DS #: 4540

APN: 163-01-102-010

St. George Romanian orthodox church-update

PROJECT: Drainage Easement Modification

SUBMITTAL: 3rd

SCANNED BY/DATE:

CHECKED BY/DATE:

CITY OF LAS VEGAS
NEVADA

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM	**DATE:** December 21, 2011
TO: **Land Development Services** Department of Public Works	**FROM:** Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT: Technical Drainage Study for: **St. George Romanian Orthodox Church – Update Drainage Easement Modification**	**COPIES TO:** G.C. Wallace, Inc.
Cross Streets: SEC of Holmby Avenue & Redrock Street	St. George Romanian Orthodox Church
File Number: F:\Depot\DSMEMOS\DS4540A.doc	Bart Anderson, P.E., DevCo
Parcel Number: 163-01-102-010	
Zoning Action: U-0045-01	

FEMA Flood Zone	YES	NO X
Proposed Storm Drain	YES	NO X

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Trn. No.
1st Submittal	9/13/2004	9/27/2004	Not Approved	$400.00	9409: $400
2nd Submittal	6/27/2006 & 11/22/2006	12/8/2006	Approved	$400.00	48450: $400
3rd Submittal	12/20/2011	12/21/2011	See Comments Below	N/C	N/C
			TOTAL FEES (LDDRS):	**$800.00**	----

REMARKS:

3rd Submittal: Update for Drainage Easement Modification

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.

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
B&H/ays/osk

T/R/S: T21S/R60E/01
AREA Q-01

Rec'd: 12/20/11
DS4540
Q-01
N/C

G. C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS

G. C. WALLACE, INC.
G. C. WALLACE OF CALIFORNIA, INC.
G. C. WALLACE HOLDINGS, INC.

Writer's Contact Information:

804-2112

398-A432

December 20, 2011

Oh-Sang Kwon
City of Las Vegas
333 North Rancho Drive
Las Vegas, NV 89101

Re: Drainage Easement Modification
Saint George Romanian Orthodox Church (Land Development CLV # 107Y5174)

Dear Mr. Kwon:

The profile of the drainage swale associated with the subject project needed to be regraded as a result of existing conditions on site. There is a very dense caliche layer just below the existing grade. We would therefore propose a change in the proposed grade of the swale. Attached are owner-provided topographic shots at each of the gates along the drainage easement. The shot on the north gate is lower (79.47 versus 80.07) than proposed, so there should not be an issue there. On the south gate, the grade shot there is 80.68 versus 80.20. Attached is a calculation which determined that the water remains inside the swale at a depth of flow of 0.31 feet. The total depth from the bottom (80.68) of the swale to the grade at the gate (81.2) is 0.52 feet. This does not meet swale free board requirements; however, it does provide 0.21' of freeboard, and the 8 cfs flow rate will not adversely impact adjacent or downstream property or facilities.

The plans for this project were completed by DeLuna Inc. This firm has been closed, and the owner has moved out of the County. We have previously submitted a permission letter from the engineer of record to revise the plan.

Should you have any questions, do not hesitate to contact me at (702) 804-2112.

Cordially,

G. C. WALLACE, INC.

Roy D. Clark

Roy D. Clark, P.E.
Vice President

PROFESSIONAL ENGINEER STATE OF NEVADA
ROY D. CLARK
Exp. 12-31-12
CIVIL
No. 8354

12/20/11

1555 South Rainbow Boulevard · Las Vegas, NV 89146 · T: 702.804.2000 · F: 702.804.2299 · gcwallace.com

RIPRAP CHANNEL

Flow "Q"	8	cfs
Manning's "n"	0.027	
Slope (%)	2.43	
Bottom Width	0.0	ft
Side Slope (Lt)	30.0	H:1V
Side Slope (Rt)	30.0	H:1V
Specific Gravity	2.5	

OUTPUT:

Velocity	2.55	ft/s
Depth	0.32	ft
Freeboard	1.04	ft
Total Depth	1.36	ft
Froude No.	1.12	
Riprap Size D50	1.1	in

