06

Final Concept Design

Final Concept Design

The Final Concept Design is to be determined pending city and stakeholder selection.

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Appendix 1

Citizen's Group Mailing List

SECTION TO BE COMPLETED
FOLLOWING CONCLUSION OF
OUTREACH ACTIVITIES

07

Appendix 2

Citizen Surveys with Tabulation of Results

SECTION TO BE COMPLETED
FOLLOWING CONCLUSION OF
OUTREACH ACTIVITIES

07

Appendix 3

Technical Committee Feedback Summary

Gage Canal Multi-Purpose Recreational Trail Design

Technical Advisory Committee Meeting #1
2:00pm – 3:00pm

I. Introductions

II. Project Background

a. One of the things we were looking for in the gateways seating, amenities, water, interpretive panels re: canal history; would like to get any additional info re: gage canal from folks that have been around for a while; gage middle school mural has neat interpretive exhibit re: gage canal history; would like to make sure that when bikes and walkers are crossing, there are some dividers from traffic. What about interpretive panels? Can that include info re: GHG and other environmental information? We are open to input. We should interpret the urban greening element for the public as well. We also want to build resilience into the project from a sustainability element. Looks like the trees will outcompete the solar.

III. Project Walkthrough / Key Challenges

- Have you discussed this with RCTC? We have trail access along the entire metrolink row. We should us it. Settlement agreement. RCTC should be at the table for this section.
- Public record, should be on RCTC. Will track down and forward to consultant.
- Is that the boundary to grand terrace? Does trail continue into next city? We know we'll need environmental work and to get crossing. We are able to go all the way to Spring in future iteration.

IV. Crossings (Blaine, Columbia, Palmyrita)

a. Trails would converge at gateways before crossing so all trail users would cross at one location

V. Design Considerations

a. Three Project Zones

1. Industrial: Security, lighting, existing disturbance
2. Box Springs: Lighter Touch, trees, lighting will be more directed to keep it out of homes and Box Springs, Views
3. Residential: existing bike path, lighting will need to be directed and not spilling into adjacent residences

b. Landscape: low water use species, will decrease over time as trees become established, 15-gal size

1. Native California, Industrial Park, Options; we aren't going to monocrop the trees; landscape design will be context driven
2. Gateways can call out agricultural history by creating an urban orchard

c. Lighting: keep trail secure and increase user enjoyment; solar lighting. We will need to work with manufacturers to specify models where solar panel is above tree canopy, and luminaire is below

canopy. We will be working with best practices for trail lighting

- What about battery life expectancy?
- Is there an option for centralized solar panel location re: gateway (could be integrated into shade structure + battery)
- Did you have to compute the amount of carbon sequestration? City does have a plant list. There is opportunity to get more detailed in the planting as long as we get the same amount of carbon sequestration.
- We are working on expanding the plant list submitted for the grant.
- Does anything take into account tree maintenance in the grant? As part of construction contract, we can perhaps extend the maintenance period. Will have to verify. If structural pruning is needed when trees are young, perhaps an urban conservation corps could be involved. Job training. Beginner arborist training.

d. Amenities: Signage, seating, bike racks…what would be really valuable to add?

- Pop up espresso stations
- Overall trail map (showing local connections)

e. Misc. Comments: Crossings themselves should have separate bike crossing markings, connection at Watkins is there budget to make sidewalk wider and just leave it unmarked like Irvine has done? No bollards please. City has issue of people driving down the trails. Having a small median is better. Swing gates, 'maze' gate option. Water opportunity recommend bottle filler station (work great for peds and cyclists). Trees look great when they go in, then start lifting the trail (root barriers?, distance from trail). Nice to have small pullout eg. 8-foot half dome with natural rocks so people can stop for breaks, phone calls etc. every ¼ to ½ mile. Donkeys are beginning to come this way. Connection to industrial properties so employees can use trail adjacent to the industrial section. Barnyard style gates work better for peds than gates that come down from above. Can we tap into Gage Canal water directly?

f. Erosion issues – make sure these are addressed; narrow portion that goes around box springs, may need small drainage ditch and maybe periodic drainage structures. Like the idea of the 3 contexts; doesn't have to be the same along the full corridor.

VI. Next Steps

a. Draft Master Plan – Late March

b. TAC Meeting #2 – Early April

c. Design – Complete October 2021

d. Construction – December 2021 – August 2022

NOTES FROM TAC MEETING #2

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Appendix 4

Agronomic and Geotechnical Reports

Infiltration Trench - Design Procedure	BMP ID	Legend:	Required Entries / Calculated Cells
Company Name:	Alta Planning and Design	Date:	5/5/2021
Designed by:	Alta Planning and Design	County/City Case No.:	

Design Volume

Enter the area tributary to this feature, Max = 10 acres	A_t=	1	acres
Enter V_{BMP} determined from Section 2.1 of this Handbook	V_{BMP}=	6,550	ft^3

Calculate Maximum Depth of the Reservoir Layer

Enter Infiltration rate	I =	3.0	in/hr
Enter Factor of Safety, FS (unitless)	FS =	3	
Obtain from Table 1, Appendix A: "Infiltration Testing" of this BMP Handbook			
	n =	40	%
Calculate D_1. $D_1 = \frac{I\ (in/hr) \times 72\ hrs}{12\ (in/ft) \times (n/100) \times FS}$	D_1 =	15.00	ft
Enter depth to historic high groundwater mark (measured from finished grade)		50	ft
Enter depth to top of bedrock or impermeable layer (measured from finished grade)		11	ft
D_2 is the smaller of:			
Depth to groundwater - 11 ft; & Depth to impermeable layer - 6 ft	D_2 =	5.0	ft
D_{MAX} is the smaller value of D_1 and D_2, must be less than or equal to 8 feet.	D_{MAX} =	5.0	ft

Trench Sizing

Enter proposed reservoir layer depth D_R, must be ≤ D_{MAX}	D_R =	2.50	ft
Calculate the design depth of water, d_W			
Design d_W = $(D_R) \times (n/100)$	Design d_W=	1.00	ft
Minimum Surface Area, A_S $A_S = \frac{V_{BMP}}{d_W}$	A_S =	6,550	ft^2
Proposed Design Surface Area	A_D =	6,600	ft^2
Minimum Width = D_R + 1 foot pea gravel		3.50	ft
Sediment Control Provided? (Use pulldown)		Yes	
Geotechnical report attached? (Use pulldown)		Yes	

If the trench has been designed correctly, there should be no error messages on the spreadsheet.

