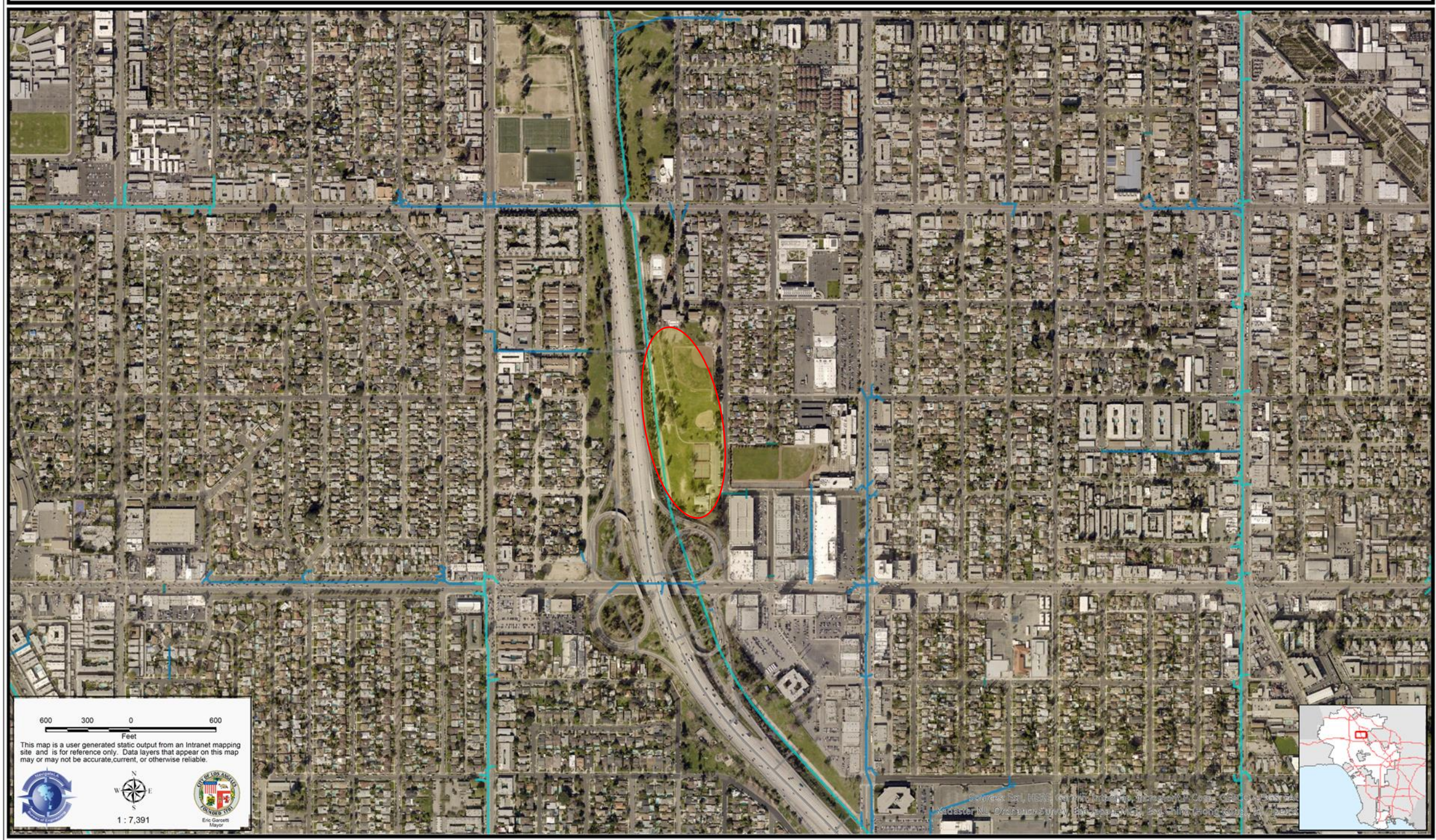


NavigateLA Map



Project Location

April 2, 2021



Safe, Clean Water Program  
Valley Plaza Park Stormwater Project -  
**StormTunnel Alternative**



**Single Event Design Storm:**  
**Annual Stormwater Capture:**

85th P. 24-hr Storm, 162.2cfs Peak Flow, 74 AF Volume  
 840 AF/YR (10-YR Modeling Average)

Proposed System



Valley Plaza Park Stormwater Project  
**StormTunnel Alternative**

MM/DD/YY	REMARKS
1	...
2	...
3	...
4	...
5	...

01

A

## INDEX OF DRAWINGS

A1	Plan
A2	Profile
A3	Section
A4	Hydraulic Grade Line
A5	Tunnel Perspective
A6	Tunnel Details
A7	Drywall Details
A8	Treatment System
A9	Diversion Perspective
A10	Diversion Plan and Sections
A11	Sediment Filter
A12	Hydrodynamic Separator
A13	Stormwater Modeling Results - 85th P. 24-Hr Storm
A14	Stormwater Modeling Results - Daily and Annual Stormwater Capture

## EARTHWORK

Description	Unit	Quantity
Excavation	CY	38,670
Hauling	CY	33,507
Backfill & Compaction	CY	9,149
Gravel Backfill	CY	3,031
<b>Total</b>	<b>CY</b>	<b>84,356</b>

## SCOPE OF WORK

Item	Description	Unit	Quantity	Drawings
1	<b>Tunnel</b> - 12' ID with segmental concrete liners	LF	5,075	A1, A2, A3, A5, and A6
2	<b>Drywells</b> - Embedded in tunnel @ 50-ft spacing with surface access	EA	88	A1, A7
3	<b>Obermeyer Gate</b> - 14' W x 3.0' H steel gate operated by inflatable bladder	EA	1	A9
4	<b>Diversion Channel</b> - 12' W x 8' L x 2.5' D concrete with trash screen	EA	1	A9, A10
5	<b>Side Channel Inlet</b> - 3.0' H x 8' W opening in channel wall with trash screen	EA	1	A9, A10
6	<b>Transition Structure</b> - 7' W x 8' L x 7' H concrete box with coned 4' diameter access	EA	1	A9, A10
7	<b>Manholes</b> - Five manholes; two 8-ft, and three 6-ft diameter each with coned 4-ft diam access	EA	5	A1, A9
8	<b>RCP Piping:</b> 45 LF of 60", 45 LF of 54", 44 LF of 48", and 60 LF of 30"	LF	194	A1
9	<b>Hydrodynamic Separator</b> - 10' diam. Hydro International "Downstream Defender"	EA	10	A12
10	<b>Sediment Filter</b> - 8'-W x 14' L Hydro International "Hydro Dry Screen"	EA	5	A11
11	<b>Park Components</b> - Restoration to original	LS	1	N/A
12	<b>Instrumentation and Lighting</b> - Solar powered flow and level meter at diversion structure, plus level meter for each tunnel	LS	1	N/A

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Index and Scope

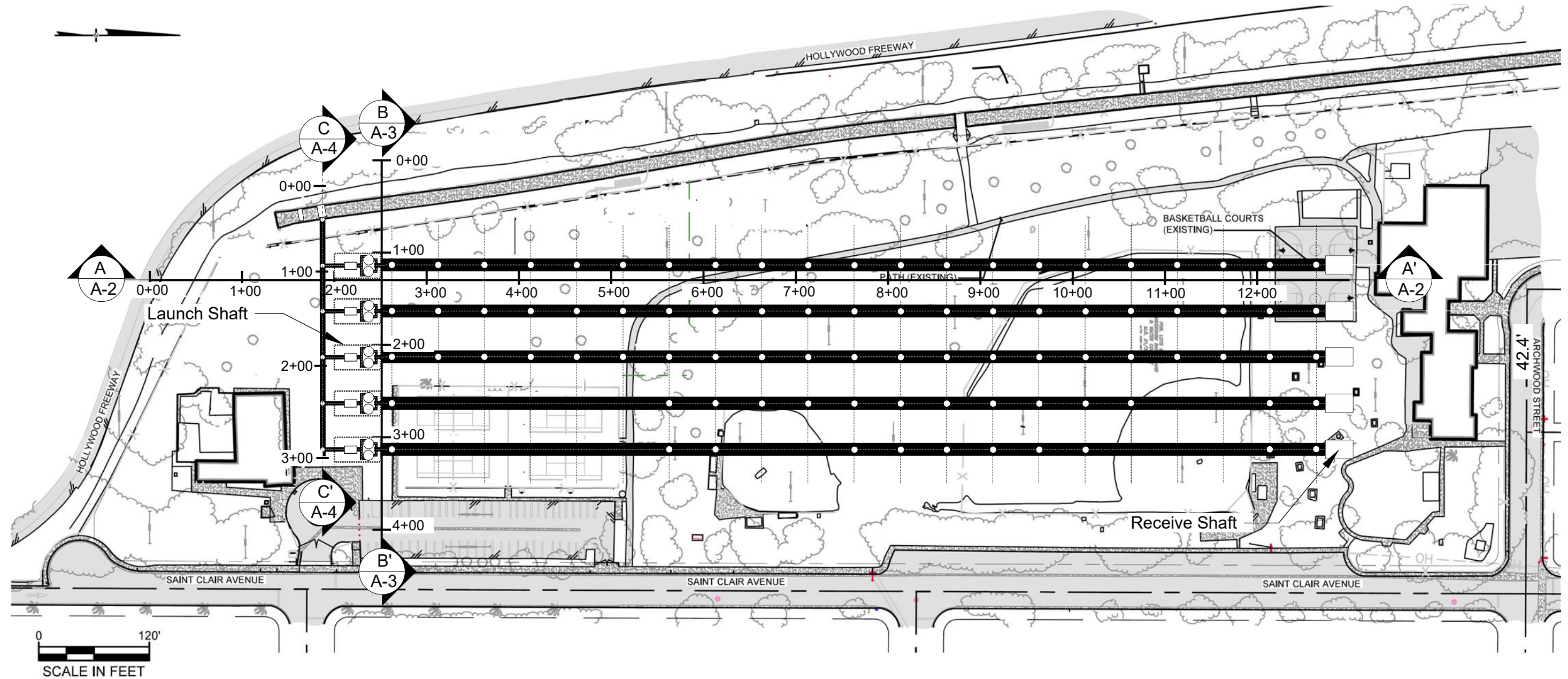
**SEITec**

Valley Plaza Park Stormwater Project  
**StormTunnel Alternative**

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01

4



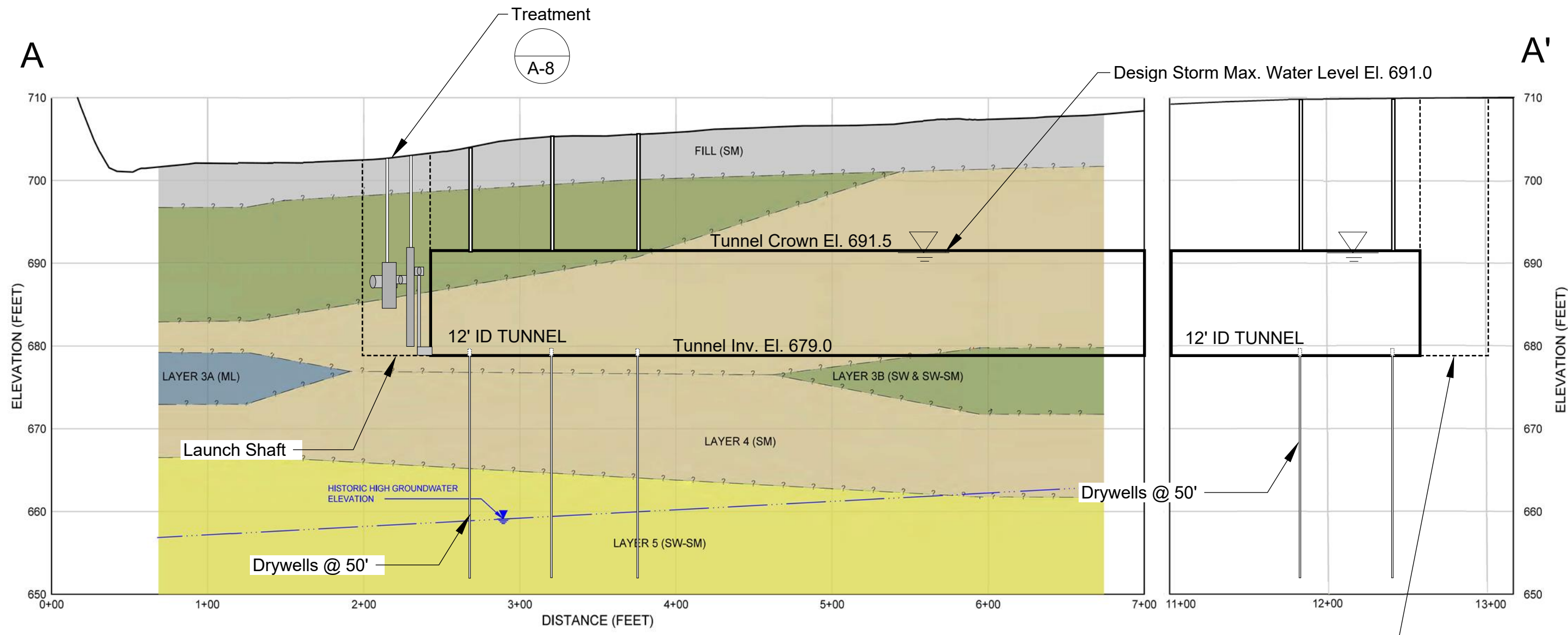
Plan



Valley Plaza Park Stormwater Project  
**StormTunnel Alternative**

MM/DD/YY	REMARKS
1	...
2	...
3	...
4	...
5	...

