

DS #: 4951

APN: 125-07-501-004

PROJECT: Skye Canyon Park Drive (Prev. Indian Hills Park)

SUBMITTAL: 2nd

SCANNED BY/DATE:

CHECKED BY/DATE:



CITY OF LAS VEGAS			DATE:
INTER-OFFICE MEMORANDUM			April 3, 2017
TO: Land Development Services Department of Building & Safety			FROM: Jennifer Shinn  Flood Control Engr. Associate Department of Public Works
SUBJECT: Drainage Study for: Skye Canyon Park Drive (Previously Indian Hills Park)			COPIES TO: Slater-Hanifan
Cross Streets:	Skye Canyon Park Drive & Iron Mountain		Ninety-Five Management, LLC
File Number:	F:\Depot\DSMemos\DS4951B.doc		Bart Anderson, P.E., DevCo
Parcel Number:	125-07-501-004		Fred Solis, Planning
Zoning Action:	VAR-55892		
FEMA Flood Zone	YES	NO X	
Proposed Storm Drain	YES	NO X	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 st Submittal	2/8/2018	2/27/2018	See Comments Below	\$400.00	493367: \$400
2 nd Submittal	3/22/2018	4/3/2018	See Comments Below	\$400.00	494314: \$400
			TOTAL FEES (LDDRS):	\$800.00	----

REMARKS:

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.

- Review and revise the drainage quantities table to match the storm drain manhole types referenced in the Grading Notes.
- Show the location of Street Section C on the plans.

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

jks

T/R/S: T19S/R60E/07

AREA G-07

**TECHNICAL DRAINAGE STUDY
UPDATE ADDENDUM
Skye Canyon Park Drive**

City of Las Vegas, Nevada

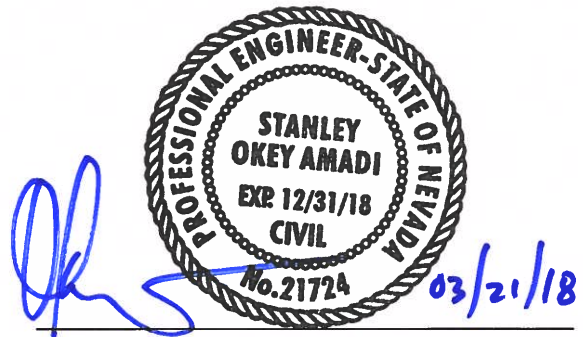
Job No.: OLY1726.000
Date: March 2018

Prepared By:

Slater Hanifan Group, Inc.
5740 S. Arville Street, Suite 216
Las Vegas, Nevada 89118
Phone: 702-284-5300 • Fax: 702-284-5399

Prepared For:

Ninety-Five Management, LLC
11411 Southern Highlands Parkway, Suite 300
Las Vegas, Nevada 89141
Phone: 702-220-6565 • Fax: 702-220-6566



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

Assisted by: Nicholas Stafford, P.E. (AZ)

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL
DRAINAGE STUDY INFORMATION FORM

Name of Development: Skye Canyon Park Drive - Addendum Date: March 2018
 Location of Development: a) Descriptive (Cross Streets): North/South: Skye Canyon Park Drive
East/West: Iron Mountain Road and Brent Lane
 b) Section: 07 Township: 19 S Range: 60 E
 c) APN: 125-07-501-004

Name of Owner: City of Las Vegas Lease/Ninety-Five Management, LLC.
 Telephone No.: 702-220-6565 Fax No.: 702-220-6566 E-mail Address: mbolduc@olympiacompanies.com
 Address: _____

Contact Person – Name: Stanley Okey Amadi, P.E. Telephone No.: (702) 284-5327
 *E-mail Address: samadi@shg-inc.com Fax No.: (702) 284-5399
 Firm: Slater Hanifan Group
 Address: 5740 S. Arville #216 Las Vegas NV 89118

Type of Land Development/Land Disturbance Process:

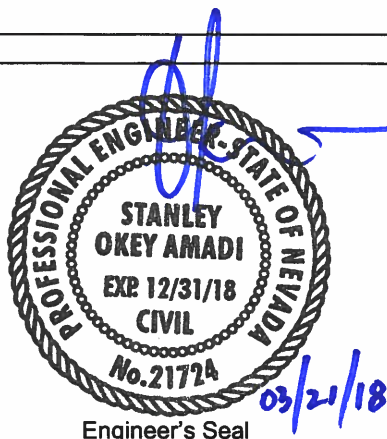
☐ Rezoning	☐ Subdivision Map	☐ Clearing and grading Only
☐ Parcel Map	☐ Planned Unit Development	☒ Other (Please specify below)
☐ Large Parcel Map	☐ Building Permit	☐

- Total Owned Land Area: At Site: +/- 10 ac Being Developed/Disturbed: +/- 3.70 ac
- Is a portion or all of the subject property located in a FEMA Flood Hazard Area? ☐ Yes** ☒ No
- Is the property bordered or crossed by an existing or proposed Clark County Regional Flood Control District Master Planned Facility? ☐ Yes** ☒ No
- Proposed type of development (Residential, Commercial, Etc.): Offsite roadway improvements
- Approximate upstream land area which drains to the subject site: +/- 62 ac
- Has the site drainage been evaluated in the past? ☒ Yes** ☐ No If yes, please identify documentation: _____

Technical Drainage Study for Indian Hills Park (DS4263)

7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Flows will discharge north into Iron Mountain Road and south into Brent Lane

8. Briefly describe your proposed schedule for the subject project: As soon as possible



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



OLY1726.000

March 19, 2018

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

**Subject: Addendum to the Technical Drainage Study Update for Skye Canyon Park Drive
(Previously Indian Hills Park; DS 4951)**

Dear Ms. Shinn:

This letter is submitted in response to the comments contained in the February 27, 2018 review memorandum, regarding the above referenced project. A copy of the City of Las Vegas (CLV) comment letter has been provided in Appendix A.

The comments in the review memorandum have been individually addressed as follows:

1. **Comment:** *As stated in the report, this study does not address the Alyn Beck Park improvements and therefore does not update DS4263. An update to the previously approved drainage study for the park improvements is required. The proposed park improvements necessitate extension/reconstruction of the existing storm drain at the intersection of Skye Canyon Park Drive and Brent Lane to accommodate park drainage.*

Response: Acknowledged. Another update for the park improvements is currently under preparation and will be submitted shortly. Note that the original study (DS4263) addressed improvements along Skye Canyon Park Drive (formerly Fort Apache Road) and therefore, revision to the street improvements is considered an update to the previous study. The existing inlet and storm drain has been upsized and extended to accommodate the park drainage. See the response to comment 2 below.

2. **Comment:** *The existing 18" RCP lateral connecting into the existing drop inlet on the northwest corner of Skye Canyon Park Drive and Brent Lane shall be upsized to accommodate the proposed storm drain system from the park (Alyn Beck Park formerly Indian Hills Park). Provide supporting calculations to adequately size the facility.*

Response: Noted. The existing 18" RCP lateral has been upsized to a 29"x45" HERCP (36" RCP equivalent) to maintain adequate cover over the pipe. Likewise, the proposed 29"x45" HERCP matched inverts with the existing 36" RCP at the new manhole in order to maintain adequate cover. The existing inlet will be replaced with a 7.5-ft Type CM2 with a 36" RCP stub provided at the back of the inlet for future connection by the park improvements. The existing curb grades around the return at the intersection of Skye Canyon Park Drive and Brent Lane have been verified to show positive drainage and to ensure that nuisance flows caught within the gutter in both Skye Canyon Park Drive and Brent Lane are intercepted by

the proposed inlet. A WSPGW hydraulic analysis has been provided to include the downstream 36" RCP segment and the starting HGL conservatively utilizes the top-of-pipe. The 100-year peak flow for the design of the storm drain is approximately 40 cfs which includes the upstream flows from the two upstream elementary schools and the southern portion of the future park as estimated by the original Technical Drainage Study for Indian Hills Park. Reference excerpts from the original study were provided with the previous submittal and have been included in Appendix E of this submittal for your convenience. The drop inlet is for nuisance flows only; thus, no computation has been provided.

3. **Comment:** *Due to the cross fall section of Skye Canyon Park Drive, the capacity of the street section is significantly decreased. This results in a flow depth at Skye Canyon Park Drive as it enters Brent Lane of 0.67' (D10), which is greater than 6-inches. Extend a lateral and provide a drop inlet in Skye Canyon Park Drive before the cross fall transition section to mitigate the impacts at the intersection. Provide supporting calculations to adequately size the facilities.*

Response: The 10-year flow depth in Skye Canyon Drive at the intersection of Brent Lane is 0.47-ft which is less than the 6" criteria required by the HCDDM. However, an 18" RCP with a 5-ft inlet has been proposed at the beginning of the cross-fall transition to ensure that nuisance flows do not traverse Skye Canyon Park Drive since it is an 80-ft right-of-way.

4. **Comment:** *It appears from the drainage basin map that the flows that impact Skye Canyon Park Drive North from the west will be contained on the west side of Skye Canyon Park Drive. Revise the FlowMaster models to reflect this condition.*

Response: Acknowledged. Section SCN for Skye Canyon Park Drive has been revised to model a half street section. The Street Cross Section Hydraulic summary table on Exhibit D has been updated to reflect the revised calculations. Please refer to the appendix for the revised calculations and exhibit.

5. **Comment:** *Provide calculations to demonstrate the dry lane criteria is satisfied.*

Response: Calculations provided with the previous submittal indicate that the 10-year storm event dry lane criteria is satisfied. The revised calculation for Section SCN also indicates that the dry lane criteria is satisfied. The Street Cross Section Hydraulic summary table on Exhibit D has been updated to include a column for the dry lane width.

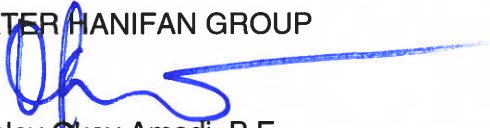
6. **Comment:** *Label the Q10/Q100 flow rates for CP3* on Exhibit D Ultimate Conditions Drainage Exhibit.*

Response: The Q10/Q100 for CP3 has been labeled on Exhibit D.

We believe the above responses with the pertinent calculations and the revisions provided on the revised plans have adequately addressed your concerns in the review memorandum. The revised plan, profile, and detail sheets adopting the revisions addressed in in this letter have been included in Appendix F. If you have any questions or require additional information, please do not hesitate to contact us at 702-284-5300.

Respectfully Submitted,

SLATER HANIFAN GROUP



Stanley Okey Amadi, P.E.
Project Manager – Flood Control Division

cc: Mark Failla, P.E., CFM – SHG
Efraim Belizan, P.E. – SHG
Jerry Slater, P.E. – SHG

APPENDIX

Appendix A CLV Comment Letter

Appendix B Drainage Exhibits

Appendix C Revised Street Sections

Appendix D WSPGW of Revised Storm Drain

Appendix E Reference Materials

Appendix F CD of Electronic Files & Revised Improvement Plans

APPENDIX A
CLV Comment Letter

CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		February 27, 2018
TO: Land Development Services Department of Building & Safety		FROM: Jennifer Shinn  Flood Control Engr. Associate Department of Public Works
SUBJECT:	Drainage Study for:	
	Skye Canyon Park Drive (Previously Indian Hills Park)	
Cross Streets:	Skye Canyon Park Drive & Iron Mountain	
File Number:	F:\Depot\DSMemos\DS4951A.doc	
Parcel Number:	125-07-501-004	
Zoning Action:	VAR-55892	
FEMA Flood Zone	YES	NO X
Proposed Storm Drain	YES	NO X
COPIES TO:		
		Slater-Hanifan
		Ninety-Five Management, LLC
		Bart Anderson, P.E., DevCo
		Fred Solis, Planning

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
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TOTAL FEES (LDDRS):				\$400.00	

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

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X	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.

- As stated in the report, this study does not address the Alyn Beck Park improvements and therefore does not update DS4263. An update to the previously approved drainage study for the park improvements is required. The proposed park improvements necessitate extension/reconstruction of the existing storm drain at the intersection of Skye Canyon Park Drive and Brent Lane to accommodate park drainage.
- The existing 18" RCP lateral connecting into the existing drop inlet on the northwest corner of Skye Canyon Park Drive and Brent Lane shall be upsized to accommodate the proposed storm drain system from the park (Alyn Beck Park formerly Indian Hills Park). Provide supporting calculations to adequately size the facility.
- Due to the cross fall section of Skye Canyon Park Drive, the capacity of the street section is significantly decreased. This results in a flow depth at Skye Canyon Park Drive as it enters Brent Lane of 0.67' (D10), which is greater than 6-inches. Extend a lateral and provide a drop inlet in Skye Canyon Park Drive before the cross fall transition section to mitigate the impacts at the intersection. Provide supporting calculations to adequately size the facilities.
- It appears from the drainage basin map that the flows that impact Skye Canyon Park Drive North from the west will be contained on the west side of Skye Canyon Park Drive. Revise the FlowMaster models to reflect this condition.

5. Provide calculations to demonstrate the dry lane criteria is satisfied.
6. Label the Q10/Q100 flow rates for CP3* on Exhibit D Ultimate Conditions Drainage Exhibit.

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

jks

T/R/S: T19S/R60E/07
AREA G-07

APPENDIX B

Drainage Exhibits

REFERENCED STUDIES

- * REFERENCED FROM THE INDIAN HILLS PARK STUDY
- ** REFERENCED FROM THE WILLIAM AND MARY SCHERKENBACH ELEMENTARY SCHOOL STUDY
- *** REFERENCED FROM THE JAMES H BILBRAY ELEMENTARY SCHOOL STUDY

