MENDOCINO COAST HEALTH CARE DISTRICT
COMMUNITY HEALTH CARE

NPC5 EVALUATION

HCAI Project No.: SRU-2023-10301

Mendocino Coast District Hospital, Fort Bragg, California

HCAI Facility No. 10301

Prepared for
Mendocino Coast Health Care District

Prepared by
Gayner Engineers
1133 Post Street
San Francisco, CA 94109

January 7, 2026

This Plan has been reviewed and approved by Facility Representative:

Signature:

Print Name and Title

CERTIFICATIONS PAGE

Design Professional Stamps:

REGISTERED PROFESSIONAL ENGINEER CYNTHIA QIAN CHENG M 36041 Exp. 09-30-26 MECHANICAL STATE OF CALIFORNIA	REGISTERED PROFESSIONAL ENGINEER BENSON NGO E 16075 Exp. 12-31-27 ELECTRICAL STATE OF CALIFORNIA
MECHANICAL ENGINEER	**ELECTRICAL ENGINEER**

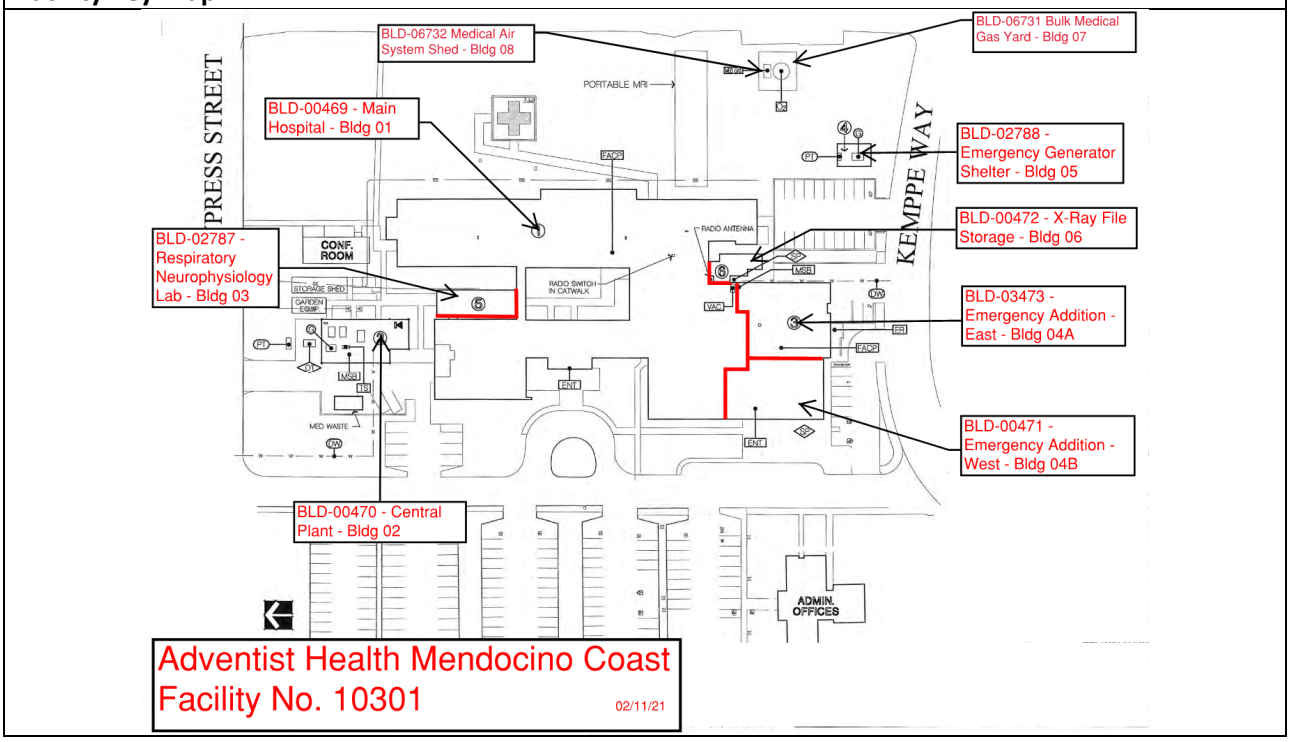
[OSHPD 1]

General Acute Care Hospital (GACH)

NPC-5 COMPLIANCE PLAN

Date:	December 23, 2025
Facility ID:	10301
Facility Name:	Adventist Health Mendocino Coast
Building Number(s):	BLD-00469 Main Hospital – Bldg 01 BLD-00470 Central Plant – Bldg 02 BLD-02787 Respiratory Neurophysiology Lab – Bldg 03 BLD-03473 Emergency Addition – East – Bldg 04A BLD-00471 Emergency Addition – West – Bldg 04B BLD-02788 Emergency Generator Shelter – Bldg 05 (No Water Use) BLD-00472 X-Ray File Storage – Bldg 06 (No Water Use) BLD-06731 Bulk Medical Gas Yard – Bldg 07 (No Water Use) BLD-06732 Medical Air System Shed – Bldg 08 (No Water Use)
Licensed Beds:	BLD-00469: 25 (4 ICU and 21 Med Surg) BLD-00470: N/A BLD-02787: N/A BLD-03473: N/A BLD-00471: N/A BLD-02788: N/A BLD-00472: N/A BLD-06731: N/A BLD-06732: N/A
Building Area(s) SF:	BLD-00469: 39,450 BLD-00470: 2,875 BLD-02787: 1,720 BLD-03473: 5,250 BLD-00471: 2,525 BLD-02788: N/A (Not a building) BLD-00472: N/A (Not a building) BLD-06731: N/A (Not a building) BLD-06732: N/A (Not a building)

Facility Key Map:



Executive Summary

The hospital's emergency water storage and wastewater holding capacity is computed based on the existing water usage under normal operating conditions. The hospital will remain fully functional in the event of an emergency. A minimum of one on-site potable water storage tank will be installed, sufficient to supply potable and industrial water for 72 hours of operation with hook-up provisions that allow for water replenishment as needed for extra hours. A wastewater holding tank will be installed on site for the wastewater discharges from the OSHPD 1 buildings. The wastewater capacity will be the same as the potable water storage tank. Any changes to the NPC-5 Compliance Plan will be reflected in the facility emergency preparedness plan when implemented.

