

DS #: 05443

APN: 137-15-811-001

PROJECT: Summerlin West V22 - Lake Mead Blvd. Improvements
(Kettle Ridge Drive to Scurry Bend Drive)

SUBMITTAL: 1st

SCANNED BY/DATE:

CHECKED BY/DATE:



CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		April 29, 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 – Lake Mead Blvd. Improvements (Kettle Ridge Drive to Scurry Bend Drive)	
Cross Streets:	Lake Mead Boulevard & Kettle Ridge Drive	COPIES TO: Atkins
File Number:	F:\Depot\DSMemos\DS5443A.doc	Howard Hughes Company, LLC
Parcel Number:	137-15-811-001	Bart Anderson, P.E., DevCo
Zoning Action:	N/A	
FEMA Flood Zone	YES	NO X
Proposed Storm Drain	YES	NO X

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 st Submittal	4/13/2021	4/28/2021	See Comments Below	\$400.00	4249141: \$400
TOTAL FEES (LDDRS):				\$400.00	----

REMARKS:

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

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

1. The subject project is based on the premise that the downstream *Kettle Ridge Drive* and the associated storm drain facilities are in place for flood flow perpetuation. The subject drainage study will not be finally approved prior to the posting of the construction bonds of the *Summerlin West Village 22 – Kettle Ridge Drive and Scurry Bend Drive (from Lake Mead to Fleet Wing)* street improvements project.
2. Provide a *Master Grading Plan* in the next submittal to show how the outfall from offsite basin “**27-COS3**” is directed into the existing 48”-stub adjacent to the intersection of *Lake Mead Boulevard* and *Kettle Ridge Drive*. Whether a maintenance bond will be required will be determined upon the *Master Grading Plan* is available.
3. The subject study did not provide 10-year normal depth calculations at all citing that the D*V for 100-year is less than 1.7, therefore 10-year calculations are not necessary. However, the study still need to address whether 12'-dry lane during 10-year storm event will be maintained.
4. It appears that the hydraulic grade line (HGL) for the proposed storm drain system is totally missing on the plan & profiles sheets. Provide as such in the next submittal.

5. Provide *City of Las Vegas* recorded drawing numbers for all existing storm drains on the pertinent grading plans.

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/15

AREA K-15

Summerlin West Village 22

Lake Mead Boulevard: From Kettle Ridge
Drive to Scurry Bend Drive

May 2021

Addendum #1

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL
DRAINAGE STUDY INFORMATION FORM

Name of Development: Addendum #1 for Lake Mead Boulevard: From Kettle Ridge Drive to Scurry Bend Drive Date: May 10, 2021

Location of Development: a) Descriptive (Cross Streets) North/South: N/A

East/West: Kettle Ridge Drive to Scurry Bend Drive

b) Section: 14 and 15 Township: 20S Range: 59E

c) APN : 137-15-811-001

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 Dr. Suite 160, Las Vegas, NV 89135

Contact Person-Name: Janelle Klein 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	☒	Roadway Improvements

1. Total Owned Land Area: At Site: +/- 446 acres Being Developed/Disturbed: 1.66 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

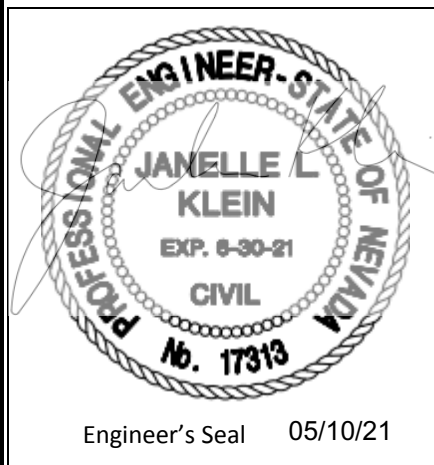
4. Proposed type of development (Residential, Commercial, Etc.): Public - Roadway Improvements

5. Approximate upstream land area which drains to the subject site: 70 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 Update #2, and DS #5155

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



Engineer's Seal 05/10/21

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

***New Required Field**

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

Revision	Date

DS #5443

Local Entity File No.

REFERENCE:

STANDARD FORM 1

CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		April 29, 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:	COPIES TO:
	Summerlin West V22 – Lake Mead Blvd. Improvements (Kettle Ridge Drive to Scurry Bend Drive)	Atkins
Cross Streets:	Lake Mead Boulevard & Kettle Ridge Drive	Howard Hughes Company, LLC
File Number:	F:\Depot\DSMemos\DS5443A.doc	Bart Anderson, P.E., DevCo
Parcel Number:	137-15-811-001	
Zoning Action:	N/A	
FEMA Flood Zone	YES NO X	
Proposed Storm Drain	YES NO X	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 st Submittal	4/13/2021	4/28/2021	See Comments Below	\$400.00	4249141: \$400
			TOTAL FEES (LDDRS):	\$400.00	----

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

- The subject project is based on the premise that the downstream *Kettle Ridge Drive* and the associated storm drain facilities are in place for flood flow perpetuation. The subject drainage study will not be finally approved prior to the posting of the construction bonds of the *Summerlin West Village 22 – Kettle Ridge Drive and Scurry Bend Drive (from Lake Mead to Fleet Wing)* street improvements project.
- Provide a *Master Grading Plan* in the next submittal to show how the outfall from offsite basin “**27-COS3**” is directed into the existing 48”-stub adjacent to the intersection of *Lake Mead Boulevard* and *Kettle Ridge Drive*. Whether a maintenance bond will be required will be determined upon the *Master Grading Plan* is available.
- The subject study did not provide 10-year normal depth calculations at all citing that the D*V for 100-year is less than 1.7, therefore 10-year calculations are not necessary. However, the study still need to address whether 12’-dry lane during 10-year storm event will be maintained.
- It appears that the hydraulic grade line (HGL) for the proposed storm drain system is totally missing on the plan & profiles sheets. Provide as such in the next submittal.

5. Provide *City of Las Vegas* recorded drawing numbers for all existing storm drains on the pertinent grading plans.

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/15
AREA K-15

Summerlin West Village 22

Addendum #1 for Lake Mead Boulevard: From
Kettle Ridge Drive to Scurry Bend Drive

Prepared for Howard Hughes Company, LLC

May 2021

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 **Addendum #1 to the Technical Drainage Study for Lake Mead Boulevard: From Kettle Ridge Drive to Scurry Bend Drive** electronic submittal matches the paper version bound into the study.



Janelle Klein, PE (NV #17313)
Senior Engineer

Contents

Chapter	Page
Engineer's Certification	2
Comment Response Letter	4
Appendix A. Referenced Study/Plans	
Appendix B. Hydraulics Calculations	
B.1. Figure 5 Hydraulics Workmap	
B.2. Normal Depth Street Section Calculations	

Comment Response Letter

Your reference: DS #5443A

Albert Sung
City of Las Vegas Public Works
495 S. Main Street
Las Vegas, NV 89106

May 2021

**RE: ADDENDUM #1 TECHNICAL DRAINAGE STUDY FOR SUMMERLIN WEST VILLAGE 22
Lake Mead Boulevard: From Kettle Ridge Drive to Scurry Bend Drive**

Dear Albert,

This letter and the attached documents have been prepared as an Addendum #1 to the *Technical Drainage Study (TDS) for Summerlin West Village 22 Lake Mead Boulevard: From Kettle Ridge Drive to Scurry Bend Drive*.

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

Comment response: Understood. We understand that the construction bonds for Kettle Ridge Drive and Scurry Bend Drive (from Lake Mead to Fleet Wing) must post before the TDS for Summerlin West Village 22 Lake Mead Boulevard: From Kettle Ridge Drive to Scurry Bend Drive, can be approved.

Comment #2: Provide a Master Grading Plan in the next submittal to show how the outfall from offsite basin “27- COS3” is directed into the existing 48”-stub adjacent to the intersection of Lake Mead Boulevard and Kettle Ridge Drive. Whether a maintenance bond will be required will be determined upon the Master Grading Plan is available.

Comment response: The grading and storm water capture from 27-COS3 have previously been designed in the approved Lake Mead Boulevard Street Improvements (Desert Foothills to Kettle Ridge Drive) Technical Drainage Study #5155D. The pertinent sheets and approval letter for DS#5155D are included in Appendix A.

Comment #3: The subject study did not provide 10-year normal depth calculations at all citing that the D*V for 100- year is less than 1.7, therefore 10-year calculations are not necessary. However, the study still needs to address whether 12'-dry lane during 10-year storm event will be maintained.

Comment response: Street section 1 N & S (Figure 5) follow typical Section A-18 on the plan set. This section has a ROW width of 80.5-ft. On the North side there a 2-ft wide curb and gutter and a minimum travel lane width of 22-ft (two 11-ft wide travel lanes). The calculated 100-yr top with for cross section 1-N is 9.3 ft, resulting in a drivable dry lane surface of 14.7 ft. On the south side of section 1 there is a 2-ft wide curb and gutter and two travel lanes (12 ft and 12.5 ft). The calculated 100-yr top with for cross section 1-S is 10.3 ft, resulting in a drivable surface of 14.7 ft. If the dry lane criteria is met for the 100-yr it can be safely assumed this condition is also met in the lesser 10-yr event.

Street section 2 (N&S) and 3 (N&S) (Figure 5) follow typical section B-18 in the plan set. These sections have a ROW width varying from 68-79 ft. These section all have a 2-ft curb and gutter and at minimum an 11-ft and 12-ft driving lane. The calculated 100-yr top width for these section ranges from 5.4 to 7.5 ft, resulting in a minimum dry lane area of 17.5 in the 100-yr event. If the dry lane criteria is met for the 100-yr it can be safely assumed this condition is also met in the lesser 10-yr event. Figure 5, from the original study, showing the location of the aforementioned cross sections, and the FlowMaster cross section worksheets are included in Appendix B for reference.

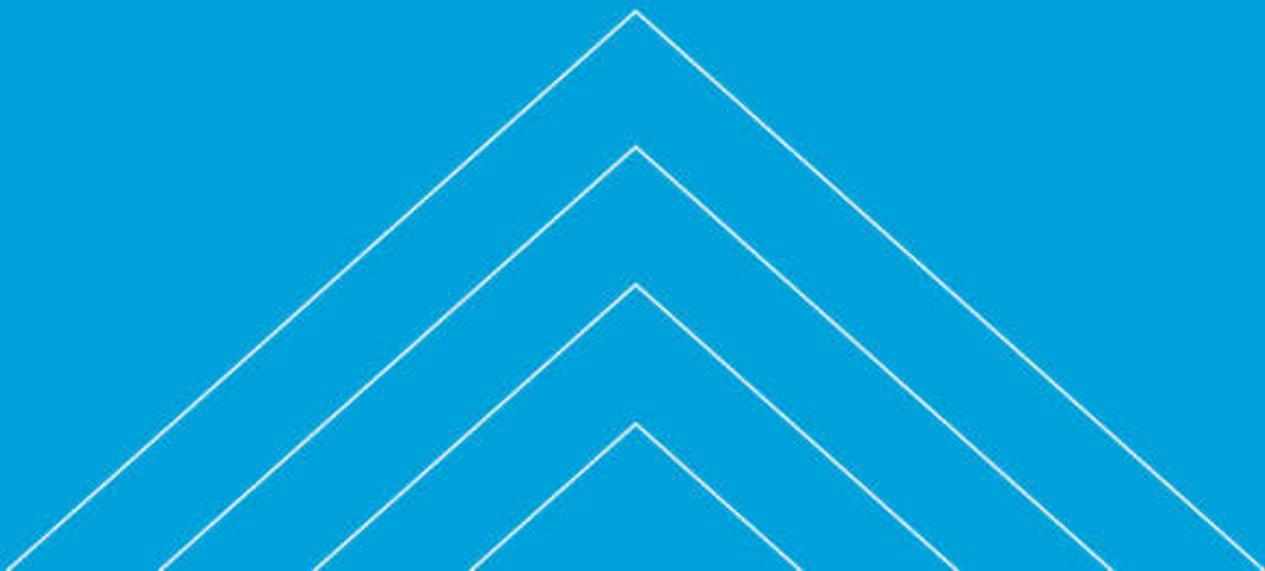
Comment #4: It appears that the hydraulic grade line (HGL) for the proposed storm drain system is totally missing on the plan & profiles sheets. Provide as such in the next submittal.

Comment response: The hydraulic grade line (HGL) has been added to the plan and profile sheets.



Janelle Klein, PE (NV #17313)
Senior Engineer

Appendices



Appendix A. Referenced Study/Plans

CITY OF LAS VEGAS		DATE:
INTER-OFFICE MEMORANDUM		May 18, 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 – Lake Mead Blvd. Street Improvements from Desert Foothill Boulevard to Kettle Ridge Drive (Street J) (also Lake Mead Rough Grade from Kettle Ridge to Scurry Bend)	
Cross Streets:	Lake Mead Boulevard & Desert Foothill Drive	COPIES TO: Atkins
File Number:	F:\Depot\DSMemos\DS5155D.doc	Howard Hughes Company, LLC
Parcel Number:	137-14-401-006 & 137-23-101-002	Bart Anderson, P.E., DevCo
Zoning Action:	N/A	CCRFC
FEMA Flood Zone	YES	NO X
Proposed Storm Drain	YES	NO X

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1 st Submittal	7/16/2019	8/2/2019	Not Approved	\$400.00	3490116: \$400
2 nd Submittal	9/11/2019	9/28/2019	Not Approved	\$400.00	3563449: \$400
3 rd Submittal & Supplement	10/16/2019 & 11/7/2019	11/7/2019	Conditional Approval	\$400.00	3612959: \$400
CCRFC	4/20/2020	5/18/2020	Concurrence Recv'd	N/C	N/C
TOTAL FEES (LDDRS):				\$1,200.00	----

REMARKS:

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

The following conditions are repeated until they are complete:

1. The *Master Drainage Study Update* for *Summerlin West Planning Area* proposes a modification to internal flow patterns that alters the flow patterns to the *Beltway Channel* system downstream of the *Summerlin Parkway* interchange. The modification proposes a storm drain system within *Summerlin Village 22* area (Storm Drain F) that will collect flows from the Gowan channel tributary area and route them into the *Beltway Channel* (MPU Facility APBE 0122). This resulted in increased flows in the *Beltway Channel* segment between *Summerlin Parkway* and *Far Hills Boulevard*, ie, mitigation measures are required for the impacted *Beltway Channel* segment.

A technical drainage study for the modification of the *Beltway Channel* has been submitted and has just been conditionally approved. The subject improvement plans will not be approved prior to the construction bond of the *Beltway Channel Modification* project has been executed.

2. **Second Request:** Clearly label "Public" and Private" storm drains in all pertinent sheets. For example, storm drains in the perimeter streets such as *Lake Mead Boulevard* are "Public"; storm drains in the common elements such as SDDI #10, SDDI #11 and the connecting pipes are "Private". Review and revise accordingly in the next submittal.

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

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

END OF REMARKS

ays

T/R/S: T20S/R59E/14

AREA K-14

The following conditions are repeated until they are complete:

2. The *Master Drainage Study Update* for *Summerlin West Planning Area* proposes a modification to internal flow patterns that alters the flow patterns to the *Beltway Channel* system downstream of the *Summerlin Parkway* interchange. The modification proposes a storm drain system within *Summerlin Village 22* area (Storm Drain F) that will collect flows from the Gowan channel tributary area and route them into the *Beltway Channel* (MPU Facility APBE 0122). This resulted in increased flows in the *Beltway Channel* segment between *Summerlin Parkway* and *Far Hills Boulevard*, ie, mitigation measures are required for the impacted *Beltway Channel* segment.

A technical drainage study for the modification of the *Beltway Channel* has been submitted and has just been conditionally approved. The subject drainage study will not be approved prior to the construction bond of the *Beltway Channel Modification* project has been executed.

3. The site is adjacent to or crosses an existing or proposed *Clark County Regional Flood Control District* (CCRFCD) master planned facility. Therefore, CCRFCD concurrence is required prior to final approval of the drainage study.

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>

4. **Second Request:** Clearly label "Public" and Private" storm drains in all pertinent sheets. For example, storm drains in the perimeter streets such as *Lake Mead Boulevard* are "Public"; storm drains in the common elements such as SDDI #10, SDDI #11 and the connecting pipes are "Private". Review and revise accordingly in the next submittal.

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

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

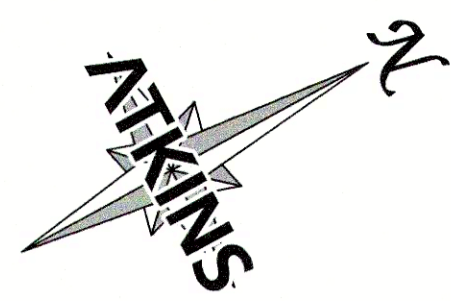


Sample Letter to
certify CD.pdf

NOTE: 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/14
AREA K-14



- STORM DRAIN CONSTRUCTION NOTES**
- 1. INSTALL STORM DRAIN. SEE SHEET 8 FOR ADDITIONAL STORM DRAIN NOTES AND INFORMATION.
 - 2. INSTALL TYPE "CM2" DROP INLET PER CCAUSD #412.1 & #421
 - 3. INSTALL MODIFIED TYPE "2" DROP INLET PER NDOT STANDARD R-4.2.1
 - 4. INSTALL TYPE I SD MANHOLE PER CCAUSD #403
 - 5. INSTALL TYPE II SD MANHOLE PER CCAUSD #405.2
 - 6. INSTALL TYPE III SD MANHOLE PER CCAUSD #406
 - 7. REMOVE CAP AND CONNECT TO EXISTING STORM DRAIN STUB
 - 8. STUB & PLUG STORM DRAIN FOR FUTURE CONNECTION PER MANUFACTURER'S PLUG, OR APPROVED EQUAL. SEE DETAIL B ON SHEET 57.
 - 9. CONNECT PROPOSED 24" PIPE TO EXISTING MANHOLE. RE-CONSTRUCT EXISTING 66" PIPE OPENING TO FIT 24" PIPE
 - 10. OUTLET STORM DRAIN PIPE AT WALL FACE. SEE DETAILS A AND B ON SHEET 72.
 - 11. INSTALL RIP-RAP (D50=6", THICKNESS=16")

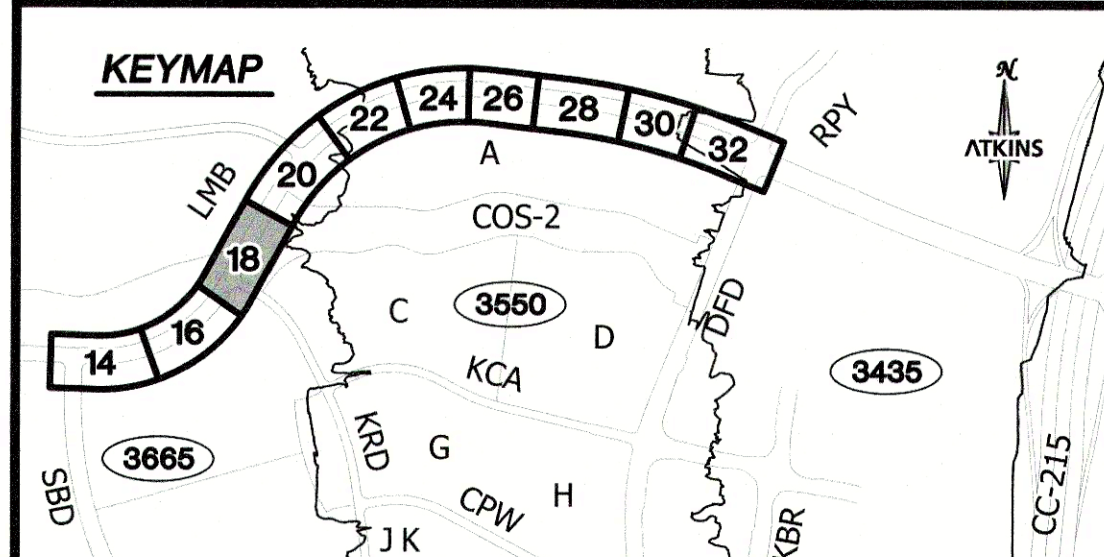
REVISIONS		
REV.	DESCRIPTION	BY DATE APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Tel: 702.263.7275
Fax: 702.263.7200

