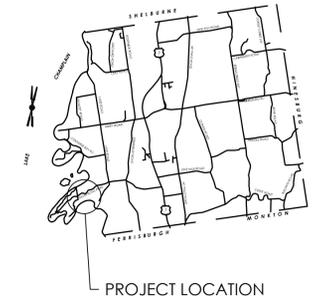


POINT BAY MARINA

1401 THOMPSON'S POINT RD
CHARLOTTE, VERMONT



PROJECT DESCRIPTION:
THIS PURPOSE OF THIS PROJECT IS TO RELOCATE A PORTION OF THE BATHROOM FIXTURES FROM THE A-FRAME BUILDING TO THE BUILDING PREVIOUSLY PERMITTED FOR THE RESTAURANT, KNOWN AS THE "RESTAURANT BUILDING". ONE BATHROOM WILL REMAIN AT THE A-FRAME, THE REST WILL BE RELOCATED. THE BATHROOMS WILL OCCUPY THE NORTHERN PORTION OF THE RESTAURANT BUILDING. NO CHANGE TO DESIGN FLOWS.

Owner/Applicant:
PBM ACQUISITION, LLC
1401 THOMPSON'S POINT RD
CHARLOTTE, VT 05445
(802) 425-2431

Engineer:
TRUDELL CONSULTING ENGINEERS (TCE)
478 BLAIR PARK ROAD
WILLISTON, VT 05495
(802) 879-6331

Sheet List Table

Sheet Number	Sheet Title
C1-00	COVER SHEET
C1-02	EXISTING CONDITIONS
C2-01	OVERALL SITE PLAN
C3-01	SANITARY PLAN
C8-10	WATER AND SANITARY DETAILS BATHROOM RELOCATE
C8-11	NOTES BATHROOM RELOCATE

USE AND INTERPRETATION OF THE DRAWINGS	
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2. By use of these drawings for construction of the Project, the Owner represents that they have reviewed, approved, and accepted the drawings, obtained all necessary permits, and have met with all applicable parties/disciplines, including but not limited to, the Engineer and the Architect, to insure these plans are properly coordinated including, but not limited to, contract documents, specifications, owner/contractor agreements, building and mechanical plans, private and public utilities, and other pertinent permits for construction.	
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5. These Drawings are specific to the Project and are not transferable. As instruments of service, these drawings, and copies thereof, furnished by TCE are its exclusive property. Changes to the drawings may only be made by TCE. If errors or omissions are discovered, they shall be brought to the attention of TCE immediately.	
6. It is the User's responsibility to ensure this copy contains the most current revisions. If unsure, please contact TCE.	
BEFORE USING THESE PLANS ENSURE THAT YOU HAVE THE LATEST REVISION	
LAST REVISED:	2/01/16 ISSUED FOR PERMITTING

TCE PROJECT NO: 15-203
TAX ID: 41-50-19





Revisions	No.	Description	Date	By
As Built PTC			10/10/2018	ALR

TAX ID: 41-50-19

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Project Title

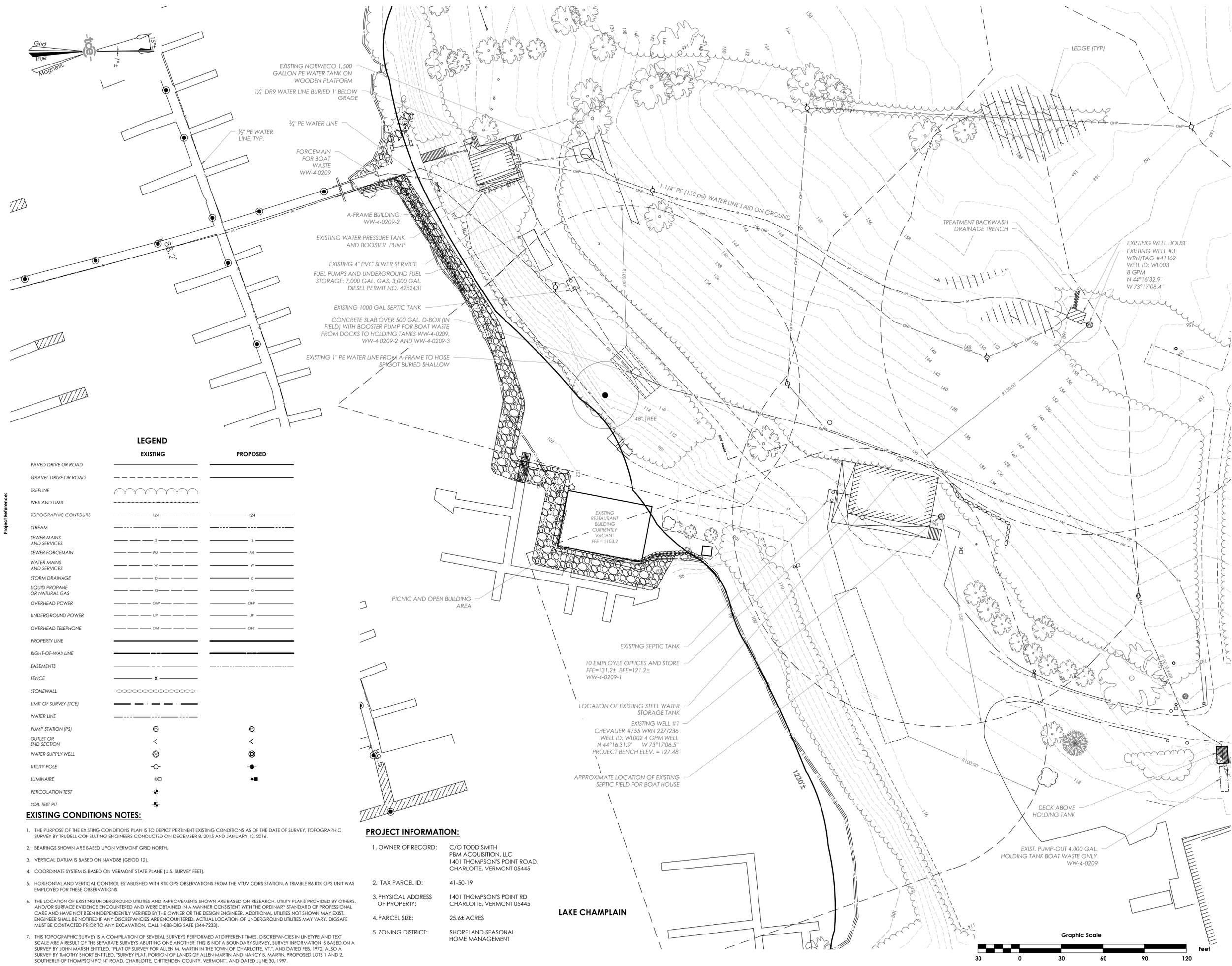
Point Bay Marina
 1401 Thompson's Point Rd
 Charlotte, Vermont

Sheet Title

Existing Conditions

Date:	10/10/18
Scale:	1" = 30'
Project Number:	15-203
Drawn By:	NPC
Project Engineer:	JPP
Approved By:	NTH
Field Book:	335

C1-02



LEGEND

	EXISTING	PROPOSED
PAVED DRIVE OR ROAD	---	---
GRAVEL DRIVE OR ROAD	---	---
TREELINE	~~~~~	~~~~~
WETLAND LIMIT	~~~~~	~~~~~
TOPOGRAPHIC CONTOURS	124	124
STREAM	~~~~~	~~~~~
SEWER MAINS AND SERVICES	S	S
SEWER FORCEMAIN	FM	FM
WATER MAINS AND SERVICES	W	W
STORM DRAINAGE	D	D
LIQUID PROPANE OR NATURAL GAS	G	G
OVERHEAD POWER	CHP	CHP
UNDERGROUND POWER	UP	UP
OVERHEAD TELEPHONE	CHT	CHT
PROPERTY LINE	---	---
RIGHT-OF-WAY LINE	---	---
EASEMENTS	---	---
FENCE	X	X
STONEMALL	o-o-o-o	o-o-o-o
LIMIT OF SURVEY (TCE)	---	---
WATER LINE	====	====
PUMP STATION (PS)	⊙	⊙
OUTLET OR END SECTION	<	<
WATER SUPPLY WELL	⊙	⊙
UTILITY POLE	⊙	⊙
LUMINAIRE	⊙	⊙
PERCOLATION TEST	⊕	⊕
SOIL TEST PIT	⊕	⊕

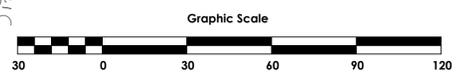
EXISTING CONDITIONS NOTES:

