ARIZONA
TEXAS
NEW MEXICO
OKLAHOMA

January 3, 2022

City of Sedona
Public Works Department
102 Roadrunner Drive
Sedona, AZ 86336

Re: Sunset Lofts, Traffic Engineering Comments (12/16/21)

Lee Engineering prepared a traffic impact study, dated December 2021, for a residential development on Sunset Drive in Sedona, Arizona. As part of the City review process, a single comment associated with the report was identified (Engineering Comment #1, attached). Opposed to producing a revised report, this letter addresses the comment.

The report suggested a potential improvement to the SR 89A/Sunset Drive/Coffee Pot Drive intersection to modify the northbound middle lane from a though lane to a shared through/left lane configuration, but did not indicate the LOS impacts associated with this modification. Table 1 shows the requested LOS summary comparison of the two conditions, the top half under existing intersection conditions and the bottom half with the modified northbound approach. In review of the results, similar delays are anticipated for the northbound movements, but with the left turn and through movement queue combined and equally distributed across the two lanes, reducing the back of queue length from approximately 195 feet to 155 feet. Because the northbound phase is expected to "gap out" sooner, additional green time to the higher volume east/west approaches can be provided, slightly improving conditions for these movements and the overall operation of the intersection. The Synchro output sheets for the modified intersection design is attached while the existing condition output sheets are included as part of the original report.

If the northbound approach lane configuration is to be changed, the N/S pavement markings for the left-turn movements will also require modification, as shown in the attached graphic. Potentially, the east and west crosswalk and stop lines may need to be shifted outward.

If we can provide more information or if you would like us to conduct additional traffic analysis related to this site, please do not hesitate to contact me at 602-443-8472 or pguzek@lee-eng.com.

Respectfully Submitted,

Paul Guzek, P.E., PTOE
Lee Engineering, LLC

attachments

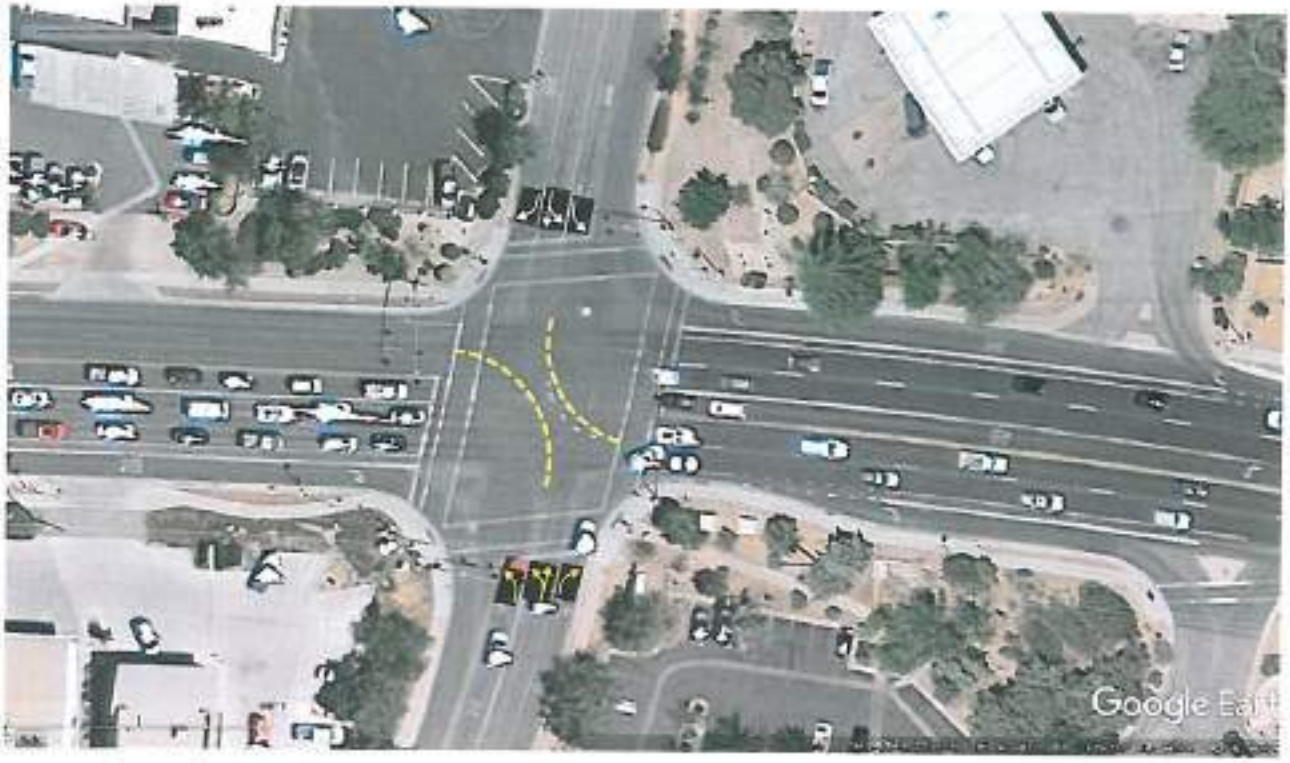
Table 1. LOS Summary Comparison, Potential Lane Configuration Change at SR 89 and Sunset/Coffee Pot

Intersection/Movement	AM Peak				Midday Peak				PM Peak			
	LOS	Delay	V/C	Queue	LOS	Delay	V/C	Queue	LOS	Delay	V/C	Queue
2023 Total - EXISTING LANE CONFIGURATION												
Int 1: SR 89A/Sunset/Coffee Pot (S)	C	34.8			D	38.7			C	34.4		
EB Left	C	26.0	--	164	D	48.8	--	271	D	37.6	--	177
EB Thru	C	31.2	--	743	D	36.0	--	964	C	31.5	--	813
EB Right	A	1.6	--	<50	A	6.3	--	<50	A	3.5	--	<50
WB Left	C	24.4	--	93	D	40.8	--	176	C	21.1	--	96
WB Thru	D	37.4	--	730	D	44.0	--	983	D	38.1	--	975
WB Right	A	4.9	--	<50	A	4.8	--	<50	A	5.4	--	<50
NB Left	E	71.6	0.73	195	E	63.7	0.67	178	E	64.6	0.70	194
NB Thru	D	52.3	--	87	D	49.3	--	82	D	46.6	--	65
NB Right	B	11.3	--	50	B	10.0	--	<50	A	10.0	--	<50
SB Left	E	70.3	0.69	178	E	62.0	0.61	158	E	61.1	0.58	146
SB Thru/Left	E	70.0	0.69	180	E	62.0	0.62	162	E	60.6	0.57	145
SB Right	B	11.7	--	53	B	10.6	--	52	B	10.8	--	51
2023 Total - Modified NB Approach Lane Configuration												
Int 1: SR 89A/Sunset/Coffee Pot (S)	C	32.8			D	36.4			C	32.1		
EB Left	C	21.6	--	148	D	44.2	--	265	C	34.1	--	168
EB Thru	C	38.1	--	691	C	33.3	--	964	C	28.9	--	813
EB Right	A	1.4	--	<50	A	6.2	--	<50	A	3.5	--	<50
WB Left	C	20.5	--	83	D	36.3	--	169	B	19.3	--	96
WB Thru	C	34.1	--	684	D	40.2	--	983	C	34.3	--	975
WB Right	A	4.5	--	<50	A	4.7	--	<50	A	5.3	--	<50
NB Left	E	70.6	0.65	155	E	61.0	0.56	137	E	60.9	0.56	137
NB Thru/Left	E	70.9	0.66	150	E	60.7	0.56	131	E	60.7	0.56	130
NB Right	B	13.1	--	52	B	10.9	--	<50	B	11.1	--	<50
SB Left	E	70.3	0.69	178	E	62.0	0.61	158	E	61.1	0.58	146
SB Thru/Left	E	70.0	0.69	180	E	62.0	0.62	162	E	60.6	0.57	145
SB Right	B	11.7	--	53	B	10.6	--	52	B	10.8	--	51

Notes:

1. S = Signal, MSS = Minor Street Stop Control. V/C only shown if LOS E/F. Delay in seconds. Queue in feet.

Existing N/S Lane Configuration and Intersection Pavement Markings



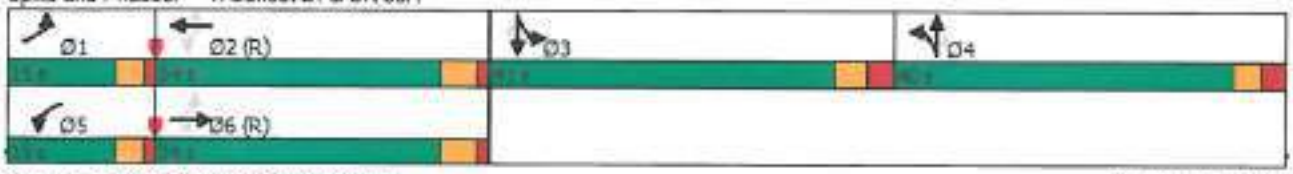
Potential New N/S Lane Configuration and Intersection Pavement Markings

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	1134	56	111	1029	77	146	59	134	218	32	159
Future Volume (vph)	174	1134	56	111	1029	77	146	59	134	218	32	159
Satd. Flow (prot)	1770	3282	1583	1770	3282	1583	1681	1734	1583	1681	1706	1583
Flt Permitted	0.119			0.141			0.950	0.980		0.950	0.964	
Satd. Flow (perm)	222	3282	1583	263	3282	1583	1681	1734	1583	1681	1706	1583
Satd. Flow (RTOR)			107			107			158			187
Lane Group Flow (vph)	205	1260	70	131	1143	96	120	126	158	146	148	187
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		6	2		2			4			3
Total Split (s)	15.0	34.0	34.0	15.0	34.0	34.0	40.0	40.0	40.0	41.0	41.0	41.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	5.7	5.7	5.7	6.0	6.0	6.0
Act Effct Green (s)	83.5	69.2	69.2	70.9	60.7	60.7	14.4	14.4	14.4	16.4	16.4	16.4
Actuated g/C Ratio	0.64	0.53	0.53	0.55	0.47	0.47	0.11	0.11	0.11	0.13	0.13	0.13
v/c Ratio	0.58	0.72	0.08	0.52	0.75	0.12	0.65	0.66	0.50	0.69	0.69	0.52
Control Delay	21.6	28.1	1.4	20.5	34.1	4.5	70.6	70.9	13.1	70.3	70.0	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.6	28.1	1.4	20.5	34.1	4.5	70.6	70.9	13.1	70.3	70.0	11.7
LOS	C	C	A	C	C	A	E	E	B	E	E	B
Approach Delay		26.0			30.6			48.2			47.4	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)	63	391	0	39	398	0	104	109	0	126	128	0
Queue Length 95th (ft)	148	#691	4	83	#684	22	155	150	52	178	180	53
Internal Link Dist (ft)		669			985			426			299	
Turn Bay Length (ft)	325		200	250		225	125		110	110		110
Base Capacity (vph)	354	1747	892	279	1531	795	443	457	533	452	459	562
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.72	0.08	0.47	0.75	0.12	0.27	0.28	0.30	0.32	0.32	0.33

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 32.8 Intersection LOS: C
Intersection Capacity Utilization 64.1% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Sunset Dr & SR 89A

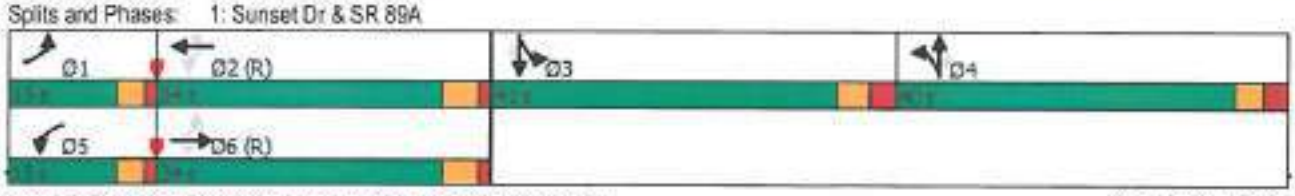


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	1136	87	141	1154	75	146	61	131	197	51	210
Future Volume (vph)	169	1136	87	141	1154	75	146	61	131	197	51	210
Satd. Flow (prot)	1770	3282	1583	1770	3282	1583	1681	1736	1583	1681	1718	1583
Flt Permitted	0.073			0.113			0.950	0.981		0.950	0.971	
Satd. Flow (perm)	136	3282	1536	210	3282	1531	1672	1732	1559	1678	1716	1554
Satd. Flow (RTOR)			107			107			154			247
Lane Group Flow (vph)	199	1262	102	166	1282	88	122	126	154	144	148	247
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		6	2		2			4			3
Total Split (s)	15.0	34.0	34.0	15.0	34.0	34.0	40.0	40.0	40.0	41.0	41.0	41.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	5.7	5.7	5.7	6.0	6.0	6.0
Act Effct Green (s)	78.3	63.8	63.8	70.2	58.9	58.9	16.9	16.9	16.9	18.2	18.2	18.2
Actuated g/C Ratio	0.60	0.49	0.49	0.54	0.45	0.45	0.13	0.13	0.13	0.14	0.14	0.14
v/c Ratio	0.73	0.78	0.13	0.70	0.86	0.12	0.56	0.56	0.46	0.61	0.62	0.58
Control Delay	44.2	33.3	6.2	36.3	40.2	4.7	61.0	60.7	10.9	62.0	62.0	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.2	33.3	6.2	36.3	40.2	4.7	61.0	60.7	10.9	62.0	62.0	10.6
LOS	D	C	A	D	D	A	E	E	B	E	E	B
Approach Delay		32.9			37.7			41.7			36.4	
Approach LOS		C			D			D			D	
Queue Length 50th (ft)	95	407	0	50	473	0	106	109	0	124	128	0
Queue Length 95th (ft)	#265	#964	37	#169	#983	25	137	131	45	158	162	52
Internal Link Dist (ft)		669			985			426			299	
Turn Bay Length (ft)	325		200	250		225	125		110	110		110
Base Capacity (vph)	273	1610	808	254	1486	752	443	458	524	452	462	598
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.78	0.13	0.65	0.86	0.12	0.28	0.28	0.29	0.32	0.32	0.41

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 36.4 — Intersection LOS: D
Intersection Capacity Utilization 71.7% — ICU Level of Service C
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Sunset Dr & SR 89A

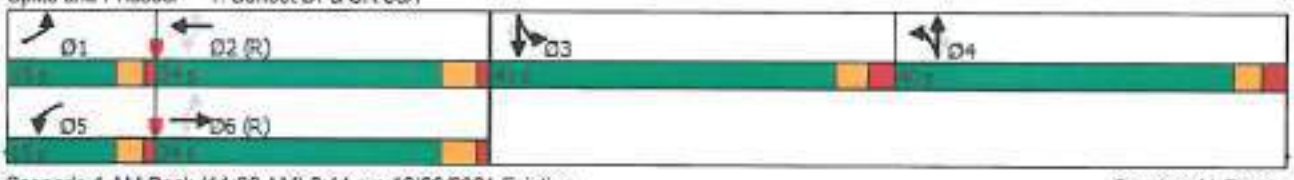


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	991	63	88	1147	79	161	45	101	186	37	206
Future Volume (vph)	135	991	63	88	1147	79	161	45	101	186	37	206
Satd. Flow (prot)	1770	3282	1583	1770	3282	1583	1681	1722	1583	1681	1713	1583
Flt Permitted	0.095			0.165			0.950	0.973		0.950	0.968	
Satd. Flow (perm)	177	3282	1524	307	3282	1505	1678	1720	1542	1661	1699	1561
Satd. Flow (RTOR)			107			107			119			242
Lane Group Flow (vph)	159	1101	79	104	1274	93	121	124	119	131	132	242
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases	6		6	2		2			4			3
Total Split (s)	15.0	34.0	34.0	15.0	34.0	34.0	40.0	40.0	40.0	41.0	41.0	41.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	5.7	5.7	5.7	6.0	6.0	6.0
Act Effct Green (s)	77.8	65.7	65.7	73.4	63.3	63.3	16.9	16.9	16.9	17.6	17.6	17.6
Actuated g/C Ratio	0.60	0.51	0.51	0.56	0.49	0.49	0.13	0.13	0.13	0.14	0.14	0.14
v/c Ratio	0.64	0.66	0.10	0.38	0.80	0.12	0.56	0.56	0.39	0.58	0.57	0.58
Control Delay	31.4	28.9	3.5	19.3	34.3	5.3	60.9	60.7	11.1	61.1	60.6	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.4	28.9	3.5	19.3	34.3	5.3	60.9	60.7	11.1	61.1	60.6	10.8
LOS	C	C	A	B	C	A	E	E	B	E	E	B
Approach Delay		27.7			31.4			44.5			36.9	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)	46	309	0	29	420	0	105	107	0	113	114	0
Queue Length 95th (ft)	#168	#813	12	96	#975	29	137	130	41	146	145	51
Internal Link Dist (ft)		669			985			426			299	
Turn Bay Length (ft)	325		200	250		225	125		110	110		110
Base Capacity (vph)	259	1658	823	307	1597	787	443	454	494	452	461	597
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.66	0.10	0.34	0.80	0.12	0.27	0.27	0.24	0.29	0.29	0.41

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 32.1 — Intersection LOS: C
Intersection Capacity Utilization 74.2% — ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Sunset Dr & SR 89A



Public Works Department
102 Roadrunner Drive Sedona, AZ 86336
(928) 204-7111 · Fax: (928) 282-5348;
Hanako Ueda, EIT (928) 203-5024

PZ21-00018 (DEV)
Sunset Lofts (comprehensive)
12/16/21

Engineering Comments

Please address all comments by the next submittal:

1. In the traffic impact analysis, show the effect on LOS at 89A if, as suggested, a 2nd left turn/through lane was added.
2. Stormwater storage cannot be placed in the floodway.
3. Please provide a geotechnical report. Percolation test results may help with subsurface retention & infiltration. A detention chamber method is preferred over voids in gravel. Retention below the parking lot is also an option.
4. Demonstrate the flow patterns if the confined central retention pond overflows from the exit pipe clogging.
5. Minimum stormdrain size is 18" per DREAM Table 3.1 for maintenance purposes. Provide storm drain cleanouts every 300ft and MAG505 collars at bends.
6. Please provide a drainage report reflecting changes to the stormwater detention.
7. Elaborate on the 2' gravel apron. Consider landscaping/seeding/grasscrete/biofilter. Is an additional curb needed to delineate the edge of asphalt during paving?
8. Adjacent grades should slope away from buildings. A swale is recommended on the western side of Buildings 3 & 1 to direct water away from the structures, or propose retaining walls & space between the habitable space and drainage.
9. Please provide a sewer design report.
10. Provide letters of serviceability for all utilities.
11. Relocation/alteration to the utilities in the right-of-way may be required to maintain visibility at the southern driveway.
12. Show ADA units. Provide 5' internal sidewalks.

Prior to Issuance of Building Permit:

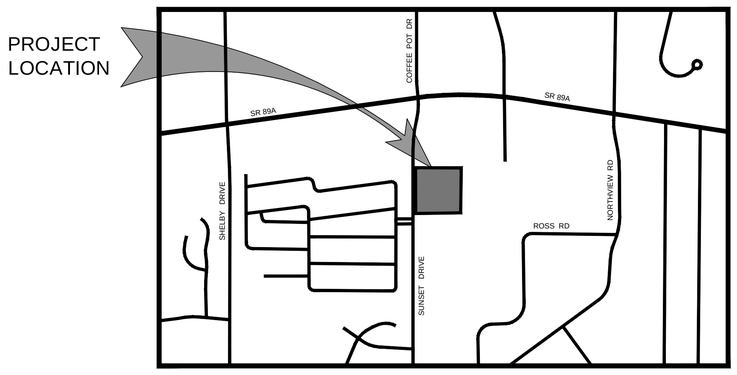
- Property lies in a floodplain. An elevation Certificate from an Arizona Registered Land Surveyor is required.
- For projects involving grading of more than 5,000 cubic yards, a haul plan, a dust control plan, a topsoil reutilization plan, a stormwater pollution prevention plan, and a traffic control plan shall be required. Each must be acceptable to and approved by the City Engineer. (DREAM 3.1.H.6.i).
- For projects involving grading of more than 5,000 cubic yards, an assurance bond is required per DREAM 3.1.G.1.
- Assurance bonds are required for all subdivision construction projects.
- Provide Final Grading and Drainage Plans. The Site Plan shall meet the requirements of DREAM Chapter 3.1.
- Provide the Final Drainage Report.
- Applicant shall follow the City of Sedona Land Development Code in its entirety.
- Applicant shall provide a Storm Water Pollution Prevention Plan. SWPPP measures shall be in place prior to the start of construction (DREAM 3.1). Storm water quality measures shall also comply with City of Sedona Code requirements (City Code Chapter 13.5)
- Accessible sidewalks and parking areas will need to meet the current US Dept. of Justice ADA requirements.
- Accessible parking/signage shall meet the requirements of the City LDC and DREAM documents.
- All concrete within the City ROW shall be colored "Sedona Red" (Davis 160 color).

SEDONA LOFTS

220 SUNSET DRIVE
SEDONA, ARIZONA

APN: 408-26-030C
LOCATED IN THE SW 1/4 OF SECTION 12, T17N, R 5E,
G&SRB&M YAVAPAI COUNTY, ARIZONA

SHEET INDEX



VICINITY MAP
SEDONA, ARIZONA
NO SCALE

DEVELOPER:

KEITH HOLBEN
MK COMPANY, INC.
15010 N 78TH WAY, SUITE 109
SCOTTSDALE, AZ 85260
480-998-2803

CIVIL ENGINEER:

SEFTON ENGINEERING CONSULTANTS
40 STUTZ BEARCAT DR.
SEDONA, ARIZONA 86336
PHONE: (928) 202-3999
LUKE A. SEFTON, P.E. 37322
TIMOTHY HUSKETT, P.E. 58609

LAND SURVEYOR:

CORNERSTONE SURVEYING & ENGINEERING, INC.
1010 N. MAIN STREET
COTTONWOOD, AZ 86326
(928) 649-0949

ARCHITECT:

SUOLL ARCHITECTS
6619 N SCOTTSDALE ROAD
SCOTTSDALE, AZ 85250
602-677-3141

GEOTECHNICAL ENGINEER:

ACS SERVICES, LLC
2235 WEST BROADWAY ROAD
MESA, ARIZONA 85202
(480) 968-0190

37322
LUKE A
SEFTON
DATE SIGNED 06/30/22
ARIZONA, U.S.A.

Sefton Engineering Consultants
Your Ideas to Completion
Surveying • Engineering • Land Planning
40 STUTZ BEARCAT DR. #8
SEDONA, ARIZONA 86336
PH: (928) 202-3999 LS@SEFENGCO.COM

SHEET TITLE: COVER SHEET

PROJECT TITLE: **SEDONA LOFTS**
MK COMPANY, INC.

DRAWN BY:	RJB
SCALE:	AS NOTED
DATE:	04/13/2022
PROJECT NO:	170202A
SHEET NO.	C-1

1 GENERAL

1.1 ALL PAVING, GRADING PIPING AND UTILITY LINE CONSTRUCTION WORK WITHIN THE PUBLIC RIGHT-OF-WAY, ON PRIVATE STREETS, ACCESS WAYS, LOT GRADING, MATERIALS, AND WORKMANSHIP SHALL COMPLY WITH ENGINEERING STANDARDS AND SPECIFICATIONS, AND SHALL CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) AND A.D.O.T. STANDARD DETAILS AND SPECIFICATIONS. GRADING WORK SHALL CONFORM TO MAG SPECS, THE SOILS REPORT AND CHAPTER 70 ENTITLED "EXCAVATION AND GRADING" OF THE UNIFORM BUILDING CODE (UBC) LATEST EDITION, SUBSECTIONS 7001 TO 7005, 7009 TO 7013, FIGURES 70-1 AND 70-2 AND AS STATED THEREIN. LOCAL MUNICIPAL STANDARD DETAILS WILL CONTINUE TO APPLY WHERE NOT ADOPTED OR INCLUDED BY MAG. THE FOLLOWING NOTES AND SPECIFICATIONS ARE HEREBY MADE A PART OF THE CONTRACT DOCUMENTS AND PROJECT MANUAL. WHERE THERE EXISTS A CONFLICT BETWEEN THESE NOTES, MAG SPECS, UBC, THE SOILS REPORT OR THE PROJECT MANUAL, THE MORE STRINGENT OF THE REQUIREMENTS SHALL GOVERN UNLESS PRIOR CLARIFICATION FROM THE ENGINEER HAS BEEN GIVEN IN WRITING TO THE CONTRACTOR. THE CONTRACTOR AS STATED HEREIN SHALL MEAN THE GENERAL CONTRACTOR AND HIS ASSOCIATED SUBCONTRACTORS. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION AND PERFORMANCE OF THE WORK OF ALL OF HIS SUBCONTRACTORS AND SUPPLIERS.

