

DS #: 4685

APN: # 138-15-410-055

PROJECT: DORAL ACADEMY — FIRE MESA CAMPUS

SUBMITTAL: 2ND

SCANNED BY/DATE: _____

CHECKED BY/DATE: _____





CITY OF LAS VEGAS			DATE:
INTER-OFFICE MEMORANDUM			August 27, 2014
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: Doral Academy – Fire Mesa Campus			COPIES TO: Walker Engineering LLC
Cross Streets:	Fire Mesa Street & Trinity Peak Avenue		CA Las Vegas FMS LLC
File Number:	F:\Depot\DSMemos\DS4685B.doc		Bart Anderson, P.E., DevCo
Parcel Number:	138-15-410-055		CCRFCD
Zoning Action:	SDR-54330 & SUP-54332		
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	7/2/2014	7/16/2014	Not Approved	\$400.00	362316: \$400
2 nd Submittal	8/21/2014	8/27/2014	See Comments Below	\$400.00	367750: \$400
			TOTAL FEES (LDDRS):	\$800.00	----

REMARKS:

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

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

1. **This drainage study is acceptable in concept;** however, *City of Las Vegas* will not formally accept the study until the *Clark County Regional Flood Control District* (CCRFCD) has issued a letter of concurrence. The engineer should contact the CCRFCD to confirm that they have begun their review.

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

ays

T/R/S: T20S/R60E/15
AREA L-15

*** FAX TX REPORT ***

TRANSMISSION OK

JOB NO. 4400
 DESTINATION ADDRESS 7028735346
 PSWD/SUBADDRESS
 DESTINATION ID
 ST. TIME 08/27 13:47
 USAGE T 00' 25
 PGS. 1
 RESULT OK

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM

DATE:

August 27, 2014

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:

Doral Academy – Fire Mesa Campus

COPIES TO:

Walker Engineering LLC

Cross Streets:

Fire Mesa Street & Trinity Peak Avenue

CA Las Vegas FMS LLC

File Number:

F:\Depot\DSMemos\DS4685B.doc

Bart Anderson, P.E., DevCo

Parcel Number:

138-15-410-055

CCRFC

Zoning Action:

SDR-54330 & SUP-54332

FEMA Flood Zone

YES

NO

X

Proposed Storm Drain

YES

NO

X

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
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5765 South Rainbow Boulevard
Suite 101
Las Vegas, Nevada 89118
T: 702.873.5197
F: 702.873.5346
www.walker-eng.com

Rec'd: 8/21/14

WALKER ENGINEERING, LLC

ADDENDUM #1
to the
TECHNICAL DRAINAGE STUDY
for

DS4685

L-15

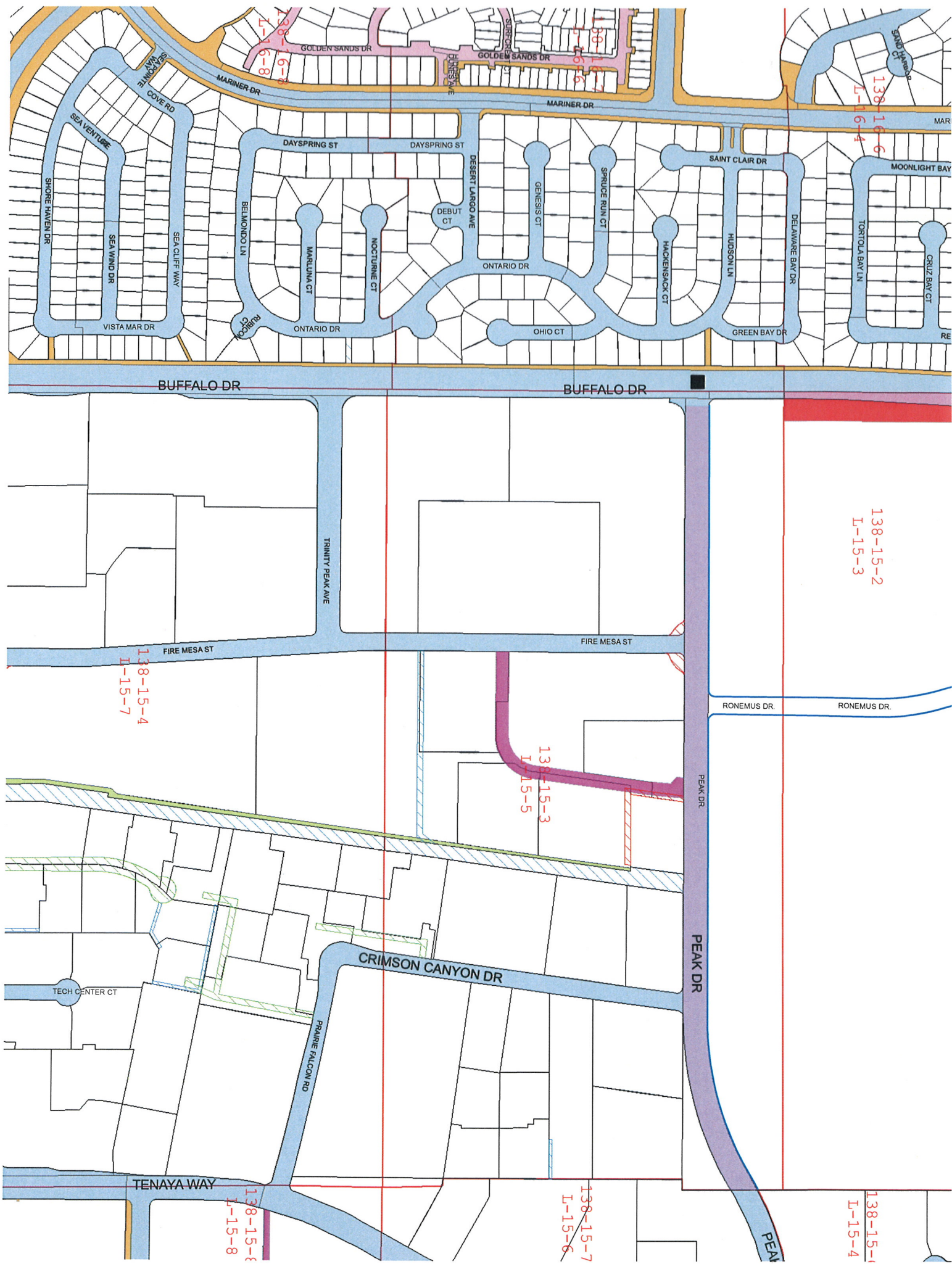
\$400

**DORAL ACADEMY
FIRE MESA CAMPUS
APN: 138-15-410-055
CLV DS#4685**



Prepared for:
CA Las Vegas FMS LLC.
3000 Olympic Blvd., Bldg. 5, Suite 2120
Santa Monica, CA 90404
Tel: 818.522.7300
Fax: 818.522.7301

Date Prepared:
August 20, 2014



138-15-2
L-15-3

138-15-3
L-15-5

138-15-4
L-15-7

138-15-8
L-15-8

138-15-7
L-15-6

138-15-4
L-15-4

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WALKER ENGINEERING, LLC

*ADDENDUM #1
to the
TECHNICAL DRAINAGE STUDY
for*

**DORAL ACADEMY
FIRE MESA CAMPUS
APN: 138-15-410-055
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Prepared for:
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Tel: 818.522.7300
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Date Prepared:
August 20, 2014

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL
DRAINAGE STUDY INFORMATION FORM

Name of Development: DORAL ACADEMY FIRE MESA CAMPUS Date: Aug 20, 2014

Location of Development: a) Descriptive (Cross Streets) North/South: FIRE MESA STREET
East/West: TRINITY PEAK AVENUE

b) Section: 15 Township: 20S Range: 60E

c) APN : 138-15-410-055

Name of Owner: CA Las Vegas FMS LLC

Telephone No.: 818.522.7300 Fax No.: 818.522.7301 E-Mail Address: _____

Address: 3000 Olympic Blvd., Bldg. 5, Suite 2120, Santa Monica, CA 90404

Contact Person-Name: Treasea Wolf, P.E., LEED AP Telephone No.: 702.873.5197

* E-Mail Address: twolf@walker-eng.com Fax No.: 702.873.5346

Firm: WALKER ENGINEERING, LLC

Address: 5765 S. RAINBOW BLVD., SUITE 101 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		GRADING PERMIT

1. Total Owned Land Area: At Site: 8.39 Being Developed/Disturbed: 4.94

2. Is a portion or all of the subject property located in a designated 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

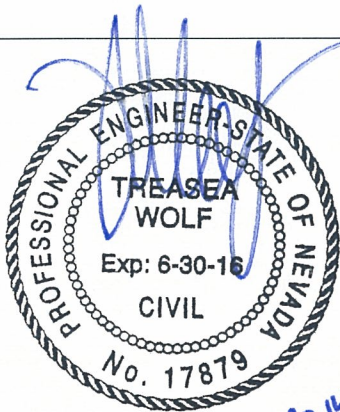
4. Proposed type of development (Residential, Commercial, Etc.): COMMERCIAL

5. Approximate upstream land area which drains to the subject site: NONE

6. Has the site drainage been evaluated in the past? ☒ YES ☐ NO If yes, please identify documentation: TDS FOR LAS VEGAS TECH CENTER PHASE 2, JANUARY 1999, DS#2440

7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: SITE WILL DISCHARGE INTO THE EXISTING CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT MASTER PLANNED FACILITY, BUFFALO CHANNEL, AT THE NORTH-EAST CORNER OF THE PROPOSED DEVELOPMENT.

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



Engineer's Seal

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

*New Required Field

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

Revision	Date
ADD #1	Aug 20, 2014

Local Entity File No. _____

REFERENCE:

STANDARD FORM 1



WALKER ENGINEERING, LLC

August 20, 2014
WE Job No. 1317.00

Via Hand Delivery

Mr. Albert Sung, PE
City of Las Vegas Flood Control
333 Rancho Drive
Las Vegas, NV 89106

RE: Addendum #1 to the Technical Drainage Study for Doral Academy @ Fire Mesa & Trinity Peak (DS 4685)

Dear Albert,

This Letter is being submitted in response to City of Las Vegas comments dated July 16, 2014. A copy of the comment letter is included in **Appendix A**. These comments have been reviewed and are addressed as follows:

Comment 1: Provide a copy of the zoning/planning conditions associated with this site (SDR-54330 & SUP-54332) with the next submittal to verify compliance with conditions. *Flood Control* will not issue conditional approval of the drainage study without the associated zoning/planning conditions (issued by the *City Council*). Any associated conditions of approval that revise the site drainage parameters will require that the drainage study be revised and resubmitted.

