DS #: 4829

APN: 139.25.405.008

PROJECT: Animal Foundation Adoption Center and Central Plant

SUBMITTAL: 1st Submittal

SCANNED BY/DATE:

CHECKED BY/DATE:

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: October 6, 2016
TO: **Land Development Services** Department of Building & Safety				FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for: **Animal Foundation Adoption Center and Central Plant**			**COPIES TO:** Advantage Civil Design Group
Cross Streets:	SWC of Harris Avenue and Mojave Road			The Animal Foundation
File Number:	F:\Depot\DSMemos\DS4829A.doc			Bart Anderson, P.E., DevCo
Parcel Number:	139-25-405-008			
Zoning Action:	SDR-60357			
FEMA Flood Zone	YES	NO	X	
Proposed Storm Drain	YES	NO	X	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1st Submittal	9/26/2016	10/6/2016	See Comments Below	$400.00	459494: $400
			TOTAL FEES (LDDRS):	**$400.00**	**----**

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.
	is conditionally approved subject to Clark County Public Works Department concurrence.

1. Provide a copy of the zoning/planning conditions associated with this site (**SDR-60357**) 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. **Sheet GP3**: The western end of the proposed new *Adoption Center* building corresponds to an existing TC of 20.60 elevation in *Harris Avenue*. The 100-year flow depth in Harris Avenue is 0.74'. Base on the twice-the-depth criteria, the proposed finished floor of the new building must be raised to a minimum of 20.60 – 0.5 + 2x0.74 = 21.58. Review and revise accordingly.

3. A local low point has been spotted by *Flood Control* staff in the *Court Yard* area. It is not to describe the exact location of the low point. The engineer is welcome to call *Flood Control* to discuss and resolve the potential issue.

4. For storm water quality and best management practices and per ***Section 1500*** of the *Clark County Regional Flood Control District's Hydrologic Criteria and Drainage Design Manual*, the subject improvements must provide for Low Impact Development (LID) measures. Review and revise accordingly in the next submittal.

5. Label an existing storm drain system in *Manning Street* and across the subject site with ***City of Las Vegas*** recorded construction drawing number on the plan.

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/25
AREA M-25

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**********
*** FAX TX REPORT ***
**********

TRANSMISSION OK

JOB NO.                    1670
DESTINATION ADDRESS        7024362234
PSWD/SUBADDRESS
DESTINATION ID
ST. TIME                   10/10 10:14
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PGS.                       2
RESULT                     OK
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CITY OF LAS VEGAS
INTER-OFFICE MEMORANDUM

DATE: October 6, 2016

TO:
Land Development Services
Department of Building & Safety

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

SUBJECT: Drainage Study for:
Animal Foundation Adoption Center and Central Plant

COPIES TO:
Advantage Civil Design Group
The Animal Foundation
Bart Anderson, P.E., DevCo

Cross Streets:	SWC of Harris Avenue and Mojave Road		
File Number:	F:\Depot\DSMemos\DS4829A.doc		
Parcel Number:	139-25-405-008		
Zoning Action:	SDR-60357		
FEMA Flood Zone	YES	NO **X**	
Proposed Storm Drain	YES	NO **X**	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1st Submittal	9/26/2016	10/6/2016	See Comments Below	$400.00	459494: $400
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1. Provide a copy of the zoning/planning conditions associated with this site (**SDR-60357**) 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. **Sheet GP3**: The western end of the proposed new *Adoption Center* building corresponds to an existing TC of 20.60 elevation in *Harris Avenue*. The 100-year flow depth in Harris Avenue is 0.74'. Base on the twice-the-depth criteria, the proposed finished floor of the new building must be raised to a minimum of 20.60 – 0.5 + 2x0.74 = 21.58. Review and revise accordingly.

LAS VEGAS CITY COUNCIL

CAROLYN G. GOODMAN
MAYOR

STEVEN D. ROSS
MAYOR PRO TEM

LOIS TARKANIAN
RICKI Y. BARLOW
STAVROS S. ANTHONY
BOB COFFIN
BOB BEERS

ELIZABETH N. FRETWELL
CITY MANAGER

September 9, 2015

Ms. Robin Yoakum
City of Las Vegas Real Estate Division
333 North Rancho Drive, 8th Floor
Las Vegas, Nevada 89106

RE: SDR-60357 [PRJ-60302] - SITE DEVELOPMENT PLAN REVIEW PLANNING COMMISSION MEETING OF SEPTEMBER 8, 2015

Dear Applicant:

Your request for a Site Development Plan Review FOR TWO PROPOSED BUILDINGS WITH A TOTAL FLOOR AREA OF 29,654 SQUARE FEET AT AN EXISTING ANIMAL HOSPITAL, CLINIC, OR SHELTER (WITH OUTSIDE PENS) on 8.39 acres at 655 North Mojave Road (APN 139-25-405-008), C-V (Civic) Zone, Ward 3 (Coffin) [PRJ-60302], was considered by the Planning Commission on September 8, 2015.

The Planning Commission voted to ***APPROVE*** your request, subject to the following:

Planning

1. Conformance to the approved conditions for Site Development Plan Review (SDR-3275), except as amended herein.

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, landscape plan, and building elevations, date stamped 07/23/15 except as amended by conditions herein.

4. The three existing temporary buildings included in Site Development Plan Review (SDR-43702) shall be removed within one year after the issuance of a Certificate of Occupancy for the Animal Adoption building included in this review. A demolition permit is required.

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 07/23/15. Any changes based upon subsequently submitted studies must be accommodated elsewhere on the site.

CITY OF LAS VEGAS
DEPARTMENT OF PLANNING

DEVELOPMENT SERVICES CENTER
333 NORTH RANCHO DRIVE
3RD FLOOR
LAS VEGAS, NEVADA 89106

VOICE 702.229.6301
FAX 702.474.7463
TTY 7-1-1
www.lasvegasnevada.gov

/city of las vegas

6. Site and building signage is approved as depicted in the site plan and elevations date stamped 07/23/15. Building permits are required for all signage, pursuant to Title 19 and the Department of Building and Safety.

7. Prior to occupancy, 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 fully operational fire protection system, including fire apparatus roads, fire hydrants and water supply, shall be installed and shall be functioning prior to construction of any combustible structures.

10. All trash enclosures shall conform to the requirements of Title 19.08.

11. All mechanical equipment, air conditioners and trash areas shall be fully screened in views from the abutting streets.

12. All utility boxes exceeding 27 cubic feet in size shall meet the standards of LVMC Title 19.08.040.

13. Parking lot lighting standards shall be no more than 30 feet in height and shall utilize downward-directed lights with full cut-off luminaries. Lighting on the exterior of buildings shall be shielded and shall be downward-directed. Non-residential property lighting shall be directed away from residential property or screened, and shall not create fugitive lighting on adjacent properties.

14. Prior to the submittal of a building permit application, the applicant shall meet with Department of Planning Department staff to develop a comprehensive address plan for the subject site. A copy of the approved address plan shall be submitted with any future building permit applications related to the site.

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

Public Works

16. Correct all American's with Disabilities Act (ADA) deficiencies on the sidewalks adjacent to this site in accordance with code requirements of Title 13.56.040, if any, to the satisfaction of the City Engineer concurrent with development of this site.

17. Landscape and maintain all unimproved rights-of-way 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.

18. An Update to the previously approved Drainage Plan and Technical Drainage Study must be submitted to and approved by the Department of Public Works prior to the issuance of any grading or building permits, submittal of construction drawings or the submittal of a Final Map for this site, whichever may occur first. Provide and improve all drainageways as recommended in the approved drainage plan/study.

This action by the Planning Commission on **September 8, 2015** is final unless a written appeal is filed with the City Clerk within ten days of the date of the Planning Commission's decision as allowed by code or there is a review action filed by the City Council within the same time period. For additional information on appeals or review requests submitted please access http://www.lasvegasnevada.gov/CheckStatus/DevelopmentApp.htm, or contact the Department of Planning and Development at 702.229.6301 after ***September 21, 2015***. No building permits or business licenses related to these items shall be issued prior to the expiration of the required ten day waiting period, or until any filed appeal is resolved pursuant to LVMC Title 19.18.

Sincerely,

Andrew P. Reed

Andrew P. Reed, AICP
Planning Supervisor
Case Planning Division

AR:nl

cc:

Ms. Bonnie Rinaldi
The Animal Foundation
Las Vegas, Nevada 89106

Mr. John Lopeman
ethos|three Architecture
8985 South Eastern Avenue, Ste. 220
Las Vegas, Nevada 89123

TECHNICAL DRAINAGE STUDY
FOR
THE ANIMAL FOUNDATION ADOPTION CENTER AND CENTRAL PLANT

CITY OF LAS VEGAS

PREPARED FOR:

ETHOS THREE ARCHITECTURE
8985 South Eastern, Suite 220
Las Vegas, Nevada 89123

PREPARED BY:

Advantage Civil Design Group, LLP
2920 N. Green Valley Parkway, Bldg. 4, Suite 422
Henderson, Nevada 89014

September 20, 2016

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: TDS for The Animal Foundation Adoption Center Date: Sep 19, 2016

Location of Development: a) Descriptive (Cross Streets) North/South: Mojave Road

East/West: Harris Avenue

b) Section: 25 Township: 20 South Range: 61 East

c) APN : 139-25-405-008

Name of Owner: The Animal Foundation

Telephone No.: 702-384-3333 Fax No.: 702-993-7500 E-Mail Address: jgerhardt@animalfoundation.com

Address: 655 North Mojave Road, Las Vegas, NV 89101

Contact Person-Name: John Manning, P.E. **Telephone No.:** (702) 432-2234

*** E-Mail Address:** John@advantagecivil-nv.com **Fax No.:** (702) 436-2234

Firm: Advantage Civil Design Group

Address: 2920 N. Green Valley Pkwy, Building 4, Suite #422 Henderson, Nevada 89014

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: 8.4 +/- Acres Being Developed/Disturbed: 2.9 +/- Acres
2. Is a portion or all of the subject property located in a designated FEMA Flood Hazard Area? ☐ Yes** ☒ No
3. Is the property bordered or crossed by an existing or proposed Clark County Regional Flood Control District Master Planned Facility? ☐ Yes** ☒ No
4. Proposed type of development (Residential, Commercial, Etc.): Commercial--New Adoption Center
5. Approximate upstream land area which drains to the subject site: 57 +/- Acres
6. Has the site drainage been evaluated in the past? ☒ YES ☐ NO If yes, please identify documentation: DS# 3512 Animal Foundation Regional Animal Campus, by Lochsa Engineering, Approved April 20, 2004.
7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: North end of the site, into Harris Avenue.
8. Briefly describe your proposed schedule for the subject project: ASAP

PROFESSIONAL ENGINEER-STATE OF NEVADA
JOHN R. MANNING
Exp: 12/31/17
CIVIL
No. 15085
9/22/16

Engineer's Seal

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

*New Required Field

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

Revision	Date

Local Entity File No.

REFERENCE:

STANDARD FORM 1

Updated 05/01/2008

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

Project Name: Animal Foundation Adoption Center	Map ID: 3200362186F
Firm Name: Advantage Civil Design	Engineer: John Manning
Address: 2920 N. Green Valley Pkwy Bldg 4, Ste 422	
City: Henderson State: NV Zip: 89014	
Phone Number: 702 432 2234	Fax Number: 702 436 2234
Property Owner: Ethos 3 Architecture	
Address: 8985 South Eastern, Suite 220	
City: Las Vegas State: NV Zip: 89123	

Reviewed By:	Date Received:	Date Accepted for Review:

The following checklist is intended as a guide for the engineer preparing a Technical Drainage Study to submit to the local entity and Clark County Regional Flood Control District (if necessary). The listed items are the minimum information required prior to the entity performing a review. The engineer will remain responsible to ensure the Technical Drainage Study is prepared within the guidelines as set forth in the Clark County Regional Flood Control District (CCRFCD) Hydrologic Criteria and Drainage Design Manual (MANUAL).

This document is intended as an aid in preparing Technical Drainage Studies. Each study submitted is reviewed for compliance with local and regional criteria. This form is not intended to be all inclusive and does not limit the extent of the information, calculations or exhibits which may be necessary to properly evaluate the intended land use.

If items are not applicable for the subject site, provide N/A.

I. GENERAL REQUIREMENT

Yes	No	
✓		Design Manual **Standard Form 1** with the engineer's seal and signature.
✓		Design Manual **Standard Form 4**.
✓		2 copies of the 24" x 36" Drainage Plan.
	N/A	A notarized letter from the adjacent property owner(s) allowing off-site grading or discharge.

REFERENCE:	**STANDARD FORM 2**

DRAINAGE SUBMITTAL CHECKLIST

II. MAPS AND EXHIBITS

Yes	No	
✓		A copy of a current Flood Insurance Rate Map (FIRM) with the site delineated.
✓		A copy of the current CCRFCD Master Plan Update Figure, (F-x), for Flood Control Facilities and Environmental areas with the site delineated.
✓		Off-site drainage basin maps for existing, interim and future conditions showing the existing topography, basin boundaries, concentration points, and flows in cfs.
✓		On-site drainage basin maps for existing and proposed conditions showing the existing topography, basin boundaries, concentration points, and on-site and off-site flows in cfs.
✓		Vicinity Map with local and major cross streets identified and a north arrow.

III. DRAINAGE PLAN

Yes	No	
✓		Sheet size: 24" x 36" sealed by a registered engineer in the State of Nevada.
✓		Minimum scale: 1" = 60'.
✓		Project name.
✓		Vicinity Map with local and major cross streets.
✓		Revision box.
✓		North arrow and bar scale.
✓		Engineer's/consultant's address and phone number.
✓		Elevation datum and benchmark.
✓		Legend for symbols and abbreviations.
✓		Cut/fill scarps, where applicable.
✓		Street names, grades, widths.
✓		Proposed future and existing spot grades for top of curbs and street crowns at lot lines, grade breaks, and along curb returns on both sides of the street.

REFERENCE:	STANDARD FORM 2

DRAINAGE SUBMITTAL CHECKLIST

III. DRAINAGE PLAN (Continued)

Yes	No	
✓		Existing contours encompassing the site and 100 feet beyond with spot elevations for important locations, where appropriate.
✓		Minimum finish floor elevations with top-of-curb elevations at upstream end of lot.
✓		Proposed typical street sections.
	N/A	Streets with off-set crowns.
✓		Proposed contours or spot elevations in sufficient detail to exhibit intended drainage patterns and slopes.
✓		Property lines.
✓		Right-of-way lines and widths, existing and proposed.
✓		Existing improvements and their elevations.
✓		Delineation of proposed on-site drainage basin s indicating area and 10-year and 100-year storm peak flows at basin concentration points.
✓		Concentration points and drainage flow direction with Q_{100} and V_{100} and D_{100} in streets.
✓		Cumulative flows, velocity, and direction of flow at upstream and downstream ends of site for the 10-year and 100-year flows.
✓		Location and cross-section of street capacity calculations.
✓		Cross-sectional detail for channels, including cutoff wall locations.
✓		Existing and proposed drainage facilities, appurtenances, and connections (i.e., sidewalk, ditches, swales, storm drain systems, unimproved and improved channels, and culverts, etc.) stating size, material, shape, and slope with plan and profile and HGL calculations.
	N/A	Existing and proposed drainage easements and widths shown with sufficient detail. A cross sectional detail must be provided that shows appropriate lining and reinforcement.
	N/A	Location and detail of existing, proposed, and future block wall openings. Minimum size is 16" x 48". Wrought iron gate is required for flows > 10 cfs.
	N/A	Location and detail of flood walls illustrating depth of flow, proposed grouting height, etc.

REFERENCE:	**STANDARD FORM 2**

DRAINAGE SUBMITTAL CHECKLIST

III. DRAINAGE PLAN (Continued)

Yes	No	
✓		Perimeter retaining wall locations. All existing and proposed walls (retaining screen and flood) must be shown with adjacent ground elevations. Flood walls with 8-inch concrete masonry unit.
✓		Building and/or lot numbers.
	N/A	Alignment of all existing, proposed, or future Regional Facilities adjacent to the site.
✓		Limits of existing floodplain based on current FIRM or best available information; limits of proposed floodplains based on best available information.
	N/A	For areas in Zone A, AE, AH, and AO, base flood elevations (BFEs) must be shown for each lot; BFEs may be listed on each lot, or in a table. Finish floor elevations must be a minimum of 18 inches above BFE.
✓		Appropriately elevated "humps" 6 inches above the 100 year water surface elevation at site accesses where the intent is to protect the site from the Q_{100} flows.
✓		Street slopes for perimeter and interior streets. The minimum slope is 0.4 percent.

IV. HYDROLOGIC ANALYSIS

Yes	No	
✓		Appropriate soil information and Soils Map for existing and future conditions with subbasins and property delineated.
✓		Input and output information for existing conditions from computer models (HEC-1 or TR-55). The flow routing diagram must be provided with HEC-1 models.
✓		Input and output information for future conditions from computer models (HEC-1 or TR-55). The flow routing diagram must be provided with HEC-1 models.
✓		Use of correct precipitation values in and around the McCarran Airport rainfall area.
✓		A discussion in the text of the hydrologic analysis justifying subbasin boundaries and cutoffs, supporting assumptions, and calculations.
✓		A summary table of stormwater flows showing basin area, Q_{10} and Q_{100} for both individual basins and combined basin flows, where applicable.
✓		Copies of supporting technical information referenced from a previously approved study and a statement accepting these results.
✓		On-site facilities must perpetuate flows through or around the site without significantly impacting adjacent property owners in accordance with current Nevada Drainage Law.

REFERENCE:	STANDARD FORM 2

DRAINAGE SUBMITTAL CHECKLIST

V. HYDRAULIC ANALYSIS

Yes	No	
✓		Flow split calculations and supporting documentation or reference for the method of flow split calculations used.
✓		Normal depth street flow calculations and cross section diagrams for all interior and perimeter streets. Provide "d x v" products for the Q_{100} and Q_{10} flows representing the worst case for interior and all perimeter streets. Q_{100} d x v $\leq$ 8. Q_{10} d x v $\leq$ 6 and 12 foot dry lane for rights-of-way $\geq$ 80 feet. Calculations must be labeled by street name as indicated on the Grading Plan.
✓		A summary table of interior and exterior street capacity calculations showing the street name, Q_{100} flow, slope, depth of flow, velocity and depth times velocity product and streets needing to meet 12 foot dry lane criteria.
	N/A	Appropriate hydraulic calculations for block wall openings assuming a 50 percent vertical clogging factor. (Assume the lower half of the opening is plugged.)
✓		Appropriate hydraulic calculations at drainage easement entrance and discharge locations to set finish floor elevations. Hydraulic calculations must include submerged weir, superelevation and tee intersection losses, where appropriate.
✓		Provide necessary freeboard requirements to set the finished floor elevations of all proposed buildings, 2 x depth of flow or depth of flow plus 18 inches of freeboard, whichever is less. The minimum requirement is 6 inches above adjacent upstream top of curb. Buildings adjacent to drainage easements must always be provided with 18 inches of freeboard above the Q_{100} weir height or flow depth, which ever is greater.
	N/A	A complete water surface profile analysis (HEC-2, HEC-RAS, etc.) for channel flows and FEMA Zone A flood zones.

- Field survey data.
- Input and output information.
- Plotted cross-sections based on survey with proper encroachments.
- A map showing the location of the cross-sections.
- Analysis of both sub and super-critical flow segments.
- A summary table and a discussion of the results in the text of the report.

	N/A	Provide a 50 percent clogging factor in the capacity calculation for drop inlets.
	N/A	Hydraulic calculations for culverts and storm drains. D-Load calculations must be provided for storm drain pipes in public rights-of-way, including headwater pool inundation.
✓		The mitigation of nuisance water, both during construction and in the fully developed condition, must be addressed.

REFERENCE:	**STANDARD FORM 2**

CITY OF LAS VEGAS

MINIMUM DRAINAGE STUDY CRITERIA
STANDARD FORM 2 CHECKLIST SUPPLEMENT

(Revised 5/18/11)

The following checklist is intended as a supplemental guide for the engineer preparing a Technical Drainage Study submittal to the City of Las Vegas. This supplement focuses on requirements specific to the City of Las Vegas. The requirements presented are in addition to the Clark County Regional Flood Control District (CCRFCD) Manual Standard Form 2. The listed items are the minimum information required prior to the City performing a review. The engineer will remain responsible to ensure the Technical Drainage Study is prepared within the guidelines as set forth in the CCRFCD Hydrologic Criteria and Drainage Design Manual (Design Manual).

An appointment must be made to preview this checklist in conjunction with CCRFCD Standard Form 2 prior to the City accepting a new drainage study for review. The engineer must contact the Flood Control Section at (702) 229-6541 to schedule a submittal appointment.

If items are not applicable for the subject site, provide N/A.

I. GENERAL REQUIREMENT		
Yes	No	
	N/A	A notarized letter from the adjacent property owner(s) allowing off-site grading. (A copy of the letter must be received prior to final acceptance of the drainage study.)
✓		Copies of all conditions of approval for development related to this property. (e.g. zoning, use permit, tentative map, etc.) Verify compliance with conditions.
✓		An electronic copy of the complete submittal is required to be submitted with one original hard copy of the study. Electronic documents should be on a universal computer-readable digital output device replicating your submittal. An Indexed Portable Document Format (PDF) or Print Ready CAD file formats with a minimum of 300dpi are the desired formats. If figures are in color, they must be scanned in color and saved as a separate file. JAM by initial here, the engineer on record acknowledges that the electronic copy is an identical replicate of the original hard copy submitted to the City of Las Vegas.

II. GRADING PLAN INFORMATION		
Yes	No	
✓		(1) 24" X 36" copy of the Grading Plan, (including all Detail Sheets) sealed by the engineer.
✓		Proposed future and existing spot grades for top of curbs and street crowns at lot lines, grade breaks, and along curb returns on both sides of the street. Note: Proposed top of curb elevations must be provided for both sides of roadways even if only half street construction is required.
✓		Label existing topography at a minimum 5 foot elevation interval including adjacent developments, finished floor elevations of existing buildings and top of existing curbs extending 100 feet* around the perimeter of the site. (*Measured from the centerline of the adjacent roadway.)

CITY OF LAS VEGAS MINIMUM DRAINAGE STUDY CRITERIA CHECKLIST

II. GRADING PLAN INFORMATION		
Yes	No	
	N/A	Proposed on-site and off-site storm drains and other flood control facilities with plan and profile sheets for public storm drains showing the class of pipe, (Class III, IV, V, etc.), design hydraulic grade line, (HGL) and 100 year storm flow. A public drainage easement must be provided over on-site storm drains conveying off-site flows. An overflow path must be provided over all storm drains.
✓		All existing and "to be constructed" walls with cross-sections showing wall type, (e.g. block wall, retaining wall, flood wall, etc.), with limits clearly defined, adjacent ground elevations. Wall heights must meet current ordinances and in no case exceed 14 feet above the adjacent property.
✓		Street slopes for both interior and perimeter streets. Note: The minimum slope for a roadway is 0.4 percent, a minimum 18-inch storm drain must be provided where minimum slopes cannot be met.
✓		Back of lot elevations and lot drainage pattern for all lots including common lots.
	N/A	Sites with a grade difference two feet above or below existing ground are required to have approval from City of Las Vegas Current Planning. Current Planning approval is required prior to final approval of the drainage study.
✓		On-site facilities must perpetuate flows through or around the site without significantly impacting adjacent property owners. (The project must pass flows through the site every 600 feet where the project is blocking flow paths.)
	N/A	This project uses a solid grouted stem wall (or approved alternate) at the back of sidewalk to provide erosion protection for landscaped areas where the depth of flow in the roadway exceeds the back of walk elevation. A corresponding cross-section detail is included.
✓		Commercial and Common Lot Landscape areas are not allowed to drain over the sidewalk. The grading plans show flow lines with grades and sidewalk under drains for all landscape areas draining to the public ROW.

III. Local Entity Criteria - City of Las Vegas – Manual Section 1600		
Yes	No	
✓		Concrete valley gutters are required in parking lots with slopes less than 1 percent. Slopes through cul-de-sac must be at a 1 percent minimum where flow is drained through the cul-de-sac.
	N/A	Ten-foot wide public drainage easements to be privately maintained are allowed for flow less than 20 cfs. The depth of flow entering the easement must be checked using the submerged weir calculation.
	N/A	The limits of the flood zones and the base flood elevations (BFE) must be shown on all grading plans for all developments within a Special Flood Hazard Zone A, AO, AE, etc.
✓		Minimum finish floor elevation is 6 inches above highest adjacent top of curb. Finish floor calculations must include allowances for super elevations on curves and velocity head for tee intersections.
✓		Finished floor elevations for buildings adjacent to public drainage easements must be a minimum of 18 inches above the Q100 weir of submerged weir elevation, whichever is greater.

III. Local Entity Criteria - City of Las Vegas – Manual Section 1600		
Yes	No	
	N/A	Lots with "B and C Type Drainage" that drain from one lot to another through a drainage easement shall be required to install an underground nuisance drainage system or a 2-foot valley gutter. 16" x 24" minimum block wall openings are required for both options.
	N/A	Bubblers are required across 80 foot and greater ROW streets. When flows exceed 10 cfs, bubblers larger than 18 inches will be required up to a maximum of 36". Inlets must be sized to match the pipe size provided.

- Contact the Flood Control Section regarding the drainage study review fee. These fees are payable at the time of submittal.
- The Drainage Study must be conditionally approved prior to submitting improvement plans to the Civil and Planning Development of the Department of Building and Safety for review.

This document is intended as an **aid** in preparing Technical Drainage Studies for the City of Las Vegas. Each study submitted is reviewed for compliance with local and regional criteria. This form is not intended to be all-inclusive and does not limit the extent of the information, calculations or exhibits which may be necessary to properly evaluate the intended land use.

ADVANTAGE CIVIL DESIGN GROUP

2920 N. Green Valley Parkway, Bldg. 4, Suite 422 Henderson, Nevada 89014 mail@advantagecivil-nv.com

September 20, 2016

Albert Sung, P.E.
City of Las Vegas, Department of Public Works
333 N. Rancho Drive
Las Vegas, NV 89106

RE: Technical Drainage Study for The Animal Foundation Adoption Center And Central Plant

Mr. Sung:

Enclosed are one copy and one CD containing a PDF version of the Technical Drainage Study for The Animal Foundation Adoption Center And Central Plant for your review and approval. All items on the CD match the paper versions bound into the study. Improvements at the site include a new adoption center, central plant, parking lot, and utility work. The Animal Foundation is located southwest of the intersection of Mojave Road and Harris Avenue.

If there are any questions or additional information that is necessary, please contact our office at 432-2234.

Sincerely,

Advantage Civil Design Group, LLP

John R. Manning, P.E.
Principal

I. INTRODUCTION

A. Study Overview and Purpose

This study is intended to serve as the Technical Drainage Study for improvements at The Animal Foundation. The proposed project is to construct a new Adoption Center building, a new Central Plant building to house HVAC equipment, and some additional parking areas. The Animal Foundation is an 8.4 acre site at the southwest corner of Mojave Road and Harris Avenue. New improvements will cover approximately 2.9 acres of the site. This study is a stand-alone document, which presents the findings of a detailed hydrologic analysis of the site and contributing watershed area. See Figure 1, *Vicinity Map* and Figure 2, *Aerial Map*.

B. Location

The project area is located in a portion of Section 25, Township 20 South, Range 61 East, Mount Diablo Meridian, City of Las Vegas, Nevada. The APN number is 139-25-405-008.

C. FEMA Flood Zone Determination

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Community Panel Number 32003C 2186F, effective November 16, 2011, the site is located within Zone X. Zone X is described as an area outside of the 500-year floodplain. See Figure 3 for additional information.

D. CCRFCD Master Plan Information

As shown on Figure F-27 from the *2013 Las Vegas Valley Flood Control Master Plan Update* (MPU), The Animal Foundation is not adjacent to and Regional Flood Control Facilities, though there are local facilities adjacent to the site. The nearest Regional Facility is LVBZ 0211, an existing 42-inch RCP in Bonanza Road, approximately 1000 feet south of the project site. See the provided copy of MPU Figure F-50.

E. Previous Drainage Studies

The site has been analyzed previously in the following analyses.

Drainage Study Update for the Animal Federation International Animal Shelter and Spay/Neuter Clinic, Southwest Engineering, December 1999. CLV DS #2191, Approved January 6, 2000.

Technical Drainage Study for the Animal Foundation Regional Animal Campus, Lochsa Engineering, February 2004. CLV DS #3512, Approved April 20, 2004.

jmanning PLOT DATE: 09-15-16 PLOT TIME: 09:47:13 DWG PATH: N:\Animal Foundation\049-001 Animal Foundation\dwg\Hydro\TAF VICINITY MAP.dwg

FIGURE 1--VICINITY MAP

THE ANIMAL FOUNDATION

ADVANTAGE CIVIL DESIGN GROUP, LLP
2920 N. GREEN VALLEY PKWY.
BUILDING #4, SUITE # 422
HENDERSON, NEVADA
89014
Office: 702.432.2254
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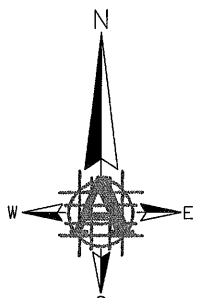
Email: MAIL@ADVANTAGECIVIL-NV.COM
CIVIL ENGINEERS CONSULTANTS PLANNERS



N.T.S.

FIGURE 2--AERIAL MAP

THE ANIMAL FOUNDATION

ADVANTAGE CIVIL DESIGN GROUP, LLP
2920 N. GREEN VALLEY PKWY.
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CIVIL ENGINEERS CONSULTANTS PLANNERS

jmanning PLOT DATE: 09-22-16 PLOT TIME: 08:55:19 DWG PATH: N:\Animal Foundation\049-001 Animal Foundation\dwg\Hydro\Figure 2 TAF AERIAL MAP.dwg

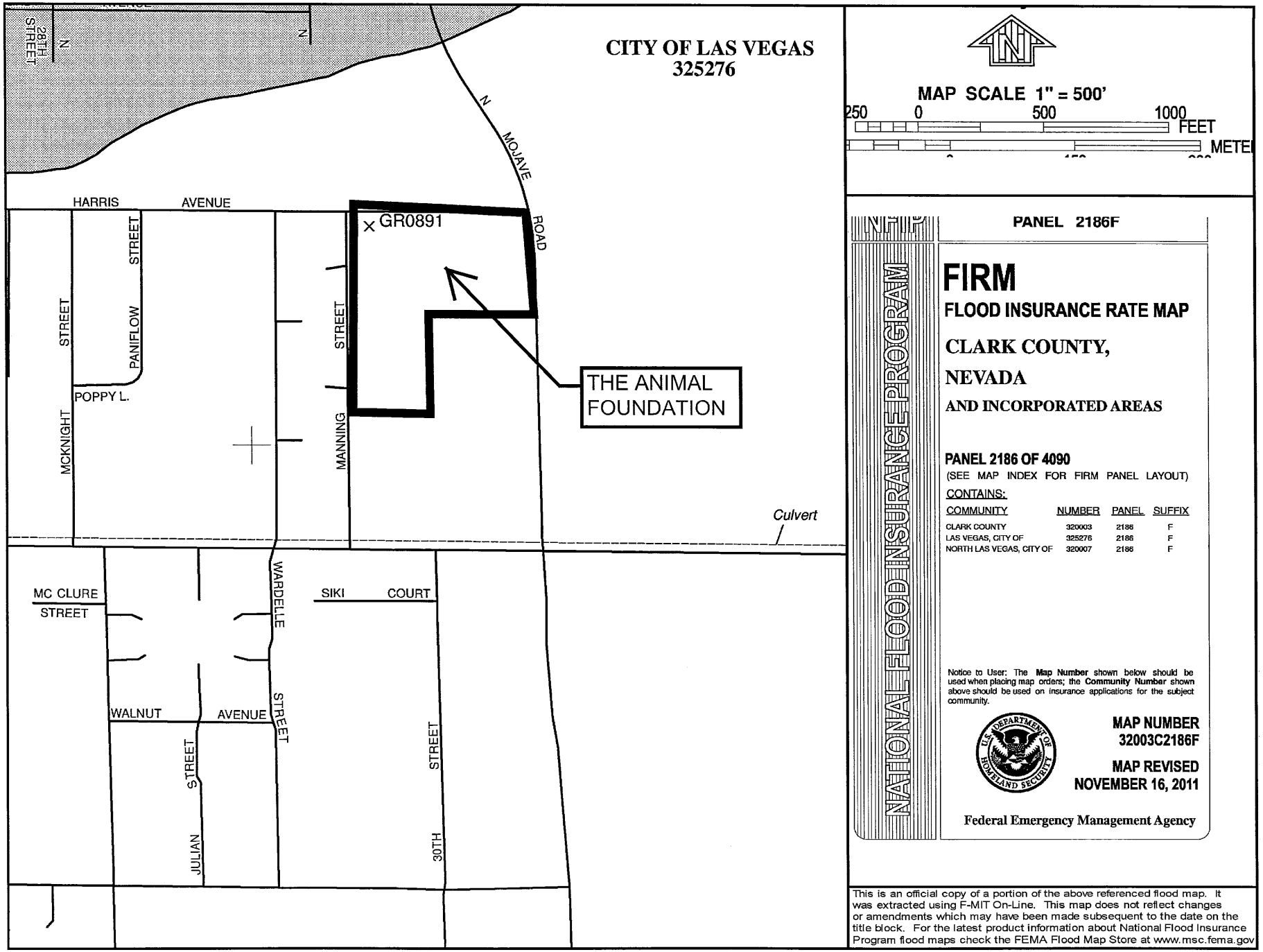

CITY OF LAS VEGAS
325276
MAP SCALE 1" = 500'
250 0 500 1000
FEET
METE
N
28TH STREET
N MOJAVE ROAD
HARRIS AVENUE
GR0891
THE ANIMAL FOUNDATION
STREET
PANIFLOW
POPPY L.
MCKNIGHT
MANNING
Culvert
MC CLURE STREET
WARDELLE
SIKI COURT
WALNUT AVENUE
JULIAN
30TH
NATIONAL FLOOD INSURANCE PROGRAM
PANEL 2186F
FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY,
NEVADA
AND INCORPORATED AREAS
PANEL 2186 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
CLARK COUNTY 320003 2186 F
LAS VEGAS, CITY OF 325276 2186 F
NORTH LAS VEGAS, CITY OF 320007 2186 F
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER
32003C2186F
MAP REVISED
NOVEMBER 16, 2011
Federal Emergency Management Agency
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

FIGURE 3

REGIONAL FLOOD CONTROL DISTRICT

2013
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

- Stormdrain
- Lined Channel
- Unlined Channel
- Levee/Dike
- Natural Wash/Floodway
- ID-Mile Separator

Remove & Replace/Parallel Facilities

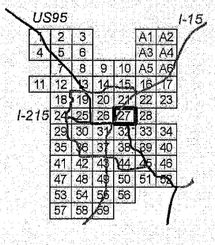
Category A	Category B
Channel	Channel
Stormdrain	Stormdrain

N

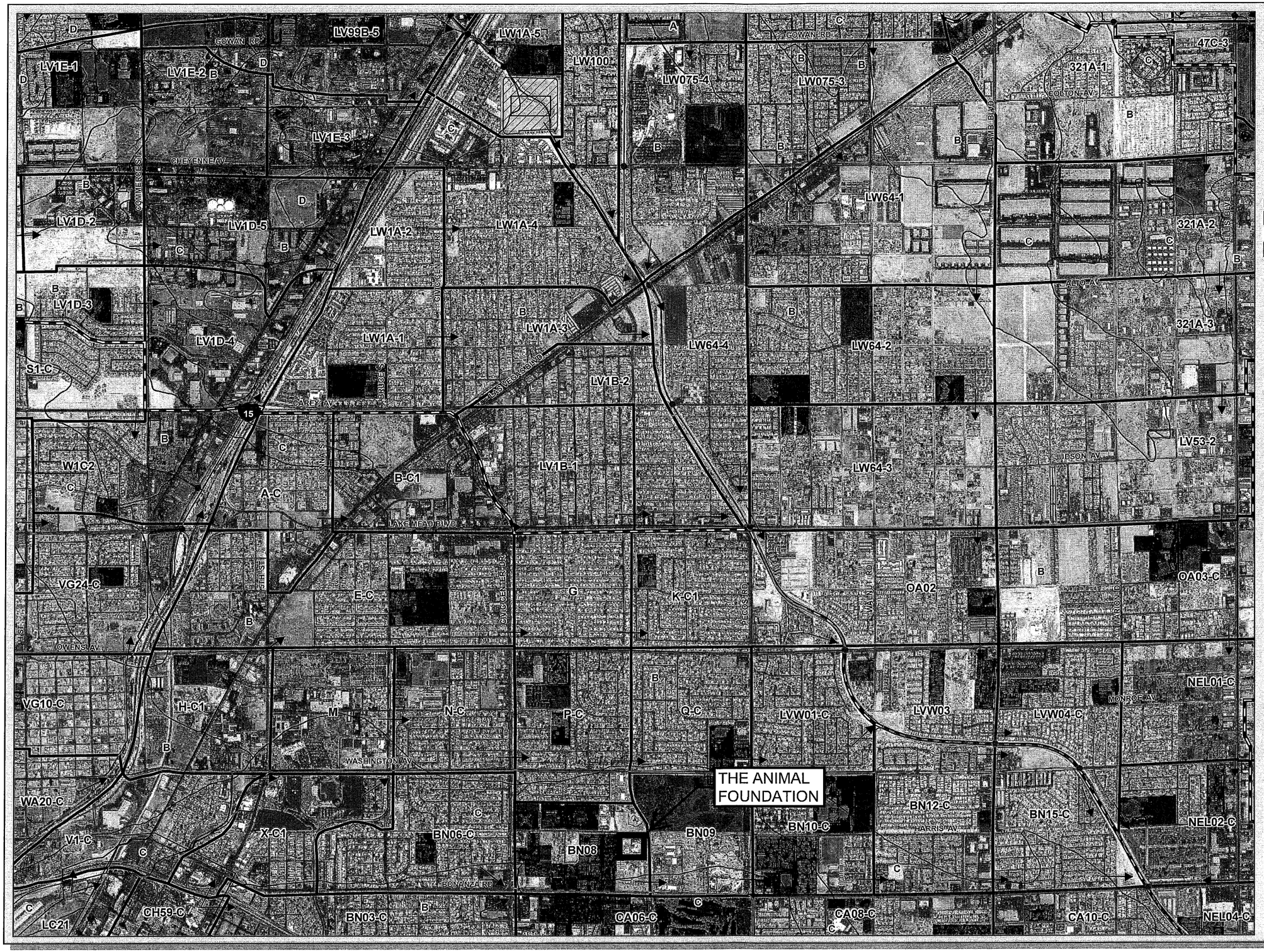
0 500 1,000 2,000 3,000
Feet

Scale: 1 inch = 2,000 feet

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



THE ANIMAL FOUNDATION



REGIONAL FLOOD CONTROL DISTRICT

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

Type 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 / 16* High Density Residential
- 7 / 17* Public Facility, Residential
- 8 / 18* Very High Density Residential
- 9 / 19* Commerical, Retail, Casino, High Rise Condominiums
- 10 / 20* Light Industrial
- 11 / 21* Heavy Industrial
- 12 / 22* Schools
- 13 Lakes

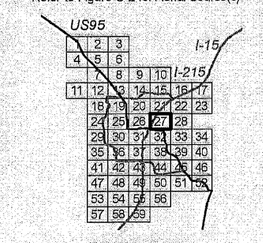
* Drought Ordinance Applied

N

0 500 1,000 2,000 3,000
Feet

Scale: 1 inch = 2,000 feet

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



PBS&J
PB

II. DRAINAGE BASIN DESCRIPTIONS

A. Site Description

The entire Animal Foundation site is approximately 8.9 acres. The site is currently developed with a main care building, temporary adoption and administrative facilities, kennels, and associated parking. A vacant portion of the site near the northern boundary is to be developed with this project. A new Adoption Center will be constructed. The existing care building will have substantial renovations to the interior (primarily plumbing and HVAC systems), but the footprint of the building will not be revised. A small central plant to house HVAC equipment will also be constructed with this project, as well as additional parking and a new driveway to Harris Avenue.

B. Existing Offsite Drainage Description

The site is located within the Central Watershed as determined by the 2013 Master Plan Update. Offsite drainage basins are all developed in commercial, residential, or other relatively high intense uses. Eastern Avenue, approximately 2200 feet west of the site, acts as a basin cutoff. Runoff for all storms are conveyed east in Harris Avenue, and south in both Manning Street and Mojave Road. Drainage through this area is generally from the west to east, at slopes approximately 0.9%. The primary soil type for the offsite basins are classified within hydrologic group C, per the 2013 MPU. Group C soils have moderately high runoff potential. For additional discussion of the offsite drainage, please see the Model Results section of this report.

C. Existing Onsite Drainage Description

Drainage onsite is also generally from the west to the east, toward Mojave Road. There is a storm drain/bubbler/channel system at the southern end of the site that conveys offsite runoff from Manning Street to Mojave Road. This project does not proposed to impact or reanalyze that system. Onsite basins are either disturbed earth, pavement, or landscaped areas. Soil classification for onsite improvements are within hydrologic group C. A copy of MPU Figure H-27 is provided as reference for soil group classification.

III. HYDROLOGIC CRITERIA

The U.S. Army Corps of Engineers HEC-1 flood hydrograph package was used to determine the peak runoff generated by the 6-hour, 10-year and 100-year storm events. The HEC-1 computer model has the ability to simulate the surface runoff response of a given basin and smaller sub-basins to rainfall. The computed hydrographs from each sub-basin are then combined at the appropriate locations, from which a final discharge hydrograph is obtained.

A. Precipitation

The project site is located within the McCarran Airport Rainfall Area. The rainfall depths for the 6-hour, 10-year and 100-year storm events were obtained per the *CCRFCD Hydrologic Criteria and Drainage Design Manual (1999), Section 500.* From Figure 513 and Table 505, the 10-year storm will generate 1.58 inches of rain, and the 100-year will generate 2.77 inches. Since the site encompasses less than 8-square miles a Storm Distribution Number three (SDN #3) was used for the HEC-1 model. HEC-1 parameters are included in Appendix A.

B. Hydrologic Abstractions

The SCS curve number method was used to determine the infiltration rates for the drainage basins. The soil groups for the existing project site were determined using the MPU, which is based on the *SCS Soil Survey of the Las Vegas Valley.* Curve Numbers for the drainage basins were determined using Table 602 from the *Drainage Design Manual.* See a copy of MPU Figure H-27, *Soil Map*, as well as reference material in Appendix A.