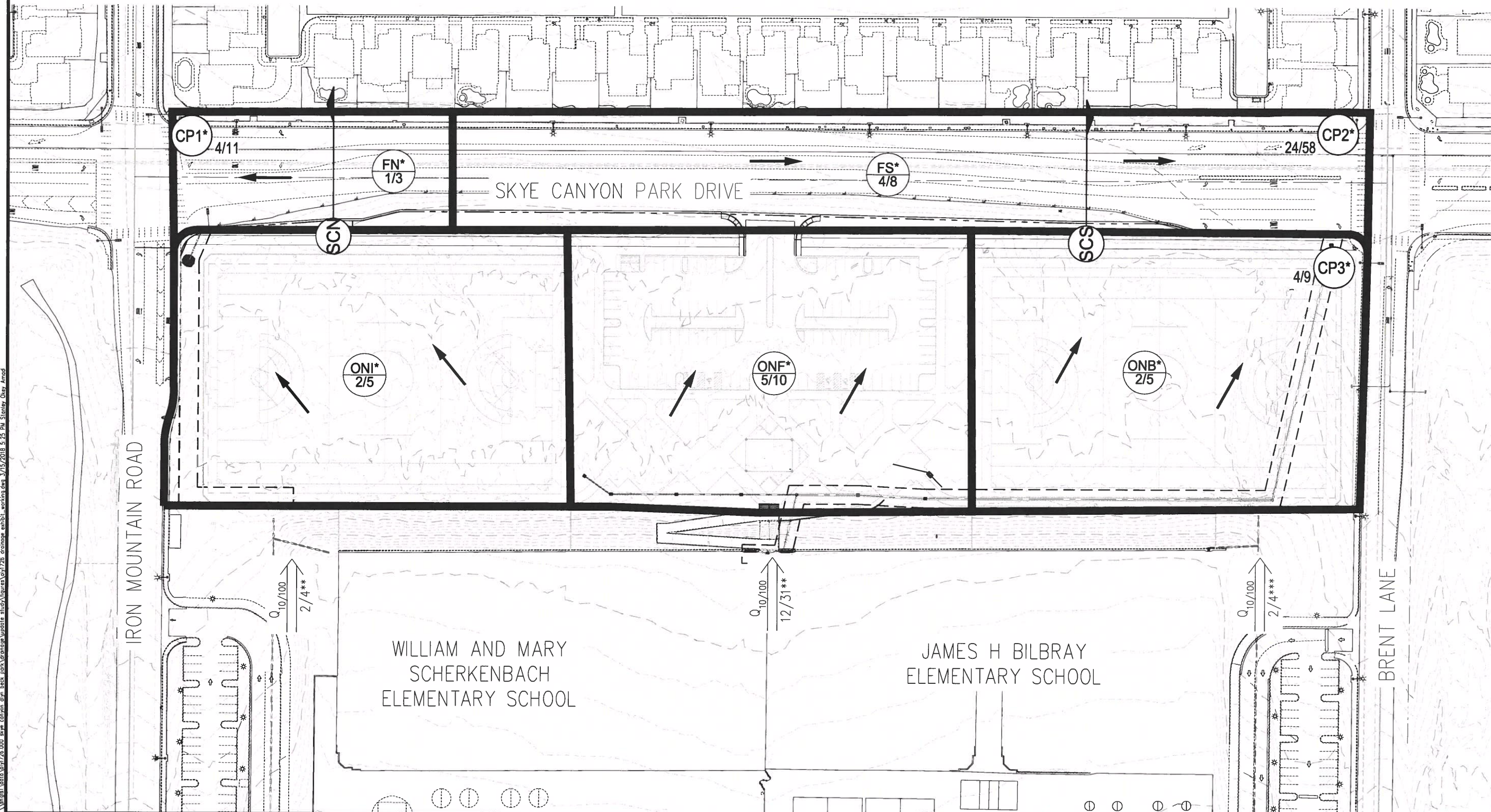
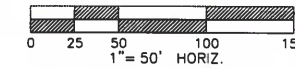
CP1* 4/11



$Q_{10/100}$

12/31**

Section ID [-]	Slope [%]	10-Year					Dry Lane [ft]	100-Year			
		Q ₁₀₀ [cfs]	D ₁₀ [ft]	V ₁₀ [ft/s]	D x V [-]	Q ₁₀₀ [cfs]		D ₁₀₀ [ft]	V ₁₀₀ [ft/s]	D x V [-]	
Existing Conditions											
Skye Canyon North	1.09	4	0.31	2.35	0.73	23.5	11	0.43	3.02	1.3	
Skye Canyon South	0.85	24	0.47	3.40	1.60	22.0	58	0.68	3.49	2.4	
Proposed Conditions											
Skye Canyon North	1.09	4	0.30	2.63	0.79	33.0	11	0.41	3.32	1.4	
Skye Canyon South	0.85	24	0.47	3.40	1.60	22.0	58	0.67	4.2	2.8	



\\shrishti\data\01\726 000 s\eye convey\in back part\drainage update study\figures\01\726 drainage exhibit_working.dwg 3/15/2018 5:25 PM Stanley Olney Anad

SLATER
HANIFAN
GROUP
CONSULTING ENGINEERS & PLANNERS
5740 S. ARVILLE STREET #210, LAS VEGAS, NV 89118
PHONE (702) 264-5300 FAX (702) 264-5300

[illegible]

LAS VEGAS, NV	
---------------	--

KAG PROPERTY, LLC

ALYN BECK PARK OFFSITES

ULTIMATE CONDITIONS DRAINAGE EXHIBIT

700

DATE:	FEB 2018
DRAFTER:	NAS
DESIGNER:	NAS
CHECKED:	SOA
PROJECT NO.	OLY1726.000

APPENDIX C

Revised Street Sections

Worksheet for Skye Canyon North - Existing Conditions - 10-year

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.01090 ft/ft
Discharge 4.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
0+17	2673.87
0+27	2672.79
0+34	2671.92
0+34	2671.96
0+44	2672.23
0+62	2672.70

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+17, 2673.87)	(0+34, 2671.92)	0.027
(0+34, 2671.92)	(0+62, 2672.70)	0.016

Options

Current Roughness weighted Method Improved Lotter's Method
Open Channel Weighting Method Improved Lotter's Method
Closed Channel Weighting Method Horton's Method

Results

Normal Depth 0.31 ft
Elevation Range 2671.92 to 2673.87 ft
Flow Area 1.70 ft²
Wetted Perimeter 12.23 ft
Hydraulic Radius 0.14 ft
Top Width 12.20 ft

Worksheet for Skye Canyon North - Existing Conditions - 10-year

Results

Normal Depth	0.31	ft
Critical Depth	0.32	ft
Critical Slope	0.00870	ft/ft
Velocity	2.35	ft/s
Velocity Head	0.09	ft
Specific Energy	0.39	ft
Froude Number	1.11	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.31	ft
Critical Depth	0.32	ft
Channel Slope	0.01090	ft/ft
Critical Slope	0.00870	ft/ft

Cross Section for Skye Canyon North - Existing Conditions - 10-year

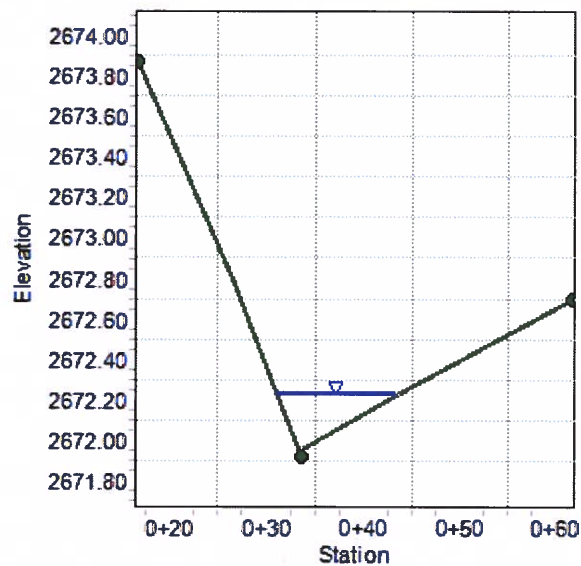
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01090	ft/ft
Normal Depth	0.31	ft
Discharge	4.00	ft ³ /s

Cross Section Image



Worksheet for Skye Canyon North - Existing Conditions - 100-year

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.01090 ft/ft
Discharge 11.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
0+17	2673.87
0+27	2672.79
0+34	2671.92
0+34	2671.96
0+44	2672.23
0+62	2672.70

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+17, 2673.87)	(0+34, 2671.92)	0.027
(0+34, 2671.92)	(0+62, 2672.70)	0.016

Options

Current Roughness weighted Method Improved Lotter's Method
Open Channel Weighting Method Improved Lotter's Method
Closed Channel Weighting Method Horton's Method

Results

Normal Depth 0.43 ft
Elevation Range 2671.92 to 2673.87 ft
Flow Area 3.64 ft²
Wetted Perimeter 18.25 ft
Hydraulic Radius 0.20 ft
Top Width 18.22 ft

Worksheet for Skye Canyon North - Existing Conditions - 100-year

Results

Normal Depth	0.43	ft
Critical Depth	0.46	ft
Critical Slope	0.00753	ft/ft
Velocity	3.02	ft/s
Velocity Head	0.14	ft
Specific Energy	0.58	ft
Froude Number	1.19	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.43	ft
Critical Depth	0.46	ft
Channel Slope	0.01090	ft/ft
Critical Slope	0.00753	ft/ft

Worksheet for Skye Canyon North - Proposed Conditions - 10-year

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.01090 ft/ft
Discharge 4.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
0+17	2671.99
0+17	2671.98
0+17	2671.74
0+18	2671.82
0+62	2672.70

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+17, 2671.99)	(0+18, 2671.82)	0.013
(0+18, 2671.82)	(0+62, 2672.70)	0.016

Options

Current Roughness weighted Method Improved Lotter's Method
Open Channel Weighting Method Improved Lotter's Method
Closed Channel Weighting Method Horton's Method

Results

Normal Depth 0.30 ft
Elevation Range 2671.74 to 2672.70 ft
Flow Area 1.52 ft²
Wetted Perimeter 12.68 ft
Hydraulic Radius 0.12 ft
Top Width 12.47 ft
Normal Depth 0.30 ft

Worksheet for Skye Canyon North - Proposed Conditions - 10-year

Results

Critical Depth	0.32	ft
Critical Slope	0.00595	ft/ft
Velocity	2.63	ft/s
Velocity Head	0.11	ft
Specific Energy	0.40	ft
Froude Number	1.33	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.30	ft
Critical Depth	0.32	ft
Channel Slope	0.01090	ft/ft
Critical Slope	0.00595	ft/ft

Cross Section for Skye Canyon North - Proposed Conditions - 10-year

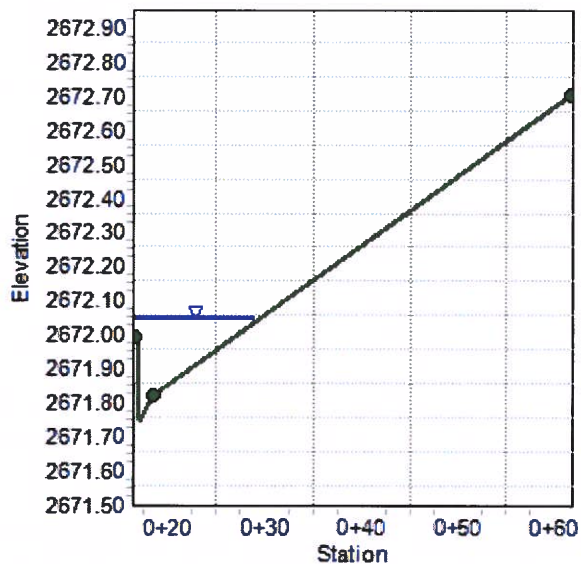
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.01090 ft/ft
Normal Depth 0.30 ft
Discharge 4.00 ft³/s

Cross Section Image



Worksheet for Skye Canyon North - Proposed Conditions - 100-year

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.01090 ft/ft
Discharge 11.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
0+17	2671.99
0+17	2671.98
0+17	2671.74
0+18	2671.82
0+62	2672.70

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+17, 2671.99)	(0+18, 2671.82)	0.013
(0+18, 2671.82)	(0+62, 2672.70)	0.016

Options

Current Roughness weighted Method Improved Lotter's Method
Open Channel Weighting Method Improved Lotter's Method
Closed Channel Weighting Method Horton's Method

Results

Normal Depth 0.41 ft
Elevation Range 2671.74 to 2672.70 ft
Flow Area 3.31 ft²
Wetted Perimeter 18.55 ft
Hydraulic Radius 0.18 ft
Top Width 18.23 ft
Normal Depth 0.41 ft

Worksheet for Skye Canyon North - Proposed Conditions - 100-year

Results

Critical Depth	0.46	ft
Critical Slope	0.00553	ft/ft
Velocity	3.32	ft/s
Velocity Head	0.17	ft
Specific Energy	0.58	ft
Froude Number	1.37	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.41	ft
Critical Depth	0.46	ft
Channel Slope	0.01090	ft/ft
Critical Slope	0.00553	ft/ft

Cross Section for Skye Canyon North - Proposed Conditions - 100-year

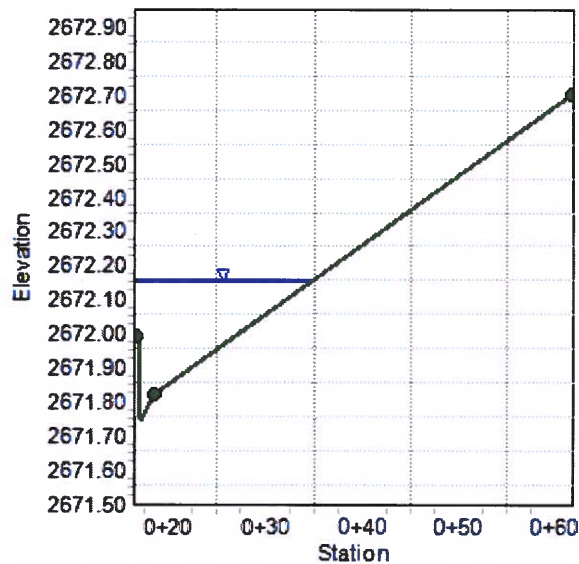
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.01090	ft/ft
Normal Depth	0.41	ft
Discharge	11.00	ft ³ /s

Cross Section Image



APPENDIX D

WSPGW of Revised Storm Drain

WSPG Summary

1 - 'HGL Check' reflects the minimum 1-ft below finished grade.

T1	OLY1726.000	SKYE CANYON PARK DRIVE			
T2	TECHNICAL DRAINAGE STUDY ADDENDUM -	MARCH 2018			
T3	STORM DRAIN WITHIN SKYE CANYON PARK DRIVE				
SO	-1146.2202661	.960 36	.013		2664.9600
R	-1074.5002664	.860 36	.013		
JX	-1074.5002664	.860 36	.013	0.1	2664.860
R	-1032.0802665	.070 36	.013		
SH	-1032.0802665	.070 36	.013		
CD	18 4	1 0.000	1.500	0.000 0.000 0.000	0.000
CD	36 4	1 0.000	3.000	0.000 0.000 0.000	0.000
Q		40.000			

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															

CD	18	4	1			1.500															
CD	36	4	1			3.000															

PAGE NO 1

HEADING LINE NO 1 IS - WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 2 IS - OLY1726.000 SKYE CANYON PARK DRIVE

TECHNICAL DRAINAGE STUDY ADDENDUM - MARCH 2018

HEADING LINE NO 3 IS - STORM DRAIN WITHIN SKYE CANYON PARK DRIVE

PAGE NO 2

W S P G W

ELEMENT NO	1	IS A	SYSTEM	OUTLET	*	W S ELEV
	STATION	INVERT	SECT			2664.960
	-1146.220	2661.960	36			

ELEMENT NO	2	IS A	REACH	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	U/S DATA	STATION	INVERT	SECT								
	-1074.500	2664.860	36									

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	4	IS A	REACH	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	U/S DATA	STATION	INVERT	SECT								
	-1032.080	2665.070	36									

W S ELEV .000

ELEMENT NO	5	IS A	SYSTEM	HEADWORKS	U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	U/S DATA	STATION	INVERT	SECT									
	-1032.080	2665.070	36										

