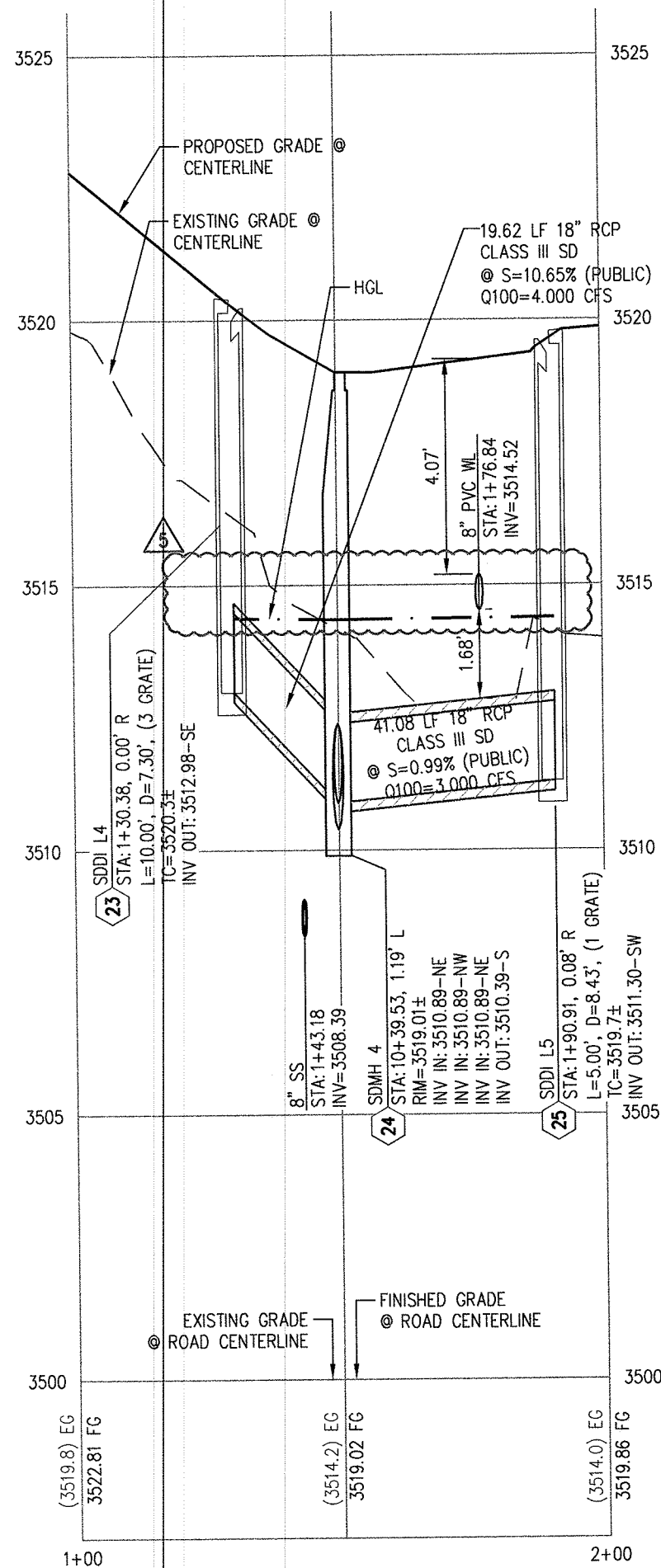
SDDI L6 TO SDMH 7 - PLAN VIEW



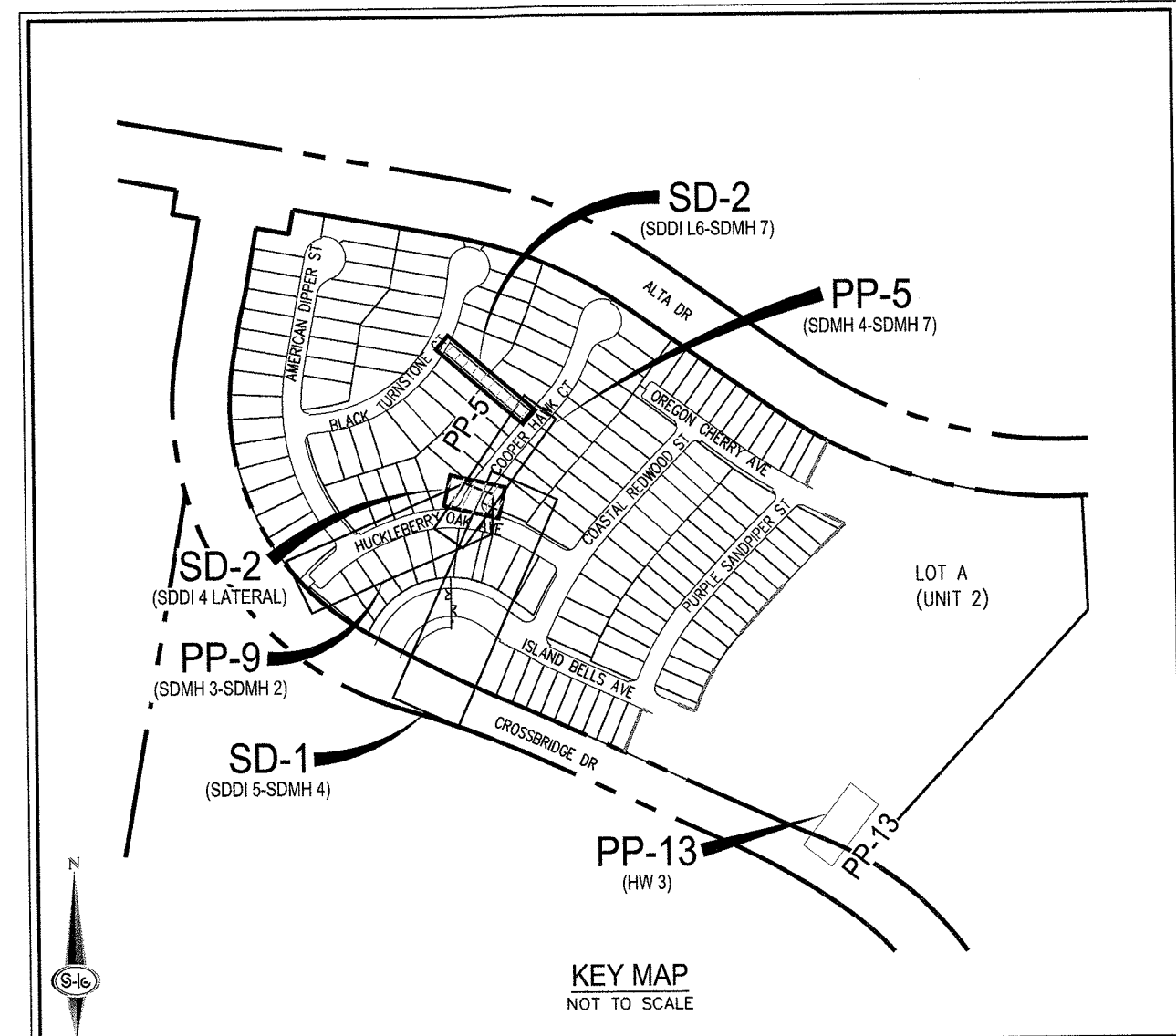
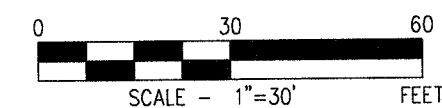
SDDI L4 TO SDDI L5 - PLAN VIEW