- THE PURPOSE OF THE EXISTING CONDITIONS PLAN IS TO DEPICT PERTINENT EXISTING CONDITIONS AS OF THE DATE OF SURVEY, TOPOGRAPHIC SURVEY BY TRUDELL CONSULTING ENGINEERS CONDUCTED ON DECEMBER 8, 2015 AND JANUARY 12, 2016.
- BEARINGS SHOWN ARE BASED UPON VERMONT GRID NORTH.
- VERTICAL DATUM IS BASED ON NAVD88 (GBOID 12).
- COORDINATE SYSTEM IS BASED ON VERMONT STATE PLANE (U.S. SURVEY FEET).
- HORIZONTAL AND VERTICAL CONTROL ESTABLISHED WITH RTK GPS OBSERVATIONS FROM THE VTUV CORS STATION. A TRIMBLE R6 RTK GPS UNIT WAS EMPLOYED FOR THESE OBSERVATIONS.
- THE LOCATION OF EXISTING UNDERGROUND UTILITIES AND IMPROVEMENTS SHOWN ARE BASED ON RESEARCH, UTILITY PLANS PROVIDED BY OTHERS, AND/OR SURFACE EVIDENCE ENCOUNTERED AND WERE OBTAINED IN A MANNER CONSISTENT WITH THE ORDINARY STANDARD OF PROFESSIONAL CARE AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE DESIGN ENGINEER. ADDITIONAL UTILITIES NOT SHOWN MAY EXIST. ENGINEER SHALL BE NOTIFIED IF ANY DISCREPANCIES ARE ENCOUNTERED. ACTUAL LOCATION OF UNDERGROUND UTILITIES MAY VARY. DIGSAFE MUST BE CONTACTED PRIOR TO ANY EXCAVATION. CALL 1-888-DIG SAFE (344-7233).
- THIS TOPOGRAPHIC SURVEY IS A COMPILATION OF SEVERAL SURVEYS PERFORMED AT DIFFERENT TIMES. DISCREPANCIES IN LINE TYPE AND TEXT SCALE ARE A RESULT OF THE SEPARATE SURVEYS ABUTTING ONE ANOTHER. THIS IS NOT A BOUNDARY SURVEY. SURVEY INFORMATION IS BASED ON A SURVEY BY JOHN MARSH ENTITLED, "PLAT OF SURVEY FOR ALLEN M. MARTIN IN THE TOWN OF CHARLOTTE, VT.," AND DATED FEB. 1972. ALSO A SURVEY BY TIMOTHY SHORT ENTITLED, "SURVEY PLAT, PORTION OF LANDS OF ALLEN MARTIN AND NANCY B. MARTIN, PROPOSED LOTS 1 AND 2, SOUTHERLY OF THOMPSON POINT ROAD, CHARLOTTE, CHITTENDEN COUNTY, VERMONT," AND DATED JUNE 30, 1997.

PROJECT INFORMATION:

- OWNER OF RECORD: C/O TODD SMITH
PBM ACQUISITION, LLC
1401 THOMPSON'S POINT ROAD,
CHARLOTTE, VERMONT 05445
- TAX PARCEL ID: 41-50-19
- PHYSICAL ADDRESS OF PROPERTY: 1401 THOMPSON'S POINT RD
CHARLOTTE, VERMONT 05445
- PARCEL SIZE: 25.6± ACRES
- ZONING DISTRICT: SHORELAND SEASONAL HOME MANAGEMENT

LAKE CHAMPLAIN





Revisions	No.	Description	Date	By
△	TNC SOURCE PERMITTING EDITS		03/10/16	NTH
△	PTC EDITS		04/06/17	NTH
△	POST PTC AND BATHROOM RELOCATE EDITS		10/10/18	ALR

TAX ID: 41-50-19

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Project Title

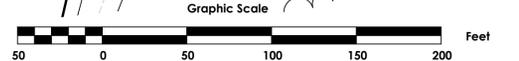
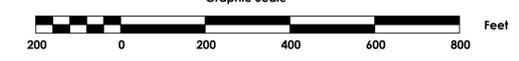
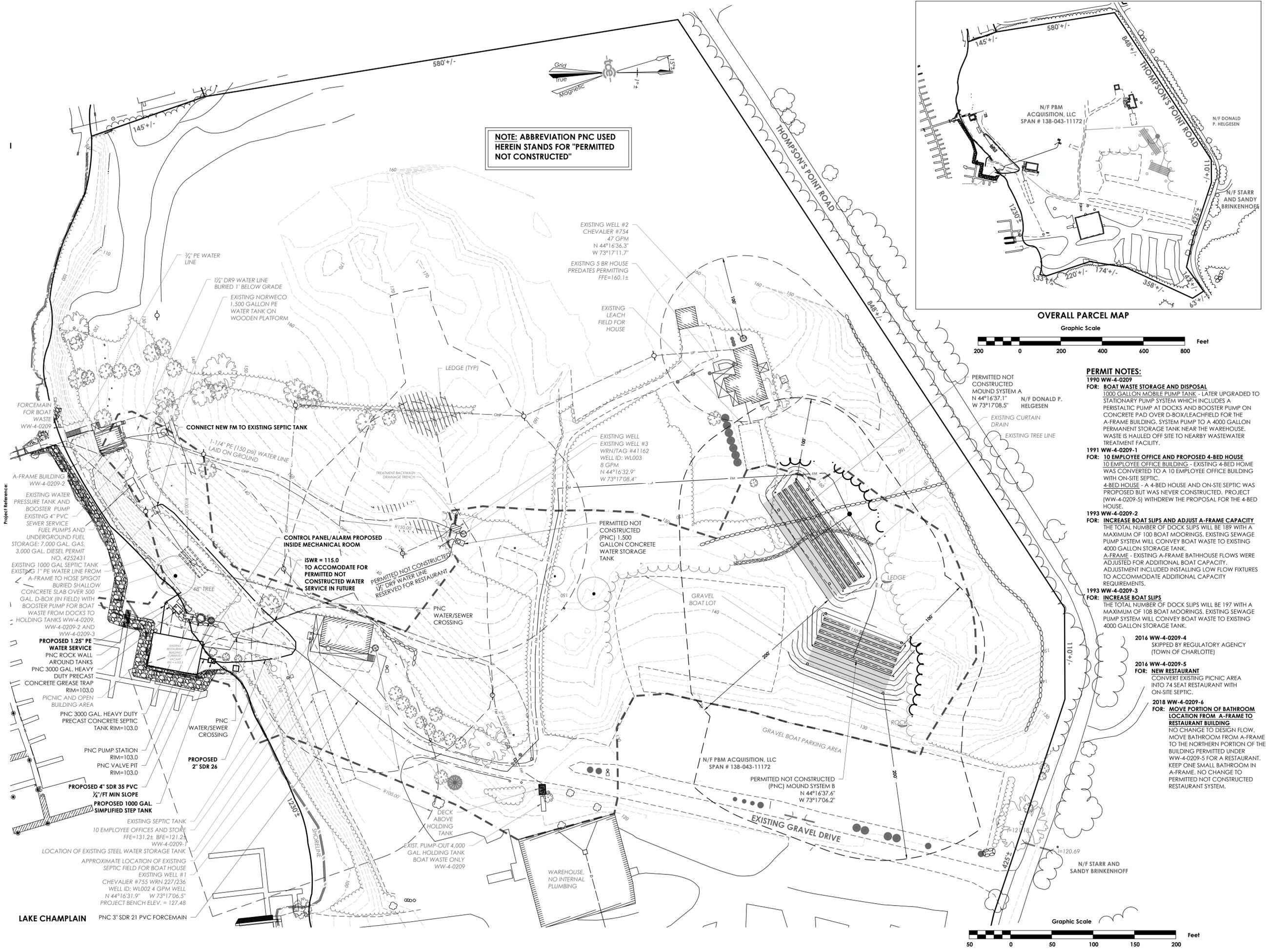
Point Bay Marina
 1401 Thompson's Point Rd
 Charlotte, Vermont

Sheet Title

Overall Site Plan

Date:	2/01/16
Scale:	1" = 50'
Project Number:	15-203
Drawn By:	NPC
Project Engineer:	JPP
Approved By:	NTH
Field Book:	335

C2-01





Revisions	No.	Description	Date	By
	1	POST PTC AND BATHROOM RELOCATE EDITS	10/10/18	ALR