01  
 A



**LEGEND**

- ARTIFICIAL FILL (SM)
- SILTY SAND (SM)
- SAND, SILT (SW, SP-SM, SW-SM & SM)
- SAND, SILT AND GRAVEL (SW-SM)
- SANDY SILT (ML)

**A-A'**

Profile

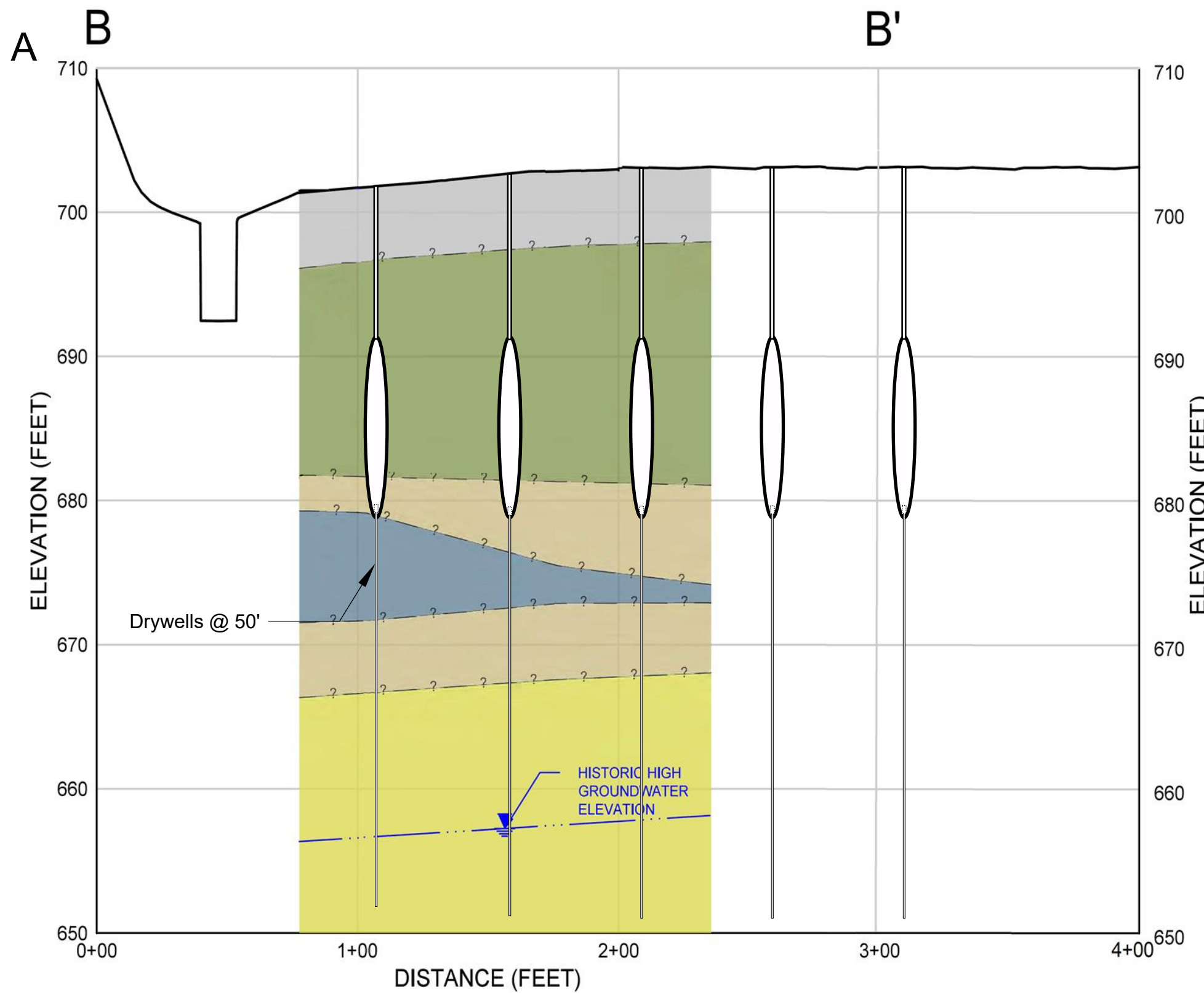


Valley Plaza Park Stormwater Project  
StormTunnel Alternative

MM/DD/YY	REMARKS
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02

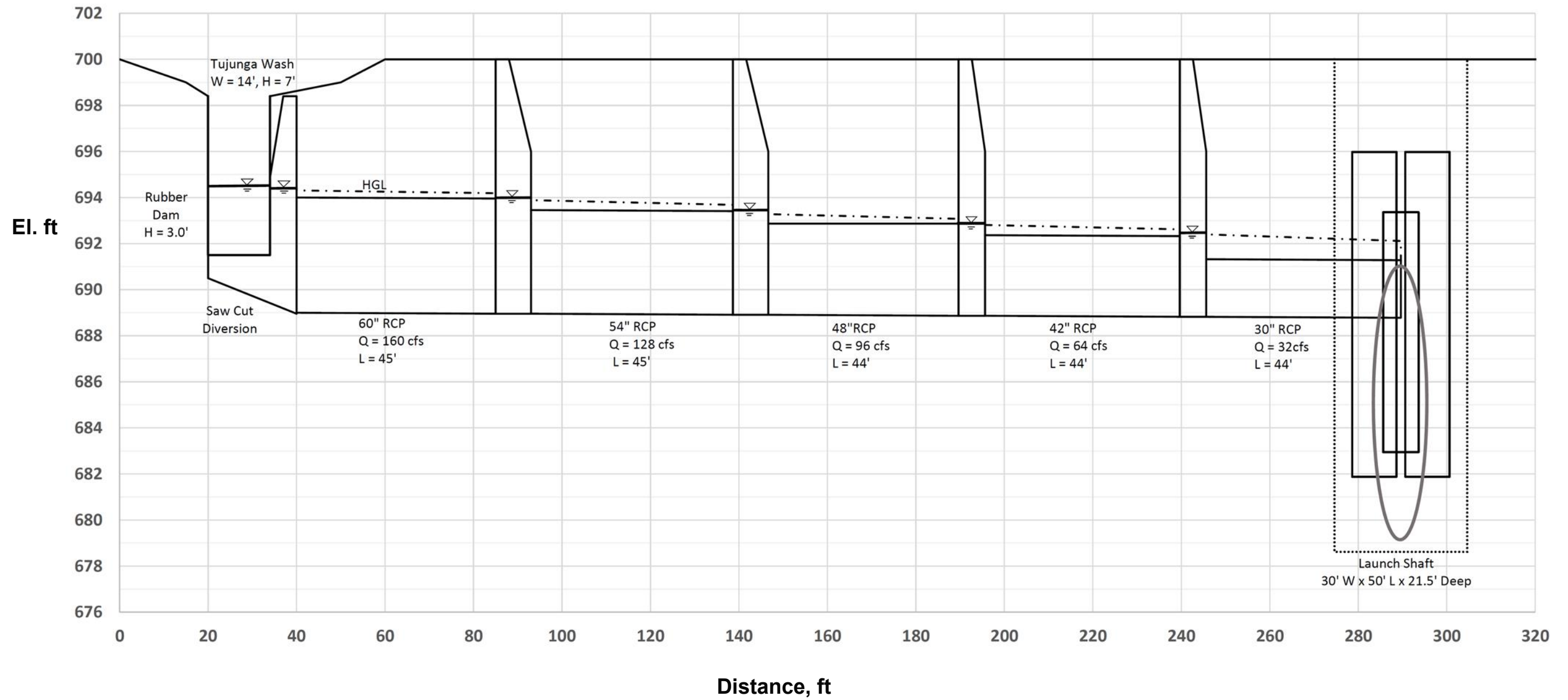
A



**LEGEND**

	ARTIFICIAL FILL (SM)
	SILTY SAND (SM)
	SAND, SILT (SW, SP-SM, SW-SM & SM)
	SAND, SILT AND GRAVEL (SW-SM)
	SANDY SILT (ML)

