

DS #: 5167.2

APN: 138.03.305.004

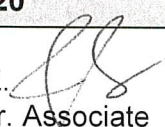
PROJECT: Update #2 for Ascent

SUBMITTAL: 5th

SCANNED BY/DATE:

CHECKED BY/DATE:



CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		September 22, 2020
TO: Land Development Services Department of Building & Safety		FROM: Jennifer Shinn, P.E.  Flood Control, Engr. Associate Department of Public Works
SUBJECT:	Drainage Study for: Update #2 for Ascent	
Cross Streets:	NWC of Pioneer Way & Hickam Ave	
File Number:	F:\Depot\DSMemos\DS5167E.doc	
Parcel Number:	138-03-305-006	
Zoning Action:	TMP-76248	
FEMA Flood Zone	YES	NO X
Proposed Storm Drain	YES	NO X
COPIES TO:		Per4mance Engineering
		Pinnacle Homes, Inc.
		Bart Anderson, P.E., DevCo
		CCPW

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 st Submittal	7/31/2019	8/20/2019	See Comments Below	\$400.00	3509288: \$400
2 nd Submittal	8/22/2019	9/9/2019		\$400.00	3539932: \$400
3 rd Submittal	11/4/2019	11/4/2019	Approved	N/C	N/C
4 th Submittal	7/1/2020	7/14/2020	Approved	\$100.00	3904679: \$100
5 th Submittal	9/21/2020	9/22/2020	Approved	\$100.00	3998463: \$100
			TOTAL FEES (LDDRS):	\$1000.00	----

REMARKS:

5th Submittal: Update #2 to remove/replace curb to revised slope in Pioneer Way to reflect field conditions.

4th Submittal: Update #1 to change L-Type curb to R-Type on interior streets

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

jks

T/R/S: T20S/R60E/03
AREA L-03

TECHNICAL DRAINAGE STUDY
Update 2
FOR
Pioneer and Hickam (aka ASCENT)

City of Las Vegas

PREPARED FOR:

Pinnacle Homes, Inc.
9225 W. Flamingo Road, Suite 190
Las Vegas, Nevada 89147
(702) 228-0720

PREPARED BY:

Per4mance Engineering, LLC.
4525 W. Hacienda Avenue, Suite 1
Las Vegas, Nevada 89118
(702) 569-9770

Per4mance Project No 19-0019

September 2020



HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL
DRAINAGE STUDY INFORMATION FORM

Name of Development: Pioneer and Hickam (aka Ascent) Update 2 Date: September 21, 2020
Location of Development: a) Descriptive (Cross Streets): North/South: Pioneer Way
East/West: Hickam Ave
b) Section: 03 Township: 20 S Range: 60 E
c) APN: 138-03-305-006

Name of Owner: BuildingNV, Inc.
Telephone No.: 702-228-0720 Fax No.: _____ E-mail Address: andy@pinnaclelv.com
Address: 9225 W. Flamingo Road, Ste 190 Las Vegas NV 89147

Contact Person – Name: Ray Fredericksen, P.E. Telephone No.: 702-569-9770
*E-mail Address: Rayf@per4mancelv.com Fax No.: _____
Firm: Per4mance Engineering
Address: 4525 W. Hacienda Ave., Ste 1 Las Vegas NV 89118

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: +/- 4.30ac Being Developed/Disturbed: +/- 4.30ac
2. Is a portion or all of the subject property located in a 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.): Residential
5. Approximate upstream land area which drains to the subject site: +/- 49 ac
6. Has the site drainage been evaluated in the past? ☒ Yes** ☐ No If yes, please identify documentation: _____
Ascent TDS, Per4mance Engineering

7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Pioneer Way surface flow

8. Briefly describe your proposed schedule for the subject project: ASAP



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.

***Newly Required Field**

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

Local Entity File No.	Revision	Date

REFERENCE:

STANDARD FORM 1

Updated 05/01/2008



September 21, 2020

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

**RE: Technical Drainage Study Update 2 for Pioneer and Hickam (aka Ascent)
Per4mance Project No.19-0019**

Mr. Sung:

This letter is provided to confirm that all items provided electronically on CD matches the hard copy paper version of the study.

If there is any question or additional information that is necessary, please contact our office at (702) 569-9770.

Sincerely,

Per4mance Engineering, llc.

A handwritten signature in blue ink, appearing to read "Ray Fredericksen".

Ray Fredericksen, P.E.
President



September 21, 2020

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

File No.: DS-051467
Project Name: Pioneer and Hickam (aka Ascent)
Project Location: NWC of Pioneer and Hickam
APN: 138-03-305-006

Dear Mr. Sung:

Per4mance Engineering, llc, is pleased to submit this Technical Drainage Study Update for the Pioneer and Hickam (aka Ascent) single family residential development. The purpose of this update is to support the change the west curb line slope and subsequent top of curb elevations along Pioneer Way from the north property line through the concrete valley gutter to centerline of Hickam Avenue proposed on the improvement plans for the proposed development and to address any drainage concerns pertinent to the site. The project site consists of approximately 4.30-acres and is located at the northwest corner of the Pioneer Way and Hickam Avenue intersection. The project site had been previously addressed in the *Technical Drainage Study for Ascent* (DS-051467; by Per4mance Engineering) hereinafter referred to as the Drainage Study. The site is located within a portion of Section 3, Township 20 South, and Range 60 East of the MDM in Clark County, Nevada and is identified by Assessor's Parcel Numbers (APN) 138-03-305-006. The Vicinity Map (Figure 1) indicating the approximate location of the site in relation to the surrounding major streets has been provided in the appendix.

Reason for Update

Due to existing field conditions being very flat a straight grade of 0.40% was not able to be maintained on the west curb line of Pioneer Ave and maintain a positive flow heading south through the ex. concrete valley gutter. The existing concrete valley gutter at the west leg of Pioneer Way and Hickam will need to be removed to the centerline of the street. The existing grades at the north property line and the existing concrete valley gutter at centerline have been re shot by the surveyors. We have designed the new west curb elevation to have a constant slope from north property line to the existing center of valley gutter. The new slope will be 0.22% sloping from north to south. In addition, the transition grades from the interior street and Hickam Avenue have been adjusted to provide positive drainage. Please refer to the revised grading plans included in the back cover of this update.

Finished Floor Elevation

The finished floor elevations remained unchanged from the original Grading plan.

4525 W. Hacienda Ave. Ste. 1, Las Vegas, NV 89118
Phone: (702) 569-9770 Email: rayf@per4mancelv.com

Hydrology & Street Hydraulics

The original drainage study determined the street flow volume and depth of flow. No changes have been made to the hydrologic site data. The hydraulic calculations have been updated to account for the west curb slope of 0.22-percent. The results of the Flowmaster calculations have been included in the appendix. The Pioneer Way analysis from the original TDS showed a water surface elevation of 0.77-ft deep with a velocity of 2.74 ft/s. The revised Flowmaster calculations based on the curb slope of 0.22-percent are as follows. (Section 4 = 60cfs, S=0.22%) shows a normal depth of 0.82-ft deep at a velocity of 2.46 ft/s. The $VxD = 2.01$. Therefore, the roadway street flow have been determined to meet the required CCRFCD HCDDM criteria

Conclusion

Based on the hydrologic and hydraulic evaluation provided, it has been concluded that the proposed design change in slope along the west curb line of Pioneer Way is in conformance with the previously approved study. The development of the project site will not cause any negative impacts to the adjacent and downstream properties.

If you have any questions or require additional information, please do not hesitate to contact our office at (702) 569-9770.

Sincerely,
PER4MANCE Engineering, llc

Ray Fredericksen, P.E.
President

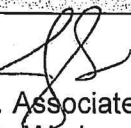


4525 W. Hacienda Ave. Ste. 1, Las Vegas, NV 89118
Phone: (702) 569-9770 Email: rayf@per4mancelv.com

Appendix

Appendix A

Approval Letter

CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		September 9, 2019
TO: Land Development Services Department of Building & Safety		FROM: Jennifer Shinn, P.E.  Flood Control, Engr. Associate Department of Public Works
SUBJECT:	Drainage Study for: Ascent	COPIES TO: Per4mance Engineering
Cross Streets:	NWC of Pioneer Way & Hickam Ave	Pinnacle Homes, Inc.
File Number:	F:\Depot\DSMemos\DS5167B.doc	Bart Anderson, P.E., DevCo
Parcel Number:	138-03-305-006	CCPW
Zoning Action:	TMP-76248	
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	7/31/2019	8/20/2019	See Comments Below	\$400.00	3509288: \$400
2 nd Submittal	8/22/2019	9/9/2019		\$400.00	3539932: \$400
TOTAL FEES (LDDRS):				\$800.00	=====

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

1. The site is also adjacent to the Clark County jurisdiction. The engineer must coordinate with Clark County Department of Public Works (CCPW) and incorporate any concerns for boundary conditions along the northern and western borders. CCPW concurrence is required prior to final acceptance of the study.
2. Along Tioga Way, show the existing flow line north of the subject site and demonstrate perpetuation/transition of flows into the proposed curb and gutter. Provide existing grades in the area.