G. C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS

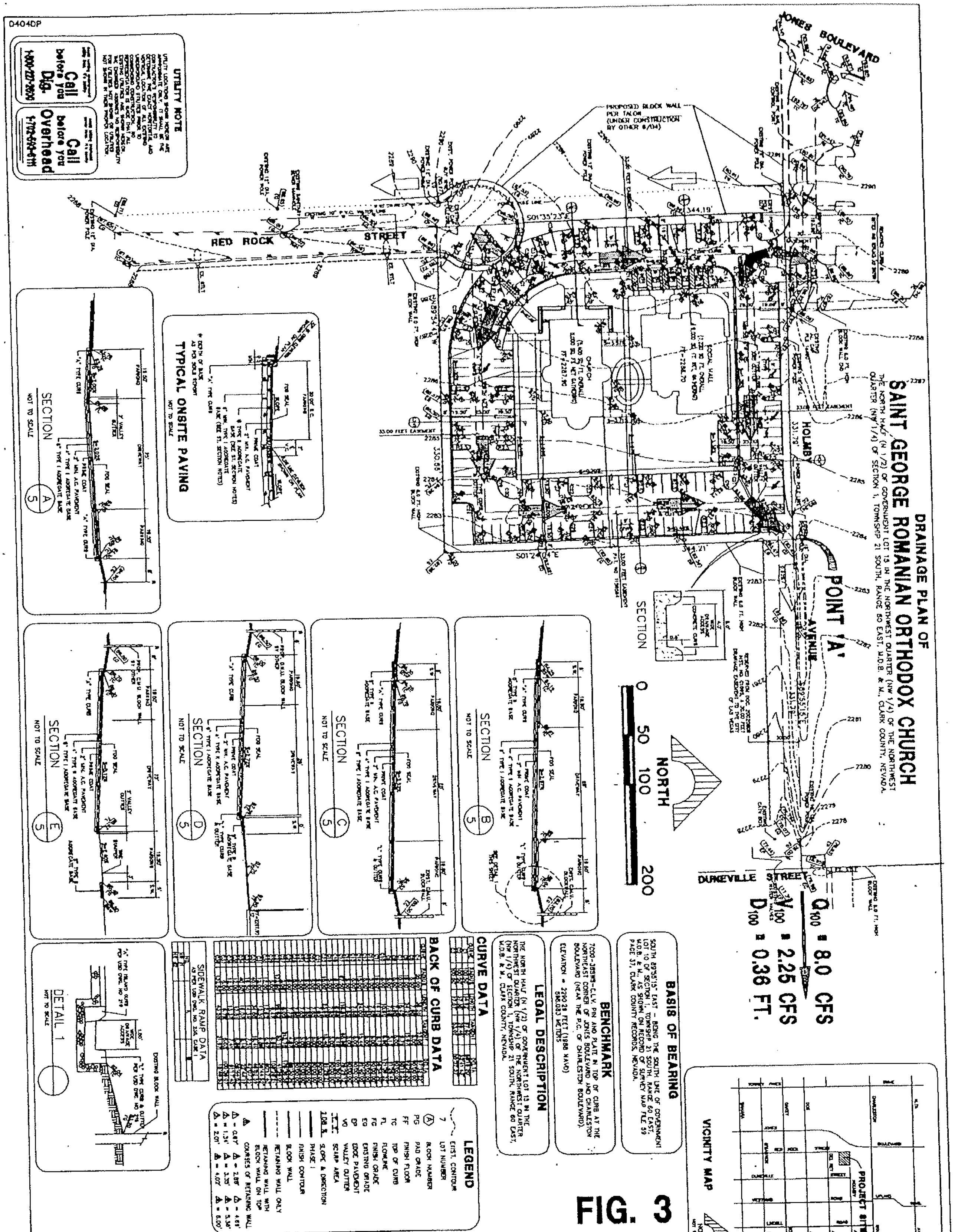


FIG. 3

ONSITE DRAINAGE PATTERN

SHEET 5 OF 7 SHEETS	SHEET CONTENTS: LIA ARNOLD ROBERTS SAINT GEORGE ROMANIAN ORTHODOX CHURCH **DRAINAGE PLAN**	**DeLUNA, INC.** ENGINEERING • PLANNING • SURVEYING 4511 W. CHEYENNE AVE., STE. 101, N. LAS VEGAS, NEV. 89032, (702) 255-6242	RECOMMENDED: LEONARDO V. DeLUNA 3794 R.E. NO. DATE	REV. DATE DESCRIPTION