**B-B'**



HGL

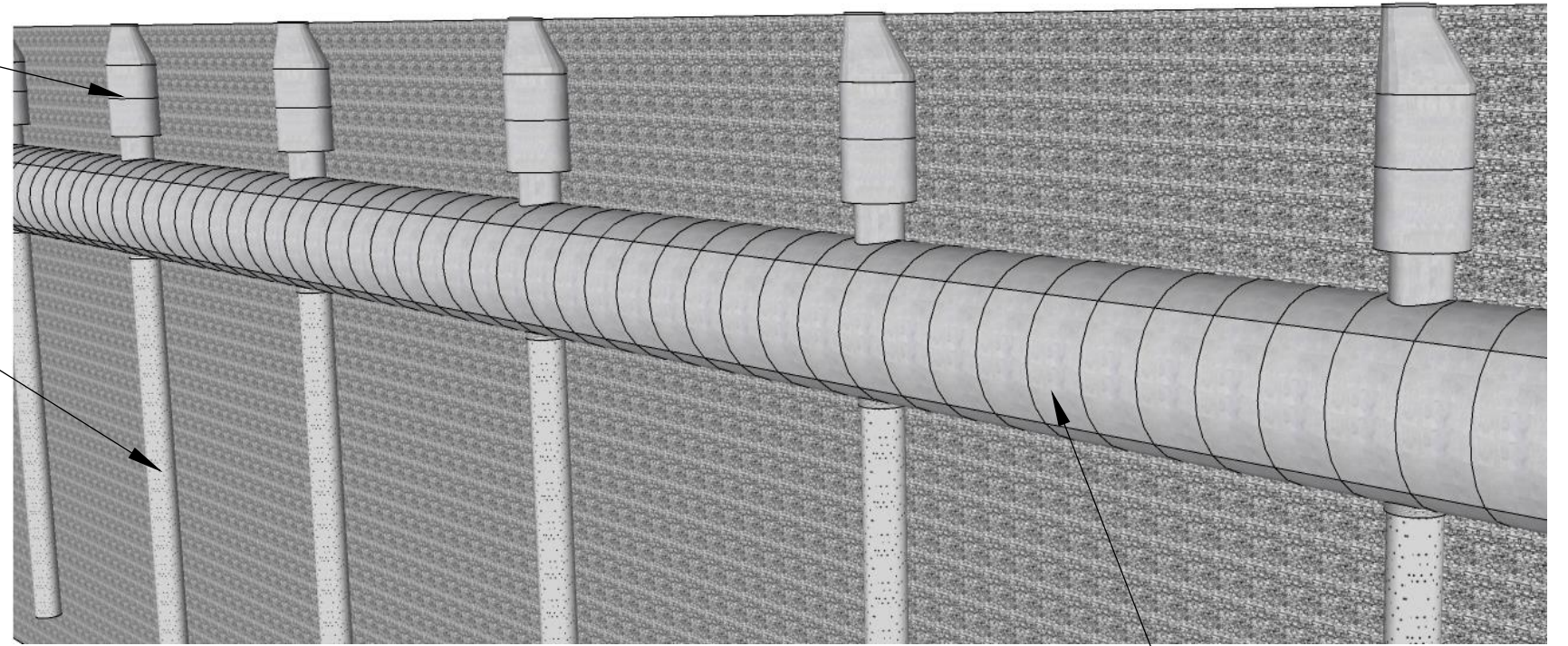


Valley Plaza Park Stormwater Project  
StormTunnel Alternative

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60" ID Access  
A-7

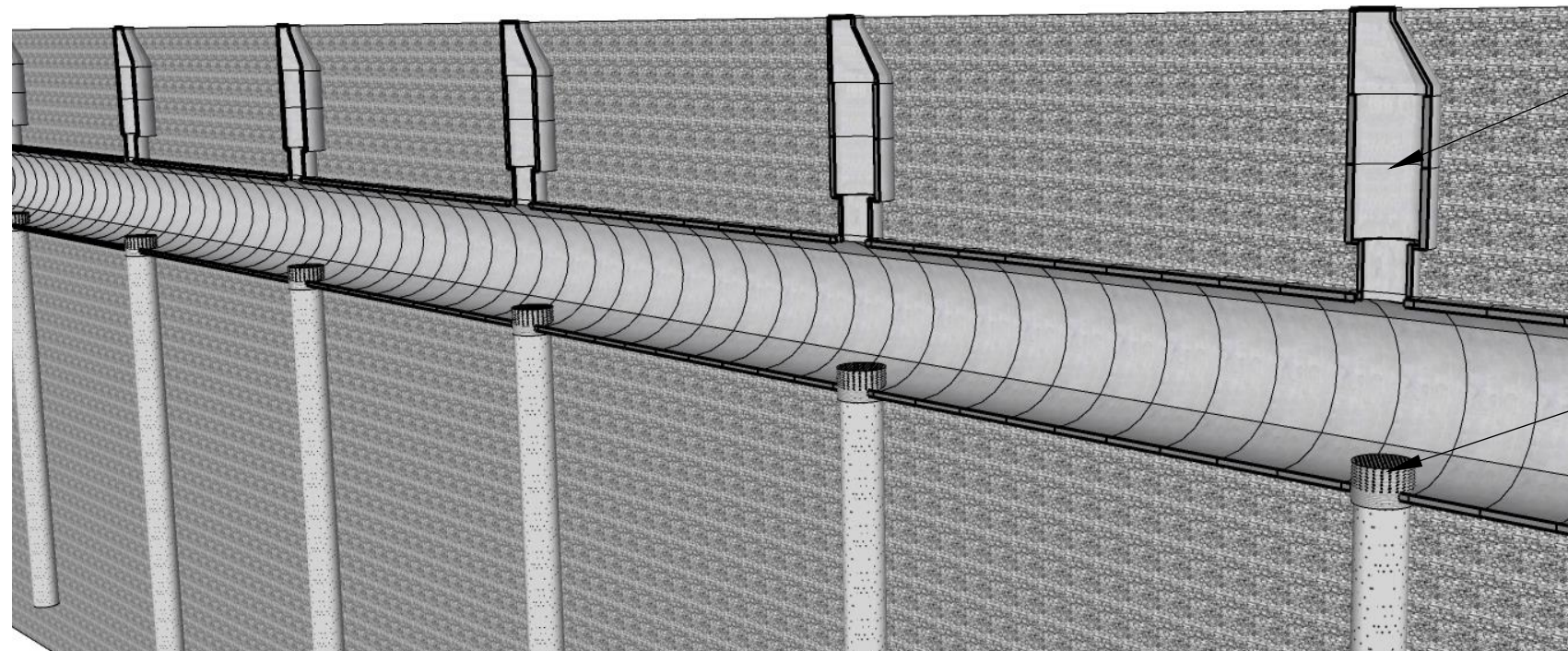
Dry Well  
A-7



12' ID Tunnel  
A-6

60" ID Access  
A-7

Drywell Inlet  
A-7



Perspective



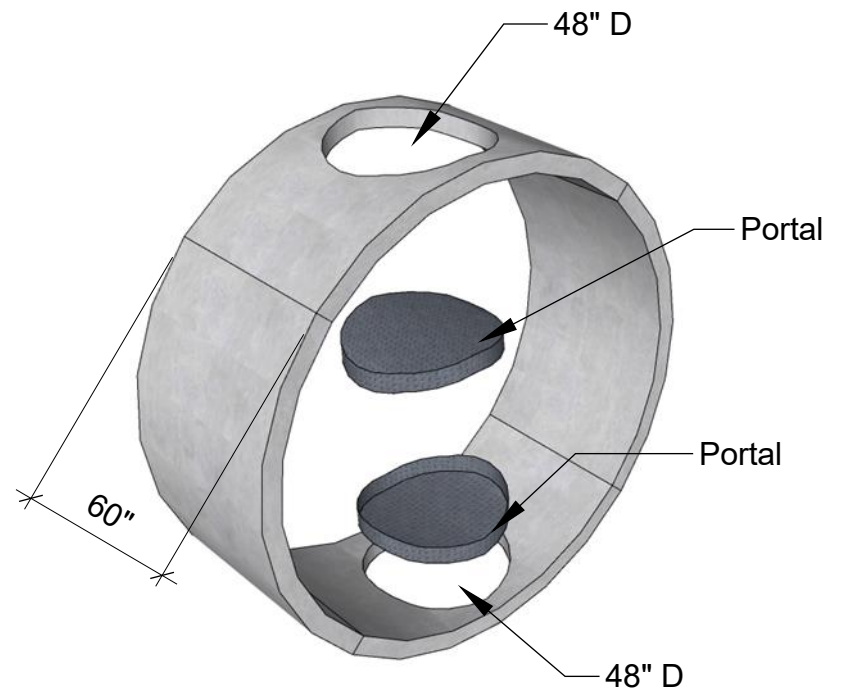
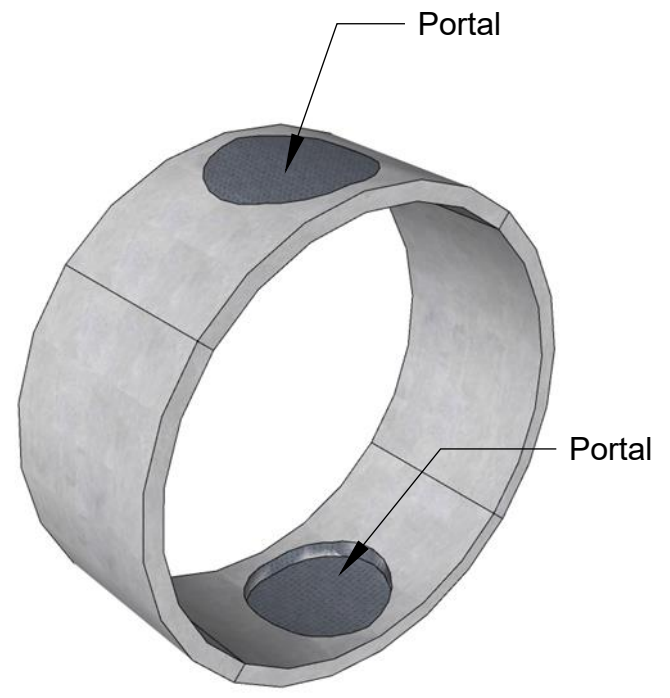
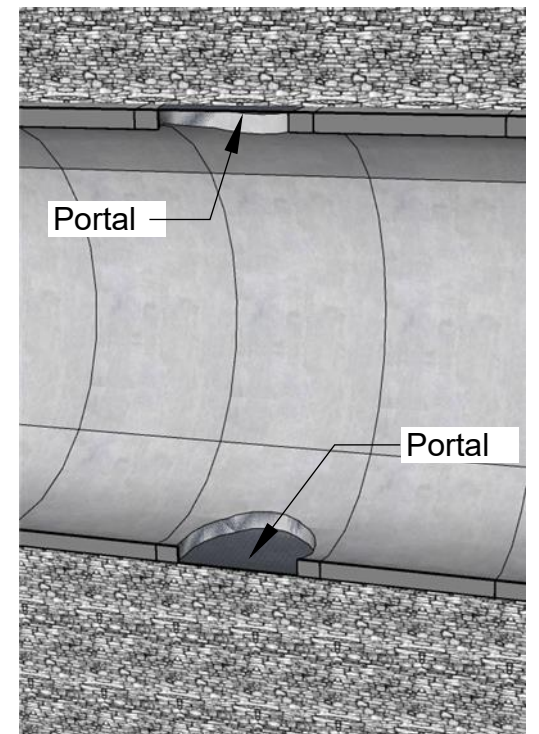
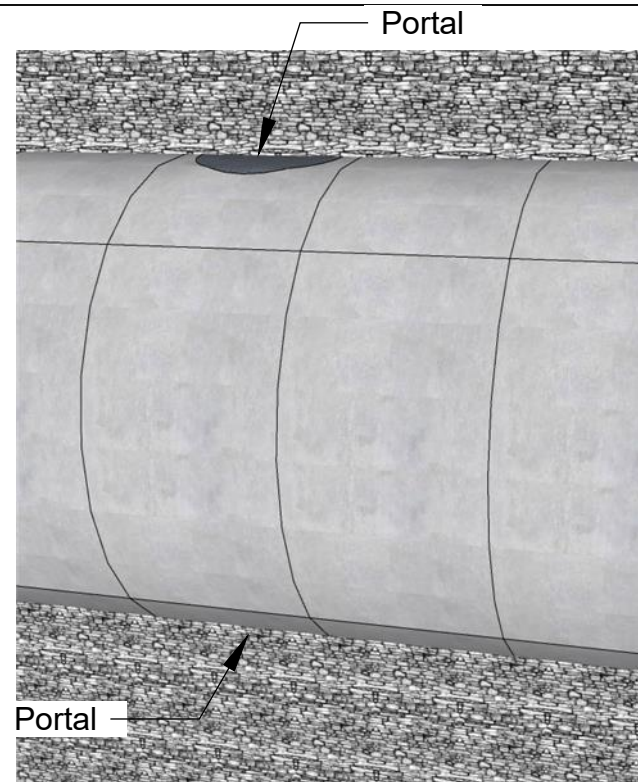
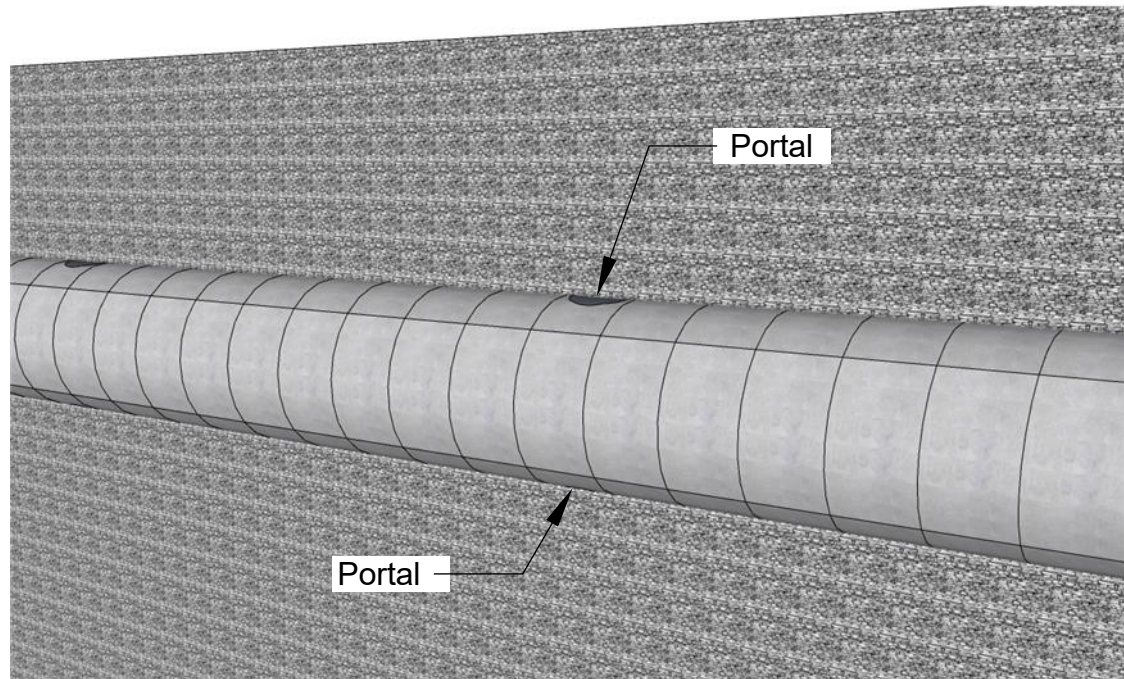
Valley Plaza Park Stormwater Project  
StormTunnel Alternative