SDDI L6 TO SDMH 7 - PROFILE VIEW



SDDI L4 TO SDDI L5 - PROFILE VIEW



LEGAL DESCRIPTION

LYING WITHIN THE NORTH EAST QUARTER (NE1/4) OF SECTION 33, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA.

EASEMENT NOTES

1. ALL PRIVATE STREETS ARE P.U.E. PUBLIC SEWER EASEMENTS AND PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY HOA.
2. ALL COMMON ELEMENTS ARE PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED.

STORM DRAIN NOTES

- WATER TIGHT MANHOLE

DIP WATER LINE

ALL DUCTILE IRON PIPE (DIP) TO BE CLASS 350 DIP UNLESS OTHERWISE SPECIFIED.

CONSTRUCTION NOTES

1. INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
2. INSTALL "L" TYPE CURB PER CCAUSD NO. 216
3. INSTALL MODIFIED ROLL TYPE CURB PER CCAUSD NO. 217.1
4. INSTALL "A" TYPE ISLAND CURB PER CCAUSD NO. 219
5. INSTALL "A" TYPE ISLAND CURB PER CCAUSD NO. 219
6. INSTALL 10" "L" TYPE CURB TO MODIFIED ROLL CURB TRANSITION PER DETAIL 31, SHEET D-3
7. CONSTRUCT 4" WIDE SIDEWALK PER CCAUSD NO. 234
8. CONSTRUCT 5" WIDE SIDEWALK PER CCAUSD NO. 234
9. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT PER DETAIL 33, SHEET D-3
10. CONSTRUCT 8" CROSS GUTTER PER CCAUSD NO. 228
11. CONSTRUCT SIDEWALK DRAIN PER CCAUSD NO. 236
12. INSTALL 18" RCP STORM DRAIN PIPE
13. INSTALL 24" RCP STORM DRAIN PIPE
14. INSTALL 30" RCP STORM DRAIN PIPE
15. INSTALL 36" RCP STORM DRAIN PIPE
16. INSTALL 48" RCP STORM DRAIN PIPE
17. INSTALL 4.5'X6' NOOT TYPE 2A DROP INLET PER DETAIL R-4.2.1, SHEET D-4, CCAUSD NO. 421
18. INSTALL WROUGHT IRON FENCE WITH VEHICLE ACCESS GATE AND EMERGENCY KNOB PADLOCK PER CCAUSD NO. 425.51
19. INSTALL DROP INLET CONCRETE APRON PER DETAIL R-4.2.7, SHEET D-4 & CCAUSD NO. 421
20. CUT EXISTING SD PIPE WHERE SHOWN ON PLANS
21. INSTALL 7.5' TYPE "CM2" DROP INLET PER CCAUSD NO. 421
22. INSTALL 10' TYPE "CM2" DROP INLET PER CCAUSD NO. 421
23. INSTALL 20' TYPE "CM2" DROP INLET PER CCAUSD NO. 421
24. INSTALL 48" TYPE II SDMH PER CCAUSD NO. 401, 402 & 405.2
25. INSTALL 5' TYPE "CM2" DROP INLET PER CCAUSD NO. 421
26. INSTALL 48" TYPE III SDMH CCAUSD NO. 401, 402 & 406
27. INSTALL 48" TYPE I SDMH CCAUSD NO. 401, 402 & 403
28. INSTALL D50=6" RIPRAP THICKNESS=12" OVER 6" TYPE II AGGREGATE BASE
29. AGGREGATE BASE
30. CONSTRUCT RESIDENTIAL DRIVEWAY PER CCAUSD NO. 223.1
31. INSTALL 6" MINUS DECORATIVE ROCK (1" THICK)
32. INSTALL 5'-WIDE 6"-THICK CONCRETE PATH FOR EMERGENCY VEHICLE ACCESS OVER 6" TYPE II
33. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT PER CCAUSD NO. 236
34. INSTALL 80MM PAVERS WITH SOLDIER COURSE BANDING OR APPROVED EQUAL PER LANDSCAPE PLANS
35. INSTALL 2" WIDE CONCRETE STRIP PER DETAIL 48 SHEET D-5.

SEE SHEET C-3 FOR LEGEND, ABBREVIATIONS, & QUANTITIES

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.

BENCHMARK

CITY OF LAS VEGAS BENCHMARK 7LV09 345W6
RIVET AND ROUND PLATE IN THE TOP OF CURB AT THE SOUTHEAST CORNER OF DESERT MOON RD. AND SKY VISTA DR
ELEVATION = 1011.422 METERS (NAVD '88)
ELEVATION = 3318.31 US SURVEY FEET (NAVD '88)

BASIS OF BEARINGS

NORTH 05°59'55" WEST, BEING THE BEARING OF THE WEST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN THE CLARK COUNTY, NEVADA RECORDER'S OFFICE IN BOOK 135, PAGE 71 OF PLATS.