C. Basin Area

Basin areas for the onsite drainage basins were determined using AutoCAD. Note that lag times below ten minutes for the undeveloped condition and five minutes for the developed condition were revised to be at those numbers, per Section 602 and 602.1 of the *Drainage Design Manual.* The HEC-1 parameter calculations are located in the appendix of this study.

D. SCS Lag-Time with Time of Concentration

Lag-time, T_L, is defined as the time measured from the centroid of effective rainfall to the peak of the outflow hydrograph. It is a measure of the watershed's response time and is related to basin length, slope, roughness characteristics, and land use.

Lag-times for this study were estimated by calculating the drainage basins' time of concentration, T_C. The time of concentration consists of two component times; the initial overland flow time, ti, and the gutter or channel flow time, t_t. The equation for the time of concentration is: $T_C = t_i + t_t$. The equation for lag-time is: $T_L = 0.6T_C$.

IV. MODEL RESULTS

A. EXISTING CONDITION DRAINAGE ANALYSIS

The existing condition drainage analysis delineates onsite and offsite basins to determine runoff from the 6-hour duration, 10-year and 100-year return period storms. The proposed Adoption Center was included as part of the previously approved *Technical Drainage Study for the Animal Foundation Regional Animal Campus* by Lochsa Engineering (CLV DS #3512). Advantage Civil Design Group has reviewed and concurs with the results of that analysis.

Offsite Drainage Analysis

Lochsa analyzed the offsite basins that impact the overall site in the 2004 study. Figure 1 of that analysis, "Offsite Basin Drainage Map, Regional Animal Campus" is included in Appendix A. It has also been replicated for clarity as Figure 5, since the scanned copy on record is difficult to read. As stated in the Lochsa analysis "Basin OFD1 (20/45 cfs) consists of residential areas that generate runoff to a valley gutter crossing the vacated Manning Avenue." The valley gutter is still in place, and drainage pattern has not been revised since the Lochsa analysis.

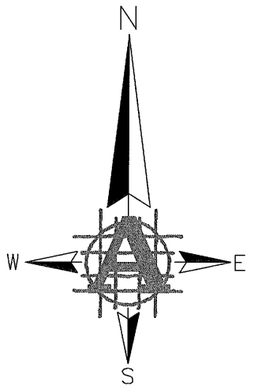
Basins OF2D (20/45 cfs) and OF3D (38/77 cfs) both drain to Harris Avenue. The Lochsa analysis estimated flows from these basins would split at the intersection of Harris and Manning, and during the 6-hour, 100-year storm, 38 cfs would be conveyed south in Manning Street, and 83 cfs flows east in Harris Road. The flow in Manning Street combines with runoff from OFD1 and is conveyed through the south end of The Animal Foundation site.

Basin OFD4 (7/13 cfs) is predominantly made up of paved parking areas on the north side of Harris Avenue. This basin, as well as basins OFD1, OFD2, and OFD3 will be conveyed to the adjacent roadways or existing storm drains and will not impact the new Adoption Center and Central Plant that are proposed with this submittal.

Onsite Drainage Analysis

Onsite drainage basins are shown on Figure 6. The site can be divided into three primary areas. The southwestern portion of the site consists of the existing dog kennels. This area drains to some small area drains onsite and an existing low point inlet in Manning Street. Runoff in this area is conveyed east in an existing 54-inch RCP that outlets (via a bubbler) into a concrete channel along the south side of the property. Since the new Adoption Center will not impact this area, it was not analyzed in detail for this project.

cchaffin PLOT DATE: 09-22-16 PLOT TIME: 12:01:14 DWG PATH: N:\Animal Foundation\049-001 Animal Foundation\dwg\Hydro\TAF Offsite Drainage Map.dwg



0 300' 600'

SCALE: 1" = 300'

NOTE: OFFSITE ANALYSIS PER TECHNICAL DRAINAGE STUDY FOR THE ANIMAL FOUNDATION REGIONAL ANIMAL CAMPUS, BY LOCHSA ENGINEERING, FEB. 2004

THE ANIMAL FOUNDATION

FIGURE 5--OFFSITE DRAINAGE

ADVANTAGE CIVIL DESIGN GROUP, LLP
2920 N. GREEN VALLEY PKWY.
BUILDING #4, SUITE # 422
HENDERSON, NEVADA
89014
Office: 702.452.2254
Fax: 702.456.2254
Email: MAIL@ADVANTAGECIVIL-NV.COM
CIVIL ENGINEERING CONSULTING PLANNING

N

W E

S

0 60' 120'

SCALE: 1" = 60'

LEGEND

- FLOW DIRECTION
- ON3EX BASIN NAME
- BASIN BOUNDARY
- CP1 CONCENTRATION POINT

*SEE FIGURE 5 FOR OFFSITE BASINS

ONSITE EXISTING CONDITION
FIGURE 6

ADVANTAGE CIVIL DESIGN GROUP, LLP
2920 N. GREEN VALLEY PKWY.
BUILDING #4, SUITE # 422
HENDERSON, NEVADA
89014
Office: 702.452.2254
Fax: 702.456.2254
Email: MAIL@ADVANTAGECIVIL-NV.COM
CIVIL ENGINEERING CONSULTING PLANNING

cchaffin PLOT DATE: 09-22-16 PLOT TIME: 12:12:18 DWG PATH: N:\Animal Foundation\049-001 Animal Foundation\dwg\Hydro\TAF Onsite Drainage Map Existing.dwg

The northern portion of the site is delineated as basin ON1X. This 2.9 acre basin drains runoff onto Harris Avenue via a driveway near the intersection of Mojave Road and Harris Avenue. Peak runoff for the 6-hour, 10-year and 100-year storm events are 4 cfs and 9 cfs, respectively.

Basin ON2X is the third drainage area. It is 2.8 acres and drains directly to Mojave Road. Peak flows are 4 cfs and 10 cfs. The HEC-1 analysis is included in Appendix A and results are summarized in Table 1.

TABLE 1
BASIN RUNOFF AMOUNTS
EXISTING CONDITION

BASIN NAME	AREA (acres)	10-YEAR FLOW (cfs)	100-YEAR FLOW (cfs)
OFD1*	20.73	20	45
OFD2*	21.64	20	45
OFD3*	33.87	38	77
OFD4*	4.39	7	13
ON1X	2.9	4	9
ON2X	2.8	4	8

* Referenced from Lochsa Study

B. INTERIM CONDITION DRAINAGE ANALYSIS

The interim condition assumes the onsite basins are developed and the offsite basins remain in the existing condition. Since all contributing offsite and onsite basins are analyzed as developed, the interim condition is not necessary for this analysis.

C. DEVELOPED CONDITION DRAINAGE ANALYSIS

The Developed Condition HEC-1 model assumes that all onsite and offsite basins are fully improved. The previously approved Lochsa analysis included a new Adoption Center and Veterinary Clinic of approximately the same size as is proposed with this project. The grading scheme utilized in this new analysis matches the concept that was previously approved. Reference onsite basin exhibits were not available for the Lochsa study so the site has been reanalyzed. Basins are shown on Figure 7.

Onsite basins ON1D and ON2D are largely unchanged from the existing condition. The driveway the conveyed runoff from ON1D is being eliminated with this project,

and a drainage flume will be installed to convey runoff to Harris Avenue. ON2D is not revised with this project.

Basin ON3D drains to an existing L-curb at the western boundary of the site. The existing curb drains south to inlets to a 54-inch RCP. Basin ON4D surface flows to a valley gutter, then to the channel along the southern boundary of the site.

Grading of the parking areas and adjacent to the proposed building is per building code requirements and will provide protection from the 6-hour, 10-year and 100-year storm events. A HEC-1 analysis was completed and is included in Appendix C. Results are summarized in Table 2.

TABLE 2
BASIN RUNOFF AMOUNTS
DEVELOPED CONDITION

BASIN NAME	AREA (acres)	10-YEAR FLOW (cfs)	100-YEAR FLOW (cfs)
OFD1*	20.73	20	45
OFD2*	21.64	20	45
OFD3*	33.87	38	77
OFD4*	4.39	7	13
ON1D	2.6	4	8
ON2D	2.6	4	8
ON3D	0.6	1	2
ON4D	0.16	<1	1

* Referenced from Lochsa Study

D. STREET FLOW CALCULATIONS

Street and easement hydraulic capacity calculations for the developed condition were completed for the site. Section locations are shown on Figure 7 in the map pockets of this report, and detailed analyses are included in Appendix D. Table 3 summarizes the results.

Several calculations are referenced from the approved *Technical Drainage Study for the Animal Foundation Regional Animal Campus* by Lochsa Engineering. The referenced study calculated a flow split at the intersection of Harris Avenue and Manning Street. Estimates showed 38 cfs flowing south in Manning, and 83 continuing east in Harris. Street sections 1 and 2 are in Harris Avenue and show the roadway will meet minimum CCRFCD criteria. Note this study for the new

Adoption Center will only revise driveways to Harris Avenue, but will not impact exiting slope or cross sections.

Section 3 is for the flume from onsite parking area out to Harris Avenue.

Section 4, on Manning Street, is calculated based on the flowsplit at Harris Street. The City of Las Vegas and The Animal Foundation agreed in 2004 that no curb would be built along the east side of Manning Street. The minimum finished floor elevation of the new Adoption Center is based on the depth of flow in Manning Street. Email correspondence regarding this issue is included in Appendix D.

TABLE 3
HYDRAULIC CALCULATION SUMMARY
6-HOUR, 10-YEAR STORM

SECTION	FLOW Q_{10} (cfs)	VELOCITY V_{10} (ft/s)	DEPTH D_{10} (ft)	VELOCITY X DEPTH
1* (Flowsplit of OFD2 + OFD3)	42	3.15	0.63	1.98
2* (Flowsplit of OFD2 + OFD3 + OFD4 + ON1D)	52	4.43	0.66	2.92
3 (ON1D)	4	8.88	0.30	N/A
4* (Flowsplit of OFD2 + OFD3)	17	2.37	0.65	1.54

* Referenced from Lochsa Study

TABLE 4
HYDRAULIC CALCULATION SUMMARY
6-HOUR, 100-YEAR STORM

SECTION	FLOW Q_{100} (cfs)	VELOCITY V_{100} (ft/s)	DEPTH D_{100} (ft)	VELOCITY X DEPTH
1* (Flowsplit of OFD2 + OFD3)	83	4.13	0.74	3.06
2* (Flowsplit of OFD2 + OFD3 + OFD4 + ON1D)	104	5.45	0.79	4.31
3 (ON1D)	8	11.72	0.46	N/A
4* (Flowsplit of OFD2 + OFD3)	38	3.26	0.80	2.61

* Referenced from Lochsa Study

V. CONCLUSIONS

The Animal Foundation Adoption Center construction project will construct utilities, parking, and landscaping necessary to support the proposed new buildings. The site has been analyzed previously, and the proposed new development is compatible with the previous design. Development of the site is in conformance with the Drainage Design Manual. Onsite runoff generated by the site will follow the natural drainage patterns to the north and east. If the site is constructed as shown on the included plans, the finished floors of the project should be protected from the 6-hour, 100-year storm.

Proposed improvements include the following:

- Closure of the existing driveway on Harris Avenue near the eastern boundary of the site, and construction of a new driveway near the western boundary of the site;
- Parking area and other site grading as shown on the attached improvement plans;
- Other infrastructure as shown on the included plans.

Nuisance water associated with this project will drain to Harris Avenue and Mojave Road, in the natural drainage pattern. Storm runoff will also follow the drainage pattern established by the onsite grading.

VI. REFERENCES

CCRFCD Hydrologic Criteria and Drainage Design Manual, WRC Engineering, 1999.

Drainage Study Update for the Animal Federation International Animal Shelter and Spay/Neuter Clinic, Southwest Engineering, December 1999. CLV DS #2191, Approved January 6, 2000.

Flood Insurance Rate Map, Panel Number 32003C 2186F, Effective November 16, 2011, Federal Emergency Management Agency.

Technical Drainage Study for the Animal Foundation Regional Animal Campus, Lochsa Engineering, February 2004. CLV DS #3512, Approved April 20, 2004.

2008 Las Vegas Valley Flood Control Master Plan Update, P.B.S. & J, Inc., 2008.

2013 Las Vegas Valley Flood Control Master Plan Update, P.B.S. & J, Inc., 2013.

APPENDIX A

OFFSITE HYDROLOGIC ANALYSIS AND REFERENCE MATERIAL

REFERENCE MATERIAL FROM LOCHSA ANALYSIS "TECHNICAL DRAINAGE STUDY FOR THE ANIMAL FOUNDATION REGIONAL ANIMAL CAMPUS"
RAINFALL CRITERIA
LOSS CRITERIA (CURVE NUMBERS)
EXISTING CONDITION HEC-1

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: April 20, 2004
TO: **Land Development Services** Department of Public Works				FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Technical Drainage Study for: **Animal Foundation Regional Animal Campus**			**COPIES TO:** Lochsa Engineers
Cross Streets:	Mojave Street and Harris Avenue			Tate Synder Kimsey Architects
File Number:	F:\Depot\DSMEMOS\DS3512B.doc			Bart Anderson, P.E., DevCo
Parcel Number:	139-25-801-002, -003			Sam Tolman, A.I.A., CLV - OAS
Zoning Action:	SDR 3235, PMP 3634			
FEMA Flood Zone	YES	NO X		
Proposed Storm Drain	YES X	NO		

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID G.R. No.
1st Submittal	2/23/2004 & 3/30/2004 & 4/13/2004	4/19/2004	See Comments Below	$400.00	119433: $400
2nd Submittal	5/06/2004	5/20/2004	See Comments Below	$400.00	124550: $400
			TOTAL FEES (LDDRS):	**$800.00**	----

REMARKS:

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

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

1. Provide a revised drainage easement exhibit to include the 18-inch storm drain connection through the Fire Training site. This site accepts offsite flows and conveys them through the site. Provide a "Public Drainage Easement to be Privately Maintained by the Animal Foundation" and show the easement on the grading plan through the entire site to include the necessary easement through the Fire Training site. Public drainage easements must be recorded by separate document prior to the final acceptance of the improvement plans unless they are to be recorded by parcel or final map. Provide a revised legal descriptions and an exhibit for Right-of-Way review and approval.
2. Revise the wall notations to reflect the wall construction next to the Fire Training Facility with this project as agreed to with Sam Tolman from the Office of Architectural Services. Revise all detail sections showing the concrete flood channel (Details 8 & 12/C6.01 and Detail A/C6.03) to indicate both sides of the channel floodwalls/screen walls to be constructed with this project
3. The proposed 8' x 6' bubbler inlet detail must be revised to show the both the inlet and outlet pipes. Include the details for the frame and grate to integrate the inlet into the concrete channel design. The grate opening to a 4" x 4" maximum grid. Provide 4-lifting rings for maintenance purposes. The Streets and Sanitation Division must approve the complete bubbler inlet design prior to final plan approval. Contact Jerry Walker @ 229-6227.

4. The site shows that power pole relocations are necessary for the construction of the 54-inch storm drain system. Show the proposed power crossings on the storm drain profile and provide a copy of the power drawings showing the relocation prior to final improvement plan approval.
5. The sediment inlets must be privately maintained by the Animal Foundation and noted as such on the storm drain profile sheet (Sheet C5.02).
6. Label the on-site 12-inch storm drain located and associated inlets north and east of the New Adoption Center as "Privately Maintained."
7. The engineer has provided a table on the grading plans that shows a quantity estimate of all on-site and off-site flood control improvements. All drainage improvements must be bonded and inspected.
8. Call out the installation of the sidewalk underdrain at the east end of the 14-foot channel at Mojave on Sheet C5.02. Remove the notation "By others."
9. This drainage study assumes that the project will be constructed in one phase. If improvement plans are submitted to break the project into separate phases, a drainage study update will be required for each phase addressing the interim condition.

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
PBJ

T/R/S: T20S/R61E/25
AREA M-25

Rec'd 2/23/04
DS 3512
M-25
$400.00

Technical Drainage Study
for the
Animal Foundation
Regional Animal Campus

JOB# 7105.15

February 2004

Prepared for:

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2. DRAINAGE DESCRIPTION

2.1 Offsite Drainage Description

The site is located within the Central Watershed and analyzed as a potion of sub-basin BN08 in the "*2002 Las Vegas Valley Flood Control Master Plan Update*" (Reference 2). Offsite runoff impacting the site is conveyed in both Manning Street and Harris Avenue adjacent to the site. The upstream parcels to the west of the site are existing residential complexes, commercial developments, and school areas. The offsite areas generating runoff toward the site consist of four basins. Basin OFD1 (20/45 cfs) consists of residential areas that generate runoff to a valley gutter crossing the vacated Manning Avenue. The runoff in Manning Avenue collects at a local sump condition at the valley gutter and weirs onto the project site. Runoff generated in Basins OFD2 (20/45 cfs) and OFD3 (38/77 cfs) are conveyed to Harris Avenue at combination point CM1 (59/121 cfs) near the intersection with Manning Street. There is a flow split at the intersection of Harris Avenue and Manning Street where 38 cfs is conveyed down Manning with the remaining 83 cfs continuing east down Harris to Mojave during a 100-year, 6-hour storm event. The flow split was modeled assuming that the runoff contained within the north half-street of Harris would continue eastward within Harris. The northern half-street capacity of Harris (21 cfs) was subtracted from the runoff at CM1 to model the split. Flow split calculations for the intersection are provided in Appendix B. The runoff in Manning Street from the flow split combines at the low point valley gutter with runoff generated in basin OFD1 and weirs onto the site.

Basin OFD4 (7/13 cfs) consists of mostly paved parking and temporary trailer buildings north of the project site. Basin OFD4 generates runoff south to Harris Avenue. The runoff in Harris Avenue continues to the east where approximately 64 cfs is collected by drop inlets in Mojave Road in a 100-year storm (Reference 6). MK Centennial provided the design for the existing drop inlets as well as a 36-inch storm drain system in Mojave Road to convey runoff to the Clark County Regional Flood Control District storm drain system in Bonanza. The MK Centennial study

calculates 9/56 cfs being conveyed in Mojave Road adjacent to the site. An approved study done for the original Animal Shelter by Pentacore uses 61/138 cfs in Mojave Road adjacent to the site as its ultimate condition flows. The 61/138 cfs was taken from the City Wide as the amount of runoff generated by basin BN08. The runoff quantity in Mojave Road used by Pentacore is assumed in this study for normal depth calculations in Mojave Road as a conservative value.

2.2 Onsite Drainage Description

The existing site consists of rough graded land with various high points due to fill placed on the site. The site was previously a wastewater treatment facility which has been demolished to leave a mostly rough graded parcel. There is an existing channel onsite located at the low point in Manning Street. The channel is in an unmaintained condition and is constantly saturated with nuisance flows from the upstream basins. There is a 30-inch CMP at the southern end of the channel that has been abandoned and is not working order. The pipe extends southeast to Bonanza Road with much of the pipe sticking out of the ground and crushed. The pipe is abandoned due to complete clogging at the outlet and unusable condition of various sections of the pipeline. This condition results in onsite ponding of nuisance flows and insignificant storm runoff. In the event of a major storm, runoff collects in the channel until it weirs out of the channel to the east toward the Fire Station Training Center. The runoff is conveyed east along the Fire Station Training Center to Mojave Road. There is also a 33-inch storm drain onsite along the Manning Street alignment identified in the City Wide as BNZ 040. Two manholes were located onsite, however the upstream alignment, manholes, and drop inlets for the system were not located. Design plans for the storm drain are not available in the City of Las Vegas archives and no record of the system has been located. For the development of this site, the existing 33-inch storm drain system is not incorporated into the drainage design and is not proposed to be utilized for storm runoff.

The site is divided into 5 basins. Basin ONX1 (3/6 cfs) consists of rough graded land and a portion of the existing animal facility. Basin ONX1 drains into Harris Avenue through the existing

driveway at the northeast corner of the site. Basin ONX2 (4/8 cfs) consists of rough graded land and the southern half of the existing animal facility. Basin ONX2 drains into Mojave Road. Basin ONXM (1/2 cfs) consists of the northeast corner of the site and generates runoff toward Mojave Road. Basin ONX3 (3/7 cfs), on the west side of the site, consists of rough graded land and the onsite existing channel. In the event of a storm, the runoff ponds up to approximately 18.46 in Manning Avenue before it weirs over to the east as shown in the provided Flowmaster weir calculations. Runoff generated in this basin ponds into the channel until it weirs into the adjacent swale along the northern property line of the fire training center. The runoff is conveyed along the property line to Mojave Road. Basin ONX4 (2/3 cfs) consists of a small patch of rough graded land on the south end of the site that drains south into the adjacent property.

2.3 Master Planning Information

The "*2002 Las Vegas Valley Flood Control Master Plan Update*", dated September 2002, as prepared by Post Buckley Schuh and Jernigan, Inc. (PBS&J), in association with G. C. Wallace Inc., and Louis Berger Group, for the Clark County Regional Flood Control District (CCRFCD) (Reference 3) illustrates the proposed regional master planned facilities in the area as shown on Figure F-13.

Review of the Master Plan Update (Reference 3), indicates no existing or proposed master plan facilities within or adjacent to the site.

2.4 Flood Plain Information

The project site is covered by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the Clark County, Nevada, and unincorporated area, Community Panel Number: 32003C2586 E, Effective Date: September 27, 2002 (Reference 4).

Review of panel 32003C2586 E indicates that the site is located entirely within FEMA Flood Zone "X" (unshaded). Zone "X" (unshaded) is described by the Federal Emergency Management Agency (FEMA) as:

"Areas determined to be outside the 0.2% annual chance floodplain."

The excerpt of FIRM for the project site is attached in the appendix (Figure 3).

2.5 Previous Drainage Studies

The overall area is covered within the CCRFCD "*2002 Las Vegas Valley Flood Control Master Plan Update, Volume I*" (Reference 2), and the "*2002 Las Vegas Valley Flood Control Master Plan Update, Volume II*" (Reference 3). The site is also covered by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the Clark County, Nevada, and unincorporated area, Community Panel Number: 32003C2586 E, Effective Date: September 27, 2002 (Reference 4). The approved technical drainage studies pertinent to the site which have been referenced include the *"Mojave Improvements - Stewart Avenue to Owens Avenue,"* by MK Centennial and the *"Drainage Letter for the Animal Shelter and Spay/Neuter Clinic,"* by Pentacore Engineering, Inc. The offsite runoff calculated in this study is greater than that calculated in the MK Centennial study due to the inclusion of residential areas consisting of basins OFD1 and OFD2. Runoff conveyed in Mojave Road was directly adopted from the approved study by Pentacore.

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3. PROPOSED DRAINAGE FACILITIES

3.1 General Description

The proposed onsite drainage plan is characteristic of existing drainage conditions. The offsite basins are in there ultimate developed condition and remain unchanged from the existing condition analysis. The grading plan has been designed to convey runoff away from the buildings. The site has been analyzed as five drainage basins labeled OND1 through OND4 and ONXM. Basin ONXM (½ cfs)is unchanged from the existing condition analysis and conveys runoff to Mojave Road. Basin OND1 (5/10 cfs) consists of the northern section of the site and contains mostly parking and building rooftops. Basin OND1 conveys storm runoff to the Harris Avenue through the existing driveway at the northeast corner of the site. Basin OND2 (4/7 cfs) consists mostly of building rooftops and conveys runoff east to Mojave Road. Basin OND4 (1/3 cfs) remains mostly unchanged from the existing condition and consists of rough graded land. Basin OND4 conveys runoff south to the undeveloped property. Basin OND3 (5/8 cfs) and OND5 (<1/1 cfs) are located at the low point in Manning Street and have been designed to maintain existing condition drainage characteristics while conveying offsite runoff through the site. Drop inlets and a bubbler system are proposed at the low point in order to pass the runoff under the site to the historic path along the fire training center property line. A 21 foot ~~Modified Type "C"~~ TYPE CM inlet is proposed to pick up the runoff at combination point CM3 (37/84 cfs) and convey it to the other side of the site through a 54-inch storm drain. The runoff discharging from the bubbler is conveyed to Mojave Road through a 14-foot wide concrete channel. The bubbler is sized to minimize the amount of runoff ponding at the drop inlets to a water surface elevation lower than the 18.47 foot weir elevation experienced in the existing condition. The starting hydraulic grade line used in the Standard Form 6 for the bubbler is taken as the water surface elevation calculated in the channel. An 18-inch storm drain is provided as a bleeder at the bubbler outlet to convey nuisance flows collected in the bubbler to the existing storm drain in Mojave Road.

An overflow path for the offsite runoff is provided through the site. A 30-foot wrought iron gate opening is provided at the site entrance and exit to allow the offsite runoff to pass through the

site. A weir calculation at the entrance shows that the required headwater to pass the runoff leaves approximately 18-inches (1.47 feet) of freeboard between the water surface elevation and existing housing finished floor elevation.

Basin OND5 consists of a small section of landscaping along the west side of the site that generates runoff to the proposed drop inlets at combination point CM3. Basin OND3 generates runoff to the proposed channel along the northern boundary of the fire training center at combination point CM4 and continues east to Mojave Road.

3.2 Compliance with Regulations and Adopted Plans

The design of this development is in compliance with local requirements, including the Clark County Regional Flood Control District (CCRFCD) "*Hydrologic Criteria and Drainage Design Manual*" (HCDDM) (Reference 1), and the CCRFCD "*Flood Control Master Plan Update*" (Reference 3). The design of this development is also in compliance with the Federal Emergency Management Agency (FEMA). The velocity times depth (V*D) criteria for both the minor and major storm events were met for both Harris Avenue and Mojave Road adjacent to the site. Please refer to the street flow summary table provided in the appendix.

3.3 Hydrologic Criteria

The United States Army Corps of Engineers HEC-1 Flood Hydrograph Package was used to compute onsite and offsite existing, and proposed/future conditions hydrology. The site is within the boundary for using the McCarran Airport Rainfall Data and precipitation data was based on Table 505 of the HCDDM (Reference 1). See Appendix A for the calculations used in the analysis of the 10-year and 100-year, 6-hour storms.

3.4 Facility Design Calculations

All drainage facilities within this project have been designed in accordance with the HCDDM (Reference 1). Street flow capacities were calculated based on Manning's equation. The onsite drainage plan has been developed to closely resemble historic/existing drainage patterns. Street hydraulic cross-section calculations have been provided along the adjacent streets for both the existing and proposed conditions, to determine appropriate finish floor elevations and to estimate

APPENDIX A

HYDROLOGIC ANALYSIS

Peak Flow Summary
Existing Condition

HEC-1 I.D.	Area (acres)	10-year Flow (cfs)	100-year Flow (cfs)
OFD2	21.64	20	45
OFD3	33.87	38	77
CM1	-	59	121
MANN	-	17	38
HARR	-	42	83
OFD4	4.39	7	13
ONX1	2.03	3	6
CM2	-	51	101
ONXM	0.55	1	2
RMANN	-	17	38
OFD1	20.73	20	45
CM3	-	37	83
ONX3	3.04	3	7
CM4	-	40	90
ONX2	2.62	4	8
CM5	-	43	97
ONX4	1.17	2	3

Peak Flow Summary
Proposed Condition

HEC-1 I.D.	Area (acres)	10-year Flow (cfs)	100-year Flow (cfs)
OFD2	21.64	20	45
OFD3	33.87	38	77
CM1	-	59	121
MANN	-	17	38
HARR	-	42	83
OFD4	4.39	7	13
OND1	3.01	5	10
CM2	-	52	104
ONXM	0.55	1	2
RMANN	-	17	38
OFD1	20.73	20	45
OND5	0.20	<1	1
CM3	-	37	84
OND3	2.41	5	8
CM4	-	40	90
OND2	2.25	4	7
OND4	4.39	1	3

SIX-HOUR STORM DISTRIBUTIONS

Storm Time (In Minutes)	Percent of Total Storm Depth SDN3	SDN4	SDN5	Storm Time (In Minutes)	Percent of Total Storm Depth SDN3	SDN4	SDN5
0	0.0	0.0	0.0	185	32.2	37.6	43.0
5	2.0	2.0	2.0	190	35.2	41.5	47.7
10	5.7	5.8	5.9	195	40.9	46.2	51.4
15	7.0	7.5	8.0	200	49.9	53.0	56.1
20	8.7	9.9	11.0	205	59.0	61.0	63.0
25	10.8	12.6	14.4	210	71.0	71.0	71.0
30	12.4	13.7	15.0	215	74.4	73.2	72.0
35	13.0	14.5	16.0	220	78.1	75.6	73.1
40	13.0	14.9	16.8	225	81.2	78.2	75.2
45	13.0	15.1	17.1	230	81.9	79.9	77.9
50	13.0	15.5	18.0	235	83.5	81.3	79.0
55	13.0	15.6	18.2	240	85.1	82.3	79.5
60	13.0	15.9	18.7	245	85.6	83.0	80.4
65	13.3	16.2	19.0	250	86.0	83.5	81.0
70	14.0	16.9	19.7	255	86.8	84.4	82.0
75	14.2	17.2	20.2	260	87.6	85.1	82.6
80	14.8	17.9	21.0	265	88.8	86.4	84.0
85	15.8	18.9	22.0	270	91.0	88.5	85.9
90	17.2	20.1	23.0	275	92.6	90.8	88.9
95	18.1	21.1	24.1	280	93.7	92.4	91.0
100	19.0	22.0	25.0	285	95.0	94.4	93.8
105	19.7	22.8	25.9	290	97.0	96.8	96.6
110	19.9	23.2	26.5	295	97.6	97.3	97.0
115	20.0	24.0	28.0	300	98.2	97.8	97.4
120	20.1	24.6	29.0	305	98.5	98.2	97.9
125	20.4	25.2	30.0	310	98.7	98.4	98.1
130	21.4	26.0	30.5	315	98.9	98.6	98.3
135	22.9	26.9	30.9	320	99.0	98.8	98.5
140	24.1	27.6	31.0	325	99.3	99.1	98.9
145	24.9	28.3	31.7	330	99.3	99.2	99.0
150	25.1	28.6	32.1	335	99.4	99.3	99.2
155	25.6	29.2	32.7	340	99.5	99.4	99.3
160	27.0	30.2	33.3	345	99.8	99.7	99.6
165	27.8	31.2	34.6	350	99.8	99.8	99.7
170	28.1	32.1	36.1	355	99.9	99.9	99.9
175	28.3	33.2	38.1	360	100.0	100.0	100.0
180	29.5	35.2	40.8				

Notes:
1. For drainage areas less than 8 square miles in size, use SDN 3.
2. For drainage areas greater than or equal to 8 square miles and less than 12 square miles in size, use SDN 4.
3. For drainage areas greater than or equal to 12 square miles, use SDN 5.
4. A graphical representation of these values is presented on **Figure 515.**

Revision	Date

REFERENCE:

TABLE 503

DEPTH-DURATION-FREQUENCY VALUES FOR McCARRAN AIRPORT RAINFALL AREA

(IN INCHES)

TIME	RECURRENCE INTERVAL					
	2-YR	5-YR	10-YR	25-YR	50-YR	100-YR
5 min.	0.15	0.27	0.35	0.46	0.54	0.63
10 min.	0.25	0.44	0.57	0.74	0.89	1.02
15 min.	0.33	0.57	0.74	0.97	1.15	1.32
30 min.	0.44	0.78	1.01	1.31	1.55	1.79
1 hour	0.52	0.89	1.15	1.50	1.78	2.06
2 hour	0.59	1.01	1.30	1.70	2.01	2.30
3 hour	0.64	1.08	1.39	1.82	2.15	2.48
6 hour	0.72	1.22	1.58	2.05	2.41	2.77
24 hour (TR-55)	1.20	1.60	1.80	2.40	2.70	2.96

NOTE: 1. Refer to Figure 513 for a description and drawing of the area included in the McCarran Airport Rainfall Area.

2. The 24 hour values presented above are for use with TR-55 only.

3. Table 501 adjustments not required.

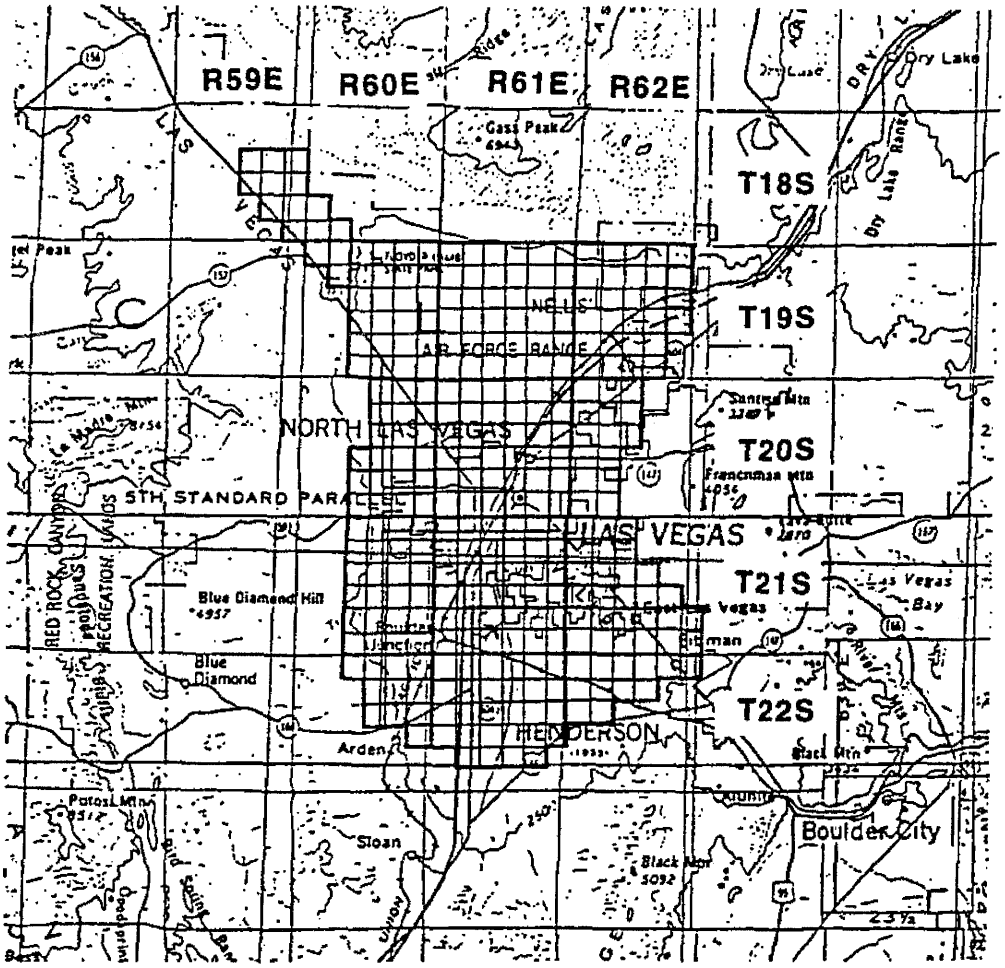
Revision	Date

WRC ENGINEERING

REFERENCE: USACE, Los Angeles District, 1988

TABLE 505

McCARRAN AIRPORT RAINFALL AREA



TOWNSHIP	RANGE	SECTIONS
18 South	59 East	13-15,22-26,36
18 South	60 East	30-32
19 South	60 East	1-6,8-16,21-28,33-36
19 South	61 East	ALL SECTIONS
19 South	62 East	2-11,14-23,27-34
20 South	60 East	1-3,10-15,21-28,33-36
20 South	61 East	ALL SECTIONS

TOWNSHIP	RANGE	SECTIONS
20 South	62 East	4-9,16-20,29-32
21 South	60 East	1-4,9-16,21-28,33-36
21 South	61 East	ALL SECTIONS
21 South	62 East	4-9,15-23, 25-36
22 South	60 East	1-4,10-15,24
22 South	61 East	1-24,26-29
22 South	62 East	1-10,17-18

Notes:
1. Refer to Table 505 and Figure 516 Depth-Duration- Frequency values in the McCarran Airport Rainfall Area.
2. Refer to Table 506 and Figure 517 for Time-Intensity-Frequency values on the McCarran Airport Rainfall Area.

Revision	Date

WRC ENGINEERING

REFERENCE:
USACE, Los Angeles District, 1988

FIGURE 513

RUNOFF CURVE NUMBERS
(URBAN AREAS[1])

Cover description		Curve numbers for hydrologic soil group—			
Cover type and hydrologic condition	Average percent impervious area[2]	A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.)[3]:					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved: curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved: open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only)[4]		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
See Table 602A					
Developing urban areas					
Newly graded areas (pervious areas only, no vegetation)[5]		77	86	91	94

1 Average runoff condition, and $I_a = 0.2S$.

2 The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system. Impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using Figure 603.

3 CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

4 Composite CN's for natural desert landscaping should be computed using Figure 603 based on the impervious area percentage (CN #98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

5 Composite CN's to use for the design of temporary measures during grading and construction should be computed using Figure 603 based on the degree of development impervious area percentage) and the CN's for the newly graded pervious areas.

Revision	Date

RUNOFF CURVE NUMBERS
(SEMIARID RANGELANDS[1])

Cover description		Curve numbers for hydrologic soil group—			
Cover type	Hydrologic condition[2]	A[3]	B	C	D
Herbaceous—mixture of grass, weeds, and low-growing brush, with brush the minor element.	Poor		80	87	93
	Fair		71	81	89
	Good		62	74	85
Oak-aspen—mountain brush mixture of oak brush, aspen, mountain mahogany, bitter brush, maple, and other brush.	Poor		66	74	79
	Fair		48	57	63
	Good		30	41	48
Pinyon-juniper—pinyon, juniper, or both; grass understory.	Poor		75	85	89
	Fair		58	73	80
	Good		41	61	71
Sagebrush with grass understory.	Poor		67	80	85
	Fair		51	63	70
	Good		35	47	55
Desert shrub—major plants include saltbush, greasewood, creosotebush, blackbrush, burasage, palo verde, mesquite, and cactus.	Poor	63	77	85	88
	Fair	55	72	81	86
	Good	49	68	79	84

[1]Average runoff condition, and $I_a = 0.2S$.

[2]*Poor:* <30% ground cover (litter, grass, and brush overstory).
Fair: 30 to 70% ground cover.
Good: >70% ground cover.

[3]Curve numbers for group A have been developed only for desert shrub.

Revision	Date

RUNOFF CURVE NUMBERS - RESIDENTIAL DISTRICTS

Average Lot Size or Usage[1]	Percent Impervious[2]	Curve Number for Hydrologic Soil Groups			
		A	B	C	D
Apartments/Condos	72	81	88	91	93
Townhouses/6,000 sq ft lots or less[3]	69	80	87	90	92
7,000 sq ft lots	63	76	84	89	91
8,000 sq ft lots	58	73	82	88	90
10,000 sq ft lots	38	61	75	83	87
14,000 sq ft lots	30	57	72	81	86
20,000 sq ft lots	25	54	70	80	85
40,000 sq ft lots	20	51	68	79	84
80,000 sq ft lots	12	46	65	77	82

1 Lot size should represent the size of the average lot and not the gross acreage divided by the number of lots.
2 Actual percent impervious value should be compared to selected land use type.
3 In cases where average residential lots are smaller than 6,000 sq ft, commercial/business/industrial land use should be used.