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Tunnel Details



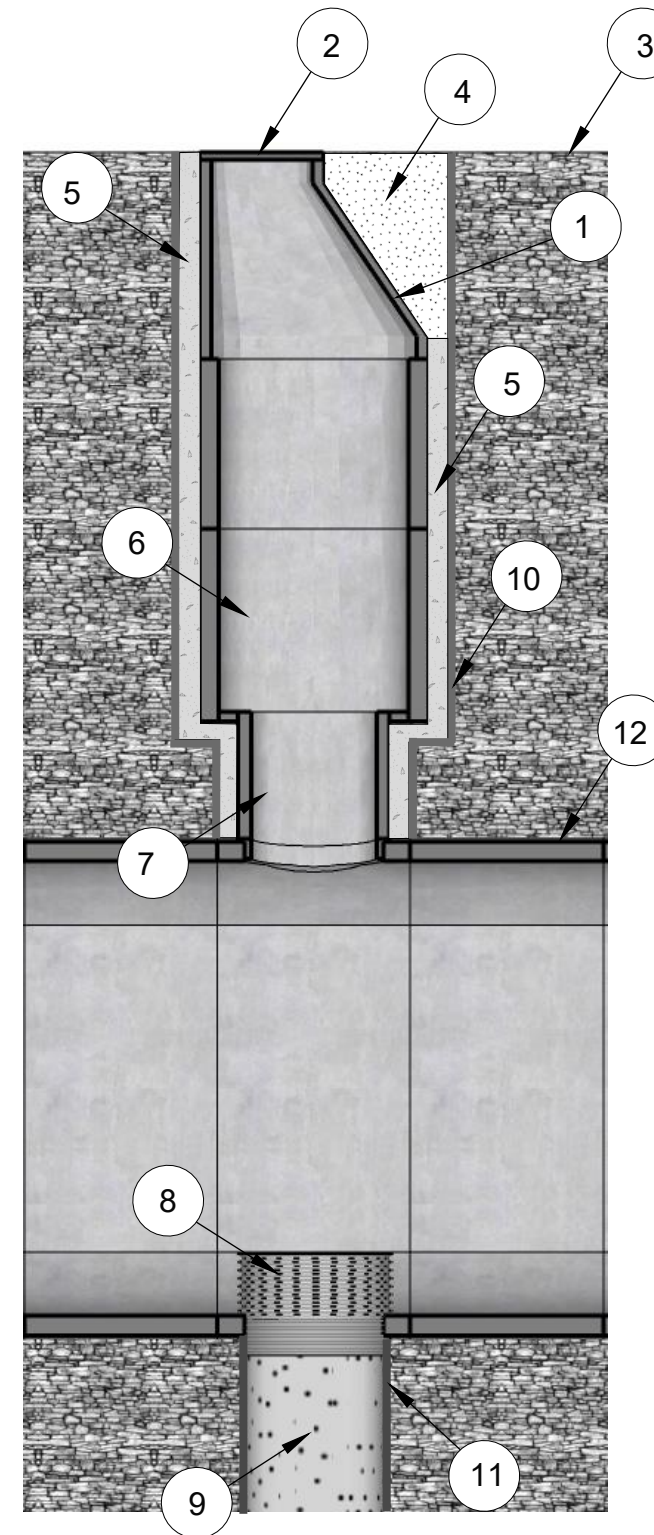
Valley Plaza Park Stormwater Project  
StormTunnel Alternative

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1	...
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5	...



ITEM NUMBERS

- 1. 60" ID Precast Manhole Cone
- 2. Bolted Ring & Cover
- 3. Final Grade
- 4. Compacted Backfill
- 5. Poured Concrete
- 6. 60" ID Precast Manhole Shaft
- 7. 48" OD Precast Pipe Connector to Tunnel
- 8. 48" OD Slotted Corrugated HDPE Pipe, Min. 18" Tall with Filter Fabric Cover
- 9. Crushed Rock 3/8" and 1-1/2" per Native Soil
- 10. 72" Diam. Drilled Shaft
- 11. 48" Diam. Drilled Shaft, 75' Deep
- 12. Tunnel Liner Segment, 5-ft W, 12-ft ID



Detail - Drywells

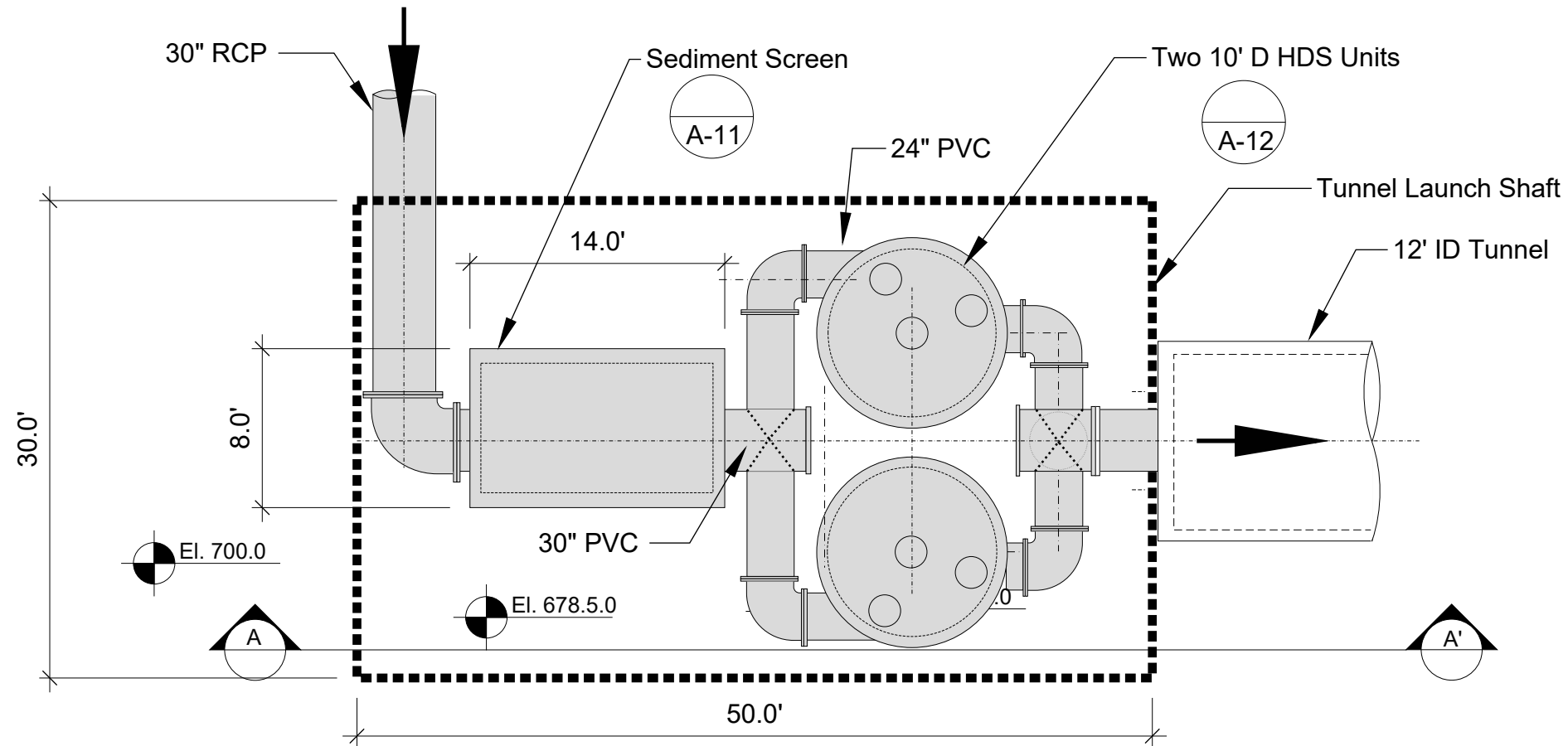


Valley Plaza Park Stormwater Project  
StormTunnel Alternative

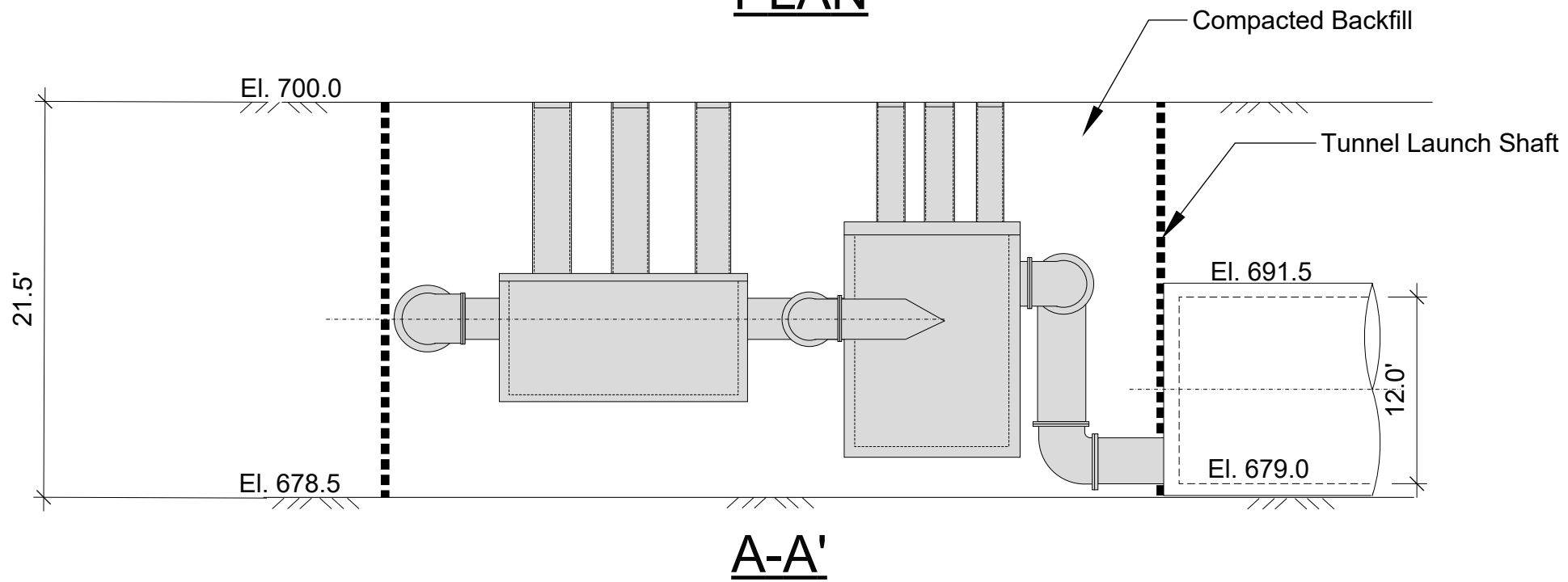
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07