APPROVED FOR CONSTRUCTION

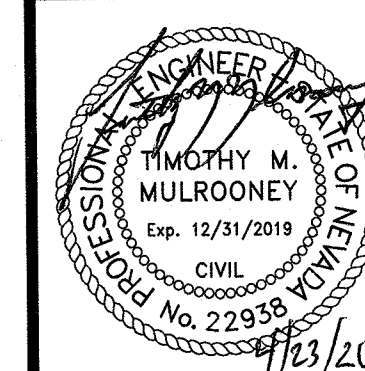
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES

PROJECT NO.: 136200 FIRST APPROVED DATE: _____

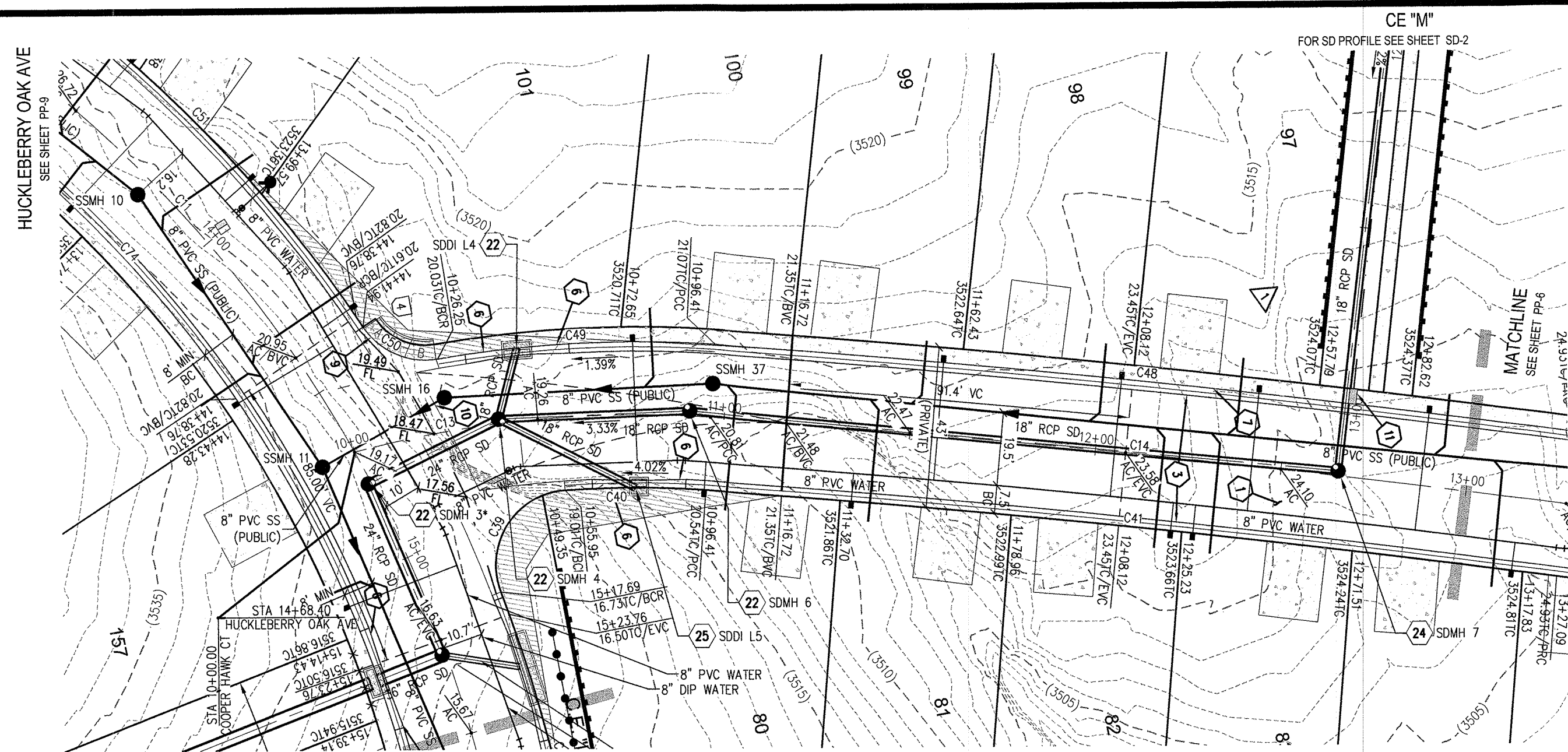


NO.	DESCRIPTION	DATE	BY	APP.
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4	REVISED			
5	REVISED			
6	REVISED			
7	REVISED			
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9	REVISED			
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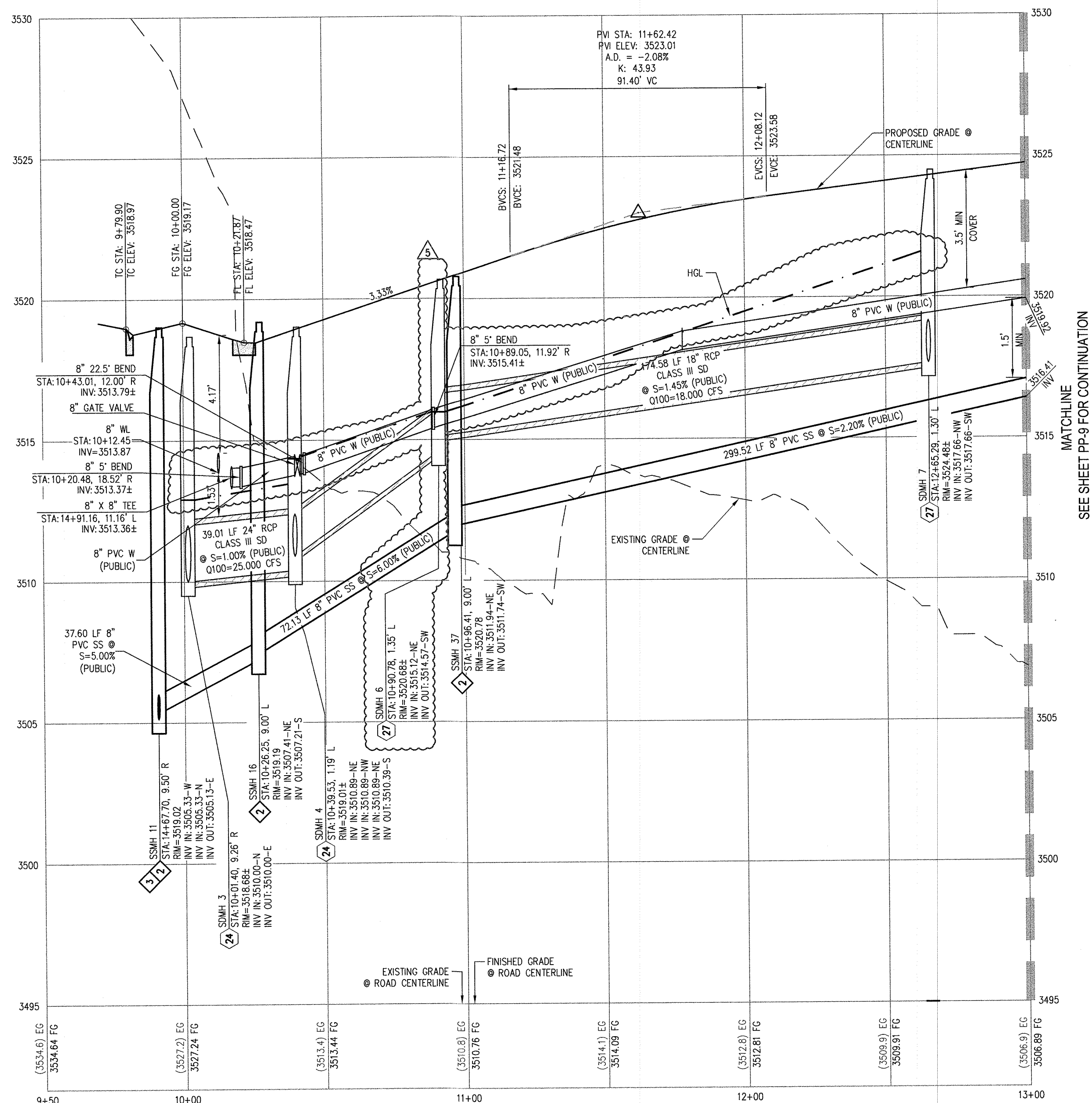
DATE: 3/14/19
DRAFTER: OIQ
DESIGNER: OIQ
CHECKED: DP
PROJECT NO.
KBH1804-000



\\bh1804-000 summerlin v24 parcel item.dwg (impr) phase 1\\bh1804-000.impr2.plt 4/23/2020 12:12 PM Oscar Quiroz



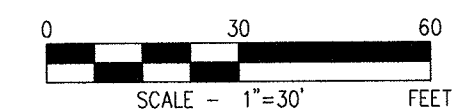
COOPER HAWK CT - PLAN VIEW
(PRIVATE)



COOPER HAWK CT - PROFILE VIEW

HORIZ: 1" = 30'
VERT: 1" = 3'

NOTE:
REVISION 5 ELEVATIONS ARE PER FIELD SURVEY AS-BUILT SHOTS PERFORMED 3/13/20



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

RAMP TRANSITION LENGTHS FOR 1:12 SIDE SLOPES				
CASE NO.	GRADE %	"B" TO "A" MIN.	"A" MIN.	"B" MIN.
1	-6 TO -5.01	4.5'	21.5'	
2	-5 TO -4.01	4.5'	15.0'	
3	-4 TO -3.01	4.5'	12.0'	