Response: Noted. The City Council hearing is scheduled for August 20, 2014 and once we have the final conditions, we will forward a copy to you.

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Suite 101
Las Vegas, Nevada, 89118
Phone: 702.873.5197
Fax: 702.873.5346
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Comment 2: Sites with a grade difference of 2 feet above or below existing are required to have approval from the *City Planning and Development Department*. The engineer must submit copies of the grading plans and detail sheet with a letter justifying the grade difference to the *City Planning Department* (229- 6301). The engineer must provide Planning approval with the next submittal.

Response: The Planning approval letter for the 2' grade difference is included in **Appendix B**.

Comment 3: The site is adjacent to or crosses an existing or proposed *Clark County Regional Flood Control District* (CCRFCD) master planned facility. Therefore, CCRFCD concurrence is required prior to final approval of the drainage study.

Response: Noted. Upon conditional approval from CLV, we will submit the studies to CCRFCD for concurrence.

Comment 4: It appears that the proposed development utilizes only portion of the subject parcel. Address in the next submittal whether there is any plan to subdivide the parcel or it will be remained in one lot and single ownership.

Response: The property will be subdivided, however, it is anticipated that the subdivision will take place after permits are pulled.

Comment 5: The anticipated 100-year flow depth at the south driveway entrance (off of *Trinity Peak Avenue*) is 0.46'. It appears that the proposed hump in the entrance does not provide a minimum of six inches (6") freeboard for onsite protection. Review and revise accordingly in the next submittal.

Response: Per Section HS-1 from original study (included in **Appendix C** of this Addendum for reference), the 100-year depth is 0.30'. The driveway has been humped to provide the six inches (6") of freeboard to protect the site. The FL elevation at the south side of the driveway is **84.79'** and the driveway hump elevation is **85.59'**. The FL elevation at the north side of the driveway is **84.62'** and the driveway hump elevation is **85.42'**.

Comment 6: There is an existing 20'-wide public drainage easement along the northern boundary of the subject site. Identify the easement and label with recorded document number on all pertinent grading plans.

Response: The existing drainage easement has been labeled on the plans. A copy of the recorded easement is included in **Appendix D**.

Comment 7: The engineer proposed to construct a sidewalk drain facilities at the northeast corner of the site which will cut into the existing concrete bench of the regional facility (*Buffalo Channel*). However, this can be avoided with a design composing of a drop inlet and a lateral to tie to an existing storm drain manhole at the northeast corner. This alternative does not impact the existing regional facility at all during construction. Review and address in the next submittal.

Response: The plans have been revised to add a 3'x3' Jensen Drop Inlet at the northeast corner of the site in a sump condition with a proposed 18" RCP that connects to the existing storm drain manhole at the northeast corner of the site. Drop inlet in sump calculation, standard form 6 for the 18" storm drain pipe and associated flowmaster sections can be found in Appendix C for review.

Comment 8: **Construction Note #22** calls for a 4"-PVC storm drain which cannot be found anywhere on the grading plans. Please point that out in the next addendum. Also note that 4" storm drain will get clogged easily and will require maintenance frequently. It is recommended to upsize the pipe or use rectangular drain.

Response: The call out has been revised to state 4" PVC roof drain pipe and it is intended to outlet to grade with a splashblock.

Comment 9: Provide a note on all grading plans: Property Owner is responsible to maintain the best management practices such as but not limited to the removal of accumulated sediment and debris and care of the vegetation.

Response: Note added.

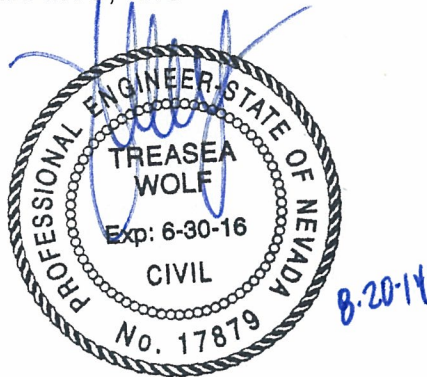
Comment 10: Add a note in all pertinent sheets for the construction of all storm drain drop inlets per a newly adopted USDCCA Drawing No. 421 (*Stormwater Quality Management Stamp and Sign Detail*).

Response: The note has been added.

Mr. Albert Sung, P.E.
August 20, 2014
Page 4 of 4

Please do not hesitate to contact me if you should have any questions or need additional information.

Sincerely,
WALKER ENGINEERING, LLC



Treasea Wolf, P.E.
Vice President



CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM

DATE:

July 16, 2014

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:

Doral Academy - Fire Mesa Campus

COPIES TO:

Walker Engineering LLC

Cross Streets:

Fire Mesa Street & Trinity Peak Avenue

CA Las Vegas FMS LLC

File Number:

F:\Depot\DSMemos\DS4685A.doc

Bart Anderson, P.E., DevCo

Parcel Number:

138-15-410-055

CCRFCD

Zoning Action:

SDR-54330 & SUP-54332

FEMA Flood Zone

YES

NO X

Proposed Storm Drain

YES

NO X

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10. Add a note in all pertinent sheets for the construction of all storm drain drop inlets per a newly adopted USDCCA Drawing No. 421 (*Stormwater Quality Management Stamp and Sign Detail*).

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END OF REMARKS

ays

T/R/S: T20S/R60E/15
AREA L-15

CC 8/20/14

158-15-410-055
PRJ-53932
SDR 54330 (7/8/2014)
PC

WE

WALKER ENGINEERING, LLC

SDR-SUP-54332
C-PB

July 2, 2014
WE Project No. 1317.00

Mr. John Alabado/Ms. Linda Maynard
City of Las Vegas Current Planning
333 Rancho Drive
Las Vegas, Nevada 89106

RE: Approval of site grade difference more than 2'

Dear John/Linda,

This letter is to provide justification for the request by Trinity Peak III LLC and CA Las Vegas FMS LLC for raising the site more than 2' above the existing conditions for the proposed Doral Academy Fire Mesa project. This project is located on the northeast corner (NEC) of Fire Mesa and Trinity Peak. The Assessor's Parcel Number is 138-15-410-055.

The site naturally drains to the east in existing conditions towards the existing Clark County Regional Flood Control Facility, Buffalo Channel. The elevation change from the southwest corner toward the northeast corner of the project property is 16 feet. However, with the site layout, the proposed school is located in the middle of the site and in order to provide the minimum and maximum slopes for ADA access from the public street to the building, the building finished floor elevation needs to be raised a maximum of 5' above the existing elevations.

The site drains to the east in existing conditions and with the site layout and maintaining the existing drainage pattern, the project site is higher than the existing conditions. The drainage study has been submitted and the reference number is DS 4685.

We look forward to working with City of Las Vegas on this and moving forward with the development in this area. Please do not hesitate to contact me if you should have any questions.

Sincerely,
WALKER ENGINEERING, LLC

Treasea Wolf
Treasea Wolf, PE, LEED AP
Vice President

PLANS APPROVED
PLANNING
Building & Safety Dept.
City of Las Vegas, Nevada
GRADE DIFFERENCE ONLY
LHM JUL 17 2014

Compliance to the minimum requirements of
LVMC Title 19 - a. (b) (1) Master Plan
development standards and/or Conditions of
Approval. Make No Change Without Approval.
Plan is Not a Permit to Violate Any Ordinance.

5765 South Rainbow Blvd.
Suite 101
Las Vegas, Nevada, 89118
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Fax: 702.873.5346
www.walker-eng.com

•

Cross Section for FIRE MESA - HS-1 100YR - EAST HALF (COMBINED)

Project Description

Friction Method

Manning Formula

Solve For

Normal Depth

Input Data

Channel Slope

0.00693 ft/ft

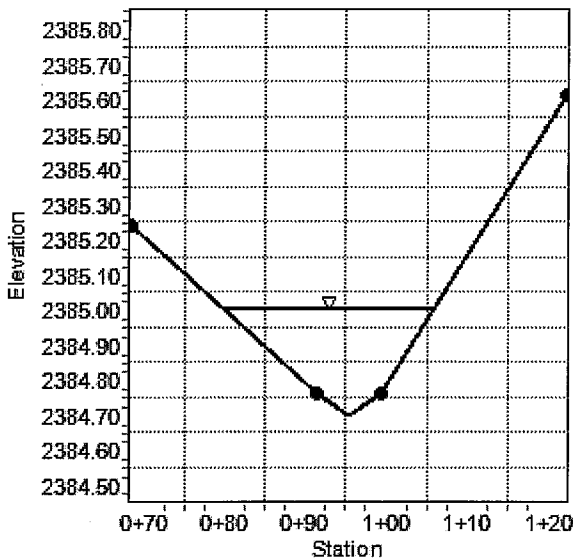
Normal Depth

0.30 ft

Discharge

10.00 ft³/s

Cross Section Image



$$FL @ SOUTH SIDE = 84.79'$$

$$FL + WSE = 85.09'$$

$$Dwy Hump = 85.59'$$

$$Dwy Hump - (FL + WSE) = 6'' = 6'' \underline{\underline{OK}}$$

$$FL @ NORTH SIDE = 84.62'$$

$$FL + WSE = 84.92'$$

$$Dwy Hump = 85.42'$$

$$Dwy Hump - (FL + WSE) = 6'' = 6'' \underline{\underline{OK}}$$

Worksheet for FIRE MESA - HS-1 100YR - EAST HALF (COMBINED)

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.00693 ft/ft
Discharge 10.00 ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+68.26	2385.24
0+91.41	2384.76
0+95.41	2384.70
0+99.41	2384.76
1+22.18	2385.61

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+68.26, 2385.24)	(0+91.41, 2384.76)	0.017
(0+91.41, 2384.76)	(0+99.41, 2384.76)	0.013
(0+99.41, 2384.76)	(1+22.18, 2385.61)	0.017

Options

Current Roughness Weighted Method Pavlovskii's Method
Open Channel Weighting Method Pavlovskii's Method
Closed Channel Weighting Method Pavlovskii's Method

Results

Normal Depth 0.30 ft
Elevation Range 2384.70 to 2385.61 ft
Flow Area 4.27 ft²
Wetted Perimeter 25.87 ft
Hydraulic Radius 0.17 ft
Top Width 25.86 ft

Worksheet for FIRE MESA - HS-1 100YR - EAST HALF (COMBINED)

