CITY OF SANTA MARIA CELL 1 EXTENSION LINER DESIGN AND CONSTRUCTION PROJECT

PRESENTED BY

THE CITY OF SANTA MARIA
HERB CANTU
SOLID WASTE MANAGER

SWT ENGINEERING
JEREMY BOTICA, P.E., M.S.
PROJECT MANAGER

April 6, 2022

Santa Maria

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CITY OF SANTA MARIA CELL 1 EXTENSION LINER DESIGN AND CONSTRUCTION PROJECT

HERB CANTU
CITY OF SANTA MARIA
SOLID WASTE MANAGER

- 13 Years In Solid Waste Industry
- 13 Years As Solid Waste Manager
- SF Giants Supporter

JEREMY BOTICA, P.E., M.S.
SWT ENGINEERING
PROJECT MANAGER

- 14 Years In Solid Waste Industry
- 8 Years As Project Manager
- LA Dodgers Supporter

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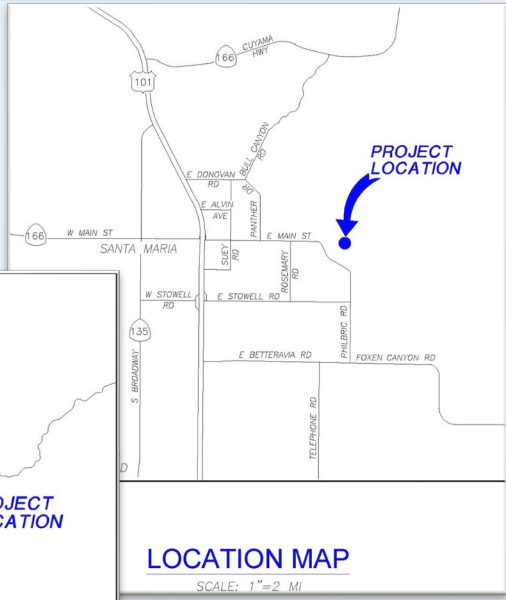
CELL 1 EXTENSION LINER PRESENTATION OUTLINE

- Site Background
- Site Overview / Goals
- NHIS Over Liner / Settlement
- Phasing Management
- Existing/Proposed LFG Network
- Liner Design and Join
- Leachate Collection
- Solar Power
- Questions

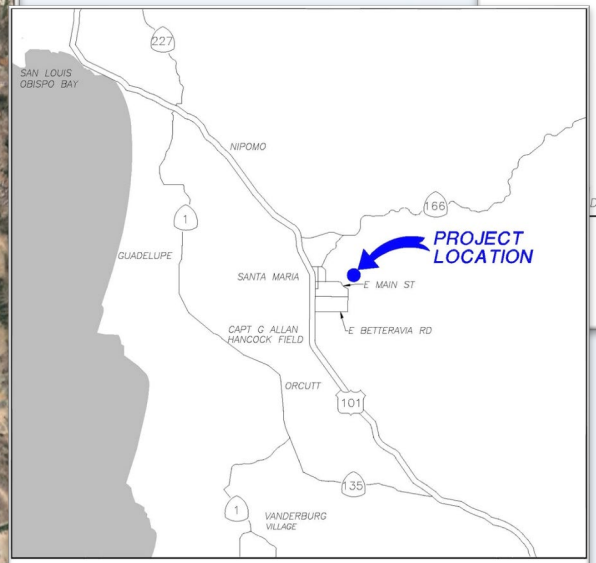
SITE LOCATION

The **Santa Maria Regional Landfill** is located 260 miles South of San Francisco and 160 miles north of Los Angeles, in the city of Santa Maria which is in Santa Barbara County



LOCATION MAP

SCALE: 1"=2 MI



VICINITY MAP

SCALE: 1"=6 MI

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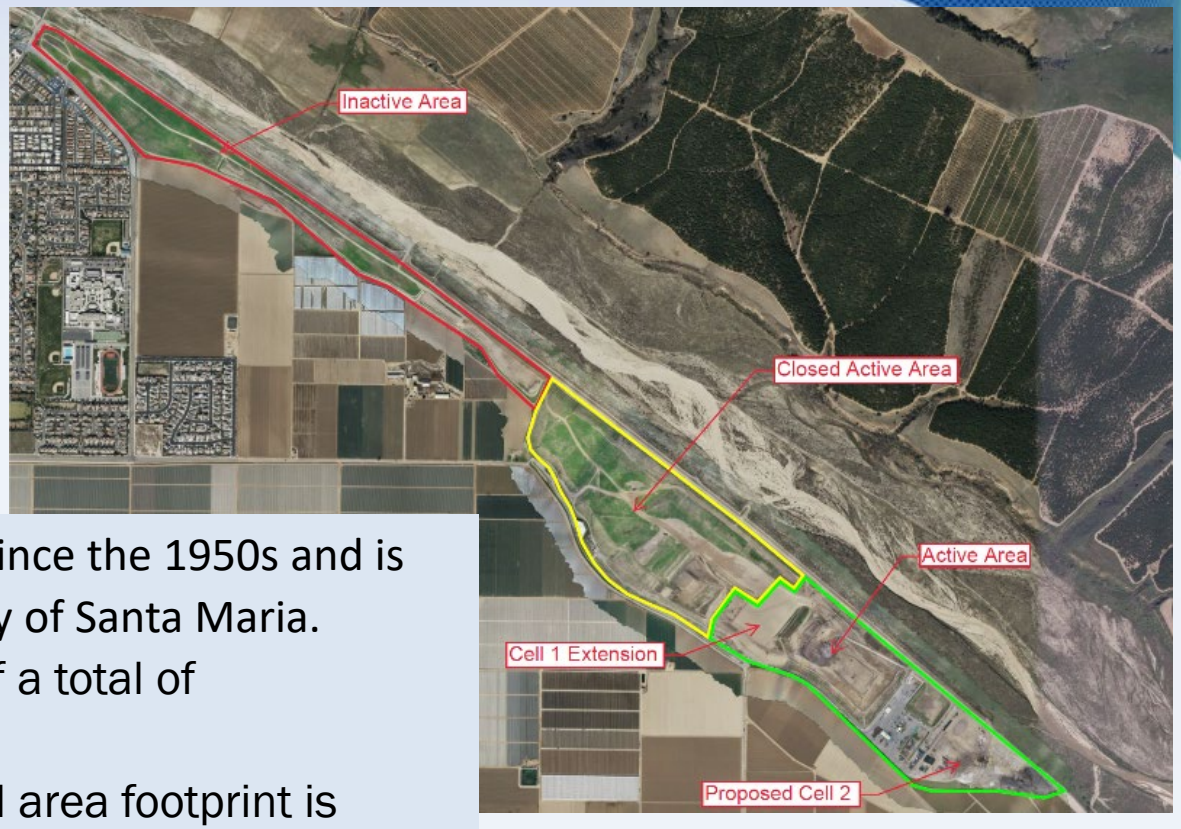
LANDFILL OVERVIEW



- The SMRL has been operating since the 1950s and is owned and operated by the City of Santa Maria.
- The facility acreage consists of a total of approximately 290 acres.
- The current permitted disposal area footprint is approximately 247 acres.
- Disposal operations are currently being conducted in the Active Area (lined Cell 1 area).

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LANDFILL OVERVIEW

Solid Waste Collections

- Perform residential and commercial refuse, recycling, and green waste collections for the City of Santa Maria
- Customer Accounts
- Residential – over 19,000
- Commercial – over 1,500
- Comprised of 27 employees
- Residential collection operates Monday through Friday
- Hours of Operation 6:00 a.m. – 2:30 p.m.
- Commercial collections operates Monday through Saturday
- Hours of Operation 3:30 a.m. – 12:00 p.m.