1.2 ALL WORK SHALL BE BID AND INSTALLED BY THE CONTRACTOR COMPLETE AND OPERATIONAL TO LINES, GRADES AND FUNCTIONS INDICATED ON ALL PLANS AND SPECIFICATIONS. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY TO COMPLETE ALL PROJECT EARTHWORK AND SITE WORK INCLUDING BUT NOT LIMITED TO: SITE CLEARING, GRUBBING, DEMOLITION'S, DEBRIS REMOVALS FROM THE SITE, IMPORT AND/OR EXPORT OF SOILS AND OTHER MATERIALS TO AND FROM THE SITE, BORROW MATERIALS, TEMPORARY SOILS MATERIAL STOCKPILING, BACKFILL OF ONSITE BORROW PITS, MOVING OF MATERIALS, CUT AND FILL, SLOPES, SOILS AND BANK STABILIZATION AND PROTECTION, BERMING, ROADWAY EXCAVATIONS, RELOCATION'S, STRUCTURE EXCAVATIONS, TRENCHING, ALL BACKFILLING, SITE GRADING, PAVING, PIPING, UTILITY LINE AND STORM DRAINAGE CONSTRUCTION, CURBS, SITE CONCRETE WORK AND OTHER MISCELLANEOUS SITE WORK STRUCTURES AND ITEMS INDICATED ON THE PLANS AND IN THE CONTRACT DOCUMENTS.

1.3 ALL OBSTRUCTIONS IN THE ROAD PRISM SHALL BE REMOVED BEFORE ANY CONSTRUCTION IS PERMITTED.

1.4 ANY QUANTITIES SHOWN ON PLANS ARE NOT VERIFIED BY THE ENGINEER. QUANTITIES ARE APPROXIMATE ONLY AND INTENDED AS A GUIDE FOR OWNERS PURPOSES. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN QUANTITY TAKE OFFS. THE CONTRACTOR SHALL VISIT THE SITE AND REVIEW THE SOILS CONDITIONS AND THE SOILS REPORT (XXXXXXXXXXX #XXXXXXXXX) WITH THE PROJECT SOILS ENGINEER PRIOR TO BIDDING THIS PROJECT. ANY DISCREPANCIES IN SITE MATERIALS SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER 7 DAYS MINIMUM PRIOR TO BID OPENING FOR REVIEW. ALL SHRINK OF EARTH MATERIAL OR EXCESS MATERIAL FROM UTILITY TRENCHES AND FOUNDATIONS SHALL BE INCLUDED IN THE CONTRACTOR'S BID.

1.5 THE ENGINEER MAY REQUIRE THE SUBMITTAL OF A "CERTIFICATE OF COMPLIANCE" AND/OR "MANUFACTURER'S GUIDELINES" FOR ANY MATERIALS USED IN THE WORK. MANUFACTURER'S GUIDELINES SHALL CONSISTS OF WRITTEN INSTRUCTIONS FOR SHIPPING, HANDLING, UNLOADING, CUTTING, JOINING, INSTALLATION, STORAGE, AND/OR ANY OTHER FACETS OF CONSTRUCTION.

1.6 THE ENGINEER WILL REQUIRE ANY MATERIALS USED IN THE WORK TO BE TESTED ACCORDING TO AASHTO AND ASTM STANDARDS. THE CONTRACTOR SHALL, AT HIS EXPENSE, SUPPLY CERTIFICATES OR RESULTS OF TESTING.

1.7 ALL WORK AND MATERIALS NOT CONFORMING TO SPECIFICATIONS OR PERFORMED WITHOUT THE CONSENT OF THE OWNER OR HIS REPRESENTATIVE WILL BE SUBJECT TO REJECTION BY THE OWNER AND/OR ENGINEER AND REPLACED AT THE CONTRACTOR'S EXPENSE.

1.8 THE CONTRACTOR SHALL GUARD AGAINST DAMAGE DURING CONSTRUCTION TO ADJACENT PROPERTIES, FENCES, WALLS AND UTILITY EQUIPMENT. ANY ITEMS DAMAGED BY CONSTRUCTION SHALL BE REPLACED WITH SAME KIND OR BETTER AT CONTRACTOR'S EXPENSE.

1.9 NO CONSTRUCTION SHALL BEGIN UNTIL CONFLICTING UNDERGROUND UTILITY MITIGATING CONSTRUCTION IS COMPLETED, IF ANY.

1.10 NO EXISTING SURVEY MONUMENTATION SHALL BE REMOVED OR DISTURBED BY THE CONTRACTOR WITHOUT NOTIFICATION AND APPROVAL OF THE PROJECT SURVEYOR. THE CONTRACTOR SHALL CONTACT THE PROJECT SURVEYOR FOR THE SETTING OF REFERENCE POINTS 48 HOURS PRIOR TO DISTURBING OR REMOVING ANY MONUMENTS. THE CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE FOR COSTS TO REESTABLISH MONUMENTATION OR CONTROLS REMOVED WITHOUT PRIOR NOTICE AND APPROVAL.

1.11 TRAFFIC CONTROL SHALL CONFORM TO THE LOCAL ADOPTED STANDARDS AND MUTCD. CONTRACTOR SHALL SUBMIT PLAN TO PROJECT ENGINEER FOR REVIEW AND APPROVAL PRIOR TO STARTING CONSTRUCTION.

1.12 BENCH MARK: ELEVATIONS ESTABLISHED WITH REFERENCE TO THE BENCH MARK AS INDICATED ON THE SURVEY CONTROL SHEET.

1.13 CONTRACTOR SHALL COORDINATE HIS WORK WITH THE DESIGN ENGINEER, OWNER, PUBLIC UTILITY COMPANIES AND OTHER ASSOCIATED TRADES ON AND ADJACENT TO THE PROJECT SITE. COORDINATE INSTALLATION OF ALL PUBLIC AND PRIVATE UNDERGROUND UTILITIES, PIPES, CONDUITS AND PIPE SLEEVE SIZES AND LOCATIONS PRIOR TO THEIR PLACEMENT. INSTALLATION: THE CONTRACTOR IS RESPONSIBLE FOR SETTING CAPPED SLEEVES AND PROVIDING TYPE 1 COMPACTION IN ALL BACKFILLED TRENCHES IN PAVED AREAS AND EASEMENTS. PROVIDE TRACER WIRE AND MARKER AT GRADE LEVEL FOR FUTURE LOCATING.

1.14 CONTRACTOR TO BE RESPONSIBLE FOR ALL IDENTIFIED AND REQUIRED TESTING AND CONSTRUCTION STAKING, AND FOR THE FOLLOWING ADDITIONAL ENGINEERING SERVICES SHOULD THEY OCCUR;

A. RE-OBSERVATION, COORDINATION AND EXTRA TESTING OR RETESTING COSTS INCURRED BECAUSE OF IMPROPER OR FAULTY CONSTRUCTION.

B. ANY RESTAKING REQUIRED BY THE CONTRACTOR.

C. CHANGES AND SUBSTITUTIONS IN MATERIALS CONSTRUCTION METHODS, REQUESTED BY THE CONTRACTOR, THAT MUST BE REVIEWED, RECALCULATED OR APPROVED BY THE PROJECT ENGINEER.

D. ENGINEERING DESIGN SERVICES REQUESTED BY THE CONTRACTOR OR CAUSED BY ERRORS OR OMISSIONS BY THE CONTRACTOR.

E. ANY ENGINEERING DESIGN APPROVED BY OTHERS AND SUBMITTED FOR REVIEW. THESE SHALL BEAR THE SEAL OF AN ENGINEER REGISTERED IN ARIZONA.

1.15 ANY DIFFERENCE BETWEEN PLANS AND SPECIFICATIONS AND QUESTIONS AS TO THEIR MEANING SHALL BE DETERMINED PRIOR TO BID OPENING OF THE CONTRACT AND SHALL BE INTERPRETED BY THE ENGINEER. THE GENERAL INTENT AND MEANING OF THE PLANS AND SPECIFICATIONS WILL GOVERN AND SHALL NOT WARRANT ANY ADDITIONAL COMPENSATION TO THE CONTRACTOR. THE ENGINEER WILL PROVIDE FULL INSTRUCTIONS WHEN DISCREPANCIES ARE DISCOVERED IN THE DOCUMENTS.

1.16 THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LIMITS OF THE WORK AREA PRIOR TO BEGINNING CONSTRUCTION ALL CONSTRUCTION LIMITS, AREAS OF WORK, SETBACKS, PERIMETERS, ADJACENT PROPERTY LINES, BOUNDARIES, AND OTHER CRITERIA DEFINING THE LIMITS OF THE CONTRACTOR'S WORK AREA AND LIMITS, SHALL BE STAKED BY THE CONTRACTOR'S SURVEYOR PRIOR TO CONSTRUCTION OR CLEARING OF THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH THE EXTENT OF WORK TO BE DONE IN EACH SEPARATE PHASE OF THE PROJECT, AND ANY WORK NECESSARY IN INACTIVE PHASES REQUIRED TO DEEM THE ACTIVE PHASES FINISHED, SAFE, AND SERVICEABLE.

1.17 THE CONTRACTOR OR SUBCONTRACTORS SHALL NOT DEVIATE FROM THESE PLANS OR MAKE FIELD CHANGES WITHOUT WRITTEN APPROVAL FROM THE NATION. ANY CHANGES MADE WITHOUT APPROVAL OF THE PROJECT ENGINEER ARE SUBJECT TO REMOVAL AT THE EXPENSE OF THE CONTRACTOR.

1.18 THE PROJECT ENGINEER RESERVES THE RIGHT TO MAKE MINOR FIELD MODIFICATIONS TO GRADES AND STRUCTURE DESIGNS TO ACCOMMODATE FIELD CONDITIONS FOUND ON SITE THAT DO NOT INVOLVE COST OR TIME. THIS INCLUDES BUT IS NOT LIMITED TO MINOR MODIFICATIONS TO GRADE, ALIGNMENT, SLOPE OR STRUCTURE LOCATIONS.

1.19 NO JOB WILL BE CONSIDERED COMPLETE UNTIL FINE GRADING IS COMPLETE AND ALL CURBS, PAVEMENT AND SIDEWALKS HAVE BEEN SWEPT CLEAN OF ALL DIRT AND DEBRIS. ALL SURVEY MONUMENTS ARE INSTALLED AND ALL VALVES, MANHOLES AND BOXES HAVE BEEN ADJUSTED ACCORDING TO THE PLANS AND STANDARD DETAILS.

1.20 EXISTING GRADES INDICATED ON PLANS ARE BASED ON PRE-GRADING CONDITIONS. LOSSES IN MATERIAL DUE TO SHRINKAGE OF MATERIAL, DEMOLITION OF EXISTING SITE FEATURES, CLEARING AND GRUBBING OF THE SITE SHALL BE INCLUDED IN CONTRACTOR'S BID.

1.21 SHOP DRAWINGS SHALL BE PROVIDED BY THE CONTRACTOR PER MAG SECTION 105.2.

1.22 ALL SERVICES SHALL BE MAINTAINED TO ALL AREAS AT ALL TIMES DURING THE CONSTRUCTION PERIOD, EXCEPT WHEN IT IS NECESSARY TO SHUT DOWN A LINE TO MAKE A CONNECTION WITH THE NEW LINE. RESIDENTS SHALL BE GIVEN A 24 HOUR NOTICE WHEN IT IS KNOWN THAT SERVICE WILL BE INTERRUPTED.

1.23 NO EXISTING SURVEY MONUMENTATION SHALL BE REMOVED OR DISTURBED BY THE CONTRACTOR WITHOUT NOTIFICATION AND APPROVAL OF THE PROJECT SURVEYOR. THE CONTRACTOR SHALL CONTACT THE PROJECT MANAGER FOR THE SETTING OF REFERENCE POINTS 48 HOURS PRIOR TO DISTURBING OR REMOVING ANY MONUMENTS. THE CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE FOR COSTS TO REESTABLISH MONUMENTATION OR CONTROLS REMOVED WITHOUT PRIOR NOTICE AND APPROVAL.

1.24 THE CONTRACTOR SHALL COORDINATE HIS WORK AND COOPERATE WITH ANY OTHER PERSONS OR ENTITIES OPERATING ON OR ADJACENT TO THE SITE OF THE PROJECT.

1.25 RETAINING WALLS SHALL BEAR INTO NATURAL BEDROCK, OR COMPACTED SOIL WHICH HAS A BEARING VALUE OF 3,000 P.S.F. VERIFICATION OF SAID BEARING VALUE TO BE PROVIDED BY THE SOILS ENGINEER.

2 PERMITS

2.1 CONTRACTOR SHALL OBTAIN ALL PERMITS AT HIS OWN EXPENSE FROM FEDERAL, STATE OR LOCAL MUNICIPAL AND AIR POLLUTION CONTROL AUTHORITIES PRIOR TO BEGINNING CONSTRUCTION.

2.2 REQUIRED PERMITS SHALL BE SECURED BY THE CONTRACTOR FROM THE APPROPRIATE AGENCIES.

2.3 THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AT HIS OWN EXPENSE ALL APPROPRIATE INSURANCE FORMS FOR PERMIT REQUIREMENTS.

2.4 IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ARRANGE FOR THE RELOCATION AND RELOCATION COSTS, IF ANY, OF ALL UTILITIES, AND SUBMIT A UTILITY RELOCATION SCHEDULE TO THE MUNICIPALITY AND DESIGN ENGINEER PRIOR TO CONSTRUCTION. ALL PUBLIC UTILITY EQUIPMENT POLES, BOXES, STRUCTURES AND MUNICIPAL UTILITY COMPANY EQUIPMENT SHALL BE RELOCATED BY THE APPROPRIATE UTILITY COMPANY OR MUNICIPALITY BEFORE ANY WORK IS STARTED.

3 APPROVALS

3.1 THE CONTRACTOR IS TO USE ONLY THAT OFFICIAL CONSTRUCTION SET OF DRAWINGS WHICH CONTAINS THE APPROVAL OF THE GOVERNMENT AGENCY SIGNED ON THE COVER SHEET OF THE PLANS. THE CONTRACTOR SHALL NOT PLACE BIDS ON A SET OF DRAWINGS UNSIGNED BY THE GOVERNMENT AGENCY AND/OR MARKED "NOT FOR CONSTRUCTION".

4 RECORD DRAWINGS

4.1 IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE AND KEEP AN UPDATED RECORD SET OF AS-BUILT INFORMATION DRAWINGS IN GOOD CONDITION ON THE JOB SITE FOR THE PROJECT MANAGER & UTILITY DIRECTOR TO INSPECT AND PROVIDE A COPY TO THE PROJECT ENGINEER AT COMPLETION OF THE WORK, WITH THE RECORD SET SHOWING FIELD VERIFIED LOCATIONS OF ALL VALVES, BOXES, MANHOLES, UTILITY POLES, PIPE SLEEVES, UTILITY ENCASEMENT AND OTHER UTILITY LINES AND EQUIPMENT ABOVE AND BELOW GROUND WHICH THE CONTRACTOR ENCOUNTERS AND INSTALLS IN HIS AREA OF WORK.

4.2 ACCEPTANCE OF THE COMPLETED PAVING, GRADING OR UTILITY INSTALLATION WILL NOT BE GIVEN UNTIL REPRODUCIBLE AS-BUILT PLANS HAVE BEEN SUBMITTED BY THE CONTRACTOR TO THE ENGINEER AND APPROVED BY THE LOCAL GOVERNING AGENCY INCLUDING HOUSING AND UTILITY DEPARTMENTS.

5 OBSERVATION

5.1 ALL MATERIALS USED AND ALL WORK DONE BY THE CONTRACTOR SHALL BE SUBJECT AT ALL TIMES TO THE OBSERVATION, TESTING AND APPROVAL OF THE ENGINEER AND GOVERNING AGENCY. SPECIAL INSPECTION AND TESTING SERVICES SHALL BE PROVIDED AT THE CONTRACTOR'S EXPENSE, AS REQUIRED BY THE CONTRACT DOCUMENTS.

5.2 THE CONTRACTOR SHALL CONTACT THE APPROPRIATE PUBLIC UTILITY COMPANIES FOR INSPECTION OF TRENCHING, BEDDING AND BACKFILLING DONE IN CONJUNCTION WITH INSTALLATION OF THOSE UTILITIES ON THIS PROJECT.

5.3 SUBMITTAL OF AN ENGINEER'S CERTIFICATE OF COMPLETION IS REQUIRED BY A.D.E.Q. FOR ALL WATER AND SEWER SYSTEM CONSTRUCTION. RELATED INSPECTION AND TESTING SHALL BE PROVIDED BY THE DEVELOPER'S ENGINEER AT THE DEVELOPER'S EXPENSE.

5.4 SOILS COMPACTION TEST RESULTS MUST BE SUBMITTED TO THE PROJECT ENGINEER'S OFFICE FOR ALL FILL MATERIAL FOR ROADS, TRENCH BACKFILL AND SITE FILL MATERIALS UNDER SLABS AND STRUCTURES. NO FILL MATERIALS SHALL BE PLACED WITHOUT TESTING DURING PLACEMENT. NO EARTH MATERIAL SHALL BE PLACED WITHOUT APPROVAL OF THE PREVIOUS LIFTS. THE CONTRACTOR SHALL SUBMIT ALL TEST RESULTS TO THE PROJECT ENGINEER.

5.5 THE CONTRACTOR WILL BE RESPONSIBLE FOR SCHEDULING AND COORDINATION OF ALL TESTING INCLUDING THE FOLLOWING ITEMS WHICH SHALL BE TESTED IN ACCORDANCE WITH MAG SPECIFICATIONS FOR:

1. SUBGRADE COMPACTION
2. BASE COURSE COMPACTION
3. ASPHALT PAVEMENT MIX DESIGN QUALITY
4. CONCRETE STRENGTH
5. TRENCH BEDDING AND BACKFILL
6. TESTING FOR UTILITIES, PIPING AND DRAINAGE SYSTEMS
7. RETAINING WALLS CONCRETE AND COMPACTION

5.6 THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR 24 HOURS PRIOR TO BEGINNING DIFFERENT ASPECTS OF CONSTRUCTION SO THAT INSPECTIONS MAY BE SCHEDULED.

6 FINAL ACCEPTANCE

6.1 APPROVAL OF A PORTION OF THE WORK IN PROGRESS DOES NOT GUARANTEE ITS FINAL ACCEPTANCE. TESTING AND EVALUATION MAY CONTINUE UNTIL WRITTEN FINAL ACCEPTANCE OF A COMPLETE WORKABLE UNIT. ACCEPTANCE OF COMPLETED IMPROVEMENTS WILL NOT BE GIVEN UNTIL DEFECTIVE OR UNAUTHORIZED WORK IS REMOVED, AND FINAL CLEANUP IS COMPLETE.

6.2 APPROVAL OF A PORTION OF THE WORK IN PROGRESS DOES NOT GUARANTEE ITS FINAL ACCEPTANCE. TESTING AND EVALUATION MAY CONTINUE UNTIL WRITTEN FINAL ACCEPTANCE OF A COMPLETE WORKABLE UNIT. ACCEPTANCE OF COMPLETED IMPROVEMENTS WILL NOT BE GIVEN UNTIL DEFECTIVE OR UNAUTHORIZED WORK IS REMOVED, AND FINAL CLEANUP IS COMPLETE.

7 UTILITIES

7.1 A UTILITY COORDINATION MEETING SHALL BE COORDINATED BY THE CONTRACTOR PRIOR TO THE START OF ANY WORK. ALL UTILITY ISSUES SHALL BE ADDRESSED IN ACCORDANCE WITH MAG

7.2 THE CONTRACTOR SHALL CALL "BLUE STAKE" AND NOTIFY THE APPROPRIATE PRIVATE, PUBLIC AND MUNICIPAL UTILITY COMPANIES 48 HOURS PRIOR TO ANY CONSTRUCTION WORK TO VERIFY LOCATION AND DEPTH OF ALL UTILITY LINES IN THE AREA OF WORK. UTILITIES IF INDICATED ON PLANS ARE APPROXIMATE LOCATIONS ONLY, TAKEN FROM THE UTILITY COMPANY MAPS. IF THE CONTRACTOR ENCOUNTERS ANY LINES NOT INDICATED ON THE DRAWINGS OR MARKED IN THE FIELD BY THE UTILITY COMPANY THAT MAY INTERFERE WITH HIS WORK, HE SHALL NOTIFY THE APPROPRIATE UTILITY COMPANY IMMEDIATELY FOR DISPOSITION OF THOSE FACILITIES.

7.3 THE CONTRACTOR IS RESPONSIBLE FOR PREPARATION OF GRADE, TRENCHING, BACKFILLING, PAD CONSTRUCTION AND CONCRETE PADS FOR UTILITY EQUIPMENT INSTALLED ON THIS PROJECT. CONTRACTOR SHALL CONTACT LOCAL UTILITY COMPANIES FOR DETAILS AND REQUIREMENTS.

7.4 REQUIRED UTILITY SLEEVES SHALL BE PLACED PRIOR TO SUBBASE CONSTRUCTION AND PAVING. CONTACT APPROPRIATE UTILITY COMPANIES FOR REQUIREMENTS IN ALL AREAS.

7.5 ALL WATER MAINS, APPURTENANCES, AND INSTALLATION SHALL CONFORM TO A.W.W.A. STANDARDS AND ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY, AND ARIZONA WATER COMPANY REQUIREMENTS. WATER SYSTEM SHALL BE TESTED PER A.D.E.Q. BULLETIN NO. 10 TO THE APPROPRIATE A.W.W.A. STANDARDS.

7.6 ALL FIRE HYDRANTS SHALL MEET ALL REQUIREMENTS OF A.W.W.A. C-509-80.

8 CONSTRUCTION STAKING

8.1 THE ACCURACY OF ALL CONSTRUCTION WORK SHALL BE MAINTAINED AND VERIFIED BY A REGISTERED LAND SURVEYOR. CONSTRUCTION STAKING SUITABLE TO THE ENGINEER WILL BE SET ESTABLISHING LINES AND GRADES (FINISH OR FLOWLINE) FOR ALL CONSTRUCTION INCLUDING ROADS, CURB AND GUTTER, SIDEWALKS, UTILITIES, STRUCTURES, AND OTHER WORK AS CONSIDERED NECESSARY BY THE PROJECT ENGINEER. ALL SURVEY CONTROL SHALL BE SET BY THE SURVEYOR FROM MONUMENTS ACCEPTABLE TO THE ENGINEER.

8.2 THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION STAKING.

9 GRADING AND EARTHWORK

9.1 PERFORM ALL EARTHWORK GRADING, CUTTING AND FILLING AS PER THE PROJECT SOILS REPORT FOR THIS PROJECT.

9.2 NO GRADING OR TRENCHING WORK SHALL BEGIN PRIOR TO SUPPORTING AND PROTECTING EXISTING ONSITE AND ADJACENT PROPERTY FROM SETTLING, CRACKING, OR OTHER DAMAGE WHICH MIGHT RESULT.

9.3 WATER SOURCE: THE CONTRACTOR SHALL MAKE THE NECESSARY ARRANGEMENTS FOR OBTAINING ALL WATER REQUIRED FOR SOIL COMPACTION, DRINKING PURPOSES AND DUST CONTROL. (MAG SPEC 225)

9.4 CLEARING AND GRUBBING: EXAMINE SITE AND PROVIDE NECESSARY EQUIPMENT AND LABOR TO REMOVE FROM THE SITE AND DISPOSE OF STUMPS, ROOTSTS, ROCKS, LOOSE FILL, VEGETATION, DEBRIS, AND ANY OTHER OBJECTIONABLE MATERIALS FROM THE BUILDING AND FILL AREAS. CLEAN, UNCLASSIFIED ONSITE SOILS MAY BE USED IN GENERAL AS FILL MATERIAL. SEE MAG SPECIFICATION SECTIONS 201 AND 215.

9.5 TOPSOIL THAT WILL BE AFFECTED BY ROUGH GRADING OR EXCAVATION SHALL BE STOCKPILED ON THE SITE SEPARATELY AND SHALL NOT BE USED FOR FILL, BUT SHALL BE CONSERVED AND USED FOR FINE AND FINISH GRADING.