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.

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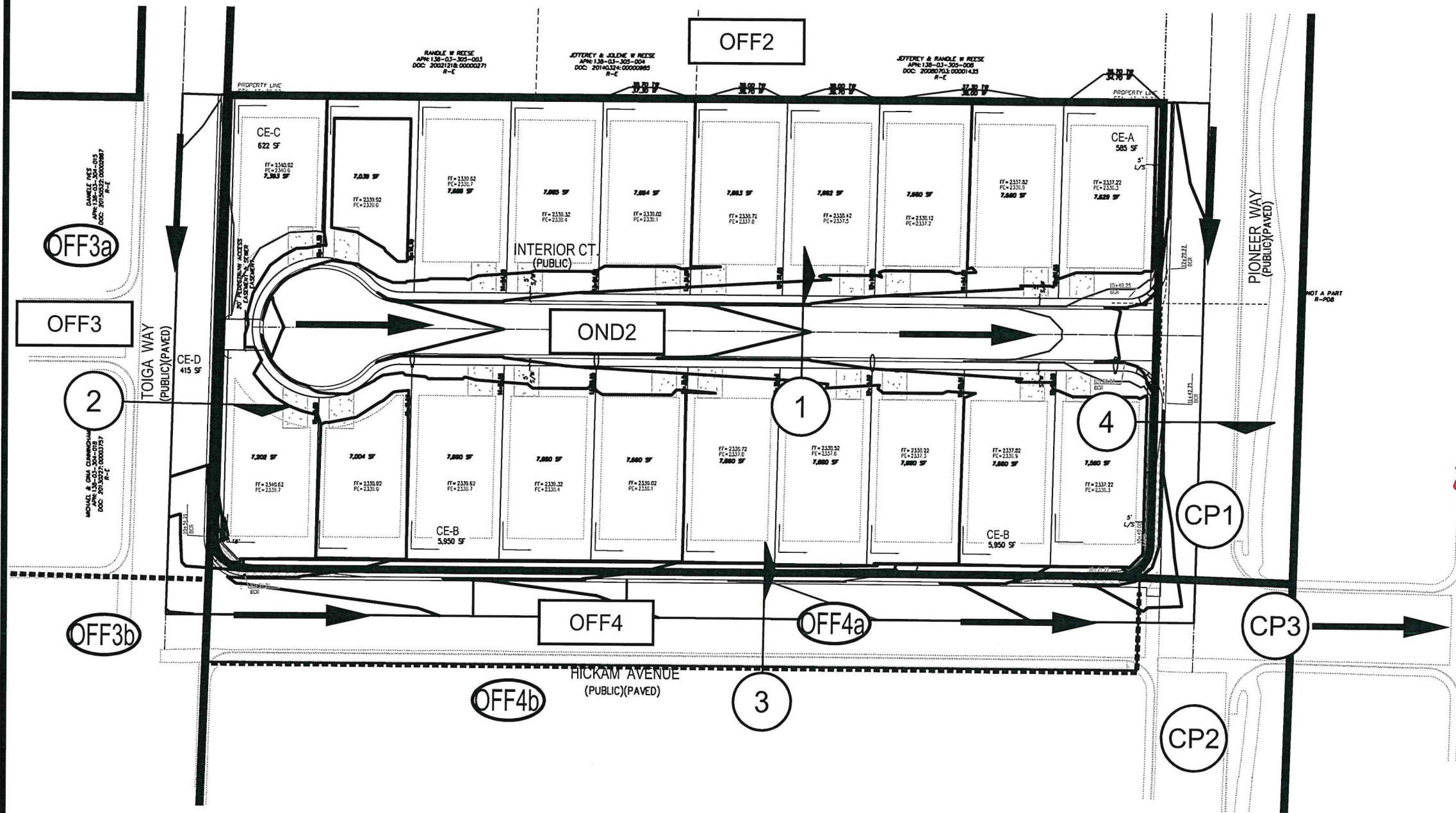
END OF REMARKS

jks

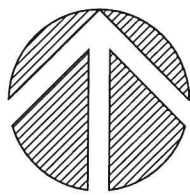
T/R/S: T20S/R60E/03
AREA L-03

Appendix B – Drainage Exhibit

DR2 Developed Condition Basin Map from Original Study



NOTE:
REFER TO THE OFFSITE DRAINAGE BASIN MAP (SHEET DR1) FOR THE EXTENTS
OF OFFSITE BASINS AND SUBBASINS



NORTH
GRAPHIC SCALE



(IN FEET)
1 inch = 80 ft.

LEGEND	
	DRAINAGE BASIN LINE
	PRORATED BASIN LINE
	EXISTING STORM DRAIN
	FLOW DIRECTION ARROW
	FLOW CROSS-SECTION
xx/xx cfs	10-YR/100-YR FLOWS
(xx/xx cfs)	10-YR/100-YR SD FLOWS
	DRAINAGE BASIN NAME
	PRORATED BASIN NAME
	REFERENCED BASIN NAME
	CONCENTRATION POINT
	REF CONCENTRATION POINT

Proposed Condition Flow Rate Summary			
Basin/Concentration Point ID	Area (ac)	Q ₁₀ (cfs)	Q ₁₀₀ (cfs)
OFF1	12.86	9	24
OFF2	15.92	9	25
OND	4.30	4	10
CP1	-	22	60
(OFF1+OFF2+OND)	-	-	-
OFF3	10.61	7	19
OFF4	9.24	9	21
CP2	-	16	40
CP3	-	38	100
(CP1+CP2)	-	-	-

Ultimate Condition Flow Rate Summary			
Basin/Concentration Point ID	Area (ac)	Q ₁₀ (cfs)	Q ₁₀₀ (cfs)
OFF1	12.86	7	21
OFF2	15.92	9	25
OND	4.30	4	10
CP1	-	20	56
(OFF1+OFF2+OND)	-	-	-
OFF3	10.61	7	19
OFF4	9.24	9	21
CP2	-	16	40
CP3	-	36	96
(CP1+CP2)	-	-	-

Prorated Flow Summary Developed Condition					
Basin	Q ₁₀ (cfs)	Q ₁₀₀ (cfs)	Area (acres)	Q ₁₀ Unit Flow (cfs/acre)	Q ₁₀₀ Unit Flow (cfs/acre)
OFF3	7	19	10.61	0.7	1.8
Subbasin	Q ₁₀ (cfs)	Q ₁₀₀ (cfs)	Area (acres)	Q ₁₀ Unit Flow (cfs/acre)	Q ₁₀₀ Unit Flow (cfs/acre)
OFF3a	2	5	2.80	0.7	1.8
OFF3b	5	14	7.81	0.7	1.8
TOTAL	7	19	10.61	0.7	1.8
OFF4	9	21	9.24	1.0	2.3
Subbasin	Q ₁₀ (cfs)	Q ₁₀₀ (cfs)	Area (acres)	Q ₁₀ Unit Flow (cfs/acre)	Q ₁₀₀ Unit Flow (cfs/acre)
OFF4a	1	2	0.75	1.0	2.3
OFF4b	8	19	8.49	1.0	2.3
TOTAL	9	21	9.24	1.0	2.3

Developed Condition Street Flow Summary - 100-Year						
Cross Section	Slope (%)	Flow Rate (cfs)	Depth (ft)	Velocity (fps)	DxV	Dry Lane (ft)
1 (Q = OND2)	0.50	10	0.45	1.96	0.88	N/A
2 (Q = OFF3a)	0.20	5	0.42	1.18	0.50	N/A
3 (Q = OFF3+OFF4a)	0.40	21	0.38	1.54	0.59	N/A
4 (Q = CP1)	0.70	60	0.54	2.57	1.39	N/A
	1.22		0.49	3.30	1.62	N/A
	0.40		0.82	2.46	2.01	N/A

SHEET
DR2

2 OF 2

NEVADA

ASCENT

CLARK COUNTY

DEVELOPED CONDITION
ONSITE DRAINAGE BASIN MAP

SHEET:

PROJECT No. 19-0060

SCALE 1"=80'

