

RESERVOIR OVERLOOK PUMPING STATION & FORCE MAIN HOWARD COUNTY, MARYLAND

PUMPING STATION SHEETS 2 THRU 12
FORCE MAIN SHEETS 13 THRU 15

DEPARTMENT OF PUBLIC WORKS CONTRACT NO. 20-3664-D

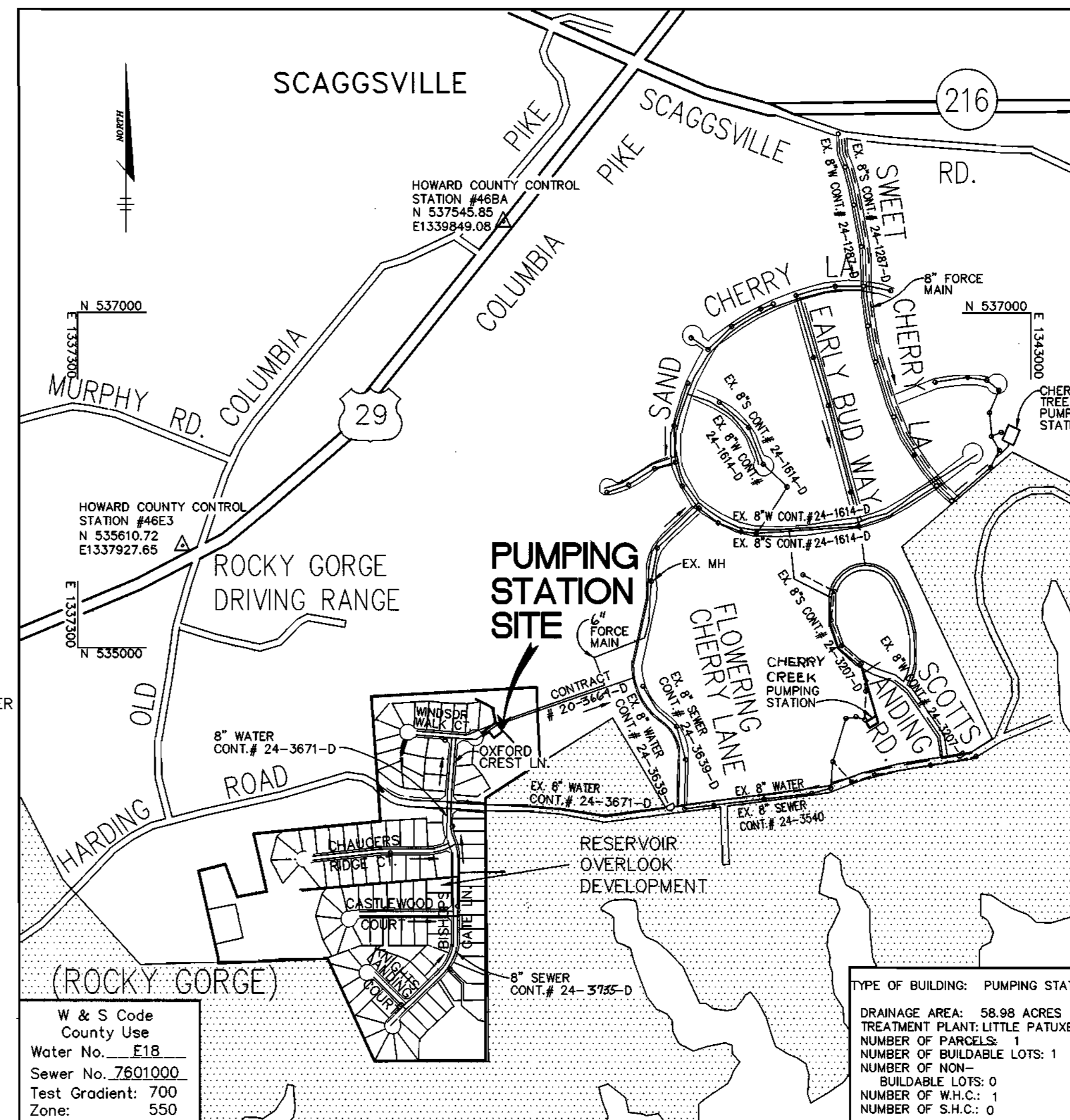
INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	SITE PLAN
3	SEWER/FORCE MAIN PROFILE & SECTION
4	FENCE & ACCESS ROAD DETAILS
5	CONTROL BUILDING PLAN AND DETAILS - ARCHITECTURAL/STRUCTURAL
6	WETWELL & PUMPING STATION - MECHANICAL
7	ODOR CONTROL SYSTEM - MECHANICAL
8	METER/VALVE VAULT AND BY-PASS PUMPING MANHOLE
9	ELECTRICAL STATION PLAN
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12	SEWERSHED MAP/SYSTEM CURVE
13	WATER AND SEWER PLAN
14	SEWER PROFILE
15	SEDIMENT CONTROL NOTES AND DETAILS

GENERAL NOTES

- Approximate location of existing mains are shown. The contractor shall take all necessary precautions to protect existing mains and services and maintain uninterrupted supply. Any damage incurred shall be repaired immediately to the satisfaction of the Engineer at the Contractor's expense.
- All horizontal controls are based on Maryland State Coordinates.
- All vertical controls are based on U.S.G.S. datum.
- All pipe elevations shown are invert elevations.
- Clear all utilities by a minimum of 6". Clear all poles by 2'-0" minimum.
- For details not shown on the drawings, and for materials and construction methods use Howard County Design Manual, Volume IV, Standard Specifications and Details for Construction. (Latest Edition). The contractor shall have a copy of Volume IV on the job.
- Where test pits have been made on existing utilities, they are noted by the symbol at the location of the test pit. A note or notes containing the results of the test pit or pits is included on the drawings. Existing utilities in the vicinity of the proposed work for which test pits have not been dug shall be located by the contractor two weeks in advance of construction operations at his own expense.
- Contractor shall notify the following utility companies or agencies at least five working days before starting work shown on these plans:

State Highway Administration	531-5533
Baltimore Gas & Electric Co. Contractor Services	850-4620
Baltimore Gas & Electric Co. Underground Damage Control	787-9068
Miss Utility	1-800-257-7777
Colonial Pipeline Co.	795-1390
Bureau of Utilities, Howard County Department of Public Works	313-4900
- Trees and shrubs are to be protected from damage to maximum extent. Trees and shrubs located within the construction strip are not to be removed or damaged by the contractor.
- All water mains to be D.I.P. Class 52 unless otherwise noted.
- Tops of all water mains to have a minimum of 3-1/2' cover unless otherwise noted.
- Valves adjacent to tees shall be strapped to tees.
- All fittings shall be buttressed or anchored with concrete in accordance with the Standard Details unless otherwise provided for on the drawings.
- The contractor shall not operate any water main valves on the existing water system.
- All water house connections shall be for inside meter setting unless otherwise noted on plans or in specifications.
- All sewer mains shall be D.I.P. Class 52 unless otherwise noted.
- All manholes shall be 4'-0" inside diameter unless otherwise noted.
- Force mains shall be D.I.P. CL. 52.
- Manholes shown with 12" and 16" walls are for brick manholes only.
- Manholes can be either brick or precast concrete structures.
- Contractor is solely responsible for construction means, methods, techniques, sequences, procedures, and safety precautions and programs.
- The contractor shall notify the Bureau of Highways, Howard County, at (410) 313-7450 at least five (5) working days before any open cut of any County road or boring/jacking operation in County roads for laying water/sewer mains or house connections. The approval of these drawings will constitute compliance with DPW requirements per Section 18.114(a) of the Howard County Code.
- Howard County DPW is hereby granted permission to access private lots shown on these plans in order to maintain public water and sewer house connections.



RESERVOIR OVERLOOK PUMPING STATION

VICINITY MAP
SCALE: 1"=600'

LEGEND

=====	EXISTING WATER
=====	EXISTING STORM DRAIN/SANITARY SEWER
=====	EXISTING FORCE MAIN
----- 200 -----	EXISTING CONTOUR LINES
-----	PROPERTY LINE
-----	RIGHT OF WAY
-----	PROPOSED W.H.C.
-----	PROPOSED SANITARY SEWER
-----	PROPOSED FORCE MAIN
-C-C-C-	PROPOSED ELECTRIC CONDUIT
-T-T-T-	PROPOSED TELEPHONE CONDUIT
PS-1	SOILS BORING

BY THE DEVELOPER:

I/WE CERTIFY THAT ALL DEVELOPMENT & CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 4.24.98
DATE

BY THE ENGINEER:

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 5/1/98
SIGNATURE DATE

QUANTITIES

ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER / SUPPLIER
PUMPING STATION: COMPLETE - IN - PLACE	1 EACH			
8" SEWER, D.I.P.	167 L.F.	157 L.F.	DIP	US PIPE
6" FORCE MAIN	79 L.F.	72 L.F.	DIP	US PIPE
1" W.H.C.	76 L.F.	75 L.F.	COPPER	US PIPE
4" S.H.C.	22 L.F.	24 L.F.	DIP	US PIPE
STANDARD MANHOLE	1 EACH	1 EACH		ATLANTIC CONC. PRODUCTS INC.
8" SEWER MAIN	318 L.F.	318 L.F.		JM MANUFACTURING
6" DIP FORCE MAIN	1197 L.F.	1196 L.F.	DIP	ATLANTIC STATES
SEWER BLOWOFF MH	2 EACH			
AIR RELEASE SEWER VALVE	2 EACH			
1/4 HB	3 EACH			
1/8 HB	6 EACH			

NAME OF UTILITY CONTRACTOR: *[Signature]*

Sediment control measures for this contract will be implemented in accordance with Section 219 of the Specifications and as shown on the Drawings.

F-99-61

CHECKBOX
AS-BUILT DATE: *11/99*
SURVEY AND DRAFTING DIVISION

Review for Howard Soil Conservation District and meets technical requirements.

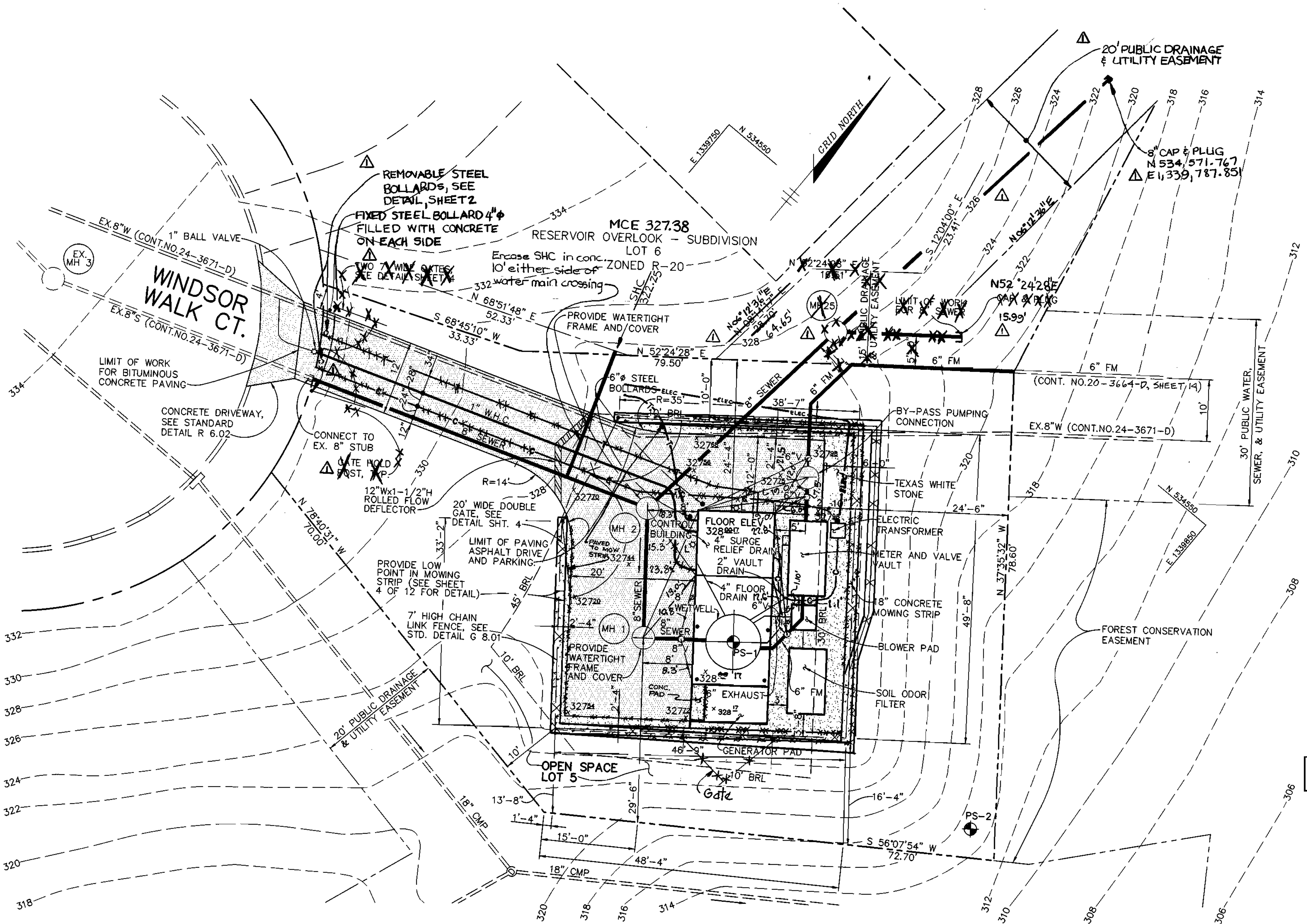
[Signature] 4/1/98
NATURAL RESOURCES CONSERVATION SERVICE DATE

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

[Signature] 6/11/98
HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND	RIEMER MUEGGE & ASSOCIATES, INC. ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING 8818 Centre Park Drive • Suite 200 • Columbia, MD 21045 410-997-5000 FAX: 410-997-9252 87001/401MS/TITLESET.DWG	DES: J.S.C. DRN: E.L.R. CHK: G.C.L. DATE: 4/27/98	REVISED ESTIMATED QUANTITY 8" SEWER DIP REVISE CONTRACT #3 IN VICINITY MAP, QUANTITIES TABLE, SHEET INDEX, AND TOTAL SHEET #.	8/98 7/17/00	TITLE SHEET	SCALE AS SHOWN
<i>[Signature]</i> 6-1-99 CHIEF, BUREAU OF UTILITIES DATE	<i>[Signature]</i> 6/15/99 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE	<i>[Signature]</i> 5/1/98 FRANK DONALDSON #8146	BY NO. - REVISION DATE	600' SCALE MAP NO. 46 BLOCK NO. 16		RESERVOIR OVERLOOK PUMPING STATION & FORCE MAIN 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 20-3664-D	SHEET 1 OF 15

AS-BUILT 11/19/99



PLAN
SCALE: 1" = 10'

GENERAL SITE NOTES:

- 1) PRESENT ZONING IS R-20.
- 2) ALL EXTERIOR LIGHTING OF BUILDING WILL BE DIRECTED DOWNWARD.
- 3) THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 46E3 & 46BA WERE USED FOR THIS PROJECT.
- 4) WATER & SEWER ARE PUBLIC, PROVIDED UNDER CONT. NO. 24-3671-D. DRAINAGE AREA IS LITTLE PATUXENT.
- 5) UNLESS OTHERWISE NOTED, PROPERTY LINES FOR OPEN SPACE LOT 5 DEFINE LIMIT OF CONTRACT.

SITE ANALYSIS:

- 1) AREA OF LOT 7,771 SQ.FT./0.178 ACRES
- 2) PRESENT ZONING R-20
- 3) PROPOSED USE OF STRUCTURE: WASTEWATER PUMPING STATION
- 4) FLOOR SPACE OF PUMPING STATION BUILDING: 107 SQ.FT.(CONTROL ROOM)
- 5) MAXIMUM NUMBER OF EMPLOYEES: NORMALLY ONE (1) VISIT PER DAY BY BUREAU OF UTILITIES MAINTENANCE PERSONNEL
- 6) NUMBER OF PARKING SPACES REQUIRED: TWO (2) PER HOWARD COUNTY DESIGN MANUAL, VOLUME II
- 7) NUMBER OF PARKING SPACES PROVIDED: TWO (2)
- 8) BUILDING COVERAGE OF SITE: 364 SQ.FT.
- 9) PAVED AREA OF SITE: 1908 SQ.FT.: 0.044 ACRES

SHEET NOTES:

- 1) PRIOR TO CONSTRUCTION, THE DEVELOPER OF RESERVOIR OVERLOOK SUBDIVISION WILL SET MONUMENTS AT EACH PROPERTY CORNER OF OPEN SPACE LOT 5 AND WILL ESTABLISH BENCHMARKS AT TWO OF THE PROPERTY CORNER MONUMENTS. THE PROPERTY LINES AND BENCHMARKS THUS ESTABLISHED SHALL BE USED BY THE CONTRACTOR AS HORIZONTAL AND VERTICAL CONTROL FOR CONSTRUCTION STAKEOUT.
- 2) 6" FORCE MAIN SHALL BE CLASS 52 D.I.P.
- 3) SEE SHEET 3 OF 15 FOR PROFILE OF THE SEWER/FORCE MAIN WITHIN THE LIMITS OF THE PUMPING STATION SITE.
- 4) SEE SHEET 3 OF 15 FOR SOILS BORING PROFILE.
- 5) SEDIMENT AND EROSION CONTROL FOR THIS SITE IS INCLUDED IN THE RESERVOIR OVERLOOK LOTS 1 THRU 109 PROJECT F-98-61 OF WHICH THIS PUMPING STATION SITE FORMS A PART.
- 6) STORMWATER MANAGEMENT FOR THIS SITE IS INCLUDED IN THE RESERVOIR OVERLOOK LOTS 1 THRU 109 PROJECT F-98-61 OF WHICH THIS PUMPING STATION SITE FORMS A PART.
- 7) PROPERTY LINES FOR OPEN SPACE LOT 5 ARE PROVIDED BY MILDENBERG AND BOENDER, WHO PREPARED THE PLAT FOR RESERVOIR OVERLOOK LOTS 1 THRU 109.
- 8) SITE NOT SUBJECT TO 100 YEAR FLOODING. FLOOD ELEVATIONS ARE BEYOND LIMITS OF PLAN.
- 9) ALL ELECTRIC CONDUITS SHALL BE CONCRETE ENCASED. SEE DETAIL ON SHEET 4 OF 15.
- 10) FOR FORCE MAIN, SEE SHEETS 13 THRU 15.

100 YEAR FLOOD ELEVATION 303.60

AS-BUILT

Frank Donaldson
FRANK DONALDSON #8146

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert J. Berman 6-1-98
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

Michael J. ... 6/1/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21046
410-997-8900 FAX: 410-997-9282
M/PROJECT/OVERLOOK/PLAN.DWG

Frank H. Donaldson
FRANK H. DONALDSON #8146

DES: G.C.L.	SJP	2	QUOTED GATE REPLACED BY STEEL BOLLARD, REALIGNED & LENGTHENED SEWER, OMITTED MH-2C	8/98
DRN: E.L.R.			REVISE FORCE MAIN CONTRACT # & TOTAL SHEET #	7/17/00
CHK: G.C.L.				
DATE: 4/27/98	BY	NO.	REVISION	DATE

600' SCALE MAP NO.	46	BLOCK NO.	16
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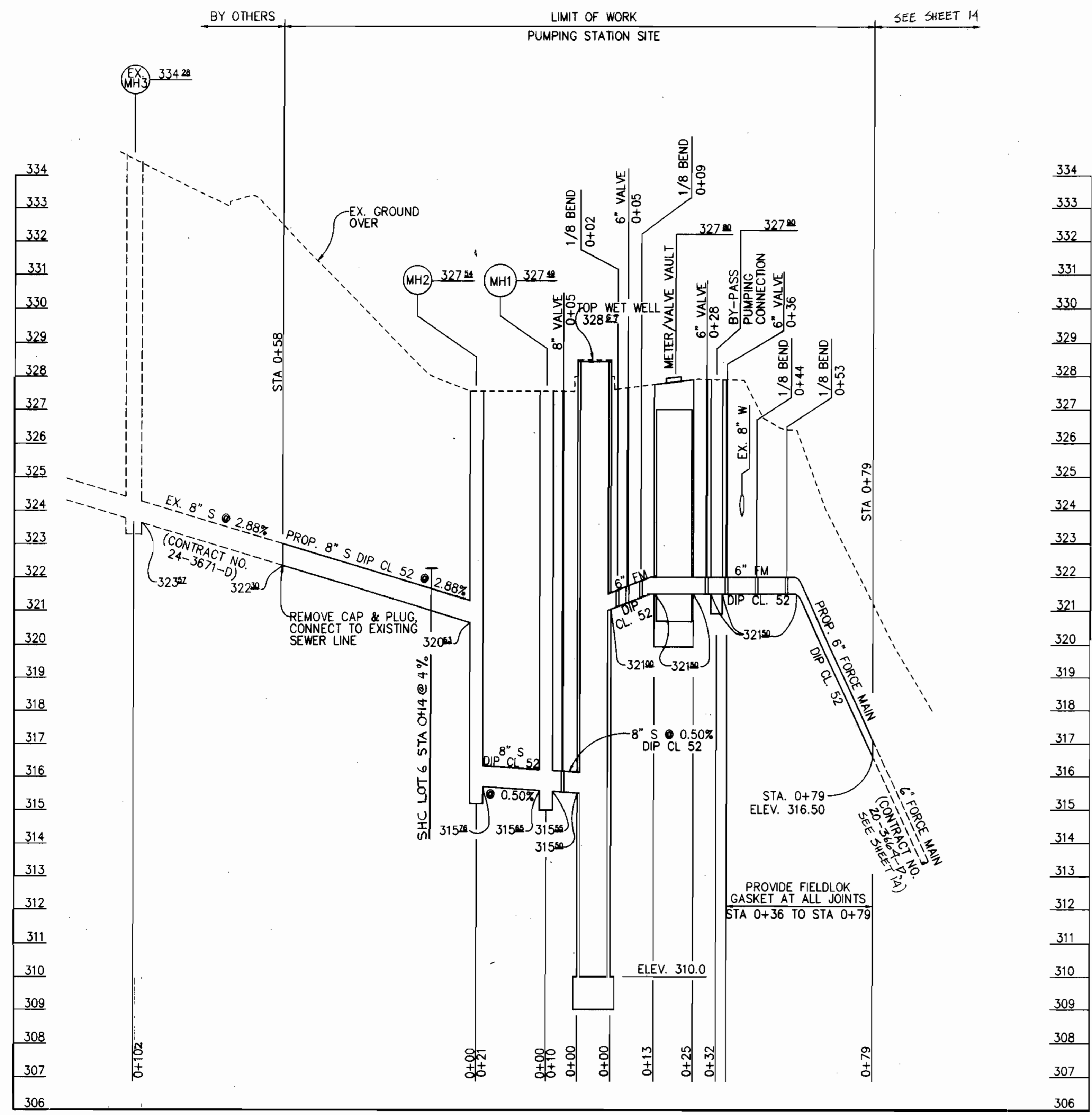
RESERVOIR OVERLOOK PUMPING STATION
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 20-3664-D

SCALE
1" = 10'

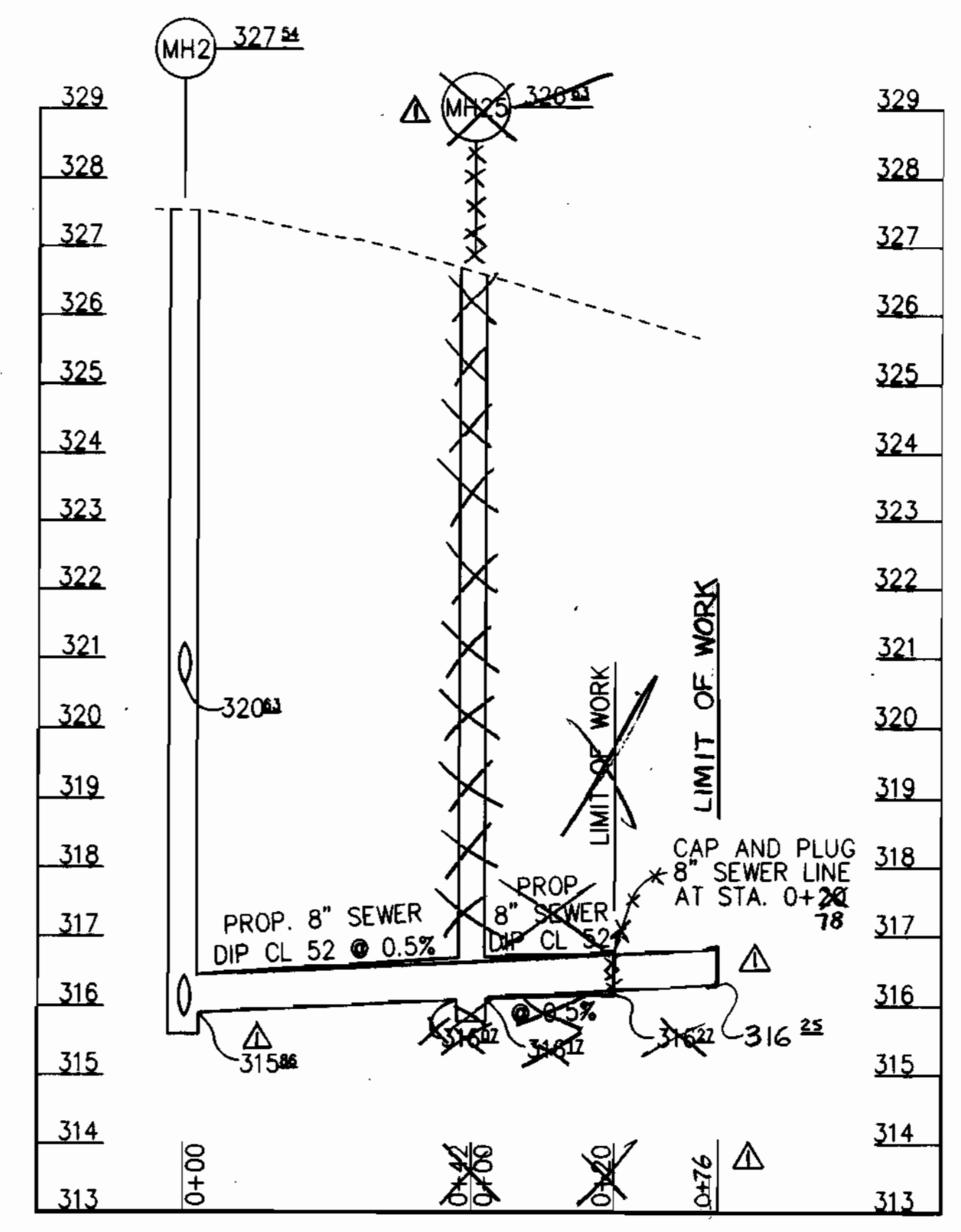
SHEET
2 OF 15

AS-BUILT 11/19/99

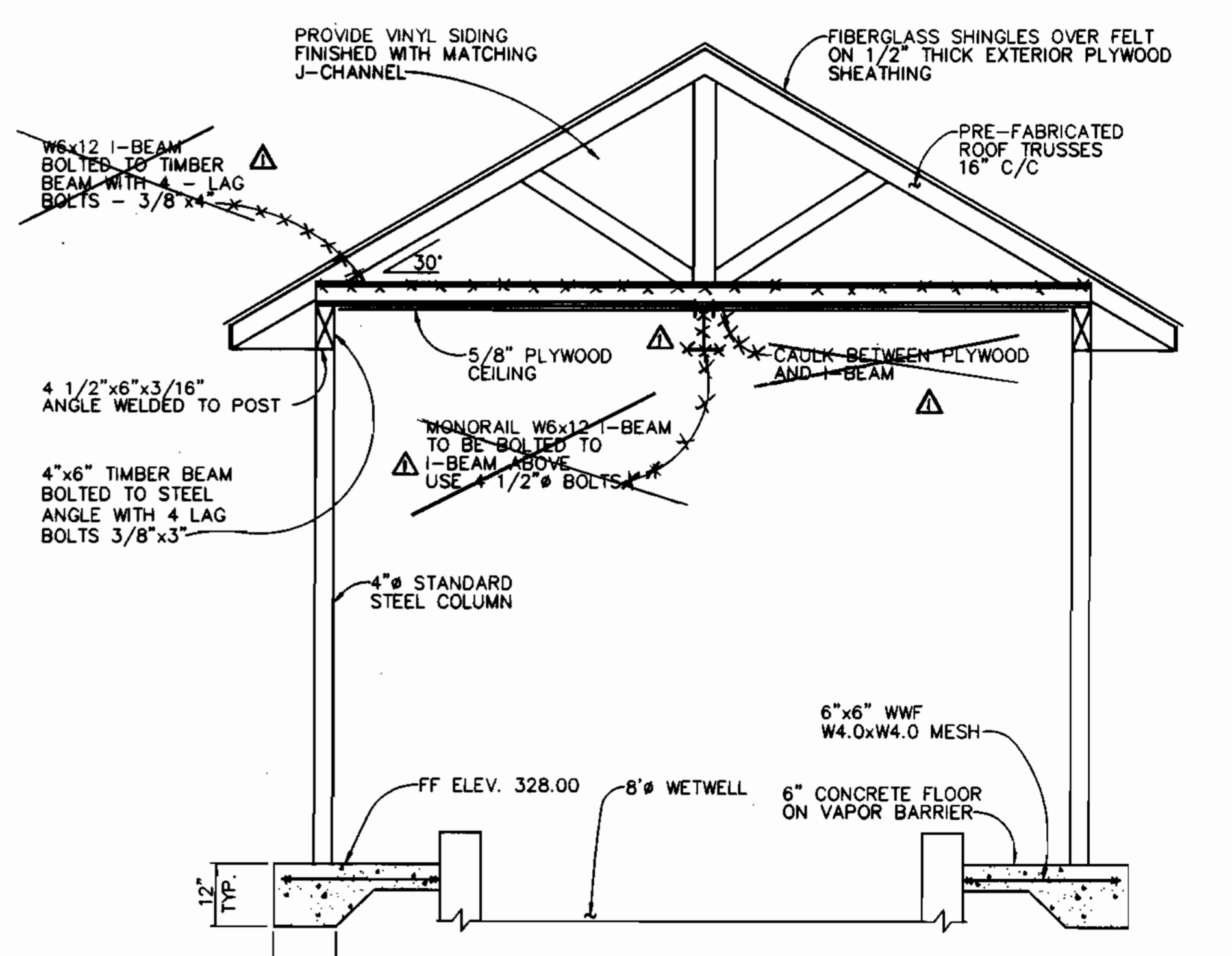
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PROFILE
 HORIZ.: 1"=20'
 SCALE: VERT.: 1"=2'



PROFILE
 HORIZ.: 1"=20'
 SCALE: VERT.: 1"=2'



SECTION B-B
 SCALE: 1/2" = 1'-0"
 NOTE: SEE SHEET 5 OF 15 FOR PLAN.

LOG OF BORING NO. PS-1 Sheet 1 of 1

PROJECT: Reservoir Overlook
 PROJECT NO: 86328-C
 PROJECT LOCATION: Howard County, Maryland
 DATE STARTED: December 10, 1997
 DATE COMPLETED: December 10, 1997
 DRILLING CONTRACTOR: HBE
 DRILLER: HBE
 CHECKED BY: J. Resco
 SAMPLING METHOD: Split Spoon
 WATER LEVEL: 2 Dry 2 Dry
 DATE: 12/10/97
 CAUSED BY: A
 GROUND SURFACE ELEVATION: 320.0
 DATUM: MSL
 WEATHER: Cloudy
 GEOLOGIST: HBE
 CHECKED BY: J. Resco
 BACKGROUND OVA (PPM):

SAMPLE NO.	DEPTH (FT.)	DIAMETER (IN.)	LOG	REMARKS
S-1	1.5	0.8	2-1-3	4 320.0 0 BM Brown, moist, loose to medium-dense to very dense, micaceous sand to the SAND, thin to some silt & clay. S&M AASHTO: A-4/A-2-4
S-2	1.5	1.0	6-6-5	11 6 Water Not Encountered While Drilling.
S-3	1.5	0.5	60H	80 10 311.5 0M Very dense weathered saprolite to weathered rock.
Auger Refused at 12.0 ft. Bottom of Hole at 12.0 ft.				

Coordinates: N: E:

GTA GEO-TECHNOLOGY ASSOCIATES, INC. LOG OF BORING PS-1 Sheet 1 of 1

LOG OF BORING NO. PS-2 Sheet 1 of 1

PROJECT: Reservoir Overlook
 PROJECT NO: 86328-C
 PROJECT LOCATION: Howard County, Maryland
 DATE STARTED: December 10, 1997
 DATE COMPLETED: December 10, 1997
 DRILLING CONTRACTOR: HBE
 DRILLER: HBE
 CHECKED BY: J. Resco
 SAMPLING METHOD: Split Spoon
 WATER LEVEL: 2 Dry 2 Dry
 DATE: 12/10/97
 CAUSED BY: A
 GROUND SURFACE ELEVATION: 310.0
 DATUM: MSL
 WEATHER: Cloudy
 GEOLOGIST: HBE
 CHECKED BY: J. Resco
 BACKGROUND OVA (PPM):

SAMPLE NO.	DEPTH (FT.)	DIAMETER (IN.)	LOG	REMARKS
S-1	1.5	0.8	1-1-2	3 310.0 0 BM Brown to gray, moist to dry, loose to very dense, coarse to fine SAND, thin to some clayey silt. (S&M) AASHTO: A-2-4
S-2	1.5	0.5	2-3-8	8 6 Water Not Encountered While Drilling.
S-3	1.5	1	60H	80 10 301.5 0M Very dense weathered saprolite to weathered rock.
Auger Refused at 14.0 ft. Bottom of Hole at 14.0 ft.				

Coordinates: N: E:

GTA GEO-TECHNOLOGY ASSOCIATES, INC. LOG OF BORING PS-2 Sheet 1 of 1

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DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Robert B. Brown 6-1-98
 CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
 Chief, Development Engineering Division DATE

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 www.riemermuegge.com

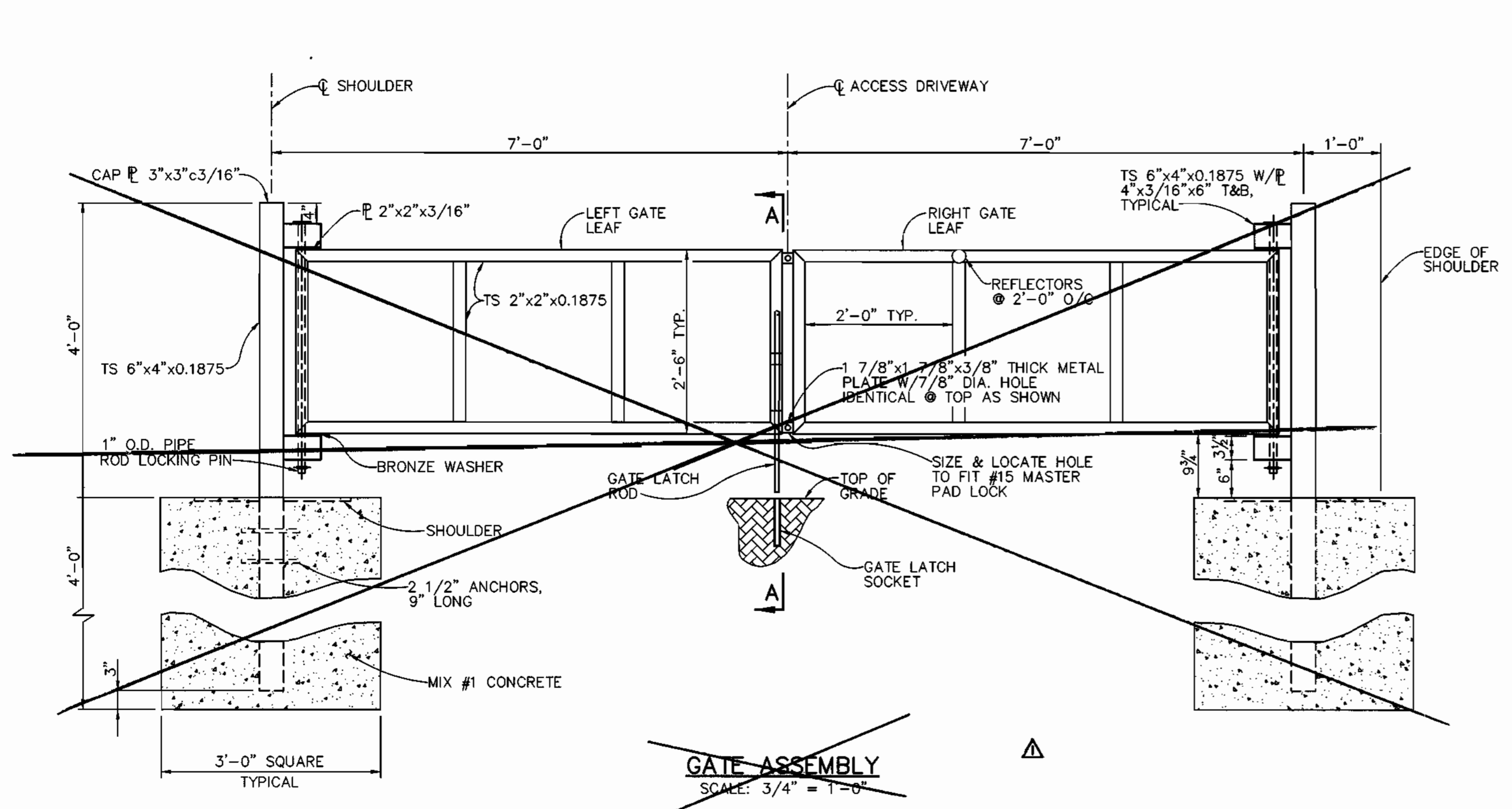
FRANK DONALDSON #8146
 5/1/98

DES: J.S.C.	DATE: 4/27/98	BY: NO.	REVISION	DATE
DRN: E.L.R.				
CHK: G.C.L.				

