

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 #
1 st Submittal	12/7/2016	12/21/2016	Not Approved	\$400.00	467949: \$400
2 nd 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.

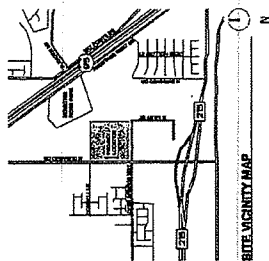
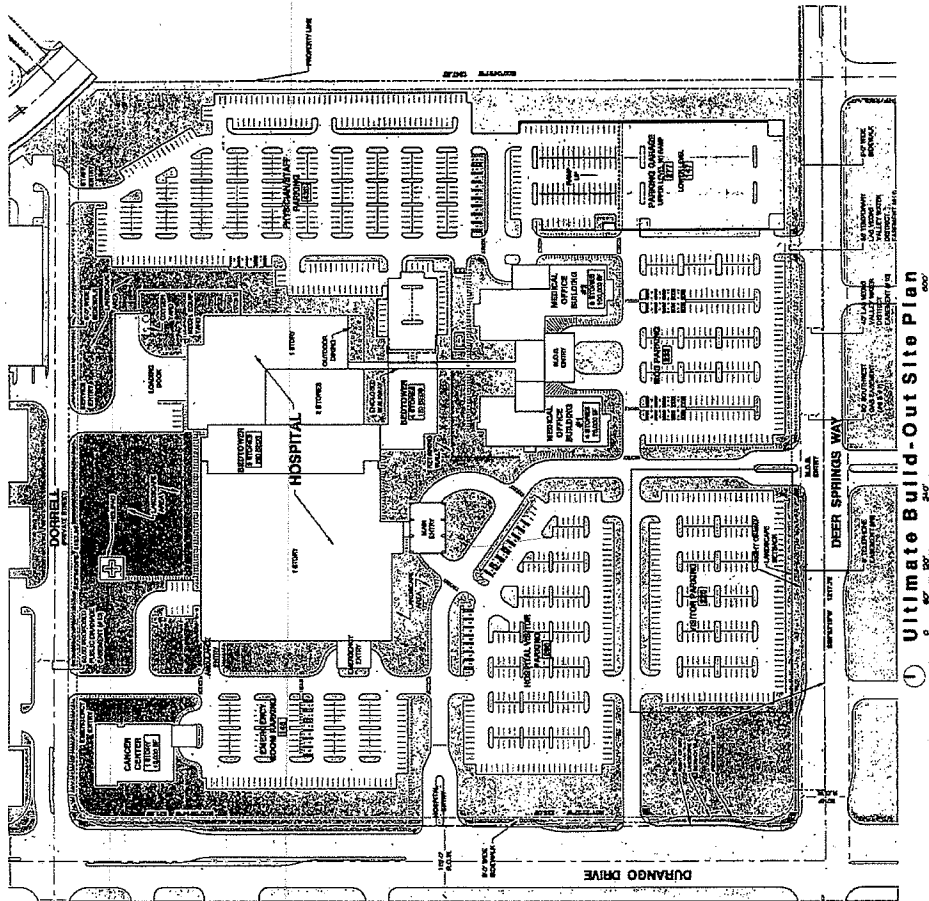
NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Update and accepted by the *City of Las Vegas Flood Control Section*. Additionally, conditional 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

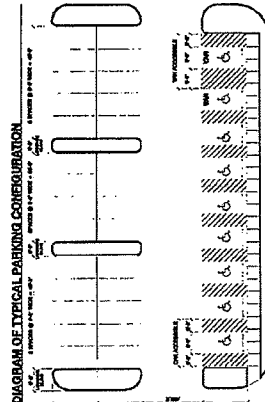
T/R/S: T19S/R60E/20
AREA G-20



PARKING CALCULATIONS	
HOSPITAL	1,000
AMBULANCE	10
EMERGENCY	10
OUTPATIENT	100
TOTAL HOSPITAL PARKING SPACES	120
MEDICAL OFFICE BUILDING #1	425
MEDICAL OFFICE BUILDING #2	570
CANCER CENTER	10,000
LABORATORY	100
PHARMACY	100
TOTAL SITE PARKING AT BUILD-OUT	11,195
TOTAL UNDISBURSED ACCESSIBLE PARKING	27

BUILDING AREA CALCULATIONS	
HOSPITAL	42,000 SF
MEDICAL OFFICE BUILDING #1	10,000 SF
MEDICAL OFFICE BUILDING #2	10,000 SF
CANCER CENTER	10,000 SF
LABORATORY	10,000 SF
PHARMACY	10,000 SF
ON SITE AT BUILD-OUT	750,700 SF

FLOOR AREA RATIO CALCULATIONS	
PROPERTY SIZE	1,840,000 SF (87.86 ACRES)
NET LOT AREA	1,840,000 SF
GROSS FLOOR AREA/NET LOT AREA	1.000
FLOOR AREA RATIO	1.000



Centennial Hills Medical Center
Las Vegas, Nevada

RECEIVED
04 MARCH 2005
HKS

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

① Ultimate Build-Out Site Plan

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.



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,

A handwritten signature in black ink, appearing to read 'Thomas Regenhard', with a long horizontal flourish extending to the right.

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

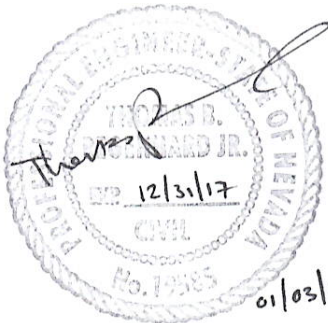
4. Proposed type of development (Residential, Commercial, Etc.): Commercial (parking lot expansion)

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

CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		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 #
1 st 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 USDOCA 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



054440

June 20, 2005

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

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

**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

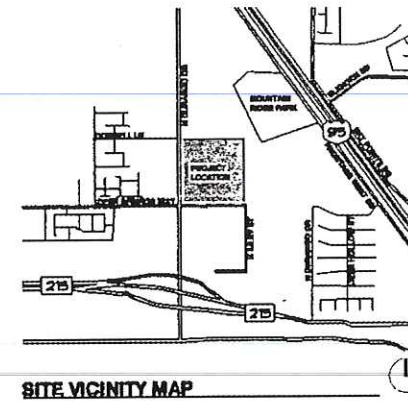
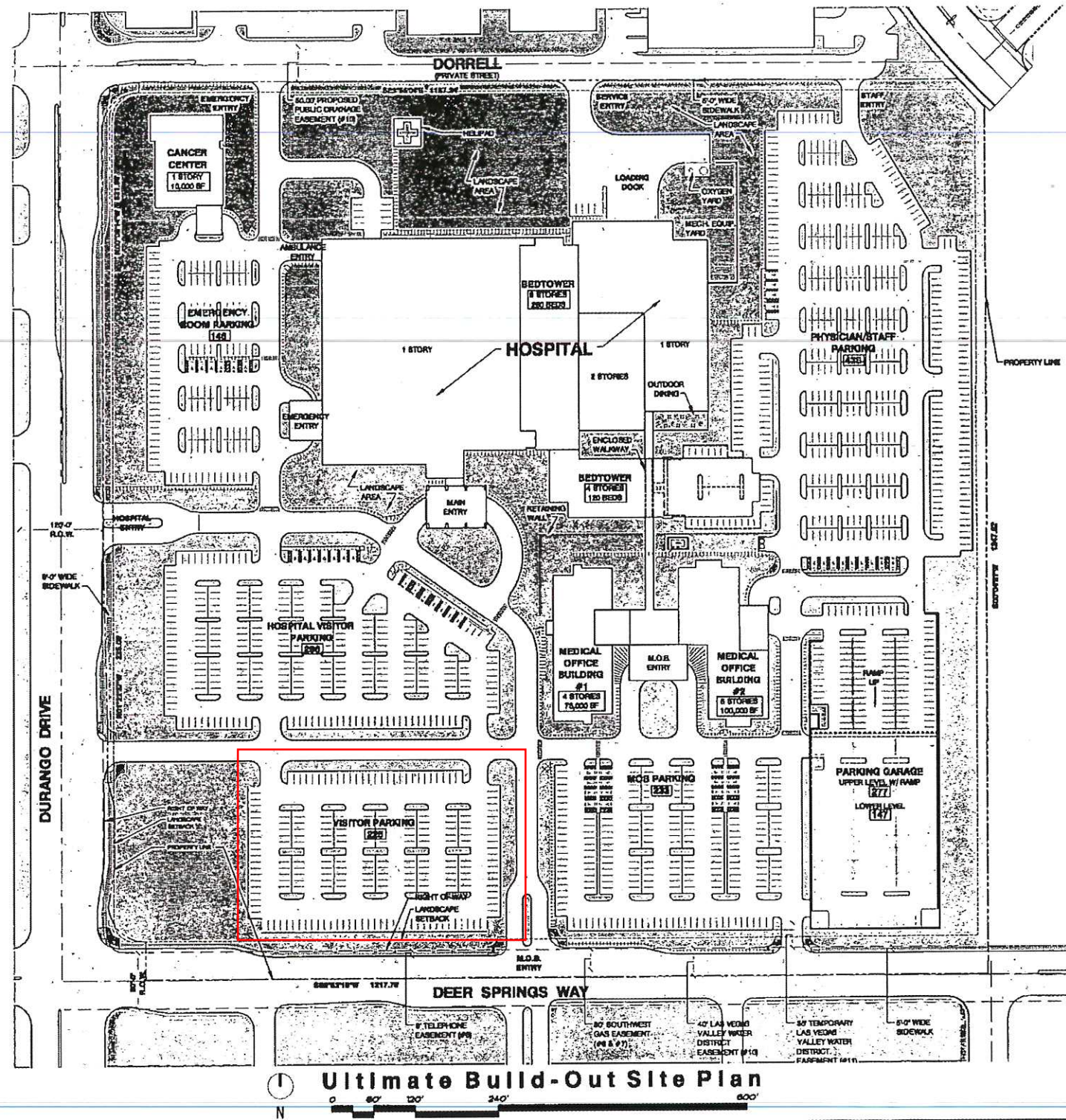
1. This Site Development Plan Review shall expire two years from date of final approval unless it is exercised or an Extension of Time is granted by the City Council.
2. All development shall be in conformance with the site plan and building elevations date stamped 05/09/05, except as amended by conditions 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.