DATE JULY 2019

DRAWN BY RFF

PERFORMANCE
4525 W. HACIENDA AVENUE STE 1, LAS VEGAS, NEVADA 89118
TEL: (702) 669-9770 EMAIL: RAYF@PERFORMANCELV.COM

Appendix C – Hydraulic Calculations

Pioneer Way Flowmaster Calc

Worksheet for Pioneer Way 0.22%

Project Description

Flow Element:	Irregular Section
Friction Method:	Manning Formula
Solve For:	Normal Depth

Input Data

Channel Slope:	0.00220	ft/ft
Discharge:	60.00	ft ³ /s

Options

Current Roughness Weighted Method:	Improved Lotters
Open Channel Weighted Roughness:	Improved Lotters
Closed Channel Weighted Roughness:	Hortons

Results

Roughness Coefficient:	0.015	
Water Surface Elevation:	0.82	ft
Elevation Range:	0.00 to 0.63 ft	
Flow Area:	24.36	ft ²
Wetted Perimeter:	61.53	ft
Top Width:	60.00	ft
Normal Depth:	0.82	ft
Critical Depth:	0.72	ft
Critical Slope:	0.00514	ft/ft
Velocity:	2.46	ft/s
Velocity Head:	0.09	ft
Specific Energy:	0.91	ft
Froude Number:	0.68	
Flow Type:	Subcritical	

Segment Roughness

Start Station	End Station	Roughness Coefficient
(0+00.00, 0.60)	(0+07.00, 0.17)	0.013
(0+07.00, 0.17)	(0+53.00, 0.17)	0.016
(0+53.00, 0.17)	(0+60.00, 0.60)	0.013

Section Geometry

Station	Elevation
---------	-----------

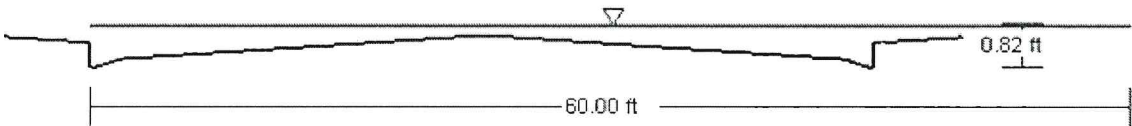
Worksheet for Pioneer Way 0.22%

Station	Elevation
0+00.00	0.60
0+05.00	0.50
0+05.50	0.50
0+05.50	0.00
0+07.00	0.13
0+07.00	0.17
0+30.00	0.63
0+53.00	0.17
0+53.00	0.13
0+54.50	0.00
0+54.50	0.50
0+55.00	0.50
0+60.00	0.60

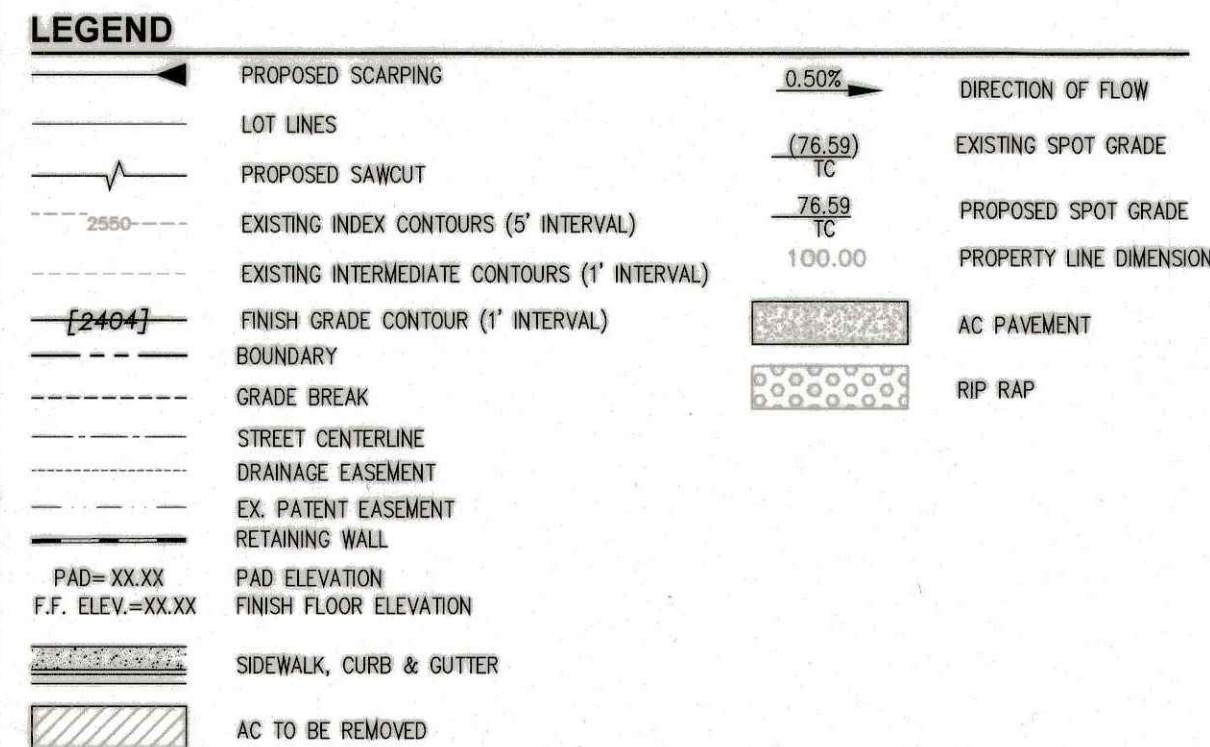
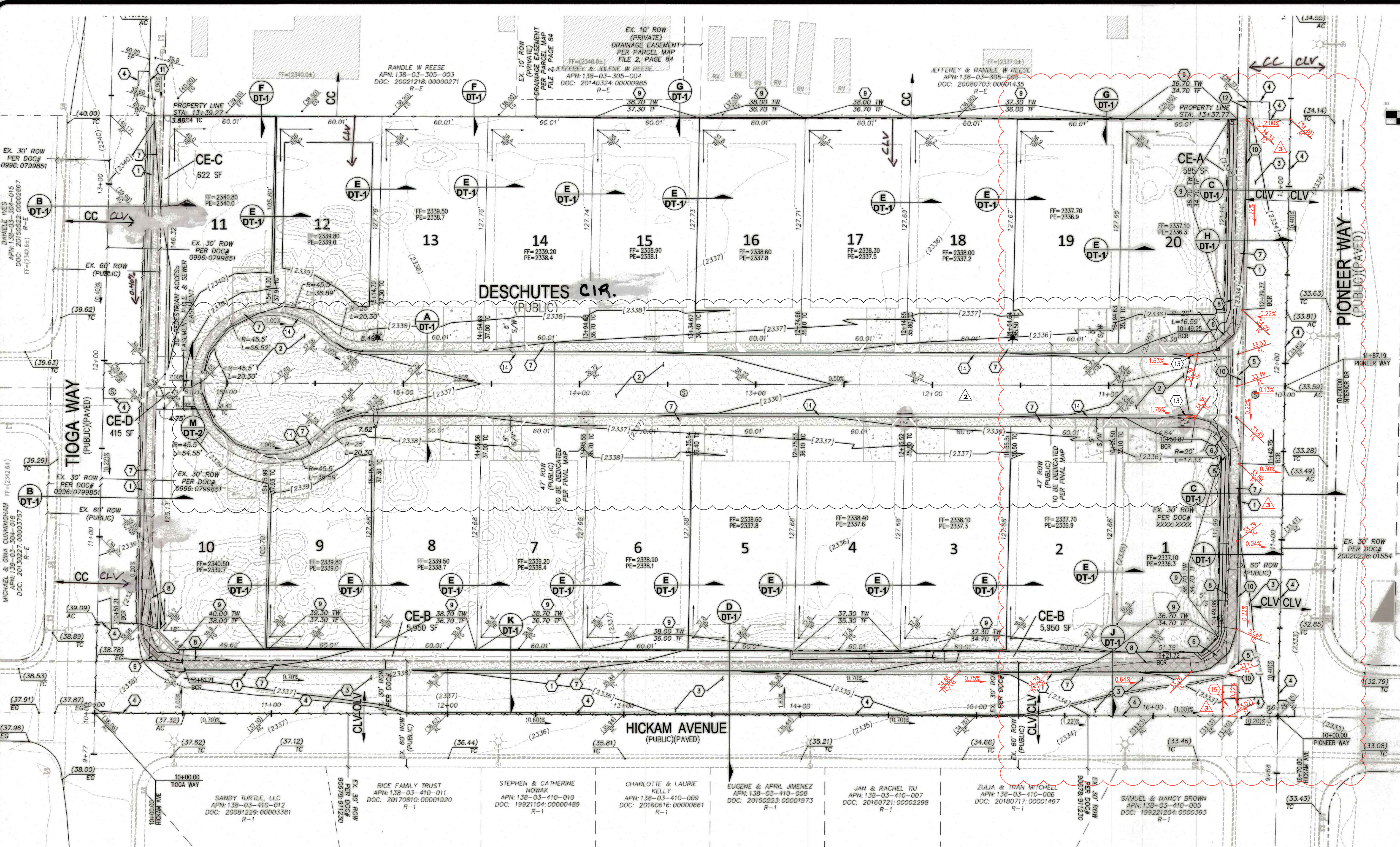
Pioneer
Cross Section for Pioneer Way 0.22%