9.6 SITE DRAINAGE: CONSTRUCTION OF ALL SWALES, CHANNELS, DRAINAGE PIPES, DRAINAGE STRUCTURES AND BANK PROTECTION SHALL BE CONSTRUCTED DURING THE FIRST PHASES OF SITE CONSTRUCTION TO PROTECT ALL OTHER CONSTRUCTION FROM SURFACE WATERS. DIVERT RUN OFF WATER AROUND CONSTRUCTION OPERATIONS. CARE SHALL BE TAKEN BY THE CONTRACTOR NOT TO ADVERSELY AFFECT ADJACENT PROPERTIES. DRAIN EXCAVATIONS BY PUMPING OR OTHER SATISFACTORY METHOD TO PREVENT SOFTENING OF THE FOUNDATION SOILS, UNDERCUTTING OF FOOTINGS, OR OTHER ACTIONS DETRIMENTAL TO PROPER CONSTRUCTION PROCEDURES.

9.7 THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL WALLS AND FOUNDATIONS. ALL STORM DRAINS, DRAIN LINES, OVERFLOWS, OUTLETS, AND/OR OTHER DRAINAGE TYPE OUTLETS WHICH CONDUCT MOISTURE NEAR THE STRUCTURES SHALL BE POSITIVELY DRAINED AWAY FORM THE STRUCTURE. NO WATER SHALL BE PERMITTED TO POND NEAR STRUCTURES OR FOUNDATIONS. ALL DRAINAGE SHALL BE CHANNELED AND TAKEN A MINIMUM OF 10 FEET AWAY FROM ALL STRUCTURES.

9.8 SUBGRADE PREPARATION: IF THE NATURAL SUBGRADE IS LESS THAN THE REQUIRED DENSITY, IT SHALL BE SCARIFIED AND COMPACTED TO A MINIMUM DEPTH OF TWELVE INCHES OR AS NOTED IN THE SOILS REPORT IMMEDIATELY PRIOR TO PLACING SUBSEQUENT FILL MATERIAL THEREON. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND REPAIR OF DAMAGE TO PREPARED SUBGRADE CAUSED BY CONTRACTORS OPERATIONS OR PUBLIC TRAFFIC UNTIL ACCEPTANCE OF PROJECT. NO MATERIALS SHALL BE PLACED UPON THE PREPARED SUBGRADE UNTIL IT MEETS THE SPECIFIED REQUIREMENTS. ROADWAY SUBGRADE COMPACTION INCLUDES SUBGRADE UNDER ALL PAVEMENT, CURB, SIDEWALKS, SHOULDERS AND FILL SLOPES. SUBGRADE TOLERANCES SHALL BE AS SPECIFIED IN MAG SECTION 301. OPEN LANDSCAPED AREAS SHALL BE GRADED TO +/- 0.20 FEET.

9.9 EARTH FILL: AREAS TO BE FILLED SHALL BE LEVELED TO PROVIDE A LEVEL BASE TO SUPPORT FILL MATERIALS. SUBGRADE AND SUBBASE AREAS REQUIRING FILL MATERIAL SHALL BE SCARIFIED MOISTENED AND COMPACTED PRIOR TO PLACING FILL. ALL FILL, SUBGRADE AND SUBBASE MATERIALS SHALL BE COMPACTED TO SPECIFIED DENSITIES AT OR NEAR OPTIMUM MOISTURE CONTENTS AS VERIFIED AND RECOMMENDED BY THE SOILS ENGINEER. PLACE FILL IN HORIZONTAL LIFTS NOT EXCEEDING SIX INCHES IN LOOSE THICKNESS BEFORE COMPACTION. SLOPED SURFACES SHALL BE PLOWED, STEPPED, AND BENCHED SO THAT THE FILL MATERIAL WILL BOND WITH THE EXISTING MATERIAL. BENCH AT THE TOE OF FILL SLOPES AND PERIODIC INTERVALS UP THE FILL SLOPES BENCHES.

9.10 IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE SOILS ENGINEER FOR SCHEDULING OF COMPACTION TESTING. THE FREQUENCY OF DENSITY AND MOISTURE TESTS REQUIRED FOR ADEQUATE CONTROL SHALL BE THE RESPONSIBILITY OF THE SOILS ENGINEER WHO SHALL CERTIFY TO THE ENGINEER AND CONTRACTOR AT PROJECT END THAT THE ROADBED FILL IS COMPACTED AS OUTLINED HEREIN. COMPACTION SHALL BE ACHIEVED BY MECHANICAL MEANS. IN NO CASE SHALL STRUCTURE BACKFILLING BE FLOOD WATER SETTLED.

9.11 ALL SLOPE CONSTRUCTION AND ROADWAY EXCAVATION SHALL CONFORM TO THE REQUIREMENTS OF MAG SPECIFICATIONS SECTIONS 201, 205, 212, 301, AND UBC SECTIONS 7009 AND 8010. CUT AND FILL SLOPES SHALL BE AS INDICATED ON THE DETAILS AND PLANS. CUT AND FILL SLOPE GRADIENTS SHALL NOT EXCEED 2:1 IN STEEPNESS WITHOUT WRITTEN AUTHORIZATION FROM THE PROJECT ENGINEER AND EXAMINATION BY THE PROJECT ENGINEER. ALL SLOPE CONDITIONS SHALL BE PROVIDED WITH THE APPROPRIATE BENCHES AS SPECIFIED IN THE REFERENCE DOCUMENTS AND INDICATED ON THE PLANS. IF SOILS CONDITIONS ARE ENCOUNTERED WHICH DO NOT ALLOW THE ESTABLISHMENT OF THE INDICATED CUT OR FILL SLOPES, THE PROJECT ENGINEER AND SOILS ENGINEER SHALL BE CONTACTED IMMEDIATELY TO DETERMINE AN ADJUSTMENT TO THE SLOPE GRADIENT OR TO ESTABLISH A METHOD OF STABILIZATION. ALL FILL SLOPES SHALL BE COMPACTED AS EACH LIFT OF FILL MATERIAL IS PLACED. ALL CUT AND FILL SLOPES SHALL BE UNIFORMLY GRADED TO LINES AND GRADES INDICATED. TOPS OF ALL CUT SLOPES SHALL BE ROUNDED AND ALL UNSTABLE AND LOOSE MATERIAL AT TOP OF SLOPE SHALL BE REMOVED. TOP OF CUT SLOPES OVER 10' HIGH SHALL BE PROVIDED WITH BROW DITCHES FOR DRAINAGE.

NOTE:
REFER TO SECTION 15 FOR SEED MIX DESIGN.

NOTE:
THERE ARE EXISTING SEWER, WATER, GAS, AND DRY UTILITIES LOCATED WITHIN THE ROAD PRISM. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND PROTECT THESE UTILITIES DURING CONSTRUCTION.

9.12 COMPACT TO THE FOLLOWING SPECIFIED PERCENT OF MAXIMUM DENSITY AS DETERMINED IN ACCORDANCE WITH ASTM D698 AND MAG SECTION 211.

MINIMUM PERCENT COMPACTION:

SUBGRADE SOIL:
ROADWAY AND STRUCTURE AREAS----------95
PAVED AREAS (PAVEMENTS, SIDEWALKS, & PADS)----------95

EARTH FILL:
ROADWAY AND STRUCTURE AREAS----------95
PAVED AREAS (PAVEMENTS, SIDEWALKS, & PADS)----------95
GRASSED AND PLANTING AREAS----------85
AGGREGATE BASE COURSE----------100
BACKFILL AROUND STRUCTURES----------95
BACKFILL FOR UTILITY TRENCHES (PER MAG SECTION 601) EXCEPT AS FOLLOWS: BACKFILL FOR TRENCHES SHALL BE COMPACTED TO 100%.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR READING AND UNDERSTANDING THE PROJECT SOIL REPORT.

37322
LUKE A
SEFTON
DATE SIGNED 06/30/22
ARIZONA, U.S.A.

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SHEET TITLE: NOTES - SHEET 1 OF 3

PROJECT TITLE:

SEDONA LOFTS

MK COMPANY, INC.

DRAWN BY:	RJB
SCALE:	NONE
DATE:	04/13/2022
PROJECT NO:	170202A
SHEET NO.	C-2

9 GRADING AND EARTHWORK

9.13 EXCAVATION: EXCAVATE TO THE DIMENSIONS AND DEPTHS INDICATED ON THE DRAWINGS. FOUNDATIONS SHALL REST ON ENGINEERED COMPACTED FILL OR UNDISTURBED NATURAL SOILS AT GRADE ELEVATIONS INDICATED. IF SUITABLE SOIL IS NOT REACHED AT THE DEPTHS INDICATED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE SOILS ENGINEER AND ENGINEER. THE CONTRACTOR WILL BE DIRECTED, IN WRITING, TO EXCAVATE TO THE DEPTH OF SUITABLE SOIL. EXCAVATION FOR FOUNDATIONS WHICH ARE CARRIED BELOW THE DEPTHS INDICATED SHALL HAVE THE CONCRETE EXTENDED TO THE BOTTOM OF THE EXCAVATION AT THE CONTRACTOR'S EXPENSE. SEE MAG SPECIFICATION SECTION 206.

9.14 WATERING: CAREFULLY WATER EARTH FILL DURING PLACING BY MEANS OF A FINE SPRAY OR OTHER APPROVED METHOD, SO THAT EACH LAYER IS THOROUGHLY AND UNIFORMLY WETTED. MOISTURE CONTENT OF THE MATERIAL SHALL BE CAREFULLY CONTROLLED AT ALL TIMES AND CHECKED AT PROPER INTERVALS TO INSURE CORRECT MOISTURE FOR COMPACTION SPECIFIED. SEE MAG SECTION 225 AND SOILS REPORT.

10 PAVING

10.1 COMPLETE ASPHALTIC CONCRETE PAVEMENT INSTALLATION SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

A. TACK COATING OF CONCRETE SURFACES, UNDILUTED .02 TO .10 GAL/SY, DILUTED 1:1 MIXTURE, .05 TO .15 GAL/SY, OR AS DIRECTED.

B. PAINT FOR PAVEMENT STRIPING AND MARKING SHALL CONFORM TO FEDERAL SPEC. NO. TTP-155E, "PAINT, TRAFFIC, HIGHWAY, WHITE AND YELLOW". COLORS FOR PAVEMENT MARKING AND STRIPING SHALL BE AS SPECIFIED BY THE PROJECT ENGINEER.

C. TRAFFIC CONTROL DEVICES: SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" LATEST EDITION, PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

10.2 ASPHALTIC PAVEMENT SHALL CONFORM TO MAG SPECIFICATION SECTION 32 WITH THICKNESS AND DESIGN MIX AS INDICATED ON THE PLANS.

10.3 ALL FRAMES, COVERS, VALVE BOXES, AND MANHOLES IN PAVED AREAS AND RIGHT-OF-WAY SHALL BE ADJUSTED TO GRADE BY THE PAVING CONTRACTOR. IN NON-PAVED AREAS THEY SHALL BE ADJUSTED TO GRADE BY THE GENERAL CONTRACTOR.

10.4 ALL PAVING WORK SHALL BE PLACED IN STRICT CONFORMANCE TO MAG SECTION 321 PAR.3213 WEATHER AND MOISTURE CONDITIONS. ALL WORK AND MATERIALS PLACED IN VIOLATION OF THESE REQUIREMENTS WILL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

10.5 EXACT POINT OF PAVEMENT MATCHING, TERMINATION AND/OR OVERLAY, IF NECESSARY, SHALL BE SUBJECT TO FIELD APPROVAL BY THE ENGINEER, HIS REPRESENTATIVE AND LOCAL MUNICIPAL AUTHORITIES. EDGE OF EXISTING PAVEMENT WHERE NECESSARY SHALL BE UNIFORMLY SAWCUT AND TACK COAT APPLIED. 10.6 THE CONTRACTOR SHALL IN ALL AREAS OF PAVING PROVIDE A UNIFORM DENSE SURFACE SMOOTH AND TRUE TO LINE. SURFACE SHALL BE FREE OF PITS, DEPRESSIONS, ROCK POCKETS AND PATCHES.

10.6 THE CONTRACTOR SHALL IN ALL AREAS OF PAVING PROVIDE A UNIFORM DENSE SURFACE SMOOTH AND TRUE TO LINE. SURFACE SHALL BE FREE OF PITS, DEPRESSIONS, ROCK POCKETS AND PATCHES.

11 FIELD INSPECTION

11.1 THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL CONSTRUCTION STAKING. ANY ADDITIONAL STAKING WILL BE AT THE COST OF THE CONTRACTOR.

11.2 THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR 24 HOURS PRIOR TO BEGINNING DIFFERENT ASPECTS OF CONSTRUCTION SO THAT INSPECTIONS MAY BE SCHEDULED.

11.3 ANY QUESTIONS RAISED RELATIVE TO ACCURACY OF IMPROVEMENT INSTALLATION SHALL NOT BE RAISED SUBSEQUENT TO COMPLETION OF THE WORK UNLESS ALL SURVEY STAKES ARE MAINTAINED INTACT. SHOULD SUCH STAKES NOT BE PRESENT AND VERIFIED AS TO THEIR ORIGIN, NO CLAIM FOR ADDITIONAL COMPENSATION FOR CORRECTION SHALL BE PRESENTED TO ANY PARTY AND SUCH WORK SHALL BE CORRECTED BY THE CONTRACTOR AT HIS EXPENSE.

12 SUSPENSION OF WORK

12.1 THE ENGINEER OR HIS AUTHORIZED REPRESENTATIVE MAY SUSPEND THE WORK BY WRITTEN NOTICE WHEN, IN HIS JUDGMENT, PROGRESS IS UNSATISFACTORY, WORK BEING DONE IS UNAUTHORIZED OR DEFECTIVE, WEATHER CONDITIONS ARE UNSUITABLE, OR THERE IS DANGER TO THE PUBLIC HEALTH OR SAFETY.

13 WARRANTY

13.1 ANY DEFECTS WHICH APPEAR IN THE WORK WITHIN TWO YEARS FROM THE DATE OF ACCEPTANCE AND WHICH ARE DUE TO IMPROPER WORKMANSHIP OR INFERIOR MATERIALS SUPPLIED SHALL BE CORRECTED BY OR AT THE EXPENSE OF THE CONTRACTOR.

14 EROSION CONTROL NOTES

(SPECIFICATIONS FOR PERMANENT SEEDING)

14.1 SITE PREPARATION
- A. INSTALL NECESSARY SURFACE WATER CONTROL MEASURES PRIOR TO PLANTING PERMANENT SEEDING.
- B. GRADE TO PERMIT USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION.
- C. PROVIDE ADEQUATE DRAINAGE WHERE INTERNAL WATER MOVEMENT, ESPECIALLY AT TOES OF SLOPES, MAY CAUSE SEEPS OR SLIPPAGE BEFORE SEEDING IS WELL ESTABLISHED.

14.2 SEEDBED PREPARATION
- A. AS PRACTICAL, PERFORM ALL CULTURAL OPERATIONS AT RIGHT ANGLES TO THE SLOPE.
- B. IMMEDIATELY BEFORE SEEDING, RAKE OR OTHERWISE LOOSEN PLANTING SURFACE TO PROVIDE A SMOOTH, FRIABLE SURFACE FREE OF EARTH CLODS, HUMPS AND DEPRESSIONS, AND DISPOSE OF LOOSE STONES HAVING A DIMENSION GREATER THAN ONE INCH AND DEBRIS BROUGHT TO THE SURFACE DURING CULTIVATION.

14.3 PLANTING
- A. APPLY SEED MIX AT THE RATE OF 11 POUNDS PER ACRE. MIX SHALL CONTAIN THE FOLLOWING PROPORTION OF PURE LIVE SEED: SAND DROPSEED (SPOROBOLUS CRYPTANDRUS) 1 LB SIDEOATS GRAMA (BOUTELOUS CURTIPENDULA)5 LB CRESTED WHEAT GRASS (AGROPYRON CRISTATUM) 5 LB
- B. APPLY SEED IN TWO DIRECTIONS AT RIGHT ANGLES TO EACH OTHER WITH HALF THE SPECIFIED APPLICATION RATE APPLIED IN EACH DIRECTION.
- C. IMMEDIATELY AFTER SEEDING, UNIFORMLY SPREAD SCREENED MANURE AT THE RATE OF ONE CUBIC YARD PER 1000 SQUARE FEET AND WATER UNTIL THE GROUND IS WET TO A MINIMUM DEPTH OF TWO INCHES.
- D. HYDRAULIC SEEDING USING 1500 POUNDS OF WOOD CELLULOSE FIBER PER ACRE MAY BE UTILIZED IN LIEU OF PLANTING.

14.4 MAINTENANCE
- A. PROTECT PLANTED AREAS FROM GRAZING, FIRE, TRAFFIC, AND WEED GROWTH.
- B. MAINTAIN PLANTED AREAS UNTIL A GOOD STAND OF GRASS IS ESTABLISHED. AREAS AS REQUIRED IF NO GROWTH IS PRESENT WITHIN 15 DAYS OF PLANTING.

15 TEMPORARY EROSION CONTROL

15.1 EROSION CONTROL BERMS AND ROCK CHECK DAMS
- A. PROVIDE EARTHEN BERMS AT TOES OF SLOPES REMAINING BARE BETWEEN CONSTRUCTION PHASES.
- B. PLACE TEMPORARY ROCK CHECK DAMS IN ROAD DITCHES AND CHANNELS IF RIP-RAP PROTECTION WILL NOT BE PROVIDED WITHIN 60 DAYS.

15.2 CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING EROSION CONTROL MEASURES SUCH AS SAND BAGGING, TEMPORARY DE-SILTING BASIN CONSTRUCTION BERMS, VISQUEEN, ETC. TO PROTECT ADJOINING PROPERTIES FROM EROSION.

16 SEWER LINE NOTES

16.1 ALL PVC LINES WILL BE BURIED WITH A GREEN #14 TRACE WIRE WITH A "CAUTION SEWER LINE BELOW" TAPE.

16.2 SEWER "YARD" LINES WILL BE CONSTRUCTED OF 4" ABS/PVC PIPE WITH GLUE JOINTS. NO JOINTS TO BE CONSTRUCTED WITHIN 6 FEET EITHER SIDE OF WATER "YARD" LINE CROSSINGS.

16.3 UNLESS SPECIFICALLY CALLED OUT ALL INVERTS ARE TO BE THREE (3) FEET BELOW FINISHED FLOOR STUBBED OUT.

16.4 MARK EACH STUB-OUT PER M.S.D. 440-1. IF BUILDING LOCATION IS KNOWN THEN MARK PER M.S.D. 440-2.

16.5 EXFILTRATION FROM ALL MANHOLES SHALL BE LIMITED TO 0.1 GALLONS PER HOUR PER VERTICAL FOOT.

16.6 ALL NEW SEWER LINES ARE TO BE TESTED FOR INFILTRATION/EXFILTRATION AS PER A.D.E.Q. BULLETIN # 11. MAXIMUM ALLOWABLE INFILTRATION/EXFILTRATION IS 0.158 GALLONS/INCH DIAMETER/100 FEET.

16.7 SHORT TERM DEFLECTION TESTING FOR AT LEAST 20% OF PVC SEWER SHALL BE PERFORMED. SHORT TERM DEFLECTION IN EXCESS OF 5% SHALL BE CONSIDERED UNSERVICEABLE AND SHALL BE REPAIRED AND RETESTED.

16.8 THE ENGINEER SHALL REVISE THESE PLANS TO "AS BUILT" CONDITIONS AND RETURN THEM TO YAVAPAI COUNTY ENVIRONMENTAL SERVICES PRIOR TO THE ACCEPTANCE OF ANY IMPROVEMENTS SHOWN ON THESE PLANS.

16.9 SEWER PIPE SHALL BE IN ACCORDANCE WITH SECTION 745 OF THE MAG STANDARD SPECIFICATIONS.

16.10 CONSTRUCTION AND TESTING OF SEWER LINES SHALL BE IN ACCORDANCE WITH MAG STANDARD SPECIFICATIONS SECTION 615.

16.11 INSTALLATION OF PVC SEWER MUST BE IN CONFORMANCE WITH STANDARD SPECIFICATION ASTM D2321.

16.12 WATER TIGHTNESS TESTING OF THE SEWER LINE SHALL BE PERFORMED IN ACCORDANCE WITH MAG SPECIFICATION 615.10.

16.13 SEWER SERVICE TAPS SHALL BE INSTALLED IN ACCORDANCE WITH MAG STANDARD DETAIL 440. SERVICE PIPE SHALL BE 4-INCH FOR HOUSE CONNECTIONS. TAP LOCATION AND SERVICE LINES SHALL BE FIELD LOCATED AND MARKED WITH A GREEN # 4 REBAR OR AS SPECIFIED.

16.14 SEWER LINES MUST HAVE 3' MINIMUM COVER OVER PIPE.

16.15 TRENCH EXCAVATION, BEDDING, AND BACKFILLING FOR SEWER PIPES SHALL BE IN COMPLIANCE WITH MAG SPECIFICATIONS SECTION 601.

16.16 SEWER MAINS (GRAVITY, PRESSURE, FORCE) SHALL BE KEPT AT A MINIMUM OF 100 FEET FROM DRINKING WATER WELLS, UNLESS THE FOLLOWING CONDITIONS ARE MET: 1. WATER MAIN PIPE, PRESSURE TESTED IN PLACE TO 150 PSI WITHOUT EXCESSIVE LEAKAGE, MAY BE USED FOR PRESSURE SEWERS AND FORCE MAINS AT DISTANCES GREATER THAN 20 FEET FROM DRINKING WATER WELLS.

17 WATER LINE NOTES

17.1 ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE ARIZONA WATER COMPANY (A.W.CO.) STANDARD SPECIFICATIONS TO INCLUDE E-4-1-1 AND E-8-1.

17.2 CONTRACTOR SHALL ACQUIRE ALL NECESSARY PERMITS.

17.3 THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.

17.4 THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING "BLUE STAKE" AT 1-800-STAKE IT (1-800-782-5348) TWO WORKING DAYS PRIOR TO ANY EXCAVATION OR CONSTRUCTION.

17.5 DUCTILE IRON PIPE (PUSH-ON TYPE) CLASS 350, CEMENT LINED AND CONFORMING TO AWWA C151 SHALL BE USED AS MAIN LINE WATER PIPING. ALL MAIN LINE VALVES SHALL CONFORM TO AWWA C500 WITH A MINIMUM WORKING PRESSURE OF 200 PSI. ALL CAST IRON FITTINGS TO BE CEMENT LINED IN ACCORDANCE WITH AWWA C104 AND SHALL CONFORM TO AWWA C110 WITH A MINIMUM WORKING PRESSURE OF 250 PSI.

17.6 WATER MAINS NEAR SEWER MAINS SHALL HAVE SEPARATION OR PROTECTION IN ACCORDANCE WITH AAC R18-5-502.C INCLUDED HEREIN.

A. IN ORDER TO PROTECT PUBLIC WATER SYSTEMS FROM POSSIBLE CONTAMINATION, A WATER MAIN SHALL NOT:

1. INFRINGE UPON AN AREA WHICH IS WITHIN SIX FEET OF EITHER SIDE OF A SEWER MAIN AND SHALL NOT BE BELOW, AT THE SAME LEVEL AS, OR LESS THAN TWO FEET ABOVE THE TOP OF THE SEWER MAIN, UNLESS EXTRA PROTECTION IS PROVIDED. EXTRA PROTECTION SHALL CONSIST OF CONSTRUCTING THE SEWER MAIN AND WATER MAIN WITH MECHANICAL JOINT DUCTILE IRON PIPE OR WITH SLIP-JOINT DUCTILE IRON PIPE IF JOINT RESTRAINT IS PROVIDED OR SHALL CONSIST OF ENCASING THE SEWER MAIN IN AT LEAST SIX INCHES OF CONCRETE.

2. UNDER ANY CIRCUMSTANCES, INFRINGE UPON AN AREA WHICH IS WITHIN TWO FEET BELOW THE SEWER MAIN.

B. WHEN UNUSUAL CONDITIONS SUCH AS, BUT NOT LIMITED TO, HIGHWAY OR BRIDGE CROSSINGS PREVENT THE WATER AND SEWER MAIN SEPARATIONS REQUIRED BY SUBSECTION A ABOVE FROM BEING MET, THE DEPARTMENT WILL REVIEW AND MAY APPROVE, REQUEST FOR AUTHORIZATION TO USE ALTERNATE CONSTRUCTION TECHNIQUES, MATERIALS AND JOINTS ON A CASE-BY-CASE BASIS.

C. NO WATER PIPE SHALL PASS THROUGH, OR COME INTO CONTACT WITH ANY PART OF A SEWER MANHOLE. THE MINIMUM HORIZONTAL SEPARATION BETWEEN WATER MAINS AND MANHOLES SHALL BE SIX FEET MEASURED FROM THE CENTER OF THE MANHOLE.

