DS #: 5149

APN: 125-20-610-004

PROJECT: Centennial Hills Hospital - Phase 3 Expansion

SUBMITTAL: 1st

SCANNED BY/DATE:

CHECKED BY/DATE:



CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: June 24, 2019
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: **Centennial Hills Hospital – Phase 3 Tower Expansion**			**COPIES TO:** Excel Engineering
Cross Streets:	NEC of Deer Springs Way & Durango Drive			Valley Health System, LLC
File Number:	F:\Depot\DSMemos\DS5149A.doc			Bart Anderson, P.E., DevCo
Parcel Number:	125-20-610-004			
Zoning Action:	SDR-76210			
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	6/18/2019	6/24/2019	See Comments Below	$400.00	3456118: $400
			TOTAL FEES (LDDRS):	**$400.00**	**----**

REMARKS:

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

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

1. Label on the improvement plans with the following note: "All proposed onsite storm drains and the associated facilities are privately owned and to be privately maintained by the owner".

In an effort to increase administrative efficiency, for all original and re-submittal packages including updates and the addenda, the City of Las Vegas Public Works Department requires both a hardcopy and a digital copy (PDF) on CD for the drainage study.

A letter sealed and signed by a Nevada registered civil engineer must be included in every submittal certifying documents on the electronic CD matches 100% of the hardcopy submittal. The new submittal requirement is effective on May 1, 2019. If there are any questions regarding these new requirements, please contact Albert Sung in the City Flood Control Section at (702) 229-6541.



Sample Letter to certify CD.pdf

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Update and accepted by the *City of Las Vegas Flood Control Section.* Additionally, conditional acceptance of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the *City of Las Vegas* reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction of a project.

NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the *Nevada Division of Environmental Protection* a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For more information, including forms and applications see http://ndep.nv.gov/bwpc/storm01.htm or call (775) 687-9429.

END OF REMARKS
ays

T/R/S: T19S/R60E/20
AREA G-20

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: Centennial Hills Hospital - Phase 3 Tower Expansion Date: 6/17/19

Location of Development: a) Descriptive (Cross Streets) North/South: East of N. Durango Dr.

East/West: North of Deer Springs Way

b) Section: 20 Township: 19S Range: 60E

c) APN : 125-20-610-004

Name of Owner: The Valley Health System, LLC

Telephone No.: 702-528-2322 Fax No.: Fax No.: E-Mail Address: stuart.hitchen@uhsinc.com

Address: 10105 Banburry Cross Drive, Las Vegas, Nevada 89144

Contact Person-Name: Andrew Van Loy, PE **Telephone No.:** (760) 518-6331

* **E-Mail Address:** avanloy@excelengineering.net **Fax No.:**

Firm: Excel Engineering

Address: 440 State Place, Escondido, CA 92029

Type of Land Development/Land Disturbance Process:

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

1. Total Owned Land Area: At Site: 36 Acres (±) Being Developed/Disturbed: <1 Acre (±)
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 (Hospital)
5. Approximate upstream land area which drains to the subject site: 0 Acres (±)
6. Has the site drainage been evaluated in the past? ☒ **YES** ☐ **NO** If yes, please identify documentation: Montecito Town Center North Conceptual Drainage Study, Centennial Hills Hospital (Original & Phase 2 - DS #3822)
7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Drainage discharges to the south along Deer Springs Way in several locations and portions discharges to the east into the neighboring parcel, per historical patterns. As part of this addendum, no drainage flows/patterns will change.
8. Briefly describe your proposed schedule for the subject project: The tower expansion is hoping to have a grading permit within the next 3 months to begin construction on foundations and footings to build a 5 story bed tower structure and auxiliary programming functions for the hospital.

PROFESSIONAL ENGINEER-STATE OF NEVADA
ROBERT D. DENTINO
Exp: 12/31/20
CIVIL
No. 22917
6/17/19

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: CENTENNIAL HILLS HOSPITAL

STANDARD FORM 1

Updated 05/01/2008

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

Project Name: Centennial Hills Hospital - Phase 3 Tower Expansion	Map ID:
Firm Name: Excel Engineering	Engineer: Andrew J. Van Loy/Robert D. Dentino
Address: 440 State Place	
City: Escondido, State: CA Zip: 92029	
Phone Number: 760-518-6331	Fax Number:
Property Owner: The Valley Health System, LLC	
Address: 10105 Banburry Cross Drive	
City: Las Vegas State: NV Zip: 89144	

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	
X		Design Manual **Standard Form 1** with the engineer's seal and signature.
	N/A	Design Manual **Standard Form 4**.
X		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.

II. MAPS AND EXHIBITS

Please note that the majority of these checklist items are contained in the previously approved Drainage Study (DS #3822) and are referenced by this Addendum

Yes	No	
X		A copy of a current Flood Insurance Rate Map (FIRM) with the site delineated.
X		A copy of the current CCRFCD Master Plan Update Figure, (F-x), for Flood Control Facilities and Environmental areas with the site delineated.

REFERENCE:	**STANDARD FORM 2**

DRAINAGE SUBMITTAL CHECKLIST

II. MAPS AND EXHIBITS (Continued)

Yes	No	
X		Off-site drainage basin maps for existing, interim and future conditions showing the existing topography, basin boundaries, concentration points, and flows in cfs.
X		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.
X		Vicinity Map with local and major cross streets identified and a north arrow.

III. DRAINAGE PLAN

Yes	No	
X		Sheet size: 24” x 36” sealed by a registered engineer in the State of Nevada.
X		Minimum scale: 1” = 60’.
X		Project name.
X		Vicinity Map with local and major cross streets.
X		Revision box.
X		North arrow and bar scale.
X		Engineer’s/consultant’s address and phone number.
X		Elevation datum and benchmark.
X		Legend for symbols and abbreviations.
X		Cut/fill scarps, where applicable.
X		Street names, grades, widths.
X		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.
X		Existing contours encompassing the site and 100 feet beyond with spot elevations for important locations, where appropriate.
X		Minimum finish floor elevations with top-of-curb elevations at upstream end of lot.
	N/A	Proposed typical street sections.

REFERENCE:	**STANDARD FORM 2**

DRAINAGE SUBMITTAL CHECKLIST

III. DRAINAGE PLAN (Continued)

Yes	No	
	N/A	Streets with off-set crowns.
X		Proposed contours or spot elevations in sufficient detail to exhibit intended drainage patterns and slopes.
X		Property lines.
X		Right-of-way lines and widths, existing and proposed.
X		Existing improvements and their elevations.
X		Delineation of proposed on-site drainage basins indicating area and 10-year and 100-year storm peak flows at basin concentration points.
X		Concentration points and drainage flow direction with Q_{100} and V_{100} and D_{100} in streets.
X		Cumulative flows, velocity, and direction of flow at upstream and downstream ends of site for the 10-year and 100-year flows.
X		Location and cross-section of street capacity calculations.
	N/A	Cross-sectional detail for channels, including cutoff wall locations.
X		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.
X		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.
X		Location and detail of flood walls illustrating depth of flow, proposed grouting height, etc.
X		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.
	N/A	Building and/or lot numbers.
X		Alignment of all existing, proposed, or future Regional Facilities adjacent to the site.
	N/A	Limits of existing floodplain based on current FIRM or best available information; limits of proposed floodplains based on best available information.

REFERENCE:	**STANDARD FORM 2**

DRAINAGE SUBMITTAL CHECKLIST

III. DRAINAGE PLAN (Continued)

Yes	No	
	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.
X		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.
X		Street slopes for perimeter and interior streets. The minimum slope is 0.4 percent.
	N/A	Location and detail of best management practice (BMP) for parking lots and low impact development (LID) (if required).

IV. HYDROLOGIC ANALYSIS

Yes	No	
X		Appropriate soil information and Soils Map for existing and future conditions with subbasins and property delineated.
	N/A	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.
	N/A	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.
X		Use of correct precipitation values in and around the McCarran Airport rainfall area.
X		A discussion in the text of the hydrologic analysis justifying subbasin boundaries and cutoffs, supporting assumptions, and calculations.
X		A summary table of stormwater flows showing basin area, Q_{10} and Q_{100} for both individual basins and combined basin flows, where applicable.
X		Copies of supporting technical information referenced from a previously approved study and a statement accepting these results.
X		On-site facilities must perpetuate flows through or around the site without significantly impacting adjacent property owners in accordance with current Nevada Drainage Law.
X		Calculation for impervious area for parking lots and LIDs (if required).

REFERENCE:	**STANDARD FORM 2**

DRAINAGE SUBMITTAL CHECKLIST

V. HYDRAULIC ANALYSIS

Yes	No	
X		Flow split calculations and supporting documentation or reference for the method of flow split calculations used.
X		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.
X		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.)
	N/A	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.
X		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, whichever 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.
X		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.
	N/A	The mitigation of nuisance water, both during construction and in the fully developed condition, must be addressed.
	N/A	Provide BMP type, size and supporting calculations for parking lots and LIDs (if required).

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.)
X		Copies of all conditions of approval for development related to this property. (e.g. zoning, use permit, tentative map, etc.) Verify compliance with conditions.
X		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. RDD 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	
X		(1) 24" X 36" copy of the Grading Plan, (including all Detail Sheets) sealed by the engineer.
X		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.
X		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.)

II. GRADING PLAN INFORMATION		
Yes	No	
X		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.
X		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.
X		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.
N/A		Back of lot elevations and lot drainage pattern for all lots including common lots.
X		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.
X		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.
X		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	
X		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.
X		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.
X		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.

LAS VEGAS CITY COUNCIL

CAROLYN G. GOODMAN
Mayor

LOIS TARKANIAN
Mayor Pro Tem

STAVROS S. ANTHONY
BOB COFFIN
MICHELE FIORE
CEDRIC CREAR
WARD 2 *(Vacant)*

SCOTT D. ADAMS
City Manager

DEPARTMENT OF PLANNING

ROBERT SUMMERFIELD
DIRECTOR

DEVELOPMENT SERVICES CENTER

333 N. RANCHO DRIVE
3RD FLOOR
LAS VEGAS, NV 89106

702.229.6301 | VOICE
702.474.7463 | FAX
711 | TTY

cityoflasvegas
lasvegasnevada.gov

May 2, 2019

CORRECTED LETTER

Ms. Cheryl Ramangano
Valley Health System, LLC
10105 Banburry Cross Drive
Las Vegas, Nevada 89144

RE: SDR-76210 [PRJ-75781] – ADMINISTRATIVE SITE DEVELOPMENT PLAN REVIEW
ADMINISTRATIVE CYCLE – APRIL 2019

Dear Ms. Ramangano:

Your request for a Minor Amendment to an approved Site Development Plan Review (SDR-3267) FOR PROPOSED BUILDING ADDITIONS AND MODIFICATIONS TO THE PHASING PLAN FOR THE OVERALL HOSPITAL DEVELOPMENT on 35.74 acres adjacent to the northeast corner of Durango Drive and Deer Springs Way (APN 125-20-610-004), T-C (Town Center) Zone [MC-TC (Montecito - Town Center) Special Land Use Designation], Ward 6 (Fiore) [PRJ-75781], has been considered administratively by the Department of Planning staff.

The Department of Planning has administratively ***APPROVED*** your request subject to the following:

Planning

1. Conformance to the Conditions of Approval for Site Development Plan Review (SDR-3267) shall be required, except where 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 04/08/19, except as amended by conditions herein.

4. 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.

5. These Conditions of Approval shall be affixed to the cover sheet of any plan set submitted for building permit.

CORRECTED LETTER

6. A technical landscape plan, signed and sealed by a Registered Architect, Landscape Architect, Residential Designer or Civil Engineer, must be submitted prior to or at the same time application is made for a building permit. A permanent underground sprinkler system is required, and shall be permanently maintained in a satisfactory manner; the landscape plan shall include irrigation specifications. Installed landscaping shall not impede visibility of any traffic control device.

7. 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.

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

Public Works

9. Correct all American's with Disabilities Act (ADA) deficiencies, if any, on the sidewalk adjacent to this site in accordance with code requirements of Title 13.56.040 to the satisfaction of the City Engineer concurrent with development of this site. All existing paving damaged or removed by this development shall be restored at its original location and to its original width concurrent with development of this site.

10. A Traffic Impact Analysis must be submitted to and approved by the Department of Public Works prior to the issuance of any building or grading permits, submittal of any construction drawings or the recordation of a Map subdividing this site, whichever may occur first. Comply with the recommendations of the approved Traffic Impact Analysis prior to occupancy of the site. No recommendation of the approved Traffic Impact Analysis, nor compliance therewith, shall be deemed to modify or eliminate any condition of approval imposed by the Planning Commission or the City Council on the development of this site.

11. 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 submittal of any construction drawings or the issuance of any building or grading permits, whichever may occur first. Provide and improve all drainageways recommended in the approved drainage study update.

12. Site development to comply with all applicable conditions of approval for SDR-3267, and all other applicable site-related actions.

CORRECTED LETTER

This action by the Department of Planning staff on **April 25, 2019** is final unless a written appeal is filed with the Director of the Department of Planning within ten days of the date of this letter.

Sincerely,

Jonathan Boyles
Senior Planner
Case Planning Division

JB:clb

cc: Mr. Andrew Van Loy
Excel Engineering
440 State Place
Escondido, California 92029

Mr. Scott Ricks
Valley Health System, LLC
10105 Banburry Cross Drive
Las Vegas, Nevada 89144

City of Las Vegas

AGENDA MEMO - PLANNING

ADMINISTRATIVE REVIEW DATE: APRIL 2019
DEPARTMENT: PLANNING
ITEM DESCRIPTION: APPLICANT/OWNER: VALLEY HEALTH SYSTEM, LLC

** STAFF RECOMMENDATION(S)**

CASE NUMBER	RECOMMENDATION	REQUIRED FOR APPROVAL
SDR-76210	Staff APPROVES, subject to conditions.	

** NOTIFICATION**

NEIGHBORHOOD ASSOCIATIONS NOTIFIED N/A

NOTICES MAILED N/A

JB

Conditions Page One
April 2019 - Administrative Review Meeting

** CONDITIONS**

SDR-76210 CONDITIONS

Planning

1. Conformance to the Conditions of Approval for Site Development Plan Review (SDR-3267) shall be required, except where 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 04/08/19, except as amended by conditions herein.

4. 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.

5. These Conditions of Approval shall be affixed to the cover sheet of any plan set submitted for building permit.

6. A technical landscape plan, signed and sealed by a Registered Architect, Landscape Architect, Residential Designer or Civil Engineer, must be submitted prior to or at the same time application is made for a building permit. A permanent underground sprinkler system is required, and shall be permanently maintained in a satisfactory manner; the landscape plan shall include irrigation specifications. Installed landscaping shall not impede visibility of any traffic control device.

7. 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.

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

Public Works

9. Correct all American's with Disabilities Act (ADA) deficiencies, if any, on the sidewalk along Valley Street adjacent to this site in accordance with code requirements of Title 13.56.040 to the satisfaction of the City Engineer concurrent with development of this site. All existing paving damaged or removed by this development shall be restored at its original location and to its original width concurrent with development of this site.

10. A Traffic Impact Analysis must be submitted to and approved by the Department of Public Works prior to the issuance of any building or grading permits, submittal of any construction drawings or the recordation of a Map subdividing this site, whichever may occur first. Comply with the recommendations of the approved Traffic Impact Analysis prior to occupancy of the site. No recommendation of the approved Traffic Impact Analysis, nor compliance therewith, shall be deemed to modify or eliminate any condition of approval imposed by the Planning Commission or the City Council on the development of this site.

11. 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 submittal of any construction drawings or the issuance of any building or grading permits, whichever may occur first. Provide and improve all drainageways recommended in the approved drainage study update.

12. Site development to comply with all applicable conditions of approval for SDR-3267, and all other applicable site-related actions.

** STAFF REPORT **

PROJECT DESCRIPTION

The applicant has proposed a Minor Amendment to an approved Site Development Plan Review (SDR-3267) for proposed building additions and modifications to the phasing plan for the overall hospital development located on the northeast corner of Durango Drive and Deer Springs Way.

ISSUES

- Per Title 19.16.100F(1)(b) the proposed amendment meets the criteria for a Minor Site Development Plan, which allows expansions to existing development that comply with all applicable requirements.
- The applicant has proposed modifications to the proposed Phasing Plan for the subject site; to allow the Hospital bed tower addition which was previously designated as Phase IV to become Phase III of the development, with Medical Office Building #2 becoming Phase IV. The applicant has proposed to increase the height of the bed tower to a five-story structure, in lieu of the four stories which was previously approved. Also, the bed count for the structure slightly increased from 129 beds to 144 beds. Staff supports this request.
- All perimeter landscaping has been installed and will remain in conformance with previously approved Site Development Plan Reviews (SDR-3267) and (SDR-6706).
- All structures remain in the same location as designated by previously approved Site Development Plan Reviews (SDR-3267) and (SDR-6706), with the exception of the proposed modifications to the building footprint to the Hospital bed tower addition into the interior parking area. Staff supports this request.

ANALYSIS

On December 4th, 2003 the Planning Commission approved a request for a Site Development Plan Review (SDR-3267) for a proposed hospital/office complex, covering a 40-acre site bounded by Durango Drive to the west, Deer Springs Way to the south, Riley Street to the east and the Dorrell Lane alignment to the north. On June 23rd, 2005 the Department of Planning approved a request for a Minor Amendment (SDR-6706) to approved Site Development Plan Review (SDR-3267) for proposed modifications to the site design. Pursuant to the approved drawings associated with Minor Site Development Plan Review (SDR-6706), the project was proposed to be divided into five building phases (Phases I, II, III, IV and V). The overall phasing plan for the development consisted of the following:

Pursuant to approved Site Development Plan Review (SDR-6706)

Overall Phasing Plan
Description of Work
I. Hospital - with 8 Story Bed Tower (492,000 SF – 271 Beds) a. Parking Provided for Phase I b. Parking Provided for Phase II c. Parking Provided for Phase V i. 1,225 Parking Spaces Provided d. Outpatient Facility e. All Perimeter Landscaping Provided
II. Medical Office Building #1 (75,000 SF) a. Parking constructed under Phase I
III. Medical Office Building #2 (100,000 SF) a. Parking Garage Constructed b. 240 additional parking spaces provided
IV. Hospital Bed Tower Addition (4 Story – 129 Beds) a. Additional visitor parking added b. 355 additional parking spaces provided
V. Cancer Center (10,000 SF) a. Parking constructed under Phase I

Currently, Phases I and II, which consist of the primary Hospital building and Medical Office Building #1, along with parking for Phases I, II and V have been completed. Pursuant to approved Site Development Plan Review (SDR-6706), Phase III of the development was intended to be Medical Office Building #2, with Phase IV being the proposed Hospital bed tower and parking garage addition.

Per the submitted justification letter and drawings date stamped 04/08/19, the applicant has proposed that the Hospital bed tower addition become Phase III of the development, with Medical Office Building #2 becoming Phase IV. In addition, the applicant has proposed to reconfigure the building footprint of the proposed Hospital bed tower addition east into the existing interior parking lot area. Also, the applicant has proposed to increase the height of the bed tower to a five-story structure, in lieu of the four stories which was previously approved. Also, the bed count for the structure slightly increased from 129 beds to 144 beds, as previously approved by Site Development Plan Review (SDR-6706). As a result, the subject site will provide 1,820 parking spaces where 1,816 spaces are required with the proposed modifications to the site after the completion of the final "Phase V".

Staff has determined the requested renovation and remodel of the subject site is in compliance with Montecito - Town Center Development Standards and the previously approved Site Development Plan Reviews (SDR-3267) and (SDR-6706). In addition, this project is compatible with surrounding development in the area; therefore, staff approves of this project with conditions.

FINDINGS – MINOR AMENDMENT TO (SDR-3267)

In order to approve a Site Development Plan application, per Title 19.16.100(E) the following shall be affirmed:

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

   Staff finds that this proposal is in context with the previous approvals and complements the existing hospital facilities onsite and commercial development within the immediate vicinity.

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

   This project has been deemed consistent with the General Plan, land use designations for the Town Center area per the previous Site Development Plan Review (SDR-3267).

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

   Access to the project site will continue to be made via Dorrell Lane, Durango Drive and Deer Springs Way as originally approved under Site Development Plan Review (SDR-3267) and will not be negatively impacted.

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

   There are no proposed changes to the existing perimeter landscape buffers. The proposed building elevations have been designed with a light brown and tan stucco finish to match the aesthetics of the existing Hospital which are appropriate materials for the desert environment.

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 building materials depicted on the submitted elevation plans show a material finish and color scheme that is consistent in appearance with the existing buildings on-site.

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

The applicant is required to obtain all necessary building permits and inspections for the proposed addition as required by the Department of Building and Safety to ensure the public health, safety and general welfare are secured.

BACKGROUND INFORMATION

Related Relevant City Actions by Planning, Fire, Bldg., etc	
12/07/98	The City Council approved a Rezoning (Z-0076-98) of this site from U (Undeveloped), R-E (Residence Estates), R-PD7 (Residential Planned Development – 7 Units per Acre), R-PD11 (Residential Planned Development – 11 Units per Acre), R-PD13 (Residential Planned Development – 13 Units per Acre), R-PD18 (Residential Planned Development – 18 Units per Acre), R-CL (Single Family Compact-Lot), C-1 (Limited Commercial), C-2 (General Commercial), C-V (Civic) and PD (Planned Development) to T-C (Town Center District) as part of a larger overall request.
12/04/03	The Planning Commission approved a request for a Site Development Plan Review (SDR-3267) for a proposed Hospital adjacent to the northeast corner of Durango Drive and Deer Springs Way. Staff recommended approval of the request.
06/23/05	The Department of Planning approved a request for a Minor Amendment (SDR-6706) Site Development Plan Review (SDR-6706) to an approved Site Development Plan Review (SDR-3267) for a proposed Hospital adjacent to the northeast corner of Durango Drive and Deer Springs Way.
07/11/07	The City Council struck a request for a Master Sign Plan (ARC-22160) and Waivers of the Town Center Development Standards Manual to allow wall signs to be located above the second floor window where below the second floor window is the height permitted, to allow five monument signs to be 8'-6" high where 8' is the permitted height, to allow directional signs to be 8'-6" high where 7' is the permitted height, to allow directional signage to be up to 51' square feet in area where 12 square feet is maximum, to allow monument one monument sign to be 125'in area where 75' is the maximum permitted, to allow one monument sign to have fugitive light where no fugitive light is permitted for an approved hospital and medical office building at 6900 North Durango Drive. Staff had no recommendation for the proposed request.

Related Relevant City Actions by Planning, Fire, Bldg., etc	
04/19/17	The City Council approved a request for a Major Modification (MOD-68579) of the Town Center Land Use Plan to amend map four to add the MC-TC (Montecito - Town Center) land use designation and remove the Montecito Town Center Mixed Use Commercial Overlay designation on approximately 202.00 acres generally located north of Clark County 215, east of Durango Drive. The Planning Commission and Staff recommended approval of the request.

Most Recent Change of Ownership	
07/24/06	A deed was recorded for a change in ownership.

Related Building Permits/Business Licenses	
01/09/06	A building permit (#6000105) was issued for a certificate of occupancy for an eight-story hospital at 6900 North Durango Drive. The permit was finalized on 07/25/08.
08/25/06	A building permit (#6005530) was issued for a certificate of occupancy for an eight-story hospital at 6850 North Durango Drive. The permit was finalized on 10/22/07.

Pre-Application Meeting	
02/12/19	A Pre-Application Meeting was conducted with the applicant to go over the application materials and submittal requirements for a Minor Site Development Plan Review for an existing hospital development.

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

Field Check	
04/16/19	During a routine site visit staff observed a well maintained hospital development free from trash and debris.

Details of Application Request	
Site Area	
Net Acres	35.74

Surrounding Property	*Existing Land Use Per Title 19.12*	*Planned or Special Land Use Designation*	*Existing Zoning District*
Subject Property	Hospital	MC-TC (Montecito - Town Center)	T-C (Town Center)
North	Shopping Center	MC-TC (Montecito - Town Center)	T-C (Town Center)
South	Shopping Center	MC-TC (Montecito - Town Center)	T-C (Town Center)
East	Undeveloped	MC-TC (Montecito - Town Center)	T-C (Town Center)
West	Mixed-Use Development	UC-TC (Urban Center Mixed Use - Town Center)	T-C (Town Center)
	Shopping Center	GC-TC (General Commercial - Town Center)	

Master and Neighborhood Plan Areas	***Compliance***
Town Center Development Standards	Y
Special Area and Overlay Districts	***Compliance***
T-C (Town Center) District	Y
Other Plans or Special Requirements	***Compliance***
Trails	N/A
Las Vegas Redevelopment Plan Area	N/A
Interlocal Agreement	N/A
Project of Significant Impact (Development Impact Notification Assessment)	N/A
Project of Regional Significance	N/A

DEVELOPMENT STANDARDS

Street Name	*Functional Classification of Street(s)*	*Governing Document*	*Actual Street Width (Feet)*	*Compliance with Street Section*
Durango Drive	Primary Arterial	Town Center Development Standards Manual	110	Y
Deer Springs Way	Town Center Arterial	Town Center Development Standards Manual	80	Y

JB

Original Phasing Plan

Pursuant to approved Site Development Plan Reviews (SDR-3267) and (SDR-6706)

Phase I

Description of Work

- Hospital with 8 Story Bed Tower
  - Parking Provided for Phase I -
  - Parking Provided for Phase II
  - Parking Provided for Phase V
  - 1,225 Parking Spaces Provided
  - Outpatient Facility
  - All Perimeter Landscaping Provided

Phase 1A - Parking Requirement

Use	*Gross Floor Area or Number of Units*	*Required*			*Provided*		*Compliance*
		Parking Ratio	*Parking*		*Parking*		
			Regular	Handi-capped	Regular	Handi-capped	
Hospital	271 Beds	1.5:Bed	407				
TOTAL SPACES REQUIRED			407		1,225		Y
Regular and Handicap Spaces Required			366	41	1,176	49	Y

Pursuant to approved Site Development Plan Reviews (SDR-3267) and (SDR-6706)

Phase II

Description of Work

- Medical Office Building #1
  - Parking constructed under Phase I

Phase II - Parking Requirement

Use	*Gross Floor Area or Number of Units*	*Required*			*Provided*		*Compliance*
		Parking Ratio	*Parking*		*Parking*		
			Regular	Handi-capped	Regular	Handi-capped	
Hospital – Phase I	271 Beds	1.5:Bed	407				
Medical Office Building #1 - Phase II	75,000 SF	1:200 up to 2,000 SF, then 1:175 SF.	428				
TOTAL SPACES REQUIRED			835		1,225		Y
Regular and Handicap Spaces Required			794	41	1,177	48	Y

JB

Pursuant to approved Site Development Plan Reviews (SDR-3267) and (SDR-6706)

Phase III							
Description of Work							
• Medical Office Building #2 o Parking Garage Constructed o 240 additional parking spaces provided							
Phase II - Parking Requirement							
Use	***Gross Floor Area or Number of Units***	***Required***			***Provided***		***Compliance***
		Parking Ratio	*Parking*		*Parking*		
			Regular	Handi-capped	Regular	Handi-capped	
Hospital – Phase I	243 Beds	1.5:Bed	407				
Medical Office Building #1 - Phase II	75,000 SF	1:200 up to 2,000 SF, then 1:175 SF.	428				
Medical Office Building #2 - Phase III	100,000 SF	1:200 up to 2,000 SF, then 1:175 SF.	570				
TOTAL SPACES REQUIRED			1,405		1,465		Y
Regular and Handicap Spaces Required			1,364	41	1,416	49	Y

Pursuant to approved Site Development Plan Reviews (SDR-3267) and (SDR-6706)

Phase IV							
Description of Work							
• Bed Tower Addition (4 Story) o Additional visitor parking added o 355 additional parking spaces provided							
Phase II - Parking Requirement							
Use	***Gross Floor Area or Number of Units***	***Required***			***Provided***		***Compliance***
		Parking Ratio	*Parking*		*Parking*		
			Regular	Handi-capped	Regular	Handi-capped	
Hospital – Phase I	243 Beds	1.5:Bed	407				
Medical Office Building #1 - Phase II	75,000 SF	1:200 up to 2,000 SF, then 1:175 SF.	428				
Medical Office Building #2 - Phase III	100,000 SF	1:200 up to 2,000 SF, then 1:175 SF.	570				
Hospital Bed Tower Addition – Phase IV	129 Beds	1.5:Bed	194				
TOTAL SPACES REQUIRED			1,599		1,820		Y
Regular and Handicap Spaces Required			1,558	41	1,771	49	Y

Pursuant to approved Site Development Plan Reviews (SDR-3267) and (SDR-6706)

Phase V							
Description of Work							
• Cancer Center o Parking constructed under Phase I							
Phase II - Parking Requirement							
Use	***Gross Floor Area or Number of Units***	***Required***			***Provided***		***Compliance***
		Parking Ratio	*Parking*		*Parking*		
			Regular	Handi-capped	Regular	Handi-capped	
Hospital – Phase I	243 Beds	1.5:Bed	407				
Medical Office Building #1 - Phase II	75,000 SF	1:200 up to 2,000 SF, then 1:175 SF.	428				
Medical Office Building #2 - Phase III	100,000 SF	1:200 up to 2,000 SF, then 1:175 SF.	570				
Hospital Bed Tower Addition – Phase IV	129 Beds	1.5:Bed	194				
Cancer Center – Phase V	10,000 SF	1:200 up to 2,000 SF, then 1:250 SF.	42				
TOTAL SPACES REQUIRED			1,641		1,820		Y
Regular and Handicap Spaces Required			1,600	41	1,771	49	Y

JB

Proposed Phasing Plan

Proposed - Phase I & II							
Description of Work							
• Hospital with 8 Story Bed Tower o 1,563 Parking Spaces Provided o Out • All Perimeter Landscaping Provided • Medical Office Building #1							
Phase II - Parking Requirement							
Use	***Gross Floor Area or Number of Units***	***Required***			***Provided***		***Compliance***
		Parking Ratio	*Parking*		*Parking*		
			Regular	Handi-capped	Regular	Handi-capped	
Hospital – Phase I	262 Beds (Existing)	1.5:Bed	393				
Outpatient	30,000 SF (existing)	1:200	150				
Medical Office Building #1 - Phase II	98,000 SF (Existing)	1:200 up to 2,000 SF, then 1:175 SF.	559				
TOTAL SPACES REQUIRED			1,102		1,563		Y*
Regular and Handicap Spaces Required			1,061	41	1,498	65	Y*

**Pursuant to approved Phasing Plan IA, IB, II, III of approved Site Development Plan Review (SDR-6706), the proposed outpatient area would be parked at one space per 200 square feet.*

Proposed - Phase III							
Description of Work							
• Bed Tower Addition (5 Story) o Interior parking-lot reconfiguration to accommodate the tower building footprint							
Phase II - Parking Requirement							
Use	***Gross Floor Area or Number of Units***	***Required***			***Provided***		***Compliance***
		Parking Ratio	*Parking*		*Parking*		
			Regular	Handi-capped	Regular	Handi-capped	
Hospital – Phase I	262 Beds (Existing)	1.5:Bed	393				
Outpatient – Phase I	30,000 SF (existing)	1:200	150				
Medical Office Building #1 - Phase II	98,000 SF (Existing)	1:200 up to 2,000 SF, then 1:175 SF.	559				
Hospital Bed Tower Addition – Phase III	144 Beds	1.5:Bed	216				
TOTAL SPACES REQUIRED			1,318		1,515		Y*
Regular and Handicap Spaces Required			1,277	41	1,450	65	Y*

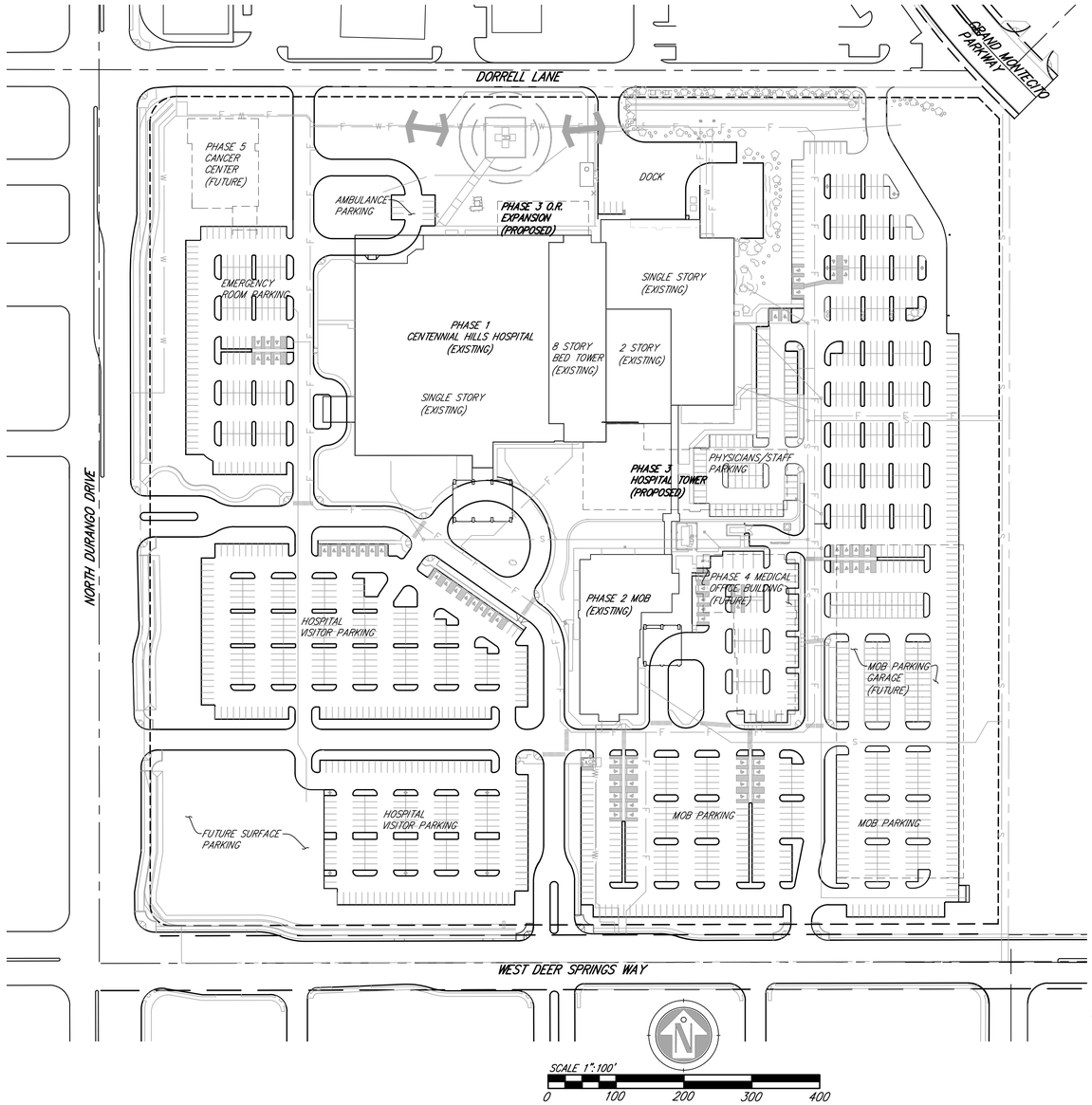
**Pursuant to approved Phasing Plan IA, IB, II, III of approved Site Development Plan Review (SDR-6706), the proposed outpatient area would be parked at one space per 200 square feet.*

Proposed - Phase IV							
Description of Work							
• Medical Office Building #2 o Parking Garage constructed (536 parking spaces) – southeast perimeter of site							
Phase II - Parking Requirement							
Use	***Gross Floor Area or Number of Units***	***Required***			***Provided***		***Compliance***
		Parking Ratio	*Parking*		*Parking*		
			Regular	Handi-capped	Regular	Handi-capped	
Hospital – Phase I	262 Beds (Existing)	1.5:Bed	393				
Outpatient – Phase I	30,000 SF (existing)	1:200	150				
Medical Office Building #1 - Phase II	98,000 SF (Existing)	1:200 up to 2,000 SF, then 1:175 SF.	559				
Hospital Bed Tower Addition – Phase III	144 Beds (Proposed)	1.5:Bed	216				
Medical Office Building #2 - Phase IV	80,000 SF (Proposed)	1:200 up to 2,000 SF, then 1:175 SF.	456				
TOTAL SPACES REQUIRED			1,774		1,820		Y*
Regular and Handicap Spaces Required			1,733	41	1,755	65	Y*

**Pursuant to approved Phasing Plan IA, IB, II, III of approved Site Development Plan Review (SDR-6706), the proposed outpatient area would be parked at one space per 200 square feet.*

Proposed - Phase V							
Description of Work							
• Cancer Center							
Phase II - Parking Requirement							
Use	***Gross Floor Area or Number of Units***	***Required***			***Provided***		***Compliance***
		Parking Ratio	*Parking*		*Parking*		
			Regular	Handi-capped	Regular	Handi-capped	
Hospital – Phase I	262 Beds (Existing)	1.5:Bed	393				
Outpatient – Phase I	30,000 SF (existing)	1:200	150				
Medical Office Building #1 - Phase II	98,000 SF (Existing)	1:200 up to 2,000 SF, then 1:175 SF.	559				
Hospital Bed Tower Addition – Phase III	144 Beds (Proposed)	1.5:Bed	216				
Medical Office Building #2 - Phase IV	80,000 SF (Proposed)	1:200 up to 2,000 SF, then 1:175 SF.	456				
Cancer Center – Phase V	10,000 SF (Proposed)	1:200 up to 2,000 SF, then 1:250 SF.	42				
TOTAL SPACES REQUIRED			1,816		1,820		Y*
Regular and Handicap Spaces Required			1,775	41	1,755	65	Y*

**Pursuant to approved Phasing Plan IA, IB, II, III of approved Site Development Plan Review (SDR-6706), the proposed outpatient area would be parked at one space per 200 square feet.*



PHASING NARRATIVE (PHASE 1 & 2 "EXISTING")

1- HOSPITAL WITH 8 STORY BED TOWER PARKING FOR PHASE 1,2 AND 5.
1225 SPACES PROVIDED.
ALL PERIMETER LANDSCAPING PROVIDED.
A- PROVIDE ACCESS ROAD/RIP RAP FOR ACCESS TO SITE.
B- REMOVE ACCESS ROAD/ RIP RAP AT COMPLETION OF CONSTRUCTION OF DRIVEWAY.

