DS #: 5278-1

APN: 137-23-201-001

PROJECT: Summerlin West V22-Fleet Wing Avenue (Street G)

SUBMITTAL: 3rd

SCANNED BY/DATE:

CHECKED BY/DATE:

CITY OF LAS VEGAS NEVADA

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM			DATE: March 18, 2021
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: **Summerlin West V22 – Fleet Wing Avenue (Street G)** **(from Desert Foothills Blvd. to Kettle Ridge Dr.)**		**COPIES TO:** Atkins
Cross Streets:	Desert Foothills Blvd. & Fleet Wing Avenue		Howard Hughes Company, LLC
File Number:	F:\Depot\DSMemos\DS5278C.doc		Bart Anderson, P.E., DevCo
Parcel Number:	137-23-201-001		CCRFCD
Zoning Action:	N/A		
FEMA Flood Zone	YES	NO **X**	
Proposed Storm Drain	YES **X**	NO	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1st Submittal (Paid on 5/13/2020)	5/7/2020 & 5/13/2020	6/2/2020	Not Approved	$400.00	3846891: $400
2nd Submittal	10/22/2020	11/5/2020	Conditional Approval	$400.00	4044500: $400
3rd Submittal	3/3/2021	3/18/2021	See Comments Below	$100.00	4206979: $400
			TOTAL FEES (LDDRS):	**$900.00**	----

REMARKS:

***** The Conditional Approval of this Drainage Study is to allow the engineer/developer to submit the Improvement Plans to City Land Development Only**

***** Do not submit the Drainage Study to Clark County Regional Flood Control District (CCRFCD) prior to the Structural Design and Calculations being approved by the City Building & Safety Department**

3rd Submittal: Update #1 to correct the typo of a few drop inlets' length

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:
X	is conditionally approved subject to Clark County Regional Flood Control District concurrence.
	is conditionally approved subject to Clark County Public Works Department concurrence.

1. The subject project is based on the premise that the upstream *Kettle Ridge Drive* and the downstream *Desert Foothill Drive* and the associated storm drain facilities are in place for flood protection. The subject drainage study will not be finally approved prior to the posting of the construction bonds of *Summerlin West Village 22 – Kettle Ridge Drive & Scurry Bend Drive (Lake Mead to Fleet Wing) and Summerlin West Village 22 – Desert Foothill Drive (Lake Mead to Fleet Wing).*

2. All storm drain inlets that are more than 10'-deep require a special structural detail and calculations. Submit structural design and calculations to *City Building & Safety Department* for review and approval prior to the final approval of the drainage study.

3. The project proposed to construct temporary drainage facilities including drainage berms/ditches along both sides of the proposed improvements. Prior to the final plans approval, the developer must complete a ***Maintenance & Liability Agreement*** for the interim drainage improvements and post a minimum maintenance bond of $50,000 or 50-percent of the construction cost for the improvements, whichever is greater. The engineer must submit an estimate of the quantities for constructing the facilities and an exhibit that adequately shows the location and limits of the drainage facilities to *City Flood Control* for approval. Once the drainage study is conditionally approved, the engineer/developer should contact the *City's Land Development Section* (702-229-6371) to begin the agreement process.

   In order for the maintenance bond to be released in the future, a drainage update/letter will be required to justify that the berm/swale are no longer necessary and can be removed.

4. **This drainage study is acceptable in concept;** however, *City of Las Vegas* will not formally accept the study until the *Clark County Regional Flood Control District (CCRFCD)* has issued a letter of concurrence. The engineer should contact the CCRFCD to confirm that they have begun their review.

   Please note that effective March 15, 2019, the CCRFCD adopted new requirements for drainage study concurrence submittal. Follow the link below for specific guidance.

   http://gustfront.ccrfcd.org/LandDev/LandDev.aspx

5. All offsite interim flood control facilities such as but not limited to berms/ditches and temporary sump are privately owned and to be privately maintained by the *Howard Hughes Company.*

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

END OF REMARKS
ays

T/R/S: T20S/R59E/23
AREA K-23

SNC·LAVALIN

ATKINS
Member of the SNC-Lavalin Group

TRANSMITTAL

Date: 03/03/21 **Job No.:** 100066776

To:	Regarding:
City Of Las Vegas 495 S Main Street Las Vegas NV 89101	V22- Fleet Wing Ave DFD to KRD TDS Supplement

Albert Sung

Transmitted:	For:	
☐ Via Overnight	☐ Approval	☐ Information
☒ Via Delivery	☒ Review/Comment	☐ Return after Use
☐ Via Mail	☐ Your Use	☐ Per your request

The Following:

1-Bound drainage TDS Supplement
1-Folded Plans
1-CD

Comments:

If you have any questions, please contact me at: caron.milstead@atkinsglobal.com or 702-551-0370
Thank You.

From:

_____ _____
Date

(For Deliveries Only)
Received By: _____ _____
Date

SNC·LAVALIN

ATKINS
Member of the SNC-Lavalin Group

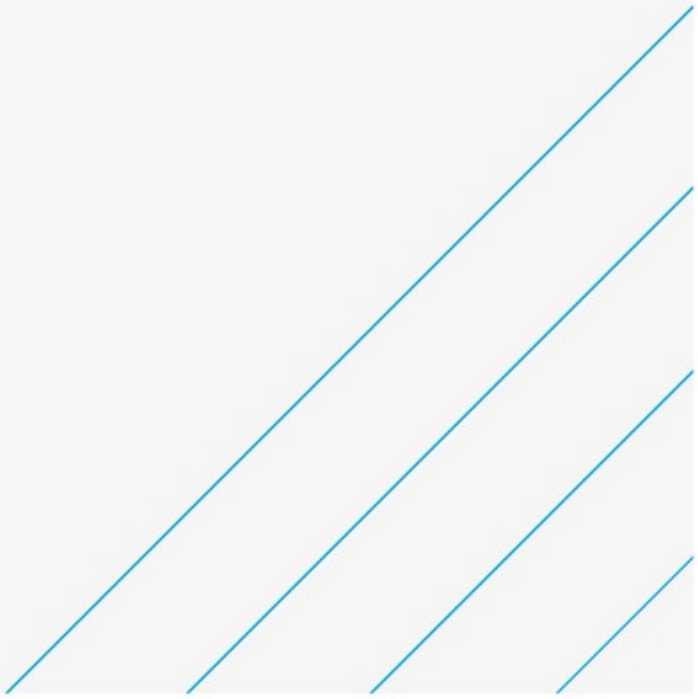
SUMMERLIN®

Summerlin West Village 22

Supplement to Fleet Wing Avenue (Street G): Desert Foothills Drive to Kettle Ridge Drive (Street J)

Prepared for Howard Hughes Company, LLC

March 2021



HYDROLOGIC CRITERIA AND DRAINAGE MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: Fleet Wing Avenue (Street G): Desert Foothills Drive to Kettle Ridge Drive Date: March 3, 2021

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

East/West: Lake Mead Blvd

b) Section: 03 Township: 21S Range: 59E

c) APN : 137-23-210-001

Name of Owner: Howard Hughes Company, LLC

Telephone No.: (702) 791-4000 Fax No.: (702) 791-4450 E-Mail Address: april.chapman@howardhughes.com

Address: 10845 Griffith Peak Drive, Suite 160, Las Vegas, NV 89135

Contact Person-Name: Janelle Klein, PE **Telephone No.:** (702) 551-0365

* **E-Mail Address:** janelle.klein@atkinsglobal.com **Fax No.:** (702) 263-7200

Firm: Atkins

Address: 2270 Corporate Circle, Ste 200, Henderson, NV 89074

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	X	Roadway Improvements

1. Total Owned Land Area: At Site: +/- 446 acres Being Developed/Disturbed: 11.7 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.): Public - Roadway Improvements
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: Master Conceptual Drainage Study for Summerlin West Village 22
7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Existing CC-215 Western Beltway Channel
8. Briefly describe your proposed schedule for the subject project: ASAP



3/3/2021

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.**

DS #5278

Local Entity File No.

Revision	Date
Original TDS	May 7, 2020
Add #1	October 22, 2020

REFERENCE:

STANDARD FORM 1

Updated 05/01/2008

Engineer's Certification

Atkins certifies that the information contained herein has been prepared in accordance with generally accepted engineering principles and practices, and to the best of our knowledge, is true and correct.

This letter certifies that all items in the **Supplement #1 to the Technical Drainage Study for Fleet Wing Avenue (Street G): Desert Foothills Drive to Kettle Ridge Drive (Street J)** electronic submittal matches the paper version bound into the study.



3/3/2021

Janelle L. Klein, PE (NV #17313)
Senior Engineer

Comment Response Letter

Your reference: DS #5278

Albert Sung
City of Las Vegas Public Works
495 S. Main Street
Las Vegas, NV 89101

March 3, 20201

RE: SUPPLEMENT #1 TECHNICAL DRAINAGE STUDY FOR SUMMERLIN WEST VILLAGE 22 FLEET WING AVENUE (STREET G): DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

Dear Albert,

This letter and the attached documents have been prepared as Supplement #1 to the *Technical Drainage Study (TDS) for Summerlin West Village 22 Fleet Wing Avenue (Street G): Desert Foothills Drive to Kettle Ridge Drive (Street J).*

During preparation of the structural details and calculations for the drop inlets greater than 10'-deep it was determined that SDDI#9 and SDDI#10 were mislabeled as 7.5' on the previously approved plans. The calculations provided in Addendum #1 for the indicated drop inlets were for 5' length, the plans have been corrected. The plans and calculations provided in Addendum #1 for SDDI#7 and SDDI#8 were for 10'-length and the calculations and plans have been revised for 7.5'-length. The revised calculations and plans are included in this submittal.

The following are the responses to the comments of the Conditional Approval Letter.

Comment #1: The subject project is based on the premise that the upstream *Kettle Ridge Drive* and the downstream *Desert Foothills Drive* and the associated storm drain facilities are in place for flood protection. The subject drainage study will not be finally approved prior to the posting of the construction bonds of *Summerlin West Village 22 – Kettle Ridge Drive & Scurry Bend Drive (Lake Mead to Fleet Wing) and Summerlin West Village 22 – Desert Foothills Drive (Lake Mead to Fleet Wing).*

Comment response: Understood. This report uses the "Summerlin West V22 – Lake Mead Boulevard (Desert Foothills Drive to Kettle Ridge Drive)" and "Summerlin West V22 – Kettle Ridge Drive (Lake Mead Boulevard to Fleet Wing Avenue)" report hydrology and hydraulics as the existing condition to cut off flow upstream of the proposed project

Comment #2: All storm drain inlets that are more than 10'-deep require a special structural detail and calculations. Submit structural design and calculations to *City Building & Safety Department* for review and approval prior to the final approval of the drainage study.

Comment response: The structural detail is located on Sheet 22/28 and will be submitted to the Building Department for approval following drainage study conditional approval.

Comment #3: The project proposed to construct temporary drainage facilities including drainage berms/ditches along both sides of the proposed improvements. Prior to the final plans approval, the developer must complete a ***Maintenance & Liability Agreement*** for the interim drainage improvements and post a minimum maintenance bond of $50,000 or 50-percent of the construction cost for the improvements, whichever is greater. The engineer must submit an estimate of the quantities for constructing the facilities and an exhibit that adequately shows the location and limits of the drainage facilities to *City Flood Control* for approval. Once the drainage study is conditionally approved, the engineer/developer should contact the *City's Land Development Section* (702-229-6371) to begin the agreement process.

In order for the maintenance bond to be released in the future, a drainage update/letter will be required to justify that the berm/swale are no longer necessary and can be removed.

Comment response: It is acknowledged that Atkins will contact the City's Land Development Section to begin the agreement process for the interim drainage improvements upon conditional approval of this study.

Comment #4: This drainage study is acceptable in concept; however, *City of Las Vegas* will not formally accept the study until the *Clark County Regional Flood Control District* (CCRFCD) has issued a letter of concurrence. The engineer should contact the CCRFCD to confirm that they have begun their review.

Please note that effective March 15, 2019, the CCRFCD adopted new requirements for drainage study concurrence submittal. Follow the link below for specific guidance.

http://gustfront.ccrfcd.org/LandDev/LandDev.aspx

Comment response: The proposed report will be submitted to CCRFCD for concurrence upon CLV approval of the structural plans and calculations for the deep drop inlets.

Comment #5: All offsite interim flood control facilities such as but not limited to berms/ditches and temporary sump are privately owned and to be privately maintained by the *Howard Hughes Company*. Provide a note as such on the grading plans.

Comment response: The note has been added to the relevant sheets.

Janelle L. Klein, PE (NV #17313)
Senior Engineer

Appendices

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: November 5, 2020
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: **Summerlin West V22 – Fleet Wing Avenue (Street G)** **(from Desert Foothills Blvd. to Kettle Ridge Dr.)**			**COPIES TO:** Atkins
Cross Streets:	Desert Foothills Blvd. & Fleet Wing Avenue			Howard Hughes Company, LLC
File Number:	F:\Depot\DSMemos\DS5278B.doc			Bart Anderson, P.E., DevCo
Parcel Number:	137-23-201-001			CCRFCD
Zoning Action:	N/A			
FEMA Flood Zone	YES	NO **X**		
Proposed Storm Drain	YES **X**	NO		

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1st Submittal (Paid on 5/13/2020)	5/7/2020 & 5/13/2020	6/2/2020	Not Approved	$400.00	3846891: $400
2nd Submittal	10/22/2020	11/5/2020	See Comments Below	$400.00	4044500: $400
			TOTAL FEES (LDDRS):	**$800.00**	----

REMARKS:

***** The Conditional Approval of this Drainage Study is to allow the engineer/developer to submit the Improvement Plans to City Land Development Only**

***** Do not submit the Drainage Study to Clark County Regional Flood Control District (CCRFCD) prior to the Structural Design and Calculations being approved by the City Building & Safety Department**

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:
X	is conditionally approved subject to Clark County Regional Flood Control District concurrence.
	is conditionally approved subject to Clark County Public Works Department concurrence.

1. The subject project is based on the premise that the upstream *Kettle Ridge Drive* and the downstream *Desert Foothill Drive* and the associated storm drain facilities are in place for flood protection. The subject drainage study will not be finally approved prior to the posting of the construction bonds of *Summerlin West Village 22 – Kettle Ridge Drive & Scurry Bend Drive (Lake Mead to Fleet Wing) and Summerlin West Village 22 – Desert Foothill Drive (Lake Mead to Fleet Wing)*.

2. All storm drain inlets that are more than 10'-deep require a special structural detail and calculations. Submit structural design and calculations to *City Building & Safety Department* for review and approval prior to the final approval of the drainage study.

3. The project proposed to construct temporary drainage facilities including drainage berms/ditches along both sides of the proposed improvements. Prior to the final plans approval, the developer must complete a ***Maintenance & Liability Agreement*** for the interim drainage improvements and post a minimum maintenance bond of $50,000 or 50-percent of the construction cost for the improvements, whichever is greater. The engineer must submit an estimate of the quantities for constructing the facilities and an exhibit that adequately shows the location and limits of the drainage facilities to *City Flood Control* for approval. Once the drainage study is conditionally approved, the engineer/developer should contact the *City's Land Development Section* (702-229-6371) to begin the agreement process.

   In order for the maintenance bond to be released in the future, a drainage update/letter will be required to justify that the berm/swale are no longer necessary and can be removed.

4. **This drainage study is acceptable in concept;** however, *City of Las Vegas* will not formally accept the study until the *Clark County Regional Flood Control District (CCRFCD)* has issued a letter of concurrence. The engineer should contact the CCRFCD to confirm that they have begun their review.

   Please note that effective March 15, 2019, the CCRFCD adopted new requirements for drainage study concurrence submittal. Follow the link below for specific guidance.

   http://gustfront.ccrfcd.org/LandDev/LandDev.aspx

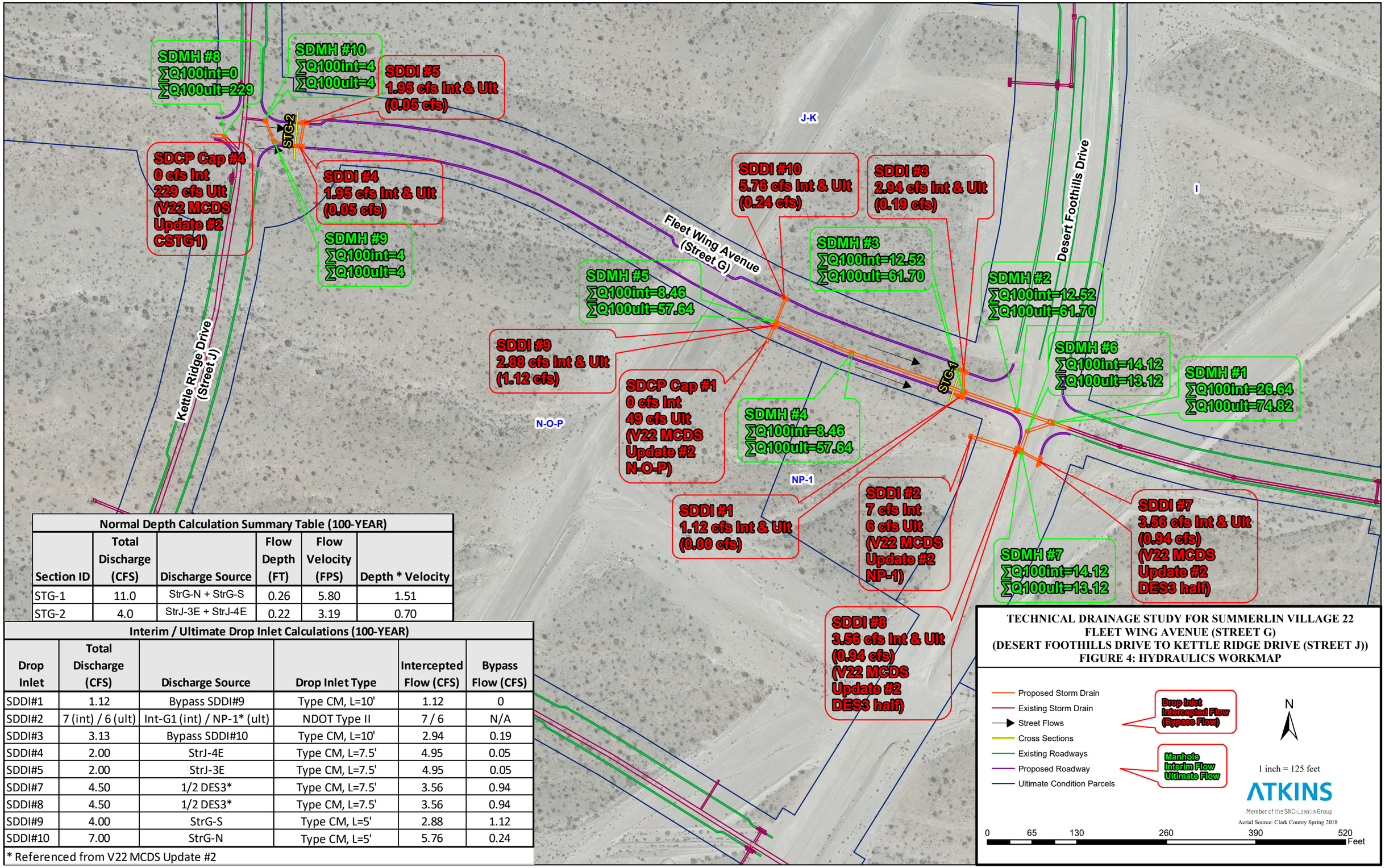
5. All offsite interim flood control facilities such as but not limited to berms/ditches and temporary sump are privately owned and to be privately maintained by the *Howard Hughes Company*.

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

END OF REMARKS
ays

T/R/S: T20S/R59E/23
AREA K-23

Appendix A. Revised Figure



Normal Depth Calculation Summary Table (100-YEAR)

Section ID	Total Discharge (CFS)	Discharge Source	Flow Depth (FT)	Flow Velocity (FPS)	Depth * Velocity
STG-1	11.0	StrG-N + StrG-S	0.26	5.80	1.51
STG-2	4.0	StrJ-3E + StrJ-4E	0.22	3.19	0.70

Interim / Ultimate Drop Inlet Calculations (100-YEAR)

Drop Inlet	Total Discharge (CFS)	Discharge Source	Drop Inlet Type	Intercepted Flow (CFS)	Bypass Flow (CFS)
SDDI#1	1.12	Bypass SDDI#9	Type CM, L=10'	1.12	0
SDDI#2	7 (int) / 6 (ult)	Int-G1 (int) / NP-1* (ult)	NDOT Type II	7 / 6	N/A
SDDI#3	3.13	Bypass SDDI#10	Type CM, L=10'	2.94	0.19
SDDI#4	2.00	StrJ-4E	Type CM, L=7.5'	4.95	0.05
SDDI#5	2.00	StrJ-3E	Type CM, L=7.5'	4.95	0.05
SDDI#7	4.50	1/2 DES3*	Type CM, L=7.5'	3.56	0.94
SDDI#8	4.50	1/2 DES3*	Type CM, L=7.5'	3.56	0.94
SDDI#9	4.00	StrG-S	Type CM, L=5'	2.88	1.12
SDDI#10	7.00	StrG-N	Type CM, L=5'	5.76	0.24

* Referenced from V22 MCDS Update #2

TECHNICAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
(DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J))
FIGURE 4: HYDRAULICS WORKMAP

Proposed Storm Drain
Existing Storm Drain
Street Flows
Cross Sections
Existing Roadways
Proposed Roadway
Ultimate Condition Parcels

Drop Inlet
Intercepted Flow
(Bypass Flow)

Manhole
Interim Flow
Ultimate Flow

N

1 inch = 125 feet

ATKINS
Member of the SNC-Lavalin Group

Aerial Source: Clark County Spring 2018

0 65 130 260 390 520 Feet

Appendix B. Revised Drop Inlet Calculations

Worksheet for SDDI #7 7.5' Combo Inlet on Grade at 3.50% 100 yr

Project Description

Solve For	Efficiency

Input Data

Discharge		4.50	ft³/s
Slope		0.03500	ft/ft
Gutter Width		1.50	ft
Gutter Cross Slope		0.08	ft/ft
Road Cross Slope		0.02	ft/ft
Roughness Coefficient		0.016	
Local Depression		4.00	in
Local Depression Width		2.00	ft
Grate Width		1.50	ft
Grate Length		5.00	ft
Grate Type	Curved Vaned		
Clogging		50.00	%
Curb Opening Length		7.50	ft

Options

Calculation Option	Use Both
Grate Flow Option	Exclude None

Results

Efficiency		79.08	%
Intercepted Flow		3.56	ft³/s
Bypass Flow		0.94	ft³/s
Spread		9.43	ft
Depth		0.28	ft
Flow Area		0.96	ft²
Gutter Depression		0.09	ft
Total Depression		0.42	ft
Velocity		4.70	ft/s
Splash Over Velocity		6.60	ft/s
Frontal Flow Factor		1.00	
Side Flow Factor		0.06	
Grate Flow Ratio		0.47	
Equivalent Cross Slope		0.11864	ft/ft
Active Grate Length		2.50	ft
Length Factor		0.28	
Total Interception Length		17.73	ft

Worksheet for SDDI #7 7.5' Combo Inlet on Grade at 3.50% 100 yr

Messages

Messages	Grate Length should be within the defined range of HEC-22's Chart 5 (approx. 0.5-4.5 ft / 0.15-1.35 m).

Worksheet for SDDI #8 7.5' Combo Inlet on Grade at 3.50% 100 yr

Project Description

Solve For	Efficiency

Input Data

Discharge		4.50	ft³/s
Slope		0.03500	ft/ft
Gutter Width		1.50	ft
Gutter Cross Slope		0.08	ft/ft
Road Cross Slope		0.02	ft/ft
Roughness Coefficient		0.016	
Local Depression		4.00	in
Local Depression Width		2.00	ft
Grate Width		1.50	ft
Grate Length		5.00	ft
Grate Type	Curved Vaned		
Clogging		50.00	%
Curb Opening Length		7.50	ft

Options

Calculation Option	Use Both
Grate Flow Option	Exclude None

Results

Efficiency		79.08	%
Intercepted Flow		3.56	ft³/s
Bypass Flow		0.94	ft³/s
Spread		9.43	ft
Depth		0.28	ft
Flow Area		0.96	ft²
Gutter Depression		0.09	ft
Total Depression		0.42	ft
Velocity		4.70	ft/s
Splash Over Velocity		6.60	ft/s
Frontal Flow Factor		1.00	
Side Flow Factor		0.06	
Grate Flow Ratio		0.47	
Equivalent Cross Slope		0.11864	ft/ft
Active Grate Length		2.50	ft
Length Factor		0.28	
Total Interception Length		17.73	ft

Worksheet for SDDI #8 7.5' Combo Inlet on Grade at 3.50% 100 yr

Messages

Messages	Grate Length should be within the defined range of HEC-22's Chart 5 (approx. 0.5-4.5 ft / 0.15-1.35 m).

Appendix C. Revised WSPG-W Models

C.1 Interim Condition WSPG-W Model

```
T1 SUMMERLIN WEST VILLAGE 22                                                0
T2 FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J)
T3 ATKINS / ULTIMATE CONDITIONS
SO      0.00 3329.77  36                          3331.621
REM  Tailwater from VTN Fleet Wing TDS
R      28.77 3330.43  36      .013                                  .000  00.0   0
REM  Downstream of SDMH #1 (Junction with SDMH#6)
JX     30.77 3330.53  36 36   .013    14.12          3330.63         44.0         .000
R      35.77 3330.63  36      .013                                  .000  00.0   1
REM  Upstream of SDMH #1 (Junction with SDMH#6)
REM  48.34 foot Reach
R      79.11 3331.67  36      .013                                  .000  00.0   0
REM  Downstream of SDMH #2
R      81.61 3331.77  36      .013                                  .000  00.0   1
R      84.11 3331.87  36      .013                                  .000  00.0   0
REM  Upstream of SDMH #2
REM  81.80 foot Reach
R     160.91 3341.45  36      .013                                  .000  00.0   0
REM  Downstream of SDMH #3 (JUNCTION WITH LATERAL SDDI#1 & SDDI#3)
JX    163.41 3341.55  36 24 24.013    1.12    2.94  3342.65 3342.65 -61.0 45.0    .000
R     165.91 3341.65  36      .013                                  .000  00.0   1
REM  Upstream of SDMH #3 (JUNCTION WITH LATERAL SDDI#1 & SDDI#3)
REM  172.54 foot Reach
R     189.53 3342.841 36      .013                                  .000  00.0   0
R     189.54 3342.842 36      .013                                  .000  00.0   0
R     189.55 3342.842 36      .013                                  .000  00.0   0
R     333.45 3350.10  36      .013                                  .000  00.0   0
REM  Downstream of SDMH #4
R     335.95 3350.20  36      .013                                  .000  00.0   1
R     338.45 3350.30  36      .013                                  .000  00.0   0
REM  Upstream of SDMH #4
REM  120.77 foot Reach
R     454.22 3358.89  36      .013                                  .000  03.0   0
REM  Downstream of SDMH #5
JX    456.72 3358.99  36 24   .013    5.76           3359.06         -90.0         .000
R     459.22 3359.09  36      .013                                  .000  00.0   1
REM  Upstream of SDMH #5
REM  7.02 foot Reach
R     461.24 3359.14  36      .013                                  .000  87.0   0
REM  Downstream of SDDI #9
JX    463.74 3359.19  36 24   .013    2.88           3359.06         -90.0         .000
R     466.24 3359.23  36      .013                                  .000  00.0   0
REM  Upstream of SDDI #9
REM  25.03 foot Reach
R     491.27 3359.73  36      .013                                  .000  00.0   0
SH    491.27 3359.73  36
CD  24  4   1    .000   2.000     .000  .000  .000   .00
CD  36  4   1    .000   3.000     .000  .000  .000   .00
Q            0.01     .0
```

FILE: IntDFD.WSW W S P G W - CIVILDESIGN Version 14.08 PAGE 1

Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:24: 4

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope				SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	
.000	3329.770	1.230	3331.000	26.83	9.83	1.50	3332.50	.00	1.67	2.95	3.000	.000	.00	1 .0
2.746	.0229					.0128	.04	1.23	1.80	1.06	.013	.00	.00	PIPE
2.746	3329.833	1.243	3331.076	26.83	9.70	1.46	3332.54	.00	1.67	2.96	3.000	.000	.00	1 .0
7.801	.0229					.0118	.09	1.24	1.77	1.06	.013	.00	.00	PIPE
10.547	3330.012	1.289	3331.301	26.83	9.24	1.33	3332.63	.00	1.67	2.97	3.000	.000	.00	1 .0
5.799	.0229					.0103	.06	1.29	1.65	1.06	.013	.00	.00	PIPE
16.346	3330.145	1.336	3331.481	26.83	8.81	1.21	3332.69	.00	1.67	2.98	3.000	.000	.00	1 .0
4.324	.0229					.0091	.04	1.34	1.54	1.06	.013	.00	.00	PIPE
20.670	3330.244	1.386	3331.630	26.83	8.40	1.10	3332.73	.00	1.67	2.99	3.000	.000	.00	1 .0
3.192	.0229					.0080	.03	1.39	1.43	1.06	.013	.00	.00	PIPE
23.862	3330.317	1.438	3331.755	26.83	8.01	1.00	3332.75	.00	1.67	3.00	3.000	.000	.00	1 .0
2.273	.0229					.0070	.02	1.44	1.34	1.06	.013	.00	.00	PIPE
26.135	3330.370	1.492	3331.862	26.83	7.64	.91	3332.77	.00	1.67	3.00	3.000	.000	.00	1 .0
1.511	.0229					.0062	.01	1.49	1.24	1.06	.013	.00	.00	PIPE
27.646	3330.404	1.550	3331.954	26.83	7.28	.82	3332.78	.00	1.67	3.00	3.000	.000	.00	1 .0
.853	.0229					.0055	.00	1.55	1.16	1.06	.013	.00	.00	PIPE
28.499	3330.424	1.610	3332.033	26.83	6.95	.75	3332.78	.00	1.67	2.99	3.000	.000	.00	1 .0
.271	.0229					.0048	.00	1.61	1.08	1.06	.013	.00	.00	PIPE

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WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:24: 4

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
28.770	3330.430	1.674	3332.104	26.83	6.62	.68	3332.78	.00	1.67	2.98	3.000	.000	.00	1 .0
JUNCT STR	.0500					.0025	.00	1.67	1.00		.013	.00	.00	PIPE
30.770	3330.530	2.321	3332.851	12.71	2.17	.07	3332.92	.00	1.13	2.51	3.000	.000	.00	1 .0
5.000	.0200					.0004	.00	2.32	.25	.74	.013	.00	.00	PIPE
35.770	3330.630	2.216	3332.846	12.71	2.27	.08	3332.93	.00	1.13	2.64	3.000	.000	.00	1 .0
3.787	.0240					.0005	.00	2.22	.27	.71	.013	.00	.00	PIPE
39.557	3330.721	2.119	3332.840	12.71	2.38	.09	3332.93	.00	1.13	2.73	3.000	.000	.00	1 .0
3.444	.0240					.0005	.00	2.12	.30	.71	.013	.00	.00	PIPE
43.001	3330.803	2.029	3332.833	12.71	2.50	.10	3332.93	.00	1.13	2.81	3.000	.000	.00	1 .0
1.727	.0240					.0006	.00	2.03	.33	.71	.013	.00	.00	PIPE
44.728	3330.845	1.980	3332.825	12.71	2.57	.10	3332.93	.00	1.13	2.84	3.000	.000	.00	1 .0
HYDRAULIC JUMP														
44.728	3330.845	.591	3331.436	12.71	12.89	2.58	3334.02	.00	1.13	2.39	3.000	.000	.00	1 .0
3.042	.0240					.0513	.16	.59	3.54	.71	.013	.00	.00	PIPE
47.769	3330.918	.585	3331.503	12.71	13.09	2.66	3334.16	.00	1.13	2.38	3.000	.000	.00	1 .0
7.675	.0240					.0562	.43	.59	3.61	.71	.013	.00	.00	PIPE
55.445	3331.102	.566	3331.668	12.71	13.73	2.93	3334.59	.00	1.13	2.35	3.000	.000	.00	1 .0
6.803	.0240					.0643	.44	.57	3.85	.71	.013	.00	.00	PIPE

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WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:24: 4

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope				SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	
62.247	3331.265	.548	3331.813	12.71	14.40	3.22	3335.03	.00	1.13	2.32	3.000	.000	.00	1 .0
6.130	.0240					.0736	.45	.55	4.11	.71	.013	.00	.00	PIPE
68.378	3331.412	.530	3331.942	12.71	15.10	3.54	3335.48	.00	1.13	2.29	3.000	.000	.00	1 .0
5.588	.0240					.0842	.47	.53	4.39	.71	.013	.00	.00	PIPE
73.965	3331.546	.513	3332.059	12.71	15.83	3.89	3335.95	.00	1.13	2.26	3.000	.000	.00	1 .0
5.145	.0240					.0965	.50	.51	4.68	.71	.013	.00	.00	PIPE
79.110	3331.670	.496	3332.166	12.71	16.61	4.28	3336.45	.00	1.13	2.23	3.000	.000	.00	1 .0
2.500	.0400					.1060	.26	.50	4.99	.63	.013	.00	.00	PIPE
81.610	3331.770	.489	3332.259	12.71	16.94	4.46	3336.72	.00	1.13	2.22	3.000	.000	.00	1 .0
2.500	.0400					.1123	.28	.49	5.13	.63	.013	.00	.00	PIPE
84.110	3331.870	.482	3332.352	12.71	17.30	4.65	3337.00	.00	1.13	2.20	3.000	.000	.00	1 .0
14.287	.1247					.1125	1.61	.48	5.28	.47	.013	.00	.00	PIPE
98.397	3333.652	.489	3334.141	12.71	16.96	4.47	3338.61	.00	1.13	2.22	3.000	.000	.00	1 .0
17.437	.1247					.1024	1.79	.49	5.14	.47	.013	.00	.00	PIPE
115.834	3335.827	.505	3336.333	12.71	16.17	4.06	3340.39	.00	1.13	2.25	3.000	.000	.00	1 .0
9.972	.1247					.0894	.89	.51	4.82	.47	.013	.00	.00	PIPE
125.806	3337.071	.522	3337.594	12.71	15.42	3.69	3341.28	.00	1.13	2.27	3.000	.000	.00	1 .0
6.819	.1247					.0781	.53	.52	4.51	.47	.013	.00	.00	PIPE

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WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:24: 4

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET
J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
132.626	3337.922	.540	3338.462	12.71	14.70	3.36	3341.82	.00	1.13	2.30	3.000	.000	.00	1 .0
5.077	.1247					.0682	.35	.54	4.23	.47	.013	.00	.00	PIPE
137.703	3338.555	.558	3339.113	12.71	14.02	3.05	3342.16	.00	1.13	2.33	3.000	.000	.00	1 .0
3.969	.1247					.0596	.24	.56	3.96	.47	.013	.00	.00	PIPE
141.672	3339.050	.577	3339.627	12.71	13.36	2.77	3342.40	.00	1.13	2.36	3.000	.000	.00	1 .0
3.201	.1247					.0521	.17	.58	3.71	.47	.013	.00	.00	PIPE
144.874	3339.450	.596	3340.046	12.71	12.74	2.52	3342.57	.00	1.13	2.39	3.000	.000	.00	1 .0
2.638	.1247					.0455	.12	.60	3.48	.47	.013	.00	.00	PIPE
147.511	3339.779	.616	3340.395	12.71	12.15	2.29	3342.69	.00	1.13	2.42	3.000	.000	.00	1 .0
2.206	.1247					.0398	.09	.62	3.26	.47	.013	.00	.00	PIPE
149.718	3340.054	.637	3340.691	12.71	11.58	2.08	3342.77	.00	1.13	2.45	3.000	.000	.00	1 .0
1.864	.1247					.0348	.06	.64	3.05	.47	.013	.00	.00	PIPE
151.581	3340.286	.659	3340.945	12.71	11.05	1.89	3342.84	.00	1.13	2.48	3.000	.000	.00	1 .0
1.587	.1247					.0304	.05	.66	2.86	.47	.013	.00	.00	PIPE
153.168	3340.484	.682	3341.166	12.71	10.53	1.72	3342.89	.00	1.13	2.51	3.000	.000	.00	1 .0
1.357	.1247					.0266	.04	.68	2.68	.47	.013	.00	.00	PIPE
154.525	3340.654	.705	3341.358	12.71	10.04	1.57	3342.92	.00	1.13	2.54	3.000	.000	.00	1 .0
1.165	.1247					.0232	.03	.70	2.51	.47	.013	.00	.00	PIPE

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SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope				SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	
155.690	3340.799	.729	3341.528	12.71	9.57	1.42	3342.95	.00	1.13	2.57	3.000	.000	.00	1 .0
.999	.1247					.0203	.02	.73	2.35	.47	.013	.00	.00	PIPE
156.688	3340.923	.754	3341.677	12.71	9.13	1.29	3342.97	.00	1.13	2.60	3.000	.000	.00	1 .0
.857	.1247					.0178	.02	.75	2.20	.47	.013	.00	.00	PIPE
157.546	3341.030	.780	3341.810	12.71	8.70	1.18	3342.99	.00	1.13	2.63	3.000	.000	.00	1 .0
.732	.1247					.0155	.01	.78	2.06	.47	.013	.00	.00	PIPE
158.278	3341.122	.807	3341.928	12.71	8.30	1.07	3343.00	.00	1.13	2.66	3.000	.000	.00	1 .0
.624	.1247					.0136	.01	.81	1.93	.47	.013	.00	.00	PIPE
158.901	3341.199	.835	3342.034	12.71	7.91	.97	3343.01	.00	1.13	2.69	3.000	.000	.00	1 .0
.526	.1247					.0119	.01	.83	1.80	.47	.013	.00	.00	PIPE
159.427	3341.265	.864	3342.129	12.71	7.54	.88	3343.01	.00	1.13	2.72	3.000	.000	.00	1 .0
.439	.1247					.0104	.00	.86	1.69	.47	.013	.00	.00	PIPE
159.866	3341.320	.894	3342.214	12.71	7.19	.80	3343.02	.00	1.13	2.74	3.000	.000	.00	1 .0
.362	.1247					.0091	.00	.89	1.58	.47	.013	.00	.00	PIPE
160.228	3341.365	.925	3342.290	12.71	6.86	.73	3343.02	.00	1.13	2.77	3.000	.000	.00	1 .0
.290	.1247					.0080	.00	.93	1.48	.47	.013	.00	.00	PIPE
160.518	3341.401	.958	3342.359	12.71	6.54	.66	3343.02	.00	1.13	2.80	3.000	.000	.00	1 .0
.226	.1247					.0070	.00	.96	1.38	.47	.013	.00	.00	PIPE

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SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET
J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
160.743	3341.429	.992	3342.421	12.71	6.23	.60	3343.02	.00	1.13	2.82	3.000	.000	.00	1 .0
.167	.1247					.0061	.00	.99	1.29	.47	.013	.00	.00	PIPE
160.910	3341.450	1.027	3342.477	12.71	5.94	.55	3343.03	.00	1.13	2.85	3.000	.000	.00	1 .0
JUNCT STR	.0400					.0276	.07	1.03	1.21		.013	.00	.00	PIPE
163.410	3341.550	.492	3342.042	8.65	11.45	2.04	3344.08	.00	.93	2.22	3.000	.000	.00	1 .0
2.500	.0399					.0500	.12	.49	3.46	.52	.013	.00	.00	PIPE
165.910	3341.650	.489	3342.139	8.65	11.53	2.06	3344.20	.00	.93	2.22	3.000	.000	.00	1 .0
23.620	.0504					.0503	1.19	.49	3.49	.49	.013	.00	.00	PIPE
189.550	3342.842	.489	3343.332	8.65	11.53	2.06	3345.39	.00	.93	2.22	3.000	.000	.00	1 .0
33.365	.0504					.0504	1.68	.49	3.49	.49	.013	.00	.00	PIPE
222.915	3344.525	.489	3345.014	8.65	11.53	2.06	3347.08	.00	.93	2.22	3.000	.000	.00	1 .0
52.557	.0504					.0509	2.68	.49	3.49	.49	.013	.00	.00	PIPE
275.472	3347.176	.487	3347.663	8.65	11.60	2.09	3349.75	.00	.93	2.21	3.000	.000	.00	1 .0
41.083	.0504					.0551	2.27	.49	3.52	.49	.013	.00	.00	PIPE
316.555	3349.248	.471	3349.719	8.65	12.17	2.30	3352.02	.00	.93	2.18	3.000	.000	.00	1 .0
16.895	.0504					.0632	1.07	.47	3.76	.49	.013	.00	.00	PIPE
333.450	3350.100	.456	3350.556	8.65	12.77	2.53	3353.09	.00	.93	2.15	3.000	.000	.00	1 .0
2.500	.0399					.0691	.17	.46	4.01	.52	.013	.00	.00	PIPE

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SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
335.950	3350.200	.451	3350.650	8.65	12.99	2.62	3353.27	.00	.93	2.14	3.000	.000	.00	1 .0
2.500	.0400					.0725	.18	.45	4.11	.52	.013	.00	.00	PIPE
338.450	3350.300	.445	3350.745	8.65	13.20	2.71	3353.45	.00	.93	2.13	3.000	.000	.00	1 .0
10.583	.0742					.0742	.79	.45	4.20	.45	.013	.00	.00	PIPE
349.033	3351.085	.445	3351.531	8.65	13.20	2.71	3354.24	.00	.93	2.13	3.000	.000	.00	1 .0
48.987	.0742					.0701	3.43	.45	4.20	.45	.013	.00	.00	PIPE
398.020	3354.720	.458	3355.178	8.65	12.66	2.49	3357.67	.00	.93	2.16	3.000	.000	.00	1 .0
16.941	.0742					.0617	1.05	.46	3.97	.45	.013	.00	.00	PIPE
414.961	3355.977	.474	3356.450	8.65	12.07	2.26	3358.71	.00	.93	2.19	3.000	.000	.00	1 .0
9.360	.0742					.0539	.50	.47	3.72	.45	.013	.00	.00	PIPE
424.321	3356.671	.490	3357.161	8.65	11.51	2.06	3359.22	.00	.93	2.22	3.000	.000	.00	1 .0
6.294	.0742					.0471	.30	.49	3.49	.45	.013	.00	.00	PIPE
430.616	3357.138	.506	3357.645	8.65	10.98	1.87	3359.52	.00	.93	2.25	3.000	.000	.00	1 .0
4.627	.0742					.0411	.19	.51	3.27	.45	.013	.00	.00	PIPE
435.243	3357.482	.523	3358.005	8.65	10.47	1.70	3359.71	.00	.93	2.28	3.000	.000	.00	1 .0
3.579	.0742					.0359	.13	.52	3.06	.45	.013	.00	.00	PIPE
438.822	3357.747	.541	3358.288	8.65	9.98	1.55	3359.83	.00	.93	2.31	3.000	.000	.00	1 .0
2.855	.0742					.0314	.09	.54	2.87	.45	.013	.00	.00	PIPE