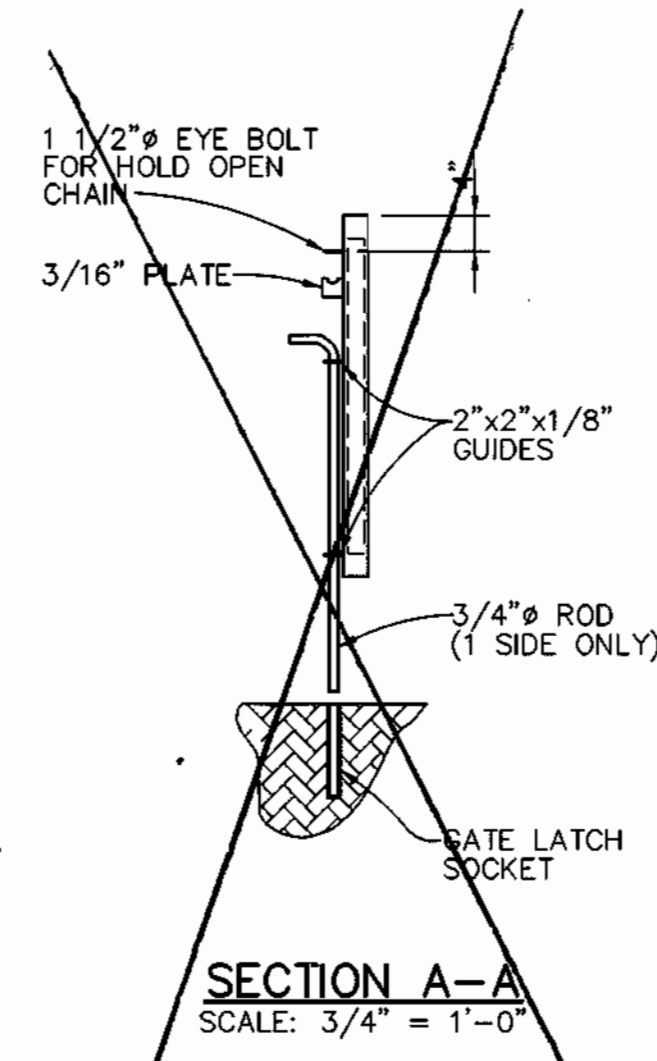
SEWER/FORCE MAIN PROFILE & SECTION
 600' SCALE MAP NO. 46 BLOCK NO. 16

RESERVOIR OVERLOOK PUMPING STATION
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 20-3664-D
 SCALE AS SHOWN
 SHEET 3 OF 15

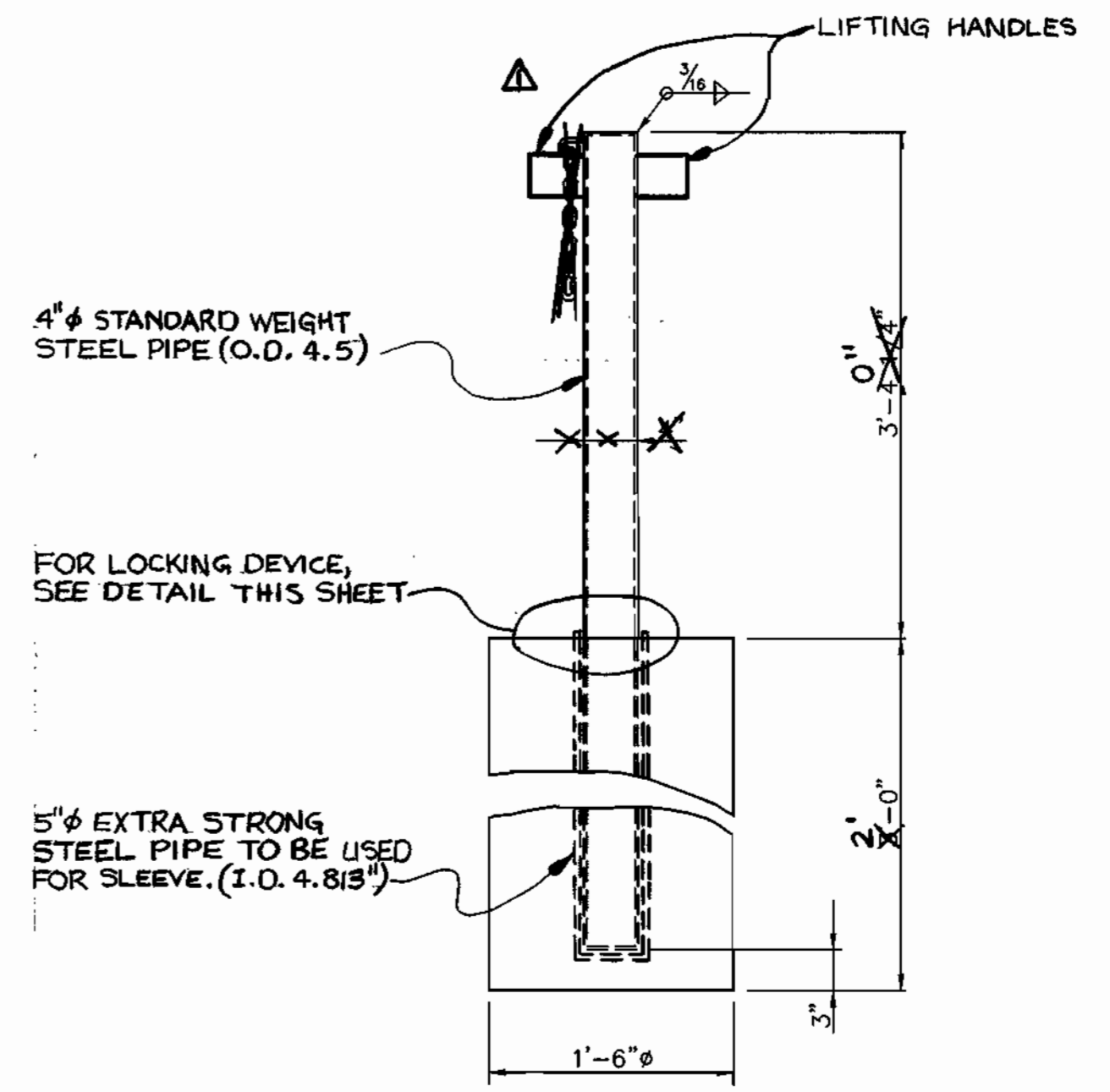
AS-BUILT 11/ /99



GATE ASSEMBLY
SCALE: 3/4" = 1'-0"



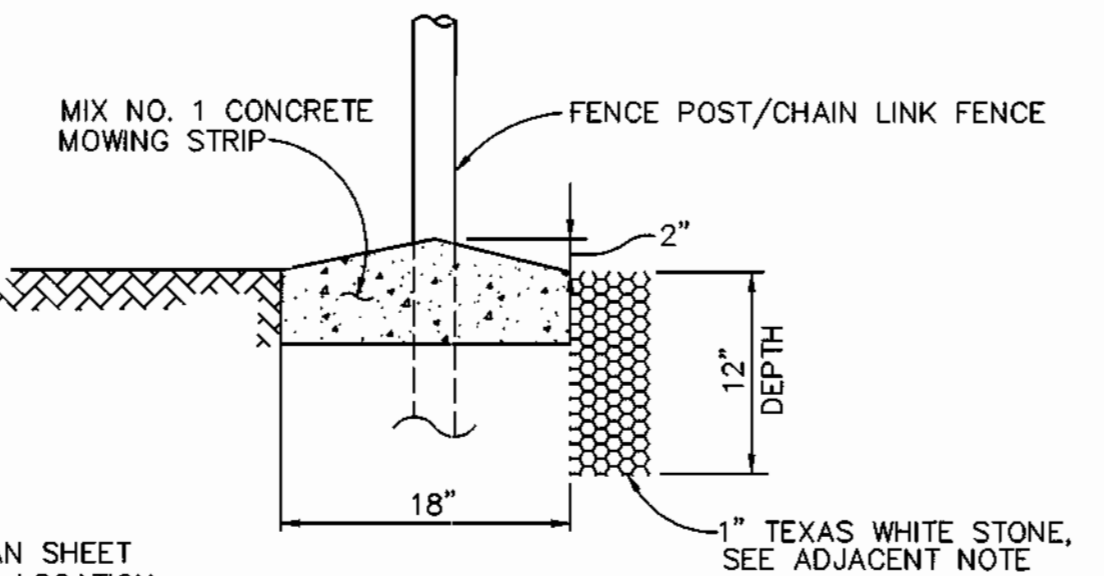
SECTION A-A
SCALE: 3/4" = 1'-0"



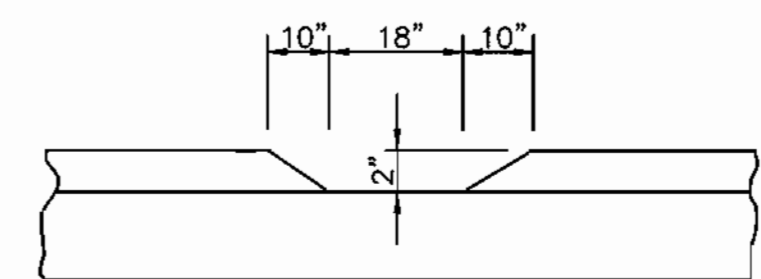
SECURITY BOLLARD GATE HOLD OPEN POST
N.T.S. (NOT TO SCALE)



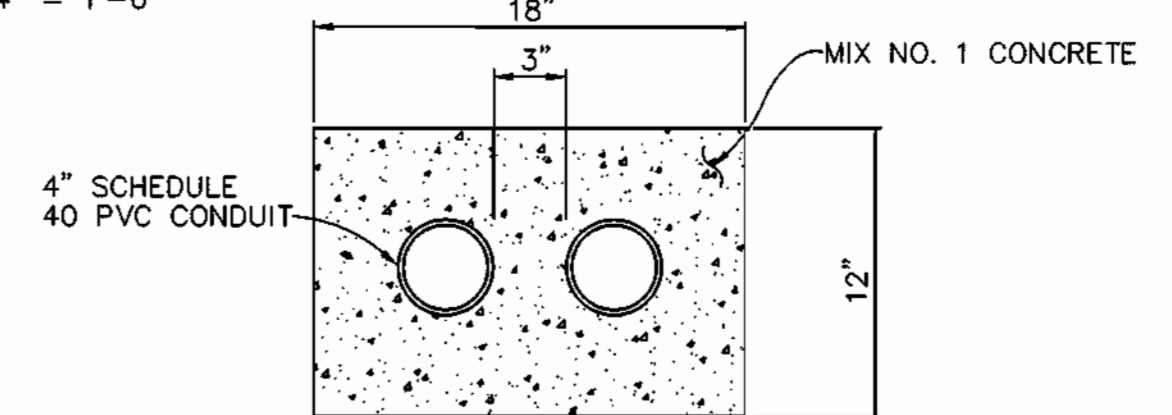
SIGN DETAIL
SCALE: 1/2" = 1'-0"



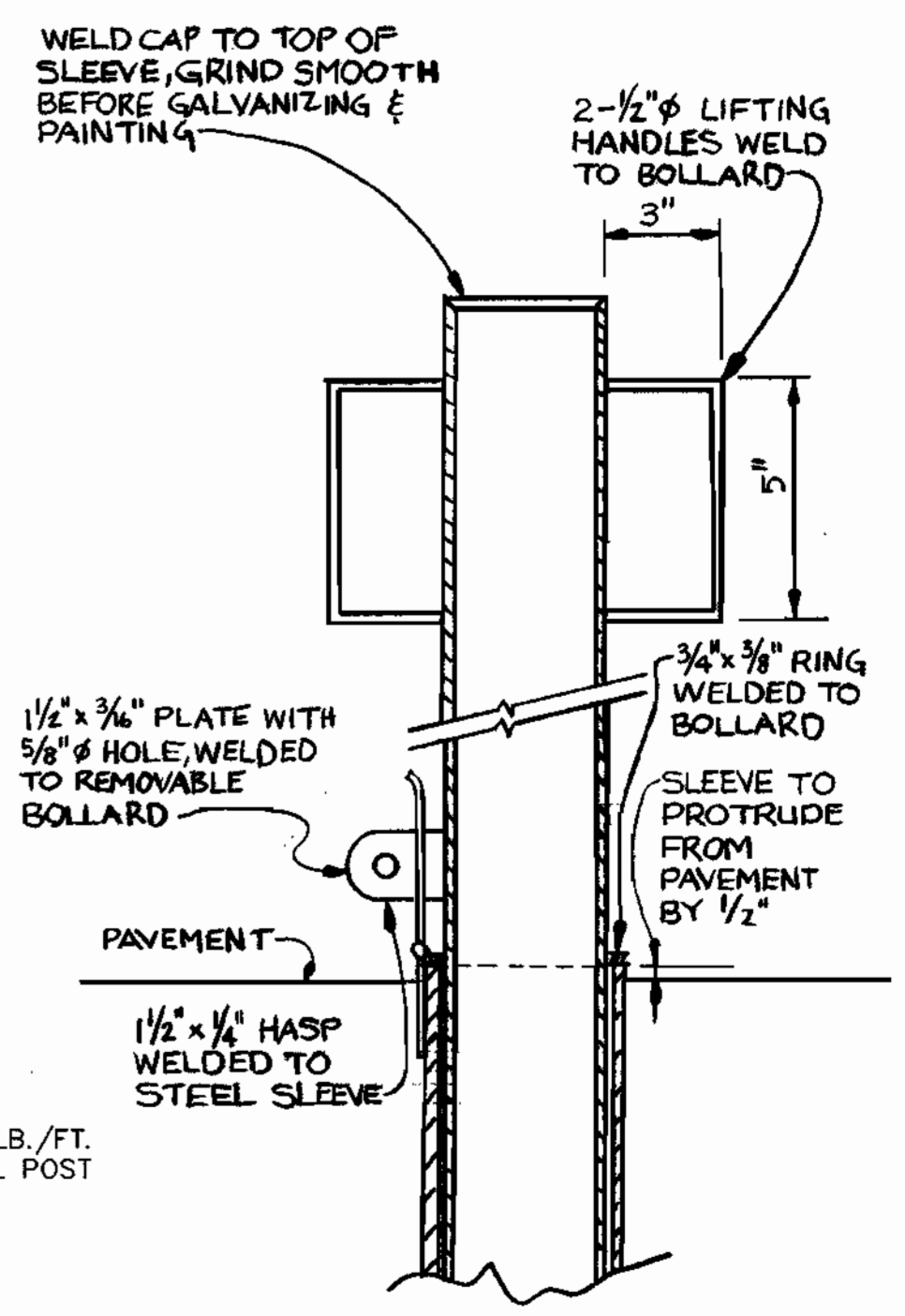
MOWING STRIP DETAIL
N.T.S.



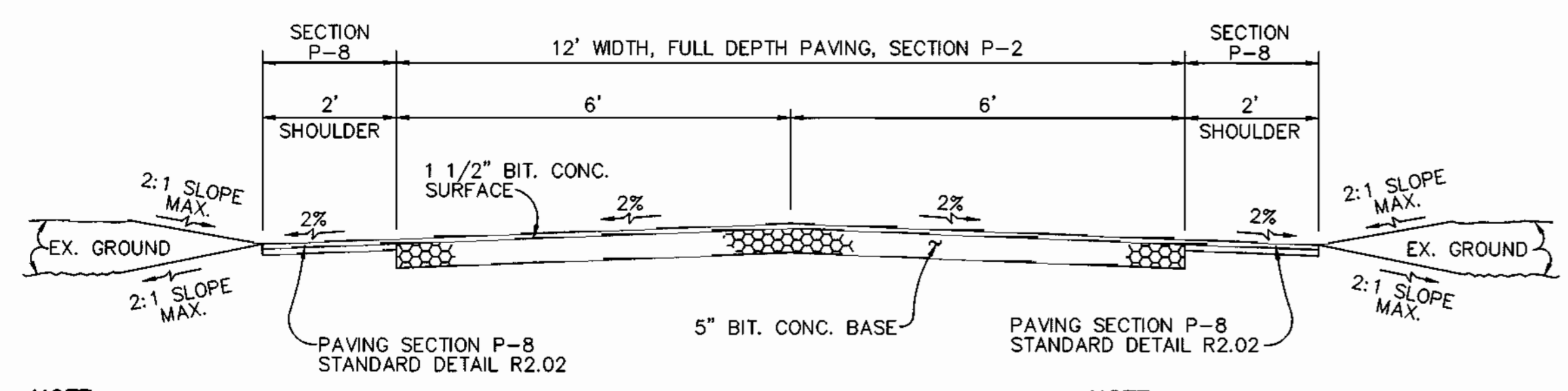
MOWING STRIP DRAINAGE CHANNEL
SCALE: 3/4" = 1'-0"



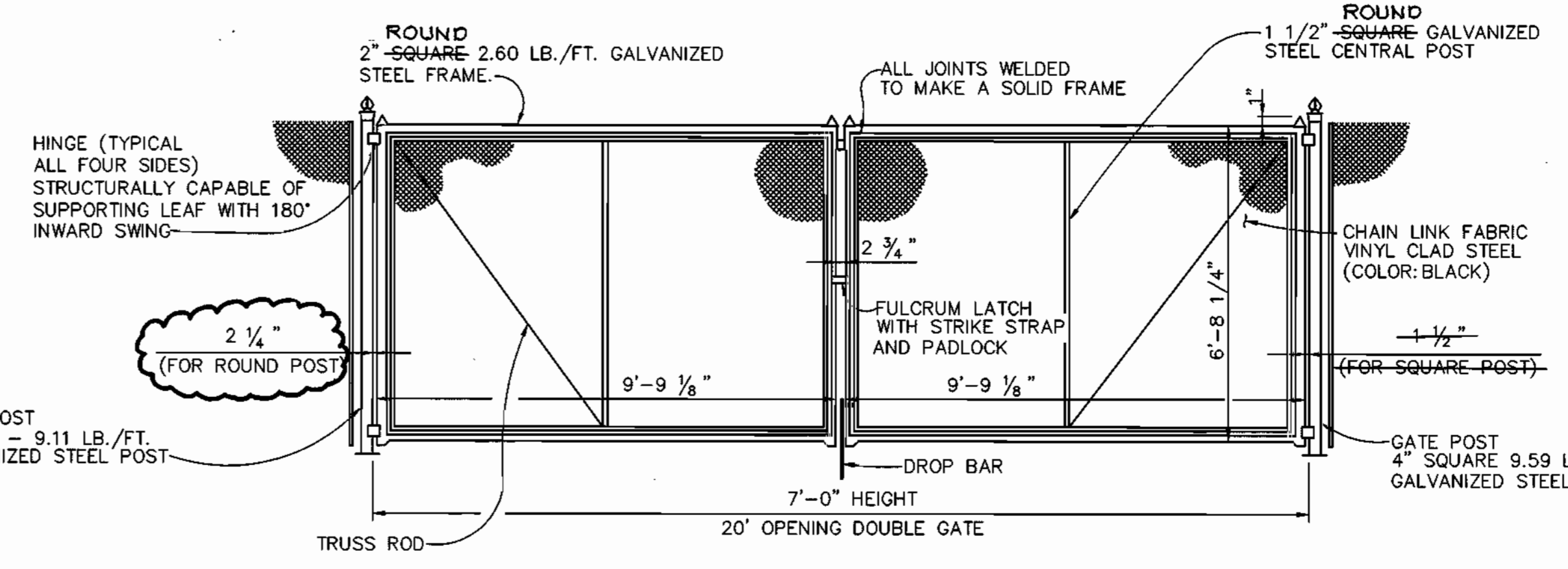
ELECTRIC DUCT BANK DETAIL
SCALE: 1 1/2" = 1'-0"



BOLLARD LOCKING DETAIL
NO SCALE



ACCESS DRIVEWAY - TYPICAL SECTION
N.T.S.



CHAIN LINK FENCE: DOUBLE GATE DETAIL
SCALE: 3/8" = 1'-0"

AS-BUILT
Professional Engineer Seal for Frank Donaldson #8146, dated 5/1/98.

NOTE: PAVING SECTION SHOWN IS HOWARD COUNTY SECTION P-2; DETAIL R-2.01 FOR THE ACCESS DRIVEWAY & SECTION P-8, STANDARD DETAIL R-2.02 FOR THE SHOULDERS.

NOTE: PAVING FOR PARKING AREAS @ PUMPING STATION & TURN AROUND AREAS SAME AS TYPICAL SECTION FOR ACCESS DRIVEWAY; SECTION P-2

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Robert M. Reimer
CHIEF, BUREAU OF UTILITIES
6-1-98

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
Frank Donaldson
CHIEF, DEVELOPMENT ENGINEERING DIVISION
6/15/98

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
410-997-8900 FAX: 410-997-9262
97061/401MS/TTTL/RSHT.DWG

Professional Engineer Seal for Frank Donaldson #8146, dated 5/1/98.

DES:	J.S.C.	DATE:	4/27/98
DRN:	E.L.R.	DATE:	7/16/00
CHK:	G.C.L.	DATE:	
BY:	NO.	REVISION:	

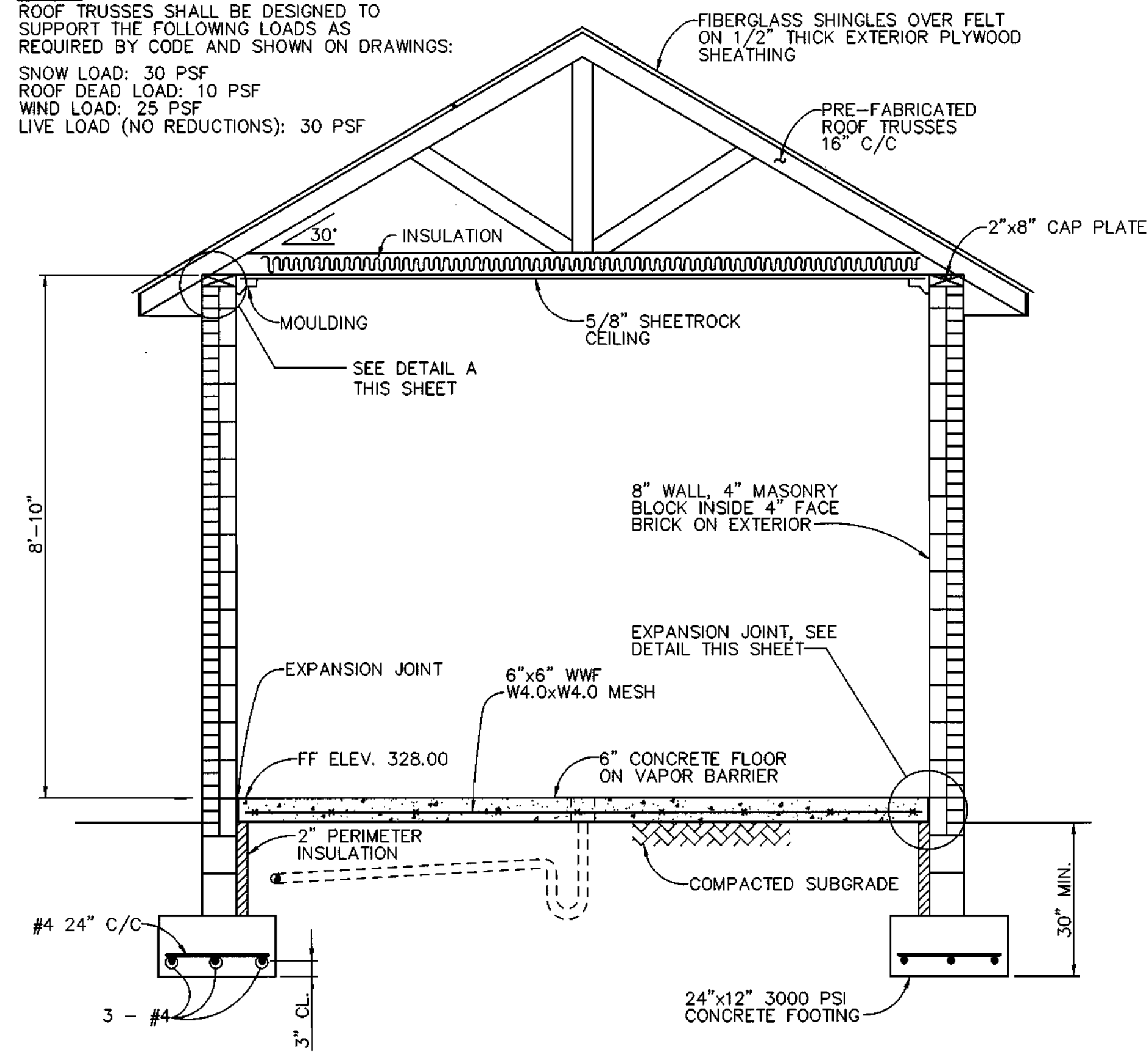
600' SCALE MAP NO.	46	BLOCK NO.	16
AS-BUILT			

RESERVOIR OVERLOOK PUMPING STATION
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 20-3664-D

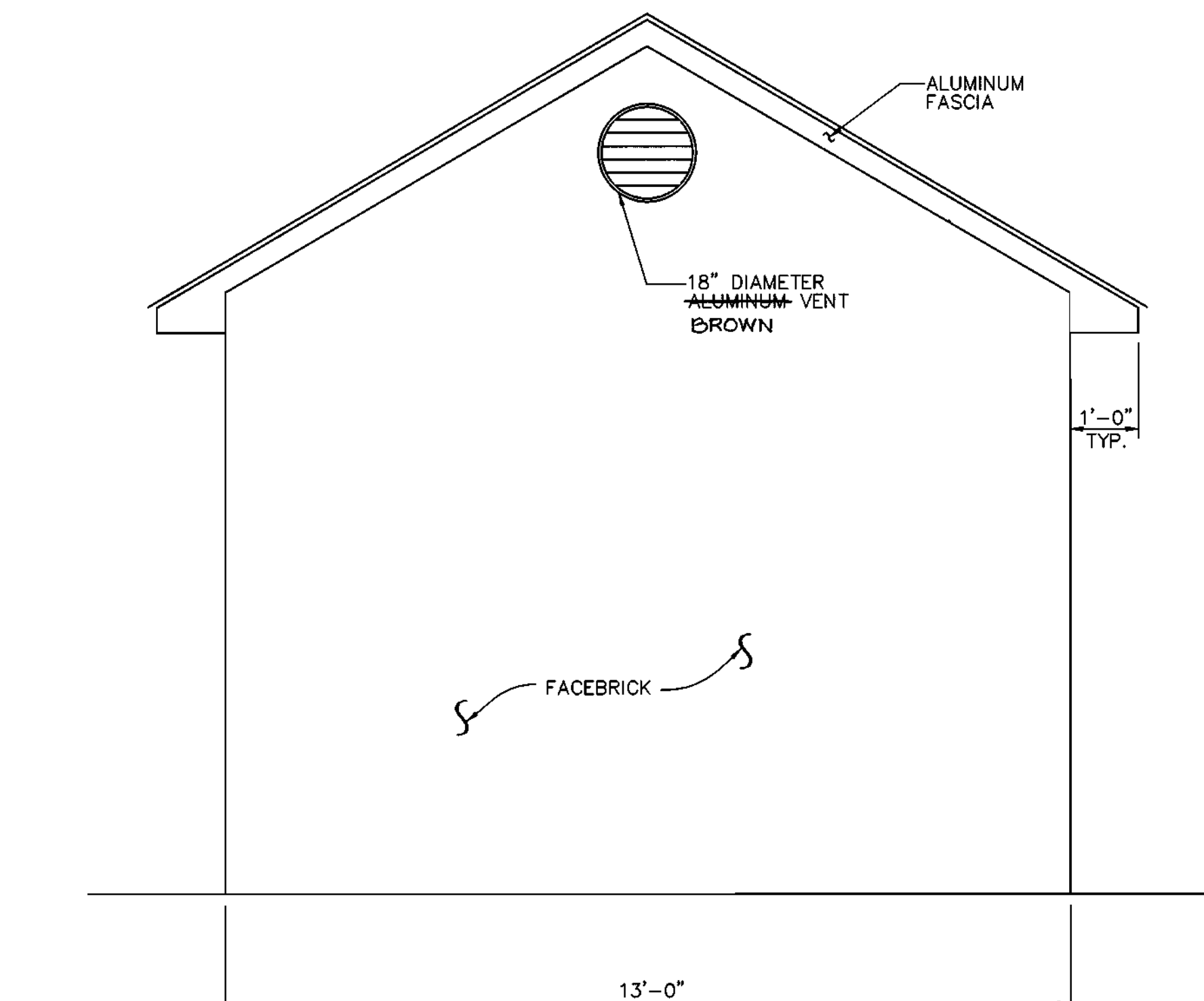
SCALE AS SHOWN
SHEET 4 OF 15

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NOTE:
 ROOF TRUSSES SHALL BE DESIGNED TO SUPPORT THE FOLLOWING LOADS AS REQUIRED BY CODE AND SHOWN ON DRAWINGS:
 SNOW LOAD: 30 PSF
 ROOF DEAD LOAD: 10 PSF
 WIND LOAD: 25 PSF
 LIVE LOAD (NO REDUCTIONS): 30 PSF



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



NORTH ELEVATION
 1/2" = 1'-0"

AS BUILT
 FRANK DONALDSON #8146
 PROFESSIONAL ENGINEER

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DATE: 6-1-98
 CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
 DATE: 6/1/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

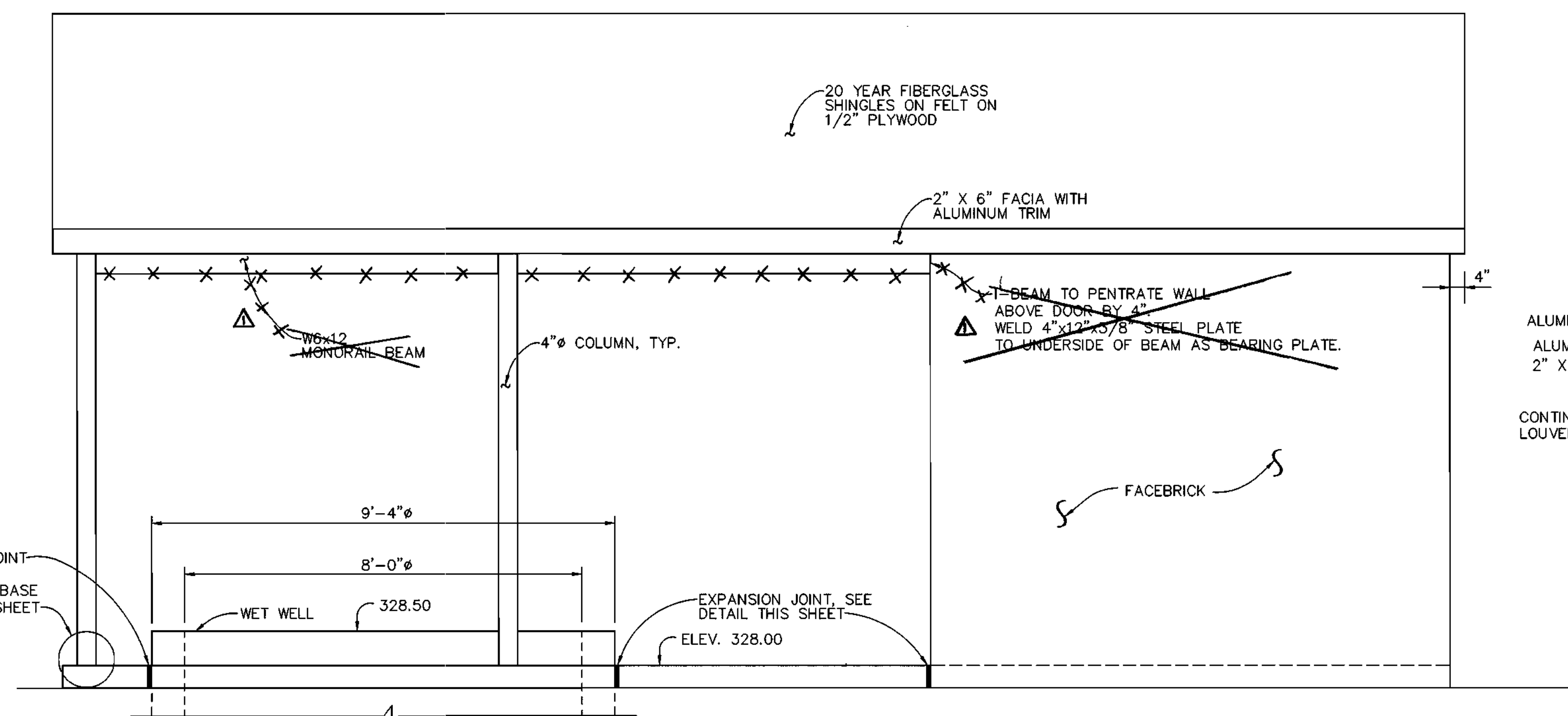
RIEMER MUEGGE & ASSOCIATES, INC.
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 8818 Centre Park Drive • Suite 200 • Columbia, MD 21046
 410-997-3900 FAX: 410-997-9282
 9701/40118/7711887.DWG

AS BUILT
 FRANK DONALDSON #8146
 PROFESSIONAL ENGINEER
 DATE: 4/27/98

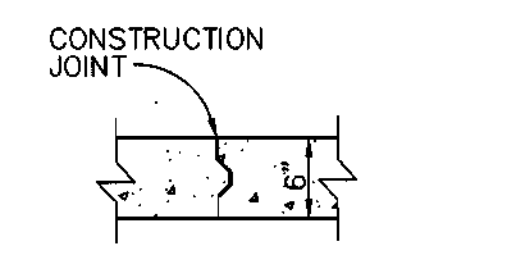
DES: J.S.C.	DATE: 8/98
DRN: E.L.R.	SCALE: 1/16"=1'-0"
CHK: G.C.L.	
BY: NO.	REVISION
DATE: 6/1/98	DATE: 6/1/98

CONTROL BUILDING
PLAN & DETAILS
ARCHITECTURAL/STRUCTURAL
 600' SCALE MAP NO. 46 BLOCK NO. 16

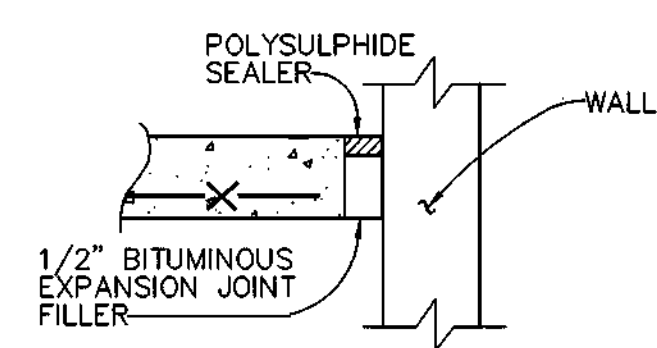
RESERVOIR OVERLOOK
PUMPING STATION
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 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 20-3664-D
 SCALE AS SHOWN
 SHEET 5 OF 15



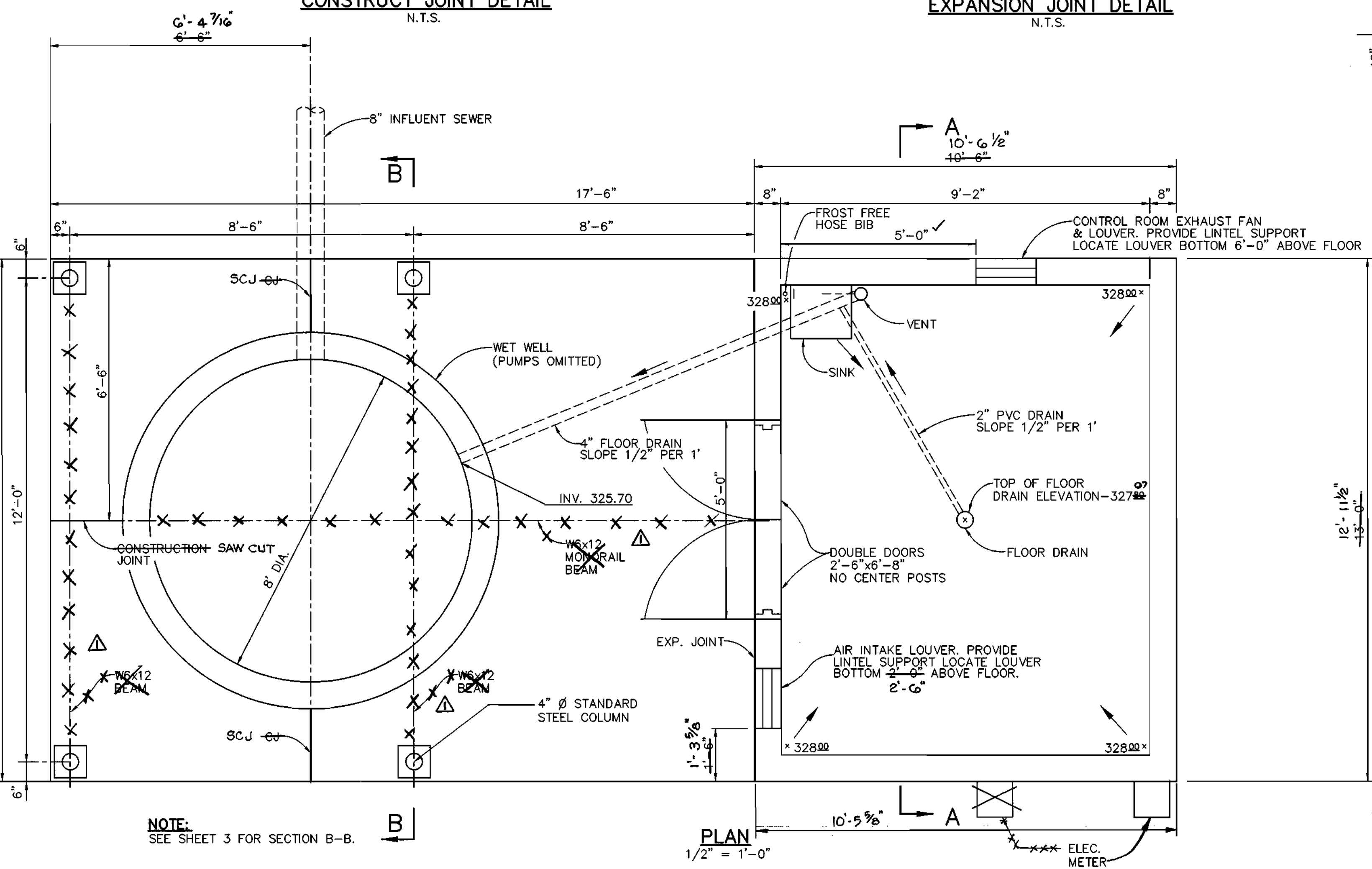
EAST ELEVATION
 1/2" = 1'-0"
 (WEST ELEVATION SIMILAR)



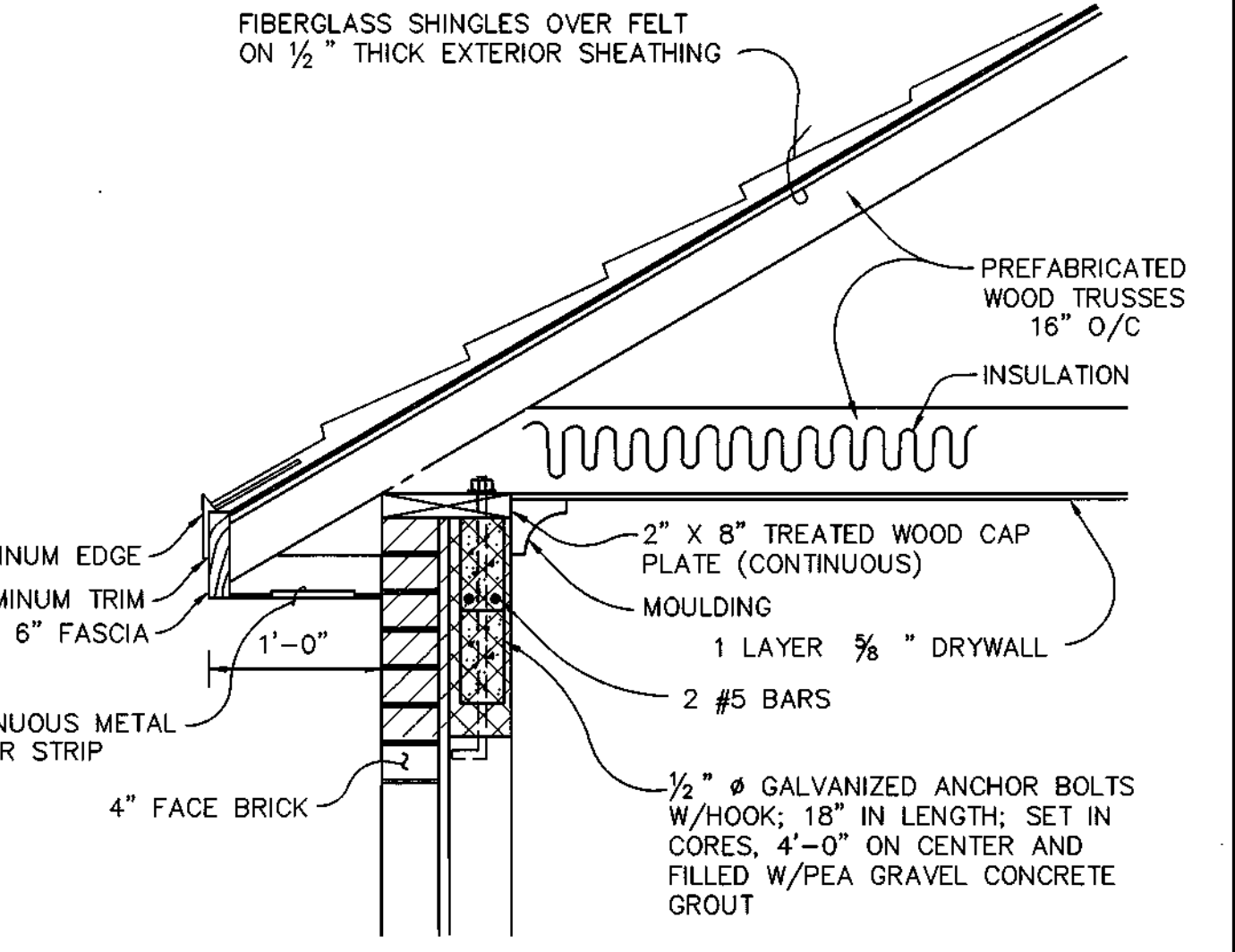
CONSTRUCT JOINT DETAIL
 N.T.S.



