Appendix M
Sewer Study

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QUARRY AND CORDOVA ROADS INDUSTRIAL COMPLEX

Town of Apple Valley

SEWER CAPACITY STUDY

Prepared for:

Town of Apple Valley
14955 Dale Evans Pkwy
Apple Valley, CA 92307
(760) 240-7000

Prepared under the Supervision of

Kathleen Hong, P.E.

May 2023

DEA Job No. VVLI0000-0001

SECTION 1 - Introduction

Purpose

The focus of this sewer study is to analyze the sewer pipelines proposed to serve the Quarry and Cordova Roads Industrial Complex (Project) and its connection to the existing Town of Apple Valley (Town) sewer system. The proposed improvements are shown in Attachment A. A hydraulic analysis was conducted using Innovyze's InfoSewer, a hydraulic modeling software, to build a model, run simulations and review the results against the Town of Apple Valley's 2013 Sewer System Master Plan (SMP Update). This memorandum summarizes the results and recommendations.

Background

Figure 1 shows the Project location in the Town of Apple Valley, CA. The Project consists of two industrial complexes known as the Quarry Road Industrial Complex (Quarry Complex) and the Cordova Road Industrial Complex (Cordova Complex). These parcels are currently undeveloped. The Quarry Road Industrial Complex is bounded by Quarry Road to the north, Flint Road to east, Cordova Road to the south, and an unnamed road to the west. The Cordova Road Industrial Complex is bounded by Cordova Road to the north, Navajo Road to the east, Doberman Street to the south, and Dachshund Avenue to the west. The proposed development encompasses approximately 161.6 acres of total area. See Table 1 for the summary of the developments. See Attachment A for the site plans of both developments.

Table 1 Development Summary

Industrial Complex	Acres	Building Square Footage
Quarry Rd	75.7	1,456,240
Cordova Rd	85.9	1,554,000
Total	161.6	3,010,240

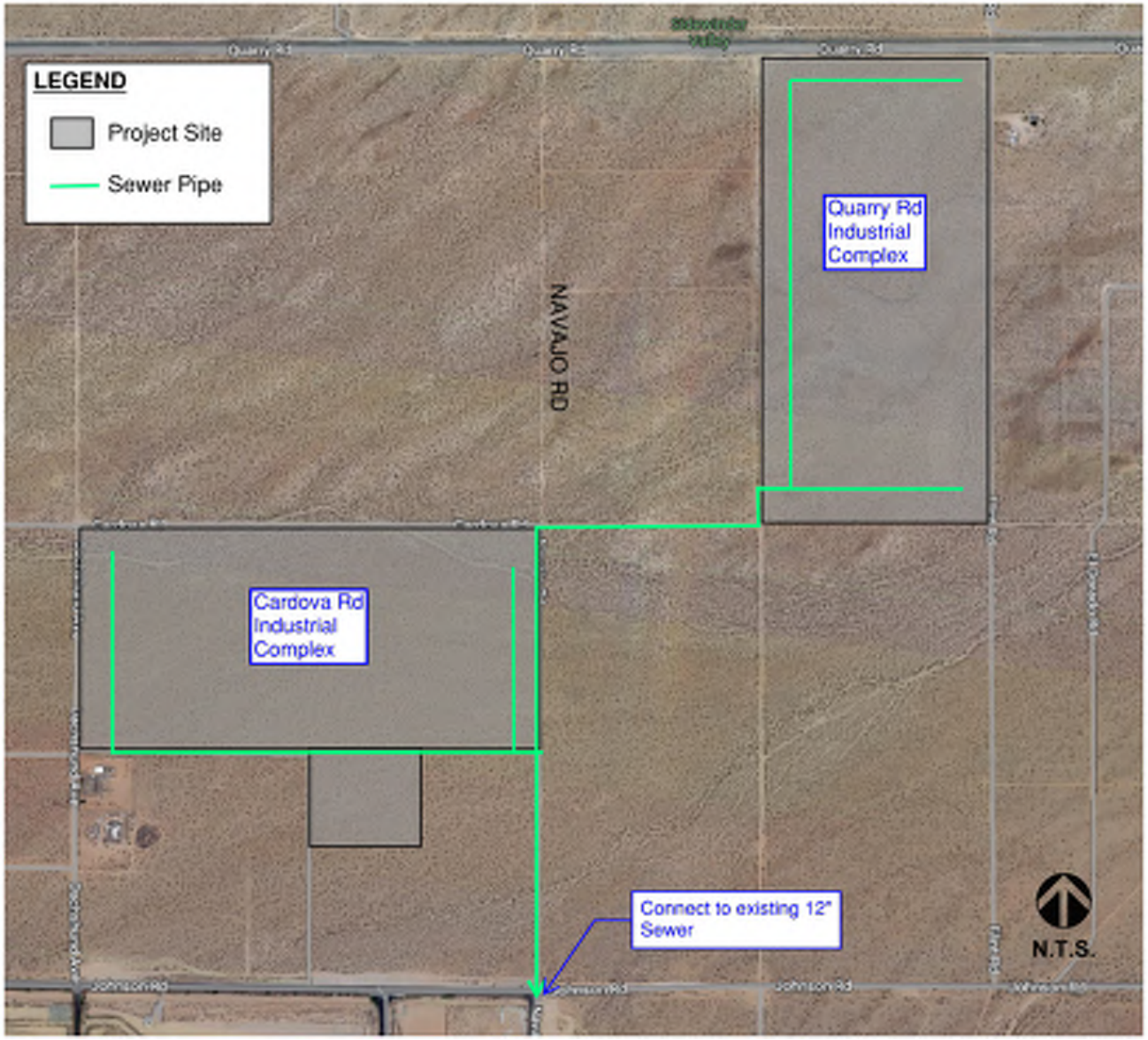
SECTION 2 – Existing Facilities

The closest existing sewer pipeline to the project site is a 12-inch sewer pipeline in Navajo Road. There is an existing manhole at the intersection of Johnson Road and Navajo Road where it is connected to an existing 12-inch sewer pipeline that flows south along Navajo Road. There are existing 10-inch stub outs extending north, west and east of this manhole. See Attachment B for the record drawings of the existing 12-inch sewer line.

SECTION 3 – Proposed Facilities

The Project development proposes to build on-site and off-site sewer facilities that will eventually discharge into the existing manhole located in the intersection of Johnson Road and Navajo Road. It is

Figure 1—Project Location



proposed to build approximately 3,780 linear feet (LF) of 8-inch on-site sewer pipes within the Quarry Complex property that will continue west as an off-site 8-inch sewer pipe, and continue south towards the existing manhole in Johnson Road and Navajo Road. For the Cordova Complex, it is proposed to build approximately 3,700 LF of 6-inch sewer pipes and a lift station on-site. The lift station will pump flows to a 6-inch gravity sewer system that connects to an 8-inch off-site piping in Navajo Road. The approximate length of off-site 8-inch piping is 4,500 LF. See Attachment A for the preliminary utility plan.

Proposed sewage flow was determined based on the SMP Update. For industrial land use, flows were calculated as acreage of building space, and then converted to Equivalent Dwelling Units (EDU's). The Town's industrial criterion for sewer generation is 1,500 gallons per day per acre. To convert the industrial building space acreage into EDU's, the ratio of 1,500 gallons per day per acre was divided by 210 gallons per day per EDU, or 7.14 EDU per acre. A unit flow factor of 210 gpd/EDU was used to calculate average dry weather flow.

The peak flow was determined by reviewing the summary of flows at monitoring sites done for the SMP Update. The peaking factor of each monitoring site was calculated by dividing the peak flow with the average day flow of each site and finding the average to determine the peak flow. The calculated peaking factor used for this study is 1.65. See Table 2 for the calculation.

Table 2 Peaking Factor Calculation [1]

Site	Average Day Flow	Peak Flow	Calculated Peaking Factor
Site AV No. 1	1.21	1.72	1.42
Site AV No. 2	0.54	0.83	1.54
Site 3 NAVI	0.02	0.04	2
Average of the Peaking Factors			1.65

[1] See Section 6.0 of the Apple Valley's Sewer System Master Plan Update for full flow monitoring results.

The estimated average dry weather flow (ADWF) is 103,617 gpd, and the peak dry weather flow (PDWF) is estimated to be 170,968 gpd (118.73 gpm). Estimated Project sewer generation are summarized in Table 3.

Table 3 Project Sewer Generation

Development	Development Designation	Building Space (SF)	Building Space (Acreage)	EDU[1]	GPD/EDU	Average Dry Weather Flow		Peaking Factor [2]	Peak Dry Weather Flow	
						Sewer Generation (gpd)	Sewer Generation (gpm)		Sewer Generation (gpd)	Sewer Generation (gpm)
Quarry Rd Industrial Complex	Industrial	1,456,240	33.43	239	210	50,126	34.81	1.65	82,708	57.44
Cordova Rd Industrial Complex	Industrial	1,554,000	35.67	255	210	53,491	37.15	1.65	88,260	61.29
	Total	3,010,240	69.11	--	--	103,617	71.96	--	170,968	118.73

[1] Per the Apple Valley 2013 Sewer System Master Plan Update, Industrial flows are calculated by converting building space acreage to EDU's. The conversion of 7.14 EDU/acre was applied, and a flow factor of 210 gpd/EDU was used to estimate average dry weather flow.
[2] Peaking factor was determined by calculating the ratio between the monitored average and peak flows in Table 6-3 of the Apple Valley 2013 Sewer System Master Plan Update.

SECTION 4 – Hydraulic Analysis

The sewer network was modeled using Innovyze's InfoSewer. The hydraulic model was built using as-builts of the existing pipelines and proposed pipelines per the preliminary site plan. Once the proposed improvements were built into the model, a steady-state, PDWF scenario was conducted for this analysis. The limits of the study includes the proposed on-site and off-site piping to the existing manhole at the intersection of Johnson Road and Navajo Road. For this study, the on-site lift station at the Cordova Complex has been modeled as discharging the PDWF. Final pump station calculation and design will be done during the design phase.

The Town's Criteria

The criteria for this analysis were obtained from the SMP Update and is summarized in Table 4. The hydraulic analysis results were reviewed against the operational criteria to determine if the proposed sewer system performs per the Town's standards.

Table 4 Sewer System Operational Criteria

Infrastructure	Peak Dry Weather Flow d/D	Minimum Velocity	Maximum Velocity
Pipe Diameter < 15 inches	<0.5	2 ft/s	10 ft/s
Pipe Diameter ≥ 15 inches	<0.7	2 ft/s	10 ft/s

Hydraulic Analysis Results

The results of the PDWF scenario and the model exhibit showing the manhole IDs and pipe IDs can be found in Attachment B. During the PDWF scenario, the results show the proposed pipes experience a maximum d/D of 0.35, which is less than the maximum d/D criteria. The minimum pipe velocity criteria of 2 ft/s was not met within all pipes. To increase velocities, the pipe slopes would need to be increased; however, the pipes meet minimum slopes and due to the grading limitations, the ability to increase the pipe velocities are limited. The pipe velocities do not exceed the Town's maximum velocity criteria. No further improvements are recommended. The Town will need to confirm the capacity of the downstream sewer system to ensure the additional flows do not impact the Town's existing sewer system.

SECTION 5 – Conclusion

The Quarry Road and Cordova Road Industrial Complexes encompasses approximately 161.6 acres. The proposed sewer improvements include 3,700 linear feet of 6-inch on-site sewer pipe within the Cordova Complex, 3,780 linear feet of 8-inch on-site sewer pipe within the Quarry Complex, and 4,500 linear feet of sewer pipeline of off-site piping with public right-of-way. The hydraulic analysis results show the proposed sewer system meets the Town's sewer operational criteria for d/D. Minimum velocities were not met in all pipes due to low flow and pipe slope constraints, however, the pipes meet the minimum slope criteria and no further improvements are recommended. The Town of Apple Valley shall confirm the capacity of the downstream sewer system to ensure the additional flows do not impact the Town's existing sewer system.

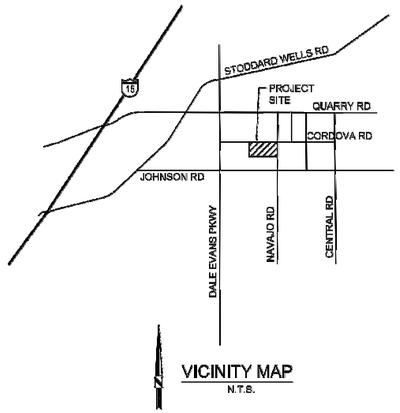
Attachments

Attachment A—Site Plans
Attachment B—12-inch Sewer Line As-built
Attachment C— Sewer Hydraulic Modeling Results

Attachment A

Site and Utility Plans

CORDOVA ROAD
INDUSTRIAL COMPLEX
TOWN OF APPLE VALLEY



VICINITY MAP
N.T.S.

OWNER/DEVELOPER:

VVLIG INDUSTRIAL
RAMSEY SHEEHAN
JOSH MALHI
9040 LESLIE STREET
RICHMOND, ON
L4B3M4

OWNER'S REPRESENTATIVE :

JESSICA HAUGHTON
PRESIDENT
SYNERGY CONSULTING CA.
(760) 330-1715
JHAUGHTON@SYNERGYCONSULTINGCA.COM

ARCHITECT:

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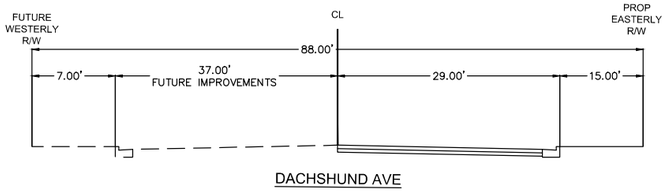
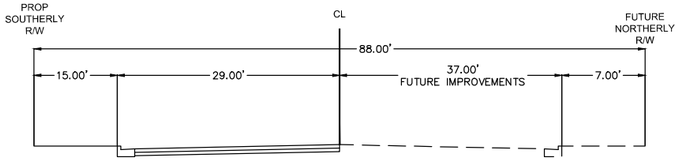
CIVIL ENGINEER:

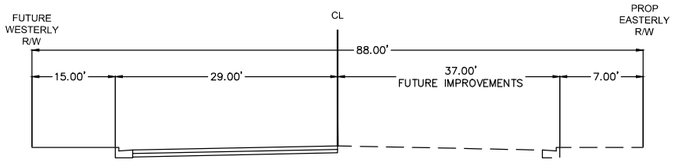
DEAN PARADISE
DAVID EVANS AND ASSOC. INC
18484 OUTER HWY 18 NORTH SUITE 225
APPLE VALLEY, CA 92307
(760) 524-9123



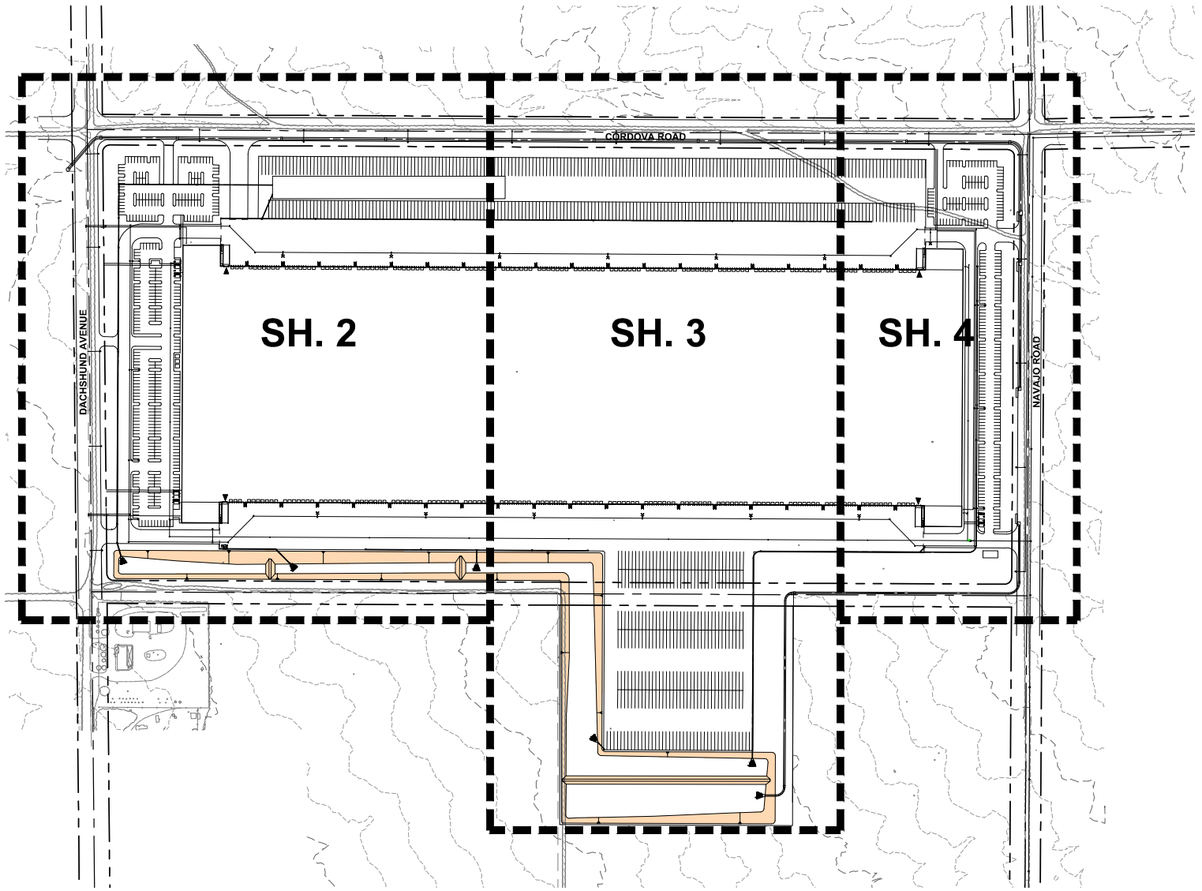
DACHSHUND AVE



CORDOVA ROAD



RAMONA ROAD



SHEET INDEX

LAND USE CALCULATION:

GROSS AREA:	85.9 AC
LANDSCAPE AREA	12.9 AC

EARTHWORK NUMBERS:

RAW CUT	311,000 C.Y.
RAW FILL	336,000 C.Y.
NET FILL	25,000 C.Y.

