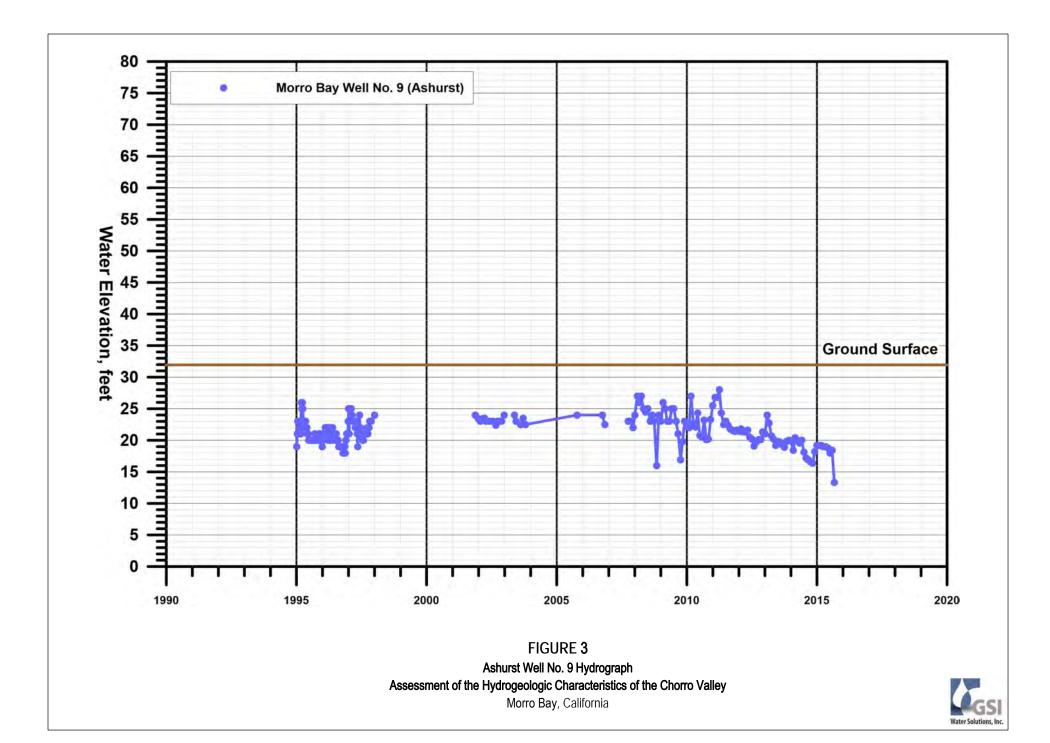
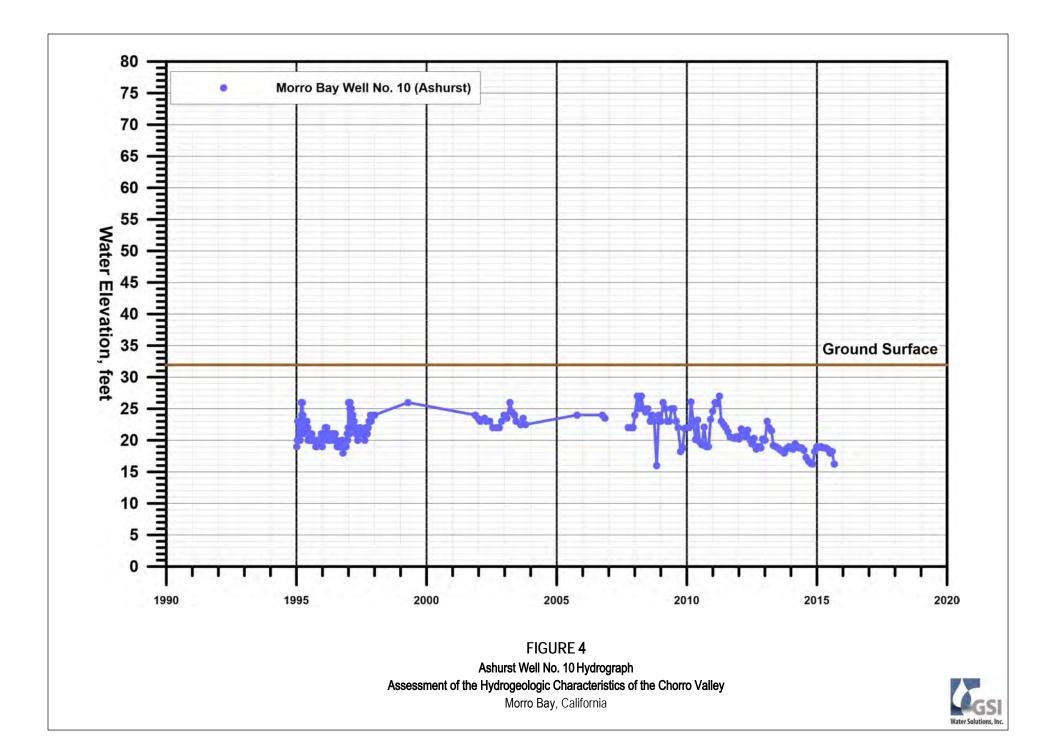
DOCKETED	
Docket Number:	21-AFC-01
Project Title:	Pecho Energy Storage Center
TN #:	240712-26
Document Title:	Pecho Energy Center's Application for Certification-Appendices 5 15 A-C
Description:	N/A
Filer:	Chester Hong
Organization:	Golder
Submitter Role:	Applicant Consultant
Submission Date:	11/23/2021 4:49:00 PM
Docketed Date:	11/23/2021