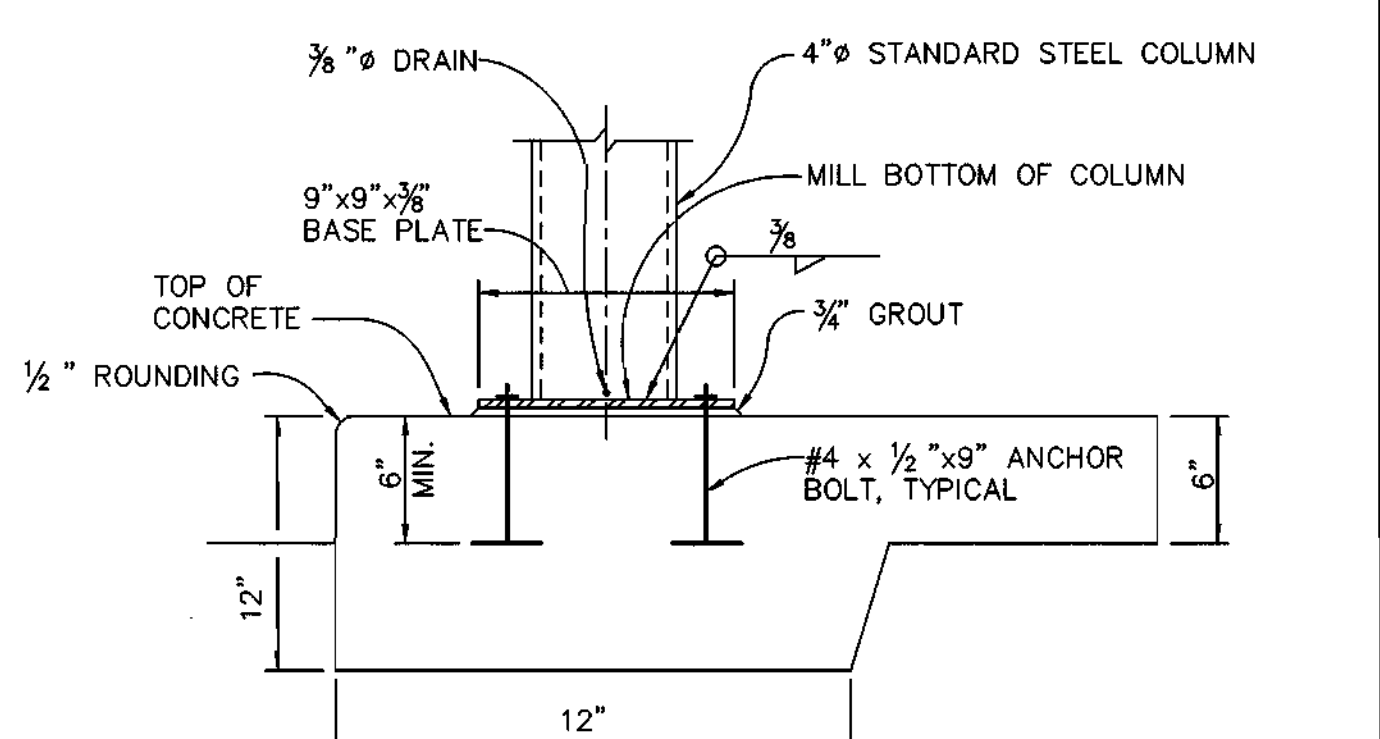
EXPANSION JOINT DETAIL
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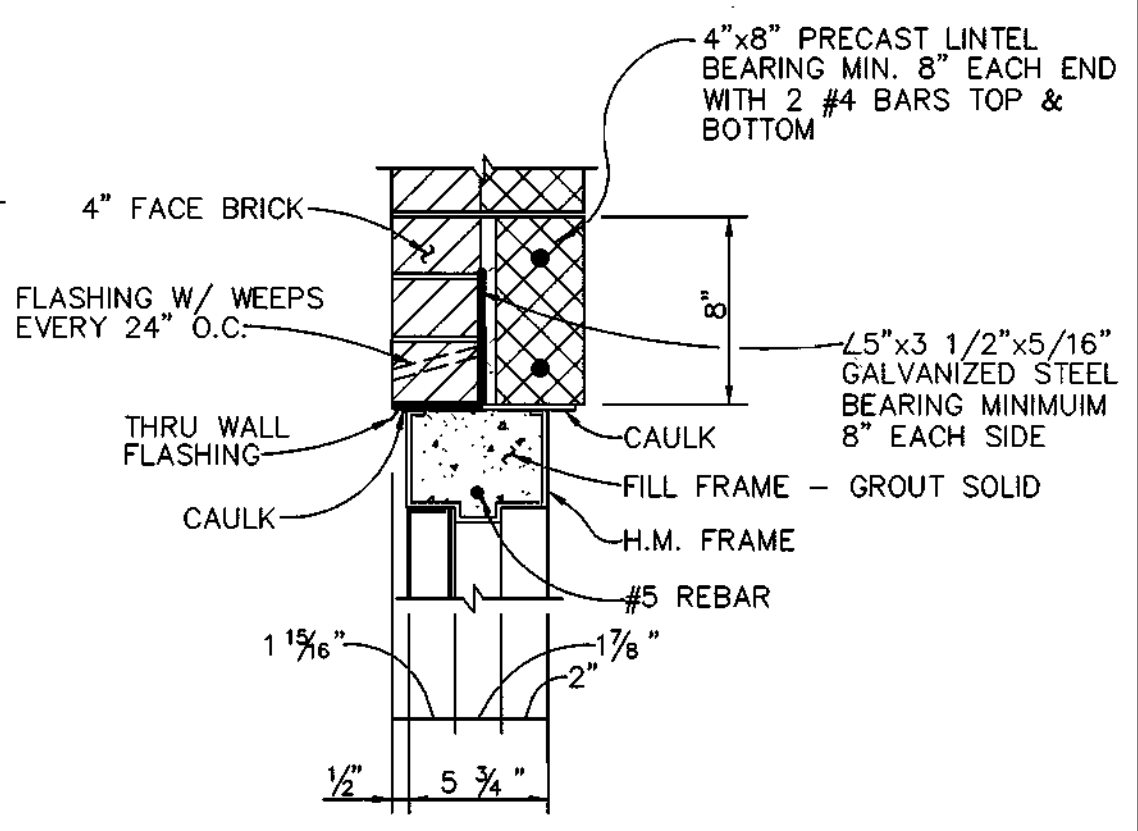
PLAN
 1/2" = 1'-0"



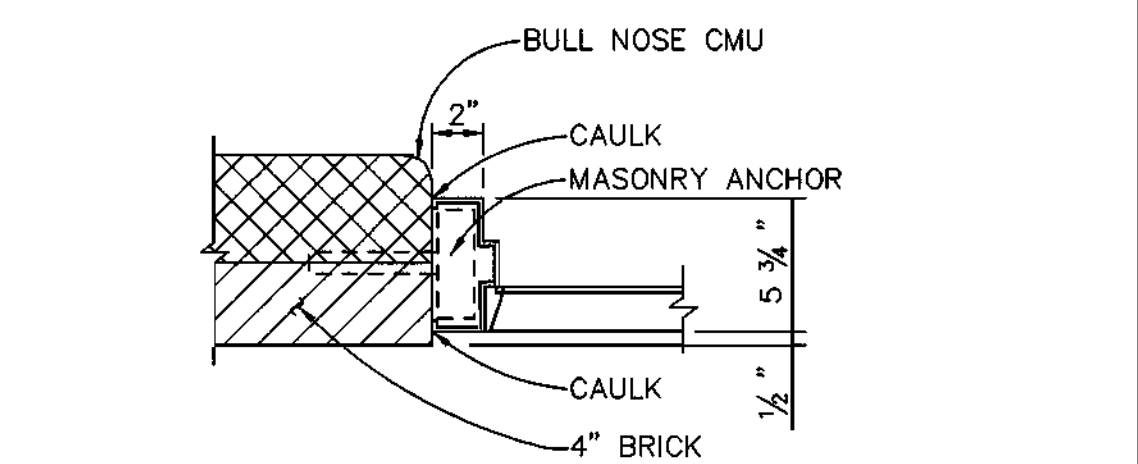
DETAIL A
 1" = 1'-0"



COLUMN BASE DETAIL
 N.T.S.



HEAD DETAIL
 1 1/2" = 1'-0"



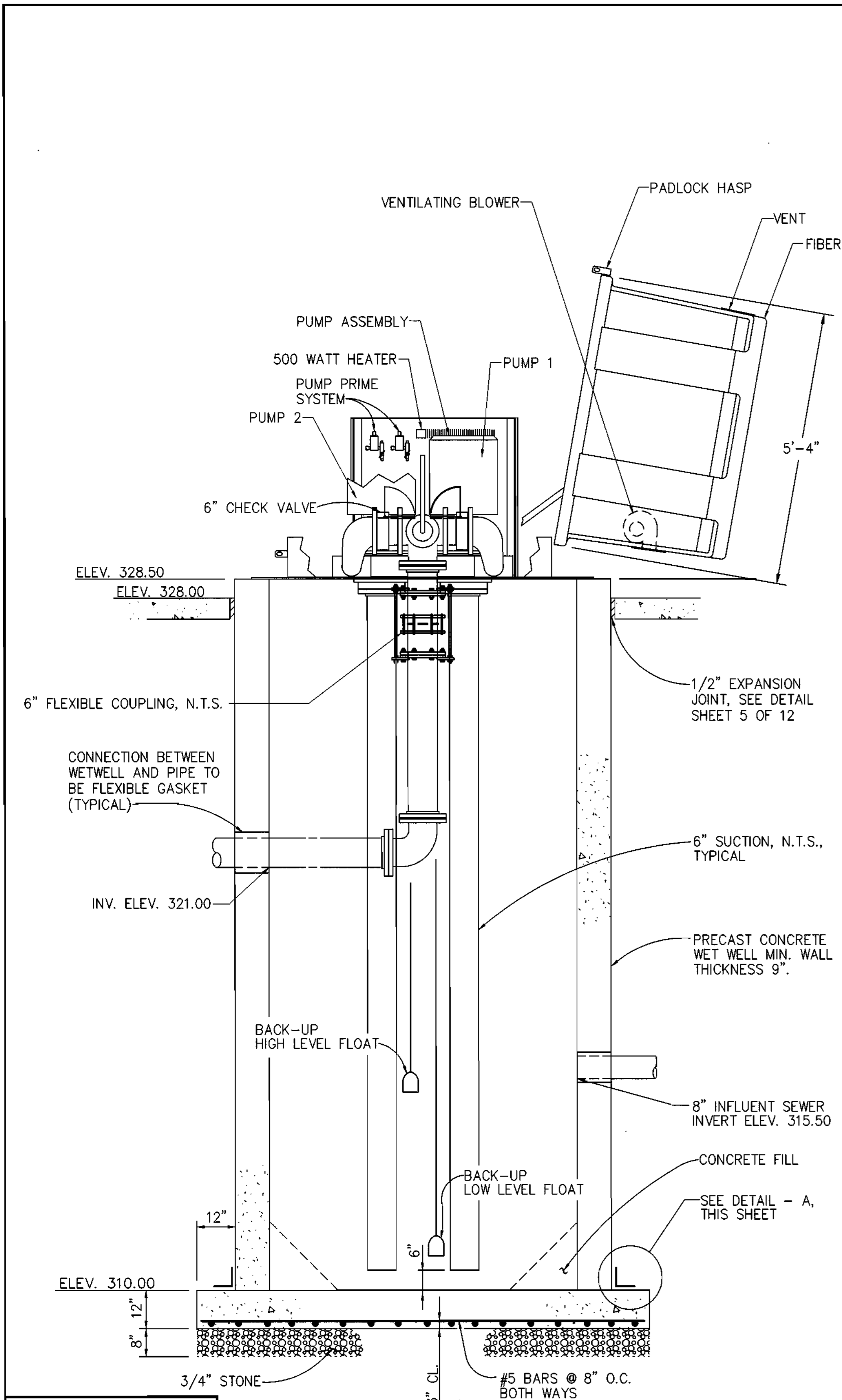
JAMB DETAIL
 1 1/2" = 1'-0"

NOTE:
 SEE SHEET 3 FOR SECTION B-B.

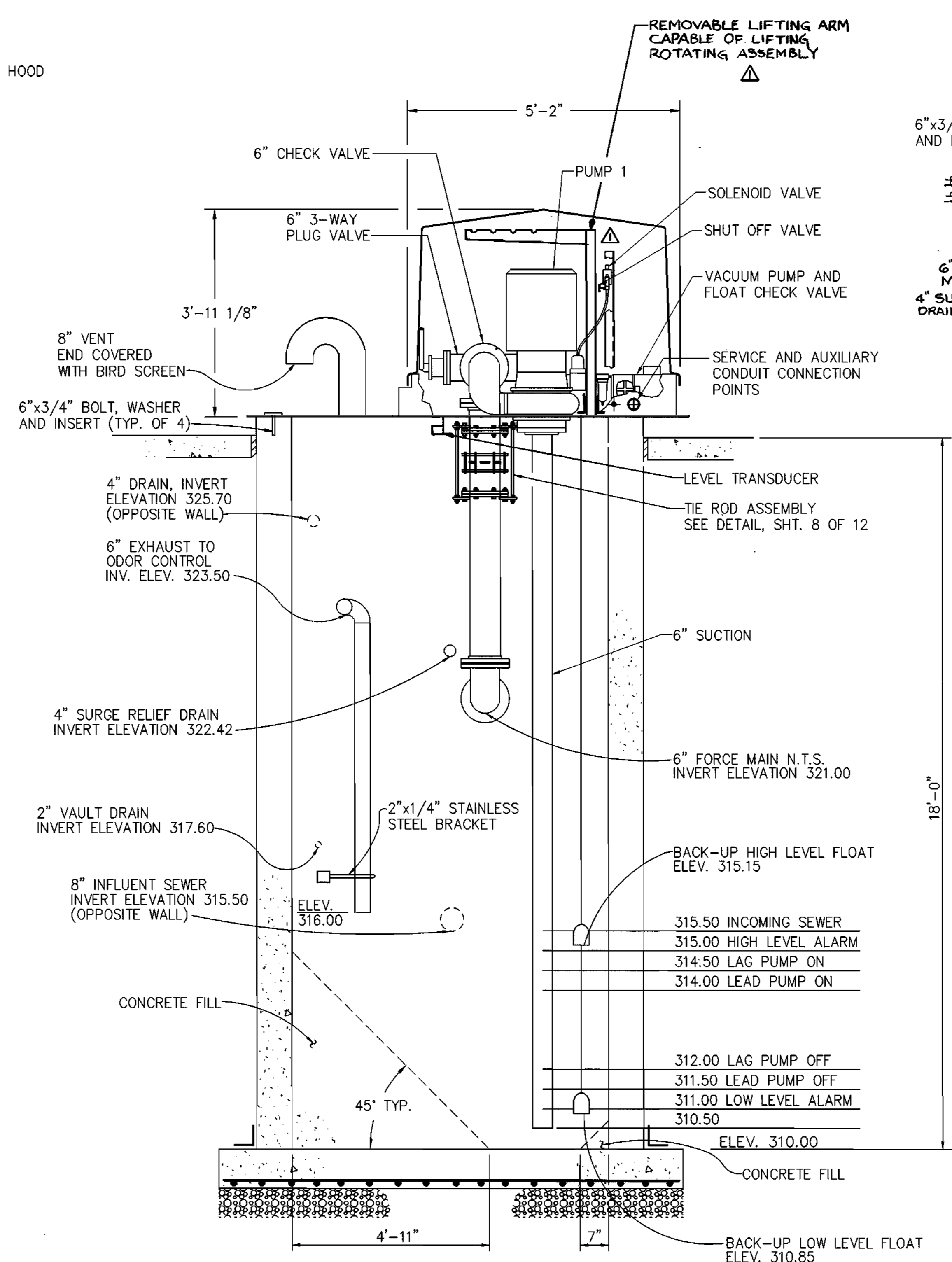
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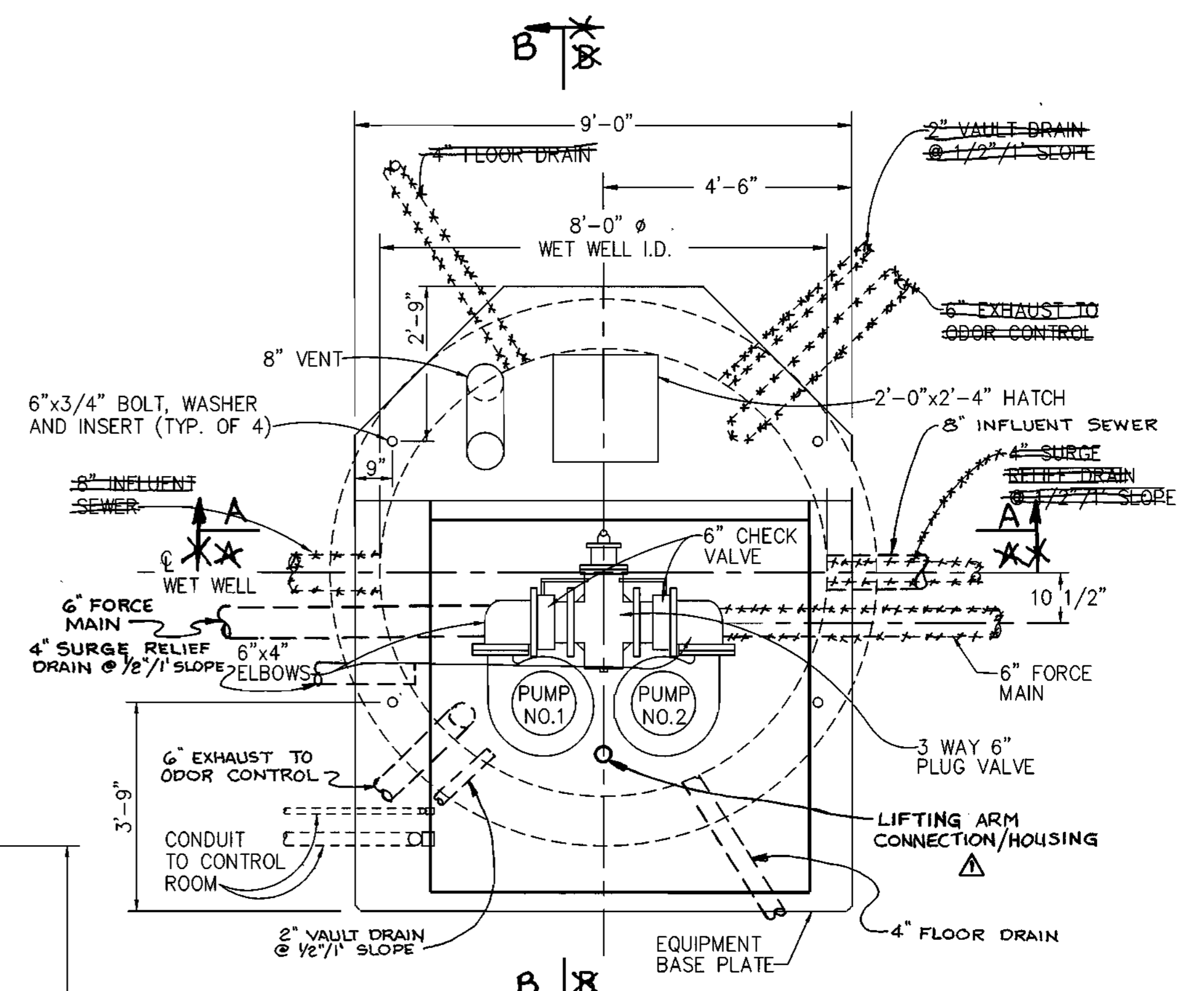
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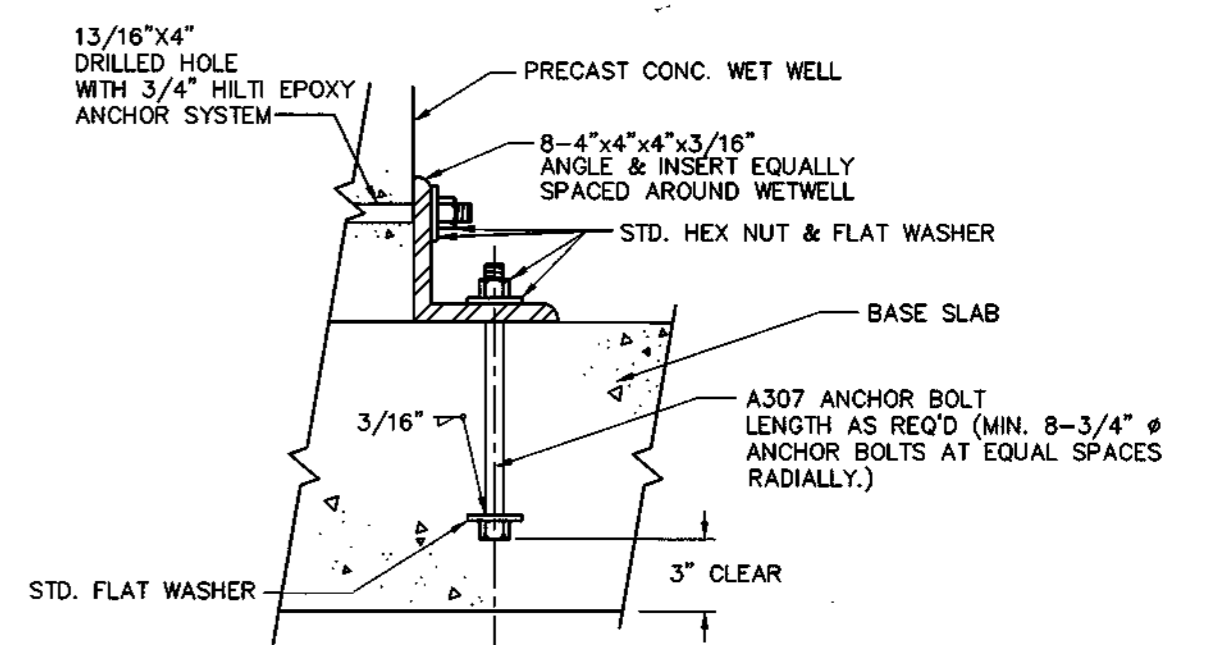
SECTIONAL ELEVATION A-A
SCALE: 1/2" = 1'-0"



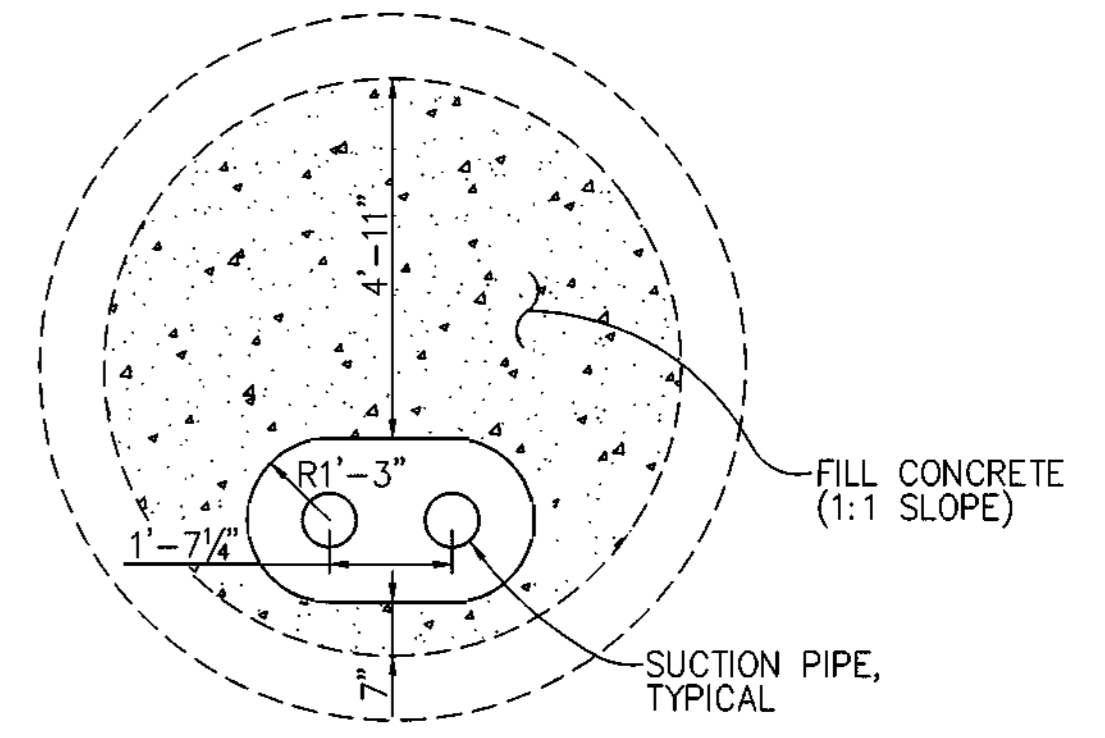
SECTIONAL ELEVATION B-B
SCALE: 1/2" = 1'-0"



PLAN VIEW
SCALE: 1/2" = 1'-0"
(SHOWN LESS HOOD)



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



WETWELL FLOOR PLAN
SCALE: 3/8" = 1'-0"

PUMPS: MODEL 4B2D 1760 RPM AS PROVIDED BY SMITH AND LOVELESS.
MOTORS: 20 HP 3 PHASE 60 HERTZ 460 VOLT.
IMPELLAR: 54L23

NOTE:
ALL CONNECTIONS BETWEEN WETWELL WALL AND PIPES SHALL BE SEALED WATER TIGHT WITH FLEXIBLE GASKET

AS-BUILT

Frank Donaldson
FRANK DONALDSON *8146

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert R. ...
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

Frank Donaldson
CHIEF, DEVELOPMENT ENGINEERING DIVISION

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410-997-8800 FAX: 410-997-9282
97081/401MS/TTLSRST.DWG

Frank Donaldson
FRANK DONALDSON *8146

DES: J.S.C.	DATE: 4/27/98	BY: NO.	REVISION	DATE
DRN: E.L.R.				
CHK: G.C.L.				
DESIGNED BY: J.S.C. / 8/98 CHECKED BY: E.L.R. / 7/16/00 REVISION: 2. ADDED REMOVABLE LIFTING ARM & CONNECTION HOUSING FOR ARM. REVISE TOTAL SHEET #				

WETWELL & PUMPING STATION MECHANICAL

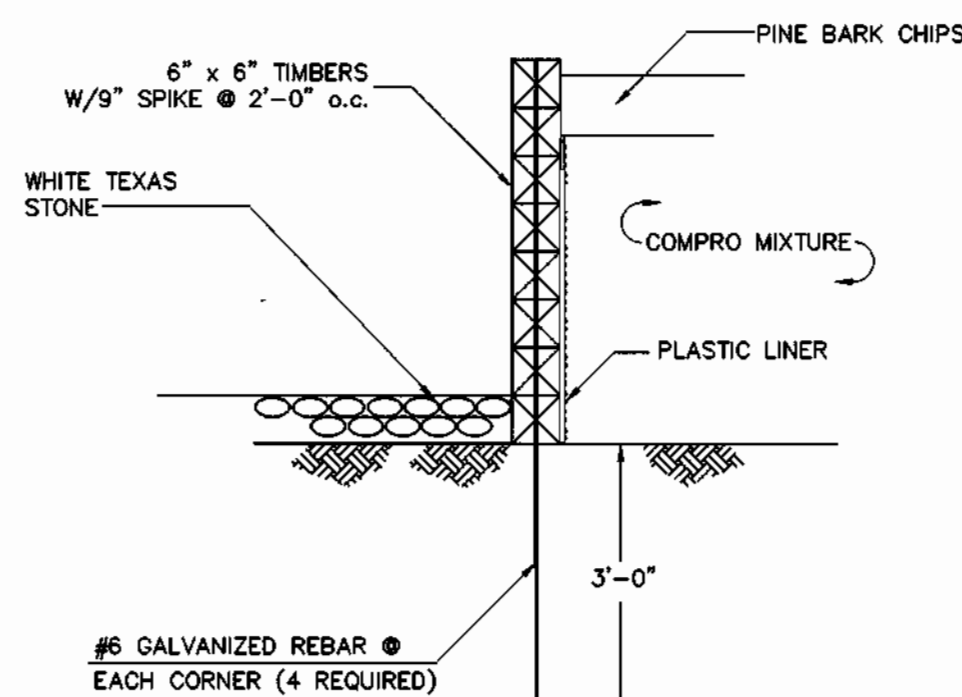
600' SCALE MAP NO. 46 BLOCK NO. 16

RESERVOIR OVERLOOK PUMPING STATION
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 20-3664-D

SCALE AS SHOWN
SHEET 6 OF 15

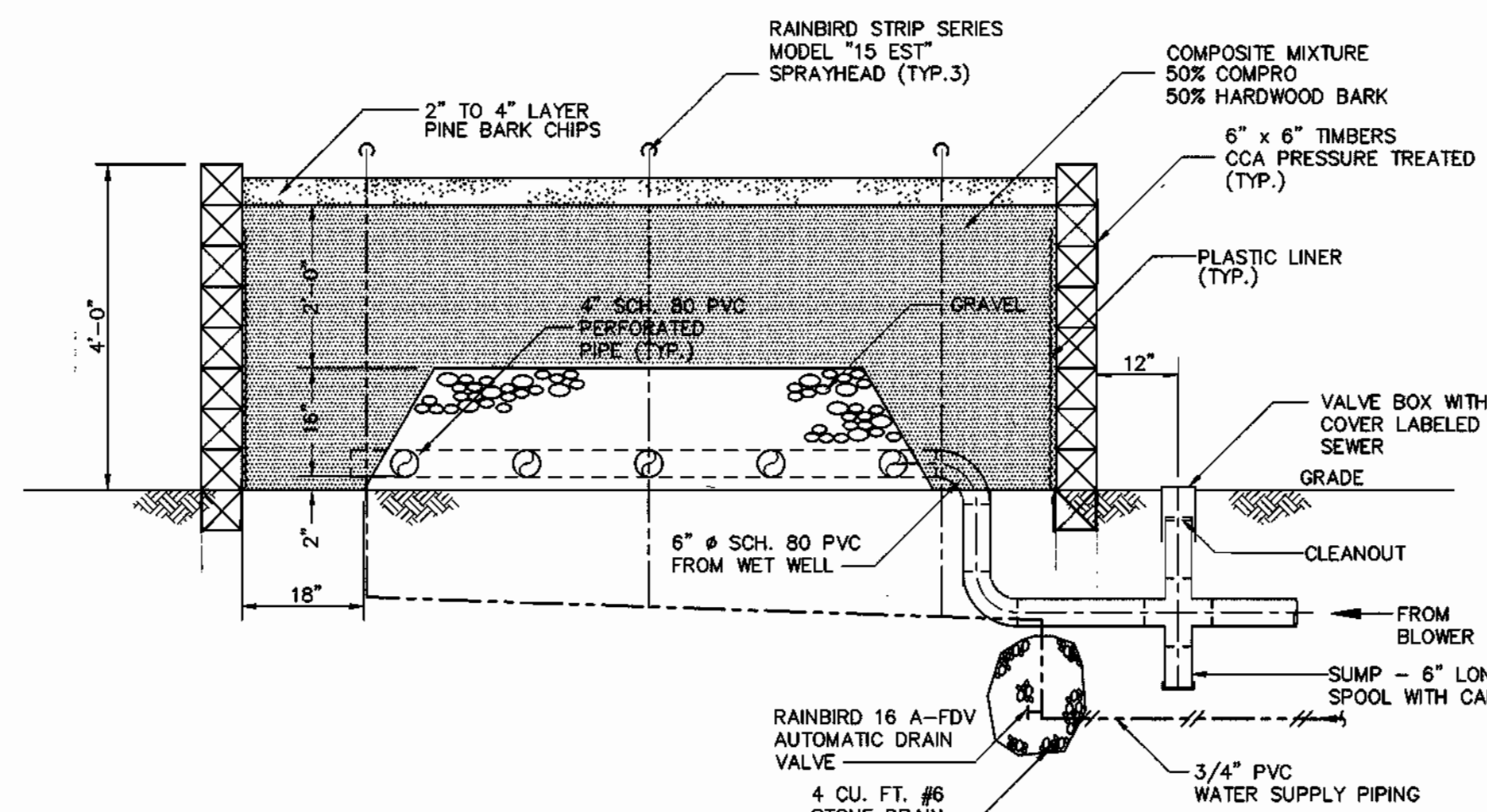
AS-BUILT 11/19/99

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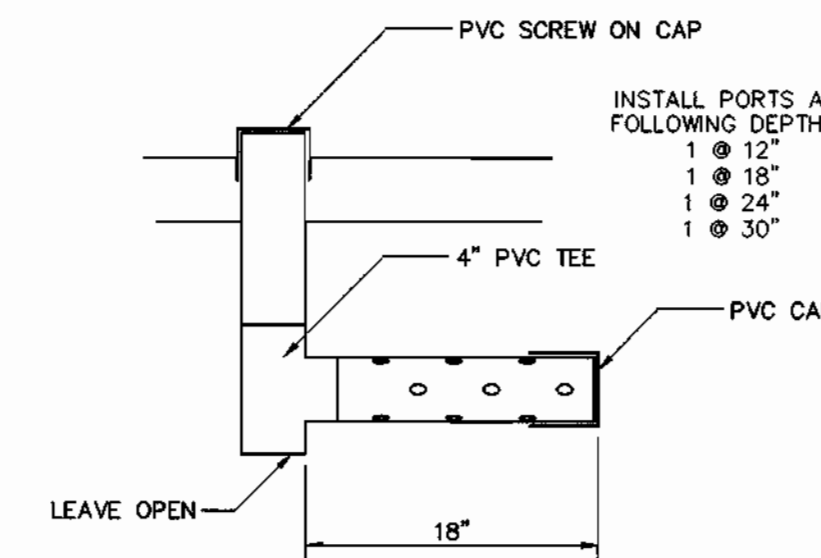
CORNER DETAIL

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



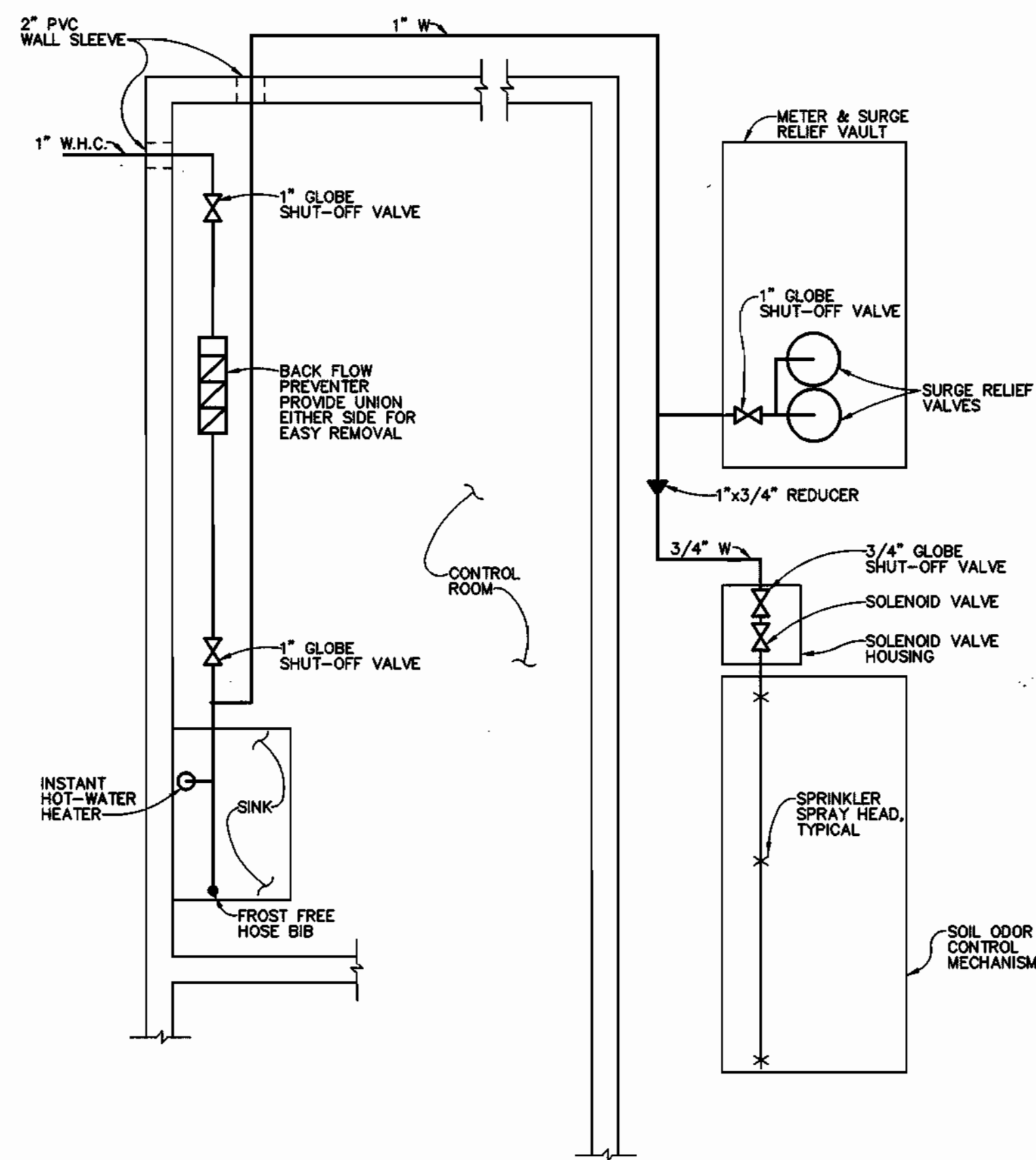
SECTION A-A

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



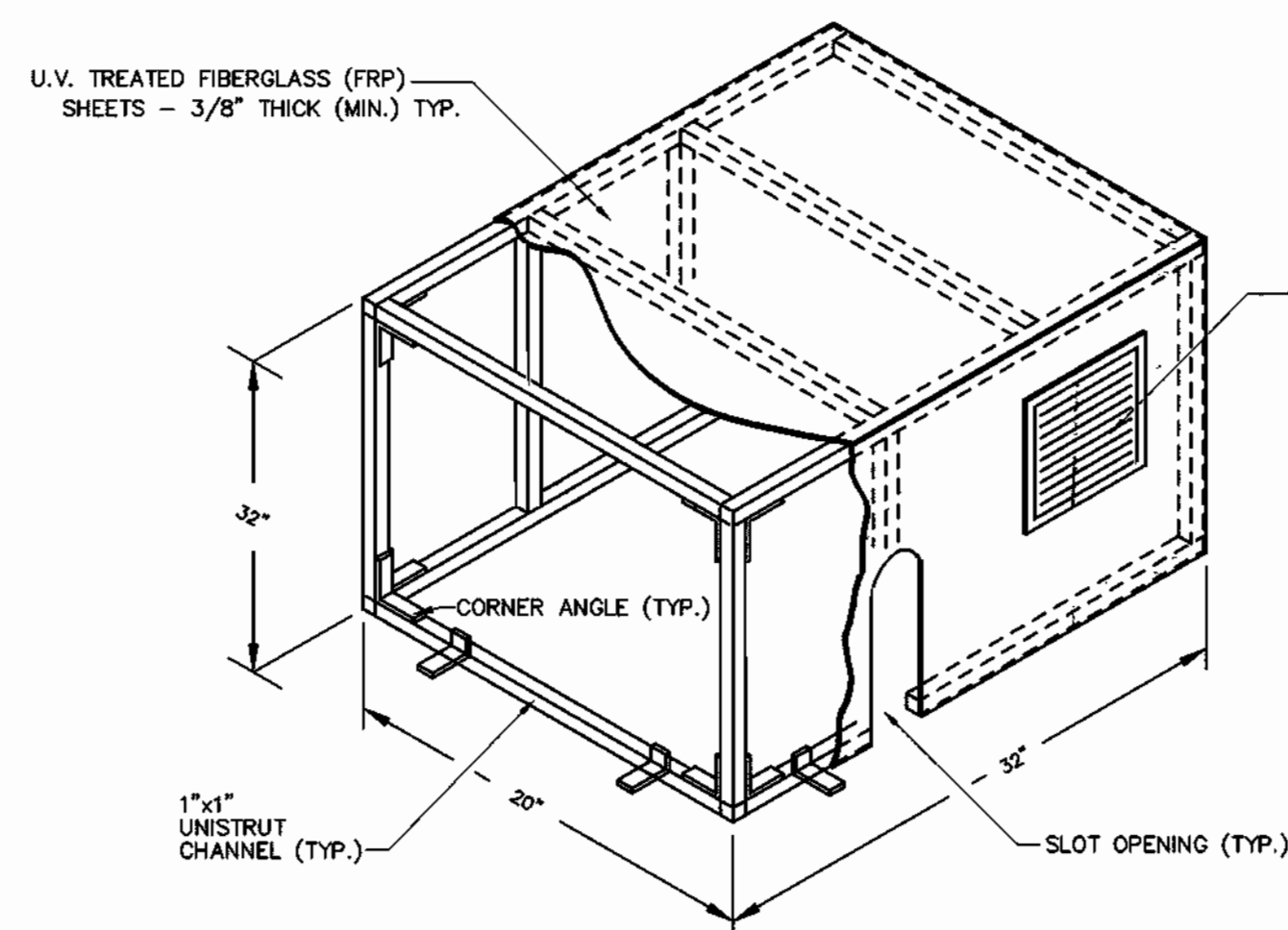
SAMPLING PORT

SCALE: 1" = 1'-0"



