



# **UPPER FREDERICK TOWNSHIP**

**P.O. Box 597, Frederick, PA 19435**

**TOWNSHIP BUILDING**  
3205 Big Road, Obelisk, PA 19492

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**TELEPHONE-610-754-6436**  
**FAX-610-754-6828**

May 12, 2022

## **Overview**

Upper Frederick Township is looking for a qualified professional to conduct an evaluation of options to increase the flow capacity of the water system at the Perkiomen Crossing development in Upper Frederick Township, Pennsylvania. The Perkiomen Crossing development consists of 330 townhomes primarily built in the 1990's and early 2000's.

The goal of this hydrant flow improvement study is to provide a minimum of 1,000 gpm water flow to all hydrants throughout the development, with a minimum residual pressure of 20 psi at each hydrant. Evaluation of several additional alternatives are also desired, as well as cost estimates for the alternatives, as outlined in the enclosed document titled Specification for Options Evaluation to Increase Fire Hydrant Flow Capacity.

## **Submittal Requirements:**

1. Submittals shall include six (6) hardcopies and one electronic copy of the proposal.
2. Proposals shall be submitted to Tracy Tackett, Township Manager by June 8, 2022 at 4:00 PM.

Questions can be sent to [ttackett@upperfrederick.org](mailto:ttackett@upperfrederick.org).



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1720 Walton Road, Blue Bell, PA 19422 610-828-3078 Fax 610-828-7842

**SPECIFICATION FOR OPTIONS EVALUATION  
TO INCREASE FIRE HYDRANT FLOW CAPACITY**

**FOR**

**THE PERKIOMEN CROSSING DEVELOPMENT**

**UPPER FREDERICK TOWNSHIP  
3205 BIG ROAD  
ZIEGLERSVILLE, PENNSYLVANIA**

**PREPARED BY: IES ENGINEERS  
DATE: MARCH 16, 2022  
PROJECT NUMBER: EV221005.01**

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## TABLE OF CONTENTS

1.0	GENERAL	1
2.0	PROJECT BACKGROUND	1
3.0	APPLICABLE CODES	2
4.0	WORK DESCRIPTION	2
4.1	Hydrant Flow Options	2
4.2	Evaluation Items	3
4.3	Project Deliverables	3
5.0	EXISTING SYSTEM DRAWINGS	3
6.0	SITE VISITS	4

## ATTACHMENTS

ATTACHEMNT 1 – HYDRANT MAP

ATTACHMENT 2 – REFERENCE DRAWINGS

## 1.0 GENERAL

This specification describes the requirements for the evaluation of options and cost estimates for equipment and work required to increase the flow capacity of the water system at the Perkiomen Crossing development in Upper Frederick Township, Pennsylvania. The goal of the hydrant flow improvement is to provide a minimum of 1,000 gpm water flow to all hydrants throughout the development, with a minimum residual pressure of 20 psig at each hydrant. Evaluation of several additional alternatives are also desired.

## 2.0 PROJECT BACKGROUND

The Perkiomen Crossing development is located in Upper Frederick Township off of Faust Road, between Little Road and Salford Station Road. The primary road through the development is Buck Road, which loops from Faust Road through the development and back to Faust Road. As shown on the site plan (**Attachment 1**) the other roads in the development include:

- Valley Stream Drive
- Meadowbrook Lane
- Glenwood Drive
- Foxfield Circle
- Pin Oak Drive
- Hunter Lane
- Westview Drive
- Ash Way
- Pine Ridge Drive

There are 330 homes in Perkiomen Crossing. Construction of the first phase of the development started in 1991 with the houses on Valley Stream Drive. Based on historical aerial photographs, by March 1992 the houses on Meadowbrook Lane and Foxfield Circle had also been mostly completed and construction had started on Pine Ridge Drive. Most of the houses on Pin Oak Drive, Westview Drive, and Ash Way were completed by April 1999. Clearing and grading for the homes on Hunter Lane had also begun. The homes on Hunter Lane and Glenwood Drive were completed by December 2002. As the grading appeared to be fresh on Glenwood Drive, the houses there had likely been completed shortly before December 2002.

The homes in the development range from approximately 1,500 square feet up to approximately 2,300 square feet. The townhouses are grouped in blocks from 4 units up to 7 units. The most common groupings are 6 or 7 units.

The water and wastewater plants for the development are located together at the topographically lowest end of the property off Valley Stream Drive. The water supply originates from two deep wells, with one adjacent to the water storage tank and the second well further upslope at the end of Glenwood Drive. The plant operator alternates the use of the wells. Water is pumped to the water system where it is chlorinated and placed in the approximately 100,000-gallon concrete storage tank. Two pumps are used to feed the water to a 2,500-gallon steel pressure tank from where it is distributed through 8-inch mains to the homes and hydrants. There are a total of 16 fire

hydrants on the water system as shown on the Fire Hydrant Location Map (**Attachment 1**). The water system was designed for approximately 250 gpm hydrant flows, but subsequent testing indicates a capacity of approximately 500 gpm near the top of the development.

The original design of the existing water distribution system is understood to incorporate the following:

- Average Daily Flow: 47,850 gpd (total build out, 330 units)
- Fire Flow: 250 gpm · Peak [Domestic] Flow: 67,000 gpd (1.4 x average daily flow)
- Storage Tank Volume: 116,700 gallons provided, (97,000 gallons required [for combined domestic and fire])
- Wells: P-1: Sustained yield of 70 gpm (design flow of 35 gpm), P-2: sustained yield of 100 gpm (design flow 50 gpm)
- Water Supply Pumps: 2 pumps @ 250 gpm (1 is a standby)
- Hydropneumatic (pressure) Tank: 2,500 gallons @ 90 psi

### **3.0 APPLICABLE CODES**

The following codes are applicable to this work. The contractor shall inform himself of any additional codes and regulations applicable to the water distribution pumping system

- 2015 International Fire Code (IFC)
- 2015 International Residential Code (IRC)
- 2013 NFPA 20 – Standard for the Installation of Stationary Pumps for Fire Protection
- 2012 NFPA 22 – Standard for Water Tanks for Private Fire Protection

### **4.0 WORK DESCRIPTION**

#### **4.1 Hydrant Flow Options**

Based on the recommendations found in the International Fire Code, 2015, Appendix B provide options for:

1. Table B105.1(1) for single family residences and townhomes for units of < 3,600 ft<sup>2</sup> with 2-hour rated fire walls, evaluate options to achieve 1,000-gpm flow with a residual of 20 psi at the uppermost hydrant in the development.
2. Evaluate options to achieve 1,500-gpm flow, with a water storage capacity of 2 hours maximum flow.
3. Evaluate flow and pressure requirements according to Table B105.1(2) with qualifiers and exclusions assuming the largest block of homes is the design point. The largest block of homes appears to have approximately 12,000 to 13,000 ft<sup>2</sup> of living space, but contractor is to verify the areas in accordance with the definitions in Appendix B.

Options to be evaluated shall include, but not limited to, a new fire pump or pumps sized to provide adequate flow and pressure, and additional tank and distribution systems as required for the option. Both diesel and electric fire pumps shall be evaluated.

#### **4.2 Evaluation Items**

The contractor shall include in the evaluation all appurtenances required for each functional and reliable system, including the following:

- Pumps
- Pump house to be located adjacent to the water storage tank
- Foundations and supports
- Diesel storage, containment, potential site impacts (for the diesel option)
- Electric supply, including emergency generator capacity as required by the pumping system (for the electric option)
- Additional tank capacity and location, if required
- Piping pressure losses and head losses
- Additional distribution system components and hydrants if required
- Adequacy of existing equipment, distribution system, and residential connections for the flows and pressures required to provide the desired flow.
- Pump controls
- Tank level control to ensure minimum storage capacity for the fire pump(s).

#### **4.3 Project Deliverables**

For each option, the contractor shall provide:

- A brief description of the system and structures required
- A conceptual layout of the system showing the approximate size and location of the pumps, pump house, tank(s), and appurtenances
- A process flow diagram indicating major equipment, line sizes, connections to existing systems, etc.
- The required pump performance characteristics
- Backup flow and pressure loss calculations
- A list of major equipment
- A listing of modifications required to existing systems, including tie-ins
- An order-of-magnitude cost estimate ( $\pm 25\%$ ), including any engineering, equipment, installation, project management, and startup and commissioning costs.
- An evaluation of tie-in and system sanitation and flushing time requirements

#### **5.0 EXISTING SYSTEM DRAWINGS**

The existing systems are depicted on the following drawings, provided in **Attachment 2**.

Drawing No	Rev	Date	Drawing Title
<b>Water And Wastewater Area</b>			
1	3	12/20/91	Wastewater Treatment Plant Partial Plot Plan
2	3	12/20/91	Wastewater Treatment Plant Site Plan Detail
8	3	12/20/91	Water Storage Pump and Control Room Mechanical Details
8E	2	12/20/91	Water Storage Pump and Control Room Electrical
9	3	12/20/91	Water Storage Tank 40'-0" Dia. X 12'-0" Deep
10	4	12/20/91	Potable Water System Building Single Line Diagrams
11	4	12/20/91	Water System Chlorine Building Single Line Diagrams
<b>Development Sewer and Water Plans</b>			
2099-1	-	2/17/93	Perkiomen Crossing Sewer & Water As-Built (Phase I) Sht 1
2099-2	-	2/17/93	Perkiomen Crossing Sewer & Water As-Built (Phase I) Sht 2
2099-3	-	2/17/93	Perkiomen Crossing Sewer & Water As-Built (Phase I) Sht 3
2099-4	-	2/17/93	Perkiomen Crossing As-Built Plan, Plan & Profile Buck Rd. Sta. 0+00 to STA. 12+00 Sht 4
2099-5	-	2/17/93	Perkiomen Crossing As-Built Plan, Plan & Profile Buck Rd. Sta. 12+00 to STA. 19+36.66, Westview Drive Sta. 0+00 to Sta. 6+46.08 Sht 5
2099-6	-	2/17/93	Perkiomen Crossing As-Built Sanitary and Water, Profile Foxfield Circle Sta. 0+00 to STA. 8+61.85 Sht 6
2099-7	-	2/17/93	Perkiomen Crossing As-Built Sanitary and Water Profile Sheet Sht 7
2099-8	-	2/17/93	Perkiomen Crossing As-Built Sanitary and Water Profile Sheet Sht 8

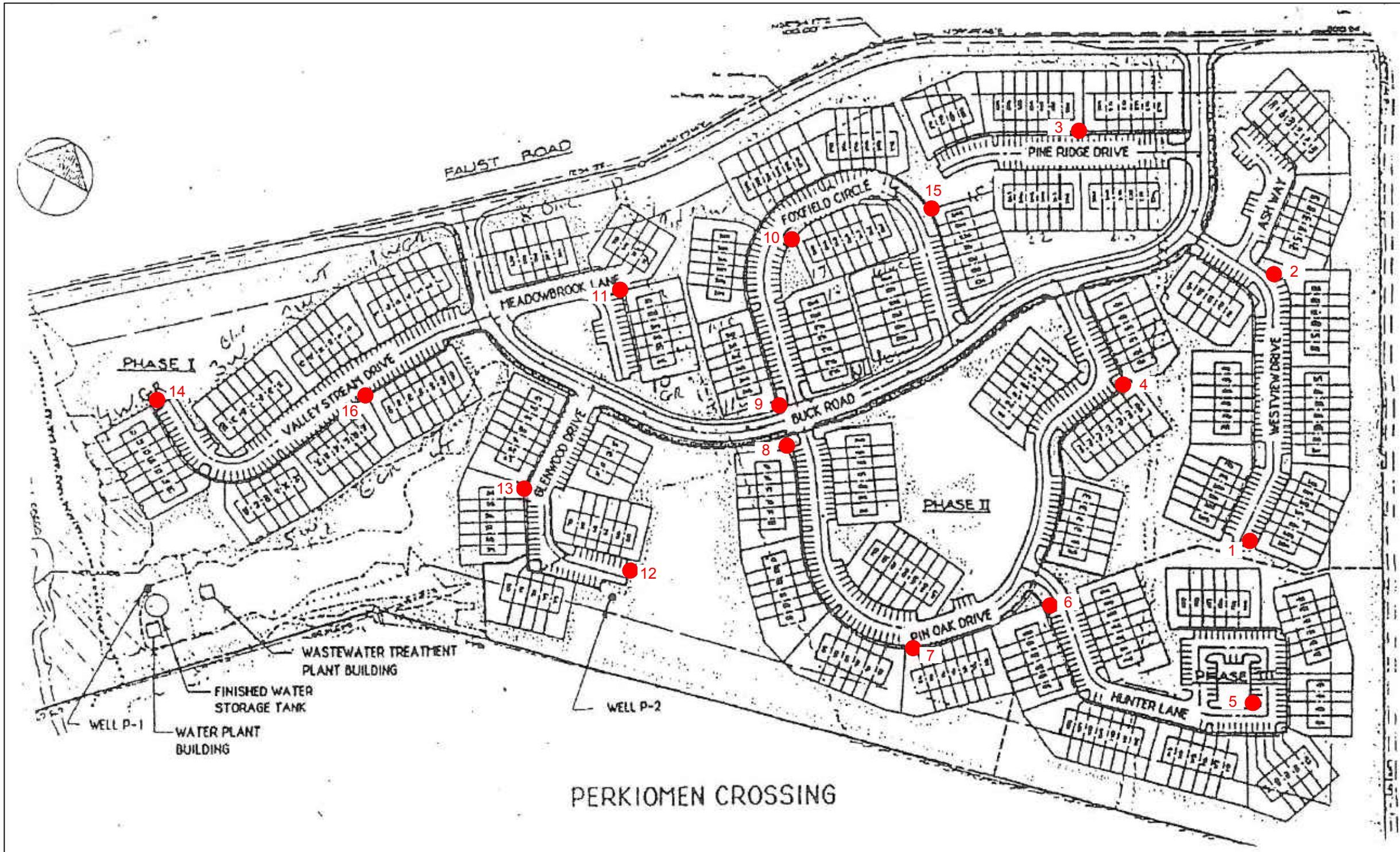
## 6.0 SITE VISITS

The contractor may visit the site during the course of the evaluation to determine existing conditions and observe existing water equipment and structures. To schedule a site visit, please contact Tracy Tackett – Township Manager (610-754-6436).

**ATTACHMENT 1**

**HYDRANT MAP**





● FIRE HYDRANTS (16)

**ies**  
**ENGINEERS**  
 ENGINEERING FOR INDUSTRY

1720 WALTON ROAD, PA 19422  
 PHONE: (610) 828-3078

BLUE BELL, PA 19422  
 FAX: (610) 828-7842

UPPER FREDERICK TOWNSHIP  
 PERKIOMEN CROSSING

FIRE HYDRANT LOCATION MAP

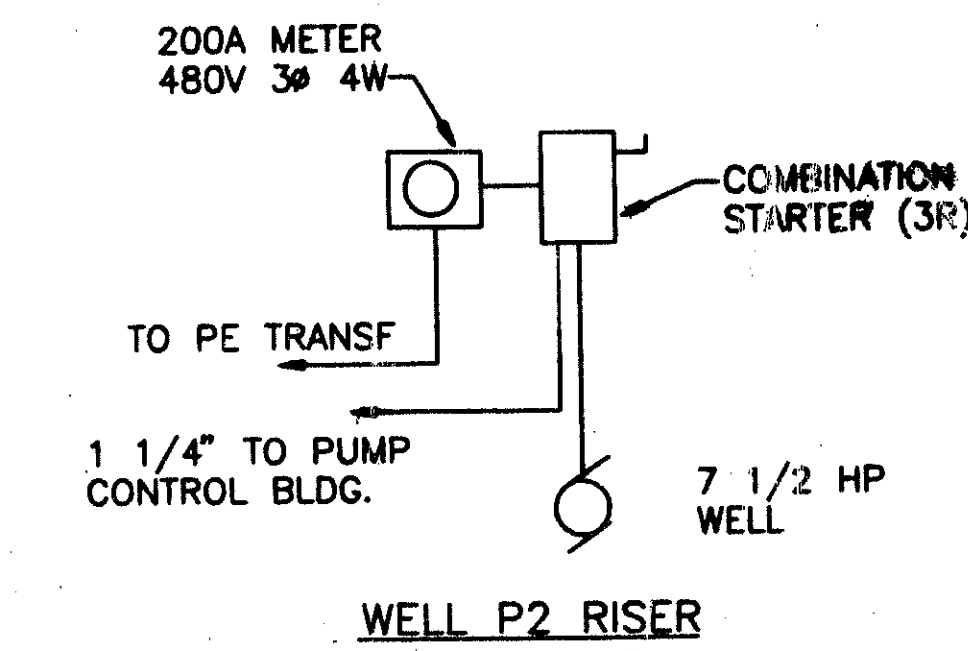
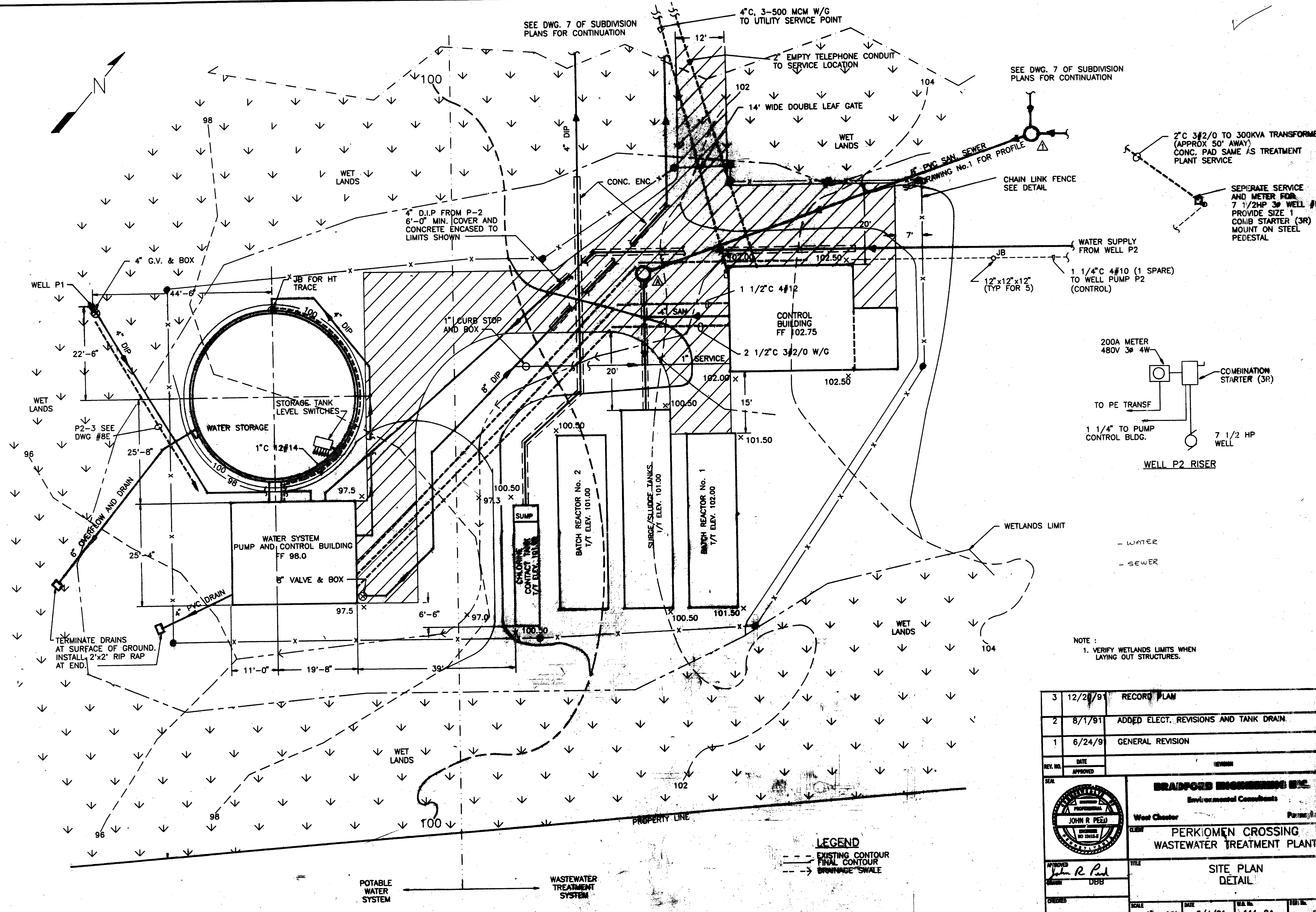
Date: 03-16-22	Project: EV211005.01	Dwg. No.: HYDRANT	Revision: -
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**ATTACHMENT 2**  
**REFERENCE DRAWINGS**









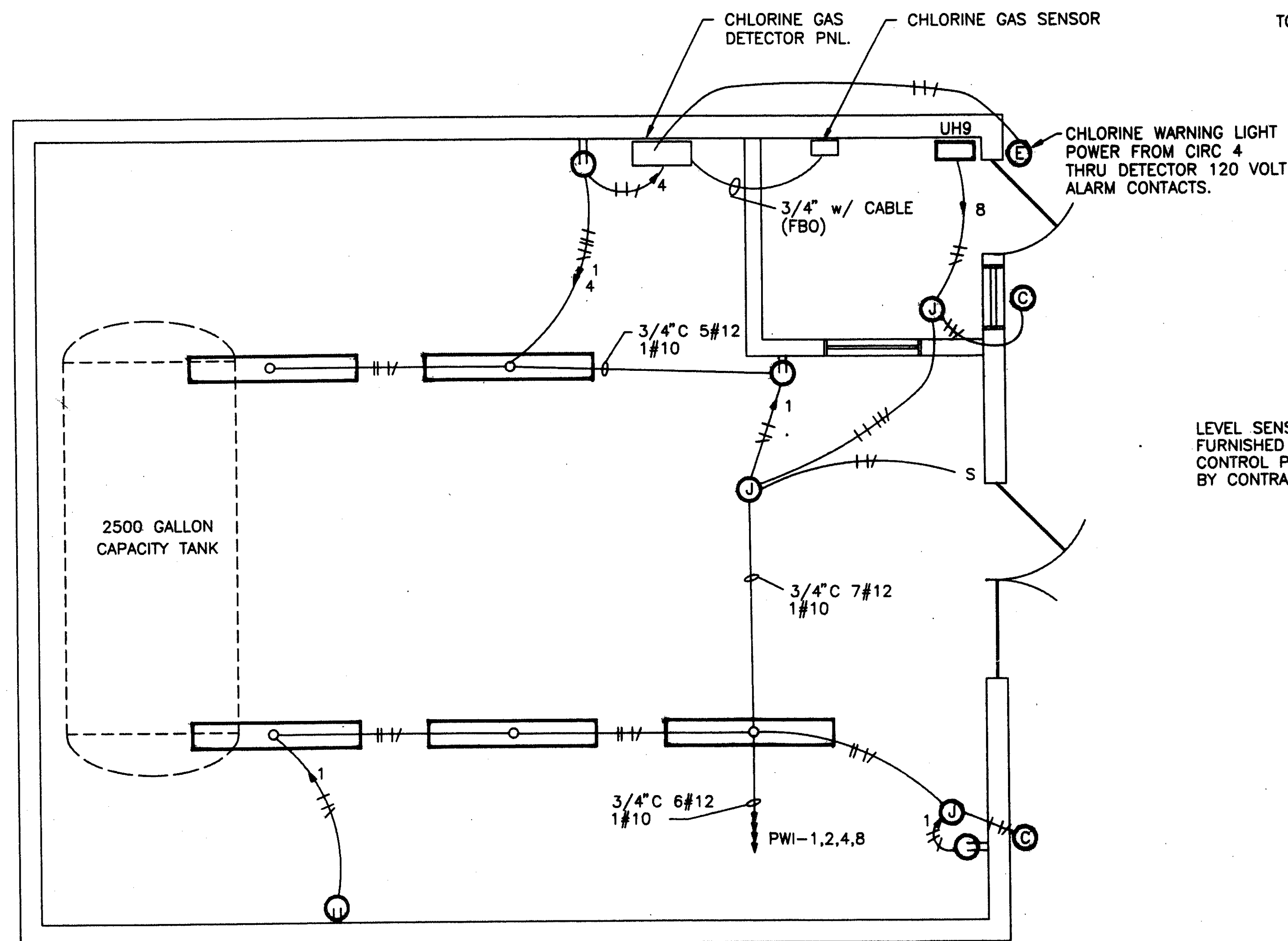
NOTE:  
1. VERIFY WETLANDS LIMITS WHEN LAYING OUT STRUCTURES.