OLY1726.000 SKYE CANYON PARK DRIVE

TECHNICAL DRAINAGE STUDY ADDENDUM - MARCH 2018

STORM DRAIN WITHIN SKYE CANYON PARK DRIVE

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 for 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	
-1146.220	2661.960	1.243	2663.203	40.10	14.49	3.26	2666.47	.00	2.06	2.96	3.000	.000	.00	1	.0
3.079	.0404					.0277	.09	1.24	2.64	1.12	.013	.00	.00	PIPE	
-1143.141	2662.084	1.249	2663.334	40.10	14.39	3.22	2666.55	.00	2.06	2.96	3.000	.000	.00	1	.0
16.852	.0404					.0258	.43	1.25	2.61	1.12	.013	.00	.00	PIPE	
-1126.289	2662.766	1.295	2664.061	40.10	13.72	2.92	2666.99	.00	2.06	2.97	3.000	.000	.00	1	.0
12.274	.0404					.0227	.28	1.30	2.44	1.12	.013	.00	.00	PIPE	
-1114.015	2663.262	1.343	2664.605	40.10	13.08	2.66	2667.26	.00	2.06	2.98	3.000	.000	.00	1	.0
9.341	.0404					.0199	.19	1.34	2.28	1.12	.013	.00	.00	PIPE	
-1104.675	2663.640	1.393	2665.033	40.10	12.48	2.42	2667.45	.00	2.06	2.99	3.000	.000	.00	1	.0
7.302	.0404					.0175	.13	1.39	2.12	1.12	.013	.00	.00	PIPE	
-1097.372	2663.935	1.446	2665.381	40.10	11.89	2.20	2667.58	.00	2.06	3.00	3.000	.000	.00	1	.0
5.794	.0404					.0154	.09	1.45	1.98	1.12	.013	.00	.00	PIPE	
-1091.578	2664.169	1.500	2665.670	40.10	11.34	2.00	2667.67	.00	2.06	3.00	3.000	.000	.00	1	.0
4.616	.0404					.0136	.06	1.50	1.84	1.12	.013	.00	.00	PIPE	
-1086.962	2664.356	1.558	2665.914	40.10	10.81	1.82	2667.73	.00	2.06	3.00	3.000	.000	.00	1	.0
3.677	.0404					.0120	.04	1.56	1.71	1.12	.013	.00	.00	PIPE	
-1083.285	2664.505	1.618	2666.123	40.10	10.31	1.65	2667.77	.00	2.06	2.99	3.000	.000	.00	1	.0
2.894	.0404					.0106	.03	1.62	1.59	1.12	.013	.00	.00	PIPE	

WATER SURFACE PROFILE LISTING

Date: 3-21-2018 Time:10:58:20

OLY1726-000 SKYE CANYON PARK DRIVE

TECHNICAL DRAINAGE STUDY ADDENDUM - MARCH 2018

STORM DRAIN WITHIN SKYE CANYON PARK DRIVE

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.E.L.	Super Elev	Critical Depth	Flow Width	Top Dia.	Height/ 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	
-1080.391	2664.622	1.682	2666.304	40.10	9.83	1.50	2667.80	.00	2.06	2.98	3.000	.000	.00	1	.0
2.228	.0404					.0093	.02	1.68	1.48	1.12	.013	.00	.00	PIPE	
-1078.163	2664.712	1.749	2666.461	40.10	9.37	1.36	2667.83	.00	2.06	2.96	3.000	.000	.00	1	.0
1.650	.0404					.0082	.01	1.75	1.37	1.12	.013	.00	.00	PIPE	
-1076.513	2664.779	1.820	2666.599	40.10	8.94	1.24	2667.84	.00	2.06	2.93	3.000	.000	.00	1	.0
1.133	.0404					.0073	.01	1.82	1.27	1.12	.013	.00	.00	PIPE	
-1075.380	2664.824	1.895	2666.720	40.10	8.52	1.13	2667.85	.00	2.06	2.89	3.000	.000	.00	1	.0
.662	.0404					.0065	.00	1.90	1.18	1.12	.013	.00	.00	PIPE	
-1074.718	2664.851	1.975	2666.826	40.10	8.12	1.02	2667.85	.00	2.06	2.85	3.000	.000	.00	1	.0
.218	.0404					.0058	.00	1.98	1.09	1.12	.013	.00	.00	PIPE	
-1074.500	2664.860	2.062	2666.922	40.10	7.74	.93	2667.85	.00	2.06	2.78	3.000	.000	.00	1	.0
JUNCT STR	.0000					.0051	.00	2.06	1.00		.013	.00	.00	PIPE	
-1074.500	2664.860	2.160	2667.020	40.00	7.34	.84	2667.86	.00	2.06	2.69	3.000	.000	.00	1	.0
42.420	.0049					.0049	.21	2.16	.91	2.13	.013	.00	.00	PIPE	
-1032.080	2665.070	2.133	2667.203	40.00	7.44	.86	2668.06	.00	2.06	2.72	3.000	.000	.00	1	.0

APPENDIX E

Reference Material

DS 4263
REC'D: 02-22-2008
\$400- G-07

ADDENDUM #3 TO THE TECHNICAL DRAINAGE STUDY FOR INDIAN HILLS PARK

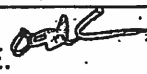
CITY OF LAS VEGAS, NEVADA
Project Number: 1531-001-072
February 2008

Prepared For:

City of Las Vegas Public Works
400 Stewart Avenue
Las Vegas, Nevada 89101
Phone: (702) 229-1046
Fax: (702) 464-5702

Prepared By:

David W. Trushaw, P.E.
L.R. Nelson Consulting Engineers
6765 W. Russell Rd., Suite 200
Las Vegas, Nevada 89118
(702) 798-7978

CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		February 25, 2008
TO: Land Development Services Department of Public Works		FROM: Oh Sang Kwon, P.E.  Flood Control Department of Public Works
SUBJECT:	Drainage Study for: Indian Hills Park	
Cross Streets:	Fort Apache and Iron Mountain	
FILE NO.:	F:\Depot\DSMEMOS\DS4263D.doc	
Parcel Number:	125-07-501-004	
Zoning Action:	SDR-24452	
FEMA Flood Zone	YES	No X
Proposed Storm Drain	YES X	No
COPIES TO:		L.R. Nelson Consulting Engineers, Inc. Patrick H. Batte', Architectural Project Manager Bart Anderson, P.E., DEVCO

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Trn. #
1 st Submittal	12/11/2007	12/19/2007	Not Approved	\$400.00	83982: \$400
2 nd Submittal	1/9/2008	1/11/2008	Not Approved	\$400.00	85451: \$400
3 rd Submittal	1/30/2008	2/13/2008	Not Approved	\$400.00	87040: \$400
4 th Submittal	2/22/08 & 2/26/07	2/27/2008	Conditionally Approved	\$400.00	88789: \$400
TOTAL FEES (LDDRS):				\$1600.00	----

REMARKS:

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.

- Please note that any revision to the proposed project site must be submit to the *City of Las Vegas Flood Control Section* and must be approved prior to final approval of improvement plan.
- Structural plans for the storm drain improvements must be submitted for review. Provide a soils report, structural calculations and specifications, two wet stamped structural sets, and a grading plan to the *Building Department* for processing. The engineer must provide a copy of *Building Department* approval of the structures to *Flood Control* prior to final acceptance of the drainage study.
- The grading plan indicates offsite grading and installation of drop inlet on the Clark County School District property. Secure a notarized letter of permission from the property owner allowing the grading. This letter is required prior to final acceptance of the drainage study.
- The proposed improvement plans show drainage facilities of a size that must be reviewed for Maintenance and Access concerns. The engineer must submit a set of improvement plans to Street and Sanitation Department for their review. Streets & Sanitation approval must be secured prior to drainage study approval.

5. This site accepts offsite flows and conveys them through the site. Public drainage easements must be recorded by separate document prior to the final acceptance of the improvement plans unless they are to be recorded by parcel or final map.

6. Grading Plan Comments:

A. Sheet C3.03:

a. Callout future drop inlet by other on Brent Lane north of Fort Apache Road.

B. Sheet C4.01:

a. Show 3-ft concrete valley gutter connecting the drop inlets on "Stairs and Drop Inlets Detail"

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 Amendment 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
OSK

T/R/S: T19S/R61E/07
AREA G-07

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*****
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
* RUN DATE 21DEC07 TIME 11:30:55 *
*****

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*****
* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET *
* DAVIS, CALIFORNIA 95616 *
* (916) 756-1104 *
*****

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X X XXXXXX XXXX X
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE, SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY, DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL, LOSS RATE:GREEN AND AMPT INFILTRATION KINEMATIC WAVE; NEW FINITE DIFFERENCE ALGORITHM

1

HEC-1 INPUT

PAGE 1

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
1 ID
2 ID
3 ID TECHNICAL DRAINAGE STUDY FOR INDIAN HILLS PARK
4 ID CITY OF LAS VEGAS, NEVADA
5 ID PREPARED BY: RYAN MORGAN
6 ID L.R. NELSON CONSULTING ENGINEERS, INC.
7 ID 6765 W. RUSSELL RD, SUITE 200
8 ID LAS VEGAS, NV 89118
9 ID
10 ID DEVELOPED CONDITION
11 ID FILENAME:IHP.DAT
12 ID JOB#1531-001-072
13 ID
14 ID *DIAGRAM
15 IT 5 0 0 300
16 IO 5
17 IN 5
18 JR PREC 0.54 0.56 1.0
19
20 KK JHBES3
21 KM REFERENCED OFFSITE BASIN 3 FROM JAMES H. BILBRAY ELEMENTARY SCHOOL STUDY
22 BA 0.00213
23 PB 3.00
24 PC .000 .020 .057 .070 .087 .108 .124 .130 .130 .130
25 PC .130 .130 .130 .133 .140 .142 .148 .158 .172 .181
26 PC .190 .197 .199 .200 .201 .204 .214 .229 .241 .249
27 PC .251 .256 .270 .278 .281 .283 .295 .322 .352 .409
28 PC .499 .590 .710 .744 .781 .812 .819 .835 .851 .856
29 PC .860 .868 .876 .888 .910 .926 .937 .950 .970 .976
30 PC .982 .985 .987 .989 .990 .993 .993 .994 .995 .998
31 PC .998 .999 1.00
32 LS 0 95
33 UD 0.083
34
35 KK JHBES4
36 KM REFERENCED OFFSITE BASIN 4 FROM JAMES H. BILBRAY ELEMENTARY SCHOOL STUDY
37 BA 0.00894
38 LS 0 84
39 UD 0.102
40
41 KK WMSSE7
42 KM REFERENCED OFFSITE BASIN 7 FROM WILLIAM AND MARY SCHERKENBACH ELEMENTARY SCHO
43 BA 0.00245
44 LS 0 95
45 UD 0.083
46
47 KK WMSSE8
48 KM REFERENCED OFFSITE BASIN 8 FROM WILLIAM AND MARY SCHERKENBACH ELEMENTARY SCHO
49 BA 0.00853
50 LS 0 80
51 UD 0.112

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1

HEC-1 INPUT

PAGE 2

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
47 KK COM3

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48	KM	REFERENCED COMBINATION POINT COM3	
49	HC	4	
50	KK	JHBES2	
51	KM	REFERENCED OFFSITE BASIN 2 FROM JAMES H. BILBRAY ELEMENTARY SCHOOL STUDY	
52	BA	0.00194	
53	LS	0	95
54	UD	0.087	
55	KK	ONB	
56	KM	DEVELOPED ONSITE BASIN ONB	
57	BA	0.0044	
58	PB	2.86	
59	LS	0	83
60	UD	0.110	
61	KK	CP3	
62	KM	COMBINATION POINT 3	
63	HC	2	
64	KK	ONF	
65	KM	DEVELOPED ONSITE BASIN ONF	
66	BA	0.0045	
67	LS	0	98
68	UD	0.079	
69	KK	FS	
70	KM	OFFSITE BASIN FS	
71	BA	0.0044	
72	LS	0	93
73	UD	0.123	
74	KK	CP2	
75	KM	COMBINATION POINT 2	
76	HC	4	
77	KK	WMSES6	
78	KM	REFERENCED OFFSITE BASIN 6 FROM WILLIAM AND MARY SCHERKENBACH ELEMENTARY SCHO	
79	BA	0.00225	
80	LS	0	92
81	UD	0.100	
82	KK	ONI	
83	KM	DEVELOPED ONSITE BASIN ONI	
84	BA	0.0044	
85	LS	0	82
86	UD	0.112	

HEC-1 INPUT

PAGE 3

1 LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

87	KK	FN	
88	KM	OFFSITE BASIN FS	
89	BA	0.0014	
90	LS	0	93
91	UD	0.100	
92	KK	CP1	
93	KM	COMBINATION POINT 1	
94	HC	3	
95	ZZ		

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT LINE (V) ROUTING (--->) DIVERSION OR PUMP FLOW
 NO. (.) CONNECTOR (<---) RETURN OF DIVERTED OR PUMPED FLOW

18	JHBES3		
32	JHBES4		
37	WMSES7		
42	WMSES8		
47	COM3		
50	JHBES2		
55	ONB		
61	CP3		
64	ONF		

OPERATION	STATION	AREA	PLAN	RATIOS APPLIED TO PRECIPITATION		
				RATIO 1	RATIO 2	RATIO 3
				.54	.56	1.00
HYDROGRAPH AT						
+	JHBES3	.00	1	2.	2.	5.
			FLOW	3.50	3.50	3.50
			TIME			
HYDROGRAPH AT						

+	JHBES4	.01	1	FLOW TIME	4. 3.58	4. 3.58	12. 3.50
	HYDROGRAPH AT						
+	WMSES7	.00	1	FLOW TIME	3. 3.50	3. 3.50	5. 3.50
	HYDROGRAPH AT						
+	WMSES8	.01	1	FLOW TIME	3. 3.58	3. 3.58	10. 3.58
	4 COMBINED AT						
+	COM3	.02	1	FLOW TIME	11. 3.50	12. 3.50	31. 3.50
	HYDROGRAPH AT						
+	JHBES2	.00	1	FLOW TIME	2. 3.50	2. 3.50	4. 3.50
	HYDROGRAPH AT						
+	ONB	.00	1	FLOW TIME	2. 3.58	2. 3.58	5. 3.58
	2 COMBINED AT						
+	CP3	.01	1	FLOW TIME	3. 3.50	4. 3.50	9. 3.50
	HYDROGRAPH AT						
+	ONF	.00	1	FLOW TIME	5. 3.50	5. 3.50	10. 3.50
	HYDROGRAPH AT						
+	FS	.00	1	FLOW TIME	3. 3.58	4. 3.58	8. 3.58
	4 COMBINED AT						
+	CP2	.04	1	FLOW TIME	23. 3.50	24. 3.50	58. 3.50
	HYDROGRAPH AT						
+	WMSES6	.00	1	FLOW TIME	2. 3.50	2. 3.50	4. 3.50
	HYDROGRAPH AT						
+	ONI	.00	1	FLOW TIME	2. 3.58	2. 3.58	5. 3.58
	HYDROGRAPH AT						
+	FN	.00	1	FLOW TIME	1. 3.50	1. 3.50	3. 3.50
	3 COMBINED AT						
+	CP1	.01	1	FLOW TIME	4. 3.58	4. 3.58	11. 3.50