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SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
441.677	3357.959	.559	3358.518	8.65	9.51	1.41	3359.92	.00	.93	2.34	3.000	.000	.00	1 .0
2.329	.0742					.0274	.06	.56	2.69	.45	.013	.00	.00	PIPE
444.006	3358.132	.578	3358.710	8.65	9.07	1.28	3359.99	.00	.93	2.37	3.000	.000	.00	1 .0
1.922	.0742					.0239	.05	.58	2.52	.45	.013	.00	.00	PIPE
445.928	3358.275	.597	3358.872	8.65	8.65	1.16	3360.03	.00	.93	2.40	3.000	.000	.00	1 .0
1.603	.0742					.0209	.03	.60	2.36	.45	.013	.00	.00	PIPE
447.531	3358.394	.618	3359.011	8.65	8.25	1.06	3360.07	.00	.93	2.43	3.000	.000	.00	1 .0
1.342	.0742					.0183	.02	.62	2.21	.45	.013	.00	.00	PIPE
448.873	3358.493	.639	3359.132	8.65	7.86	.96	3360.09	.00	.93	2.46	3.000	.000	.00	1 .0
1.127	.0742					.0160	.02	.64	2.07	.45	.013	.00	.00	PIPE
449.999	3358.577	.660	3359.237	8.65	7.50	.87	3360.11	.00	.93	2.49	3.000	.000	.00	1 .0
.942	.0742					.0140	.01	.66	1.94	.45	.013	.00	.00	PIPE
450.941	3358.646	.683	3359.329	8.65	7.15	.79	3360.12	.00	.93	2.52	3.000	.000	.00	1 .0
.788	.0742					.0122	.01	.68	1.82	.45	.013	.00	.00	PIPE
451.729	3358.705	.706	3359.411	8.65	6.82	.72	3360.13	.00	.93	2.55	3.000	.000	.00	1 .0
.651	.0742					.0107	.01	.71	1.70	.45	.013	.00	.00	PIPE
452.381	3358.753	.730	3359.483	8.65	6.50	.66	3360.14	.00	.93	2.57	3.000	.000	.00	1 .0
.532	.0742					.0093	.00	.73	1.59	.45	.013	.00	.00	PIPE

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Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:24: 4

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET
J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
452.913	3358.793	.755	3359.548	8.65	6.20	.60	3360.14	.00	.93	2.60	3.000	.000	.00	1 .0
.427	.0742					.0082	.00	.76	1.49	.45	.013	.00	.00	PIPE
453.340	3358.824	.781	3359.606	8.65	5.91	.54	3360.15	.00	.93	2.63	3.000	.000	.00	1 .0
.332	.0742					.0071	.00	.78	1.40	.45	.013	.00	.00	PIPE
453.672	3358.849	.808	3359.657	8.65	5.63	.49	3360.15	.00	.93	2.66	3.000	.000	.00	1 .0
.247	.0742					.0062	.00	.81	1.31	.45	.013	.00	.00	PIPE
453.919	3358.867	.836	3359.704	8.65	5.37	.45	3360.15	.00	.93	2.69	3.000	.000	.00	1 .0
.171	.0742					.0055	.00	.84	1.22	.45	.013	.00	.00	PIPE
454.090	3358.880	.865	3359.746	8.65	5.12	.41	3360.15	.00	.93	2.72	3.000	.000	.00	1 .0
.098	.0742					.0048	.00	.87	1.14	.45	.013	.00	.00	PIPE
454.188	3358.887	.896	3359.783	8.65	4.88	.37	3360.15	.00	.93	2.75	3.000	.000	.00	1 .0
.032	.0742					.0042	.00	.90	1.07	.45	.013	.00	.00	PIPE
454.220	3358.890	.928	3359.818	8.65	4.65	.34	3360.15	.00	.93	2.77	3.000	.000	.00	1 .0
JUNCT STR	.0400					.0020	.01	.93	1.00		.013	.00	.00	PIPE
456.720	3358.990	1.313	3360.303	2.89	.97	.01	3360.32	.00	.53	2.98	3.000	.000	.00	1 .0
1.133	.0400					.0001	.00	1.31	.17	.31	.013	.00	.00	PIPE
457.853	3359.035	1.267	3360.302	2.89	1.02	.02	3360.32	.00	.53	2.96	3.000	.000	.00	1 .0
1.078	.0400					.0001	.00	1.27	.18	.31	.013	.00	.00	PIPE

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Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:24: 4

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
458.930	3359.079	1.222	3360.301	2.89	1.07	.02	3360.32	.00	.53	2.95	3.000	.000	.00	1 .0
.290	.0400					.0002	.00	1.22	.20	.31	.013	.00	.00	PIPE
459.220	3359.090	1.210	3360.300	2.89	1.08	.02	3360.32	.00	.53	2.94	3.000	.000	.00	1 .0
1.658	.0247					.0002	.00	1.21	.20	.34	.013	.00	.00	PIPE
460.878	3359.131	1.168	3360.299	2.89	1.14	.02	3360.32	.00	.53	2.93	3.000	.000	.00	1 .0
.362	.0247					.0002	.00	1.17	.21	.34	.013	.00	.00	PIPE
461.240	3359.140	1.159	3360.299	2.89	1.15	.02	3360.32	.00	.53	2.92	3.000	.000	.00	1 .0
JUNCT STR	.0200					.0001	.00	1.16	.22		.013	.00	.00	PIPE
463.740	3359.190	1.150	3360.340	.01	.00	.00	3360.34	.00	.03	2.92	3.000	.000	.00	1 .0
2.495	.0160					.0000	.00	1.15	.00	.03	.013	.00	.00	PIPE
466.240	3359.230	1.110	3360.340	.01	.00	.00	3360.34	.00	.03	2.90	3.000	.000	.00	1 .0
1.922	.0200					.0000	.00	1.11	.00	.03	.013	.00	.00	PIPE
468.162	3359.268	1.071	3360.340	.01	.00	.00	3360.34	.00	.03	2.87	3.000	.000	.00	1 .0
1.842	.0200					.0000	.00	1.07	.00	.03	.013	.00	.00	PIPE
470.004	3359.305	1.035	3360.340	.01	.00	.00	3360.34	.00	.03	2.85	3.000	.000	.00	1 .0
1.772	.0200					.0000	.00	1.03	.00	.03	.013	.00	.00	PIPE
471.777	3359.341	.999	3360.340	.01	.00	.00	3360.34	.00	.03	2.83	3.000	.000	.00	1 .0
1.707	.0200					.0000	.00	1.00	.00	.03	.013	.00	.00	PIPE

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Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:24: 4

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
473.484	3359.375	.965	3360.340	.01	.01	.00	3360.34	.00	.03	2.80	3.000	.000	.00	1 .0
1.637	.0200					.0000	.00	.97	.00	.03	.013	.00	.00	PIPE
475.121	3359.407	.932	3360.340	.01	.01	.00	3360.34	.00	.03	2.78	3.000	.000	.00	1 .0
1.582	.0200					.0000	.00	.93	.00	.03	.013	.00	.00	PIPE
476.703	3359.439	.901	3360.340	.01	.01	.00	3360.34	.00	.03	2.75	3.000	.000	.00	1 .0
1.517	.0200					.0000	.00	.90	.00	.03	.013	.00	.00	PIPE
478.219	3359.469	.871	3360.340	.01	.01	.00	3360.34	.00	.03	2.72	3.000	.000	.00	1 .0
1.467	.0200					.0000	.00	.87	.00	.03	.013	.00	.00	PIPE
479.686	3359.499	.841	3360.340	.01	.01	.00	3360.34	.00	.03	2.70	3.000	.000	.00	1 .0
1.412	.0200					.0000	.00	.84	.00	.03	.013	.00	.00	PIPE
481.098	3359.527	.813	3360.340	.01	.01	.00	3360.34	.00	.03	2.67	3.000	.000	.00	1 .0
1.357	.0200					.0000	.00	.81	.00	.03	.013	.00	.00	PIPE
482.454	3359.554	.786	3360.340	.01	.01	.00	3360.34	.00	.03	2.64	3.000	.000	.00	1 .0
1.312	.0200					.0000	.00	.79	.00	.03	.013	.00	.00	PIPE
483.766	3359.580	.760	3360.340	.01	.01	.00	3360.34	.00	.03	2.61	3.000	.000	.00	1 .0
1.262	.0200					.0000	.00	.76	.00	.03	.013	.00	.00	PIPE
485.027	3359.605	.735	3360.340	.01	.01	.00	3360.34	.00	.03	2.58	3.000	.000	.00	1 .0
1.221	.0200					.0000	.00	.73	.00	.03	.013	.00	.00	PIPE

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Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:24: 4

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope				SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	
486.249	3359.630	.710	3360.340	.01	.01	.00	3360.34	.00	.03	2.55	3.000	.000	.00	1 .0
1.176	.0200				.0000	.00	.71	.00	.03	.013		.00	.00	PIPE
487.425	3359.653	.687	3360.340	.01	.01	.00	3360.34	.00	.03	2.52	3.000	.000	.00	1 .0
1.131	.0200				.0000	.00	.69	.00	.03	.013		.00	.00	PIPE
488.557	3359.676	.664	3360.340	.01	.01	.00	3360.34	.00	.03	2.49	3.000	.000	.00	1 .0
1.096	.0200				.0000	.00	.66	.00	.03	.013		.00	.00	PIPE
489.653	3359.698	.642	3360.340	.01	.01	.00	3360.34	.00	.03	2.46	3.000	.000	.00	1 .0
1.056	.0200				.0000	.00	.64	.00	.03	.013		.00	.00	PIPE
490.709	3359.719	.621	3360.340	.01	.01	.00	3360.34	.00	.03	2.43	3.000	.000	.00	1 .0
.561	.0200				.0000	.00	.62	.00	.03	.013		.00	.00	PIPE
491.270	3359.730	.610	3360.340	.01	.01	.00	3360.34	.00	.03	2.42	3.000	.000	.00	1 .0

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T1 SUMMERLIN WEST VILLAGE 22                                                0
T2 FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J)
T3 ATKINS / INTERIM CONDITIONS
SO     28.77 3330.43  36                         3332.104
R      62.14 3331.75  36      .013                              .000  46.0   1
REM  Downstream of SDMH #6
R      67.14 3331.95  36      .013                              .000  00.0   0
REM  Upstream of SDMH #6
R      92.77 3332.68  36      .013                              .000  00.0   0
REM  Downstream of SDMH #7 (JUNCTION WITH LATERAL SDDI# 7)
JX     95.27 3332.78  36 24   .013     3.5           3332.88         78.0         .000
R      97.77 3332.88  36      .013                              .000  00.0   0
REM  Upstream of SDMH #7 (JUNCTION WITH LATERAL SDDI# 8)
R      99.20 3333.46  36      .013                              .000 -89.0   1
JX    104.20 3333.66  36 36   .013     3.6           3333.76         -90.0         .000
R     173.70 3339.91  36      .013                              .000  00.0   0
REM  SDDI #2
SH    173.70 3339.91  36
CD  24  4   0    .000   2.000     .000  .000  .000   .00
CD  36  4   0    .000   3.000     .000  .000  .000   .00
CD  48  4   0    .000   4.000     .000  .000  .000   .00
Q            7.0    .0
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Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:31:36

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / INTERIM CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope				SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	
28.770	3330.430	.702	3331.132	14.10	11.20	1.95	3333.08	.00	1.20	2.54	3.000	.000	.00	0 .0
6.646	.0396					.0301	.20	.70	2.80	.66	.013	.00	.00	PIPE
35.416	3330.693	.712	3331.404	14.10	10.99	1.88	3333.28	.00	1.20	2.55	3.000	.000	.00	0 .0
12.153	.0396					.0275	.33	.71	2.73	.66	.013	.00	.00	PIPE
47.569	3331.174	.736	3331.909	14.10	10.48	1.71	3333.61	.00	1.20	2.58	3.000	.000	.00	0 .0
8.376	.0396					.0241	.20	.74	2.56	.66	.013	.00	.00	PIPE
55.945	3331.505	.761	3332.266	14.10	9.99	1.55	3333.82	.00	1.20	2.61	3.000	.000	.00	0 .0
6.195	.0396					.0211	.13	.76	2.40	.66	.013	.00	.00	PIPE
62.140	3331.750	.787	3332.537	14.10	9.53	1.41	3333.95	.00	1.20	2.64	3.000	.000	.00	0 .0
.413	.0400					.0195	.01	.79	2.24	.66	.013	.00	.00	PIPE
62.553	3331.767	.790	3332.556	14.10	9.49	1.40	3333.96	.00	1.20	2.64	3.000	.000	.00	0 .0
4.587	.0400					.0182	.08	.79	2.23	.66	.013	.00	.00	PIPE
67.140	3331.950	.817	3332.767	14.10	9.05	1.27	3334.04	.00	1.20	2.67	3.000	.000	.00	0 .0
4.613	.0285					.0163	.08	.82	2.09	.72	.013	.00	.00	PIPE
71.753	3332.082	.834	3332.916	14.10	8.79	1.20	3334.11	.00	1.20	2.69	3.000	.000	.00	0 .0
5.799	.0285					.0147	.09	.83	2.00	.72	.013	.00	.00	PIPE
77.552	3332.247	.863	3333.110	14.10	8.38	1.09	3334.20	.00	1.20	2.72	3.000	.000	.00	0 .0
4.410	.0285					.0128	.06	.86	1.88	.72	.013	.00	.00	PIPE

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Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:31:36

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / INTERIM CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope				SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	
81.962	3332.372	.893	3333.265	14.10	7.99	.99	3334.26	.00	1.20	2.74	3.000	.000	.00	0 .0
3.408	.0285					.0112	.04	.89	1.75	.72	.013	.00	.00	PIPE
85.370	3332.469	.925	3333.394	14.10	7.62	.90	3334.29	.00	1.20	2.77	3.000	.000	.00	0 .0
2.649	.0285					.0098	.03	.92	1.64	.72	.013	.00	.00	PIPE
88.019	3332.545	.957	3333.502	14.10	7.26	.82	3334.32	.00	1.20	2.80	3.000	.000	.00	0 .0
2.051	.0285					.0086	.02	.96	1.54	.72	.013	.00	.00	PIPE
90.070	3332.603	.991	3333.594	14.10	6.92	.74	3334.34	.00	1.20	2.82	3.000	.000	.00	0 .0
1.556	.0285					.0076	.01	.99	1.44	.72	.013	.00	.00	PIPE
91.625	3332.647	1.026	3333.673	14.10	6.60	.68	3334.35	.00	1.20	2.85	3.000	.000	.00	0 .0
1.145	.0285					.0066	.01	1.03	1.34	.72	.013	.00	.00	PIPE
92.770	3332.680	1.062	3333.742	14.10	6.29	.62	3334.36	.00	1.20	2.87	3.000	.000	.00	0 .0
JUNCT STR	.0400					.0175	.04	1.06	1.26		.013	.00	.00	PIPE
95.270	3332.780	.620	3333.400	10.60	10.06	1.57	3334.97	.00	1.03	2.43	3.000	.000	.00	0 .0
2.500	.0399					.0285	.07	.62	2.69	.57	.013	.00	.00	PIPE
97.770	3332.880	.624	3333.504	10.60	9.96	1.54	3335.04	.00	1.03	2.44	3.000	.000	.00	0 .0
.113	.4056					.0275	.00	.62	2.66	.33	.013	.00	.00	PIPE
97.883	3332.926	.631	3333.557	10.60	9.80	1.49	3335.05	.00	1.03	2.45	3.000	.000	.00	0 .0
.300	.4056					.0252	.01	.63	2.60	.33	.013	.00	.00	PIPE

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Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:31:36

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / INTERIM CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
98.183	3333.048	.652	3333.700	10.60	9.35	1.36	3335.06	.00	1.03	2.48	3.000	.000	.00	0 .0
.263	.4056					.0220	.01	.65	2.43	.33	.013	.00	.00	PIPE
98.446	3333.154	.675	3333.829	10.60	8.91	1.23	3335.06	.00	1.03	2.50	3.000	.000	.00	0 .0
.231	.4056					.0192	.00	.67	2.28	.33	.013	.00	.00	PIPE
98.677	3333.248	.698	3333.945	10.60	8.50	1.12	3335.07	.00	1.03	2.53	3.000	.000	.00	0 .0
.201	.4056					.0168	.00	.70	2.13	.33	.013	.00	.00	PIPE
98.877	3333.329	.722	3334.051	10.60	8.10	1.02	3335.07	.00	1.03	2.56	3.000	.000	.00	0 .0
.174	.4056					.0147	.00	.72	2.00	.33	.013	.00	.00	PIPE
99.051	3333.400	.746	3334.146	10.60	7.72	.93	3335.07	.00	1.03	2.59	3.000	.000	.00	0 .0
.149	.4056					.0129	.00	.75	1.87	.33	.013	.00	.00	PIPE
99.200	3333.460	.772	3334.232	10.60	7.36	.84	3335.07	.00	1.03	2.62	3.000	.000	.00	0 .0
JUNCT STR	.0400					.0496	.25	.77	1.75		.013	.00	.00	PIPE
104.200	3333.660	.387	3334.047	7.00	13.11	2.67	3336.72	.00	.83	2.01	3.000	.000	.00	0 .0
27.631	.0899					.0817	2.26	.39	4.48	.38	.013	.00	.00	PIPE
131.831	3336.145	.400	3336.545	7.00	12.51	2.43	3338.98	.00	.83	2.04	3.000	.000	.00	0 .0
11.205	.0899					.0714	.80	.40	4.21	.38	.013	.00	.00	PIPE
143.036	3337.153	.413	3337.566	7.00	11.93	2.21	3339.78	.00	.83	2.07	3.000	.000	.00	0 .0
6.780	.0899					.0623	.42	.41	3.95	.38	.013	.00	.00	PIPE

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Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:31:36

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / INTERIM CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope				SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	
149.816	3337.762	.427	3338.189	7.00	11.37	2.01	3340.20	.00	.83	2.10	3.000	.000	.00	0 .0
4.738	.0899					.0544	.26	.43	3.70	.38	.013	.00	.00	PIPE
154.554	3338.188	.441	3338.629	7.00	10.84	1.83	3340.46	.00	.83	2.12	3.000	.000	.00	0 .0
3.567	.0899					.0475	.17	.44	3.47	.38	.013	.00	.00	PIPE
158.121	3338.509	.456	3338.965	7.00	10.34	1.66	3340.63	.00	.83	2.15	3.000	.000	.00	0 .0
2.801	.0899					.0415	.12	.46	3.25	.38	.013	.00	.00	PIPE
160.922	3338.761	.471	3339.232	7.00	9.86	1.51	3340.74	.00	.83	2.18	3.000	.000	.00	0 .0
2.260	.0899					.0362	.08	.47	3.05	.38	.013	.00	.00	PIPE
163.182	3338.965	.487	3339.451	7.00	9.40	1.37	3340.82	.00	.83	2.21	3.000	.000	.00	0 .0
1.860	.0899					.0316	.06	.49	2.85	.38	.013	.00	.00	PIPE
165.042	3339.132	.503	3339.635	7.00	8.96	1.25	3340.88	.00	.83	2.24	3.000	.000	.00	0 .0
1.549	.0899					.0276	.04	.50	2.68	.38	.013	.00	.00	PIPE
166.590	3339.271	.520	3339.791	7.00	8.55	1.13	3340.92	.00	.83	2.27	3.000	.000	.00	0 .0
1.301	.0899					.0241	.03	.52	2.51	.38	.013	.00	.00	PIPE
167.891	3339.388	.537	3339.925	7.00	8.15	1.03	3340.96	.00	.83	2.30	3.000	.000	.00	0 .0
1.098	.0899					.0211	.02	.54	2.35	.38	.013	.00	.00	PIPE
168.989	3339.487	.555	3340.042	7.00	7.77	.94	3340.98	.00	.83	2.33	3.000	.000	.00	0 .0
.928	.0899					.0184	.02	.56	2.20	.38	.013	.00	.00	PIPE

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Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:31:36

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / INTERIM CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope				SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	
169.917	3339.570	.574	3340.144	7.00	7.41	.85	3341.00	.00	.83	2.36	3.000	.000	.00	0 .0
.786	.0899					.0161	.01	.57	2.06	.38	.013	.00	.00	PIPE
170.703	3339.641	.594	3340.234	7.00	7.06	.77	3341.01	.00	.83	2.39	3.000	.000	.00	0 .0
.663	.0899					.0141	.01	.59	1.93	.38	.013	.00	.00	PIPE
171.366	3339.700	.614	3340.314	7.00	6.73	.70	3341.02	.00	.83	2.42	3.000	.000	.00	0 .0
.556	.0899					.0123	.01	.61	1.81	.38	.013	.00	.00	PIPE
171.923	3339.750	.635	3340.385	7.00	6.42	.64	3341.03	.00	.83	2.45	3.000	.000	.00	0 .0
.462	.0899					.0107	.00	.63	1.70	.38	.013	.00	.00	PIPE
172.385	3339.792	.656	3340.448	7.00	6.12	.58	3341.03	.00	.83	2.48	3.000	.000	.00	0 .0
.379	.0899					.0094	.00	.66	1.59	.38	.013	.00	.00	PIPE
172.763	3339.826	.679	3340.504	7.00	5.84	.53	3341.03	.00	.83	2.51	3.000	.000	.00	0 .0
.305	.0899					.0082	.00	.68	1.49	.38	.013	.00	.00	PIPE
173.068	3339.853	.702	3340.555	7.00	5.57	.48	3341.04	.00	.83	2.54	3.000	.000	.00	0 .0
.238	.0899					.0072	.00	.70	1.39	.38	.013	.00	.00	PIPE
173.306	3339.875	.726	3340.601	7.00	5.31	.44	3341.04	.00	.83	2.57	3.000	.000	.00	0 .0
.177	.0899					.0063	.00	.73	1.30	.38	.013	.00	.00	PIPE
173.484	3339.891	.751	3340.641	7.00	5.06	.40	3341.04	.00	.83	2.60	3.000	.000	.00	0 .0
.122	.0899					.0055	.00	.75	1.22	.38	.013	.00	.00	PIPE

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Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:31:36

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET
J ATKINS / INTERIM CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope				SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	
173.606	3339.902	.776	3340.678	7.00	4.82	.36	3341.04	.00	.83	2.63	3.000	.000	.00	0 .0
.071	.0899					.0048	.00	.78	1.14	.38	.013	.00	.00	PIPE
173.677	3339.908	.803	3340.711	7.00	4.60	.33	3341.04	.00	.83	2.66	3.000	.000	.00	0 .0
.023	.0899					.0042	.00	.80	1.07	.38	.013	.00	.00	PIPE
173.700	3339.910	.832	3340.742	7.00	4.38	.30	3341.04	.00	.83	2.69	3.000	.000	.00	0 .0

C.2 Ultimate Condition WSPG-W Model

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T1 SUMMERLIN WEST VILLAGE 22                                                0
T2 FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J)
T3 ATKINS / ULTIMATE CONDITIONS
SO      0.00 3329.77  36                          3331.621
REM  Tailwater from VTN Fleet Wing TDS
R      28.77 3330.43  36      .013                                  .000  00.0   0
REM  Downstream of SDMH #1 (Junction with SDMH#6)
JX     30.77 3330.53  36 36   .013    13.12          3330.63         44.0         .000
R      35.77 3330.63  36      .013                                  .000  00.0   1
REM  Upstream of SDMH #1 (Junction with SDMH#6)
REM  48.34 foot Reach
R      79.11 3331.67  36      .013                                  .000  00.0   0
REM  Downstream of SDMH #2
R      81.61 3331.77  36      .013                                  .000  00.0   1
R      84.11 3331.87  36      .013                                  .000  00.0   0
REM  Upstream of SDMH #2
REM  81.80 foot Reach
R     160.91 3341.45  36      .013                                  .000  00.0   0
REM  Downstream of SDMH #3 (JUNCTION WITH LATERAL SDDI#1 & SDDI#3)
JX    163.41 3341.55  36 24 24.013    1.12    2.94  3342.65 3342.65 -61.0 45.0    .000
R     165.91 3341.65  36      .013                                  .000  00.0   1
REM  Upstream of SDMH #3 (JUNCTION WITH LATERAL SDDI#1 & SDDI#3)
REM  172.54 foot Reach
R     333.45 3350.10  36      .013                                  .000  00.0   0
REM  Downstream of SDMH #4
R     335.95 3350.20  36      .013                                  .000  00.0   1
R     338.45 3350.30  36      .013                                  .000  00.0   0
REM  Upstream of SDMH #4
REM  120.77 foot Reach
R     454.22 3358.89  36      .013                                  .000  03.0   0
REM  Downstream of SDMH #5
JX    456.72 3358.99  36 24   .013    5.76          3359.06         -90.0         .000
R     459.22 3359.09  36      .013                                  .000  00.0   1
REM  Upstream of SDMH #5
REM  7.02 foot Reach
R     461.24 3359.14  36      .013                                  .000  87.0   0
REM  Downstream of SDDI #9
JX    463.74 3359.19  36 24   .013    2.88          3359.06         -90.0         .000
R     466.24 3359.23  36      .013                                  .000  00.0   0
REM  Upstream of SDDI #9
REM  25.03 foot Reach
R     491.27 3359.73  36      .013                                  .000  00.0   0
SH    491.27 3359.73  36
CD  24  4   1    .000   2.000     .000  .000  .000   .00
CD  36  4   1    .000   3.000     .000  .000  .000   .00
Q           49.0     .0
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WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:23:54

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
.000	3329.770	1.786	3331.556	74.82	17.05	4.52	3336.07	.00	2.72	2.94	3.000	.000	.00	1 .0
28.770	.0229					.0295	.85	1.79	2.46	1.92	.013	.00	.00	PIPE
28.770	3330.430	1.750	3332.180	74.82	17.47	4.74	3336.92	.00	2.72	2.96	3.000	.000	.00	1 .0
JUNCT STR	.0500					.0448	.09	1.75	2.56		.013	.00	.00	PIPE
30.770	3330.530	1.282	3331.812	61.70	21.40	7.11	3338.93	.00	2.53	2.97	3.000	.000	.00	1 .0
5.000	.0200					.0605	.30	1.28	3.83	1.77	.013	.00	.00	PIPE
35.770	3330.630	1.268	3331.897	61.70	21.73	7.33	3339.23	.00	2.53	2.96	3.000	.000	.00	1 .0
14.473	.0240					.0656	.95	1.27	3.91	1.67	.013	.00	.00	PIPE
50.243	3330.977	1.228	3332.205	61.70	22.67	7.98	3340.18	.00	2.53	2.95	3.000	.000	.00	1 .0
15.046	.0240					.0742	1.12	1.23	4.16	1.67	.013	.00	.00	PIPE
65.289	3331.338	1.185	3332.523	61.70	23.77	8.78	3341.30	.00	2.53	2.93	3.000	.000	.00	1 .0
13.821	.0240					.0845	1.17	1.18	4.45	1.67	.013	.00	.00	PIPE
79.110	3331.670	1.143	3332.813	61.70	24.93	9.65	3342.47	.00	2.53	2.91	3.000	.000	.00	1 .0
2.500	.0400					.0909	.23	1.14	4.77	1.43	.013	.00	.00	PIPE
81.610	3331.770	1.137	3332.907	61.70	25.11	9.79	3342.70	.00	2.53	2.91	3.000	.000	.00	1 .0
2.500	.0400					.0927	.23	1.14	4.82	1.43	.013	.00	.00	PIPE
84.110	3331.870	1.131	3333.002	61.70	25.29	9.93	3342.93	.00	2.53	2.91	3.000	.000	.00	1 .0
3.295	.1247					.0929	.31	1.13	4.87	1.05	.013	.00	.00	PIPE

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Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:23:54

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
87.405	3332.281	1.136	3333.417	61.70	25.16	9.83	3343.24	.00	2.53	2.91	3.000	.000	.00	1 .0
22.337	.1247					.0866	1.93	1.14	4.83	1.05	.013	.00	.00	PIPE
109.742	3335.068	1.177	3336.244	61.70	23.98	8.93	3345.18	.00	2.53	2.93	3.000	.000	.00	1 .0
15.776	.1247					.0760	1.20	1.18	4.51	1.05	.013	.00	.00	PIPE
125.518	3337.035	1.220	3338.255	61.70	22.87	8.12	3346.38	.00	2.53	2.95	3.000	.000	.00	1 .0
11.952	.1247					.0667	.80	1.22	4.21	1.05	.013	.00	.00	PIPE
137.469	3338.526	1.264	3339.790	61.70	21.80	7.38	3347.17	.00	2.53	2.96	3.000	.000	.00	1 .0
9.440	.1247					.0586	.55	1.26	3.93	1.05	.013	.00	.00	PIPE
146.909	3339.704	1.311	3341.014	61.70	20.79	6.71	3347.73	.00	2.53	2.98	3.000	.000	.00	1 .0
7.663	.1247					.0515	.39	1.31	3.67	1.05	.013	.00	.00	PIPE
154.573	3340.659	1.359	3342.019	61.70	19.82	6.10	3348.12	.00	2.53	2.99	3.000	.000	.00	1 .0
6.337	.1247					.0452	.29	1.36	3.42	1.05	.013	.00	.00	PIPE
160.910	3341.450	1.410	3342.860	61.70	18.90	5.55	3348.41	.00	2.53	2.99	3.000	.000	.00	1 .0
JUNCT STR	.0400					.0462	.12	1.41	3.19		.013	.00	.00	PIPE
163.410	3341.550	1.294	3342.844	57.64	19.75	6.06	3348.90	.00	2.46	2.97	3.000	.000	.00	1 .0
2.500	.0399					.0503	.13	1.29	3.51	1.38	.013	.00	.00	PIPE
165.910	3341.650	1.291	3342.941	57.64	19.81	6.09	3349.03	.00	2.46	2.97	3.000	.000	.00	1 .0
6.083	.0504					.0504	.31	1.29	3.53	1.29	.013	.00	.00	PIPE

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Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:23:54

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope				SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	
171.993	3341.957	1.291	3343.248	57.64	19.81	6.09	3349.34	.00	2.46	2.97	3.000	.000	.00	1 .0
161.457	.0504					.0535	8.64	1.29	3.53	1.29	.013	.00	.00	PIPE
333.450	3350.100	1.251	3351.351	57.64	20.66	6.63	3357.98	.00	2.46	2.96	3.000	.000	.00	1 .0
2.500	.0399					.0569	.14	1.25	3.75	1.38	.013	.00	.00	PIPE
335.950	3350.200	1.247	3351.447	57.64	20.73	6.68	3358.12	.00	2.46	2.96	3.000	.000	.00	1 .0
2.500	.0400					.0574	.14	1.25	3.77	1.38	.013	.00	.00	PIPE
338.450	3350.300	1.244	3351.544	57.64	20.81	6.72	3358.27	.00	2.46	2.96	3.000	.000	.00	1 .0
25.793	.0742					.0545	1.41	1.24	3.79	1.16	.013	.00	.00	PIPE
364.243	3352.214	1.285	3353.499	57.64	19.94	6.18	3359.67	.00	2.46	2.97	3.000	.000	.00	1 .0
19.812	.0742					.0483	.96	1.28	3.56	1.16	.013	.00	.00	PIPE
384.055	3353.684	1.332	3355.016	57.64	19.01	5.61	3360.63	.00	2.46	2.98	3.000	.000	.00	1 .0
14.497	.0742					.0424	.61	1.33	3.32	1.16	.013	.00	.00	PIPE
398.551	3354.760	1.382	3356.141	57.64	18.13	5.10	3361.24	.00	2.46	2.99	3.000	.000	.00	1 .0
11.165	.0742					.0373	.42	1.38	3.10	1.16	.013	.00	.00	PIPE
409.716	3355.588	1.433	3357.021	57.64	17.29	4.64	3361.66	.00	2.46	3.00	3.000	.000	.00	1 .0
8.882	.0742					.0328	.29	1.43	2.89	1.16	.013	.00	.00	PIPE
418.598	3356.247	1.488	3357.734	57.64	16.48	4.22	3361.95	.00	2.46	3.00	3.000	.000	.00	1 .0
7.207	.0742					.0289	.21	1.49	2.69	1.16	.013	.00	.00	PIPE

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Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:23:54

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
425.805	3356.781	1.545	3358.326	57.64	15.71	3.83	3362.16	.00	2.46	3.00	3.000	.000	.00	1 .0
5.925	.0742					.0255	.15	1.54	2.50	1.16	.013	.00	.00	PIPE
431.730	3357.221	1.604	3358.825	57.64	14.98	3.49	3362.31	.00	2.46	2.99	3.000	.000	.00	1 .0
4.909	.0742					.0225	.11	1.60	2.33	1.16	.013	.00	.00	PIPE
436.639	3357.585	1.667	3359.253	57.64	14.29	3.17	3362.42	.00	2.46	2.98	3.000	.000	.00	1 .0
4.081	.0742					.0198	.08	1.67	2.16	1.16	.013	.00	.00	PIPE
440.720	3357.888	1.733	3359.622	57.64	13.62	2.88	3362.50	.00	2.46	2.96	3.000	.000	.00	1 .0
3.386	.0742					.0175	.06	1.73	2.01	1.16	.013	.00	.00	PIPE
444.105	3358.139	1.803	3359.943	57.64	12.99	2.62	3362.56	.00	2.46	2.94	3.000	.000	.00	1 .0
2.794	.0742					.0155	.04	1.80	1.86	1.16	.013	.00	.00	PIPE
446.900	3358.347	1.878	3360.224	57.64	12.38	2.38	3362.60	.00	2.46	2.90	3.000	.000	.00	1 .0
2.275	.0742					.0138	.03	1.88	1.72	1.16	.013	.00	.00	PIPE
449.175	3358.516	1.956	3360.472	57.64	11.81	2.16	3362.64	.00	2.46	2.86	3.000	.000	.00	1 .0
1.816	.0742					.0122	.02	1.96	1.59	1.16	.013	.00	.00	PIPE
450.991	3358.650	2.041	3360.691	57.64	11.26	1.97	3362.66	.00	2.46	2.80	3.000	.000	.00	1 .0
1.396	.0742					.0109	.02	2.04	1.47	1.16	.013	.00	.00	PIPE
452.387	3358.754	2.131	3360.885	57.64	10.73	1.79	3362.67	.00	2.46	2.72	3.000	.000	.00	1 .0
1.001	.0742					.0097	.01	2.13	1.35	1.16	.013	.00	.00	PIPE

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Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:23:54

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
453.387	3358.828	2.229	3361.057	57.64	10.23	1.63	3362.68	.00	2.46	2.62	3.000	.000	.00	1 .0
.616	.0742					.0087	.01	2.23	1.23	1.16	.013	.00	.00	PIPE
454.003	3358.874	2.337	3361.210	57.64	9.76	1.48	3362.69	.00	2.46	2.49	3.000	.000	.00	1 .0
.217	.0742					.0079	.00	2.34	1.12	1.16	.013	.00	.00	PIPE
454.220	3358.890	2.458	3361.348	57.64	9.30	1.34	3362.69	.00	2.46	2.31	3.000	.000	.00	1 .0
JUNCT STR	.0400					.0068	.02	2.46	1.00		.013	.00	.00	PIPE
456.720	3358.990	3.101	3362.091	51.88	7.34	.84	3362.93	.00	2.34	.00	3.000	.000	.00	1 .0
2.500	.0400					.0061	.02	3.10	.00	1.30	.013	.00	.00	PIPE
459.220	3359.090	3.058	3362.148	51.88	7.34	.84	3362.98	.00	2.34	.00	3.000	.000	.00	1 .0
2.020	.0247					.0061	.01	3.06	.00	1.49	.013	.00	.00	PIPE
461.240	3359.140	3.261	3362.401	51.88	7.34	.84	3363.24	.00	2.34	.00	3.000	.000	.00	1 .0
JUNCT STR	.0200					.0057	.01	3.26	.00		.013	.00	.00	PIPE
463.740	3359.190	3.406	3362.595	49.00	6.93	.75	3363.34	.00	2.28	.00	3.000	.000	.00	1 .0
2.500	.0160					.0054	.01	3.41	.00	1.64	.013	.00	.00	PIPE
466.240	3359.230	3.379	3362.609	49.00	6.93	.75	3363.36	.00	2.28	.00	3.000	.000	.00	1 .0
25.030	.0200					.0054	.14	3.38	.00	1.53	.013	.00	.00	PIPE
491.270	3359.730	3.014	3362.744	49.00	6.93	.75	3363.49	.00	2.28	.00	3.000	.000	.00	1 .0

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T1 SUMMERLIN WEST VILLAGE 22                                                0
T2 FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J)
T3 ATKINS / ULTIMATE CONDITIONS
SO     28.77 3330.43  36                          3332.180
R      62.14 3330.63  36      .013                                .000  46.0   0
REM  Downstream of SDMH #6
R      67.14 3331.95  36      .013                                .000  00.0   0
REM  Upstream of SDMH #6
R      92.77 3332.68  36      .013                                .000  00.0   0
REM  Downstream of SDMH #7 (JUNCTION WITH LATERAL SDDI# 7)
JX     95.27 3332.78  36 24   .013     3.5           3332.88         78.0         .000
R      97.77 3332.88  36      .013                                .000  00.0   0
REM  Upstream of SDMH #7 (JUNCTION WITH LATERAL SDDI# 8)
R      99.20 3333.46  36      .013                                .000 -89.0   1
JX    104.20 3333.66  36 36   .013     3.6           3333.76         -90.0         .000
R     173.70 3339.91  36      .013                                .000  00.0   0
REM  SDDI #2
SH    173.70 3339.91  36
CD  24  4   0    .000   2.000     .000  .000  .000   .00
CD  36  4   0    .000   3.000     .000  .000  .000   .00
CD  48  4   0    .000   4.000     .000  .000  .000   .00
Q            6.0    .0
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Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:31:50

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
28.770	3330.430	1.750	3332.180	13.10	3.06	.15	3332.33	.00	1.15	2.96	3.000	.000	.00	0 .0
1.388	.0060					.0009	.00	1.75	.45	1.03	.013	.00	.00	PIPE
30.158	3330.438	1.750	3332.188	13.10	3.06	.15	3332.33	.00	1.15	2.96	3.000	.000	.00	0 .0
HYDRAULIC JUMP														
30.158	3330.438	.717	3331.155	13.10	10.11	1.59	3332.74	.00	1.15	2.56	3.000	.000	.00	0 .0
2.083	.0060					.0246	.05	.72	2.50	1.03	.013	.00	.00	PIPE
32.241	3330.451	.717	3331.167	13.10	10.11	1.59	3332.75	.00	1.15	2.56	3.000	.000	.00	0 .0
6.616	.0060					.0264	.17	.72	2.50	1.03	.013	.00	.00	PIPE
38.856	3330.490	.693	3331.183	13.10	10.60	1.74	3332.93	.00	1.15	2.53	3.000	.000	.00	0 .0
6.267	.0060					.0302	.19	.69	2.67	1.03	.013	.00	.00	PIPE
45.123	3330.528	.670	3331.198	13.10	11.12	1.92	3333.12	.00	1.15	2.50	3.000	.000	.00	0 .0
5.952	.0060					.0345	.21	.67	2.85	1.03	.013	.00	.00	PIPE
51.075	3330.563	.648	3331.212	13.10	11.66	2.11	3333.32	.00	1.15	2.47	3.000	.000	.00	0 .0
5.665	.0060					.0395	.22	.65	3.05	1.03	.013	.00	.00	PIPE
56.740	3330.597	.627	3331.224	13.10	12.23	2.32	3333.55	.00	1.15	2.44	3.000	.000	.00	0 .0
5.400	.0060					.0452	.24	.63	3.25	1.03	.013	.00	.00	PIPE
62.140	3330.630	.606	3331.236	13.10	12.82	2.55	3333.79	.00	1.15	2.41	3.000	.000	.00	0 .0
.786	.2640					.0457	.04	.61	3.47	.40	.013	.00	.00	PIPE

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Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:31:50

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
62.926	3330.837	.623	3331.460	13.10	12.34	2.36	3333.82	.00	1.15	2.43	3.000	.000	.00	0 .0
.867	.2640					.0405	.04	.62	3.29	.40	.013	.00	.00	PIPE
63.793	3331.066	.644	3331.710	13.10	11.77	2.15	3333.86	.00	1.15	2.46	3.000	.000	.00	0 .0
.759	.2640					.0354	.03	.64	3.08	.40	.013	.00	.00	PIPE
64.552	3331.267	.666	3331.932	13.10	11.22	1.95	3333.89	.00	1.15	2.49	3.000	.000	.00	0 .0
.665	.2640					.0310	.02	.67	2.89	.40	.013	.00	.00	PIPE
65.217	3331.442	.689	3332.131	13.10	10.70	1.78	3333.91	.00	1.15	2.52	3.000	.000	.00	0 .0
.582	.2640					.0271	.02	.69	2.71	.40	.013	.00	.00	PIPE
65.799	3331.596	.712	3332.308	13.10	10.20	1.62	3333.92	.00	1.15	2.55	3.000	.000	.00	0 .0
.509	.2640					.0237	.01	.71	2.53	.40	.013	.00	.00	PIPE
66.309	3331.730	.737	3332.467	13.10	9.72	1.47	3333.94	.00	1.15	2.58	3.000	.000	.00	0 .0
.445	.2640					.0207	.01	.74	2.37	.40	.013	.00	.00	PIPE
66.754	3331.848	.762	3332.610	13.10	9.27	1.33	3333.94	.00	1.15	2.61	3.000	.000	.00	0 .0
.386	.2640					.0181	.01	.76	2.22	.40	.013	.00	.00	PIPE
67.140	3331.950	.788	3332.738	13.10	8.84	1.21	3333.95	.00	1.15	2.64	3.000	.000	.00	0 .0
6.117	.0285					.0159	.10	.79	2.08	.69	.013	.00	.00	PIPE
73.257	3332.124	.813	3332.937	13.10	8.46	1.11	3334.05	.00	1.15	2.67	3.000	.000	.00	0 .0
5.049	.0285					.0140	.07	.81	1.96	.69	.013	.00	.00	PIPE

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Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:31:50

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope				SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	
78.305	3332.268	.841	3333.109	13.10	8.07	1.01	3334.12	.00	1.15	2.70	3.000	.000	.00	0 .0
3.862	.0285					.0123	.05	.84	1.83	.69	.013	.00	.00	PIPE
82.168	3332.378	.870	3333.249	13.10	7.69	.92	3334.17	.00	1.15	2.72	3.000	.000	.00	0 .0
3.002	.0285					.0107	.03	.87	1.71	.69	.013	.00	.00	PIPE
85.170	3332.464	.901	3333.364	13.10	7.34	.84	3334.20	.00	1.15	2.75	3.000	.000	.00	0 .0
2.325	.0285					.0094	.02	.90	1.60	.69	.013	.00	.00	PIPE
87.495	3332.530	.932	3333.462	13.10	6.99	.76	3334.22	.00	1.15	2.78	3.000	.000	.00	0 .0
1.796	.0285					.0082	.01	.93	1.50	.69	.013	.00	.00	PIPE
89.291	3332.581	.965	3333.546	13.10	6.67	.69	3334.24	.00	1.15	2.80	3.000	.000	.00	0 .0
1.349	.0285					.0072	.01	.97	1.40	.69	.013	.00	.00	PIPE
90.640	3332.619	.999	3333.618	13.10	6.36	.63	3334.25	.00	1.15	2.83	3.000	.000	.00	0 .0
.978	.0285					.0063	.01	1.00	1.31	.69	.013	.00	.00	PIPE
91.618	3332.647	1.035	3333.682	13.10	6.06	.57	3334.25	.00	1.15	2.85	3.000	.000	.00	0 .0
.658	.0285					.0055	.00	1.03	1.23	.69	.013	.00	.00	PIPE
92.276	3332.666	1.071	3333.737	13.10	5.78	.52	3334.26	.00	1.15	2.87	3.000	.000	.00	0 .0
.371	.0285					.0049	.00	1.07	1.15	.69	.013	.00	.00	PIPE
92.647	3332.677	1.110	3333.786	13.10	5.51	.47	3334.26	.00	1.15	2.90	3.000	.000	.00	0 .0
.123	.0285					.0042	.00	1.11	1.07	.69	.013	.00	.00	PIPE

