

PLOTTED: 04/25/2017 15:23  
 D:\NAME: F:\16-1750 Main and Atherton Commercial Development\Planning\1 - Grading.dwg

	EXISTING	PROPOSED
BOUNDARY LINE		
CENTERLINE		
RIGHT-OF-WAY		
PARCEL LINE		
CURB, GUTTER AND SIDEWALK		
EDGE OF PAVEMENT		
STORM DRAIN (MAIN)		
DRAINAGE SWALE		
STORM DRAIN MAINTENANCE HOLE		
CURB INLET		
DRAIN INLET		
DRAIN INLET ON MAINTENANCE HOLE		
WATER (MAIN)		
WATER (SERVICE)		
WATER VALVE		

	EXISTING	PROPOSED
FIRE HYDRANT		
SERVICE STUB	N/A	
CLEANOUT		
SEWER MAINTENANCE HOLE		
SEWER (MAIN)		
ELECTROLIER		
FINISH FLOOR ELEVATION (PROPOSED)	N/A	FF=100.00
BUILDING PAD	N/A	
ORIGINAL GROUND		N/A
DIRECTION OF FLOW		
CONTOURS		
FENCE (CHAINLINK OR VINYL)		
SIGN		
TRIBUTARY AREA	N/A	



NO.	DATE	APPROVED	REVISIONS DESCRIPTIONS

**PRELIMINARY GRADING PLAN**  
**MAIN AND ATHERTON**  
**COMMERCIAL DEVELOPMENT**  
**MANTECA, CALIFORNIA**



JOB #: 16-1750  
 DATE: 04/25/2017  
 SCALE: AS SHOWN  
 DRAWN: KM  
 DESIGN: KM  
 CHK D: BJ

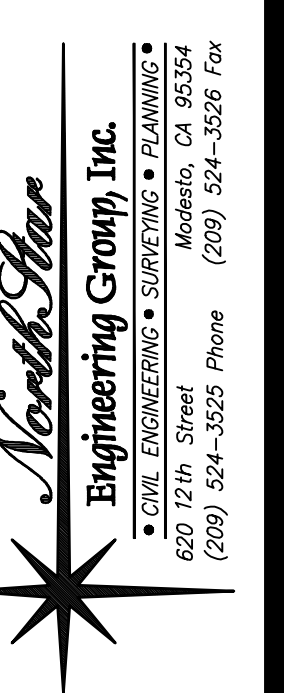
SHEET NUMBER

# C1



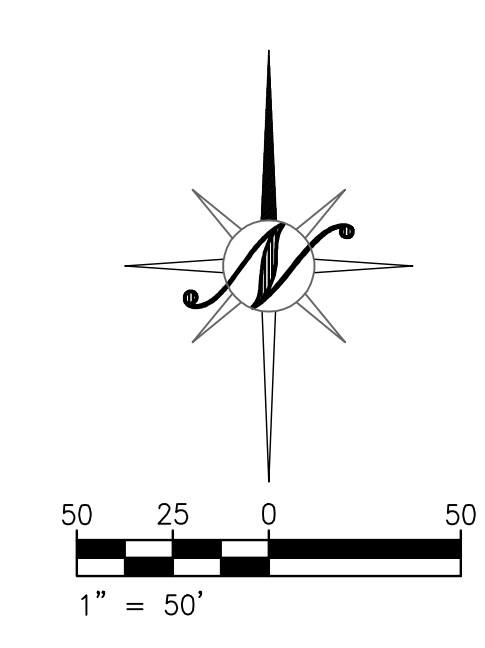
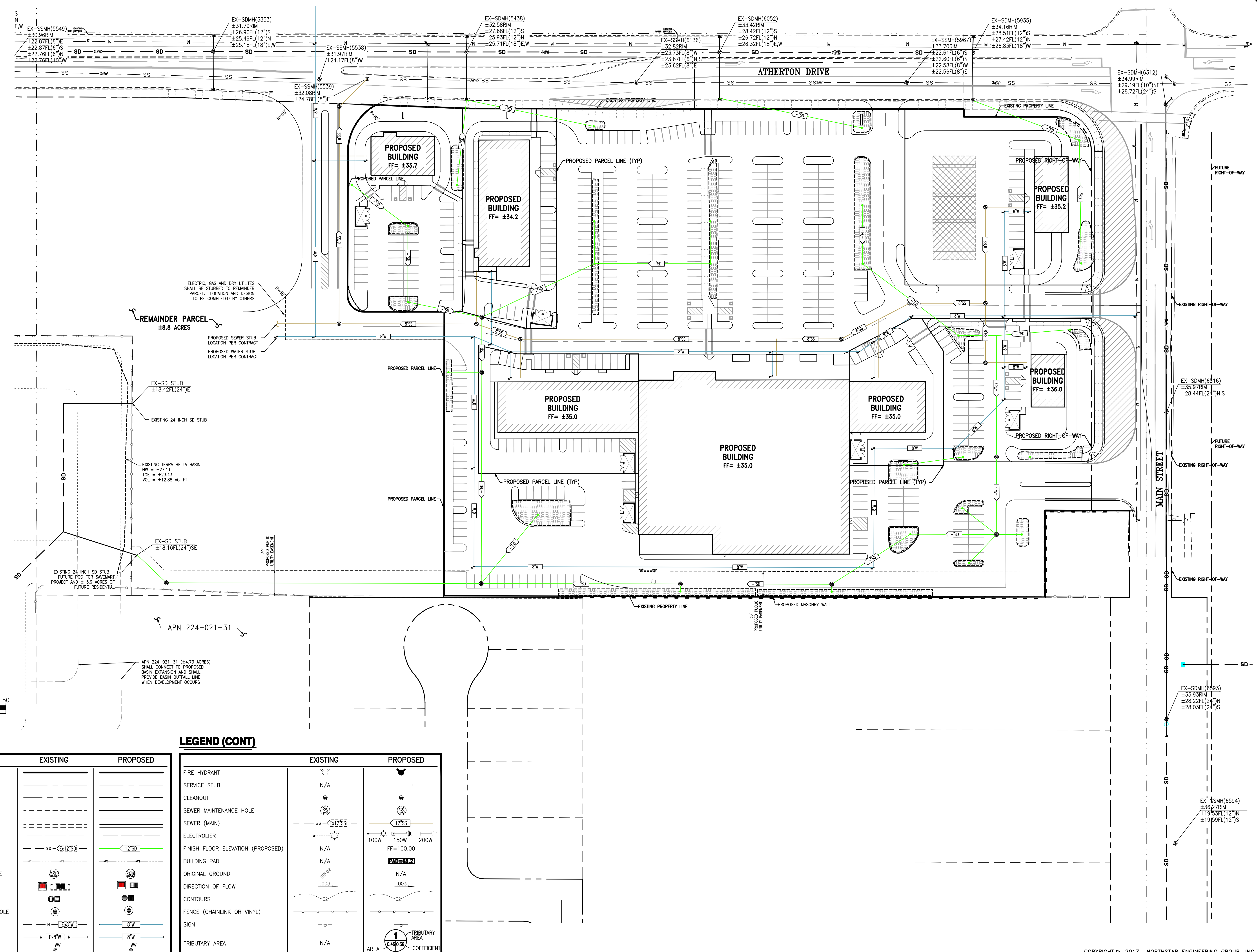
NO.	DATE	APPROVED	REVISIONS	DESCRIPTIONS