Santa Ana Watershed - BMP Design Volume, V_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name: Alta Planning and Design — Date: 5/5/2021

Designed by: Alta Planning and Design — Case No:

Company Project Number/Name: Gage Canal Multi Purpose Trail

BMP Identification

BMP NAME / ID: Infiltration Trench

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth, from the Isohyetal Map in Handbook Appendix E

D_{85}= 0.64 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	Design Storm Depth (in)	Design Capture Volume, V_{BMP} (cubic feet)	Proposed Volume on Plans (cubic feet)
1.1	22710	Concrete or Asphalt	1	0.89	20257.3			
1.2	17707	Decomposed Granite	0.4	0.28	4952.9			
1.3	73561	Natural (A Soil)	0.03	0.06	4600.6			
2.1	24520	Concrete or Asphalt	1	0.89	21871.8			
2.2	8911	Decomposed Granite	0.4	0.28	2492.5			
2.3	46288	Natural (A Soil)	0.03	0.06	2894.9			
3.1	33731	Concrete or Asphalt	1	0.89	30088.1			
3.2	26969	Decomposed Granite	0.4	0.28	7543.6			
3.3	50106	Natural (C Soil)	0.3	0.23	11282.2			
4.1	12390	Concrete or Asphalt	1	0.89	11051.9			
4.2	11403	Decomposed Granite	0.4	0.28	3189.6			
4.3	38350	Natural (A Soil)	0.03	0.06	2398.5			
	366646	Total			122623.9	0.64	6539.9	6615

Notes:

A & L WESTERN AGRICULTURAL LABORATORIES, INC.

1311 Woodland Avenue, Suite 1 • Modesto, California 95351 • (209) 529-4080

Report: 21-077-076

Grower: GAGE CANAL, RIVERSIDE BIKE PATH

DIAZ-YOURMAN & ASSOCIATES
1616 EAST 17TH STREET
SANTA ANA, CA 92705

Client: 90574
Page # 1 of 1
Date: 03/23/2021

Attn: BRIAN

Nematode Analysis Report

Number of nematodes recovered per 100cc of soil

Lab Number	Sample Number	Crop Past/Present	Root-Knot (Meloidogyne)	Lesion (Pratylenchus)	Stunt (Tylenchorhynchus)	Spiral (Helicotylenchus)	Stubby-Root (Trichodorus)	Dagger (Xiphinema)	Ring (Criconemoides)	CYST Larva	CYST Adult	CYST Egg	Sting (Belonolaimus)	Lance (Hoplolaimus)	Sheath (Hemicriconemoides)	Pin (Paratylenchus)	Citrus (Tylenchulus)			Comments
57499	21-01	Ornamentals							88											E**
57500	21-04	Ornamentals		N	O	N	E		D	E	T	E	C	T	E	D				A
57501	21-05	Ornamentals		N	O	N	E		D	E	T	E	C	T	E	D				A
57502	21-09	Ornamentals		N	O	N	E		D	E	T	E	C	T	E	D				A
57503	21-11	Ornamentals														36				B
57504	21-12	Ornamentals														31				B

A. None detected. If symptoms are present, check that proper sampling and shipping techniques were followed.
B. Populations and kinds detected are not likely to cause plant/crop damage or yield loss.
C. Continue to monitor populations.
D. If this is a PREPLANT situation, treatment should definitely be considered.
E. Populations and/or kinds detected may cause plant/crop damage or yield loss.
F. Populations are high and treatment may be necessary.
G. Recording crop information in the future will help to provide more meaningful recommendations, as varying tolerance levels exist.

Do not apply a nematicide that is not labeled for your specific situation.

Comments:

Ring nematode can cause damage to some ornamental trees by its feeding with its long stylet into the vascular tissue of the root system. **Check on the varietal characteristics of the ornamental you are growing before making management decisions. Pin nematode is not known to cause damage to ornamental trees/shrubs.

Analyzed by Ever-Green Nematode Testing Labs, Inc.

AGRONOMIC SURVEY SUMMARY

WALLACE LABORATORIES, LLC

365 Coral Circle
El Segundo, CA 90245
phone (310) 615-0116 fax (310) 640-6863

March 15, 2021

Brian Diaz, brian@diazyourman.com

Clint Isa, clint@diazyourman.com

Diaz Yourman & Associates

1616 East 17th Street

Santa Ana, CA 92705

RE: Job No. 2021-001

Six samples received March 10, 2021

Preliminary Report

Dear Brian and Clint,

DYB 21-01, Bulk at 0-5'

DYB 21-03, Bulk at 0-5'

DYB 21-05, Bulk at 0-5'

DYB 21-09, Bulk at 0-5'

DYB 21-11, Bulk at 0-5'

DYB 21-12, Bulk at 0-5'

Acidity/Alkalinity – The average pH is moderately alkaline at 7.74. The pH values range from 7.31 to 8.05.

Salinity – The average salinity is moderate at 1.37 millimho/cm. Salinity ranges from 0.14 millimho/cm for DYB 21-03 to 3.37 millimho/cm for DYB 21-01.

AGRONOMIC SURVEY SUMMARY

Fertility -

Nitrogen – Nitrogen is low for DYB 21-03 and DYB 21-11. Nitrogen is moderate for DYB 21-12. Nitrogen is high for the other three samples.