TAX ID: 41-50-19

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Project Title

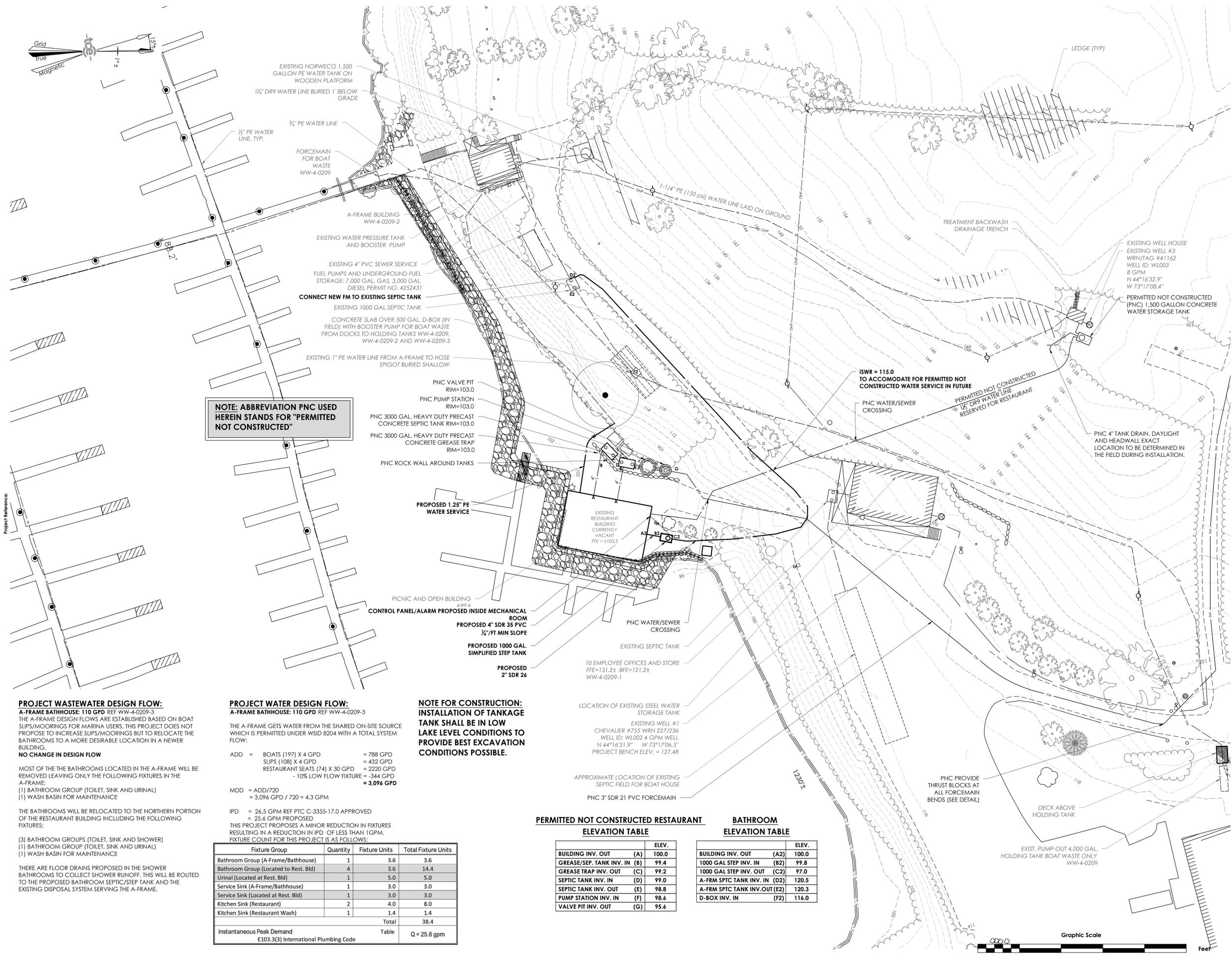
Point Bay Marina
 1401 Thompson's Point Rd
 Charlotte, Vermont

Sheet Title

Sanitary Plan

Date:	02/01/16
Scale:	1" = 30'
Project Number:	15-203
Drawn By:	NPC
Project Engineer:	JPP
Approved By:	NTH
Field Book:	335

C3-01



NOTE: ABBREVIATION PNC USED HEREIN STANDS FOR "PERMITTED NOT CONSTRUCTED"

PROJECT WATER DESIGN FLOW:
 A-FRAME BATHHOUSE: 110 GPD REF WW-4-0209-3

THE A-FRAME GETS WATER FROM THE SHARED ON-SITE SOURCE WHICH IS PERMITTED UNDER WSD 8204 WITH A TOTAL SYSTEM FLOW:

ADD = BOATS (197) X 4 GPD = 788 GPD
 SLIPS (108) X 4 GPD = 432 GPD
 RESTAURANT SEATS (74) X 30 GPD = 2220 GPD
 - 10% LOW FLOW FIXTURE = -344 GPD
= 3,096 GPD

MDD = ADD/720
 = 3,096 GPD / 720 = 4.3 GPM

IPD = 26.5 GPM REF PTC C-3355-17.0 APPROVED
 = 25.4 GPM PROPOSED

THIS PROJECT PROPOSES A MINOR REDUCTION IN FIXTURES RESULTING IN A REDUCTION IN IPD OF LESS THAN 1GPM. FIXTURE COUNT FOR THIS PROJECT IS AS FOLLOWS:

Fixture Group	Quantity	Fixture Units	Total Fixture Units
Bathroom Group (A-Frame/Bathhouse)	1	3.6	3.6
Bathroom Group (Located at Rest. Bld)	4	3.6	14.4
Urinal (Located at Rest. Bld)	1	5.0	5.0
Service Sink (A-Frame/Bathhouse)	1	3.0	3.0
Service Sink (Located at Rest. Bld)	1	3.0	3.0
Kitchen Sink (Restaurant)	2	4.0	8.0
Kitchen Sink (Restaurant Wash)	1	1.4	1.4
Total			38.4
Instantaneous Peak Demand			Table
E103.3(3) International Plumbing Code			Q = 25.6 gpm

NOTE FOR CONSTRUCTION:
 INSTALLATION OF TANKAGE TANK SHALL BE IN LOW LAKE LEVEL CONDITIONS TO PROVIDE BEST EXCAVATION CONDITIONS POSSIBLE.

PERMITTED NOT CONSTRUCTED RESTAURANT ELEVATION TABLE

	ELEV.
BUILDING INV. OUT (A)	100.0
GREASE/SEP. TANK INV. IN (B)	99.4
GREASE TRAP INV. OUT (C)	99.2
SEPTIC TANK INV. IN (D)	99.0
SEPTIC TANK INV. OUT (E)	98.8
PUMP STATION INV. IN (F)	98.6
VALVE PIT INV. OUT (G)	95.6

BATHROOM ELEVATION TABLE

	ELEV.
BUILDING INV. OUT (A2)	100.0
1000 GAL STEP INV. IN (B2)	99.8
1000 GAL STEP INV. OUT (C2)	97.0
A-FRM SPTC TANK INV. IN (D2)	120.5
A-FRM SPTC TANK INV. OUT (E2)	120.3
D-BOX INV. IN (F2)	116.0

PROJECT WASTEWATER DESIGN FLOW:
 A-FRAME BATHHOUSE: 110 GPD REF WW-4-0209-3

THE A-FRAME DESIGN FLOWS ARE ESTABLISHED BASED ON BOAT SLIPS/MOORINGS FOR MARINA USERS. THIS PROJECT DOES NOT PROPOSE TO INCREASE SLIPS/MOORINGS BUT TO RELOCATE THE BATHROOMS TO A MORE DESIRABLE LOCATION IN A NEWER BUILDING.