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Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:31:50

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
92.770	3332.680	1.151	3333.831	13.10	5.25	.43	3334.26	.00	1.15	2.92	3.000	.000	.00	0 .0
JUNCT STR	.0400							1.15	1.00		.013	.00	.00	PIPE
95.270	3332.780	.604	3333.384	9.60	9.45	1.39	3334.77	.00	.98	2.41	3.000	.000	.00	0 .0
2.500	.0399					.0258	.06	.60	2.56	.54	.013	.00	.00	PIPE
97.770	3332.880	.610	3333.489	9.60	9.33	1.35	3334.84	.00	.98	2.41	3.000	.000	.00	0 .0
.203	.4056					.0241	.00	.61	2.52	.31	.013	.00	.00	PIPE
97.973	3332.962	.625	3333.586	9.60	9.01	1.26	3334.85	.00	.98	2.44	3.000	.000	.00	0 .0
.243	.4056					.0215	.01	.62	2.40	.31	.013	.00	.00	PIPE
98.216	3333.061	.646	3333.706	9.60	8.59	1.15	3334.85	.00	.98	2.47	3.000	.000	.00	0 .0
.212	.4056					.0188	.00	.65	2.25	.31	.013	.00	.00	PIPE
98.428	3333.147	.668	3333.814	9.60	8.19	1.04	3334.86	.00	.98	2.50	3.000	.000	.00	0 .0
.185	.4056					.0164	.00	.67	2.11	.31	.013	.00	.00	PIPE
98.612	3333.222	.691	3333.912	9.60	7.81	.95	3334.86	.00	.98	2.53	3.000	.000	.00	0 .0
.160	.4056					.0144	.00	.69	1.97	.31	.013	.00	.00	PIPE
98.772	3333.286	.714	3334.000	9.60	7.44	.86	3334.86	.00	.98	2.56	3.000	.000	.00	0 .0
.137	.4056					.0126	.00	.71	1.85	.31	.013	.00	.00	PIPE
98.908	3333.342	.739	3334.081	9.60	7.10	.78	3334.86	.00	.98	2.58	3.000	.000	.00	0 .0
.116	.4056					.0110	.00	.74	1.73	.31	.013	.00	.00	PIPE

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Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:31:50

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope				SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	
99.024	3333.389	.764	3334.153	9.60	6.77	.71	3334.86	.00	.98	2.61	3.000	.000	.00	0 .0
.097	.4056					.0096	.00	.76	1.62	.31	.013	.00	.00	PIPE
99.121	3333.428	.790	3334.219	9.60	6.45	.65	3334.86	.00	.98	2.64	3.000	.000	.00	0 .0
.079	.4056					.0084	.00	.79	1.52	.31	.013	.00	.00	PIPE
99.200	3333.460	.818	3334.278	9.60	6.15	.59	3334.87	.00	.98	2.67	3.000	.000	.00	0 .0
JUNCT STR	.0400					.0480	.24	.82	1.42		.013	.00	.00	PIPE
104.200	3333.660	.358	3334.018	6.00	12.57	2.46	3336.47	.00	.77	1.95	3.000	.000	.00	0 .0
1.729	.0899					.0882	.15	.36	4.47	.36	.013	.00	.00	PIPE
105.929	3333.815	.358	3334.174	6.00	12.57	2.45	3336.63	.00	.77	1.95	3.000	.000	.00	0 .0
28.700	.0899					.0826	2.37	.36	4.47	.36	.013	.00	.00	PIPE
134.629	3336.396	.370	3336.766	6.00	11.99	2.23	3339.00	.00	.77	1.97	3.000	.000	.00	0 .0
10.666	.0899					.0721	.77	.37	4.19	.36	.013	.00	.00	PIPE
145.294	3337.355	.383	3337.738	6.00	11.43	2.03	3339.77	.00	.77	2.00	3.000	.000	.00	0 .0
6.352	.0899					.0629	.40	.38	3.93	.36	.013	.00	.00	PIPE
151.646	3337.927	.395	3338.322	6.00	10.90	1.84	3340.17	.00	.77	2.03	3.000	.000	.00	0 .0
4.411	.0899					.0549	.24	.40	3.69	.36	.013	.00	.00	PIPE
156.057	3338.323	.408	3338.732	6.00	10.39	1.68	3340.41	.00	.77	2.06	3.000	.000	.00	0 .0
3.304	.0899					.0479	.16	.41	3.46	.36	.013	.00	.00	PIPE

FILE: UltLatSDMH1.WSW W S P G W - CIVILDESIGN Version 14.08 PAGE 6

Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:31:50

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
159.361	3338.621	.422	3339.042	6.00	9.91	1.52	3340.57	.00	.77	2.09	3.000	.000	.00	0 .0
2.587	.0899					.0418	.11	.42	3.24	.36	.013	.00	.00	PIPE
161.948	3338.853	.436	3339.289	6.00	9.45	1.39	3340.67	.00	.77	2.11	3.000	.000	.00	0 .0
2.085	.0899					.0365	.08	.44	3.04	.36	.013	.00	.00	PIPE
164.033	3339.041	.451	3339.491	6.00	9.01	1.26	3340.75	.00	.77	2.14	3.000	.000	.00	0 .0
1.714	.0899					.0319	.05	.45	2.85	.36	.013	.00	.00	PIPE
165.748	3339.195	.466	3339.660	6.00	8.59	1.14	3340.81	.00	.77	2.17	3.000	.000	.00	0 .0
1.425	.0899					.0278	.04	.47	2.67	.36	.013	.00	.00	PIPE
167.173	3339.323	.481	3339.804	6.00	8.19	1.04	3340.84	.00	.77	2.20	3.000	.000	.00	0 .0
1.195	.0899					.0243	.03	.48	2.50	.36	.013	.00	.00	PIPE
168.368	3339.430	.497	3339.928	6.00	7.81	.95	3340.87	.00	.77	2.23	3.000	.000	.00	0 .0
1.009	.0899					.0212	.02	.50	2.34	.36	.013	.00	.00	PIPE
169.377	3339.521	.514	3340.035	6.00	7.44	.86	3340.90	.00	.77	2.26	3.000	.000	.00	0 .0
.853	.0899					.0185	.02	.51	2.20	.36	.013	.00	.00	PIPE
170.230	3339.598	.531	3340.129	6.00	7.10	.78	3340.91	.00	.77	2.29	3.000	.000	.00	0 .0
.721	.0899					.0162	.01	.53	2.06	.36	.013	.00	.00	PIPE
170.952	3339.663	.549	3340.212	6.00	6.77	.71	3340.92	.00	.77	2.32	3.000	.000	.00	0 .0
.609	.0899					.0142	.01	.55	1.93	.36	.013	.00	.00	PIPE

FILE: UltLatSDMH1.WSW W S P G W - CIVILDESIGN Version 14.08 PAGE 7

Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:31:50

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET J ATKINS / ULTIMATE CONDITIONS

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
171.561	3339.718	.568	3340.285	6.00	6.45	.65	3340.93	.00	.77	2.35	3.000	.000	.00	0 .0
.510	.0899					.0124	.01	.57	1.81	.36	.013	.00	.00	PIPE
172.071	3339.763	.587	3340.350	6.00	6.15	.59	3340.94	.00	.77	2.38	3.000	.000	.00	0 .0
.424	.0899					.0108	.00	.59	1.69	.36	.013	.00	.00	PIPE
172.494	3339.802	.607	3340.408	6.00	5.86	.53	3340.94	.00	.77	2.41	3.000	.000	.00	0 .0
.349	.0899					.0094	.00	.61	1.59	.36	.013	.00	.00	PIPE
172.843	3339.833	.627	3340.460	6.00	5.59	.49	3340.95	.00	.77	2.44	3.000	.000	.00	0 .0
.278	.0899					.0082	.00	.63	1.49	.36	.013	.00	.00	PIPE
173.121	3339.858	.649	3340.507	6.00	5.33	.44	3340.95	.00	.77	2.47	3.000	.000	.00	0 .0
.218	.0899					.0072	.00	.65	1.39	.36	.013	.00	.00	PIPE
173.339	3339.877	.671	3340.548	6.00	5.08	.40	3340.95	.00	.77	2.50	3.000	.000	.00	0 .0
.162	.0899					.0063	.00	.67	1.30	.36	.013	.00	.00	PIPE
173.502	3339.892	.694	3340.586	6.00	4.85	.36	3340.95	.00	.77	2.53	3.000	.000	.00	0 .0
.112	.0899					.0055	.00	.69	1.22	.36	.013	.00	.00	PIPE
173.614	3339.902	.718	3340.620	6.00	4.62	.33	3340.95	.00	.77	2.56	3.000	.000	.00	0 .0
.065	.0899					.0048	.00	.72	1.14	.36	.013	.00	.00	PIPE
173.679	3339.908	.742	3340.650	6.00	4.41	.30	3340.95	.00	.77	2.59	3.000	.000	.00	0 .0
.021	.0899					.0042	.00	.74	1.07	.36	.013	.00	.00	PIPE

FILE: UltLatSDMH1.WSW W S P G W - CIVILDESIGN Version 14.08 PAGE 8

Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING Date: 3- 1-2021 Time: 2:31:50

SUMMERLIN WEST VILLAGE 22
FLEET WING AVE (STREET G) DESERT FOOTHILLS DR TO KETTLE RIDGE DR (STREET
J ATKINS / ULTIMATE CONDITIONS

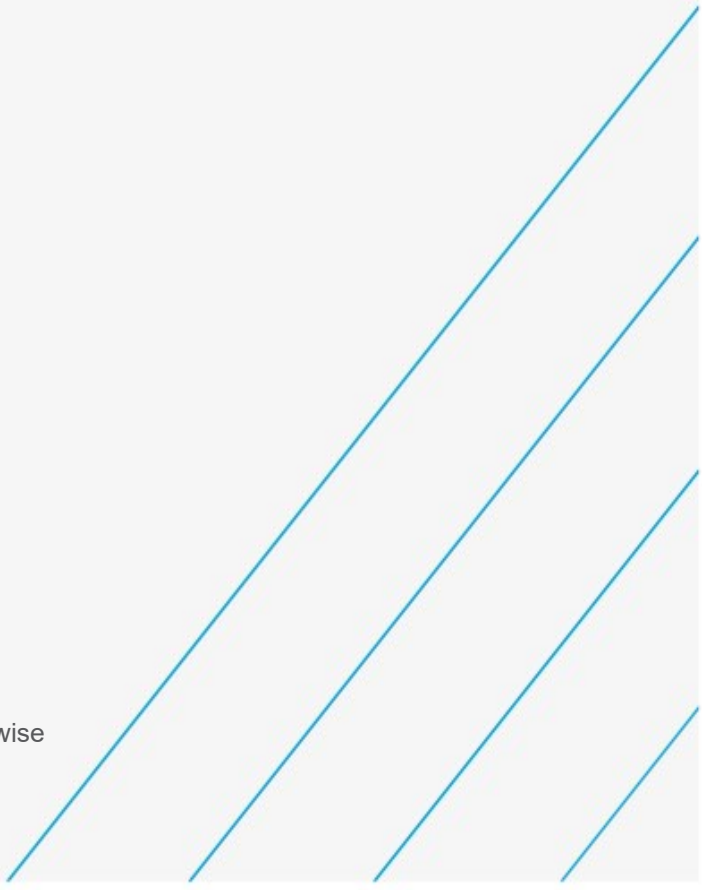
Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope				SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	
173.700	3339.910	.769	3340.679	6.00	4.19	.27	3340.95	.00	.77	2.62	3.000	.000	.00	0 .0

Appendix D. CD-ROM

Atkins

2270 Corporate Circle
Suite 200
Henderson, NV 89074-7755

Tel: +1 702 263 7275/+1 800 483 6244
Fax: +1 702 263 7200
Direct: +1 702 551 0365
Janelle.klein@atkinsglobal.com



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SUMMERLIN VILLAGE 22
IMPROVEMENT PLANS FOR:

FLEET WING AVENUE (STREET G)

DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)
FUTURE SID PROJECT
A PORTION OF VILLAGE 22 ONE-WAY COUPLET

SUMMERLIN®

SHEET INDEX

1	COVER SHEET	
2	LEGEND AND ABBREVIATIONS	
3	GENERAL NOTES	
4	HORIZONTAL CONTROL PLAN	
5	MASTER DRAINAGE PLAN	
6	MASTER WATER PLAN	
7	MASTER SEWER PLAN	
8	ROADWAY GRADING PLAN 1	STA 25+50 TO END
9	ROADWAY PLAN AND PROFILE 1	STA 25+50 TO END
10	ROADWAY GRADING PLAN 2	STA 22+00 TO STA 25+50
11	ROADWAY PLAN AND PROFILE 2	STA 22+00 TO STA 25+50
12	ROADWAY GRADING PLAN 3	STA 18+50 TO STA 22+00
13	ROADWAY PLAN AND PROFILE 3	STA 18+50 TO STA 22+00
14	ROADWAY GRADING PLAN 4	BEGIN TO STA 18+50
15	ROADWAY PLAN AND PROFILE 4	BEGIN TO STA 18+50
16	STORM DRAIN LATERAL PROFILES	
17	WATER LATERAL PROFILES	
18	SANITARY SEWER LATERAL PROFILES	
19	STREETLIGHT PLAN	
20	SIGNAGE AND STRIPING PLAN	
21	TYPICAL SECTIONS	
22	STORM DRAIN DETAILS	
23	WATER DETAILS	
24	STREETLIGHT DETAILS	
25	TRAFFIC SIGNAL UNDERGROUNDS PLAN 1	
26	TRAFFIC SIGNAL UNDERGROUNDS SCHEDULES 1	
27	TRAFFIC SIGNAL UNDERGROUNDS PLAN 2	
28	TRAFFIC SIGNAL UNDERGROUNDS SCHEDULES 2	

UTILITY NOTE

UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION.

CALL BEFORE YOU DIG: 1-800-642-2444

THIS PROPERTY MAY HAVE STATIC WATER PRESSURE IN EXCESS OF 80 PSI. THE UNIFORM PLUMBING CODE REQUIRES THAT INDIVIDUAL, ON-SITE (PRIVATE) PRESSURE REDUCING VALVES BE INSTALLED WHENEVER THE PRESSURE EXCEEDS 80 PSI. PRV'S ARE THE DEVELOPER'S RESPONSIBILITY AND WILL NOTE BE INSPECTED OR INCLUDED IN THE ACCEPTANCE OF THE LAS VEGAS VALLEY WATER DISTRICT FACILITIES.

NOTICE OF INTENT NOTE

NOTE: ALL LAND SURFACE AREA DISTURBANCES OVER 1 ACRE REQUIRE A STORMWATER DISCHARGE PERMIT ISSUED BY THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP). A PHASED CONSTRUCTION UNIT IN A CONTIGUOUS SUBDIVISION IS CONSIDERED UNDER CONSTRUCTION UNTIL ALL STRIPPED SURFACE AREAS HAVE BEEN COVERED BY PAVING, BUILDING CONSTRUCTION OR PLANTING. A STORMWATER DISCHARGE PERMIT APPLICATION AND ASSOCIATED INFORMATION MAY BE DOWNLOADED FROM THE WEB SITE: HTTP://WWW.STATE.NV.US/BWPC/STORM01.HTM PROJECTS THAT DISTURB MORE THAN ONE ACRE OF LAND MUST SUBMIT TO NDEP A "NOTICE OF INTENT" FOR INCLUSION UNDER STORMWATER PERMIT NO. NVR100000 ALONG WITH APPROPRIATE FILLING FEE.

NPDES PERMIT 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 NDEP. ALL QUESTIONS REGARDING THE NPDES PERMIT REQUIREMENTS SHOULD BE DIRECTED TO THE NDEP AT (775) 687-9429.

FEMA FLOOD ZONE INFORMATION

THE PROJECT SITE IS LOCATED WITHIN A FEMA DESIGNATED ZONE X (UNSHADED) AS DEPICTED ON FLOOD INSURANCE RATE MAP (FIRM) PANEL 32003C2150E, DATED 9/27/2002. A ZONE X (UNSHADED) IS DESCRIBED AS AN AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.

PROPOSED RIGHT-OF-WAY ACREAGE
2.09 AC.

PROPOSED DISTURBED AREA ACREAGE
5.26 AC.

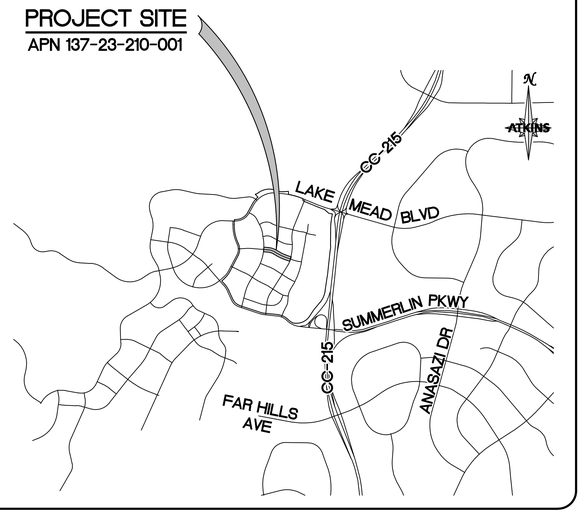
GEOTECHNICAL ENGINEER
PREPARED BY: NOVA GEOTECHNICAL & INSPECTION SERVICES
4480 W. HACIENDA AVENUE, SUITE 104, LAS VEGAS, NV 89118
PHONE: 702-873-3478
PROJECT NO.: G-18-176
DATED: DECEMBER 3, 2018 AND SUBSEQUENT LETTER DATED ON DECEMBER 30, 2019

OWNER /DEVELOPER

OWNER

CONTACT: KEVIN ORROCK
HOWARD HUGHES COMPANY LLC, A DELAWARE LIMITED LIABILITY COMPANY
10845 GRIFFITH PEAK DRIVE, SUITE 160
LAS VEGAS, NEVADA 89135

LOCATION MAP

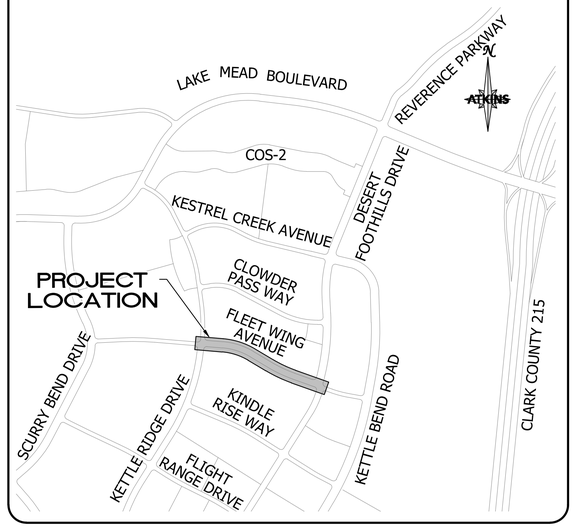


ENGINEER / CONSULTANT

CIVIL

CONTACT: DAVID WILSON P.E.
ATKINS
2270 CORPORATE CIRCLE SUITE 200
HENDERSON, NEVADA 89074
(702) 263-7275

VICINITY MAP



APPROVALS

HOWARD HUGHES COMPANY LLC, A DELAWARE LIMITED LIABILITY COMPANY

KEVIN T. ORROCK, VICE PRESIDENT — DATE

STEVEN FORD, P.E. #012175 — DATE
CITY ENGINEER

APPROVAL OF THESE PLANS IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED RIGHT-OF-WAY AND OR/ DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE THE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND/OR SPECIFICATIONS, EXCEPT THOSE SPECIFICALLY LISTED UNDER DEVIATIONS FROM STANDARD. THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN DEVIATIONS FROM STANDARDS IN FAVOR OF THE UNIFORM STANDARDS DRAWING AND SPECIFICATIONS CLARK COUNTY AREA, NEVADA.

CITY OF LAS VEGAS PLANNING DEPARTMENT — DATE

NOTE:
THIS PLAN CONFORMS TO THE APPLICABLE STANDARDS OF THE PLANNING DEPARTMENT.

LAS VEGAS FIRE AND RESCUE — DATE

CENTRAL TELEPHONE COMPANY d/b/a CENTURYLINK — DATE

THE AFFIXED CENTRAL TELEPHONE COMPANY d/b/a CENTURYLINK APPROVAL DOES NOT ASSUME OR GUARANTEE LIABILITY FOR KNOWN OR UNKNOWN CONFLICTS WITH EXISTING OR PROPOSED IMPROVEMENTS. RESOLUTION OF ANY CONFLICTS WILL BE ACCOMPLISHED PURSUANT TO LOCAL ORDINANCES, NEVADA REVISED STATUTES, AND/OR PUBLIC UTILITY COMMISSION RULES AND REGULATIONS.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT PLANNING AND ENGINEERING SERVICES
PROJECT NO. 137512 FIRST APPROVED DATE: _____
LVVWD APPROVAL FIRE FLOW: 1500 GPM AT 20 PSI RESIDUAL
SHEETS: 1-3, 6, 9, 11, 13, 15-18, 23

NV ENERGY — DATE

NV ENERGY HAS ACKNOWLEDGED WE HAVE RECEIVED YOUR PLANS AND WILL PROVIDE SERVICE TO ALL ELECTRICAL NEEDS ASSOCIATED WITH THIS PROJECT. NV ENERGY RESERVES THE RIGHT TO ADDRESS ANY EXISTING OR FUTURE CONFLICTS ONCE THE FINAL DESIGN IS COMPLETED. THE NEW SERVICE AND THE RESOLUTION OF ANY CONFLICTS WILL BE ACCOMPLISHED PURSUANT TO THE NEVADA UTILITY COMMISSION'S RULES AND REGULATIONS.

SOUTHWEST GAS CORPORATION — DATE

COX COMMUNICATIONS OF LAS VEGAS, INC — DATE

BASIS OF BEARING

GRID NORTH AS DEFINED BY THE CENTRAL MERIDIAN OF THE NEVADA COORDINATE REFERENCE SYSTEM (NCRS), LAS VEGAS HIGH ELEVATION 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
SYSTEM: NEVADA COORDINATE REFERENCE SYSTEM (NCRS)
ZONE: LAS VEGAS HIGH ELEVATION ZONE
PROJECTION: TRANSVERSE MERCATOR STANDARD PARALLEL (AND LATITUDE OF GRID ORIGIN): 36°15'00"N
LONGITUDE OF CENTRAL MERIDIAN: 114°58'00"W
NORTHING AT GRID OF ORIGIN: 400,000.00 M (1,312,333.3333 FTUS)
EASTING AT CENTRAL MERIDIAN: 300,000 M (984,250.0000 FTUS)
SCALE FACTOR ON CENTRAL MERIDIAN: 1.000135 (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 PROJECTED AREA
2. GRID BEARINGS SHOWN HEREON (OR IMPLIED BY GRID COORDINATES) DO NOT EQUAL GEODETIC BEARINGS DUE TO MERIDIAN CONVERGENCE.

BENCHMARK

PROJECT DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
CITY OF LAS VEGAS BENCHMARK: D368 (REVISED 2008)
NAVD88 ELEVATION: 989.574 METERS (3,246.63 FEET)
FND USC&GS DISC SET IN ROCK RIDGE 150' SOUTH OF CHARLESTON BLVD. & WEST OF DETENTION BASIN.
T21S,R59E,S03

LEGAL DESCRIPTION

BEING A PORTION OF LOT 1 AS SHOWN ON THE MAP THEREOF IN BOOK 161 OF PLATS, PAGE 68, OFFICIAL RECORDS, CITY OF LAS VEGAS CLARK COUNTY, NEVADA.

FAST Call before you Underground 1-702-432-5300 BUREAU OF ACTIVITIES SYSTEM OF TRANSPORTATION

Call before you Dig AVOID CUTTING AND DAMAGING UTILITY LINES, IT'S COSTLY. Call 811 OR 1-800-642-2444

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

PROFESSIONAL ENGINEER - STATE OF NEVADA - ANTHONY J. ORTIZ - EXP. 12-31-21 - CIVIL - No. 18949 - 2/15/2021

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

SUMMERLIN

SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

COVER SHEET

DESIGNED BY: S. BANTA	DRAWN BY: C. DANIELS	CHECKED BY: P. BATES	HORIZ.: NONE
XXXVXXXX L20-XXXXX	DATE: November 2, 2020	DRAWING NO. 1 /28	VERT.: NONE

JOB NO. 100066776

C:\pw_work\clkronn01\westkins_torr9642\dms57691\66776-01-TITL-C1.dwg LAYOUT: C-1 Feb 23, 2021 - 9:12PM

@	AT
#	NUMBER
AB	ABANDONED
AC	ASPHALTIC CONCRETE
ACP	ASBESTOS CEMENT PIPE
AGG	AGGREGATE
AIP	ABANDON IN PLACE
ALT	ALTERNATE
AP	ANGLE POINT
APPROX	APPROXIMATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS INTERNATIONAL
AV/AR	AIR VACUUM AIR RELIEF VALVE
BC	BACK OF CURB
BCR	BACK OF CURB RETURN
BLK	BLOCK
BLVD	BOULEVARD
BM	BENCHMARK
BO	BLOW OFF
BP	BOTTOM OF PIPE
BSW	BACK OF SIDEWALK
BVC	BEGIN VERTICAL CURVE
BVCE	BEGINNING OF VERTICAL CURVE ELEVATION
BVCS	BEGINNING OF VERTICAL CURVE STATION
BW	BOTTOM WIDTH
C&G	CURB AND GUTTER
C–C	CENTER TO CENTER
CATV	CABLE TELEVISION
CCAUSD	CLARK COUNTY AREA UNIFORM STANDARD DRAWING
CCRFCD	CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT
CCWRD	CLARK COUNTY WATER RECLAMATION DISTRICT
CF	CUBIC FOOT
CIP	CAST IRON PIPE OR CAST IN PLACE
CL	CENTERLINE
CLR	CLEAR
CLV	CITY OF LAS VEGAS
CM	CONSTRUCTION MANAGER
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CNDT	CONDUIT
CNLV	CITY OF NORTH LAS VEGAS
CO	CLEANOUT
COH	CITY OF HENDERSON
COL	COLUMN
CON'T	CONTINUATION
CONC	CONCRETE
CONST	CONSTRUCT OR CONSTRUCTION
COR	CORNER
COS	COMMUNITY OPEN SPACE
CPP	CORRUGATED PLASTIC PIPE
CSP	CORRUGATED STEEL PIPE
CU	CUBIC
CULV	CULVERT
CY	CUBIC YARD
D	DEPTH
DCSWCS	DESIGN AND CONSTRUCTION STANDARDS FOR WASTEWATER COLLECTION SYSTEMS
DET, DTL	DETAIL
DEPT	DEPARTMENT
DG	DESIGN GRADE
DI	DROP INLET
DIA	DIAMETER
DIAG	DIAGONAL
DIP	DUCTILE IRON PIPE
DOC	DOCUMENT
DW	DRIVEWAY
DWG	DRAWING
E	EAST
EA	EACH
EB	EASTBOUND
EC	END OF CURVE
ECR	END CURB RETURN
EF	EACH FACE
EG	EXISTING GROUND
ELEC	ELECTRICAL
ELEV	ELEVATION
EMBK	EMBANKMENT
EOP	EDGE OF PAVEMENT
EP	EDGE OF PAVEMENT ALIGNMENT END
EQ	EQUAL
ESMT	EASEMENT
EVC	END VERTICAL CURVE
EVCS	END VERTICAL CURVE STATION
EW	EACH WAY
EX, EXST	EXISTING
EXP, JT	EXPANSION JOINT
FA	FIRE ALARM
FC	FACE OF CURB
FF	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FL	FLOW LINE
FO	FIBER OPTIC
FT	FOOT OR FEET
G	GAS LINE
GALV	GALVANIZED
GB	GRADE BREAK
GL	GRATE LENGTH
GM	GAS METER
GUT	GUTTER
GV	GATE VALVE
H	HEIGHT
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HDWL	HEADWALL
HE	HORIZONTAL ELLIPTICAL
HGL	HYDRAULIC GRADE LINE
HOA	HOMEOWNER'S ASSOCIATION
HOR	HORIZONTAL
HP	HIGH POINT
ID	INSIDE DIAMETER
IN	INCH(ES)
INT	INTERSECTION
INV	INVERT
IQAC	INTERAGENCY QUALITY ASSURANCE COMMITTEE
IRR	IRRIGATION
ISL	ISLAND
JB	JUNCTION BOX
JCT	JUNCTION
JT	JOINT
K	VERTICAL CURVE K VALUE
L	LENGTH
LB	POUND(S)
LF	LINEAR FEET
LIN	LINEAR
LIN #	CCWRD MANHOLE NUMBER
LOC	LENGTH OF CURVE
LOL	LAYOUT LINE
LP	LOW POINT
LS	LANDSCAPE
LT	LEFT
LVC	LENGTH OF VERTICAL CURVE
LVVWD	LAS VEGAS VALLEY WATER DISTRICT
MAS	MASONRY
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MON	MONOLITHIC, MONUMENT
MTL	MATERIAL
ME	MATCH EXISTING
MUE	MUNICIPAL UTILITY EASEMENT
N	NORTH
NAP	NOT A PART
NDOT	NEVADA DEPARTMENT OF TRANSPORTATION
NF	NEAR FACE
NG	NUMBER OF GRATES, NATURAL GRADE
NIC	NOT IN CONTRACT
No.	NUMBER
NTS	NOT TO SCALE
NVE	NV ENERGY
OC	ON CENTER
OD	OUTSIDE DIAMETER
OG	OPEN GRADE
OH	OVERHEAD
OHP	OVERHEAD POWER
OS	OFFSET
P	POWER
PB	PULL BOX
PBS	PLANTMIX BITUMINOUS SURFACE
PC	POINT OF CURVATURE
PCC	PORTLAND CEMENT CONCRETE OR POINT OF COMPOUND CURVATURE
PE	POLYETHYLENE
PG	PROPOSED GRADE
PGL	PROFILE GRADE LINE
PH	POT HOLE
PI	POINT OF INTERSECTION
PIP	PROTECT IN PLACE
PL	PROPERTY LINE
PLCS	PLACES
PMF	PAVEMENT MARKING FILM
POC	POINT OF CONNECTION
PP	POWER POLE
PRC	POINT OF REVERSE CURVATURE
PROP	PROPOSED
PSI	POUNDS PER SQUARE INCH
PT	POINT, POINT OF TANGENCY
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
QTY	QUANTITY
(R)	RADIAL
R/W,ROW	RIGHT OF WAY
R	RADIUS
RC	REINFORCED CONCRETE
RCB	REINFORCED CONCRETE BOX
RCC	ROLLER COMPACTED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
REINF	REINFORCED OR REINFORCEMENT
RELOC	RELOCATE
REV	REVISION
RG	ROUGH GRADE
RP	RADIUS POINT
RPM	RAISED PAVEMENT MARKER
RR	RAILROAD
RT	RIGHT
SCHED	SCHEDULE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SF	SQUARE FOOT/SQUARE FEET
SHLD	SHOULDER
SHT	SHEET
SHP	STEEL HIGH PRESSURE PIPE
SMFO	SINGLE MODE FIBER OPTIC
SNWA	SOUTHERN NEVADA WATER AUTHORITY
SQ	SQUARE
SS	SANITARY SEWER OR SIDE SLOPE
SSD	SUMMERLIN STANDARD DRAWING
SST	STAINLESS STEEL
ST	STREET
STA	STATION
STD	STANDARD
STL	STEEL
STLT	STREETLIGHT
SDHW	STORM DRAIN HEADWALL
STRUCT	STRUCTURAL OR STRUCTURE
SUM #	CCWRD MANHOLE NUMBER
SURV	SURVEY
SVZ	SIGHT VISIBILITY ZONE
SW	SIDEWALK
SY	SQUARE YARD
T	TELEPHONE LINE
TAN	TANGENT
TB	TOP OF BOX
TBA	TO BE ADJUSTED
TBC	TOP OF BACK OF CURB
TBR	TO BE REMOVED
TC	TOP OF CURB
TCD	TRAFFIC CONTROL DEVICE
TDS	TECHNICAL DRAINAGE STUDY
TEL	TELEPHONE
TEMP	TEMPORARY
TF	TOP OF FOOTING
THK	THICK
THR	THRUST
THW	TOP OF HEADWALL
TOF	TOP OF FACE
TOP	TOP OF BANK
TW/TOW	TOP OF WALL
TP	TOP OF PIPE
TRANS	TRANSITION
TS	TRAFFIC SIGNAL
TSI	TRAFFIC SIGNAL INTERCONNECT
TW	TOP OF WALL
TYP	TYPICAL
UDACS	UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR WATER DISTRIBUTION SYSTEMS
UG	UNDERGROUND
UGP	UNDERGROUND POWER
UIE	UPPER INVERT ELEVATION
UNO	UNLESS NOTED OTHERWISE
UPRR	UNION PACIFIC RAILROAD
USD	UNIFORM STANDARD DRAWING
UTACS	ULTRA THIN ASPHALT CONCRETE SURFACE
USTCDE	UTILITY, STREETLIGHT, TRAFFIC CONTROL DEVICE EASEMENT
V	VOLT
VAR	VARIABLE
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VG	VALLEY GUTTER
W	WEST, WATER
W/	WITH
WB	WEST BOUND
WL	WATER LINE
WM	WATER METER
W/O	WITHOUT
WPJ	WEAKENED PLANE JOINT
WV	WATER VALVE
WW	WING WALL
YD	YARD(S)

	EXISTING	PROPOSED
DAYLIGHT LINE		
FLOWLINE		
CENTERLINE		
PARCEL LINE		
RIGHT OF WAY		
PAVEMENT STRIPING		
OVERHEAD POWER	—OHP—	—OHP—
UNDERGROUND POWER	—UGP—	—UGP—
SANITARY SEWER	—S—	15" SS
WATER		24"W (3550)
STORM DRAIN		
GAS	—G—	—G—
CABLE T.V.	—CATV—	—CATV—
TELEPHONE	—T—	—T—
STREETLIGHT CONDUIT	—STLT—	—STLT—
TRAFFIC SIGNAL CONDUIT		
FIBER OPTIC CONDUIT		
STOP BAR		
CONCRETE ENCASEMENT		
FENCE		
BLOCK WALL		
RETAINING WALL		
SAWCUT PAVEMENT		
CONTOUR	(3000)	3005
SPOT ELEVATION	x 3011.6	x 3011.67
CURB AND GUTTER		
EDGE OF PAVEMENT		
EASEMENT		
MATCHLINE		
SIGN		
DOUBLE POST SIGN		
STORM DRAIN MANHOLE	SD	
STORM DRAIN STRUCTURE		
DROP INLET		
BEEHIVE INLET		OR
SEWER MANHOLE	S	S
FIRE HYDRANT		
CAP AND BLOWOFF		
GATE VALVE		
REDUCER		
STREETLIGHT	OR	OR
PULLBOX		
SIGNAL POLE		
SIGNAL OR PEDESTRIAN POLE FOUNDATION	OR	OR
SERVICE PEDESTAL		
CONTROLLER		
DETECTION LOOPS		
ELEVATION	(0000.0) EG	0000.00 FG
WATER PRESSURE ZONE BOUNDARY		
WATER PRESSURE ZONE		3550
		FUTURE
HARDSCAPE		

NOTE TO CONTRACTOR

- QUANTITIES SHOWN ARE ESTIMATES ONLY AND ARE INTENDED TO ILLUSTRATE SCOPE OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXACT QUANTITIES INVOLVED.

ROADWAY ALIGNMENT DESIGNATIONS

"FWA" = FLEET WING AVENUE
"DFD" = DESERT FOOTHILLS DRIVE
"KRD" = KETTLE RIDGE DRIVE

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT
PLANNING AND ENGINEERING SERVICES

PROJECT NO. 137512 FIRST APPROVED DATE: _____

LVVWD APPROVED FIRE FLOW 1500 GPM AT 20 PSI RESIDUAL

BASIS OF BEARING

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

BENCHMARK

CITY OF LAS VEGAS BENCHMARK: D368
(REVISED 2008)
NAVD88 ELEVATION: 989.574 METERS
(3,246.63 FEET)
FND USC&GS DISC SET IN ROCK RIDGE 150' SOUTH OF CHARLESTON BLVD. & WEST OF DETENTION BASIN.
T21S,R59E,S03

FAST Call before you UnderGround 1-702-432-5300 TIMELY AND ACCURATE SYSTEM OF TRANSPORTATION

Call before you Dig AVOID CUTTING TELEPHONE OR UTILITY LINES IN YOUR COUNTY. Call 811 or 1-800-642-2444

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

UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION.

PROFESSIONAL ENGINEER – STATE OF NEVADA – ANTHONY ORTIZ – EXP. 12-31-21 – No. 18949 – CIVIL
2/15/2021

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

SUMMERLIN

SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

LEGEND AND ABBREVIATIONS

DESIGNED BY: BANTA
DRAWN BY: C. DANIELS
CHECKED BY: C. DANIELS
HORIZ.: NONE
VERT.: NONE

XXVVXXXX
L20–XXXXX

DATE: November 2, 2020
DRAWING NO. 2 /28

JOB NO. 100066776

C:\pw_work\atkinsn01\westkins_torr8642\dms57691\66776-02-LGND-C2.dwg LAYOUT: C-2 Feb 23, 2021 – 9:12PM

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; THE "SUMMERLIN IMPROVEMENT STANDARDS" FOR WORK IN THE SUMMERLIN AREA; 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 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 (NOVA, G–18–176, 12/03/18) 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. 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 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 ± 0.09 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.

REVISED 06/04/2018

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.

REVISED 04/15/10

CONSTRUCTION CONCURRENCY NOTE

THE FOLLOWING SEPARATE VILLAGE 22 ROADWAY IMPROVEMENT PLANS ARE ASSUMED TO BE CONSTRUCTED CONCURRENTLY AND ARE SHOWN AS FUTURE (BY OTHERS):

1. KETTLE RIDGE DRIVE (FLEET WING AVENUE TO LAKE MEAD BLVD)
2. DESERT FOOTHILLS DRIVE (FLEET WING AVENUE TO LAKE MEAD BLVD)
3. FLEET WING AVENUE (KETTLE BEND ROAD TO DESERT FOOTHILLS DRIVE) by VTN NEVADA
4. KINDLE RISE WAY (DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE) & KETTLE RIDGE DRIVE (KINDLE RISE WAY TO FLEET WING AVENUE)
5. DESERT FOOTHILLS DRIVE (SUNSET RUN DRIVE TO FLEET WING AVENUE)
6. KETTLE RIDGE DRIVE (FLEET WING AVENUE TO SUNSET RUN DRIVE)

DEVIATIONS FROM STANDARDS

NONE.