Phosphorus – Phosphorus is moderate for DYB 21-09 and DYB 21-12. Phosphorus is low for the other samples.

Potassium – Potassium is modest on average.

Iron – Iron is sufficient for DYB 21-09 and is low for the other samples.

Manganese – Manganese is deficient.

Zinc – Zinc is deficient.

Copper – Copper is sufficient.

Boron – Boron is moderate on average.

Magnesium – Magnesium is moderate for DYB 21-05 and DYB 21-09. Magnesium is high for the other samples.

Sulfur – Sulfur is modest for DYB 21-01 and DYB 21-09. Sulfur is low for the other samples.

Sodicity – Sodium is modest on average. SAR (sodium adsorption ratio) is 1.1 on average.

Soil organic matter – Soil is low on 0.37% on a dry weight basis on average.

CEC – The average cation exchange capacity is 10.4 milliequivalents per 100 grams. Exchangeable potassium is low. Exchangeable magnesium is moderate. Exchangeable calcium is good. Exchangeable sodium is low. Exchangeable hydrogen is good.

Growth studies are being commenced. A final report will be issued in about 2 weeks.

Sincerely,

Garn A. Wallace, Ph. D.

GAW:n

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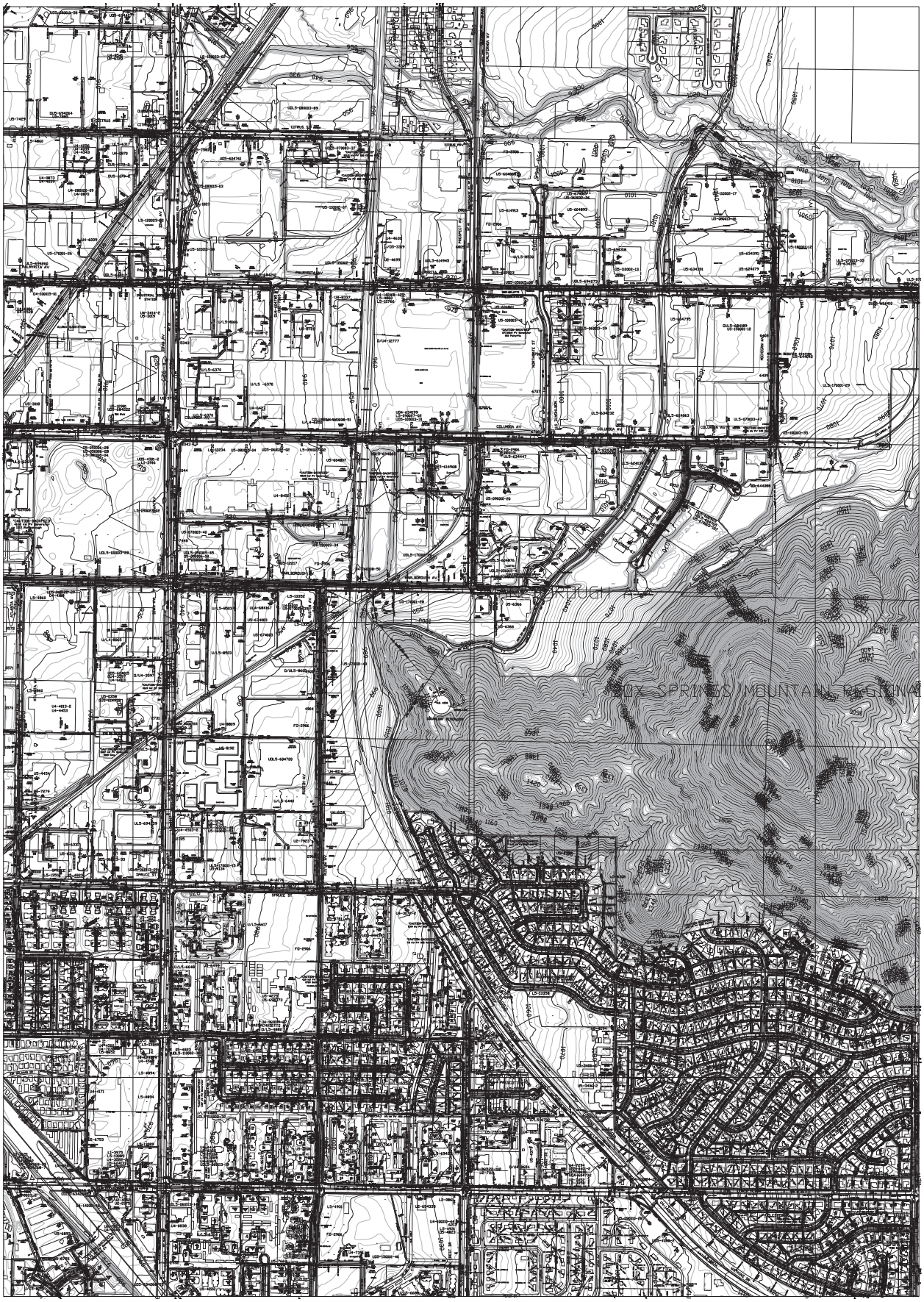
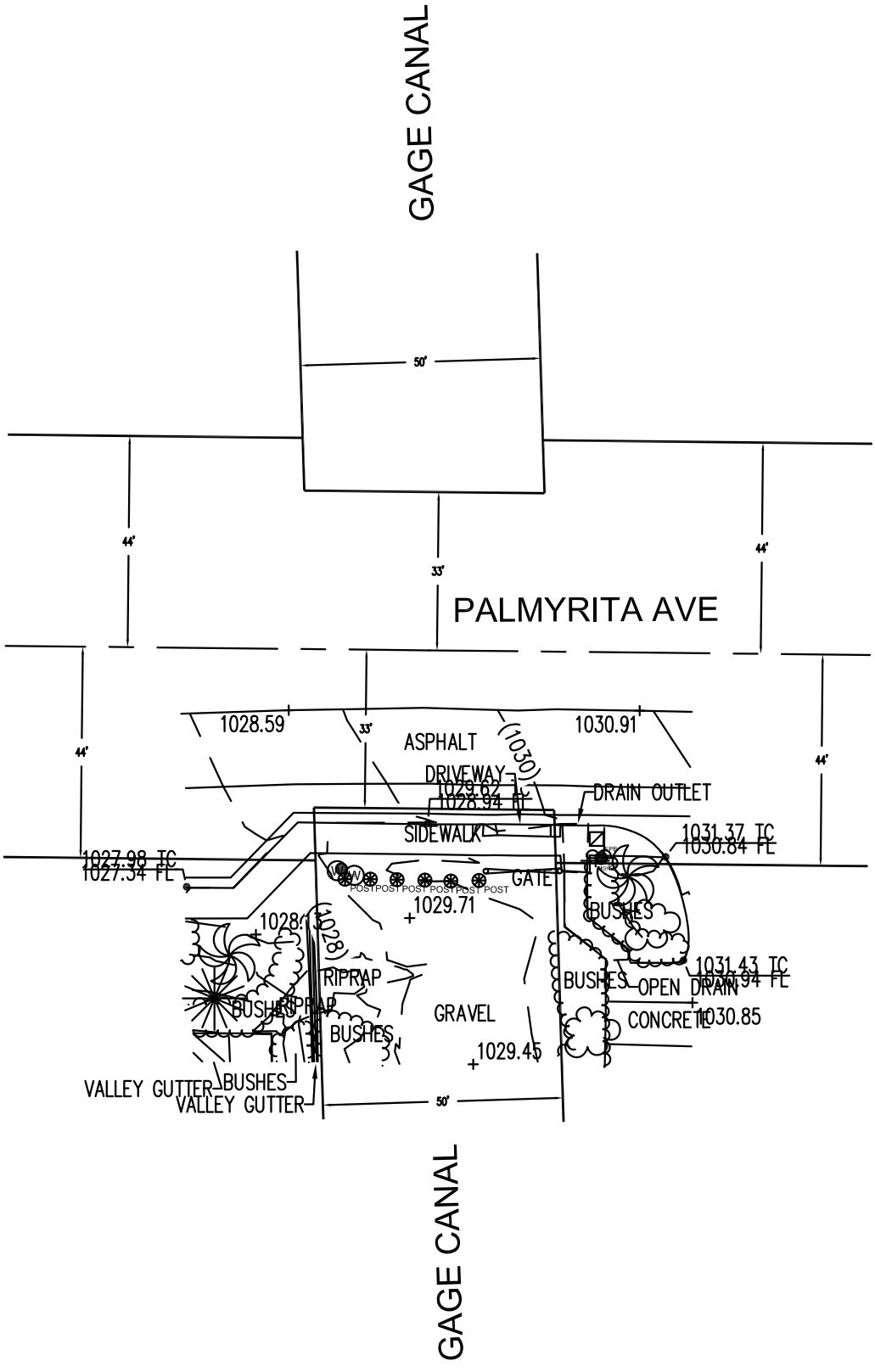
Appendix 6