Project Description	
Flow Element:	Irregular Section
Friction Method:	Manning Formula
Solve For:	Normal Depth

Section Data		
Roughness Coefficient:	0.015	
Channel Slope:	0.00220	ft/ft
Normal Depth:	0.82	ft
Elevation Range:	0.00 to 0.63 ft	
Discharge:	60.00	ft³/s



V: 3.333333 
H: 1



LIST OF BONDABLE DRAINAGE QUANTITIES:

DRAINAGE	PUBLIC	PRIVATE
1. "L" CURB	1222	-
2. CONC. SOLID GROUTING ON WALLS (DE)	363	-
3. 8" CONCRETE VALLEY GUTTER	970	-
4. "R" TYPE CURB	1188	-
5.		
6.		
7.		

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

EARTHWORK QUANTITIES

THIS INFORMATION SHOULD BE USED FOR BIDDING PURPOSES ONLY. ALL CONTRACTORS ARE RESPONSIBLE FOR VERIFYING THEIR OWN EARTHWORK QUANTITIES. THESE ESTIMATES ARE SUBJECT TO CHANGE BASED ON SITE SPECIFIC GEOTECHNICAL EVALUATIONS.

GEOTECHNICAL REPORT
REPORT PREPARED BY: SOUTHWEST GEOTECHNICAL
PROJ. No. 196251
DATED: JULY 23, 2019

PAD, FINISH FLOOR ELEVATION NOTE:
THE FINISH FLOOR ELEVATION IS TO BE CONSTRUCTED AS NOTED ON THIS PLAN. THE PAD ELEVATION IS A FUNCTION OF THE REQUIRED FINISH FLOOR ELEVATION LESS THE STRUCTURAL SECTION OF THE SLAB, BASE AND SUB BASE MATERIAL DETERMINED BY THE STRUCTURAL ENGINEER ASSIGNED TO THIS PROJECT. ALL SUB GRADE, SUBSURFACE, SOIL PREPARATION AND GEOTECHNICAL ENGINEERING PARAMETERS ARE DICTATED BY THE FOLLOWING REPORT
REPORT #196251 BY SOUTHWEST GEOTECHNICAL
STAMPED & DATED: JULY 23, 2019

FLOOD ZONE NOTE:
ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM), COMMUNITY PANEL 2135F OF 4090, MAP NUMBER 300032125F, EFFECTIVE NOVEMBER 16, 2011, SITE IS LOCATED WITHIN ZONE "X" (UNSHADED). ZONE "X" (UNSHADED) IS DESCRIBED AS AN AREA OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.

CURB NOTE:
CURB FLOW LINES LESS THAN 0.60% GRADE SHALL BE WATER TESTED. ANY CURB THAT DOES NOT FLOW SHALL BE REMOVED AND REPLACED AT NO COST TO THE CITY.

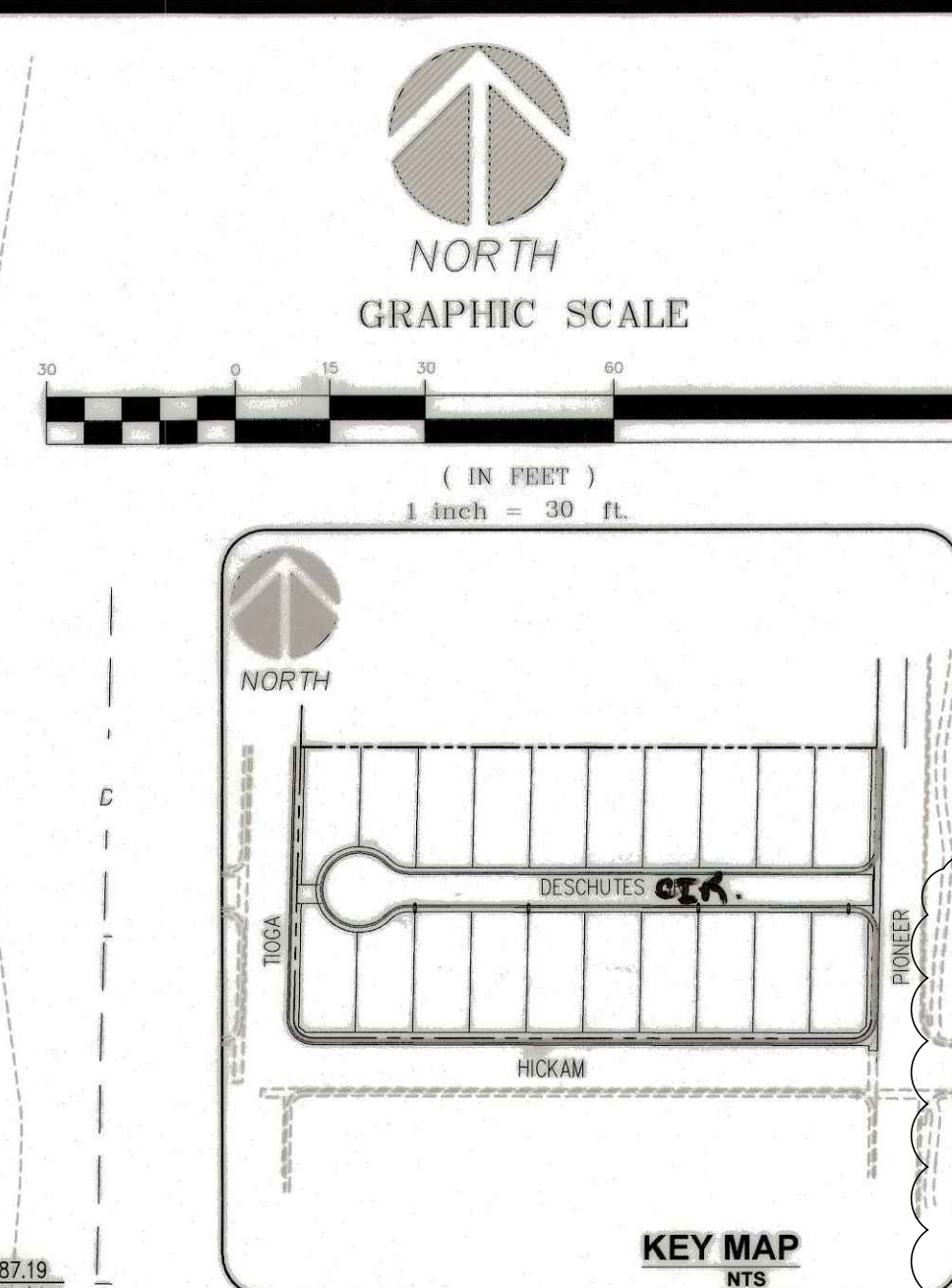
STORMWATER MANAGEMENT NOTES:
A) THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL EACH DAY REMOVE ALL SEDIMENT, MUD CONSTRUCTION DEBRIS, OR POTENTIAL POLLUTANTS THAT MAY HAVE BEEN DISCHARGED TO, OR ACCUMULATED IN, THE PUBLIC RIGHTS OF WAY OF CLARK COUNTY AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS SITE DEVELOPMENT OR CONSTRUCTION PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM SEWER SYSTEM.
B) ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN CLARK COUNTY TITLE 24.40 AND THE LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDANCE MANUAL.
C) TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. SOME EXCEPTIONS MAY APPLY. REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.5.
D) AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT AREA EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS, AND ALL BMPs WEEKLY AND WITHIN 24 HOURS AFTER A RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY. SOME EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY. SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITIES. REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVR100000, SECTION III.A.2.
E) ACCUMULATED SEDIMENT IN BMPs SHALL BE REMOVED WITHIN 7 DAYS AFTER A STORMWATER RUNOFF EVENT OR PRIOR TO THE NEXT ANTICIPATED STORM EVENT, WHICHEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50% OR MORE.