**LEGEND**  
 --- EXISTING CONTOUR  
 ——— FINAL CONTOUR  
 - - - DRAINAGE SWALE

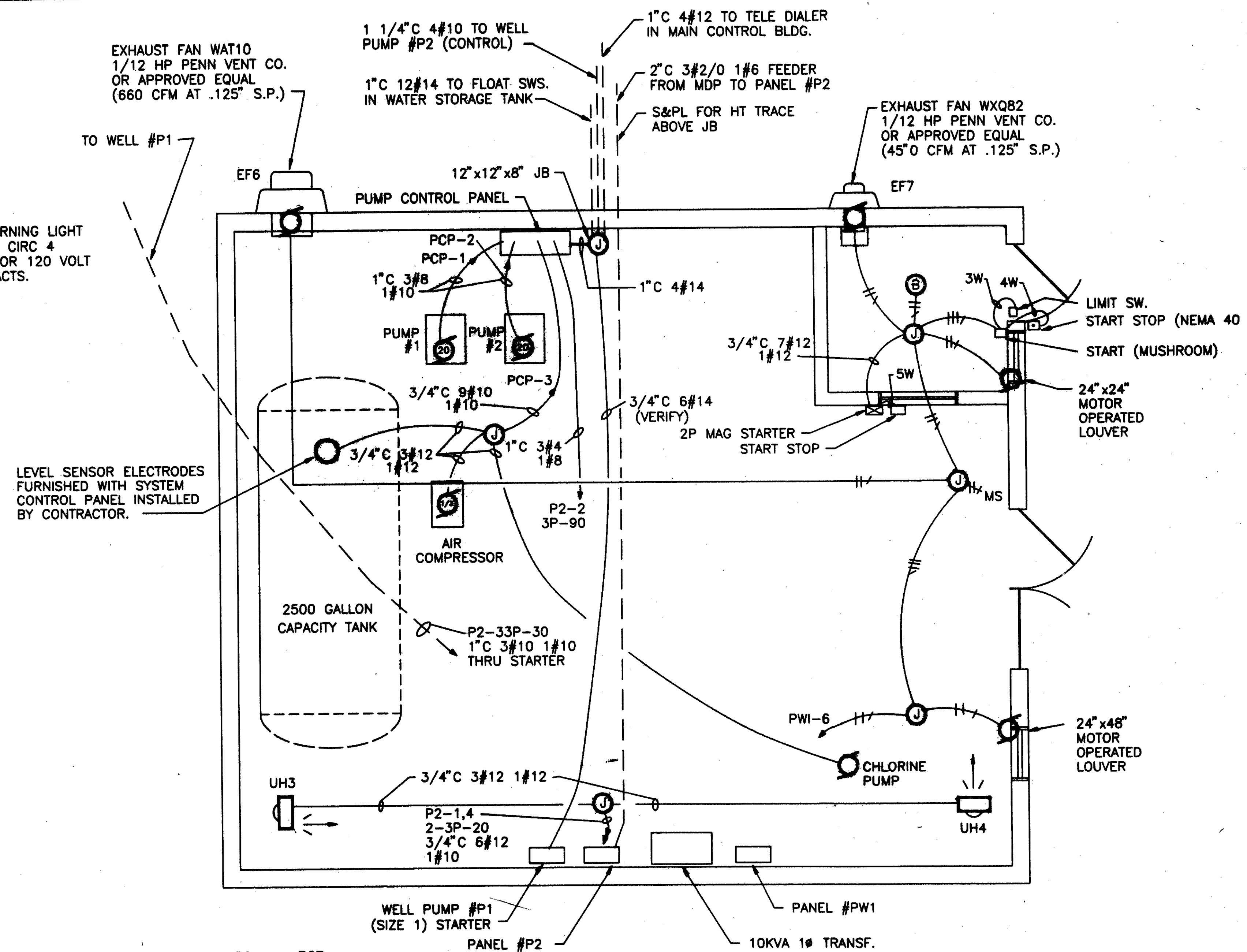
3	12/20/91	RECORD PLAN
2	8/1/91	ADDED ELECT. REVISIONS AND TANK DRAIN
1	6/24/91	GENERAL REVISION
REV. NO.	DATE	REVISION
APPROVED		
SEAL	<b>BRADFORD ENGINEERING INC.</b> Environmental Consultants West Chester JOHN R. PEEBLES PROFESSIONAL ENGINEER NO. 38414	
CLIENT	<b>PERKIOMEN CROSSING</b> <b>WASTEWATER TREATMENT PLANT</b>	
DESIGNER	JOHN R. PEEBLES DBB	
DESIGN ENGINEER	DBB	
SCALE	1" = 10'	DATE
DATE	6/4/91	W.A. NO.
W.A. NO.	111-04	SHEET NO.
SHEET NO.	3	







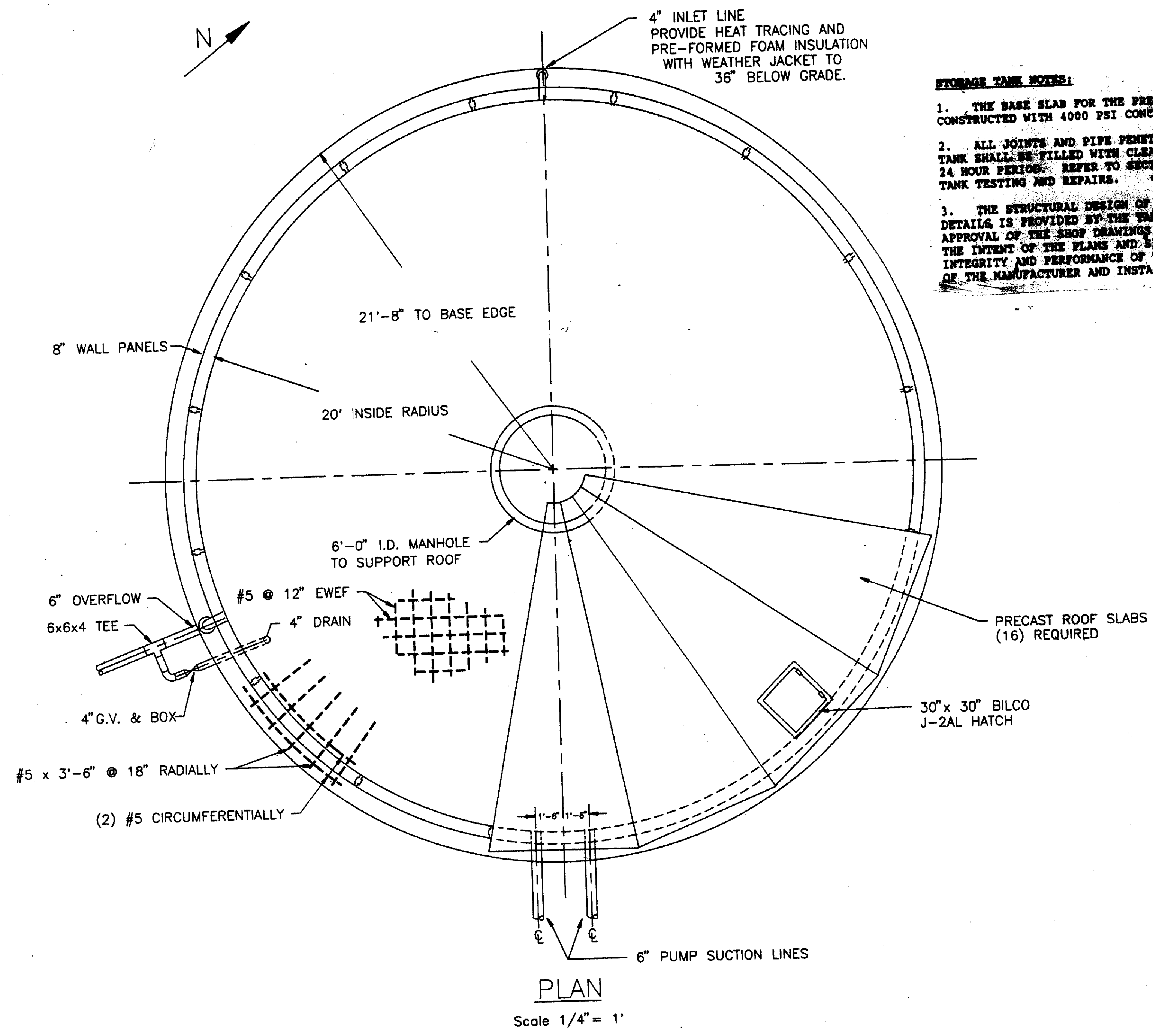
WATER PUMP CONTROL BUILDING LIGHTING PLAN



PW1	P2	PCP
1-2-4-8	1-4	1
6	2	2
	3	3

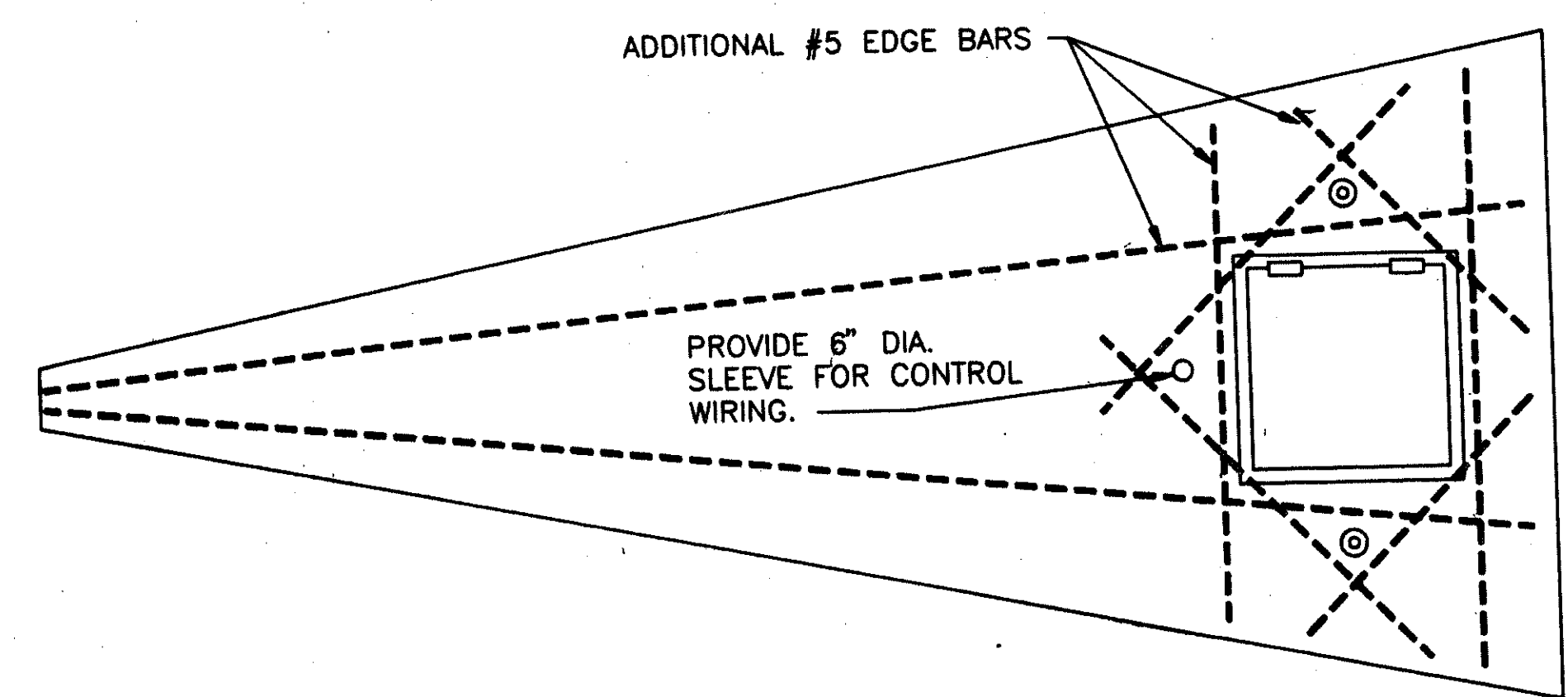
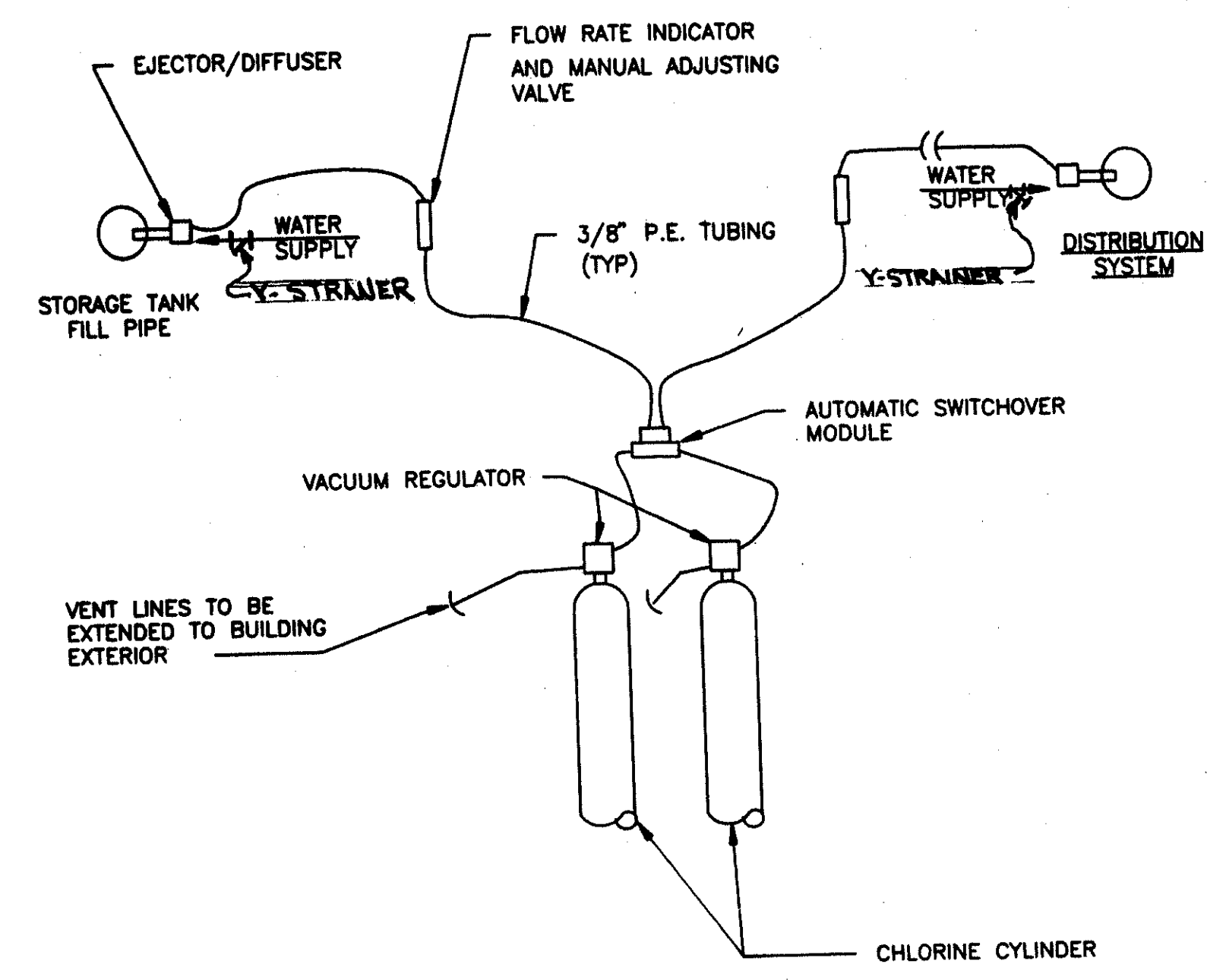
WATER PUMP CONTROL BUILDING POWER DISTRIBUTION PLAN

2	12/20/91	RECORD PLAN
1	12/13/91	GENERAL REVISION
REV. NO.	DATE	REVISION
APPROVED	APPROVED	
SEAL	<b>BRADFORD ENGINEERING INC.</b> Environmental Consultants West Chester Pennsylvania	
CLIENT	PERKIOMEN CROSSING WASTEWATER TREATMENT PLANT	
APPROVED	TITLE	
DESIGNED	WATER STORAGE PUMP AND CONTROL ROOM ELECTRICAL	
CHECKED	SCALE	DATE
DESIGN ENGINEER	3/8" = 1'	5/24/91
	W.O. No.	DWG No.
	111-04	8E



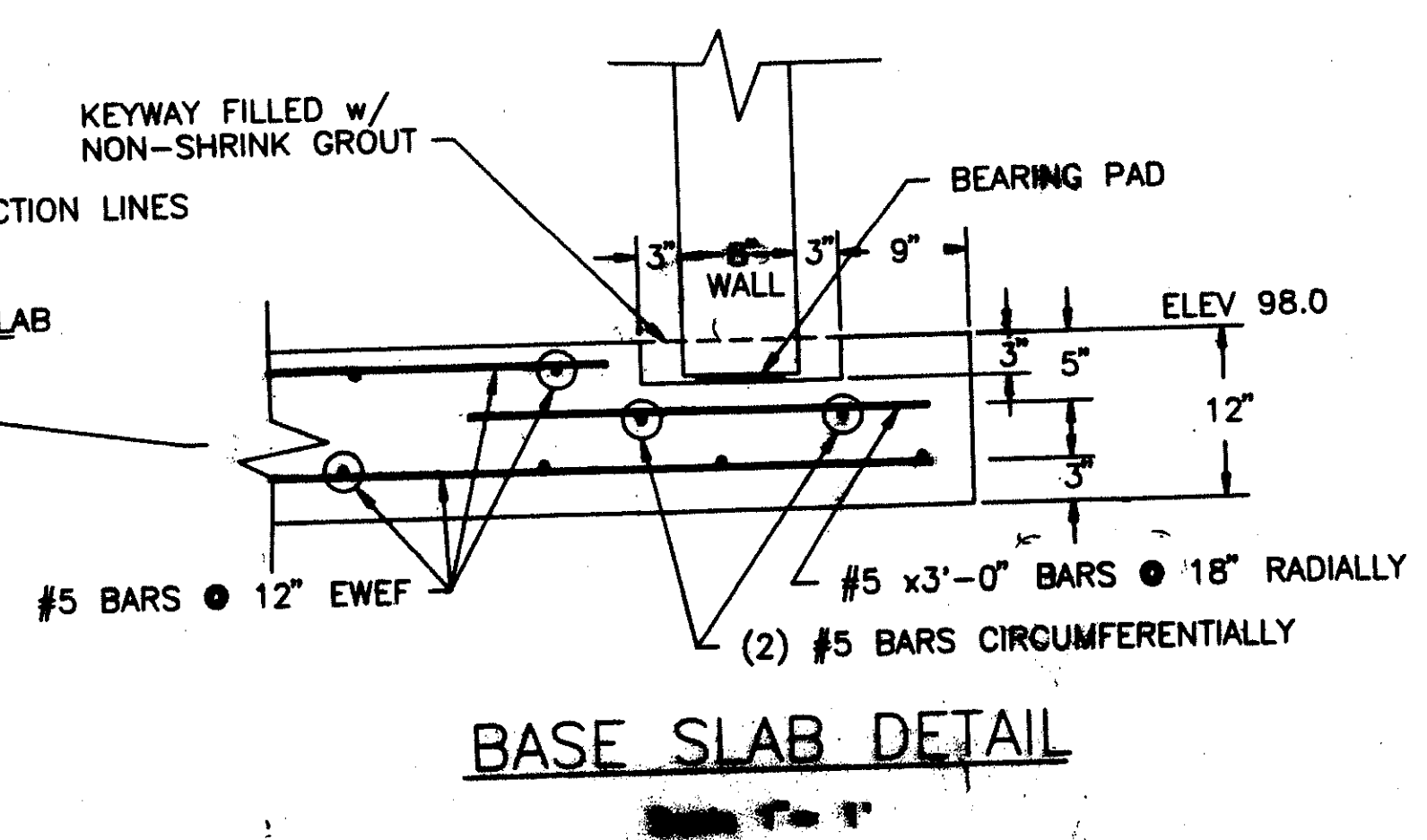
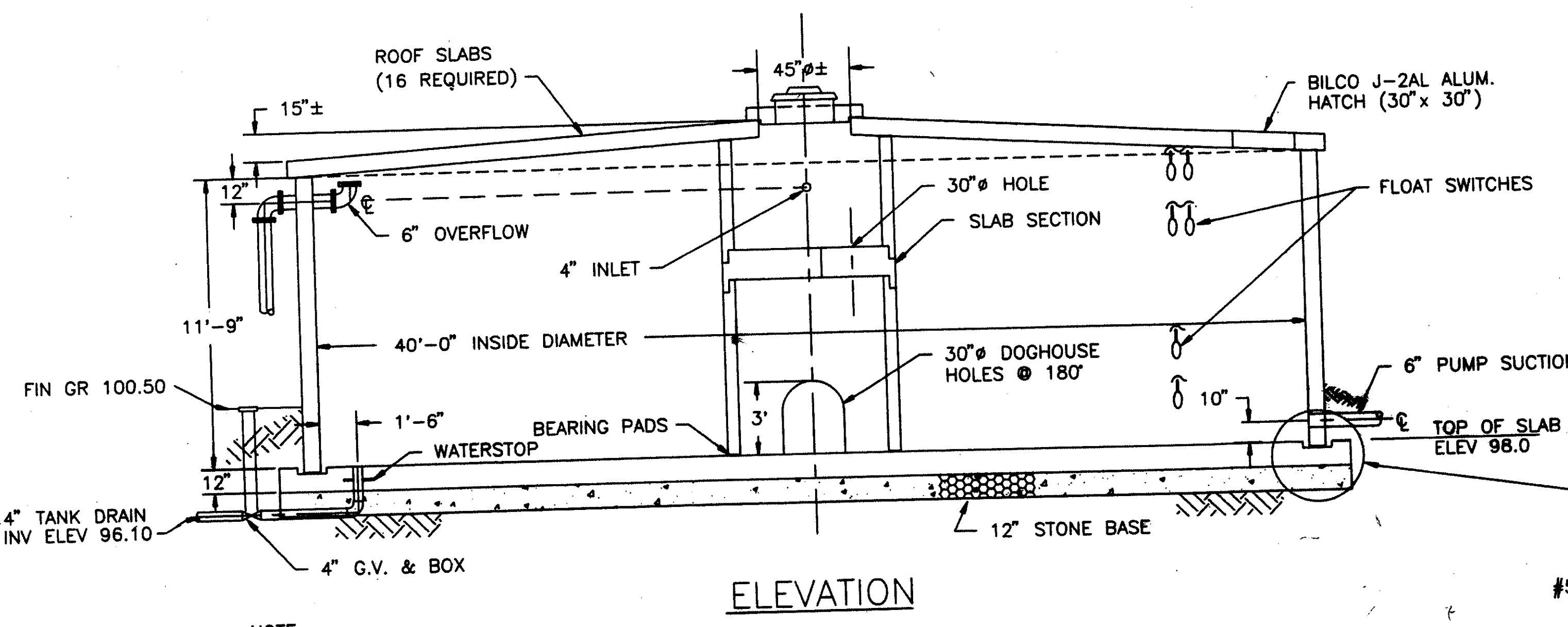
**STORAGE TANK NOTES:**

1. THE BASE SLAB FOR THE PRECAST STORAGE TANK SHALL BE CONSTRUCTED WITH 4000 PSI CONCRETE.
2. ALL JOINTS AND PIPE PENETRATIONS SHALL BE WATERTIGHT. THE TANK SHALL BE FILLED WITH CLEAN WATER AND TESTED FOR LEAKS OVER A 24 HOUR PERIOD. REFER TO SECTION 3.3 OF THE SPECIFICATIONS FOR TANK TESTING AND REPAIRS.
3. THE STRUCTURAL DESIGN OF THE TANK, BASE SLAB, AND OTHER DETAILS IS PROVIDED BY THE TANK MANUFACTURER. REVIEW AND APPROVAL OF THE SHOP DRAWINGS WILL BE FOR GENERAL CONFORMANCE TO THE INTENT OF THE PLANS AND SPECIFICATIONS ONLY. THE STRUCTURAL INTEGRITY AND PERFORMANCE OF THE TANK ARE THE SOLE RESPONSIBILITY OF THE MANUFACTURER AND INSTALLING CONTRACTOR(S).



**FLOAT SWITCH SETTINGS**

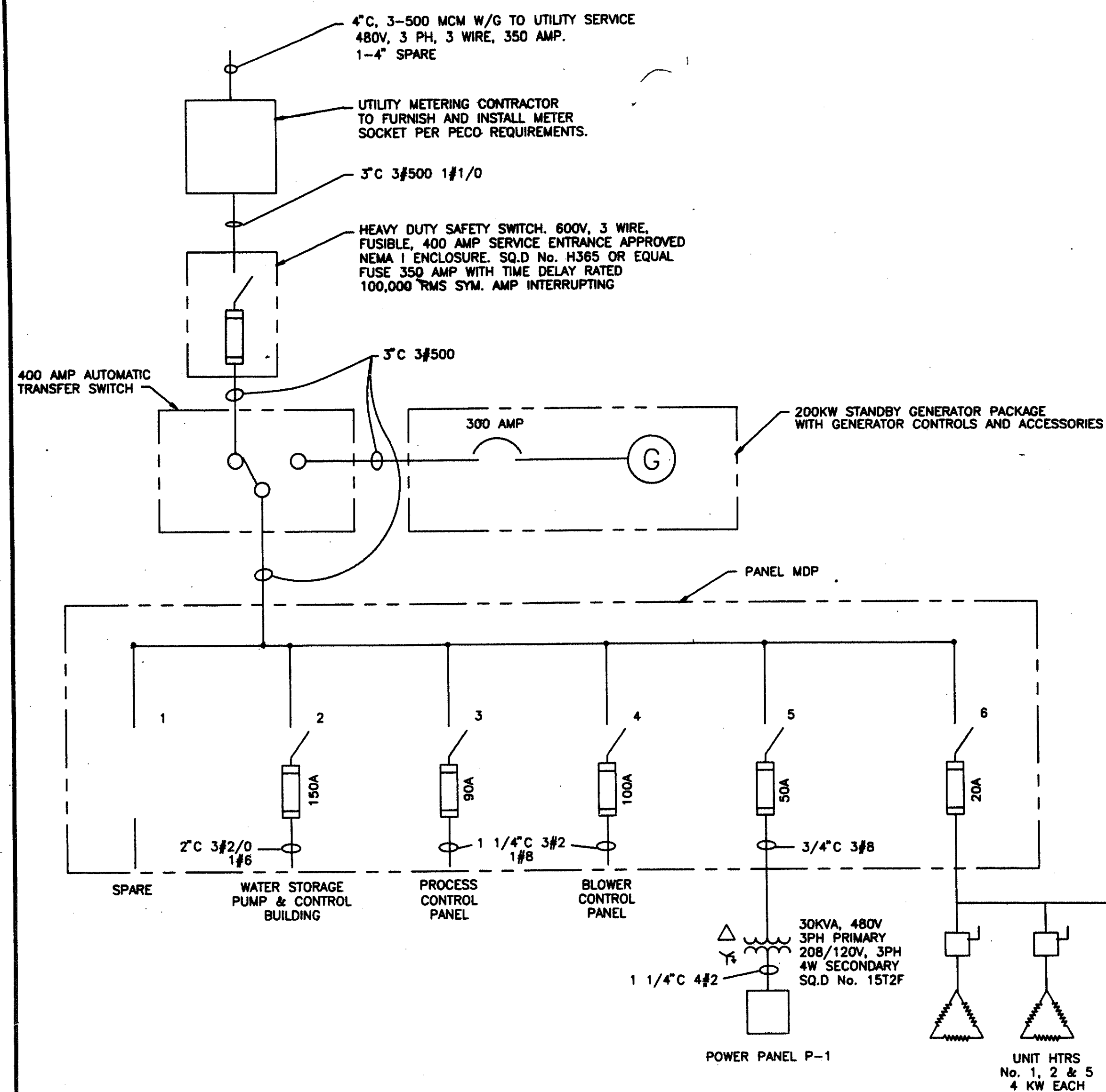
WELL PUMPS OFF	ELEV 109.25
WELL PUMPS ON	ELEV 106.25
LOW LEVEL ALARM	ELEV 101.50
PRESS PUMPS OFF	ELEV 99.50



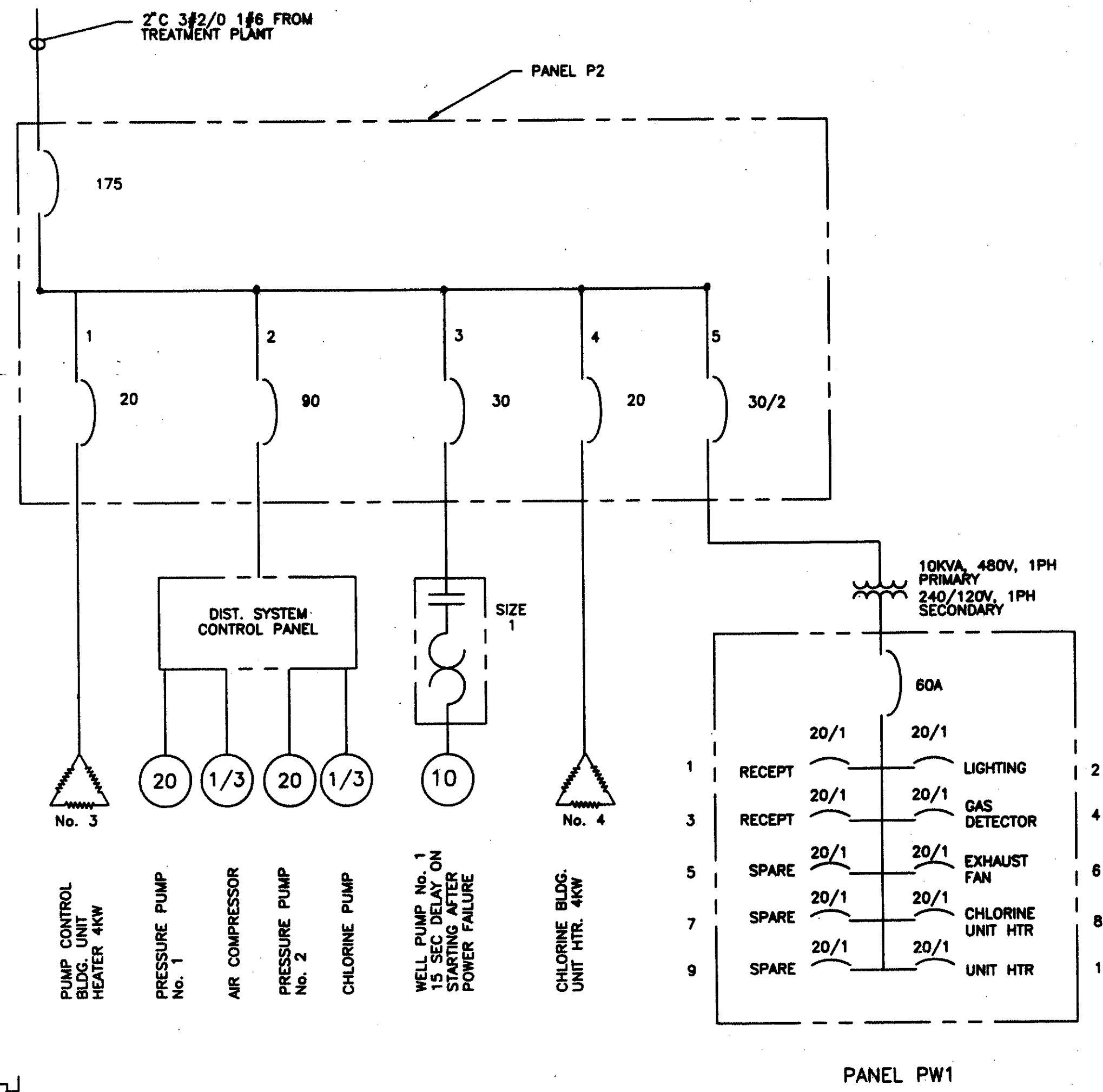
**NOTE:**

1. INTERIOR WALLS & FLOOR SHALL RECEIVE TWO COATS THOROSEAL PROTECTIVE COATING
2. SEE PLAN VIEW FOR PROPER ORIENTATION OF PIPING AND HATCH.