NO CHANGE IN DESIGN FLOW

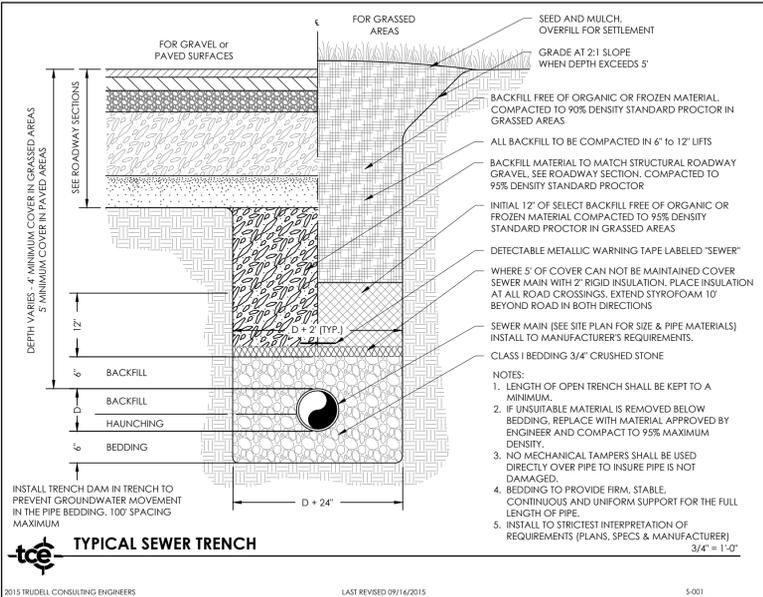
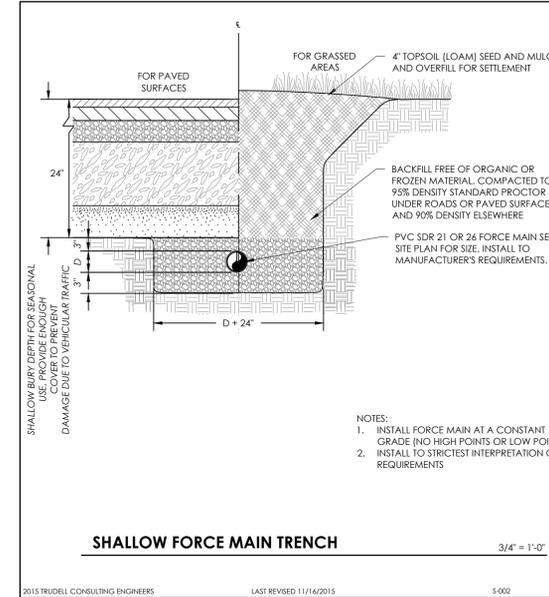
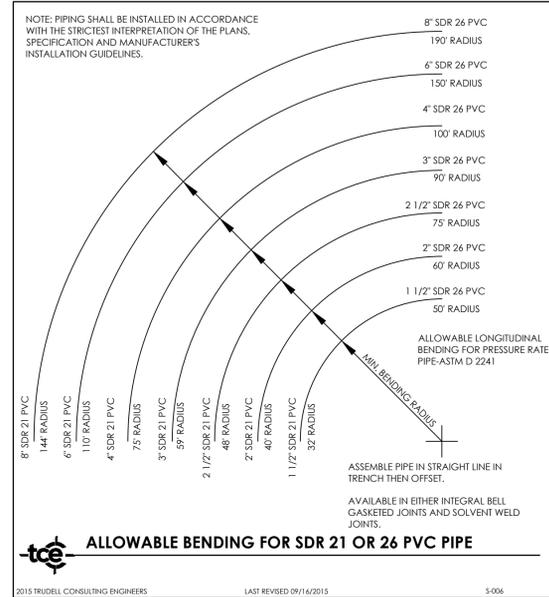
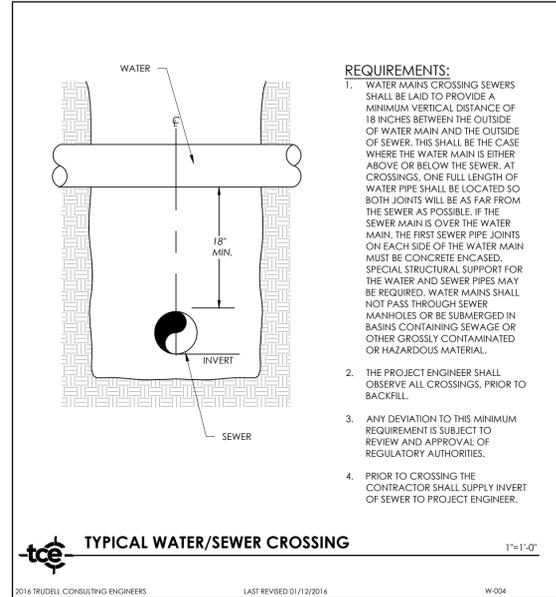
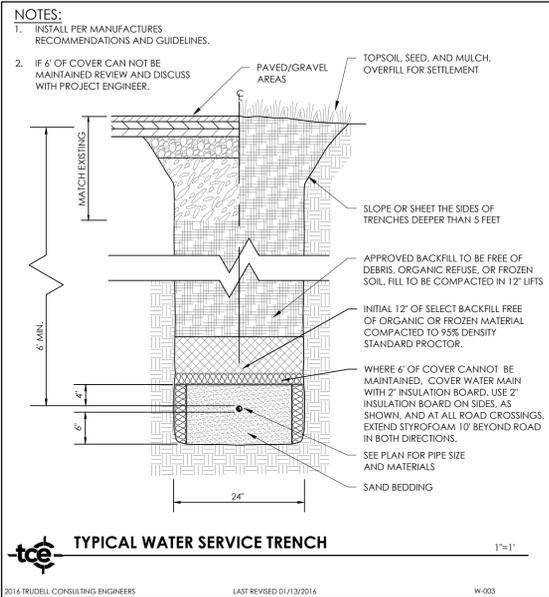
MOST OF THE BATHROOMS LOCATED IN THE A-FRAME WILL BE REMOVED LEAVING ONLY THE FOLLOWING FIXTURES IN THE A-FRAME:

- BATHROOM GROUP (TOILET, SINK AND URINAL)
- WASH BASIN FOR MAINTENANCE

THE BATHROOMS WILL BE RELOCATED TO THE NORTHERN PORTION OF THE RESTAURANT BUILDING INCLUDING THE FOLLOWING FIXTURES:

- BATHROOM GROUP (TOILET, SINK AND URINAL)
- WASH BASIN FOR MAINTENANCE

THERE ARE FLOOR DRAINS PROPOSED IN THE SHOWER BATHROOMS TO COLLECT SHOWER RUNOFF. THIS WILL BE ROUTED TO THE PROPOSED BATHROOM SEPTIC/STEP TANK AND THE EXISTING DISPOSAL SYSTEM SERVING THE A-FRAME.

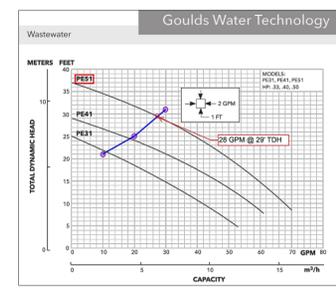
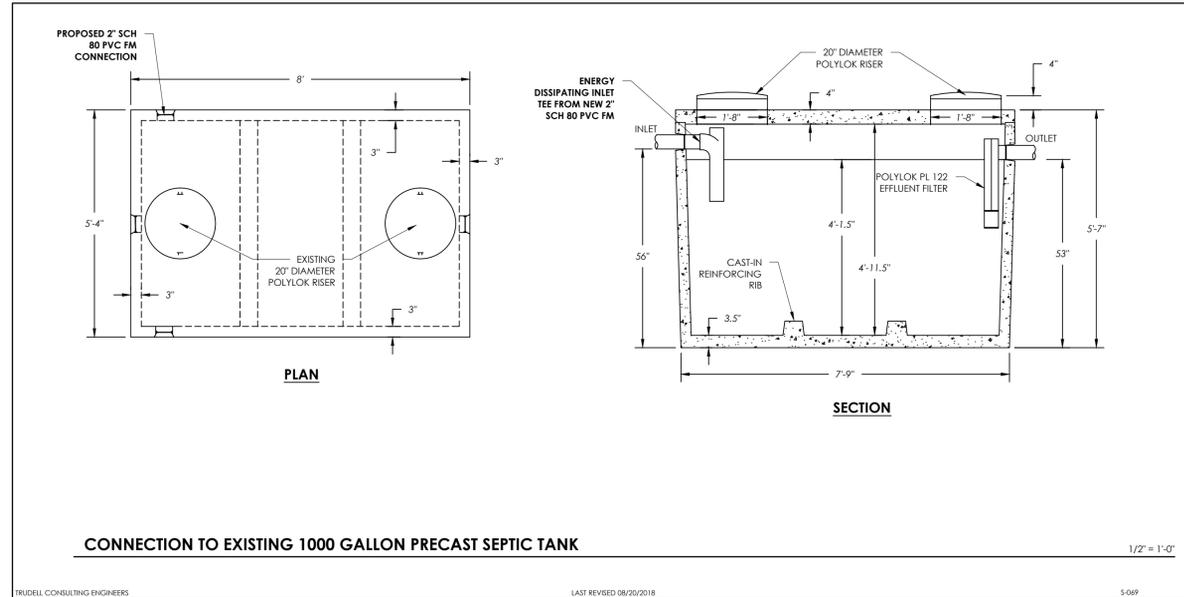
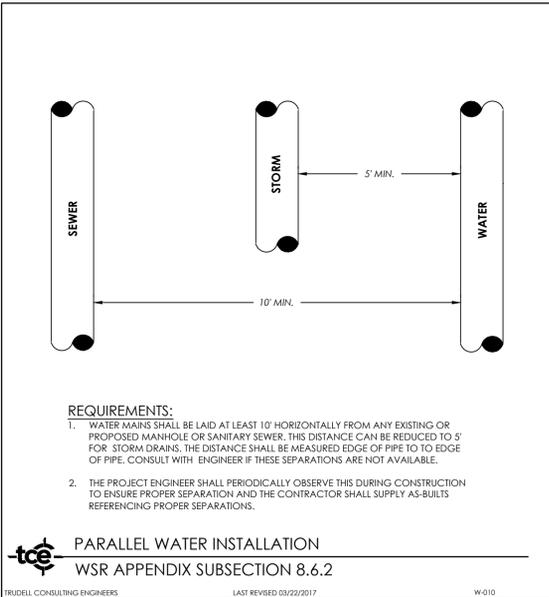
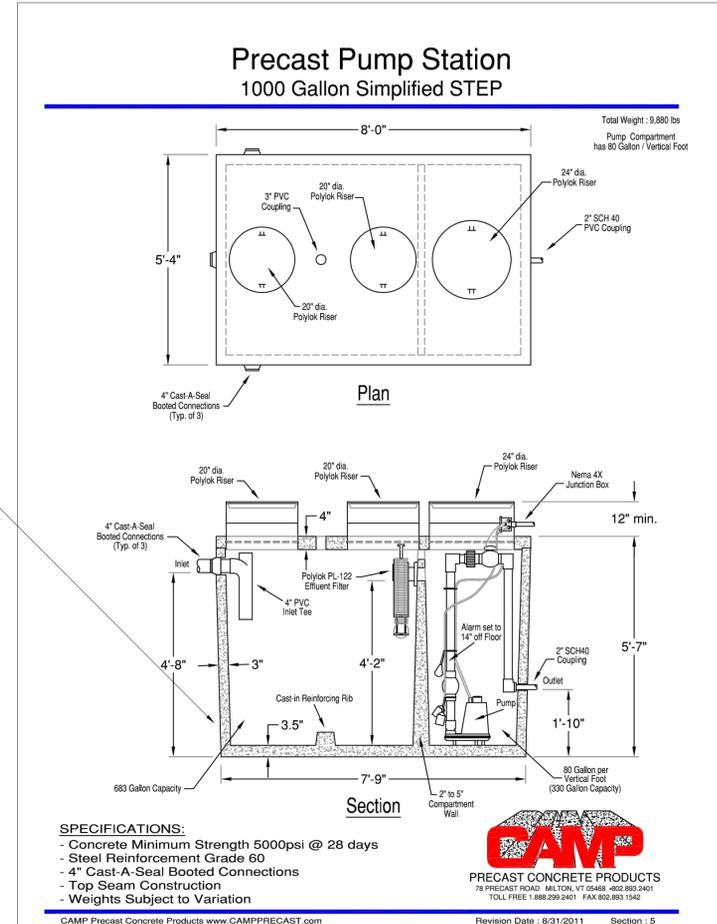