Revision	Date

REFERENCE:

TABLE 602A

DEVELOPMENT: Animal Foundation and Regional Animal Shelter and Campus
CALCULATED BY: JHF
PROJECT NUMBER: 7105.15

DATE: February 2004

SUB-BASIN DATA				INITIAL/OVERLAND TIME (ti)			TRAVEL TIME (tt)				tc CHECK (URBANIZED BASINS)		FINAL tc	REMARKS			
DESIG (1)	K (2)	AREA Ac (3)	AREA Sq. mile (4)	LENGTH Ft (5)	SLOPE % (6)	ti Min (7)	LENGTH Ft (8)	SLOPE % (9)	VELOCITY FPS (10)	tt Min (11)	TOTAL LENGTH Ft (12)	tc =(L/180)+10 Min (13)	Min (14)	CN (15)	tL Hrs (16)	Urbanized?	Soil Type
ONXM	0.8864	0.55	0.00086	35	2.2	1.7	110	0.9	1.6	1.2	145	10.8	2.9	96.7	0.050	YES	C
ONX1	0.8666	2.03	0.00317	80	1.3	3.4	540	0.7	1.7	5.2	620	13.4	8.6	95.2	0.086	YES	C
ONX2	0.8666	2.62	0.00409	135	2.7	3.5	555	0.9	2.2	4.1	690	13.8	7.6	95.2	0.076	YES	C
ONX3	0.8033	3.04	0.00475	135	1.2	5.8	885	0.5	0.9	16.7	1,020	15.7	15.7	90.4	0.157	YES	C
ONX4	0.8112	1.17	0.00183	45	2.3	2.6	175	0.7	0.8	3.6	220	11.2	6.2	91.0	0.062	YES	C
OND1	0.9036	3.01	0.00470	85	1.1	3.2	605	0.6	1.7	5.8	690	13.8	8.9	98.0	0.089	YES	C
OND2	0.9036	2.25	0.00352	170	1.0	4.6	465	1.2	2.5	3.1	635	13.5	7.7	98.0	0.077	YES	C
OND3	0.9036	2.41	0.00377	40	0.5	2.8	510	0.6	1.9	4.4	550	13.1	7.2	98.0	0.072	YES	C
OND4	0.8112	0.99	0.00155	55	1.7	3.2	190	1.4	1.3	2.5	245	11.4	5.7	91.0	0.057	YES	C
OND5	0.9036	0.20	0.00031	30	0.4	2.6	325	0.9	1.6	3.5	355	12.0	6.1	98.0	0.061	YES	C
OFD1	0.8112	20.73	0.03239	260	0.7	9.5	1,350	0.5	2.2	10.0	1,610	18.9	18.9	91.0	0.189	YES	C
OFD2	0.8138	21.64	0.03381	300	0.5	11.2	1,795	0.8	2.4	12.3	2,095	21.6	21.6	91.2	0.216	YES	C
OFD3	0.8508	33.87	0.05292	325	0.5	10.2	2,190	1.1	3.3	11.1	2,515	24.0	21.3	94.0	0.213	YES	C
OFD4	0.9036	4.39	0.00686	250	0.5	7.0	490	0.6	2.2	3.8	740	14.1	10.8	98.0	0.108	YES	C

ti = 1.8 (1.1 - K) L^(0.5) / S^(1/3)

K = 0.0132 CN - 0.39

tt = L / (60 V)

tc = ti + tt

tL= tLAG = 0.6 tc

LOCATION: ONSITE /OFFSITE

HYDROLOGIC CONDITION: EXISTING/PROPOSED

TRIAL: FINAL ITERATION

AVERAGE VELOCITY

Input Variables	Basin ONXM	Basin ONX1	Basin ONX2	Basin ONX3	Basin ONX4		Basin OND1	Basin OND2	Basin OND3	Basin OND4	Basin OND5		Basin OFD1	Basin OFD2	Basin OFD3	Basin OFD4
Bottom Width, B, (ft):	3.0	3.0	3.0	20.0	20.0		3.0	3.0	3.0	5.0	3.0		60.0	60.0	60.0	3.0
Right Side Slope, Zr:	0	50	0	100	100		50	0	50	100	50		0	0	0	30
Left Side Slope, Zl:	50	50	50	100	100		50	50	0	100	0		0	0	0	30
Manning's n:	0.016	0.016	0.016	0.025	0.025		0.016	0.016	0.016	0.022	0.016		0.016	0.016	0.016	0.016
Geometric Slope, So (ft/ft):	0.009	0.007	0.009	0.005	0.007		0.006	0.012	0.006	0.014	0.009		0.005	0.008	0.011	0.006
Flowrate, Q (cfs):	1	4	4	4	2		5	4	4	2	1		27	23	39	7
							Output Variables									
Normal Depth, Yn (ft):	0.11	0.19	0.21	0.13	0.09		0.21	0.20	0.23	0.10	0.11		0.20	0.16	0.20	0.28
Area of Flow, A, (sf):	0.64	2.29	1.78	4.52	2.45		2.87	1.60	2.07	1.59	0.64		12.03	9.48	11.83	3.25
Velocity, V (fps):	1.56	1.75	2.25	0.89	0.82		1.74	2.50	1.93	1.26	1.56		2.25	2.43	3.30	2.15
Wetted Perimeter, p (ft):	8.66	21.61	13.89	46.97	37.15		24.14	13.21	14.93	25.71	8.66		60.40	60.32	60.39	20.00
Hydraulic Radius, Rh (ft):	0.07	0.11	0.13	0.10	0.07		0.12	0.12	0.14	0.06	0.07		0.20	0.16	0.20	0.16
Free SurfaceTop Width, T (ft):	8.55	21.61	13.67	46.97	37.15		24.13	13.00	14.69	25.71	8.55		60.00	60.00	60.00	19.99
Centroid, Y*, (ft):	0.05	0.07	0.08	0.06	0.04		0.08	0.08	0.09	0.04	0.05		0.10	0.08	0.10	0.11

Curve Number Calculations
Animal Foundation and Regional Animal Shelter and Campus

Sub-Basin: ONXM
Total Area: 0.55 Acres

Land Use/Cover type	Area [A] (acres)	Soil Type	Percentage, P [P]	Curve Number [CN]	Product (CN x P)
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)	0.50	C	90%	98	88.2
Natural desert landscaping (pervious areas only)	0.06	C	10%	85	8.5
Total:	0.55	------	100%	----------	96.7

Curve Number Calculations
Animal Foundation and Regional Animal Shelter and Campus

Sub-Basin: ONX1
Total Area: 2.03 Acres

Land Use/Cover type	Area [A] (acres)	Soil Type	Percentage, P [P]	Curve Number [CN]	Product (CN x P)
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)	1.22	C	60%	98	58.8
Newly graded area (pervious area only, no vegetation)	0.81	C	40%	91	36.4
Total:	2.03	----	100%	----------	95.2

Curve Number Calculations
Animal Foundation and Regional Animal Shelter and Campus

Sub-Basin: ONX2
Total Area: 2.62 Acres

Land Use/Cover type	Area [A] (acres)	Soil Type	Percentage, P [P]	Curve Number [CN]	Product (CN x P)
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)	1.57	C	60%	98	58.8
Newly graded area (pervious area only, no vegetation)	1.05	C	40%	91	36.4
Total:	2.62	------	100%	----------	95.2

Curve Number Calculations
Animal Foundation and Regional Animal Shelter and Campus

Sub-Basin: ONX3
Total Area: 3.04 Acres

Land Use/Cover type	Area [A] (acres)	Soil Type	Percentage, P [P]	Curve Number [CN]	Product (CN x P)
Newly graded area (pervious area only, no vegetation)	2.74	C	90%	91	81.9
Desert Shrub: Poor Condition	0.30	C	10%	85	8.5
Total:	3.04	------	100%	----------	90.4

Curve Number Calculations
Animal Foundation and Regional Animal Shelter and Campus

Sub-Basin: ONX4
Total Area: 1.17 Acres

Land Use/Cover type	Area [A] (acres)	Soil Type	Percentage, P [P]	Curve Number [CN]	Product (CN x P)
Newly graded area (pervious area only, no vegetation)	1.17	C	100%	91	91.0
Total:	1.17	------	100%	----------	91.0

Curve Number Calculations
Animal Foundation and Regional Animal Shelter and Campus

Sub-Basin: OND1
Total Area: 3.01 Acres

Land Use/Cover type	Area [A] (acres)	Soil Type	Percentage, P [P]	Curve Number [CN]	Product (CN x P)
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)	3.01	C	100%	98	98.0
Total:	3.01	------	100%	----------	98.0

Curve Number Calculations
Animal Foundation and Regional Animal Shelter and Campus

Sub-Basin: OND2
Total Area: 2.25 Acres

Land Use/Cover type	Area [A] (acres)	Soil Type	Percentage, P [P]	Curve Number [CN]	Product (CN x P)
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)	2.25	C	100%	98	98.0
Total:	2.25	------	100%	----------	98.0

Curve Number Calculations
Animal Foundation and Regional Animal Shelter and Campus

Sub-Basin: OND3
Total Area: 2.41 Acres

Land Use/Cover type	Area [A] (acres)	Soil Type	Percentage, P [P]	Curve Number [CN]	Product (CN x P)
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)	2.41	C	100%	98	98.0
Total:	2.41	------	100%	----------	98.0

Curve Number Calculations
Animal Foundation and Regional Animal Shelter and Campus

Sub-Basin: OND4
Total Area: 0.99 Acres

Land Use/Cover type	Area [A] (acres)	Soil Type	Percentage, P [P]	Curve Number [CN]	Product (CN x P)
Newly graded area (pervious area only, no vegetation)	0.99	C	100%	91	91.0
Total:	0.99	----	100%	----	91.0

Curve Number Calculations
Animal Foundation and Regional Animal Shelter and Campus

Sub-Basin: OND5
Total Area: 0.20 Acres

Land Use/Cover type	Area [A] (acres)	Soil Type	Percentage, P [P]	Curve Number [CN]	Product (CN x P)
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)	0.20	C	100%	98	98.0
Total:	0.20	----	100%	----	98.0

Curve Number Calculations
Animal Foundation and Regional Animal Shelter and Campus

Sub-Basin: OFD1
Total Area: 20.73 Acres

Land Use/Cover type	Area [A] (acres)	Soil Type	Percentage, P [P]	Curve Number [CN]	Product (CN x P)
Residential: Apartments/Condos	20.73	C	100%	91	91.0
Total:	20.73	----	100%	----	91.0

Curve Number Calculations
Animal Foundation and Regional Animal Shelter and Campus

Sub-Basin: OFD2
Total Area: 21.64 Acres

Land Use/Cover type	Area [A] (acres)	Soil Type	Percentage, P [P]	Curve Number [CN]	Product (CN x P)
Commercial and business	6.49	C	30%	94	28.2
Residential: Townhouses / 6,000 sf lots or less	15.15	C	70%	90	63.0
Total:	21.64	----	100%	----	91.2

Curve Number Calculations
Animal Foundation and Regional Animal Shelter and Campus

Sub-Basin: **OFD3**
Total Area: 33.87 Acres

Land Use/Cover type	Area [A] (acres)	Soil Type	Percentage, P [P]	Curve Number [CN]	Product {CN x P}
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)	16.94	C	50%	98	49.0
Open Space: Poor Condition	8.47	C	25%	86	21.5
Commercial and business	8.47	C	25%	94	23.5
Total:	33.87	-------	100%	----------	94.0

Curve Number Calculations
Animal Foundation and Regional Animal Shelter and Campus

Sub-Basin: **OFD4**
Total Area: 4.39 Acres

Land Use/Cover type	Area [A] (acres)	Soil Type	Percentage, P [P]	Curve Number [CN]	Product {CN x P}
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)	4.39	C	100%	98	98.0
Total:	4.39	-------	100%	----------	98.0

EXISTING CONDITION HEC-1 ANALYSIS

```
*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*            MAY  1991                  *
*         VERSION 4.0.1E                *
*     Lahey F77L-EM/32 version 5.01     *
*       Dodson & Associates, Inc.       *
*  RUN DATE  02/23/04  TIME  02:38:40   *
*                                       *
*****************************************
```


```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*          (916) 551-1748               *
*                                       *
*****************************************
```


```
X     X  XXXXXXX   XXXXX           X
X     X  X        X     X         XX
X     X  X        X                X
XXXXXXX  XXXX     X        XXXXX   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 -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

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

    1     ID        ANIMAL FOUNDATION AND REGIONAL ANIMAL SHELTER AND CAMPUS
    2     ID        COMMERCIAL DEVELOPMENT
    3     ID        EXISTING CONDITION
    4     ID
    5     ID
    6     ID
    7     ID        LOCHSA JOB # 7105.15
    8     ID
    9     ID        INPUT FILE NAME: 7105X.DAT
   10     ID
   11     ID
   12     ID
   13     ID        ****************************************
   14     ID             McCARRAN AIRPORT RAINFALL AREA
   15     ID             10 & 100 YEAR - 6 HOUR STORM EVENT
   16     ID             PRECIPITATION:
   17     ID                    10-YEAR: 1.58 INCHES
   18     ID                    100-YEAR: 2.77 INCHES
   19     ID        ****************************************
   20     ID
          *DIAGRAM
   21     IT       5                    300
   22     IO       5       0
   23     IN       5
   24     JR     PREC   .5704     1.0

   25     KK     OFD2
   26     KM     OFFSITE BASIN OFD2
   27     PB     2.77
   28     PC      0.0      .02     .057      .07     .087     .108     .124      .13      .13      .13
   29     PC      .13      .13      .13     .133      .14     .142     .148     .158     .172     .181
   30     PC      .19     .197     .199       .2     .201     .204     .214     .229     .241     .249
   31     PC     .251     .256      .27     .278     .281     .283     .295     .322     .352     .409
   32     PC     .499      .59      .71     .744     .781     .812     .819     .835     .851     .856
   33     PC      .86     .868     .876     .888      .91     .926     .937      .95      .97     .976
   34     PC     .982     .985     .987     .989      .99     .993     .993     .994     .995     .998
   35     PC     .998     .999      1.0
   36     BA   .03381
   37     LS       0    91.2
   38     UD    .216

   39     KK     OFD3
   40     KM     OFFSITE BASIN OFD3
   41     BA   .05292
   42     LS       0    94.0
   43     UD    .213

   44     KK      CM1
   45     KM   COMBINE OFD2 AND OFD3
   46     HC       2
```

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

  47      KK    HARR
  48      KM    FLOW SPLIT AT THE INTERSECTION OF HARRIS STREET AND
  49      KM    MANNING AVENUE AS DETERMINED IN FLOW SPLIT ANALYSIS SPREADSHEET
  50      DT    MANN
  51      DI       0      59     121
  52      DQ       0      17      38

  53      KK    OFD4
  54      KM    OFFSITE BASIN OFD4
  55      BA  .00686
  56      LS       0    98.0
  57      UD    .108

  58      KK    ONX1
  59      KM    ONSITE BASIN ONX1
  60      BA  .00317
  61      LS       0    95.2
  62      UD    .086

  63      KK     CM2
  64      KM    COMBINE ONX1 WITH RUNOFF CONVEYED IN HARRIS TOWARD MOJAVE
  65      HC       3

  66      KK    ONXM
  67      KM    ONSITE BASIN ONXM GENERATING RUNOFF TOWARD MOJAVE ROAD
  68      BA  .00086
  69      LS       0    96.7
  70      UD    .050

  71      KK   RMANN
  72      KM    FLOW SPLIT TO MANNING
  73      DR    MANN

  74      KK    OFD1
  75      KM    OFFSITE BASIN OFD1
  76      BA  .03239
  77      LS       0    91.0
  78      UD    .189

  79      KK     CM3
  80      KM    COMBINE OFD1 AND FLOW SPLIT INTO MANNING
  81      HC       2

  82      KK    ONX3
  83      KM    ONSITE BASIN ONX3
  84      BA  .00475
  85      LS       0    90.4
  86      UD    .157
```

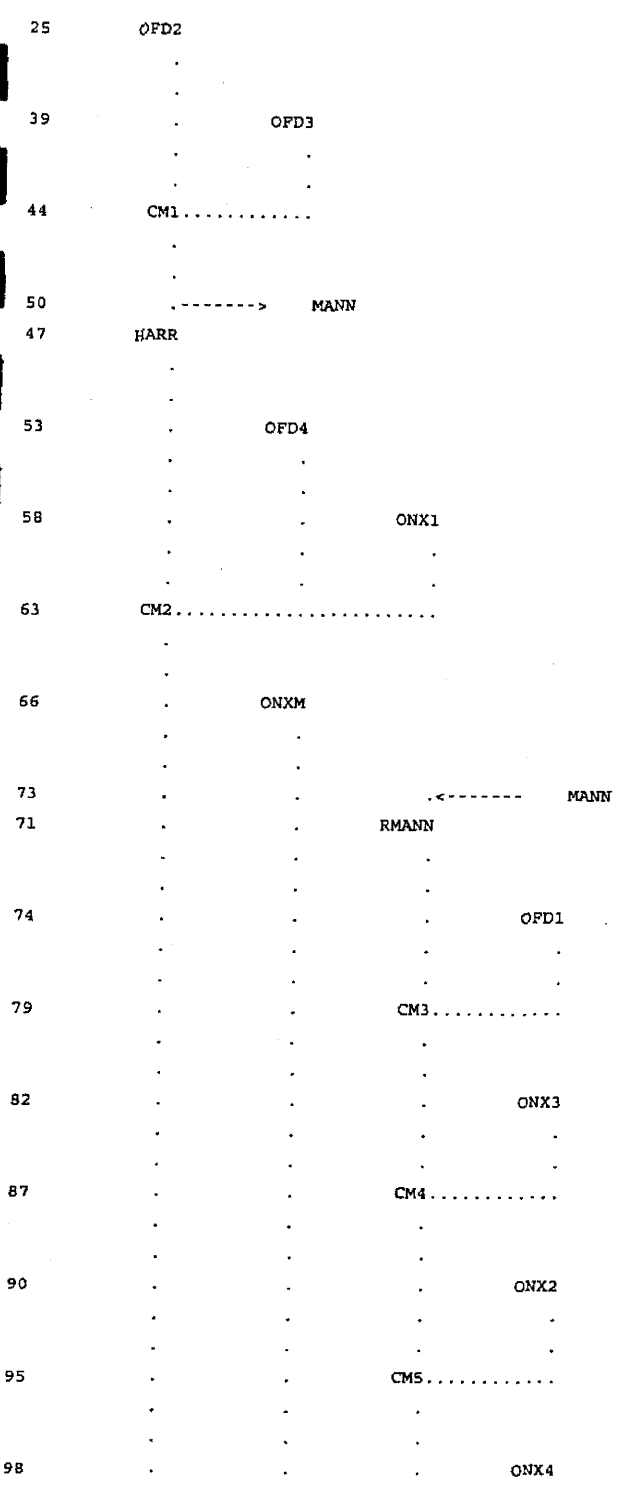
```
LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  87      KK     CM4
  88      KM    COMBINE CM3 AND ONX3
  89      HC       2

  90      KK     ONX2
  91      KM     ONSITE BASIN ONX2
  92      BA   .00409
  93      LS       0     95.2
  94      UD     .076

  95      KK     CM5
  96      KM    COMBINE CM4 AND ONX2 INTO MOJAVE
  97      HC       2

  98      KK     ONX4
  99      KM     ONSITE BASIN ONX4
 100      BA   .00183
 101      LS       0     91.0
 102      UD     .062
 103      ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT LINE NO.

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

(.) CONNECTOR (<----) RETURN OF DIVERTED OR PUMPED FLOW



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*            MAY  1991                  *
*         VERSION 4.0.1E                *
*     Lahey F77L-EM/32 version 5.01     *
*       Dodson & Associates, Inc.       *
*  RUN DATE  02/23/04  TIME  02:38:40   *
*                                       *
*****************************************
```


```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*          (916) 551-1748               *
*                                       *
*****************************************
```


ANIMAL FOUNDATION AND REGIONAL ANIMAL SHELTER AND CAMPUS
COMMERCIAL DEVELOPMENT
EXISTING CONDITION

LOCHSA JOB # 7105.15

INPUT FILE NAME: 7105X.DAT

```
*****************************************
     McCARRAN AIRPORT RAINFALL AREA
     10 & 100 YEAR - 6 HOUR STORM EVENT
     PRECIPITATION:
           10-YEAR: 1.58 INCHES
           100-YEAR: 2.77 INCHES
*****************************************
```

22 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 ORDINATES
NDDATE	2	0	ENDING DATE
NDTIME		0055	ENDING TIME
ICENT		19	CENTURY MARK

COMPUTATION INTERVAL 0.08 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

0.57 1.00

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS

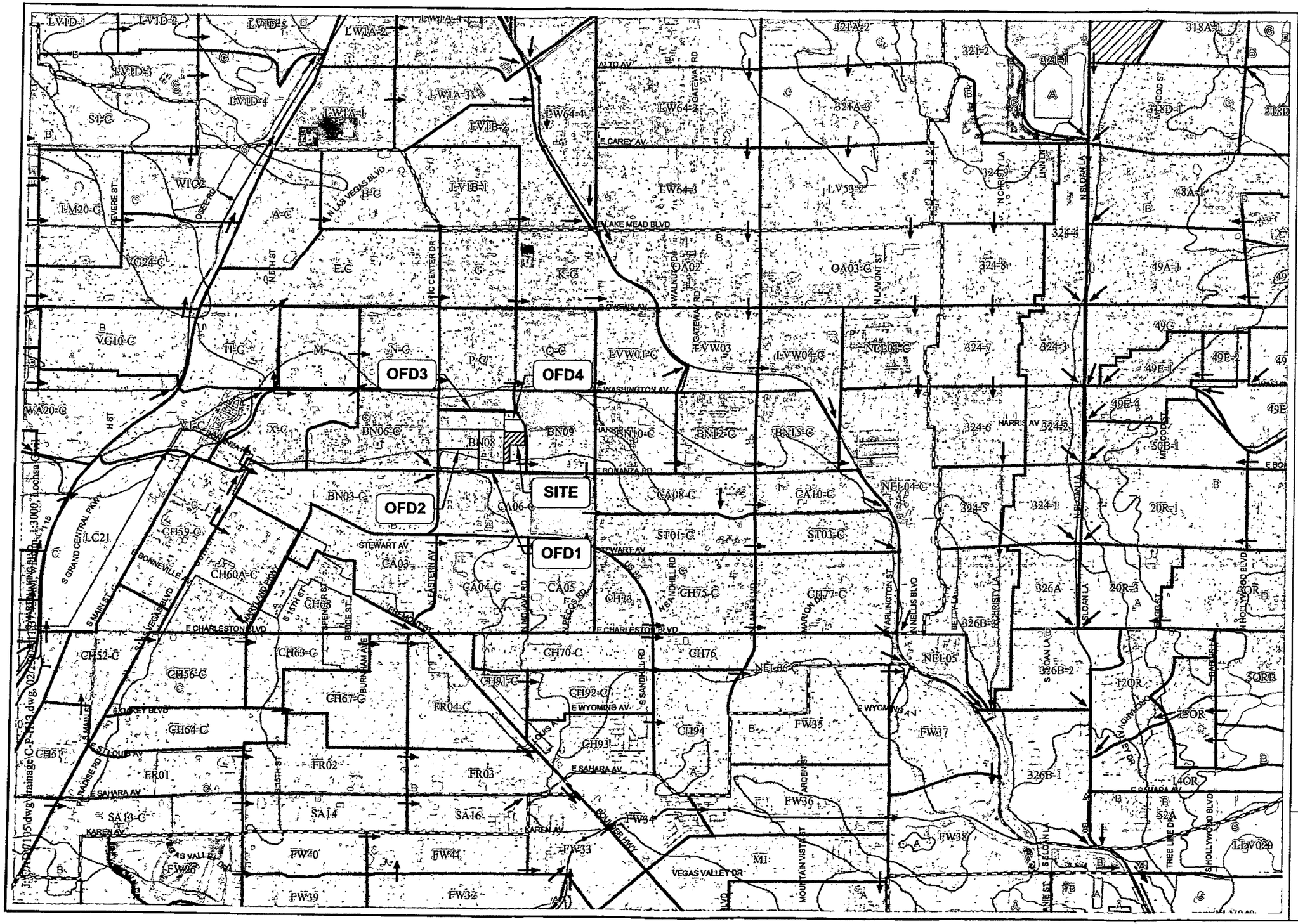
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES

TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO PRECIPITATION RATIO 1	RATIO 2
					0.57	1.00
YDROGRAPH AT	OFD2	0.03	1	FLOW	20.	45.
				TIME	3.67	3.67
HYDROGRAPH AT	OFD3	0.05	1	FLOW	38.	77.
				TIME	3.67	3.58
2 COMBINED AT	CM1	0.09	1	FLOW	59.	121.
				TIME	3.67	3.67
DIVERSION TO	MANN	0.09	1	FLOW	17.	38.
				TIME	3.67	3.67
HYDROGRAPH AT	HARR	0.09	1	FLOW	42.	83.
				TIME	3.67	3.67
YDROGRAPH AT	OFD4	0.01	1	FLOW	7.	13.
				TIME	3.50	3.50
YDROGRAPH AT	ONX1	0.00	1	FLOW	3.	6.
				TIME	3.50	3.50
3 COMBINED AT	CM2	0.10	1	FLOW	51.	101.
				TIME	3.58	3.58
YDROGRAPH AT	ONXM	0.00	1	FLOW	1.	2.
				TIME	3.50	3.50
YDROGRAPH AT	RMANN	0.00	1	FLOW	17.	38.
				TIME	3.67	3.67
HYDROGRAPH AT	OFD1	0.03	1	FLOW	20.	45.
				TIME	3.58	3.58
2 COMBINED AT	CM3	0.03	1	FLOW	37.	83.
				TIME	3.58	3.58
HYDROGRAPH AT	ONX3	0.00	1	FLOW	3.	7.
				TIME	3.58	3.58
2 COMBINED AT	CM4	0.04	1	FLOW	40.	90.
				TIME	3.58	3.58
YDROGRAPH AT	ONX2	0.00	1	FLOW	4.	8.
				TIME	3.50	3.50
2 COMBINED AT	CM5	0.04	1	FLOW	43.	97.
				TIME	3.58	3.58
YDROGRAPH AT	ONX4	0.00	1	FLOW	2.	3.

TIME 3.50 3.50

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



REGIONAL FLOOD CONTROL DISTRICT

2002 LAS VEGAS VALLEY FLOOD CONTROL MASTER PLAN UPDATE

LEGEND

- Ultimate Development Boundary
- Watershed Boundary
- Subarea Boundary
- Flow Arrows

Flood Control Facilities

- Existing Facilities
- Proposed Facilities

Type Hydrologic Soil Groups

- A Low Runoff Potential
- B Moderately Low Runoff Potential
- C Moderately High Runoff Potential
- D High Runoff Potential

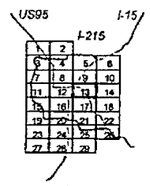
Typical Land Use

1. Undeveloped Land, Open Desert
2. Parks, Golf Courses
3. Rural
4. Low Density Residential
5. Medium Density Residential
6. High Density Residential
7. Public Facility, Multi Family
8. Commercial, Office, Retail, Casino
9. Light Industrial
10. Heavy Industrial
11. Schools
12. Lakes

N W E S

0 1,000 2,000 3,000 4,000 5,000 Feet

SCALE: 1 inch = 3000 feet

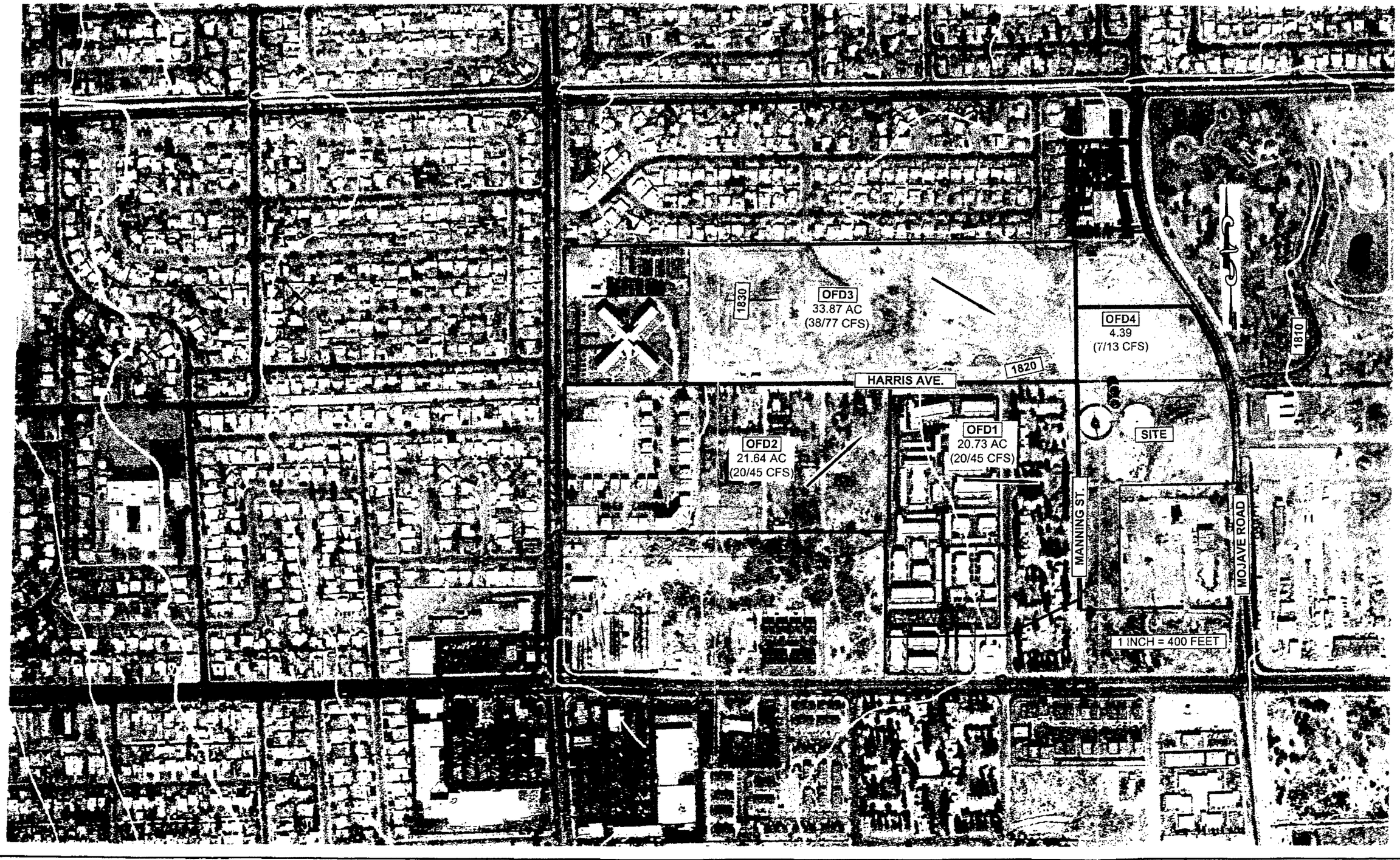


HYDROLOGIC SUBAREAS, LAND USE & SOILS

FIGURE H-13

PBS&J

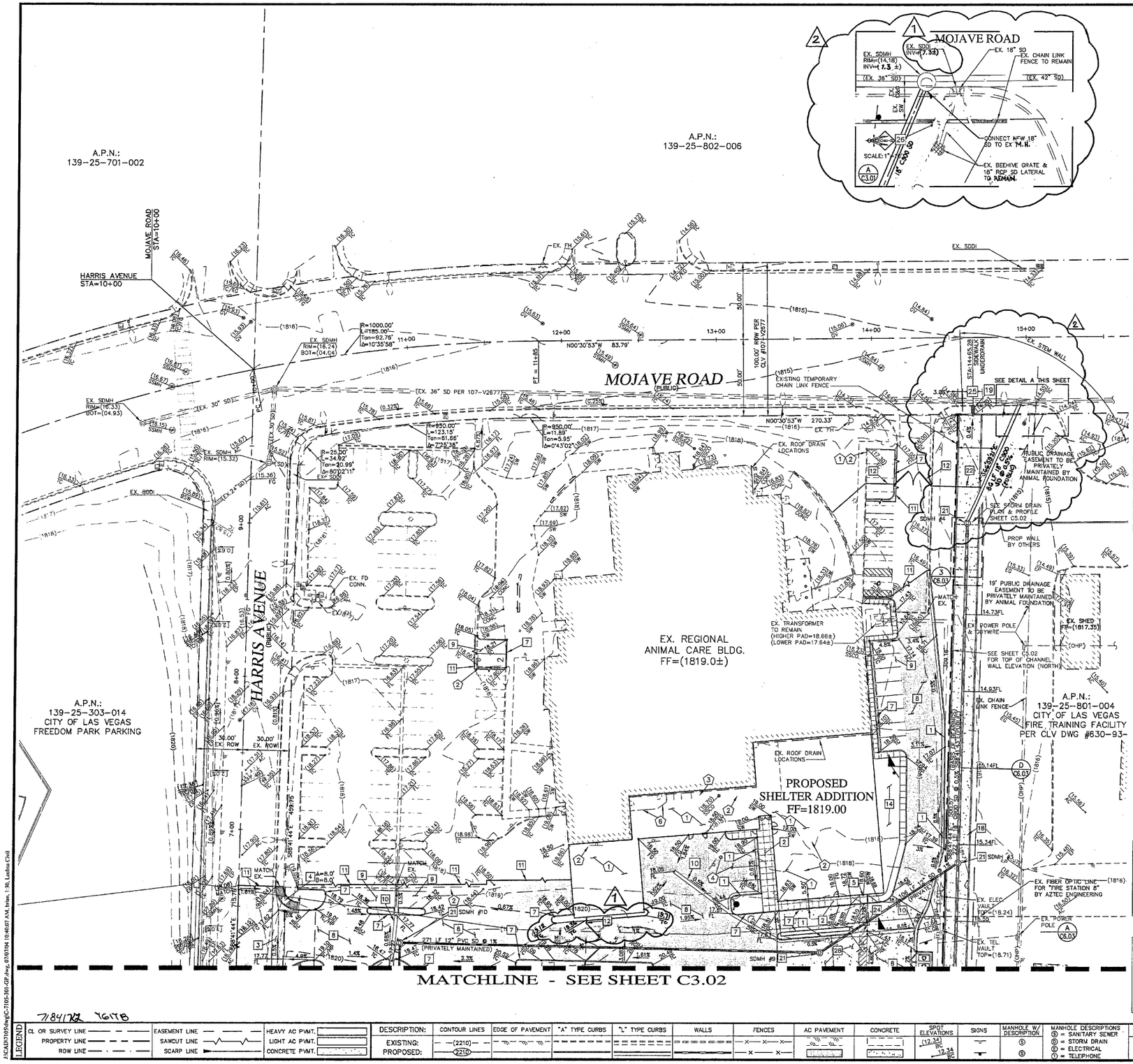
C:\CAD\07105\dwg\drainage\C-P-H13.dwg, 02/22/2008 1:30:00, Lochsa Gill



OFFSITE BASIN DRAINAGE MAP
REGIONAL ANIMAL CAMPUS

FIGURE 1

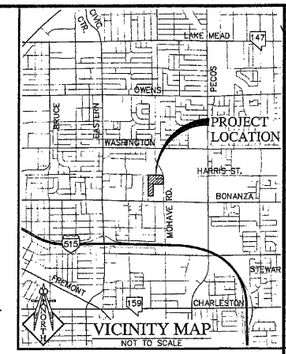
LOCHSA ENGINEERING



CONSTRUCTION NOTES:

-- ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH "CLARK COUNTY AREA UNIFORM STANDARD DRAWINGS (C.C.A.U.S.D.)" LATEST EDITION AND/OR REGULATING ENTITY HAVING JURISDICTION.
-- NOT ALL NOTES USED ON THIS SHEET --

1. CONSTRUCT "L" TYPE CURB PER DETAIL 1 ON C6.01.
2. CONSTRUCT CONC. SIDEWALK PER DETAIL 2 ON C6.01. SEE PLAN FOR WIDTH.
3. CONSTRUCT 8' WIDE CONC. CROSS GUTTER PER DETAIL 3 ON C6.01.
4. CONSTRUCT CASE I SIDEWALK RAMP PER C.C.A.U.S.D. No. 235.
5. CONSTRUCT CONC. ON-SITE RAMP 'A' PER DETAIL 4 ON C6.01.
6. INSTALL 18"x18" CATCH BASIN PER DETAIL 6 SHEET C6.03 (TO BE PRIVATELY MAINTAINED). CONNECT PER DETAIL 3 SHEET C6.04
7. CONSTRUCT ON-SITE "A" TYPE CURB PER DETAIL 5 ON C6.01.
8. CONSTRUCT "HEAVY" AC PAVEMENT PER DETAIL 6 ON C6.01.
9. CONSTRUCT "LIGHT" AC PAVEMENT PER DETAIL 6 ON C6.01.
10. CONSTRUCT 2' CONC. VALLEY GUTTER PER DETAIL 7 ON C6.01.
11. SAWCUT AND MATCH EX. GRADES.