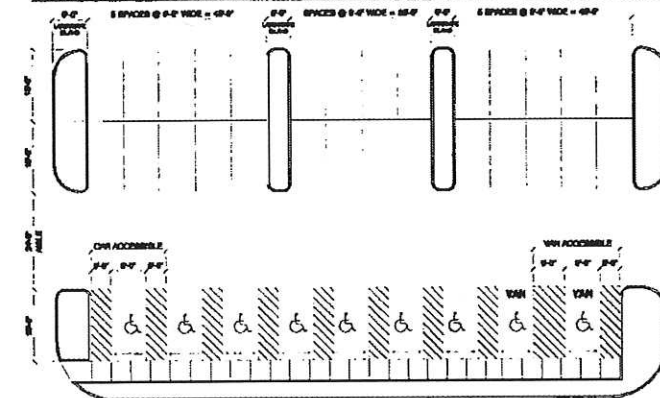


PARKING CALCULATIONS		SPACES REQUIRED	SPACES PROVIDED
HOSPITAL			
1.2 SPACES PER PATIENT BED			
BED TOWER (200 BEDS)		420	
FUTURE BED TOWER (100 BEDS)		180	
TOTAL HOSPITAL PARKING SPACES		600	728
MEDICAL OFFICE BUILDING #1			
1 SPACE PER 250 SF OF G.P. TO 2000 SF		428	570
MEDICAL OFFICE BUILDING #2			
1 SPACE PER 250 SF OF G.P. TO 2000 SF		570	430
CANCER CENTER (10,000 SF)			
1 SPACE PER 250 SF OF G.P. TO 2000 SF		42	42
TOTAL SITE PARKING AT BUILD-OUT		1640	1788
TOTAL HANDICAPPED ACCESSIBLE PARKING			
		27	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		63,700 SF
TOTAL GROSS FLOOR AREA ON SITE AT BUILD-OUT		730,700 SF

FLOOR AREA RATIO CALCULATIONS		
PROPERTY SIZE		1,840,028 SF (37.85 ACRES)
NET LOT AREA		1,840,028 SF - 52,566 SF (GROSS AREA NOT IN LOT) = 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.

RECEIVED

04 MARCH 2005

HKS

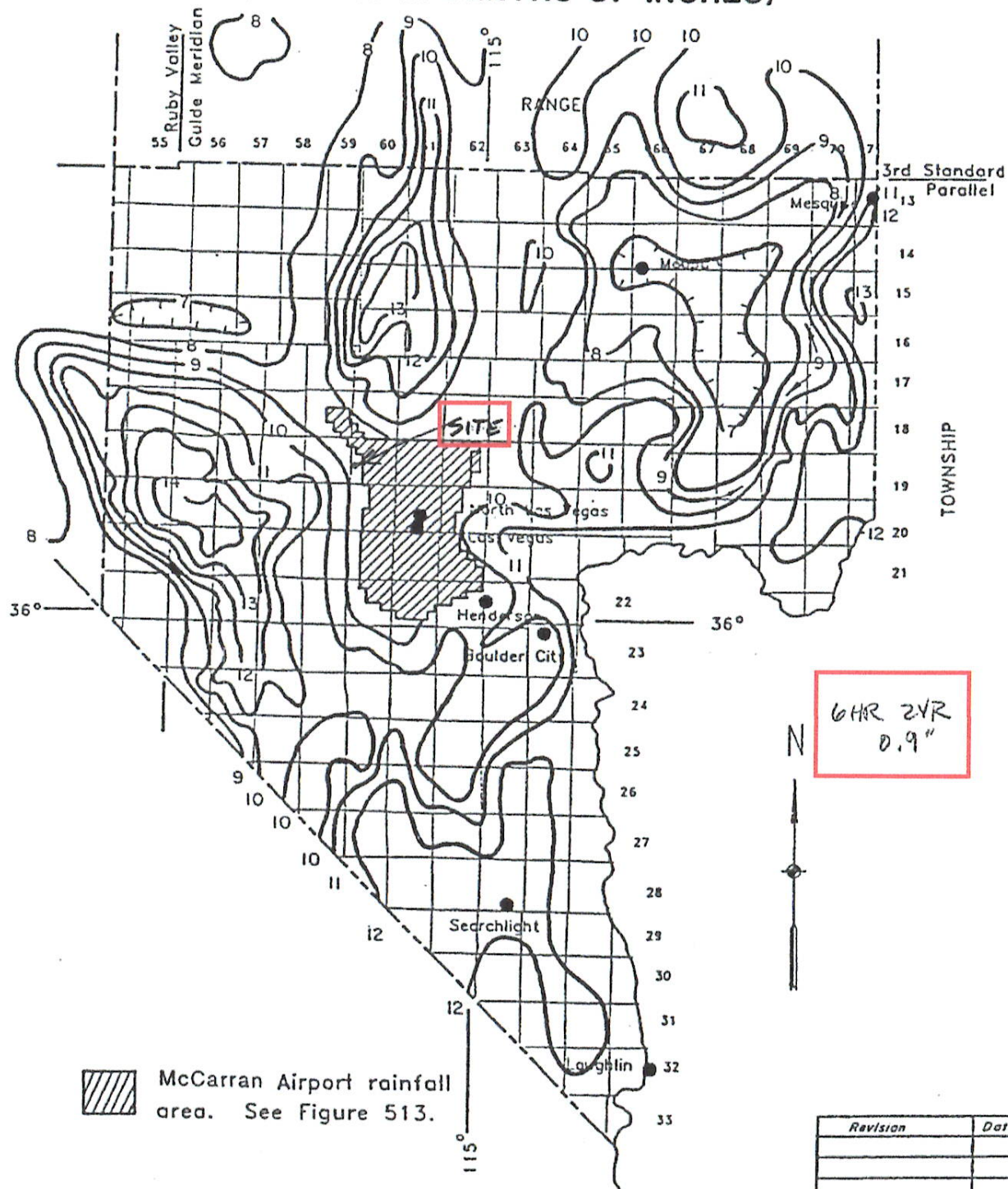
MAY 09 2005

SDR-6706

06/23/05 ADMIN

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

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



HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DEPTH-DURATION-FREQUENCY VALUES FOR McCARRAN AIRPORT RAINFALL AREA (IN INCHES)

<u>TIME</u>	<u>RECURRENCE INTERVAL</u>					
	<u>2-YR</u>	<u>5-YR</u>	<u>10-YR</u>	<u>25-YR</u>	<u>50-YR</u>	<u>100-YR</u>
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.