V-Ditch

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	2.43000	%
Left Side Slope	30.00	ft/ft (H:V)
Right Side Slope	30.00	ft/ft (H:V)
Discharge	8.00	ft³/s

Results

Normal Depth	0.31	ft
Flow Area	2.97	ft²
Wetted Perimeter	18.88	ft
Top Width	18.86	ft
Critical Depth	0.34	ft
Critical Slope	0.01648	ft/ft
Velocity	2.70	ft/s
Velocity Head	0.11	ft
Specific Energy	0.43	ft
Froude Number	1.20	
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	0.34	ft
Channel Slope	2.43000	%
Critical Slope	0.01648	ft/ft

Cross Section for Triangular Channel - 1

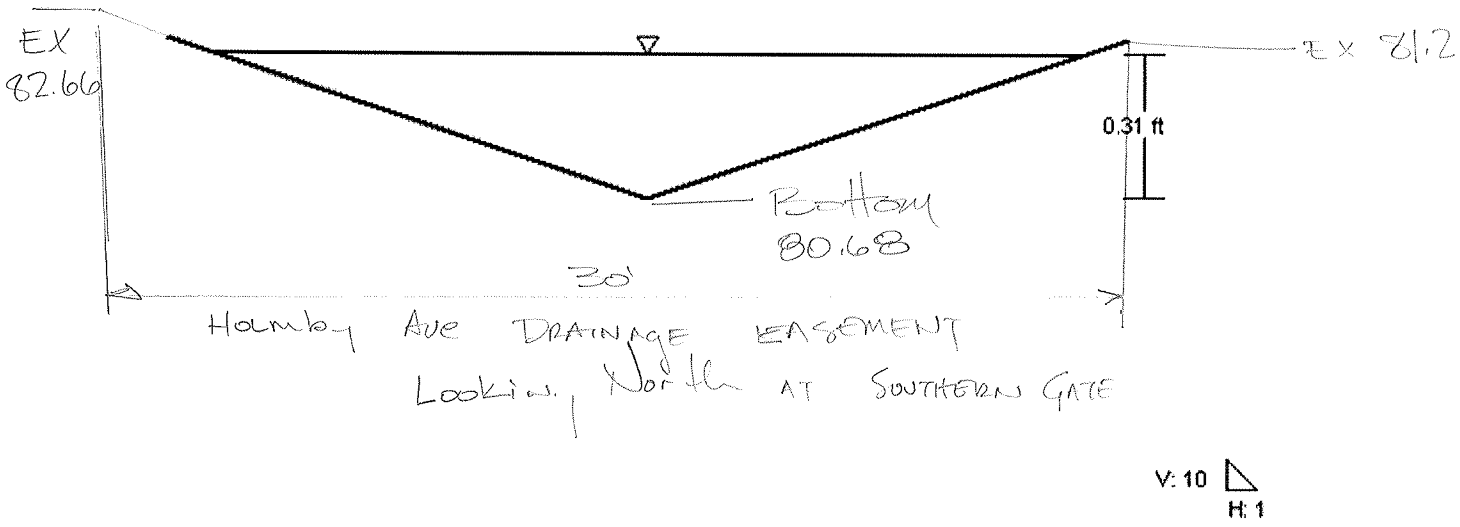
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	2.43000	%
Normal Depth	0.31	ft
Left Side Slope	30.00	ft/ft (H:V)
Right Side Slope	30.00	ft/ft (H:V)
Discharge	8.00	ft³/s

