

DS #: 4003

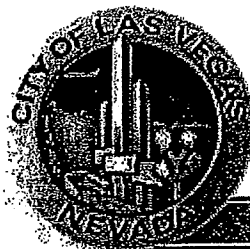
APN: 139-27-603-028 & 139-27-504-010

PROJECT: Palm Mortuary - Downtown Expansion - Update #1

SUBMITTAL: 3rd

SCANNED BY/DATE: _____

CHECKED BY/DATE: _____



CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM

DATE:

August 1, 2012

TO:

Land Development Services
Department of Public Works

FROM:

Albert Sung, P.E.
Flood Control Project Engineer
Department of Public Works

SUBJECT:

Drainage Study for:

Palm Mortuary – Downtown Expansion – Update #1

COPIES TO:

VTN Nevada

Cross Streets:

NWC of Washington Blvd & Las Vegas Blvd

Palm Mortuary

File Number:

F:\Depot\DSMemos\DS4003D.doc

Bart Anderson, P.E., DevCo

Parcel Number:

139-27-603-028 & 139-27-504-010

Zoning Action:

SDR-44937 & SUP-44938

FEMA Flood Zone

YES

NO

X

Proposed Storm Drain

YES

NO

X

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Transaction #
1 st Submittal	5/5/2006	5/19/2006	Not Approved	\$400.00	44894: \$400
2 nd Submittal	6/30/2006, 8/3/2006 & 9/8/2006	9/11/2006	Conditional Approval	\$400.00	48792: \$400
CCRFCD	10/5/2006	10/16/2006	Concurrence	N/C	N/C
3 rd Submittal	7/18/2012	8/1/2012	See Comments Below	\$100.00	289980: \$100
TOTAL FEES (LDDRS):				\$900.00	----

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:
X	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.

1. Provide a copy of the zoning/planning conditions (**SDR-44937 & SUP-44938**) associated with this site 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.
2. It appears that the proposed south berm will direct onsite flow northerly and discharge into *Las Vegas Boulevard* through the opening between the two berms. Provide erosion protection measures before the 100-year flow discharges into the street. Provide sidewalk underdrain to prevent nuisance flow from crossing over the street sidewalk. Review and revise accordingly in the next submittal.
3. Identify an existing storm drain in *Las Vegas Boulevard* with size and label with *City of Las Vegas* recorded plan number on the grading plan.
4. Label the finish floor elevation of all existing buildings adjacent to the site.
5. **Sheet DT:** Section E: Replace the AC curb at the downstream side of the driveway with "L"-curb.
6. Construction Notes #10, #12 and #13 cannot be found anywhere on the grading plan. Clarify in the next submittal.

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

ays

T/R/S: T20S/R61E/27

AREA M-27

 *** FAX TX REPORT ***

TRANSMISSION OK

JOB NO. 4518
 DESTINATION ADDRESS 3622597
 PSWD/SUBADDRESS
 DESTINATION ID
 ST. TIME 08/01 15:37
 USAGE T 01' 13
 PGS. 2
 RESULT OK

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM

DATE:

August 1, 2012

TO:
 Land Development Services
 Department of Public Works

FROM:
 Albert Sung, P.E.
 Flood Control Project Engineer
 Department of Public Works

SUBJECT: Drainage Study for:
 Palm Mortuary – Downtown Expansion – Update #1

COPIES TO:

VTN Nevada

Cross Streets: NWC of Washington Blvd & Las Vegas Blvd

Palm Mortuary

File Number: F:\Depot\DSMemos\DS4003D.doc

Bart Anderson, P.E., DevCo

Parcel Number: 139-27-603-028 & 139-27-504-010

Zoning Action: SDR-44937 & SUP-44938

FEMA Flood Zone YES NO X

Proposed Storm Drain YES NO X

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X	must be resubmitted or supplemented including the following:
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2. It appears that the proposed south berm will direct onsite flow northerly and discharge into *Las Vegas Boulevard* through the opening between the two berms. Provide erosion protection measures



LETTER OF TRANSMITTAL

TO: **City of Las Vegas**
Dept. of Public Works
333 N. Rancho Drive
Las Vegas, NV 89106

DATE: **July 18, 2012**

PROJECT: **New Vista**

ATTN: **Mr. Oh Sang Kwon, P.E.**

W.O. NO.: **7215-1-A-5**

BY MAIL: BY MESSENGER: XXX PICK-UP: EXPRESS MAIL:

FAX: FEDERAL EXPRESS:

No. Copies:	Description
1	Hard copy of Update #1 to the Technical Drainage Study for Palm Mortuary
1	CD copy of Update #1 to the Technical Drainage Study for Palm Mortuary

COMMENTS:

MATERIAL SENT FOR THE FOLLOWING REASONS:

CHECKING: FILING: APPROVAL: XXX YOUR FILES:

OTHER: CC:

SENDER: Shaun Boulton, E.I.

ABOVE MATERIAL RECEIVED BY: DATE:

2727 SOUTH RAINBOW BOULEVARD LAS VEGAS, NEVADA 89146-5148
TEL: (702)873-7550 FAX: 362-2597
PUBLIC WORKS DEPARTMENT TEL: (702) 247-4020 FAX: (702) 247-4262

**UPDATE #1 TO THE
TECHNICAL DRAINAGE STUDY
FOR PALM MORTUARY
(PALM MORTUARY DOWNTOWN EXPANSION)**

**CITY OF LAS VEGAS, NEVADA
W.O. # 7215-1-A-5**

Prepared for:

PALM MORTUARY, INC

Submitted to:

**PUBLIC WORKS DEPT.
CITY OF LAS VEGAS, NEVADA**



HYDROLOGIC CRITERIA AND DRAINAGE MANUAL
DRAINAGE STUDY INFORMATION FORM

Name of Development: PALM MORTUARY Date: Jul 18, 2012

Location of Development: a) Descriptive (Cross Streets) North/South: N. Las Vegas Blvd.

East/West: Foremaster Ln.

b) Section: 27 Township: 20 Range: 61

c) APN: 139-27-603-028, 139-27-504-012

Name of Owner: PALM MORTUARY, INC

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

Address: 1325 N. Main St. Las Vegas, NV 89101

Contact Person-Name: Shaun Boulton, E.I. Telephone No.: 873-7550

* E-Mail Address: Shaunb@vtnnv.com Fax No.: _____

Firm: VTN Nevada

Address: 2727 S. Rainbow Blvd.

Type of Land Development/Land Disturbance Process:

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

1. Total Owned Land Area: At Site: 16.3 ac Being Developed/Disturbed: 2 ac

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

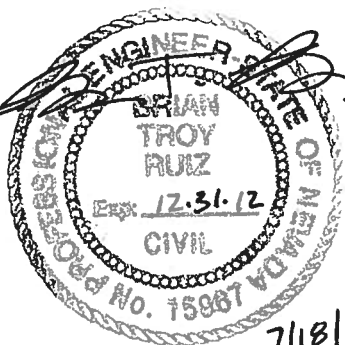
4. Proposed type of development (Residential, Commercial, Etc.): Cemetery

5. Approximate upstream land area which drains to the subject site: 21.6 acre

6. Has the site drainage been evaluated in the past? ☒ YES ☐ NO If yes, please identify documentation: TECHNICAL DRAINAGE STUDY FOR PALM MORTUARY APPROVED 10/19/2008 CLV DOC # DS4003C

7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Las Vegas Boulevard at north end of site

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



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.

Local Entity File No.	Revision	Date

REFERENCE:

STANDARD FORM 1



July 18th, 2012
W.O. # 7215-1-A5

City of Las Vegas
Department of Public Works
731 South Fourth Street
Las Vegas, Nevada 89101

Attention: Mr. Oh Sang Kwon, P.E.
Flood Control Project Manager

**SUBJECT: UPDATE #1 TO THE TECHNICAL DRAINAGE STUDY FOR:
PALM MORTUARY**

This Update #1 to the approved Technical Drainage Study for Palm Mortuary is being submitted to address the revision to the approved grading plan. The improvements proposed within the original Palm Mortuary study were never built and the site, with the exception of a few added cemetery plots, remains in the existing condition mentioned in that study. With this update, the grading plan has been redesigned with the overall general drainage patterns remaining the same. The site is to be completed in two phases of development. Phase 1 proposes an onsite road connecting into the existing southern onsite road and ending in a cul-de-sac. Existing asphalt sidewalk, curb and gutter are to be replaced adjacent to the site within Las Vegas Boulevard to the east. Landscaping berms are also proposed along the eastern boundary of the site. These improvements are to be built during the interim condition of this update. Phase 2 plans to complete the design of the onsite roadways. Phase 2 is not being designed with this study but a preliminary hydrologic and hydraulic analysis has been conducted for the developed (future) condition. This preliminary analysis will serve as guidance for the design of the future Phase 2 grading plan. A new update to the Technical Drainage Study for Palm Mortuary will be submitted for the development of Phase 2.

Corporate Headquarters
Las Vegas, Nevada
2727 South Rainbow Blvd
Las Vegas, NV 89146-5148
Office 702.873.7550 fax 702.362.2597
www.vtnnv.com

Mesquite, Nevada Office
450 Hillside Drive A - 200
Mesquite, NV 89027-3118
Office 702.873.7550 fax 702.362.2597
www.vtnnv.com

Phoenix, Arizona Office
2375 East Camelback Road, Suite 500
Phoenix, AZ 85016-3424
Office 602.387.5202 fax 602.387.4286
www.vtnnv.com

Chino Valley, Arizona Office
140 North Highway 89
Chino Valley, AZ 86323-5944
Office 928.636.1445 fax 928.636.1568
www.vtnnv.com

c o n s u l t i n g e n g i n e e r s • p l a n n e r s • s u r v e y o r s

In the existing condition, all offsite basins south and southwest of the site are developed and remain the same as determined within the Palm Mortuary study. These basins are routed east within the Las Vegas Boulevard alignment and are collected by existing drop inlets. The remaining flows not intercepted by the existing drop inlets are conveyed north within Las Vegas Boulevard and adjacent to the site at combination point CP3. The basins labeled NDOT AND 4TH-ST are actually collected by drop inlets onsite which then route flows into the existing storm drain in Las Vegas Boulevard. Existing drop inlet DI-3 located just north of combination point CP3 collects 3-cfs (10-year) and 6-cfs (100-year). *ON1E and the tributary basins to the west, *OFF1DA and *OFF1DB, have been slightly modified to better determine an accurate conveyance of flows. *OFF1EC (*OFF1DC in the developed condition) is the only new basin that has been added to this update. During the existing condition, developed basin *OFF1DB combines with *ON1E and travels east where they combine with street basin ST2 and the offsite flows within Las Vegas Boulevard at combination point *CP4 for a total flow of 7-cfs and 23-cfs during the 10-year and 100-year storm events. An existing drop inlet, DI-4, collects 4-cfs (10-year) and 8-cfs (100-year) from combination point *CP4. Developed basin *OFF1DA then combines with existing basin *OFF1EC, street basin ST1, and the remaining flows from combination point *CP4 at combination point *CP5 within Las Vegas Boulevard. *CP5 has a total flow of 6-cfs (10-year) and 26-cfs (100-year) which is conveyed north within Las Vegas Boulevard. Please see Figure 5A, Existing Condition Basin Exhibit.

During the interim condition, the improvements proposed in the grading plan (GR) provided with this study will be developed for basin *ON1E which is now split into two basins labeled *ON1I and *ON2I (*ON1D and *ON2D in the developed condition). All other basins will remain the same as mentioned in the existing condition. The improvements proposed include a roadway with cul-de-sac, two landscaping berms at the eastern boundary of the site, and replacement of existing asphalt sidewalk, curb and gutter within the Las Vegas Boulevard right of way. Developed onsite basin *ON2I has been divided into sub-basins ON2I-A, ON2I-B and ON2I-C based on area approximation calculations. Sub-basin ON2I-A represents the flows tributary to the proposed onsite roadway and sub-basin ON2I-B represents the flows tributary to the proposed landscaping berm. Developed onsite basin *ON1I has also been divided into sub-basins ON1I-A, ON1I-B and ON1I-C. Sub-basin ON1I-A represents the flows tributary to the proposed onsite roadway and sub-basin ON1I-C represents the flows tributary to the proposed landscaping berm. Basin *OFF1DB combines with sub-basins ON1I-A and ON2I-A at the onsite roadway low point where they then combine with sub-basins ON2I-C and ON2I-B, street basin ST2, and remaining street flows after DI-3 at combination point *CP4 for a total flow value of 7 and 22 cfs in the 10 and 100-yr storm events. Basins *OFF1DA and *OFF1EC and sub-basin ON1I-B is conveyed through an 8 foot swale with 4:1 side slopes to Las Vegas Boulevard where they then combine with sub-basin ON1I-C, street basin ST1, and the remaining street flows after DI-4 at combination point *CP5 for a total flow value of 7 and 28 cfs in the 10 and 100-yr storm events. Please see Figure 5B, Interim Condition Basin Exhibit.

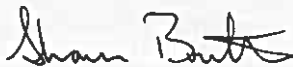
In the developed future Phase 2 condition, basin *ON1D, *ON2D and *OFF1DC are expected to be utilized as cemetery plots. The routing flow patterns of all basins and sub-basins will remain the same as mentioned in the interim condition. Combination points

*CP4 and *CP5 will have flow values of 6 and 17 cfs, and 6 and 22 cfs in the 10 and 100-yr storm events. Please see Figure 5C, Developed Condition Basin Exhibit.

Please note that only the basins noted with an asterisk have been revised or added with this study. All pertinent calculations, analysis and reference material have been included in the appendix. The general drainage patterns remain the same and there is no increase in flows with this update. Copies of the old grading plans clouded to show the location of the revisions and copies of the new plans have been included in the back of this update. Also, a copy of the zoning/planning conditions and the most current approval letter from CLV is included in the appendix.

Respectfully Submitted,

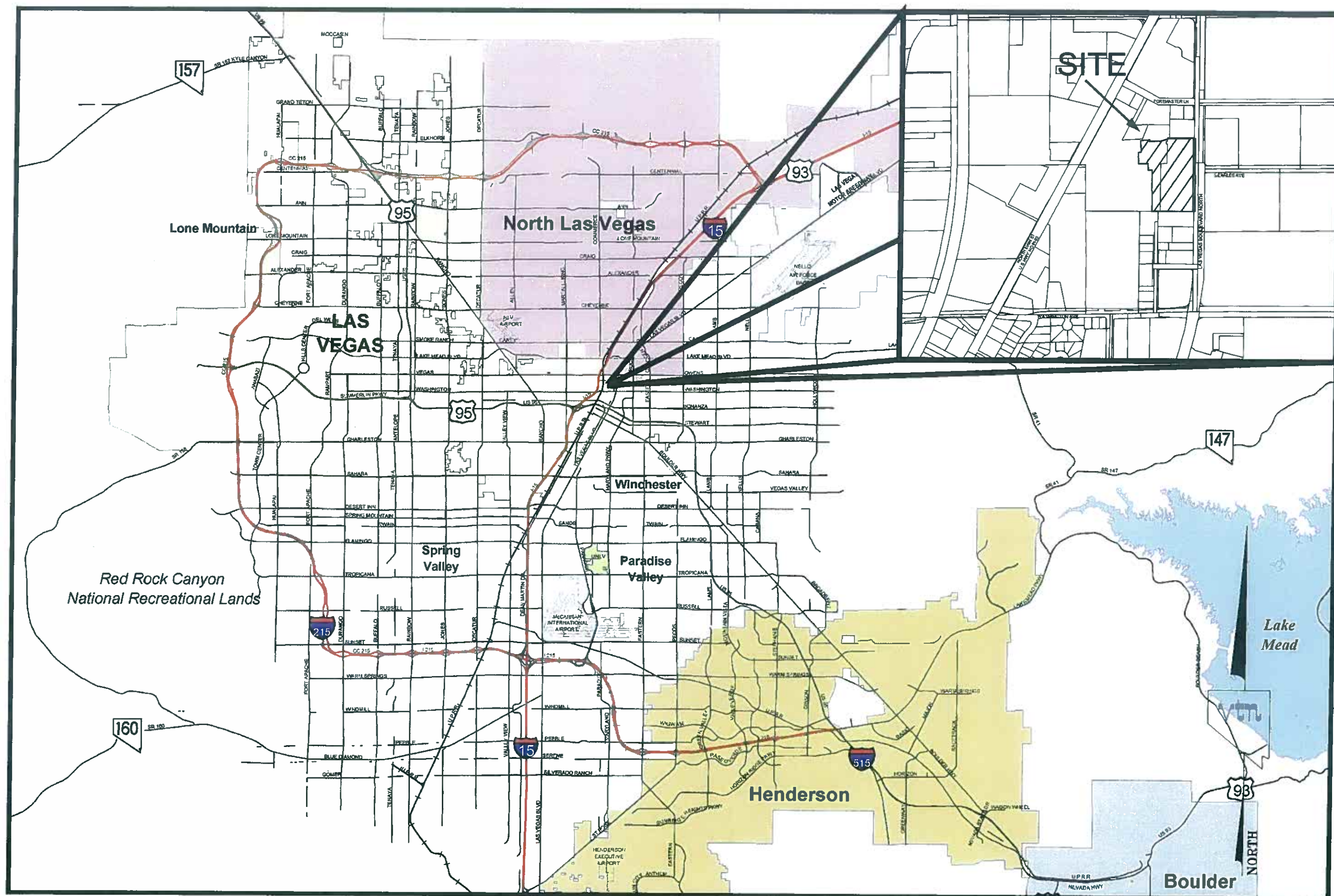
VTN Nevada

A handwritten signature in black ink, appearing to read "Shaun Boulton".

Shaun Boulton, E.I.

APPENDIX

FIGURES



W.O.#: 7215-1-A5
DATE: 04/01/12
BY: SDB
SCALE: N.T.S.
SHEET 1 OF X

PALM MORTUARY UP#1
VICINITY MAP
FIGURE 1





GRAPHIC SCALE



1" = 400'



2727 S. RAINBOW BOULEVARD
LAS VEGAS, NEVADA 89146-5148

PROJECT:

FIGURE 2 SITE DESCRIPTION MAP

FOR:

PALM MORTUARY UP#1

SCALE	HORZ. 400
	VERT.
W.O. NO. 7215-1-A5	
DRAWN BY: SDB	
DATE: 04/01/12	
SHEET 1 OF 1	

SITE

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly those from local drainage sources or small creeks. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or floodway depths have been determined, users are encouraged to consult the Flood Profile and Floodway Data and/or Summary of Special Flood Hazard Areas contained within the Flood Insurance Study (FIS) report that accompanies the FIRI. Users should be aware that BFEs shown on the FIRI represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRI for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only to landward of 0.5 ft from the American Vertical Datum of 1988 (AVD 88). Users of this FIRI should be aware that coastal flood elevations are also provided in the Summary of Special Flood Hazard Areas in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Special Flood Hazard Areas table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRI.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent boundary data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM), Zone 11. The horizontal datum was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zone used to the production of FIRIs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRI.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structural and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Survey branch of the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NCA, NH0312
National Geodetic Survey
SSAC-3, #2202
1315 East-West Highway
Silver Spring, MD 20910-3202

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services branch of the National Geodetic Survey at (301) 713-3542, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRI was provided in digital form by the Clark County GIS Management Office (GISMO).

This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRI for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRI may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profile and Floodway Data labels in the Flood Insurance Study report (which contain authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels, community map repository addresses, and a listing of communities with National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

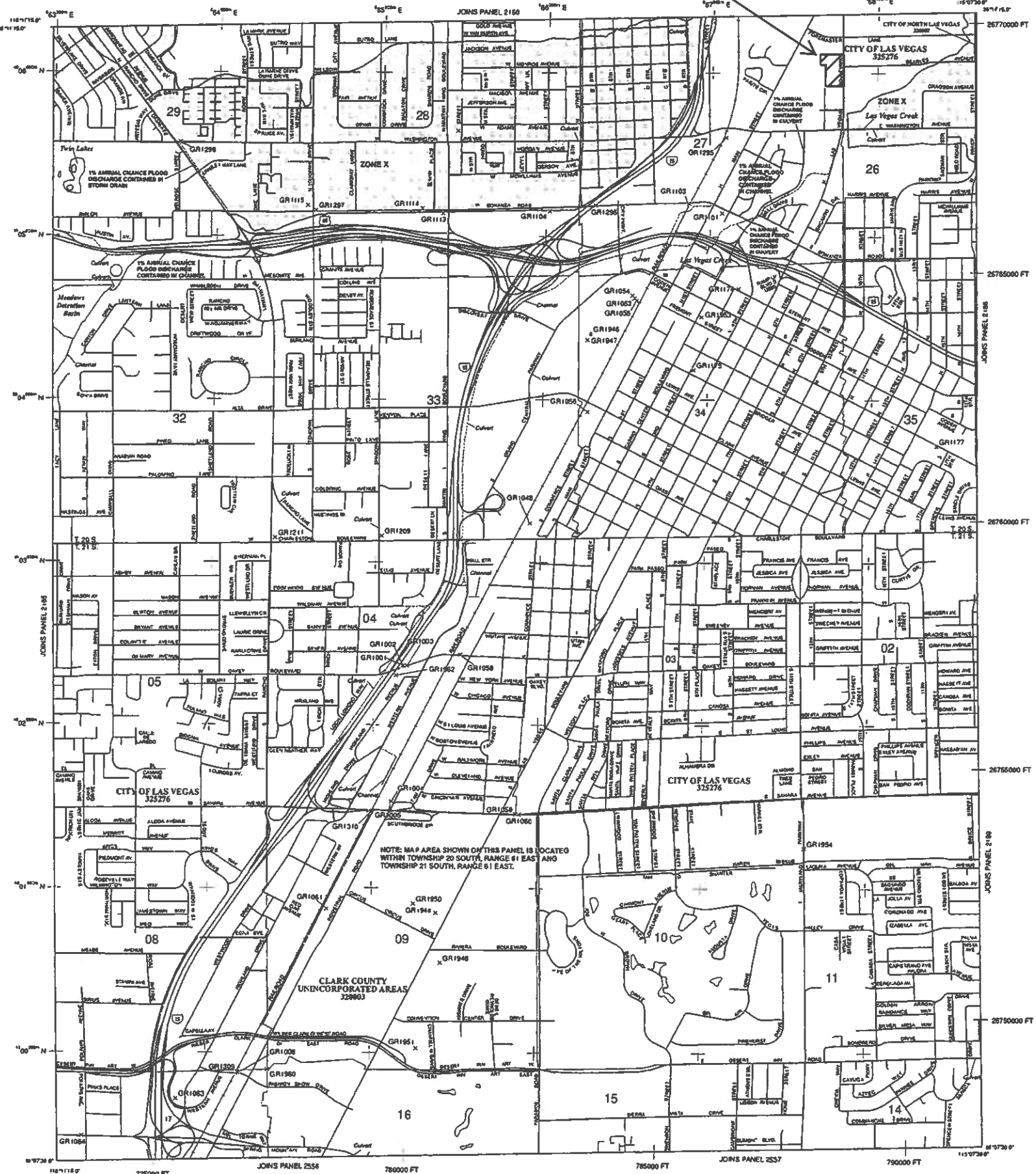
For information and questions about this map, available products associated with this FIRI including historic versions of this FIRI, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information Exchange at 1-877-FEMA-MAP (1-877-362-6227) or visit the FEMA Map Service Center website at <http://www.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRI panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information Exchange.

The Digital Flood Insurance Rate Map (DFIRM) was produced through a unique partnership between Clark County and the Federal Emergency Management Agency (FEMA). Clark County has developed a long-term approach of floodplain management to decrease the costs associated with flooding. This is demonstrated by the Clark County commitment to share and maintain floodplain layers within their Geographic Information System Management Office (GISMO).

This DFIRM reflects several innovative features. These include:
- Southern Nevada GIS-Cooperation among local government agencies throughout Clark County. The foundation of cooperation is the GIS Interlocal Agreements formed between Southern Nevada regional participants. In part, the agreements specify that the Clark County GIS Management Office (GISMO) will be responsible for maintaining a GIS data warehouse and associated Southern Nevada GIS metadata.

- The GISMO's responsibilities go beyond maintaining the GIS data warehouse. GISMO also maintains the Street Centerline Database used by 911 dispatch services. This centerline database serves as the base map for this DFIRM.

DIGITAL DATA AVAILABILITY: <http://www.co.clark.nv.us/cis/gis/gisdata.htm>



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO FLOODING BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, A1, A2, A3, A4, A5, A6, A7, and VE. The Base Flood Elevation is the minimum elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevation determined.
- ZONE AE** Base Flood Elevation determined.
- ZONE AH** Flood depths of 1 to 5 feet (usually areas of ponding); Base Flood Elevation determined.
- ZONE AO** Flood depths of 1 to 7 feet (usually areas of ponding); Base Flood Elevation determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently destroyed. Zone AR indicates that the former flood control system is being replaced to provide protection from the 1% annual chance or greater flood.
- ZONE AR9** Area 9% is protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevation determined.
- ZONE C** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevation determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevation determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that flow in the stream and are subject to the 1% annual chance flood. The floodway is the area that is subject to the 1% annual chance flood. The floodway is the area that is subject to the 1% annual chance flood.

OTHER FLOOD AREAS

ZONE S Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with average wave heights less than 1 square mile; areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE B Areas determined to be subject to the 0.2% annual chance flood.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain boundary

Roadway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities

Base Flood Elevation line and value; elevation in feet

(Elev. 100)

Reference to the North American Vertical Datum of 1988 (AVD 88)

Cross section line

Traverse line

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)

100-foot Universal Transverse Mercator grid zone, zone 11

100-foot grid zone; North

Scale Flood elevation system, east zone (NAD 83) 2111

Scale Flood elevation system, east zone (NAD 83) 2111

North arrow (true north) in feet to nearest section of the FIRI panel

North arrow

MAP REPOSITORIES

Refer to Map Repository for on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP

AUGUST 16, 1993

EFFECTIVE DATE OF REVISION TO THIS PANEL

SEPTEMBER 27, 2002

November 16, 2011 - As required by the National Flood Insurance Act, the Federal Emergency Management Agency (FEMA) is required to update the National Flood Insurance Map (NFIRM) for Clark County, Nevada. The NFIRM is a map that shows the areas that are subject to flooding by the 1% annual chance flood. The NFIRM is a map that shows the areas that are subject to flooding by the 1% annual chance flood.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-425-6250.

For community map revision history prior to community mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-425-6250.

MAP SCALE 1" = 1000'

0 100 200 FEET

0 100 200 METERS

PANEL 2170F

FIRM

FLOOD INSURANCE RATE MAP

CLARK COUNTY,

NEVADA

AND INCORPORATED AREAS

PANEL 2170 OF 4090

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY

CLARK COUNTY

LAKE MEAD CITY OF

NORTH LAS VEGAS CITY OF

20000

2170

2170

2170

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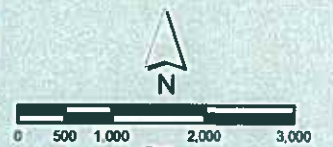
2008
LAS VEGAS VALLEY
FLOOD CONTROL
MASTER PLAN UPDATE

FIGURE F-27

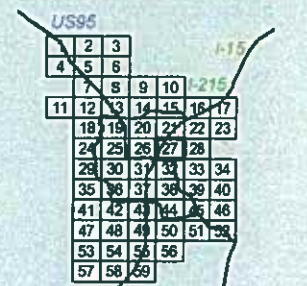
FLOOD CONTROL FACILITIES

LEGEND

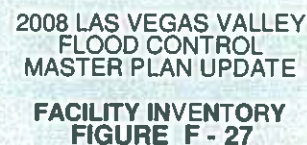
- Ultimate Development Boundary
- Existing Facilities
- Category A Proposed Facilities
- Category B Proposed Facilities
- Local Existing Facilities
- Local Proposed Facilities
- Detention Basin
- Culvert or Bridge Crossing
- Stormdrain
- Lined Channel
- Unlined Channel
- Levee/Dike
- Natural Wash/Floodway
- ID-Mile Separator
- Remove & Replace/Parallel Facilities
- Category A Channel
- Category B Channel
- Category A Stormdrain
- Category B Stormdrain
- Category A Crossing
- Category B Crossing

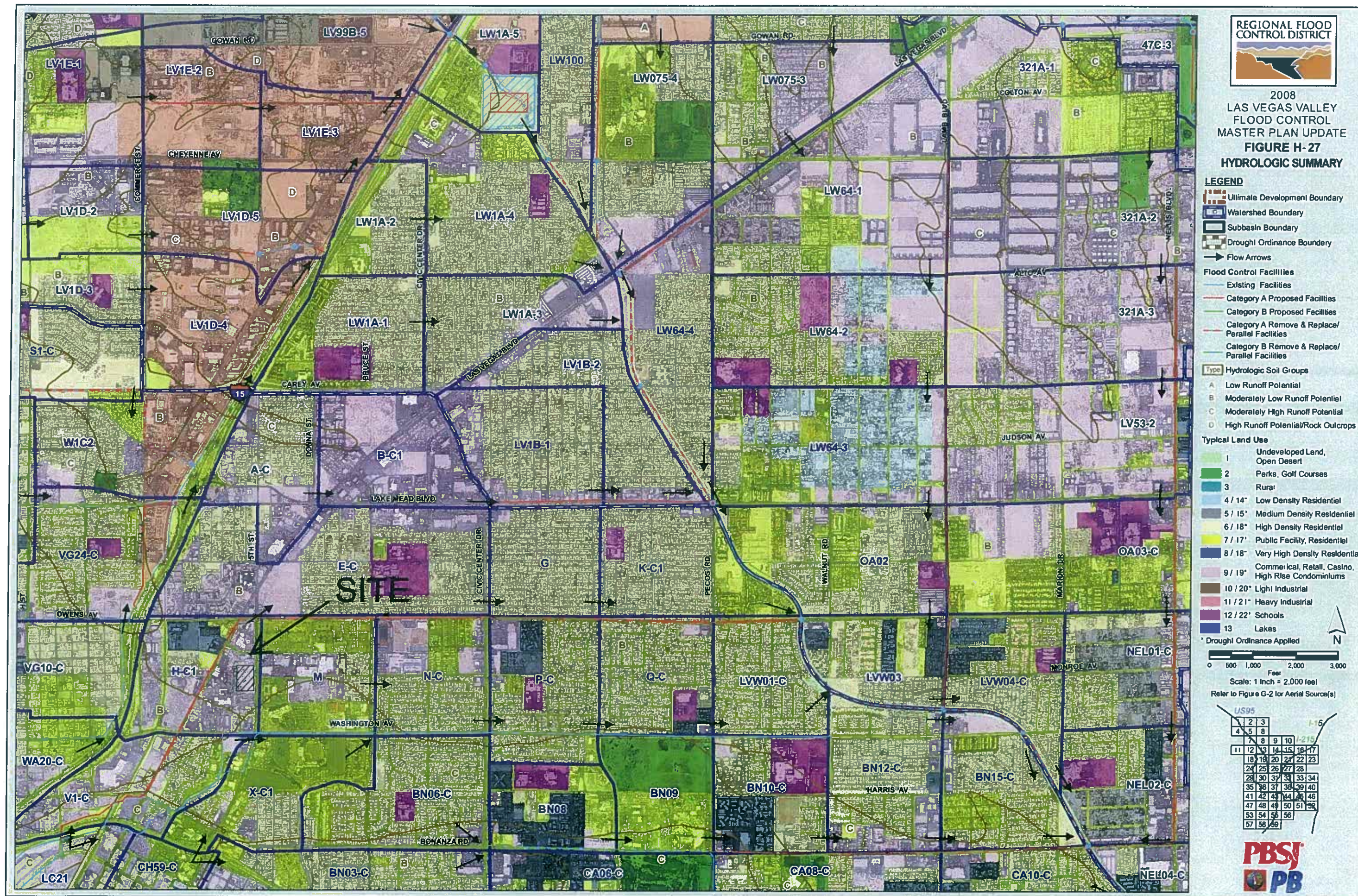


Refer to Figure G-2 for Aerial Source(s)



* The HEC-1 node shown identifies the controlling concentration point for the associated facility and is located upstream of this facility due to decreasing peak flow with increasing tributary area caused by storm distribution transitions, depth area reduction factors, or attenuation of flow from routing.





