

DS #:

05349

APN:

137-23-210-001

PROJECT:

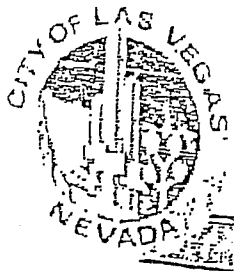
Summerlin West Village 22-Kettle Ridge Drive
(Sheet J)

SUBMITTAL:

3rd

SCANNED BY/DATE:

CHECKED BY/DATE:



CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM			DATE: January 21, 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 Village 22 - Kettle Ridge Drive (Street J) (from Sunset Run Drive to Kindle Rise Way)			COPIES TO: Atkins Global
Cross Streets:	Kettle Ridge Drive and Sunset Run Drive		Howard Hughes Company, LLC.
File Number:	F:\Depot\DSMemos\DS5349C.doc		Bart Anderson, P.E., DevCo
Parcel Number:	137-23-210-001		CCRFC
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 #
1 st Submittal	8/27/2020	9/14/2020	Not Approved	\$400.00	3990502: \$400
2 nd Submittal	11/4/2020	11/17/2020	Not Approved	\$400.00	4061002: \$400
3 rd Submittal	1/12/2021	1/21/2021	See Comments Below	\$400.00	4127576: \$400
			TOTAL FEES (LDDRS):	\$1,200.00	----

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 (CCRFC) 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 street improvement of *Kettle Ridge Drive (Street J)* is premised on the existence of *Sunset Run Drive, Kindle Rise Way* and the associated storm drain facilities are in place for downstream flood perpetuation. The subject drainage study will not be approved prior to the posting of the construction bonds of the above stated street improvements projects.
2. The project proposes to build temporary drainage facilities, ie, berms/swales along the sides of *Kettle Ridge Drive (Street J)* for interim flood protection. Prior to final plan approval the developer must complete a maintenance and liability agreement for the interim drainage improvements (berms or channels) 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 facility and an exhibit that adequately shows the location and limits of

the drainage facility to *City of Las Vegas Flood Control* for approval. Once the drainage study is conditionally approved, the engineer should contact the *City's Land Development Section* (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 offsite berms / channels are no longer necessary and can be removed.

3. **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>

4. 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.

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
HDR/AYS

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

Summerlin West Village 22

Kettle Ridge Drive (Street J):
Sunset Run Drive to Kindle Rise Way

November 2020

Supplement to Addendum #1

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL
DRAINAGE STUDY INFORMATION FORM

Name of Development: Supplement to Addendum #1: Kettle Ridge Drive: Sunset Run Drive to Kindle Rise Way Date: November 23, 2020
Location of Development: a) Descriptive (Cross Streets) North/South: Kindle Rise Way/Sunset Run Drive
East/West: Desert Foothills Drive/Scurry Bend Drive
b) Section: 23 and 14 Township: 20S Range: 59E
c) APN : 137-23-210-001

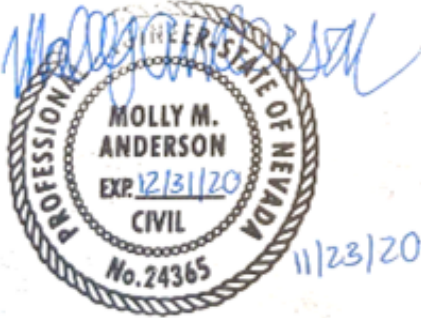
Name of Owner: Howard Hughes Company, LLC
Telephone No.: (702) 791-4000 Fax No.: (702) 791-4450 E-Mail Address: april.chapman@howardhughes.com
Address: 10801 West Charleston Blvd, Ste 300, Las Vegas, NV 89135

Contact Person-Name: Molly Anderson, PE Telephone No.: (702) 551-0330
* E-Mail Address: molly.anderson@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: _____
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 Update #2
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	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 #5249A Local Entity File No.	
REFERENCE:	STANDARD FORM 1	

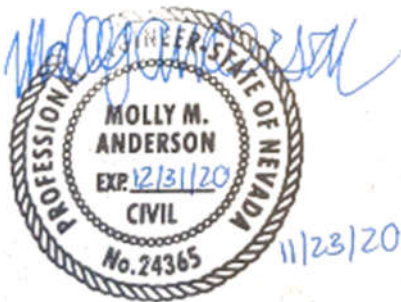
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Comment Response Letter	4
Appendix A. Comment Letter	
Appendix B. CD-ROM	

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 to Addendum #1 to the Technical Drainage Study for Kettle Ridge Drive: Sunset Run Drive to Kindle Rise Way** electronic submittal matches the paper version bound into the study.



Molly Anderson, PE (NV #24365)
Senior Engineer

Comment Response Letter

Your reference: DS #5349

Albert Sung
City of Las Vegas Public Works
333 N. Rancho Dr, 7th Floor
Las Vegas, NV 89106

November 23, 2020

RE: Supplement to Addendum 1 to the Technical Drainage Study for Summerlin West Village 22 Kettle Ridge Drive: Sunset Run Drive to Kindle Rise Way

Dear Albert,

This letter and the attached documents have been prepared as a Supplement to Addendum #1 to the *Technical Drainage Study (TDS) for Summerlin West Village 22 Kettle Ridge Drive: Sunset Run Drive to Kindle Rise Way*.

Comment #1: The subject street improvement of *Kettle Ridge Drive (Street J)* is premised on the existence of *Sunset Run Drive, Kindle Rise Way*, and the associated storm drain facilities are in place for downstream flood perpetuation. The subject drainage study will not be approved prior to the posting of the construction bonds of all of the above stated street improvements projects.

Comment response: Understood.

Comment #2: The project proposes to build temporary drainage facilities, ie, berms/swales along the sides of *Kettle Ridge Drive (Street J)* for interim flood protection. Prior to final plan approval the developer must complete a maintenance and liability agreement for the interim drainage improvements (berms or channels) 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 facility and an exhibit that adequately shows the location and limits of the drainage facility to *City of Las Vegas Flood Control* for approval. Once the drainage study is conditionally approved, the engineer should contact the *City's Land Development Section (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 offsite berms / channels are no longer necessary and can be removed.

Comment response: Once this drainage study is conditionally approved, the report will be submitted to the Land Development Section to begin the agreement process.

Comment #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>

Comment response: This report will be submitted to CCRFCD for concurrence following structural approval by the City Building & Safety Department.

Comment #4: 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: Following TDS Conditional Approval, plans and structural calculations will be submitted to Luis Morales of CLV Land Development, structural review will be concurrent with the Civil Improvement Plans. Atkins will provide approval letter of structural design to CLV Flood Control for final acceptance of drainage study.

Comment #5: Previous Comment: Sheet 8/26 & Sheet 9/26: SDDI #1 appears to be at a local low point. Address in the next submittal during a worst-case scenario that the inlet is totally clogged, what is the maximum ponding depth at the inlet before it overflows. Note that the maximum allowable ponding depth is six inches. Provide enough grade elevations in the plan & profile to verify that the criterion will be met.

Comment response: In the worst-case scenario that SDDI #1 is 100% clogged, SDDI #1 will flood-route east to SDDI #2. The centerline of roadway in the crown between SDDI #1 and SDDI #2 is 3452.70 ft, while the top of curb behind SDDI #1 is 3452.75 ft. Therefore, the flow would flood-route towards SDDI #2 before it overtops the curb. Also, the maximum ponding depth from flowline at SDDI #1 (3452.25 ft) to centerline flood-routing (3452.70 ft) is less than six inches. In the worst-case scenario that SDDI #2 is also 100% clogged, SDDI #2 then flood routes south along Kettle Ridge Drive to Sunset Run Drive, which then flows east.

Comment #6: Previous Comment: Sheet 20/26 & Sheet 21/26: In general, the HGL shown on the profiles for the laterals do not match the calculations. For example: The HGL is lower than the base of the inlet for SDDI #10.

Comment response: SDDI #10 lateral has been revised to show the correct HGL. The associated WSPG-W output is included for review convenience.

