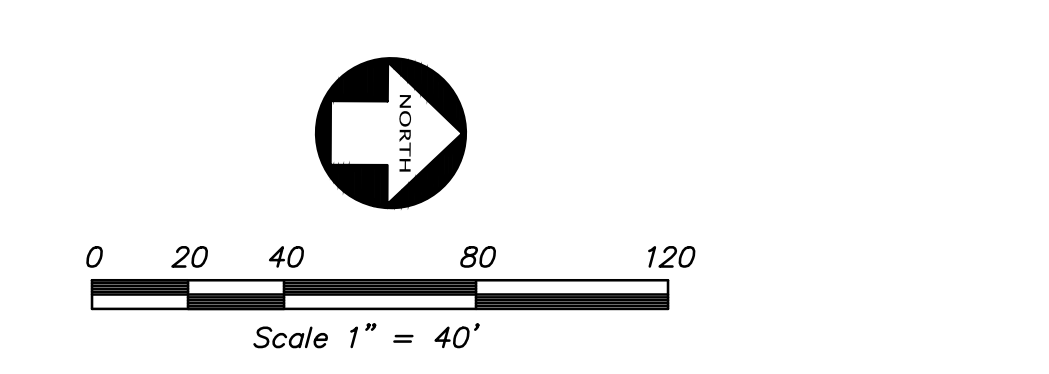


WAREHOUSE
FF 26.10
PAD 25.02±
7" PCC /
6" CLASS II AB/
SUBGRADE PER
SOILS REPORT

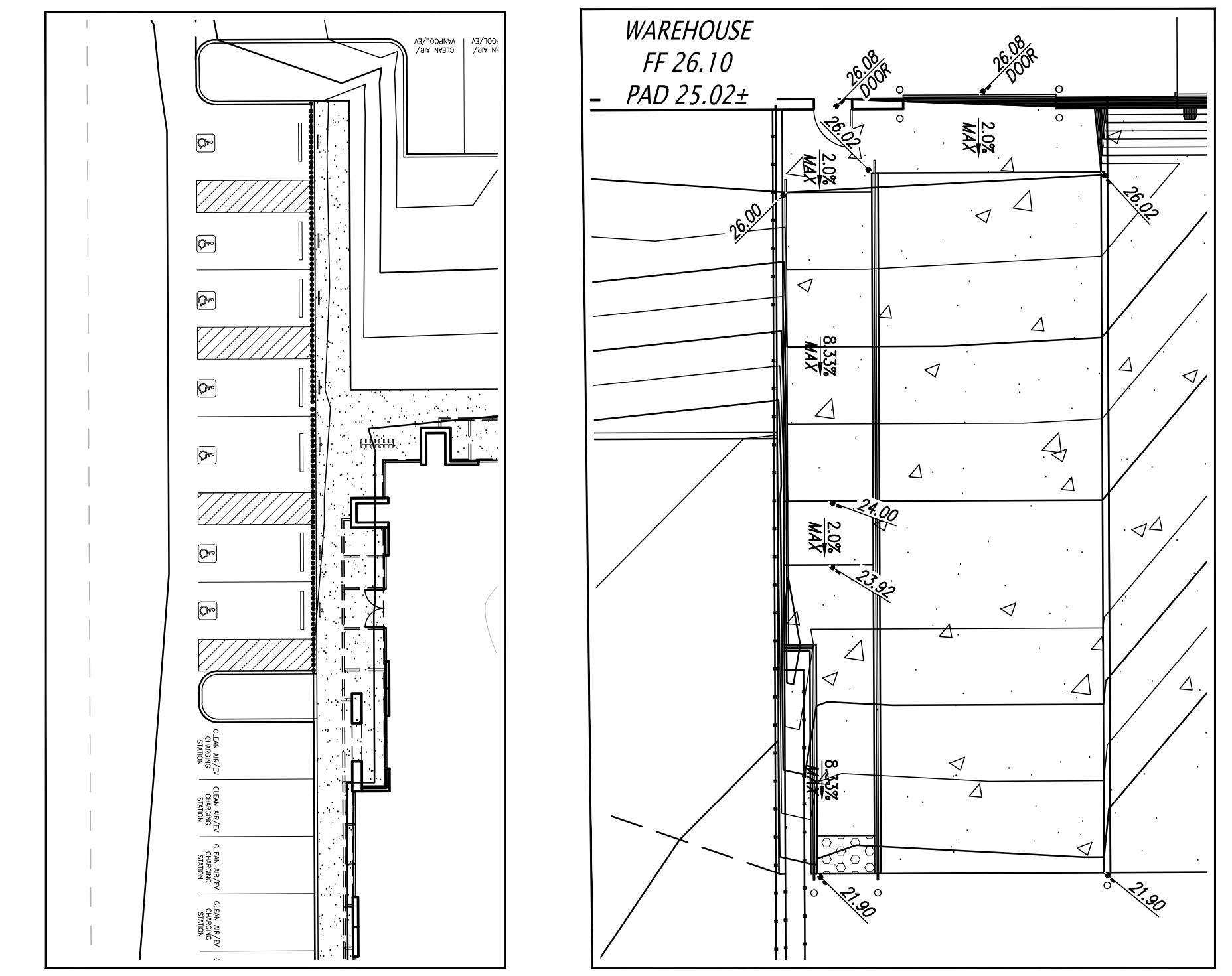
SEE SHEET C3.1

SEE SHEET C3.2



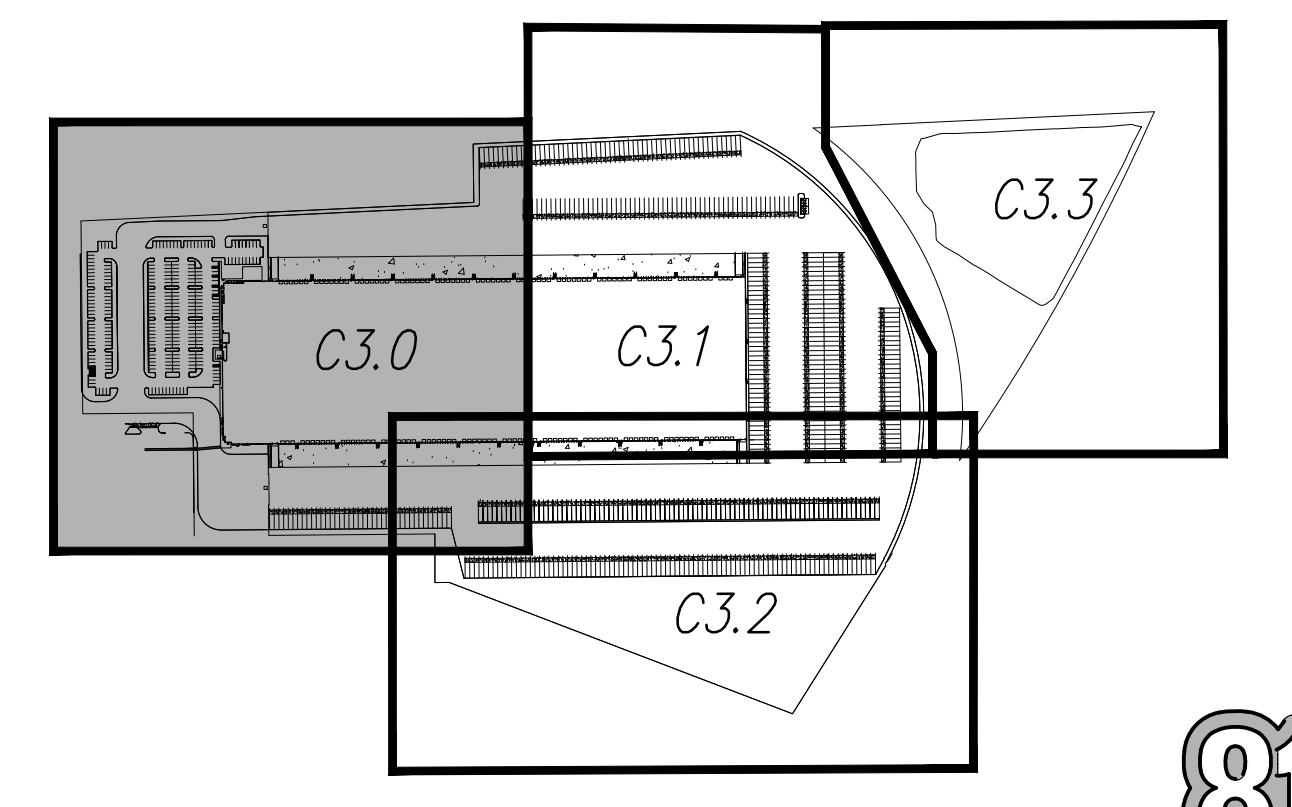
KEYNOTES	
1	NO ADA PATH SHALL EXCEED 2% IN CROSS SLOPE OR 5% LONGITUDINAL SLOPE (TYP)
2	ADA RAMP PER DETAIL 10/CB.0
3	ADA RAMP PER DETAIL 11/CB.0
4	ADA RAMP PER DETAIL 12/CB.0
5	ADA PARKING STALLS SHALL NOT EXCEED 2% MAX SLOPE IN ANY DIRECTION
6	TRUNCATED DOMES PER DETAIL 9/CB.0
7	ADA PARKING STRIPING PER DETAIL 13/CB.0
8	6" CONCRETE CURB PER DETAIL 1/CB.0
9	6" CONCRETE CURB AND GUTTER PER DETAIL 3/CB.0
10	6" CONCRETE CURB AT WALK PER DETAIL 15/CB.0
11	6" NOTCHED CONCRETE CURB AND GUTTER PER DETAIL 19/CB.0
12	FLUSH CURB PER DETAIL 16/CB.0
13	8" TRUCK CONCRETE CURB PER DETAIL 17/CB.0
14	WHEEL STOP PER DETAIL 14/CB.0 (TYP.)
15	DOLLY PAD PER DETAIL 18/CB.0
16	VALLEY GUTTER PER DETAIL 3/CB.1
17	VALLEY GUTTER AT DOLLY PAD PER DETAIL 2/CB.1
18	DRAIN THRU GUTTER AT LANDSCAPE ISLANDS PER DETAIL 4/CB.1
19	PAVEMENT CONFORM PER DETAIL 5/CB.1
20	8" TRUCK CONCRETE CURB AND GUTTER PER DETAIL 6/CB.1
21	10" CURB TRANSITION FROM 6" TO 8" HEIGHT CURB

LEGEND	
PROPOSED	EXISTING
ASPHALT BERM	BLOCK RETAINING WALL
BLDG	BUILDING LINE
FLUSH CONCRETE CURB	FLUSH CONCRETE CURB
CONCRETE CURB	CONCRETE CURB CUT
CONCRETE CURB & GUTTER	CONCRETE CURB & GUTTER
DRIVEWAY	EDGE OF PAVEMENT
FENCE LINE	FENCE LINE
LOT LINE	LOT LINE
MONUMENT/MONUMENT LINE	MONUMENT/MONUMENT LINE