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**PLAN**



**A-A'**

Treatment System

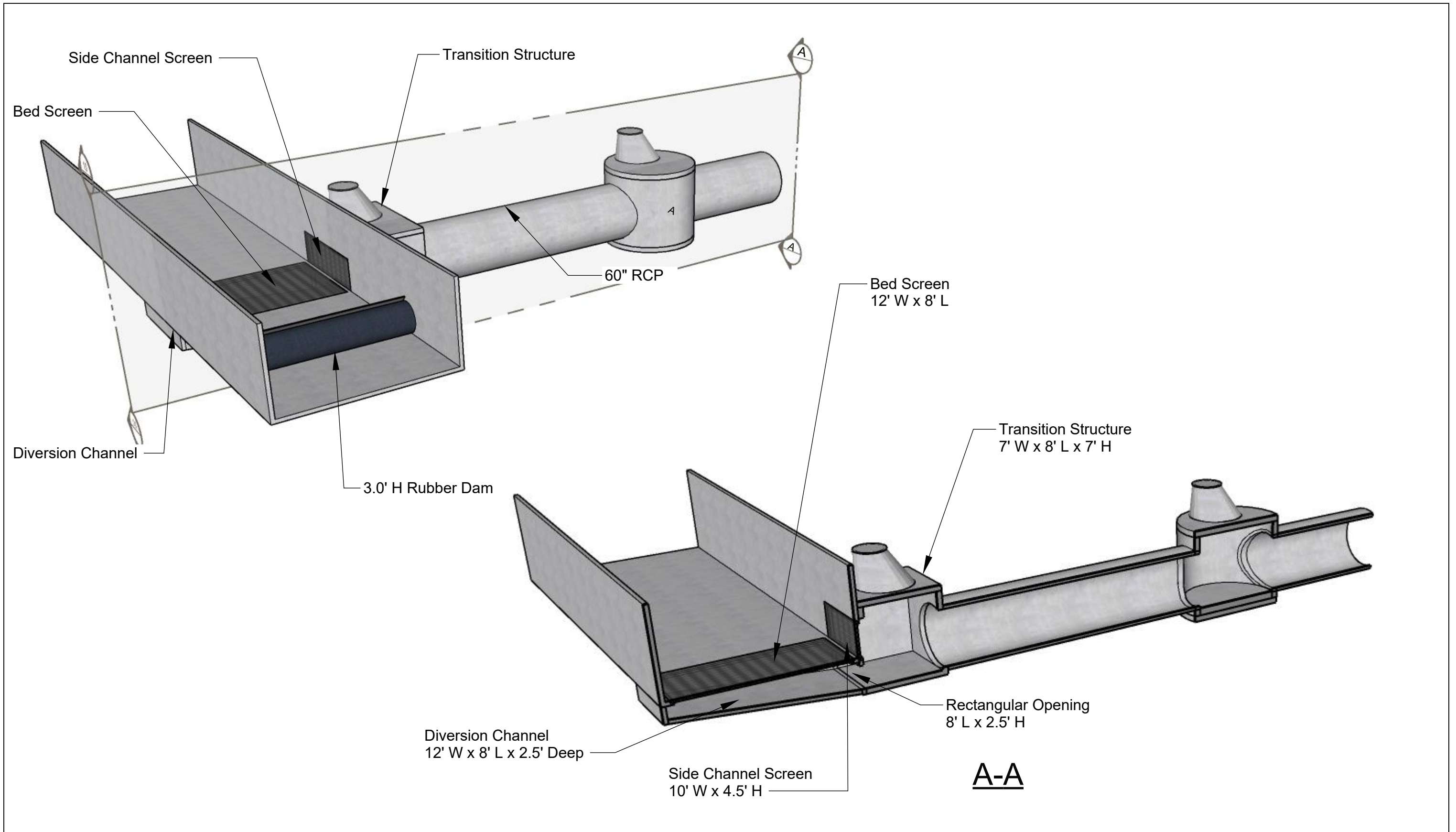


Valley Plaza Park Stormwater Project  
StormTunnel Alternative

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08

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Diversion - Perspective

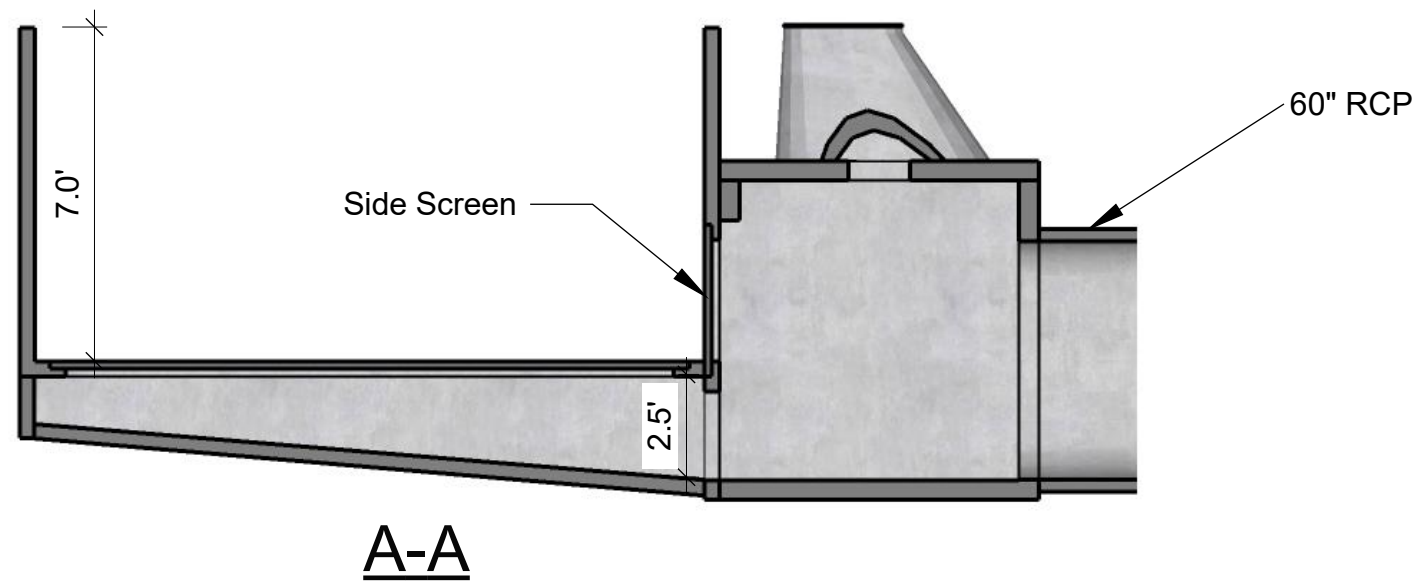
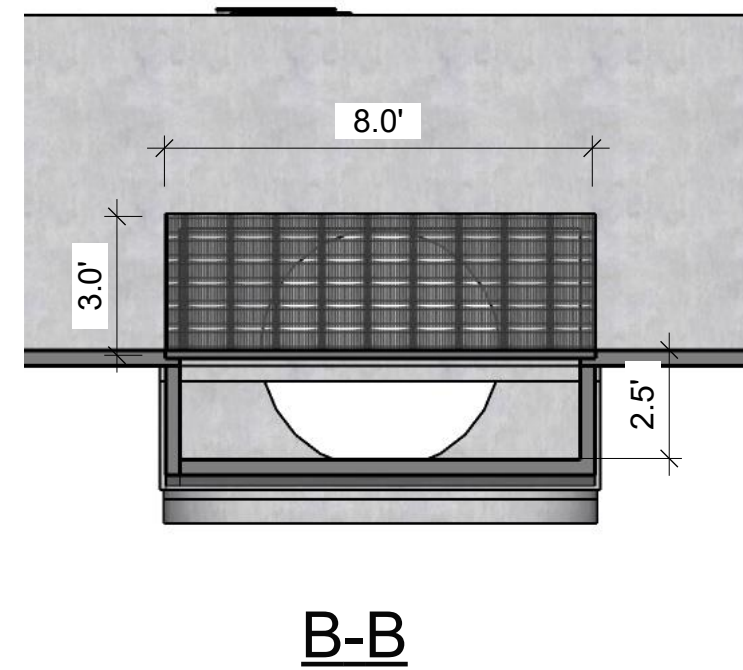
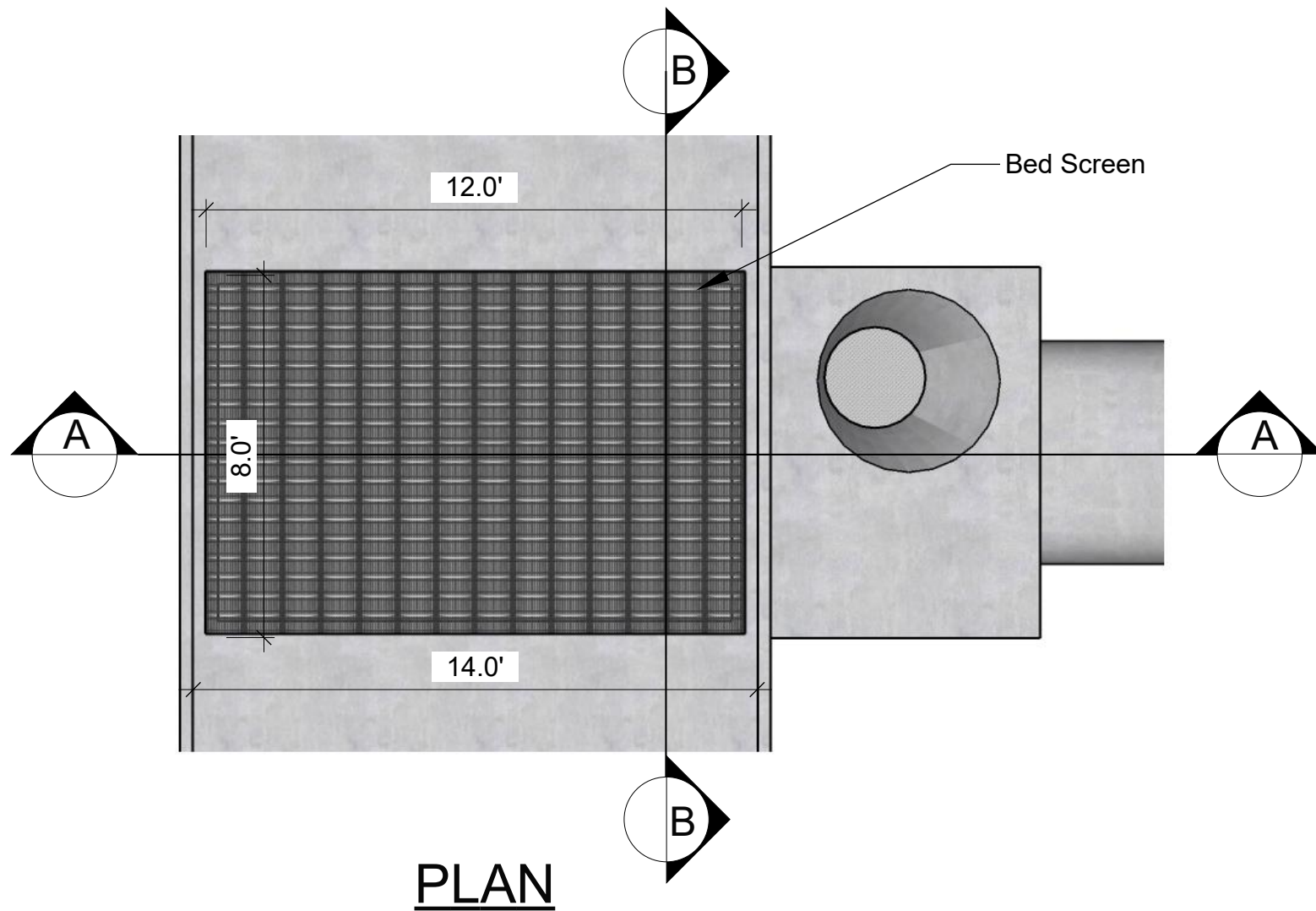