<i>Revision</i>	<i>Date</i>

**WRC
ENGINEERING**

REFERENCE:

USACE, Los Angeles District, 1988

TABLE 505

Water Quality Design Storm Calculation

Per HCDDM Section 1502.3

D₂ for 2 -Yr. 6- hr. storm per HCDDM Figure 501

$$D_2 \text{ Site} = 0.9 \text{ in.}$$

D₂ for McCarran Airport Area per HCDDM Table 505

$$D_2 \text{ McCarran} = 0.72 \text{ in.}$$

$$D_2 = D_2 \text{ Site} / D_2 \text{ McCarran}$$

$$0.9 / 0.72 = 1.25$$

Determine BMP Design Precipitation - 85th Percentile Rainfall Depth (D₈₅)

$$D_{85} = 0.32 \times D_2$$

$$0.32 \times 1.25 = 0.4$$

Calculate BMP Design Discharge

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

$$1.5042 \times 0.4 + 0.0066 = 0.60828$$

Find Adjustment Factor for Percent Impervious

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

$$Qp/A = 0.60 \times [(0.0059[85]) + 0.4688] = 0.59$$

$$Qp = Qp/A \times \text{Area}$$

$$0.59 \times 1.4 \text{ acres} = \underline{\underline{0.83}} \text{ cfs}$$

Project Description

Input Data

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

Roughness Segment Definitions

Results

10/20/2016 7:51:24 PM Bentley Systems, Inc. Haestad Methods Solution Center Bentley FlowMaster [08.01.071.00] 27 Siemens Company Drive Suite 200 W Watertown, CT 06795 USA +1-203-755-1666 Page 1 of 2

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

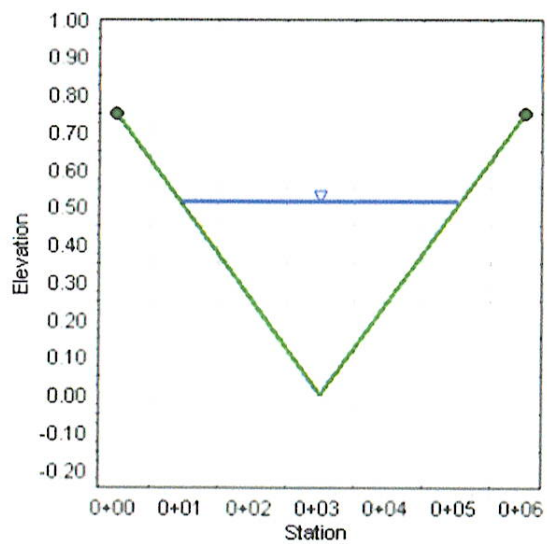
Project Description

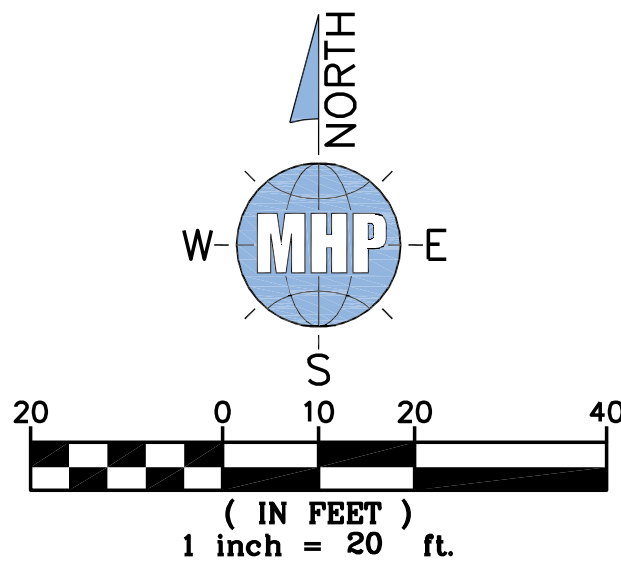
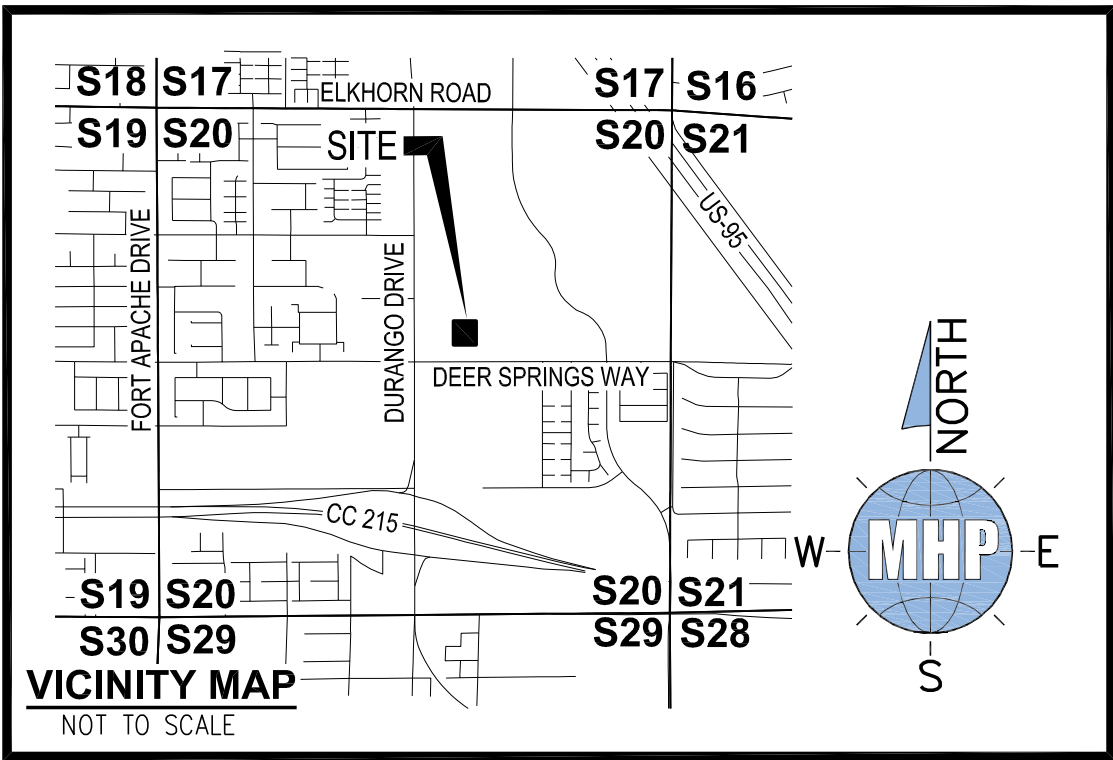
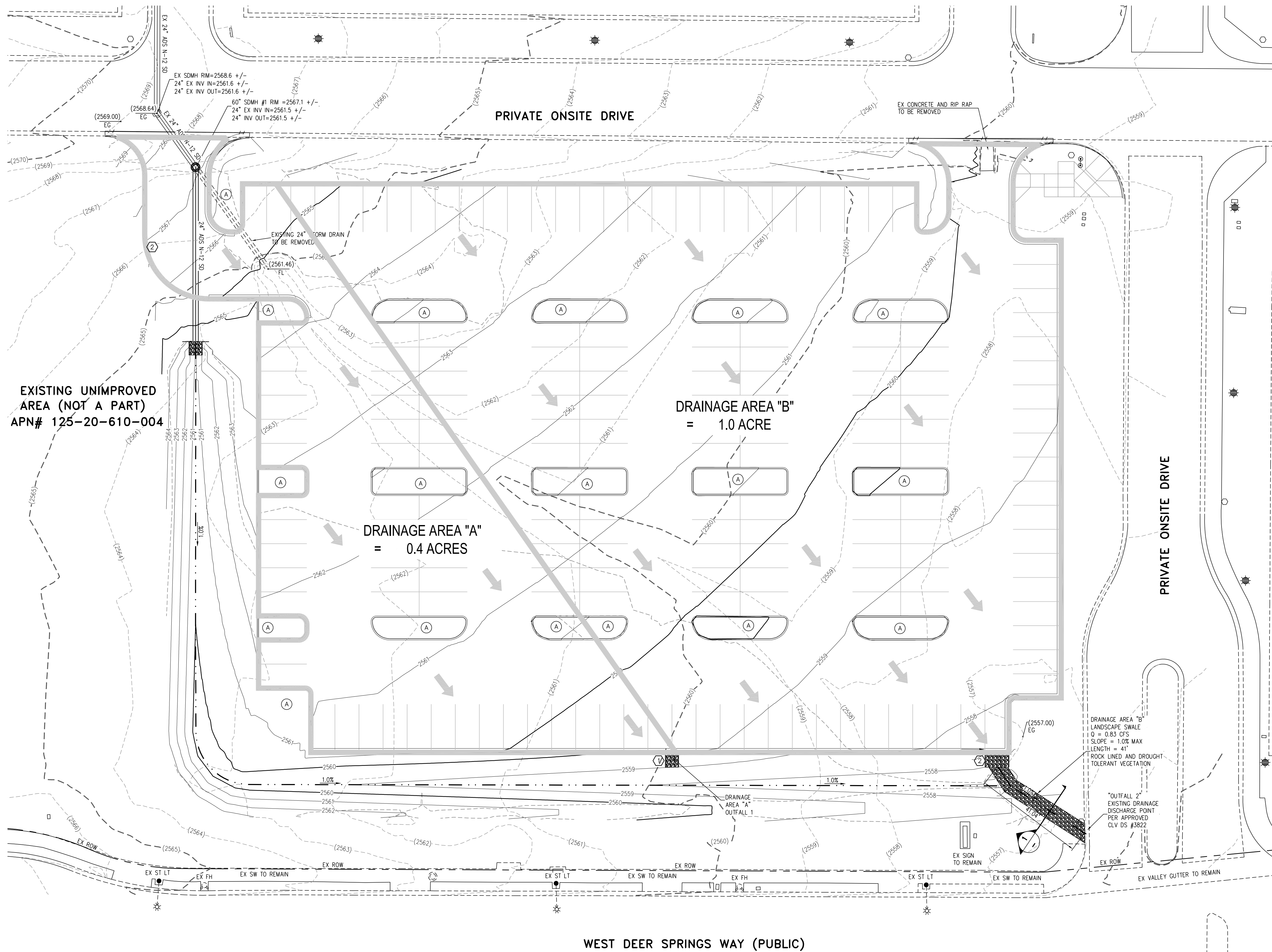
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	1.00	%
Normal Depth	0.51	ft
Discharge	1.00	ft ³ /s