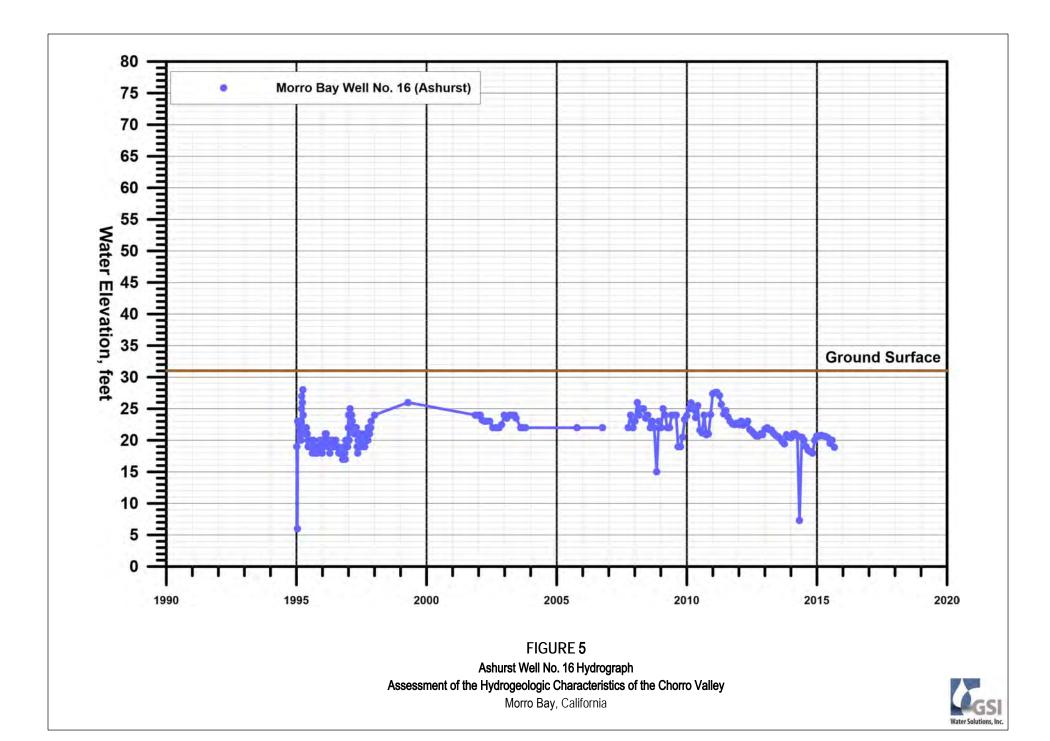
APPENDIX 15.5-A

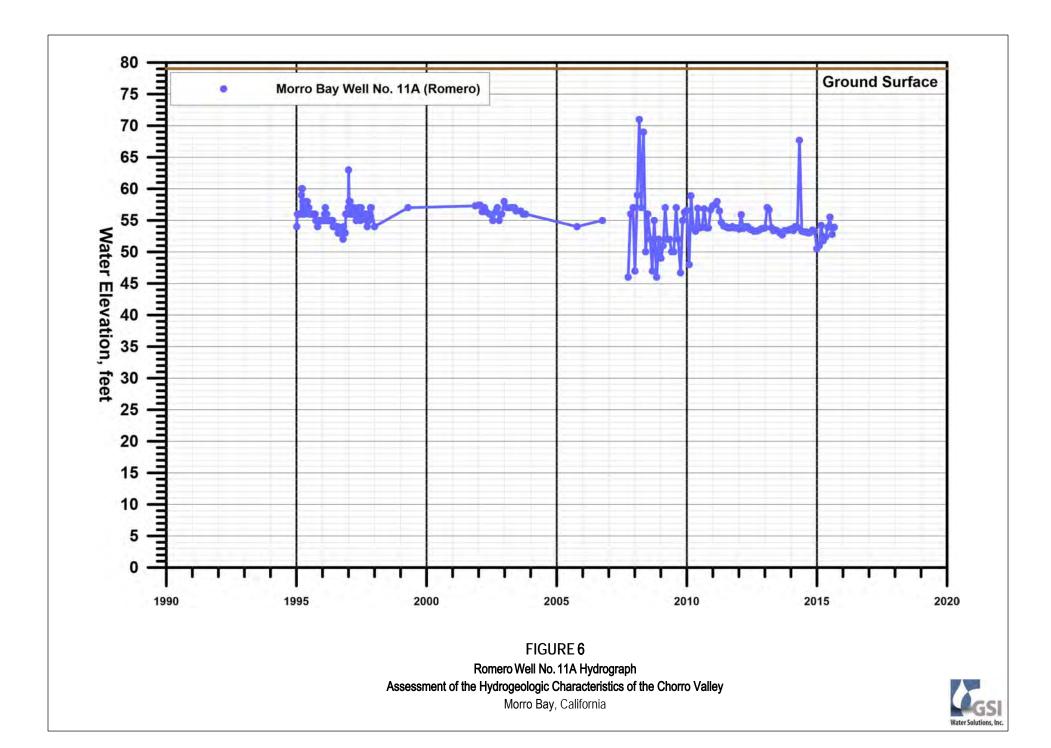


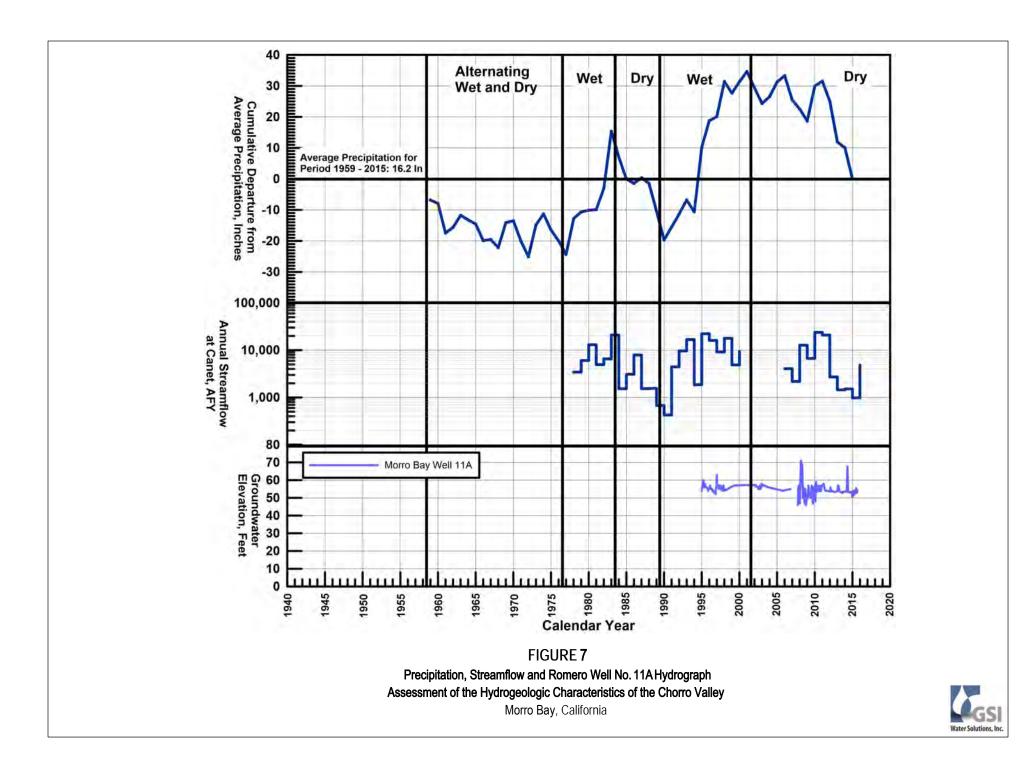
Source: GSI Water Solutions, Inc. 2017. Assessment of the Hydrogeologic Characteristics of the Chorro Valley, Morro Bay, California. May

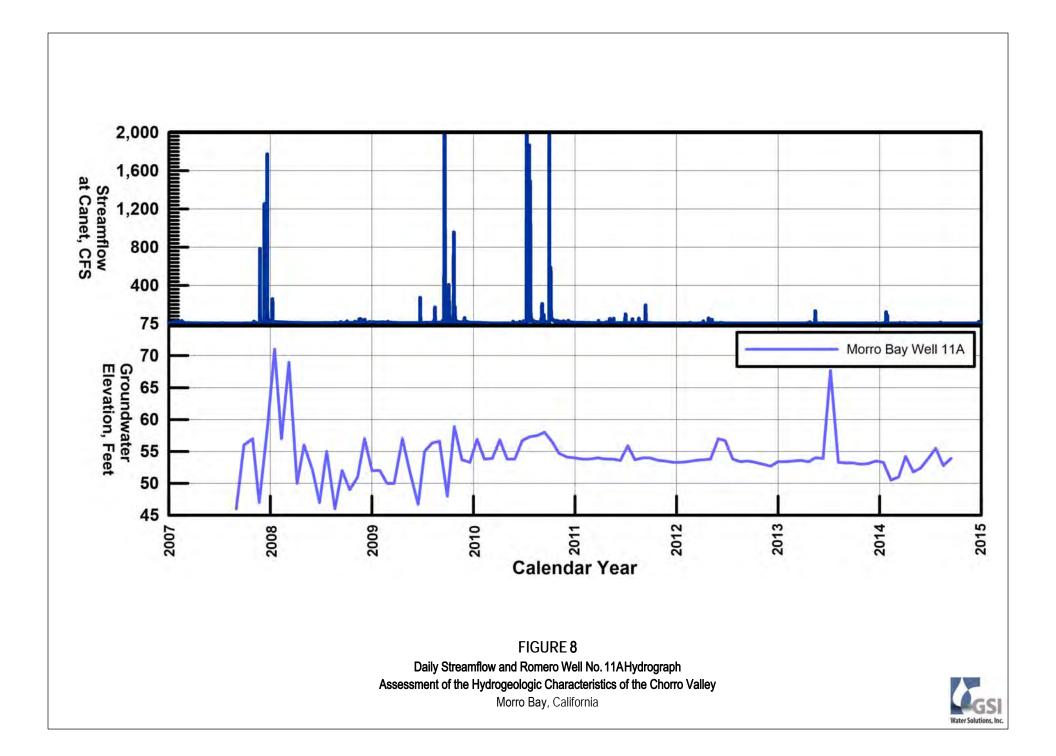












APPENDIX 15.5B

Grading and Drainage Plan, Stormwater Basin Design Drawings and Supporting Calculations

Stormwater Pond Calculations

Calculation Title:	Project	Calculation No:		
	Pecho Energy Storage Center	21-5375-00-3338-002		
Pecho Storm Runoff Calculations	Client	- 21-5375-00-5556-002		
Pecho Storm Runon Calculations	Hydrostor	Rev.	С	
	Project No.	Date		
	21-5375	July 30, 2021		

Note: Proposed site will not produce any discharge to the environment. (Zero Discharge)

Storm Management:

1- Upstream lands: Site will be separated from other lands by a proposed soil berm surrounding entire site. Upstream storm runoff will be directed to the Chorro Creek (the current discharge point / pre-construction) through existing creek at south of the site or by creating new ditch along the soil berm and direct the storm runoff to the Chorro Creek

2- Storm within the site except the Reservoir: The proposed grading will create slope towards 2 stormwater ponds (retention pond with no discharge system). The ponds will not have discharge to the environment part of regular life cycle except for an emergency situation which makes unexpected overflow. Ponds will be equipped with overflow discharge culvert with a manual gate valve (always in closed position) and with a sediment control system. Overflow culverts will discharge the clean stormwater to the Chorro Creek. The overflow discharge point will have erosion control design (Rip Rap or similar).

The stormwater inside the pond will be evaporated or pumped to the reservoir (it is assumed that the water inside the pond is clean water since there is no source of contamination within the site).

3-Reservoir: The reservoir will be covered. The cover will drain to a filter/pump house for cleaning. After the storm water is filtered, it will be pumped back into the reservoir. The stormwater within the reservoir will not discharge to the ponds.