LANDFILL OVERVIEW

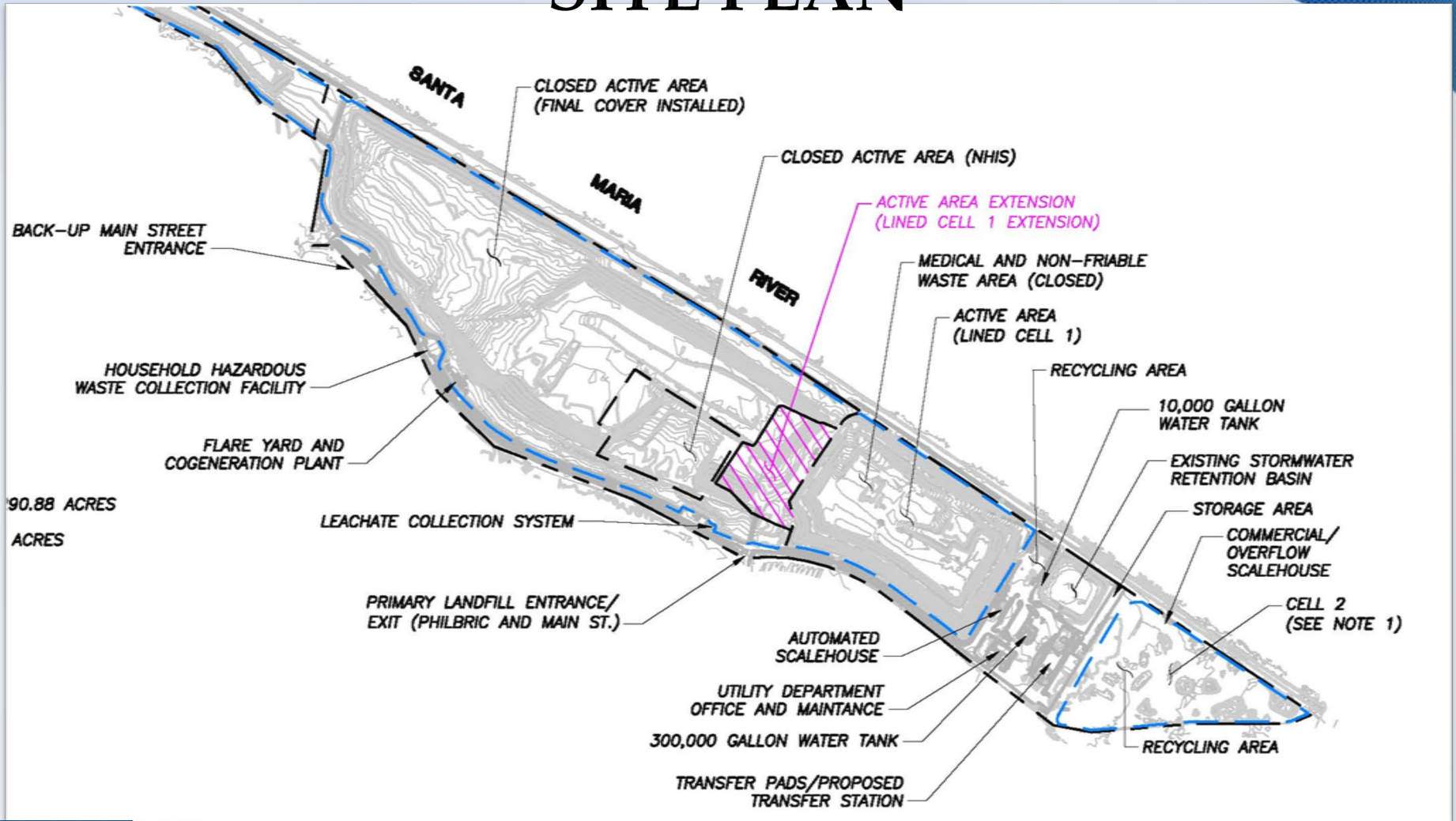
2020 Figures*

- Open 7 days a week (7:00 a.m. – 4:00 p.m.)
- Closed 7 holidays a year
- Buried 146,760 tons of MSW
- Over 60,000 tons from our Collections Fleet
- Average 409 tons/day (818,000 lbs./day)
- City-wide diverted over 90,000 tons for recycling and composting
- Busiest Day: 1081 tons MSW & recycling
- 114,479 vehicles cross the scales
- Average 319 vehicles/day (1 every 1:40)
- Busiest day: 504 vehicles
- *Note: Does not include NHIS tons

PROJECT GOALS

- Extend the site life/Provide additional time to open the new facility
- Convert NHIS capacity to Class III refuse disposal capacity
- Expand the Subtitle D liner area
- Provide a robust design to facilitate regulatory agencies permitting
- Maintain the existing solid waste facility permit

SITE PLAN



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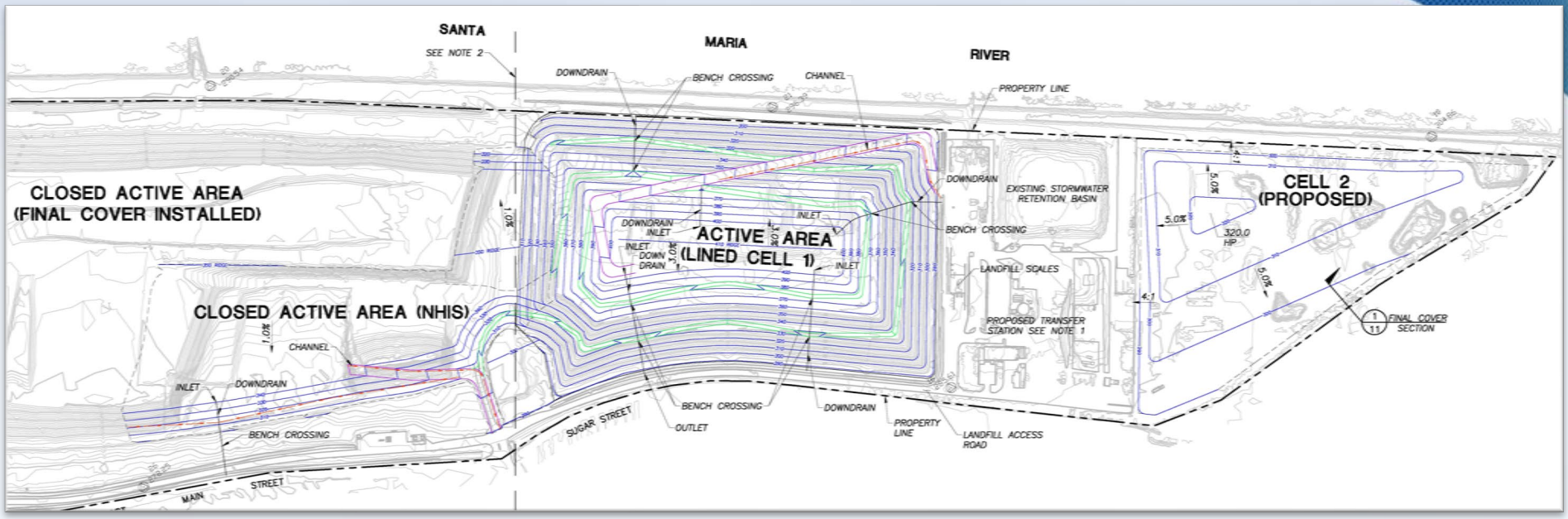
LANDFILL CAPACITY AS OF JAN 1, 2021



	Airspace (CY)	Current Yearly Refuse Fill Rate (CY)	Remaining Years
NHIS – Current	842,230	72,500	11.6
CELL 1 – Current	706,670	202,270	3.5
CELL 2 – Current	352,000	202,270	1.75