Valley Plaza Park Stormwater Project  
StormTunnel Alternative

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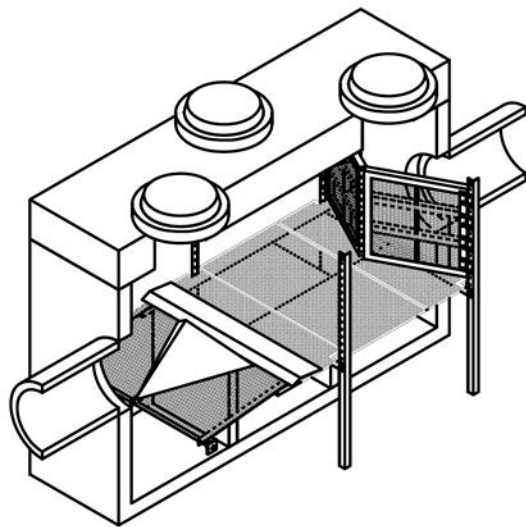
Diversion - Plan and Sections

**SEITec**

Valley Plaza Park Stormwater Project  
StormTunnel Alternative

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1	___/___/___	...
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4	___/___/___	...
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10  
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MAXIMUM PIPE SIZE: 48 in

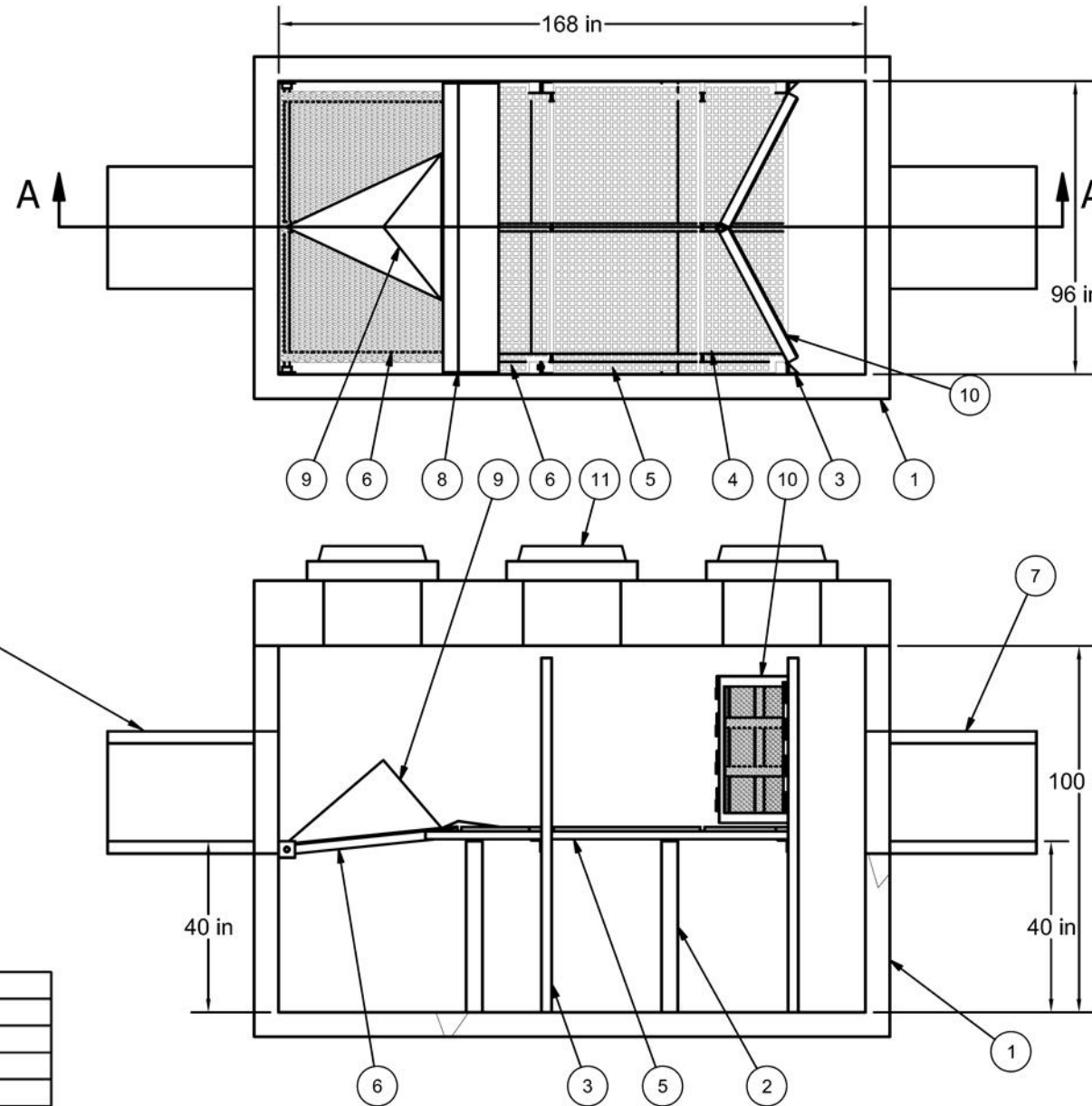
**EQUIPMENT PERFORMANCE**

Max. Treatment Flow Rate = 93 cfs  
 Typical Treatment Flow Rate = 37 cfs  
 Open orifice area of screen system = 78.4 sq.ft.  
 Min. Screenings Storage capacity = 14.2 yd<sup>3</sup>  
 Min. Sediment storage volume = 4.4 yd<sup>3</sup>

Parts List			
ITEM	QTY	SIZE	DESCRIPTION
1	1	8 ft x 14 ft	VAULT
2	2		BAFFLES
3	4		MOUNTING BRACKETS
4	3		HORZ. SCREEN PANELS
5	1		FRAME
6	1		INLET SCREEN PANEL
7	2	48 in	INLET/OUTLET PIPES (BY OTHERS)
8	1		TRANSITION CONNECTOR
9	1		FLOW SPREADER
10	2		VERT. SCREEN WEIR
11	3	30 in	FRAME AND COVER

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**Notes**

1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING HYDRO DRYSCREEN SYSTEMS.
3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

REV	BY	DATE	DESCRIPTION
JF		1/15/15	FIRST ISSUE

**REVISION HISTORY**

Date	Scale	
1/15/15	NTS	
Drawn	Checked	Approved
JF		

**Title**

DRYSCREEN  
 8' x 14' VAULT

**GENERAL ARRANGEMENT**



Stormwater Solutions  
 94 Hutchins Drive  
 Portland, Maine 04102  
 Tel: (207) 756-6200  
 Fax: (207) 756-6212  
 stormwaterinquiry@hydro-int.com

CAD Ref: DS-8x14

Project No. xx-xxxx

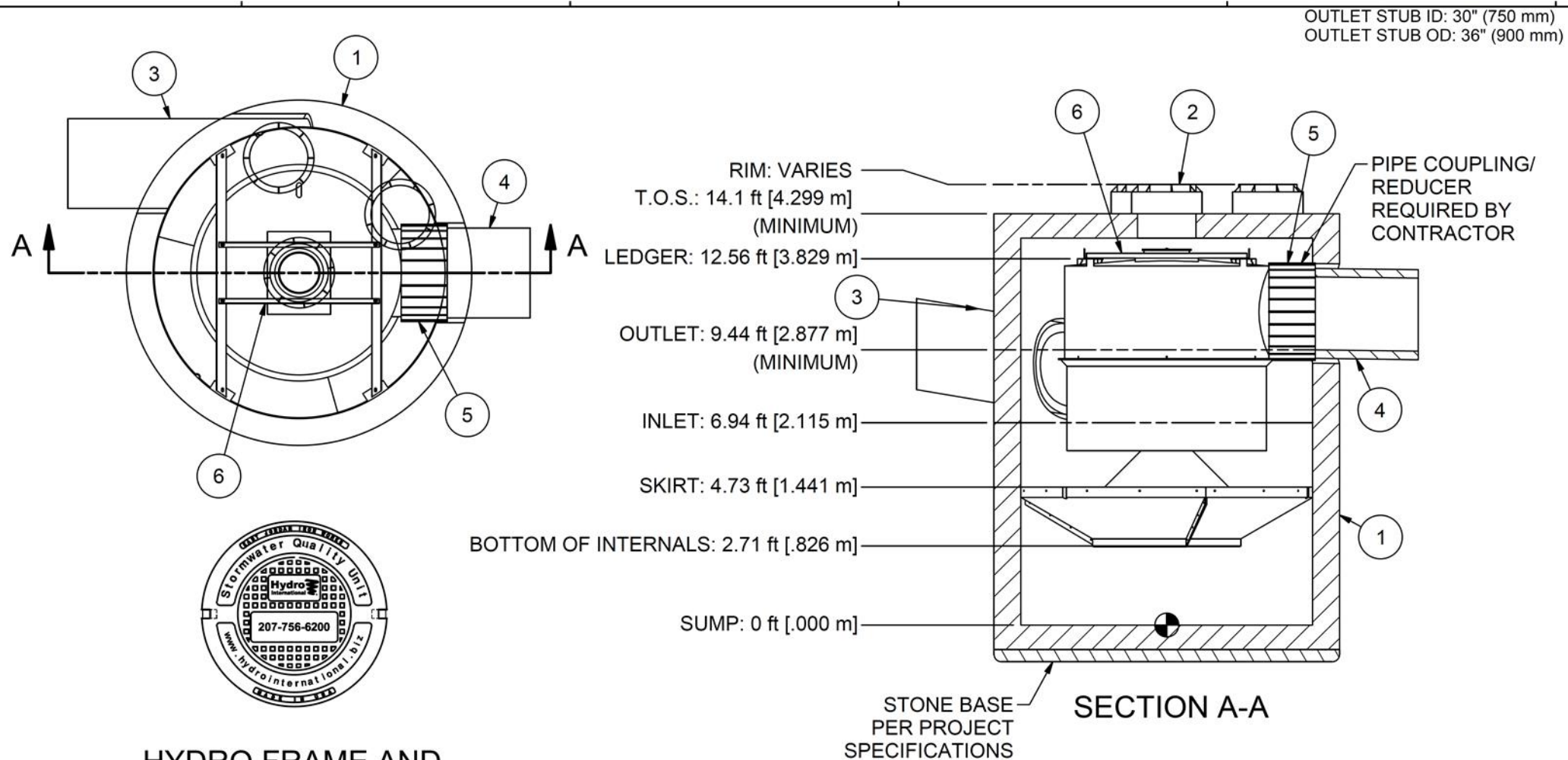
Drawing No. DS-8x14 Rev.

Sediment Filter



Valley Plaza Park Stormwater Project  
 StormTunnel Alternative

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1	...
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**HYDRO FRAME AND COVER (INCLUDED)**

GRADE RINGS BY OTHERS AS REQUIRED

EQUIPMENT PERFORMANCE

The stormwater treatment unit shall adhere to the hydraulic parameters given in the chart below and provide the removal efficiencies and storage capacities as follows:

1. The treatment system shall use an induced vortex to separate pollutants from stormwater runoff.
2. Peak Hydraulic Capacity: 25.0 cfs (708 l/s)
3. Sediment Storage Capacity: 8.70 cu. yd. (6.65 cu. m)
4. Continuous Oil Storage Capacity: 1050 gal. (3975 liters)
5. Sediment shall be stored in a zone that is isolated from the main flow path and protected from reentrainment by a benching skirt.
6. For more product information including regulatory acceptances, please visit <https://hydro-int.com/en/products/downstream-defender>

NOTE: NOT FOR CONSTRUCTION. CONTACT HYDRO FOR SITE SPECIFIC DETAIL

PARTS LIST

ITEM	QTY	SIZE (in)	SIZE (mm)	DESCRIPTION
1	1	120	3000	PRECAST MANHOLE (BY HYDRO VIA PRECASTER)
2	3	24	600	FRAME AND COVER (QTY 3)
3	1	30 (MAX)	750 (MAX)	INLET PIPE (BY OTHERS)
4	1	30 (MAX)	750 (MAX)	OUTLET PIPE (BY OTHERS)
5	1			PIPE COUPLING (BY OTHERS)
6	1			INTERNAL COMPONENTS (PRE-INSTALLED)

ANY WARRANTY GIVEN BY HYDRO INTERNATIONAL WILL APPLY ONLY TO THOSE ITEMS SUPPLIED BY IT. ACCORDINGLY HYDRO INTERNATIONAL CANNOT ACCEPT ANY RESPONSIBILITY FOR ANY STRUCTURE, PLANT, OR EQUIPMENT, (OR THE PERFORMANCE THERE OF) DESIGNED, BUILT, MANUFACTURED, OR SUPPLIED BY ANY THIRD PARTY. HYDRO INTERNATIONAL HAVE A POLICY OF CONTINUOUS DEVELOPMENT AND RESERVE THE RIGHT TO AMEND THE SPECIFICATION. HYDRO INTERNATIONAL CANNOT ACCEPT LIABILITY FOR PERFORMANCE OF ITS EQUIPMENT, (OR ANY PART THEREOF), IF THE EQUIPMENT IS SUBJECT TO CONDITIONS OUTSIDE ANY DESIGN SPECIFICATION. HYDRO INTERNATIONAL OWNS THE COPYRIGHT OF THIS DRAWING, WHICH IS SUPPLIED IN CONFIDENCE. IT MUST NOT BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT IS SUPPLIED AND MUST NOT BE REPRODUCED, IN WHOLE OR IN PART, WITHOUT PRIOR PERMISSION IN WRITING FROM HYDRO INTERNATIONAL.