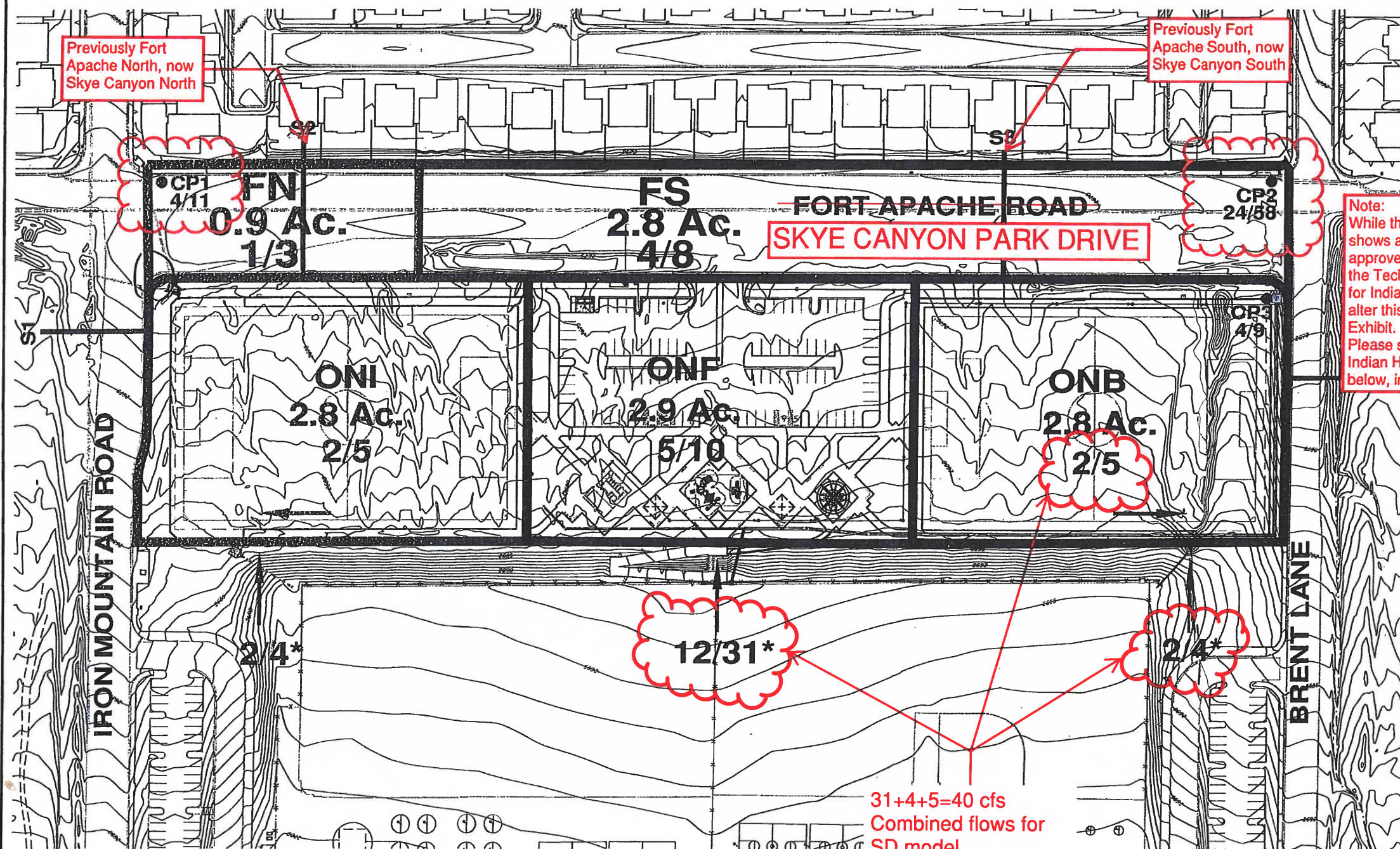
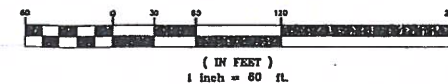
TO BE CAPTURED BY SD
W/ FUTURE PARK IMPS.

*** NORMAL END OF HEC-1 ***

STREET FLOW CALCULATIONS

Interim Condition					
Iron Mountain	3.10	301/737	0.86/1.21	10.2/14.6	8.8/17.7
Fort Apache North	1.00	4/11	0.41/0.52	1.7/2.0	0.7/1.0
Fort Apache South	3.10	24/58	0.55/0.75	5.5/4.8	3.0/3.6
Brent	3.66	319/1024	1.19/1.81	9.9/15.3	11.8/27.7
Interim Condition w/ Full Street Improvements					
Iron Mountain	3.10	301/737	0.89/1.24	10.4/2.1	9.3/2.6
Fort Apache North	1.00	4/11	0.31/0.40	2.4/3.0	0.7/1.2
Fort Apache South	3.10	24/58	0.42/0.55	5.6/6.5	2.4/3.6
Brent	3.66	319/1024	0.89/1.39	11.0/17.4	9.8/24.2
CITY WIDE STUDY FLOWS					
Interim Condition					
Iron Mountain	3.10	483/1255	1.07/1.62	11.5/16.7	12.3/27.1
Fort Apache	No Flows are shown on City Wide Figures (Existing, Interim and Future)				
Brent	3.66	408/1301	1.28/2.00	10.9/16.6	14.0/33.2
Interim Condition w/ Full Street Improvements					
Iron Mountain	3.10	483/1255	1.05/1.56	12.5/18.2	13.1/28.4
Brent	3.66	408/1301	0.96/1.53	12.3/19.4	11.8/29.7
Future Condition					
Iron Mountain	3.10	0/137	-0.71	-7.6	-5.4
Brent	3.66	0/79	-0.61	-6.5	-4.0

GRAPHIC SCALE



Note:
While this grading plan shows as "rejected", the approved Addendum #3 to the Technical Drainage Study for Indian Hills Park did not alter this Onsite Basin Map Exhibit.
Please see "Approved" Indian Hills Park Plan Sheets below, included for reference.

This grading plan is a part of drainage study # 4263 which was received on 1/9/2008 and rejected on 1/11/2008. Page 1 of 9

LEGEND

- BASIN LINE
- FLOW DIRECTION
- 5 BASIN NAME
- 1.4 AC. SIZE OF BASIN
- 1/4 10/100 YR FLOW
- CONCENTRATION POINT
- CV CONCENTRATION POINT NAME
- * REFERENCED FLOWS

L. R. NELSON CONSULTING ENGINEERS, INC.

6765 West Russell Road, Suite 200
Las Vegas, Nevada 89118
(702) 798-7978
(702) 451-2256 FAX

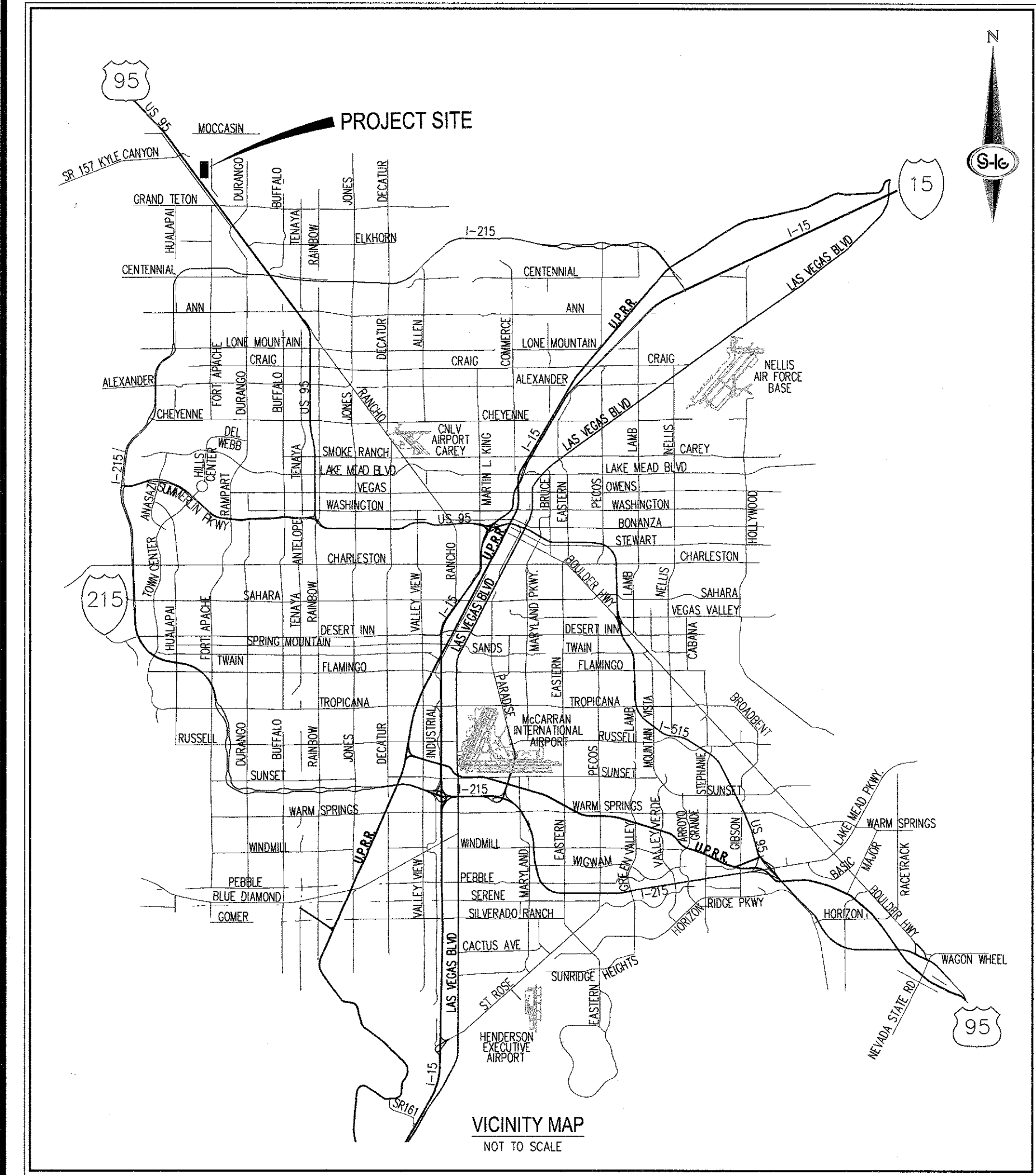
ONSITE BASIN MAP
FIGURE 8
INDIAN HILLS PARK

CITY OF LAS VEGAS

SHEET NUMBER
1
OF 1 SHEETS
1531-001-072

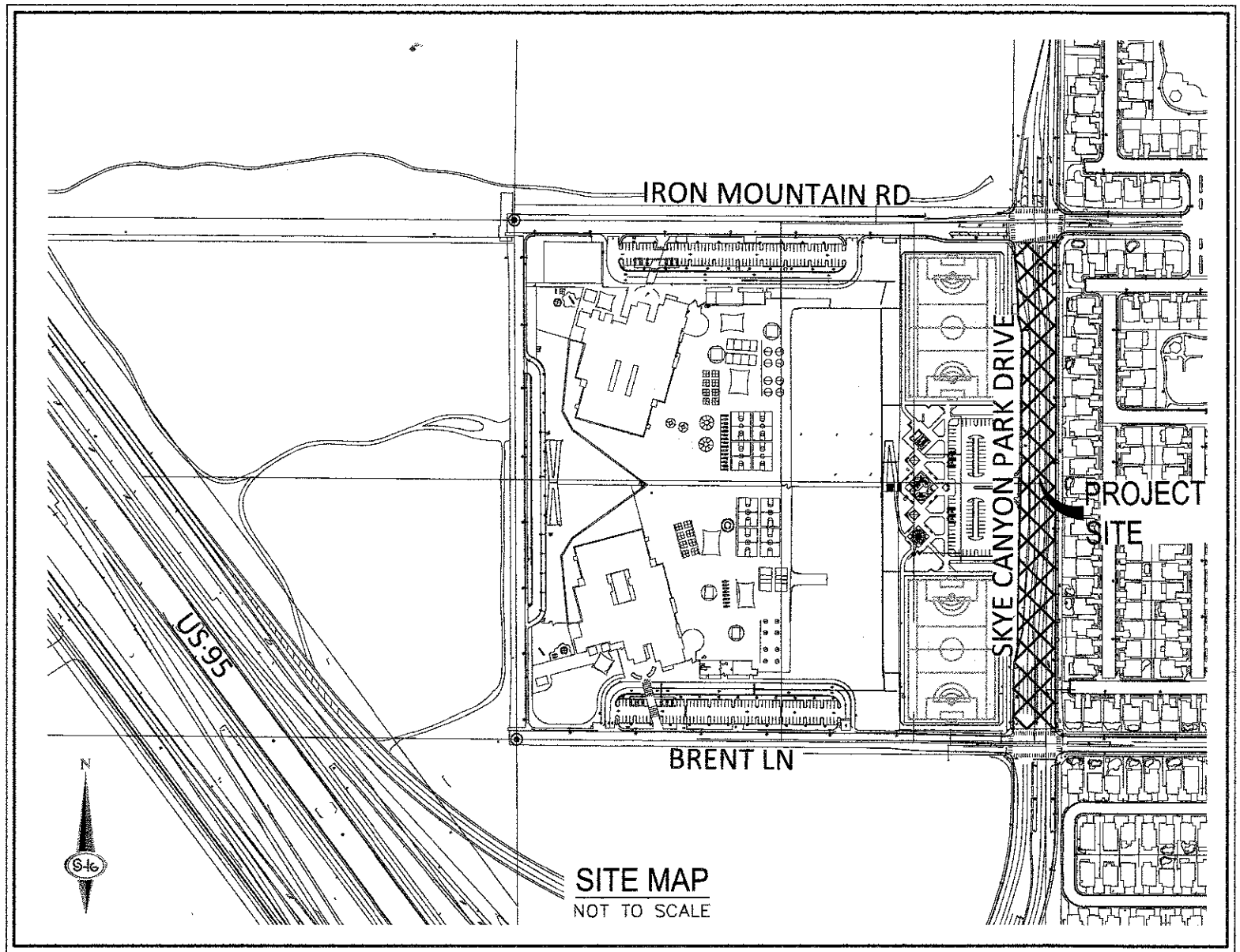
APPENDIX F

CD of Electronic Files & Revised Improvement Plans



IMPROVEMENT PLANS FOR SKYE CANYON PARK DRIVE

CITY OF LAS VEGAS, NEVADA
RESIDENTIAL SUBDIVISION
APN: 125-07-501-004



SHEET INDEX		
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DEVIATIONS FROM STANDARDS
NONE

SWPPP NOTE

NOTE: ALL LAND SURFACE AREA DISTURBANCES OVER 1 ACRE REQUIRE A STORMWATER DISCHARGE PERMIT ISSUED BY THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP). A PHASED CONSTRUCTION UNIT IN A CONTIGUOUS SUBDIVISION IS CONSIDERED UNDER CONSTRUCTION UNTIL ALL STRIPPED SURFACE AREAS HAVE BEEN COVERED BY PAVING, BUILDING CONSTRUCTION OR PLANTING. A STORMWATER DISCHARGE PERMIT APPLICATION AND ASSOCIATED INFORMATION MAY BE DOWNLOADED FROM THE WEB SITE: [HTTP://WWW.STATE.NV.US/BMPC/STORMD1.HTM](http://www.state.nv.us/bmpc/stormd1.htm) PROJECTS THAT DISTURB MORE THAN ONE ACRE OF LAND MUST SUBMIT TO NDEP A "NOTICE OF INTENT" FOR INCLUSION UNDER STORMWATER PERMIT NO. NVR100000 ALONG WITH THE APPROPRIATE FILLING FEE.