12. REFER TO ARCHITECTURAL PLANS BY OTHERS FOR TRASH ENCLOSURE, FENCE & GATE DETAILS.
13. CONST. 8' HIGH SCREEN WALL PER DETAIL 9 ON C6.01.
14. REFER TO LANDSCAPING PLANS BY OTHERS FOR ALL LANDSCAPE AND IRRIGATION RELATED IMPROVEMENTS.
15. CONST 30' WIDE WALL OPENING PER DETAIL 1 SHEET C6.02. "FENCE TO BE PRIVATELY MAINTAINED BY ANIMAL FOUNDATION.
16. INSTALL MODIFIED TYPE 'CM' DROP INLET PER DETAIL 2 SHEET C6.02
17. CONST ONSITE DETENTION POND AND INSTALL STORM DRAIN PER DETAIL 11 ON SHEET C6.01
18. CONST 14' WIDE CONCRETE DRAINAGE CHANNEL PER DETAIL 8 SHEET C6.01
19. INSTALL SIDEWALK UNDERDRAIN PER C.C.A.U.S.D. 236
20. CONST DIRT SWALE @ 1% MIN.
21. INSTALL STANDARD 48" DIA. SDMH
22. CONSTRUCT 20' WIDE WALL OPENING PER DETAIL 1 SHEET C6.02. FENCE TO BE PRIVATELY MAINTAINED BY ANIMAL FOUNDATION.
23. INSTALL STANDARD TYPE III MANHOLE PER CCAUSD #406
24. INSTALL 40" WIDE V.G. PER DETAIL 4 SHEET C6.04
25. EX. STEM WALL TO BE REMOVED
26. EX. STEM WALL TO BE REMOVED & REPLACED PER DETAIL 5 SHEET C6.04
27. INSTALL JENSEN "68-U" BOX PER DETAIL 4 SHEET C6.03
28. CONSTRUCT CONC. PVMT. PER DETAIL 2 SHEET C6.03
29. INSTALL BUMPER BLOCK PER DETAIL 12 SHEET C6.01



DEMOLITION NOTES:

-- NOT ALL NOTES USED ON THIS SHEET --

1. REMOVE EX. AC PAVING.
2. REMOVE EX. CURB.
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5. REMOVE EX. SIGNS. REFER TO PLANS BY OTHERS FOR SALVAGE PARTICULARS.

GRADING NOTES:

1. SLOPES 4:1 OR STEEPER AND FINE-GRAINED MATERIALS THAT HAVE BEEN DISTURBED (SANDY AND SILTY MATERIALS) SHOULD BE PROTECTED WITH BURLAP OR OTHER EROSION CONTROL FABRIC/MATERIAL, UNLESS OTHERWISE SPECIFIED BY LANDSCAPE DRAWINGS AND SPECIFICATIONS OR THE SOILS REPORT.

2. CONTRACTOR SHALL DETERMINE HIS OWN FOOTING OR BASEMENT EXCAVATION QUANTITIES, EVEN THOUGH SHOWN ON ROUGH GRADING PLANS. ADDITIONALLY, STRUCTURE BACKFILL COST'S SHOULD BE INCLUDED IN THE COST OF THE STRUCTURE, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.

3. CONTRACTOR SHALL NOTIFY LOCHSA ENGINEERING WITHIN 24 HOURS OF OMISSIONS AND ERRORS DISCOVERED ON PLANS. LOCHSA ENGINEERING WILL NOT BE RESPONSIBLE FOR ANY "CORRECTIVE" WORK DONE BY OTHERS.

4. CONTRACTOR TO ENSURE POSITIVE DRAINAGE. NO PONDING ALLOWED. CONTRACTOR TO FOLLOW RECOMMENDATIONS AS OUTLINED IN THE PROJECT GEOTECHNICAL REPORT, INCLUDING BUT NOT LIMITED TO EXCAVATION, GRADING AND COMPACTION. REFER TO THE REPORT PREPARED BY: Terracon, Project No.: 64035184, Titled: Animal Shelter Expansion SWC Mojave Road and Harris Avenue, Dated: November 26, 2003.

5. GRADES SHOWN IN [BRACKETS] ARE FUTURE GRADES PROPOSED FOR CLV FIRE TRAINING FACILITY BY AZTEC ENGINEERING.

NOTE:

LOCHSA ENGINEERING ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS AND ELEVATIONS. THE UTILITIES SHOWN ON THIS PLAN ARE FROM THE BEST AVAILABLE INFORMATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES, INCLUDING BUT NOT LIMITED TO, THE WATER, FIRE, SANITARY SEWER, STORM SEWER, TELEPHONE, POWER, GAS, AND IRRIGATION LINES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. IF CONFLICT EXISTS IN THE FIELD, THE CONTRACTOR IS TO NOTIFY THE PROJECT ARCHITECT, OWNER'S REPRESENTATIVE AND THE PROJECT ENGINEER IMMEDIATELY.

A.P.N.:

139-25-405-008

BASIS OF BEARINGS:

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE SOUTHERLY LINE OF LOT 1 AS SHOWN BY THAT MAP ON FILE IN FILE 89 OF PARCEL MAPS, PAGE 53 AND THE SOUTHERLY LINE OF LOT 1 AS SHOWN BY THAT MAP ON FILE IN FILE 100 OF PARCEL MAPS, PAGE 68 IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA.

SAID LINE BEARS SOUTH 88°41'44" EAST.

BENCHMARK:

CITY OF LAS VEGAS BENCHMARK No. 2LV01 2554, BEING A RIVET AND PLATE IN TOP OF CURB AT THE NORTHEAST CORNER OF BONANZA ROAD AND MOJAVE ROAD.

ELEV: 1812.97 FEET, 552.593 METERS (NAVD '88 DATUM)
(NOTE: add 1800.00 feet to all proposed elevations, inverts and grades shown)

NORTH

GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 inch = 30 ft.

EARTHWORK QUANTITIES:

CUBIC YARDS OF CUT:	5841 CY
CUBIC YARDS OF FILL:	5957 CY

NOTE: Quantities are appoximate only. Contractor shall verify quantities prior to start of construction.

GRADING PLAN CERTIFICATION

NAME: HENDARD F. MIZE, II PE #10935 DATE: 7-7-4

CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH APPROVED DRAINAGE STUDY FOR THIS SITE ON FILE AT CITY OF LAS VEGAS FOR THIS PROJECT.

Avoid cutting underground utility lines. It's costly.
Call before you Dig
1-800-227-2600

SAFETY ALERT
Call Before You Overhead
1-702-227-2929

REV.:	DATE:	BY:	DESCRIPTION:
1	11/04/04		REVISE CURB AND CORRECTED SD INVERT PER CITY COMMENTS
2	12/16/04		REVISE NUISANCE DRAINAGE POINT OF CONNECTION 12/29/04

TATE SNYDER KIM ARCHITECTS
709 Valle Verde Court Henderson, Nevada 89014 ph. 702. 456. 3000 fax 702. 898. 6208
www.tatesnyderkimarchitects.com

LOCHSA ENGINEERING
5828 SPRING MTN. RD. SUITE 308
LAS VEGAS, NV 89146
PHONE: (702) 365-9312, FAX: (702) 365-9317

DRAWN BY: L.B. | DATE: JUNE 24, 2004
DESIGNED BY: | DATE: JUNE 24, 2004
CHECKED BY: | DATE: JUNE 24, 2004
PROJECT No.: 7105.13 | SCALE: 1"=30'

SEAL

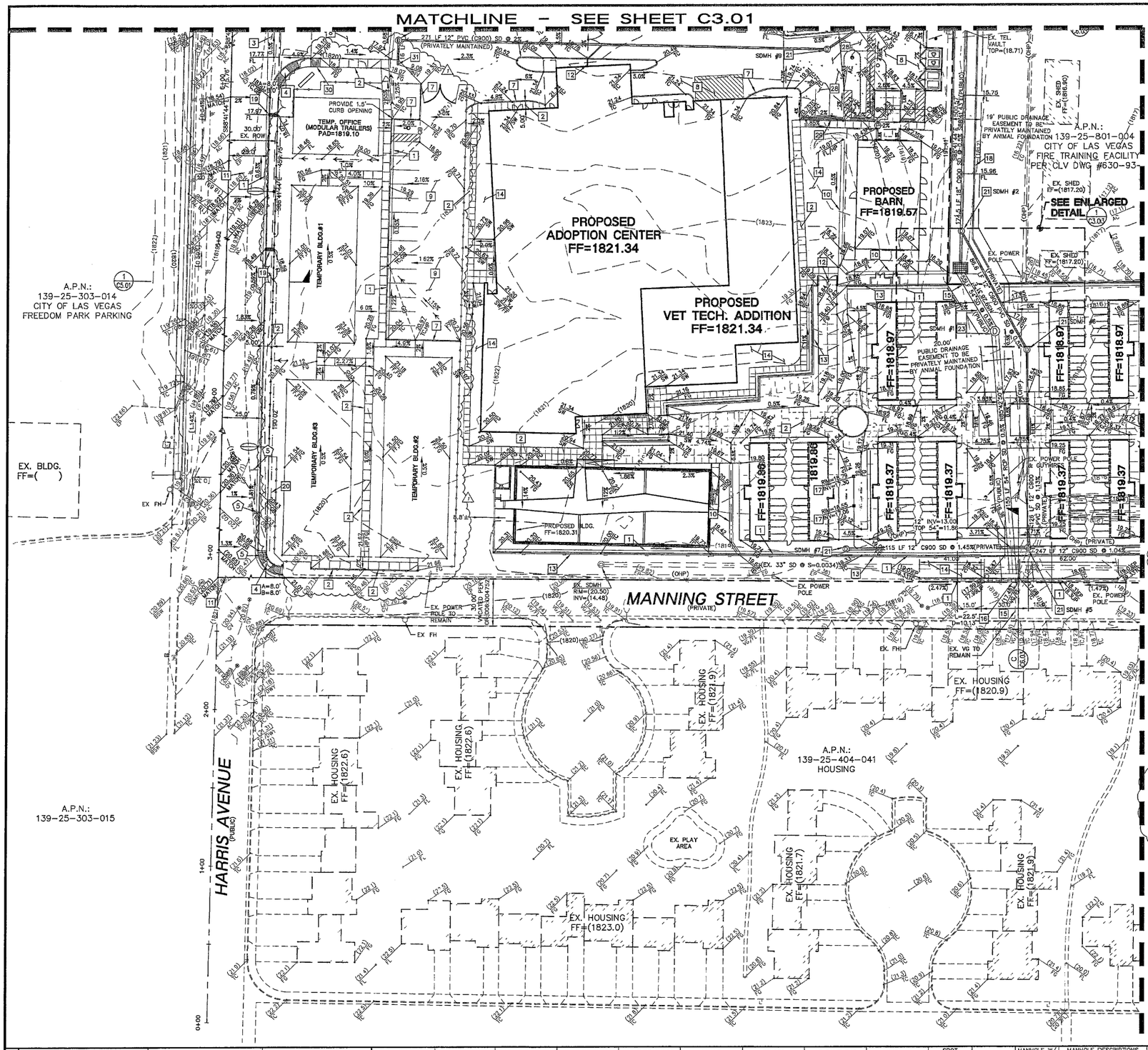
HENDARD F. MIZE, II
EXP 12-31-05
CIVIL
No. 10935
PROFESSIONAL ENGINEER
STATE OF NEVADA
7-7-4

SHEET No.
C3.01
SHEET 7 OF 19
DRAWING No.
10N3264-2

TITLE: THE ANIMAL FOUNDATION REGIONAL ANIMAL CAMPUS
SHEET: GRADING PLAN (SHEET 1 OF 3)

LEGEND

| | | |



CONSTRUCTION NOTES:

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3. CONSTRUCT 8' WIDE CONC. CROSS GUTTER PER DETAIL 3 ON C6.01.
4. CONSTRUCT CASE I SIDEWALK RAMP PER C.C.A.U.S.D. No. 235.
5. CONSTRUCT CONC. ON-SITE RAMP 'A' PER DETAIL 4 ON C6.01
6. INSTALL 18"x18" CATCH BASIN PER DETAIL 6 SHEET C6.03 (TO BE PRIVATELY MAINTAINED). CONNECT PER DETAIL 3 SHEET C6.04
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13. CONST. 8' HIGH SCREEN WALL PER DETAIL 9 ON C6.01.
14. REFER TO LANDSCAPING PLANS BY OTHERS FOR ALL LANDSCAPE AND IRRIGATION RELATED IMPROVEMENTS.
15. CONST 30' WIDE WALL OPENING PER DETAIL 1 SHEET C6.02. FENCE TO BE PRIVATELY MAINTAINED BY ANIMAL FOUNDATION.
16. INSTALL MODIFIED TYPE 'CM' DROP INLET PER DETAIL 2 SHEET C5.02
17. CONST ONSITE DETENTION POND AND INSTALL STORM DRAIN PER DETAIL 11 ON SHEET C6.01
18. CONST 14' WIDE CONCRETE DRAINAGE CHANNEL PER DETAIL 8 SHEET C6.01
19. INSTALL SIDEWALK UNDERDRAIN PER C.C.A.U.S.D. 236
20. CONST DIRT SWALE @ 1% MIN.
21. INSTALL STANDARD 48" DIA. SDMH
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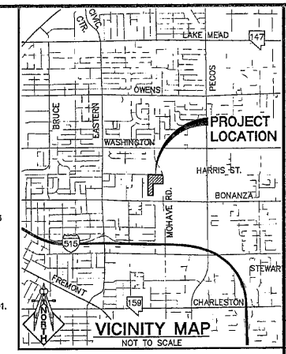
23. INSTALL STANDARD TYPE III MANHOLE PER CCAUSD #406
24. INSTALL 40" WIDE V.G. PER DETAIL 4 SHEET C6.04
25. EX. STEM WALL TO BE REMOVED
26. EX. STEM WALL TO BE REMOVED & REPLACED PER DETAIL 5 SHEET C6.04
27. INSTALL JENSEN "68-U" BOX PER DETAIL 4 SHEET C6.03
28. CONSTRUCT CONC. PVMT. PER DETAIL 2 SHEET C6.03
29. INSTALL BUMPER BLOCK PER DETAIL 12 SHEET C6.01
30. CONSTRUCT ONSITE HANDICAP RAMP, MAX SLOPE= 12:1 (8.33%), L=8.0', H=0.5'.
31. STUB & CAP FOR FUTURE USE.



NORTH

GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 inch = 30 ft

DEMOLITION NOTES:

– NOT ALL NOTES USED ON THIS SHEET –

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NOTE:

THIS SHEET IS FOR USE IN CONSTRUCTION OF THE AREA COVERED BY REVISION #1 ONLY. INFORMATION FOR AREAS OUTSIDE THE LIMITS OF REVISION #1 IS SHOWN ONLY TO ILLUSTRATE RELATIONSHIP OF THESE INTERIM IMPROVEMENTS TO THE REMAINDER OF SITE. CONTRACTOR TO REFERENCE SHEET C3.02 (SHT. 8) FOR AREAS OUTSIDE THE LIMITS OF REVISION #1.

EARTHWORK QUANTITIES:

CUBIC YARDS OF CUT:	5841 CY
CUBIC YARDS OF FILL:	5957 CY

NOTE: Quantities are approximate only. Contractor shall verify quantities prior to start of construction.

GRADING PLAN CERTIFICATION

NAME: KENDARD F. MIZE II PE #10935 DATE: 3-24-05

CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH APPROVED DRAINAGE STUDY FOR THIS SITE ON FILE AT CITY OF LAS VEGAS FOR THIS PROJECT.

Avoid cutting underground utility lines. It's costly.

Call before you Dig
1-800-227-2600

SAFETY ALERT
Call Before You Overhead
1-702-227-2929

BASIS OF BEARINGS:

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE SOUTHERLY LINE OF LOT 1 AS SHOWN BY THAT MAP ON FILE IN FILE 89 OF PARCEL MAPS, PAGE 53 AND THE SOUTHERLY LINE OF LOT 1 AS SHOWN BY THAT MAP ON FILE IN FILE 100 OF PARCEL MAPS, PAGE 68 IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA.

SAID LINE BEARS SOUTH 88°41'44" EAST.

BENCHMARK:

CITY OF LAS VEGAS BENCHMARK No. 2LV01 2554, BEING A RIVET AND PLATE IN TOP OF CURB AT THE NORTHEAST CORNER OF BONANZA ROAD AND MOJAVE ROAD.

ELEV: 1812.97 FEET, 552.593 METERS (NAVD '88 DATUM)
(NOTE: add 1800.00 feet to all proposed elevations, inverts and grades shown)

REV	DATE	BY	DESCRIPTION
3	3/15/05	WW	ADDITION OF INTERIM GRADING SHEET & TEMPORARY STRUCTURES ALONG HARRIS AVE.

TATE SNYDER KIMSEY ARCHITECTS
7709 Valle Verde Court Henderson, Nevada 89014 ph. 702 456 3000 fax 702 898 6009

LOCHSA ENGINEERING
5628 SPRING MTN. RD. SUITE 308
LAS VEGAS, NV 89146
PHONE: (702) 365-9312, FAX: (702) 365-9317

TITLE: THE ANIMAL FOUNDATION REGIONAL ANIMAL CAMPUS

SHEET: INTERIM GRADING PLAN (SHEET 1 OF 1)

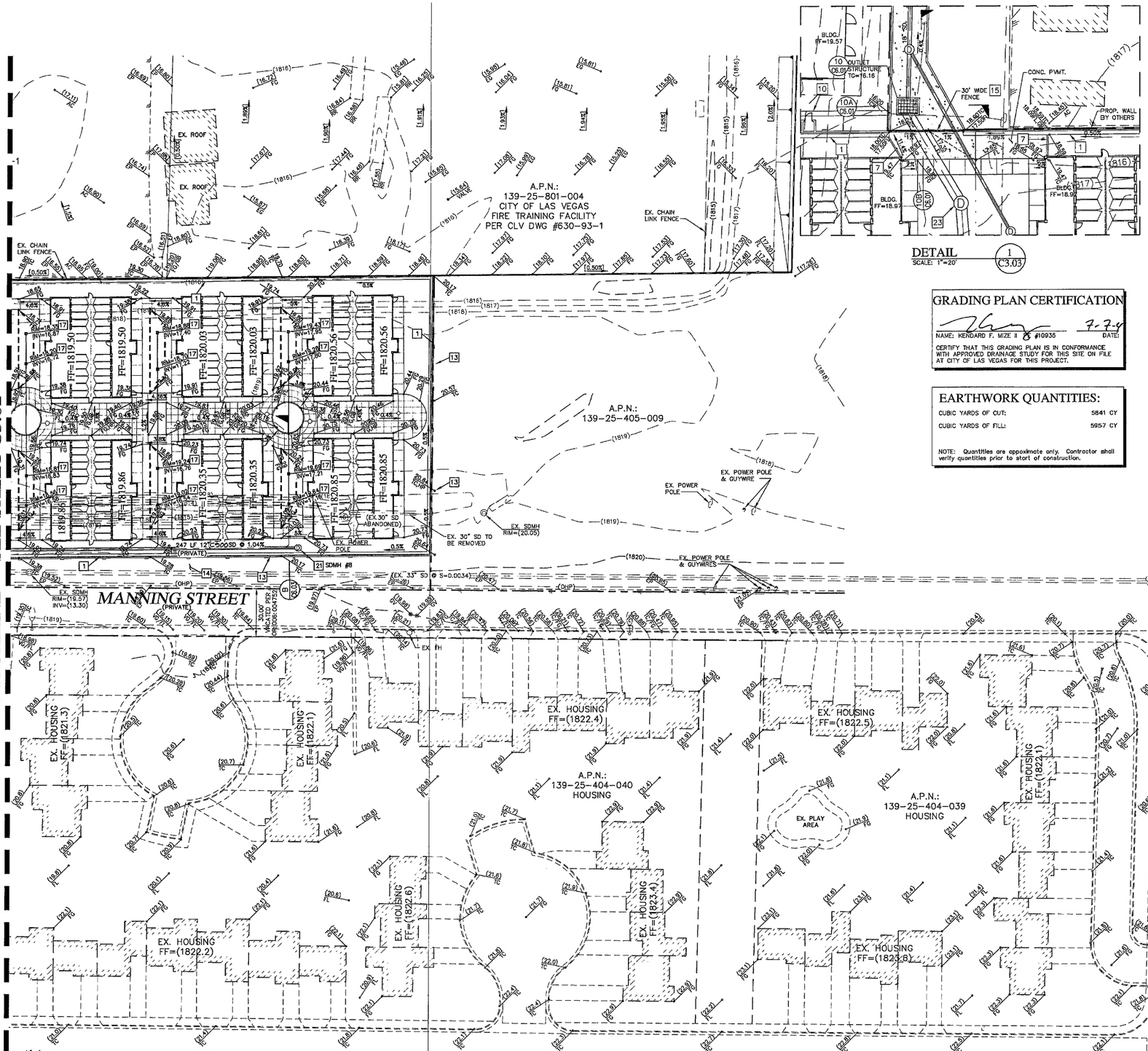
DATE: JUNE 24, 2004
DRAWN BY: L.B.
DESIGNED BY:
CHECKED BY:
SCALE: 1"=30'
PROJECT No: 7105.13

SEAL

SHEET No: C3.02B
SHEET 8B OF 19
DRAWING No: 107V3264-2

LEGEND

CL OR SURVEY LINE	EASEMENT LINE	HEAVY AC PVMT.	DESCRIPTION:	CONTOUR LINES	EDGE OF PAVEMENT	"A" TYPE CURBS	"L" TYPE CURBS	WALLS	FENCES	AC PAVEMENT	CONCRETE	SPOT ELEVATIONS	SIGNS	MANHOLE W/ DESCRIPTION	MANHOLE DESCRIPTIONS	FIRE HYDRANTS	GATE VALVES	REDUCERS	CLEAN OUTS	UTILITY BOX OR VAULT	100w HPS STREETLIGHTS	150w HPS STREETLIGHTS	200w HPS STREETLIGHTS	250w HPS STREETLIGHTS
PROPERTY LINE	SAWCUT LINE	LIGHT AC PVMT.	EXISTING:	(2210)								12.34 BC			(S) = SANITARY SEWER									
ROW LINE	SCARP LINE	CONCRETE PVMT.	PROPOSED:	2210								12.34 BC			(D) = STORM DRAIN (E) = ELECTRICAL (T) = TELEPHONE									



GRADING PLAN CERTIFICATION

NAME: KENDARD F. MIZE II # 10935 DATE: 7-7-4

CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH APPROVED DRAINAGE STUDY FOR THIS SITE ON FILE AT CITY OF LAS VEGAS FOR THIS PROJECT.

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19. INSTALL SIDEWALK UNDERDRAIN PER C.C.A.U.S.D. 236
20. CONST DIRT SWALE @ 1% MIN.
21. INSTALL STANDARD 48" DIA. SDMH
22. CONSTRUCT 20' WIDE WALL OPENING PER DETAIL 1 SHEET C6.02. FENCE TO BE PRIVATELY MAINTAINED BY ANIMAL FOUNDATION.
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24. INSTALL 40" WIDE V.G. PER DETAIL 4 SHEET C6.04
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26. EX. STEM WALL TO BE REMOVED & REPLACED PER DETAIL 5 SHEET C6.04
27. INSTALL JENSEN "68-U" BOX PER DETAIL 4 SHEET C6.03
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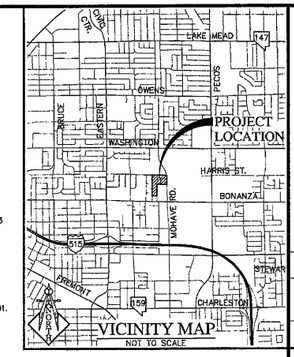

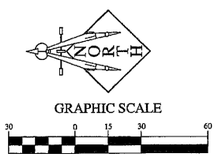

DEMOLITION NOTES:

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2. CONTRACTOR SHALL DETERMINE HIS OWN FOOTING OR BASEMENT EXCAVATION QUANTITIES, EVEN THOUGH SHOWN ON ROUGH GRADING PLANS. ADDITIONALLY, STRUCTURE BACKFILL COSTS SHOULD BE INCLUDED IN THE COST OF THE STRUCTURE, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.

3. CONTRACTOR SHALL NOTIFY LOCHSA ENGINEERING WITHIN 24 HOURS OF OMISSIONS AND ERRORS DISCOVERED ON PLANS. LOCHSA ENGINEERING WILL NOT BE RESPONSIBLE FOR ANY "CORRECTIVE" WORK DONE BY OTHERS.

4. CONTRACTOR TO ENSURE POSITIVE DRAINAGE. NO PONDING ALLOWED. CONTRACTOR TO FOLLOW RECOMMENDATIONS AS OUTLINED IN THE PROJECT GEOTECHNICAL REPORT, INCLUDING BUT NOT LIMITED TO EXCAVATION, GRADING AND COMPACTION. REFER TO THE REPORT PREPARED BY: Terracon, Project No.: 64035184, Titled: Animal Shelter Expansion SWC Mojave Road and Harris Avenue, Dated: November 26, 2003.

5. GRADES SHOWN IN [BRACKETS] ARE FUTURE GRADES PROPOSED FOR CLV FIRE TRAINING FACILITY BY AZTEC ENGINEERING.

NOTE:

LOCHSA ENGINEERING ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS AND ELEVATIONS. THE UTILITIES SHOWN ON THIS PLAN ARE FROM THE BEST AVAILABLE INFORMATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES, INCLUDING BUT NOT LIMITED TO, THE WATER, FIRE, SANITARY SEWER, STORM SEWER, TELEPHONE, POWER, GAS, AND IRRIGATION LINES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. IF CONFLICT EXISTS IN THE FIELD, THE CONTRACTOR IS TO NOTIFY THE PROJECT ARCHITECT, OWNER'S REPRESENTATIVE AND THE PROJECT ENGINEER IMMEDIATELY.

A.P.N.:

139-25-405-008

BASIS OF BEARINGS:

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE SOUTHERLY LINE OF LOT 1 AS SHOWN BY THAT MAP ON FILE IN FILE 89 OF PARCEL MAPS, PAGE 53 AND THE SOUTHERLY LINE OF LOT 1 AS SHOWN BY THAT MAP ON FILE IN FILE 100 OF PARCEL MAPS, PAGE 68 IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA.

SAID LINE BEARS SOUTH 88°41'44" EAST.

BENCHMARK:

CITY OF LAS VEGAS BENCHMARK No. 2LV01 25S4, BEING A RIVET AND PLATE IN TOP OF CURB AT THE NORTHEAST CORNER OF BONANZA ROAD AND MOJAVE ROAD.

ELEV: 1812.97 FEET, 552.593 METERS (NAVD '88 DATUM) (NOTE: add 1800.00 feet to all proposed elevations, inverts and grades shown)

Avoid cutting underground utility lines. It's costly.

Call before you Dig 1-800-227-2600

SAFETY ALERT
Call Before You Overhead
1-702-227-2929

REV.:	DATE:	BY:	DESCRIPTION:

TATE SNYDER KIM ARCHITECTS
709 Valle Verde Court Henderson, Nevada 89014 ph. 702. 456. 3000 fax 702. 898. 6209
LOCHSA ENGINEERING
5828 SPRING MTN. RD. SUITE 308
LAS VEGAS, NV 89146
PHONE: (702) 365-9312, FAX: (702) 365-9317

GRADING PLAN (SHEET 3 OF 3)

THE ANIMAL FOUNDATION REGIONAL ANIMAL CAMPUS

DRAWN BY:	DESIGNED BY:	CHECKED BY:	PROJECT No.:
L.B.			7105.13

DATE: SHEET	DATE:	DATE: TITLE	SCALE:
JUNE 24, 2004	JUNE 24, 2004	JUNE 24, 2004	1"=30'

SEAL

KENDARD F MIZE, II EXP. 12-31-05 CIVIL No. 10935 — REGISTERED PROFESSIONAL ENGINEER — STATE OF NEVADA

SHEET No. C3.03
SHEET 9 OF 19
DRAWING No. 107V3264-2

LEGEND

| | | |

APPENDIX B

ONSITE EXISTING CONDITION HEC-1

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

PROJECT: THE ANIMAL FOUNDATION ADOPTION CENTER

TIME OF CONCENTRATION--LAG TIME | CALCULATED BY: JRM | DATE : 09/21/16

Sub-Basin Data					Initial/Overland Time (T_i)			Travel Time (T_t)					T_c	T_c Check (Urbanized Basins)		Final T_c	T_{lag}	Remarks
DESIG	CN	K	AREA (acres)	AREA (mi^2)	LENGTH (ft)	SLOPE (%)	T_i (min)	LENGTH (ft)	SLOPE (%)	V_1 (fps)	V_2 (fps)	T_t (min)	$T_c=T_i+T_t$ (min)	TOTAL (ft)	T_c (min)	T_c (min)	T_{lag} (hrs)	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
EXISTING CONDITION																		
ON1X	94	0.851	2.9	0.0045	45	2.22	2.3	650	0.61	1.58	2.39	6.3	8.6	695.0	13.9	8.6	0.086	Developed
ON2X	94	0.851	2.8	0.0044	85	1.18	3.9	550	0.73	1.73	2.61	5.1	9.1	635.0	13.5	9.1	0.091	Developed

$T_i=(1.8(1.1-K)L^{(1/2)})/(S^{1/3})$

$T_c=T_i+T_t$

$K=0.0132(CN)-.39$

$T_{lag} = 0.6T_c$

For the travel time (T_t) calculations,
V_1 applies to the first 500 feet of travel distance;
V_2 applies to the remaining travel distance.

Travel Time Velocity Formulas	
Existing	Developed
$V_1 = 14.8*(S/100)^{1/2}$	$V_1 = 20.2*(S/100)^{1/2}$
$V_2 = 29.4*(S/100)^{1/2}$	$V_2 = 30.6*(S/100)^{1/2}$

All basins over one square mile are calculated by the equation $T_{lag}=20Kn(L*L_c/S^{0.5})^{0.33}$ and denoted by shaded gray (See Worksheet).

REFERENCE:

STANDARD FORM 4

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              JUN  1998                *
*            VERSION 4.1                *
*                                       *
*  RUN DATE   21SEP16  TIME  13:56:32   *
*                                       *
*****************************************
```

```
*****************************************
*                                       *
*    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         XX
X     X  X        X                X
XXXXXXX  XXXX     X        XXXXX   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 -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


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

  1           ID   ADVANTAGE CIVIL DESIGN GROUP, LLP
  2           ID   SEPT 21, 2016
  3           ID
  4           ID   THE ANIMAL FOUNDATION ADOPTION CENTER AND CENTRAL PLANT
  5           ID
  6           ID   10-YEAR AND 100-YEAR, 6-HOUR STORM
  7           ID
  8           ID   FILENAME:  N:¥...HYDRO¥HEC1EX.DAT
  9           ID
 10           ID   **EXISTING CONDITION--SDN 3**
 11           ID
              *DIAGRAM
 12           IT       5       0       0     300
 13           IN       5
 14           IO       5
 15           JR    PREC    0.57    1.00

 16           KK    ON1X
 17           KM   BASIN ON1X
 18           BA   .0045
 19           PB    2.77
 20           PC    .000    .020    .057     .07    .087    .108    .124     .13     .13     .13
 21           PC     .13     .13     .13    .133     .14    .142    .148    .158    .172    .181
 22           PC     .19    .197    .199      .2    .201    .204    .214    .229    .241    .249
 23           PC    .251    .256     .27    .278    .281    .283    .295    .322    .352    .409
 24           PC    .499     .59     .71    .744    .781    .812    .819    .835    .851    .856
 25           PC     .86    .868    .876    .888     .91    .926    .937     .95     .97    .976
 26           PC    .982    .985    .987    .989     .99    .993    .993    .994    .995    .998
 27           PC    .998    .999     1.0
 28           LS       0    94.0
 29           UD    .086
              *

 30           KK    ON2X
 31           KM   BASIN ON2X
 32           BA   .0044
 33           LS       0      94
 34           UD   0.091
              *
 35           ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

16 ON1X
.
.
30 . ON2X

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              JUN  1998                *
*            VERSION 4.1                *
*                                       *
*  RUN DATE   21SEP16  TIME  13:56:32   *
*                                       *
*****************************************
```