PERFORATED STORM DRAIN PIPE	PERFORATED STORM DRAIN PIPE
PROPERTY LINE	PROPERTY LINE
RAINFALL LEADER	RAINFALL LEADER
SOILWALK	SOILWALK
STORM DRAIN-MANHOLE & CATCH BASIN	STORM DRAIN-MANHOLE & CATCH BASIN
THRU CURB DRAIN	THRU CURB DRAIN
SPOT ELEVATION	SPOT ELEVATION
TRAFFIC SIGN	TRAFFIC SIGN
TRE	TRE
UTILITY BOX	UTILITY BOX
AREA DRAIN	AREA DRAIN
BACK OF WALK	BACK OF WALK
BUILDING	BUILDING
BUILDING LINE	BUILDING LINE
BLDG	BLDG
CB	CB
COTG	COTG
C	C
CONCRETE	CONCRETE
DOOR	DOOR
DOWN SPOUT	DOWN SPOUT
DUCTILE IRON PIPE	DUCTILE IRON PIPE
EASMENT	EASMENT
EW	EW
FACE OF BERM	FACE OF BERM
FACE OF CURB	FACE OF CURB
FACE OF WALL	FACE OF WALL
FINISHED FLOOR	FINISHED FLOOR
FLOW LINE	FLOW LINE
GRADE BREAK	GRADE BREAK
HIGH POINT	HIGH POINT
INVERT ELEVATION	INVERT ELEVATION
LOW POINT	LOW POINT
LIGHT	LIGHT
LT	LT
OVERFLOW	OVERFLOW
PAVEMENT	PAVEMENT
RAINFALL LEADER	RAINFALL LEADER
RIDGE	RIDGE
RM ELEVATION	RM ELEVATION
ROOF DRAIN	ROOF DRAIN
STORM DRAIN JUNCTION BOX	STORM DRAIN JUNCTION BOX
STORM DRAIN MANHOLE	STORM DRAIN MANHOLE
SMH	SMH
TOP OF BERM	TOP OF BERM
TOP OF CURB	TOP OF CURB
TOP OF WALL	TOP OF WALL
TRANSFORMER	TRANSFORMER
TRASH ENCLOSURE	TRASH ENCLOSURE
TE	TE



A ADA PARKING SCALE 1"=20'

B TYPICAL ADA DOCK RAMP SCALE 1"=10'



NO.	REVISION	DATE
1	ISSUED FOR BUILDING PERMIT SUBMITTAL 09-27-2017	SEPTEMBER, 2017

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
2850 Collier Canyon Road
Livermore, California 94551
Phone (925) 245-8788
Fax (925) 245-8796