4	-3 TO -2.01	4.5'	9.5'	
5	-2 TO 2	8.0'	8.0'	
6	2.01 TO 3	9.5'	4.5'	
7	3.01 TO 4	12.0'	4.5'	
8	4.01 TO 5	15.0'	4.5'	
9	5.01 TO 6	21.5'	4.5'	

SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT PER CCAUSD NO. 235, CASE 1

CURVE TABLE				
CURVE	LENGTH	RADIUS	DELTA	TANGENT
C10	151.99'	343.00'	252°32'0"	77.26'
C11	160.25'	343.00'	26°46'07"	81.61'
C13	96.41'	296.00'	18°39'42"	48.64'
C14	230.68'	3496.00'	3°46'50"	115.38'
C38	107.65'	362.50'	17°00'54"	54.22'
C39	37.41'	20.00'	107°10'20"	27.11'
C40	37.79'	276.50'	7°49'52"	18.93'
C41	229.39'	3476.50'	3°46'50"	114.74'
C48	231.96'	3515.50'	3°46'50"	116.02'
C49	74.79'	315.50'	13°34'52"	37.57'
C50	23.01'	20.00'	65°55'28"	12.87'
C51	142.28'	362.50'	22°29'19"	72.07'
C74	151.14'	323.50'	26°46'07"	76.97'
C75	143.35'	323.50'	252°32'0"	72.87'

LEGAL DESCRIPTION

LYING WITHIN THE NORTH EAST QUARTER (NE1/4) OF SECTION 33, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA.

EASEMENT NOTES

1. ALL PRIVATE STREETS ARE P.U.E., PUBLIC SEWER EASEMENTS AND PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY HOA.
2. ALL COMMON ELEMENTS ARE PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED.