CLARK COUNTY DEPARTMENT OF PUBLIC WORKS
DEVELOPMENT REVIEW
ACCEPTANCE OF PLANS FOR FILING
BY: *[Signature]* 4/4/2020
ACCEPTANCE OF THESE PLANS FOR FILING SHALL NOT BE CONSTRUED TO BE A PERMIT OR AN APPROVAL OF ANY VIOLATION OF ANY OF THE PROVISIONS OF THE STATE OR COUNTY LAWS AND/OR SPECIFICATIONS. CLARK COUNTY SHALL BE HELD FREE FROM DAMAGES WHICH MAY RESULT FROM THE CONSTRUCTION OF THE IMPROVEMENTS FROM THE ENGINEERING DESIGN DERIVED HEREIN.
NOTE: POWER POLES AND/OR OTHER EXISTING FACILITIES NOT IN THEIR PROPER LOCATION BASED ON PROPOSED IMPROVEMENTS SHOWN HEREON, WILL BE RELOCATED AT NO EXPENSE TO CLARK COUNTY.

- GRADING NOTES**
1. INSTALL "L" TYPE CURB AND GUTTER PER CCAUSD #216
 2. INSTALL 2.5" AC OVER 4.5" TYPE II AGGREGATE BASE
 3. INSTALL 3.5" AC OVER 5.0" TYPE II AGGREGATE BASE
 4. SAWCUT AND WATCH EXISTING PAVEMENT PER USDOCA 500.4. DUE TO THE EXISTING FIELD CONDITIONS AND VARYING SLOPES THE LENGTH AND WIDTH OF SAWCUT AND PATCH TO BE DETERMINED BY THE INSPECTOR IN THE FIELD. WIDTHS MAY VARY.
 5. INSTALL 8-FT CROSS GUTTER PER CCAUSD #228.
 6. INSTALL SIDEWALK RAMP USING ARMOR TILE TRUNCATED DOMES PER CCAUSD NO. 235. A & B EQUAL 8-FEET UNLESS OTHERWISE NOTED.
 7. INSTALL CONCRETE SIDEWALK (4" THICK OVER 6" TYPE 2 AGGREGATE BASE) PER CCAUSD #234.
 8. SIGHT VISIBILITY ZONE
 9. CONSTRUCT RETAINING WALL, HEIGHT PER PLAN. STRUCTURAL DESIGN BY OTHERS
 10. REMOVE EXISTING CURB
 11. TRANSITION ASPHALT TO ALLOW EARTHEN FLOW LINE TO PROVIDE POSITIVE FLOW INTO NEW "L" CURB
 12. TRANSITION "L" CURB. START BY MATCHING EXISTING "A" CURB AND TRANSITIONING A CURB TO "L" CURB BY PROJECT PROPERTY LINE
 13. INSTALL 10-FT TRANSITION FROM "R" CURB TO "L" CURB
 14. INSTALL "R" TYPE CURB AND GUTTER PER CCAUSD #217.3.51
 15. REMOVE AND REPLACE 8-VALLEY GUTTER TO CENTERLINE OF HICKAM PER CCAUSD #228

- GRADING NOTES**
1. PERMANENCE ENGINEERING SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCY IN THE PLANS OR CONDITIONS IN THE FIELD.
 2. ALL WORK TO BE PERFORMED OUTSIDE OF THE PROJECT BOUNDARY AND ON PRIVATE PROPERTY SHALL NOT BE PERFORMED UNTIL WRITTEN PERMISSION AND EASEMENT HAVE BEEN OBTAINED FROM THE OFFSITE OWNER AND GIVEN TO THE CLARK COUNTY.
 3. FOR AREAS THAT ARE FLATTER THAN 3:1 SLOPE, OR LESS THAN 1' ELEVATION DIFFERENCE, SCARPS ARE NOT SHOWN ON PLAN FOR CLARITY PURPOSES.
 4. ALL SLOPE AREAS SHALL HAVE A MINIMUM ONE FOOT SHOULDER NEXT TO WALL PRIOR TO STARTING SLOPE.
 5. THERE SHALL BE NO GRUBBING, GRADING OR CLEARING PRIOR TO THE APPROVAL OF THE CIVIL IMPROVEMENT PLANS AND FINAL GRADING PLANS BY THE PUBLIC WORKS DIRECTOR AND THE ISSUANCE OF A GRADING PERMIT. GRUBBING, GRADING AND CLEARING ARE TO OCCUR ONLY WITHIN THE AREAS IDENTIFIED ON THE APPROVED GRADING PLAN.
 6. ALL PORTIONS OF THE SITE OR LOT TO BE LEFT UNGRADED ARE TO REMAIN UNDISTURBED AREAS AND ARE NOT TO BE USED FOR STOCKPILING OF MATERIALS OR EXCESS FILL.
 7. DRIVEWAYS PER THE GRADING PLANS SHALL NOT EXCEED 4.0% MAX DRIVEWAY SLOPES.
 8. FOR ALL TRUNCATED NUMBERS ADD 2300'-FT TO THE ELEVATION.

DRAINAGE STUDY NOTE:
I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY ON FILE AT CITY OF LAS VEGAS FOR THIS PROJECT. 055167
BY: *[Signature]* 2/20/20
RAY F. FREDERICKSEN, P.E. No. 17471 DATE



BENCHMARK
CITY OF LAS VEGAS VERTICAL CONTROL
BENCHMARK No. "1LV004SEB" 2005-2007
RIVET AND PLATE IN TOP OF CURB, SOUTHWEST CORNER OF BUFFALO DRIVE AND HICKAM AVENUE
ELEVATION = 714.772 METERS
2345.05 FEET
CITY OF LAS VEGAS VERTICAL CONTROL DATUM BASED UPON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD '88)
BASIS OF BEARINGS
NORTH 89°51'11" WEST BEING THE SOUTH LINE OF THE SOUTHEAST QUARTER (SE 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 3, TOWNSHIP 20 SOUTH, RANGE 60 EAST, M.D.M., SAID LINE ALSO BEING THE CENTERLINE OF HICKAM AVENUE AS SHOWN IN FILE 134, PAGE 80 OF SURVEYS ON FILE AT THE CLARK COUNTY, NEVADA, RECORDER'S OFFICE.

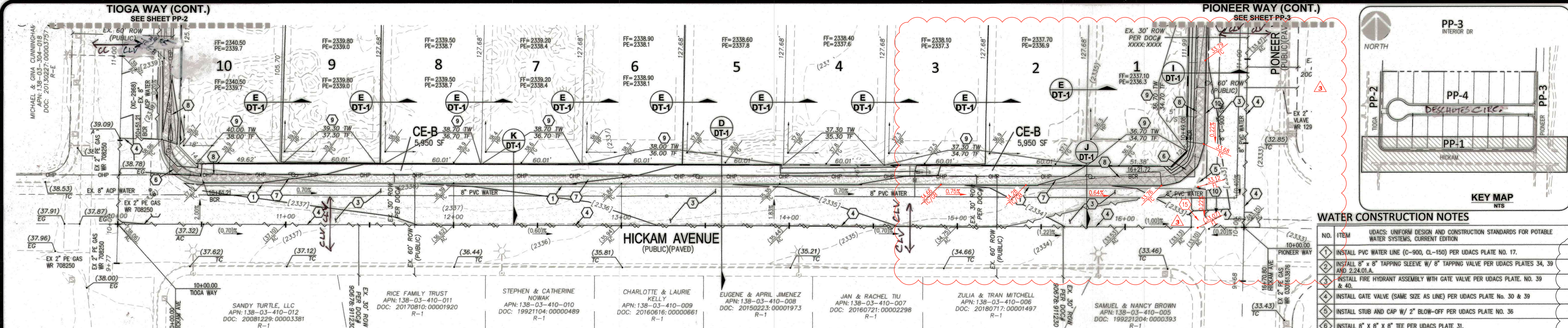
NO.	REVISION	DATE	APP. DATE
1	REVISED PROPOSED GRADES TO 0.02 SLOPE	09/18/20	RF
2	REVISED INTERIOR CURB TO R CURB	06/30/20	RF
3	CHANGE TITLE OF PROJECT	06/04/20	RF

PIONEER AND HICKAM (AKA ASCENT)
CITY OF LAS VEGAS
SHEET: 3 OF 11

GRADING PLAN

PERFORMANCE ENGINEERING
4525 W. HACIENDA AVE. STE. 1 LAS VEGAS, NV 89118
TEL: (702) 566-9770 EMAIL: RAY@PERMANENCE.COM

DESIGNED BY: RFF
DRAWN BY: RFF
CHECKED BY: RFF
SCALE: 1" = 30'
PROJECT DATE: FEBRUARY 20, 2020
SHEET
GP-1
3 OF 11
CLV PROJ. # 179-02259
107Y5122



