

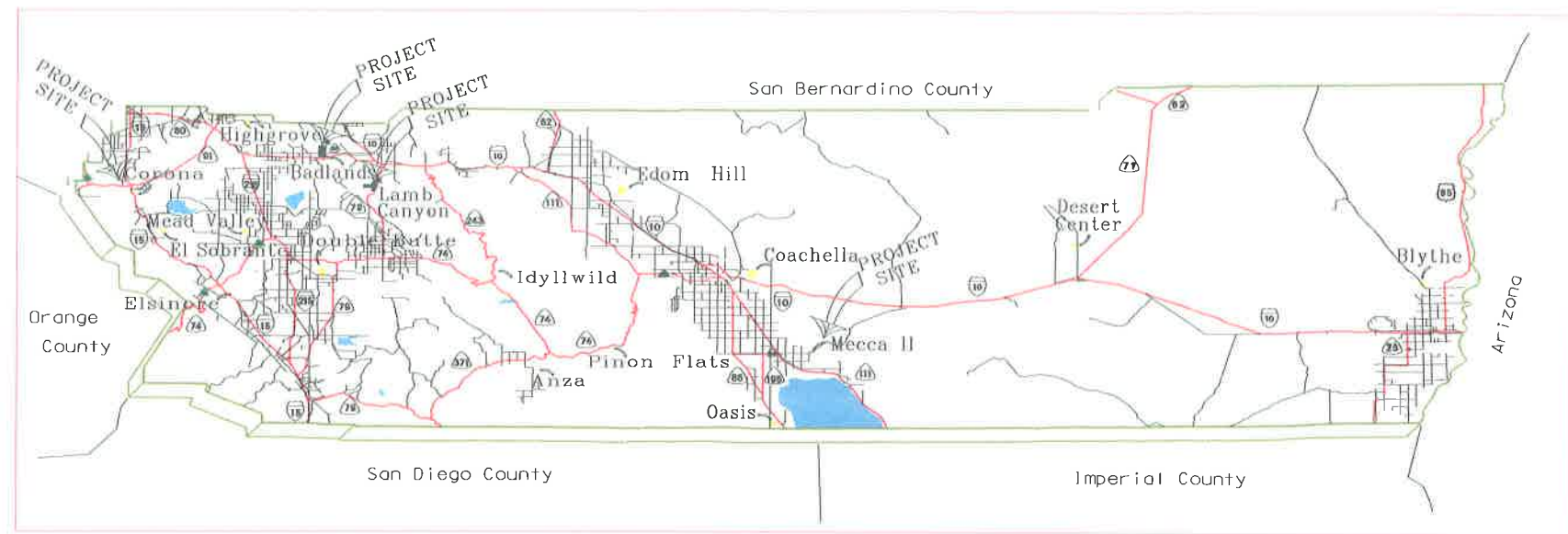
# General Project Drawings for

## Construction of Landfill Gas Collection System Components at the Badlands, Corona, Lamb Canyon, and Mecca II Sanitary Landfills and as Needed Perimeter Probe Installation 2021 to 2024



Hans W. Kernkamp, General Manager/ Chief Engineer

PREPARED BY  
DEPARTMENT OF WASTE RESOURCES  
14310 FREDERICK STREET  
MORENO VALLEY, CALIFORNIA 92553  
TEL. (951) 486-3200 FAX. (951) 486-3250



LOCATION MAP  
N.T.S.

INDEX OF DRAWINGS	
SHEET NO.	TITLE
G1	General Notes and Legends
G2	Lamb Canyon and Badlands Project Vicinity Maps
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G11	Typical Horizontal Well & Gravel Pit Detail
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G13	Multi-Level Probe Detail
G14	Mecca II Concrete and Tank Detail

FILL PATTERNS

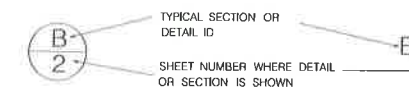
	ASPHALT
	FINAL COVER BLENDED MATERIAL (UPPER 4')
	CONCRETE
	EXISTING EARTHEN MATERIAL
	GRouted RIP-RAP/OVERSIZE ROCK
	REFUSE
	EXISTING CLEAN DAILY COVER MATERIAL
	CLASS II AGGREGATE BASE ACCESS ROAD
	NON-SELECT FILL
	ON-SITE DAILY COVER MATERIAL STOCKPILED SOURCE

ABBREVIATIONS

A.C.	ASPHALT CONCRETE
APPROX.	APPROXIMATE
B.C.	BEGINNING OF CURVE
B.V.C.	BEGINNING OF VERTICAL CURVE
Q	CENTER LINE
CLF	CHAIN LINK FENCE
△	CURVE DELTA
E.	EASTING
E.C.	END OF CURVE
EL.	ELEVATION
E.V.C.	END OF VERTICAL CURVE
F	FILL
FL	FLOW LINE
GB	GRADE BREAK
HDPE	HIGH DENSITY POLYETHYLENE
HP	HIGH POINT
INV	INVERT OF PIPE, CHANNEL ETC.
L	LENGTH OF CURVE
N	NORTHING
N.T.S.	NOT TO SCALE
PVC	POLYVINYL CHLORIDE
PL	PROPERTY LINE
R	RADIUS
R.C.	REINFORCED CONCRETE
R.C.B.	REINFORCED CONCRETE BOX
R.C.F.C.	RIVERSIDE COUNTY FLOOD CONTROL
R.P.	RADIUS POINT OF CURVE
SDR	STANDARD DIMENSION RATIO
SIM	SIMILAR
STA.	STATION
T	TANGENCY
TDA	TIRE DERIVED AGGREGATE
TYP.	TYPICAL
TOP	TOP OF SLOPE
TOE	TOE OF SLOPE

GENERAL NOTES

- Details of construction, materials and workmanship not shown in these drawings shall conform to the pertinent requirements of the Standard Specifications and any applicable Contract Specifications.
- Contractor shall provide all utilities (water, electrical, and telephone service) as necessary to successfully complete any and all construction activities.
- All existing utilities such as fences, monitoring wells, pipe lines, gas lines, probes, etc. shall be protected from damage or replaced at Contractor's expense.
- All existing and proposed dimensions shall be verified by the Contractor prior to starting work. The Department shall be notified of all discrepancies immediately.
- Topography is developed by digital photogrammetric methods and field topographic survey.
- Grid ticks are based on North American datum of 1983 (NAD 83). California coordinate system Zone VI NAVD 88 is to be used for all on-site survey work.
- Topographic features, both contours and plan data, are based on R.C.F.C. photogrammetric mapping dated December 2010.
- All elevations are in feet, based on U.S.C. & G.S. Datum.



Detail Callouts

CONVENTIONAL SYMBOLS

	MONUMENT POINT
	CHAIN LINK FENCE
	SLOPE

WASTE RESOURCES DEPARTMENT

APPROVED:		GENERAL MANAGER-CHIEF ENGINEER R.C.E. C-45866
RECOMMENDED:		ASSISTANT CHIEF ENGINEER R.C.E. C-51694
RECOMMENDED:		PRINCIPAL ENGINEER R.C.E. C-66765
SUBMITTED:		SENIOR CIVIL ENGINEER R.C.E. C-74886



NO.	REVISIONS	BY	APPROVED	DATE

DESIGNED BY:	NMR
DRAWN BY:	ACC
CHECKED BY:	NMR
DATE:	November 20, 2020
DATE OF PHOTOGRAPHY:	NA
PROJECT:	Isar



Hans W. Kernkamp, General Manager/Chief Engineer

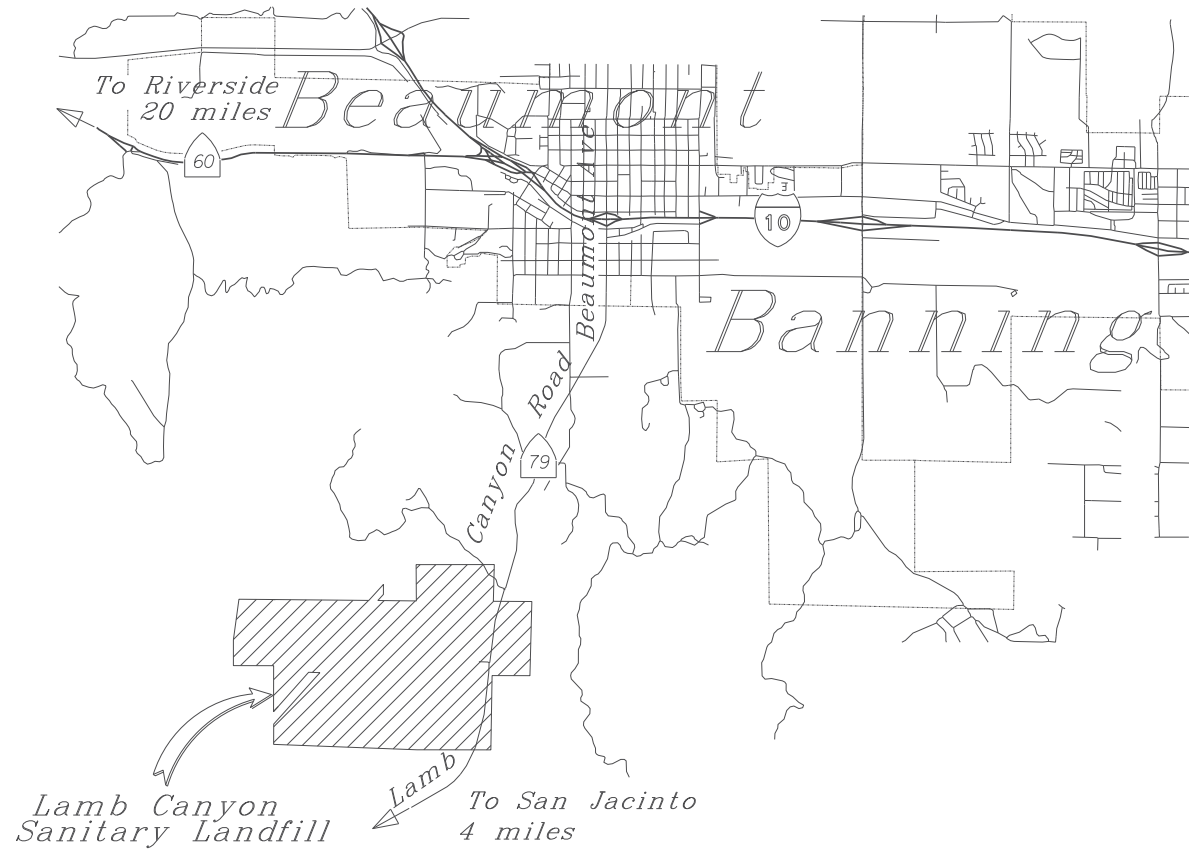
G1

Construction of Landfill Gas Collection System Components at the Badlands, Corona, Lamb Canyon, and Mecca II Sanitary Landfills and As Needed Perimeter Probe Installation 2021 to 2024  
General Notes and Legends

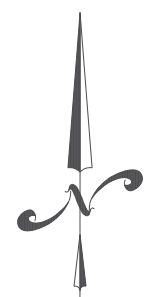
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FILE:	G1 general notes 2021 2024 LC_BLDgn
SHEET:	1 OF 14

# Lamb Canyon Sanitary Landfill Vicinity Map

Por. Secs. 21, 28 & 29 T3S R1W S.B.B.M.