The reservoir working volume is 484,000 cu.m. The current capacity of the reservoir is about 600,00 cu.m excluding 4ft of free board. The volume within the free board is more than 80,000 cu.m. Therefore the reservoir has capacity of holding much more than the required working volume. In case of any unforeseen/emergency situation, there will be emergency overflow discharge which will drain to the ponds and if the ponds are full, the overflow will be discharged to the Chorro Creek.

Reference Standard

County of San Luis Obispo Public Improvement Standards, Department of Public Works, July 2019

Data	Reference data	
Runoff Coefficient	Table 1: Rational Method Standard Runoff Coefficients For Developed Areas Hydrology Runoff Coefficient - developed (Drawing No. H3)	
Rainfall Intensity	Table 3 Annual rainfall 18" to 21" Hydrology Rainfall Intensity (Drawing No. H-4)	

Service	Runoff Coefficient	Remarks
Hard Services	0.95	Buildings and Structures
Loose Gravel (Rip Rap)	0.5	For Sloped Embankment of the Reservoir (*)
Gravel Paved	0.55	For all areas inside the plant except buildings, structures and the reservoir (*)
Ponds and Reservoir	1	

(*) The Reservoir outer embankment slope will be partially covered with Rip Rap and the remainder grassed. The unfinished area of the plant also will be covered with one layer of topsoil.

The Storm Runoff volume with above assumptions will be more than the expected actual condition

Intensity:

Based on 19" Annual rainfall and SLO Hydrology Rainfall Intensity (Drawing No. H-4), for a 50-year storm, 10-hrs intensity for 10 hrs duration, the intensity is 0.58 inches per hour or 5.8 inches for 10 hours

Area Measurements

Total Land	327,000.00	m²	391,088.75	yd²	Approximate Area, No Survey info Available
Footprint of Reservoir	106,250.00	m²	127,073.94	yd ²	(outer perimeter)
Inside of the Reservoir	73,234.00	m²	87,587.14	yd ²	Drain to the Reservoir



Stormwater Pond Calculations

Calculation Title:		Project			Calculation No:		
		Pecho Energy Storage Center			21-5375-00-3338-002		_002
Pecho Storm Runoff Calculations			Client		2	1-0070-00-0000	-002
	Calculations		Hydrostor			Rev.	C
		P	roject No.			Date	
			21-5375			July 30, 2021	
Reservoir Outside		33,016.00	m²	39,486.81	yd ²	Drain to the pond	ls
Total Hard Surface		75,450.00	m ²	90,237.45	yd ²	Drain to the pond	ls
Gravel Paved Area		91,084.00	m²	108,935.56	yd ² Drain to the ponds		ls
Ponds Footprint		21,200.00	m²	25,354.99	yd ² Drain to the ponds		ls
Total Area other than the Re	eservoir	220,750.00				•	
Volume calculation							
Area	A (m ²)	Runoff Coefficient C		s Intensity - 10 hrs n.(mm) - R-	VOLU	ME OF 50 yr 10 h V = C * R * A (m3	
Hard Surface	75,450.00	0.95		148		10,608.27	
Rip Rap	33,016.00	0.5	148			2,443.18	
Gravel paved	91,084.00	0.55		148	7,414.24		
Pond	21,200.00	1		148	3,137.60		
Total	220,750.00					23,603.29	

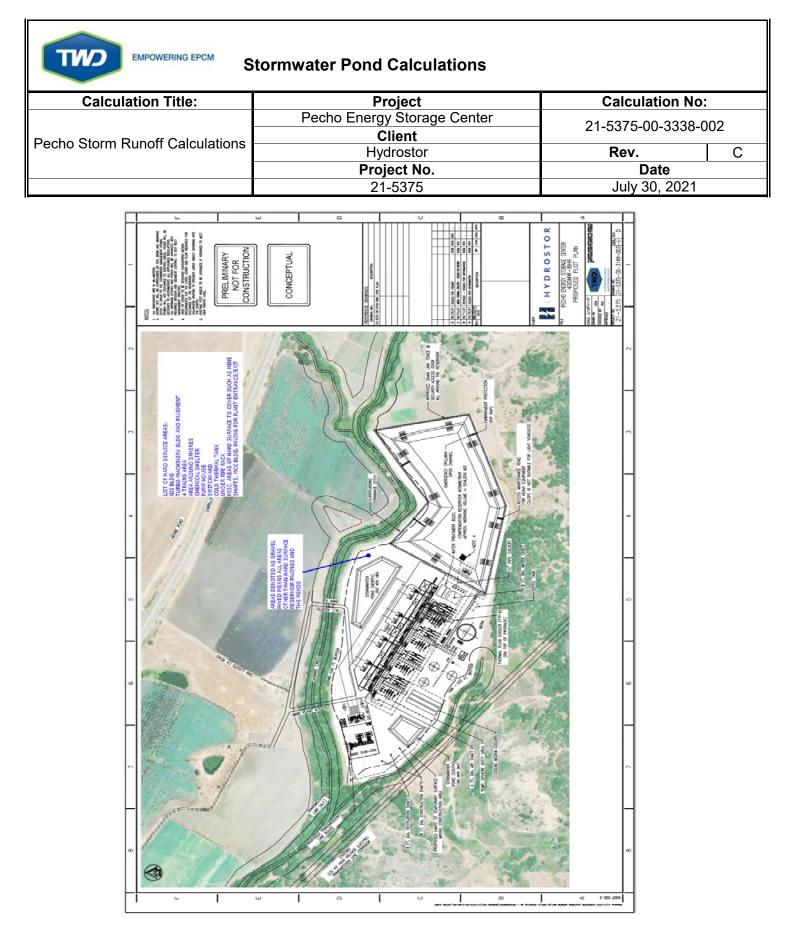


Fig 1 - Plot Plan

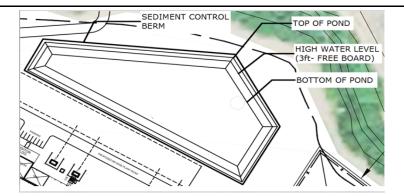
Stormwater Pond Calculations

Calculation Title:	Project	Calculation No:	
	Pecho Energy Storage Center	21-5375-00-3338-0	02
Pecho Storm Runoff Calculations	Client		02
Fecho Storin Runon Calculations	Hydrostor	Rev.	С
	Project No. Date		
	21-5375	July 30, 2021	