The hospital does not have an existing potable water storage tank or a wastewater holding tank. The anticipated emergency water storage and wastewater holding capacity required for the 72 hours of emergency operation under NPC 5 compliance are listed in Table 1.

Anticipated Water Use and Wastewater Holding Requirements (Table 1)				
	0-24 hours	24-48 hours	48-72 hours	Total
CPC Code Required Water Usage for **25** Beds at 50 Gallons per Bed per Day	1,250	1,250	1,250	3,750
Existing average water usage (note 1)	6,949	6,949	6,949	20,847
Proposed Emergency Water Storage Tank Capacity (Note 2)	**8,175**	**8,175**	**8,175**	**24,525**
Existing Potable Water Storage Capacity	N/A	N/A	N/A	N/A
Hospital Water Rationing Plan-Water Storage Reduction	N/A	N/A	N/A	N/A
Water Replenishment/Tanker Truck Arrangement	N/A	N/A	N/A	N/A
Proposed Emergency Wastewater Holding Tank Capacity (Note 2, 3)	**8,175**	**8,175**	**8,175**	**24,525**
Existing Wastewater Storage Capacity	N/A	N/A	N/A	
Hospital Water Rationing Plan-Waste Water Storage Reduction	N/A	N/A	N/A	
Wastewater Removal/Tanker Truck Arrangement	N/A	N/A	N/A	

Notes
1. Based on historical water usage requirement and the maximum average daily consumption month, Hospital elected to maintain normal hospital service during emergency and provide potable water storage capacity to meet code and operation requirement without the need to implement a water rationing at this time.
2. Tank size based on 85% usable tank volume to meet the required potable water storage capacity and wastewater holding capacity.
3. Tank size based on the maximum average daily water consumption from Hospital. Facility does not have cooling towers. Existing chillers are air-cooled.

Size of Emergency Water Storage

Emergency Water Storage Requirements:

For acute care hospital facilities or buildings required to meet NPC-5, on-site water supply of not less than 150 gallons of potable water per licensed bed shall be provided. In no event shall the campus on-site water storage capacity be less than one tank with at least 5,000 gallons capacity.

The NPC-5 requirement refers to both potable water as well as industrial/process water to operate hospital utilities and equipment to support 72 hours of emergency operations.

Emergency Water Storage Tanks Sizing:

Water Usage under Normal Operating Conditions:

1. Building Water Meter Readings:
   A water meter under 700 River Dr measures the water usage in the Main Hospital **(BLD-00469)**, Central Utility Plant (**BLD-00470**), ED addition East and West (**BLD-03473**, **BLD-00471**), and Respiratory Neuro Lab (**BLD-02787**). Existing water meter at 700 River Dr serves OSHPD 1 buildings only. Non-GAC buildings are served by separate meters.
   X-Ray File Storage **(BLD-00472),** Emergency Generator Shelter **(BLD-02788),** Bulk Medical Gas Yard (**BLD-06731),** and Medical Air System Shed **(BLD-06732**) do not use have any water usage.
   The maximum average daily usage of 6,949 gallons is shown in the beginning of 2023. The highest average water consumption will be used for the potable water storage tank sizing consideration.

LOCATION #	VENDOR NAME	ACCOUNT ADDRES	ACCOUNT #	BILL MONTH	NUMBER OF DAYS	SERVICE TYPE	UOM	USAGE	GALLONS	Avg. GALLON PER DAY
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr (Serial	017816-000	12/01/2021	31	Water	ccf	247	184,756	5,960
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr	017816-000	1/01/2022	31	Water	ccf	198	148,104	4,778
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr	017816-000	2/01/2022	28	Water	ccf	234	175,032	6,251
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr	017816-000	3/01/2022	31	Water	ccf	244	182,512	5,887
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr	017816-000	4/01/2022	30	Water	ccf	229	171,292	5,710
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr	017816-000	5/01/2022	31	Water	ccf	245	183,260	5,912
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr	017816-000	6/01/2022	30	Water	ccf	233	174,284	5,809
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr	017816-000	7/01/2022	31	Water	ccf	215	160,820	5,188
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr	017816-000	8/01/2022	31	Water	ccf	263	196,724	6,346
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr	017816-000	9/01/2022	30	Water	ccf	240	179,520	5,984
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr	017816-000	10/01/2022	31	Water	ccf	283	211,684	6,829
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr	017816-000	11/01/2022	30	Water	ccf	258	192,984	6,433
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr	017816-000	12/01/2022	31	Water	ccf	265	198,220	6,394
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr	017816-000	1/01/2023	31	Water	ccf	288	215,424	6,949
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr	017816-000	2/01/2023	28	Water	ccf	254	189,992	6,785
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr	017816-000	3/01/2023	31	Water	ccf	249	186,252	6,008
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr	017816-000	4/01/2023	30	Water	ccf	244	182,512	6,084
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr	017816-000	5/01/2023	31	Water	ccf	286	213,928	6,901
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr	017816-000	6/01/2023	30	Water	ccf	250	187,000	6,233
CA-AHMC-03	City of Fort Bragg, CA	700 River Dr	017816-000	7/01/2023	31	Water	ccf	235	175,780	5,670

2. Under normal operating conditions the average water consumption is 278 gallons/day/bed.

Existing Water Storage Tanks and Connections on Campus:

1. There is an existing 5,000-gallon water storage tank located at the south side of the Patient Service Building (PSB). PSB is an outpatient service building (non-acute care) and is excluded from the NPC 5 evaluation. The tank is connected to city water main which serves PSB and AJ Gray Administration Building (non-acute care)
2. Another 2,500-gallon water storage tank is located at the north side of the Central Utility Plant (BLD-00470). The tank is connected to an underground well which serves irrigation system(s).

Although well water is tested weekly it is considered non-potable. The 2,500 gallons water storage is excluded from this NPC-5 evaluation.

Analysis and Recommendations:

1. The existing 5,000-gallon water storage tank serving PSB and AJ Gray Building is located away from the existing water main serving the acute-care buildings, as shown in the Emergency Water Storage Exhibit attached, as such, connecting the existing water storage tank to the water main will require extensive piping connection.
2. Installing a new emergency water storage tank near the existing water main is recommended. The table lists the required water storage without water rationing.