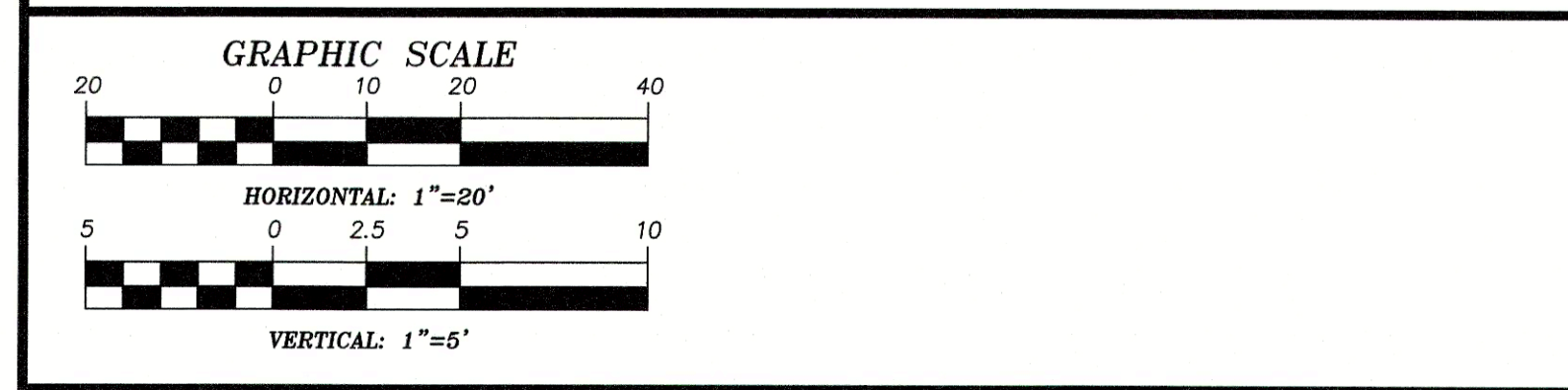
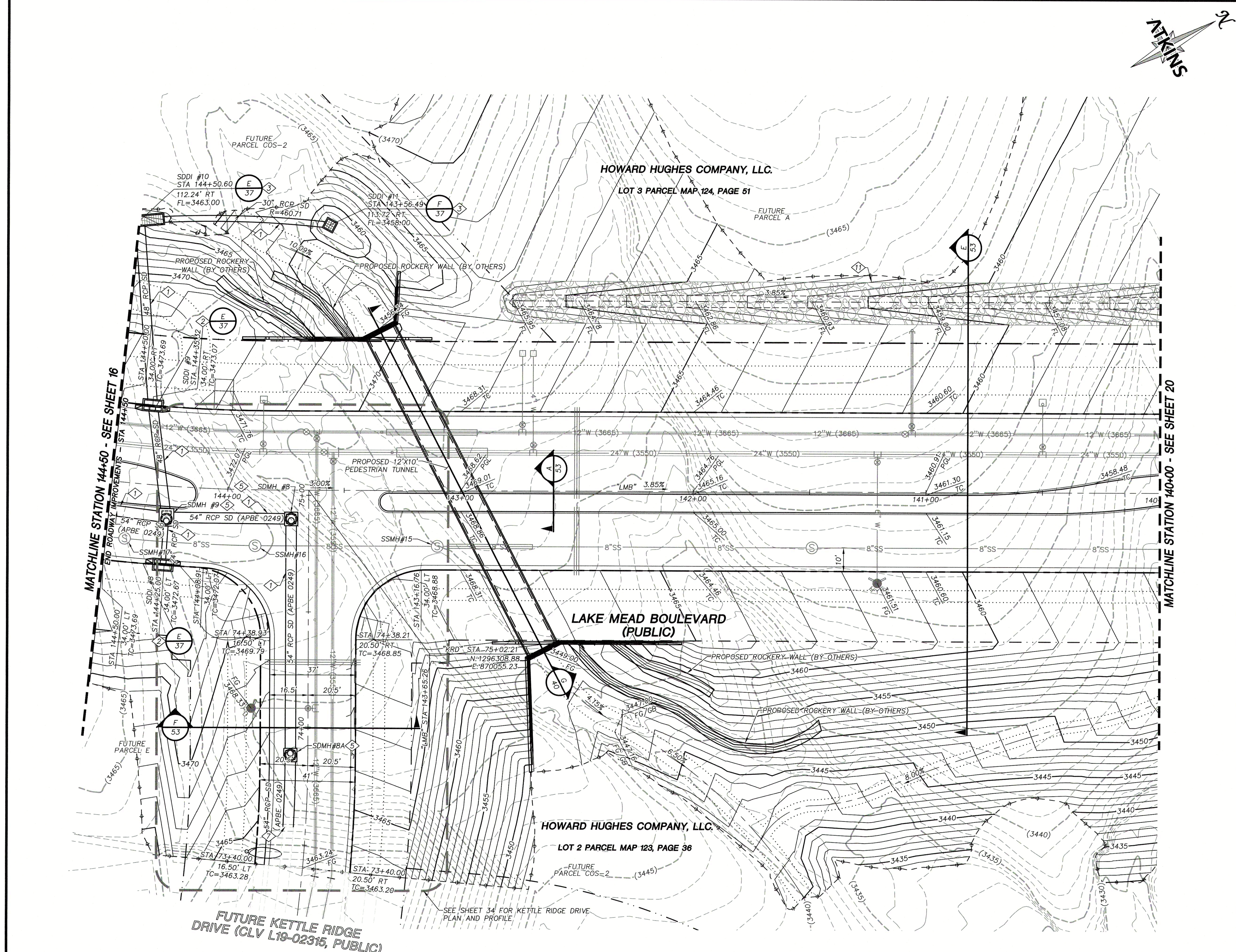
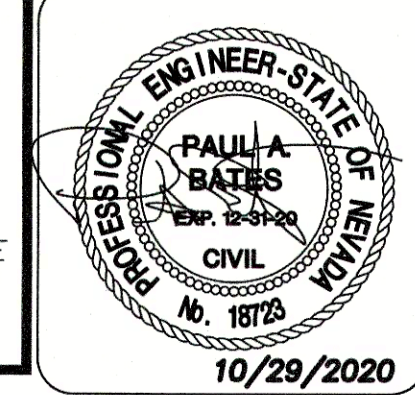
SUMMERLIN

SUMMERLIN VILLAGE 22
LAKE MEAD BOULEVARD - DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)
LAKE MEAD BOULEVARD ROUGH GRADE - KETTLE RIDGE DRIVE (STREET J) TO SCURRY BEND DRIVE (STREET N)
ROADWAY GRADING PLAN
STA 140+00 TO STA 144+50

DESIGNED BY: 101V8077
CHECKED BY: L. MANACLAY
DATE: NOVEMBER, 2020
DRAWING NO.: 18/74
VERT.: NONE
JOB NO.: 100060653



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.



GRADING PLAN CERTIFICATION
PAUL BATES PE#18723 DATE 12/6/2020
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#5155

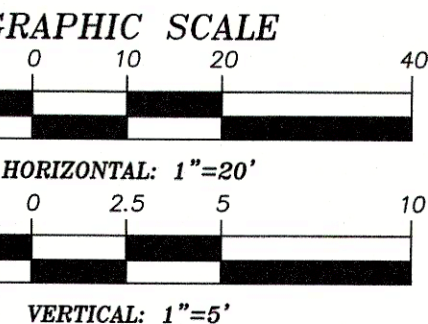
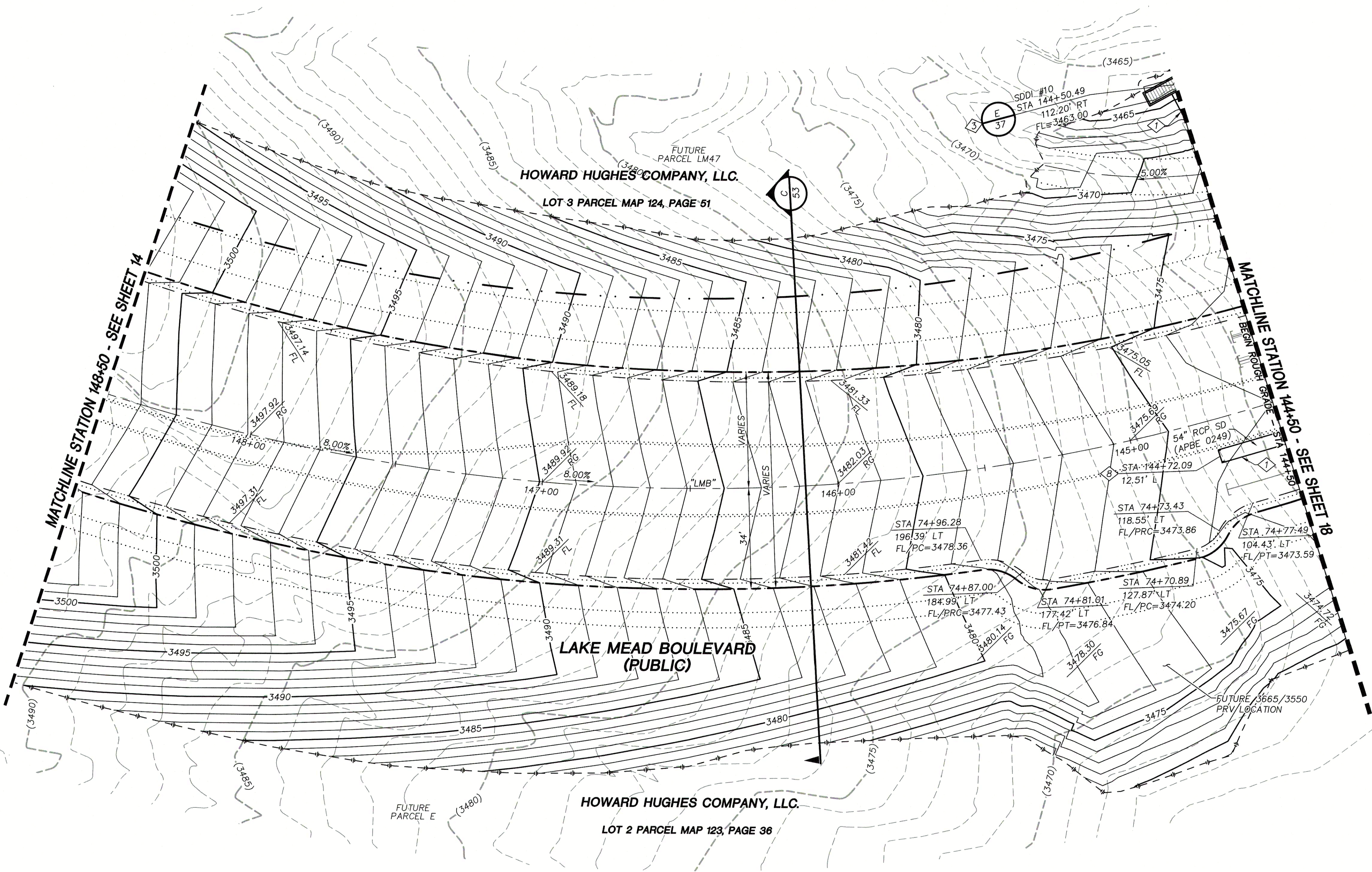
BASIS OF BEARING
GRID NORTH AS DEFINED BY THE CENTRAL MERIDIAN OF THE NEVADA COORDINATE REFERENCE SYSTEM (NCRS), LAS VEGAS HIGH ELEVATION ZONE, NORTH AMERICAN DATUM OF 1983; SAID MERIDIAN BEING COINCIDENT WITH 114°58' WEST OF THE GREENWICH MERIDIAN.

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 dig
UnderGround
1-702-432-6300
SYSTEM OF TRANSPORTATION

Call before you dig
Call 811
1-800-642-2444

CALL BEFORE YOU DIG
UNDERGROUND UTILITIES
1-702-227-2929



GRADING PLAN CERTIFICATION

PAUL BATES PE#18723 DATE 12/2/2020 DS#5155

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.

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.

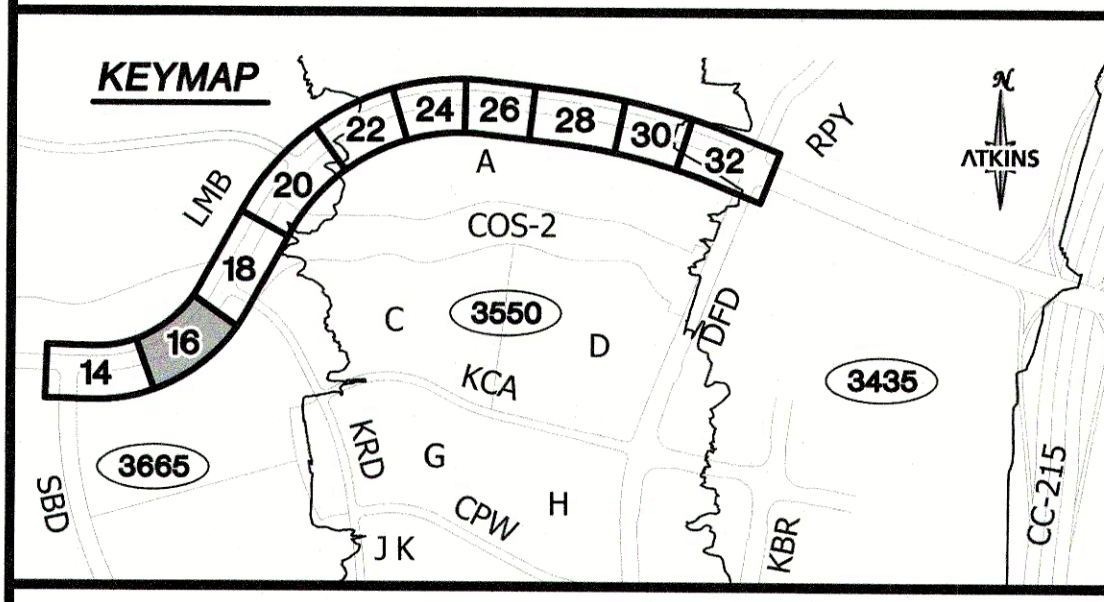
BENCHMARK

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 dig 1-702-432-5300

Call before you dig 1-800-642-2444

Call before you dig 1-702-227-2929



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.

- STORM DRAIN CONSTRUCTION NOTES**
1. INSTALL STORM DRAIN. SEE SHEET 8 FOR ADDITIONAL STORM DRAIN NOTES AND INFORMATION.
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 4. INSTALL TYPE I SD MANHOLE PER CCAUSD #403
 5. INSTALL TYPE II SD MANHOLE PER CCAUSD #405.2
 6. INSTALL TYPE III SD MANHOLE PER CCAUSD #406
 7. REMOVE CAP AND CONNECT TO EXISTING STORM DRAIN STUB
 8. STUB & PLUG STORM DRAIN FOR FUTURE CONNECTION PER MANUFACTURER'S PLUG, OR APPROVED EQUAL. SEE DETAIL B ON SHEET 57.
 9. CONNECT PROPOSED 24" PIPE TO EXISTING MANHOLE. RE-CONSTRUCT EXISTING 66" PIPE OPENING TO FIT 24" PIPE
 10. OUTLET STORM DRAIN PIPE AT WALL FACE. SEE DETAILS A AND B ON SHEET 72.
 11. INSTALL RIP-RAP (D50=8", THICKNESS=16")

ROUGH GRADE

THE PROPOSED ROUGH GRADE PAVEMENT IS 8 1/2" BELOW THE FINISH GRADE SHOWN WITHIN THESE PLANS.

NOTE:

THIS SECTION OF LAKE MEAD BOULEVARD TO BE ROUGH GRADED ONLY TO ACT AS INTERIM DIVERSION CHANNEL.

ATKINS 2270 Corporate Circle Suite 200 Henderson, Nevada 89074 Telephone: +1702.263.7275 Fax: +1702.263.7200

SUMMERLIN

DESIGNED BY: N. BARCOS
DRAWN BY: L. MAMACLAY
CHECKED BY: P. BATES
DATE: NOVEMBER, 2020
DRAWING NO.: 16/74

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

PROJECT INFORMATION

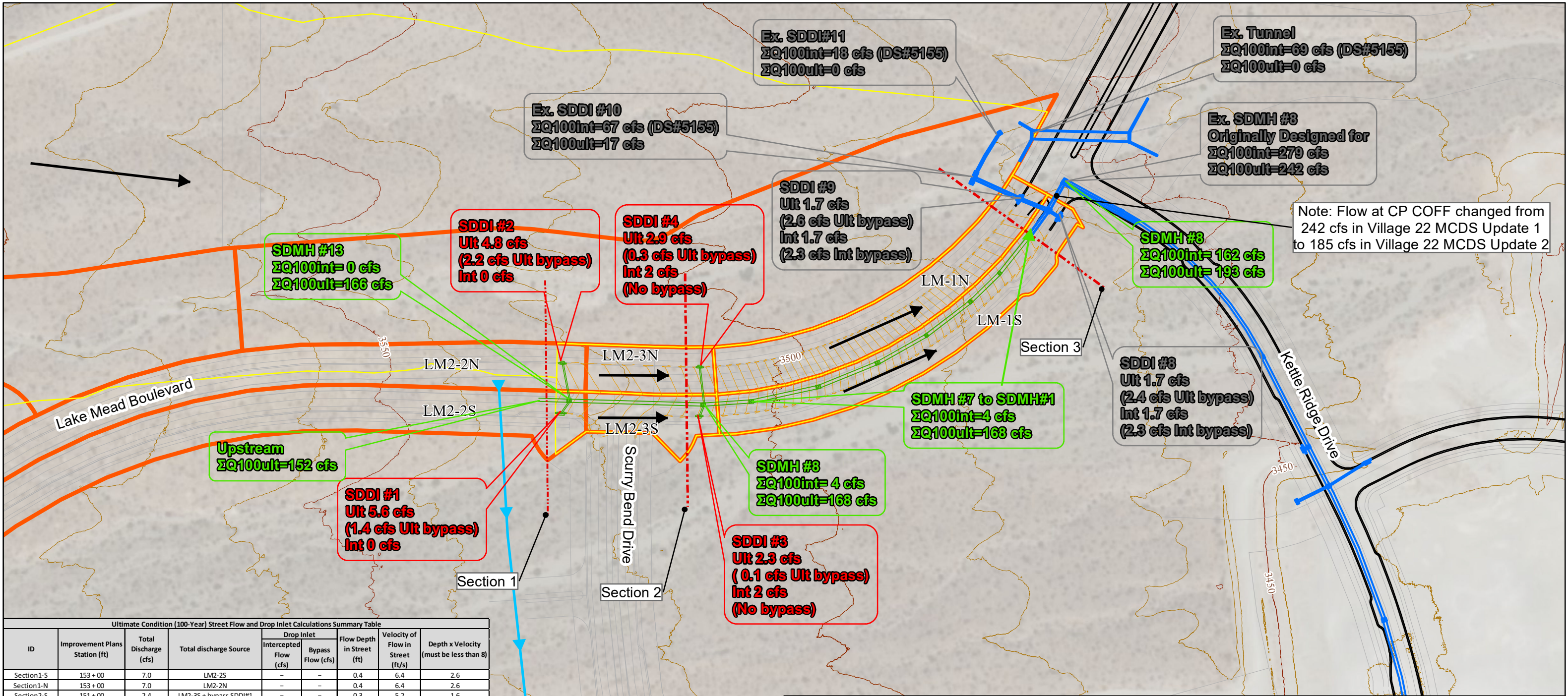
SUMMERLIN VILLAGE 22
LAKE MEAD BOULEVARD - DESERT FOOTHILLS DRIVE TO KETTLE RIDGE DRIVE (STREET J)
LAKE MEAD BOULEVARD ROUGH GRADE - KETTLE RIDGE DRIVE (STREET J) TO SCURRY BEND DRIVE (STREET N)
ROADWAY GRADING PLAN
STA. 144+50 TO STA. 148+50