Thank you,



Molly Anderson, PE (NV #24365)
Senior Engineer

KR_Lateral-SDDI_10.WSW

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T1 SUMMERLIN WEST VILLAGE 22											
T2 KETTLE RIDGE DRIVE (SUNSET RUN DRIVE TO FLIGHT RANGE AVE)											
T3 ATKINS -SDDI-10 100 YEAR ULTIMATE CONDITION											
SO	1115.63	3437.28	48						3443.40		
R	1118.63	3437.38	24		.013					.000	00.0 0
R	1198.55	3451.50	24		.013					.000	00.0 0
SH	1201.55	3451.50	24								
CD	55	3	0	.000	5.000	5.000	.000	.000	.00		
CD	24	4	1	.000	2.000	.000	.000	.000	.00		
CD	30	4	1	.000	2.500	.000	.000	.000	.00		
CD	36	4	1	.000	3.000	.000	.000	.000	.00		
CD	42	4	1	.000	3.500	.000	.000	.000	.00		
CD	48	4	1	.000	4.000	.000	.000	.000	.00		
CD	54	4	1	.000	4.500	.000	.000	.000	.00		
Q				4.000	.0						

KR_Lateral-SDDI_10.OUT

FILE: KR_Lateral-SDDI_10.WSW

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WATER SURFACE PROFILE LISTING

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SUMMERLIN WEST VILLAGE 22

KETTLE RIDGE DRIVE (SUNSET RUN DRIVE TO FLIGHT RANGE AVE)

ATKINS -SDDI-10 100 YEAR ULTIMATE CONDITION

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/ 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
1115.630	3437.280	6.120	3443.400	4.00	1.27	.03	3443.43	.00	.70	.00	2.000	.000	.00	1 .0
	3.000	.0333				.0003	.00	6.12	.00	.42	.013	.00	.00	PIPE
1118.630	3437.380	6.021	3443.401	4.00	1.27	.03	3443.43	.00	.70	.00	2.000	.000	.00	1 .0
	22.799	.1767				.0003	.01	6.02	.00	.28	.013	.00	.00	PIPE
1141.429	3441.408	2.000	3443.408	4.00	1.27	.03	3443.43	.00	.70	.00	2.000	.000	.00	1 .0
	1.031	.1767				.0003	.00	2.00	.00	.28	.013	.00	.00	PIPE
1142.460	3441.590	1.815	3443.405	4.00	1.34	.03	3443.43	.00	.70	1.16	2.000	.000	.00	1 .0
	.595	.1767				.0003	.00	1.81	.15	.28	.013	.00	.00	PIPE
1143.055	3441.695	1.707	3443.402	4.00	1.40	.03	3443.43	.00	.70	1.41	2.000	.000	.00	1 .0
	.486	.1767				.0003	.00	1.71	.17	.28	.013	.00	.00	PIPE
1143.541	3441.781	1.618	3443.399	4.00	1.47	.03	3443.43	.00	.70	1.57	2.000	.000	.00	1 .0
	.422	.1767				.0003	.00	1.62	.20	.28	.013	.00	.00	PIPE
1143.964	3441.856	1.540	3443.396	4.00	1.54	.04	3443.43	.00	.70	1.68	2.000	.000	.00	1 .0
	.262	.1767				.0004	.00	1.54	.22	.28	.013	.00	.00	PIPE
1144.225	3441.902	1.492	3443.394	4.00	1.59	.04	3443.43	.00	.70	1.74	2.000	.000	.00	1 .0
HYDRAULIC JUMP														
1144.225	3441.902	.280	3442.182	4.00	14.98	3.49	3445.67	.00	.70	1.39	2.000	.000	.00	1 .0
	9.117	.1767				.1731	1.58	.28	6.02	.28	.013	.00	.00	PIPE

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SUMMERLIN WEST VILLAGE 22

KETTLE RIDGE DRIVE (SUNSET RUN DRIVE TO FLIGHT RANGE AVE)

ATKINS -SDDI-10 100 YEAR ULTIMATE CONDITION

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/ 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
1153.342	3443.513	.283	3443.795	4.00	14.77	3.39	3447.18	.00	.70	1.39	2.000	.000	.00	1 .0
16.694	.1767					.1588	2.65	.28	5.90	.28	.013	.00	.00	PIPE
1170.036	3446.462	.292	3446.754	4.00	14.08	3.08	3449.83	.00	.70	1.41	2.000	.000	.00	1 .0
7.101	.1767					.1386	.98	.29	5.53	.28	.013	.00	.00	PIPE
1177.137	3447.717	.302	3448.019	4.00	13.43	2.80	3450.82	.00	.70	1.43	2.000	.000	.00	1 .0
4.394	.1767					.1210	.53	.30	5.19	.28	.013	.00	.00	PIPE
1181.531	3448.493	.312	3448.805	4.00	12.80	2.54	3451.35	.00	.70	1.45	2.000	.000	.00	1 .0
3.111	.1767					.1057	.33	.31	4.86	.28	.013	.00	.00	PIPE
1184.641	3449.043	.322	3449.365	4.00	12.21	2.31	3451.68	.00	.70	1.47	2.000	.000	.00	1 .0
2.364	.1767					.0923	.22	.32	4.56	.28	.013	.00	.00	PIPE
1187.005	3449.460	.333	3449.793	4.00	11.64	2.10	3451.90	.00	.70	1.49	2.000	.000	.00	1 .0
1.873	.1767					.0806	.15	.33	4.27	.28	.013	.00	.00	PIPE
1188.879	3449.792	.344	3450.136	4.00	11.10	1.91	3452.05	.00	.70	1.51	2.000	.000	.00	1 .0
1.526	.1767					.0704	.11	.34	4.00	.28	.013	.00	.00	PIPE
1190.405	3450.061	.356	3450.417	4.00	10.58	1.74	3452.15	.00	.70	1.53	2.000	.000	.00	1 .0
1.268	.1767					.0615	.08	.36	3.75	.28	.013	.00	.00	PIPE
1191.673	3450.285	.368	3450.653	4.00	10.09	1.58	3452.23	.00	.70	1.55	2.000	.000	.00	1 .0
1.067	.1767					.0537	.06	.37	3.51	.28	.013	.00	.00	PIPE

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SUMMERLIN WEST VILLAGE 22

KETTLE RIDGE DRIVE (SUNSET RUN DRIVE TO FLIGHT RANGE AVE)

ATKINS -SDDI-10 100 YEAR ULTIMATE CONDITION

*****																	*****	
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/ 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				
*****																	*****	
1192.740	3450.474	.380	3450.854	4.00	9.62	1.44	3452.29	.00	.70	1.57	2.000	.000	.00	1	.0			
	.907	.1767				.0469	.04	.38	3.29	.28	.013	.00	.00	PIPE				
1193.647	3450.634	.393	3451.027	4.00	9.17	1.31	3452.33	.00	.70	1.59	2.000	.000	.00	1	.0			
	.777	.1767				.0410	.03	.39	3.08	.28	.013	.00	.00	PIPE				
1194.424	3450.771	.406	3451.177	4.00	8.74	1.19	3452.36	.00	.70	1.61	2.000	.000	.00	1	.0			
	.668	.1767				.0358	.02	.41	2.89	.28	.013	.00	.00	PIPE				
1195.092	3450.889	.420	3451.309	4.00	8.34	1.08	3452.39	.00	.70	1.63	2.000	.000	.00	1	.0			
	.577	.1767				.0313	.02	.42	2.71	.28	.013	.00	.00	PIPE				
1195.669	3450.991	.434	3451.425	4.00	7.95	.98	3452.41	.00	.70	1.65	2.000	.000	.00	1	.0			
	.498	.1767				.0274	.01	.43	2.54	.28	.013	.00	.00	PIPE				
1196.167	3451.079	.449	3451.528	4.00	7.58	.89	3452.42	.00	.70	1.67	2.000	.000	.00	1	.0			
	.431	.1767				.0239	.01	.45	2.38	.28	.013	.00	.00	PIPE				
1196.598	3451.155	.465	3451.620	4.00	7.23	.81	3452.43	.00	.70	1.69	2.000	.000	.00	1	.0			
	.371	.1767				.0209	.01	.46	2.22	.28	.013	.00	.00	PIPE				
1196.969	3451.221	.480	3451.701	4.00	6.89	.74	3452.44	.00	.70	1.71	2.000	.000	.00	1	.0			
	.319	.1767				.0183	.01	.48	2.08	.28	.013	.00	.00	PIPE				
1197.287	3451.277	.497	3451.774	4.00	6.57	.67	3452.44	.00	.70	1.73	2.000	.000	.00	1	.0			
	.273	.1767				.0160	.00	.50	1.95	.28	.013	.00	.00	PIPE				