Cross Section Image



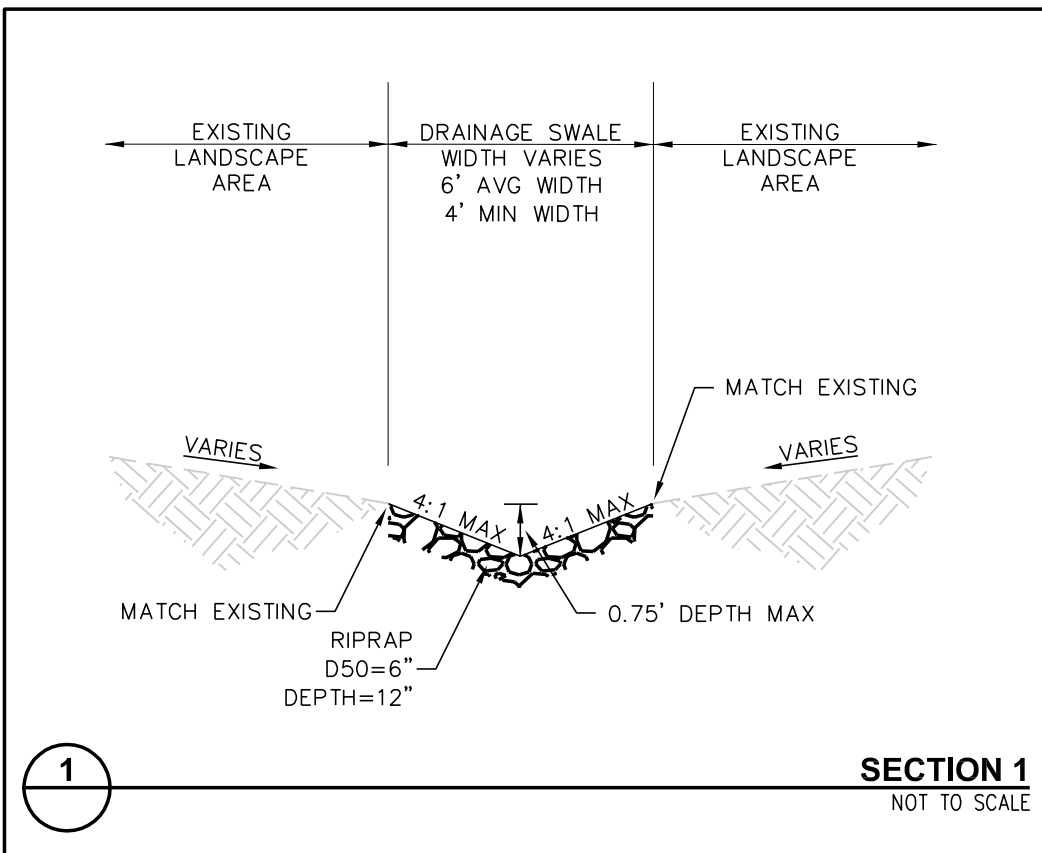


LEGEND

- Flow Direction
- Drainage Area Delineation
- Landscape Area, Removed from Impervious Calculations
- 2' Wide Depressed Curb
- 9' Wide Depressed Curb