Topographic Survey

CITY-PROVIDED 1-FOOT CONTOURS



GROUND SURVEY AT INTERSECTIONS



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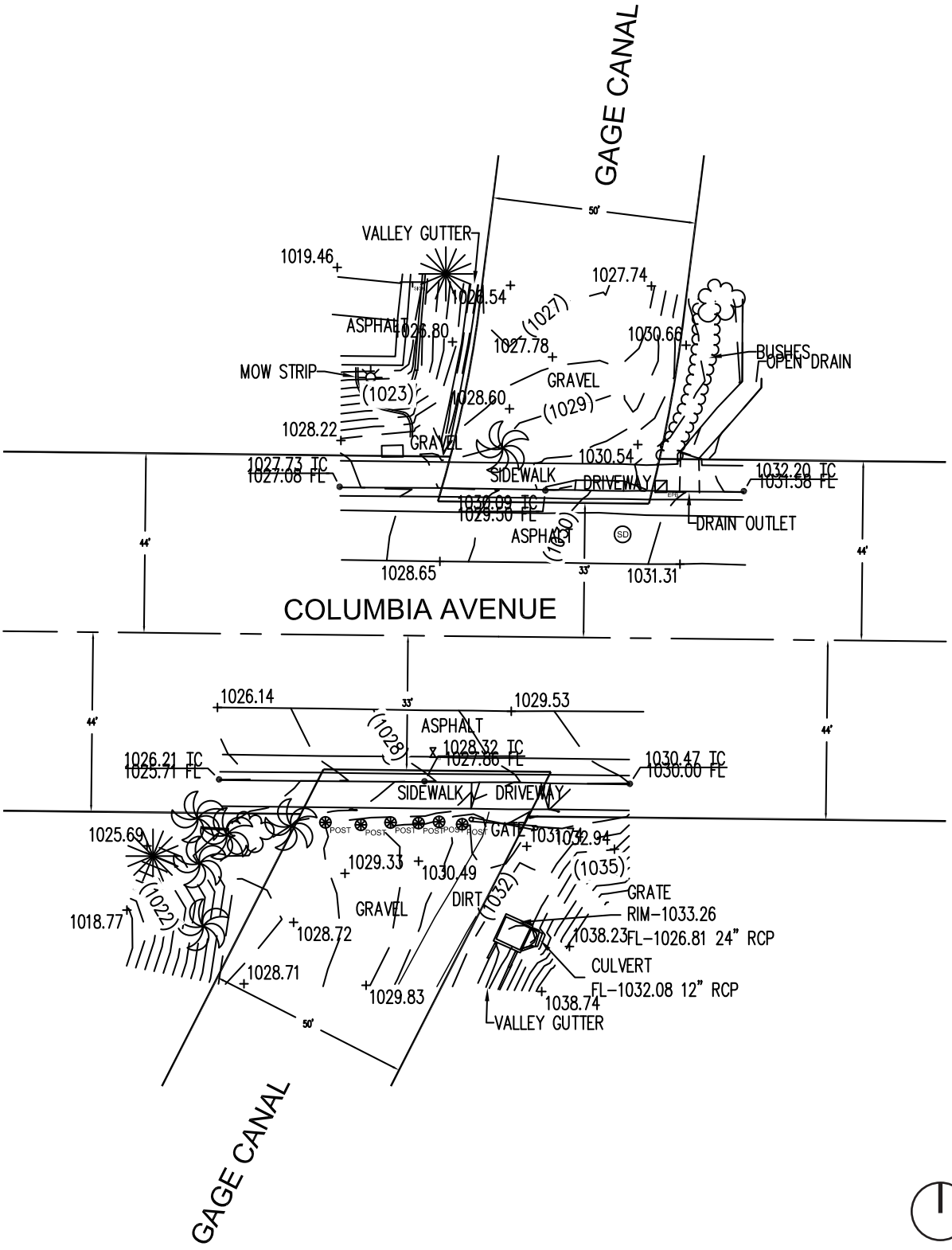