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SUMMERLIN WEST VILLAGE 22

KETTLE RIDGE DRIVE (SUNSET RUN DRIVE TO FLIGHT RANGE AVE)

ATKINS -SDDI-10 100 YEAR ULTIMATE CONDITION

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 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
1197.560	3451.325	.514	3451.839	4.00	6.26	.61	3452.45	.00	.70	1.75	2.000	.000	.00	1 .0
	.232	.1767				.0140	.00	.51	1.83	.28	.013	.00	.00	PIPE
1197.792	3451.366	.532	3451.898	4.00	5.97	.55	3452.45	.00	.70	1.77	2.000	.000	.00	1 .0
	.194	.1767				.0122	.00	.53	1.71	.28	.013	.00	.00	PIPE
1197.986	3451.401	.550	3451.951	4.00	5.69	.50	3452.45	.00	.70	1.79	2.000	.000	.00	1 .0
	.161	.1767				.0107	.00	.55	1.60	.28	.013	.00	.00	PIPE
1198.147	3451.429	.569	3451.998	4.00	5.43	.46	3452.46	.00	.70	1.80	2.000	.000	.00	1 .0
	.130	.1767				.0094	.00	.57	1.50	.28	.013	.00	.00	PIPE
1198.276	3451.452	.589	3452.041	4.00	5.18	.42	3452.46	.00	.70	1.82	2.000	.000	.00	1 .0
	.103	.1767				.0082	.00	.59	1.40	.28	.013	.00	.00	PIPE
1198.379	3451.470	.610	3452.080	4.00	4.94	.38	3452.46	.00	.70	1.84	2.000	.000	.00	1 .0
	.077	.1767				.0072	.00	.61	1.31	.28	.013	.00	.00	PIPE
1198.456	3451.484	.631	3452.115	4.00	4.71	.34	3452.46	.00	.70	1.86	2.000	.000	.00	1 .0
	.053	.1767				.0063	.00	.63	1.23	.28	.013	.00	.00	PIPE
1198.509	3451.493	.653	3452.146	4.00	4.49	.31	3452.46	.00	.70	1.88	2.000	.000	.00	1 .0
	.031	.1767				.0055	.00	.65	1.15	.28	.013	.00	.00	PIPE
1198.540	3451.498	.676	3452.175	4.00	4.28	.28	3452.46	.00	.70	1.89	2.000	.000	.00	1 .0
	.010	.1767				.0048	.00	.68	1.07	.28	.013	.00	.00	PIPE

KR_Lateral-SDDI_10.OUT

FILE: KR_Lateral-SDDI_10.WSW

W S P G W - CIVILDESIGN Version 14.08

PAGE 5

Program Package Serial Number: 7271

WATER SURFACE PROFILE LISTING

Date:11-18-2020 Time: 9:51:53

SUMMERLIN WEST VILLAGE 22

KETTLE RIDGE DRIVE (SUNSET RUN DRIVE TO FLIGHT RANGE AVE)

