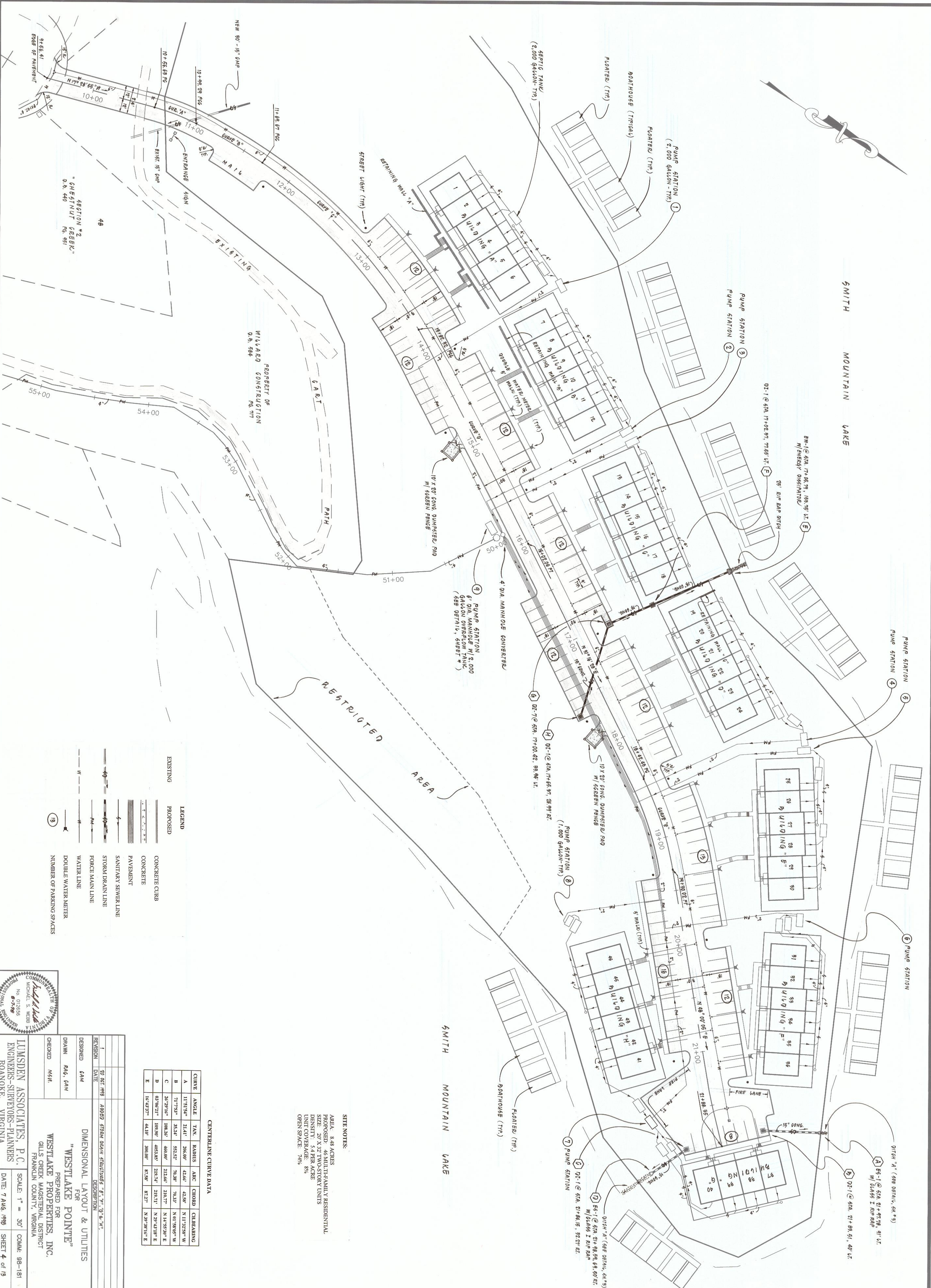




CENTERLINE CURVE DATA					
CURVE	ANGLE	TAN.	RADIUS	ARC	CHORD
A	11°51'54"	21.41'	206.00'	42.66'	11°12'58" W
B	71°7'35"	35.34'	55.25'	70.38'	N 01°58'05" W
C	36°29'16"	108.26'	460.00'	212.66'	N 14°52'30" E
D	03°06'21"	109.20'	4053.85'	219.74'	N 2°43'18" E
E	16°43'27"	44.10'	300.00'	61.58'	N 2°28'16" E

SITE NOTES:
AREA: 8.48 ACRES
PROPOSED: 46 MULTIFAMILY RESIDENTIAL
SIZE: 20 X 32 TWO-STORY UNITS
DENSITY: 5.4 PER ACRE
UNIT COVERAGE: 8%
OPEN SPACE: 74%

- LEGEND
- EXISTING
- PROPOSED
- CONCRETE CURB
- CONCRETE
- PAVEMENT
- SANITARY SEWER LINE
- STORM DRAIN LINE
- FORCE MAIN LINE
- WATER LINE
- DOUBLE WATER METER
- NUMBER OF PARKING SPACES

Professional Seal

Michael S. Webb
No. 012556
Virginia
Professional Engineer

REVISION

DATE

DESCRIPTION

DESIGNED

DATE

DESCRIPTION

DRAWN

DATE

DESCRIPTION

CHECKED

DATE

DESCRIPTION

LUMSDEN ASSOCIATES, P.C.
ENGINEERS-SURVEYORS-PLANNERS
ROANOKE, VIRGINIA

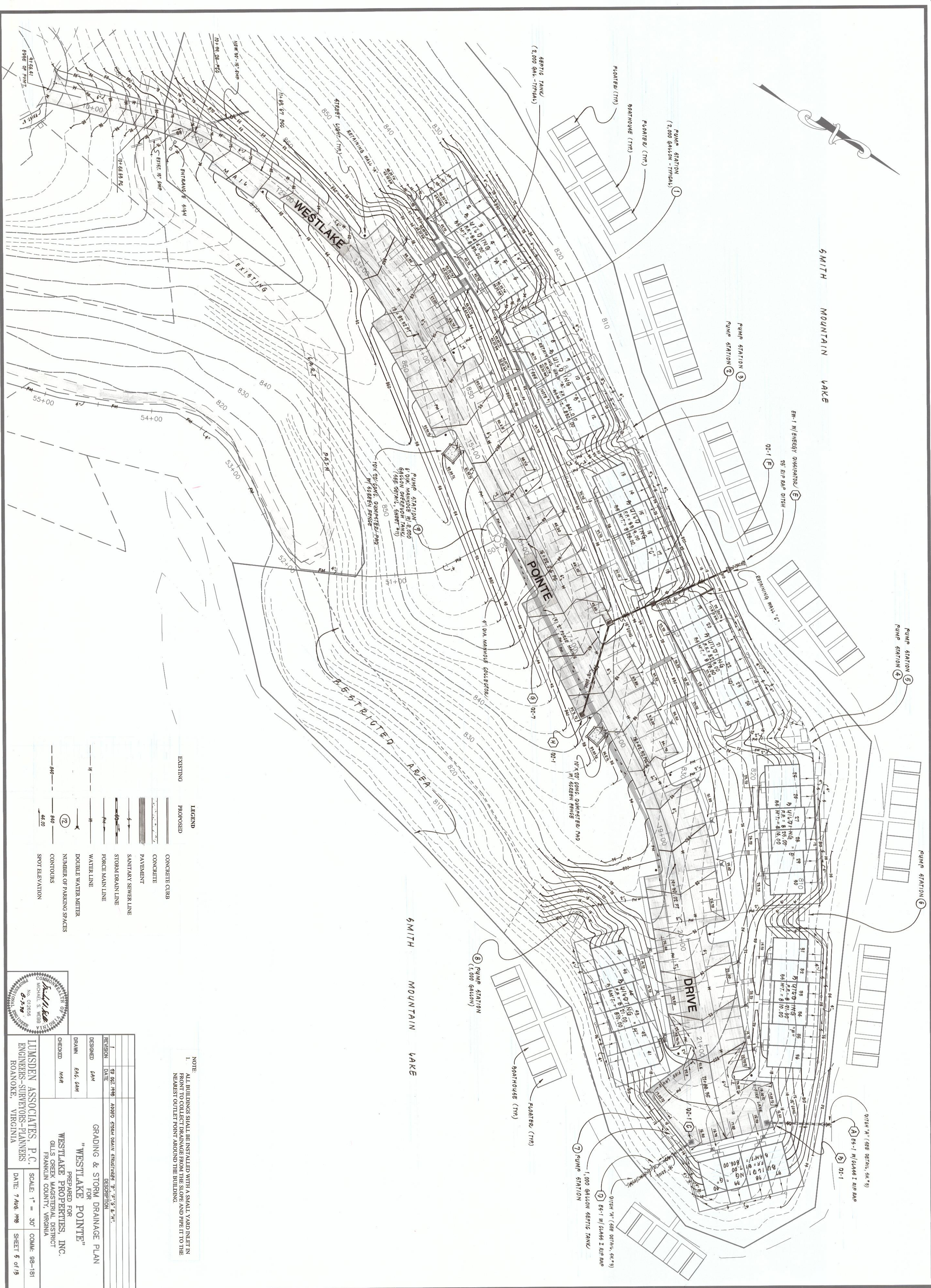
SCALE: 1" = 30'

COMM: 98-181

WESTLAKE PROPERTIES, INC.
GILLS CREEK MAGISTERIAL DISTRICT
FRANKLIN COUNTY, VIRGINIA

DATE: 7 AUG. 1990

SHEET 4 of 13



NOTE:
1. ALL BUILDINGS SHALL BE INSTALLED WITH A SMALL YARD INLET IN THE REAR TO COLLECT DRAINAGE FROM THE ROOF AND PERMIT TO THE NEAREST OUTLET POINT AROUND THE BUILDING.