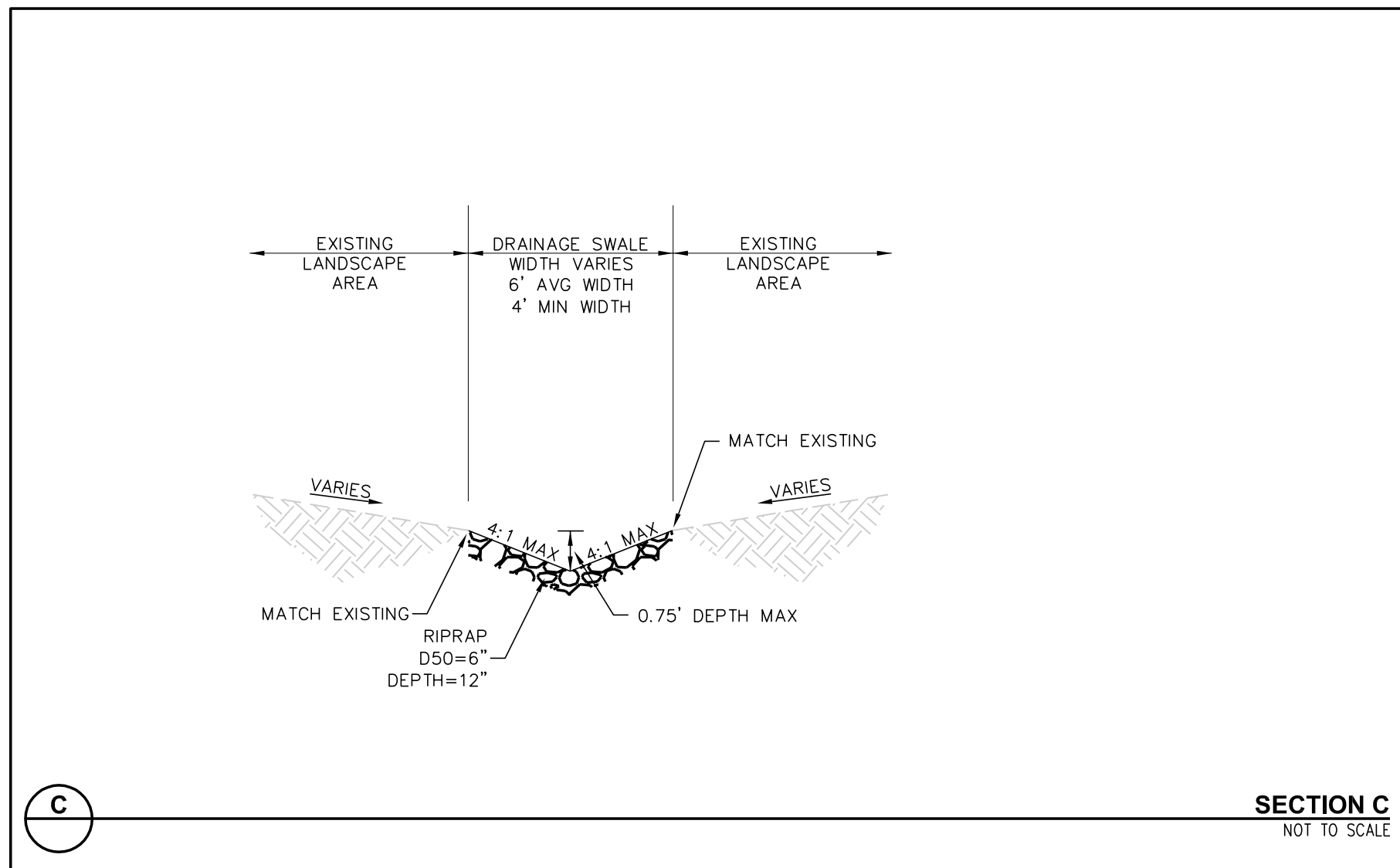
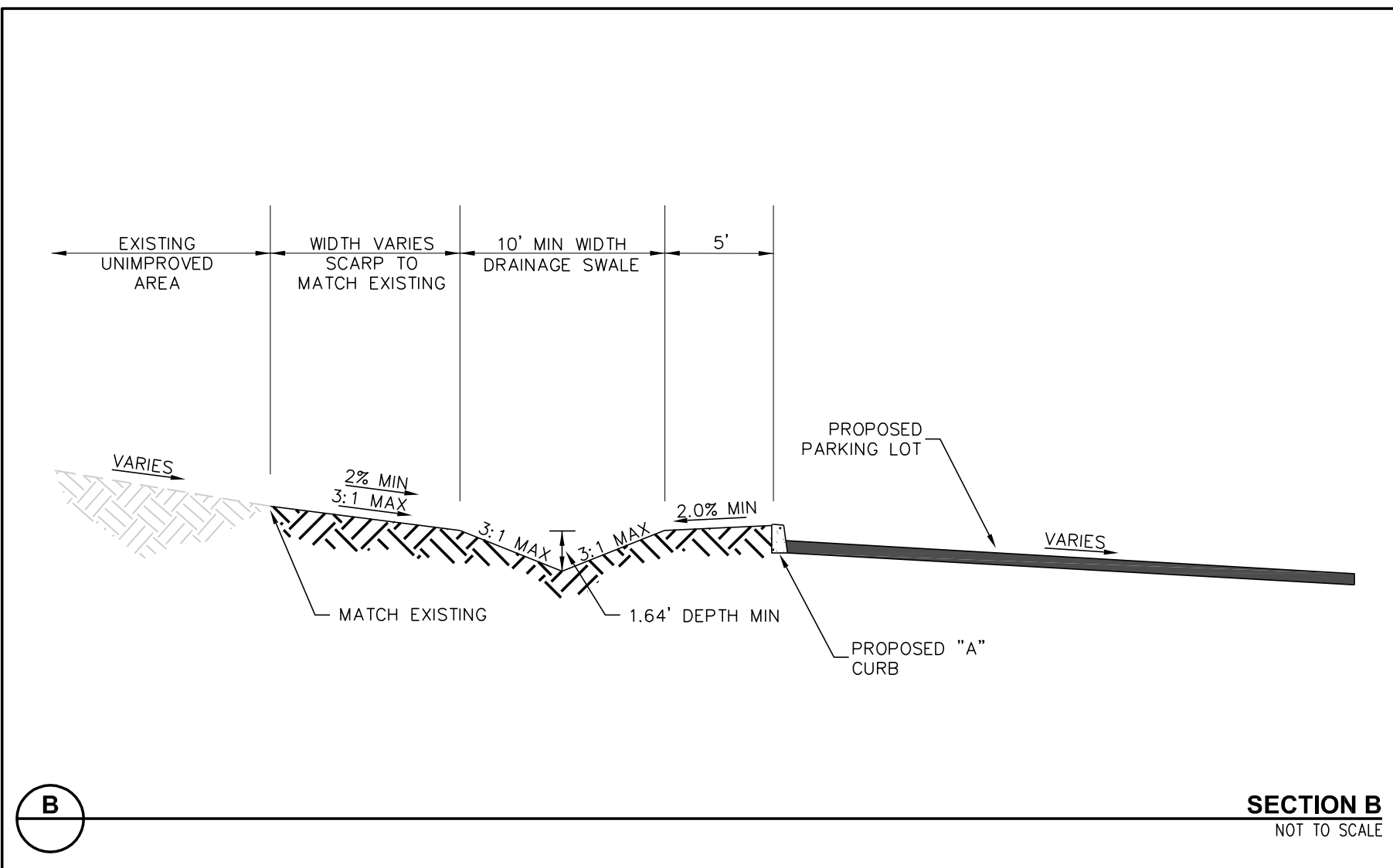
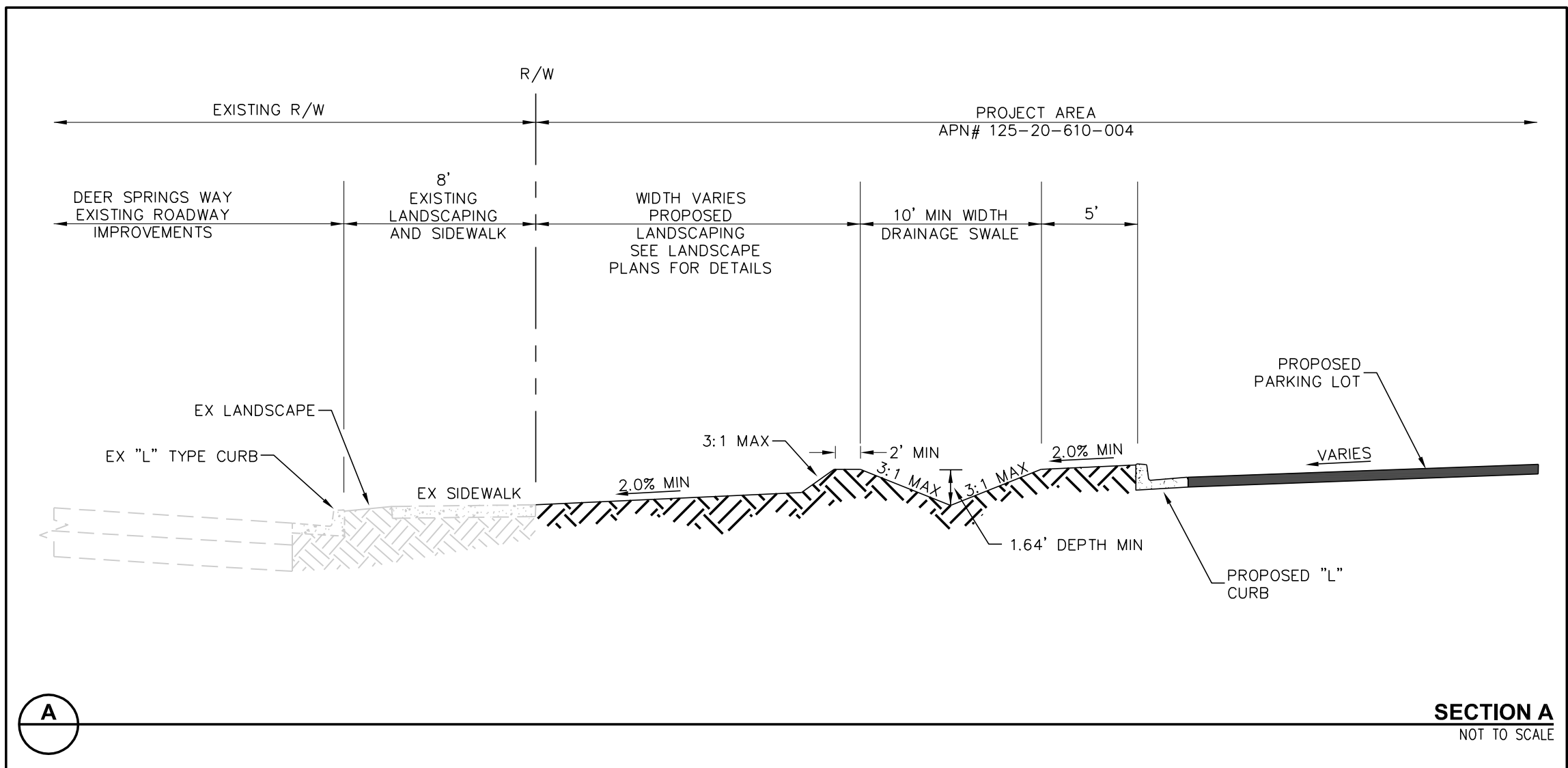
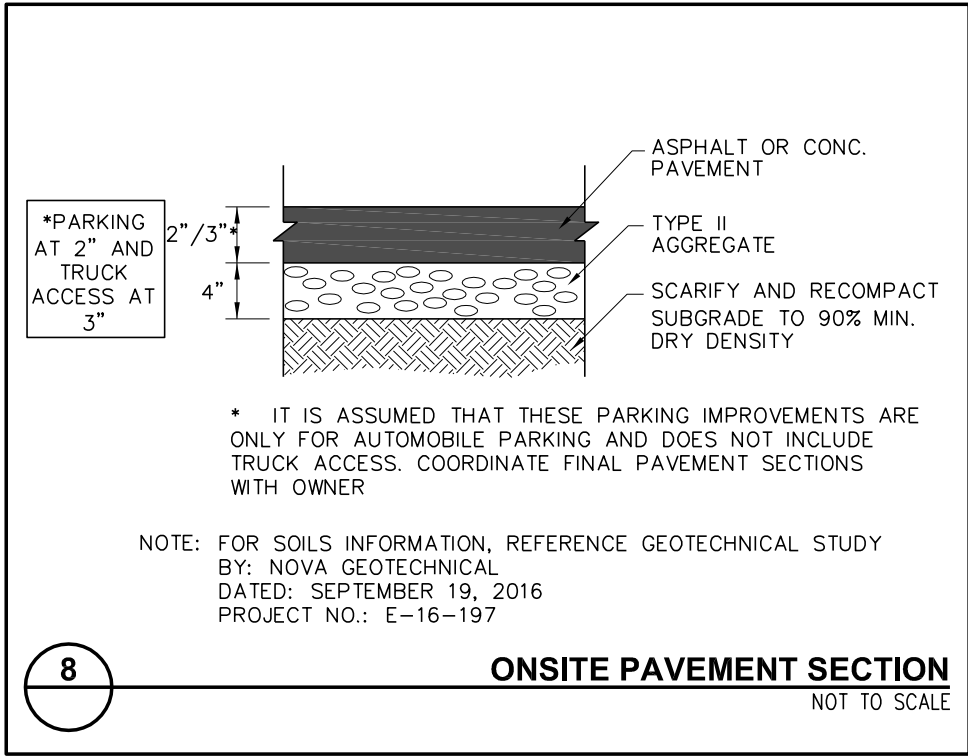
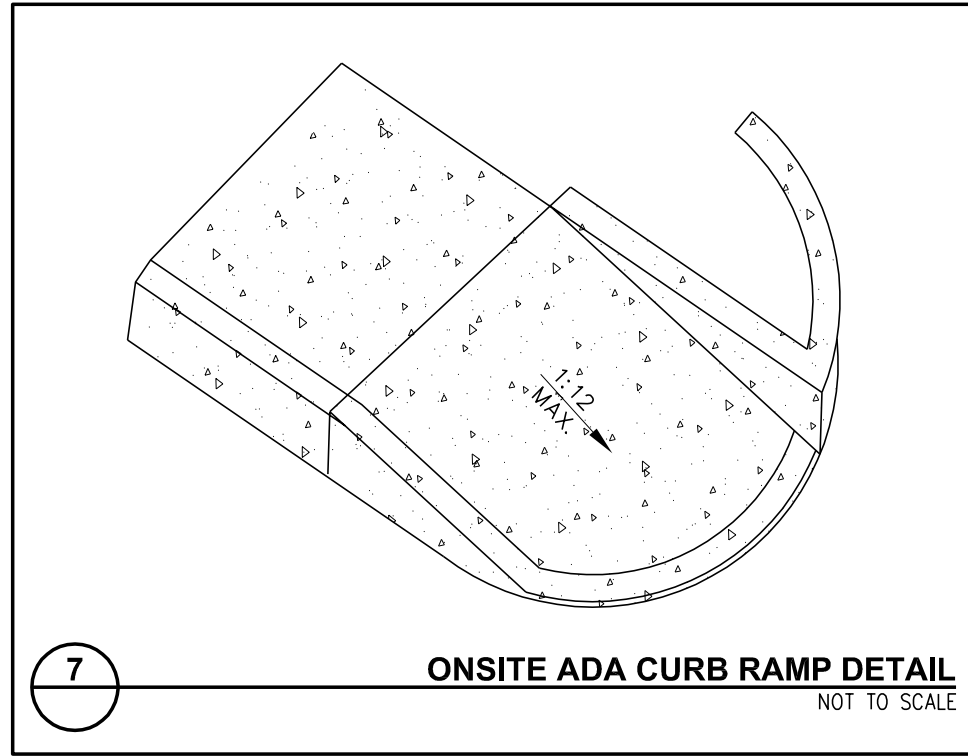
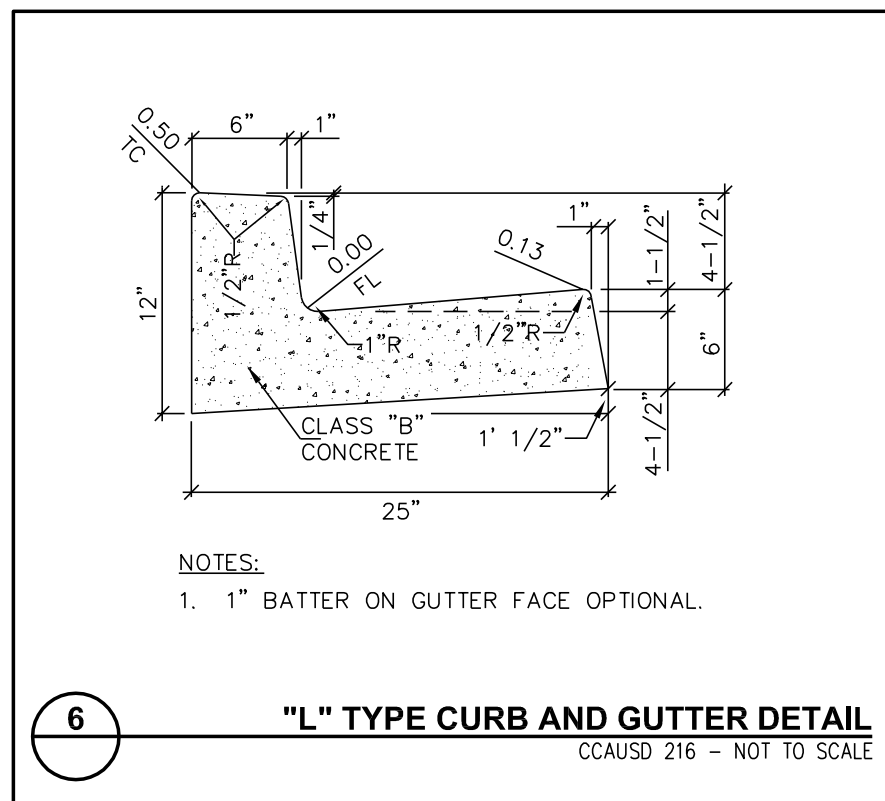