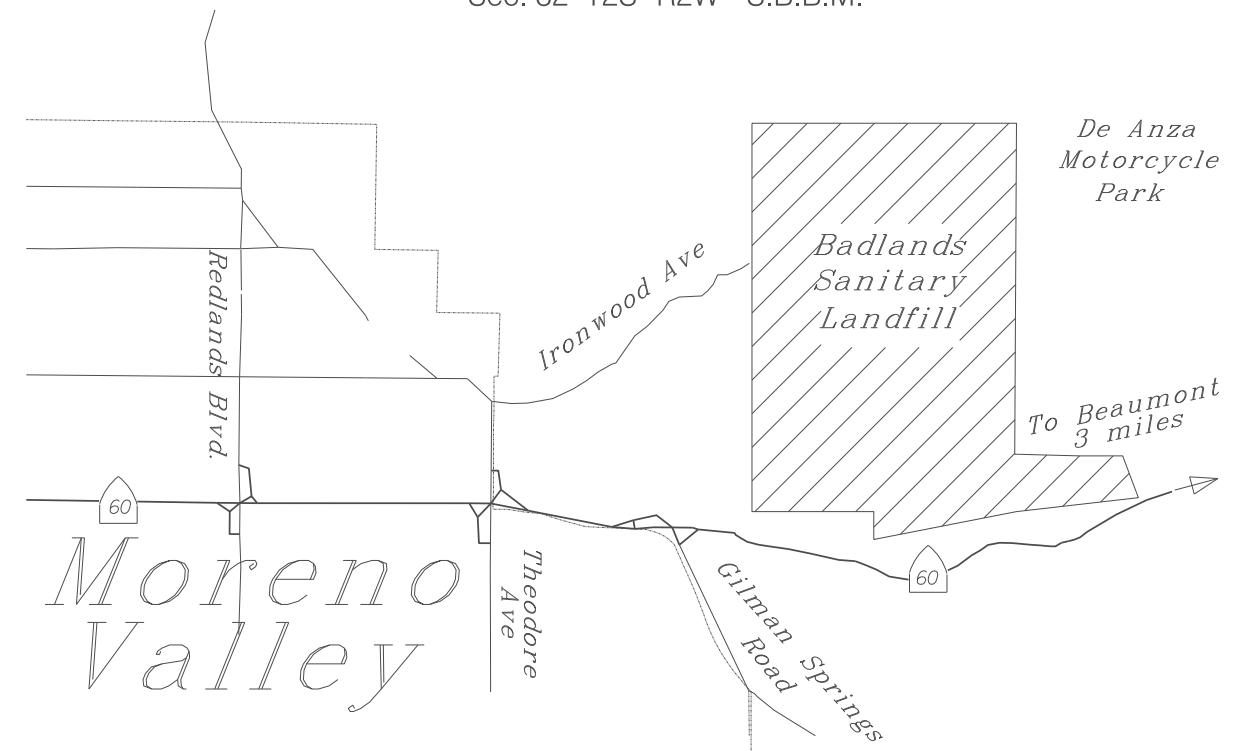


Legend	
Paved Access Roads	—
Freeways (Hwys 60 & I-10)	—
Other Roads	—
City Boundaries	—
Sanitary Landfill	

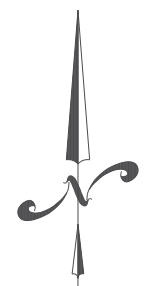


# Badlands Sanitary Landfill Vicinity Map

Por. Secs. 4 & 5 T3S R2W &  
Sec. 32 T2S R2W S.B.B.M.



Legend	
Paved Access Roads	—
Freeway (Highway 60)	—
Other Roads	—
City Boundary	—
Sanitary Landfill	



NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	NMR
					DRAWN BY:	ACC
					CHECKED BY:	NMR
					DATE:	November 20, 2020
					DATE OF PHOTOGRAPHY:	NA
					PENQUUEE:	laser



G2

Construction of Landfill Gas Collection System Components at the Badlands, Corona, Lamb Canyon, and Mecca II Sanitary Landfills and As Needed Perimeter Probe Installation 2021 to 2024

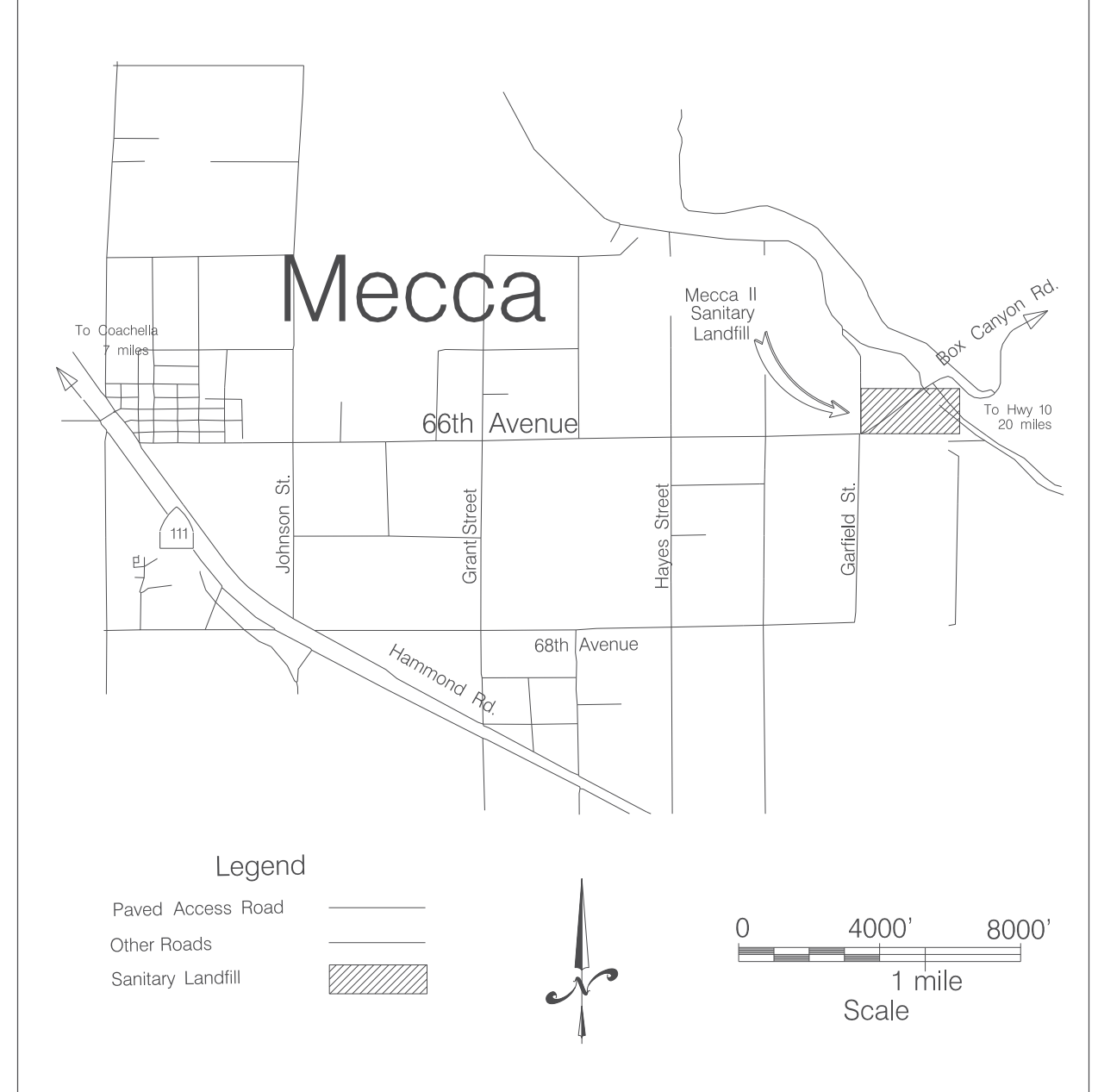
Project Vicinity  
Maps

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FILE:	G2-3 Vicinity maps 21-24.dgn
SHEET	2 OF 14

## Corona Closed Landfill Vicinity Map



## Mecca II Sanitary Landfill Vicinity Map



NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	NMR
					DRAWN BY:	ACC
					CHECKED BY:	NMR
					DATE:	November 20, 2020
					DATE OF PHOTOGRAPHY:	N/A
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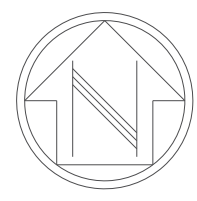
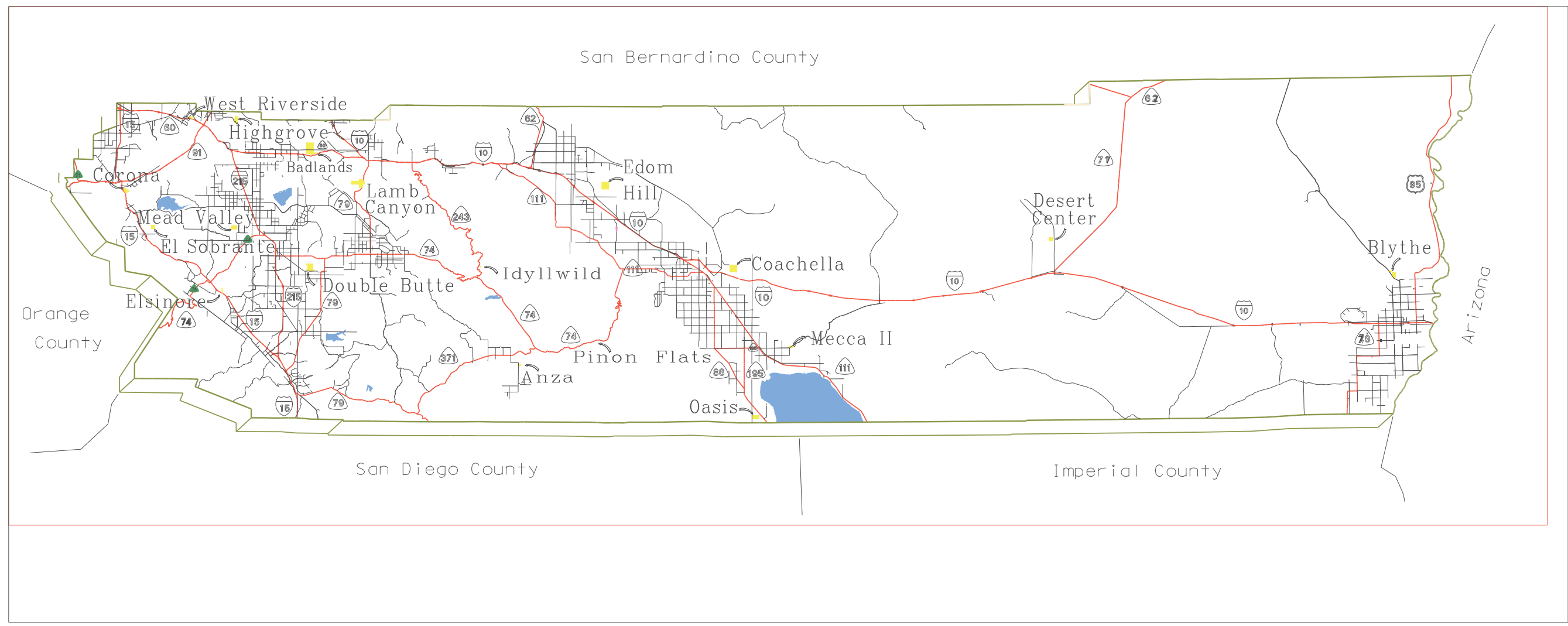
G 3

Construction of Landfill Gas Collection System Components at the Badlands, Corona, Lamb Canyon, and Mecca II Sanitary Landfills and As Needed Perimeter Probe Installation 2021 to 2024

*Project Vicinity  
Maps*

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FILE:	G2-3 Vicinity maps 21-24.dgn
SHEET	3 OF 14