2008
LAS VEGAS VALLEY
FLOOD CONTROL
MASTER PLAN UPDATE
FIGURE H-27
HYDROLOGIC SUMMARY

LEGEND

- Ultimate Development Boundary
- Watershed Boundary
- Subbasin Boundary
- Drought Ordinance Boundary
- Flow Arrows

Flood Control Facilities

- Existing Facilities
- Category A Proposed Facilities
- Category B Proposed Facilities
- Category A Remove & Replace/Parallel Facilities
- Category B Remove & Replace/Parallel Facilities

Hydrologic Soil Groups

- A Low Runoff Potential
- B Moderately Low Runoff Potential
- C Moderately High Runoff Potential
- D High Runoff Potential/Rock Outcrops

Typical Land Use

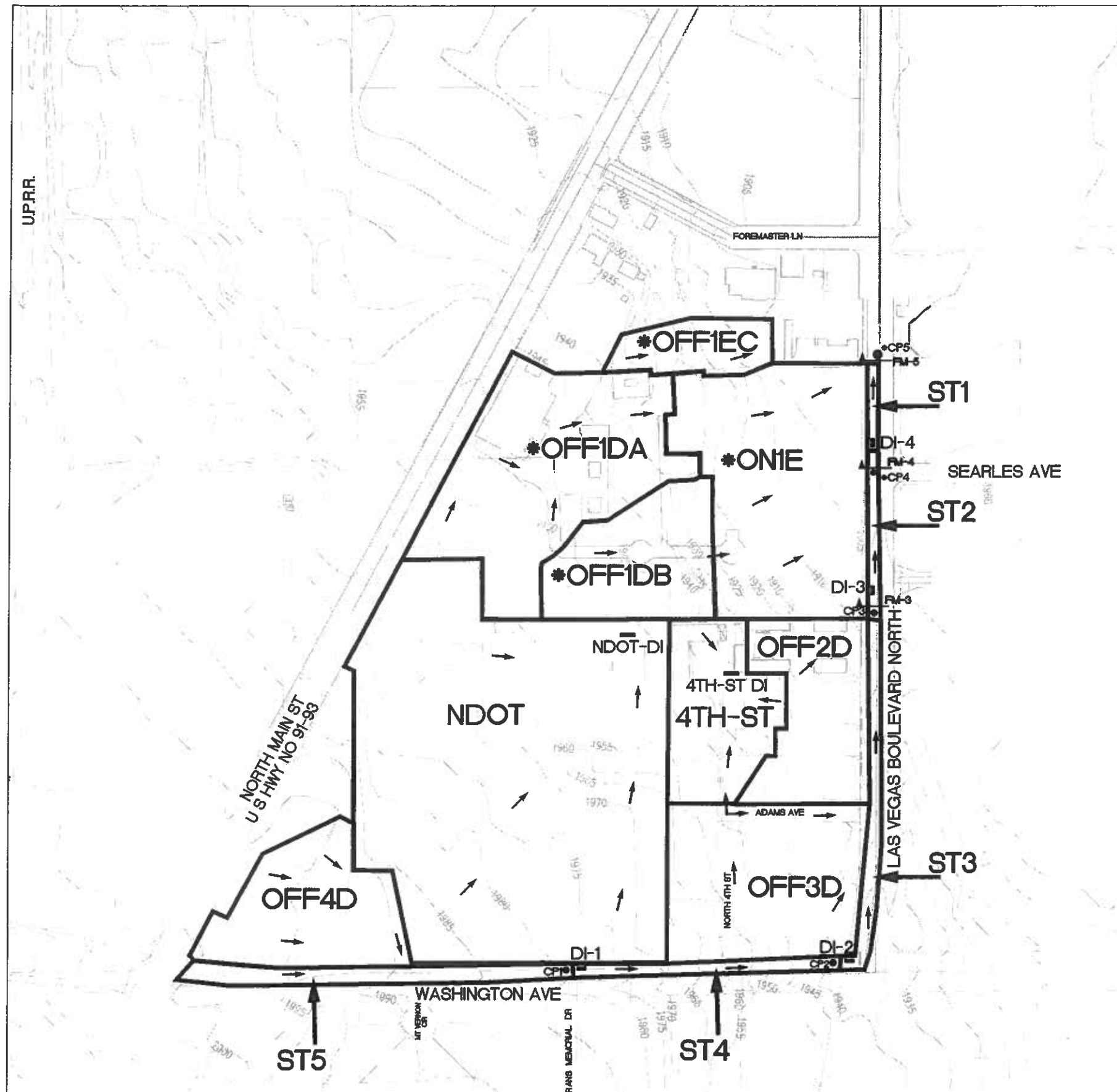
- 1 Undeveloped Land, Open Desert
- 2 Parks, Golf Courses
- 3 Rural
- 4 / 14' Low Density Residential
- 5 / 15' Medium Density Residential
- 6 / 18' High Density Residential
- 7 / 17' Public Facility, Residential
- 8 / 18' Very High Density Residential
- 9 / 19' Commercial, Retail, Casino, High Rise Condominiums
- 10 / 20' Light Industrial
- 11 / 21' Heavy Industrial
- 12 / 22' Schools
- 13 Lakes

Drought Ordinance Applied

Scale: 1 Inch = 2,000 feet

Refer to Figure G-2 for Aerial Source(s)





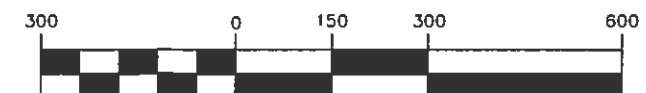
BASIN	10-YEAR FLOW	100-YEAR FLOW
	(CFS)	(CFS)
PALM MORTUARY UPDATE #1		
EXISTING CONDITION		
*ONIE	2	7
*OFF1DA	3	10
*OFF1DB	0	1
*OFF1EC	0	2
OFF2D	5	9
OFF3D	7	15
OFF4D	5	9
ST1	0	0
ST2	1	1
ST3	1	3
ST4	1	2
ST5	2	3
CP1	6	13
CP2	1	6
CP3	8	20
*CP4	7	23
*CP5	6	26

EXISTING CONDITION FLOWMASTER SECTIONS					
Section	Q (cfs)	Slope (%)	Velocity (fps)	Depth (ft)	VxD
FM 3 - Q10	8	3.36	5.14	0.38	1.95
FM 3 - Q100	20	3.36	5.72	0.51	2.92
FM 4 - Q10	7	0.10	1.09	0.62	0.68
FM 4 - Q100	23	0.10	1.56	0.86	1.34
FM 5 - Q10	6	0.10	1.04	0.60	0.62
FM 5 - Q100	26	0.10	1.64	0.89	1.46

LEGEND

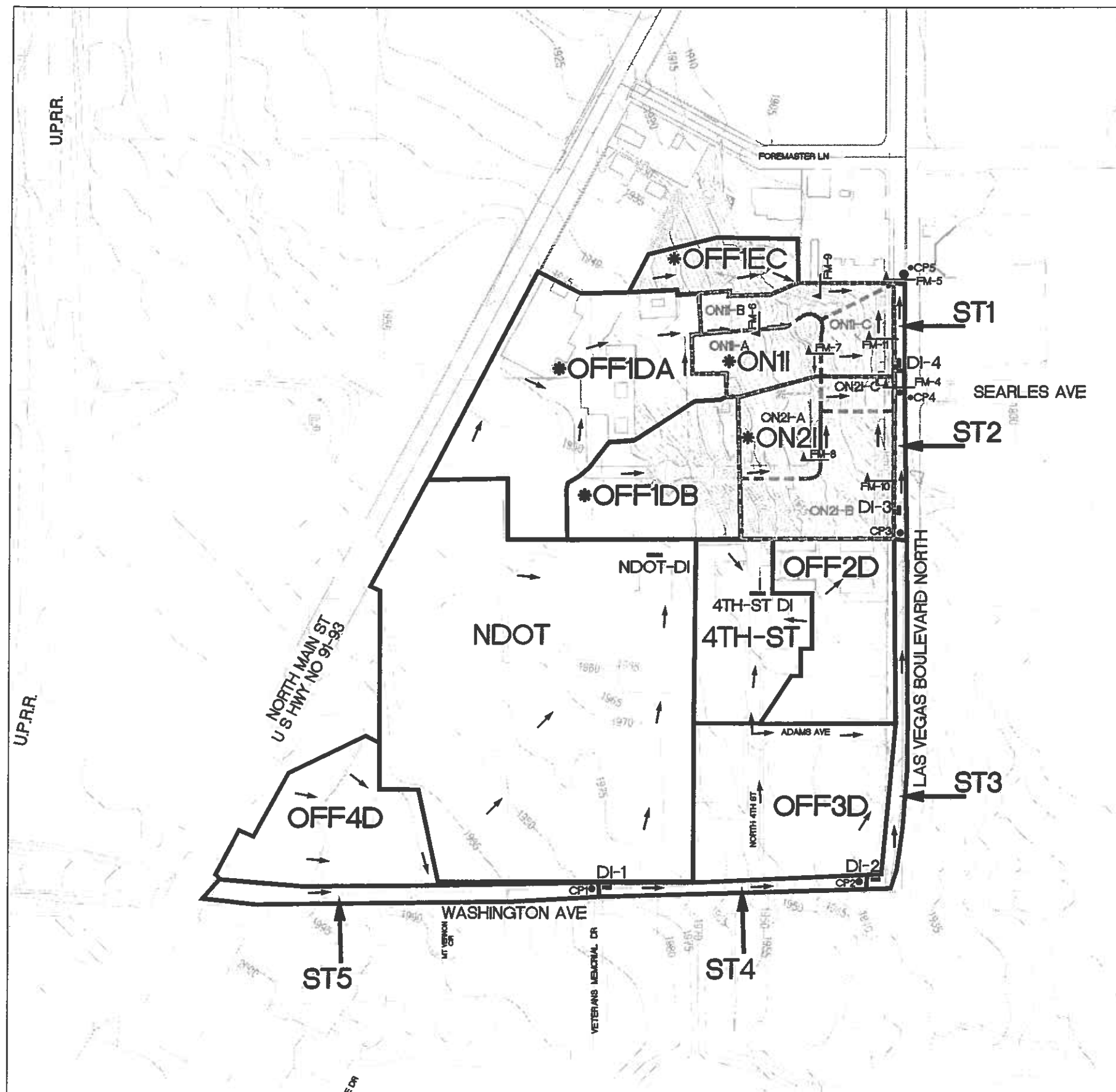
- BASIN DELINEATION
- ONIE — BASIN NAME
- CP1 — COMBINATION POINT
- 1935— CONTOUR ELEVATION
- DI-1 — DROP INLET

GRAPHIC SCALE



1" = 300'

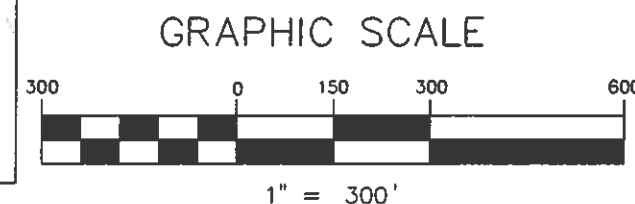
* DENOTES A BASIN THAT HAS BEEN REVISED OR ADDED WITH UPDATE #1



BASIN	10-YEAR FLOW	100-YEAR FLOW
	(CFS)	(CFS)
PALM MORTUARY UPDATE #1		
INTERIM CONDITION		
*ON11	1	4
*ON21	1	4
*OFF1DA	3	10
*OFF1DB	0	1
*OFF1EC	0	2
OFF2D	5	9
OFF3D	7	15
OFF4D	5	9
ST1	0	0
ST2	1	1
ST3	1	3
ST4	1	2
ST5	2	3
CP1	6	13
CP2	1	6
CP3	8	20
*CP4	7	22
*CP5	7	28

AREA APPROXIMATION CALCULATION SUMMARY								
Basin	Area (ac)	Q10 (cfs)	Q100 (cfs)	Sub Basin	Sub Area	Sub Area %	Sub Q10	Sub Q100
ON11	2.7	1	4	ON11-A	1.06	39.3%	0.39	1.57
				ON11-B	0.84	31.1%	0.31	1.25
				ON11-C	0.80	29.7%	0.30	1.19
ON21	3.6	1	4	ON21-A	1.10	31.0%	0.31	1.24
				ON21-B	2.08	58.6%	0.59	2.34
				ON21-C	0.37	10.4%	0.10	0.42

INTERIM CONDITION FLOWMASTER SECTIONS					
Section	Q (cfs)	Slope (%)	Velocity (fps)	Depth (ft)	VxD
FM 4 - Q10	7	0.10	1.09	0.62	0.68
FM 4 - Q100	22	0.10	1.53	0.85	1.30
FM 5 - Q10	7	0.10	1.09	0.62	0.68
FM 5 - Q100	28	0.10	1.68	0.91	1.53
FM6 - Q100	11.25	5.90	3.39	0.20	0.68
FM7 - Q100	1.57	2.50	2.42	0.20	0.48
FM8 - Q100	2.24	3.86	3.10	0.21	0.85
FM9 - Q100	13.25	1.50	4.17	0.89	3.71
FM10 - Q100	2.34	0.42	1.32	0.42	0.55
FM11 - Q100	1.19	0.45	1.01	0.26	0.26



LEGEND

- BASIN DELINEATION
- ONID — BASIN NAME
- CP1 — COMBINATION POINT
- 1935 — CONTOUR ELEVATION
- DI-1 — DROP INLET
- FM-5 — FLOWMASTER SECTION

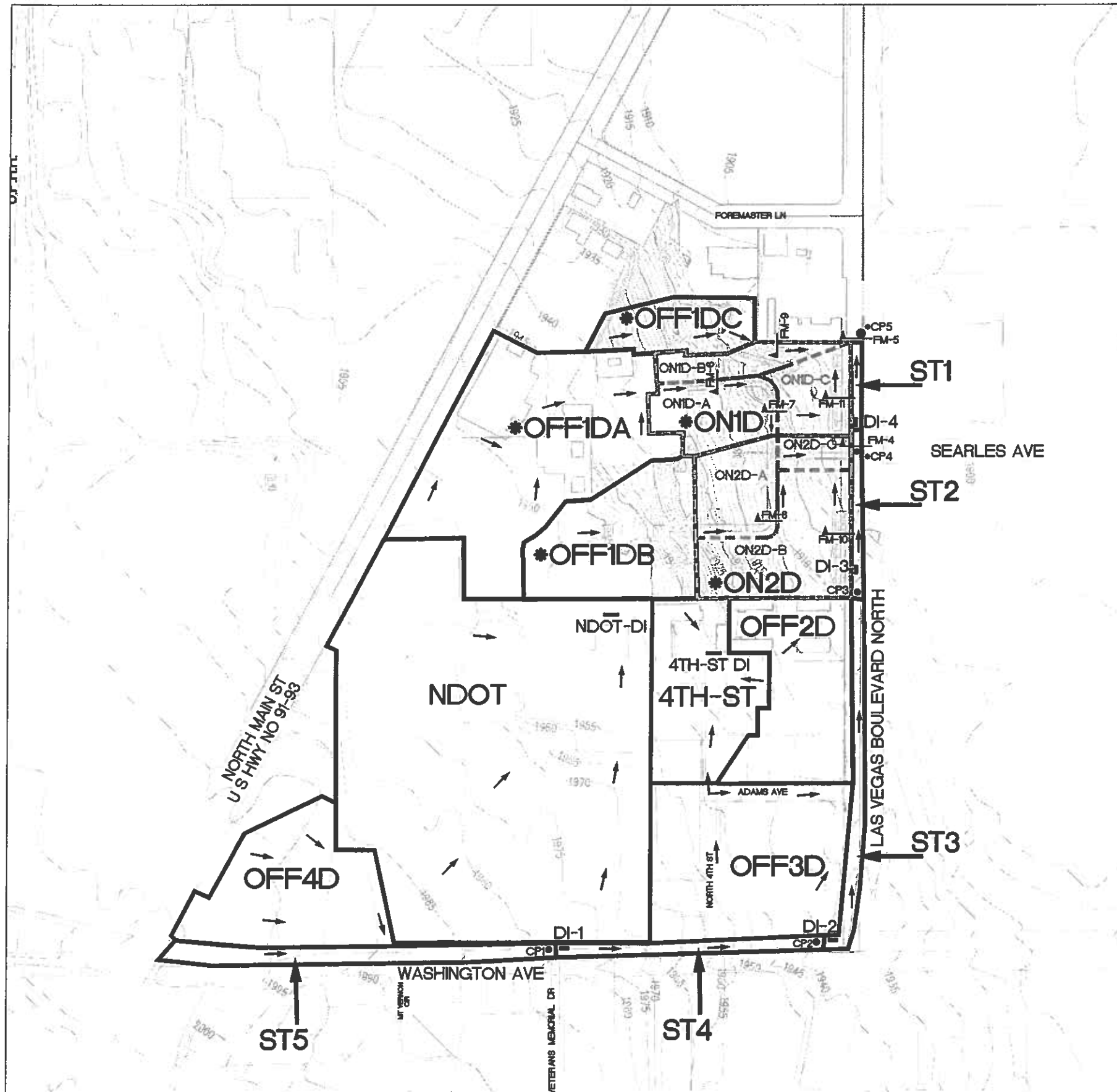
• DENOTES A BASIN THAT HAS BEEN REVISED OR ADDED WITH UPDATE #1

PALM MORTUARY UP#1 INTERIM CONDITION BASIN EXHIBIT FIGURE 5B



W.O.#: 7215-1-A5
DATE: 04/01/12
BY: SDB
SCALE: 300
SHEET 1 OF 1

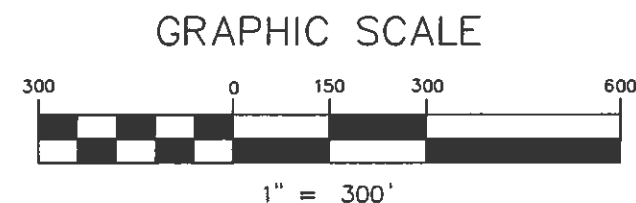
J:\7215-1-Palm Mortuary-Main\Update\Exhibits\7215-spl-basin-UP1.dwg



BASIN	10-YEAR FLOW	100-YEAR FLOW
	(CFS)	(CFS)
PALM MORTUARY UPDATE #1		
DEVELOPED CONDITION		
*ON1D	0	1
*ON2D	0	2
*OFF1DA	3	10
*OFF1DB	0	1
*OFF1DC	0	1
OFF2D	5	9
OFF3D	7	15
OFF4D	5	9
ST1	0	0
ST2	1	1
ST3	1	3
ST4	1	2
ST5	2	3
CP1	6	13
CP2	1	6
CP3	8	20
*CP4	6	17
*CP5	6	22

AREA APPROXIMATION CALCULATION SUMMARY								
Basin	Area (ac)	Q10 (cfs)	Q100 (cfs)	Sub Basin	Sub Area	Sub Area %	Sub Q10	Sub Q100
ON1D	2.7	0	1	ON1D-A	1.15	42.8%	0.00	0.43
				ON1D-B	0.66	24.5%	0.00	0.25
				ON1D-C	0.86	32.7%	0.00	0.33
ON2D	3.6	0	2	ON2D-A	1.10	31.0%	0.00	0.62
				ON2D-B	2.08	58.6%	0.00	1.17
				ON2D-C	0.37	10.4%	0.00	0.21

DEVELOPED CONDITION FLOWMASTER SECTIONS					
Section	Q (cfs)	Slope (%)	Velocity (fps)	Depth (ft)	VxD
FM 4 - Q10	6	0.10	1.05	0.60	0.63
FM 4 - Q100	17	0.10	1.41	0.79	1.11
FM 5 - Q10	6	0.10	1.05	0.60	0.63
FM 5 - Q100	22	0.10	1.53	0.85	1.30
FM6 - Q100	10.43	3.66	4.22	0.31	1.31
FM7 - Q100	10.43	2.50	3.65	0.33	1.20
FM8 - Q100	1.62	3.86	2.94	0.19	0.56
FM9 - Q100	11.25	1.50	4.00	0.84	3.36
FM10 - Q100	1.17	0.42	1.13	0.32	0.36
FM11 - Q100	0.33	0.45	0.73	0.16	0.12



LEGEND

- BASIN DELINEATION
- ONID BASIN NAME
- CP1 COMBINATION POINT
- 1935 CONTOUR ELEVATION
- DI-1 DROP INLET

• DENOTES A BASIN THAT HAS BEEN REVISED OR ADDED WITH UPDATE #1

HYDRAULIC CALCULATIONS

REVISED CURVE NUMBER CALCULATIONS

CURVE NUMBERS FOR SOILS

Soil #200 Glencarb silt loam						
Soil	Percent	Group	Existing ₁	Commercial ₂	Cemetery ₃	Streets ₄
Glencarb	85%	B	77	92	61	98
Bluepoint	3%	A	63	89	39	98
Land	9%	D	88	95	80	98
McCarran	3%	B	77	92	61	98
Total	100%		78	93	63	98

Soil #236 Glencarb very fine sandy loam, saline						
Soil	Percent	Group	Existing ₁	Commercial ₂	Cemetery ₃	Streets ₄
Glencarb	85%	B	77	92	61	98
McCarran	5%	B	77	92	61	98
Land	10%	D	88	95	80	98
Total	100%		79	93	63	98

Soil #341 Paradise silt loam						
Soil	Percent	Group	Existing ₁	Commercial ₂	Cemetery ₃	Streets ₄
Paradise	100%	C	85	94	74	98
Total	100%		85	94	74	98

Notes:

- 1- Referenced from Table 602 (4 of 4), Desert Shrub, Poor Condition
- 2- Referenced from Table 602 (1 of 4), Urban districts: Commercial and Business
- 3- Referenced from Table 602 (1 of 4), Open space - Cemeteries in good hydrologic condition
- 4- Referenced from Table 602 (1 of 4), Impervious areas: Parking lots, roofs, driveways
- 5- Developed area assumed to be 50% impervious and 50% grass in good hydrologic condition
- 6- Ex/Dev area calculated to be 10.78% impervious, 15.61% Open space - Cemetery and 73.61% Desert Shrub
- 7- Ex/Dev area calculated to be 9.58% impervious, 23.94% Open space - Cemetery and 66.48% Desert Shrub
- 8- Existing area calculated to be 20.5% Open Space - Cemetery and 79.5% Desert Shrub
- *- An * denotes a basin that has been revised or added with Update #1

Curve Number calculations for basins

Basin	Type	Soil #200	Soil #236	Soil #341	CN Value
*ON1E ₈	Existing	100%	0%	0%	75
*OFF1EC	Existing	100%	0%	0%	78
OFF2D	Developed	88%	0%	12%	93
OFF3D	Developed	4%	28%	68%	94
OFF4D	Developed	0%	100%	0%	93
ST1	Developed	100%	0%	0%	98
ST2	Developed	100%	0%	0%	98
ST3	Developed	68%	0%	32%	98
ST4	Developed	0%	32%	68%	98
ST5	Developed	0%	100%	0%	98
*ON1I ₆	Ex/Dev	100%	0%	0%	78
*ON2I ₇	Ex/Dev	100%	0%	0%	76
*ON1D	Developed	100%	0%	0%	63
*ON2D	Developed	100%	0%	0%	63
*OFF1DA ₅	Developed	100%	0%	0%	81
*OFF1DB	Developed	100%	0%	0%	63
*OFF1DC	Developed	100%	0%	0%	63

REVISED VELOCITY CALCULATIONS

TRAVEL TIME CALCULATIONS

DEVELOPMENT: PALM MORTUARY UP #1

W.O. # 7215

CALCULATED BY: SDB

$$Velocity = CS^{\frac{1}{2}}$$

C1 applies to the first 500 feet of travel distance			
C2 applies to the remaining travel distance			
Existing:		Developed	
C1=14.8	C2=29.4	C1=20.2	C2=30.6

Basin	Length (ft)	High Elev (ft)	Low Elev (ft)	Slope (ft/ft)	First 500 feet		Remaining Travel Distance	
					C1	V1 (fps)	C2	V2 (fps)
*ON1E	684	1929	1902	0.041	14.8	3.0	29.4	5.9
*OFF1EC	494	1940	1907	0.067	14.8	3.8	29.4	7.6
OFF2D	716	1945	1908	0.052	20.2	4.6	30.6	7.0
OFF3D	684	1960	1930	0.044	20.2	4.2	30.6	6.4
OFF4D	329	1992	1987	0.015	20.2	2.5	30.6	3.8
ST1	205	1904	1902	0.010	20.2	2.0	30.6	3.0
ST2	409	1907	1904	0.007	20.2	1.7	30.6	2.6
ST3	893	1938	1907	0.035	20.2	3.8	30.6	5.7
ST4	662	1978	1938	0.060	20.2	5.0	30.6	7.5
ST5	921	1998	1978	0.022	20.2	3.0	30.6	4.5
*ON1I	527	1913	1902	0.021	14.8	2.1	29.4	4.2
*ON2I	663	1929	1902	0.041	14.8	3.0	29.4	5.9
*ON1D	527	1913	1902	0.021	20.2	2.9	30.6	4.4
*ON2D	663	1929	1902	0.041	20.2	4.1	30.6	6.2
*OFF1DA	646	1952	1925	0.042	20.2	4.1	30.6	6.3
*OFF1DB	293	1947	1942	0.017	20.2	2.6	30.6	4.0
*OFF1DC	494	1940	1907	0.067	20.2	5.2	30.6	7.9

Note: An * denotes a basin that has been revised or added with Update #1

REVISED STANDARD FORM 4 ANALYSIS

DEVELOPMENT: PALM MORTUARY UP #1

CALCULATED BY: SDB

Extending:	Developed

Extending:	Developed

$W = 119.5 \frac{\text{kg}}{\text{m}^3}$	$W = 294.5 \frac{\text{kg}}{\text{m}^3}$
--	--

$W = 119.5 \frac{\text{kg}}{\text{m}^3}$	$W = 294.5 \frac{\text{kg}}{\text{m}^3}$
--	--

$$T_1 = \frac{60V}{L}$$

$$T_1 = \frac{60V}{L}$$

$k=0013C-030$

$k=0013C-030$

Note: An * denotes a basin that has been revised or added with Update #1

HYDROLOGIC ANALYSIS

REVISED EX COND HEC-1

```

*****
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUH 1998 *
* VERSION 4.1 *
* RUN DATE 20JUN12 TIME 17:54:48 *
*****

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7215E

```

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

```

```

      X  X  XXXXXXX  XXXXX  X
      X  X  X  X  X  X  X
      X  X  X  X  X  X  X
      XXXXXXX  XXXX  X  XXXXX  X
      X  X  X  X  X  X  X
      X  X  X  X  X  X  X
      X  X  XXXXXXX  XXXXX  XXX

```

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, OSS:WRITE STAGE FREQUENCY, OSS: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

```

LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
*** FREE ***
1         ID  =====
2         ID  PALM MORTUARY - UP #1 TO THE TOS
3         ID  FILE 7215E.OAT
4         ID  EXISTING CONDITION
5         ID  04-01-2012
6         ID  SOH3
7         ID  =====
8         IT  5      0      0      300
9         IN  5      0      0
10        ID  5      0      0
11        JR  PREC  .570  1.000

12        KK  ST5
13        KM  DEVELOPED OFFSITE STREET BASIN
14        BA  .0015
15        PB  2.77
16        PC  .000  .020  .057  .070  .087  .108  .124  .130  .130  .130
17        PC  .130  .130  .130  .133  .140  .142  .148  .158  .172  .181
18        PC  .190  .197  .199  .200  .201  .204  .214  .229  .241  .249
19        PC  .251  .256  .270  .278  .281  .283  .295  .322  .352  .409
20        PC  .499  .590  .710  .744  .781  .812  .819  .835  .851  .856
21        PC  .860  .868  .876  .888  .910  .926  .937  .950  .970  .976
22        PC  .982  .985  .987  .989  .990  .993  .993  .994  .995  .998
23        PC  .998  .999  1.00
24        LS  0
25        UD  0.062

26        KK  OFF40
27        KM  DEVELOPED OFFSITE BASIN
28        BA  .0048
29        LS  0      93.0
30        UD  .072

31        KK  CP1
32        KM  COMBINE OFF40 AND ST5
33        HC  2

34        KK  RC1
35        KM  6/9 CFS INTERCEPTED BY D11
36        OT  DC1
37        DI  6      13
38        DQ  6      9

39        KK  ST4
40        KM  DEVELOPED OFFSITE STREET BASIN
41        BA  .0008
42        LS  0      98.0
43        UD  .050

```

1 HEC-1 INPUT PAGE 2

```

LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
44        KK  CP2
45        KM  COMBINE ST4 AND CP1
46        HC  2

47        KK  OFF30
48        KM  DEVELOPED OFFSITE BASIN
49        BA  .0069
50        LS  0      94.0
51        UD  .054

52        KK  FS1
53        KM  FLOW SPLIT AT ADAMS AND 4TH
54        OT  DQ1
55        DI  7      15
56        DQ  6      12

57        KK  OFF20
58        KM  DEVELOPED OFFSITE BASIN
59        BA  .0044
60        LS  0      93.0
61        UD  .050

62        KK  ST3
63        KM  DEVELOPED OFFSITE STREET BASIN
64        BA  .0011
65        LS  0      98.0
66        UD  .052

67        KK  CP3
68        KM  COMBINE BASINS ST3, OFF20, FS1, AND CP2
69        HC  4

```



```

70      KK      RC2
71      KM      3/6 CFS INTERCEPTED BY OI3
72      OT      DC2
73      OI      8      20
74      DQ      3      6

75      KK      *OFF1DB
76      KM      DEVELOPED OFFSITE BASIN
77      BA      .0043
78      LS      0      63.0
79      UD      .118

80      KK      ST2
81      KM      DEVELOPED OFFSITE STREET BASIN
82      BA      .0004
83      LS      0      98.0
84      UD      .058

```

NEC-1 INPUT

PAGE 3

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

```

85      KK      *ON1E
86      KM      EXISTING ONSITE BASIN
87      BA      .0097
88      LS      0      75.0
89      UD      .100

90      KK      *CP4
91      KM      COMBINE ON1E, ST2, OFF1DB, CP3
92      NC      4

93      KK      *RC3
94      KM      4/8 CFS INTERCEPTED BY OI4
95      OT      *OC3
96      OI      7      23
97      DQ      4      8

98      KK      *OFF1DA
99      KM      DEVELOPED OFFSITE BASIN
100     BA      .0092
101     LS      0      81.0
102     UD      .114

103     KK      *OFF1EC
104     KM      EXISTING OFFSITE BASIN
105     BA      .0018
106     LS      0      78.0
107     UD      .100

108     KK      ST1
109     KM      DEVELOPED OFFSITE STREET BASIN
110     BA      .0002
111     LS      0      98.0
112     UD      .050

113     KK      *CP5
114     KM      COMBINE *CP4, *OFF1DA, *OFF1EC, AND ST1
115     NC      4
116     ZZ

```

SCHEMATIC DIAGRAM OF STREAM NETWORK

1 INPUT LINE

(V) ROUTING (---->) DIVERSION OR PUMP FLOW

NO. (.) CONNECTOR (<----) RETURN OF DIVERTED OR PUMPED FLOW