SEWER NOTES

1. INSTALL 8" PVC SANITARY SEWER PER DCSWCS SD-15 & SD-17
 2. INSTALL 48" DIAMETER SANITARY SEWER MANHOLE WITH PRECAST BASE PER DCSWCS SD-1A, SD-1B, SD-4, SD-9, AND SINGLE LID (24")
 3. MANHOLE SHALL BE CORROSION PROTECTED WITH FIELD APPLIED COATING PER DCSWCS SECTION 3.16.BB
 4. INSTALL 4" PVC SEWER LATERAL PER DCSWCS SD-22 & SD-23
 5. REMOVE CAP AND CONNECT TO EXISTING 8" SS
 6. INSTALL 4" C900 PVC SEWER LATERAL PER DCSWCS SD-22 & SD-25 FOR LOTS 123 AND 124 ONLY
 7. INSTALL 8" C900 PVC SANITARY SEWER PER DCSWCS SD-15 & SD-17
 8. INSTALL 8" CAP WITH THRUST BLOCK PER DCSWCS SECTION 2.2
 9. INSTALL 8" WPE PER DCSWCS SD-22
- SEE SHEET C-3 FOR QUANTITIES AND ABBREVIATIONS

DISCLAIMER NOTE

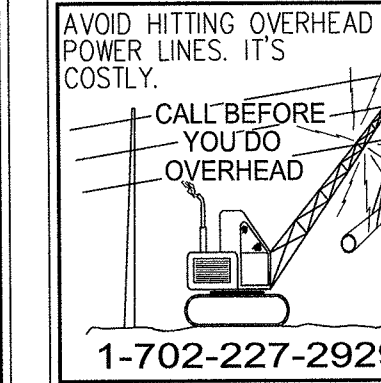
1. EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN 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.

BENCHMARK

CITY OF LAS VEGAS BENCHMARK 7L09 345W6
RIVET AND ROUND PLATE IN THE TOP OF CURB AT THE SOUTHEAST CORNER OF DESERT MOON RD. AND SKY VISTA DR.
ELEVATION = 1011.422 METERS (NAVD 88)
ELEVATION = 3318.91 US SURVEY FEET (NAVD 88)

BASIS OF BEARINGS

NORTH 05°59'59" WEST, BEING THE BEARING OF THE WEST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN THE CLARK COUNTY, NEVADA RECORDER'S OFFICE IN BOOK 135, PAGE 71 OF PLATS.



CONSTRUCTION NOTES

1. INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
 2. INSTALL "L" TYPE CURB PER CCAUSD NO. 216
 3. INSTALL MODIFIED ROLL TYPE CURB PER CCAUSD NO. 217.1
 4. INSTALL "L" TYPE ISLAND CURB PER CCAUSD NO. 219
 5. INSTALL "A" TYPE ISLAND CURB PER CCAUSD NO. 219
 6. INSTALL 10" "L" TYPE CURB TO MODIFIED ROLL CURB TRANSITION PER DETAIL 31, SHEET D-3
 7. CONSTRUCT 4' WIDE SIDEWALK PER CCAUSD NO. 234
 8. CONSTRUCT 5' WIDE SIDEWALK PER CCAUSD NO. 234
 9. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT PER DETAIL 33, SHEET D-3
 10. CONSTRUCT 8" CROSS GUTTER PER CCAUSD NO. 228
 11. CONSTRUCT SIDEWALK DRAIN PER CCAUSD NO. 236
 12. INSTALL 18" RCP STORM DRAIN PIPE
 13. INSTALL 24" RCP STORM DRAIN PIPE
 14. INSTALL 30" RCP STORM DRAIN PIPE
 15. INSTALL 36" RCP STORM DRAIN PIPE
 16. INSTALL 48" RCP STORM DRAIN PIPE
 17. INSTALL 4.5"X6" RCP INLET PER DETAIL R-4.2.1, SHEET U-4, CCAUSD NO. 421
 18. INSTALL WROUGHT IRON FENCE WITH VEHICLE ACCESS GATE AND EMERGENCY KNOX PADLOCK PER CCAUSD NO. 425.S1
 19. INSTALL DROP INLET CONCRETE APRON PER DETAIL R-4.2.7, SHEET D-4 & CCAUSD NO. 421
 20. CUT EXISTING SD PIPE WHERE SHOWN ON PLANS
 21. INSTALL 7.5" TYPE "CM2" DROP INLET PER CCAUSD NO. 421
 22. INSTALL 10" TYPE "CM2" DROP INLET PER CCAUSD NO. 421
 23. INSTALL 20" TYPE "CM2" DROP INLET PER CCAUSD NO. 421
 24. INSTALL 48" TYPE II SDMH PER CCAUSD NO. 401, 402 & 405.2
 25. INSTALL 5" TYPE "CM2" DROP INLET PER CCAUSD NO. 421
 26. INSTALL 48" TYPE III SDMH CCAUSD NO. 401, 402 & 403
 27. INSTALL 48" TYPE I SDMH CCAUSD NO. 401, 402 & 403
 28. INSTALL D50=6" RIPRAP THICKNESS=12" OVER 6" TYPE II AGGREGATE BASE
 29. INSTALL RIPRAP D50=12" THICKNESS=24" OVER 6" TYPE II AGGREGATE BASE
 30. CONSTRUCT RESIDENTIAL DRIVEWAY PER CCAUSD NO. 223.1
 31. INSTALL 6" MINUS DECORATIVE ROCK (1" THICK)
 32. INSTALL 5'-WIDE 6" THICK CONCRETE PATH FOR EMERGENCY VEHICLE ACCESS OVER 6" TYPE II
 33. CONSTRUCT SIDEWALK RAMPS USING ARMOR TILE TRUNCATED DOMES OR EQUIVALENT PER CCAUSD NO. 235
 34. INSTALL BROWN PAVERS WITH SOLIDER COURSE BANDING OR APPROVED EQUAL PER LANDSCAPE PLANS
 35. INSTALL 2" WIDE CONCRETE STRIP PER DETAIL 48 SHEET D-5.
- SEE SHEET C-3 FOR LEGEND, ABBREVIATIONS, & QUANTITIES

LVWWD NOTES

- ALL DUCTILE IRON PIPE (DIP) TO BE CLASS 350 DIP UNLESS OTHERWISE SPECIFIED.
- MAINTAIN MINIMUM TWENTY-FOUR (24") INCH COVER PER UDACS SEC. 2.08.04. GRADING MUST BE COMPLETED PRIOR TO WATERLINE INSTALLATION.
- WATER PRESSURE ZONE 3665