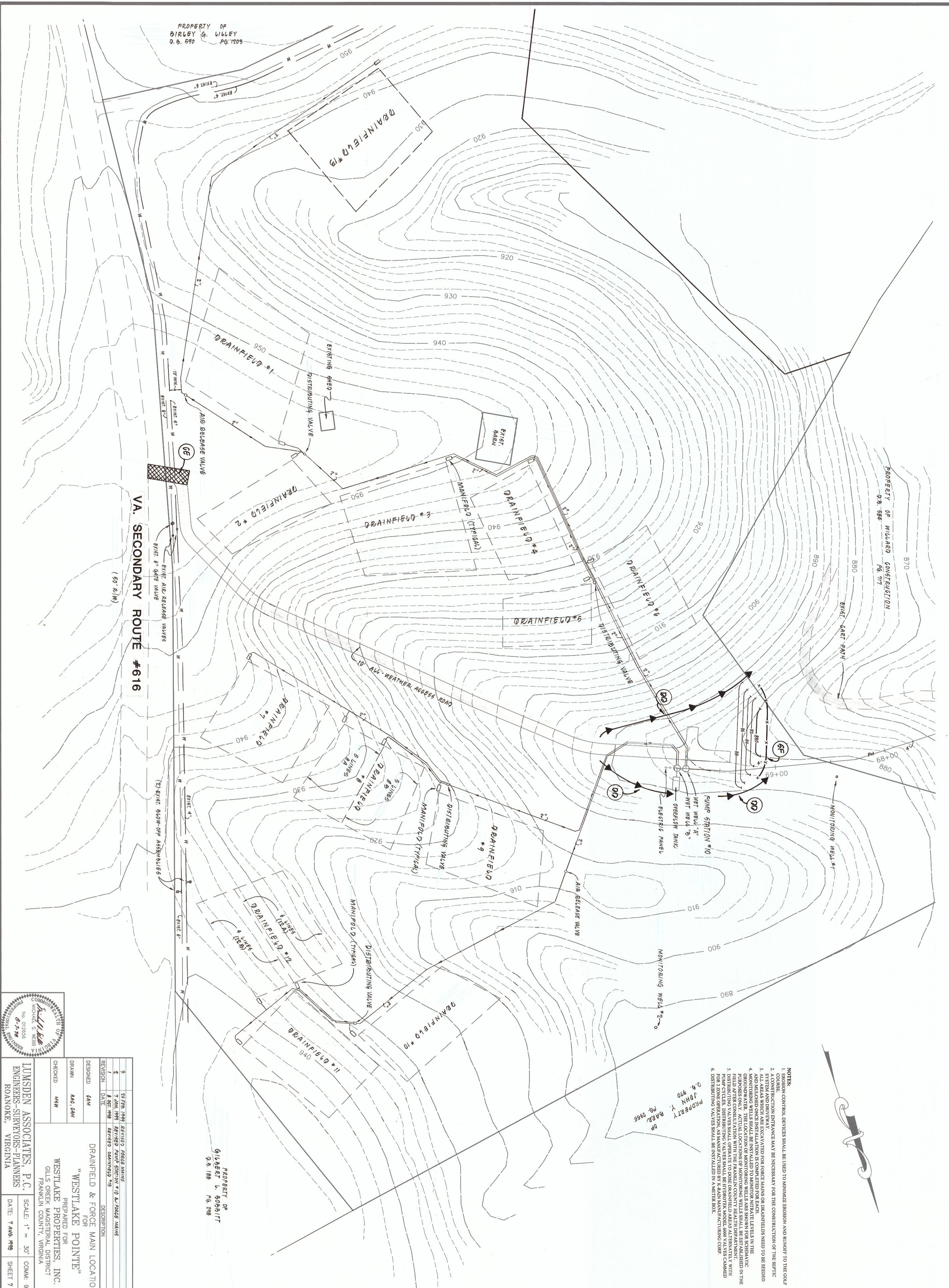
GRADING & STORM DRAINAGE PLAN
FOR
"WESTLAKE POINTE"

REVISION		DATE	DESCRIPTION
1	DESIGNED	02.02.1978	ADDED STORM DRAIN STRUCTURES "A", "B", "C", & "H".
2	DRAWN	04.06.1978	
3	CHECKED	06.07.1978	

LUMSDEN ASSOCIATES, P.C.
ENGINEERS-SURVEYORS-PLANNERS
ROANOKE, VIRGINIA

PREPARED FOR
WESTLAKE PROPERTIES, INC.
GILLS CREEK MASTERAL DISTRICT
FRANKLIN COUNTY, VIRGINIA

SCALE: 1" = 30'
DATE: 7 AUG. 1978
SHEET 5 OF 13



- NOTES:
1. EROSION CONTROL DEVICES SHALL BE USED TO MINIMIZE EROSION AND RUNOFF TO THE GOLF COURSE.
 2. A CONSTRUCTION ENTRANCE MAY BE NECESSARY FOR THE CONSTRUCTION OF THE SEPTIC SYSTEM AND DRIVEWAY. CONSTRUCTION OF THE SEPTIC SYSTEM AND DRIVEWAY SHALL BE COMPLETED FOR FORCE MAINS OR DRAINAGE FIELDS NEED TO BE SERVED.
 3. AND MULCHED ONCE INSTALLATION IS COMPLETED FOR EACH.
 4. MONITORING WELLS SHALL BE INSTALLED TO MONITOR NITRATE LEVELS IN THE GROUNDWATER. THE LOCATION OF MONITORING WELLS ARE SHOWN IN THE ATTACHED MONITORING WELL LOCATIONS MAP. MONITORING WELLS SHALL BE ESTABLISHED IN THE FIELD AFTER CONSULTATION WITH THE FRANKLIN COUNTY HEALTH DEPARTMENT.
 5. DISTRIBUTING VALVES SHALL OPERATE TO DRAIN DRAINAGE AREAS ALTERNATELY WITH FORCE MAINS. DISTRIBUTING VALVES SHALL BE INSTALLED IN A METER BOX.
 6. DISTRIBUTING VALVES SHALL BE INSTALLED IN A METER BOX.

PROPERTY OF
JOHN Y. BARE
D.B. 590 PG. 2065

PROPERTY OF
GILBERT L. BORDEN
D.B. 188 PG. 298

3

28 FEB 1999

REVISED FORCE MAINS

2

7 JAN 1999

REVISED PUMP STATION #10 & FORCE MAINS

1

8 OCT 1998

REVISED DRAINAGE FIELDS

DESIGNED
CAM

DRAWN
RAG, CAM

CHECKED
MAM

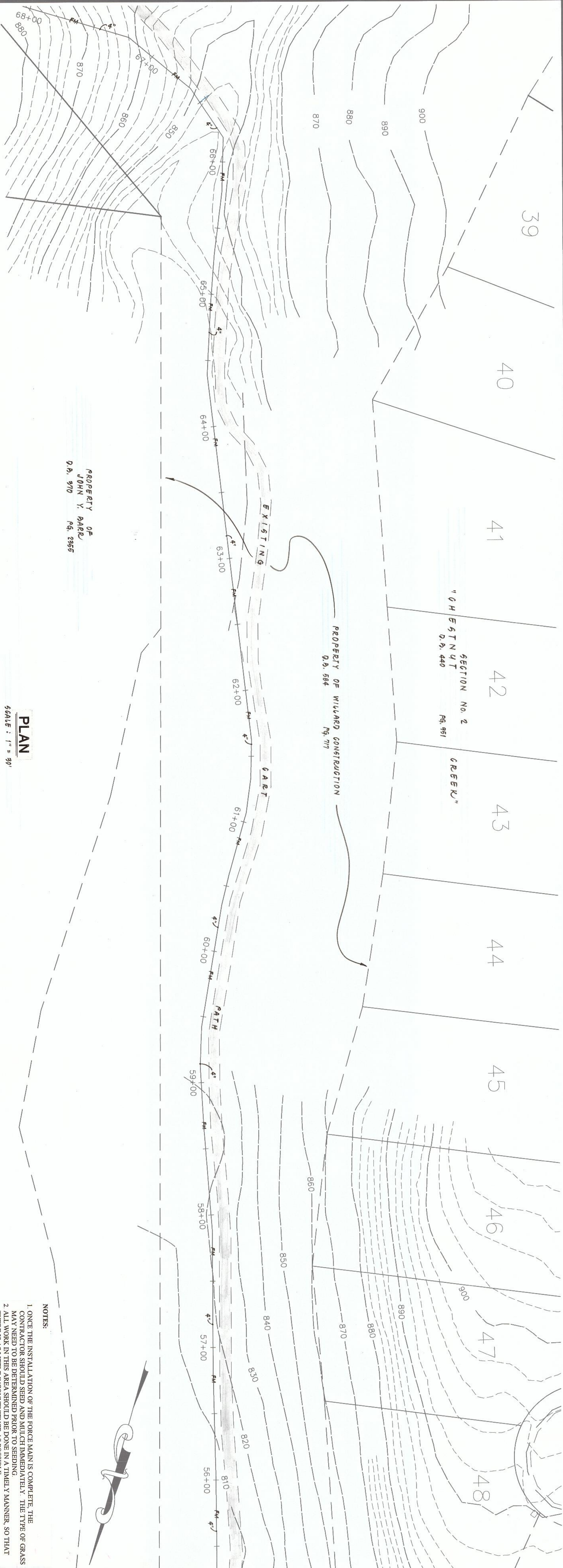
DRAINFIELD & FORCE MAIN LOCATIONS
FOR
"WESTLAKE POINTE"
WESTLAKE PROPERTIES, INC.
GILLS CREEK MAGISTERIAL DISTRICT
FRANKLIN COUNTY, VIRGINIA

PREPARED FOR
LUMSDEN ASSOCIATES, P.C.
ENGINEERS-SURVEYORS-PLANNERS
ROANOKE, VIRGINIA

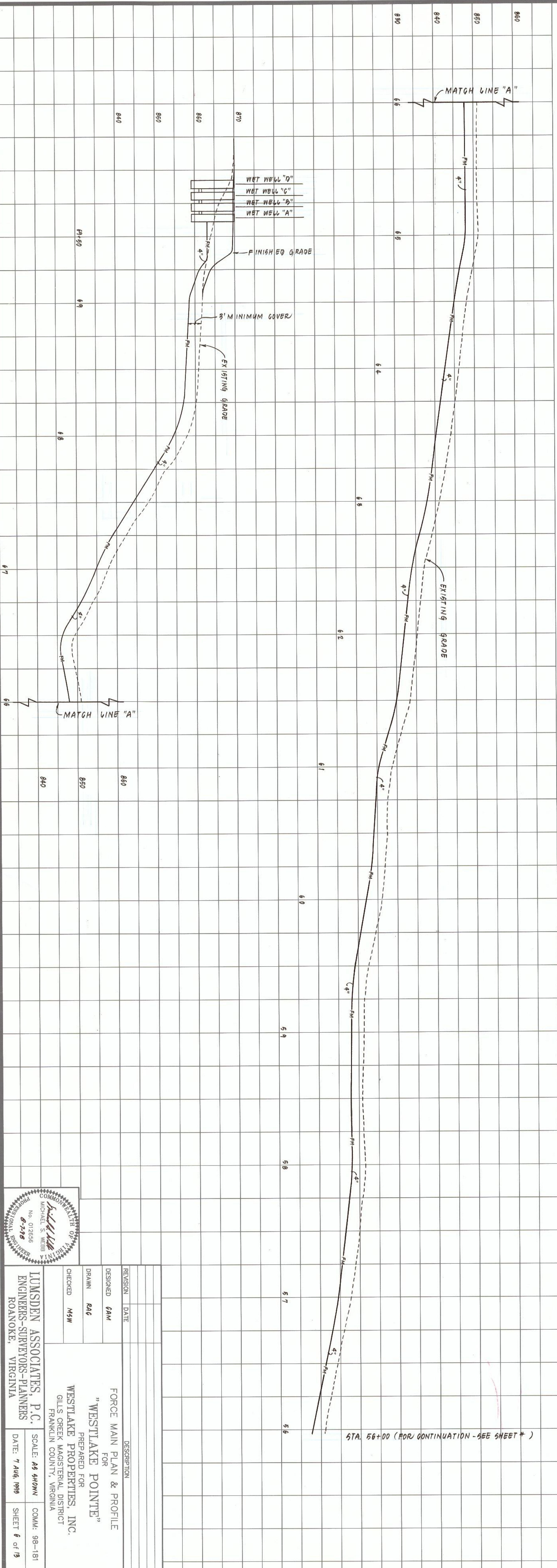
SCALE: 1" = 30'

DATE: 7 AUG 1998

SHEET 7 OF 13



- NOTES:
1. ONCE THE INSTALLATION OF THE FORCE MAIN IS COMPLETE, THE CONTRACTOR SHOULD SEED AND MULCH IMMEDIATELY. THE TYPE OF GRASS MAY NEED TO BE DETERMINED PRIOR TO SEEDING.
 2. ALL WORK IN THIS AREA SHOULD BE DONE IN A TIMELY MANNER, SO THAT THERE IS AS LITTLE INCONVENIENCE AS POSSIBLE.