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

ADVANTAGE CIVIL DESIGN GROUP, LLP
SEPT 21, 2016

THE ANIMAL FOUNDATION ADOPTION CENTER AND CENTRAL PLANT

10-YEAR AND 100-YEAR, 6-HOUR STORM

FILENAME: N:¥...HYDRO¥HEC1EX.DAT

EXISTING CONDITION--SDN 3

```
 14 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 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
             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

					RATIOS APPLIED TO PRECIPITATION	
OPERATION	STATION	AREA	PLAN		RATIO 1	RATIO 2
					.57	1.00
HYDROGRAPH AT						
+	ON1X	.00	1	FLOW	4.	9.
				TIME	3.50	3.50
HYDROGRAPH AT						
+	ON2X	.00	1	FLOW	4.	8.
				TIME	3.50	3.50

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

APPENDIX C

DEVELOPED CONDITION HEC-1

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

PROJECT: THE ANIMAL FOUNDATION ADOPTION CENTER

TIME OF CONCENTRATION--LAG TIME | CALCULATED BY: JRM | DATE : 09/21/16

Sub-Basin Data					Initial/Overland Time (T_i)			Travel Time (T_t)					T_c	T_c Check (Urbanized Basins)		Final T_c	T_{lag}	Remarks
DESIG	CN	K	AREA (acres)	AREA (mi^2)	LENGTH (ft)	SLOPE (%)	T_i (min)	LENGTH (ft)	SLOPE (%)	V_t (fps)	V_2 (fps)	T_t (min)	$T_c=T_i+T_t$ (min)	TOTAL (ft)	T_c (min)	T_c (min)	T_{lag} (hrs)	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
DEVELOPED CONDITION																		
ON1D	94	0.851	2.6	0.0041	35	2.90	1.9	575	0.60	1.56	2.37	5.9	7.7	610.0	13.4	7.7	0.077	Developed
ON2D	94	0.851	2.6	0.0041	80	1.00	4.0	470	0.64	1.62	N/A	4.8	8.9	550.0	13.1	8.9	0.089	Developed
ON3D	94	0.851	0.6	0.0009	50	1.00	3.2	230	0.70	1.69	N/A	2.3	5.4	280.0	11.6	5.4	0.054	Developed
ON4D	94	0.851	0.2	0.0003	20	1.00	2.0	80	1.00	2.02	N/A	0.7	2.7	100.0	10.6	2.7	0.050	Developed

$T_i=(1.8(1.1-K)L^{(1/2)})/(S^{1/3})$

$T_c=T_i+T_t$

$K=0.0132(CN)-.39$

$T_{lag}=0.6T_c$

For the travel time (T_t) calculations,
V_1 applies to the first 500 feet of travel distance;
V_2 applies to the remaining travel distance.

Travel Time Velocity Formulas

Existing	Developed
$V_1 = 14.8*(S/100)^{1/2}$	$V_1 = 20.2*(S/100)^{1/2}$
$V_2 = 29.4*(S/100)^{1/2}$	$V_2 = 30.6*(S/100)^{1/2}$

All basins over one square mile are calculated by the equation $T_{lag}=20Kn(L*L_c/S^{0.5})^{0.33}$ and denoted by shaded gray (See Worksheet).

REFERENCE: **STANDARD FORM 4**

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN  1998               *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   21SEP16  TIME  16:25:39  *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    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        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  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 -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


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

  1           ID   ADVANTAGE CIVIL DESIGN GROUP, LLP
  2           ID   SEPTEMBER 21, 2016
  3           ID
  4           ID   THE ANIMAL FOUNDATION ADOPTION CENTER
  5           ID
  6           ID   10-YEAR AND 100-YEAR, 6-HOUR STORM
  7           ID
  8           ID   FILENAME:  N:¥...HYDRO¥HEC1DEV.DAT
  9           ID
 10           ID   **DEVELOPED CONDITION--SDN 3**
 11           ID
              *DIAGRAM
 12           IT       5       0       0     300
 13           IN       5
 14           IO       5
 15           JR    PREC    0.57    1.00

 16           KK   ON1D
 17           KM   BASIN OFF33D
 18           BA   .0041
 19           PB    2.77
 20           PC    .000    .020    .057     .07    .087    .108    .124     .13     .13     .13
 21           PC     .13     .13     .13    .133     .14    .142    .148    .158    .172    .181
 22           PC     .19    .197    .199      .2    .201    .204    .214    .229    .241    .249
 23           PC    .251    .256     .27    .278    .281    .283    .295    .322    .352    .409
 24           PC    .499     .59     .71    .744    .781    .812    .819    .835    .851    .856
 25           PC     .86    .868    .876    .888     .91    .926    .937     .95     .97    .976
 26           PC    .982    .985    .987    .989     .99    .993    .993    .994    .995    .998
 27           PC    .998    .999     1.0
 28           LS       0    94.0
 29           UD    .077
              *

 30           KK    ON2D
 31           KM   BASIN ON2D
 32           BA   .0041
 33           LS       0    94.0
 34           UD   0.089
```

```
                *

 35             KK    ON3D
 36             KM   BASIN ON3D
 37             BA   .0009
 38             LS       0      94
 39             UD   0.054
                *

 40             KK    ON4D
 41             KM   BASIN ON4D
 42             BA   .0003
 43             LS       0    94.0
 44             UD   0.050
                *
 45             ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    16      ON1D
                .
                .
    30          .        ON2D
                .          .
                .          .
    35          .          .        ON3D
                .          .          .
                .          .          .
    40          .          .          .        ON4D

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*               JUN   1998              *
*            VERSION 4.1                *
*                                       *
*  RUN DATE   21SEP16  TIME  16:25:39   *
*                                       *
*****************************************

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

                ADVANTAGE CIVIL DESIGN GROUP, LLP
                SEPTEMBER 21, 2016

                THE ANIMAL FOUNDATION ADOPTION CENTER

                10-YEAR AND 100-YEAR, 6-HOUR STORM

                FILENAME:  N:¥...HYDRO¥HEC1DEV.DAT

                **DEVELOPED CONDITION--SDN 3**

 14 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 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
               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


                                                                  RATIOS APPLIED TO PRECIPITATION
 OPERATION      STATION     AREA    PLAN                 RATIO 1  RATIO 2
                                                            .57      1.00

 HYDROGRAPH AT
+                ON1D        .00     1   FLOW              4.       8.
                                         TIME            3.50     3.50

 HYDROGRAPH AT
+                ON2D        .00     1   FLOW              4.       8.
                                         TIME            3.50     3.50

 HYDROGRAPH AT
+                ON3D        .00     1   FLOW              1.       2.
                                         TIME            3.50     3.50

 HYDROGRAPH AT
+                ON4D        .00     1   FLOW              0.       1.
                                         TIME            3.50     3.50


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

APPENDIX D

HYDRAULIC CAPACITY CALCULATIONS

APPENDIX B

HYDRAULIC ANALYSIS

* Referenced from Lochsa 2004 analysis

Street Flow Summary

(Future Condition)

10-year, 6-hour Storm

Street	Right of Way Width (ft)	Section	10-Year Flow [Q10] (cfs)	10-year Velocity [v] (fps)	10-year Flow Depth [d] (ft)	10-year Velocity x Depth Product (v x d)	Dry Lane Width (ft) (Within 1/2 ROW)
Harris Avenue	60	1	42	3.15	0.63	1.98	N/A
Harris Avenue	60	2	52	4.43	0.66	2.92	N/A
Mojave Road	100	3	61	2.38	0.81	1.93	11
Manning Street	30	4	17	2.37	0.62	1.47	N/A

Street Flow Summary

(Future Condition)

100-year, 6-hour Storm

Street	Right of Way Width (ft)	Section	100-Year Flow [Q100] (cfs)	100-year Velocity [v] (fps)	100-year Flow Depth [d] (ft)	100-year Velocity x Depth Product (v x d)
Harris Avenue	60	1	83	4.13	0.74	3.06
Harris Avenue	60	2	104	5.45	0.79	4.31
Mojave Road	100	3	138	2.99	1.04	3.11
Manning Street	30	4	38	3.26	0.8	2.61

*Future runoff values are the same as in the Proposed Condition. Sections 1 and 2 in Harris Avenue reflect future full-street construction.

Section 1 - Harris Avenue - Q10 - Future Condition
Worksheet for Irregular Channel

Project Description	
Worksheet	*Section 1 - Harris Avenue - Q10 - Future Condition*
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.008000	ft/ft
Discharge	42.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Metho	Improved Lotter's Method
Closed Channel Weighting Meth	Horton's Method

Results		
Mannings Coefficient	0.015	
Water Surface Elevation	20.00	ft
Elevation Range	19.37 to 20.00	
Flow Area	13.3	ft²
Wetted Perimeter	*61.17*	ft
Top Width	60.00	ft
Actual Depth	0.63	ft
Critical Elevation	20.03	ft
Critical Slope	0.005567	ft/ft
Velocity	3.15	ft/s
Velocity Head	0.15	ft
Specific Energy	20.16	ft
Froude Number	1.18	
Flow Type	Supercritical	

Calculation Messages:
Water elevation exceeds lowest end station by 0.32164922e-1 ft.

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+07.00	0.013
0+07.00	0+53.00	0.016
0+53.00	0+60.00	0.013

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	19.97
0+05.00	19.87
0+05.50	19.87
0+05.50	19.37
0+07.00	19.50
0+07.00	19.54
0+30.00	20.00
0+53.00	19.54

Section 1 - Harris Avenue - Q10 - Future Condition
Worksheet for Irregular Channel

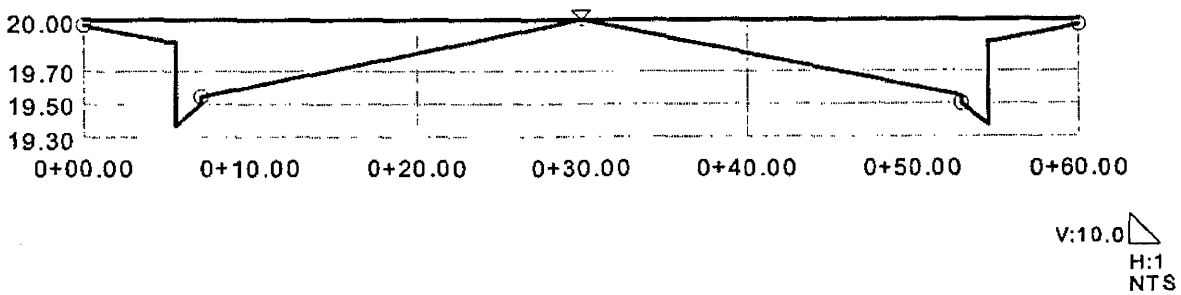
Natural Channel Points	
Station (ft)	Elevation (ft)
0+53.00	19.50
0+54.50	19.37
0+54.50	19.87
0+55.00	19.87
0+60.00	19.97

Notes: *Normal depth calculation using future full street section.

Section 1 - Harris Avenue - Q10 - Future Condition
Cross Section for Irregular Channel

Project Description	
Worksheet	Section 1 - Harris Avenue - Q10 - Future Condition
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.015	
Slope	0.008000	ft/ft
Water Surface Elevation	20.00	ft
Elevation Range	19.37 to 20.00	
Discharge	42.00	cfs



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Section 1 - Harris Avenue - Q100 - Future Condition
Worksheet for Irregular Channel

Project Description	
Worksheet	Section 1 - Harris Avenue - Q100 - Future Condition
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.008000	ft/ft
Discharge	83.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Metho	Improved Lotter's Method
Closed Channel Weighting Meth	Horton's Method

Results		
Mannings Coefficient	0.015	
Water Surface Elevation	20.11	ft
Elevation Range	19.37 to 20.00	
Flow Area	20.1	ft²
Wetted Perimeter	61.39	ft
Top Width	60.00	ft
Actual Depth	0.74	ft
Critical Elevation	20.17	ft
Critical Slope	0.004803	ft/ft
Velocity	4.13	ft/s
Velocity Head	0.27	ft
Specific Energy	20.38	ft
Froude Number	1.26	
Flow Type	Supercritical	

Calculation Messages:
Water elevation exceeds lowest end station by 0.14462829 ft.

Roughness Segments		
Start Station	End Station	Mannings Coefficient
0+00.00	0+07.00	0.013
0+07.00	0+53.00	0.016
0+53.00	0+60.00	0.013

Natural Channel Points	
Station (ft)	Elevation (ft)
0+00.00	19.97
0+05.00	19.87
0+05.50	19.87
0+05.50	19.37
0+07.00	19.50
0+07.00	19.54
0+30.00	20.00
0+53.00	19.54

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Section 1 - Harris Avenue - Q100 - Future Condition
Worksheet for Irregular Channel

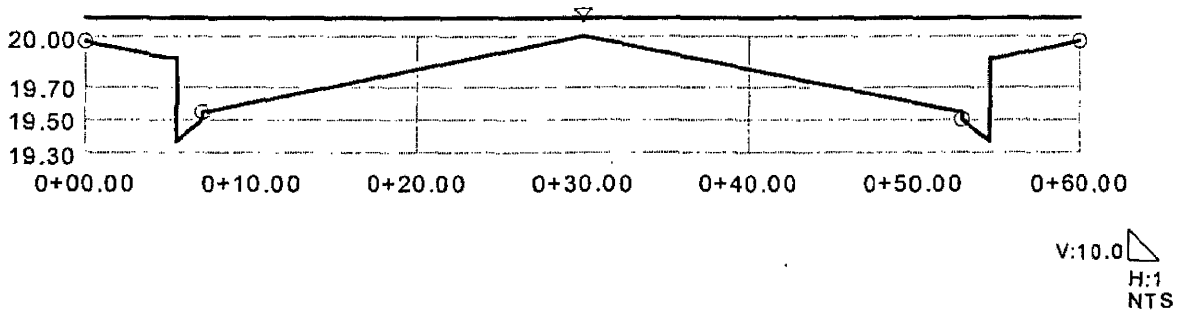
Natural Channel Points	
Station (ft)	Elevation (ft)
0+53.00	19.50
0+54.50	19.37
0+54.50	19.87
0+55.00	19.87
0+60.00	19.97

Notes: *Normal depth calculation using future full street section.

Section 1 - Harris Avenue - Q100 - Future Condition
Cross Section for Irregular Channel

Project Description	
Worksheet	Section 1 - Harris Avenue - Q100 - Future Condition
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.015	
Slope	0.008000	ft/ft
Water Surface Elevation	20.11	ft
Elevation Range	19.37 to 20.00	
Discharge	83.00	cfs



Section 2 - Harris Avenue - Q10 - Future Condition
Worksheet for Irregular Channel

Project Description	
Worksheet	Section 2 - Harris Avenue - Q10 - Future Condition
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.014400	ft/ft
Discharge	52.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Metho	Improved Lotter's Method
Closed Channel Weighting Meth	Horton's Method

Results		
Mannings Coefficient	0.015	
Water Surface Elevation	15.79	ft
Elevation Range	15.13 to 15.93	
Flow Area	11.7	ft²
Wetted Perimeter	50.88	ft
Top Width	49.66	ft
Actual Depth	0.66	ft
Critical Elevation	15.88	ft
Critical Slope	0.005160	ft/ft
Velocity	4.43	ft/s
Velocity Head	0.31	ft
Specific Energy	16.09	ft
Froude Number	1.61	
Flow Type	Supercritical	

Calculation Messages:
Water elevation exceeds lowest end station by 0.58342848e-1 ft.
Flow is divided.

Roughness Segments		
Start Station	End Station	Mannings Coefficient
0+00.00	0+07.00	0.013
0+07.00	0+53.00	0.016
0+53.00	0+60.00	0.013

Natural Channel Points	
Station (ft)	Elevation (ft)
0+00.00	15.73
0+05.00	15.63
0+05.50	15.63
0+05.50	15.13
0+07.00	15.26
0+07.00	15.30
0+30.00	15.93
0+53.00	15.30

Section 2 - Harris Avenue - Q10 - Future Condition
Worksheet for Irregular Channel

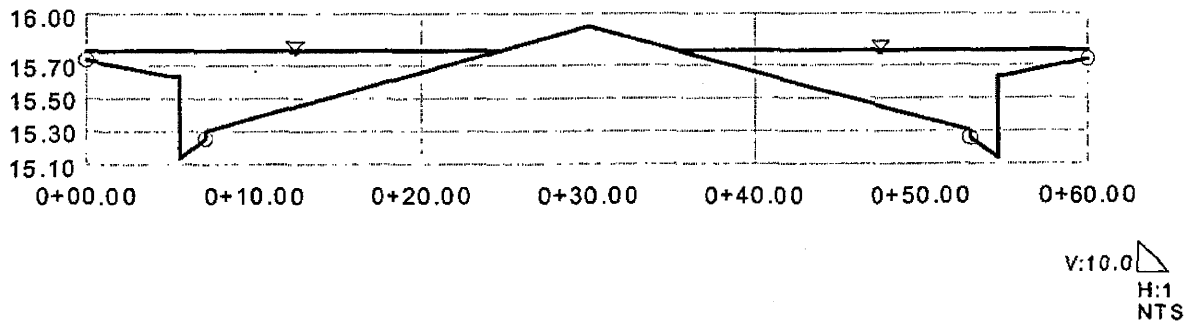
Natural Channel Points	
Station (ft)	Elevation (ft)
0+53.00	15.26
0+54.50	15.13
0+54.50	15.63
0+55.00	15.63
0+60.00	15.73

Notes: *Normal depth calculation using future full street section.

Section 2 - Harris Avenue - Q10 - Future Condition
Cross Section for Irregular Channel

Project Description	
Worksheet	Section 2 - Harris Avenue - Q10 - Future Condition
Flow Element	*Irregular Channel*
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.015	
Slope	*0.014400*	*ft/ft*
Water Surface Elevation	15.79	ft
Elevation Range	15.13 to 15.93	
Discharge	52.00	cfs



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Section 2 - Harris Avenue - Q100 - Future Condition
Worksheet for Irregular Channel

Project Description	
Worksheet	Section 2 - Harris Avenue - Q100 - Future Condition
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.014400	ft/ft
Discharge	104.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Metho	Improved Lotter's Method
Closed Channel Weighting Meth	Horton's Method

Results		
Mannings Coefficient	0.015	
Water Surface Elevation	15.92	ft
Elevation Range	15.13 to 15.93	
Flow Area	19.1	ft²
Wetted Perimeter	61.01	ft
Top Width	59.51	ft
Actual Depth	0.79	ft
Critical Elevation	16.06	ft
Critical Slope	0.004490	ft/ft
Velocity	5.45	ft/s
Velocity Head	0.46	ft
Specific Energy	16.38	ft
Froude Number	1.70	
Flow Type	Supercritical	

Calculation Messages:
Water elevation exceeds lowest end station by 0.19330228 ft.
Flow is divided.

Roughness Segments		
Start Station	End Station	Mannings Coefficient
0+00.00	0+07.00	0.013
0+07.00	0+53.00	0.016
0+53.00	0+60.00	0.013

Natural Channel Points	
Station (ft)	Elevation (ft)
0+00.00	15.73
0+05.00	15.63
0+05.50	15.63
0+05.50	15.13
0+07.00	15.26
0+07.00	15.30
0+30.00	15.93
0+53.00	15.30

Section 2 - Harris Avenue - Q100 - Future Condition
Worksheet for Irregular Channel

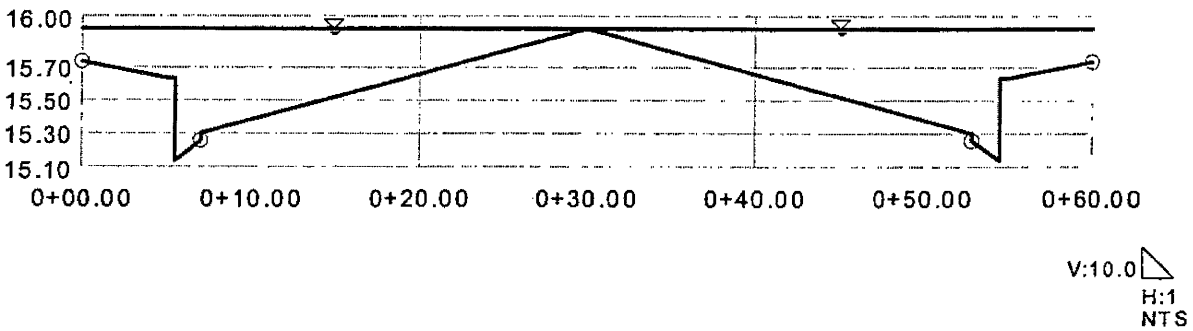
Natural Channel Points	
Station (ft)	Elevation (ft)
0+53.00	15.26
0+54.50	15.13
0+54.50	15.63
0+55.00	15.63
0+60.00	15.73

*Notes: *Normal depth calculation using future full street section.*

Section 2 - Harris Avenue - Q100 - Future Condition
Cross Section for Irregular Channel

Project Description	
Worksheet	Section 2 - Harris Avenue - Q100 - Future Condition
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.015	
Slope	0.014400	ft/ft
Water Surface Elevation	15.92	ft
Elevation Range	15.13 to 15.93	
Discharge	104.00	cfs



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Section 3
$Q_{10} = 4$ cfs

Rectangular Channel

Input Parameters

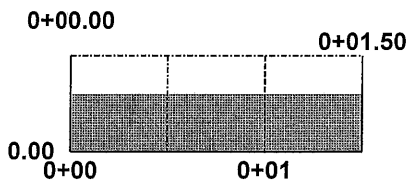
Manning N Value	0.0104	
Manning N Method	Lotter Method	
Channel Slope	3.00000	%
Normal Depth	0.30	ft
Discharge	4.00	cfs
Solve For	Normal Depth	

Channel Section

Station (ft)	Elevation (ft)	Start N-Value
0+00.00	0.50	0.0130
0+00.00	0.00	0.0130
0+01.50	0.00	0.0130
0+01.50	0.50	0.0130

Output Parameters

Channel Depth	0.50	ft
Channel Width	1.50	ft
Water Surface Elevation	0.30	ft
Flow Area	0.45	sq.ft.
Wetted Perimeter	2.10	ft
Top Width	1.50	ft
Hydraulic Depth	0.300	ft
Hydraulic Radius	0.214	ft
Critical Depth	Error	
Critical Slope	Error	
Velocity	8.88	ft/s
Velocity Head	1.22	ft
Specific Energy	1.53	ft
Froude Number	2.856	
Velocity Depth Product	2.67	sq.ft./s
Flow Type	Super-Critical	



Horizontal Scale: Ratio: 1:12 (1 in=1 ft) Vertical Scale: Ratio: 1:12 (1 in=1 ft)

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Section 3

$Q_{100} = 8$ cfs

Rectangular Channel

Input Parameters

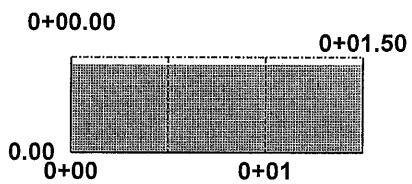
Manning N Value	0.0095	
Manning N Method	Lotter Method	
Channel Slope	3.00000	%
Normal Depth	0.46	ft
Discharge	8.00	cfs
Solve For	Normal Depth	

Channel Section

Station (ft)	Elevation (ft)	Start N-Value
0+00.00	0.50	0.0130
0+00.00	0.00	0.0130
0+01.50	0.00	0.0130
0+01.50	0.50	0.0130

Output Parameters

Channel Depth	0.50	ft
Channel Width	1.50	ft
Water Surface Elevation	0.46	ft
Flow Area	0.68	sq.ft.
Wetted Perimeter	2.41	ft
Top Width	1.50	ft
Hydraulic Depth	0.455	ft
Hydraulic Radius	0.283	ft
Critical Depth	Error	
Critical Slope	Error	
Velocity	11.72	ft/s
Velocity Head	2.13	ft
Specific Energy	2.59	ft
Froude Number	3.062	
Velocity Depth Product	5.33	sq.ft./s
Flow Type	Super-Critical	



Horizontal Scale: Ratio: 1:12 (1 in=1 ft) Vertical Scale: Ratio: 1:12 (1 in=1 ft)

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Section 4 - Manning Street - Q10
Worksheet for Irregular Channel

Project Description	
Worksheet	Section 4 - Manning Street - Q10
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.004100	ft/ft
Discharge	17.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Metho	Improved Lotter's Method
Closed Channel Weighting Meth	Horton's Method

Results		
Mannings Coefficient	0.015	
Water Surface Elevation	0.65	ft
Elevation Range	0.00 to 0.63	
Flow Area	7.2	ft²
Wetted Perimeter	30.62	ft
Top Width	30.00	ft
Actual Depth	0.65	ft
Critical Elevation	0.62	ft
Critical Slope	0.005815	ft/ft
Velocity	2.37	ft/s
Velocity Head	0.09	ft
Specific Energy	0.74	ft
Froude Number	0.85	
Flow Type	Subcritical	

Calculation Messages:
Water elevation exceeds lowest end station by 0.49281115e-1 ft.

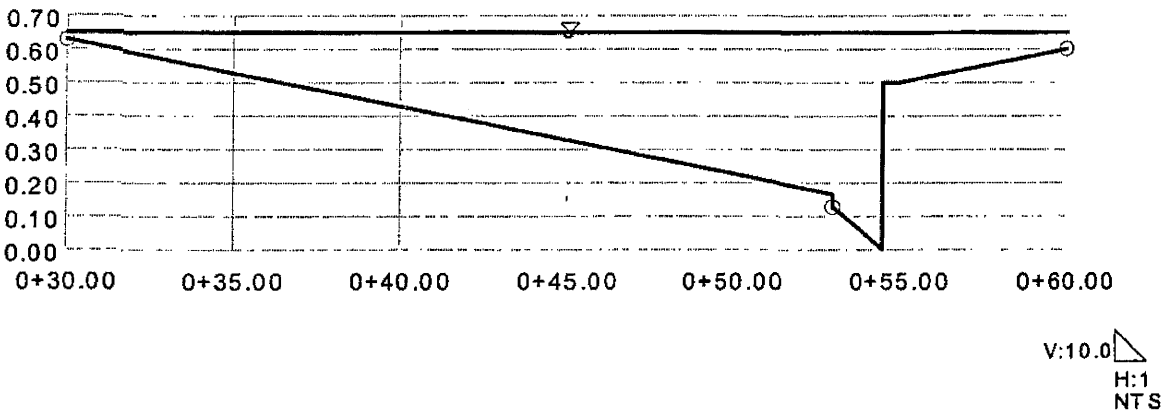
Roughness Segments		
Start Station	End Station	Mannings Coefficient
0+30.00	0+53.00	0.016
0+53.00	0+60.00	0.013

Natural Channel Points	
Station (ft)	Elevation (ft)
0+30.00	0.63
0+53.00	0.17
0+53.00	0.13
0+54.50	0.00
0+54.50	0.50
0+55.00	0.50
0+60.00	0.60

Section 4 - Manning Street - Q10
Cross Section for Irregular Channel

Project Description	
Worksheet	Section 4 - Manning Street - Q10
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.015	
Slope	0.004100	ft/ft
Water Surface Elevation	0.65	ft
Elevation Range	0.00 to 0.63	
Discharge	17.00	cfs



Section 4 - Manning Street - Q100
Worksheet for Irregular Channel

Project Description	
Worksheet	Section 4 - Manning Street - Q100
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Slope	0.004100	ft/ft
Discharge	38.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Metho	Improved Lotter's Method
Closed Channel Weighting Meth	Horton's Method

Results		
Mannings Coefficient	0.015	
Water Surface Elevation	0.80	ft
Elevation Range	0.00 to 0.63	
Flow Area	11.7	ft²
Wetted Perimeter	30.92	ft
Top Width	30.00	ft
Actual Depth	0.80	ft
Critical Elevation	0.78	ft
Critical Slope	0.004922	ft/ft
Velocity	3.26	ft/s
Velocity Head	0.16	ft
Specific Energy	0.96	ft
Froude Number	0.92	
Flow Type	Subcritical	

Calculation Messages:
Water elevation exceeds lowest end station by 0.1989489 ft.

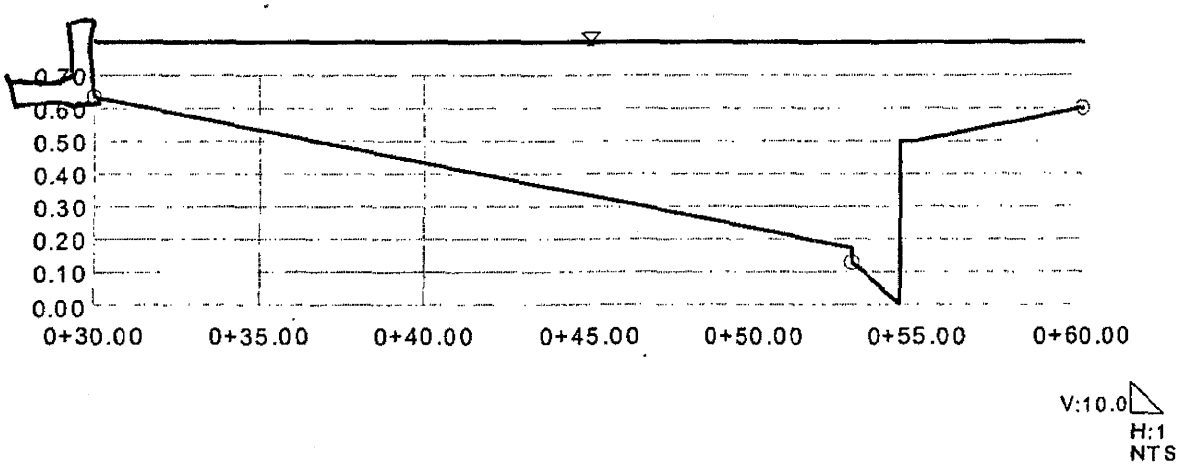
Roughness Segments		
Start Station	End Station	Mannings Coefficient
0+30.00	0+53.00	0.016
0+53.00	0+60.00	0.013

Natural Channel Points	
Station (ft)	Elevation (ft)
0+30.00	0.63
0+53.00	0.17
0+53.00	0.13
0+54.50	0.00
0+54.50	0.50
0+55.00	*0.50*
0+60.00	0.60

Section 4 - Manning Street - Q100
Cross Section for Irregular Channel

Project Description	
Worksheet	Section 4 - Manning Street - Q100
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.015	
Slope	0.004100	ft/ft
Water Surface Elevation	0.80	ft
Elevation Range	0.00 to 0.63	
Discharge	38.00	cfs



Rosa Cortez

From: Rosa Cortez
Sent: Monday, March 01, 2004 1:33 PM
To: 'John Feller'
Subject: RE: CAD Detail for the type "CM" and "DM" Drop Inlet Section

CM_DM_DropInlets.dwg

John,

Attached is the ACAD drawing with the "CM" and "DM" Drop Inlet details.

Based on our conversation, it is understood that curb will not be constructed on the east side of Manning Street within the 30-foot street section. Minimum finished floor elevations for the Adoption Center, Vet. Tech Addition, and the proposed pad are as follows:

Adoption Center and Vet Tech Addition: Min FFE = 20.24' (TC) - 0.5' + (0.8' x 2) = 21.34'
Proposed Pad: Min FFE = 19.53' (FL) + (0.8' x 2) = 21.13'

If you have any questions, please let us know. Thanks.

-Rosa

-----Original Message-----
From: John Feller [mailto:JOHNF@lochsa.com]
Sent: Monday, March 01, 2004 10:41 AM
To: rcortez@ci.las-vegas.nv.us
Subject: CAD Detail for the type "CM" and "DM" Drop Inlet Section

Hi Rosa,

We're working on the drainage study supplement for the Animal Foundation Regional Animal Campus and need the CAD details for the type "CM and "DM" drop inlet sections to insert into our detail sheet. When you have a minute, can you please e-mail them over?

I also have a question on the red-lined grading plans. The minimum finished floor required for the proposed Adoption Center, Vet. Tech Addition and the proposed pad were red-lined at an elevation of 1821.70. The normal depth calculation in Manning Street adjacent to the buildings and pad shows a flow depth of 0.80 feet (The drainage map DR2 mistakenly showed the flow depth at 0.86 feet). A finished floor elevation of twice the depth of flow above the upstream gutter flowline in Manning Steet results in a minimum finished floor elevation of 1821.34 feet. Would this be an acceptable finished floor elevation for the buildings?

Thanks,

John Feller
Lochsa Engineering
(702) 365-9312

FLOW SPLIT ANALYSIS AT THE INTERSECTION OF HARRIS AVENUE AND MANNING STREET

Flow Split at Harris Avenue and Manning Street (Ultimate Condition 10-Year)

Harris Avenue

Total Flow 38 = 59cfs - 21cfs half-street capacity in Harris

Right-of Way Width, (ft):	60.0
Curb Height, (in):	6.0
Street Side Slope, (%):	2.00
Sidewalk Width, (ft):	5.0
Sidewalk Slope, (%):	2.00
Manning's Coefficient, n:	0.016
Street Longitudinal Slope, (%):	1.00
Lip of Asphalt, (in):	0.5
Depth of Gutter Flowline, (in):	1.6
Crown Height, (ft):	0.63
Sidewalk Height, (ft):	0.60
Height of Asphalt Lip, (ft):	0.17

Manning Street

Right-of Way Width, (ft):	30.0
Curb Height, (in):	6.0
Street Side Slope, (%):	2.00
Sidewalk Width, (ft):	5.0
Sidewalk Slope, (%):	2.00
Manning's Coefficient, n:	0.016
Street Longitudinal Slope, (%):	0.70
Lip of Asphalt, (in):	0.5
Depth of Gutter Flowline, (in):	1.6
Crown Height, (ft):	0.33
Sidewalk Height, (ft):	0.60
Height of Asphalt Lip, (ft):	0.17

Depth of Flow (ft)	Harris Avenue Flow Capacity (cfs)	Manning Street Flow Capacity (cfs)	Combined Flow (cfs)	Harris Avenue Flow (cfs)	Manning Street Flow (cfs)
0.0	0	0	0		
0.1	0	0	0	-	-
0.2	1	1	1	-	-
0.3	3	3	6	-	-
0.4	9	9	18	-	-
0.5	21	18	38	21	17
0.6	37	25	62	-	-
0.7	72	42	114	-	-
0.8	117	63	180	-	-
0.9	170	88	258	-	-
1.0	232	115	347	-	-
1.1	300	145	446	-	-
1.2	376	179	555	-	-
1.3	458	214	672	-	-
1.4	547	253	799	-	-
1.5	641	294	935	-	-

The flow split is modeled utilizing runoff overtopping the crown in Harris Avenue and runoff contained within the southern half-street. The runoff contained within the northern half-street of Harris Avenue (21 cfs) continues east through the intersection and is not considered in the flow split analysis.

Flow Split at Harris Avenue and Manning Street (Ultimate Condition Q100)

Harris Avenue

Total Flow

100 = 121 cfs - 21 cfs half-street capacity in Harris's

Right-of Way Width, (ft):	60.0
Curb Height, (in):	6.0
Street Side Slope, (%):	2.00
Sidewalk Width, (ft):	5.0
Sidewalk Slope, (%):	2.00
Manning's Coefficient, n:	0.016
Street Longitudinal Slope, (%):	1.00
Lip of Asphalt, (in):	0.5
Depth of Gutter Flowline, (in):	1.6
Crown Height, (ft):	0.63
Sidewalk Height, (ft):	0.60
Height of Asphalt Lip, (ft):	0.17

Manning Street

Right-of Way Width, (ft):	30.0
Curb Height, (in):	6.0
Street Side Slope, (%):	2.00
Sidewalk Width, (ft):	5.0
Sidewalk Slope, (%):	2.00
Manning's Coefficient, n:	0.016
Street Longitudinal Slope, (%):	0.70
Lip of Asphalt, (in):	0.5
Depth of Gutter Flowline, (in):	1.6
Crown Height, (ft):	0.33
Sidewalk Height, (ft):	0.60
Height of Asphalt Lip, (ft):	0.17

Depth of Flow (ft)	Harris Avenue Flow Capacity (cfs)	Manning Street Flow Capacity (cfs)	Combined Flow (cfs)	Harris Avenue Flow (cfs)	Manning Street Flow (cfs)
0.0	0	0	0		
0.1	0	0	0	-	-
0.2	1	1	1	-	-
0.3	3	3	6	-	-
0.4	9	9	18	-	-
0.5	21	18	38	-	-
0.6	37	25	62	-	-
0.7	72	42	114	62	38
0.8	117	63	180	-	-
0.9	170	88	258	-	-
1.0	232	115	347	-	-
1.1	300	145	446	-	-
1.2	376	179	555	-	-
1.3	458	214	672	-	-
1.4	547	253	799	-	-