PROFESSIONAL ENGINEER - STATE OF NEVADA
PAUL A. BATES
No. 181723
CIVIL
10/29/2020

100060653

Appendix B. Hydraulics Calculations

B.1. Figure 5 Hydraulics Workmap



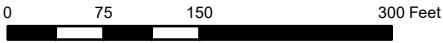
Ultimate Condition (100-Year) Street Flow and Drop Inlet Calculations Summary Table								
ID	Improvement Plans Station (ft)	Total Discharge (cfs)	Total discharge Source	Drop Inlet		Flow Depth in Street (ft)	Velocity of Flow in Street (ft/s)	Depth x Velocity (must be less than 8)
				Intercepted Flow (cfs)	Bypass Flow (cfs)			
Section1-S	153 + 00	7.0	LM2-2S	-	-	0.4	6.4	2.6
Section1-N	153 + 00	7.0	LM2-2N	-	-	0.4	6.4	2.6
Section2-S	151 + 00	2.4	LM2-3S + bypass SDDI#1	-	-	0.3	5.2	1.6
Section2-N	151 + 00	3.2	LM2-3N + bypass SDDI#2	-	-	0.3	5.5	1.7
Section3-S	145 + 00	4.1	LM-1S + bypass SDDI#3	-	-	0.3	5.7	1.7
Section3-N	145 + 00	4.3	LM-1N + bypass SDDI#4	-	-	0.3	5.8	1.7
SDDI#1	152 + 83.74	7.0	LM2-2S	5.6	1.4	-	-	-
SDDI#2	152 + 83.75	7.0	LM2-2N	4.8	2.2	-	-	-
SDDI#3	150 + 67.2	2.4	LM2-3S + bypass SDDI#1	2.3	0.1	-	-	-
SDDI#4	150 + 65.42	3.2	LM2-3N + bypass SDDI#2	2.9	0.3	-	-	-
SDDI#8	144+25.46	4.1	LM-1S + bypass SDDI#3	1.7	2.4	-	-	-
SDDI#9	144+25.46	4.3	LM-1N + bypass SDDI#4	1.7	2.6	-	-	-

Interim Condition (100-Year) Street Flow and Drop Inlet Calculations Summary Table								
ID	Improvement Plans Station (ft)	Total Discharge (cfs)	Total discharge Source	Drop Inlet		Flow Depth in Street (ft)	Velocity of Flow in Street (ft/s)	Depth x Velocity (must be less than 8)
				Intercepted Flow (cfs)	Bypass Flow (cfs)			
Section 1S	153 + 00	0.0	NA	-	-	NA	NA	NA
Section 1N	153 + 00	0.0	NA	-	-	NA	NA	NA
Section 2S	151 + 00	2.0	LM2-3S + bypass SDDI#1	-	-	0.3	5.1	1.5
Section 2N	151 + 00	2.0	LM2-3N + bypass SDDI#2	-	-	0.3	5.1	1.5
Section 3S	145 + 00	4.0	LM-1S + bypass SDDI#3	-	-	0.3	5.7	1.7
Section 3N	145 + 00	4.0	LM-1N + bypass SDDI#4	-	-	0.3	5.7	1.7
SDDI#1	152 + 83.74	0.0	NA	0.0	0.0	-	-	-
SDDI#2	152 + 83.75	0.0	NA	0.0	0.0	-	-	-
SDDI#3	150 + 67.2	2.0	LM2-3S + bypass SDDI#1	2.0	0.0	-	-	-
SDDI#4	150 + 65.42	2.0	LM2-3N + bypass SDDI#2	2.0	0.0	-	-	-
SDDI#8	144+25.46	4	LM-1S + bypass SDDI#3	1.7	2.3	-	-	-
SDDI#9	144+25.46	4	LM-1N + bypass SDDI#4	1.7	2.3	-	-	-

Figure 5: Hydraulics Workmap
Village 22 Lake Mead Boulevard (Kettle Ridge to Scurry Bend)

- Legend
- Existing Storm Water Facilities
 - Proposed Storm Drain
 - Swale
 - Interim Subbasins
 - Ultimate Subbasins
 - Existing Roadway
 - StormDrain_Existing
 - Proposed Future Developments
 - Major Contours
 - Minor Contours

Intercepted Flow
(Bypass Flow)



1 inch = 150 feet



Howard Hughes
THE HOWARD HUGHES CORPORATION

ATKINS

Member of the SNC-Lavalin Group

Aerial Imagery Source:ESRI 2019
Projection: State Plane, Nevada East, NAD83 2011, US Feet

B.2. Normal Depth Street Section Calculations

Section1 N

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.080 ft/ft
Discharge	7.00 cfs

Section Definitions

Station (ft)	Elevation (ft)
0+00	0.50
0+00	0.00
0+02	0.20
0+24	0.69

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.50)	(0+02, 0.20)	0.015
(0+02, 0.20)	(0+24, 0.69)	0.016

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

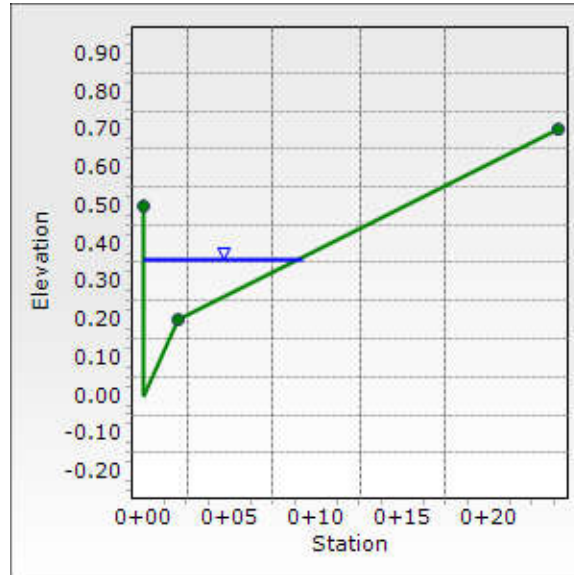
Results	
Normal Depth	0.4 ft
Elevation Range	0.0 to 0.7 ft
Flow Area	1.1 ft ²
Wetted Perimeter	9.6 ft
Hydraulic Radius	0.1 ft
Top Width	9.3 ft
Normal Depth	0.4 ft
Critical Depth	0.5 ft
Critical Slope	0.007 ft/ft
Velocity	6.32 ft/s
Velocity Head	0.62 ft
Specific Energy	0.98 ft
Froude Number	3.216
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.0 ft

GVF Input Data	
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	0.4 ft
Critical Depth	0.5 ft
Channel Slope	0.080 ft/ft
Critical Slope	0.007 ft/ft

Cross Section for Section1 N

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.080 ft/ft
Normal Depth	0.4 ft
Discharge	7.00 cfs



Section1 S

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.080 ft/ft
Discharge	7.00 cfs

Section Definitions

Station (ft)	Elevation (ft)
0+00	0.50
0+00	0.00
0+02	0.20
0+27	0.66

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.50)	(0+02, 0.20)	0.015
(0+02, 0.20)	(0+27, 0.66)	0.016

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

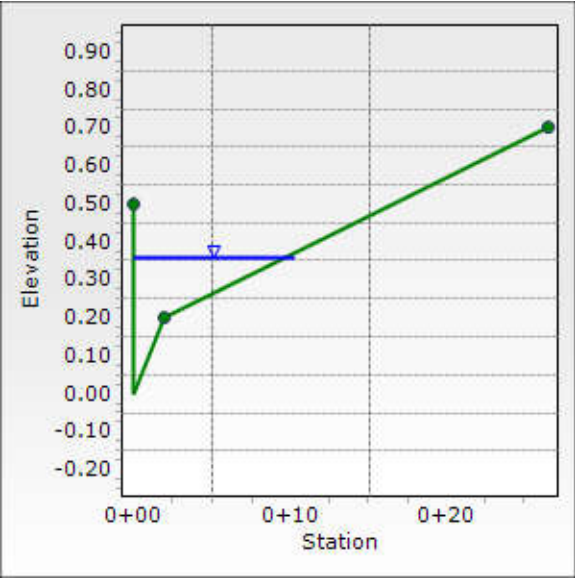
Results	
Normal Depth	0.4 ft
Elevation Range	0.0 to 0.7 ft
Flow Area	1.2 ft ²
Wetted Perimeter	10.6 ft
Hydraulic Radius	0.1 ft
Top Width	10.3 ft
Normal Depth	0.4 ft
Critical Depth	0.5 ft
Critical Slope	0.007 ft/ft
Velocity	6.06 ft/s
Velocity Head	0.57 ft
Specific Energy	0.93 ft
Froude Number	3.189
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.0 ft

GVF Input Data	
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	0.4 ft
Critical Depth	0.5 ft
Channel Slope	0.080 ft/ft
Critical Slope	0.007 ft/ft

Cross Section for Section1 S

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.080 ft/ft
Normal Depth	0.4 ft
Discharge	7.00 cfs



Section2 N

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.080 ft/ft
Discharge	3.20 cfs

Section Definitions

Station (ft)	Elevation (ft)
0+00	0.50
0+00	0.00
0+02	0.20
0+25	0.69

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.50)	(0+02, 0.20)	0.015
(0+02, 0.20)	(0+25, 0.69)	0.016

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

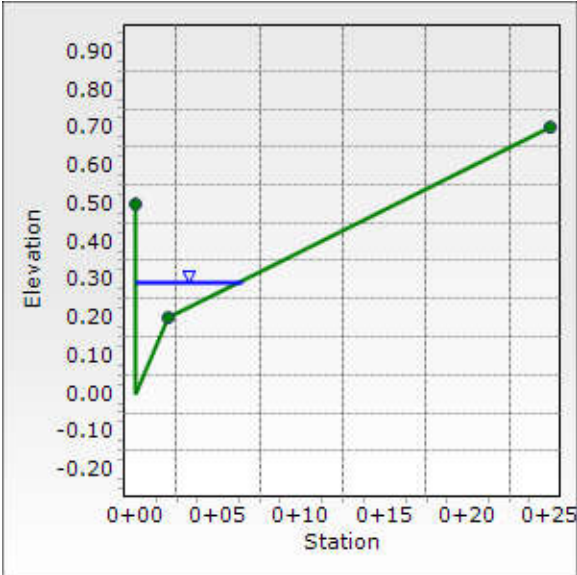
Results	
Normal Depth	0.3 ft
Elevation Range	0.0 to 0.7 ft
Flow Area	0.6 ft ²
Wetted Perimeter	6.7 ft
Hydraulic Radius	0.1 ft
Top Width	6.4 ft
Normal Depth	0.3 ft
Critical Depth	0.4 ft
Critical Slope	0.007 ft/ft
Velocity	5.35 ft/s
Velocity Head	0.44 ft
Specific Energy	0.74 ft
Froude Number	3.091
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.0 ft

GVF Input Data	
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	0.3 ft
Critical Depth	0.4 ft
Channel Slope	0.080 ft/ft
Critical Slope	0.007 ft/ft

Cross Section for Section2 N

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.080 ft/ft
Normal Depth	0.3 ft
Discharge	3.20 cfs



Section2 S

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.080 ft/ft
Discharge	2.40 cfs

Section Definitions

Station (ft)	Elevation (ft)
0+00	0.50
0+00	0.00
0+02	0.20
0+25	0.69

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.50)	(0+02, 0.20)	0.015
(0+02, 0.20)	(0+25, 0.69)	0.016

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

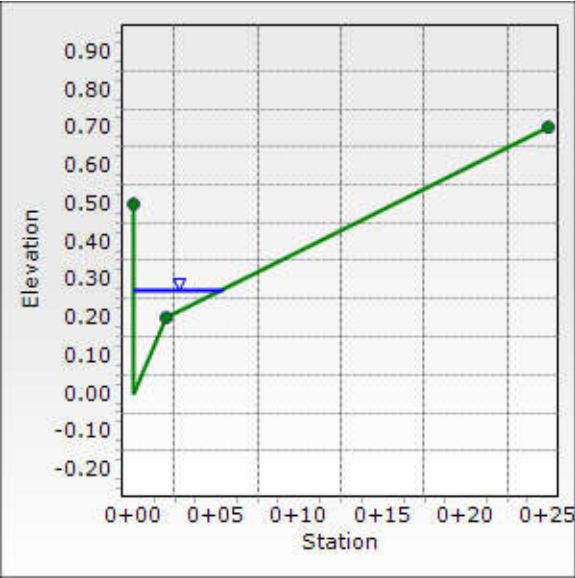
Results	
Normal Depth	0.3 ft
Elevation Range	0.0 to 0.7 ft
Flow Area	0.5 ft ²
Wetted Perimeter	5.7 ft
Hydraulic Radius	0.1 ft
Top Width	5.4 ft
Normal Depth	0.3 ft
Critical Depth	0.4 ft
Critical Slope	0.008 ft/ft
Velocity	5.09 ft/s
Velocity Head	0.40 ft
Specific Energy	0.68 ft
Froude Number	3.046
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.0 ft

GVF Input Data	
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	0.3 ft
Critical Depth	0.4 ft
Channel Slope	0.080 ft/ft
Critical Slope	0.008 ft/ft

Cross Section for Section2 S

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.080 ft/ft
Normal Depth	0.3 ft
Discharge	2.40 cfs



Section3 N

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.080 ft/ft
Discharge	4.30 cfs

Section Definitions

Station (ft)	Elevation (ft)
0+00	0.50
0+00	0.00
0+02	0.20
0+25	0.69

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.50)	(0+02, 0.20)	0.015
(0+02, 0.20)	(0+25, 0.69)	0.016

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

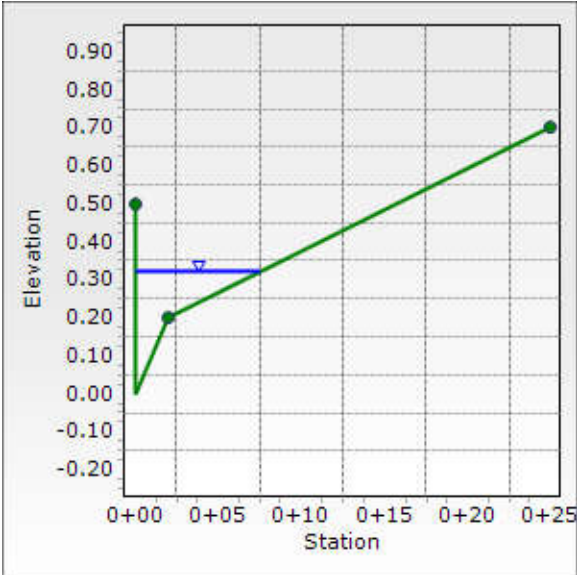
Results	
Normal Depth	0.3 ft
Elevation Range	0.0 to 0.7 ft
Flow Area	0.8 ft ²
Wetted Perimeter	7.9 ft
Hydraulic Radius	0.1 ft
Top Width	7.5 ft
Normal Depth	0.3 ft
Critical Depth	0.4 ft
Critical Slope	0.007 ft/ft
Velocity	5.64 ft/s
Velocity Head	0.49 ft
Specific Energy	0.81 ft
Froude Number	3.123
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.0 ft

GVF Input Data	
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	0.3 ft
Critical Depth	0.4 ft
Channel Slope	0.080 ft/ft
Critical Slope	0.007 ft/ft

Cross Section for Section3 N

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.080 ft/ft
Normal Depth	0.3 ft
Discharge	4.30 cfs



Section3 S

Project Description	
Friction Method	Manning
Solve For	Formula
	Normal Depth
Input Data	
Channel Slope	0.080 ft/ft
Discharge	4.10 cfs

Section Definitions

Station (ft)	Elevation (ft)
0+00	0.50
0+00	0.00
0+02	0.20
0+25	0.69

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.50)	(0+02, 0.20)	0.015
(0+02, 0.20)	(0+25, 0.69)	0.016

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

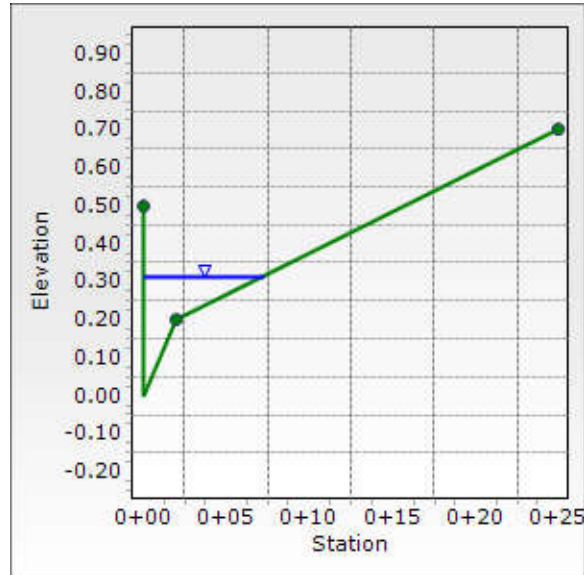
Results	
Normal Depth	0.3 ft
Elevation Range	0.0 to 0.7 ft
Flow Area	0.7 ft ²
Wetted Perimeter	7.7 ft
Hydraulic Radius	0.1 ft
Top Width	7.3 ft
Normal Depth	0.3 ft
Critical Depth	0.4 ft
Critical Slope	0.007 ft/ft
Velocity	5.60 ft/s
Velocity Head	0.49 ft
Specific Energy	0.80 ft
Froude Number	3.130
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.0 ft

GVF Input Data	
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 ft
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	0.3 ft
Critical Depth	0.4 ft
Channel Slope	0.080 ft/ft
Critical Slope	0.007 ft/ft

Cross Section for Section3 S

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.080 ft/ft
Normal Depth	0.3 ft
Discharge	4.10 cfs



Atkins

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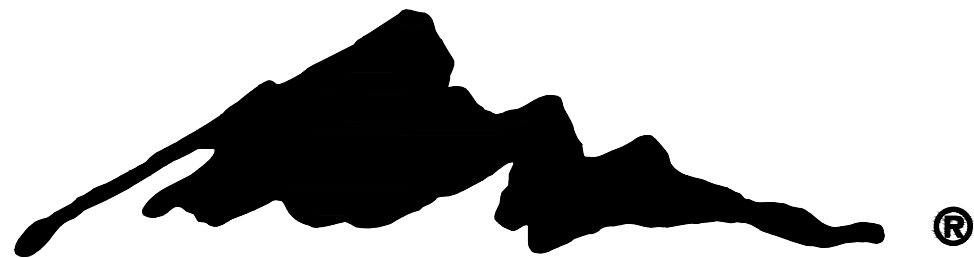
Direct: +1 702 551 0365

Janelle.klein@atkinsglobal.com

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	END TO STA 150+00
9	ROADWAY PLAN & PROFILE	END TO STA 150+00
10	ROADWAY GRADING PLAN	STA 150+00 TO STA 146+00
11	ROADWAY PLAN & PROFILE	STA 150+00 TO STA 146+00
12	ROADWAY GRADING PLAN 3	STA 146+00 TO BEGIN
13	ROADWAY PLAN & PROFILE	STA 146+00 TO BEGIN
14	STORM DRAIN LATERAL PROFILE	
15	WATER LATERAL PROFILES	
16	STREETLIGHT PLAN	
17	TRAFFIC CONTROL PLAN	
18	TYPICAL SECTIONS	
19	UNDERGROUNDS	
20	STORM DRAIN DETAILS	
21	WATER DETAILS	
22	STREETLIGHT DETAILS	
23	INTERSECTION DETAIL	
24	INTERSECTION DETAIL	

SUMMERLIN VILLAGE 22 NORTH IMPROVEMENT PLANS FOR:

LAKE MEAD BOULEVARD KETTLE RIDGE DRIVE TO SCURRY BEND DRIVE FUTURE VILLAGE 22 SID PROJECT APN# 137-15-811-001



SUMMERLIN®

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](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.