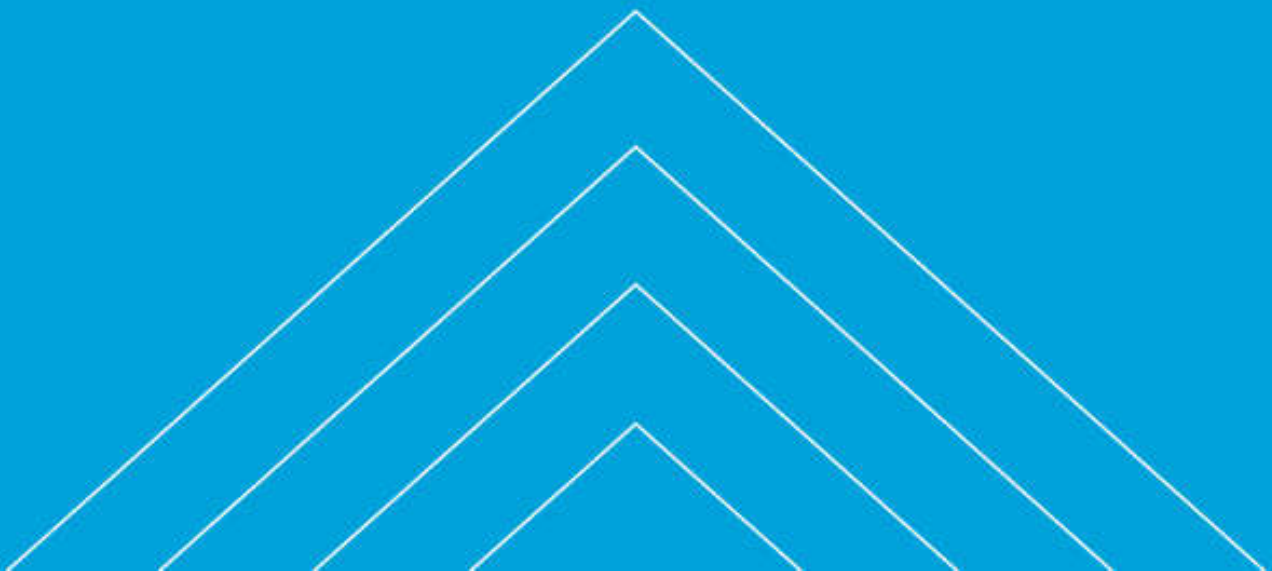
ATKINS -SDDI-10 100 YEAR ULTIMATE CONDITION

```

*****
| Invert | Depth | Water | Q | Vel | Vel | Energy | Super | Critical | Flow Top | Height/ | Base Wt | | No Wth
Station | Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT | or I.D. | ZL | Prs/Pip
-|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|-
L/Elem |Ch Slope | | | | | SF Ave | HF | SE Dpth | Froude N | Norm Dp | "N" | X-Fall | ZR | Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
| | | | | | | | | | | | | | | |
1198.550 3451.500 .701 3452.201 4.00 4.07 .26 3452.46 .00 .70 1.91 2.000 .000 .00 1 .0
-|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|-
| | | | | | | | | | | | | | | |
1201.550 3451.500 .701 3452.201 4.00 4.07 .26 3452.46 .00 .70 1.91 2.000 .000 .00 1 .0
-|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|- -|-

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Appendices



Appendix A. Comment Letter

CITY OF LAS VEGAS			DATE:		
INTER-OFFICE MEMORANDUM			November 17, 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:			COPIES TO:		
Summerlin West Village 22 - Kettle Ridge Drive (Street J) (from Sunset Run Drive to Kindle Rise Way)			Atkins Global		
Cross Streets: Kettle Ridge Drive and Sunset Run Drive			Howard Hughes Company, LLC.		
File Number: F:\Depot\DSMemos\DS5349B.doc			Bart Anderson, P.E., DevCo		
Parcel Number: 137-23-210-001			CCRFC		
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 #
1 st Submittal	8/27/2020	9/14/2020	Not Approved	\$400.00	3990502: \$400
2 nd Submittal	11/4/2020	11/17/2020	See Comments Below	\$400.00	4061002: \$400
			TOTAL FEES (LDDRS):	\$800.00	----

REMARKS:

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

	is approved subject to conformance to all City standards and the following conditions:
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.

- The subject street improvement of *Kettle Ridge Drive (Street J)* is premised on the existence of *Sunset Run Drive*, *Kindle Rise Way* and the associated storm drain facilities are in place for downstream flood perpetuation. The subject drainage study will not be approved prior to the posting of the construction bonds of the above stated street improvements projects.