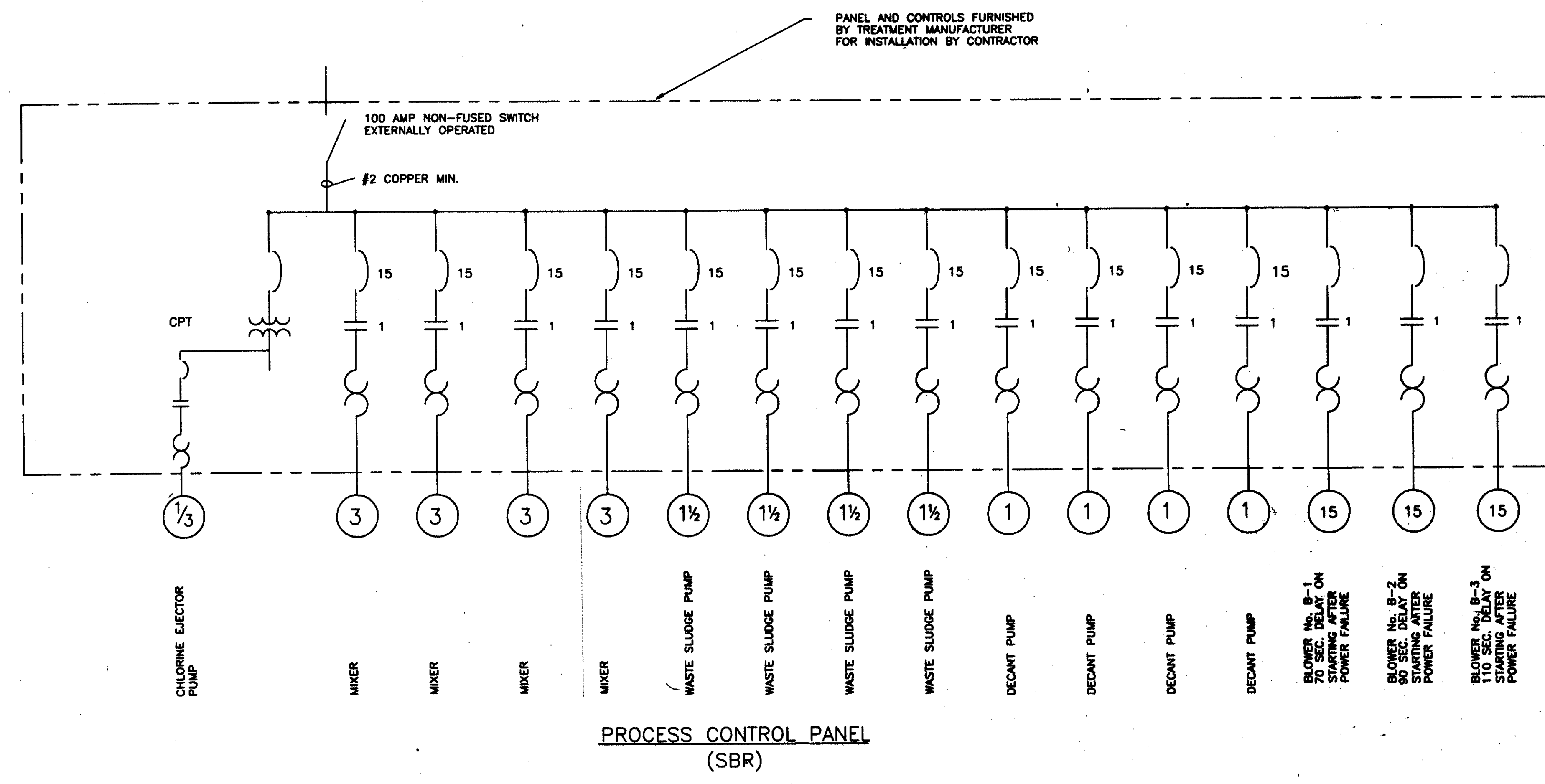
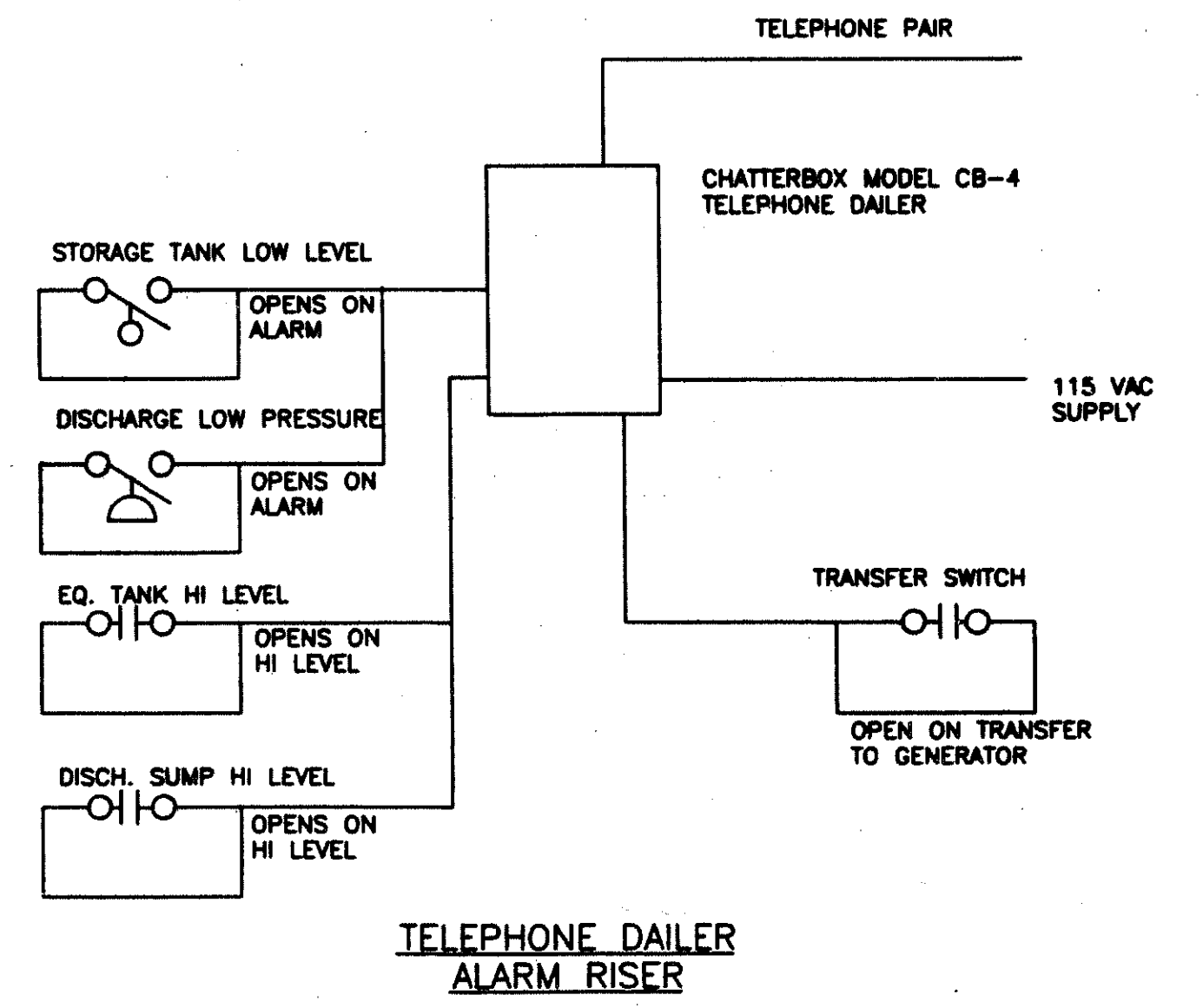
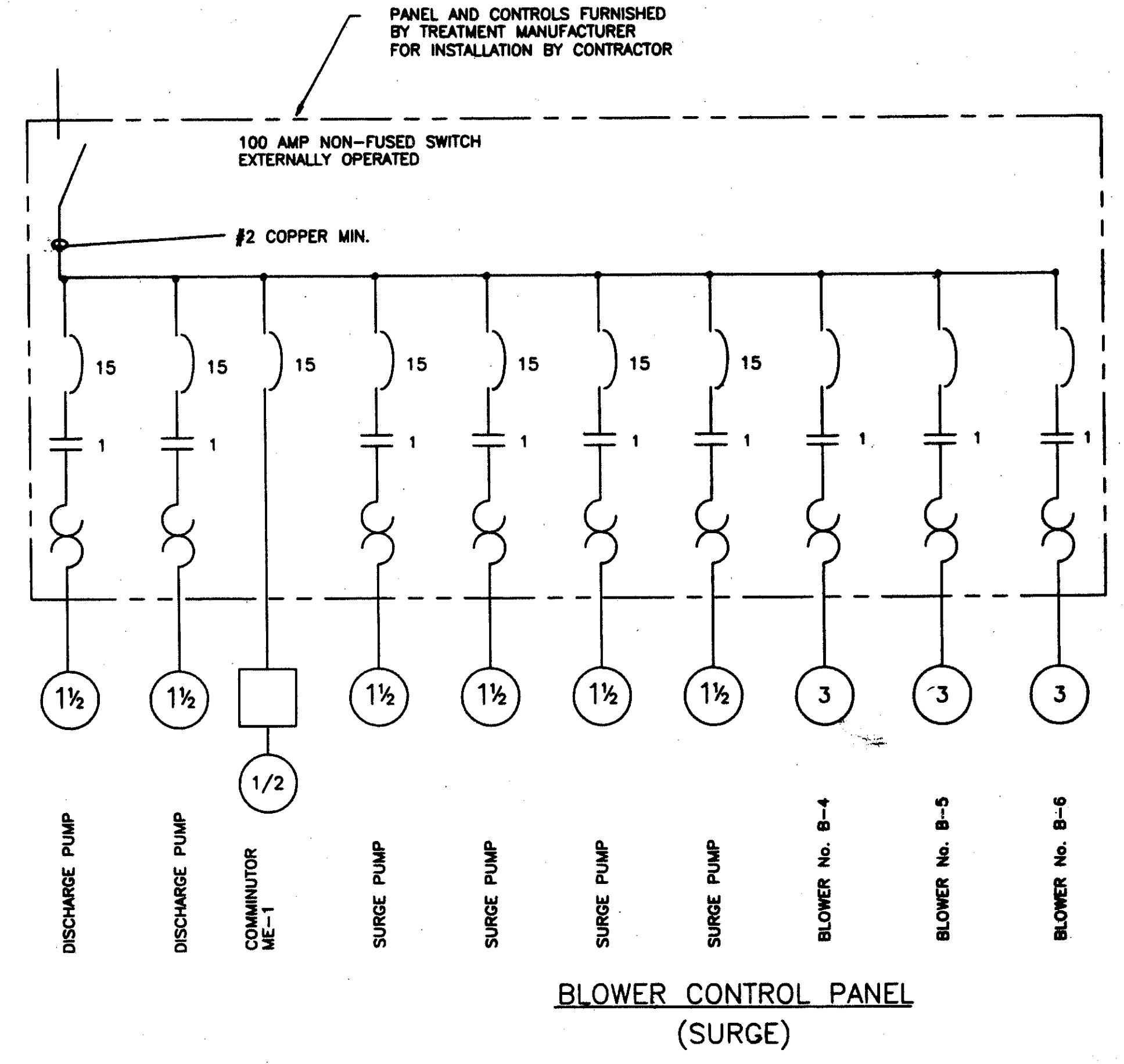
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2	8/5/91	ADDED DRAIN LINES
1	6/25/91	REDRAWN AND RE-ISSUED
REV. NO.	DATE	REVISION
SEAL	APPROVED	
<b>BRADFORD ENGINEERING INC.</b> Environmental Consultants West Chester Pennsylvania		
CLIENT <b>PERKIOMEN CROSSING WASTEWATER TREATMENT PLANT.</b>		
TITLE <b>WATER STORAGE TANK 40'-0" DIA. x 12'-0" DEEP</b>		
APPROVED 8/24/91 <i>John R. Peed</i>	DATE	SCALE
DRAWN DBB	5/23/91	AS NOTED
CHECKED	DATE	SCALE
DESIGN ENGINEER DBB	111-04	9



SINGLE LINE DIAGRAM

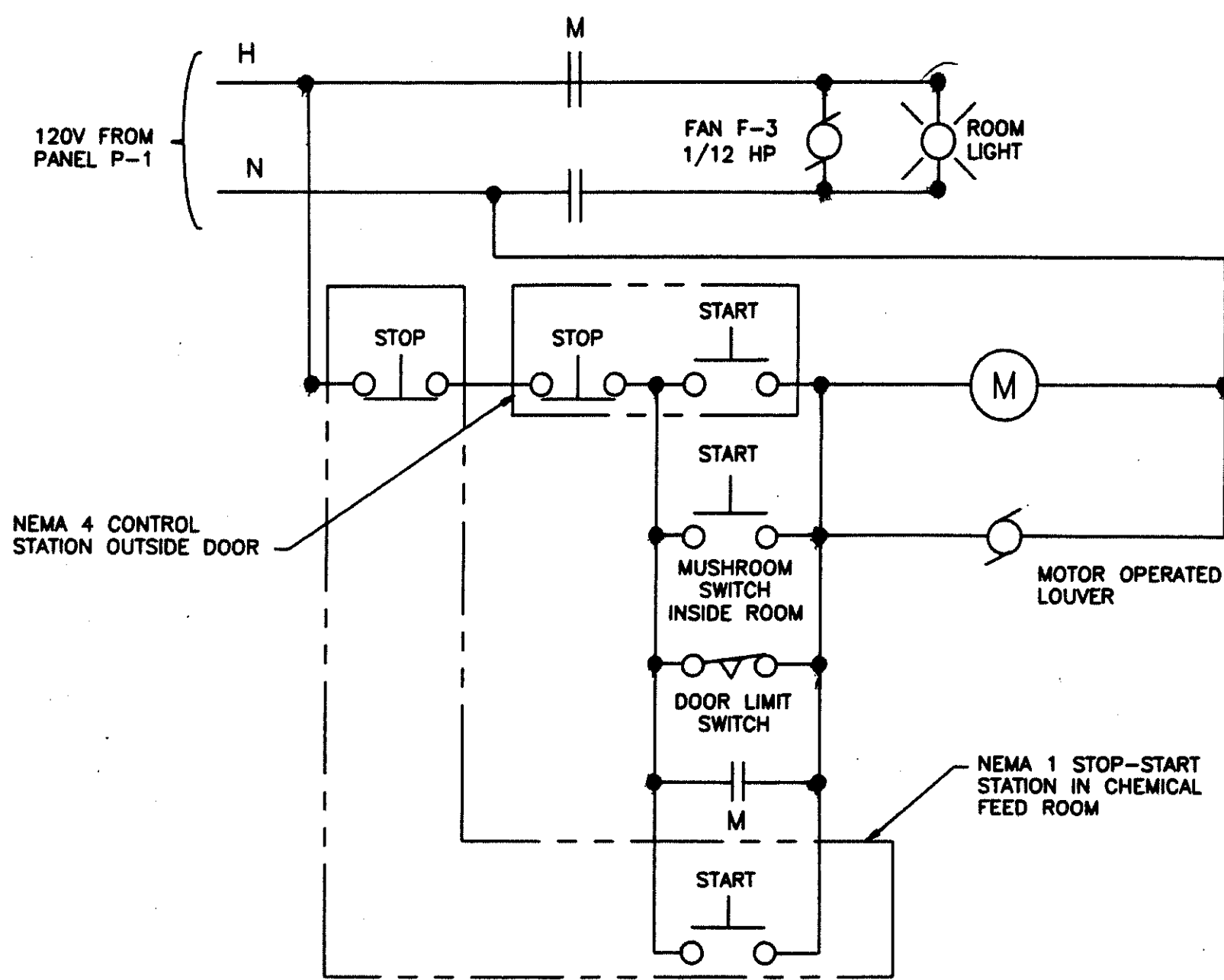


POTABLE WATER SYSTEM

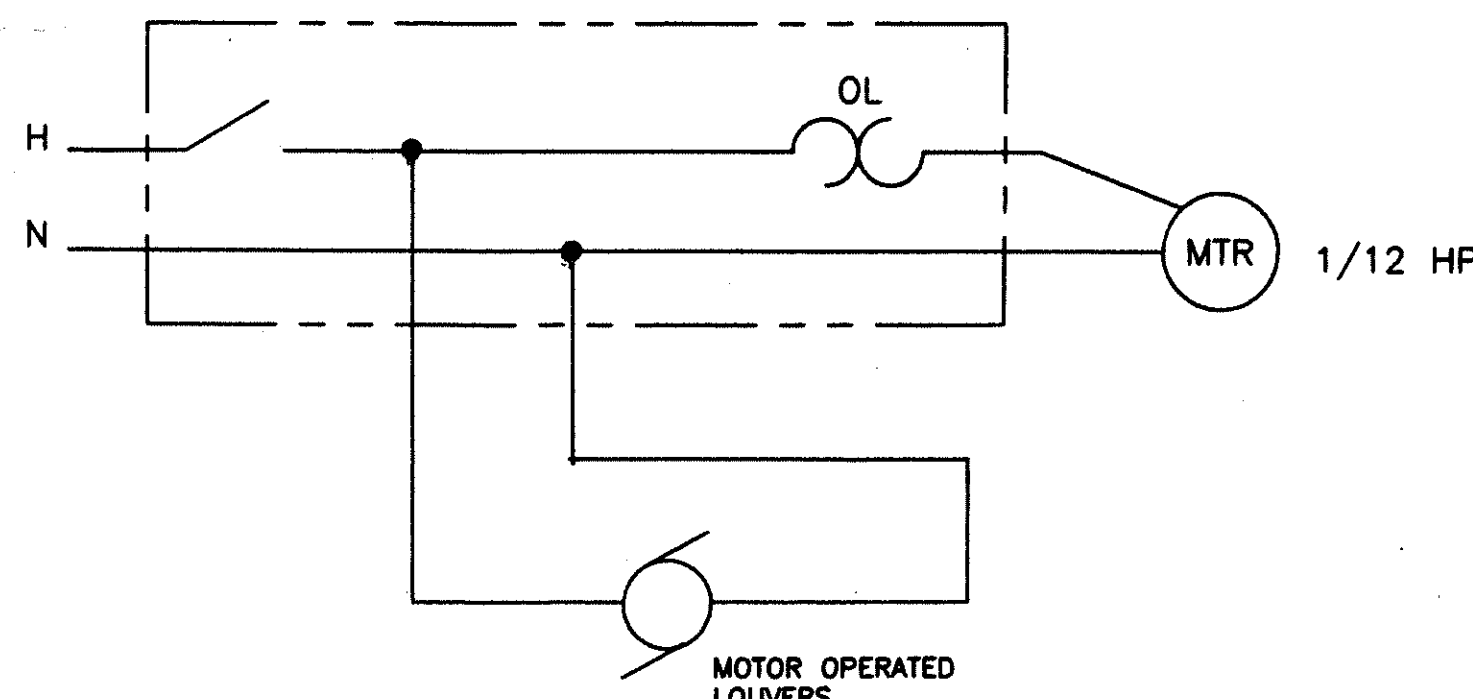


4	12/20/91	RECORD PLAN
3	8/5/91	GENERAL REVISION
2		GENERAL REVISION
1		ISSUED FOR PERMIT
REV. NO.	DATE	REVISION
APPROVED		
SEAL		
<b>BRADFORD ENGINEERING INC.</b> Environmental Consultants West Chester Pennsylvania		
CLIENT <b>PERKIOMEN CROSSING WASTEWATER TREATMENT PLANT</b>		
TITLE <b>POTABLE WATER SYSTEM BUILDING SINGLE LINE DIAGRAMS</b>		
DESIGN ENGINEER DBB	SCALE NONE	DATE 7/23/90
W.C. No. 111-04	DBB No. 10	

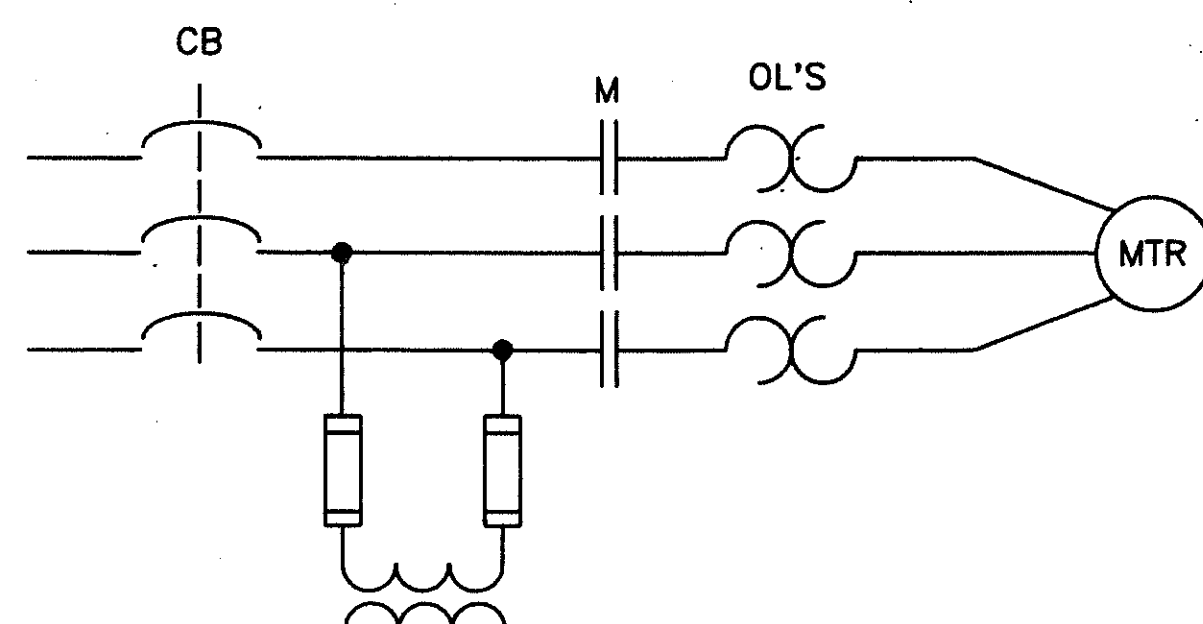




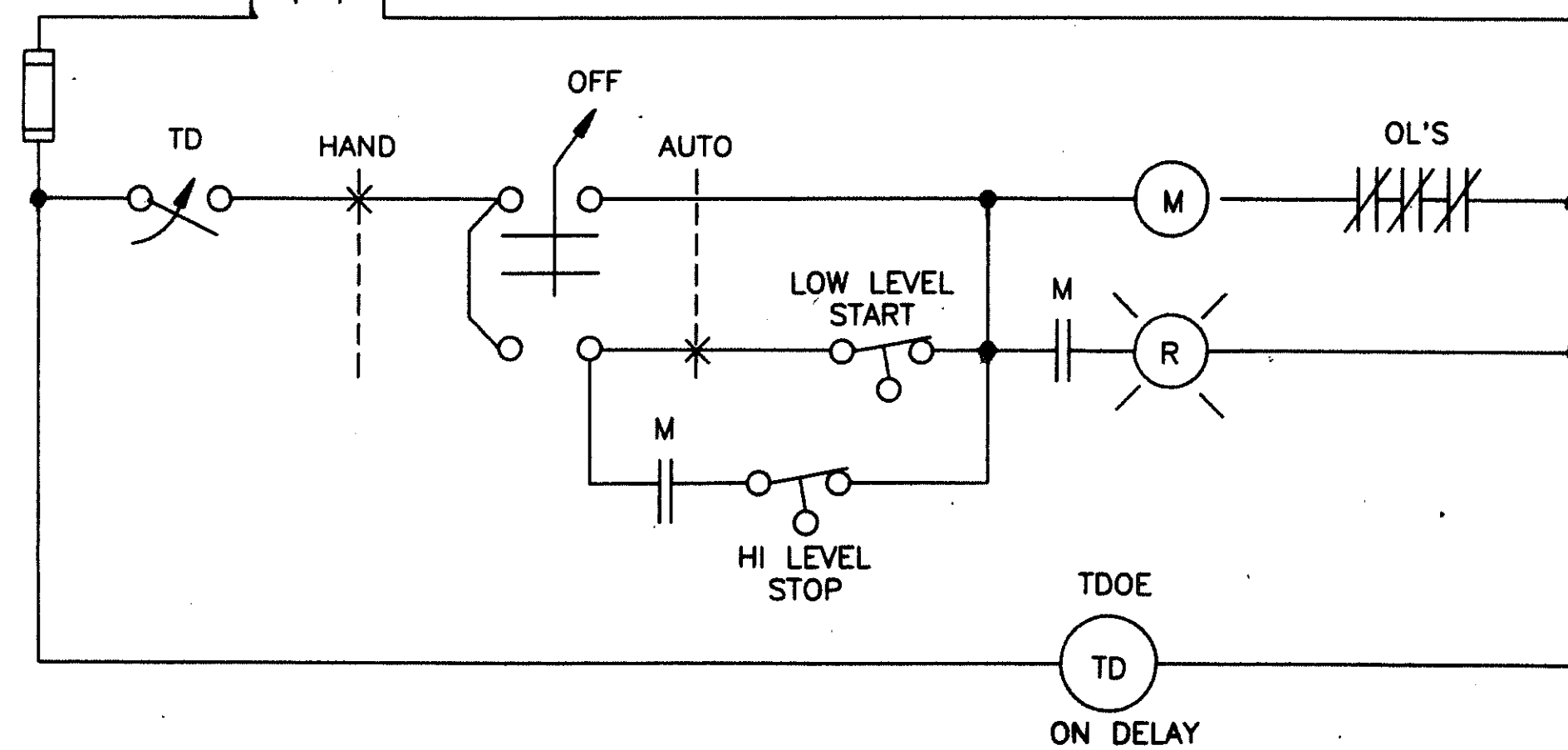
CHLORINE ROOM EXHAUST FAN CONTROL (TWO ROOMS TYPICAL)