Results

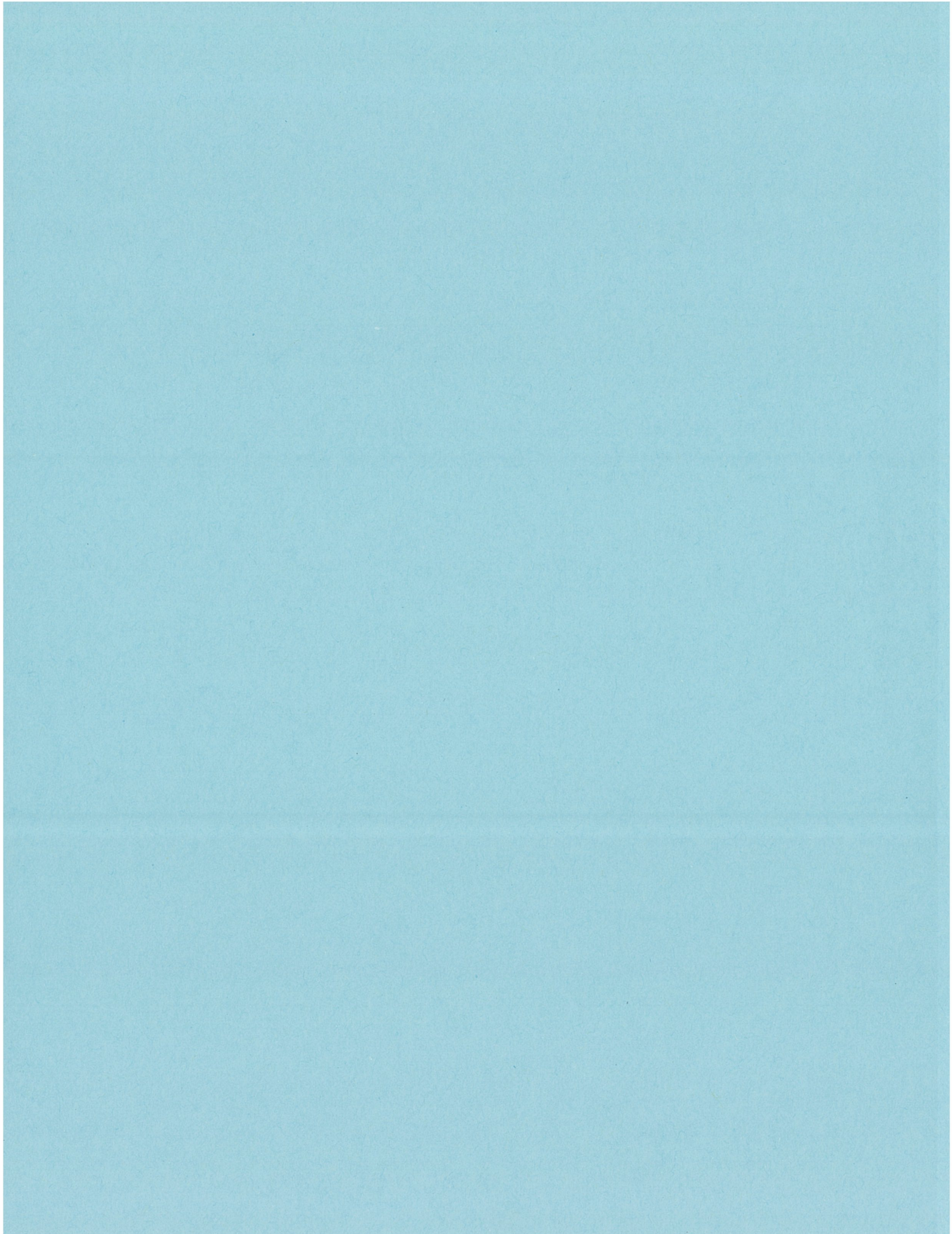
Normal Depth	0.30	ft
Critical Depth	0.30	ft
Critical Slope	0.00668	ft/ft
Velocity	2.34	ft/s
Velocity Head	0.09	ft
Specific Energy	0.38	ft
Froude Number	1.02	
Flow Type	Supercritical	

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	0.30	ft
Channel Slope	0.00693	ft/ft
Critical Slope	0.00668	ft/ft



Cross Section for 3x3 DI: E-W SECTION

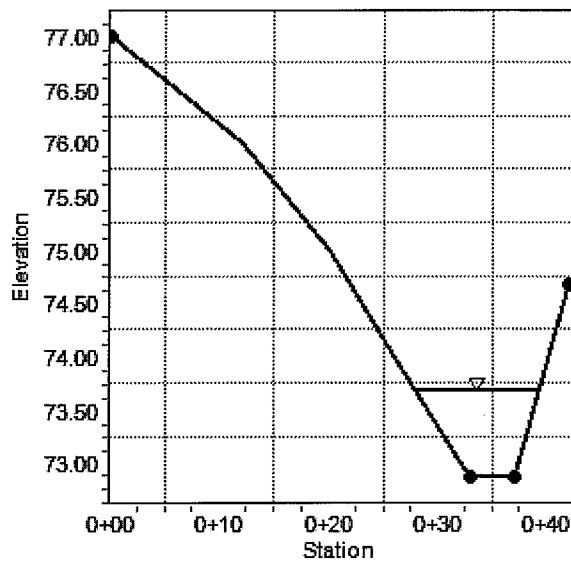
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.00400 ft/ft
Normal Depth 0.80 ft ← USED FOR DI IN SUMP CALC.
Discharge 18.00 ft³/s

Cross Section Image



$$\begin{aligned} WSE &= 73.67 \\ TW &= 74.67 \\ TW - WSE &= 1' > 6'' \text{ OK} \end{aligned}$$

TW ADJ. TO TRAIL NEXT
TO BUFFALO CHANNEL

Worksheet for 3x3 DI: E-W SECTION

Results

Wetted Perimeter	11.49	ft
Hydraulic Radius	0.54	ft
Top Width	11.28	ft
Normal Depth	0.80	ft
Critical Depth	0.66	ft
Critical Slope	0.00896	ft/ft
Velocity	2.89	ft/s
Velocity Head	0.13	ft
Specific Energy	0.93	ft
Froude Number	0.69	
Flow Type	Subcritical	

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	0.80	ft
Critical Depth	0.66	ft
Channel Slope	0.00400	ft/ft
Critical Slope	0.00896	ft/ft

Cross Section for 3x3 DI: N-S SECTION

Project Description

Friction Method

Manning Formula

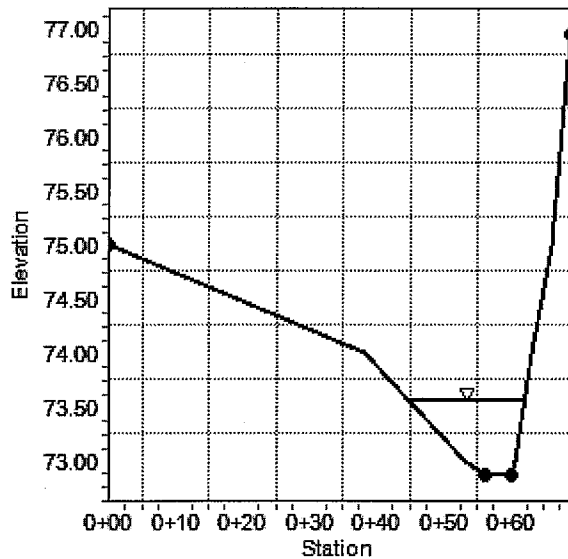
Solve For

Normal Depth

Input Data

Channel Slope	0.00400	ft/ft
Normal Depth	0.68	ft
Discharge	18.00	ft ³ /s

Cross Section Image



FG @ P/L

WSE = 73.55

FG @ P/L = 76.94

FG @ P/L - WSE = 3.39' > 6" OK

Worksheet for 3x3 DI: N-S SECTION

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.00400 ft/ft
Discharge 18.00 ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	75.00
0+38.00	74.00
0+53.00	73.00
0+56.00	72.87
0+60.00	72.87
0+60.50	73.00
0+63.00	74.00
0+66.00	75.00
0+68.50	76.94

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 75.00)	(0+56.00, 72.87)	0.025
(0+56.00, 72.87)	(0+60.00, 72.87)	0.013
(0+60.00, 72.87)	(0+68.50, 76.94)	0.025

Options

Current Roughness Weighting Method Pavlovskii's Method
Open Channel Weighting Method Pavlovskii's Method
Closed Channel Weighting Method Pavlovskii's Method

Results

Normal Depth 0.68 ft
Elevation Range 72.87 to 76.94 ft

Worksheet for 3x3 DI: N-S SECTION

Results

Flow Area	7.58	ft ²
Wetted Perimeter	17.33	ft
Hydraulic Radius	0.44	ft
Top Width	17.19	ft
Normal Depth	0.68	ft
Critical Depth	0.54	ft
Critical Slope	0.01075	ft/ft
Velocity	2.37	ft/s
Velocity Head	0.09	ft
Specific Energy	0.77	ft
Froude Number	0.63	
Flow Type	Subcritical	

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	0.68	ft
Critical Depth	0.54	ft
Channel Slope	0.00400	ft/ft
Critical Slope	0.01075	ft/ft

$$T_G = 72.87$$

Cross Section for 18"RCP

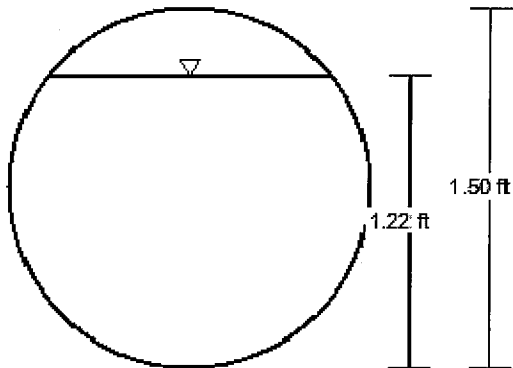
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.03000	ft/ft
Normal Depth	1.22	ft
Diameter	1.50	ft
Discharge	18.00	ft ³ /s

Cross Section Image



V: 1
H: 1

Worksheet for 18"RCP

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.03000	ft/ft
Diameter	1.50	ft
Discharge	18.00	ft³/s

Results

Normal Depth	1.22	ft
Flow Area	1.53	ft²
Wetted Perimeter	3.36	ft
Hydraulic Radius	0.46	ft
Top Width	1.18	ft
Critical Depth	1.45	ft
Percent Full	81.0	%
Critical Slope	0.02577	ft/ft
Velocity	11.74	ft/s
Velocity Head	2.14	ft
Specific Energy	3.36	ft
Froude Number	1.81	
Maximum Discharge	19.57	ft³/s
Discharge Full	18.19	ft³/s
Slope Full	0.02937	ft/ft
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
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	81.02	%
Downstream Velocity	Infinity	ft/s