USE CLASS D (2500 PSI) CONCRETE FOR THRUST BLOCKS. PLACE 4 MIL. POLYETHYLENE BETWEEN FITTING AND THRUST BLOCK. PLACE THRUST BLOCK AGAINST UNDISTURBED TRENCH WALL. CONCRETE BEARING AREA ON FITTING TO BE A MINIMUM OF 1/2 SQUARE FOOT. THRUST BLOCKS BASED ON 50 PSI TEST PRESSURE IF CHANGE IN ELEVATION BETWEEN ANY 2 POINTS IN THE LINE IS GREATER THAN 110 THRUST BLOCKS WILL HAVE TO BE ENLARGED.

SOIL TYPE	SAFE BEARING LOAD, LBS/FT.²	2"		2 1/2"			3"			4"			6"					
		TEE	90°	45°	22.5°	TEE	90°	45°	22.5°	TEE	90°	45°	22.5°	TEE	90°	45°	22.5°	
CLAY	1000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
SAND	2000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
GRAVEL	3000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
TILL	4000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
SHALE	10000	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

FORCE MAIN THRUST BLOCK SPECIFICATIONS
 1"=1'-0"

2013 TRUDELL CONSULTING ENGINEERS LAST REVISED 03/06/2013 S-015



Revisions

No.	Description	Date	By

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Project Title

Point Bay Marina
 1401 Thompson's Point Rd

Sheet Title
Water and Sanitary
Details Bathroom
Relocate

Date: 10/10/2018
 Scale: As Shown
 Project Number: 15-203
 Drawn By: ALR
 Project Engineer: JPP
 Approved By: NTH
 Field Book:

CONTRACTOR'S CERTIFICATION REQUIRED

PRIOR TO THE DESIGN ENGINEER CERTIFYING THAT THE INSTALLATION HAS BEEN INSTALLED IN ACCORDANCE WITH THE PERMITTED DESIGN, THE CONTRACTOR SHALL PROVIDE A CERTIFICATION THAT THE WATER SYSTEM WAS INSTALLED AND TESTED IN ACCORDANCE WITH THE APPROVED DESIGN PLANS. STATE PERMITS REQUIRE THERE SHALL BE NO DEVIATIONS FROM THE APPROVED PLANS WITHOUT PRIOR APPROVALS. THE DESIGN ENGINEER SHALL BE NOTIFIED AND ALLOWED TO OBSERVE THE CRITICAL PHASES OF CONSTRUCTION INCLUDING ANY REQUIRED TESTS. LIKEWISE, THE DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DEVIATIONS FROM THE APPROVED PLANS. SINCE THE DESIGN ENGINEER DOES NOT CUSTOMARILY OBSERVE ALL PHASES OF THE WORK, OR ALL TESTING, HE MAY RELY ON THE CONTRACTOR'S CERTIFICATION AS THE BASIS FOR FINAL CERTIFICATION. THE CONTRACTOR SHALL THEREFORE SIGN AND RETURN A COPY OF THE FOLLOWING CERTIFICATION UPON COMPLETION OF THE WORK:

"I HEREBY CERTIFY THAT I HAVE INSTALLED, PROPERLY TESTED, AND SUCCESSFULLY PASSED THOSE TESTS, AND THE WATER SYSTEM(S) ARE BUILT IN ACCORDANCE WITH THE APPROVED DESIGN PLANS AND APPLICABLE PERMIT CONDITIONS."

CONTRACTOR NAME: _____

AUTHORIZED AGENTS NAME: _____

SIGNATURE: _____ DATE: _____

NOTE ANY DEVIATIONS FROM APPROVED PLANS HERE: _____

NOTE: THE CERTIFICATION AND THE PROJECT ENGINEER'S SUBSEQUENT CERTIFICATION DOES NOT VOID THE CONTRACTOR FROM REPAIR OR REPLACEMENT OF DISCREPANCIES DISCARDED AT A LATER DATE. THE CONTRACTOR REMAINS RESPONSIBLE, INCLUDING CUSTOMARY GUARANTEE AND WARRANTY PERIODS.

CONTRACTOR'S CERTIFICATION FOR POTABLE WATER SYSTEMS

2015 TRUDELL CONSULTING ENGINEERS LAST REVISED 9/10/2015 WH-002

PRESSURE TEST

UPON COMPLETION OF CONSTRUCTION OF A FORCE MAIN, THE LINE SHALL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH THE FOLLOWING PROCEDURE:

AFTER THE PIPE HAS BEEN LAID, ALL NEWLY LAID PIPE OR ANY VALVED SECTION THEREOF SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE OF AT LEAST 1.5 X THE HIGHEST WORKING PRESSURE IN THE SECTION

- TEST PRESSURE RESTRICTIONS. TEST PRESSURES SHALL:
 - NOT BE LESS THAN 50 PSI AT THE HIGHEST POINT ALONG THE TEST SECTION.
 - NOT EXCEED PIPE OR THRUST RESTRAINT DESIGN PRESSURES.
 - BE OF AT LEAST 2 (TWO) HOUR DURATION.
 - NOT VARY BY MORE THAN 4.5 PSI.
 - NOT EXCEED TWICE THE RATED PRESSURE OF THE VALVES WHEN THE PRESSURE BOUNDARY OF THE TEST SECTION INCLUDES CLOSED GATE VALVES.
- PRESSURIZATION.
 - EACH VALVED SECTION OF PIPE SHALL BE FILLED WITH WATER SLOWLY AND THE SPECIFIED TEST PRESSURE, BASED ON THE ELEVATION OF THE LOWEST POINT IN THE LINE OR SECTION UNDER TEST AND CORRECTED TO THE ELEVATION OF THE TEST GAUGE, SHALL BE APPLIED BY MEANS OF A PUMP CONNECTED TO THE PIPE.
 - AIR REMOVAL: BEFORE APPLYING THE SPECIFIED TEST PRESSURE, AIR SHALL BE EXPELLED COMPLETELY FROM THE PIPE VALVES.
 - EXAMINATION: ALL EXPOSED PIPE, FITTINGS, VALVES, AND JOINTS SHALL BE EXAMINED CAREFULLY DURING THE TEST. ANY DAMAGED OR DEFECTIVE PIPE, FITTINGS, OR VALVES, THAT ARE DISCOVERED FOLLOWING THE PRESSURE TEST SHALL BE REPAIRED OR REPLACED WITH SOUND MATERIAL AND THE TEST SHALL BE REPEATED AT NO EXPENSE TO OWNER.