CITY OF LAS VEGAS FIRE DEPARTMENT NOTES

1. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE LAS VEGAS FIRE AND RESCUE ADOPTED FIRE CODE ORDINANCE #6325 FOR HYDRANT SPECIFICATIONS AND HYDRANT INSTALLATION SPECIFICATIONS.
2. ONLY FIRE HYDRANTS THAT ARE ON THE LAS VEGAS VALLEY WATER DISTRICT'S APPROVED PRODUCTS LIST ARE ALLOWED TO BE INSTALLED.
3. A PERMIT IS REQUIRED FROM LAS VEGAS FIRE AND RESCUE FOR THE INSTALLATION OF ON–SITE WATER LINES AND FIRE HYDRANTS. THE PERMIT AND CONTRACTORS MATERIAL TEST CERTIFICATE FOR UNDERGROUND PIPING FORM SHALL BE OBTAINED FROM THE FIRE PROTECTION ENGINEER BEFORE COMMENCEMENT OF WORK. IFC § 105.7.12
4. ON ANY RESIDENTIAL OR COMMERCIAL INSTALLATIONS, FIRE HYDRANTS SHALL BE INSTALLED AND FIRE APPARATUS ACCESS ROADS SHALL BE MAINTAINED BEFORE COMMENCEMENT OF ANY COMBUSTIBLE CONSTRUCTION. ALL FIRE HYDRANTS SHALL BE IN GOOD WORKING ORDER AND SHALL BE CAPABLE OF DELIVERING THE REQUIRED FIRE FLOW. IFC § 3310, § 3312
5. TO IDENTIFY THE FIRE HYDRANT LOCATIONS, THE CONTRACTOR SHALL PLACE A BLUE REFLECTIVE MARKER AT THE CENTER LINE OF THE STREET ADJACENT TO THE FIRE HYDRANTS. IFC § 507.5.7.3
6. ALL UNDERGROUND INSPECTIONS, PRESSURE AND FLUSH VERIFICATIONS OF ALL FIRE HYDRANTS AND FIRE LINES, SHALL BE CONDUCTED BEFORE COVERING THE LINES. CENTER LOADING IS ACCEPTABLE FOR THE HYDRO TESTS WITH PRIOR FIRE PREVENTION APPROVAL. IFC § 106.3
7. ALL ON–SITE UNDERGROUND WATER MAINS AND MATERIALS SHALL BE U.L. LISTED, A.W.W.A APPROVED AND SHALL BE RATED FOR THE APPROPRIATE WORKING PRESSURE. IFC § 507.2.1, NFPA 24
8. PAINTING OF CURBS, FIRE HYDRANTS, PADS, PROTECTION OF FIRE HYDRANTS FROM PHYSICAL DAMAGE, AND ALL OTHER WORK NECESSARY PER PLANS SHALL BE COMPLETED BEFORE APPROVAL BY LAS VEGAS FIRE AND RESCUE, FIRE PREVENTION DIVISION. IFC § 507
9. PRIVATE HYDRANTS SHALL BE PAINTED RED. IFC § 507.5.7.1
10. PRIOR TO THE FINAL OCCUPANCY, A FIRE FLOW TEST SHALL BE WITNESSED BY LAS VEGAS FIRE AND RESCUE, FIRE PREVENTION DIVISION TO VERIFY AVAILABILITY OF THE REQUIRED FIRE FLOW. IFC § 507
11. FIRE HYDRANT SPACING SHALL BE AS FOLLOWS: IFC § C102
    - RESIDENTIAL – 500 FT UNSPRINKLERED; 600 FT SPRINKLERED.
    - COMMERCIAL – 300 FT UNSPRINKLERED; 400 FT SPRINKLERED.
12. WHERE THE WATER MAINS ARE EXTENDED ALONG STREETS OR NEW STREETS ARE INSTALLED WHERE FIRE HYDRANTS ARE NOT NEEDED FOR PROTECTION OF THE STRUCTURES, FIRE HYDRANTS SHALL BE INSTALLED AT A MAXIMUM OF 1000 FT SPACING, TO PROVIDE FOR TRANSPORTATION HAZARDS. WHERE STREETS ARE PROVIDED WITH MEDIAN DIVIDERS OR HAVE FOUR (4) OR MORE TRAFFIC LANES AND HAVE A TRAFFIC COUNT OF MORE THAN 30,000 PER DAY, HYDRANTS ARE REQUIRED ON EACH SIDE OF THE STREET SPACED AT 500 FT ON AN ALTERNATING BASIS. IFC § C102.8
13. NO FIRE HYDRANTS SHALL BE LOCATED WITHIN THE RADIUS OF A CUL–DE–SAC OR WITHIN 20 FT OF THE PERIMETER OF THE RADIUS OF THE CUL–DE–SAC.
14. NO FIRE HYDRANTS SHALL BE LOCATED WITHIN 6 FT OF ANY CURB RETURN, DRIVEWAY, POWER POLE, STREETLIGHT OR ANY OTHER OBSTRUCTION. IFC § C102.12
15. A MAXIMUM DISTANCE FROM A FIRE HYDRANT TO A ONE–TWO FAMILY DWELLING SHALL NOT EXCEED 300 FT, AS MEASURED BY AN APPROVED ROUTE. IFC § 102.4
16. THE MAXIMUM DISTANCE FROM A FIRE HYDRANT TO A FIRE DEPARTMENT CONNECTION (FDC) SHALL NOT EXCEED 100 FT, AS MEASURED BY AN APPROVED ROUTE. IFC § C102.7
17. THE MAXIMUM DISTANCE FROM A HYDRANT TO THE END OF A DEAD–END STREET SHALL NOT EXCEED 200 FT. IFC § C102.6
18. TWO (2) SOURCES OF SUPPLY ARE REQUIRED WHENEVER THERE IS 4 OR MORE FIRE HYDRANTS/SPRINKLER LEAD–INS ARE INSTALLED ON A SINGLE SYSTEM. SECTIONAL CONTROL VALVES SHALL BE INSTALLED SO THAT NO MORE THAN 2 FIRE HYDRANTS CAN BE OUT OF SERVICE DUE TO A BREAK IN A WATER MAIN. IFC § C104
19. ALL FIRE APPARATUS ACCESS ROADS SHALL BE PAVED TO PROVIDE ALL–WEATHER DRIVING CAPABILITIES, AND SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF THE FIRE APPARATUS. IFC § 503.2.3
20. THE GRADIENT FOR THE FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED 12% ANGLES OF APPROACH AND ANGLES OF DEPARTURE SHALL NOT EXCEED 6% FOR 25 FT PRIOR TO OR AFTER THE GRADE CHANGE. ADJACENT TO THE STRUCTURES GRADIENT SHALL NOT EXCEED 6%. IFC § 503.2.7; 503.2.8
21. THE TURNING RADIUS OF THE FIRE APPARATUS ACCESS ROADS SHALL BE NO LESS THAN 52 FT OUTSIDE AND 28 FT INSIDE TURNING RADIUS. IFC § 503.2.4
22. VERTICAL CLEARANCE OF ALL FIRE APPARATUS ACCESS ROADS SHALL NOT BE LESS THAN 13FT 6 INS. IFC § 503.2.1
23. FIRE DEPARTMENT ACCESS ROADS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF NOT LESS THAN 40 FT FLOW LINE TO FLOW LINE WITH PARALLEL PARKING PERMITTED ON BOTH SIDES. NOT LESS THAN 32 FT WIDE, FLOW LINE TO FLOW LINE, WHERE PARKING IS PERMITTED ONLY ON ONE SIDE OF THE FIRE APPARATUS ACCESS ROAD. NOT LESS THAN 24FT WIDE, FLOW LINE TO FLOW LINE, WHERE NO PARKING IS PERMITTED ON EITHER SIDE. FIRE LANES THROUGH PARKING LOTS SHALL BE NOT LESS THAN 24 FT. IFC § 503.2.1.1
24. A FIRE APPARATUS ACCESS ROAD SHALL BE REQUIRED WHEN ANY PORTION OF AN EXTERIOR WALL OF THE FIRST STORY IS LOCATED MORE THAN 150 FT FROM A FIRE DEPARTMENT VEHICLE ACCESS. THIS DISTANCE COULD BE INCREASED TO 250 FT IF THE BUILDING IS SPRINKLERED. IFC § 503.1.1
25. APPROVED SECONDARY FIRE APPARATUS ACCESS SHALL BE PROVIDED FOR 100 OR MORE DWELLING UNITS, ROAD(S) WITH DEAD–ENDS OR WITH A SINGLE POINT OF ACCESS IN EXCESS OF 600 FT. COMMERCIAL AND INDUSTRIAL DEVELOPMENTS WHERE BUILDINGS EXCEED 2 STORIES OR 30 FEET IN HEIGHT, OR EXCEEDING 62,000 SQUARE FEET IN AREA. IFC § 503.1.2
26. ALL DEAD–END FIRE APPARATUS ROADS AND/OR FIRE LANES, PUBLIC OR PRIVATE, IN EXCESS OF 150 FT IN LENGTH SHALL BE PROVIDED WITH AN APPROVED TURN AROUND HAVING A MINIMUM DIAMETER OF 81 FT. IFC § 503.2.5
27. ALL FIRE APPARATUS ACCESS ROADS SHALL BE MARKED BY PLACING APPROVED SIGNS AT THE START OF THE DESIGNATED FIRE LANE, ONE SIGN AT THE END OF THE FIRE LANE AND WITH SIGNS AT INTERVALS OF 100 FT ALONG THE DESIGNATED FIRE LANES. SIGNS TO BE PLACED ON BOTH SIDES OF AN ACCESS ROADWAY IF NEEDED TO PREVENT PARKING ON EITHER SIDE. SIGNS TO BE INSTALLED NO HIGHER THAN 10 FT OR LESS THAN 6 FT FROM THE ROADWAY LEVEL. THE CURB ALONG OR ON THE PAVEMENT OR CEMENT (IF NO CURB IS PROVIDED) SHALL BE PAINTED WITH A RED WEATHER RESISTANT PAINT IN ADDITION TO THE SIGNS. IFC § 503.3
28. ELECTRICALLY CONTROLLED ACCESS GATES SHALL BE PROVIDED WITH AN APPROVED EMERGENCY VEHICLE DETECTOR/RECEIVER SYSTEM. SAID SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE IFC § 503.6 AND IFC APPENDIX M.

REVISED MARCH 1, 2016

CITY OF LAS VEGAS TRAFFIC NOTES

1. ALL CONSTRUCTION SIGNING, BARRICADING, AND TRAFFIC DELINEATION SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST EDITION.
2. THE STREET SIGN CONTRACTOR SHALL OBTAIN SCURRY BEND DRIVEAMES AND BLOCK NUMBERING FROM THE PLANNING DEPARTMENT PRIOR TO CONSTRUCTION.
3. BEFORE ANY WORK IS STARTED IN THE RIGHT–OF–WAY, THE CONTRACTOR SHALL INSTALL ALL ADVANCE WARNING SIGNS FOR THE CONSTRUCTION ZONE. THE CONTRACTOR SHALL INSTALL TEMPORARY STOP SIGNS AT ALL NEW STREET ENCROACHMENTS INTO EXISTING CITY STREETS WHERE WARRANTED IMMEDIATELY AFTER FIRST GRADING WORK IS ACCOMPLISHED, AND SHALL MAINTAIN SAID SIGNS UNTIL PERMANENT SIGNS ARE INSTALLED.
4. WHEN A DESIGNATED "SUGGESTED ROUTE TO SCHOOL" IS ENCROACHED UPON BY A CONSTRUCTION WORK ZONE AND PUBLIC WORKS STAFF IDENTIFIES A NEED FOR STUDENTS TO BE ASSISTED IN THE SAFE CROSSING THROUGH THAT WORK ZONE, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE A QUALIFIED "CROSSING GUARD". THE GUARD SHALL BE PRESENT FOR THE FULL DURATION OF TIME THAT CHILDREN ARE LIKELY TO BE PRESENT.
5. IF THE IMPROVEMENTS NECESSITATE THE OBLITERATION, TEMPORARY OBSTRUCTION, TEMPORARY REMOVAL OR RELOCATION OF ANY EXISTING TRAFFIC PAVEMENT MARKING, SUCH PAVEMENT MARKING SHALL BE RESTORED OR REPLACED WITH LIKE MATERIALS TO THE SATISFACTION OF THE CITY TRAFFIC ENGINEER.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL PERMANENT SIGNS SHOWN ON THE PLANS. ALL NEW TRAFFIC SIGNS SHALL UTILIZE TYPE XI RETROREFLECTIVE SHEETING IN ACCORDANCE WITH CGAUSS 627 AND 716 AND SHALL HAVE AN ANTI–GRAFFITI PROTECTIVE OVERLAY FILM THAT IS A MATCHING COMPONENT TO, AND OF THE SAME MANUFACTURER AS THE RETROREFLECTIVE SHEETING TO WHICH IT IS APPLIED. SCURRY BEND DRIVEAME SIGNS SHALL CONFORM IN THEIR ENTIRETY TO CURRENT CITY STANDARDS. ALL OTHER SIGNS SHALL BE STANDARD SIZE UNLESS OTHERWISE SPECIFIED ON THE PLANS. ALL SIGN POSTS SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT CITY STANDARDS.
7. WHEN A PROPOSED STREET LIGHT STANDARD IS LOCATED WITHIN FIVE (5') FEET OF ANY PROPOSED SIGN SHOWN ON THE PLANS TO BE MOUNTED ON A SIGNPOST, THE SIGN SHALL BE MOUNTED ON THE STREET LIGHT STANDARD AND THE SIGNPOST SHALL BE ELIMINATED.
8. ALL PERMANENT TRAFFIC CONTROL DEVICES CALLED FOR HEREON SHALL BE IN PLACE AND IN FINAL POSITION PRIOR TO ALLOWING ANY PUBLIC TRAFFIC ONTO THE PORTIONS OF THE ROAD(S) BEING IMPROVED HERE UNDER, REGARDLESS OF THE STATUS OF COMPLETION OF PAVING OR OTHER OFF–SITE IMPROVEMENTS CALLED FOR BY THESE PLANS.
9. STREET SIGNS AND STOP SIGNS SHALL BE INSTALLED PER CITY STANDARD SPECIFICATIONS FOR PLACEMENT OF SCURRY BEND DRIVEAME SIGNS.
10. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TRAFFIC CONTROL DEVICES AND FLAGGERS TO INSURE THE SAFETY OF THE PUBLIC IN OR AROUND THE WORK THE CONTRACTOR SHALL HAVE A CERTIFIED ATSSA TRAFFIC CONTROL TECHNICIAN OR IMSA WORK ZONE SAFETY SPECIALIST SET UP, MAINTAIN AND/OR REMOVE ALL TRAFFIC CONTROL DEVICES IN THE CITY OF LAS VEGAS RIGHT OF WAY.
11. WORK IN PUBLIC STREETS, ONCE BEGUN, SHALL BE EXPEDITED TO COMPLETION SO AS TO PROVIDE MINIMUM INCONVENIENCE TO ADJACENT PROPERTY OWNERS AND TO THE TRAVELING PUBLIC.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA (RTC). IF THE CONSTRUCTION INTERRUPTS OR RELOCATES A BUS STOP OR HAS AN ADVERSE EFFECT ON BUS SERVICE ON THAT STREET TO ARRANGE FOR TEMPORARY RELOCATION OF STOP.
13. GUARDS SHALL BE OBTAINED BY CONTACTING THE METROPOLITAN POLICE DEPARTMENT SPECIAL EVENTS UNIT (PHONE # 828–3422) WHO WILL PROVIDE OFFICERS PROPERLY TRAINED IN TRAFFIC CONTROL FEES FOR THE USE OF THESE OFFICERS SHALL BE SET BY METRO AND WILL BE PAID BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR ALL ARRANGEMENTS WITH METRO.
14. ANY WORK WITHIN 300' OF A SIGNALIZED INTERSECTION WILL BE NIGHT WORK, UNLESS DIRECTED BY THE CITY OF LAS VEGAS TRAFFIC ENGINEER.
15. THE CONTRACTOR SHALL CONTACT THE TRAFFIC ENGINEERING DIVISION (TRANSPORTATION SECTION) THROUGH THE PROJECT'S OFFSITE INSPECTOR PRIOR TO INITIATING PAVING TO RECEIVE DIRECTION FOR ANY PERMANENT OR TEMPORARY MODIFICATIONS TO THE APPROVED DRAWINGS REGARDING FINAL PAVEMENT TRANSITIONS, MARKINGS AND SIGNING THAT ARE REQUIRED TO MATCH ADJACENT ROADWAY SEGMENTS. THE CONTRACTOR SHALL PROVIDE A DRAWING FOR APPROVAL BY THE TRAFFIC ENGINEERING DIVISION DEPICTING ANY ADJUSTMENTS TO THE FINAL PAVEMENT MARKINGS AND SIGNAGE, WHICH MAY INCLUDE OMITTING, ADDING OR MODIFYING PAVEMENT MARKINGS AND TRAFFIC CONTROL SIGNS SUCH THAT ADEQUATE TRANSITIONS AND LANE TERMINATIONS BETWEEN ADJACENT ROADWAY SEGMENTS ARE CONSTRUCTED.

REVISED JUNE 4, 2018

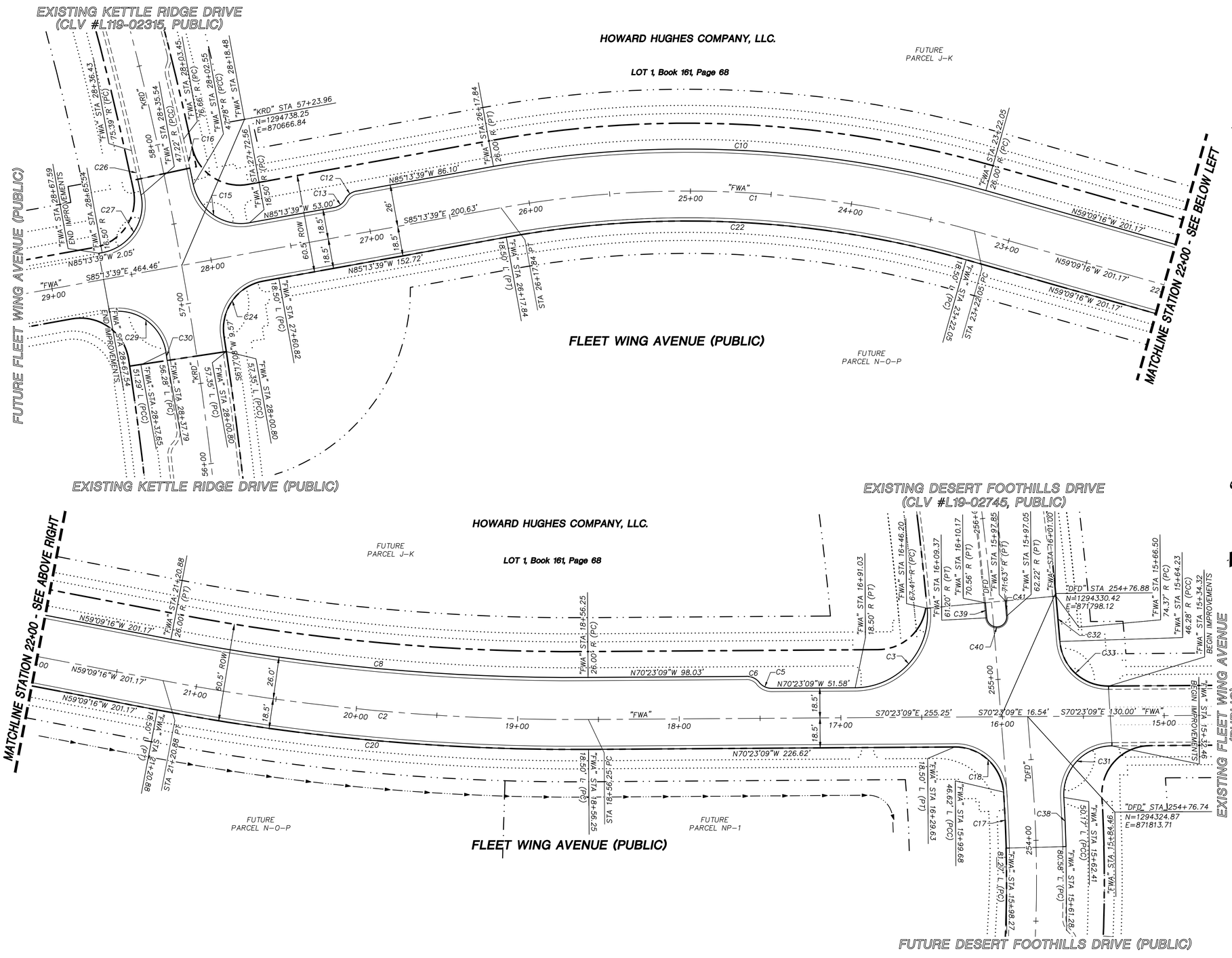
CITY OF LAS VEGAS SEWER NOTES

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.

REVISED 04/15/10

CITY OF LAS VEGAS STREET LIGHT NOTES

1. ALL STREET LIGHTING INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE STREET LIGHTING PLANS, THE "UNIFORM STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION OFF–SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA", LATEST REVISION (USS), AND THE "UNIFORM STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION OFF–SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA" (USD), LATEST REVISION.
2. DESIGN PROFESSIONAL AND CONTRACTOR SHALL VERIFY CITY'S LATEST LED FIXTURE SPECIFICATIONS AND APPROVED FIXTURES PER CLV WEBSITE, UNDER BUILDING AND SAFETY FORMS, PRIOR TO ORDERING MATERIALS.
3. NO DEVIATION OF STREET LIGHT, PULL BOX, CONDUITS, ETC., LOCATIONS SHALL BE PERMITTED WITHOUT WRITTEN APPROVAL OF THE TRAFFIC AND CITY ENGINEER. ANY DEVIATION FROM THE PLAN LOCATION WILL REQUIRE COMPLIANCE WITH SECTION 623 OF THE USS.
4. ALL EXISTING STREET LIGHTING SHALL REM



SUMMARY OF QUANTITIES

DESCRIPTION	QUANTITY	UNIT
ROADWAY		
PLANTMIX BITUMINOUS PAVEMENT (4")	6,700	SY
TYPE II AGGREGATE BASE (ROAD) (4")	780	CY
TYPE II AGGREGATE BASE (CURB) (4")	70	CY
TYPE "L" CURB AND GUTTER	2,800	LF
TYPE "A" ISLAND CURB	40	LF
BIKE TRAIL SIDEWALK	15,400	SF
TYPE II AGGREGATE BASE (SIDEWALK) (4")	190	CY

ROADWAY NOTES

1. SEE SHEET 21 FOR TYPICAL SECTIONS, DETAILS
2. SEE SHEET 2 FOR ROADWAY ALIGNMENT ABBREVIATIONS

CENTERLINE CURVE TABLE

NO.	RADIUS	DELTA	LENGTH	TANGENT
C1	650.00'	26°04'23"	295.79'	150.50'
C2	1350.00'	11°13'52"	264.63'	132.74'

BACK OF CURB CURVE TABLE

NO.	RADIUS	DELTA	LENGTH	TANGENT
C3	45.00'	94°59'09"	74.60'	49.10'
C5	10.00'	51°19'04"	8.96'	4.80'
C6	10.00'	51°19'04"	8.96'	4.80'
C8	1324.00'	11°13'52"	259.53'	130.18'
C10	676.00'	26°04'23"	307.62'	156.52'
C12	10.00'	51°19'04"	8.96'	4.80'
C13	10.00'	51°19'04"	8.96'	4.80'
C15	30.00'	88°37'31"	46.40'	29.29'
C16	1991.50'	0°49'52"	28.89'	14.45'
C17	787.00'	2°31'31"	34.68'	17.35'
C18	30.00'	86°24'06"	45.24'	28.17'
C20	1368.50'	11°13'52"	268.26'	134.56'
C22	631.50'	26°04'23"	287.37'	146.22'
C24	29.64'	89°59'19"	46.55'	29.64'
C26	1958.50'	0°49'28"	28.18'	14.09'
C27	30.00'	91°22'54"	47.85'	30.73'
C29	30.00'	91°30'08"	47.91'	30.80'
C30	1956.50'	0°08'47"	5.00'	2.50'
C31	30.00'	93°11'21"	48.79'	31.72'
C32	2160.00'	0°44'50"	28.17'	14.09'
C33	30.00'	85°45'41"	44.90'	27.86'
C38	824.00'	2°06'58"	30.43'	15.22'
C39	2116.17'	0°15'15"	9.39'	4.69'
C40	6.18'	180°00'00"	19.43'	INFINITY'
C41	2128.53'	0°15'15"	9.44'	4.72'

GRAPHIC SCALE
30 0 15 30 60
HORIZONTAL: 1"= 30'

BASIS OF BEARING

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

BENCHMARK

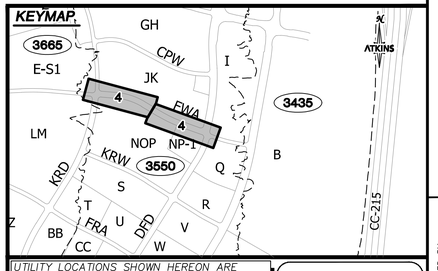
CITY OF LAS VEGAS BENCHMARK: D368
(REVISED 2008)
NAVD88 ELEVATION: 989.574 METERS (3,246.63 FEET)
FND USC&GS DISC SET IN ROCK RIDGE 150' SOUTH OF CHARLESTON BLVD. & WEST OF DETENTION BASIN.
T21S,R59E,S03

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

KEYMAP



UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION.

PROFESSIONAL ENGINEER - STATE OF NEVADA - ANTHONY J. ORTIZ - EXP. 6-30-21 - CIVIL - No. 18949
2/15/2021

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7375
Fax: +1.702.263.7200

SUMMERLIN

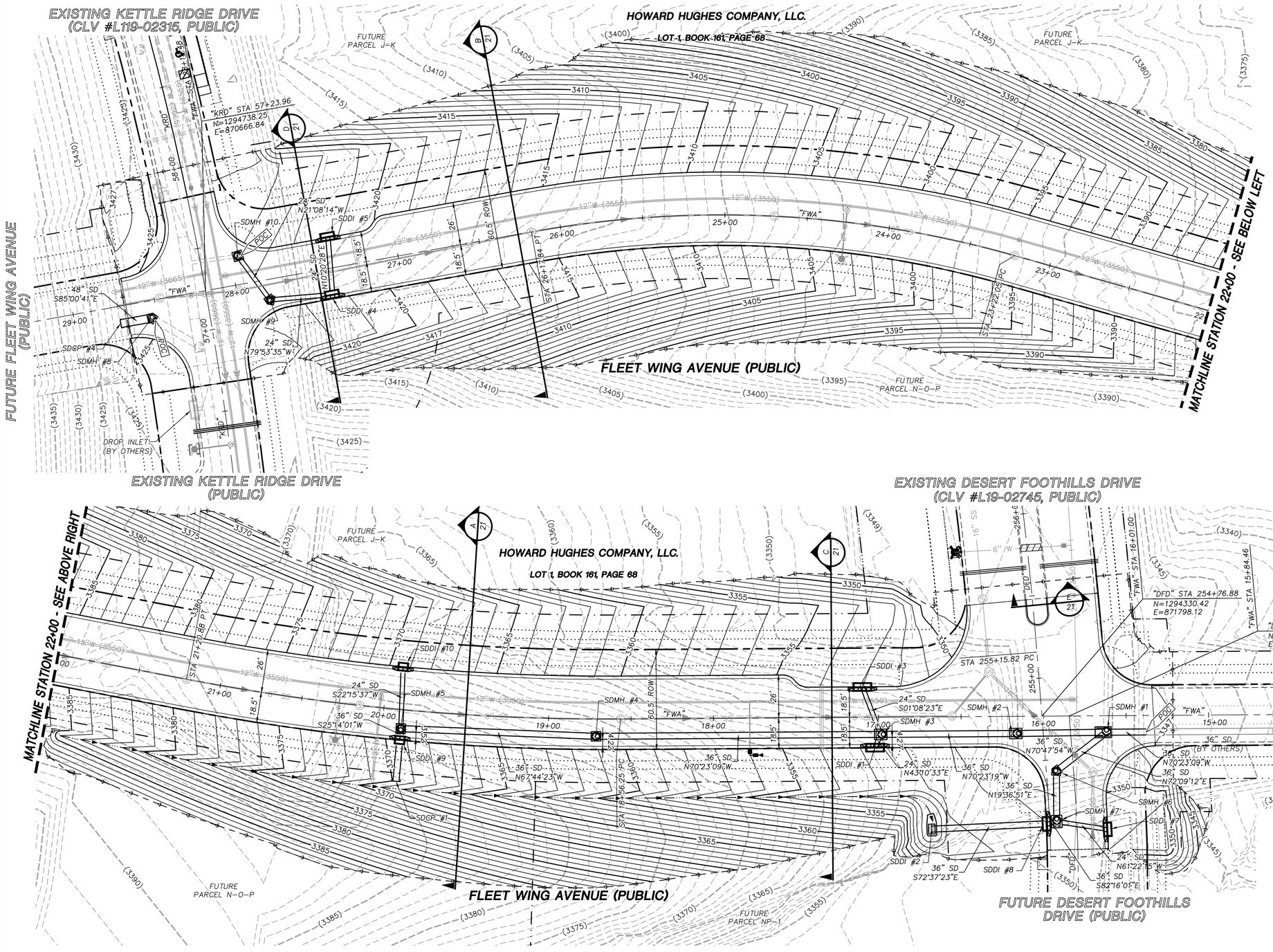
SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

HORIZONTAL CONTROL PLAN

DESIGNED BY: J. BANTA
DRAWN BY: C. DANIELS
CHECKED BY: P. BATES
HORIZ.: 1"=30'
VERT.: NONE

XXXVXXXX
L20-XXXXX
DATE: November 2, 2020
DRAWING NO. 4 /28
JOB NO. 100066776

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SUMMARY OF QUANTITIES

DESCRIPTION	QUANTITY	UNIT
DRAINAGE		
48" RCP CLASS III	20	LF
36" RCP CLASS III	630	LF
24" RCP CLASS III	150	LF
10' TYPE CM2 SDDI	2	EA
10' TYPE CM2 SDDI (D>10')	2	EA
7.5' TYPE CM SDDI	2	EA
4' X 8' NDOT TYPE 2 DROP INLET	1	EA
TYPE II SDMH	4	EA
TYPE III SDMH	4	EA
CAP	2	EA
RIP-RAP (D50=8" THICKNESS=16")	280	CY

MASTER PLAN NOTE

THIS SHEET IS FOR INFORMATIONAL PURPOSES ONLY. IT IS AN OVERALL REPRESENTATION OF THE UTILITY FOR REVIEW AND COORDINATION WITH OTHER PROJECT DETAILS WITHIN THIS PLAN SET.

STORM DRAIN NOTES

1. SEE ROADWAY PLAN AND PROFILE SHEETS FOR CONSTRUCTION DETAILS.
2. ALL STORM DRAIN MATERIAL TO BE CLASS III REINFORCED CONCRETE PIPE, UNLESS OTHERWISE NOTED IN PROFILES.
3. CONTRACTOR TO PROVIDE 6" MINIMUM OF CLEARANCE BETWEEN OUTSIDE OF PIPE TO INSIDE WALL OF STORM DRAIN STRUCTURES.

GRAPHIC SCALE
30 0 15 30 60
HORIZONTAL: 1"= 30'

SOILS REPORT

BY NOVA
PROJECT NO. G-18-176
DATED 12/03/18 AND
SUBSEQUENT UPDATE LETTER
DATED 12/30/19
EARTHWORK QUANTITIES (RAW):
CUT= 15,400 CU YDS
FILL= 30,700 CU YDS

GRADING PLAN CERTIFICATION

ANTHONY J. ORTIZ PE#18849 DATE

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

DS#XXX-0000

BASIS OF BEARING

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

BENCHMARK

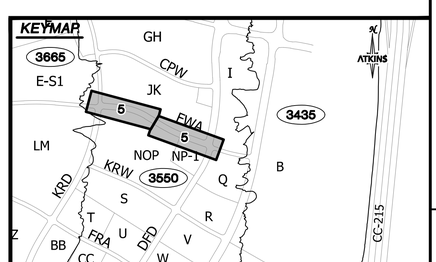
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(REVISED 2008)
NAVD88 ELEVATION: 989.574 METERS
(3,246.63 FEET)
FND USC&GS DISC SET IN ROCK RIDGE 150' SOUTH OF CHARLESTON BLVD. & WEST OF DETENTION BASIN.
T21S,R59E,S03

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KEYMAP



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PROFESSIONAL ENGINEER-STATE OF NEVADA ANTHONY J. ORTIZ EXP. 06-30-21 No. 18849 CIVIL
2/15/2021

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

SUMMERLIN

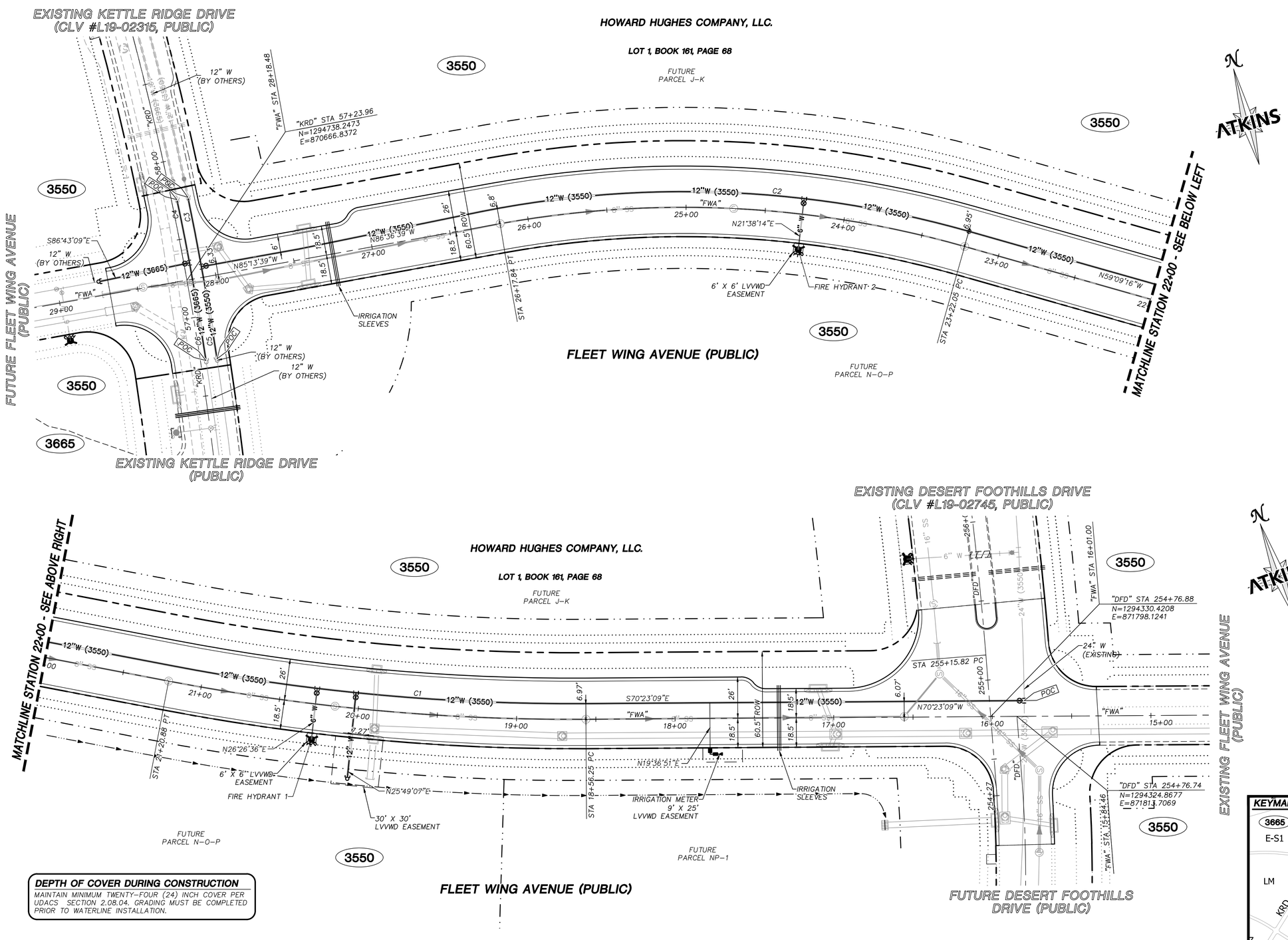
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DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

MASTER DRAINAGE PLAN

DESIGNED BY: J. BAUTA
DRAWN BY: C. DANIELS
CHECKED BY: P. BATES
HORIZ.: 1"=30'
VERT.: NONE

XXXVXXXX
L20-XXXXX
DATE: November 2, 2020
DRAWING NO. 5 /28
JOB NO. 100066776

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SUMMARY OF QUANTITIES

DESCRIPTION	QUANTITY	UNIT
WATER		
12" C-900 PVC PIPE	1,517	LF
6" C-900 PVC PIPE	70	LF
1.5" COPPER PIPE	35	LF
FIRE HYDRANT ASSEMBLY	2	EA
CAP AND BLOWOFF ASSEMBLY	2	EA
24" X 12" TAPING SLEEVE	1	EA
12" X 12" TEE	3	EA
12" X 6" TEE	2	EA
12" X 1.5" SERVICE SADDLE	1	EA
12" GATE VALVE	5	EA
6" GATE VALVE	2	EA
IRRIGATION SLEEVES	85	LF
12" DIP	44	LF
1.5" METER WITH 1.5" RPPA	1	EA

MASTER PLAN NOTE

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WATERLINE CURVE TABLE

NO.	RADIUS	DELTA	TANGENT
C1	1340.10'	11°13'52"	131.77'
C2	656.65'	26°12'03"	152.81'
C3	1603.05'	1°35'26"	22.25'
C4	1253.45'	1°51'26"	20.32'
C5	1652.47'	2°02'37"	29.47'
C6	1813.65'	1°58'20"	31.22'

WATER NOTES

1. SEE ROADWAY PLAN AND PROFILE SHEETS FOR CONSTRUCTION NOTES AND INFORMATION RELATED TO PIPE SIZE, LENGTH, AND SIZE OF FITTINGS.
2. ALL WATER PIPE MATERIAL TO BE WATER QUALITY RATED AWWA C-900, UNLESS OTHERWISE NOTED IN PROFILES.
3. INSTALL PIPELINE MARKER BALLS IN TRENCH ABOVE EACH HORIZONTAL ELBOW FITTING PER UDACS PLATE #15.
4. PROTECT IN PLACE AND ADJUST LVVWD EXISTING FACILITIES TO FINISHED GRADE. ALL LVVWD FACILITIES SHALL BE ACCESSIBLE AT ALL TIMES.
5. SEE SHEET 23 FOR WATER DETAILS.
6. THRUST BLOCKS WILL BE PROVIDED AT EVERY CHANGE IN DIRECTION PER UDACS PLATES #30 & #31.
7. CONTRACTOR TO INSTALL PIPE BENDS AS NECESSARY IN ORDER TO ACHIEVE EQUIVALENT PIPE CENTERLINE RADIUS PER UDACS SECTION 2.07 WATER MAIN JOINT DEFLECTION.

DEPTH OF COVER DURING CONSTRUCTION

MAINTAIN MINIMUM TWENTY-FOUR (24) INCH COVER PER UDACS SECTION 2.08.04. GRADING MUST BE COMPLETED PRIOR TO WATERLINE INSTALLATION.

GRAPHIC SCALE
30 0 15 30 60
HORIZONTAL: 1" = 30'

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT
PLANNING AND ENGINEERING SERVICES

PROJECT NO. 137512 FIRST APPROVED DATE:_____

LVVWD APPROVED FIRE FLOW 1500 GPM AT 20 PSI RESIDUAL

BASIS OF BEARING

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

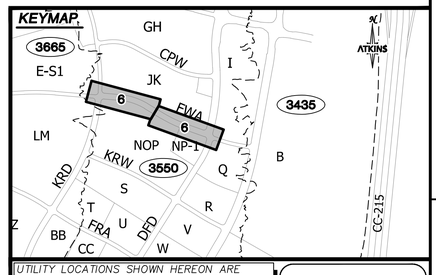
BENCHMARK

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PROFESSIONAL ENGINEER-STATE OF NEVADA
ANTHONY J. ORTIZ
EXP. 12-31-21
CIVIL
No. 18949
2/15/2021

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7375
Fax: +1.702.263.7200

SUMMERLIN

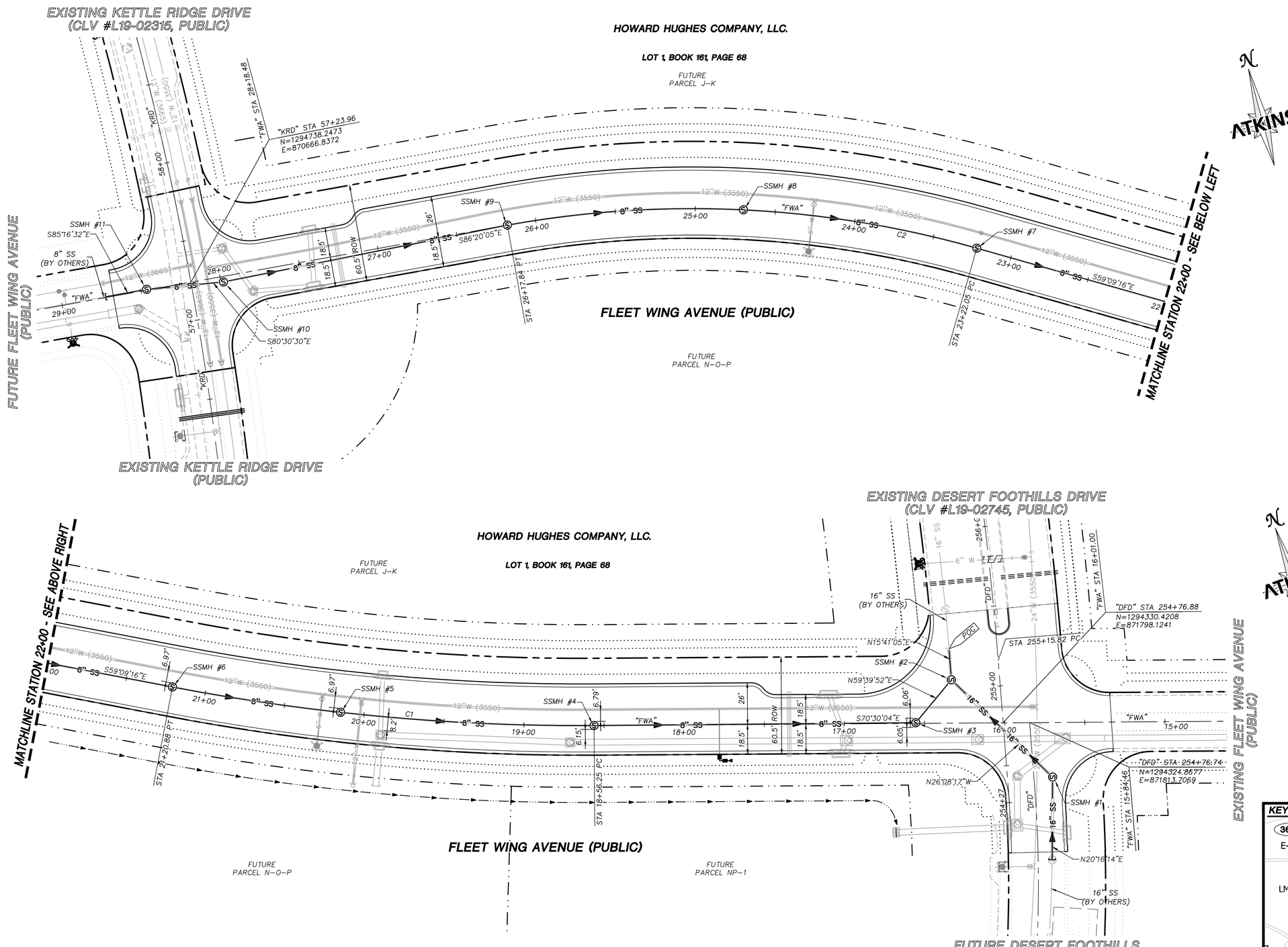
SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

MASTER WATER PLAN

DESIGNED BY: L. BAATA
DRAWN BY: C. DANIELS
CHECKED BY: P. BATES
HORIZ.: 1"=30'
VERT.: NONE

XXXVXXXX
L20-YXXXX
DATE: November 2, 2020
DRAWING NO. 6/28
JOB NO. 100066776

C:\pw_work\atkinsv01\wsatkins_tor9642\dms57891\66776-06-WATR-W1.dwg LAYOUT: MASTER WATER PLAN Feb 23, 2021 - 9:15PM



SUMMARY OF QUANTITIES

DESCRIPTION	QUANTITY	UNIT
SEWER		
8" C-900 PVC PIPE	1,250	LF
16" C-900 PVC PIPE	160	LF
48" SD-1 MANHOLE	6	EA
60" SD-1 MANHOLE	1	EA
72" SD-1 MANHOLE	4	EA
CAP AND BLOWOFF ASSEMBLY	2	EA

MASTER PLAN NOTE

THIS SHEET IS FOR INFORMATIONAL PURPOSES ONLY. IT IS AN OVERALL REPRESENTATION OF THE UTILITY FOR REVIEW AND COORDINATION WITH OTHER PROJECT DETAILS WITHIN THIS PLAN SET.