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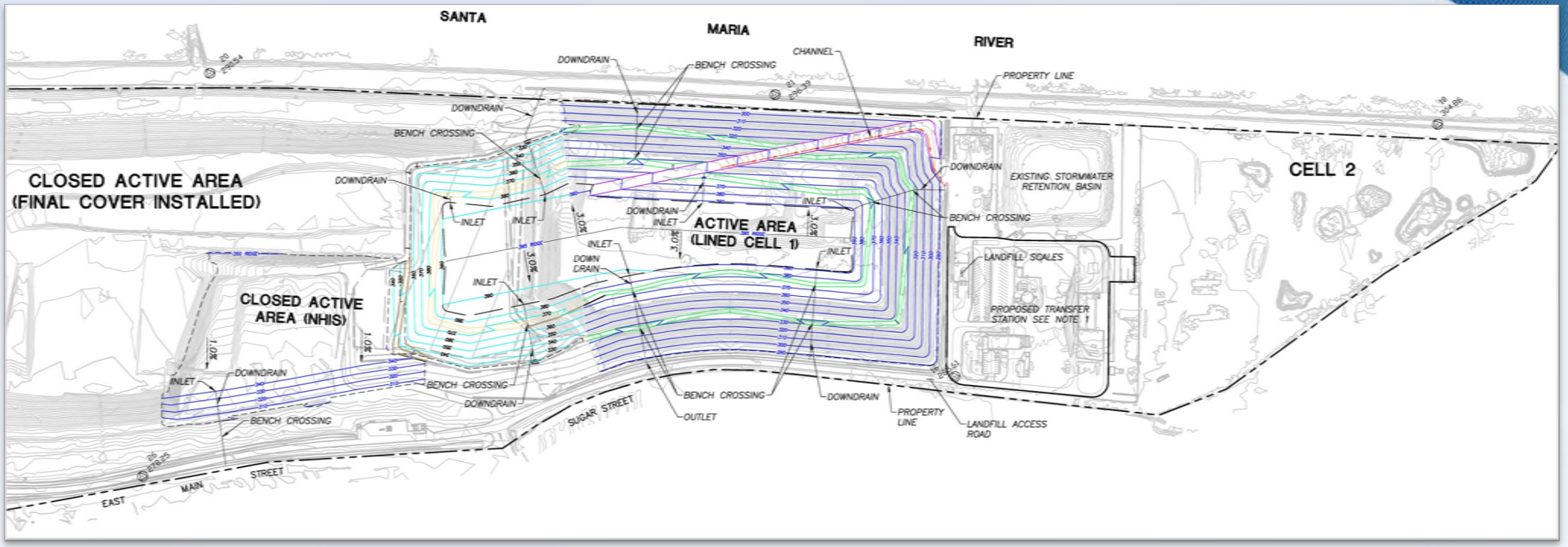
LANDFILL CAPACITY AS OF JAN 1, 2022



	Airspace (CY)	Current Yearly Refuse Fill Rate (CY)	Remaining Years	Extension Airspace (CY)	Remaining Years
NHIS – Current	842,230	72,500	11.6	476,785	6.6
CELL 1 – Current	706,670	202,270	3.5	1,535,000	7.5
CELL 2 – Current	352,000	202,270	1.75	0	0

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- Reallocated 352,000 CY from CELL 2
- Repurposed 350,000 CY of NHIS Airspace To Class III Waste

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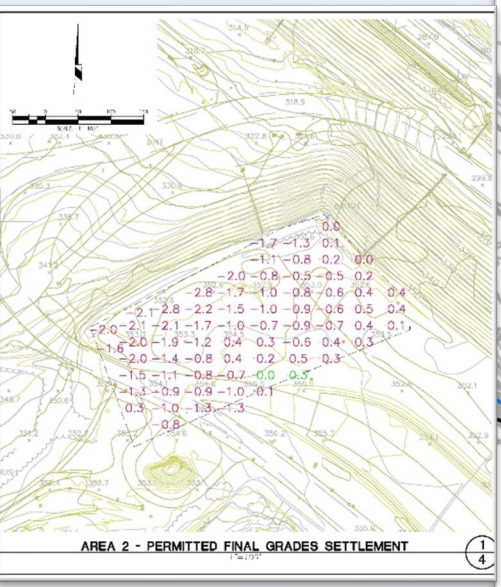
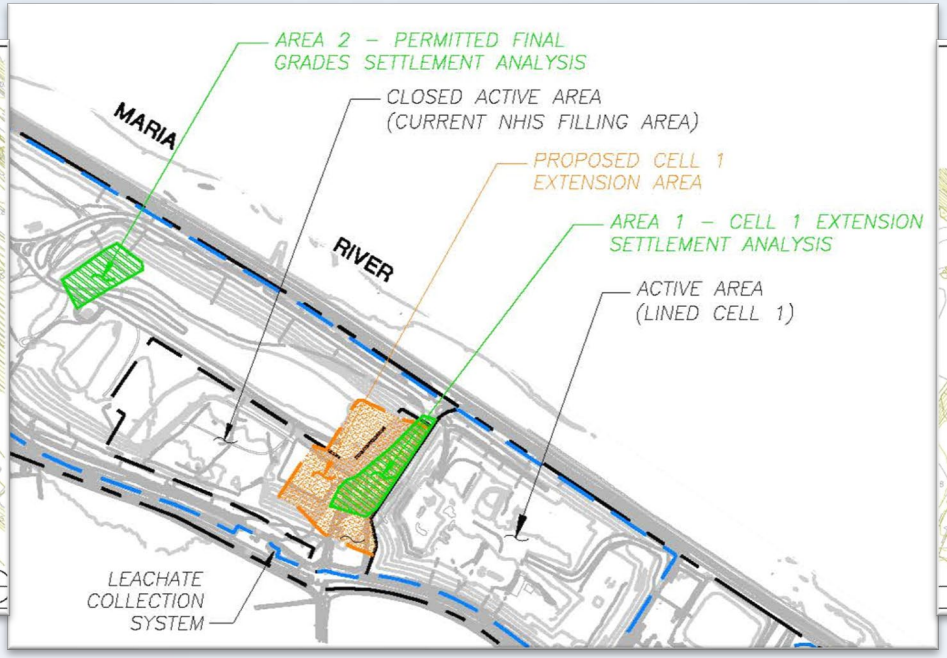
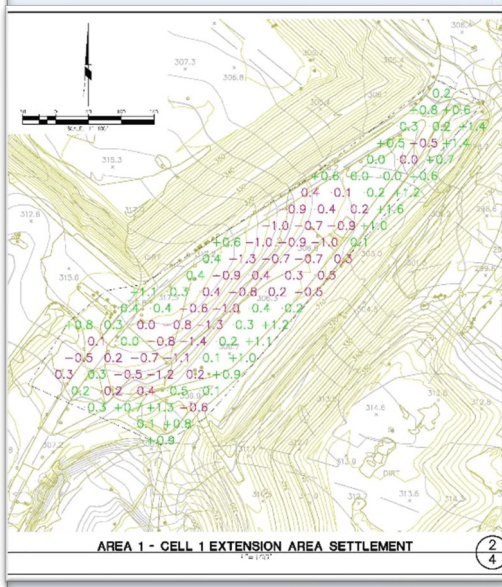
SITE SETTLEMENT

Evaluated actual settlement within the Closed Active Area at two different locations between the topographic aerial surveys of October 2008 and October 2018.







- Area 2 maximum settlement of approximately 2.8 feet.
- Area 1 maximum settlement of approximately 1.5 feet.