Water Storage Tank	Volume
Emergency Water Storage required over 72 hours (under normal operation without rationing plan)	**24,525 gallons**
Recommended new tank size (Equipment Rated Capacity)	**25,000 gallons**

3. The table summarizes the infrastructure/equipment required for the emergency water storage and water delivery to the hospital.

Equipment	Location	Capacity	Recommendations
- A new 25,000 Gallons Aboveground Storage Tank for Potable Water - New set of triplex pumping system (N+1)	New Yard	25,000 gallons Approx. 12’ dia. X 30’L	- Install a 25,000 gallons water storage tank. - Install a new set of pumps to deliver water to the hospital from the tank. - Connect a water main from the tank to the main hospital. - 480V, 3W+G will be derived from the HCAI Building – CUP (BLD-00470)

Source(s) of Emergency Water Supply:

Primary Emergency Water Supply	Capacity (Gallons)	Notes
Existing Water Tank(s)	N/A	N/A
New Water Tank(s)	**25,000**	1, 2
Well(s) if any (daily average)	N/A	N/A
Other	N/A	N/A

Secondary Emergency Water Supply (if any)	Capacity (Gallons)	Notes (Indicate Location)
Bottled Water	N/A	N/A
Other Stored Water	N/A	N/A

Footnotes:
1. Water tank will be located onsite in the facility's existing parking lot. Water tank will supply water to the Main Hospital (BLD-00469), Central Utility Plant (BLD-00470), ED addition East and West (BLD-03473, BLD-00471), and Respiratory Neuro Lab (BLD-02787)
2.Tank size based on 85% usable tank volume to meet the required potable water storage capacity.

Stored Water Treatment and Water Quality Control:

Potable water is provided by the City of Fort Bragg and to be piped to the atmospheric water storage tank(s). Facility water is tested every three months for bacteriological analysis per Title 22 requirements. Tanks will be either designed for underground or aboveground installation (To Be Determined in design). If tanks are installed aboveground, reflective coating or external insulation will be provided to minimize stored water temperature gain. Storage tanks will be equipped with automatic fill valve control, screened tank vent(s) per EPA requirements, outlet pipe with foot valve, manual tank drain valve, microprocessor electronic level control and monitoring, manway service access, water temperature gauge and temperature sensor connected to the BMS for monitoring and recording. **Piping layout of the water storage tanks will be of the "pass thru" design such that the contents of the tank is always consumed by the building and constantly replenished by the City Water.** Tanks and piping sections will be provided with test ports for water sampling to be taken by certified water quality testing lab during routine testing. Required testing frequency will be established based on OSHPD/CDPH requirement. Water inlet piping to tank will be equipped with a reduced pressure backflow preventer before connection to tank. Backflow preventer testing will be based on City of Fort Bragg requirement. A factory packaged pump skid with factory microprocessor control panel with pressure control, three variable speed VFD driven centrifugal pumps (one is standby) shall provide emergency water distribution to the buildings. Piping distribution will be connected to the existing underground cold-water main serving the buildings and equipped with manual isolation valves at the city mains and at the stored water distribution mains to provide manual isolation from city water during emergencies. The hospital would provide water treatment systems in the future if water tests failed to meet water quality requirements. Make-ready valves for future treatment system connections will be provided as part of the NPC 5-compliant water storage system.

Size of Emergency Wastewater Holding Tank(s)

Emergency Sanitary Waste Holding Requirements:

The Hospital shall have an onsite holding tank(s) to store sewage and liquid waste sufficient to operate essential hospital utilities and equipment in the acute care hospital building, to support 72 hours of continuing operation in the event of an emergency. The emergency waste holding capacity calculation is based on the Emergency Water Usage under this evaluation.

Emergency Sanitary Waste Holding Tank Sizing:

Sanitary Waste under Normal Operating Conditions:

1. Assume sanitary drainage under normal operation is based on the potable water usage over 72 hours. The total anticipated wastewater will be less or equal to 20,847 gallons, considering some of the industrial water loss is due to equipment process in lieu of direct drainage.

Analysis and Recommendations:

1. The hospital currently does not have an on-site sanitary waste storage tank.
2. There is a single 8” sanitary sewer underground lateral connected to the City Sewer Manhole on Cypress Street.
3. It’s recommended that a sanitary waste-holding tank be installed underground north of the Central Utility Plant (BLD-00470). The waste holding tank will intercept the existing 8” SS from the hospital. Wastewater will be diverted to the storage tank during emergencies. A service call for a sewage truck to remove waste from the tank or an automatic pumping station can be provided as part of the tank installation. (See Emergency Waste Holding Tank Exhibit for location)

Emergency Wastewater Storage:

Primary Emergency Wastewater Storage	**Capacity (Gallons)**	**Notes**
Existing Wastewater Tank(s)	N/A	N/A
New Wastewater Tank(s)	**25,000**	1,2
Secondary Emergency Wastewater Storage (if any)	**Capacity (Gallons)**	**Notes (Indicate Location)**
Leak-Proof Bags	N/A	N/A
Location of Leak-Proof Bags	N/A	N/A

Footnotes:

1. Wastewater tank will collect wastewater discharges from the Main Hospital (BLD-00469), Central Utility Plant (BLD-00470), ED addition East and West (BLD-03473, BLD-00471), and Respiratory Neuro Lab (BLD-02787)

2.Tank size based on 85% usable tank volume to meet the required wastewater holding capacity.

Impacted Services in the Building(s)

Temperature (Heating/Cooling)

The Water Rationing Plan is based on no service reduction per the Hospital's directive. Essential electrical power is provided for the cooling equipment; Central cooling equipment from the central utility plant serves the entire OSHPD 1 building(s).

Fire Protection:

The buildings are provided with automatic fire sprinkler coverage. Fire water services are piped from the street to the buildings independently from the domestic water services with their own utility meters and backflow preventers. The campus does not have a fire water storage facility or emergency fire pump system as it is not required by code. The fire alarm system serving the various buildings is on emergency power and will be operational during an NPC 5 emergency. In the event of losing site fire water service, the facility will initiate the following actions:

1. Hospital Administration will notify the local fire department.
2. Facility Engineering will ensure the building fire alarm system is operational.
3. Hospital Administration will initiate a continuous fire watch for the various buildings on campus and maintain the fire watch until the emergency is cleared and fire water service is restored.
4. In case of fire or activation of fire alarm, the hospital administration will notify the local fire department immediately.