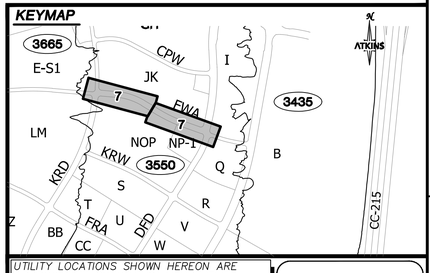
SEWER LINE CURVE TABLE

NO.	RADIUS	DELTA	TANGENT
C1	1350.00'	11°13'52"	132.74'
C2	650.00'	26°04'23"	150.50'

SEWER NOTES

1. SEE ROADWAY PLAN AND PROFILE SHEETS FOR CONSTRUCTION NOTES AND INFORMATION RELATED TO PIPE SIZE, SLOPE, INVERT, RIM INFORMATION, AND MANHOLE BASE SIZE.
2. ALL SEWER PIPE MATERIAL TO BE WATER QUALITY RATED AWWA C-900, UNLESS OTHERWISE NOTED IN PROFILES.
3. ALL SEWER MANHOLES SHALL HAVE WATER TIGHT JOINTS PER DCSWCS 3.16.2.A.2

KEYMAP



GRAPHIC SCALE
30 0 15 30 60
HORIZONTAL: 1"= 30'

BASIS OF BEARING

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

BENCHMARK

CITY OF LAS VEGAS BENCHMARK: D368
(REVISED 2008)
NAVD88 ELEVATION: 989.574 METERS
(3,246.63 FEET)
FND USC&GS DISC SET IN ROCK RIDGE 150' SOUTH OF CHARLESTON BLVD. & WEST OF DETENTION BASIN.
T21S,R59E,S03

FAST Call before you UnderGround 1-702-432-5300 REGIONAL AND INTERNAL SYSTEM OF TRANSPORTATION

Call before you Dig AVOID CUTTING UNDERGROUND UTILITY LINES IN CLARK COUNTY. Call 811 OR 1-800-642-2444

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PROFESSIONAL ENGINEER - STATE OF NEVADA
ANTHONY ORTIZ
Exp. 12-31-21
CIVIL
No. 18949
2/15/2021

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

SUMMERLIN

SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

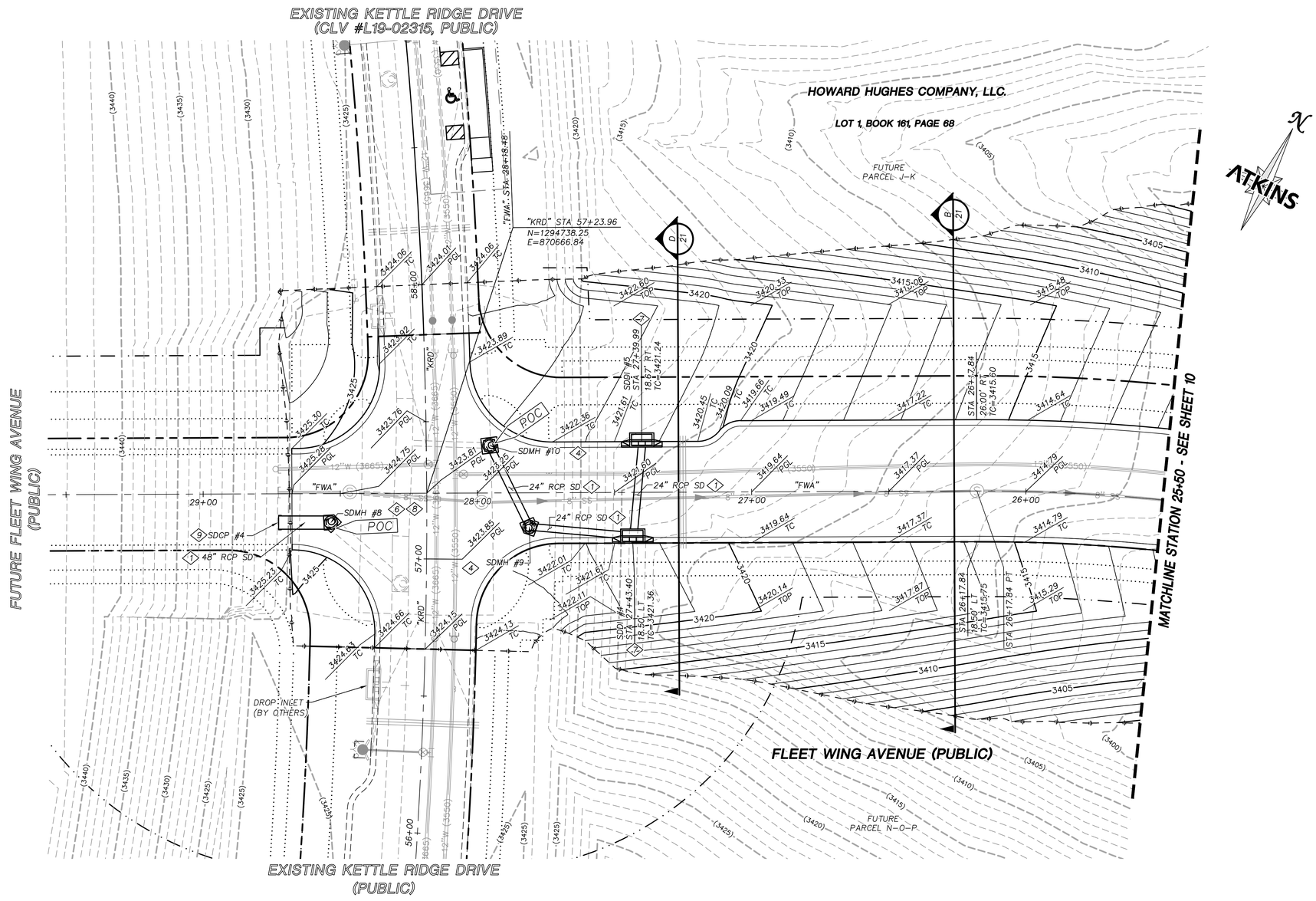
MASTER SEWER PLAN

DESIGNED BY: N. BARCOS
DRAWN BY: L. MAMACLAY
CHECKED BY: P. BATES
HORIZ.: 1"=30'
VERT.: NONE

XXXYXXXX
L20-XXXXX
DATE: November 2, 2020
DRAWING NO. 7 / 28

JOB NO. 100066776

C:\pw_work\atkinson01\westkins_torr9642\dms57691\66776-07-SEWER-SS1.dwg LAYOUT: MASTER SEWER PLAN Feb 23, 2021 - 9:16PM



GRAPHIC SCALE

20 0 10 20 40

HORIZONTAL: 1"=20'

GRADING PLAN CERTIFICATION

ANTHONY J. ORTIZ PE#18849 DATE

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

DS#XXX-0000

BASIS OF BEARING

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

BENCHMARK

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T21S,R59E,S03

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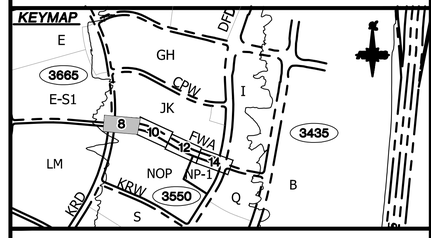
STORM DRAIN CONSTRUCTION NOTES

1. INSTALL STORM DRAIN. SEE SHEET ROADWAY PLAN AND PROFILE SHEETS FOR ADDITIONAL STORM DRAIN NOTES AND INFORMATION.
2. INSTALL TYPE "CM2" DROP INLET PER CCAUSD #412.1 & #421
3. INSTALL NDOT TYPE II DROP INLET PER NDOT R-4.2.1 (SEE SHEET 22)
4. INSTALL TYPE I SD MANHOLE PER CCAUSD #403
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8. REMOVE CAP AND CONNECT TO EXISTING STORM DRAIN STUB
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13. INSTALL TYPE "CM2" DROP INLET PER CCAUSD #412.1 & #421, AND DETAIL C SHEET 22

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

KEYMAP



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PROFESSIONAL ENGINEER-STATE OF NEVADA ANTHONY J. ORTIZ EXP. 12-31-21 CIVIL No. 18849

2/15/2021

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

SUMMERLIN

SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

ROADWAY GRADING PLAN
STA 25-50 TO END

DESIGNED BY: L. BAUTA
DRAWN BY: C. DANIELS
CHECKED BY: P. BATES
HORIZ.: 1"=20'
VERT.: NONE

XXXVXXXX
L20-YXXXX
DATE: November 2, 2020
DRAWING NO. 8 /28

JOB NO. 100066776

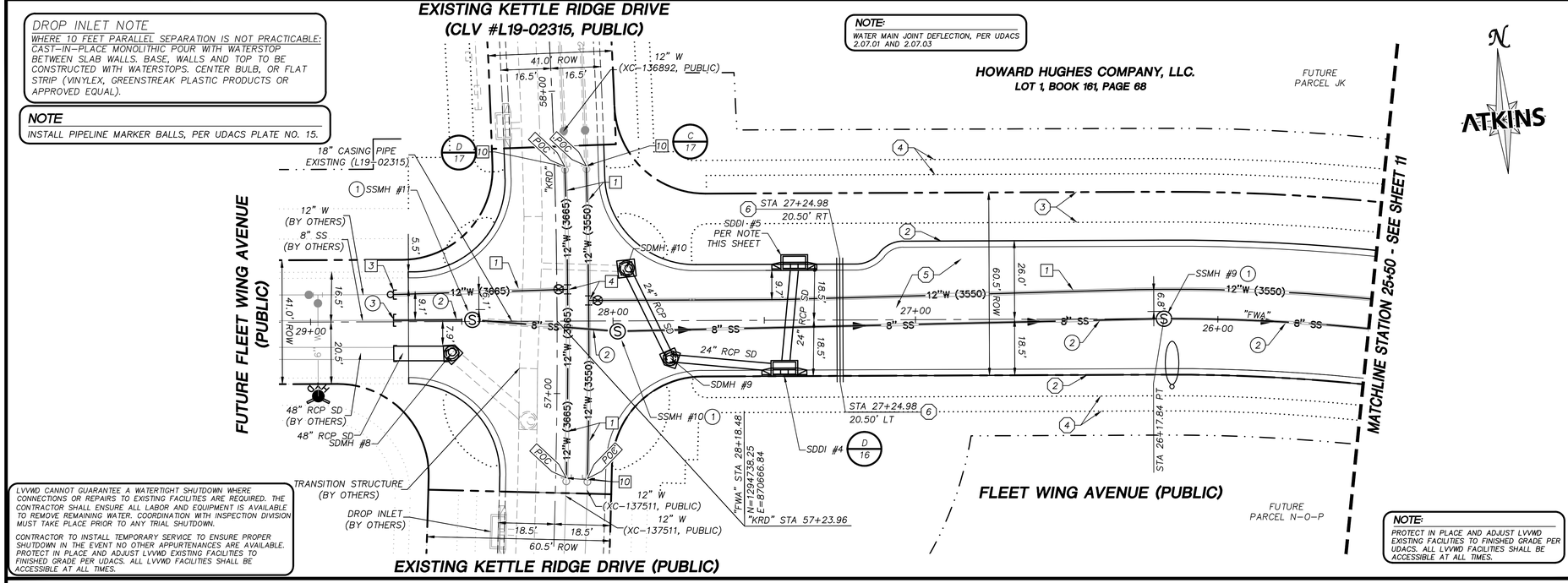
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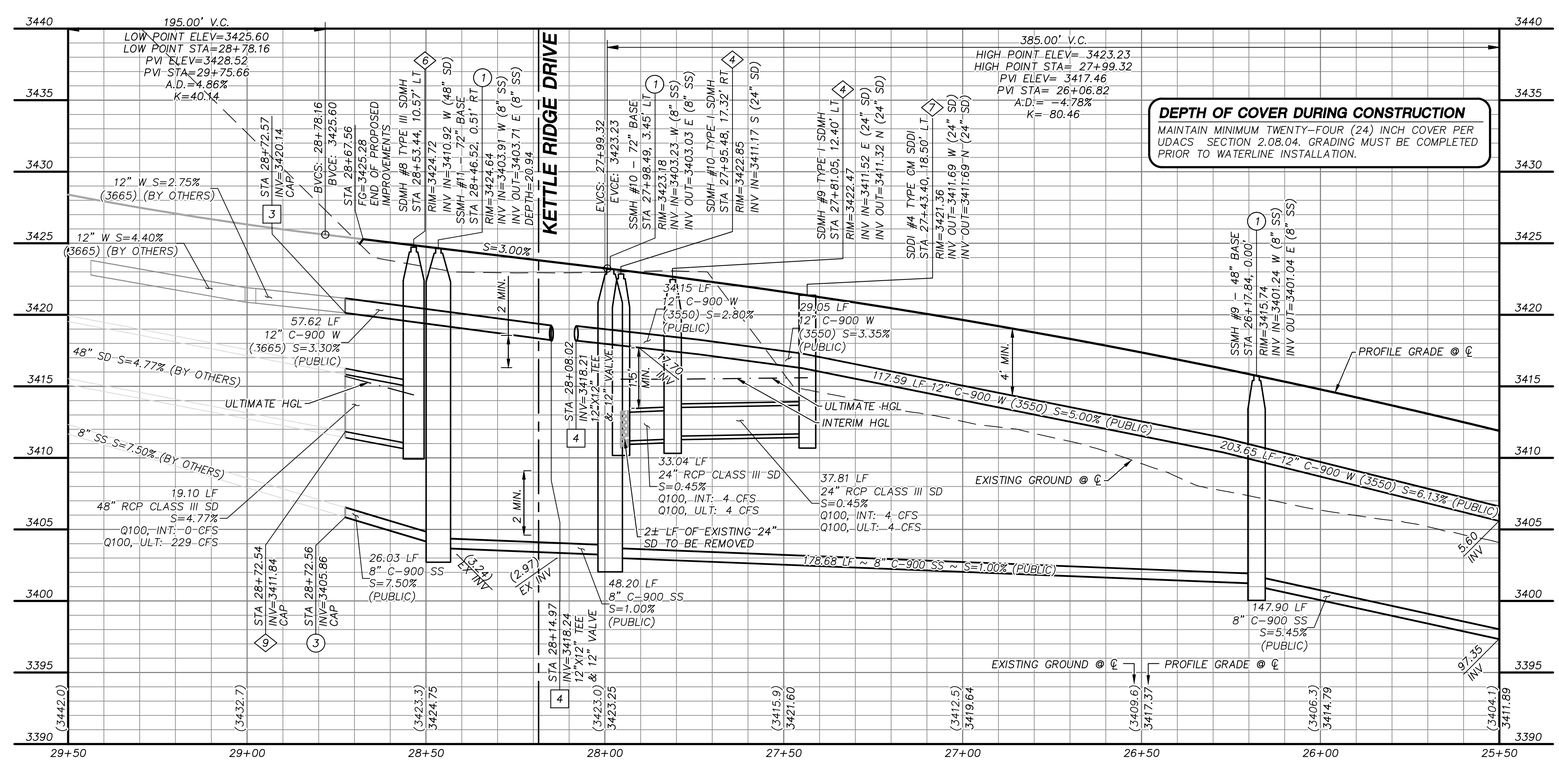
DROP INLET NOTE

WHERE 10 FEET PARALLEL SEPARATION IS NOT PRACTICABLE: CAST-IN-PLACE MONOLITHIC POUR WITH WATERSTOP BETWEEN SLAB WALLS. BASE, WALLS AND TOP TO BE CONSTRUCTED WITH WATERSTOPS. CENTER BULB, OR FLAT STRIP (VINYLEX, GREENSTREAK PLASTIC PRODUCTS OR APPROVED EQUAL).

NOTE

INSTALL PIPELINE MARKER BALLS, PER UDACS PLATE NO. 15.





GRAPHIC SCALE

20 0 10 20 40

HORIZONTAL: 1"=20'

5 0 2.5 5 10

VERTICAL: 1"=5'

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT
PLANNING AND ENGINEERING SERVICES

PROJECT NO. 137512 FIRST APPROVED DATE: _____

LVVWD APPROVED FIRE FLOW 1500 GPM AT 20 PSI RESIDUAL

BASIS OF BEARING

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

BENCHMARK

CITY OF LAS VEGAS BENCHMARK: D368 (REVISED 2008)
NAVD88 ELEVATION: 989.574 METERS (3,246.63 FEET)
FND USC&GS DISC SET IN ROCK RIDGE 150' SOUTH OF CHARLESTON BLVD. & WEST OF DETENTION BASIN.
T21S,R59E,S03

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SEWER CONSTRUCTION NOTES

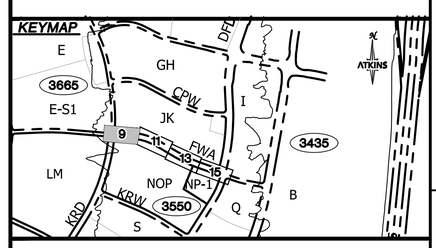
1. INSTALL SEWER MANHOLE PER DCSWCS SD-1 AND SD-4 WITH WATERTIGHT JOINTS
2. INSTALL SEWER MAIN PER DCSWCS SD-17
3. STUB AND CAP SEWER PIPE. PLACE MARKER BALL AND 4"X4" POST, DOUGLAS FIR, OVER END OF PIPE AND INSTALL THRUST BLOCK (1 CUBIC FT. MINIMUM).
4. REMOVE CAP AND CONNECT TO EXISTING SEWER STUB
5. ADJUST EXISTING MANHOLE TO GRADE PER DCSWCS SD-5.
6. PROTECT SEWER AT UTILITY CROSSING PER DCSWCS SD-19

WATERLINE CONSTRUCTION NOTES

1. INSTALL WATER MAIN PER UDACS PLATES #17 AND PLATE #19
2. INSTALL GATE VALVE PER UDACS PLATES #30 AND #39
3. INSTALL CAP AND 2" MANUAL BLOWOFF ASSEMBLY PER UDACS PLATE #36
4. INSTALL TEE W/ VALVE AND LATERAL PER UDACS PLATES #17, #19, #30, #31 AND #39
5. INSTALL TAPPING SLEEVE WITH TAPPING VALVE AND LATERAL PER UDACS PLATES #17, #19, #30, #31, #34, #39, AND 2.24.01 B
7. INSTALL 1.5" SERVICE SADDLE PER UDACS PLATE #4
8. INSTALL 1-1/2" IRRIGATION METER WITH RPPA PER UDACS PLATES #4 AND #8
9. INSTALL DEFLECTION AT PIPE JOINTS (MAXIMUM 1°)
10. REMOVE CAP AND 2" BLOWOFF AND CONNECT TO EXISTING WATERLINE STUB
11. INSTALL FIRE HYDRANT WITH APPURTENANCES (CONCRETE PAD, LATERAL, VALVE, AND TEE) PER UDACS PLATES #30, #31, #39, AND #40

ROADWAY CONSTRUCTION NOTES

1. SAWCUT AND MATCH EXISTING
2. CONSTRUCT "L" TYPE CURB AND GUTTER PER CCAUSD #216
3. CONSTRUCT CONCRETE BIKEPATH PER CCAUSD #234
4. FUTURE SIDEWALK BY OTHERS
5. CONSTRUCT PLANTMIX BITUMINOUS SURFACE OVER TYPE II AGGREGATE BASE PER SOILS REPORT. SEE SHEET 21 FOR TYPICAL PAVEMENT SECTION.
6. INSTALL SCHEDULE 40 PVC IRRIGATION SLEEVES (2-4", 1-6") PER DETAIL ON SHEET 23



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PROFESSIONAL ENGINEER-STATE OF NEVADA
ANTHONY J. ORTIZ
EXP. 12-31-21
CIVIL
No. 18949
2/15/2021

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

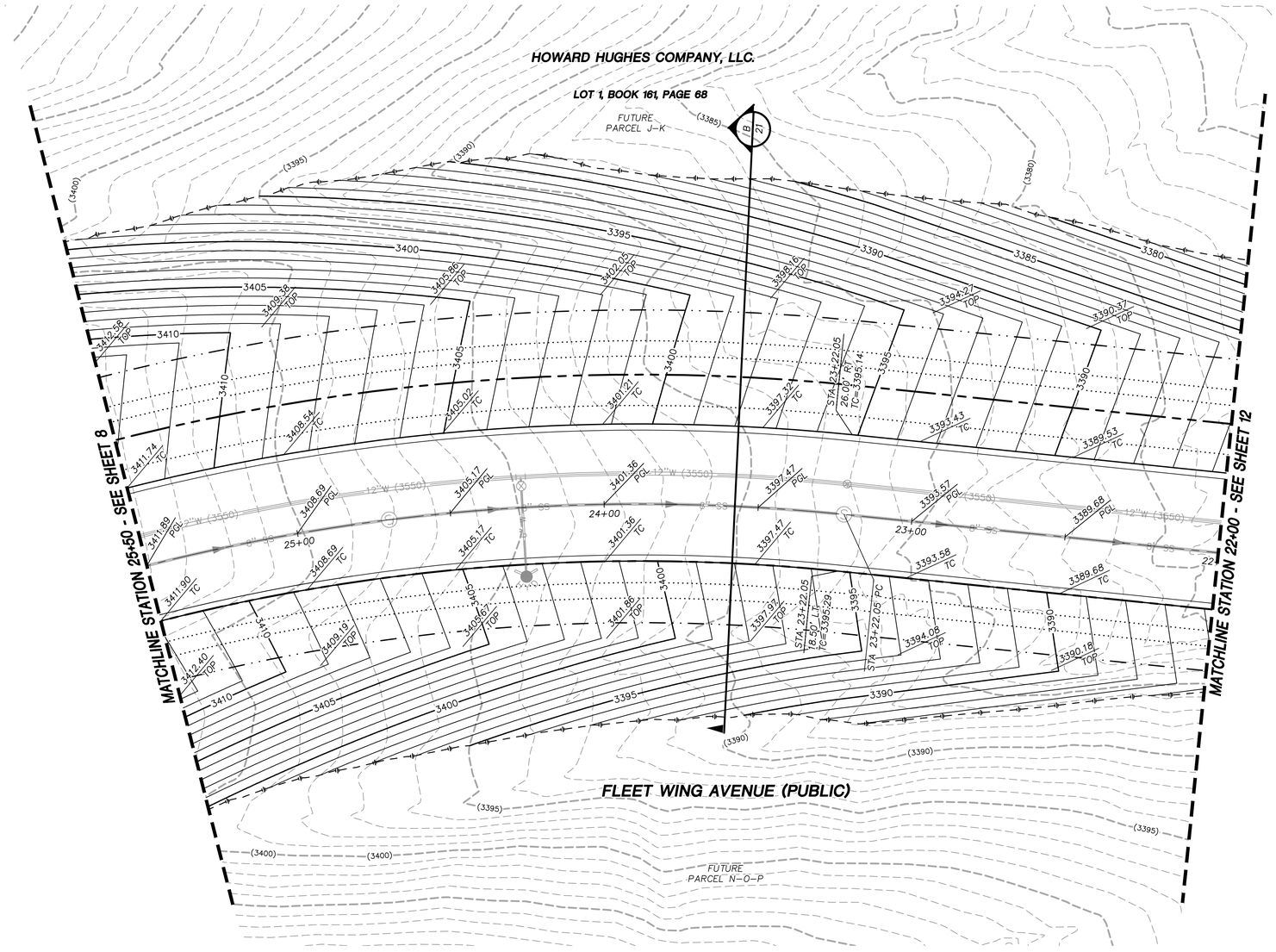
SUMMERLIN

SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

ROADWAY PLAN AND PROFILE
STA 25+50 TO END

DESIGNED BY:	L. BANTA
DRAWN BY:	C. DANIELS
CHECKED BY:	P. BATES
HORIZ.:	1"=20'
VERT.:	1"=5'
XXXVXXXX	
L20-XXXXX	
DATE:	November 2, 2020
DRAWING NO.	9 /28
JOB NO.	100066776

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STORM DRAIN CONSTRUCTION NOTES

1. INSTALL STORM DRAIN. SEE SHEET ROADWAY PLAN AND PROFILE SHEETS FOR ADDITIONAL STORM DRAIN NOTES AND INFORMATION.
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13. INSTALL TYPE "CM2" DROP INLET PER CCAUSD #412.1 & #421, AND DETAIL C SHEET 22

GRAPHIC SCALE
20 0 10 20 40
HORIZONTAL: 1"=20'

GRADING PLAN CERTIFICATION

ANTHONY J. ORTIZ PE#18849 — 2/24/2021 DATE

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

DS#XXX-0000

BASIS OF BEARING

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

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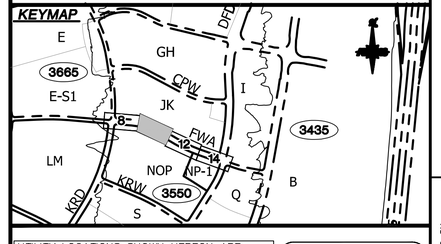
CITY OF LAS VEGAS BENCHMARK: D368
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KEYMAP



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PROFESSIONAL ENGINEER STATE OF NEVADA — ANTHONY J. ORTIZ — EXP. 12-31-21 — CIVIL — No. 18849
2/15/2021

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
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SUMMERLIN

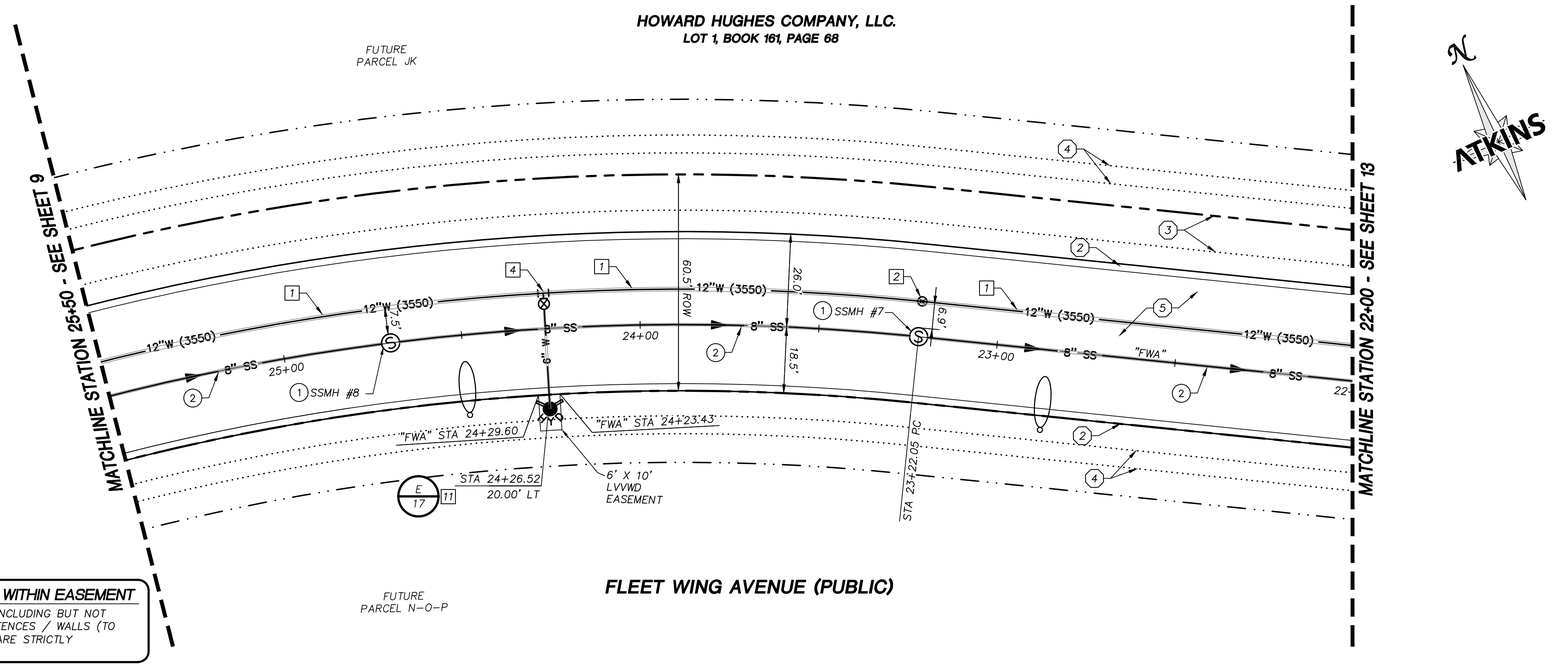
SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

ROADWAY GRADING PLAN
STA 22+00 TO STA 25+50

DESIGNED BY: D. BANTA
DRAWN BY: C. DANIELS
CHECKED BY: P. BATES
HORIZ.: 1"=20'
VERT.: NONE

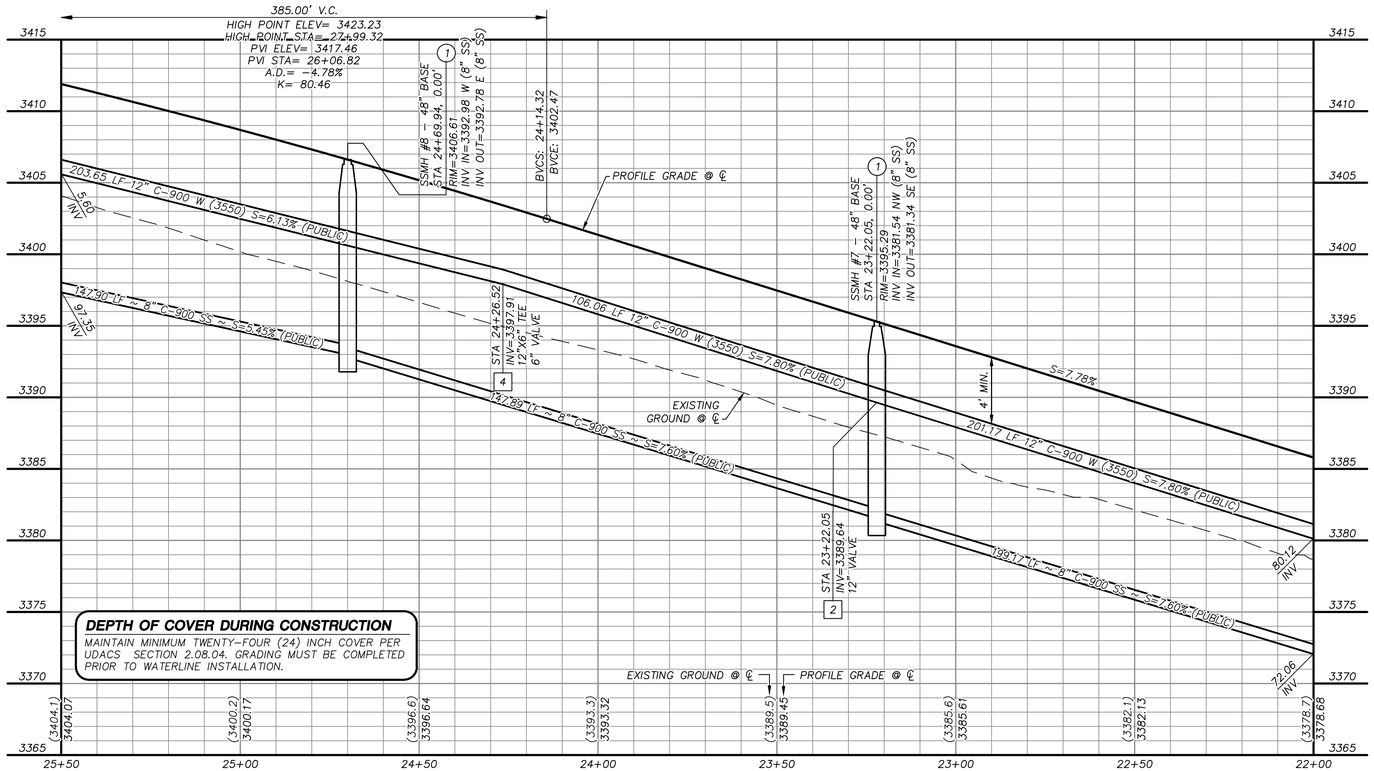
XXVVXXXX
L20-XXXXX
DATE: November 2, 2020
DRAWING NO. 10/28
JOB NO. 100066776

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TO ENSURE LVVWD ACCESS WITHIN EASEMENT

ALL ABOVE GROUND OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO, LANDSCAPE BOULDERS, FENCES / WALLS (TO INCLUDE NO FOOTINGS), AND SIGNS ARE STRICTLY PROHIBITED WITHIN EASEMENT.



DEPTH OF COVER DURING CONSTRUCTION

MAINTAIN MINIMUM TWENTY-FOUR (24) INCH COVER PER UDACS SECTION 2.08.04. GRADING MUST BE COMPLETED PRIOR TO WATERLINE INSTALLATION.

GRAPHIC SCALE

20 0 10 20 40

HORIZONTAL: 1"=20'

5 0 2.5 5 10

VERTICAL: 1"=5'

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT
PLANNING AND ENGINEERING SERVICES

PROJECT NO. 137512 FIRST APPROVED DATE: _____

LVVWD APPROVED FIRE FLOW 1500 GPM AT 20 PSI RESIDUAL

BASIS OF BEARING

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

BENCHMARK

CITY OF LAS VEGAS BENCHMARK: D368
(REVISED 2008)
NAVD88 ELEVATION: 989.574 METERS
(3,246.63 FEET)
FND USC&GS DISC SET IN ROCK RIDGE 150' SOUTH OF CHARLESTON BLVD. & WEST OF DETENTION BASIN.
T21S,R59E,S03

FAST Call before you UnderGround 1-702-432-5300 TRANSIT AND HIGHWAY SYSTEM OF TRANSPORTATION

Call before you Dig AVOID OUTAGES, NOTIFICATION OF UTILITY LINES IN YOUR AREA. Call 811 or 1-800-642-2444

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

STORM DRAIN CONSTRUCTION NOTES

1. INSTALL STORM DRAIN. SEE SHEET ROADWAY PLAN AND PROFILE SHEETS FOR ADDITIONAL STORM DRAIN NOTES AND INFORMATION.
2. INSTALL TYPE "CM2" DROP INLET PER CCAUSD #412.1 & #421
3. INSTALL NDOT TYPE II DROP INLET PER NDOT R-4.2.1 (SEE SHEET 22)
4. INSTALL TYPE I SD MANHOLE PER CCAUSD #403
5. INSTALL TYPE II SD MANHOLE PER CCAUSD #405
6. INSTALL TYPE III SD MANHOLE PER CCAUSD #406
7. INSTALL TYPE "CM" DROP INLET PER CCAUSD #421 & #422
8. REMOVE CAP AND CONNECT TO EXISTING STORM DRAIN STUB
9. STUB & PLUG STORM DRAIN FOR FUTURE CONNECTION PER MANUFACTURER'S PLUG, OR APPROVED EQUAL (SEE SHEET 22)
10. INSTALL RIP-RAP (D50=8", THICKNESS=16")
11. INSTALL TYPE II SD MANHOLE W/SINGLE SIDE DRAIN PER CCAUSD #405.2 (SHEET 2 OF 3)
12. INSTALL TYPE II SD MANHOLE W/DOUBLE SIDE DRAIN PER CCAUSD #405.2 (SHEET 3 OF 3)
13. INSTALL TYPE "CM2" DROP INLET PER CCAUSD #412.1 & #421, AND DETAIL C SHEET 22

SEWER CONSTRUCTION NOTES

1. INSTALL SEWER MANHOLE PER DCSWCS SD-1 AND SD-4 WITH WATERTIGHT JOINTS
2. INSTALL SEWER MAIN PER DCSWCS SD-17
3. STUB AND CAP SEWER PIPE. PLACE MARKER BALL AND 4"X4" POST, DOUGLAS FIR, OVER END OF PIPE AND INSTALL THRUST BLOCK (1 CUBIC FT. MINIMUM).
4. REMOVE CAP AND CONNECT TO EXISTING SEWER STUB
5. ADJUST EXISTING MANHOLE TO GRADE PER DCSWCS SD-5.
6. PROTECT SEWER AT UTILITY CROSSING PER DCSWCS SD-19

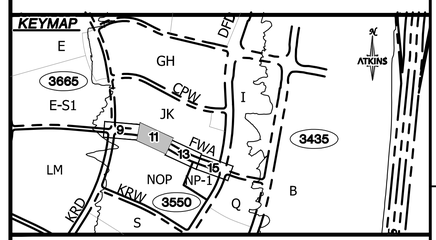
WATERLINE CONSTRUCTION NOTES

1. INSTALL WATER MAIN PER UDACS PLATES #17 AND PLATE #19
2. INSTALL GATE VALVE PER UDACS PLATES #30 AND #39
3. INSTALL CAP AND 2" MANUAL BLOWOFF ASSEMBLY PER UDACS PLATE #36
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5. INSTALL TAPPING SLEEVE WITH TAPPING VALVE AND LATERAL PER UDACS PLATES #17, #19, #30, #31, #34, #39, AND 2.24.01 B
7. INSTALL 1.5" SERVICE SADDLE PER UDACS PLATE #4
8. INSTALL 1-1/2" IRRIGATION METER WITH RPPA PER UDACS PLATES #4 AND #8
9. INSTALL DEFLECTION AT PIPE JOINTS (MAXIMUM 1°)
10. REMOVE CAP AND 2" BLOWOFF AND CONNECT TO EXISTING WATERLINE STUB
11. INSTALL FIRE HYDRANT WITH APPURTENANCES (CONCRETE PAD, LATERAL, VALVE, AND TEE) PER UDACS PLATES #30, #31, #39, AND #40

ROADWAY CONSTRUCTION NOTES

1. SAWCUT AND MATCH EXISTING
2. CONSTRUCT "L" TYPE CURB AND GUTTER PER CCAUSD #216
3. CONSTRUCT CONCRETE BIKEPATH PER CCAUSD #234
4. FUTURE SIDEWALK BY OTHERS
5. CONSTRUCT PLANTMIX BITUMINOUS SURFACE OVER TYPE II AGGREGATE BASE PER SOILS REPORT. SEE SHEET 21 FOR TYPICAL PAVEMENT SECTION.
6. INSTALL SCHEDULE 40 PVC IRRIGATION SLEEVES (2-4", 1-6") PER DETAIL ON SHEET 23

KEYMAP



UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION.

PROFESSIONAL ENGINEER - STATE OF NEVADA - ANTHONY ORTIZ - EXP. 12-31-21 - No. 18948 - CIVIL

2/15/2021

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

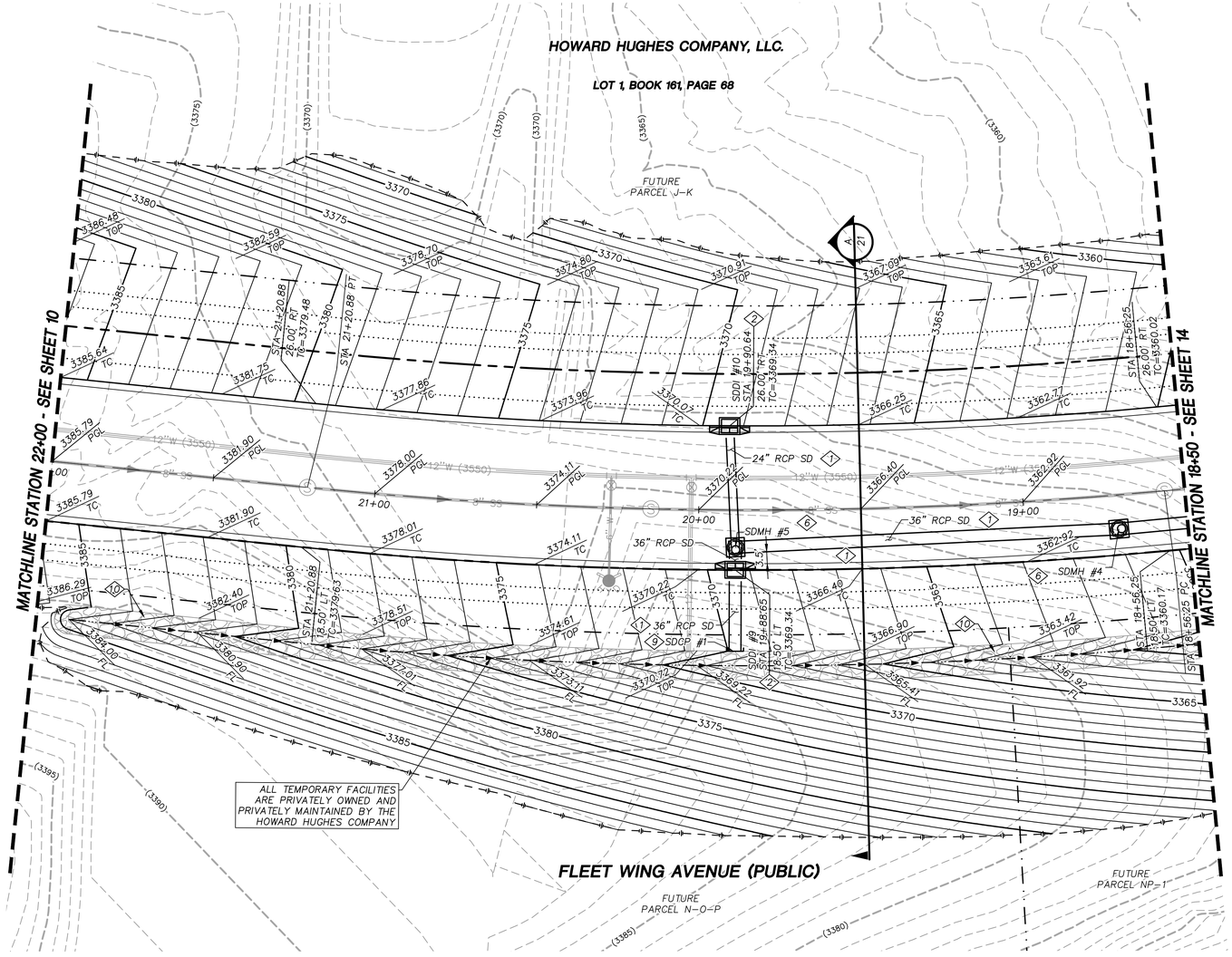
SUMMERLIN

SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

ROADWAY PLAN AND PROFILE
STA 22+00 TO STA 25+50

DESIGNED BY:	N. BARCOS
DRAWN BY:	L. MAMACLAY
CHECKED BY:	P. BATES
HORIZ.:	1"=20'
VERT.:	1"=5'
XXVVXXXX	
L20-XXXXX	
DATE:	November 2, 2020
DRAWING NO.	11/28
JOB NO.	100066776

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STORM DRAIN CONSTRUCTION NOTES

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13. INSTALL TYPE "CM2" DROP INLET PER CCAUSD #412.1 & #421, AND DETAIL C SHEET 22

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

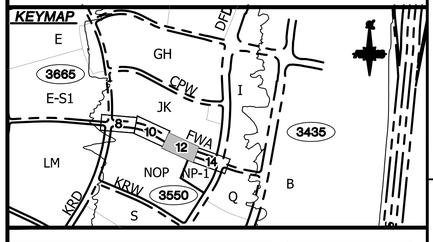
ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

SUMMERLIN

SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

ROADWAY GRADING PLAN
STA 18+50 TO STA 22+00

KEYMAP



GRAPHIC SCALE
20 0 10 20 40
HORIZONTAL: 1"=20'

GRADING PLAN CERTIFICATION

ANTHONY J. ORTIZ PE#18849 2/24/2021 DATE

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

DS#XXX-0000

BASIS OF BEARING

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

BENCHMARK

CITY OF LAS VEGAS BENCHMARK: D368
(REVISED 2008)
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(3,246.63 FEET)
FND USC&GS DISC SET IN ROCK RIDGE 150' SOUTH OF CHARLESTON BLVD. & WEST OF DETENTION BASIN.
T21S,R59E,S03

FAST Call before you UnderGround 1-702-432-5300 REGULATED AND AUTHORIZED SYSTEM OF TRANSPORTATION

Call before you Dig AVOID CUTTING TELEPHONE OR UTILITY CABLES. IT'S COURTLY. Call 811 or 1-800-642-2444

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

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PROFESSIONAL ENGINEER - STATE OF NEVADA - ANTHONY ORTIZ - Exp. 12-31-21 - CIVIL - No. 18849
2/15/2021

DESIGNED BY:	BANTA
DRAWN BY:	C. DANIELS
CHECKED BY:	P. BATES
HORIZ.:	1"=20'
VERT.:	NONE
XXXVXXXX	
L20-XXXXX	
DATE:	November 2, 2020
DRAWING NO.	12/28
JOB NO.	100066776

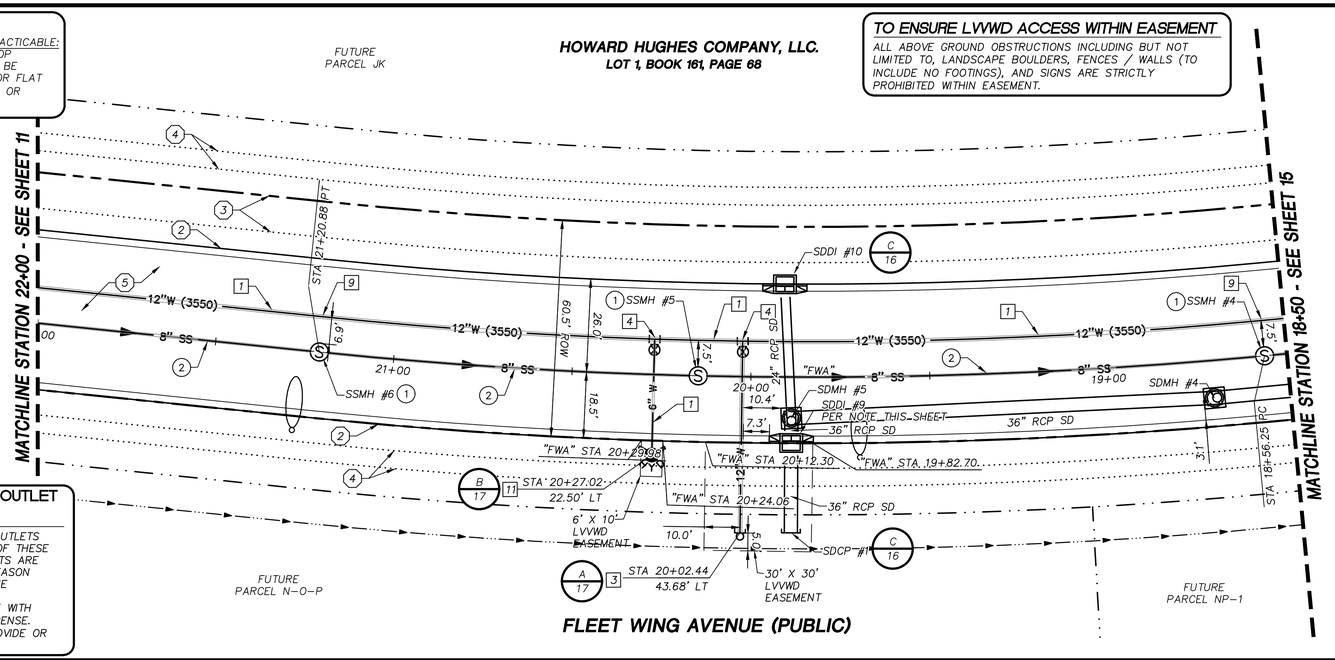
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DROP INLET NOTE

WHERE 10 FEET PARALLEL SEPARATION IS NOT PRACTICABLE; CAST-IN-PLACE MONOLITHIC POUR WITH WATERSTOP BETWEEN SLAB WALLS. BASE, WALLS AND TOP TO BE CONSTRUCTED WITH WATERSTOPS. CENTER BULB, OR FLAT STRIP (VINYLEX, GREENSTREAK PLASTIC PRODUCTS OR APPROVED EQUAL).