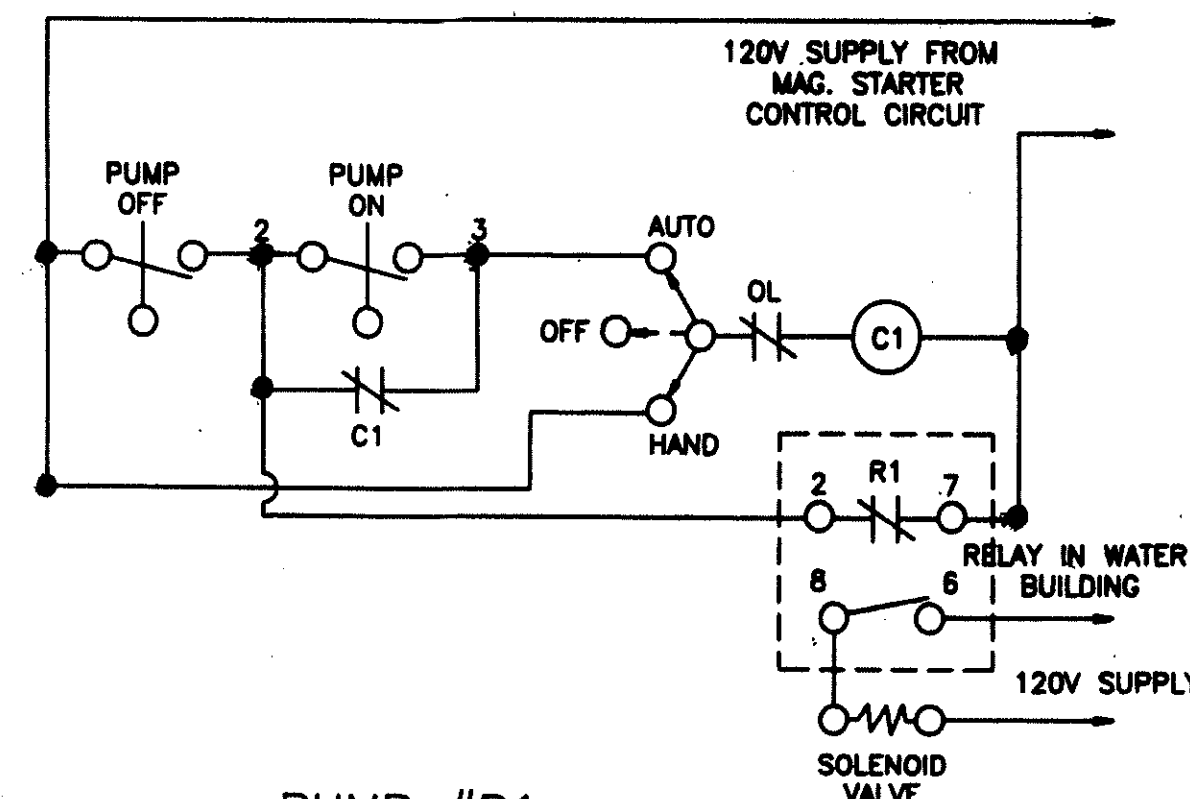
CONTROL BUILDING FANS



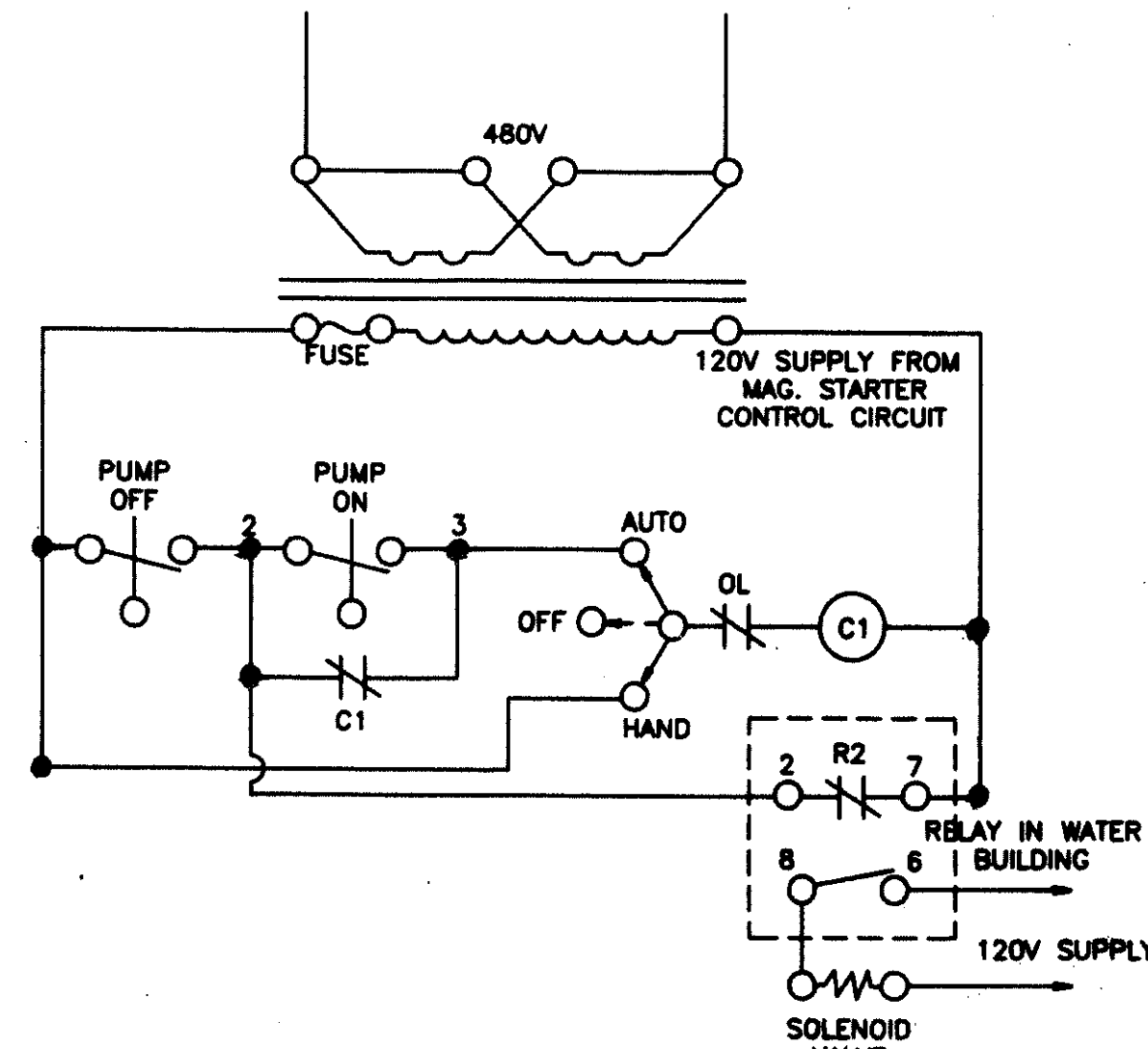
WELL PUMPS



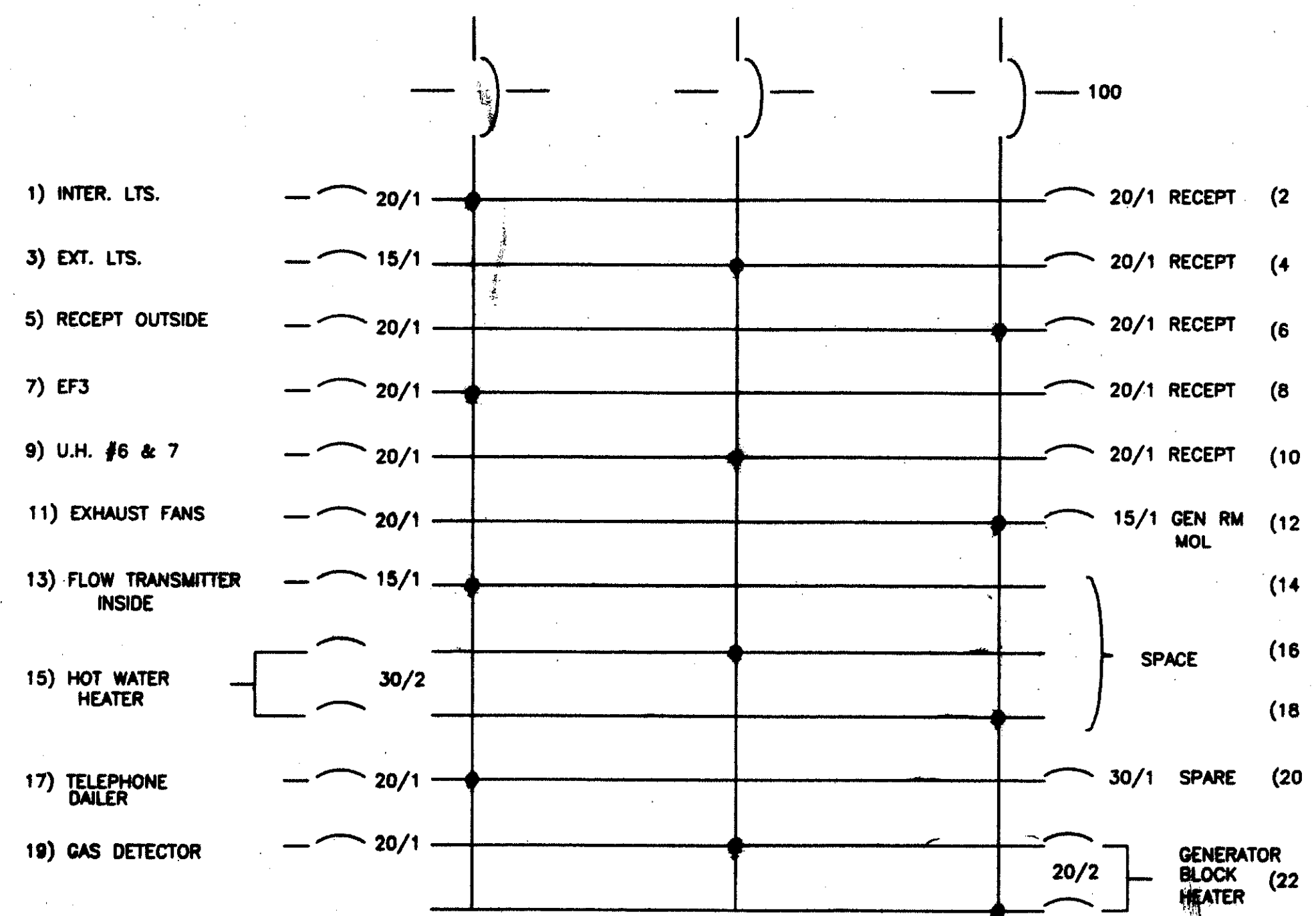
DELAY  
PUMP No. 1 40 SEC  
PUMP No. 2 NONE



PUMP #1 SOLENIOD VALVE CIRCUIT



PUMP #2 SOLENIOD VALVE CIRCUIT



PANEL P-1  
100A MAIN C/B PANEL  
WITH 24 POLES  
208Y/120V, 3 PH, 4W  
WITH BOLT ON BREAKERS

- LEGEND (APPLY TO ALL ELECTRICAL SYMBOLS)
- STOP-START IMMEDIATE PROTECTION SWITCH, NEMA ENCLOSURE AS SPECIFIED ON 3 CLASS 9001 TYPE UNIT.
  - IMMEDIATE STOP IMMEDIATE PROTECTION SWITCH, NEMA ENCLOSURE ON 3 CLASS 9001 TYPE UNIT WITH IMMEDIATE STOP/STOP REVERSE.
  - LIMIT SWITCH FOR DOOR NORMALLY CLOSED HOLD OPEN ON 3 CLASS 9007 LEVER TYPE WITH ROLLER ARM.
  - 3/4" x 10" COVER AND BOX.
  - MANUAL MOTOR STARTER SWITCH ON 3 CLASS 90. 00-1A.
  - VARIABLE SPEED CONTROLLER PROVIDED WITH INVERTER AND INSTALLED & WIRE'D BY CONTRACTOR.
  - SAFETY SWITCH, HEAVY DUTY 600 VOLT, 3 POLE, 30A. MOUNTED IN A NEMA 1 ENCLOSURE 18000 INCH IN OUTSIDE. THIS IS A MINIMUM REQUIREMENT AND IS SUPERSEDED BY SPECIFIC REQUIREMENTS FOUND ON DRAWINGS.
  - COMBINATION MOTOR STARTER AS SPECIFIED.
  - MOTOR STARTER AS SPECIFIED.
  - UNIT HEATER.
  - FLUORESCENT FIXTURE.
  - WALLPACK TYPE FIXTURE.
  - JUNCTION BOX.
  - TOGGLE SWITCH, SPECIFICATION CLASS 120V, 30A. IN SURFACE BOX WITH METAL COVER MOUNTED 54" APF.
  - RECEPTACLE SWITCH, 30A. 120V SPECIFICATION CLASS IN SURFACE BOX 10" APF UNLESS NOTED OTHERWISE.
  - WP WEATHERPROOF ENCLOSURE
  - G-FZ GROUND FAULT INTERRUPTER

4	12/20/91	RECORD PLAN
3	8/5/91	GENERAL REVISION
2		GENERAL REVISION
1		ISSUED FOR PERMIT
REV. NO.	DATE	REVISION
SEAL		
<b>BRADFORD ENGINEERING INC.</b> Environmental Consultants West Chester, Pennsylvania		
CLIENT <b>PERKIOMEN CROSSING WASTEWATER TREATMENT PLANT</b>		
APPROVED	TITLE <b>WATER SYSTEM CHLORINE BUILDING SINGLE LINE DIAGRAMS</b>	
DRAWN	SCALE NONE	
CHECKED	DATE	NO. 11
DESIGN ENGINEER	DATE	NO. 11
DBB	12/6/90	111-04 11

UNIT # - UNIT #1

LATERAL STATION	LEFT	RIGHT	UNIT #
0+51.8	X	X	28
0+76.7	X	X	29
0+78.7	X	X	30
1+18.7	X	X	31
1+20.7	X	X	32
1+60.7	X	X	33
1+62.7	X	X	34

UNIT # - UNIT #1

LATERAL STATION	LEFT	RIGHT	UNIT #
0+46.9	X	X	28
0+48.9	X	X	29
0+87.8	X	X	30
0+89.8	X	X	31
1+08.1	X	X	32
1+10.1	X	X	33
1+29.8	X	X	34
1+31.8	X	X	35
1+50.1	X	X	36
1+52.1	X	X	37
1+52.1	X	X	38
1+94.1	X	X	39
2+00.0	X	X	40
2+02.0	X	X	41
2+13.1	X	X	42
2+42.0	X	X	43
2+44.0	X	X	44

UNIT # - UNIT #1

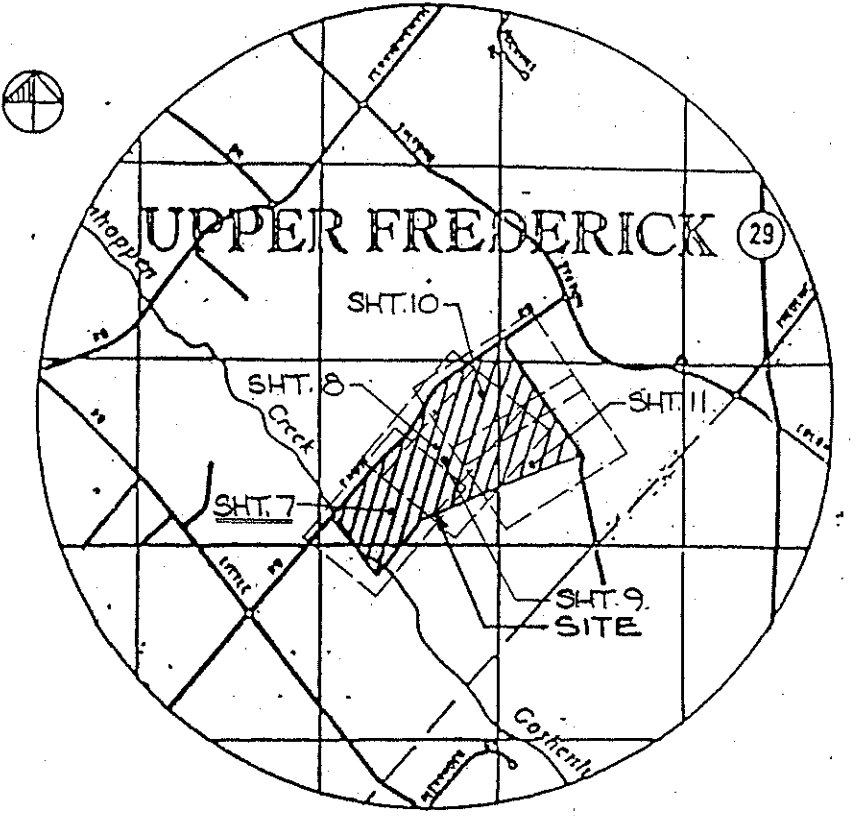
LATERAL STATION	LEFT	RIGHT	UNIT #
0+11	X	X	38
0+12	X	X	39
0+13	X	X	40
0+14	X	X	41
0+53.8	X	X	42
0+55.8	X	X	43
0+96	X	X	44
0+97	X	X	45
0+98	X	X	46
1+36.5	X	X	47
1+38.5	X	X	48
1+44.2	X	X	49
1+46.2	X	X	50
1+78	X	X	51
1+80	X	X	52
2+00.7	X	X	53
2+05.6	X	X	54
2+07.6	X	X	55
2+47	X	X	56
2+49	X	X	57
2+49.7	X	X	58

UNIT # - UNIT #1

LATERAL STATION	LEFT	RIGHT	UNIT #
1+30	X	X	60
1+32	X	X	61

UNIT # - UNIT #1

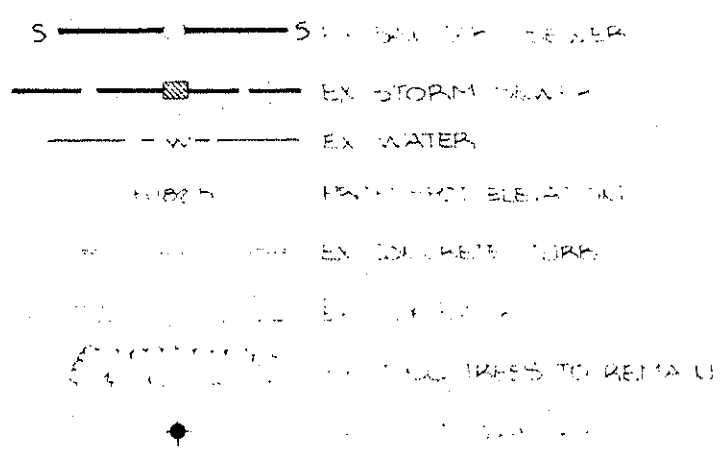
LATERAL STATION	LEFT	RIGHT	UNIT #
0+36	X	X	62
0+38	X	X	63
0+40	X	X	64
0+71	X	X	65
0+73	X	X	66
1+11	X	X	67
1+13	X	X	68
1+58	X	X	69
1+60	X	X	70



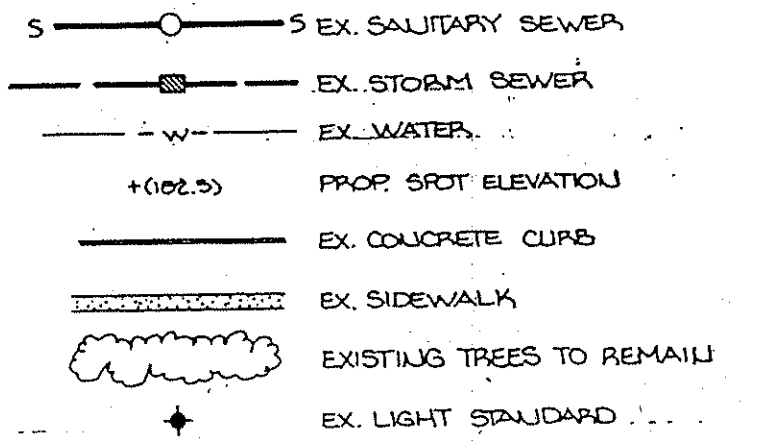
SANITARY SEWER SUMMARY

DES.	DISTANCE	SLOPE	TOP INV. IN	INV. OUT	DESCRIPTION
20	201'-8"	PVC 3.26%	189.90	177.22	177.02 MANHOLE
29.1	181'-8"	PVC 3.37%	180.50	170.46	170.26 MANHOLE
29	116'-8"	PVC 0.51%	174.00	164.16	163.96 MANHOLE
28	131'-8"	PVC 0.61%	171.90	163.28	163.06 MANHOLE
16	131'-8"	PVC 0.61%	172.30	162.26	162.06 MANHOLE
18	230'-8"	PVC 1.23%	183.10	175.80	175.60 MANHOLE
17	229'-8"	PVC 3.31%	180.07	172.77	172.57 MANHOLE
16	100'-8"	PVC 1.18%	172.30	162.38	162.18 DROP MANHOLE
15	149'-8"	PVC 4.43%	168.30	161.00	160.80 MANHOLE
10	161.50		154.20	152.30	MANHOLE
11	335'-8"	PVC 2.35%	168.00	160.58	160.38 MANHOLE
10	86'-8"	PVC 2.71%	161.50	152.50	152.30 MANHOLE
9	165'-8"	PVC 8.21%	154.50	149.70	149.50 MANHOLE
8	99'-8"	PVC 7.10%	141.75	135.95	135.75 MANHOLE
6	136.80		128.72	128.52	MANHOLE
7	140.75		132.25	132.25	MANHOLE
6	151'-8"	PVC 2.81%	136.20	129.00	128.80 MANHOLE
6	228'-8"	PVC 3.61%	127.90	120.57	120.37 MANHOLE
5	330'-8"	PVC 3.30%	116.50	109.37	109.17 MANHOLE
4	269'-8"	PVC 2.33%	110.00	102.90	102.70 MANHOLE
2	126'-8"	PVC 2.62%	104.50	97.70	97.50 MANHOLE
3	166'-8"	PVC 1.02%	110.20	102.90	102.70 MANHOLE
2	110.00		101.20	101.00	MANHOLE
40	167'-8"	PVC 5.61%	135.80	128.30	128.10 MANHOLE
39	142'-8"	PVC 5.91%	130.00	118.83	118.57 MANHOLE
28	366'-8"	PVC 3.32%	216.50	110.18	109.98 MANHOLE
1	104.84		97.83	97.50	MANHOLE
41	279'-8"	PVC 1.75%	133.70	123.70	123.50 MANHOLE
39	130.00		118.83	118.57	MANHOLE

LEGEND

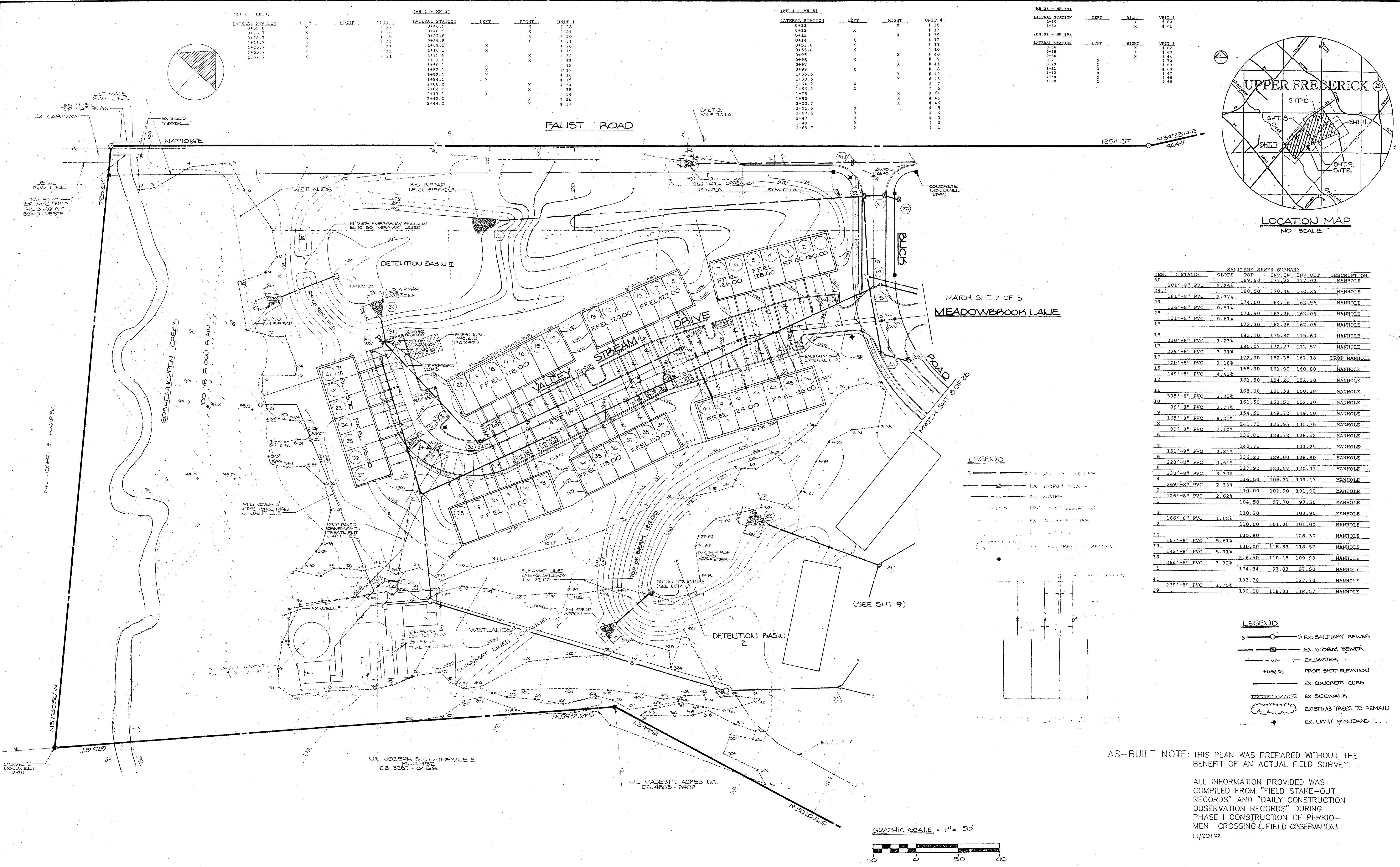
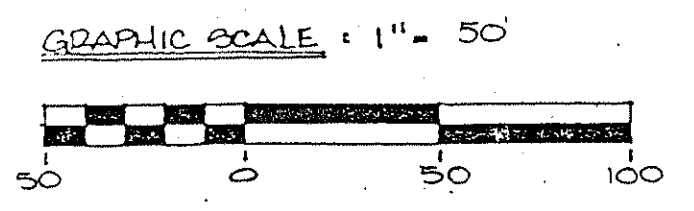


LEGEND



AS-BUILT NOTE: THIS PLAN WAS PREPARED WITHOUT THE BENEFIT OF AN ACTUAL FIELD SURVEY.