LEGEND:

2800.00 FS	-	PROPOSED FINISHED SURFACE
2800.00 FG	-	PROPOSED FINISHED GRADE
2800.00 TG	-	PROPOSED TOP OF GRATE
(2800.00) FG	-	EXISTING FINISHED GRADE
2800	-	PROPOSED SLOPE
(2800)	-	EXISTING SLOPE
INV	-	INVERT
EX.	-	EXISTING
PROP.	-	PROPOSED
R/W	-	RIGHT OF WAY
P/L	-	PROPERTY LINE
2800	-	PROPOSED CONTOUR
(2800)	-	EXISTING CONTOUR
	-	PROPOSED RIGHT OF WAY
	-	FUTURE RIGHT OF WAY
	-	DAYLIGHT LINE / LIMITS OF GRADING
	-	CUT/FILL LINE

TOP / TOE PROPOSED SLOPE 2:1 MAX.

PROPOSED AC PAVEMENT

PROPOSED PCC PAVEMENT

PROPOSED STORM DRAIN PIPE

PROPOSED STORM DRAIN PIPE FLOW DIRECTION

NOTE:

ALL ELEVATIONS SHOWN ON THIS PLAN HAVE BEEN LOWERED 3000'.

NOT FOR CONSTRUCTION

ENGINEER

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18484 Outer Highway 18 N Suite 225
Apple Valley California 92307
Phone: 760.524.9100
SSchubert@deainc.com

DATE: 10/27/2022

CORDOVA ROAD INDUSTRIAL COMPLEX
APN: 0436-213-05 - 09, 16, 33 - 36

SITE PLAN REVIEW
KEY MAP AND GENERAL INFO

FILE NO.

DRAWING NO.
SH. 1 OF 10

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By: Jls
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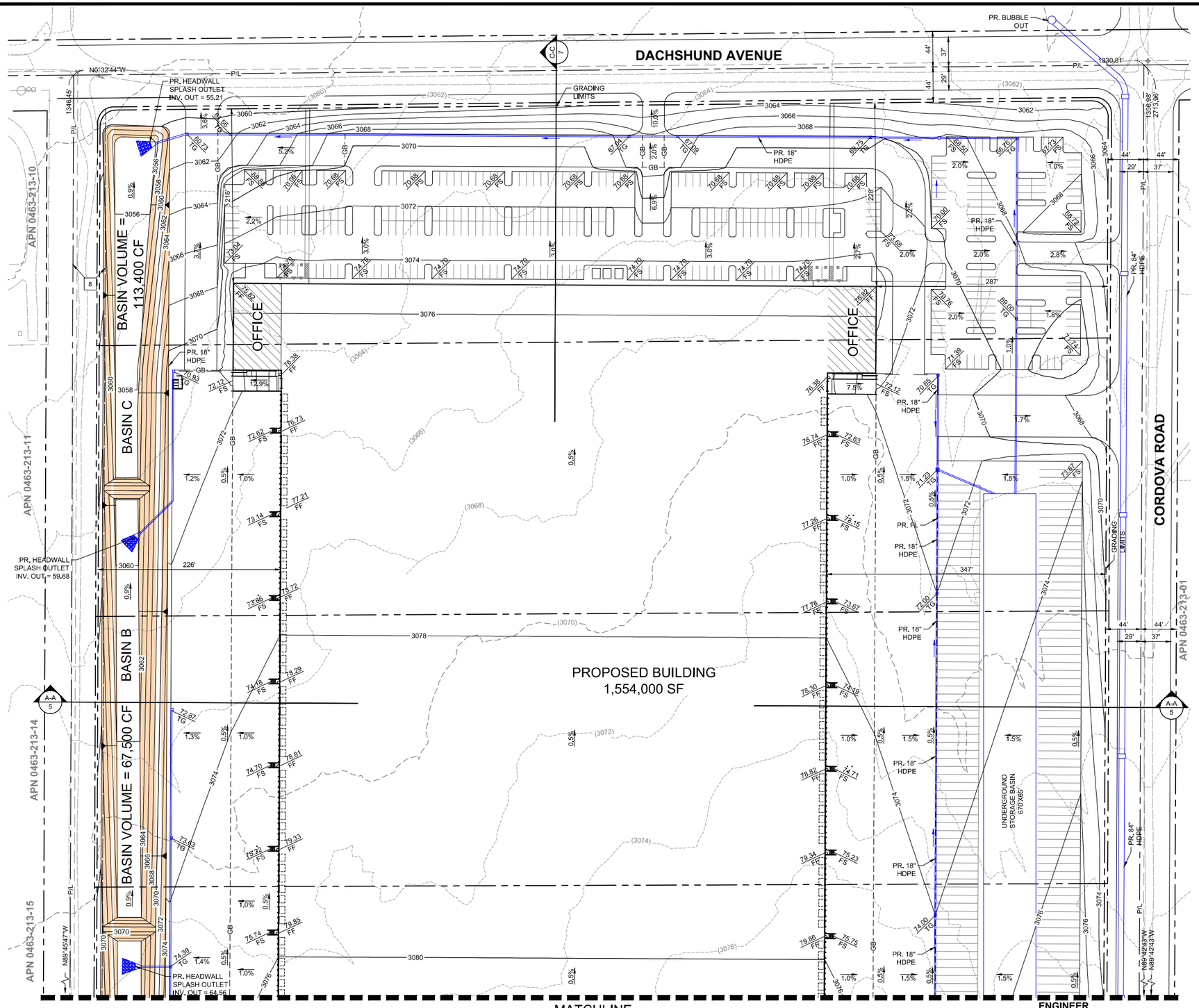

ABBREVIATIONS

BFP	BACK FLOW PREVENTER
C/L	CENTERLINE
C&G	CURB AND GUTTER
CB	CATCH BASIN
EG	EXISTING GROUND
EL.	ELEVATION
ELEC.	ELECTRIC
EX.	EXISTING
FF	FINISH FLOOR
FG	FINISH GRADE
FL	FLOW LINE
FH	FIRE HYDRANT
FS	FINISH SURFACE
FUT.	FUTURE
GB	GRADE BREAK
GUY	GUY ANCHOR
HP	HIGH POINT
INV.	INVERT
LF	LINEAR FEET
LP	LOW POINT
P/L	PROPERTY LINE
PE	PAD ELEVATION
PP	POWER POLE
PS	PIPE SLOPE
PR.	PROPOSED
R/W	RIGHT OF WAY
ST.	STREET
SWR	SEWER
TG	TOP OF GRATE
TYP	TYPICAL
WTR	WATER

EASEMENTS

8 A 40' WIDE OFFER OF DEDICATION FOR PIPELINE, UTILITIES, ACCESS AND INCIDENTAL PURPOSES, RECORDED MAY 06, 1987 AS INSTRUMENT NO. 87-150726 OF OFFICIAL RECORDS.

LEGEND

- PROPOSED SLOPE 2:1 MAX.
- PROPOSED AC PAVEMENT
- PROPOSED PCC PAVEMENT
- PROPOSED STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE FLOW DIRECTION

NOT FOR CONSTRUCTION

DATE: 10/27/2022

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APN: 0436-213-05 - 09, 16, 33 - 36

SITE PLAN REVIEW
CONCEPTUAL GRADING AND DRAINAGE

FILE NO.

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SH. 2 OF 10

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By: Jfa

MATCHLINE SEE SHEET 2

APN 0463-213-15

APN 0463-213-26

APN 0463-213-17

BASIN A1
BASIN VOLUME =
251,100 CF

BASIN A2

PROPOSED BASIN
BOTOM = 3066.50
BASIN VOLUME =
202,500 CF

PROPOSED BASIN
BOTOM = 3066.50

PROPOSED BUILDING
1,554,000 SF

PR. HEADWALL
SPLASH OUTLET
INV. OUT = 66.50

PR. 18" HDPE

PR. 54" HDPE

CORDOVA ROAD

GRADING LIMITS

N0°05'33"W 665.07'

N89°45'47"W 1346.45'

N89°47'23"W 670.59'

N0°08'04"E 664.71'

N89°45'47"W 673.23'

N89°42'43"W 678.49'

N89°42'43"W 1356.98'
2713.96'

923'

226'

347'

44'

29'

37'

3082'

3084'

258'

EASEMENTS

5 A VARIABLE WIDTH EASEMENT FOR INGRESS, EGRESS AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED JUNE 5, 1984 AS INSTRUMENT NO. 84-131161 OF OFFICIAL RECORDS.

7 A 30' WIDE OFFER OF DEDICATION FOR PIPELINE, UTILITIES, ACCESS AND INCIDENTAL PURPOSES, RECORDED MAY 06, 1987 AS INSTRUMENT NO. 87-150725 OF OFFICIAL RECORDS.

8 A 40' WIDE OFFER OF DEDICATION FOR PIPELINE, UTILITIES, ACCESS AND INCIDENTAL PURPOSES, RECORDED MAY 06, 1987 AS INSTRUMENT NO. 87-150728 OF OFFICIAL RECORDS.

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MATCHLINE
SEE SHEET 4

N

60 0 60 120
scale 1"= 60' feet

CONTOUR INTERVALS = 2'

ABBREVIATIONS

BFP	BACK FLOW PREVENTER
C/L	CENTERLINE
C&G	CURB AND GUTTER
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P/L	PROPERTY LINE
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PP	POWER POLE
PS	PIPE SLOPE
PR.	PROPOSED
R/W	RIGHT OF WAY
ST.	STREET
SWR	SEWER
TG	TOP OF GRATE
TYP	TYPICAL
WTR	WATER

LEGEND

TOE / TOE PROPOSED SLOPE 2:1 MAX.

PROPOSED AC PAVEMENT

4" / 7" PROPOSED PCC PAVEMENT

PROPOSED STORM DRAIN PIPE

PROPOSED STORM DRAIN PIPE FLOW DIRECTION

NOT FOR CONSTRUCTION

DATE: 10/27/2022

ENGINEER

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CORDOVA ROAD INDUSTRIAL COMPLEX
APN: 0436-213-05 - 09, 16, 33 - 36

SITE PLAN REVIEW
CONCEPTUAL GRADING AND DRAINAGE

FILE NO.

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SH. 3 OF 10

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ABBREVIATIONS

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CB	CATCH BASIN
EG	EXISTING GROUND
EL.	ELEVATION
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FG	FINISH GRADE
FL	FLOW LINE
FH	FIRE HYDRANT
FS	FINISH SURFACE
FUT.	FUTURE
GB	GRADE BREAK
GUY	GUY ANCHOR
HP	HIGH POINT
INV.	INVERT
LF	LINEAR FEET
LP	LOW POINT
P/L	PROPERTY LINE
PE	PAD ELEVATION
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PS	PIPE SLOPE
PR.	PROPOSED
R/W	RIGHT OF WAY
ST.	STREET
SWR	SEWER
TG	TOP OF GRADE
TYP	TYPICAL
WTR	WATER

MATCHLINE
SEE SHEET 2

PROPOSED BUILDING
1,554,000 SF

OFFICE

OFFICE

GRADING LIMITS

PR. 18" HDPE

PR. 54" HDPE

PR. 54" HDPE

PR. FL

PR. 84" HDPE

PR. 60" HDPE

PR. 72" HDPE

PR. 84" HDPE

GRADING LIMITS

APN 0463-213-17

APN 0463-214-24

APN 0463-214-22

APN 0463-213-03

CORDOVA ROAD

NAVAJO ROAD

N89°45'47"W

N0°21'41"E

N89°42'43"W

N89°42'43"W

1328.28'

EASEMENTS

5 A VARIABLE WIDTH EASEMENT FOR INGRESS, EGRESS AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED JUNE 5, 1984 AS INSTRUMENT NO. 84-131161 OF OFFICIAL RECORDS.

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LEGEND

- PROPOSED SLOPE 2:1 MAX.
- PROPOSED AC PAVEMENT
- PROPOSED PCC PAVEMENT
- PROPOSED STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE FLOW DIRECTION

NOT FOR CONSTRUCTION

N

60 0 60 120
scale 1"= 60' feet

CONTOUR INTERVALS = 2'

ENGINEER

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DATE: 10/27/2022

CORDOVA ROAD INDUSTRIAL COMPLEX
APN: 0436-213-05 - 09, 16, 33 - 36

SITE PLAN REVIEW
CONCEPTUAL GRADING
AND DRAINAGE

FILE NO.