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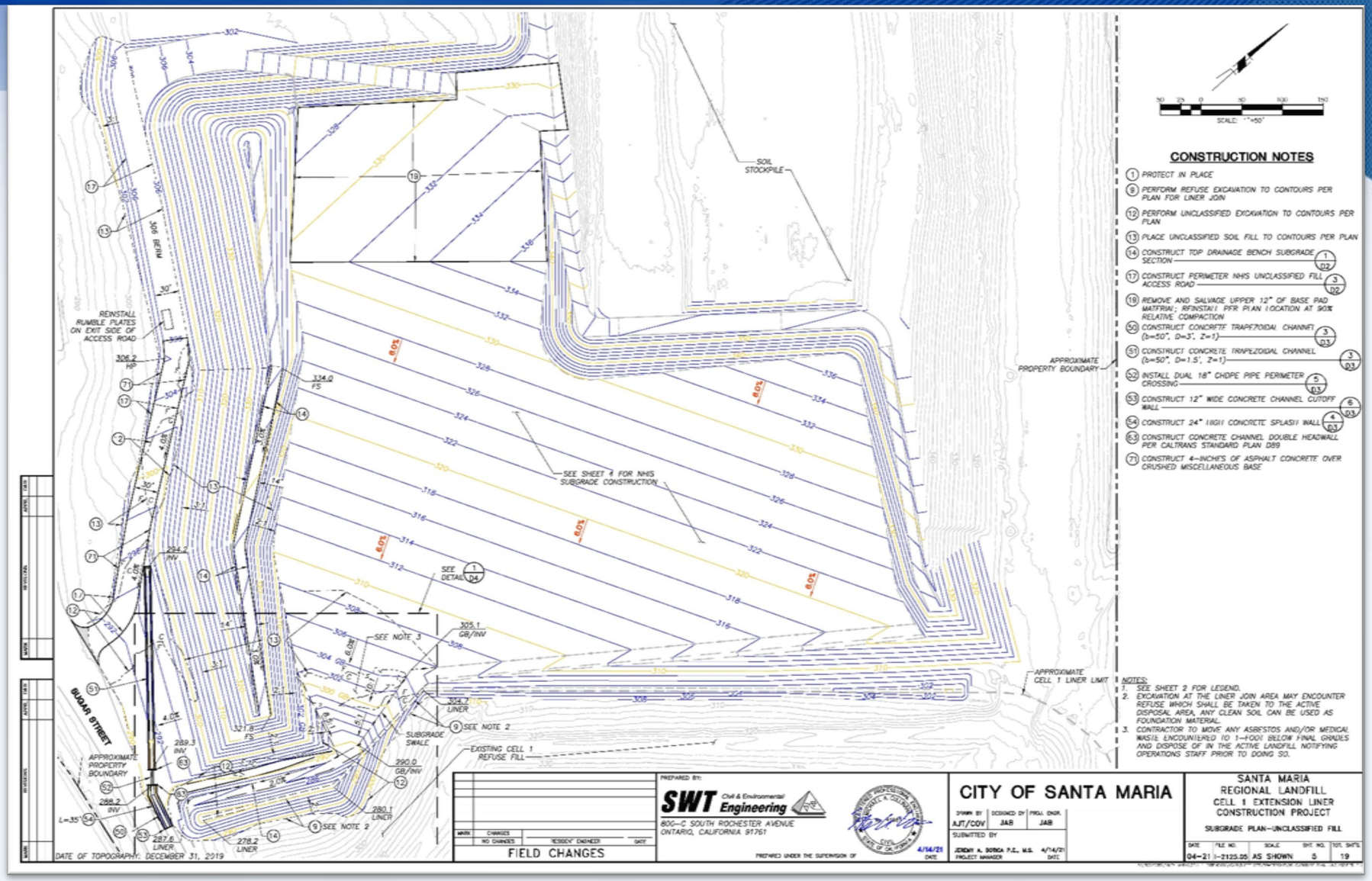

- 6% Grade
- 36 ft of fall from North to South
- All Gravity Leachate Convenience System

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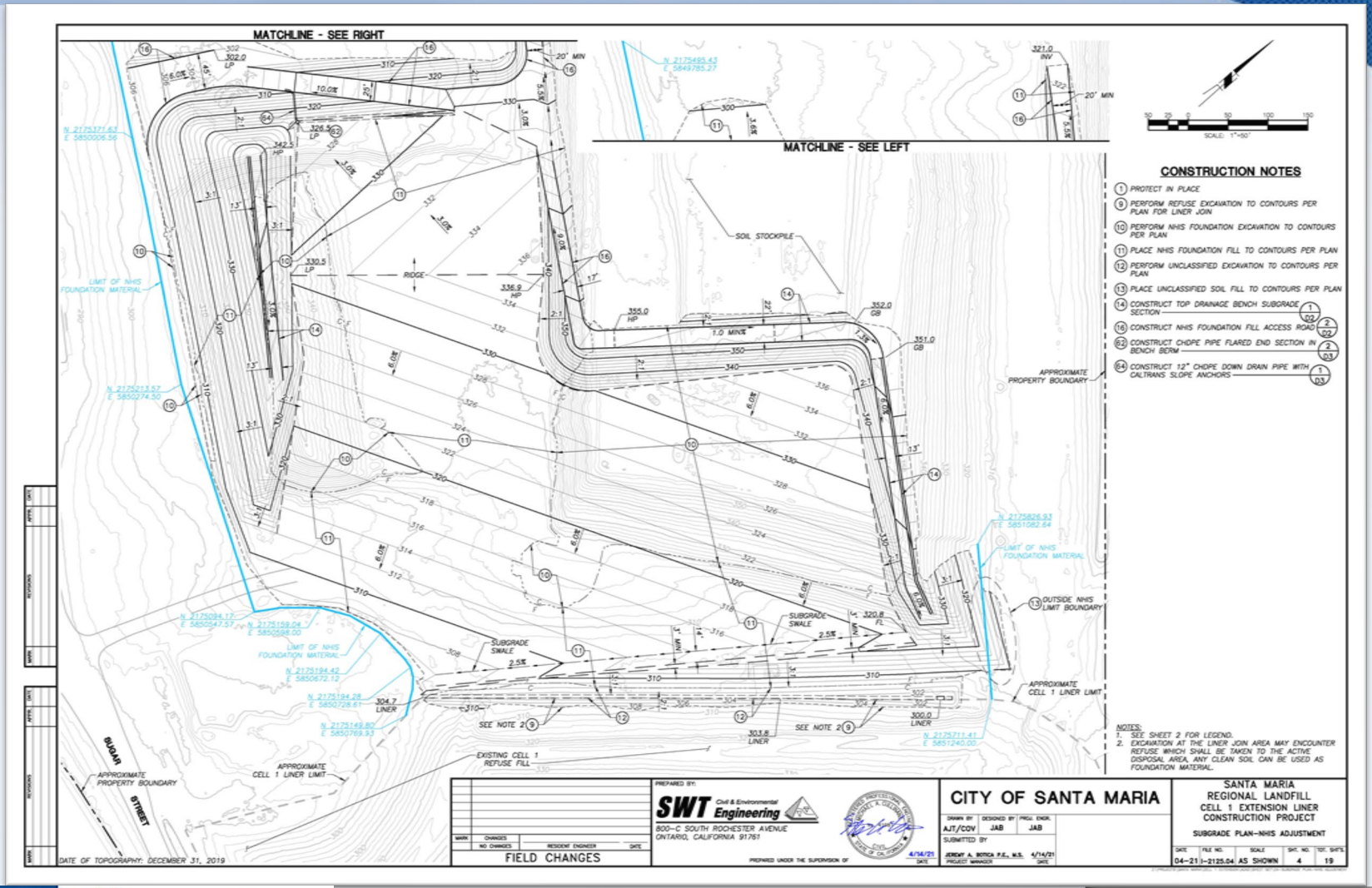
PHASING MANAGEMENT