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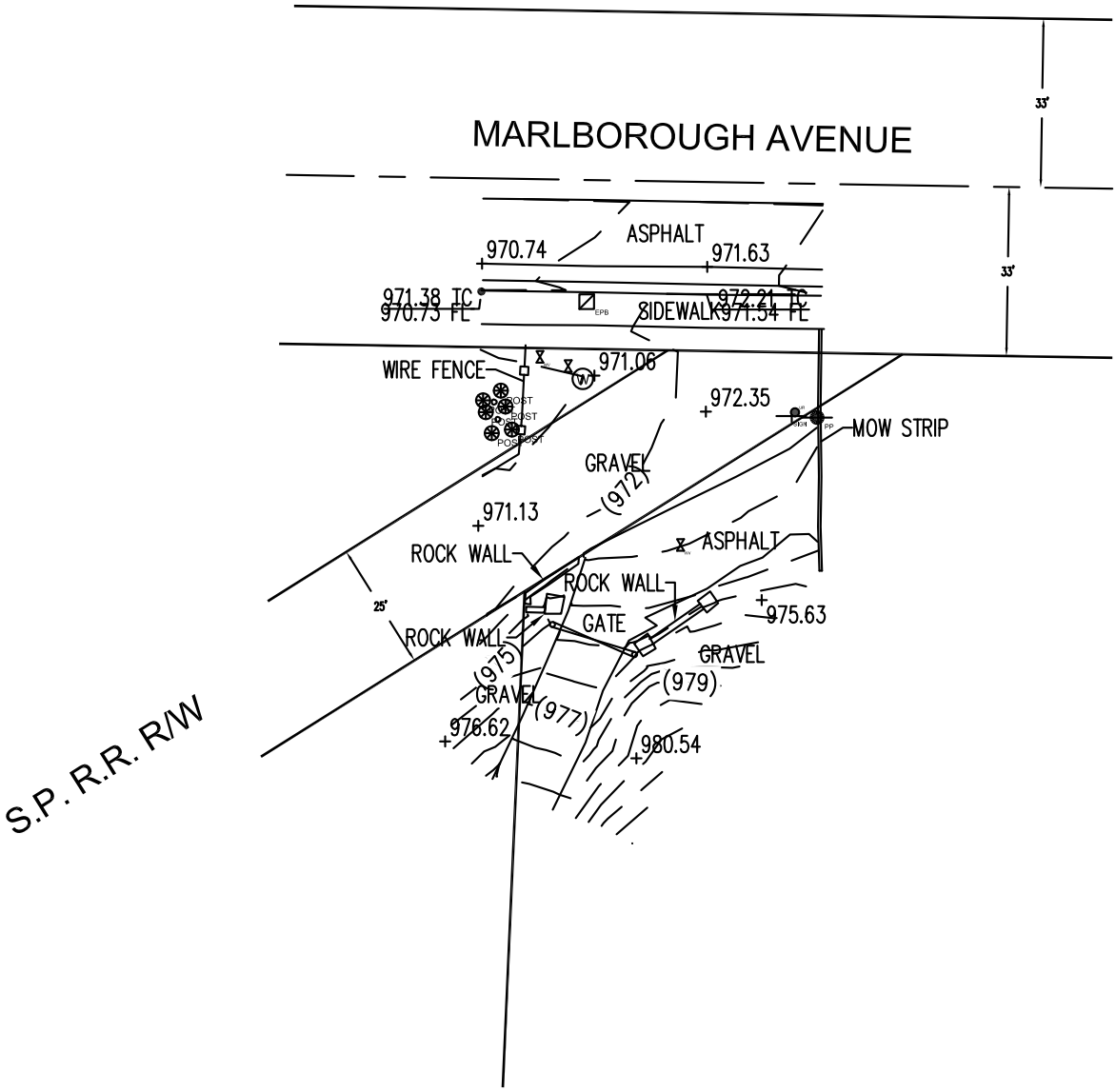