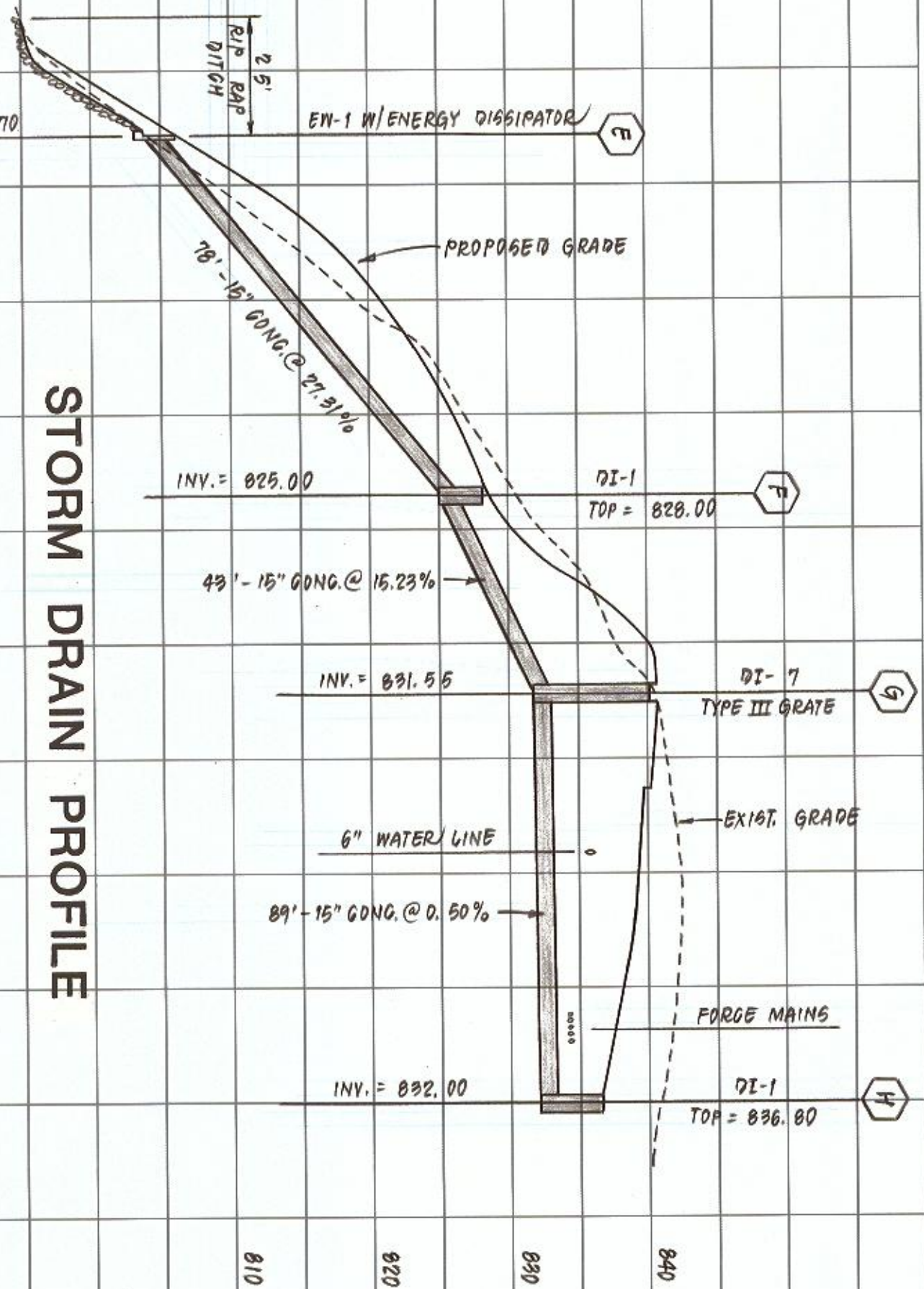


REVISION		DATE	DESCRIPTION
DESIGNED	GMW		FORCE MAIN PLAN & PROFILE FOR "WESTLAKE POINTE"
DRAWN	EGC		PREPARED FOR WESTLAKE PROPERTIES, INC. GILLS CREEK MASTERIAL DISTRICT FRANKLIN COUNTY, VIRGINIA
CHECKED	MSW		