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SH. 4 OF 10

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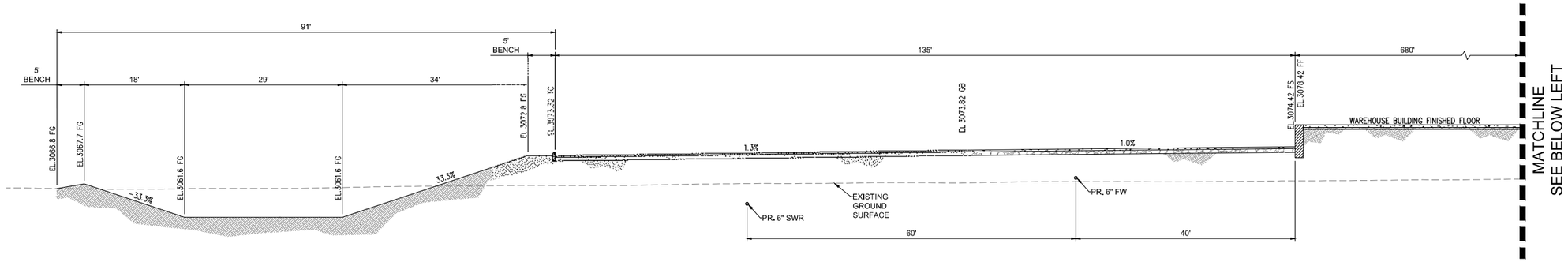

SECTION A-A

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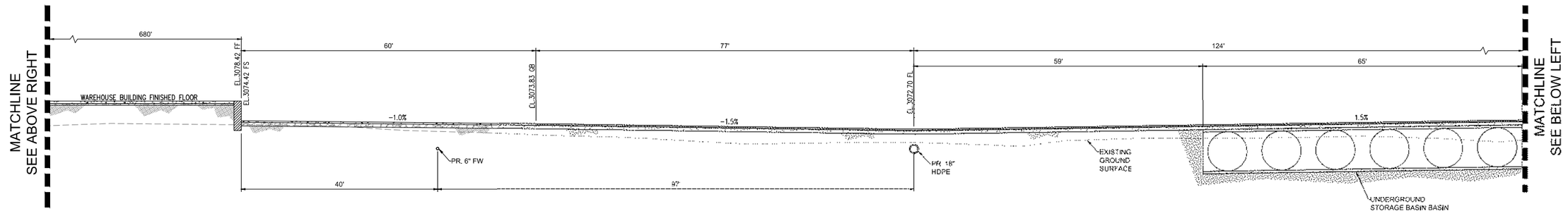
HORIZ. 1" = 10'



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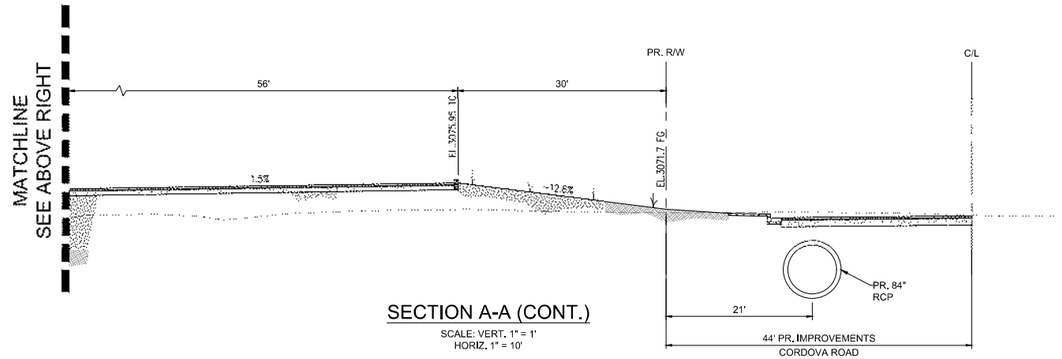

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NOT FOR CONSTRUCTION

DATE: 10/27/2022

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CORDOVA ROAD INDUSTRIAL COMPLEX
APN: 0436-213-05 - 09, 16, 33 - 36

SITE PLAN REVIEW
CONCEPTUAL GRADING
SECTIONS

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SH. 5 OF 10

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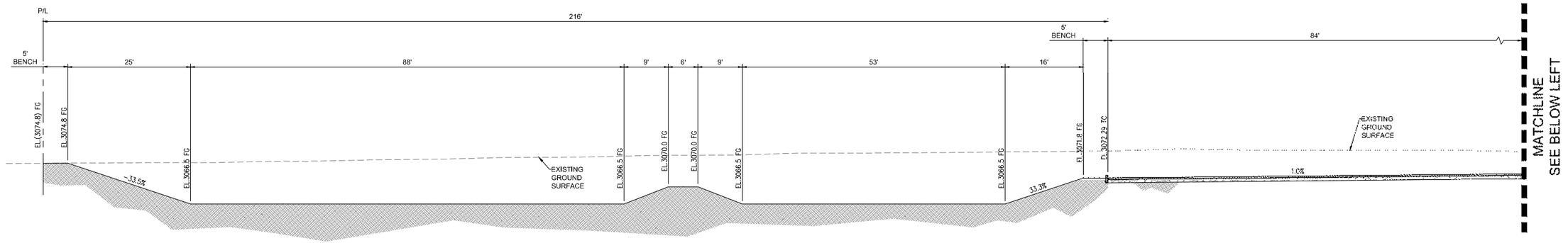

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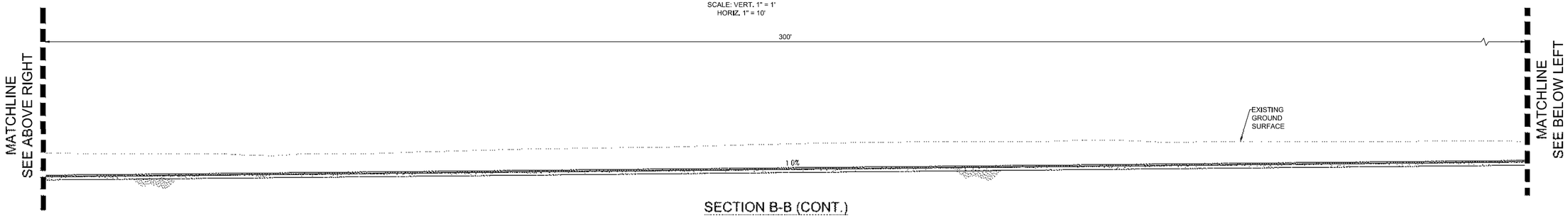
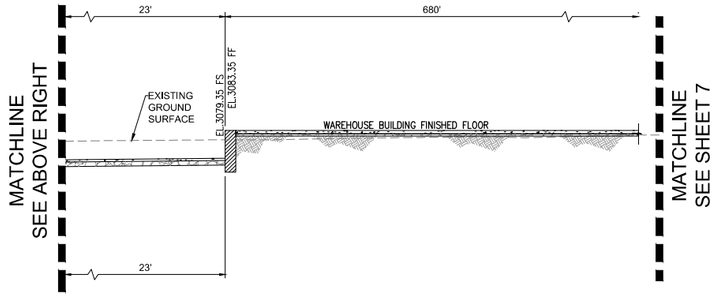


SECTION B-B (CONT.)

SCALE: VERT. 1" = 1'
HORIZ. 1" = 10'

SECTION B-B (CONT.)

SCALE: VERT. 1" = 1'
HORIZ. 1" = 10'



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ENGINEER

DAVID EVANS AND ASSOCIATES INC.
18484 Outer Highway 18 N Suite 225
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CORDOVA ROAD INDUSTRIAL COMPLEX
APN: 0436-213-05 - 09, 16, 33 - 36

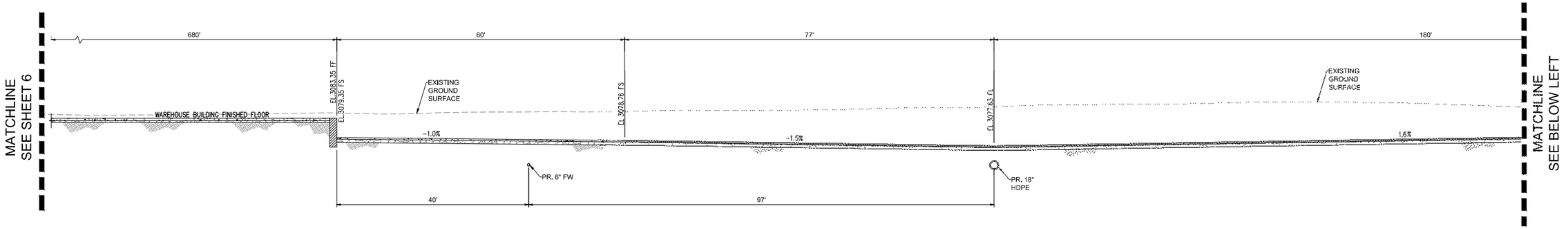
SITE PLAN REVIEW
CONCEPTUAL GRADING
SECTIONS

FILE NO.

DRAWING NO.

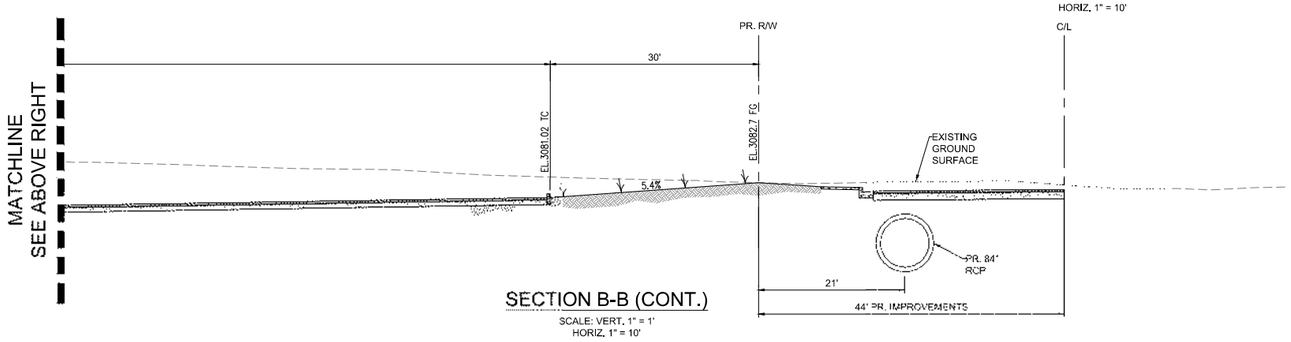
SH. 6 OF 10

Plot Date: 11/2/2022 2:13 PM By: Jose Aguilar
Save Date: 11/2/2022 1:53 PM By: Jita File: P:\VVVLM00000001\0400\CAD\SHEETS\EC\Conceptual Grading\005-Cordova-Conceptual Grading-VVLI00000001.dwg



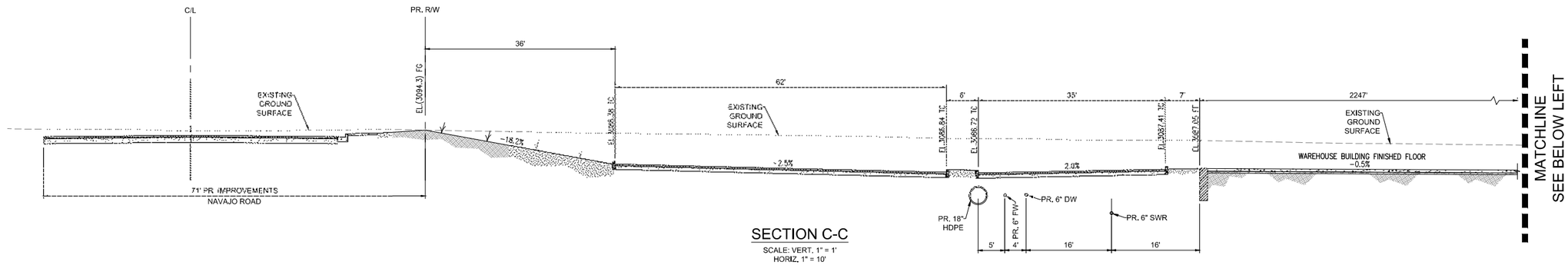
SECTION B-B (CONT.)

SCALE: VERT. 1" = 1'
HORIZ. 1" = 10'



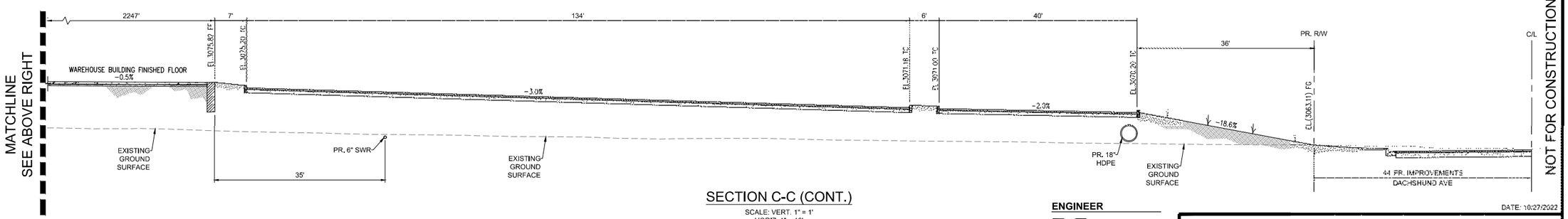
SECTION B-B (CONT.)

SCALE: VERT. 1" = 1'
HORIZ. 1" = 10'



SECTION C-C

SCALE: VERT. 1" = 1'
HORIZ. 1" = 10'



SECTION C-C (CONT.)

SCALE: VERT. 1" = 1'
HORIZ. 1" = 10'

DATE: 10/27/2022

ENGINEER

DAVID EVANS AND ASSOCIATES INC.
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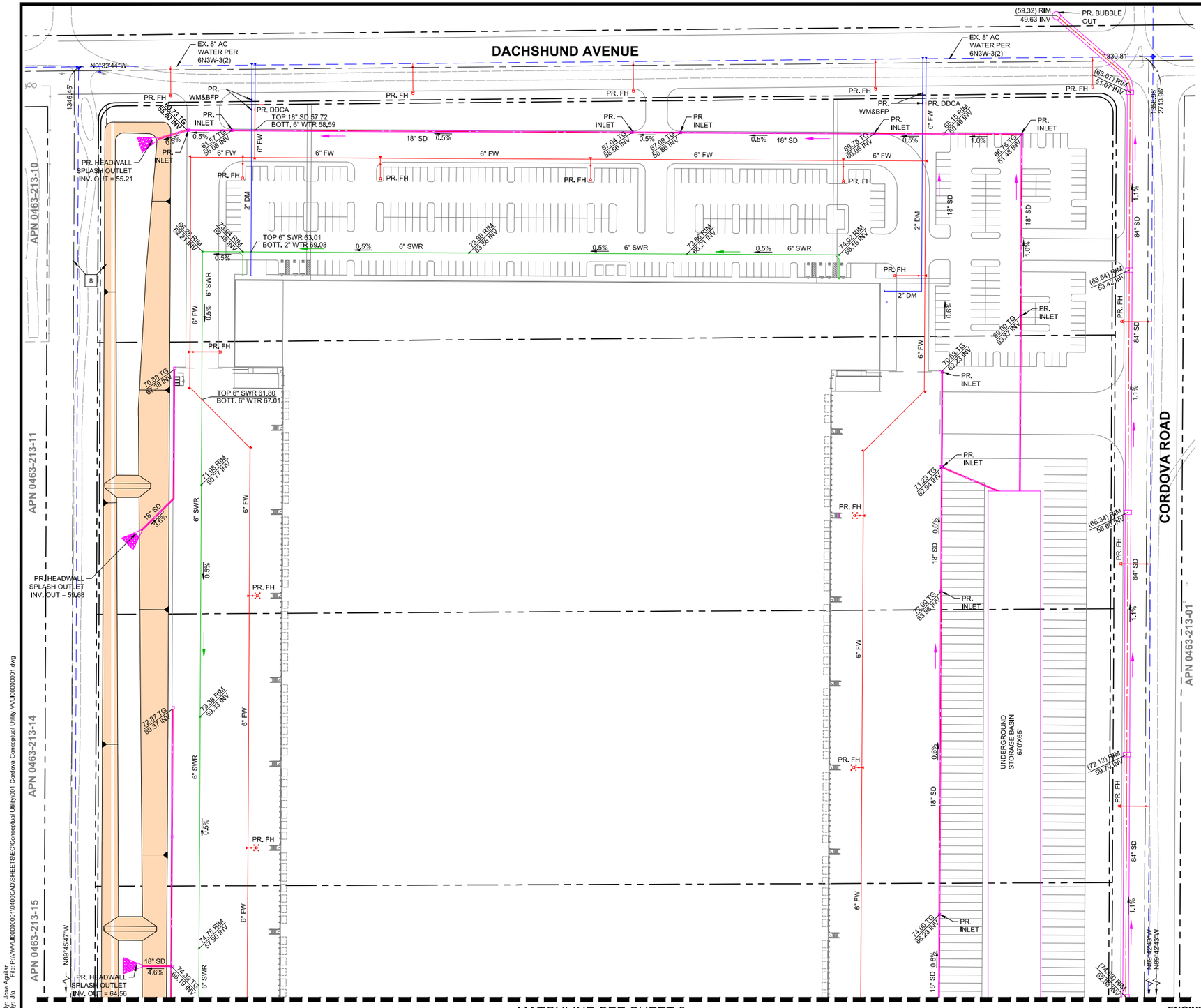
CORDOVA ROAD INDUSTRIAL COMPLEX
APN: 0436-213-05 - 09, 16, 33 - 36

SITE PLAN REVIEW
CONCEPTUAL GRADING
SECTIONS

FILE NO.