APPROVALS

CITY ENGINEER-ALLEN PAVELKA PE, #9029	DATE
APPROVAL OF THESE PLANS BY THE CITY ENGINEER IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED 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	
THIS PLAN MEETS THE APPLICABLE STANDARDS OF THE PLANNING DEPARTMENT.	
CENTRAL TELEPHONE CO. DBA CENTURYLINK	DATE
THE AFFIRMED 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.	
APPROVED FOR CONSTRUCTION	
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES	
PROJECT NO.: ADD FIELD FIRST APPROVED DATE:	
LYVWD APPROVED FIRE FLOW ADD FIELD GPM AT 20 PSI RESIDUAL SHEETS ADD FIELD	
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

OWNER/DEVELOPER

NINETY FIVE MANAGEMENT, LLC
11411 SOUTHERN HIGHLANDS PKWY
SUITE 300
PH: 702-220-6565
FX: 702-220-6566
CONTACT: BOBBY WILLIAMSON

ENGINEER

SLATER HANFAN GROUP, INC.
5740 S. ARVILLE STREET, SUITE 216
LAS VEGAS, NV 89118
PH: (702) 284-5300
FX: (702) 284-5399
CONTACT: EFRAM BALIZAN

BENCHMARK

RIVET & PLATE IN TOP OF HEADWALL SE CORNER OF IRON MOUNTAIN AND GRAND CANYON. BLY90 7N4 838.8366(m) 2752.08(ft)

BASIS OF BEARINGS

NORTH 88°39'07" WEST, BEING THE BEARING OF THE NORTH LINE OF THE NORTHEAST QUARTER (NE 1/4) OF THE NORTHEAST QUARTER (NE 1/4) OF SECTION 7, TOWNSHIP 19 SOUTH, RANGE 60 EAST, M.D.M., AS SHOWN ON A MAP ON FILE IN THE CLARK COUNTY, NEVADA RECORDER'S OFFICE AS FILE 87, PAGE 9 OF SURVEYS.

FEMA FLOOD ZONE INFORMATION

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE 'X' (AREA OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), PER THE FEMA FIRM PANELS 32003C1735E. EFFECTIVE DATE: SEPTEMBER 27, 2002



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

CITY OF LAS VEGAS, NEVADA

NINETY FIVE MANAGEMENT LLC

SKYE CANYON PARK DRIVE IMPROVEMENT PLANS

COVER SHEET

DATE: 3/21/18

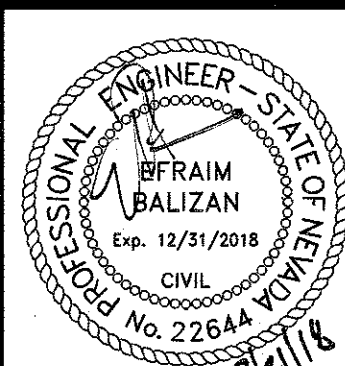
DRAFTER: JMP

DESIGNER: EB

CHECKED: EB

PROJECT NO.

OLY1726.000



C-1

SHEET 1 OF 8

ABBREVIATIONS			
AC	ASPHALTIC CONCRETE OR ACRE	FH	FIRE HYDRANT
AGG	AGGREGATE BASE	FL	FLOWLINE
APN	ASSESSORS PARCEL NUMBER	FT	FEET OR FOOT
APPROX OR ~	APPROXIMATE	FUT	FUTURE
AVE	AVENUE	GRD	GRADE OR GROUND
Ø	AT	GB	GRADE BREAK OR GRADE CHANGE
BC	BEGIN CURVE OR BACK OF CURB	GV	GATE VALVE
BCR	BEGINNING OF CURB RETURN	HDPE	HIGH DENSITY POLYETHYLENE
BHW	BOTTOM OF HEADWALL	HGA	HOME OWNERS ASSOCIATION
BLDG	BUILDING	HORZ	HORIZONTAL
BLVD	BOULEVARD	HP	HIGH POINT
BM	BENCHMARK	HVL	HIGH WATER LEVEL
BVC	BEGIN VERTICAL CURVE	HDWL OR HW	HEADWALL
BWV	BACK WATER VALVE	HYD	HYDRAULIC OR HYDRANT
CC	CLARK COUNTY	ID	INSIDE DIAMETER
CCAUSD	CLARK COUNTY AREA UNIFORM STANDARD DRAWINGS	IN	INCH
CCPW	CLARK COUNTY PUBLIC WORKS	INT	INTERSECTION
CCRFCD	CLARK COUNTY REGIONAL FLOOD DISTRICT	INV	INVERT ELEVATION
CCWRD	CLARK COUNTY WATER RECLAMATION DISTRICT	IP	IRON PIPE
CE	COMMON ELEMENT	IRRG	IRRIGATION
CL/C/LC	CENTERLINE	LF	LINEAR FEET
CLR	CLEAR OR CLEARANCE	LP	LOW POINT
CLSM	CONTROLLED LOW STRENGTH MATERIAL	LT OR L	LEFT
CLV	CITY OF LAS VEGAS	LVWD	LAS VEGAS VALLEY WATER DISTRICT
CM&C	CEMENT MORTAR LINED AND COATED	LWL	LOW WATER LEVEL
CMU	CONCRETE MASONRY UNIT	MAX	MAXIMUM
CONH	CITY OF NORTH LAS VEGAS	MECH	MECHANICAL
COH	CITY OF HENDERSON	MH	MANHOLE
CONC	CONCRETE	MIN	MINIMUM
CT	COURT	MISC	MISCELLANEOUS
CY OR CU YD	CUBIC YARD	MUE	MUNICIPAL UTILITY EASEMENT
DCWCS	DESIGN AND CONSTRUCTION FOR WASTEWATER COLLECTION SYSTEMS	NDOT	NEVADA DEPARTMENT OF TRANSPORTATION
DET	DETAIL	NPC	NEVADA POWER COMPANY
DI	DUCTILE IRON OR DRAIN INLET	NTS	NOT TO SCALE
DIA. Ø	DIAMETER	NUE	NONEXCLUSIVE UTILITY EASEMENT
DIP	DUCTILE IRON PIPE	ON CENTER	ON CENTER
DR	DRIVE	OD	OUTSIDE DIAMETER OR OVERALL DIMENSION
DWG(S)	DRAWING	OFF	OFFSET
DWY	DRIVEWAY	ORIG	ORIGINAL
EA	EACH	PAE	PUBLIC OR PEDESTRIAN ACCESS EASEMENT
ECR	END CURB RETURN	PB	PULL BOX
EG	EXISTING GROUND	PC	POINT OF CURVE
EL	ELEVATION	PCC	POINT OF COMPOUND CURVE
ESMT	EASEMENT	PDE	PUBLIC DRAINAGE EASEMENT
EP	EDGE OF PAVEMENT	P OR PL	PROPERTY LINE
ERU	EQUIVALENT RESIDENTIAL UNIT	POB	POINT OF BEGINNING
EVC	END VERTICAL CURVE	POC	POINT OF CURVATURE
EX OR EXIST	EXISTING	POE	POINT OF ENDING
FC	FACE OF CURB	PRC	POINT OF REVERSE CURVATURE
FF	FINISHED FLOOR	PRELIM	PRELIMINARY
FG	FINISHED GRADE	PROP	PROPOSED
FGH	FINISHED GRADE, HIGH SIDE	PRV	PRESSURE REDUCING VALVE
FGI	FINISHED GRADE, LOW SIDE	PUE	PUBLIC UTILITY EASEMENT
		PT	POINT OF TANGENT OR POINT
		PVC	POLYVINYL CHLORIDE
		PVI	POINT OF VERTICAL INTERSECTION
		PVI	POINT OF VERTICAL INTERSECTION
		QTY	QUANTITY
		RCA	REINFORCED CONCRETE ARCH
		ROB	REINFORCED CONCRETE BOX
		ROP	REINFORCED CONCRETE PIPE
		RD	ROAD
		RDWY ESMT	ROADWAY EASEMENT
		REQD	REQUIRED
		REV	REVISION
		RG	ROUGH GRADE
		RT OR R	RIGHT
		S/W, ROW	SLOPE
		SCH	SCHEDULE
		SD	STORM DRAIN
		SODI	STORM DRAIN DROP INLET
		SSMH	STORM DRAIN MANHOLE
		ST	STREET
		SSMH	SANITARY SEWER MANHOLE
		STA	STATION
		STD	STANDARD
		STL	STEEL OR STREET LIGHT
		SW	SIDEWALK
		SWG	SOUTHWEST GAS
		SWR OR SS	SANITARY SEWER
		SY	SQUARE YARD
		TAN	TANGENT
		TC	TOP OF CURB
		TF	TOP OF FLOOR OR TOP OF FOOTING
		TO	TOP OF GRADE
		TG	TOP OF GRADE
		THRU	THROUGH
		THW	TOP OF HEADWALL
		TP	TOP OF PIPE
		TW	TOP OF WALL
		TRW	TOP OF RETAINING WALL
		TSW	TOP OF SCREEN WALL
		TYP	TYPICAL
		UDACS	UNIFORM DESIGN AND CONSTRUCTION STANDARDS
		VC	VERTICAL CURVE
		VERT	VERTICAL
		W	WAL
		W	WAL
		WPZ	WATER PRESSURE ZONE
		WT	WEIGHT
		WTR	WATER LINE

SPECIAL NOTE

IN THE EVENT THAT ANY TEMPORARY CONSTRUCTION ITEM IS REQUIRED WHICH IS NOT SHOWN ON THESE DRAWINGS, THE OWNER AGREES TO PROVIDE AND INSTALL SUCH ITEM AT HIS OWN EXPENSE AND AT THE DIRECTION OF THE CLARK COUNTY DEPT. OF PUBLIC WORKS. TEMPORARY CONSTRUCTION ITEMS INCLUDE: PAVEMENT TRANSITIONS, PROTECTIVE DITCHES AND BERMS, ROAD SIGNS AND BARRICADES, ETC.

NOTICE TO CONTRACTOR

-QUANTITIES SHOWN ARE ESTIMATES ONLY AND ARE INTENDED TO ILLUSTRATE SCOPE OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXACT QUANTITIES INVOLVED.

-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

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		5' CONTOUR
		1' CONTOUR
		STRIPING
		SEWER MANHOLE
		CURB AND GUTTER
		SANITARY SEWER PIPE AND FLOW ARROW
		WATER PIPE
		WATER GATE VALVE
		FIRE HYDRANT
		WATER BLOW-OFF
		WATER LATERAL W/ METER
		SANITARY SEWER LATERAL
		STREETLIGHT
		EDGE OF PAVEMENT
		TRAFFIC SIGN
		BACK WATER VALVE

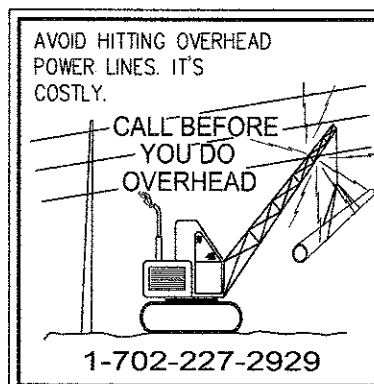
QUANTITIES

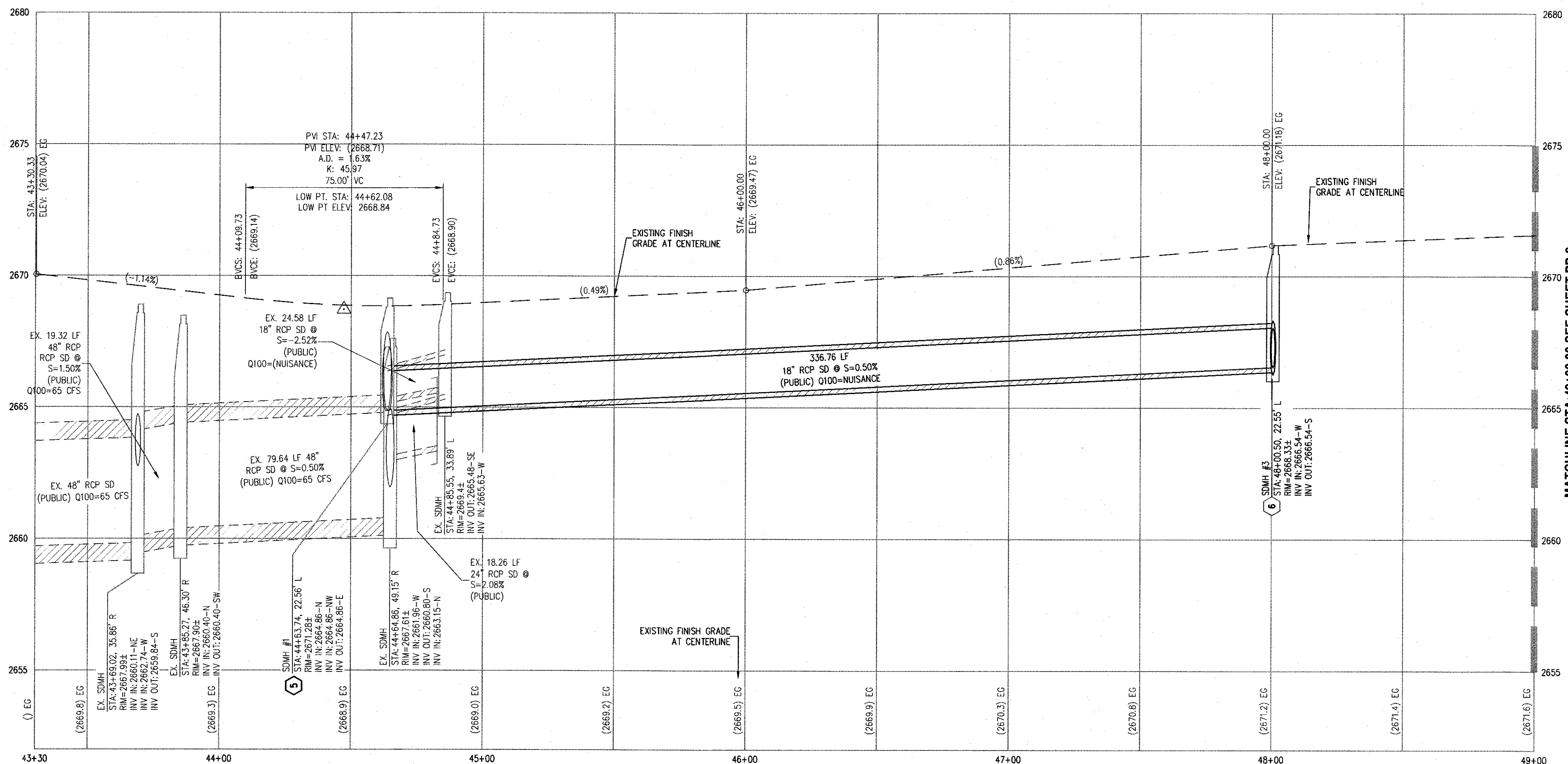
DRAINAGE				
1.	48" TYPE III STORM DRAIN MANHOLE	EA	--	2
2.	5.0' TYPE "CM2" DROP INLET	EA	--	1
3.	10.0' TYPE "CM2" DROP INLET	EA	--	1
4.	12.5' TYPE "CM2" DROP INLET	EA	--	--
5.	20.0' TYPE "CM2" DROP INLET	EA	--	--
6.	18" RCP CLASS III STORM DRAIN	LF	--	359
7.	24" RCP CLASS IV STORM DRAIN	LF	--	--
8.	30" RCP CLASS IV STORM DRAIN	LF	--	--
9.	29" x 45" CLASS III HERCOP STORM DRAIN	LF	--	40
10.	RIPRAP D50=8", THK=16"	SF	--	--
11.	8" WIDE CONCRETE VALLEY GUTTER W/10" TYPE I AGGREGATE BASE	SF	--	--
12.	SIDEWALK UNDER DRAIN	SF	--	--
13.				
SEWER SYSTEM				
1.	4" PVC SEWER LATERAL (PRIVATE)	LF	--	--
2.	8" PVC SEWER PIPE (PUBLIC)	LF	--	--
3.	STANDARD 48" SEWER MANHOLE (PUBLIC)	EA	--	--
4.	8" SEWER PIPE CAP	EA	--	--
5.	BACK WATER VALVE	EA	--	--
6.	8" C-900 WATER QUALITY SEWER PIPE (PUBLIC)	EA	--	--
7.				
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 55)	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.	8" 5 DEGREE BEND WITH RESTRAINED JOINTS	EA	--	--
9.	8" 11.25 DEGREE BEND PER UDACS PLATE NO. 31	EA	--	--
10.	8" 22.5 DEGREE BEND PER UDACS PLATE NO. 31	EA	--	--
11.	8" 45 DEGREE BEND PER UDACS PLATE NO. 31	EA	--	--
12.	8" 90 DEGREE BEND PER UDACS PLATE NO. 31	EA	--	--
13.	CAP AND 2" BLOW-OFF ASSEMBLY W/CAP PER UDACS PLATE NO. 36	EA	--	--
14.	1" COPPER SERVICE W/ 3/4" METER PER UDACS PLATE NO. 2	EA	--	--
15.	1" COPPER SERVICE W/ 1" METER PER UDACS PLATE NO. 4	EA	--	--
16.	1" COPPER SERVICE W/ 3/4" METER & 1" RPPA PER UDACS PLATE NO. 4 & 8	EA	--	--
STREET IMPROVEMENTS				
1.	2" A.C. PAVEMENT W/ 4" TYPE II OVER 6" TYPE I AGGREGATE BASE	SY	--	--
2.	STANDARD 18" TYPE "A" ISLAND CURB & GUTTER W/6" TYPE I AGGREGATE BASE	LF	--	--
3.	STANDARD 8" TYPE "A" ISLAND CURB W/6" TYPE I AGGREGATE BASE	LF	--	--
4.	STANDARD 30" TYPE "ROLL" CURB & GUTTER W/6" TYPE I AGGREGATE BASE	LF	--	--
5.	4" WIDE CONCRETE SIDEWALK W/4" TYPE II AGGREGATE BASE	SF	--	--
6.				
7.				
TRAFFIC SIGNALS				
1.	30" STOP SIGN WITH POST (R1-1)	EA	--	--
2.	9" STREET NAME SIGN (D-3, BROWN W/ WHITE LETTERS)(6 POLES x 2 PER POLE=12)	EA	--	--
3.	BLUE COLORED REFLECTIVE RAISED PAVEMENT MARKER	EA	--	--
4.	CROSSWALK MARKINGS	LF	--	--
5.				
6.				
7.				
8.				
DRY UTILITIES				
1.	100W H.P.S. LUMINAIRE STREET LIGHT W/DECORATIVE POLE	EA	--	--
2.	1"-1/4" PVC STREET LIGHT CONDUIT WITH (2) #4 AND (1) #8 CONDUCTORS	LF	--	--
3.	NO. 3-1/2 PULL BOX W/METAL COVER	EA	--	--
4.	150 AMP SERVICE PEDESTAL (RRR)	EA	--	--
5.	200 AMP SERVICE PEDESTAL (SLT)	EA	--	--
6.				