FAST

CALL BEFORE YOU DIG

811

CALL BEFORE YOU DIG

UNDERGROUND

1-702-432-5300

1-800-227-2600

1-702-227-2929

PERFORMANCE ENGINEERING

RAY F. FREDERICKSEN

DESIGNED BY: RFF

DRAWN BY: RFF

CHECKED BY: RFF

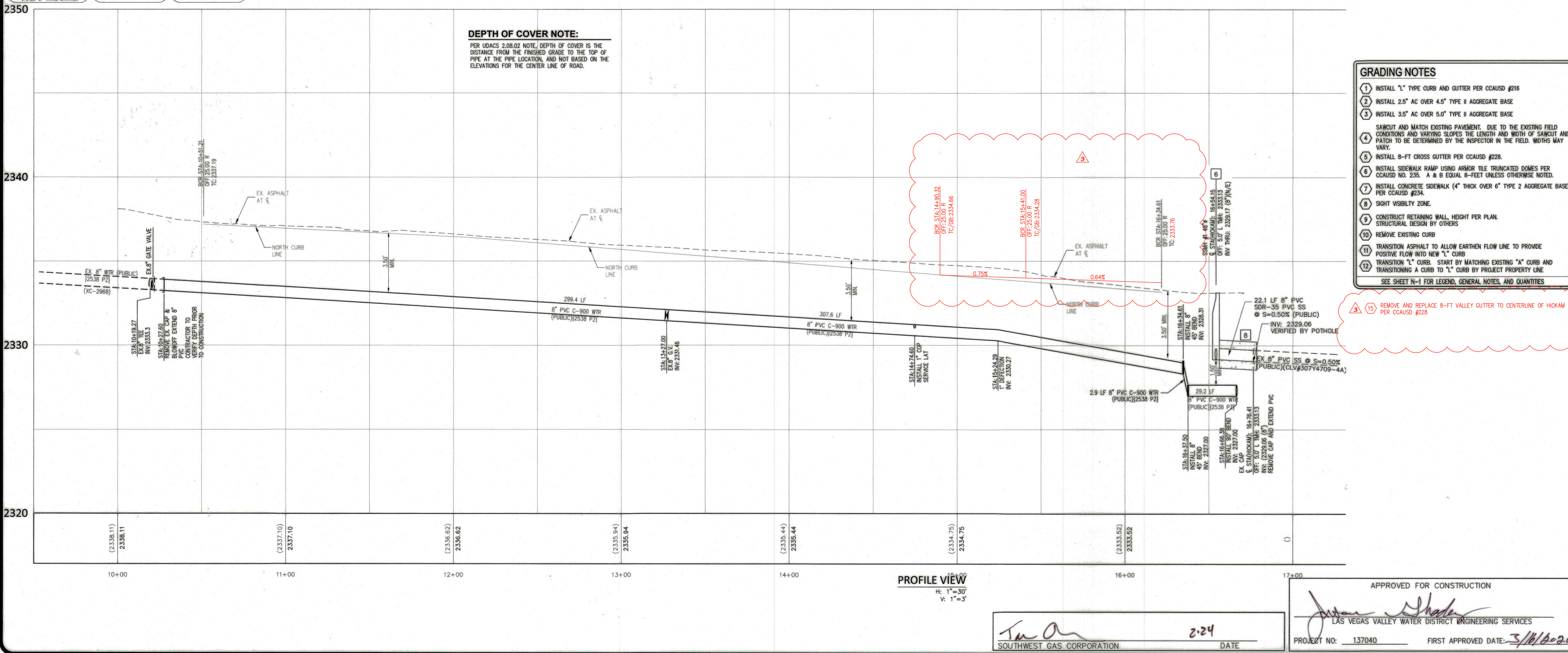
SCALE: 1"=30'

PROJECT DATE: FEBRUARY 20, 2020

SHEET PP-1 8 OF 11

CLV PROJ. # L19-02259 107Y5122

PWA-19583



FAST

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UNDERGROUND

1-702-432-5300

1-800-227-2600

1-702-227-2929

PERFORMANCE ENGINEERING

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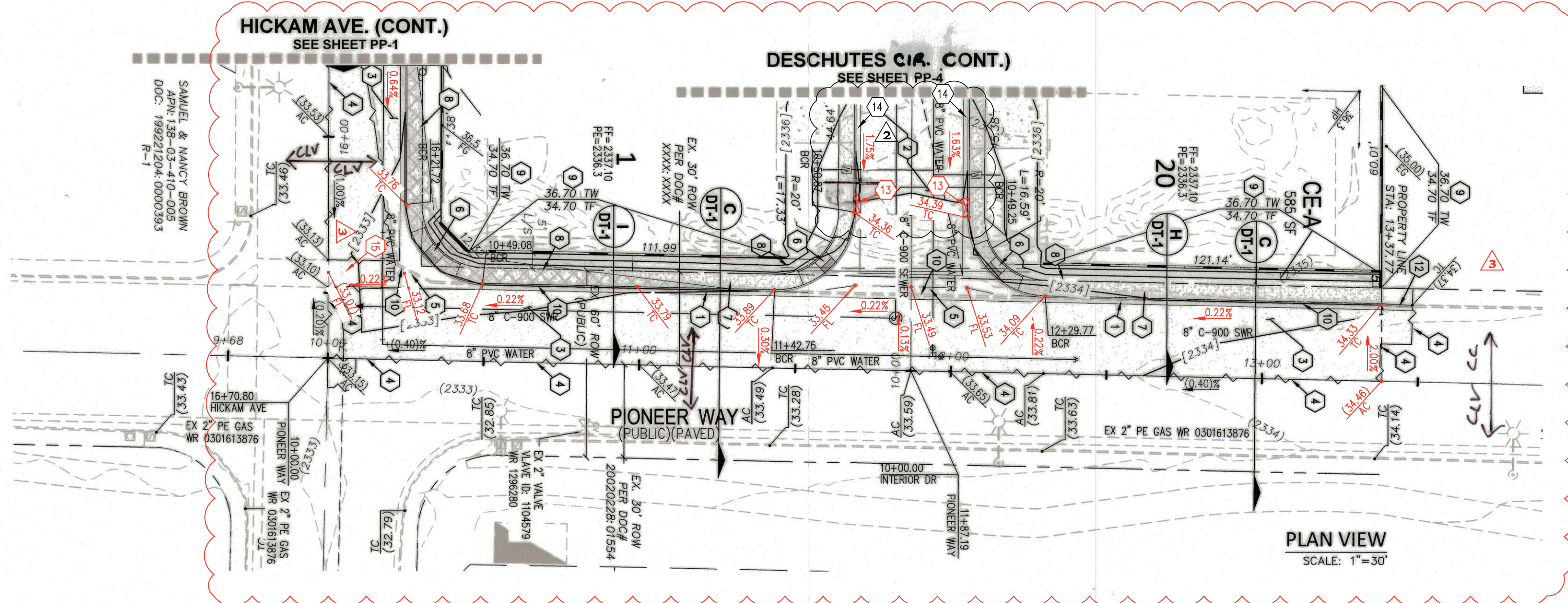
SCALE: 1"=30'