PROJECTION

**IF IN DOUBT ASK**

COMMENTS:  
1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.  
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING DOWNSTREAM DEFENDER MANHOLE.

DATE: 11/8/2019 SCALE: NTS  
DRAWN BY: GW CHECKED BY: APPROVED BY:

Title  
10ft-DIAMETER  
DOWNSTREAM DEFENDER

**Hydro International**  
hydro-int.com  
HYDRO INTERNATIONAL

**DO NOT SCALE DRAWING**  
**STEEL FABRICATION TOLERANCES**  
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.

LINEAR 000 - 012in = ±0.04in 012 - 024in = ±0.06in 024 - 048in = ±0.08in 048 - 120in = ±0.12in 120in >>> = ±0.20in	ANGULAR 000 - 120in = ±1° 120 - 240in = ±0.5° 240in >>> = ±0.25°
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WEIGHT: N/A MATERIAL:

REFERENCE NUMBER:

DRAWING NO.:

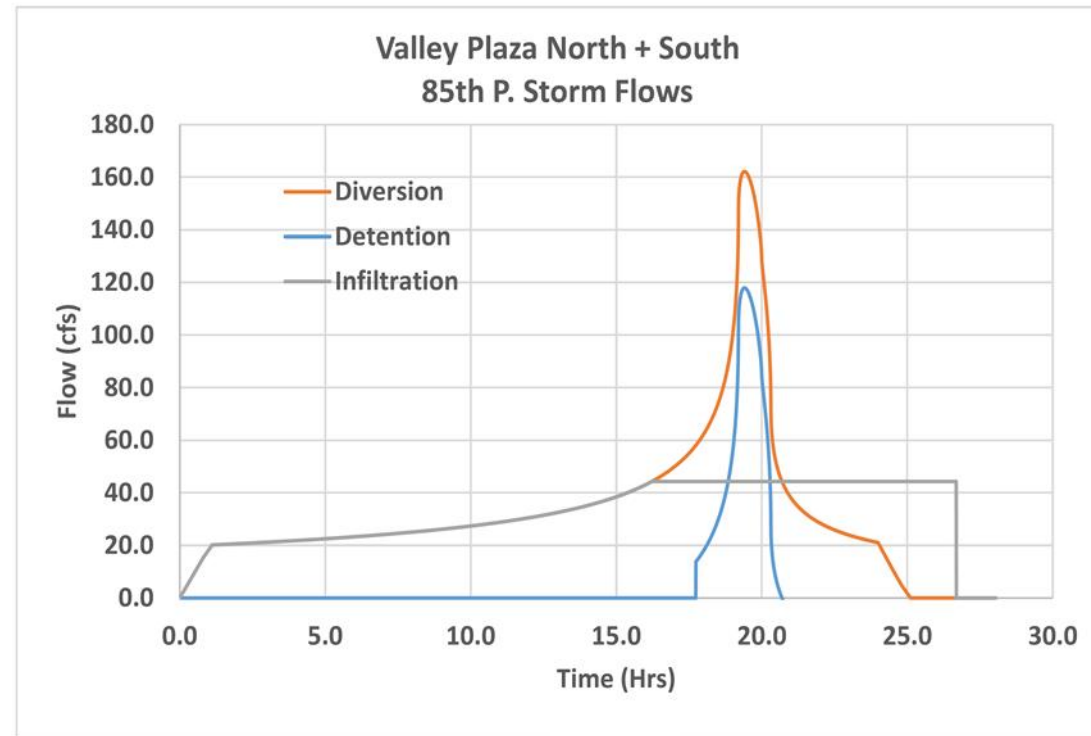
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Hydrodynamic Separator

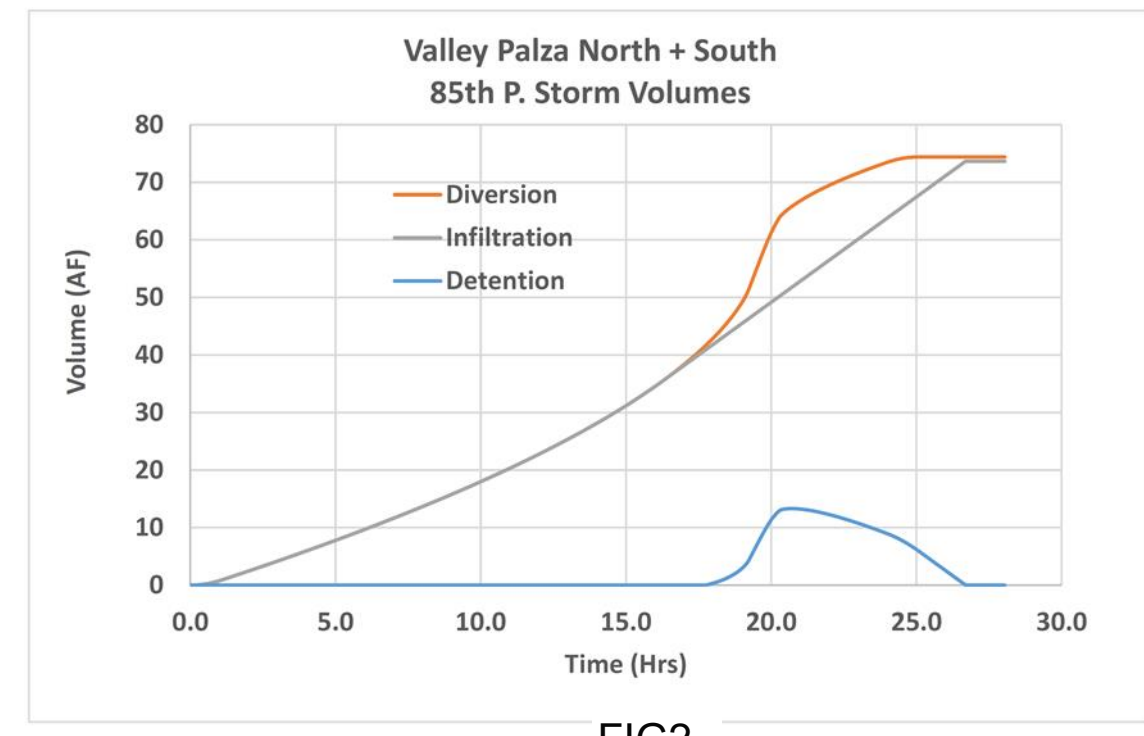
**SEITec**

Valley Plaza Park Stormwater Project  
StormTunnel Alternative

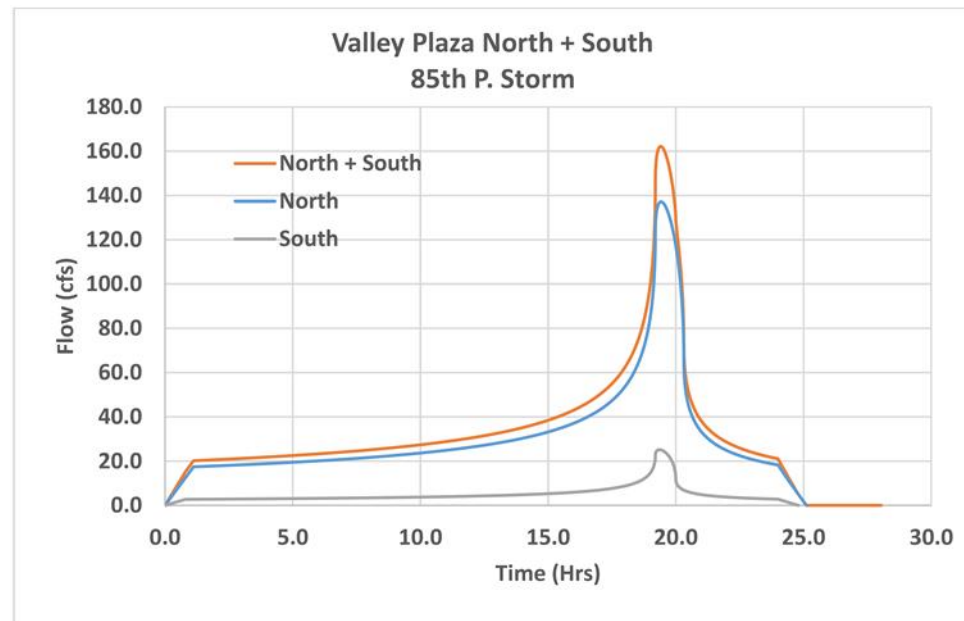
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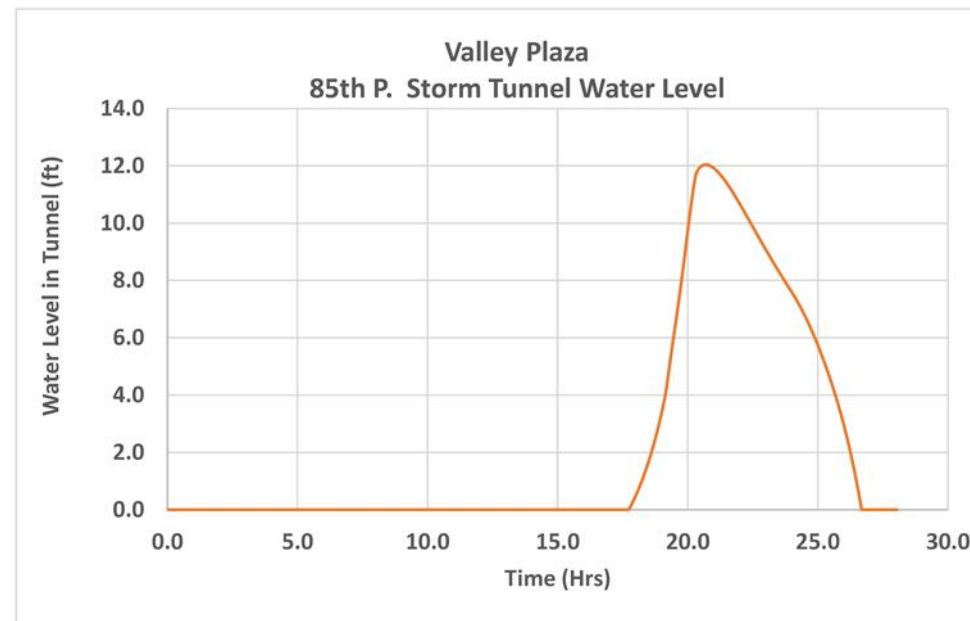
**FIG1**