APPROVED FOR CONSTRUCTION

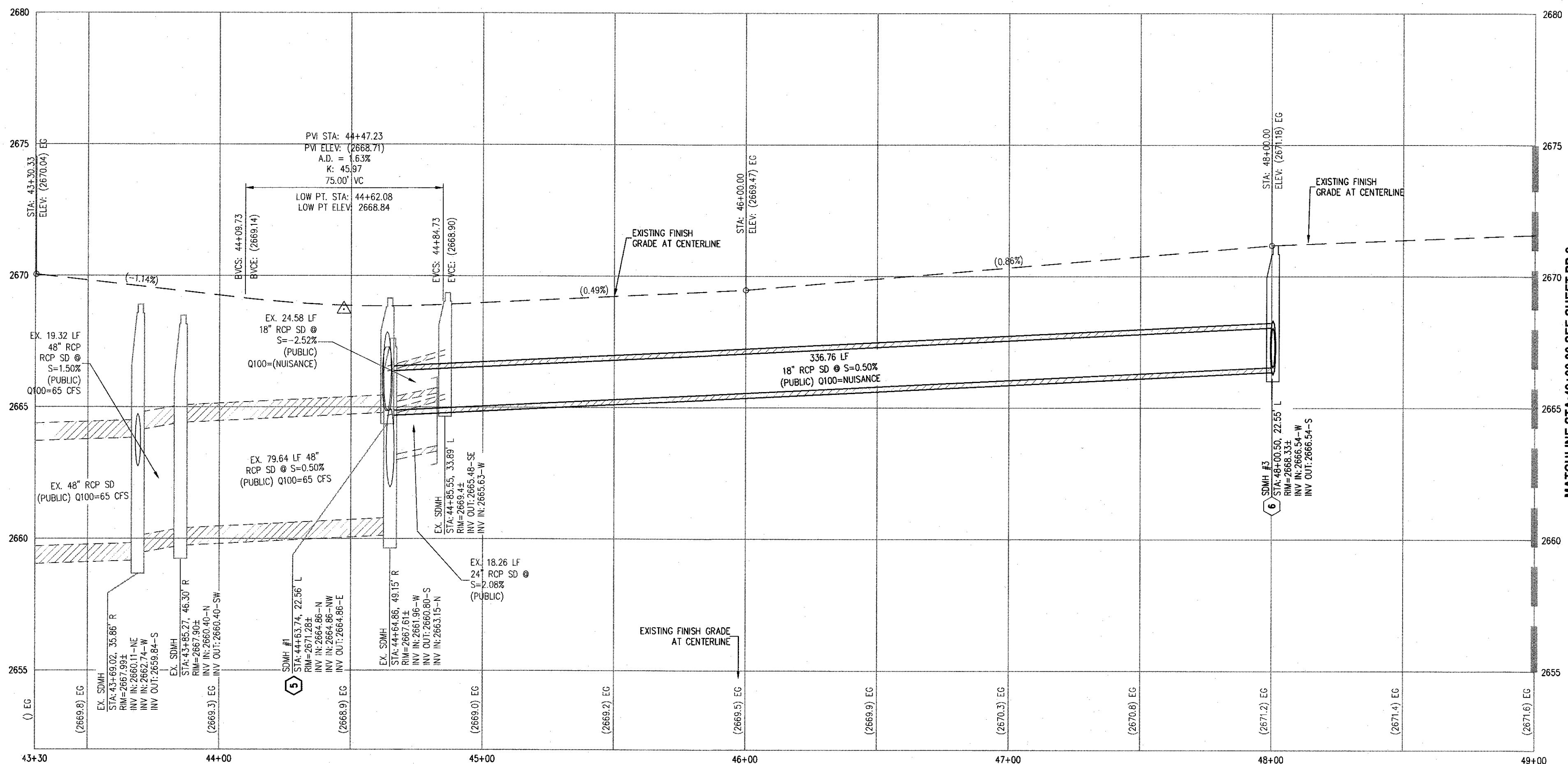
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES

PROJECT No. FIRST APPROVED DATE:

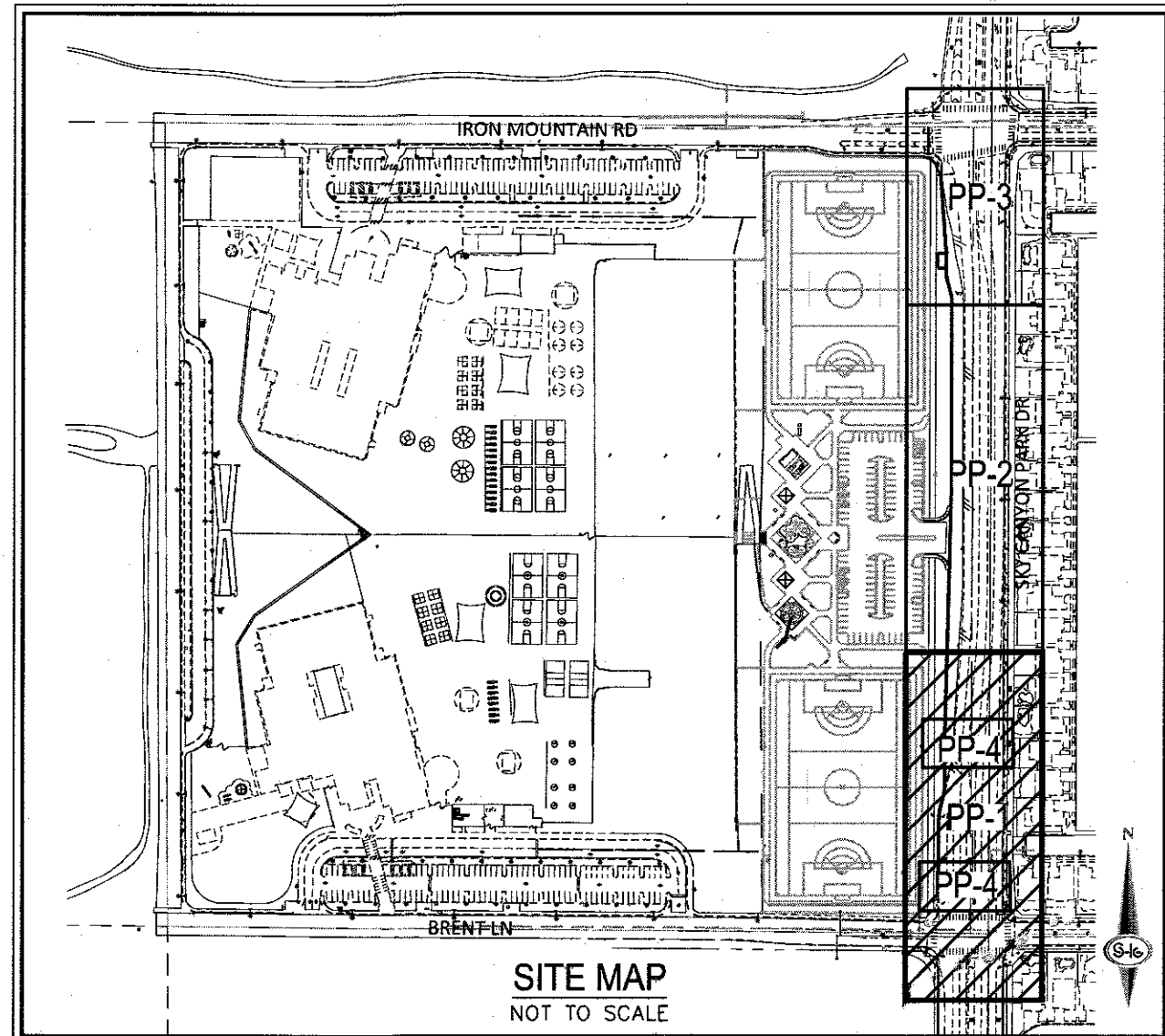




SKYE CANYON PARK DRIVE - PROFILE VIEW



SKYE CANYON PARK DRIVE - PROFILE VIEW



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 GROSS SLOPES FROM EXISTING PAVEMENT SAWCUT LINE TO PROPOSED EDGE OF PAVEMENT OR PROJECTED LINE OF CURB PRIOR TO SUBGRADE PREPARATION AND CONSTRUCTION OF PROPOSED CURB LINE. IF MINIMUM OR MAXIMUM GROSS SLOPES DO NOT MEET AGENCY STANDARDS THE CONTRACTOR SHALL NOTIFY THE ENGINEER.

1. THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT, WAD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY BE DISCHARGED TO, OR ACCUMULATED IN, THE PUBLIC RIGHTS OF WAY OF CLARK COUNTY AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM SEWER SYSTEM.
2. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN CLARK COUNTY CHAPTER 14.4 AND IN THE LAS VEGAS VENTURA CONSTRUCTION SITE EMBODIMENT MANUAL.
3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY; REFER TO NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NWT00000, SECTION III.A.5.
4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, WEATHER, ENTRANCE AND EXIT LOCATIONS, AND ALL BMPs WEEKLY, AND WITHIN 24 HOURS AFTER A RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY TO REFLECT CHANGES. INSPECTIONS MAY APPLY, SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES, REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NWT00000, SECTION III.A.12.
5. ACCUMULATED SEDIMENT IN BMPs SHALL BE REMOVED WITHIN SEVEN DAYS AFTER A STORMWATER RUNOFF EVENT OR PRIOR TO THE NEXT ANTICIPATED STORM EVENT, WHICHEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50 PERCENT OR MORE.

QUANTITIES		PRIVATE	PUBLIC
DRAINAGE			
1.	48" TYPE III STORM DRAIN MANHOLE	EA	2
2.	5.0" TYPE "CM2" DROP INLET	EA	1
3.	10.0" TYPE "CM2" DROP INLET	EA	1
4.	18" RCP CLASS III STORM DRAIN	LF	359
5.	29" X 45" CLASS III HERCP STORM DRAIN	LF	40

GRADING NOTES

1. FINAL GRADES ADJUSTED 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.
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 FACILITIES AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. CONTRACTOR TO PROTECT IN PLACE DURING CONSTRUCTION. ENGINEER'S OWNER SHALL BE NOTIFIED OF PRIOR DAMAGE TO EXISTING FACILITIES PRIOR TO CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR REPAIR/REPLENISH 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-FOUR (24) INCHES IN HEIGHT (MEASURED FROM THE TOP OF THE ADJACENT CURB IF CURB EXIST) WITHIN THE SIGHT VISIBILITY ZONES.

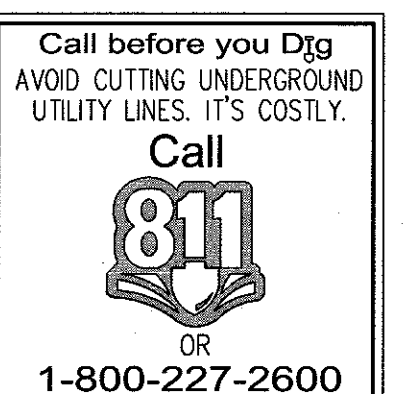
BASIS OF BEARINGS

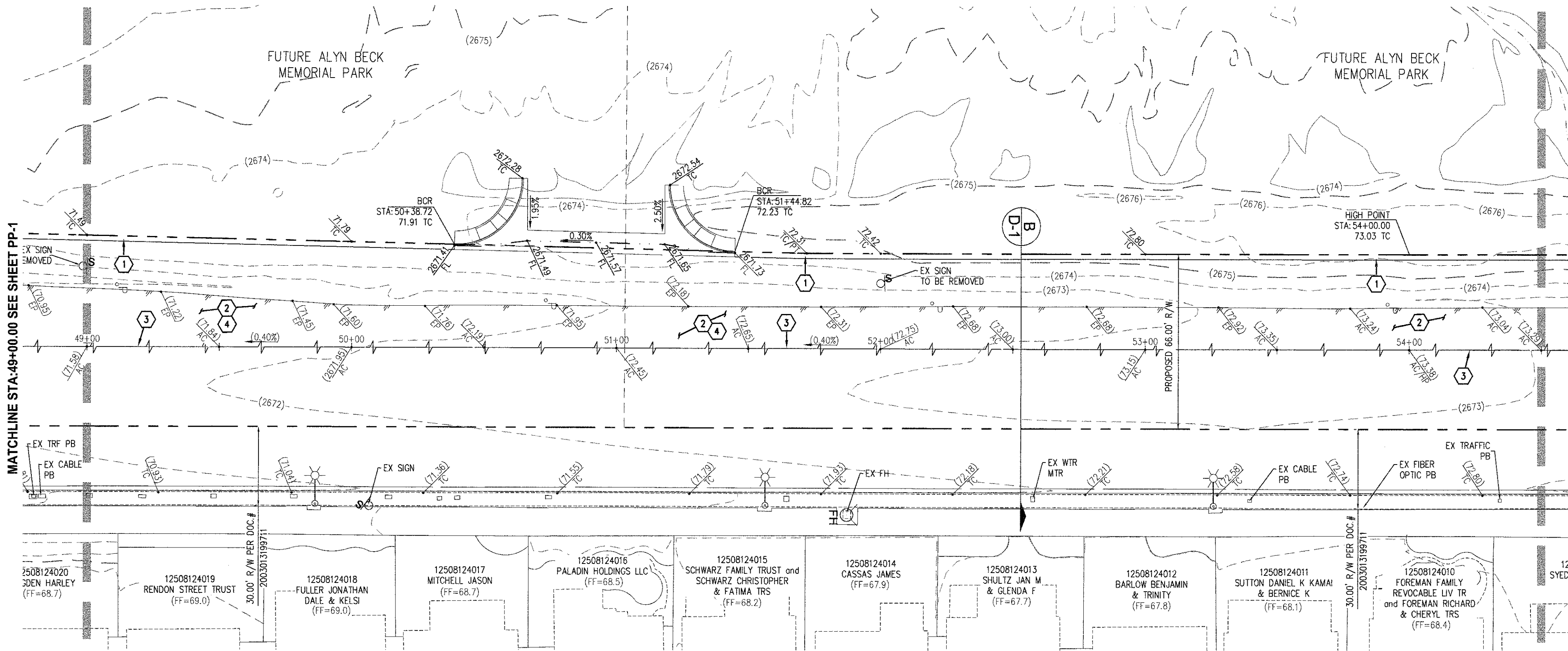
NORTH 89°39'07" WEST, BEING THE BEARING OF THE NORTH LINE OF THE NORTHEAST QUARTER (NE 1/4) OF THE NORTHEAST QUARTER (NE 1/4) OF SECTION 7, TOWNSHIP 19 SOUTH, RANGE 60 EAST, M.D.M., AS SHOWN ON A MAP ON FILE IN THE CLARK COUNTY, NEVADA RECORDER'S OFFICE AS FILE 87, PAGE 9 OF SURVEY.