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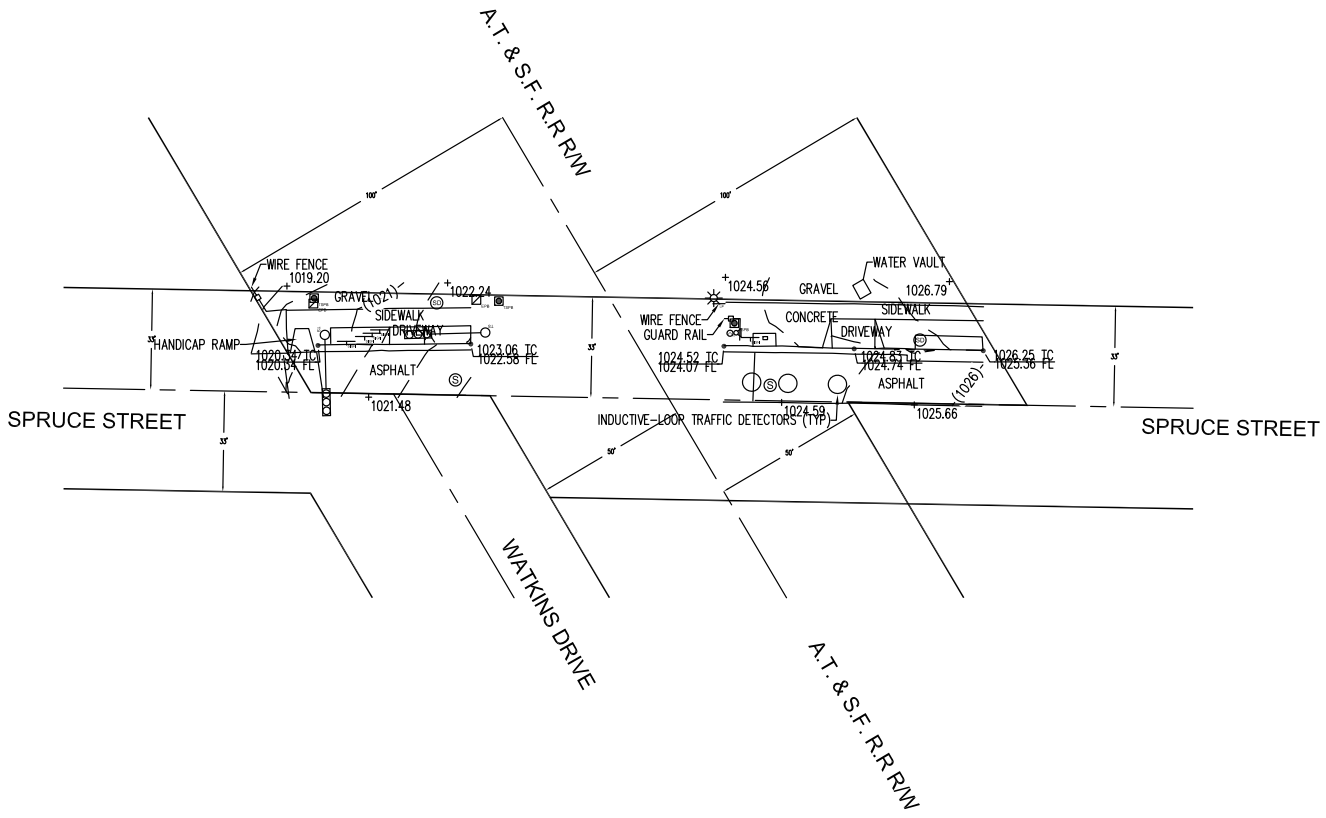

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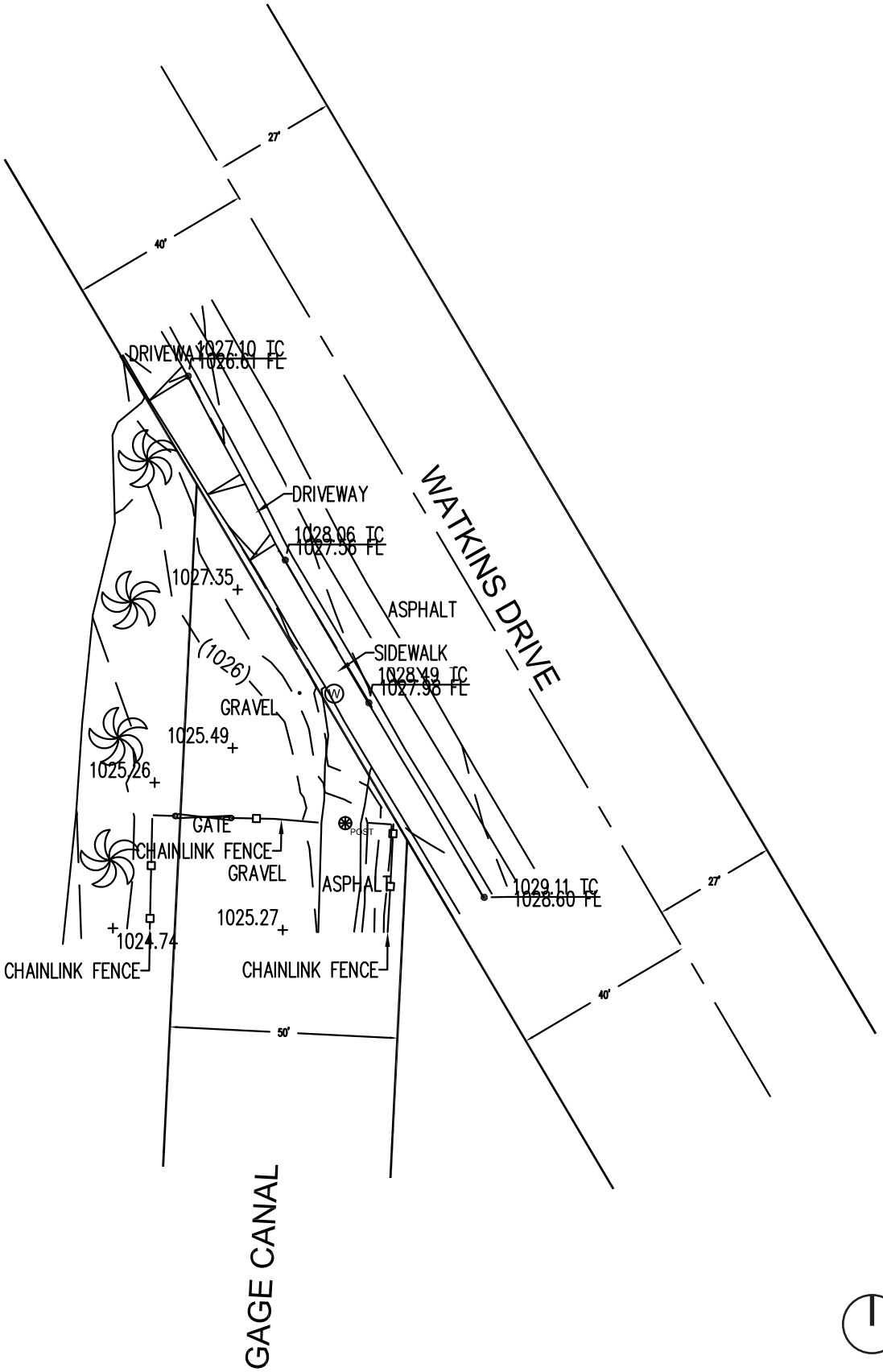