```

12      ST5
13      .
14      .
15      .
26      .      OFF40
27      .
28      .
31      CP1.....
32      .
33      .
36      .      ----->      OC1
37      .
38      .
39      .      ST4
40      .
41      .
44      CP2.....
45      .
46      .
47      .      OFF30
48      .
49      .
54      .      ----->      DQ1
55      .
56      .
57      .      OFF20
58      .
59      .
62      .      ST3
63      .
64      .
67      CP3.....
68      .
69      .
72      .      ----->      DC2
73      .
74      .
75      .      *OFF1DB
76      .
77      .
80      .      ST2
81      .
82      .
85      .      *ON1E
86      .
87      .
90      *CP4.....
91      .
92      .
95      .      ----->      *OC3
96      .
97      .
98      .      *OFF10A

```

103 *OFF1EC
 108 ST1
 113 *CP5.....

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

 * FLOOD HYDROGRAPH PACKAGE (HEC-1) *
 * JUN 1998 *
 * VERSION 4.1 *
 * RUN DATE 20JUN12 TIME 17:54:48 *

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 * 609 SECOND STREET *
 * DAVIS, CALIFORNIA 95616 *
 * (916) 756-1104 *

=====

PALM MORTUARY - UP #1 TO THE TDS
 FILE 7215E.DAT
 EXISTING CONDITION
 04-01-2012
 SDN3

=====

10 10 OUTPUT CONTROL VARIABLES

IPRNT	5	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

IT HYDROGRAPH TIME DATA

NMIN	5	MINUTES IN COMPUTATION INTERVAL
IDATE	1	STARTING DATE
ITIME	0000	STARTING TIME
NQ	300	NUMBER OF HYDROGRAPH ORDINATES
NDOATE	2	ENDING DATE
NDOIME	0055	ENDING TIME
ICENT	19	CENTURY MARK

COMPUTATION INTERVAL .08 HOURS
 TOTAL TIME BASE 24.92 HOURS

ENGLISH UNITS

ORAINAGE AREA	SQUARE MILES
PRECIPITATION DEPTH	INCHES
LENGTH, ELEVATION	FEET
FLOW	CUBIC FEET PER SECONO
STORAGE VOLUME	ACRE-Feet
SURFACE AREA	ACRES
TEMPERATURE	DEGREES FAHRENHEIT

JP MULTI-PLAN OPTION

NPLAN	1	NUMBER OF PLANS
-------	---	-----------------

JR MULTI-RATIO OPTION

RATIOS OF PRECIPITATION	1.00
.57	

1

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
 FLOWS IN CUBIC FEET PER SECONO, AREA IN SQUARE MILES
 TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN	FLOW TIME	RATIOS APPLIED TO PRECIPITATION	
					RATIO 1	RATIO 2
					.57	1.00
HYDROGRAPH AT	ST5	.00	1	2.	3.	
+				3.50	3.50	
HYDROGRAPH AT	OFF40	.00	1	5.	9.	
+				3.50	3.50	
2 COMBINED AT	CP1	.01	1	6.	13.	
+				3.50	3.50	
OIVERSION TO	DC1	.01	1	6.	9.	
+				3.50	3.50	
HYDROGRAPH AT	RC1	.01	1	0.	4.	
+				3.50	3.50	
HYDROGRAPH AT	ST4	.00	1	1.	2.	
+				3.50	3.50	
2 COMBINED AT	CP2	.01	1	1.	6.	
+				3.50	3.50	
HYDROGRAPH AT	OFF30	.01	1	7.	15.	
+				3.50	3.50	
OIVERSION TO	DQ1	.01	1	6.	12.	
+				3.50	3.50	
HYDROGRAPH AT	FS1	.01	1	1.	3.	
+				3.50	3.50	
HYDROGRAPH AT	OFF20	.00	1	5.	9.	
+				3.50	3.50	
HYDROGRAPH AT	ST3	.00	1	1.	3.	
+				3.50	3.50	

4 COMBINED AT	CP3	.02	1	FLOW TIME	8. 3.50	20. 3.50
DIVERSION TO	DC2	.02	1	FLOW TIME	3. 3.50	6. 3.50
HYDROGRAPH AT	RC2	.02	1	FLOW TIME	5. 3.50	14. 3.50
HYDROGRAPH AT	*OFF1DB	.00	1	FLOW TIME	0. 4.92	1. 3.58
HYDROGRAPH AT	ST2	.00	1	FLOW TIME	1. 3.50	1. 3.50
HYDROGRAPH AT	*ON1E	.01	1	FLOW TIME	2. 3.58	7. 3.58
4 COMBINED AT	*CP4	.03	1	FLOW TIME	7. 3.50	23. 3.50
DIVERSION TO	*DC3	.03	1	FLOW TIME	4. 3.50	8. 3.50
HYDROGRAPH AT	*RC3	.03	1	FLOW TIME	3. 3.50	15. 3.50
HYDROGRAPH AT	*OFF1DA	.01	1	FLOW TIME	3. 3.58	10. 3.58
HYDROGRAPH AT	*OFF1EC	.00	1	FLOW TIME	0. 3.58	2. 3.58
HYDROGRAPH AT	ST1	.00	1	FLOW TIME	0. 3.50	0. 3.50
4 COMBINED AT	*CP5	.05	1	FLOW TIME	6. 3.50	26. 3.50

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

REVISED INTERIM CONDITION HEC-1

```

*****
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
* RUN DATE 25JUN12 TIME 08:03:40 *
*****

```

```

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

```

```

      X  X  XXXXXXX  XXXXX  X
      X  X  X  X  X  X  X
      X  X  X  X  X  X  X
      XXXXXXX  XXXX  X  XXXXX  X
      X  X  X  X  X  X  X
      X  X  X  X  X  X  X
      X  X  XXXXXXX  XXXXX  XXX

```

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

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIDR- 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

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

*DIAGRAM

*** FREE ***

```

1 ID
2 ID PALM MORTUARY - UPDATE #1 TO THE TDS
3 ID FILE 72151.DAT
4 ID INTERIM CONDITION
5 ID 04-01-2012
6 ID SDN3
7 ID
8 ID
9 IT 5 0 0 300
10 IN 5 0 0
11 ID 5 0 0
12 JR PREC .570 1.000
13 KK ST5
14 KM DEVELOPED OFFSITE STREET BASIN
15 BA .0015
16 PB 2.77
17 PC .000 .020 .057 .070 .087 .108 .124 .130 .130 .130
18 PC .130 .130 .130 .133 .140 .142 .148 .158 .172 .181
19 PC .190 .197 .199 .200 .201 .204 .214 .229 .241 .249
20 PC .251 .256 .270 .278 .281 .283 .295 .322 .352 .409
21 PC .499 .590 .710 .744 .781 .812 .819 .835 .851 .856
22 PC .860 .868 .876 .888 .910 .926 .937 .950 .970 .976
23 PC .982 .985 .987 .989 .990 .993 .993 .994 .995 .998
24 LS 0 98.0
25 UD 0.062
26 KK DFF4D
27 KM DEVELOPED OFFSITE BASIN
28 BA .0048
29 LS 0 93.0
30 UD .072
31 KK CP1
32 KM COMBINE DFF4D AND ST5
33 HC 2
34 KK RC1
35 KM 6/9 CFS INTERCEPTED BY DI1
36 DT DC1
37 DI 6 13
38 DQ 6 9
39 KK ST4
40 KM DEVELOPED OFFSITE STREET BASIN
41 BA .0008
42 LS 0 98.0
43 UD .050

```

1 HEC-1 INPUT PAGE 2

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

```

44 KK CP2
45 KM COMBINE ST4 AND CP1
46 HC 2
47 KK DFF3D
48 KM DEVELOPED OFFSITE BASIN
49 BA .0069
50 LS 0 94.0
51 UD .054
52 KK FS1
53 KM FLOW SPLIT AT ADAMS AND 4TH
54 DT DQ1
55 DI 7 15
56 DQ 6 12
57 KK DFF2D
58 KM DEVELOPED OFFSITE BASIN
59 BA .0044
60 LS 0 93.0
61 UD .050
62 KK ST3
63 KM DEVELOPED OFFSITE STREET BASIN
64 BA .0011
65 LS 0 98.0
66 UD .052
67 KK CP3
68 KM COMBINE BASINS ST3, DFF2D, FS1, AND CP2
69 HC 4

```

```

70      KK      RC2
71      KM      3/6 CFS INTERCEPTED BY OI3
72      OT      DC2
73      OI      8      20
74      DQ      3      6

75      KK      *OFF1DB
76      KM      DEVELOPED OFFSITE BASIN
77      BA      .0043
78      LS      0      63.0
79      UD      .118

80      KK      *ON2I
81      KM      EX/DEV ONSITE BASIN
82      BA      .0055
83      LS      0      76.0
84      UD      .100

```

HEC-1 INPUT

PAGE 3

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

```

85      KK      ST2
86      KM      DEVELOPED OFFSITE STREET BASIN
87      BA      .0004
88      LS      0      98.0
89      UD      .058

90      KK      *ON1I
91      KM      EX/DEV ONSITE BASIN
92      BA      .0042
93      LS      0      78.0
94      UD      .100

95      KK      *RT
96      KM      0.61/2.44 CFS from sub basins ON1I-B & ON1I-C
97      OT      *OT1
98      OI      1      4
99      DQ      0.61      2.44

100     KK      *CP4
101     KM      COMBINE *RT, ST2, *ON2I, *OFF1DB, AND RC2
102     HC      5

103     KK      *RC3
104     KM      4/7 CFS INTERCEPTED BY OI4
105     OT      *OC3
106     OI      7      22
107     DQ      4      7

108     KK      *OFF1DA
109     KM      DEVELOPED OFFSITE BASIN
110     BA      .0092
111     LS      0      81.0
112     UD      .114

113     KK      *OFF1EC
114     KM      EXISTING OFFSITE BASIN
115     BA      .0018
116     LS      0      78.0
117     UD      .100

118     KK      ST1
119     KM      DEVELOPED OFFSITE STREET BASIN
120     BA      .0002
121     LS      0      98.0
122     UD      .050

123     KK      *OT1
124     OR      *OT1

```

HEC-1 INPUT

PAGE 4

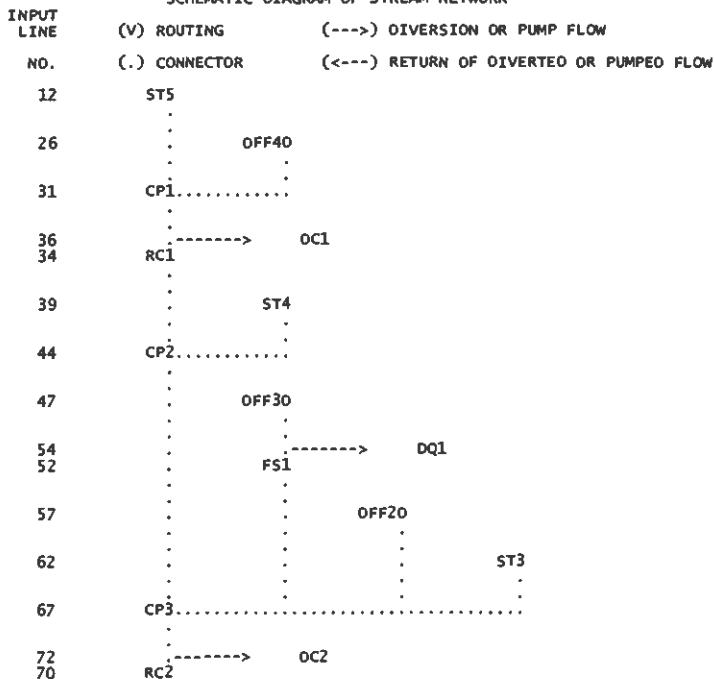
LINE IO.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

```

125     KK      *CP5
126     KM      COMBINE *OT1, ST1, *OFF1EC, *OFF1DA AND RC3
127     HC      5
128     ZZ

```

SCHEMATIC DIAGRAM OF STREAM NETWORK




```

75      *OFF1DB
80      *ON2I
85      ST2
90      *ON1I
97      *RT-----> *OT1
95
100     *CP4-----
105     *RC3-----> *DC3
103
108     *OFF1DA
113     *OFF1EC
118     ST1
124     *OT1-----> *OT1
123
125     *CP5-----

```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```

*****
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
* RUN DATE 25JUN12 TIME 08:03:40 *
*****

```

```

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

```

```

=====
PALM MORTUARY - UPDATE #1 TO THE TOS
FILE 72151.OAT
INTERIM CONDITION
04-01-2012
SON3
=====

```

```

10 IO      OUTPUT CONTROL VARIABLES
           IPRNT      5 PRINT CONTROL
           IPLOT      0 PLOT CONTROL
           QSCAL      0. HYDROGRAPH PLOT SCALE

IT         HYDROGRAPH TIME DATA
           NMIN      5 MINUTES IN COMPUTATION INTERVAL
           IDATE      1 0 STARTING DATE
           ITIME      0000 STARTING TIME
           NQ        300 NUMBER OF HYDROGRAPH ORIGINATES
           HDATE      2 0 ENDING DATE
           HTIME      0055 ENDING TIME
           ICENT      19 CENTURY MARK

           COMPUTATION INTERVAL .08 HOURS
           TOTAL TIME BASE 24.92 HOURS

```

```

ENGLISH UNITS
DRAINAGE AREA      SQUARE MILES
PRECIPITATION DEPTH INCHES
LENGTH, ELEVATION FEET
FLOW               CUBIC FEET PER SECOND
STORAGE VOLUME     ACRE-Feet
SURFACE AREA       ACRES
TEMPERATURE        DEGREES FAHRENHEIT

```

```

JP         MULTI-PLAN OPTION
           NPLAN      1 NUMBER OF PLANS

```

```

JR         MULTI-RATIO OPTION
           RATIOS OF PRECIPITATION
           .57      1.00

```

1

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
 FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
 TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN	FLOW TIME	RATIOS APPLIED TO PRECIPITATION	
					RATIO 1 .57	RATIO 2 1.00
HYDROGRAPH AT	ST5	.00	1	2.3.50	3.3.50	
HYDROGRAPH AT	OFF40	.00	1	5.3.50	9.3.50	
2 COMBINED AT	CP1	.01	1	6.3.50	13.3.50	
DIVERSION TO	OC1	.01	1	6.3.50	9.3.50	
HYDROGRAPH AT	RC1	.01	1	0.4.		

				TIME	3.50	3.50
HYDROGRAPH AT	ST4	.00	1	FLOW	1.	2.
+				TIME	3.50	3.50
2 COMBINED AT	CP2	.01	1	FLOW	1.	6.
+				TIME	3.50	3.50
HYDROGRAPH AT	OFF30	.01	1	FLOW	7.	15.
+				TIME	3.50	3.50
DIVERSION TO	DQ1	.01	1	FLOW	6.	12.
+				TIME	3.50	3.50
HYDROGRAPH AT	FS1	.01	1	FLOW	1.	3.
+				TIME	3.50	3.50
HYDROGRAPH AT	OFF20	.00	1	FLOW	5.	9.
+				TIME	3.50	3.50
HYDROGRAPH AT	ST3	.00	1	FLOW	1.	3.
+				TIME	3.50	3.50
4 COMBINED AT	CP3	.02	1	FLOW	8.	20.
+				TIME	3.50	3.50
DIVERSION TO	DC2	.02	1	FLOW	3.	6.
+				TIME	3.50	3.50
HYDROGRAPH AT	RC2	.02	1	FLOW	5.	14.
+				TIME	3.50	3.50
HYDROGRAPH AT	*OFF1DB	.00	1	FLOW	0.	1.
+				TIME	4.92	3.58
HYDROGRAPH AT	*ON2I	.01	1	FLOW	1.	4.
+				TIME	3.58	3.58
HYDROGRAPH AT	ST2	.00	1	FLOW	1.	1.
+				TIME	3.50	3.50
HYDROGRAPH AT	*ON1I	.00	1	FLOW	1.	4.
+				TIME	3.58	3.58
DIVERSION TO	*OT1	.00	1	FLOW	1.	2.
+				TIME	3.58	3.58
HYDROGRAPH AT	*RT	.00	1	FLOW	0.	1.
+				TIME	3.58	3.58
5 COMBINED AT	*CP4	.03	1	FLOW	7.	22.
+				TIME	3.50	3.50
DIVERSION TO	*OC3	.03	1	FLOW	4.	7.
+				TIME	3.50	3.50
HYDROGRAPH AT	*RC3	.03	1	FLOW	3.	15.
+				TIME	3.50	3.50
HYDROGRAPH AT	*OFF1DA	.01	1	FLOW	3.	10.
+				TIME	3.58	3.58
HYDROGRAPH AT	*OFF1EC	.00	1	FLOW	0.	2.
+				TIME	3.58	3.58
HYDROGRAPH AT	ST1	.00	1	FLOW	0.	0.
+				TIME	3.50	3.50
HYDROGRAPH AT	*OT1	.00	1	FLOW	1.	2.
+				TIME	3.58	3.58
5 COMBINED AT	*CP5	.05	1	FLOW	7.	28.
+				TIME	3.50	3.50

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

REVISED DEVELOPED CONDITION HEC-1


```

1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1)
* JUN 1998
* VERSION 4.1
*
* RUN DATE 05JUL12 TIME 09:06:27
*
*****

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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 XXXXXXX XXXXX X
X X X X X XX
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X X X X X X
X X X X X X
X X XXXXXXX XXXXX XXXX

```

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

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIDR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- 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

```

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
*** FREE ***
1 ID =====
2 ID PALM MORTUARY - UPDATE #1 TO THE TDS
3 ID FILE 72150.DAT
4 ID DEVELOPED CONDITION
5 ID 04-01-2012
6 ID SDN3
7 ID =====
8 IT 5 0 0 300
9 IN 5 0 0
10 ID 5 0 0
11 JR PREC .570 1.000
12 KK ST5
13 KM DEVELOPED OFFSITE STREET BASIN
14 BA .0015
15 PB 2.77
16 PC .000 .020 .057 .070 .087 .108 .124 .130 .130 .130
17 PC .130 .130 .130 .133 .140 .142 .148 .158 .172 .181
18 PC .190 .197 .199 .200 .201 .204 .214 .229 .241 .249
19 PC .251 .256 .270 .278 .281 .283 .295 .322 .352 .409
20 PC .499 .590 .710 .744 .781 .812 .819 .835 .851 .856
21 PC .860 .868 .876 .888 .910 .926 .937 .950 .970 .976
22 PC .982 .985 .987 .989 .990 .993 .993 .994 .995 .998
23 PC .998 .999 1.00
24 LS 0 98.0
25 UD 0.062
26 KK DFF4D
27 KM DEVELOPED OFFSITE BASIN
28 BA .0048
29 LS 0 93.0
30 UD .072
31 KK CP1
32 KM COMBINE DFF4D AND ST5
33 HC 2
34 KK RC1
35 KM 6/9 CFS INTERCEPTED BY D11
36 DT DC1
37 DI 6 13
38 DQ 6 9
39 KK ST4
40 KM DEVELOPED OFFSITE STREET BASIN
41 BA .0008
42 LS 0 98.0
43 UD .050

```

HEC-1 INPUT

PAGE 2

```

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
44 KK CP2
45 KM COMBINE ST4 AND CP1
46 HC 2
47 KK DFF3D
48 KM DEVELOPED OFFSITE BASIN
49 BA .0069
50 LS 0 94.0
51 UD .054
52 KK FS1
53 KM FLOW SPLIT AT ADAMS AND 4TH
54 DT DQ1
55 DI 7 15
56 DQ 6 12
57 KK DFF2D
58 KM DEVELOPED OFFSITE BASIN
59 BA .0044
60 LS 0 93.0
61 UD .050
62 KK ST3
63 KM DEVELOPED OFFSITE STREET BASIN
64 BA .0011
65 LS 0 98.0
66 UD .052
67 KK CP3
68 KM COMBINE BASINS ST3, DFF2D, FS1, AND CP2

```

```

70      KK      RC2
71      KM      3/6 CFS INTERCEPTED BY OI3
72      DT      DC2
73      OI      8      20
74      DQ      3      6

75      KK      *OFF10B
76      KM      DEVELOPEO OFFSITE BASIN
77      BA      .0043
78      LS      0      63.0
79      UD      .118

80      KK      *ON20
81      KM      OEV ONSITE BASIN
82      BA      .0055
83      LS      0      63.0
84      UD      .111

```

1 HEC-1 INPUT PAGE 3

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

```

85      KK      ST2
86      KM      DEVELOPED OFFSITE STREET BASIN
87      BA      .0004
88      LS      0      98.0
89      UD      .058

90      KK      *ON1D
91      KM      OEV ONSITE BASIN
92      BA      .0042
93      LS      0      63.0
94      UD      .108

95      KK      *RT
96      KM      0.00/0.58 CFS from sub basins ON1D-B & ON1D-C
97      DT      *DT1
98      OI      0      1
99      DQ      0.00 0.58

100     KK      *CP4
101     KM      COMBINE *RT, ST2, *ON2I, *OFF10B, AND RC2
102     HC      5

103     KK      *RC3
104     KM      3/6 CFS INTERCEPTED BY DI4
105     DT      *OC3
106     OI      6      17
107     OQ      3      6

108     KK      *OFF1DA
109     KM      DEVELOPEO OFFSITE BASIN
110     BA      .0092
111     LS      0      81.0
112     UD      .114

113     KK      *OFF1DC
114     KM      DEVELOPEO OFFSITE BASIN
115     BA      .0018
116     LS      0      63.0
117     UD      .070

118     KK      ST1
119     KM      DEVELOPEO OFFSITE STREET BASIN
120     BA      .0002
121     LS      0      98.0
122     UD      .050

123     KK      *DT1
124     OR      *DT1

```

1 NEC-1 INPUT PAGE 4

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

```

125     KK      *CP5
126     KM      COMBINE *OT1, ST1, *OFF1DC, *OFF1DA AND RC3
127     HC      5
128     ZZ

```

1 SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT LINE (V) ROUTING (--->) OIVERSION OR PUMP FLOW
 NO. (.) CONNECTOR (<---) RETURN OF OIVERTEO OR PUMPEO FLOW

```

12      ST5
13      .
14      .
15      .
16      .      OFF4D
17      .
18      .
19      .
20      .
21      .
22      .
23      .
24      .
25      .
26      .
27      .
28      .
29      .
30      .
31      CP1.....
32      .
33      .
34      .
35      .
36      .
37      .
38      .
39      .
40      .
41      .
42      .
43      .
44      CP2.....
45      .
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49      .
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67      CP3.....
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75      .      *OFF1D8
80      .      .      *ON20
85      .      .      .      ST2
90      .      .      .      .      *ON1D
97      .      .      .      .      .      *RT-----> *OT1
95      .      .      .      .      .      .
100     *CP4.....
105     .      .      .      .      .      .
103     *RC3-----> *DC3
108     .      .      *OFF10A
113     .      .      .      *OFF1DC
118     .      .      .      .      ST1
124     .      .      .      .      .      .
123     .      .      .      .      .      .      *OT1<----- *OT1
125     *CP5.....

```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```

1*****
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
*   JUN 1998                  *
*   VERSION 4.1              *
* RUN DATE 05JUL12 TIME 09:06:27 *
*****

```

```

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

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=====
PALM MORTUARY - UPDATE #1 TO THE TOS
FILE 72150.DAT
DEVELOPED CONDITION
04-01-2012
SON3
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10 IO  OUTPUT CONTROL VARIABLES
        IPRNT      5  PRINT CONTROL
        IPLOT      0  PLOT CONTROL
        QSCAL      0.  HYDROGRAPH PLOT SCALE

IT      HYDROGRAPH TIME DATA
        NMIN      5  MINUTES IN COMPUTATION INTERVAL
        IOATE      1  0  STARTING DATE
        ITIME      0000 STARTING TIME
        NQ         300 NUMBER OF HYDROGRAPH ORDINATES
        NDDATE      2  0  ENDING DATE
        NDTIME      0055 ENDING TIME
        ICENT       19  CENTURY MARK

        COMPUTATION INTERVAL .08 HOURS
        TOTAL TIME BASE     24.92 HOURS

ENGLISH UNITS
ORAINAGE AREA      SQUARE MILES
PRECIPITATION DEPTH INCHES
LENGTH, ELEVATION  FEET
FLOW               CUBIC FEET PER SECOND
STDRAGE VOLUME     ACRE-Feet
SURFACE AREA       ACRES
TEMPERATURE        DEGREES FAHRENHEIT