ALL INFORMATION PROVIDED WAS COMPILED FROM "FIELD STAKE-OUT RECORDS" AND "DAILY CONSTRUCTION OBSERVATION RECORDS" DURING PHASE I CONSTRUCTION OF PERKIOMEN CROSSING & FIELD OBSERVATION 11/20/92



<table border="1"> <tr><td>NO.</td><td>REVISION</td><td>DATE</td><td>BY</td><td>APP.</td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>					NO.	REVISION	DATE	BY	APP.						<table border="1"> <tr><td>SEAL</td><td> </td></tr> <tr><td>SEAL</td><td> </td></tr> </table>	SEAL		SEAL		<table border="1"> <tr><td>MANAGER</td><td>B. MACY</td><td>CHKD. BY</td><td> </td></tr> <tr><td>DESIGN</td><td>B. MACY</td><td>CHKD. BY</td><td> </td></tr> <tr><td>DRAFT</td><td>M. LOPEZ</td><td>CHKD. BY</td><td> </td></tr> <tr><td>FILE</td><td>DISK 22</td><td>DATE</td><td>FEB. 17, 1993</td></tr> <tr><td>NOTES</td><td>FEB. 197, 242</td><td>SCALE</td><td>1"=50'</td></tr> </table>	MANAGER	B. MACY	CHKD. BY		DESIGN	B. MACY	CHKD. BY		DRAFT	M. LOPEZ	CHKD. BY		FILE	DISK 22	DATE	FEB. 17, 1993	NOTES	FEB. 197, 242	SCALE	1"=50'	<p><b>Bursich Associates INC.</b></p> <p>consulting engineers (215) 323-4040</p> <p>2129 East High Street Pottstown PA 19464</p>	<p>CLIENT</p> <p><b>G.I.D.A., INCORPORATED</b> VALLEY FORGE BUSINESS CENTER 2570 BLVD OF THE GENERALS BUILDING 100, SUITE 122 NORRISTOWN, PA 19403</p>	<p>SUBJECT</p> <p>SEWER &amp; WATER AS-BUILT (PHASE I)</p> <p><b>PERKIOMEN CROSSING</b></p> <p>UPPER FREDERICK TOWNSHIP, MONTGOMERY CO., PENNSYLVANIA</p>	<p>JOB NO.</p> <p>2099</p> <p>SHEET NO.</p> <p>1 of 9</p> <p>DWG. NO.</p> <p>2099-1</p>
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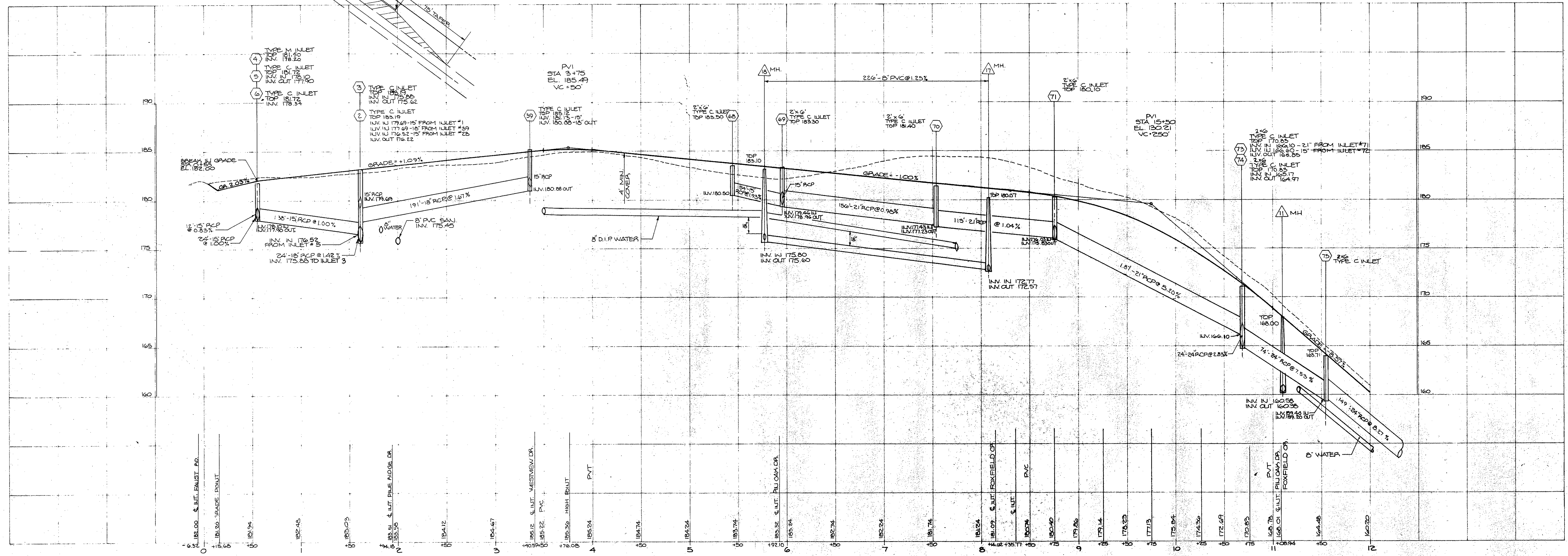
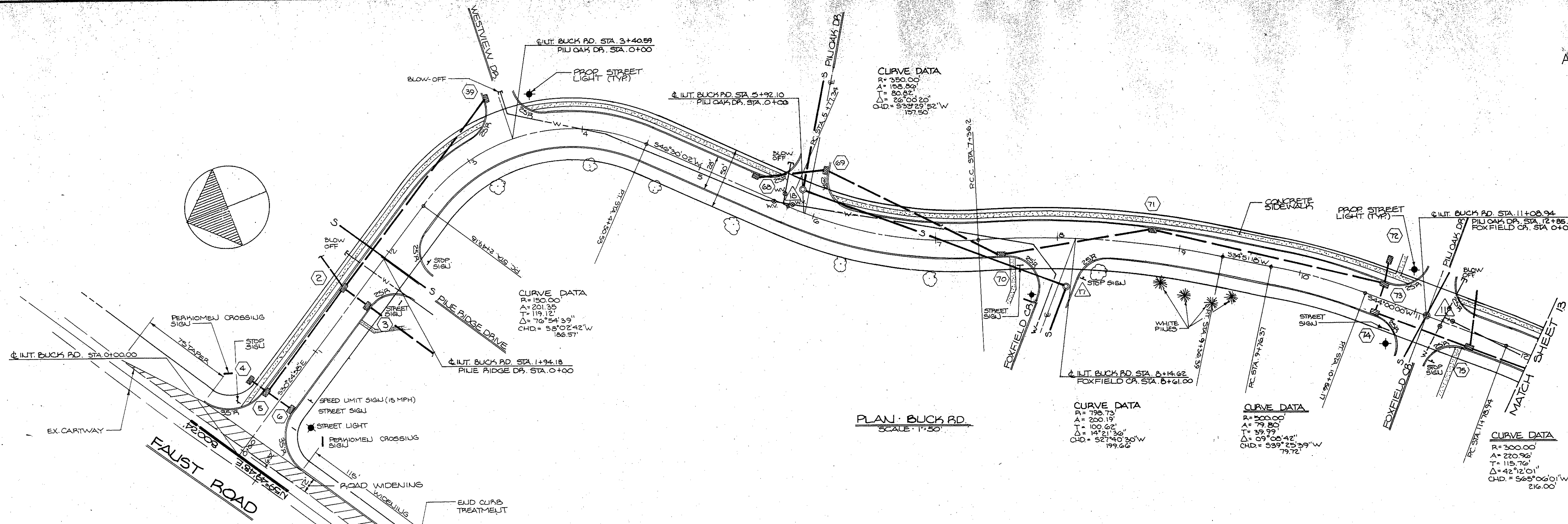






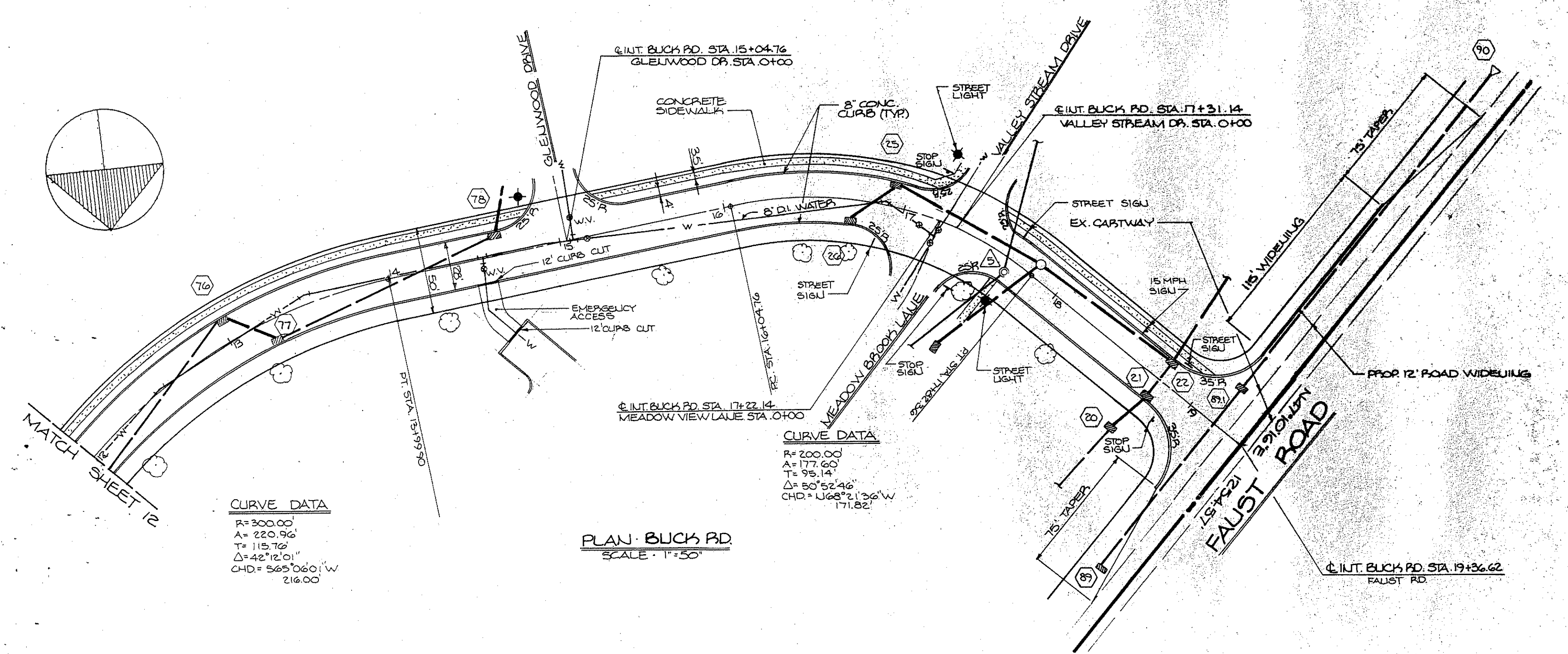
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11/20/92



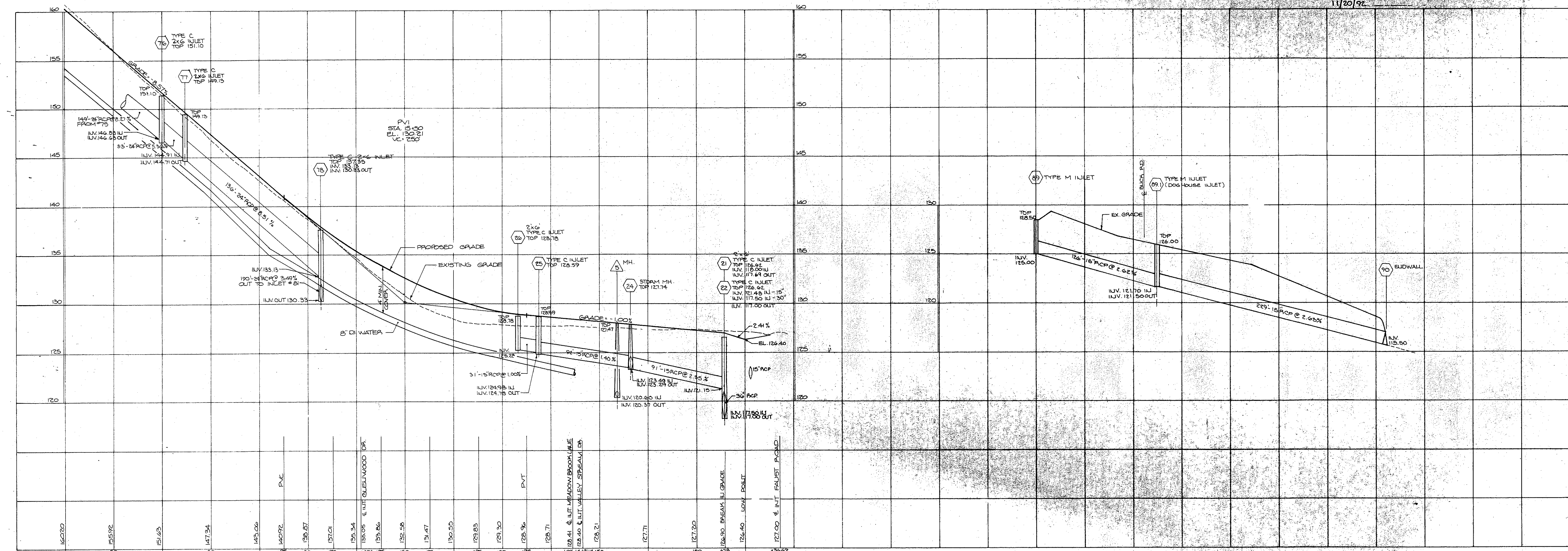
NO.		REVISION		DATE	BY	APP	SEAL	SEAL	MANAGER B. MACY	CHKD. BY	<b>Bursich Associates INC.</b> engineers • planners • surveyors landscape architects 2129 East High Street • Pottstown, PA 19464 • 215-323-4040		CLIENT <b>G.I.D.A., INCORPORATED</b> VALLEY FORGE BUSINESS CENTER 2570 BLVD. OF THE GENERALS BUILDING 100, SUITE 122 NORRISTOWN, PA 19403	SUBJECT <b>AS-BUILT PLAN</b> PLAN & PROFILE - BUCK RD STA. 0+00 TO STA. 12+00 <b>PERKIOMEN CROSSING</b> UPPER FREDERICK TOWNSHIP, MONTGOMERY CO., PENNSYLVANIA	JOB NO. 2099	SHEET NO. 4 of 8	DWG. NO. 2099-4
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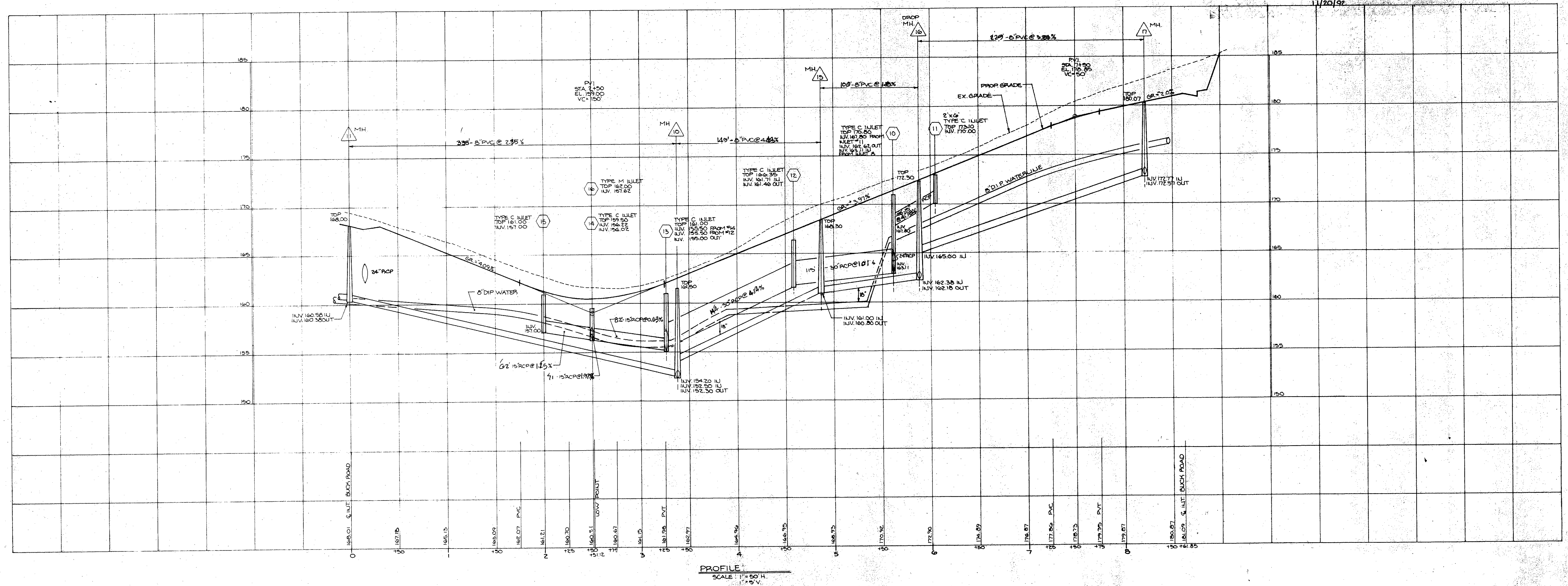


NO.		REVISION	DATE	BY	APP.	SEAL	SEAL	MANAGER B. MACY	CHKD. BY	<b>Bursich Associates INC.</b> <b>engineers • planners • surveyors</b> <b>landscape architects</b> 2129 East High Street • Pottstown, PA 19464 • 215-323-4040	CLIENT <b>G.I.D.A., INCORPORATED</b> VALLEY FORCE BUSINESS CENTER 2570 BLVD. OF THE GENERALS BUILDING 100, SUITE 122 NORRISTOWN, PA 19403	SUBJECT <b>AS-BUILT PLAN</b> VALLEY FORCE BUSINESS CENTER WESTVIEW DRIVE STA. 0+00 TO STA. G+46.08 <b>PERKIOMEN CROSSING</b>	JOB NO. 2099
								DESIGN DRAFT T. SHANE M. LOPEZ	CHKD. BY		SHEET NO. 5 of 8		
								FILE DISH 22	DATE FEB 17, 1993		DWG. NO. 2099-5		
								NOTES FD 197, 242	SCALE AS NOTED				



AS-BUILT NOTE: THIS PLAN WAS PREPARED WITHOUT THE BENEFIT OF AN ACTUAL FIELD SURVEY.

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PROFILE  
SCALE: 1" = 50' H.  
1" = 5' V.

NO.	REVISION	DATE	BY	APP

SEAL	
SEAL	

MANAGER	CHKD BY
DESIGN	CHKD BY
DRAFT M. LOPEZ	CHKD BY
FILE	DATE FEB-17, 1993
NOTES	SCALE AS NOTED

**Bursich Associates INC.**  
consulting engineers  
2125 E. HIGH STREET  
Pottstown, PA 19464

CLIENT  
**G.I.A. INCORPORATED**  
VALLEY FORGE BUSINESS CENTER  
2510 BLDG. OF THE GENERALS  
BUILDING 100, SUITE 122  
WORMISTOWN, PA 19403

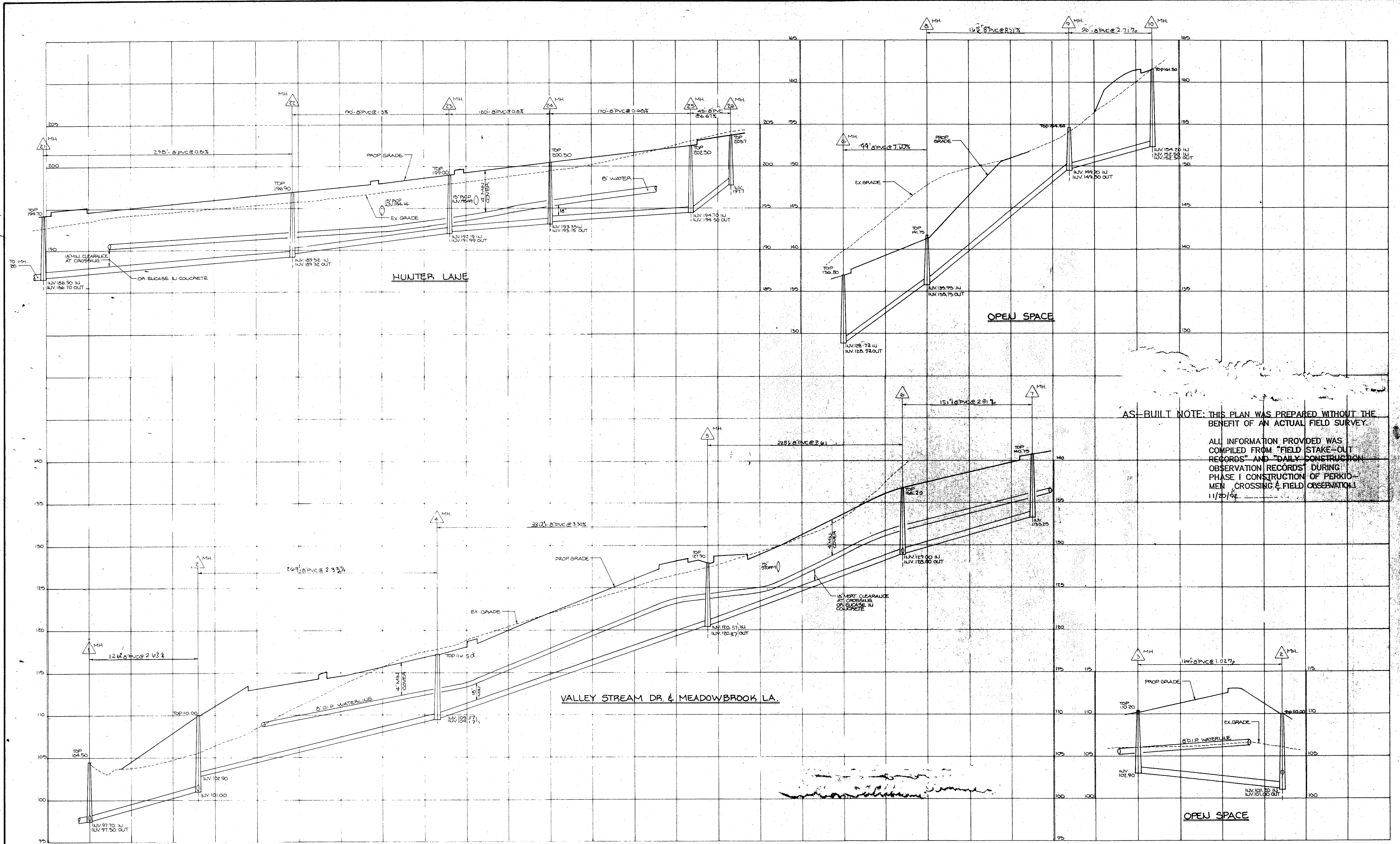
SUBJECT  
AS-BUILT SANITARY SEWER  
PROFILE - FOXFIELD CIRCLE - STA. 0+00 - 8+61.85

**PERKIOMEN CROSSING**

UPPER FREDERICK TOWNSHIP - MONTGOMERY CO. - PENNSYLVANIA

JOB NO.	2099
SHEET NO.	6 of 8
DWG NO.	2099-6





AS-BUILT NOTE: THIS PLAN WAS PREPARED WITHOUT THE BENEFIT OF AN ACTUAL FIELD SURVEY.

ALL INFORMATION PROVIDED WAS COMPILED FROM "FIELD STAKE-OUT RECORDS" AND "DAILY CONSTRUCTION OBSERVATION RECORDS" DURING PHASE I CONSTRUCTION OF PERKIOMEN CROSSING & FIELD OBSERVATION 11/20/94

NO.	REVISION	DATE	BY	APP.

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MANAGER	B. MACY	CHKD. BY	
DESIGN		CHKD. BY	
DRAFT	M. LOPEZ	CHKD. BY	
FILE	CHK 22	DATE	FEB 17, 1993
NOTES	FD. 197, 242	SCALE	1" = 50' HORIZ. 1" = 5' VERT.

**Bursich Associates INC.**

---

consulting engineers (215) 323-4040

2129 East High Street Pottstown PA 19464

CLIENT

**G.I.D.A. INCORPORATED**  
 VALLEY FORGE BUSINESS CENTER  
 2570 BLVD OF THE GENERALS  
 BUILDING 100, SUITE 122  
 HOPKISTOWN, PA. 19403

SUBJECT

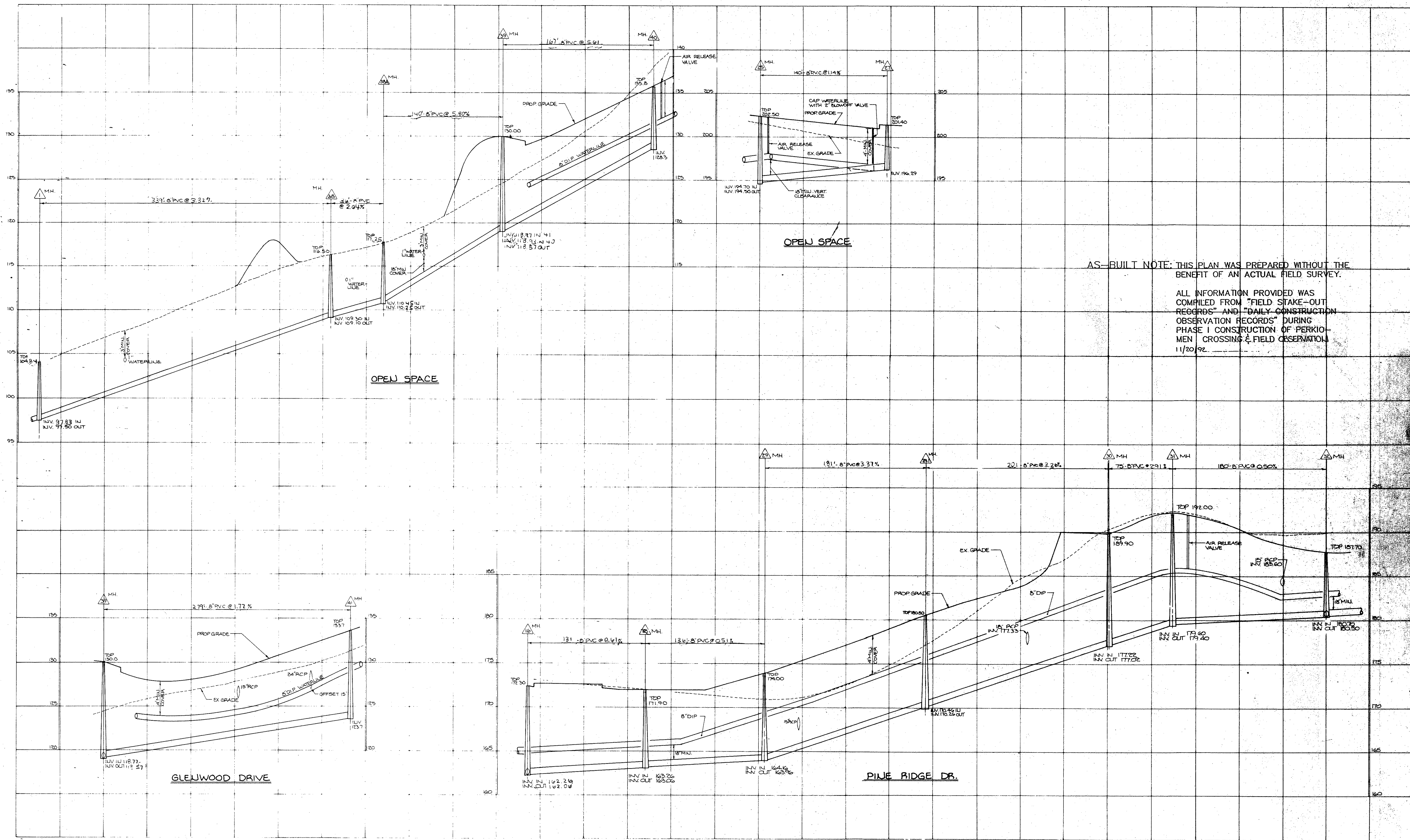
AS-BUILT SANITARY & WATER  
 SANITARY SEWER PROFILE SHEET

**PERKIOMEN CROSSING**

UPPER FREDERICK TOWNSHIP, MONTGOMERY CO., PENNSYLVANIA

JOB NO.	2099
SHEET NO.	7 OF 8
DWG. NO.	2099-7





AS-BUILT NOTE: THIS PLAN WAS PREPARED WITHOUT THE BENEFIT OF AN ACTUAL FIELD SURVEY.