# Riverside County Sanitary Landfills Location Map



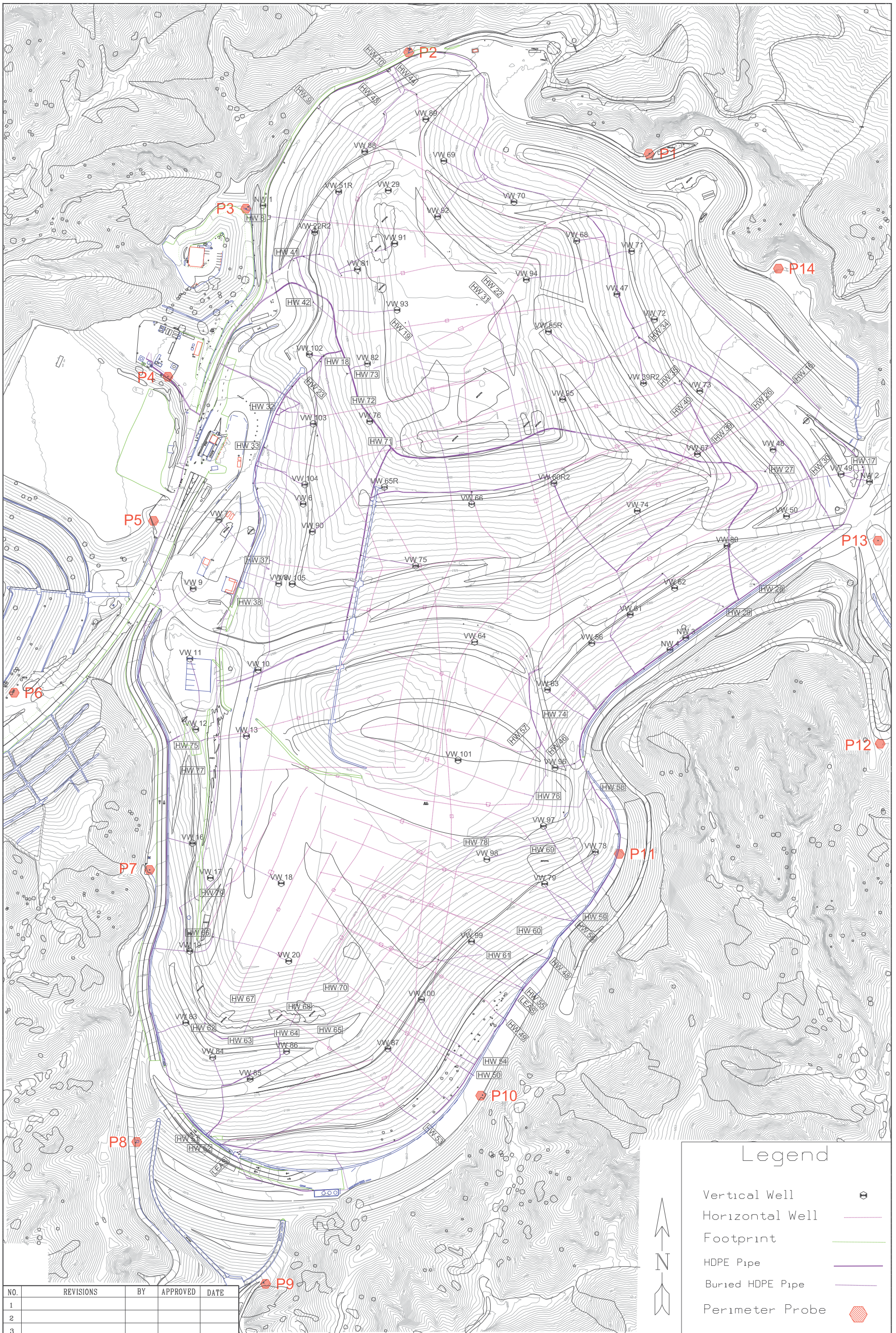
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					PENQUETTE: laser



G4


Construction of Landfill Gas Collection System Components at the Badlands, Corona, Lamb Canyon, and Mecca II Sanitary Landfills and As Needed Perimeter Probe Installation 2021 to 2024  
*Location Map*

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FILE:	G4 Landfill Location Maps.dgn
SHEET 4 OF 14	




NO.	REVISIONS	BY	APPROVED	DATE
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2				
3				

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DIRECTORY: gassystem/2019/LFG Exp CY20-23	DATE: July 2020
FILE: G5 BL site map.dgn	DATE OF PHOTOGRAPHY: June 2020
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**RIVERSIDE COUNTY  
DEPARTMENT OF  
WASTE RESOURCES**

Hans W. Kernkamp, General Manager/Chief Engineer

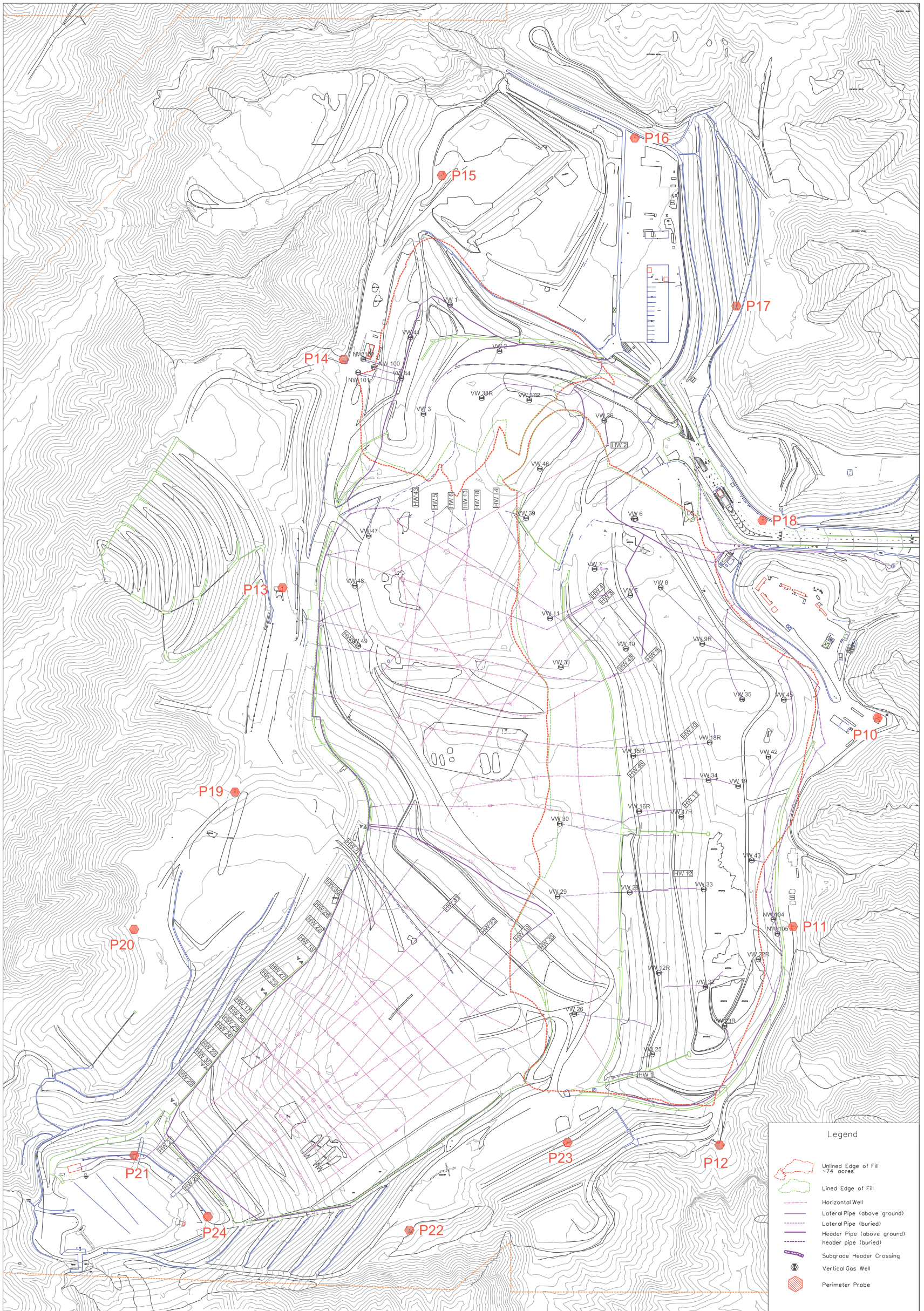


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Datum is mean sea level

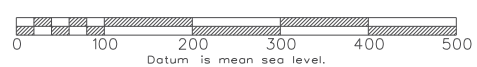
G5

Construction of Landfill Gas Collection System Components at the Badlands, Corona, Lamb Canyon, and Mecca II Sanitary Landfills and As Needed Perimeter Probe Installation 2021 to 2024

**Badlands Sanitary Landfill Site Map**



REVISIONS	BY	APPRVD	DATE

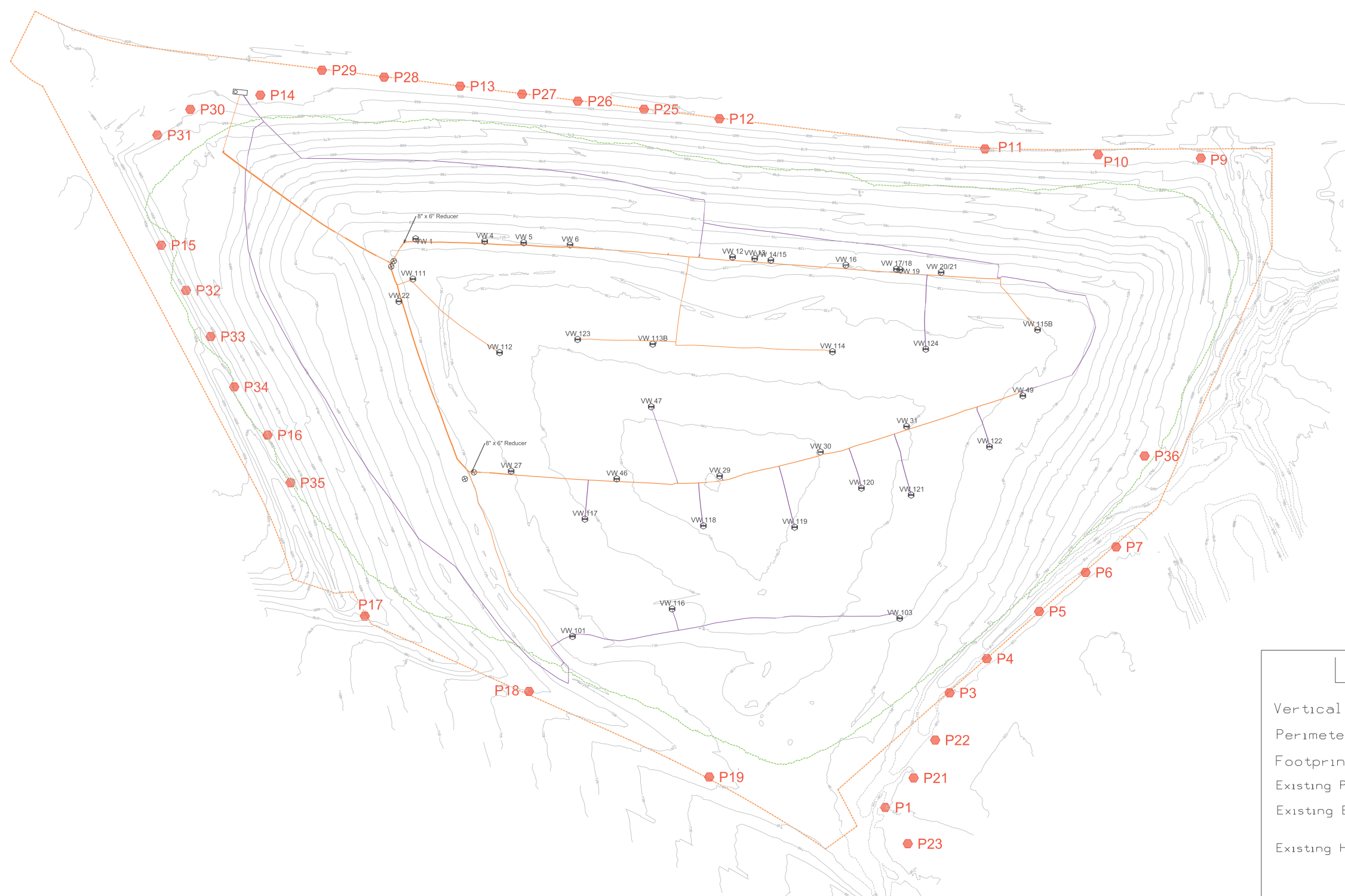


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 DRAWN BY: fe  
 CHECKED BY: fe  
 DRAWING DATE: March 2020  
 PHOTO DATE: March 2020  
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G6

Construction of Landfill Gas Collection System Components at the Badlands, Corona, Lamb Canyon, and Mecca II Sanitary Landfills and As Needed Perimeter Probe Installation 2021 to 2024  
**Lamb Canyon Sanitary Landfill Site Map**

SHEET: 6 of 14



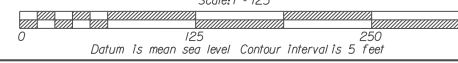
### Legend

Vertical Well	
Perimeter Probe	
Footprint	
Existing PVC	
Existing Buried PVC	
Existing HDPE	



NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	NMR
					DRAWN BY:	ACC
					CHECKED BY:	NMR
					DATE:	November 20, 2020
					DATE OF TOPO:	Oct 2015
					PEN/QUEUE:	laser