JP      MULTI-PLAN OPTION
        NPLAN      1  NUMBER OF PLANS

JR      MULTI-RATIO OPTION
        RATIOS OF PRECIPITATION
        .57        1.00

```

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
 FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
 TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN	RATIOS APPLIED TO PRECIPITATION	
				RATIO 1	RATIO 2
				.57	1.00
HYDROGRAPH AT					
+	ST5	.00	1	FLOW TIME	2. 3.50
HYDROGRAPH AT					
+	OFF4D	.00	1	FLOW TIME	5. 3.50
2 COMBINED AT					
+	CP1	.01	1	FLOW TIME	6. 3.50
DIVERSION TO					
+	DC1	.01	1	FLOW TIME	6. 3.50
HYDROGRAPH AT					
	CP1	.01	1	FLOW TIME	6. 3.50

				TIME	3.50	3.50
HYDROGRAPH AT						
+	ST4	.00	1	FLOW TIME	1. 3.50	2. 3.50
2 COMBINED AT						
+	CP2	.01	1	FLOW TIME	1. 3.50	6. 3.50
HYDROGRAPH AT						
+	OFF30	.01	1	FLOW TIME	7. 3.50	15. 3.50
DIVERSION TO						
+	DQ1	.01	1	FLOW TIME	6. 3.50	12. 3.50
HYDROGRAPH AT						
+	FS1	.01	1	FLOW TIME	1. 3.50	3. 3.50
HYDROGRAPH AT						
+	OFF20	.00	1	FLOW TIME	5. 3.50	9. 3.50
HYDROGRAPH AT						
+	ST3	.00	1	FLOW TIME	1. 3.50	3. 3.50
4 COMBINED AT						
+	CP3	.02	1	FLOW TIME	8. 3.50	20. 3.50
DIVERSION TO						
+	QC2	.02	1	FLOW TIME	3. 3.50	6. 3.50
HYDROGRAPH AT						
+	RC2	.02	1	FLOW TIME	5. 3.50	14. 3.50
HYDROGRAPH AT						
+	*OFF1DB	.00	1	FLOW TIME	0. 4.92	1. 3.58
HYDROGRAPH AT						
+	*ON20	.01	1	FLOW TIME	0. 4.92	2. 3.58
HYDROGRAPH AT						
+	ST2	.00	1	FLOW TIME	1. 3.50	1. 3.50
HYDROGRAPH AT						
+	*ON1D	.00	1	FLOW TIME	0. 4.92	1. 3.58
DIVERSION TO						
+	*OT1	.00	1	FLOW TIME	0. 4.83	1. 3.58
HYDROGRAPH AT						
+	*RT	.00	1	FLOW TIME	0. 4.83	0. 3.58
5 COMBINED AT						
+	*CP4	.03	1	FLOW TIME	6. 3.50	17. 3.50
DIVERSION TO						
+	*DC3	.03	1	FLOW TIME	3. 3.50	6. 3.50
HYDROGRAPH AT						
+	*RC3	.03	1	FLOW TIME	3. 3.50	11. 3.50
HYDROGRAPH AT						
+	*OFF1DA	.01	1	FLOW TIME	3. 3.58	10. 3.58
HYDROGRAPH AT						
+	*OFF1DC	.00	1	FLOW TIME	0. 4.83	1. 3.50
HYDROGRAPH AT						
+	ST1	.00	1	FLOW TIME	0. 3.50	0. 3.50
HYDROGRAPH AT						
+	*OT1	.00	1	FLOW TIME	0. 4.83	1. 3.58
5 COMBINED AT						
+	*CP5	.05	1	FLOW TIME	6. 3.50	22. 3.50

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

HYDRAULIC CALCULATIONS

**REVISED EXISTING CONDITION
FLOWMASTER CROSS-SECTIONS**

Worksheet for FM-3 - 80 FT - R/W - Half street - LV Blvd @ CP3 - Q10 - ex

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 3.36000 %
Discharge 8.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.60
0+05.00	0.50
0+05.50	0.50
0+05.50	0.00
0+07.00	0.13
0+07.00	0.17
0+40.00	0.83

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.60)	(0+07.00, 0.13)	0.013
(0+07.00, 0.13)	(0+40.00, 0.83)	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 0.38 ft
Elevation Range 0.00 to 0.83
Flow Area 1.56 ft²
Wetted Perimeter 12.34 ft
Hydraulic Radius 0.13 ft

Worksheet for FM-3 - 80 FT - R/W - Half street - LV Blvd @ CP3 - Q10 - ex

Results

Top Width	11.92	ft
Normal Depth	0.38	ft
Critical Depth	0.49	ft
Critical Slope	0.00474	ft/R
Velocity	5.14	ft/s
Velocity Head	0.41	ft
Specific Energy	0.79	ft
Froude Number	2.51	
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	0.38	ft
Critical Depth	0.49	ft
Channel Slope	3.36000	%
Critical Slope	0.00474	ft/R

Cross Section for FM-3 - 80 FT - R/W - Half street - LV Blvd @ CP3 - Q10

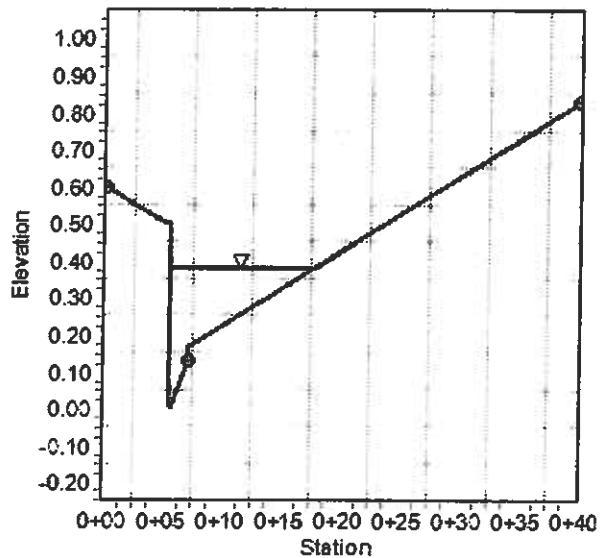
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope	3.36000	%
Normal Depth	0.38	ft
Discharge	8.00	ft ³ /s

Cross Section Image



Worksheet for FM-3 - 80 FT - R/W - Half street - LV Blvd @ CP3 - Q100 -

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 3.36000 %
Discharge 20.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.60
0+05.00	0.50
0+05.50	0.50
0+05.50	0.00
0+07.00	0.13
0+07.00	0.17
0+40.00	0.83

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.60)	(0+07.00, 0.13)	0.013
(0+07.00, 0.13)	(0+40.00, 0.83)	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 0.51 ft
Elevation Range 0.00 to 0.83
Flow Area 3.50 ft²
Wetted Perimeter 19.70 ft
Hydraulic Radius 0.18 ft

Worksheet for FM-3 - 80 FT - R/W - Half street - LV Blvd @ CP3 - Q100 -

Results

Top Width	19.16	ft
Normal Depth	0.51	ft
Critical Depth	0.65	ft
Critical Slope	0.00550	ft/ft
Velocity	5.72	ft/s
Velocity Head	0.51	ft
Specific Energy	1.01	ft
Froude Number	2.36	
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	0.51	ft
Critical Depth	0.65	ft
Channel Slope	3.36000	%
Critical Slope	0.00550	ft/ft

Cross Section for FM-3 - 80 FT - R/W - Half street - LV Blvd @ CP3 -

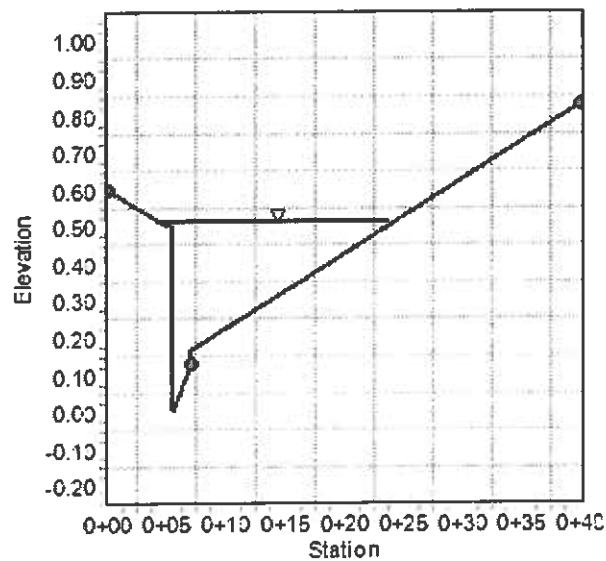
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope	3.36000	%
Normal Depth	0.51	ft
Discharge	20.00	ft ³ /s

Cross Section Image



Worksheet for FM-4 - 80 FT - R/W - Half street - LV/Searles @ CP4 - Q10 -

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.10000 %
Discharge 7.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.60
0+05.00	0.50
0+05.50	0.50
0+05.50	0.00
0+07.00	0.13
0+07.00	0.17
0+40.00	0.83

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.60)	(0+07.00, 0.13)	0.013
(0+07.00, 0.13)	(0+40.00, 0.83)	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 0.62 ft
Elevation Range 0.00 to 0.83
Flow Area 6.41 ft²
Wetted Perimeter 30.25 ft
Hydraulic Radius 0.21 ft

Worksheet for FM-4 - 80 FT - R/W - Half street - LV/Searles @ CP4 - Q10 -

Results

Top Width	29.68	ft
Normal Depth	0.62	ft
Critical Depth	0.48	ft
Critical Slope	0.00633	ft/ft
Velocity	1.09	ft/s
Velocity Head	0.02	ft
Specific Energy	0.64	ft
Froude Number	0.41	
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	0.62	ft
Critical Depth	0.48	ft
Channel Slope	0.10000	%
Critical Slope	0.00633	ft/ft

Cross Section for FM-4 - 80 FT - R/W - Half street - LV/Searles @ CP4 -

Project Description

Friction Method

Manning Formula

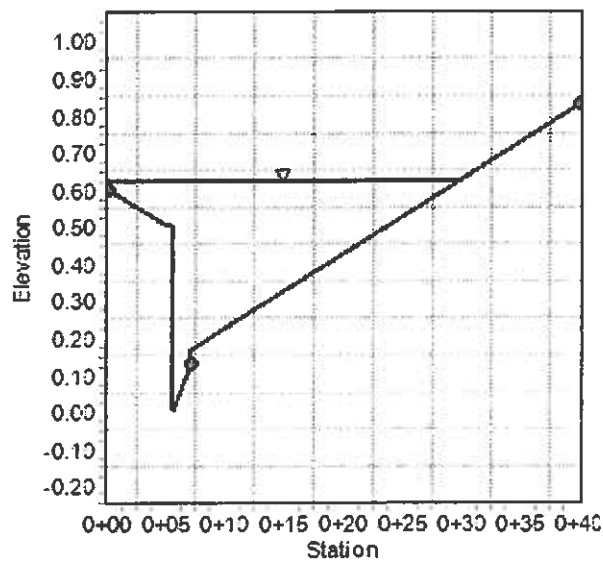
Solve For

Normal Depth

Input Data

Channel Slope	0.10000	%
Normal Depth	0.62	ft
Discharge	7.00	ft ³ /s

Cross Section Image



Project Description

Manning Formula

Normal Depth

Channel Slope

0.10000 %

Discharge

23.00 ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.60
0+05.00	0.50
0+05.50	0.50
0+05.50	0.00
0+07.00	0.13
0+07.00	0.17
0+40.00	0.83

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.60)	(0+07.00, 0.13)	0.013
(0+07.00, 0.13)	(0+40.00, 0.83)	0.016

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		0.86	ft
Elevation Range	0.00 to 0.83		
Flow Area		14.74	ft²
Wetted Perimeter		40.84	ft
Hydraulic Radius		0.36	ft

Worksheet for FM-4 - 80 FT - R/W - Half street - LV/Searles @ CP4 - Q100

Results

Top Width	40.00	ft
Normal Depth	0.86	ft
Critical Depth	0.68	ft
Critical Slope	0.00554	ft/ft
Velocity	1.56	ft/s
Velocity Head	0.04	ft
Specific Energy	0.90	ft
Froude Number	0.45	
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	0.86	ft
Critical Depth	0.68	ft
Channel Slope	0.10000	%
Critical Slope	0.00554	ft/ft

Cross Section for FM-4 - 80 FT - R/W - Half street - LV/Searles @ CP4 -

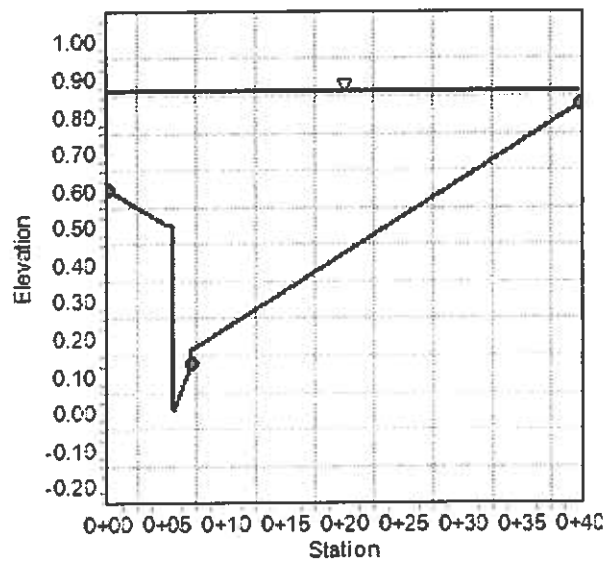
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.10000 %
Normal Depth 0.86 ft
Discharge 23.00 ft³/s

Cross Section Image



Worksheet for FM-5 - 80 FT - R/W - Half street - LV Blvd @ CP5 - Q10 - ex

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.10000 %
Discharge 6.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
0+00.00	1.93
0+00.00	0.60
0+05.00	0.50
0+05.50	0.50
0+05.50	0.00
0+07.00	0.13
0+07.00	0.17
0+40.00	0.83

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 1.93)	(0+07.00, 0.13)	0.013
(0+07.00, 0.13)	(0+40.00, 0.83)	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 0.60 ft
Elevation Range 0.00 to 1.93
Flow Area 5.74 ft²
Wetted Perimeter 29.08 ft

Worksheet for FM-5 - 80 FT - R/W - Half street - LV Blvd @ CP5 - Q10 - ex

Results

Hydraulic Radius	0.20	ft
Top Width	28.53	ft
Normal Depth	0.60	ft
Critical Depth	0.45	ft
Critical Slope	0.00644	ft/ft
Velocity	1.04	ft/s
Velocity Head	0.02	ft
Specific Energy	0.62	ft
Froude Number	0.41	
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	0.60	ft
Critical Depth	0.45	ft
Channel Slope	0.10000	%
Critical Slope	0.00644	ft/ft

Cross Section for FM-5 - 80 FT - R/W - Half street - LV Blvd @ CP5 - Q10

Project Description

Friction Method

Manning Formula

Solve For

Normal Depth

Input Data

Channel Slope

0.10000 %

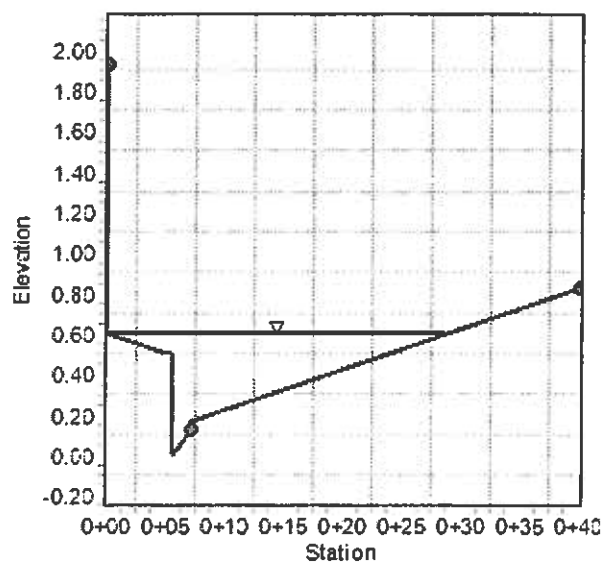
Normal Depth

0.60 ft

Discharge

6.00 ft³/s

Cross Section Image



Worksheet for FM-5 - 80 FT - R/W - Half street - LV Blvd @ CP5 - Q100 -

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.10000 %
Discharge 26.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
0+00.00	1.93
0+00.00	0.60
0+05.00	0.50
0+05.50	0.50
0+05.50	0.00
0+07.00	0.13
0+07.00	0.17
0+40.00	0.83

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 1.93)	(0+07.00, 0.13)	0.013
(0+07.00, 0.13)	(0+40.00, 0.83)	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 0.89 ft
Elevation Range 0.00 to 1.93
Flow Area 15.89 ft²
Wetted Perimeter 40.90 ft

Worksheet for FM-5 - 80 FT - R/W - Half street - LV Blvd @ CP5 - Q100 -

Results

Hydraulic Radius	0.39	ft
Top Width	40.00	ft
Normal Depth	0.89	ft
Critical Depth	0.70	ft
Critical Slope	0.00545	ft/ft
Velocity	1.64	ft/s
Velocity Head	0.04	ft
Specific Energy	0.93	ft
Froude Number	0.46	
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	0.89	ft
Critical Depth	0.70	ft
Channel Slope	0.10000	%
Critical Slope	0.00545	ft/ft

Cross Section for FM-5 - 80 FT - R/W - Half street - LV Blvd @ CP5 -

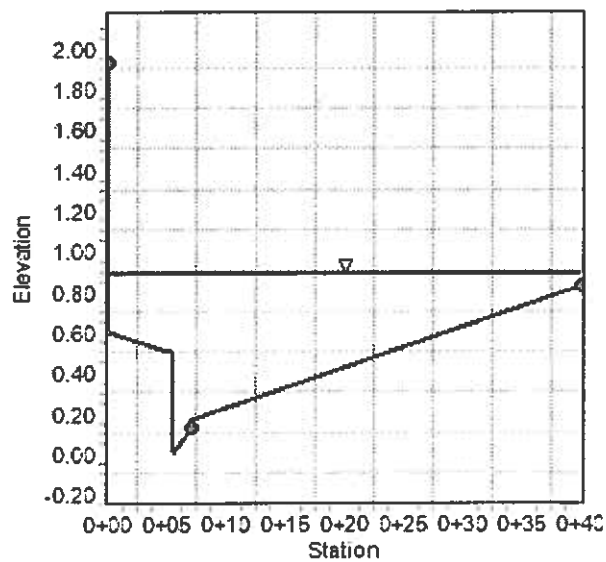
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope	0.10000	%
Normal Depth	0.89	ft
Discharge	26.00	ft ³ /s

Cross Section Image



**REVISED INTERIM CONDITION
FLOWMASTER CROSS-SECTIONS**

Worksheet for FM-4 - 80 FT - R/W - Half street - LV/Searles @ CP4 - Q10 -

Results

Top Width	29.68	ft
Normal Depth	0.62	ft
Critical Depth	0.48	ft
Critical Slope	0.00633	ft/ft
Velocity	1.09	ft/s
Velocity Head	0.02	ft
Specific Energy	0.64	ft
Froude Number	0.41	
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	0.62	ft
Critical Depth	0.48	ft
Channel Slope	0.10000	%
Critical Slope	0.00633	ft/ft

Cross Section for FM-4 - 80 FT - R/W - Half street - LV/Searles @ CP4 -

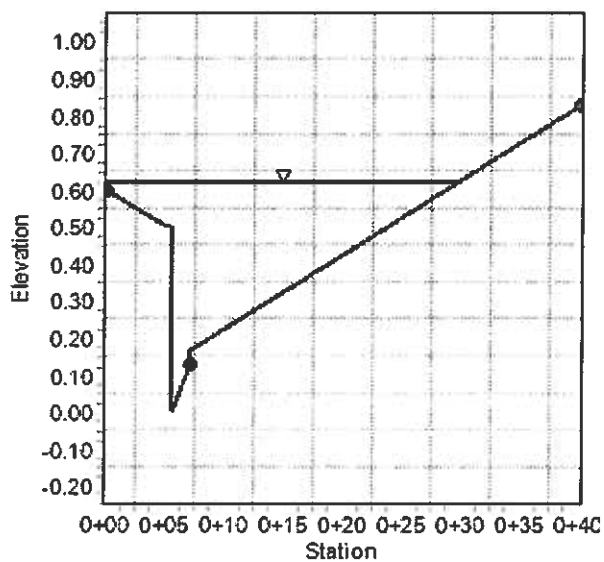
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.10000 %
Normal Depth 0.62 ft
Discharge 7.00 ft³/s

Cross Section Image



Project Description

Input Data

Station (ft)	Elevation (ft)
--------------	----------------

Roughness Segment Definitions

Options

Results

Bentley Systems, Inc. Haestad Methods Software 1000 Winter Street, Suite 200
6/24/2012 4:29:31 PM 27 Siemons Company Drive Suite 200 W Watertown, CT 06795 USA +1-203-755-1666 Page 1 of 2

Worksheet for FM-4 - 80 FT - R/W - Half street - LV/Searles @ CP4 - Q100

Results

Top Width	40.00	ft
Normal Depth	0.85	ft
Critical Depth	0.67	ft
Critical Slope	0.00558	ft/ft
Velocity	1.53	ft/s
Velocity Head	0.04	ft
Specific Energy	0.89	ft
Froude Number	0.45	
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	0.85	ft
Critical Depth	0.67	ft
Channel Slope	0.10000	%
Critical Slope	0.00558	ft/ft

Cross Section for FM-4 - 80 FT - R/W - Half street - LV/Searles @ CP4 -

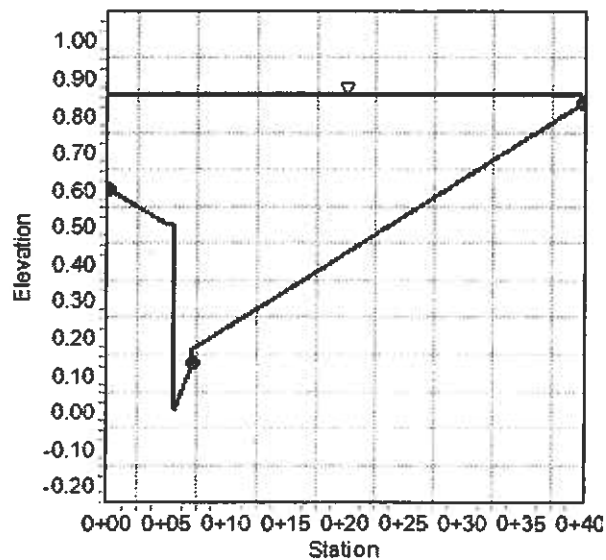
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.10000 %
Normal Depth 0.85 ft
Discharge 22.00 ft³/s

Cross Section Image



Worksheet for FM-5 - 80 FT - R/W - Half street - LV Blvd @ CP5 - Q10 -

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.10000 %
Discharge 7.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
0+00.00	1.93
0+00.00	0.60
0+05.00	0.50
0+05.50	0.50
0+05.50	0.00
0+07.00	0.13
0+07.00	0.17
0+40.00	0.83

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 1.93)	(0+07.00, 0.13)	0.013
(0+07.00, 0.13)	(0+40.00, 0.83)	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 0.62 ft
Elevation Range 0.00 to 1.93
Flow Area 6.41 ft²
Wetted Perimeter 30.25 ft

Worksheet for FM-5 - 80 FT - R/W - Half street - LV Blvd @ CP5 - Q10 -

Results

Hydraulic Radius	0.21	ft
Top Width	29.67	ft
Normal Depth	0.62	ft
Critical Depth	0.48	ft
Critical Slope	0.00633	ft/ft
Velocity	1.09	ft/s
Velocity Head	0.02	ft
Specific Energy	0.64	ft
Froude Number	0.41	
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	0.62	ft
Critical Depth	0.48	ft
Channel Slope	0.0000	%
Critical Slope	0.00633	ft/ft

Cross Section for FM-5 - 80 FT - R/W - Half street - LV Blvd @ CP5 - Q10

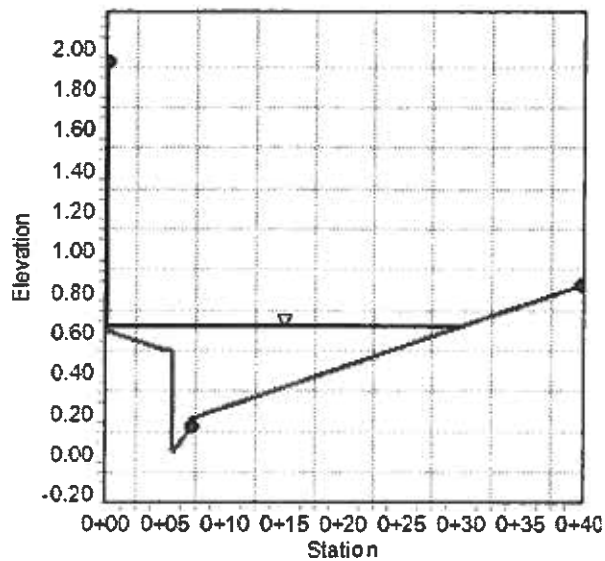
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope	0.10000	%
Normal Depth	0.62	ft
Discharge	7.00	ft ³ /s

Cross Section Image



Worksheet for FM-5 - 80 FT - R/W - Half street - LV Blvd @ CP5 - Q100 -

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.10000 %
Discharge 28.00 ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	1.93
0+00.00	0.60
0+05.00	0.50
0+05.50	0.50
0+05.50	0.00
0+07.00	0.13
0+07.00	0.17
0+40.00	0.83

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 1.93)	(0+07.00, 0.13)	0.013
(0+07.00, 0.13)	(0+40.00, 0.83)	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 0.91 ft
Elevation Range 0.00 to 1.93
Flow Area 16.63 ft²
Wetted Perimeter 40.93 ft

Worksheet for FM-5 - 80 FT - R/W - Half street - LV Blvd @ CP5 - Q100 -

Results

Hydraulic Radius	0.41	ft
Top Width	40.00	ft
Normal Depth	0.91	ft
Critical Depth	0.72	ft
Critical Slope	0.00539	ft/ft
Velocity	1.68	ft/s
Velocity Head	0.04	ft
Specific Energy	0.95	ft
Froude Number	0.46	
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	0.91	ft
Critical Depth	0.72	ft
Channel Slope	0.10000	%
Critical Slope	0.00539	ft/ft

Cross Section for FM-5 - 80 FT - R/W - Half street - LV Blvd @ CP5 -

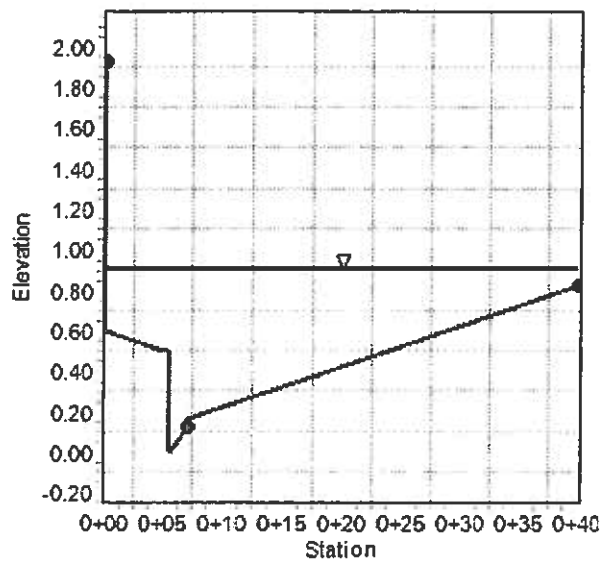
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope	0.10000	%
Normal Depth	0.91	ft
Discharge	28.00	ft ³ /s

Cross Section Image



Worksheet for FM-6 Q100 - int

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 5.90000 %
Discharge 11.25 ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+10.01	1919.68
0+15.97	1919.65
0+21.86	1919.64
0+35.20	1919.41
0+42.27	1919.46
0+52.62	1919.62
0+52.71	1919.64
0+52.72	1919.64
0+55.25	1920.15
0+64.67	1922.05

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+10.01, 1919.68)	(0+64.67, 1922.05)	0.025

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 0.20 ft
Elevation Range 1919.41 to 1922.05 ft
Flow Area 3.31 ft²

Worksheet for FM-6 Q100 - int

Results

Wetted Perimeter	29.12	ft
Hydraulic Radius	0.11	ft
Top Width	29.12	ft
Normal Depth	0.20	ft
Critical Depth	0.27	ft
Critical Slope	0.01804	ft/ft
Velocity	3.39	ft/s
Velocity Head	0.18	ft
Specific Energy	0.38	ft
Froude Number	1.77	
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	0.20	ft
Critical Depth	0.27	ft
Channel Slope	5.90000	%
Critical Slope	0.01804	ft/ft

Cross Section for FM-6 Q100 - int

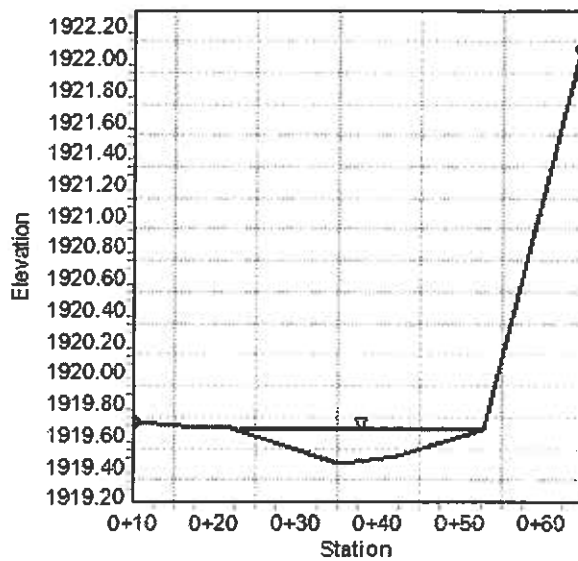
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 5.90000 %
Normal Depth 0.20 ft
Discharge 11.25 ft³/s

Cross Section Image



Project Description

Input Data

Station (ft)

Elevation (ft)

Roughness Segment Definitions

Start Station**Ending Station**

Roughness Coefficient

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Worksheet for FM-7 Q100 - int

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	0.20	ft
Elevation Range	1914.03 to 1914.41	ft
Flow Area	0.65	ft²
Wetted Perimeter	10.52	ft
Hydraulic Radius	0.06	ft
Top Width	10.44	ft
Normal Depth	0.20	ft
Critical Depth	0.23	ft
Critical Slope	0.00801	ft/ft
Velocity	2.42	ft/s
Velocity Head	0.09	ft
Specific Energy	0.29	ft
Froude Number	1.71	
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	0.20	ft
Critical Depth	0.23	ft
Channel Slope	2.50000	%
Critical Slope	0.00801	ft/ft

Cross Section for FM-7 Q100 - int

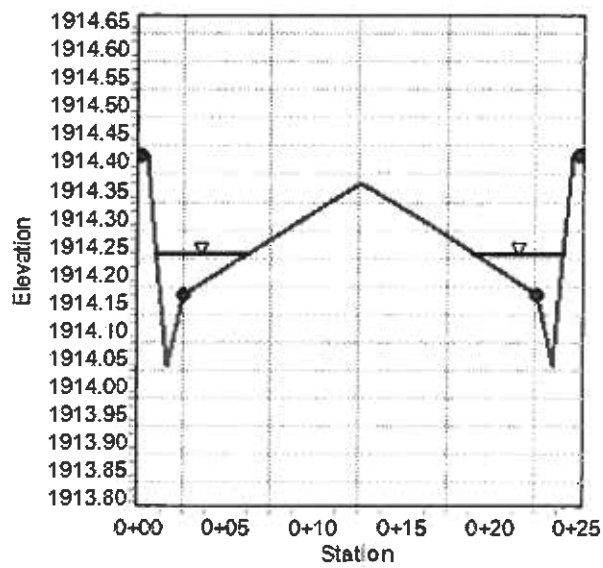
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 2.50000 %
Normal Depth 0.20 ft
Discharge 1.57 ft³/s

Cross Section Image



Project Description

Solve For	Normal Depth
-----------	--------------

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	1914.41
0+00.22	1914.41
0+00.37	1914.41
0+00.84	1914.23
0+01.50	1914.03
0+02.09	1914.11
0+02.50	1914.16
0+06.63	1914.24
0+12.50	1914.36
0+16.63	1914.28
0+22.50	1914.16
0+23.09	1914.08
0+23.50	1914.03
0+23.96	1914.19
0+24.62	1914.41
0+24.85	1914.41
0+25.00	1914.41

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 1914.41)	(0+02.50, 1914.16)	0.013
(0+02.50, 1914.16)	(0+22.50, 1914.16)	0.016
(0+22.50, 1914.16)	(0+25.00, 1914.41)	0.013

Worksheet for FM-8 Q100 - int

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	0.21	ft
Elevation Range	1914.03 to 1914.41	ft
Flow Area	0.72	ft²
Wetted Perimeter	11.20	ft
Hydraulic Radius	0.06	ft
Top Width	11.11	ft
Normal Depth	0.21	ft
Critical Depth	0.26	ft
Critical Slope	0.00770	ft/ft
Velocity	3.10	ft/s
Velocity Head	0.15	ft
Specific Energy	0.36	ft
Froude Number	2.14	
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	0.21	ft
Critical Depth	0.26	ft
Channel Slope	3.86000	%
Critical Slope	0.00770	ft/ft

Project Description

Manning Formula

Normal Depth

2.24 ft³/s

Worksheet for FM-9 Q100 - int

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 1.50000 %
Discharge 13.25 ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	1.00
0+04.00	0.00
0+08.00	1.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 1.00)	(0+08.00, 1.00)	0.025

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 0.89 ft
Elevation Range 0.00 to 1.00 ft
Flow Area 3.18 ft²
Wetted Perimeter 7.35 ft
Hydraulic Radius 0.43 ft
Top Width 7.13 ft
Normal Depth 0.89 ft
Critical Depth 0.93 ft
Critical Slope 0.01226 ft/ft
Velocity 4.17 ft/s

Worksheet for FM-9 Q100 - int

Results

Velocity Head	0.27	ft
Specific Energy	1.16	ft
Froude Number	1.10	
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	0.89	ft
Critical Depth	0.93	ft
Channel Slope	1.50000	%
Critical Slope	0.01226	ft/ft

Cross Section for FM-9 Q100 - Int

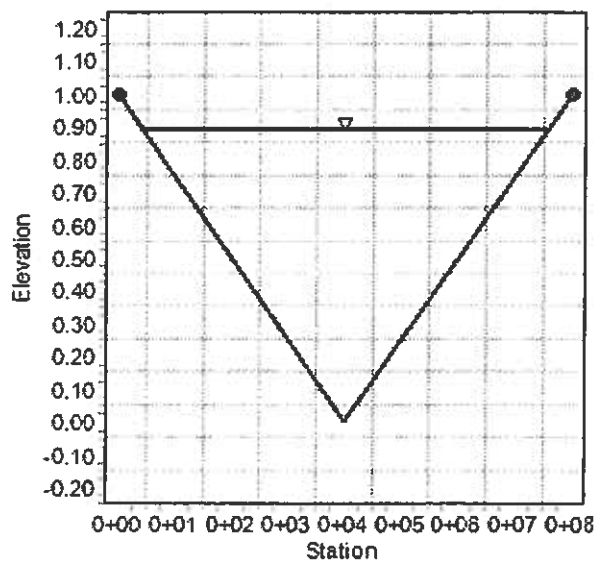
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	1.50000	%
Normal Depth	0.89	ft
Discharge	13.25	ft ³ /s

Cross Section Image



Project Description

Input Data

Station (ft)

0+00.00	t909.17
0+06.29	t908.80
0+14.55	t908.36
0+47.23	t906.99
0+53.67	t906.62
0+59.97	t908.72

Start Station

Roughness Coefficient

0.025

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

Normal Depth	0.42	ft
Elevation Range	1906.62 to 1909.17 ft	
Flow Area	1.77	ft²
Wetted Perimeter	8.87	ft
Hydraulic Radius	0.20	ft
Top Width	8.79	ft
Normal Depth	0.42	ft

Worksheet for FM-10 Q100 - int

Results

Critical Depth	0.32	ft
Critical Slope	0.01702	ft/ft
Velocity	1.32	ft/s
Velocity Head	0.03	ft
Specific Energy	0.44	ft
Froude Number	0.52	
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	0.42	ft
Critical Depth	0.32	ft
Channel Slope	0.42000	%
Critical Slope	0.01702	ft/ft

Cross Section for FM-10 Q100 - int

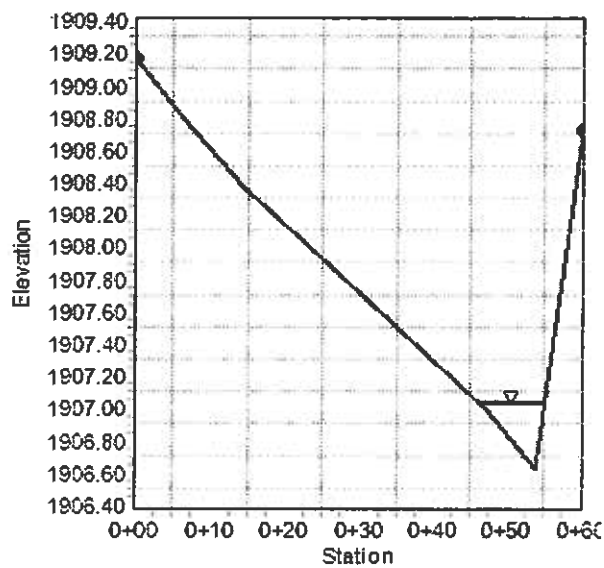
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.42000 %
Normal Depth 0.42 ft
Discharge 2.34 ft³/s

Cross Section Image



Worksheet for FM-11 Q100 - int

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.45000 %
Discharge 1.19 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
0+00.00	1905.97
0+10.97	1905.33
0+28.08	1904.24
0+47.34	1903.64
0+58.15	1907.24

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 1905.97)	(0+58.15, 1907.24)	0.025

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	0.26 ft
Elevation Range	1903.64 to 1907.24 ft
Flow Area	1.17 ft ²
Wetted Perimeter	9.18 ft
Hydraulic Radius	0.13 ft
Top Width	9.13 ft
Normal Depth	0.26 ft
Critical Depth	0.19 ft

Worksheet for FM-11 Q100 - int

Results

Critical Slope	0.01993	ft/ft
Velocity	1.01	ft/s
Velocity Head	0.02	ft
Specific Energy	0.27	ft
Froude Number	0.50	
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	0.26	ft
Critical Depth	0.19	ft
Channel Slope	0.45000	%
Critical Slope	0.01993	ft/ft

Project Description

Manning Formula

Normal Depth

Channel Slope

0.45000 %

0.26 ft

1.19 ft³/s

The profile view graph displays the elevation of the ground surface along a stationing range from 0+00 to 0+50. The vertical axis represents Elevation in feet, ranging from 1903.50 to 1907.00. The horizontal axis represents Stationing. The profile line starts at (0+00, 1906.00), descends steadily to a minimum elevation of approximately 1903.65 at station 0+48, and then rises sharply to 1907.00 at station 0+50. A horizontal line is drawn at an elevation of 1904.00 between stations 0+40 and 0+48, with a small triangle symbol above it at station 0+45.

Station	Elevation (ft)
0+00	1906.00
0+10	1905.40
0+20	1904.80
0+30	1904.25
0+40	1903.90
0+48	1903.65
0+50	1907.00

**REVISED DEVELOPED CONDITION
FLOWMASTER CROSS-SECTIONS**

Worksheet for FM-4 - 80 FT - R/W - Half street - LV/Searles @ CP4 - Q10 -

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.10000 %
Discharge 7.00 ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.60
0+05.00	0.50
0+05.50	0.50
0+05.50	0.00
0+07.00	0.13
0+07.00	0.17
0+40.00	0.83

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.60)	(0+07.00, 0.13)	0.013
(0+07.00, 0.13)	(0+40.00, 0.83)	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 0.62 ft
Elevation Range 0.00 to 0.83
Flow Area 6.41 ft²
Wetted Perimeter 30.25 ft
Hydraulic Radius 0.21 ft

Project Description

Input Data

Station (ft)	Elevation (ft)
--------------	----------------

Start Station	Ending Station	Roughness Coefficient
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Options

Results

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27 Siemens Company Drive Suite 200 W Watertown, CT 06795 USA +1-203-755-1666 Page 1 of 2

Worksheet for FM-4 - 80 FT - R/W - Half street - LV/Searles @ CP4 - Q10 -

Results

Top Width	28.52	ft
Normal Depth	0.60	ft
Critical Depth	0.45	ft
Critical Slope	0.00643	ft/ft
Velocity	1.05	ft/s
Velocity Head	0.02	ft
Specific Energy	0.62	ft
Froude Number	0.41	
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	0.60	ft
Critical Depth	0.45	ft
Channel Slope	0.10000	%
Critical Slope	0.00643	ft/ft

Cross Section for FM-4 - 80 FT - R/W - Half street - LV/Searles @ CP4 -

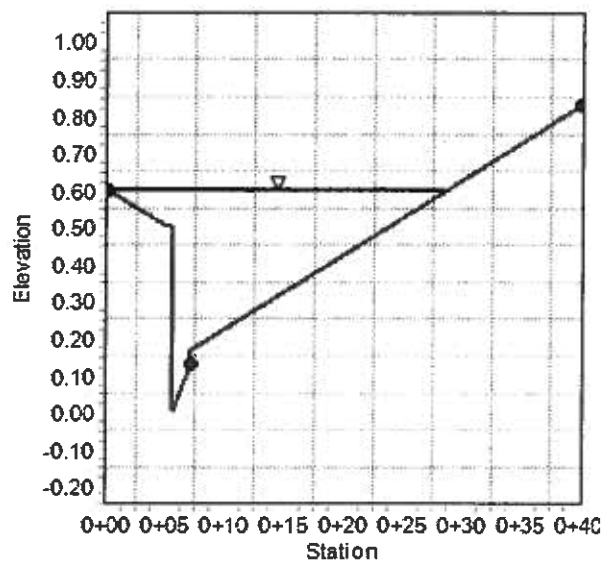
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.10000 %
Normal Depth 0.60 ft
Discharge 6.00 ft³/s

Cross Section Image



Worksheet for FM-4 - 80 FT - R/W - Half street - LV/Searles @CP4 - Q100

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.10000 %
Discharge 17.00 ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.60
0+05.00	0.50
0+05.50	0.50
0+05.50	0.00
0+07.00	0.13
0+07.00	0.17
0+40.00	0.83

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.60)	(0+07.00, 0.13)	0.013
(0+07.00, 0.13)	(0+40.00, 0.83)	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 0.79 ft
Elevation Range 0.00 to 0.83
Flow Area 12.05 ft²
Wetted Perimeter 38.76 ft
Hydraulic Radius 0.31 ft

Worksheet for FM-4 - 80 FT - R/W - Half street - LV/Searles @CP4 - Q100

Results

Top Width	38.02	ft
Normal Depth	0.79	ft
Critical Depth	0.62	ft
Critical Slope	0.00581	ft/ft
Velocity	1.41	ft/s
Velocity Head	0.03	ft
Specific Energy	0.82	ft
Froude Number	0.44	
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	0.79	ft
Critical Depth	0.62	ft
Channel Slope	0.10000	%
Critical Slope	0.00581	ft/ft

Cross Section for FM-4 - 80 FT - R/W - Half street - LV/Searles @CP4 -

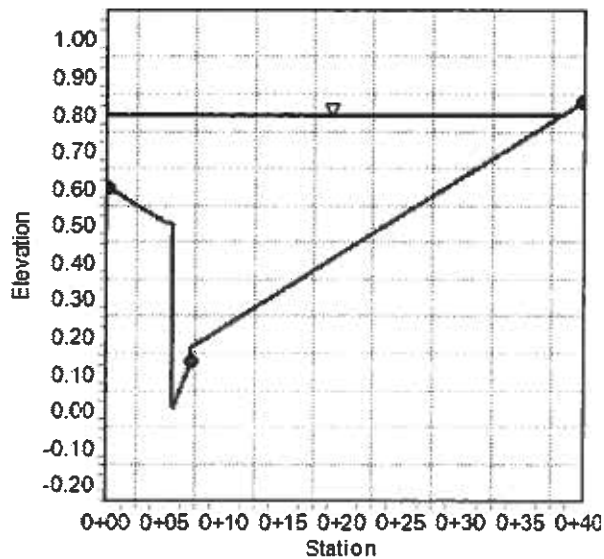
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.10000 %
Normal Depth 0.79 ft
Discharge 17.00 ft³/s

Cross Section Image



Worksheet for FM-5 - 80 FT - R/W - Half street - LV Blvd @ CP5 - Q10 -

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.10000 %
Discharge 6.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
0+00.00	0.60
0+05.00	0.50
0+05.50	0.50
0+05.50	0.00
0+07.00	0.13
0+07.00	0.17
0+40.00	0.83

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 0.60)	(0+07.00, 0.13)	0.013
(0+07.00, 0.13)	(0+40.00, 0.83)	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 0.60 ft
Elevation Range 0.00 to 0.83
Flow Area 5.74 ft²
Wetted Perimeter 29.07 ft
Hydraulic Radius 0.20 ft

Worksheet for FM-5 - 80 FT - R/W - Half street - LV Blvd @ CP5 - Q10 -

Results

Top Width	28.52	ft
Normal Depth	0.60	ft
Critical Depth	0.45	ft
Critical Slope	0.00643	ft/ft
Velocity	1.05	ft/s
Velocity Head	0.02	ft
Specific Energy	0.62	ft
Froude Number	0.41	
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	0.60	ft
Critical Depth	0.45	ft
Channel Slope	0.10000	%
Critical Slope	0.00643	ft/ft

Cross Section for FM-5 - 80 FT - R/W - Half street - LV Blvd @ CP5 - Q10

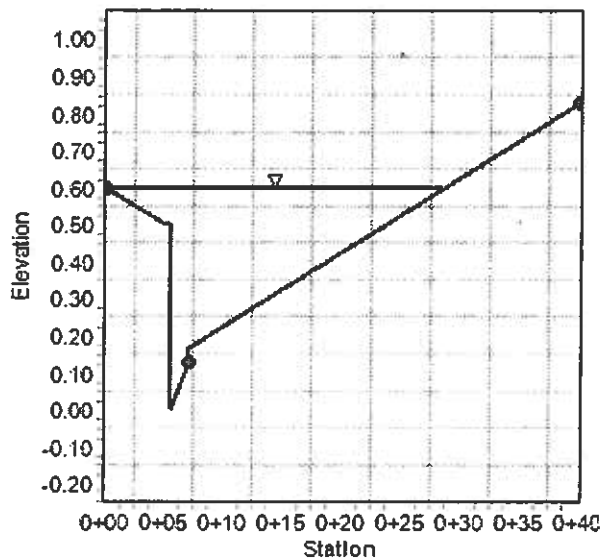
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope	0.10000	%
Normal Depth	0.60	ft
Discharge	6.00	ft ³ /s

Cross Section Image



Worksheet for FM-5 - 80 FT - R/W - Half street - LV Blvd @ CP5 - Q100 -

Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 0.10000 %
Discharge 22.00 ft³/s
Section Definitions

Station (ft)	Elevation (ft)
0+00.00	1.93
0+00.00	0.60
0+05.00	0.50
0+05.50	0.50
0+05.50	0.00
0+07.00	0.13
0+07.00	0.17
0+40.00	0.83

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 1.93)	(0+07.00, 0.13)	0.013
(0+07.00, 0.13)	(0+40.00, 0.83)	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 0.85 ft
Elevation Range 0.00 to 1.93
Flow Area 14.36 ft²
Wetted Perimeter 40.82 ft

Worksheet for FM-5 - 80 FT - R/W - Half street - LV Blvd @ CP5 - Q100 -

Results

Hydraulic Radius	0.35	ft
Top Width	40.00	ft
Normal Depth	0.85	ft
Critical Depth	0.67	ft
Critical Slope	0.00558	ft/ft
Velocity	1.53	ft/s
Velocity Head	0.04	ft
Specific Energy	0.89	ft
Froude Number	0.45	
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	0.85	ft
Critical Depth	0.67	ft
Channel Slope	0.00000	%
Critical Slope	0.00558	ft/ft

Cross Section for FM-5 - 80 FT - R/W - Half street - LV Blvd @ CP5 -

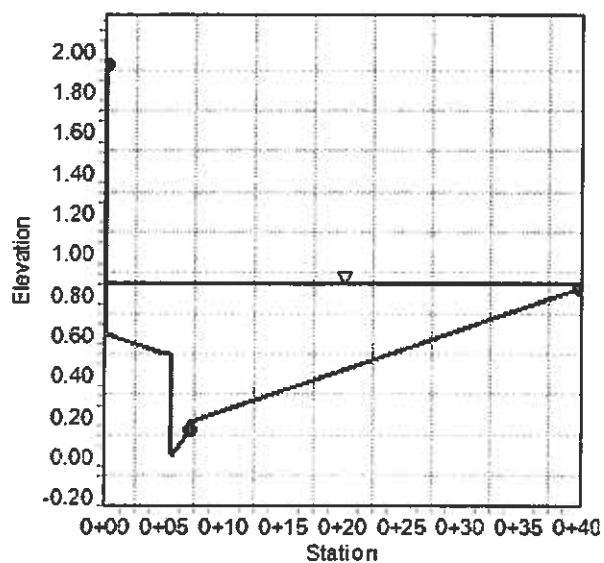
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope	0.10000	%
Normal Depth	0.85	ft
Discharge	22.00	ft ³ /s

Cross Section Image



Project Description

Manning Formula

Normal Depth

10.43 ft³/s

Elevation (ft)

0+00.00	1914.41
0+00.22	1914.41
0+00.37	1914.41
0+00.84	1914.25
0+01.50	1914.03
0+02.09	1914.11
0+02.50	1914.16
0+06.63	1914.24
0+12.50	1914.36
0+16.63	1914.28
0+22.50	1914.16
0+23.09	1914.08
0+23.50	1914.03
0+23.96	1914.19
0+24.62	1914.41
0+24.85	1914.41
0+25.00	1914.41

(0+00.00, 1914.41)	(0+02.50, 1914.16)	0.013
(0+02.50, 1914.16)	(0+22.50, 1914.16)	0.016
(0+22.50, 1914.16)	(0+25.00, 1914.41)	0.013

Worksheet for FM-6 Q100 - dev

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	0.31	ft
Elevation Range	1914.03 to 1914.41	ft
Flow Area	2.47	ft²
Wetted Perimeter	22.36	ft
Hydraulic Radius	0.11	ft
Top Width	22.24	ft
Normal Depth	0.31	ft
Critical Depth	0.39	ft
Critical Slope	0.00632	ft/ft
Velocity	4.22	ft/s
Velocity Head	0.28	ft
Specific Energy	0.59	ft
Froude Number	2.23	
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	0.39	ft
Channel Slope	3.66000	%
Critical Slope	0.00632	ft/ft

Cross Section for FM-6 Q100 - dev

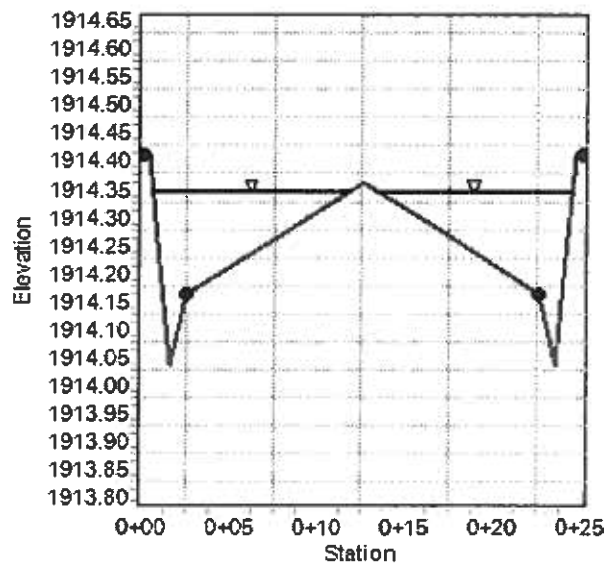
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	3.66000	%
Normal Depth	0.31	ft
Discharge	10.43	ft ³ /s

Cross Section Image



Project Description

Manning Formula

Normal Depth

10.43 ft³/s

Elevation (ft)

0+00.00	1914.41
0+00.22	1914.41
0+00.37	1914.41
0+00.84	1914.25
0+01.50	1914.03
0+02.09	1914.11
0+02.50	1914.16
0+06.63	1914.24
0+ t2.50	1914.36
0+16.63	1914.28
0+22.50	1914.16
0+23.09	1914.08
0+23.50	1914.03
0+23.96	1914.19
0+24.62	1914.41
0+24.85	1914.41
0+25.00	1914.41

(0+00.00, 1914.41)	(0+02.50, 1914.16)	0.013
(0+02.50, 1914.16)	(0+22.50, 1914.16)	0.016
(0+22.50, 1914.16)	(0+25.00, 1914.41)	0.013

Worksheet for FM-7 Q100 - dev

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	0.33	ft
Elevation Range	1914.03 to 1914.41 ft	
Flow Area	2.86	ft ²
Wetted Perimeter	24.08	ft
Hydraulic Radius	0.12	ft
Top Width	23.95	ft
Normal Depth	0.33	ft
Critical Depth	0.39	ft
Critical Slope	0.00634	ft/ft
Velocity	3.65	ft/s
Velocity Head	0.21	ft
Specific Energy	0.53	ft
Froude Number	1.86	
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	0.33	ft
Critical Depth	0.39	ft
Channel Slope	2.50000	%
Critical Slope	0.00634	ft/ft

Cross Section for FM-7 Q100 - dev

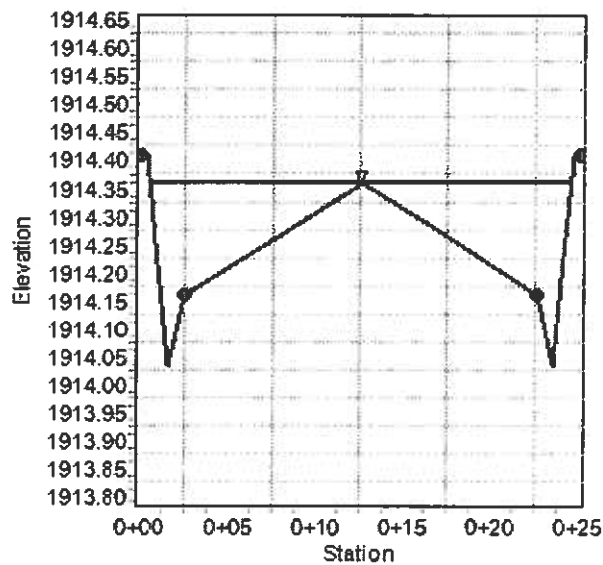
Project Description

Friction Method Manning Formula
Solve For Normal Depth

Input Data

Channel Slope 2.50000 %
Normal Depth 0.33 ft
Discharge 10.43 ft³/s

Cross Section Image



Project Description

Manning Formula

Normal Depth

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	1914.41
0+00.22	1914.41
0+00.37	1914.41
0+00.84	1914.23
0+01.50	1914.03
0+02.09	1914.11
0+02.50	1914.16
0+06.63	1914.24
0+12.50	1914.36
0+16.63	1914.28
0+22.50	1914.16
0+23.09	1914.08
0+23.50	1914.03
0+23.96	1914.19
0+24.62	1914.41
0+24.85	1914.41
0+25.00	1914.41

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 1914.41)	(0+02.50, 1914.16)	0.013
(0+02.50, 1914.16)	(0+22.50, 1914.16)	0.016
(0+22.50, 1914.16)	(0+25.00, 1914.41)	0.013

Worksheet for FM-8 Q100 - dev

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	0.19	ft
Elevation Range	1914.03 to 1914.41 ft	
Flow Area	0.55	ft ²
Wetted Perimeter	9.40	ft
Hydraulic Radius	0.06	ft
Top Width	9.32	ft
Normal Depth	0.19	ft
Critical Depth	0.23	ft
Critical Slope	0.00787	ft/ft
Velocity	2.94	ft/s
Velocity Head	0.13	ft
Specific Energy	0.33	ft
Froude Number	2.13	
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	0.19	ft
Critical Depth	0.23	ft
Channel Slope	3.86000	%
Critical Slope	0.00787	ft/ft

Project Description

Input Data

Section Definitions

Roughness Segment Definitions

Options

Results

Bentley Systems, Inc. Haestad Methods Solution Center MicroStation V8i (SELECTseries 1) [08.11.01.03]

Worksheet for FM-9 Q100 - dev

Results

Velocity Head	0.25	ft
Specific Energy	1.09	ft
Froude Number	1.09	
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	0.84	ft
Critical Depth	0.87	ft
Channel Slope	1.50000	%
Critical Slope	0.01253	ft/ft

Project Description

Manning Formula

Normal Depth

11.25 ft³/s

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.42000	%
Discharge	1.17	ft ³ /s

Section Definitions

Station (ft)	Elevation (ft)
0+00.00	1909.17
0+06.29	1908.80
0+14.55	1908.36
0+47.23	1906.99
0+53.67	1906.62
0+59.97	1908.72

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 1909.17)	(0+59.97, 1908.72)	0.025

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		0.32	ft
Elevation Range	1906.62 to 1909.17 ft		
Flow Area		1.04	ft²
Wetted Perimeter		6.57	ft
Hydraulic Radius		0.16	ft
Top Width		6.51	ft
Normal Depth		0.32	ft

Worksheet for FM-10 Q100 - dev

Results

Critical Depth	0.24	ft
Critical Slope	0.01866	ft/ft
Velocity	1.13	ft/s
Velocity Head	0.02	ft
Specific Energy	0.34	ft
Froude Number	0.50	
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	0.32	ft
Critical Depth	0.24	ft
Channel Slope	0.42000	%
Critical Slope	0.01866	ft/ft

Project Description

Manning Formula

Normal Depth

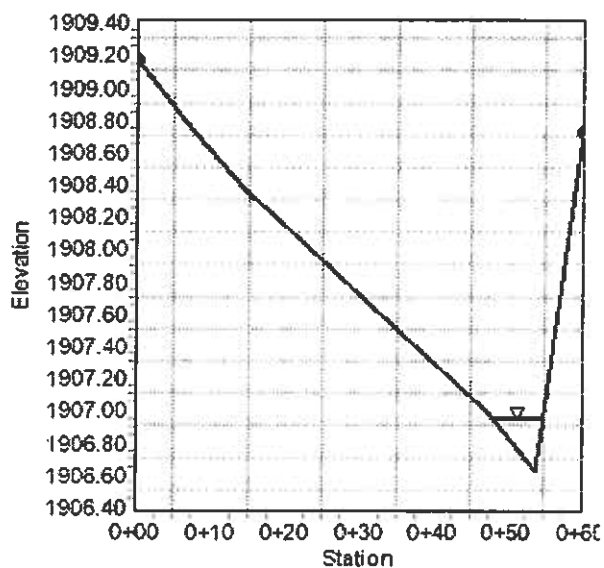
Input Data

0.42000 %

0.32 ft

1.17 ft³/s

Cross Section Image



Project Description

Input Data

Station (ft)	Elevation (ft)
0+00.00	1905.97
0+10.97	1905.33
0+28.08	1904.24
0+47.34	1903.64
0+58.15	1907.24

Start Station	Ending Station	Roughness Coefficient
(0+00.00, 1905.97)	(0+58.15, 1907.24)	0.025

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

Normal Depth	0.16	ft
Elevation Range	1903.64 to 1907.24	ft
Flow Area	0.45	ft²
Wetted Perimeter	5.67	ft
Hydraulic Radius	0.08	ft
Top Width	5.64	ft
Normal Depth	0.16	ft
Critical Depth	0.12	ft

Worksheet for FM-11 Q100 - dev

Results

Critical Slope	0.02366	ft/ft
Velocity	0.73	ft/s
Velocity Head	0.01	ft
Specific Energy	0.17	ft
Froude Number	0.46	
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	0.16	ft
Critical Depth	0.12	ft
Channel Slope	0.45000	%
Critical Slope	0.02366	ft/ft

Cross Section for FM-11 Q100 - dev

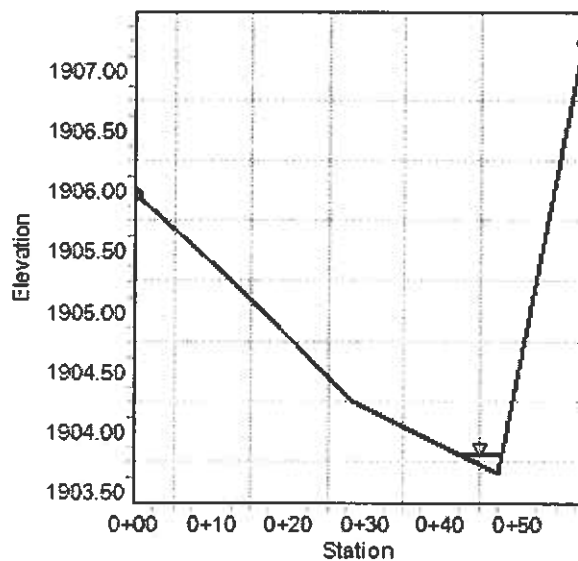
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.45000	%
Normal Depth	0.16	ft
Discharge	0.33	ft ³ /s

Cross Section Image



**REVISED EXISTING CONDITION
DROP INLET CALCULATIONS**

DROP INLET CALCULATIONS - ON GRADE

DEVELOPMENT PALM MORTUARY UP#1

LOCATION DI-3 Las Vegas Blvd - Q10 (exl)

CALCULATED BY SDB

WORK ORDER # 7215

RESULTS

CURB OPENING LENGTH: 3 ft

GRATE LENGTH: 3 ft

TOTAL FLOW INTERCEPTED 3 cfs

***** RECTANGULAR GRATE DROP INLET --- ON GRADE WITH LOCAL DEPRESSION *****