- The project proposes to build temporary drainage facilities, ie, berms/swales along the sides of *Kettle Ridge Drive (Street J)* for interim flood protection. Prior to final plan approval the developer must complete a maintenance and liability agreement for the interim drainage improvements (berms or channels) 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 facility and an exhibit that adequately shows the location and limits of the drainage facility to *City of Las Vegas Flood Control* for approval. Once the drainage study is conditionally approved, the engineer should contact the *City's Land Development Section* (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 offsite berms / channels are no longer necessary and can be removed.

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. 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.
5. **Previous Comment: Sheet 8/26 & Sheet 9/26: SDDI #1 appears to be at a local low point. Address in the next submittal during a worst case scenario that the inlet is totally clogged, what is the maximum ponding depth at the inlet before it overflows. Note that the maximum allowable ponding depth is six inches. Provide enough grade elevations in the plan & profile to verify that the criterion will be met.**

The response did not clearly explain what will happen if the inlet is 100% clogged. Note that the inlet is in a low point, it doesn't look like the ponding water (in case the inlet is totally clogged) have any emergency overflow path, ie, the worst case situation can be disastrous.

Address and resolve in the next submittal.

6. **Previous Comment: Sheet 20/26 & Sheet 21/26: In general, the HGL shown on the profiles for the laterals do not match the calculations. For example: SDDI #2: Calculation shows a lower water surface while the profile shows a much higher water surface. SDDI #5: The HGL is even lower than the base of the inlet. Same for SDDI #10.**