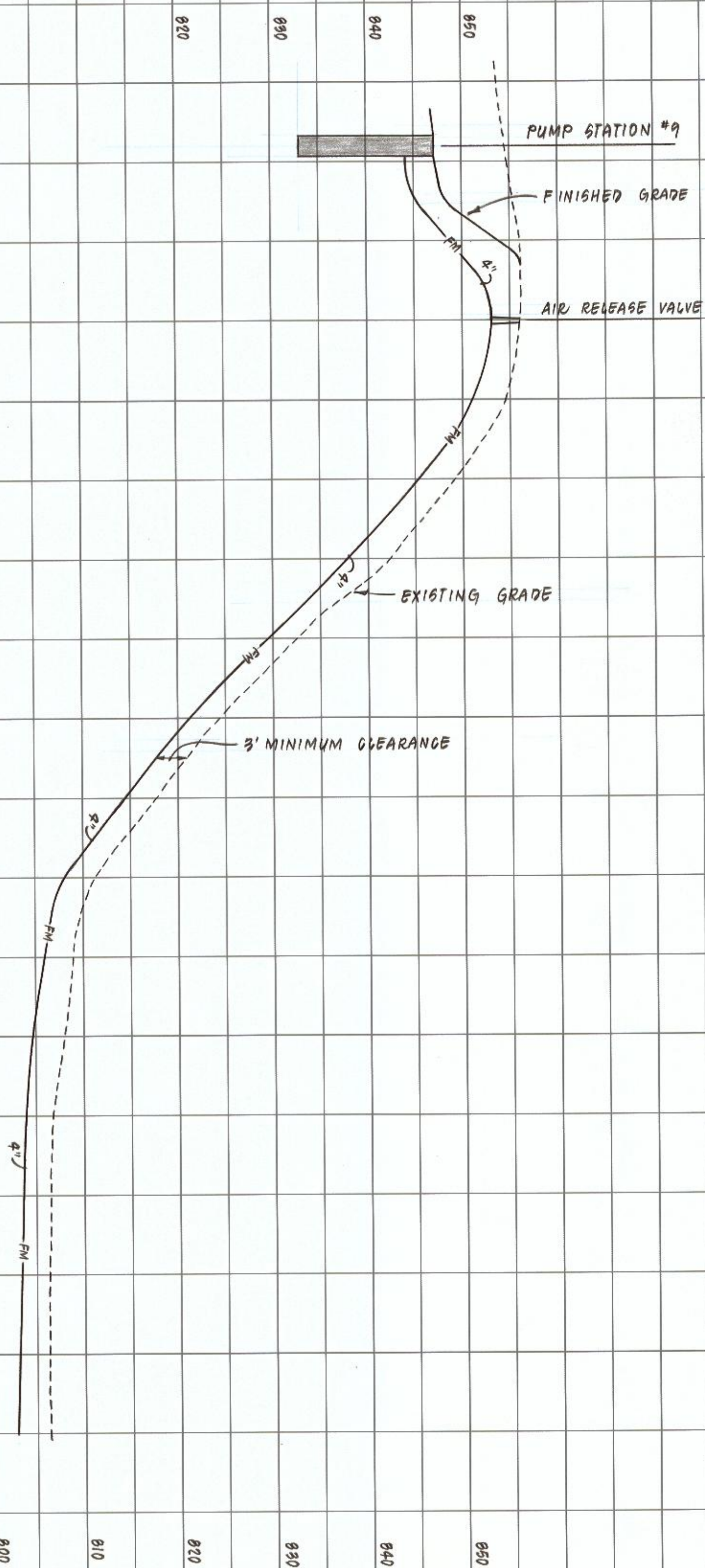
LUMSDEN ASSOCIATES, P.C.
ENGINEERS-SURVEYORS-PLANNERS
ROANOKE, VIRGINIA

SCALE: AS SHOWN
DATE: 7 AUG 1998
SHEET 6 OF 13

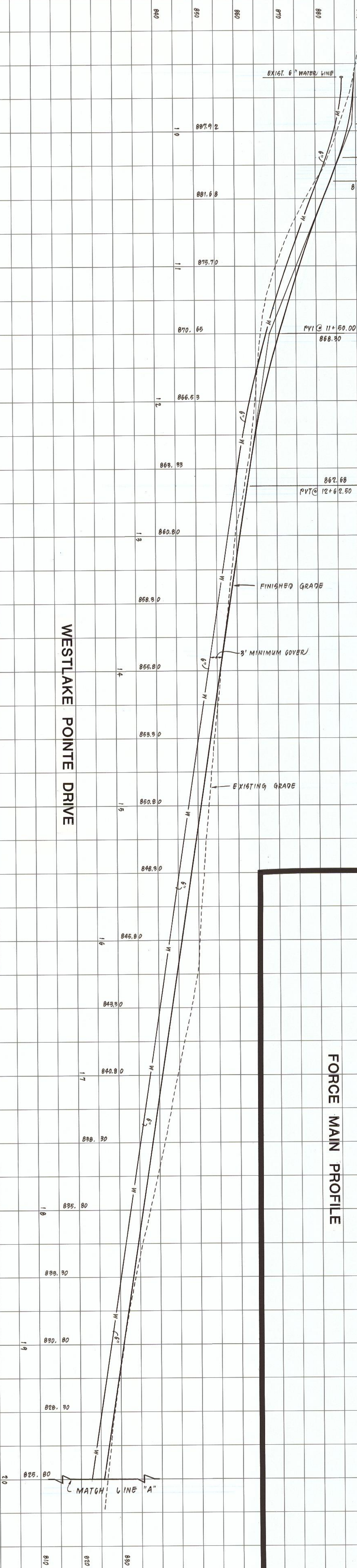
STORM DRAIN PROFILE



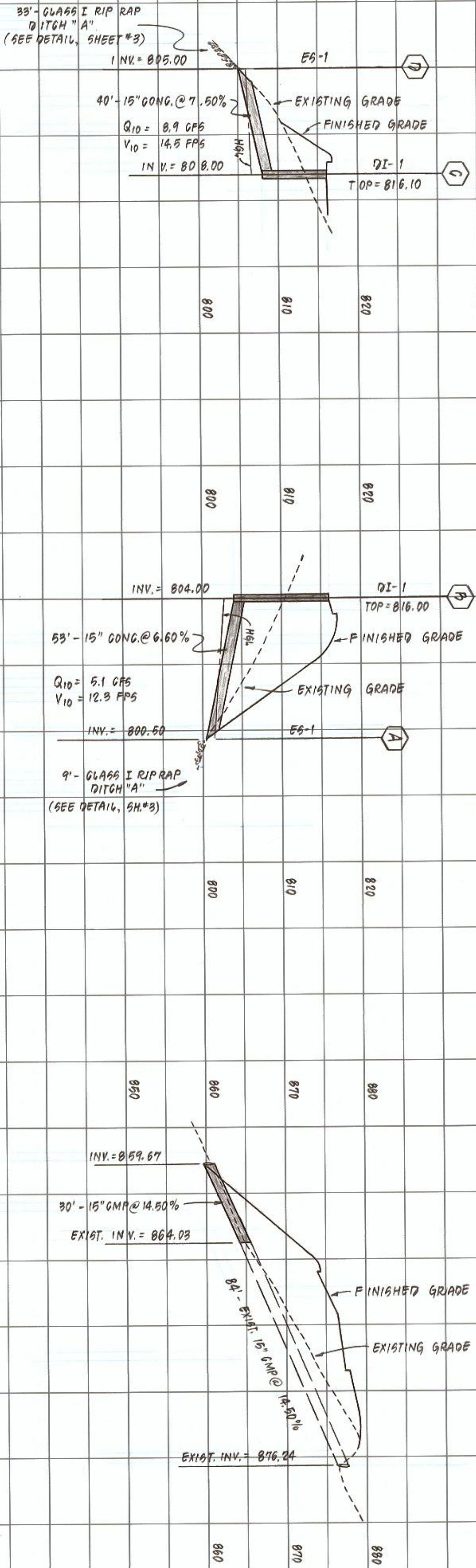
FORCE MAIN PROFILE



WESTLAKE POINTE DRIVE



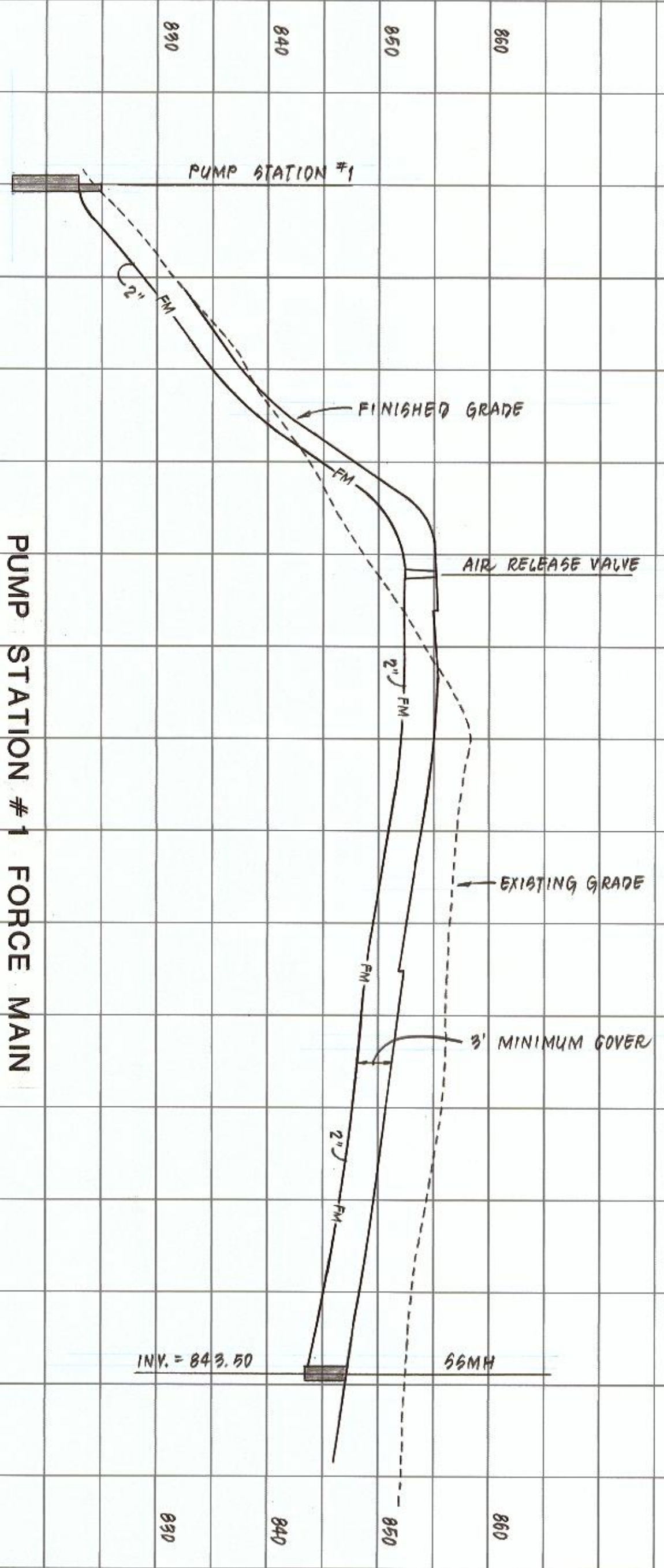
STORM DRAIN PROFILES



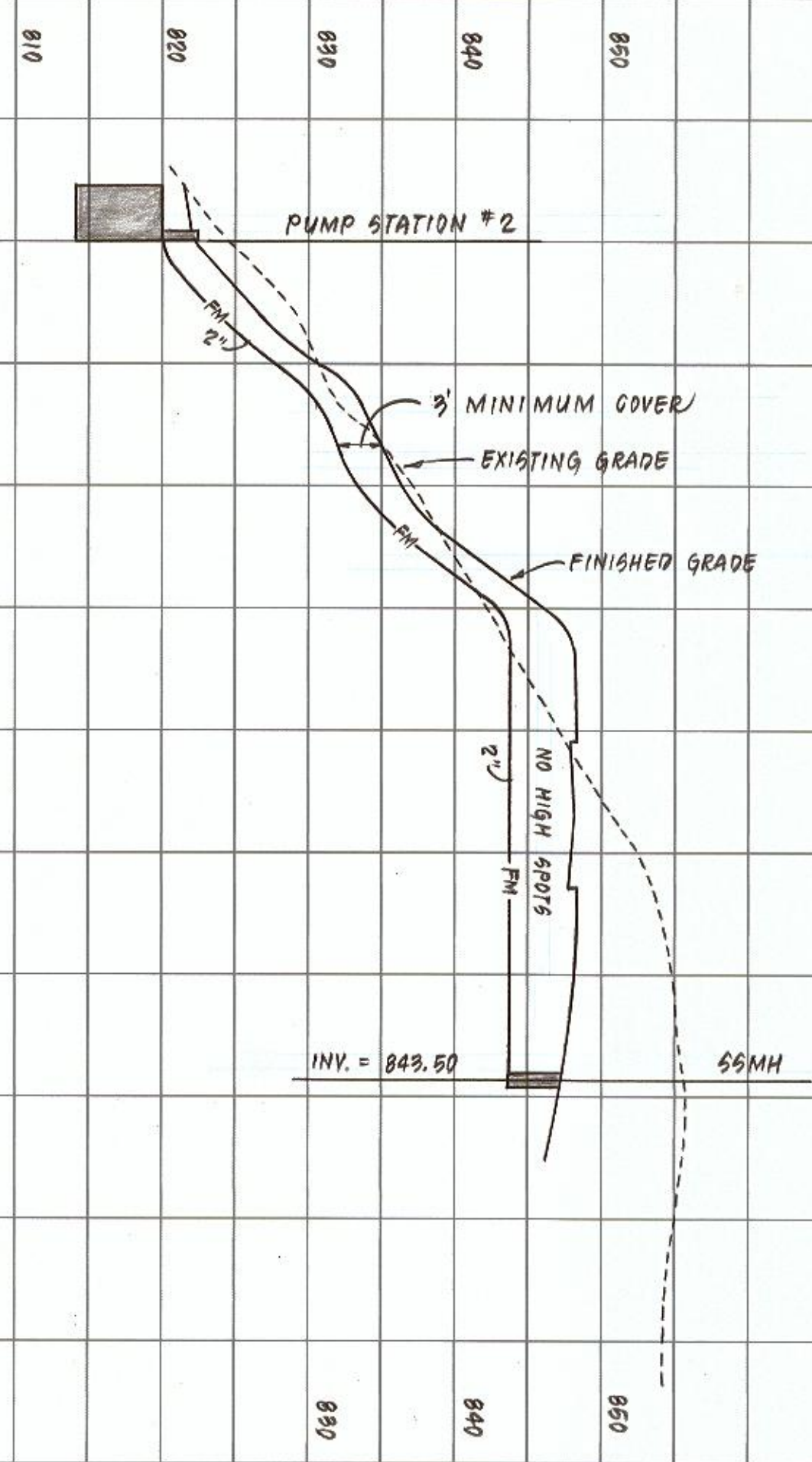
NOTES:
1. ALL LINES SHALL BE INSTALLED ABOVE SEWER LINES AT CROSSINGS. PROVIDE A MINIMUM OF 18" VERTICAL CLEARANCE BETWEEN THE TOP OF SEWER LINES AND THE BOTTOM OF THE NEW LINES.