```
*****
*
* Gutter flow, Q..... 8.0 cfs
* Flow depth, y..... 0.38 feet
* Street slope, S..... 3.36 %
* Cross slope, Sx..... 2.00 %
* Opening length, L..... 1.5 feet
* Gutter depr, a..... 1.68 in
* MANNING'S n..... 0.015
*
*****
* Frontal ratio, Eo..... 0.40
* Eq cross-slope, Se..... 5.73 %
* 100% intercept..... 35.9 feet
* Efficiency..... 7.4 %
* Intercepted flow..... 0.6 cfs
*
*****
```

Note:

1. Equations from FHWA HEC-12 dated March, 1984.

***** RECTANGULAR GRATE DROP INLET --- ON GRADE *****

```
*****
*
* Gutter flow, Q..... 8.0 cfs
* Flow velocity, V..... 5.1 fps
* Flow depth, Y..... 0.38 feet
* Grate length, L..... 1.5 feet
* Gutter width, W..... 2.0 feet
* Cross slope, Sx..... 2.00 %
*
*****
* Efficiency:
* Frontal:total. 34 %
* Side flow, R: 2 %
* Grate, E..... 35 %
* Top width, T.... 19.0 feet
* Intercepted flow 2.8 cfs
*
*****
```

Note:

1. Ratio of frontal flow intercepted to total frontal flow, Rf=1.0
2. Frontal to total gutter flow ratio is for composite cross slope.
3. Equations from FHWA HEC-12 dated March, 1984.

DROP INLET CALCULATIONS - ON GRADE

DEVELOPMENT PALM MORTUARY UP#1

LOCATION DI-3 Las Vegas Blvd - Q100 (exl)

CALCULATED BY SDB

WORK ORDER # 7215

RESULTS

CURB OPENING LENGTH: 3 ft

GRATE LENGTH: 3 ft

TOTAL FLOW INTERCEPTED 6 cfs

CURB OPENING DROP INLET — ON GRADE WITH LOCAL DEPRESSION

* Gutter flow, Q.....	20.0 cfs	* Frontal ratio, Eo.....	0.28
* Flow depth, y.....	0.51 feet	* Eq cross-slope, Se.....	4.61 %
* Street slope, S.....	3.36 %		
* Cross slope, Sx.....	2.00 %		
* Opening length, L.....	1.5 feet	* 100% intercept.....	60.1 feet
* Gutter depr, a.....	1.68 in	* Efficiency.....	4.5 %
* MANNING'S n.....	0.015	* Intercepted flow.....	0.9 cfs

Note:

1. Equations from FHWA HEC-12 dated March, 1984.

RECTANGULAR GRATE DROP INLET — ON GRADE

* Gutter flow, Q.....	20.0 cfs	* Efficiency:	
* Flow velocity, V.....	5.7 fps	* Frontal:total	25 %
* Flow depth, Y.....	0.51 feet	* Side flow, R.....	1 %
* Grate length, L.....	1.5 feet	* Grate, E.....	26 %
* Gutter width, W.....	2.0 feet	* Top width, T....	25.5 feet
* Cross slope, Sx.....	2.00 %	* Intercepted flow	5.2 cfs

Note:

1. Ratio of frontal flow intercepted to total frontal flow, Rf=1.0
2. Frontal to total gutter flow ratio is for composite cross slope.
3. Equations from FHWA HEC-12 dated March, 1984.

RESULTS

CURB OPENING LENGTH: 3 ft

GRATE LENGTH: 3 ft

TOTAL FLOW INTERCEPTED **4 cfs**

100

RECTANGULAR GRATE DROP INLET --- ON GRADE *****					
*	*	*	*	*	*
Gutter flow, Q.....	7.0 cfs	* Efficiency:			
Flow velocity, V.....	1.1 fps	Frontal total:	20 %		
Flow depth, Y.....	0.62 feet	Side flow, R:	22 %		
Grate length, L.....	1.5 feet	Grate, E.....	38 %		
Gutter width, W.....	2.0 feet	Top width, T....	31.0 feet		
Cross slope, Sx.....	2.00 %				
*	*	*	*	*	*
		Intercepted flo	2.7 cfs		

Note:

1. Ratio of frontal flow intercepted to total frontal flow. $R_f=1.0$

2. Frontal to total gutter flow ratio is for composite cross slope.

3. Equations from FHWA HEC-12 dated March, 1984.

DROP INLET CALCULATIONS - ON GRADE

DEVELOPMENT PALM MORTUARY UP#1

LOCATION DI-4 LV Blvd/Searles - Q100 (exl)

CALCULATED BY SDB

WORK ORDER # 7215

RESULTS

CURB OPENING LENGTH: 3 ft

GRATE LENGTH: 3 ft

TOTAL FLOW INTERCEPTED 8 cfs

***** CURB OPENING DROP INLET --- ON GRADE WITH LOCAL DEPRESSION *****

* Gutter flow, Q.....	23.0 cfs	* Frontal ratio, Eo.....	0.11
* Flow depth, y.....	0.86 feet	* Eq cross-slope, Se.....	3.01 %
* Street slope, S.....	0.10 %		
* Cross slope, Sx.....	2.00 %		
* Opening length, L.....	1.3 feet	* 100% intercept.....	28.6 feet
* Gutter depr, a.....	1.68 in	* Efficiency.....	7.7 %
* MANNING'S n.....	0.015	* Intercepted flow.....	1.8 cfs

Note:

1. Equations from FHWA HEC-12 dated March, 1984.

***** RECTANGULAR GRATE DROP INLET --- ON GRADE *****

* Gutter flow, Q.....	23.0 cfs	* Efficiency:	
* Flow velocity, V.....	1.6 fps	* Frontal:total	14 %
* Flow depth, Y.....	0.86 feet	* Side flow, R:	13 %
* Grate length, L.....	1.5 feet	* Grate, E.....	25 %
* Gutter width, W.....	2.0 feet	* Top width, T....	43.0 feet
* Cross slope, Sx.....	2.00 %	* Intercepted flow	5.8 cfs

Note:

1. Ratio of frontal flow intercepted to total frontal flow, Rf=1.0
2. Frontal to total gutter flow ratio is for composite cross slope.
3. Equations from FHWA HEC-12 dated March, 1984.

**REVISED INTERIM CONDITION
DROP INLET CALCULATIONS**

DROP INLET CALCULATIONS - ON GRADE

DEVELOPMENT PALM MORTUARY UP #1

LOCATION D1-4 LV Blvd/Searles - Q10 (Int)

CALCULATED BY SDB

WORK ORDER # 7215

RESULTS

CURB OPENING LENGTH: 3 ft

GRATE LENGTH: 3 ft

TOTAL FLOW INTERCEPTED 4 cfs

CURB OPENING DROP INLET --- ON GRADE WITH LOCAL DEPRESSION

* Gutter flow, Q..... 7.0 cfs * Frontal ratio, Eo..... 0.20 *
* Flow depth, y..... 0.62 feet * Eq cross-slope, Se..... 3.85 % *
* Street slope, S..... 0.10 % *
* Cross slope, Sx..... 2.00 % *
* Opening length, L..... 1.3 feet * 100% intercept..... 15.0 feet *
* Gutter depr, a..... 1.68 in * Efficiency..... 14.5 % *
* MANNING'S n..... 0.015 * Intercepted flow..... 1.0 cfs *

Note:

1. Equations from FHWA HEC-12 dated March, 1984.

RECTANGULAR GRATE DROP INLET --- ON GRADE

* Gutter flow, Q..... 7.0 cfs * Efficiency: *
* Flow velocity, V..... 1.1 fps * Frontal: total. 20 % *
* Flow depth, Y..... 0.62 feet * Side flow, R: 22 % *
* Grate length, L..... 1.5 feet * Grate, E..... 38 % *
* Gutter width, W..... 2.0 feet * Top width, T.... 31.0 feet *
* Cross slope, Sx..... 2.00 % * Intercepted flow 2.7 cfs *

Note:

1. Ratio of frontal flow intercepted to total frontal flow, Rf=1.0
2. Frontal to total gutter flow ratio is for composite cross slope.
3. Equations from FHWA HEC-12 dated March, 1984.

DROP INLET CALCULATIONS - ON GRADE

DEVELOPMENT PALM MORTUARY UP #1

LOCATION DI-4 LV Blvd/Searles - Q100 (int)

CALCULATED BY SDB

WORK ORDER # 7215

RESULTS

CURB OPENING LENGTH: 3 ft

GRATE LENGTH: 3 ft

TOTAL FLOW INTERCEPTED 7 cfs

CURB OPENING DROP INLET --- ON GRADE WITH LOCAL DEPRESSION

```
**** ***** **
* * * * *
* Gutter flow, Q..... 22.0 cfs * Frontal ratio, Eo..... 0.11 *
* Flow depth, y..... 0.85 feet * Eq cross-slope, Se..... 3.04 % *
* Street slope, S..... 0.10 % * *
* Cross slope, Sx..... 2.00 % *
* Opening length, L..... 1.3 feet * 100% intercept..... 28.0 feet *
* Gutter depr, a..... 1.68 in * Efficiency..... 7.9 % *
* MANNING'S n..... 0.015 * Intercepted flow..... 1.7 cfs *
* * * * *
```

Note:

1. Equations from FHWA HEC-12 dated March, 1984.

RECTANGULAR GRATE DROP INLET --- ON GRADE

```
**** ***** **
* * * * *
* Gutter flow, Q..... 22.0 cfs * Efficiency: *
* Flow velocity, V..... 1.5 fps * Frontal:total. *
* Flow depth, Y..... 0.85 feet * Side flow, R: *
* Grate length, L..... 1.5 feet * Grate, E..... 26 % *
* Gutter width, W..... 2.0 feet * Top width, T.... 42.5 feet *
* Cross slope, Sx..... 2.00 % * Intercepted flow 5.7 cfs *
* * * * *
```

Note:

1. Ratio of frontal flow intercepted to total frontal flow, $Rf=1.0$
2. Frontal to total gutter flow ratio is for composite cross slope.
3. Equations from FHWA HEC-12 dated March, 1984.

**REVISED DEVELOPED CONDITION
DROP INLET CALCULATIONS**

DROP INLET CALCULATIONS - ON GRADE

DEVELOPMENT PALM MORTUARY UP#1

LOCATION DI-4 LV Blvd/Searles - Q10 (dev)

CALCULATED BY SDB

WORK ORDER # 7215

RESULTS

CURB OPENING LENGTH: 3 ft
GRATE LENGTH: 3 ft
TOTAL FLOW INTERCEPTED 3 cfs

CURB OPENING DROP INLET --- ON GRADE WITH LOCAL DEPRESSION

*** *****
* Gutter flow, Q..... 6.0 cfs * Frontal ratio, Eo.. 0.22 *
* Flow depth, Y..... 0.60 feet * Eq cross-slope, Se 4.03 % *
* Street slope, S.... 0.10 % *
* Cross slope, Sx.... 2.00 % *
* Opening length, L.. 1.3 feet * 100% intercept..... 13.7 feet *
* Gutter depr, a..... 1.68 in * Efficiency..... 15.8 % *
* MANNING'S n..... 0.02 * Intercepted flow.. 1.0 cfs *
* *****
Note: 1. Equations from FHWA HEC-12 dated March, 1984.

RECTANGULAR GRATE DROP INLET --- ON GRADE

*** *****
* Gutter flow, Q..... 6.0 cfs * Efficiency: *
* Flow velocity, V... 1.1 fps * Frontal: 21 % *
* Flow depth, Y..... 0.6 feet * Side flo 24 % *
* Grate length, L..... 1.5 feet * Grate, E 39 % *
* Gutter width, W.... 2.0 feet * Top width, T 30.0 feet *
* Cross slope, Sx.... 2.00 % * Intercepted 2.4 cfs *
* *****
Note: 1. Ratio of frontal flow intercepted to total frontal flow, Rf=1.0
2. Frontal to total gutter flow ratio is for composite cross slope.
3. Equations from FHWA HEC-12 dated March, 1984.

DROP INLET CALCULATIONS - ON GRADE

DEVELOPMENT PALM MORTUARY UP#1

LOCATION DI-4 LV Blvd/Searles - Q100 (dev)

CALCULATED BY SDB

WORK ORDER # 7215

RESULTS

CURB OPENING LENGTH: 3 ft

GRATE LENGTH: 3 ft

TOTAL FLOW INTERCEPTED 6 cfs

CURB OPENING DROP INLET --- ON GRADE WITH LOCAL DEPRESSION

```
*** *****
* Gutter flow, Q..... 17.0 cfs * Frontal ratio, Eo.. 0.13 *
* Flow depth, Y..... 0.79 feet * Eq cross-slope, Se 3.18 % *
* Street slope, S.... 0.10 % *
* Cross slope, Sx.... 2.00 % *
* Opening length, L.. 1.3 feet * 100% intercept..... 24.4 feet *
* Gutter depr, a..... 1.68 in * Efficiency..... 9.0 % *
* MANNING'S n..... 0.02 * Intercepted flow.. 1.5 cfs *
* *****
Note:
1. Equations from FHWA HEC-12 dated March, 1984.
```

RECTANGULAR GRATE DROP INLET --- ON GRADE