**PRELIMINARY UTILITY PLAN**  
**MAIN AND ATHERTON**  
**COMMERCIAL DEVELOPMENT**  
**MANTECA, CALIFORNIA**



JOB #: 16-1750  
 DATE: 04/25/2017  
 SCALE: AS SHOWN  
 DRAWN: KM  
 DESIGN: KM  
 CHK D: BJ

SHEET NUMBER  
**C2**



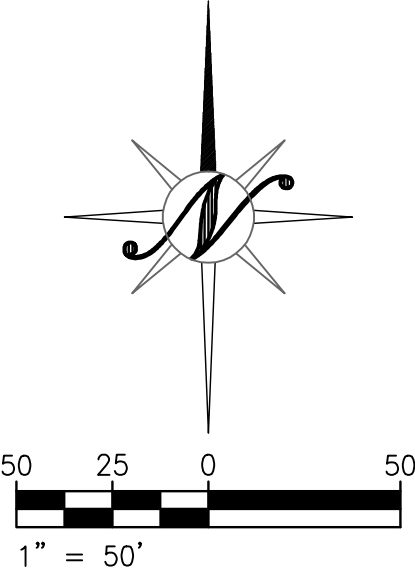
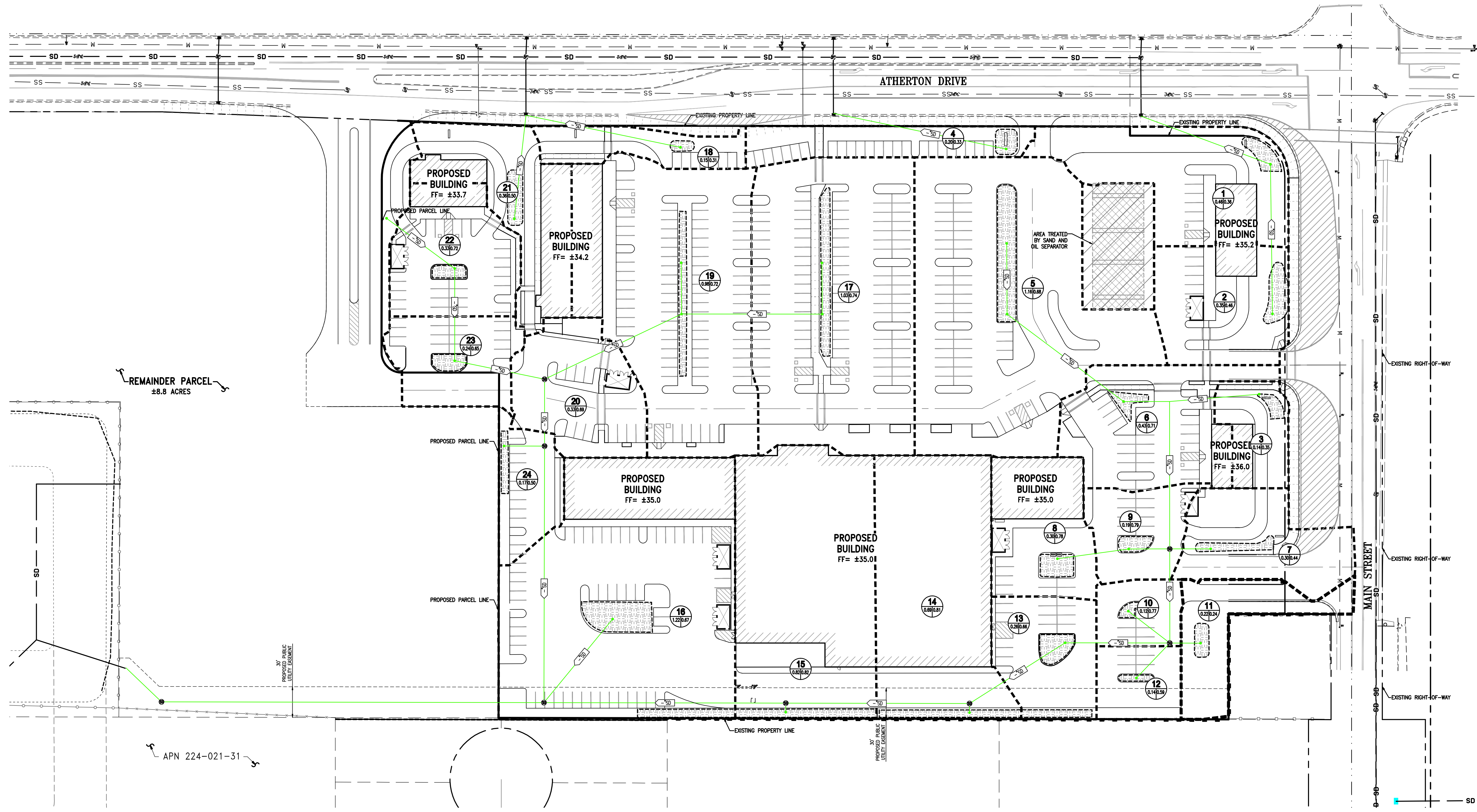
**LEGEND**

	EXISTING	PROPOSED
BOUNDARY LINE	---	---
CENTERLINE	---	---
RIGHT-OF-WAY	---	---
PARCEL LINE	---	---
CURB, GUTTER AND SIDEWALK	---	---
EDGE OF PAVEMENT	---	---
STORM DRAIN (MAIN)	SD 12" SD	SD 12" SD
DRAINAGE SWALE	---	---
STORM DRAIN MAINTENANCE HOLE	SD	SD
CURB INLET	---	---
DRAIN INLET	---	---
DRAIN INLET ON MAINTENANCE HOLE	---	---
WATER (MAIN)	W 8" W	W 8" W
WATER (SERVICE)	WV 8" WV	WV 8" WV
WATER VALVE	---	---