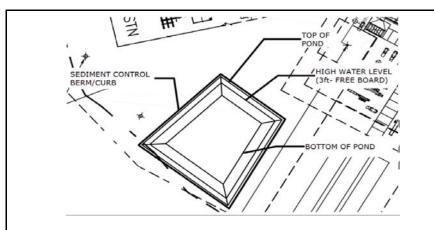
In order to avoid very long run open ditches and also to provide a pond adjacent to the proposed mining area, the SWM retention basin is divided into two smaller ponds at either sides of the Turbomachinery Building

South Pond Assumptions: Slope Height Freeboard Calculations: A1 - Bottom	4 to 1 9 ft 3 ft 24,770.00	sa ft		
A2 - Top	42,385.00	•	Based on a conceptual plot plan	
A1xA2	1,049,876,450.00			
(A1xA2)^0.5	32,401.80			
A1+A2+(A1xA2)^0.5	99,556.80			
h/3		ft = (9.0ft -3.	Oft)/3	
V=h/3 x [A1+A2+(A1xA2)^0.5]	199,113.59		, 7,374.58 Cu.yd	
North Pond Assumptions: Slope Height Freeboard Calculations: A1 - Bottom A2 - Top A1xA2 (A1xA2)^0.5 A1+A2+(A1xA2)^0.5 h/3	4 to 1 9 ft 3 ft 100,167.00 138,670.00 13,890,157,890.00 117,856.51 356,693.51 2	sq. ft	Based on a conceptual plot plan .0ft)/3	
V=h/3 x [A1+A2+(A1xA2)^0.5]	713,387.03		26,421.74 Cu.yd	
Sum of North Pond and South Pond	912,500.62		33,796.32 Cu.yd	
Volume of a 50-year storm, 10-hrs inte	ensity for 10 hrs duration		23,600.00 cu.m	30,868.00 Cu.yd
Sum of North Pond and South Pond >	Volume of a 50-year sto	rm, 10-hrs int	ensity for 10 hrs duration "OK"	

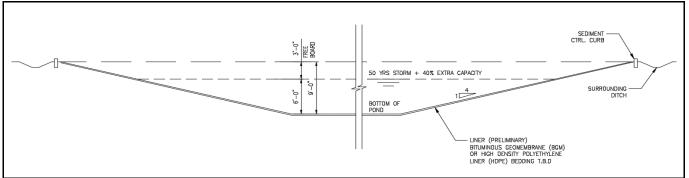
TW EMPOWERING EPCM **Stormwater Pond Calculations Calculation Title:** Project **Calculation No:** Pecho Energy Storage Center 21-5375-00-3338-002 Client Pecho Storm Runoff Calculations Hydrostor Rev. С Project No. Date 21-5375 July 30, 2021



Stormwater Pond - North Pond - Plan



Stormwater Pond - South Pond - Plan



Typical Section of Stormwater Pond



Calculation Cover Page

Calculation Title:	Project	Calculation N	lo:
	Pecho Energy Storage center	21-5375-00-3338-001	
Reservoir Volume Calculation -	Client	21-03/0-00-333	6-00 I
400MW-8hrs	Hydrostor	Rev.	С
	Project No.	Date	
	21-5375	July 28, 202	1
Assumptions: Reservoir is built in a Flat Terrain Groundwater below bottom of the reservoir Bottom of Reservoir is clapsed towards the to	raah raak		
Bottom of Reservoir is sloped towards the ti			0.
No. 13, Chapter 6, Table B-1)	h <1 mile and wind speed of 100 miles per hour. I	Bureau of Reclamation, Desig	n Standard

Soil Stability was not reviewed

This is an initial estimation, no detail design, no structural or stability study