```
*** *****
* Gutter flow, Q..... 17.0 cfs * Efficiency: *
* Flow velocity, V... 1.4 fps * Frontal: 15 % *
* Flow depth, Y..... 0.79 feet * Side flo 15 % *
* Grate length, L..... 1.5 feet * Grate, E 28 % *
* Gutter width, W.... 2.0 feet * Top width, T 39.5 feet *
* Cross slope, Sx.... 2.00 % * Intercepted 4.8 cfs *
* *****
Note:
1. Ratio of frontal flow intercepted to total frontal flow, Rf=1.0
2. Frontal to total gutter flow ratio is for composite cross slope.
3. Equations from FHWA HEC-12 dated March, 1984.
```

ZONING / PLANNING CONDITIONS

City of Las Vegas

AGENDA MEMO - PLANNING

PLANNING COMMISSION MEETING DATE: MAY 8, 2012

DEPARTMENT: PLANNING

ITEM DESCRIPTION: APPLICANT/OWNER: PALM MORTUARY, INC.

**** STAFF RECOMMENDATION(S) ****

CASE NUMBER	RECOMMENDATION	REQUIRED FOR APPROVAL
SUP-44938	Staff recommends APPROVAL, subject to conditions:	
SDR-44937	Staff recommends APPROVAL, subject to conditions:	SUP-44938

**** CONDITIONS ****

SUP-44938 CONDITIONS

Planning

1. Approval of and conformance to the Conditions of Approval for Site Development Plan Review (SDR-44937) shall be required.
2. This approval shall be void two years from the date of final approval, unless exercised pursuant to the provisions of LVMC Title 19.16. An Extension of Time may be filed for consideration by the City of Las Vegas.
3. All necessary building permits shall be obtained and final inspections shall be completed in compliance with Title 19 and all codes as required by the Department of Building and Safety.
4. These Conditions of Approval shall be affixed to the cover sheet of any plan set submitted for building permit.
5. All City Code requirements and design standards of all City departments must be satisfied, except as modified herein.

YK

Conditions Page Two
May 8, 2012 - Planning Commission Meeting

SDR-44937 CONDITIONS

Planning

1. Conformance to the Conditions of Approval for Site Development Plan Review (SDR-29648), except as modified herein shall be required, if approved.
2. This approval shall be void two years from the date of final approval, unless exercised pursuant to the provisions of LVMC Title 19.16. An Extension of Time may be filed for consideration by the City of Las Vegas.
3. All development shall be in conformance with the site plan and landscape plans, date stamped 04/02/12, except as amended by conditions herein.
4. The existing chain link fence along Las Vegas Boulevard shall be removed within six months of final approval. Any wall or fence proposed to replace the existing fence shall be located outside of the public right-of-way and shall conform to all requirements of Title 19.
5. Any changes based upon right-of-way, traffic or drainage studies or street improvements required by the city or public utilities shall not reduce the widths of perimeter landscape buffers, height of walls or quantities of plant materials from that on submitted landscape plans date stamped 04/02/12. Any changes based upon subsequently submitted studies must be accommodated elsewhere on the site.
6. The applicant shall coordinate with the City Surveyor and other city staff to determine the most appropriate mapping action necessary to consolidate the existing lots. The mapping action shall be completed and recorded prior to the issuance of any building permits.
7. All necessary building permits shall be obtained and final inspections shall be completed in compliance with Title 19 and all codes as required by the Department of Building and Safety.
8. These Conditions of Approval shall be affixed to the cover sheet of any plan set submitted for building permit.
9. A technical landscape plan, signed and sealed by a Registered Architect, Landscape Architect, Residential Designer or Civil Engineer, must be submitted prior to or at the same time application is made for a building permit. A permanent underground sprinkler system is required, and shall be permanently maintained in a satisfactory manner; the landscape plan shall include irrigation specifications. Installed landscaping shall not impede visibility of any traffic control device.

Conditions Page Three
May 8, 2012 - Planning Commission Meeting

10. All City Code requirements and design standards of all City Departments must be satisfied, except as modified herein.

Public Works

11. In accordance with code requirements of Title 13.56, remove all substandard sidewalk and unused driveways on Las Vegas Boulevard North and replace with new improvements meeting Current City Standards concurrent with development of this site. All existing paving damaged or removed by this development shall be restored at its original location and to its original width concurrent with development of this site.
12. Where not already occupied by a building or structure, dedicate an additional 5 feet of public sewer easement on each side of the existing 10 foot public sewer easement by Book 715 Instrument 575067, for a total of 20' public sewer easement. Maintain paved drivable access to the existing public sewer manholes within said easement. No structures, nor vegetation over 3 feet tall, are allowed within public sewer easements. Any existing structures within a public sewer easement may be removed in the future at property owner's expense if access is needed for emergency repairs to the public sewer.
13. Landscape and maintain all unimproved rights-of-way, if any, adjacent to this site. All landscaping and private improvements installed with this project shall be situated and maintained so as to not create sight visibility obstructions for vehicular traffic at all development access drives and abutting street intersections.
14. Submit an Encroachment Agreement for any landscaping and existing private improvements, if any, located in the public right-of-way adjacent to this site prior to occupancy of this site. The applicant must carry an insurance policy for the term of the encroachment agreement and add the City of Las Vegas as an additionally insured entity on this insurance policy. If requested by the City, the applicant shall remove landscaping and private improvements encroaching in the public right-of-way at the applicant's expense pursuant to the terms of the City's encroachment agreement. The installation and maintenance of all private structures in the public right-of-way shall be the responsibility of the adjacent property owner(s) and shall be transferred with the sale of the property for the entire term of the Encroachment Agreement.
15. A Drainage Study update must be submitted to and approved by the Department of Public Works prior to issuance of any building or grading permits. Provide and improve all drainageways recommended in the approved drainage study update.

Staff Report Page One
May 8, 2012 - Planning Commission Meeting

**** STAFF REPORT ****

PROJECT DESCRIPTION

This project proposes to expand an existing nonconforming cemetery and bring it into conformance with the Unified Development Code. The project is located at 1325 South Main Street. Since a Special Use Permit is required for a cemetery located on a C-V (Civic) zoned property, the normal development conditions do not apply; therefore, no wall or wrought iron fence is required along Las Vegas Boulevard. However, the applicant has agreed to meet this condition since the existing chain link fence located within public right-of-way will be required to be removed. Staff supports the requested applications. If denied, the cemetery could not be expanded and would remain a nonconforming use.

ISSUES

- The Special Use Permit for a Cemetery/Mausoleum use will cover all three parcels, which will bring the nonconforming parcels into conformance with the current Unified Development Code for Cemetery/Mausoleum use.
- An existing six-foot tall chain link fence with razor wire located within the Las Vegas Boulevard right-of-way shall be removed within six months of approval of this application.

BACKGROUND INFORMATION

<i>Related Relevant City Actions by P&D, Fire, Bldg., etc</i>	
05/21/03	The City Council approved the Downtown North Land Use Plan (GPA-2249). The Planning Commission recommended approval.
04/21/04	The City Council approved a Rezoning (ZON-3888) application from: M (Industrial), C-M (Commercial/Industrial), C-2 (General Commercial) and C-V (Civic) to: C-M (Commercial/Industrial), C-2 (General Commercial), C-1 (Limited Commercial), R-3 (Medium Density Residential), and C-V (Civic) on properties generally located within the area bounded by Washington Avenue, Owens Avenue, the Union Pacific Railroad and Bruce Street. The Planning Commission and Staff recommended approval.
11/05/08	The City Council approved a Special Use Permit (SUP-29649) and Site Development Plan Review (SDR-29648) for a proposed 14,771 square-foot addition to an existing cemetery and crematory on 13.12 acres at 1325 North Main Street. The Planning Commission and staff recommended approval.

Staff Report Page Two
May 8, 2012 - Planning Commission Meeting

Most Recent Change of Ownership	
04/14/59	A deed was recorded for a change in ownership on parcels 139-27-504-012 and 139-27-603-028.
09/17/09	A deed was recorded for a change in ownership on parcel 139-27-504-006.

Related Building Permits/Business Licenses	
08/11/93	A business license (C11-04909) was issued for a contractor at 1325 North Main Street.
08/03/95	A building permit (#95383898) was issued for a 3,040 square-foot facility remodel at 1325 North Main Street. This project was completed on 10/26/95.
10/19/95	A business license (F05-00020) was issued for a Funeral Home and Cemetery at 1325 North Main Street.
09/12/95	A building permit (#95386923) was issued for Tenant Improvements at 1325 North Main Street. This project was completed 10/26/95.
08/20/03	Permit (#95383898) for a monument sign was issued at 1325 North Main Street. The project was completed on 09/25/03.
07/24/07	A business license (F05-00027) was re-issued for a Funeral Home and Cemetery at 1325 North Main Street.
07/25/07	A business license (F05-00032) was issued for a Memorial Estate Planning Service at 1325 North Main Street.
07/21/07	A business license (Q05-00020) was issued for Funeral/Cemetery Administrators at 1325 North Main Street.
07/25/07	A business license (H02-01010) was issued for Handbilling at 1325 North Main Street.

Pre-Application Meeting	
03/07/12	Staff met with the applicant and reviewed the Site Development Plan Review and Special Use Permit application requirements needed for an expansion of a Cemetery/Mausoleum use at 1325 North Main Street. Staff also informed the applicant that a condition will be added requiring remapping of the parcels.

Neighborhood Meeting	
A neighborhood meeting was not required, nor was one held.	

Field Check	
03/29/12	Staff visited the site and found a well maintained cemetery. The east portion of the site was undeveloped and had no landscaping. A six-foot tall chain link fence with razor wire was located along the Las Vegas Boulevard frontage.

YK

Staff Report Page Three
May 8, 2012 - Planning Commission Meeting

Details of Application Request	
Site Area	
Net Acres	17

Surrounding Property	Existing Land Use Per Title 19.12	Planned or Special Land Use Designation	Existing Zoning District
Subject Property	Cemetery/Mausoleum	PF (Public Facilities)	C-V (Civic)
North	Automotive Repair	GC (General Commercial)	C-2 (General Commercial)
	Community Residence		
South	State of Nevada Maintenance Facility	PF (Public Facilities)	C-V (Civic)
	Mobile Home Park	M (Medium Density Residential)	R-MHP (Residential Mobile/Manufactured Home Park)
	Cemetery/Mausoleum	GC (General Commercial)	C-2 (General Commercial)
East	Community Residence	GC (General Commercial)	C-2 (General Commercial)
	Warehouse/Distribution Center	LI/R (Light Industry/Research)	C-M (Commercial/Industrial)
	Cemetery/Mausoleum	PF (Public Facilities)	C-V (Civic)
West	Parking Lot	GC (General Commercial)	C-2 (General Commercial)
	Undeveloped/NDOT	PF (Public Facilities)	C-V (Civic)
	Retail	LI/R (Light Industry/Research)	M (Industrial)
	Community Residence	H (High Density Residential)	R-5 (Apartment)

Master Plan Areas	Yes	No	Compliance
Downtown North Plan			Y
Special Purpose and Overlay Districts	Yes	No	Compliance
A-O (Airport Overlay) District 175 and 200 Feet	X		Y
Trails	X		Y
Rural Preservation Overlay District		X	N/A
Las Vegas Redevelopment Plan Area		X	N/A
Development Impact Notification Assessment		X	N/A
Project of Regional Significance		X	N/A

Staff Report Page Four
May 8, 2012 - Planning Commission Meeting

DEVELOPMENT STANDARDS

There are no specific, set landscape requirements for the C-V (Civic) zone; requirements are determined via the Site Development Plan Review process.

<i>Street Name</i>	<i>Functional Classification of Street(s)</i>	<i>Governing Document</i>	<i>Actual Street Width (Feet)</i>	<i>Compliance with Street Section</i>
Main Street	Primary Arterial	Master Plan of Streets and Highways	85	N
Las Vegas Boulevard	Primary Arterial	Master Plan of Streets and Highways	100	Y
Foremaster Lane	Local	N/A	60	N/A

Pursuant to Title 19.08 and 19.12, the following parking standards apply:

Parking Requirement							
Use	Largest number of shift employees	Required			Provided		Compliance
		Parking Ratio	Parking		Parking		
			Regular	Handi-capped	Regular	Handi-capped	
Cemetery/ Mausoleum	38	1 space for each employee on largest shift	38				
TOTAL SPACES REQUIRED			38		152		Y
Regular and Handicap Spaces Required			36	2	150	2	Y

ANALYSIS

The Cemetery/Mausoleum use is defined as "Property and facilities used for interring of the dead." The proposed use meets the definition. There are no minimum Special Use Permit requirements.

This project will expand an existing nonconforming cemetery by 3.88 acres and bring the entire 17-acre cemetery into conformance with the Special Use Permit requirements of Title 19.12. The applicant is requesting an undeveloped parcel be developed for use as a cemetery. An existing driveway will be expanded onto the undeveloped parcel and a large landscaped berm will be added along the rear of the property, adjacent to Las Vegas Boulevard. The cemetery will continue to be accessed from Main Street and Foremaster Lane.

Staff Report Page Five
May 8, 2012 - Planning Commission Meeting

Since a Special Use Permit is required for a cemetery and there are no conditions required for this use under a Special Use Permit, no fence or wall is required. However, the applicant is proposing to install lush landscaping along a new earth berm along the Las Vegas Boulevard perimeter. This perimeter landscape buffer will be 35 feet wide with thirty-three, 24-inch box shade trees and one hundred and thirty-two, 5-gallon shrubs. The area will be covered with a three inch layer of gravel mulch. This proposal will result in one tree per 20 linear feet, the normal requirement for a commercially zoned parcel. An additional one acre of turf with seven shade trees will cover the expanded portion of the developed cemetery area.

The applicant has agreed to remove the existing nonconforming chain link fence with razor wire located in the Las Vegas Boulevard right-of-way. A condition has been added to require the removal within six months of final approval. Any new masonry wall or wrought iron fence shall be designed to meet Title 19 standards. This feature, along with the proposed dense landscaping, will improve this section of Las Vegas Boulevard. For these reasons, staff supports the requested applications, with conditions.

FINDINGS (SUP-44938)

In order to approve a Special Use Permit application, per Title 19.16.110(L) the Planning Commission and City Council must affirm the following:

1. **The proposed land use can be conducted in a manner that is harmonious and compatible with existing surrounding land uses, and with future surrounding land uses as projected by the General Plan.**

The proposed development is compatible with the existing Mortuary use on the subject site, and also the surrounding area. Securing a presently undeveloped parcel will benefit the adjacent properties in the area and the proposed development fits in well with the surrounding properties.

2. **The subject site is physically suitable for the type and intensity of land use proposed.**

The subject site is physically suitable for this type and intensity of land use. There is an existing cemetery, mortuary and crematory on the site and this application represents an expansion of the cemetery use, which has been conducted on that site for many years with no negative impact to the area.

3. **Street or highway facilities providing access to the property are or will be adequate in size to meet the requirements of the proposed use.**

**Staff Report Page Six
May 8, 2012 - Planning Commission Meeting**

The two main points of entry to the site will be from Main Street and Foremaster Lane. The public will ingress/egress via Main Street and Foremaster Lane driveway will be restricted to employee and service use only. Both of these roadways can accommodate the minimal traffic the proposed development will generate.

4. **Approval of the Special Use Permit at the site in question will not be inconsistent with or compromise the public health, safety, and welfare or the overall objectives of the General Plan.**

The proposed use is consistent with the General Plan for the subject site and compatible with the surrounding uses in the area.

5. **The use meets all of the applicable conditions per Title 19.12.**

There are no specific conditions for a Cemetery/Mausoleum use under the Special Use Permit.

FINDINGS (SDR-44937)

In order to approve a Site Development Plan application, per Title 19.16.100(E) the Planning Commission and/or City Council must affirm the following:

1. **The proposed development is compatible with adjacent development and development in the area;**

The proposed development is compatible with the existing Cemetery/Mausoleum use on the subject site, and also the surrounding area.

2. **The proposed development is consistent with the General Plan, this Title, the Design Standards Manual, the Landscape, Wall and Buffer Standards, and other duly-adopted city plans, policies and standards;**

The proposed development and use are consistent with uses allowed by the PF (Public Facilities) General Plan designation and the C-V (Civic) zoning. Title 19.06.020 stipulates that the development standards for a project in a C-V (Civic) district shall be established upon approval of a Site Development Plan Review, and that setback and other standards are not automatically applied. As this project is a proposed expansion of an existing use within the C-V (Civic) District, development standards shall be established via this Site Development Plan Review.

3. **Site access and circulation do not negatively impact adjacent roadways or neighborhood traffic;**

**Staff Report Page Seven
May 8, 2012 - Planning Commission Meeting**

The two main points of entry to the site will be from Main Street and Foremaster Lane. The public access is via Main Street, while the Foremaster Lane driveway will be restricted to employee and service use only. Both of these roadways can accommodate the minimal traffic the proposed development will generate.

4. Building and landscape materials are appropriate for the area and for the City;

The proposed building materials and landscaping materials are suitable for the subject site and the surrounding area. The proposed development will be an enhancement to the undeveloped portion of the subject site and will be a positive addition to the area.

5. Building elevations, design characteristics and other architectural and aesthetic features are not unsightly, undesirable, or obnoxious in appearance; create an orderly and aesthetically pleasing environment; and are harmonious and compatible with development in the area;

No buildings are proposed with this project.

6. Appropriate measures are taken to secure and protect the public health, safety and general welfare.

The facility will be subject to State of Nevada, Southern Nevada Health District and City of Las Vegas regulations and inspection. Public Health and Safety will not be adversely impacted by the proposed development.

NEIGHBORHOOD ASSOCIATIONS NOTIFIED

17

NOTICES MAILED 263

APPROVALS 1

PROTESTS 0

APPROVAL LETTER

#5932-X

CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		October 16, 2006
TO: Land Development Services Department of Public Works		FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for:	COPIES TO:
	Palm Mortuary – Downtown Expansion	VTN Nevada
Cross Streets:	NWC of Washington Blvd & Las Vegas Blvd	Palm Mortuary
File Number:	F:\Depot\DSMemos\DS4003C.doc	Bart Anderson, P.E., DevCo
Parcel Number:	139-27-603-002 & 139-27-504-010	CCRFC
Zoning Action:	SDR-10461	
FEMA Flood Zone	YES	NO X
Proposed Storm Drain	YES	NO X

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Transaction #
1 st Submittal	5/5/2006	5/19/2006	Not Approved	\$400.00	44894: \$400
2 nd Submittal	6/30/2006, 8/3/2006 & 9/8/2006	9/11/2006	Conditional Approval	\$400.00	48792: \$400
CCRFC	10/5/2006	10/16/2006	Concurrence	N/C	N/C
			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.

- Sheet DT-1: Section 4: Specify the wall to have minimum two courses above the adjacent valley gutter.
Section 6: Specify the wall to have minimum two courses above the adjacent top of the L-curb.

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

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T/R/S: T20S/R61E/27

AREA M-27

REFERENCE MATERIAL
APPROVED PALM MORTUARY TDS

5932E.OUT

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* FLOOD HYDROGRAPH PACKAGE (NEC-1) *
*   JUN 1998                      *
*   VERSION 4.1                    *
* RUN DATE 12APR06 TIME 14:40:22 *
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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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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF NEC-I KNOWN AS NEC1 (JAN 73), NEC1GS, NEC1DB, AND NEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
 THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSEON
 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

NEC-1 INPUT

PAGE 1

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
*DIAGRAM
1 ID *****
2 ID PALM MORTUARY - TECHNICAL DRAINAGE STUDY
3 ID FILE 5932E.DAT
4 ID EXISTING CONDITION
5 ID 03-24-2006
6 ID SDW3
7 ID *****
8 IT 5 0 0 300
9 IM 5 0 0
10 IO 5 0 0
11 JR PREC .570 1.000

12 KK ST5
13 KM DEVELOPED OFFSITE STREET BASIN
14 BA .0015
15 PB 2.77
16 PC .000 .020 .057 .070 .087 .108 .124 .130 .130 .130
17 PC .130 .130 .130 .133 .140 .142 .148 .158 .172 .181
18 PC .190 .197 .199 .200 .201 .204 .214 .229 .241 .249
19 PC .251 .256 .270 .278 .281 .283 .295 .322 .352 .409
20 PC .499 .590 .710 .744 .781 .812 .819 .835 .851 .856
21 PC .860 .868 .876 .888 .910 .926 .937 .950 .970 .976
22 PC .982 .985 .987 .989 .990 .993 .993 .994 .995 .998
23 PC .998
24 LS 98.0
25 UD 0.062

26 KK OFF4D
27 KM DEVELOPED OFFSITE BASIN
28 BA .0048
29 LS 93.0
30 UD .072

31 KK CPI
32 KM COMBINE OFF4D AND ST5
33 HC 2

34 KK RC1
35 KM 6/9 CFS INTERCEPTED BY O11
36 DT DC1
37 DI 6 13
38 DQ 6 9

39 KK ST4
40 KM DEVELOPED OFFSITE STREET BASIN
41 BA .0008
42 LS 98.0
43 UD .050

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1

NEC-1 INPUT

PAGE 2

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
44 KK CP2
45 KM COMBINE ST4 AND CP1
46 HC 2

47 KK DFF3D
48 KM DEVELOPED OFFSITE BASIN
49 BA .D069
50 LS 94.0
51 UD .054

52 KK FS1
53 KM FLOW SPLIT AT ADAMS AND 4TH
54 DT DQ1
55 DI 7 15

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Page 1

56 DQ 6 12
 57 KK OFF20
 58 KM DEVELOPED OFFSITE BASIN
 59 BA .0044
 60 LS 93.0
 61 UD .050
 62 KK ST3
 63 KM DEVELOPED OFFSITE STREET BASIN
 64 BA .0011
 65 LS 98.0
 66 UD .052
 67 KK CP3
 68 KM COMBINE BASINS ST3, OFF20, FS1, AND CP2
 69 MC 4
 70 KK RC2
 71 KM 3/6 CFS INTERCEPTED BY D13
 72 DT DC2
 73 D1 8 20
 74 DQ 3 6
 75 KK OFF1DB
 76 KM DEVELOPED OFFSITE BASIN
 77 BA .0029
 78 LS 63.0
 79 UD .117
 80 KK ST2
 81 KM DEVELOPED OFFSITE STREET BASIN
 82 BA .0004
 83 LS 98.0
 84 UD .058

HEC-1 INPUT

PAGE 3

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

85 KK ON1E
 86 KM EXISTING ONSITE BASIN
 87 BA .0119
 88 LS 78.0
 89 UD .100
 90 KK CP4
 91 KM COMBINE ON1E, ST2, OFF1DB, CP3
 92 MC 4
 93 KK RC3
 94 KM 3/7 CFS INTERCEPTED BY D14
 95 DT DC3
 96 D1 8 26
 97 DQ 3 7
 98 KK OFF1DA
 99 KM DEVELOPED OFFSITE BASIN
 100 BA .0108
 101 LS 81.0
 102 UD .114
 103 KK ST1
 104 KM DEVELOPED OFFSITE STREET BASIN
 105 BA .0002
 106 LS 98.0
 107 UD .050
 108 KK CP5
 109 KM COMBINE ST1, OFF1DA, AND CP4
 110 MC 3
 111 Z2

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

```

12 ST5
.
.
26 OFF40
.
.
31 CP1.....
.
.
36 RC1-----> DC1
34
.
.
39 ST4
.
.
44 CP2.....
.
.
47 OFF30
.
.
54 FS1-----> OQ1
52
.
.
57 OFF20

```

S932E.OUT

```

62      .      .      .      ST3
67      CP3.....
72      .      .      .      DC2
70      RC2----->
75      .      .      .      OFF108
80      .      .      .      ST2
85      .      .      .      ON1E
90      CP4.....
95      .      .      .      DC3
93      RC3----->
98      .      .      .      OFF10A
103     .      .      .      ST1
108     CP5.....

```

```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
*****
* FLOOD HYDROGRAPH PACKAGE (NEC-1) *
* JUN 1998 *
* VERSION 4.1 *
* RUN DATE 12APR06 TIME 14:40:22 *
*****

```

```

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

```

```

*****
PALM MORTUARY - TECHNICAL DRAINAGE STUDY
FILE S932E.DAT
EXISTING CONDITION
03-24-2006
SDN3
*****

```

```

10 IO      OUTPUT CONTROL VARIABLES
          IPRINT      5      PRINT CONTROL
          IPLOT       0      PLOT CONTROL
          QSCAL       0.     HYDROGRAPH PLOT SCALE

IT         HYDROGRAPH TIME DATA
          NMN        5      MINUTES IN COMPUTATION INTERVAL
          IOATE      1 0    STARTING DATE
          ITIME      0000   STARTING TIME
          NQ         300    NUMBER OF HYDROGRAPH ORDINATES
          NDDATE     2 0    ENDING DATE
          NOTIME      0055   ENDING TIME
          ICENT      19     CENTURY MARK

          COMPUTATION INTERVAL .08 HOURS
          TOTAL TIME BASE 24.92 HOURS

ENGLISH UNITS
DRAINAGE AREA      SQUARE MILES
PRECIPITATION DEPTH INCHES
LENGTH, ELEVATION FEET
FLOW               CUBIC FEET PER SECOND
STORAGE VOLUME     ACRES-Feet
SURFACE AREA       ACRES
TEMPERATURE        DEGREES FAHRENHEIT