- NHIS Subgrade Grading 110,000 CY

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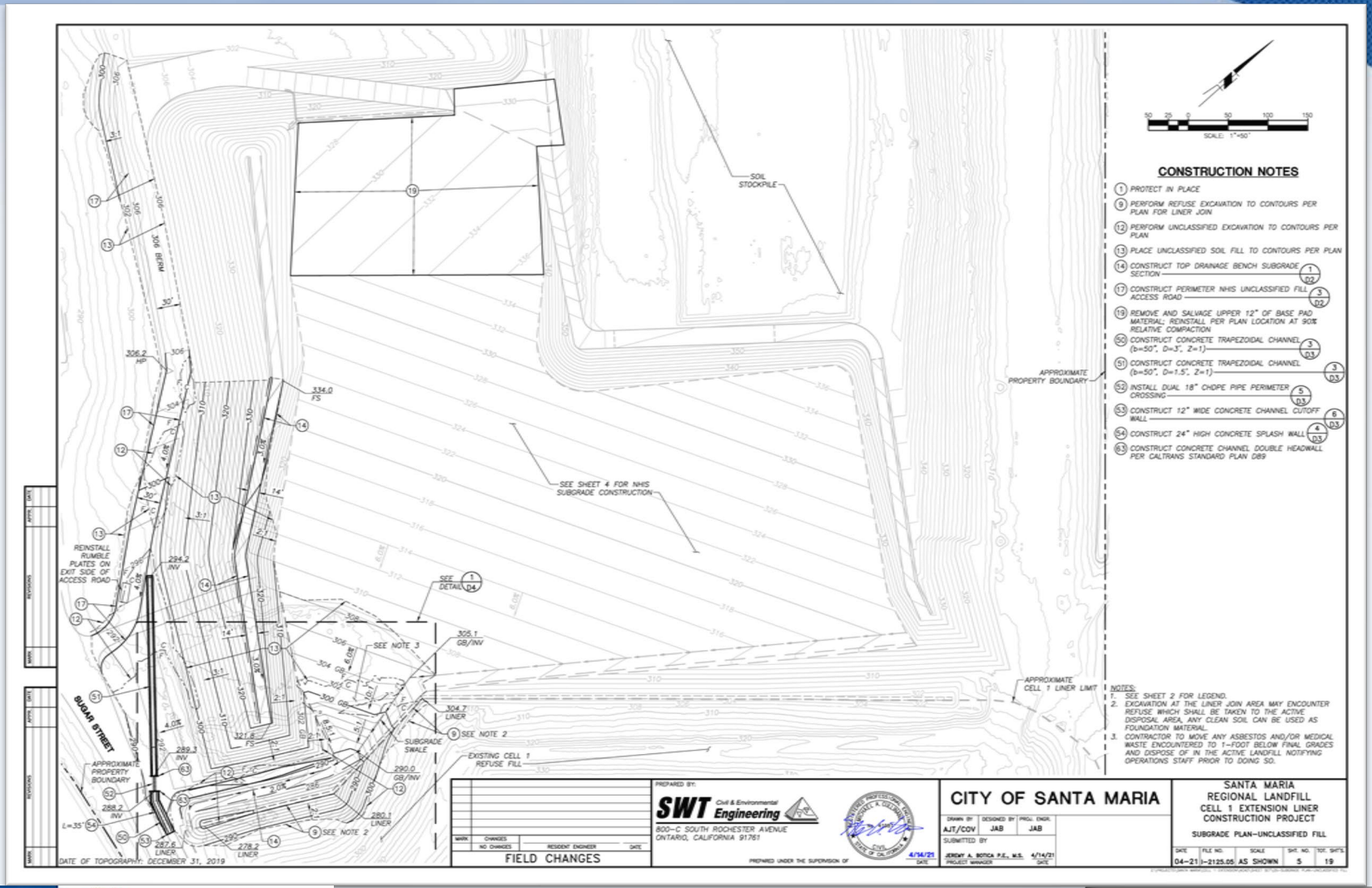
PHASING MANAGEMENT



- Unclassified Fill 35,000 CY

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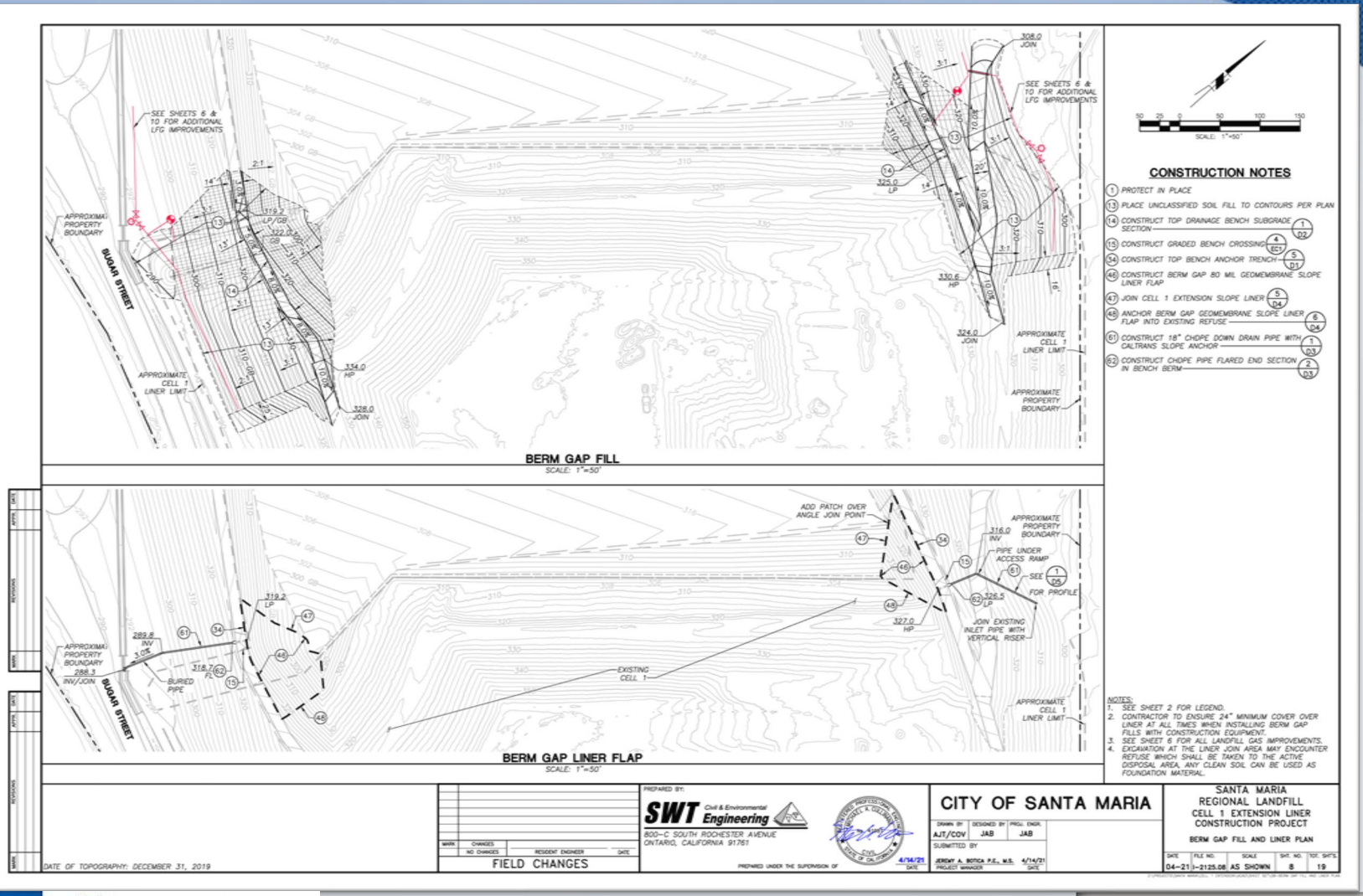
PHASING MANAGEMENT