CONDITIONAL APPROVAL OF VALVED OUTLET (6-INCH AND LARGER)

THE WATER PLANS SHOW ONE OR MORE VALVED OUTLETS EXTENDING OUT OF PAVED AREAS. INSTALLATION OF THESE OUTLETS IS ACCEPTABLE, HOWEVER, IF THE OUTLETS ARE INCORRECTLY LOCATED OR NOT USED FOR ANY REASON WHEN THE PROPERTY IS ACTUALLY DEVELOPED, THE DEVELOPER SHALL REMOVE THE OUTLETS AT THE CONNECTION TO THE ACTIVE MAIN IN ACCORDANCE WITH LVVWD STANDARDS AND AT THE DEVELOPER'S EXPENSE. APPROVAL OF THE VALVED OUTLET DOES NOT PROVIDE OR IMPLY A WATER COMMITMENT.

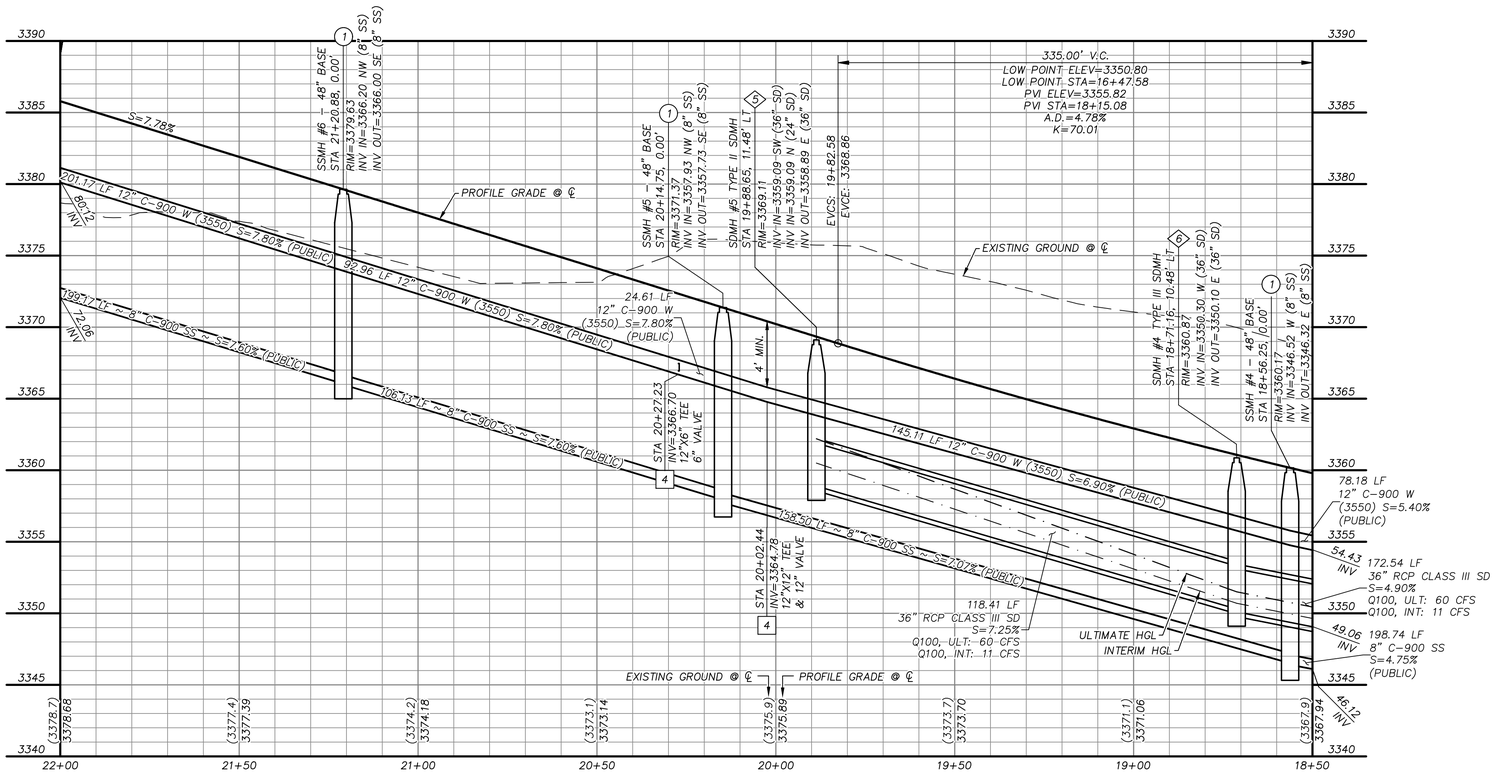


TO ENSURE LVVWD ACCESS WITHIN EASEMENT

ALL ABOVE GROUND OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO, LANDSCAPE BOULDERS, FENCES / WALLS (TO INCLUDE NO FOOTINGS), AND SIGNS ARE STRICTLY PROHIBITED WITHIN EASEMENT.

NOTE:

THIS PROJECT PROVIDES FOR THE INSTALLATION OF OFF-SITE WATER MAINS ONLY, AND DOES NOT PROVIDE OR IMPLY ANY WATER COMMITMENT.



GRAPHIC SCALE

HORIZONTAL: 1"=20'

VERTICAL: 1"=5'

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT
PLANNING AND ENGINEERING SERVICES

PROJECT NO. 137512 FIRST APPROVED DATE: _____

LVVWD APPROVED FIRE FLOW 1500 GPM AT 20 PSI RESIDUAL

BASIS OF BEARING

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T21S,R59E,S03

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3. STUB AND CAP SEWER PIPE. PLACE MARKER BALL AND 4"X4" POST, DOUGLAS FIR, OVER END OF PIPE AND INSTALL THRUST BLOCK (1 CUBIC FT. MINIMUM).
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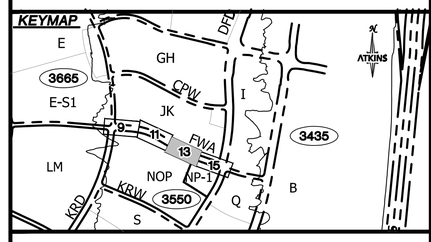
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ROADWAY CONSTRUCTION NOTES

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2. CONSTRUCT "L" TYPE CURB AND GUTTER PER CCAUSD #216
3. CONSTRUCT CONCRETE BIKEPATH PER CCAUSD #234
4. FUTURE SIDEWALK BY OTHERS
5. CONSTRUCT PLANTMIX BITUMINOUS SURFACE OVER TYPE II AGGREGATE BASE PER SOILS REPORT. SEE SHEET 21 FOR TYPICAL PAVEMENT SECTION.
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KEYMAP



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PROFESSIONAL ENGINEER - STATE OF NEVADA - ANTHONY J. ORTIZ - EXP. 12-31-21 - No. 18949 - CIVIL - 2/15/2021

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

SUMMERLIN

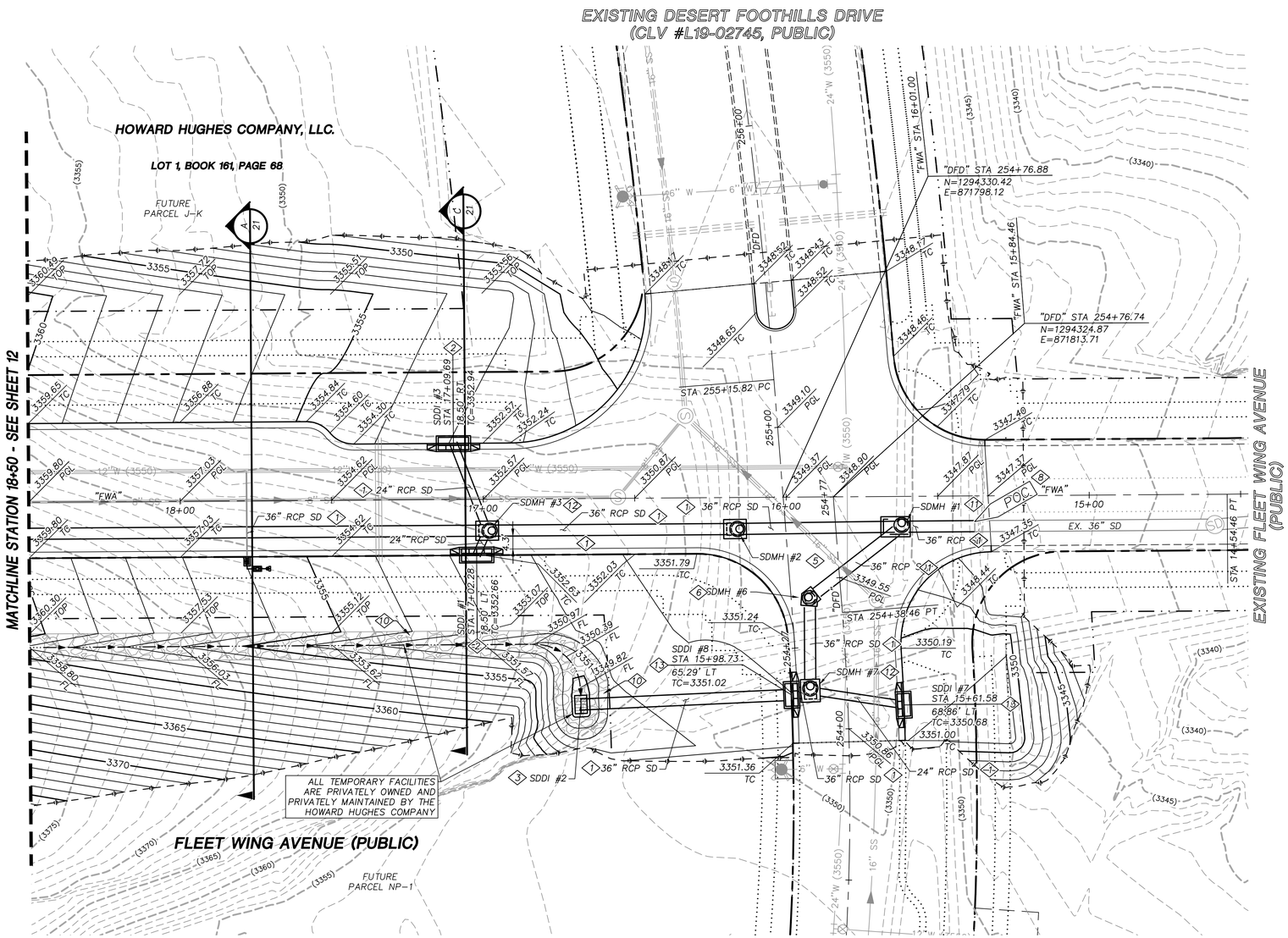
SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

ROADWAY PLAN AND PROFILE
STA 18+50 TO STA 22+00

DESIGNED BY:	J. BAUTA
DRAWN BY:	C. DANIELS
CHECKED BY:	P. BATES
HORIZ.:	1"=20'
VERT.:	1"=5'

XXXVXXXX
L20-YXXXX
DATE: November 2, 2020
DRAWING NO. 13/28
JOB NO. 100066776

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STORM DRAIN CONSTRUCTION NOTES

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GRAPHIC SCALE
20 0 10 20 40
HORIZONTAL: 1"=20'

GRADING PLAN CERTIFICATION

ANTHONY J. ORTIZ PE#18849 — 2/24/2021 DATE

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

DS#XXX-0000

BASIS OF BEARING

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

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T21S,R59E,S03

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

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

KEYMAP



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PROFESSIONAL ENGINEER-STATE OF NEVADA ANTHONY J. ORTIZ EXP. 12-31-21 CIVIL No. 18949
2/15/2021

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
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SUMMERLIN

SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

ROADWAY GRADING PLAN
BEGIN TO STA 18+50

DESIGNED BY: J. BANTA
DRAWN BY: C. DANIELS
CHECKED BY: P. BATES
HORIZ.: 1"=20'
VERT.: NONE

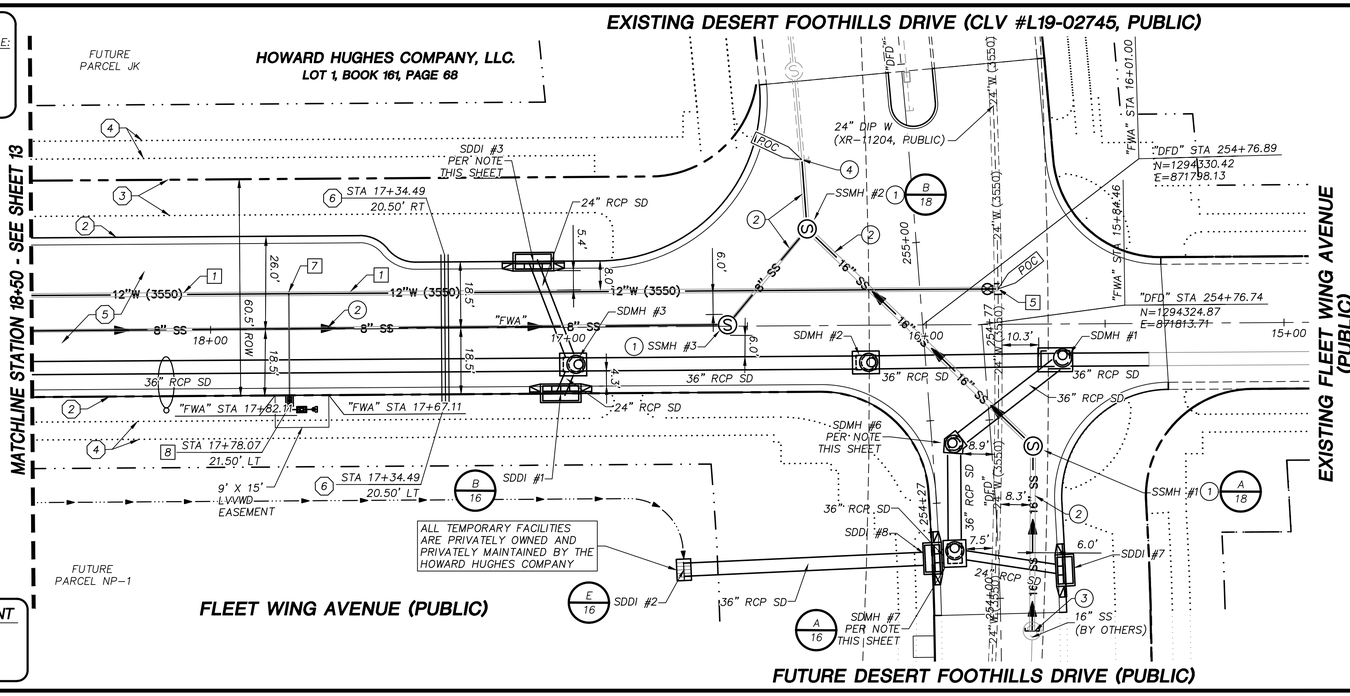
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L20-XXXXX
DATE: November 2, 2020
DRAWING NO. 14/28

JOB NO. 100066776

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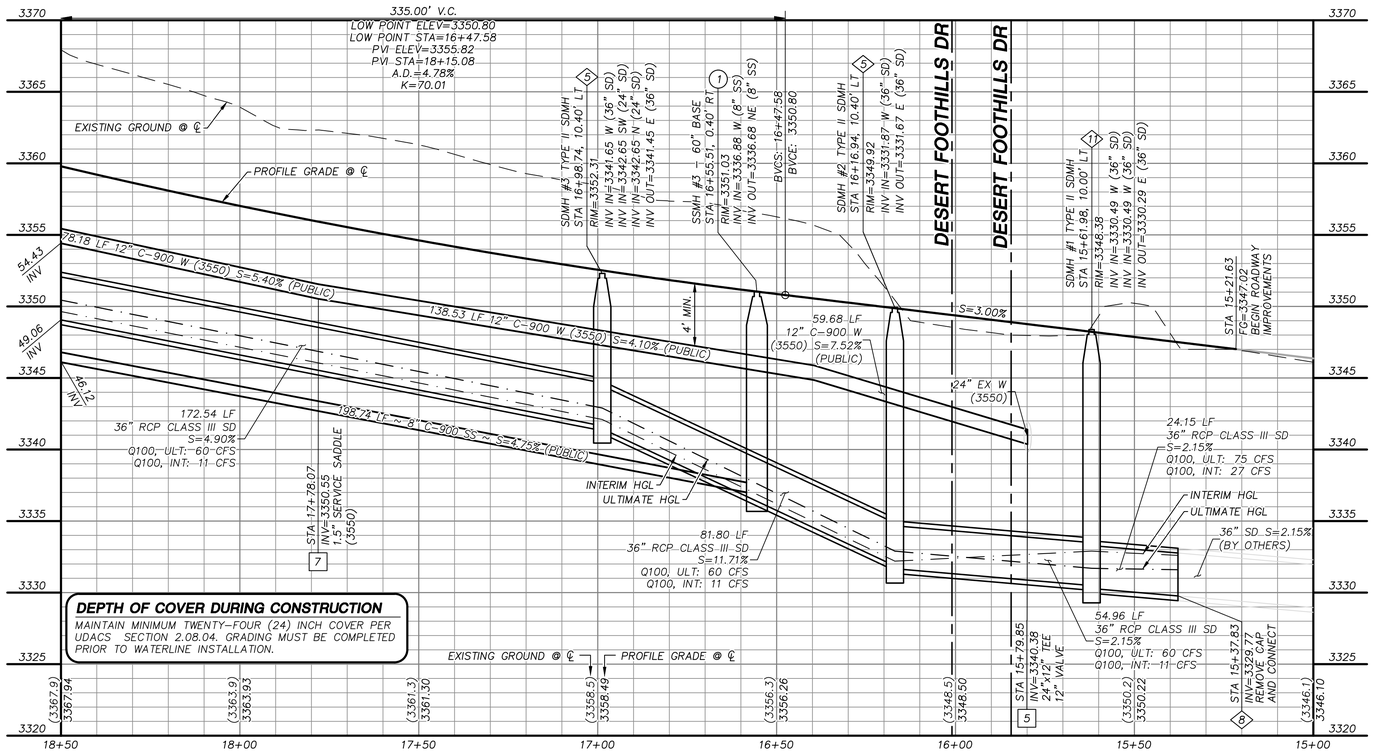
DROP INLET AND MANHOLE NOTE

WHERE 10 FEET PARALLEL SEPARATION IS NOT PRACTICABLE; CAST-IN-PLACE MONOLITHIC POUR WITH WATERSTOP BETWEEN SLAB WALLS. BASE, WALLS AND TOP TO BE CONSTRUCTED WITH WATERSTOPS. CENTER BULB, OR FLAT STRIP (VINYLEX, GREENSTREAK PLASTIC PRODUCTS OR APPROVED EQUAL).



TO ENSURE LVVWD ACCESS WITHIN EASEMENT

ALL ABOVE GROUND OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO, LANDSCAPE BOULDERS, FENCES / WALLS (TO INCLUDE NO FOOTINGS), AND SIGNS ARE STRICTLY PROHIBITED WITHIN EASEMENT.



DEPTH OF COVER DURING CONSTRUCTION

MAINTAIN MINIMUM TWENTY-FOUR (24) INCH COVER PER UDACS SECTION 2.08.04. GRADING MUST BE COMPLETED PRIOR TO WATERLINE INSTALLATION.

GRAPHIC SCALE

20 0 10 20 40
HORIZONTAL: 1"=20'
5 0 2.5 5 10
VERTICAL: 1"=5'

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT
PLANNING AND ENGINEERING SERVICES

PROJECT NO. 137512 FIRST APPROVED DATE: _____

LVVWD APPROVED FIRE FLOW 1500 GPM AT 20 PSI RESIDUAL

BASIS OF BEARING

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

BENCHMARK

CITY OF LAS VEGAS BENCHMARK: D368
(REVISED 2008)
NAVD88 ELEVATION: 989.574 METERS
(3,246.63 FEET)
FND USC&GS DISC SET IN ROCK RIDGE 150' SOUTH OF CHARLESTON BLVD. & WEST OF DETENTION BASIN.
T21S,R59E,S03

FAST Call before you UnderGround 1-702-432-5300 TRAFFIC AND SIGNAL SYSTEM OF TRANSPORTATION

Call before you Dig AVOID OUTAGES, UNDERGROUND UTILITY LINES. IN CLARK COUNTY. Call 811 or 1-800-642-2444

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

STORM DRAIN CONSTRUCTION NOTES

1. INSTALL STORM DRAIN. SEE SHEET ROADWAY PLAN AND PROFILE SHEETS FOR ADDITIONAL STORM DRAIN NOTES AND INFORMATION.
2. INSTALL TYPE "CM2" DROP INLET PER CCAUSD #412.1 & #421
3. INSTALL NDOT TYPE II DROP INLET PER NDOT R-4.2.1 (SEE SHEET 22)
4. INSTALL TYPE I SD MANHOLE PER CCAUSD #403
5. INSTALL TYPE II SD MANHOLE PER CCAUSD #405
6. INSTALL TYPE III SD MANHOLE PER CCAUSD #406
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SEWER CONSTRUCTION NOTES

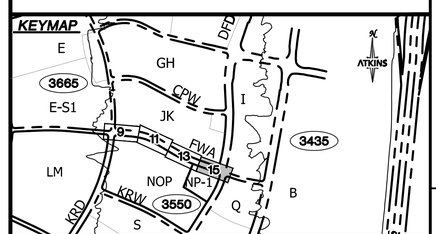
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4. REMOVE CAP AND CONNECT TO EXISTING SEWER STUB
5. ADJUST EXISTING MANHOLE TO GRADE PER DCSWCS SD-5.
6. PROTECT SEWER AT UTILITY CROSSING PER DCSWCS SD-19

WATERLINE CONSTRUCTION NOTES

1. INSTALL WATER MAIN PER UDACS PLATES #17 AND PLATE #19
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3. INSTALL CAP AND 2" MANUAL BLOWOFF ASSEMBLY PER UDACS PLATE #36
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7. INSTALL 1.5" SERVICE SADDLE PER UDACS PLATE #4
8. INSTALL 1-1/2" IRRIGATION METER WITH RPPA PER UDACS PLATES #4 AND #8
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3. CONSTRUCT CONCRETE BIKEPATH PER CCAUSD #234
4. FUTURE SIDEWALK BY OTHERS
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PROFESSIONAL ENGINEER - STATE OF NEVADA - ANTHONY ORTIZ - EXP. 12-31-21 - CIVIL - No. 18948 - 2/15/2021

REVISIONS				
REV.	DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

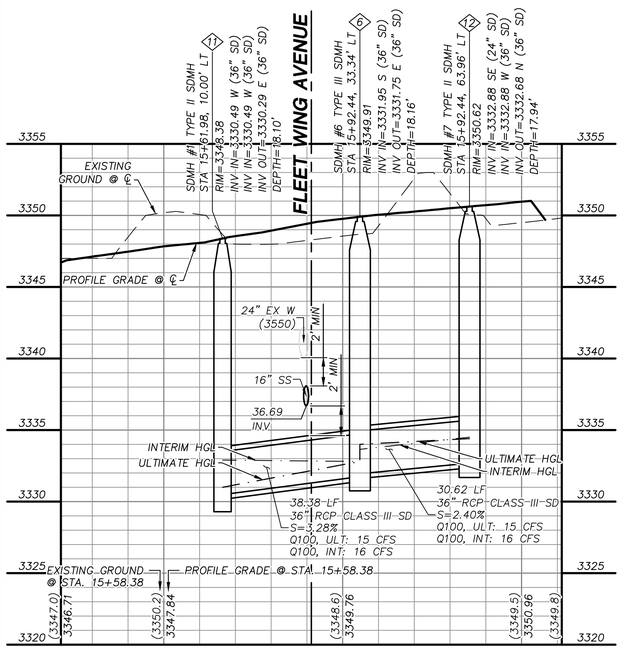
SUMMERLIN

SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

ROADWAY PLAN AND PROFILE
BEGIN TO STA 18+50

DESIGNED BY:	BANTA
DRAWN BY:	C. DANIELS
CHECKED BY:	P. BATES
HORIZ.:	1"=20'
VERT.:	1"=5'
XXVVXXXX	
L20-XXXXX	
DATE:	November 2, 2020
DRAWING NO.	15/28
JOB NO.	100066776

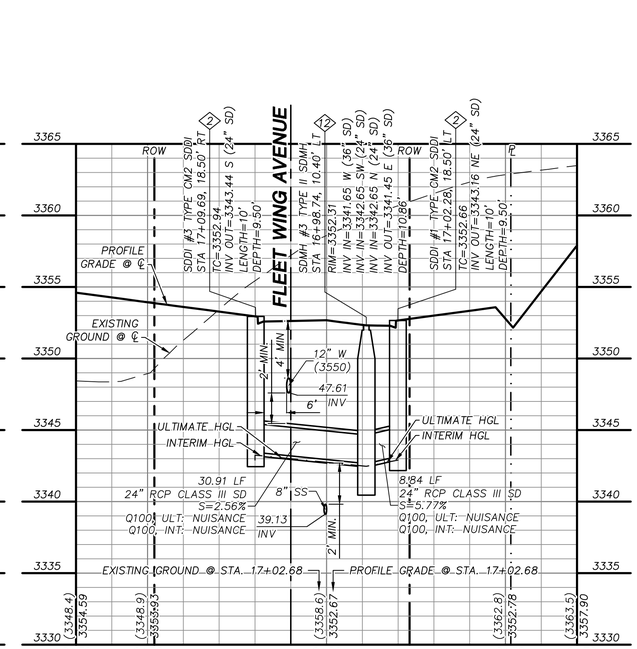
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STORM DRAIN 1

"FWA" STA. 15+58.38 SEE SHEET 15

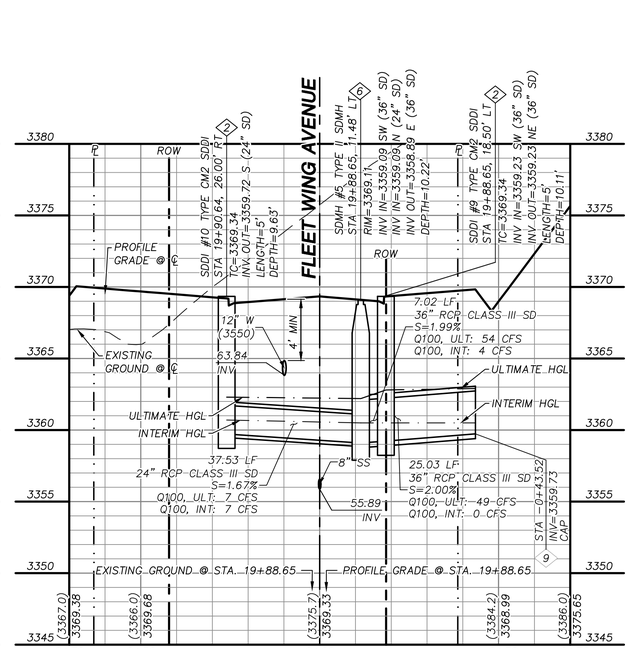
A 16



STORM DRAIN 2

"FWA" STA. 17+02.68 SEE SHEET 15

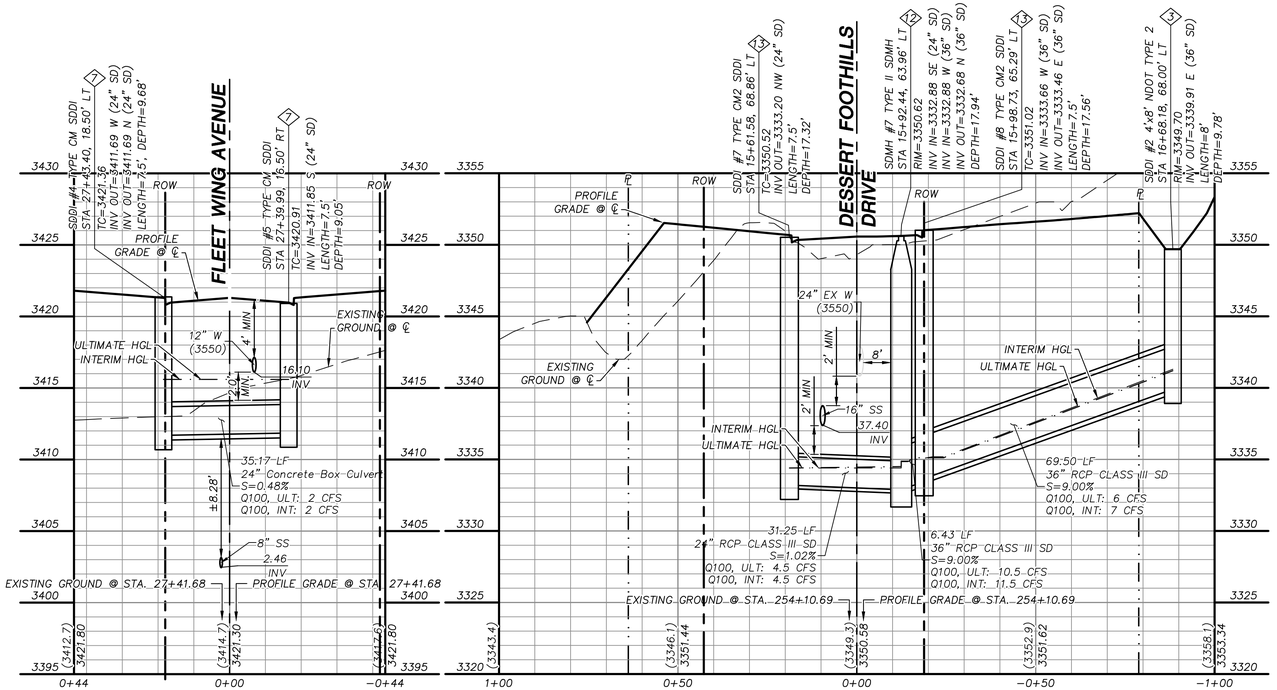
B 16



STORM DRAIN 3

"FWA" STA. 19+88.65 SEE SHEET 13

C 16



STORM DRAIN 4

"FWA" STA. 27+49.98 SEE SHEET 9

D 16

STORM DRAIN 5

"DFD" STA. 254+10.69 SEE SHEET 15

E 16

GRAPHIC SCALE

20 0 10 20 40

HORIZONTAL: 1"=20'

5 0 2.5 5 10

VERTICAL: 1"=5'

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT
PLANNING AND ENGINEERING SERVICES

PROJECT NO. 137512 FIRST APPROVED DATE: _____

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PROFESSIONAL ENGINEER − STATE OF NEVADA — ANTHONY J. ORTIZ — EXP. 06-30-21 — No. 18949 — CIVIL — 2/15/2021

REV.	DESCRIPTION	BY	DATE	APPROVAL

REVISIONS

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

SUMMERLIN

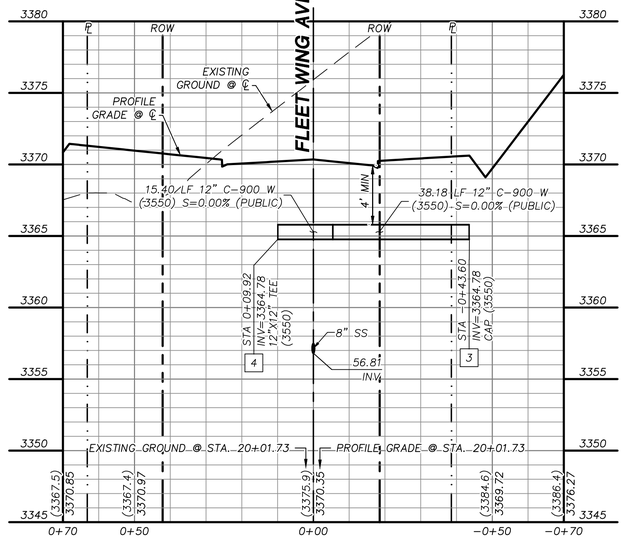
SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

STORM DRAIN LATERAL PROFILES

DESIGNED BY: J. BANTA
DRAWN BY: C. DANIELS
CHECKED BY: P. BATES
HORIZ.: 1"=20'
VERT.: 1"=5'

XXXVXXXX
L20−YXXXX
DATE: November 2, 2020
DRAWING NO. 16/28
JOB NO. 100066776

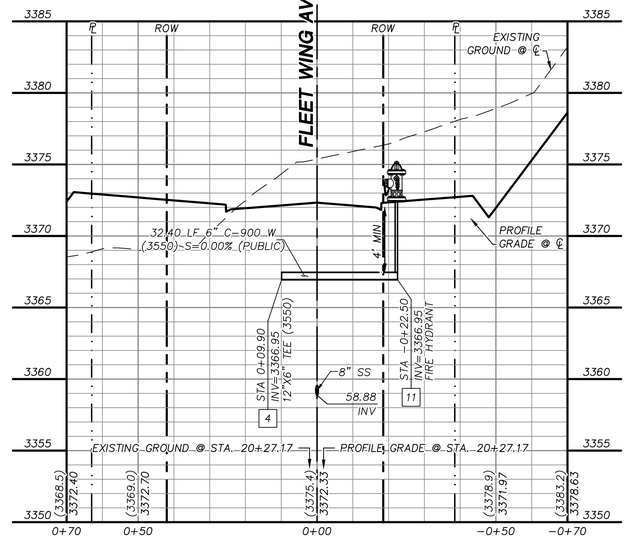
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WATER LATERAL 1

"FWA" STA. 19+98 SEE SHEET 13

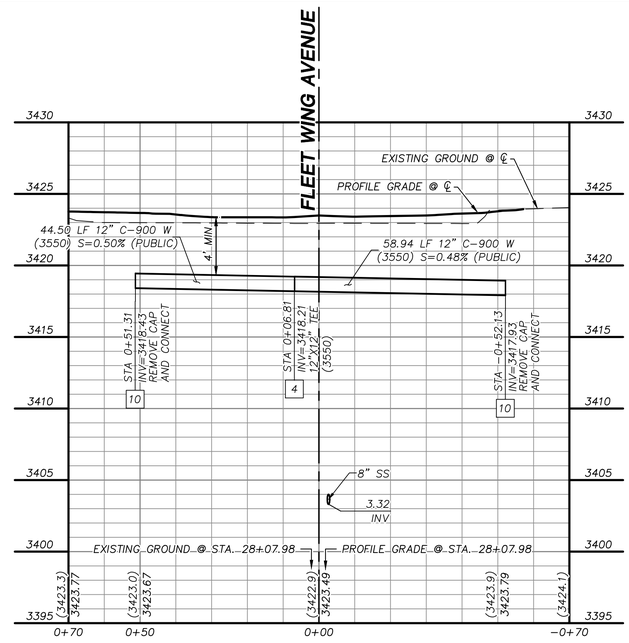
A 17



WATER LATERAL 2

"FWA" STA. 20+26 SEE SHEET 13

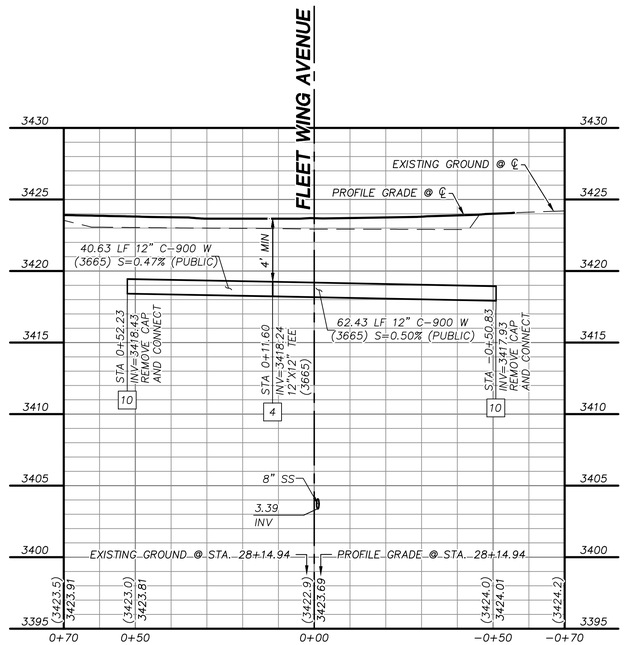
B 17



WATER LATERAL 3

"FWA" STA. 28+07 SEE SHEET 9

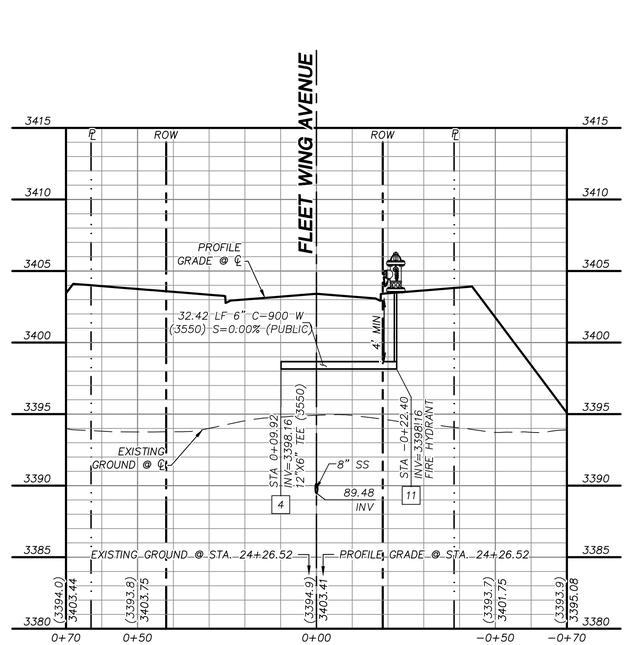
C 17



WATER LATERAL 4

"FWA" STA. 28+14 SEE SHEET 9

D 17



WATER LATERAL 5

"FWA" STA. 24+26 SEE SHEET 11

E 17

GRAPHIC SCALE

20 0 10 20 40

HORIZONTAL: 1"=20'

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VERTICAL: 1"=5'

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT
PLANNING AND ENGINEERING SERVICES

PROJECT NO. 137512 FIRST APPROVED DATE: _____

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PROFESSIONAL ENGINEER-STATE OF NEVADA ANTHONY ORTIZ EXP. 12-31-21 CIVIL No. 18949 2/15/2021

REVISIONS				
REV.	DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

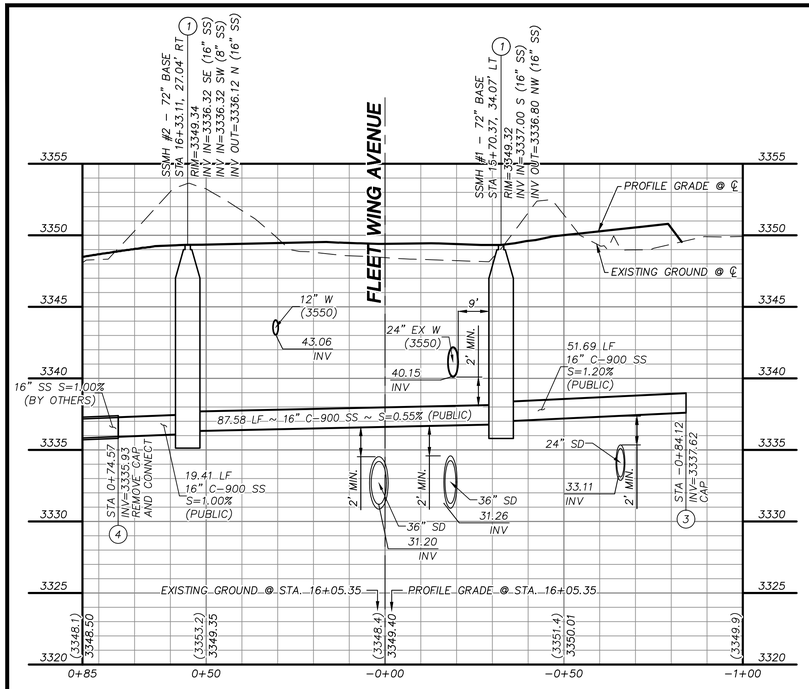
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DRAWN BY:	C. DANIELS
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L20-XXXXX	
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JOB NO.	100066776

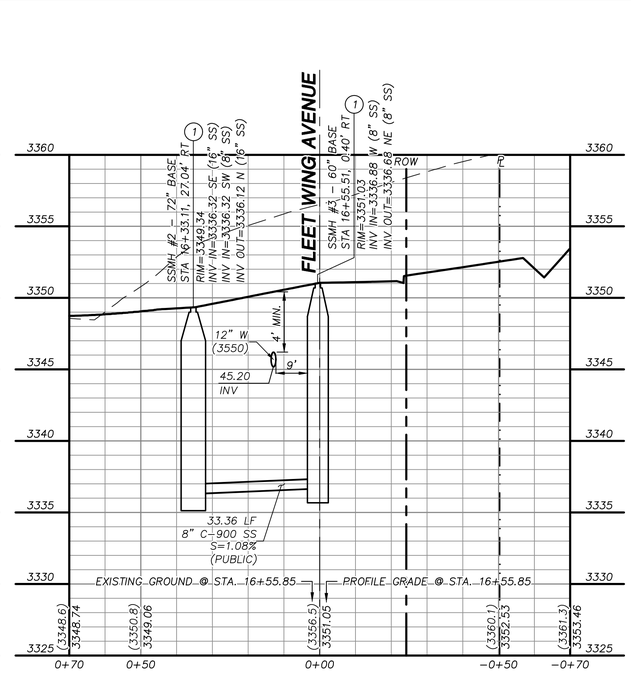
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SANITARY SEWER LATERAL 1