JP         MULTI-PLAN OPTION
          NPLAN      1      NUMBER OF PLANS

JR         MULTI-RATIO OPTION
          RATIOS OF PRECIPITATION
          .57        1.00
1

```

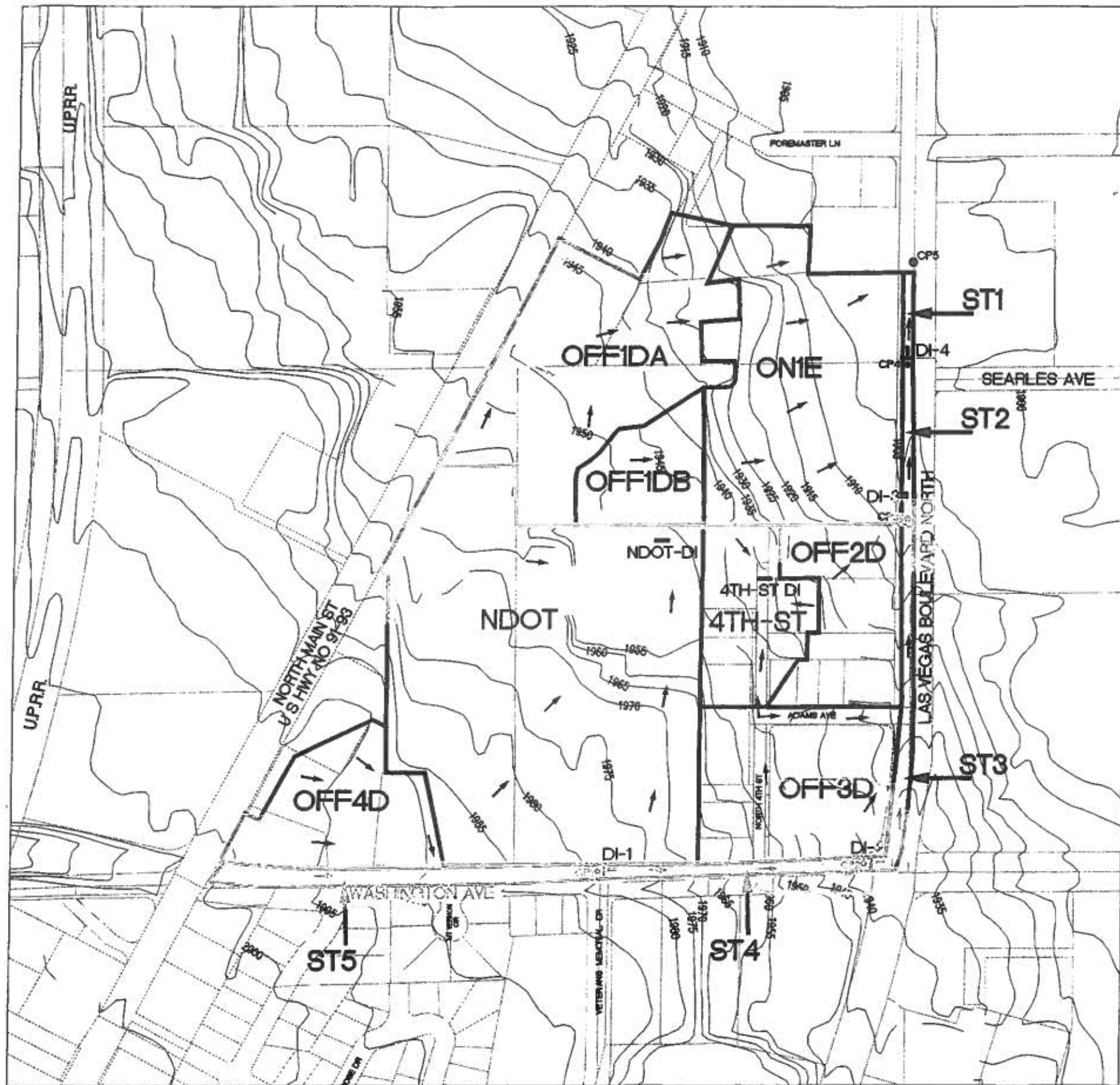
PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
 FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
 TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN	RATIOS APPLIED TO PRECIPITATION	
				RATIO 1	RATIO 2
				.57	1.00
HYDROGRAPH AT	STS	.00	1	2.	3.
			TIME	3.50	3.50

S932E.OUT

HYDROGRAPH AT	OFF4D	.00	1	FLOW	5.	9.
+				TIME	3.50	3.50
2 COMBINED AT	CP1	.01	1	FLOW	6.	13.
+				TIME	3.50	3.50
DIVERSION TO	DC1	.01	1	FLOW	6.	9.
+				TIME	3.50	3.50
HYDROGRAPH AT	RC1	.01	1	FLOW	0.	4.
+				TIME	3.50	3.50
HYDROGRAPH AT	ST4	.00	1	FLOW	1.	2.
+				TIME	3.50	3.50
2 COMBINED AT	CP2	.01	1	FLOW	1.	6.
+				TIME	3.50	3.50
HYDROGRAPH AT	OFF3D	.01	1	FLOW	7.	15.
+				TIME	3.50	3.50
DIVERSION TO	DQ1	.01	1	FLOW	6.	12.
+				TIME	3.50	3.50
HYDROGRAPH AT	FS1	.01	1	FLOW	1.	3.
+				TIME	3.50	3.50
HYDROGRAPH AT	OFF2D	.00	1	FLOW	5.	9.
+				TIME	3.50	3.50
HYDROGRAPH AT	ST3	.00	1	FLOW	1.	3.
+				TIME	3.50	3.50
4 COMBINED AT	CP3	.02	1	FLOW	8.	20.
+				TIME	3.50	3.50
DIVERSION TO	DC2	.02	1	FLOW	3.	6.
+				TIME	3.50	3.50
HYDROGRAPH AT	RC2	.02	1	FLOW	5.	14.
+				TIME	3.50	3.50
HYDROGRAPH AT	OFF1DB	.00	1	FLOW	0.	1.
+				TIME	4.92	3.58
HYDROGRAPH AT	ST2	.00	1	FLOW	1.	1.
+				TIME	3.50	3.50
HYDROGRAPH AT	ON1E	.01	1	FLOW	3.	11.
+				TIME	3.58	3.58
4 COMBINED AT	CP4	.03	1	FLOW	8.	26.
+				TIME	3.50	3.50
DIVERSION TO	DC3	.03	1	FLOW	3.	7.
+				TIME	3.50	3.50
HYDROGRAPH AT	RC3	.03	1	FLOW	5.	19.
+				TIME	3.50	3.50
HYDROGRAPH AT	OFF1DA	.01	1	FLOW	4.	11.
+				TIME	3.58	3.58
HYDROGRAPH AT	ST1	.00	1	FLOW	0.	0.
+				TIME	3.50	3.50
3 COMBINED AT	CP5	.05	1	FLOW	9.	30.
+				TIME	3.50	3.50

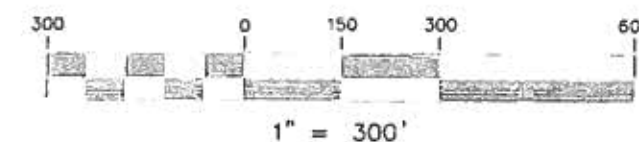
*** NORMAL END OF NEC-1 ***



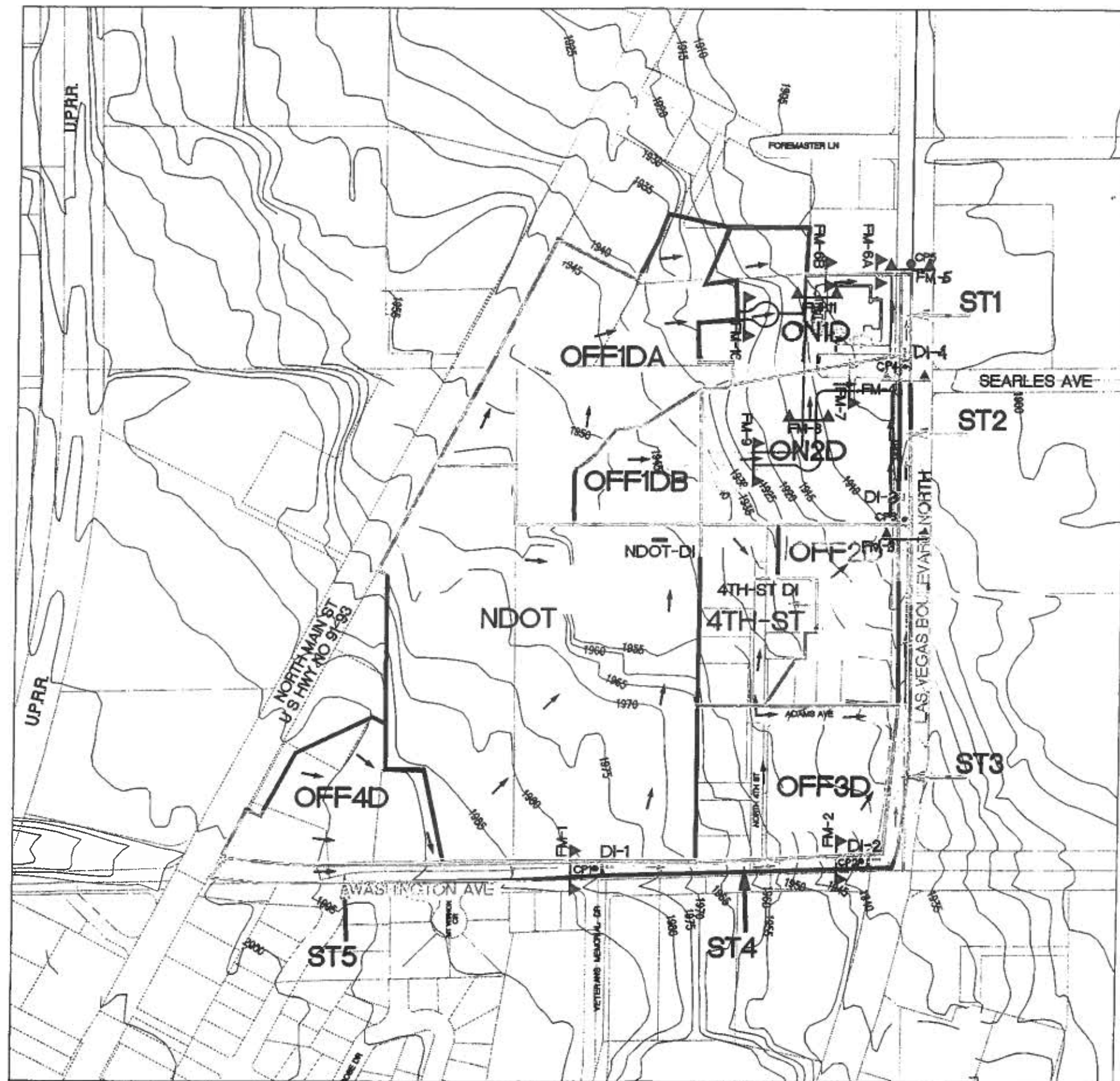
LEGEND

-BASIN DELINEATION
- ONIEBASIN NAME
- CP1COMBINATION POINT
- 1935-.....CONTOUR ELEVATION
- DI-1DROP INLET

GRAPHIC SCALE



5932 - PALM MORTUARY
EXISTING CONDITION BASIN EXHIBIT
FIGURE 5A



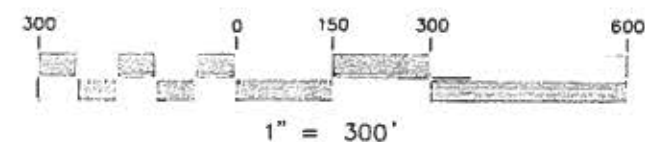
BASE	10-YEAR ST QW	100-YEAR ST QW
	(CFS)	(CFS)
PALM MORTUARY		
EXISTING CONDITION		
ON1E	3	11
OFF1DA	4	11
OFF1DB	0	1
OFF2D	5	9
OFF3D	7	15
OFF4D	5	9
ST1	0	0
ST2	1	1
ST3	1	3
ST4	1	2
ST5	2	3
CP1	6	13
CP2	1	6
CP3	8	20
CP4	8	26
CP5	9	30
DEVELOPED CONDITION		
ON1D	1	4
ON2D	0	2
OFF1DA	4	11
OFF1DB	0	1
OFF2D	5	9
OFF3D	7	15
OFF4D	5	9
ST1	0	0
ST2	1	1
ST3	1	3
ST4	1	2
ST5	2	3
CP1	6	13
CP2	1	6
CP3	8	20
CP4	6	17
CP5	7	27

FM SECTION	O-100 (cfs)	D-100 (ft)	V-100 (fps)
FM-1	11	0.43	5.17
FM-2	6	0.34	5.17
FM-3	20	0.53	5.08
FM-4	17	0.65	2.31
FM-5	27	0.69	3.21
FM-6A	15	0.39	4.38
FM-6B	15	0.32	5.59
FM-7	3	0.24	3.84
FM-8	3	0.34	3.32
FM-9	3	0.27	5.4
FM-10	11	0.42	5.63
FM-11	11	0.39	2.22

LEGEND

-BASIN DELINEATION
- ON1DBASIN NAME
-COMBINATION POINT
- 1935CONTOUR ELEVATION
- ▲FLOWMASTER SECTION

GRAPHIC SCALE



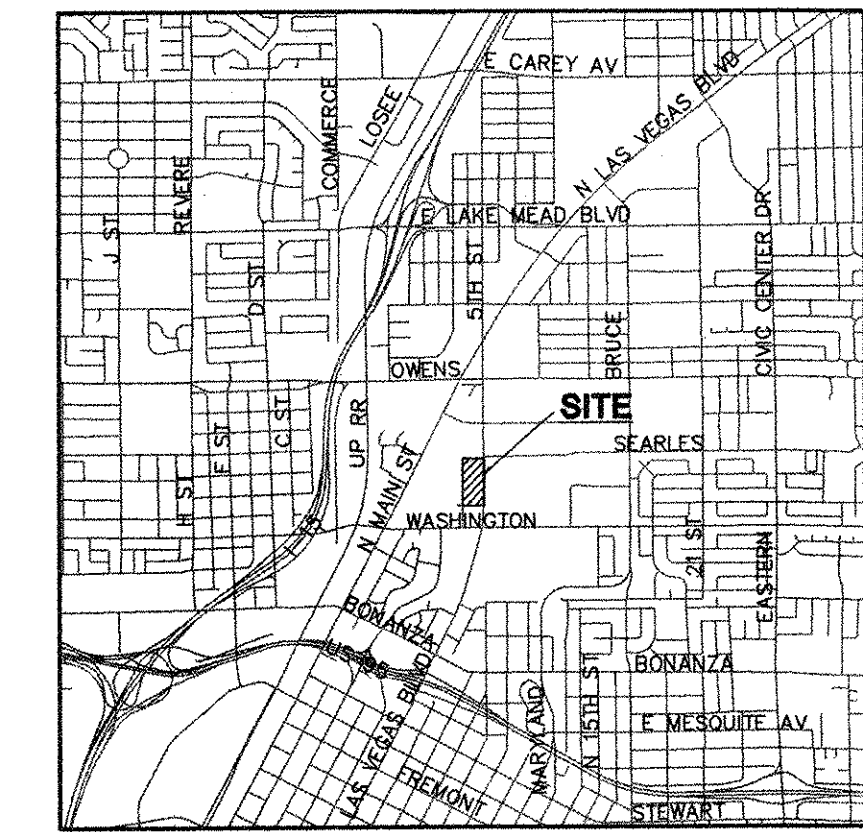
5932 - PALM MORTUARY

DEVELOPED CONDITION-ONSITE AND OFFSITE DRAINAGE

FIGURE 6

vtn nevada

DATE: 03/24/06
BY: SDG
SCALE: 300
SHEET 1 OF 1



Revised



PALM MORTUARY/GARY WESTERFIELD
1325 N. MAIN ST.
LAS VEGAS, NV. 89101

139-27-504-010
139-27-603-002

2 CONSTRUCT "L" TYPE CURB AND GUTTER PER USD.DWG.#216
8 SAWCUT AND MATCH EXISTING AC

SITE IS LOCATED IN A ZONE X
AS SHOWN IN FIRM MAP 32003C2170E
DATED SEPTEMBER 27,2002
ZONE X IS DETERMINED TO BE OUTSIDE
THE 0.2% ANNUAL CHANCE FLOOD PLAIN.

CITY OF LAS VEGAS BENCHMARK #1LV0127-NE6A
JUNE 2003 DATUM
RIVET & PLATE IN THE TOP OF CURB AT THE NORTHEAST
CORNER OF MAIN STREET AND FOREMASTER LANE
METERS: 585.5977 (1920.26 FEET)

NORTH 89°42'28" EAST, BEING THE BEARING OF THE NORTH LINE OF THE NORTHEAST QUARTER (NE 1/4) OF THE NORTHEAST QUARTER (NE 1/4) OF SECTION 27, TOWNSHIP 20 SOUTH, RANGE 61 EAST, AS SHOWN ON A RECORD OF SURVEY ON FILE IN THE CLARK COUNTY, NEVADA, RECORDER'S OFFICE, IN FILE 51 OF SURVEYS, AT PAGE 36.

"I CERTIFY THAT THIS PLAN IS IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY ON FILE AT THE CITY OF LAS VEGAS FOR THIS PROJECT." DS #4003

DANIEL J. HOOD NO. 12811

DATE _____

Reference

BACK OF CURB CURVE TABLE				
CURVE	LENGTH	RADIUS	TANGENT	DELTA
C1	21.31'	30.00'	11.13'	49°42'22"
C2	95.46'	32.00'	403.22'	17°05'S29"
C3	21.31'	30.00'	11.13'	49°42'22"
C4	31.25'	20.00'	19.86'	89°30'45"
C5	31.28'	20.00'	19.86'	89°35'39"
C6	38.97'	25.00'	24.70'	89°19'06"
C7	39.46'	25.00'	25.20'	90°28'47"
C8	31.55'	20.00'	20.14'	90°23'21"
C9	3.93'	2.50'	2.50'	90°00'00"
C10	3.93'	2.50'	2.50'	90°00'00"
C11	3.93'	2.50'	2.50'	90°00'00"
C12	3.93'	2.50'	2.50'	90°00'00"
C13	3.93'	2.50'	2.50'	90°00'00"
C14	23.56'	15.00'	15.00'	90°00'00"
C15	7.85'	5.00'	5.00'	90°00'00"
C16	14.14'	4.50'	INFINITE'	180°00'00"
C17	7.85'	2.50'	INFINITE'	180°00'00"
C18	7.85'	5.00'	5.00'	90°00'00"
C19	21.99'	14.00'	14.00'	90°00'00"
C20	7.85'	5.00'	5.00'	90°00'00"
C21	14.14'	4.50'	INFINITE'	180°00'00"
C22	3.93'	2.50'	2.50'	90°00'00"
C23	23.56'	15.00'	15.00'	90°00'00"
C24	25.77'	30.00'	13.74'	49°12'53"
C25	155.50'	32.00'	27.61'	278°25'46"
C26	25.77'	30.00'	13.74'	49°12'53"

1. IN THE EVENT THAT ANY UNFORSEEN CONDITIONS NOT COVERED BY THESE NOTES ARE ENCOUNTERED DURING GRADING OPERATIONS, THE OWNER/ENGINEER SHALL BE IMMEDIATELY NOTIFIED FOR DIRECTION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM ALL NECESSARY CUTS AND FILLS WITHIN THE LIMITS OF THIS PROJECT AND THE RELATED OFF-SITE WORK, SO AS TO GENERATE THE DESIRED CONSTRUCTION. THE CONTRACTOR SHALL TAKE RESPONSIBILITY FOR ALL EXCAVATION, SUBGRADE, FINISH GRADES AND SLOPES SHOWN ON THE PLANS. ADEQUATE SHORING SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR TO PREVENT UNDERMINING OF ANY ADJACENT FEATURES OR FACILITIES AND/OR CAVEING OF THE EXCAVATION.

2. THE CONTRACTOR IS WARNED THAT THE EARTHWORK BALANCE WAS NOT NECESSARILY THE INTENT OF THIS PROJECT. ANY ADDITIONAL MATERIAL REQUIRED OR LEFTOVER MATERIAL FOLLOWING EARTHWORK OPERATIONS BECOMES THE RESPONSIBILITY OF THE CONTRACTOR.

3. THE GRADING CONTRACTOR IS ADVISED THAT THE PLANS REQUIRE THE OWNER TO PROVIDE FOR THE REQUIREMENTS OF THE PROJECT STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND ASSOCIATED PERMIT. THE CONTRACTOR SHALL GRADE TO THE FINISH GRADES AND SLOPES SHOWN ON THE PLANS WITHIN THE FOLLOWING HORIZONTAL AND VERTICAL TOLERANCES AND DEGREES OF COMPACTION, IN THE AREAS INDICATED:

	HORIZONTAL	VERTICAL	COMPACTION
A. PAVEMENT AREA SUBGRADE	±0.00	+0.00/-0.1	See Soil Report
B. ENGINEERED FILL	±0.5"	+0.10/-0.1	See Soil Report

CONSTRUCTION TESTING WILL BE PERFORMED BY THE OWNER OR HIS REPRESENTATIVE. ALL CUT AND FILL SLOPES SHALL BE PROTECTED UNTIL EFFECTIVE EROSION CONTROL HAS BEEN ESTABLISHED.

4. THE USE OF POTABLE WATER WITHOUT A SPECIAL PERMIT FOR BUILDING OR CONSTRUCTION PURPOSES INCLUDING CONSOLIDATION OF BACKFILL OR DUST CONTROL IS PROHIBITED. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR CONSTRUCTION WATER.

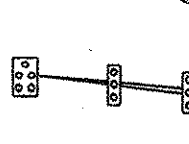
5. THE CONTRACTOR SHALL MAINTAIN THE STREETS, SIDEWALKS AND ALL OTHER PUBLIC RIGHT-OF-WAY IN A CLEAN, SAFE AND USABLE CONDITION. ALL SPILLS OF SOIL, ROCK OR CONSTRUCTION DEBRIS SHALL BE PROMPTLY REMOVED. THE CONTRACTOR SHALL MAINTAIN PROPERTY DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT. ALL ADJACENT PROPERTY, PRIVATE OR PUBLIC SHALL BE MAINTAINED IN A CLEAN, SAFE AND USABLE CONDITION.

6. IN THE EVENT THAT ANY TEMPERAMENTAL CONSTRUCTION ITEM IS REQUIRED THAT 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 CITY ENGINEER. TEMPERAMENTAL CONSTRUCTION INCLUDES DITCHES, BERMS, ROAD SIGNS AND BARRICADES, ETC.

DESCRIPTION	LEGEND PROPOSED	EXISTING	FUTURE
EX. CONTOUR (5' INTERVAL)			
EX. CONTOUR (1' INTERVAL)			
PROPOSED PAD GRADE			
EDGE OF PAVEMENT			
SIDEWALK RAMP			
SLOPE AND FLOW DIRECTION			
RETAINING WALL			
CONC. BLOCK WALL			
R/W OR P/L			
CENTER LINE			
BACK OF CURB			
LIP OF GUTTER			
SIDEWALK			
STEPCAB LINE			
UNIT BNDRY. LINE			
PRESSURE ZONE BOUNDARY LINE			
SCARP AREA			
SEWER LINE			
WATER LINE			
STORM DRAIN			

**AVOID HITTING UNDERGROUND
TRAFFIC SIGNAL SYSTEMS
AND STREET LIGHT SYSTEM CONDUITS
IT'S COSTLY**

**CALL BEFORE YOU
DO UNDERGROUND**



**Call
before you
Underground**

1-702-455-7511

CLARK COUNTY TRAFFIC OPERATIONS
AND
1-702-229-6611

LAS VEGAS AREA COMPUTERIZED TRAFFIC SYSTEM

Avoid overhead power line contact. It's costly.

Call
before you
Overhead
1-702-227-2929

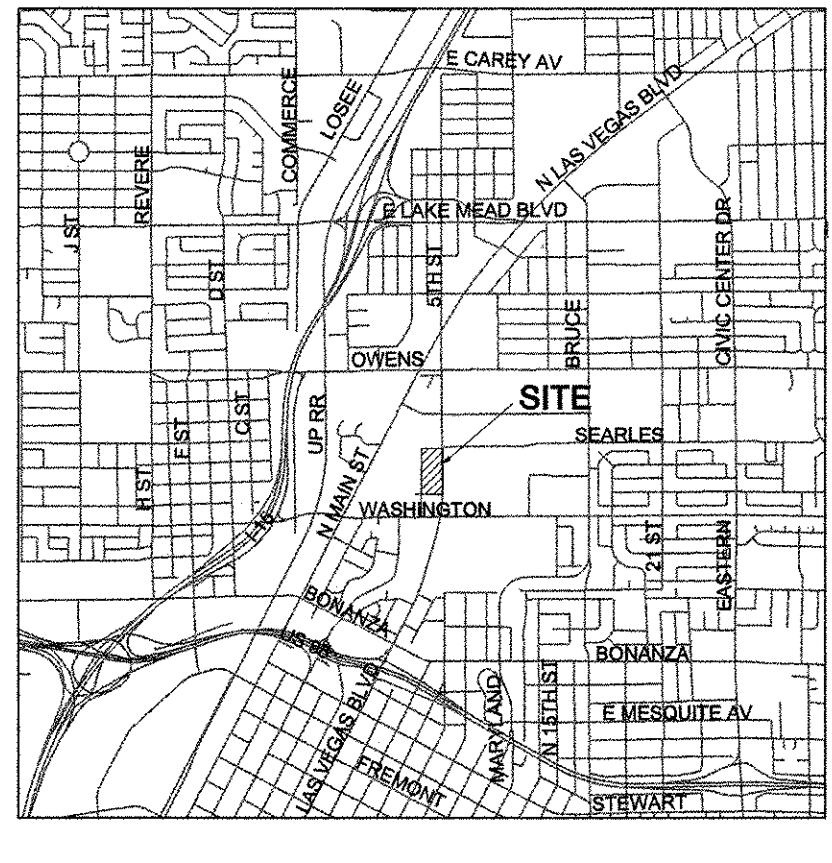
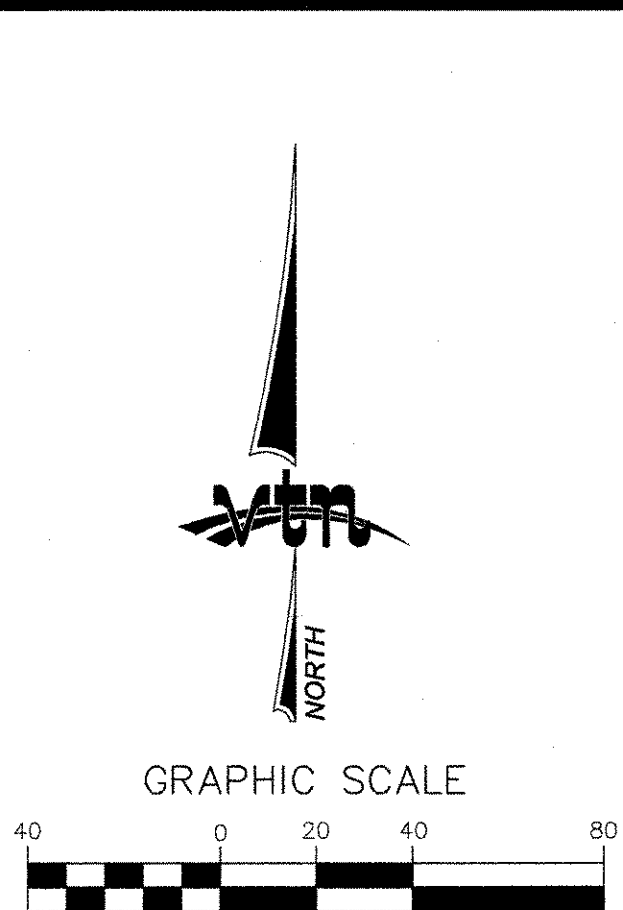
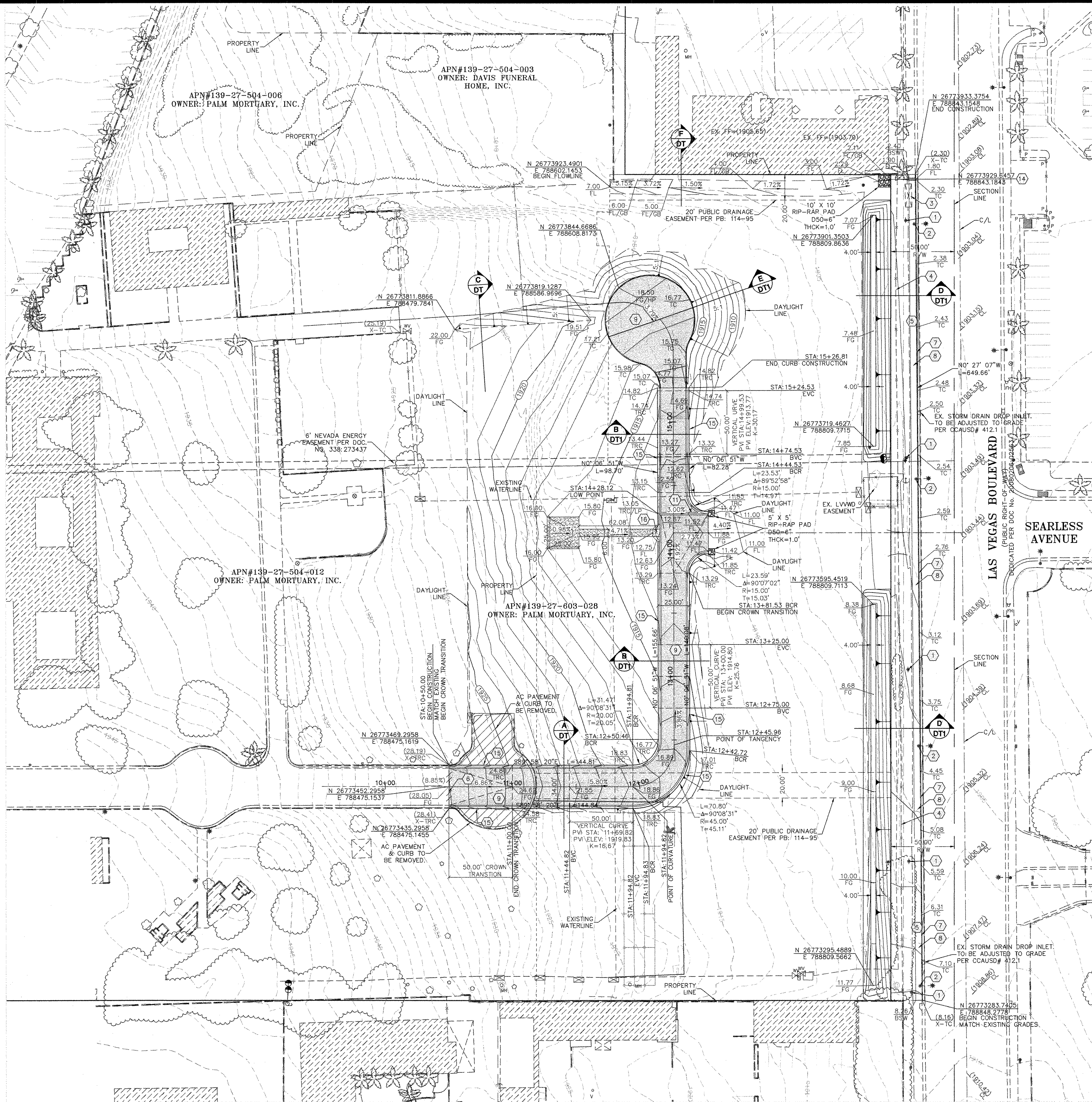
Avoid cutting underground utility lines. It's costly.

**Call
before you
Dig**

1-800-227-2600

[illegible]

4: \5932\PALM MORTUARY\5932--GR2



ROADWAY & PAVING NOTES

1. EXISTING POWERPOLE UTILITY, PROTECT IN PLACE.
2. EXISTING STREETLIGHT UTILITY, PROTECT IN PLACE.
3. EXISTING BUS SHELTER, PROTECT IN PLACE.
4. EXISTING CHAINLINK FENCE, TO BE REMOVED.
5. EXISTING ASPHALT SIDEWALK, TO BE REMOVED.
6. SAWCUT AND MATCH EXISTING AC.
7. INSTALL "L" TYPE CURB AND GUTTER PER CCUSD NO. 216.
8. INSTALL SIDEWALK PER PER CCUSD NO. 234.
9. INSTALL 2" AC PAVEMENT OVER 6" TYPE II AGGREGATE BASE OR MATCH EXISTING PAVEMENT SECTION, WHICHEVER IS GREATER. SEE TYPICAL SECTIONS FOR DETAILS.
10. INSTALL 8" CROSS GUTTER PER CCUSD NO. 228.
11. INSTALL 4" CROSS GUTTER PER CCUSD NO. 228.
12. ADJUST MANHOLE LID TO GRADE PER DCSWS SD-5.
13. INSTALL "A" TYPE CURB PER CCUSD NO. 219.
14. INSTALL SIDEWALK DRAIN PER CCUSD NO. 236.
15. INSTALL 30" ROLL CURB AND GUTTER PER CCUSD NO. 217.
16. INSTALL HANDICAP RAMP PER CCUSD NO. 235.

NOTE:
CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITIES AND NOTIFY THE DESIGN ENGINEER IMMEDIATELY OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

FLOODZONE NOTE:
According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Community Panel Number 32003C2170F, Clark County, Nevada, and Incorporated Areas, dated November 16, 2011, the site is located within a Zone "X". A Zone "X" is described as an area outside of the 500-year floodplain.

LEGEND	
TSW	TOP OF SIDEWALK
EG	EXISTING GROUND
FG	FINISH GRADE
FL	FLOW LINE
TL	TOP OF CURB
EAC	EDGE OF ASPHALT PAVEMENT
EX	EXISTING (EXIST)
VG	VALLEY GUTTER
H.P.	HIGH POINT
L.P.	LOW POINT
C/L	CENTER LINE
BC	BACK OF CURB
BCR	BEGIN CURB RETURN
TF	TOP OF FOOTING
OB	GRADE BREAK
PC	POINT OF CURVATURE
PT	POINT OF TANGENCY
PRC	POINT OF REVERSE CURVATURE
PCC	POINT OF COMPOUND CURVATURE
BVC	BEGIN VERTICAL CURVE
MVC	MID-POINT OF VERTICAL CURVE
EVC	END VERTICAL CURVE