**RIVERSIDE COUNTY**  
**DEPARTMENT OF**  
**WASTE RESOURCES**  
 Hans W. Kernkamp, General Manager/Chief Engineer



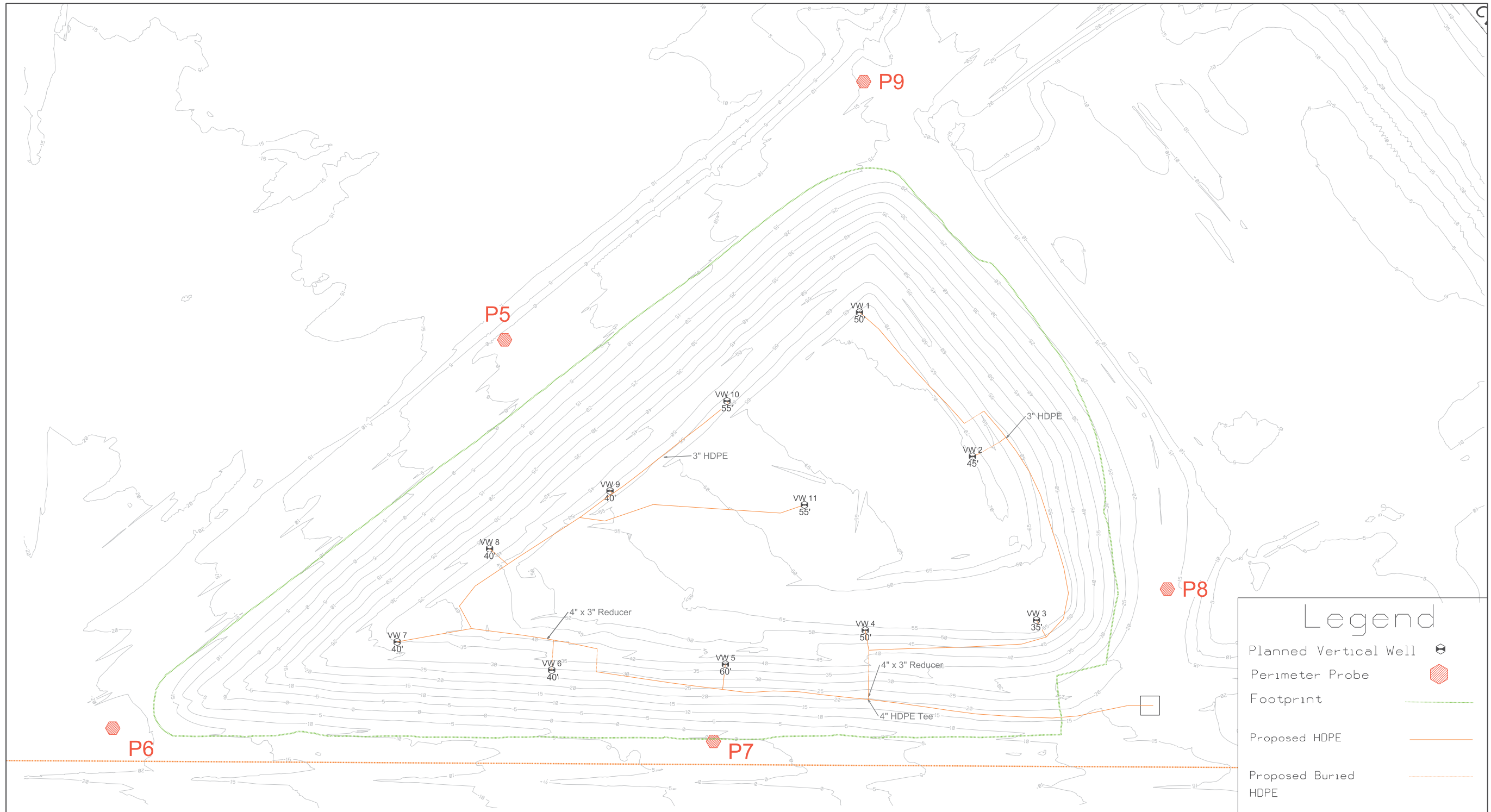
Construction of Landfill Gas Collection System Components at the Badlands, Corona, Lamb Canyon, and Mecca II Sanitary Landfills and As Needed Perimeter Probe Installation 2021 to 2024

*Corona Sanitary Landfill Site Map*

# G7

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DIRECTORY:	/2019/LFG Exp.CY20-23
FILE:	G7 Corona Site Map
SHEET	7 OF 14



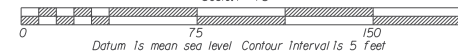


### Legend

- Planned Vertical Well
- Perimeter Probe
- Footprint
- Proposed HDPE
- Proposed Buried HDPE



NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	NMR
	Planned Gas Well Locations and Final Topo	ACC		JUL 19, 2019	DRAWN BY:	ACC
					CHECKED BY:	NMR
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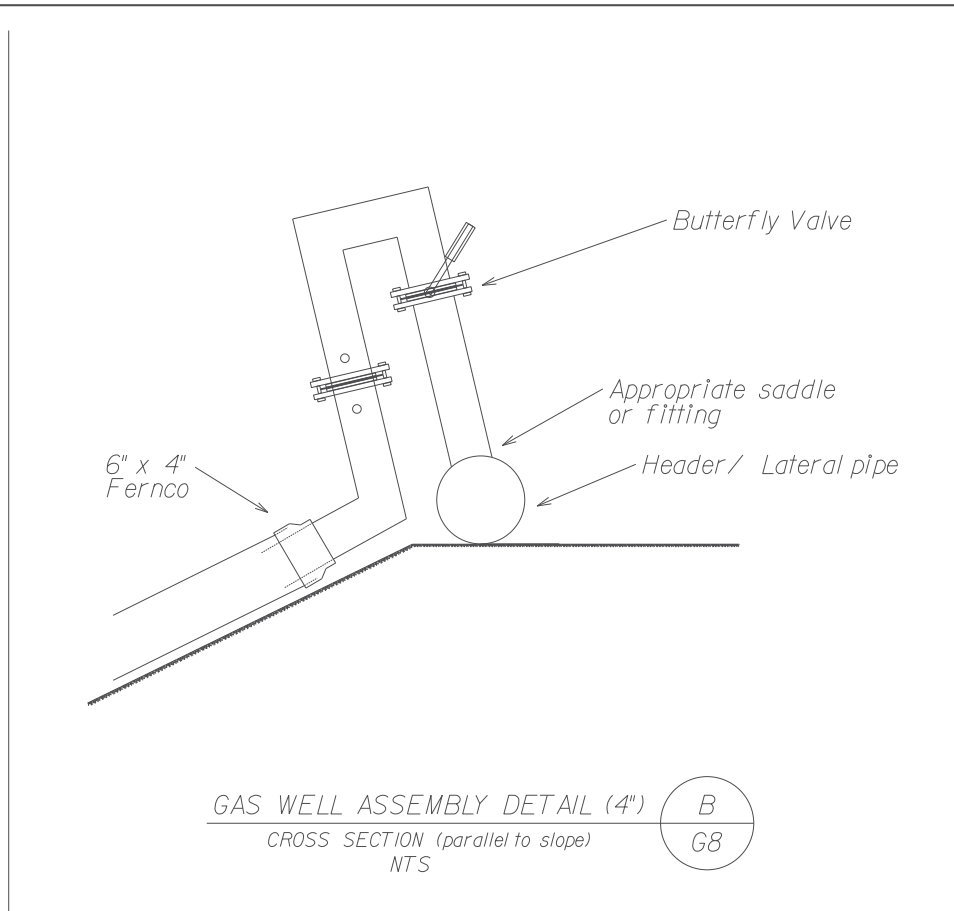
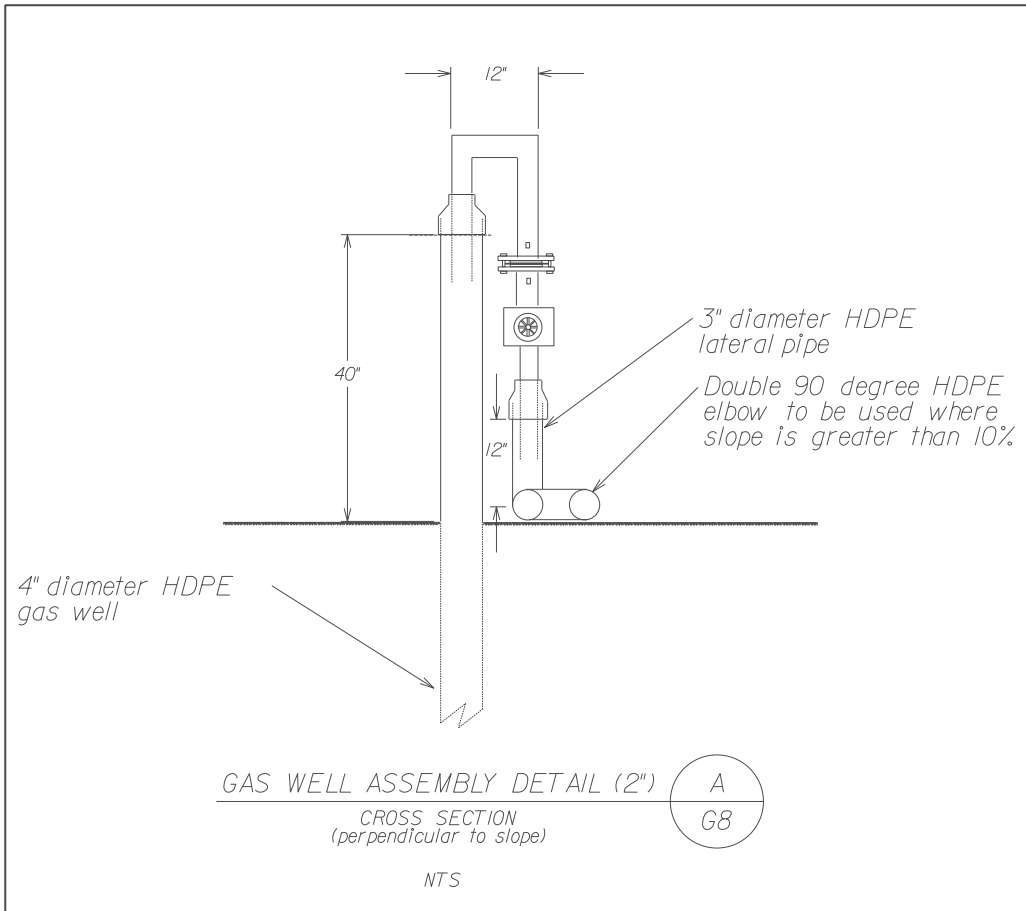


Construction of Landfill Gas Collection System Components at the Badlands, Corona, Lamb Canyon, and Mecca II Sanitary Landfills and As Needed Perimeter Probe Installation 2021 to 2024