PROJECT DATE: FEBRUARY 20, 2020

SHEET PP-1 8 OF 11

CLV PROJ. # L19-02259 107Y5122

PWA-19583



BASIS OF BEARINGS

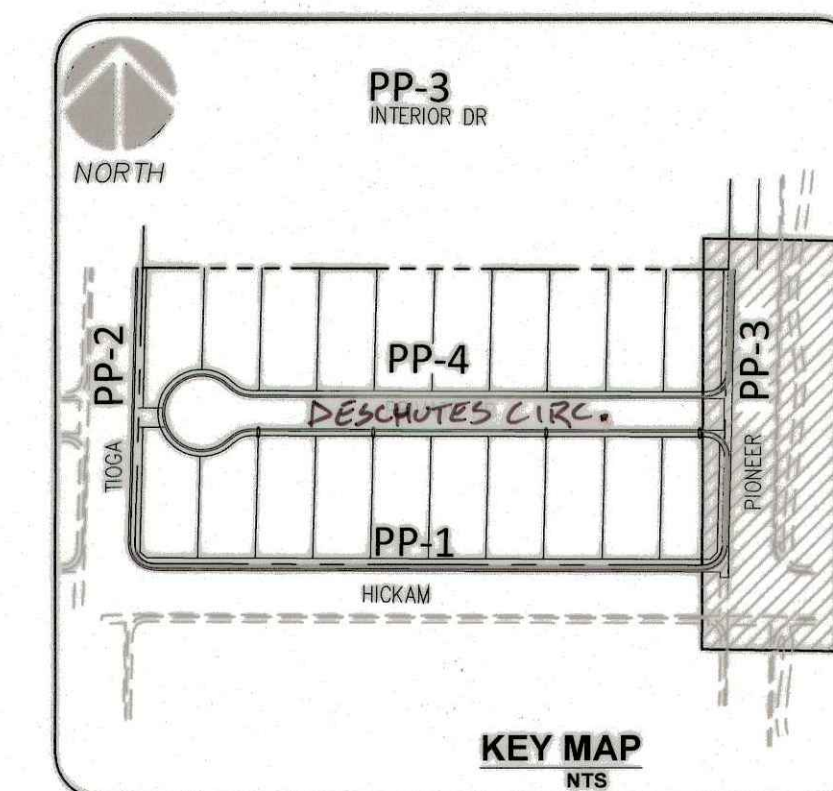
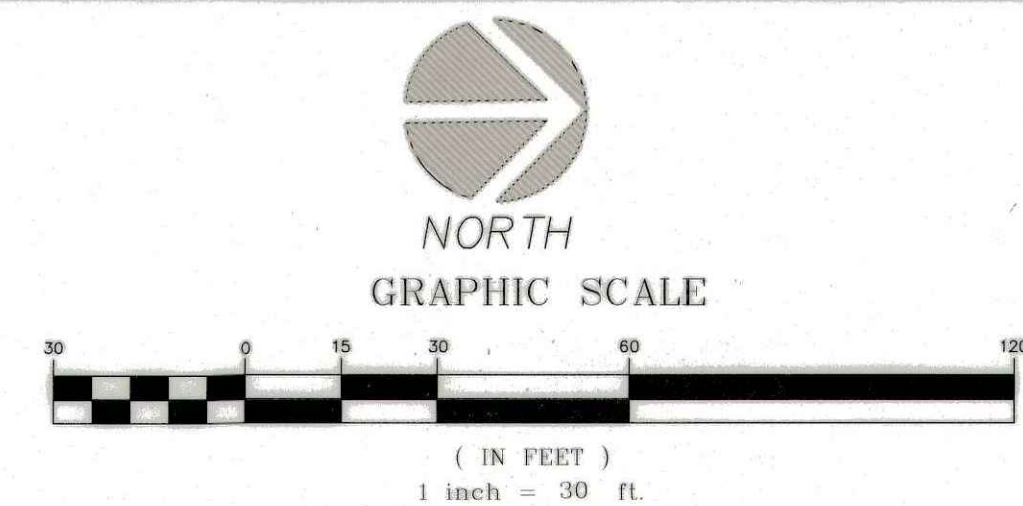
NORTH 89°51'13" WEST, BEING THE SOUTH LINE OF THE SOUTHEAST QUARTER (SE 1/4) OF THE NORTHWEST QUARTER (NW 1/4) OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 3, TOWNSHIP 20 SOUTH, RANGE 60 EAST, M.D.M., SAID LINE ALSO BEING THE CENTERLINE OF HICKAM AVENUE AS SHOWN IN FILE 134, PAGE 80 OF SURVEYS ON FILE AT THE CLARK COUNTY, NEVADA, RECORDER'S OFFICE.

BENCHMARK

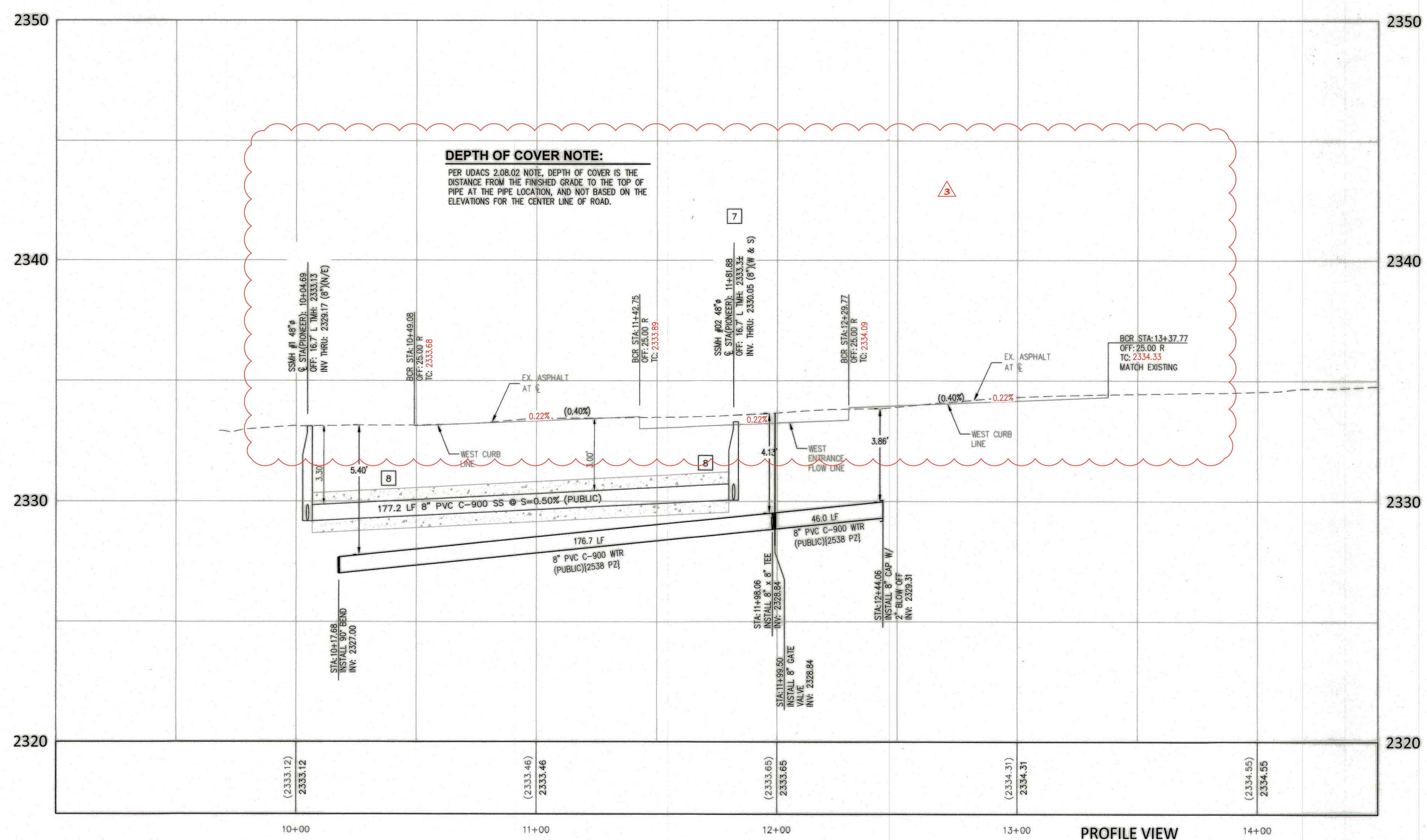
CITY OF LAS VEGAS VERTICAL CONTROL
BENCHMARK No. "1LV004SEE6" 2005-2007
RIVET AND PLATE IN TOP OF CURB, SOUTHWEST CORNER OF BUFFALO DRIVE AND HICKAM AVENUE

ELEVATION = 714.772 METERS
2345.05 FEET

CITY OF LAS VEGAS VERTICAL CONTROL DATUM BASED UPON
NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD '88)



13. INSTALL 10-FT TRANSITION FROM "R" CURB TO "L" CURB
14. INSTALL "R" TYPE CURB AND GUTTER PER CCAUSD #217.3.51
15. REMOVE AND REPLACE 8-VALLEY GUTTER TO CENTERLINE OF HICKAM PER CCAUSD #228



DEPTH OF COVER NOTE:
PER UDACS 2.08.02 NOTE, DEPTH OF COVER IS THE DISTANCE FROM THE FINISHED GRADE TO THE TOP OF PIPE AT THE PIPE LOCATION, AND NOT BASED ON THE ELEVATIONS FOR THE CENTER LINE OF ROAD.