2- MEDICAL OFFICE BUILDING #1
PARKING CONSTRUCTED UNDER PHASE 1.

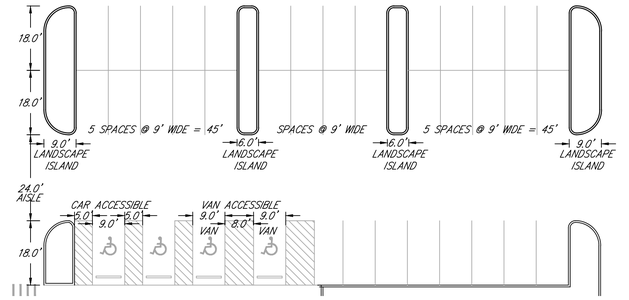
BUILDING AREA CALCULATIONS

HOSPITAL	359,500 SF
MEDICAL OFFICE BUILDING #1	98,000 SF
TOTAL GROSS FLOOR AREA ONSITE (PHASE 1 & 2 "EXISTING")	457,500 SF

FLOOR AREA RATIO CALCULATIONS

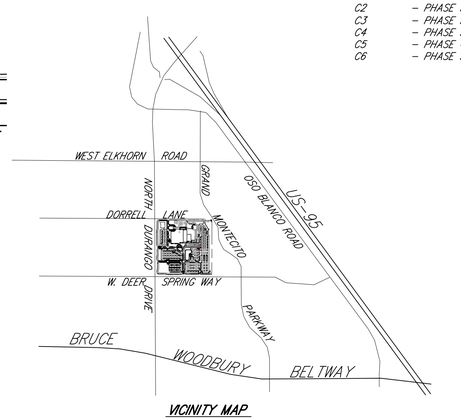
PROPERTY SIZE	1,640,028 SF (37.65 ACRES)
NET LOT AREA	1,640,028 SF - 52,556 SF = 1,587,472 SF
FLOOR AREA RATIO	GROSS FLOOR AREA/NET LOT AREA 457,500 / 1,587,472 SF = 0.288

DIAGRAM OF TYPICAL PARKING CONFIGURATION



SHEET INDEX

C1	- PHASE 1 & 2 SITE PLAN (EXISTING) & INDEX SHEET
C2	- PHASE 3 SITE PLAN (PROPOSED TOWER EXPANSION)
C3	- PHASE 3 TOWER EXPANSION PLAN DETAIL
C4	- PHASE 3 TOWER EXPANSION UTILITIES
C5	- PHASE 4 SITE PLAN
C6	- PHASE 5 SITE PLAN



VICINITY MAP
NOT TO SCALE

The Valley Health System℠

KEYNOTES

PARKING CALCULATIONS		SPACES REQ'D	SPACES PROVIDED
PHASE 1 & 2 (EXISTING)			
HOSPITAL	(1.5 STALLS/PATIENT BED X 262 BEDS)	393	
	(1 STALL/200 SF OUTPATIENT X 30,000 SF)	150	
MOB	(1 STALL/200 SF UP TO TO 2,000 SF THEN 1 STALL FOR EACH 175 SF OVER)	558	
TOTAL SITE PARKING AFTER PHASES 1 AND 2		1,101	1,563

	SPACES REQ'D	SPACES PROVIDED
TOTAL ACCESSIBLE PARKING SPACES (ADA PARKING STALLS SHOWN ARE INCLUDED IN PARKING TOTALS)	52	65

NOTES

COMPREHENSIVE PLAN LAND USE DESIGNATION
TOWN CENTER DISTRICT (T-C)

ZONING
MONTECITO (MC-TC) URBAN CORE

APN
125-20-610-004

LEGAL DESCRIPTION
A PORTION OF LOT ONE (1), MONTECITO TOWN CENTER NORTH, A COMMERCIAL SUBDIVISION AS SHOWN BY MAP THEREOF ON FILE IN BOOK 114 OF PLATS, PAGE 18, IN THE OFFICE OF THE COUNTY RECORDER, CLARK COUNTY, NEVADA

Key Plan

OWNER:
VALLEY HEALTH SYSTEM, LLC
1015 BANBURRY CROSS DRIVE, SUITE 230
LAS VEGAS, NV 89144
(205) 966-6919
ATTN: SCOTT RICKS

EXCEL ENGINEERING
LAND PLANNING • ENGINEERING • SURVEYING
440 STATE PLACE, ESCONDIDO, CA 92029
PH (760)745-8118 FX (760)745-1890

Project Title

CENTENNIAL HILLS HOSPITAL

PHASE 3 TOWER EXPANSION

6900 N DURANGO DRIVE LAS VEGAS, NEVADA

No.	Description	Date

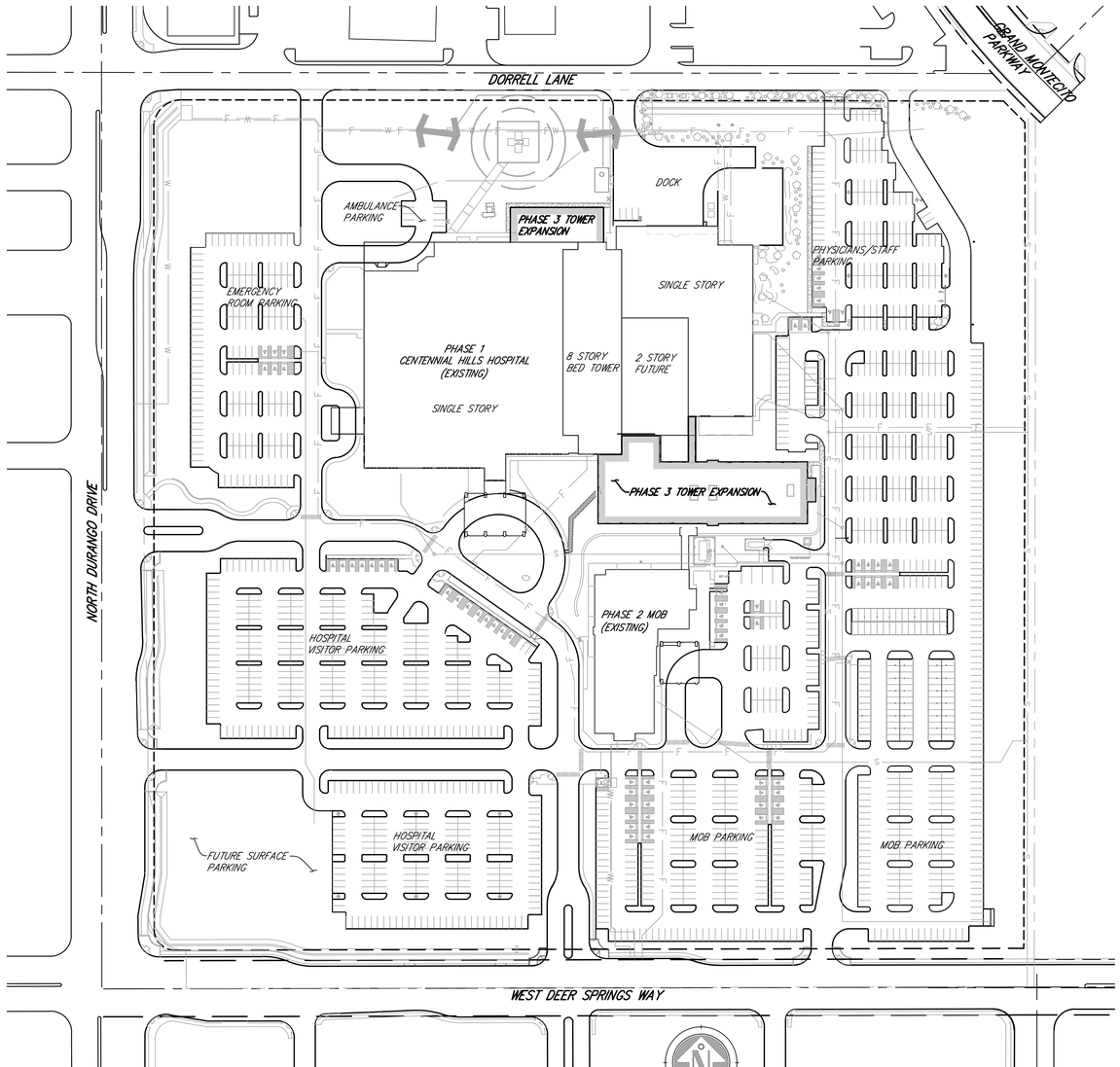
Drawing Title:

PHASE 1 & 2 SITE PLAN (EXISTING) & INDEX SHEET

Designed: AJV	Project No.
Drawn: JR	Scale: 1"=100'
QAQC: RDD	Drawing No. C1
Date: 03/08/2019	

PLEASE RECYCLE

SITE DEVELOPMENT PLAN MODIFICATION SUBMITTAL



PHASING NARRATIVE

1– HOSPITAL WITH 8 STORY BED TOWER PARKING FOR PHASE 1,2 AND 3.
1225 SPACES PROVIDED.
ALL PERIMETER LANDSCAPING PROVIDED.
A– PROVIDE ACCESS ROAD/RIP RAP FOR ACCESS TO SITE.
B– REMOVE ACCESS ROAD/ RIP RAP AT COMPLETION OF CONSTRUCTION OF DRIVEWAY.

2– MEDICAL OFFICE BUILDING #1
PARKING CONSTRUCTED UNDER PHASE 1.

3– BED TOWER ADDITION (5 STORY)
PARKING REVISIONS TO ACCOMMODATE TOWER FOOTPRINT AND TO PROVIDE A DOCTOR-SPECIFIC PARKING AREA. FIRST 3 FLOORS TO BE BUILT OUT IMMEDIATELY WITH FLOORS 4 & 5 TO BE BUILT OUT IN NEAR FUTURE (PARKING COUNTS ACCOUNT FOR FULL BUILD-OUT)

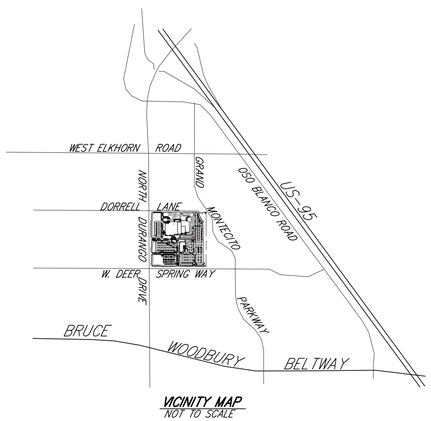
***** THE PREVIOUS SITE DEVELOPMENT APPROVAL HAD THE MOB#2 AS PART OF PHASE 3 AND THE 2ND TOWER AS PHASE 4. THIS SITE DEVELOPMENT PLAN MODIFICATION PROPOSES THE 2ND TOWER AS PHASE 3 AND THE MOB#2 AS PHASE 4.**

BUILDING AREA CALCULATIONS

HOSPITAL	507,000 SF
MEDICAL OFFICE BUILDING #1	98,000 SF
TOTAL GROSS FLOOR AREA ONSITE AT BUILD-OUT	605,000 SF

FLOOR AREA RATIO CALCULATIONS

PROPERTY SIZE	1,640,028 SF (37.65 ACRES)
NET LOT AREA	1,640,028 SF – 52,556 SF = 1,587,472 SF
FLOOR AREA RATIO	GROSS FLOOR AREA/NET LOT AREA 605,000 / 1,587,472 SF = 0.381



VICINITY MAP
NOT TO SCALE

The Valley Health System℠

KEYNOTES

PARKING CALCULATIONS		SPACES REQ'D	SPACES PROVIDED
PHASE 1 & 2 (EXISTING)			
HOSPITAL	(1.5 STALLS/PATIENT BED X 262 BEDS)	393	
	(1 STALL/200 SF OUTPATIENT X 30,000 SF)	150	
MOB	(1 STALL/200 SF UP TO TO 2,000 SF THEN 1 STALL FOR EACH 175 SF OVER)	558	
TOTAL SITE PARKING AFTER PHASES 1 AND 2		1,101	1,563
PHASE 3			
HOSPITAL	(1.5 STALLS/PATIENT BED X 144 BEDS) (NO NEW OUTPATIENT)	216	
TOTAL SITE PARKING AFTER PHASE 3		1,317	1,515

	SPACES REQ'D	SPACES PROVIDED
TOTAL ACCESSIBLE PARKING SPACES (ADA PARKING STALLS SHOWN ARE INCLUDED IN PARKING TOTALS)	54	65

NOTES

COMPREHENSIVE PLAN LAND USE DESIGNATION
TOWN CENTER DISTRICT (T-C)

ZONING
MONTECITO (MC-TC) URBAN CORE

APN
125-20-610-004

LEGAL DESCRIPTION
A PORTION OF LOT ONE (1), MONTECITO TOWN CENTER NORTH, A COMMERCIAL SUBDIVISION AS SHOWN BY MAP THEREOF ON FILE IN BOOK 114 OF PLATS, PAGE 18, IN THE OFFICE OF THE COUNTY RECORDER, CLARK COUNTY, NEVADA

Key Plan

OWNER:
VALLEY HEALTH SYSTEM, LLC
1015 BANBURRY CROSS DRIVE, SUITE 230
LAS VEGAS, NV 89144
(205) 966-6919
ATTN: SCOTT RICKS

EXCEL ENGINEERING
LAND PLANNING • ENGINEERING • SURVEYING
440 STATE PLACE, ESCONDIDO, CA 92029
PH (760)745-8118 FX (760)745-1890

Project Title

CENTENNIAL HILLS HOSPITAL

PHASE 3 TOWER EXPANSION

6900 N DURANGO DRIVE LAS VEGAS, NEVADA

No.	Description	Date

Drawing Title:

PHASE 3 SITE PLAN (PROPOSED TOWER EXPANSION)

Designed: AJV	Project No.
Drawn: JR	Scale: 1"=100'
QAQC RDD	Drawing No. C2
Date: 03/08/2019	

This is the 2016 addendum study for the parking expansion. See starting at Page 17 of this PDF for where we are highlighting how Basins ON3 and ON8 are already planned for 100% paved land use and C=0.90.

DS #: 4853

APN: 125-20-610-004

PROJECT: Centennial Hills Hospital - Update for Phase 2

SUBMITTAL: 1st Submittal

SCANNED BY/DATE:

CHECKED BY/DATE:



CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: December 21, 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: **Centennial Hills Hospital – Update for Phase 2 Parking Lot Expansion**			**COPIES TO:** MHP Limited, LLC
Cross Streets:	NEC of Durango Drive & Deer Springs Way			Valley Health System, LLC
File Number:	F:\Depot\DSMemos\DS4853A.doc			Bart Anderson, P.E., DevCo
Parcel Number:	125-20-610-004			
Zoning Action:	SDR-xxxxx			
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	12/7/2016	12/21/2016	See Comments Below	$400.00	467949: $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-xxxxx**) 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. The overall parking lot improvement area is larger than 1 acre. 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. Please review and address the issue in the next submittal.

3. ***Construction Note #5*** called for a 5'-wide depressed curb. However, hydraulic calculation provided in the last submittal shows that the depressed curb is 9'-wide. Review and revise accordingly.

4. Provide a note on the grading plan: " All Onsite Storm Drains and the associated facilities are Privately Owned and to be Privately Maintained".

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

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: T19S/R60E/20
AREA G-20

November 15, 2016

Mr. Albert Sung, P.E., CFM
Flood Control Project Engineer
Department of Public Works
City of Las Vegas
333 N. Rancho Dr.
Las Vegas, NV 89106

RE: Update #2 for Technical Drainage Study for Centennial Hills Hospital (CLV DS #3822).

Dear Mr. Sung:

The enclosed letter serves as update #2 to the previously approved Centennial Hills Hospital Drainage Study (CLV DS #3822) dated July 27, 2006. The purpose of this update is to address the phase 2 parking lot expansion being proposed within onsite basin ON2 from the original approved study. The proposed expansion will include 2 drive entrances and approximately 177 paved parking spaces with landscape islands. Additional improvements will include redirection of the existing 24" storm drain south. The redirected flow will be discharged to a proposed swale that will flow south then east into historical discharge point C1. Ripraps are being proposed at the outlet of the proposed 24" storm drain and the outlet of the proposed depressed curb section at the southeast corner of the proposed parking expansion.

The hydrology for basin ON2 will remain the same as the previously approved study. The runoff coefficient (C) used in the future condition rational method analysis for this basin had already assumed future development. The C value used is 0.90 for 10 year and 0.93 for 100 year respectively; which represent paved streets/parking lot. As such, the flow quantified for ON2 and on Deer Springs Way from the previous study remains unchanged.

In conclusion, the proposed parking lot expansion will not increase storm flow to Deer Springs Way and should not negatively impact downstream areas. Reference materials from the previously approved drainage study, normal depth & riprap calculations are included in the Appendix.

Should you have additional questions regarding this updated, please feel free to contact us. Thank you.

Sincerely,

Thomas Regenhard, P.E.

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: CENTENNIAL HILL HOSPITAL (UPDATE #2) Date: 11/4/2016

Location of Development: a) Descriptive (Cross Streets) North/South: DURANGO DRIVE

East/West: DEER SPRINGS WAY

b) Section: 20 Township: 19S Range: 60E

c) APN : 125-20-610-004

Name of Owner: VALLEY HEALTH SYSTEM, LLC

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

Address: 1440 METCALF AVENUE, OVERLAND PARK, KS 66223

Contact Person-Name: THOMAS REGENHARD **Telephone No.:** ~~7026728586~~ 702-803-6223

* **E-Mail Address:** info@mhplimited.com **Fax No.:**

Firm: MHP LIMITED, LLC

Address: 6440 SKY POINTE DRIVE #140-385

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: 3.6 Being Developed/Disturbed: 2.6
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 (PARKING LOT EXPANSION)
5. Approximate upstream land area which drains to the subject site: 0 ACRES
6. Has the site drainage been evaluated in the past? ☒ **YES** ☐ **NO** If yes, please identify documentation: RANCHO DRIVE/US95 LOMR
7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: TECHNICAL DRAINAGE STUDY FOR CENTENNIAL HILLS HOSPITAL (DS# 3822)
8. Briefly describe your proposed schedule for the subject project: A.S.A.P.



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

APPENDIX

REFERENCE MATERIALS

TDS FOR CENTENNIAL HILLS HOSPITAL (DS 3822)

CITY OF LAS VEGAS
INTER-OFFICE MEMORANDUM

	DATE: September 13, 2005
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: **Centennial Hills Hospital**	**COPIES TO:** Nevada By Design
Cross Streets: Durango and Deer Springs	UHS Delaware Inc, C/O Pyskacek, Universal Health Services Inc.
File Number: F:\Depot\DSMemos\DS3822B.doc	LOPEZGARCIA GROUP
Parcel Number: 125-20-610-003	Bart Anderson, P.E., DevCo
SDR-3267	
FEMA Flood Zone YES NO **X**	
Proposed Storm Drain YES **X** NO	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Trn . No.
1st Submittal	5/26/2005	6/17/2005	Not Approved	**$400.00**	Trn: 22395
2nd Submittal & Supplemental	8/8/2005 & 8/24/2005	9/12/2005	See Comments Below	**$400.00**	Trn: 27251
			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. The developer is responsible for the continued coordination of the access road and drainage improvements along the vacated Dorrell alignment between the Hospital and the Montecito North (Montecito Marketplace) project between Durango and Grand Montecito Parkway. The ultimate improvements will be constructed by the Montecito North (Montecito Marketplace) project. These improvements are required to protect the Hospital site. Once the ultimate improvements are constructed the Hospital site plans will be required to show the revision to the plans to reflect these improvements.
2. The City of Las Vegas understands that in the interim the development of the Hospital site proposes drainage improvements along the northern boundary of the site (along the Dorrell alignment) to provide interim protection. The access road shown must have rip-rap protection. Provide a detail of the access road section with the required rip-rap shown. Provide D_{50} for the rip-rap, overall thickness, Geotextile fabric and the minimum 6-inches of base material per manual requirements. These interim improvements must be bonded and inspected.
3. The proposed East Drainage Channel shown on Sheet C5.21 must also be shown on the Grading plans. The rip-rap sections must label the D_{50} and the depth of the rip-rap section. Include the Geotextile fabric and the minimum 6-inches of base material per the manual requirements. These channel improvements must be bonded and inspected.

4. Provide additional storm drain manholes for Line "A" at the terminus Station 7+11.68 and at Station 5+77.74 where the pipe size changes from 18-inch to 24-inch pipe.
5. Provide a connection detail between the RCP flared-end section and the ADS N-12 plastic pipe or provide for a single pipe material.
6. The storm drain system must be labeled as Privately Maintained on both the plan and the profile sheets. The profiles must also include the water and sewer crossings and show the minimum separation between these pipe systems.
7. Show the storm drain outlet structure and graded outfall with flared-end section and rip-rap on the storm drain profiles.
8. Provide a maintenance access opening (24-inch minimum) for Outlet Structure #2 as shown on Sheet C5.4.
9. The grading plan sheets need additional design elevations to adequately construct the proposed site improvements. At a minimum grades need to be added at curb returns, low points, grade breaks, point of curvature, concrete islands, valley gutters, sidewalk underdrains, etc.
10. The proposed grading and flow channel near the southwest corner of the site shown on Sheet C3.C and Sheet C5.C do not match. Revise the plans accordingly.
11. The cross gutters shown on the grading plans need to be labeled with a construction note.
12. The existing sewer line along the east property line has a 12-foot access road that must be perpetuated. The sewer manholes are shown within downstream slope of the East Drainage Channel section. Adjust the manhole elevations to the new grade and provide a revised access road section to maintain manhole accessibility.
13. Sheet C3.1: Revise Section 1 to show the proposed access road and rip-rap section.
14. Sheet C3.D & C5.6: Label the sidewalk underdrains and revise the sidewalk drain detail to show the multiple opening sidewalk underdrains.
15. A Drainage Study Update will be required for the future expansion of the site.

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.

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Amendment and accepted by the City of Las Vegas Flood Control Section. Additionally, conditional acceptance of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the City of Las Vegas reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction.

END OF REMARKS T/R/S: 19/60/20
B&H/PBJ AREA G-21

TECHNICAL DRAINAGE STUDY
For
CENTENNIAL HILLS HOSPITAL

DS 3822
400
6-20
5-26-05

NBD Project No. CE04324

May 20, 2005

Prepared For
Lopez-Garcia Group
1825 Market Center Boulevard
Suite 500
Dallas, TX 75207

Prepared By

Nevada By Design, LLC
3515 E. Harmon Avenue
Las Vegas, NV 89121

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: Centennial Hills Hospital Date: May 2005

Location of Development: a) Descriptive Northeast corner of Durango Dr. and Deer Springs Way
b) Sect. 20 Twn 19S Rng 60E

Name of Owner UHS Delaware Inc, C/O Pyskacek, Universal Health Services Inc.

Assessors Parcel No: 125-20-610-003

Telephone No.: (610) 768-3300 Facsimile No.: (610) 768-3301

Address: PO Box 61558

King of Prussia, Pennsylvania 19406

Contact Person - Name: Margie De Laurell, P.E. Telephone No.: (702) 938-1525

Firm: Nevada By Design

Address: 3515 E. Harmon Avenue Las Vegas, NV 89121

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	X	Building Permit		

1. Total Owned Land Area: At Site: 36 acres ± Being Developed/Disturbed: 36 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 (Hospital)

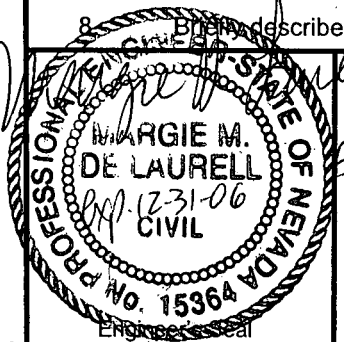
5. Approximate upstream land area which drains to the subject site? 0 acres ±

6. Has the site drainage been evaluated in the past? (YES) NO If yes, please identify documentation:

Montecito Town Center North Conceptual Drainage Study

7. If known, please briefly identify the proposed discharge point (s) of runoff from the site:
A portion to historical discharge point east of the site and a portion to Deer Springs.

8. Briefly describe your proposed schedule for the subject project: A.S.A.P.



Engineer's Seal
For Drainage Study Only

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.

5-19-05

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

Revision	Date

Local Entity File No.

REFERENCE: Centennial Hills Hospital

STANDARD FORM 1

EXISTING ONSITE DRAINAGE DESCRIPTION

Rational Method Analyses were performed for the existing condition drainage condition so that the onsite proposed condition runoff released towards the easterly adjacent property would not be increased. Figure 6 shows the two onsite Basins EX1 (Q10=5/Q100=17) and EX2 (Q10=6/Q100=20). EX1 flows toward Deer Springs Way and EX2 flows towards the adjacent easterly property, respectively.

PROPOSED ONSITE DRAINAGE DESCRIPTION

Figure 7 contains the Future Drainage Conditions Map from the Northwest Neighborhood Study for the area. As seen in the figure, two onsite 10-Year storm drains are depicted, as is a 10-Year storm drain in Deer Springs Way. Due to unforeseeable conditions and agreements between adjacent developers and CLV, the 10-Year storm drain in Deer Springs will not be constructed in the near future. Therefore there will not be any 10-Year storm drains onsite.

See Figure 8 (Map Pocket 9) for Developed Condition Drainage Map depicted for the site in the interim condition. Onsite drainage is conveyed across the site as sheet flow, shallow concentrated flow via surface gutters, and concentrated flow via storm drain. Concentration points, as shown on Figure 8 (Map Pocket 9) are located at Deer Springs Way and at the northeast corner of the site.

There are 12 onsite drainage Basins (ON1-ON12) that total 35.55 acres. Basins ON1 thru ON8 discharge into Deer Springs at various locations. The remaining four basins follow the historic path and discharge east of the project.

Basin ON1 drains over the surface to two storm drain drop inlets located on the west side of the hospital. The storm drain pipe carries the 100-Year flow to Basin ON2, opens to a dirt swale and then combines with flows from ON2 and ON4 at an inlet structure. The inlet structure empties through five pipes and then a riprap channel that discharges into Deer Springs through the first driveway east of Durango.

Basins ON3 and ON5 discharge into Deer Springs at the second driveway east of Durango. These two basins consist of building roofs and pavement. All of the flow is conveyed on the surface as sheet flow and shallow concentrated flow. Basin ON3 drains through Basin ON5 before discharging into Deer Springs.

Basins ON6, ON7, and ON8 discharge into Deer Springs at the southeast corner of the site. Basin ON6 consists entirely of the building's roof. This basin drains into a storm drain pipe east of the hospital. That pipe goes south and connects to the storm drain pipe for Basin ON7. Basin ON7 consists of a small landscaped area adjacent to the medical office building. These flows then continue through the storm drain system to the southeast corner of the site where the pipe dumps into an outfall structure and then daylights to a riprap channel. Basin ON8 drains to the southeast corner of the project as surface flow, combines with Basins ON6 and ON7 at the outfall structure, and then discharges in the riprap channel that flows through sidewalk under-drains into Deer Springs.

Basins ON9, ON10, and ON11 drain to the northeast corner of the site. Basin ON9 collects its flow at the low point where it is conveyed in a pipe to Basin ON10. The ON9 flow combines with ON10 flow as it is routed through Basin ON10 via open channels and storm drain pipe. These two basins then drain into Basin ON11 and are conveyed across it through an open channel and storm drain pipe. Basin ON11 combines with ON9 and ON10 and all three basins discharge onto the undeveloped parcel to the east of the site. This follows the historic drainage pattern.

SECTION III: HYDROLOGIC ANALYSES AND RESULTS

HYDROLOGIC METHODOLOGY AND CRITERIA

The *Clark County Regional Flood Control District* have adapted for smaller contributing basins the *Modified Rational Formula Method.* This modification assures the formula matches the HEC-1 Flood Hydrograph Package and is used to determine the peak runoff generated by the 100 and 10-Year, 6-Hour storm event.

The modified Rational Formula is Q = KCIA where "Q" is defined as the maximum peak flow of runoff in cubic feet per second (cfs). "C" is a runoff coefficient and represents the condition and land use of the area of concern. "I" is the intensity of rainfall in inches per hour for duration equal to the time of concentration. "A" is the area in acres being evaluated. "K" is the factor that adjusts the formula to the local vicinity; in Clark County this number is 0.5.

The Rational Formula makes the following assumptions:

1. The computed maximum runoff at the point of interest is directly related to the average and is a function of the rainfall rate during the time of concentration.

2. The maximum rate of rainfall occurs during the time of concentration and the design rainfall depth during the time of concentration is converted to the average rainfall intensity for the time of concentration.

3. The maximum runoff occurs when the entire area is contributing flow. However, this assumption has been modified from time to time when local rainfall/runoff data was used to improve calculated results.

Both CCRFCD's Drainage Design Management System (DDMS) was utilized to obtain the 10-Year and 100-Year flood discharge quantities.

HYDROLOGIC PARAMETERS

Basin Area

The proposed onsite areas were determined from the onsite grading plans produced by Lopez-Garcia Group. The Drainage Basin Map (Figure 8) for the proposed onsite conditions is included in Map Pocket 2. These areas were delineated in order to determine the discharge resulting from the 10- and 100-Year storm events at various points throughout the site.

Runoff Coefficients

The Rational Method Runoff Coefficients (C) for the proposed conditions have been calculated by DDMS. For each sub-basin a land use was input into the program. For most of the CHH project the land use inputted was COMM1 (Neighborhood Commercial). See the "LAND USE DEFAULTS" and "RATIONAL METHOD LAND USE" tables included in the Appendix.

Time of Concentration

Time of concentration, T_c, consists of two component times; the initial overland flow time, t_i, and the gutter or channel flow time, t_t. The equation for the time of concentration is: $T_c=t_i+t_t$

The DDMS default values for overland flow times for neighborhood commercial drainage basin areas are 50 feet at two percent (2%) slope; see "RATIONAL METHOD LAND USE" table in the Appendix. The gutter or channel flow length and slopes were inputted into DDMS according to the unique drainage basin; see "RATIONAL METHOD SUB BASINS" table in the Appendix for T_c calculations.