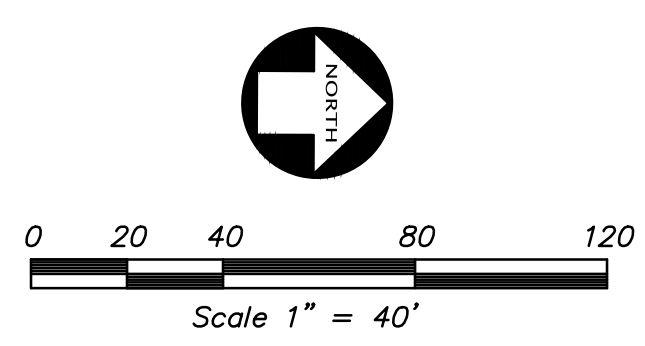
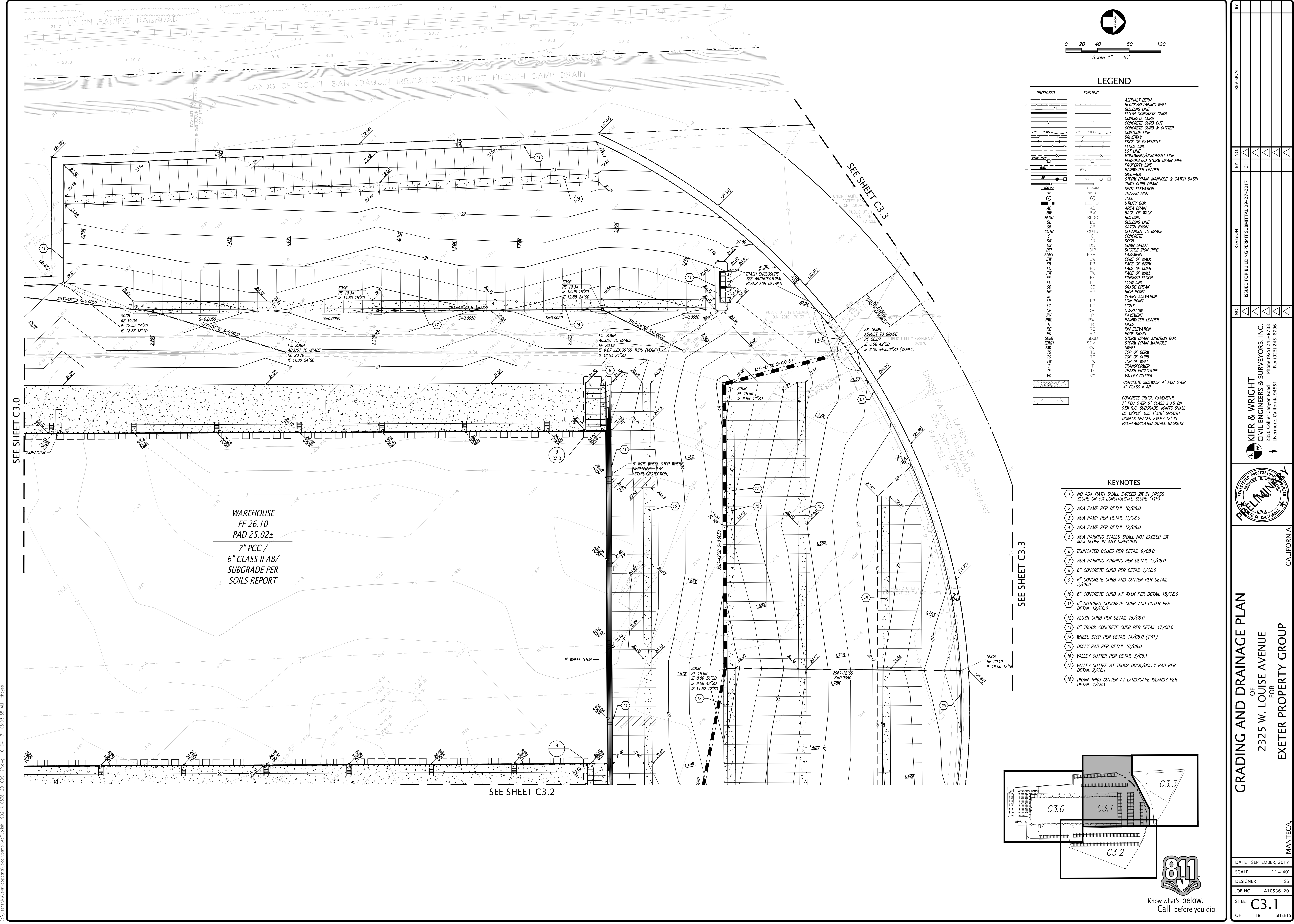
PRELIMINARY

CALIFORNIA

GRADING AND DRAINAGE PLAN
OF
2325 W. LOUISE AVENUE
FOR
EXETER PROPERTY GROUP

MANTECA, CALIFORNIA

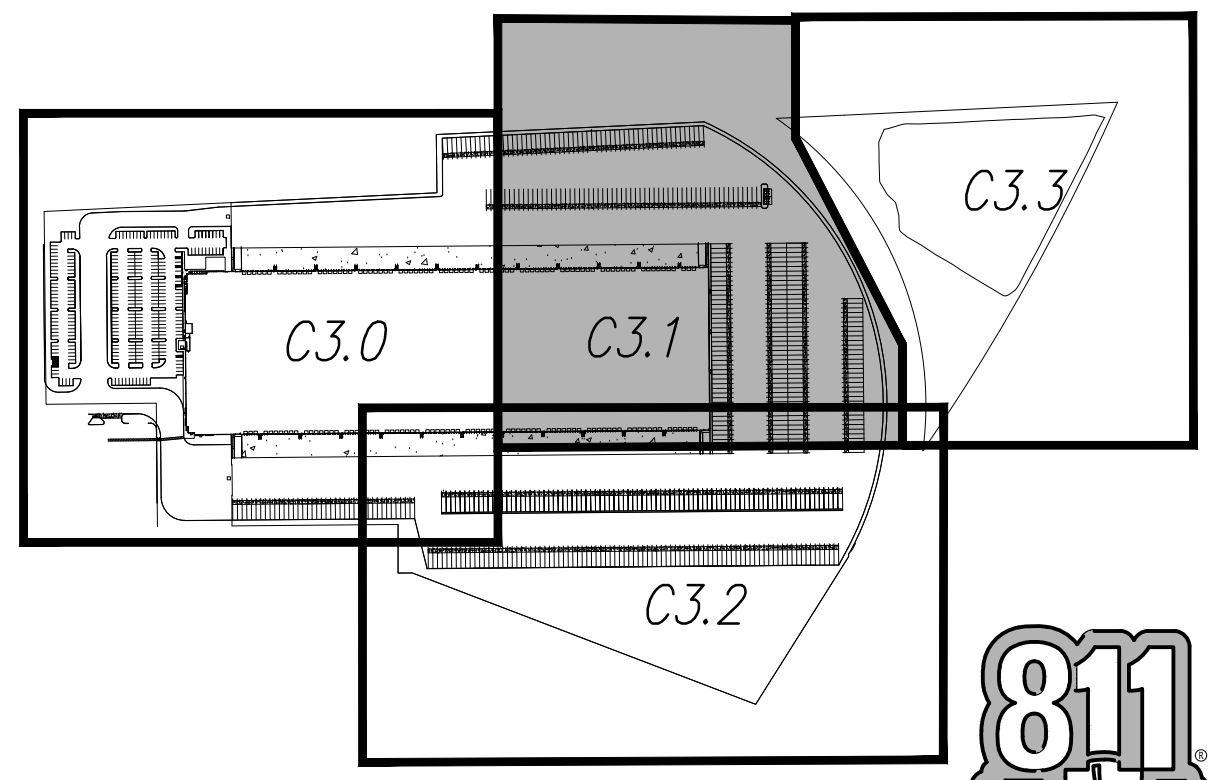
DATE	SEPTEMBER, 2017
SCALE	1" = 40'
DESIGNER	SS
JOB NO.	A10536-20
SHEET	C3.0
OF	18 SHEETS