ALL INFORMATION PROVIDED WAS COMPILED FROM "FIELD STAKE-OUT RECORDS" AND "DAILY CONSTRUCTION OBSERVATION RECORDS" DURING PHASE I CONSTRUCTION OF PERKIOMEN CROSSING & FIELD OBSERVATION 11/20/92.

NO.	REVISION	DATE	BY	APP.

SEAL	
SEAL	

MANAGER B. MACY	CHKD. BY
DESIGN	CHKD. BY
DRAFT M. LOPEZ	CHKD. BY
FILE DISK 22	DATE FEB 17, 1993
NOTES FD. 97, 242	SCALE HORIZ 1"=50' VERT 1"=5'

**Bursich Associates INC.**  
 consulting engineers (215) 323-4040  
 2129 East High Street Pottstown PA 19464

CLIENT  
**G.I.D.A., INCORPORATED**  
 VALLEY FORGE BUSINESS CENTER  
 2570 BLVD. OF THE GENERALS  
 BUILDING 100, SUITE 122  
 NORRISTOWN, PA 19403

SUBJECT  
 AS-BUILT SANITARY & WATER  
 SANITARY SEWER PROFILE SHEET  
**PERKIOMEN CROSSING**  
 UPPER FREDEICK TOWNSHIP, MONTGOMERY CO., PENNSYLVANIA

JOB NO.  
2099

SHEET NO.  
8 of 8

DWG. NO.  
2099-8



REFERENCE NOTES

- 1. For General Notes See Sheet 2 of 28.
2. For General Construction Notes See Sheet 7 of 28.
3. For Sediment and Erosion Control Notes See Sheet 22 of 28.
4. For Grading and Utility Layout See Sheets 7 thru 11.
5. For Sediment and Erosion Control Measures See Sheets 22 thru 28.
6. For Site Details See Sheets 20 and 21.

ZONING DATA

Court Order Number ..... 83-12809
Min. Front Yard ..... 20'
Side Yard ..... 15'
Rear Yard ..... 40'
Minimum Lot Area ..... SF
Minimum Lot Width ..... 20'
Parking Required ..... 2 Spaces/Unit
MAX BUILDING HEIGHT ..... 35'
MAX BUILDING COVERAGE ..... 15.7%

SITE DATA

Total Title Area ..... 59.116 Acres
Area Between Title Line & Required R/W along Faust Road ..... 1.874 Acres
BUCK Road R/W Area ..... 2.174 Acres
Net Tract ..... 55.068 Acres
Open Space Provided ..... 31.424 Acres
Total Units ..... 330 Units
Water & Sewer Lot ..... 1
Average Lot Area ..... 1,654 SF
Parking Provided ..... 746 Spaces
Actual Building Coverage ..... 2.3 Spaces/Unit
(Density & Layout Per Court Order 83-12809)

WETLAND NOTE:

The wetland delineation as indicated on the plan was compiled based upon a field investigation and soils analysis of the site on 19 by DEL-VAL SOIL CONSULTANTS. A location survey of the delineated wetland was performed by Bursich Associates, Inc. on 5-22-90. Bursich Associates, Inc. assumes no responsibility as to the extent of the wetland delineation. If any work is to be performed within the designated wetland area, then the necessary permits shall be obtained prior to the disturbance.

REFERENCE PLAN

Topographic Map made for Moland Development Company, Inc., by Urwiler and Walter, Inc., Sunnyside, Pennsylvania.

NOTE: All roof drains will be conveyed to downspouts with a splash block or stone lined outlet.

The Upper Frederick Township Supervisors granted the following waivers for setbacks at the September 19, 1990 meeting:
a. Front Yard - 20'
b. Side Yard - 12 1/2' - 15'
c. Buffer to Adjacent Properties - 75'

LEGEND

- Existing Contour
Proposed Contour
Proposed Storm Sewer
Proposed Sanitary Sewer
Proposed Water
Proposed Spot Elevation
Proposed Concrete Curb
Proposed Sidewalk
Proposed Light Standard

EASEMENT CORNER DESIGNATIONS

- STORM SEWER
SANITARY SEWER
WATERLINE
EASEMENT ACCESS ROAD
DRIVEWAY

GENERAL NOTES

- 1. The boundary was computed from field survey by Bursich Associates, Inc. on October 16, 1987.
2. Field topography was based on plans prepared for Moland Development Company, Inc. by Urwiler and Walter, Inc., and from field check by Bursich Associates, Inc. on June 7, 1988.
3. Benchmark Elevation 162.17 at invert of existing 18" x 27" CMP storm sewer culvert. Benchmark location 1,780 feet along easterly side of Faust Road from its intersection with the centerline of existing Goshenhoppen culvert in a northeasterly direction. The benchmark elevation was based upon an assumed datum as indicated on previous plans prepared for Moland Development Company, Inc. by Urwiler and Walter, Inc.
4. Public water and sewer facilities for Perkiomen Crossing including all mains and appurtenant structures shall be owned and maintained by Upper Frederick Township.
5. Solid waste refuse collection will be the responsibility of individual lot owners. Collection vehicles may have to back in or out of parking lots.
6. Public water and sewer control and treatment facilities were designed and more fully detailed by Bradford Engineering, Inc., West Chester, Pennsylvania. The water and sanitary sewer distribution systems were designed by Bursich Associates, Inc. All permits required for the water and sewer control and treatment facilities shall be the responsibility of Bradford Engineering, Inc.
7. Perkiomen Crossing Homeowner's Association will be responsible for ownership and maintenance of the following:
(a) Open Space
(b) Storm Water Detention Basins
(c) Storm Sewer Maintenance not within Dedicated Road
(d) Sidewalks
(e) Lighting Facilities
(f) Solid Waste Collection
(g) Snow Removal
8. Upon completion of construction improvements, the following will be offered for dedication to Upper Frederick Township:
(a) BUCK Road
(b) Area between Title Line and Required R/W along Faust Road
(c) Storm Sewer within Dedicated BUCK Road
(d) Sanitary Sewer Mains and Treatment Facilities and Blanket Easement Rights within all open space areas for maintenance of all sewer facilities.
(e) Watermains, wells and treatment facilities and Blanket Easement Rights within all open space areas for maintenance of all water facilities.
9. Layout and density as provided is based upon Court Order No. 83-12809.
10. All lot owners containing portions of wetlands within their lots shall be restricted from any disturbance of the wetland. A permit would be required from the appropriate State and Federal Agencies prior to any disturbance should the property owner desire to fill or be within wetland area.
11. All utilities shall be installed underground.
12. Present land use of sight is woodlands.
13. Present land use of adjacent properties is agricultural and residential within 100' of project.
14. For typical building landscaping see Sheet 21 of 28.
15. Property owners shall not build any structures or store any chemicals of any kind within 100 feet well buffer zone.

SURVEYOR'S CERTIFICATION

I hereby certify to G.I.D.A., INCORPORATED, that to the best of my knowledge and belief, on this 16th day of OCTOBER, 1990, this plat and survey was performed in accordance with the Minimum Standards for Boundary Surveys Section of the Manual of Practice for Professional Land Surveyors in the Commonwealth of Pennsylvania, as adopted by the Pennsylvania Society of Land Surveyors on July 26, 1985.

Signature of Surveyor Registration Number

CLIENT/OWNER

SUBDIVISION PLAN

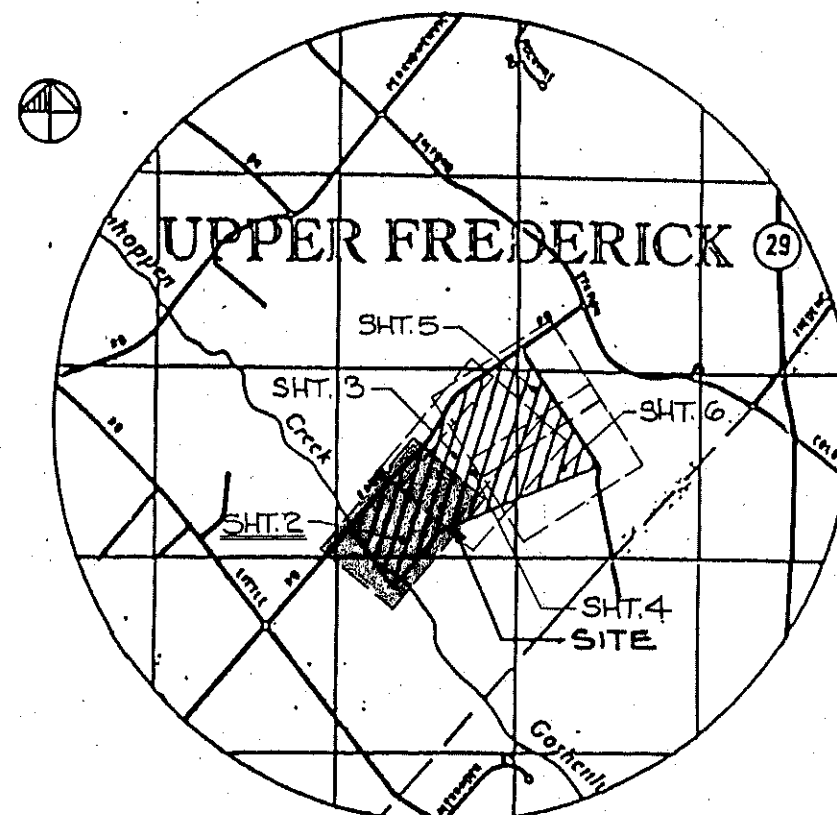
SUBJECT

JOB NO.

SHEET NO.

DWG. NO.

UPPER FREDERICK TOWNSHIP - MONTGOMERY CO. - PENNSYLVANIA



LOCATION MAP NO SCALE

COMMONWEALTH OF PENNSYLVANIA - COUNTY OF MONTGOMERY

On the \_\_\_ day of \_\_\_, 19\_\_\_, before me the undersigned, a Notary Public of the Commonwealth of Pennsylvania, personally appeared \_\_\_ who acknowledge themselves to be the owners of the property shown on this plan, that the plan was made at their direction, that they acknowledge the same be recorded according to law. Witness my hand and notarial seal the \_\_\_ day and the year aforesaid.

Notary Public
My Commission Expires \_\_\_
Recorded this \_\_\_ day of \_\_\_, 19\_\_\_, in the Office for the Recording of Deeds, in and for the County of Montgomery, at Norristown, Pennsylvania in Plan Book \_\_\_, Page \_\_\_.

UPPER FREDERICK TOWNSHIP PLANNING COMMISSION

This plan was approved as to layout and location by the Planning Commission of Upper Frederick Township at a meeting held on the \_\_\_ day of \_\_\_, 19\_\_\_.

UPPER FREDERICK TOWNSHIP BOARD OF SUPERVISORS

This plan was approved as to layout and location by the Board of Supervisors of Upper Frederick Township at a meeting held on the \_\_\_ day of \_\_\_, 19\_\_\_.

Reviewed this \_\_\_ day of \_\_\_, 19\_\_\_ by the Township Engineer for the Township of Upper Frederick.

Reviewed this \_\_\_ day of \_\_\_, 19\_\_\_ by the Montgomery County Planning Commission.

I do hereby certify that this plan has been prepared in accordance with the Upper Frederick Township Subdivision and Zoning Ordinances other than as required by Court Order No. 83-12809.

LIST OF UTILITIES

- Philadelphia Electric Company
2301 Market Street
Philadelphia, PA 19101
(215) 841-5393
Bell Telephone Company of PA
400 Cherry Street - 3rd Floor
Norristown, PA 19401
(215) 287-0271
Upper Frederick Township
Route 73, Obisisk
P.O. Box 597
Frederick, PA 19435
(215) 754-6436

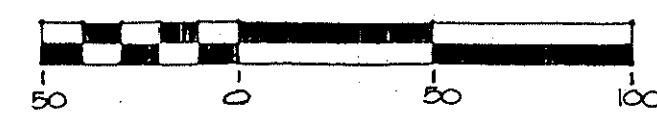
ACT 172 COMPLIANCE

The following utilities may have underground and/or overhead lines or structures in the work area. The designer has contacted the Pennsylvania One Call System, "Kathy". The site Serial Number is 1520066. It is the responsibility of the Contractor to contact each utility company listed below at least 4 days before construction begins for the purpose of:

- 1. Requesting the utility to field locate its lines.
2. Initiate cooperation which will avoid damage.
3. Request procedures which will avoid damage.
Also, the Contractor shall:
1. Inform each operator employed by him at the site of such work of the information obtained.
2. Report immediately to the user any break or leak on its lines, or any dent, gouge, groove, or other damage to such lines or to their coating or cathodic protection, made or discovered in the courses of the excavation or demolition work.
3. Alert immediately the occupants of premises as to any emergency that he may make or discover at or near such premises.

16. ALL INDIVIDUAL LOTS SHALL BE MOUNTBATED W/VAI (VAI) AT EACH CORNER.
17. LOTS 331 & 332 ARE BOTH TO BE UTILIZED FOR PUBLIC UTILITIES AND ARE NOT TO BE CONSTRUCTED AS BUILDING LOTS.

GRAPHIC SCALE: 1" = 50'



RECEIVED APR 25 1991

Table with columns: COURSE, BEARING, DISTANCE. Rows: 1-2 S 32 20'39" E 19.46', 2-3 S 29 24'26" W 15.42', 3-4 N 59 30'01" W 177.70', 4-5 N 29 24'26" E .94', 5-6 S 60 35'34" E 100.12', 6-1 R = 100.00' A = 64.86'

Table with columns: COURSE, BEARING, DISTANCE. Rows: 1-2 R = 100.00' A = 49.25', 2-3 S 22 39'30" W 62.53', 3-4 N 63 10'49" W 5.41', 4-1 N 22 05'39" W 29.68'

Table with columns: COURSE, BEARING, DISTANCE. Rows: 1-2 N 69 07'11" W 70.00', 2-3 S 85 04'14" E 72.80', 3-1 S 20 52'29" W 20.00'

Table with columns: COURSE, BEARING, DISTANCE. Rows: 1-2 S 57 47'12" E 12.43', 2-3 S 41 02'33" W 102.05', 3-1 N 34 02'58" E 100.89'

Table with columns: COURSE, BEARING, DISTANCE. Rows: 1-2 S 32 20'39" E 19.46', 2-3 S 29 24'26" W 10.00', 3-4 N 43 12'37" W 33.36', 4-1 R = 100.00' A = 17.38'

Table with columns: COURSE, BEARING, DISTANCE. Rows: 1-2 N 60 35'34" W 141.34', 2-3 S 56 06'52" E 11.09', 3-4 S 65 14'40" E 136.80', 4-1 S 29 24'26" W 21.00'

Table with columns: NO., REVISION, DATE, BY, APP. Rows: 5. REVISED CENTERLINE VALLEY STREAM DR. AND LOTS 43,44,45,46. 4. ADDED LOT 332 W/ EASEMENT, REVISED LOT 331, ADDED NOTE 17. 3. SALT SWR. REVISIONS PER TWP ENGR. DATED FEB. 18, 1991. 2. REV. PER TWP ENGR. LETTER DATED FEB. 14, 1991. 1. PREVIOUS PER TWP. ENGINEER'S LETTER, DATED DEC 5 & JAN 2, 1991.

Table with columns: MANAGER, DESIGN, DRAFT, FILE, NOTES, CHKD. BY, DATE, SCALE. Rows: B. MACY, B. MACY, A. CUNIGLEY, DISK 22, FB. 19, 242. CHKD. BY: B. MACY, A. CUNIGLEY. DATE: OCT 30, 1990. SCALE: 1" = 50'

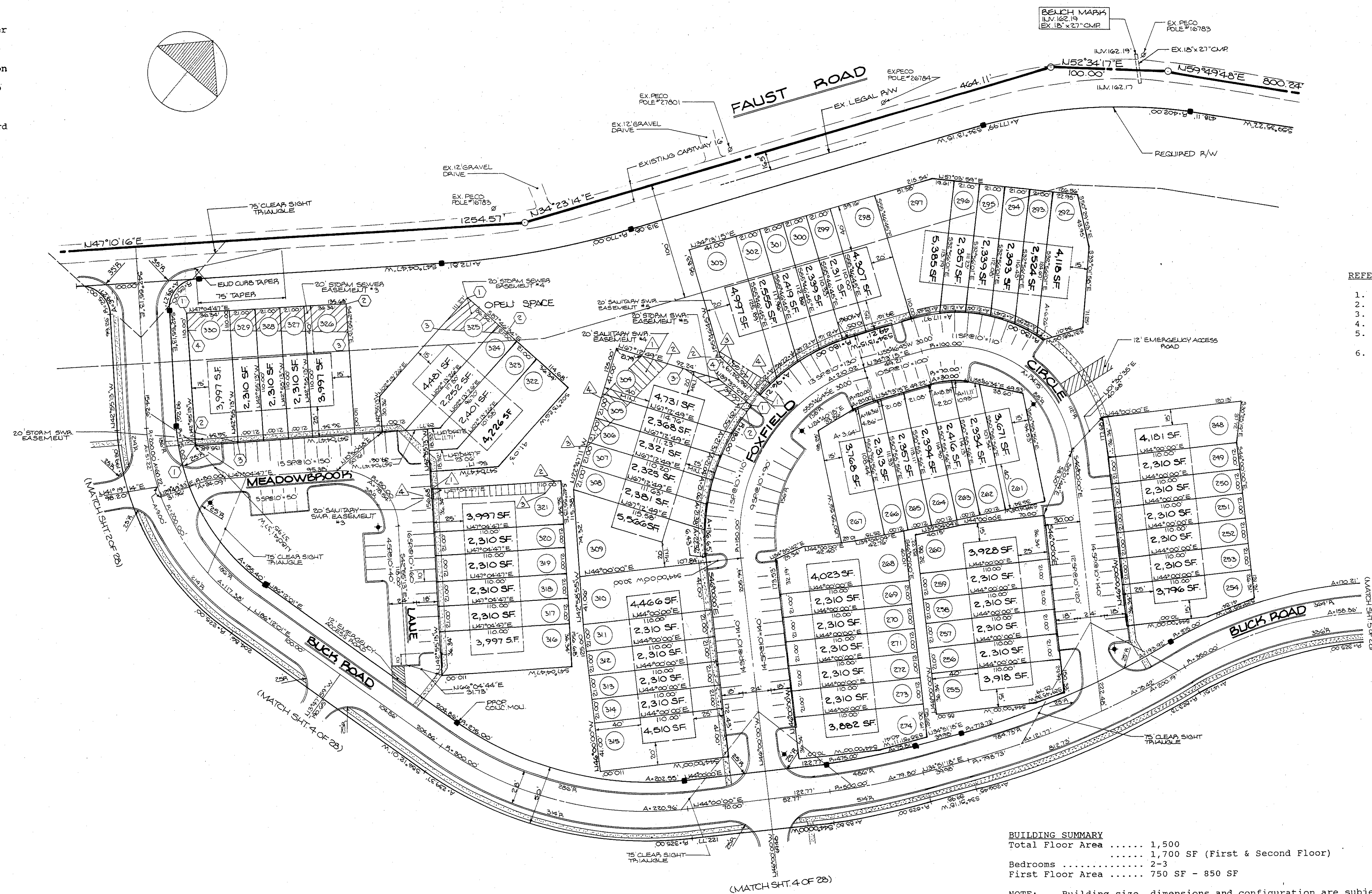
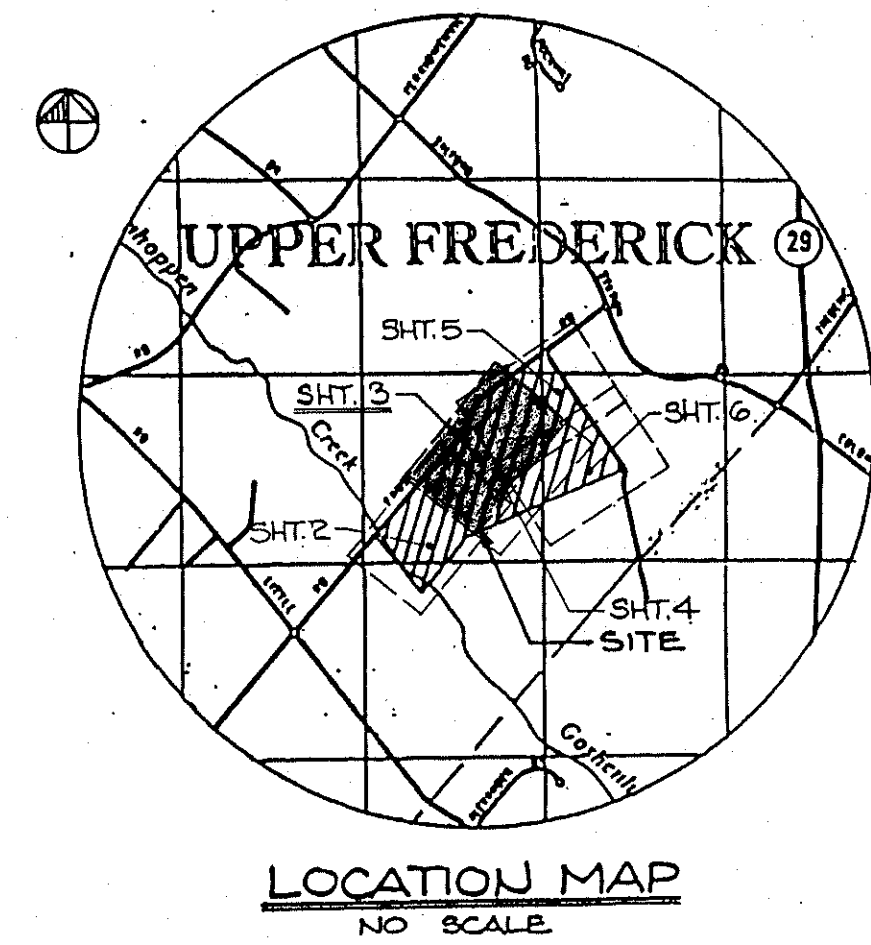
Bursich Associates INC. consulting engineers (215) 323-4040 2129 East High Street Pottstown PA 19464

G.I.D.A., INCORPORATED VALLEY FORGE BUSINESS CENTER 2501 BLDG. OF THE CENTURALS BUILDING SUITE 102 JOPHINSTOWN, PA. 19403

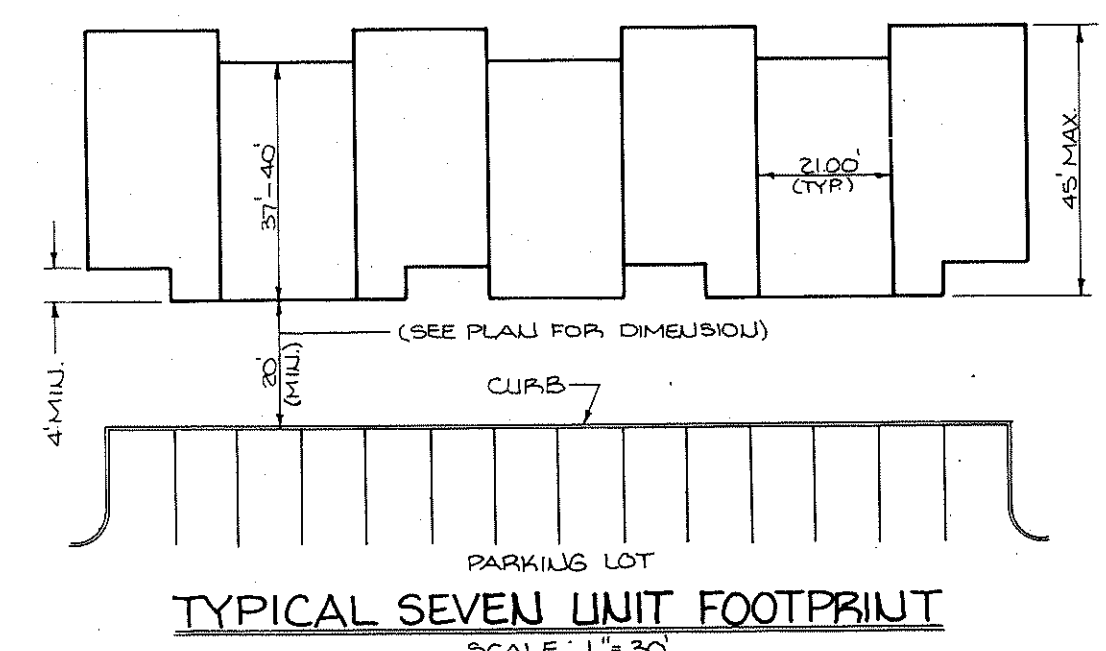
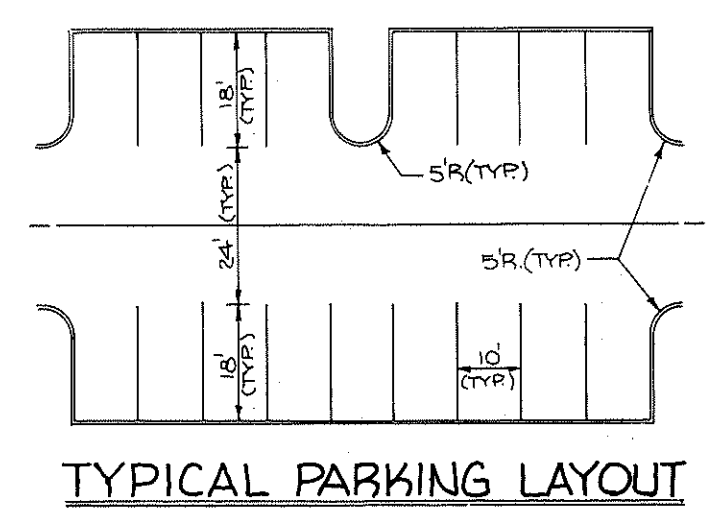
UPPER FREDERICK TOWNSHIP - MONTGOMERY CO. - PENNSYLVANIA 02099-2



- LEGEND**
- Existing Contour
  - - - Proposed Contour
  - Proposed Storm Sewer
  - Proposed Sanitary Sewer
  - Proposed Water
  - Proposed Spot Elevation
  - Proposed Concrete Curb
  - Proposed Sidewalk
  - Proposed Light Standard



- REFERENCE NOTES**
1. For General Notes See Sheet 2 of 28.
  2. For General Construction Notes See Sheet 7 of 28.
  3. For Sediment and Erosion Control Notes See Sheet 22 of 28.
  4. For Grading and Utility Layout See Sheets 7 thru 11.
  5. For Sediment and Erosion Control Measures See Sheets 22 thru 28.
  6. For Site Details See Sheets 20 and 21.