Review and revise all the laterals and DIs calculations to match the plotted profiles on the plan in the next submittal.

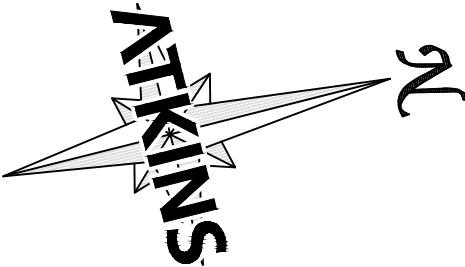
The response to SDDI #10 is still un-satisfactory: The HGL is still lower than the base of the inlet. Perform better quality control in the next submittal.

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
HDR/AYS

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

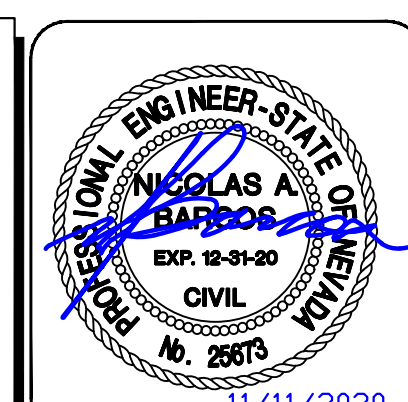
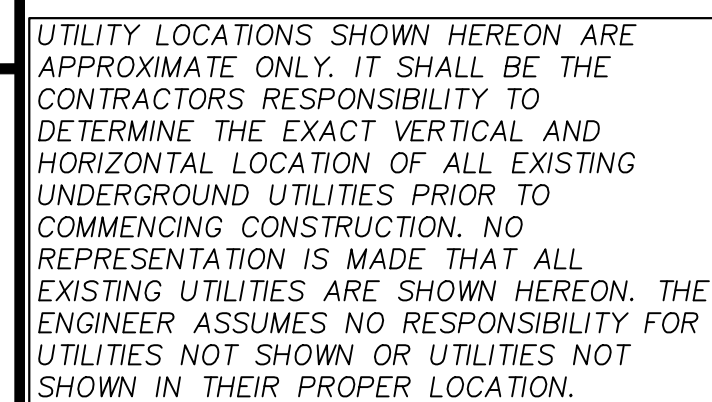
Appendix B. CD-ROM



MATCHLINE STATION 34+00 - SEE SHEET 10

1. INSTALL STORM DRAIN. SEE SHEET 3 FOR ADDITIONAL STORM DRAIN NOTES AND INFORMATION.
2. INSTALL TYPE "CM2" DROP INLET PER CCAUSD #412.1 & #421
3. INSTALL TYPE II SD MANHOLE PER CCAUSD #405.2
4. INSTALL TYPE III SD MANHOLE PER CCAUSD #406
5. INSTALL NDOT TYPE 2 DROP INLET PER NDOT R-4.2.1 (SEE SHEET 27)
6. STUB & PLUG STORM DRAIN FOR FUTURE CONNECTION PER MANUFACTURER'S PLUG, OR APPROVED EQUAL (SEE SHEET 27)
7. INSTALL RIP-RAP (D50=12", THICKNESS=24")
8. INSTALL RIP-RAP (D50=6", THICKNESS=12")

- ① CONSTRUCT PLANTMIX BITUMINOUS SURFACE OVER TYPE II AGGREGATE BASE PER SOILS REPORT. SEE SHEET 26 FOR TYPICAL PAVEMENT SECTION.
- ② CONSTRUCT "L" TYPE CURB AND GUTTER PER CCAUSD #216
- ③ FUTURE SIDEWALK BY OTHERS
- ④ CONSTRUCT CURB RAMP, TYPE A, PER NDOT STANDARD PLAN R-5.2.1.
- ⑤ CONSTRUCT CONCRETE BIKE PATH PER CCAUSD #234
- ⑥ CONSTRUCT CURB RAMP, TYPE A, PER NDOT STANDARD PLAN R-5.2.1 (A=B=6.5')
- ⑦ INSTALL SCHEDULE 40 PVC IRRIGATION SLEEVES (2'-4", 1'-6") PER DETAIL B ON SHEET 29



JOB NO. 700066768		DESIGNED BY: N. BARCOS		SUMMERLIN VILLAGE 22		 S U M M E R L I N .		ATKINS		REVISIONS				
DRAWN BY: MAMAKLAY		CHECKED BY: P. BATES		KETTLE RIDGE DRIVE (STREET J) SUNSET RUN DRIVE TO KINDLE RISE WAY (STREET F)				2270 Corporate Circle Suite 200 Henderson, Nevada 89074 Telephone: +1702.263.7275 Fax: +1702.263.7200		REV.	DESCRIPTION	BY	DATE	APPROVAL
DRAWING NO.		HORIZ.: NONE VERT.: NONE		ROADWAY GRADING PLAN BEGIN TO STA 34+00										