WATER SUPPLY SCHEMATIC

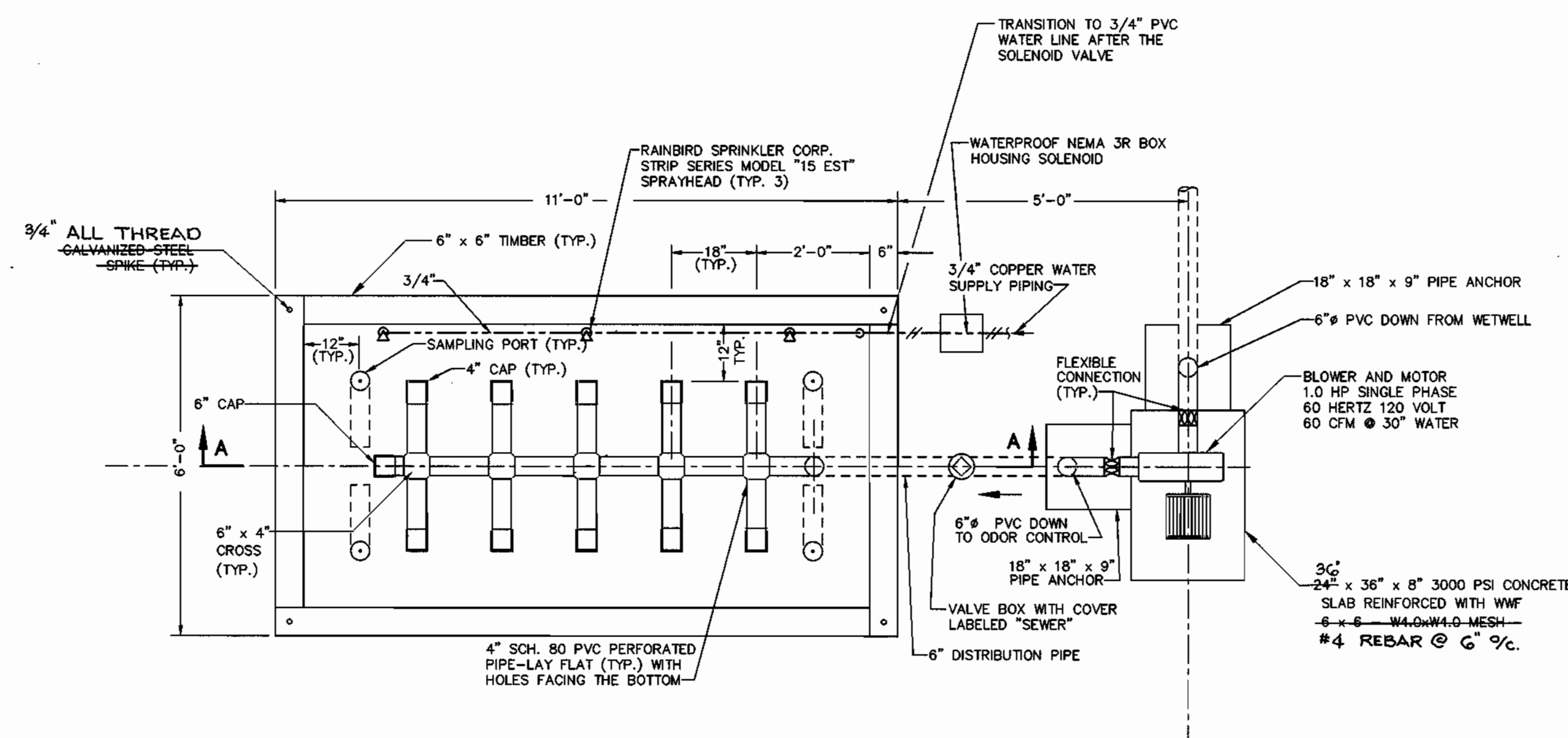
N.T.S.



BLOWER ENCLOSURE DETAIL

NOT TO SCALE

1. ALL DIMENSIONS ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
2. PROVIDE ADDITIONAL UNISTRUT AS REQUIRED FOR LOUVER SUPPORT AND RIGIDITY OF ENCLOSURE.
3. FIBERGLASS (FRP) SHEETS SHALL COVER ENTIRE STRUCTURE AND SHALL BE BOLTED TO UNISTRUT AS REQUIRED.
4. PROVIDE ADDITIONAL OPENINGS FOR PIPE PENETRATIONS AS REQUIRED.
5. STRUCTURE SHALL HAVE CORNER ANGLES (TWO PER SIDE) FOR BOLTING DOWN TO THE CONCRETE PAD.
6. ENCLOSURE SHALL HAVE 1/2" THICK U.L. APPROVED DUCT LINER GLUED TO INSIDE FACE OF FRP PANELS.



ODOR CONTROL PLAN

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

NOTES:

1. PROVIDE MINIMUM 24" MULCH MIXTURE BETWEEN GRAVEL AND TIMBER STRUCTURE.
2. CONTAIN GRAVEL DURING PLACEMENT WITH TEMPORARY FRAMEWORK. REMOVE TEMPORARY FRAMEWORK AFTER COMPOSITE MIXTURE IS IN PLACE AROUND GRAVEL.
3. 6 x 6 TIMBERS SHALL MEET AASHTO M168. MARINE GRADE, TREATED WITH CHROMATED COPPER ARSENATE (CCA) AT A RATE OF 2.5 LBS. PER CU. FT. OF WOOD AND SHALL MEET AASHTO M133.

AS-BUILT

FRANK DONALDSON #8146

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert Bannister
CHIEF, BUREAU OF UTILITIES

6-1-98
DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

Frank Donaldson
CHIEF, DEVELOPMENT ENGINEERING DIVISION

4/27/98
DATE

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DES: J.S.C.	SJP	2	REVISE TOTAL SHEET #	11/6/00
DRN: E.L.R.				
CHK: G.C.L.				
DATE: 4/27/98	BY	NO.	REVISION	DATE

**ODOR CONTROL SYSTEM
MECHANICAL**

600' SCALE MAP NO. 46 BLOCK NO. 16

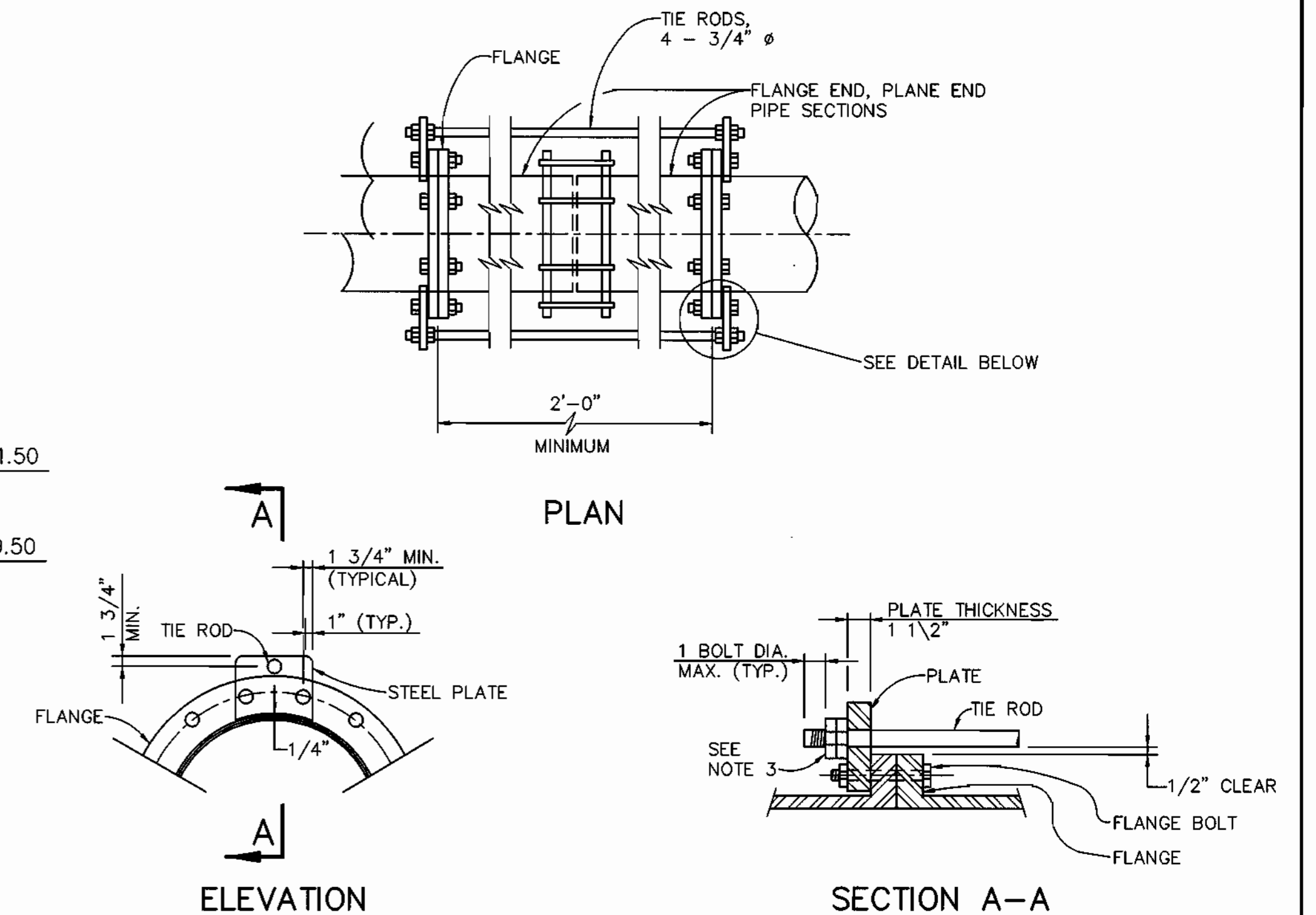
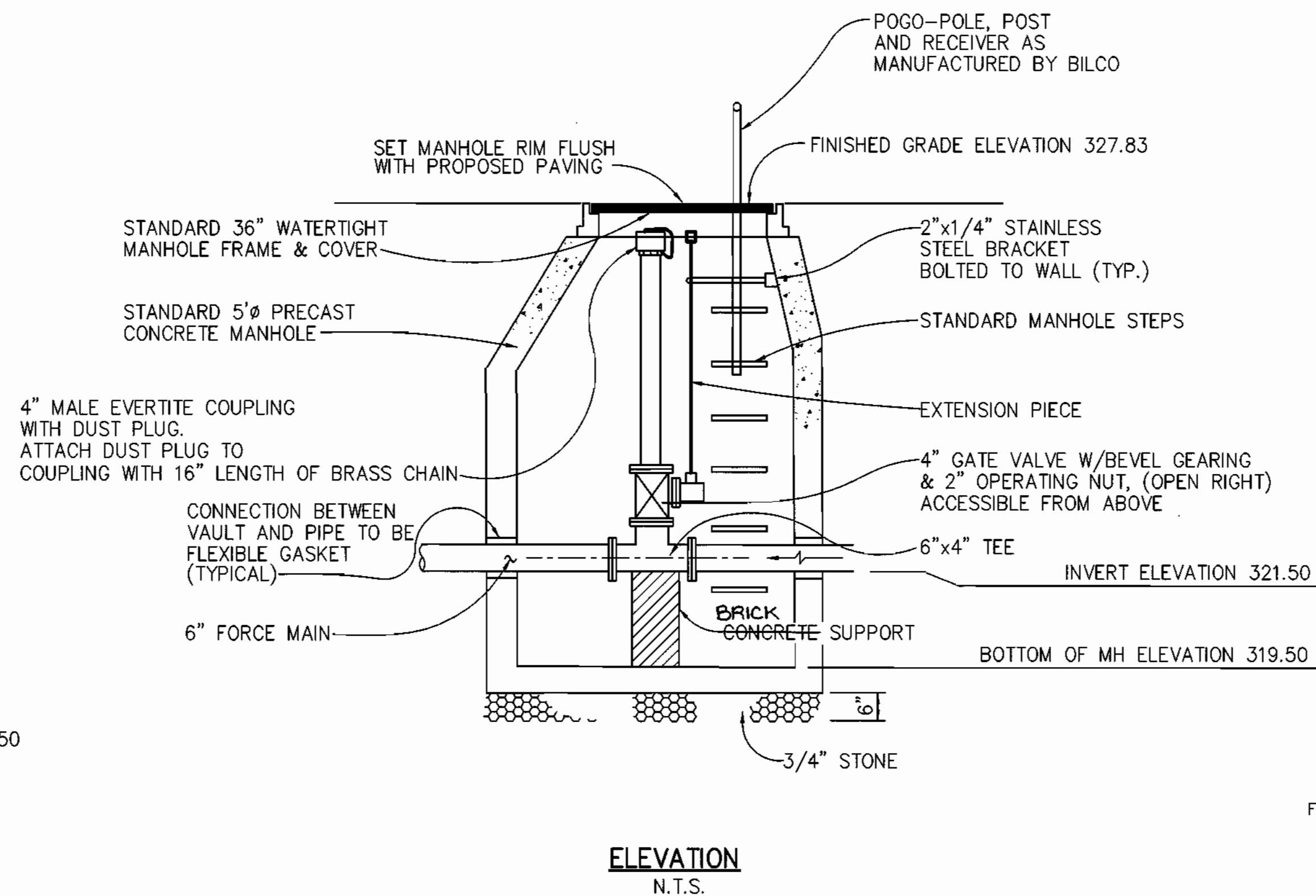
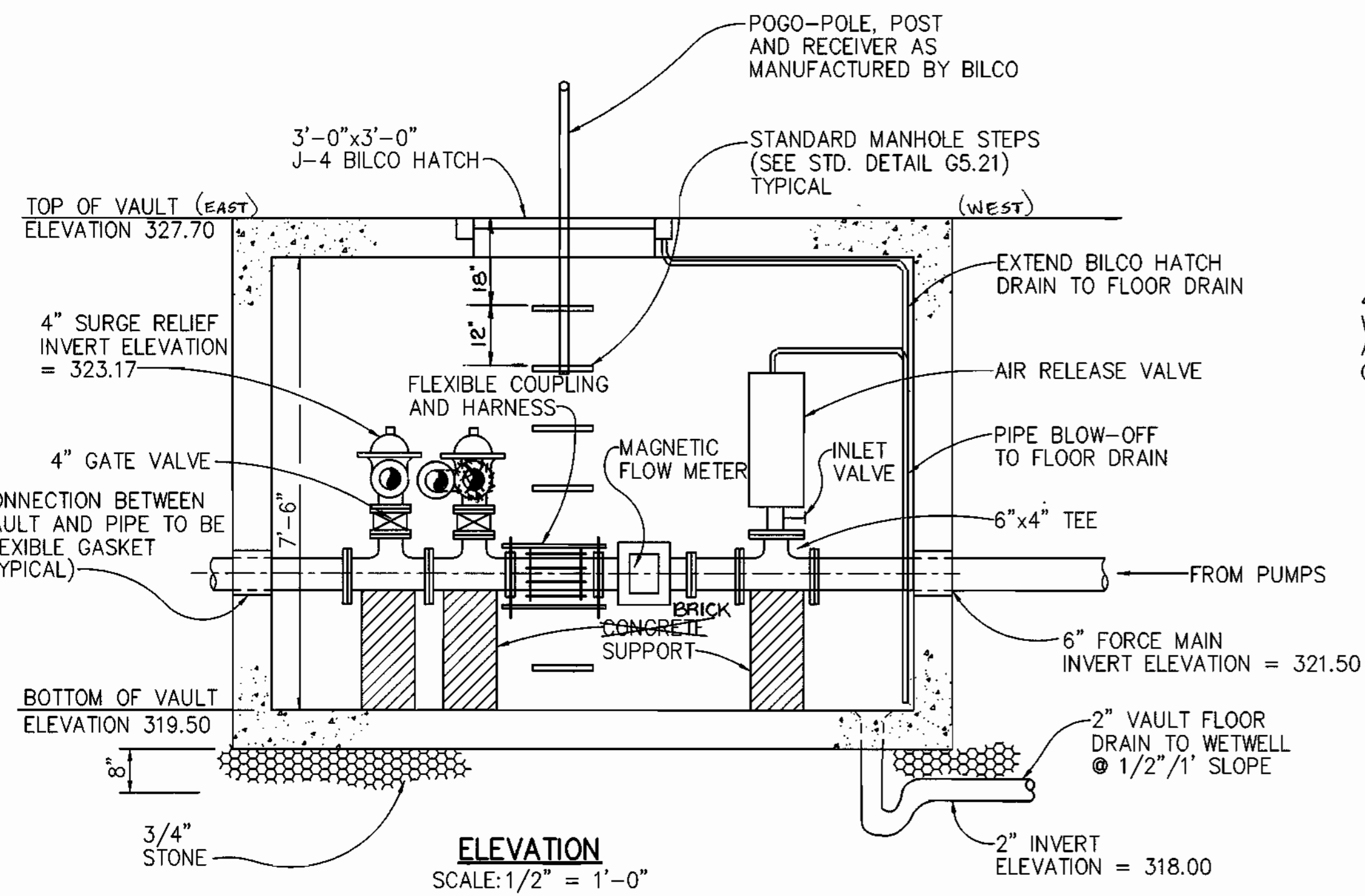
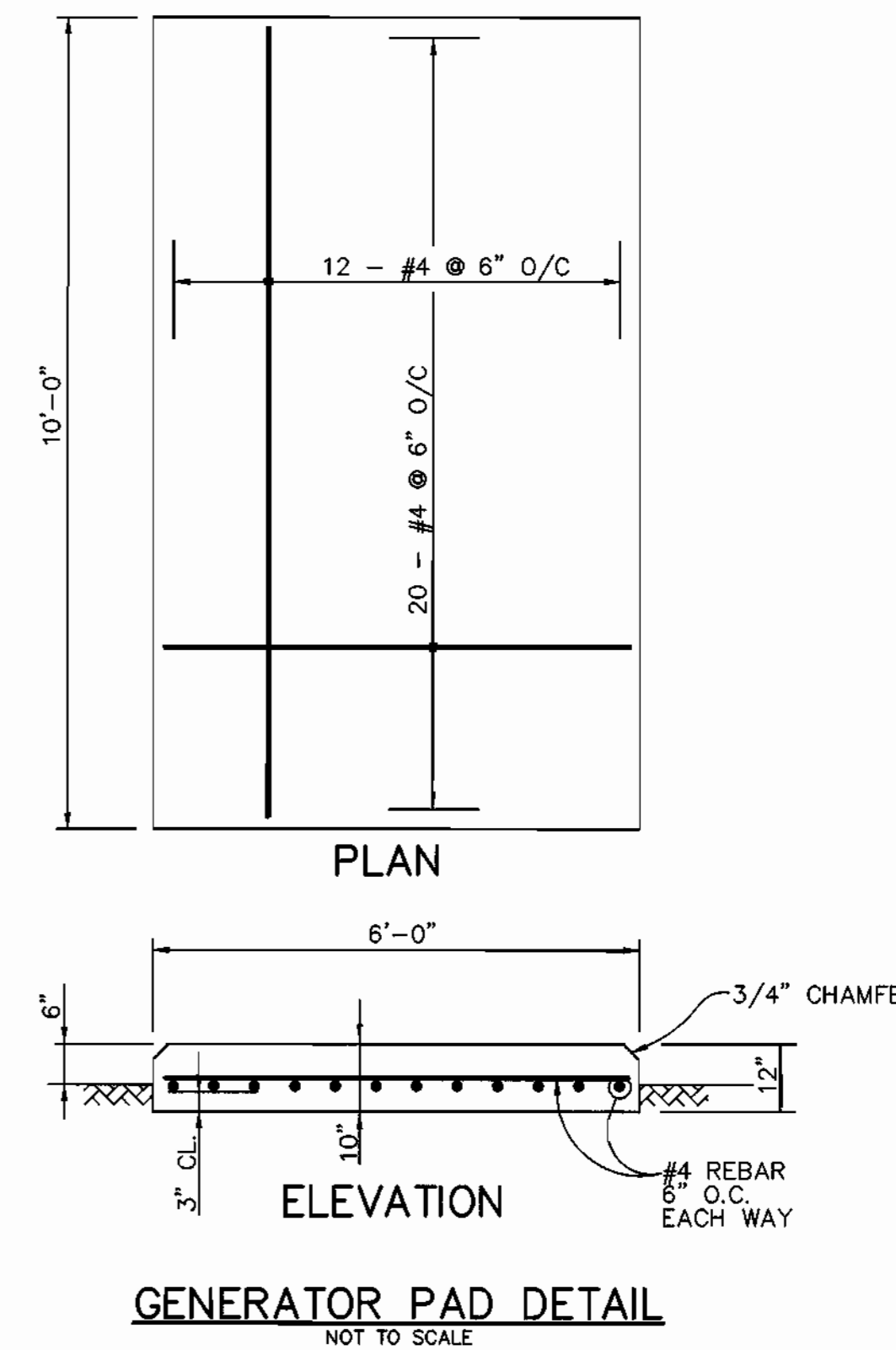
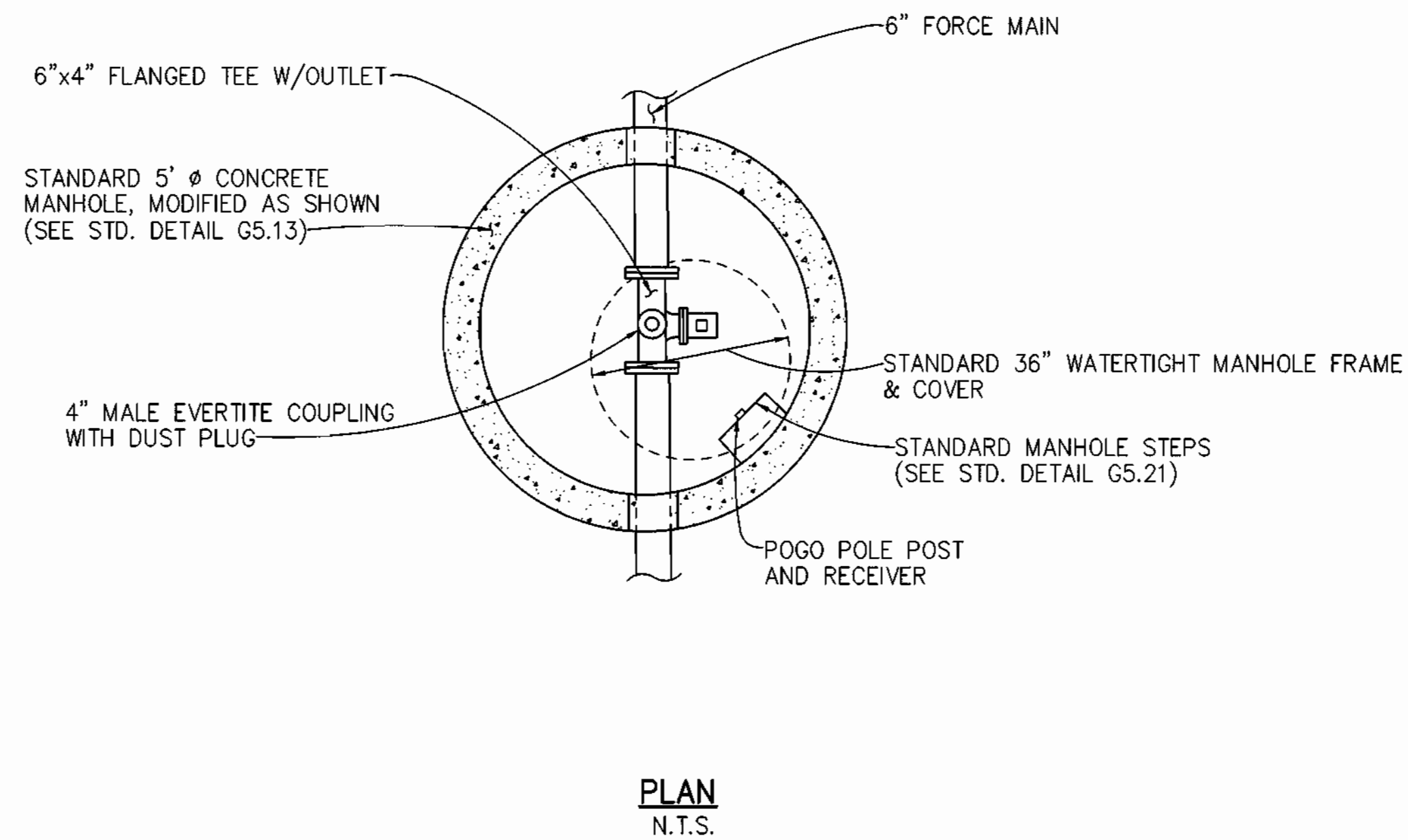
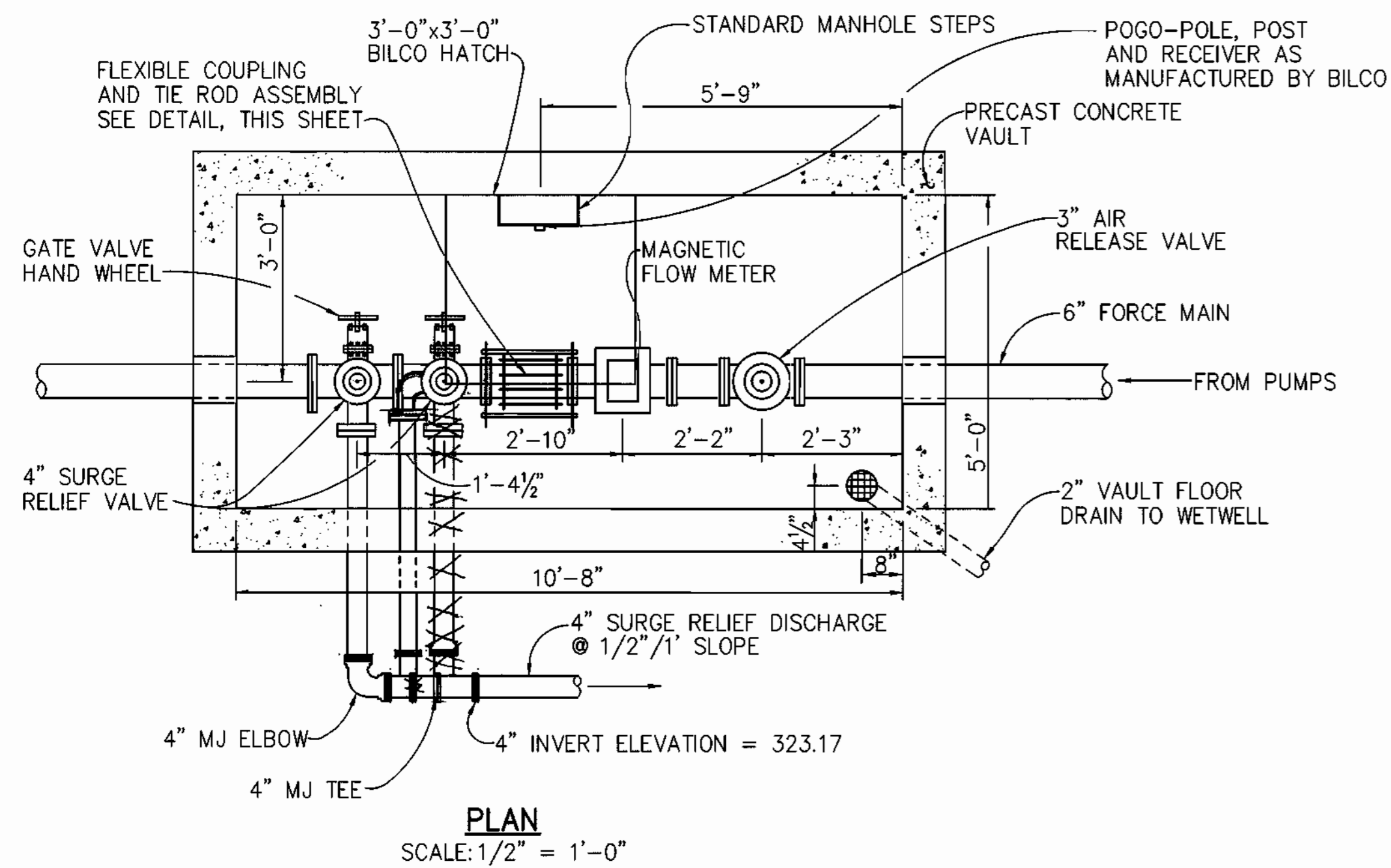
**RESERVOIR OVERLOOK
PUMPING STATION**
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 20-3664-D

SCALE
AS
SHOWN

SHEET
7 OF 15

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NOTES

1. TIE RODS SHALL CONFORM TO ASTM A-588 SPECIFICATION.
2. STEEL PLATE SHALL CONFORM TO ASTM A-36 SPECIFICATION.
3. INSIDE NUT TO BE HAND TIGHT AND TWO NUTS SHALL BE TIGHTENED AGAINST EACH OTHER.
4. WHEN THE STRAPPING ASSEMBLY IS LOCATED NEAR THE FLANGED VALVE, PROVIDE A FLANGED SPOOL PIECE (1" MIN. LENGTH) BETWEEN THE VALVE AND ASSEMBLY IN ORDER TO AVOID STRAPPING DIRECTLY TO THE VALVE.

METER AND SURGE RELIEF VAULT

BY-PASS PUMPING MANHOLE

TIE ROD ASSEMBLY
NOT TO SCALE

AS-BUILT

FRANK DONALDSON #8146

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

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DRN:	E.L.R.				
CHK:	G.C.L.				
DATE:	4/27/98	BY	NO.	REVISION	DATE

METER/VALVE VAULT AND
BY-PASS PUMPING MANHOLE

600' SCALE MAP NO. 46 BLOCK NO. 16

RESERVOIR OVERLOOK
PUMPING STATION
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 20-3664-D

SCALE
AS
SHOWN

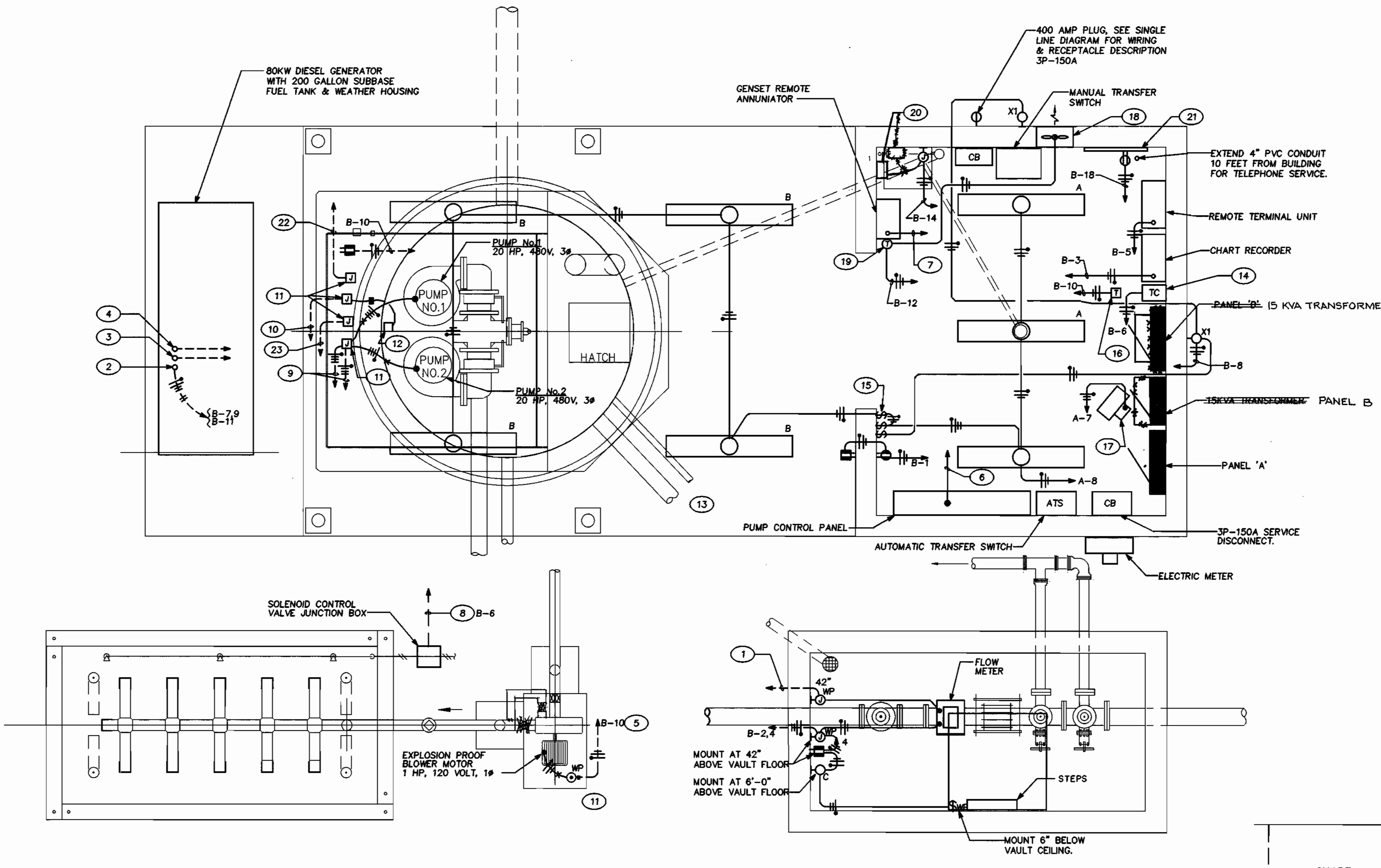
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8 OF 15

5/1/98

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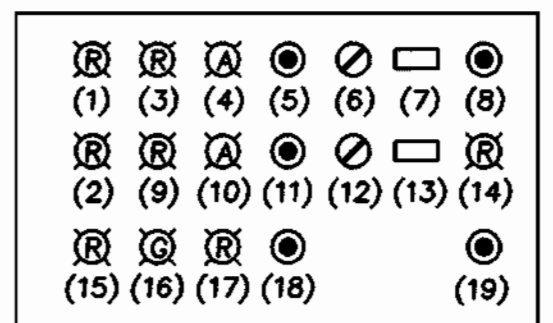
PLAN NOTES:

- 1 1/2" CONDUIT WITH DATA CABLE TO CHART RECORDER.
- 2 PROVIDE CONNECTION TO GENSET BATTERY CHARGER, BATTERY HEATER & BLOCK HEATER.
- 3 PROVIDE 2#10 & 1#10 GROUND IN 3/4" CONDUIT FROM 12VDC BATTERY SUPPLY TO TELEMETRY POWER SUPPLY IN REMOTE TERMINAL UNIT.
- 4 PROVIDE 2#14 IN 1" CONDUIT TO GENERATOR REMOTE ANNUNCIATOR PANEL.
- 5 TO PANEL A VIA BLOWER MOTOR MANUAL MOTOR STARTER SWITCH. PROVIDE CONDUIT SEAL AT HOMERUN.
- 6 PROVIDE 3#18 IN 1-1/2" CONDUIT TO REMOTE TERMINAL UNIT FOR ALARMS. PROVIDE 10#14 IN 3/4" CONDUIT TO REMOTE TERMINAL UNIT FOR LEVEL CONTROLS.
- 7 4#18 IN 1/2" CONDUIT TO TELEMETRY CONTROL PANEL FOR GENERATOR FAILURE & GENERATOR RUN.
- 8 2 #12 & 1 #12 GROUND IN 3/4" CONDUIT TO REPEAT CYCLE TIMER IN CONTROL ROOM. PROVIDE CONNECTION TO SOLENOID VALVE.
- 9 PROVIDE 2 SETS OF 3 #8 & 1 #10 GROUND IN 1" CONDUIT. PROVIDE 3 #8 & 1 #10 GROUND IN LIQUIDTIGHT FLEXIBLE METAL CONDUIT TO EACH PUMP MOTOR.
- 10 PROVIDE 3/4" CONDUIT WITH RG-62U COAXIAL CABLE FROM WET WELL TRANSDUCER TO ULTRASONIC LEVEL CONTROLLER.
- 11 PROVIDE CONDUIT STUP-UP WITH CONDUIT SEAL & LIQUIDTIGHT FLEXIBLE METAL CONDUIT CONNECTION TO MOTOR.
- 12 PROVIDE PVC COATED STEEL CHANNEL & MOUNT LEVEL TRANSDUCER IN WET WELL. LOCATION TO BE AS RECOMMENDED BY MANUFACTURER. PROVIDE CONDUIT SEALS AT PENETRATION TO WET WELL.
- 13 SEE ELEVATION ON THIS DRAWING.
- 14 REPEAT CYCLE TIMER FOR CONTROL OF SOLENOID VALVE.
- 15 PROVIDE IDENTIFICATION CABLES FOR EACH SWITCH AS FOLLOWS "CANOPY LIGHTS", "STATION LIGHTS", AND "SECURITY LIGHTS".
- 16 BLOWER MOTOR MANUAL MOTOR STARTER SWITCH, MOUNT ABOVE REPEAT CYCLE TIMER.
- 17 PROVIDE UNIT HEATER: 3 KW, 480 VOLT, 1φ (Q-MARK No. "MUH-03-41" OR EQUAL). HEATER SHALL CONTAIN LOW VOLTAGE CONTROL TRANSFORMER AND INTERNAL THERMOSTAT. PROVIDE CEILING MOUNTING BRACKET.
- 18 PROVIDE STEEL PROPELLER WALL FAN, EQUAL TO "COOK No. 10515D, 1150 RPM, FAN SIZE 8, 1/25 HP, 120 VOLT, 1φ.
- 19 PROVIDE LINE VOLTAGE THERMOSTAT WITH ON-OFF CONTROL FOR FAN MOTOR.
- 20 INSTANT HOT WATER HEATER: 4.6 KW, 208 VOLT, 1φ.
- 21 PROVIDE 4"x4"x3/4" THICK FIRE RATED TELEPHONE BACKBOARD.
- 22 PROVIDE 13 #12 IN 1" CONDUIT TO PUMP CONTROL PANEL. PROVIDE LIQUIDTIGHT FLEXIBLE METAL CONDUIT CONNECTIONS TO VENTILATION MOTOR, HEATER, AND (2) VACUUM PUMPS AND (2) SOLENOID VALVES.
- 23 PROVIDE 4 #14 IN 3/4" CONDUIT TO REMOTE TERMINAL UNIT FOR BACKUP HIGH LEVEL AND LOW LEVEL ALARM FLOAT. PROVIDE 4 #14 TO FLOAT SWITCH IN WET WELL. PROVIDE CONDUIT SEAL AT PENETRATION TO WET WELL.