LEGEND		
PROPOSED	EXISTING	
		ASPHALT BERM
		BLOCK/RETAINING WALL
		BUILDING LINE
		FLUSH CONCRETE CURB
		CONCRETE CURB
		CONCRETE CURB CUT
		CONCRETE CURB & GUTTER
		CONTOUR LINE
		DRIVEWAY
		EDGE OF PAVEMENT
		FENCE LINE
		LOT LINE
		MONUMENT/MONUMENT LINE
		PERFORATED STORM DRAIN PIPE
		PROPERTY LINE
		RAINWATER LEADER
		SIDEWALK
		STORM DRAIN-MANHOLE & CATCH BASIN
		THRU CURB DRAIN
		SPOT ELEVATION
		TRAFFIC SIGN
		TREE
		UTILITY BOX
		AREA DRAIN
		BACK OF WALK
		BUILDING
		BUILDING LINE
		CATCH BASIN
		CLEANOUT TO GRADE
		CONCRETE
		DOOR
		DOWN SPOUT
		DUCTILE IRON PIPE
		EASEMENT
		EDGE OF WALK
		FACE OF BERM
		FACE OF CURB
		FACE OF WALL
		FINISHED FLOOR
		FLOW LINE
		GRADE BREAK
		HIGH POINT
		INVERT ELEVATION
		LOW POINT
		LIGHT
		OVERFLOW PAVEMENT
		RAINWATER LEADER
		RIDGE
		RM ELEVATION
		ROOF DRAIN
		STORM DRAIN JUNCTION BOX
		STORM DRAIN MANHOLE
		SWALE
		TOP OF BERM
		TOP OF CURB
		TOP OF WALL
		TRANSFORMER
		TRASH ENCLOSURE
		VALLEY GUTTER
		CONCRETE SIDEWALK 4" PCC OVER 4" CLASS II AB
		CONCRETE TRUCK PAVEMENT: 7" PCC OVER 4" CLASS II AB ON 95% R.C. SUBGRADE. JOINTS SHALL BE 12'X12" USE 1'X18" SMOOTH DOMESLY SPADED EVERY 12" IN PRE-FABRICATED DOMEL BASKETS

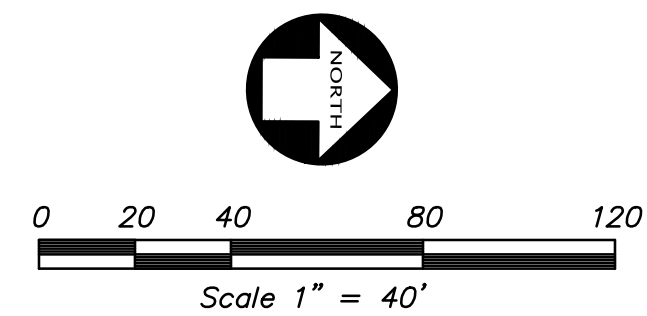
- KEYNOTES**
- NO ADA PATH SHALL EXCEED 2% IN CROSS SLOPE OR 3% LONGITUDINAL SLOPE (TYP)
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 - 6" NOTCHED CONCRETE CURB AND GUTTER PER DETAIL 19/CB.0
 - FLUSH CURB PER DETAIL 16/CB.0
 - 8" TRUCK CONCRETE CURB PER DETAIL 17/CB.0
 - WHEEL STOP PER DETAIL 14/CB.0 (TYP.)
 - DOLLY PAD PER DETAIL 18/CB.0
 - VALLEY GUTTER PER DETAIL 3/CB.1
 - VALLEY GUTTER AT TRUCK DOCK/DOLLY PAD PER DETAIL 2/CB.1
 - DRAIN THRU GUTTER AT LANDSCAPE ISLANDS PER DETAIL 4/CB.1

WAREHOUSE
FF 26.10
PAD 25.02±
7" PCC /
6" CLASS II AB/
SUBGRADE PER
SOILS REPORT



Know what's below.
Call before you dig.

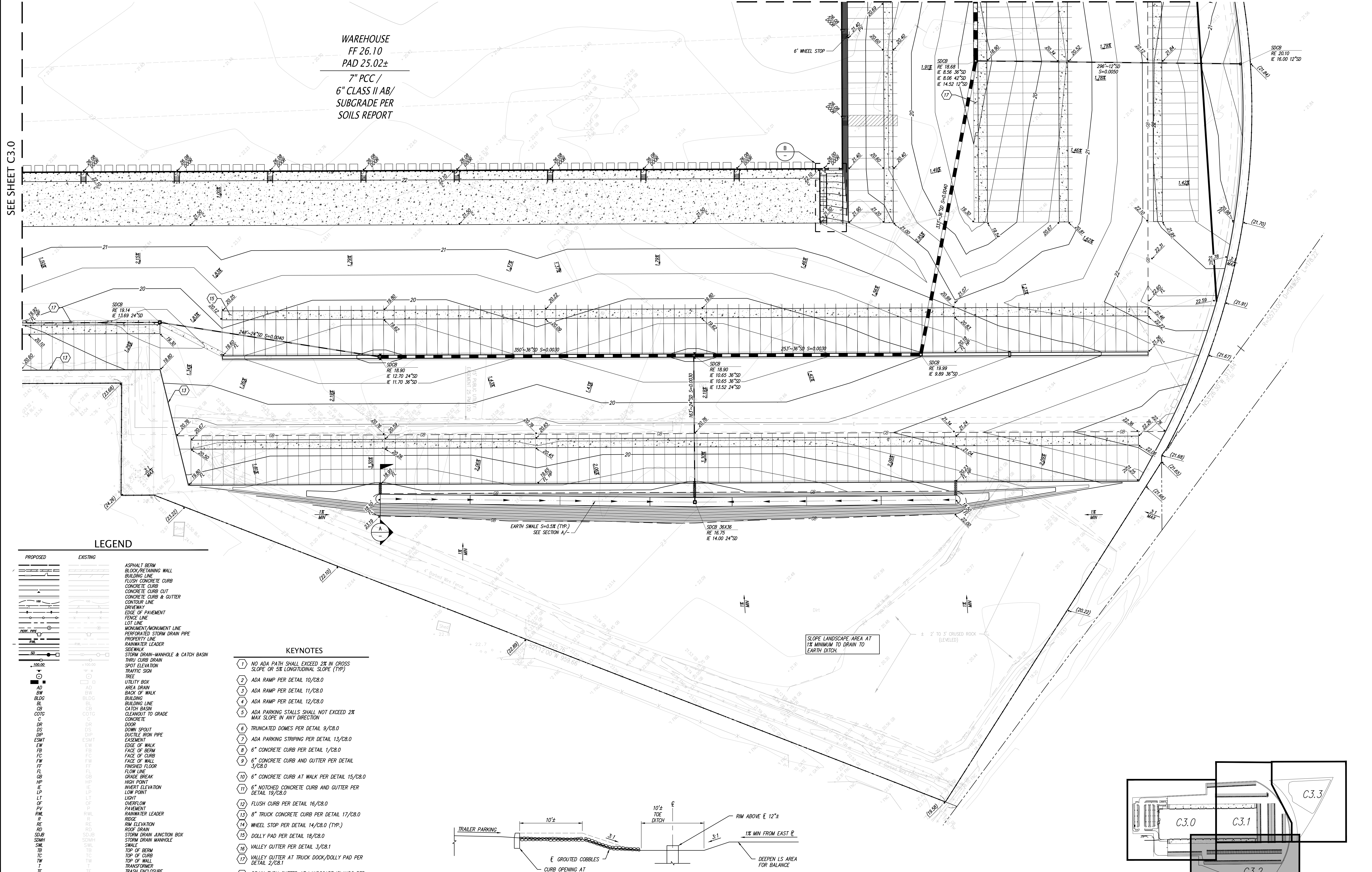
BY				
REVISION				
NO.	NO.	NO.	NO.	NO.
CH	CH	CH	CH	CH
ISSUED FOR BUILDING PERMIT SUBMITTAL 09-27-2017				
KIER & WRIGHT CIVIL ENGINEERS & SURVEYORS, INC. 2850 Collier Canyon Road Livermore, California 94551 Phone (925) 245-8788 Fax (925) 245-8796				
GRADING AND DRAINAGE PLAN OF 2325 W. LOUISE AVENUE FOR EXETER PROPERTY GROUP				
MANTECA, CALIFORNIA				
DATE	SEPTEMBER, 2017			
SCALE	1" = 40'			
DESIGNER	SS			
JOB NO.	A10536-20			
SHEET	C3.1			
OF	18 SHEETS			