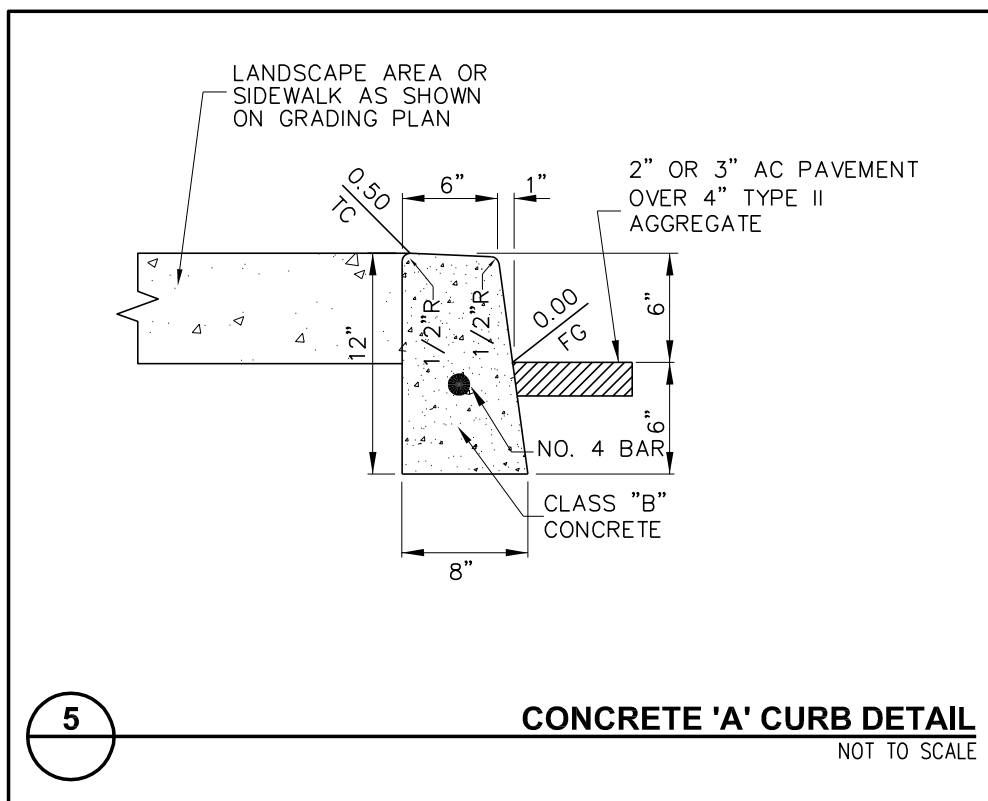
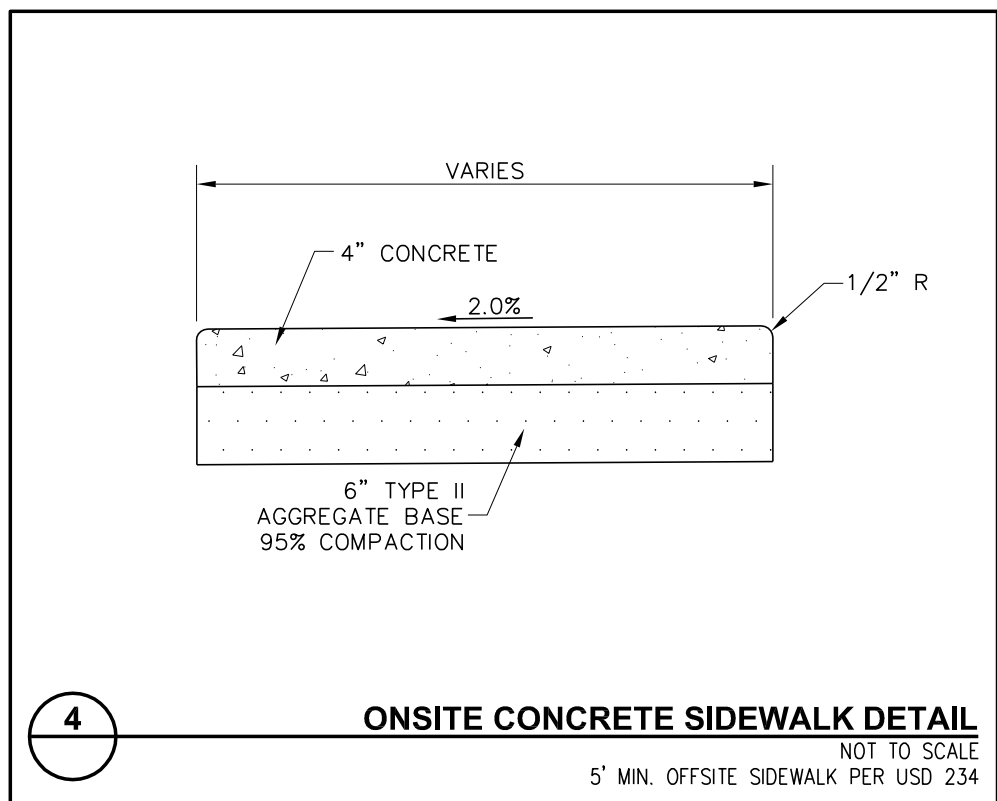
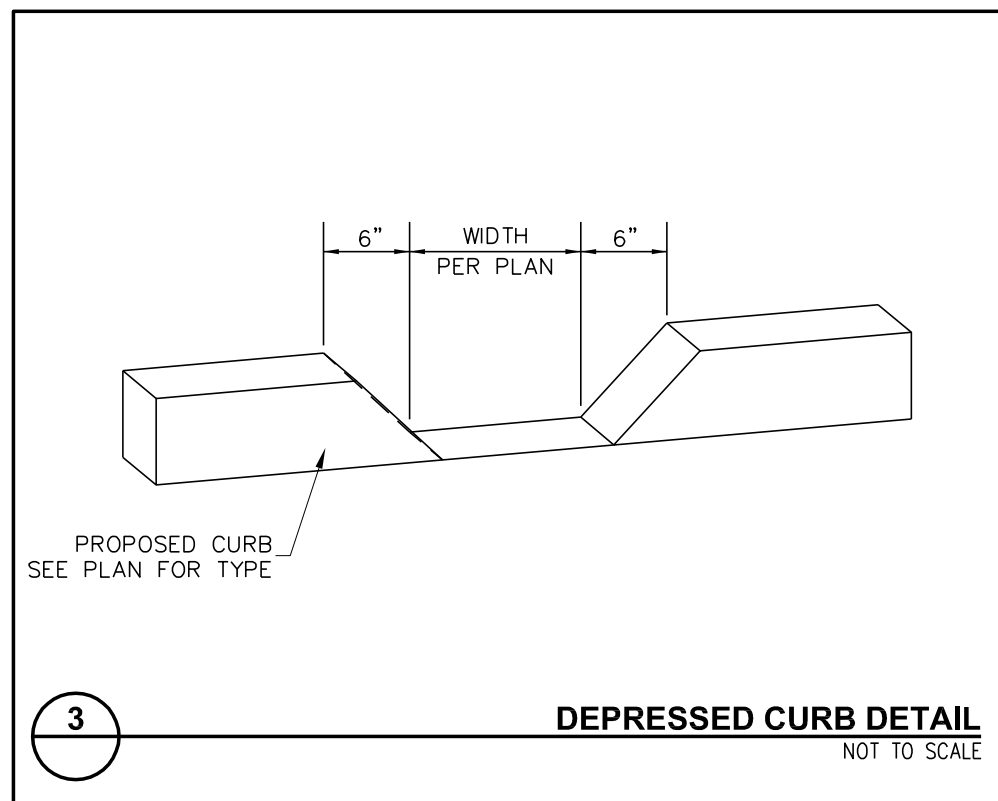
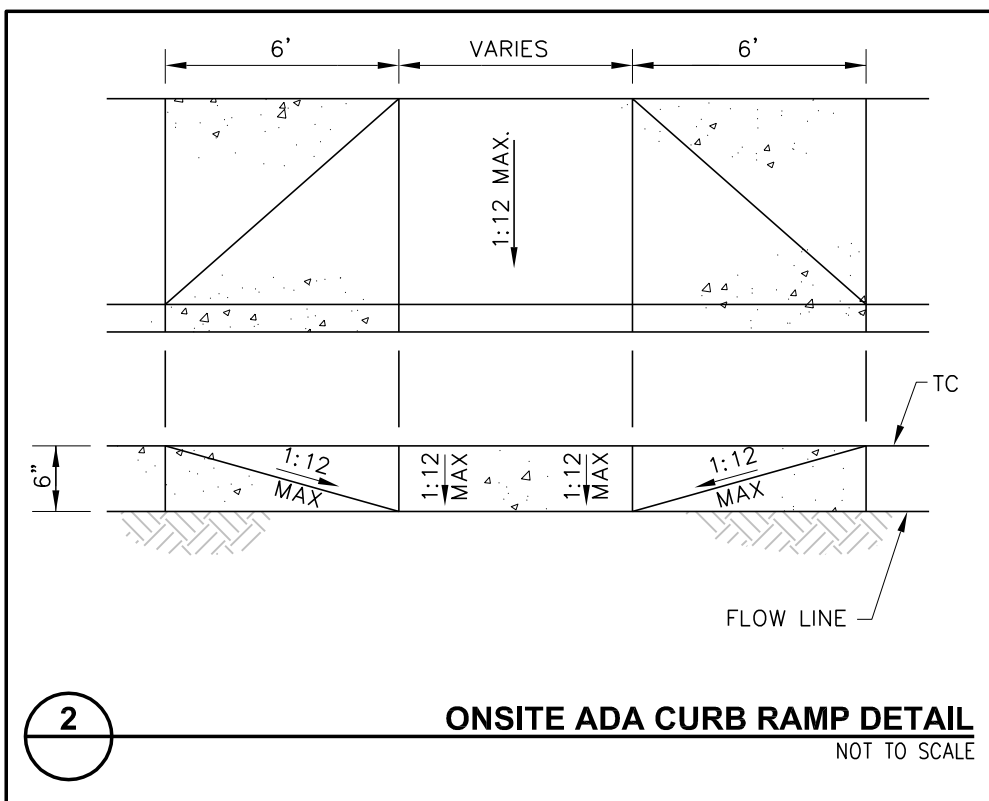
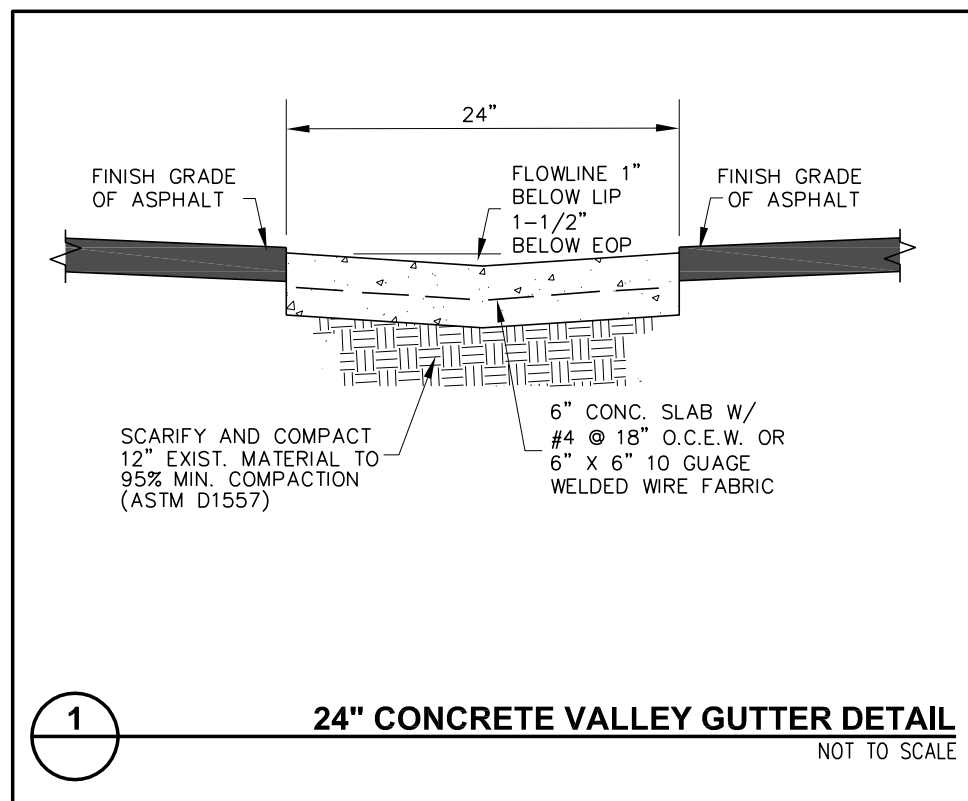
PARKING LOT DATA