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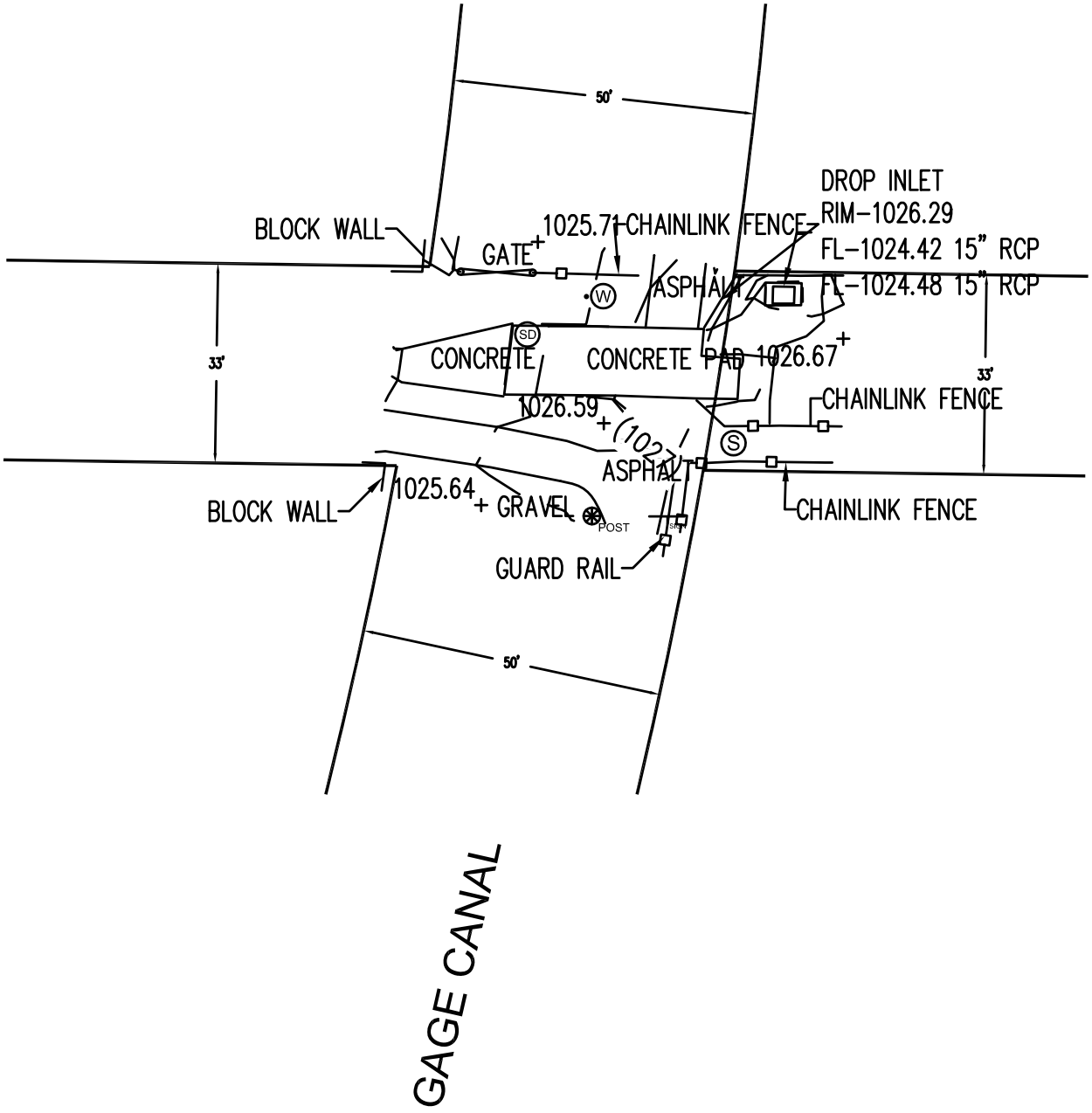