Rainfall

The rainfall intensity was calculated by DDMS (see DDMS "RAINFALL DATA" table in the Appendix), which uses certain NOAA depths inputted by Nevada By Design. Since the project site is outside the McCarran Airport rainfall area Figures 501, 506, 507, and 512 of the Drainage Design Manual was used to obtain the rainfall depths (the Figures are included in the Appendix). The depths in inches inputted into DDMS were as follows:

- 2-year, 6-hour: 0.9
- 100-year, 6-hour: 2.1
- 2-year, 24-hour: 1.2
- 100-year, 24-hour: 3.0

RESULTS OF PROPOSED CONDITION HYDROLOGIC ANALYSES

The Modified Rational Formula flow rates for the developed condition are summarized in Table 2. Developed Drainage Basin Map also lists the 6-Hour, 10-Year and 100-Year peak flow rates (see Map Pocket 2). The total 100-Year runoff produced is 59 cfs in the proposed condition.

City of Las Vegas
Drainage Design Management System
RATIONAL METHOD LAND USE
Project Reference: 04324-P-REVISED

8/2/2005

Sub Basin	Land Use Code	Area (acres)	Area (%)	Overland Flow		Runoff Coefficient C					
				Length (ft)	Slope	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
Major Basin 01											
ON1	OPEN	0.84	19.4	200	0.020	0.10	0.10	0.10	0.18	0.26	0.30
	PAVED	3.48	80.6	50	0.020	0.90	0.90	0.90	0.91	0.92	0.93
		4.320	**100.0**								
ON10	OPEN	1.63	67.1	200	0.020	0.10	0.10	0.10	0.18	0.26	0.30
	PAVED	0.80	32.9	50	0.020	0.90	0.90	0.90	0.91	0.92	0.93
		2.430	**100.0**								
ON11	OPEN	1.62	50.6	200	0.020	0.10	0.10	0.10	0.18	0.26	0.30
	PAVED	1.58	49.4	50	0.020	0.90	0.90	0.90	0.91	0.92	0.93
		3.200	**100.0**								
ON12	NATURAL	2.19	100.0	200	0.020	0.25	0.25	0.25	0.35	0.45	0.50
		2.190	**100.0**								
ON2	PAVED	3.63	100.0	50	0.020	0.90	0.90	0.90	0.91	0.92	0.93
		3.630	**100.0**								
ON3	PAVED	2.64	100.0	50	0.020	0.90	0.90	0.90	0.91	0.92	0.93
		2.640	**100.0**								
ON4	OPEN	0.45	11.9	200	0.020	0.10	0.10	0.10	0.18	0.26	0.30
	PAVED	3.33	88.1	50	0.020	0.90	0.90	0.90	0.91	0.92	0.93
		3.780	**100.0**								
ON5	PAVED	4.89	100.0	50	0.020	0.90	0.90	0.90	0.91	0.92	0.93
		4.890	**100.0**								
ON6	PAVED	1.39	100.0	50	0.020	0.90	0.90	0.90	0.91	0.92	0.93
		1.390	**100.0**								

* Non default value

City of Las Vegas
Drainage Design Management System
RATIONAL METHOD LAND USE
Project Reference: 04324-P-REVISED

8/2/2005

Sub Basin	Land Use Code	Area (acres)	Area (%)	Overland Flow		Runoff Coefficient C					
				Length (ft)	Slope	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
Major Basin 01											
ON7	OPEN	0.36	100.0	200	0.020	0.10	0.10	0.10	0.18	0.26	0.30
		0.360	**100.0**								
ON8	PAVED	6.41	100.0	50	0.020	0.90	0.90	0.90	0.91	0.92	0.93
		6.410	**100.0**								
ON9	OPEN	0.22	73.3	200	0.020	0.10	0.10	0.10	0.18	0.26	0.30
	PAVED	0.08	26.7	50	0.020	0.90	0.90	0.90	0.91	0.92	0.93
		0.300	**100.0**								

* Non default value

City of Las Vegas
Drainage Design Management System
RATIONAL METHOD SUB BASINS
Project Reference: 04324-P-REVISED

8/2/2005

Sub Basin ID	Area (acres)	Overland Flow Length (ft)	Overland Flow Slope (ft/ft)	Travel Parameters Length (ft)	Travel Parameters Slope (ft/ft)	Travel Parameters Velocity Coef C	Tc (min)		Sub Basin Hydrology Summary 2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
Major Basin: 01														
ON1	4.3	79	0.0200	353	0.0250	20.2	6.4	Q (cfs)	4	6	8	10	13	15
								C	0.74	0.74	0.74	0.77	0.79	0.81
								CA (ac)	3.20	3.20	3.20	3.33	3.41	3.50
								i (in/hr)	2.40	3.80	4.80	6.20	7.30	8.30
ON10	2.4	151	0.0200	477	0.0500	14.8	15.4	Q (cfs)	1	1	1	2	3	4
								C	0.36	0.36	0.36	0.42	0.48	0.51
								CA (ac)	0.88	0.88	0.88	1.02	1.17	1.24
								i (in/hr)	1.60	2.50	3.20	4.20	5.00	5.80
ON11	3.2	126	0.0200	498	0.0400	20.2	11.7	Q (cfs)	1	2	3	4	5	6
								C	0.50	0.50	0.50	0.54	0.59	0.61
								CA (ac)	1.60	1.60	1.60	1.72	1.88	1.95
								i (in/hr)	1.80	2.80	3.60	4.60	5.50	6.40
ON12	2.2	200	0.0200	67	0.0650	14.8	17.5	Q (cfs)	-	1	1	2	2	3
								C	0.25	0.25	0.25	0.35	0.45	0.50
								CA (ac)	0.55	0.55	0.55	0.77	0.99	1.10
								i (in/hr)	1.40	2.30	3.00	3.90	4.60	5.30
ON2	3.6	50	0.0200	612	0.0250		6.4	Q (cfs)	4	6	8	10	12	14
								C	0.90	0.90	0.90	0.91	0.92	0.93
								CA (ac)	3.27	3.27	3.27	3.30	3.34	3.38
								i (in/hr)	2.40	3.80	4.80	6.20	7.30	8.30
ON3	2.7	50	0.0200	688	0.0350	20.2	5.1	Q (cfs)	3	5	6	8	9	11
								C	0.90	0.90	0.90	0.91	0.92	0.93
								CA (ac)	2.39	2.39	2.39	2.41	2.44	2.46
								i (in/hr)	2.50	4.10	5.00	6.60	7.70	8.80
ON4	3.8	68	0.0200	642	0.0250		6.9	Q (cfs)	4	6	7	9	11	13
								C	0.80	0.80	0.80	0.82	0.84	0.86
								CA (ac)	3.03	3.03	3.03	3.11	3.18	3.26

* Non default value

City of Las Vegas
Drainage Design Management System
RATIONAL METHOD SUB BASINS
Project Reference: 04324-P-REVISED

Sub Basin ID	Area (acres)	Overland Flow Length (ft)	Overland Flow Slope (ft/ft)	Travel Parameters Length (ft)	Travel Parameters Slope (ft/ft)	Travel Parameters Velocity Coef C	Tc (min)		Sub Basin Hydrology Summary 2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
								i (in/hr)	2.30	3.60	4.50	5.90	6.90	7.90
ON5	4.9	50	0.0200	668	0.0200		5.9	Q (cfs)	5	8	11	14	17	19
								C	0.90	0.90	0.90	0.91	0.92	0.93
								CA (ac)	4.41	4.41	4.41	4.46	4.51	4.56
								i (in/hr)	2.40	3.80	4.80	6.20	7.30	8.30
ON6	1.4	50	0.0200	461	0.0100		5.8	Q (cfs)	2	2	3	4	5	5
								C	0.90	0.90	0.90	0.91	0.92	0.93
								CA (ac)	1.25	1.25	1.25	1.26	1.28	1.29
								i (in/hr)	2.40	3.80	4.80	6.20	7.30	8.30
ON7	0.4	200	0.0200	110	0.0150	14.8	21.2	Q (cfs)	-	-	-	-	-	-
								C	0.10	0.10	0.10	0.18	0.26	0.30
								CA (ac)	0.04	0.04	0.04	0.06	0.09	0.11
								i (in/hr)	1.30	2.20	2.80	3.60	4.30	4.90
ON8	6.4	50	0.0200	920	0.0200	20.2	7.4	Q (cfs)	7	10	13	17	20	24
								C	0.90	0.90	0.90	0.91	0.92	0.93
								CA (ac)	5.77	5.77	5.77	5.83	5.90	5.96
								i (in/hr)	2.30	3.60	4.50	5.90	6.90	7.90
ON9	0.3	160	0.0200	143	0.0700	14.8	14.9	Q (cfs)	-	-	-	-	-	-
								C	0.31	0.31	0.31	0.37	0.44	0.47
								CA (ac)	0.09	0.09	0.09	0.11	0.13	0.14
								i (in/hr)	1.60	2.50	3.20	4.20	5.00	5.80

* Non default value

City of Las Vegas
Drainage Design Management System
RATIONAL METHOD FLOW SUMMARY
Return Period: 10 Years

Type	Model ID	Size	Area (acres)	Length (feet)	Velocity (ft/sec)	Time in Drain (min)	CA (acres)	Tc (min)	I (in/hr)	Q (cfs)
Major Basin: 01										
Basin	ON1		4.3				3.20	6.4	4.8	7.7
Convey	RK1	1-18" Dia	4.3	134	0.3	7.4	3.20	14.0	3.3	5.3
Convey	RK2	1-24" Dia	4.3	578	0.3	32.1	3.20	46.0	1.7	5.3
Convey	RK3	1.00'H x 1.00'W	4.3	288	3.3	1.5	3.20	48.0	1.6	5.3
Basin	ON2		3.6				3.27	6.4	4.8	7.8
Combine			8.0				6.47	48.0	1.6	5.2
Basin	ON4		3.8				3.03	6.9	4.5	6.8
Combine			11.7				9.50	48.0	1.6	7.6
Basin	ON3		2.7				2.39	5.1	5.0	6.0
Basin	ON5		4.9				4.41	5.9	4.8	10.6
Combine			7.6				6.80	5.9	4.8	16.3
Basin	ON6		1.4				1.25	5.8	4.8	3.0
Convey	RK5	1-12" Dia	1.4	168	0.7	4.0	1.25	10.0	3.8	2.4
Convey	RK6	1-15" Dia	1.4	220	0.7	5.2	1.25	15.0	3.2	2.4
Basin	ON7		0.4				0.04	21.2	2.8	0.1
Combine			1.8				1.29	21.2	2.8	1.8
Convey	RK7	1-18" Dia	1.8	722	0.4	30.1	1.29	51.0	1.5	1.0
Basin	ON8		6.4				5.77	7.4	4.5	13.0
Combine			8.2				7.06	51.0	1.5	5.3
Convey	RK16	0.50'H x 10.00'	8.2	47	3.4	0.2	7.06	51.0	1.5	5.3
Basin	ON9		0.3				0.09	14.9	3.2	0.1
Convey	RK8	1-12" Dia	0.3	37	0.4	1.5	0.09	16.0	3.2	0.1
Convey	RK9	0.70'H x 20.00'	0.3	22	4.2	0.1	0.09	16.0	3.2	0.1
Convey	RK10	1-18" Dia	0.3	32	0.5	1.1	0.09	17.0	3.1	0.1
Convey	RK11	4.00'H x 20.00'	0.3	203	9.0	0.4	0.09	17.0	3.1	0.1
Basin	ON10		2.4				0.88	15.4	3.2	1.4
Combine			2.7				0.97	17.0	3.1	1.5
Convey	RK12	1-18" Dia	2.7	64	0.4	2.7	0.97	20.0	2.8	1.4
Convey	RK13	1.50'H x 20.00'	2.7	205	7.7	0.4	0.97	20.0	2.8	1.4
Basin	ON11		3.2				1.60	11.7	3.6	2.9
Combine			5.9				2.57	20.0	2.8	3.6
Convey	RK14	1-18" Dia	5.9	117	0.5	3.9	2.57	24.0	2.5	3.2
Basin	ON12		2.2				0.55	17.5	3.0	0.8

City of Las Vegas
Drainage Design Management System
RATIONAL METHOD FLOW SUMMARY
Return Period: 100 Years

8/2/2005

	Type	Model ID	Size	Area (acres)	Length (feet)	Velocity (ft/sec)	Time in Drain (min)	CA (acres)	Tc (min)	I (in/hr)	Q (cfs)
Major Basin: 01											
	Basin	ON1		4.3				3.50	6.4	8.3	14.5
	Convey	RK1	1-18" Dia	4.3	134	0.3	7.4	3.50	14.0	6.0	10.5
	Convey	RK2	1-24" Dia	4.3	578	0.3	32.1	3.50	46.0	3.1	10.5
	Convey	RK3	1.00'H x 1.00'W	4.3	288	3.3	1.5	3.50	48.0	3.0	10.5
	Basin	ON2		3.6				3.38	6.4	8.3	14.0
	Combine			8.0				6.88	48.0	3.0	10.3
	Basin	ON4		3.8				3.26	6.9	7.9	12.9
	Combine			11.7				10.14	48.0	3.0	15.2
	Basin	ON3		2.7				2.46	5.1	8.8	10.8
	Basin	ON5		4.9				4.56	5.9	8.3	18.9
	Combine			7.6				7.02	5.9	8.3	29.1
	Basin	ON6		1.4				1.29	5.8	8.3	5.4
	Convey	RK5	1-12" Dia	1.4	168	0.7	4.0	1.29	10.0	6.8	4.4
	Convey	RK6	1-15" Dia	1.4	220	0.7	5.2	1.29	15.0	5.8	4.4
	Basin	ON7		0.4				0.11	21.2	4.9	0.3
	Combine			1.8				1.40	21.2	4.9	3.4
	Convey	RK7	1-18" Dia	1.8	722	0.4	30.1	1.40	51.0	2.8	2.0
	Basin	ON8		6.4				5.96	7.4	7.9	23.5
	Combine			8.2				7.36	51.0	2.8	10.3
	Convey	RK16	0.50'H x 10.00'	8.2	47	3.4	0.2	7.36	51.0	2.8	10.3
	Basin	ON9		0.3				0.14	14.9	5.8	0.4
	Convey	RK8	1-12" Dia	0.3	37	0.4	1.5	0.14	16.0	5.6	0.4
	Convey	RK9	0.70'H x 20.00'	0.3	22	4.2	0.1	0.14	16.0	5.6	0.4
	Convey	RK10	1-18" Dia	0.3	32	0.5	1.1	0.14	17.0	5.5	0.4
	Convey	RK11	4.00'H x 20.00'	0.3	203	9.0	0.4	0.14	17.0	5.5	0.4
	Basin	ON10		2.4				1.24	15.4	5.8	3.6
	Combine			2.7				1.38	17.0	5.5	3.8
	Convey	RK12	1-18" Dia	2.7	64	0.4	2.7	1.38	20.0	5.1	3.5
	Convey	RK13	1.50'H x 20.00'	2.7	205	7.7	0.4	1.38	20.0	5.1	3.5
	Basin	ON11		3.2				1.95	11.7	6.4	6.2
	Combine			5.9				3.33	20.0	5.1	8.5
	Convey	RK14	1-18" Dia	5.9	117	0.5	3.9	3.33	24.0	4.6	7.7
	Basin	ON12		2.2				1.10	17.5	5.3	2.9

NORMAL DEPTH, RIPRAP CALCULATIONS, DRAINAGE MAP & GRADING PLAN

Worksheet for Prop. Swale

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.035	
Channel Slope	1.00	%
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	29.00	ft^3/s

Results

Normal Depth	1.64	ft
Flow Area	8.07	ft^2
Wetted Perimeter	10.38	ft
Top Width	9.84	ft
Critical Depth	1.42	ft
Critical Slope	0.02146	ft/ft
Velocity	3.59	ft/s
Velocity Head	0.20	ft
Specific Energy	1.84	ft
Froude Number	0.70	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.64	ft
Critical Depth	1.42	ft
Channel Slope	1.00	%
Critical Slope	0.02146	ft/ft

Worksheet for Prop. Swale

Messages

Notes	*100 yr flow from ON1& ON2 per reference study

Cross Section for Prop. Swale

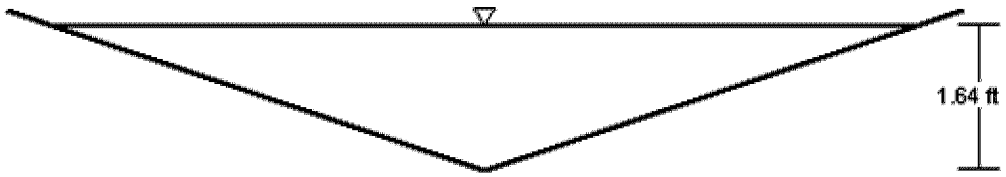
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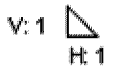
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.035	
Channel Slope	1.00	%
Normal Depth	1.64	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	29.00	ft^3/s

Cross Section Image





Worksheet for Prop. 24 in. SD

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	1.00	%
Diameter	24.00	in
Discharge	15.00	ft³/s

Results

Normal Depth	1.19	ft
Flow Area	1.95	ft²
Wetted Perimeter	3.52	ft
Top Width	1.96	ft
Critical Depth	1.40	ft
Percent Full	59.5	%
Critical Slope	0.00632	ft/ft
Velocity	7.70	ft/s
Velocity Head	0.92	ft
Specific Energy	2.11	ft
Froude Number	1.36	
Maximum Discharge	24.33	ft³/s
Discharge Full	22.62	ft³/s
Slope Full	0.00440	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	59.50	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s

Worksheet for Prop. 24 in. SD

GVF Output Data

Normal Depth	1.19	ft
Critical Depth	1.40	ft
Channel Slope	1.00	%
Critical Slope	0.00632	ft/ft

Messages

Notes	*100 yr flow from ON1 per reference study

Cross Section for Prop. 24 in. SD

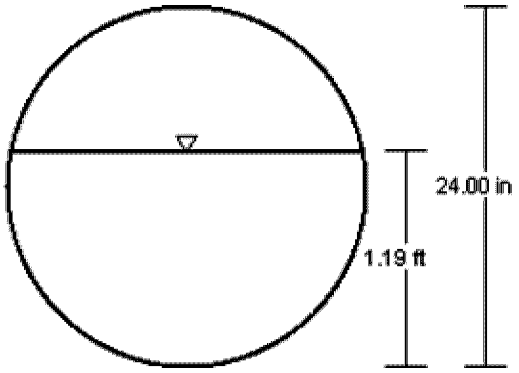
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	1.00	%
Normal Depth	1.19	ft
Diameter	24.00	in
Discharge	15.00	ft³/s

Cross Section Image



V: 1
H: 1

Worksheet for Prop. Depress Curb Section

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	1.00	%
Discharge	27.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
-0+00.50	0.50
0+00.00	0.50
0+00.00	0.00
0+09.00	0.00
0+09.00	0.50
0+09.50	0.50

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(-0+00.50, 0.50)	(0+09.50, 0.50)	0.013

Results

Normal Depth		0.47	ft
Elevation Range	0.00 to 0.50 ft		
Flow Area		4.20	ft²
Wetted Perimeter		9.93	ft
Top Width		9.00	ft
Normal Depth		0.47	ft
Critical Depth		0.66	ft
Critical Slope		0.00343	ft/ft
Velocity		6.44	ft/s
Velocity Head		0.64	ft
Specific Energy		1.11	ft
Froude Number		1.66	

Worksheet for Prop. Depress Curb Section

Results

Flow Type	Supercritical

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.47	ft
Critical Depth	0.66	ft
Channel Slope	0.01000	ft/ft
Critical Slope	0.00343	ft/ft

Cross Section for Prop. Depress Curb Section

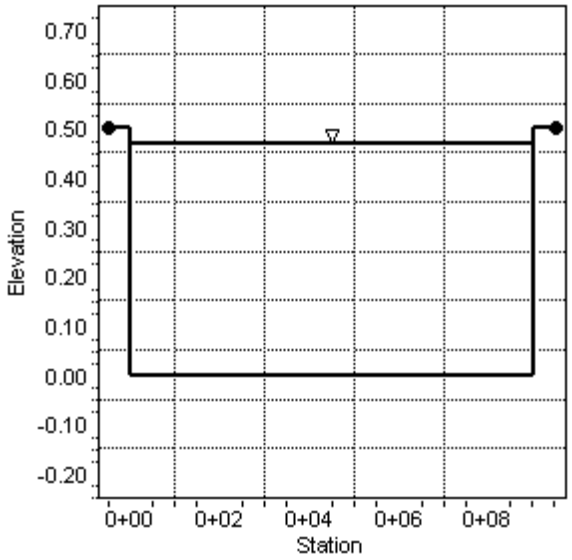
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	1.00	%
Normal Depth	0.47	ft
Discharge	27.00	ft³/s

Cross Section Image



Rip Rap Calculation

at 24" RCP Outlet

CENTENNIAL HILLS PARKING LOT EXPANSION

$(d_{50} / D) (Y_t / D)^{1.2} / (Q / D^{2.5}) = 0.023$ **Eqn. 760 of the Manual**

$Y_t / D = 0.4$ Based on assumptions as outlined in section 707.4.2 (b)*

Q = 15 Flow at outlet of pipe (cfs)

D = 2 Diameter of pipe (ft)

$Q / D^{2.5} =$ 2.65165 Solution must be less than 6 for the following equation to be valid

$d_{50} = 0.023 * D * (Q / D^{2.5}) / (Y_t / D)$ **Equation 733* solved for rock size**

$d_{50} =$ 0.30494 ft.

Therefore rip rap size d_{50} =	**0.3**	**ft.**	**or**	**4** **in.**
Blanket thickness =2*d_{50} =	**0.6**			**7** **in.**

Rip Rap Calculation

at Depressed Curb Section

CENTENNIAL HILLS PARKING LOT EXPANSION

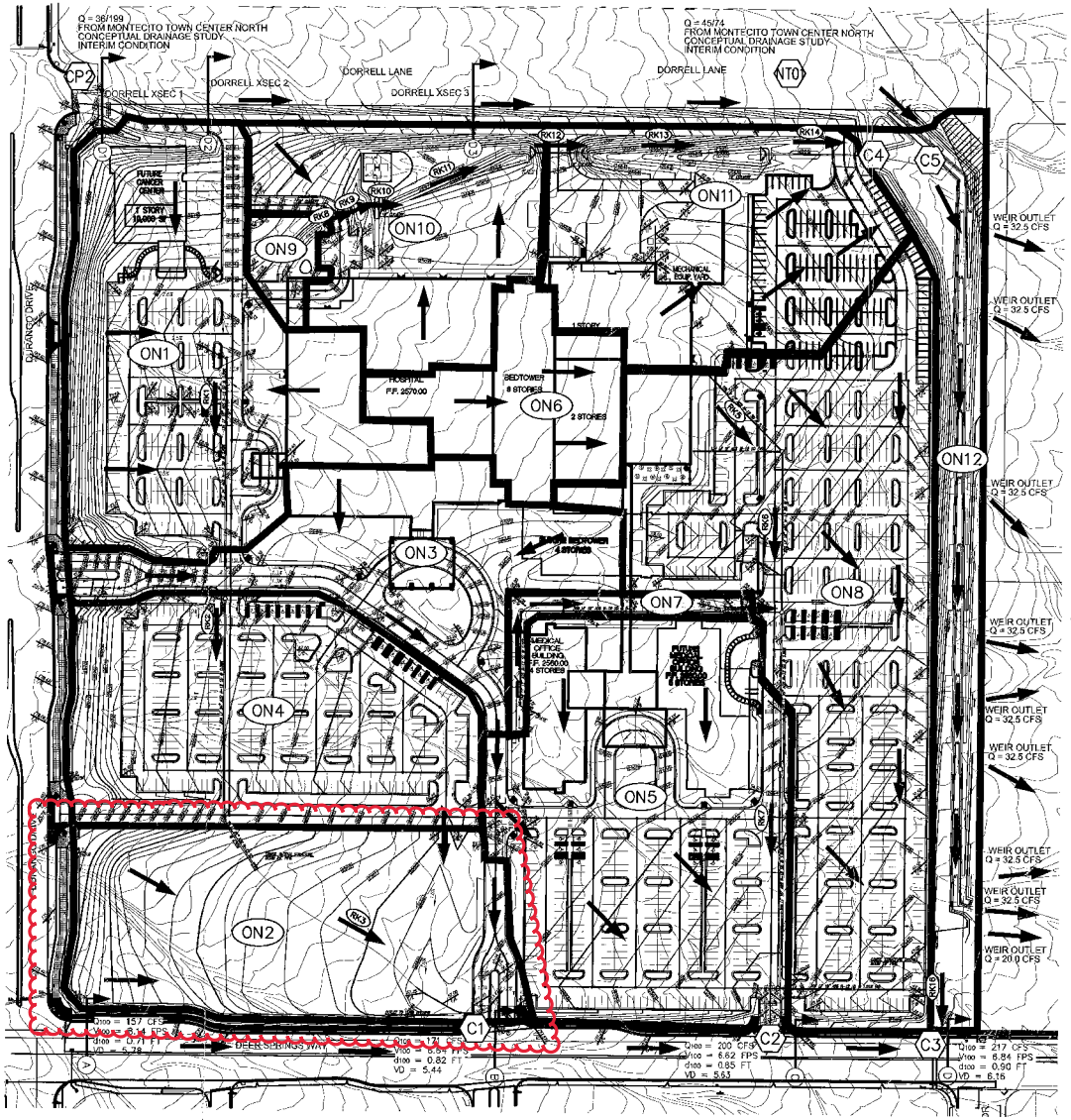
$$V = 3 (d_{50}^{0.5}) (S_s - 1) / S^{0.17}$$ ***Eq. 734 of the Manual***

V =	6.44	Mean channel velocity in feet per second per Normal Depth Section A
S =	0.01	Longitudinal channel slope in feet per foot
S_S =	2.5	Specific gravity of rock (minimum S_s = 2.50)
d_{50} =		Rocksize in ft for which 50 % of the riprap by weight is smaller

d_{50} = 0.4279 Equation 733* solved for rock size

Therefore rip rap size d_{50} = **0.4** **ft.** **or** **5** **in.**

Blanket thickness =2*d_{50} = **0.9** **ft.** **or** **10** **in.**



PROPOSED CONDITION			
BASIN	AREA (ACRES)	Q10 (CFS)	Q100 (CFS)
ON1	4.3	8	15
RK1	N/A	7	14
RK2	N/A	7	14
RK3	N/A	7	14
ON2	3.6	8	14
RK4	N/A	12	23
ON3	3.8	7	13
RK5	N/A	18	34
ON4	2.7	6	11
ON5	4.9	11	19
RK6	N/A	16	29
ON6	1.4	3	5
RK7	N/A	3	5
RK8	N/A	3	5
ON7	0.4	<1	<1
RK9	N/A	2	3
ON8	N/A	2	3
ON9	6.4	13	24
RK10	N/A	9	17
ON10	N/A	9	17
ON11	N/A	9	17
ON12	0.3	<1	<1
RK13	N/A	<1	<1
RK14	N/A	<1	<1
RK15	N/A	<1	<1
RK16	N/A	<1	<1
RK17	2.4	1	4
RK18	N/A	2	4
RK19	N/A	2	4
RK20	N/A	2	4
RK21	3.2	3	6
RK22	N/A	4	9
RK23	N/A	4	9
RK24	N/A	4	9
RK25	N/A	85	282
RK26	2.2	1	3

LEGEND	
ON1	BASIN LABEL / ROUTING LABEL
	FLOW DIRECTION
	BASIN BOUNDARY
C1	CONCENTRATION POINT
Q100/Q10	100 YEAR/10 YEAR FLOW RATES

NORTH

GRAPHIC SCALE

This grading plan is a part of drainage study #3822 which was received on 2/21/05 and approved on 9/26/05. Page 1 of 1

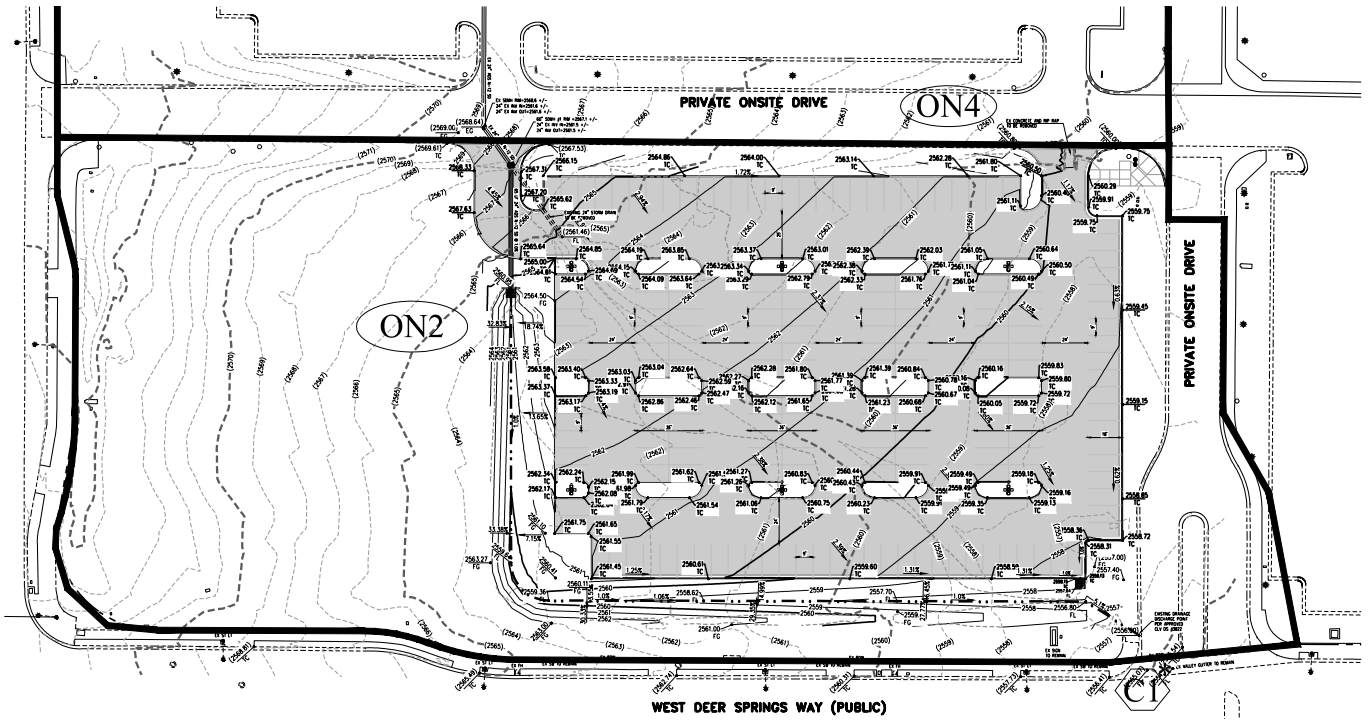
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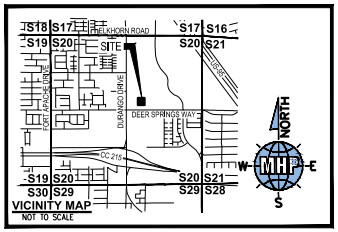
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DESIGNED BY: JDA | JOB NUMBER: C4324
CHECK BY: CJH | DATE: 06/02/05

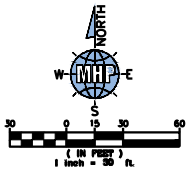
CENTENNIAL HILLS HOSPITAL

DEVELOPED CONDITION
BASIN MAP

FIG 8







LEGEND

	BASIN BOUNDARY
	FLOW ARROW
(ON1)	BASIN ID
	COMBINATION POINT
10 cfs/100 cfs	Q_M/Q_{100}

BASIN FLOW SUMMARY

BASIN ID	AREA (ACRES)	Q_{10} (CFS)	Q_{100} (CFS)
ON1*	4.3	8	15
ON2*	3.6	6	14
ON4*	3.8	7	13
C1*	-	18	34

NOTE:
FLOWS REFERENCED FROM THE ORIGINAL APPROVED DRAINAGE STUDY ARE DENOTED BY * ON THIS DRAINAGE MAP

BASIS OF BEARINGS

GRID NORTH AS DEFINED BY THE CENTRAL MERIDIAN OF THE NEVADA COORDINATE REFERENCE SYSTEM (NCRS), LAS VEGAS ZONE, NORTH AMERICAN DATUM OF 1983; SAID MERIDIAN BEING COINCIDENT WITH 114°58' WEST OF THE GREENWICH MERIDIAN.

LINEAR UNIT: US SURVEY FOOT (FTUS)

DATUM (REFERENCE FRAME): NAD 83 (2011) EPOCH 2010.00
NEVADA COORDINATE REFERENCE SYSTEM (NCRS)

ZONE: LAS VEGAS

PROJECTION: TRANSVERSE MERCATOR
STANDARD PARALLEL (AND LATITUDE OF GRID ORGIN): 36°15'00"N
LONGITUDE OF CENTRAL MERIDIAN: 114°58'00"W
NORTHING AT GRID ORIGIN: 200,000.000 M (656,166.6667 FTUS)
EASTING AT CENTRAL MERIDIAN: 100,000.000 M (328,083.3333 FTUS)
SCALE FACTOR ON CENTRAL MERIDIAN: 1.0001 (EXACT)

NOTES:
1. ALL DISTANCES AND BEARINGS SHOWN HEREON ARE PROJECTED (GRID) VALUES BASED ON THE PRECEDING PROJECTION DEFINITION. THE PROJECTION WAS DEFINED SUCH THAT PROJECTED (GRID) DISTANCES ARE EQUIVALENT TO "GROUND" DISTANCES IN THE PROJECT AREA.
2. GRID BEARINGS SHOWN HEREON (OR IMPLIED BY GRID COORDINATES) DO NOT EQUAL GEODETIC BEARINGS DUE TO MERIDIAN CONVERGENCE.

BENCHMARK

CITY OF LAS VEGAS BENCHMARK STATION: 5LV902DE6

DESCRIPTION: RIVET AND ROUND ALUMINUM PLATE IN TOP OF CURB AT THE SOUTHWEST CORNER OF RILEY STREET AND DEER SPRING SPRINGS.