Mecca II Sanitary Landfill Site Map

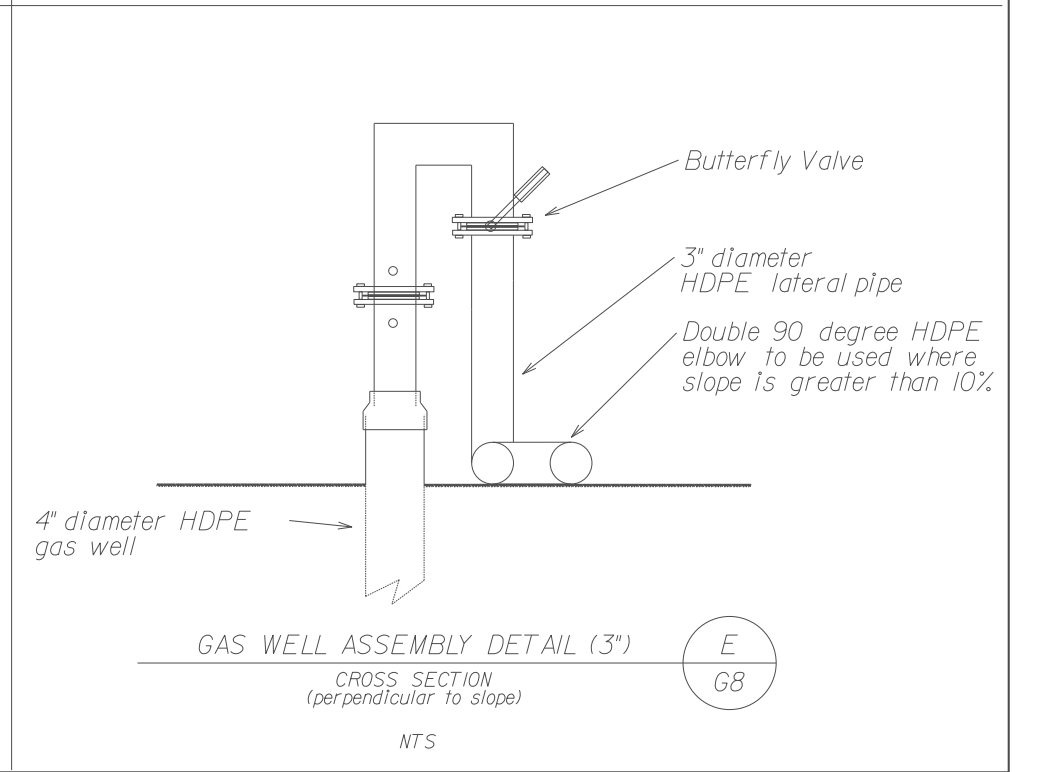
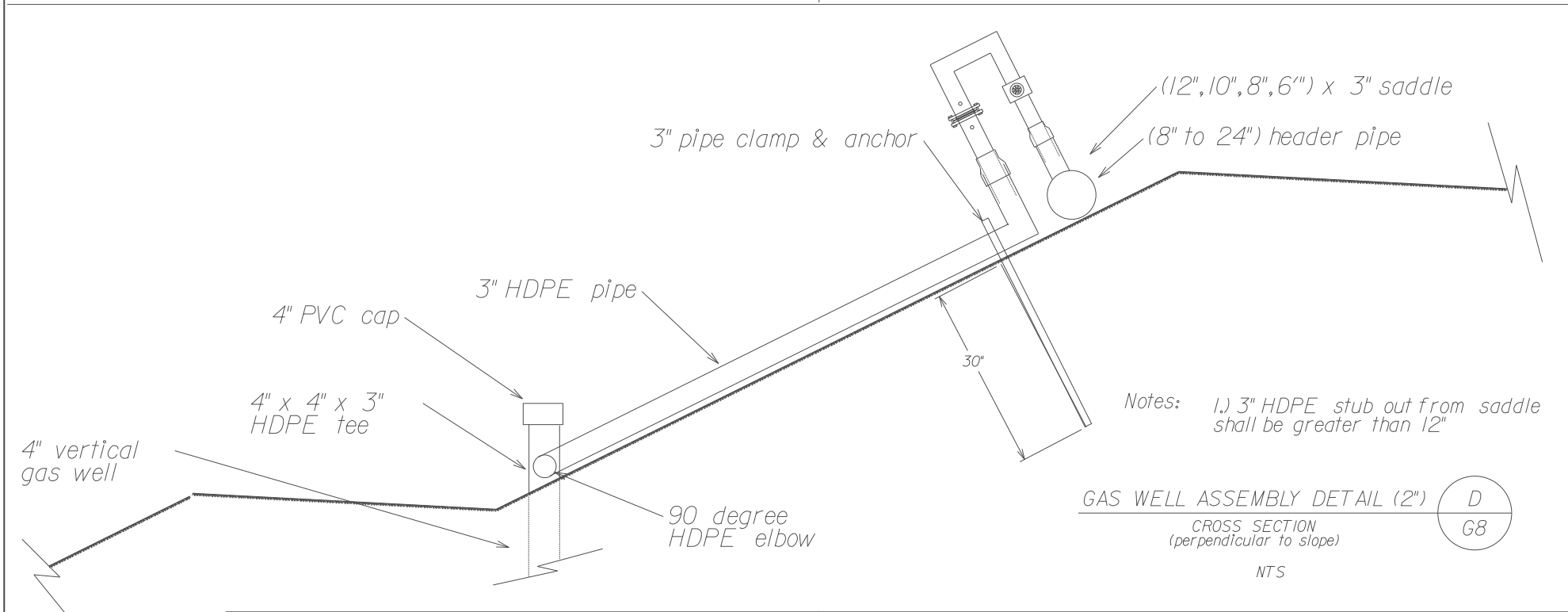
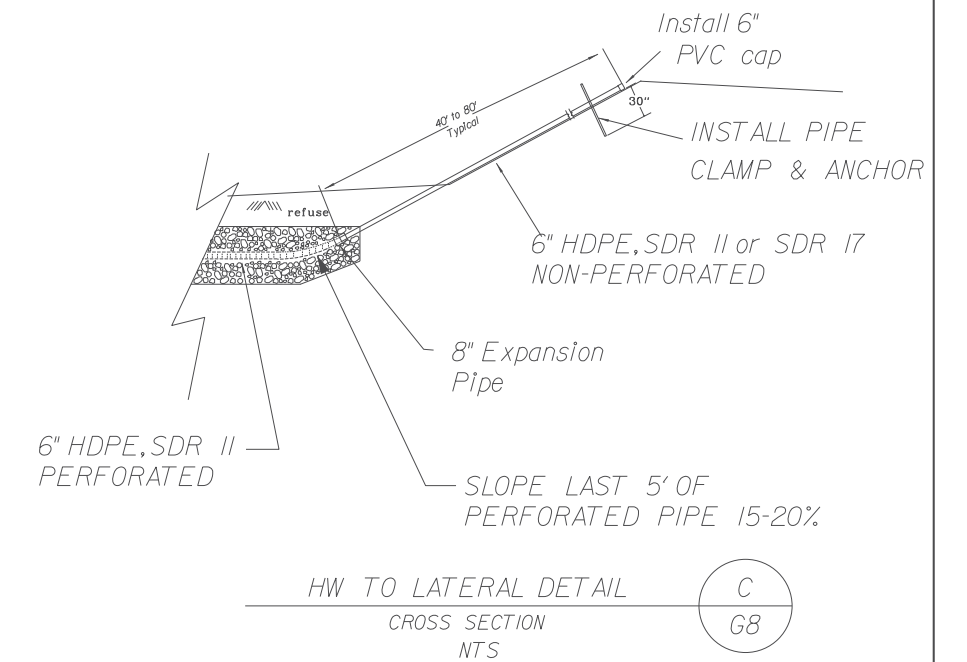
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FILE:	GB Mecca II Site Map
SHEET 8 OF 14	



Notes:

- 1.) Pipe clamp to be installed on 1 1/4" steel pipe driven 30" into soil.
- 2.) 6" diameter pipe clamps to be supplied by the County



NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	NMR
					DRAWN BY:	ACC/NMR
					CHECKED BY:	NMR
					DATE:	November 20, 2020
					DATE OF PHOTOGRAPHY:	N/A
					PENQUETUE:	laser



G 9

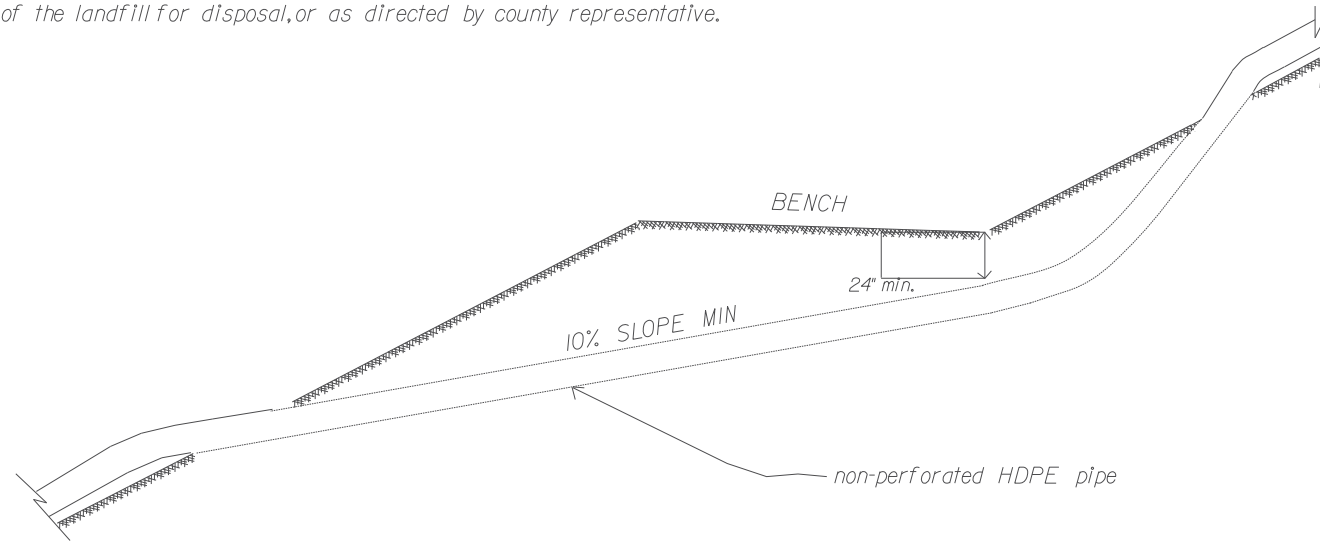
Construction of Landfill Gas Collection System Components at the Badlands, Corona, Lamb Canyon, and Mecca II Sanitary Landfills and As Needed Perimeter Probe Installation 2021 to 2024

Gas Well to Lateral and Gas Well Assembly Details

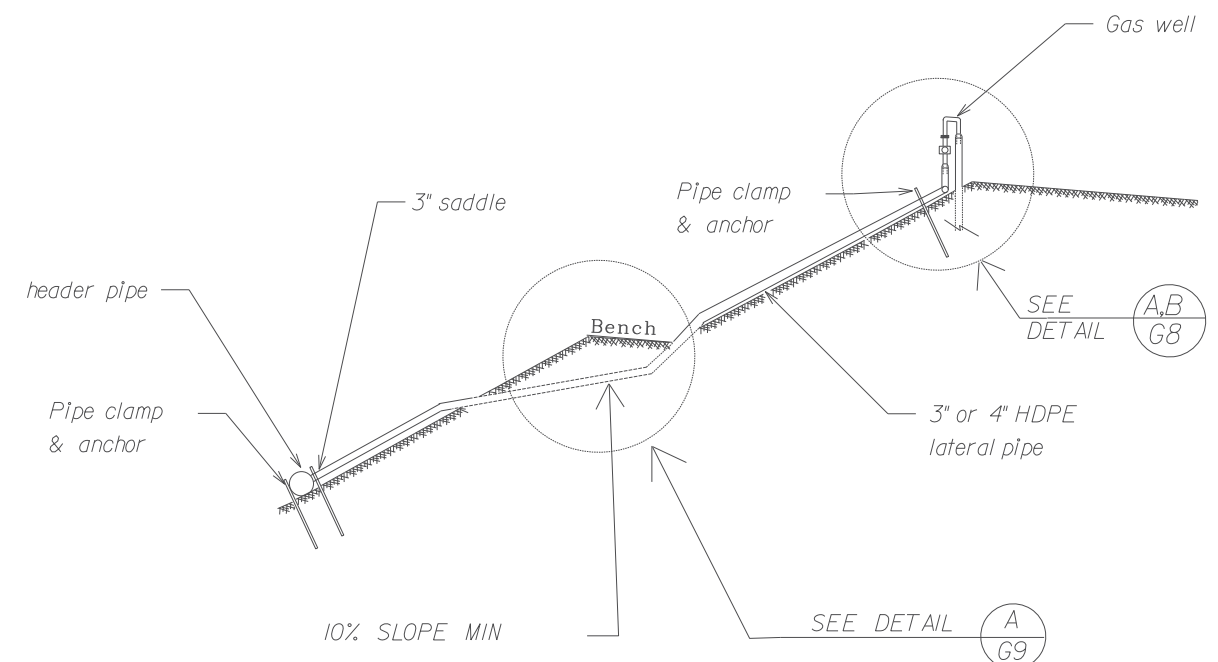
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DIRECTORY:	environ\sites\badlands\air\gassystem
DIRECTORY:	2019\LFG Exp. CY20-23
FILE:	G9 typical gas well assembly 21 24.dgn
SHEET	9 OF 14

Notes:

- 1.) Trench to be backfilled with clean soil in 6" lifts to 90% compaction
- 2.) Refuse might be encountered during trenching on deeper part of trench.
- 3.) All excavated refuse must be removed and taken to the working face of the landfill for disposal, or as directed by county representative.