- Gap Berm Placement 37,000 CY

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GAP BERM SEQUENCING

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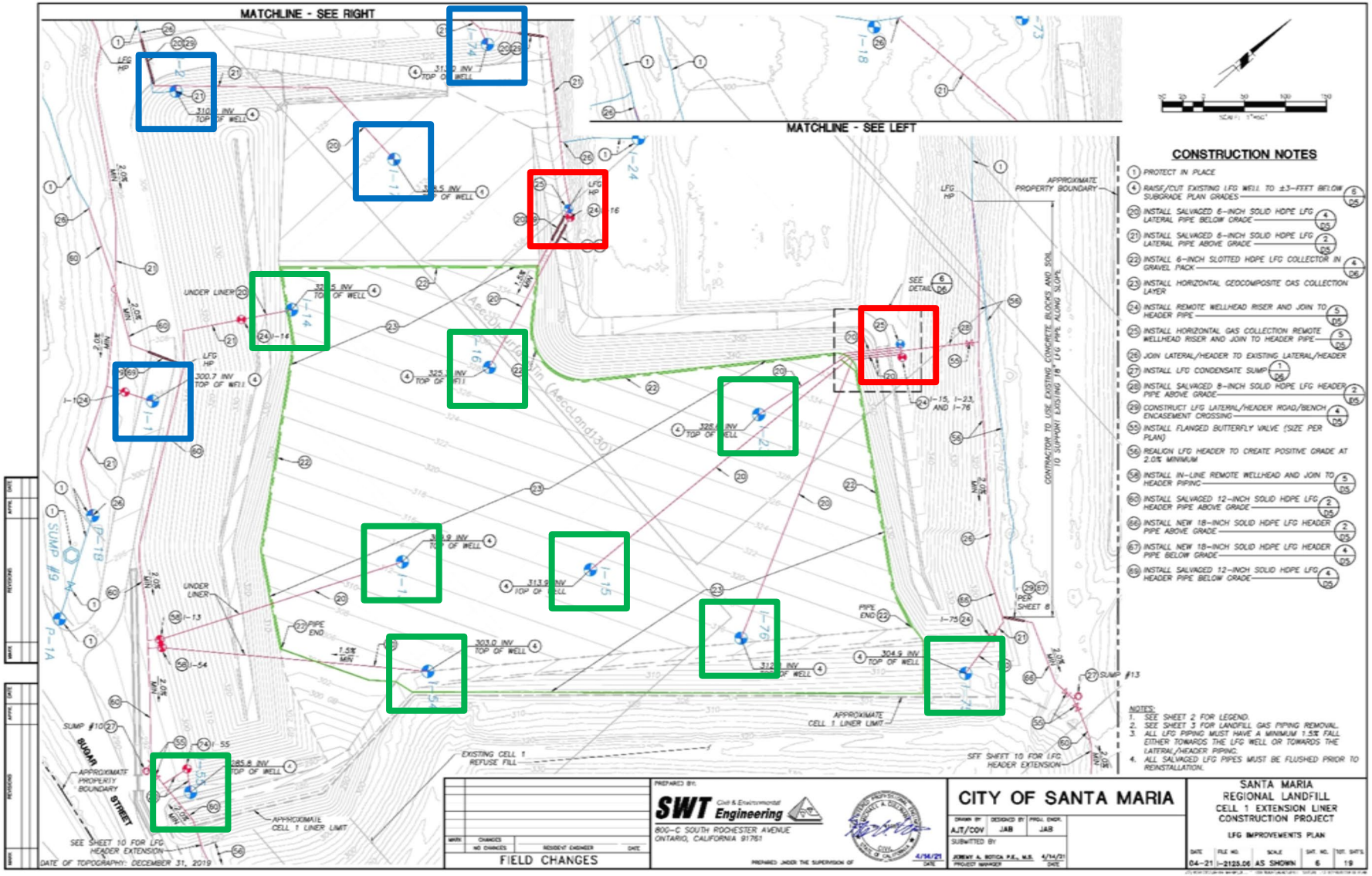

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- 9 wells under liner construction
- 4 other well adjustments
- 2 geocomposite wells

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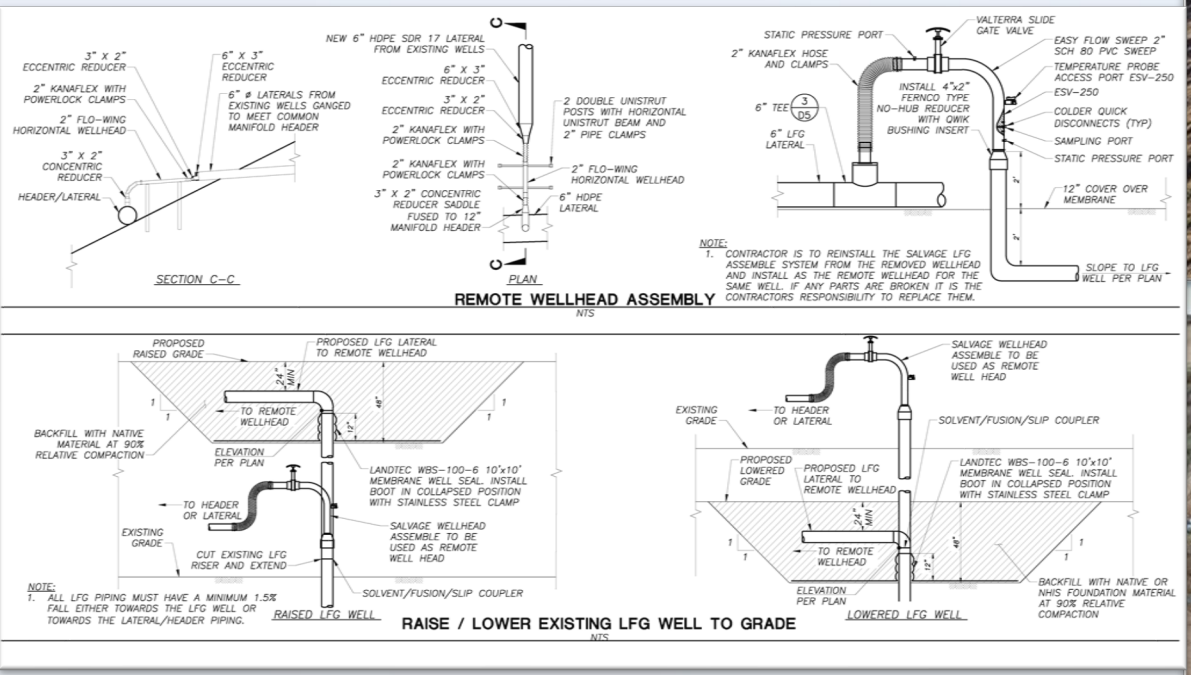
EXISTING LANDFILL GAS NETWORK



- Extended remote wellheads from under the liner system

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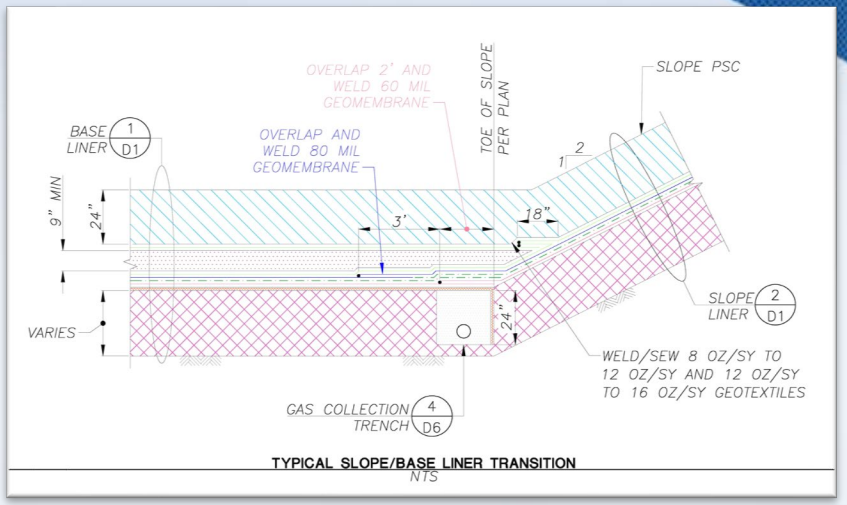
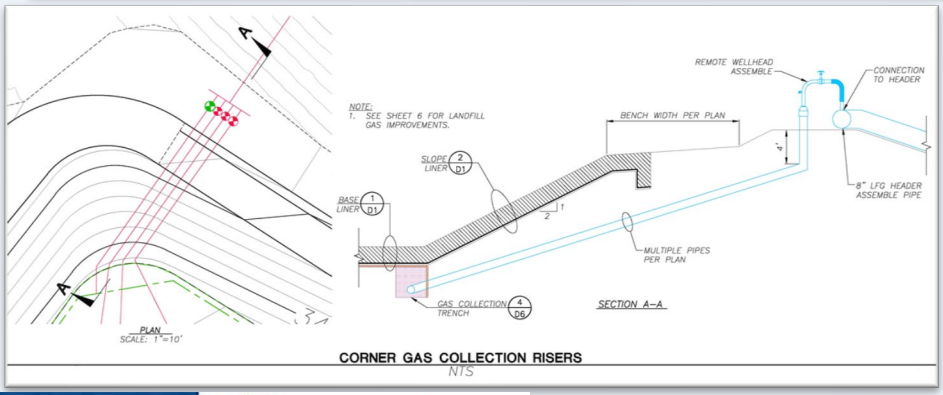
LANDFILL GAS GEOCOMPOSITE COLLECTION