ELEVATION: 774.781 METERS
2541.93 FEET (U.S. SURVEY FEET)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

AVOID HITTING UNDERGROUND TRAFFIC SIGNAL SYSTEMS AND STREET LIGHT SYSTEM CONDUITS. IT'S COSTLY.
Call before you do UnderGround
1-702-455-6000
CLARK COUNTY TRAFFIC OPERATIONS
AND
1-702-432-5300
FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

Call before you Dig
AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call 811
1-800-227-2600
CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-6000

REVISIONS

REV	DATE	BY

VALLEY HEALTH SYSTEM, LLC
1400 METICAL / KENOL, OVERLAND PARK, KS 66223

MHP LIMITED, LLC
9440 SKY POINTE DRIVE #140-385
LAS VEGAS, NEVADA 89131-6497
PH: (702) 341-1447 E-MAIL: MHP@MHPLIMITED.COM
WWW.MHPLIMITED.COM

DEVELOPED CONDITION DRAINAGE MAP
CITY OF LAS VEGAS, NEVADA

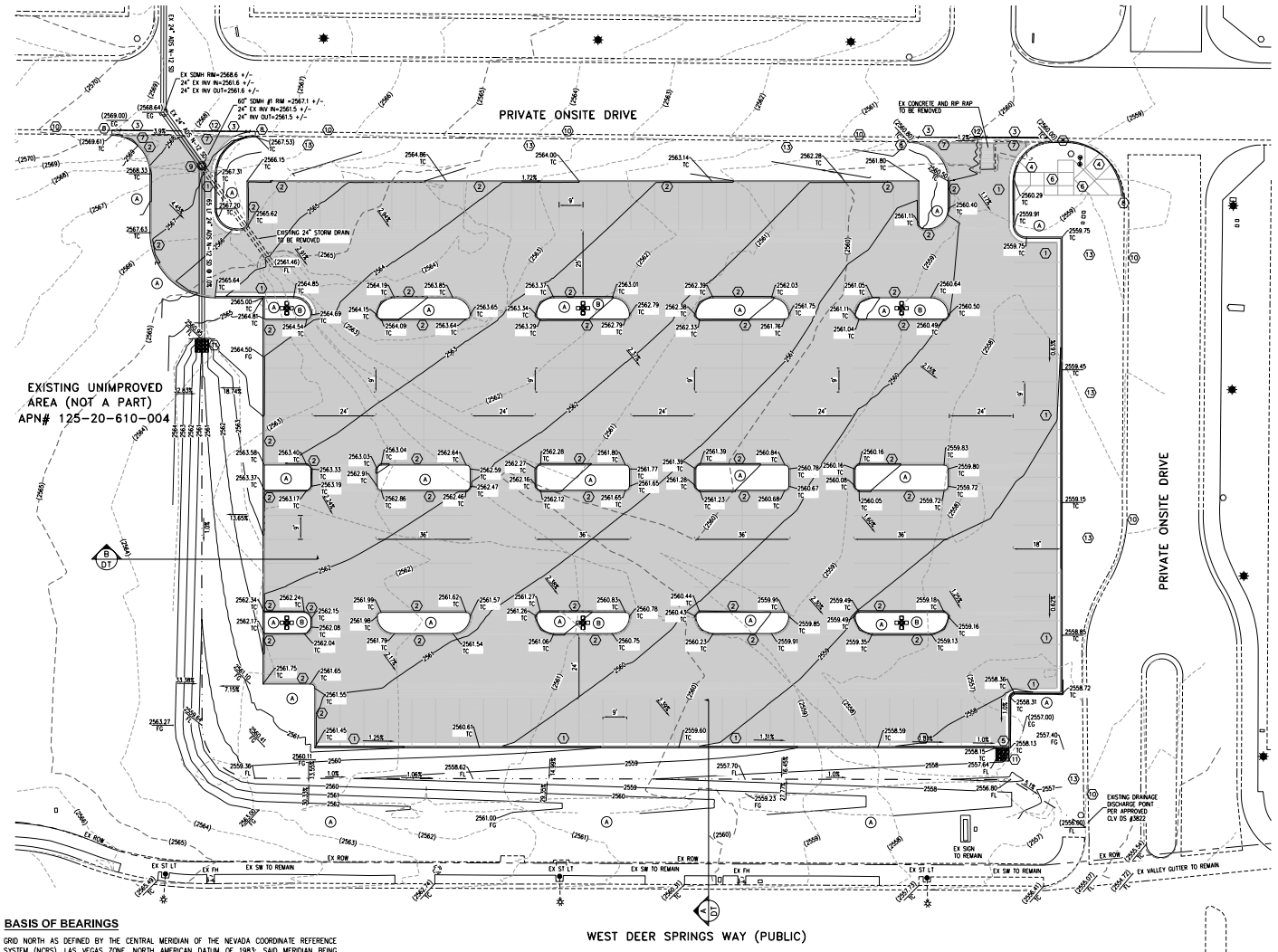
CENTENNIAL HILLS HOSPITAL
PHASE 2 PARKING LOT EXPANSION

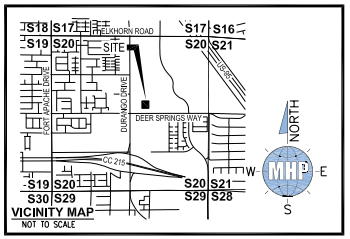
DRAWING INFORMATION:
DRAWN BY: JCF 10/24/2016
DESIGNED BY: JCF 10/24/2016
CHECKED BY: TBR 10/24/2016
PROJECT NO.: 1600011
SCALE: 1" = 30' HORZ. N/A VERT.

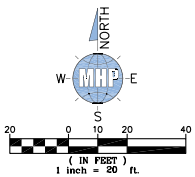
PROFESSIONAL ENGINEER STATE OF NEVADA
THOMAS B. REGENHARD JR.
No. 19585
CIVIL
EXPIRES 12-31-17

SHEET
1 OF 1
DRAWING NO.

G:\CENTENNIAL HILL PARKING\DRAINAGE\DRAINAGE MAP.DWG







CONSTRUCTION ITEMS

1. INSTALL "L" TYPE CURB AND GUTTER PER DETAIL 6 ON SHEET DT.
2. CONSTRUCT TYPE "A" CURB PER DETAIL 5 ON SHEET DT.
3. SAWCUT AND MATCH EXISTING AC.
4. CONSTRUCT SIDEWALK CURB RAMP PER DETAIL 2 ON DT AND ARCHITECTURAL PLANS.
5. CONSTRUCT 5' WIDE DEPRESSED CURB FOR DRAINAGE.
6. CONSTRUCT CONCRETE SIDEWALK PER DETAIL 4 ON SHEET DT. (WIDTH VARIES FROM 3' TO 15') ALSO, SEE ARCHITECTURAL PLANS FOR DETAILS.
7. CONSTRUCT 2' CONCRETE VALLEY GUTTER PER DETAIL 1 ON SHEET DT.
8. MATCH EXISTING WITH PROPOSED CONSTRUCTION.
9. 60" TYPE I STORM DRAIN MANHOLE PER CCAUSD NO. 403 AND 401.
10. EXISTING "L" CURB, PROTECT IN PLACE.
11. 5'x5' RIPRAP PAD D50=6" DEPTH=1'
12. REMOVE EXISTING "L" CURB.
13. EXISTING LANDSCAPING. PROTECT IN PLACE.

COORDINATION ITEMS

- (A) LANDSCAPE AREA. SEE LANDSCAPE PLANS FOR IRRIGATION SCHEMATIC, PLANTING SCHEDULE AND DETAILS.
- (B) PROPOSED AREA LIGHT LOCATION. SEE LIGHTING PLAN FOR DETAILS.

PAVEMENT LEGEND

ONSITE PAVEMENT AREAS. SEE SHEET DT FOR SECTION DETAIL

ONSITE EARTHWORK QUANTITIES

CUT	FILL	NET
983 CUBIC YARDS	645 CUBIC YARDS	338 CUBIC YARDS (FILL)

NOTE:
ALL EXPORTED DIRT SHOULD BE PLACED UNDER AN APPROVED CLV GRADING PERMIT. NO ILLEGAL DUMPING.

BASIS OF BEARINGS

GRID NORTH AS DEFINED BY THE CENTRAL MERIDIAN OF THE NEVADA COORDINATE REFERENCE SYSTEM (NCRS), LAS VEGAS ZONE, NORTH AMERICAN DATUM OF 1983; SAID MERIDIAN BEING COINCIDENT WITH 114°58' WEST OF THE GREENWICH MERIDIAN.

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CITY OF LAS VEGAS BENCHMARK STATION: 5LV002DE6

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ELEVATION: 774.781 METERS
2541.93 FEET (U.S. SURVEY FEET)

LEGEND

- 1/16 LINE
- TREES/ SHURBS
- EXISTING SIGNS
- HANDICAP PARKING
- EXISTING AREA LIGHT
- PROPOSED AREA LIGHT
- EXISTING BACK OF CURB
- EDGE OF PAVEMENT/SAW CUT LINE
- EXISTING MANHOLE
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- FLOWLINE / SWALE/ STORM DRAIN

AVOID HITTING OVERHEAD POWER LINES IT'S COSTLY.
CALL BEFORE YOU DIG OVERHEAD
1-702-227-2929

AVOID HITTING UNDERGROUND TRAFFIC SIGNAL SYSTEMS AND STREET LIGHT SYSTEM CONDUITS. IT'S COSTLY.
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Call before you Dig
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Call 811
1-800-227-2600
CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-6000

REVISIONS		
NO	DATE	BY

VALLEY HEALTH SYSTEM, LLC
1400 METCALF AVENUE, OVERLAND PARK, KS 66223

MHP LIMITED, LLC
6440 SOUTH POINTE PARKWAY #140-295
LAS VEGAS, NEVADA 89135-4047
P: (702) 872-8886 | INFO@MHPLIMITED.COM
WWW.MHPLIMITED.COM

GRADING PLAN SHEET
CITY OF LAS VEGAS, NEVADA

CENTENNIAL HILLS HOSPITAL
PHASE 2 PARKING LOT EXPANSION

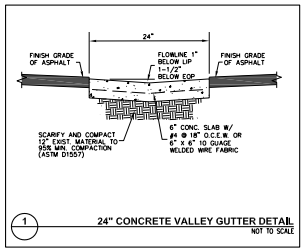
DRAWING INFORMATION:

DRAWN BY:	JCF	10/24/2016
DESIGNED BY:	JCF	10/24/2016
CHECKED BY:	TBR	10/24/2016
PROJECT NO.:	160001	SCALE: 1" = 20' HORIZ. NA VERT.

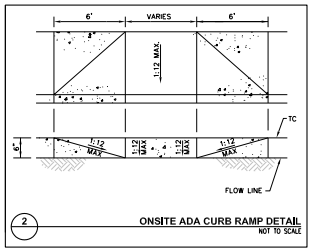
THOMAS B. REGENHARD JR. CIVIL 19585 EXPIRES 12-31-17 — 11/30/16

SHEET
GR
4 OF 5
DRAWING NO.

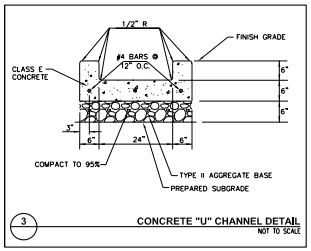
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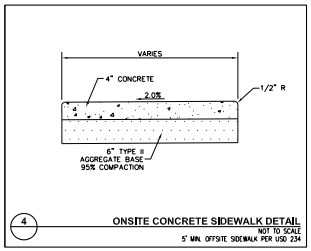
1 **24" CONCRETE VALLEY GUTTER DETAIL**
NOT TO SCALE



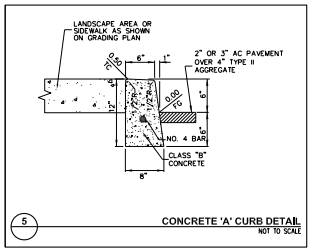
2 **ONSITE ADA CURB RAMP DETAIL**
NOT TO SCALE



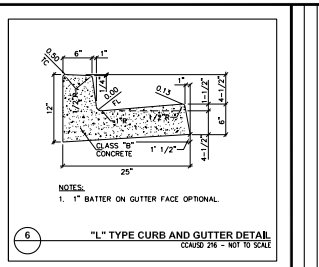
3 **CONCRETE "U" CHANNEL DETAIL**
NOT TO SCALE



4 **ONSITE CONCRETE SIDEWALK DETAIL**
NOT TO SCALE
5' MIN. OFFSITE SIDEWALK PER USD 234

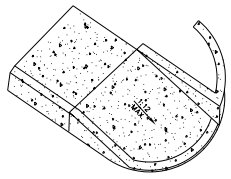


5 **CONCRETE 'A' CURB DETAIL**
NOT TO SCALE

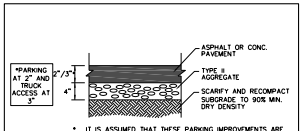


NOTES:
1. 1" BATTER ON GUTTER FACE OPTIONAL.

6 **"L" TYPE CURB AND GUTTER DETAIL**
CCAUSD 216 - NOT TO SCALE



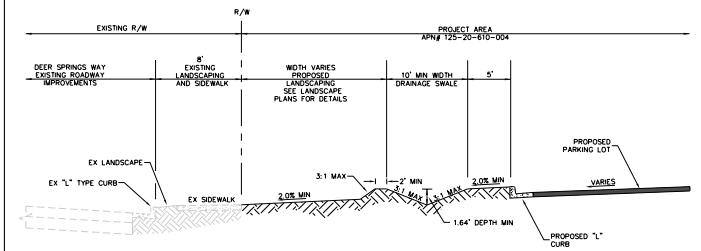
7 **ONSITE ADA CURB RAMP DETAIL**
NOT TO SCALE



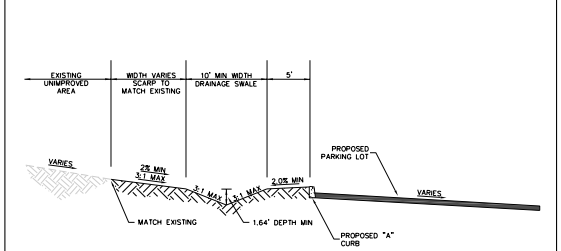
* IT IS ASSUMED THAT THESE PARKING IMPROVEMENTS ARE ONLY FOR AUTOMOBILE PARKING AND DOES NOT INCLUDE TRUCK ACCESS. COORDINATE FINAL PAVEMENT SECTIONS WITH OWNER

NOTE: FOR SOILS INFORMATION, REFERENCE GEOTECHNICAL STUDY
BY: NOVA GEOTECHNICAL
DATED: SEPTEMBER 19, 2016
PROJECT NO.: E-16-197

8 **ONSITE PAVEMENT SECTION**
NOT TO SCALE



A **SECTION A**
NOT TO SCALE



B **SECTION B**
NOT TO SCALE

NO.	DATE	BY	REVISIONS

VALLEY HEALTH SYSTEM, LLC
11400 MCCALF AVENUE, OVERLAND PARK, KS 66223

MHP LIMITED, LLC
6440 SKY POINTE DRIVE #140-295
LAS VEGAS, NEVADA 89131-4047
P: (702) 872-6888 | INFO@MHPLIMITED.COM
WWW.MHPLIMITED.COM

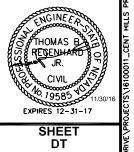
DETAIL SHEET
CITY OF LAS VEGAS, NEVADA

CENTENNIAL HILLS HOSPITAL
PHASE 2 PARKING LOT EXPANSION

DRAWING INFORMATION:

DRAWN BY:	JCF	10/24/16
DESIGNED BY:	JCF	10/24/16
CHECKED BY:	TBR	10/24/16
PROJECT NO.:	160001	SCALE: 1" = 20' HORIZ. NA VERT.





SHEET
DT
5 OF 5
DRAWING NO.

D:\ONEDRIVE\PROJECTS\160001_CENT HILLS PRKNG EXP 2\DRAWINGS\IMPROVEMENTS\160001_CIVIL PLANS.DWG

DS #: 4853

APN: 125-20-610-004

PROJECT: Centennial Hills Hospital - Update for Phase 2

SUBMITTAL: 2nd Submittal

SCANNED BY/DATE:

CHECKED BY/DATE:



CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: January 11, 2017
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: **Centennial Hills Hospital – Update for Phase 2 Parking Lot Expansion**			**COPIES TO:** MHP Limited, LLC
Cross Streets:	NEC of Durango Drive & Deer Springs Way			Valley Health System, LLC
File Number:	F:\Depot\DSMemos\DS4853B.doc			Bart Anderson, P.E., DevCo
Parcel Number:	125-20-610-004			
Zoning Action:	SDR-6706			
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	12/7/2016	12/21/2016	Not Approved	$400.00	467949: $400
2nd Submittal	1/3/2017	1/10/2017	See Comments Below	$400.00	470642: $400
			TOTAL FEES (LDDRS):	**$800.00**	**----**

REMARKS:

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

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

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Update and accepted by the *City of Las Vegas Flood Control Section.* Additionally, conditional acceptance of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the *City of Las Vegas* reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction of a project.

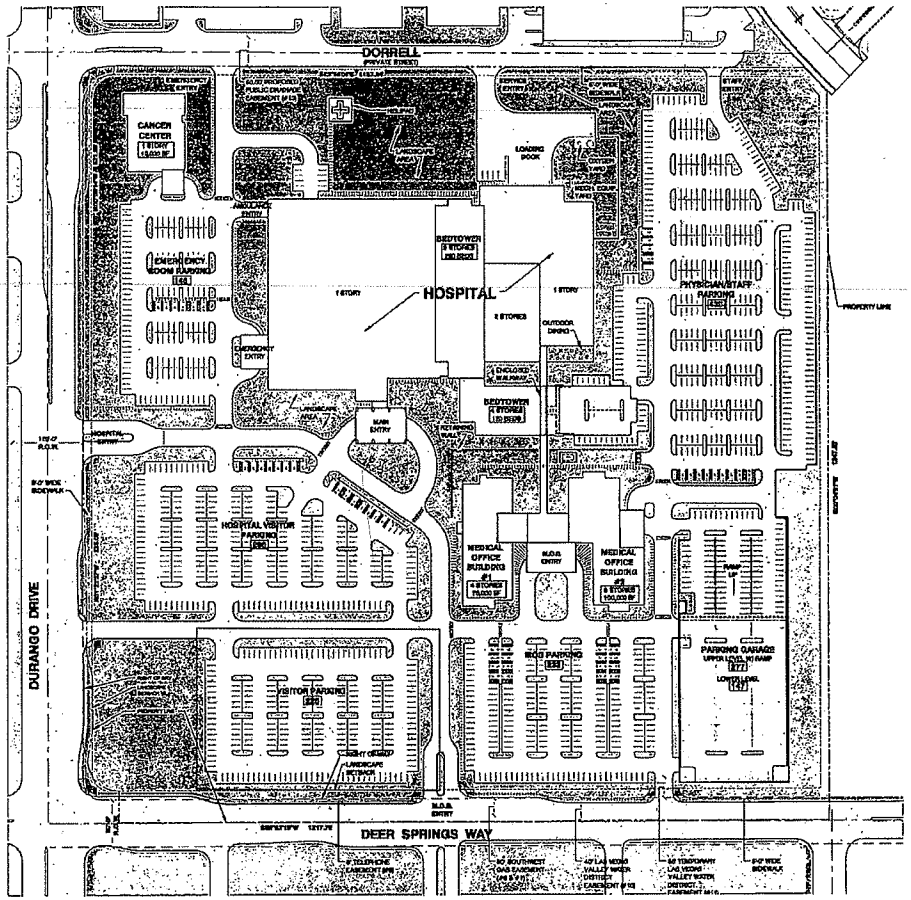
NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the *Nevada Division of Environmental Protection* a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For more information, including forms and applications see http://ndep.nv.gov/bwpc/storm01.htm or call (775) 687-9429.

END OF REMARKS

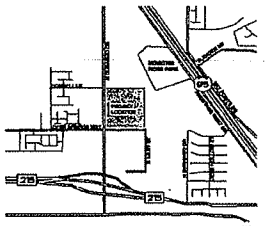
ays

T/R/S: T19S/R60E/20

AREA G-20



Ultimate Build-Out Site Plan



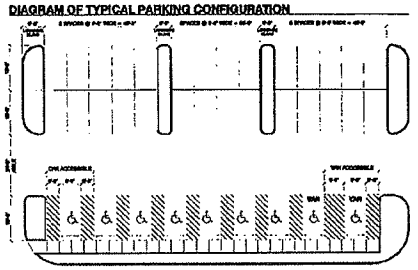
SITE VICINITY MAP

PARKING CALCULATIONS	SPACES REQUIRED	SPACES PROVIDED
HOSPITAL		
BED TOWER	420	
FUTURE BED TOWER	180	
TOTAL HOSPITAL PARKING SPACES	600	725
MEDICAL OFFICE BUILDING #1	438	570
MEDICAL OFFICE BUILDING #2	570	430
CANCER CENTER (10,000 SF)	42	42
TOTAL SITE PARKING AT BUILD-OUT	1640	1765
	SPACES REQUIRED	SPACES PROVIDED
TOTAL HANDICAPPED ACCESSIBLE PARKING	27	43

BUILDING AREA CALCULATIONS	
HOSPITAL	492,000 SF
MEDICAL OFFICE BUILDING #1	78,000 SF
MEDICAL OFFICE BUILDING #2	100,000 SF
CANCER CENTER	10,000 SF
PARKING GARAGE	53,700 SF
TOTAL GROSS FLOOR AREA ON SITE AT BUILD-OUT	730,700 SF

FLOOR AREA RATIO CALCULATIONS	
PROPERTY SIZE	1,640,0028 SF (37.66 ACRES)
NET LOT AREA	1,640,028 SF - 52,556 SF = 1,587,472 SF
FLOOR AREA RATIO	GROSS FLOOR AREA / NET LOT AREA 730,700 / 1,587,472 SF = .46

DIAGRAM OF TYPICAL PARKING CONFIGURATION



Centennial Hills Medical Center

Las Vegas, Nevada UHS of Delaware, Inc.

04 MARCH 2005 HKS

RECEIVED
MAY 09 2005
SDR-6706
06/23/05 ADMIN

Albert Sung

From: Lucien Paet
Sent: Wednesday, January 11, 2017 9:26 AM
To: Albert Sung
Subject: RE: Centennial Hills Hospital Parking Lot Expansion

Per Planning, no new SDR required.

Thanks,

Lucien Paet | Engineering Project Manager
Department of Public Works
Transportation Engineering Division
Development Services Center (DSC) 8th Floor
333 N Rancho Dr. Las Vegas, Nevada 89106
702-229-6145
lasvegasnevada.gov

Your opinion is important! Click here to take a short survey.

From: Albert Sung
Sent: Tuesday, January 10, 2017 5:10 PM
To: Lucien Paet
Subject: Centennial Hills Hospital Parking Lot Expansion

Here you go, Lucien.

TRANSMITTAL

DATE: January 3, 2017

To: **Mr. Albert Sung, PE, CFM**
Flood Control Project Engineer
Dept of Public Works
City of Las Vegas
333 N Rancho Drive
Las Vegas, NV 89106

From: **Thomas Regenhard**

PROJECT: CENTENNIAL HILLS PARKING EXPANSION PHASE 2

PROJECT #: 16100011, CLV DS #4853, UPDATE 2 ADDENDUM #1

Transmitted herewith are the following:

- 1 Copy of TDS Update #2 Addendum #1 for Review/Approval
- 1 CD

Comments:

Please find the attached for submittal to CLV.

Received: _____ **Date:** _____

MHP Limited, LLC
6440 Sky Pointe Dr. #140-385
Las Vegas, NV 89131
Phone: 702-803-6223

January 3, 2017

Mr. Albert Sung, P.E., CFM
Flood Control Project Engineer
Department of Public Works
City of Las Vegas
333 N. Rancho Dr.
Las Vegas, NV 89106

RE: Addendum #1 to Centennial Hills Hospital - Update for Phase 2 Parking Lot Expansion (CLV DS #4853).

Dear Mr. Sung,

The enclosed addendum is being provided in response to City of Las Vegas comment letter dated December 21, 2016 for the above project. The comments are addressed within the following summarization:

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

Response: The overall commercial site layout was approved under SDR-6706, a copy of the zoning/planning conditions is included with this submittal, along with the approved site plan. This SDR included the proposed parking lot improvements that are included with this submittal. Please note that the proposed parking is less than what was originally approved.

Comment 2: **The overall parking lot improvement area is larger than 1 acre. Per Section 1500 of the Clark County Regional Flood Control District's Hydrologic Criteria and Drainage Design Manual, the subject improvements must provide Low Impact Development (LID) measures. Please review and address the issue in the next submittal.**

Response: Section 1500 of the CCRFCD HCDDM was reviewed and mitigation BMPs were implemented to the parking lot design. The specific BMP that was implemented was "Section 1503.4 Landscape Swale". Section 1503.4.5 Design Criteria was used for the proposed swale and the Grading Plans and Details were revised accordingly. An added Exhibit "Low Impact Development, Perimeter Swale BMP",

that includes the proposed Landscape Swale BMP cross section detail, is included to show the proposed design mitigation and information per the example provided "Figure 1501" in the CCRFCD HCDDM. The proposed ac paving (impervious) in the parking area is 1.4 acres. Section 1502.2 "Design Criteria" states that a minimum of 75% of the impervious area needs to be treated through a BMP. Therefore, a minimum of 1 acre is required for this project. Section 1502.2 "Design Criteria" also state that the outfall basins be limited to a maximum of 1 acre, where a 0.5 acre or less is preferred but not required. The added Exhibit "Low Impact Development, Perimeter Swale BMP", shows that "Drainage Area B" is 1.0 acre and the outfall swale (Outfall 2) is treating this tributary area. The proposed outfall swale is 41' long and has an average width of 6' (4' minimum) and is 0.75' deep (max) with a slope of 1%. This proposed design meets the requirements of Section 1500 and satisfies the BMP Design Criteria. Additionally, the BMP design runoff volume per HCDDM Section 1502.3 had been calculated and included with this submittal. The volume is determine to be <1 cfs, which is used in the normal depth calculation of the proposed BMP swale. As shown in the calculation, the propose swale as design will be able to handle the 2-year, 6-hour storm as required by Section 1500 of the HCDDM.

Comment 3: **Construction Note #5 called for a 5'-wide depressed curb. However, hydraulic calculation provided in the last submittal shows that the depressed curb is 9'-wide. Review and revise accordingly.**

Response: Construction Note #5 has been revised to 9' wide to match the hydraulic calculation from the previous submittal, the revised plans is included with this submittal.

Comment 4: **Provide a note on the grading plan: "All Onsite Storm Drains and the associated facilities are Privately Owned and to be Privately Maintained".**

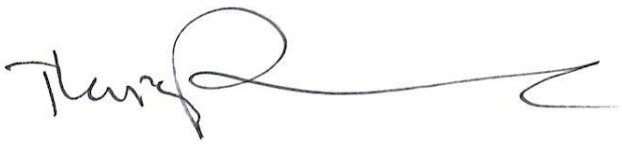
Response: The requested note has been added to the grading plan and included with this submittal.

Comment 5: **Add a note in all pertinent sheets for the construction of all storm drain drop inlets per a newly adopted USDCCA Drawing No. 421 (Stormwater Quality Management Stamp and Sign Detail).**

Response: The requested note has been added to all pertinent sheets and included with this submittal.

Should you have additional questions regarding this addendum, please feel free to contact me. Thank you.

Sincerely,



Thomas Regenhard, P.E.

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: Centennial Hills Hospital - Addendum #1 to Update #2 Date: Jan 3, 2017

Location of Development: a) Descriptive (Cross Streets) North/South: Durango Drive

East/West: Deer Springs Way

b) Section: 20 Township: 19S Range: 60E

c) APN : 125-20-610-004

Name of Owner: VALLEY HEALTH SYSTEM, LLC

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

Address: 1440 Metcalf Ave., Overland Park, KS 66223

Contact Person-Name: Thomas Regenhard P.E. **Telephone No.:** 702-672-8586

* **E-Mail Address:** info@mhplimited.com **Fax No.:**

Firm: MHP Limited, LLC

Address: 6440 Sky Pointe Drive #140-385, Las Vegas, NV 89131

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: 33.9+/- Being Developed/Disturbed: 2.2+/-
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 (parking lot expansion)
5. Approximate upstream land area which drains to the subject site: see drainage map
6. Has the site drainage been evaluated in the past? ☒ **YES** ☐ **NO** If yes, please identify documentation: Technical Drainage Study for Centennial Hills Hospital (DS# 3822)
7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Southeast onto Deer Springs Way
8. Briefly describe your proposed schedule for the subject project: A.S.A.P.



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

DS 4853

Local Entity File No.

REFERENCE:

STANDARD FORM 1

Updated 05/01/2008

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: December 21, 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: **Centennial Hills Hospital – Update for Phase 2 Parking Lot Expansion**			**COPIES TO:** MHP Limited, LLC
Cross Streets:	NEC of Durango Drive & Deer Springs Way			Valley Health System, LLC
File Number:	F:\Depot\DSMemos\DS4853A.doc			Bart Anderson, P.E., DevCo
Parcel Number:	125-20-610-004			
Zoning Action:	SDR-xxxxx			
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	12/7/2016	12/21/2016	See Comments Below	$400.00	467949: $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-xxxxx**) 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. The overall parking lot improvement area is larger than 1 acre. 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. Please review and address the issue in the next submittal.

3. ***Construction Note #5*** called for a 5'-wide depressed curb. However, hydraulic calculation provided in the last submittal shows that the depressed curb is 9'-wide. Review and revise accordingly.

4. Provide a note on the grading plan: " All Onsite Storm Drains and the associated facilities are Privately Owned and to be Privately Maintained".

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

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: T19S/R60E/20
AREA G-20



LAS VEGAS CITY COUNCIL

OSCAR B. GOODMAN
MAYOR

GARY REESE
MAYOR PRO TEM

LARRY BROWN
LAWRENCE WEEKLY
MICHAEL MACK
STEVE WOLFSON
LOIS TARKANIAN

DOUGLAS A. SELBY
CITY MANAGER

June 20, 2005

Mr. Don Pyskacek
UHS of Delaware, Inc.
367 South Gulph Road
King of Prussia, Pennsylvania 19406

RE: SDR-6706 - ADMINISTRATIVE MINOR AMENDMENT TO AN APPROVED SITE DEVELOPMENT PLAN REVIEW

Dear Mr. Pyskacek:

Your request for a Minor Amendment to an approved Administrative Site Development Plan Review (SDR-3267) FOR A PROPOSED HOSPITAL on 36.34 acres adjacent to the northeast corner of Durango Drive and Deer Springs Way (APN 125-20-610-003), T-C (Town Center) Zone [MS-TC (Main Street Mixed Use - Town Center) Special Land Use Designation], Ward 6 (Mack) has been considered administratively by the Planning and Development Department staff.

The Planning and Development Department staff has administratively ***APPROVED*** your request subject to:

Planning and Development

1. This Site Development Plan Review shall expire two years from date of final approval unless it is exercised or an Extension of Time is granted by the City Council.

2. All development shall be in conformance with the site plan and building elevations date stamped 05/09/05, except as amended by conditions herein.

3. The site plan shall be revised and approved by Planning and Development Department staff, prior to the time application is made for a building permit, to reflect street section development that complies with the standards of the Town Center Development Standards Manual, and to identify how trash collection facilities will be adequately screened to meet Code requirements.

4. Prior to the submittal of a building permit, the applicant shall meet with Planning and Development 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.

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

VOICE 702.229.6011
TTY 702.386.9108
www.lasvegasnevada.gov
18112-001-1-05
CLV 7009

15. Driveways shall be designed, located and constructed in accordance with Standard Drawing #222A.

16. Provide a copy of a recorded Joint Access Agreement between this site and the adjoining parcel to the north prior to the issuance of any permits.

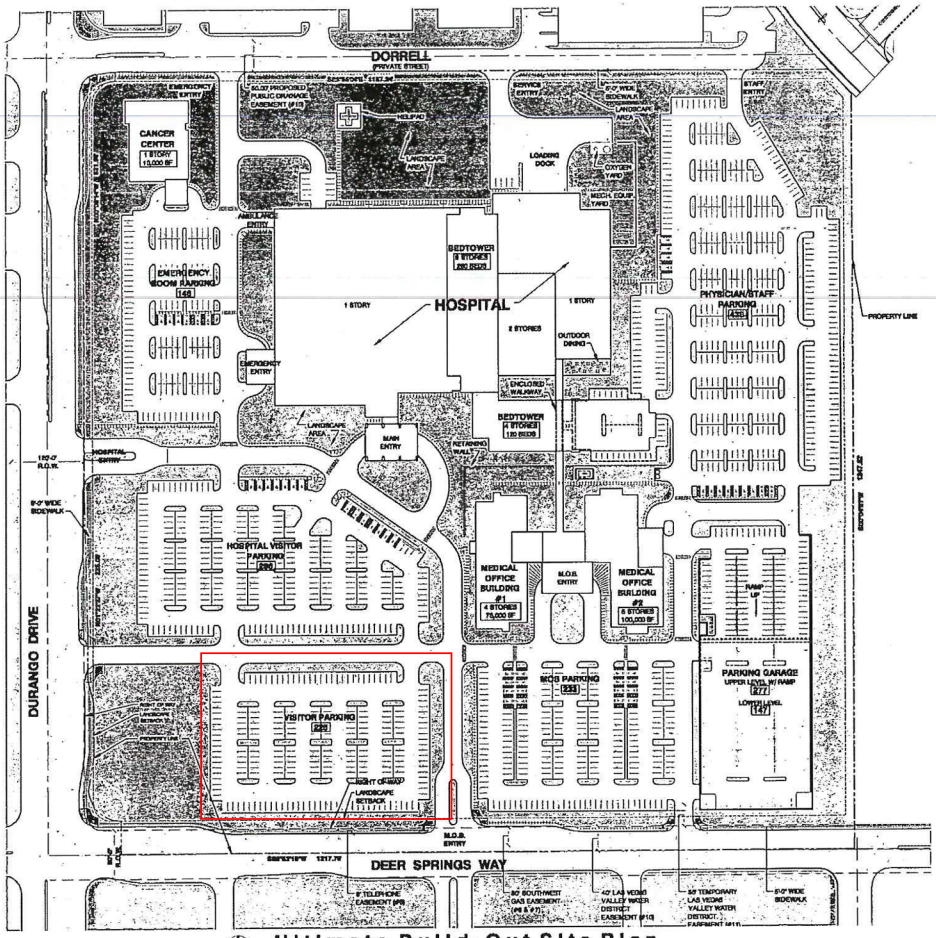
17. An update to the Montecito Master Sewer Plan must be submitted and approved by the Collection Systems Planning Section of the Department of Public Works prior to the submittal of any construction drawings for this site. Comply with recommendations of the approved plan.

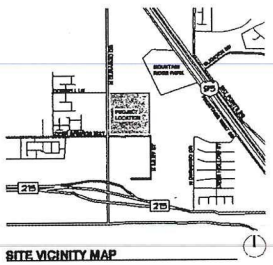
18. Provide a drivable access to the existing public sewer easement along the east side of this site.