LEAKAGE TEST

A LEAKAGE TEST SHALL BE CONDUCTED CONCURRENTLY WITH THE PRESSURE TESTS.

- LEAKAGE SHALL BE DEFINED AS THE QUANTITY OF WATER THAT MUST BE SUPPLIED INTO THE NEWLY LAID PIPE, OR ANY VALVED SECTION THEREOF, TO MAINTAIN PRESSURE WITHIN 5 PSI OF THE SPECIFIED TEST PRESSURE AFTER THE AIR IN THE PIPELINE HAS BEEN EXPELLED AND THE PIPE HAS BEEN FILLED WITH WATER.
- ALLOWABLE LEAKAGE: NO PIPE INSTALLATION WILL BE ACCEPTED IF THE LEAKAGE IS GREATER THAN THAT DETERMINED BY THE FOLLOWING FORMULA:

$$L = \frac{ND \cdot IP}{7400}$$
 WHERE:
 - L IS THE ALLOWABLE LEAKAGE, IN GALLONS PER HOUR;
 - N IS THE NUMBER OF JOINTS IN THE LENGTH OF PIPELINE TESTED;
 - D IS THE NOMINAL DIAMETER OF THE PIPE, IN INCHES; AND
 - P IS THE AVERAGE TEST PRESSURE DURING THE LEAKAGE TEST, IN POUNDS PER SQUARE INCH GAUGE.

NOTE: IN THE EVENT THAT THE FORCE MAIN IS RELATIVELY SHORT (100 FEET OR LESS), THE PROJECT ENGINEER CAN UTILIZE DISCRETION IN TEST REQUIREMENTS.

TESTING FORCE MAINS

(ENVIRONMENTAL PROTECTION RULES CH1, EFFECTIVE 9/29/07 SECTION 1-A-05(g))

2015 TRUDELL CONSULTING ENGINEERS LAST REVISED 09/10/15 SH-001

CONTRACTOR'S CERTIFICATION REQUIRED

PRIOR TO THE DESIGN ENGINEER CERTIFYING THAT THE INSTALLATION HAS BEEN INSTALLED IN ACCORDANCE WITH THE PERMITTED DESIGN, THE CONTRACTOR SHALL PROVIDE A CERTIFICATION THAT THE WASTEWATER SYSTEM WAS INSTALLED AND TESTED IN ACCORDANCE WITH THE APPROVED DESIGN PLANS. STATE PERMITS REQUIRE THERE SHALL BE NO DEVIATIONS FROM THE APPROVED PLANS WITHOUT PRIOR APPROVALS. THE DESIGN ENGINEER SHALL BE NOTIFIED AND ALLOWED TO OBSERVE THE CRITICAL PHASES OF CONSTRUCTION INCLUDING ANY REQUIRED TESTS. LIKEWISE, THE DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DEVIATIONS FROM THE APPROVED PLANS. SINCE THE DESIGN ENGINEER DOES NOT CUSTOMARILY OBSERVE ALL PHASES OF THE WORK, OR ALL TESTING, HE MAY RELY ON THE CONTRACTOR'S CERTIFICATION AS THE BASIS FOR FINAL CERTIFICATION. THE CONTRACTOR SHALL THEREFORE SIGN AND RETURN A COPY OF THE FOLLOWING CERTIFICATION UPON COMPLETION OF THE WORK:

"I HEREBY CERTIFY THAT I HAVE INSTALLED, PROPERLY TESTED, AND SUCCESSFULLY PASSED THOSE TESTS, AND THE WASTEWATER DISPOSAL AND COLLECTION SYSTEM(S) ARE BUILT IN ACCORDANCE WITH THE APPROVED DESIGN PLANS AND APPLICABLE PERMIT CONDITIONS."

CONTRACTOR NAME _____

AUTHORIZED AGENTS NAME _____

SIGNATURE _____ DATE _____

NOTE ANY DEVIATIONS FROM APPROVED PLANS HERE: _____

NOTE: THE CERTIFICATION AND THE PROJECT ENGINEER'S SUBSEQUENT CERTIFICATION DOES NOT VOID THE CONTRACTOR FROM REPAIR OR REPLACEMENT OF DISCREPANCIES DISCARDED AT A LATER DATE. THE CONTRACTOR REMAINS RESPONSIBLE, INCLUDING CUSTOMARY GUARANTEE AND WARRANTY PERIODS.

CONTRACTOR CERTIFICATION FOR WASTEWATER SYSTEM

2015 TRUDELL CONSULTING ENGINEERS LAST REVISED 09/10/15 SH-002

WATER PRESSURE TEST

UPON COMPLETION OF INSTALLATION ALL TANKAGE SHALL BE TESTED WITH CLEAN WATER TO DEMONSTRATE THAT THE STRUCTURES ARE WATERTIGHT. THE TESTING SHALL BE CONDUCTED BEFORE THE TANKAGE AND STRUCTURES ARE BACKFILLED. THE TEST SHALL BE CONDUCTED BY COMPLETELY FILLING THE TANKAGE TO THE TOP OF THE STRUCTURES AND PROVIDING A HYDROSTATIC HEAD OF AT LEAST TWO FEET ABOVE THE SURROUNDING GROUNDWATER LEVEL AT THE TIME OF TESTING. THE TEST SHALL BE AT LEAST 24 HOURS, WITH NO LEAKAGE RESULTING. IF ANY LEAKAGE OCCURS DURING THE TEST PERIOD THE TANKS SHALL BE REPAIRED AND RETESTED (PER ASTM C1227-9.2.1 STANDARDS).

VACUUM TEST

UPON COMPLETION OF INSTALLATION ALL TANKAGE SHALL BE TESTED TO DEMONSTRATE THAT THE STRUCTURES ARE WATERTIGHT. THE TESTING SHALL BE CONDUCTED BEFORE THE TANKAGE AND STRUCTURES ARE BACKFILLED. THE TEST SHALL BE CONDUCTED BY SEALING THE EMPTY TANK AND APPLYING A VACUUM TO 2 INCHES (50MM) OF MERCURY. THE TANK IS APPROVED IF 90% OF THE VACUUM IS HELD FOR A MINIMUM OF 2 HOURS (PER ASTM C1227-9.2.1 STANDARDS).

TANK LEAKAGE TESTING

2015 TRUDELL CONSULTING ENGINEERS LAST REVISED 3/4/2013 WH-004

IMPORTANT NOTE

CHECK WITH STATE OR ENGINEER TO VERIFY SETBACK DISTANCES. SETBACK DISTANCES CAN VARY FROM WHAT IS SHOWN HEREON BASED ON THE SIZE AND SCOPE OF THE PROJECT OR NEWLY PUBLISHED RULES FROM OTHER STATE AGENCIES.

ITEM	HORIZONTAL DISTANCE (FEET) *		
	DISPOSAL FIELD	SEPTIC TANK	SEWER
DRILLED WELL	b	50	50
GRAVEL PACK WELL, SHALLOW WELL OR SPRING	b	75	75
LAKES, PONDS, IMPOUNDMENTS	50 ¹	25	25
RIVERS AND STREAMS	50	25	10
DRAINAGE SWALES, ROADWAY DITCHES	25	--	--
MAIN OR MUNICIPAL WATER LINES	50	50	d
ATMOSPHERIC WATER STORAGE TANKS	50	50	50
SERVICE WATER LINES	25	25	d
ROADWAYS, DRIVEWAYS, PARKING LOTS	10	5	c
TOP OF EMBANKMENT OR SLOPE GREATER THAN 30%	25	10	--
PROPERTY LINE (e)	25 ³	10	10
TREES	10	10	10
OTHER DISPOSAL FIELD OR REPLACEMENT SYSTEM	10	--	--
FOUNDATION DRAINS, FOOTING DRAINS, CURTAIN DRAINS	35 ⁵	10	--
PUBLIC WATER SUPPLY (a)	f	f	f
SUCTION WATER LINE	100	50	50

* THESE DISTANCES MAY BE REDUCED WHEN EVIDENT THAT THE DISTANCE IS UNNECESSARY TO PROTECT AN ITEM, OR INCREASED IF NECESSARY TO PROVIDE ADEQUATE PROTECTION.
 * INDIRECT DISCHARGE REQUIREMENTS SUPERSEDE THIS IF DIFFERENT.
 * WATER SUPPLY RULES SUPERSEDE THIS IF DIFFERENT.