STATION PLAN - ELECTRICAL

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

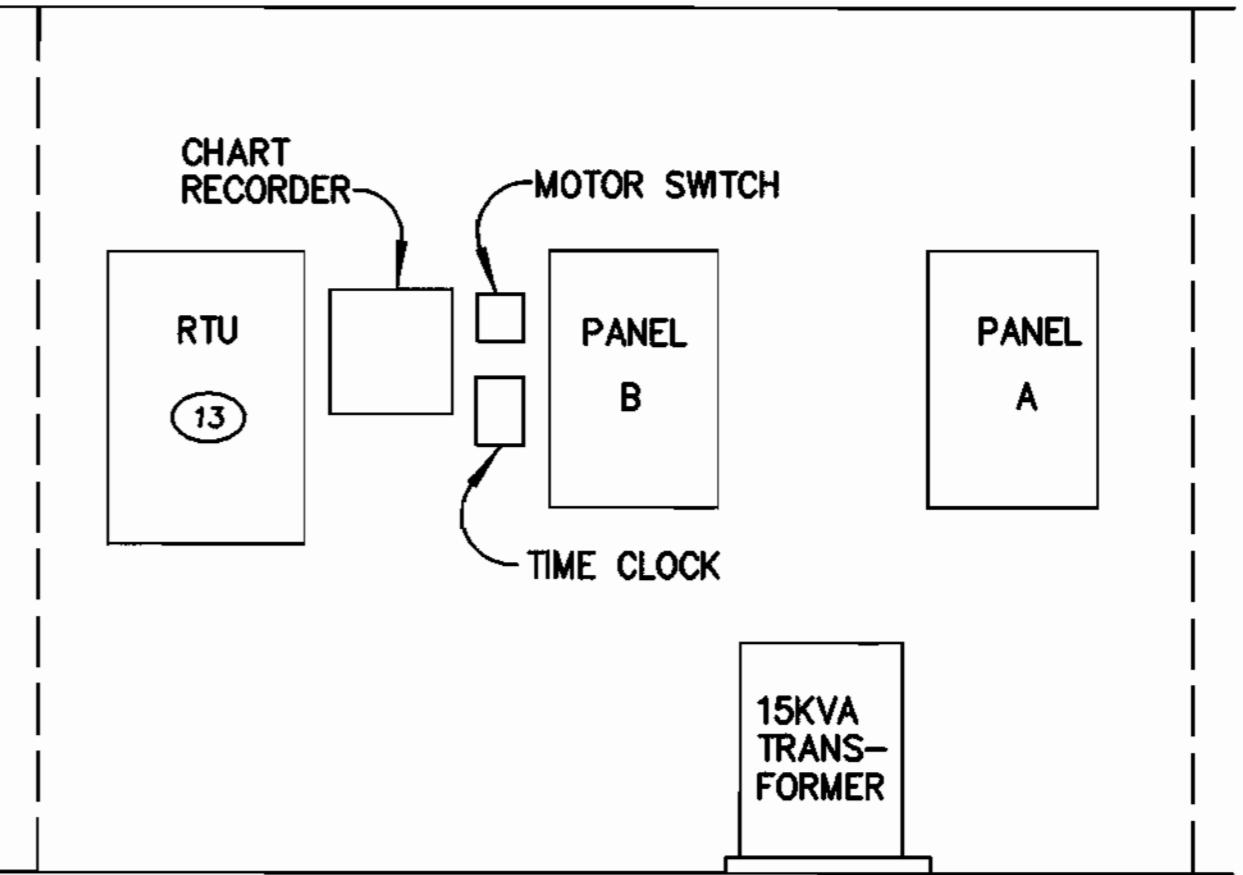


REMOTE TERMINAL UNIT (RTU) ELEVATION

NO SCALE
 NOTES: ENCLOSURE TO BE NEMA 1 WITH KEY-LOCKED HANDLE - PIANO HINGED DOOR. VIEW WINDOW SHALL ALLOW FULL VIEW OF ULTRASONIC LEVEL INDICATORS.

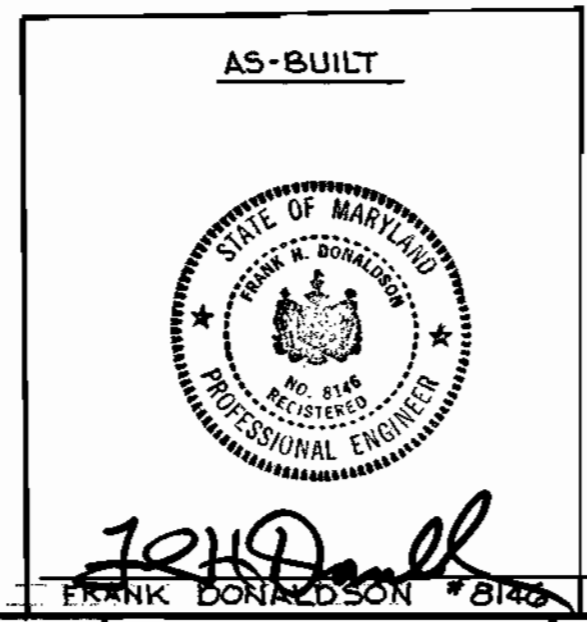
(RTU) NAMEPLATES

- 1) HIGH WET WELL LEVEL
- 2) LOW WET WELL LEVEL
- 3) PUMP #1 RUNNING
- 4) PUMP #1 OVER-TEMPERATURE
- 5) PUMP #1 RESET
- 6) PUMP #1 H-O-A SELECTOR SWITCH
- 7) PUMP #1 RUNNING TIME METER
- 8) PUMP #1 ALTERNATOR
- 9) PUMP #2 RUNNING
- 10) PUMP #2 OVER-TEMPERATURE
- 11) PUMP #2 RESET
- 12) PUMP #2 H-O-A SELECTOR SWITCH
- 13) PUMP #2 RUNNING TIME METER
- 14) ULTRASONIC LEVEL CONTROL FAIL
- 15) GENERATOR FAIL
- 16) GENERATOR RUN
- 17) TELEMETRY FAIL
- 18) TELEMETRY TEST SWITCH
- 19) ULTRASONIC LEVEL CONTROL RESET



CONTROL ROOM ELEVATION NORTH WALL
 SCALE: 1/2" = 1'-0"

SRBR
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 CONSULTING ENGINEERS
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DRN:	TZG				
CHK:	WFS				
DATE:	4/27/98				
BY:	NO.		REVISION		DATE

ELECTRICAL STATION PLAN

600' SCALE MAP NO. 46 BLOCK NO. 16

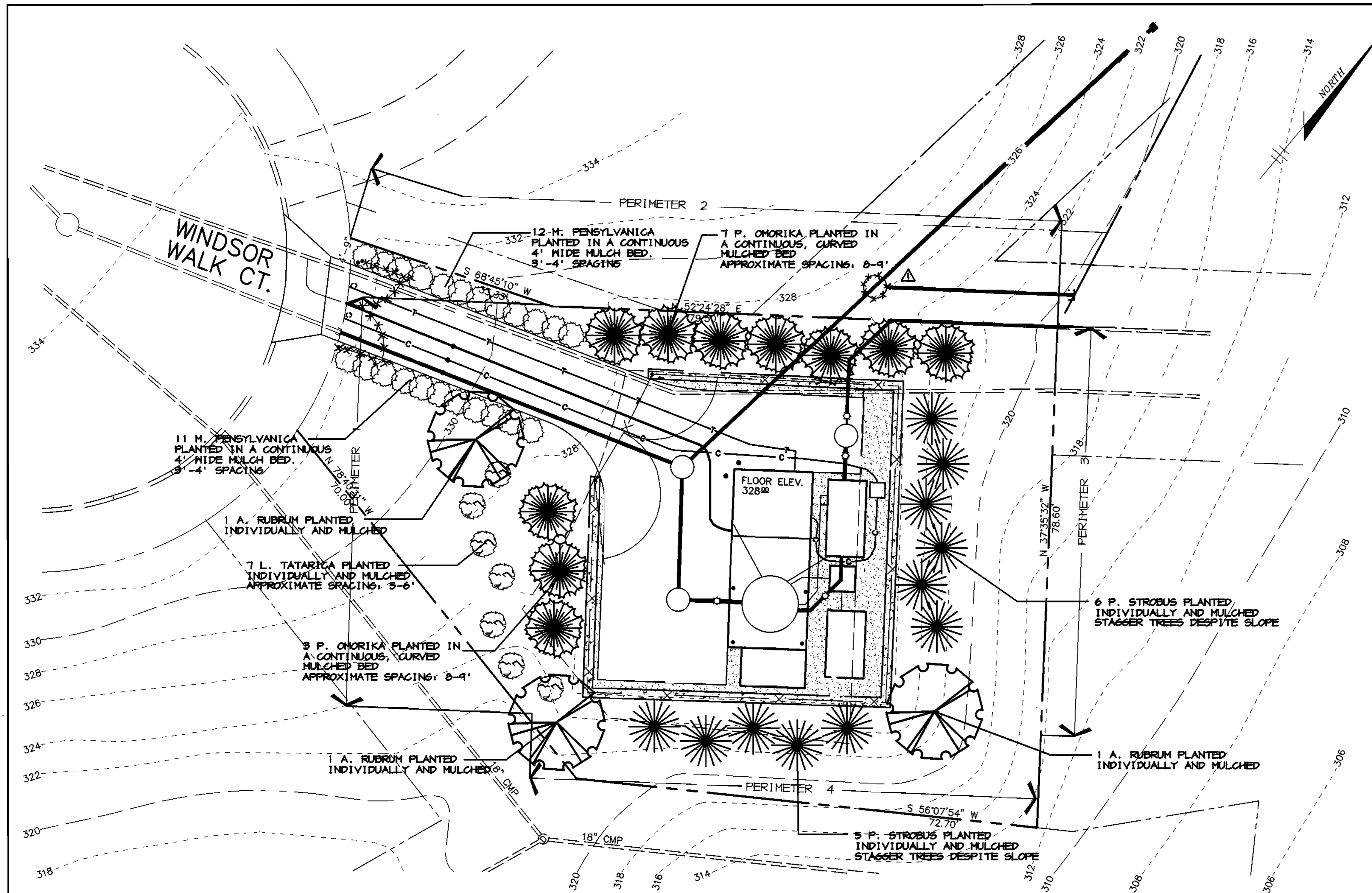
RESERVOIR OVERLOOK PUMPING STATION
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 20-3664-D

SCALE AS SHOWN

SHEET 9 OF 15

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
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 CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
 Frank Donaldson 6/1/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



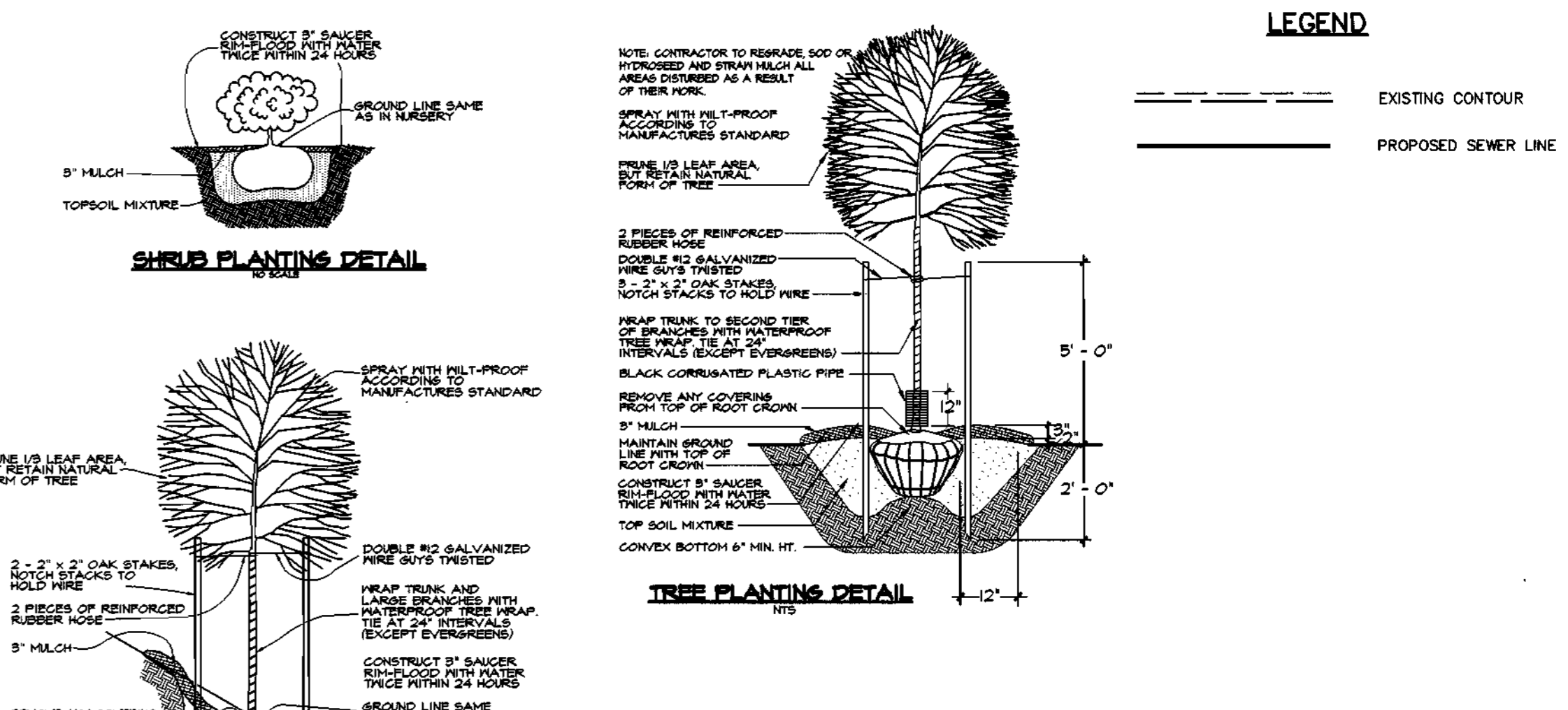
PLAN
SCALE: 1" = 10'

PLANTING SCHEDULE

QTY	BOTANICAL / COMMON NAME	SIZE / SPACING
3	Acer rubrum / October Glory / Red Maple	2 1/2' cal. min. 14' ht. min. B + B
10	Picea omorika / Serbian Spruce	7'-8' ht. B + B
25	Myrica pensylvanica / Northern Bayberry	2'-2 1/2' ht.
7	Lonicera tatarica / Tatarian Honeysuckle	8'-9 1/2' ht.
11	Pinus strobus / White Pine	6'-7' ht. B + B

PERIMETER PLANTING CALCULATIONS

Perimeter	Use	Type	Plants
Perimeter 1	Non Residential Use to Roadway Front / Side	Type B	1 Shade Tree 2 Evgn. Trees
Perimeter 2	Non Residential Use to SFD	Type C	3 Shade Trees 6 Evgn. Trees
Perimeter 3	No requirement / abuts major open space / not visible from other land uses.		
Perimeter 4	No requirement / abuts major open space / not visible from other land uses.		



**SCHEDULE A
PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROPERTIES
LANDSCAPE TYPE	B	C
LINEAR FEET OF ROADWAY FRONTAGE / PERIMETER	65'	115'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO
NUMBER OF PLANTS REQUIRED:		
SHADE TREES	1	5
EVERGREEN TREES	2	6
SHRUBS	0	0
NUMBER OF PLANTS PROVIDED:		
SHADE TREES	2	1
EVERGREEN TREES	3	0
OTHER TREES (2:1 SUBSTITUTION) SHRUBS (10:1 SUBSTITUTION)	0	12

COMMENTS:
M. PENNSYLVANICA SHRUBS ARE SUBSTITUTED FOR SHADE & EVERGREEN TREES TO AVOID CONFLICTS WITH MAJOR UTILITIES ALONG THE ACCESS ROAD.

PLANTING SPECIFICATIONS

- Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein.
- All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to American Association of Nurserymen (A.A.N.) standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sunscald injuries, abrasions of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements. Plant material which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug; no heeled-in plants or plants from cold storage will be accepted.
- Unless otherwise specified, all general conditions, planting operations, details and planting specification shall conform to Landscape Specification Guidelines for Baltimore-Washington Metropolitan Area (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architect, latest edition, including all agenda.
- Contractor shall be required to guarantee all plant material for a period of two years after date of acceptance in accordance with the appropriate section of the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the two year specifications including watering and replacement of specified plant material.
- Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning any work. Contractor will make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.
- Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence at the drip line.
- Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within growing season of completion of site construction.
- Bid shall be based on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications.
- Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plant list take precedence.
- All shrubs and groundcover areas shall be planted in continuous prepared planting beds mulched with composted hardwood mulch as detailed and specified except where noted on plans.
- Positive drainage shall be maintained in planting beds (minimum 2 percent slope).
- Planting mix shall be as follows: Deciduous Plants - Two parts topsoil, one part well-rotted cow or horse manure, and 3 lbs of standard fertilizer per cubic yard of planting mix. Evergreen Plants - two parts topsoil, one part humus or other approved organic material. Add 3 lbs of evergreen (acidic) fertilizer per cubic yard of planting mix. Topsoil shall conform to the Landscape Guidelines.
- Weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: Be sure to carefully check the chemical used to assure its adaptability to the specific groundcover to be treated.
- Mulch: Groundcover beds should be mulched with minimum 2 inches of shredded composted hardwood, or as specified on the details, whichever is greater.
- All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded.
- This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.

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HOWARD COUNTY, MARYLAND
David T. Dows 6-1-98
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4/24/98
DAVID T. DOWS
DATE: 3/31/98
BY NO. REVISION DATE 600' SCALE MAP NO. 46 BLOCK NO. 16

DES:	D.T.D.	REVISED SEWER ALIGNMENT	8/98
DRN:	A.J.L.	REVISE TOTAL SHEET #	7/16/00
CHK:	D.T.D.		
DATE:	3/31/98		
BY	NO.	REVISION	DATE

LANDSCAPE PLAN
AS-BUILT 11/1999




**RESERVOIR OVERLOOK
PUMPING STATION**
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 20-3664-D

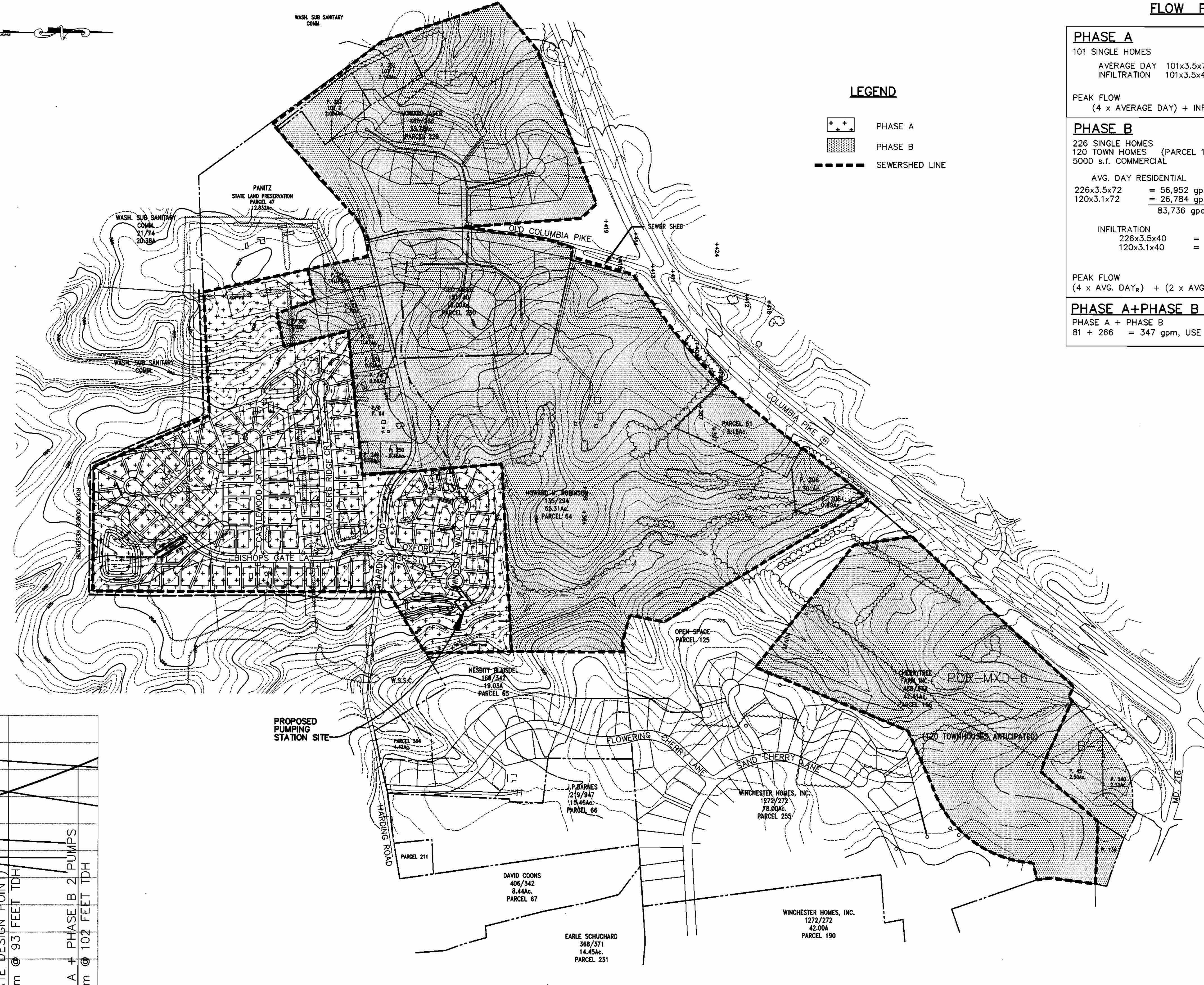
SCALE
1" = 10'
SHEET
11 OF 15

FLOW PROJECTIONS

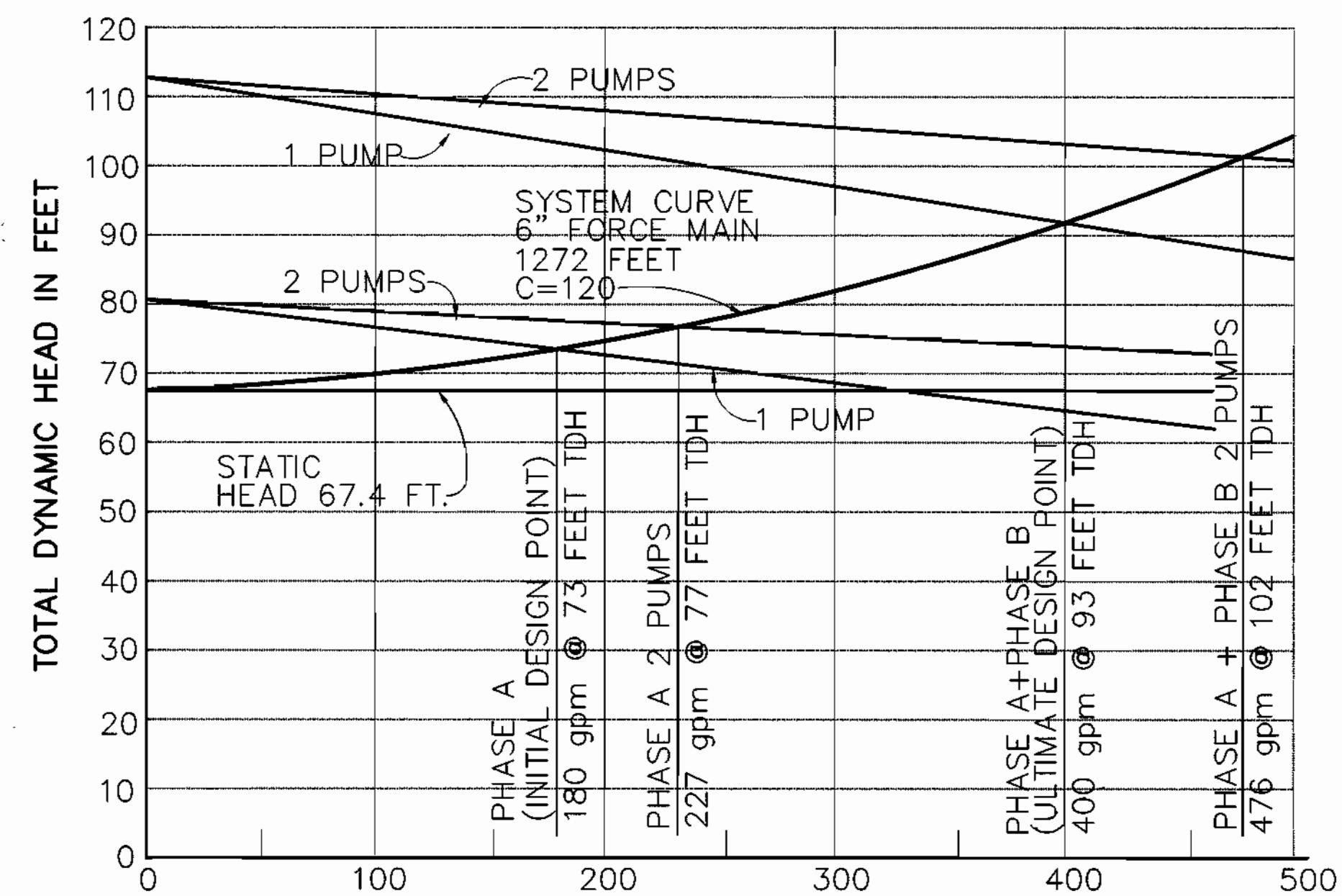
PHASE A			
101 SINGLE HOMES			
AVERAGE DAY	101x3.5x72	=	25,452 gpd
INFILTRATION	101x3.5x40	=	14,140 gpd
PEAK FLOW (4 x AVERAGE DAY) + INFILTRATION = 81 gpm, USE 180 gpm			
PHASE B			
226 SINGLE HOMES (PARCEL 156)			
120 TOWN HOMES (PARCEL 156)			
5000 s.f. COMMERCIAL			
AVG. DAY RESIDENTIAL		AVG. DAY COMMERCIAL	
226x3.5x72	=	56,952 gpd	5000 x .05 = 250 gpd
120x3.1x72	=	26,784 gpd	
		83,736 gpd	
INFILTRATION			
226x3.5x40	=	31,640 gpd	
120x3.1x40	=	14,880 gpd	
		46,520 gpd	
PEAK FLOW (4 x AVG. DAY _r) + (2 x AVG. DAY _c) + INFILTRATION = 266 gpm			
PHASE A+PHASE B (ULTIMATE PEAK FLOW)			
PHASE A + PHASE B			
81 + 266 = 347 gpm, USE 400 gpm			

LEGEND

-  PHASE A
-  PHASE B
-  SEWERSHED LINE



NOTE:
 PUMPS: MODEL 4B2D 1760 RPM AS PROVIDED BY SMITH AND LOVELESS.
 MOTORS: 20 HP 3 PHASE 60 HERTZ 460 V. IMPELLAR: S4L23.



SYSTEM/PUMP CURVES

SCALE: HORIZ. 1" = 60 gpm VERT. 1" = 20' TDH

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

RIEMER MUEGGE & ASSOCIATES, INC.
 ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
 8818 Centre Park Drive • Suite 200 • Columbia, MD 21046
 410-997-5000 FAX: 410-997-9282
 97061/401MS/TTLESBY.DWG

FRANK DONALDSON #8146
 DATE: 4/27/98
 5/1/98

DES: J.S.C.	SUP: 2	REVISE TOTAL SHEET #	7/16/00
DRN: E.L.R.			
CHK: G.C.L.			
DATE: 4/27/98	BY NO.	REVISION	DATE

SEWERSHED MAP/SYSTEM CURVE

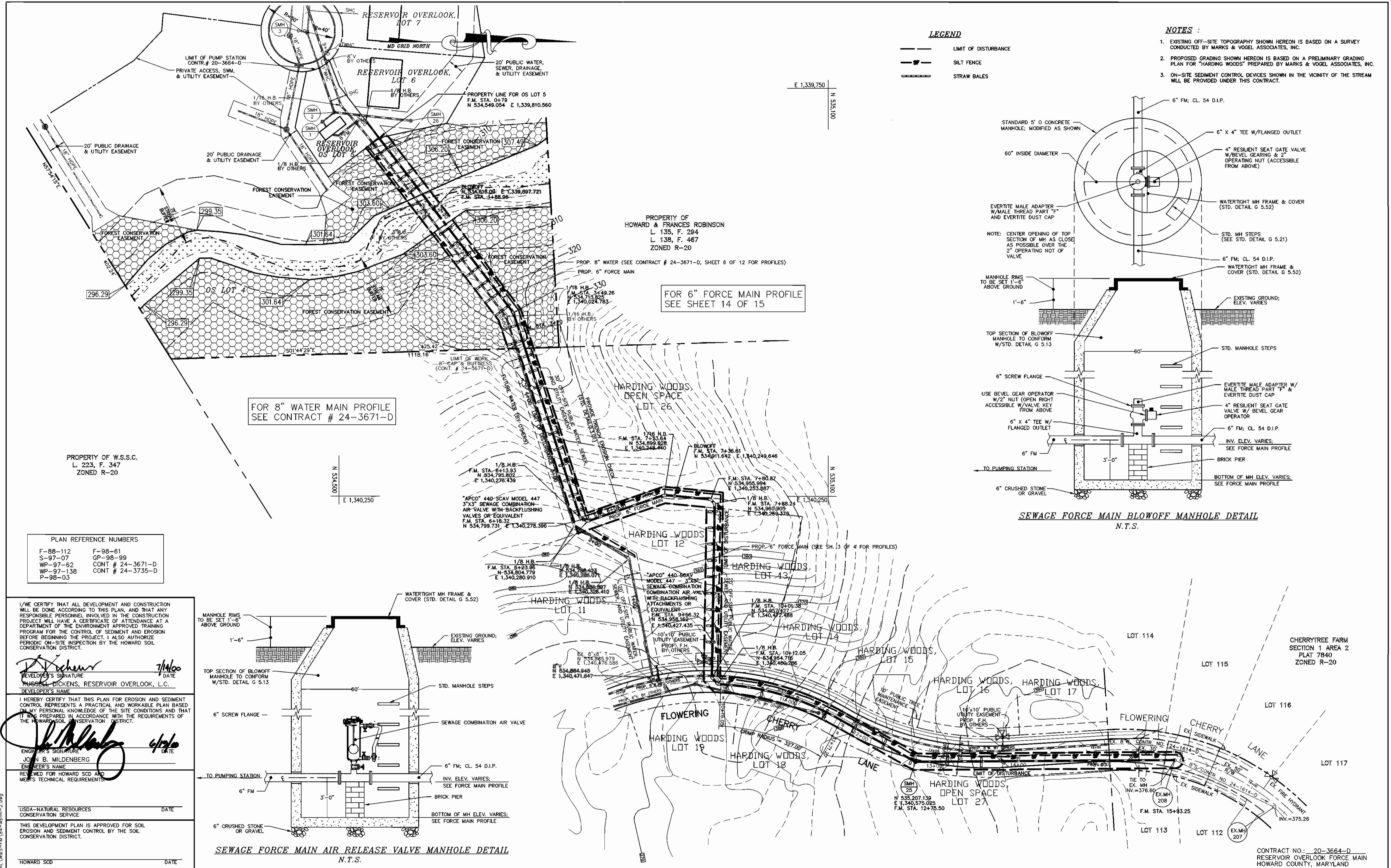
600' SCALE MAP NO. 46 BLOCK NO. 16

RESERVOIR OVERLOOK
 PUMPING STATION
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 20-3664-D

SCALE AS SHOWN

SHEET 12 OF 15

AS-BUILT 11/1998

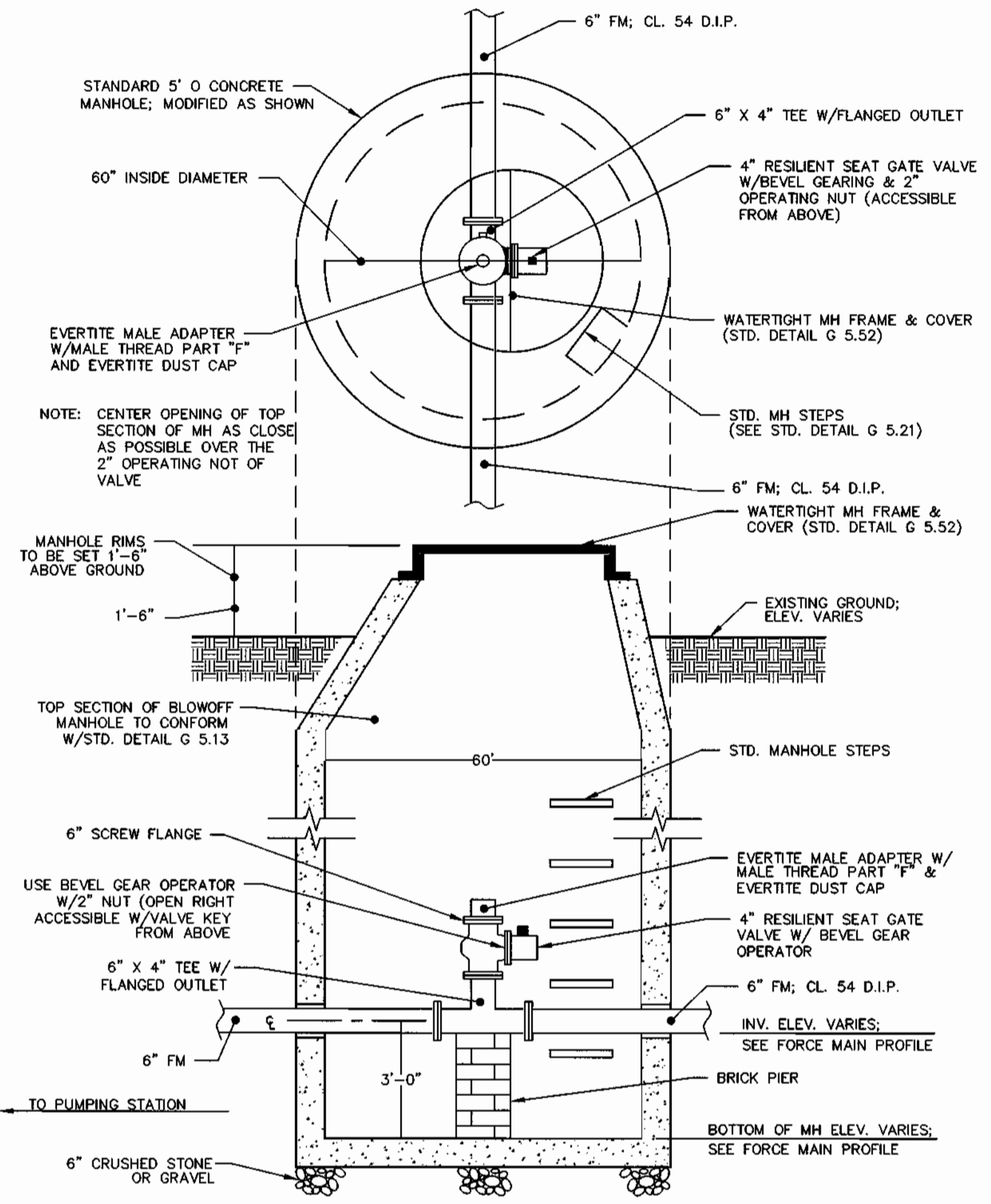


LEGEND

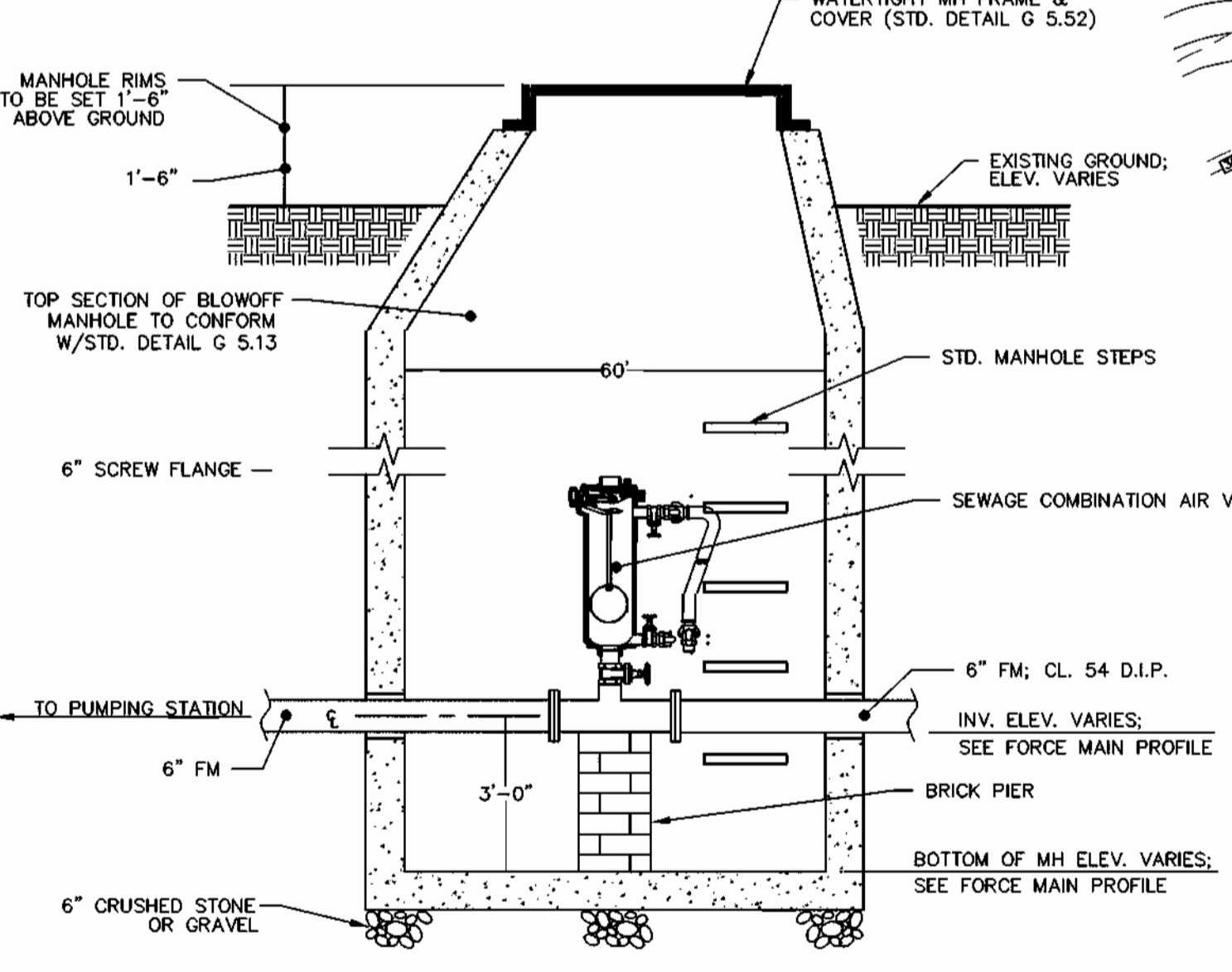
- LIMIT OF DISTURBANCE
- SILT FENCE
- STRAW BALES

NOTES :

1. EXISTING OFF-SITE TOPOGRAPHY SHOWN HEREON IS BASED ON A SURVEY CONDUCTED BY MARKS & VOGEL ASSOCIATES, INC.
2. PROPOSED GRADING SHOWN HEREON IS BASED ON A PRELIMINARY GRADING PLAN FOR "HARDING WOODS" PREPARED BY MARKS & VOGEL ASSOCIATES, INC.
3. ON-SITE SEDIMENT CONTROL DEVICES SHOWN IN THE VICINITY OF THE STREAM WILL BE PROVIDED UNDER THIS CONTRACT.