Worksheet for 18"RCP

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	1.22	ft
Critical Depth	1.45	ft
Channel Slope	0.03000	ft/ft
Critical Slope	0.02577	ft/ft

20030529:01730

→ See Doc No 20030529:01731

COPY

L 15

**RIGHT OF WAY GRANT
FOR DRAINAGE PURPOSES**

I (WE) LB LVTC II, LLC, a Delaware limited liability company and
CROSSROADS AT SUNSET LIMITED LIABILITY COMPANY, a Nevada limited liability
company, each as their interests appear of record,

the undersigned, for and in consideration of the sum of One Dollar (\$1.00) and other good and valuable consideration, the receipt of which is hereby acknowledged, do hereby grant and convey to the CITY OF LAS VEGAS, a Municipal Corporation of the County of Clark, State of Nevada, its successors and assigns, all rights necessary for the construction, operation, repair and renewal of surface and subsurface drainage channels, pipes, conduits and attached appurtenances; upon, over, under and across the parcel of land hereinafter described, and the right of ingress and egress to and over said parcel. Said parcel of land being described as follows:

**FOR COMPLETE LEGAL DESCRIPTION, SEE EXHIBIT "B" ATTACHED HERETO
AND BY THIS REFERENCE MADE A PART HEREOF**

APN: 138-15-310-025 & 138-15-410-030

For: Drainage easement located North of Smoke Ranch Rd, East of Fire Mesa St.

The grantor(s) retain(s) the right to fence, to plant, to maintain and to use said parcel for _____ own purpose so long as such use is consistent with standard safety factors and does not interfere with the rights herein granted.

Together with all and singular the tenements, hereditaments and appurtenances thereunto belonging or in anywise appertaining.

Witness _____ hand(s) _____ this _____ day of _____, 20____.

LB LVTC II, LLCCROSSROADS AT SUNSET LLCCARMINE VISIONETITLETHOMAS A. THOMASTITLESTATE OF NevadaCOUNTY OF Clark

) ss.

DOCUMENT IS BEING SIGNED IN COUNTERPART

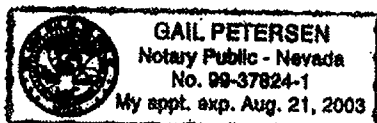
On May 8, 2003 personally appeared before me, a Notary Public _____

(Date)

(Person(s) appearing before Notary)

Thomas A. Thomas personally known (or proved) to me to be the person

whose name is subscribed to the above instrument who acknowledged that he executed the above instrument.



Gail Petersen
(Notary Public Signature)

05/10/03 1:55 PM

05/10/03 1:55 PM

COPY

EXHIBIT "B"

A.P.N. 138-15-310-025 & -410-030

20-FOOT DRAINAGE EASEMENT IN LOT 1, BLOCK 5

RESUBDIVISION OF A PORTION OF THE LAS VEGAS TECHNOLOGY CENTER

That portion of the Southwest Quarter (SW 1/4) of Section 15, Township 20 South, Range 60 East, M.D.M., in the City of Las Vegas, County of Clark, State of Nevada, being a portion of Lot 1 in Block 5 of the RESUBDIVISION OF THE LAS VEGAS TECHNOLOGY CENTER, A COMMERCIAL SUBDIVISION, as filed September 4, 1990 in Book 47 of Plats, Page 35, and as a portion of said Lot 1 in Block 5 was remapped by the RECORD OF SURVEY, filed March 11, 2003 in File 129 of Surveys, Page 2, both of Clark County, Nevada Records, described as:

A 20.00-foot wide strip of land, the sidelines of said strip of land lying 10.00 feet on each side of the following described centerline:

COMMENCING at the northeast corner of Lot 1 in Block 5 of said RESUBDIVISION OF THE LAS VEGAS TECHNOLOGY CENTER, being the northwest corner of the DRAINAGE RIGHT OF WAY (also known as BUFFALO CHANNEL) as dedicated by said RESUBDIVISION OF THE LAS VEGAS TECHNOLOGY CENTER; thence along the easterly boundary line of said Lot 1 in Block 5 and along the westerly boundary line of said DRAINAGE RIGHT OF WAY, the following three (3) courses:

- 1) thence South 08°00'03" West a distance of 180.00 feet;
- 2) thence South 81°59'57" East a distance of 15.00 feet
- 3) thence South 08°00'03" West a distance of 685.98 feet to the POINT OF BEGINNING of the centerline of said 20.00-foot wide strip of land;

thence departing said westerly boundary line, South 37°59'59" West a distance of 20.00 feet to the easterly boundary line of that parcel of land shown as AREA E-L (PARCEL ONE [1]) on said File 129 of Surveys, Page 2; thence continuing South 37°59'59" West a distance of 15.50 feet; thence parallel with the north line of said Lot 1 in Block 5,

COPY

EXHIBIT "B"
(CONCLUDED)

A.P.N. 138-15-310-025 & -410-030
20-FOOT DRAINAGE EASEMENT IN LOT 1, BLOCK 5
RESUBDIVISION OF A PORTION OF THE LAS VEGAS TECHNOLOGY CENTER

North 89°49'44" West a distance of 621.92 feet to the POINT OF TERMINATION of said centerline in the easterly right-of-way line of FIRE MESA STREET (also known as FIRE MESA LANE) as dedicated to the CITY OF LAS VEGAS by GRANT DEED, recorded July 30, 2001 in Book 20010730 as Instrument Number 01360 of Clark County, Nevada Records, said easterly right-of-way line being the west line of AREA E-L as shown on said File 129 of Surveys, Page 2.

The sidelines of said 20.00-foot wide strip of land shall be prolonged or shortened, such that, said sidelines begin in the westerly boundary line of said DRAINAGE RIGHT OF WAY and terminate in the easterly right-of-way line of said FIRE MESA STREET.

The above-described easement contains an area of 13,148 square feet or 0.302 acres, more or less.

The Basis of Bearings of the above legal description is South 89°49'44" East, being the north line of Lot 1 in Block 5, as shown on the plat of the RESUBDIVISION OF THE LAS VEGAS TECHNOLOGY CENTER, A COMMERCIAL SUBDIVISION, as filed September 4, 1990 in Book 47 of Plats, Page 35 of Clark County, Nevada Records. All other record sources cited hereinabove, have been rotated and adjusted as necessary, to said Book 47 of Plats, Page 35, datum.

Scripts:

Michael Barrett, SEA, TTG
City of Las Vegas
731 South Fourth Street
Las Vegas, Nevada
89101

ex030504.doc

WHEN RECORDED MAIL & SEND TAX STATEMENTS TO:

CITY OF LAS VEGAS
CITY CLERK
400 STEWART AVENUE
LAS VEGAS, NEVADA 89101

CLARK COUNTY, NEVADA
FRANCES DEANE, RECORDER
RECORDED AT REQUEST OF: LAS VEGAS CITY

05-29-2003 11:21 AEA PAGE COUNT: 3
BOOK/INSTR: 20030529-01730 FEE: .00
PERMIT RPTT: .00

RECEIPT/CONF COPY-HAS NOT BEEN COMPARED TO THE ORIG

→ See Doc. No. 20030529:01730

COPY

**RIGHT OF WAY GRANT
FOR DRAINAGE PURPOSES**

I (WE) LB LVTC II, LLC, a Delaware limited liability company and
CROSSROADS AT SUNSET LIMITED LIABILITY COMPANY, a Nevada limited liability
company, each as their interests appear of record.

the undersigned, for and in consideration of the sum of One Dollar (\$1.00) and other good and valuable consideration, the receipt of which is hereby acknowledged, do hereby grant and convey to the CITY OF LAS VEGAS, a Municipal Corporation of the County of Clark, State of Nevada, its successors and assigns, all rights necessary for the construction, operation, repair and renewal of surface and subsurface drainage channels, pipes, conduits and attached appurtenances; upon, over, under and across the parcel of land hereinafter described, and the right of ingress and egress to and over said parcel. Said parcel of land being described as follows:

**FOR COMPLETE LEGAL DESCRIPTION, SEE EXHIBIT "B" ATTACHED HERETO
AND BY THIS REFERENCE MADE A PART HEREOF**

APN: 138-15-310-025 & 138-15-410-030

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The grantor(s) retain(s) the right to fence, to plant, to maintain and to use said parcel for _____ own purpose so long as such use is consistent with standard safety factors and does not interfere with the rights herein granted.

Together with all and singular the tenements, hereditaments and appurtenances thereunto belonging or in anywise appertaining.

Witness _____ hand(s) _____ this 12th day of May, 202003

LB LVTC II, LLC

CROSSROADS AT SUNSET LLC

CARMINE VISIONE, Authorized TITLE

THOMAS A. THOMAS TITLE

STATE OF New York

) ss.

DOCUMENT IS BEING SIGNED IN COUNTERPART

COUNTY OF New York

On May 12, 2003 personally appeared before me, a Notary Public _____

(Date)

(Person(s) appearing before Notary)

Carmine A. Visione

personally known (or proved) to me to be the person

whose name is subscribed to the above instrument who acknowledged that he executed the above instrument.