TYPICAL SLOPE/BASE LINER TRANSITION
NTS



CORNER GAS COLLECTION RISERS
NTS

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- Blanket gas collection layer under the floor liner system
- Geocomposite perimeter gas collection

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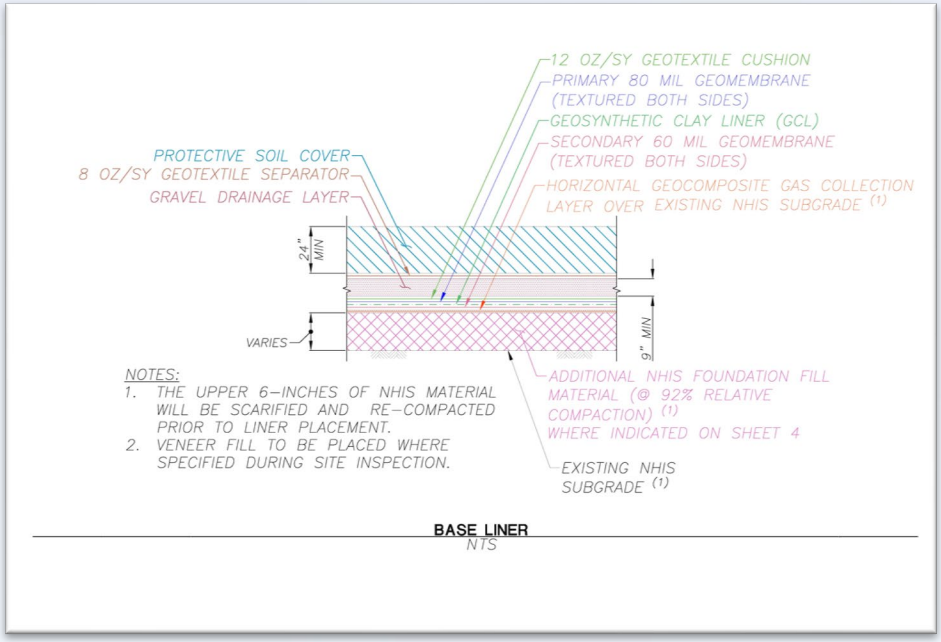
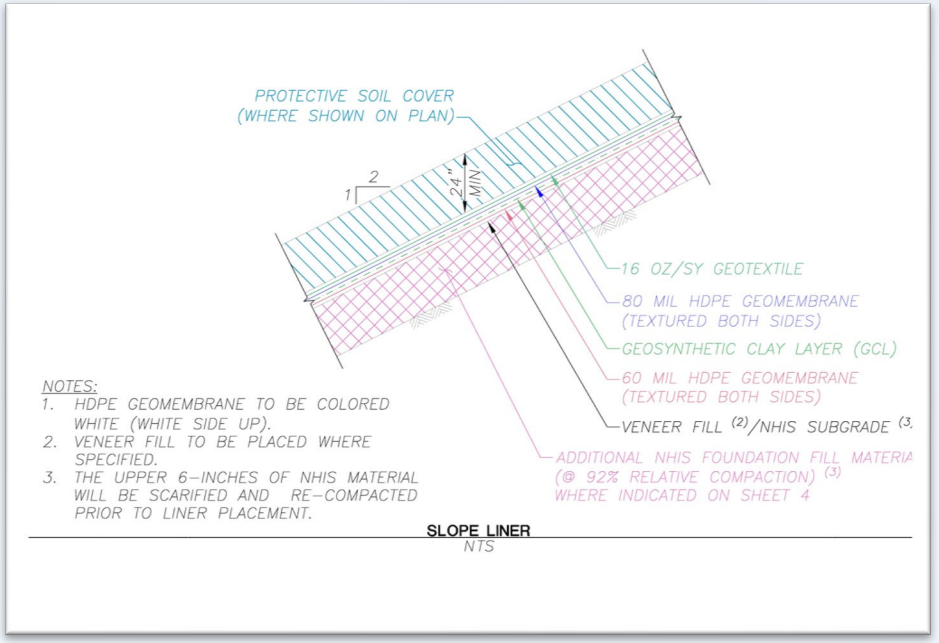
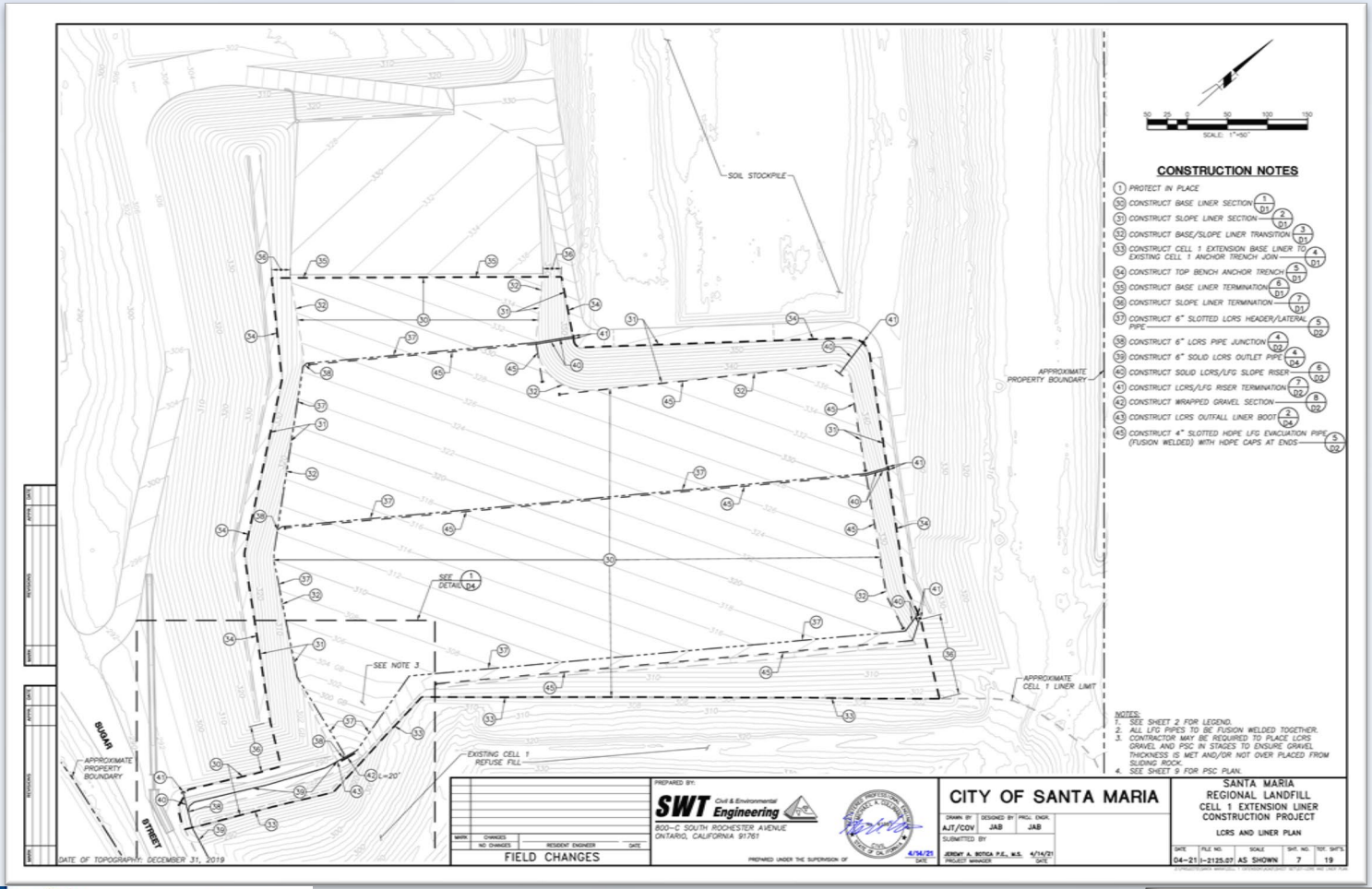
LINER DESIGN