19. Landscape and maintain all unimproved rights-of-way, if any, on Deer Springs Way and Durango Drive adjacent to this site.

20. Submit an Encroachment Agreement for all landscaping and private improvements, if any, located in the Deer Springs Way and Durango Drive public rights-of-way adjacent to this site prior to occupancy of this site.

21. A Traffic Impact Analysis must be submitted to and approved by the Department of Public Works prior to the issuance of any building or grading permits or the submittal of any construction drawings. Comply with the recommendations of the approved Traffic Impact Analysis prior to occupancy of the site. The Traffic Impact Analysis shall also include a section addressing Standard Drawings #234.1 #234.2 and #234.3 to determine additional right-of-way requirements for bus turnouts adjacent to this site, if any; dedicate all areas recommended by the approved Traffic Impact Analysis. All additional rights-of-way required by Standard Drawing #201.1 for exclusive right turn lanes and dual left turn lanes shall be dedicated prior to or concurrent with the commencement of on-site development activities unless specifically noted as not required in the approved Traffic Impact Analysis. If additional rights-of-way are not required and Traffic Control devices are or may be proposed at this site outside of the public right-of-way, all necessary easements for the location and/or access of such devices shall be granted prior to the issuance of permits for this site. Phased compliance will be allowed if recommended by the approved Traffic Impact Analysis. No recommendation of the approved Traffic Impact Analysis, nor compliance therewith, shall be deemed to modify or eliminate any condition of approval imposed by the Planning Commission or the City Council on the development of this site.



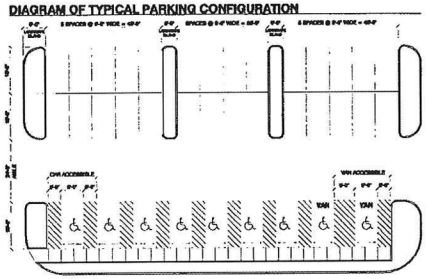


PARKING CALCULATIONS	SPACES REQUIRED	SPACES PROVIDED
HOSPITAL		
BED TOWER	420	
FUTURE BED TOWER	180	
TOTAL HOSPITAL PARKING SPACES	600	728
MEDICAL OFFICE B UILDING #1	428	670
MEDICAL OFFICE B UILDING #2	670	430
CANCER CENTER (10,000 SF)	42	42
TOTAL SITE PARKING AT BUILD-OUT	1840	1768
TOTAL HANDICAPPED ACCESSIBLE PARKING	SPACES REQUIRED 27	SPACES PROVIDED 49

BUILDING AREA CALCULATIONS	
HOSPITAL	492,000 SF
MEDICAL OFFICE BUILDING #1	75,000 SF
MEDICAL OFFICE BUILDING #2	100,000 SF
CANCER CENTER	10,000 SF
PARKING GARAGE	53,700 SF
TOTAL GROSS FLOOR AREA ON SITE AT BUILD-OUT	730,700 SF

FLOOR AREA RATIO CALCULATIONS	
PROPERTY SIZE	1,640,0028 SF (37.65 ACRES)
NET LOT AREA	1,640,028 SF - 52,556 SF = 1,587,472 SF
FLOOR AREA RATIO	GROSS FLOOR AREA / NET LOT AREA 730,700 / 1,587,472 SF = .46

DIAGRAM OF TYPICAL PARKING CONFIGURATION



Centennial Hills Medical Center

Las Vegas, Nevada UHS of Delaware, Inc.

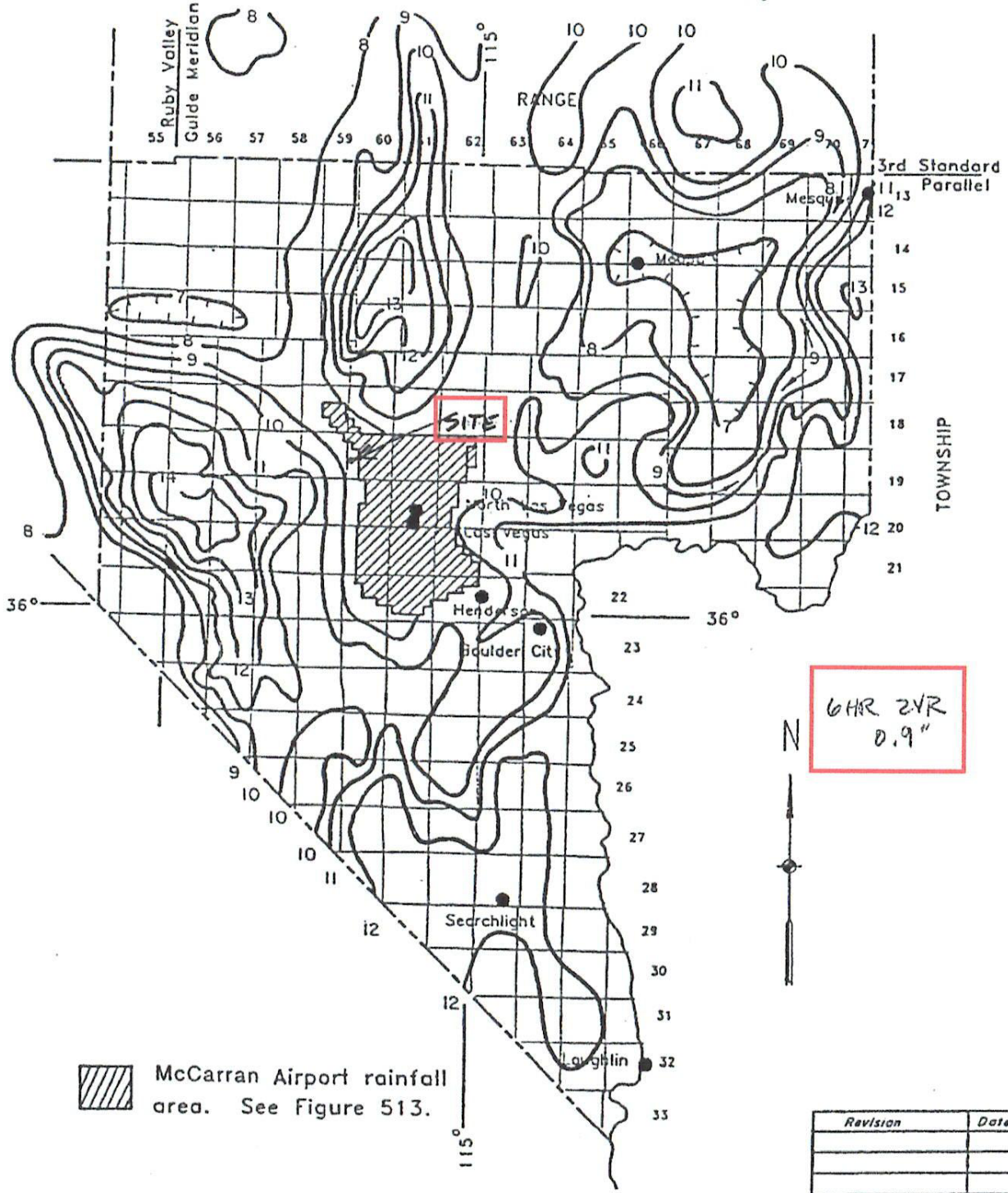
04 MARCH 2005 HKS

RECEIVED
MAY 09 2005

SDR-6706

06/23/05 ADMIN

RAINFALL DEPTH-DURATION-FREQUENCY
2-YEAR, 6-HOUR
(DEPTHS IN TENTHS OF INCHES)



Revision	Date

WRC ENGINEERING	REFERENCE: NOAA ATLAS 2, VOLUME VII NEVADA, 1973	FIGURE 501

DEPTH-DURATION-FREQUENCY VALUES FOR McCARRAN AIRPORT RAINFALL AREA

(IN INCHES)

	RECURRENCE INTERVAL					
TIME	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

Water Quality Design Storm Calculation

Per HCDDM Section 1502.3

D_2 for 2 -Yr. 6- hr. storm per HCDDM Figure 501

D_2 Site = 0.9 in.

D_2 for McCarran Airport Area per HCDDM Table 505

D_2 McCarran = 0.72 in.

$D_2 = D_2$ Site / D_2 McCarran

0.9 / 0.72 = 1.25

Determine BMP Design Precipitation - 85th Percntile Raingall Depth (D_{85})

$D_{85} = 0.32 \times D_2$

0.32 x 1.25 = 0.4

Calculate BMP Design Discharge

$Qp/A\ (90\%) = 1.5042 \times D_{85} + 0.0066$

1.5042 x 0.4+0.0066 = 0.60828

Find Adjustement Factor for Percent Impervious

$Qp/A = Qp/a\ (90\%) \times [(0.0059[85]) + 0.4688]$

Qp/A = 0.60 x [(0.0059[85])+0.4688] = 0.59

Qp = Qp/A x Area

0.59 x 1.4 acres = **0.83** cfs

Worksheet for Irregular Section - 1

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	1.00	%
Discharge	1.00	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	0.75
0+03	0.00
0+06	0.75

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.75)	(0+06, 0.75)	0.060

Results

Normal Depth		0.51	ft
Elevation Range	0.00 to 0.75 ft		
Flow Area		1.03	ft²
Wetted Perimeter		4.18	ft
Top Width		4.06	ft
Normal Depth		0.51	ft
Critical Depth		0.33	ft
Critical Slope		0.09964	ft/ft
Velocity		0.97	ft/s
Velocity Head		0.01	ft
Specific Energy		0.52	ft
Froude Number		0.34	
Flow Type	Subcritical		

Worksheet for Irregular Section - 1

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.51	ft
Critical Depth	0.33	ft
Channel Slope	0.01000	ft/ft
Critical Slope	0.09964	ft/ft

Cross Section for Irregular Section - 1

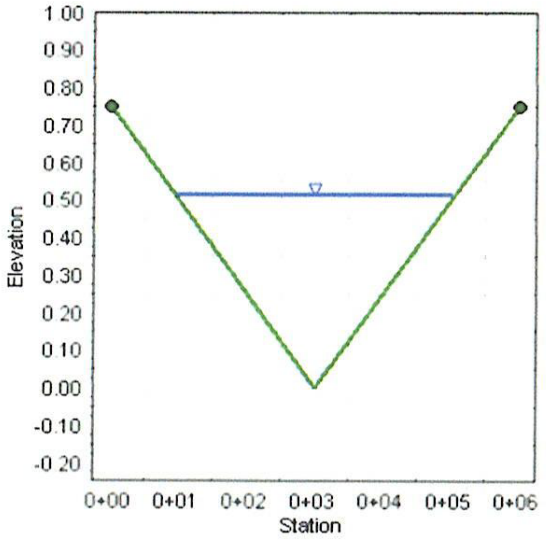
Project Description

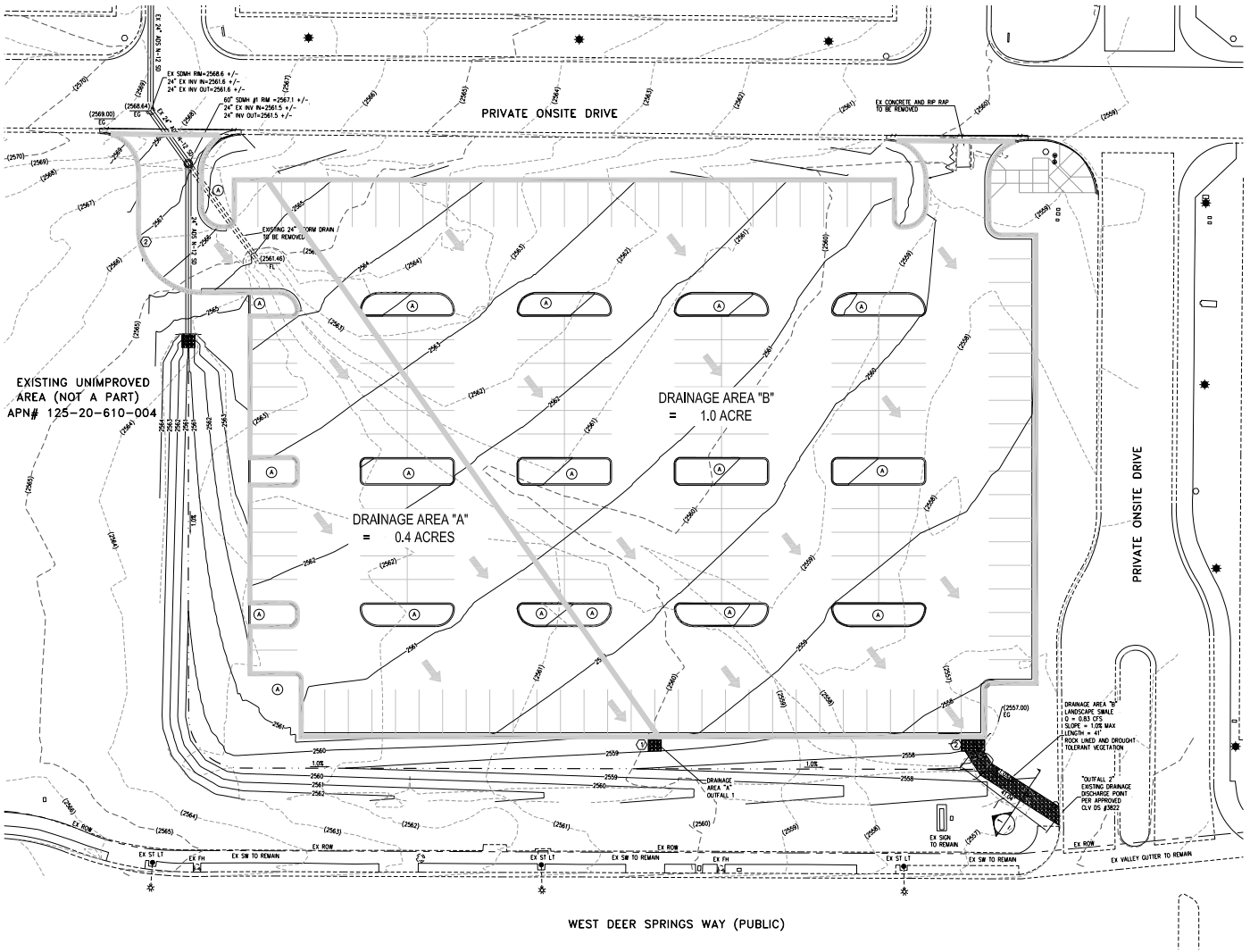
Friction Method	Manning Formula
Solve For	Normal Depth

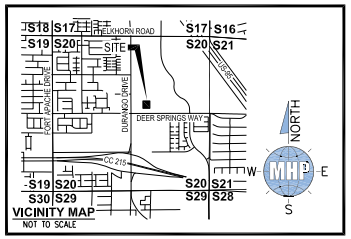
Input Data

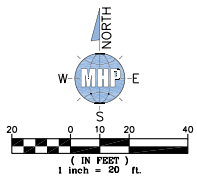
Channel Slope	1.00	%
Normal Depth	0.51	ft
Discharge	1.00	ft³/s

Cross Section Image









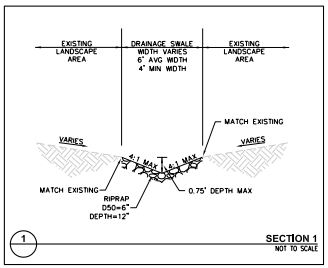
LEGEND

- FLOW DIRECTION
- DRAINAGE AREA DELINEATION
- (A) LANDSCAPE AREA, REMOVED FROM IMPERVIOUS CALCULATIONS.
- (1) 2' WIDE DEPRESSED CURB.
- (2) 9' WIDE DEPRESSED CURB.

PARKING LOT DATA

PER SECTION 1500 OF THE CCRFCD HCDDM:

1. PROPERTY SIZE = 33.93 ACRES (OVERALL DEVELOPMENT)
2. PROJECT AREA = 2.2 ACRES (PROPOSED IMPROVEMENTS)
3. BUILDING AREA = N/A (NO BUILDING PROPOSED)
4. TOTAL PERVIOUS AREA = 1.4 ACRES
5. PARKING LOT AREA (PLA) = 1.4 ACRES
6. MINIMUM PLA TO BE TREATED = 75% x 1.4 ACRES = 1.0 ACRE



REVISIONS			
REV	DATE	BY	

VALLEY HEALTH SYSTEM, LLC
1400 METCALF AVENUE, OVERLAND PARK, KS 66223

MHP LIMITED, LLC
6440 SOUTH POINTE PARKWAY #105
LAS VEGAS, NEVADA 89118-4047
P: (702) 872-8888 | INFO@MHPLIMITED.COM
WWW.MHPLIMITED.COM

LOW IMPACT DEVELOPMENT PERIMETER SWALE BMP
CITY OF LAS VEGAS, NEVADA

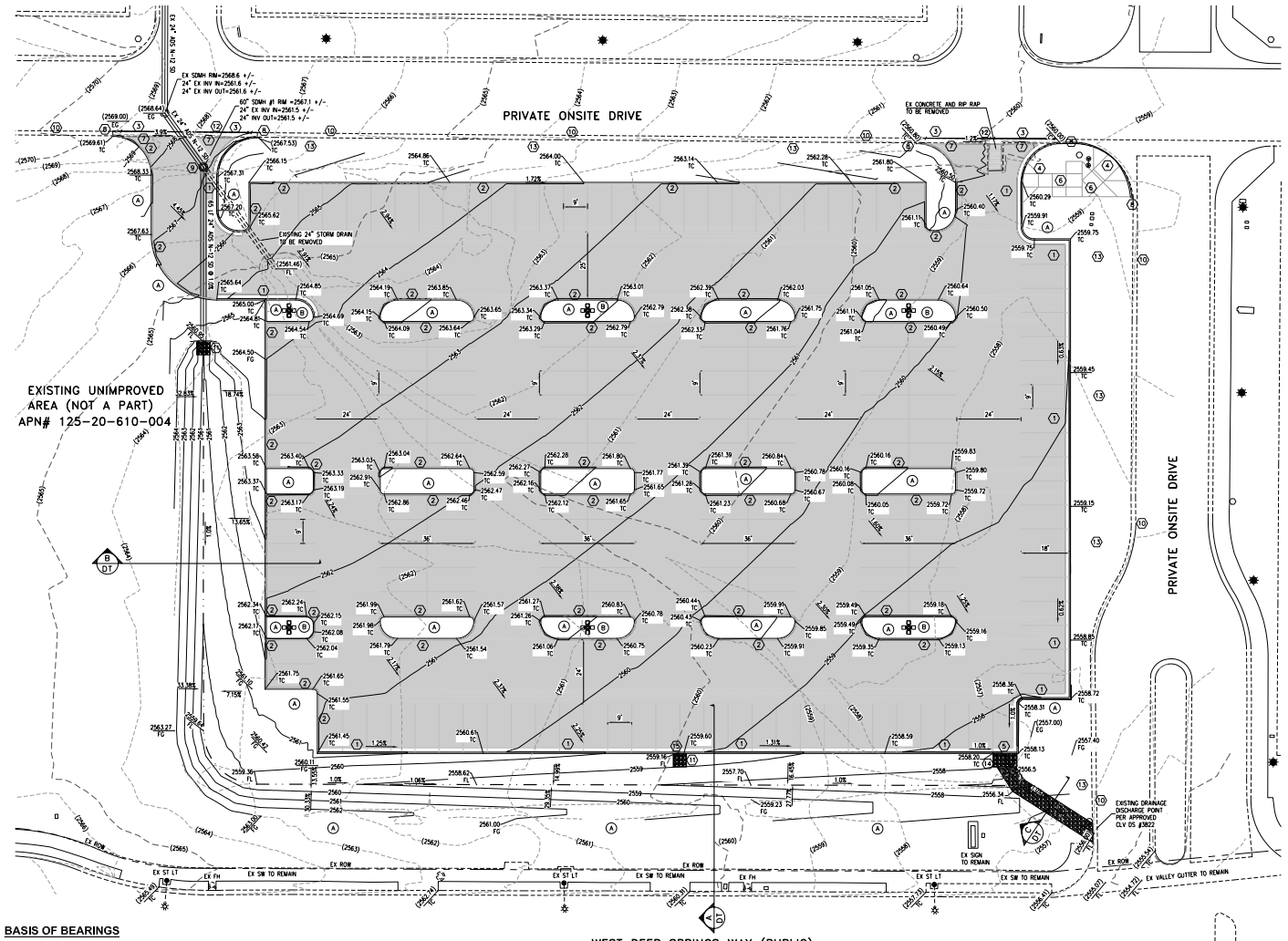
CENTENNIAL HILLS HOSPITAL PHASE 2 PARKING LOT EXPANSION

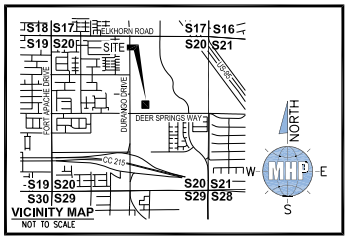
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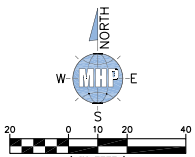
DRAWN BY:		12/27/2016
DESIGNED BY:		12/27/2016
CHECKED BY:		12/27/2016
PROJECT NO.:	160011	SCALE: 1" = 20' HORZ. N/A VERT.

D:\ONEDRIVE\PROJECTS\160011_CENT HILLS PRKNG EXP 2\DRAINAGE\UPDATE STUDY\160011_LID BMP EXHIBIT.DWG

SHEET
LID BMP
1 OF 1
DRAWING NO.







CONSTRUCTION ITEMS

1. INSTALL "L" TYPE CURB AND GUTTER PER DETAIL 6 ON SHEET DT.
2. CONSTRUCT TYPE "A" CURB PER DETAIL 5 ON SHEET DT.
3. SAWCUT AND MATCH EXISTING AC.
4. CONSTRUCT SIDEWALK CURB RAMP PER DETAIL 2 ON SHEET DT AND ARCHITECTURAL PLANS.
5. CONSTRUCT 9' WIDE DEPRESSED CURB FOR DRAINAGE PER DETAIL 3 ON SHEET DT.
6. CONSTRUCT CONCRETE SIDEWALK PER DETAIL 4 ON SHEET DT. (WIDTH VARIES FROM 3' TO 15') ALSO, SEE ARCHITECTURAL PLANS FOR DETAILS.
7. CONSTRUCT 2' CONCRETE VALLEY GUTTER PER DETAIL 1 ON SHEET DT.
8. MATCH EXISTING WITH PROPOSED CONSTRUCTION.
9. 60" TYPE I STORM DRAIN MANHOLE PER CCAUSD NO. 403 AND 401.
10. EXISTING "L" CURB, PROTECT IN PLACE.
11. 5'x5' RIPRAP PAD D50=6" DEPTH=1'
12. REMOVE EXISTING "L" CURB.
13. EXISTING LANDSCAPING. PROTECT IN PLACE.
14. 9'x5' RIPRAP PAD D50=6" DEPTH=1'
15. CONSTRUCT 2' WIDE DEPRESSED CURB FOR DRAINAGE PER DETAIL 3 ON SHEET DT.

COORDINATION ITEMS

- (A) LANDSCAPE AREA. SEE LANDSCAPE PLANS FOR IRRIGATION SCHEMATIC, PLANTING SCHEDULE AND DETAILS.
- (B) PROPOSED AREA LIGHT LOCATION. SEE LIGHTING PLAN FOR DETAILS.

PAVEMENT LEGEND

ONSITE PAVEMENT AREAS. SEE SHEET DT FOR SECTION DETAIL

ONSITE EARTHWORK QUANTITIES

CUT	FILL	NET
98.3 CUBIC YARDS	6.45 CUBIC YARDS	3.38 CUBIC YARDS (FILL)

NOTE:
ALL EXPORTED DIRT SHOULD BE PLACED UNDER AN APPROVED CLV GRADING PERMIT, NO ILLEGAL DUMPING.

STORM DRAIN NOTE

ALL ONSITE STORM DRAINS AND THE ASSOCIATED FACILITIES ARE PRIVATELY OWNED AND TO BE PRIVATELY MAINTAINED.

STORM DRAIN DROP INLETS NOTE

ALL STORM DRAIN DROP INLETS SHALL BE CONSTRUCTED TO INCLUDE THE USDCCA DRAWING NO. 421 "STORMWATER QUALITY MANAGEMENT STAMP AND SIGN DETAIL".

BASIS OF BEARINGS

GRID NORTH AS DEFINED BY THE CENTRAL MERIDIAN OF THE NEVADA COORDINATE REFERENCE SYSTEM (NCRS), LAS VEGAS ZONE, NORTH AMERICAN DATUM OF 1983; SAID MERIDIAN BEING COINCIDENT WITH 114°58' WEST OF THE GREENWICH MERIDIAN.

LINEAR UNIT: US SURVEY FOOT (FTUS)

DATUM (REFERENCE FRAME): NAD 83 (2011) EPOCH 2010.00
NEVADA COORDINATE REFERENCE SYSTEM (NCRS)

ZONE: LAS VEGAS

PROJECTION: TRANSVERSE MERCATOR
STANDARD PARALLEL (AND LATITUDE OF GRID ORIGIN): 36°15'00"N
LONGITUDE OF CENTRAL MERIDIAN: 114°58'00"W
NORTHING AT ORIGIN: 200,000.000 M (656,166.6667 FTUS)
EASTING AT CENTRAL MERIDIAN: 100,000.000 M (328,083.3333 FTUS)
SCALE FACTOR ON CENTRAL MERIDIAN: 1.0001 (EXACT)

NOTES:
1. ALL DISTANCES AND BEARINGS SHOWN HEREON ARE PROJECTED (GRID) VALUES BASED ON THE PRECEDING PROJECTION DEFINITION. THE PROJECTION WAS DEFINED SUCH THAT PROJECTED (GRID) DISTANCES ARE EQUIVALENT TO "GROUND" DISTANCES IN THE PROJECT AREA.
2. GRID BEARINGS SHOWN HEREON (OR IMPLIED BY GRID COORDINATES) DO NOT EQUAL GEODETIC BEARINGS DUE TO MERIDIAN CONVERGENCE.

BENCHMARK

CITY OF LAS VEGAS BENCHMARK STATION: 5LV002DE6

DESCRIPTION: RIVET AND ROUND ALUMINUM PLATE IN TOP OF CURB AT THE SOUTHWEST CORNER OF RILEY STREET AND DEER SPRING SPRINGS.

ELEVATION: 774.781 METERS
2541.93 FEET (U.S. SURVEY FEET)

LEGEND

- 1/16 LINE
- TREES/ SHURBS
- EXISTING SIGNS
- HANDICAP PARKING
- EXISTING AREA LIGHT
- PROPOSED AREA LIGHT
- EXISTING BACK OF CURB
- EDGE OF PAVEMENT/SAW CUT LINE
- EXISTING MANHOLE
- EXISTING 1' CONTOUR
- EXISTING 5' CONTOUR
- FLOWLINE / SWALE/ STORM DRAIN

AVOID HITTING OVERHEAD POWER LINES IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

AVOID HITTING UNDERGROUND TRAFFIC SIGNAL SYSTEMS AND STREET LIGHT SYSTEM CONDUITS. IT'S COSTLY.
Call before you do UnderGround
1-702-455-6000
CLARK COUNTY TRAFFIC OPERATIONS
AND
1-702-432-5300
FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

Call before you Dig
AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY.
Call 811
1-800-227-2600
CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-6000

REVISIONS		
NO	DATE	BY

VALLEY HEALTH SYSTEM, LLC
1400 METCALF AVENUE, OVERLAND PARK, KS 66223

MHP LIMITED, LLC
6440 SOUTH POLARIS AVENUE
LAS VEGAS, NEVADA 89118-4047
P: (702) 872-8888 | INFO@MHPLIMITED.COM
WWW.MHPLIMITED.COM

GRADING PLAN SHEET

CITY OF LAS VEGAS, NEVADA

CENTENNIAL HILLS HOSPITAL PHASE 2 PARKING LOT EXPANSION

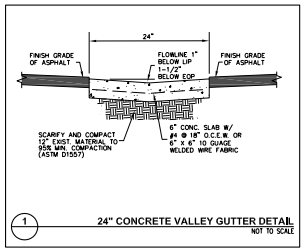
DRAWING INFORMATION:

DRAWN BY:	JCF	01/03/2017
DESIGNED BY:	JCF	01/03/2017
CHECKED BY:	TBR	01/03/2017
PROJECT NO.:	160001	SCALE: 1" = 20' HORIZ. NA VERT.

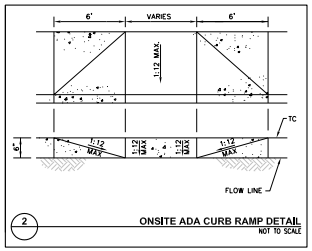
THOMAS B. REGENHARD JR. 19585 CIVIL STATE OF NEVADA PROFESSIONAL ENGINEER
01/03/2017
EXPIRES 12-31-17

SHEET GR
4 OF 5
DRAWING NO.

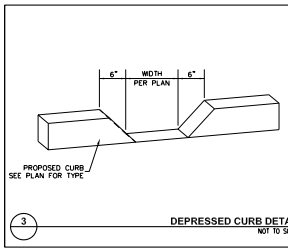
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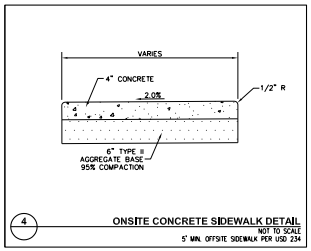
1 **24" CONCRETE VALLEY GUTTER DETAIL**
NOT TO SCALE



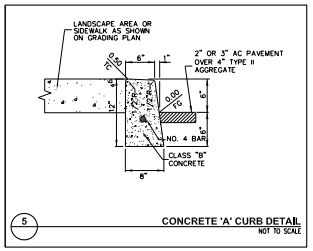
2 **ONSITE ADA CURB RAMP DETAIL**
NOT TO SCALE



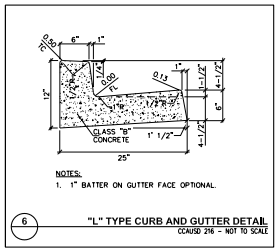
3 **DEPRESSED CURB DETAIL**
NOT TO SCALE



4 **ONSITE CONCRETE SIDEWALK DETAIL**
NOT TO SCALE
5' MIN. OFFSITE SIDEWALK PER USD 234

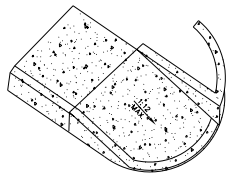


5 **CONCRETE 'A' CURB DETAIL**
NOT TO SCALE

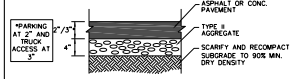


NOTES:
1. 1" BATTER ON GUTTER FACE OPTIONAL.

6 **"L" TYPE CURB AND GUTTER DETAIL**
CCAUSD 216 - NOT TO SCALE



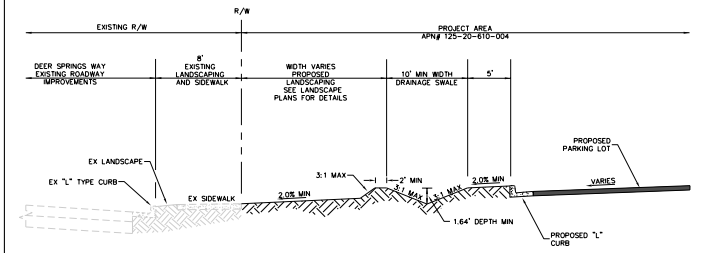
7 **ONSITE ADA CURB RAMP DETAIL**
NOT TO SCALE



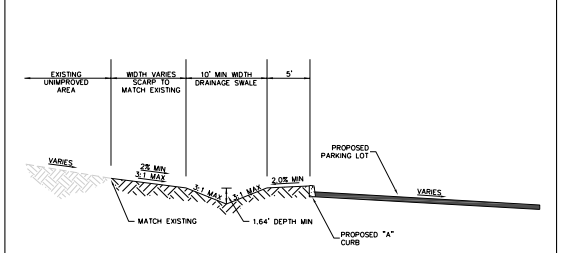
* IT IS ASSUMED THAT THESE PARKING IMPROVEMENTS ARE ONLY FOR AUTOMOBILE PARKING AND DOES NOT INCLUDE TRUCK ACCESS. COORDINATE FINAL PAVEMENT SECTIONS WITH OWNER

NOTE: FOR SOILS INFORMATION, REFERENCE GEOTECHNICAL STUDY
BY: NOVA GEOTECHNICAL
DATED: SEPTEMBER 19, 2016
PROJECT NO.: E-16-197

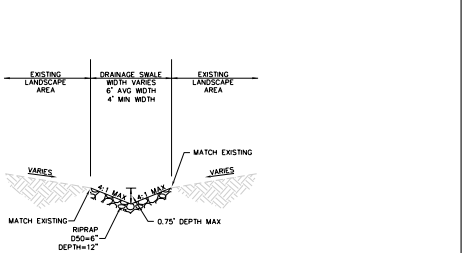
8 **ONSITE PAVEMENT SECTION**
NOT TO SCALE



A **SECTION A**
NOT TO SCALE



B **SECTION B**
NOT TO SCALE



C **SECTION C**
NOT TO SCALE

STORM DRAIN NOTE

ALL ONSITE STORM DRAINS AND THE ASSOCIATED FACILITIES ARE PRIVATELY OWNED AND TO BE PRIVATELY MAINTAINED.

STORM DRAIN DROP INLETS NOTE

ALL STORM DRAIN DROP INLETS SHALL BE CONSTRUCTED TO INCLUDE THE USDCCA DRAWING NO. 421 "STORMWATER QUALITY MANAGEMENT STAMP AND SIGN DETAIL".