FLOOD CERTIFICATION

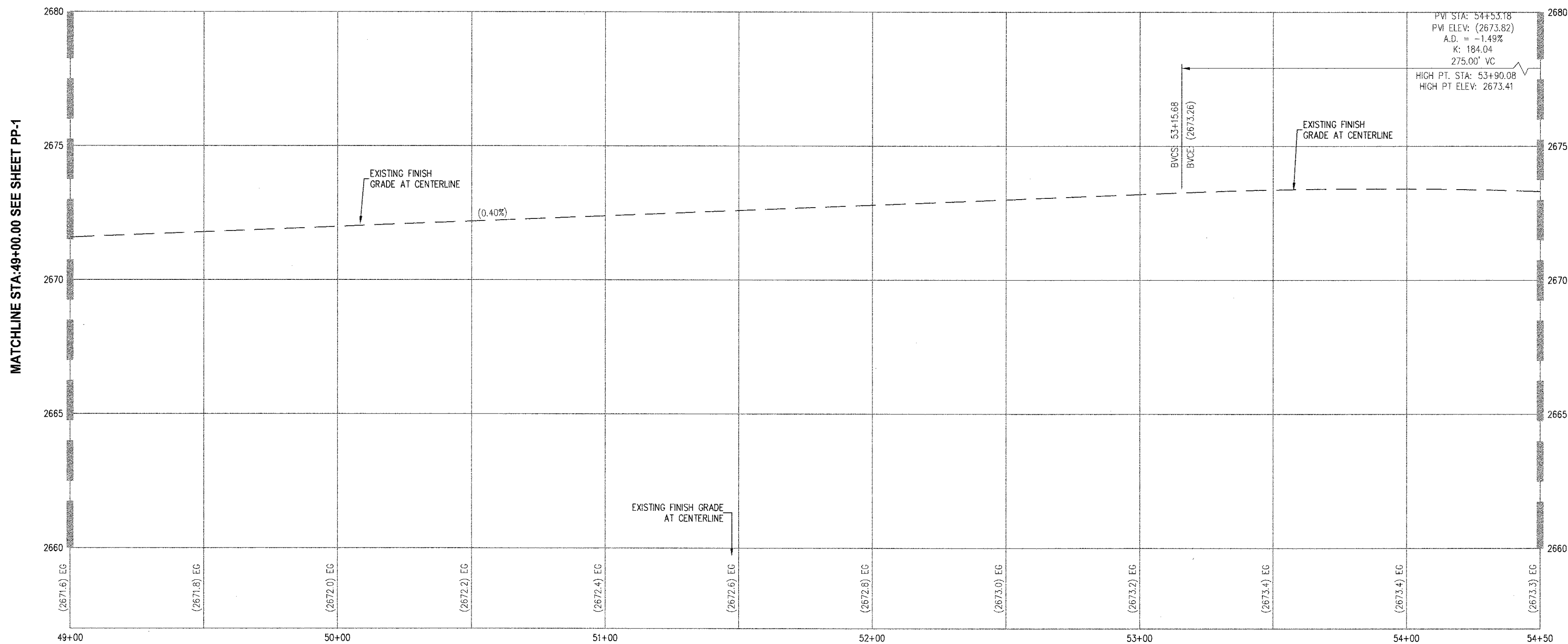
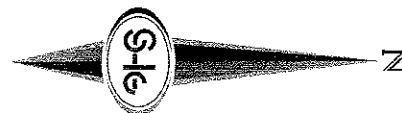
I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED
 TECHNICAL DRAINAGE STUDY DS4951 ON FILE AT CITY OF LAS VEGAS FOR THE
 SUBJECT PROJECT.

 EFRAM BALIZAN, P.E. 22644 DATE _____



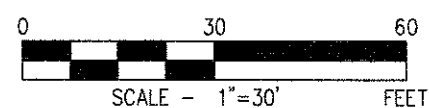


SKYE CANYON PARK DRIVE - PLAN VIEW
(PUBLIC)



SKYE CANYON PARK DRIVE - 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

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

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

LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDELINES
(REQUIRED FOR ALL SITES GREATER THAN 1 ACRE (43,560 SQ.FT.))
1. THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATED IN, THE PUBLIC RIGHTS OF WAY OF CLARK COUNTY AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM SEWER SYSTEM.
2. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN CLARK COUNTY TITLE 24.40 AND IN THE LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDANCE MANUAL.
3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY. REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NV100000, SECTION III.A.5.
4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS, AND ALL BMPs WEEKLY, AND WITHIN 24 HOURS AFTER A RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY, SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NV100000, SECTION III.A.12.
5. ACCUMULATED SEDIMENT IN BMPs SHALL BE REMOVED WITHIN SEVEN DAYS AFTER A STORMWATER RUNOFF EVENT OR PRIOR TO THE NEXT ANTICIPATED STORM EVENT, WHICHEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50 PERCENT OR MORE.

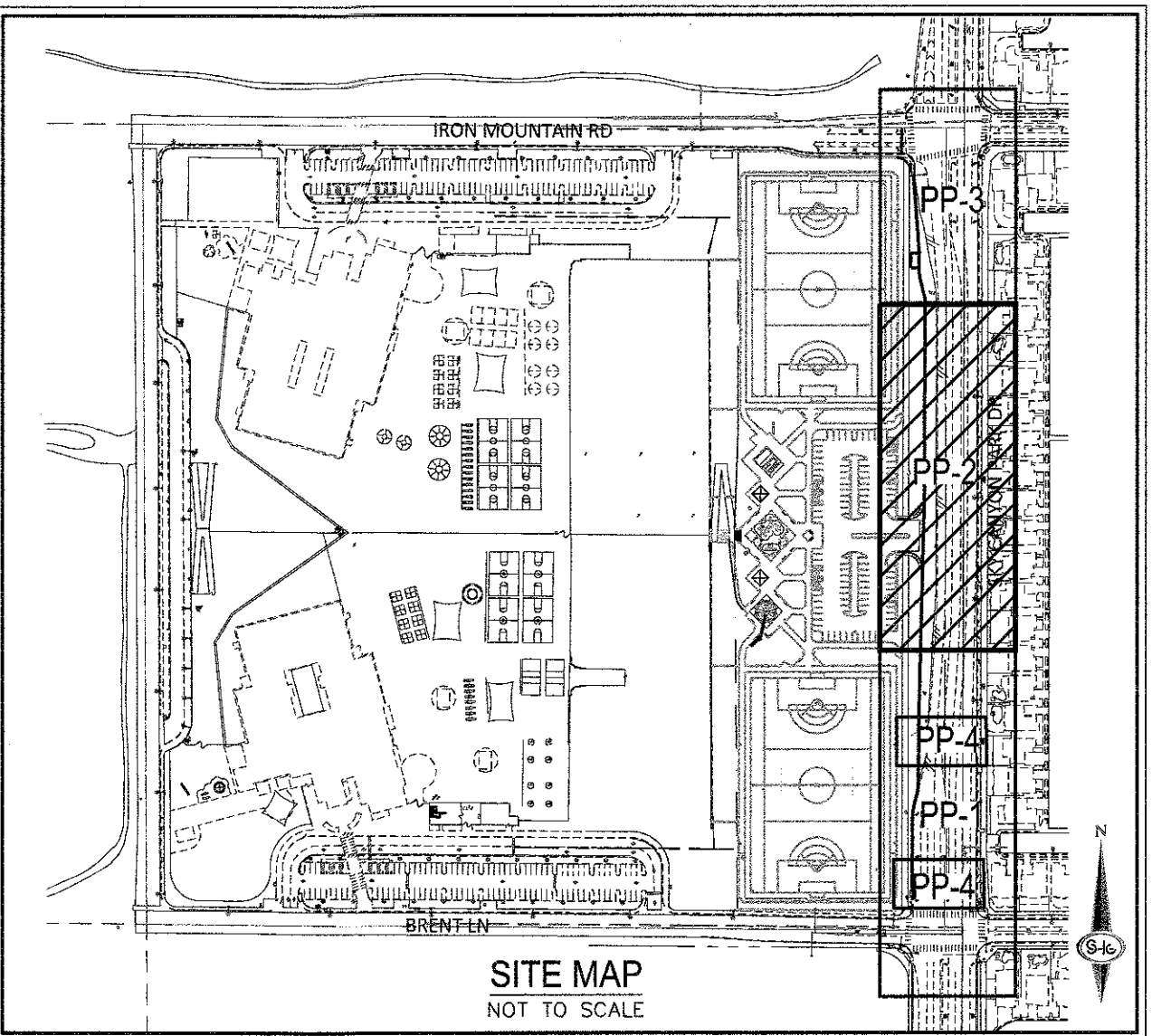
FEMA FLOOD ZONE INFORMATION
THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE "X" (AREA OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN). PER THE FEMA FIRM PANELS 32003C1735E.
EFFECTIVE DATE: SEPTEMBER 27, 2002

QUANTITIES	PRIVATE	PUBLIC
DRAINAGE		
1. 48" TYPE III STORM DRAIN MANHOLE	EA	2
2. 5.0' TYPE "CM2" DROP INLET	EA	1
3. 10.0' TYPE "CM2" DROP INLET	EA	1
4. 18" RCP CLASS III STORM DRAIN	LF	359
5. 28" X 45" CLASS III HERC STORM DRAIN	LF	40

BENCHMARK
RIVET & PLATE IN TOP OF HEADWALL SE CORNER OF IRON MOUNTAIN AND GRAND CANYON. BLV90 7N4 838.8366(m) 2752.08(11)

BASIS OF BEARINGS
NORTH 89°39'07" WEST, BEING THE BEARING OF THE NORTH LINE OF THE NORTHEAST QUARTER (NE 1/4) OF THE NORTHEAST QUARTER (NE 1/4) OF SECTION 7, TOWNSHIP 19 SOUTH, RANGE 60 EAST, M.D.M., AS SHOWN ON A MAP ON FILE IN THE CLARK COUNTY, NEVADA RECORDER'S OFFICE AS FILE 87, PAGE 9 OF SURVEYS.

FLOOD CERTIFICATION
I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED TECHNICAL DRAINAGE STUDY D24951 ON FILE AT CITY OF LAS VEGAS FOR THE SUBJECT PROJECT.
EPRAM BALIZAN, P.E. 22644 DATE



SITE MAP
NOT TO SCALE

GRADING NOTES
1) INSTALL "L" TYPE CURB AND GUTTER PER CCAUSD #216
2) INSTALL 4" ASPHALT PAVEMENT OVER 6" TYPE II AGGREGATE BASE
3) SAWCUT AND MATCH EXISTING IMPROVEMENTS PER CCAUSD NO. 500.1 & 500.2
4) REMOVE AND REPLACE EXISTING PAVEMENT
5) REMOVE EXISTING MANHOLE AND INSTALL 48" TYPE II MANHOLE PER CCAUSD NO. 405
6) INSTALL 48" TYPE I STORM DRAIN MANHOLE
7) INSTALL TYPE CM2 DROP INLET PER CCAUSD NO. 412.1 & 421.
L=10', D=5.1', 3 GRATES
8) REMOVE EXISTING DROP INLET AND REPLACE WITH TYPE CM2 DROP INLET PER CCAUSD 412.1
9) INSTALL TYPE CM2 DROP INLET PER CCAUSD NO. 412.1 & 421. L=5', D=6.64', 1 GRATE
10) STUB AND CAP STORM DRAIN FOR FUTURE USE WITH CONCRETE SPIGOT PLUG PER DETAIL 1 ON SHEET D-1.

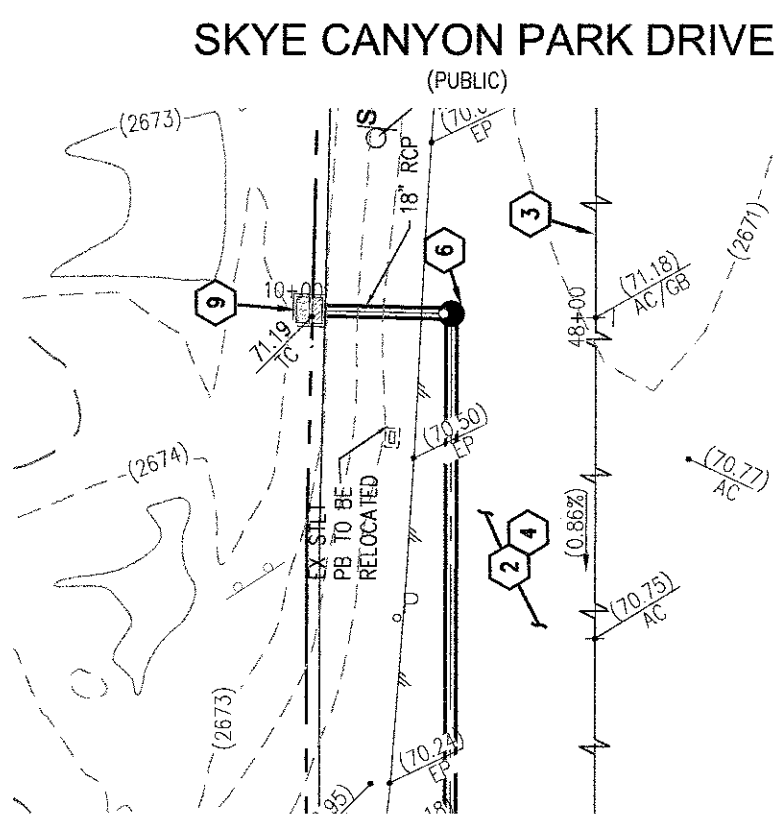
GRADING NOTES
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3. ALL IMPROVEMENTS TO BE PROTECTED FROM EROSION BY SWPPP.
4. MAXIMUM/MINIMUM SLOPES AND MINIMUM STREET SECTIONS NOT TO EXCEED THAT SHOWN ON GEOTECH REPORT.
5. SEE DETAIL SHEET FOR STREET SECTIONS AND DETAILS.
6. ALL PUBLIC AND PRIVATE 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 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.
9. 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.