DRAWING NO.
SH. 7 OF 10

Plot Date: 11/2/2022 2:14 PM By: Jose Aguilar
Save Date: 11/2/2022 1:53 PM By: Jfa File: P:\VV\VU8000000010400\CAD\SHEETSIEC\Conceptual Grading\008-Cordova-Conceptual Grading-VVU8000000001.dwg



MATCHLINE SEE SHEET 9

N

60 0 60 120
scale 1"= 60' feet

CONTOUR INTERVALS = 2'

ABBREVIATIONS

BFP	BACK FLOW PREVENTER
C/L	CENTERLINE
C&G	CURB AND GUTTER
CB	CATCH BASIN
EG	EXISTING GROUND
EL.	ELEVATION
ELEC.	ELECTRIC
EX.	EXISTING
FF	FINISH FLOOR
FG	FINISH GRADE
FL	FLOW LINE
FH	FIRE HYDRANT
FS	FINISH SURFACE
FUT.	FUTURE
GB	GRADE BREAK
GUY	GUY ANCHOR
HP	HIGH POINT
INV.	INVERT
LF	LINEAR FEET
LP	LOW POINT
P/L	PROPERTY LINE
PE	PAD ELEVATION
PP	POWER POLE
PS	PIPE SLOPE
PR.	PROPOSED
R/W	RIGHT OF WAY
ST.	STREET
SWR	SEWER
TG	TOP OF GRATE
TYP	TYPICAL
WTR	WATER

EASEMENTS

8 A 40' WIDE OFFER OF DEDICATION FOR PIPELINE, UTILITIES, ACCESS AND INCIDENTAL PURPOSES, RECORDED MAY 06, 1987 AS INSTRUMENT NO. 87-150726 OF OFFICIAL RECORDS.

UTILITY LEGEND

- PROPOSED FIRE WATER SERVICE/MAIN
- PROPOSED DOMESTIC WATER SERVICE/MAIN
- PROPOSED SEWER SERVICE/MAIN
- PROPOSED STORM DRAIN
- PROPOSED SEWER PIPE FLOW DIRECTION
- PROPOSED STORM DRAIN PIPE FLOW DIRECTION

LEGEND

- PROPOSED SLOPE 2:1 MAX.
- PROPOSED AC PAVEMENT
- PROPOSED PCC PAVEMENT
- PROPOSED STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE FLOW DIRECTION

NOT FOR CONSTRUCTION

DATE: 10/27/2022

ENGINEER
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Apple Valley California 92307
Phone: 760.524.9100
SSchubert@deainc.com

CORDOVA ROAD INDUSTRIAL COMPLEX
APN: 0436-213-05 - 09, 16, 33 - 36

SITE PLAN REVIEW
CONCEPTUAL WET UTILITY PLAN

FILE NO.

DRAWING NO.
SH. 8 OF 10

By: Jose Aguilar
By: Jfa
File: P:\VVV\LI00000001\0400CAD\SHEETS\EC\Conceptual Utility\001-Cordova-Conceptual Utility-VVLI00000001.dwg
Plot Date: 11/2/2022 2:14 PM
Save Date: 11/2/2022 2:07 PM

MATCHLINE SEE SHEET 8

APN 0463-213-15

APN 0463-213-26

APN 0463-213-17

APN 0463-213-32

APN 0463-213-31

CORDOVA ROAD

N0°05'33"W 665.07'

670.59'

N89°45'47"W 1346.45'

N89°47'23"W

N0°08'04"E 664.74'

N89°45'47"W 673.23'

N89°42'43"W 1356.98'

N89°42'43"W 678.49'

PR. HEADWALL
SPLASH OUTLET
INV. OUT = 66.50

PR. HEADWALL
SPLASH OUTLET
INV. OUT = 66.50

PR. HEADWALL
SPLASH OUTLET
INV. OUT = 66.50

1.3% 18" SD
70.45 TG
67.20 INV

0.6% 18" SD

1.3% 54" SD

18" SD 2.0%
75.15 TG
69.31 INV

18" SD 2.0%
76.18 RIM
56.46 INV

6" SWR 0.5%
75.91 TG
70.41 INV

6" SWR 0.5%
77.57 RIM
55.03 INV

6" SWR 0.5%

18" SD 0.6%
78.30 TG
70.80 INV

78.97 RIM
53.58 INV

72.92 RIM
67.44 INV

64.45 RIM
74.98 INV

18" SD 0.6%

18" SD 0.6%
76.00 TG
68.61 INV

PR. INLET

18" SD 0.6%
78.00 TG
70.06 INV

PR. INLET

18" SD 1.1%

84" SD 1.1%

84" SD 1.1%

84" SD 1.1%

(79.11) RIM
69.21 INV

(82.33) RIM
69.36 INV

(85.44) RIM
72.55 INV

18" SD 0.6%

18" SD 0.6%

6" SWR 0.5%

6" FW

PR. FH

5

7

8

EASEMENTS

5 A VARIABLE WIDTH EASEMENT FOR INGRESS, EGRESS AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED JUNE 5, 1984 AS INSTRUMENT NO. 84-131161 OF OFFICIAL RECORDS.

7 A 30' WIDE OFFER OF DEDICATION FOR PIPELINE, UTILITIES, ACCESS AND INCIDENTAL PURPOSES, RECORDED MAY 06, 1987 AS INSTRUMENT NO. 87-150725 OF OFFICIAL RECORDS.

8 A 40' WIDE OFFER OF DEDICATION FOR PIPELINE, UTILITIES, ACCESS AND INCIDENTAL PURPOSES, RECORDED MAY 06, 1987 AS INSTRUMENT NO. 87-150726 OF OFFICIAL RECORDS.

7 A VARIABLE WIDTH EASEMENT FOR INGRESS, EGRESS AND INCIDENTAL PURPOSES, RECORDED FEBRUARY 24, 1972 AS BOOK 7866, PAGE 704 OF OFFICIAL RECORDS AND RECORDED FEBRUARY 24, 1972 AS BOOK 7866, PAGE 708 OF OFFICIAL RECORDS.

N

60 0 60 120
scale 1"= 60' feet

CONTOUR INTERVALS = 2'

MATCHLINE SEE SHEET 10

ABBREVIATIONS

BFP	BACK FLOW PREVENTER	GUY	GUY ANCHOR
C/L	CENTERLINE	HP	HIGH POINT
C&G	CURB AND GUTTER	INV	INVERT
CB	CATCH BASIN	LF	LINEAR FEET
EG	EXISTING GROUND	LP	LOW POINT
EL.	ELEVATION	P/L	PROPERTY LINE
ELEC.	ELECTRIC	PE	PAD ELEVATION
EX.	EXISTING	PP	POWER POLE
FF	FINISH FLOOR	PS	PIPE SLOPE
FG	FINISH GRADE	PR.	PROPOSED
FL	FLOW LINE	R/W	RIGHT OF WAY
FH	FIRE HYDRANT	ST.	STREET
FS	FINISH SURFACE	SWR	SEWER
FUT.	FUTURE	TG	TOP OF GRATE
GB	GRADE BREAK	TYP	TYPICAL
		WTR	WATER

UTILITY LEGEND

- PROPOSED FIRE WATER SERVICE/MAIN
- PROPOSED DOMESTIC WATER SERVICE/MAIN
- PROPOSED SEWER SERVICE/MAIN
- PROPOSED STORM DRAIN
- PROPOSED SEWER PIPE FLOW DIRECTION
- PROPOSED STORM DRAIN PIPE FLOW DIRECTION

LEGEND

- TOP / TOE PROPOSED SLOPE 2:1 MAX.
- PROPOSED AC PAVEMENT
- PROPOSED PCC PAVEMENT
- PROPOSED STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE FLOW DIRECTION

DATE: 10/27/2022

NOT FOR CONSTRUCTION

ENGINEER

DAVID EVANS AND ASSOCIATES INC.
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Apple Valley California 92307
Phone: 760.524.9100
SSchubert@deainc.com

CORDOVA ROAD INDUSTRIAL COMPLEX
APN: 0436-213-05 - 09, 16, 33 - 36

SITE PLAN REVIEW
CONCEPTUAL WET
UTILITY PLAN

FILE NO.

DRAWING NO.
SH. 9 OF 10

Plot Date: 11/2/2022 2:14 PM
Save Date: 11/2/2022 2:08 PM
By: Jose Aguilar
By: Jfa
File: P:\VV\VU\0000000\100400\CAD\SHEETS\EC\Conceptual Utility\002-Cordova-Conceptual Utility-VU0000000001.dwg

MATCHLINE SEE SHEET 9

MATCHLINE SEE BOTTOM RIGHT

MATCHLINE SEE MIDDLE RIGHT

MATCHLINE SEE TOP RIGHT

MATCHLINE SEE MIDDLE LEFT

APN 0463-213-17

APN 0463-213-03

APN 0463-214-24

APN 0463-214-22

APN 0463-214-13

NAVAJO ROAD

CORDOVA ROAD

PR. SEWER EJECTOR WELL

TOP 6" SWR 52.05
BOTT. 6" WTR 76.47

TOP 6" SWR 81.56
BOTT. 6" WTR 82.07

TOP 6" SWR 81.51
BOTT. 6" WTR 82.27

TOP 6" SWR 80.25
BOTT. 54" SD 85.27

PR. 35' CATCH BASIN

PR. INLET

PR. FH

2" DW

6" FW

6" SWR

54" SD

18" SD

72" SD

60" SD

84" SD

8" SWR

1328.28'

EX. 12" SWR PER DC NO 7033 C12

SEE QUARRY ROAD INDUSTRIAL COMPLEX CONCEPTUAL UTILITY PLAN FOR CONTINUATION

N

60 0 60 120
scale
1"= 60'
feet

CONTOUR INTERVALS = 2'

ABBREVIATIONS

BFP	BACK FLOW PREVENTER	GUY	GUY ANCHOR
C/L	CENTERLINE	HP	HIGH POINT
C&G	CURB AND GUTTER	INV	INVERT
CB	CATCH BASIN	LF	LINEAR FEET
EG	EXISTING GROUND	LP	LOW POINT
EL.	ELEVATION	P/L	PROPERTY LINE
ELEC.	ELECTRIC	PE	PAD ELEVATION
EX.	EXISTING	PP	POWER POLE
FF	FINISH FLOOR	PS	PIPE SLOPE
FG	FINISH GRADE	PR.	PROPOSED
FL	FLOW LINE	R/W	RIGHT OF WAY
FH	FIRE HYDRANT	ST.	STREET
FS	FINISH SURFACE	SWR	SEWER
FUT.	FUTURE	TG	TOP OF GRATE
GB	GRADE BREAK	TYP	TYPICAL
		WTR	WATER

EASEMENTS

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- PROPOSED DOMESTIC WATER SERVICE/MAIN
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- PROPOSED STORM DRAIN
- PROPOSED SEWER PIPE FLOW DIRECTION
- PROPOSED STORM DRAIN PIPE FLOW DIRECTION

LEGEND

- PROPOSED SLOPE 2:1 MAX.
- PROPOSED AC PAVEMENT
- PROPOSED PCC PAVEMENT
- PROPOSED STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE FLOW DIRECTION

NOT FOR CONSTRUCTION

DATE: 10/27/2022

ENGINEER

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Apple Valley California 92307
Phone: 760.524.9100
SSchubert@deainc.com

CORDOVA ROAD INDUSTRIAL COMPLEX
APN: 0436-213-05 - 09, 16, 33 - 36

SITE PLAN REVIEW
CONCEPTUAL WET UTILITY PLAN

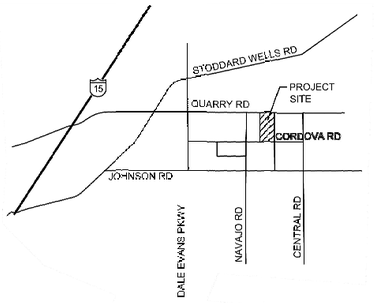
FILE NO.

DRAWING NO.

SH. 10OF 10

Plot Date: 11/2/2022 2:14 PM
Save Date: 11/2/2022 2:10 PM
By: Jose Aguilar
By: Jfa
File: P:\VVVU\00000001\10400\CAD\SHEETS\EC\Conceptual Utility\003-Cordova-Conceptual Utility-VVU00000001.dwg

QUARRY ROAD
INDUSTRIAL COMPLEX
TOWN OF APPLE VALLEY



VICINITY MAP
N.T.S.

OWNER/DEVELOPER:

VVLIG INDUSTRIAL
RAMSEY SHEEHAN
JOSH MALHI
9040 LESLIE STREET
RICHMOND, ON
L4B3M4

OWNER'S REPRESENTATIVE :

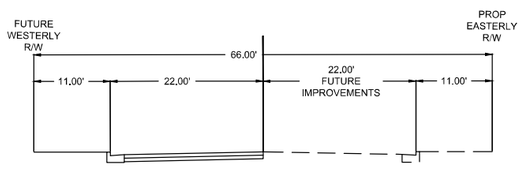
JESSICA HAUGHTON
PRESIDENT
SYNERGY CONSULTING CA.
(760) 330-1715
JHAUGHTON@SYNERGYCONSULTINGCA.COM

ARCHITECT:

STEVE HONG
LHA
4590 MACARTHUR BLVD. SUITE 500
NEWPORT BEACH, CA 92660
(714) 822-1171

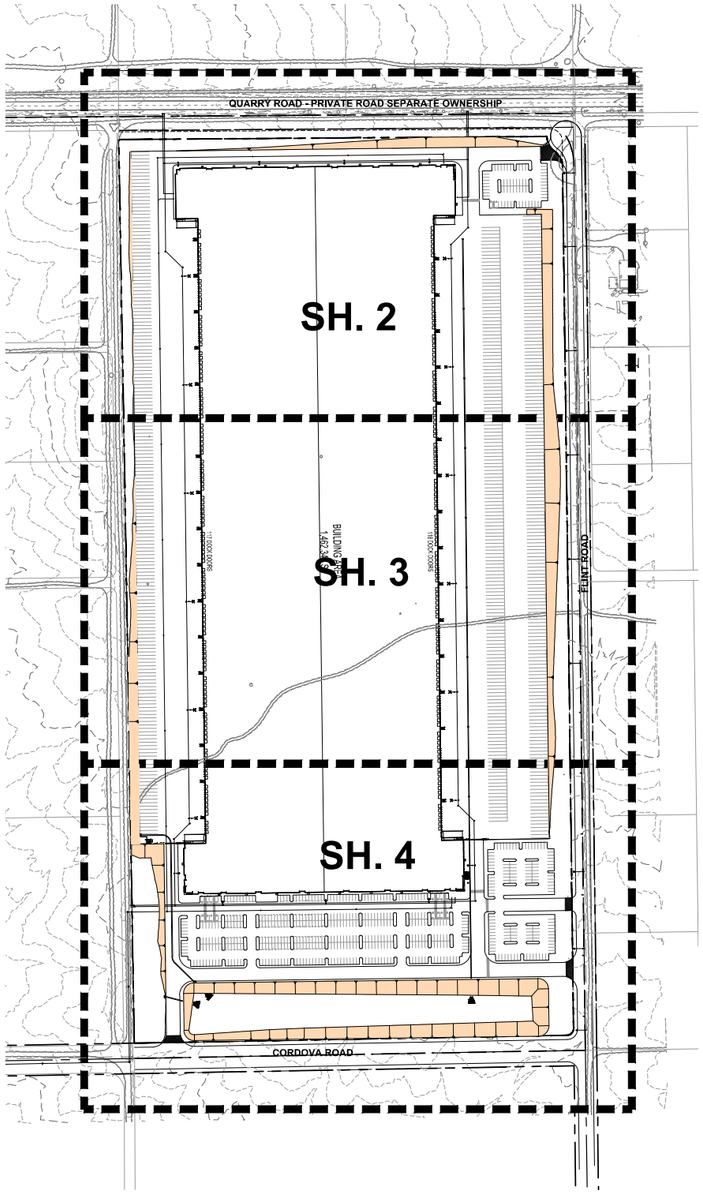
CIVIL ENGINEER:

DEAN PARADISE
DAVID EVANS AND ASSOC. INC
18484 OUTER HWY 18 NORTH SUITE 225
APPLE VALLEY, CA 92307
(760) 524-9123



FLINT ROAD

NOTE:
No construction or access to Quarry Road.



SHEET INDEX

LAND USE CALCULATION:

GROSS AREA:	11.45 AC
LANDSCAPE AREA	1.72 AC

EARTHWORK NUMBERS:

RAW CUT	423,000 C.Y.
RAW FILL	351,000 C.Y.
NET CUT	72,000 C.Y.