SEE SHEET C3.0

SEE SHEET C3.1

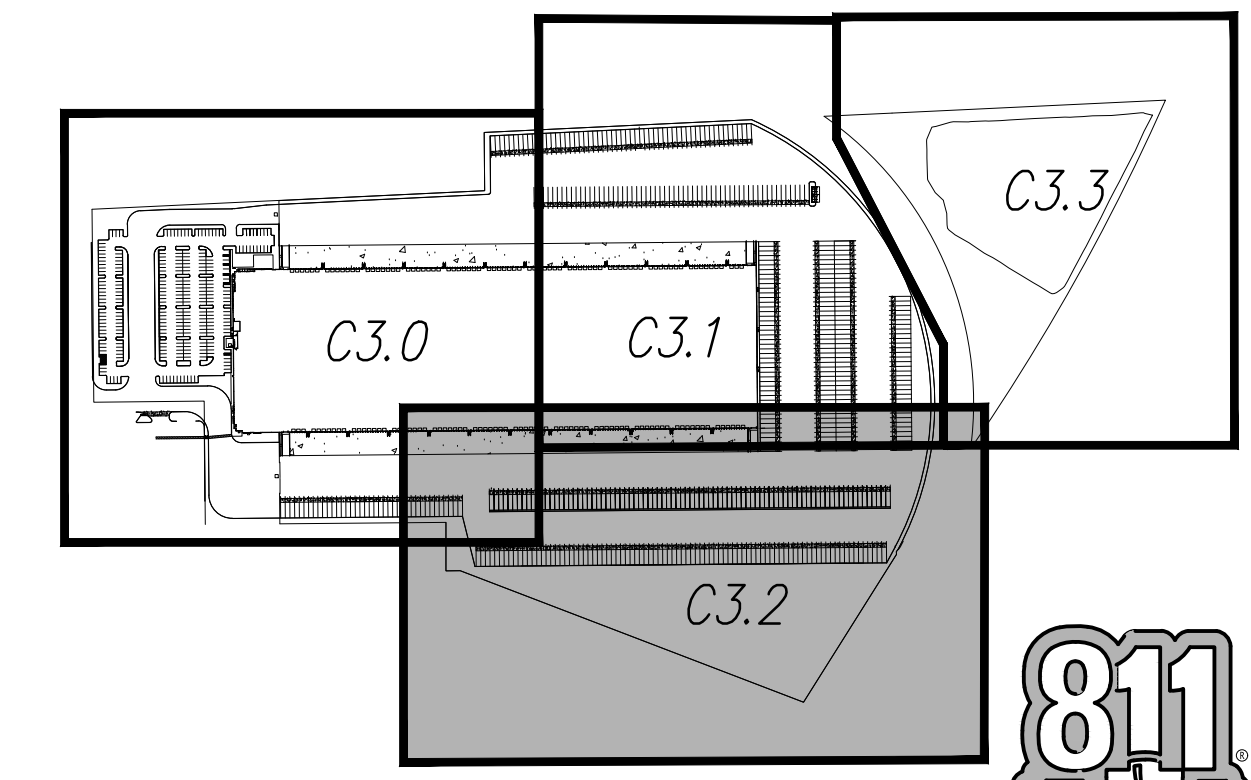
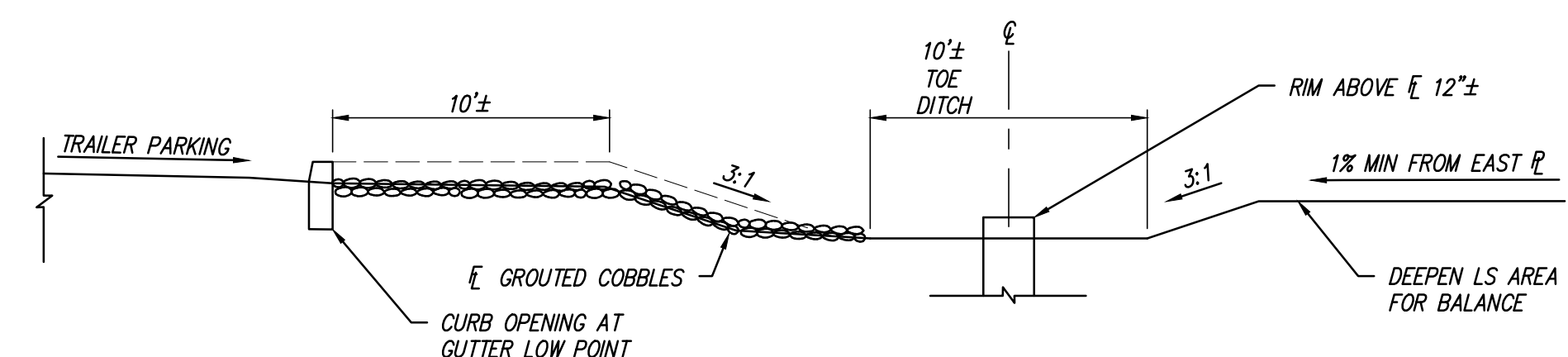
WAREHOUSE
FF 26.10
PAD 25.02±
7" PCC /
6" CLASS II AB/
SUBGRADE PER
SOILS REPORT