SEWAGE FORCE MAIN BLOWOFF MANHOLE DETAIL
N.T.S.



SEWAGE FORCE MAIN AIR RELEASE VALVE MANHOLE DETAIL
N.T.S.

PLAN REFERENCE NUMBERS

F-88-112	F-98-61
S-97-07	GP-98-99
WP-97-62	CONT # 24-3671-D
WP-97-138	CONT # 24-3735-D
P-98-03	

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

Russell Dickens 7/14/00
DEVELOPER'S SIGNATURE DATE
RUSSELL DICKENS, RESERVOIR OVERLOOK, L.C.
DEVELOPER'S NAME

I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

John B. Mildenberg 6/15/00
ENGINEER'S SIGNATURE DATE
JOHN B. MILDENBERG
ENGINEER'S NAME

REVIEWED FOR HOWARD SCD AND METS TECHNICAL REQUIREMENTS.

USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE SOIL CONSERVATION DISTRICT.

HOWARD SCD DATE

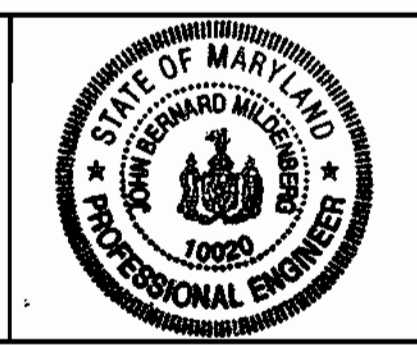
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert S. ... 7-25-00
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

William ... 7/21/00
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Ball. (301) 621-5521 Wash. (410) 997-0298 Fax.



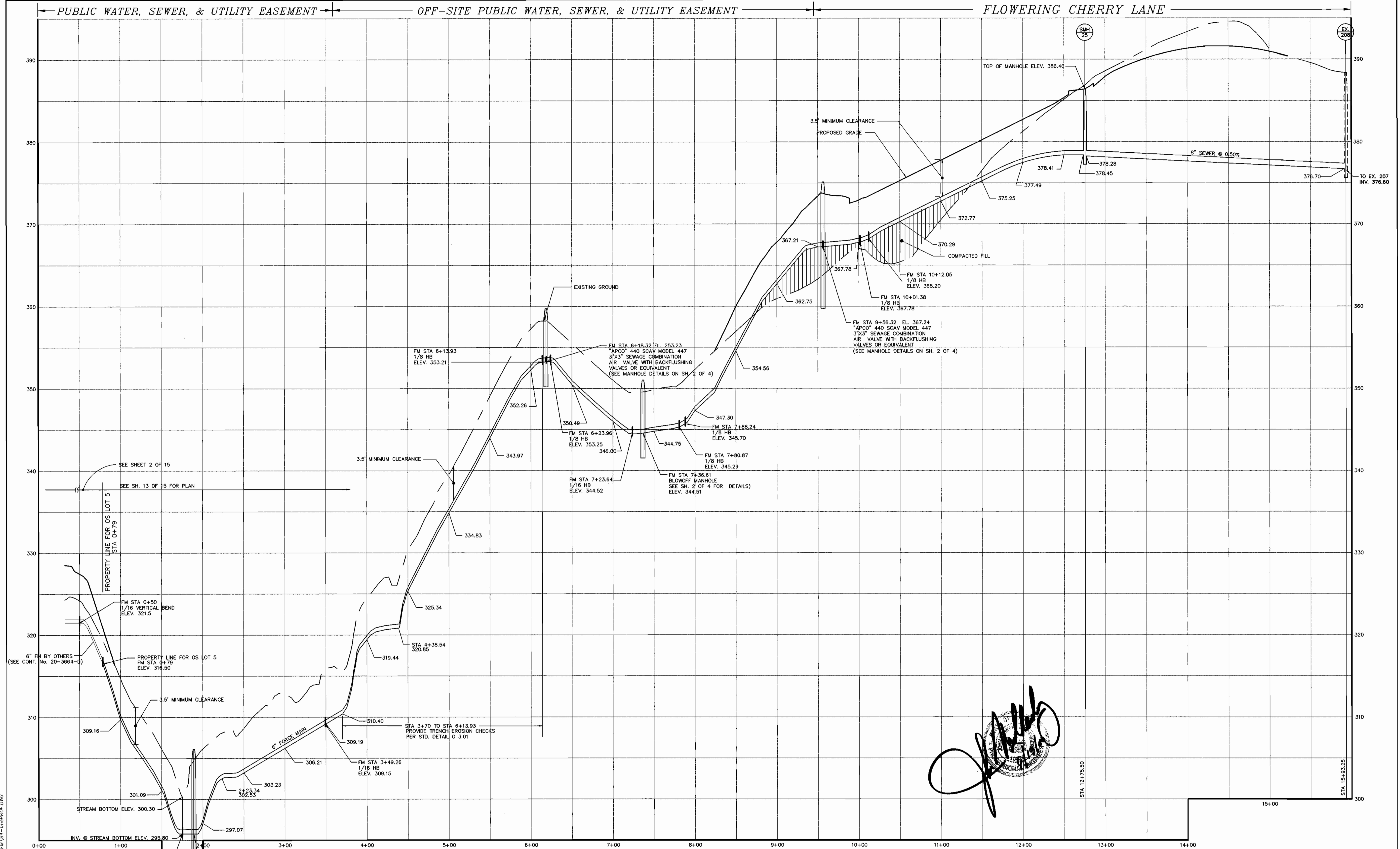
engineering	SJD				
illustration	SJD				
approval					
project	97084				
date	JUNE 2000	BY	NO.	REVISION	DATE

WATER AND SEWER PLAN

600' SCALE MAP NO. 46 BLOCK NO. 15 & 16

RESERVOIR OVERLOOK FORCE MAIN
CONTRACT # 20-3664-D
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

scale
1"=50'
13 of 15



SEWER PROFILE - FORCE MAIN TO SMH 28

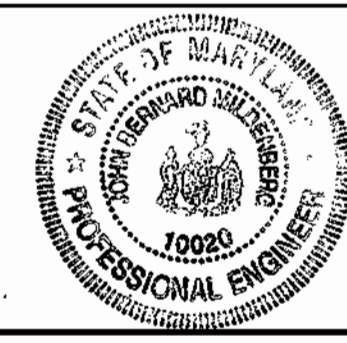
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

NOTE: FIELD LOCK GASKET FOR THE ENTIRE FORCE MAIN.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
7-25-00
DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
7/21/00
DATE

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Fax: (301) 621-5521 Wash. (410) 997-0298 Fax



engineering	SJD				
illustration	SJD				
approval					
project	97084				
date	JUNE 2000	BY	NO.	REVISION	DATE

SEWER PROFILE
600' SCALE MAP NO. 46 BLOCK NO. 15 & 16

RESERVOIR OVERLOOK FORCE MAIN
CONTRACT # 20-3664-D
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

scale AS SHOWN
14 of 15

97084.DWG.FINAL VWS-FM184-fm184.DWG

HOWARD SOIL CONSERVATION DISTRICT

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

- 1) PREFERRED - APPLY 2 TONS PER ACRES DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.) BEFORE SEEDING.
2) ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ.FT.) BEFORE SEEDING.

SEEDING - FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE 1.4 LBS./1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (05 LBS./1000 SQ.FT.) OF WEEPING LOVEGRASS.

MULCHING - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS.

MAINTENANCE - INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, FOR NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.)

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SQ.FT.) FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (.07 LBS./1000 SQ.FT.).

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ.FT.) OF UNROTTED WEEED FREE SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS.

REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

STANDARD SEDIMENT CONTROL NOTES

- 1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION, (313-1855).
2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
3) FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1991 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC-51), SOO (SEC-54), TEMPORARY SEEDING (SEC-50) AND MULCHING (SEC-52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

Table with 2 columns: SITE ANALYSIS, TOTAL AREA OF SITE, AREA DISTURBED, AREA TO BE ROOFED OR PAVED, AREA TO BE VEGETATIVELY STABILIZED, TOTAL CUT, TOTAL FILL, TOTAL WASTE/BORROW AREA LOCATION.

THESE QUANTITIES ARE FOR PERMIT PURPOSES ONLY. CONTRACTOR IS REQUIRED TO PROVIDE HIS OWN QUANTITIES MEASUREMENTS.

- 8) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9) ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
11) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

STANDARD AND SPECIFICATIONS FOR TOPSOIL

DEFINITION

PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES

- I. THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
II. FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

- I. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATION. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.
II. TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
i. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CONCRETES, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.
ii. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSON-SON GRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
iii. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.
III. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
i. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
IV. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:
i. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:
a. PH FOR TOPSOILS SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A PH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PERSORBED TO RAISE THE PH TO 6.5 OR HIGHER.
b. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.
c. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.
d. NO SOO OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

ii. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

TOPSOIL APPLICATION

- I. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
II. GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBERT 4" - 8" HIGHER IN ELEVATION.
III. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" TO 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
IV. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXPOSED TO WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
V. ALTERNATIVE FOR PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW:
i. COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES SHALL BE TESTED TO PRESCRIBE AMENDMENTS AND FOR SITES HAVING AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
a. COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS WHO ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 26.04.06.
b. COMPOSTED SLUDGE SHALL CONTAIN AT LEAST 1 PERCENT NITROGEN, 1.5 PERCENT PHOSPHOROUS, AND 0.2 PERCENT POTASSIUM AND HAVE A PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS, THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO MEET THE REQUIREMENTS PRIOR TO USE.
c. COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQUARE FEET.
iv. COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4 LB/1,000 SQUARE FEET, AND 1/3 THE NORMAL LIME APPLICATION RATE.

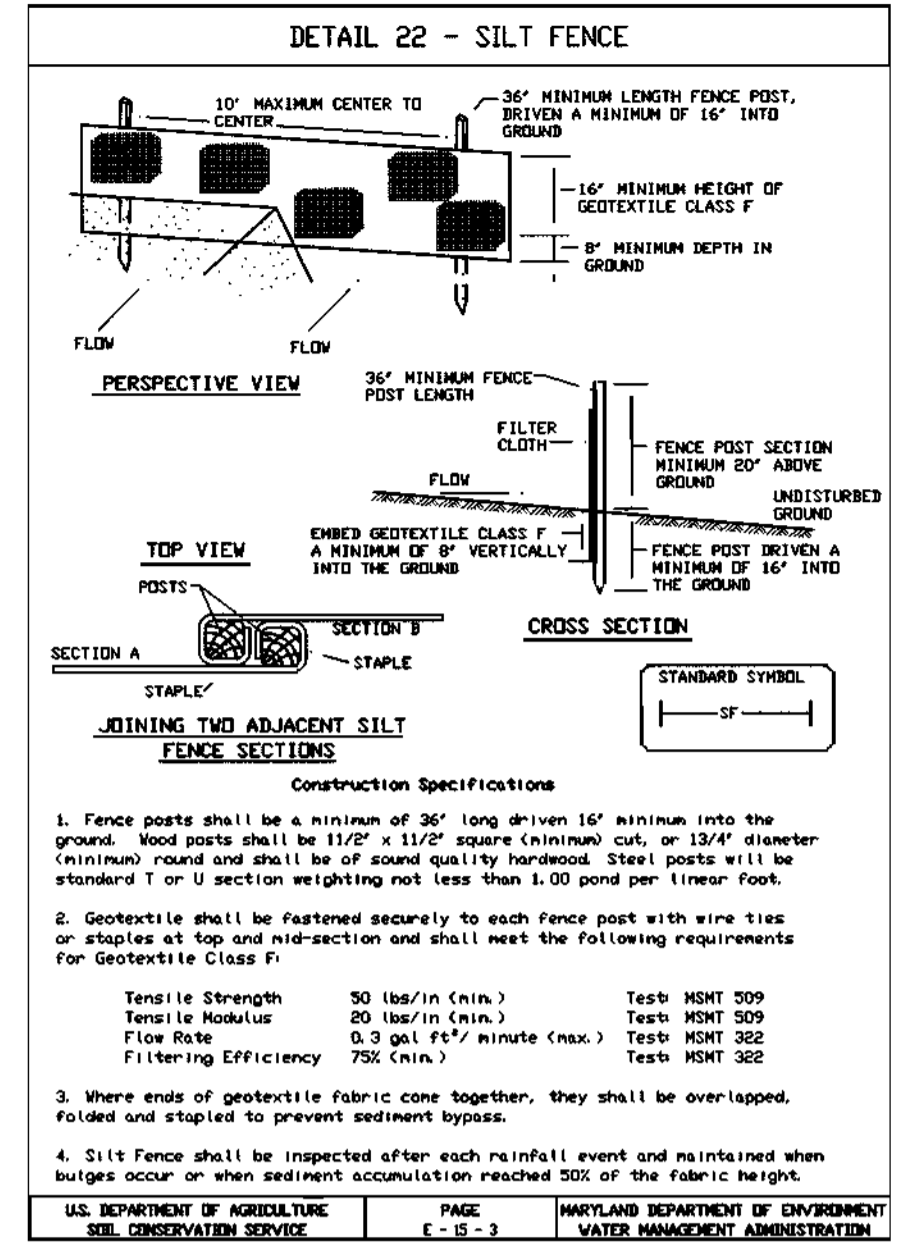
REFERENCES: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SODDING. MD-VA, PUB. #1. COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES. REVISED 1973.

SEQUENCE OF CONSTRUCTION

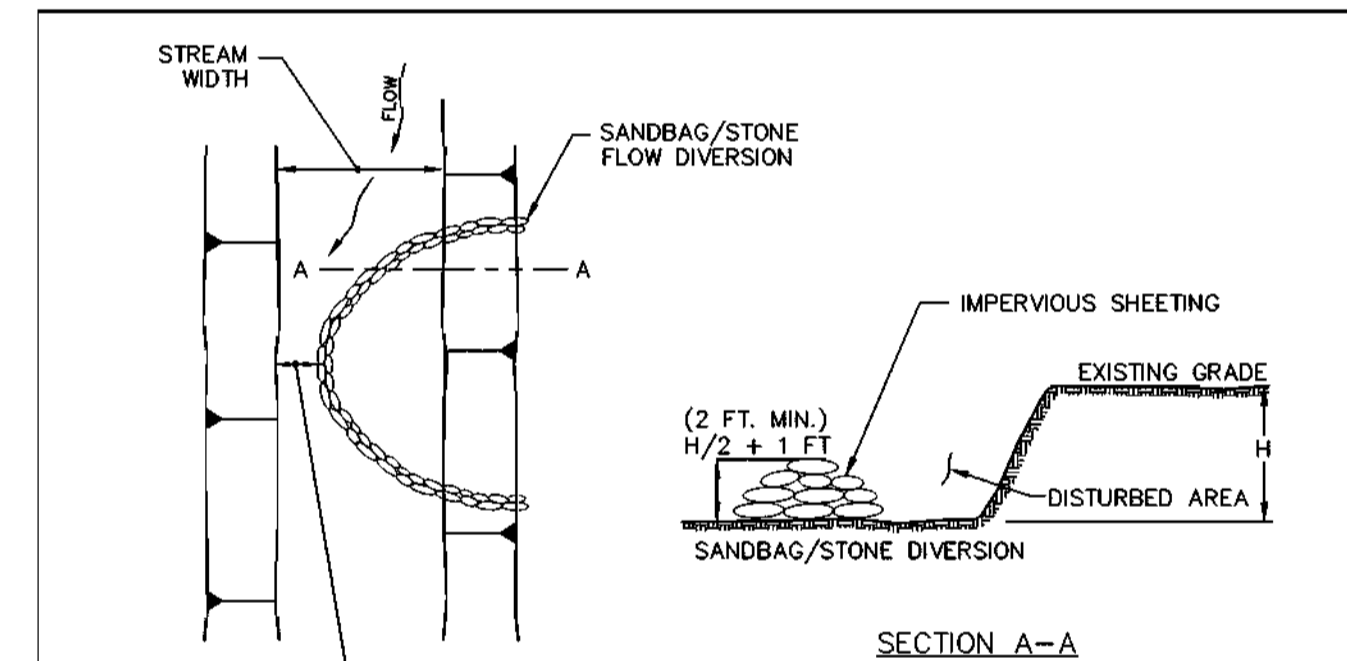
- 1. OBTAIN GRADING PERMIT. (1 DAY)
2. SEDIMENT AND EROSION CONTROL DEVICES INSTALLED UNDER F-98-61 WILL BE USED FOR INSTALLATION OF WATER AND SEWER MAINS WITHIN PROJECT LIMITS, EXCEPT AS NOTED HEREIN. INSPECT AND REPAIR ALL SEDIMENT AND EROSION CONTROL DEVICES, AS DIRECTED BY THE SEDIMENT CONTROL INSPECTOR PRIOR TO COMMENCEMENT OF WORK. (2 DAYS)
3. FOR WATER AND SEWER CONSTRUCTION OUTSIDE LIMITS OF F-98-61, ALL WORK SHALL CONFORM TO THE FOLLOWING:
A. CLEAR AND GRUB FOR STRAW BALE DIKES AND SILT FENCES. (2 DAYS)
B. INSTALL STRAW BALE DIKES AND SILT FENCES AS INDICATED. (3 DAYS)
C. EXCAVATION SHALL BE LIMITED TO THE AMOUNT OF TRENCH WHICH CAN BE COMPLETED, BACKFILLED, AND STABILIZED WITHIN ONE WORKING DAY.
D. REPAIR AND/OR REPLACE ANY DISTURBED STRAW BALE DIKES AND SILT FENCES AT END OF EACH WORKING DAY.
4. FOR STREAM CROSSING, REFER TO STREAM DIVERSION DETAIL WPD 2.3 AND THE FOLLOWING:
A. PRIOR TO COMMENCEMENT OF ANY WORK WITHIN THE BANKS OF THE STREAM, PLACE SANDBAG DIVERSIONS AS INDICATED ON DETAIL.
B. COMPLETE INSTALLATION OF UTILITY CROSSING WITHIN THE AREA OF DIVERSION AND BACKFILL AS INDICATED ON PLAN.
C. RELOCATE SANDBAG DIVERSION TO OPPOSITE SIDE OF STREAM.
D. COMPLETE INSTALLATION AND BACKFILL FOR UTILITY CROSSING.
E. WHEN INSTALLATION IS COMPLETE AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE SANDBAG DIVERSION AND STABILIZE STREAM AREA AND BANKS AS INDICATED ON PLANS.
5. UPON STABILIZATION OF AREA, AND WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL DEVICES AND STABILIZE REMAINING DISTURBED AREAS.

EROSION AND SEDIMENT CONTROL NOTES

- 1. ALL SEDIMENT CONTROL OPERATIONS ARE TO BE DONE IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY VOLUME IV DESIGN MANUAL AND THE STANDARDS AND SPECIFICATIONS FOR SEDIMENT CONTROL IN DEVELOPING AREAS.
2. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS THE FIRST ORDER OF BUSINESS.
3. ALL EXCAVATED MATERIALS SHALL BE STOCKPILED ON THE UPGRADE SIDE OF THE MAIN TRENCH.
4. EXCAVATION AND BACKFILL SHALL BE LIMITED TO THAT WHICH CAN BE STABILIZED WITHIN ONE WORKING DAY.
5. IMMEDIATELY FOLLOWING BACKFILL OF THE SEWER TRENCH, ALL DISTURBED AREAS ARE TO BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION AND SEEDING NOTES SHOWN ON THIS SHEET.
6. THROUGHOUT THE PROJECT, THE CONTRACTOR SHALL REGULARLY INSPECT ALL SEDIMENT CONTROL DEVICES AND PROVIDE ALL NECESSARY MAINTENANCE TO INSURE THAT ALL DEVICES ARE IN OPERATIVE CONDITION.
7. ALL SEDIMENT CONTROL FACILITIES SHALL REMAIN IN PLACE UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

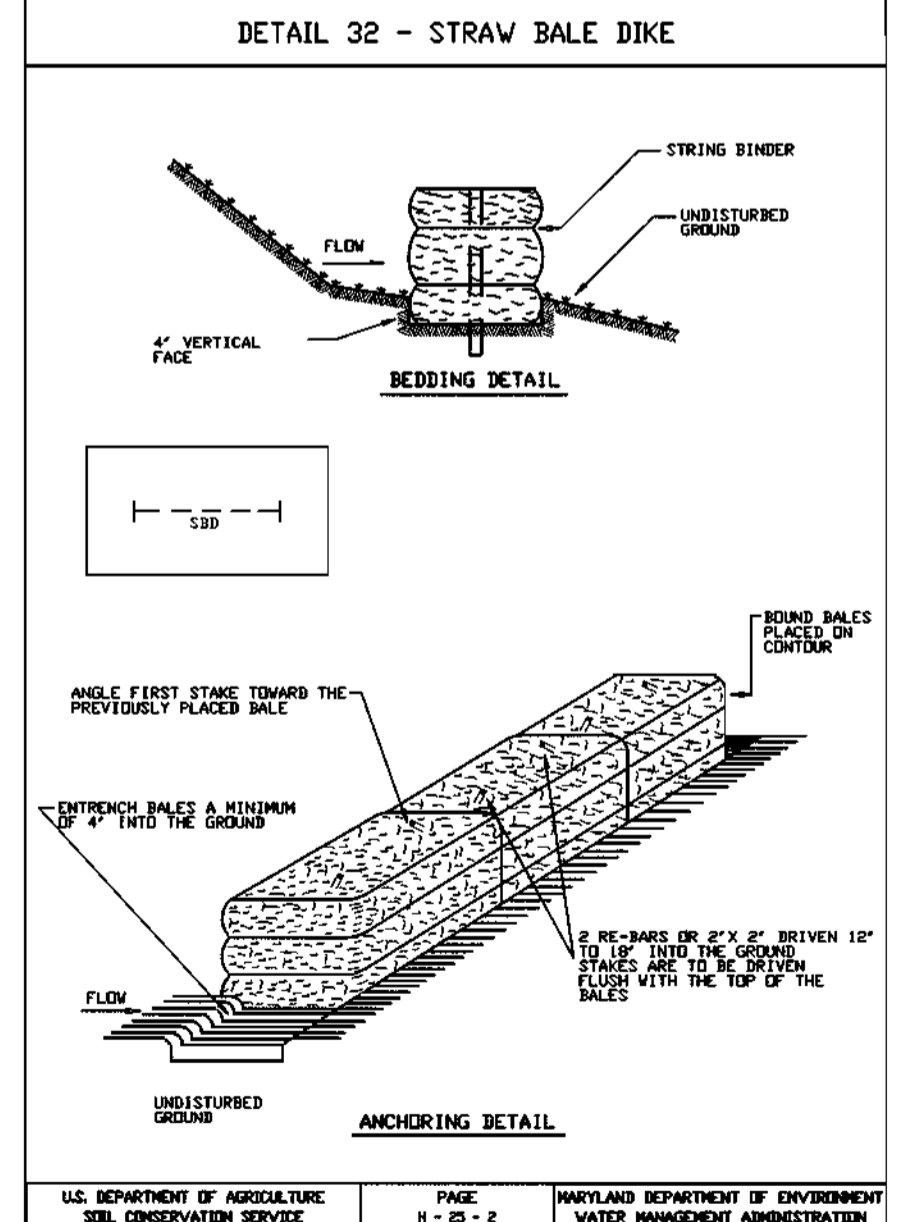


SILT FENCE. Silt Fence Design Criteria table with columns for Slope Steepness, Slope Length, and Silt Fence Length. Includes construction specifications and a note about fabric inspection.



- I. DESCRIPTION: THE WORK SHALL CONSIST OF INSTALLING FLOW DIVERSIONS FOR THE PURPOSE OF EROSION CONTROL WHEN CONSTRUCTION ACTIVITIES TAKE PLACE WITHIN THE STREAM CHANNEL SUCH AS BANK STABILIZATION OR BRIDGE ABUTMENT CONSTRUCTION.
II. MATERIAL SPECIFICATIONS:
1. SANDBAGS: SANDBAGS SHALL CONSIST OF MATERIALS WHICH ARE RESISTANT TO ULTRAVIOLET RADIATION, TEARING AND PUNCTURE AND WOVEN TIGHTLY ENOUGH TO PREVENT LEAKAGE OF FILL MATERIAL (I.E., SAND, FINE GRAVEL, ETC.).
2. STONE: STONE SHALL BE WASHED AND HAVE A MINIMUM DIAMETER OF 6 INCHES.
3. SHEETING: SHEETING SHALL CONSIST OF POLYETHYLENE OR OTHER MATERIAL WHICH IS IMPERVIOUS AND RESISTANT TO PUNCTURE AND TEARING.
III. CONSTRUCTION REQUIREMENTS:
1. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS THE FIRST ORDER OF WORK.
2. THE DIVERSION STRUCTURE SHALL BE INSTALLED FROM UPSTREAM TO DOWNSTREAM.
3. THE HEIGHT OF THE DIVERSION STRUCTURE SHALL BE ONE HALF THE DISTANCE FROM STREAM BED TO STREAM BANK PLUS ONE FOOT, AS INDICATED ON THE CROSS SECTION VIEW.
4. ALL EXCAVATED MATERIALS SHALL BE DISPOSED OF IN A SCD APPROVED DISPOSAL AREA OUTSIDE THE 100-YEAR FLOODPLAIN UNLESS OTHERWISE APPROVED ON THE PLANS BY THE WRA.
5. ALL DEWATERING OF THE CONSTRUCTION AREA SHALL BE PUMPED TO A DEWATERING BASIN PRIOR TO RE-ENTERING THE STREAM.
6. SHEETING SHALL BE OVERLAPPED SUCH THAT THE UPSTREAM PORTION COVERS THE DOWNSTREAM PORTION WITH AT LEAST AN 18-INCH OVERLAP.
7. SEDIMENT CONTROL DEVICES AREA TO REMAIN IN PLACE UNTIL ALL DISTURBED AREAS ARE STABILIZED IN ACCORDANCE WITH AN APPROVED SEDIMENT AND EROSION CONTROL PLAN AND THE INSPECTING AUTHORITY APPROVES THEIR REMOVAL.

Approval table with columns for WATER RESOURCES ADMINISTRATION, SANDBAG/STONE DIVERSION, APPROVED ON, and WPD.



I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE SOIL CONSERVATION DISTRICT.
HOWARD SCD DATE

PLAN REFERENCE NUMBERS table listing various plan numbers like F-88-112, F-98-61, S-97-07, OP-98-99, etc.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND
DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND
MILDENBERG, BOENDER & ASSOC., INC. Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042

engineering SJD
illustration SJD
approval SJD
project 97084
date JUNE 2000 BY NO. REVISION

SEDIMENT CONTROL NOTES AND DETAILS
60' SCALE MAP NO. BLOCK NO. 15 & 16

RESERVOIR OVERLOOK FORCE MAIN
CONTRACT # 20-3664-D
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

scale NOT TO SCALE
15 of 15

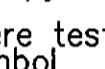
RESERVOIR OVERLOOK PUMPING STATION HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS CONTRACT NO. 20-3664-D

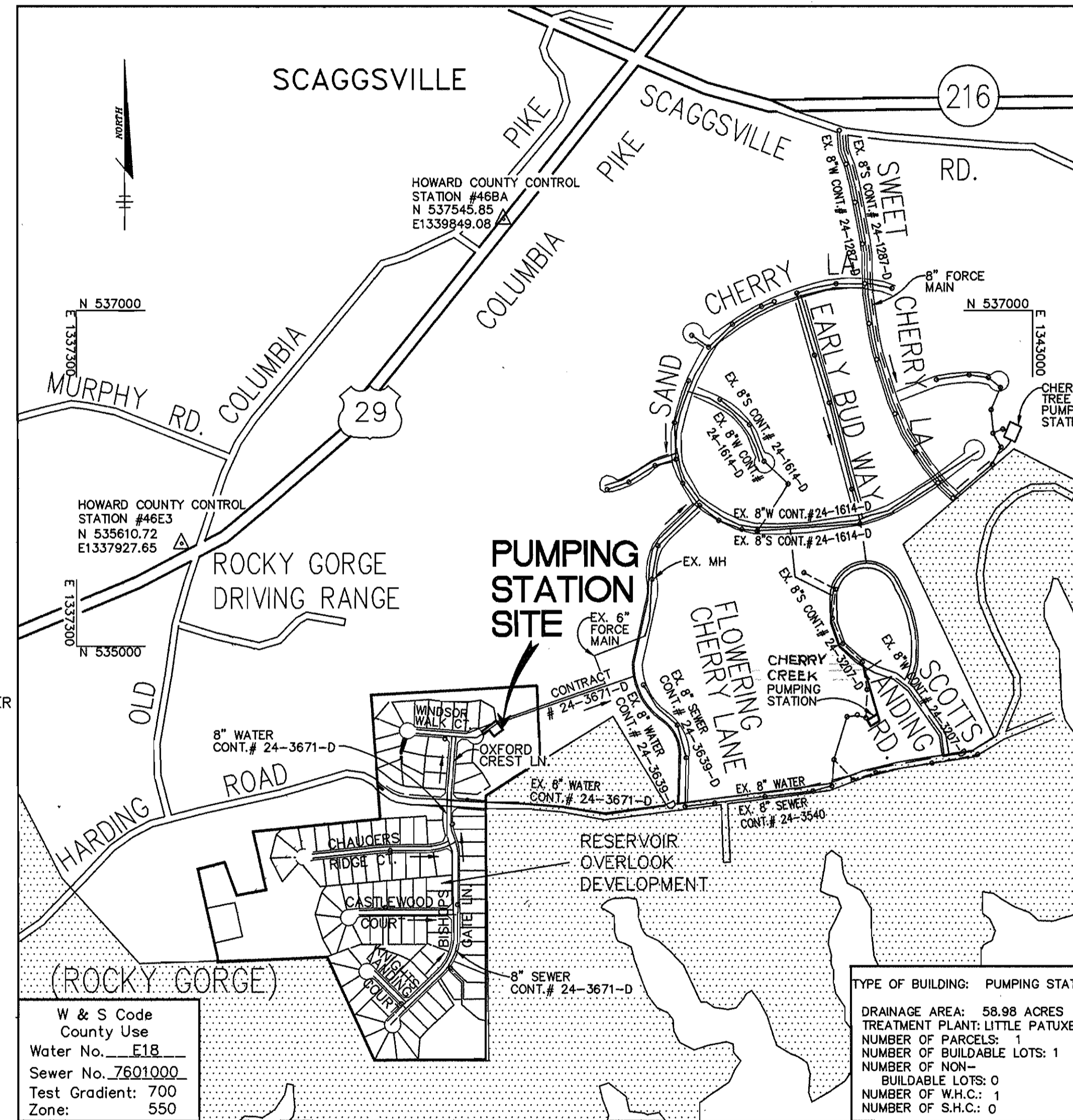
INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	SITE PLAN
3	SEWER/FORCE MAIN PROFILE & SECTION
4	FENCE & ACCESS ROAD DETAILS
5	CONTROL BUILDING PLAN AND DETAILS - ARCHITECTURAL/STRUCTURAL
6	WETWELL & PUMPING STATION - MECHANICAL
7	ODOR CONTROL SYSTEM - MECHANICAL
8	METER/VALVE VAULT AND BY-PASS PUMPING MANHOLE
9	ELECTRICAL STATION PLAN
10	ELECTRICAL LINE DIAGRAMS/PANEL BOARDS
11	LANDSCAPE PLAN
12	SEWERSHED MAP/SYSTEM CURVE

GENERAL NOTES

- Approximate location of existing mains are shown. The contractor shall take all necessary precautions to protect existing mains and services and maintain uninterrupted supply. Any damage incurred shall be repaired immediately to the satisfaction of the Engineer at the Contractor's expense.
- All horizontal controls are based on Maryland State Coordinates.
- All vertical controls are based on U.S.G.S. datum.
- All pipe elevations shown are invert elevations.
- Clear all utilities by a minimum of 6". Clear all poles by 2'-0" minimum.
- For details not shown on the drawings, and for materials and construction methods use Howard County Design Manual, Volume IV, Standard Specifications and Details for Construction. (Latest Edition). The contractor shall have a copy of Volume IV on the job.
- Where test pits have been made on existing utilities, they are noted by the symbol  at the location of the test pit. A note or notes containing the results of the test pit or pits is included on the drawings. Existing utilities in the vicinity of the proposed work for which test pits have not been dug shall be located by the contractor two weeks in advance of construction operations at his own expense.
- Contractor shall notify the following utility companies or agencies at least five working days before starting work shown on these plans:

State Highway Administration	531-5533
Baltimore Gas & Electric Co. Contractor Services	850-4620
Baltimore Gas & Electric Co. Underground Damage Control	787-9068
Miss Utility	1-800-257-7777
Colonial Pipeline Co.	795-1390
Bureau of Utilities, Howard County Department of Public Works	313-4900
- Trees and shrubs are to be protected from damage to maximum extent. Trees and shrubs located within the construction strip are not to be removed or damaged by the contractor.
- All water mains to be D.I.P. Class 52 unless otherwise noted.
- Tops of all water mains to have a minimum of 3-1/2' cover unless otherwise noted.
- Valves adjacent to tees shall be strapped to tees.
- All fittings shall be buttressed or anchored with concrete in accordance with the Standard Details unless otherwise provided for on the drawings.
- The contractor shall not operate any water main valves on the existing water system.
- All water house connections shall be for inside meter setting unless otherwise noted on plans or in specifications.
- All sewer mains shall be D.I.P. Class 52 unless otherwise noted.
- All manholes shall be 4'-0" inside diameter unless otherwise noted.
- Force mains shall be D.I.P. CL. 52.
- Manholes shown with 12" and 16" walls are for brick manholes only.
- Manholes can be either brick or precast concrete structures.
- Contractor is solely responsible for construction means, methods, techniques, sequences, procedures, and safety precautions and programs.
- The contractor shall notify the Bureau of Highways, Howard County, at (410) 313-7450 at least five (5) working days before any open cut of any County road or boring/jacking operation in County roads for laying water/sewer mains or house connections. The approval of these drawings will constitute compliance with DPW requirements per Section 18.114(a) of the Howard County Code.
- Howard County DPW is hereby granted permission to access private lots shown on these plans in order to maintain public water and sewer house connections.



RESERVOIR OVERLOOK PUMPING STATION

VICINITY MAP
SCALE: 1"=600'

BY THE DEVELOPER:

I/WE CERTIFY THAT ALL DEVELOPMENT & CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature]
DEVELOPER
4.24.98
DATE

BY THE ENGINEER:

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature]
SIGNATURE
5/1/98
DATE

QUANTITIES				
ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER / SUPPLIER
PUMPING STATION: COMPLETE - IN - PLACE	1 EACH			
8" SEWER, D.I.P.	167 L.F.			
6" FORCE MAIN	79 L.F.			
1" W.H.C.	76 L.F.			
4" S.H.C.	22 L.F.			

LEGEND

- EXISTING WATER
- EXISTING STORM DRAIN/SANITARY SEWER
- EXISTING FORCE MAIN
- EXISTING CONTOUR LINES
- PROPERTY LINE
- RIGHT OF WAY
- PROPOSED W.H.C.
- PROPOSED SANITARY SEWER
- PROPOSED FORCE MAIN
- PROPOSED ELECTRIC CONDUIT
- PROPOSED TELEPHONE CONDUIT
- SOILS BORING

NAME OF UTILITY CONTRACTOR:

Sediment control measures for this contract will be implemented in accordance with Section 219 of the Specifications and as shown on the Drawings.

F-9961

Review for Howard Soil Conservation District and meets technical requirements.

[Signature] 4/1/98
NATURAL RESOURCES CONSERVATION SERVICE DATE

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

[Signature] 6/1/98
HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

[Signature] 6-1-98
CHIEF, BUREAU OF UTILITIES DATE

[Signature] 6/1/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21046
410-997-8900 FAX: 410-997-9282
97061/401MS/TITLESH1.DWG

STATE OF MARYLAND
FRANK DONALDSON #8146
DATE: 4/27/98

DES:	J.S.C.	REVISION	DATE
DRN:	E.L.R.	REVISED ESTIMATED QUANTITY 8" SEWER DIP	8/98
CHK:	G.C.L.		
DATE:	4/27/98		
BY:	NO.		