DISCLAIMER NOTE

EXISTING 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 IN THEIR PROPER LOCATION.

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
1.56 AC.

PROPOSED DISTURBED AREA ACREAGE
1.66 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 UPDATE LETTER
DATED ON DECEMBER 2, 2020

OWNER / DEVELOPER

CONTACT: BRIAN WALSH
HOWARD HUGHES COMPANY LLC, A DELAWARE LIMITED LIABILITY COMPANY
10845 GRIFFITH PEAK DRIVE, SUITE 160
LAS VEGAS, NV 89135

BRIAN WALSH SR. VICE PRESIDENT

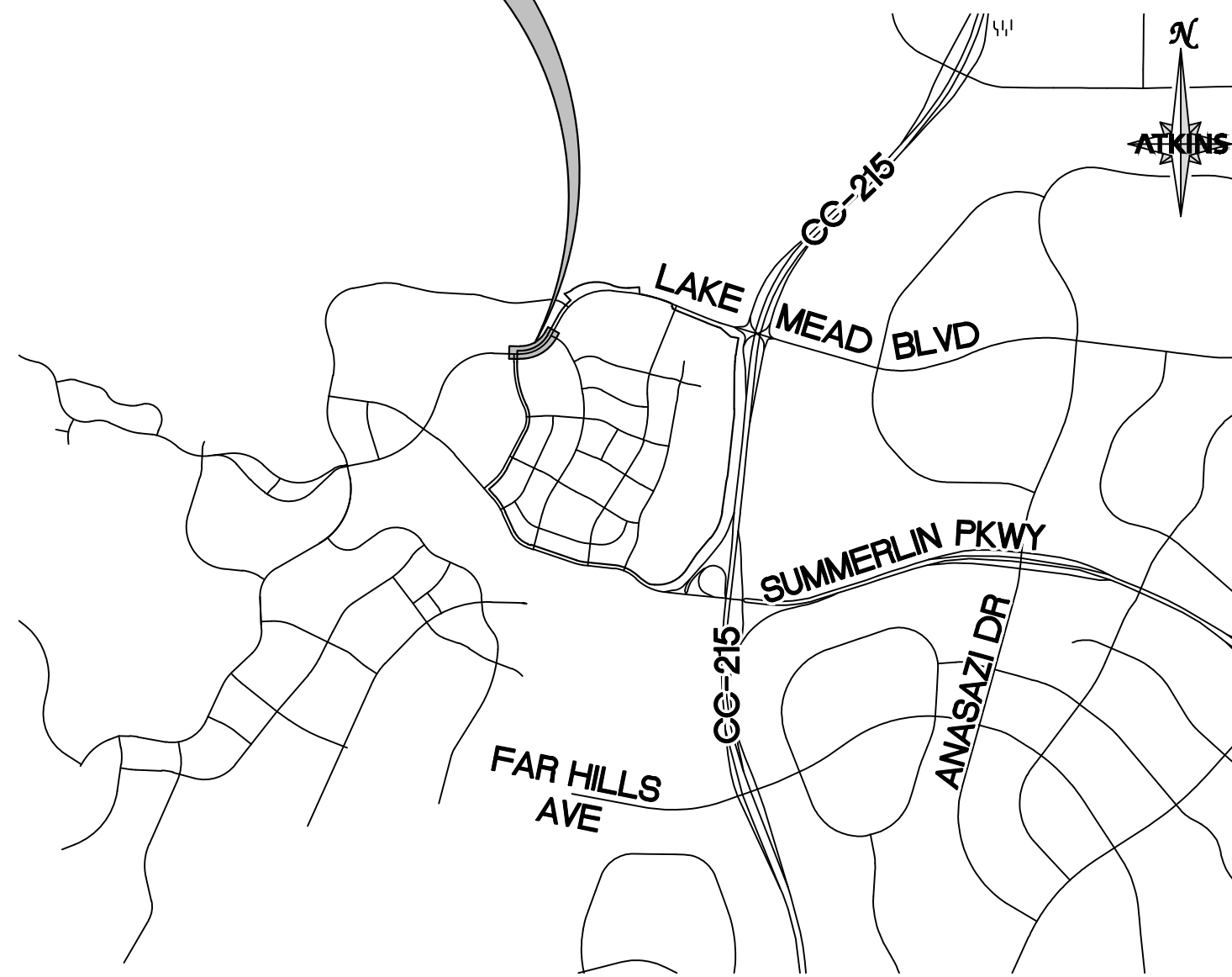
DATE

ENGINEER / CONSULTANT

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

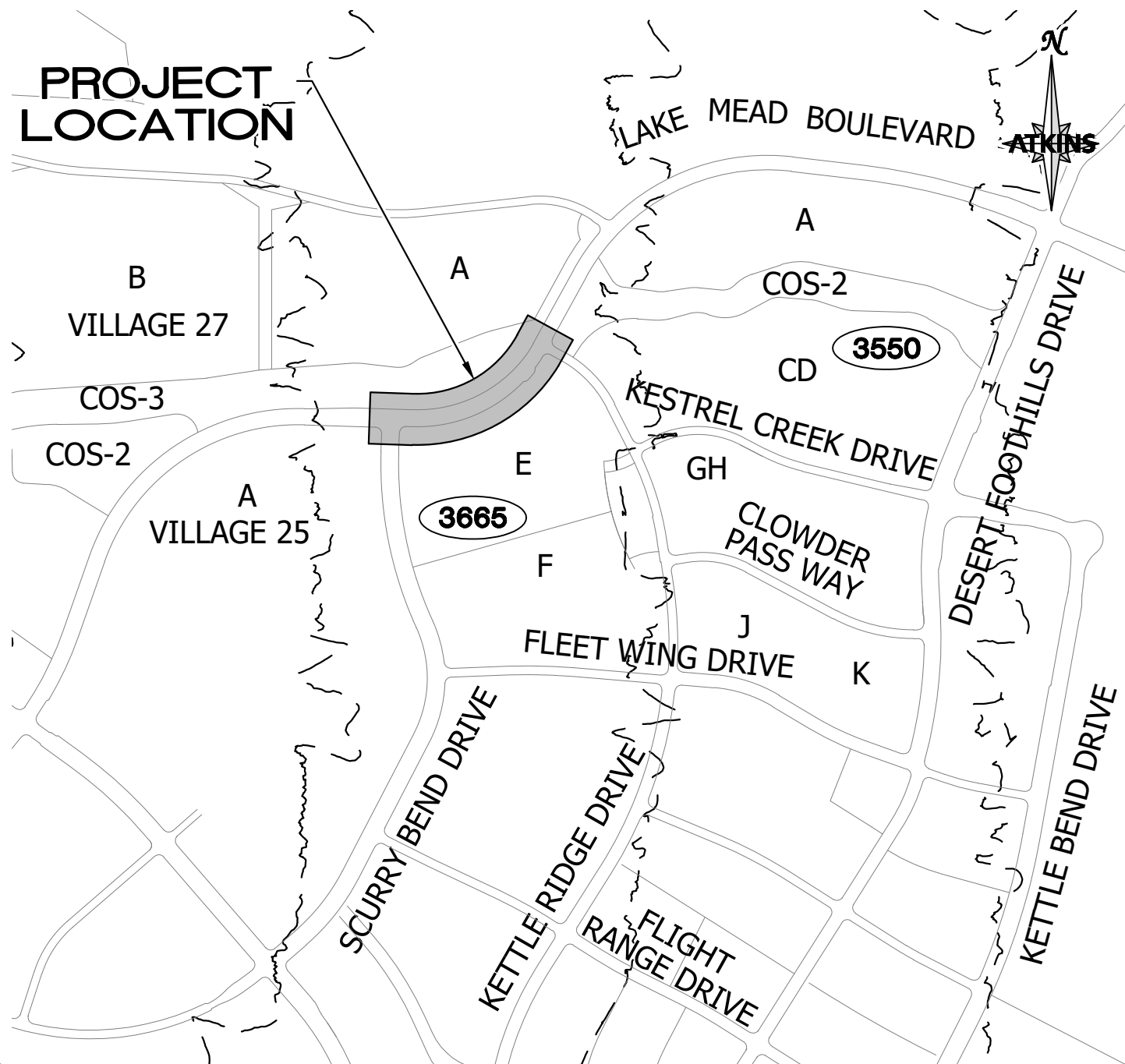
LOCATION MAP

PROJECT SITE
APN 137-15-811-001



VICINITY MAP

PROJECT LOCATION



APPROVALS

CITY OF LAS VEGAS ENGINEERING APPROVAL STAMP

DEPARTMENT OF PLANNING

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

LAS VEGAS FIRE AND RESCUE

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 & ENGINEERING SERVICES

PROJECT NO. FIRST APPROVED DATE:

LVVWD APPROVED FIRE FLOW GPM AT 20 PSI RESIDUAL

SHEETS:

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 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 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 PROJECT 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)

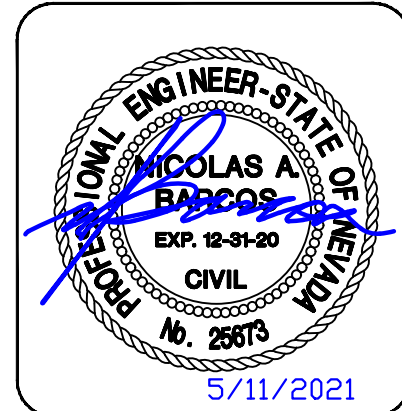
NAVD88 ELEVATION: 989.574 METERS (3,246.63 FEET)

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 163 OF PLATS, PAGE 43, OFFICIAL RECORDS, CITY OF LAS VEGAS CLARK COUNTY, NEVADA



DESIGNED BY: L. MAMACLAY
DRAWN BY: G. HANSEN
CHECKED BY: P. BATES
HORIZ.: 1"=30'
VERT.: NONE
DATE: MAY, 2021
DRAWING NO.: 1/24
JOB NO.: 100069221

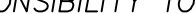
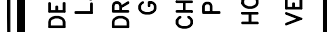
SUMMERLIN VILLAGE 22
LAKE MEAD BOULEVARD
KETTLE RIDGE DRIVE (STREET J) TO SCURRY BEND DRIVE (STREET N)

COVER SHEET

REVISIONS

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1702.263.7275
Fax: +1702.263.7200

SUMMERLIN®

ROADWAY ALIGNMENT DESIGNATIONS "LMB" = LAKE MEAD BOULEVARD "KRD" = KETTLE RIDGE DRIVE "SBD" = SCURRY BEND DRIVE	APPROVED FOR CONSTRUCTION LAS VEGAS VALLEY WATER DISTRICT PLANNING AND ENGINEERING SERVICES PROJECT NO. <u>0000</u> FIRST APPROVED DATE: _____ LVVWD APPROVED FIRE FLOW <u>1500</u> 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 before you dig UnderGround 1-702-432-5300 SYSTEM OF TRANSDUCTION	 Call 811 before you dig UnderGround 1-702-432-5300 SYSTEM OF TRANSDUCTION	 Call before you dig 1-800-642-2444	 Call before you dig 1-702-227-2929	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.	 5/11/2021
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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".

- REVISÉ 06/04/2018

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.

- REVISÉ 04/15/10

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

1. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE LAS VEGAS FIRE AND RESCUE ADOPTED FIRE CODE, CHAPTER #6328 FOR FIRE HYDRANT AND UNDERGROUND 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 PIPING 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 HYDRANT ACCESS ROADS SHALL BE MAINTAINED BEFORE COMPLETION OF ANY REMEDIATION 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 HYDRANT ADJACENT TO THE FIRE HYDRANT. 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. ON ALL UNDERGROUND INSTALLATIONS, ALL 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 FOR FIRE PREVENTION APPROVAL. IFC § 106.3
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

- REVISÉ MARCH 1, 2016

1. ALL CONSTRUCTION SIGNING, BARRICADING, AND TRAFFIC DELINEATION SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST EDITION.

- REVISÉ JUNE 4, 2018

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE DESIGN SPECIFICATIONS FOR CONCRETE AND STEEL REINFORCEMENT SYSTEMS AND THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA, AS SPECIFIED. IT SHALL 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 "6" IN CURBS WHERE SEWER OR GAS LATERALS PASS UNDER THE CURB.
4. POLY(VINYL) (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 RETROW 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 12" T'S SHALL BE USED ON LINES TWELVE INCHES (12") OR ABOVE.
7. WATER MAINS SHALL BE PROTECTED IN ACCORDANCE WITH LVWD 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 LIMIT SHALL BE REPAIRED OR REMOVED AND REPLACED TO THE SATISFACTION OF THE CITY ENGINEER PRIOR TO ACCEPTANCE BY THE CITY OF LAS VEGAS.

REVISÉ 09-16-2020

1. ALL STREET LIGHTING INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE STREET LIGHTING PLANS, THE "UNIFORM STANDARD DRAWINGS FOR PUBLIC WORKS" (USPD), LATEST EDITION, AND THE "UNIFORM STANDARD DRAWINGS FOR PUBLIC WORKS" (USPD), LATEST EDITION.
2. DESIGN PROFESSIONAL AND CONTRACTOR SHALL VERIFY CITY LATEST LED FIXTURE SPECIFICATIONS AND APPROVED FIXTURES PER CITY WEBSITE FOR PUBLIC WORKS (USPD) PRIOR TO ORDERING MATERIALS.
3. LUMINAIRES SHALL BE MARKED TO INDICATE INSTALLATION ORIENTATION, AND SHALL HAVE EXTERNAL LABELS PER ANSI C136 THAT INDICATE WATTAGE AND ARE CLEARLY VISIBLE FROM STREET LEVEL.
4. 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 USPD.
5. ALL EXISTING STREET LIGHTING SHALL REMAIN OPERATIONAL DURING CONSTRUCTION IN ACCORDANCE WITH SECTION 623.0.2.0.1 OF THE USPD.
6. ALL EMPTY CONDUIT SHALL HAVE AT LEAST ONE GREEN NO. 8B AWG WIRE INSTALLED AS TRACER WIRE IN ACCORDANCE WITH SECTION 623.0.2.0.1 OF THE USPD PRIOR TO BACKFILLING AND FINAL INSPECTION.
7. ANY STRUCTURE SUCH AS BLOCK WALLS, CHAIN LINK FENCES, RETAINING WALLS, SHALL LEAVE A MINIMUM CLEARANCE IN COMPLIANCE WITH USD NO. 320A WHEN POLE IS INSTALLED BEHIND SIDEWALK, AND SHALL AT NO POINTS EXCEED THE MINIMUM CLEARANCE.
8. AS-BUILT DRAWINGS SHALL BE SUPPLIED TO THE TRAFFIC ENGINEERING DIVISION PRIOR TO ANY PRE-FINAL INSPECTION. THE AS-BUILT DRAWING NEEDS TO BE STAMPED AS-BUILT AND SIGNED BY THE PREPARER.
9. SERVICE POINTS SHALL BE COORDINATED WITH NV ENERGY, AND WHEREVER POSSIBLE, BE LOCATED NEAR THE CENTER OF THE CIRCUIT. SERVICEPOINTS SHALL BE SHOWN ON THE PLANS.
10. NEW STREETLIGHT SERVICES SHALL BE 200 AMP PADMOUNT AND SHALL PROVIDE CAPACITY FOR 20 OR 24 AVAILABLE CIRCUITS
11. WHEREVER THERE IS AN OVERHEAD UTILITY THAT MAY CONFLICT WITH THE INSTALLATION OF STREETLIGHTING, THE CITY ENGINEER SHALL BE NOTIFIED AND THE UTILITY SHALL BE RESOLVED BEFORE THE DEVELOPER AND THE UTILITIES INVOLED BEFORE STREETLIGHT BASES ARE INSTALLED. AT NO EXPENSE TO THE CITY OF LAS VEGAS.
12. THE CONTRACTOR SHALL FURNISH COMPLETE CONDUIT, WIRE, ETC. FROM SERVICE TO TRANSFORMERS AND CONTROL SYSTEMS IF REQUIRED ON THE PLANS.

REVISED MAY 19, 2020 (LD VERSION)

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

2. ADDITIONAL CONSTRUCTION SITE DISCHARGE BEST MANAGEMENT PRACTICES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT MEET THE PERFORMANCE STANDARDS SPECIFIED IN CLARK COUNTY TITLE 24.40 AND IN THE LAS VEGAS VALLEY CONSTRUCTION SITE BMP GUIDANCE MANUAL.
3. TEMPORARY OR PERMANENT STABILIZATION PRACTICES WILL BE INSTALLED ON DISTURBED AREAS AS SOON AS PRACTICABLE AND NO LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS COMPLETED. IN THE EVENT OF SUCH EXCEPTIONS, NO APPLY, REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVIR000100, SECTION III.A.5.
4. AT A MINIMUM, THE CONTRACTOR OR HIS AGENT SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE OF MATERIALS AND EQUIPMENT THAT ARE EXPOSED TO PRECIPITATION, VEHICLE ENTRANCE AND EXIT LOCATIONS, AND ALL BMPs WEEKLY, AND WITHIN 24 HOURS AFTER ANY RAIN EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR OR HIS AGENT SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY. SUCH EXCEPTIONS TO WEEKLY INSPECTIONS MAY APPLY, SUCH AS SUSPENSION OF LAND DISTURBANCE ACTIVITY REFER TO THE NEVADA STORMWATER GENERAL PERMIT FOR CONSTRUCTION ACTIVITY NVIR000100, SECTION III.A.12.
5. ACCUMULATED SEDIMENT IN BMPs SHALL BE REMOVED WITHIN SEVEN DAYS AFTER A STORMWATER RUNOFF EVENT OR PRIOR TO THE NEXT ANTICIPATED STORM EVENT, WHICHEVER IS EARLIER. SEDIMENT MUST BE REMOVED WHEN BMP DESIGN CAPACITY HAS BEEN REDUCED BY 50 PERCENT OR MORE.

GENERAL NOTES

1. IN THE EVENT OF NATURAL GAS EMERGENCIES CALL 911 AND 1-877-860-6020.
2. MINIMUM HORIZONTAL AND VERTICAL CLEARANCES BETWEEN NATURAL GAS FACILITIES AND ANY UNDERGROUND STRUCTURES OR UTILITIES SHALL BE 10 FEET. MINIMUM CLEARANCES FROM OPEN FLAMES, COMMUNICATING DEVICES, AND ELECTRICAL SHALL BE AT LEAST 12-INCHES OR GREATER AS DICTATED BY LOCAL CODES AND STANDARDS.
a) ANY DEVIATION FROM SPECIFIED MINIMUM CLEARANCES MUST BE APPROVED BY ALL AFFECTED UTILITIES AND/OR MUNICIPALITIES.
3. FOR VALVE ADJUSTMENT CONTACT 702-528-7881 14 DAYS PRIOR TO CONSTRUCTION.
4. IN THE EVENT OF A NATURAL GAS CONFLICT WITH PROPOSED UTILITIES AND/OR STRUCTURES CONTACT 702-365-2098.
5. FOR STABILITY WHEN EXCAVATING (INCLUDING SAW CUTTING AND PAVEMENT REMOVAL) OR NEAR HIGH PRESSURE GAS LINES CONTACT 702-278-8451 48 HOURS PRIOR TO CONSTRUCTION.