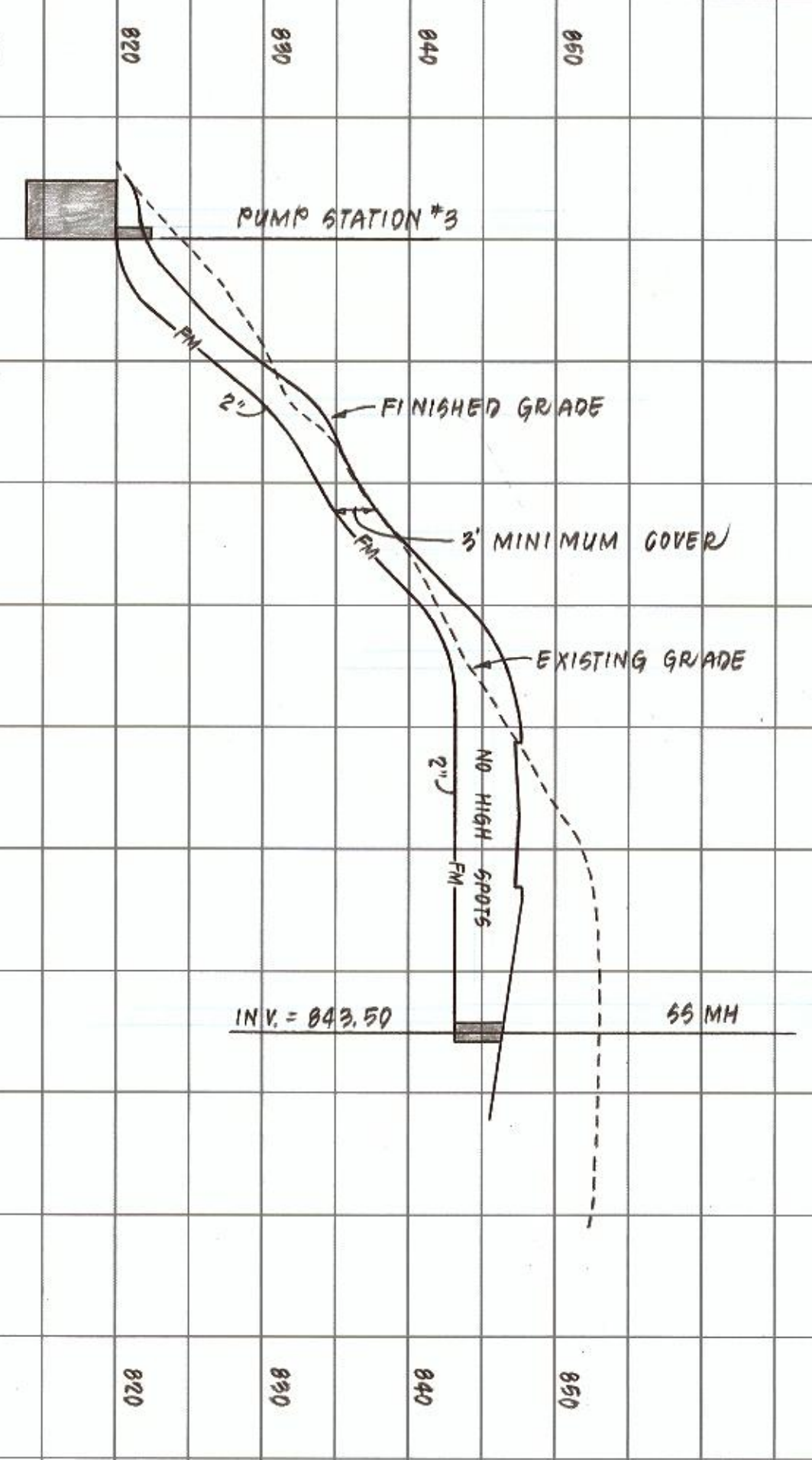
2 14 SEPT 2000 APPROVED FOR THE PROJECT
30 OCT 1999 ROAD STORM DRAIN PROFILES BETWEEN STRUCTURES 6" THROUGH 15"
DESIGNED BY GMM
DRAWN BY GMM
CHECKED BY MWM
LUMSDEN ASSOCIATES, P.C.
ENGINEERS-SURVEYORS-PLANNERS
ROANOKE, VIRGINIA
SCALE: 1"=30' HORIZ.
1"=10' VERT.
DATE: 7/14/99 SHEET 8 OF 19
COMMA: 98-181
WESTLAKE PROPERTIES, INC.
GILLS CREEK INDUSTRIAL DISTRICT
FRANKLIN COUNTY, VIRGINIA
PREPARED FOR