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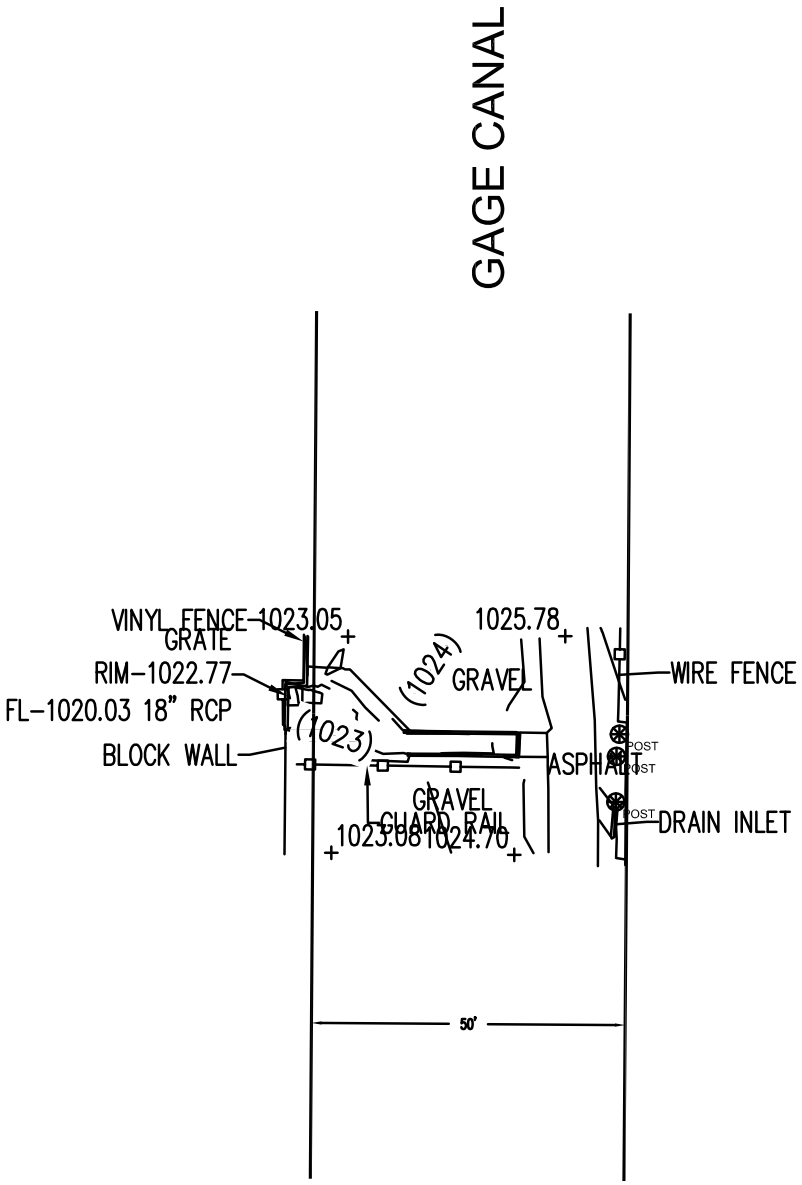

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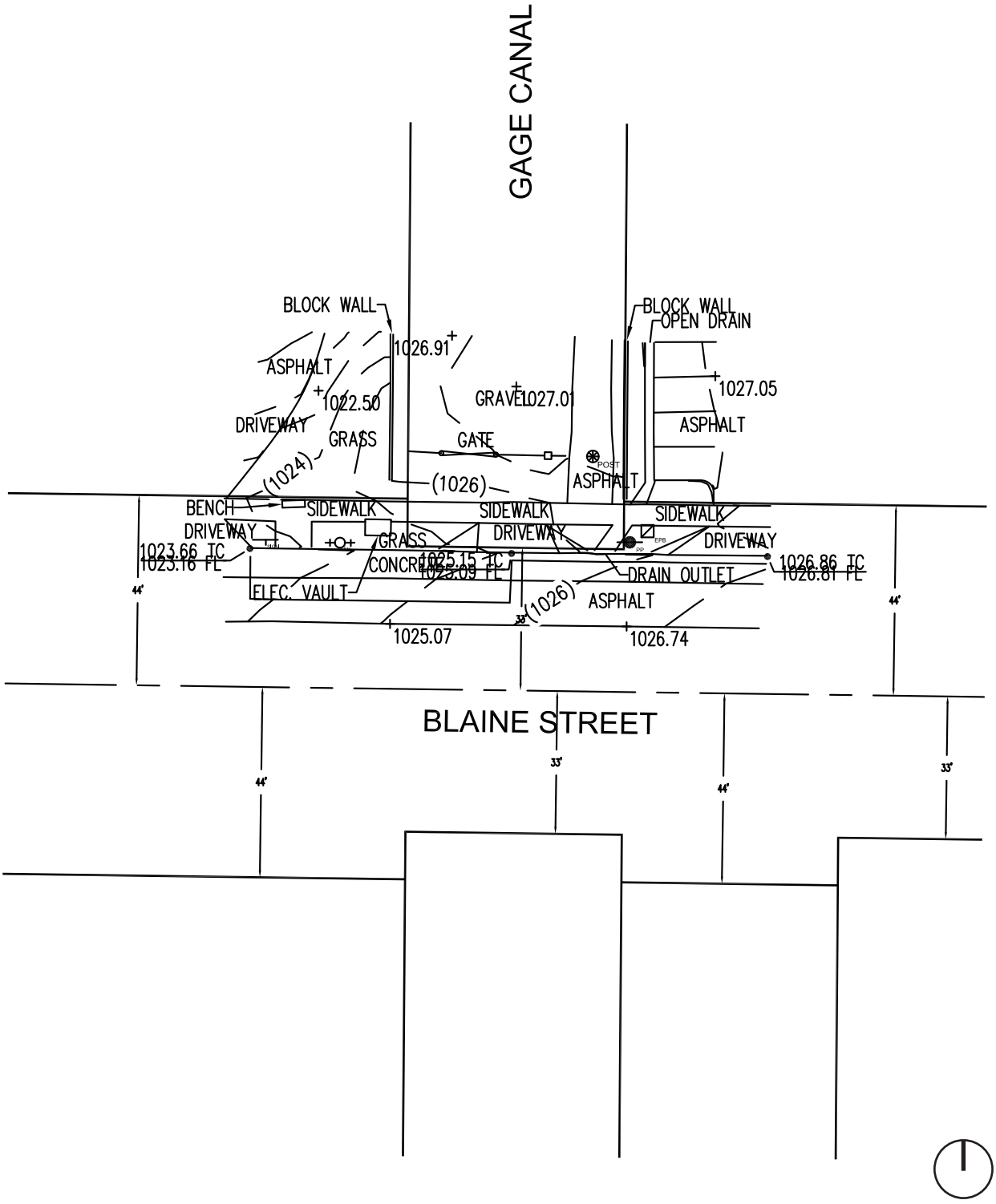

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Appendix 7

35% Conceptual Plans

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