LAUREN R. SCHMAUCH
NOTARY PUBLIC, State of New York
No. 0180031836
Qualified in Queens County
Commission Expires 06/15/2006

Lauren R. Schmauch
(Notary Public Signature)

All. out of 7-15-2003 ALD Power 675 6/2/03 BMD

COPY

EXHIBIT "B"

A.P.N. 138-15-310-025 & -410-030

20-FOOT DRAINAGE EASEMENT IN LOT 1, BLOCK 5

RESUBDIVISION OF A PORTION OF THE LAS VEGAS TECHNOLOGY CENTER

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- 3) thence South 08°00'03" West a distance of 685.98 feet to the POINT OF BEGINNING of the centerline of said 20.00-foot wide strip of land;

thence departing said westerly boundary line, South 37°59'59" West a distance of 20.00 feet to the easterly boundary line of that parcel of land shown as AREA E-1 (PARCEL ONE [1]) on said File 129 of Surveys, Page 2; thence continuing South 37°59'59" West a distance of 15.50 feet; thence parallel with the north line of said Lot 1 in Block 5,

COPY

**EXHIBIT "B"
(CONCLUDED)**

**A.P.N. 138-15-310-025 & -410-030
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Scriptsit:
Michael Barrett, SEA, TTG
City of Las Vegas
731 South Fourth Street
Las Vegas, Nevada
89101

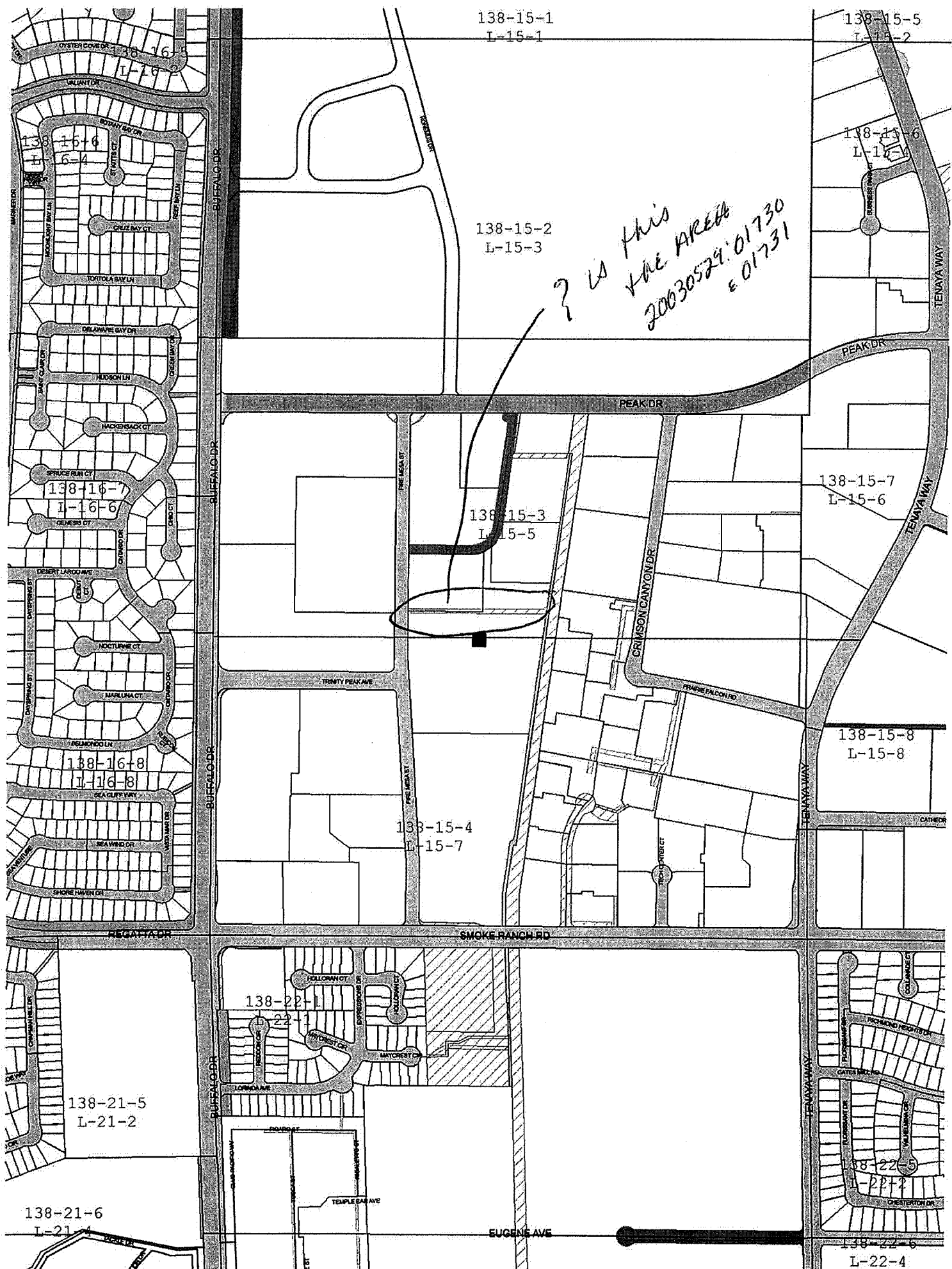
ex030504.doc WHEN RECORDED MAIL & SEND TAX STATEMENTS TO:
CITY OF LAS VEGAS
CITY CLERK
400 STEWART AVENUE
LAS VEGAS, NEVADA 89101