**BUILDING SUMMARY**

Total Floor Area ..... 1,500  
 ..... 1,700 SF (First & Second Floor)

Bedrooms ..... 2-3

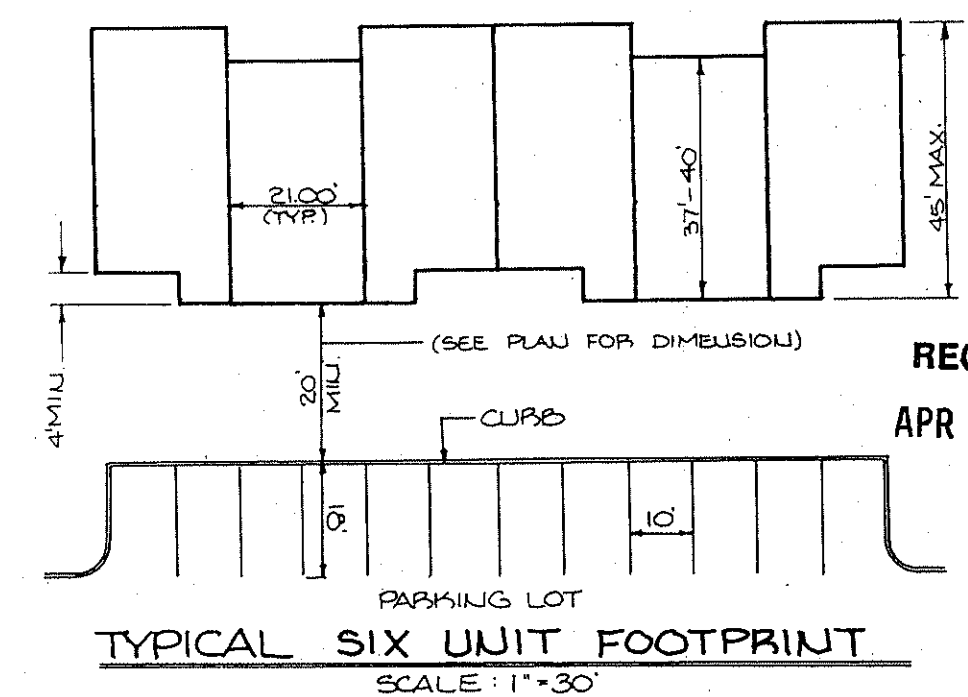
First Floor Area ..... 750 SF - 850 SF

**NOTE:** Building size, dimensions and configuration are subject to change. THEY MUST CONFORM TO GENERAL CRITERIA INDICATED ON TYPICAL UNIT FOOTPRINTS

**NOTE:** All roof drains will be conveyed to downspouts with a splash block or stone lined outlet.

The Upper Frederick Township Supervisors granted the following waivers for setbacks at the September 19, 1990 meeting:

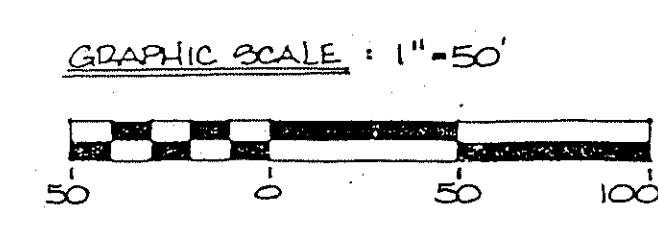
- a. Front Yard - 20'
- b. Side Yard - 12-1/2' ± 15'
- c. Buffer to Adjacent Properties - 75'



**EASEMENT CORNER DESIGNATIONS**

- STORM SEWER
- △ SANITARY SEWER
- WATERLINE
- EMERGENCY ACCESS ROAD
- DRIVEWAY

20' WIDE STORM SEWER EASEMENT #3			20' WIDE STORM SEWER EASEMENT #4			20' WIDE STORM SEWER EASEMENT #5			20' WIDE SANITARY SEWER EASEMENT #3			20' WIDE SANITARY SEWER EASEMENT #4			20' WIDE SANITARY SEWER EASEMENT #5		
COURSE	BEARING	DISTANCE	COURSE	BEARING	DISTANCE	COURSE	BEARING	DISTANCE	COURSE	BEARING	DISTANCE	COURSE	BEARING	DISTANCE	COURSE	BEARING	DISTANCE
1-2	N 47° 04' 47" E	135.67'	1-2	S 87° 46' 34" E	42.72'	1-2	R = 180.00' A = 6.81'		1-2	N 47° 04' 47" E	104.47'	1-2	N 67° 12' 49" E	22.34'	1-2	N 86° 24' 19" W	45.64'
2-3	S 42° 55' 13" E	19.68'	2-3	S 84° 34' 19" W	64.56'	2-3	S 03° 40' 12" W	12.59'	2-3	S 03° 40' 12" W	92.05'	2-3	S 03° 40' 12" W	92.05'	2-3	S 55° 46' 45" W	4.32'
3-4	S 49° 46' 19" W	135.82'	3-4	S 54° 20' 22" W	54.12'	3-4	N 67° 12' 49" E	32.64'	3-4	S 47° 04' 47" W	95.33'	3-4	N 27° 06' 01" W	39.09'	3-4	N 82° 23' 12" E	50.72'
4-1	N 42° 55' 13" W	13.30'	3-1	N 02° 13' 26" E	33.24'	4-1	N 89° 32' 29" E	34.00'	4-1	N 42° 55' 13" W	8.65'	4-1	N 03° 40' 12" E	48.51'	4-1	R = 180.00' A = 12.07'	



NO.	REVISION	DATE	BY	APP.
4.	REVISED CENTERLINE MEADOWBROOK LAKE, LOTS 316 - 321 THE DOWN	4-18-91	AG	
3.	SALUT SWA. PREVIOUS PER TWP. EUG. DATED FEB. 18, 1991.	2-21-91	AG	
2.	REV. PER TWP. ENGINEER LETTER DATED FEB. 14, 1991	2-22-91	M.L.	
1.	PREVIOUS PER TWP. ENGINEER'S LETTER DATED DEC. 5 & JAN. 2, 1991	1-21-91	AG	

SEAL	SEAL	MANAGER	CHKD. BY
		B. MACY	
		DESIGN	CHKD. BY
		B. MACY	
		DRAFT	CHKD. BY
		FILE	DATE
		DISK 22	OCT. 30, 1990
		NOTES	SCALE
		F.B. 197, 242	1" = 50'

**Bursich Associates INC.**

consulting engineers (215) 323-4040

2129 East High Street Pottstown PA 19464

CLIENT/OWNER

G.I.D.A., INCORPORATED  
 VALLEY FORGE BUSINESS CENTER  
 2570 BLVD. OF THE GENERALS  
 BUILDING 100, SUITE 122  
 LORRAISTOWN, PA. 19403

SUBDIVISION PLAN

**PERKIOMEN CROSSING**

UPPER FREDERICK TOWNSHIP-MONTGOMERY CO., PENNSYLVANIA

JOB NO. 2099

SHEET NO. 3 OF 28

DWG. NO. 2099-3

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APR 25 1991



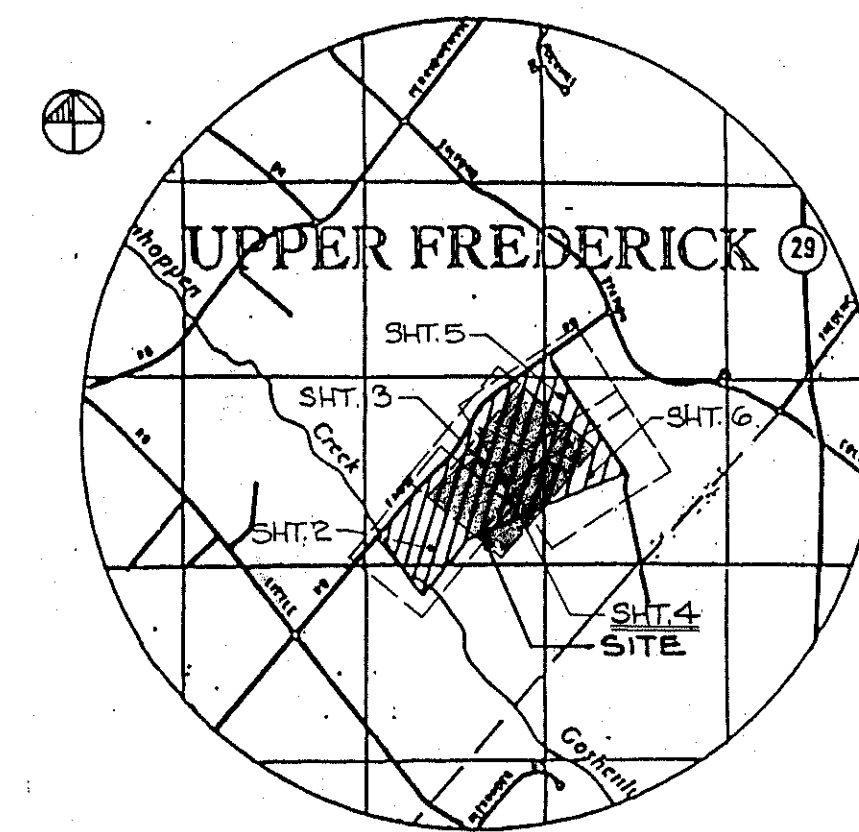
NOTE: All roof drains will be conveyed to downspouts with a splash block or stone lined outlet.

The Upper Frederick Township Supervisors granted the following waivers for setbacks at the September 19, 1990 meeting:

- Front Yard - 20'
- Side Yard - 12-1/2' - 15'
- Buffer to Adjacent Properties - 75'

LEGEND

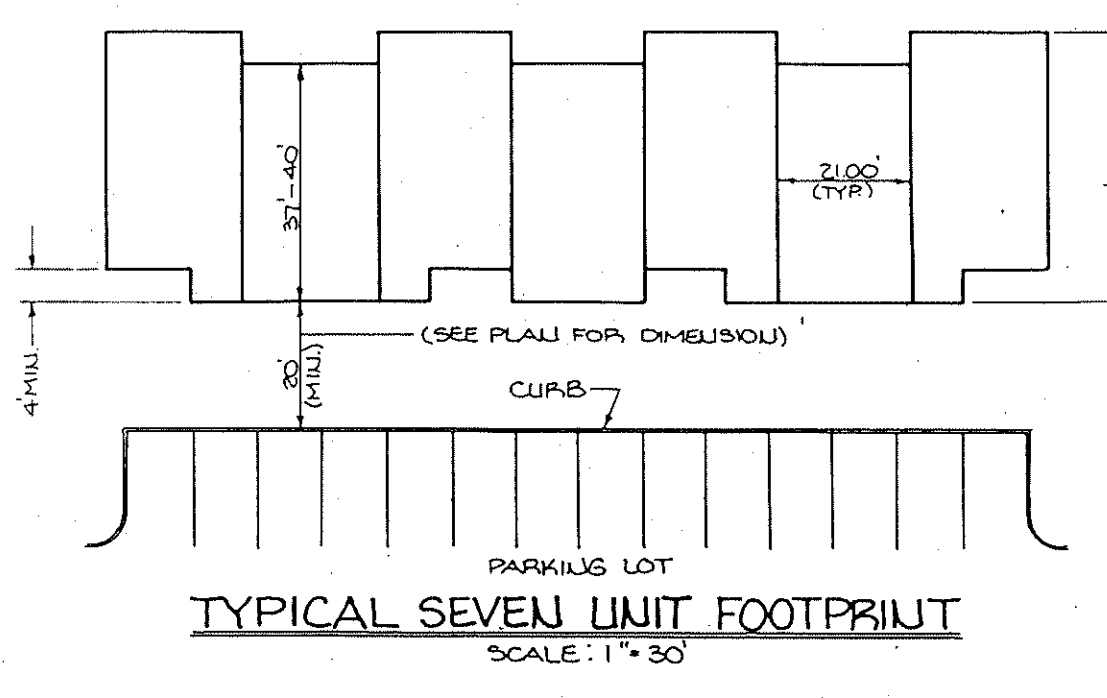
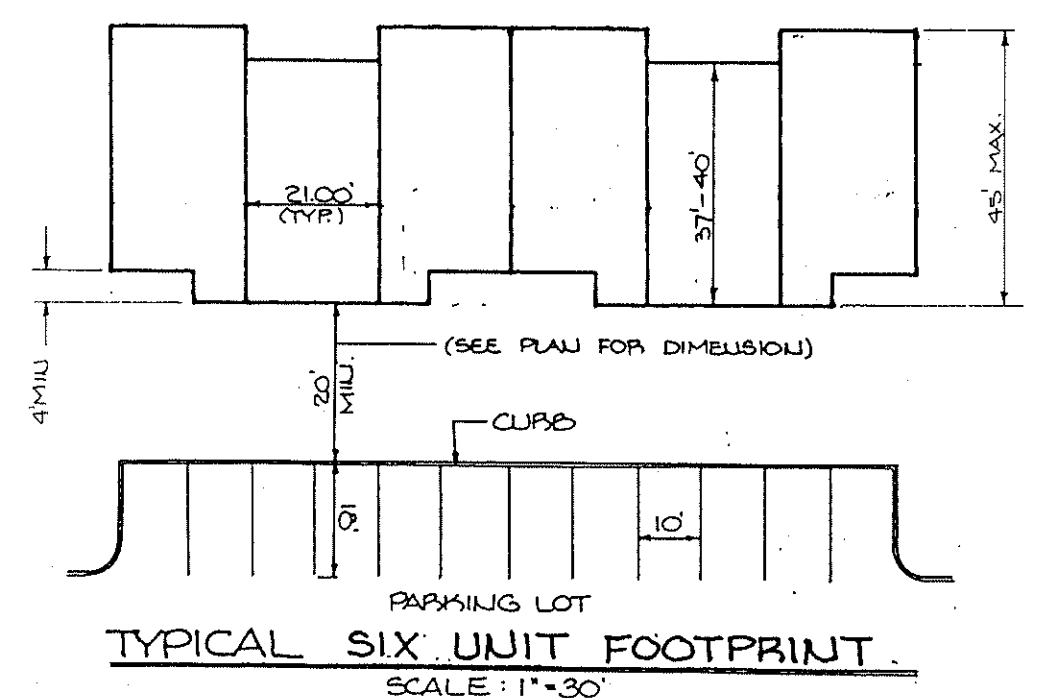
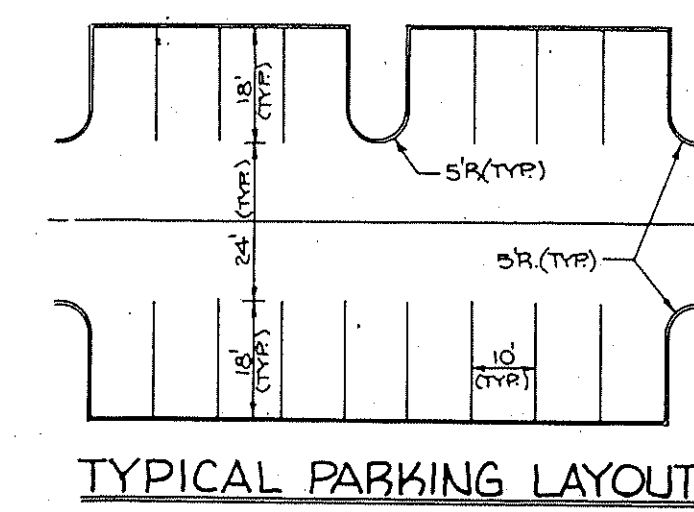
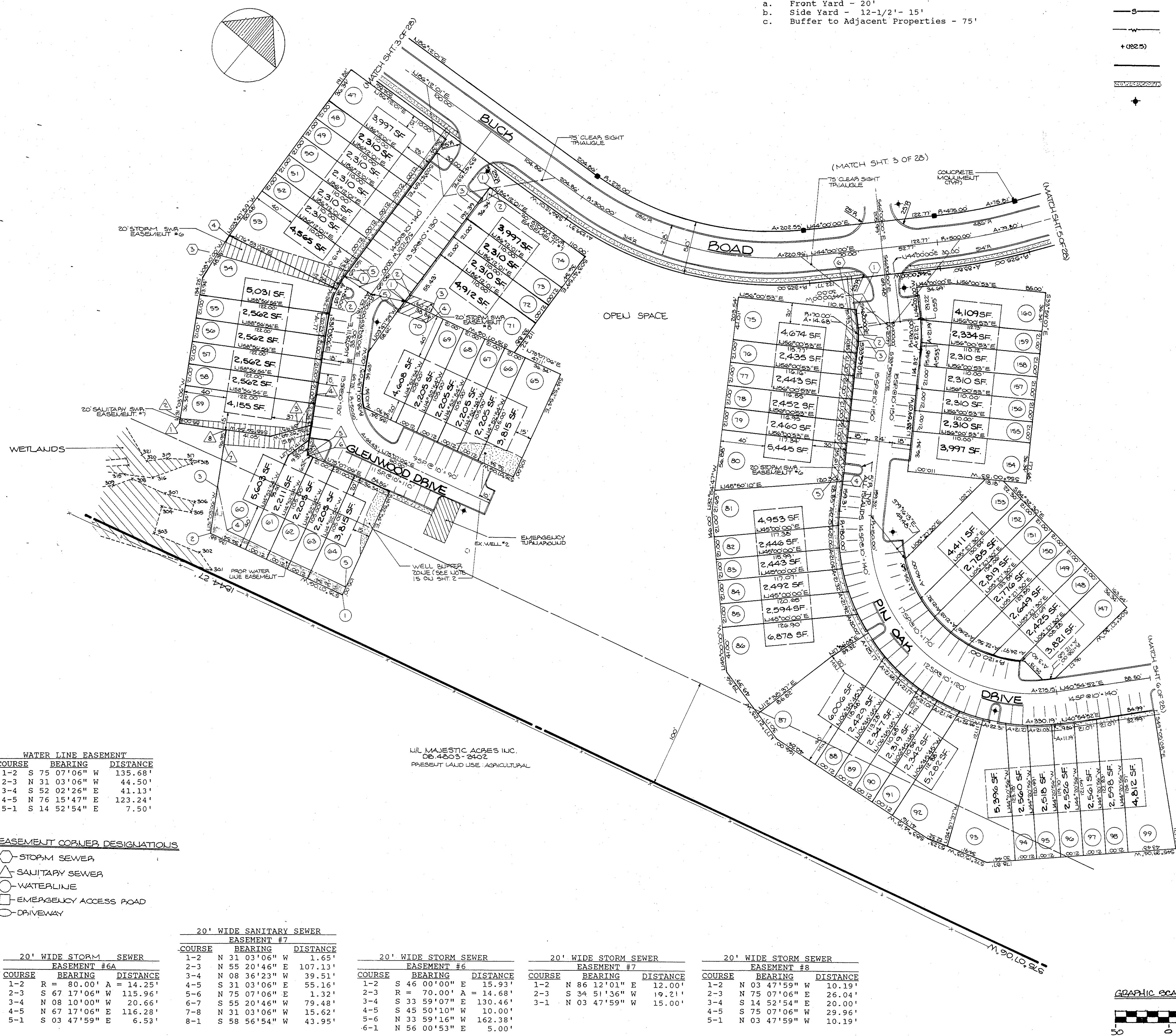
- Existing Contour
- - - Proposed Contour
- - - Proposed Storm Sewer
- - - Proposed Sanitary Sewer
- - - Proposed Water
- + (0825) Proposed Spot Elevation
- - - Proposed Concrete Curb
- - - Proposed Sidewalk
- ★ Proposed Light Standard



LOCATION MAP  
NO SCALE

REFERENCE NOTES

- For General Notes See Sheet 2 of 28.
- For General Construction Notes See Sheet 7 of 28.
- For Sediment and Erosion Control Notes See Sheet 22 of 28.
- For Grading and Utility Layout See Sheets 7 thru 11.
- For Sediment and Erosion Control Measures See Sheets 22 thru 28.
- For Site Details See Sheets 20 and 21.

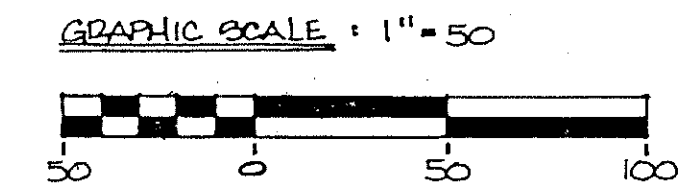


WATER LINE EASEMENT

COURSE	BEARING	DISTANCE
1-2	S 75° 07' 06" W	135.68'
2-3	N 31° 03' 06" W	44.50'
3-4	S 52° 02' 26" E	41.13'
4-5	N 76° 15' 47" E	12.24'
5-1	S 14° 52' 54" E	7.50'

- EASEMENT CORNER DESIGNATIONS
- STOP-M SEWER
  - △ SANITARY SEWER
  - WATERLINE
  - EMERGENCY ACCESS ROAD
  - DRIVEWAY

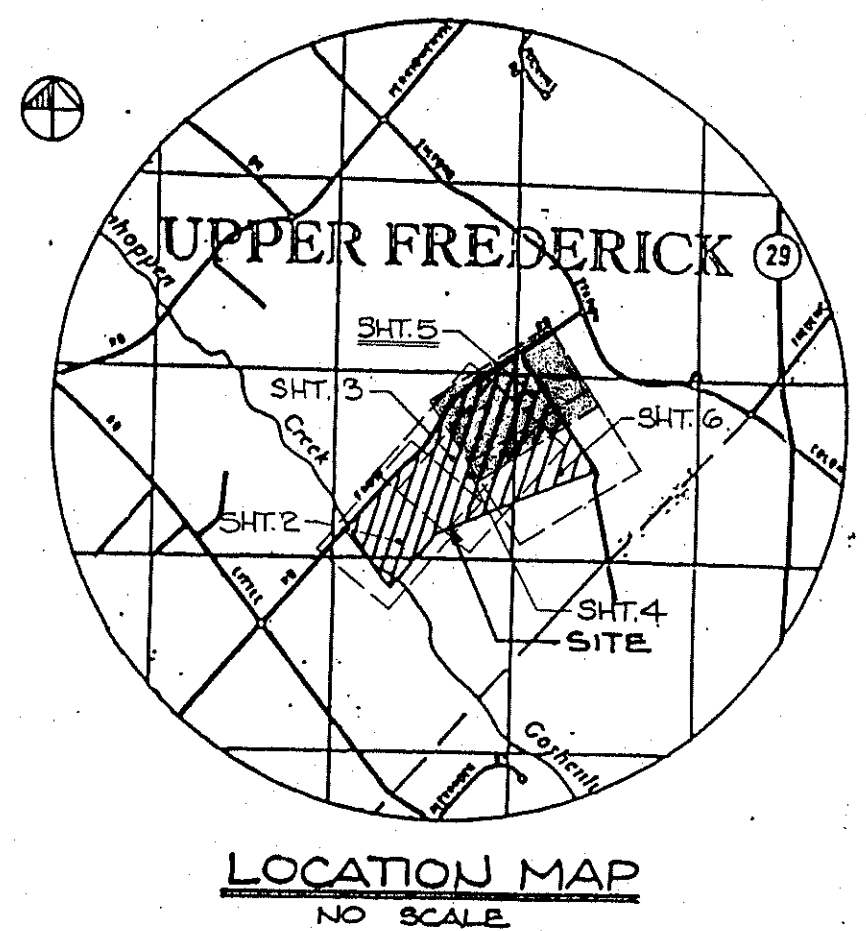
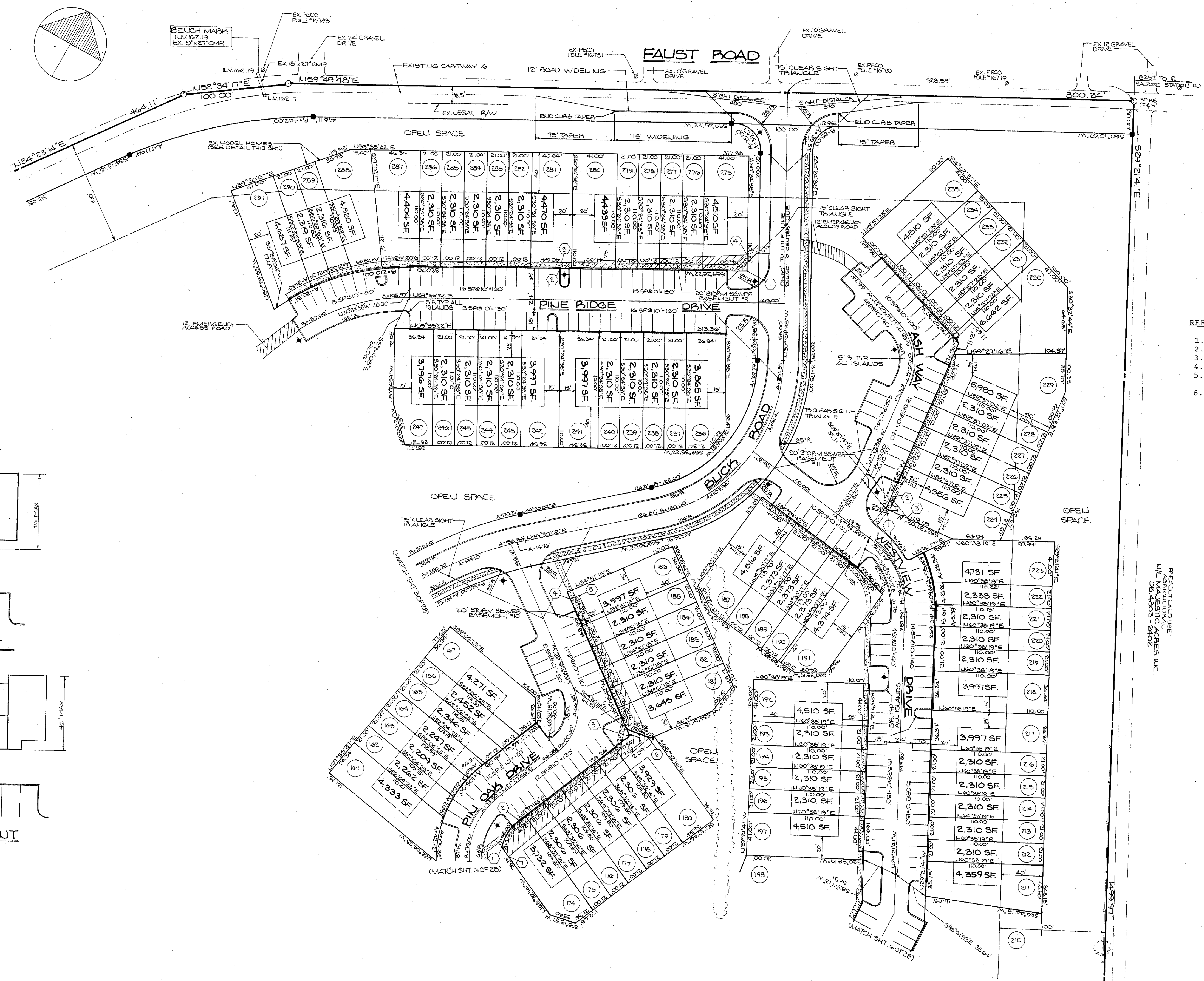
20' WIDE STORM SEWER EASEMENT #6A			20' WIDE STORM SEWER EASEMENT #6			20' WIDE STORM SEWER EASEMENT #7			20' WIDE STORM SEWER EASEMENT #8		
COURSE	BEARING	DISTANCE	COURSE	BEARING	DISTANCE	COURSE	BEARING	DISTANCE	COURSE	BEARING	DISTANCE
1-2	R = 80.00' A = 14.25'		1-2	S 46° 00' 00" E	15.93'	1-2	S 86° 12' 01" E	12.00'	1-2	N 03° 47' 59" W	10.19'
2-3	S 67° 17' 06" W	115.96'	2-3	R = 70.00' A = 14.68'		2-3	S 34° 51' 36" E	19.21'	2-3	N 75° 07' 06" E	26.04'
3-4	N 08° 10' 00" W	20.66'	3-4	S 33° 59' 07" E	130.46'	3-4	S 14° 52' 54" E	20.00'	3-4	S 14° 52' 54" E	20.00'
4-5	N 67° 17' 06" E	116.28'	4-5	S 45° 50' 10" W	10.00'	4-5	S 75° 07' 06" E	29.96'	4-5	S 75° 07' 06" E	29.96'
5-1	S 03° 47' 59" E	6.53'	5-6	N 33° 59' 16" W	162.38'	5-6	N 03° 47' 59" W	10.19'	5-1	N 03° 47' 59" W	10.19'
			6-1	N 56° 00' 53" E	5.00'						