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1-800-227-2600
AND
CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-6000

REVISIONS			
NO.	DATE	BY	

VALLEY HEALTH SYSTEM, LLC
1400 MCCALF AVENUE, OVERLAND PARK, KS 66223

MHP LIMITED, LLC
6440 SOUTH POINTE PKWY, SUITE 140-295
LAS VEGAS, NEVADA 89113-4047
P: (702) 872-6888 | INFO@MHPLIMITED.COM
WWW.MHPLIMITED.COM

DETAIL SHEET
CITY OF LAS VEGAS, NEVADA

CENTENNIAL HILLS HOSPITAL
PHASE 2 PARKING LOT EXPANSION

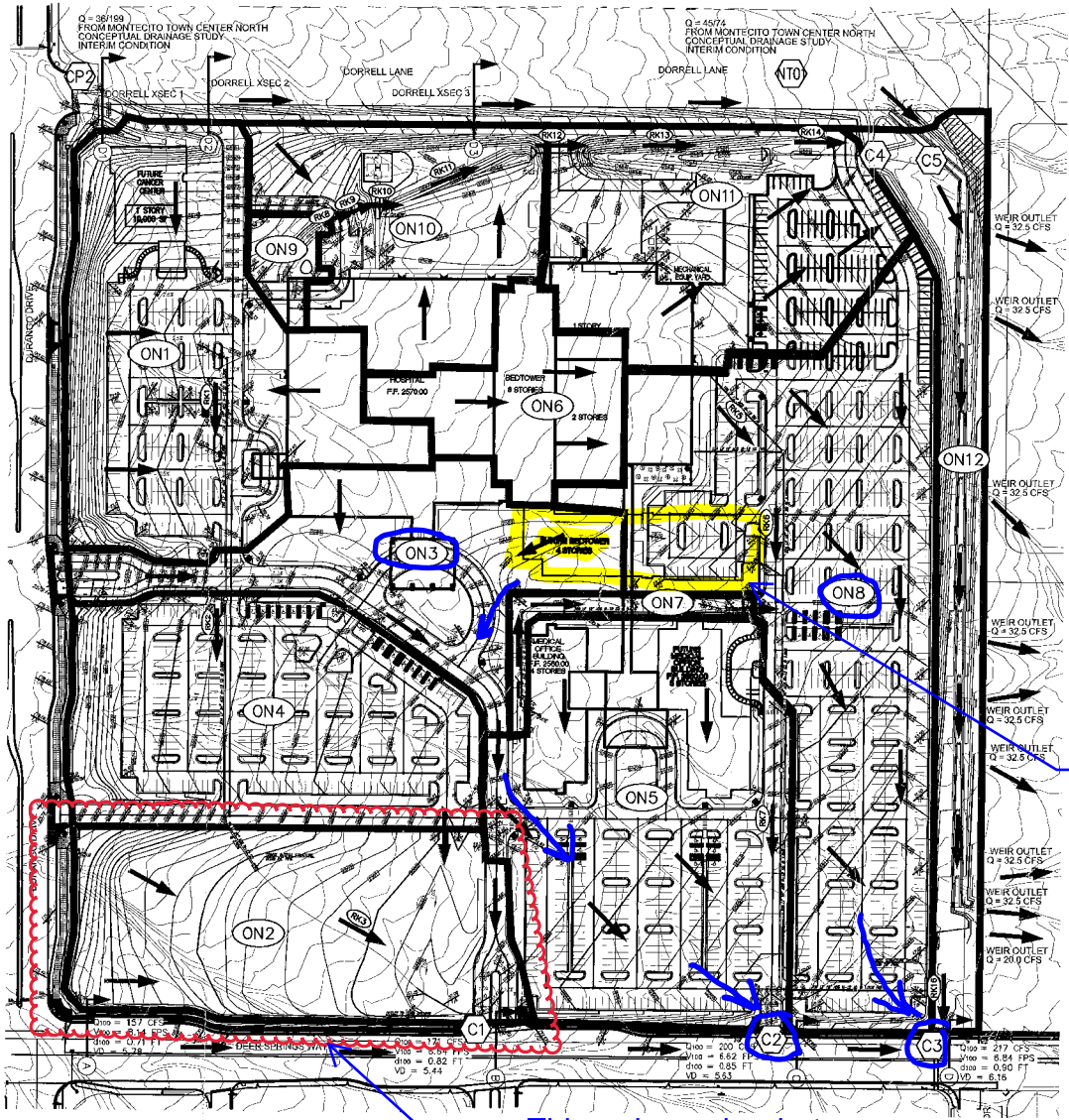
DRAWING INFORMATION:

DRAWN BY:	JCF	01/03/17
DESIGNED BY:	JCF	01/03/17
CHECKED BY:	TBR	01/03/17
PROJECT NO.:	160001	SCALE: 1" = 20' HORIZ. NA VERT.

PROFESSIONAL ENGINEER
THOMAS B. REGENHARD JR.
CIVIL
No. 19585
STATE OF NEVADA
01/03/2017
EXPIRES 12-31-17

SHEET
DT
5 OF 5
DRAWING NO.

D:\ONEDRIVE\PROJECTS\160001_CENT HILLS PRKNG EXP 2\DRAWINGS\IMPROVEMENTS\160001_CIVIL_PLANS.DWG



PROPOSED CONDITION			
BASIN	AREA (ACRES)	Q10 (CFS)	Q100 (CFS)
ON1	4.3	8	15
ON2	N/A	7	14
ON3	N/A	7	14
ON4	N/A	7	14
ON5	3.6	8	14
ON6	N/A	12	23
ON7	3.8	7	13
ON8	N/A	18	34
ON9	2.7	6	11
ON10	4.9	11	19
ON11	N/A	16	29
ON12	1.4	3	5
RK1	N/A	3	5
RK2	N/A	3	5
RK3	0.4	<1	<1
RK4	N/A	2	3
RK5	N/A	2	3
RK6	6.4	13	24
RK7	N/A	9	17
RK8	N/A	9	17
RK9	N/A	9	17
RK10	0.3	<1	<1
RK11	N/A	<1	<1
RK12	N/A	<1	<1
RK13	N/A	<1	<1
RK14	N/A	<1	<1
RK15	2.4	1	4
CP2	N/A	2	4
NT0	N/A	2	4
C1	N/A	2	4
C2	3.2	3	6
C3	N/A	4	9
C4	N/A	4	9
C5	N/A	4	9
	N/A	85	282
	2.2	1	3

LEGEND	
ON1	BASIN LABEL / ROUTING LABEL
→	FLOW DIRECTION
—	BASIN BOUNDARY
C1	CONCENTRATION POINT
Q100/Q10	100 YEAR/10 YEAR FLOW RATES

New tower location is in exact same location as previously shown on approved study (CLV DS #3822 dated July 27, 2006

This red area is what was analyzed as part of 2016 parking expansion addendum (CLV DS #3822)

NORTH

GRAPHIC SCALE

This grading plan is a part of drainage study #3822 which was received on 9/21/05 and approved on 9/26/05. Page 1 of 1

Nevada By Design
5960 S. Jones Blvd. Las Vegas, NV 89118
(702) 362-2600 www.nvbydesign.com

DRAWN BY: JDA | SCALE: 1"=50'
DESIGNED BY: JDA | JOB NUMBER: 04-324
CHECK BY: CJH | DATE: 06/02/05

CENTENNIAL HILLS HOSPITAL

DEVELOPED CONDITION BASIN MAP

SHEET NO.: FIG 8

EXISTING HELIPAD (TO REMAIN)
EXISTING SIDEWALK (TO REMAIN)
EXISTING 18" CULVERT PER DWG. 104V4516 (TO REMAIN)
EXISTING 6" CURB (TO REMAIN)
EXISTING CONCRETE PAD (TO REMAIN)
EXISTING PARKING LIGHT (TO REMAIN)
DAYLIGHT
(2568.00) FL
EXISTING CHAIN LINK FENCE (TO REMAIN)
EXISTING 18" SD PER DWG. 107V4516 (TO REMAIN)
2569.24 FL
2569.19 FL
SD-9
SD-3
SD-6
CONNECT TO ROOF DRAIN DISCHARGE PIPE
2568.85 FL
EXISTING CONCRETE PAD (TO REMAIN)
EXISTING SIDEWALK (TO REMAIN)
OR EXPANSION FF=2570.00
(SEE SHEET 4 FOR DEMOLITION PLAN)
EXISTING HOSPITAL FF=2570.00

OR EXPANSION – UTILITY PLAN
SCALE 1":20'
0 20 40 60 80

EXISTING HOSPITAL FF=2570.00
EXISTING HOSPITAL FF=2570.00
UTILITY ROOM EXPANSION FF=2570.00
SD-6

UTILITY ROOM EXPANSION – UTILITY PLAN
SCALE 1":20'
0 20 40 60 80

EXISTING ROOF DRAIN (TO REMAIN)
EXISTING PATIO AREA (TO REMAIN)
EXISTING SCREEN WALL (TO REMAIN)
EXISTING SIDEWALK (TO REMAIN)
EXISTING SD INLET (TO REMAIN) (2569.18 TC)
EXISTING SD LINE (LOCATION TO BE CONFIRMED)
SD-7 12"X12" SD CATCH BASIN 2566.68 TC (FL TO CONNECT TO EXIST)
EXISTING ROOF DRAIN (TO REMAIN)
EXISTING SIDEWALK (TO REMAIN)
Drainage Basin Dividing line
TOWER EXPANSION FF=2570.00
(SEE SHEET 4 FOR DEMOLITION PLAN)
53.7'
SD CLEANOUT 2569.33 RIM 2566.60 FL
SD CLEANOUT 2569.33 RIM 2567.00 FL CONNECT 8" PVC SD 7' OUTSIDE BUILDING
SD-4 @ 1%
2566.44 FL
SD-9
5'
SD-12
2564.64
EXISTING PARKING LIGHT (TO REMAIN)
EXISTING CALICHE WALL (TO REMAIN)
EXISTING SD INLET PER DWG. 107V4516 (TO REMAIN)
EXIST. UTILITY BOX (TO REMAIN)
EXISTING 8" SEWER PER DWG. 107V4516 (TO REMAIN)
EXISTING HOSPITAL FF=2560.00
Drainage will be picked up from the west half of the tower, routed to rip-rap lined swale, run underneath the sidewalk and into the curb and gutter system for overland flow (per the approved drainage study)
EXISTING 8" SEWER PER DWG. 107V4516 (TO REMAIN)
EXISTING SD MH PER DWG. 107V4516 (TO REMAIN)
EXISTING 15" SD PER DWG. 107V4516 (TO REMAIN)
SEWER CLEANOUT 2563.28 TC 2558.50 IE CONNECT 8" SEWER LINE @ 4' OUTSIDE 4' OF BUILDING
SS-2
SS-1 @ 100% (2547.54 IE)
SS-3
CONNECT TO EXISTING 8" PVC SEWER MAIN PER DWG. 107V4516
USE PVC FITTINGS AS NECESSARY TO ACHIEVE CONNECTION ANGLES TO EXIST. SD LINE
SD CLEANOUT 2563.42 RIM 2557.85 FL IN 8" (2557.68 FL OUT 12")
SD-5 SD CLEANOUT 2569.24 RIM 2565.00 FL CONNECT 8" PVC SD 5' OUTSIDE BUILDING
72.4'
PROPOSED RETAINING WALL (SEE SHEET 8)
SD-4 @ 5%
SD-5 SD CLEANOUT 2565.79 RIM 2564.47 FL
6' MIN BEHIND FACE OF EXIST. CALICHE WALL
SD-5 SD CLEANOUT 2563.81 RIM 2560.88 FL
24"X24" SD CATCH BASIN 2563.36 TC 2560.10 FL IN 2557.99 FL OUT
SD-2
EXISTING 12" SD LINE PER DWG. 107V4516 (TO REMAIN)
EXIST. 12" SD (2553.72 FL)
WT-1
WT-2
EXISTING PARKING LIGHT (TO REMAIN)
EXISTING TRANSFORMER (TO REMAIN)
EXISTING CURB AND GUTTER (TO REMAIN)
EXISTING 8" FIRE LINE PER DWG. 107V4516 (TO REMAIN)
EXISTING STORAGE ENCLOSURE (TO REMAIN)
EXISTING TRASH ENCLOSURE (TO REMAIN)
Drainage will be picked up from the east half of the tower, routed through new SD piping, and tie into existing drainage infrastructure to run southerly to the southeast corner of the property (per the approved drainage study)
Existing Drainage infrastructure that we are tying into

BED TOWER EXPANSION – UTILITY PLAN
SCALE 1":20'
0 20 40 60 80

DESCRIPTIONS

SURFACE IMPROVEMENTS

SI-6	CONCRETE SIDEWALK
SI-9	VELOCITY DISSIPATER
SI-12	SIDEWALK UNDERDRAIN

STORM DRAIN IMPROVEMENTS

SD-1	12"X12" CATCH BASIN
SD-2	24"X24" CATCH BASIN
SD-3	6" PVC SD
SD-4	8" PVC SD
SD-5	SD CLEANOUT

WATERLINE IMPROVEMENTS

WT-1	6" PVC
WT-2	FIRE HYDRANT ASSEMBLY

SEWER IMPROVEMENTS

SS-1	8" PVC
SS-2	SEWER CLEANOUT
SS-3	CONNECT TO EXIST SEWER MAIN

WATER DATA (CL-150)

NO	DELTA/BRG	RADIUS	LENGTH	REMARK
1	N90°00'00"E	--	17.65'	6" PVC

STORM DRAIN DATA

NO	DELTA/BRG	RADIUS	LENGTH	REMARK
1	N89°56'42"E	--	40.00'	8" PVC
2	N44°56'42"E	--	16.02'	" "
3	N00°03'18"W	--	10.54'	" "
4	N89°34'25"W	--	71.95'	" "
5	N53°07'46"E	--	15.59'	" "
6	N03°06'57"E	--	14.42'	" "
7	N00°03'18"W	--	10.00'	6" PVC
8	N00°05'05"W	--	5.00'	" "

SEWER DATA

NO	DELTA/BRG	RADIUS	LENGTH	REMARK
1	N89°54'03"W	--	10.86'	8" PVC

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811 Know what's below. Call before you dig.
OR 1-800-227-2600

AVOID HITTING OVERHEAD POWER LINES. ITS COSTLY.
CALL BEFORE YOU DIG OVERHEAD
1-702-227-2929

FAST
CALL BEFORE YOU UNDERGROUND
1-702-432-5300
FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

STATE OF NEVADA PROFESSIONAL ENGINEER ROBERT D. DENTINO Exp. 12-31-20 CIVIL No. 22171 DATE: 6/10/19

EXCEL ENGINEERING
LAND PLANNING • ENGINEERING • SURVEYING
440 STATE PLACE, ESCONDIDO, CA 92029
PH (760)745-8118 FX (760)745-1890

NO	DESCRIPTION	DATE	APP'D

DESIGN: AJV
DRAWN: JJR
CHECK: ROD
ISSUE DATE: 6/10/19
ISSUE EDITOR:
PLOT DATE:
PLOT TIME:

THE VALLEY HEALTH SYSTEM
CENTENNIAL HILLS HOSPITAL
PHASE 3 BED TOWER, OR, & UTILITY ROOM EXPANSION
PRIVATE UTILITY PLAN

DRAWING
U1
7 OF 8 SHEETS

V:\18\18072\Engineering\GP1P\GPTower\18-072_07-GP3-Private Utility Plan.dwg[Jun 11, 2019 15:33

PRECISE GRADING PLANS

FOR

VALLEY HEALTH SYSTEM, LLC
CENTENNIAL HILLS HOSPITAL
PHASE 3 - BED TOWER, OR, & UTILITY ROOM EXPANSION
CITY OF LAS VEGAS

APN : 125-20-610-004

CONDITIONS OF APPROVAL

YOUR REQUEST FOR A MINOR AMENDMENT TO AN APPROVED SITE DEVELOPMENT PLAN REVIEW (SDR-3267) FOR PROPOSED BUILDING ADDITIONS AND MODIFICATIONS TO THE PHASING PLAN FOR THE OVERALL HOSPITAL DEVELOPMENT ON 35.74 ACRES ADJACENT TO THE NORTHEAST CORNER OF DURANGO DRIVE AND DEER SPRINGS WAY (APN 125-20-610-004), T-C (TOWN CENTER) ZONE [MC-TC (MONTECITO - TOWN CENTER) SPECIAL LAND USE DESIGNATIONS], WARD 6 (FIORE) [PRJ-75781], HAS BEEN CONSIDERED ADMINISTRATIVELY BY THE DEPARTMENT OF PLANNING STAFF.

THE DEPARTMENT OF PLANNING HAS ADMINISTRATIVELY APPROVED YOUR REQUEST SUBJECT TO THE FOLLOWING:

PLANNING

1. CONFORMANCE TO THE CONDITIONS OF APPROVAL FOR SITE DEVELOPMENT PLAN REVIEW (SDR-3267) SHALL BE REQUIRED, EXCEPT WHERE 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 04/08/19, EXCEPT AS AMENDED BY CONDITIONS HEREIN.
4. 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.
5. THESE CONDITIONS OF APPROVAL SHALL BE AFFIXED TO THE COVER SHEET OF ANY PLAN SET SUBMITTED FOR BUILDING PERMIT.
6. A TECHNICAL LANDSCAPE PLAN, SIGNED AND SEALED BY A REGISTERED ARCHITECT, LANDSCAPE ARCHITECT, RESIDENTIAL DESIGNER OR CIVIL ENGINEER, MUST BE SUBMITTED PRIOR TO OR AT THE SAME TIME APPLICATION IS MADE FOR A BUILDING PERMIT. A PERMANENT UNDERGROUND SPRINKLER SYSTEM IS REQUIRED, AND SHALL BE PERMANENTLY MAINTAINED IN A SATISFACTORY MANNER; THE LANDSCAPE PLAN SHALL INCLUDE IRRIGATION SPECIFICATIONS. INSTALLED LANDSCAPING SHALL NOT IMPEDE VISIBILITY OF ANY TRAFFIC CONTROL DEVICE.
7. A FULLY OPERATION 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.
8. ALL CITY CODE REQUIREMENTS AND DESIGN STANDARDS OF ALL CITY DEPARTMENTS MUST BE SATISFIED, EXCEPT AS MODIFIED HEREIN.

PUBLIC WORKS

9. CORRECT ALL AMERICAN'S WITH DISABILITIES ACT (ADA) DEFICIENCIES, IF ANY, ON THE SIDEWALK ADJACENT TO THIS SITE IN ACCORDANCE WITH CODE REQUIREMENTS OF TITLE 13.56.040 TO THE SATISFACTION OF THE CITY ENGINEER CONCURRENT WITH DEVELOPMENT OF THIS SITE. ALL EXISTING PAVING DAMAGED OR REMOVED BY THIS DEVELOPMENT SHALL BE RESTORED AT ITS ORIGINAL LOCATION AND TO ITS ORIGINAL WIDTH CONCURRENT WITH DEVELOPMENT OF THIS SITE.
10. A TRAFFIC IMPACT ANALYSIS MUST BE SUBMITTED TO AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS PRIOR TO THE ISSUANCE OF ANY BUILDING OR GRADING PERMITS, SUBMITTAL OF ANY CONSTRUCTION DRAWINGS OR THE RECORDATION OF A MAP SUBDIVIDING THIS SITE, WHICHEVER MAY OCCUR FIRST. COMPLY WITH THE RECOMMENDATIONS OF THE APPROVED TRAFFIC IMPACT ANALYSIS PRIOR TO OCCUPANCY OF THE SITE. NO RECOMMENDATION OF THE APPROVED TRAFFIC IMPACT ANALYSIS, NOR COMPLIANCE THEREWITH, SHALL BE DEEMED TO MODIFY OR ELIMINATE ANY CONDITION OF APPROVAL IMPOSED BY THE PLANNING COMMISSION OR THE CITY COUNCIL ON THE DEVELOPMENT OF THIS SITE.
11. 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 SUBMITTAL OF ANY CONSTRUCTION DRAWINGS OR THE ISSUANCE OF ANY BUILDING OR GRADING PERMITS, WHICHEVER MAY OCCUR FIRST. PROVIDE AND IMPROVE ALL DRAINAGEWAYS RECOMMENDED IN THE APPROVED DRAINAGE STUDY UPDATE.
12. SITE DEVELOPMENT TO COMPLY WITH ALL APPLICABLE CONDITIONS OF APPROVAL FOR SDR-3267, AND ALL OTHER APPLICABLE SITE-RELATED ACTIONS.

THIS ACTION BY THE DEPARTMENT OF PLANNING STAFF ON APRIL 25, 2019 IS FINAL UNLESS A WRITTEN APPEAL IS FILED WITH THE DIRECTOR OF THE DEPARTMENT OF PLANNING WITHIN TEN DAYS OF THE DATE OF THIS LETTER

SITE ADDRESS

CENTENNIAL HILLS HOSPITAL
6900 N. DURANGO DRIVE
LAS VEGAS, NEVADA 89149

OWNER / DEVELOPER

VALLEY HEALTH SYSTEM, LLC
A DELAWARE LIMITED LIABILITY COMPANY
10105 BANBURRY CROSS DRIVE, SUITE 230
LAS VEGAS, NV 89144
(1) (702)-528-2322
CONTACT: STUART HITCHEN

LEGAL DESCRIPTION

A PORTION OF LOT 1, MONTECITO TOWN CENTER NORTH, A COMMERCIAL SUBDIVISION AS SHOWN BY MAP THEREOF ON FILE IN BOOK 114, OF PLATS, PAGE 18, AND AMENDED BY CERTIFICATE OF AMENDMENT RECORDED MAY 24, 2004 IN BOOK 20040524 AS INSTRUMENT NO. 04959 IN THE OFFICE OF THE COUNTY RECORDER, CLARK COUNTY, NEVADA.

BASIS OF BEARINGS

SOUTH 89°52'26" WEST, BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF THE NORTHEAST QUARTER (NE 1/4) OF SECTION 20, TOWNSHIP 19, RANGE 60, M.D.M., AS SHOWN IN FILE 114, PAGE 18 OF PLATS ON FILE AT THE CLARK COUNTY, NEVADA, RECORDER'S OFFICE.

BENCHMARK

CITY OF LAS VEGAS VERTICAL CONTROL BENCHMARK NO. "SLV9020E6"
RIVET AND PLATE IN THE TOP OF CURB AT THE SOUTHWEST CORNER OF RILEY STREET AND DEER SPRINGS AVENUE.
ELEVATION = 774.781 METERS
2541.93 FEET
CITY OF LAS VEGAS VERTICAL CONTROL DATUM BASED UPON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD '88)

STORM WATER POLLUTION NOTE

"THE ENGINEER SHOULD CONTACT THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP) TO OBTAIN A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT PRIOR TO CONSTRUCTION. ALL CONSTRUCTION PROJECTS ONE ACRE OR LARGER MUST APPLY FOR THE PERMIT THROUGH THE NDEP. ALL QUESTIONS REGARDING THE NDEP PERMIT REQUIREMENTS SHOULD BE DIRECTED TO THE NPDES (775) 687-9429"

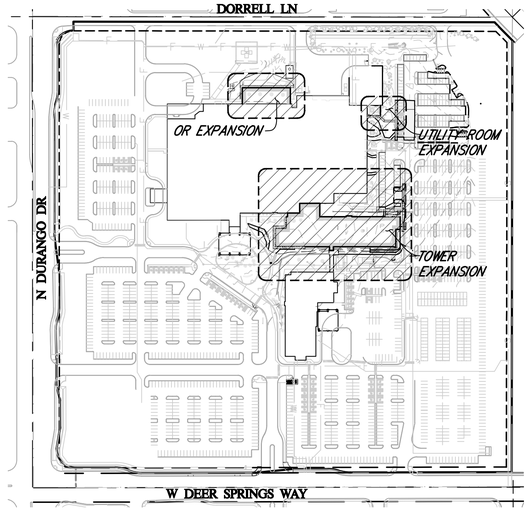
GEOTECHNICAL STUDY

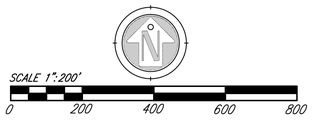
ENGINEER: NOVA GEOTECHNICAL & INSPECTION SERVICES
4480 WEST HACIENDA AVENUE SUITE 104
LAS VEGAS, NEVADA 89118
PHONE: (702) 873-3478
FAX: (702) 873-2199
PROJECT NO.: G-19-002 DATED: FEBUARY 11, 2019

FLOOD ZONE DESCRIPTION

THIS SITE IS LOCATED IN SHADED ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 100-YEAR FLOOD PLAIN WHERE FLOWS AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE, PER THE FLOOD INSURANCE RATE MAP COMMUNITY PANEL 32003C1745E
CLARK COUNTY, NEVADA DATED SEPTEMBER 27, 2002.

FLOOD DESIGNATION PROVIDED BY FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA).





SHEET INDEX

GENERAL INFORMATION DRAWINGS
1 C1 – TITLE SHEET
2 C2 – GENERAL NOTES
3 C3 – SECTIONS AND DETAILS

DEMOLITION PLAN
4 DEMO1 – DEMOLITION PLAN

GRADING PLAN
5 HZC1 – HORIZONTAL CONTROL PLAN
6 GP1 – PRECISE GRADING PLANS

UTILITY PLAN
7 U1 – PRIVATE UTILITY PLAN

PLAN DETAILS
8 A1 – ADA & RETAINING WALL DETAILS

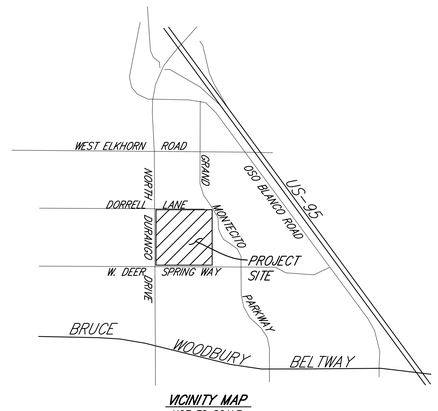
APPROVALS

CITY ENGINEER — DATE

DIRECTOR – BUILDING & SAFETY DEPARTMENT — DATE

DIRECTOR – PLANNING DEPARTMENT — DATE

LAS VEGAS FIRE & RESCUE — DATE



VICINITY MAP
NOT TO SCALE

AVOID CUTTING UNDERGROUND UTILITY LINES. ITS COSTLY.
811
Know what's below. Call before you dig.
OR
1-800-227-2600

AVOID HITTING OVERHEAD POWER LINES. ITS COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

FAST
CALL BEFORE YOU UNDERGROUND
1-702-432-5300
FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

EXCEL ENGINEERING
LAND PLANNING • ENGINEERING • SURVEYING
440 STATE PLACE, ESCONDIDO, CA 92029
PH. (760)745-8118 FX (760)745-1880

STATE OF NEVADA — PROFESSIONAL ENGINEER — ROBERT D. DENTINO — No. 22211 — Exp. 12-31-20 — CIVIL

DATE: 6/10/19

DESCRIPTION	REV. DATE	APP.	DATE APP.

DESIGN: A.W.
DRAWN: J.J.R.
CHECK: R.D.D.
ISSUE DATE: 6/10/19
ISSUE EDITOR:
PLOT DATE:
PLOT TIME:

THE VALLEY HEALTH SYSTEM
CENTENNIAL HILLS HOSPITAL
PHASE 3 BED TOWER, OR, & UTILITY ROOM EXPANSION
TITLE SHEET

DRAWING
C1

1 OF 8 SHEETS

V:\18\18072\Engineering\GP1P\GP1Tower\18-072_01-C1-Title.dwg[J.Jun-11-2019]5:24

CITY OF LAS VEGAS GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFFSITE IMPROVEMENTS, CLARK COUNTY AREA NEVADA", LATEST ISSUE; THE "UNIFORM STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION, CLARK COUNTY AREA NEVADA", LATEST REVISED EDITION; AND OTHER APPLICABLE APPROVED STANDARDS ISSUED BY THE CONTROLLING AGENCY; THE UNIFORM BUILDING CODE; AND ALL LOCAL CITY CODES AND ORDINANCES APPLICABLE, EXCEPT AS NOTED ON THIS SHEET AS "DEVIATIONS FROM STANDARDS".

2. THE EXISTENCE AND LOCATION OF ANY OVERHEAD OR UNDERGROUND UTILITY LINES, PIPES, OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A RESEARCH OF THE AVAILABLE RECORDS. EXISTING UTILITIES AS SHOWN FROM CLV PLANS LIBRARY ARE APPROXIMATE AND FOR RECORD PURPOSES. EXISTING UTILITIES ARE LOCATED ON PLANS ONLY FOR THE CONVENIENCE OF THE CONTRACTOR. EXISTING UTILITY SERVICE LATERALS MAY NOT BE SHOWN ON THE PLANS. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, LOCATE ALL UNDERGROUND AND OVERHEAD INTERFERENCE'S WHICH MAY AFFECT HIS OPERATION DURING CONSTRUCTION AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO SAME. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR OVERHEAD UTILITIES SO AS TO SAFELY PROTECT ALL PERSONNEL AND EQUIPMENT, AND SHALL BE RESPONSIBLE FOR ALL COST AND LIABILITY IN CONNECTION THEREWITH.

3. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING UTILITY LINES, STRUCTURES AND STREET IMPROVEMENTS WHICH ARE TO REMAIN IN PLACE, FROM DAMAGE, AND ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED SATISFACTORY TO THE CITY ENGINEER AND OWNING UTILITY COMPANY AT THE EXPENSE OF THE CONTRACTOR.

4. ALL CONSTRUCTION SHALL BE AS SHOWN ON THESE PLANS, ANY REVISIONS SHALL HAVE THE PRIOR WRITTEN APPROVAL OF THE CITY ENGINEER.

5. TYPE V CEMENT SHALL BE USED IN ALL OFF-SITE CONCRETE WORK. CONCRETE TO BE 3000 P.S.I. MINIMUM @ 28 DAYS. MIX DESIGNS TO BE APPROVED BY THE CITY, PRIOR TO THE USE ON THE PROJECT.

6. PERMITS ARE REQUIRED FOR ANY WORK IN THE PUBLIC RIGHT-OF-WAY. THE CONTRACTOR SHALL SECURE ALL PERMITS AND INSPECTIONS REQUIRED FOR THIS CONSTRUCTION.

7. EXPANSION JOINTS REQUIRED, MAXIMUM EVERY 300' IN EXTRUDED-TYPE CURB.

8. AC PAVEMENT TO BE ONE-HALF INCH (½") ABOVE LIP OF ALL GUTTERS AFTER COMPACTION, EXCEPT AT SIDEWALK RAMPS AND CROSS GUTTERS.

9. CURB AND GUTTER FOUND TO BE UNACCEPTABLE TO THE CITY OF LAS VEGAS SHALL BE REMOVED AND REPLACED PER STANDARD DRAWING 216.

10. SIDEWALK RAMPS SHALL BE CONSTRUCTED IN EACH QUADRANT OF AN INTERSECTION PER STANDARD DRAWING 235. EXACT LOCATION OF RAMPS MAY BE ADJUSTED IN THE FIELD BY A CITY INSPECTOR.

11. CONTRACTOR SHALL PROVIDE ALL NECESSARY HORIZONTAL AND VERTICAL TRANSITIONS BETWEEN NEW CONSTRUCTION AND EXISTING SURFACES TO PROVIDE FOR PROPER DRAINAGE AND FOR INGRESS AND EGRESS TO NEW CONSTRUCTION. THE EXTENT OF THE TRANSITIONS TO BE AS SHOWN ON PLANS.

12. ALL GRADING WORK SHALL CONFORM TO THE SOILS REPORT AS PREPARED BY THE (COMPANY, REPORT #, DATE) APPROVED BY THE CITY ENGINEER, AND AS SHOWN ON THESE PLANS.

13. EXACT LOCATION OF ALL SAWCUT LINES MAY BE ADJUSTED OR DETERMINED IN THE FIELD BY A CITY OF LAS VEGAS ENGINEER IF LOCATION ON PLANS IS NOT CLEARLY SHOWN, OR EXISTING PAVEMENT CONDITION REQUIRES RELOCATIONS.

14. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT EXISTING PERMANENT SURVEY MONUMENTS. ANY MONUMENTS DISTURBED SHALL BE REPLACED AND ADJUSTED PER AVAILABLE RECORDS IN ACCORDANCE WITH STATUTE NO. 625.380 & CITY OF LAS VEGAS TITLE 18, APPENDIX D.

15. UTILITY COMPANY METER BOXES, MANHOLE LIDS, VALVE COVERS, ETC., SHALL BE LOCATED OUT OF DRIVEWAYS, DRIVEWAY APRONS, FLOWLINES, AND CROSS GUTTERS UNLESS WRITTEN APPROVAL IS GRANTED BY THE UTILITY COMPANY AND THE CITY ENGINEER.

WALL NOTES:

16. ALL WALLS, NEW OR EXISTING, ARE ONLY SHOWN ON CIVIL PLANS FOR THE PURPOSE OF REVIEWING GRADING RELATIONSHIPS; FLOOD CONTROL AND SIGHT DISTANCE AT INTERSECTIONS. NEW WALLS REQUIRE A SEPARATE PERMIT AND INSPECTION BY THE BUILDING DEPARTMENT.

17. ASPHALT MIX DESIGN MUST BE SUBMITTED AND APPROVED BY THE CITY ENGINEER PRIOR TO THE PLACEMENT OF ASPHALT WITHIN CITY RIGHT OF WAY.

18. CONTRACTOR SHALL ADJUST ALL NEW AND EXISTING INLETS, VALVE BOXES, MANHOLE RIMS, AND SEWER CLEAN OUTS, ETC. TO FINISH GRADE AS APPLICABLE WHETHER OR NOT THEY ARE SHOWN ON THE PLANS.

19. MATERIALS, HANDLING AND PLACEMENT OF PORTLAND CEMENT CONCRETE SHALL BE IN ACCORDANCE WITH APPLICABLE SECTIONS OF NDOT OR THE CLARK COUNTY AREA SPECIFICATIONS (AS APPLICABLE) AND THE PLANS AND DETAILS SHOWN HEREON.

20. WHEN INSTALLING UNDERGROUND FACILITIES THAT REQUIRE UNDERGROUND LOCATING DEVICES SUCH AS MARKER BALLS, LOCATING RIBBON, ETC, THE CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION TO OFFSITE INSPECTION AND TESTING CERTIFYING THAT ALL DEVICES HAVE BEEN PLACED AND VERIFIED TO BE IN GOOD WORKING CONDITION PRIOR TO THE CONSTRUCTION OF ANY ROAD BASE.