NOVEMBER, 2020		8 / 29												



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#XXX-0000

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.	CITY OF LAS VEGAS BENCHMARK: D368 (REVISED 2008) NAD 83 ELEVATION: 989.574 METERS (3,246.61 FEET) FNU: USGCS DISC SET IN ROCK RIDGE 150 SOUTH OF CHARLTON BLVD. & WEST OF DETENTION BASIN. T21S,R59E,S03
--	---

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

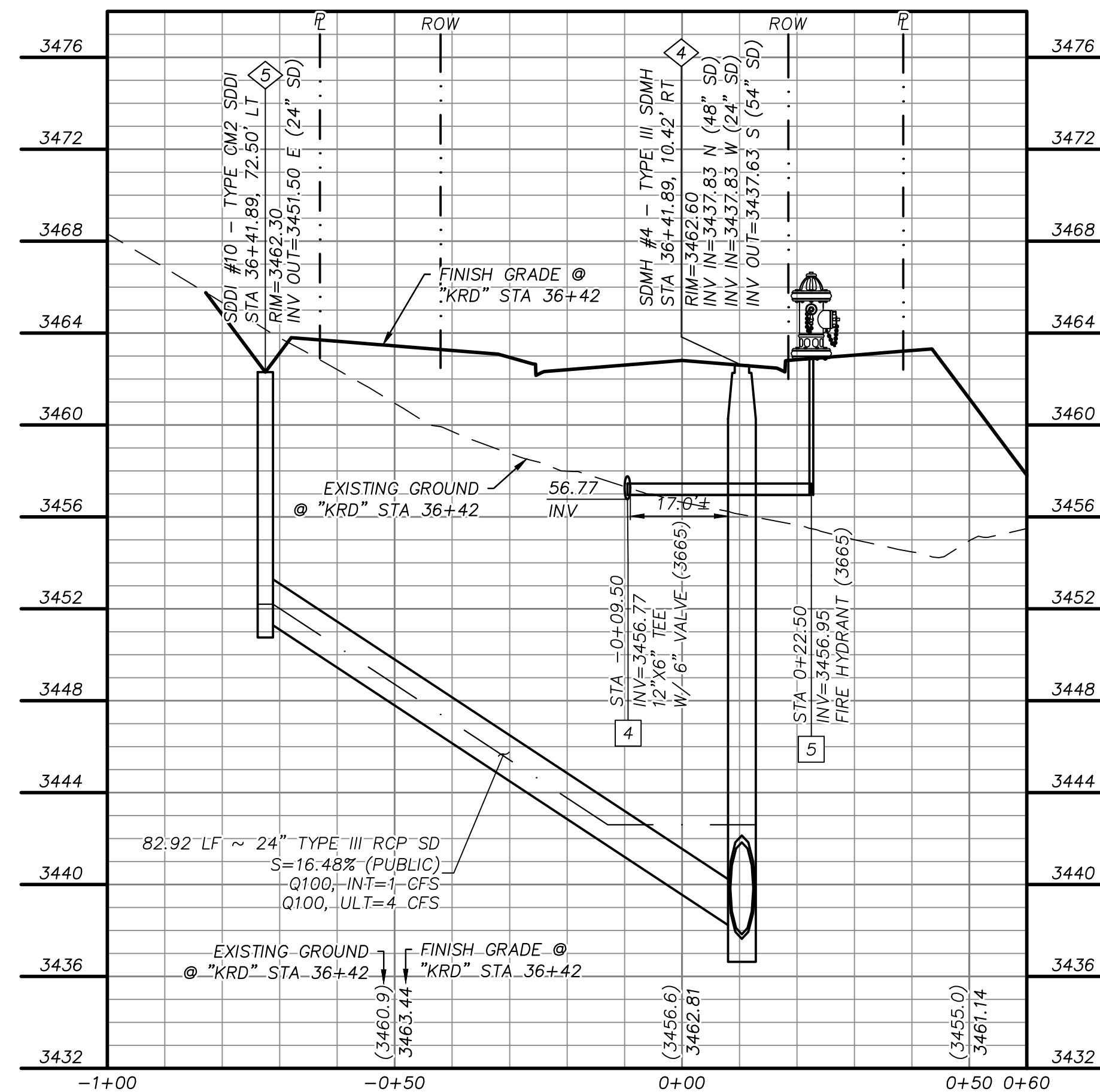
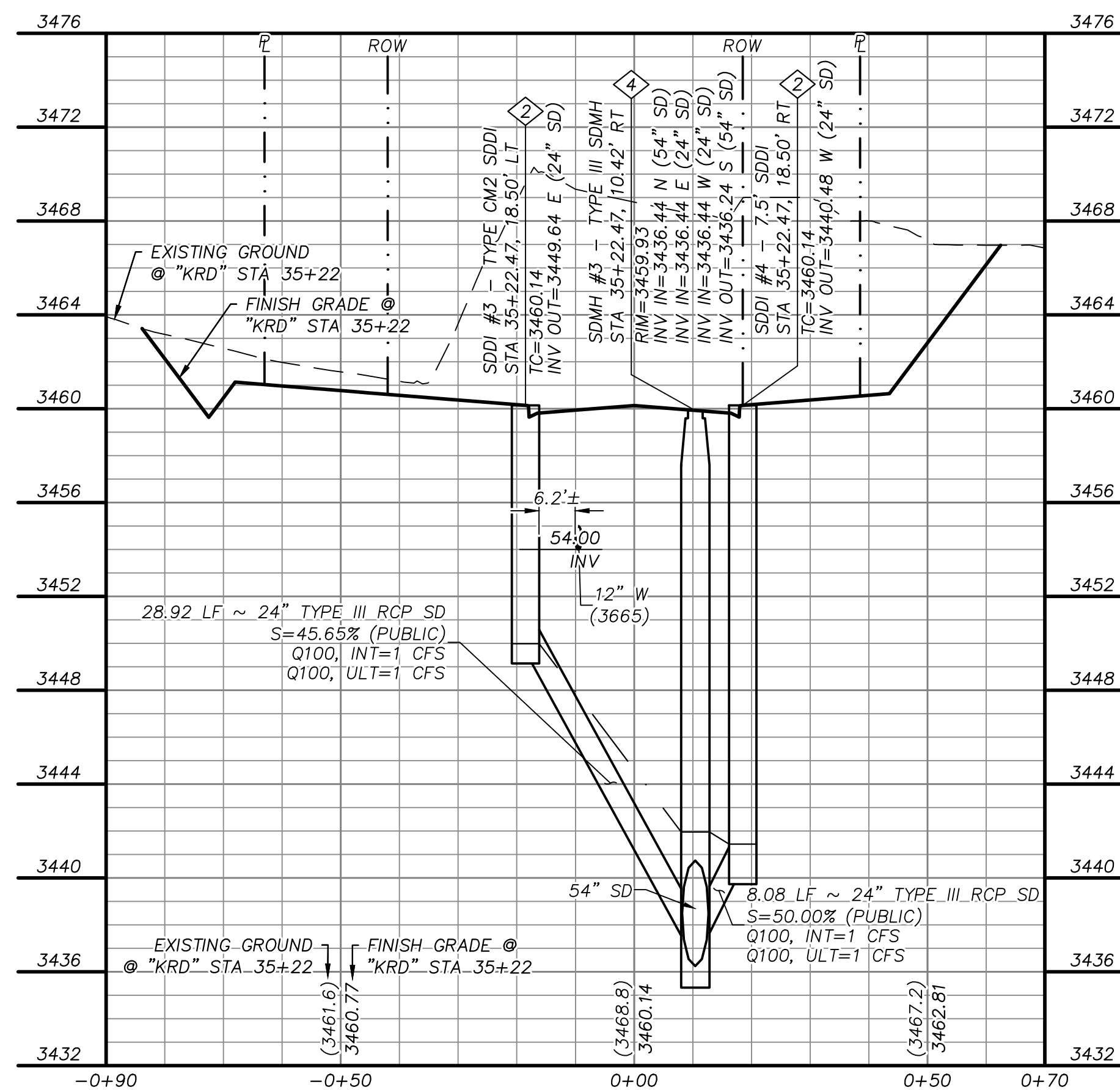
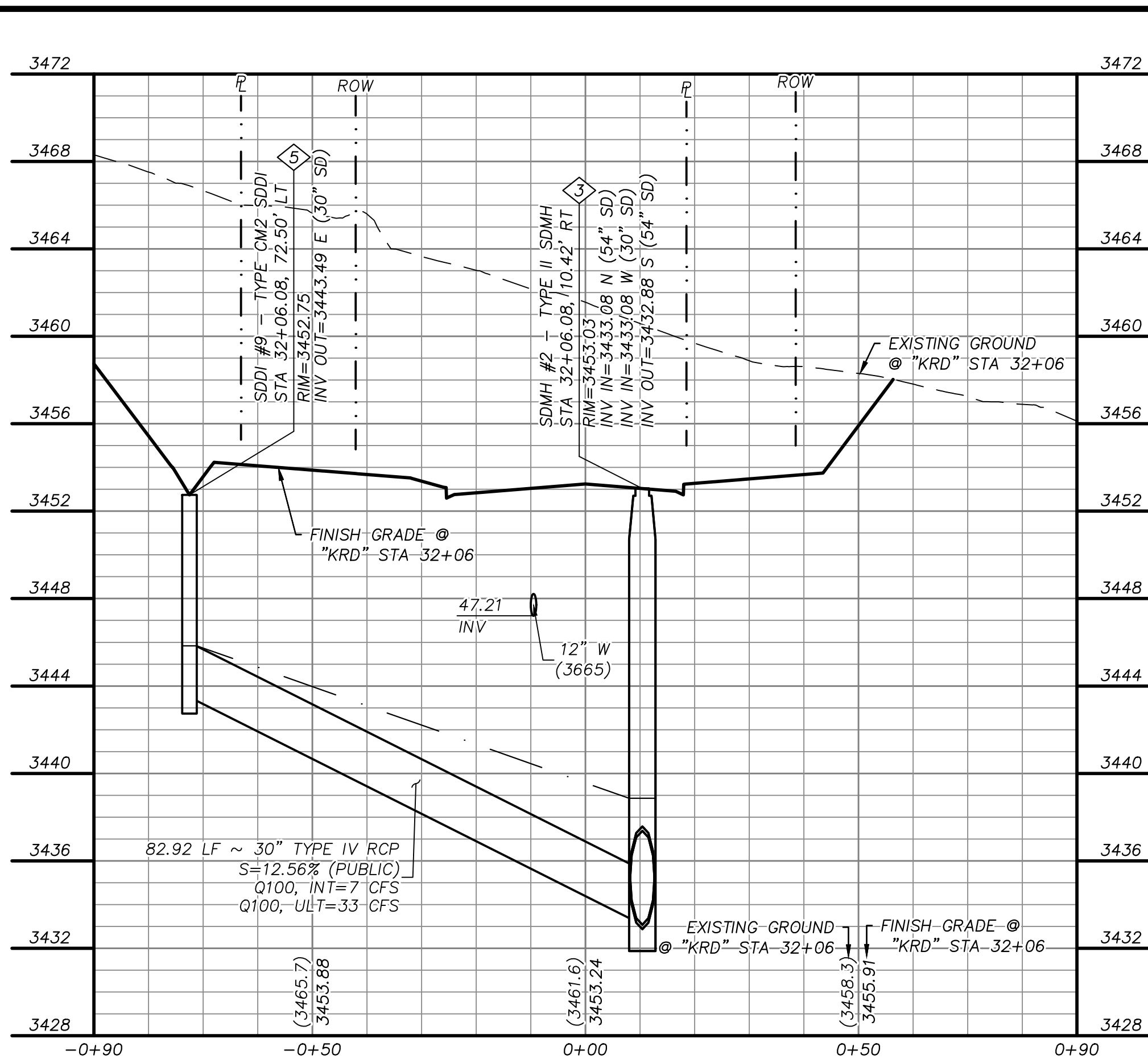
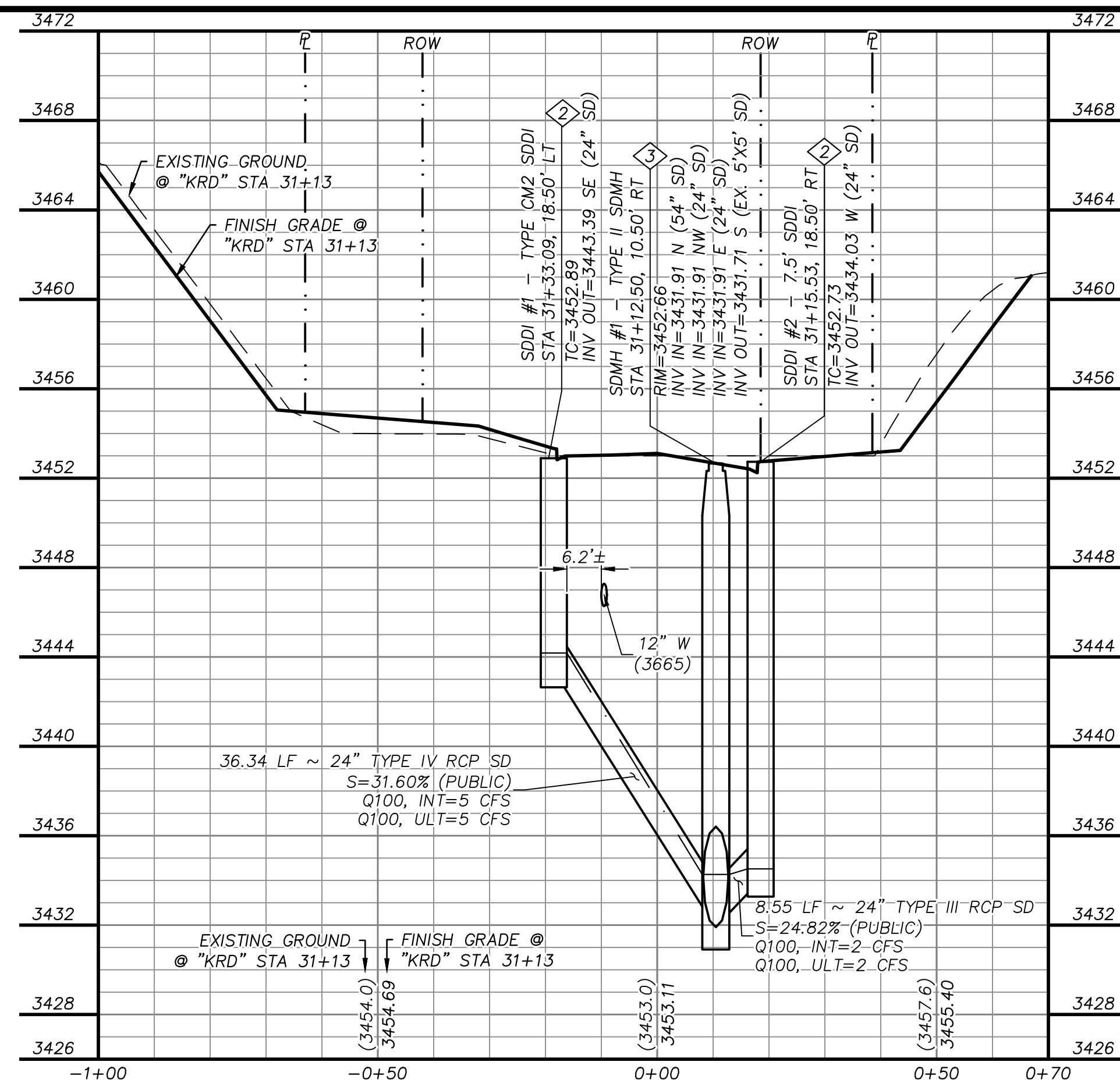


Call before you Dig
AVOID CUTTING UNDERGROUND
UTILITY LINES. IT'S COSTLY.

Call
811
OR
1-800-642-2444



\\Projects\Summ West\ Village 22\100066768 - V22 Kettle Ridge (Sunset to Fleet Wing)\ Sheets\66768-10-GRAD-C10.dwg LAYOUT: G1 Nov 19, 2020 - 1:42PM



STORM DRAIN CONSTRUCTION NOTES

1. INSTALL STORM DRAIN. SEE SHEET 3 FOR ADDITIONAL STORM DRAIN NOTES AND INFORMATION.
2. INSTALL TYPE "CM2" DROP INLET PER CCAUSD #412.1 & #421
3. INSTALL TYPE II SD MANHOLE PER CCAUSD #405.2
4. INSTALL TYPE III SD MANHOLE PER CCAUSD #406
5. INSTALL NDOT TYPE 2 DROP INLET PER NDOT R-4.2.1 (SEE SHEET 27)
6. STUB & PLUG STORM DRAIN FOR FUTURE CONNECTION PER MANUFACTURER'S PLUG, OR APPROVED EQUAL (SEE SHEET 27)
7. INSTALL RIP-RAP (D50=12", THICKNESS=24")
8. INSTALL RIP-RAP (D50=6", THICKNESS=12")

SEWER CONSTRUCTION NOTES

- ① INSTALL SEWER MANHOLE PER DCSWCS SD-1A, SD-1B, AND SD-4
- 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).

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 FIRE HYDRANT WITH APPURTENANCES (CONCRETE PAD, LATERAL, VALVE, AND TEE) PER UDACS PLATES #30, #31, #39, AND #40.
- [6] INSTALL DEFLECTION AT PIPE JOINTS (MAXIMUM OF 1")
- [7] INSTALL 5' HORIZONTAL BEND PER UDACS PLATE #31
- [8] INSTALL 45° HORIZONTAL BEND PER UDACS PLATE #31
- [9] INSTALL TAPPING SLEEVE WITH TAPPING VALVE AND LATERAL PER UDACS PLATES #17, #19, #30, #31, #34, AND #39
- [10] REMOVE CAP AND 2" BLOWOFF AND CONNECT TO EXISTING WATERLINE SUB