D. THE MINIMUM SEPARATION BETWEEN FORCE, GRAVITY OR PRESSURE SEWERS AND WATER MAINS SHALL BE TWO FEET VERTICALLY AND SIX FEET HORIZONTALLY UNDER ALL CONDITIONS. WHERE A SEWER FORCE MAIN CROSSES ABOVE, OR LESS THAN TWO FEET BELOW A WATER LINE, THE SEWER MAIN SHALL BE ENCASED IN AT LEAST SIX INCHES OF CONCRETE FOR 10 FEET ON EITHER SIDE OF THE WATER MAIN.

E. ALL DISTANCES ARE MEASURED PERPENDICULARLY FROM THE OUTSIDE OF THE SEWER MAIN TO THE OUTSIDE OF THE WATER MAIN. THESE SEPARATION REQUIREMENTS DO NOT APPLY TO BUILDING PLUMBING OR INDIVIDUAL HOUSE SERVICE CONNECTIONS.

F. ALL WATER SERVICE LINES THAT ARE UNDER PAVEMENT SHALL BE SLEEVED IN 4" CLASS 160 PVC PIPE CONDUIT.

G. THRUST BLOCKS SHALL BE INSTALLED AT ALL ANGLES, TEEs AND IN ACCORDANCE WITH AWC STANDARDS E-9-5-1, E-9-5-2 OR PER DETAILS.

17.7 A ONE (1) FOOT MINIMUM VERTICAL SEPARATION SHALL BE PROVIDED BETWEEN A STORM DRAIN CROSSING A WATER MAIN. THE MINIMUM VERTICAL SEPARATION IS MEASURED FROM OUTSIDE OF WATER MAIN TO OUTSIDE OF STORM DRAIN. EXTRA PROTECTION IS REQUIRED PER MAG SPECIFICATIONS WHEN THESE REQUIREMENTS ARE NOT MET.

17.8 A THREE (3) FOOT MINIMUM HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN A FIRE HYDRANT AND ANY WATER SERVICE LINE.

17.9 RECLAIMED WASTEWATER MAINS SHALL BE CONSIDERED THE SAME AS WATER MAINS FOR THE PURPOSE OF MINIMUM COVER AND SEPARATION.

17.10 VERTICAL CLEARANCE BETWEEN WATER MAINS AND SEWER SERVICE CONNECTIONS:

THE WATER MAIN MAIN SHALL NOT BE LESS THAN SIX (6) INCHES ABOVE THE SEWER SERVICE EVEN IF THE SEWER SERVICE CONNECTION IS CONSTRUCTED WITH DUCTILE IRON PIPE IN ACCORDANCE WITH NOTE 3B OF MAG STANDARD DETAIL 404-11.

18 STORM SEWER NOTES

18.1 ALL CORRUGATED METAL PIPE TO BE 14 GAUGE, UNLESS OTHERWISE APPROVED BY THE DESIGN ENGINEER.

18.2 ALL CORRUGATED METAL PIPE SHALL HAVE FLARED END SECTIONS, EXCEPT WHERE HEADWALLS ARE USED.

18.3 ALL DRAINAGE CULVERTS AND PIPES SHALL HAVE A MINIMUM COVER OF 12".

19 DRY UTILITIES NOTES

19.1 GAS MAINS SHALL HAVE A MINIMUM COVER OF 36" WITH SAND SHADE 6" BELOW AND ABOVE PIPING. MAINTAIN A MINIMUM OF 1 FOOT VERTICAL AND HORIZONTAL SEPARATION BE-BETWEEN GAS LINE AND OTHER UTILITIES. CONSULT CITIZEN'S UTILITIES FOR FUR-OTHER REQUIREMENTS.

19.2 PRIMARY ELECTRIC LINES SHALL HAVE A MINIMUM COVER OF 48". CONSULT APS FOR FURTHER REQUIREMENTS.

19.3 CABLE TV LINES SHALL BE INSTALLED PER THE REQUIREMENTS OF SEDONA CABLEVISION.

19.4 TELEPHONE LINES SHALL BE INSTALLED PER THE REQUIREMENTS OF US WEST.

20 LANDSCAPING NOTES

20.1 ALL EXISTING TREES AND SHRUBS NOT AFFECTED BY BUILDING CONSTRUCTION OR ROAD DEVELOPMENT MUST BE FENCED WITH A CONSTRUCTION ENVELOPE FENCE TO PROTECT THEM DURING CONSTRUCTION.

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SHEET TITLE: NOTES - SHEET 2 OF 3

PROJECT TITLE: **SEDONA LOFTS**

MK COMPANY, INC.

DRAWN BY:	RJB
SCALE:	NONE
DATE:	04/13/2022
PROJECT NO:	170202A
SHEET NO.	C-3

21 ADEQ WATER AND SEWER SYSTEM NOTES

1 WATER SYSTEM THRUST BLOCKING AND/OR JOINT RESTRAINT

2 PIPE LINES SHALL BE PROVIDED WITH CONCRETE THRUST BLOCKS AT ALL CHANGES IN DIRECTION AND SIZE AND AT ALL TEES, VALVES, PLUGS, AND DEAD ENDS, PER MAG STANDARD DETAILS 301 AND 380 AND YAG STANDARD DETAIL 3-03. PIPE LINES MAY ALSO BE PROVIDED WITH RESTRAINED JOINTS AT ALL CHANGES IN DIRECTION AND SIZE AND AT ALL TEES, VALVES, PLUGS, AND DEAD ENDS, PER MAG STANDARD DETAILS 302 AND 303.

3 TRENCHING AND BACKFILLING

3.1 ROUGH GRADING SHALL BE COMPLETED PRIOR TO INSTALLATION OF UNDERGROUND UTILITIES.

3.2 TRENCH BOTTOM SHALL BE COMPACTED BY SUITABLE MEANS APPROVED BY THE ENGINEER PRIOR TO PLACEMENT OF BEDDING MATERIAL. BEDDING MATERIAL SHALL BE PLACED TO PROVIDE UNIFORM AND ADEQUATE LONGITUDINAL SUPPORT UNDER THE PIPE. THE CONTRACTOR SHALL ENSURE THAT A MINIMUM COMPACTED DEPTH OF 6" IS MAINTAINED UNDERNEATH THE PIPE. BELL HOLES SHOULD BE PROVIDED AT EACH JOINT TO PERMIT PROPER ASSEMBLY WHILE MAINTAINING UNIFORM SUPPORT.

3.3 BEDDING MATERIAL SHALL BE AGGREGATE BASE COURSE WITH A MAXIMUM PARTICLE SIZE OF 3/4" AND SHALL BE NON-PLASTIC. WHERE DEPTH OF COVER IS 2-FT. OR LESS, BACKFILL MATERIAL SHALL BE ROUNDED GRAVEL WITH A MAXIMUM PARTICLE SIZE OF 1/2" AND WITH NO MORE THAN 20% PASSING THE #200 SIEVE.

4 GENERAL CONTRACTOR TO STUB OUT UTILITIES 1-FT WITHIN EACH PROPERTY AND MARKED. SEWER TO BE MARKED PER M.S.D. 440-1. IF BUILDING LOCATION IS KNOWN THEN MARK PER M.S.D. 440-2. ALL OTHER UTILITIES TO BE MARKED WITH METAL STUD PER M.S.D. 440-1 BUT PAINTED GREEN FOR SEWER, BLUE FOR WATER AND RED FOR APS. PIPES ALSO TO HAVE TRACER WIRE AND MARKING TAPE.

5 BACKFILL SHALL BE PLACED IN LAYERS OF NOT MORE THAN 8" LOOSE DEPTH AND COMPACTED TO ACHIEVE COMPACTION OF 95% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99 AND T-191 OR ASTM D-2922 AND D-3017. THE CONTRACTOR SHALL CONTRACT WITH AN INDEPENDENT TESTING LABORATORY TO PROVIDED COMPACTION TESTING. TESTS SHALL BE PROVIDED AT MINIMUM INTERVALS OF ONE TEST PER 50 CUBIC YARDS OF TRENCH BACKFILL. TEST RESULTS SHALL BE SUBMITTED TO THE ENGINEER DAILY.

6 TRENCHING, PIPELAYING, BACKFILLING, AND ALL OTHER CONSTRUCTION SHALL BE PERFORMED UNDER THE INSPECTION, COORDINATION, AND SUPERVISION OF A REGISTERED PROFESSIONAL CIVIL ENGINEER.

7 NO TRENCH SHALL BE FILLED WITH BEDDING MATERIAL OR BACKFILL UNTIL THE EXCAVATION AND PIPE LAYING, RESPECTIVELY, HAVE BEEN APPROVED BY THE OWNER OR HIS AUTHORIZED REPRESENTATIVE.

8 THE EXCAVATION METHOD EMPLOYED SHALL BE THE CONTRACTOR'S OPTION. MATERIAL SHALL NOT BE STOCKPILED TO A DEPTH OF MORE THAN 5 FEET ABOVE FINISHED GRADE WITHIN 25 FEET OF ANY EXCAVATION OR STRUCTURE. EXCAVATION SHALL EXTEND SUFFICIENT DISTANCE FROM WALLS AND FOOTINGS TO ALLOW PLACING AND REMOVAL OF FORMS, INSTALLATION OF SERVICES AND INSPECTION BY THE ENGINEER. WITHIN 12" OF FINISHED GRADE SHOWN ON THE DRAWINGS, AND FOR THE MANHOLES, FILL AND BACKFILL SHALL BE NATIVE MATERIAL, FREE FROM BROKEN CONCRETE, ORGANIC MATERIAL, OR OTHER DEBRIS WITH SUFFICIENT FINES TO FILL ALL VOIDS AND TO INSURE A UNIFORMLY COMPACTED MASS OF THE REQUIRED DENSITY AND HAVING A MAXIMUM SIZE OF 2 – ½ INCHES WITH 0 TO 20% MINUS #200. ALL FILL AND BACKFILL SHALL BE PLACED IN LAYERS OF NOT MORE THAN 8" LOOSE AND COMPACTED TO 95% OF MAXIMUM DENSITY, DETERMINED BY AASHTO TEST METHOD T-99, PRIOR TO PLACEMENT OF THE NEXT LAYER.

22 WATER AND SEWER SYSTEM DESIGN

22.1 WATER AND SEWER MAINS SHALL BE SEPARATED IN ORDER TO PROTECT PUBLIC WATER SYSTEMS FROM POSSIBLE CONTAMINATION. ALL DISTANCES ARE MEASURED PERPENDICULARLY FROM THE OUTSIDE OF THE SEWER MAIN TO THE OUTSIDE OF THE WATER MAIN. SEPARATION REQUIREMENTS ARE AS FOLLOWS:

1. WATER MAIN SHALL NOT BE PLACED: (AAC: 18-5-502)
   A. WITHIN SIX FEET, HORIZONTAL DISTANCE, AND BELOW TWO FEET, VERTICAL DISTANCE, ABOVE THE TOP OF A SEWER MAIN UNLESS EXTRA PROTECTION IS PROVIDED (WHEN A WATER MAIN IS ABOVE A SEWER MAIN; EXTRA PROTECTION IS REQUIRED WHEN THE WATER MAIN IS CLOSER THAN TWO (2) FEET TO THE SEWER MAIN. WHEN A WATER MAIN IS BELOW A SEWER MAIN: THE MINIMUM SEPARATION IS TWO (2) FEET AND EXTRA PROTECTION IS ALWAYS REQUIRED PER MAG SPECIFICATIONS). EXTRA PROTECTION SHALL CONSIST OF CONSTRUCTING THE SEWER MAIN WITH MECHANICAL JOINT DUCTILE IRON PIPE OR WITH SLIP-JOINT DUCTILE IRON PIPE IF JOINT RESTRAINT IS PROVIDED. ALTERNATE EXTRA PROTECTION SHALL CONSIST OF ENCASING BOTH THE WATER AND SEWER MAINS IN AT LEAST SIX INCHES OF CONCRETE FOR AT LEAST TEN FEET BEYOND THE AREA COVERED BY THIS SUBPARAGRAPH.
   B. WITHIN TWO FEET HORIZONTALLY AND TWO FEET BELOW THE SEWER MAIN.
2. NO WATER PIPE SHALL PASS THROUGH OR COME INTO CONTACT WITH ANY PART OF A SEWER MANHOLE. THE MINIMUM HORIZONTAL SEPARATION BETWEEN WATER MAINS AND MANHOLES SHALL BE SIX FEET, MEASURED FROM THE CENTER OF THE MANHOLE.
3. THE MINIMUM SEPARATION BETWEEN FORCE MAINS OR PRESSURE SEWERS AND WATER MAINS SHALL BE TWO FEET VERTICALLY AND SIX FEET HORIZONTALLY UNDER ALL CONDITIONS. WHERE A SEWER FORCE MAIN CROSSES ABOVE OR LESS THAN SIX FEET BELOW A WATER LINE, THE SEWER MAIN SHALL BE ENCASED IN AT LEAST SIX INCHES OF CONCRETE OR CONSTRUCTED USING MECHANICAL JOINT DUCTILE IRON PIPE FOR TEN FEET ON EITHER SIDE OF THE WATER MAIN.
4. A ONE (1) FOOT MINIMUM VERTICAL SEPARATION SHALL BE PROVIDED BETWEEN A STORM DRAIN CROSSING A WATER MAIN. THE MINIMUM VERTICAL SEPARATION IS MEASURED FROM OUTSIDE OF WATER MAIN TO OUTSIDE OF STORM DRAIN. EXTRA PROTECTION IS REQUIRED PER MAG SPECIFICATIONS WHEN THESE REQUIREMENTS ARE NOT MET.
5. A SIX (6) FOOT MINIMUM HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN A SEWER MAIN OR STORM DRAIN AND A WATER MAIN. THE MINIMUM HORIZONTAL SEPARATION IS MEASURED FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
6. WHENEVER TWO PARALLEL WATER MAINS ARE REQUIRED, THERE SHALL BE A TEN (10) FOOT MINIMUM HORIZONTAL SEPARATION BETWEEN THE TWO MAINS TO ALLOW FOR TAPPING, TIE-OVER, AND MAINTENANCE.
7. A THREE (3) FOOT MINIMUM HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN A FIRE HYDRANT AND ANY WATER SERVICE LINE.
8. RECLAIMED WASTEWATER MAINS SHALL BE CONSIDERED THE SAME AS WATER MAINS FOR THE PURPOSE OF MINIMUM COVER AND SEPARATION.
9. VERTICAL CLEARANCE BETWEEN WATER MAINS AND SEWER SERVICE CONNECTIONS: THE WATER MAIN SHALL NOT BE LESS THAN 6 INCHES ABOVE THE SEWER SERVICE EVEN IF THE SEWER SERVICE CONNECTION IS CONSTRUCTED WITH DUCTILE IRON PIPE IN ACCORDANCE WITH NOTE 3B OF MAG STANDARD DETAIL 404-1.
10. WHEN THE SEWER SERVICE IS ABOVE THE WATER MAIN IS NOT ALLOWED.
11. SEPARATION FROM STORM DRAINS AND CULVERTS; WATER AND SEWER MAINS SHALL MAINTAIN SIX (6) FEET HORIZONTAL AND ONE FOOT VERTICAL SEPARATION FROM STORM DRAINS AND CULVERTS.
12. MINIMUM COVER IS TO BE MEASURED TO SUBGRADE UNLESS THERE IS NO PAVEMENT; THEN IT IS MEASURED TO FINISHED GRADE. IN ALL CASES, SEWER LINES ARE TO BE AT A DEPTH SUFFICIENT TO PROVIDE GRAVITY SERVICE TO ALL ADJACENT BUILDING PADS. SERVICE LINES ARE TO BE LAID AT GRADES AND DEPTHS PRESCRIBED IN THE INTERNATIONAL PLUMBING CODE.

22.2 MANHOLES

ALL MANHOLES SHALL BE 4-FT. ID PRECAST CONCRETE WITH POURED-IN-PLACE CONCRETE BASE AND TRAFFIC BEARING RING AND COVER. ALL COVERS SHALL BE 2-FT. IN DIAMETER AND SHALL BE MARKED "SEWER". TEST MANHOLES FOR WATER TIGHTNESS (INFILTRATION) PER R 18-9-E301.4.01.D.3.F. WATER TIGHTNESS SHALL BE TESTED BY EITHER 1) FILLING THE MANHOLE WITH WATER AND ENSURING THAT THE DROP IN WATER LEVEL DOES NOT EXCEED 0.001% OF THE TOTAL MANHOLE VOLUME IN ONE HOUR, OR 2) AIR PRESSURE TESTING USING THE "STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY NEGATIVE AIR PRESSURE (VACUUM) TEST". ASTM C-1244-93. TEST 100% OF ALL MANHOLES. MANHOLES SHALL CONFORM TO A.D.E.Q. AND M.A.G. SPECIFICATIONS. CONSTRUCTION SHALL CONFORM TO M.A.G. STD. DTLS. 420-1 AND 420-2.'

22.3 CONCRETE

CLASS A CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI. ALL POURED-IN-PLACE CONCRETE FOR WATER CONTAINING AND/OR TRANSPORTING CHAMBERS, MANHOLES AND BOXES, AND FOUNDATIONS SHALL BE CLASS A CONCRETE, AND SHALL BE SMOOTH FINISHED ON WATER CONTACT SURFACES. THRUST BLOCKS, VALVE ANCHORS, AND CONCRETE SURROUNDS MAY BE FORMED FROM CLASS C CONCRETE. THE EXCAVATION METHOD EMPLOYED SHALL BE THE CONTRACTOR'S GRADE WITHIN 25 FEET OF ANY EXCAVATION OR STRUCTURE. EXCAVATION SHALL EXTEND A SUFFICIENT DISTANCE FROM WALLS AND FOOTINGS TO ALLOW PLACING AND REMOVAL OF FORMS, INSTALLATION OF SERVICES AND INSPECTION BY THE ENGINEER.

23 SEWER AND WATER LINE TESTING

GRAVITY SANITARY SEWER TESTING:

ALL GRAVITY SANITARY SEWER MAINS SHALL BE TESTED IN ACCORDANCE WITH THE ARIZONA ADMINISTRATIVE CODE. ALL ACCEPTANCE TESTING SHALL BE PERFORMED IN THE PRESENCE OF THE PROJECT ENGINEER OR AUTHORIZED REPRESENTATIVE. TESTING SHALL CONSIST OF THE FOLLOWING:

1. TEST EACH SECTION OF GRAVITY PIPELINE FOR LEAKAGE AND PRESSURE RATING AFTER BACKFILLING OCCURS AND BEFORE ROAD IS PAVED. PERFORM LEAKAGE TESTS WITH THE AIR TEST AS SPECIFIED BELOW. TEST LATERALS FROM THE MAIN LINE TO PROPERTY LINE.
2. IN ADDITION TO PRESSURE AND LEAKAGE TESTING, A DEFLECTION TEST SHALL BE PERFORMED ON ALL GRAVITY PIPELINES INSTALLED. A RIGID BALL OR MANDREL DEFLECTION TESTING EQUIPMENT AND LABOR SHALL BE PROVIDED. TEST SHALL BE PERFORMED WITHOUT MECHANICAL PULLING DEVICES. ANY SECTION OF THE PIPELINE WHICH SHOWS DEFLECTION IN EXCESS OF 5 PERCENT OF THE AVERAGE INSIDE DIAMETER AS PER ASTM D3034 SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. ENGINEER MAY REQUIRE CONTRACTOR TO TEST PVC PIPE AFTER BACKFILL HAS BEEN IN PLACE FOR 30 DAYS.
3. VIDEO INSPECTION

3.a. THE CONTRACTOR WILL BE REQUIRED TO VIDEO RECORD THE INTERIOR OF THE SEWER LINE USING A VIDEO CAMERA. ANY DEFECTS OR 'SAGS' IN THE PIPE OR CONSTRUCTION METHODS REVEALED BY THE INSPECTION SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST.

3.b. THE CONTRACTOR SHALL RE-VIDEO THE PIPE AFTER IT HAS BEEN REPAIRED OR EXCAVATED. ANY ADDITIONAL INSPECTION(S) REQUIRED, BASED ON A FAILURE OR DEFICIENCY DISCOVERED DURING THE INSPECTION, SHALL BE PAID FOR BY THE CONTRACTOR. ALL SEWER LINE VIDEOS SHALL BE TURNED IN TO THE PROJECT MANAGER AFTER ACCEPTANCE.

4. AIR TESTING (ASTM F1417)

4.a. PERFORM AIR TESTS FOR PLASTIC MAINLINE AND WILL INCLUDE LATERAL PIPES TO THE PROPERTY LINES WHERE APPLICABLE.

4.b. CONTRACTOR SHALL FURNISH ALL FACILITIES REQUIRED INCLUDING: NECESSARY PIPING CONNECTIONS, TEST PUMPING EQUIPMENT, PRESSURE GAUGES OR MANOMETERS, BULKHEADS, ALL MISCELLANEOUS ITEMS REQUIRED. OBTAIN APPROVAL OF EQUIPMENT AND ACCEPTANCE OF METHODS PROPOSED FOR USE. CONDUCT. INITIAL TEST ON FIRST SECTION OF PIPE LAID BY EACH CREW.

4.c. INTRODUCE LOW-PRESSURE AIR UNTIL INTERNAL AIR PRESSURE IS 4.0 PSI. ALLOW TWO TO FIVE MINUTES FOR INTERNAL AIR PRESSURE AND TEMPERATURE TO STABILIZE. ADJUST PRESSURE TO 3.5 PSI AND START TEST. THE TIME REQUIRED FOR THE PRESSURE TO DECREASE 1.0 PSI FROM 3.5 TO 2.5 PSI GREATER THAN THE AVERAGE BACK PRESSURE OF ANY GROUND WATER ABOVE THE PIPE INVERT SHALL NOT BE LESS THAN THE MINIMUM TEST TIME IN THE FOLLOWING FOR THE GIVEN DIAMETERS: NOMINAL PIPE TIME (MIN) PER DIAMETER PER 100FT OF PIPE: 4"=.66 MIN; 6"=1.48 MIN; 8"=2.510 MIN; 10"=3.912 MIN; 12"=5.615 MIN; 15"=8.918 MIN; 18" =12.8 MIN.

5. MANHOLES SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH AAC R18-9-E301D.3, ASTM C -1244 AND MAG SPECIFICATION SECTION 615.

WATER SYSTEM PRESSURE AND LEAKAGE TESTING:

1. THE CONTRACTOR SHALL PROVIDE THE LABOR, TOOLS, EQUIPMENT, AND MATERIALS NECESSARY TO PERFORM THE PRESSURE TESTS AND LEAKAGE TESTS.
2. ALL TESTS PERFORMED FOR EACH PIPE TEST SECTION, FACILITY, OR PART OF A FACILITY SHALL BE OBSERVED AND APPROVED BY THE ENGINEER BEFORE ACCEPTANCE. IN THE EVENT THE CONTRACTOR PERFORMS ANY TEST WITHOUT OBSERVED BY THE ENGINEER, THE CONTRACTOR WILL BE REQUIRED TO TEST THE SECTION, FACILITY, OR PART OF A FACILITY AGAIN IN CONFORMANCE WITH THIS SPECIFICATION AT NO COST TO THE OWNER.
3. SUBMIT TEST RESULTS OF ALL TESTING INCLUDED IN THIS SECTION, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: PRESSURE TESTS AND GAUGE CALIBRATIONS.
4. THE ENGINEER AND PROJECT MANAGER SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO ANY TESTING AND/OR DISINFECTING.
5. TEST PRESSURES SHALL BE 150 PSI, MEASURED AT THE LOWEST POINT OF THE PIPE SEGMENT BEING TESTED. ONLY POTABLE WATER SHALL BE USED FOR FLUSHING AND TESTING THE POTABLE WATER SYSTEM.
6. THE CONTRACTOR WILL BE RESPONSIBLE FOR DISPOSAL OF ANY WATER ASSOCIATED WITH HYDROSTATIC TESTING. THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT ENGINEER TO DETERMINE DISPOSAL LOCATIONS. PERMITTING, COORDINATION, AND APPROVAL OF DISPOSAL LOCATIONS ARE THE RESPONSIBILITY OF CONTRACTOR. ALL TEMPORARY PLUGS, BULKHEADS, OR BLIND FLANGES USED FOR HYDROSTATIC TESTING WILL BE FURNISHED BY THE CONTRACTOR AND INCIDENTAL TO THE COST OF THE PIPELINE.
7. ALL PRESSURE MAINS SHALL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH MAG SPECIFICATION SECTION 610. SUBSECTION 610.15 EXCEPT THAT THE MAXIMUM ALLOWABLE LEAKAGE FROM THE PIPE LINE SHALL BE DETERMINED BY THE FOLLOWING FORMULA: WHERE: L = SD√P/133,200; L = ALLOWABLE LEAKAGE IN GALLONS PER HOUR, S = LENGTH OF PIPE TESTED IN FEET, D = NOMINAL DIAMETER OF PIPE IN INCHES, AND P = AVERAGE TEST PRESSURE IN PSI GAGE DURING THE HYDROSTATIC TEST AS MEASURED AT THE LOWEST POINT IN THE TEST SECTION.
8. EACH SECTION OF PRESSURE MAIN TO BE TESTED SHALL BE SLOWLY FILLED WITH WATER AND THE SPECIFIED TEST PRESSURE SHALL BE APPLIED BY MEANS OF A PUMP CONNECTED TO THE PIPE IN A MANNER SATISFACTORY TO THE ENGINEER. BEFORE APPLYING THE SPECIFIED TEST PRESSURE, ALL AIR SHALL BE EXPELLED FROM THE PIPE. THE WATER PRESSURE SHALL BE BROUGHT TO THE SPECIFIED TEST PRESSURES AND MAINTAINED FOR AT LEAST 2 HOURS. LEAKAGE WILL BE DETERMINED BY MEASURING THE QUANTITY OF WATER TO BE SUPPLIED TO MAINTAIN THE SPECIFIED TEST PRESSURE. THE CONTRACTOR SHALL REPAIR AND RETEST ANY LINES THAT FAILED.
9. PRESSURE TESTING OF NEW MAINS SHALL BE BY THE CONTRACTOR PER MAG SECTION 610.15 AND PROJECT ENGINEER OR REPRESENTATION WILL BE PRESENT AT ALL TESTING.