"FWA" STA. 16+05 SEE SHEET 15

A 18



SANITARY SEWER LATERAL 2

"FWA" STA. 16+55 SEE SHEET 15

B 18

STORM DRAIN CONSTRUCTION NOTES

1. INSTALL STORM DRAIN. SEE SHEET ROADWAY PLAN AND PROFILE SHEETS FOR ADDITIONAL STORM DRAIN NOTES AND INFORMATION.
2. INSTALL TYPE "CM2" DROP INLET PER CCAUSD #412.1 & #421
3. INSTALL NDOT TYPE II DROP INLET PER NDOT R–4.2.1 (SEE SHEET 22)
4. INSTALL TYPE I SD MANHOLE PER CCAUSD #403
5. INSTALL TYPE II SD MANHOLE PER CCAUSD #405
6. INSTALL TYPE III SD MANHOLE PER CCAUSD #406
7. INSTALL TYPE "CM" DROP INLET PER CCAUSD #421 & #422
8. REMOVE CAP AND CONNECT TO EXISTING STORM DRAIN STUB
9. STUB & PLUG STORM DRAIN FOR FUTURE CONNECTION PER MANUFACTURER'S PLUG, OR APPROVED EQUAL (SEE SHEET 22)
10. INSTALL RIP–RAP (D50=8", THICKNESS=16")
11. INSTALL TYPE II SD MANHOLE W/SINGLE SIDE DRAIN PER CCAUSD #405.2 (SHEET 2 OF 3)
12. INSTALL TYPE II SD MANHOLE W/DOUBLE SIDE DRAIN PER CCAUSD #405.2 (SHEET 3 OF 3)
13. INSTALL TYPE "CM2" DROP INLET PER CCAUSD #412.1 & #421, AND DETAIL C SHEET 22

SEWER CONSTRUCTION NOTES

1. INSTALL SEWER MANHOLE PER DCSWCS SD–1 AND SD–4 WITH WATERTIGHT JOINTS
2. INSTALL SEWER MAIN PER DCSWCS SD–17
3. STUB AND CAP SEWER PIPE. PLACE MARKER BALL AND 4"X4" POST, DOUGLAS FIR, OVER END OF PIPE AND INSTALL THRUST BLOCK (1 CUBIC FT. MINIMUM).
4. REMOVE CAP AND CONNECT TO EXISTING SEWER STUB
5. ADJUST EXISTING MANHOLE TO GRADE PER DCSWCS SD–5.
6. PROTECT SEWER AT UTILITY CROSSING PER DCSWCS SD–19

WATERLINE CONSTRUCTION NOTES

1. INSTALL WATER MAIN PER UDACS PLATES #17 AND PLATE #19
2. INSTALL GATE VALVE PER UDACS PLATES #30 AND #39
3. INSTALL CAP AND 2" MANUAL BLOWOFF ASSEMBLY PER UDACS PLATE #36
4. INSTALL TEE W/ VALVE AND LATERAL PER UDACS PLATES #17, #19, #30, #31 AND #39
5. INSTALL TAPPING SLEEVE WITH TAPPING VALVE AND LATERAL PER UDACS PLATES #17, #19, #30, #31, #34, #39, AND 2.24.01 B
7. INSTALL 1.5" SERVICE SADDLE PER UDACS PLATE #4
8. INSTALL 1–1/2" IRRIGATION METER WITH RPPA PER UDACS PLATES #4 AND #8
9. INSTALL DEFLECTION AT PIPE JOINTS (MAXIMUM 1°)
10. REMOVE CAP AND 2" BLOWOFF AND CONNECT TO EXISTING WATERLINE STUB
11. INSTALL FIRE HYDRANT WITH APPURTENANCES (CONCRETE PAD, LATERAL, VALVE, AND TEE) PER UDACS PLATES #30, #31, #39, AND #40

ROADWAY CONSTRUCTION NOTES

1. SAWCUT AND MATCH EXISTING
2. CONSTRUCT "L" TYPE CURB AND GUTTER PER CCAUSD #216
3. CONSTRUCT CONCRETE BIKEPATH PER CCAUSD #234
4. FUTURE SIDEWALK BY OTHERS
5. CONSTRUCT PLANTMIX BITUMINOUS SURFACE OVER TYPE II AGGREGATE BASE PER SOILS REPORT. SEE SHEET 21 FOR TYPICAL PAVEMENT SECTION.
6. INSTALL SCHEDULE 40 PVC IRRIGATION SLEEVES (2–4", 1–6") PER DETAIL ON SHEET 23

GRAPHIC SCALE

20 0 10 20 40

HORIZONTAL: 1"=20'

5 0 2.5 5 10

VERTICAL: 1"=5'

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT
PLANNING AND ENGINEERING SERVICES

PROJECT NO. 137512 FIRST APPROVED DATE: _____

LVVWD APPROVED FIRE FLOW 1500 GPM AT 20 PSI RESIDUAL

BASIS OF BEARING

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

BENCHMARK

CITY OF LAS VEGAS BENCHMARK: D368
(REVISED 2008)
NAVD88 ELEVATION: 989.574 METERS
(3,246.63 FEET)
FND USC&GS DISC SET IN ROCK RIDGE 150' SOUTH OF CHARLESTON BLVD. & WEST OF DETENTION BASIN.
T21S,R59E,S03

FAST Call before you UnderGround 1-702-432-5300 FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

Call before you Dig AVOID OUTAGE INTERRUPTION OF UTILITY LINES. ITS COSTLY. Call 811 OR 1-800-642-2444

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

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PROFESSIONAL ENGINEER STATE OF NEVADA ANTHONY ORTIZ No. 18949 CIVIL 2/15/2021

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

SUMMERLIN

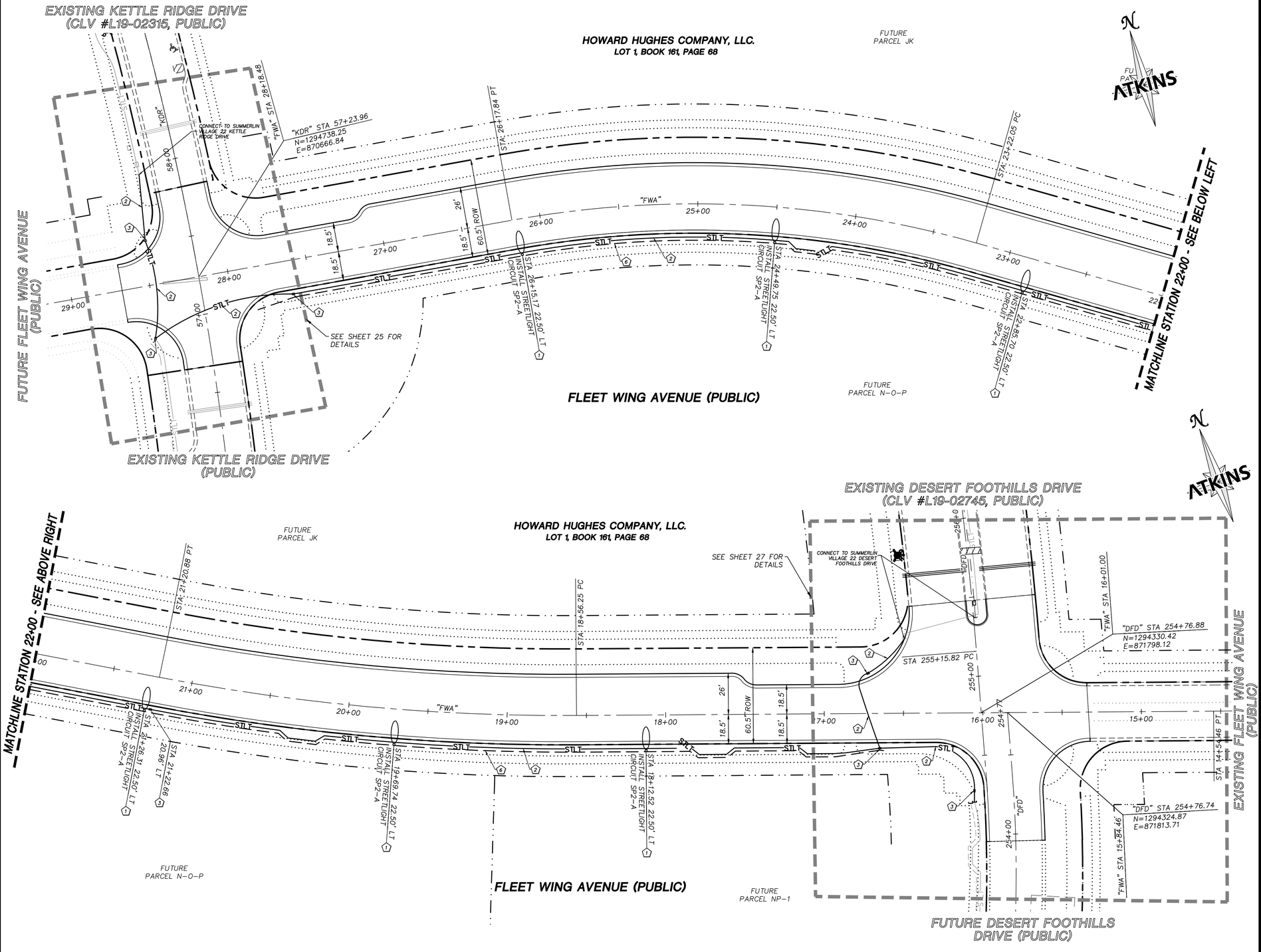
SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

SANITARY SEWER LATERAL PROFILES

DESIGNED BY: N. BARCOS
DRAWN BY: L. MAMACLAY
CHECKED BY: P. BATES
HORIZ.: 1"=20'
VERT.: 1"=5.00000033'

XXVVXXXX
L20–XXXXX
DATE: November 2, 2020
DRAWING NO. 18/28
JOB NO. 100066776

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STREET LIGHTING CONSTRUCTION NOTES

1. INSTALL TYPE 4 LED STREETLIGHT WITH 8' MAST ARMS AND LSI LUMINARE FIXTURE SUM-XGBM-LED-26L-SIL-2-UE-DIM-27-7-CRI-BRZ-NR-4397-SM BRKT WITH A 2700K COLOR TEMPERATURE PER APPROVED LED LIGHTING ANALYSIS. REFER TO SUMMERLIN STD DWG E-2, SEE SHEET 24 FOR TYPICAL LOCATION, AND CCAUSD #311, #316, AND #320.
2. INSTALL 1-1/4" STREETLIGHT CONDUIT W/ 2-#4 AND 1-#8 PER CCAUSD #501
3. INSTALL NO. 3-1/2" PULL BOX PER CCAUSD #705, SEE SHEET 24
4. STUB AND CAP CONDUIT 5' PAST EDGE OF CONSTRUCTION
5. INSTALL TYPE XX-A SIGNAL POLE WITH NO MAST ARM AND 15' LUMINAIRE ARMS AND LSI LUMINAIRE FIXTURE SUM-XGBM-LED-26L-SIL-2-UE-DIM-27-70CRI-BRZ-NR-4397-SMBRKT WITH A 2700K COLOR TEMPERATURE PER APPROVED LED LIGHTING ANALYSIS. REFER TO SUMMERLIN STD DWG E-2, SEE SHEET 33 FOR LOCATIONS
6. INSTALL 4" CONDUIT WITH PULL STRING AND 6 PAIR PE39 NO. 22 AWG INTERCONNECT CABLE
7. INSTALL (2) 3" CONDUIT WITH (1) #8 THW

SUMMARY OF QUANTITIES

DESCRIPTION	QUANTITY	UNIT
STREETLIGHTING		
TYPE 2 SINGLE ARM STREET LIGHT POLE ASSEMBLY	8	EA
NO 3 1/2 PULL BOX	8	EA
1 1/4" STREET LIGHT CONDUIT WITH ALL WIRING	1,500	LF

GRAPHIC SCALE
30 0 15 30 60
HORIZONTAL: 1"= 30'

STREET LIGHTING NOTES

1. SEE SHEET 24 FOR DETAILS & CCAUSD'S FOR STREETLIGHTING

BASIS OF BEARING

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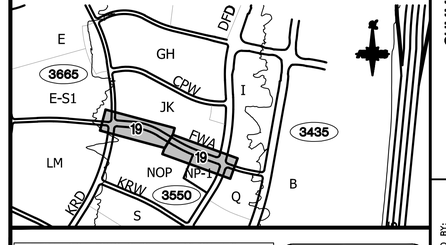
BENCHMARK

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T21S,R59E,S03

FAST Call before you UnderGround 1-702-432-5300 PRIORITY AND ARTERIAL SYSTEMS OF TRANSPORTATION

Call before you Dig AVOID CUTTING NEIGHBORING UTILITY LINES. IT'S COSTLY. Call 811 or 1-800-642-2444

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



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PROFESSIONAL ENGINEER-STATE OF NEVADA
ANTHONY J. ORTIZ
EXP. 12-31-21
CIVIL
No. 19949
2/15/2021

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

SUMMERLIN

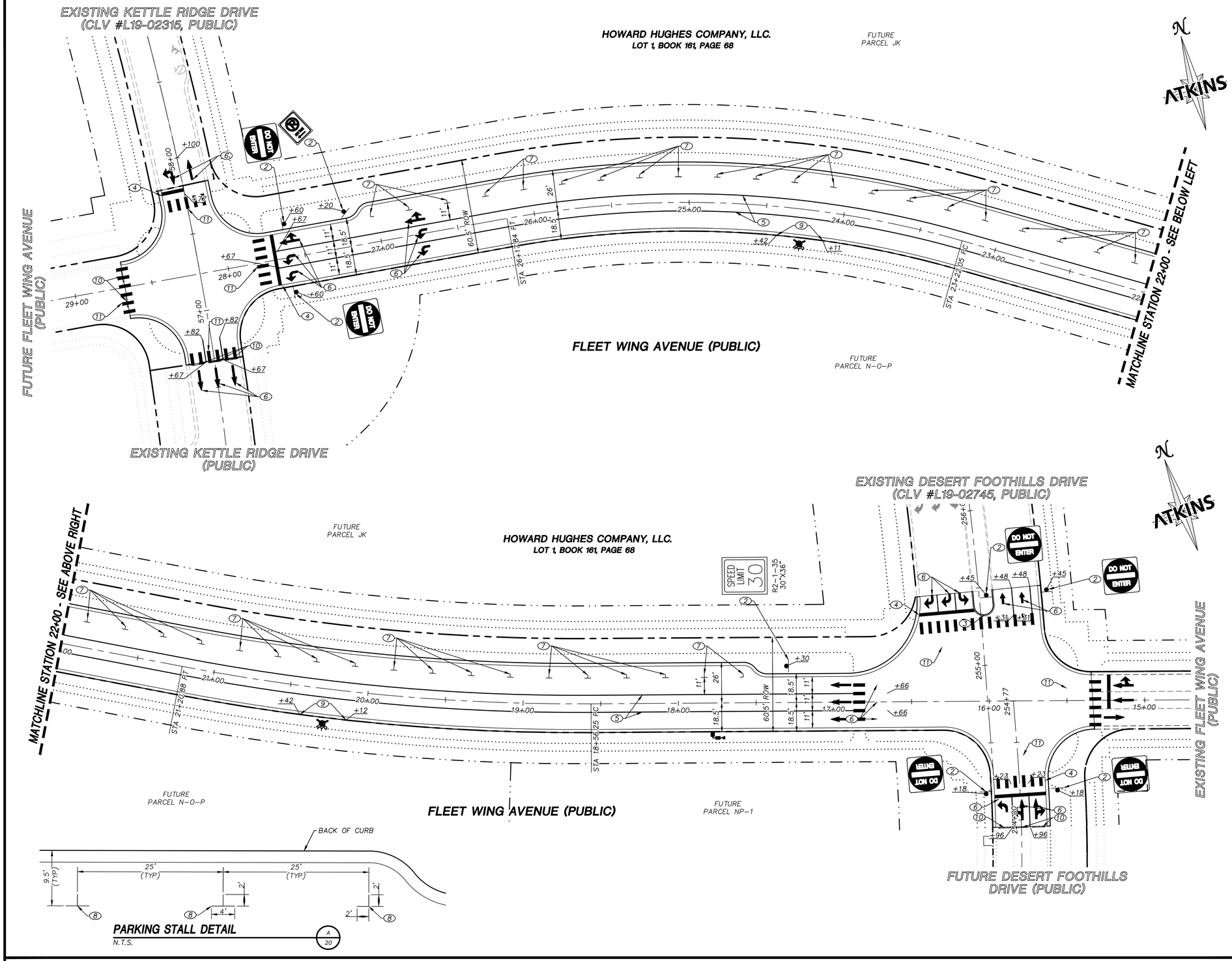
SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

STREETLIGHT PLAN

DESIGNED BY:	J. BANTA
DRAWN BY:	C. DANIELS
CHECKED BY:	P. BATES
HORIZ.:	1"=30'
VERT.:	NONE
XXXVXXXX.	
L20-XXXXX	
DATE:	November 2, 2020
DRAWING NO.	19/28

JOB NO. 100066776

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STRIPING AND SIGNAGE CONSTRUCTION NOTES

1. INSTALL SIGN(S) ON STREETLIGHT POLE
2. INSTALL SIGN(S) ON POST PER CCAUSD #249.1
3. INSTALL MEDIAN NOSE MARKER PER CCAUSD #248 WITH R-71 AND TYPE C MARKING ALONG THE MEDIAN ISLAND
4. INSTALL 24" SOLID WHITE LINE PER CCAUSD #254 (TYPE 2 PMF)
5. INSTALL TYPE 4 LANE LINE USING RAISED PAVEMENT MARKERS PER CCAUSD #246
6. INSTALL WHITE LANE USE ARROW (TYPE 2 PMF) PER MUTCD FIGURE 3B-24
7. INSTALL TEMPORARY PARKING STALLS PER DETAIL THIS SHEET, TO BE MAINTAINED BY SUMMERLIN HOA.
8. INSTALL 6" SOLID WHITE LINE PER CCAUSD #244.9 (POLUREA LPM)
9. PAINT CURB 15' EITHER DIRECTION OF FIRE HYDRANT (30' MINIMUM) & PLACE BLUE REFLECTIVE PAVEMENT MARKER IN MIDDLE OF ADJACENT DRIVE LANE NEAREST TO HYDRANT
10. INSTALL TYPE IIIA BARRICADE PER CCAUSD #601 WITH OM4-1 END ON ROAD MARKER
11. INSTALL 24" WIDE SOLID WHITE CROSSWALK LINES USING TYPE 1 PAVEMENT MARKINGS PER CCAUSD #254

SUMMARY OF QUANTITIES

DESCRIPTION	QUANTITY	UNIT
SIGNAGE AND STRIPING		
TYPE 1 CENTERLINE	2,370	LF
6" WHITE STRIPE (PARKING STALLS)	230	LF
24" WHITE STRIPE (STOP BAR)	135	LF
24" WHITE STRIPE (CROSSWALK)	440	LF
TYPE 2 PMF WHITE LANE USE ARROW	22	EA
RED PAINTED CURB (FIRE HYDRANT)	60	LF
STREET SIGNS	8	EA
CCAUSD 248 MEDIAN NOSE MARKER	1	EA
CCAUSD 601 BARRICADE	8	EA

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T21S,R59E,S03

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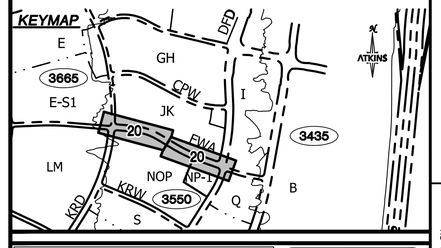
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PROFESSIONAL ENGINEER - STATE OF NEVADA - ANTHONY ORTIZ - Exp. 12-31-21 - CIVIL - No. 18949
2/15/2021

KEYMAP



REV.	DESCRIPTION	BY	DATE	APPROVAL

REVISIONS

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7375
Fax: +1.702.263.7200

SUMMERLIN

SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

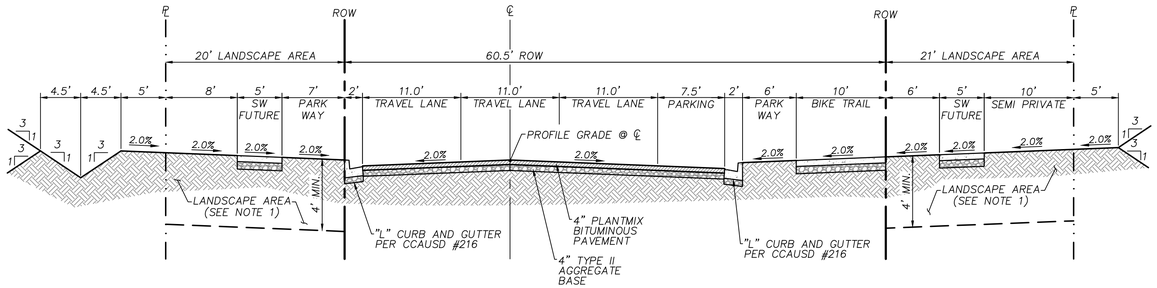
SIGNAGE AND STRIPING PLAN

DESIGNED BY: J. BANTA
DRAWN BY: C. DANIELS
CHECKED BY: P. BATES
HORIZ.: 1"=30'
VERT.: NONE

XXXYXXXX
L20-YXXXX
DATE: November 2, 2020
DRAWING NO. 20/28

JOB NO. 100066776

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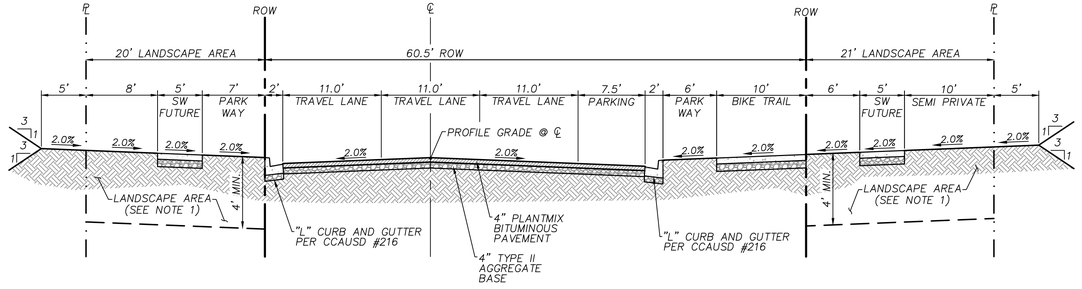
NOTES:

1. EXCAVATE BOTH SIDES TO DEPTH INDICATED PRIOR TO STREET IMPROVEMENTS. SIFT/SCREEN OUT ROCK AND DEBRIS GREATER THAN 6" FROM EXCAVATED MATERIAL, THEN BACKFILL TO 85% COMPACTION. FILL AS NECESSARY TO 2" BELOW THE FINISHED GRADE.

FLEET WING AVE - TYPICAL SECTION WITH DITCH & PARKING

N.T.S.

A / 21



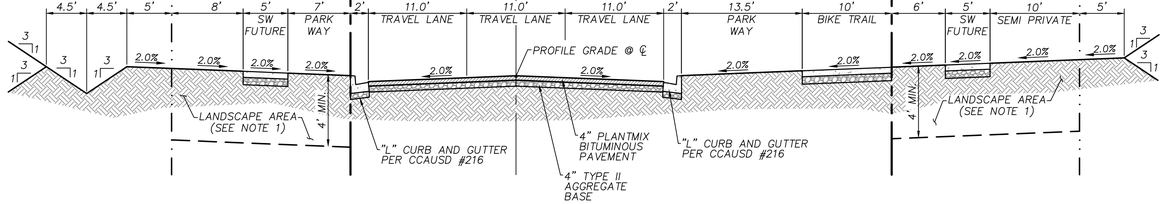
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N.T.S.

B / 21



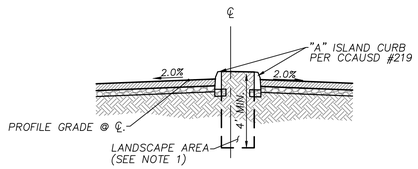
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FLEET WING AVE - TYPICAL SECTION WITH DITCH

N.T.S.

C / 21



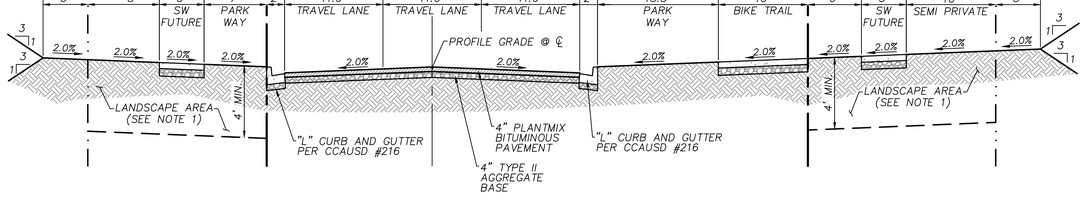
NOTES:

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DESSERT FOOTHILLS DRIVE - MEDIAN

N.T.S.

E / 21



NOTES:

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FLEET WING AVE - TYPICAL SECTION

N.T.S.

D / 21

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1215,859E,503

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PROFESSIONAL ENGINEER-STATE OF NEVADA
ANTHONY J. ORTIZ
EXP. 12-31-21
CIVIL
No. 18949
2/15/2021

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

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Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

SUMMERLIN

SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESSERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

TYPICAL SECTIONS

DESIGNED BY: J. BANTA
DRAWN BY: C. DANIELS
CHECKED BY: P. BATES
HORIZ.: NONE
VERT.: NONE

XXXVXXXX
L20-XXXXX
DATE: November 2, 2020
DRAWING NO. 21/28
JOB NO. 100066776

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BILL OF MATERIALS (RCP HDPE CMP)

PIPE SIZE (INCH)	SINGLE (ONE GRATE) ● CONCRETE (CY)	● REINF. (LB.)	BASE QUAN. (IN MIN.)	ADD RATE (CY/FT)	BASE QUAN. (IN MIN.)	ADD RATE (LB/FT)	STR STEEL (LB)	DOUBLE (TWO GRATES) ● CONCRETE (CY)	● REINF. (LB.)	BASE QUAN. (IN MIN.)	ADD RATE (CY/FT)	BASE QUAN. (IN MIN.)	ADD RATE (LB/FT)	STR STEEL (LB)	TRIPLE (THREE GRATES) ● CONCRETE (CY)	● REINF. (LB.)	BASE QUAN. (IN MIN.)	ADD RATE (CY/FT)	BASE QUAN. (IN MIN.)	ADD RATE (LB/FT)	STR STEEL (LB)
≤15	0.71	0.19	36	10	211	1.06	0.26	50	13	397	1.41	0.33	70	17	583						
18	0.89	0.20	40	10	306	1.31	0.28	56	13	574	1.72	0.35	77	18	842						
24	1.08	0.22	58	12	349	1.56	0.30	80	15	652	2.04	0.37	105	20	956						
30	1.28	0.24	63	12	390	1.83	0.31	86	16	729	2.38	0.39	113	20	1068						
36	1.50	0.28	67	13	524	2.11	0.33	92	16	980	2.72	0.41	120	21	1435						
42	1.71	0.28	90	15	575	2.39	0.35	120	18	1073	3.07	0.43	154	22	1571						
48	1.94	0.30	95	15	707	2.68	0.37	127	18	1329	3.42	0.44	163	23	1951						

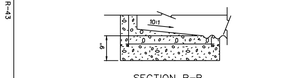
*The Concrete And Reinforcing Quantities Are Based On The H Min. Shown. Increase The Concrete And Reinforcing Base Quantity By The Corresponding Add Rate (Per Foot Of Increased H) If The H Specified Is Larger Than H Min.

TABLE OF DIMENSIONS (RCP HDPE CMP)

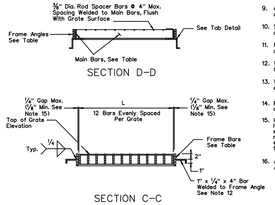
PIPE SIZE (INCH)	A	H Min. (FT)	MAIN BARS (INCH)	FRAME ANGLES (INCH)	FRAME BARS (INCH)	L (FT) SINGLE GRATE	L (FT) DOUBLE GRATE	L (FT) TRIPLE GRATE
≤ 15	2'	2.50	3½ x ⅜	4 X 3 X ⅜	4 X ⅜	2'	4'	6'
18	2'-6"	3.00	4½ x ⅜	5 X 3 X ⅜	5 X ⅜	2'	4'	6'
24	3'	3.50	4½ x ⅜	5 X 3 X ⅜	5 X ⅜	2'	4'	6'
30	3'-6"	4.00	4½ x ⅜	5 X 3 X ⅜	5 X ⅜	2'	4'	6'
36	4'	4.50	5½ x ⅜	6 X 3½ x ⅜	6 X ⅜	2'	4'	6'
42	4'-6"	5.00	5½ x ⅜	6 X 3½ x ⅜	6 X ⅜	2'	4'	6'
48	5'	5.50	5½ x ⅜	6 X 3½ x ⅜	6 X ⅜	2'	4'	6'

NOTES:

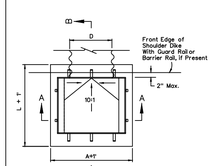
1. All concrete shall be class A or AA.
2. Reinforcing steel shall be No.4 bars with maximum spacing at 18 inch centers, wired tightly at all intersections and embedded 2 inches clear of all concrete surfaces.
3. Exposed edges of concrete shall be chamfered 1 inch.
4. Dimensions may be varied to fit local conditions if ordered by the engineer.
5. Commercial prefabricated gratings approved by the bridge division may be used in lieu of the field-welded grating shown.
6. Extreme low cover situations to be reviewed by hydraulics engineer.
7. Slope catch basin floors 10:1 from all directions toward outlet pipe. If basin is used as a junction, shape flow line(s) to outlet pipe and provide a 10:1 slope to flow line(s).
8. See sheet R-2.9.1 for details if connecting HDPE pipe.
9. A single Type 2 drop inlet shall be constructed unless a double or triple is specified.
10. Single grate configuration shown for clarity. Outside dimensions of each grate shall measure 2' feet by A+4¾".
11. Run rebar continuous thru construction joint. Joint must be a minimum of 3 inches from horizontal bars.
12. Weld one tab on ℄ of grate and remaining two tabs 6 inches from edge of frame. Six tabs per inlet, three tabs on each side
13. Weld tabs 6 inches from edge of frame. Four tabs per grate, two on each side.
14. For multiple grate installations, the station/offset is to the center of the concrete drop inlet structure.
15. Grate is to fit in the frame and be easily removed. If the gap between the grate and frame is greater than ¼" on each side of the grate, the grate and frame shall be removed and replaced at the Contractor's expense. If approved by the project engineer, a filler strip up to ¼" in thickness may be welded flush to the top of the frame to reduce the gap to a maximum of ⅛".
16. Additional pipe penetrations may be placed in any wall. Pipe penetrations are to be to the center of the structure wall unless specified otherwise.



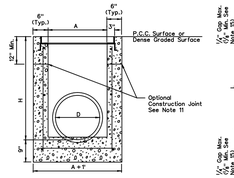
SECTION B-B



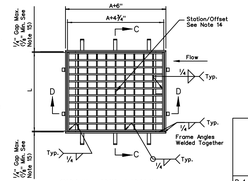
SECTION C-C



PLAN



SECTION A-A



GRATE AND FRAME

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

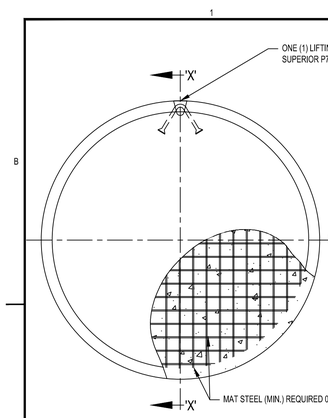
DROP INLET
TYPE 2

R-4.2.1 (609)
ADOPTED 11/7/01 REVISED 10/15
Signed Original on File
CHIEF HYDRAULICS ENGR.

DROP INLET TYPE 2 PER NDOT

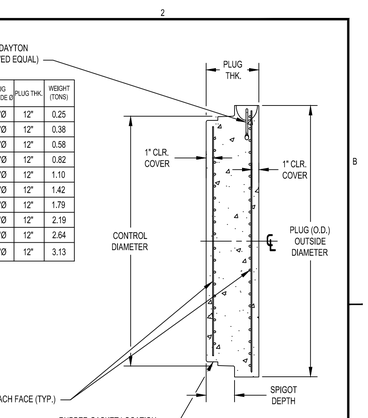
N.T.S.

A 22



PLUG END VIEW

PIPE Ø	CONTROL Ø	PLUG OUTSIDE Ø	PLUG THK.	WEIGHT (TONS)
18"Ø	22 1/8"Ø	23"Ø	12"	0.25
24"Ø	28 3/4"Ø	30"Ø	12"	0.38
30"Ø	35 5/8"Ø	37"Ø	12"	0.58
36"Ø	42 3/8"Ø	44"Ø	12"	0.82
42"Ø	49 3/8"Ø	51"Ø	12"	1.10
48"Ø	55 3/8"Ø	58"Ø	12"	1.42
54"Ø	61 3/8"Ø	65"Ø	12"	1.79
60"Ø	67 3/8"Ø	72"Ø	12"	2.19
66"Ø	73 3/8"Ø	79"Ø	12"	2.64
72"Ø	79 3/8"Ø	86"Ø	12"	3.13



SECTION : 'X'-'X'

NOTES:
1) FOR ADDITIONAL PLUG / PIPE DETAIL INFORMATION CONTACT RINKER MATERIALS REPRESENTATIVE.
2) SEE CONTRACT BID ITEM SUMMARY FOR SIZE & QUANTITY REQUIRED.
3) MINIMUM CONCRETE STRENGTH (F'c) = 4,000 PSI.

6560 LANGFIELD RD., BLDG. 3
HOUSTON, TEXAS 77092
PHONE #: 832-590-5300

FOR APPROVAL
SCALE: N. T. S.

REV. NO.	DESCRIPTION	BY	DATE
REVISIONS			

DRAWN BY: E. JACKSON DATE: JUNE 7, 2018
CHECKED BY: T. LOPEZ

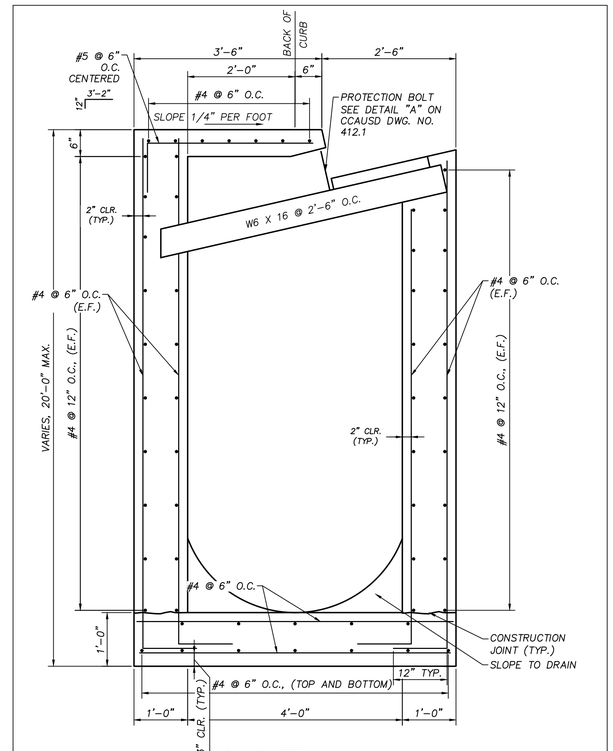
GENERAL R.C. PLUG DETAIL (18"Ø TO 72"Ø)

PROJECT: LAS VEGAS AREA
LOCATION: NEVADA
CONTRACTOR:
DRAWING NO.: A200-CE-731
SHEET NO.: END PLUG
REV.:

TYPICAL STORM DRAIN CAP

N.T.S.

B 22



CONCRETE:

CONCRETE SHALL BE MODIFIED CLASS DA 4500 PSI, SEE SPECIAL PROVISIONS SECTION 501.

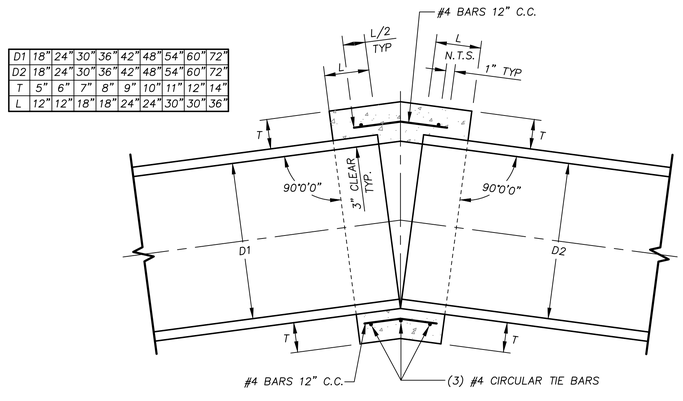
NOTE:
THIS DETAIL MODIFIES THE TYPE "CM2" DROP INLET SECTION PER CCAUSD DWG. NO. 412.1 FOR STRUCTURES WITH DEPTHS GREATER THAN 10'. ALL OTHER INFORMATION OF THE STANDARD DRAWING STILL APPLY, UNLESS OVERWRITTEN BY THIS DETAIL.

PROFESSIONAL ENGINEER-STATE OF NEVADA
A MOHOTTI ALAGIYAWANNA
EXP. 12-31-22
CIVIL
No. 026458

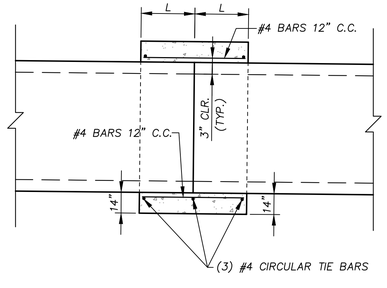
SUPPLEMENT TO "CM2" DROP INLET (D>10')

N.T.S.

C 22



PROFILE VIEW



PLAN VIEW

RCP CONCRETE COLLAR CONNECTION

N.T.S.

D 22

PROFESSIONAL ENGINEER-STATE OF NEVADA
ANTHONY J. ORTIZ
EXP. 12-31-21
CIVIL
No. 18849
2/15/2021

REVISIONS REV.	DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

SUMMERLIN

SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

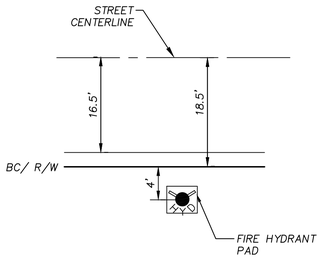
STORM DRAIN DETAILS

DESIGNED BY: J. BIANTA
DRAWN BY: C. DANIELS
CHECKED BY: P. BATES
HORIZ.: NONE
VERT.: NONE

XXVVXXXX
L20-XXXXX
DATE: November 2, 2020
DRAWING NO. 22/28

JOB NO. 100066776

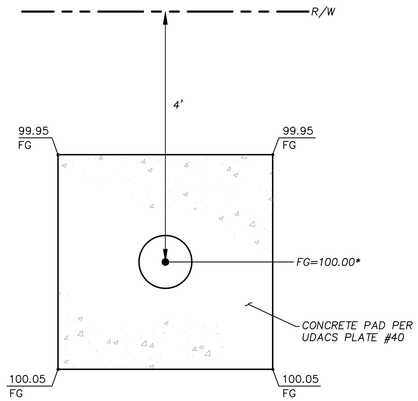
C:\pw_work\atkinsnv01\wsatkins_tor9642\dms57691\66776-16-DETL-STRM.dwg LAYOUT: 22 Feb 23, 2021 - 9:23PM



FIRE HYDRANT LOCATION DETAIL

N.T.S.

A 23



*NOTE: THE GRADES SHOWN IN THIS DETAIL ARE RELATIVE NOT ACTUAL, 100.00 IS THE REFERENCE GRADE FOR THE CENTER OF PAD ELEVATION. SEE P-SHEETS FOR ACTUAL FINISHED GRADE FOR CENTER OF PAD. CALCULATE THE CORNER GRADES PER SHEET 9 FINISHED GRADE.

FIRE HYDRANT PAD GRADING DETAIL

N.T.S.

B 23

NOTES:

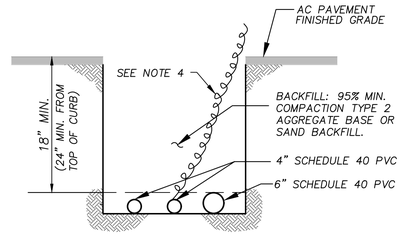
1 SLEEVES AND CONDUITS SHALL BE INSTALLED 18" BELOW FINISHED GRADE AND SHALL EXTEND 5' BEYOND BACK OF CURBS, WALLS AND PAVING.

2 CONTRACTOR SHALL RECORD LOCATIONS OF INSTALLED SLEEVES: A COPY OF THE FILED NOTES SHALL BE GIVEN TO SUMMERLIN'S ENGINEER FOLLOWING CONSTRUCTION.

3 HORIZONTAL LOCATION OF SLEEVES SHOWN ON P-SHEETS.

4 THE CONTRACTOR TO PROVIDE A WIRE THROUGH THE SLEEVE TO GRADE LEVEL (FOR FUTURE SLEEVE LOCATION).

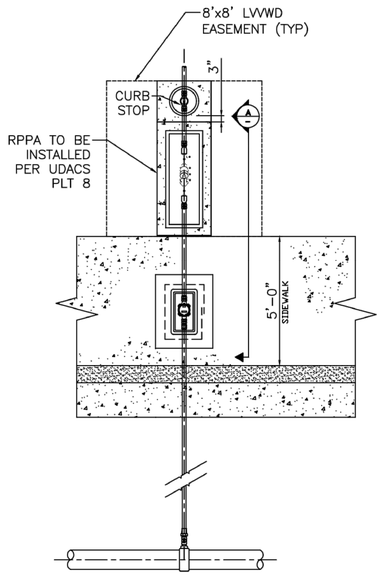
5 CONTRACTOR TO IDENTIFY SLEEVE LOCATION ON TOP OF CURB.

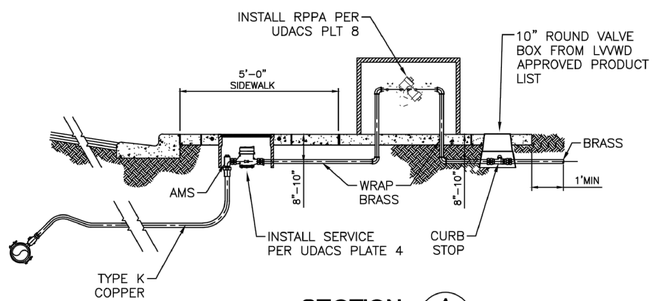


IRRIGATION SLEEVES DETAIL

N.T.S.

C 23





SECTION A -

IRRIGATION METER DETAIL

N.T.S.