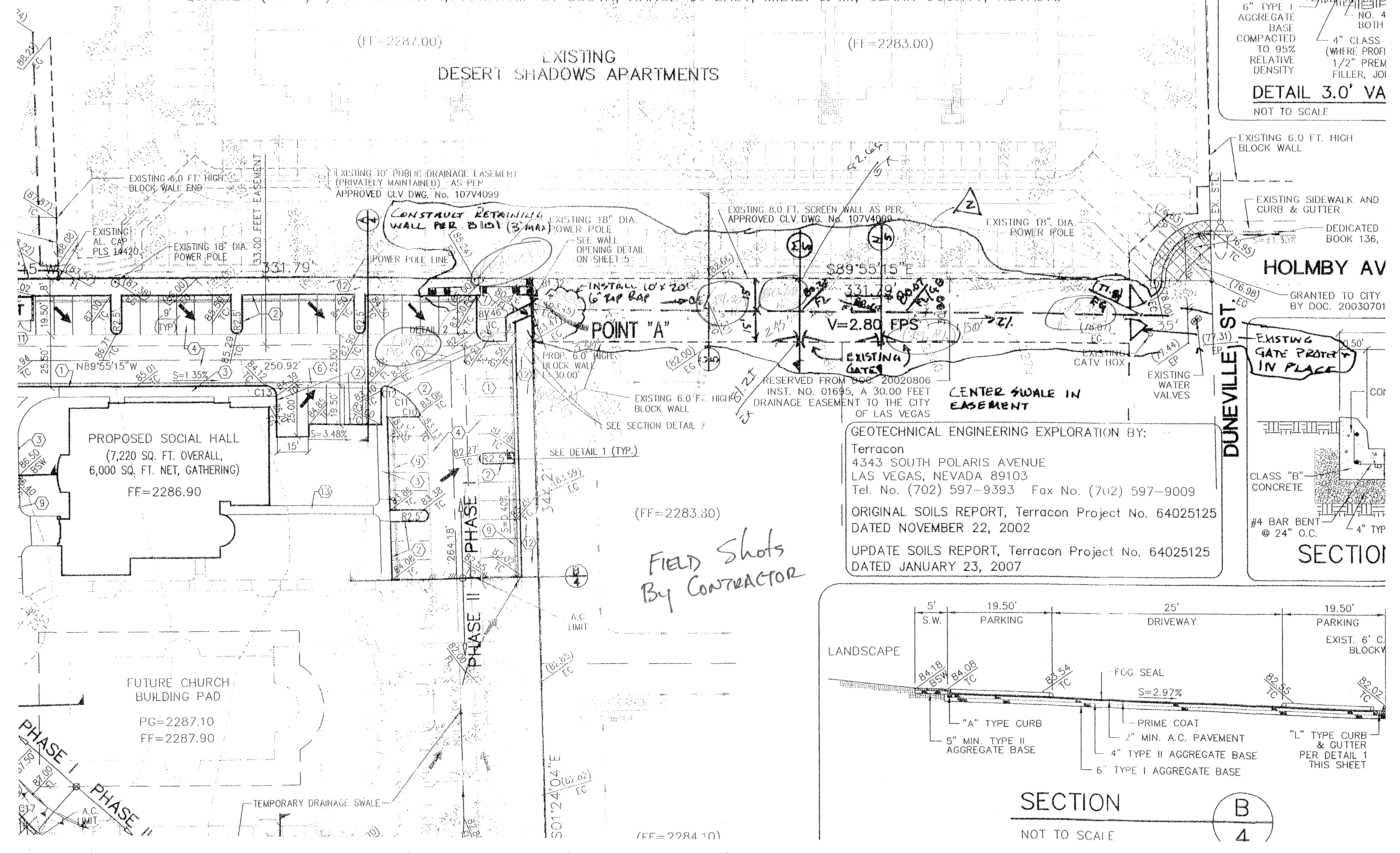
Cross Section Image



Holmby Ave Drainage Easement
Looking North at Southern Gate

81.90
79.42 / 100 = 2.43%

THE NORTH HALF (N 1/2) OF GOVERNMENT LOT 15 IN THE NORTHWEST QUARTER (NW 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF SECTION 1, TOWNSHIP 21 SOUTH, RANGE 60 EAST, M.D.B. & M., CLARK COUNTY, NEVADA.



CONSTRUCT RETAINING WALL PER B101 (3' MAX)

INSTALL 10' x 20' 6" RIP RAP

EXISTING GATE

CENTER SWALE IN EASEMENT

EXISTING GATE PROTECT IN PLACE

Field Shots By Contractor

GEOTECHNICAL ENGINEERING EXPLORATION BY:
Terracon
4343 SOUTH POLARIS AVENUE
LAS VEGAS, NEVADA 89103
Tel. No. (702) 597-9393 Fax No. (702) 597-9009

ORIGINAL SOILS REPORT, Terracon Project No. 64025125
DATED NOVEMBER 22, 2002

UPDATE SOILS REPORT, Terracon Project No. 64025125
DATED JANUARY 23, 2007

SECTION B/4
NOT TO SCALE