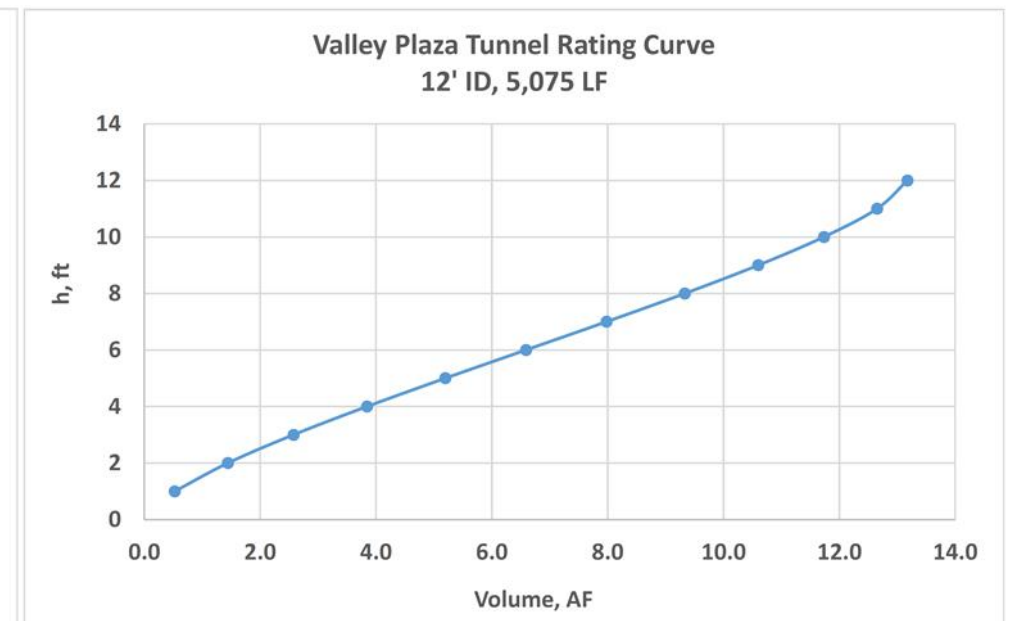
**FIG2**



**FIG3**



**FIG4**



**FIG5**

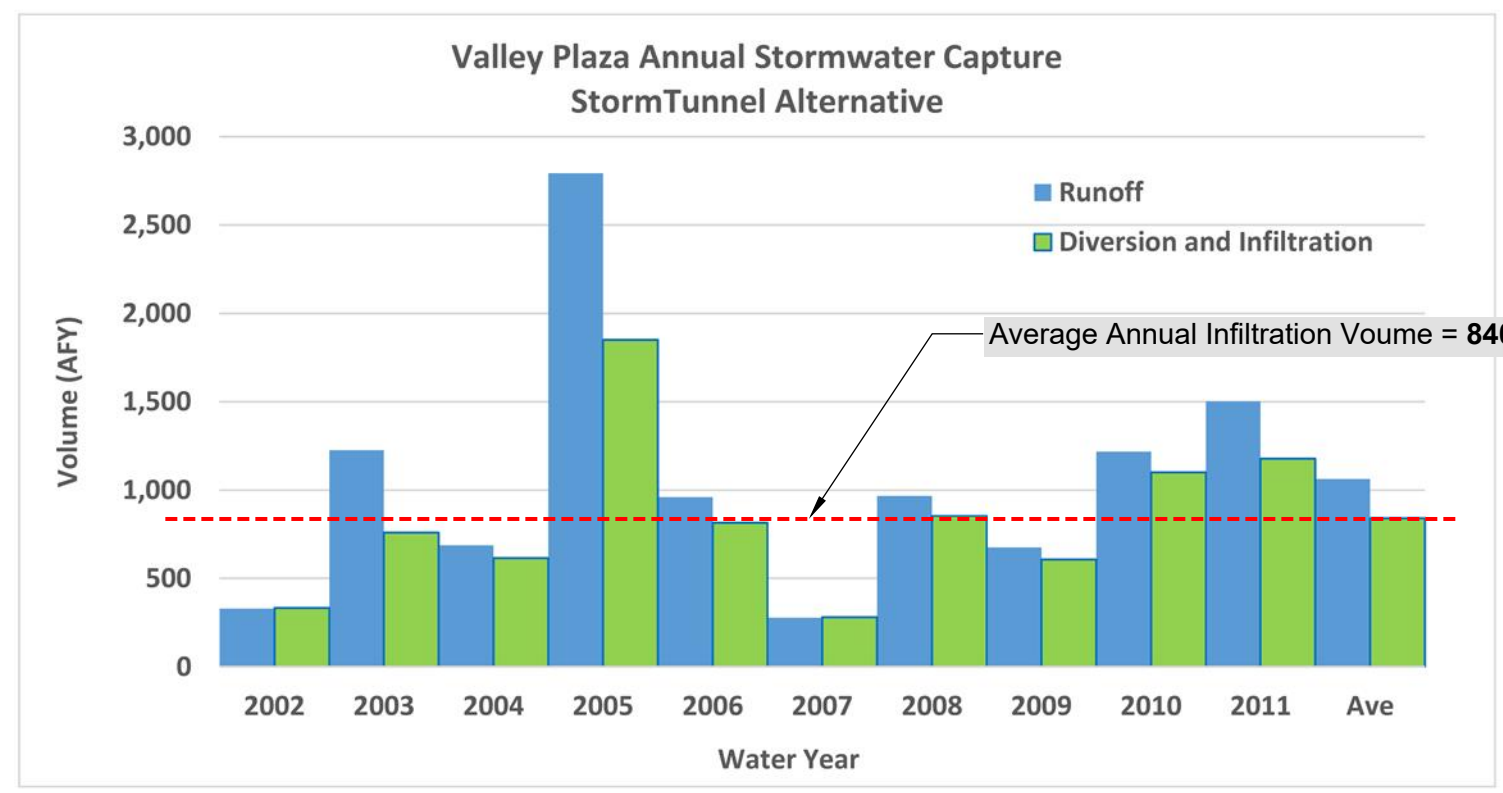
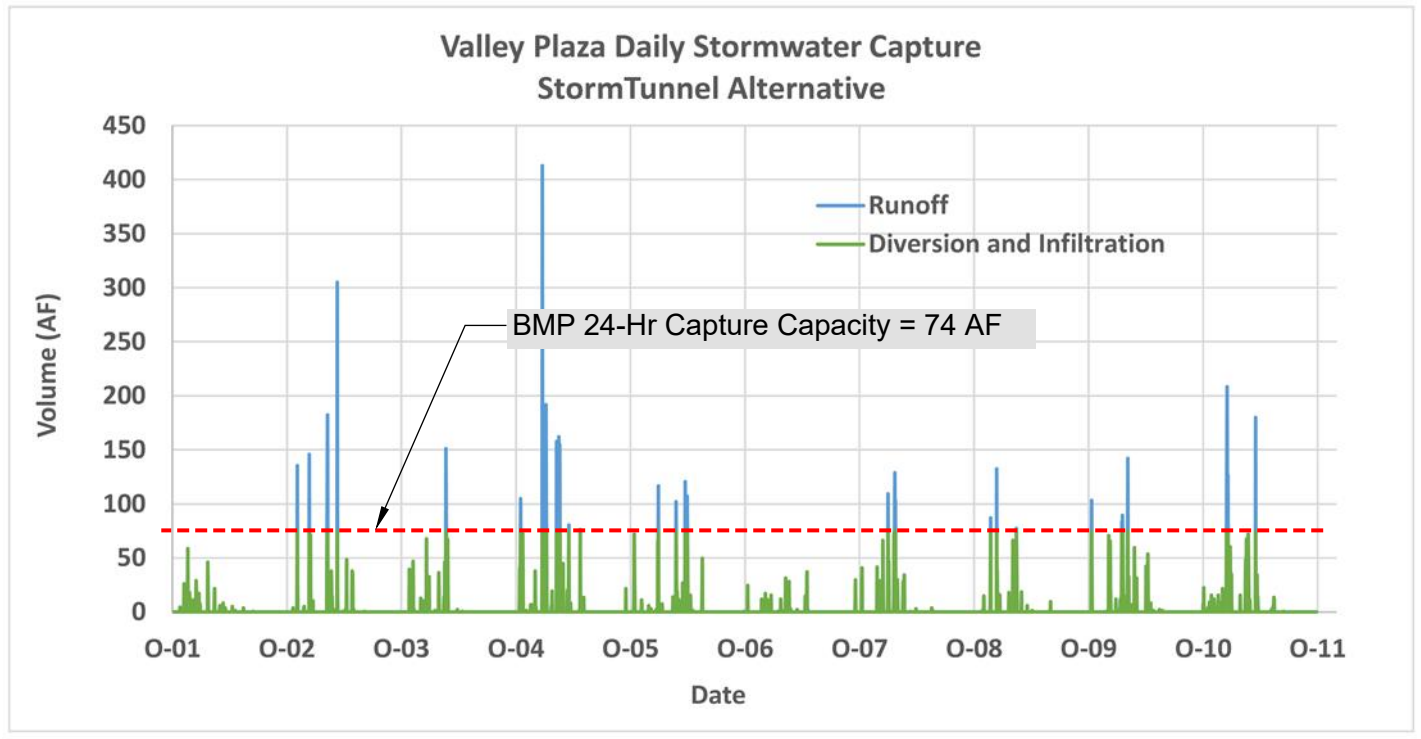
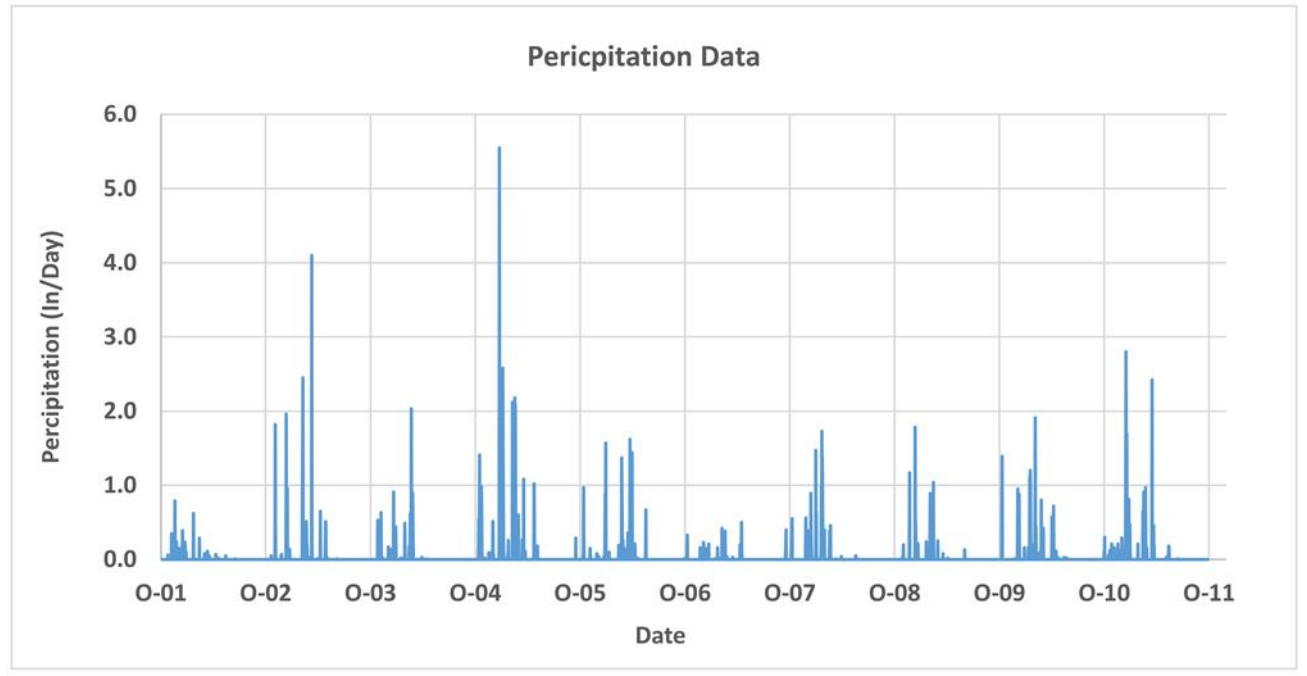
Modeling Results  
85th P. 24-hr Storm



Valley Plaza Park Stormwater Project  
StormTunnel Alternative

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Modeling Results  
10-yr Daily and Annual Capture



Valley Plaza Park Stormwater Project  
StormTunnel Alternative

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