LEGEND:

2800.00 FS	-	PROPOSED FINISHED SURFACE
2800.00 FG	-	PROPOSED FINISHED GRADE
2800.00 TG	-	PROPOSED TOP OF GRATE
(2800.00) FG	-	EXISTING FINISHED GRADE
2800	-	PROPOSED SLOPE
(2800)	-	EXISTING SLOPE
INV	-	INVERT
EX.	-	EXISTING
PROP.	-	PROPOSED
R/W	-	RIGHT OF WAY
P/L	-	PROPERTY LINE
2800	-	PROPOSED CONTOUR
(2800)	-	EXISTING CONTOUR
	-	PROPOSED RIGHT OF WAY
	-	FUTURE RIGHT OF WAY
	-	DAYLIGHT LINE / LIMITS OF GRADING
	-	CUT/FILL LINE

TOP / TOE PROPOSED SLOPE 2:1 MAX.

PROPOSED AC PAVEMENT

PROPOSED PCC PAVEMENT

PROPOSED STORM DRAIN PIPE

PROPOSED STORM DRAIN PIPE FLOW DIRECTION

NOTE:

ALL ELEVATIONS SHOWN ON THIS PLAN HAVE BEEN LOWERED 3100'.

NOT FOR CONSTRUCTION

ENGINEER

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Phone: 760.524.9100
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REVISED SITE PLAN APRIL 21, 2023

DATE: 03/23/2023

QUARRY ROAD INDUSTRIAL COMPLEX
APN: 0436-214-06 - 09

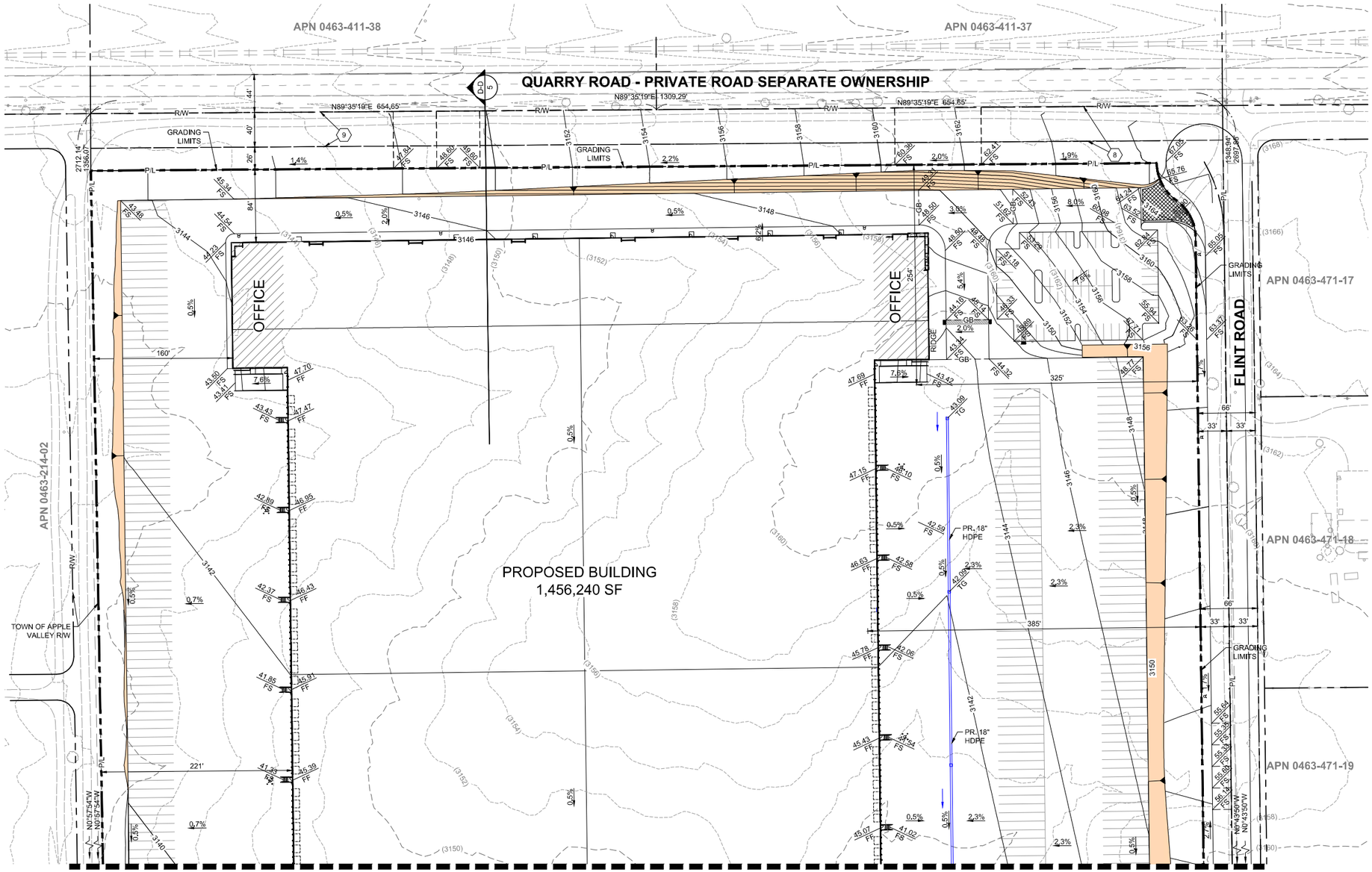
SITE PLAN REVIEW
KEY MAP AND GENERAL INFO

FILE NO.

DRAWING NO.

SH. 1 OF 9

Plot Date: 4/26/2023 2:38 PM
Save Date: 4/24/2023 7:02 PM
By: Jon Kaya
By: JKa
File: P:\VVVL\00000001\10400CAD\SHEETS\EC\Conceptual Grading\001-Quarry-Title Sheet-VVLI00000001.dwg



ABBREVIATIONS

BFP	BACK FLOW PREVENTER
C/L	CENTERLINE
C&G	CURB AND GUTTER
CB	CATCH BASIN
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EX.	EXISTING
FF	FINISH FLOOR
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FL	FLOW LINE
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FS	FINISH SURFACE
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GUY	GUY ANCHOR
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INV.	INVERT
LF	LINEAR FEET
LP	LOW POINT
P/L	PROPERTY LINE
PE	PAD ELEVATION
PP	POWER POLE
PS	PIPE SLOPE
PR.	PROPOSED
R/W	RIGHT OF WAY
ST.	STREET
SWR	SEWER
TG	TOP OF GRATE
TYP	TYPICAL
WTR	WATER

EASEMENTS

(8) A 40' WIDE EASEMENT FOR PIPE LINES, UTILITIES, ACCESS RIGHTS AND INCIDENTAL PURPOSES, RECORDED JUNE 3, 1987 AS INSTRUMENT NO. 87-187992 OF OFFICIAL RECORDS.

(9) A 40' WIDE EASEMENT FOR PIPE LINES, UTILITIES, ACCESS RIGHTS AND INCIDENTAL PURPOSES, RECORDED JUNE 3, 1987 AS INSTRUMENT NO. 87-187992 OF OFFICIAL RECORDS.

LEGEND

- PROPOSED SLOPE 2:1 MAX.
- PROPOSED AC PAVEMENT
- PROPOSED PCC PAVEMENT
- PROPOSED STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE FLOW DIRECTION

N

60 0 60 120
scale 1"= 60' feet

CONTOUR INTERVALS = 2'

NOT FOR CONSTRUCTION

ENGINEER

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Apple Valley California 92307
Phone: 760,524,9100
SSchubert@deainc.com

REVISED SITE PLAN APRIL 21, 2023 DATE: 03/23/2023

QUARRY ROAD INDUSTRIAL COMPLEX
APN: 0436-214-06 - 09

SITE PLAN REVIEW
CONCEPTUAL GRADING
AND DRAINAGE

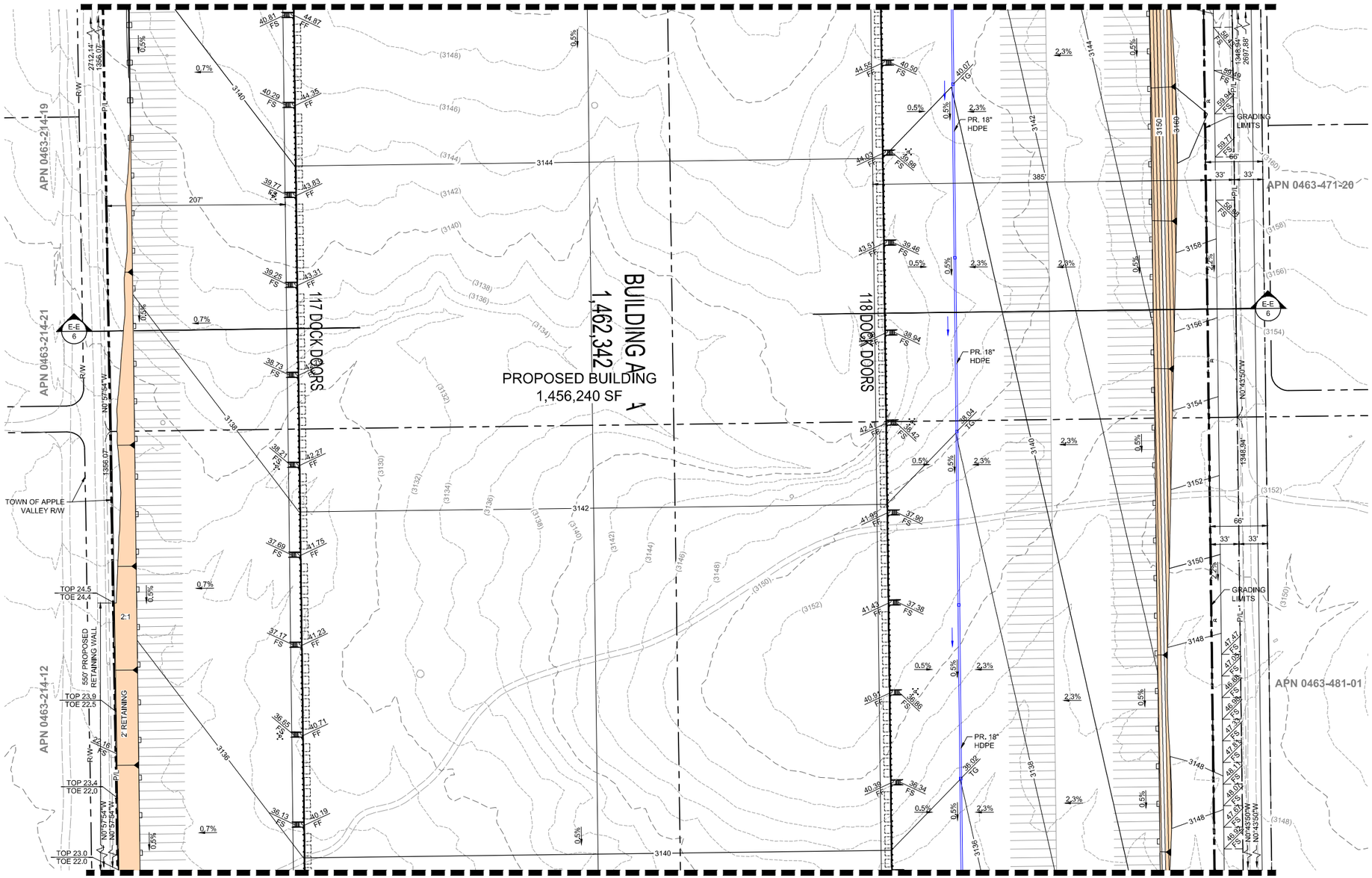
FILE NO.

DRAWING NO.

SH. 2 OF 9

Plot Date: 4/26/2023 2:38 PM
Save Date: 4/26/2023 1:49 PM
By: Jon Kaya
By: Jtka
File: P:\VVVL\00000001\04000CAD\SHEETSIEC\Conceptual Grading\001-Quarry-Conceptual Grading-VVL100000001.dwg

MATCHLINE
SEE SHEET 2



MATCHLINE
SEE SHEET 4

N

60 0 60 120
scale 1"= 60' feet

CONTOUR INTERVALS = 2'

ABBREVIATIONS

BFP	BACK FLOW PREVENTER
C/L	CENTERLINE
C&G	CURB AND GUTTER
CB	CATCH BASIN
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EL.	ELEVATION
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FG	FINISH GRADE
FL	FLOW LINE
FH	FIRE HYDRANT
FS	FINISH SURFACE
FUT.	FUTURE
GB	GRADE BREAK
GUY	GUY ANCHOR
HP	HIGH POINT
INV.	INVERT
LF	LINEAR FEET
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P/L	PROPERTY LINE
PE	PAD ELEVATION
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PS	PIPE SLOPE
PR.	PROPOSED
R/W	RIGHT OF WAY
ST.	STREET
SWR	SEWER
TG	TOP OF GRATE
TYP	TYPICAL
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LEGEND

- PROPOSED SLOPE 2:1 MAX.
- PROPOSED AC PAVEMENT
- PROPOSED PCC PAVEMENT
- PROPOSED STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE FLOW DIRECTION

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REVISED SITE PLAN APRIL 21, 2023

DATE: 03/23/2023

QUARRY ROAD INDUSTRIAL COMPLEX
APN: 0436-214-06 - 09

SITE PLAN REVIEW
CONCEPTUAL GRADING
AND DRAINAGE

FILE NO.

DRAWING NO.
SH. 3 OF 9

Plot Date: 4/26/2023 2:38 PM
Save Date: 4/26/2023 1:50 PM
By: Jon Kaya
By: Jlka
File: P:\VVVLM00000001040\CAD\SHEETS\EC\Conceptual Grading\002-Quarry-Conceptual Grading-VVLI00000001.dwg

MATCHLINE
SEE SHEET 3

PROPOSED BUILDING
1,456,240 SF

OFFICE

OFFICE

PROPOSED BASIN
BOTOM = 3115.00

BASIN VOLUME=
18,500 CY

CORDOVA ROAD

FLINT ROAD

APN 0463-214-13

APN 0463-481-03

APN 0463-481-05

APN 0463-213-11

TOWN OF APPLE VALLEY R/W

GRADING LIMITS

PR. 18" HDPE

PR. HEADWALL SPLASH OUTLET INV. OUT = 15.00

550' PROPOSED RETAINING WALL

TOP 23.0 TOE 22.0

TOP 22.6 TOE 21.9

TOP 22.1 TOE 19.4

TOP 21.6 TOE 18.7

TOP 18.8 TOE 18.8

3' RETAINING

1' RETAINING

3:1 MAX

649.10'
N88°57'47"E 1298.20'

N88°57'47"E

N0°57'54"W

N0°43'50"W

CONTOUR INTERVALS = 2'

N

60 0 60 120
scale 1"= 60' feet

ABBREVIATIONS

BFP	BACK FLOW PREVENTER
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FS	FINISH SURFACE
FUT.	FUTURE
GB	GRADE BREAK
GUY	GUY ANCHOR
HP	HIGH POINT
INV.	INVERT
LF	LINEAR FEET
LP	LOW POINT
P/L	PROPERTY LINE
PE	PAD ELEVATION
PP	POWER POLE
PS	PIPE SLOPE
PR.	PROPOSED
R/W	RIGHT OF WAY
ST.	STREET
SWR	SEWER
TG	TOP OF GRATE
TYP	TYPICAL
WTR	WATER

LEGEND

- PROPOSED SLOPE 2:1 MAX.
- PROPOSED AC PAVEMENT
- PROPOSED PCC PAVEMENT
- PROPOSED STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE FLOW DIRECTION

NOT FOR CONSTRUCTION

ENGINEER

DAVID EVANS AND ASSOCIATES INC.

18484 Outer Highway 18 N Suite 225
Apple Valley California 92307
Phone: 760.524.9100
SSchubert@deainc.com

REVISED SITE PLAN APRIL 21, 2023

DATE: 03/23/2023

QUARRY ROAD INDUSTRIAL COMPLEX
APN: 0436-214-06 - 09

SITE PLAN REVIEW
CONCEPTUAL GRADING
AND DRAINAGE

FILE NO.