WATER SYSTEM CHLORINATION FLUSHING AND BACTERIOLOGICAL TESTING:

1. CHLORINATION, FLUSHING AND BACTERIOLOGICAL TESTING CHLORINATION AND FLUSHING OF NEW MAINS SHALL BE PERFORMED BY THE CONTRACTOR PER MAG SECTION 611 AND PART V OF ADEQ ENGINEERING BULLETIN NO. 8, BEFORE BEING PLACED IN SERVICE, ALL NEWLY INSTALLED PIPE, VALVES, HYDRANTS, AND APPURTENANCES SHALL BE FLUSHED, DISINFECTED, KEPT CLEAN, AND WILL BE SAMPLED FOR ACCEPTABLE BACTERIOLOGICAL ANALYSIS. THE CONTRACTOR WILL HAVE SAMPLE TAKEN FROM EACH AND EVERY 500-FOOT INTERVAL, AND AT EACH END. FOR EACH HYDRANT LATERAL OVER 18-FEET IN LENGTH, A SAMPLE WILL BE TAKEN AT THE HYDRANT END. ON NEW WATERLINE WITHOUT HYDRANT, TEMPORARY SAMPLING TAPS SHALL BE PROVIDED, AND THEN REMOVED AND PLUGGED AFTER ACCEPTABLE BACTERIOLOGICAL RESULTS ARE RECEIVED. HYDRANT USED FOR SAMPLING SHALL BE FITTED WITH AN APPROVED SAMPLING TAP.

THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT ENGINEER AND UTILITY DEPARTMENT FOR THE LOCATION OF SAMPLING TAPS.

2. PRE-DISINFECTION FLUSHING: PIPE SHALL FIRST BE FLUSHED TO REMOVE ANY SOLID OR CONTAMINATED MATERIAL. FLUSHING VELOCITY SHALL BE AT LEAST 2.5-FEET PER SECOND IN THE PIPE. FLUSHING PERIOD SHALL BE AT LEAST 5 MINUTES FOR EVERY 150-FEET OF NEW PIPE BUT IN NO CASE LESS THAN 30 MINUTES. B. ONE 2-1/2 INCH HYDRANT OPENING WILL, UNDER NORMAL PRESSURE OF 40 PSI, PROVIDE THIS VELOCITY IN PIPE SIZES UP TO AND INCLUDING 12-INCHES.
3. FINAL FLUSHING AND TESTING. FOLLOWING CHLORINATION, ALL TREATED WATER SHALL BE FLUSHED FROM THE PIPE UNTIL THE REPLACEMENT WATER TREATED THROUGHOUT ITS LENGTHS SHOWS AN ABSENCE OF CHLORINE. IF CHLORINE IS NORMALLY USED IN THE SOURCE OF SUPPLY, TESTS SHALL SHOW A RESIDUAL NOT IN EXCESS OF THAT CARRIED IN THE SYSTEM. FLUSHING VELOCITY SHALL BE AT LEAST 2.5-FEET PER SECOND IN THE WATERLINE. FLUSHING PERIOD SHALL BE AT LEAST 5 MINUTES FOR EVERY 150-FEET OF NEW WATERLINE BUT IN NO CASE LESS THAN 30 MINUTES. ALL HYDRANTS ON THE NEW WATERLINE SHALL BE FLUSHED TO REMOVE EXCESS CHLORINE FROM THE HYDRANT AND HYDRANT BRANCH.
6. THE CONTRACTOR WILL PROVIDE A COPY OF ALL TEST TO THE PROJECT ENGINEER AND UTILITY DEPARTMENT.

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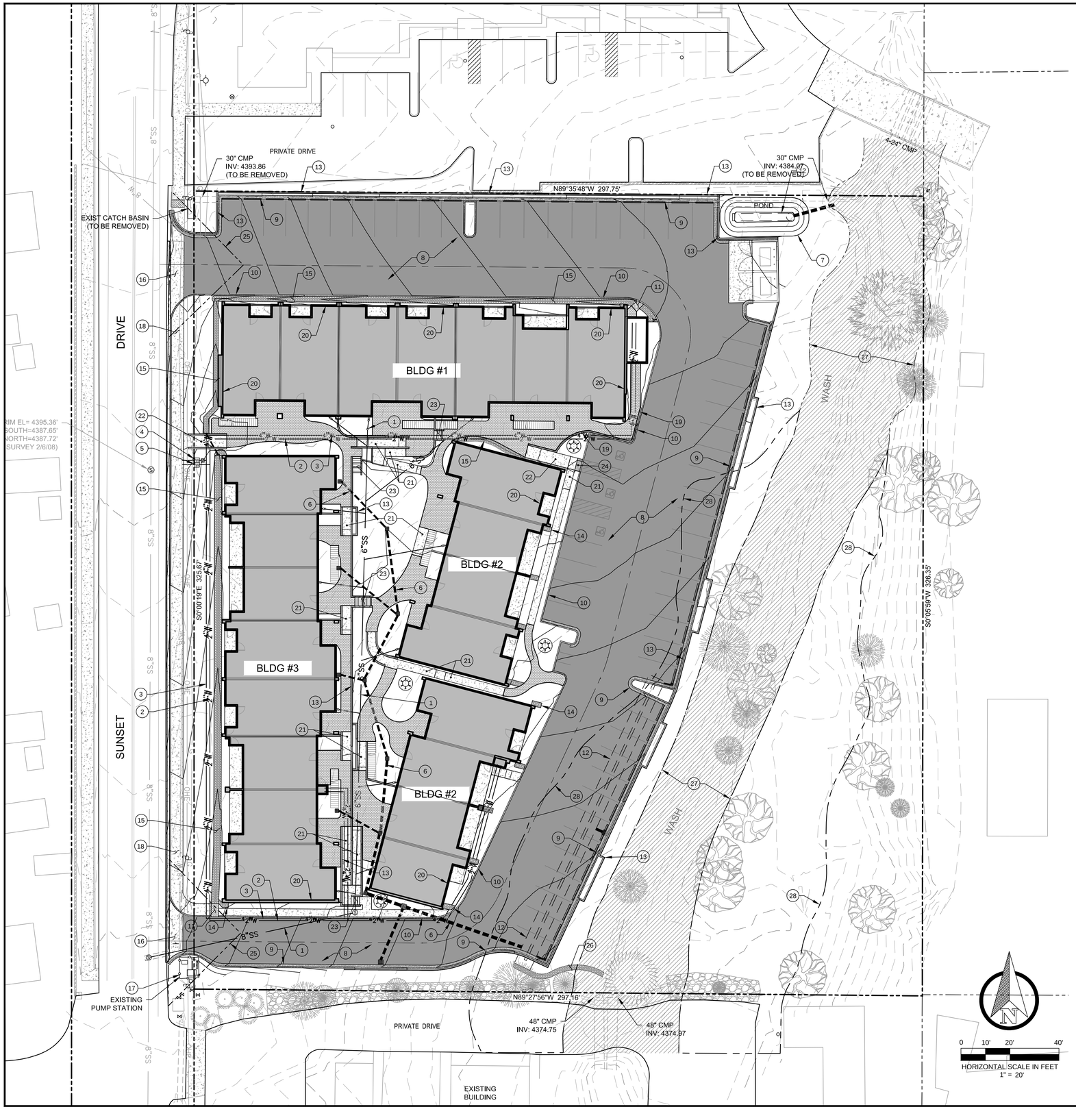
SHEET TITLE: NOTES - SHEET 3 OF 3

PROJECT TITLE:

SEDONA LOFTS

MK COMPANY, INC.

DRAWN BY:	RJB
SCALE:	NONE
DATE:	04/13/2022
PROJECT NO:	170202A
SHEET NO.	C-4



CONSTRUCTION NOTES:

1. CONTRACTOR TO VERIFY ALL EXISTING UTILITY CONNECTION POINTS PRIOR TO INSTALLATION OF NEW SERVICE LINES.
2. TEMPORARY TRAFFIC SURFACING SHALL BE APPLIED PRIOR TO CONSTRUCTION AND SHALL CONSIST OF NO LESS THAN A 4" THICKNESS OF 3/4" AGGREGATE. THE SURFACE SHALL EXTEND FROM THE EXISTING ROADWAY TO THE BUILDING FOOTPRINT.
3. ALL NEW SIDEWALKS, DRIVEWAYS, EXPOSED SURFACES OF CONCRETE DRAINAGE STRUCTURES, AND OTHER EXPOSED CONCRETE SURFACES SHALL BE INTEGRALLY COLORED "SEDONA RED". THE AMOUNT OF CONCRETE COLOR ADDITIVE REQUIRED IS 3.05 LBS OF DAVIS 160 LIQUID PER SACK OF CONCRETE. THIS IS THE SEDONA RED AS MANUFACTURED BY HANSON CONCRETE IN COTTONWOOD ARIZONA. VARIATIONS IN THE ADDITIVE TO ACCOMPLISH THE "SEDONA RED" SHALL BE SUBJECT TO CITY ENGINEER APPROVAL.
4. WATER AND SEWER SERVICES SHALL BE INSTALLED PER INTERNATIONAL PLUMBING CODE REQUIREMENTS.
5. DURING CONSTRUCTION PHASE: IMPLEMENT STRAW WATTLES, SILT FENCING OR OTHER APPROPRIATE "BEST MANAGEMENT PRACTICES" (BMPS) TO MITIGATE STORMWATER POLLUTON AND PREVENT EROSION ONSITE AND SEDIMENT LEAVING THE PROPERTY AND ENTERING THE THE CITY OF SEDONA MS4. THESE BMPS ARE TO BE PROPERLY INSTALLED AND MAINTAINED. CONSTRACTOR IS TO PROVIDE INFORMATION, LOCATION AND OTHER DETAILS REGARDING STROMWATER POLLUTION PREVENTION MEASURES TO BE IMPLEMENTED DURING CONSTRUCTION.
6. POST CONSTRUTION PHASE: BMPS SHALL BE IMPLEMENTED TO PREVENT STROMWATER POLLUTION AND SITE EROSION ONCE ACTIVE CONSTRUTION IS COMPLETED. THESE BMPS INCLUDE REVEGETATION, GENTLE SLOPING , TERRACING AND LANDSCAPING (WITH ROCK OR OTHER SUITABLE MATERIAL AND FILTER FABRIC) . THIS SHOULD BE IN CONJUNCTION WTIH THE REQUIRED STROMWATER MEASURES ADRESSING VOLUME , SUCH AS RENTENTION/DETENTON BASINS, SWALES AND RIPRAP PADS. ALSO PROVIDE INFORMATION, LOCATON AND OTHER DETAILS REGARDING STROMWATER POLLUTION PREVENTION MEASURES TO BE IMPLEMENTED AFTER CONSTRUTION.

KEY NOTES:

1. SEWER SERVICE LINE WITH DUAL DIRECTION CLEANOUT AT BUILDINGS.
2. 2" WATER SERVICE.
3. 4" FIRE SUPPRESSION SUPPLY
4. 4" WATER METER & BACKFLOW PREVENTION VALVE
5. 2" WATER METER
6. STORM DRAIN PIPING SYSTEM (SEE SHEET C-9)
7. STORM DRAIN POND (SEE SHEET C-9)
8. ASPHALT DRIVEWAY & PARKING (SEE DETAIL)
9. CONC. CURB & GUTTER (SEE DETAIL)
10. CONC. CURB (SEE DETAIL)
11. SCUPPER
12. SUBSURFACE STORM WATER DETENTION PIPE
13. RETAINING WALL (5' HIGH MAX) (SEE DETAIL)
14. 3' x 2' GRAVEL PAD AT DOWNSPOUT (QTY = 11)
15. RIPRAP LINED SWALE (SEE DETAIL)
16. CONC. ENTRANCE PER MAG STD DTL 250-2 (SEE DETAIL)
17. EXISTING WATER PUMP STATION (TO REMAIN)
    LOWER CHAIN LINK FENCE, CONTROLLER AND METER PANELS. ADD SECURE HINGED COVER. TOP OF COVER TO BE TO LESS THAN 3' HIGH.
18. 5' CONC. SIDEWALK
19. RETAINING WALL (2.5' HIGH MAX) (SEE DETAIL)
20. STEM WALL (SEE ARCHITECTURAL PLANS)
21. 3.5' WIDE CONCRETE ADA RAMP WITH RAILING (SEE ARCHITECTURAL PLAN)
22. 5' WIDE CONCRETE ADA RAMP WITH RAILING (SEE ARCHITECTURAL PLAN)
23. CONCRETE STEPS WITH RAILING (SEE ARCHITECTURAL PLAN)
24. DETECTABLE WARNING STRIP
25. 60' x 30' SIGHT VISIBILITY TRIANGLE
26. 2' WIDE RIPRAP LINES DRAINAGE SWALE
27. LIMIT OF FLOODWAY
28. LIMIT OF 100 YR FLOOD PLAIN

LINETYPE LEGEND

- EXISTING STORM SEWER LINE
- EXISTING WATER SERVICE — W —
- EXISTING SANITARY SERVICE — SS —
- EXISTING UNDERGROUND ELECTRIC LINE — UGE —
- EXISTING GAS LINE — G —
- EXISTING CONTOURS 4095 / 4096
- PROPOSED CONTOURS 4095 / 4096
- PROPOSED STORM SEWER LINE
- PROPOSED 6" WATER MAIN — 6"W —
- PROPOSED 8" SANITARY MAIN — 8"SS —
- PROPOSED 6" SANITARY MAIN — 6"SS —
- PROPOSED 4" SANITARY SERVICE — 4"SS —
- PROPOSED UNDERGROUND ELECTRIC LINE — UGE —
- PROPOSED COMMUNICATION LINE — COMM —
- PROPOSED GAS LINE — G —
- PROPOSED ROAD CENTERLINE
- PARCEL BOUNDARY & RIGHT-OF-WAY LINE
- PROPOSED LOT LINE
- BUILDING SETBACK LINE
- EXISTING EASEMENT LINE
- PROPOSED EASEMENT LINE
- PROPOSED SIGHT DISTANCE TRIANGLE
- PROPOSED FLOW LINE
- PROPOSED FENCE
- PROPOSED CHAIN-LINK FENCE

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SHEET TITLE: OVERALL SITE & UTILITY PLAN

PROJECT TITLE:

SEDONA LOFTS

MK COMPANY, INC.

DRAWN BY:	RJB
SCALE:	1" = 20'
DATE:	04/13/2022
PROJECT NO:	170202A
SHEET NO.	C-5

3D SURFACE MODEL

LOOKING NW WITH 1' CONTOURS

SHEET NO. C-6

PROJECT NO: 170202A

DATE: 04/13/2022

SCALE: NONE

DRAWN BY: RJB

SHEET TITLE: 3D MODEL

PROJECT TITLE:

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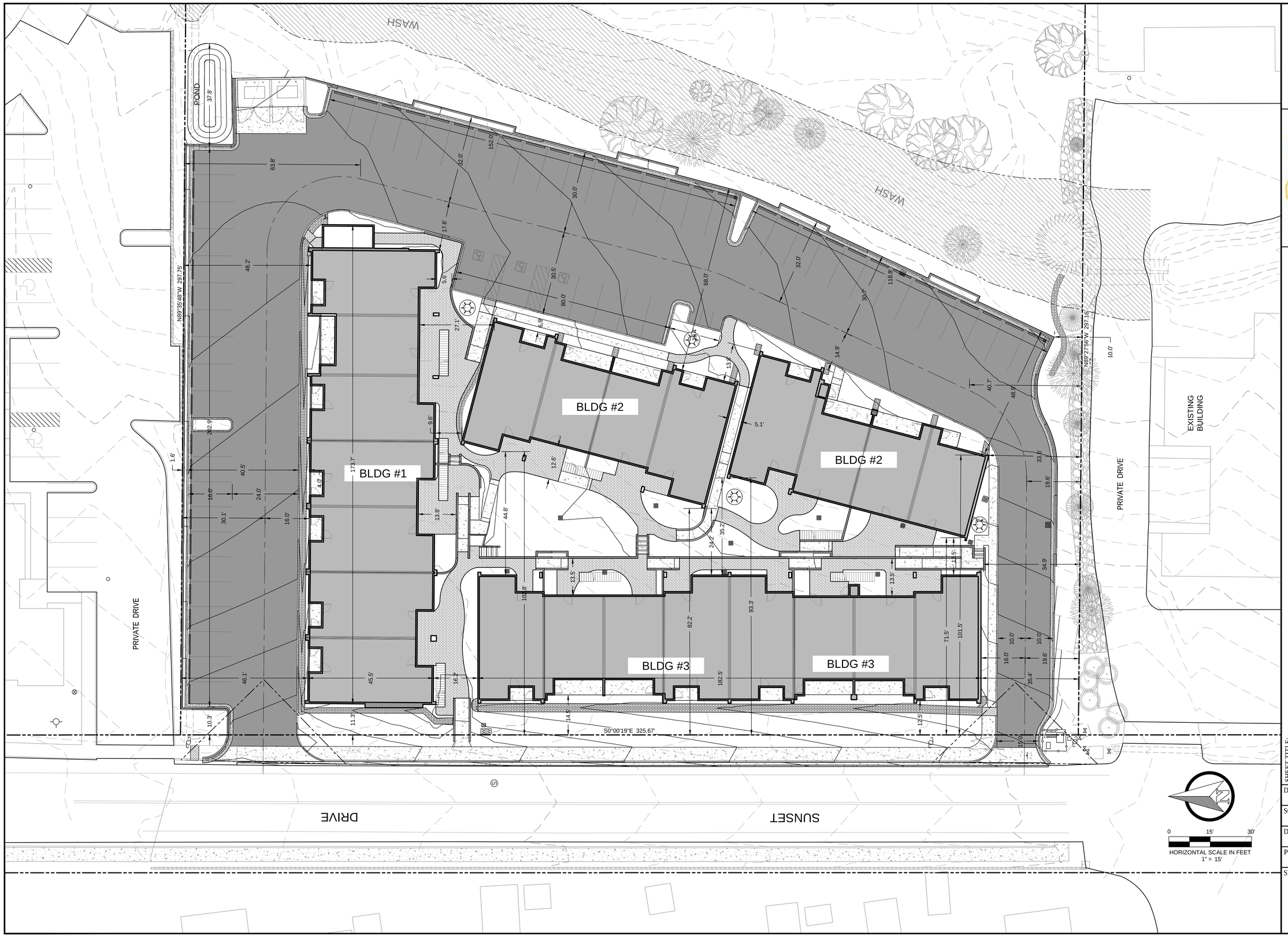
Civil
12/31/2022



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SHEET TITLE: HORIZONTAL CONTROL PLAN

PROJECT TITLE:

SEDONA LOFTS

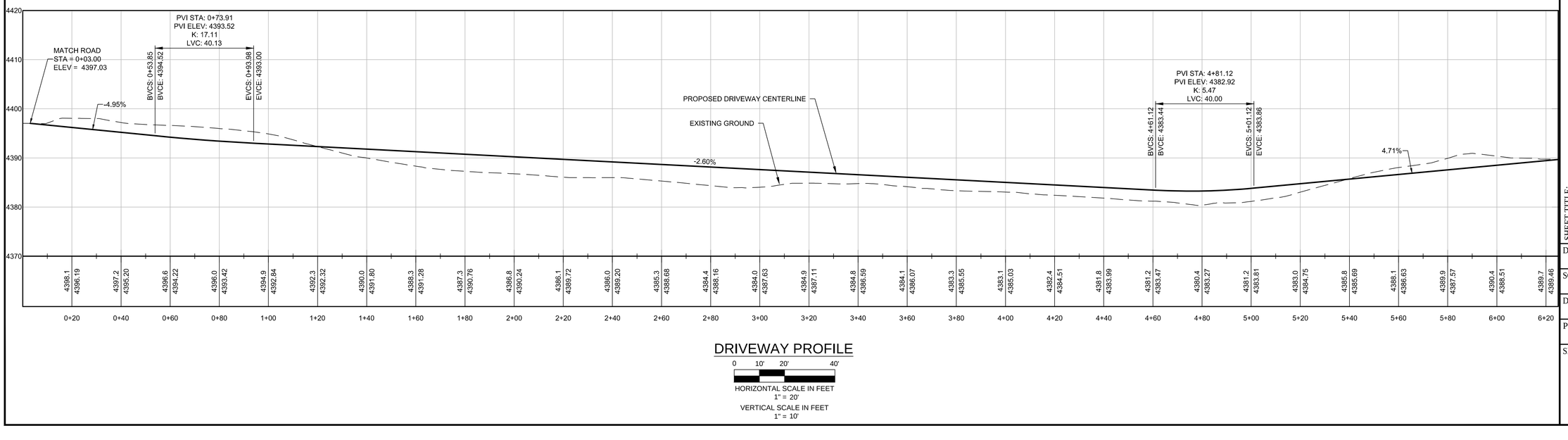
MK COMPANY, INC.