LEGEND

PROPOSED	EXISTING	DESCRIPTION
[Symbol]	[Symbol]	ASPHALT BERM
[Symbol]	[Symbol]	BLOCK RETAINING WALL
[Symbol]	[Symbol]	BUILDING LINE
[Symbol]	[Symbol]	FLUSH CONCRETE CURB
[Symbol]	[Symbol]	CONCRETE CURB
[Symbol]	[Symbol]	CONCRETE CURB CUT
[Symbol]	[Symbol]	CONCRETE CURB & GUTTER
[Symbol]	[Symbol]	CONTOUR LINE
[Symbol]	[Symbol]	DRIVEWAY
[Symbol]	[Symbol]	EDGE OF PAVEMENT
[Symbol]	[Symbol]	FENCE LINE
[Symbol]	[Symbol]	LOT LINE
[Symbol]	[Symbol]	MONUMENT/MONUMENT LINE
[Symbol]	[Symbol]	PERFORATED STORM DRAIN PIPE
[Symbol]	[Symbol]	PROPERTY LINE
[Symbol]	[Symbol]	RAINWATER LEADER
[Symbol]	[Symbol]	STORM DRAIN-MANHOLE & CATCH BASIN
[Symbol]	[Symbol]	THRU CURB DRAIN
[Symbol]	[Symbol]	SPOT ELEVATION
[Symbol]	[Symbol]	TRAFFIC SIGN
[Symbol]	[Symbol]	TRAIL
[Symbol]	[Symbol]	UTILITY BOX
[Symbol]	[Symbol]	AREA DRAIN
[Symbol]	[Symbol]	BACK OF WALK
[Symbol]	[Symbol]	BUILDING
[Symbol]	[Symbol]	BUILDING LINE
[Symbol]	[Symbol]	CATCH BASIN
[Symbol]	[Symbol]	CLEANOUT TO GRADE
[Symbol]	[Symbol]	CONCRETE
[Symbol]	[Symbol]	DOOR
[Symbol]	[Symbol]	DOWN SPOUT
[Symbol]	[Symbol]	DUCTILE IRON PIPE
[Symbol]	[Symbol]	EASEMENT
[Symbol]	[Symbol]	EDGE OF WALK
[Symbol]	[Symbol]	FACE OF BERM
[Symbol]	[Symbol]	FACE OF CURB
[Symbol]	[Symbol]	FACE OF WALL
[Symbol]	[Symbol]	FINISHED FLOOR
[Symbol]	[Symbol]	FLOW LINE
[Symbol]	[Symbol]	GRADE BREAK
[Symbol]	[Symbol]	HIGH POINT
[Symbol]	[Symbol]	INVERT ELEVATION
[Symbol]	[Symbol]	LOW POINT
[Symbol]	[Symbol]	LIGHT
[Symbol]	[Symbol]	OVERFLOW
[Symbol]	[Symbol]	PAVEMENT
[Symbol]	[Symbol]	RAINWATER LEADER
[Symbol]	[Symbol]	RIDGE
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[Symbol]	[Symbol]	STORM DRAIN MANHOLE
[Symbol]	[Symbol]	SMILE
[Symbol]	[Symbol]	TOP OF BERM
[Symbol]	[Symbol]	TOP OF CURB
[Symbol]	[Symbol]	TOP OF WALL
[Symbol]	[Symbol]	TRANSFORMER
[Symbol]	[Symbol]	TRASH ENCLOSURE

- KEYNOTES**
- NO ADA PATH SHALL EXCEED 2% IN CROSS SLOPE OR 5% LONGITUDINAL SLOPE (TYP.)
 - ADA RAMP PER DETAIL 10/C8.0
 - ADA RAMP PER DETAIL 11/C8.0
 - ADA RAMP PER DETAIL 12/C8.0
 - ADA PARKING STALLS SHALL NOT EXCEED 2% MAX SLOPE IN ANY DIRECTION
 - TRUNCATED DOMES PER DETAIL 9/C8.0
 - ADA PARKING STRIPING PER DETAIL 13/C8.0
 - 6" CONCRETE CURB PER DETAIL 1/C8.0
 - 6" CONCRETE CURB AND GUTTER PER DETAIL 3/C8.0
 - 6" CONCRETE CURB AT WALK PER DETAIL 15/C8.0
 - 6" NOTCHED CONCRETE CURB AND GUTTER PER DETAIL 19/C8.0
 - FLUSH CURB PER DETAIL 16/C8.0
 - 8" TRUCK CONCRETE CURB PER DETAIL 17/C8.0
 - WHEEL STOP PER DETAIL 14/C8.0 (TYP.)
 - DOLLY PAD PER DETAIL 18/C8.0
 - VALLEY GUTTER PER DETAIL 3/C8.1
 - VALLEY GUTTER AT TRUCK DOCK/DOLLY PAD PER DETAIL 2/C8.1
 - DRAIN THRU GUTTER AT LANDSCAPE ISLANDS PER DETAIL 4/C8.1



NO.	REVISION	ISSUED FOR BUILDING PERMIT SUBMITTAL 09-27-2017
BY	CH	
NO.	REVISION	

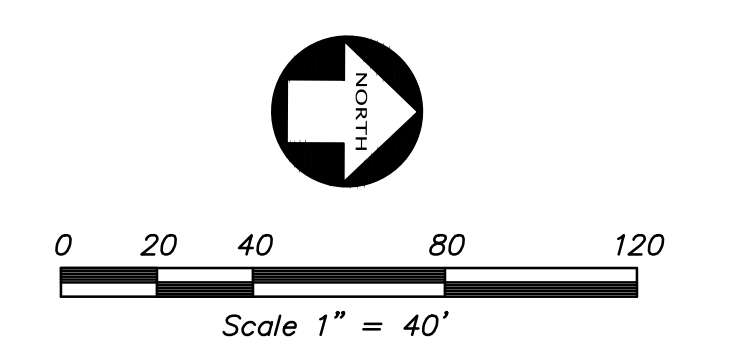
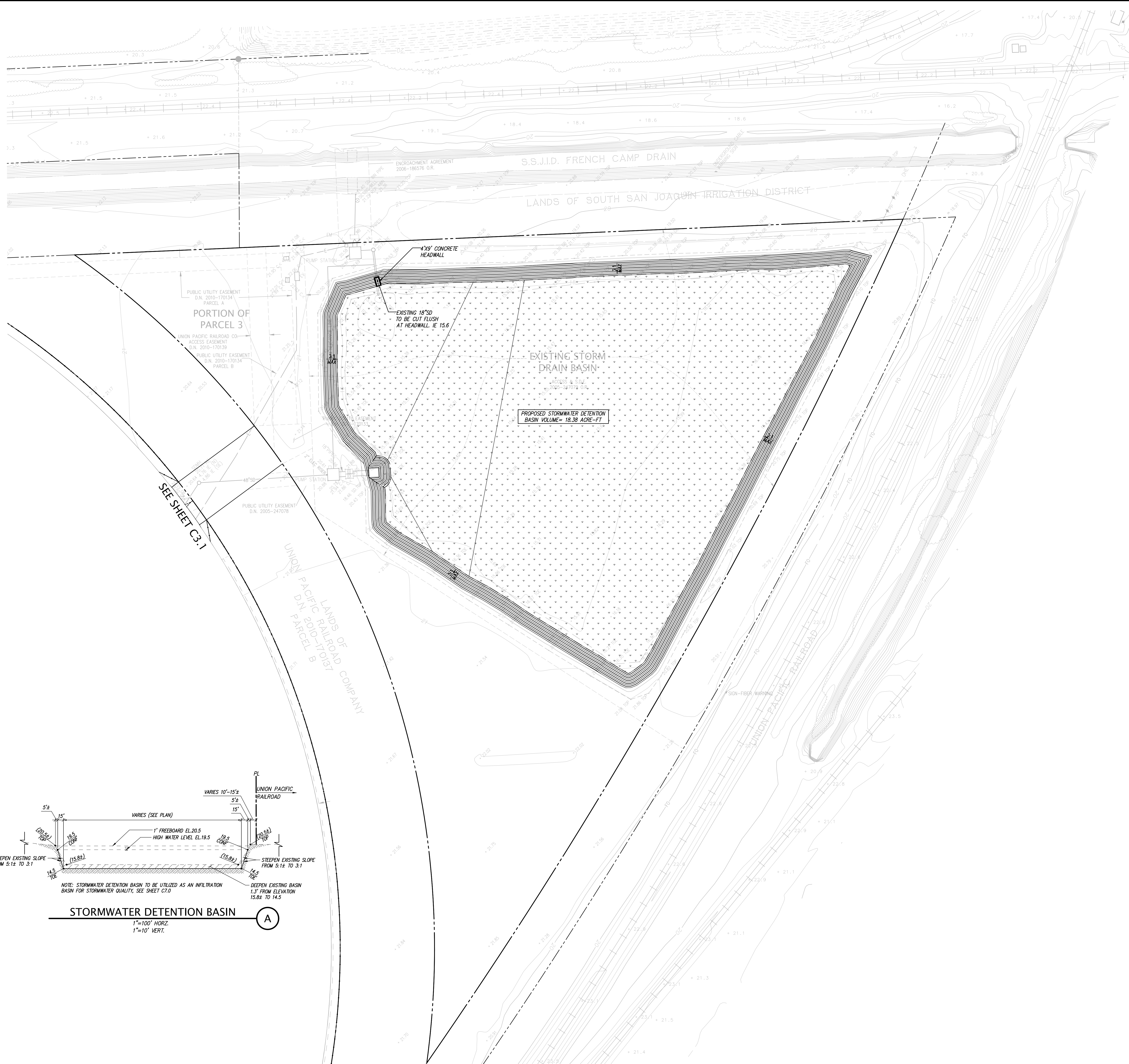
KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
2850 Collier Canyon Road
Livermore, California 94551
Phone (925) 245-8788
Fax (925) 245-8796

REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA
PRELIMINARY

GRADING AND DRAINAGE PLAN
OF
2325 W. LOUISE AVENUE
FOR
EXETER PROPERTY GROUP

CALIFORNIA
MANTECA

DATE: SEPTEMBER, 2017
SCALE: 1" = 40'
DESIGNER: SS
JOB NO.: A10536-20
SHEET: C3.2
OF 18 SHEETS



PROPOSED	EXISTING	LEGEND
[Symbol]	[Symbol]	ASPHALT BERM
[Symbol]	[Symbol]	BLOCK/RETAINING WALL
[Symbol]	[Symbol]	BUILDING LINE
[Symbol]	[Symbol]	FLUSH CONCRETE CURB
[Symbol]	[Symbol]	CONCRETE CURB
[Symbol]	[Symbol]	CONCRETE CURB CUT
[Symbol]	[Symbol]	CONCRETE CURB & CUTTER
[Symbol]	[Symbol]	CONTOUR LINE
[Symbol]	[Symbol]	DRIVEWAY
[Symbol]	[Symbol]	EDGE OF PAVEMENT
[Symbol]	[Symbol]	FENCE LINE
[Symbol]	[Symbol]	LOT LINE
[Symbol]	[Symbol]	MONUMENT/MONUMENT LINE
[Symbol]	[Symbol]	PERFORATED STORM DRAIN PIPE
[Symbol]	[Symbol]	PROPERTY LINE
[Symbol]	[Symbol]	RAINWATER LEADER
[Symbol]	[Symbol]	STORM DRAIN-MANHOLE & CATCH BASIN
[Symbol]	[Symbol]	THRU CURB DRAIN
[Symbol]	[Symbol]	SPOT ELEVATION
[Symbol]	[Symbol]	TRAFFIC SIGN
[Symbol]	[Symbol]	TREE
[Symbol]	[Symbol]	UTILITY BOX
[Symbol]	[Symbol]	AREA DRAIN
[Symbol]	[Symbol]	BACK OF WALK
[Symbol]	[Symbol]	BUILDING
[Symbol]	[Symbol]	BUILDING LINE
[Symbol]	[Symbol]	CATCH BASIN
[Symbol]	[Symbol]	CLEANOUT TO GRADE
[Symbol]	[Symbol]	CONCRETE
[Symbol]	[Symbol]	DOOR
[Symbol]	[Symbol]	DOWN SPOUT
[Symbol]	[Symbol]	DUCTILE IRON PIPE
[Symbol]	[Symbol]	EASEMENT
[Symbol]	[Symbol]	EDGE OF WALK
[Symbol]	[Symbol]	FACE OF BERM
[Symbol]	[Symbol]	FACE OF CURB
[Symbol]	[Symbol]	FACE OF WALL
[Symbol]	[Symbol]	FINISHED FLOOR
[Symbol]	[Symbol]	FLOW LINE
[Symbol]	[Symbol]	GRADE BREAK
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[Symbol]	[Symbol]	RIDGE
[Symbol]	[Symbol]	RM ELEVATION
[Symbol]	[Symbol]	ROOF DRAIN
[Symbol]	[Symbol]	STORM DRAIN JUNCTION BOX
[Symbol]	[Symbol]	STORM DRAIN MANHOLE
[Symbol]	[Symbol]	SMALL
[Symbol]	[Symbol]	TOP OF BERM
[Symbol]	[Symbol]	TOP OF CURB
[Symbol]	[Symbol]	TOP OF WALL
[Symbol]	[Symbol]	TRANSFORMER
[Symbol]	[Symbol]	TRASH ENCLOSURE
[Symbol]	[Symbol]	STORMWATER DETENTION BASIN

SIZING CAPACITY CALCULATIONS FOR PROPOSED STORMWATER DETENTION BASIN
(CITY OF MANTECA STORMDRAIN MASTER PLAN 2013)

DESIGN BASIN CAPACITY (ACRE-FEET): $V_1 = CAR/12$ (PER CITY OF MANTECA STORMDRAIN MASTER PLAN 2013)

RUNOFF COEFFICIENT FOR BASIN TRIBUTARY SHED, C: 0.73
 TRIBUTARY SHED AREA, A (ACRES): 69.4
 TOTAL RAINFALL FOR A DESIGN STORM, R (IN): 3.56
 (URBANIZED SHED- 48 HOUR DURATION STORM)
VOLUME OF BASIN, V_1 (ACRE-FEET): 15.13