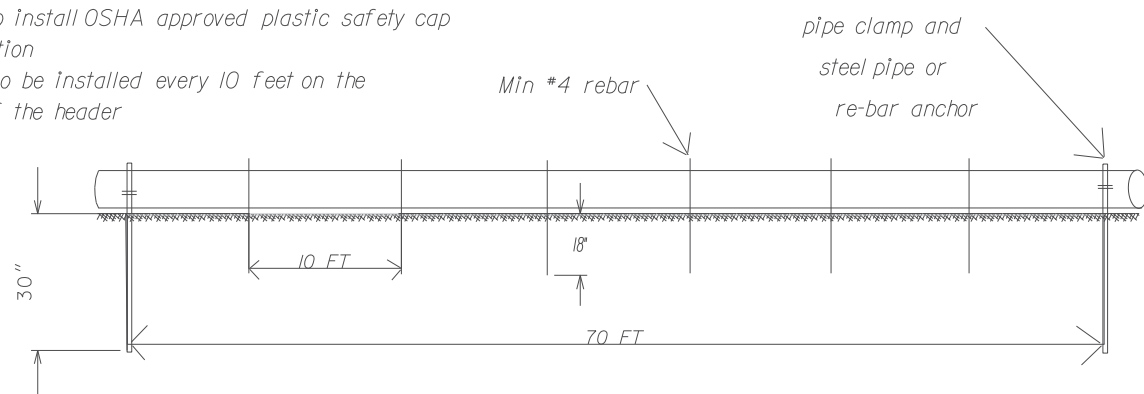
WELL LATERAL & HEADER BENCH CROSSING DETAIL  
CROSS SECTION NTS (A/G9)



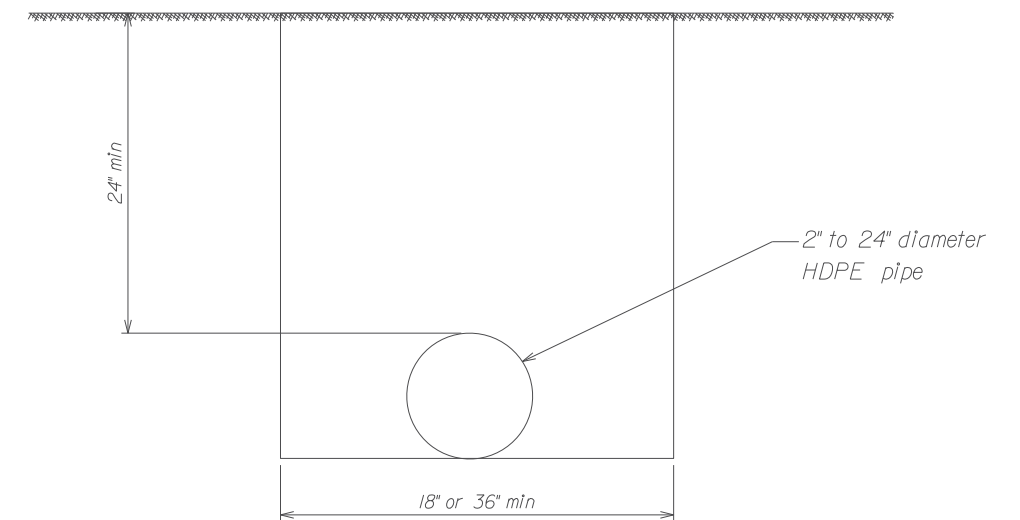
WELL LATERAL DETAIL  
CROSS SECTION NTS (B/G9)

Notes:

- 1.) Pipe clamps & anchors to be installed every 70 feet.
- 2.) Pipe clamps & anchors to be installed within one foot of each saddle connection
- 3.) Rebar to be driven 18" into ground and extend several inches above the header.
- 4.) Contractor is to install OSHA approved plastic safety cap on each rebar section
- 5.) Rebar section to be installed every 10 feet on the down-slope side of the header



HEADER PIPE DETAIL  
CROSS SECTION NTS (C/G9)



TRENCH DETAIL FOR BURIED PIPE  
CROSS SECTION NTS (D/G9)

Notes:

Trench Width shall be 12" greater than pipe O.D.



NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	NMR
					DRAWN BY:	ACC/NMR
					CHECKED BY:	NMR
					DATE:	November 20, 2020
					DATE OF PHOTOGRAPHY:	N/A
					PENQUEUE:	laser



Hans W. Kernkamp, General Manager/Chief Engineer

G10

Construction of Landfill Gas Collection System Components at the Badlands, Corona, Lamb Canyon, and Mecca II Sanitary Landfills and As Needed Perimeter Probe Installation 2021 to 2024

Lateral and Header Details

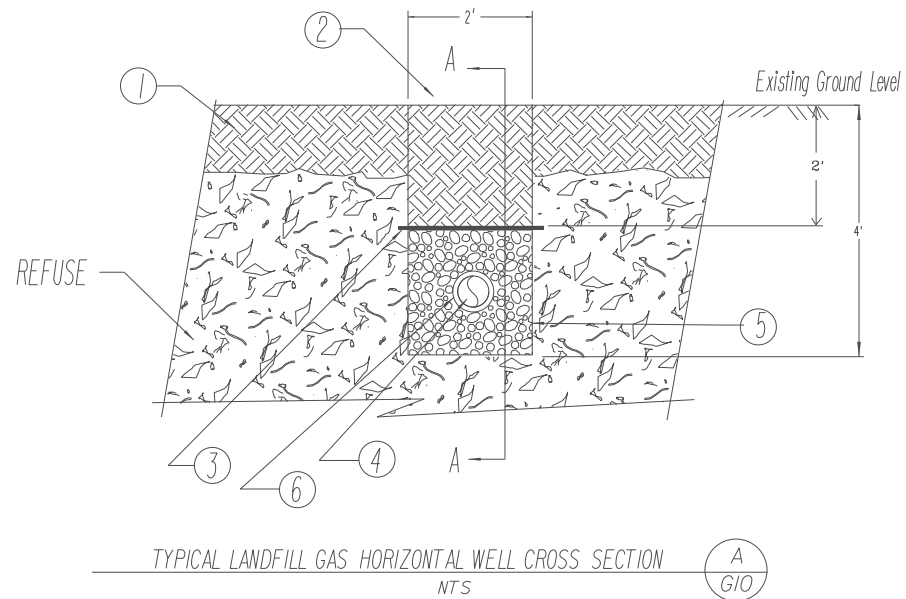
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SHEET:	10 OF 14

**Geotextile Specifications**

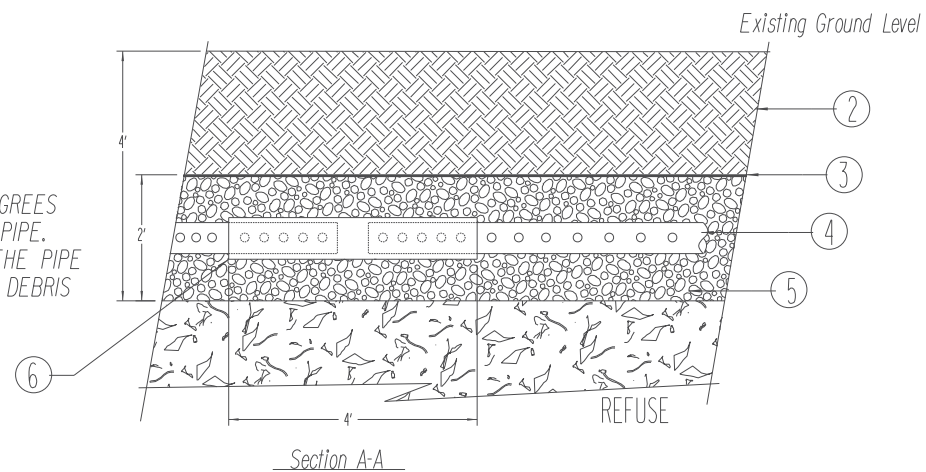
- 1.) The geotextile shall be of woven needle-punched, polyester fabric, Trevira Spunbound Type II35 or approved equal.
- 2.) The geotextile fibers shall be uniform in thickness and surface texture.
- 3.) The geotextile shall be free of any chemical treatment or coating that reduces permeability and shall be inert to chemicals commonly found in soils.

- 4.) The geotextile shall be a minimum of 125 Mils thick and conform to the minimum physical properties listed below:

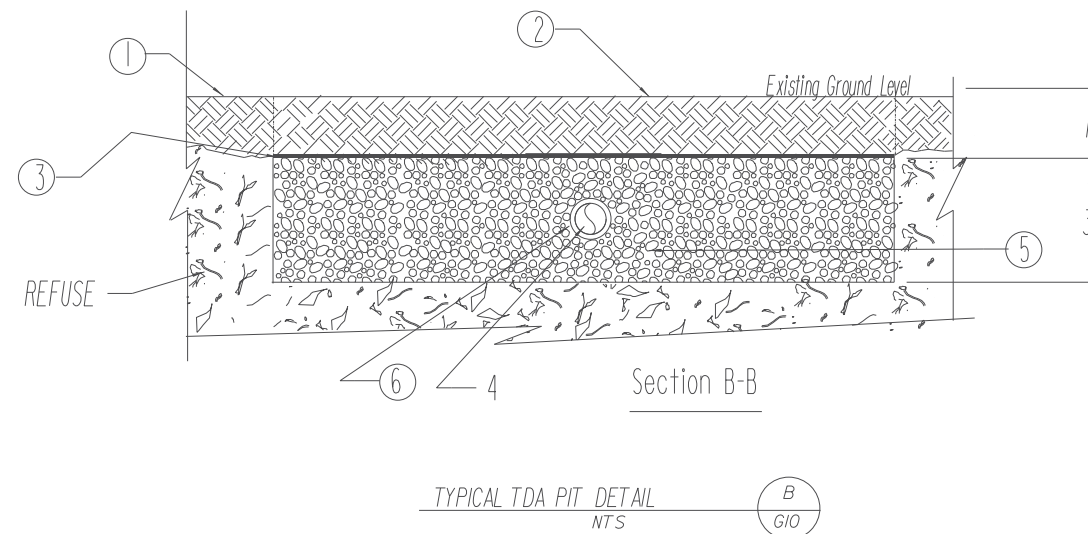
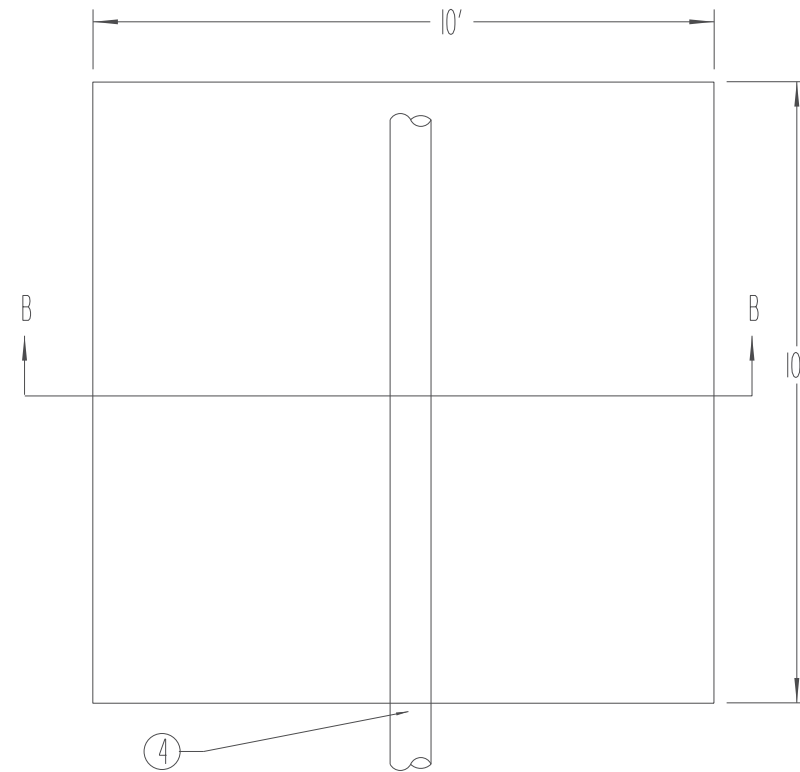
Physical Property	Test Method	Results
Fabric Mass	ASTM D-3776	10 oz/cy
Grab Tensile Strength	ASTM D-4632	250 lb.
Grab Elongation	ASTM D-4632	50 %
CBR Puncture Resistance	ASTM D-3786	525 lb.
Trapezoid Tear Strength	ASTM D-4553	100 lb.

- NOTES:
- A. WELL PIPE AND ROCK/TDA CROSSSECTION SHALL BE PLACED BELOW THE COVER SOIL AND WITHIN TRASH.
  - B. PERFORATION SHALL BE: 1/2" DIA HOLES DRILLED IN ROWS OF FOUR (4), NINETY (90) DEGREES APART, EVERY 6' PER LENGTH OF PIPE. HOLES MUST FULLY PENETRATE THE PIPE AND BE FREE OF CUTTINGS AND DEBRIS



- NOTES:
- A. WELL PIPE AND TDA CROSSSECTION SHALL BE PLACED BELOW THE COVER SOIL AND WITHIN TRASH.