DRAWING NO.
SH. 4 OF 9

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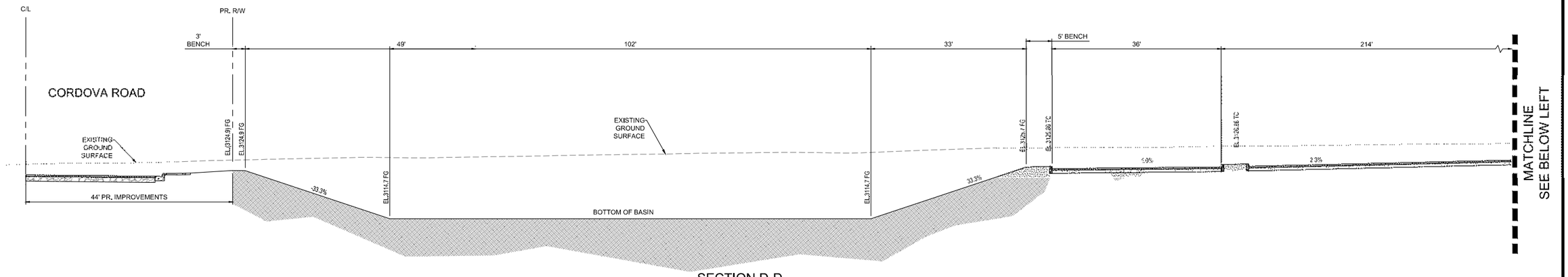
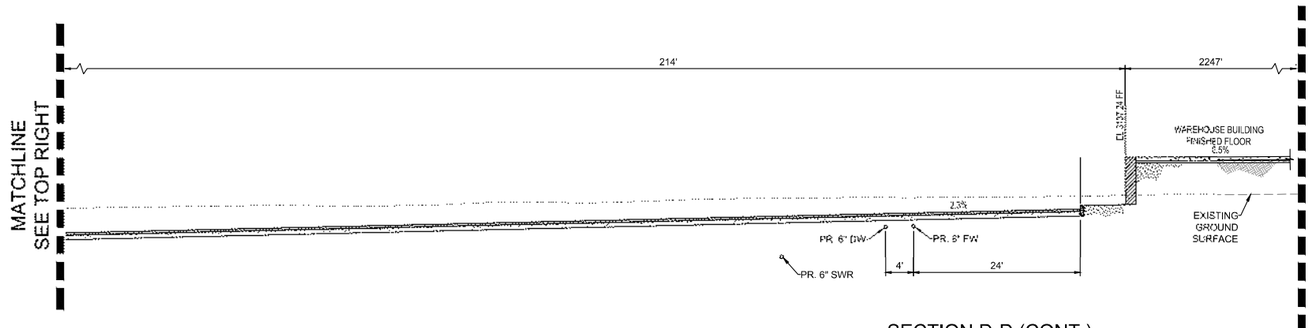


SECTION D-D

SCALE: VERT. 1" = 1'
HORIZ. 1" = 10'



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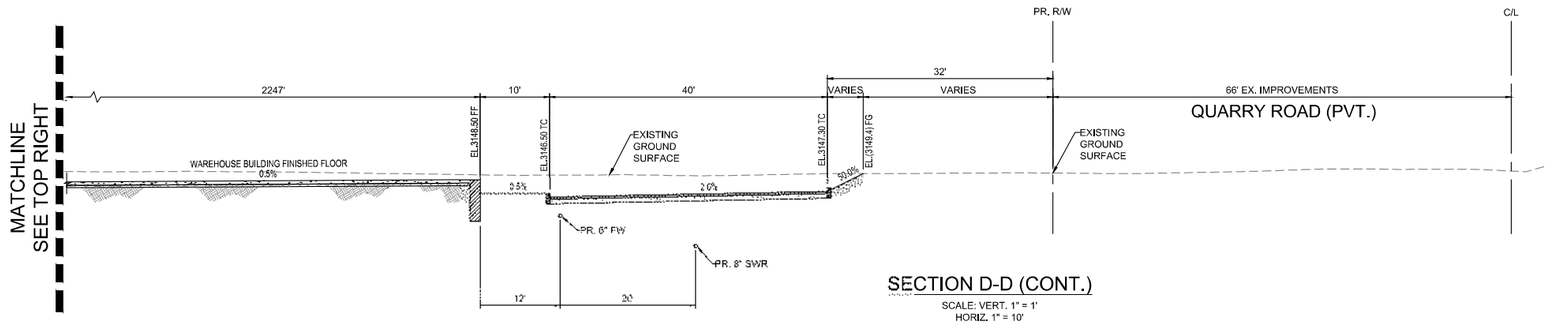
HORIZ. 1" = 10'



SECTION D-D (CONT.)

SCALE: VERT. 1" = 1'
HORIZ. 1" = 10'

NOT FOR CONSTRUCTION

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DATE: 03/23/2023

QUARRY ROAD INDUSTRIAL COMPLEX
APN: 0436-214-06 - 09

SITE PLAN REVIEW
CONCEPTUAL GRADING
SECTIONS

FILE NO.

DRAWING NO.

SH. 5 OF 9

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SECTION E-E

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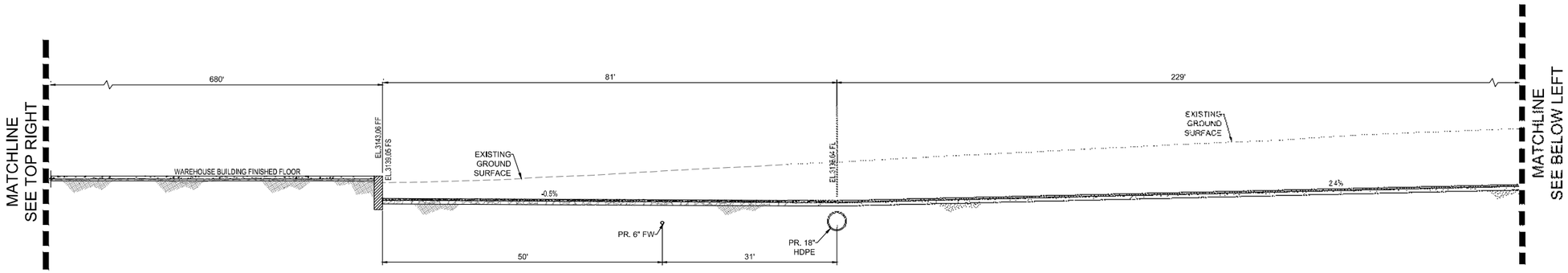
HORIZ. 1" = 10'



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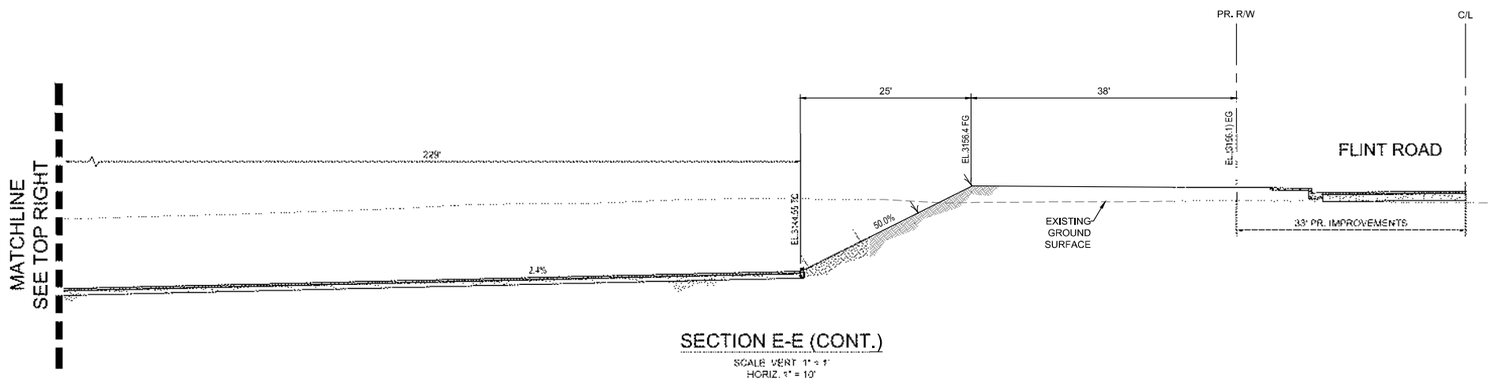

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SCALE: VERT. 1" = 1'
HORIZ. 1" = 10'

NOT FOR CONSTRUCTION

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By: Jlka
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ENGINEER

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Phone: 760.524.9100
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REVISED SITE PLAN APRIL 21, 2023

DATE: 03/23/2023

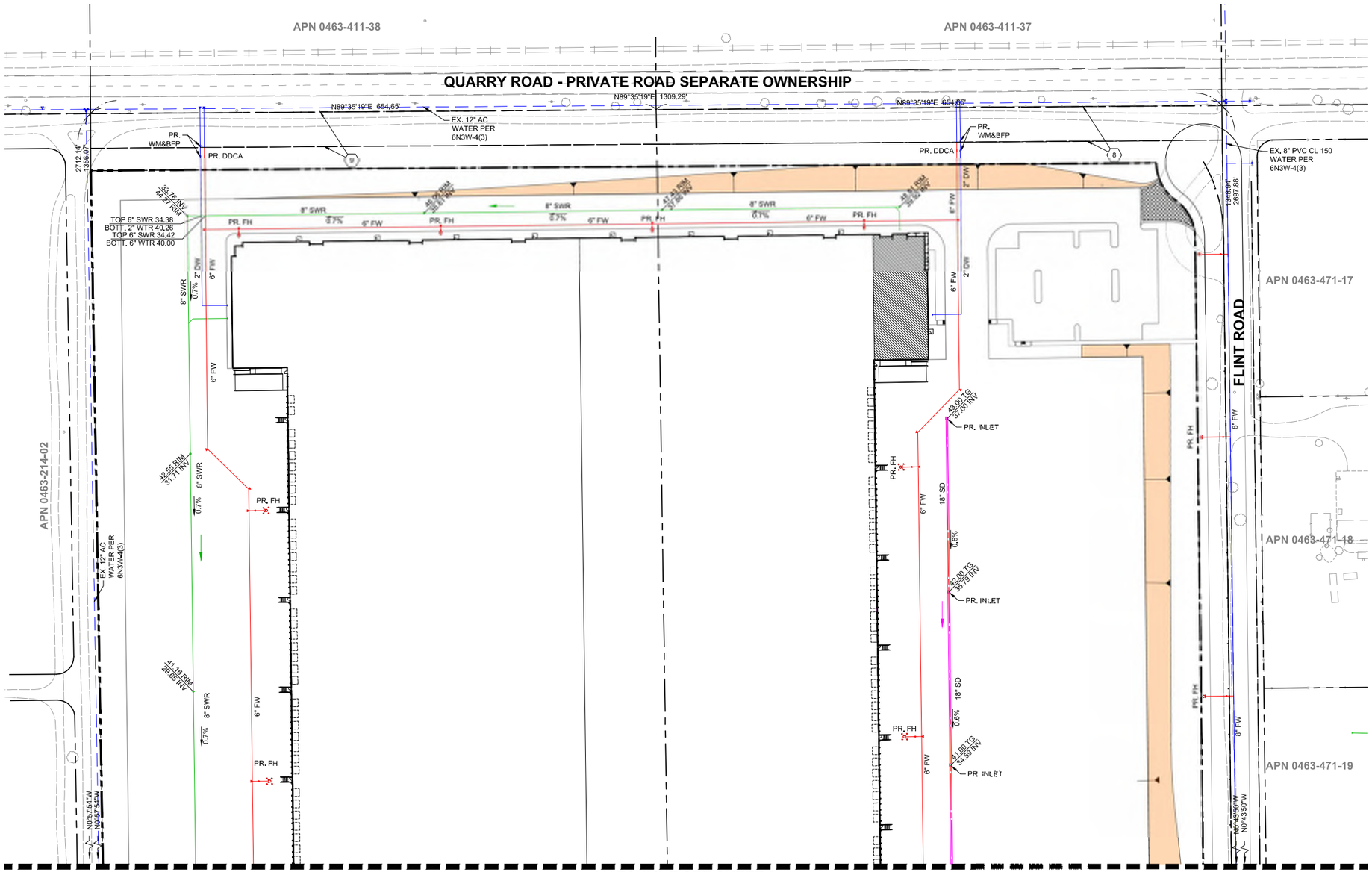
QUARRY ROAD INDUSTRIAL COMPLEX
APN: 0436-214-06 - 09

SITE PLAN REVIEW
CONCEPTUAL GRADING
SECTIONS

FILE NO.

DRAWING NO.

SH. 6 OF 9



ABBREVIATIONS

BFP	BACK FLOW PREVENTER
C/L	CENTERLINE
C&G	CURB AND GUTTER
CB	CATCH BASIN
EG	EXISTING GROUND
EL.	ELEVATION
ELEC.	ELECTRIC
EX.	EXISTING
FF	FINISH FLOOR
FG	FINISH GRADE
FL	FLOW LINE
FH	FIRE HYDRANT
FS	FINISH SURFACE
FUT.	FUTURE
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PS	PIPE SLOPE
PR.	PROPOSED
R/W	RIGHT OF WAY
ST.	STREET
SWR	SEWER
TG	TOP OF GRATE
TYP	TYPICAL
WTR	WATER

EASEMENTS

(8) A 40' WIDE EASEMENT FOR PIPE LINES, UTILITIES, ACCESS RIGHTS AND INCIDENTAL PURPOSES, RECORDED JUNE 3, 1987 AS INSTRUMENT NO. 87-187992 OF OFFICIAL RECORDS.

(9) A 40' WIDE EASEMENT FOR PIPE LINES, UTILITIES, ACCESS RIGHTS AND INCIDENTAL PURPOSES, RECORDED JUNE 3, 1987 AS INSTRUMENT NO. 87-187992 OF OFFICIAL RECORDS.

UTILITY LEGEND

- PROPOSED FIRE WATER SERVICE/MAIN
- PROPOSED DOMESTIC WATER SERVICE/MAIN
- PROPOSED SEWER SERVICE/MAIN
- PROPOSED STORM DRAIN
- PROPOSED SEWER PIPE FLOW DIRECTION
- PROPOSED STORM DRAIN PIPE FLOW DIRECTION
- EXISTING DOMESTIC WATER SERVICE/MAIN
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER SERVICE/MAIN
- PROPOSED FIRE HYDRANT

LEGEND

- PROPOSED SLOPE 2:1 MAX.
- PROPOSED AC PAVEMENT
- PROPOSED PCC PAVEMENT

NOT FOR CONSTRUCTION

N

60 0 60 120
scale 1"= 60' feet

CONTOUR INTERVALS = 2'

ENGINEER

DAVID EVANS AND ASSOCIATES INC.

18484 Outer Highway 18 N Suite 225
Apple Valley California 92307
Phone: 760,524,9100
SSchubert@deainc.com

DATE: 03/23/2023

QUARRY ROAD INDUSTRIAL COMPLEX
APN: 0436-214-06 - 09

SITE PLAN REVIEW
CONCEPTUAL WET
UTILITY PLAN

FILE NO.