ALL CIVIL IMPROVEMENT PLANS MUST INCLUDE SOUTHWEST GAS CORPORATION HIGH PRESSURE NOTES ON THE NOTES SHEET AND ALL SHEETS DEPICTING HIGH PRESSURE NATURAL GAS MAINS AS INDICATED BELOW:

CAUTION: HIGH PRESSURE GAS!!
CALL SOUTHWEST GAS AT 702-278-8451 FOR STANDBY WHEN EXCAVATING OVER OR
NEAR HIGH PRESSURE GAS LINES 48 HOURS PRIOR TO CONSTRUCTION

SOUTHWEST GAS CORPORATION

DATE _____

1. INDICATED GRADES OTHER THAN TC, FG & GUTTER FL ARE ROUGH GRADES.

2. THE ROUGH GRADING PLAN SHALL BE ON THE JOB SITE AT ALL TIMES. THE ROUGH GRADING SHALL BE FINISHED IN CONFORMANCE WITH THE LINES AND GRADES SHOWN ON THE PLANS. THE GRADING QUANTITIES ARE BASED ON THE INFORMATION AND DETAILS SHOWN ON THE PLANS. ANY DEVIATIONS FROM THE PLAN WILL RESULT IN QUANTITY CHANGES.
3. SOILS REPORT 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 UPDATE LETTER DATED ON DECEMBER 30, 2019 AND PROJECT NO. 2020.
4. EARTHWORK QUANTITIES (RAW):
—CUT = 50 CUBIC YARDS
—FILL = 2100 CUBIC YARDS
- A. THE ABOVE QUANTITIES DO NOT REFLECT LOSSES DUE TO SUBSIDENCE OR SHRINKAGE.
- B. THE ABOVE QUANTITIES DO REFLECT USING NATIVE MATERIAL IN LIEU OF TYPE 1 GRAVEL BASE MATERIAL FOR STREET SECTIONS.
- C. THE ABOVE QUANTITIES DO NOT REFLECT ANY EARTHWORK WHICH MAY BE REQUIRED BY THE ENGINEER TO CONSTRUCT ADDITIONAL PROTECTIVE DITCHES OR BERMS NOT SHOWN ON THESE DRAWINGS.

1. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED PUBLIC ENTITIES, THE PROJECT ENGINEER AND CLARK COUNTY AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF WORK.
2. ALL CONSTRUCTION SHALL BE AS SHOWN ON THESE CONTRACT DRAWINGS. ANY REVISIONS SHALL HAVE THE PRIOR WRITTEN APPROVAL OF THE PROJECT ENGINEER.
3. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA NEVADA", LATEST ISSUE; THE "UNIFORM STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION, CLARK COUNTY AREA NEVADA", LATEST ISSUE; THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CLARK COUNTY AREA NEVADA", LATEST ISSUE; AND ALL APPLICABLE STATE, FEDERAL, COUNTY, AND LOCAL ORDINANCES, THE CONTROLLING AGENCY, THE UNIFORM BUILDING CODE; AND ALL LOCAL CITY CODES AND ORDINANCES APPLICABLE.

1. LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM INFORMATION RECEIVED FROM THE APPLICABLE UTILITY COMPANIES. NEITHER THE OWNER NOR ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES OR STRUCTURES NOT SHOWN, OR NOT IN THE LOCATION SHOWN ON THE DRAWINGS. CONTRACTOR TO VERIFY EXISTENCE OF UTILITIES PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR'S RESPONSIBILITY REGARDING UTILITIES SHALL AS BE REQUIRED UNDER SECTION 107.17 OF THE "UNIFORM STANDARD SPECIFICATIONS FOR CLARK COUNTY AREA, NEVADA" AND AS PROVIDED IN THE SPECIFICATIONS.
2. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES TO PROTECT EXISTING UTILITY LINES, STRUCTURES, AND STREET IMPROVEMENTS WHICH ARE TO REMAIN IN PLACE, FROM DAMAGE. ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE COUNTY ENGINEER OR OWNING UTILITY COMPANY AT THE EXPENSE OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL NOT REMOVE TREES, SHRUBS, LAWNS, WALLS, FENCES, SIGNS, STRUCTURES, LIGHTS, OR STRUCTURES OR STRUCTURES LOCATED OUTSIDE OF STREET RIGHT-OF-WAY, EXCEPT WHEN REQUIRED TO DO SO BY THE CONTRACT DRAWINGS OR THE PROJECT ENGINEER. REPLACEMENT, RELOCATION OR RECONSTRUCTION OF ALL EXISTING IMPROVEMENTS INCLUDING SPRINKLER SYSTEMS, LAWNS, FENCES, WALLS, SIGNS, STEPS, SIDEWALKS, DRIVEWAYS, LAWN LIGHTS, AND ALL OTHER ITEMS APPLICABLE TO THIS CONTRACT SHALL BE REQUIRED BY THE PROJECT ENGINEER.
4. THE CONTRACTOR SHALL BACKFILL AND FINE GRADE ALL CUT OR FILL SLOPES TO MATCH EXISTING CONDITIONS TO THE SATISFACTION OF THE PROJECT ENGINEER. WHERE EXISTING LAWNS ARE DAMAGED BY THE CONTRACTOR'S OPERATIONS THE CONTRACTOR WILL SOD THE AFFECTED AREA TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION.
5. THE 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 TRANSITIONS TO BE AS SHOWN PER CONTRACT DRAWINGS.
6. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT EXISTING PERMANENT SURVEY MONUMENTS, ANY MONUMENTS DAMAGED SHALL BE REPLACED AND ADJUSTED PER AVAILABLE RECORDS IN ACCORDANCE WITH N.E.S. CHAPTER 262-020.
7. THE ACTUAL LOCATIONS OF SAW CUT LINES, LIMITS OF COLD MILLING, LIMITS OF DRIVEWAY TRANSITIONS, AND LANDSCAPE PRACTICES SHALL BE DETERMINED IN THE FIELD BY THE RESIDENT PROJECT REPRESENTATIVE.
8. THE ACTUAL LIMITS OF EXISTING OPEN GRADE REMOVAL AND UDACS APPLICATION SHALL BE DETERMINED IN THE FIELD BY THE RESIDENT PROJECT REPRESENTATIVE.
9. ALL STANDARD DRAWINGS REFERENCED IN THIS SET ARE BASED ON THE CURRENT "UNIFORM STANDARD DRAWINGS REVISION SET 1999 RELEASE".
10. UNLESS OTHERWISE SHOWN ON THE CONTRACT DRAWINGS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OR RELOCATION OF ALL WATER SERVICES AND METERS WHICH INTERFERE WITH IMPROVEMENTS SHOWN ON THE CONTRACT DRAWINGS.
11. THE CONTRACTOR SHALL MAINTAIN AN ONGOING REMOVAL PROCESS OF ALL SPILLAGE OF EXCAVATION MATERIAL ON ALL PAVED STREETS.
12. CURB AND GUTTER OF A GRADE OF LESS THAN 4/10 OF ONE PERCENT SHALL BE CONSTRUCTED BY FORMING. EACH JOINT SHALL BE CHECKED FOR GRADE PRIOR TO CONSTRUCTION AND WATER TESTED AS SOON AS POSSIBLE AFTER CONSTRUCTION.
13. THE CONTRACTOR SHALL VERIFY IN THE FIELD ALL DIMENSIONS, EXISTING CONDITIONS AND POINTS OF CONNECTION WITH ADJOINING PROPERTY (PUBLIC AND PRIVATE). ANY DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE PROJECT ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
14. REMOVAL OR RELOCATION OF POWER POLES, TELEPHONE POLES, JOINTLY-OWNED POLES, AND APPURTENANCES WHICH INTERFERE WITH IMPROVEMENTS REQUIRED TO BE CONSTRUCTED UNDER THIS CONTRACT, SHALL BE THE RESPONSIBILITY OF THE UTILITY COMPANY. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH THE UTILITY COMPANIES FAR ENOUGH IN ADVANCE SO AS TO NOT IMPACT THE SCHEDULE.
15. COX COMMUNICATIONS SHALL BE RESPONSIBLE FOR THE VERTICAL OR HORIZONTAL ADJUSTMENT OF ALL CATV FACILITIES WHICH INTERFERE WITH IMPROVEMENTS SHOWN ON THE CONTRACT DRAWINGS, UNLESS NOTED OTHERWISE.
16. NV ENERGY SHALL BE RESPONSIBLE FOR THE RELOCATION OF UNDERGROUND OR OVERHEAD POWER LINES THAT INTERFERE WITH THE REQUIRED IMPROVEMENTS AS SHOWN ON THE CONTRACT DRAWINGS.
17. EMBARO SHALL BE RESPONSIBLE FOR THE VERTICAL OR HORIZONTAL ADJUSTMENT OF ALL TELEPHONE FACILITIES WHICH INTERFERE WITH IMPROVEMENTS SHOWN ON CONTRACT DRAWINGS, UNLESS NOTED OTHERWISE.

VVWD PROJECT #0000

1. WORK PLAN APPROVAL, NOTICE SHALL BE GIVEN TO THE LVVMD COMMUNICATION SUPPORT CENTER (258-7171) TWO WORKING DAYS PRIOR TO THE START OF CONSTRUCTION. FOR FUTURE INSPECTIONS, NOTICE MUST BE GIVEN BY 2:00 P.M. THE BUSINESS DAY PRIOR TO THE REQUESTED LVVMD INSPECTION. **WHEN REQUESTING INSPECTIONS, PLEASE REFER TO THE PROJECT # IDENTIFIED ABOVE.**
2. ALL WORK SHALL CONFORM TO LVVMD STANDARD PLATES, DRAWINGS, AND SPECIFICATIONS, AND TO THE 2010 EDITION OF THE UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR POTABLE WATER SYSTEMS (UDACS). **THE LATEST EDITION OF UDACS SHALL SUPERSEDE ANY CONFLICTS CONTAINED IN THE APPROVED DRAWINGS AND/OR SPECIFICATIONS.**
3. ALL WORK, EXCEPT AS MODIFIED BY THESE PLANS OR BY NOTE 2 ABOVE, SHALL BE DONE IN ACCORDANCE WITH THE MOST RECENT DRAFT OR EDITION OF THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFFSITE IMPROVEMENT, CLARK COUNTY AREA.
4. A SINGLE PIPE MATERIAL SHALL BE USED THROUGHOUT THE PROJECT UNLESS OTHERWISE APPROVED BY THE LVVMD.
5. ALL SERVICE LATERALS TWO (2) INCHES IN DIAMETER AND SMALLER SHALL BE TYPE K COPPER WITH 1/2" O.D. TUBING WITH LVVMD APPROVED SERVICE SADDLES.
6. ALL WATER METER BOXES SHALL BE LOCATED OUTSIDE OF DRIVEWAYS AREAS.
7. ALL VALVES SHALL BE LOCATED OUTSIDE OF DRIVEWAYS, VALLEY AND CURB GUTTERS.
8. ALL WATER AND STORM DRAIN OR SANITARY SEWER CROSSINGS SHALL CONFORM TO SECTION 2.22 OF THE 2010 EDITION OF THE UDACS.
9. ALL WATER FACILITIES AND APPURTENANCES SHALL BE DISINFECTED, PRESSURE TESTED, AND HAVE AN ACCEPTABLE PASSING HEALTH WATER SAMPLE OBTAINED, PRIOR TO OPERATION AND USE.
10. THE CONTRACTOR MUST OBTAIN ALL METERS TWO (2) INCHES AND SMALLER FROM LVVMD CENTRAL STORES. TELEPHONE 258-3152 OR 258-3802 TWO (2) WORKING DAYS PRIOR TO METER PICKUP.
11. ANY INTERRUPTION OF SERVICE MUST BE PERFORMED IN ACCORDANCE WITH UDACS SECTION 3.14.01 AND APPROVED BY THE LVVMD INSPECTION DIVISION PRIOR TO SHUTDOWN. PROPER WRITTEN NOTIFICATION MUST BE GIVEN TO ALL AFFECTED CUSTOMERS.
12. ALL WATER FACILITY CONSTRUCTION MATERIALS USED MUST BE AS LISTED ON THE LVVMD APPROVED PRODUCT'S LIST FOR NEW FACILITIES, LATEST REVISION, OR SPECIFICALLY APPROVED TO THESE PLANS BY SUBMITTING SHOP DRAWINGS.
13. TELEPHONE "CALL BEFORE YOU DIG" AT "811" OR 1-800-227-2600.
14. THE INSTALLATION OF LAS VEGAS VALLEY WATER DISTRICT (LVVWD) MUNICIPAL WATER FACILITIES WITHIN ALL STREETS SHALL BE ASSUMED TO BE IN COMPLIANCE WITH THE UNIFORM STANDARD, INCLUDING THE PLACEMENT OF ASPHALT PAVING SURFACES. ANY REPAIR WORK DONE BY THE LVVWD TO THE MUNICIPAL WATER FACILITIES WILL INCLUDE THE PLACEMENT OF AN APPROPRIATELY SIZED ASPHALT REPAIR PATCH ON THE STREET SURFACE.

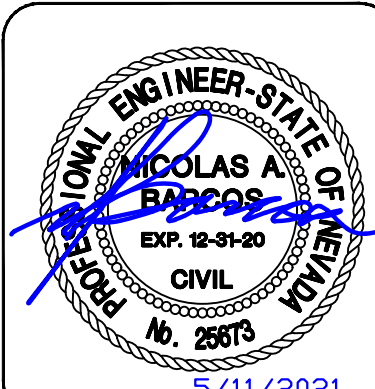
ANY DECORATIVE PAVING SURFACE WITHIN THE STREET IS THE RESPONSIBILITY OF THE OWNER'S ASSOCIATION, OR THE INDIVIDUAL PROPERTY OWNERS IF NO OWNER'S ASSOCIATION IS IN EXISTENCE, OR THE AGENCY HAVING JURISDICTION. DECORATIVE SURFACE MATERIALS PLACED WITHIN THE TEN FOOT PLAZA OR CURB AREA OF A PUBLIC OR PRIVATE DRIVE, OR DISTURBED BY THE PLAZA OR DRIVE REPAIR OR OPERATION OF ITS FACILITIES, WILL BE REPLACED BY LVVWD WITH AN APPROPRIATELY SIZED PLAIN FINISH CONCRETE PATCH. THE LVVWD WILL NOT RESTORE, AND WILL NOT BE RESPONSIBLE FOR THE REPAIR OF, ANY DECORATIVE SURFACE WITHIN THE STREET. THE LVVWD WILL NOT ATTEMPT TO MATCH COLOR OR FINISH OF ANY ADJACENT MATERIALS.

15. NO LEAD COMPLIANCE NOTE

TO COMPLY WITH THE FEDERAL SAFE DRINKING WATER ACT, ALL WATER WORKS BRASS PRODUCTS PROPOSED TO BE RELOCATED, OR INSTALLED AS NEW MUST BE INSTALLED WITH THE LEAD FREE APPROVED PRODUCT. THE OLD LEADED PRODUCT MAY NOT BE REUSED.

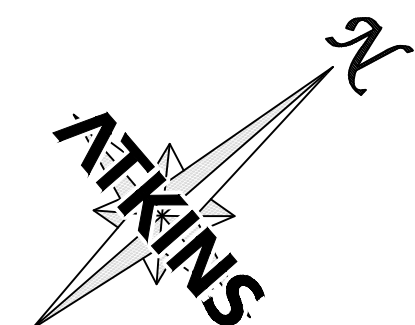
LAS VEGAS VALLEY WATER DISTRICT
PLANNING AND ENGINEERING SERVICES

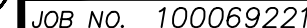
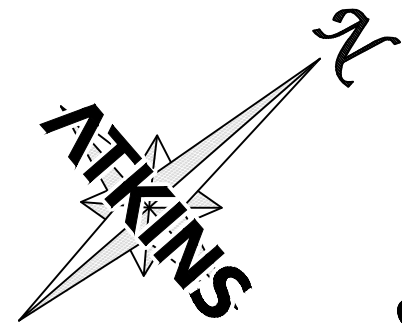
PROJECT NO. 0000 FIRST APPROVED DATE: _____
LVVWD APPROVED FIRE FLOW 1500 GPM AT 20 PSI RESIDUAL _____

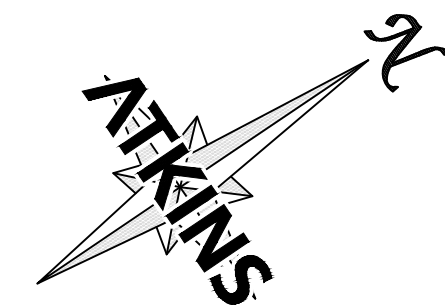


5/11/2021

XXXXXXX LXX-XXXX		DESIGNED BY: MAMACLAY		SUMMERLIN VILLAGE 22 LAKE MEAD BOULEVARD KETTLE RIDGE DRIVE (STREET J) TO SCURRY BEND DRIVE (STREET N) GENERAL NOTES	 SUMMERLIN® ATKINS 2270 Corporate Circle Suite 200 Henderson, Nevada 89074 Telephone: +1702.263.7275 Fax: +1702.263.7200	REVISIONS			
DATE:		DRAWN BY: G. HANSEN				DESCRIPTION	BY	DATE	APPROVAL
MAY, 2021		CHECKED BY: P. BATES							
DRAWING NO.									
JOB NO. 10006922		HORIZ.: 1" = 30' VERT.: NONE							
3 / 24									