STORM DRAIN NOTES

- WATER TIGHT MANHOLE

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO.: 136070 FIRST APPROVED 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.
1	REVISION DRAIN TO MATCH AS-BUILT PLANS	04/19/20	00	

LAS VEGAS, NV

KBHOME
BRISTLE VALE - UNIT 1

PLAN & PROFILE - COOPER HAWK CT STA 9+00 TO 13+00

DATE: 3/14/19

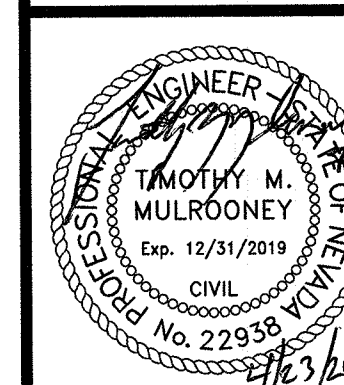
DRAFTER: OIQ

DESIGNER: OIQ

CHECKED: DP

PROJECT NO.

KBH1804-000

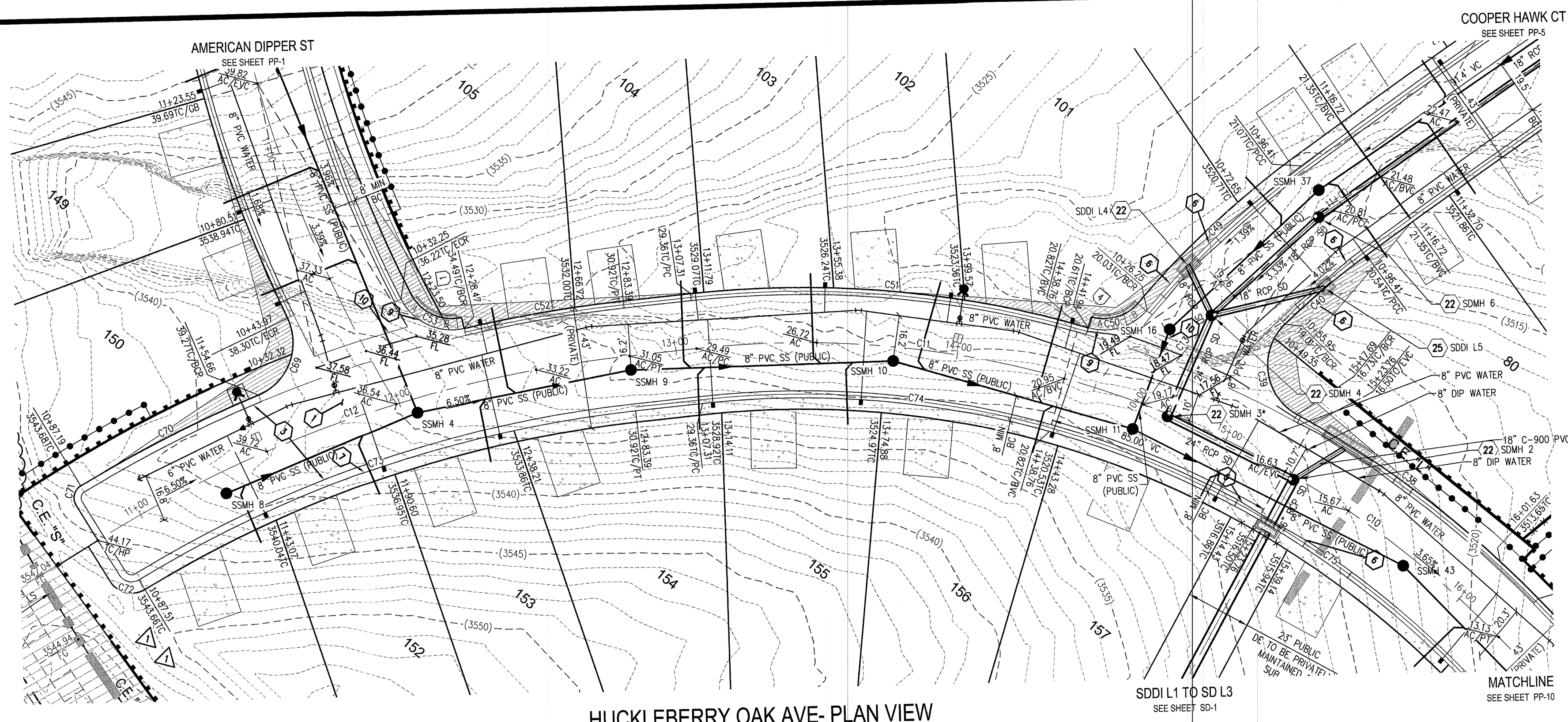


PP-5

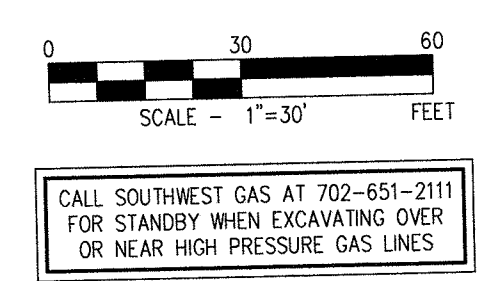
SHEET 23 OF 54

L19-00027

107Y5102



HUCKLEBERRY OAK AVE- PLAN VIEW
(PRIVATE)



RAMP TRANSITION LENGTHS
FOR 1:12 SIDE SLOPES

CASE NO.	GRADE % "B" TO "A"	"A" MIN.	"B" MIN.
1	-6 TO -5.01	4.5'	21.5'
2	-5 TO -4.01	4.5'	15.0'
3	-4 TO -3.01	4.5'	12.0'
4	-3 TO -2.01	4.5'	9.5'
5	-2 TO 2	8.0'	8.0'
6	2.01 TO 3	9.5'	4.5'
7	3.01 TO 4	12.0'	4.5'
8	4.01 TO 5	15.0'	4.5'
9	5.01 TO 6	21.5'	4.5'