DRAWN BY:	RJB
SCALE:	1" = 20'
DATE:	04/13/2022
PROJECT NO:	170202A
SHEET NO.	C-7

DRIVEWAY PLAN

0 10' 20' 40'

HORIZONTAL SCALE IN FEET
1" = 20'



DRIVEWAY PROFILE

0 10' 20' 40'

HORIZONTAL SCALE IN FEET
1" = 20'

VERTICAL SCALE IN FEET
1" = 10'

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SHEET TITLE: DRIVEWAY PLAN & PROFILE

PROJECT TITLE:

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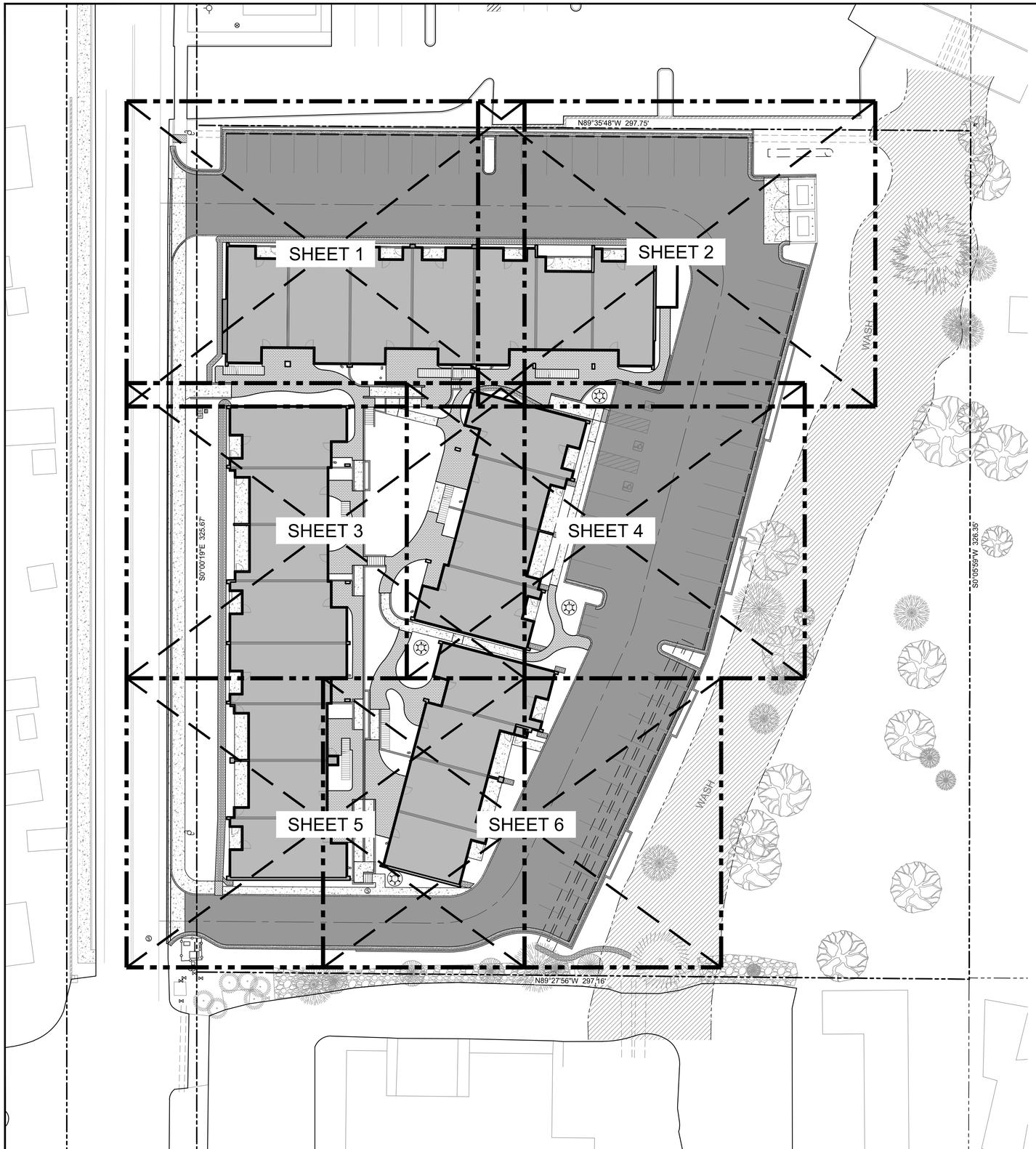
MK COMPANY, INC.

DRAWN BY:	RJB
SCALE:	AS NOTED
DATE:	04/13/2022
PROJECT NO:	170202A
SHEET NO.	C-8



GENERAL GRADING AND DRAINAGE NOTES:

1. TOP OF CUT SLOPES SHALL BE MADE NOT NEARER TO A SITE BOUNDARY LINE THAN 1/5 OF THE THE VERTICAL HEIGHT OF THE CUT WITH A MINIMUM OF 2 FEET. THE TOE OF FILL SLOPES SHALL BE MADE NOT NEARER TO A SITE BOUNDARY LINE THAN 1/2 OF THE VERTICAL HEIGHT OF THE FILL, WITH A MINIMUM OF 2 FEET. ALL CUT OR FILL SLOPES STEEPER THAN 2:1 SHALL BE STABILIZED WITH RIPRAP.
2. THE GROUND SURFACE SHALL BE PREPARED TO RECEIVE FILL BY REMOVING ALL VEGETATION, NON-COMPLYING FILL, AND OTHER UNSUITABLE MATERIALS.
3. NO ROCK OR SIMILAR IRREDUCIBLE MATERIAL WITH A MAXIMUM DIMENSION GREATER THAN 12" SHALL BE ALLOWED IN FILLS IN THE ABSENCE OF A SOILS REPORT AND INSPECTION BY A SOILS ENGINEER.
4. ALL FILLS SHALL BE COMPACTED TO A MINIMUM OF 90% OF MAXIMUM DENSITY AND VERIFIED BY A COMPACTION REPORT WHEN SUPPORTING A STRUCTURE.

SPOT ELEVATIONS LEGEND

BOC	BACK OF CURB
BOW	BOTTOM OF WALL
BM	BENCH MARK
CL	CENTER LINE
EG	EXISTING GROUND
FC	FINISHED CONCRETE
FF	FINISHED FLOOR
FG	FINISHED GROUND
FL	FLOW LINE
EOP	EDGE OF PAVEMENT
GB	GRADE BREAK
HP	HIGH POINT
LP	LOW POINT
PC	POINT OF CURVATURE
PT	POINT OF TANGENCY
TOF	TOP OF FOOTING
TOW	TOP OF WALL
TOC	TOP OF CURB

VOLUMES

EARTHWORKS: (PR LESS EX)
CUT: 1460 CY
FILL: 3410 CY
NET: 3410 - (1460 + 150) = 1800 CY (IMPORT)

MATERIALS:
ASPHALT & BASE
8,012 SF X 0.75 FT = 770 CY

SLAB CONCRETE:
24,000 SF X 0.33 = 290 CY

SITE NET (EARTHWORK)
1800 - 770 - 290 = 740 CY (IMPORT)

NOTE: VOLUMES ARE APPROXIMATE

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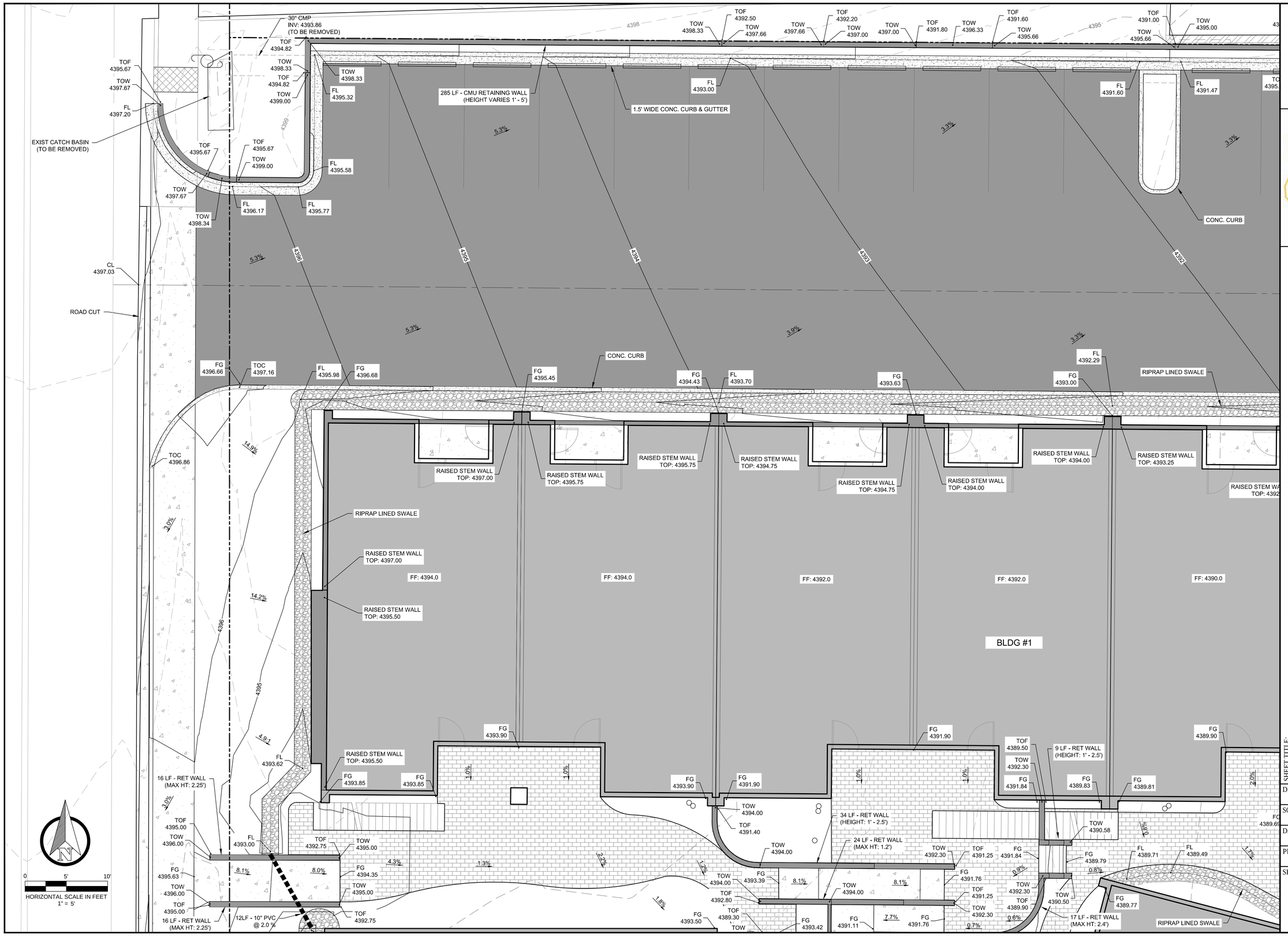
SHEET TITLE: GRADING & DRAINAGE - KEY SHEET

PROJECT TITLE:
SEDONA LOFTS
MK COMPANY, INC.

DRAWN BY:	RJB
SCALE:	1" = 20'
DATE:	04/13/2022
PROJECT NO:	170202A
SHEET NO.	C-9



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NATIONAL PROFESSIONAL ENGINEERING CERTIFICATION
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SHEET TITLE: GRADING & DRAINAGE - SHEET 1 OF 6

PROJECT TITLE: **SEDONA LOFTS**
MK COMPANY, INC.

DRAWN BY:	RJB
SCALE:	1" = 5'
DATE:	04/13/2022
PROJECT NO:	170202A
SHEET NO.	**C-10**

TOF 4391.00
TOW 4395.66
TOW 4395.00
TOF 4390.60
TOW 4394.33
TOW 4393.66
TOF 4390.20
TOF 4390.10
TOW 4391.66
TOF 4389.30
N89°35'48"W 297.75'
TOW 4391.00
TOF 4388.80
TOW 4390.33
TOW 4390.33
TOF 4387.00
30" CMP
INV: 4384.07
(TO BE REMOVED)
FL 4391.47
TOW 4395.00
TOW 4393.00
TOW 4392.33
TOW 4391.00
285 LF - CMU RETAINING WALL
(HEIGHT VARIES 1' - 5')
1.5' WIDE CONC. CURB & GUTTER
FL - CURB CUT
4389.29
2.0%
POND
4385
18LF - 15" PVC
(SEE DETAIL)
25LF - 42" CMP SUBSURFACE DETENTION
(SEE DETAIL)
285 LF - CMU RETAINING WALL
(HEIGHT VARIES 1' - 5')
4386
TOW
4390.00
TOF
4387.50
TOF
4387.50
FL
4388.88
TOW
4390.00
CONC. CURB
CURB CUT
FL
4389.36
CL
4390.49
RIPRAP LINED SWALE
FL
4391.72
FG
4392.45
FG
4391.81
FL
4391.10
CONC. CURB
FG
4390.73
TOC
4391.23
FG
4391.00
FL
4390.27
SCUPPER
FG
4390.59
CURB CUT
FL
4389.93
FL
4389.03
RAISED STEM WALL
TOP: 4393.25
RAISED STEM WALL
TOP: 4392.75
RAISED STEM WALL
TOP: 4392.75
RAISED STEM WALL
TOP: 4392.25
1.5' WIDE CONC. CURB & GUTTER
FL
4388.48
BOW
4385.35
TOF
4384.85
TOW
4389.09
FF: 4390.75
FG
4389.47
FF: 4390.0
FF: 4390.0
FF: 4390.0
RAISED STEM WALL
TOP: 4390.75
CL
4389.21
FG
4390.17
FG
4390.70
CONC. CURB
FL
4387.77
BOW
4384.39
TOF
4383.89
TOW
4388.26
WASH
FG
4389.90
FG
4389.90
FG
4389.81
FG
4389.57
TOF
4389.50
TOW
4390.00
FG
4389.69
60 LF - RET WALL
(MAX HT: 2.0')
TOW
4390.23
FL
4389.71
FL
4389.49
TOF
4388.10
TOW
4389.93
FG
4388.38
TOW
4390.00
TOW
4390.00
FG
4389.43
FG
4388.16
TOF
4388.00
FG
4388.32
RIPRAP LINED SWALE
0
5'
10'
HORIZONTAL SCALE IN FEET
1" = 5'

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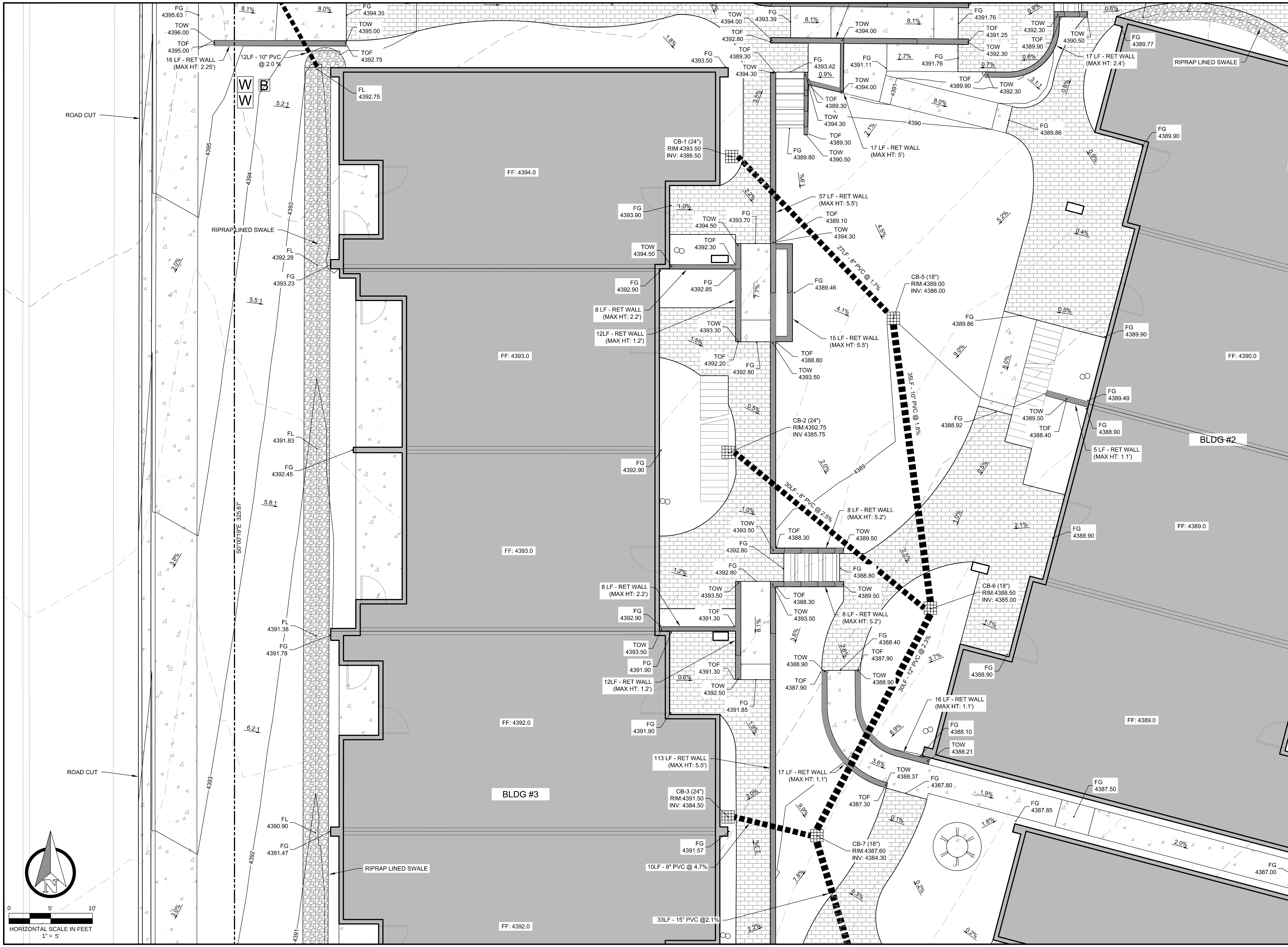
SHEET TITLE: GRADING & DRAINAGE - SHEET 2 OF 6

PROJECT TITLE:

SEDONA LOFTS

MK COMPANY, INC.

DRAWN BY:	RJB
SCALE:	1" = 5'
DATE:	04/13/2022
PROJECT NO:	170202A
SHEET NO.	C-11



GRADING & DRAINAGE - SHEET 3 OF 6

SEDONA LOFTS

MK COMPANY, INC.

SHEET TITLE:

PROJECT TITLE:

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CERTIFICATION NO. 37322
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SCALE:	1" = 5'
DATE:	04/13/2022
PROJECT NO:	170202A
SHEET NO.	C-12

FG 4391.76
TOW 4392.30
TOF 4391.25
TOW 4392.30
TOF 4389.90
TOW 4390.50
FG 4391.76
TOF 4389.90
TOW 4392.30
FG 4389.77
17 LF - RET WALL (MAX HT: 2.4')
RIPRAP LINED SWALE
FL 4389.42
TOW 4390.00
TOW 4390.00
FG 4389.43
TOF 4388.00
4388.10
FG 4388.16
FG 4388.38
FG 4388.32
FG 4388.02
FG 4387.98
FG 4388.22
FG 4387.96
FG 4388.49
FG 4389.86
FG 4389.90
FF: 4390.0
WALL
CB-5 (18")
RIM:4389.00
INV: 4386.00
FG 4389.86
FG 4389.90
FF: 4390.0
FG 4388.24
FG 4387.57
FG 4387.48
CONC. CURB
1.5' WIDE CONC. CURB & GUTTER
FL 4386.78
TOW 4387.28
BOW 4383.14
TOF 4382.65
35LF - 10" PVC @ 1.8%
FG 4389.49
FG 4388.92
TOW 4389.50
TOF 4388.40
FG 4388.90
5 LF - RET WALL (MAX HT: 1.1')
BLDG #2
FG 4387.75
FG 4388.90
FF: 4389.0
FL 4385.82
BOW 4382.21
TOF 4381.71
TOW 4386.32
CB-6 (18")
RIM:4388.50
INV: 4385.00
FL 4386.59
FL 4386.31
FL 4386.22
FL 4386.08
FG 4387.27
FG 4387.25
FG 4388.90
FG 4388.90
16 LF - RET WALL (MAX HT: 1.1')
FF: 4389.0
FL 4385.20
TOW 4385.70
BOW 4381.94
TOF 4381.44
FG 4388.10
TOW 4388.21
CL 4385.83
FG 4387.80
FG 4387.85
FG 4387.50
CONC. CURB
FL 4385.35
CB-14 (24")
W/ FLOW GUARD FILTER
RIM: 4384.60
INV (12"): 4379.00
FG 4385.66
FG 4386.16
FG 4387.00
BOW 4381.06
TOF 4380.56
FL 4385.23
TOW 4385.10
FG 4386.65
FL 4384.99

0 5' 10'
HORIZONTAL SCALE IN FEET
1" = 5'

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GRADING & DRAINAGE - SHEET 4 OF 6

SEDONA LOFTS

MK COMPANY, INC.

SHEET TITLE:

PROJECT TITLE:

DRAWN BY:	RJB
SCALE:	1" = 5'
DATE:	04/13/2022
PROJECT NO:	170202A
SHEET NO.	C-13

ROAD CUT

RIPRAP LINED SWALE

ROAD CUT

SCUPPER

CONC. CURB

1.5' WIDE CONC. CURB & GUTTER

CONC. CURB

CONC. CURB

CONC. CURB

BLDG #2

FF: 4391.0

FF: 4391.0

FF: 4391.0

FF: 4388.0

FF: 4388.0

FF: 4387.0

FF: 4387.0

8 LF - RET WALL (MAX HT: 2.2')

12 LF - RET WALL (MAX HT: 1.2')

113 LF - RET WALL (MAX HT: 5.5')

31 LF - RET WALL (MAX HT: 3.2)

22 LF - RET WALL (MAX HT: 5.5')

28 LF - RET WALL (MAX HT: 1.6')

33 LF - RET WALL (MAX HT: 3.2)

10 LF - RET WALL (MAX HT: 3.4')

CB-4 (24") RIM:4390.70 INV: 4383.70

CB-8 (18") RIM:4387.60 INV: 4383.60

CB-9 (18") RIM:4386.70 INV: 4383.00

CB-10 (24") RIM:4386.40 INV: 4382.40

CB-11 (24") RIM:4385.50 INV (W): 4382.10 INV (SW): 4382.10 INV OUT: 4382.00

CB-12 (24") W/ FLOW GUARD FILTER RIM:4385.17 INV: 4382.67

30LF - 15" PVC @ 2.0%

19LF - 8" PVC @ 4.7%

25LF - 15" PVC @ 2.4%

15LF - 15" PVC@ 2.0%

30LF - 10" PVC @ 1.9%

44LF - 15" PVC @ 6.8%

(2X) 1

12" IN

36" PI (SEE DETA

0 5' 10'

HORIZONTAL SCALE IN FEET
1" = 5'

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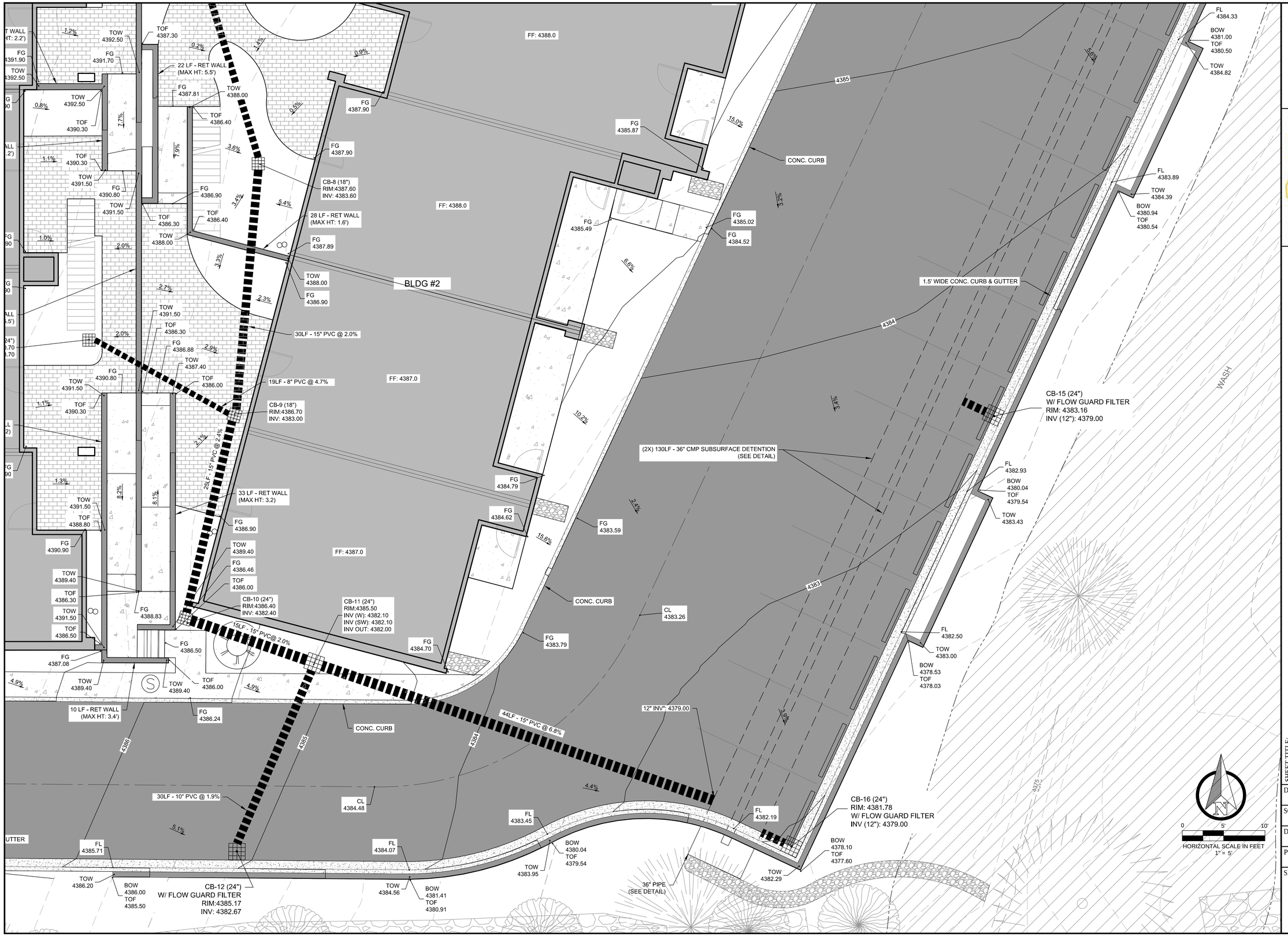
SHEET TITLE: GRADING & DRAINAGE - SHEET 5 OF 6

PROJECT TITLE: **SEDONA LOFTS**

MK COMPANY, INC.