1.5	641	294	935	-	-

The flow split is modeled utilizing runoff overtopping the crown in Harris Avenue and runoff contained within the southern half-street. The runoff contained within the northern half-street of Harris Avenue (21 cfs) continues east through the intersection and is not considered in the flow split analysis.

Harris Half-Street Capacity
Worksheet for Irregular Channel

Project Description	
Worksheet	Harris Street Section 2
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Slope	0.008300	ft/ft
Water Surface Elevation	0.63	ft

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Metho	Improved Lotter's Method
Closed Channel Weighting Meth	Horton's Method

Results		
Mannings Coefficient	0.015	
Elevation Range	0.00 to 0.63	
Discharge	21.04	cfs
Flow Area	6.6	ft²
Wetted Perimeter	30.58	ft
Top Width	30.00	ft
Actual Depth	0.63	ft
Critical Elevation	0.66	ft
Critical Slope	0.005573	ft/ft
Velocity	3.19	ft/s
Velocity Head	0.16	ft
Specific Energy	0.79	ft
Froude Number	1.20	
Flow Type	Supercritical	

Calculation Messages:
Water elevation exceeds lowest end station by 0.03 ft.

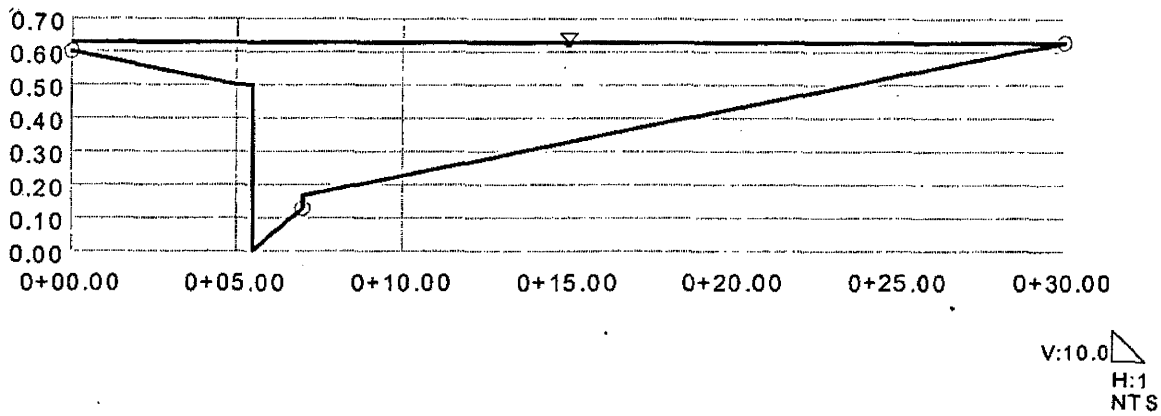
Roughness Segments		
Start Station	End Station	Mannings Coefficient
0+00.00	0+07.00	0.013
0+07.00	0+30.00	0.016

Natural Channel Points	
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+30.00	0.63

Harris Half-Street Capacity
Cross Section for Irregular Channel

Project Description	
Worksheet	Harris Street Section 2
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Discharge

Section Data		
Mannings Coefficient	0.015	
Slope	0.008300	ft/ft
Water Surface Elevation	0.63	ft
Elevation Range	0.00 to 0.63	
Discharge	21.04	cfs



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APPENDIX E

ZONING CONDITIONS

City of Las Vegas

AGENDA MEMO - PLANNING

PLANNING COMMISSION MEETING DATE: SEPTEMBER 8, 2015
DEPARTMENT: PLANNING
ITEM DESCRIPTION: APPLICANT: THE ANIMAL FOUNDATION – OWNER: CITY OF LAS VEGAS

** STAFF RECOMMENDATION(S) **

CASE NUMBER	*RECOMMENDATION*	*REQUIRED FOR APPROVAL*
SDR-60357	Staff recommends APPROVAL, subject to conditions:	

** CONDITIONS **

SDR-60357 CONDITIONS

Planning

1. Conformance to the approved conditions for Site Development Plan Review (SDR-3275), except as amended herein.

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, landscape plan, and building elevations, date stamped 07/23/15 except as amended by conditions herein.

4. The three existing temporary buildings included in Site Development Plan Review (SDR-43702) shall be removed within one year after the issuance of a Certificate of Occupancy for the Animal Adoption building included in this review. A demolition permit is required.

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 07/23/15. Any changes based upon subsequently submitted studies must be accommodated elsewhere on the site.

GK

6. Site and building signage is approved as depicted in the site plan and elevations date stamped 07/23/15. Building permits are required for all signage, pursuant to Title 19 and the Department of Building and Safety.

7. Prior to occupancy, 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 fully operational fire protection system, including fire apparatus roads, fire hydrants and water supply, shall be installed and shall be functioning prior to construction of any combustible structures.

10. All trash enclosures shall conform to the requirements of Title 19.08.

11. All mechanical equipment, air conditioners and trash areas shall be fully screened in views from the abutting streets.

12. All utility boxes exceeding 27 cubic feet in size shall meet the standards of LVMC Title 19.08.040.

13. Parking lot lighting standards shall be no more than 30 feet in height and shall utilize downward-directed lights with full cut-off luminaries. Lighting on the exterior of buildings shall be shielded and shall be downward-directed. Non-residential property lighting shall be directed away from residential property or screened, and shall not create fugitive lighting on adjacent properties.

14. Prior to the submittal of a building permit application, the applicant shall meet with Department of Planning Department staff to develop a comprehensive address plan for the subject site. A copy of the approved address plan shall be submitted with any future building permit applications related to the site.

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

Public Works

16. Correct all American's with Disabilities Act (ADA) deficiencies on the sidewalks adjacent to this site in accordance with code requirements of Title 13.56.040, if any, to the satisfaction of the City Engineer concurrent with development of this site.

17. Landscape and maintain all unimproved rights-of-way 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.

18. An Update to the previously approved Drainage Plan and Technical Drainage Study must be submitted to and approved by the Department of Public Works prior to the issuance of any grading or building permits, submittal of construction drawings or the submittal of a Final Map for this site, whichever may occur first. Provide and improve all drainageways as recommended in the approved drainage plan/study.

** STAFF REPORT **

PROJECT DESCRIPTION

The 8.39-acre subject site contains a 47,778 square-foot Animal Shelter building, 22 dog adoption bungalows totaling 29,920 square feet, and three modular buildings totaling 7,660 square feet. The applicant proposes to construct two additional detached buildings totaling 29,654 square feet to the existing Animal Shelter campus at 655 North Mojave Road. The proposed buildings will contain animal adoption services, administrative offices, a veterinary technology training center and central plant. Also proposed is a 1,190 square-foot barn east of the existing dog adoption bungalows. The three modular buildings located at the northwest corner of the subject site would be replaced with this proposal and removed for an expanded parking lot. A new monument sign is proposed along the Mojave Road frontage and incidental signs are proposed within the interior of the site to provide direction and identification. A plaza area is provided adjacent to the new main building. As the development proposed is compatible in appearance and function with the existing development on the site and with adjacent properties, staff recommends approval with conditions. If denied, the site would still be subject to development according to the previously approved Site Development Plan Review (SDR-3275).

ISSUES

- The site currently contains three modular buildings located at the northwest corner of the subject site. The three buildings total 7,660 square feet and were approved through Site Development Plan Review (SDR-43702). These buildings shall be removed within one year after completion of the Animal Adoption building proposed as part of this review.
- No Waivers or exceptions are required for landscaping on the site. Perimeter landscaping shall adhere to the previously approved landscape plan, except as noted (the result of a proposed additional driveway).
- Six new signs are proposed as part of the proposed development. They must be reviewed and approved through this application before building permits can be issued for their construction and placement.
- No building permits for new structures will be issued unless permits for all existing structures on the site have been issued, final inspections approved and certificates of occupancy have been issued. Building permits are required for all structures, including but not limited to, buildings, walls, trash enclosures, signage, the addition of electrical or plumbing components and the demolition of existing structures.

BACKGROUND INFORMATION

Related Relevant City Actions by P&D, Fire, Bldg., etc	
09/23/97	The City of Las Vegas Planning & Development staff administratively approved a Site Development Plan Review (SD-0015-97) for a 34,000 square-foot Animal Shelter on 2.02 acres adjacent to the southwest corner of Mojave Road and Harris Avenue.
01/07/04	The City Council approved a Site Development Plan Review (SDR-3275) for a proposed Animal Shelter and Veterinary Complex on 9.5 acres adjacent to the southwest corner of Harris Avenue and Mojave Road. The Planning Commission and staff recommended approval of this request.
08/17/05	The City Council approved a Site Development Plan Review (SDR-6883) for Temporary Structures for an Animal Shelter on 8.39 acres adjacent to the southwest corner of Mojave Road and Harris Avenue. The Planning Commission and staff recommended approval of this request.
11/01/06	The City Council approved a One-Year Required Review (RQR-14476) of an approved Site Development Plan Review (SDR-6883) which allowed Temporary Structures for an Animal Shelter on 8.39 acres at the southwest corner of Mojave Road and Harris Avenue. The Planning Commission and staff recommended denial of this request.
12/20/06	The City Council approved a Review of Condition (ROC-17677) for Condition Number 1 of an approved Site Development Plan Review (SDR-6883) to allow a temporary tent located on the corner of Harris Street and Manning Street to be allowed to remain for two additional years on 8.39 acres at the southwest corner of Mojave Road and Harris Avenue. Staff recommended approval of this request.
05/16/07	The City Council struck a request for a Site Development Plan Review (SDR-20124) for an existing 1,900 square-foot Veterinary School, a 4,116 square-foot Animal Shelter, a 1,900 square-foot Office and a proposed Barn and Restroom Facility on 8.39 acres adjacent to the southwest corner of Harris Avenue and Mojave Road. The Planning Commission and staff recommended approval of this request.
01/21/09	The City Council approved a Site Development Plan Review (SDR-31744) for an existing 1,400 square-foot veterinary school, an existing 1,900 square-foot office, an existing 4,116 square-foot cat facility and a proposed 2,800 square-foot spay/neuter clinic on 8.39 acres at the southwest corner of Mojave Road and Harris Avenue. The Planning Commission and staff recommended approval. The approval expired 01/21/11.
08/17/09	A Code Enforcement case (80879) was processed for construction near the dog adoption kennels without permits. The case was resolved 08/19/09.

Related Relevant City Actions by P&D, Fire, Bldg., etc	
01/18/12	The City Council approved a Site Development Plan Review (SDR-43702) for three existing temporary structures on the subject site located along Harris Avenue. Planning Commission and staff recommended approval.
	The City Council approved a Special Use Permit (SUP-43703) for a cemetery/mausoleum (animals) at an existing animal hospital, clinic or shelter (with outside pens) at 655 North Mojave Road. The Planning Commission and staff recommended approval.
	The City Council approved a Site Development Plan Review (SDR-43704) for two proposed buildings with a total floor area of 28,495 square feet at an existing animal hospital, clinic or shelter (with outside pens) at 655 North Mojave Road. The Planning Commission and staff recommended approval. A condition of approval was included requiring removal of the temporary structures approved by Site Development Plan Review (SDR-43702) one year after the two permanent buildings were constructed under this review.

Most Recent Change of Ownership	
N/A	There has been no change in ownership on the subject property.

Related Building Permits/Business Licenses	
02/11/98	A business license (G99-00005) was issued for an Animal Shelter at 655 North Mojave Road. The license is still active.
06/30/00	A building permit (#00012474) was issued for a new building at 655 North Mojave Road. The permit received final approval on 12/20/00.
06/30/00	A building permit (#00012475) was issued for onsite improvements at 655 North Mojave Road. The permit received final approval 01/12/01.
10/23/00	A building permit (#00019517) was issued for a trash enclosure and walls at 655 North Mojave Road. The permit received final approval 11/01/00.
01/16/01	A building permit (#01000727) was issued for a sign at 655 North Mojave Road. The permit received final approval on 02/27/01.
08/20/04	A building permit (#04019189) was issued for a utility closet at 3000 Harris Avenue. The permit received final approval 06/21/05.
08/20/04	A building permit (#04019175) was issued for onsite/hardscape improvements at 3000 Harris Avenue. The permit has not yet received final approval.
08/20/04	Building permits were issued for a new Kennel Building 1 (#04019178) and Kennel Building 2 (#04019179) at 3000 Harris Avenue. The permits received final approval on 09/23/05 and 09/16/05.

Related Building Permits/Business Licenses	
08/20/04	Building permits were issued for Kennel Buildings 3 through 11 (#04019180 through #04019188) at 3000 Harris Avenue. The permits received final approval on 09/09/05.
03/17/05	Building permits were issued for onsite/hardscape improvements (#05001671) and for a building addition (#05001670) for an Animal Shelter at 655 North Mojave Road. The permits received final approval on 03/21/06.
03/17/05	A building permit (#05001669) was issued for a barn animal shelter at 3000 Harris Avenue. The permit expired and was placed on hold on 09/17/05.
04/13/05	A building permit (#05002193) was issued for onsite improvements for a wetlands project at 3000 Harris Avenue. The permit did not have a final inspection.
05/26/05	A building permit (41873) was issued for a wall/fence at 655 North Mojave Road. The permit did not have a final inspection and expired 12/29/05.
12/13/05	A building permit (#05008740) was issued for a temporary classroom trailer building at 655 North Mojave Road. The permit did not have a final inspection.
12/27/12	A building permit (#226681) was issued for an interior partition wall at 655 North Mojave Road. The permit received a final inspection on 01/31/13.
03/20/12	A building permit (#204790) was issued for a 2,160 square-foot modular building at the northwest corner of 655 North Mojave Road. The permit received a final inspection on 12/09/13.
	A building permit (#204791) was issued for a 1,440 square-foot modular building at the northwest corner of 655 North Mojave Road. The permit received a final inspection on 08/29/12.
	A building permit (#205904) was issued for a 4,060 square-foot tent structure at the northwest corner of 655 North Mojave Road. The permit received a final inspection on 09/05/12.

Pre-Application Meeting	
07/20/15	Staff met with the applicant and discussed the need for a Site Development Plan Review application for this proposed project.

Neighborhood Meeting
No neighborhood meeting was required, nor was one held.

Field Check	
07/30/15	During a staff field inspection, the following items were noted: • The site consists of an existing Animal Shelter in a maintained condition with numerous buildings for various functions of the operation. • Three modular buildings are located to the rear of the site along Harris Avenue.

Details of Application Request	
Site Area	
Net Acres	8.39

Surrounding Property	*Existing Land Use Per Title 19.12*	*Planned or Special Land Use Designation*	*Existing Zoning District*
Subject Property	Animal Shelter	PF (Public Facilities)	C-V (Civic)
North	Government Facility (Fire Station)	PF (Public Facilities)	C-V (Civic)
South	Government Facility	PF (Public Facilities)	C-V (Civic)
	Shopping Center	SC (Service Commercial)	C-1 (Limited Commercial)
East	Government Facility (Maintenance and Storage Yard)	PF (Public Facilities)	C-V (Civic)
West	Multi-Family Residential	M (Medium Density Residential)	R-3 (Medium Density Residential)

Master Plan Areas	*Compliance*
No Applicable Master Plan Area	N/A
Special Purpose and Overlay Districts	*Compliance*
C-V (Civic) District	Y
Other Plans or Special Requirements	*Compliance*
Trails	N/A
Las Vegas Redevelopment Plan Area	N/A
Project of Significant Impact (Development Impact Notification Assessment)	N/A
Project of Regional Significance	N/A

DEVELOPMENT STANDARDS

Pursuant to 19.10.020 and SDR-3275, the following standards apply:

Standard	*Provided*
Min. Lot Size	8.39 acres
Min. Lot Width	602 Feet
Min. Setbacks • Front (Mojave Road) • Side • Corner (Harris Avenue) • Rear	 20 Feet (Existing) 0 Feet 119 Feet 29 Feet
Max. Lot Coverage	29 %
Max. Building Height	50 Feet
Trash Enclosure	2 Existing, None proposed
Mech. Equipment	Parapet screened

Pursuant to Title 19.08 and SDR-3275, the following standards apply:

Landscaping and Open Space Standards				
Standards	*Required*		*Provided*	*Compliance*
	Ratio	*Trees*		
Buffer Trees: • North • West • East	 1 Tree / 20 Linear Feet 1 Tree / 20 Linear Feet 1 Tree / 20 Linear Feet	 10 Trees 13 Trees 13 Trees	 22 Trees 15 Trees 13 Trees	 Y Y Y
TOTAL PERIMETER TREES		**33 Trees**	**50 Trees**	**Y**
Parking Area Trees	1 Tree / 6 Uncovered Spaces, plus 1 tree at the end of each row of spaces	31 Trees	40 Trees	Y
LANDSCAPE BUFFER WIDTHS				
Min. Zone Width • North • West • East	 8 Feet 10 Feet 8 Feet		 8 Feet 16 Feet 8 Feet	 Y Y Y
Wall Height	6 to 8 Feet Adjacent to Residential		Existing 8' wall on west PL	Y

Street Name	*Functional Classification of Street(s)*	*Governing Document*	*Actual Street Width (Feet)*	*Compliance with Street Section*
Mojave Road	Primary Arterial	Master Plan of Streets and Highways	100	Y
Harris Avenue	Collector	Master Plan of Streets and Highways	60	Y

Pursuant to Title 19.10 and 19.12, the following parking standards apply:

Parking Requirement							
Use	*Gross Floor Area or Number of Units*	*Required*			*Provided*		*Compliance*
		Parking Ratio	*Parking*		*Parking*		
			Regular	Handi-capped	Regular	Handi-capped	
Animal Hospital, Clinic, or Shelter (with Outside Pens)	134 on-duty employees, 6 doctors and 4 exam rooms	One space for every 2 on-duty employees, plus 1 space per doctor and 1 space per exam room	77				
TOTAL SPACES REQUIRED			77		148		Y
Regular and Handicap Spaces Required			73	4	142	6	Y

Monument Signs: [Sign Type A – Mojave Road Frontage]		
Standards (C-V)	*Allowed*	*Provided*
Maximum Number	1 / Street frontage 1 total	1 total
Maximum Area	75 SF	137 SF (approx.)
Maximum Height	10 Feet	25 Feet
Minimum Setback	5 Feet	6 Feet
Residential Protection	EMU, animated/flashing prohibited within 200 feet of residential zone unless not visible	No EMU, animation or flashing proposed. Sign is more than 200 feet away from residentially zoned property
Illumination	Internal and External	Not indicated

Directional Signs: *[Sign Type B – Harris Frontage (Main Entry Directory)]*		
Standards (C-V)	***Allowed***	***Provided***
Maximum Number	2 / Driveway 4 total	1 total
Maximum Area	12 SF (no more than 50% to include name/logo)	180 SF (approx.) – approx. 25% is name/logo
Maximum Height	7 Feet	14 Feet
Minimum Setback	5 Feet from any property line	69 Feet from north property line
Illumination	Internal only	Non-illuminated

Non-Directional Signs: *[Sign Type C – Animal Adoption/Public Clinic/Lost and Found]*		
Standards (C-V)	***Allowed***	***Provided***
Maximum Number	No Limit	3 total
Maximum Area	4 SF if set back less than 30 feet from public ROW 9 SF if set back 30 or more feet from public ROW (no more than 25% to include name/logo)	125 SF (approx.) – approx. 50% is logo All signs are set back greater than 30 feet
Maximum Height	7 Feet	25 Feet
Minimum Setback	5 Feet from any property line	55 Feet from east property line
Illumination	No illumination	Non-illuminated

ANALYSIS

The site is located within a C-V (Civic) District, in which development standards may be proposed that ensure compatibility of the development with existing and planned development in the surrounding area. The development standards for this site were established by the previously approved and exercised Site Development Plan Review (SDR-3275). The subject site contains a 47,778 square-foot Animal Shelter building, 22 dog adoption bungalows totaling 29,920 square feet, and three modular buildings totaling 7,660 square feet. The applicant proposes to construct two additional detached buildings totaling 29,654 square feet to the existing Animal Shelter campus at 655 North Mojave Road. The proposed buildings will contain animal adoption services, administrative offices, a veterinary technology training center and central plant. Also proposed is a 1,190 square-foot barn east of the existing dog adoption bungalows. The three modular buildings located at the northwest corner of the subject site would be replaced with this proposal and removed to make room for an expanded parking lot.

The proposed setbacks, lot coverage and maximum building height will be harmonious and compatible with existing residential development to the west and public facilities to the north, south and east. Any future development will require review for determination of appropriate

development standards. Perimeter landscape buffers on the site were approved as part of Site Development Plan Review (SDR-3275). The north perimeter buffer has been altered from the approved plan to close an existing driveway located at the northeast corner of the site and add a driveway along Harris Avenue at the northwest corner. However, the number of trees along Harris Avenue has increased from the original plan. As such, no waivers or exceptions are necessary.

The 1,190 square-foot accessory barn proposed at the south side of the proposed building near the existing dog adoption bungalows is appropriately placed on the site and will not have any adverse impact on the public facility site to the south.

New signage is proposed along Mojave Road, at the parking lot entrance from Harris Avenue, and at three locations near the existing and proposed building entrances. Per Title 19.10.110, sign standards in the C-V District shall be the same as those for the P-O (Professional Office) District, unless approved as part of a Site Development Plan Review application. The signs proposed do not conform to the P-O District standards, but are appropriate for this facility and would not adversely impact adjacent properties. If approved, proposed signage shall require the issuance of a building permit prior to installation, pursuant to Title 19 and the requirements of the Department of Building and Safety.

The proposed development will complement the existing development on the site and be compatible with residential and public facility uses on adjacent properties. Staff therefore recommends approval of the Site Development Plan Review, with conditions.

FINDINGS (SDR-60357)

In order to approve a Site Development Plan Review 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 in appearance and function with the existing development on the site and with residential and public facility uses on adjacent properties.

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 8.39-acre site is located within the C-V (Civic) District and is subject to development standards both approved through the previous Site Development Plan Review and proposed through this review. The development as proposed is consistent with the previously approved standards.

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

   A new driveway is proposed along Harris Avenue that will provide better circulation around the proposed parking lot and add to the existing access to the east. The Department of Public Works indicates that Mojave Road is at about 21 percent of capacity and Harris Avenue is at about seven percent of capacity, therefore, staff finds the impact to neighborhood traffic should be minimal as a result of these changes.

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

   Building materials include textured concrete, metal trim and glass, which are appropriate for this use and this area, which contains clusters of public facilities.

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;**

   The elevations contain varied rooflines, articulated walls and variation in materials and colors that create a pleasant appearance. The elevations will be compatible with the existing buildings on the site and with adjacent development.

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

   Development of the site is subject to all applicable codes, permitting and inspection, thereby securing the public health, safety and general welfare.

NEIGHBORHOOD ASSOCIATIONS NOTIFIED 45

NOTICES MAILED 90

APPROVALS 0

PROTESTS 0

GK

DEPARTMENT OF PLANNING

STATEMENT OF FINANCIAL INTEREST

Case Number: **SDR-60357** APN: 139-25-405-008

Name of Property Owner: City of Las Vegas

Name of Applicant: The Animal Foundation

Name of Representative: John Lopeman, ethos|three ARCHITECTURE

To the best of your knowledge, does the Mayor or any member of the City Council or Planning Commission have any financial interest in this or any other property with the property owner, applicant, the property owner or applicant's general or limited partners, or an officer of their corporation or limited liability company?