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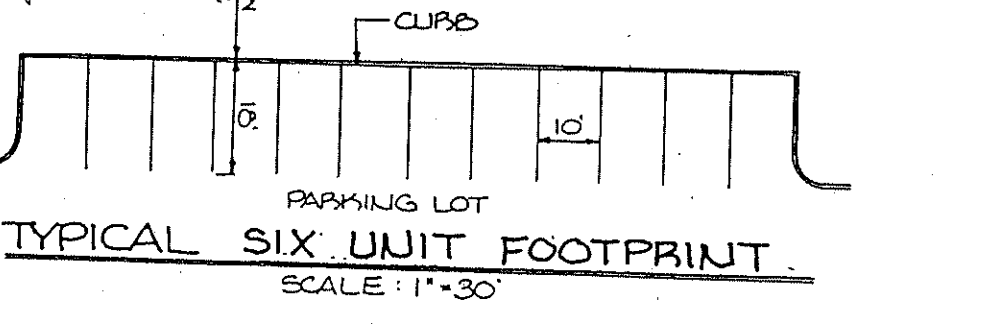
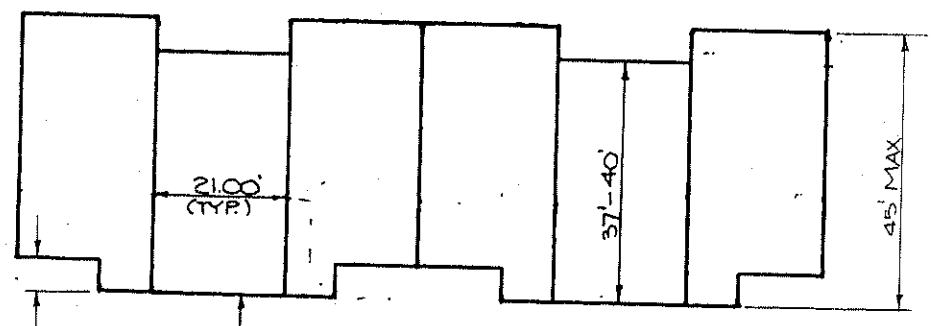
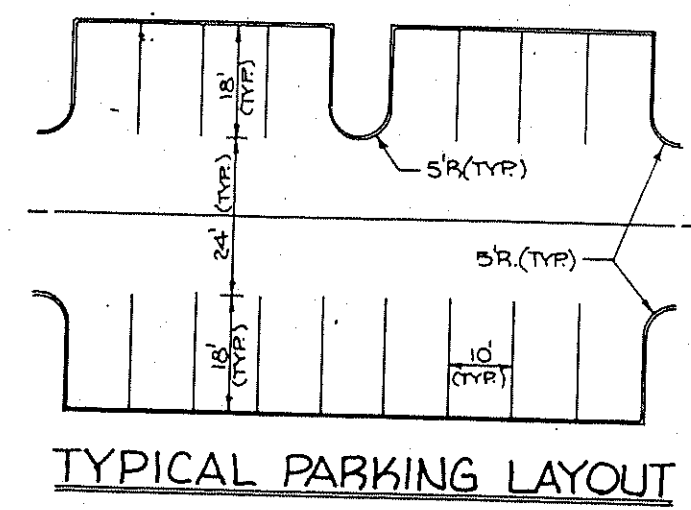
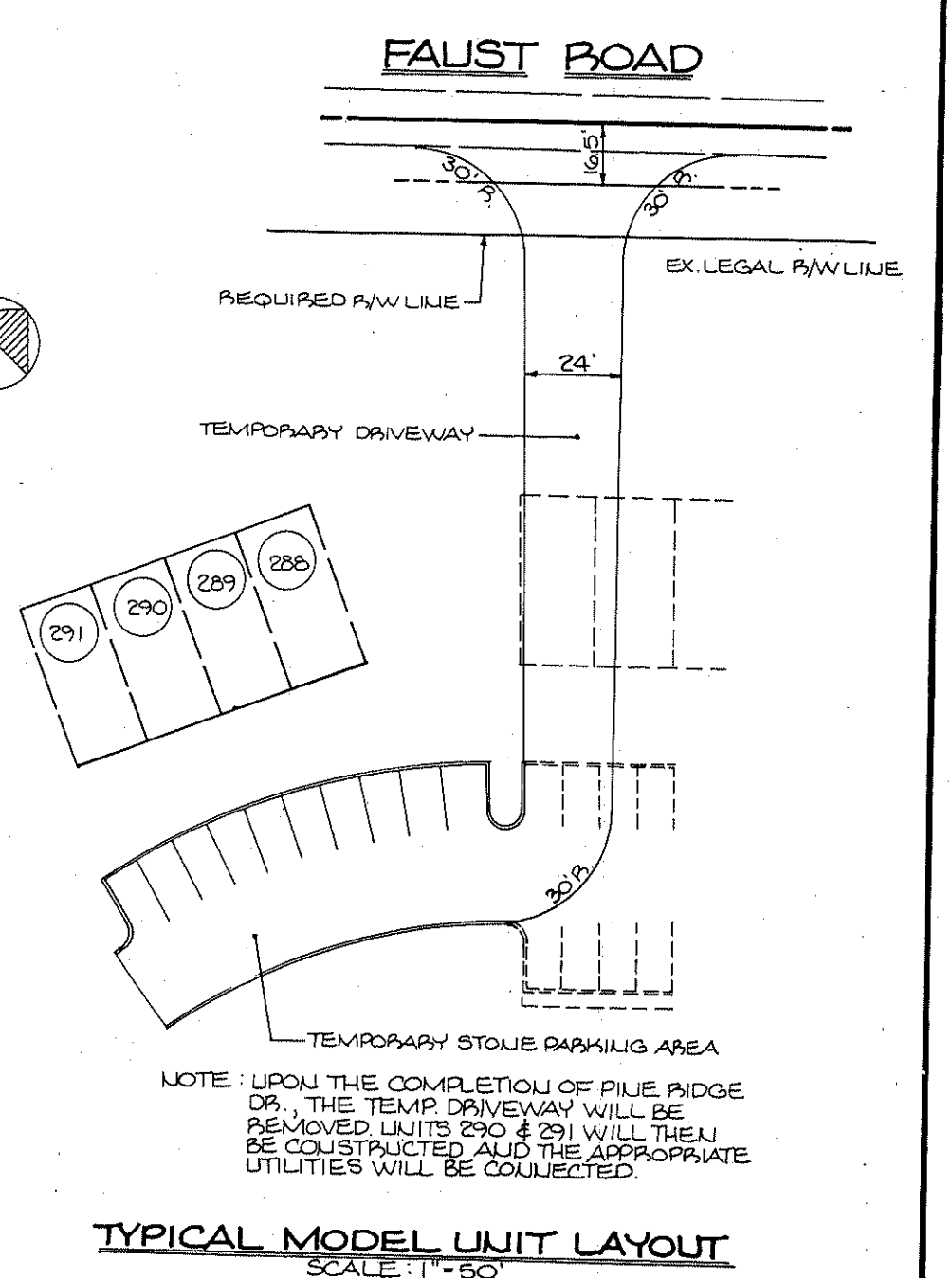
SEAL		SEAL		MANAGER B. MACY	CHKD. BY	<b>Bursich Associates INC.</b> consulting engineers (215) 323-4040 2129 East High Street Pottstown PA 19464	CLIENT / OWNER <b>G.I.D.A., INCORPORATED</b> VALLEY FORGE BUSINESS CENTER 2570 BLVD OF THE GENERALS BUILDING 100, SUITE 122 NORRISTOWN, PA. 19403	SUBDIVISION PLAN <b>PERKIOMEN CROSSING</b>	JOB NO. 2099
SEAL		SEAL		DESIGN B. MACY	CHKD. BY		SHEET NO. 4 OF 28	UPPER FREDERICK TOWNSHIP, MONTGOMERY CO., PENNSYLVANIA	DWG. NO. 2099-4
SEAL		SEAL		DRAFT	CHKD. BY				
SEAL		SEAL		FILE DISK 22	DATE OCT. 30, 1990				
SEAL		SEAL		NOTES F.B. 197, 242	SCALE 1" = 50'				
NO.		REVISION		DATE	BY	APP.			
3.		SALUT. SWP. PREVIOUS PER. TWP. ENG. DATED FEB. 18, 1991		2-27-91	AG.				
2.		REV. PER. TWP. ENGINEER LETTER DATED FEB. 14, 1991		2-22-91	M.L.				
1.		PREVIOUS PER. TWP. ENGINEER'S LETTER DATED DEC. 5 & JAN. 2, 1991		1-21-91	AG.				





- REFERENCE NOTES**
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  2. For General Construction Notes See Sheet 7 of 28.
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- LEGEND**
- Existing Contour
  - - - Proposed Contour
  - Proposed Storm Sewer
  - - - Proposed Sanitary Sewer
  - - - Proposed Water
  - + (82.5) Proposed Spot Elevation
  - Proposed Concrete Curb
  - Proposed Sidewalk
  - ★ Proposed Light Standard



- EASEMENT CORNER DESIGNATIONS**
- STORM SEWER
  - △ SANITARY SEWER
  - WATERLINE
  - EMERGENCY ACCESS ROAD
  - DRIVEWAY

**20' WIDE STORM SEWER EASEMENT #9**

COURSE	BEARING	DISTANCE
1-2	S 59° 35' 22" W	165.30'
2-3	N 30° 24' 38" W	7.00'
3-4	N 56° 28' 23" E	165.54'
4-1	S 30° 24' 38" E	16.00'

**20' WIDE STORM SEWER EASEMENT #10**

COURSE	BEARING	DISTANCE
1-2	R = 45.00'	A = 32.32'
2-3	N 21° 27' 46" E	129.26'
3-4	N 55° 08' 42" W	135.49'
4-5	N 34° 51' 18" E	9.00'
5-6	S 57° 17' 38" E	144.70'
6-7	S 18° 28' 21" W	171.04'
7-1	N 68° 32' 14" W	10.00'

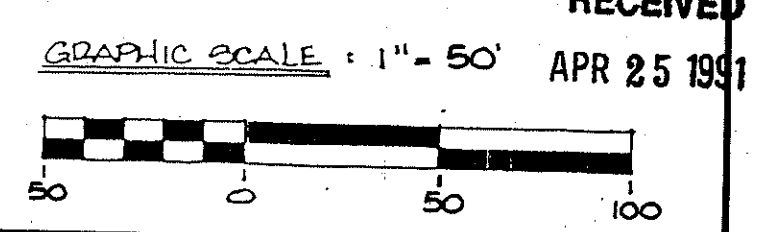
**20' WIDE STORM SEWER EASEMENT #11**

COURSE	BEARING	DISTANCE
1-2	N 07° 22' 58" W	10.00'
2-3	S 73° 53' 03" E	25.08'
3-1	S 82° 37' 02" W	23.00'

**NOTE:** All roof drains will be conveyed to downspouts with a splash block or stone lined outlet.

The Upper Frederick Township Supervisors granted the following waivers for setbacks at the September 19, 1990 meeting:

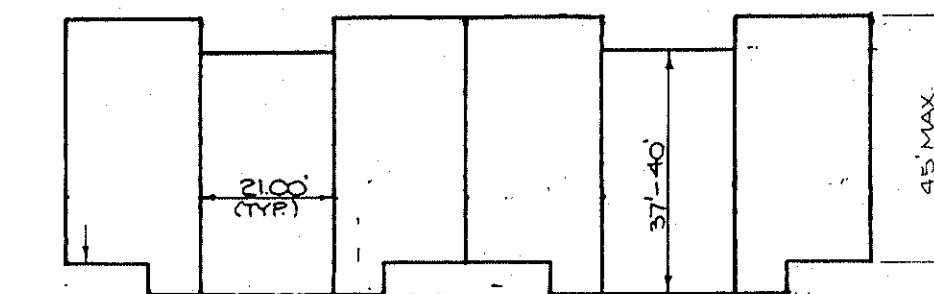
- a. Front Yard - 20'
- b. Side Yard - 12-1/2' - 15'
- c. Buffer to Adjacent Properties - 75'



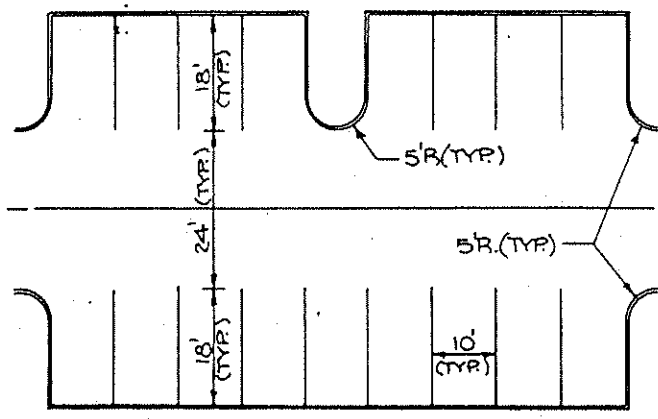
RECEIVED  
APR 25 1991

3. SAUT. SWR. PREVIOUS PER TWP. ENGR. DATED FEB. 18, 1991 2. REV. PER TWP. ENGINEER LETTER DATED FEB. 14, 1991 1. PREVIOUS PER TWP. ENGINEER'S LETTER DATED DEC. 5 & JAN. 2, 1991		SEAL SEAL SEAL	MANAGER B. MACY DESIGN B. MACY DRAFT A. GUILLEY	CHKD. BY CHKD. BY CHKD. BY	<b>Bursich Associates INC.</b> consulting engineers 2129 East High Street Pottstown PA 19464 (215) 323-4040	CLIENT/OWNER <b>G.I.D.A., INCORPORATED</b> VALLEY FORGE BUSINESS CENTER 2510 BLDG. OF THE GENERALS BUILDING 100, SUITE 122 LOPP, PENNSYLVANIA, PA 19043	SUBJECT <b>PERKIOMEN CROSSING</b>	JOB NO. 02099 SHEET NO. 5 of 28 DWG. NO. 02099-5
REVISION NO. DATE BY APP.	DATE BY APP.	DATE BY APP.	DATE BY APP.					

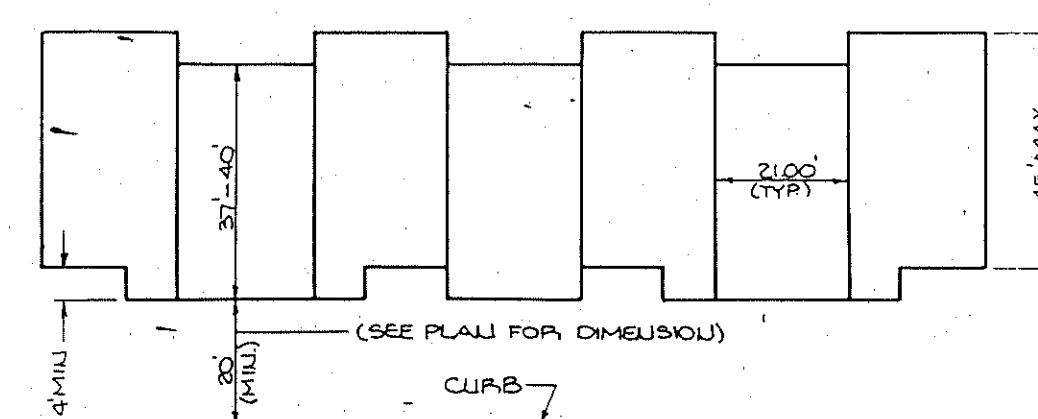




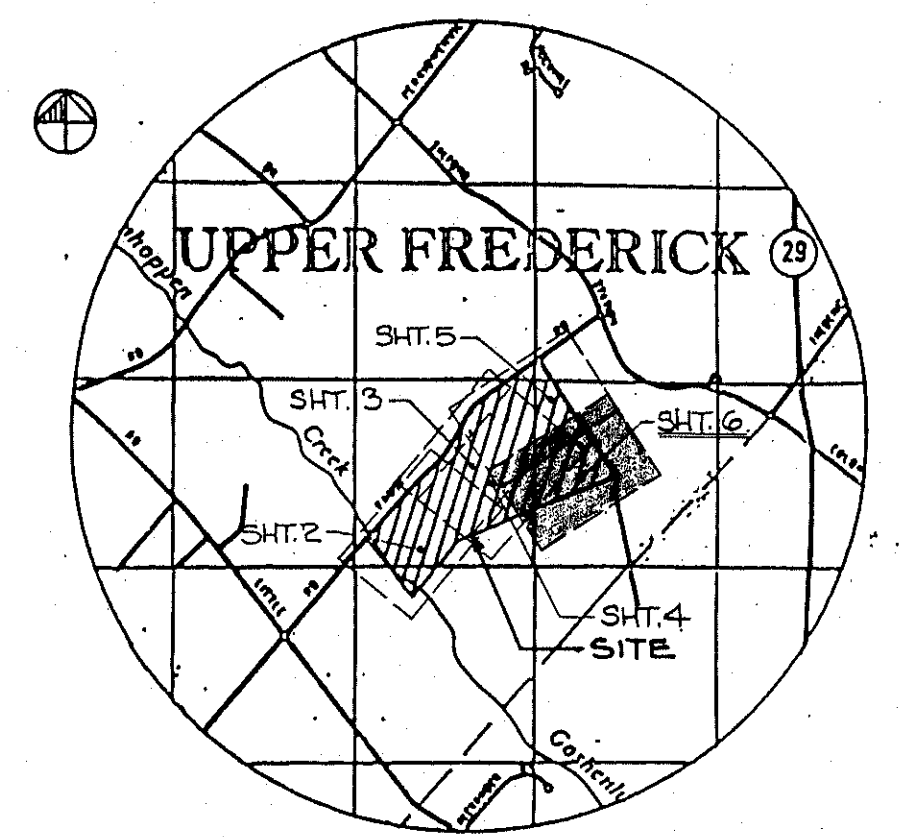
TYPICAL SIX UNIT FOOTPRINT  
SCALE: 1" = 30'



TYPICAL PARKING LAYOUT



TYPICAL SEVEN UNIT FOOTPRINT  
SCALE: 1" = 30'



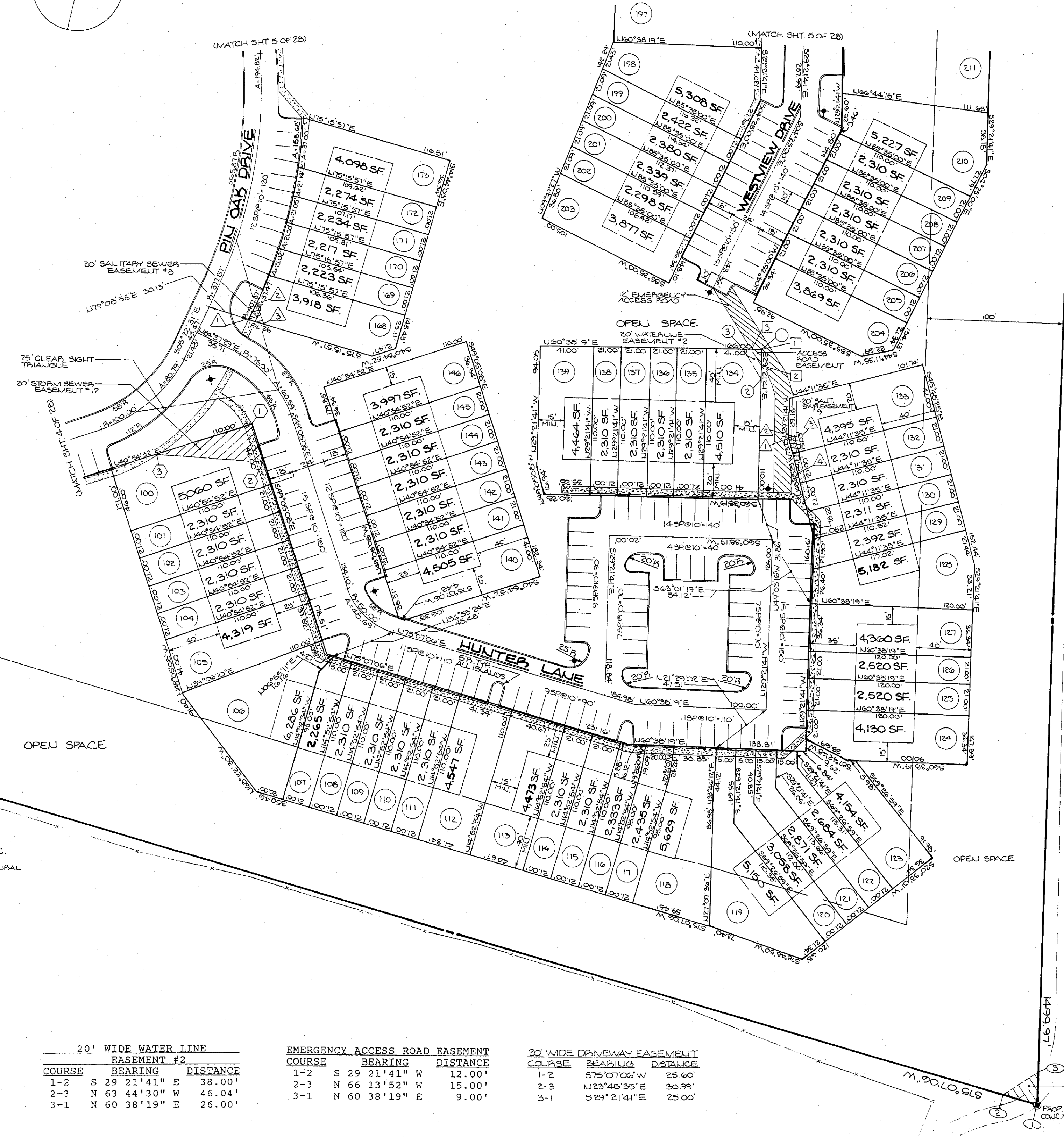
LOCATION MAP  
NO SCALE

REFERENCE NOTES

1. For General Notes See Sheet 2 of 28.
2. For General Construction Notes See Sheet 7 of 28.
3. For Sediment and Erosion Control Notes See Sheet 22 of 28.
4. For Grading and Utility Layout See Sheets 7 thru 11.
5. For Sediment and Erosion Control Measures See Sheets 22 thru 28.
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LEGEND

- ..... Existing Contour
- Proposed Contour
- Proposed Storm Sewer
- Proposed Sanitary Sewer
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- + (82.5) Proposed Spot Elevation
- Proposed Concrete Curb
- Proposed Sidewalk
- ★ Proposed Light Standard



LIL MAJESTIC ACRES INC.  
DB 4803-2402  
(PRESENT AND USE AGRICULTURAL)

LIL MAJESTIC ACRES INC.  
DB 4803-2402  
PRESENT LAND USE: AGRICULTURAL

NOTE: All roof drains will be conveyed to downspouts with a splash block or stone lined outlet.

The Upper Frederick Township Supervisors granted the following waivers for setbacks at the September 19, 1990 meeting:

- a. Front Yard - 20'
- b. Side Yard - 12-1/2' = 15'
- c. Buffer to Adjacent Properties - 75'

EASEMENT CORNER DESIGNATIONS

- STORM SEWER
- △ SANITARY SEWER
- WATERLINE
- EMERGENCY ACCESS ROAD
- DRIVEWAY

20' WIDE SANITARY SEWER EASEMENT #8		
COURSE	BEARING	DISTANCE
1-2	R = 407.87' A = 14.00'	
2-3	S 44 54'06" E	16.04'
3-1	S 75 15'57" W	10.00'

20' WIDE SANITARY SEWER EASEMENT #9		
COURSE	BEARING	DISTANCE
1-2	N 29 21'41" W	1.27'
2-3	N 60 38'19" E	8.90'
3-4	S 24 05'14" E	24.03'
4-1	N 45 48'25" W	23.63'

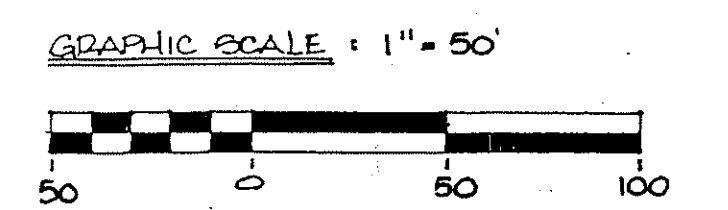
20' WIDE SANITARY SEWER EASEMENT #12		
COURSE	BEARING	DISTANCE
1-2	S 49 05'08" E	29.50'
2-3	S 62 23'09" W	80.59'
3-1	N 40 54'52" E	75.00'

20' WIDE WATER LINE EASEMENT #2		
COURSE	BEARING	DISTANCE
1-2	S 29 21'41" E	38.00'
2-3	N 63 44'30" W	46.04'
3-1	N 60 38'19" E	26.00'

EMERGENCY ACCESS ROAD EASEMENT		
COURSE	BEARING	DISTANCE
1-2	S 29 21'41" W	12.00'
2-3	N 66 13'52" W	15.00'
3-1	N 60 38'19" E	9.00'

20' WIDE DRIVEWAY EASEMENT		
COURSE	BEARING	DISTANCE
1-2	S 75 07'06" W	25.60'
2-3	N 23 46 35" E	20.99'
3-1	S 29 21'41" E	25.00'

RECEIVED  
APR 25 1991



NO.	REVISION	DATE	BY	APP.
3	SALT SWP, PREVIOUS PER TWP. EUG. DATED FEB. 18, 1991	2-27-91	AG.	
2	REV. PER TWP. ENGINEER LETTER DATED FEB. 14, 1991	2-22-91	M.L.	
1	PREVIOUS PER TWP. ENGINEER LETTER DATED DEC. 5, & JAN. 2, 1991	1-21-91	AG.	

SEAL	SEAL	MANAGER B. MACY	CHKD. BY
		DESIGN B. MACY	CHKD. BY
		DRAFT A. QUIGLEY	CHKD. BY
		FILE DISH 22	DATE OCT. 30, 1990
		NOTES FB 197, 242	SCALE 1" = 50'

**Bursich Associates INC.**  
consulting engineers  
2129 East High Street Pottstown PA 19464  
(610) 323-4040

CLIENT/OWNER  
**G.I.D.A., INCORPORATED**  
VALLEY FORGE BUSINESS CENTER  
2570 BLVD. OF THE GENERALS  
BUILDING 100, SUITE 102  
NORRISTOWN, PA 19403

SUBDIVISION PLAN  
**PERKIOMEN CROSSING**  
UPPER FREDERICK TOWNSHIP, MONTGOMERY CO., PENNSYLVANIA

JOB NO.	02099
SHEET NO.	6 OF 28
DWG. NO.	02099-6