- PER SECTION 1500 OF THE CCRFCD HCDM:
- PROPERTY SIZE = 33.93 ACRES (OVERALL DEVELOPMENT)
 - PROJECT AREA = 2.2 ACRES (PROPOSED IMPROVEMENTS)
 - BUILDING AREA = N/A (NO BUILDING PROPOSED)
 - TOTAL PERVIOUS AREA = 1.4 ACRES
 - PARKING LOT AREA (PLA) = 1.4 ACRES
 - MINIMUM PLA TO BE TREATED = 75% x 1.4 ACRES = 1.0 ACRE



DRAWING INFORMATION:		LOW IMPACT DEVELOPMENT PERIMETER SWALE BMP		VALLEY HEALTH SYSTEM, LLC 14400 METCALF AVENUE, OVERLAND PARK, KS 66223	
DRAWN BY:	12/27/2016	CITY OF LAS VEGAS, NEVADA			
DESIGNED BY:	12/27/2016				
CHECKED BY:	12/27/2016				
PROJECT NO.:	1600011				
SCALE: 1" = 20' HORZ. N/A VERT.		CENTENNIAL HILLS HOSPITAL PHASE 2 PARKING LOT EXPANSION		MHP LIMITED, LLC 6440 SKY POINTE DRIVE #140-385 LAS VEGAS, NEVADA 89131-4047 P: (702) 672-6886 INFO@MHPLIMITED.COM WWW.MHPLIMITED.COM	
					