PRVC	POINT OF REVERSE VERTICAL CURVE
VPI	VERTICAL POINT OF INTERSECTION
TOP	TOP OF FLOOD WALL
TOE	TOE OF CHANNEL/SCARP
PP	POWER POLE
TRANS.	TRANSITION
RET.	RETAINMENT
INT.	INTERSECTION
D.G.	DESIGN GRADE
TSW	TOP OF SIDEWALK
DI	DROP INLET
L.S.	LANDSCAPE/AMENITY ZONE
R/W	RIGHT-OF-WAY
S/W	SIDEWALK
OHP	OVERHEAD POWER
PP	POWER POLE
TC	TRASH ENCLOSURE
(2400)	EX. CONTOUR(5' INTERVAL)
(2400)	EX. CONTOUR(1' INTERVAL)
PROPOSED CONTOUR	
0.50%	SLOPE AND FLOW DIRECTION
EDGE A.C.	
BLDG-A	BUILDING TYPE
SIDEWALK RAMP	
SIGHT VISIBILITY ZONES	
CUT/FILL TRANSITION LINE	
SETBACK LINE	
R/W OR P/L	
CENTER LINE	
BACK OF CURB	
LIP OF GUTTER	
EXIST. IMPROVEMENTS	
RETAINING WALL	
ADA ROUTE	
RETAINING WALL ELEV. (ft.)	
AC REMOVE & REPLACE	
SAWCUT LINE	
BACKFLOW PREVENTER PAD	

Call before you Dig

1-702-455-7511

CLARK COUNTY TRAFFIC OPERATIONS AND

1-702-229-6611

FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

Call before you Dig

811 OR 1-800-227-2600

Call before you Overhead

1-702-227-2929

PROJECT BENCHMARK
PROJECT DATUM: NORTH AMERICAN VERTICAL DATUM OF 1985 (NAVD88)
CITY OF LAS VEGAS BENCHMARK: 2LV0127NE6
NAVD88 ELEVATION: 594.6457 METERS (1950.93 FEET)
RIVET AND PLATE IN TOP OF CURB EAST SIDE MAIN STREET AT PAUTE CIRCLE.

PALM MORTUARY, INC

CITY OF LAS VEGAS

2727 SOUTH RAINBOW BOULEVARD
LAS VEGAS, NEVADA 89146-5148
PH. (702) 873-7550 FAX (702) 362-2597 WEB WWW.VTNV.COM
CONSULTING ENGINEERS • PLANNERS • LAND SURVEYORS

GRADING PLAN

PALM MORTUARY DOWNTOWN EXPANSION

DRAWN BY: JUNE 2012

DESIGNED BY: JUNE 2012

CHECKED BY: JUNE 2012

PROJECT NO: 7215-1-A-5

SCALE: 1"=40' HORIZ. N/A VERT.

EXPIRES 12-31-13

PROFESSIONAL ENGINEER

DARYN M. OHTA

CIVIL

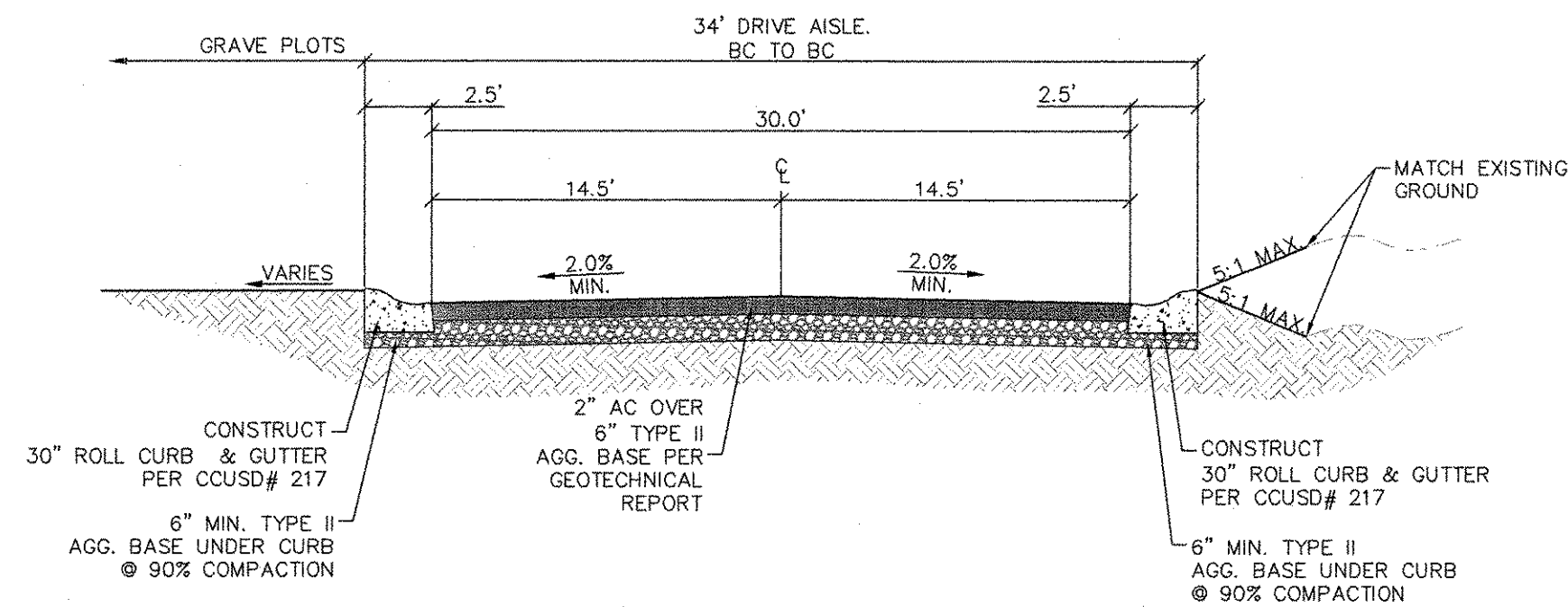
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7/18/12

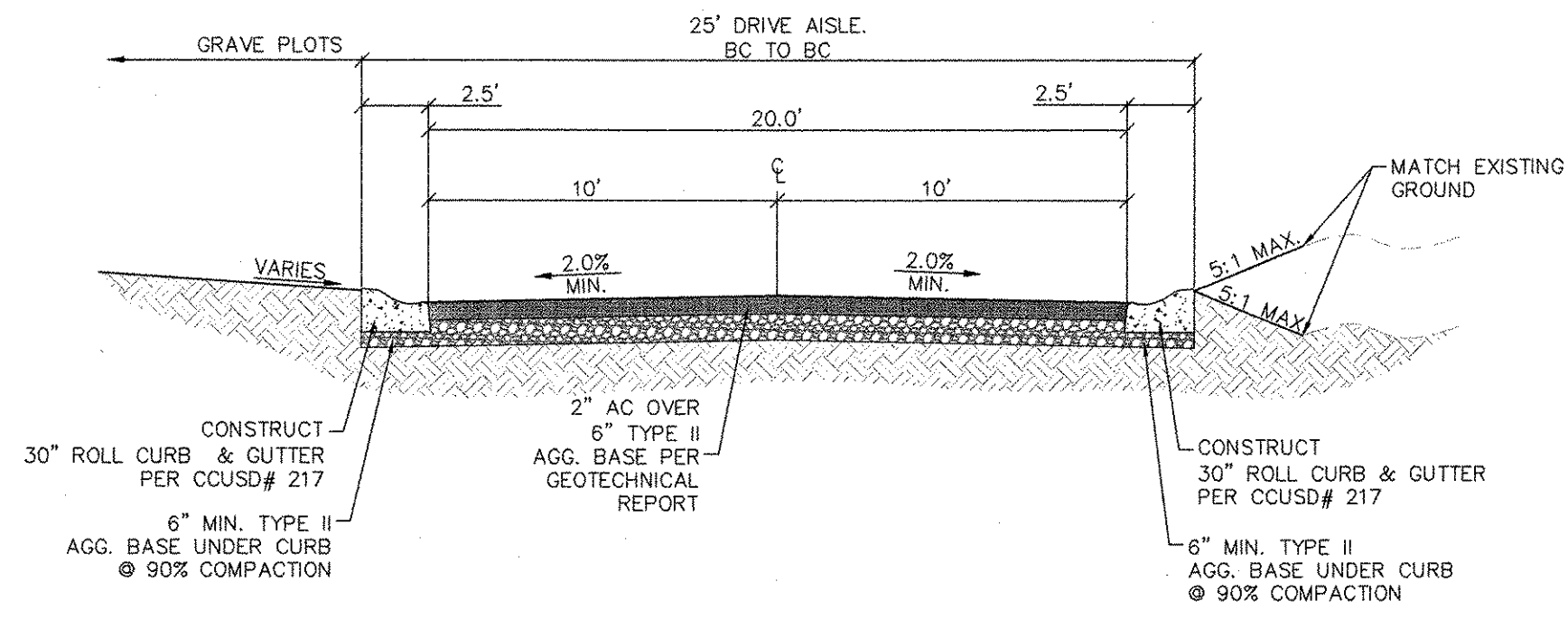
SHEET GR

1 OF 2 SHEETS

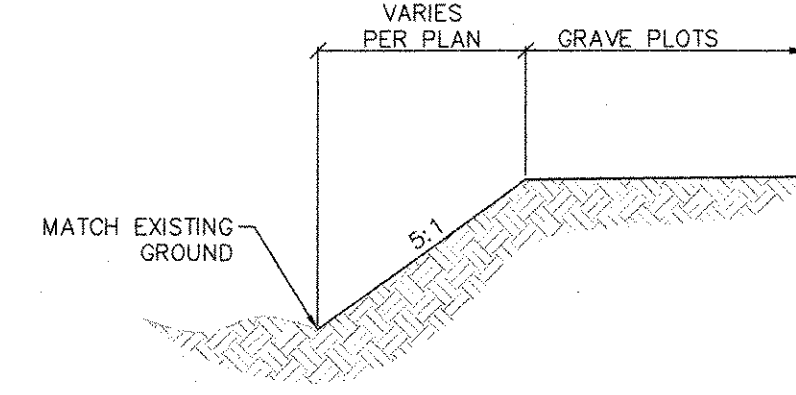
DRAWING NO.



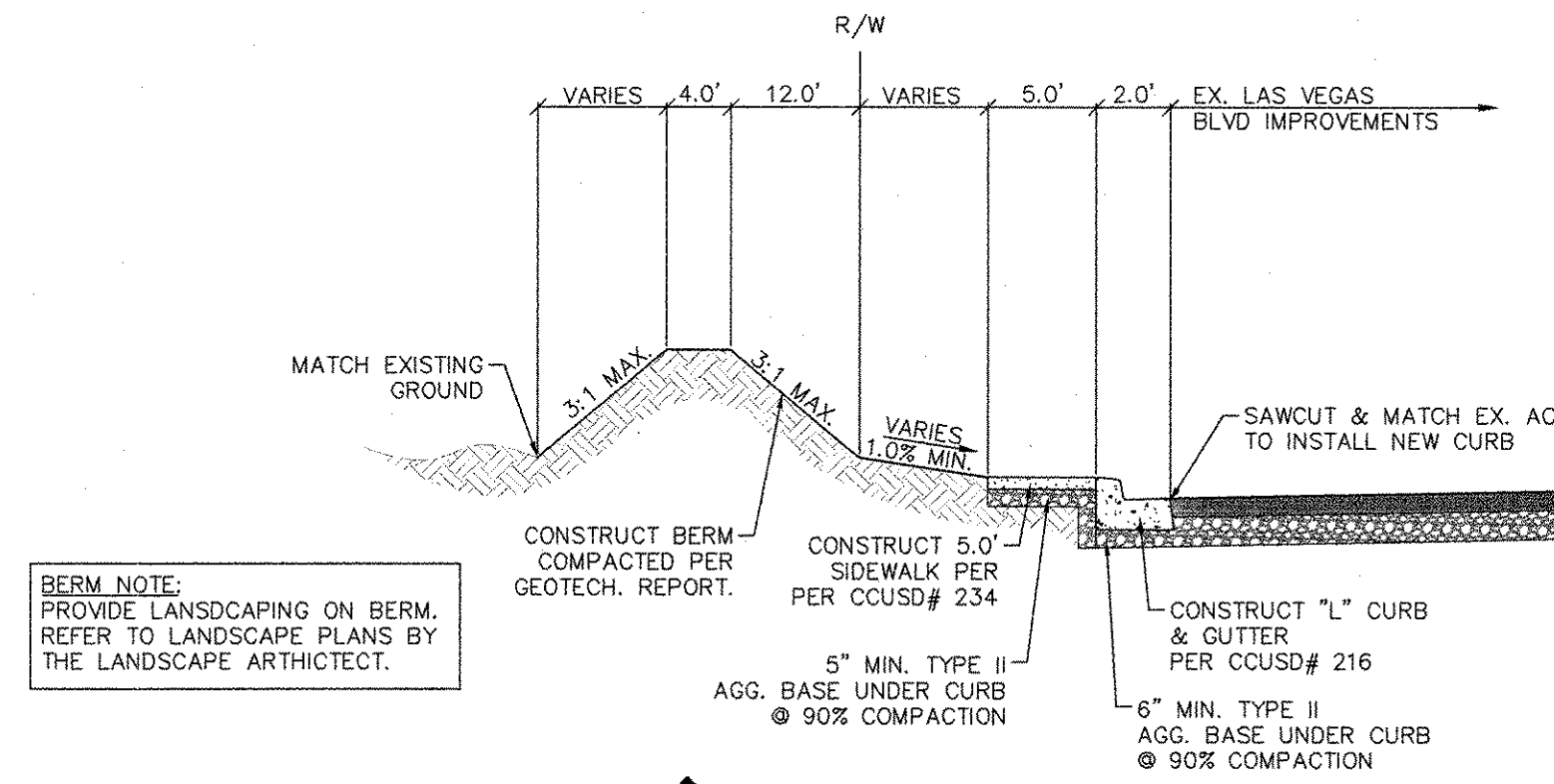
SECTION A
NTS



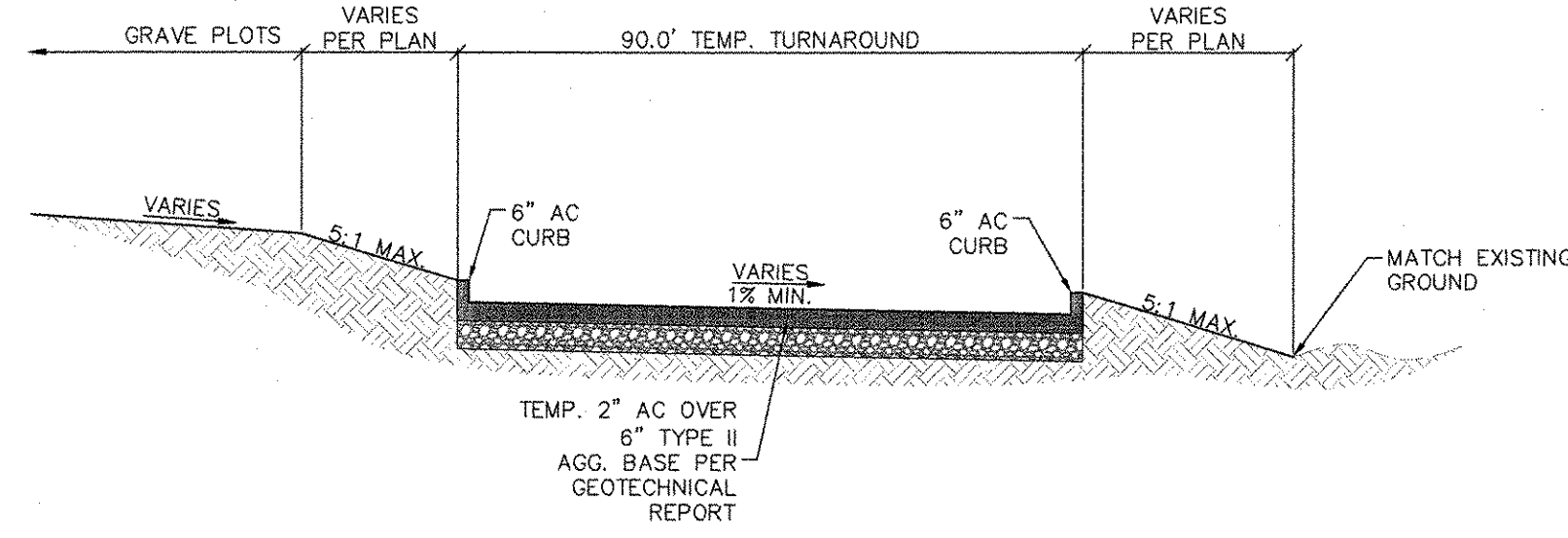
SECTION B
NTS



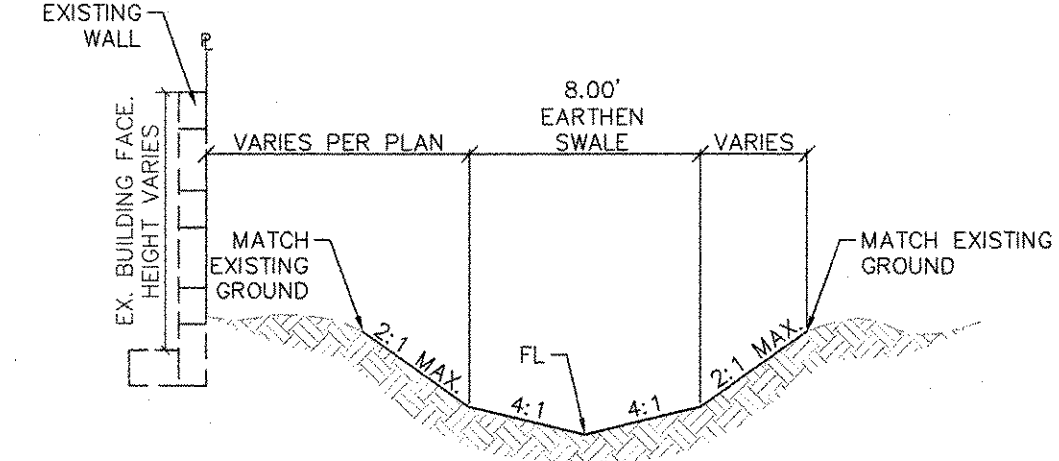
SECTION C
NTS



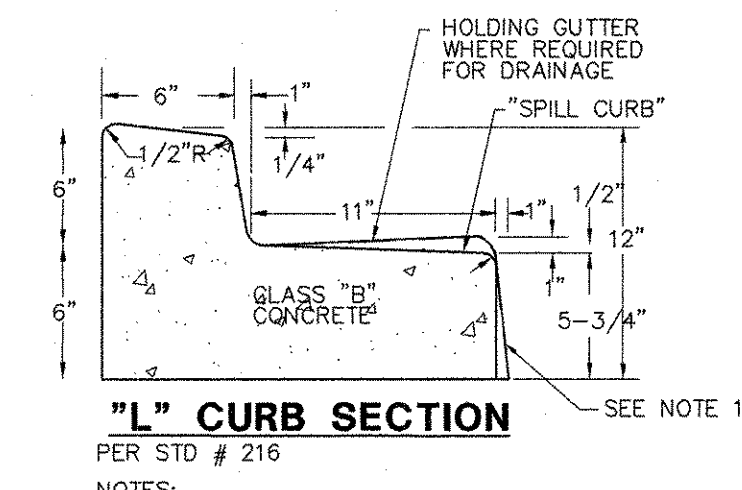
SECTION D
NTS



SECTION E
NTS

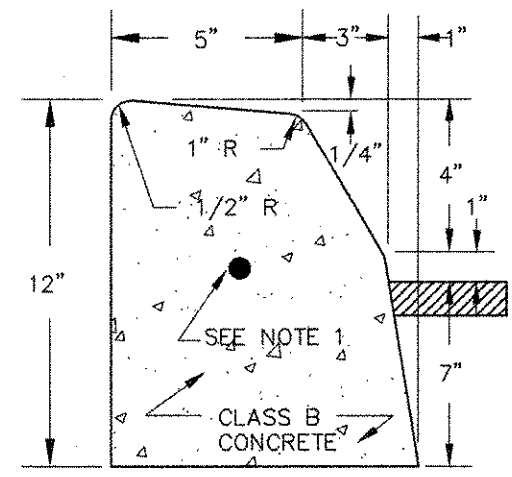


SECTION F
NTS



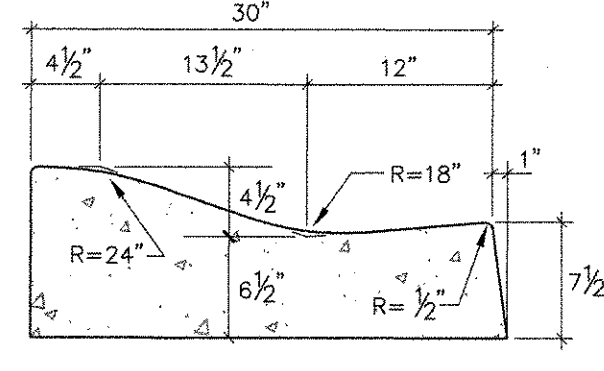
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NOTES:
1. 1\"/>

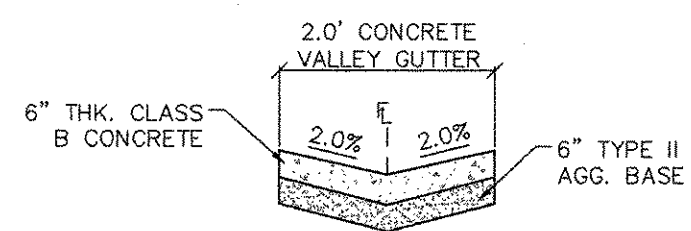


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NOTES:
1. CONTINUOUS NO. 4 BAR REQUIRED



ROLL CURB SECTION
PER STD # 217



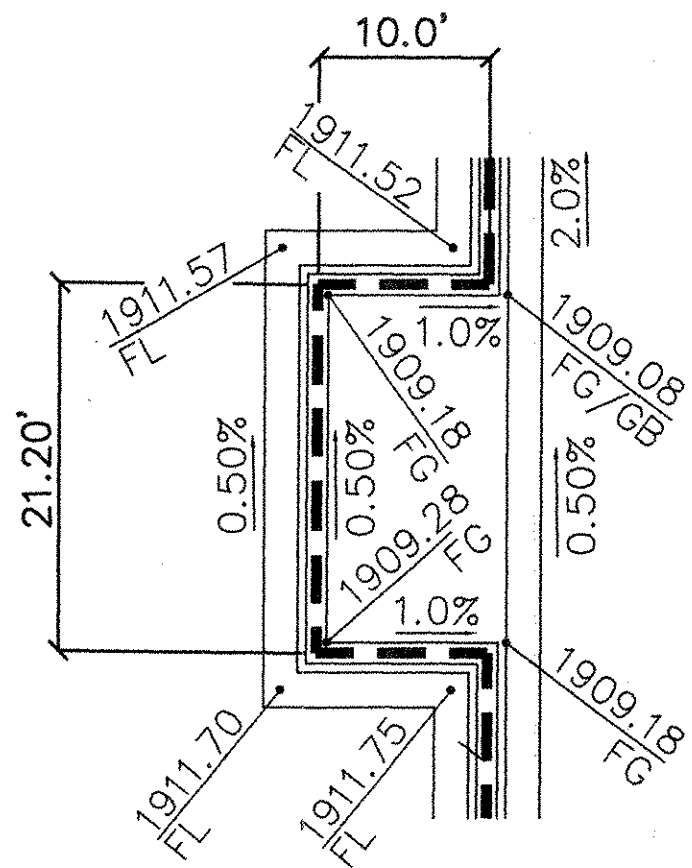
2' CONCRETE VALLEY GUTTER

Call before you Underground
1-702-455-7511
CLARK COUNTY TRAFFIC OPERATIONS AND
1-702-229-6611
FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

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

Call before you Overhead
1-702-227-2929

PALM MORTUARY, INC 1324 N MAIN STREET LAS VEGAS, NEVADA 89101		CITY OF LAS VEGAS 2727 SOUTH RAINBOW BOULEVARD LAS VEGAS, NEVADA 89146-5148 PH. (702) 873-7550 FAX (702) 362-2597 WEB WWW.VTNV.COM CONSULTING ENGINEERS • PLANNERS • LAND SURVEYORS	
DETAILS PALM MORTUARY DOWNTOWN EXPANSION		DRAWN BY: JUNE 2012 DESIGNED BY: JUNE 2012 CHECKED BY: JUNE 2012 PROJECT NO: 7215-1-A-5 SCALE: 1"=40' HORIZ. N/A VERT.	REV. DATE BY REVISION
EXPIRES 12-31-13 PROFESSIONAL ENGINEER DARYN M. OHTA CIVIL No. 15908		SHEET DT 2 OF 2 SHEETS DRAWING NO.	



TRASH ENCLOSURE DETAIL
N.T.S.



MATCHLINE SEE SHEET GR-2
FOR CONTINUATION

LINE	LENGTH	BEARING
L1	101.32	N89°55'46"E
L2	106.58	N89°55'46"E
L3	435.50	S00°25'01"W
L4	115.60	S00°25'01"W
L5	164.19	S89°58'20"E
L6	162.98	S89°58'20"E
L7	37.48	S00°25'01"W
L8	178.00	S89°34'59"W
L9	197.67	S00°25'01"W
L10	217.89	N89°34'59"W
L11	123.75	N89°34'59"W
L12	29.55	S00°25'01"W
L13	22.25	S89°34'59"E
L14	99.12	S00°25'01"W
L15	3.50	N89°34'59"W
L16	15.17	S00°25'01"W
L17	54.00	N89°34'59"W
L18	15.67	S00°25'01"W
L19	30.00	N89°34'59"W
L20	19.00	S00°25'01"W
L21	13.00	N89°34'59"W
L22	16.50	S00°25'01"W
L23	16.50	S00°25'01"W
L24	13.00	N89°34'59"W
L25	14.00	S00°25'01"W
L26	2.00	N89°34'59"W
L27	14.00	N89°34'59"W
L28	36.00	S00°25'01"W
L29	14.50	N89°34'59"W
L30	14.50	N89°34'59"W
L31	36.00	S00°25'01"W
L32	16.50	N89°34'59"W
L33	13.50	S00°25'01"W
L34	23.30	N89°10'17"E
L35	23.30	N89°10'17"E
L37	15.67	S00°25'01"W

CURVE	LENGTH	RADIUS	TANGENT	DELTA
C1	21.31	30.00'	11.13'	40°42'22"
C2	95.46	32.00'	403.22'	170°55'29"
C3	21.31	30.00'	11.13'	40°42'22"
C4	31.25	20.00'	19.83'	89°30'45"
C5	31.25	20.00'	19.83'	89°30'45"
C6	38.97	25.00'	24.70'	89°19'06"
C7	39.46	25.00'	25.20'	90°28'47"
C8	31.55	20.00'	20.14'	90°23'21"
C9	3.93	2.50'	2.50'	90°00'00"
C10	3.93	2.50'	2.50'	90°00'00"
C11	3.93	2.50'	2.50'	90°00'00"
C12	3.93	2.50'	2.50'	90°00'00"
C13	3.93	2.50'	2.50'	90°00'00"
C14	23.56	15.00'	15.00'	90°00'00"
C15	7.85	5.00'	5.00'	90°00'00"
C16	14.14	4.50'	INFINITE	180°00'00"
C17	7.85	2.50'	INFINITE	180°00'00"
C18	7.85	5.00'	5.00'	90°00'00"
C19	21.99	14.00'	14.00'	90°00'00"
C20	7.85	5.00'	5.00'	90°00'00"
C21	14.14	4.50'	INFINITE	180°00'00"
C22	3.93	2.50'	2.50'	90°00'00"
C23	23.56	15.00'	15.00'	90°00'00"
C24	25.77	30.00'	13.74'	49°12'53"
C25	155.50	32.00'	27.61'	278°25'46"
C26	25.77	30.00'	13.74'	49°12'53"

NOTE*
REMOVE ANY UNWANTED DRIVEWAY CUTS - REPLACE W/5" MIN.
SIDEWALK PER USD #234 AND MATCH CURB & GUTTER WITH
EXISTING.

Call before you Overhead
1-702-227-2929

Call before you Dig
1-800-227-2600

Avoid overhead power line contact. It's costly.

Avoid cutting underground utility lines. It's costly.

Call before you Underground
1-702-455-7511

CLARK COUNTY TRAFFIC OPERATIONS AND
LAS VEGAS AREA COMPUTERIZED TRAFFIC SYSTEM

CALL BEFORE YOU DIG UNDERGROUND

CITY OF LAS VEGAS GRADING NOTES

- IN THE EVENT THAT ANY UNFORSEEN CONDITIONS NOT COVERED BY THESE NOTES ARE ENCOUNTERED DURING GRADING OPERATIONS, THE OWNER/ENGINEER SHALL BE IMMEDIATELY NOTIFIED FOR DIRECTION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM ALL NECESSARY CUTS AND FILLS WITHIN THE LIMITS OF THIS PROJECT AND THE RELATED OFF-SITE WORK, SO AS TO GENERATE THE DESIRED CONTRACTOR SHALL TAKE RESPONSIBILITY FOR ALL EXCAVATION, SUBGRADE, FINISH GRADES AND SLOPES SHOWN.
- ADDITIONAL SHORING SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR TO PREVENT UNDERMINING OF ANY ADJACENT FEATURES OR FACILITIES AND/OR CAVING OF THE EXCAVATION.
- THE CONTRACTOR IS WARNED THAT AN EARTHWORK BALANCE WAS NOT NECESSARILY THE INTENT OF THIS PROJECT. ANY ADDITIONAL MATERIAL REQUIRED OR LEFTOVER FOLLOWING EARTHWORK OPERATIONS BECOMES THE RESPONSIBILITY OF THE CONTRACTOR.
- THE GRADING CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH THE OWNER TO PROVIDE FOR THE REQUIREMENTS OF THE PROJECT STORM WATER POLLUTION PREVENTION PLAN (SWPPP).
- CONTRACTOR SHALL GRADE TO THE LINES AND ELEVATIONS SHOWN ON THE PLANS WITHIN THE FOLLOWING HORIZONTAL AND VERTICAL TOLERANCES AND DEGREES OF COMPACTION, IN THE AREAS INDICATED:
A. PAVEMENT AREA SUBGRADE 0.1" +0.0" to -0.1" See Soils Report
B. ENGINEERED FILL 0.5" +0.1" to -0.1" See Soils Report
COMPACTION TESTING WILL BE PERFORMED BY THE OWNER OR HIS REPRESENTATIVE.
- EROSION CONTROL HAS BEEN ESTABLISHED.
- THE USE OF POTABLE WATER WITHOUT A SPECIAL PERMIT FOR BUILDING OR CONSTRUCTION PURPOSES INCLUDING CONSOLIDATION OF BACKFILL OR JUST CONTROL, IS PROHIBITED. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR CONSTRUCTION WATER.
- THE CONTRACTOR SHALL MAINTAIN THE STREETS, SIDEWALKS AND ALL OTHER PUBLIC RIGHT-OF-WAY IN A CLEAN, SAFE AND USABLE CONDITION. SPILLS OF SOIL, ROCK OR CONSTRUCTION DEBRIS SHALL BE PROMPTLY REMOVED FROM ALL THE PUBLICLY OWNED PROPERTY DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT. ALL ADJACENT PROPERTY, PRIVATE OR PUBLIC SHALL BE MAINTAINED IN A CLEAN, SAFE AND USABLE CONDITION.
- IN THE EVENT THAT ANY TEMPORARY CONSTRUCTION ITEM IS REQUIRED THAT 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 CITY ENGINEER. TEMPORARY CONSTRUCTION INCLUDES DITCHES, BERMS, ROAD SIGNS AND BARRICADES, ETC.

DESCRIPTION

SVRE

EX. CONTOUR (5' INTERVAL)

EX. CONTOUR (1' INTERVAL)

PROPOSED PAD GRADE

EDGE OF PAVEMENT

SIDEWALK RAMP

SLOPE AND FLOW DIRECTION

RETAINING WALL

CONC. BLOCK WALL

R/W OR P/L

CENTER LINE

BACK OF CURB

LIP OF GUTTER

SIDEWALK

STEBACK LINE

UNIT BNDRY. LINE

PRESSURE ZONE BOUNDARY LINE

SCARP AREA

SEWER LINE

WATER LINE

STORM DRAIN

0" CURB

LEGEND

PROPOSED

EXISTING

FUTURE

42.1

36.9

0.50%

0.50%

SSMH

G.V.

EX. SSMH

EX. G.V.

EX. SSMH

FLOOD ZONE NOTE:

SITE IS LOCATED IN A ZONE X
AS SHOWN IN FIRM MAP 32003C2170E
DATED SEPTEMBER 27, 2002
ZONE X IS DETERMINED TO BE OUTSIDE
THE 0.2% ANNUAL CHANCE FLOOD PLAIN.

BENCHMARK:

CITY OF LAS VEGAS BENCHMARK #1LV0127-NE6A
JUNE 2003 DATUM
RIVET & PLATE IN THE TOP OF CURB AT THE NORTHEAST
CORNER OF MAIN STREET AND FOREMASTER LANE
METERS: 585.5977 (1920.26 FEET)

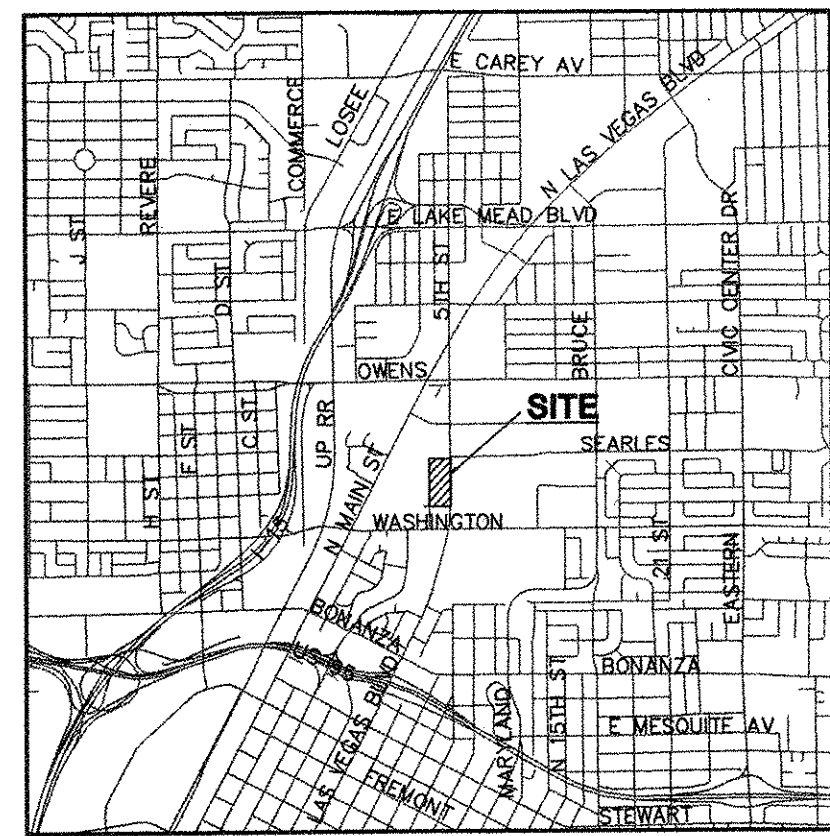
BASIS OF BEARINGS:

NORTH 89°42'28" EAST, BEING THE BEARING OF THE NORTH LINE OF THE
NORTHEAST QUARTER (NE 1/4) OF THE NORTHEAST QUARTER (NE 1/4) OF
SECTION 27, TOWNSHIP 20 SOUTH, RANGE 61 EAST, AS SHOWN ON A
RECORD OF SURVEY ON FILE IN THE CLARK COUNTY, NEVADA, RECORDER'S
OFFICE, IN FILE 51 OF SURVEYS, AT PAGE 38.

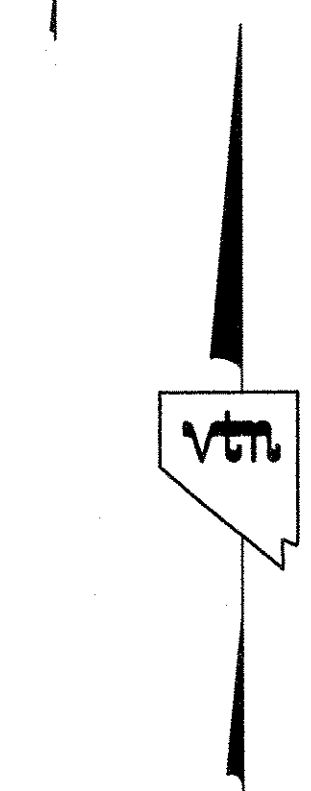
DANIEL J. HOOD NO. 12811 DATE

SHEET
GR-1
3 OF 6 SHEETS
DRAWING NO.

Reference



VICINITY MAP



GRAPHIC SCALE

1" = 40'

OWNERS/DEVELOPER

PALM MORTUARY/GARY WESTERFIELD
1325 N. MAIN ST.
LAS VEGAS, NV. 89101

PROJECT APN

139-27-504-010
139-27-603-002

CONSTRUCTION KEY NOTES:

(PER U.S.D.C.A. STANDARD DRAWINGS)

- CONSTRUCT 4" VALLEY GUTTER. SEE DETAIL ON SHEET DT-1
- CONSTRUCT "L" TYPE CURB AND GUTTER PER USD.DWG.#216
- CONSTRUCT 4" RETAINING WALL WITH 3"-2 STRAND POST AND CABLE FENCE
- CONSTRUCT SIDEWALK UNDERDRAIN PER USD.DWG.#236
- CONSTRUCT 3" CURB OPENING
- CONSTRUCT 3" VALLEY GUTTER. SEE DETAIL ON SHEET DT-1
- CONSTRUCT 2" CURB OPENING
- SAWCUT AND MATCH EXISTING AC
- CONSTRUCT DRIVEWAY PER USD DWG #222A
- CONSTRUCT CONCRETE VALLEY GUTTER PER USD DWG #228
- PROVIDE WHEELSTOP SEE DETAIL ON SHEET DT-1

CITY OF LAS VEGAS

2727 SOUTH RAINBOW BOULEVARD LAS VEGAS, NEVADA 89146-5148
PH. (702) 873-7550 FAX (702) 362-2597

CONSULTING ENGINEERS • PLANNERS • LAND SURVEYORS

neveda

PALM MORTUARY

1325 N. MAIN ST.
LAS VEGAS, NV. 89101

GRADING PLAN

PALM MORTUARY

DRAWN BY: R.SALCIDO

DESIGNED BY: [Signature]

CHECKED BY: [Signature]

PROJECT NO: [Blank]

SCALE: 1"=40'

VERT. [Blank]

EXPIRES 06-30-2009

PROFESSIONAL ENGINEER STATE OF NEVADA

DANIEL J. HOOD

CIVIL

NO. 12811

7-12-07

SHEET
GR-1
3 OF 6 SHEETS
DRAWING NO.