Onsite Fuel Oil Supply for 72 hours

Onsite Fuel Oil Supply Capacity Requirements:

An onsite emergency system as defined in the California Electrical Code is incorporated into the building electrical system for critical care areas. Additionally, the system shall provide radiological service and an onsite fuel supply for 72 hours of acute care operation.

Existing Generators and Fuel Oil Storage on Campus Summary:

Location	Generator Equipment (Kw)	Existing Fuel Oil Storage
Existing Tank Yard, South of PSB	80	1,000 gallons
Generator Room, North of Main Hospital	250	5,000 gallons

Fuel Oil Storage required to support 72 hours of operation:

Location	Generator Equipment (Kw)	Fuel Supply over 72 Hrs.*	Required Fuel Oil Tank Capacity**
Existing Tank Yard, South of PSB	80	540 gallons	720 gallons
Generator Room, North of Main Hospital	250	1,700 gallons	2,300 gallons
Total Fuel Oil Storage over 72 Hrs.:		**2,240 gallons**	

*Calculation based on 7 gallon per hour fuel consumption per 100 kw at 100% load.
**NFPA 110 requires tank capacity at least 133% of required consumption.

Based on the calculated fuel supply for 72 hrs., the existing onsite Fuel Tanks therefore have sufficient capacity to provide the required NPC-5 Fuel Supply Storage.

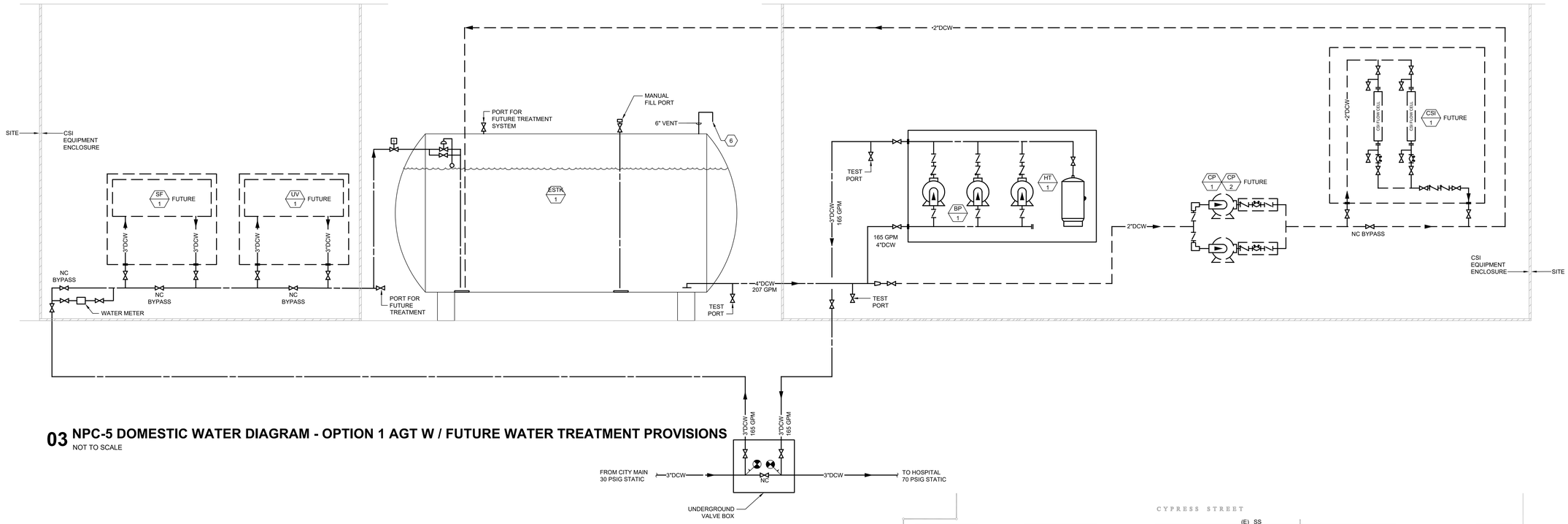
APPENDIX A

PROPOSED EMERGENCY
WATER SYSTEM DIAGRAM

LEGEND:

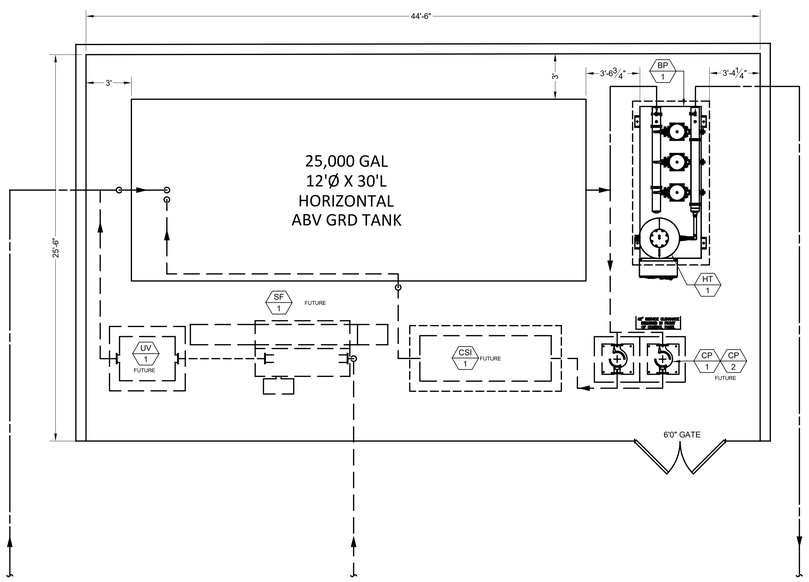
INCLUDED IN DESIGN

FUTURE EQUIPMENT OR PIPES



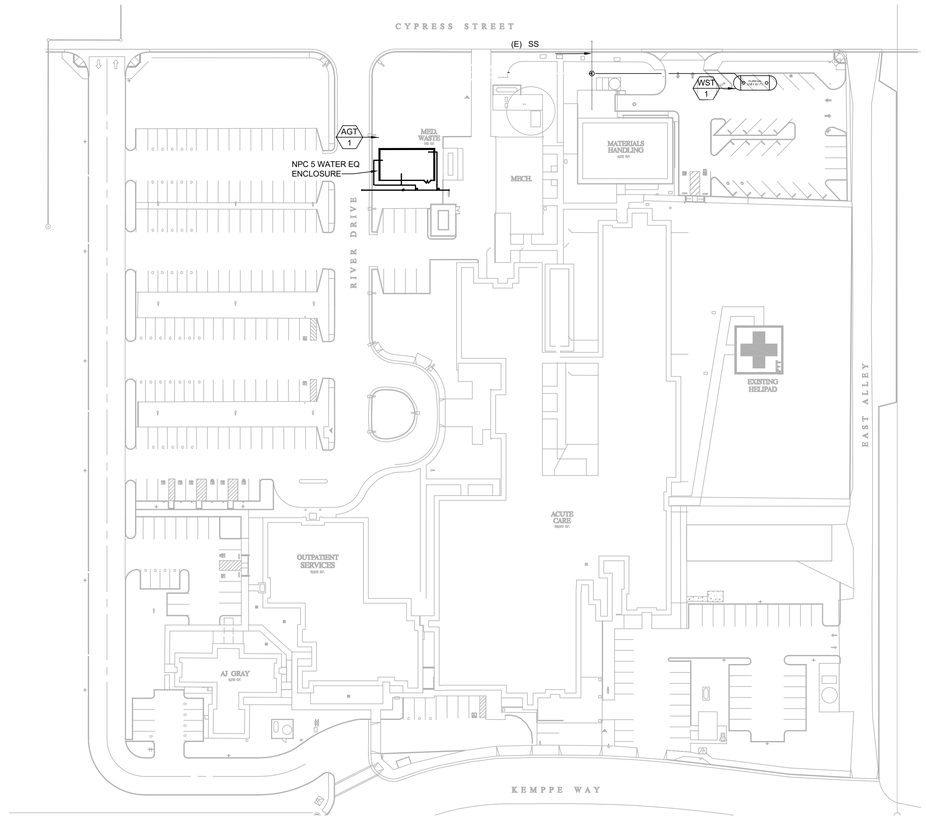
03 NPC-5 DOMESTIC WATER DIAGRAM - OPTION 1 AGT W / FUTURE WATER TREATMENT

NOT TO SCALE



05 CSI ENCLOSURE LAYOUT - OPTION 1 AGT W / FUTURE TREATMENT

1/4" = 1' - 0"



25 NPC-5 DOMESTIC WATER DIAGRAM - OPTION 1 AGT W / FUTURE TREATMENT

1" = 50'

Preliminary

12/23/2025 5:02:53 PM

ISSUE SCHEDULE	NO.	DATE
100%SD	1	XX/XX/2025

OSHPD STAMP (IF APPLIES):

PROJECT NORTH TRUE NORTH

ADVENTIST HEALTH MENDOCINO COAST

700 RIVER DRIVE,
FORT BRAGG, CA 95437

NPC-5

SHEET TITLE:

OPT 1 AGT W / FUTURE TREATMENT

100% SCHEMATIC DESIGN

SCALE: NTS

PROJECT NUMBER: -

SHEET NUMBER: P-1

04-DESIGN REVIEW PACKAGE

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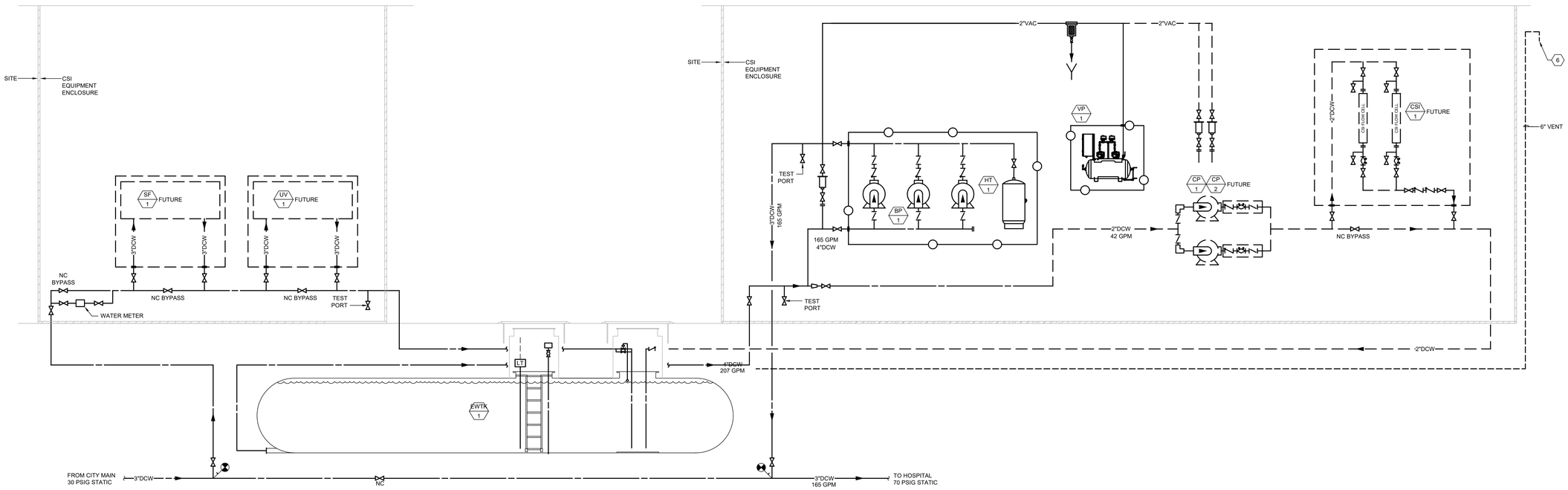
LEGEND:

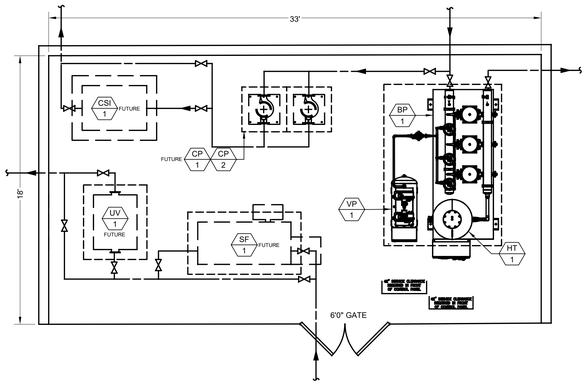
INCLUDED IN DESIGN

FUTURE EQUIPMENT OR PIPES



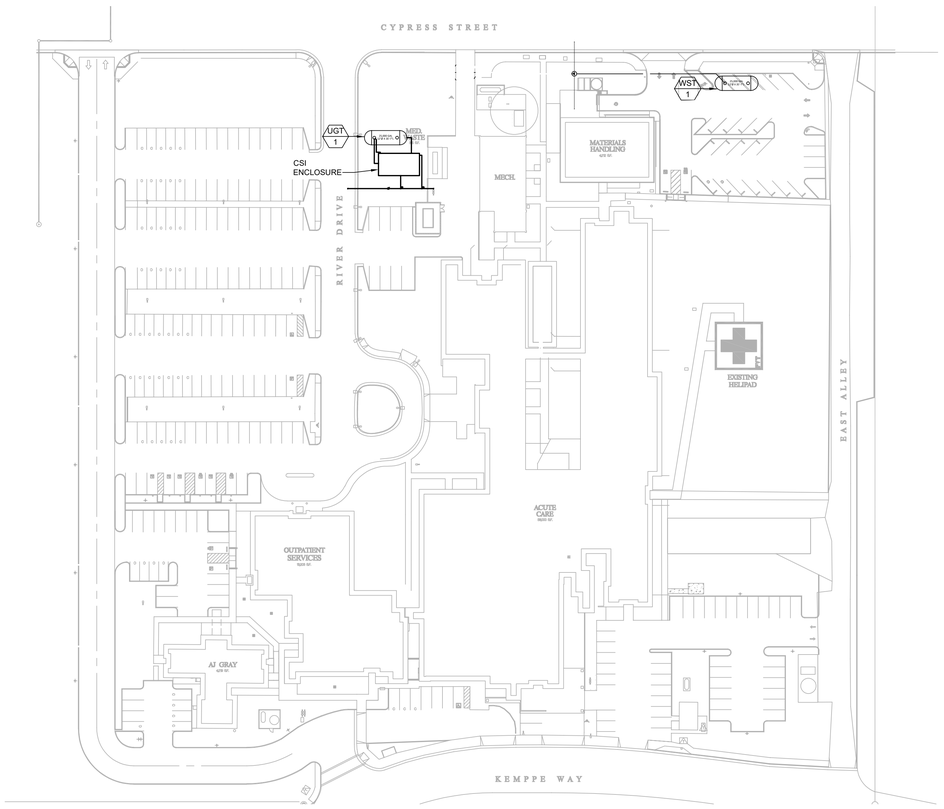
03 NPC-5 DOMESTIC WATER DIAGRAM - OPTION 2 UGT W / FUTURE WATER TREATMENT PROVISIONS

NOT TO SCALE



05 CSI ENCLOSURE LAYOUT - OPTION 2 UGT W / FUTURE TREATMENT

NOT TO SCALE



25 NPC-5 DOMESTIC WATER DIAGRAM - OPTION 2 UGT W / FUTURE TREATMENT

1" = 50'

Preliminary

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ISSUE SCHEDULE	NO.	DATE
100%SD	1	XX/XX/2025

OSHPD STAMP (IF APPLIES):

PROJECT NORTH / TRUE NORTH

ADVENTIST HEALTH MENDOCINO COAST

700 RIVER DRIVE,
FORT BRAGG, CA 95437

NPC-5

SHEET TITLE:

OPT 2 UGT W / FUTURE TREATMENT

100% SCHEMATIC DESIGN

SCALE: NTS

PROJECT NUMBER: -

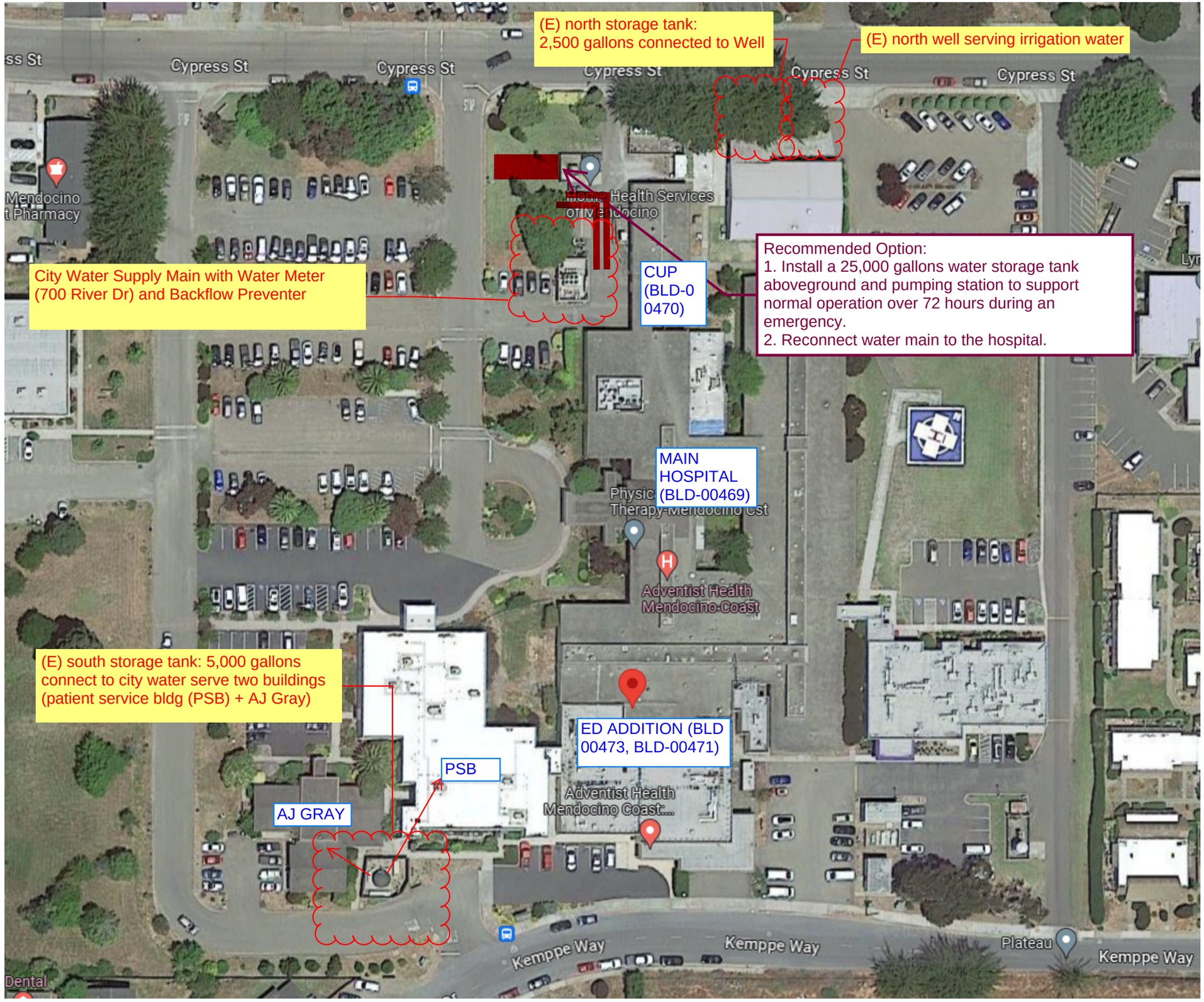
SHEET NUMBER: P-2

1/15/2025 10:58:09 AM SA DESIGN REVIEW PACKAGE

APPENDIX B

FACILITY WATER QUALITY REPORT
(QUARTERLY)

APPENDIX C
EMERGENCY POTABLE WATER
EXHIBIT



2023-08-28

Mendocino Coast District Hospital Water Info:

Total Patient Beds: 25

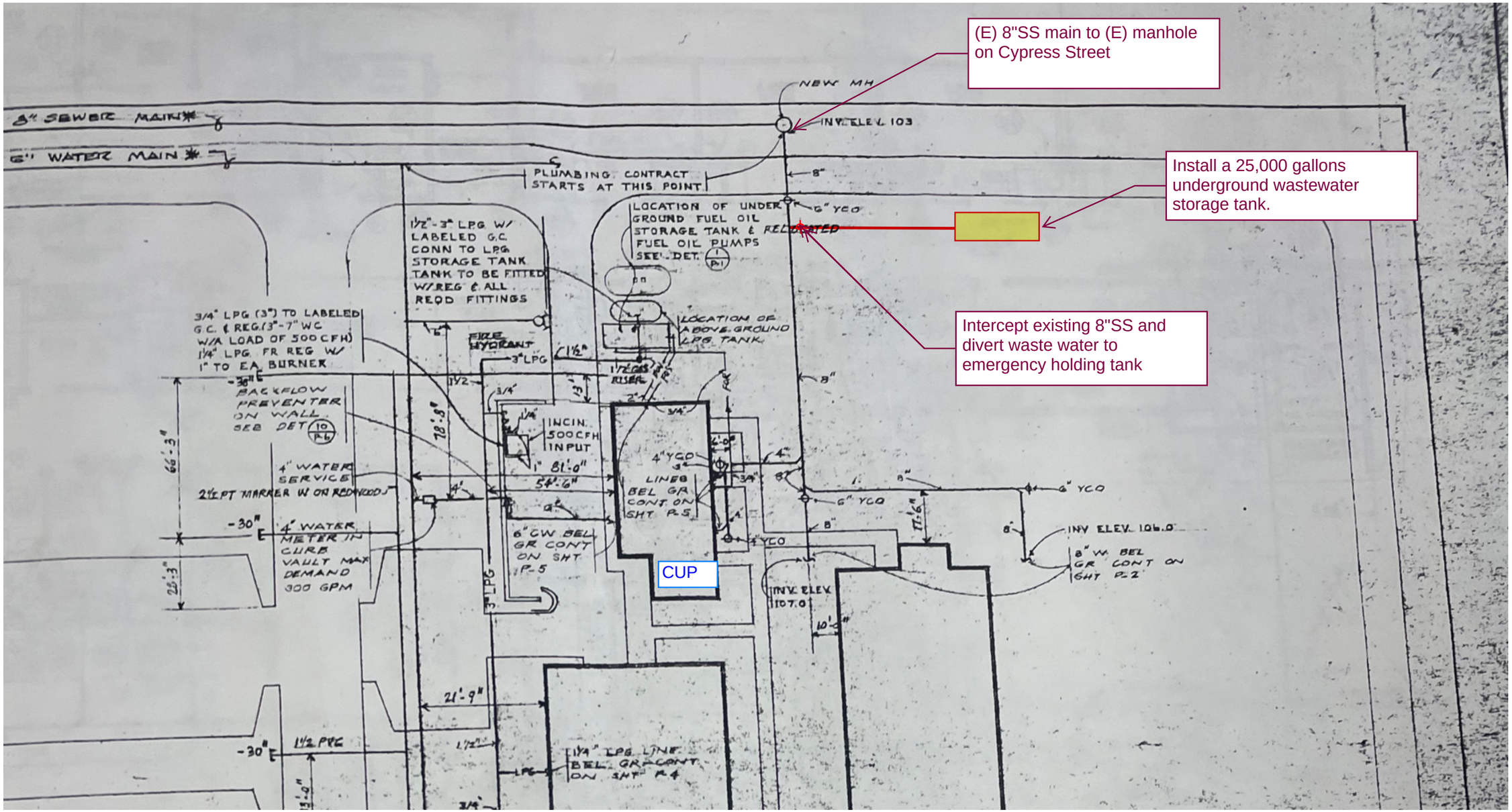
Four existing water meters:
1. Main Hospital
2. Irrigation
3. Outpatient Imaging
4. Patent Service Bldg (PSB).

Two existing water storage tanks and a well (see Exhibit to the left)

Well water test weekly. Well currently serve irrigation.