21. AFTER HAUNCHING AND PRIOR TO BACKFILL OPERATIONS WHICH WOULD COVER SANITARY SEWER AND STORM DRAIN FACILITIES, CONTRACTOR IS REQUIRED TO SCHEDULE CLV OPEN-TRENCH UTILITY SURVEY INSPECTION FOR DETERMINATION OF FINAL LOCATION COORDINATES. FACILITIES TO BE LOCATED BY CLV SHALL INCLUDE AT A MINIMUM THE HORIZONTAL AND VERTICAL (INVERT) LOCATION OF PUBLIC SEWER MANHOLES, STORM DRAIN MANHOLES AND TRANSITION STRUCTURES, STORM DRAIN LATERALS AT THE CONNECTION TO THE STORM DRAIN MAIN AND AT THE CONNECTION TO A DROP INLET, THE CONNECTION OF SEWER SERVICE LATERALS TO THE SEWER MAIN AND WHERE THE SEWER SERVICE LATERALS EXIT THE PUBLIC RIGHT-OF-WAY, SEWER AND STORM DRAIN MAIN ALIGNMENT, INCLUDING DEFLECTION POINTS.
OR
(MAY BE USED ONLY ON PROJECTS ASSOCIATED WITH A TENTATIVE MAP CONTAINING 5 LOTS OR MORE)

SANITARY SEWER AND STORM DRAIN FINAL LOCATION MAP(S) SHALL BE PROVIDED TO THE CITY AND APPROVED PRIOR TO ACCEPTANCE OF FACILITY VIDEO INSPECTION. THE MAP(S) SHALL INCLUDE THE HORIZONTAL AND VERTICAL (INVERT) LOCATION OF PUBLIC SEWER MANHOLES, STORM DRAIN MANHOLES AND TRANSITION STRUCTURES, STORM DRAIN LATERALS AT THE CONNECTION TO THE STORM DRAIN MAIN AND AT THE CONNECTION TO A DROP INLET, THE CONNECTION OF SEWER SERVICE LATERALS TO THE SEWER MAIN AND WHERE THE SEWER SERVICE LATERALS EXIT THE PUBLIC RIGHT-OF-WAY, SEWER AND STORM DRAIN MAIN ALIGNMENT, INCLUDING DEFLECTION POINTS. THE LOCATION SHALL BE DESCRIBED BY COORDINATES WHICH SHALL BE BASED ON THE OFFICIAL HORIZONTAL AND VERTICAL CONTROL NETWORKS OF THE CITY OF LAS VEGAS. FINAL LOCATION MAPS MUST BE SEALED AND CERTIFIED BY A NEVADA PROFESSIONAL LAND SURVEYOR TO HAVE POSITIONAL CERTAINTIES OF ± 0.08 METERS (± 0.3 FEET) HORIZONTALLY AND VERTICALLY. A SEPARATE ELECTRONIC COMMA DELIMITED FILE FOR THE SANITARY SEWER AND STORM DRAIN COORDINATES SHALL ALSO ACCOMPANY THE SANITARY SEWER AND STORM DRAIN FINAL LOCATION MAP(S).

22. CCTV VIDEO INSPECTION IS REQUIRED FOR ALL SEWER AND STORM DRAINS. THE CCTV VIDEO INSPECTIONS NEED TO BE PERFORMED PER THE DESIGN AND CONSTRUCTION STANDARDS FOR WASTEWATER COLLECTION SYSTEMS LATEST EDITION.

23. A SEPARATE BORING PERMIT IS REQUIRED FOR ALL BORING ACTIVITIES.

CITY OF LAS VEGAS GRADING NOTES

1. IN THE EVENT THAT ANY UNFORESEEN CONDITIONS NOT COVERED BY THESE NOTES ARE ENCOUNTERED DURING GRADING OPERATIONS, THE OWNER/ENGINEER SHALL BE IMMEDIATELY NOTIFIED FOR DIRECTION.

2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM ALL NECESSARY CUTS AND FILLS WITHIN THE LIMITS OF THIS PROJECT AND THE RELATED OFF-SITE WORK, SO AS TO GENERATE THE DESIRED SUBGRADE, FINISH GRADES AND SLOPES SHOWN.

3. CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ALL EXCAVATION. ADEQUATE SHORING SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR TO PREVENT UNDERMINING OF ANY ADJACENT FEATURES OR FACILITIES AND/OR CAVING OF THE EXCAVATION.

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

5. THE GRADING CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH THE OWNER TO PROVIDE FOR THE REQUIREMENTS OF THE PROJECT STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND ASSOCIATED PERMIT.

6. CONTRACTOR SHALL GRADE TO THE LINES AND ELEVATIONS SHOWN ON THE PLANS WITHIN THE FOLLOWING HORIZONTAL AND VERTICAL TOLERANCES AND DEGREES OF COMPACTION, IN THE AREAS INDICATED:
HORIZONTAL VERTICAL COMPACTION
A. PAVEMENT AREA SUBGRADE 0.1'+ +0.0' TO −0.1' SEE SOILS REPORT
B. ENGINEERED FILL 0.5'+ +0.1' TO −0.1' SEE SOILS REPORT

COMPACTION TESTING WILL BE PERFORMED BY THE OWNER OR HIS REPRESENTATIVE.

7. ALL CUT AND FILL SLOPES SHALL BE PROTECTED UNTIL EFFECTIVE EROSION CONTROL HAS BEEN ESTABLISHED.

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

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

10. IN THE EVENT THAT ANY TEMPORARY CONSTRUCTION ITEM IS REQUIRED THAT IS NOT SHOWN ON THESE DRAWINGS, THE OWNER AGREES TO PROVIDE AND INSTALL SUCH ITEM AT HIS OWN EXPENSE AND AT THE DIRECTION OF THE CITY ENGINEER. TEMPORARY CONSTRUCTION INCLUDES DITCHES, BERMS, ROAD SIGNS AND BARRICADES, ETC.

CITY OF LAS VEGAS SEWER NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE DESIGN AND CONSTRUCTION STANDARDS FOR WASTEWATER COLLECTION SYSTEMS AND THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA, AS AMENDED. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BE AWARE OF THE CONTENTS OF THE ABOVE SPECIFICATIONS.

2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM CONSTRUCTION AS PER PLANS. ANY ADDITIONS, DELETIONS, OR CHANGES SHALL FIRST MEET WITH THE APPROVAL OF THE CITY ENGINEER.

3. CHISEL "S" OR "G" IN CURBS WHERE SEWER OR GAS LATERALS PASS UNDER THE CURB.

4. POLYVINYL (PVC) SEWER PIPE SHALL MEET ASTM D-3034 SDR 35 SPECIFICATIONS, INSTALLED WITH SAND BEDDING AND BACKFILL OF TYPE II AGGREGATE BASE.

5. ALL MANHOLES PAVED IN STREETS EIGHTY (80') FOOT R/W AND LARGER SHALL HAVE CONCRETE COLLARS. STREETS LESS THAN EIGHTY (80') FOOT R/W WILL REQUIRE RETROFIT IF PAVING DOES NOT CONFORM TO CITY STANDARDS AT THE MANHOLE.

6. TEE SADDLES SHALL BE USED TO CONNECT SEWER LATERALS TO EXISTING MAIN LINES UP TO TWELVE INCH (12") DIAMETER. CONNECTIONS TO FIFTEEN INCH (15") OR LARGER MAINS SHALL REQUIRE SPECIAL PROCEDURES. IN LINE "Y"S SHALL BE USED ON LINES TWELVE INCHES (12") OR ABOVE.

7. WATER MAINS SHALL BE PROTECTED IN ACCORDANCE WITH LVVWD STANDARDS WHENEVER A SEWER MAIN CROSSES OVER A WATER MAIN OR THE SEWER IS LESS THAN EIGHTEEN INCH (18") UNDER A WATER MAIN.

8. ALL CONTRACTORS INSTALLING SEWER MAINS THAT WILL BE UNDER THE JURISDICTION OF THE CITY OF LAS VEGAS MUST BE STATE OF NEVADA CLASS "A" CONTRACTORS.

9. THE CITY OF LAS VEGAS WILL NOT ACCEPT ANY SEWER MAINS WHICH HAVE A VERTICAL DEFLECTION OF MORE THAN ONE TENTH (0.1) OF A FOOT FROM THE APPROVED CONSTRUCTION PLANS AT ANY LOCATION. SEWER MAINS FOUND TO EXCEED THIS TOLERANCE WILL HAVE TO BE REPAIRED OR REMOVED OR REPLACED TO THE SATISFACTION OF THE CITY ENGINEER PRIOR TO ACCEPTANCE BY THE CITY OF LAS VEGAS.

10. INSTALLATION OF CURVED SEWER REQUIRES THE USE OF C-900 PIPE WHICH ALLOWS FOR PIPE DEFLECTION AT THE JOINTS.

DEMOLITION QUANTITIES

NO.	ITEM	UNIT	PRIVATE
D-1	REMOVE EXISTING 6" CONCRETE CURB AND GUTTER	LF	950
D-2	REMOVE EXISTING AC PAVEMENT	SF	16126
D-3	REMOVE EXISTING CONCRETE SIDEWALK	SF	2652
D-4	REMOVE EXISTING BUILDING	SF	1690
D-5	REMOVE EXISTING UTILITY BOX	EA	4
D-6	REMOVE EXISTING STORM DRAIN INLET	EA	1
D-7	REMOVE EXISTING SIGN	EA	1
D-8	REMOVE EXISTING OVERHEAD PARKING STRUCTURE	SF	13126
D-9	REMOVE EXISTING TREE	EA	19
D-10	REMOVE EXISTING LIGHT	EA	1
D-11	REMOVE EXISTING SCREEN WALL	LF	38
D-12	SAWCUT LINE	LF	275

ABBREVIATIONS

A – ANODE, GAS
AC – ASPHALTIC CONCRETE
ACP – ASBESTOS CEMENT PIPE BOND STATION
AGG – AGGREGATE
AIP – ABANDONED IN PLACE
AVE – AVENUE
BC – BACK OF CURB
BCR – BACK OF CURB RADIUS
BDRY LINE – BOUNDARY LINE
BVC – BEGINNING OF VERTICAL CURVE
C&G – CURB AND GUTTER
CATV – CABLE TELEVISION
CBC – CITY OF BOULDER CITY
CC – CLARK COUNTY
CCSD – CLARK COUNTY SANITATION DISTRICT
CF – CUBIC FEETOF – CURB FACE
CIP – CAST IRON PIPE
CL – CENTERLINE
CLV – CITY OF LAS VEGAS
CM – CITY OF MESQUITE
CMP – CORRUGATED METAL PIPE
CNLV – CITY OF NORTH LAS VEGAS
CO – CLEAN OUT, SEWER
COH – CITY OF HENDERSON
CONC, PCC – CONCRETE
CONST – CONSTRUCTION OR CONSTRUCT
COR – CORNER
CSAP – CORRUGATED STEEL ARCH PIPE
CY – CUBIC YARD
DEPT – DEPARTMENT
DI – DROP INLET
DIA – DIAMETER
E – ELECTRIC
EBS– CATHODE PROTECTION
EC – END OF CURVE
ECR – END OF CURB RETURN
EG – EXISTING GRADE
EM – ELECTRIC METER
EP – EDGE OF PAVEMENT
ESMT – EASEMENT
ETS – CATHODE PROTECTION TEST STATION
EVC – END OF VERTICAL CURVE
FA – FIRE ALARM
FG – FINISH GRADE
FH – FIRE HYDRANT
FL – FLOW LINE
FT – FEET OR FOOT
G – GAS
GB – GRADE BREAK
GM – GAS METER
GR – GAS PRESSURE REGULATOR
INT – INTERSECTION
INV – INVERT
JB – JUNCTION BOX
LF – LINEAR FEET
LT – LEFT
LVVWD – LAS VEGAS VALLEY WATER DISTRICT
MAX – MAXIMUM
MH – MANHOLE
MIN – MINIMUM
NTS – NOT TO SCALE
OC – ON CENTER
P – POWER
PB – PULL BOX
PC – POINT OF CURVE
PCC – POINT OF COMPOUND CURVE
PCC, CONC – PORTLAND CEMENT CONCRETE
PI – POINT OF INTERSECTION
PL – PROPERTY LINE
PP – POWER POLE
PRC – POINT OF REVERSE CURVE
PROP – PROPOSED
PT – POINT OF TANGENCY
R – RADIUS
R/W – RIGHT-OF-WAY
RC – REINFORCED CONCRETE
RCB – REINFORCED CONCRETE BOX
RCP – REINFORCED CONCRETE PIPE
RD – ROAD
REINF – REINFORCED
RELOC – RELOCATE
RP – RADIUS POINT
RR – RAILROAD
RT – RIGHT
SD – STORM DRAIN
SF – SQUARE FOOT
SHT – SHEET
SL – STREETLIGHT
SS – SANITARY SEWER
STA – STATION
STD – STANDARD
SURV – SURVEY
SW – SIDEWALK
SY – SQUARE YARD
T – TELEPHONE
TBR – TO BE REMOVED
TC – TOP OF CURB
TEMP – TEMPORARY
TG – TOP OF GRATE
TOP – TOP OF SLOPE
TP – TOP OF PIPE
TRANS – TRANSITION
TS – TRAFFIC SIGNAL
TYP – TYPICAL
UG – UNDERGROUND
VAR – VARIABLE
VC – VERTICAL CURVE
VERT – VERTICAL
VG – VALLEY GUTTER
W – WATER
WM – WATER METER
YD – YARD

LEGEND

PROPERTY LINE
LOT LINE
RIGHT OF WAY — R/W
EXISTING WATERLINE — W
EXISTING SEWER MAIN — S
EXISTING GAS LINE — G
EXISTING STORM DRAIN — SD
FINISHED GROUND CONTOUR — 335
EXISTING GROUND CONTOUR — 335
EXISTING FINISH SURFACE — (335.0 FS)
EXISTING GRADE — (334.0 EG)
PROPOSED CUT/FILL SLOPE — CUT 2:1 FILL
FUTURE SPOT ELEVATIONS — 400.50 TC / 400.00 FL
DIRECTION OF DRAINAGE
DAYLIGHT LINE/ EDGE OF CONSTRUCTON

CONSTRUCTION QUANTITIES

NO.	ITEM	UNIT	PRIVATE
SI-1	CONSTRUCT "A" TYPE CURB PER CCAUSD DWG NO. 219	LF	260
SI-2	CONSTRUCT "L" TYPE CURB AND GUTTER PER CCAUSD DWG NO. 216.	LF	160
SI-3	CONSTRUCT 2" STANDARD A.C. PAVEMENT PER DETAIL "1" "AUTOMOBILE PARKING" ON SHEET C3	SF	1,053
SI-4	CONSTRUCT 3" STANDARD A.C. PAVEMENT PER DETAIL "2" MAIN CORRIDORS & TRUCK ACCESS ON SHEET C3	SF	232
SI-5	CONSTRUCT ADA RAMPS WITH ARMOR TILE TRUNCATED DOMES (OR EQUIVALENT) PER CCAUSD DWG NO. 235	EA	2
SI-6	CONSTRUCT SIDEWALK PER CCAUSD DWG NO 234	SF	3,865
SI-7	SAWCUT REHABILITATION PER DETAIL "3" ON SHEET C3	LF	AS NEEDED
SI-8	CONSTRUCT CONCRETE RETAINING WALL PER DETAIL "4" ON SHEET C3	SF	850
SI-9	RIP RAP VELOCITY DISSIPATOR PER DETAIL "5" ON SHEET C3	SF	220
SI-10	CONSTRUCT CURB OPENING PER DETAIL "6" ON SHEET C3	EA	3
SI-11	CONSTRUCT OVERHEAD PARKING STRUCTURE (DESIGN BY OTHERS)	EA	4115
SI-12	CONSTRUCT SIDEWALK DRAIN PER CCAUSD DWG NO 236	EA	2
SI-13	CONSTRUCT CONCRETE CROSS GUTTER PER CCAUSD DWG NO. 228	SF	275

STORM DRAIN CONSTRUCTION QUANTITIES

NO.	ITEM	UNIT	PRIVATE
SD-1	INSTALL 12"X12" CATCH BASIN PER JENSEN PRECAST (OR EQUIVALENT)	EA	1
SD-2	INSTALL 24"X24" CATCH BASIN PER JENSEN PRECAST (OR EQUIVALENT)	EA	1
SD-3	INSTALL 6" SDR-35 PVC	LF	10
SD-4	INSTALL 8" SDR-35 PVC	LF	170
SD-5	INSTALL PVC CLEANOUT PER DCSWCS DWG. NO. SD-26	EA	6

WATER CONSTRUCTION QUANTITIES

NO.	ITEM	UNIT	PRIVATE
WT-1	INSTALL 6" PVC WL – C900, SDR-35 PER UDACS PLATES 16 OR 17	LF	18
WT-2	INSTALL FIRE HYDRANT & 6" GATE VALVE PER UDACS PLATE NO. 40 W/ ANCHOR BLOCK PER UDACS PLATE 31.	EA	1

SEWER CONSTRUCTION QUANTITIES

NO.	ITEM	UNIT	PRIVATE
SS-1	INSTALL 8" PVC (SDR-35) SEWER LATERAL PER DCSWCS DWG. NO. SD-14, SD-15, AND SD-17	LF	11
SS-2	INSTALL 6" SEWER CLEANOUT PER DCSWCS DWG. NO. SD-26	EA	1
SS-3	CONNECTION TO EXISTING 8" MAIN PER DCSWCS DWG. NO. SD-22	EA	1

EARTHWORK

CUT: 340 CY
FILL: 1,220 CY
IMPORT: 880 CY

EARTHWORK NOTES:

1. VOLUMES HAVE BEEN CALCULATED BASED ON RECOMMENDATIONS WITHIN NOVA GEOTECHNICAL & INSPECTION SERVICES'S 2-11-10 REPORT (G-19-002), THE IMPROVEMENTS SHOWN ON THESE PLANS, AND THE FOUNDATION & FOOTING DESIGN BY BUELLER STRUCTURAL ENGINEERING, DATED 5/31/19.

REMEDIAL (OVEREX) NOTES:

1. ASSUME TOP 6" OF MATERIAL BENEATH FINISH PAD OR SUBGRADE TO BE REMOVED/REPLACED & RECOMPACTED
2. REMEDIAL VOLUME = 805 CY

AVOID CUTTING UNDERGROUND UTILITY LINES. ITS COSTLY.
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OR
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CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

FAST
CALL BEFORE YOU UNDERGROUND
1-702-432-5300
FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

STATE OF NEVADA — PROFESSIONAL ENGINEER — ROBERT D. DENTINO — Exp. 12-31-20 — CIVIL — No. 22
DATE: 6/10/19
EXCEL ENGINEERING
1,140 N. TOWN CENTER DRIVE, SUITE 330, LAS VEGAS, NV 89144
PH: (702) 562-3100 FX: (702) 562-3101

NO.	DESCRIPTION	DATE	APP'D
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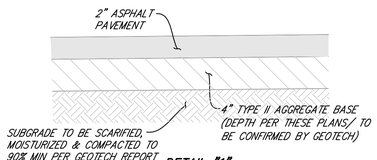
DESIGN: AJV
DRAWN: JJP
CHECK: RDD
ISSUE DATE: 6/10/19
ISSUE EDITOR:
PLOT DATE:
PLOT TIME:

THE VALLEY HEALTH SYSTEM
CENTENNIAL HILLS HOSPITAL
PHASE 3 BED TOWER, OR, & UTILITY ROOM EXPANSION
GENERAL NOTES

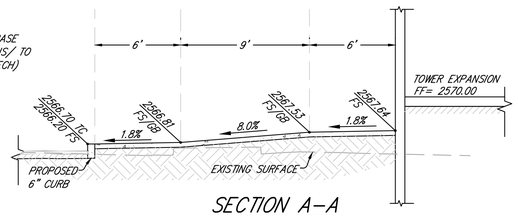
DRAWING
C2
2 OF 8 SHEETS

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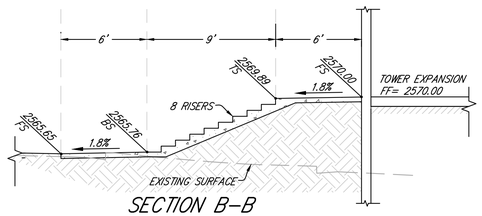
STANDARD STRUCTURAL SECTIONS



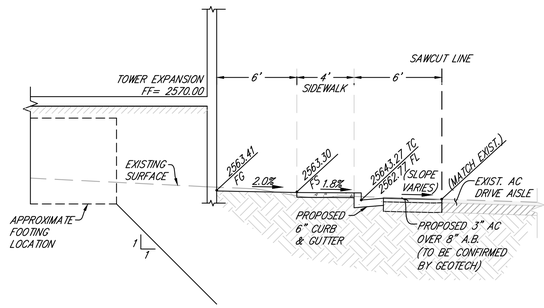
DETAIL "1"
AUTOMOBILE PARKING SI-3
NOT TO SCALE



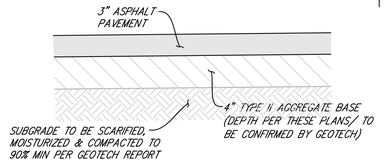
SECTION A–A
NOT TO SCALE



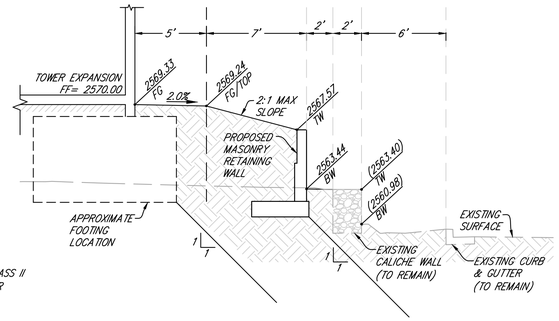
SECTION B–B
NOT TO SCALE



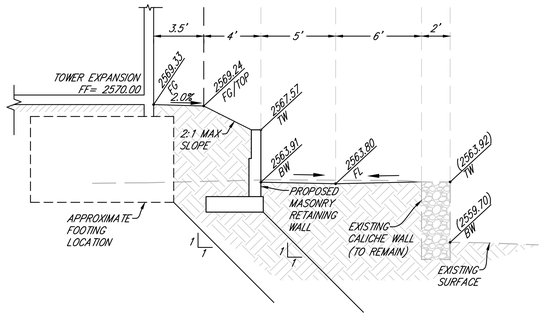
SECTION C–C
NOT TO SCALE



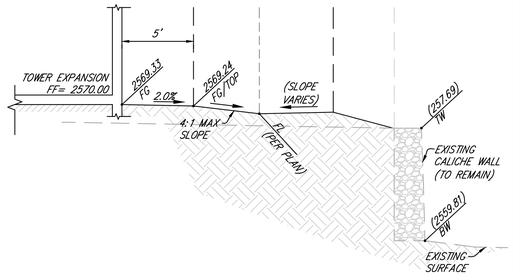
DETAIL "2"
MAIN CORRIDORS & TRUCK ACCESS SI-4
NOT TO SCALE



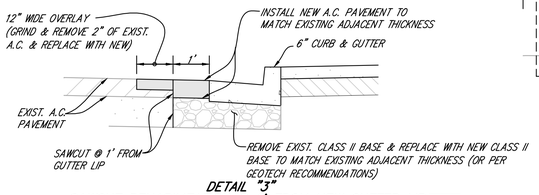
SECTION D–D
NOT TO SCALE



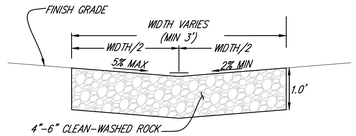
SECTION E–E
NOT TO SCALE



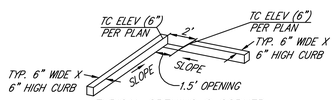
SECTION F–F
NOT TO SCALE



DETAIL "3"
SAWCUT REHABILITATION @ 1' FROM NEW GUTTER LIP SI-7
NOT TO SCALE

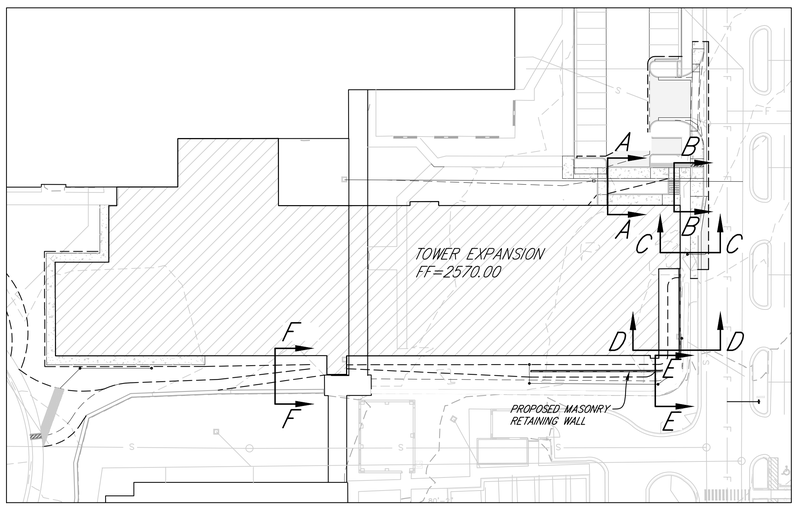


DETAIL "5"
DETAIL – RIP RAP VELOCITY DISSAPATOR SI-9
NOT TO SCALE

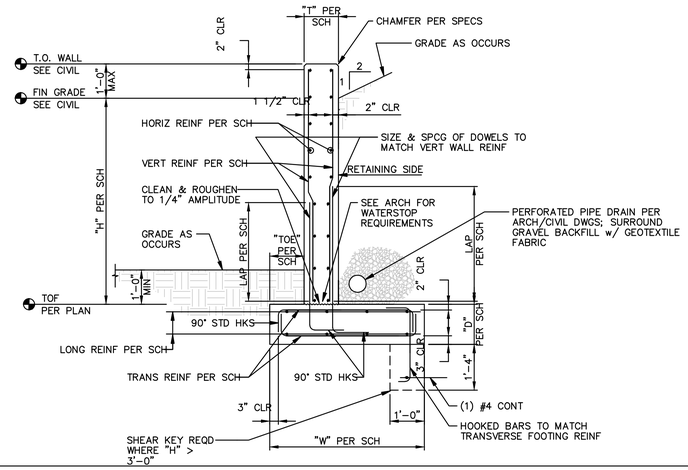


TYPICAL OPENING @ CORNER

DETAIL "6"
CURB CUT SI-10
NOT TO SCALE



KEY MAP
NOT TO SCALE



RETAINING WALL SCHEDULE

MARK	WALL DIM		WALL REINFORCING		FOOTING DIM			FOOTING REINFORCING	
	"H"	"T"	VERTICAL	HORIZONTAL	"W"	"TOE"	"D"	TRANSVERSE	LONGITUDINAL
A	UP TO 3'-0"	12"	#4 @ 12"CC	#4 @ 16"CC	4'-0"	12"	12"	#4 @ 12"CC T&B	#4 @ 16"CC T&B
B	3'-1" TO 5'-0"	12"	#5 @ 12"CC	#4 @ 16"CC	4'-6"	12"	14"	#5 @ 12"CC T&B	#4 @ 16"CC T&B

DETAIL "4"
CONCRETE RETAINING WALL SI-8
NOT TO SCALE

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V:\18\18072\Engineering\GPIP\GP\Tower\18-072_03-C3-Typical Sections.dwg[Jun-11-2019]5:27

ENGINEER: STATE OF NEVADA — PROFESSIONAL — ROBERT D. DENTINO — Exp: 12-31-20 — CIVIL — No. 22131
DATE: 6/10/19

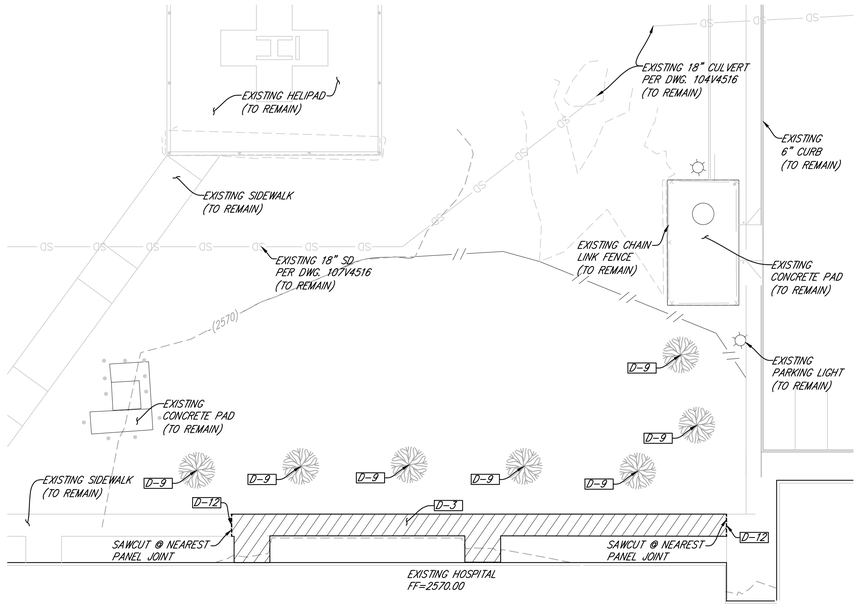
EXCEL ENGINEERING
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PH (760)745-3115 FX (760)745-1890

DESIGN:	A.W.
DRAWN:	J.J.P.
CHECK:	R.D.D.
ISSUE DATE:	6/10/19
ISSUE EDITOR:	
PLOT DATE:	
PLOT TIME:	

NO.	DESCRIPTION	REV. DATE	APP.	DATE	APP.	DATE	APP.
1	90% SUBMITTAL	6/10/19					

THE VALLEY HEALTH SYSTEM
CENTENNIAL HILLS HOSPITAL
PHASE 3 BED TOWER, OR, & UTILITY ROOM EXPANSION
SECTIONS AND DETAILS

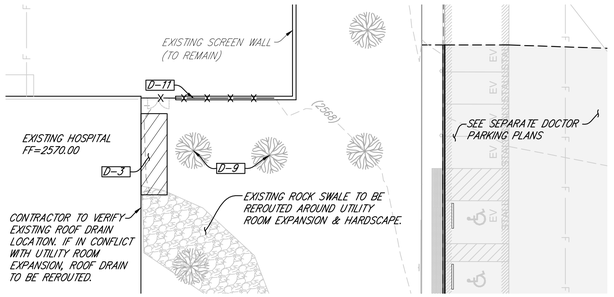
DRAWING
C3
3 OF 8 SHEETS



OR EXPANSION – DEMOLITION PLAN

SCALE 1":20'

0 20 40 60 80



UTILITY ROOM – DEMOLITION PLAN

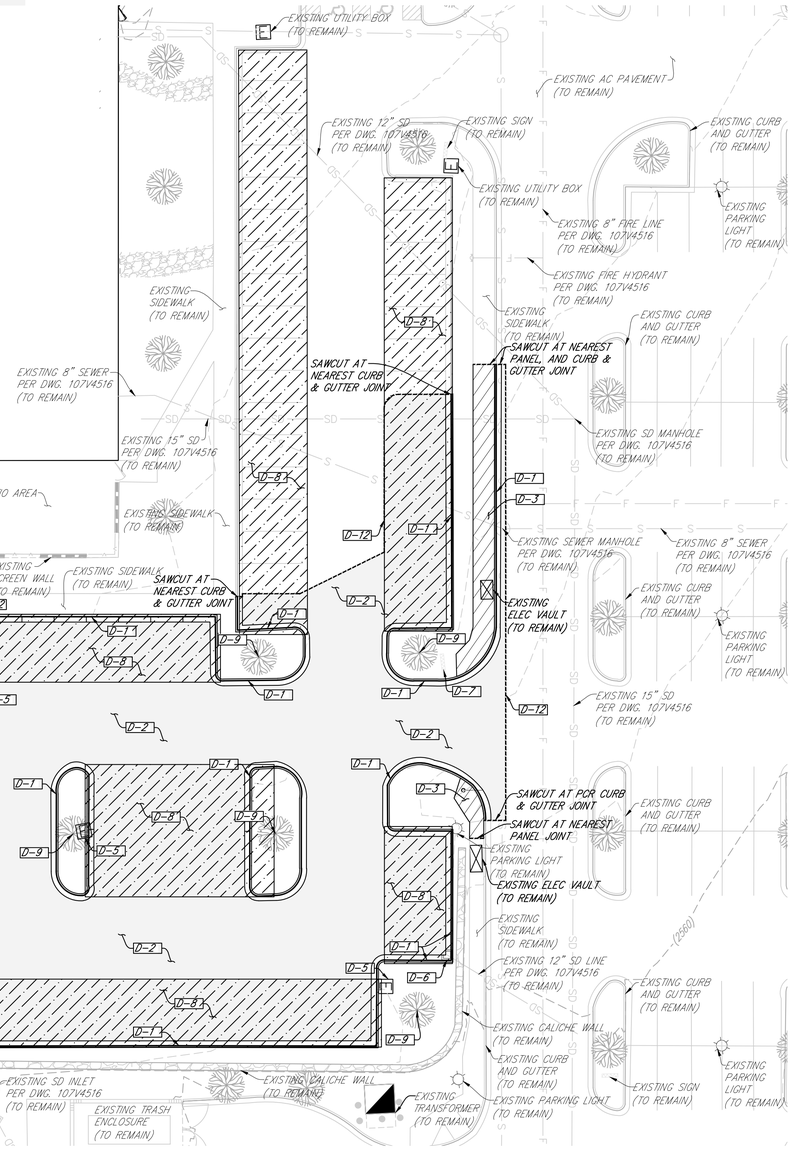
SCALE 1":20'

0 20 40 60 80

DESCRIPTIONS

SURFACE REMOVALS

D-1	REMOVE EXISTING 6" CONCRETE CURB AND GUTTER
D-2	REMOVE EXISTING AC PAVEMENT
D-3	REMOVE EXISTING CONCRETE SIDEWALK
D-4	REMOVE EXISTING BUILDING
D-5	REMOVE EXISTING UTILITY BOX
D-6	REMOVE EXISTING STORM DRAIN INLET
D-7	REMOVE EXISTING SIGN
D-8	REMOVE EXISTING OVERHEAD PARKING STRUCTURE
D-9	REMOVE EXISTING TREE
D-10	REMOVE EXISTING LIGHT
D-11	REMOVE EXISTING SCREEN WALL
D-12	SAWCUT LINE



TOWER EXPANSION – DEMOLITION PLAN

SCALE 1":20'

0 20 40 60 80

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NEVADA STATE OF ENGINEER — ROBERT D. DENTINO — Exp. 12-31-20 — CIVIL — No. 22171 — PROFESSIONAL

DATE: 6/10/19

DESIGN:	AJV
DRAWN:	JJP
CHECK:	RDD
ISSUE DATE:	6/10/19
ISSUE EDITOR:	
PLOT DATE:	
PLOT TIME:	