GENERAL CRITERIA REGARDING ISOLATION DISTANCES

- ISOLATION DISTANCES APPLY REGARDLESS OF PROPERTY LINE LOCATION AND OWNERSHIP.
- SEPARATION BETWEEN POTABLE WATER SUPPLIES AND LEACHFIELDS SHALL BE DETERMINED BY THE METHODS IN THE VERMONT WATER SUPPLY RULE, APPENDIX A, PART 11, SECTION 11.
- SEWERS UNDER ROADS, DRIVEWAYS, OR PARKING LOTS MAY REQUIRE PROTECTIVE CONDUITS OR SLEEVES.
- SEPARATION OF PRESSURE WATER LINES CONSIDERED AS "SERVICE CONNECTIONS" AND SEWER LINES SHALL ADHERE TO THE VERMONT PLUMBING RULES. SEPARATION OF PRESSURE WATER LINES (CONSIDERED TO BE PART OF A PUBLIC WATER SYSTEM AS DEFINED BY THE VERMONT WATER SUPPLY RULE) AND SEWER LINES SHALL ADHERE TO THE REQUIREMENTS OF THE VERMONT WATER SUPPLY RULE.
- THIS REFERS TO PUBLIC COMMUNITY WATER SYSTEMS, AS DEFINED IN THE VERMONT WATER SUPPLY RULE.
- CONTACT THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION'S WATER SUPPLY DIVISION, 103 SOUTH MAIN STREET, WATERBURY, VERMONT.

SPECIFIC CRITERIA FOR ISOLATION DISTANCES

- THE ISOLATION DISTANCE TO SURFACE WATERS SHALL BE MEASURED FROM THE NEAREST PORTION OF THE LEACHFIELD, WHICH WILL BE THE TOE OF THE SYSTEM FOR MOUND AND AT-GRADE SYSTEMS. THE ISOLATION DISTANCE MUST BE SATISFIED ON A YEAR-ROUNDBASIS, THEREFORE THE EDGE OF THE SURFACE WATER IS THE ANNUAL HIGH WATER LEVEL.
- FOR MOUND WASTEWATER DISPOSAL SYSTEMS, THE LIMIT OF FILL MUST BE 25 FEET FROM ANY DOWNHILL PROPERTY LINE AND 10 FEET FROM ALL PROPERTY LINES ON THE SIDE OR UPHILL.
- NO DISPOSAL FIELD OR REPLACEMENT AREA SHALL BE CLOSER THAN 10 FEET TO ONE ANOTHER EXCEPT AS ALLOWED FOR TRENCH SYSTEMS IN SECTION 1-907(M).
- IF A CURTAIN OR FOUNDATION DRAIN IS DOWNSLOPE OF THE DISPOSAL FIELD, THE DISPOSAL FIELD CANNOT BE CLOSER THAN 75 FEET TO THE DRAIN. IF THE CURTAIN OR FOUNDATION DRAIN IS UPSLOPE OF THE DISPOSAL FIELD, IT SHALL BE 35' IF POSSIBLE, AND A MINIMUM OF 20 FEET TO THE DISPOSAL FIELD. THE ISOLATION DISTANCES FOR MOUND SYSTEMS SHALL BE FROM THE EDGE OF THE MINIMUM BASAL AREA OR THE EDGE OF THE ABSORPTION TRENCH OR BED WHICH IS CLOSER. THIS DISTANCE MAY BE REDUCED IF THE CONSULTANT PROVIDES ADEQUATE DATA AND ANALYSIS TO SHOW THAT EFFLUENT FROM THIS SOIL BASED SYSTEM WILL NOT ENTER THE DRAIN OR INCREASED IF EFFLUENT WILL ENTER THE DRAIN.

ISOLATION DISTANCES

ENVIRONMENTAL PROTECTION RULES, CHAPTER 21, EFFECTIVE 9/29/07 SECTION 1-807

2015 TRUDELL CONSULTING ENGINEERS LAST REVISED 11/12/15 SH-003

DISINFECTING WATER MAINS AND SYSTEMS

*ALL TESTING SHALL BE PERFORMED IN THE PRESENCE OF THE TOWN ENGINEER OR PUBLIC WORKS DEPARTMENT AND PROJECT ENGINEER (AS DESIGNATED BY OWNER).

- PRIOR TO BEING PUT INTO SERVICE, WATER MAINS SHALL BE DISINFECTED ACCORDING TO THE LATEST EDITION OF AWWA SPECIFICATION C-651, THE TABLET METHOD IN AWWA STANDARD 651 IS NOT APPLICABLE.
- THE NEW LINE SHALL BE FLUSHED AT A VELOCITY OF NOT LESS THAN 2.5 FEET PER SECOND (OPEN 2-1/2 INCH HYDRANT CONNECTION). FLUSH FOR A PERIOD DETERMINED BY THE PROJECT ENGINEER FOR THE LENGTH OF MAIN TO BE DISINFECTED.
- CHLORINATION SHALL BE ACCOMPLISHED BY INTRODUCING A SODIUM HYPOCHLORITE SOLUTION FOR A RESULTANT CONCENTRATION OF GREATER THAN 25 PARTS PER MILLION OF FREE CHLORINE.
- USING A NOZZLE AT EACH END HYDRANT, CONTROL THE RATE OF FLOW INTO THE NEW MAIN AND PROPORTIONALLY FEED THE SODIUM HYPOCHLORITE SOLUTION INTO THE MAIN. AFTER THE SOLUTION HAS REACHED ALL POINTS IN THE SYSTEM, CLOSE THE VALVE SUPPLYING WATER FROM THE EXISTING MAIN AND THE END HYDRANTS, MAINTAIN THE HEAVILY CHLORINATED WATER IN THE MAIN FOR 24 HOURS DURING WHICH TIME ALL MAIN LINE VALVES SHOULD BE OPERATED. AFTER 24 HOURS THE MINIMUM CHLORINE RESIDUAL MUST BE AT LEAST 10 PARTS PER MILLION.
- FLUSH HEAVILY CHLORINATED WATER FROM THE LINE AND REFILL THE LINE FOR SERVICE (USE CHLORINE DIFFUSER). TAKE AND SUBMIT TWO BACTERIOLOGICAL SAMPLES (TAKEN 24 HOURS APART) OF THE WATER TO THE STATE OF VERMONT OR A STATE APPROVED TESTING LABORATORY. IF THE RESULTS ARE UNSATISFACTORY, THE DISINFECTION PROCEDURE WILL BE REPEATED UNTIL SATISFACTORY RESULTS ARE OBTAINED.
- FINISHED WATER STORAGE STRUCTURES SHALL BE DISINFECTED IF APPLICABLE, IN ACCORDANCE WITH CURRENT AWWA STANDARD C652, TWO OR MORE SUCCESSIVE SETS OF SAMPLES, TAKEN AT 24 HOUR INTERVALS, SHALL INDICATE MICROBIOLOGICALLY SATISFACTORY WATER BEFORE THE FACILITY IS PLACED INTO OPERATION.
- DISPOSAL OF HEAVILY CHLORINATED WATER FROM THE DISINFECTION PROCESS SHALL BE DE-CHLORINATED OR OTHERWISE HANDLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE VERMONT AGENCY OF NATURAL RESOURCES.
- THE DISINFECTION PROCEDURE (AWWA CHLORINATION METHOD 3, SECTION 4.3 C652) WHICH ALLOWS USE OF THE CHLORINATED WATER HELD IN THE STORAGE TANK FOR DISINFECTION PURPOSES IS NOT RECOMMENDED. WHEN THAT PROCEDURE IS USED, IT IS REQUIRED THAT THE INITIAL HEAVILY CHLORINATED WATER BE PROPERLY DISPOSED IN ORDER TO PREVENT RELEASE OF WATER WHICH MAY CONTAIN VARIOUS CHLORINATED ORGANIC COMPOUNDS INTO THE DISTRIBUTION SYSTEM.