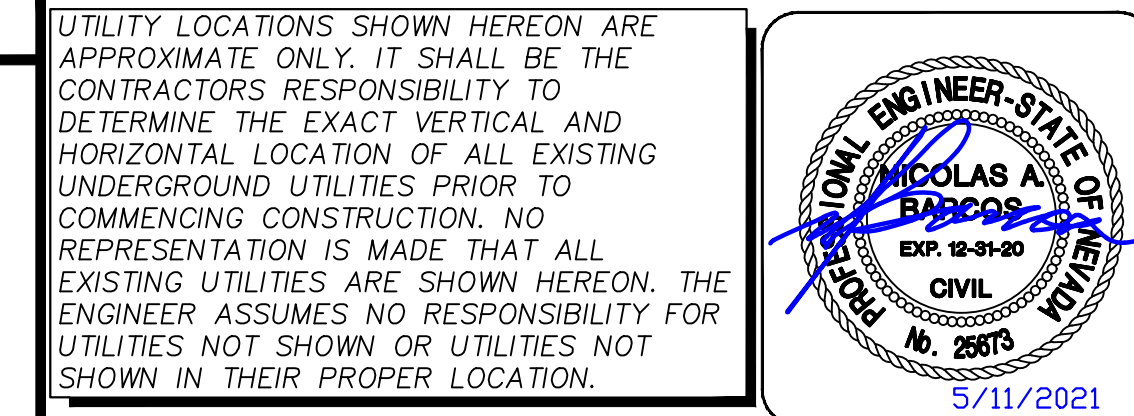




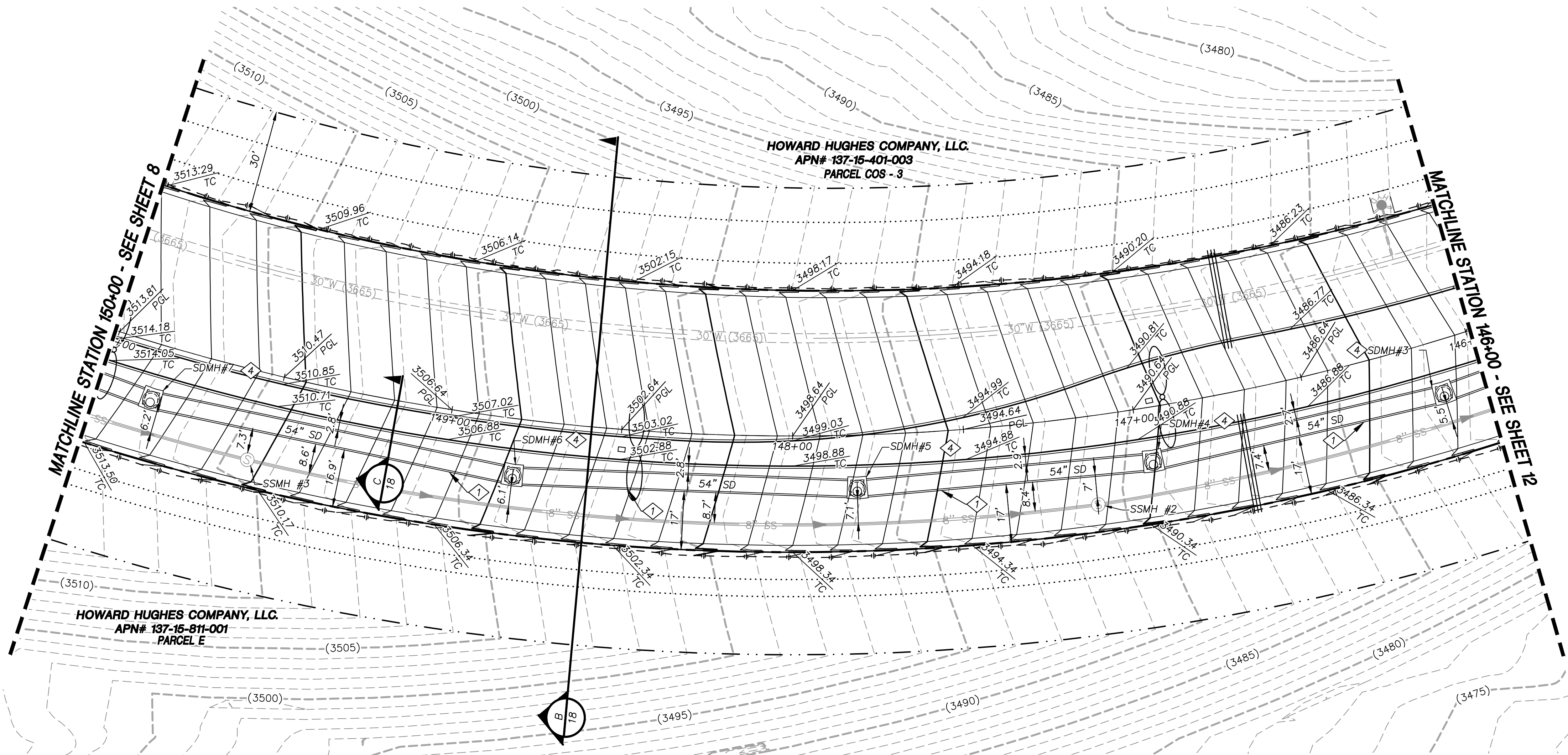
[illegible]

SUMMERLIN®

SUMMERLIN VILLAGE 22
LAKE MEAD BOULEVARD
TO SCURRY BEND DRIVE (STREET N)
ROADWAY GRADING PLAN
END TO STA 150+00



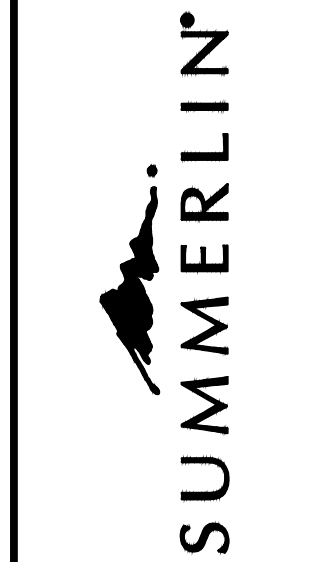
XXXXXXXXXX LXX-XXXXX	DESIGNED BY: L. MAMACLA
DATE: MAY, 2021	DRAWN BY: G. HANSEN
DRAWING NO.	CHECKED BY: P. BATES
8/24	HORIZ.: 1"=3'
	VERT.: NONE



- STORM DRAIN CONSTRUCTION NOTES**
- 1. INSTALL STORM DRAIN. SEE SHEET 20 FOR ADDITIONAL STORM DRAIN NOTES AND INFORMATION.
 - 2. INSTALL TYPE "CM2" DROP INLET PER CCAUSD #412.1 & #421
 - 3. INSTALL MODIFIED TYPE "2" DROP INLET PER NDOT STANDARD R-4.2.1
 - 4. INSTALL TYPE III SD MANHOLE PER CCAUSD #406
 - 5. REMOVE CAP AND CONNECT TO EXISTING STORM DRAIN STUB
 - 6. STUB & PLUG STORM DRAIN FOR FUTURE CONNECTION PER MANUFACTURER'S PLUG, OR APPROVED EQUAL. SEE DETAIL A ON SHEET 20.
- LVVWD CONSTRUCTION NOTES**
- 1. ADJUST EXISTING BLOW OFF VALVE TO GRADE
 - 2. ADJUST 30" GATE VALVE TO GRADE

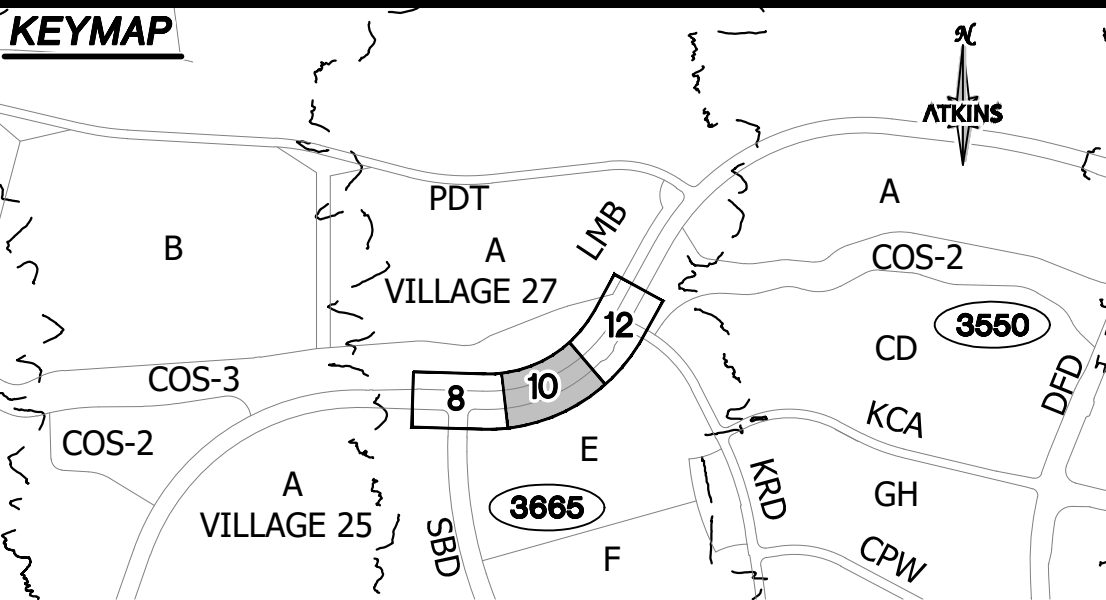
REV.		DESCRIPTION	BY	DATE	APPROVAL

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1702.263.7755
Fax: +1702.263.7200

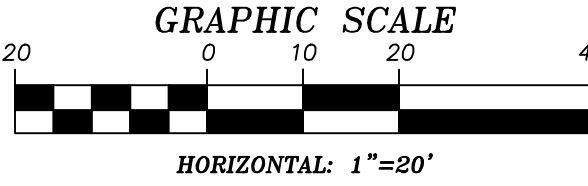
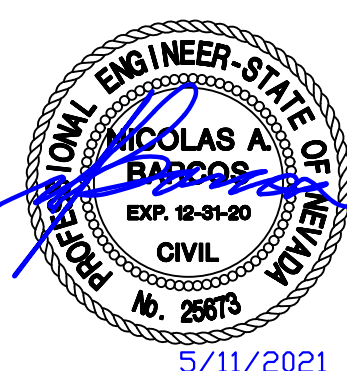


SUMMERLIN VILLAGE 22
LAKE MEAD BOULEVARD
KETTLE RIDGE DRIVE (STREET J) TO SCURRY BEND DRIVE (STREET N)
ROADWAY GRADING PLAN
STA 150+00 TO STA 146+00

DESIGNED BY: L. MAMACLAY
DRAWN BY: G. HANSEN
CHECKED BY: P. BATES
DATE: MAY, 2021
DRAWING NO.: 10/24
VERT.: NONE



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.



GRADING PLAN CERTIFICATION

NICOLAS BARCOS PE#25673 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# _____

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°53' WEST OF THE GREENWICH MERIDIAN.

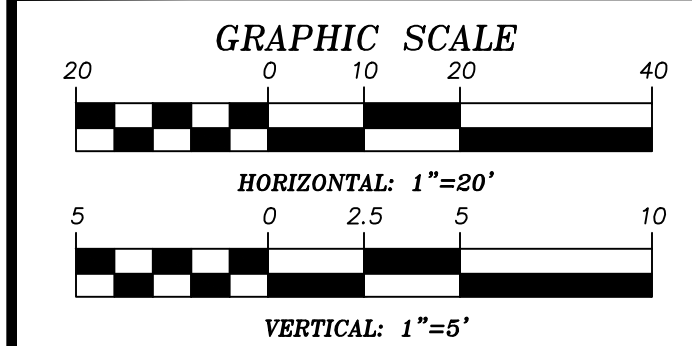
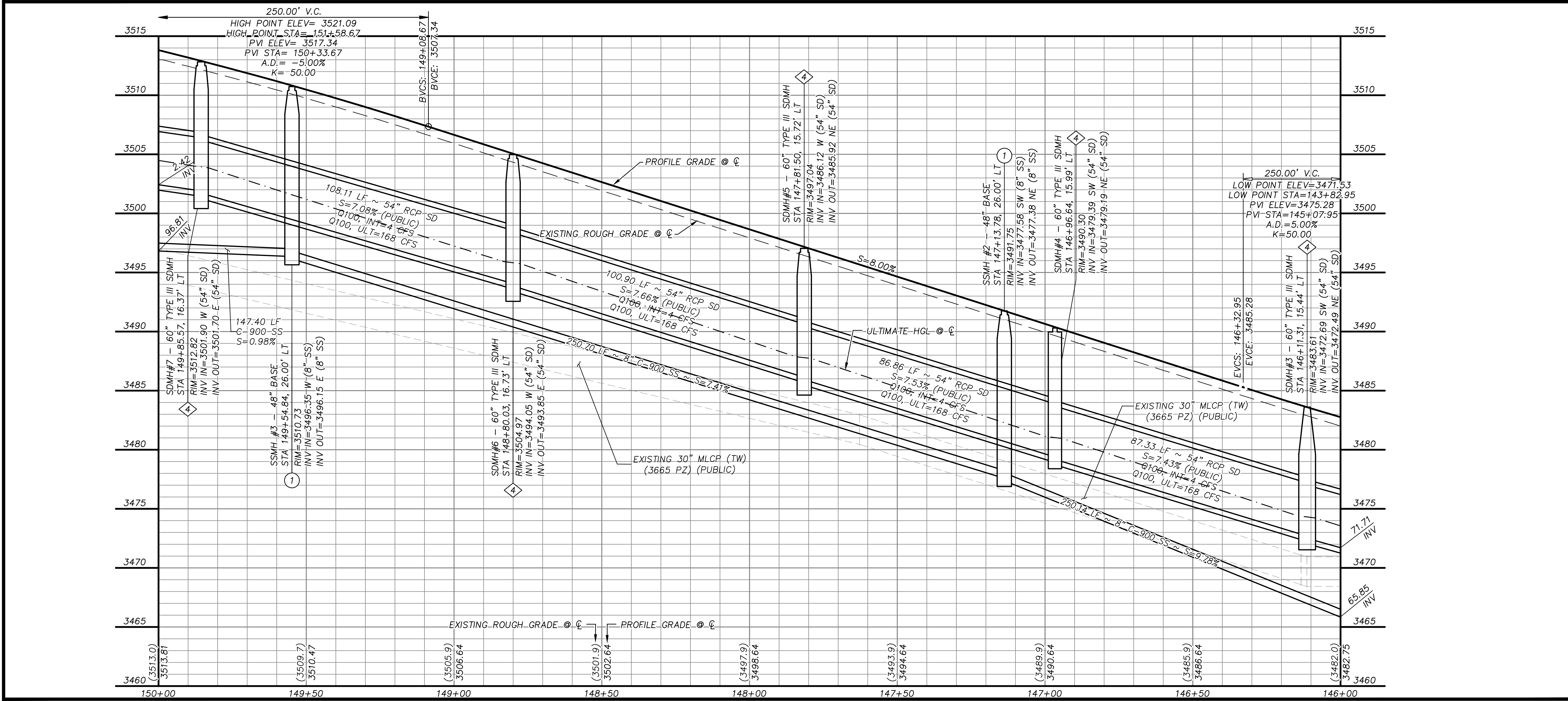
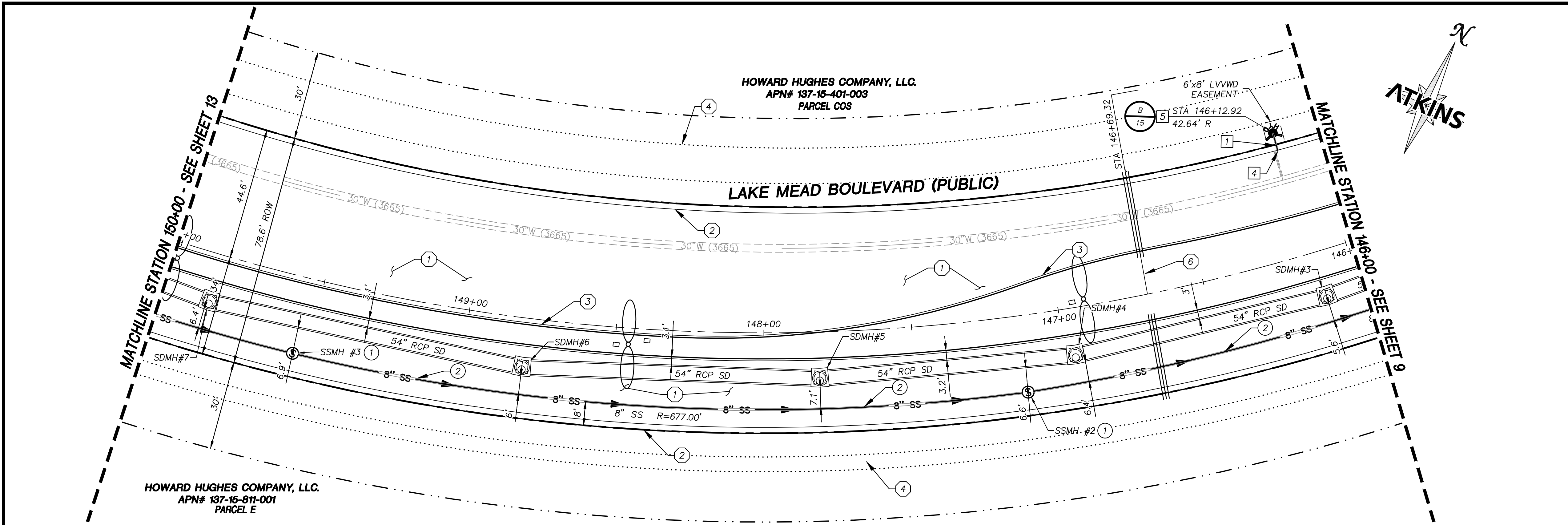
BENCHMARK

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

1-702-432-5300

1-800-642-2444

1-702-227-2929



APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT
PLANNING AND ENGINEERING SERVICES

PROJECT NO. 0000 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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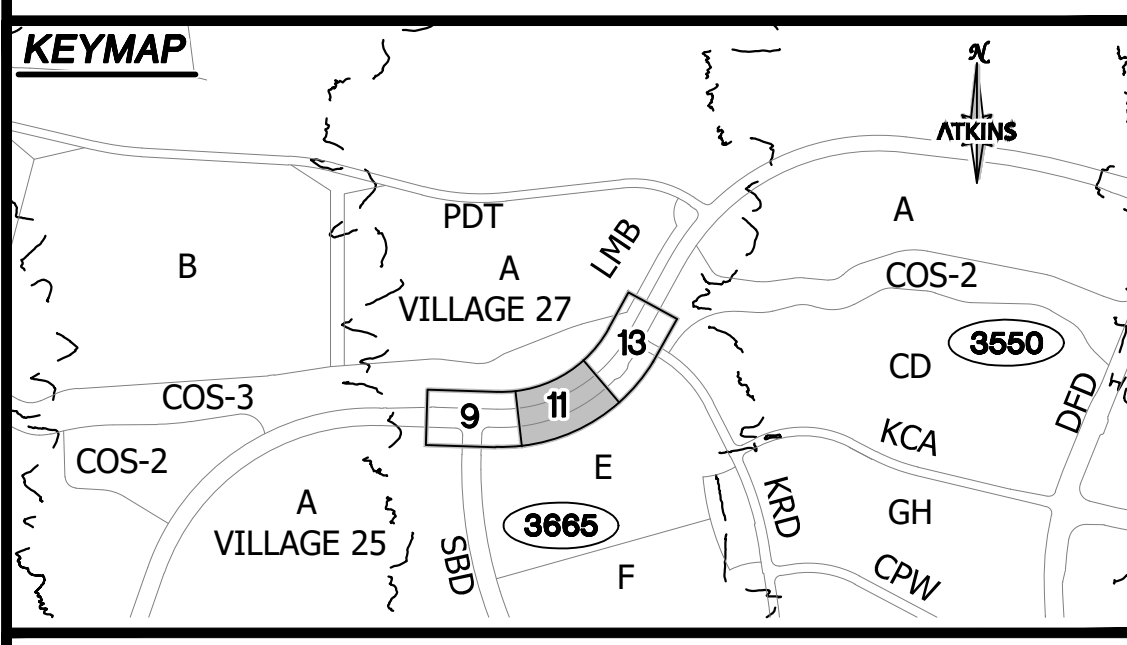
Call before you Dig
underground
1-702-432-5300

Call before you Dig
underground
1-800-642-2444

Call before you Dig
underground
1-702-227-2929

- STORM DRAIN CONSTRUCTION NOTES**
- INSTALL STORM DRAIN. SEE SHEET 20 FOR ADDITIONAL STORM DRAIN NOTES AND INFORMATION.
 - INSTALL TYPE "CM2" DROP INLET PER CCAUSD #412.1 & #421
 - INSTALL MODIFIED TYPE "2" DROP INLET PER NDOT STANDARD R-4.2.1
 - INSTALL TYPE III SD MANHOLE PER CCAUSD #406
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 - STUB & PLUG STORM DRAIN FOR FUTURE CONNECTION PER MANUFACTURER'S PLUG, OR APPROVED EQUAL. SEE DETAIL A ON SHEET 20.
- SEWER CONSTRUCTION NOTES**
- INSTALL 48-INCH DIAMETER SEWER MANHOLE WITH 24" SINGLE LID AND WATERTIGHT JOINTS PER DCSWCS SD-1, SD-3 AND SD-4
 - INSTALL SEWER MAIN PER DCSWCS SD-17. WHERE CURVED PIPE RADIUS IS LESS THAN 1150', CONSTRUCT 10' SECTIONS OF CURVED SEWER PER DCSWCS 2.3.4.5
 - STUB AND CAP SEWER PIPE. PLACE 4"x4" POST, DOUGLAS FIR, OVER END OF PIPE AND INSTALL THRUST BLOCK (1 CUBIC FT. MINIMUM).
 - INSTALL 72-INCH DIAMETER SEWER MANHOLE WITH CORROSION PROTECTION AND WATERTIGHT JOINTS PER 3.16.8 AND DUAL CONCENTRIC LIDS PER DCSWCS SD-2
 - REMOVE CAP AND CONNECT TO EXISTING SEWER STUB
- WATERLINE CONSTRUCTION NOTES**
- INSTALL WATER MAIN PER UDACS PLATES #17 AND #19
 - INSTALL GATE VALVE PER UDACS PLATES #30 AND #39
 - INSTALL TEE W/ VALVE AND LATERAL WITH RESTRAINED JOINTS PER UDACS 2.15, AND UDACS PLATES #17, #19, #30, AND #39
 - REMOVE CAP AND 2" BLOWOFF AND CONNECT TO EXISTING WATERLINE STUB
 - INSTALL FIRE HYDRANT WITH APPURTENANCES (CONCRETE PAD, LATERAL, VALVE, AND TEE WITH RESTRAINED JOINTS PER UDACS 2.15) PER UDACS PLATES #39 AND #40.
 - INSTALL 45° VERTICAL BEND PER UDACS PLATE #31
 - INSTALL SERVICE SADDLE
 - INSTALL 2" MANUAL BLOWOFF ASSEMBLY PER UDACS PLATE #36

- ROADWAY CONSTRUCTION NOTES**
- CONSTRUCT PLANTMIX BITUMINOUS SURFACE OVER TYPE II AGGREGATE BASE PER SOILS REPORT. SEE SHEET 18 FOR TYPICAL PAVEMENT SECTION.
 - CONSTRUCT "L" TYPE CURB AND GUTTER PER CCAUSD #216
 - CONSTRUCT "A" TYPE ISLAND CURB PER CCAUSD #219
 - FUTURE SIDEWALK BY OTHERS
 - CONSTRUCT CURB RAMP, CASE II, PER CCAUSD #235.
 - INSTALL SCHEDULE 40 PVC IRRIGATION SLEEVES (2-4", 1-6") PER DETAIL C ON SHEET 21
 - SAWCUT AND MATCH EXISTING



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.

ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1702.263.7755
Fax: +1702.263.7200

SUMMERLIN

SUMMERLIN VILLAGE 22
LAKE MEAD BOULEVARD
KETTLE RIDGE DRIVE (STREET J) TO SCURRY BEND DRIVE (STREET N)
ROADWAY PLAN + PROFILE
STA 150+00 TO STA 146+00

DESIGNED BY: L. MAMACLAY
DRAWN BY: G. HANSEN
CHECKED BY: P. BATES
DATE: MAY, 2021
DRAWING NO. 11/24
JOB NO. 100069221

XXXXXX
LXX-XXXX
DATE: MAY, 2021
DRAWING NO. 11/24
JOB NO. 100069221

5/11/2021



STORM DRAIN CONSTRUCTION NOTES

- 1. INSTALL STORM DRAIN. SEE SHEET 20 FOR ADDITIONAL STORM DRAIN NOTES AND INFORMATION.
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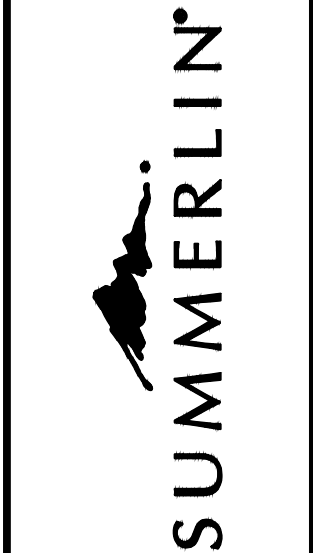
LVVWD CONSTRUCTION NOTES

- 1. ADJUST EXISTING BLOW OFF VALVE TO GRADE
- 2. ADJUST 30" GATE VALVE TO GRADE

REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL

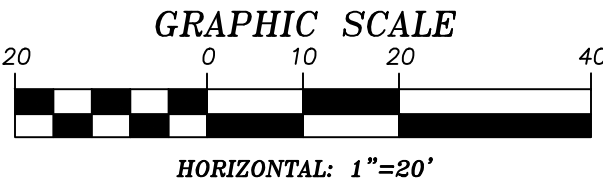
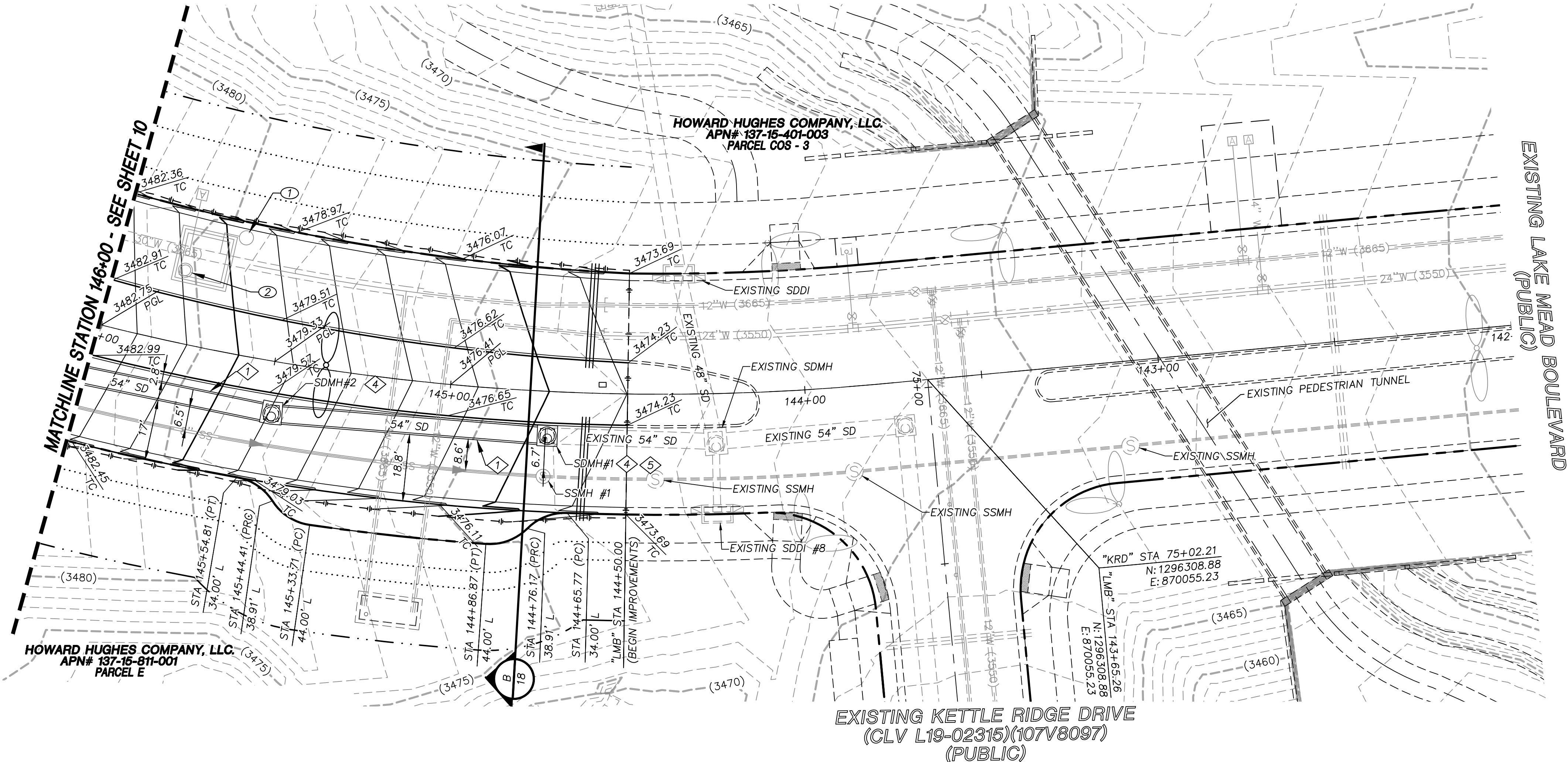
ATKINS
2270 Corporate Circle Suite 200
Henderson, Nevada 89074
Telephone: +1702.263.7755
Fax: +1702.263.7200



SUMMERLIN VILLAGE 22
LAKE MEAD BOULEVARD
KETTLE RIDGE DRIVE (STREET J) TO SCURRY BEND DRIVE (STREET N)
ROADWAY GRADING PLAN 3
STA 146+00 TO BEGIN

DESIGNED BY: L. MAMACLAY
DRAWN BY: G. HANSEN
CHECKED BY: P. BATES
DATE: MAY, 2021
DRAWING NO.:
12/24
JOB NO.: 100069221

C:\pwwork\atkins\01\mama6066\69221-08-GRAD.dwg LAYOUT: P1 May 12, 2021 10:30AM



GRADING PLAN CERTIFICATION

NICOLAS BARCOS PE#25673 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# ----

BASIS OF BEARING

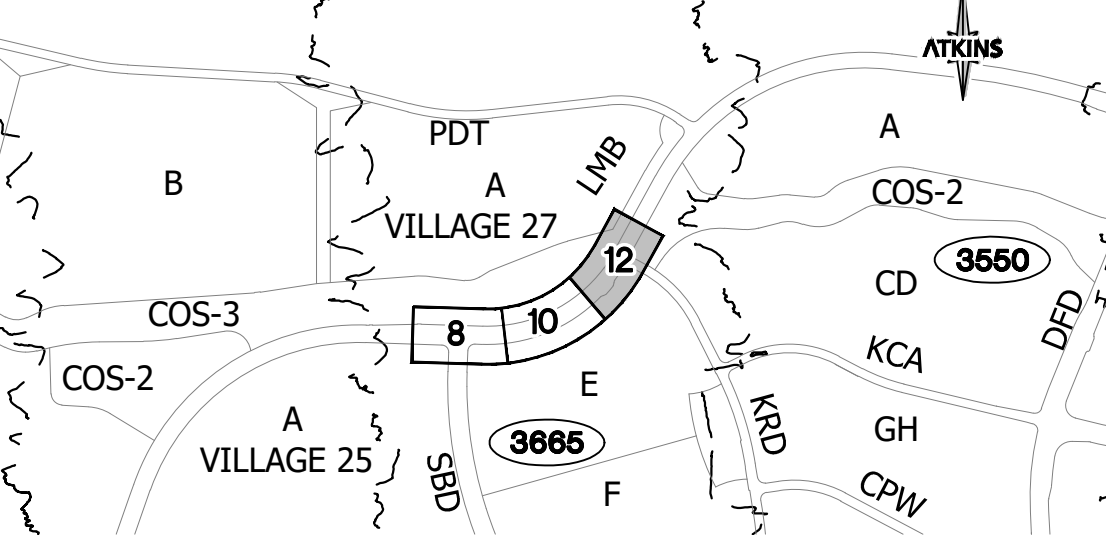
GRID NORTH AS DEFINED BY THE CENTRAL MERIDIAN OF THE NEVADA COORDINATE REFERENCE SYSTEM (NCRS), LAS VEGAS HIGH ELEVATION ZONE, NORTH AMERICAN DATUM OF 1983; SAID MERIDIAN BEING COINCIDENT WITH 114°58' WEST OF THE GREENWICH MERIDIAN.

BENCHMARK

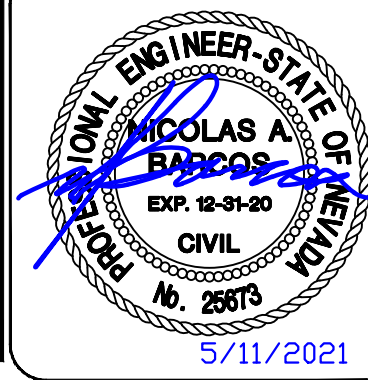
CITY OF LAS VEGAS BENCHMARK: D368 (REVISED 2008)
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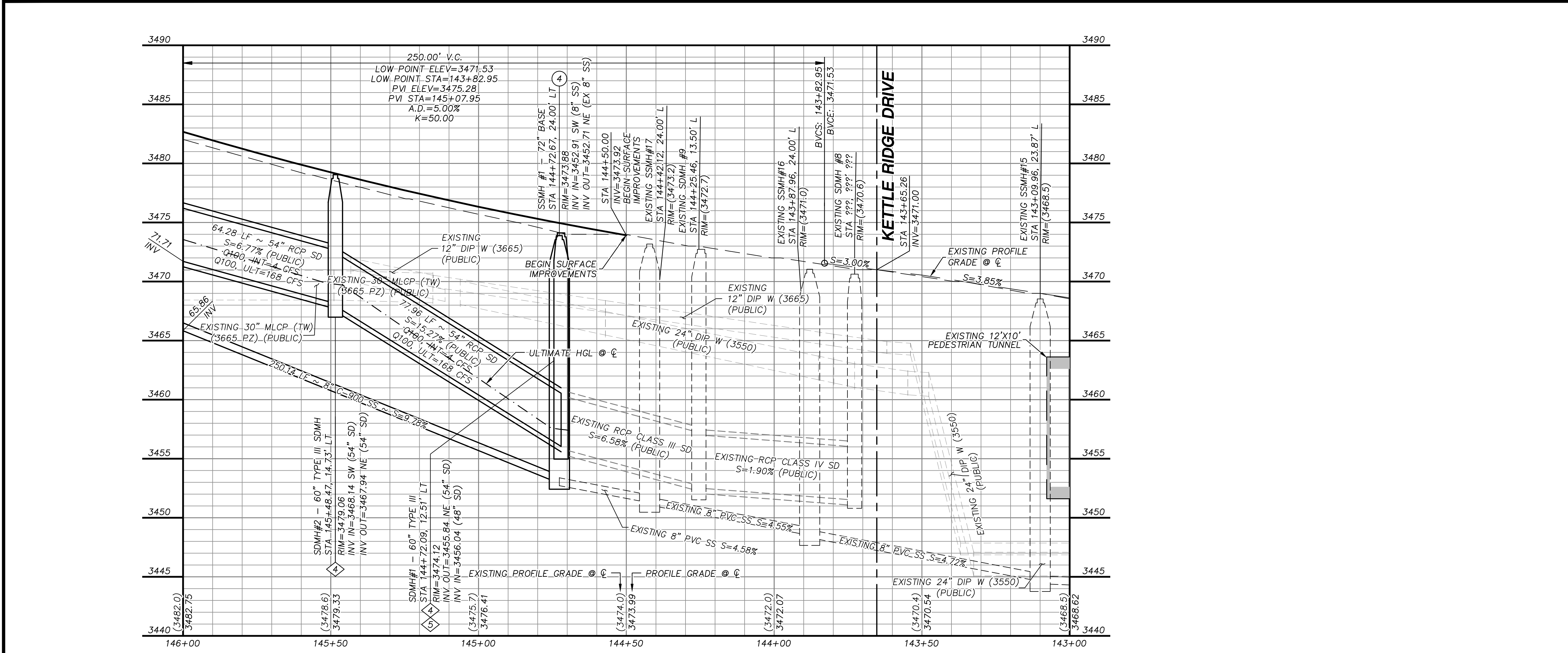
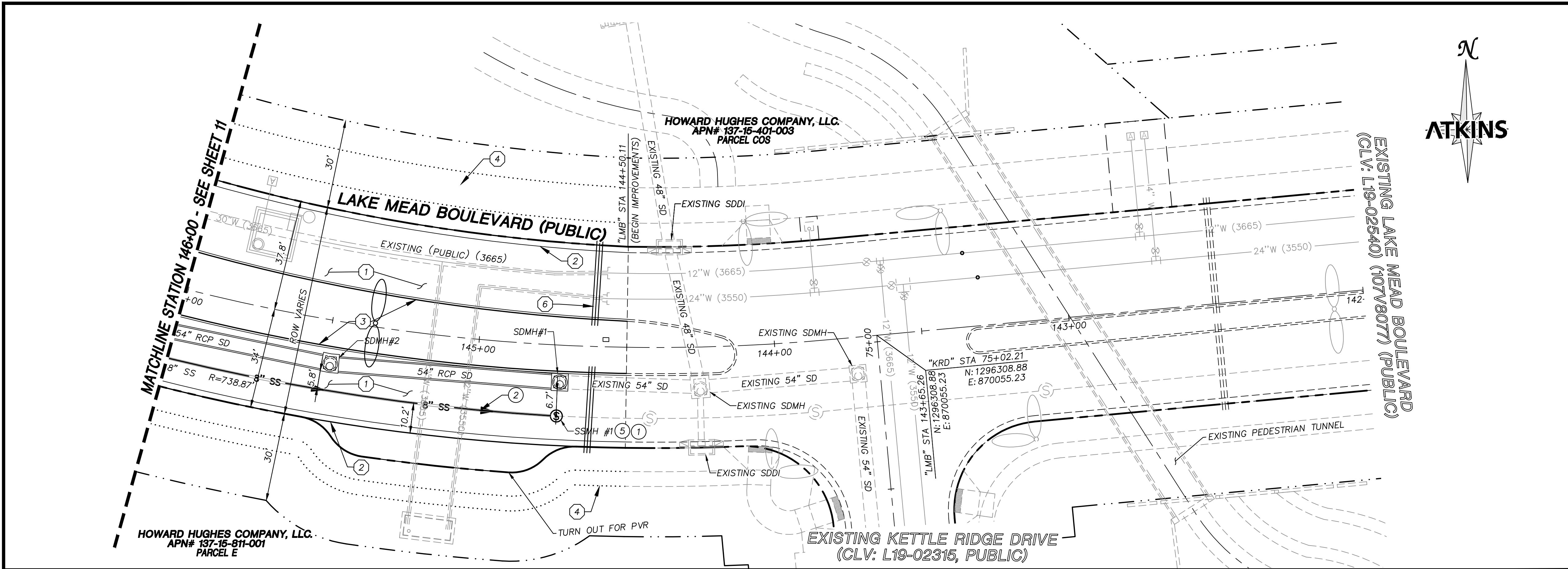


KEYMAP



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GRAPHIC SCALE

HORIZONTAL: 1"=20'

VERTICAL: 1"=5'

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT
PLANNING AND ENGINEERING SERVICES

PROJECT NO. 0000 FIRST APPROVED DATE: _____

LVWD 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.

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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 Dig
UnderGround
1-702-432-5300

Call before you Dig
Call 811
1-800-642-2444

CALL BEFORE YOU DIG
1-702-227-2929

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LOWE ENGINEER-STATE OF NEVADA

NICOLAS BACCOS
EXP. 9-31-20
CIVIL
No. 26673

5/11/2021

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- INSTALL SEWER MAIN PER DCSWCS SD-17. WHERE CURVED PIPE RADIUS IS LESS THAN 1150', CONSTRUCT 10' SECTIONS OF CURVED SEWER PER DCSWCS 2.3.4.5
- STUB AND CAP SEWER PIPE. PLACE 4"x4" POST, DOUGLAS FIR, OVER END OF PIPE AND INSTALL THRUST BLOCK (1 CUBIC FT. MINIMUM).
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- FUTURE SIDEWALK BY OTHERS
- CONSTRUCT CURB RAMP, CASE II, PER CCAUSD #235.
- INSTALL SCHEDULE 40 PVC IRRIGATION SLEEVES (2-4", 1-6") PER DETAIL C ON SHEET 21
- SAWCUT AND MATCH EXISTING

KEYMAP

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.