REV	DATE	DESCRIPTION

APP.	DATE

THE VALLEY HEALTH SYSTEM

CENTENNIAL HILLS HOSPITAL

PHASE 3 BED TOWER, OR, & UTILITY ROOM EXPANSION

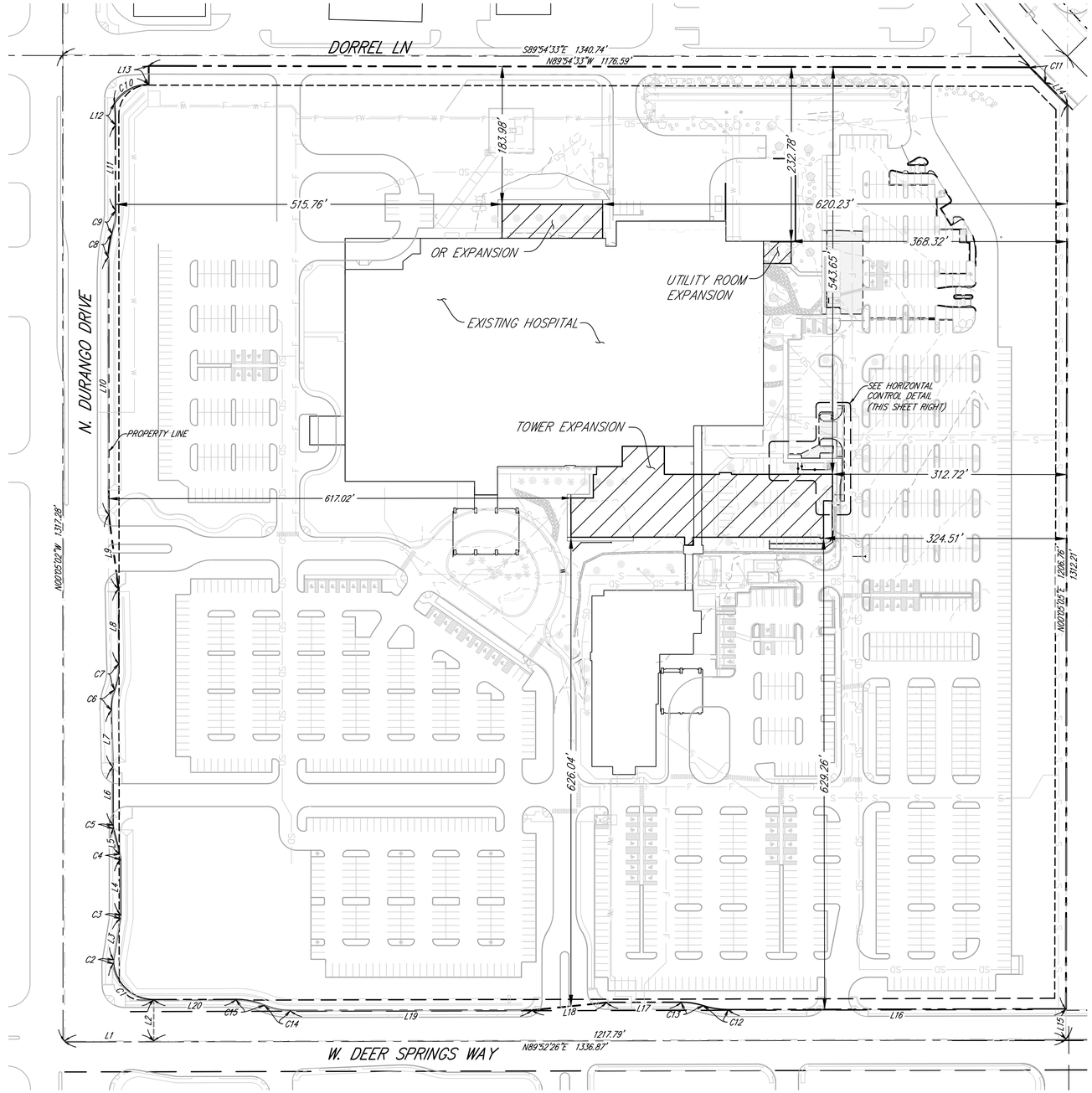
DEMOLITION PLAN

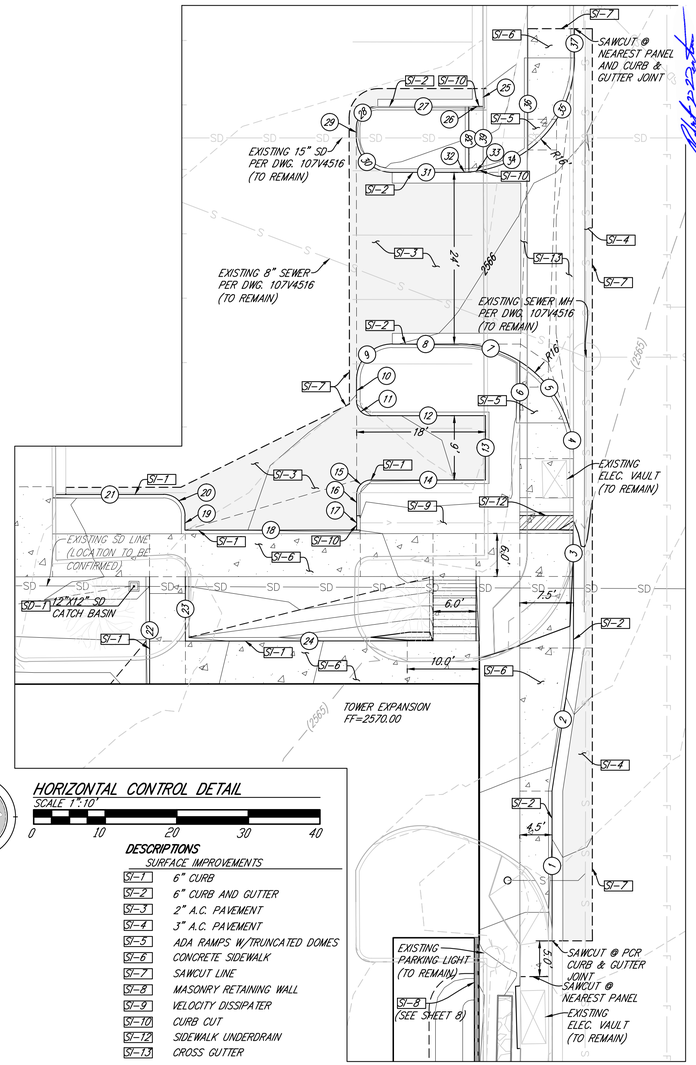
DRAWING

DEMO1

4 OF 8 SHEETS

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BOUNDARY CURVE DATA

NO	DELTA	RADIUS	LENGTH
C1	Δ=84°01'47"	54.00'	79.20'
C2	Δ=15°28'30"	20.00'	5.40'
C3	Δ=09°27'24"	30.00'	4.95'
C4	Δ=14°02'10"	30.00'	7.35'
C5	Δ=14°02'10"	20.00'	4.90'
C6	Δ=19°39'46"	80.52'	27.63'
C7	Δ=18°23'23"	109.53'	35.16'
C8	Δ=18°11'42"	100.00'	31.76'
C9	Δ=18°11'42"	100.00'	31.76'
C10	Δ=57°41'02"	54.00'	54.37'
C11	Δ=01°26'47"	1145.00'	28.90'
C12	Δ=18°11'42"	106.50'	33.82'
C13	Δ=18°11'42"	93.50'	29.69'
C14	Δ=23°25'29"	87.00'	35.57'
C15	Δ=23°25'29"	95.00'	38.84'

BOUNDARY LINE DATA

NO	DIRECTION	LENGTH
L1	N89°52'26"E	119.08'
L2	N00°07'34"W	55.00'
L3	N09°22'42"E	55.55'
L4	N00°05'02"W	73.82'
L5	N14°07'13"W	35.08'
L6	N00°05'02"W	77.46'
L7	N01°21'15"W	75.92'
L8	N00°05'02"W	100.00'
L9	N07°33'17"W	100.00'
L10	N00°05'02"W	343.70'
L11	N00°05'02"W	114.00'
L12	N03°08'51"W	29.04'
L13	N00°05'27"E	25.01'
L14	N44°52'23"W	42.04'
L15	N00°05'05"E	40.00'
L16	N89°52'26"E	451.17'
L17	N89°52'26"E	100.00'
L18	N84°08'05"E	100.00'
L19	N89°52'26"E	322.47'
L20	N89°52'26"E	110.00'

HORIZONTAL CONTROL DETAIL

SCALE 1":10'

0 10 20 30 40

SCALE 1":80'

0 80 160 240 320

DESCRIPTIONS

SURFACE IMPROVEMENTS

SY-1	6" CURB
SY-2	6" CURB AND GUTTER
SY-3	2" A.C. PAVEMENT
SY-4	3" A.C. PAVEMENT
SY-5	ADA RAMPS W/TRUNCATED DOMES
SY-6	CONCRETE SIDEWALK
SY-7	SAWCUT LINE
SY-8	MASONRY RETAINING WALL
SY-9	VELOCITY DISSIPATER
SY-10	CURB CUT
SY-12	SIDEWALK UNDERDRAIN
SY-13	CROSS GUTTER

CURB DATA

NO	DELTA/BRG	RADIUS	LENGTH	REMARK
1	N00°00'23"W	--	20.93'	2
2	N08°31'03"E	--	20.22'	" "
3	N00°00'23"W	--	26.48'	" "
4	Δ=18°09'55"	16.00'	5.07'	4
5	Δ=39°44'05"	16.00'	11.10'	3
6	N00°00'23"W	--	8.57'	4
7	Δ=32°08'56"	16.00'	8.98'	2
8	N89°56'42"E	--	9.30'	" "
9	Δ=90°00'00"	5.00'	7.85'	1
10	N00°03'18"W	--	3.00'	" "
11	Δ=90°00'00"	2.00'	3.14'	" "
12	N89°56'42"E	--	16.00'	" "
13	N00°03'18"W	--	9.00'	" "
14	N89°56'42"E	--	16.00'	" "
15	Δ=90°00'00"	2.00'	3.14'	" "
16	N00°03'18"W	--	2.98'	" "
17	N00°03'18"W	--	2.00'	" "
18	N89°56'42"E	--	24.00'	3
19	N00°03'18"W	--	2.00'	1
20	Δ=90°00'00"	3.00'	4.71'	" "

CURB DATA

NO	DELTA/BRG	RADIUS	LENGTH	REMARK
21	N89°56'42"E	--	15.00'	1
22	N00°03'18"W	--	15.00'	" "
23	N00°03'18"W	--	9.00'	" "
24	N89°56'42"E	--	34.62'	" "
25	N00°03'18"W	--	2.50'	2
26	N89°56'42"E	--	2.00'	3
27	N89°56'42"E	--	12.72'	2
28	Δ=90°00'00"	3.00'	4.71'	1
29	N00°03'18"W	--	1.22'	" "
30	Δ=90°00'00"	5.00'	7.85'	" "
31	N89°56'42"E	--	9.48'	2
32	Δ=04°26'54"	16.00'	1.24'	" "
33	Δ=07°14'18"	16.00'	2.02'	3
34	Δ=24°41'18"	16.00'	6.89'	2
35	Δ=53°34'35"	16.00'	14.96'	3
36	N00°00'23"W	--	12.87'	4
37	N00°00'23"W	--	4.07'	2
38	N00°03'18"W	--	9.17'	1
39	N00°03'18"W	--	8.88'	" "

*REMARKS
1 - 6" CURB
2 - 6" CURB AND GUTTER
3 - 0" CURB
4 - 0" TO 6" TRANSITION

AVOID CUTTING UNDERGROUND UTILITY LINES. ITS COSTLY.

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OR 1-800-227-2600

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CALL BEFORE YOU DO OVERHEAD

1-702-227-2929

FAST

CALL BEFORE YOU UNDERGROUND

1-702-432-5300

FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

PROFESSIONAL ENGINEER STATE OF NEVADA
ROBERT D. DENTINO
Exp. 12-31-20
CIVIL
No. 22

EXCEL ENGINEERING
LAND PLANNING • ENGINEERING • SURVEYING
440 STATE PLACE, ESCONDIDO, CA 92029
PH (760)745-8118 FX (760)745-1880

DATE: 6/10/19

	DESIGN:	DRAWN:	CHECK:	ISSUE DATE:	ISSUE EDITOR:	PLOT DATE:	PLOT TIME:
	A.V.	J.R.	R.D.D.	6/10/19			

REV	DATE	DESCRIPTION	APP'D	DATE	APP'D	DATE

THE VALLEY HEALTH SYSTEM

CENTENNIAL HILLS HOSPITAL

PHASE 3 BED TOWER, OR, & UTILITY ROOM EXPANSION

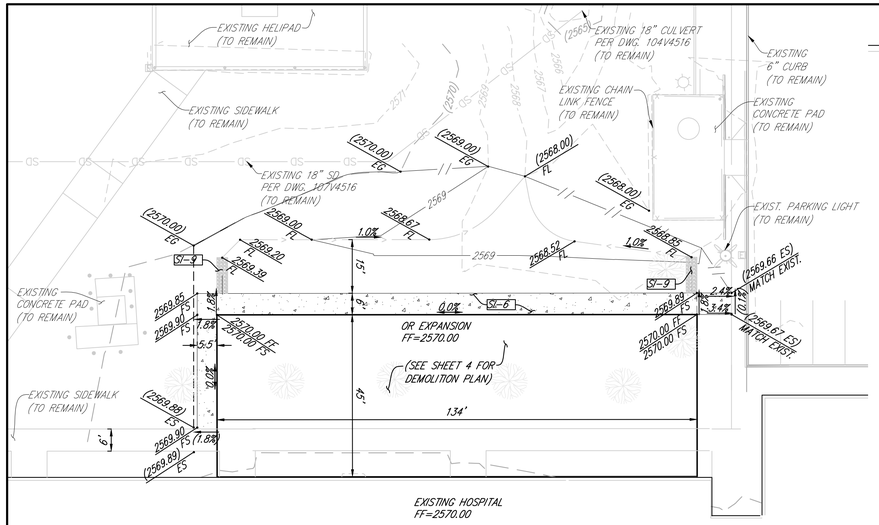
HORIZONTAL CONTROL PLAN

DRAWING

HZC1

5 OF 8 SHEETS

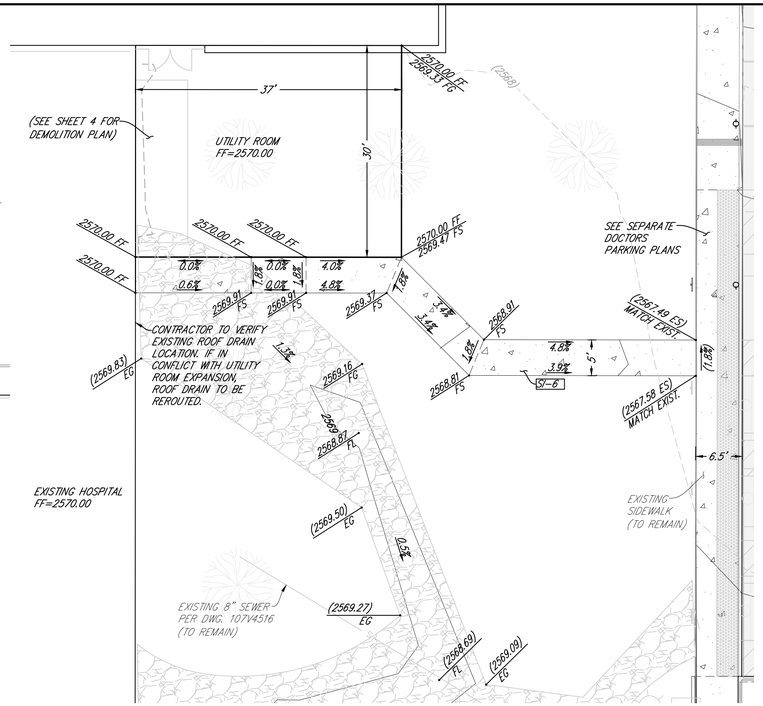
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OR EXPANSION – GRADING PLAN

SCALE 1"=20'

0 20 40 60 80



UTILITY ROOM EXPANSION – GRADING PLAN

SCALE 1"=10'

0 10 20 30 40

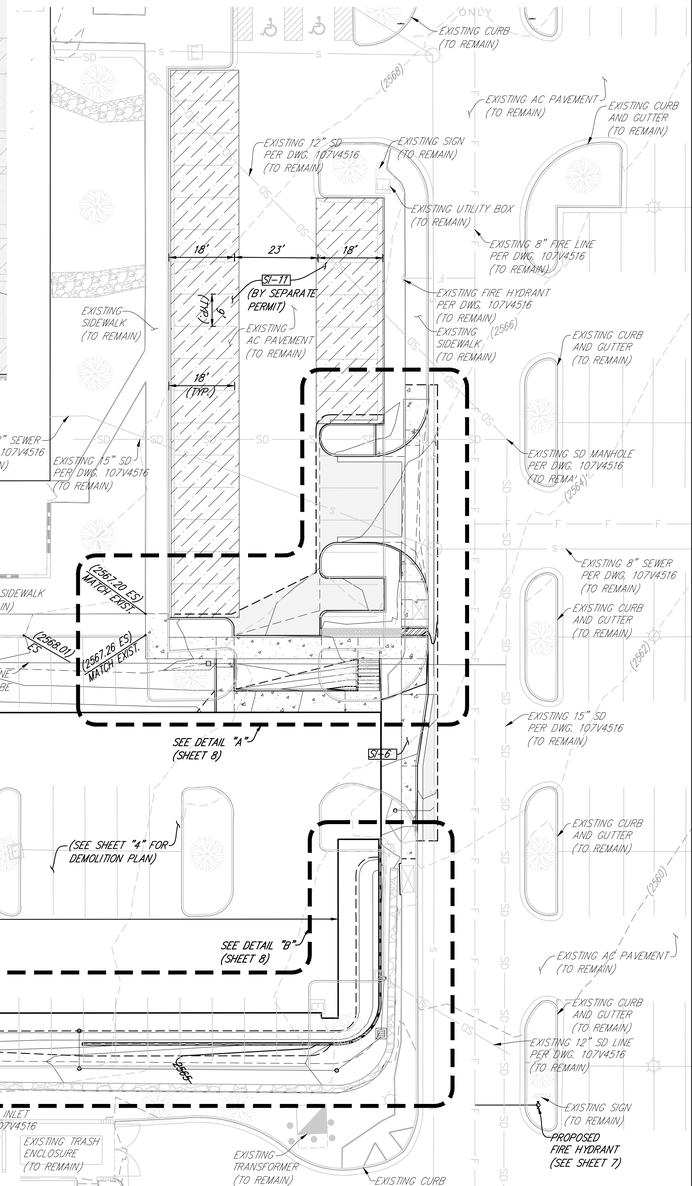
DESCRIPTIONS

SURFACE IMPROVEMENTS

- SI-8 MASONRY RETAINING WALL
- SI-9 VELOCITY DISSIPATER
- SI-11 OVERHEAD PARKING STRUCTURE
- SI-12 SIDEWALK UNDERDRAIN

STORM DRAIN IMPROVEMENTS

- SD-1 12"X12" CATCH BASIN



TOWER EXPANSION – GRADING PLAN

SCALE 1"=20'

0 20 40 60 80

AVOID CUTTING UNDERGROUND UTILITY LINES. ITS COSTLY.

811 Know what's below. Call before you dig.

OR 1-800-227-2600

AVOID HITTING OVERHEAD POWER LINES. ITS COSTLY.

CALL BEFORE YOU DO OVERHEAD

1-702-227-2929

FAST

CALL BEFORE YOU UNDERGROUND

1-702-432-5300

FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

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STATE OF NEVADA — PROFESSIONAL ENGINEER — ROBERT D. DENTINO — Exp. 12-31-20 — CIVIL — No. 22911 — DATE: 6/10/19

EXCEL ENGINEERING — LAND PLANNING • ENGINEERING • SURVEYING — 440 STATE PLACE, ESCONDIDO, CA 92029 — PH (760)745-8118 FX (760)745-1880

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CHECK:	R.D.D.
ISSUE DATE:	6/10/19
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THE VALLEY HEALTH SYSTEM

CENTENNIAL HILLS HOSPITAL

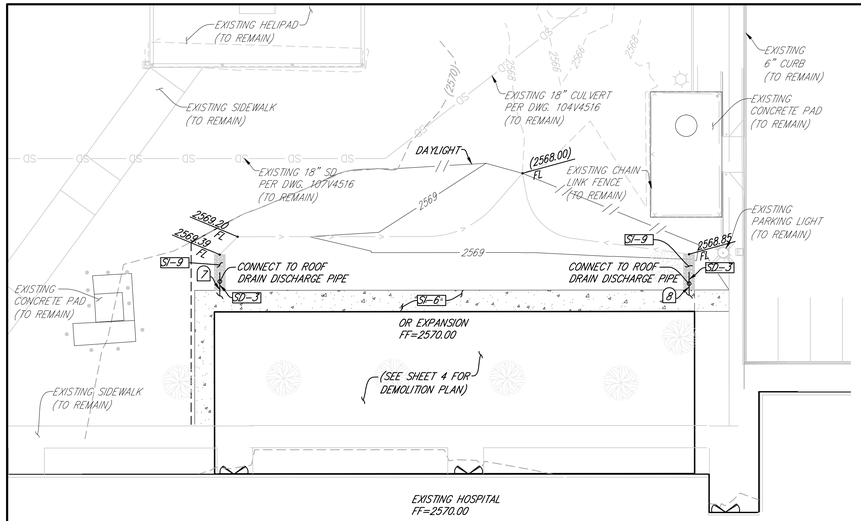
PHASE 3 BED TOWER, OR, & UTILITY ROOM EXPANSION

PRECISE GRADING PLAN

DRAWING

GP1

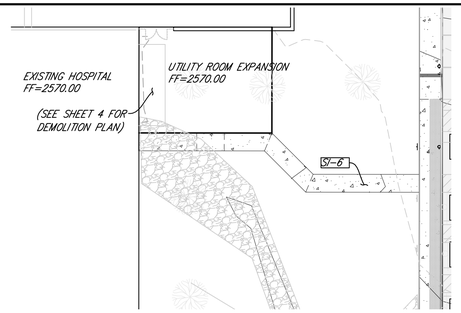
6 OF 8 SHEETS



OR EXPANSION – UTILITY PLAN

SCALE 1":20'

0 20 40 60 80

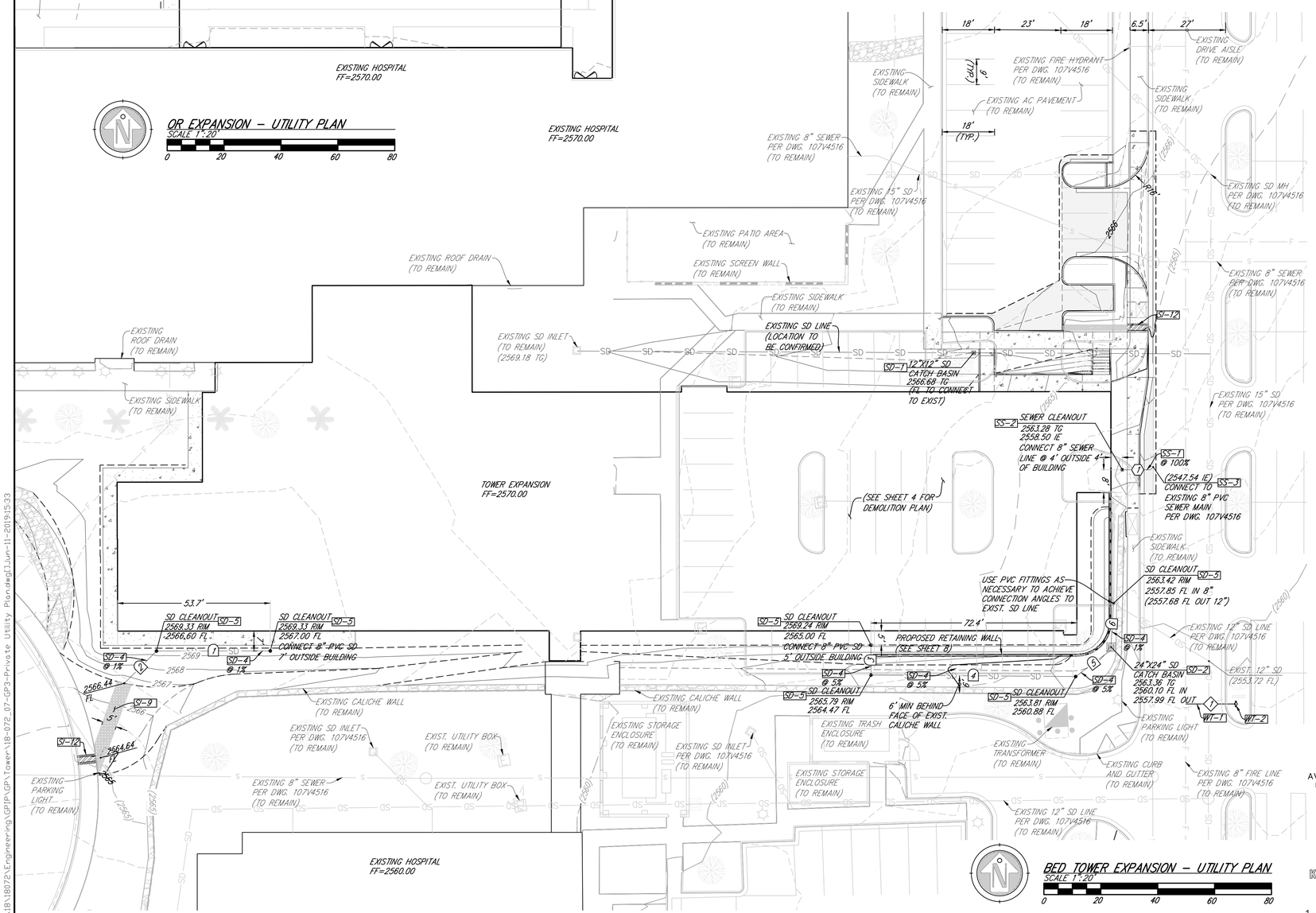


UTILITY ROOM EXPANSION – UTILITY PLAN

SCALE 1":20'

0 20 40 60 80

EXISTING HOSPITAL FF=2570.00



BED TOWER EXPANSION – UTILITY PLAN

SCALE 1":20'

0 20 40 60 80

DESCRIPTIONS

SURFACE IMPROVEMENTS

SI-6	CONCRETE SIDEWALK
SI-9	VELOCITY DISSIPATER
SI-12	SIDEWALK UNDERDRAIN

STORM DRAIN IMPROVEMENTS

SD-1	12"X12" CATCH BASIN
SD-2	24"X24" CATCH BASIN
SD-3	6" PVC SD
SD-4	8" PVC SD
SD-5	SD CLEANOUT

WATERLINE IMPROVEMENTS

WT-1	6" PVC
WT-2	FIRE HYDRANT ASSEMBLY

SEWER IMPROVEMENTS

SS-1	8" PVC
SS-2	SEWER CLEANOUT
SS-3	CONNECT TO EXIST SEWER MAIN

WATER DATA (CL-150)

NO	DELTA/BRG	RADIUS	LENGTH	REMARK
1	N90°00'00"E	--	17.65'	6" PVC

STORM DRAIN DATA

NO	DELTA/BRG	RADIUS	LENGTH	REMARK
1	N89°56'42"E	--	40.00'	8" PVC
2	N44°56'42"E	--	16.02'	" "
3	N00°03'18"W	--	10.54'	" "
4	N89°34'25"W	--	71.95'	" "
5	N53°07'46"E	--	15.59'	" "
6	N03°06'57"E	--	14.42'	" "
7	N00°03'18"W	--	10.00'	6" PVC
8	N00°05'05"W	--	5.00'	" "

SEWER DATA

NO	DELTA/BRG	RADIUS	LENGTH	REMARK
1	N89°54'03"W	--	10.86'	8" PVC

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1-702-227-2929

FAST

CALL BEFORE YOU UNDERGROUND

1-702-432-5300

FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

STATE OF NEVADA — PROFESSIONAL ENGINEER — ROBERT D. DENTINO — No. 22121 — Exp. 12-31-20 — CIVIL — DATE: 6/10/19

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PH (760)745-8118 FX (760)745-1890

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ISSUE DATE: 6/10/19
ISSUE EDITOR:
PLOT DATE:
PLOT TIME:

THE VALLEY HEALTH SYSTEM
CENTENNIAL HILLS HOSPITAL
PHASE 3 BED TOWER, OR, & UTILITY ROOM EXPANSION
PRIVATE UTILITY PLAN

DRAWING
U1

7 OF 8 SHEETS

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TOWER EXPANSION
FF=2570.00

EXISTING STORAGE ENCLOSURE (TO REMAIN)

EXISTING SD INLET PER DWG. 107V4516 (TO REMAIN)

EXISTING TRASH ENCLOSURE (TO REMAIN)

EXISTING CALICHE WALL (TO REMAIN)

EXISTING TRANSFORMER (TO REMAIN)

EXISTING PARKING LIGHT (TO REMAIN)

PROPOSED SEWER (SEE SHEET 7)

EXISTING ELEC VAULT (TO REMAIN)

EXISTING SIDEWALK (TO REMAIN)

SEE RETAINING WALL DETAIL ON SHEET 3

EXIST. SD INLET (TO BE REMOVED)

SD CLEANOUT 2563.42 RIM

PROPOSED SD (SEE SHEET 7)

24"X24" SD CATCH BASIN 2563.36 TG

EXISTING 12" SD LINE PER DWG. 107V4516 (TO REMAIN)

SEWER CLEANOUT 2563.28 RIM

EXISTING 15" SD PER DWG. 107V4516 (TO REMAIN)

EXISTING SEWER MANHOLE PER DWG. 107V4516 (TO REMAIN) (2565.44 RIM)

EXISTING ELEC VAULT (TO REMAIN)

DETAIL "B"
SCALE 1"=10'
0 10 20 30 40

DETAIL "A"
SCALE 1"=5'
0 5 10 15 20

DESCRIPTIONS

SURFACE IMPROVEMENTS

SI-1	6" CURB
SI-2	6" CURB AND GUTTER
SI-3	2" A.C. PAVEMENT
SI-4	3" A.C. PAVEMENT
SI-5	ADA RAMPS W/TRUNCATED DOMES
SI-6	CONCRETE SIDEWALK
SI-7	SAWCUT
SI-8	MASONRY RETAINING WALL
SI-9	VELOCITY DISSIPATER
SI-10	CURB CUT
SI-12	SIDEWALK UNDERDRAIN
SI-13	CROSS GUTTER

STORM DRAIN IMPROVEMENTS

SD-1	12"X12" CATCH BASIN
SD-2	24"X24" CATCH BASIN

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FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

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ENGINEER: STATE OF NEVADA — PROFESSIONAL — ROBERT D. DENTINO — Exp. 12-31-20 — CIVIL — No. 22171
DATE: 6/10/19

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REV	DATE	DESCRIPTION	DATE	APP'D

THE VALLEY HEALTH SYSTEM
CENTENNIAL HILLS HOSPITAL
PHASE 3 BED TOWER, OR, & UTILITY ROOM EXPANSION
ADA & RETAINING WALL DETAILS

DRAWING
A1
8 OF 8 SHEETS

EXCEL ***ENGINEERING***

LEVIN & DENTINO INC. D.B.A. EXCEL ENGINEERING

440 State Place • Escondido, CA 92029 • (760)745-8118 • Fax 745-1890 • www.excelengineering.net

June 13, 2019

Attn: Albert Sung, P.E.
City of Las Vegas
Public Works Department – Flood Control Section
333 N. Rancho Drive
Las Vegas, NV 89106

RE: The Valley Health System's Centennial Hills Hospital - Phase 3 Tower Expansion (APNS: 125-20-610-004)
Update to Approved Technical Drainage Studies for Centennial Hills Hospital (CLV DS #3822)

Dear Mr. Sung,

This purpose of this letter is to provide an update to the approved Technical Drainage Study for Centennial Hills Hospital (CLV DS #3822 – Phase 1 originally reviewed in 2005/2006 with the last update approved in 2016 for Phase 2). The purpose of this update/addendum is to show that the proposed Phase 3 Tower Expansion will be located in the exact same footprint as planned by the previously approved drainage studies for this project. As part of this update, the following attachments are included as part of this package:

1. Clark County Standard Forms 1 and 2
2. Las Vegas Standard Form 2
3. Conditions of Approval for the Phase 3 Tower Expansion Project
    a. the full Master Planning of the Centennial Hills Hospital Site was included in the SDR-76210 approval process
    b. All planned phases from the existing Phase 1 and 2, the immediate proposed Phase Tower Expansion, and the Phase 4 and 5 build-out of the MOB No. 2 and Cancer Center.
4. 24"x36" Plots of the Master Plan Exhibits for Phase 1-2 (existing) and Phase 3 (Tower Expansion) to show the progress of the site relative to the previously approved studies
5. Complete 2016/2017 Drainage Study Update iterations (last processing prior to this report)
6. 11"x17" Color Marked-up Developed Conditions Map (from original study) showing tower location and Subbasin identification numbers that it is a part of
7. 11"x17" Color Marked-up Private Utility Plan for new tower installation – showing drainage pattern
8. 24"x36" Precise Grading and Improvement Plans for Phase 3 Tower Expansion Project

As identified in the list of attachments to this Update, several of the items are excerpts from the previously approved studies for the Centennial Hills Hospital project site that date back to 2005. As you can see on the Developed Conditions Map, the proposed tower sits halfway between two previously studied drainage subbasins, ON3 draining to the west and ON8 draining to the east. Previous studies show that both of those subbasins were planned, for drainage purposes, to be 100% paved with a C-factor of 0.90 at the 10-year and 0.93 for the 100 year. As such, the flow previously quantified for ON3 and ON8 exceed that which is to be expected for the proposed Phase 3 Tower conditions where pervious areas and landscaping are to remain and

be enhanced as part of this project. The impact from this project will only reduce flows to Deer Springs Way from those that were previously calculated and approved for the site.

It is our opinion that the approved Technical Drainage Study for Centennial Hills substantially addresses the drainage design considerations for the proposed Phase 3 Tower Expansion. Should you wish to see any additional information or technical content, please do not hesitate to contact us and we will be happy to provide that information.

Thank you for your attention to this matter.

Robert D. Dentino, PE
Co-President
Excel *Engineering*
440 State Place
Escondido, CA 92029
(760) 745-8118 ext. 212
(760) 745-1890 fax
rdentino@excelengineering.net