☐ Yes ☒ No

If yes, please indicate the member of the City Council or Planning Commission who is involved and list the name(s) of the person or persons with whom the City Official holds an interest. Also list the Assessor's Parcel Number if the property in which the interest is held is different from the case parcel.

City Official: The City of Las Vegas owns the property. It is leased to The Animal Foundation.

Partner(s): _____ _____

APN: _____

Signature of Property Owner: Robin Yoakum

Print Name: Robin Yoakum

Subscribed and sworn before me

This 16th day of July, 2015

Pamela Samuelis

Notary Public in and for said County and State

PAMELA SAMUOLIS
Notary Public State of Nevada
No. 00-63724-1
My appt. exp. Aug. 23 2016

PRJ-60302
07/23/15

DEPARTMENT OF PLANNING

APPLICATION / PETITION FORM

Application/Petition For: SITE DEVELOPMENT PLAN REVIEW

Project Address (Location) 655 NORTH MOJAVE ROAD, LAS VEGAS

Project Name THE ANIMAL FOUNDATION **Proposed Use** ANIMAL CLINIC

Assessor's Parcel #(s) 139-25-405-008 **Ward #** 3

General Plan: existing public facility proposed no change **Zoning:** existing C-V proposed C-V

Commercial Square Footage 108,542 **Floor Area Ratio** 29.7%

Gross Acres 8.39 **Lots/Units** _____ **Density** _____

Additional Information _____

PROPERTY OWNER CITY OF LAS VEGAS **Contact** REAL ESTATE DIVISION-Robin Yoakum

Address 333 N. RANCHO DRIVE, 8TH FLOOR **Phone:** 702-229-1022 **Fax:** _____

City LAS VEGAS **State** NV **Zip** 89106

E-mail Address _____

APPLICANT THE ANIMAL FOUNDATION **Contact** Bonnie Rinaldi

Address 655 NORTH MOJAVE ROAD **Phone:** 702-528-0782 **Fax:** 541-702-2251

City LAS VEGAS **State** NV **Zip** 89106

E-mail Address bonnie@rinaldinet.com

REPRESENTATIVE ethos|three ARCHITECTURE **Contact** JOHN LOPEMAN

Address 8985 SOUTH EASTERN, SUITE 220 **Phone:** 702-456-1070 **Fax:** 702-456-7020

City LAS VEGAS **State** NV **Zip** 89123

E-mail Address jclopeman@ethosthree.com

I certify that I am the applicant and that the information submitted with this application is true and accurate to the best of my knowledge and belief. I understand that the City is not responsible for inaccuracies in information presented, and that inaccuracies, false information or incomplete application may cause the application to be rejected. I further certify that I am the owner or purchaser (or option holder) of the property involved in this application, or the lessee or agent fully authorized by the owner to make this submission, as indicated by the owner's signature below.

Property Owner Signature* Robin Yoakum

*An authorized agent may sign in lieu of the property owner for Final Maps, Tentative Maps, and Parcel Maps.

Print Name Robin Yoakum

Subscribed and sworn before me

This 16th day of July, 2015.

Pamela Samuolis

Notary Public in and for said County and State

PAMELA SAMUOLIS
Notary Public State of Nevada
No. 00-63724-1
My appt. exp. Aug. 23 2016

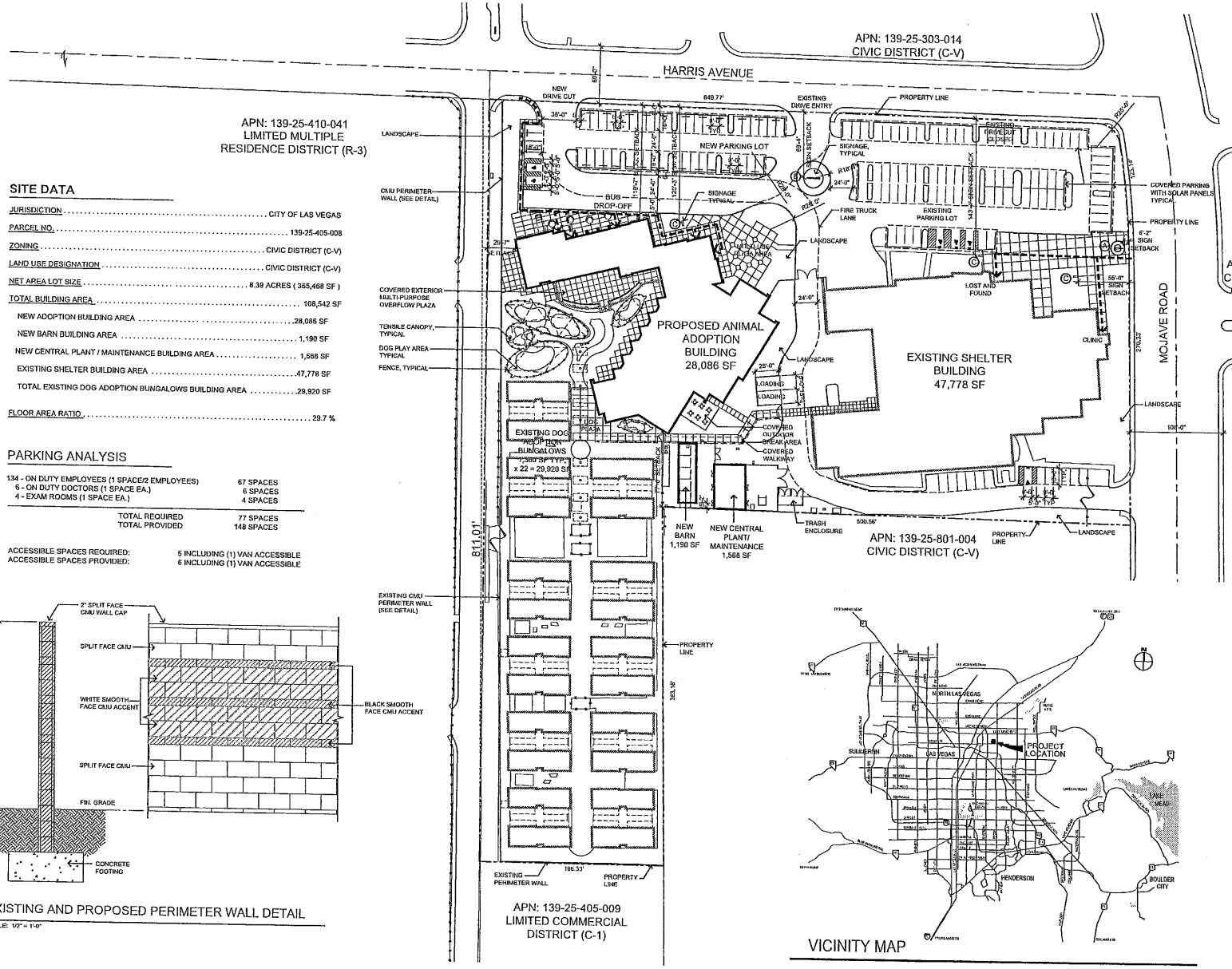
Revised 10/27/08

FOR DEPARTMENT USE ONLY

Case #	SDR-60357
Meeting Date:	
Total Fee:	
Date Received:*	
Received By:	

*The application will not be deemed complete until the submitted materials have been reviewed by the Department of Planning for consistency with applicable sections of the Zoning Code.

PRJ-60302



OVERALL SITE PLAN

SCALE : 1"=50'-0"

8985 s. eastern
suite 220
las vegas, nv 89123
p 702.456.1070
f 702.456.7020

JOB NUMBER - 2015103

ethos three ARCHITECTURE

SITE PLAN

THE ANIMAL FOUNDATION
655 N. MOJAVE RD.

PRJ-60302
07/23/15

0 25 50 100

07-23-15

SHT A1.0

SDR-60357

ENLARGED SITE PLAN

SCALE : 1/16"=1'-0"

0 8 16 32

north

8985 s. eastern
suite 220
las vegas, nv 89123
p 702.456.1070
f 702.456.7020

JOB NUMBER - 2015103

ethos three ARCHITECTURE

ENLARGED SITE PLAN

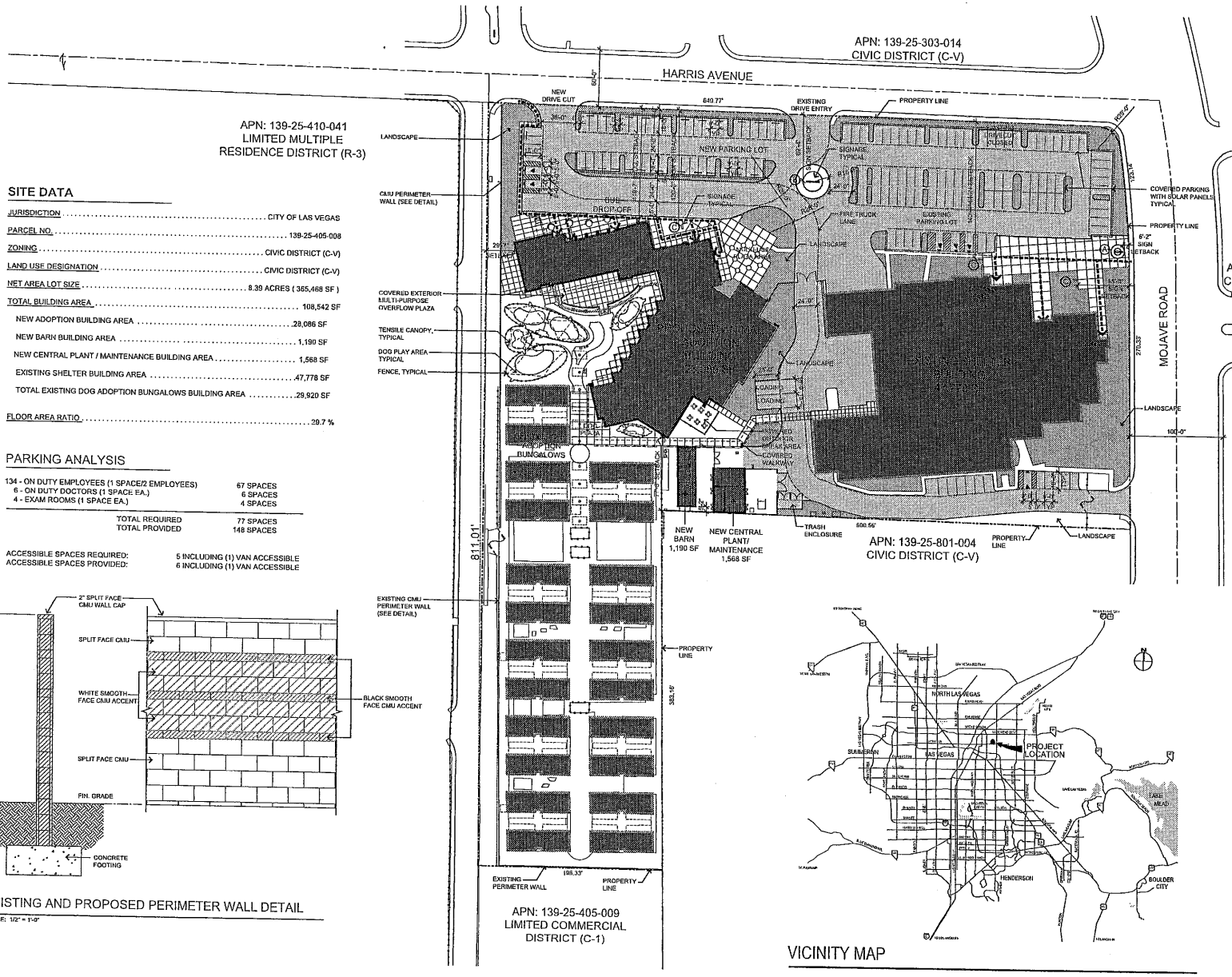
THE ANIMAL FOUNDATION
655 N. MOJAVE RD.

PRJ-60302
07/23/15

07-23-15

SHT A1.1

SDR-60357



SITE DATA

JURISDICTION	CITY OF LAS VEGAS
PARCEL NO.	139-25-405-008
ZONING	CIVIC DISTRICT (C-V)
LAND USE DESIGNATION	CIVIC DISTRICT (C-V)
NET AREA LOT SIZE	8.39 ACRES (365,468 SF)
TOTAL BUILDING AREA	108,542 SF
NEW ADOPTION BUILDING AREA	28,086 SF
NEW BARN BUILDING AREA	1,190 SF
NEW CENTRAL PLANT / MAINTENANCE BUILDING AREA	1,568 SF
EXISTING SHELTER BUILDING AREA	47,778 SF
TOTAL EXISTING DOG ADOPTION BUNGALOWS BUILDING AREA	29,920 SF
FLOOR AREA RATIO	29.7 %

PARKING ANALYSIS

134 - ON DUTY EMPLOYEES (1 SPACE/2 EMPLOYEES)	67 SPACES
6 - ON DUTY DOCTORS (1 SPACE EA.)	6 SPACES
4 - EXAM ROOMS (1 SPACE EA.)	4 SPACES
TOTAL REQUIRED	77 SPACES
TOTAL PROVIDED	148 SPACES
ACCESSIBLE SPACES REQUIRED:	5 INCLUDING (1) VAN ACCESSIBLE
ACCESSIBLE SPACES PROVIDED:	6 INCLUDING (1) VAN ACCESSIBLE

EXISTING AND PROPOSED PERIMETER WALL DETAIL

SCALE: 1/2" = 1'-0"

VICINITY MAP

OVERALL SITE PLAN

SCALE : 1"=50'-0"

0 25 50 100

8985 s. eastern
suite 220
las vegas, nv 89123
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f 702.456.7020

ethos three ARCHITECTURE

JOB NUMBER - 2015103

SITE PLAN

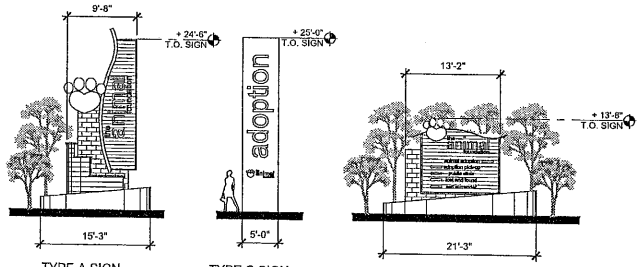
THE ANIMAL FOUNDATION
655 N. MOJAVE RD.

PRJ-60302
07/23/15

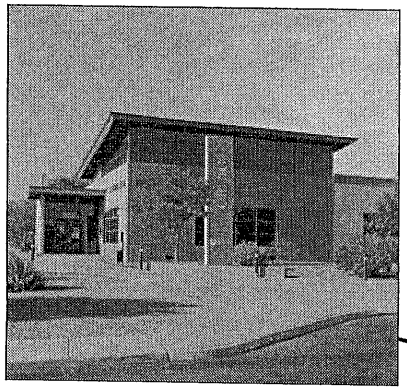
07-23-15

SHT A1.0

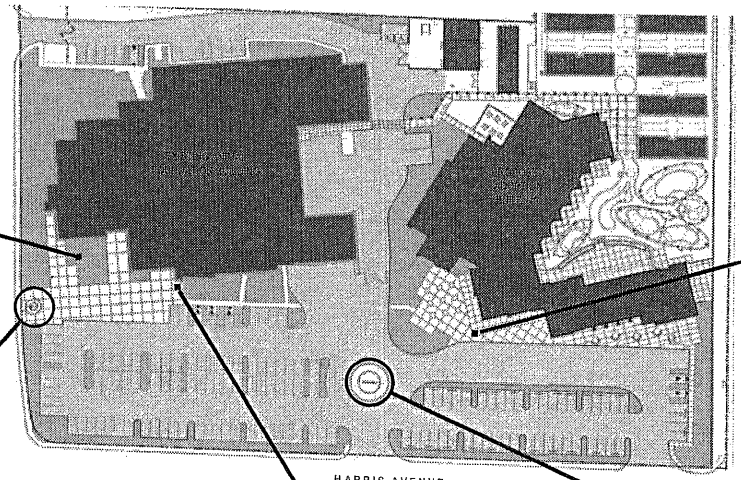
SDR-60357



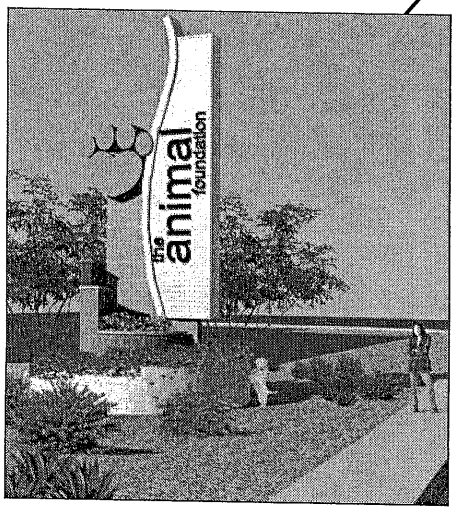
TYPE A SIGN | TYPE C SIGN | TYPE B SIGN



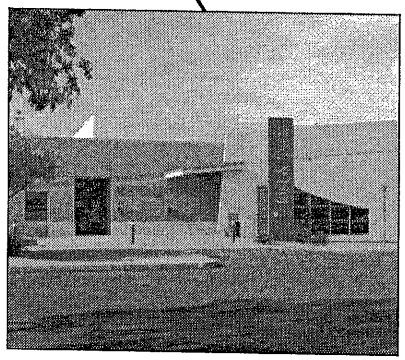
SIGN AT CLINIC LOBBY (C)



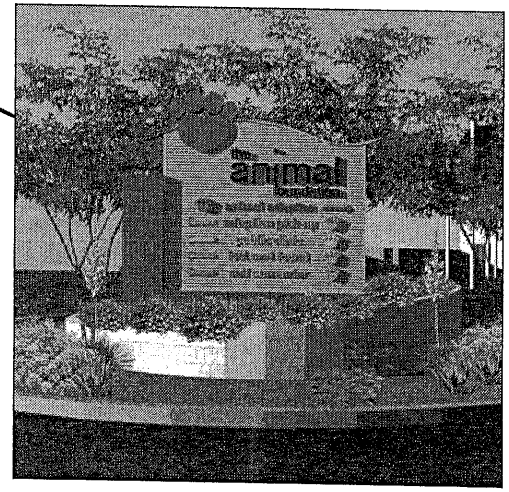
SIGN AT ADOPTION LOBBY (C)



SIGN AT MOJAVE ROAD (A)



SIGN AT RECIEVING/
LOST & FOUND LOBBY (C)



MAIN ENTRY DIRECTORY (B)

WAY FINDING

SCALE : 1"=60'-0"

0 30 60 120

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las vegas, nv 89123
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f 702.456.7020

JOB NUMBER - 2015103

ethos three
ARCHITECTURE

WAY FINDING

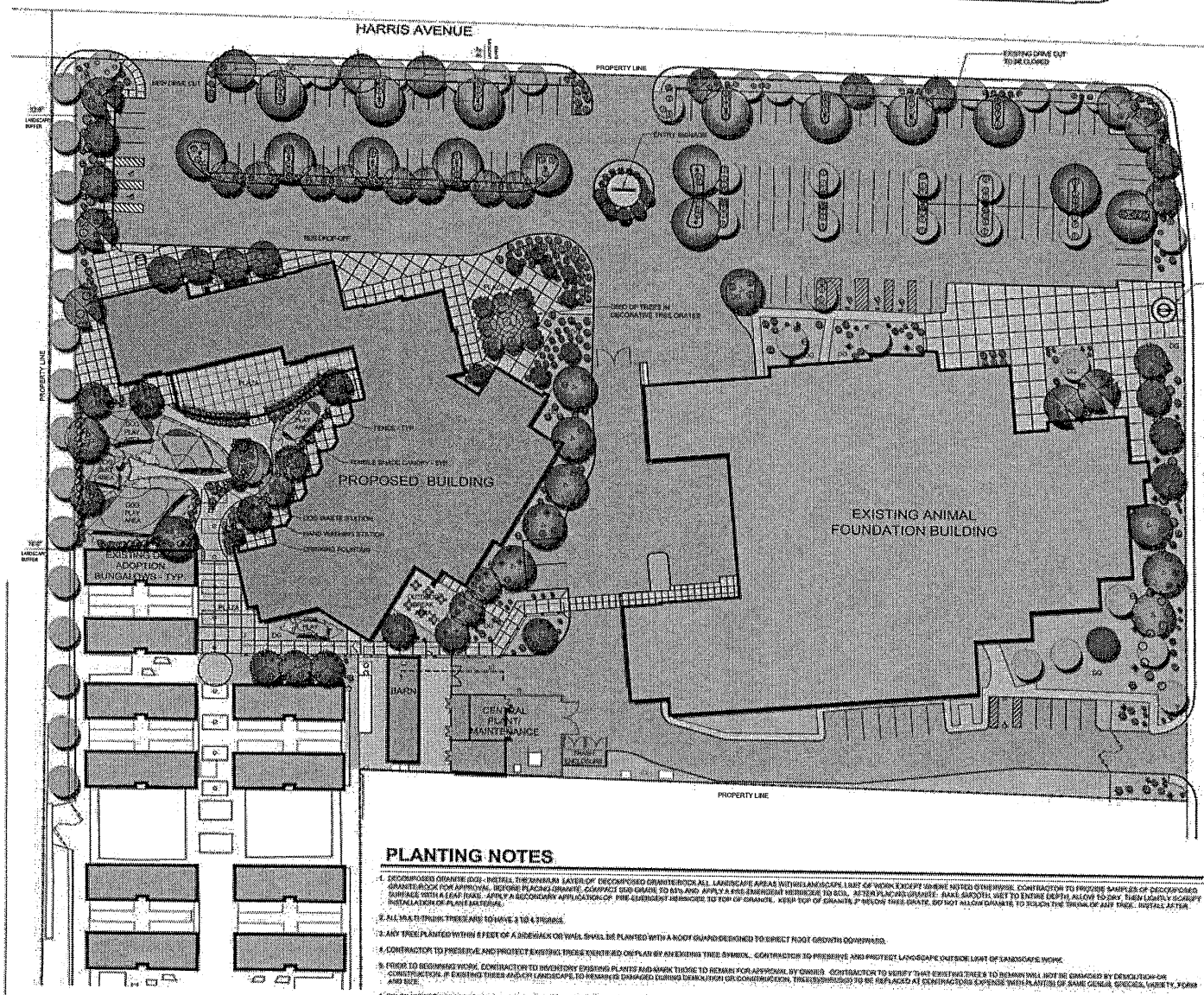
THE ANIMAL FOUNDATION
655 N. MOJAVE RD.

PRJ-60302
07/23/15

07-23-15

SHT A1.2

SDR-60357



PLANTING LEGEND

TREES

SYMBOL	BOTANICAL NAME / COMMON NAME	QTY.	CALIPER / MINIMUM SIZE

SHRUBS

SYMBOL	BOTANICAL NAME / COMMON NAME	QTY.	MINIMUM SIZE

LANDSCAPE ELEMENTS

SYMBOL	DESCRIPTION	QTY.
	DECOMPOSED GRANITE COLOR: TO MATCH EXISTING. SEE TO MATCH EXISTING 3" MINIMUM DEPTH. SEE NOTE #1.	45,544 S.F.
	DECORATIVE ROCK: COLOR: GOLD SIZE: 1/8" MINUS, 2" MEDIUM DEPTH: SEE NOTE #1.	8,000 S.F.
	SYNTHETIC TURF	8,250 S.F.

SITE NOTES:

	TOTAL
TOTAL LANDSCAPE AREA	53,776 S.F.
TOTAL OPEN SPACE AREA	191,506 S.F.
TOTAL AREA	365,453 S.F.

PLANTING NOTES

1. DECOMPOSED GRANITE (DG) - INSTALL THE MINIMUM LAYER OF DECOMPOSED GRANITE/ROCK ALL LANDSCAPE AREAS WITH/LANDSCAPE LIMIT OF WORK EXCEPT WHERE NOTED OTHERWISE. CONTRACTOR TO PROVIDE SAMPLES OF DECOMPOSED GRANITE/ROCK FOR APPROVAL BEFORE PLACING GRANITE. COMPACT DG TO 90% AND APPLY A PRE-EMERGENT HERBICIDE TO DG. AFTER PLACING GRANITE, RAKE SMOOTH, WET TO ENTIRE DEPTH, ALLOW TO DRY, THEN LIGHTLY SCARIFY INSTALLATION OF PLANT MATERIALS.
2. ALL MULTI-TRUNK TREES ARE TO HAVE 3 TO 5 TRUNKS.
3. ANY TREE PLANTED WITHIN 5 FEET OF A SIDEWALK OR WALL SHALL BE PLANTED WITH A ROOT GUARD DESIGNED TO DIRECT ROOT GROWTH DOWNWARD.
4. CONTRACTOR TO PRESERVE AND PROTECT EXISTING TREES IDENTIFIED ON PLAN BY ANY/EXISTING TREE SYMBOL. CONTRACTOR TO PRESERVE AND PROTECT LANDSCAPE OUTSIDE LIMIT OF LANDSCAPE WORK.
5. PRIOR TO BEGINNING WORK, CONTRACTOR TO INVENTORY EXISTING PLANTS AND MARK THOSE TO REMAIN FOR APPROVAL BY OWNER. CONTRACTOR TO VERIFY THAT EXISTING TREES TO REMAIN WILL NOT BE DAMAGED BY DEMOLITION OR CONSTRUCTION. IF EXISTING TREES AND/OR LANDSCAPE TO REMAIN IS DAMAGED DURING DEMOLITION OR CONSTRUCTION, TREE(S)/SHRUB(S) TO BE REPLACED AT CONTRACTORS EXPENSE WITH PLANTING OF SAME GENUS, SPECIES, VARIETY, FORM AND SIZE.
6. CONTRACTOR TO PROTECT IN PLACE EXISTING UTILITIES. CONTRACTOR TO VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION. CONTRACTOR TO USE CAUTION, CALL BEFORE YOU DIG AND CALL BEFORE YOU OVER HEAD.

LANDSCAPE PLAN

SCALE : 1"=30'-0"

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suite 220
las vegas, nv 89123
p 702.456.1070
f 702.456.7020

ethos three ARCHITECTURE

southwick LANDSCAPE ARCHITECTS

north

0 15 30 60

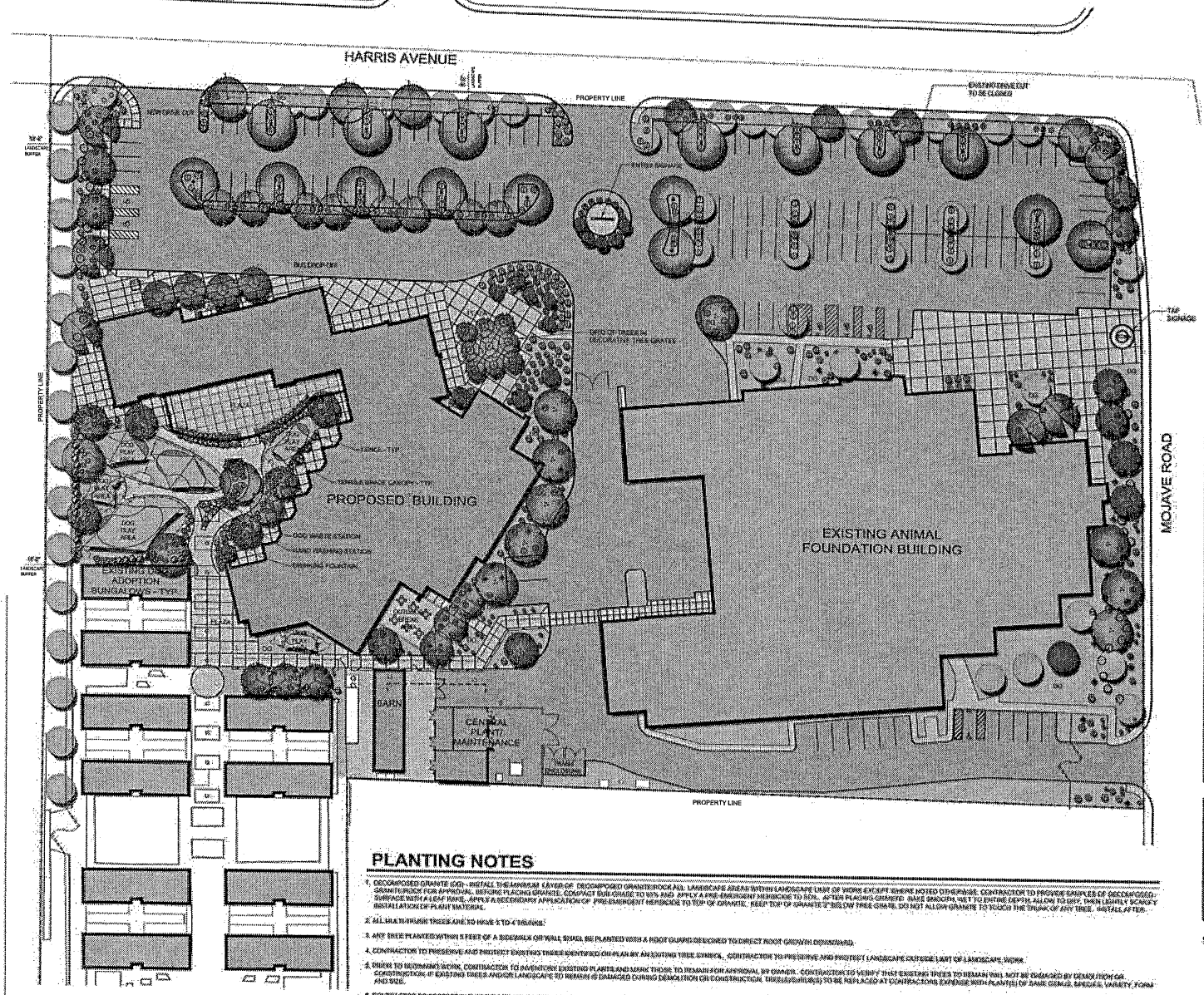
PRJ-60302
07-23-15 / 08/23/15

LANDSCAPE PLAN

THE ANIMAL FOUNDATION
645 N. MOJAVE RD.

SHT L1.1

SDR-60357



PLANTING LEGEND

TREES

SYMBOL	BOTANICAL NAME / COMMON NAME	QTY.	CAL/SIZE
	MORUS MICROPHYLLA / BOXTHORN TREE	9	24" BOX
	CHITALPA X TASHKENTENSIS / CHITALPA TREE	2	24" BOX
	PISTACIA ATLANTICA 'KM1' / KEITH DAVEY MALE ASH	28	24" BOX
	PISTACIA CHINENSIS / CHINESE PISTACHE	9	24" BOX
	PROSOPIS CHILENSIS / CHILEAN MESQUITE	9	24" BOX
	PYRUS CALLERYANA 'REDSPIRE' / REDSPIRE ASH	9	24" BOX
	QUERCUS SUBER / CORK OAK	4	24" BOX
	ULMUS SAPOTIFOLIA / CHINESE ELM	12	24" BOX
	WASHINGTONIA ROBUSTA / MEXICAN FAN PALM	13	12 FT. BOX
	ULMUS SAPOTIFOLIA / CHINESE ELM	16	15 FT. BOX
	EXISTING TREE TO REMAIN / PROTECT IN PLACE		

SHRUBS

SYMBOL	BOTANICAL NAME / COMMON NAME	QTY.	MINIMUM SIZE
	ACACIA REDONDA / BERRY CAMPEY	56	5 GALLON
	AGAVE AMERICANA / CENTURY PLANT	15	5 GALLON
	CAESALPINIA CALIDA / YELLOW BIRD OF PARADISE	37	5 GALLON
	CELTIS CAPITATA 'MONUMENTAL' / MONUMENTAL GOLD SPIRIT	150	5 GALLON
	DASYLIRION WHEELERI / DESERT SPOON	28	5 GALLON
	DODONAEA VISCOSA 'PURPUREA' / PURPLE HOP BUSH	35	5 GALLON
	HESPERALOE FUNIFERA / GIANT HESPERALOE	21	5 GALLON
	HESPERALOE PARVIFLORA 'RED' / RED YUCCA	15	5 GALLON
	LANTANA MONTEVIDENSIS 'NEW GOLD' / TRAILING LANTANA	116	5 GALLON
	LEUCOPHYLLUM CANDIDUM 'SILVER CLOUD' / SILVER CLOUD SAGE	59	5 GALLON
	LEUCOPHYLLUM LANGMANIAE 'RIO BRAVO' / RIO BRAVO SAGE	33	5 GALLON
	MUHLENBERGIA CAPILLARIS 'REGAL MIST' / PINK MUHLY	33	5 GALLON
	RUSSELIA EQUISETIFORMIS / FIRECRACKER PLANT	8	5 GALLON
	SALVIA CLEVELANDII / CLEVELAND SAGE	136	5 GALLON
	EXISTING SHRUB TO REMAIN / PROTECT IN PLACE	4	5 GALLON

LANDSCAPE ELEMENTS

SYMBOL	DESCRIPTION	QTY.
	DECOMPOSED GRANITE, COLOR: TO MATCH EXISTING DG, TO MATCH EXISTING, 3" MINIMUM DEPTH, SEE NOTE #1.	48,644 S.F.
	BOULDER ROCK, COLOR: GOLD, SIZE: 24" MIN., 3' MINIMUM DEPTH, SEE NOTE #1.	2,033 S.F.
	ARTIFICIAL TURF	4,200 S.F.

SITE NOTES:

	TOTAL
TOTAL LANDSCAPE AREA	53,776 S.F.
TOTAL OPEN SPACE AREA	151,306 S.F.
TOTAL AREA	365,405 S.F.

PLANTING NOTES

1. DECOMPOSED GRANITE (DG) - INSTALL THE MINIMUM LAYER OF DECOMPOSED GRANITE/ROCK ALL LANDSCAPE AREAS WITHIN LANDSCAPE LIMIT OF WORK EXCEPT WHERE NOTED OTHERWISE. CONTRACTOR TO PROVIDE SAMPLES OF DECOMPOSED GRANITE/ROCK FOR APPROVAL. BEFORE PLACING GRANITE, COMPACT SUB-GRADE TO 90% AND APPLY A PRE-EMERGENT HERBICIDE TO SOIL. AFTER PLACING GRANITE, RAKE SMOOTH, WET TO ENTIRE DEPTH, ALLOW TO DRY, THEN LIGHTLY SCARIFY SURFACE WITH A LEAF RAKE. APPLY A SECONDARY APPLICATION OF PRE-EMERGENT HERBICIDE TO TOP OF GRANITE. KEEP TOP OF GRANITE 3" BELOW TREE GRATE. DO NOT ALLOW GRANITE TO TOUCH THE TRUNK OF ANY TREE. INSTALL AFTER INSTALLATION OF PLANT MATERIAL.
2. ALL MULTI-TRUNK TREES ARE TO HAVE 3 TO 4 TRUNKS.
3. ANY TREE PLANTED WITHIN 5 FEET OF A SIDEWALK OR WALL SHALL BE PLANTED WITH A ROOT GUARD DESIGNED TO DIRECT ROOT GROWTH DOWNWARD.
4. CONTRACTOR TO PRESERVE AND PROTECT EXISTING TREES IDENTIFIED ON PLAN BY AN EXISTING TREE SYMBOL. CONTRACTOR TO PRESERVE AND PROTECT LANDSCAPE OUTSIDE LIMIT OF LANDSCAPE WORK.
5. PRIOR TO BEGINNING WORK, CONTRACTOR TO INVENTORY EXISTING PLANTS AND MARK THOSE TO REMAIN FOR APPROVAL BY OWNER. CONTRACTOR TO VERIFY THAT EXISTING TREES TO REMAIN WILL NOT BE DAMAGED BY DEMOLITION OR CONSTRUCTION. IF EXISTING TREES AND/OR LANDSCAPE TO REMAIN IS DAMAGED DURING DEMOLITION OR CONSTRUCTION, TREE(S)/PLANT(S) TO BE REPLACED AT CONTRACTORS EXPENSE WITH PLANT(S) OF SAME GENUS, SPECIES, VARIETY, FORM AND SIZE.
6. CONTRACTOR TO PROTECT IN PLACE EXISTING UTILITIES. CONTRACTOR TO VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION. CONTRACTOR TO USE CAUTION, CALL BEFORE YOU DIG AND CALL BEFORE YOU OVER HEAD.

LANDSCAPE PLAN

SCALE : 1"=30'-0"

0 15 30 60

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f 702.456.7020

ethos three ARCHITECTURE

LANDSCAPE PLAN

THE ANIMAL FOUNDATION
645 N. MOJAVE RD.

southwick LANDSCAPE ARCHITECTS

north

PRJ-60302
07-23-15 5/23/15

SHT L1.1

SDR-60357

EXTERIOR MATERIALS

MTL-1 — STANDING SEAM METAL ROOF PANELS
Berridge Manufacturing Co., MODEL: T5/E PANEL
Color: Factory Kynar 500 Finish to match EP-4

MTL-1a METAL FASCIA AND SOFFIT PANELS
Berridge Manufacturing Co.
Color: Factory Kynar 500 Finish to match EP-4

MTL-2 — CORRUGATED METAL WALL PANELS
- Berridge Manufacturing Co., MODEL: HR-16
Color: Factory Kynar 500 Color Finish: ZINC GREY

MTL-3 — WROUGHT IRON FENCE
Color: EP-11

MTL-4 — METAL PANEL CANOPY

MTL-4a Color: EP-6

MTL-4b Color: EP-8

MTL-4c Color: EP-11

EP- — PAINTED CONCRETE TILT PANEL

EP-1 — FIELD 1: Sherwin Williams 6098 Sand Dollar

EP-2 — FIELD 2: Sherwin Williams 7038 Tony Taupe

EP-3 — FIELD 3: Sherwin Williams 7025 Backdrop

EP-4 — ACCENT 1: Sherwin Williams 6487 Cloudburst

EP-5 — ACCENT 2: Sherwin Williams 6485 Raindrop

EP-6 — ACCENT 3: Sherwin Williams 6713 Verdant

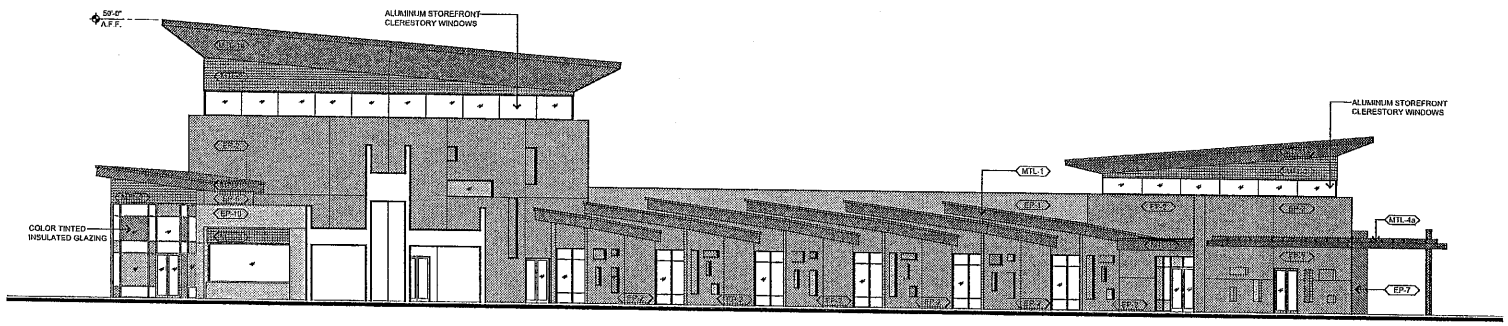
EP-7 — ACCENT 4: Sherwin Williams 6424 Taney Green

EP-8 — ACCENT 5: Sherwin Williams 6643 Yam

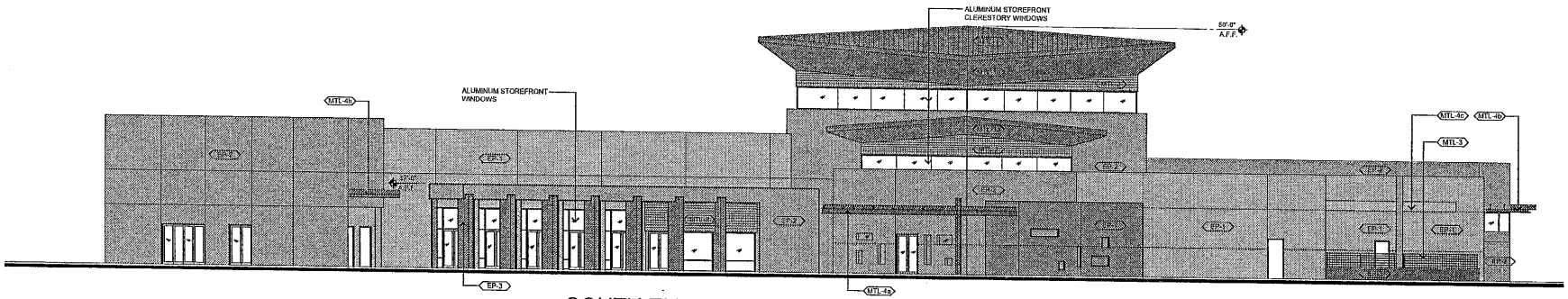
EP-9 — ACCENT 6: Sherwin Williams 6656 Serape

EP-10 — ACCENT 7: Sherwin Williams 6674 Jonquil

EP-11 — ACCENT 8: Sherwin Williams 6882 June Day



WEST ELEVATION



SOUTH ELEVATION

8985 s. eastern
suite 220
las vegas, nv 89123
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JOB NUMBER - 2015103

ethos three ARCHITECTURE

ELEVATIONS 1

THE ANIMAL FOUNDATION
655 N. MOJAVE

ELEVATIONS

SCALE : 3/32"=1'-0"

0 4 8 16

PRJ-60302
07/23/15

07-23-15

SHT A5.1

SDR-60357

EXTERIOR MATERIALS

MTL-1 — STANDING SEAM METAL ROOF PANELS
Berridge Manufacturing Co., MODEL : TEE PANEL
Color: Factory Kynar 500 Finish to match EP-4

MTL-1a METAL FASCIA AND SOFFIT PANELS
Berridge Manufacturing Co.
Color: Factory Kynar 500 Finish to match EP-4

MTL-2 — CORRUGATED METAL WALL PANELS
* Berridge Manufacturing Co., MODEL HR-16
Color: Factory Kynar 500 Color Finish: ZINC GREY

MTL-3 — WROUGHT IRON FENCE
Color: EP-11

MTL-4 — METAL PANEL CANOPY

MTL-4a Color: EP-6

MTL-4b Color: EP-8

MTL-4c Color: EP-11

EP- — PAINTED CONCRETE TILT PANEL

EP-1 — FIELD 1: Sherwin Williams 6099 Sand Dollar

EP-2 — FIELD 2: Sherwin Williams 7038 Tony Taupe

EP-3 — FIELD 3: Sherwin Williams 7025 Backdrop

EP-4 — ACCENT 1: Sherwin Williams 6487 Cloudburst

EP-5 — ACCENT 2: Sherwin Williams 6485 Raindrop

EP-6 — ACCENT 3: Sherwin Williams 6713 Verdant

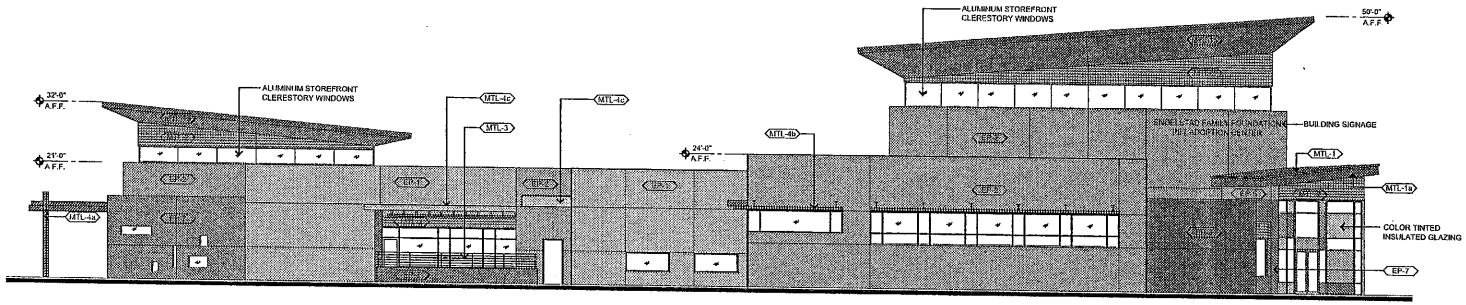
EP-7 — ACCENT 4: Sherwin Williams 6424 Tansy Green

EP-8 — ACCENT 5: Sherwin Williams 6643 Yam

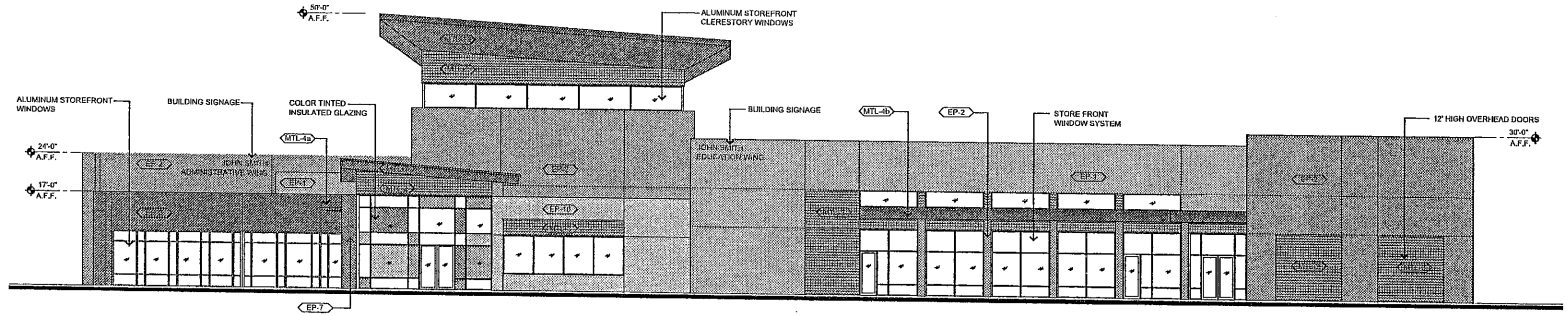
EP-9 — ACCENT 6: Sherwin Williams 6656 Serape

EP-10 — ACCENT 7: Sherwin Williams 6674 Jonquil

EP-11 — ACCENT 8: Sherwin Williams 6692 June Day



EAST ELEVATION



NORTH ELEVATION

ELEVATIONS

SCALE : 3/32"=1'-0"

0 4 8 16

PRJ-60302
07/23/15

07-23-15

SHT A5.2

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JOB NUMBER - 2015103

ethos three ARCHITECTURE

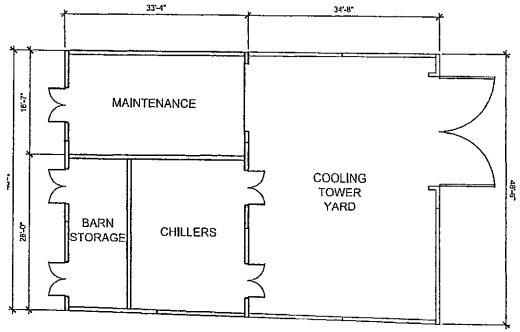
ELEVATIONS 2

THE ANIMAL FOUNDATION
655 N. MOJAVE

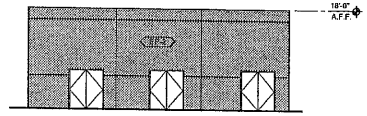
SDR-60357

EXTERIOR MATERIALS

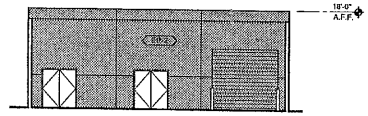
- MTL-1 — STANDING SEAM METAL ROOF PANELS
  Berridge Manufacturing Co., MODEL: T65 PANEL
  Color: Factory Kynar 500 Finish to match EP-4
- MTL-1a METAL FASCIA AND SOFFIT PANELS
  Berridge Manufacturing Co.
  Color: Factory Kynar 500 Finish to match EP-4
- MTL-2 — CORRUGATED METAL WALL PANELS
  - Berridge Manufacturing Co., MODEL: HR-16
  Color: Factory Kynar 500 Color Finish: ZINC GREY
- MTL-3 — WROUGHT IRON FENCE
  Color: EP-11
- MTL-4 — METAL PANEL CANOPY
  - MTL-4a Color: EP-6
  - MTL-4b Color: EP-8
  - MTL-4c Color: EP-11
- EP- — PAINTED CONCRETE TILT PANEL
  - EP-1 — FIELD 1: Sherwin Williams 6099 Sand Dollar
  - EP-2 — FIELD 2: Sherwin Williams 7038 Tony Taupe
  - EP-3 — FIELD 3: Sherwin Williams 7025 Backdrop
  - EP-4 — ACCENT 1: Sherwin Williams 6487 Cloudburst
  - EP-5 — ACCENT 2: Sherwin Williams 6485 Raindrop
  - EP-6 — ACCENT 3: Sherwin Williams 6713 Verdant
  - EP-7 — ACCENT 4: Sherwin Williams 6424 Tansy Green
  - EP-8 — ACCENT 5: Sherwin Williams 6643 Yare
  - EP-9 — ACCENT 6: Sherwin Williams 6556 Scrape
  - EP-10 — ACCENT 7: Sherwin Williams 6674 Jonquil
  - EP-11 — ACCENT 8: Sherwin Williams 6682 June Day



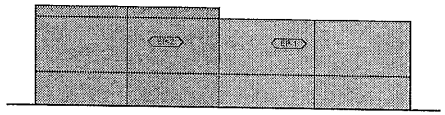
PLAN



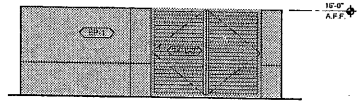
WEST ELEVATION



EAST ELEVATION

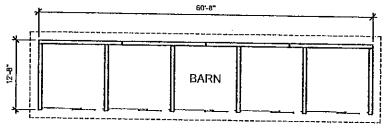


SOUTH ELEVATION (NORTH SIMILAR)

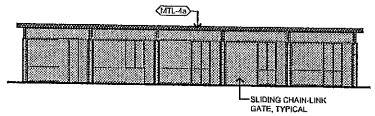


EAST ELEVATION

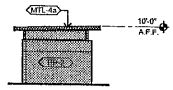
MAINTENANCE / CENTRAL PLANT



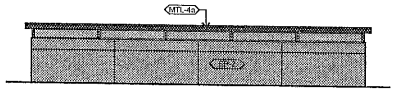
PLAN



EAST ELEVATION



TYPICAL SIDE ELEVATION



WEST ELEVATION

BARN

PLANS AND ELEVATIONS - ANCILLARY BUILDINGS

SCALE : 3/32"=1'-0"

8985 s. eastern
suite 220
las vegas, nv 89123
p 702.456.1070
f 702.456.7020

JOB NUMBER - 2015103

ethos three ARCHITECTURE

ELEVATIONS 3

THE ANIMAL FOUNDATION
655 N. MOJAVE

PRJ-60302
07/23/15

0 4 8 16

07-23-15

SHT A5.3

SDR-60357

EXTERIOR MATERIALS

MTL-1 — STANDING SEAM METAL ROOF PANELS
Berridge Manufacturing Co., MODEL: T-EE PANEL
Color: Factory Kynar 500 Finish to match EP-4

MTL-1a METAL FASCIA AND SOFFIT PANELS
Berridge Manufacturing Co.
Color: Factory Kynar 500 Finish to match EP-4

MTL-2 — CORRUGATED METAL WALL PANELS
- Berridge Manufacturing Co., MODEL: 1-VR-16
Color: Factory Kynar 500 Color Finish: ZINC GREY

MTL-3 — WROUGHT IRON FENCE
Color: EP-11

MTL-4 — METAL PANEL CANOPY

MTL-4a Color: EP-6

MTL-4b Color: EP-8

MTL-4c Color: EP-11

EP- — PAINTED CONCRETE TILT PANEL

EP-1 — FIELD 1: Sherwin Williams 6099 Sand Dollar

EP-2 — FIELD 2: Sherwin Williams 7038 Tony Taupe

EP-3 — FIELD 3: Sherwin Williams 7025 Backdrop

EP-4 — ACCENT 1: Sherwin Williams 6487 Cloudburst

EP-5 — ACCENT 2: Sherwin Williams 6485 Raindrop

EP-6 — ACCENT 3: Sherwin Williams 6713 Verdant

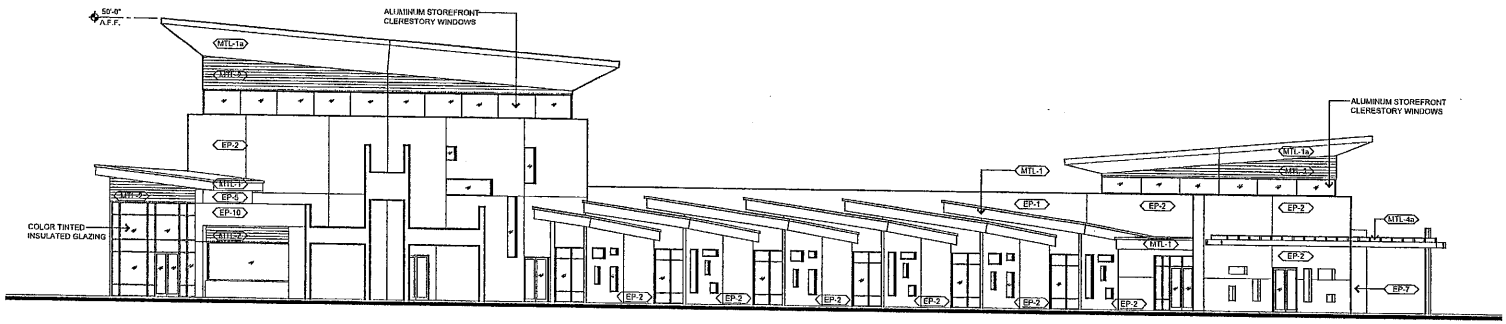
EP-7 — ACCENT 4: Sherwin Williams 6424 Toney Green

EP-8 — ACCENT 5: Sherwin Williams 6643 Yam

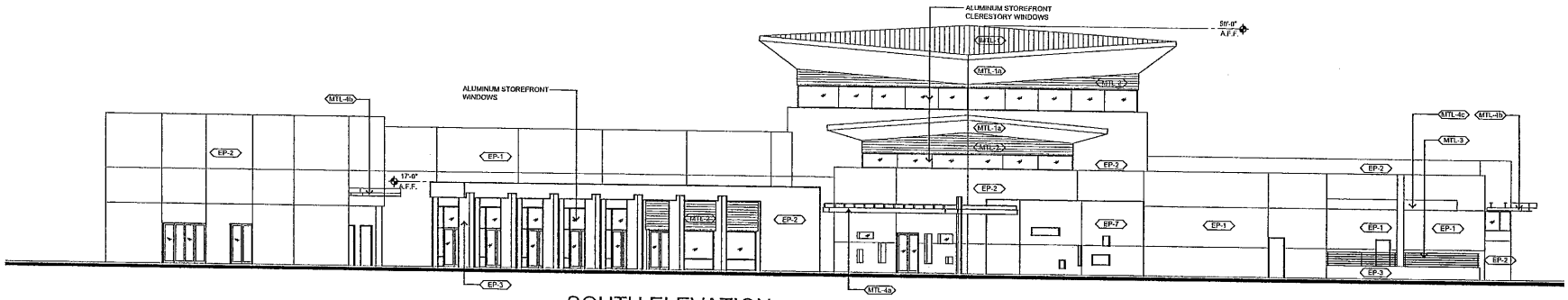
EP-9 — ACCENT 6: Sherwin Williams 6656 Serape

EP-10 — ACCENT 7: Sherwin Williams 6674 Jonquil

EP-11 — ACCENT 8: Sherwin Williams 9582 June Day



WEST ELEVATION



SOUTH ELEVATION

8985 s. eastern
suite 220
las vegas, nv 89123
p 702.456.1070
f 702.456.7020

JOB NUMBER - 2015103

ethos three ARCHITECTURE

THE ANIMAL FOUNDATION
655 N. MOJAVE

ELEVATIONS 1

ELEVATIONS

SCALE : 3/32"=1'-0"

0 4 8 16

PRJ-60302
07/23/15

07-23-15

SHT A5.1

SDR-60357

EXTERIOR MATERIALS

MTL-1 — STANDING SEAM METAL ROOF PANELS
Berridge Manufacturing Co., MODEL: T EE PANEL
Color: Factory Kynar 500 Finish to match EP-4

MTL-1a METAL FASCIA AND SOFFIT PANELS
Berridge Manufacturing Co.
Color: Factory Kynar 500 Finish to match EP-4

MTL-2 — CORRUGATED METAL WALL PANELS
- Berridge Manufacturing Co., MODEL: HR-16
Color: Factory Kynar 500 Color Finish: ZINC GREY

MTL-3 — W/ROUGHT IRON FENCE
Color: EP-11

MTL-4 — METAL PANEL CANOPY

MTL-4a Color: EP-6

MTL-4b Color: EP-8

MTL-4c Color: EP-11

EP- — PAINTED CONCRETE TILT PANEL

EP-1 — FIELD 1: Sherwin Williams 6099 Sand Dollar

EP-2 — FIELD 2: Sherwin Williams 7038 Tony Taupe

EP-3 — FIELD 3: Sherwin Williams 7025 Backdrop

EP-4 — ACCENT 1: Sherwin Williams 6487 Cloudburst

EP-5 — ACCENT 2: Sherwin Williams 6465 Raindrop

EP-6 — ACCENT 3: Sherwin Williams 6713 Verdant

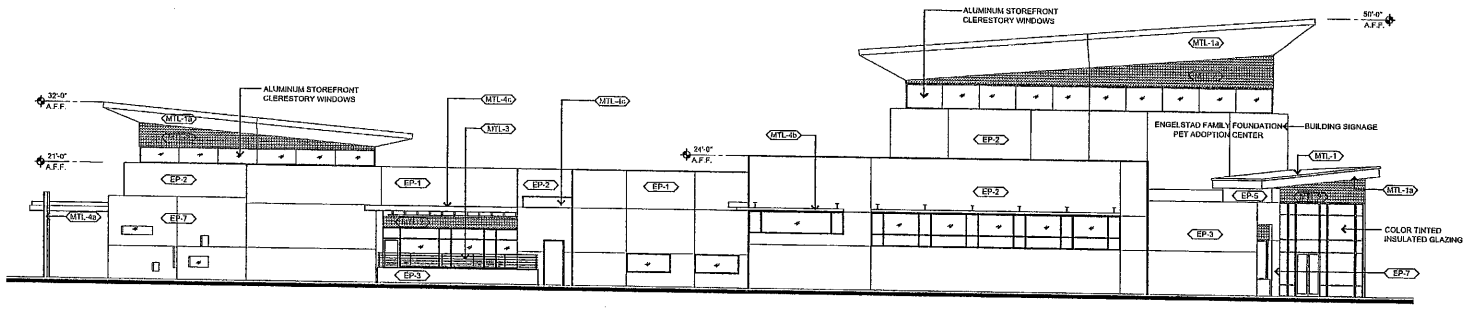
EP-7 — ACCENT 4: Sherwin Williams 6424 Tansy Green

EP-8 — ACCENT 5: Sherwin Williams 6843 Yam

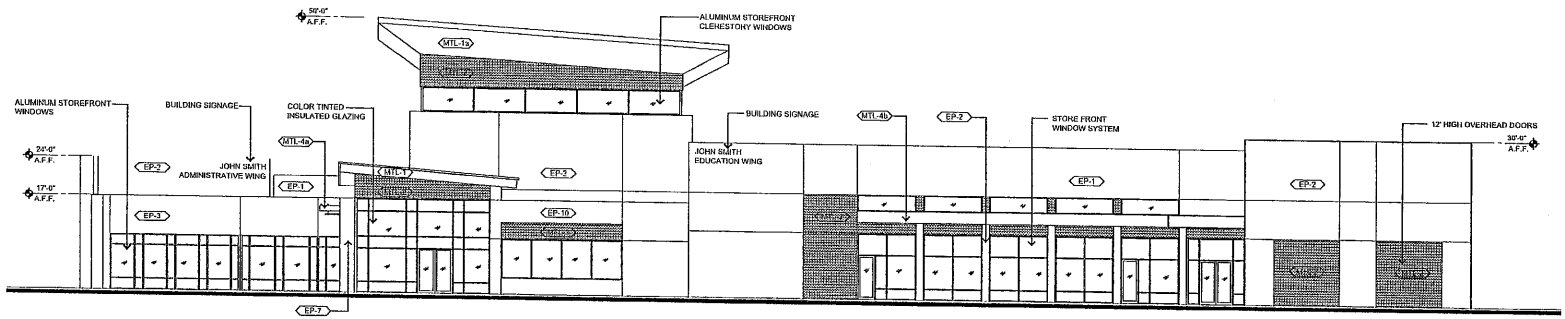
EP-9 — ACCENT 6: Sherwin Williams 6656 Serape

EP-10 — ACCENT 7: Sherwin Williams 6674 Jonquil

EP-11 — ACCENT 8: Sherwin Williams 6882 June Day



EAST ELEVATION



NORTH ELEVATION

ELEVATIONS

SCALE : 3/32"=1'-0"

0 4 8 16

PRJ-60302
07/23/15

07-23-15

SHT A5.2

8985 s. eastern
suite 220
las vegas, nv 89123
p 702.456.1070
f 702.456.7020

JOB NUMBER - 2015103

ethos three ARCHITECTURE

ELEVATIONS 2

THE ANIMAL FOUNDATION
655 N. MOJAVE

SDR-60357

EXTERIOR MATERIALS

MTL-1 — STANDING SEAM METAL ROOF PANELS
Berridge Manufacturing Co., MODEL : TEE PANEL
Color: Factory Kynar 500 Finish to match EP-4

MTL-1a METAL FASCIA AND SOFFIT PANELS
Berridge Manufacturing Co.
Color: Factory Kynar 500 Finish to match EP-4

MTL-2 — CORRUGATED METAL WALL PANELS
• Berridge Manufacturing Co., MODEL :HR-16
Color: Factory Kynar 500 Color Finish: ZINC GREY

MTL-3 — WROUGHT IRON FENCE
Color: EP-11

MTL-4 — METAL PANEL CANOPY

MTL-4a Color: EP-6

MTL-4b Color: EP-8

MTL-4c Color: EP-11

EP- — PAINTED CONCRETE TILT PANEL

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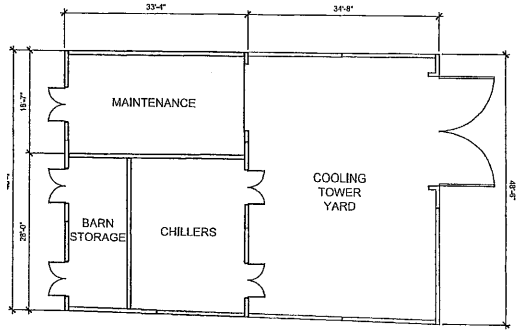
EP-8 — ACCENT 5: Sherwin Williams 6643 Yam

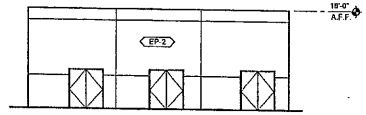
EP-9 — ACCENT 6: Sherwin Williams 9656 Serape

EP-10 — ACCENT 7: Sherwin Williams 6674 Jonquil

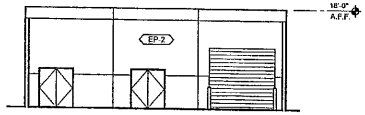
EP-11 — ACCENT 8: Sherwin Williams 6582 Jute Dpy



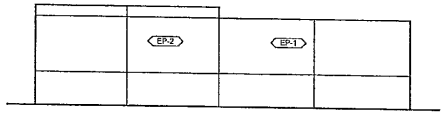
PLAN



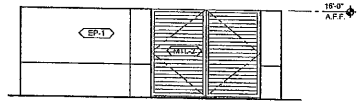
WEST ELEVATION



EAST ELEVATION

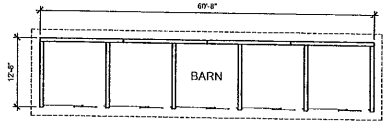


SOUTH ELEVATION (NORTH SIMILAR)

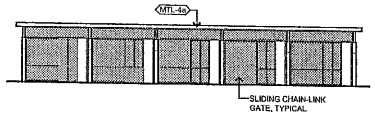


EAST ELEVATION

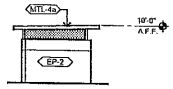
MAINTENANCE / CENTRAL PLANT



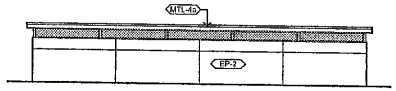
PLAN



EAST ELEVATION



TYPICAL SIDE ELEVATION



WEST ELEVATION

BARN

PLANS AND ELEVATIONS - ANCILLARY BUILDINGS

SCALE : 3/32"=1'-0"

8985 s. eastern
suite 220
las vegas, nv 89123
p 702.456.1070
f 702.456.7020

JOB NUMBER - 2015103

ethos three ARCHITECTURE

ELEVATIONS 3

THE ANIMAL FOUNDATION
655 N. MOJAVE

PRJ-60302
07/23/15

0 4 8 16

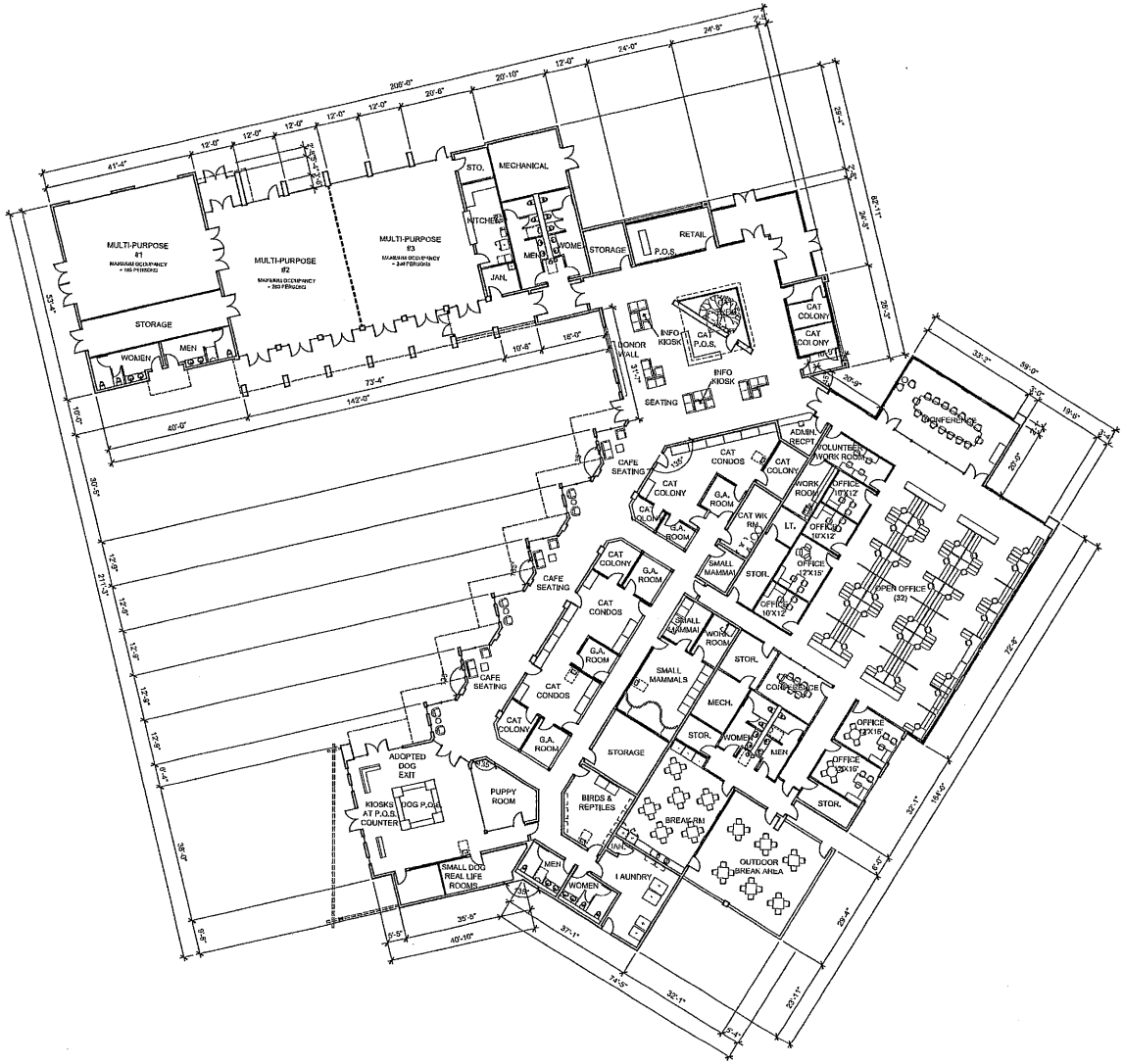
07-23-15

SHT A5.3

SDR-60357

8985 s. eastern
suite 220
las vegas, nv 89123
p 702.456.1070
f 702.456.7020

JOB NUMBER - 2015103



ADOPTION BUILDING FLOOR PLAN

SCALE : 1/16"=1'-0"

PRJ-60302
07/23/15

0 8 16 32

07-23-15

north

ethos three ARCHITECTURE

FLOOR PLAN

THE ANIMAL FOUNDATION
655 N. MOJAVE RD.

SHT A2.1

SDR-60357

SDR 60357
The Animal Foundation

655 N. Mojave Road

Proposed 30.844 thousand square foot animal hospital.

Traffic produced by proposed development:

Proposed Use	DESCRIPTION	#UNIT	RATE/# UNIT	TOTAL
Average Daily Traffic (ADT)	ANIMAL HOSPITAL/VETERINARY CLINIC [1000 SF]	30.844	28.66	884
AM Peak Hour			4.08	126
PM Peak Hour			4.72	146

Existing traffic on all nearby streets:

Mojave Road	
Average Daily Traffic (ADT)	7,182
PM Peak Hour (heaviest 60 minutes)	575

Harris Avenue	
Average Daily Traffic (ADT)	1,087
PM Peak Hour (heaviest 60 minutes)	87

	Adjacent Street ADT Capacity
Mojave Road	34,500
Harris Avenue	16,300

This project is expected to add about 884 trips per day on Mojave Rd. & Harris Ave. Currently, Mojave is at about 21 percent of capacity and Harris is at about 7 percent of capacity. With this project, Mojave is expected to be at about 23 percent of capacity and Harris to be at about 12 percent of capacity.

Based on Peak Hour use, this project will add about 146 trips in the peak hour, or about five every two minutes.

Note that this report assumes all traffic from this development uses all named streets.

CITY OF LAS VEGAS

ONE MOTION / ONE VOTE

Planning and Development Department
Case Planning Division
333 North Rancho Drive, 3rd Floor
Las Vegas, Nevada 89106
(702) 229-6301 Phone (702) 464-7499 Fax

RECEIVED
SEP 3 2015
City of Las Vegas
Dept. of Planning

CASE: SDR-60357 [PRJ-60302] - SITE DEVELOPMENT PLAN REVIEW

SUBJECT: APPLICANT: THE ANIMAL FOUNDATION - OWNER: CITY OF LAS VEGAS

The above item has been placed on the One Motion/One Vote portion of the Planning Commission Agenda for the ***SEPTEMBER 8, 2015*** Planning Commission meeting. All of these items will be placed at the beginning of the agenda. The Chairman of the Planning Commission will open them at the same time.

Enclosed please find the proposed conditions of approval. If you agree to these conditions, please sign this form and fax it to ***Nora Lares*** at *(702)464-7499* or e-mail to ***nlares@lasvegasnevada.gov***. If there is no one present at the Planning Commission meeting who wants to discuss this item, you will not be called to the podium to discuss the case. However, you must be present in case any Planning Commissioner or member of the public wants to discuss the item. If you have any questions, please contact my office at (702) 229-6301.

Please sign and date that you have read and agree to the conditions and return to our office by 5:00PM ***MONDAY, SEPTEMBER 7, 2015.***

Bonnie Rinaldi — Signature

3 Sept 2015 — Date