DESIGNED BY: L. MANACLAY
DRAWN BY: G. HANSEN
CHECKED BY: P. BATES
DATE: MAY, 2021
DRAWING NO.: 13/24
VERT.: 1"=20'

SUMMERLIN

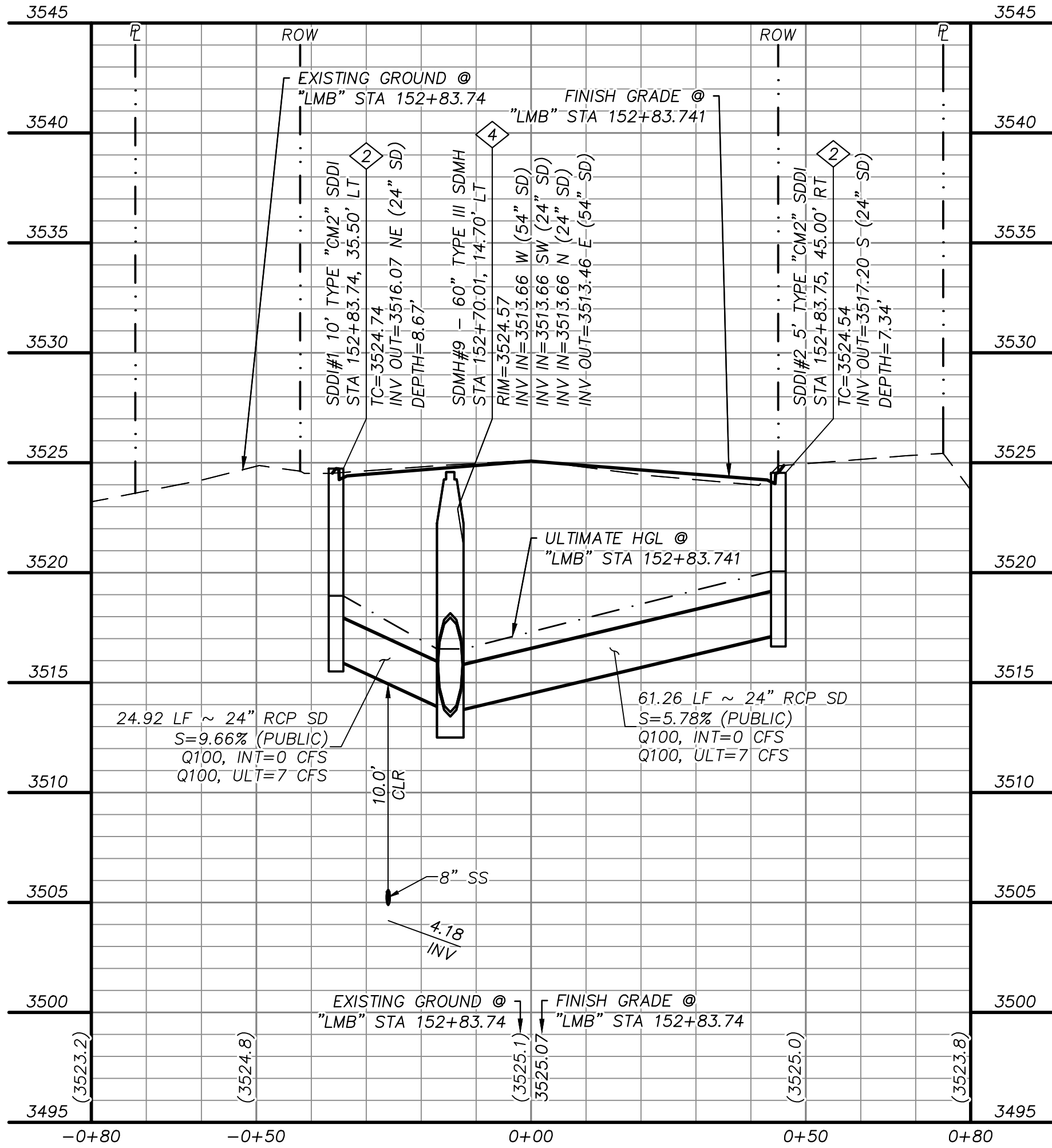
SUMMERLIN VILLAGE 22
LAKE MEAD BOULEVARD
KETTLE RIDGE DRIVE (STREET J) TO SCURRY BEND DRIVE (STREET N)
ROADWAY PLAN + PROFILE
STA 146+00 TO BEGIN

ATKINS

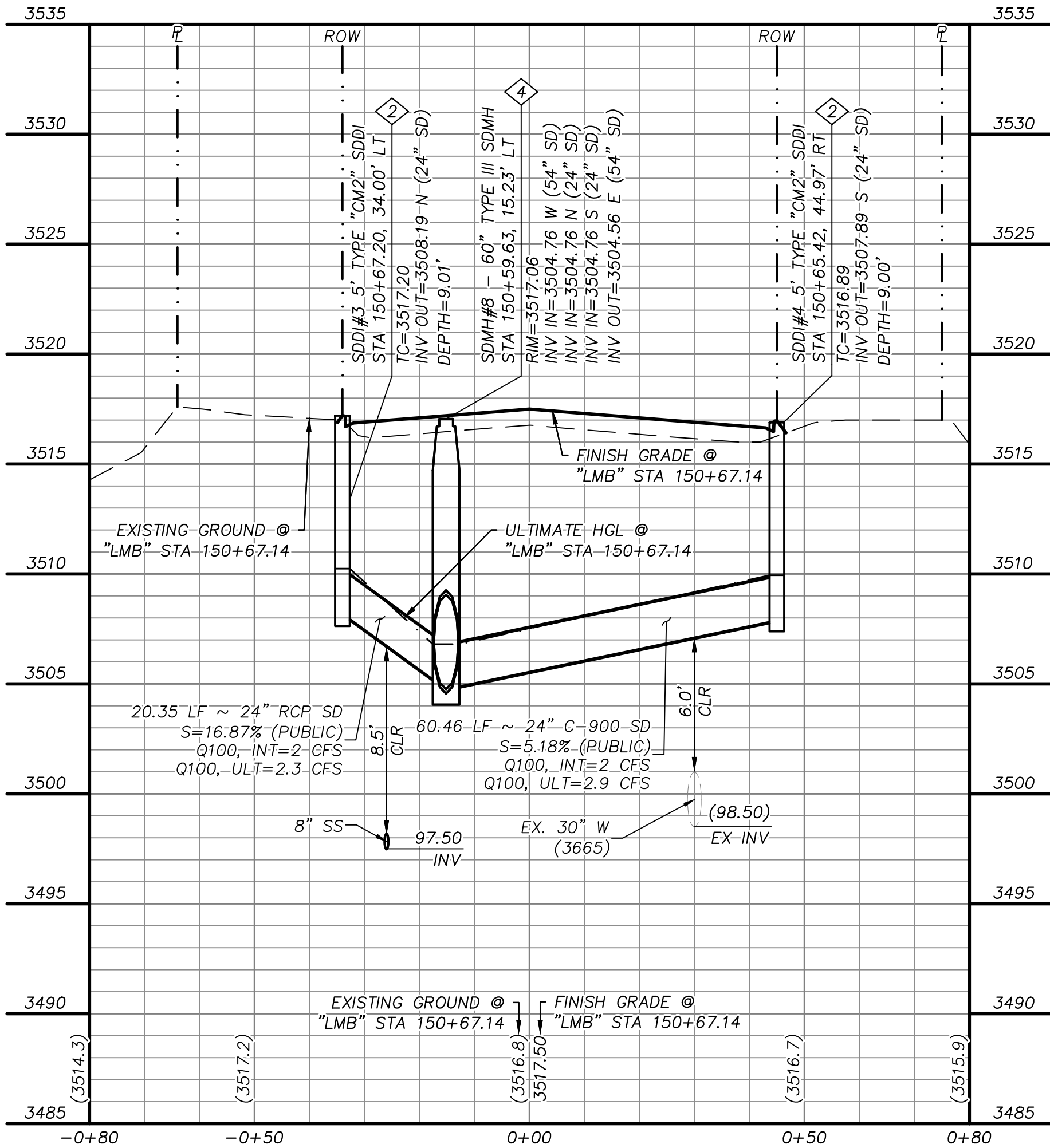
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STORM DRAIN LATERAL 1
"LMB" STA. 152+83.74 SEE SHEET 9



STORM DRAIN LATERAL 2
"LMB" STA. 150+67.14 SEE SHEET 9

STORM DRAIN CONSTRUCTION NOTES

- 1. INSTALL STORM DRAIN. SEE SHEET 20 FOR ADDITIONAL STORM DRAIN NOTES AND INFORMATION.
- 2. INSTALL TYPE "CM2" DROP INLET PER CCAUSD #412.1 & #421
- 3. INSTALL MODIFIED TYPE "2" DROP INLET PER NDOT STANDARD R-4.2.1
- 4. INSTALL TYPE III SD MANHOLE PER CCAUSD #406
- 5. REMOVE CAP AND CONNECT TO EXISTING STORM DRAIN STUB
- 6. STUB & PLUG STORM DRAIN FOR FUTURE CONNECTION PER MANUFACTURER'S PLUG, OR APPROVED EQUAL. SEE DETAIL A ON SHEET 20.

SEWER CONSTRUCTION NOTES

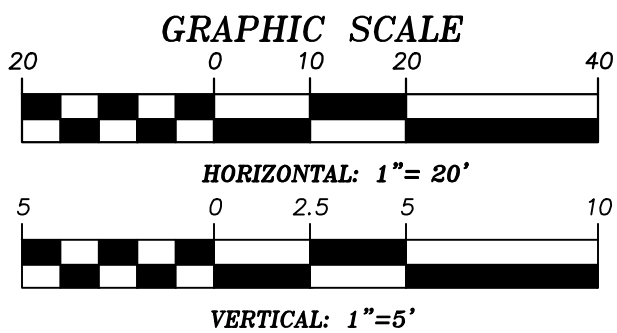
- 1. INSTALL 48-INCH DIAMETER SEWER MANHOLE WITH 24" SINGLE LID AND WATERTIGHT JOINTS PER DCSWCS SD-1, SD-3 AND SD-4
- 2. INSTALL SEWER MAIN PER DCSWCS SD-17. WHERE CURVED PIPE RADIUS IS LESS THAN 1150', CONSTRUCT 10' SECTIONS OF CURVED SEWER PER DCSWCS 2.3.4.5
- 3. STUB AND CAP SEWER PIPE. PLACE 4"x4" POST, DOUGLAS FIR, OVER END OF PIPE AND INSTALL THRUST BLOCK (1 CUBIC FT. MINIMUM).
- 4. INSTALL 72-INCH DIAMETER SEWER MANHOLE WITH CORROSION PROTECTION AND WATERTIGHT JOINTS PER 3.16.8 AND DUAL CONCENTRIC LIDS PER DCSWCS SD-2
- 5. REMOVE CAP AND CONNECT TO EXISTING SEWER STUB

WATERLINE CONSTRUCTION NOTES

- 1. INSTALL WATER MAIN PER UDACS PLATES #17 AND #19
- 2. INSTALL GATE VALVE PER UDACS PLATES #30 AND #39
- 3. INSTALL TEE W/ VALVE AND LATERAL WITH RESTRAINED JOINTS PER UDACS 2.15, AND UDACS PLATES #17, #19, #30, AND #39
- 4. REMOVE CAP AND 2" BLOWOFF AND CONNECT TO EXISTING WATERLINE STUB
- 5. INSTALL FIRE HYDRANT WITH APPURTENANCES (CONCRETE PAD, LATERAL, VALVE, AND TEE WITH RESTRAINED JOINTS PER UDACS 2.15) PER UDACS PLATES #39 AND #40.
- 6. INSTALL 45° VERTICAL BEND PER UDACS PLATE #31
- 7. INSTALL SERVICE SADDLE
- 8. INSTALL 2" MANUAL BLOWOFF ASSEMBLY PER UDACS PLATE #36

ROADWAY CONSTRUCTION NOTES

- 1. CONSTRUCT PLANTMIX BITUMINOUS SURFACE OVER TYPE II AGGREGATE BASE PER SOILS REPORT. SEE SHEET 18 FOR TYPICAL PAVEMENT SECTION.
- 2. CONSTRUCT "L" TYPE CURB AND GUTTER PER CCAUSD #216
- 3. CONSTRUCT "A" TYPE ISLAND CURB PER CCAUSD #219
- 4. FUTURE SIDEWALK BY OTHERS
- 5. CONSTRUCT CURB RAMP, CASE II, PER CCAUSD #235.
- 6. INSTALL SCHEDULE 40 PVC IRRIGATION SLEEVES (2-4", 1-6") PER DETAIL C ON SHEET 21
- 7. SAWCUT AND MATCH EXISTING



APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT
PLANNING AND ENGINEERING SERVICES

PROJECT NO. 0000 FIRST APPROVED DATE: _____

LVVWD APPROVED FIRE FLOW 1500 GPM AT 20 PSI RESIDUAL

BASIS OF BEARING

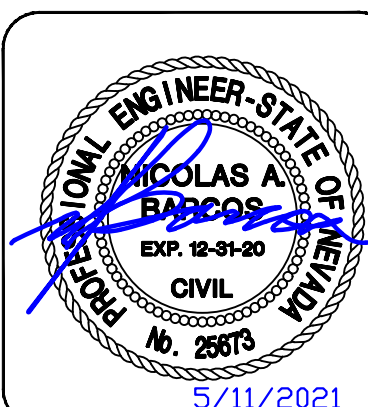
GRID NORTH AS DEFINED BY THE CENTRAL MERIDIAN OF THE NEVADA COORDINATE REFERENCE SYSTEM (NCRS), LAS VEGAS HIGH ELEVATION ZONE, NORTH AMERICAN DATUM OF 1983; SAID MERIDIAN BEING COINCIDENT WITH 114°53' WEST OF THE GREENWICH MERIDIAN.

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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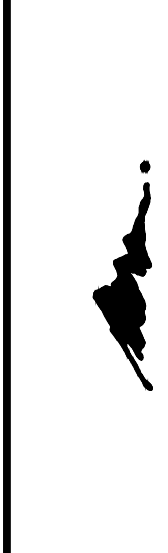


DESIGNED BY: L. MAMACLAY
DRAWN BY: G. HANSEN
CHECKED BY: P. BATES
HORIZ.: NONE
VERT.: NONE

DATE: MAY, 2021
DRAWING NO. 14/24

SUMMERLIN VILLAGE 22
LAKE MEAD BOULEVARD
KETTLE RIDGE DRIVE (STREET J) TO SCURRY BEND DRIVE (STREET N)

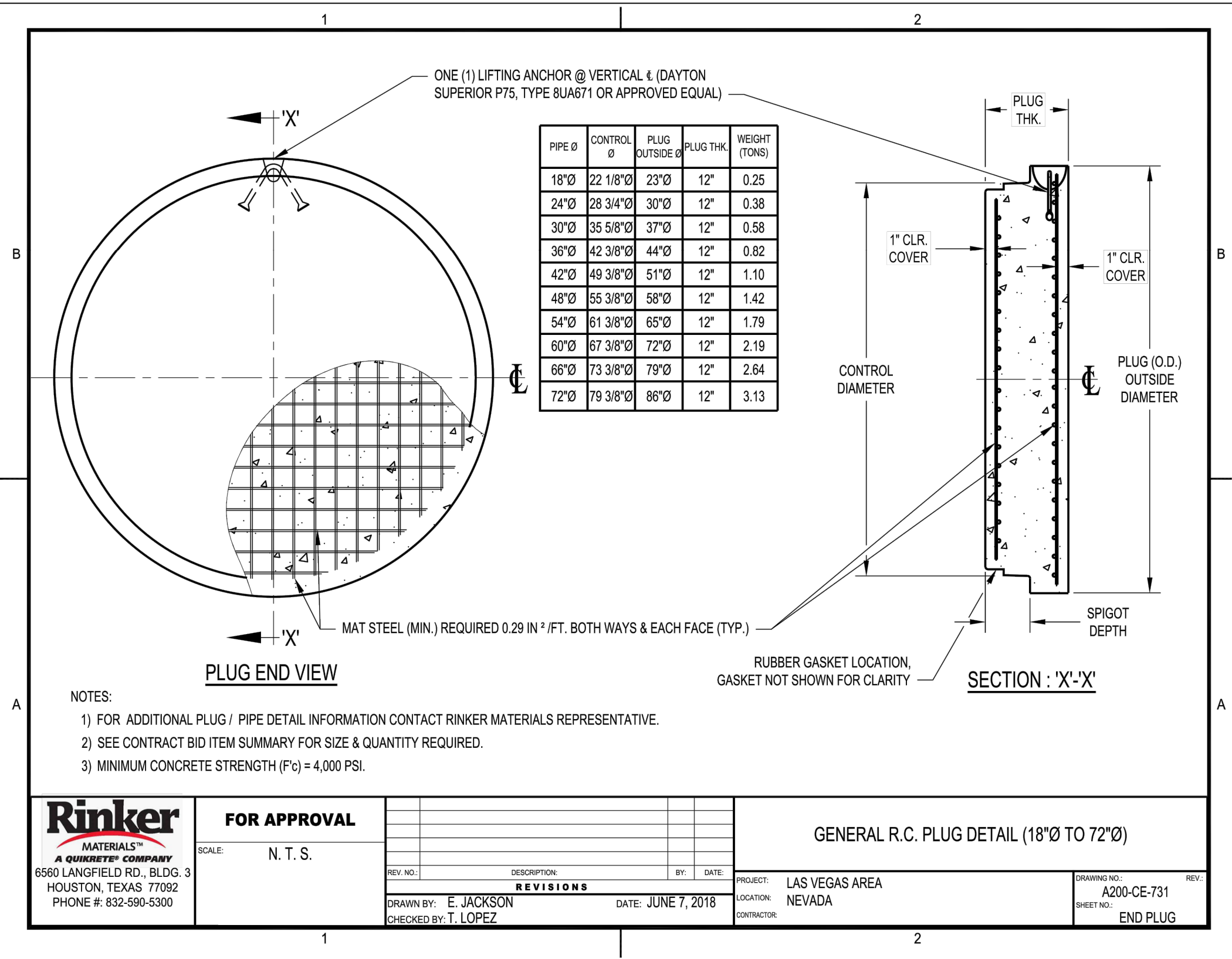
STORM DRAIN LATERAL PROFILE



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REVISIONS

REV.	DESCRIPTION	BY	DATE	APPROVAL



TYPICAL STORM DRAIN CAP

N. T. S.

A

20

BASIS OF BEARING

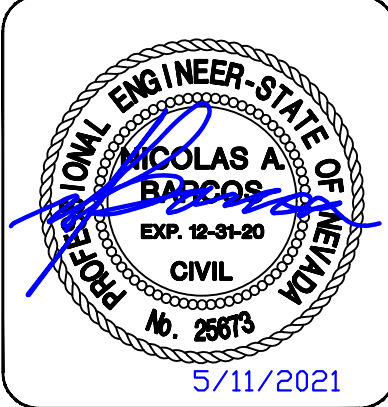
GRID NORTH AS DEFINED BY THE CENTRAL MERIDIAN OF THE NEVADA COORDINATE REFERENCE SYSTEM (NCRS), LAS VEGAS HIGH ELEVATION ZONE, NORTH AMERICAN DATUM OF 1983; SAID MERIDIAN BEING COINCIDENT WITH 114°53' WEST OF THE GREENWICH MERIDIAN.

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CHECKED BY: G. HANSEN

HORIZ.: NONE

VERT.: NONE

DATE: MAY, 2021

DRAWING NO.

20/24

JOB NO. 100069221

SUMMERLIN VILLAGE 22

LAKE MEAD BOULEVARD

KETTLE RIDGE DRIVE (STREET J) TO SCURRY BEND DRIVE (STREET N)

STORM DRAIN DETAILS



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REVISIONS

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