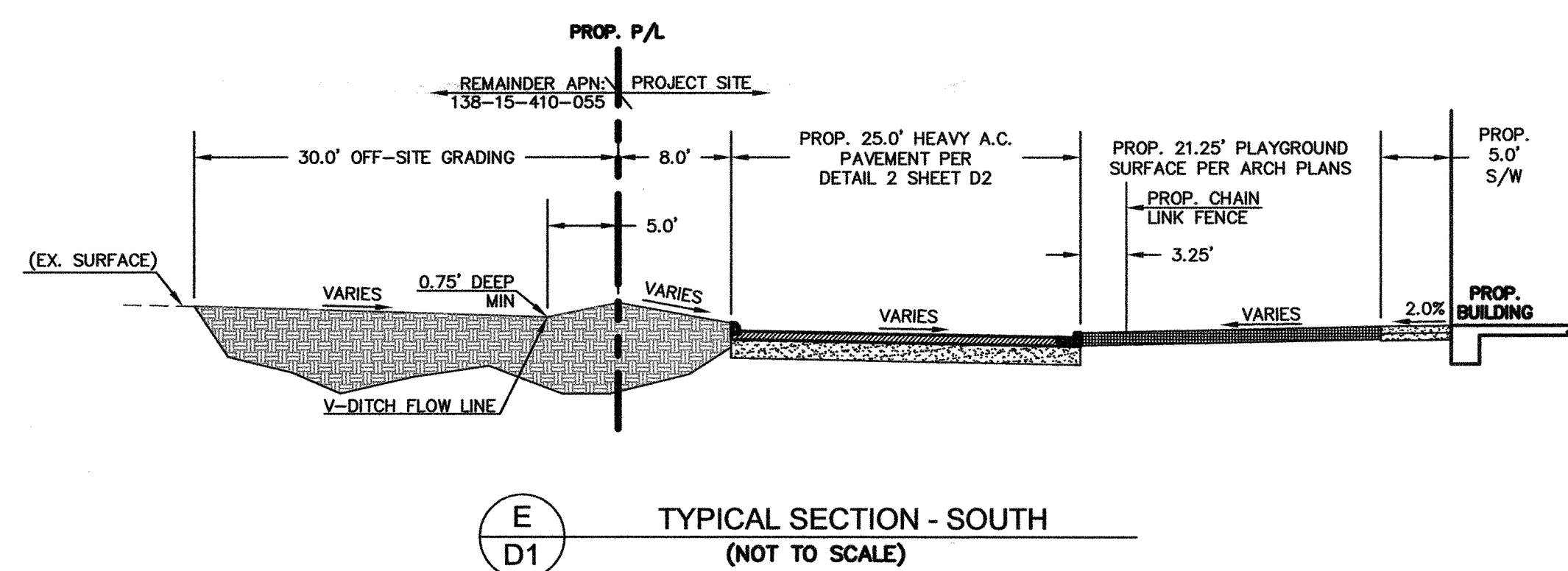
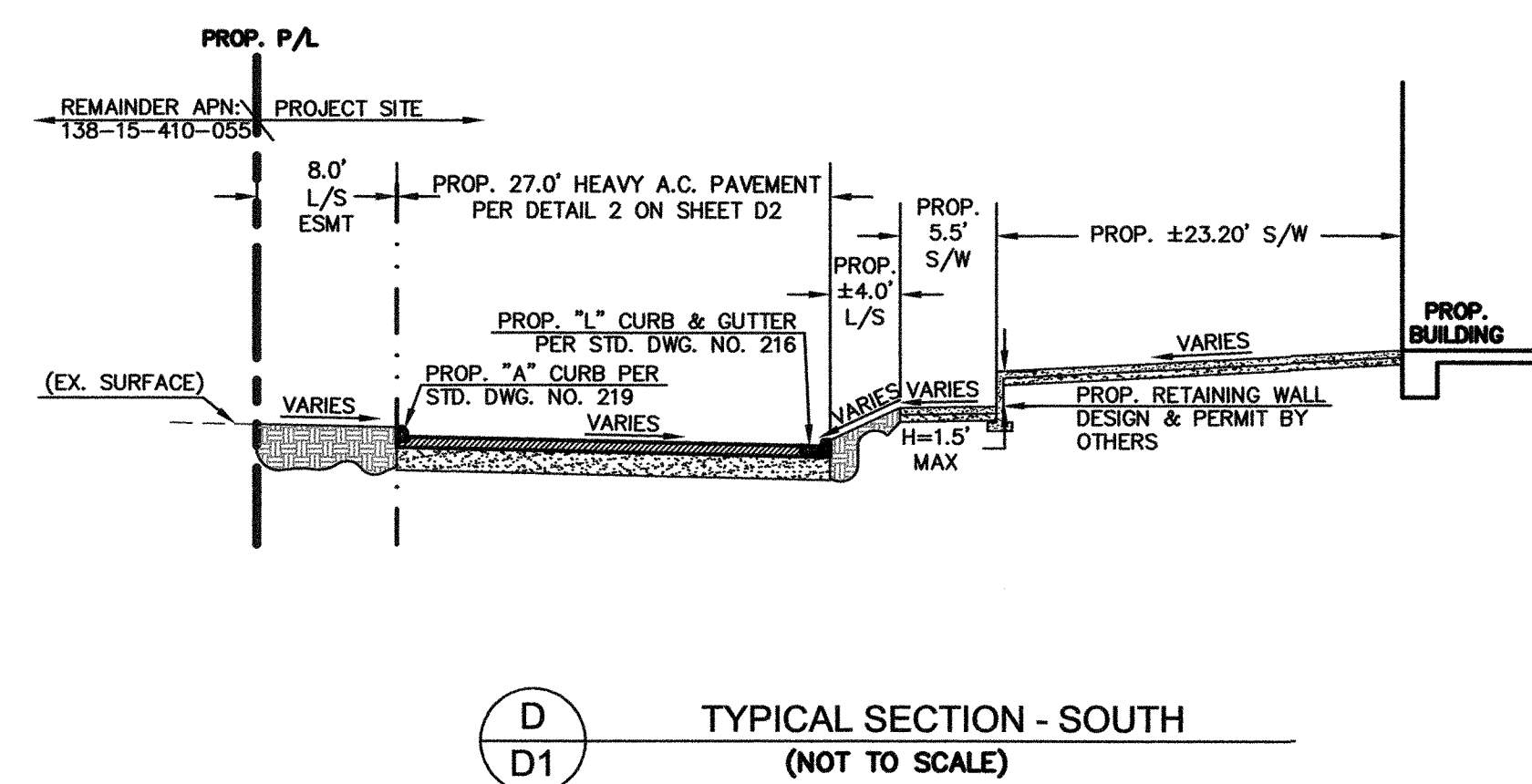
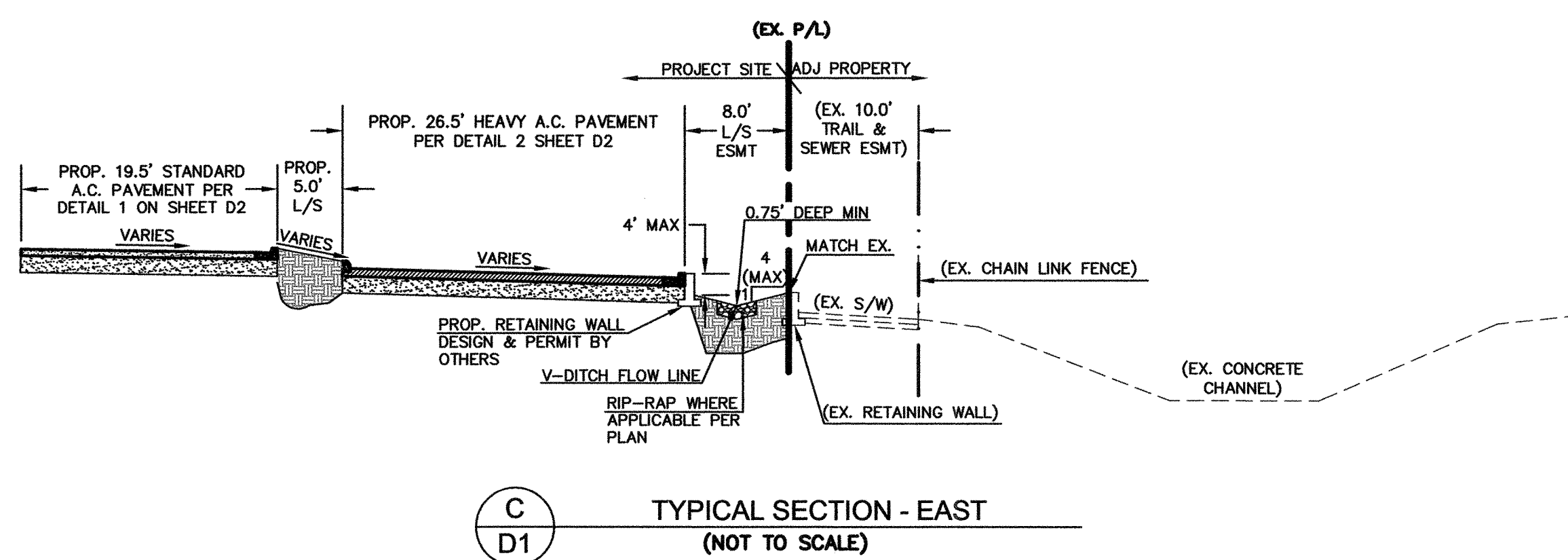
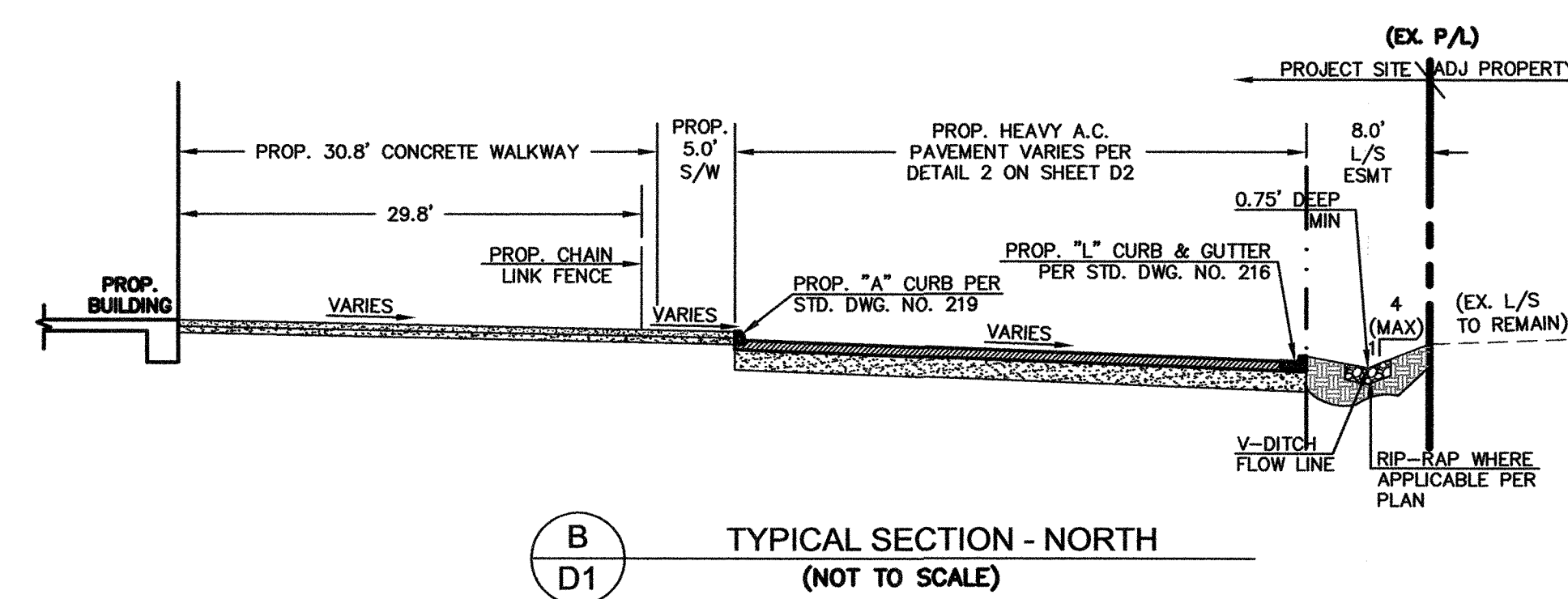
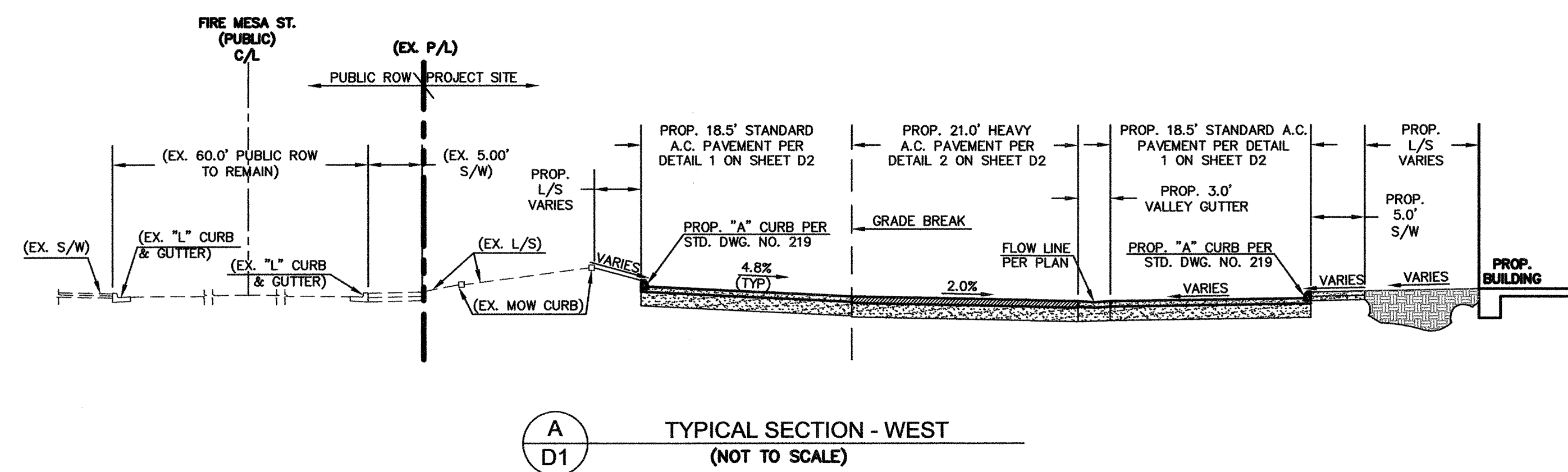
CLARK COUNTY, NEVADA
FRANCES DEANE, RECORDER
RECORDED AT REQUEST OF: LAS VEGAS CITY

05-29-2003 11:21 AEA PAGE COUNT: 3

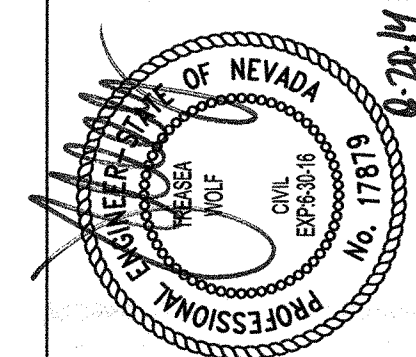
BOOK/INSTR:20030529-01731 FEE: .00
PERMIT RPTT: .00

RECEIPT/CONF COPY HAS NOT BEEN COMPARED TO THE ORIG





WALKER ENGINEERING, LLC
5765 S. RAINBOW BLVD.
SUITE 101
LAS VEGAS, NV 89118
TEL: 702.873.5197
FAX: 702.873.5346

[illegible]

**DORAL ACADEMY
FIRE MESA CAMPUS**

TYPICAL DETAILS SHEET 1

SUBMITTAL NO. ADD1
DATE: AUG 20, 2014
WE PROJECT NO. 1317.00
AGENCY NO. CLV:4685
SHEET NO.:

D1

3 OF 10 SHEETS

1 STANDARD PAVEMENT SECTION
D2 (NOT TO SCALE)

5
D2

3' WIDE VALLEY GUTTER
(NOT TO SCALE)

9
D2

2' CONCRETE FLUME
(NOT TO SCALE)

2 HEAVY PAVEMENT SECTION
D2 (NOT TO SCALE)

6
D2

SIDEWALK RAMP
(NOT TO SCALE)

3
D2

PCC SECTION
(NOT TO SCALE)

7
D2

TRANSITION FROM 6" CURB TO 0" CURB
(NOT TO SCALE)