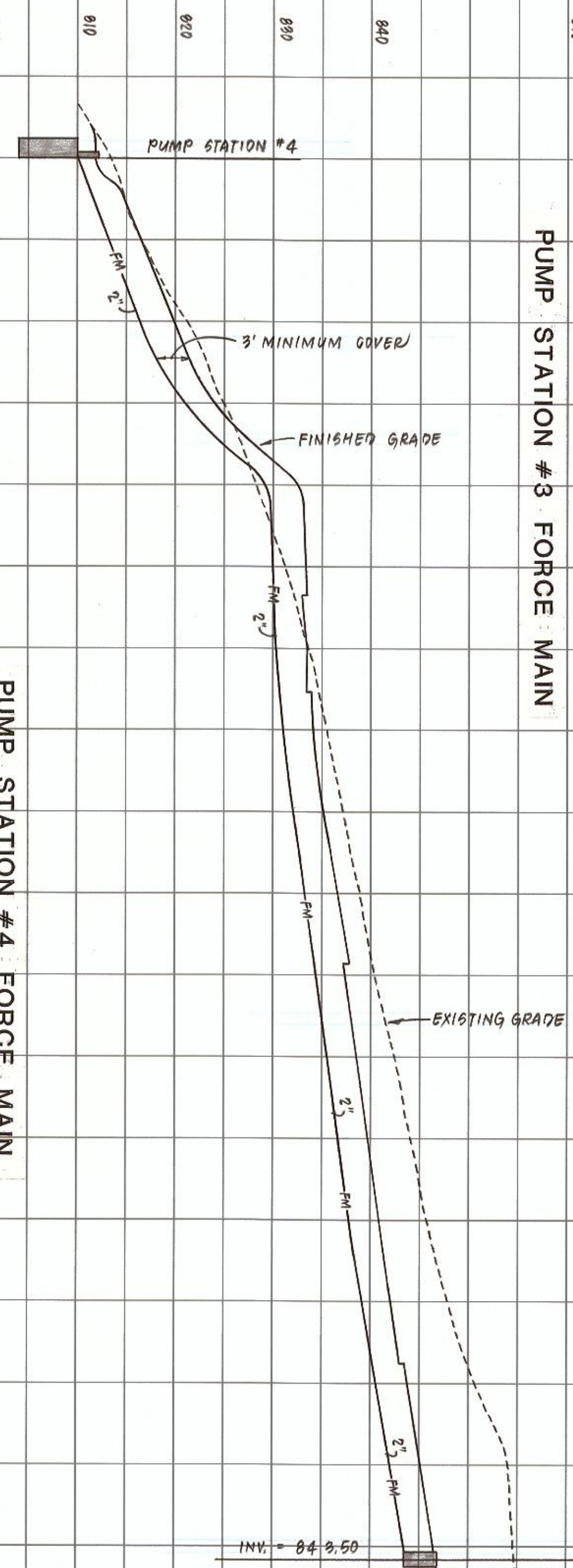
PUMP STATION #1 FORCE MAIN



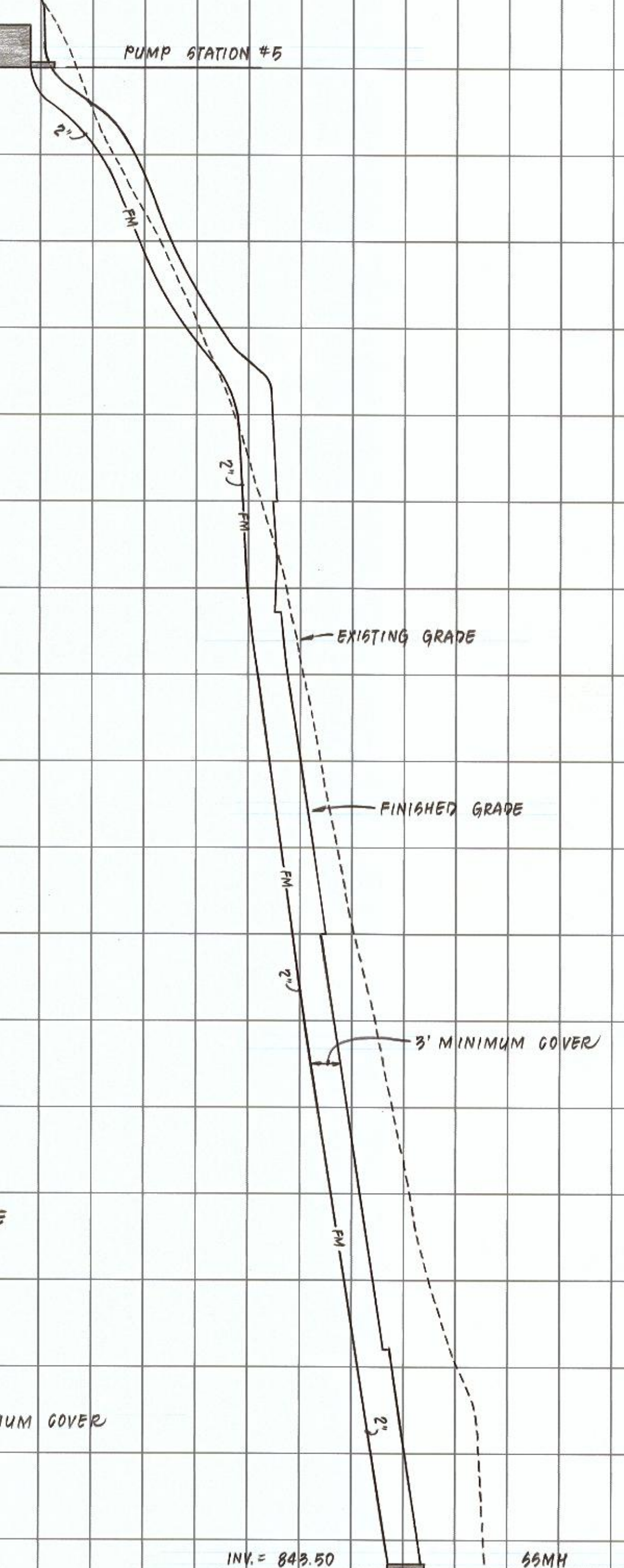
PUMP STATION #2 FORCE MAIN



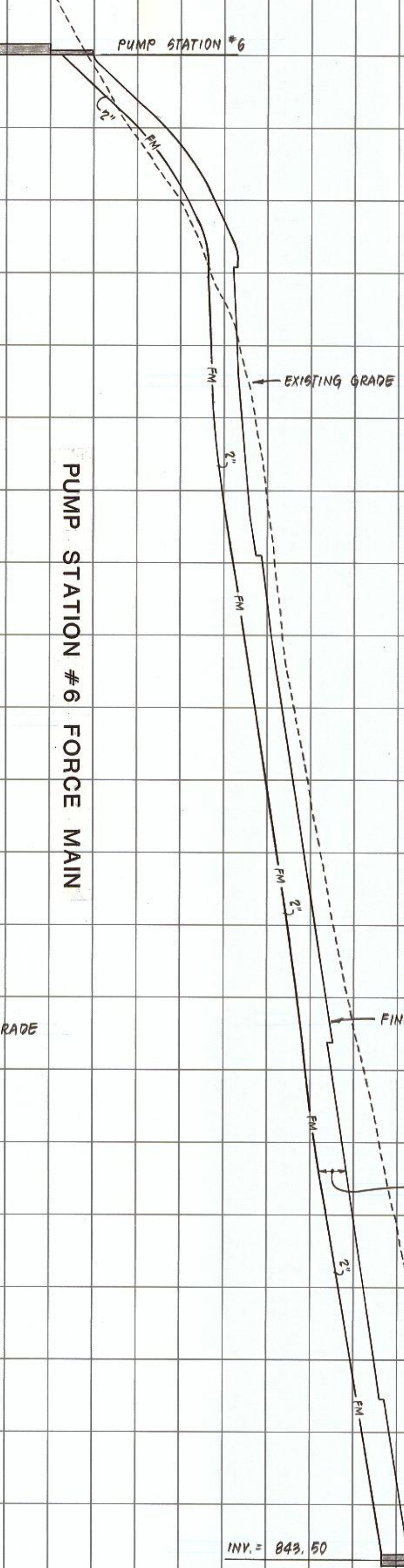
PUMP STATION #3 FORCE MAIN



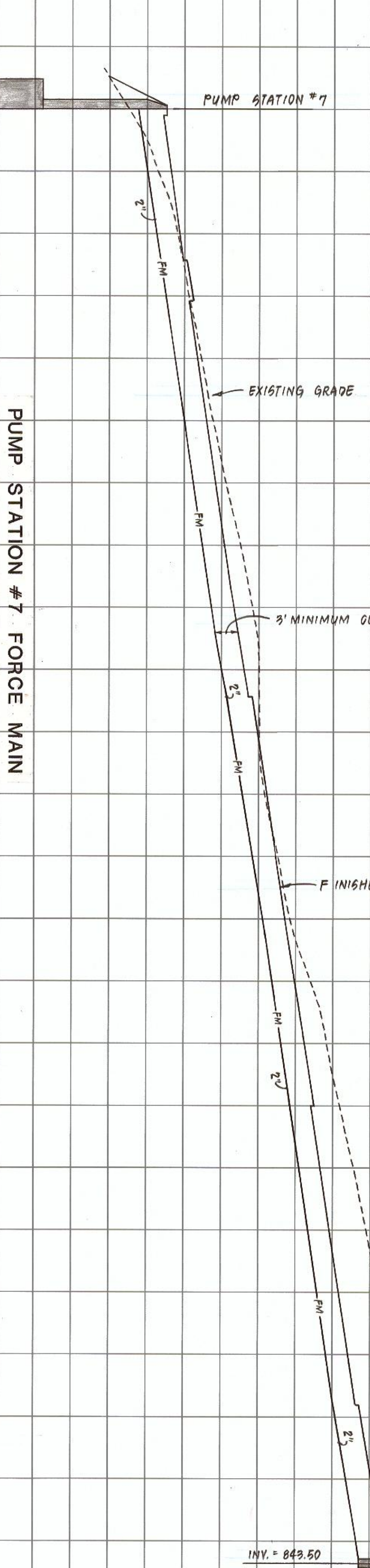
PUMP STATION #4 FORCE MAIN



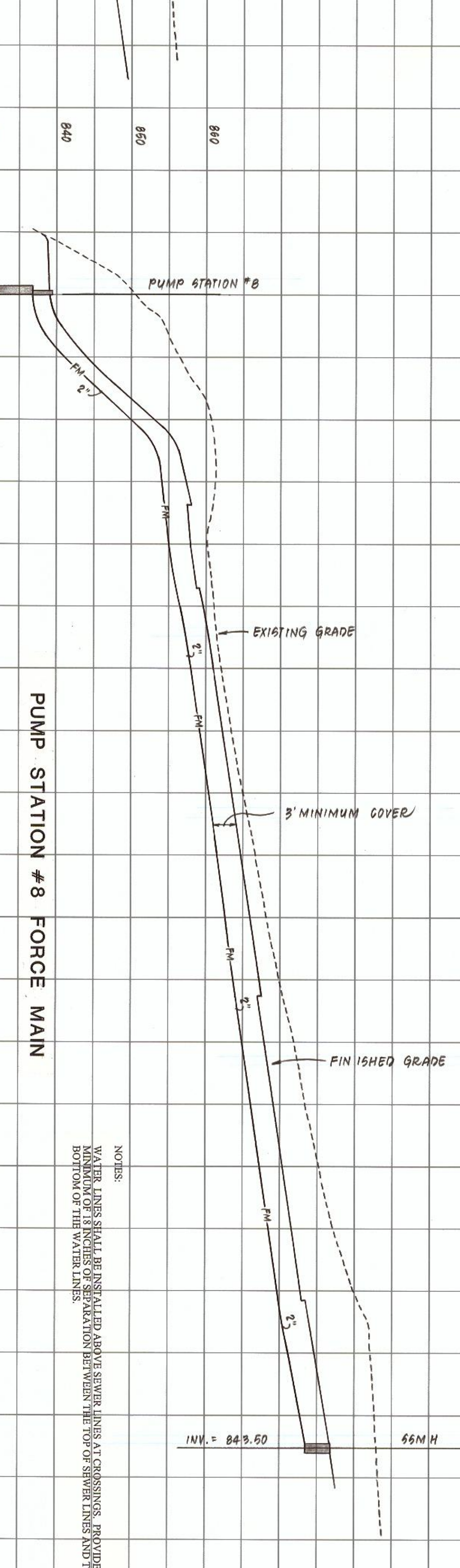
PUMP STATION #5 FORCE MAIN



PUMP STATION #6 FORCE MAIN



PUMP STATION #7 FORCE MAIN



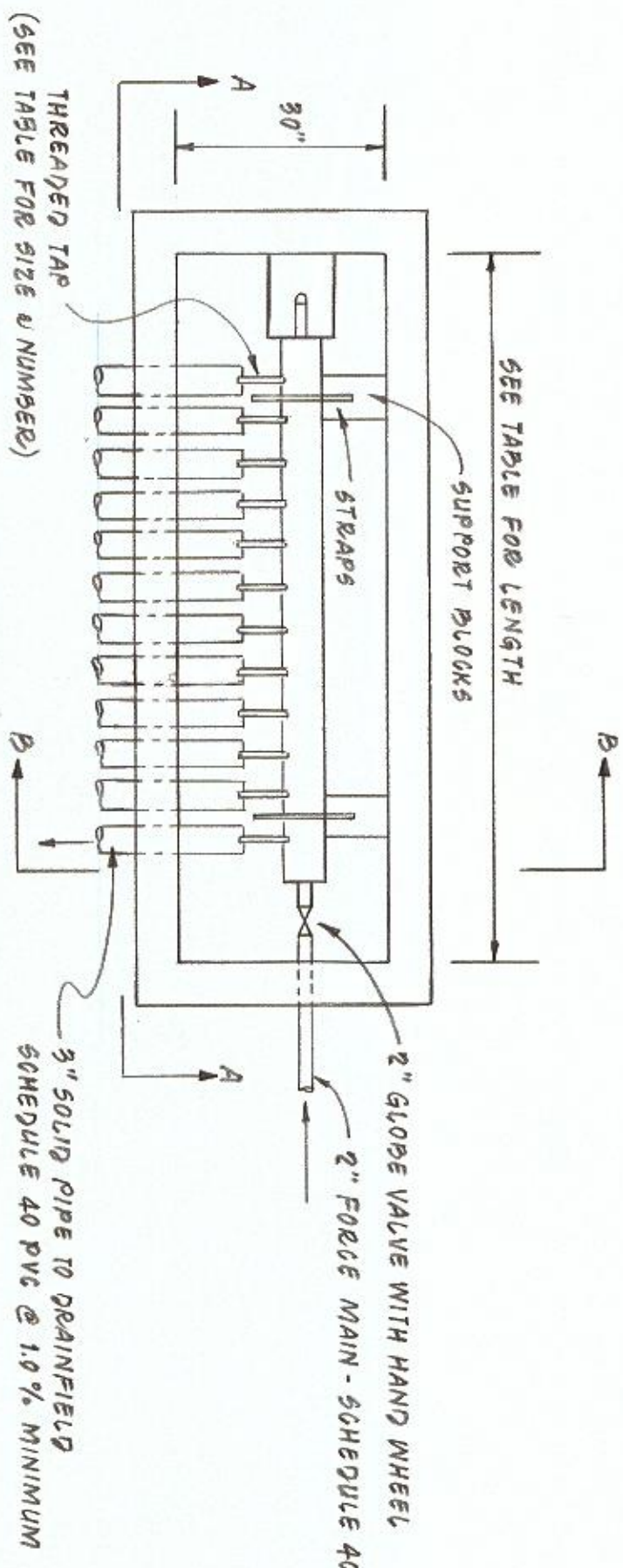
PUMP STATION #8 FORCE MAIN

NOTES:
WATER LINES SHALL BE INSTALLED ABOVE SEWER LINES AT CROSSINGS. PROVIDE A MINIMUM OF 18 INCHES OF SEPARATION BETWEEN THE TOP OF SEWER LINES AND THE BOTTOM OF THE WATER LINES.

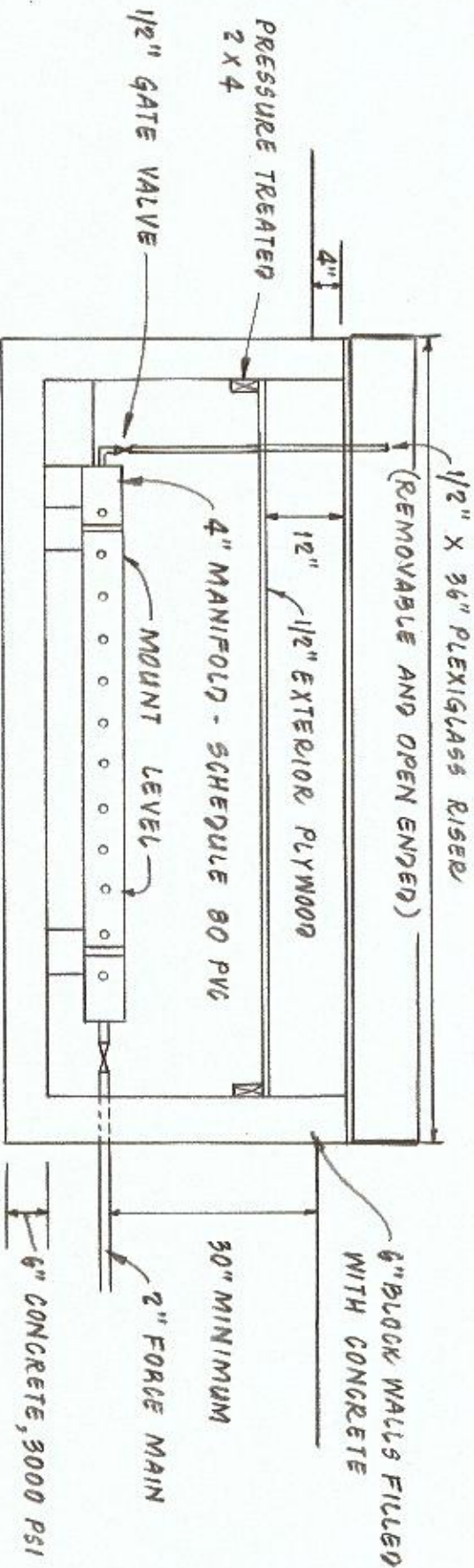


MANIFOLD DATA				
DRAINFIELD NO.	NO. OF TAPS	LENGTH	THREADED TAP SIZE	HEAD
1	12	8.5 FT.	1/2 INCH	1.0 FT.
2	4	4.5 FT.	1/2 INCH	1.0 FT.
3	8	6.5 FT.	1/2 INCH	1.6 FT.
4	10	7.5 FT.	1/2 INCH	1.0 FT.
5	5	6.0 FT.	1/2 INCH	1.0 FT.
6	10	7.5 FT.	1/2 INCH	1.0 FT.
7	10	7.5 FT.	1/2 INCH	1.0 FT.
8A	5	6.0 FT.	1/2 INCH	1.0 FT.
8B	5	6.0 FT.	1/2 INCH	1.4 FT.
9	12	8.5 FT.	1/2 INCH	1.0 FT.
10	10	7.5 FT.	1/2 INCH	1.0 FT.
11	8	6.5 FT.	1/2 INCH	1.0 FT.
12A	6	5.5 FT.	5/8 INCH	1.1 FT.
12B	4	4.5 FT.	1/2 INCH	1.0 FT.
13	8	6.5 FT.	1/2 INCH	1.0 FT.