DRAWING NO.
SH. 7 OF 9

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By: Jka
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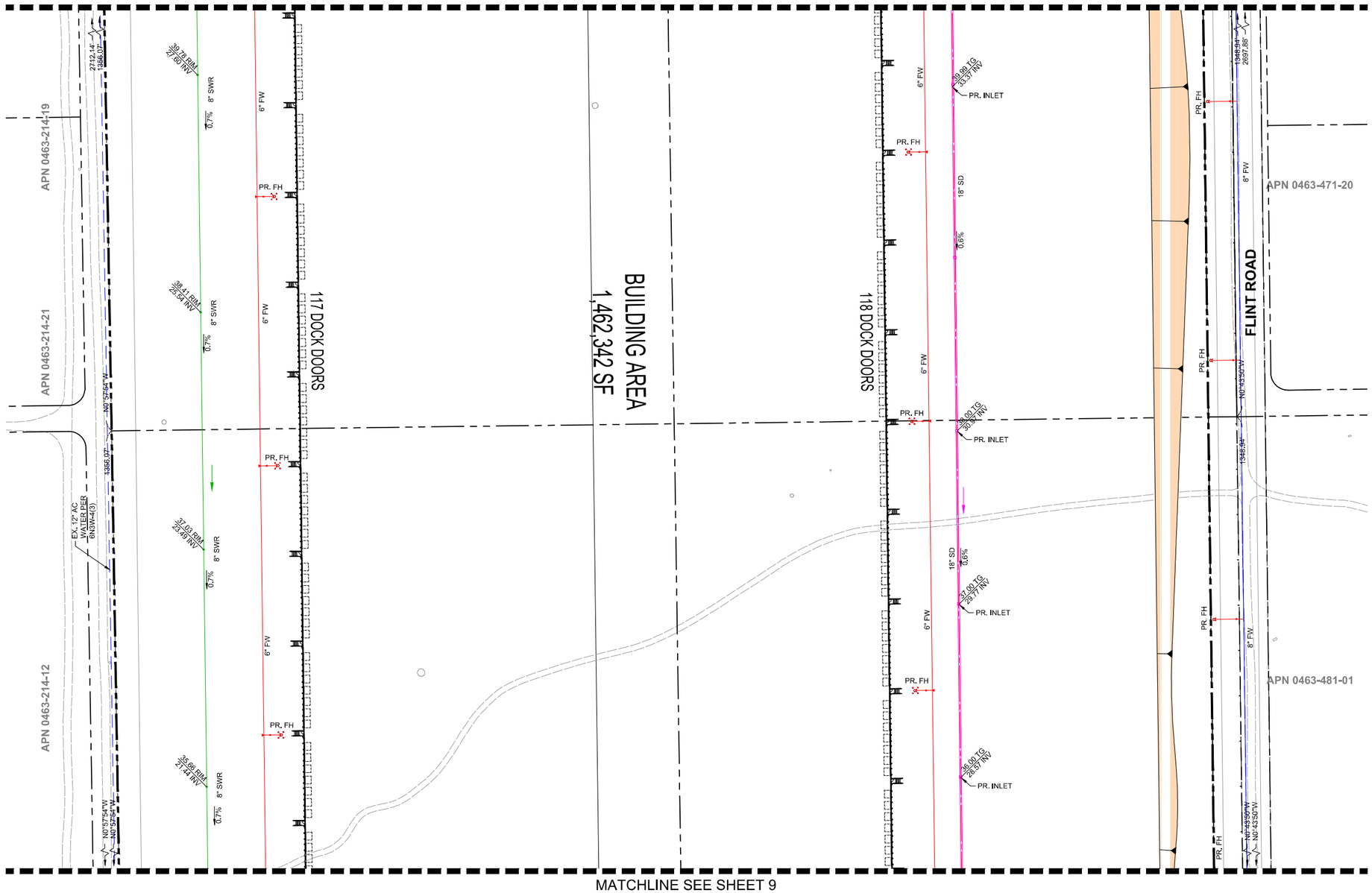

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FUT.	FUTURE
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LF	LINEAR FEET
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R/W	RIGHT OF WAY
ST.	STREET
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- PROPOSED SEWER PIPE FLOW DIRECTION
- PROPOSED STORM DRAIN PIPE FLOW DIRECTION
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- PROPOSED SEWER MANHOLE
- PROPOSED SEWER SERVICE/MAIN
- PROPOSED FIRE HYDRANT

LEGEND

- PROPOSED SLOPE 2:1 MAX.
- PROPOSED AC PAVEMENT
- PROPOSED PCC PAVEMENT

NOT FOR CONSTRUCTION

N

60 0 60 120
scale 1"= 60' feet

CONTOUR INTERVALS = 2'

ENGINEER

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Apple Valley California 92307
Phone: 760,524,9100
SSchubert@deainc.com

REVISED SITE PLAN APRIL 21, 2023

DATE: 03/23/2023

QUARRY ROAD INDUSTRIAL COMPLEX
APN: 0436-214-06 - 09

SITE PLAN REVIEW
CONCEPTUAL WET UTILITY PLAN

FILE NO.

DRAWING NO.

SH. 8 OF 9

Plot Date: 4/24/2023 1:19 PM
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By: Jtka
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MATCHLINE SEE SHEET 8

ABBREVIATIONS

BFP	BACK FLOW PREVENTER
C/L	CENTERLINE
C&G	CURB AND GUTTER
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WTR	WATER

APN 0463-214-13

APN 0463-481-03

APN 0463-481-05

APN 0463-213-11

CORDOVA ROAD

FLINT ROAD

PR. WM&BFP

PR. DDCA

EX. 12" AC WATER PER 6N3W-4(3)

TOP 6" SWR 19.67
BOTT. 18" SD 26.30

33.68 TG
27.68 INV

TOP 6" SWR 18.18
BOTT. 6" WTR 25.07

TOP 6" SWR 18.15
BOTT. 2" WTR 25.29

TOP 24" SD 23.91
BOTT. 2" WTR 25.50

TOP 18" SD 23.83
BOTT. 2" WTR 25.40

TOP 6" SWR 18.20
BOTT. 18" SD 22.05

TOP 24" SD 28.53
BOTT. 2" WTR 30.55

TOP 24" SD 27.06
BOTT. 2" WTR 28.13

PR. INLET

PR. FH

PR. CB

23.70 TG
17.41 INV

22.43 TG
16.43 INV

PR. HEADWALL
SPLASH OUTLET
INV. OUT = 15.00

SEE CORDOVA ROAD INDUSTRIAL COMPLEX CONCEPTUAL UTILITY PLAN FOR CONTINUATION

649.10'
N88°57'47"E
1298.20'

N0°43'50"W

N0°57'54"W

UTILITY LEGEND

- PROPOSED FIRE WATER SERVICE/MAIN
- PROPOSED DOMESTIC WATER SERVICE/MAIN
- PROPOSED SEWER SERVICE/MAIN
- PROPOSED STORM DRAIN
- PROPOSED SEWER PIPE FLOW DIRECTION
- PROPOSED STORM DRAIN PIPE FLOW DIRECTION
- EXISTING DOMESTIC WATER SERVICE/MAIN
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER SERVICE/MAIN
- PROPOSED FIRE HYDRANT

LEGEND

- PROPOSED SLOPE 2:1 MAX.
- PROPOSED AC PAVEMENT
- PROPOSED PCC PAVEMENT

NOT FOR CONSTRUCTION

N

60 0 60 120
scale
1"= 60'
feet

CONTOUR INTERVALS = 2'

By: Jon Kaya
By: JKa
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ENGINEER

DAVID EVANS AND ASSOCIATES INC.

18484 Outer Highway 18 N Suite 225
Apple Valley California 92307
Phone: 760.524.9100
SSchubert@deainc.com

REVISED SITE PLAN APRIL 21, 2023

DATE: 03/23/2023

QUARRY ROAD INDUSTRIAL COMPLEX
APN: 0436-214-06 - 09

SITE PLAN REVIEW
CONCEPTUAL WET
UTILITY PLAN

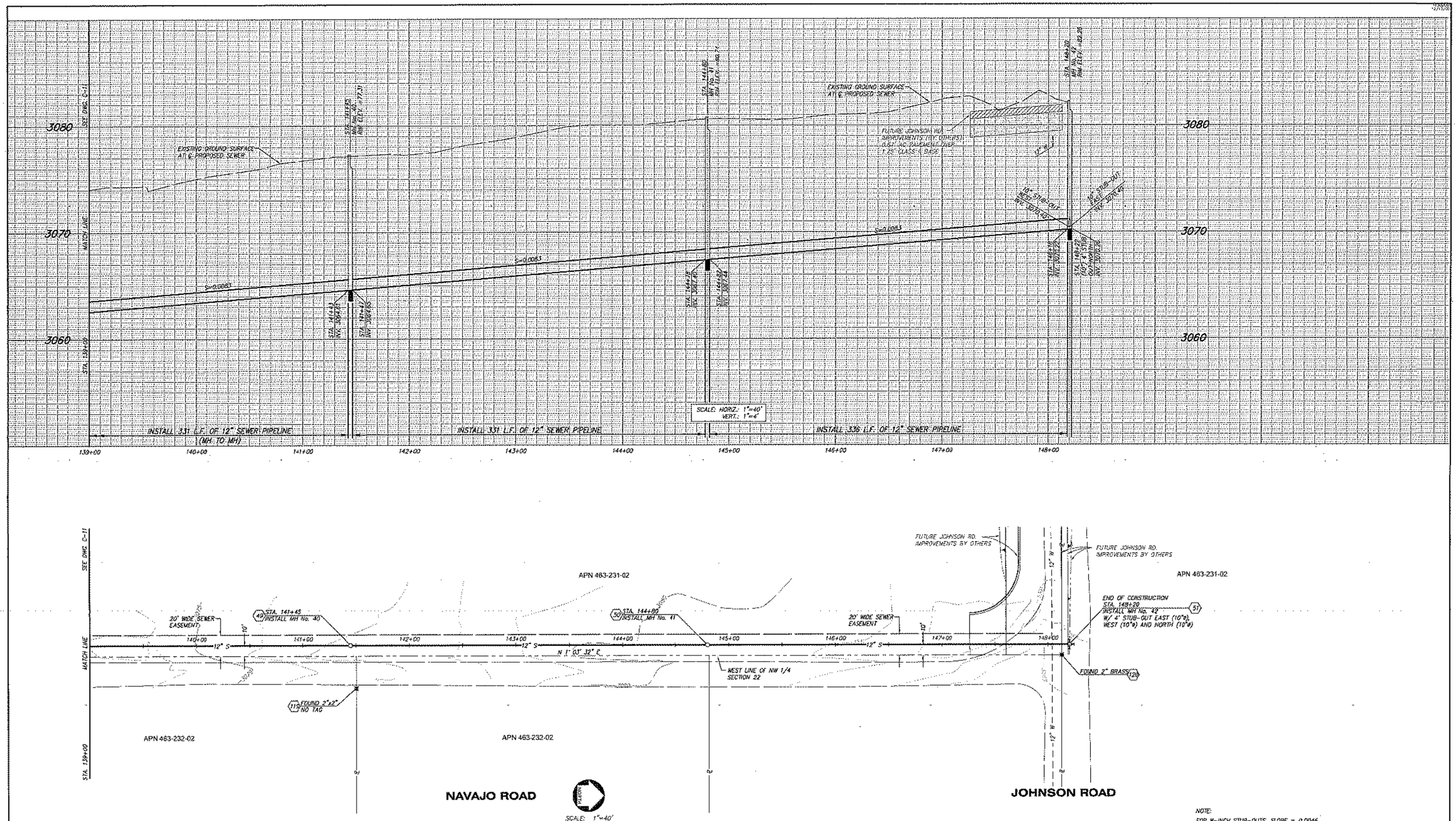
FILE NO.

DRAWING NO.

SH. 9 OF 9

Attachment B

Existing 12-inch Sewer Line Recording Drawings



NOTE:
FOR 8-INCH STUB-OUTS, SLOPE = 0.0046
FOR 10-INCH STUB-OUTS, SLOPE = 0.0030

REGISTERED PROFESSIONAL ENGINEER
Wilson F. So
No. C 21, 651
Civil
Exp 9/30/2005
STATE OF CALIFORNIA

REV.	REVISION DESCRIPTION	BY	DATE
	"AS-BUILT" CONDITIONS SHOWN	K.E.S.	10/22/04

DESIGNED BY: J.J.
DRAWN BY: G.R.C./R.E.S.
CHECKED BY: WFS

PROJECT MANAGER _____ DATE
SUBMITTED BY _____ 12-17-2002
WILSON F. SO R.C.E. No. C21651 DATE

SCALE: AS SHOWN
PROJECT NO. 113.0400

PREPARED BY:
So & Associates Engineers Inc.
16209 KAMANA ROAD • P.O. BOX 1712
APPLE VALLEY, CALIFORNIA 92307
(760) 242-2335 • FAX (760) 242-3053

ACCEPTED BY
TOWN ENGINEER - DENNIS CRON, PUBLIC WORKS DEPARTMENT 12/26/02 DATE
RUSTY R. REED R.C.E. No. 37081 12.19.02 DATE

TOWN OF APPLE VALLEY PROJECT No. -

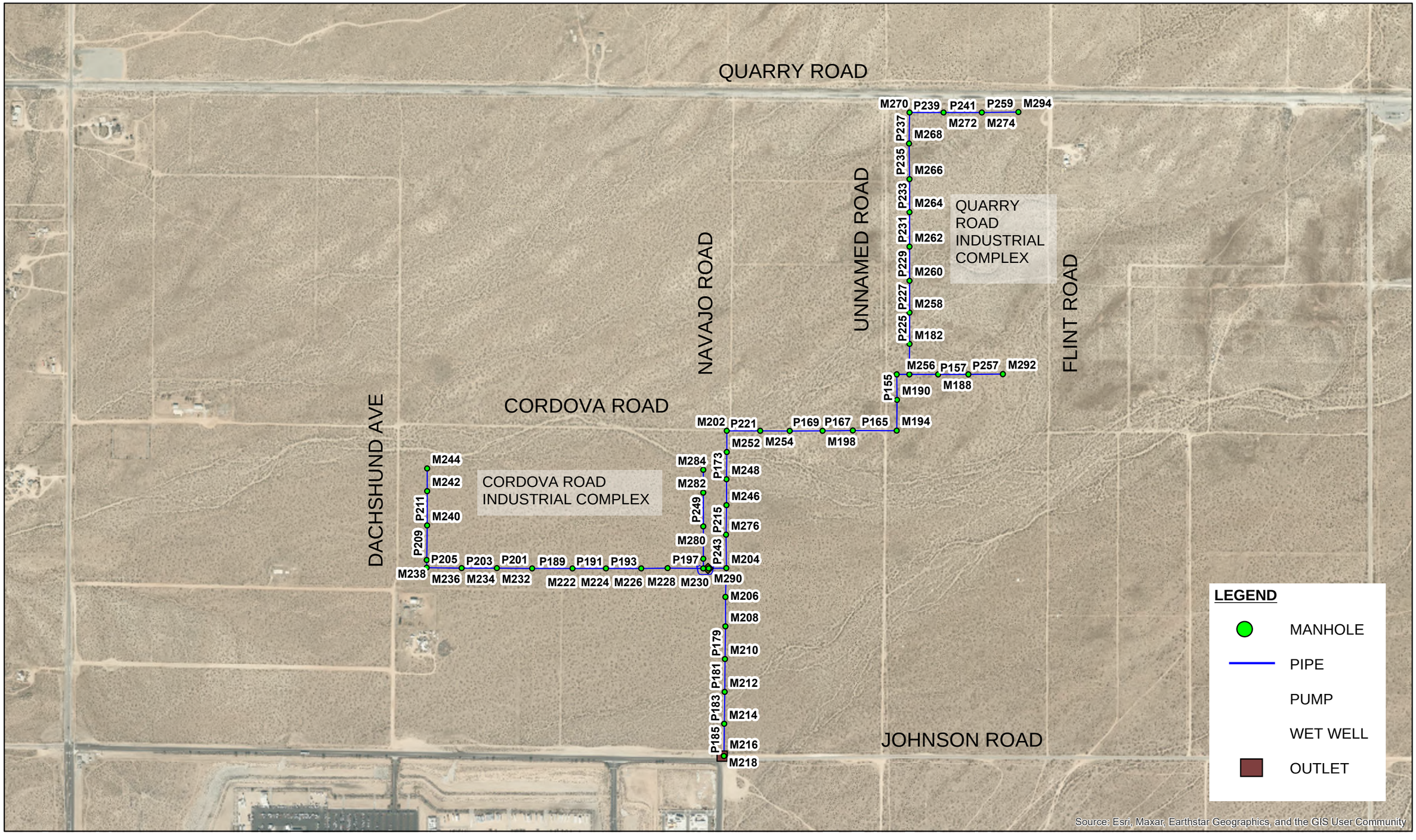
TOWN OF APPLE VALLEY

WALMART REGIONAL D.C. No. 7033
SEWER PIPELINE PROJECT
NAVAJO ROAD – STA. 139+00 TO STA. 148+20

DRAWING NO. C-12
SHEET 13 OF 14

Attachment C

Sewer Hydraulic Modeling Results



N.T.S.

*The Cordova Complex on-site piping is 6-inches, all other proposed piping is 8-inches.