				REV	
				DATE	
				BY	
				REVISIONS	

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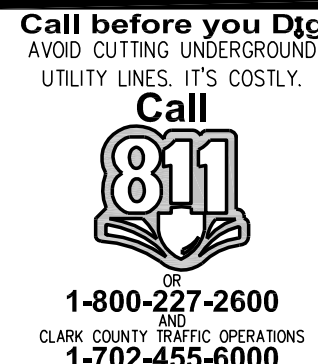
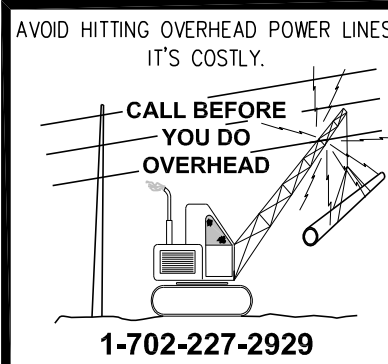


STORM DRAIN NOTE

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 USDOCA DRAWING NO. 421 \"STORMWATER QUALITY MANAGEMENT STAMP AND SIGN DETAIL\".



REV	DATE	BY	REVISIONS

VALLEY HEALTH SYSTEM, LLC 14400 MEACALF AVENUE, OVERLAND PARK, KS 66223	MHP LIMITED, LLC 8440 SKY POINTE DRIVE #40-385 LAS VEGAS, NEVADA 89131-4047 P: 702.672-8886 INFO@MHPLIMITED.COM WWW.MHPLIMITED.COM
DETAIL SHEET	CENTENNIAL HILLS HOSPITAL PHASE 2 PARKING LOT EXPANSION

DRAWING INFORMATION:	01/03/17
DRAWN BY:	JCF
DESIGNED BY:	JCF
CHECKED BY:	TBR
PROJECT NO.:	1600011
SCALE:	1" = 20' HORZ. 1/4" = 1' VERT.

PROFESSIONAL ENGINEER-STATE OF NEVADA THOMAS B. REGENHARDT JR. NO. 19585 CIVIL EXPIRES 12-31-17	01/03/2017
SHEET DT 5 OF 5 DRAWING NO.	

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