- |  |   |  |
|--|---|--|
| 1. EXISTING COVER SOIL                           | 4. 6" HDPE, SDR 11, PERFORATED, 40' SECTION, SEE NOTE A                   | 6. 8" HDPE, SDR 11, PERFORATED, EXPANSION PIPE (4' LENGTH EVERY 40') |
| 2. CLEAN TRENCH/PIT BACKFILL                     |   |  |
| 3. GEOTEXTILE (see specifications on this sheet) | 5. EITHER TYPE A (3" MINUS) TIRE DERIVED AGGREGATE (TDA) OR 3" CLEAN ROCK |  |



NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	TE
1	Tire Derived Aggregate and Perf	NMR	NMR	02/20/2013	DRAWN BY:	TE
					CHECKED BY:	NMR
					DATE:	November 20, 2020
					DATE OF PHOTOGRAPHY:	NA
					PENQUEUE:	laser



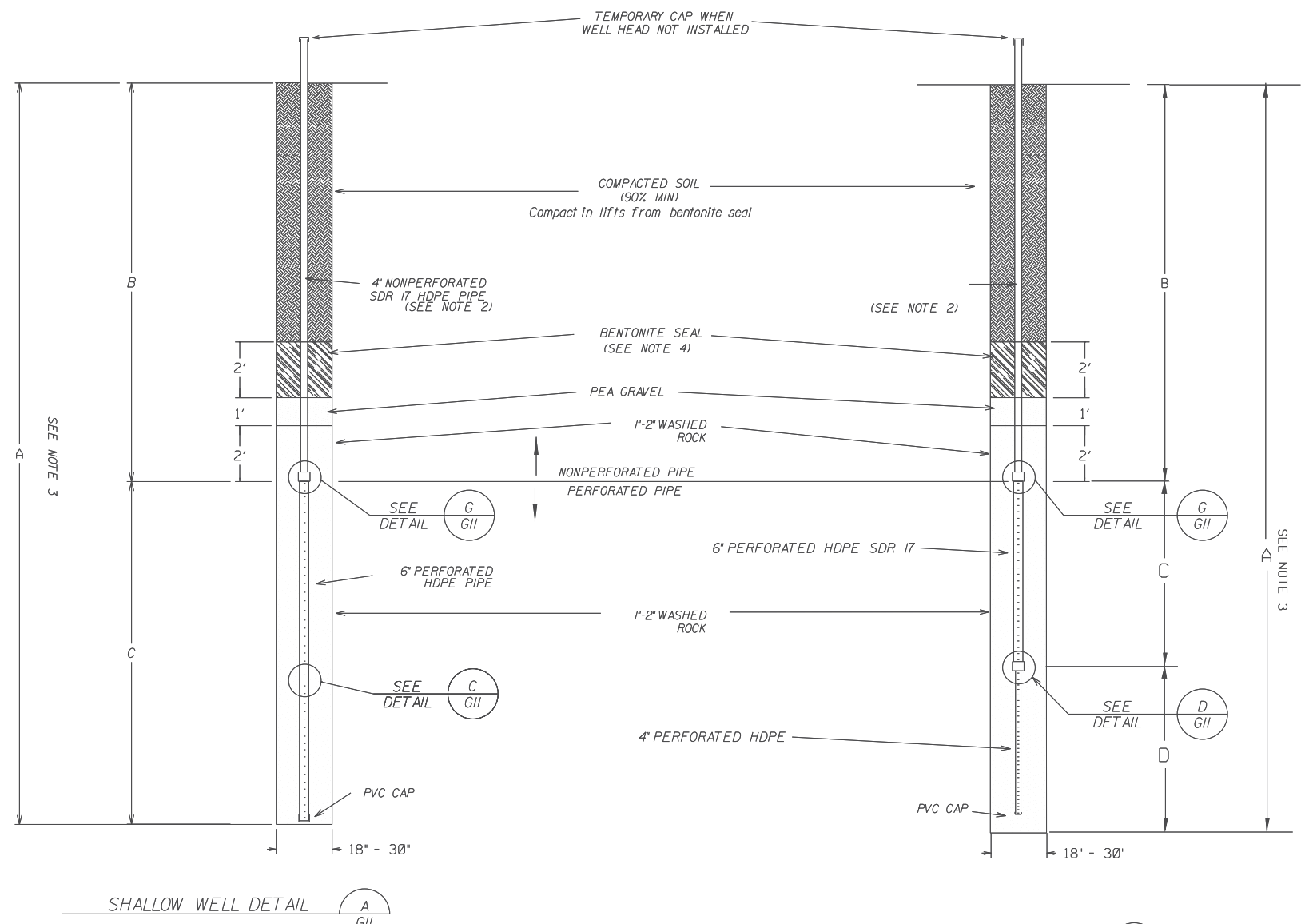
Hans W. Kernkamp, General Manager/Chief Engineer

G11

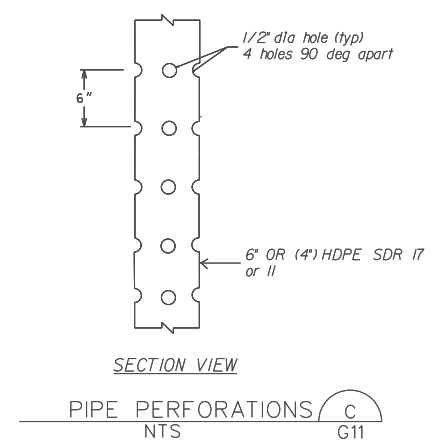
Construction of Landfill Gas Collection System Components at the Badlands, Corona, Lamb Canyon, and Mecca II Sanitary Landfills and As Needed Perimeter Probe Installation 2021 to 2024

Typical Horizontal Well & TDA Pit Detail

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SERVER:	wastefs-1
DIRECTORY:	environ\sites\badlands\air\gassystem
DIRECTORY:	2019\LFG Exp. CY20-23
FILE:	G11 bl_lc Horiz Well.dtl
SHEET:	Sheet 11 of 14



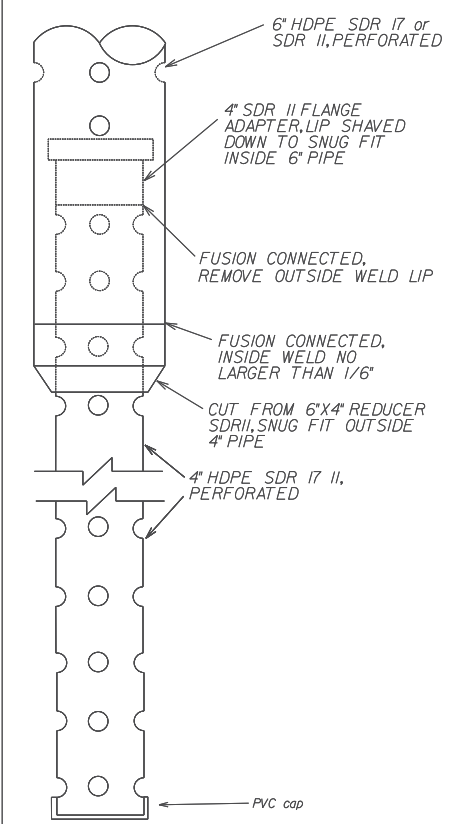
- NOTES:
1. IF THE LANDFILL BOTTOM IS ENCOUNTERED DURING DRILLING, THE CONTRACTOR SHALL BACKFILL THE HOLE TO AN ELEVATION THREE FEET ABOVE THE LANDFILL BOTTOM WITH BENTONITE.
  2. NO WELD SEAM OR OTHER OBSTRUCTION SHALL BE PRESENT ON THE SOLID 4" PE PIPE THAT MIGHT HINDER IT'S MOVEMENT IN THE TELESCOPING JOINT FOR A DISTANCE OF 15' ABOVE THE JOINT. HOLD PIPE VERTICAL DURING BACKFILL.
  3. WELL CONSTRUCTION DIMENSIONS ARE SHOWN ON DRILLING TABLE ON THIS SHEET.
  4. DURING DRILLING, A SCAQMD APPROVED EMISSION CONTROL BOX SHALL BE PLACED OVER THE WELL-HOLE TO COLLECT LANDFILL GAS.
  5. ACTUAL WELL DIMENSION WILL DEPEND ON WELL DRILLING PROFILE AND SHALL BE DETERMINED BY FIELD ENGINEERS ON SITE.
  6. THE CONTRACTOR SHALL MAINTAIN A LOG FOR EACH HOLE DRILLED PROVIDED BY THE ENGINEER.
  7. DRILLING SHALL BE PERFORMED ACCORDING TO THE APPLICABLE CONDITIONS OF THE SCAQMD PERMIT TO CONSTRUCT.
  8. ALL HDPE PIPE SHALL BE SDR 11 OR 17.
  9. BORE DIAMETER TYPICALLY 24". IF OTHER SIZE IS NECESSARY IT WILL BE NOTED IN THE NOTICE TO PROCEED



WELL #	DETAIL	A	B	C	D	PLATE SIZE
Example	DEEP	120	40	40	40	
Example	SHALLOW	80	40	40		

Note: No well to be deeper than 220 feet deep

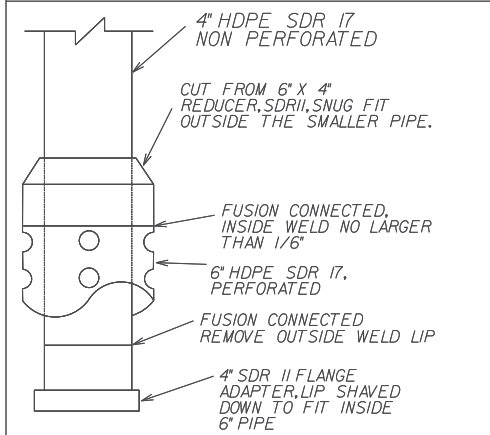
LAMB CANYON  
DRILLING TABLE  
SCALE: NONE



WELL #	DETAIL	A	B	C	D	PLATE SIZE
EXAMPLE	DEEP	105	35	40	30	
EXAMPLE	SHALLOW	75	35	40		

Note: No well to be deeper than 220 feet deep

BADLANDS  
DRILLING TABLE  
SCALE: NONE



NOTES:

CONNECTION BETWEEN PIPES SHALL ALLOW HDPE PIPES TO SLIDE FREELY. HDPE PIPES IN THIS SECTION VIEW ARE ALL PERFORATED.

TELESCOPING JOINT  
SCALE: NONE



NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	VTE
					DRAWN BY:	VTE
					CHECKED BY:	NMR
					DATE:	November 20, 2020
					DATE OF PHOTOGRAPHY:	NA
					PENQUEUE:	laser



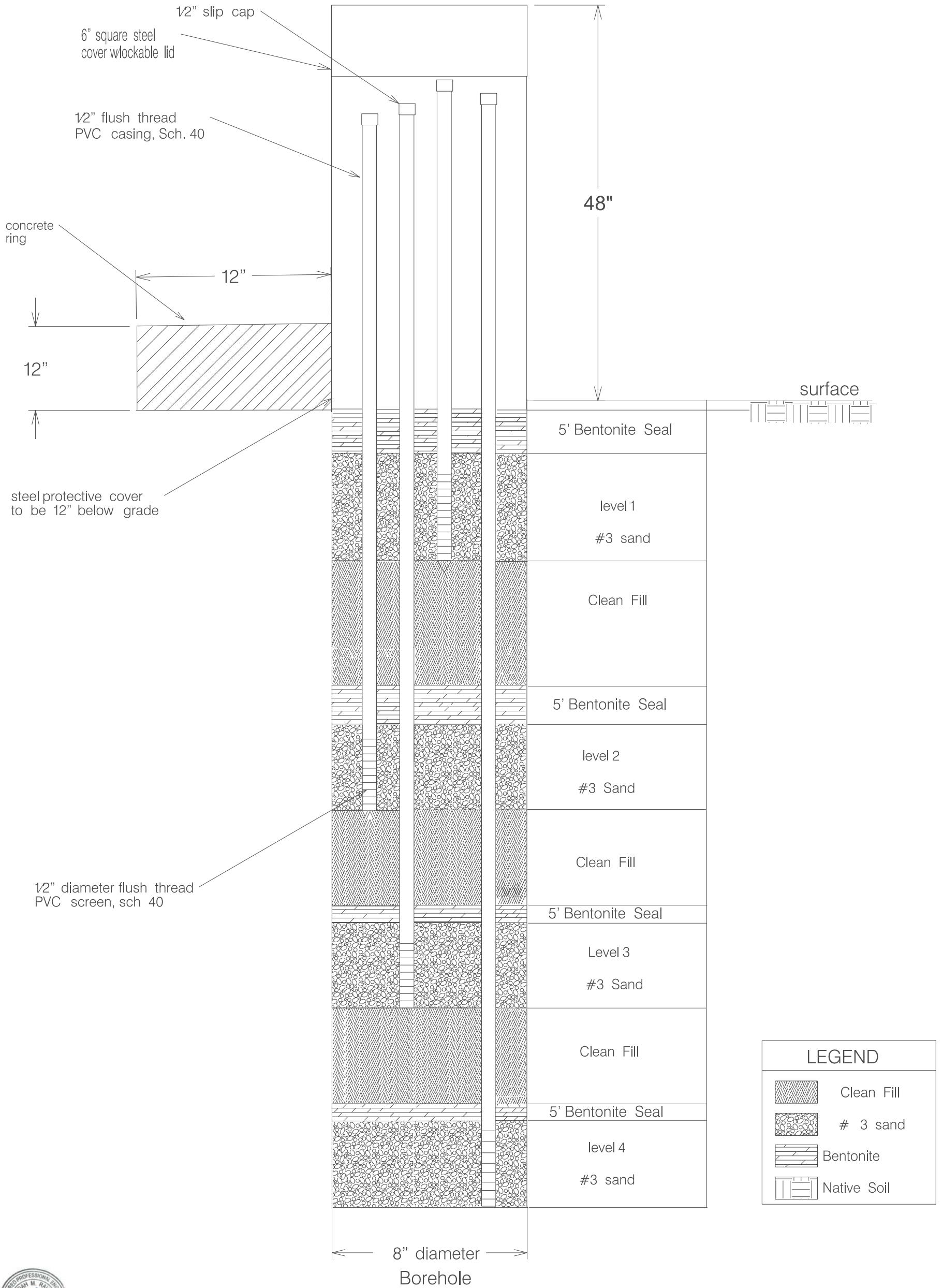
G12

Construction of Landfill Gas Collection System Components at the Badlands, Corona, Lamb Canyon, and Mecca II Sanitary Landfills and As Needed Perimeter Probe Installation 2021 to 2024