Sewer Hydraulic Analysis Map

CORDOVA ROAD

CORDOVA ROAD INDUSTRIAL COMPLEX

DACHSHUND AVE

NAVAJO ROAD

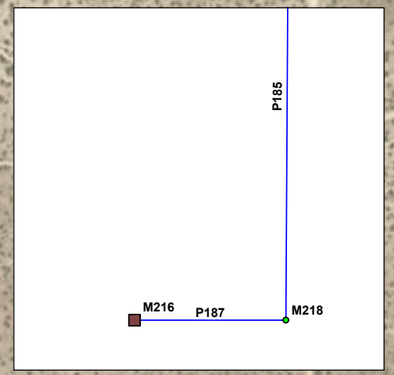
JOHNSON ROAD

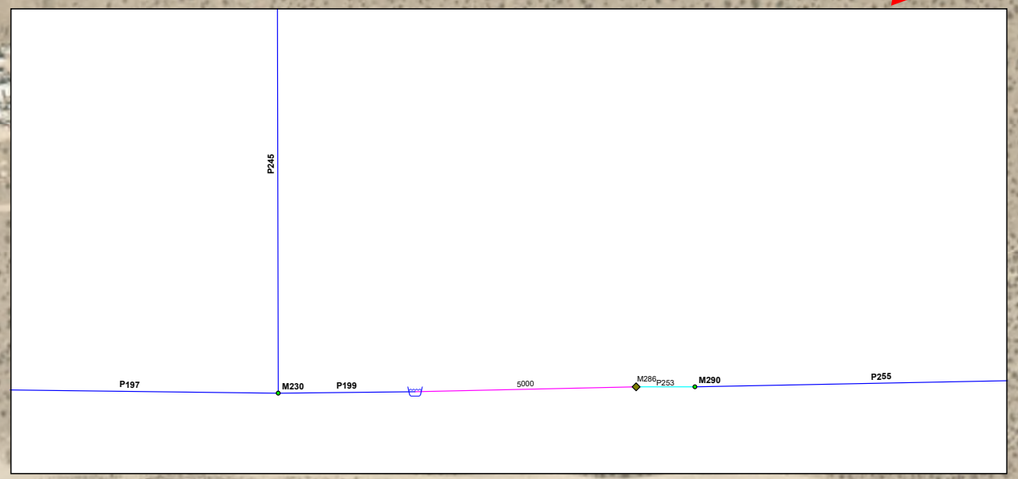
M244 P213 M242 P211 M240 P209 M238 P207 M236

M234 P205 M232 P203 M230 P201 M220 P189 M222 P191 M224 P193 M226 P195 M228 P197

M202 P221 M254 P171 M200 P169 M198 P167 M196 P165 P163 M194

P219 M252 P173 M284 P251 M282 P217 M248 P249 M280 P215 M246 P247 M276 P243 M255 P245 M204 P175 M206 P177 M208 P179 M210 P181 M212 P183 M214 P185 M216 M218





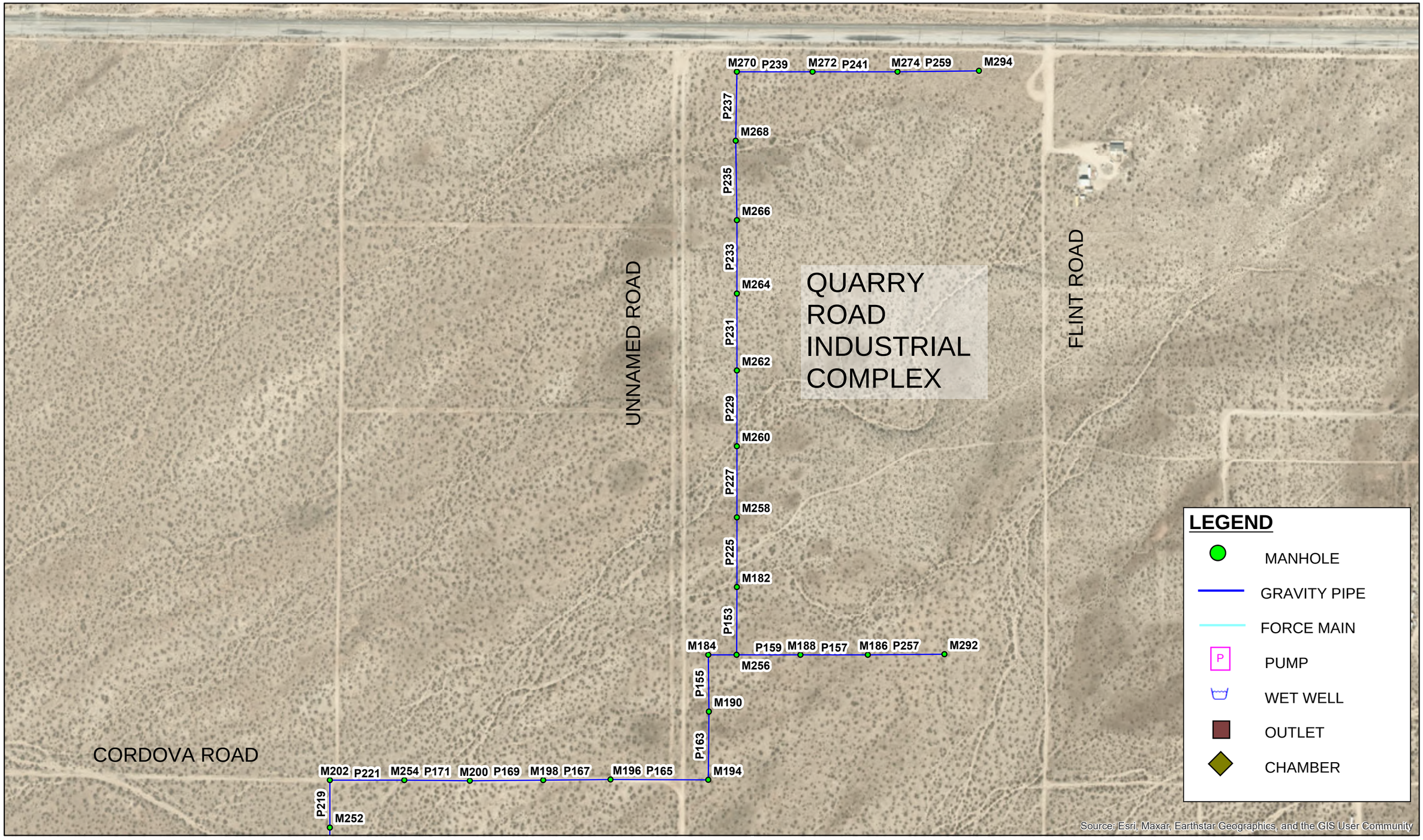
LEGEND

- MANHOLE
- GRAVITY PIPE
- FORCE MAIN
- PUMP
- WET WELL
- OUTLET
- CHAMBER

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

N.T.S.

Sewer Hydraulic Analysis Map



Sewer Hydraulic Analysis Map

N.T.S.

PDWF Hydraulic Analysis

Pipe Results																			
ID	From ID	To ID	FROM_INV (Num)	TO_INV (Num)	Diameter (in)	Length (ft)	Slope	Total Flow (gpm)	Unpeakable Flow (gpm)	Flow Type	Velocity (ft/s)	d/D	q/Q	Water Depth (ft)	Critical Depth (ft)	Froude Number	Full Flow (gpm)	Backwater Adjustment	Adjusted Depth (ft)	Adjusted Velocity (ft/s)
P153	M182	M256	119.38	117.54	8	245	0.008	38.30	38.30	Free Surface	2.0	0.18	0.07	0.118	0.133	1.25	557	No	0.12	2.04
P155	M184	M190	109.77	106.92	8	213	0.013	57.45	57.45	Free Surface	2.8	0.19	0.08	0.125	0.163	1.68	743	No	0.13	2.81
P157	M186	M188	122.82	120.99	8	272	0.007	19.15	19.15	Free Surface	1.594	0.13	0.036	0.087	0.093	1.15	527	No	0.09	1.59
P159	M188	M256	120.99	117.54	8	266	0.013	19.15	19.15	Free Surface	2.006	0.11	0.026	0.074	0.093	1.57	732	Yes	0.079	1.82
P163	M190	M194	106.92	104.04	8	215	0.013	57.45	57.45	Free Surface	2.814	0.19	0.077	0.125	0.163	1.68	744	No	0.125	2.81
P165	M194	M196	103.94	101.77	8	358.699	0.006	57.45	57.45	Free Surface	2.125	0.23	0.115	0.153	0.163	1.14	500	No	0.153	2.13
P167	M196	M198	101.77	97.95	8	246	0.016	57.45	57.45	Free Surface	2.965	0.18	0.072	0.121	0.163	1.80	801	No	0.121	2.97
P169	M198	M200	97.95	94.12	8	246	0.016	57.45	57.45	Free Surface	2.967	0.18	0.072	0.121	0.163	1.80	802	Yes	0.122	2.93
P171	M200	M254	94.12	90.56	8	246	0.014	57.45	57.45	Free Surface	2.892	0.18	0.074	0.123	0.163	1.74	773	No	0.123	2.89
P173	M252	M248	84.98	83.22	8	227	0.008	57.45	57.45	Free Surface	2.32	0.22	0.102	0.143	0.163	1.29	566	Yes	0.151	2.15
P175	M204	M206	79.41	78.47	8	152	0.006	118.73	118.73	Free Surface	2.635	0.33	0.235	0.22	0.238	1.16	505	Yes	0.22	2.63
P177	M206	M208	78.47	76.88	8	261	0.006	118.73	118.73	Free Surface	2.621	0.33	0.237	0.221	0.238	1.15	502	No	0.221	2.62
P179	M208	M210	76.88	75.28	8	261	0.006	118.73	118.73	Free Surface	2.627	0.33	0.236	0.22	0.238	1.16	503	No	0.22	2.63
P181	M210	M212	75.28	73.68	8	261	0.006	118.73	118.73	Free Surface	2.627	0.33	0.236	0.22	0.238	1.16	503	No	0.22	2.63
P183	M212	M214	73.68	72.08	8	261	0.006	118.73	118.73	Free Surface	2.627	0.33	0.236	0.22	0.238	1.16	503	No	0.22	2.63
P185	M214	M218	72.08	70.48	8	261	0.006	118.73	118.73	Free Surface	2.627	0.33	0.236	0.22	0.238	1.16	503	Yes	0.226	2.53
P187	M218	M216	70.48	70.4	8	16	0.005	118.73	118.73	Free Surface	2.441	0.35	0.261	0.233	0.238	1.04	454	No	0.233	2.44
P189	M220	M222	57.9	56.46	6	285	0.005	30.64	30.64	Free Surface	1.712	0.26	0.144	0.128	0.128	1.00	212	No	0.128	1.71
P191	M222	M224	56.46	55.03	6	274.306	0.005	30.64	30.64	Free Surface	1.732	0.26	0.142	0.127	0.128	1.02	215	Yes	0.128	1.72
P193	M224	M226	55.03	53.59	6	283	0.005	30.64	30.64	Free Surface	1.717	0.26	0.144	0.128	0.128	1.00	213	Yes	0.128	1.72
P195	M226	M228	53.59	52.16	6	283	0.005	30.64	30.64	Free Surface	1.712	0.26	0.144	0.128	0.128	1.00	212	No	0.128	1.71
P197	M228	M230	52.16	50.72	6	284	0.005	30.64	30.64	Free Surface	1.715	0.26	0.144	0.128	0.128	1.00	212	No	0.128	1.72
P199	M230	9000	50.72	49	6	14.5	0.119	61.28	61.28	Free Surface	6.404	0.17	0.06	0.083	0.184	4.71	1028	No	0.083	6.40
P201	M232	M220	59.33	57.9	6	285	0.005	30.64	30.64	Free Surface	1.708	0.26	0.145	0.129	0.128	1.00	211	No	0.129	1.71
P203	M234	M232	60.77	59.33	6	285	0.005	30.64	30.64	Free Surface	1.712	0.26	0.144	0.128	0.128	1.00	212	Yes	0.129	1.71
P205	M236	M234	62.21	60.77	6	288	0.005	30.64	30.64	Free Surface	1.706	0.26	0.145	0.129	0.128	0.99	211	No	0.129	1.71
P207	M238	M236	62.46	62.21	6	49	0.005	15.32	15.32	Free Surface	1.403	0.18	0.072	0.091	0.09	0.99	213	Yes	0.11	1.07
P209	M240	M238	63.86	62.46	6	277	0.005	15.32	15.32	Free Surface	1.399	0.18	0.072	0.091	0.09	0.98	212	No	0.091	1.40
P211	M242	M240	65.21	63.86	6	269	0.005	15.32	15.32	Free Surface	1.395	0.18	0.072	0.091	0.09	0.98	211	No	0.091	1.40
P213	M244	M242	66.16	65.21	6	186	0.005	15.32	15.32	Free Surface	1.404	0.18	0.072	0.091	0.09	0.99	213	Yes	0.091	1.40
P215	M246	M276	82.06	80.74	8	262	0.005	57.45	57.45	Free Surface	1.991	0.24	0.126	0.16	0.163	1.04	456	No	0.16	1.99
P217	M248	M246	83.22	82.06	8	227	0.005	57.45	57.45	Free Surface	2.001	0.24	0.125	0.159	0.163	1.05	459	Yes	0.159	2.00
P219	M202	M252	86.68	84.98	8	166	0.01	57.45	57.45	Free Surface	2.56	0.20	0.088	0.134	0.163	1.47	650	Yes	0.139	2.44
P221	M254	M202	90.56	86.68	8	246	0.016	57.45	57.45	Free Surface	2.981	0.18	0.071	0.12	0.163	1.82	807	Yes	0.127	2.76
P223	M256	M184	117.54	109.77	8	113	0.069	57.45	57.45	Free Surface	5	0.13	0.034	0.084	0.163	3.67	1685	Yes	0.105	3.64
P225	M258	M182	121.44	119.38	8	272	0.008	38.3	38.3	Free Surface	2.042	0.18	0.068	0.118	0.133	1.26	559	Yes	0.118	2.04
P227	M260	M258	123.49	121.44	8	272	0.008	38.3	38.3	Free Surface	2.039	0.18	0.069	0.118	0.133	1.25	558	No	0.118	2.04
P229	M262	M260	125.54	123.49	8	272	0.008	38.3	38.3	Free Surface	2.039	0.18	0.069	0.118	0.133	1.25	558	No	0.118	2.04
P231	M264	M262	127.6	125.54	8	272	0.008	38.3	38.3	Free Surface	2.042	0.18	0.068	0.118	0.133	1.26	559	Yes	0.118	2.04
P233	M266	M264	129.65	127.6	8	272	0.008	38.3	38.3	Free Surface	2.039	0.18	0.069	0.118	0.133	1.25	558	No	0.118	2.04
P235	M268	M266	131.71	129.65	8	272	0.008	38.3	38.3	Free Surface	2.042	0.18	0.068	0.118	0.133	1.26	559	Yes	0.118	2.04
P237	M270	M268	133.76	131.71	8	272	0.008	38.3	38.3	Free Surface	2.039	0.18	0.069	0.118	0.133	1.25	558	No	0.118	2.04
P239	M272	M270	135.81	133.76	8	273	0.008	19.15	19.15	Free Surface	1.657	0.13	0.034	0.085	0.093	1.21	557	Yes	0.101	1.27
P241	M274	M272	137.86	135.81	8	273	0.008	19.15	19.15	Free Surface	1.657	0.13	0.034	0.085	0.093	1.21	557	No	0.085	1.66
P243	M276	M204	80.74	79.41	8	262	0.005	57.45	57.45	Free Surface	1.996	0.24	0.125	0.159	0.163	1.05	458	Yes	0.19	1.57
P245	M278	M230	52.33	50.72	6	77	0.021	30.64	30.64	Free Surface	2.831	0.18	0.071	0.09	0.128	1.99	432	No	0.09	2.83
P247	M280	M278	75.9	73.27	6	263	0.01	15.32	15.32	Free Surface	1.779	0.15	0.051	0.077	0.09	1.36	298	No	0.077	1.78
P249	M282	M280	78.55	75.9	6	263	0.01	15.32	15.32	Free Surface	1.783	0.15	0.051	0.077	0.09	1.36	300	Yes	0.077	1.78
P251	M284	M282	80.39	78.55	6	180	0.01	15.32	15.32	Free Surface	1.792	0.15	0.051	0.077	0.09	1.37	302	Yes	0.077	1.79
P255	M290	M204	81.12	79.41	6	143.341	0.012	61.28	61.28	Free Surface	2.837	0.29	0.188	0.147	0.184	1.54	326	Yes	0.363	0.90
P257	M292	M186	124.64	122.82	8	272	0.007	19.15	19.15	Free Surface	1.591	0.13	0.036	0.087	0.093	1.15	526	No	0.087	1.59
P259	M294	M274	139.92	137.86	8	273	0.008	19.15	19.15	Free Surface	1.659	0.127	0.034	0.085	0.093	1.215	558.267	Yes	0.085	1.658