DISINFECTION OF WATER SYSTEM

2015 TRUDELL CONSULTING ENGINEERS LAST REVISED 7/12/2013 WH-003

- CONTRACT DOCUMENTS: THESE PLANS WERE PREPARED BY TRUDELL CONSULTING ENGINEERS (TCE) AND ARE INTENDED TO BE USED IN CONJUNCTION WITH THE STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT, #C-700 PREPARED BY THE ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE (EJCDC), LATEST EDITION. COPIES ARE AVAILABLE AT WWW.NSPE.ORG/EJCDC.
- UNDERGROUND IMPROVEMENTS: THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE ASSUMED BASED ON RESEARCH. UTILITY PLANS PROVIDED BY OTHERS, AND/OR SURFACE EVIDENCE AVAILABLE AND WERE OBTAINED IN A MANNER CONSISTENT WITH THE ORDINARY STANDARD OF PROFESSIONAL CARE AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE DESIGN ENGINEER.
- DIFFERENCES SUBSURFACE OR PHYSICAL CONDITIONS: IF CONTRACTOR BELIEVES THAT ANY SUBSURFACE OR PHYSICAL CONDITION AT OR CONTIGUOUS TO THE SITE THAT IS UNCOVERED OR REVEALED EITHER: (1) IS OF SUCH A NATURE AS TO ESTABLISH THAT ANY "TECHNICAL DATA" ON WHICH CONTRACTOR RELIED IS MATERIALLY INACCURATE; OR (2) IS OF SUCH A NATURE AS TO REQUIRE A CHANGE IN THE PLANS; CONTRACT DOCUMENTS; OR (3) DIFFERS MATERIALLY FROM THAT SHOWN OR INDICATED IN THE PLANS/CONTRACT DOCUMENTS; OR (4) IS OF AN UNUSUAL NATURE, AND DIFFERS MATERIALLY FROM CONDITIONS ORDINARILY ENCOUNTERED AND GENERALLY RECOGNIZED AS INHERENT IN WORK OF THE CHARACTER PROVIDED FOR IN THE PLANS/CONTRACT DOCUMENTS; THEN CONTRACTOR SHALL, PROMPTLY AFTER BECOMING AWARE THEREOF AND BEFORE FURTHER DISTURBING THE SUBSURFACE OR PHYSICAL CONDITIONS OR PERFORMING ANY WORK IN CONNECTION THEREWITH (EXCEPT IN AN EMERGENCY), NOTIFY OWNER AND ENGINEER ABOUT SUCH CONDITION. CONTRACTOR SHALL NOT FURTHER DISTURB SUCH CONDITION OR PERFORM ANY WORK IN CONNECTION THEREWITH (EXCEPT AS AFORESAID) UNTIL RECEIPT OF WRITTEN ORDER TO DO SO. ALL PARTIES INVOLVED (OWNER, ENGINEER, ARCHITECT, AND MUNICIPALITY IF APPLICABLE) SHALL AGREE UPON HOW TO PROCEED AND ANY RELATED COST IMPLICATIONS.
- UTILITIES: PRIVATE AND PUBLIC UTILITIES SUCH AS ELECTRIC, TELEPHONE, GAS, CABLE, FIBER OPTIC ETC., ARE THE RESPONSIBILITY OF THE RESPECTIVE UTILITY COMPANY. ANY INFORMATION SHOWN BY TCE SHOULD BE CONSIDERED PRELIMINARY (USUALLY TO ASSIST WITH PERMITTING). FINAL DESIGN, CONSTRUCTION AND MAINTENANCE ARE THE RESPONSIBILITY OF RESPECTIVE UTILITY COMPANIES. COMPLIANCE WITH EASEMENTS AND REGULATIONS (STATE AND LOCAL) ARE THE RESPONSIBILITY OF RESPECTIVE UTILITY COMPANY.
- DIGSAFE: IN ACCORDANCE WITH VERMONT STATE LAW (VSA TITLE 30 CHAPTER 86 AND PSB RULE 3.800) THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT DIGSAFE SYSTEMS, INC., "DIGSAFE", AT LEAST 48 HOURS, EXCLUDING SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS, BUT NOT MORE THAN 30 DAYS BEFORE COMMENCING EXCAVATION ACTIVITIES, EXCEPT IN AN EMERGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRE-MARKING THE SITE AND MAINTAINING DESIGNATED MARKINGS. FOR MORE INFORMATION ON DIGSAFE REQUIREMENTS SEE WWW.DIGSAFE.COM.
- JOB SITE SAFETY: NEITHER THE PROFESSIONAL ACTIVITIES OF TRUDELL CONSULTING ENGINEERS (TCE), NOR THE PRESENCE OF TCE OR ITS EMPLOYEES AND SUB CONSULTANTS AT A CONSTRUCTION SITE, SHALL RELIEVE THE GENERAL CONTRACTOR AND ANY OTHER ENTITY OF THEIR OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING OR COORDINATING ALL PORTIONS OF THE WORK OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. TCE AND ITS PERSONNEL HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER ANY CONSTRUCTION CONTRACTOR OR OTHER ENTITY OR THEIR EMPLOYEES IN CONNECTION WITH THEIR WORK OR ANY HEALTH OR SAFETY PRECAUTIONS. THE CLIENT AGREES THAT THE GENERAL CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SITE SAFETY, AND WARRANTIES THAT THIS INTENT SHALL BE MADE EVIDENT IN THE CLIENT'S AGREEMENT WITH THE GENERAL CONTRACTOR. THE CLIENT ALSO AGREES THAT THE CLIENT, TCE AND TCE'S CONSULTANTS SHALL BE INDEMNIFIED AND SHALL BE MADE ADDITIONAL INSURED UNDER THE GENERAL CONTRACTOR'S GENERAL LIABILITY INSURANCE POLICY.
- CODES AND STANDARDS COMPLIANCE: TCE SHALL EXERCISE USUAL AND CUSTOMARY PROFESSIONAL CARE IN ITS EFFORTS TO COMPLY WITH CODES, STANDARDS, REGULATIONS, AND ORDINANCES IN EFFECT. THE OWNER ACKNOWLEDGES THAT SUCH REQUIREMENTS MAY BE SUBJECT TO VARIOUS AND CONTRADICTIONARY INTERPRETATIONS. TCE, THEREFORE, WILL USE ITS REASONABLE PROFESSIONAL EFFORTS AND JUDGMENT TO INTERPRET APPLICABLE REQUIREMENTS AS THEY APPLY TO THE PROJECT. TCE, HOWEVER, CANNOT AND DOES NOT WARRANT OR GUARANTEE THAT THE PROJECT WILL COMPLY WITH ALL INTERPRETATIONS OF SUCH REQUIREMENTS.
- CONSTRUCTION OBSERVATION: TCE MAY VISIT THE PROJECT AT APPROPRIATE INTERVALS DURING CONSTRUCTION TO BECOME GENERALLY FAMILIAR WITH THE PROGRESS AND QUALITY OF THE CONTRACTOR'S WORK AND TO DETERMINE IF THE WORK IS PRECEDING IN GENERAL ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE OWNER HAS NOT RETAINED TCE TO MAKE DETAILED INSPECTIONS OR TO PROVIDE EXHAUSTIVE OR CONTINUOUS PROJECT REVIEW AND OBSERVATION SERVICES. TCE DOES NOT GUARANTEE THE PERFORMANCE OF, AND SHALL NOT HAVE RESPONSIBILITY FOR, THE ACTS OR OMISSIONS OF ANY CONTRACTOR, SUB-CONTRACTOR, SUPPLIER OR ANY OTHER ENTITY FURNISHING MATERIALS OR PERFORMING ANY WORK ON THE PROJECT. TCE SHALL NOT SUPERVISE, DIRECT OR HAVE CONTROL OVER THE CONTRACTOR'S WORK NOR HAVE ANY RESPONSIBILITY FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OF THE CONTRACTOR. IF THE OWNER DESIRES MORE EXTENSIVE PROJECT OBSERVATION OR FULL-TIME PROJECT REPRESENTATION, THE OWNER SHALL REQUEST SUCH SERVICES BE PROVIDED BY TCE AS ADDITIONAL SERVICES.

CONSTRUCTION NOTES FOR CONTRACTOR & CLIENT/OWNER

TRUDELL CONSULTING ENGINEERS LAST REVISED 12/27/2017 SH-014



No.	Description	Date	By

TAX ID:

Use of these Drawings

- Unless otherwise noted, these Drawings are intended for preliminary planning, coordination with other disciplines or utilities, and/or approval from the regulatory authorities. They are not intended as construction drawings unless noted as such or marked approved by a regulatory authority.
- By use of these drawings for construction of the Project, the Owner represents that they have reviewed, approved, and accepted the drawings, obtained all necessary permits, and have met with all applicable parties/disciplines, including but not limited to, the Engineer and the Architect, to insure these plans are properly coordinated including, but not limited to, contract documents, specifications, owner/contractor agreements, building and mechanical plans, private and public utilities, and other pertinent permits for construction.
- Owner and Architect, are responsible for final design and location of buildings shown, including an area measuring a minimum five (5) feet around any building and coordinating final utility connections shown on these plans.
- Prior to using these plans for construction layout, the user shall contact TCE to ensure the plan contains the most current revisions.
- These Drawings are specific to the Project and are not transferable. As instruments of service, these drawings, and copies thereof, furnished by TCE are its exclusive property. Changes to the drawings may only be made by TCE. If errors or omissions are discovered, they shall be brought to the attention of TCE immediately.
- It is the User's responsibility to ensure this copy contains the most current revisions. If unsure, please contact TCE.



Project Title _____

Point Bay Marina
1401 Thompson's Point Rd

Sheet Title _____

Notes Bathroom Relocate

Date: _____ 10/10/2018

Scale: _____ As Shown

Project Number: _____ 15-203

Drawn By: _____ ALR

Project Engineer: _____ JPP

Approved By: _____ NTH

Field Book: _____

C8-11