No Ice volume considered

No Evaporation considered

Lining will be HDPE or Similar

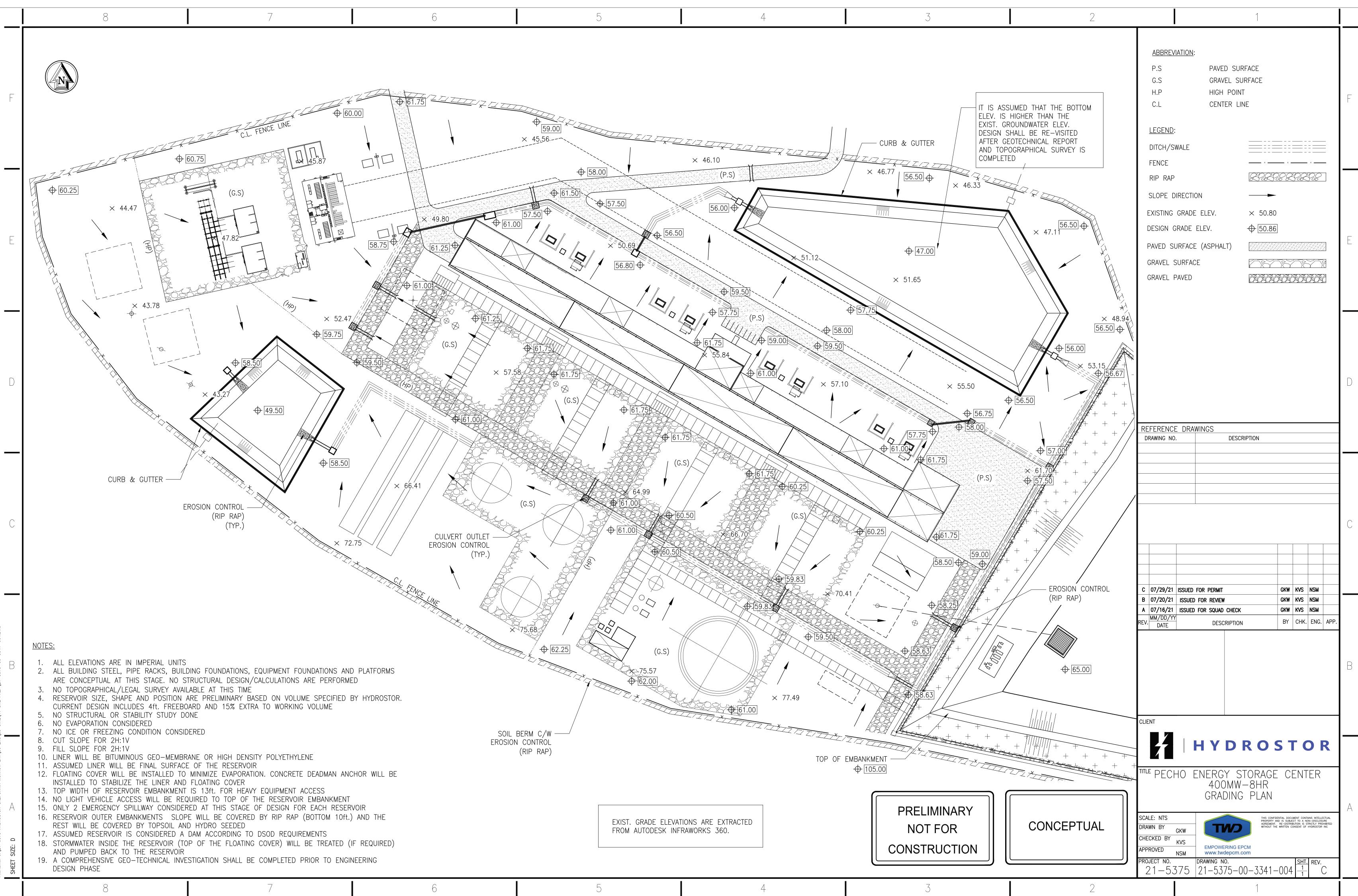
Berm fill slope and excavation slope 2H:1V

Although the Reservoir has extra capacity than the working volume and also accommodated with 4ft free board, however it is not designed for entire site stormwater management. The storm over the reservoir cover, after screening and treatment (if required) will be discharged in to the reservoir

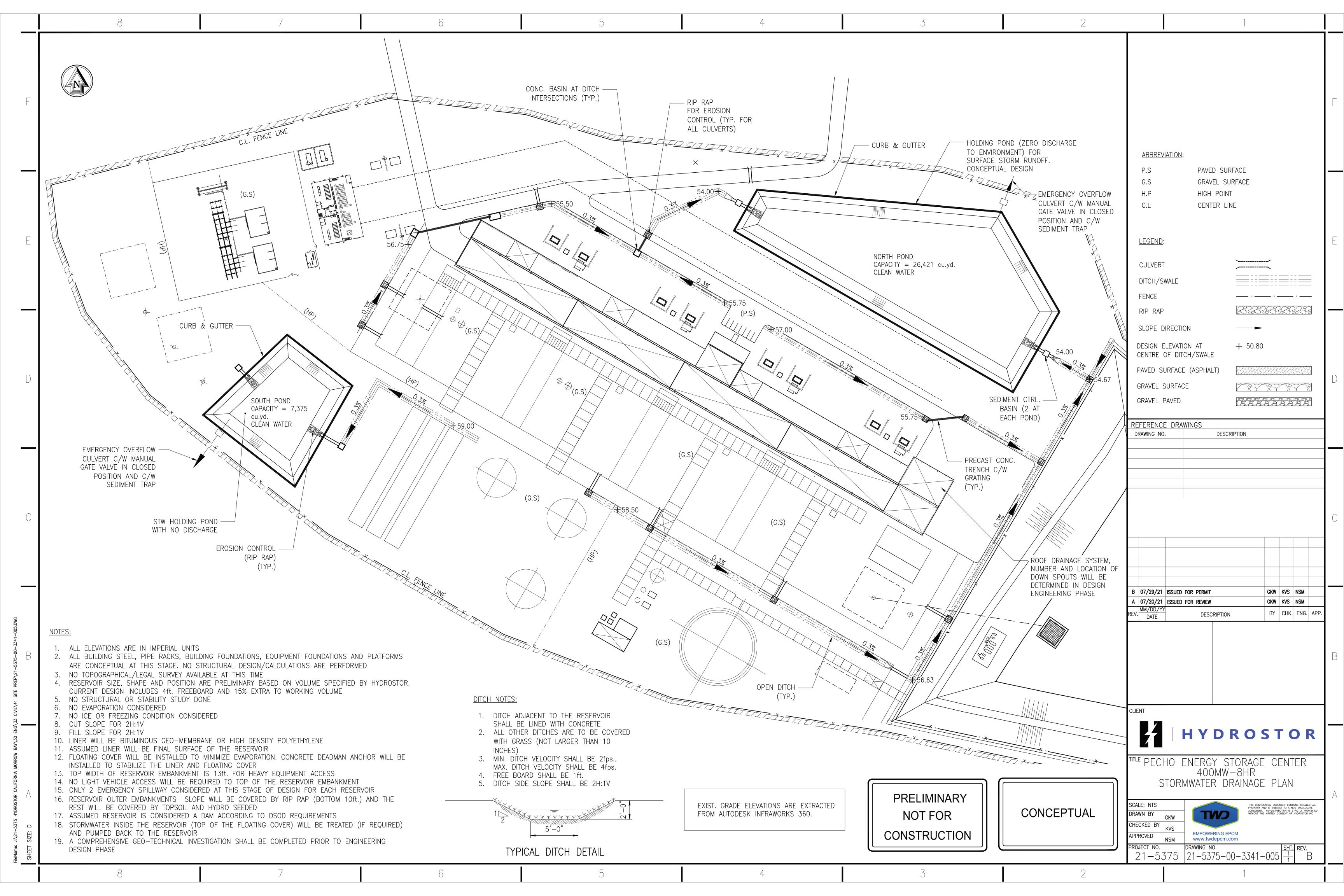
In case of any accidental overflow, the overflow water, will drain to the nearest SW pond, and if the pond does not have capacity, it will over flow into the adjacent creek.