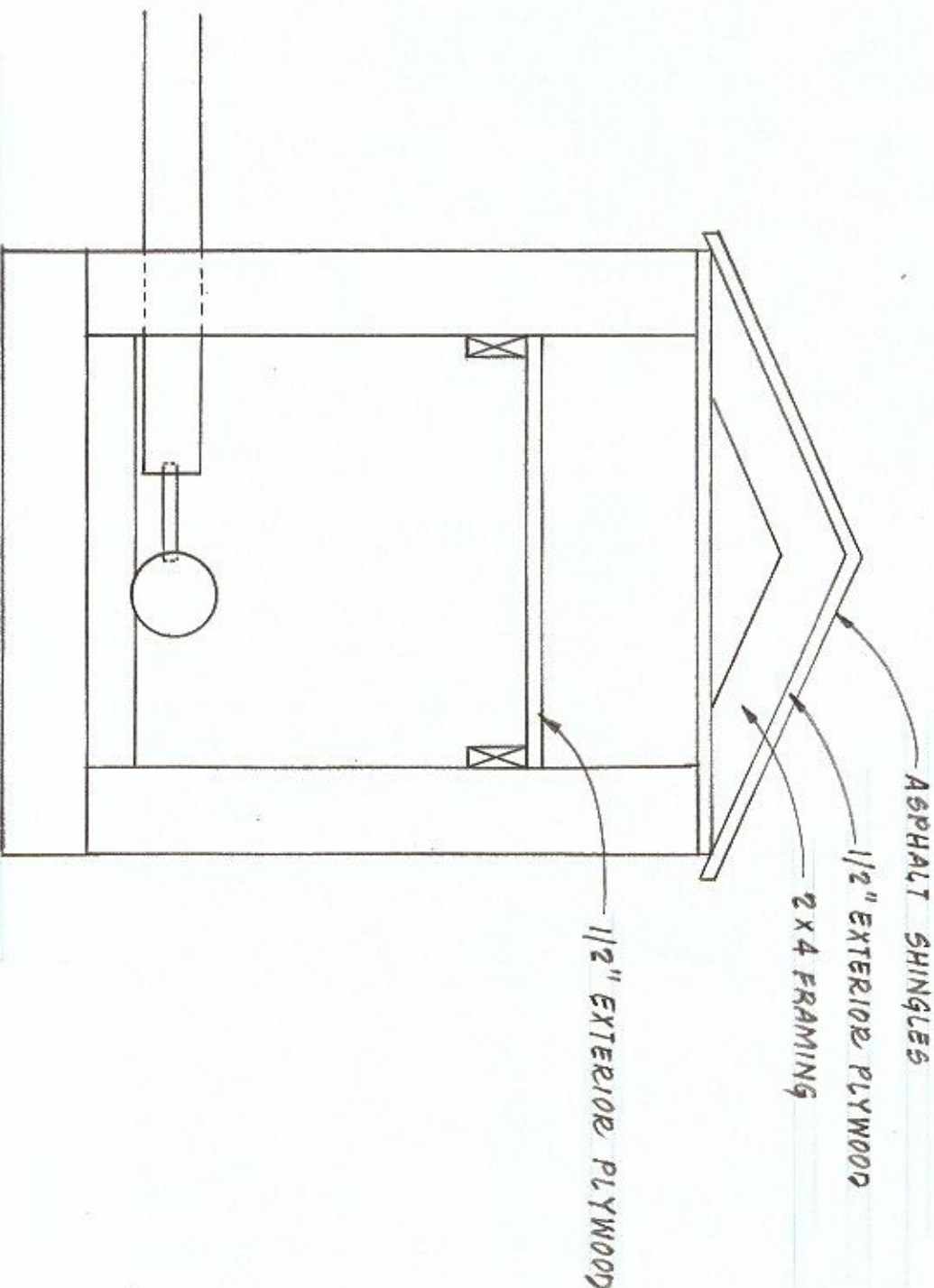
NOTES:
1. 2-INCH GLOBE VALVES SHALL BE ADJUSTED AFTER INSTALLATION TO PROVIDE THE LISTED HEAD MEASURED VERTICALLY FROM THE CENTER OF THE MANIFOLD. AFTER CALIBRATION THE FLEXGLASS RISER SHALL BE REMOVED AND STORED PRIOR TO PLACING THE MANIFOLD IN SERVICE.



MANIFOLD PLAN



SECTION A-A



SECTION B-B

MANIFOLD DETAIL

REVISION

DATE

DESIGNED

MAW

DRAWN

VWP

CHECKED

MSW

FORCE MAIN DETAILS

FOR

"WESTLAKE POINTE"

PREPARED FOR

WESTLAKE PROPERTIES, INC.

GILLS CREEK MAGISTERIAL DISTRICT

FRANKLIN COUNTY, VIRGINIA

SCALE: NONE

DATE: 7 AUG 1999

COMM: 95-181

SHEET 10 of 15

APPROVED BY

SEAL

NO. 012856

DATE: 8-7-99

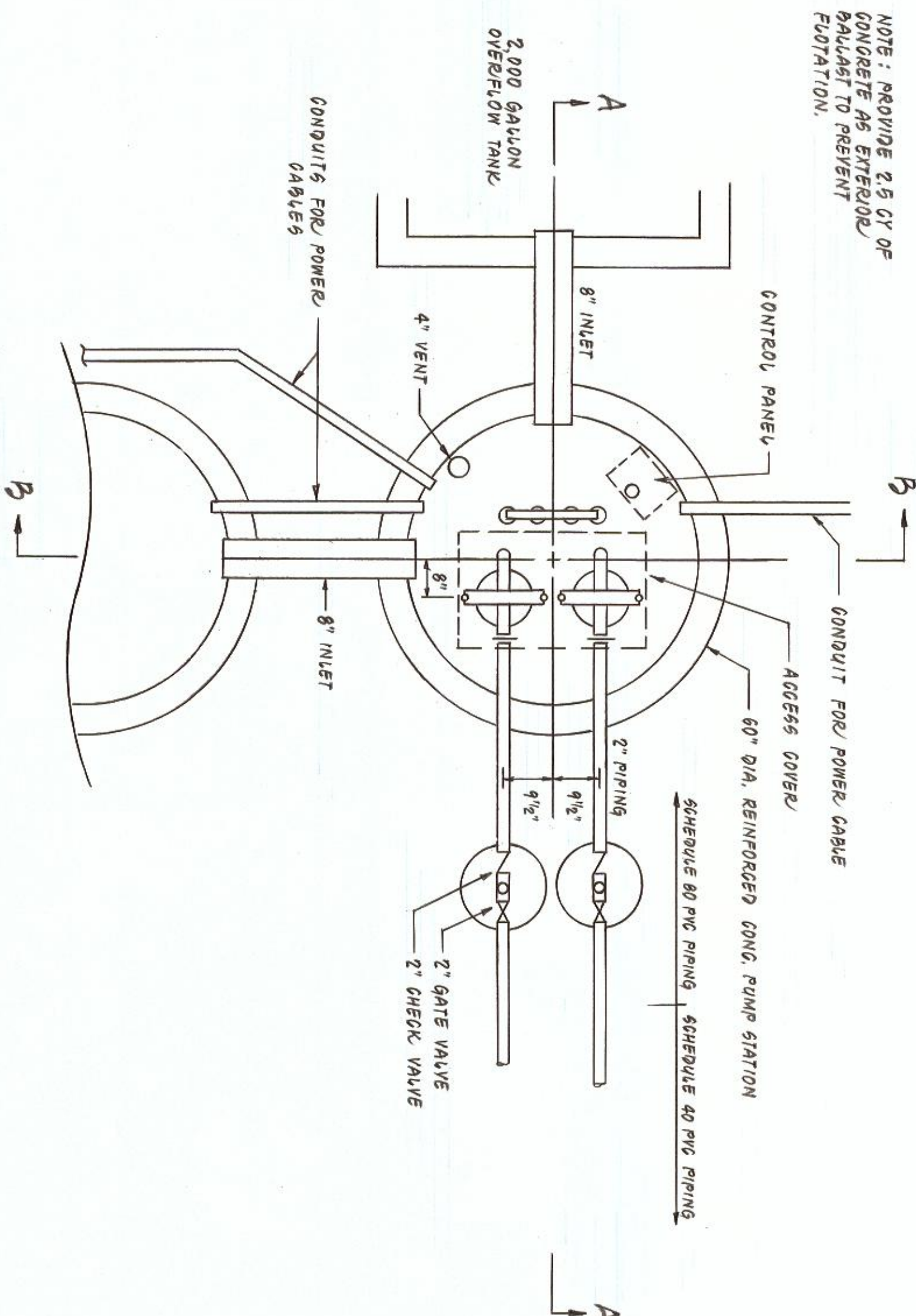
MICHAEL S. WEBB

REGISTERED PROFESSIONAL ENGINEER

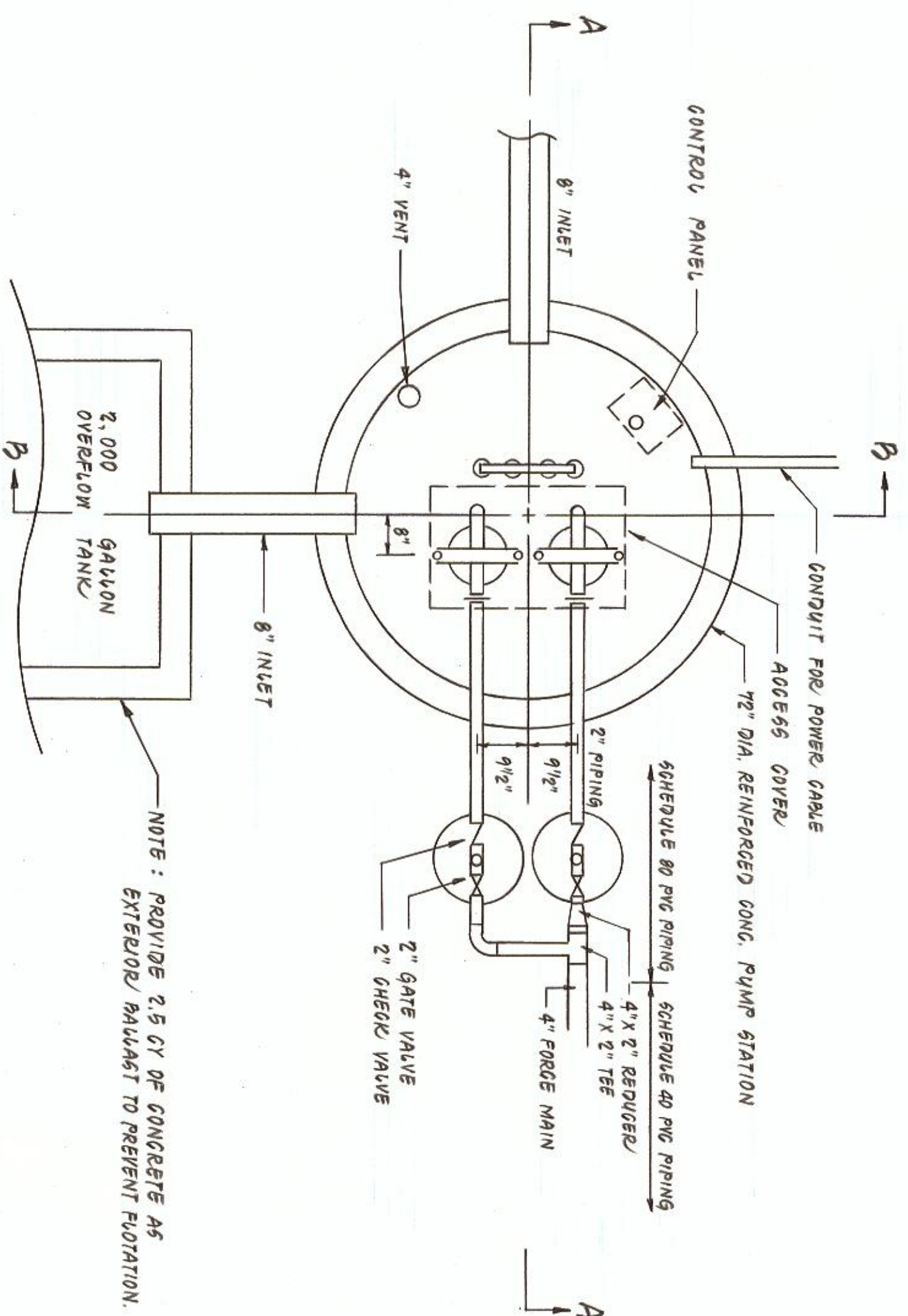
LUMSDEN ASSOCIATES, P.C.