SIDEWALK RAMP USING AMOR TILE
TRUNCATED DOWNS OR EQUIVALENT PER
CROSS-SECTION NO. 235, CASE 1

CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA	TANGENT
C11	160.25'	343.00'	26°46'07"	81.61'
C12	201.05'	450.00'	25°35'55"	102.23'
C50	23.01'	20.00'	65°55'28"	12.97'
C51	142.28'	362.50'	22°29'19"	72.07'
C52	57.30'	469.50'	6°59'32"	28.68'
C53	26.58'	20.00'	76°09'14"	15.67'
C59	32.47'	20.00'	93°01'44"	21.09'
C70	70.11'	469.50'	8°33'20"	35.12'
C71	7.64'	5.00'	87°31'55"	4.79'
C72	7.82'	5.00'	89°37'39"	4.97'
C73	187.64'	430.50'	24°58'23"	95.33'
C74	151.14'	323.50'	26°46'07"	76.97'

LEGAL DESCRIPTION
LYING WITHIN THE NORTH EAST QUARTER
(NE1/4) OF SECTION 33, TOWNSHIP 20 SOUTH,
RANGE 59 EAST M.D.M., CITY OF LAS VEGAS,
CLARK COUNTY, NEVADA.

EASEMENT NOTES
1. ALL PRIVATE STREETS ARE PUBLIC. PUBLIC
SEWER EASEMENTS AND PUBLIC DRAINAGE
EASEMENTS TO BE PRIVATELY MAINTAINED
BY HOA.
2. ALL COMMON ELEMENTS ARE PUBLIC
DRAINAGE EASEMENTS TO BE PRIVATELY
MAINTAINED.

- SEWER NOTES
1. INSTALL 8" PVC SANITARY SEWER PER DCSWCS SD-15 & SD-17
 2. PRECAST BASE PER DCSWCS SD-1A, SD-1B, SD-4, SD-9, AND SINGLE LID (24")
 3. MANHOLE SHALL BE CORROSION PROTECTED WITH FIELD APPLIED COATING PER DCSWCS SECTION 3.16.88
 4. INSTALL 4" PVC SEWER LATERAL PER DCSWCS SD-22 & SD-25
 5. REMOVE CAP AND CONNECT TO EXISTING 8" SS
 6. INSTALL 4" 6900 PVC SEWER LATERAL PER DCSWCS SD-22 & SD-25 FOR LOTS 123 AND 124 ONLY
 7. INSTALL 8" 6900 PVC SANITARY SEWER PER DCSWCS SD-15 & SD-17
 8. INSTALL 8" CAP WITH THRUST BLOCK PER DCSWCS SECTION 2.2
 9. INSTALL 8" WYE PER DCSWCS SD-22
- SEE SHEET C-3 FOR QUANTITIES AND ABBREVIATIONS

- CONSTRUCTION NOTES
1. INSTALL 2" ASPHALT PAVEMENT OVER 4" TYPE II AGGREGATE BASE
 2. INSTALL "L" TYPE CURB PER CCAUSD NO. 216
 3. INSTALL MODIFIED ROLL TYPE CURB PER CCAUSD NO. 217.1
 4. INSTALL "L" TYPE ISLAND CURB PER CCAUSD NO. 219
 5. INSTALL "A" TYPE ISLAND CURB PER CCAUSD NO. 219
 6. INSTALL 10" 1" TYPE CURB TO MODIFIED ROLL CURB TRANSITION PER DETAIL 31, SHEET D-3
 7. CONSTRUCT 4" WIDE SIDEWALK PER CCAUSD NO. 234
 8. CONSTRUCT 5' WIDE SIDEWALK PER CCAUSD NO. 234
 9. CONSTRUCT SIDEWALK RAMP USING ARMOR TILE TRUNCATED DOWNS OR EQUIVALENT PER DETAIL 33, SHEET D-3
 10. CONSTRUCT 8" CROSS GUTTER PER CCAUSD NO. 228
 11. CONSTRUCT SIDEWALK DRAIN PER CCAUSD NO. 236
 12. INSTALL 18" RCP STORM DRAIN PIPE
 13. INSTALL 24" RCP STORM DRAIN PIPE
 14. INSTALL 30" RCP STORM DRAIN PIPE
 15. INSTALL 36" RCP STORM DRAIN PIPE
 16. INSTALL 48" RCP STORM DRAIN PIPE
 17. INSTALL 4.5"X6" NOT TYPE 2A DROP INLET PER DETAIL R-4.2.1.1, SHEET D-4, CCAUSD NO. 421
 18. INSTALL WROUGHT IRON FENCE WITH VEHICLE ACCESS GATE AND EMERGENCY KNOX PADLOCK PER CCAUSD NO. 425.1, SHEET D-4 & CCAUSD NO. 421
 19. INSTALL DROP INLET CONCRETE APRON PER DETAIL R-4.2.7
 20. CUT EXISTING SD PIPE WHERE SHOWN ON PLANS
 21. INSTALL 7.5" TYPE "CM2" DROP INLET PER CCAUSD NO. 421
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 28. INSTALL D50=6" RIPPAP THICKNESS=12" OVER 6" TYPE II AGGREGATE BASE
 29. INSTALL RIPPAP D50=12" THICKNESS=24" OVER 6" TYPE II AGGREGATE BASE
 30. CONSTRUCT RESIDENTIAL DRIVEWAY PER CCAUSD NO. 223.1
 31. INSTALL 6" MINUS DECORATIVE ROOK (1" THICK)
 32. INSTALL 5" WIDE 6" THICK CONCRETE PATH FOR EMERGENCY VEHICLE ACCESS OVER 6" TYPE II
 33. CONSTRUCT SIDEWALK RAMP USING ARMOR TILE TRUNCATED DOWNS OR EQUIVALENT PER CCAUSD NO. 235
 34. INSTALL 8MM PAVERS WITH SOLDIER COURSE BANDING OR APPROVED EQUIV. PER LANDSCAPE PLANS
 35. INSTALL 2" WIDE CONCRETE STRIP PER DETAIL 48 SHEET D-5.
- SEE SHEET C-3 FOR LEGEND, ABBREVIATIONS, & QUANTITIES

- LWWVD NOTES
- ALL DUCTILE IRON PIPE (DIP) TO BE CLASS 350 DIP UNLESS OTHERWISE SPECIFIED.
 - MAINTAIN MINIMUM TWENTY-FOUR (24") INCH COVER PER UDACS SEC. 2.08.04. GRADING MUST BE COMPLETED PRIOR TO WATERLINE INSTALLATION
 - WATER PRESSURE ZONE 3665

STORM DRAIN NOTES

- WATER TIGHT MANHOLE

APPROVED FOR CONSTRUCTION
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO.: 136070 FIRST APPROVED DATE: _____

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 SLOUT 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.