DRAWN BY:	RJB
SCALE:	1" = 5'
DATE:	04/13/2022
PROJECT NO:	170202A
SHEET NO.	C-14



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REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
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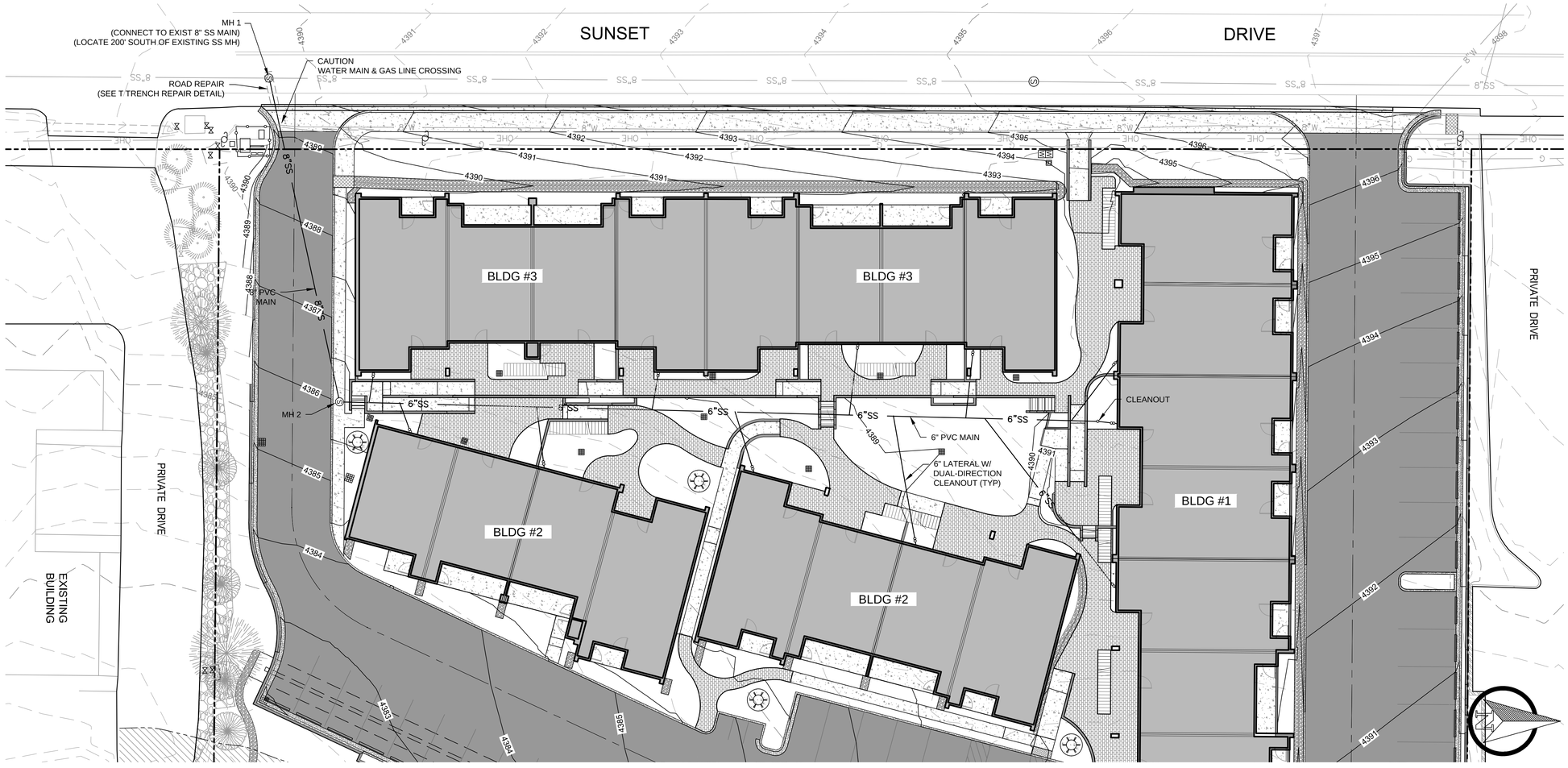
DATE SIGNED 04/13/22
ARIZONA, U.S.A.

SHEET TITLE: GRADING & DRAINAGE - SHEET 6 OF 6

PROJECT TITLE:
SEDONA LOFTS
MK COMPANY, INC.

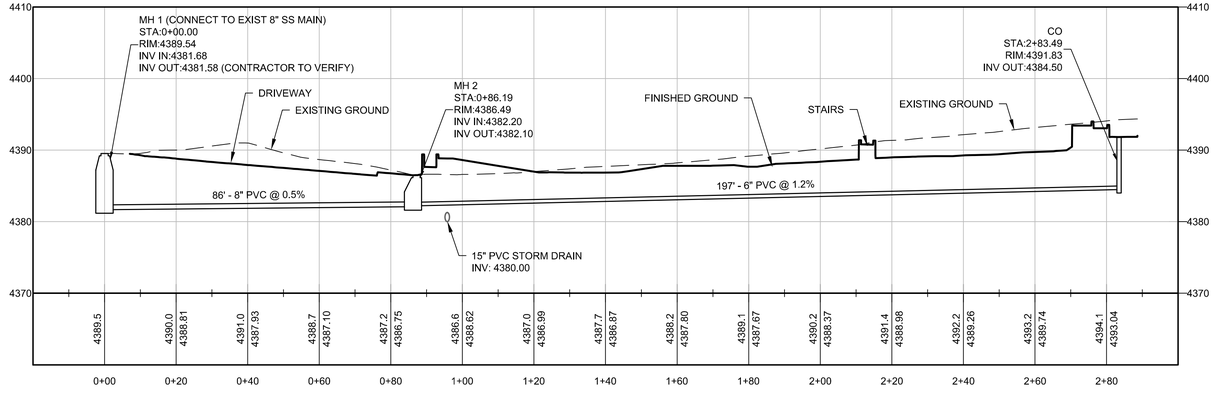
DRAWN BY:	RJB
SCALE:	1" = 5'
DATE:	04/13/2022
PROJECT NO:	170202A
SHEET NO.	C-15



SANITARY SEWER PLAN

0 15' 30'

HORIZONTAL SCALE IN FEET
1" = 15'



SANITARY SEWER PROFILE

0 10' 20' 40'

HORIZONTAL SCALE IN FEET
1" = 20'

VERTICAL SCALE IN FEET
1" = 10'

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SHEET TITLE: SANITARY SEWER PLAN & PROFILE

PROJECT TITLE:

SEDONA LOFTS

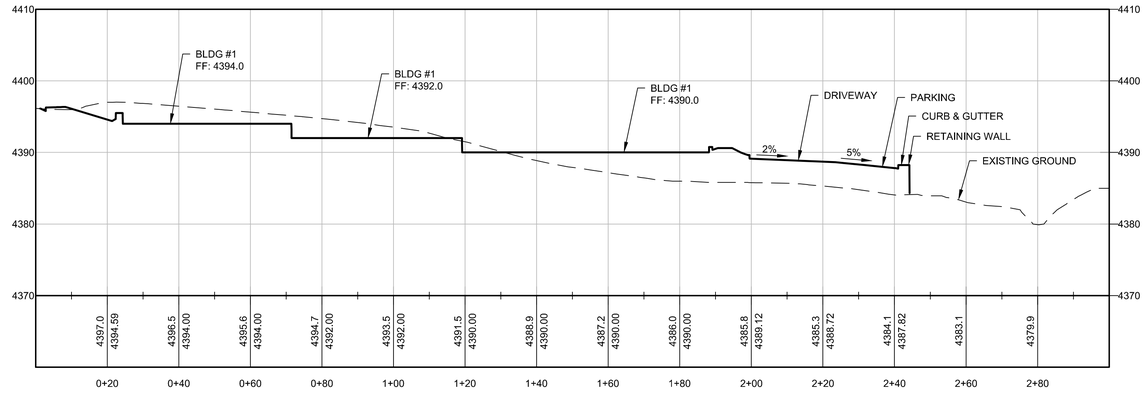
MK COMPANY, INC.

DRAWN BY:	RJB
SCALE:	AS NOTED
DATE:	04/13/2022
PROJECT NO:	170202A
SHEET NO.	C-16

SECTION REFERENCE

0 15' 30' 60'

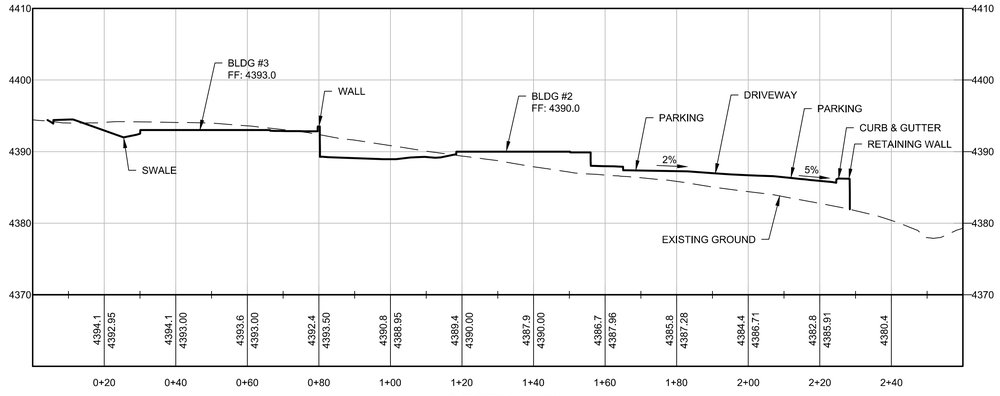
HORIZONTAL SCALE IN FEET
1" = 30'



SECTION 'C'

0 10' 20' 40'

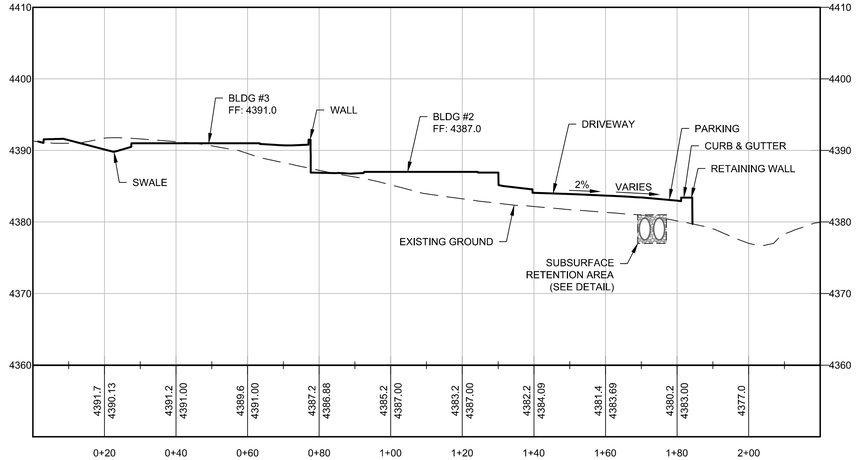
HORIZONTAL SCALE IN FEET
1" = 20'
VERTICAL SCALE IN FEET
1" = 10'



SECTION 'B'

0 10' 20' 40'

HORIZONTAL SCALE IN FEET
1" = 20'
VERTICAL SCALE IN FEET
1" = 10'



SECTION 'A'

0 10' 20' 40'

HORIZONTAL SCALE IN FEET
1" = 20'
VERTICAL SCALE IN FEET
1" = 10'

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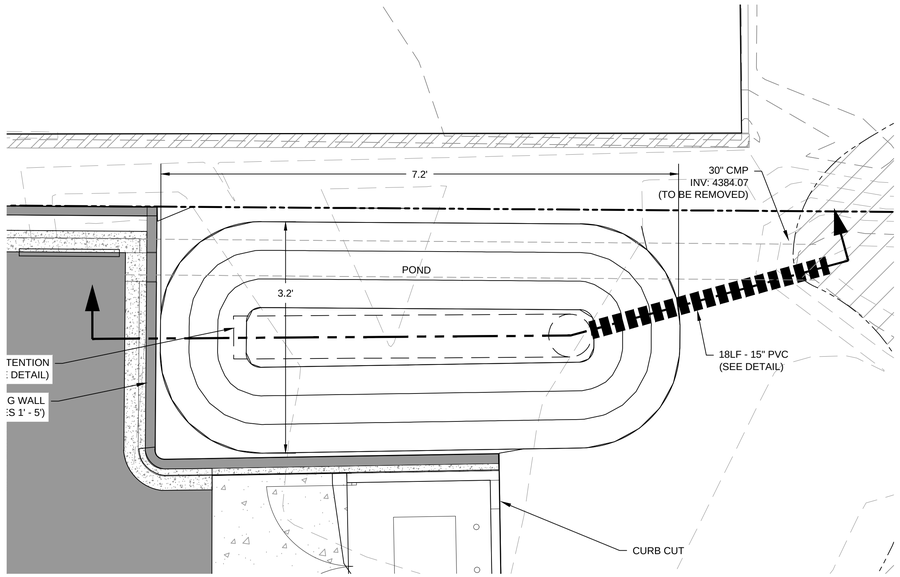
SHEET TITLE: SECTIONS

PROJECT TITLE:

SEDONA LOFTS

MK COMPANY, INC.

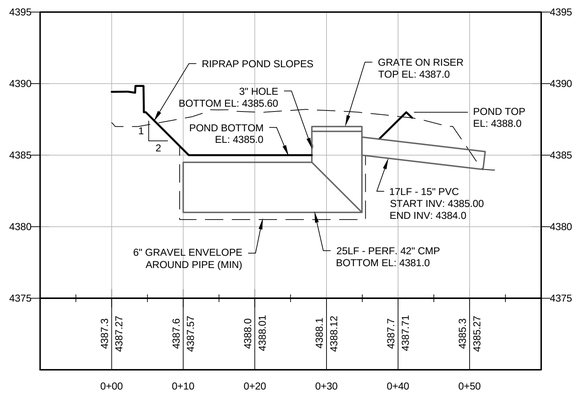
DRAWN BY:	RJB
SCALE:	AS NOTEDD
DATE:	04/13/2022
PROJECT NO:	170202A
SHEET NO.	C-17



POND PLAN

0 5' 10'

HORIZONTAL SCALE IN FEET
1" = 5'

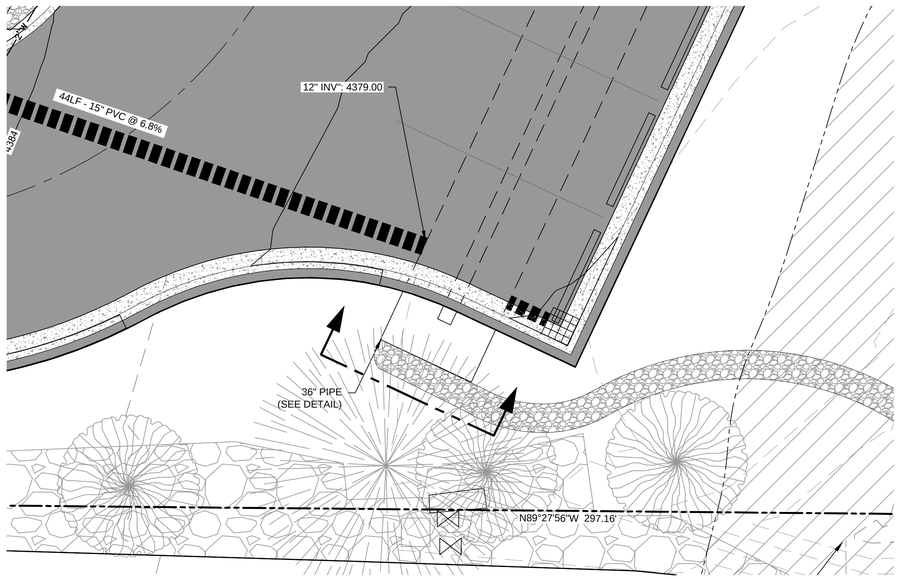


POND SECTION

0 5' 10' 20'

HORIZONTAL SCALE IN FEET
1" = 10'

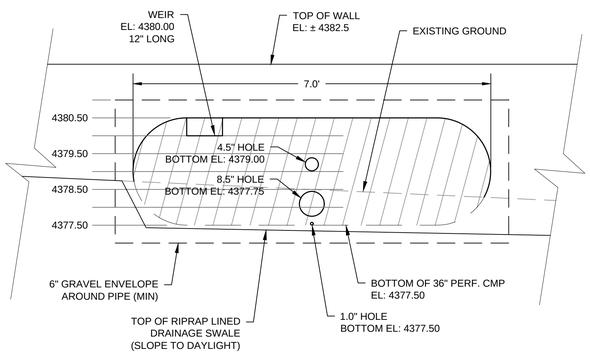
VERTICAL SCALE IN FEET
1" = 5'



SUBSURFACE PIPE PLAN

0 5' 10'

HORIZONTAL SCALE IN FEET
1" = 5'



PIPE ELEVATION

SCALE: 1" = 2'

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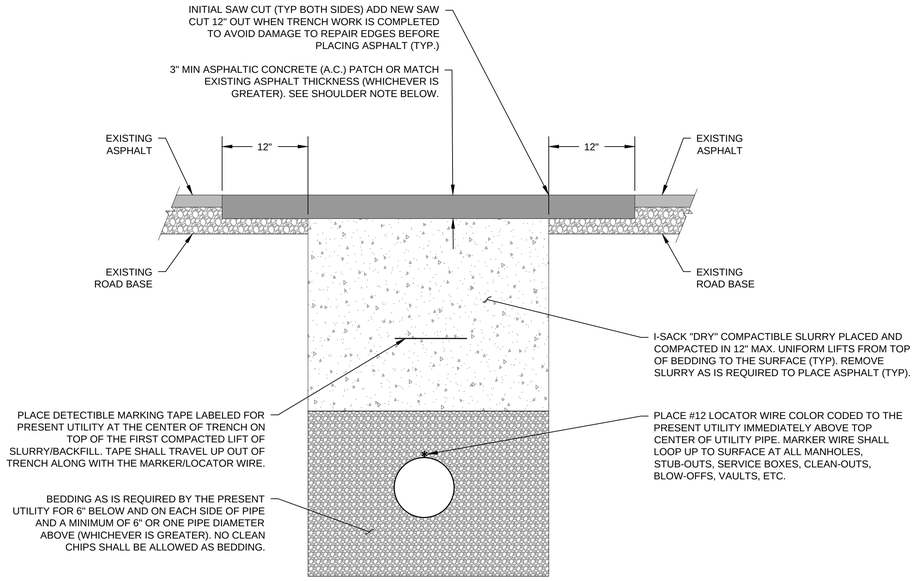
SHEET TITLE: DETAILS - SHEET 1 OF 2

PROJECT TITLE:

SEDONA LOFTS

MK COMPANY, INC.

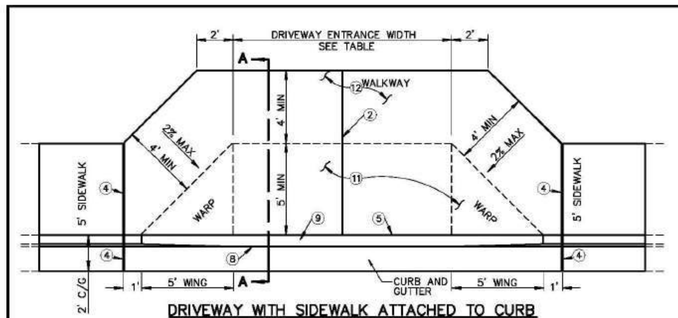
DRAWN BY:	RJB
SCALE:	AS NOTED
DATE:	04/13/2022
PROJECT NO:	170202A
SHEET NO.	C-18



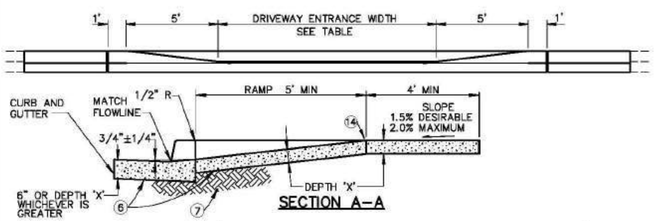
SHOULDER NOTE:
IF TRENCH (INCLUDING CROSS-TRENCH ENDS) IS WITHIN 4" OF THE PAVEMENT EDGES, TRENCH SHALL BE BACKFILLED WITH THE SAME COMPACTED SLURRY AS CALLED OUT ABOVE TO WITHIN 4" OF THE SURFACE FILL LAST 4" TO SURFACE WITH NATIVE SOILS.

TYPICAL STANDARD UTILITY TRENCH CROSS-SECTION
TYPICAL ROAD REPAIR CROSS-SECTION

NOT TO SCALE



DRIVEWAY WITH SIDEWALK ATTACHED TO CURB



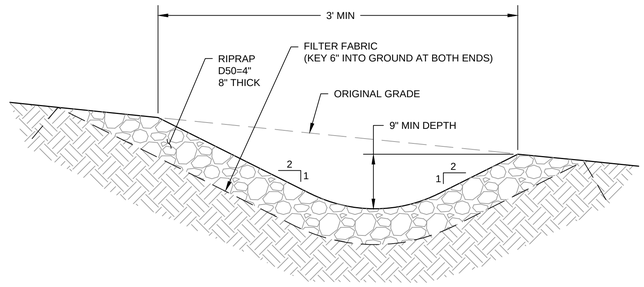
SECTION A–A

NOTES:

1. DEPRESSED CURB SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE TYPE OF CURB USED AT THAT LOCATION.
2. CONTRACTION JOINT(S) FOR DRIVEWAY ENTRANCE: WIDTH LESS THAN 22' NONE REQUIRED; WIDTH GREATER THAN 22' AND LESS THAN 30' LOCATE SINGLE JOINT ON D/W CENTERLINE; WIDTH OF 30' OR GREATER LOCATE TWO JOINTS TO EQUALLY DIVIDE THE DRIVEWAY ENTRANCE WIDTH.
3. DETAIL GEOMETRICS ARE BASED ON A CURB HEIGHT OF SIX INCHES (6"), AN ATTACHED SIDEWALK WIDTH OF FIVE FEET (5'), AND A DRIVEWAY RAMP LENGTH NOT EXCEEDING SIX FEET (6'). GEOMETRIC MODIFICATIONS MAY BE REQUIRED WHEN CONDITIONS ARE MODIFIED.
4. 1/2–INCH EXPANSION JOINTS SHALL COMPLY WITH SECTION 340.
5. BACK OF CURB – CONSTRUCTION JOINT.
6. CONCRETE CLASS AS NOTED IN TABLE. CONCRETE PER SECTION 725.
7. SUBGRADE PREPARATION, SECT. 301.
8. FLOW LINE OF GUTTER.
9. DEPRESSED CURB.
10. SECT. A–A AND ELEVATION: D/W SHOWN WITH VERTICAL CURB AND GUTTER, ROLL TYPE CURB AND GUTTER TREATED SIMILARLY.
11. ROUGH BROOM FINISH FULL WIDTH OF RAMP AND WINGS.
12. TROWEL AND USE LIGHT HAIR BROOM FINISH FOR WALKWAY AREA.
13. 'DRIVEWAY ENTRANCE WIDTH' IS THE DRIVEWAY WIDTH PLUS ADDITIONAL WIDENING REQUIRED BY THE LOCAL JURISDICTION.
14. ELEVATION AT TOP OF DRIVEWAY RAMP SHALL BE EQUAL TO OR HIGHER THAN NORMAL CURB ELEVATION.