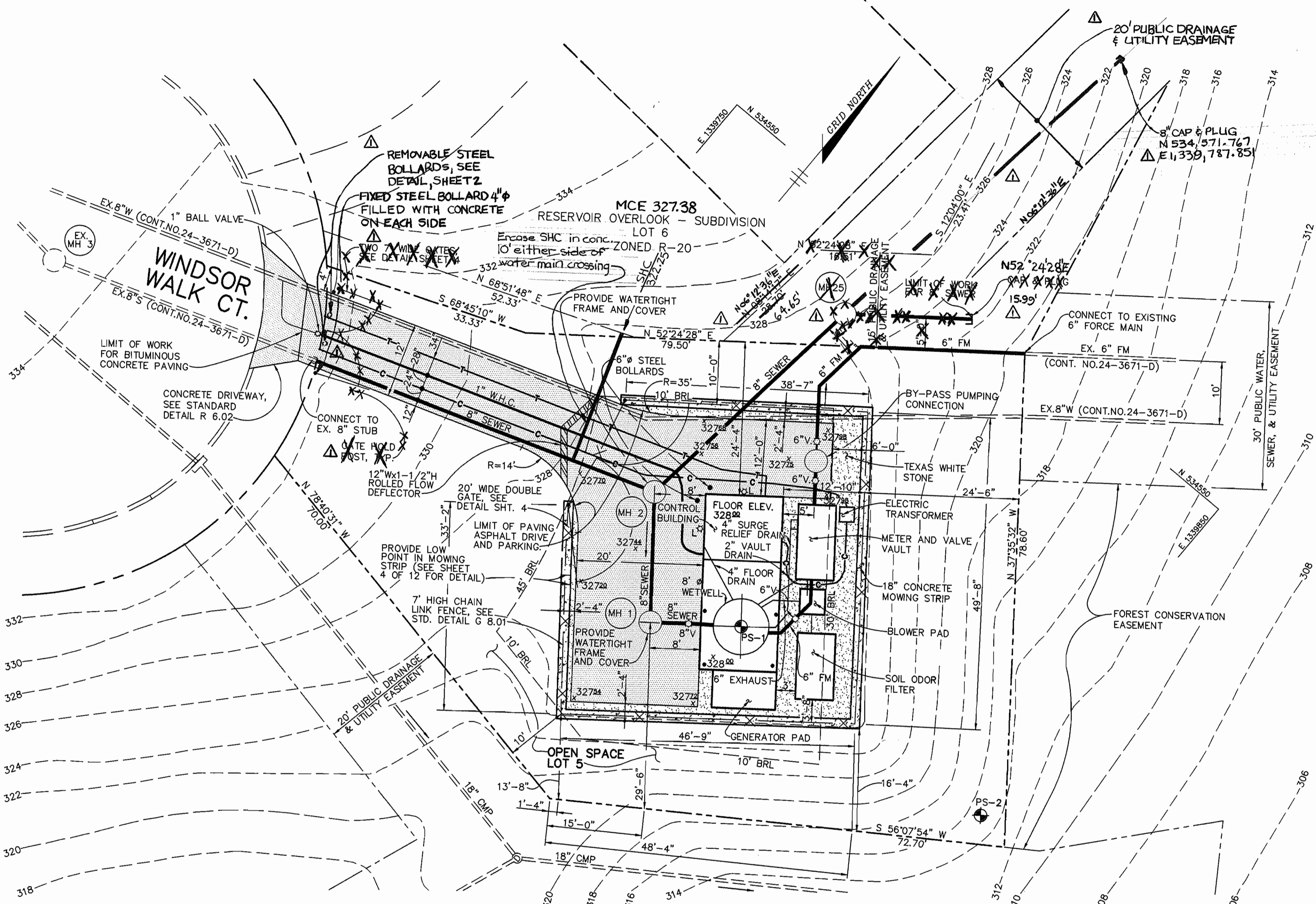
TITLE SHEET

600' SCALE MAP NO. 46 BLOCK NO. 16

RESERVOIR OVERLOOK PUMPING STATION
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 20-3664-D

SCALE AS SHOWN

SHEET 1 OF 12



PLAN
SCALE: 1" = 10'

GENERAL SITE NOTES:

- 1) PRESENT ZONING IS R-20.
- 2) ALL EXTERIOR LIGHTING OF BUILDING WILL BE DIRECTED DOWNWARD.
- 3) THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 46E3 & 46BA WERE USED FOR THIS PROJECT.
- 4) WATER & SEWER ARE PUBLIC, PROVIDED UNDER CONT. NO. 24-3671-D. DRAINAGE AREA IS LITTLE PATUXENT.
- 5) UNLESS OTHERWISE NOTED, PROPERTY LINES FOR OPEN SPACE LOT 5 DEFINE LIMIT OF CONTRACT.

SITE ANALYSIS:

- 1) AREA OF LOT 7,771 SQ.FT./0.178 ACRES
- 2) PRESENT ZONING R-20
- 3) PROPOSED USE OF STRUCTURE: WASTEWATER PUMPING STATION
- 4) FLOOR SPACE OF PUMPING STATION BUILDING: 107 SQ.FT.(CONTROL ROOM)
- 5) MAXIMUM NUMBER OF EMPLOYEES: NORMALLY ONE (1) VISIT PER DAY BY BUREAU OF UTILITIES MAINTENANCE PERSONNEL
- 6) NUMBER OF PARKING SPACES REQUIRED: TWO (2) PER HOWARD COUNTY DESIGN MANUAL, VOLUME II
- 7) NUMBER OF PARKING SPACES PROVIDED: TWO (2)
- 8) BUILDING COVERAGE OF SITE: 364 SQ.FT.
- 9) PAVED AREA OF SITE: 1908 SQ.FT.: 0.044 ACRES

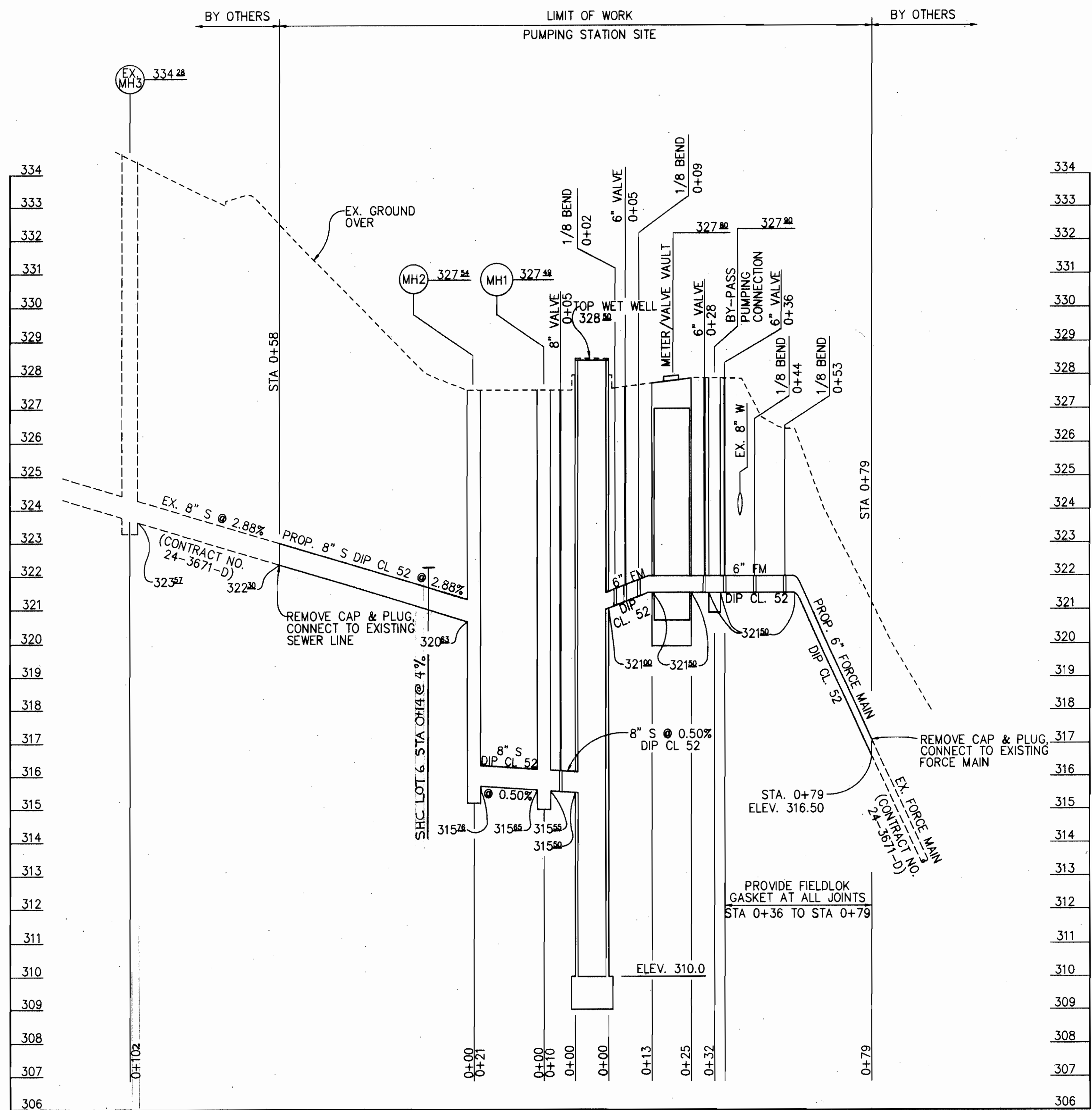
SHEET NOTES:

- 1) PRIOR TO CONSTRUCTION, THE DEVELOPER OF RESERVOIR OVERLOOK SUBDIVISION WILL SET MONUMENTS AT EACH PROPERTY CORNER OF OPEN SPACE LOT 5 AND WILL ESTABLISH BENCHMARKS AT TWO OF THE PROPERTY CORNER MONUMENTS. THE PROPERTY LINES AND BENCHMARKS THUS ESTABLISHED SHALL BE USED BY THE CONTRACTOR AS HORIZONTAL AND VERTICAL CONTROL FOR CONSTRUCTION STAKEOUT.
- 2) 6" FORCE MAIN SHALL BE CLASS 52 D.I.P.
- 3) SEE SHEET 3 OF 12 FOR PROFILE OF THE SEWER/FORCE MAIN WITHIN THE LIMITS OF THE PUMPING STATION SITE.
- 4) SEE SHEET 3 OF 12 FOR SOILS BORING PROFILE.
- 5) SEDIMENT AND EROSION CONTROL FOR THIS SITE IS INCLUDED IN THE RESERVOIR OVERLOOK LOTS 1 THRU 109 PROJECT F-98-61 OF WHICH THIS PUMPING STATION SITE FORMS A PART.
- 6) STORMWATER MANAGEMENT FOR THIS SITE IS INCLUDED IN THE RESERVOIR OVERLOOK LOTS 1 THRU 109 PROJECT F-98-61 OF WHICH THIS PUMPING STATION SITE FORMS A PART.
- 7) PROPERTY LINES FOR OPEN SPACE LOT 5 ARE PROVIDED BY MILDENBERG AND BOENDER, WHO PREPARED THE PLAT FOR RESERVOIR OVERLOOK LOTS 1 THRU 109.
- 8) SITE NOT SUBJECT TO 100 YEAR FLOODING. FLOOD ELEVATIONS ARE BEYOND LIMITS OF PLAN.
- 9) ALL ELECTRIC CONDUITS SHALL BE CONCRETE ENCASED. SEE DETAIL ON SHEET 4 OF 12.

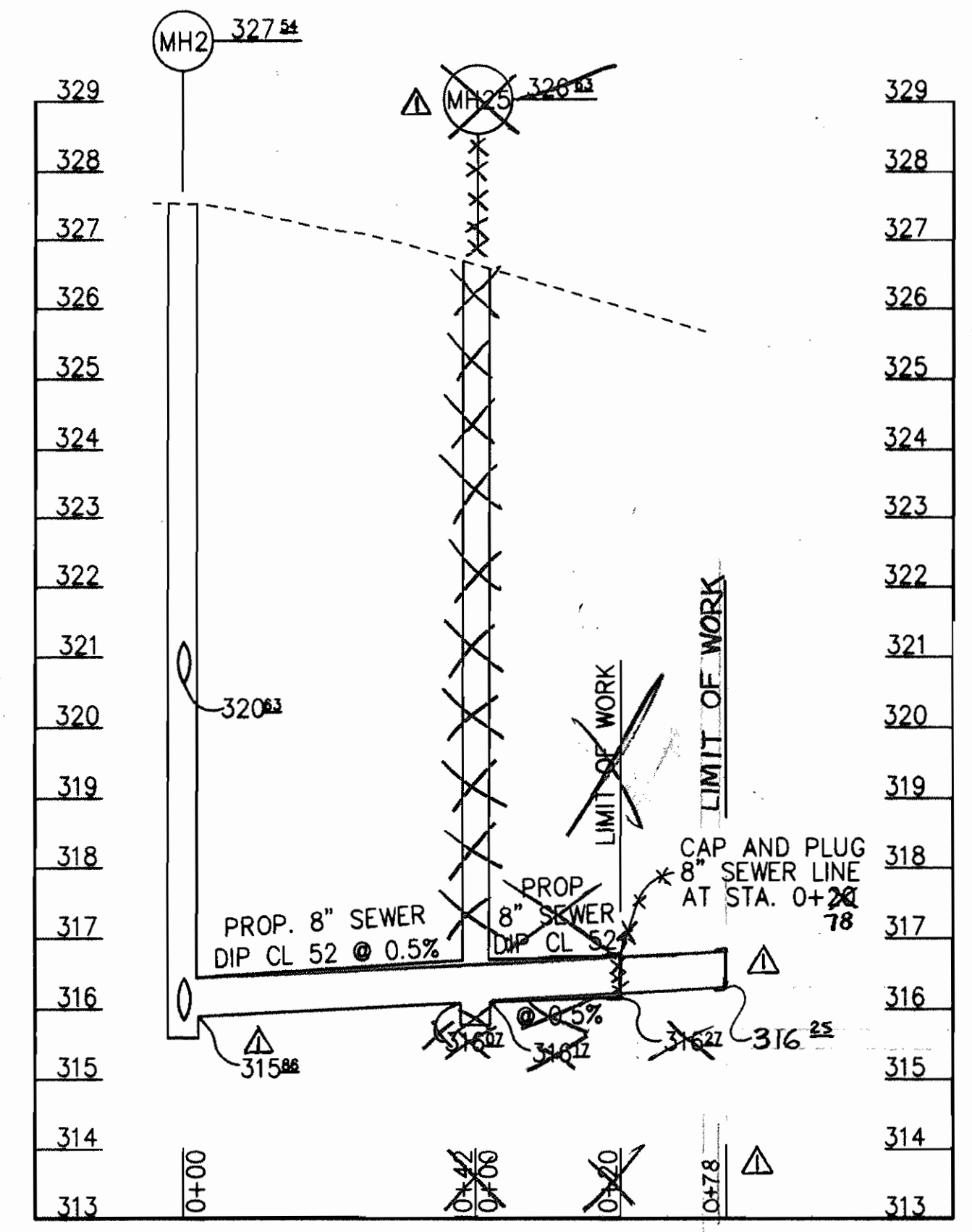
K:\PROJECT\9736\RESERVOIR\PLAN F-1.dwg 24 09 08 08:26 1998 RIEMER MUEGGE AND ASSOCIATES, INC.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Robert M. Berman 6-1-98 CHIEF, BUREAU OF UTILITIES DATE		DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND [Signature] 6/1/98 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE		RIEMER MUEGGE & ASSOCIATES, INC. ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING 8818 Centre Park Drive • Suite 200 • Columbia, MD 21045 410-997-8900 FAX: 410-997-9282 M:\PROJECT\OVERLOOK\PLAN.DWG		FRANK H. DONALDSON #8146		DES: G.C.L. DRN: E.L.R. CHK: G.C.L. DATE: 4/27/98		[Symbol] OMITTED GATE & REPLACED IT WITH A STEEL BOLLARD. REALIGNED & LENGTHENED SEWER. OMITTED MH-25. 8/98		600' SCALE MAP NO. 46 BLOCK NO. 16		SITE PLAN		RESERVOIR OVERLOOK PUMPING STATION 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 20-3664-D		SCALE 1" = 10' SHEET 2 OF 12	
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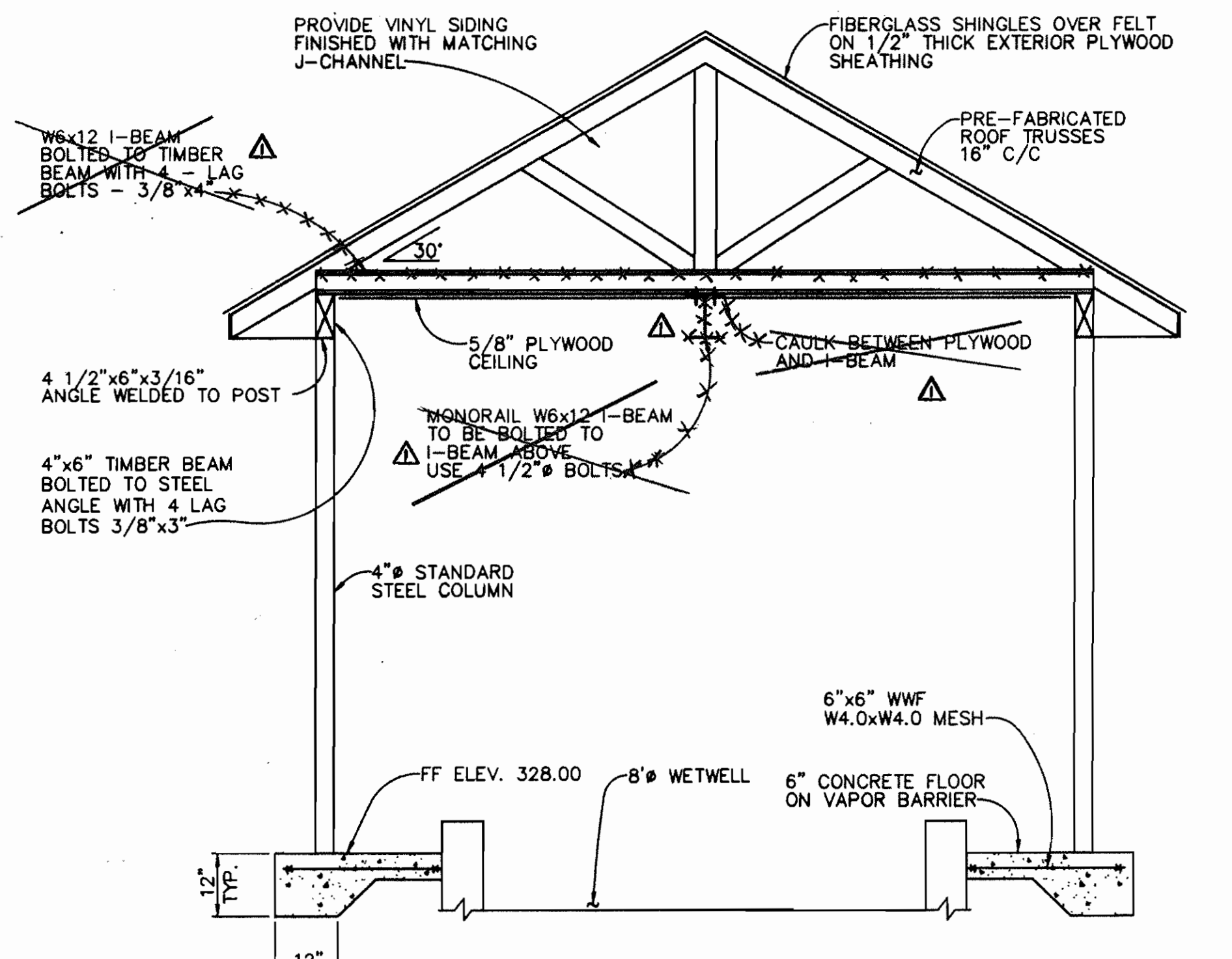
5/1/98



PROFILE
 HORIZ.: 1"=20'
 VERT.: 1"=2'



PROFILE
 HORIZ.: 1"=20'
 VERT.: 1"=2'



SECTION B-B
 SCALE: 1/2" = 1'-0"
 NOTE: SEE SHEET 5 OF 12 FOR PLAN.

LOG OF BORING NO. PS-1 Sheet 1 of 1

PROJECT: Reservoir Overlook
 PROJECT NO: 94328.C
 PROJECT LOCATION: Howard County, Maryland
 DATE STARTED: December 10, 1997
 DATE COMPLETED: December 10, 1997
 DRILLING CONTRACTOR: H&H
 DRILLER: H&H
 SAMPLING METHOD: Split Spoon

WATER LEVEL: Dry Dry
 DATE: 12/10/97
 CAVED IN: 8.0 8.0
 GROUND SURFACE ELEVATION: 320.0
 DATUM: MBL
 WEATHER: Cloudy
 GEOLOGIST: J. Niso
 CHECKED BY: J. Niso
 BACKGROUND OVA (PPM):

SAMPLE NUMBER	DEPTH (FT.)	DIAMETER (IN.)	REMARKS
S-1	1.5	0.8	2-1-3 4 320.0 0 SM Brown, moist, loose to medium-dense to very dense, micaceous silt to fine SAND, fine to coarse silt & clay. (SM) AASHTO: A-6/A-2-4
S-2	1.8	1.0	6-6-5 11 8 Water Not Encountered While Drilling.
S-3	1.8	0.5	60/4 50 311.8 10- Very dense weathered spherulite to weathered rock.
Auger Refusal at 12.0 ft. Bottom of Hole at 12.0 ft.			

Coordinates: N: E:

GTA GEO-TECHNOLOGY ASSOCIATES, INC.
 9080 JUNCTION DRIVE, SUITE 9
 ANNAPOLIS JUNCTION, MARYLAND 20701

LOG OF BORING NO. PS-2 Sheet 1 of 1

PROJECT: Reservoir Overlook
 PROJECT NO: 94328.C
 PROJECT LOCATION: Howard County, Maryland
 DATE STARTED: December 10, 1997
 DATE COMPLETED: December 10, 1997
 DRILLING CONTRACTOR: H&H
 DRILLER: H&H
 SAMPLING METHOD: Split Spoon

WATER LEVEL: Dry Dry
 DATE: 12/10/97
 CAVED IN: 8.0 8.0
 GROUND SURFACE ELEVATION: 310.0
 DATUM: MBL
 WEATHER: Cloudy
 GEOLOGIST: J. Niso
 CHECKED BY: J. Niso
 BACKGROUND OVA (PPM):

SAMPLE NUMBER	DEPTH (FT.)	DIAMETER (IN.)	REMARKS
S-1	1.5	0.3	1-1-2 3 310.0 0 SM Brown to gray, moist to dry, loose to very dense, coarse to fine SAND, silt to some clayey sil. (SM) AASHTO: A-2-4
S-2	1.8	0.6	2-3-6 8 5 Water Not Encountered While Drilling.
S-3	1.8	1	60/2 50 301.8 10- Very dense weathered spherulite to weathered rock.
Auger Refusal at 14.0 ft. Bottom of Hole at 14.0 ft.			

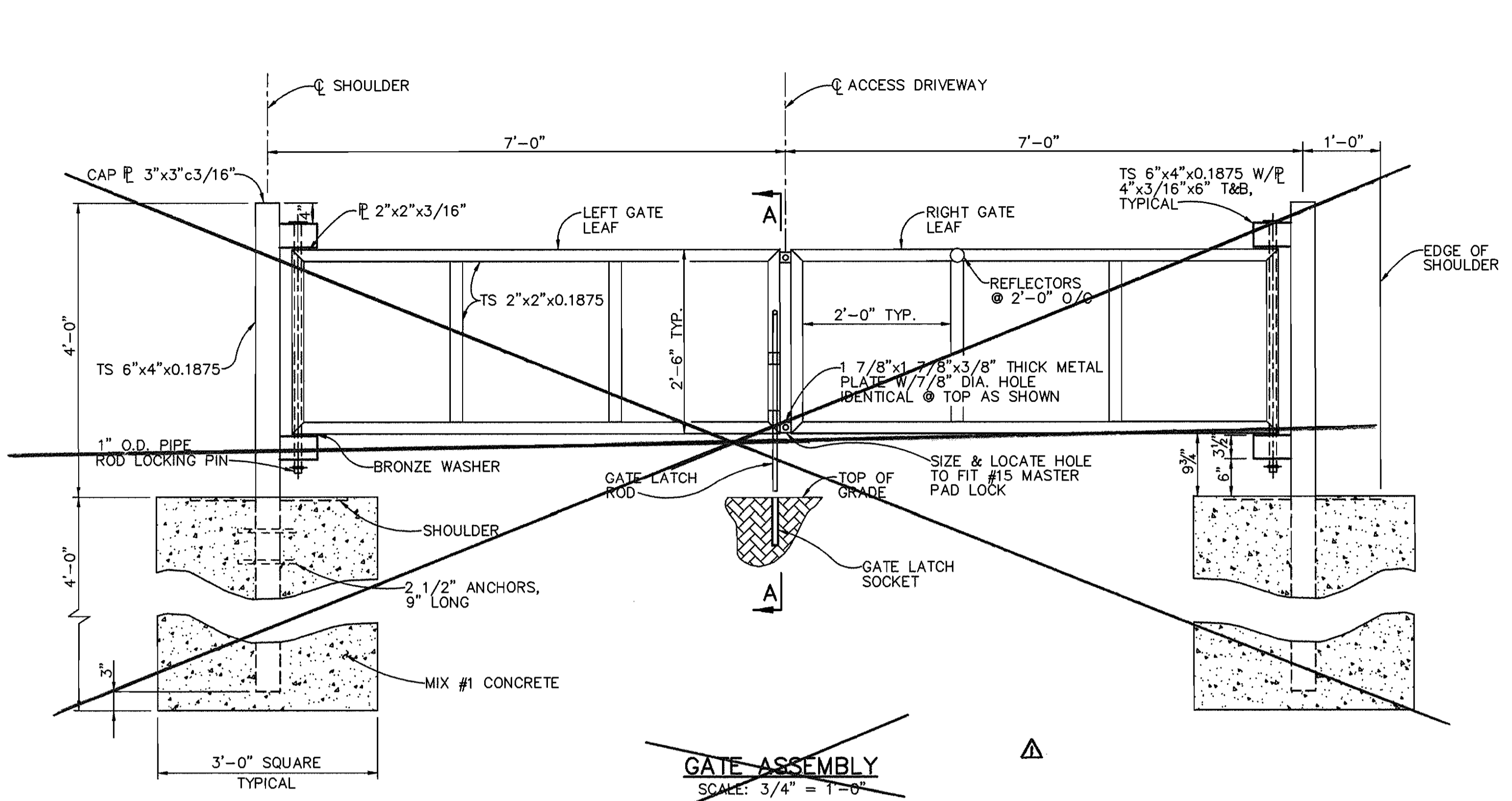
Coordinates: N: E:

GTA GEO-TECHNOLOGY ASSOCIATES, INC.
 9080 JUNCTION DRIVE, SUITE 9
 ANNAPOLIS JUNCTION, MARYLAND 20701

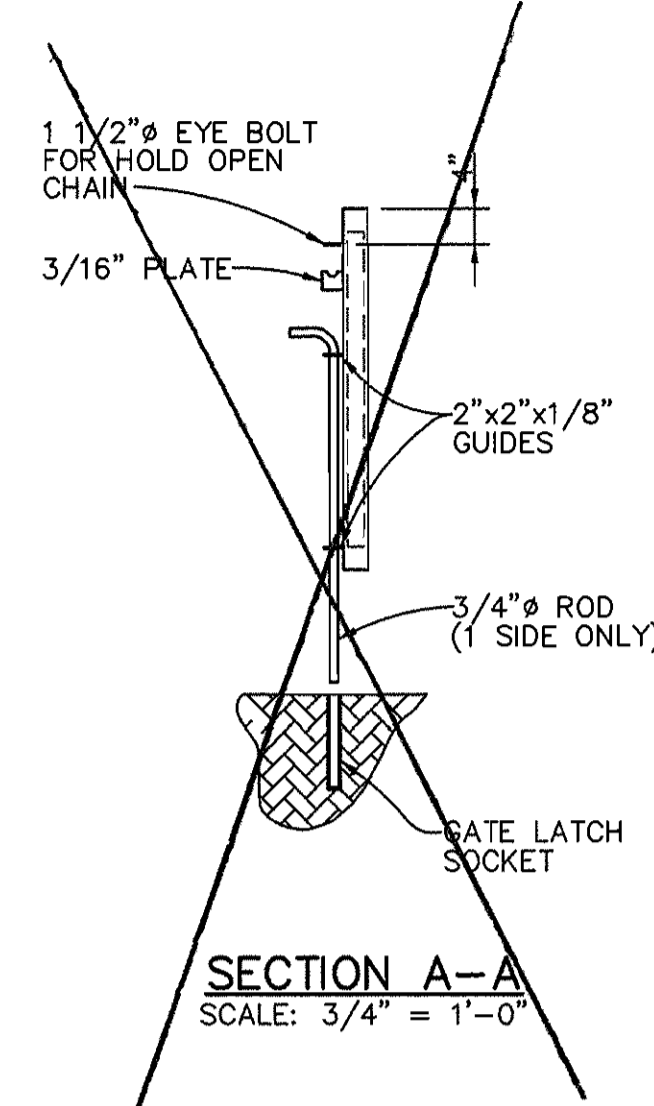
N:\PROJECT\97256\REVISION\PROFILE.FR1 Apr 24 09:51:32 1998 RIEMER MUEGGE AND ASSOCIATES, INC.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Robert M. Brown CHIEF, BUREAU OF UTILITIES 6-1-98 DATE	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND Frank Donaldson CHIEF, DEVELOPMENT ENGINEERING DIVISION 6/15/98 DATE	RIEMER MUEGGE & ASSOCIATES, INC. ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING 8818 Centre Park Drive • Suite 200 • Columbia, MD 21046 410-997-8900 FAX: 410-997-9882 WWW.RIEMERMUEGGE.COM	DES: J.S.C. DRN: E.L.R. CHK: G.C.L. DATE: 4/27/98 BY NO. REVISION DATE	REALIGNED SEWER, DELETED MH-2, ADJUSTED SEWER LENGTH, OMITTED MONORAIL & POST. 9/98	SEWER/FORCE MAIN PROFILE & SECTION 60' SCALE MAP NO. 46 BLOCK NO. 16	RESERVOIR OVERLOOK PUMPING STATION 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 20-3664-D	SCALE AS SHOWN SHEET 3 OF 12
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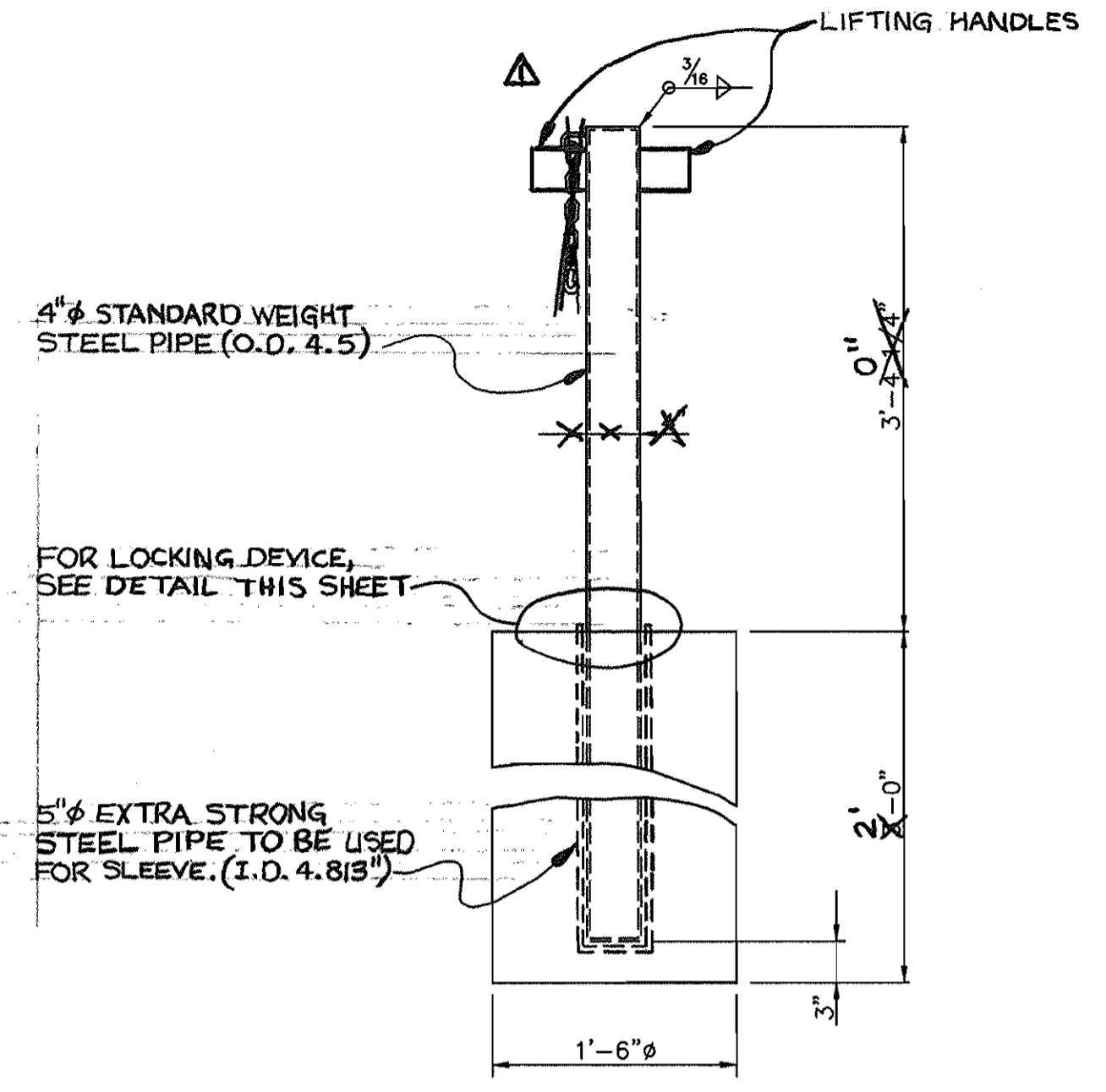
5/1/98



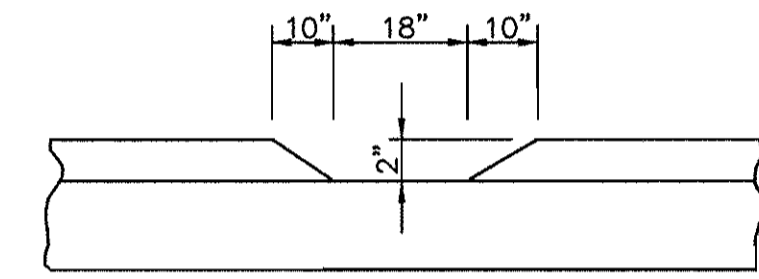
GATE ASSEMBLY
SCALE: 3/4" = 1'-0"



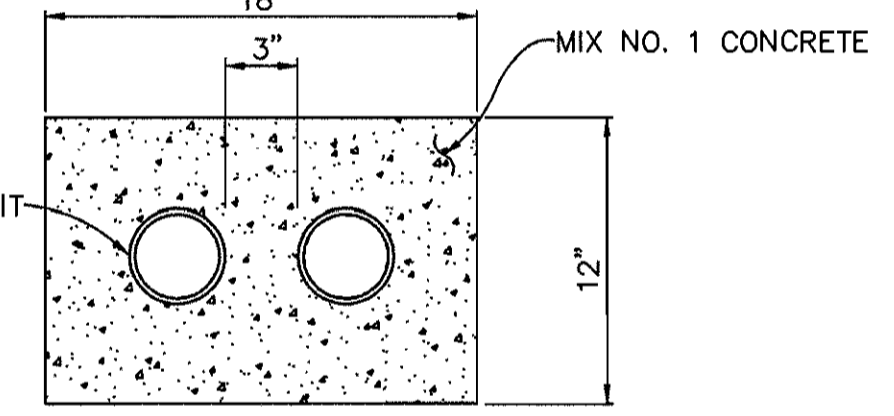
SECTION A-A
SCALE: 3/4" = 1'-0"



SECURITY BOLLARD GATE HOLD OPEN POST
N.T.S.
(TWO REQUIRED)



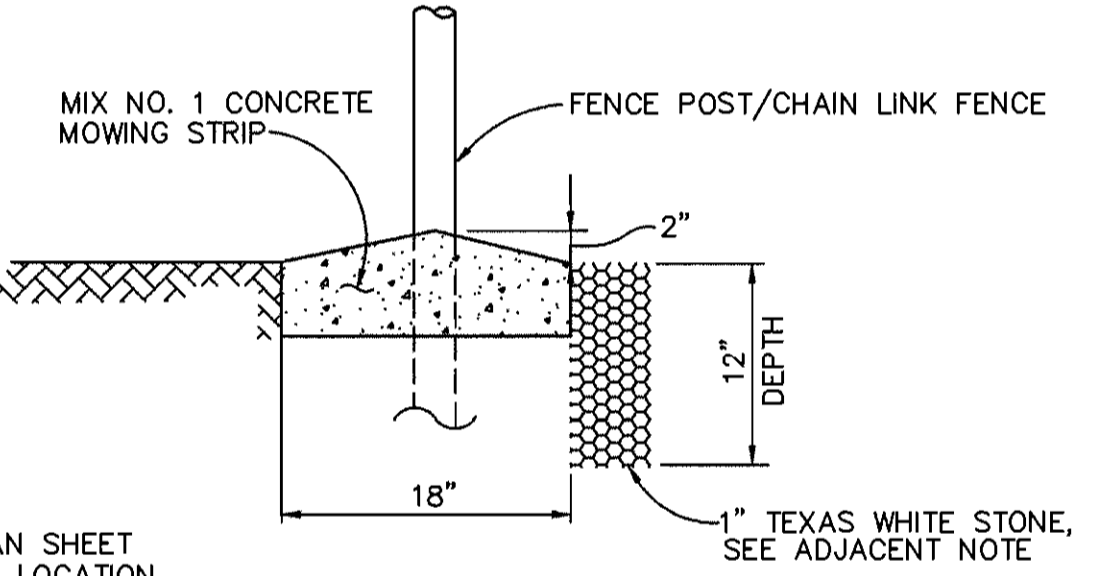
MOWING STRIP DRAINAGE CHANNEL
SCALE: 3/4" = 1'-0"



ELECTRIC DUCT BANK DETAIL
SCALE: 1 1/2" = 1'-0"

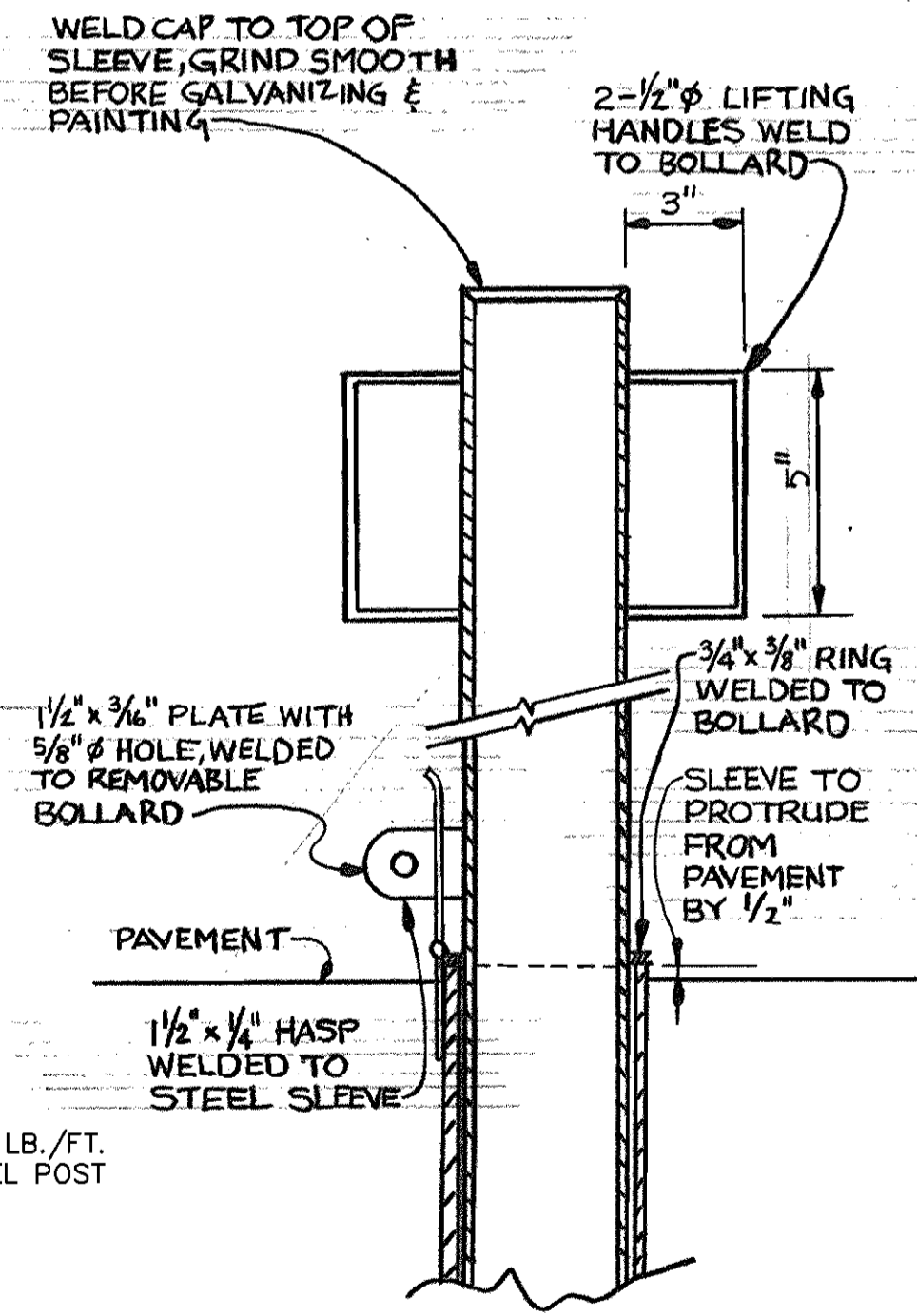


SIGN DETAIL
SCALE: 1/2" = 1'-0"

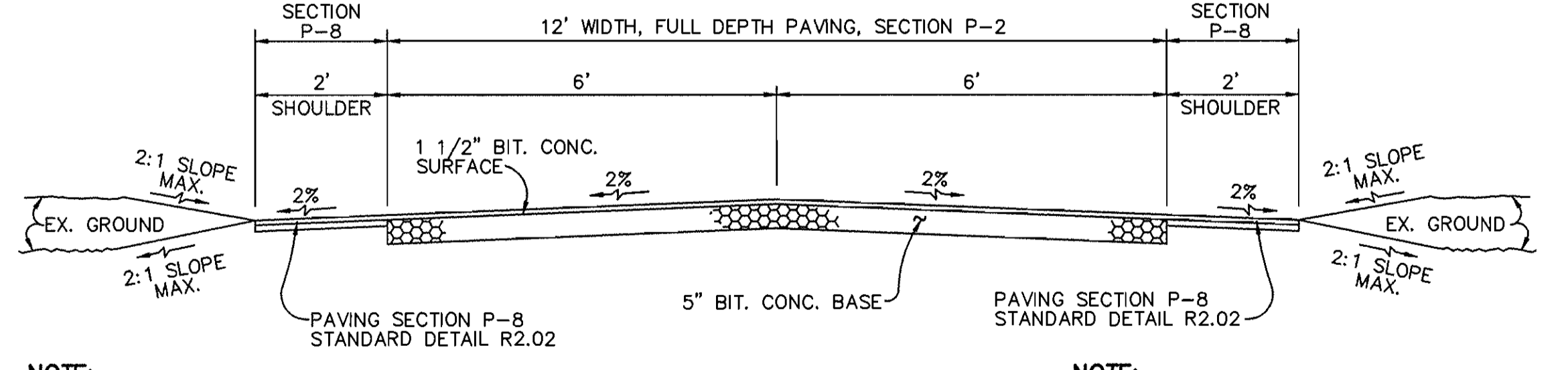


MOWING STRIP DETAIL
N.T.S.