**LEGEND (CONT)**

	EXISTING	PROPOSED
FIRE HYDRANT	---	---
SERVICE STUB	N/A	---
CLEANOUT	---	---
SEWER MAINTENANCE HOLE	---	---
SEWER (MAIN)	SS 12" SS	SS 12" SS
ELECTROLIER	---	---
FINISH FLOOR ELEVATION (PROPOSED)	N/A	FF=100.00
BUILDING PAD	N/A	PAD=88.2
ORIGINAL GROUND	---	N/A
DIRECTION OF FLOW	---	---
CONTOURS	---	---
FENCE (CHAINLINK OR VINYL)	---	---
SIGN	---	---
TRIBUTARY AREA	N/A	AREA 0.48(0.36) COEFFICIENT

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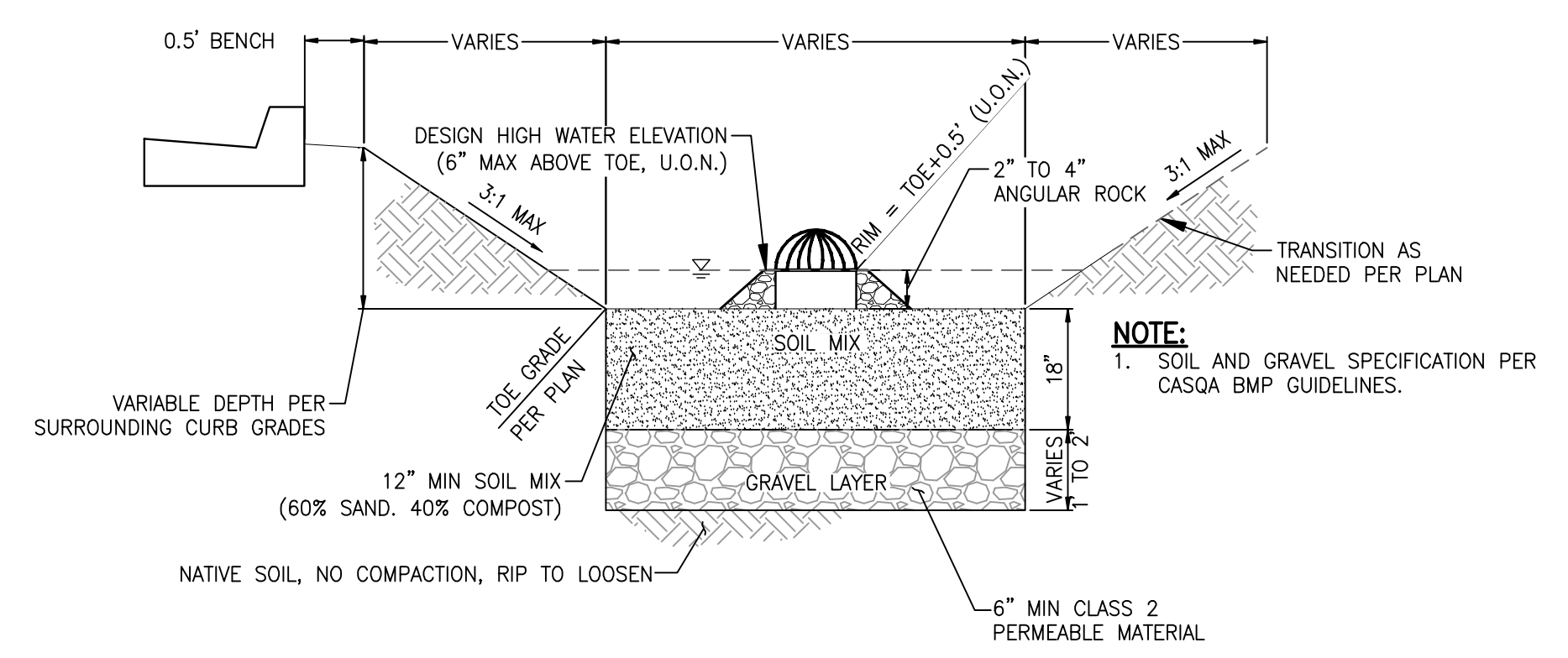