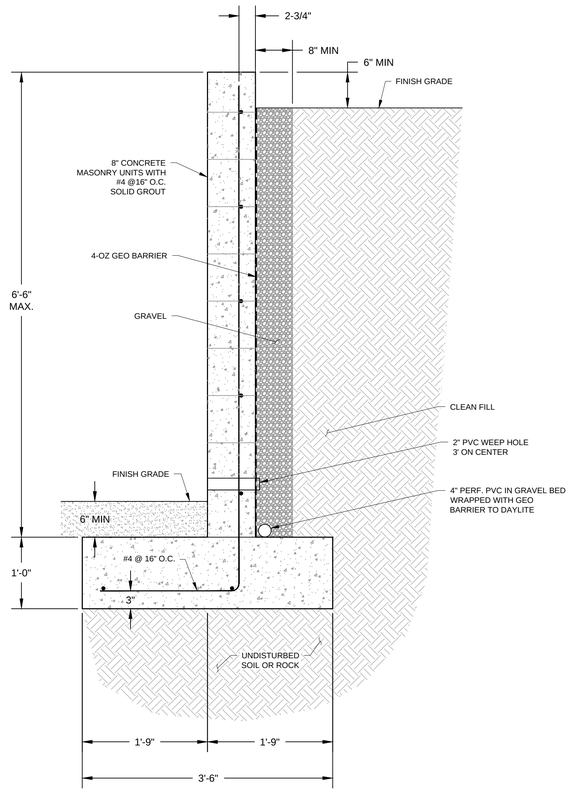
COMMERCIAL AND INDUSTRIAL					RESIDENTIAL				
DRIVEWAY ENTRANCE WIDTH	MIN.	MAX.	CLASS	DEPTH 'X'	DRIVEWAY ENTRANCE WIDTH	MIN.	MAX.	CLASS	DEPTH 'X'
COMMERCIAL	* 16'	40'	A	9"	MAJOR STREET	16'	30'	B	5"
INDUSTRIAL	* 16'	40'	A	9"	COLLECTOR STREET	* 12'	30'	B	5"
*24' MIN. FOR TWO WAY TRAFFIC					LOCAL STREET	12'	30'	B	5"
					*16' DESIRABLE				

DETAIL NO.	STANDARD DETAIL	DRIVEWAY ENTRANCES WITH SIDEWALK ATTACHED TO CURB	REVISED	DETAIL NO.
250–2	MARICOPA ASSOCIATION of GOVERNMENTS ENGLISH		01–01–2013	250–2



RIPRAP LINED DITCH

NOT TO SCALE



DETAIL 'C'
RETAINING WALL (UP TO 6'-6" HIGH)

SCALE: 1" = 1'

NOTES:

1. BASE FOUNDATION TO BE APPROVED BY THE SITE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF THE CONCRETE FOOTING.
2. ALL BACKFILL MATERIALS TO BE COMPACTED IN 8" LIFTS TO 95% STANDARD PROCTOR DENSITY OR 92% MODIFIED PROCTOR DENSITY.

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SHEET TITLE: DETAILS - SHEET 2 OF 2

PROJECT TITLE:

SEDONA LOFTS
MK COMPANY, INC.

DRAWN BY:	RJB
SCALE:	AS NOTED
DATE:	04/13/2022
PROJECT NO:	170202A
SHEET NO.	C-19

STORM WATER MANAGEMENT POLLUTION PREVENTION PLAN (SWMPPP) NOTES

1. THE SWPPP IS INTENDED TO BE A DYNAMIC PLAN THAT CAN BE REVISED EITHER AS A RESULT OF UNANTICIPATED CONDITIONS DURING DESIGN OR AS A RESULT OF CHANGING CONDITIONS IN THE FIELD. MAKING CHANGES TO THE PLAN WHERE IT IS NOT EFFECTIVE IS A REQUIREMENT OF THE AZPDES PERMIT. ANY CHANGES TO THE PLAN SHALL BE NOTED AND DATED ON THE PLAN.

2. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT A NOTICE OF INTENT (NOI) AND A NOTICE OF TERMINATION (NOT) IS SENT AT THE BEGINNING AND END OF THE PROJECT TO THE PROPER AUTHORITIES. THE CONTRACTOR IS RESPONSIBLE FOR UNDERSTANDING THE REQUIREMENT OF THE EPA'S NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (AZPDES) PERMITTING PROGRAM, ESTABLISHED UNDER SECTION 402 OF THE CLEAN WATER ACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SWPPP ACTIVITIES AND FOR ALL SUB CONSULTANTS ON SITE. THE CONTRACTOR SHALL OBTAIN AN NOI AT HTTP://CDX.EPA.GOV/, THE SWPPP TEMPLATE IS LOCATED AT HTTP://WATER.EPA.GOV/POLWASTE/NPDES/BASICS/UPLOAD/SW_CGP2012_SWPPPTEMPLATE.DOCX. FURTHER INFORMATION CAN BE FOUND AT HTTP://WATER.EPA.GOV/POLWASTE/NPDES/STORMWATER/STORMWATER-POLLUTION-PREVENTION-PLANS-FOR-CONSTRUCTION-ACTIVITIES.CFM. A TUTORIAL IS AVAILABLE AT HTTP://WWW.EPA.GOV/NPDES/PUBS/ENOI_2012CGP_USERMANUAL.PDF FOR REGISTRATION. IF YOU HAVE ANY QUESTION YOU MAY CALL 1-888-890-1995 OR FOR NOI INFORMATION YOU MAY CALL 1-866-352-7755.

3. LIMIT LAND DISTURBANCE AND PRESERVE EXISTING VEGETATION. SENSITIVITY TO THE ENVIRONMENT DURING CONSTRUCTION IS A DEFINING FACTOR IN PRESERVING NATURAL VEGETATION. THE EXTENT OF THE CUT AND FILL SLOPES SHOULD BE FIELD SURVEYED AND STAKED PRIOR TO CONSTRUCTION TO DEFINE ALL AREAS THAT REQUIRE GRADING. AREAS OUTSIDE THESE LIMITS SHOULD BE PROTECTED FROM ALL CONSTRUCTION ACTIVITIES. TREES THAT LIE WITHIN TRANSITION AREAS OF SIGNIFICANT CUT OR FILL AND OUTSIDE REQUIRED CLEAR-ZONE DISTANCES SHALL BE FLAGGED AND/OR FENCED FOR PROTECTION. EXISTING TREES AT OR NEAR THE TOE OF FILL SLOPES SHALL BE SAVED WITH PROTECTIVE TREE WELLS.

4. MINIMIZE SOIL EXPOSURE AND RE-VEGETATE DENUDED AREAS. TRY TO SCHEDULE CONSTRUCTION TO COINCIDE WITH THE DRY SEASON OF THE SITE'S LOCATION. LIMIT THE SIZE OF THE EXPOSED AREA AND AMOUNT OF TIME IT IS EXPOSED. UNDER THE EPA'S GENERAL PERMIT ALL BARE GROUND SHALL BE SEEDED WITHIN 14 DAYS AFTER GRADING IS FINISHED WITH SOME EXCEPTIONS.

5. PROTECT FILL SLOPES FROM ROADWAY RUNOFF. DROWN DRAINS AND RIPRAP PROTECTION HAVE BEEN CALLED OUT ON THE PLAN AS NEEDED. THE CONTRACTOR SHOULD MONITOR SLOPES TO ENSURE ADEQUATE PROTECTION IS PROVIDED THROUGH OUT THE CONSTRUCTION ACTIVITIES.

6. PREVENT EROSION IN AREAS WHERE RUNOFF CONCENTRATES. CONTRACTOR SHALL PROVIDE PROTECTION OF ALL DITCHES, OPEN CHANNELS, CULVERT AND CHANNEL OUTLETS AS SHOWN ON THE CONSTRUCTION PLAN.

7. TRAP SEDIMENT BEFORE IT LEAVES THE SITE. IT IS PREFERABLE TO PROVIDE EROSION CONTROL INSTEAD OF SEDIMENT CONTROL WHERE PRACTICABLE. IT IS IMPORTANT THAT REGULAR MAINTENANCE OF ANY SEDIMENT TRAPPING IS CONDUCTED ON A REGULAR BASIS IN ORDER FOR IT TO OPERATE EFFECTIVELY. THIS INCLUDES REMOVING ACCUMULATIONS OF SEDIMENT AND MAKING NECESSARY REPAIRS AND ADJUSTMENTS. TEMPORARY SEDIMENT BARRIERS SHOULD BE PLACED AROUND CATCH BASIN INLETS DURING CONSTRUCTION TO TRAP SEDIMENT BEFORE IT ENTERS THE INLET. SEDIMENT TRAPPING IS NECESSARY AT SOIL STOCKPILES AND THESE STOCKPILES SHOULD BE LOCATED ABOVE AND AWAY FROM STREAMS, WASHES AND SWALES TO PREVENT THEM FROM BEING WASHED DOWNSTREAM. A STABILIZED CONSTRUCTION ENTRANCE SHOULD BE PROVIDED TO REMOVE SEDIMENT FROM THE TIRES OF THE VEHICLES BEFORE THEY LEAVE THE SITE.

8. AS NEEDED A SPILL CONTAINMENT AREA SHOULD BE PROVIDED AT THE JOB SITE FOR STORING CHEMICALS, FUELS, PAINTS AND OTHER MATERIALS. THIS AREA WILL PREVENT CHEMICALS FROM MIXING WITH STORM WATER AND DISCHARGING INTO STREAMS AND WASHES, OR SEEPING INTO AND CONTAMINATING THE SURROUNDING SOIL. THE PROTECTED AREA SHOULD BE EXCAVATED OR BERMED, AND LINED WITH PLASTIC SO THAT AN ACCIDENTAL SPILL FROM A CHEMICAL DRUM WILL BE CONTAINED. IT SHOULD BE LOCATED IN AREAS WHERE ANY SPILL WILL BE PREVENTED FROM DISCHARGING OFF-SITE. PROCEDURES SHALL BE ESTABLISHED TO PREVENT CONTAMINATION OF ON-SITE SOILS FROM EQUIPMENT MAINTENANCE. CONSTRUCTION EQUIPMENT SHALL BE REGULARLY MAINTAINED TO REPAIR LEAKY HOSES AND GASKETS. USED OIL, HYDRAULIC FLUIDS, FILTERS, BATTERIES AND TIRES SHALL BE PROPERLY DISPOSED OF IN ACCORDANCE WITH STATE AND FEDERAL LAWS

9. SOLID WASTE MATERIALS SHOULD BE COLLECTED DAILY. A TRASH CONTAINER OR DUMPSTER SHOULD BE PROVIDED AT THE SITE TO CONTAIN SMALLER WASTE MATERIALS. THE TRASH CONTAINERS SHOULD BE COVERED TO PREVENT MIXING WITH RAINWATER OR LOSS OF CONTENTS BY HIGH WINDS. OTHER TYPES OF LARGER DEBRIS, SUCH AS: VEGETATION FORM CLEARING OPERATIONS SHOULD BE COLLECTED AND STOCKPILED ON A DAILY BASIS AND DISPOSED OF REGULARLY. THE STOCKPILE LOCATION SHALL BE LOCATED AWAY FROM STREAMS AND WASHES.

10. TEMPORARY PITS OR BERMED AREAS SHOULD BE PROVIDED AT THE CONSTRUCTION SITE FOR THE WASHOUT OF CONCRETE TRUCKS AND FOR WASHING AGGREGATE MATERIALS AND TOOLS. THE WASH WATER SHOULD BE KEPT OUT OF STREAMS AND WASHES. WASHOUT AREAS SHOULD BE LARGE ENOUGH TO RETAIN ALL WASH WATER. HARDENED CONCRETE SHOULD BE ROUTINELY REMOVED AND DISPOSED OF IN ORDER TO MAINTAIN ADEQUATE WATER PERCOLATION.

11. PROPER IMPLEMENTATION, INSPECTION AND MAINTENANCE OF POLLUTION CONTROL MEASURES IS ESSENTIAL TO ACHIEVE THE GOALS OF EROSION AND SEDIMENT CONTROL AND TO IDENTIFY POTENTIAL PROBLEMS. A RAIN GAGE SHOULD BE KEPT AT THE SITE TO RECORD THE DEPTH OF RAINFALL. THE CONTRACTOR SHOULD COORDINATE THE IMPLEMENTATION, INSPECTION AND MAINTENANCE OF THE POLLUTION CONTROLS WITH THE PROJECT INSPECTOR. THE CONTRACTOR SHOULD ALSO MONITOR WEATHER FORECASTS AND MAKE ALL SITE INSPECTIONS AND NECESSARY REPAIRS BEFORE STORMS ARE EXPECTED. THE CONTRACTOR SHALL MONITOR AND RECORD WEEKLY EXTENDED WEATHER FORECASTS. THESE FORECASTS SHALL BE DISCUSSED BY THE CONTRACTOR AT REGULARLY SCHEDULED WEEKLY PROGRESS MEETINGS. IN THE EVENT THAT EXTENDED FORECASTS REPORT A HIGH PROBABILITY FOR PRECIPITATION IN THE GIVEN PROJECT AREA, THE CONTRACTOR SHALL REVIEW AND SUPPLEMENT EXISTING EROSION CONTROL MEASURES. HE SHALL ALSO INSTALL ADDITIONAL MEASURES IN AREAS DETERMINED TO BE SUSCEPTIBLE TO EROSION AND/OR SEDIMENTATION, AS DIRECTED BY THE PROJECT ENGINEER. THE EPA GENERAL PERMIT REQUIRES REGULAR INSPECTIONS EVERY 7 DAYS OR WITHIN 24 HOURS AFTER A RAINFALL OF ¼ INCH OR GREATER.

12. THE CONTRACTOR MUST RECORD ANY DAMAGES OR DEFICIENCIES IN THE CONTROL MEASURES ON A INSPECTION REPORT FORM. THIS REPORT DOCUMENTS THE INSPECTION OF THE POLLUTION PREVENTION MEASURES. THE SAME FORM CAN BE USED TO REQUEST REPAIRS AND TO PROVE THAT REQUIRED INSPECTIONS AND MAINTENANCE WERE PERFORMED. AS A CONDITION OF THE GENERAL PERMIT, THE CONTRACTOR SHALL CORRECT DAMAGE OR DEFICIENCIES AS SOON AS PRACTICABLE AFTER THE INSPECTION; BUT IN NO CASE LATER THAN 7 DAYS AFTER THE INSPECTION. ANY CHANGES THAT MAY BE REQUIRED TO CORRECT DEFICIENCIES IN THE SWPPP SHOULD ALSO BE MADE AS SOON AS PRACTICABLE AFTER THE INSPECTION; BUT IN NO CASE LATER THAN 7 DAYS AFTER THE INSPECTION

13. OVERVIEW OF INSPECTION REQUIREMENTS, CONSTRUCTION OPERATORS COVERED UNDER THE 2012 CGP ARE SUBJECT TO THE FOLLOWING REQUIREMENTS IN PART 4:

INSPECTION FREQUENCY (SEE PART 4.1.4)

YOU ARE REQUIRED TO CONDUCT INSPECTIONS EITHER:

- ONCE EVERY 7 CALENDAR DAYS; OR
- ONCE EVERY 14 CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT OF 0.25 INCHES OR GREATER.

YOUR INSPECTION FREQUENCY IS INCREASED IF THE SITE DISCHARGES TO A SENSITIVE WATER. SEE PART 4.1.3. YOUR INSPECTION FREQUENCY MAY BE DECREASED TO ACCOUNT FOR STABILIZED AREAS, OR FOR ARID, SEMI-ARID, OR DROUGHT-STRICKEN CONDITIONS, OR FOR FROZEN CONDITIONS. SEE PART 4.1.4.

AREAS THAT NEED TO BE INSPECTED (SEE PART 4.1.5)

DURING EACH INSPECTION, YOU MUST INSPECT THE FOLLOWING AREAS OF YOUR SITE:

- CLEARED, GRADED, OR EXCAVATED AREAS OF THE SITE;
- STORMWATER CONTROLS (E.G., PERIMETER CONTROLS, SEDIMENT BASINS, INLETS, EXIT POINTS ETC.) AND POLLUTION PREVENTION PRACTICES (E.G., POLLUTION PREVENTION PRACTICES FOR VEHICLE FUELING/MAINTENANCE AND WASHING, CONSTRUCTION PRODUCT STORAGE, HANDLING, AND DISPOSAL, ETC.) AT THE SITE;
- MATERIAL, WASTE, OR BORROW AREAS COVERED BY THE PERMIT, AND EQUIPMENT STORAGE AND MAINTENANCE AREAS;
- AREAS WHERE STORMWATER FLOWS WITHIN THE SITE;
- STORMWATER DISCHARGE POINTS; AND
- AREAS WHERE STABILIZATION HAS BEEN IMPLEMENTED.

WHAT TO CHECK FOR DURING YOUR INSPECTION (SEE PART 4.1.6)

DURING YOUR SITE INSPECTION, YOU ARE REQUIRED TO CHECK:

- WHETHER STORMWATER CONTROLS OR POLLUTION PREVENTION PRACTICES REQUIRE MAINTENANCE OR CORRECTIVE ACTION, OR WHETHER NEW OR MODIFIED CONTROLS ARE REQUIRED;
- FOR THE PRESENCE OF CONDITIONS THAT COULD LEAD TO SPILLS, LEAKS, OR OTHER POLLUTANT ACCUMULATIONS AND DISCHARGES;
- WHETHER THERE ARE VISIBLE SIGNS OF EROSION AND SEDIMENT ACCUMULATION AT POINTS OF DISCHARGE AND TO THE CHANNELS AND STREAMBANKS THAT ARE IN THE IMMEDIATE VICINITY OF THE DISCHARGE;
- IF A STORMWATER DISCHARGE IS OCCURRING AT THE TIME OF THE INSPECTION, WHETHER THERE ARE OBVIOUS, VISUAL SIGNS OF POLLUTANT DISCHARGES; AND
- IF ANY PERMIT VIOLATIONS HAVE OCCURRED ON THE SITE.

INSPECTION REPORTS (SEE PART 4.1.7)

WITHIN 24 HOURS OF COMPLETING EACH INSPECTION, YOU ARE REQUIRED TO COMPLETE AN INSPECTION REPORT THAT INCLUDES:

- DATE OF INSPECTION;
- NAMES AND TITLES OF PERSONS CONDUCTING THE INSPECTION;
- SUMMARY OF INSPECTION FINDINGS;
- RAIN GAUGE OR WEATHER STATION READINGS IF YOUR INSPECTION IS TRIGGERED BY THE 0.25 INCH STORM THRESHOLD; AND
- IF YOU DETERMINE THAT A PORTION OF YOUR SITE IS UNSAFE TO ACCESS FOR THE INSPECTION, DOCUMENTATION OF WHAT CONDITIONS PREVENTED THE INSPECTION AND WHERE THESE CONDITIONS OCCURRED ON THE SITE

14. REMOVAL OF TEMPORARY CONTROLS WHEN THE PROJECT IS COMPLETE IS THE RESPONSIBILITY OF THE CONTRACTOR. AFTER ALL CONSTRUCTION ACTIVITIES HAVE STOPPED, THE CONTRACTOR MUST KEEP A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN. RECORDS OF ALL THE DATA USED TO COMPLETE THE NOTICE OF INTENT MUST ALSO BE KEPT FOR A PERIOD OF THREE YEARS FOLLOWING FINAL STABILIZATION. THE RETENTION PERIOD MAY BE EXTENDED BY THE EPA'S REQUEST.

15. AS A CONDITION OF THE GENERAL PERMIT, A COPY OF THE CONTRACTOR'S NOI AND A COPY OF THE SWPPP ARE TO REMAIN AT THE JOB SITE THROUGHOUT THE CONSTRUCTION PROCESS AND AVAILABLE DAILY TO THE PROJECT MANAGER.

16. DUST CONTROL IN ACCORDANCE WITH THE COUNTY REQUIREMENTS SHALL BE PROVIDED AT ALL TIMES WHILE UNDER CONSTRUCTION.

17. THE CONTRACTOR SHALL KEEP THE SITE WATERED DOWN (OR OTHER APPROVED METHODS) TO PREVENT DUST MIGRATING OFFSITE.

18. THE CONTRACTOR SHALL ON A DAILY OR AS NEEDED BASIS CLEAN ALL ROADS LEADING OUT OF THE SITE AND SHALL PLACE SAND BAGS (OR OTHER APPROVED METHODS) TO TRAP SEDIMENT BEFORE IT ENTERS INTO THE STORM DRAIN SYSTEM.

19. ALL DUMP TRUCKS ENTERING AND EXITING THE SITE SHALL BE COVERED WITH AN APPROVED COVER TO PREVENT DUST AND FLYING DEBRIS.

20. THE CONTRACTOR WILL PROVIDE THE COUNTY A SIGNED COPY OF THE SWPPP BEFORE BEGINNING CONSTRUCTION.

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS
OF THE GENERAL ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM (AZPDES) PERMIT
THAT AUTHORIZES THE STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL
ACTIVITY FROM THE CONSTRUCTION SITE IDENTIFIED AS PART OF THIS CERTIFICATION.

CONTRACTOR SIGNATURE PRINT NAME OF CONTRACTOR AND COMPANY

37322
LUKE A
SEFTON
DATE SIGNED: 04-13-22
ARIZONA, U.S.A.

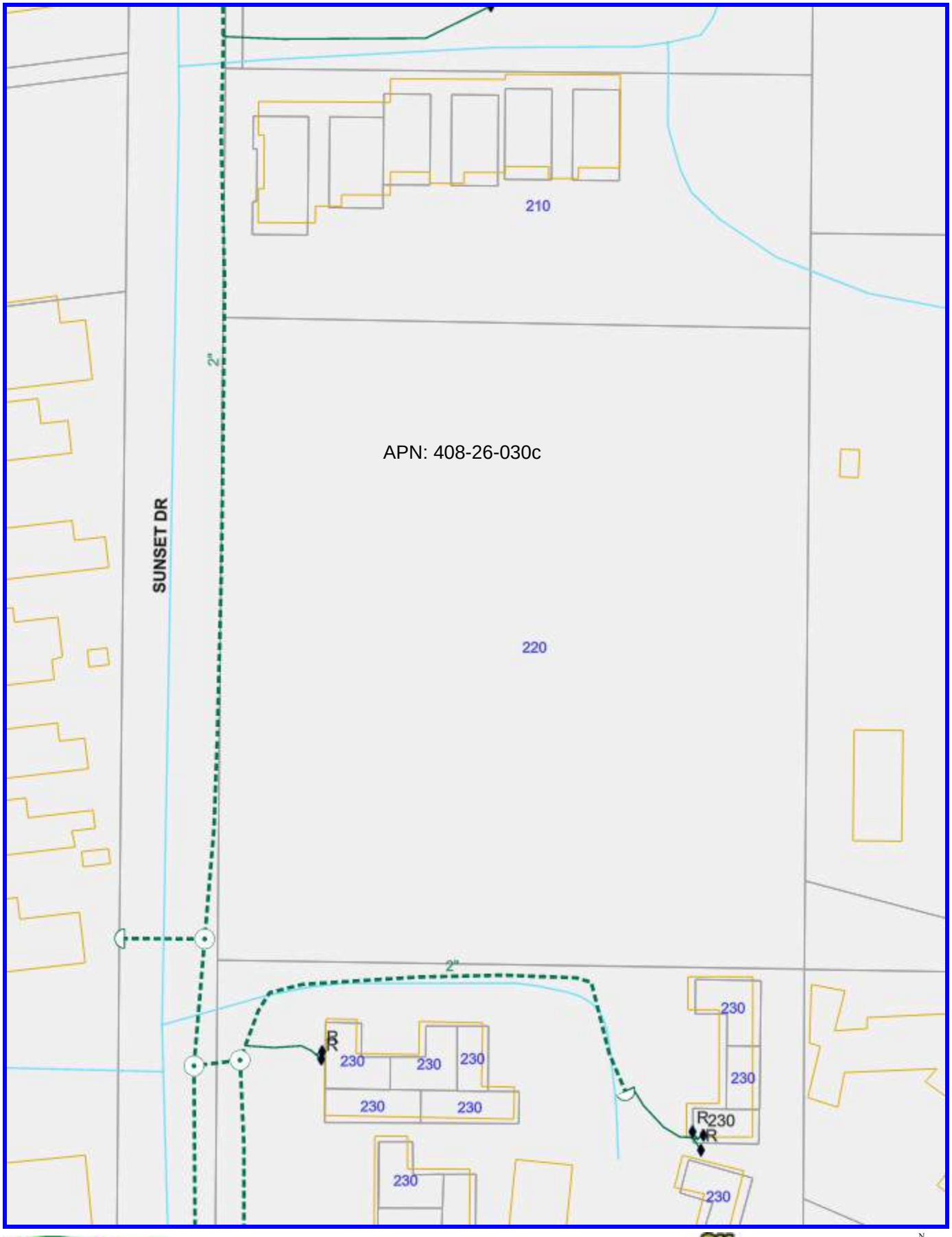
Sefton Engineering Consultants
Your Ideas to Completion
Surveying • Engineering • Land Planning
40 STUTZ BEARCAT DR. #8
SEDONA, ARIZONA 86336
PH. (928) 202-3999 LS@SEFENGCO.COM

SHEET TITLE: STORM WATER POLLUTION PREVENTION PLAN

PROJECT TITLE: **SEDONA LOFTS**

MK COMPANY, INC.

DRAWN BY:	RJB
SCALE:	1" = 20'
DATE:	04/13/2022
PROJECT NO:	170202A
SHEET NO.	**C-20**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