Bonnie Rinaldi — Please Print Name

The Animal Foundation — Company Name

Sincerely,

Andrew P. Reed, AICP
Planning Supervisor
Case Planning Division

Submitted after final agenda

Date 9/3/15 Item 17

ethos three
ARCHITECTURE

July 23, 2015

City of Las Vegas
Department of Planning
333 North Rancho Drive
Las Vegas, NV 89106

RE: **PRJ-60302**: Justification Letter for Site Development Plan Review
The Animal Foundation
APN: 139-25-405-008

We are requesting a Site Development Plan Review for a new Adoption Building and associated support buildings and site work for The Animal Foundation (TAF) located at 655 North Mojave Road. This request is intended to replace the expired SDR-43704, which was approved on January 25, 2012. The request remains very similar, with slight changes in design.

The parcel is currently zoned CV. The site is currently developed and includes a shelter building (not part of this application), dog bungalows (not part of this application), a tent structure housing adoption facilities and a portable building with administrative offices. As part of this application, the tent structure and administrative building will be replaced with a new Adoption Building. In addition, a shade structure (open air barn) will be added to accommodate the larger animals TAF receives as well as a central plant building and yard that will house new mechanical equipment which will service the entire facility.

Currently, it is difficult for the public to navigate through the various services and functions scattered throughout the site. This application includes additional site work and signage/way finding improvements to assist the public in locating each different function on the site, while at the same time improving operational circulation and efficiency. While the standards require that signage be provided similar to professional office use, the campus layout of the facility and varied backgrounds and needs of public users necessitates increased visibility and scale of way finding elements. In addition, the design intent is to spur interest and promote building functions as made visible from street distance to encourage public attendance. Additional parking will be provided as well as a bus circulation lane to improve vehicular circulation.

The building materials include concrete walls and metal roofing (matching the existing shelter building), metal wall panels (matching the existing dog bungalows and shelter building) in an effort to architecturally tie the campus structures together cohesively. In addition, splashes of color, extensive use of glass, and improved landscaping will be introduced to create a community center aesthetic to the campus resulting in an improved image and increased public visitation.

A new central plant mechanical system will service all buildings on site resulting in a large reduction in energy consumption. As indicated on the site plan, this proposal includes solar panel covered parking. In addition, daylighting strategies, durable low maintenance materials, and locally produced materials (concrete) will contribute to a reduced carbon footprint.

Sincerely,

John Lopeman, AIA

SDR-60357

PRJ-60302
07/23/15

8985 S. EASTERN SUITE 220 LAS VEGAS, NEVADA 89123 P: 702.456.1070 WWW.ETHOSTHREE.COM

NOTE: OFFSITE ANALYSIS PER TECHNICAL DRAINAGE STUDY FOR THE ANIMAL FOUNDATION REGIONAL ANIMAL CAMPUS, BY LOCHSA ENGINEERING, FEB. 2004

SEE FIGURE 5 FOR ADDITIONAL OFFSITE BASIN INFORMATION

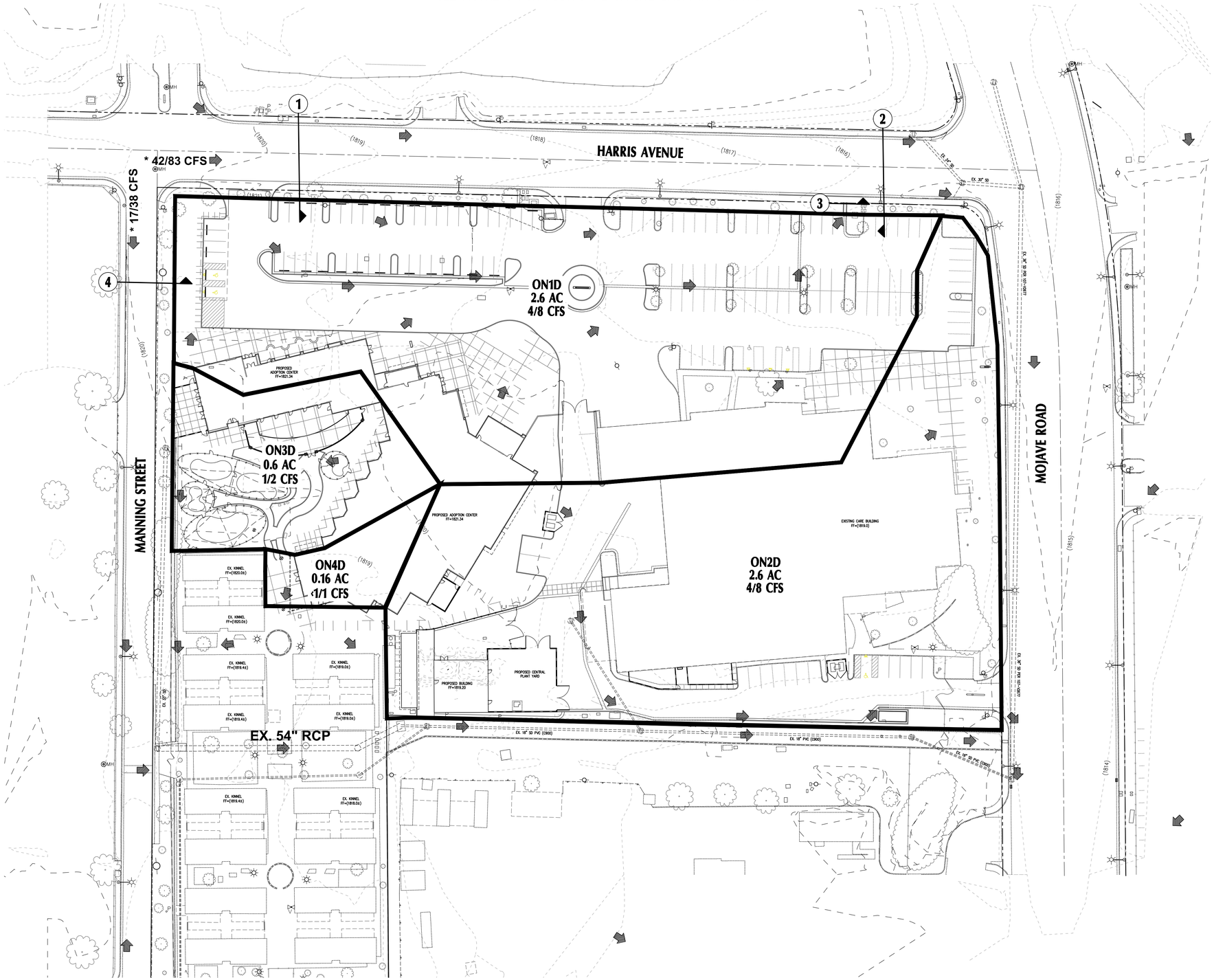


TABLE 2
BASIN RUNOFF AMOUNTS
DEVELOPED CONDITION

BASIN NAME	AREA (acres)	10-YEAR FLOW (cfs)	100-YEAR FLOW (cfs)
OFD1*	20.73	20	45
OFD2*	21.64	20	45
OFD3*	33.87	38	77
OFD4*	4.39	7	13
ON1D	2.6	4	8
ON2D	2.6	4	8
ON3D	0.6	1	2
ON4D	0.16	<1	1

* Referenced from Lochsa Study

TABLE 3
HYDRAULIC CALCULATION SUMMARY
6-HOUR, 10-YEAR STORM

SECTION	FLOW Q_{10} (cfs)	VELOCITY V_{10} (ft/s)	DEPTH D_{10} (ft)	VELOCITY X DEPTH
1* (Flowsplit of OFD2 + OFD3)	42	3.15	0.63	1.98
2* (Flowsplit of OFD2 + OFD3 + OFD4 + ON1D)	52	4.43	0.66	2.92
3 (ON1D)	4	8.88	0.30	N/A
4* (Flowsplit of OFD2 + OFD3)	17	2.37	0.65	1.54

* Referenced from Lochsa Study

TABLE 4
HYDRAULIC CALCULATION SUMMARY
6-HOUR, 100-YEAR STORM

SECTION	FLOW Q_{100} (cfs)	VELOCITY V_{100} (ft/s)	DEPTH D_{100} (ft)	VELOCITY X DEPTH
1* (Flowsplit of OFD2 + OFD3)	83	4.13	0.74	3.06
2* (Flowsplit of OFD2 + OFD3 + OFD4 + ON1D)	104	5.45	0.79	4.31
3 (ON1D)	8	11.72	0.46	N/A
4* (Flowsplit of OFD2 + OFD3)	38	3.26	0.80	2.61

* Referenced from Lochsa Study

N
W E
S
0 40' 80'
SCALE: 1" = 40'

LEGEND

- FLOW DIRECTION
- ON3EX BASIN NAME
- BASIN BOUNDARY
- CP1 CONCENTRATION POINT
- (1) HYDRAULIC SECTION

ADVANTAGE CIVIL DESIGN GROUP, LLP
2920 N. GREEN VALLEY PKWY. BLDG. 4 STE. #422
HENDERSON, NEVADA
89014
Office: 702.452.2254
Fax: 702.456.2254
Email: MAIL@ADVANTAGECIVIL-NV.COM
CIVIL ENGINEERING PLANNING CONSULTING

DEVELOPED ONSITE DRAINAGE

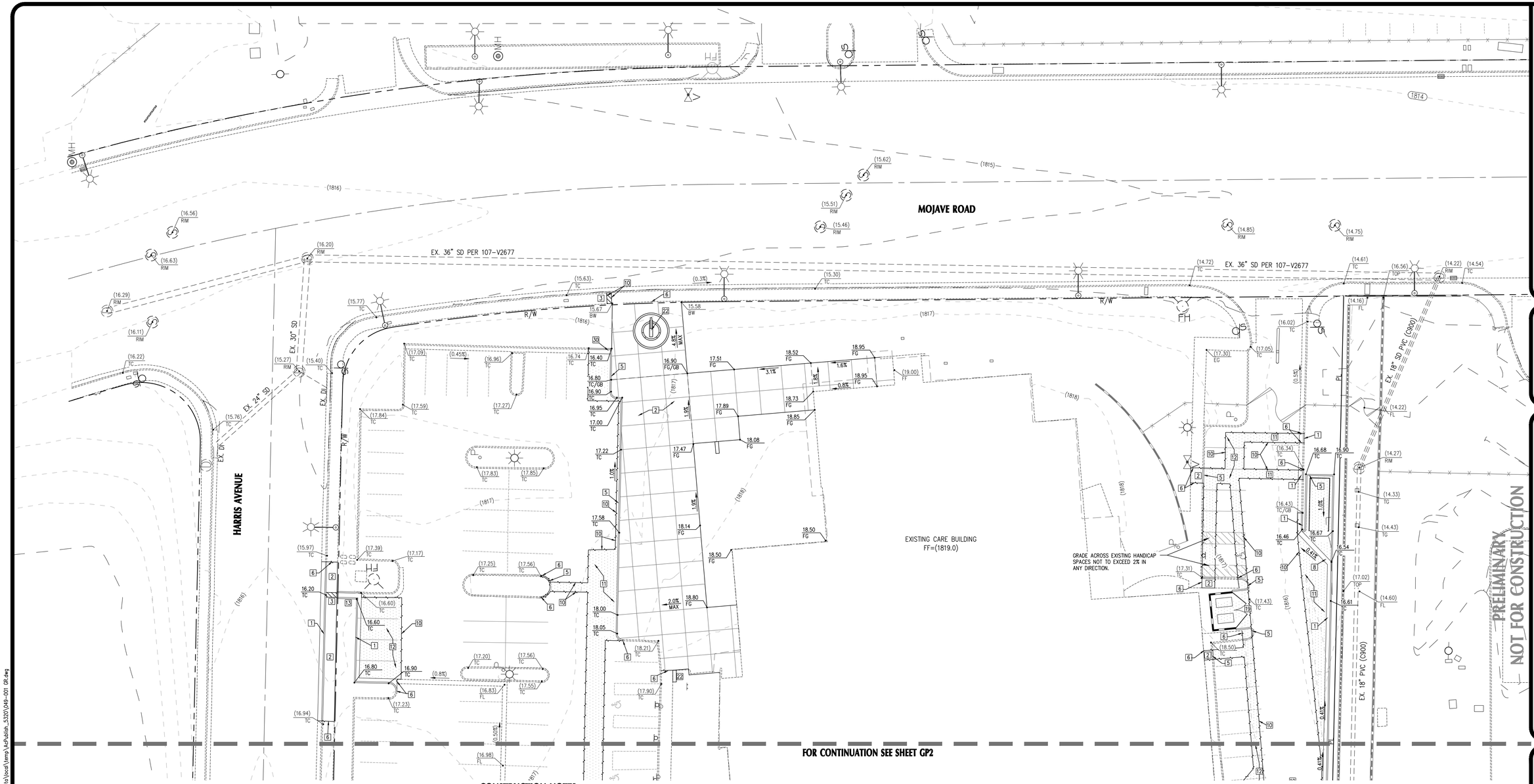
THE ANIMAL FOUNDATION REGIONAL ANIMAL CAMPUS ADOPTION CENTER

NO.	DATE	REVISIONS DESCRIPTION	BY

JOB NUMBER: 049-001
DRAWN BY: JM
DESIGNED BY: MK
CHECKED BY: JM
DATE: 09/2016

FIG 7

bdaly PLOT DATE: 09-22-16 PLOT TIME: 11:37:18 DWG PATH: N:\Animal Foundation\049-001 Animal Foundation\dwg\Hydro\TAF Onsite Drainage Map_Developed.dwg



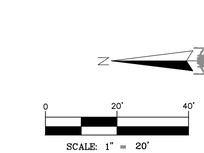
GENERAL NOTES

1. SEE FINAL MAP FOR EXACT BEARINGS AND DISTANCES.
2. CONTRACTORS SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND SHALL REPORT ALL DISCREPANCIES TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
3. ALL GRADING WORK TO CONFORM TO SOILS REPORT AS PREPARED FOR THIS PROPERTY.
4. CONTRACTOR SHALL REMOVE EXCESS DEBRIS AND VERIFY WALL FOOTING ELEVATION PRIOR TO CONSTRUCTION, REPORT DISCREPANCIES TO ENGINEER IMMEDIATELY.
5. CONTRACTOR TO MAINTAIN MIN. DEPTH OF COVER ABOVE PAD FOOTINGS AND ADJACENT WALL FOOTINGS WHERE DEEP SWALES OCCUR.
6. ADD 1800' TO ELEVATION TAGS SHOWN ON THIS GRADING PLAN.
7. DRIVEWAY SLOPES CANNOT EXCEED MAXIMUM SLOPE OF 12.5%

NOTE:

ADVANTAGE CIVIL DESIGN GROUP ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITIES SHOWN OR NOT SHOWN. THE UTILITIES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM RECORD INFORMATION AND ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY BOTH THE HORIZONTAL AND VERTICAL LOCATION OF ALL RELEVANT UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION. IF A CONFLICT OR DISCREPANCY IS DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING IMMEDIATELY.

Call before you UnderGround
1-702-432-5300
REGIONAL ROAD AND MATERIAL SYSTEM OF TRANSPORTATION



BENCHMARK #1LV01 25S6

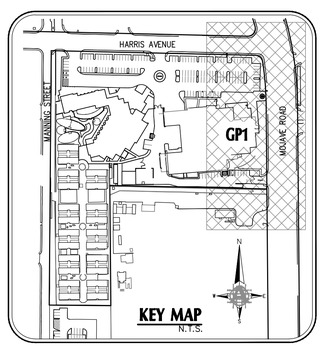
RIVET AND PLATE IN TOP OF CURB SW CORNER OF MOJAVE AND HARRIS. SECTION 25, TOWNSHIP 20 SOUTH, RANGE 61 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA. 553.4508 METERS – 1815.78 FEET

BASIS OF BEARINGS

SOUTH 88°41'44" EAST, BEING THE BEARING OF THE CENTERLINE OF HARRIS AVENUE AS SHOWN BY MAP THEREOF IN FILE 106, PAGE 75 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA.

CONSTRUCTION NOTES

1. INSTALL "L" TYPE CURB & GUTTER PER CCAUSD #216.
2. CONSTRUCT SIDEWALK PER CCAUSD #234. FINISH PER ARCHITECTURAL PLANS.
3. INSTALL SIDEWALK UNDERDRAIN PER CCAUSD #236
4. CONSTRUCT SIDEWALK RAMP PER CCAUSD # 235 CASE 1, A & B=8 UNLESS OTHERWISE NOTED
5. CONSTRUCT 6" CURB PER DETAIL "3", SHEET DE1.
6. MATCH EXISTING PAVEMENT, SIDEWALK, CURB AND/OR GUTTER.
7. INSTALL 8' CONCRETE VALLEY GUTTER PER CCAUSD #228.
8. INSTALL 2' CONCRETE VALLEY GUTTER PER DETAIL "6", SHEET DE1.
9. CONSTRUCT 6' HIGH SCREEN WALL PER ARCHITECTURAL PLANS.
10. SAWCUT AND MATCH EXISTING GRADES
11. INSTALL HEAVY AC PAVEMENT PER DETAIL"2" SHEET DE1.
12. INSTALL LIGHT AC PAVEMENT PER DETAIL "2" SHEET DE1.
13. CONSTRUCT 18" FLUME PER DETAIL "19", SHEET DE1.
14. TRENCH, BACKFILL AND AC PAVEMENT RESTORATION PER CCAUSD #303, 500.6, AND 500.5.
15. CONSTRUCT SIDEWALK RAMP PER DETAIL "13", SHEET DE1.
16. CONSTRUCT SIDEWALK RAMP PER DETAIL "14", SHEET DE1.
17. INSTALL REMOVABLE BOLLARDS PER DETAIL "10", SHEET DE1.
18. CONSTRUCT WROUGHT IRON FENCE PER ARCHITECTURAL PLANS.
19. TRASH ENCLOSURE: REFER TO ARCHITECTURAL PLANS FOR ENCLOSURE DETAILS.
20. PAVER WALK WAY PER ARCHITECTURAL PLANS.
21. INSTALL BUMPER BLOCK PER CCAUSD #238
22. MONUMENT SIGN PER ARCHITECTURAL PLANS.
23. TREE WELL PER ARCHITECTURAL PLANS.
24. AUTOMATIC DOUBLE SWING GATE PER ARCHITECTURAL PLANS
25. MANGATE PER ARCHITECTURAL PLANS.
26. DOG RUN AREA PER ARCHITECTURAL PLANS.
27. CONSTRUCT FLUME PER DETAIL "5", SHEET DE1.
28. CONSTRUCT SIDEWALK RAMP PER DETAIL "12", SHEET DE1.
29. CONSTRUCT 0" CURB PER DETAIL "4", SHEET DE1.
30. INSTALL 2' CURB OPENING PER DETAIL "15", SHEET DE1.
31. INSTALL 0" TO 6" CURB TRANSITION PER DETAIL "16", SHEET DE1.
32. CONSTRUCT 8' HIGH SCREEN WALL PER ARCHITECTURAL PLANS.
33. CONSTRUCT MODIFIED 24" L CURB HEIGHT VARIES (7"–3") PER DETAIL "18", SHEET DE1.



LEGEND

	EXISTING PAVEMENT	HERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
	PROPERTY LINE	RCP	REINFORCED CONCRETE PIPE
	SCARP	HP	LOT HIGH POINT
	SCREEN WALL	EVC	END VERTICAL CURVE
	FLOW RATE/DIRECTION	EX.	EXISTING
	EX. RETAINING WALL	FF	FINISH FLOOR
	EX. CHANNEL WALL	FG	FINISH GRADE
3	LOT NUMBER	FL	FLOW LINE
2	BLOCK NUMBER	GB	GRADE BREAK
2090	NAT. GRND CONTOUR	TF	TOP OF FOOTING
BC	BACK OF CURB	TRW	TOP OF RETAINING WALL
BCR	BACK OF CURB RETURN	PL	PROPERTY LINE
BVC	BEGIN VERTICAL CURVE	TC	TOP OF CURB
CL	CENTERLINE	VG	VALLEY GUTTER
R/W	RIGHT OF WAY	P.S.	PRIVATE STREET
	V-DITCH/SWALE	P.U.E.	PUBLIC UTILITY EASEMENT
		C&G	CURB AND GUTTER
		EP	EDGE OF PAVEMENT
		AC	ASPHALTIC CONCRETE
	SIGHT VISIBILITY ZONE	SVZ	SIGHT VISIBILITY ZONE
		BL	BOUNDARY LINE
		TFW	TOP OF FLOOD WALL
		GRND	NATIVE GROUND

SIGHT VISIBILITY NOTE:

NO WALLS, FENCES, SHRUBS, UTILITY APPURTENANCES OR ANY OTHER OBJECT, OTHER THAN TRAFFIC CONTROL DEVICES, FIRE HYDRANTS, TREES, AND STREET LIGHT POLES, MAY BE CONSTRUCTED OR INSTALLED WITHIN THE SIGHT VISIBILITY ZONE UNLESS SAID OBJECT IS MAINTAINED AT LESS THAN 24 INCHES IN HEIGHT, MEASURED FROM TOP OF CURB, OR WHERE NO CURB EXISTS, A HEIGHT OF 27 INCHES MEASURED FROM THE TOP OF ADJACENT ASPHALT, GRAVEL OR PAVEMENT STREET SURFACE. THIS RESTRICTION EXTENDS ALONG THE SIGHT VISIBILITY LINE THROUGH LANDSCAPED MEDIANS.

FLOOD NOTE:

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM), COMMUNITY PANNEL NUMBERS 32003C2218SF, EFFECTIVE NOVEMBER 16, 2011, THE SITE IS LOCATED WITHIN ZONE X. ZONE X IS DESCRIBED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

DRAINAGE CERTIFICATION

JOHN R. MANNING, P.E. # 15805 — DATE

I CERTIFY THIS GRADING PLAN IS IN CONFORMANCE WITH THE CITY OF LAS VEGAS DRAINAGE REQUIREMENTS.

STORMWATER MANAGEMENT NOTES:

1. THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATED IN, THE PUBLIC RIGHTS OF WAY AS A RESULT OF CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM SYSTEM.

2. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORSEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN CLARK COUNTY TITLE 24.40 AND THE *LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDANCE MANUAL*.

3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS BEEN TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY; REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.5.

4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS, AND ALL BMPs WEEKLY, AND WITHIN 24 HOURS AFTER ANY RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENETION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY, SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.12.

5. ACCUMULATED SEDIMENT IN BMPs SHALL BE REMOVED WITHIN SEVEN DAYS AFTER A STORMWATER RUNOFF EVENT OR PRIOR TO THE NEXT ANTICIPATED STORM EVENT, WHICHEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50 PERCENT OR MORE.

ADVANTAGE CIVIL DESIGN GROUP, LLP
2920 N. GREEN VALLEY PKWY, BLDG 4 STE. #422
HENDERSON, NEVADA 89014
Office: 702.492.2254
Fax: 702.456.2254
Email: MAIL@ADVANTAGECIVIL-NV.COM
CIVIL ENGINEERING PLANNING CONSULTING

REGISTERED PROFESSIONAL ENGINEER-STATE OF NEVADA
JOHN R MANNING
EXP: 12/31/17
CIVIL
No. 15805

GRADING PLAN 1

THE ANIMAL FOUNDATION BY REGIONAL ANIMAL CAMPUS

PRELIMINARY NOT FOR CONSTRUCTION

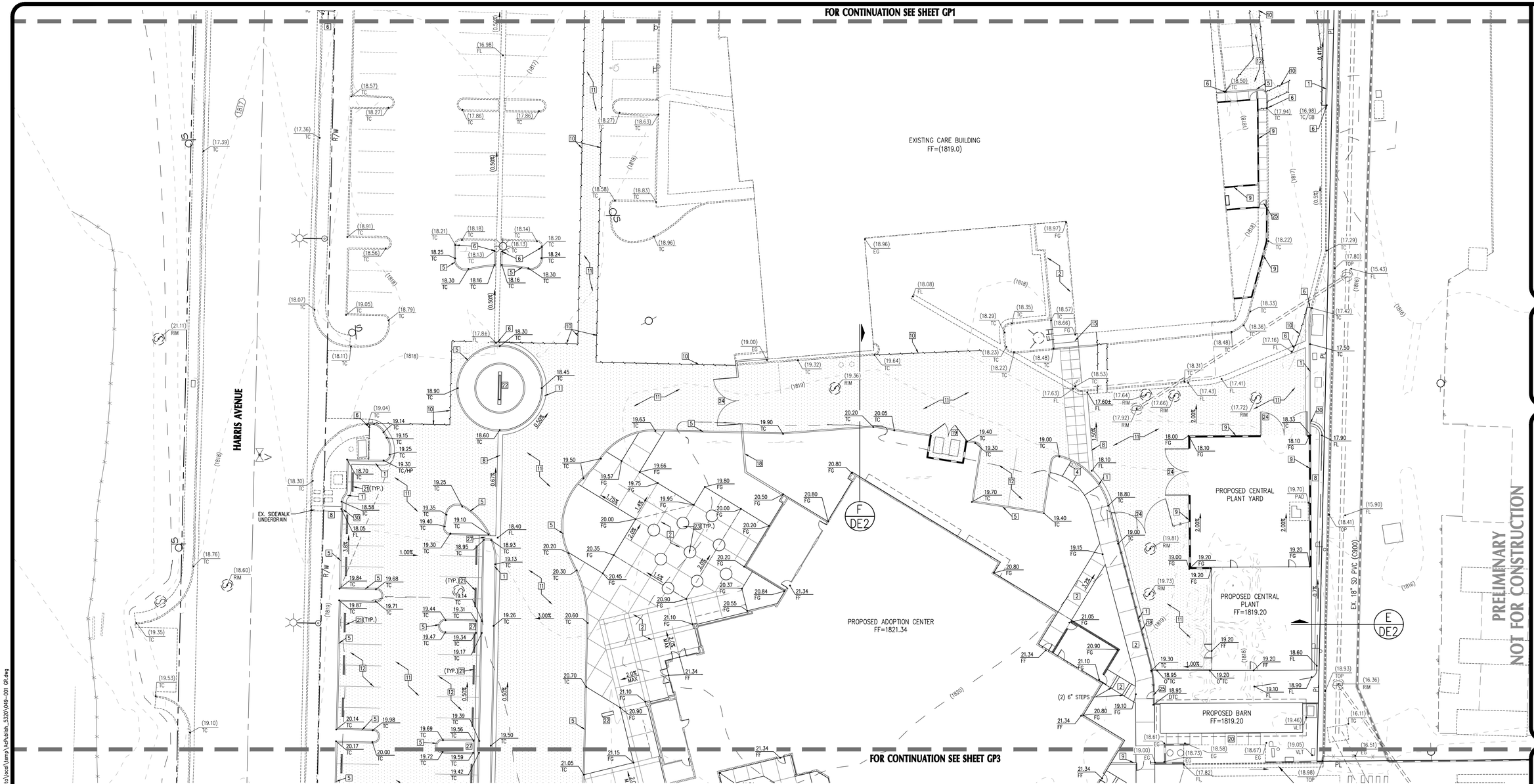
NO.	DATE	DESCRIPTION	BY
		REVISIONS	

JOB NUMBER: 049-001
DRAWN BY: TH
DESIGNED BY: MK
CHECKED BY: JM
DATE: 09/2016

GP1 — 6/10

PLOT DATE: 09-22-16 PLOT TIME: 11:42:12 DWG PATH: C:\Users\rwintner\appdata\local\temp\AcPublish_5320\049-001 GP.dwg rwintner

FOR CONTINUATION SEE SHEET GP1



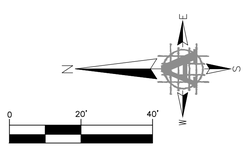
FOR CONTINUATION SEE SHEET GP3

GENERAL NOTES

1. SEE FINAL MAP FOR EXACT BEARINGS AND DISTANCES.
2. CONTRACTORS SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AND SHALL REPORT ALL DISCREPANCIES TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
3. ALL GRADING WORK TO CONFORM TO SOILS REPORT AS PREPARED FOR THIS PROPERTY.
4. CONTRACTOR SHALL REMOVE EXCESS DEBRIS AND VERIFY WALL FOOTING ELEVATION PRIOR TO CONSTRUCTION, REPORT DISCREPANCIES TO ENGINEER IMMEDIATELY.
5. CONTRACTOR TO MAINTAIN MIN. DEPTH OF COVER ABOVE PAD FOOTINGS AND ADJACENT WALL FOOTINGS WHERE DEEP SWALES OCCUR.
6. ADD 1800' TO ELEVATION TAGS SHOWN ON THIS GRADING PLAN.
7. DRIVEWAY SLOPES CANNOT EXCEED MAXIMUM SLOPE OF 12.5%

NOTE:

ADVANTAGE CIVIL DESIGN GROUP ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITIES SHOWN OR NOT SHOWN. THE UTILITIES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM RECORD INFORMATION AND ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY BOTH THE HORIZONTAL AND VERTICAL LOCATION OF ALL RELEVANT UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION. IF A CONFLICT OR DISCREPANCY IS DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING IMMEDIATELY.



BENCHMARK #1LV01 25S6

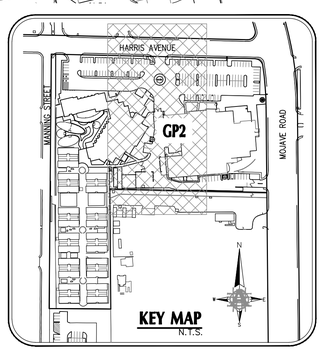
RIVET AND PLATE IN TOP OF CURB SW CORNER OF MOJAVE AND HARRIS. SECTION 25, TOWNSHIP 20 SOUTH, RANGE 61 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA. 553.4508 METERS – 1815.78 FEET

BASIS OF BEARINGS

SOUTH 88°41'44" EAST, BEING THE BEARING OF THE CENTERLINE OF HARRIS AVENUE AS SHOWN BY MAP THEREOF IN FILE 106, PAGE 75 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA.

CONSTRUCTION NOTES

1. INSTALL "L" TYPE CURB & GUTTER PER CCAUSD #216.
2. CONSTRUCT SIDEWALK PER CCAUSD #234. FINISH PER ARCHITECTURAL PLANS.
3. INSTALL SIDEWALK UNDERDRAIN PER CCAUSD #236
4. CONSTRUCT SIDEWALK RAMP PER CCAUSD # 235 CASE 1, A & B=5 UNLESS OTHERWISE NOTED
5. CONSTRUCT 6" CURB PER DETAIL "3", SHEET DE1.
6. MATCH EXISTING PAVEMENT, SIDEWALK, CURB AND/OR GUTTER.
7. INSTALL 8" CONCRETE VALLEY GUTTER PER CCAUSD #228.
8. INSTALL 2' CONCRETE VALLEY GUTTER PER DETAIL "6", SHEET DE1.
9. CONSTRUCT 6' HIGH SCREEN WALL PER ARCHITECTURAL PLANS.
10. SAWCUT AND MATCH EXISTING GRADES
11. INSTALL HEAVY AC PAVEMENT PER DETAIL "2" SHEET DE1.
12. INSTALL LIGHT AC PAVEMENT PER DETAIL "2" SHEET DE1.
13. CONSTRUCT 18" FLUME PER DETAIL "19", SHEET DE1.
14. TRENCH, BACKFILL, AND AC PAVEMENT RESTORATION PER CCAUSD #503, 500.4, AND 500.5.
15. CONSTRUCT SIDEWALK RAMP PER DETAIL "13", SHEET DE1.
16. CONSTRUCT SIDEWALK RAMP PER DETAIL "14", SHEET DE1.
17. INSTALL REMOVABLE BOLLARDS PER DETAIL "10", SHEET DE1.
18. CONSTRUCT WROUGHT IRON FENCE PER ARCHITECTURAL PLANS.
19. TRASH ENCLOSURE: REFER TO ARCHITECTURAL PLANS FOR ENCLOSURE DETAILS.
20. PAVER WALK WAY PER ARCHITECTURAL PLANS.
21. INSTALL BUMPER BLOCK PER CCAUSD #238
22. MONUMENT SIGN PER ARCHITECTURAL PLANS.
23. TREE WELL PER ARCHITECTURAL PLANS.
24. AUTOMATIC DOUBLE SWING GATE PER ARCHITECTURAL PLANS
25. MANGATE PER ARCHITECTURAL PLANS.
26. DOG RUN AREA PER ARCHITECTURAL PLANS.
27. CONSTRUCT FLUME PER DETAIL "5", SHEET DE1.
28. CONSTRUCT SIDEWALK RAMP PER DETAIL "12", SHEET DE1.
29. CONSTRUCT 0" CURB PER DETAIL "4", SHEET DE1.
30. INSTALL 2' CURB OPENING PER DETAIL "15", SHEET DE1.
31. INSTALL 0" TO 6" CURB TRANSITION PER DETAIL "16", SHEET DE1.
32. CONSTRUCT 8' HIGH SCREEN WALL PER ARCHITECTURAL PLANS.
33. CONSTRUCT MODIFIED 24" L CURB HEIGHT VARIES (7"–3") PER DETAIL "18", SHEET DE1.



LEGEND

	EXISTING PAVEMENT	HERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
	PROPERTY LINE	RCP	REINFORCED CONCRETE PIPE
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	SCREEN WALL	EVC	END VERTICAL CURVE
	FLOW RATE/DIRECTION	EX.	EXISTING
	EX. RETAINING WALL	FF	FINISH FLOOR
	EX. CHANNEL WALL	FG	FINISH GRADE
3	LOT NUMBER	FL	FLOW LINE
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CL	CENTERLINE	VG	VALLEY GUTTER
R/W	RIGHT OF WAY	P.S.	PRIVATE STREET
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		SVZ	SIGHT VISIBILITY ZONE
		BL	BOUNDARY LINE
		TFW	TOP OF FLOOD WALL
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DRAINAGE CERTIFICATION

JOHN R. MANNING, P.E. # 15805 — DATE

I CERTIFY THIS GRADING PLAN IS IN CONFORMANCE WITH THE CITY OF LAS VEGAS DRAINAGE REQUIREMENTS.

FLOOD NOTE:

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM), COMMUNITY PANNEL NUMBERS 32003C2186F, EFFECTIVE NOVEMBER 16, 2011, THE SITE IS LOCATED WITHIN ZONE X. ZONE X IS DESORIBED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

STORMWATER MANAGEMENT NOTES:

1. THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATED IN, THE PUBLIC RIGHTS OF WAY AS A RESULT OF CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM SYSTEM.

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4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS, AND ALL BMPs WEEKLY, AND WITHIN 24 HOURS AFTER ANY RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENETION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY, SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.12.

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CIVIL ENGINEERING — PLANNING — CONSULTING

ENGINEER-STATE OF NEVADA REGISTERED PROFESSIONAL
JOHN R MANNING
EXP: 12/31/17
CIVIL
No. 15805

GRADING PLAN 2

THE ANIMAL FOUNDATION
BY REGIONAL ANIMAL CAMPUS

PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		REVISIONS	

JOB NUMBER: 049-001
DRAWN BY: TH
DESIGNED BY: MK
CHECKED BY: JM
DATE: 09/2016

GP2 | 7/10

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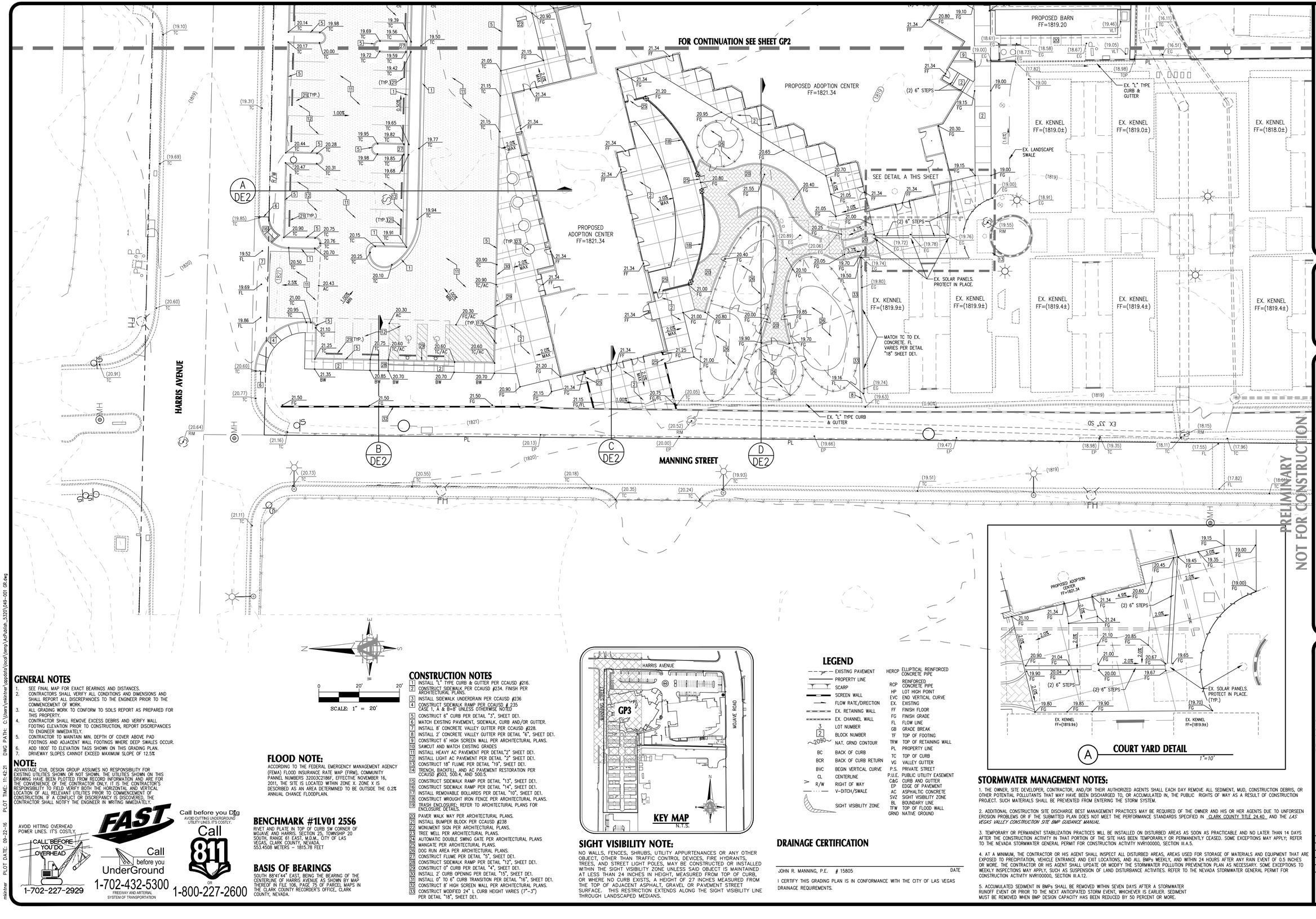
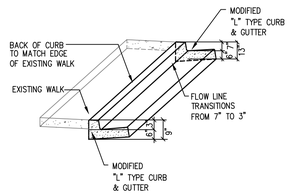
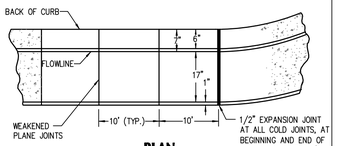

FOR CONTINUATION SEE SHEET GP2
PROPOSED ADOPTION CENTER FF=1821.34
PROPOSED BARN FF=1819.20
SEE DETAIL A THIS SHEET
EX. KENNEL FF=(1819.0±)
EX. KENNEL FF=(1819.0±)
EX. KENNEL FF=(1818.0±)
EX. KENNEL FF=(1819.9±)
EX. KENNEL FF=(1819.9±)
EX. KENNEL FF=(1819.4±)
EX. KENNEL FF=(1819.4±)
EX. KENNEL FF=(1818.4±)
EX. "L" TYPE CURB & GUTTER
EX. LANDSCAPE SWALE
(2) 6" STEPS
EX. SOLAR PANELS. PROTECT IN PLACE.
MATCH TC TO EX. CONCRETE. FL VARIES PER DETAIL "18" SHEET DE1.
EX. "L" TYPE CURB & GUTTER
HARRIS AVENUE
MANNING STREET
EX. 33" SD
EX. 15" SD
EX. 8" W
EX. 6" W
EX. 8" SS
EX. 4" SS
EX. 4" G
EX. 2" G
EX. 1" G
EX. 1" E
EX. 1" T
EX. 1" C
EX. 1" T
EX. 1" E
EX. 1" C
EX. 1" T
EX. 1" E
EX. 1" C
EX. 1" T
EX. 1" E

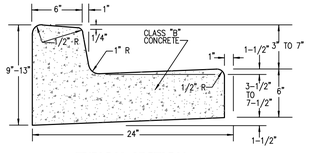




PLAN

NOTE:

1. WHERE LONGITUDINAL SLOPE IS LESS THAN 0.4%, THE FLOW LINE SHALL BE WATER TESTED.

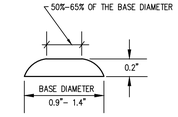


TYPICAL SECTION

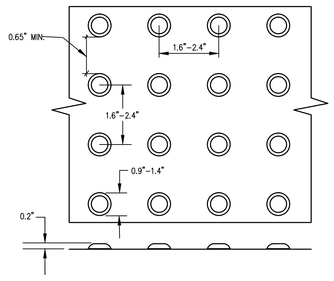
18 MODIFIED "L" TYPE CURB AND GUTTER
(FLOW LINE VARIES 3" TO 7")
NOT TO SCALE

NOTES:

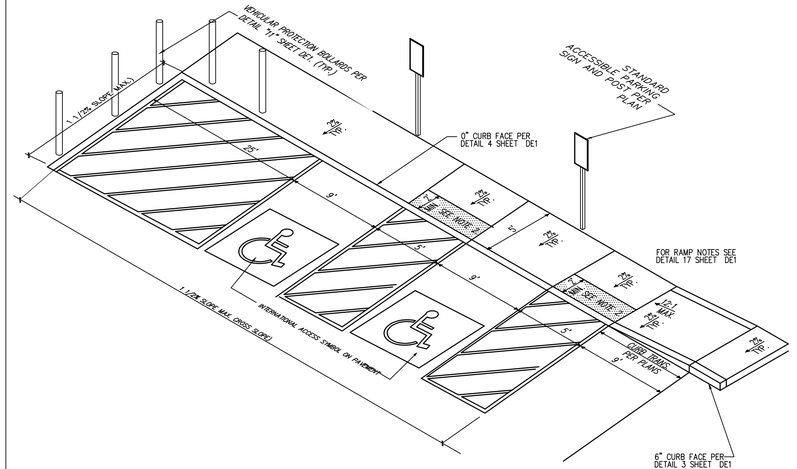
1. SIDEWALK RAMP WITHIN CURB RETURN SHALL BE LOCATED AT THE MIDPOINT OF CURB RETURN UNLESS OTHERWISE APPROVED.
2. SIDEWALK RAMPS OUTSIDE OF THE CURB RETURN SHALL BE LOCATED ADJACENT TO THE RETURN UNLESS OTHERWISE APPROVED.
3. RAMPS SHALL BE CONSTRUCTED WITH A ROUGH BROOM FINISH TRANSVERSE TO THE SLOPE OF THE RAMP.
4. WHEN CONSTRUCTING RAMP WHERE CURB & GUTTER EXISTS, COMPLETELY REMOVE INTERFERING PORTIONS OF EXISTING CURB & GUTTER.
5. DETECTABLE WARNING CONSISTING OF RAISED TRUNCATED DOMES WHICH COMPLY WITH DETAILS ON THIS SHEET AND CONTRASTING VISUALLY WITH ADJOINING SURFACES SHALL BE PLACED ON BOTTOM PORTION OF RAMP EXTENDING THE FULL WIDTH OF THE RAMP AND TO A MINIMUM DEPTH OF 24 INCHES.



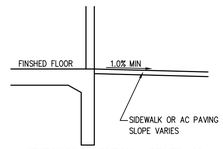
DOME SECTION



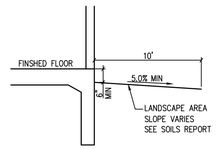
17 DETECTABLE WARNING DETAILS (TRUNCATED DOMES) AND HANDICAP RAMP NOTES
NOT TO SCALE



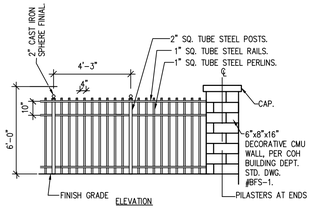
12 HANDICAP LOADING ZONE & RAMP
NOT TO SCALE



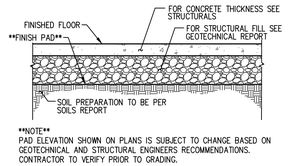
7 TYPICAL BUILDING SECTION
NOT TO SCALE



8 TYPICAL BUILDING SECTION
NOT TO SCALE

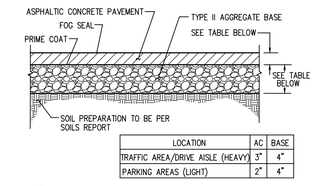


9 WROUGHT IRON FENCE DETAIL
NOT TO SCALE



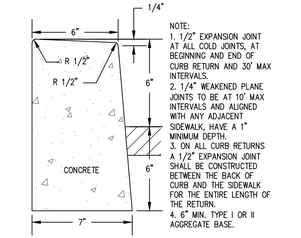
NOTE
PAD ELEVATION SHOWN ON PLANS IS SUBJECT TO CHANGE BASED ON GEOTECHNICAL AND STRUCTURAL ENGINEERS RECOMMENDATIONS. CONTRACTOR TO VERIFY PRIOR TO GRADING.

1 TYPICAL BUILDING SLAB SECTION
NOT TO SCALE



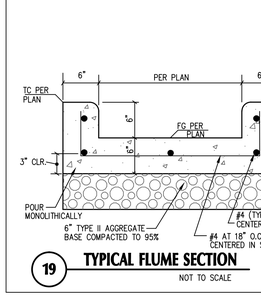
LOCATION	AC	BASE
TRAFFIC AREA/DRIVE AISLE (HEAVY)	3"	4"
PARKING AREAS (LIGHT)	2"	4"

2 ON-SITE PAVING SECTION
NOT TO SCALE

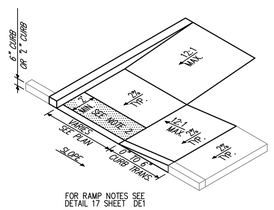


NOTE:
1. 1/2" EXPANSION JOINT AT ALL COLD JOINTS, AT BEGINNING AND END OF CURB RETURN AND 30' MAX INTERVALS.
2. 1/4" WEAKENED PLANE JOINTS TO BE AT 10' MAX INTERVALS AND ALIGNED WITH ANY ADJACENT SIDEWALK, HAVE A 1" MINIMUM DEPTH.
3. ON ALL CURB RETURNS A 1/2" EXPANSION JOINT SHALL BE CONSTRUCTED BETWEEN THE BACK OF CURB AND THE SIDEWALK FOR THE ENTIRE LENGTH OF THE RETURN.
4. 6" MIN. TYPE I OR II AGGREGATE BASE.

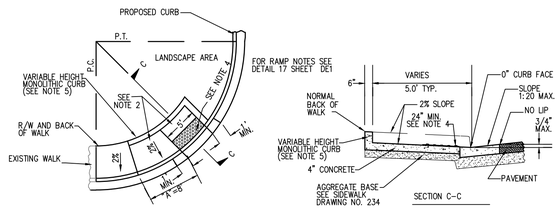
3 ONSITE 6" CURB
NOT TO SCALE



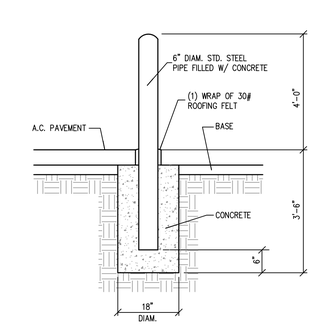
19 TYPICAL FLUME SECTION
NOT TO SCALE



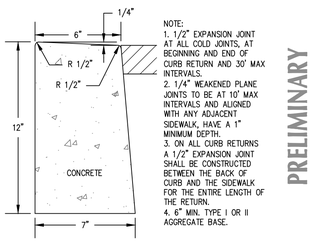
13 HANDICAP RAMP
NOT TO SCALE



14 HANDICAP RAMP
NOT TO SCALE

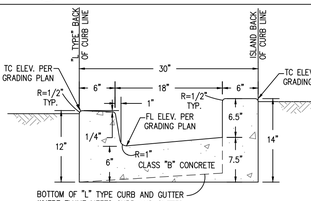


10 BOLLARD DETAIL
NOT TO SCALE



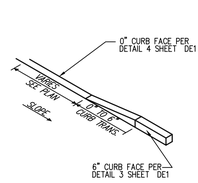
NOTE:
1. 1/2" EXPANSION JOINT AT ALL COLD JOINTS, AT BEGINNING AND END OF CURB RETURN AND 30' MAX INTERVALS.
2. 1/4" WEAKENED PLANE JOINTS TO BE AT 10' MAX INTERVALS AND ALIGNED WITH ANY ADJACENT SIDEWALK, HAVE A 1" MINIMUM DEPTH.
3. ON ALL CURB RETURNS A 1/2" EXPANSION JOINT SHALL BE CONSTRUCTED BETWEEN THE BACK OF CURB AND THE SIDEWALK FOR THE ENTIRE LENGTH OF THE RETURN.
4. 6" MIN. TYPE I OR II AGGREGATE BASE.

4 ONSITE 0" CURB FACE
NOT TO SCALE

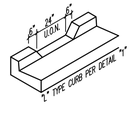


NOTE:
1. 1/2" EXPANSION JOINT AT ALL LOCATIONS WHERE FLUME MEETS CURB.
2. 1/4" WEAKENED PLANE JOINTS TO BE AT 10' MAX INTERVALS AND ALIGNED WITH ANY ADJACENT SIDEWALK, HAVE A 1" MINIMUM DEPTH.
3. 6" MIN. TYPE I OR II AGGREGATE BASE.

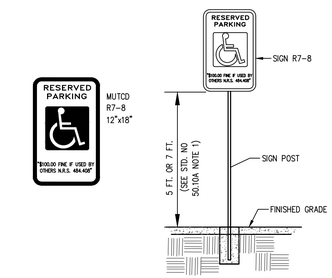
5 MODIFIED 30" FLUME
NOT TO SCALE



16 6" TO 0" CURB TRANSTION
NOT TO SCALE



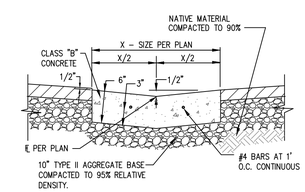
15 2' CURB OPENING
NOT TO SCALE



NOTES:

1. ALL 12"x18" ACCESSIBLE SIGNS (R7-8 & R7-1) SHALL BE MOUNTED AT 7 FEET FROM GRADE TO BOTTOM EDGE OF SIGN FACE (MUTCD). MOUNTING HEIGHT CAN BE REDUCED TO 5 FEET IF PLACED IN AN AREA BETWEEN SIDEWALK AND BUILDING FACE IN WHICH PEDESTRIANS ARE NOT EXPECTED TO USE.
2. REFER TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (MUTCD) U.S. DEPARTMENT OF TRANSPORTATION.

11 ACCESSIBLE PARKING SIGN
NOT TO SCALE



6 VALLEY GUTTER
NOT TO SCALE

ADVANTAGE CIVIL DESIGN GROUP, LLP
2920 N. GREEN VALLEY PKWY., BLDG 4 STE. #422
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CIVIL ENGINEERING CONSULTING PLANNING

JOHN R. MANNING
LIC. NO. 15081
REGISTERED PROFESSIONAL ENGINEER-STATE OF NEVADA

REVISIONS

NO.	DATE	DESCRIPTION	BY

JOB NUMBER: 049-001
DRAWN BY: TH
DESIGNED BY: MK
CHECKED BY: JM
DATE: 09/2016

PRELIMINARY
NOT FOR CONSTRUCTION

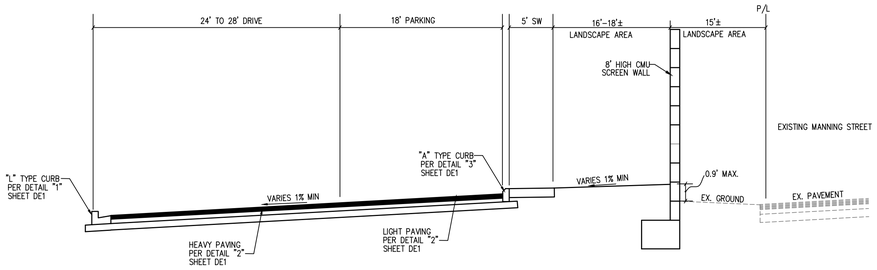
DETAIL SHEET 1

THE ANIMAL FOUNDATION
BY REGIONAL ANIMAL CAMPUS

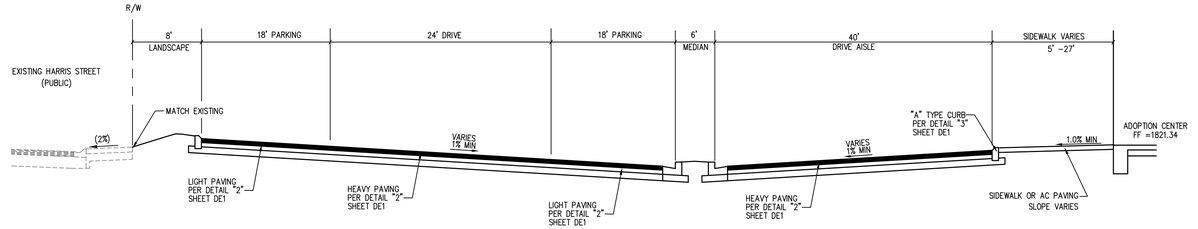
DE1

3
10

mkleiner PLOT DATE: 09-22-16 PLOT TIME: 11:42:31 DWG PATH: N:\Animal Foundation\049-001 Animal Foundation\dwg\tmx\049-001 07.dwg



B **PROPERTY LINE SECTION**
NOT TO SCALE



A **PROPERTY LINE SECTION**
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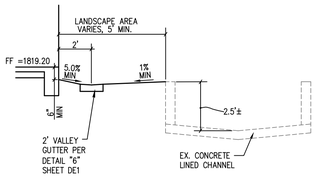

E **PROPERTY LINE SECTION**
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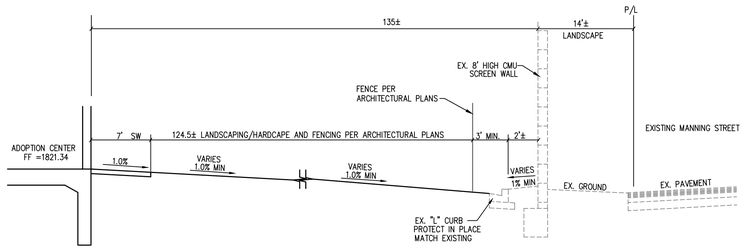
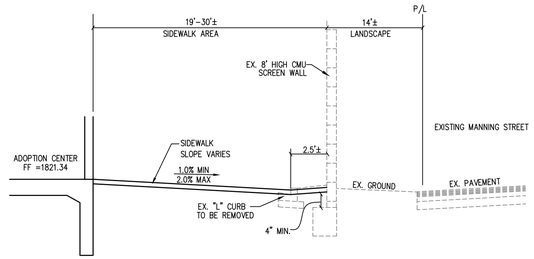
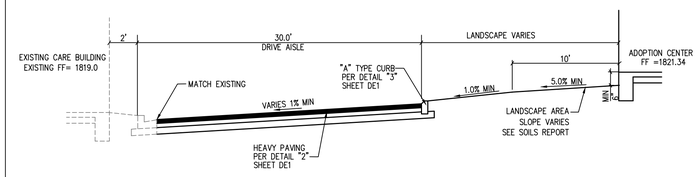


D **PROPERTY LINE SECTION**
NOT TO SCALE



C **PROPERTY LINE SECTION**
NOT TO SCALE



F **PROPERTY LINE SECTION**
NOT TO SCALE

PRELIMINARY
NOT FOR CONSTRUCTION

ADVANTAGE CIVIL DESIGN GROUP, LLP
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ENGINEER-STATE OF NEVADA
REGISTERED PROFESSIONAL
JOHN R. MANNING
EXP: 12/31/17
CIVIL
No. 15081

DETAIL SHEET 2

THE ANIMAL FOUNDATION BY REGIONAL ANIMAL CAMPUS

REVISIONS

NO.	DATE	DESCRIPTION	BY

JOB NUMBER: 049-001
DRAWN BY: TH
DESIGNED BY: MK
CHECKED BY: JM
DATE: 09/2016

DE2 4/10

mkistner PLOT DATE: 09-22-16 PLOT TIME: 11:42:39 DWG PATH: N:\Animal Foundation\049-001 Animal Foundation\dwg\prep\049-001 DT.dwg