- [11] INSTALL 11.25° VERTICAL BEND PER UDACS PLATE #31
- [12] INSTALL 5° VERTICAL BEND PER UDACS PLATE #31
- [13] INSTALL 1-1/2" IRRIGATION METER WITH 1-1/2" RPPA PER UDACS PLATES #4 AND #38 WITH CURB STOP
- [14] INSTALL COMBINATION AIR VALVE ASSEMBLY WITH ALL APPURTENANCES PER UDACS PLATE #38

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT
PROJECT NO. 0000 FIRST APPROVED 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.

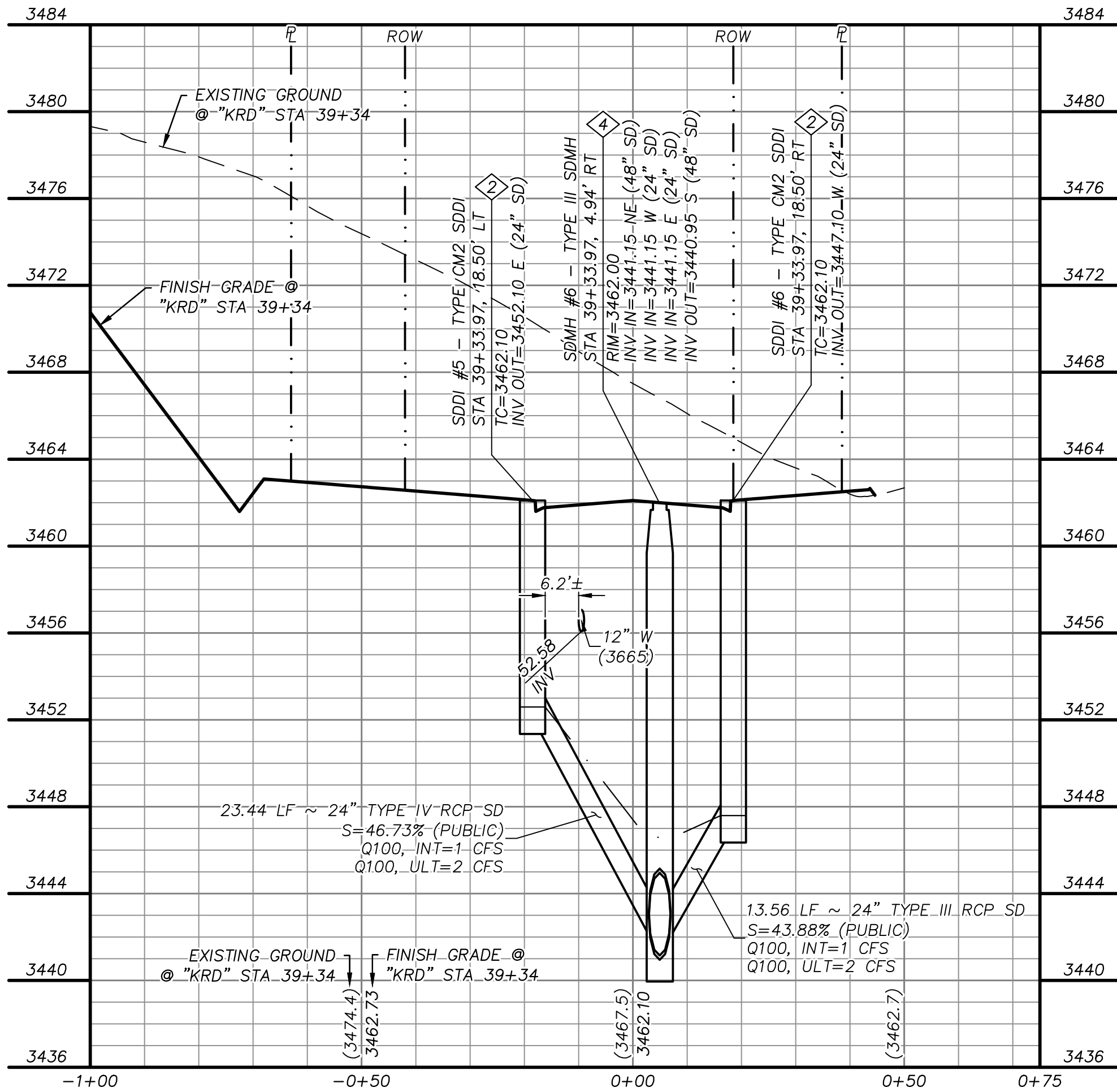
BENCHMARK

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



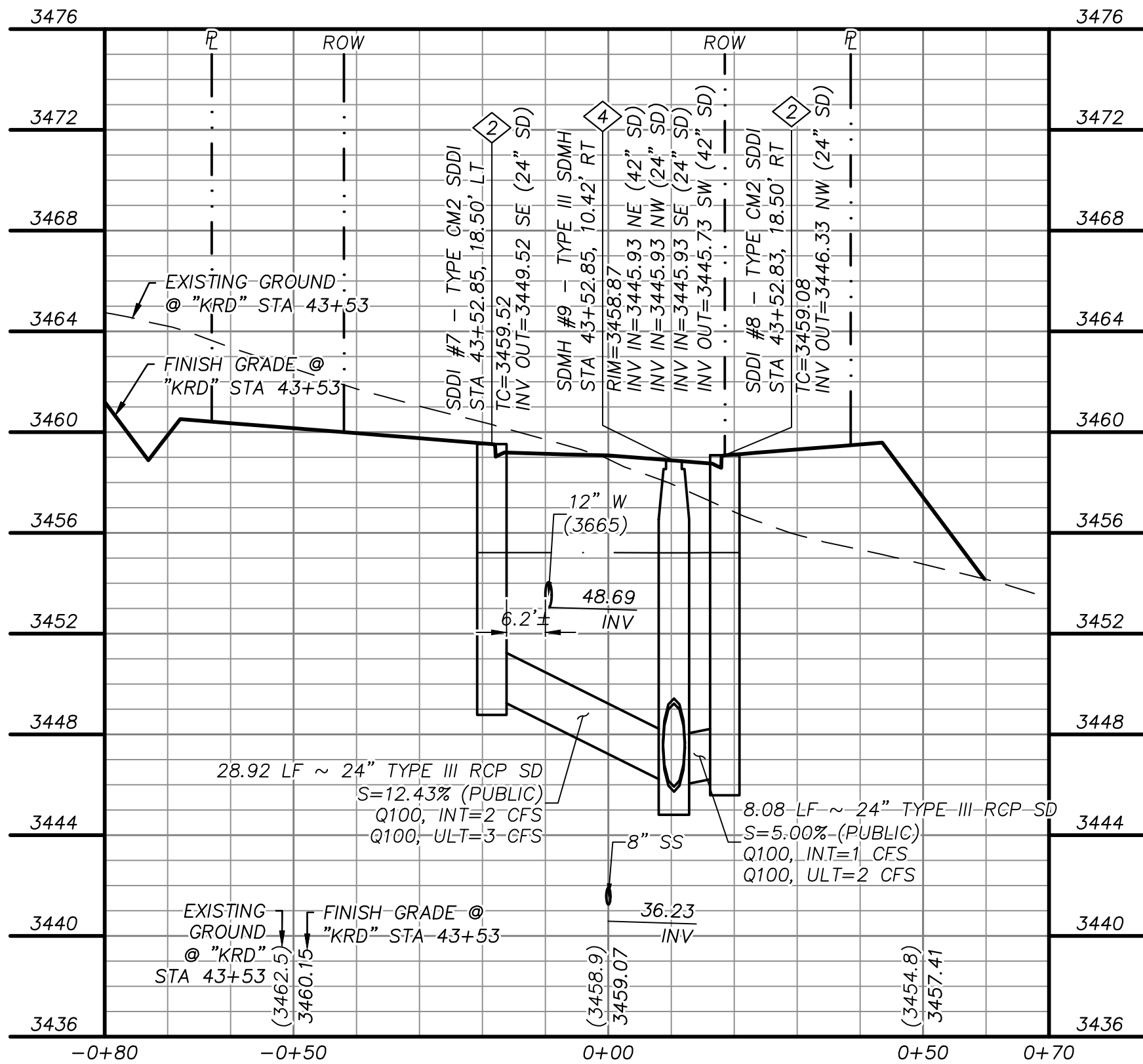
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		DATE: NOVEMBER, 2020	DRAWN BY: L. MAMAOLAY
		DRAWING NO.	CHECKED BY: P. BATES
		20/29	HORIZ.: NONE VERT.: NONE

SUMMERLIN VILLAGE 22
KETTLE RIDGE DRIVE (STREET J)
SUNSET RUN DRIVE TO KINDLE RISE WAY (STREET F)



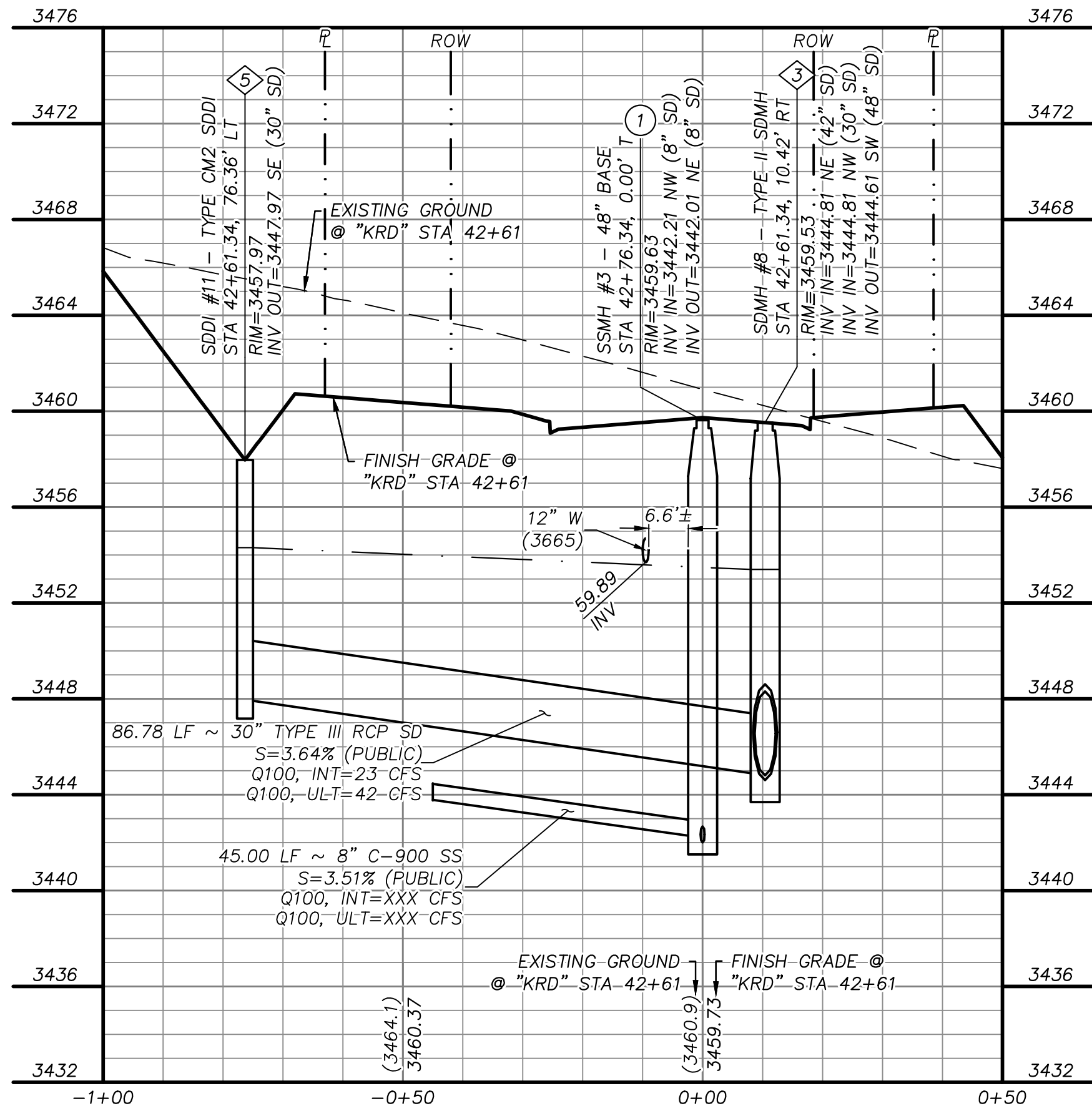
STORM DRAIN LATERAL 5

"KRD" STA. 39+34 SEE SHEET 13



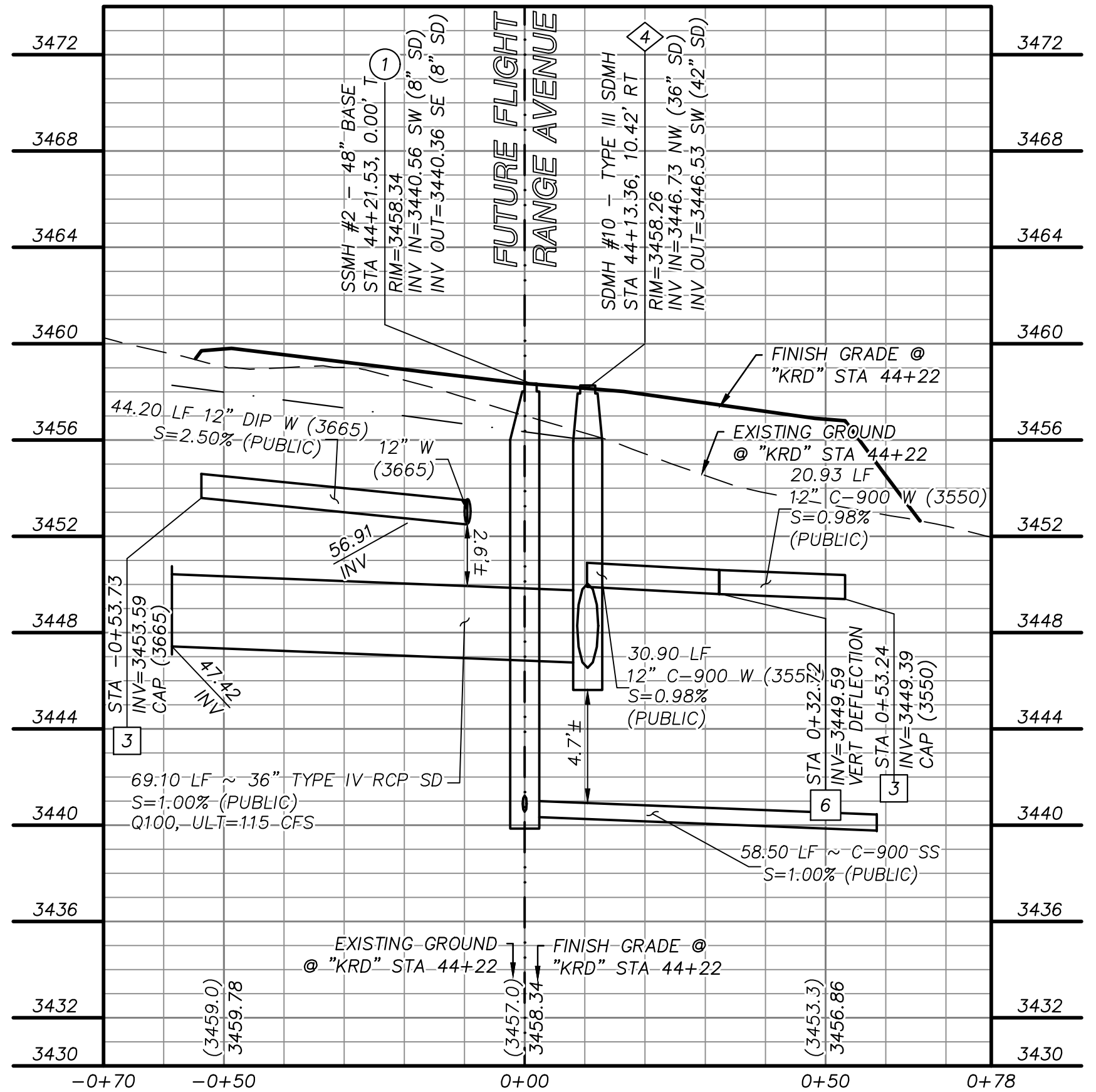
STORM DRAIN LATERAL 7

"KRD" STA. 43+53 SEE SHEET 15



STORM DRAIN LATERAL 6

"KRD" STA. 42+61 SEE SHEET 15



STORM DRAIN LATERAL 8

"KRD" STA. 44+22 SEE SHEET 15

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14. INSTALL COMBINATION AIR VALVE ASSEMBLY WITH ALL APPURTENANCES PER UDACS PLATE #38

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT
PROJECT NO. 0000 FIRST APPROVED DATE: _____

BASIS OF BEARING

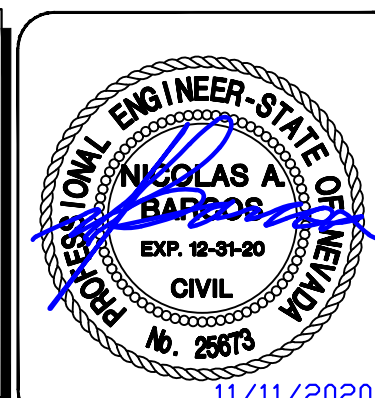
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T21S.R59E.S03



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.



DESIGNED BY: N. BARCOS
DRAWN BY: L. MAMACLAY
CHECKED BY: P. BATES
HORIZ.: NONE
VERT.: NONE
JOB NO. 1000066768
DATE: NOVEMBER, 2020
DRAWING NO. 21/29
CLV 00-000000

SUMMERLIN VILLAGE 22
KETTLE RIDGE DRIVE (STREET J)
SUNSET RUN DRIVE TO KINDLE RISE WAY (STREET F)

STORM DRAIN LATERAL PROFILES 2



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

REV.	DESCRIPTION	BY	DATE	APPROVAL

REVISIONS



2270 Corporate Circle
Suite 200
Henderson NV 89074-7755
Tel: 702.263.7275
www.atkinsglobal.com/northamerica