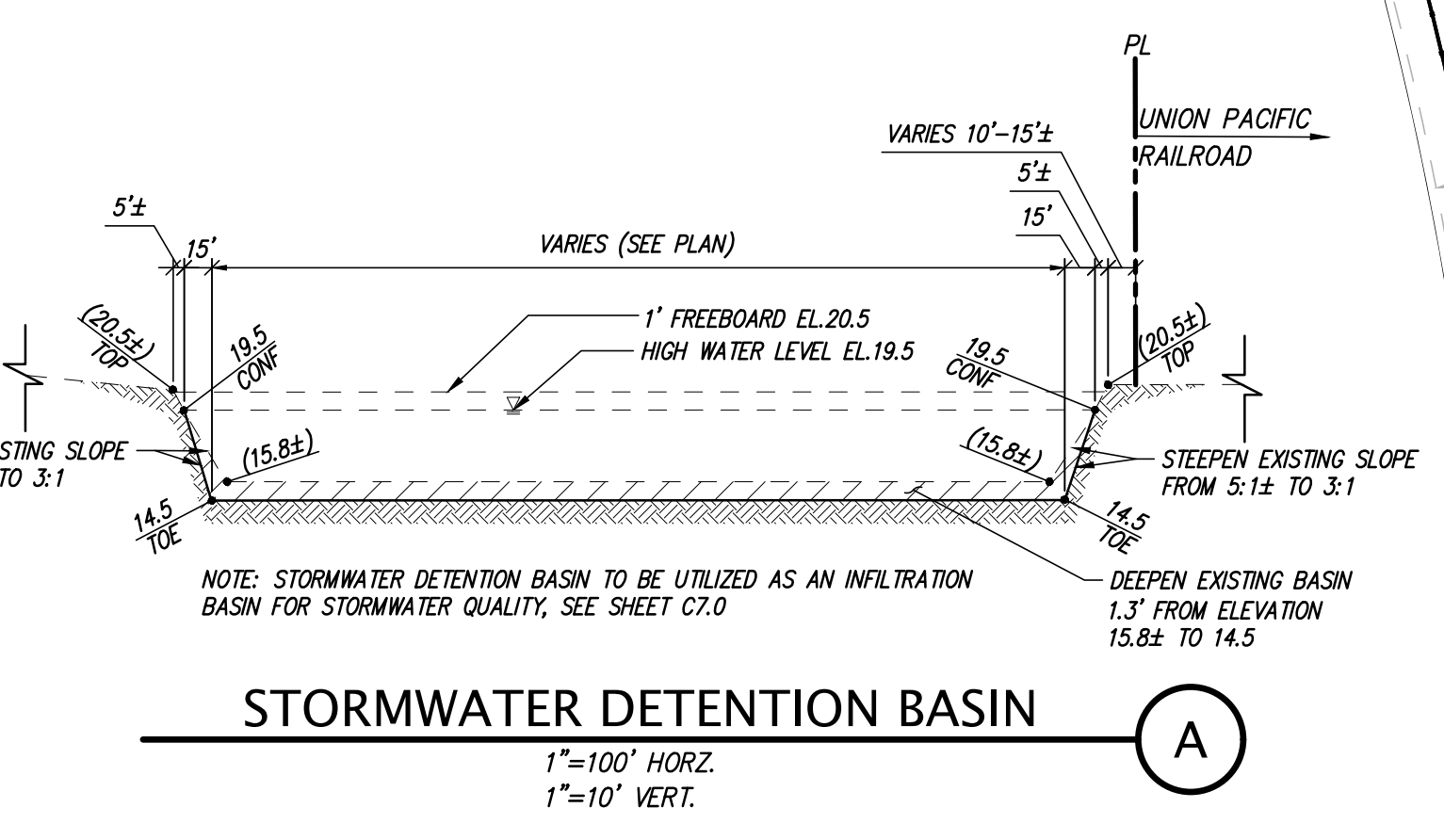
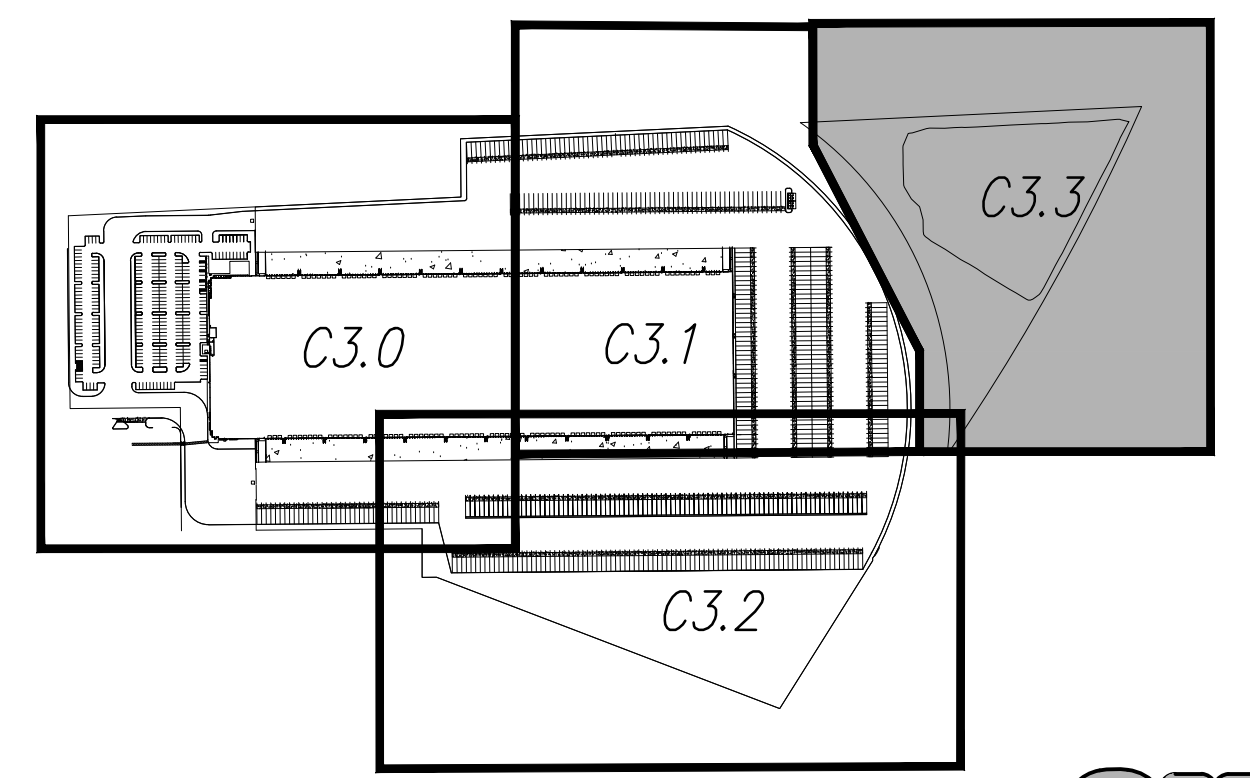
EXISTING BASIN CAPACITY (ACRE-FEET): $V_2 = \text{AVERAGE END AREA} \times \text{DEPTH} = (A_1 + A_2)/2 \times D$

ELEVATION AT TOP OF BASIN: 20.5
 HIGH WATER LEVEL ELEVATION AT BASIN: 19.5
 (ALLOWS FOR CITY REQUIREMENT OF 1' FREEBOARD)
 AVERAGE ELEVATION AT TOE OF BASIN: 15.8
 DEPTH OF BASIN, D (FT): 3.70
 AVERAGE AREA AT TOP OF BASIN, A_1 (ACRES): 3.21
 AREA AT HIGH WATER LEVEL, A_2 (ACRES): 3.96
 AVERAGE END AREA FOR BASIN (ACRE): 3.59
VOLUME OF BASIN, V_2 (ACRE-FEET): 13.26

CHANGES TO EXISTING BASIN TO MEET DESIGN CAPACITY: $V_3 = \text{AVERAGE END AREA} \times \text{DEPTH} = (A_1 + A_2)/2 \times D$

SOLUTION: DEEPEN THE EXISTING BASIN TO ELEVATION 14.5 AND CUT SIDE SLOPES AT 3:1
 (NOTE: EXISTING SIDE SLOPES ARE 6:1)

DIFFERENCE BETWEEN EXISTING AND DESIGN, Δ (ACRE-FEET): 1.86
 ELEVATION AT TOP OF BASIN: 20.5
 HIGH WATER LEVEL ELEVATION AT BASIN: 19.5
 AVERAGE ELEVATION AT TOE OF BASIN: 14.5
 (DROP TOE ELEVATION OF BASIN -1.3)
 DEPTH OF BASIN, D (FT): 5.00
 (MAX DEPTH FOR AN UNLINED BASIN-5FT)
 AVERAGE AREA AT TOE OF BASIN, A_1 (ACRES): 3.38
 (AREA AT NEW TOE ELEVATION WITH 3:1 SIDE SLOPES)
 AREA AT HIGH WATER LEVEL, A_2 (ACRES): 3.96
 AVERAGE END AREA FOR BASIN (ACRE): 3.67
VOLUME OF BASIN, V_3 (ACRE-FEET): 18.35



NO.	REVISION	ISSUED FOR BUILDING PERMIT SUBMITTAL 09-27-2017
NO.	REVISION	CH

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REGISTERED PROFESSIONAL ENGINEER
 CIVIL
 STATE OF CALIFORNIA

GRADING AND DRAINAGE PLAN
 OF
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DATE: SEPTEMBER, 2017
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 SHEET: **C3.3**
 OF 18 SHEETS