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

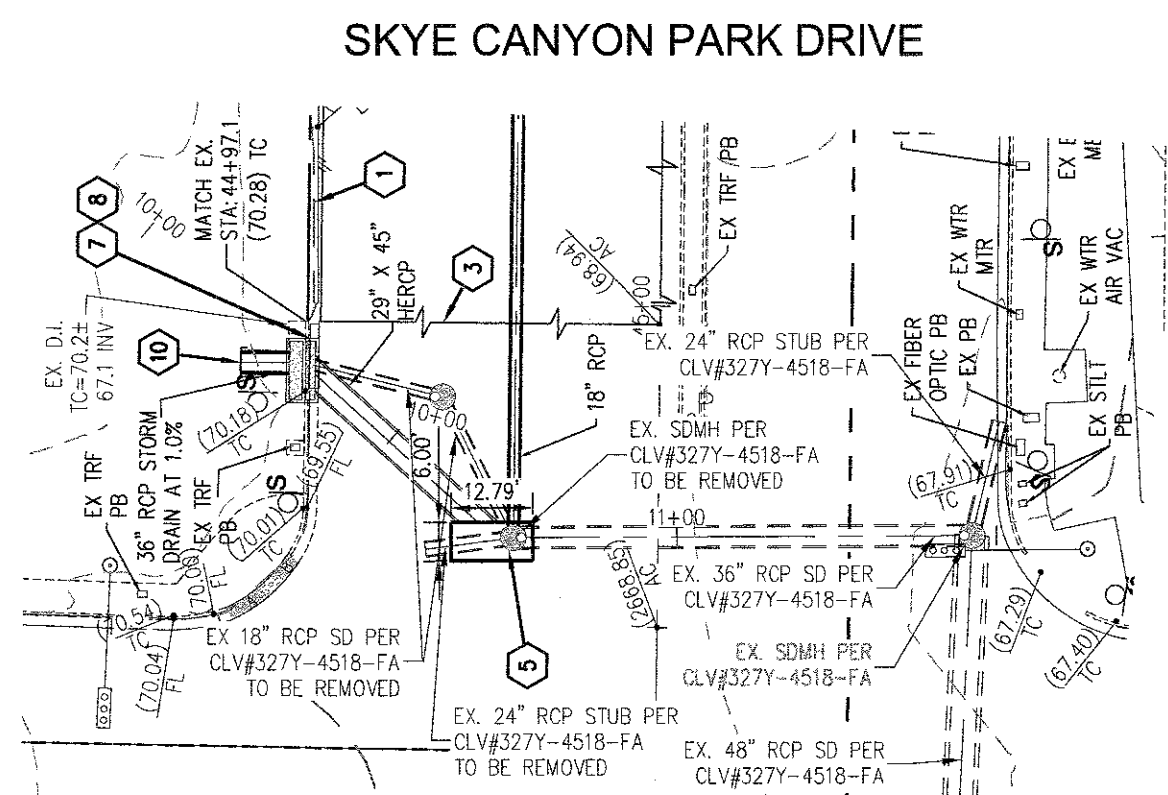
DATE: 5/21/18
DRAFTER: JWP
DESIGNER: EB
CHECKED: EB
PROJECT NO.: OLY1726.000
PP-2
SHEET 5 OF 8

CITY OF LAS VEGAS, NEVADA
NINETY FIVE MANAGEMENT LLC
SKYE CANYON PARK DRIVE IMPROVEMENT PLANS
SKYE CANYON PARK DRIVE PLAN & PROFILE II
STA: 49+00.00 TO 54+50.00

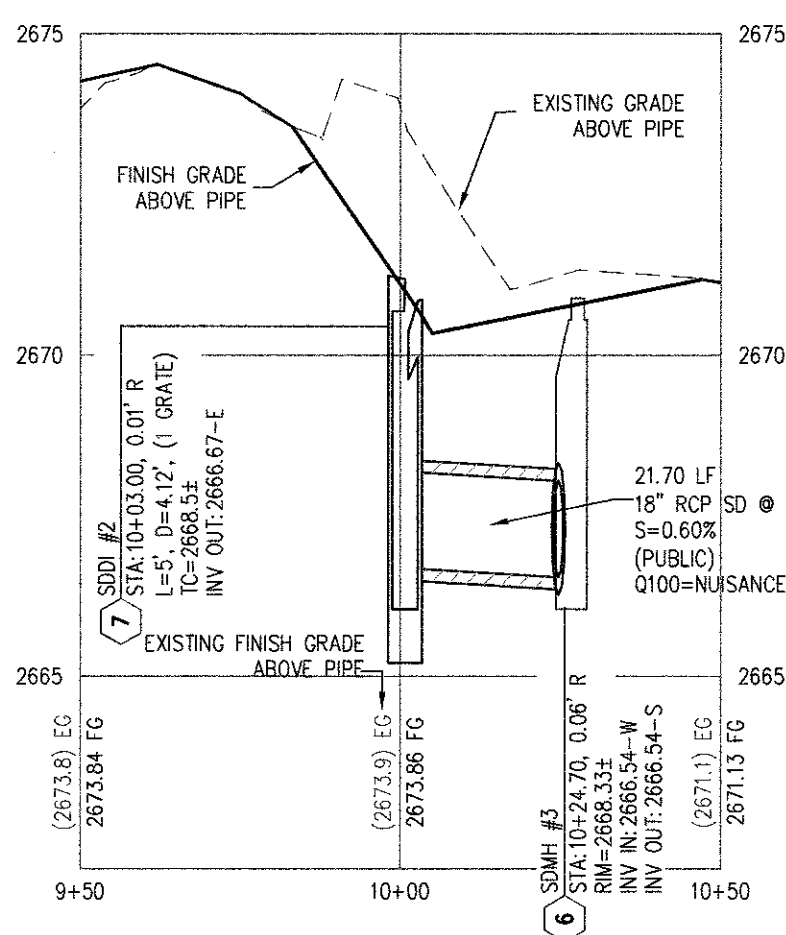
EXP. 12/31/2018
CIVIL
EPRAM BALIZAN
No. 22644



STORM DRAIN - PLAN VIEW
(PUBLIC)

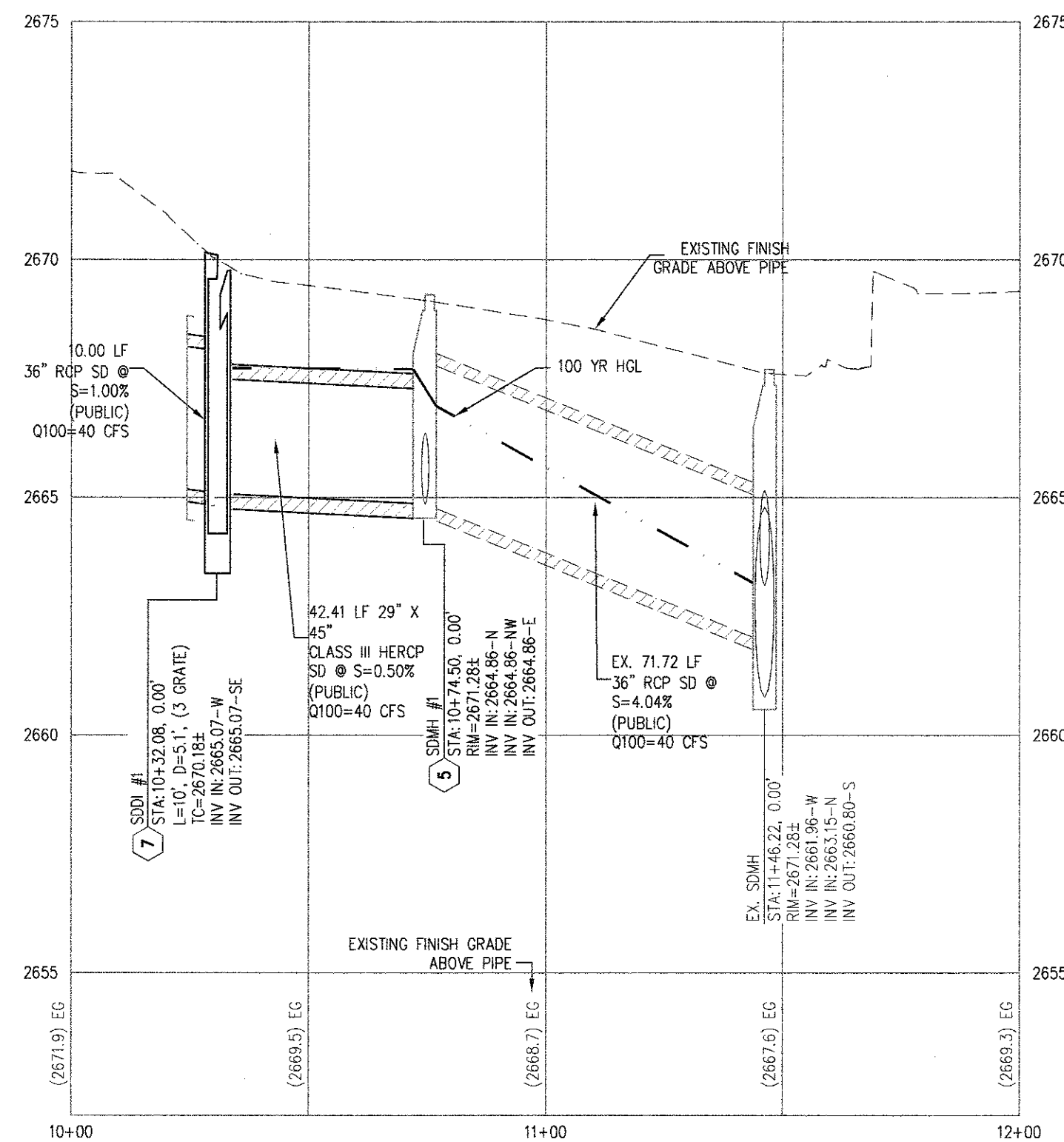


STORM DRAIN - PLAN VIEW
(PUBLIC)



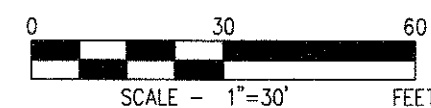
STORM DRAIN - PROFILE VIEW

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



STORM DRAIN - PROFILE VIEW

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



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BENCHMARK

RIVET & PLATE IN TOP OF HEADWALL SE CORNER OF IRON MOUNTAIN AND GRAND CANYON. BLV90 7N4 838.8366(m) 2752.08(ft)

BASIS OF BEARINGS

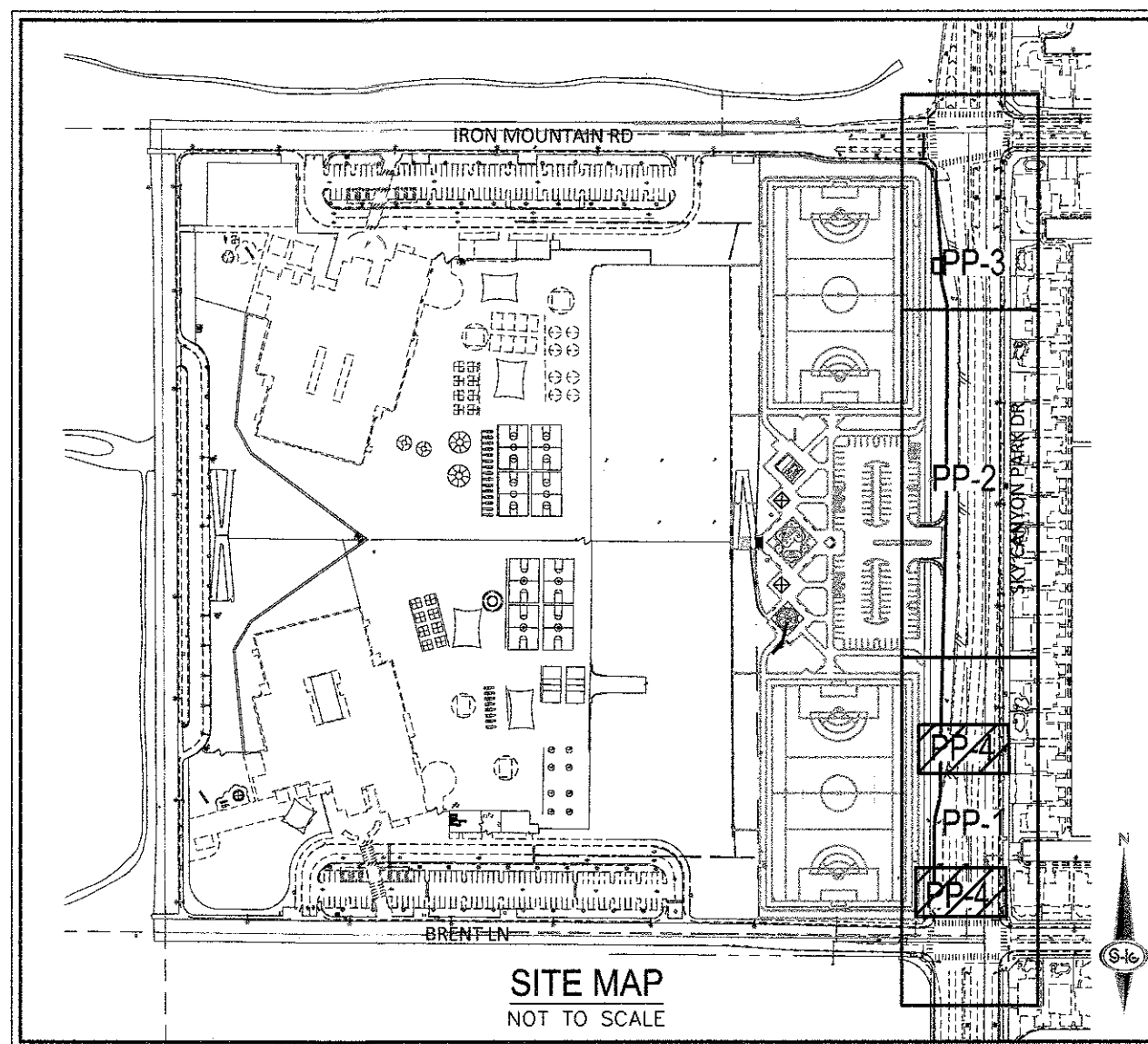
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EPHRAIM BALIZAN, P.E. 22644

DATE



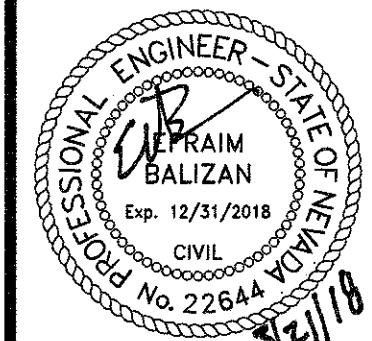
SITE MAP
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PIPE I.D.	CONTROL DIA.	OUTSIDE DIA.
18"Ø	22 1/8"Ø	27"Ø
24"Ø	28 13/16"Ø	35 1/2"Ø
36"Ø	42 3/8"Ø	50 1/4"Ø