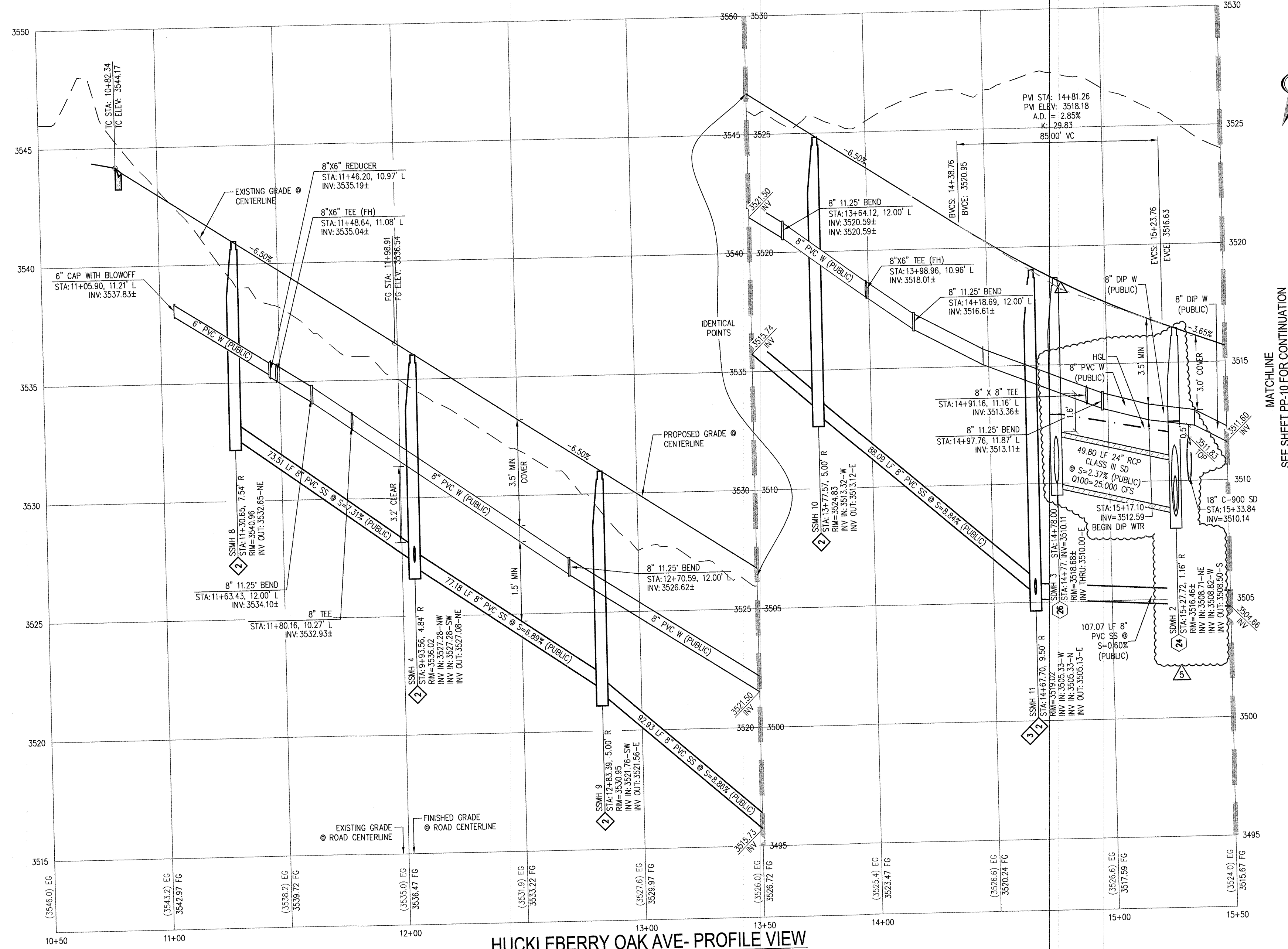
BENCHMARK
CITY OF LAS VEGAS BENCHMARK 7LV09 34SW6
RIVET AND ROUND PLATE IN THE TOP OF CURB AT THE SOUTHEAST CORNER OF DESERT MOON RD. AND SKY VISTA DR.
ELEVATION = 1011.422 METERS (NAVD '88)
ELEVATION = 3318.31 US SURVEY FEET (NAVD '88)

BASIS OF BEARINGS
NORTH 05°59'55" WEST, BEING THE BEARING OF THE WEST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN THE CLARK COUNTY, NEVADA RECORDER'S OFFICE IN BOOK 135, PAGE 71 OF PLATS.

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 DIG
OVERHEAD
1-702-227-2929

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



HUCKLEBERRY OAK AVE- PROFILE VIEW
HORIZ: 1" = 30'
VERT: 1" = 5'

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

KB HOME
BRISTLE VALE - UNIT 1
PLAN & PROFILE - HUCKLEBERRY OAK AVE STA 10+50 TO 15+50

DATE: 3/14/19
DRAFTER: OIQ
DESIGNER: OIQ
CHECKED: OIQ
PROJECT NO.: KBH1804-000

PP-9
SHEET 27 OF 54
L19-00027
107Y5102

APPROVED FOR CONSTRUCTION
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO.: 136070 FIRST APPROVED DATE: _____

Call before you Dig
AVOID CUTTING UNDERGROUND
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