ENGINEERS-SURVEYORS-PLANNERS

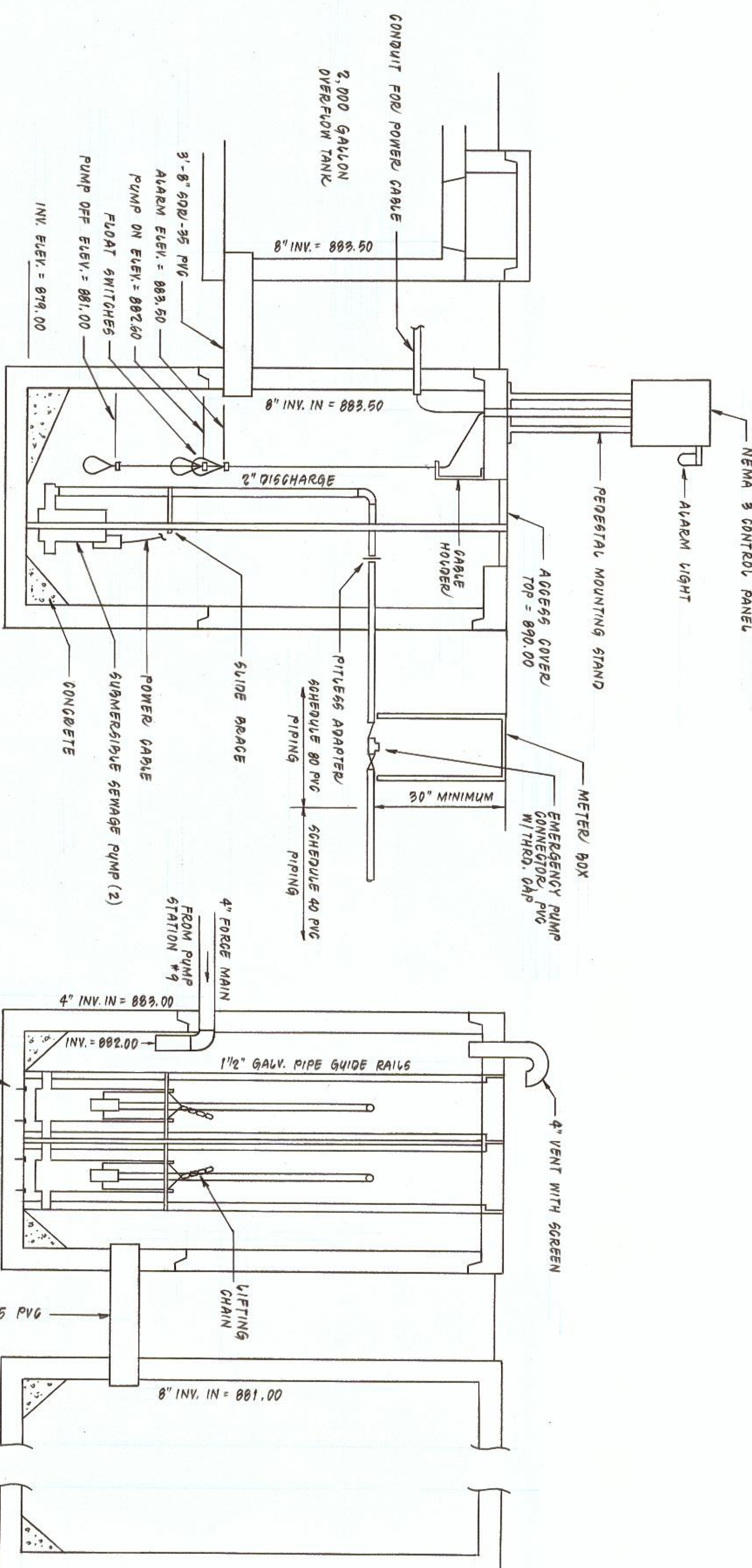
ROANOKE, VIRGINIA



PLAN
SCALE: 1/2" = 1'-0"

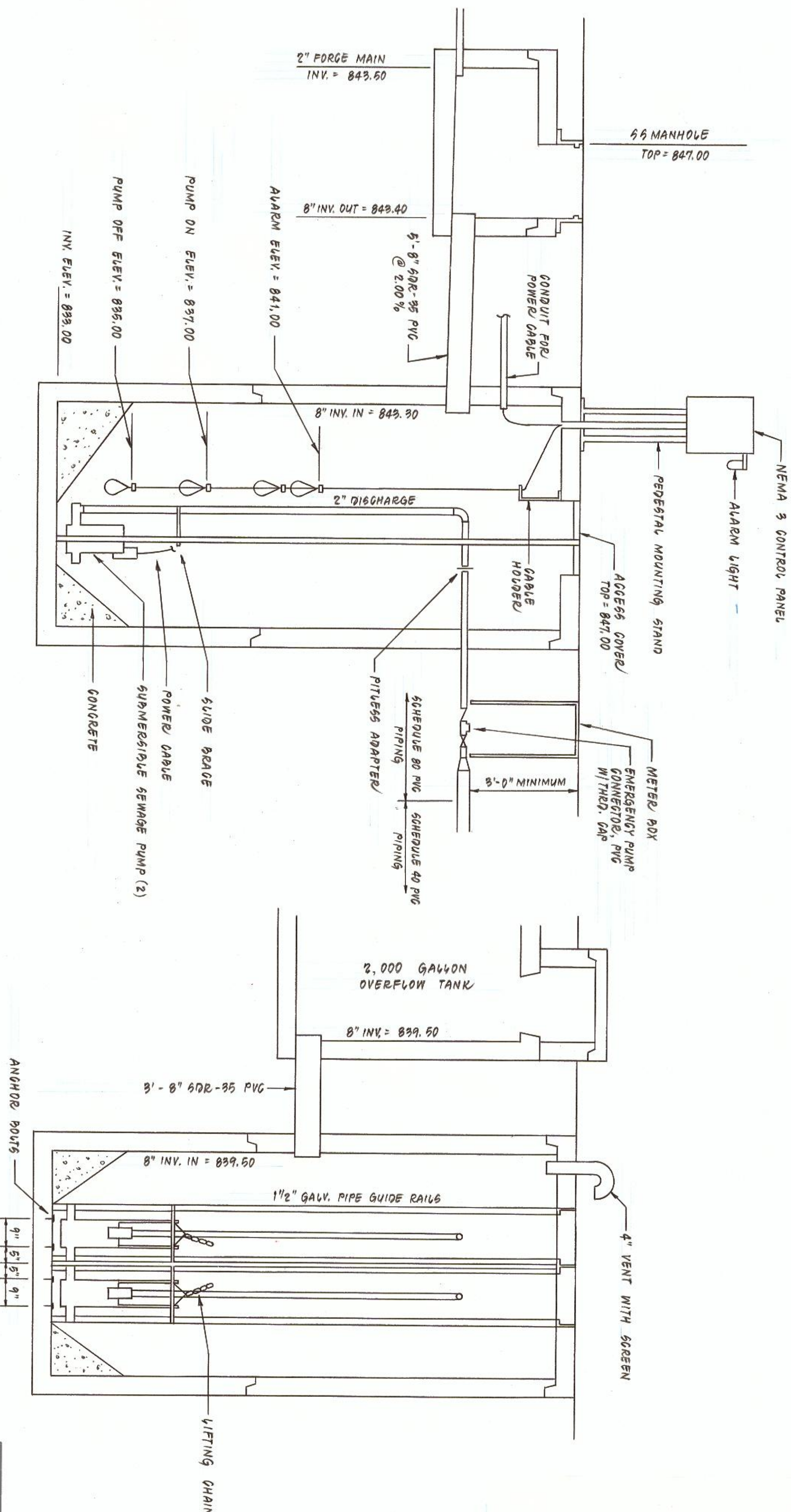


PLAN
SCALE: 1/2" = 1'-0"



SECTION A - A
SCALE: 1/2" = 1'-0"

PUMP STATION #10



SECTION A - A
SCALE: 1/2" = 1'-0"

PUMP STATION #9

WET WELL "A"
(TYPICAL)

WET WELL "B"

NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LUMSDEN ASSOCIATES, P.C. STANDARD SPECIFICATIONS AND THE FRANKLIN COUNTY BUILDING CODE. ALL REGULATIONS AND ORDINANCES SHALL BE FOLLOWED.
2. THE SUBMERSIBLE SEWAGE PUMPS SHALL BE HYDRODYNAMIC MODEL SPG550, 3450 RPM, 5 HORSEPOWER SINGLE PHASE, 230 VOLT, OR APPROVED EQUAL.
3. THE SEWAGE PUMPS SHALL BE INSTALLED WITH GUIDE RAILS TO ALLOW REMOVAL OF THE SEWAGE PUMPS.
4. THE PUMP STATION SHALL BE MADE WITH WATERPROOF SEALS OR BOLTED JOINTS TO PREVENT LEAKAGE.
5. STATION DISCHARGE PIPING SHALL BE SCHEDULE 80 PVC, FORCE MAIN PIPING SHALL BE BRACED AND BLOCKED TO PREVENT MOVEMENT.
6. ALL PIPING SHALL BE SCHEDULE 40 PVC.
7. THE PUMP STATION ACCESS COVER SHALL BE IN ACCORDANCE WITH THE FRANKLIN COUNTY BUILDING CODE.
8. SERVICE PANEL AND ELECTRIC METER SHALL BE MOUNTED ON A STAND ADJACENT TO THE PUMP STATION.

PUMP OPERATION:

1. PUMPS IN PUMP STATION NUMBER 9 SHALL BE CONTROLLED BY THE CONTROL PANEL. THE CONTROL PANEL SHALL PROVIDE FOR AUTOMATIC OPERATION OF THE PUMPS. THE PUMP IN PUMP STATION NUMBER 9 WHEN THE PUMP IN PUMP STATION 10 CUTS OFF.
2. PUMPS IN PUMP STATION NUMBER 10 SHALL BE CONTROLLED BY THE CONTROL PANEL. THE CONTROL PANEL SHALL PROVIDE FOR AUTOMATIC OPERATION OF THE PUMPS.

SECTION B - B
SCALE: 1/2" = 1'-0"

SECTION A - A
SCALE: 1/2" = 1'-0"



REVISION	DATE	DESCRIPTION
2	24 FEB 1991	DESIGNED PUMP STATIONS 9 & 10
1	24 FEB 1991	DESIGNED PUMP STATION 10 & FORCE MAIN
0	24 FEB 1991	DESIGNED PUMP STATION 9
DESIGNED	MSW	
DRAWN	RLC	
CHECKED	MSW	
DETAILS FOR PUMP STATIONS 9 & 10 FOR "WESTLAKE POINTE" PREPARED FOR WESTLAKE PROPERTIES, INC. GILTS CREEK MAGISTERIAL DISTRICT FRANKLIN COUNTY, VIRGINIA		
LUMSDEN ASSOCIATES, P.C. ENGINEERS-SURVEYORS-PLANNERS ROANOKE, VIRGINIA		
DATE: 7 AUG 1990	SCALE: NONE	COMM: 96-181
		SHEET 11 OF 13