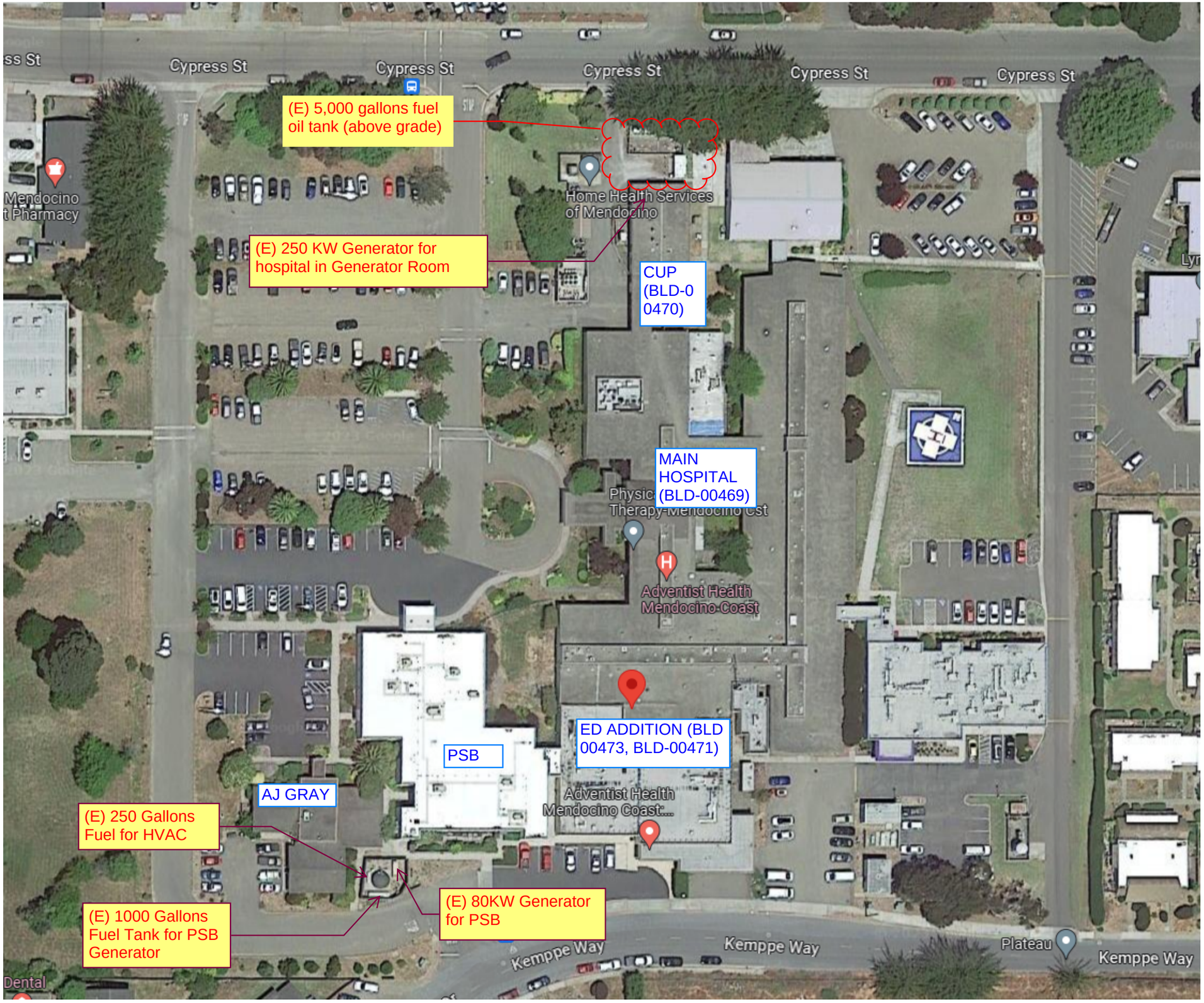
APPENDIX D

EMERGENCY WASTE WATER EXHIBIT


(E) 8"SS main to (E) manhole on Cypress Street
Install a 25,000 gallons underground wastewater storage tank.
Intercept existing 8"SS and divert waste water to emergency holding tank
CUP
8" SEWER MAIN
6" WATER MAIN
NEW MH
INV. ELEV. 103
PLUMBING CONTRACT STARTS AT THIS POINT
LOCATION OF UNDER GROUND FUEL OIL STORAGE TANK & FUEL OIL PUMPS SEE DET.
LOCATION OF ABOVE GROUND LPG TANK
1½"-3" LPG W/ LABELED G.C. CONN TO LPG STORAGE TANK TANK TO BE FITTED W/REG & ALL REQD FITTINGS
3/4" LPG (3") TO LABELED G.C. & REG (3"-7" WC W/A LOAD OF 500 CFH) 1¼" LPG FR REG W/ 1" TO EA BURNER
BACKFLOW PREVENTER ON WALL SEE DET
FIRE HYDRANT
INCIN. 500 CFH INPUT
4" WATER SERVICE
2½ PT MARKER W ON REDWOOD
4" WATER METER IN CURB VAULT MAX DEMAND 300 GPM
6" CW BEL GR CONT ON SHT P-5
LINES BEL GR CONT ON SHT P-5
INV. ELEV. 106.0
8" W BEL GR CONT ON SHT P-2
INV. ELEV. 107.0
1¼" LPG LINE BEL GR CONT ON SHT P-4
1½ PEG
21'-9"
54'-6"
81'-0"
66'-3"
28'-3"
78'-3"
11'-6"

APPENDIX E

EXISTING FUEL OIL STORAGE EXHIBIT


Cypress St
Cypress St
Cypress St
Cypress St
Cypress St
Cypress St
(E) 5,000 gallons fuel oil tank (above grade)
Mendocino Pharmacy
Home Health Services of Mendocino
(E) 250 KW Generator for hospital in Generator Room
CUP (BLD-0 0470)
MAIN HOSPITAL (BLD-00469)
Adventist Health Mendocino Coast
ED ADDITION (BLD 00473, BLD-00471)
PSB
AJ GRAY
Adventist Health Mendocino Coast
(E) 250 Gallons Fuel for HVAC
(E) 1000 Gallons Fuel Tank for PSB Generator
(E) 80KW Generator for PSB
Kemppe Way
Kemppe Way
Plateau
Kemppe Way
Dental