Unit	400MW / 8hr			
m ³	484 800			
111	404,000			
m³	34,720			
m³	39,840			
na	,			
557,520.00	cu.m	729,208.63	Cu.yd	
(Irregular Shape)	See sketch # 21-	5375-00-3349-	004	
(Irregular Shape)	See sketch # 21-	5375-00-3349-	004	
	sq. ft	43,092.40	sq.m	
			•	
2 to1				
ooard)	36	ft	10.97	m
rm)		721,874.00	sq. ft	67,064.00 sq.ı
,		,		
721,870.89		•		
		,		
784,675.67	Cu.yd	599,927.59	cu.m	
784,675.67	-	599,927.59		
	m ³ m ³ m ³ m ³ 557,520.00 (Irregular Shape) (Irregular Shape) 463,842.00 2 to1 board) rrm) 463,842.73 721,870.89	m³ 484,800 m³ 34,720 m³ 39,840 ng 557,520.00 cu.m (Irregular Shape) See sketch # 21- (Irregular Shape) See sketch # 21- 463,842.00 sq. ft 2 to1 36 oboard) 36 arm) 463,842.73	m³ 484,800 m³ 34,720 m³ 39,840 ng 557,520.00 cu.m f(Irregular Shape) See sketch # 21-5375-00-3349- (Irregular Shape) See sketch # 21-5375-00-3349- (Irregular Shape) See sketch # 21-5375-00-3349- 463,842.00 sq. ft 43,092.40 2 to1 36 ft ooard) 36 ft rrm) 721,874.00 463,842.73 43,092.40 721,870.89 67,064.00 2889948714 53758.24322 12.01 ft 3.66	m ³ 484,800 m ³ 34,720 m ³ 39,840 ng 557,520.00 cu.m 557,520.00 cu.m 729,208.63 Cu.yd (Irregular Shape) See sketch # 21-5375-00-3349-004 See sketch # 21-5375-00-3349-004 (Irregular Shape) See sketch # 21-5375-00-3349-004 sq.m 2 to1 See sketch # 21-5375-00-3349-004 sq.m 10.97 sq. ft 43,092.40 sq.m 2 to1 36 ft 10.97 rrm) 721,870.89 67,064.00 sq.m 2889948714 53758.24322 163,914.64 12.01 ft 3.66 m m

When the Reservoir is filled up to the bottom of free board, there will be approximately 3 ft buffer after design volume (working volume+15%) is completely discharged. For Absolute working volume, the buffer height is approximately 8 ft



	5	4	3
			-



APPENDIX 5.15C

County Well Permit Application Forms



PO Box 1489, San Luis Obispo, CA 93-PO ne: (805) 781-5544 Fax: (805) 781-4211 Email: ehs@co.slo.ca.us

Well Permit Application Approval Process – Checklist

Application Submittal:

- Well Permit Application is complete and accurate including Plot Plan, with specific distances to potential contamination sources clearly labeled.
- ✓ Appropriate fees are included.
- A letter from a geologist is included if applicable. (Wells 800' or deeper anywhere in the county <u>OR</u> equal to or deeper than the Sub-Area thresholds in the PRGWB. See "Well Permitting Process" document for details.)
- PRGWB Ag wells SLO County Planning & Building off-set requirements met if applicable provide documentation.
- √ \$25,000 Surety Bond is current.
- ✓ C-57 License is valid.
- ✓ C-57 Licensed Driller's signature is provided.

Written approval is required prior to performing any work. Notify Environmental Health of any changes to proposed plan – obtain approval prior to continuing work.

After Application is approved:

- Driller notifies EH the day prior to sealing with a notice of intent to seal Make reasonable effort to schedule seals during weekday business hours.
- ✓ Notify this office in writing upon completion of work.
- ✓ Well Completion Reports (WCR) to be submitted within 60 days of completion of work.
- ✓ Water Quality Test Results to be submitted within 60 days of completion of work.
- EH to send Final Letter after all data is submitted and reviewed WCR, Water Quality Results,
 Geologist's Letter, E-logs (if applicable). Additional data may be required.

FEE	PE	DESCRIPTION	Fee		
<u>IND. #</u>	<u> </u>		Amount		
WATER	SAMP	LE FEES			
5013	3640	OCEAN WATER SAMPLES FOR SANITATION	\$67.00		
WATER	WELL	CONSTRUCTION/DESTRUCTION PERMIT			
5006/FN8	4369	WATER WELL APPLICATION (CONSTRUCTION)	\$918.00		
5007/FN8	4370	WATER WELL APPLICATION (DESTRUCTION)	\$279.00		
5008	4344	MONITORING WELL CONSTRUCTION PERMIT	\$267.00		
5009	4346	MONITORING WELL DESTRUCTION PERMIT	\$262.00		
	/IRON	MENTAL HEALTH PROGRAMS		-	
		FAILURE TO OBTAIN INITIAL PERMIT	Original Fee + 50%		
		LATE FEES 1-30 DAYS AFTER DUE DATE	Original Fee + 15%		
		LATE FEES 31 OR MORE DAYS AFTER DUE DATE	Original Fee + 30%		
		CONSULTATION/RESEARCH/FILE REVIEW	\$135.00 /Hour		
		REINSPECTION FEE	\$135.00 /Hour		
		CONSULTANT FEES (DIRECT AND INDIRECT)	Actual Cost		