**LEGEND**

	EXISTING	PROPOSED
BOUNDARY LINE	---	---
CENTERLINE	---	---
RIGHT-OF-WAY	---	---
PARCEL LINE	---	---
CURB, GUTTER AND SIDEWALK	---	---
EDGE OF PAVEMENT	---	---
STORM DRAIN (MAIN)	12" SD	12" SD
DRAINAGE SWALE	---	---
STORM DRAIN MAINTENANCE HOLE	---	---
CURB INLET	---	---
DRAIN INLET	---	---
DRAIN INLET ON MAINTENANCE HOLE	---	---
WATER (MAIN)	8" W	8" W
WATER (SERVICE)	8" W	8" W
WATER VALVE	---	---

**LEGEND (CONT)**

	EXISTING	PROPOSED
FIRE HYDRANT	---	---
SERVICE STUB	N/A	---
CLEANOUT	---	---
SEWER MAINTENANCE HOLE	---	---
SEWER (MAIN)	12" SS	12" SS
ELECTROLIER	---	---
FINISH FLOOR ELEVATION (PROPOSED)	N/A	FF=100.00
BUILDING PAD	N/A	PA=88.2
ORIGINAL GROUND	---	N/A
DIRECTION OF FLOW	---	---
CONTOURS	---	---
FENCE (CHAINLINK OR VINYL)	---	---
SIGN	---	---
TRIBUTARY AREA	N/A	AREA 0.48(0.36) COEFFICIENT



**TYPICAL CROSS-SECTION BIO-RETENTION**  
NTS

DMA	C	DMA area (ft <sup>2</sup> )	P <sub>s</sub> = Unit Storm-water Vol (in)	SDV (ft <sup>3</sup> )	Minimum # of Trees	Calc Req SDV <sub>req</sub> (ft <sup>3</sup> )	Calc Req A <sub>tot</sub> (ft <sup>2</sup> )	Provided A <sub>tot</sub> (ft <sup>2</sup> )
1	0.36	19857	0.26	435.93		435.93	458.88	496.0
2	0.46	15295	0.33	426.87		426.87	449.34	627.0
3	0.35	6294	0.25	132.67		132.67	139.65	223.0
4	0.33	8801	0.24	178.35		178.35	187.74	378.0
5	0.68	50368	0.49	2075.69	7.00	1313.39	1050.71	1647.0
6	0.71	18709	0.52	803.53	5.00	259.03	272.66	298.8
7	0.44	12995	0.32	349.84		349.84	368.25	370.0
8	0.78	13127	0.57	623.18	1.00	514.28	541.35	552.0
9	0.79	8351	0.57	397.62	1.00	288.72	303.91	318.0
10	0.77	5290	0.56	247.71	1.00	138.81	146.12	166.0
11	0.24	9606	0.17	138.96		138.96	146.28	326.0
12	0.59	5883	0.43	211.60	1.00	102.70	82.16	91.0
13	0.66	11220	0.48	449.07	1.00	340.17	358.07	547.0
14	0.81	30033	0.59	1466.48	6.00	813.08	650.46	872.0
15	0.82	35788	0.60	1785.19	4.00	1349.59	1079.67	1146.0
16	0.68	53203	0.49	2180.07	7.00	1417.77	1492.39	1583.0
17	0.74	44740	0.54	2016.25	8.00	1145.05	916.04	973.0
18	0.31	6682	0.22	124.82		124.82	131.39	135.0
19	0.72	42560	0.53	1866.37	10.00	777.37	621.90	672.0
20	0.69	14333	0.50	597.12	6.00	-56.28	0.00	0.0
21	0.50	15887	0.36	477.96		477.96	503.11	592.0
22	0.72	14462	0.52	631.55	4.00	195.95	206.26	270.0
23	0.65	10499	0.47	414.15	2.00	196.35	206.69	357.0
24	0.50	7215	0.37	220.10		220.10	231.68	234.0

PLOTTED: 04/25/2017 15:26  
 DRAWING: F:\16-1750 Main and Atherton Commercial\Planning\16-1750 Main and Atherton Commercial\16-1750 Main and Atherton Commercial.dwg  
 NORTHSTAR ENGINEERING GROUP, INC.  
 620 12th Street  
 Manteca, CA 95334  
 (209) 324-3323  
 (209) 324-3324 Fax



NO.	DATE	APPROVED	REVISIONS	DESCRIPTIONS

**PRELIMINARY STORMWATER QUALITY MANAGEMENT PLAN**  
**MAIN AND ATHERTON COMMERCIAL DEVELOPMENT**  
 MANTECA, CALIFORNIA



JOB #: 16-1750  
 DATE: 04/25/2017  
 SCALE: AS SHOWN  
 DRAWN: KM  
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 CHK D: BJ

SHEET NUMBER  
**C3**