Typical Vertical Well Detail

SCALE:	NTS
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DIRECTORY:	environ\sites\badlands\air\gassystem
DIRECTORY:	2019\LFG Exp. CY20-23
FILE:	G12 typical vertical well detail 21-24.dgn
SHEET:	12 OF 14

# Not to Scale



LEGEND	
	Clean Fill
	# 3 sand
	Bentonite
	Native Soil



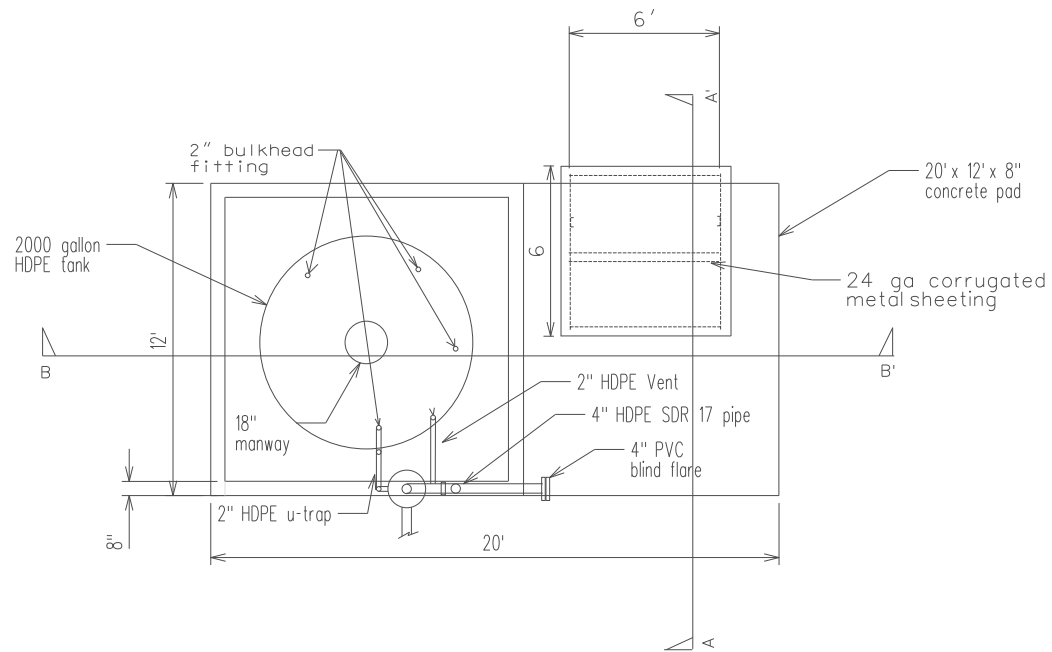
Hans W. Kernkamp, General Manager/Chief Engineer

## G 13

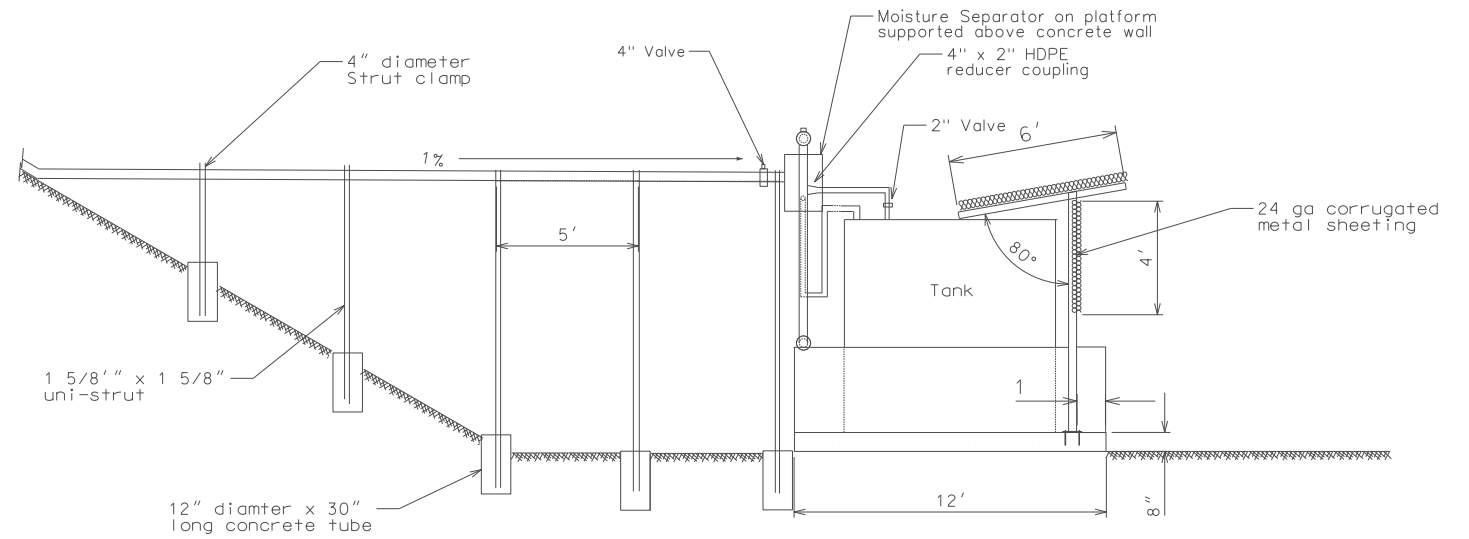
Construction of Landfill Gas Collection System Components at the Badlands, Corona, Lamb Canyon, and Mecca II Sanitary Landfills and As Needed Perimeter Probe Installation 2021 to 2024

*Multi-Level Probe Detail*

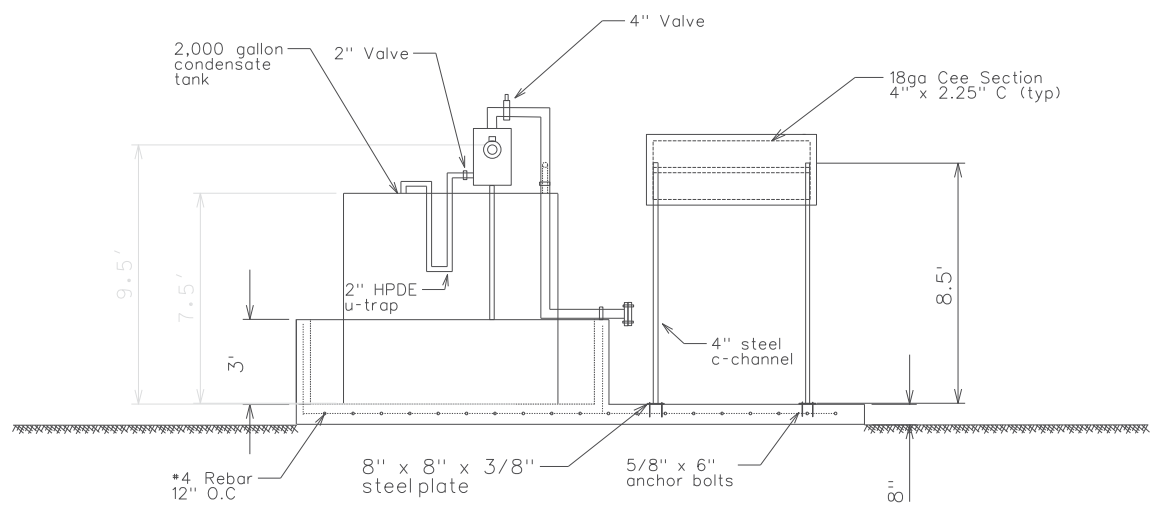
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DIRECTORY:	2019\LFG Exp. CY20-23
FILE:	G13 probe detail
SHEET:	13 OF 14



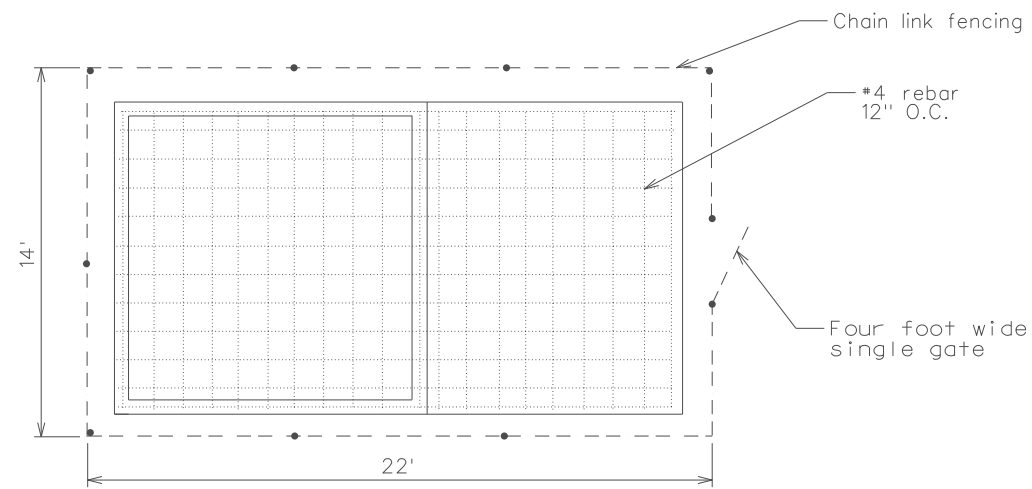
A  
G14



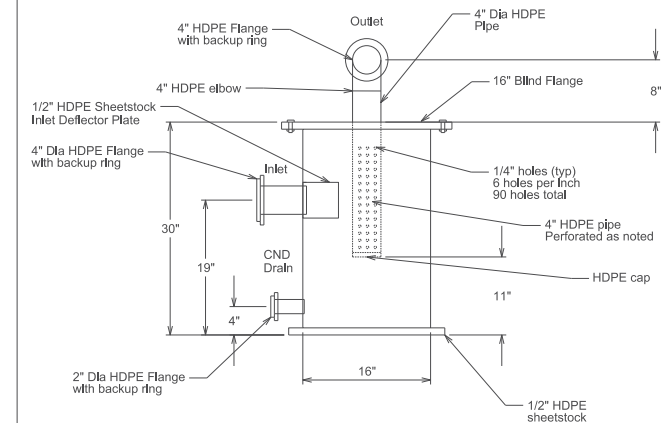
B  
G14



C  
G14



D  
G14



E  
G14



G14

Construction of Landfill Gas Collection System  
Components at the Badlands, Corona, Lamb Canyon,  
and Mecca II Sanitary Landfills and As  
Needed Perimeter Probe Installation 2021 to 2024  
Mecca II Concrete and Tank Detail

Scale : NTS  
Date: November 20, 2020  
File Directory: Environ\sites\Badlands\air\  
\gssystem\ 2019\LFG Exp. CY20-23  
File Name: G14 concrete pad SVE.dgn  
Sheet 14 of 14