LINER CONSTRUCTION

GRAVITY LEACHATE CONVEYANCE SYSTEM



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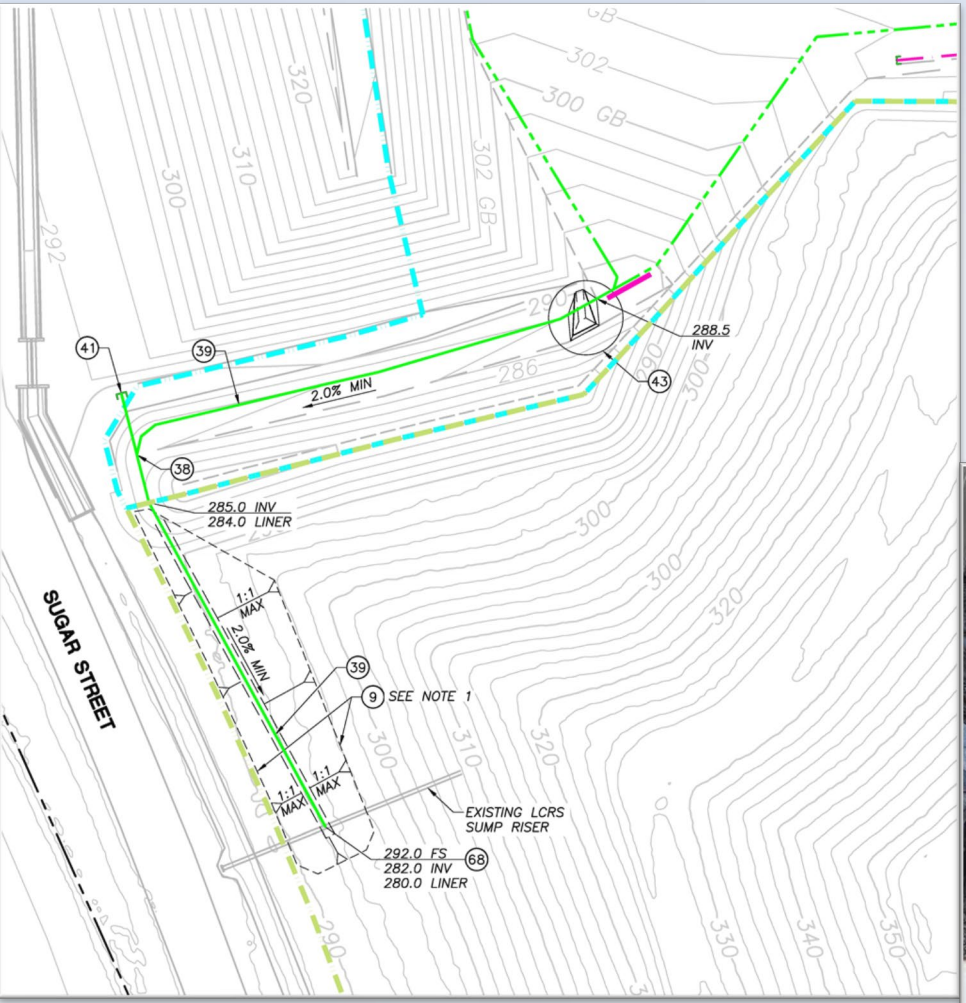
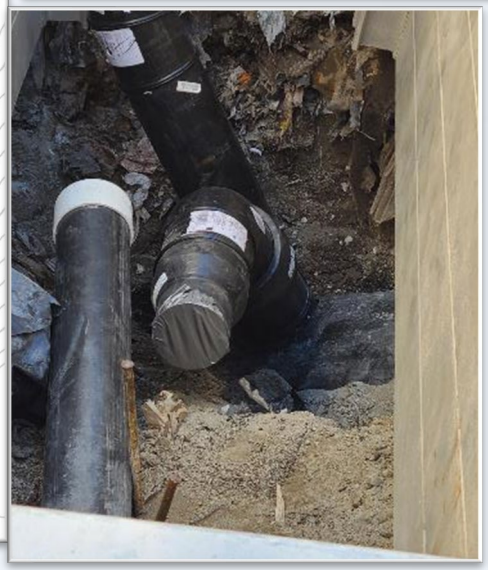
CELL 1 SUMP RISER TIE-IN





- Outfall piping required refuse excavation.
- Installed riser cleanout outlets

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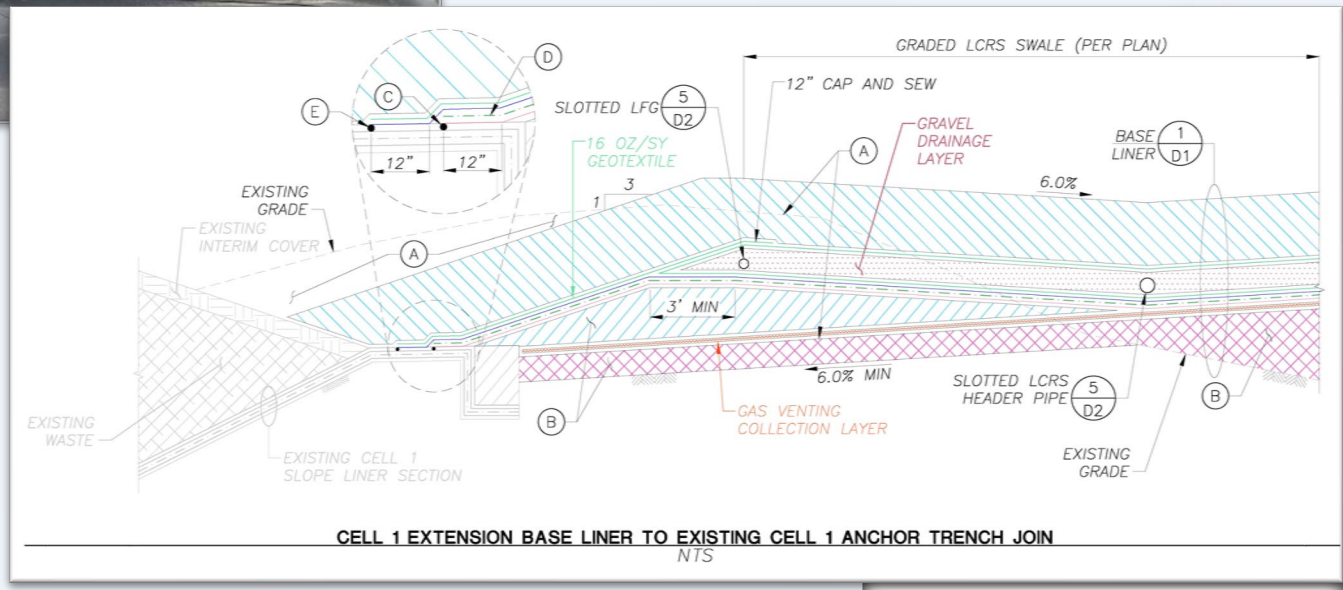
LINER JOIN

- Liner tie in was designed to not have more than 1 foot of potential leachate head on the liner.
- Geocomposite collection went to existing Cell 1 tie in.

- As-Builts didn't match up to design.
- Required additional refuse excavation.
- Slightly steeper slopes to join.



CELL 1 EXTENSION BASE LINER TO EXISTING CELL 1 ANCHOR TRENCH JOIN
NTS

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SOLAR POWER PUMP SUPPLY

- Removed existing 480V power to contact water tank/pump.
- Installed solar to run new pump system.

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CONSTRUCTION TIME LAPSE

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QUESTIONS