COUNTY उSAN LUIS
OBISPO

COUNTY OF SAN LUIS OBISPO HEALTH AGENCY ENVIRONMENTAL HEALTH SERVICES DIVISION 2156 SIERRA WAY, STE. B SAN LUIS OBISPO, CA 93401 PHONE: (805)781-5544 EMAIL: EHS@CO.SLO.CA.US www.slopublichealth.org/ehs

OFFICE USE
Permit No
Submittal Complete 🛛
Date///
WP No
nvoice No
Scanned///

WELL PERMIT APPLICATION

FOR CONSTRUCTION , REPAIR, OR MODIFICATION OF WATER WELLS

□ Construction □ Repair/Modification □ Replacement

SITE INFORMATION			
Proposed Well Site Address	City or Are	a	
Assessor's Parcel Number			
Site served by a water company, agency or district? \square No \square			
PROPERTY OWNER INFORMATION			
Property Owner Name			
Mailing Address		Zip	
Telephone Number			
Property Owner Signature			
WELL OWNER INFORMATION (If Different From Prop			
Well Owner Name			
Mailing Address		Zip	
Telephone Number	-	•	
WELL CONSULTANT INFORMATION			
Consultant Name	Telephone Number		
Email			
WELL DRILLER INFORMATION			
Drilling Contractor Name	C-57 License N	lo	
Drilling Company Name			
Mailing Address			
Fax Email Addres	SS		
I hereby agree to comply with all applicable laws and regulations o to well construction, destruction, repair, or modification and to the p or technical review of the application. Within sixty days after comp well completion report and water quality test results. The application DRILLING SHALL NOT COMMENCE U	ayment of any additional fees pletion of the well, I will furnis on becomes a valid permit fol	to complete any required envir h Environmental Health Service lowing sign off by Environmenta	onmental es with a
Contractor Signature			
Contractor Printed Name			
	CE USE ONLY		
WELL SITE VERIFIED: YES IND BY			
SITE LETTER DATE PERMIT EXPIRATION DA			
COMMENTS			
CONDUCTOR CASING SEAL WITNESSED YES NO BY			
WELL SEAL WITNESSED YES IN NO BY			
BOREHOLE DESTRUCTION/SEAL WITNESSED YES D NO D BY	D	DATEDEPTH	
WELL SEAL GPS COORDINATES	N		W
WELL COMPLETION REPORT RECEIVED DATE WATER QUALITY TEST	RESULTS RECEIVED DATE	FINAL LETTER SENT DATE	

WELL PROPOSAL DETAILS
Intended Use: Domestic Irrigation Agriculture Commercial Public/Community Private Water System
Public Water System Name Contact (If Different From Owner)
Is proposed well located within city limits?
Parcel Size (acres): Coastal Zone 🛛 Lake Nacimiento 🖾 Sensitive Resource Area
🗖 Paso Robles GWB 🛛 Edna GWB 🖓 Cuyama GWB 🖓 Los Osos GWB 🖓 Santa Maria GWB
Basin Name Sub-Basin Name Target Aquifer/Basin
 Do you anticipate drilling into a water bearing formation that has the potential to degrade a higher quality aquifer? □ No □ Yes
2) Do you anticipate encountering soil conditions between ground surface and groundwater other than those described in State Well Standard 8.A? \Box No \Box Yes
3) Are there any other conditions that may render inadequate the minimum horizontal separation distances identified in State Well Standard 8.A to ensure that the well does not result in deterioration of groundwater quality? On Ves
4) Are there any areas with known or suspected soil or water pollution or contamination for which a certain horizontal separation distance may need to be established in order to ensure that the well does not result in deterioration of groundwater quality despite the increased 50 foot minimum seal depth identified in the County Code? □ No □ Yes
If, during well construction, you encounter any soil or other conditions or water pollution or contamination that would modify your answer to any of the above questions, you must cease drilling immediately and notify Environmental Health Services of the changed circumstances.
WELL CONSTRUCTION DETAILS
Drilling Method: 🗆 Mud Rotary 🖾 Air Rotary 🖾 Reverse Rotary 🖾 Cable Tool 🖾 Other
Exploration Hole: Exploration/Borehole Depthft. Exploration/ Borehole Diameterin.
Conductor Casing: Conductor Depthft. Diameterin. Material Seal Depthft.
Boring: Boring Depthft. Boring Diameterin.
Well Casing: Production Casing Depth ft. Diameter in. Gravel Pack/ Gravel Size
Thickness/Gauge/ASTM sched
Annular Seal: Depth ft. 🗆 Neat Cement 🗆 Sand Cementsack mix Other
Seal Method: Pumped with tremie pipe Other Retardant/Accelerator (name) ATTACHMENTS
Geologist letter attached: Yes No (Required for wells 800' or deeper <u>OR</u> equal to or deeper than the sub-area thresholds in the PRGWB or where the answer to guestion 1) is yes)
Other attachments: 🛛 Construction Plan/Diagram 🖓 Land Use Permit 🗍 Coastal Zone Permit
🗆 Other, please explain
WELL PROPOSAL/CONSTRUCTION MODIFICATIONS NOTE: NOT APPROVED UNTIL SIGNED BELOW
Date: Description:
FOR OFFICE USE ONLY—PROJECT MODIFICATIONS EVALUATION
Received By: Evaluated By: Date:
Approved Denied Approved with Comments:

WELL PERMIT PLOT PLAN



COUNTY OF SAN LUIS OBISPO HEALTH AGENCY ENVIRONMENTAL HEALTH SERVICES DIVISION 2156 SIERRA WAY, STE. B SAN LUIS OBISPO, CA 93401 PHONE: (805)781-5544 EMAIL: EHS@CO.SLO.CA.US www.slopublichealth.org/ehs

SCALE: 1/4" = 25'

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