DETECTABLE WARNING DETAIL
"TRUNCATED DOME"
(NOT TO SCALE)

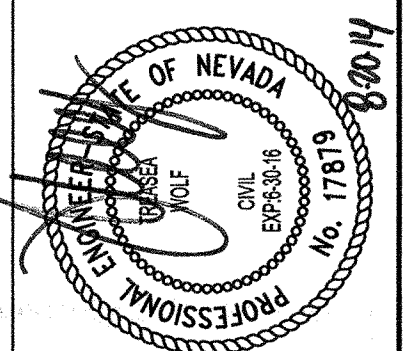
8
D2

2' CURB OPENING
(NOT TO SCALE)

10 3'X3'X2' JENSEN DROP INLET
D2 (NOT TO SCALE)



WALKER ENGINEERING, LLC
5765 S. RAINBOW BLVD.
SUITE 101
LAS VEGAS, NV 89118
TEL: 702.873.5197
FAX: 702.873.5346

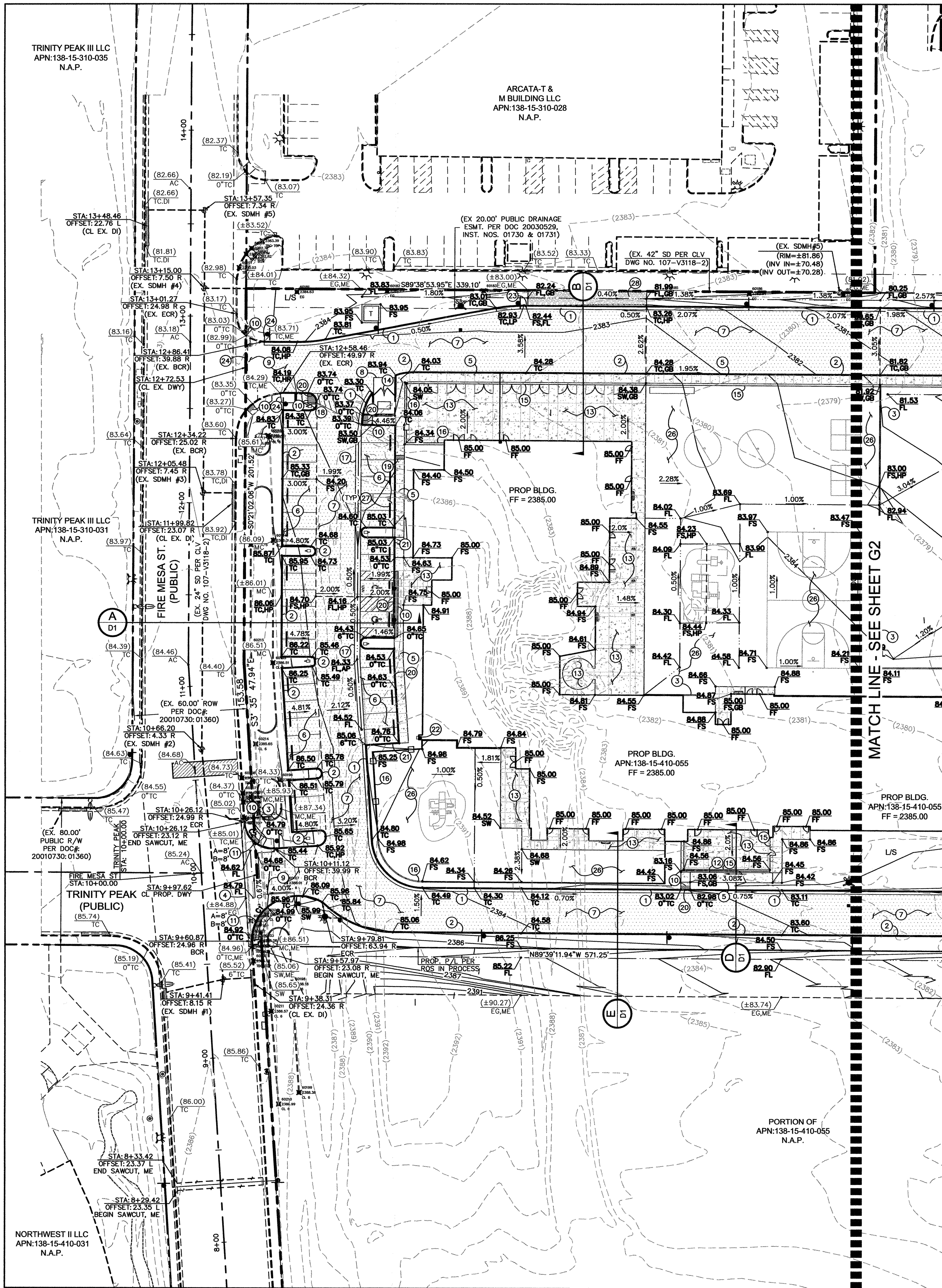
[illegible][illegible]

TYPICAL DETAILS SHEET 2

SUBMITTAL NO.	ADD1
DATE:	AUG 20, 2014
WE PROJECT NO.	1317.00
AGENCY NO.	CLV:4685
SHEET NO.:	

D2

4 OF 10 SHEETS



ACCESSIBILITY NOTES

1. MAXIMUM SLOPE ON THE ACCESSIBLE ROUTE IS 5.0% IN THE DIRECTION OF TRAVEL, 2.0% CROSS SLOPE.
2. MAXIMUM SLOPE IN ACCESSIBLE PARKING STALL LOADING AISLES IS 2.0% IN ANY DIRECTION.
3. PROVIDE ACCESSIBLE PARKING STALL SIGNAGE FOR HANDICAP AND VAN ACCESSIBLE STALLS PER NRS 484.408.
4. HANDICAP STALLS SHALL BE 9'-0" WIDE X 18'-6" LONG (18'-6" WITH PERMITTED OVERHANG). HANDICAP STALL LOADING AISLES ARE 5'-0" WIDE X THE ENTIRE LENGTH OF THE PARKING STALL (8'-0" WIDE FOR VAN ACCESSIBLE SPACES).

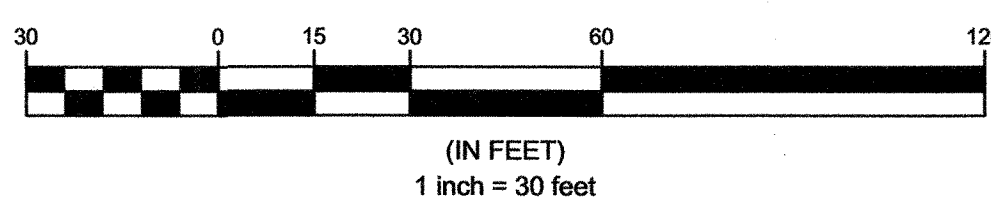
ENGINEER'S NOTES:

1. ALL WORK SHALL CONFORM TO THE SOILS REPORT PREPARED BY WESTERN TERRACON CONSULTANTS, INC. DATED JUNE 26, 2014 PROJECT NO. 64145020.
2. ALL OFF-SITE IMPROVEMENT CONSTRUCTION SHALL CONFORM TO THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA", LATEST EDITION.
3. FINAL ASPHALTIC CONCRETE (AC) PAVEMENT SURFACES SHALL BE ONE-HALF INCH ABOVE THE TOP OF THE GUTTER (INCLUDING OPEN GRADE).
4. CONTRACTOR IS RESPONSIBLE FOR DUST AND EROSION CONTROL DURING CONSTRUCTION.
5. THIS PLAN SHALL NOT, IN PART OR IN WHOLE, BE USED FOR CONSTRUCTION UNTIL APPROVED AND SIGNED BY ALL APPLICABLE GOVERNMENT AGENCIES.
6. ENGINEER TO BE NOTIFIED OF ANY DISCREPANCIES IMMEDIATELY.
7. MATCH ELEVATIONS SHOWN TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.
8. PROPERTY OWNER IS RESPONSIBLE TO MAINTAIN THE BEST MANAGEMENT PRACTICES SUCH AS BUT NOT LIMITED TO THE REMOVAL OF ACCUMULATED SEDIMENT AND DEBRIS AND CARE OF THE VEGETATION.

LEGEND

- PROPERTY LINE
- STREET CENTERLINE
- PROPOSED RETAINING WALL
- PROPOSED BUILDING
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED CURB & GUTTER
- PROPOSED CURB
- PROPOSED EDGE OF PAVEMENT
- EXISTING CURB & GUTTER
- EXISTING CURB
- EXISTING BUILDING
- CONSTRUCTION NOTE
- CUT FILL TRANSITION
- SAWCUT LIMITS
- SCARP
- SLOPE
- FLOW LINE
- EASEMENT LINE
- HANDICAP PARKING
- FINISHED SURFACE
- CURB FACE
- CURB BACK
- EDGE OF PAVEMENT
- TOP OF GRADE
- PROPOSED GRADE
- EXISTING GRADE
- PROP. AC PAVEMENT
- PROP. PCC PAVEMENT
- REMOVE & REPLACE EXISTING AC PAVEMENT

GRAPHIC SCALE



FLOODZONE

THE PARCEL DESCRIBED HEREON LIES WITHIN THE FLOOD HAZARD ZONE HAVING A ZONE DESIGNATION OF "X" (AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN) BY THE SECRETARY OF HOUSING AND URBAN DEVELOPMENT, AS SHOWN ON FIRM MAP NO. 2135F DATED NOVEMBER 16, 2011.

BACK OF CURB CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C1	52.43	25.00	120°10'00"
C2	23.56	15.00	89°59'49"

BACK OF CURB LINE TABLE		
LINE	LENGTH	BEARING
L1	2.91	S03°29'40"E

STORM DRAIN DROP INLET NOTE:

CONSTRUCTION OF ALL STORM DRAIN DROP INLETS PER A NEWLY ADOPTED USCSA DWG NO. 421 (STORMWATER QUALITY MANAGEMENT STAMP AND SIGN DETAIL).

LEGAL DESCRIPTION:

SEE COVER SHEET FOR FULL LEGAL DESCRIPTION

BASIS OF BEARINGS:

NORTH 89°40'51" WEST, BEING THE BEARING OF THE CENTERLINE OF SMOKE RANCH ROAD AND THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 15, TOWNSHIP 20 SOUTH, RANGE 60 EAST, M.D.M., CLARK COUNTY, NEVADA, AS SHOWN IN FILE 155, PAGE 31 OF SURVEYS, OFFICIAL RECORDS OF CLARK COUNTY, NEVADA.