GRADING NOTES

1. INSTALL "L" TYPE CURB AND GUTTER PER CCAUSD #216
2. INSTALL 2.5" AC OVER 4.5" TYPE II AGGREGATE BASE
3. INSTALL 3.5" AC OVER 5.0" TYPE II AGGREGATE BASE
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SEWER CONSTRUCTION NOTES

- | NO. | ITEM |
|-----|---|
| 1 | INSTALL 8" PVC SEWER LINE PER DCSWCS DWG. NO. SD-17, (C900 PVC) |
| 2 | INSTALL 4" PVC (PRIVATE) SEWER LATERAL PER DCSWCS DWG. NO. SD-20 AND SD-23, (C900 PVC) |
| 3 | INSTALL 48-INCH SEWER MANHOLE PER DCSWCS SD-1, SD-3, SD-4 & SD-9, WITH SINGLE 24" LID |
| 4 | SAWCUT, TRENCH, BACKFILL AND RESTORATION PER CCAUSD #500.5, #500.3, AND #503 |
| 5 | NEW MANHOLES TO HAVE PRECAST BASE |
| 6 | EX. SEWER MANHOLE, PROTECT IN PLACE, ADJUST RIM PER DCSWCS SD-4 & SD-5 IF APPLICABLE. |
| 7 | INSTALL 48-INCH SEWER SPECIAL MANHOLE "C" PER DCSWCS SD-13, WITH SINGLE 24" LID PER SD-3. |
| 8 | INSTALL REINFORCED CONCRETE ENCASUREMENT PER DCSWCS SD-14 |

WATER CONSTRUCTION NOTES

- | NO. | ITEM |
|-----|---|
| 1 | UDACS: UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR POTABLE WATER SYSTEMS, CURRENT EDITION |
| 2 | INSTALL PVC WATER LINE (C-900, CL-150) PER UDACS PLATE NO. 17. |
| 3 | INSTALL 8" x 8" TAPPING SLEEVE W/ 8" TAPPING VALVE PER UDACS PLATES 34, 39 AND 2.24.01.A |
| 4 | INSTALL FIRE HYDRANT ASSEMBLY WITH GATE VALVE PER UDACS PLATE NO. 39 & 40. |
| 5 | INSTALL GATE VALVE (SAME SIZE AS LINE) PER UDACS PLATE NO. 30 & 39 |
| 6 | INSTALL STUB AND CAP W/ 2" BLOW-OFF PER UDACS PLATE NO. 36 |
| 7 | INSTALL 8" x 8" x 8" TEE PER UDACS PLATE 31. |
| 8 | INSTALL 1" TYPE "K" COPPER WATER SERVICE W/ 3/4" METER PER UDACS PLATE 3, (DOMESTIC) |
| 9 | MINIMUM CROSSING IS 18-INCHES CLEAR. IF NOT AVAILABLE A VERTICAL SEPARATION OF NO LESS THAN 36 INCHES MUST BE MAINTAINED. USE C-900 PIPE FOR CROSSING |
| 10 | INSTALL 90° BEND PER UDACS PLATE 31. |
| 11 | POC - REMOVE EXISTING CAP & BLOW OFF ASSEMBLY PER UDACS PLATE NO. 36 AND CONNECT NEW 8" PVC WATER |
| 12 | SAWCUT, TRENCH, BACKFILL AND RESTORATION PER CCAUSD #500.5, #500.3, AND #503. |
| 13 | INSTALL 8" x 8" x 6" TEE PER UDACS PLATE 31, FIRE HYDRANT |
| 14 | INSTALL 1" TYPE "K" COPPER WATER SERVICE W/ 1" METER PER UDACS PLATE 3 AND 1" RPPA PER UDACS PLATE 4 & 8, (RIGIDATION) |
| 15 | REFER TO LANDSCAPE PLAN FOR CONTINUATION |
| 16 | INSTALL 45° BEND (VERT.) PER UDACS PLATE 31. |

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SYSTEM OF TRANSPORTATION

811
CALL BEFORE YOU DIG
1-800-227-2600

CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

Tom A.
SOUTHWEST GAS CORPORATION
DATE: 2-24

APPROVED FOR CONSTRUCTION
John A. Shadler
LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES
PROJECT NO: 137040 FIRST APPROVED DATE: 3/16/2020

NO.	REVISION	DATE	BY
1	REVISED PIONEER GRADES	02/19/20	RFF
2	REVISED INTERIOR CURB TO R CURB	02/20/20	RFF
3	CHANGE TITLE OF PROJECT	02/04/20	RFF

PIONEER AND HICKAM
CITY OF LAS VEGAS
SHEET

PLAN AND PROFILE

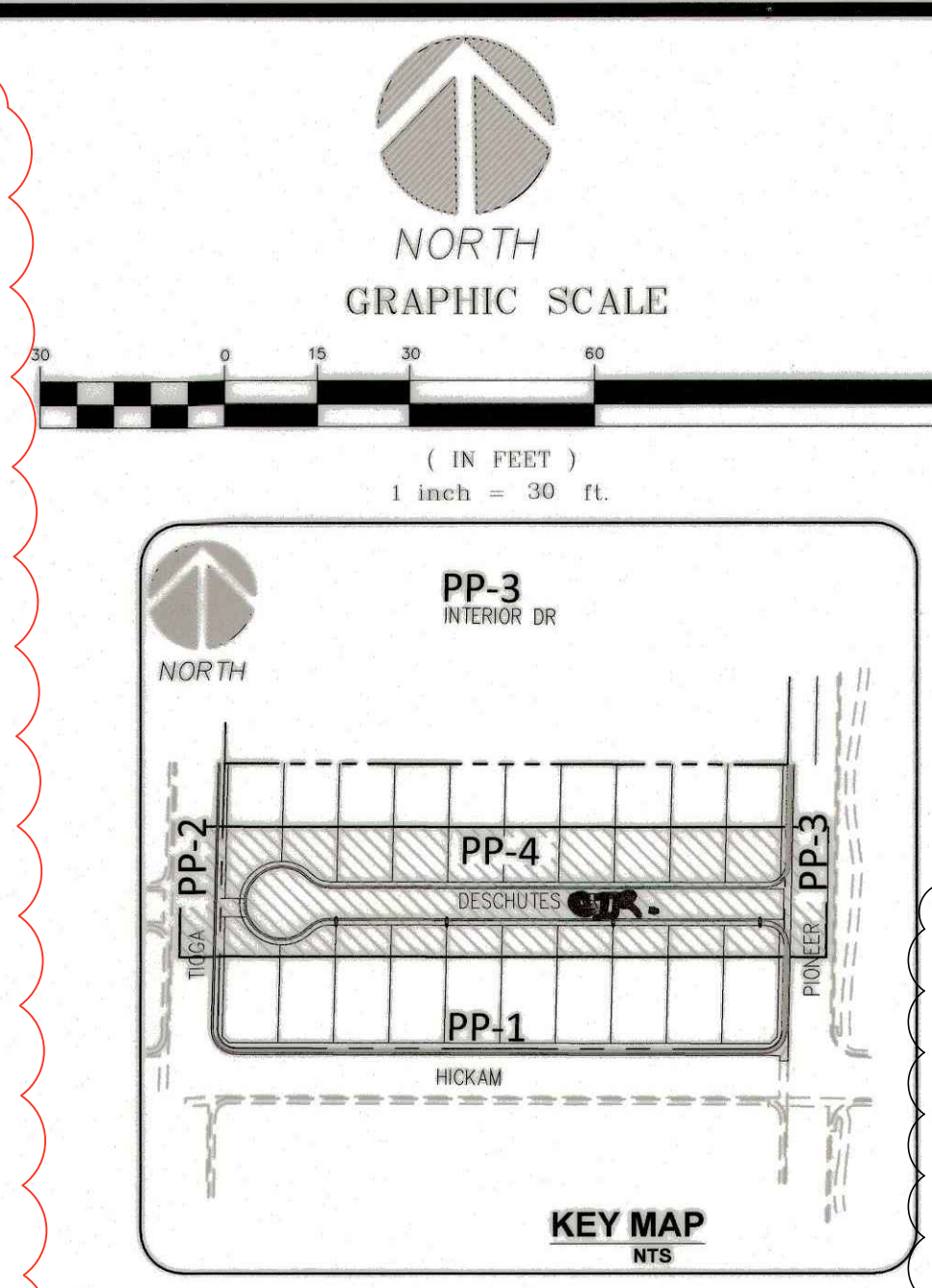
PIONEER WAY

PERFORMANCE ENGINEERING
4525 W. HACIENDA AVE. STE. 1 LAS VEGAS, NV 89118
TEL: (702) 569-9770 EMAIL: RAY@PERFORMANCEV.COM

DESIGNED BY: RFF
DRAWN BY: RFF
CHECKED BY: RFF
SCALE: 1"=30'
PROJECT DATE: FEBRUARY 20, 2020

SHEET
PP-3
10 OF 11

CLV PROJ. # L19-02259
107Y5122



NEER WAY (CONT.)
SEE SHEET PP-3

PH 19-198



AVOID HITTING OVERHEAD
POWER LINES. IT'S COSTLY.

**CALL BEFORE
YOU DO
OVERHEAD**

1-702-227-2929

2/24

PROJECT NO: 137040 FIRST APPROVED DATE: 3/16/2020

RAY F.
FREDERICKSEN
Exp. 06/30/21
CIVIL
No. 17471

19-199