D 23

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT
PLANNING AND ENGINEERING SERVICES

PROJECT NO. 137512 FIRST APPROVED DATE: _____

LVVWD APPROVED FIRE FLOW 1500 GPM AT 20 PSI RESIDUAL

FAST Call before you UnderGround 1-702-432-5300 REGIONAL AND ARTERIAL SYSTEM OF TRANSPORTATION

Call before you Dig AVOID CUTTING UNDERGROUND UTILITY LINES, IT'S COSTLY. Call 811 OR 1-800-642-2444

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

PROFESSIONAL ENGINEER - STATE OF NEVADA - ANTHONY J. ORTIZ - EXP. 12-31-21 - CIVIL - No. 18849 - 2/15/2021

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

SUMMERLIN

SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

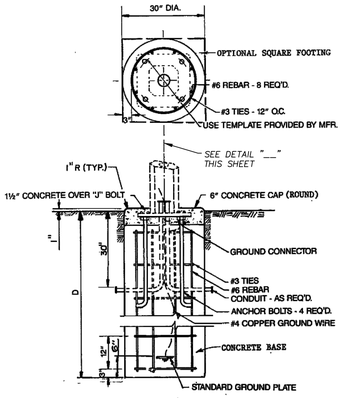
WATER DETAILS

DESIGNED BY: J. BANTA
DRAWN BY: C. DANIELS
CHECKED BY: P. BATES
HORIZ.: NONE
VERT.: NONE

XXXVXXXX
L20-XXXXX
DATE: November 2, 2020
DRAWING NO. 23/28
JOB NO. 100066776

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STREET LIGHT POLE FOUNDATIONS



	DEPTH "D"	ANCHOR BOLT
TYPE 1	6'6"	1¼" x 44" x 4"
TYPE 2	5'6"	1" x 36" x 4"
TYPE 3	4'6"	1" x 36" x 4"
TYPE 4	4'0"	1" x 30" x 4"

NOTE:

1. ALL CONCRETE SHALL BE TYPE V CONCRETE CLASS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA.
2. PLACE CONCRETE AGAINST UNDISTURBED EARTH OR 95% COMPACTED BACKFILL (10' MIN. RADIUS AROUND FOUNDATION)
3. CALCULATION SHEETS AND DETAILS WILL BE SUBMITTED, SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER. TO CCPW FOR REVIEW AND APPROVAL FOR FOUNDATION DESIGNS OTHER THAN SHOWN PER THIS STANDARD.

REVISED	APPROVALS (INITIALS)		
DATE	HHP	GCW	CLV
6-10-98			

REVISED	APPROVALS (INITIALS)		
DATE	HHP	GCW	CLV
2/2/93			

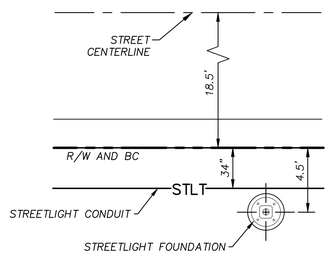
RECOMMENDED BY: DAVID H. MALPASS 7445 R.P.E.

APPROVED BY: C.L.V. CITY ENGINEER R.P.E.# 7569

SUMMERLIN STANDARD DRAWINGS

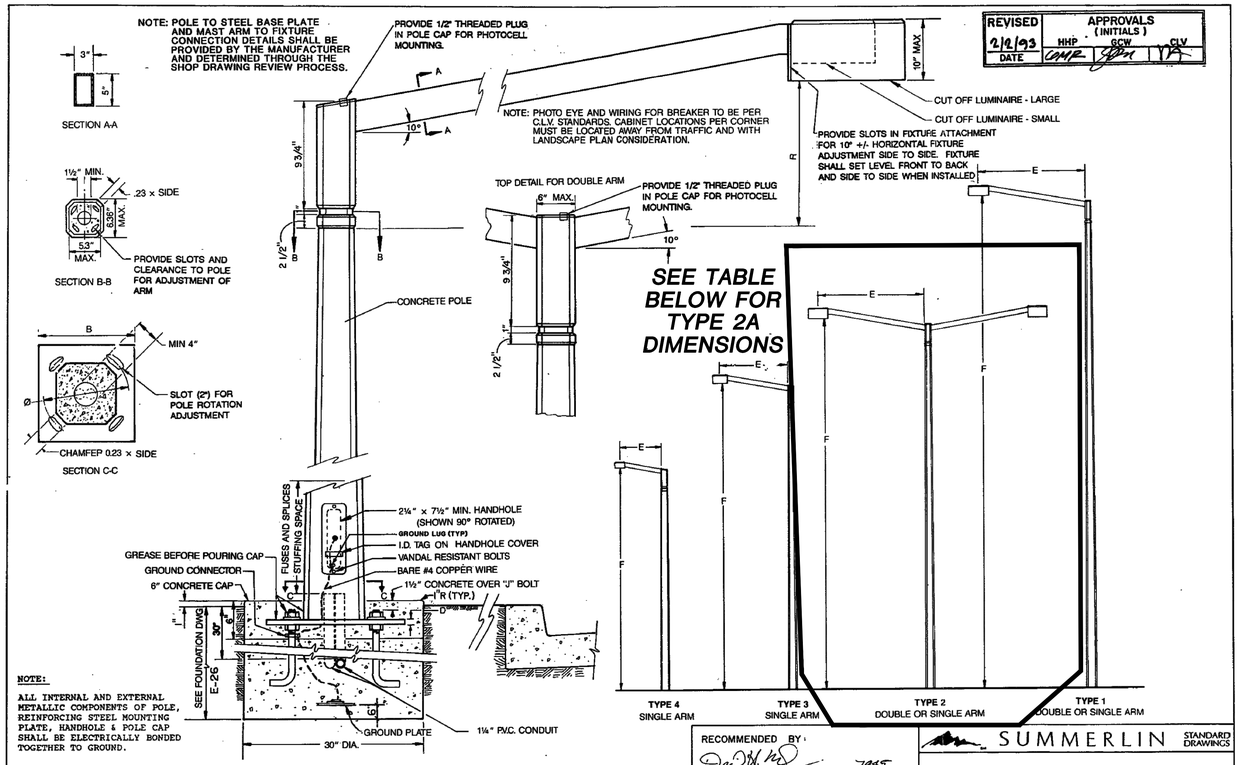
FOUNDATION

DATE 8-88 | DWG. NO. E-26 | PAGE NO. 1 OF 1



STREETLIGHT FOUNDATION LOCATION DETAIL (A/24)

N.T.S.



NOTE:

ALL INTERNAL AND EXTERNAL METALLIC COMPONENTS OF POLE, REINFORCING STEEL MOUNTING PLATE, HANDHOLE & POLE CAP SHALL BE ELECTRICALLY BONDED TOGETHER TO GROUND.

	"B"	"b"	"D"	"E"	"F"	"R"	SHAFT BASE	FOOTING	CUTOFF LUMINAIRE
TYPE 1	16"	16"	1"	8'	41'-9"	2.16'	10-1/4"	30"Ø X 6'6"	LARGE
TYPE 2A	14"	14"	3/4"	8'	31'-2"	2.16'	9-3/16"	30"Ø X 5'6"	LARGE
TYPE 2B	14"	14"	3/4"	5'	30'-7"	1.64'	9-3/16"	30"Ø X 5'6"	LARGE

	"B"	"b"	"D"	"E"	"c"	"R"	SHAFT BASE	FOOTING	CUTOFF LUMINAIRE
TYPE 3	14"	14"	3/4"	5'	264.5"	1.64'	8-5/8"	30"Ø X 4'4"	SMALL
TYPE 4	14"	14"	3/4"	3'	16'11.5"	1.29	7-3/4"	30"Ø X 4'0"	SMALL

REVISED	APPROVALS (INITIALS)		
DATE	HHP	GCW	CLV
2/2/93			

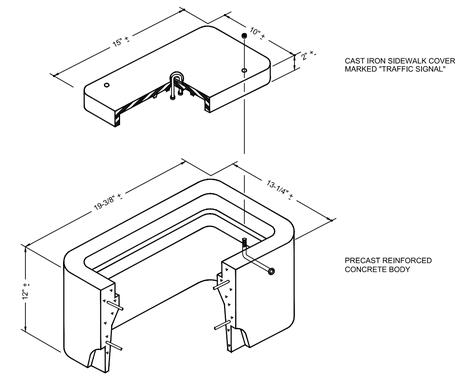
RECOMMENDED BY: DAVID H. MALPASS 7445 R.P.E.

APPROVED BY: C.L.V. CITY ENGINEER R.P.E.# 7569

SUMMERLIN STANDARD DRAWINGS

STREET LIGHT POLE, ARM AND FIXTURE DETAIL

DATE 8-88 | DWG. NO. E-2 | PAGE NO. 1 OF 1



NOTES:

1. THIS PULL BOX SHALL NOT BE USED IN TRAFFIC OR PARKING LANES.
2. ALL DIMENSIONS ARE NOMINAL.

AGENCY APPROVED	B	C	H	L	M	N

SPECIFICATION REFERENCE	
*	

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

NO. 3 1/2 PULL BOX

DATE | DWG. NO. 705

REV.	DESCRIPTION	BY	DATE	APPROVAL

REVISIONS

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

SUMMERLIN

SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

STREETLIGHT DETAILS

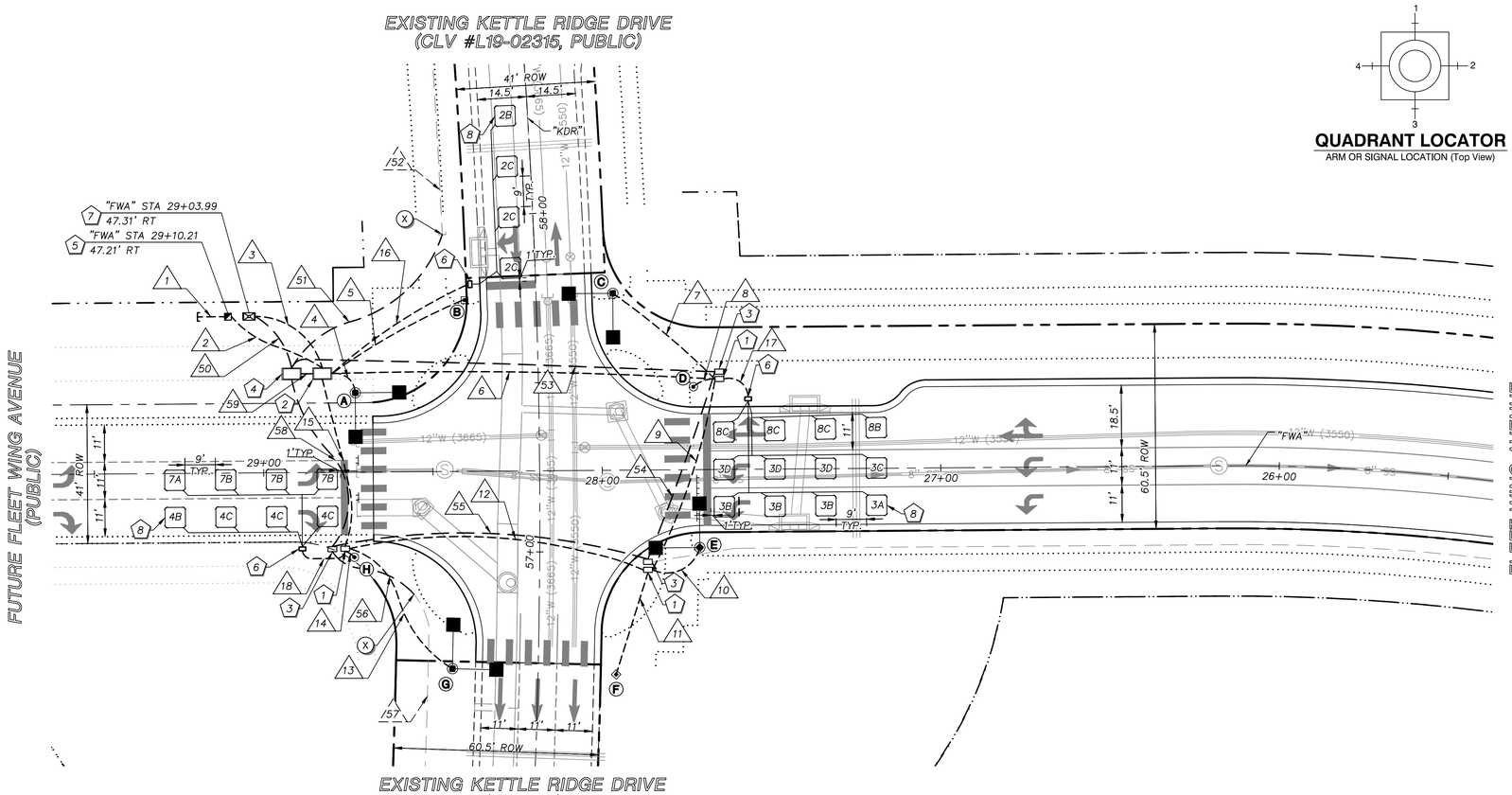
PROFESSIONAL ENGINEER - STATE OF NEVADA - ANTHONY ORTIZ - No. 18949 - CIVIL - Date of Signature: 2/15/2021

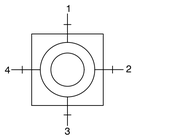
DESIGNED BY: J. BANTA
DRAWN BY: C. DANIELS
CHECKED BY: P. BATES
HORIZ.: NONE
VERT.: NONE

XXXVXXXX
L20-XXXXX
DATE: November 2, 2020
DRAWING NO. 24/28

JOB NO. 100066776

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QUADRANT LOCATOR
ARM OR SIGNAL LOCATION (Top View)

NOTE: PULL BOX COVER SHALL BE GROUNDED PER USD #709

TYPE 100 VAULT (MARKED "TRAFFIC SIGNAL" OR "FIBER OPTIC") DETAIL (A / 25)
N.T.S.

GRAPHIC SCALE
20 0 10 20 40
HORIZONTAL: 1"=20'

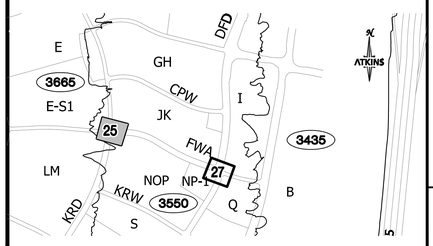
TRAFFIC SIGNAL CONSTRUCTION NOTES

1. INSTALL NO. 7 PULL BOX MARKED "TRAFFIC SIGNAL" PER CCAUSD #707
2. INSTALL TYPE 100 VAULT MARKED "TRAFFIC SIGNAL" PER DETAIL A ON SHEET 25
3. INSTALL P30 PULL BOX MARKED "FAST" PER CCAUSD #761
4. INSTALL TYPE 200 SPLICE VAULT MARKED "FAST" PER CCAUSD #762
5. INSTALL 200 AMP SERVICE PEDESTAL PER CCAUSD #332.S2, #331, #335.S2, #336, AND #730
6. INSTALL NO. 5 PULL BOX MARKED "TRAFFIC SIGNAL" PER CCAUSD #706
7. INSTALL TYPE VIII "R" CABINET WITH 18-INCH COLLAR PER CCAUSD #803
8. INSTALL PRE-FORMED DETECTION LOOPS PER DETAIL ON SHEET 27 AND SPECIAL PROVISIONS.

(X) INTERCEPT EXISTING CONDUIT AND CONNECT TO NEW PULL BOX.

/X CONDUIT NO. SEE CONDUIT AND WIRE SCHEDULE SHEET 26.

/X EXISTING CONDUIT NO. SEE CONDUIT AND WIRE SCHEDULE SHEET 26.



STREET LIGHTING NOTES

1. SEE SHEET 24 FOR DETAILS & CCAUSD'S FOR STREETLIGHTING

BASIS OF BEARING

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

BENCHMARK

CITY OF LAS VEGAS BENCHMARK: D368 (REVISED 2008)
NAVD88 ELEVATION: 989.574 METERS (3,246.63 FEET)
FND USC&GS DISC SET IN ROCK RIDGE 150' SOUTH OF CHARLESTON BLVD. & WEST OF DETENTION BASIN.
T21S,R59E,S03

FAST Call before you UnderGround 1-702-432-5300 FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

Call before you Dig AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COURTLY. Call 811 OR 1-800-642-2444

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

UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION.

PROFESSIONAL ENGINEER - STATE OF NEVADA
ANTHONY J. ORTIZ
EXP. 12-31-21
CIVIL
No. 18949
2/15/2021

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

SUMMERLIN

SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

TRAFFIC SIGNAL UNDERGROUNDS PLAN 1

DESIGNED BY: L. BIAYA
DRAWN BY: C. DANIELS
CHECKED BY: P. BATES
HORIZ.: 1"=20'
VERT.: NONE

XXXVXXXX
L20-YXXXX
DATE: November 2, 2020
DRAWING NO. 25/28

JOB NO. 100066776

C:\pw_work\atkinsv01\wsatkins_tor9642\dms57691\66776-XX-DETL-SIGL.dwg LAYOUT: 25 Feb 23, 2021 - 9:24PM

CONDUIT AND WIRE SCHEDULE

WIRE AND CABLE	FROM	TO	CONDUIT 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	50	51	52	53	54	55	56	57	58	59
4-#4 AWG & 1- #8 AWG	POWER SOURCE	CONTROLLER	X																											
4-#4 THW & 1- #8 AWG	SERVICE PEDESTAL	CONTROLLER		X	X																									
4- #10 THW	CONTROLLER	POLE A LUMINAIRES			X	X																								
4- #10 THW	CONTROLLER	POLE C LUMINAIRES			X			X	X																					
4- #10 THW	CONTROLLER	POLE E LUMINAIRES			X			X			X	X																		
4- #10 THW	CONTROLLER	POLE G LUMINAIRES			X										X		X													
1- #8 GROUND	CONTROLLER	POLE A			X	X																								
1- #8 GROUND	CONTROLLER	POLE B			X		X																							
1- #8 GROUND	CONTROLLER	POLE C			X			X	X																					
1- #8 GROUND	CONTROLLER	POLE D			X			X		X																				
1- #8 GROUND	CONTROLLER	POLE E			X			X			X	X																		
1- #8 GROUND	CONTROLLER	POLE F			X			X			X		X																	
1- #8 GROUND	CONTROLLER	POLE G			X										X		X													
1- #8 GROUND	CONTROLLER	POLE H			X											X	X													
6-PAIR #18 MULTI CONDUCTOR LOOP LEAD IN CABLES	CONTROLLER	LOOP PULL BOX PHASES: 2B - 2C			X													X												
6-PAIR #18 MULTI CONDUCTOR LOOP LEAD IN CABLES	CONTROLLER	LOOP PULL BOX PHASES: 8B - 8C			X			X											X											
6-PAIR #18 MULTI CONDUCTOR LOOP LEAD IN CABLES	CONTROLLER	LOOP PULL BOX LEFT TURN POCKET PHASES: 3A - 3D			X			X											X											
6-PAIR #18 MULTI CONDUCTOR LOOP LEAD IN CABLES	CONTROLLER	LOOP PULL BOX PHASES: 4B - 4C			X												X			X										
6-PAIR #18 MULTI CONDUCTOR LOOP LEAD IN CABLES	CONTROLLER	LOOP PULL BOX LEFT TURN POCKET PHASES: 7A - 7B			X												X			X										
6-PAIR PE 39 NO.22 AWG INTERCONNECT CABLE	CONTROLLER	TYPE 200 SPLICE VAULT																			X									
6-PAIR PE 39 NO.22 AWG INTERCONNECT CABLE	TYPE 200 SPLICE VAULT	CONNECT KETTLE RIDGE DRIVE NORTH																				X	X							
6-PAIR PE 39 NO.22 AWG INTERCONNECT CABLE	TYPE 200 SPLICE VAULT	P30 PULL BOX: NE CORNER																						X						
6-PAIR PE 39 NO.22 AWG INTERCONNECT CABLE	P30 PULL BOX: NE CORNER	P30 PULL BOX: SE CORNER																							X					
6-PAIR PE 39 NO.22 AWG INTERCONNECT CABLE	P30 PULL BOX: SE CORNER	P30 PULL BOX: SW CORNER																								X				
6-PAIR PE 39 NO.22 AWG INTERCONNECT CABLE	P30 PULL BOX: SW CORNER	CONNECT KETTLE RIDGE DRIVE SOUTH																									X	X		
6-PAIR PE 39 NO.22 AWG INTERCONNECT CABLE	P30 PULL BOX: SW CORNER	TYPE 200 SPLICE VAULT																											X	
6-PAIR PE 39 NO.22 AWG INTERCONNECT CABLE	TYPE 200 SPLICE VAULT	TYPE 100																												X
CONDUIT SIZE (E) EXISTING			1-3"	1-2"	5-3" 2-2"	1-3"	1-2"	2-3" 2-2"	1-3"	1-2"	2-3" 2-2"	1-3"	1-2"	2-3" 2-2"	1-3"	1-2"	2-3" 2-2"	1-2"	1-2"	1-2"	1-4"	1-4"	(E) 1-4"	1-4"	1-4"	1-4"	1-4"	(E) 1-4"	1-4"	1-4"

-CONDUIT INSTALLATIONS AND ASSOCIATED PAVEMENT PATCHES SHALL BE IN CONFORMANCE WITH CCAUSD DWG. NO. 500.1, 500.2, 500.3, AND 733.

POLE SCHEDULE

POLE	LOCATION STATION (OFFSET)	POLE TYPE	POLE TYPE OF FOUNDATION	LUM. ARM QUAD.	LUM. ARM LENGTH	REMARKS
Ⓐ	"FWA" 28+72.78 23.56' RT	XX-A	L	2 3	15' 15'	
Ⓑ	"FWA" 28+40.30 50.58' RT	1-B	C			
Ⓒ	"FWA" 27+96.49 52.26' RT	XX-A	L	3 4	15' 15'	
Ⓓ	"FWA" 27+72.91 24.49' RT	1-A	C			
Ⓔ	"FWA" 27+71.36 23.01' LT	XX-A	L	1 4	15' 15'	
Ⓕ	"FWA" 27+96.33 60.32' LT	1-B	C			
Ⓖ	"FWA" 28+44.69 58.27' LT	XX-A	L	1 2	15' 15'	
Ⓗ	"FWA" 28+73.38 25.13' LT	1-A	C			

ALL NEW AND EXISTING POLES, MAST ARMS, AND LUMINAIRE ARMS SHALL BE FINISHED WITH AMERLOCK 400/AMERSHIELD SYSTEM NO. 5442D "HUMMINGBIRD BROWN" OR APPROVED EQUIVALENT. ALL EXPOSED WELDS SHALL BE PAINTED TO POLE COLOR AND FINISH.

LOOP DETECTOR SCHEDULE

(EAST BOUND AND WEST BOUND APPROACH)

MOVEMENT	LOOP NUMBER	LOOP OPERATION
EB RIGHT	4B	"PRESENCE/COUNT" LOOP WITH DELAY
	4C	"PRESENCE LOOP WITH DELAY
EB LEFT	7A	"PRESENCE/COUNT" LOOP
	7B	"PRESENCE" LOOPS
WB THRU RIGHT	8B	"PRESENCE/COUNT" LOOP
	8C	"PRESENCE" LOOPS
WB LEFT	3A	"PRESENCE/COUNT" LOOP
	3B	"PRESENCE" LOOPS
	3C	"PRESENCE/COUNT" LOOP
	3D	"PRESENCE" LOOPS

LOOP DETECTOR SCHEDULE

(SOUTH BOUND APPROACH)

MOVEMENT	LOOP NUMBER	LOOP OPERATION
SB THRU RIGHT	2B	"PRESENCE/COUNT" LOOP
	2C	"PRESENCE" LOOPS

6-PAIR LOOP LEAD-IN CABLE ASSIGNMENTS

PAIR NO.	COLOR	PHASE LETTER DESIGNATION
1	BLACK & RED	A
2	BLACK & WHITE	B
3	BLACK & GREEN	C
4	BLACK & BLUE	D
5	BLACK & YELLOW	E
6	BLACK & BROWN	F

CONTROLLER CABINET TO HAVE 48 DETECTION CHANNELS. IN THE EVENT THAT AN INTERSECTION BEING DESIGNED REQUIRES MORE THAN 48 CHANNELS DUE TO THE NUMBER OF LANES, SPECIAL DESIGN CONSIDERATION WILL BE NECESSARY. LOOP AMP ASSIGNMENTS ARE AVAILABLE THROUGH CLV TRAFFIC ENGINEERING, FIELD OPERATIONS.

STREET LIGHTING NOTES

1. SEE SHEET 24 FOR DETAILS & CCAUSD'S FOR STREETLIGHTING

BASIS OF BEARING

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

BENCHMARK

CITY OF LAS VEGAS BENCHMARK: D368 (REVISED 2008)
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FND USC&GS DISC SET IN ROCK RIDGE 150' SOUTH OF CHARLESTON BLVD. & WEST OF DETENTION BASIN.
T21S,R59E,S03

FAST Call before you UnderGround 1-702-432-5300 FUNDED BY FEDERAL HIGHWAY ADMINISTRATION, U.S. DEPARTMENT OF TRANSPORTATION

Call before you Dig AVOID CUTTING TELEPHONE AND UTILITY LINES. DON'T DIG. Call 811 or 1-800-642-2444

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

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PROFESSIONAL ENGINEER-STATE OF NEVADA ANTHONY ORTIZ EXP. 12-31-21 CIVIL No. 18949 2/15/2021

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

SUMMERLIN

SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

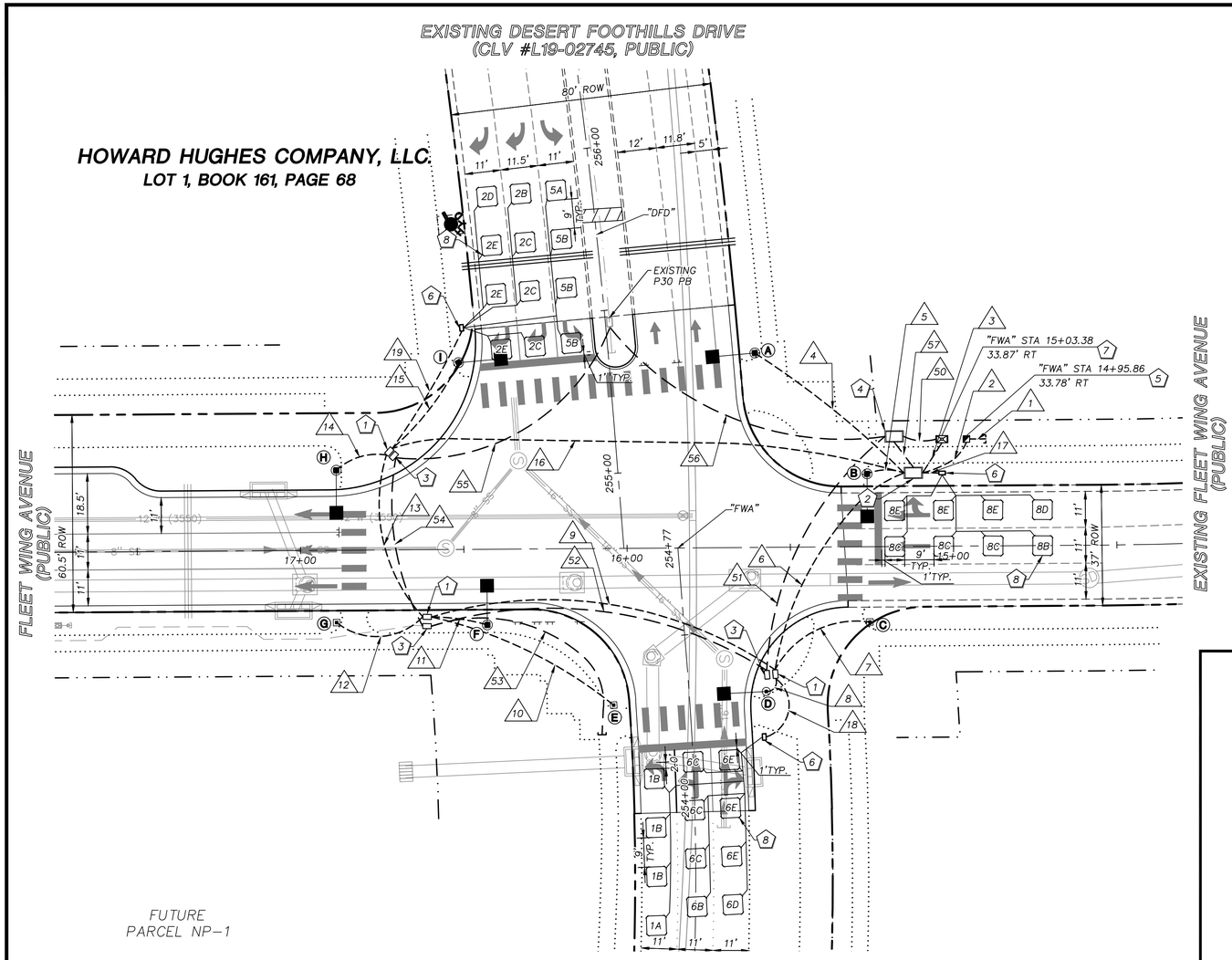
TRAFFIC SIGNAL UNDERGROUNDS SCHEDULES 1

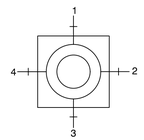
DESIGNED BY: S. BANTA
DRAWN BY: C. DANIELS
CHECKED BY: P. BATES
HORIZ.: 1"=20'
VERT.: NONE

XXVVXXXX
L20-XXXXX
DATE: November 2, 2020
DRAWING NO. 26/28

JOB NO. 100066776

C:\pw_work\atkinsn01\westkins_torr8642\dms57691\66776-XX-DETL-SIGL.dwg LAYOUT: 26 Feb 23, 2021 - 8:24PM

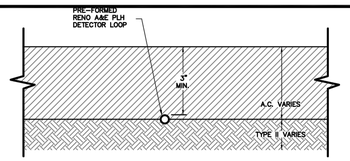




QUADRANT LOCATOR
ARM OR SIGNAL LOCATION (Top View)

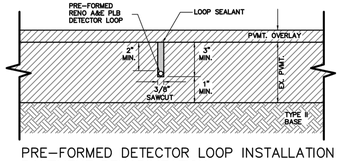
TRAFFIC SIGNAL CONSTRUCTION NOTES

1. INSTALL NO. 7 PULL BOX MARKED "TRAFFIC SIGNAL" PER CCAUSD #707
2. INSTALL TYPE 100 VAULT MARKED "TRAFFIC SIGNAL" PER DETAIL A ON SHEET 25
3. INSTALL P30 PULL BOX MARKED "FAST" PER CCAUSD #761
4. INSTALL TYPE 200 SPLICE VAULT MARKED "FAST" PER CCAUSD #762
5. INSTALL 200 AMP SERVICE PEDESTAL PER CCAUSD #332.S2, #331, #335.S2, #336, AND #730
6. INSTALL NO. 5 PULL BOX MARKED "TRAFFIC SIGNAL" PER CCAUSD #706
7. INSTALL TYPE VIII "R" CABINET WITH 18-INCH COLLAR PER CCAUSD #803
8. INSTALL PRE-FORMED DETECTION LOOPS PER DETAIL ON SHEET 27 AND SPECIAL PROVISIONS.



PRE-FORMED DETECTOR LOOP INSTALLATION
FULL DEPTH PAVEMENT CONSTRUCTION

NOT TO SCALE



PRE-FORMED DETECTOR LOOP INSTALLATION
PAVEMENT REHABILITATION

NOT TO SCALE

CONSTRUCTION NOTES:

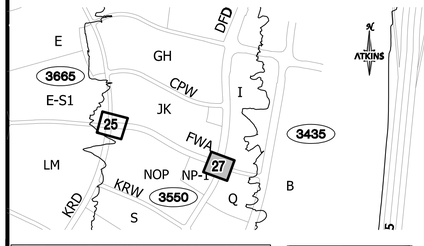
1. DETECTOR LOOPS SHALL BE PRE-FORMED PER SPECIAL PROVISION 623.02.04.
2. LOOP LEAD-IN CABLE SHALL BE PER SPECIAL PROVISION 623.02.04.
3. FOR FULL-DEPTH PAVEMENT CONSTRUCTION, EMBED OR PLACE PRE-FORMED LOOP DETECTORS ON TOP OF AGGREGATE BASE MATERIAL PER MANUFACTURER'S RECOMMENDATIONS OR AS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL ENSURE THAT THE LOOP DETECTORS ARE PROPERLY SECURED IN PLACE TO PREVENT MOVEMENT PRIOR TO AND DURING THE INSTALLATION OF PAVING MATERIAL.
4. LOOPS DETECTORS SHALL BE CENTERED IN TRAVEL LANES.
5. ALL LOOP DETECTOR LOCATIONS SHALL BE APPROVED BY THE CLV TRAFFIC ENGINEER PRIOR TO INSTALLATION.

SPECIFICATION REFERENCE	CLV STANDARD DRAWING
	LOOP DETECTORS
	PRE-FORMED LOOP DETECTOR INSTALLATION DETAILS AND NOTES
DATE 5-14-14	PAGE 5 of 6

(X) INTERCEPT EXISTING CONDUIT AND CONNECT TO NEW PULL BOX.

X CONDUIT NO. SEE CONDUIT AND WIRE SCHEDULE SHEET 28.

X EXISTING CONDUIT NO. SEE CONDUIT AND WIRE SCHEDULE SHEET 28.



GRAPHIC SCALE
20 0 10 20 40
HORIZONTAL: 1"=20'

STREET LIGHTING NOTES

1. SEE SHEET 24 FOR DETAILS & CCAUSD'S FOR STREETLIGHTING

BASIS OF BEARING

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

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T21S,R59E,S03

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Call before you Dig AVOID CUTTING INTERCONNECTED UTILITY LINES. IT'S COSTLY. Call 811 OR 1-800-642-2444

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PROFESSIONAL ENGINEER-STATE OF NEVADA
ANTHONY J. ORTIZ
EXP. 12-31-21
CIVIL
No. 19949
2/15/2021

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

SUMMERLIN

SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

TRAFFIC SIGNAL UNDERGROUND PLAN 2

DESIGNED BY: J. BANTA
DRAWN BY: C. DANIELS
CHECKED BY: P. BATES
HORIZ.: 1"=20'
VERT.: NONE

XXVVXXXX
L20-XXXXX
DATE: November 2, 2020
DRAWING NO. 27/28

JOB NO. 100066776

C:\pw_work\atkinsOf1\wsatkins_tor9642\dms57691\66776-XX-DETL-SIGL.dwg LAYOUT: 27 Feb 23, 2021 - 9:24PM

CONDUIT AND WIRE SCHEDULE

WIRE AND CABLE	FROM	TO	CONDUIT 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	50	51	52	53	54	55	56	57
4-#4 AWG & 1- #8 AWG	POWER SOURCE	CONTROLLER	X																										
4-#4 THW & 1- #8 AWG	SERVICE PEDESTAL	CONTROLLER		X	X																								
2- #10 THW	CONTROLLER	POLE A LUMINAIRES			X	X																							
2- #10 THW	CONTROLLER	POLE B LUMINAIRES			X		X																						
2- #10 THW	CONTROLLER	POLE D LUMINAIRES			X			X		X																			
2- #10 THW	CONTROLLER	POLE F LUMINAIRES			X			X			X		X																
2- #10 THW	CONTROLLER	POLE H LUMINAIRES			X											X		X											
2- #10 THW	CONTROLLER	POLE I LUMINAIRES			X												X	X											
1- #8 GROUND	CONTROLLER	POLE A			X	X																							
1- #8 GROUND	CONTROLLER	POLE B			X		X																						
1- #8 GROUND	CONTROLLER	POLE C			X			X	X																				
1- #8 GROUND	CONTROLLER	POLE D			X			X		X																			
1- #8 GROUND	CONTROLLER	POLE E			X			X			X	X																	
1- #8 GROUND	CONTROLLER	POLE F			X			X			X		X																
1- #8 GROUND	CONTROLLER	POLE G			X			X			X			X															
1- #8 GROUND	CONTROLLER	POLE H			X											X		X											
1- #8 GROUND	CONTROLLER	POLE I			X												X	X											
6-PAIR #18 MULTI CONDUCTOR LOOP LEAD IN CABLES	CONTROLLER	LOOP PULL BOX PHASES: 8B - 8E			X														X										
6-PAIR #18 MULTI CONDUCTOR LOOP LEAD IN CABLES	CONTROLLER	LOOP PULL BOX PHASES: 6B - 6E			X			X											X	X									
6-PAIR #18 MULTI CONDUCTOR LOOP LEAD IN CABLES	CONTROLLER	LOOP PULL BOX LEFT TURN POCKET PHASES: 1A - 1B			X			X												X									
6-PAIR #18 MULTI CONDUCTOR LOOP LEAD IN CABLES	CONTROLLER	LOOP PULL BOX PHASES: 2B - 2E			X														X		X								
6-PAIR #18 MULTI CONDUCTOR LOOP LEAD IN CABLES	CONTROLLER	LOOP PULL BOX LEFT TURN POCKET PHASES: 5A - 5B			X														X		X								
6-PAIR PE 39 NO.22 AWG INTERCONNECT CABLE	CONTROLLER	TYPE 200 SPLICE VAULT																				X							
6-PAIR PE 39 NO.22 AWG INTERCONNECT CABLE	TYPE 200 SPLICE VAULT	P30 PULL BOX: SE CORNER																					X						
6-PAIR PE 39 NO.22 AWG INTERCONNECT CABLE	P30 PULL BOX: SE CORNER	P30 PULL BOX: SW CORNER																						X					
6-PAIR PE 39 NO.22 AWG INTERCONNECT CABLE	P30 PULL BOX: SW CORNER	FUTURE CONNECTION DESERT FOOTHILLS DRIVE SOUTH																							X				
6-PAIR PE 39 NO.22 AWG INTERCONNECT CABLE	P30 PULL BOX: SW CORNER	P30 PULL BOX: NW CORNER																								X			
6-PAIR PE 39 NO.22 AWG INTERCONNECT CABLE	P30 PULL BOX: NW CORNER	TYPE 200 SPLICE VAULT																									X	X	
6-PAIR PE 39 NO.22 AWG INTERCONNECT CABLE	TYPE 200 SPLICE VAULT	TYPE100																											X
CONDUIT SIZE (E) EXISTING			1-3"	1-2"	5-3" 2-2"	1-3"	1-3"	2-3" 2-2"	1-2"	1-3"	2-3" 2-2"	1-2"	1-3"	1-2"	2-3" 2-2"	1-3"	1-3"	2-3" 2-2"	1-2"	1-2"	1-2"	1-4"	1-4"	1-4"	1-4"	1-4"	1-4"	1-4"	1-4"

-CONDUIT INSTALLATIONS AND ASSOCIATED PAVEMENT PATCHES SHALL BE IN CONFORMANCE WITH CCAUSD DWG. NO. 500.1, 500.2, 500.3, AND 733.

POLE SCHEDULE

POLE	LOCATION STATION (OFFSET)	POLE TYPE	POLE TYPE OF FOUNDATION	LUM. ARM QUAD.	LUM. ARM LENGTH	REMARKS
Ⓐ	"FWA" 15+60.50 59.56' RT	XX-A	L	4	15'	
Ⓑ	"FWA" 15+26.38 22.30' RT	XX-A	L	3	15'	
Ⓒ	"FWA" 15+25.80 23.07' LT	1-B	C			
Ⓓ	"FWA" 15+57.68 44.15' LT	XX-A	L	4	15'	
Ⓔ	"FWA" 16+04.44 48.00' LT	1-B	C			
Ⓕ	"FWA" 16+42.97 23.17' LT	XX-A	L	1	15'	
Ⓖ	"FWA" 16+89.11 22.16' LT	1-B	C			
Ⓗ	"FWA" 16+88.95 24.49' RT	XX-A	L	3	15'	
Ⓘ	"FWA" 16+51.23 57.20' RT	XX-A	L	2	15'	

ALL NEW AND EXISTING POLES, MAST ARMS, AND LUMINAIRE ARMS SHALL BE FINISHED WITH AMERLOCK 400/AMERSHIELD SYSTEM NO. 5442D "HUMMINGBIRD BROWN" OR APPROVED EQUIVALENT. ALL EXPOSED WELDS SHALL BE PAINTED TO POLE COLOR AND FINISH.

LOOP DETECTOR SCHEDULE

(NORTH BOUND AND SOUTH BOUND APPROACH)

MOVEMENT	LOOP NUMBER	LOOP OPERATION
SB RIGHT	2B	"PRESENCE/COUNT" LOOP WITH DELAY
	2C	"PRESENCE" LOOP WITH DELAY
	2D	"PRESENCE/COUNT" LOOP WITH DELAY
	2E	"PRESENCE" LOOP WITH DELAY
SB LEFT	5A	"PRESENCE/COUNT" LOOP
	5B	"PRESENCE" LOOPS
NB THRU RIGHT	6D	"PRESENCE/COUNT" LOOP
	6E	"PRESENCE" LOOPS
NB THRU	6B	"PRESENCE/COUNT" LOOP
	6C	"PRESENCE" LOOPS
NB LEFT	1A	"PRESENCE/COUNT" LOOP
	1B	"PRESENCE" LOOPS

LOOP DETECTOR SCHEDULE

(WEST BOUND APPROACH)

MOVEMENT	LOOP NUMBER	LOOP OPERATION
WB THRU	8B	"PRESENCE/COUNT" LOOP
	8C	"PRESENCE" LOOPS
WB THRU RIGHT	8D	"PRESENCE/COUNT" LOOP
	8E	"PRESENCE" LOOPS

6-PAIR LOOP LEAD-IN CABLE ASSIGNMENTS

PAIR NO.	COLOR	PHASE LETTER DESIGNATION
1	BLACK & RED	A
2	BLACK & WHITE	B
3	BLACK & GREEN	C
4	BLACK & BLUE	D
5	BLACK & YELLOW	E
6	BLACK & BROWN	F

CONTROLLER CABINET TO HAVE 48 DETECTION CHANNELS. IN THE EVENT THAT AN INTERSECTION BEING DESIGNED REQUIRES MORE THAN 48 CHANNELS DUE TO THE NUMBER OF LANES, SPECIAL DESIGN CONSIDERATION WILL BE NECESSARY. LOOP AMP ASSIGNMENTS ARE AVAILABLE THROUGH CLV TRAFFIC ENGINEERING, FIELD OPERATIONS.

GRAPHIC SCALE
30 0 15 30 60
HORIZONTAL: 1"= 30'

STREET LIGHTING NOTES

1. SEE SHEET 24 FOR DETAILS & CCAUSD'S FOR STREETLIGHTING

BASIS OF BEARING

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

BENCHMARK

CITY OF LAS VEGAS BENCHMARK: D368 (REVISED 2008)
NAVD88 ELEVATION: 989.574 METERS (3,246.63 FEET)
FND USC&GS DISC SET IN ROCK RIDGE 150' SOUTH OF CHARLESTON BLVD. & WEST OF DETENTION BASIN.
T21S,R59E,S03

FAST Call before you UnderGround 1-702-432-5300 (PRIMARY AND ARTERIAL SYSTEMS OF TRANSPORTATION)

Call before you Dig AVOID CUTTING OR DISTURBING UTILITY LINES. IT'S SAFETY. Call 811 or 1-800-642-2444

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

UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION.

PROFESSIONAL ENGINEER-STATE OF NEVADA ANTHONY J. ORTIZ Exp. 12-31-21 CIVIL No. 18949 2/15/2021

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1.702.263.7275
Fax: +1.702.263.7200

SUMMERLIN

SUMMERLIN VILLAGE 22
FLEET WING AVENUE (STREET G)
DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)

TRAFFIC SIGNAL UNDERGROUNDS SCHEDULES 2

DESIGNED BY: J. BANTA
DRAWN BY: C. DANIELS
CHECKED BY: P. BATES
HORIZ.: 1"=20'
VERT.: NONE

XXVYXXXX
L20-XXXXX
DATE: November 2, 2020
DRAWING NO. 28/28
JOB NO. 100066776

C:\pw_work\atkinsnv01\wsatkins_tor-9642\dms57691\66776-XX-DETL-SIGL.dwg LAYOUT: 28 Feb 23, 2021 - 9:24PM