BENCHMARK:

CITY OF LAS VEGAS BM #JOLC0016SEE6, BEING A RIVET PLATE IN THE TOP OF CURB WEST SIDE OF BUFFALO AT TRINITY PEAK AVENUE, ELEVATION: 2401.52 (US SURVEY FEET) 731.98 (METERS)

BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

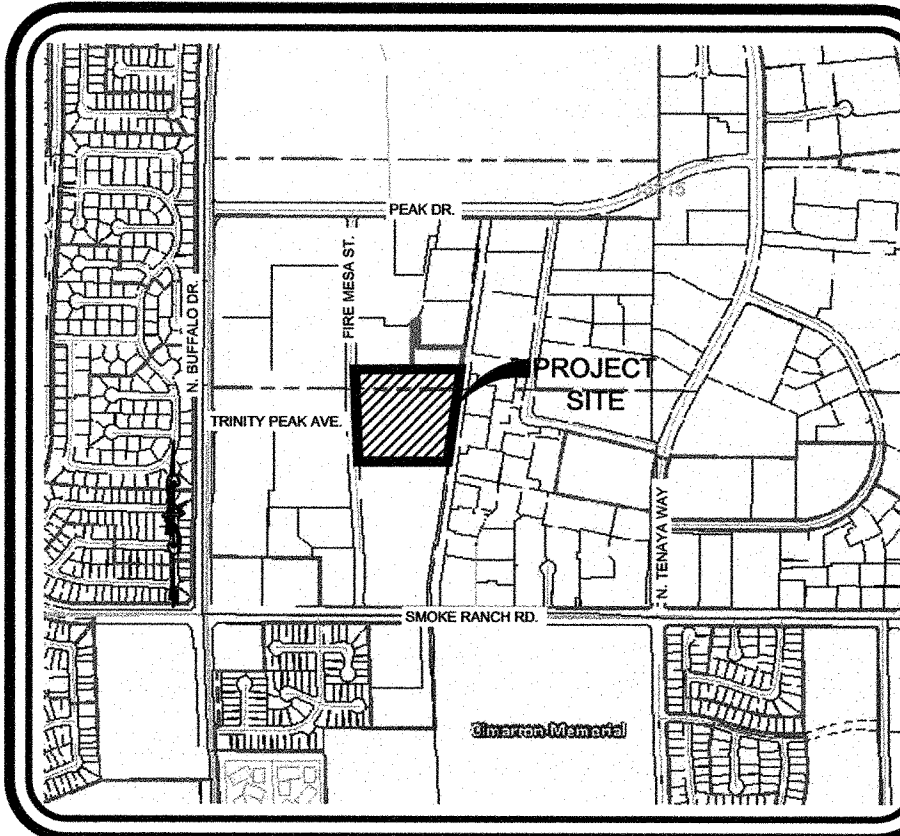
SIGHT VISIBILITY ZONES NOTE

NO WALLS, FENCES, TREES, SHRUBS, UTILITY APPURTENANCES OR ANY OTHER OBJECT, OTHER THAN TRAFFIC CONTROL DEVICES AND STREET LIGHT POLES, MAY BE CONSTRUCTED OR INSTALLED WITHIN THE SIGHT VISIBILITY ZONE UNLESS SAID OBJECT IS MAINTAINED AT LESS THAN 24 INCHES IN HEIGHT, MEASURED FROM THE TOP OF CURB.

EARTHWORK QUANTITIES

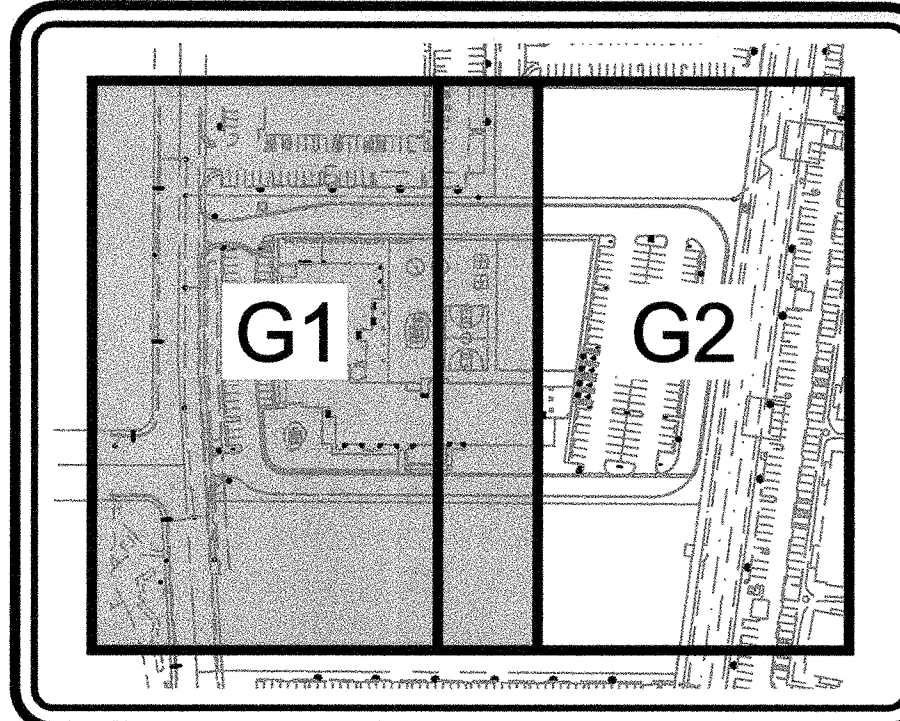
*NOTE: THESE QUANTITIES ARE APPROXIMATE AND ARE RAW VOLUMES ONLY. OVEREXCAVATION SUBSIDENCE, SHRINKAGE, & BULKING FACTORS ARE NOT TAKEN INTO ACCOUNT.

CUT =	x C.Y.
FILL =	x C.Y.



VICINITY MAP

N.T.S.



KEY MAP

N.T.S.

CONSTRUCTION NOTES

NO	ITEM
1	CONSTRUCT "L" TYPE CURB & GUTTER PER STD DWG NO. 216
2	CONSTRUCT "A" TYPE CURB ER STD DWG NO. 219
3	CONSTRUCT MOW CURB PER ARCHITECTURAL PLANS (BY OTHERS)
4	SAWCUT NEAT & MATCH EXISTING
5	CONSTRUCT CONCRETE SIDEWALK PER ARCHITECTURAL PLANS (BY OTHERS)
6	CONSTRUCT 2" STANDARD A.C. PAVEMENT OVER 4" TYPE II AGG. BASE PER SOILS REPORT BY TERRACON CONSULTANTS. SEE DETAIL 1 ON SHEET D2
7	CONSTRUCT 3" HEAVY A.C. PAVEMENT OVER 4" TYPE II AGG. BASE PER SOILS REPORT BY TERRACON CONSULTANTS. SEE DETAIL 2 ON SHEET D2
8	CONSTRUCT 5" PCC OVER 4" TYPE II AGG. BASE PER SOILS REPORT BY TERRACON CONSULTANTS. SEE DETAIL 3 ON SHEET D2
9	CONSTRUCT COMMERCIAL DRIVEWAY PER STD DWG NO. 226.S1
10	INSTALL ARMOR TILE TRUNCATED DOMES OR EQUIVALENT PER DETAIL 4 ON SHEET D2
11	CONSTRUCT SIDEWALK RAMP PER STD DWG NO. 235 CASE 1
12	CONSTRUCT 4.0' MAX RETAINING WALL DESIGN & PERMITS (BY OTHERS)
13	CONSTRUCT CONCRETE WALKWAY PAVEMENT PER ARCHITECTURAL PLANS (BY OTHERS)
14	INSTALL TRASH ENCLOSURE PER ARCHITECTURAL PLANS (BY OTHERS)
15	INSTALL CHAIN LINK FENCE PER ARCHITECTURAL PLANS (BY OTHERS)
16	INSTALL DECORATIVE WROUGHT IRON FENCE PER ARCHITECTURAL PLANS (BY OTHERS)
17	CONSTRUCT 3.0' WIDE VALLEY GUTTER PER DETAIL 5 ON SHEET D2
18	CONSTRUCT SIDEWALK RAMP PER DETAIL 6 ON SHEET D2
19	CONSTRUCT SIDEWALK DRAIN PER STD DWG NO. 236
20	CONSTRUCT 0" CURB
21	TRANSITION FROM 6" CURB TO 0" CURB PER DETAIL 7 ON SHEET D2
22	INSTALL 4" PVC ROOF DRAIN. OUTLET TO GRADE WITH SPLASHBLOCK. SEE ARCHITECTURAL PLANS (BY OTHERS)
23	CONSTRUCT 2.0' WIDE CURB OPENING PER DETAIL 8 ON SHEET D2
24	MATCH EXISTING
25	CONSTRUCT 2' CONCRETE FLUME PER DETAIL 9 ON SHEET D2
26	CONSTRUCT ASPHALT PLAYGROUND SURFACE PER ARCHITECTURAL PLANS (BY OTHERS)
27	INSTALL PRECAST CONCRETE WHEEL STOP BY JENSEN OR EQUIVALENT PER ARCHITECTURAL PLANS (BY OTHERS)
28	CONSTRUCT CLASS 150 RIP RAP (D50=6", T=12") OVER 8" CLASS 150 BEDDING OVER NON-WOVEN GEOTEXTILE PER NDOT R-1.4.1
29	INSTALL 18" RCP CLASS III STORM DRAIN PIPE
30	INSTALL 3'X3'X2' JENSEN DROP INLET (OR EQUIVALENT) PER DETAIL 10 ON SHEET D2
31	CONNECT TO EXISTING SDMH

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY ON FILE WITH CITY OF LAS VEGAS FOR THIS PROJECT, DS 4685.

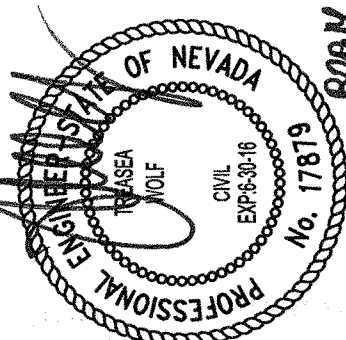
TREASEA WOLF, P.E. No. 17879 DATE

CLV DRAWING NO.

TBD

WIE

WALKER ENGINEERING, LLC
5765 S. RAINBOW BLVD.
SUITE 101
LAS VEGAS, NV 89118
TEL: 702.873.5197
FAX: 702.873.5346



APPROVAL

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