NOTE: SEE SITE PLAN SHEET 2 OF 12 FOR LOCATION OF TEXAS WHITE STONE



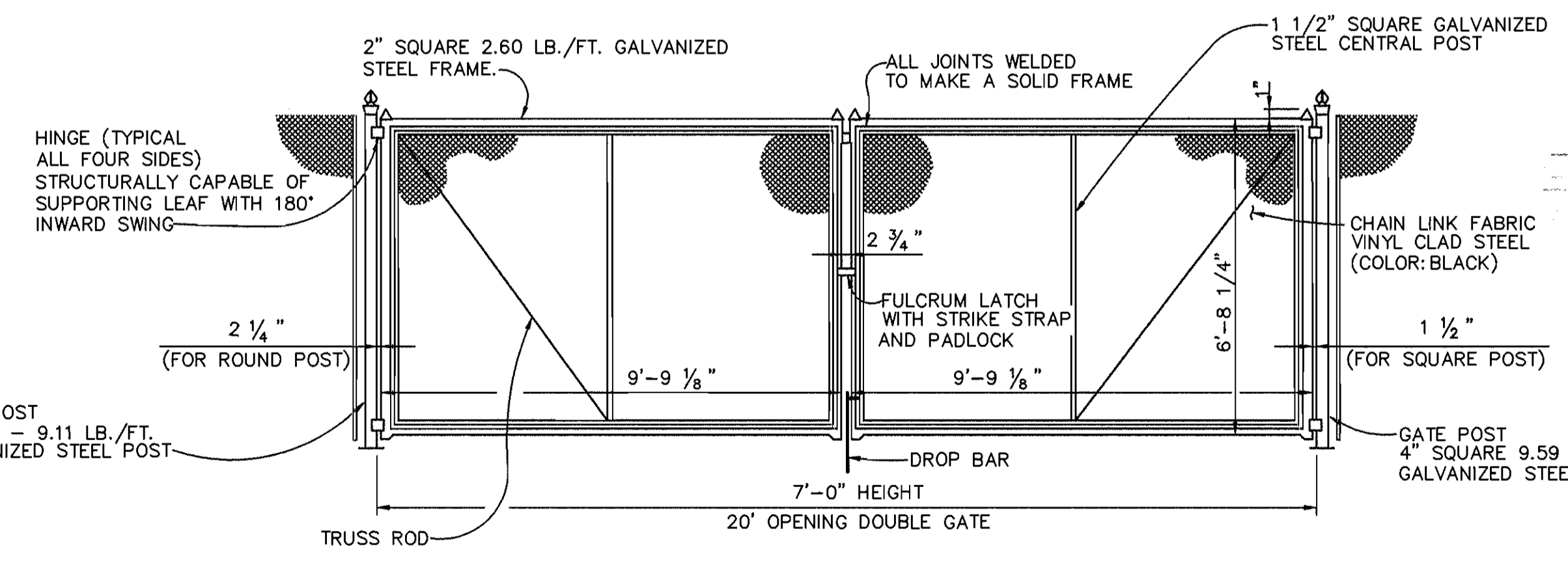
BOLLARD LOCKING DETAIL
NO SCALE



ACCESS DRIVEWAY - TYPICAL SECTION
N.T.S.

NOTE: PAVING SECTION SHOWN IS HOWARD COUNTY SECTION P-2; DETAIL R-2.01 FOR THE ACCESS DRIVEWAY & SECTION P-8, STANDARD DETAIL R-2.02 FOR THE SHOULDERS.

NOTE: PAVING FOR PARKING AREAS @ PUMPING STATION & TURN AROUND AREAS SAME AS TYPICAL SECTION FOR ACCESS DRIVEWAY; SECTION P-2



CHAIN LINK FENCE: DOUBLE GATE DETAIL
SCALE: 3/8" = 1'-0"

△

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Robert M. Seaman
CHIEF, BUREAU OF UTILITIES
6-1-98
DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
Chief Development Engineering Division
DATE

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
410-997-8900 FAX: 410-997-9282
97091/401MS/TITLESET.DWG

STATE OF MARYLAND
FRANK DONALDSON #8146
DATE: 4/27/98

DES: J.S.C.	△ OMITTED GATE ASSEMBLY, MODIFIED GATE HOLD OPEN POST TO SECURITY BOLLARD, ADD BOLLARD LOCK DETAIL	8/98
DRN: E.L.R.		
CHK: G.C.L.		
DATE: 4/27/98		
BY NO.	REVISION	DATE

FENCE & ACCESS ROAD DETAILS
600' SCALE MAP NO. 46 BLOCK NO. 16

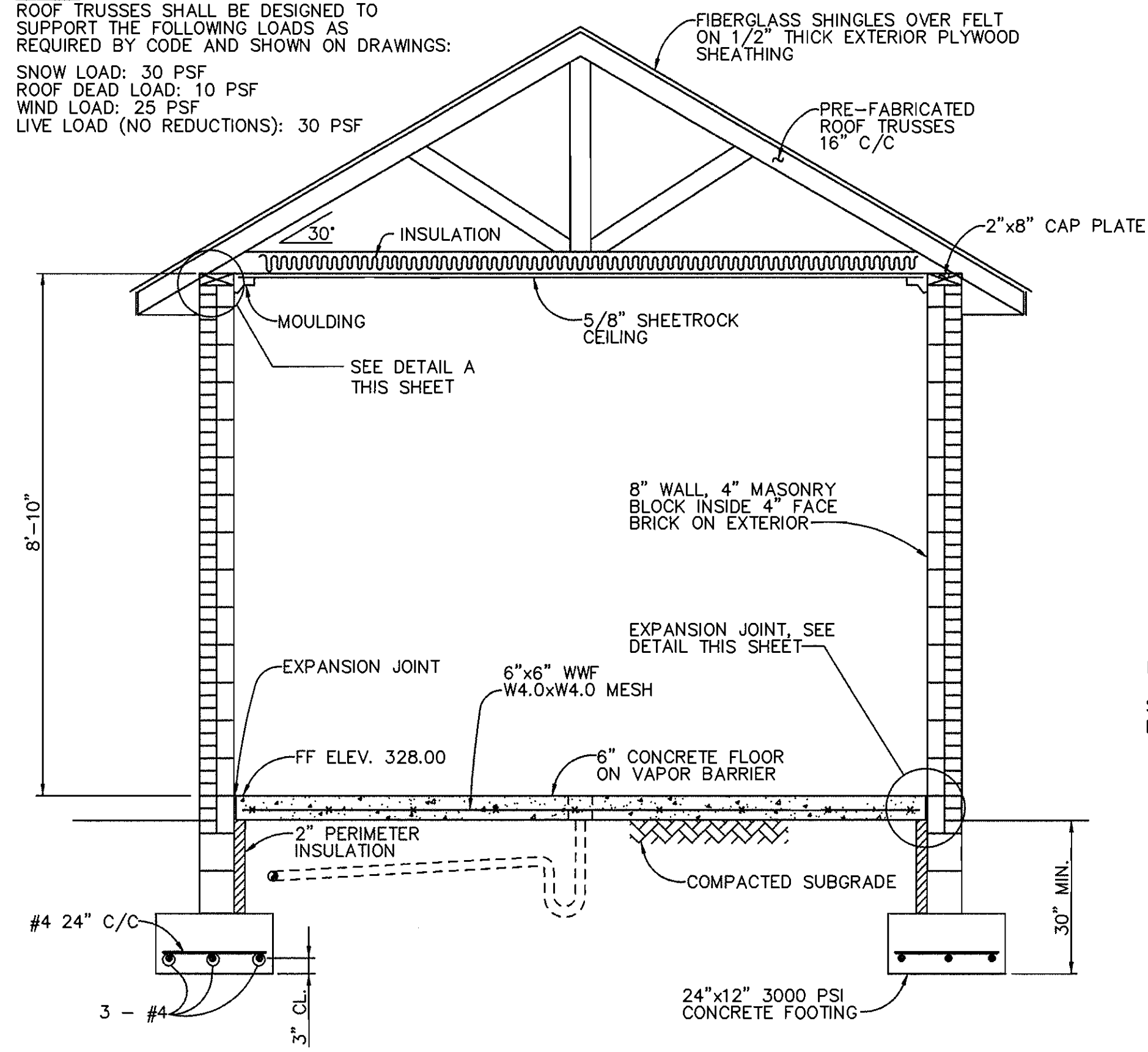
RESERVOIR OVERLOOK PUMPING STATION
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 20-3664-D

SCALE AS SHOWN
SHEET 4 OF 12

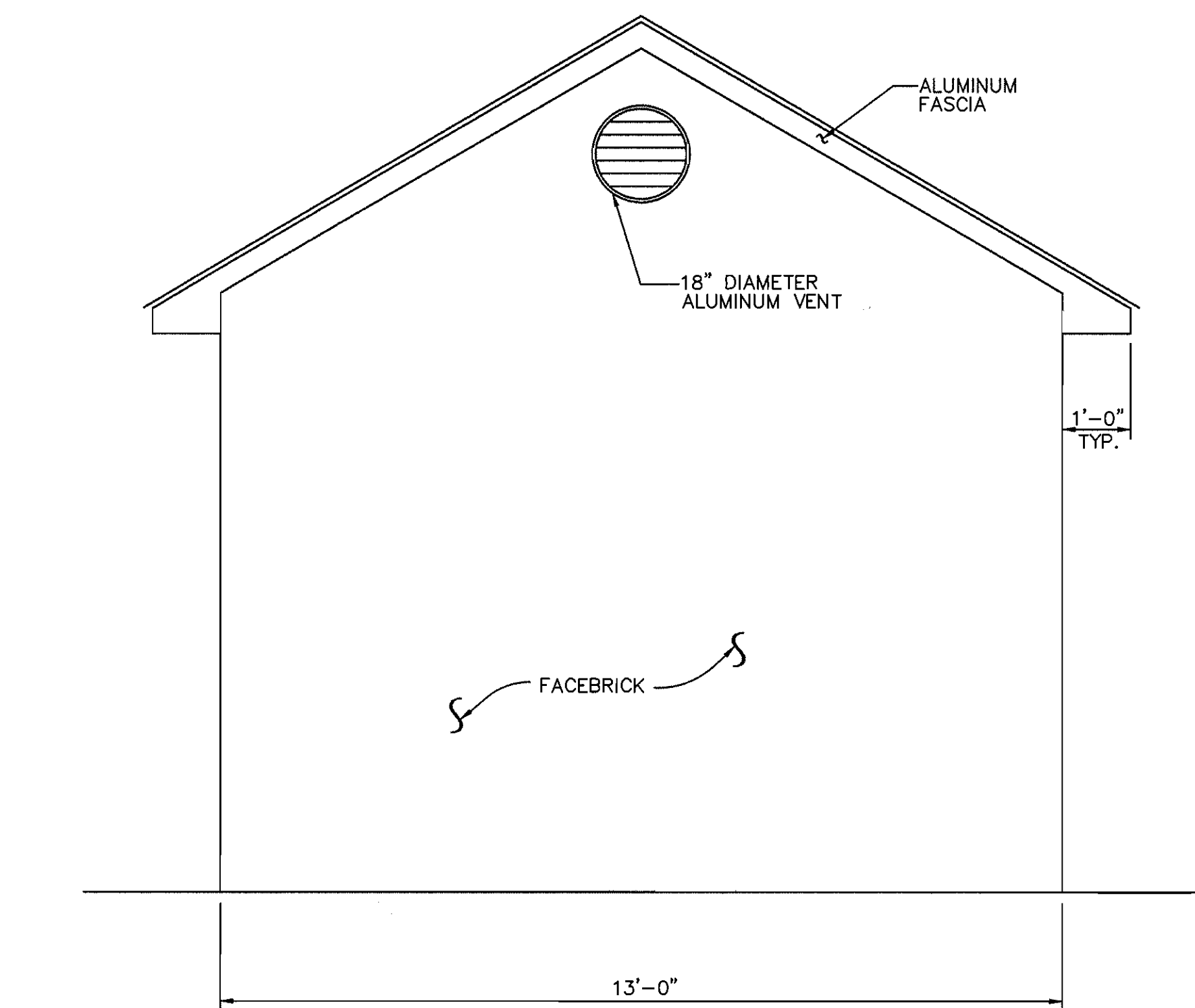
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5/1/98

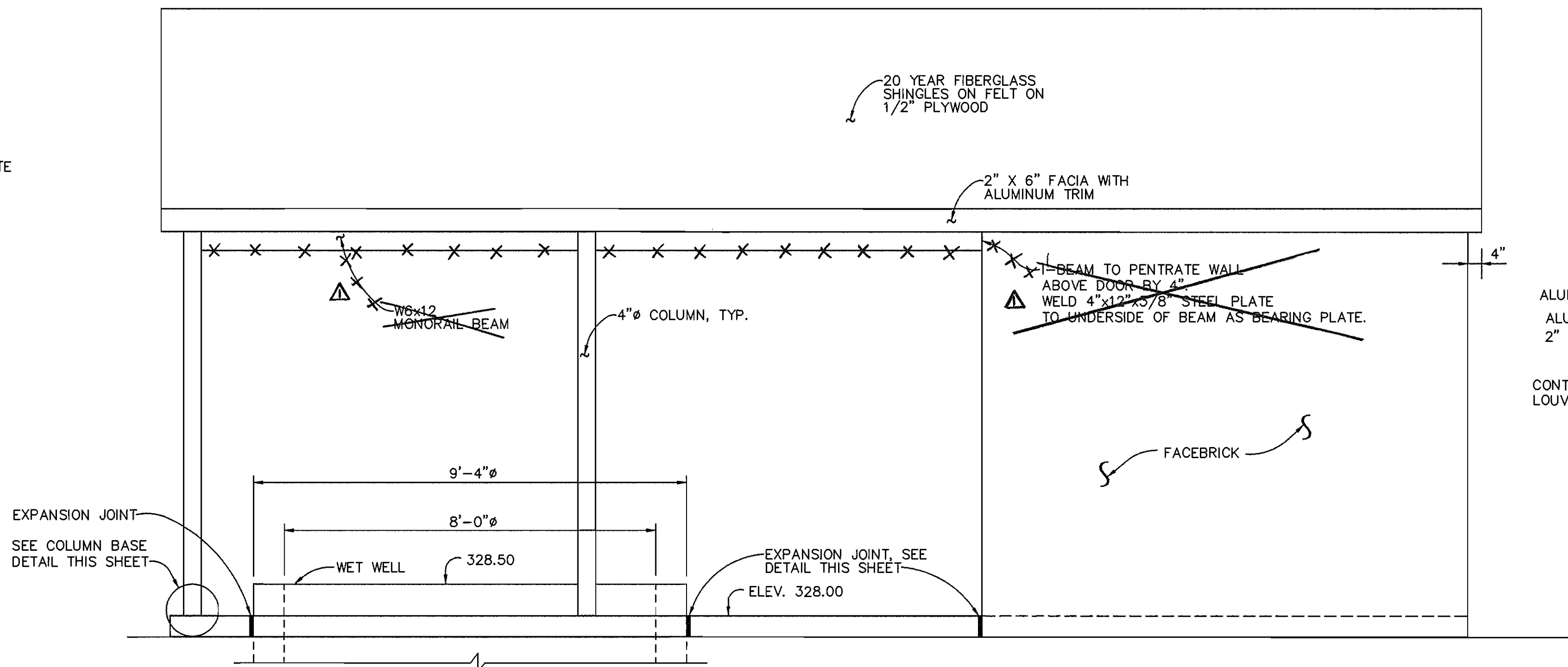
NOTE:
 ROOF TRUSSES SHALL BE DESIGNED TO SUPPORT THE FOLLOWING LOADS AS REQUIRED BY CODE AND SHOWN ON DRAWINGS:
 SNOW LOAD: 30 PSF
 ROOF DEAD LOAD: 10 PSF
 WIND LOAD: 25 PSF
 LIVE LOAD (NO REDUCTIONS): 30 PSF



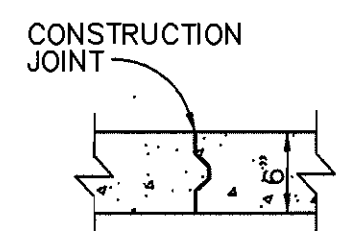
SECTION A-A
 1/2" = 1'-0"



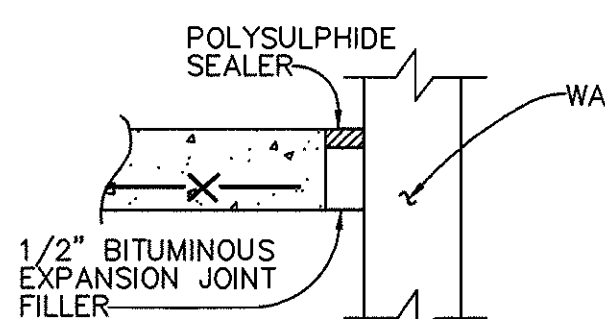
NORTH ELEVATION
 1/2" = 1'-0"



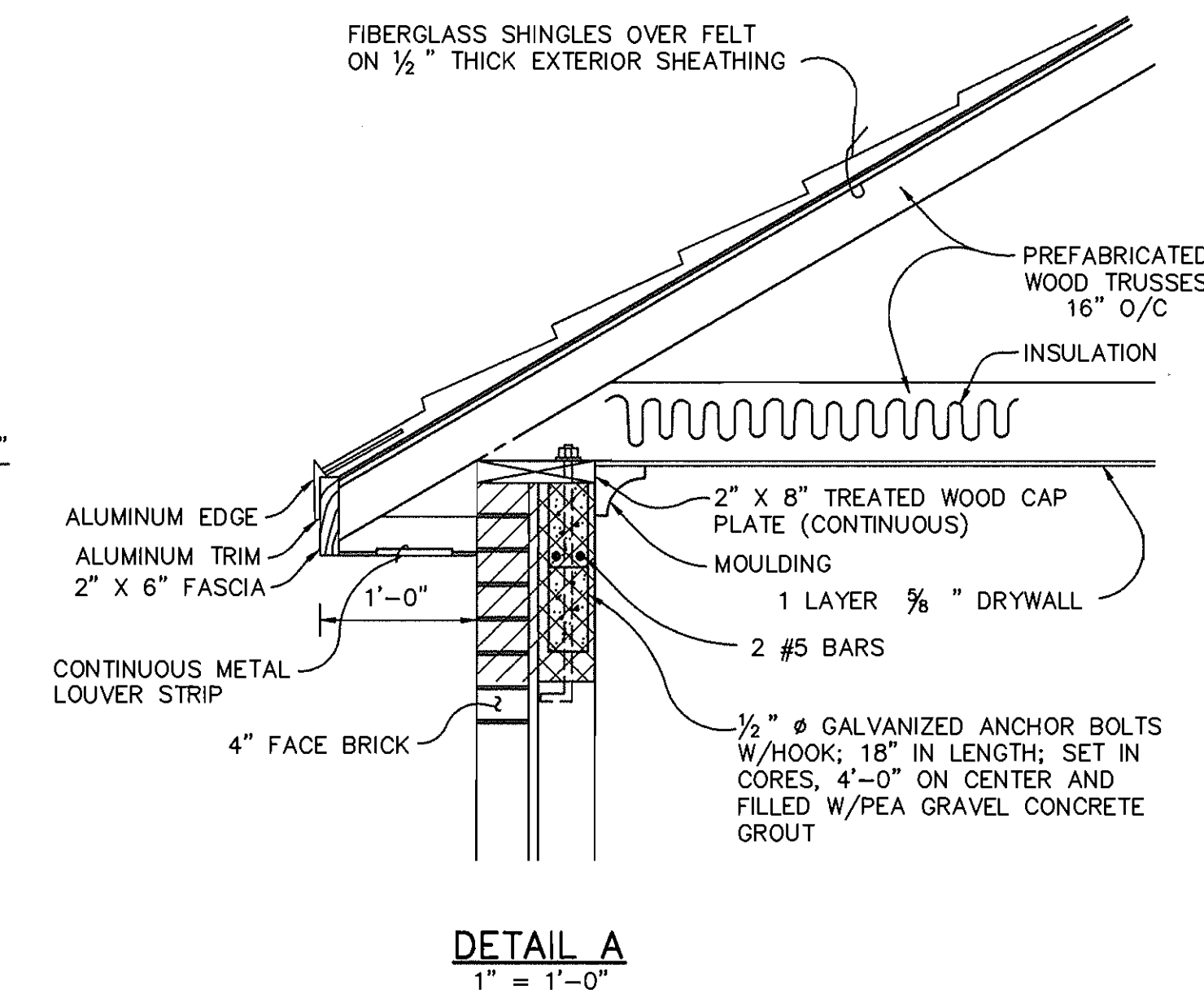
EAST ELEVATION
 1/2" = 1'-0"
 (WEST ELEVATION SIMILAR)



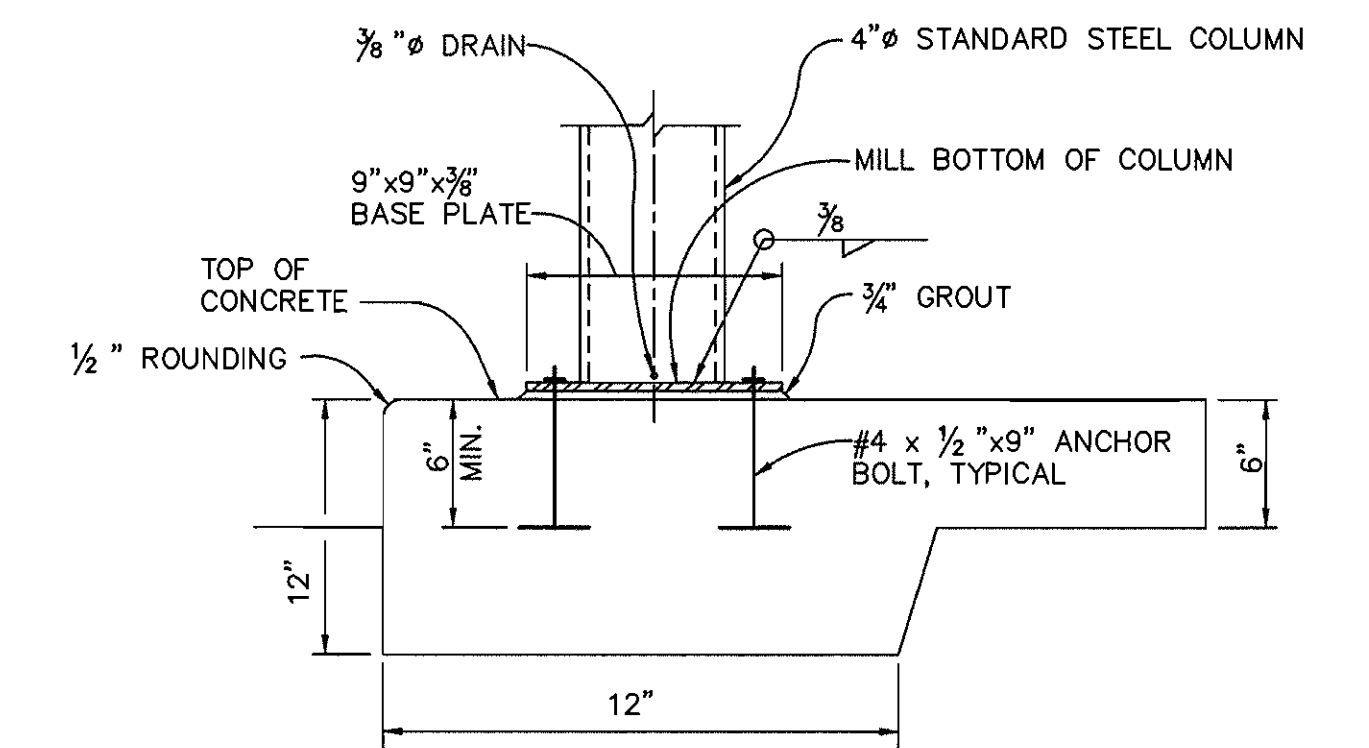
CONSTRUCT JOINT DETAIL
 N.T.S.



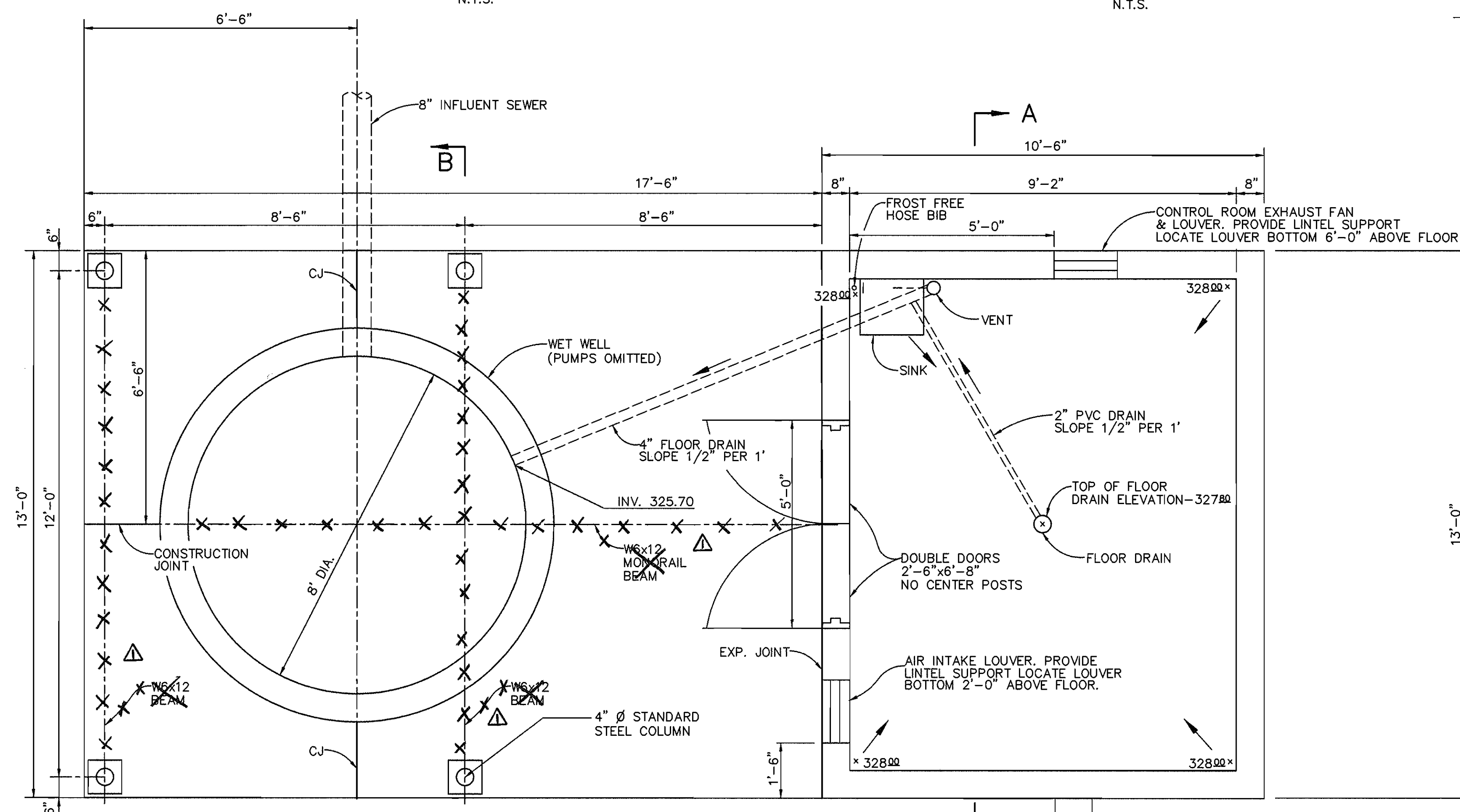
EXPANSION JOINT DETAIL
 N.T.S.



DETAIL A
 1" = 1'-0"

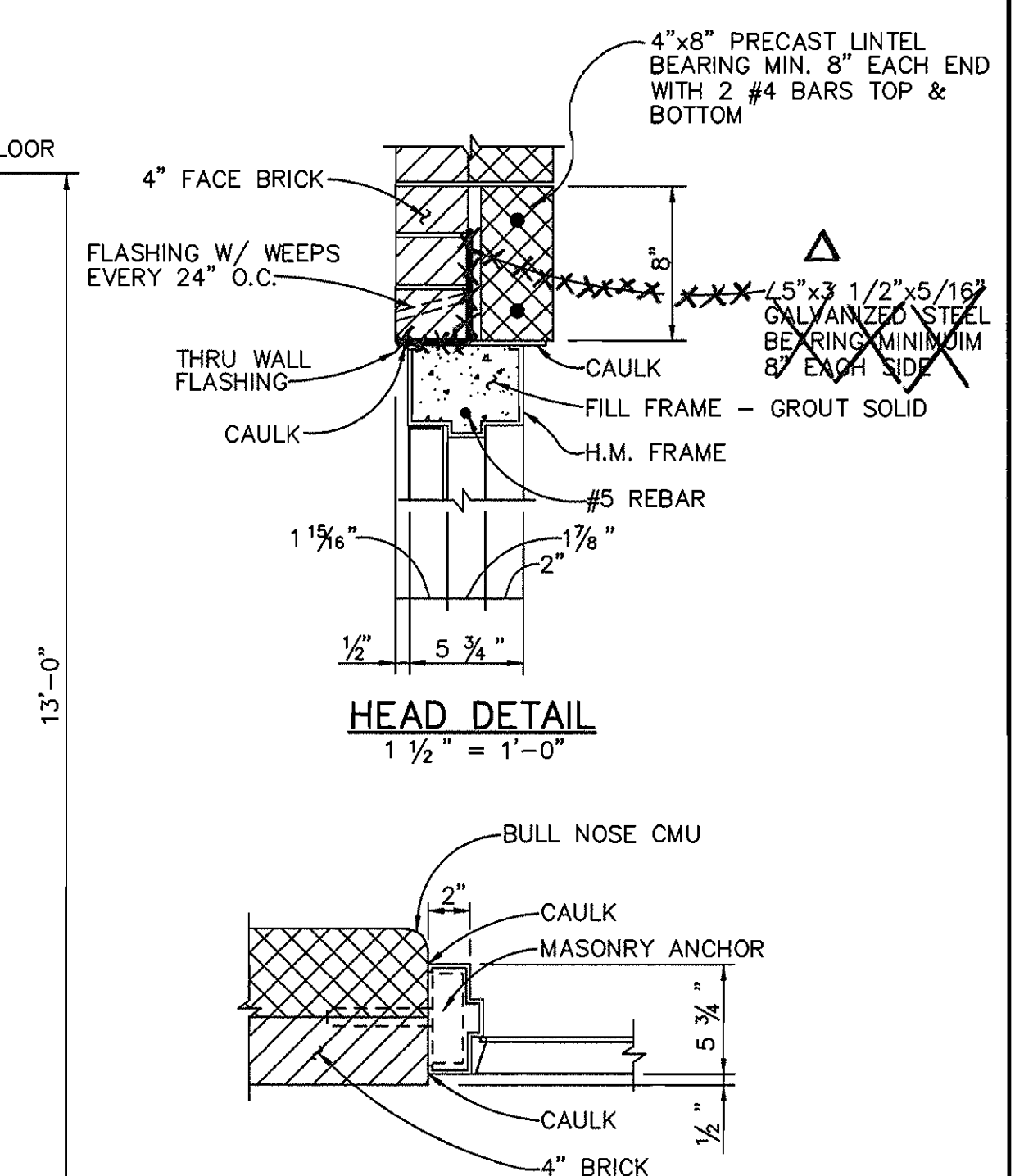


COLUMN BASE DETAIL
 N.T.S.

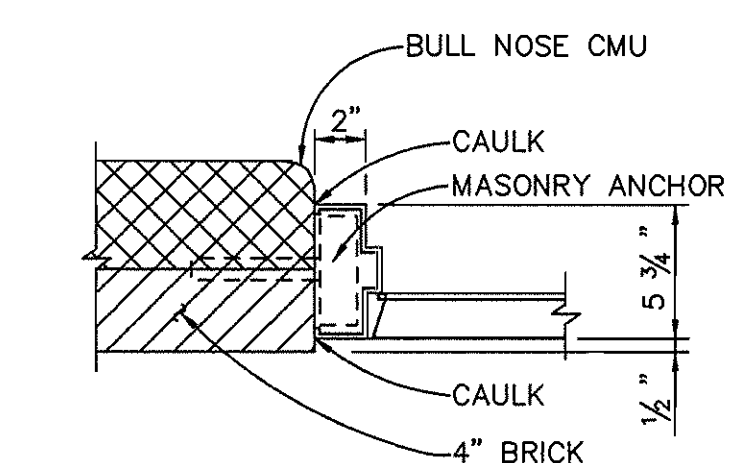


NOTE:
 SEE SHEET 3 FOR SECTION B-B.

PLAN
 1/2" = 1'-0"



HEAD DETAIL
 1 1/2" = 1'-0"



JAMB DETAIL
 1 1/2" = 1'-0"

M:\PROJECT\97565\REV\STANDARD\SH14.FR1 May 1 08:37:39 1998 RIEMER MUEGGE AND ASSOCIATES, INC.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Robert J. ...
 CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
 ...
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

RIEMER MUEGGE & ASSOCIATES, INC.
 ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
 8818 Centre Park Drive • Suite 200 • Columbia, MD 21046
 410-997-8900 FAX: 410-997-9282
 97001/40148/TITLESET.DWG

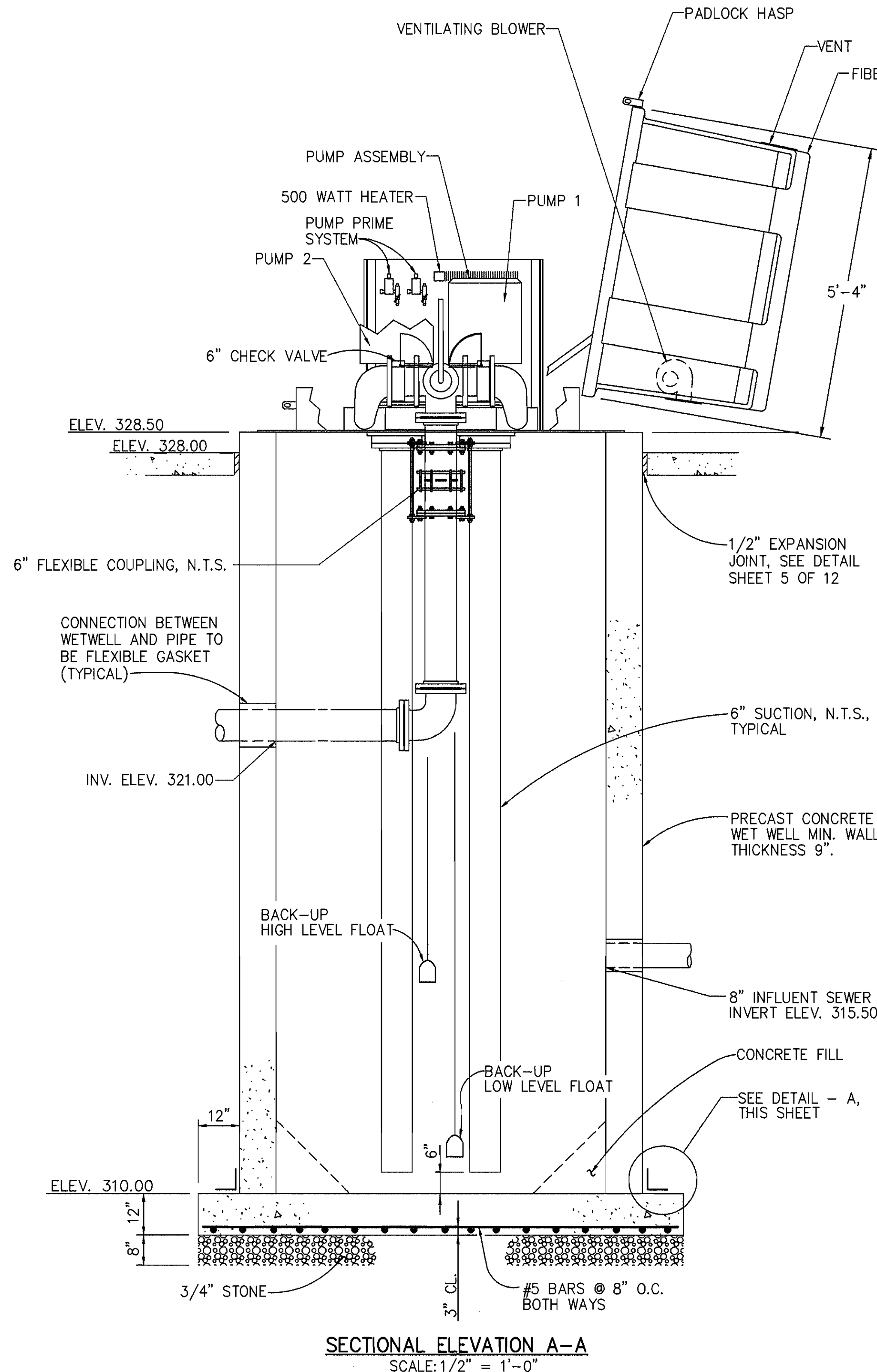
FRANK DONALDSON #8146
 5/1/98

DES: J.S.C.	OMITTED MONORAIL BEAM & HOIST	8/98
DRN: E.L.R.		
CHK: G.C.L.		
DATE: 4/27/98		
BY: NO.	REVISION	DATE

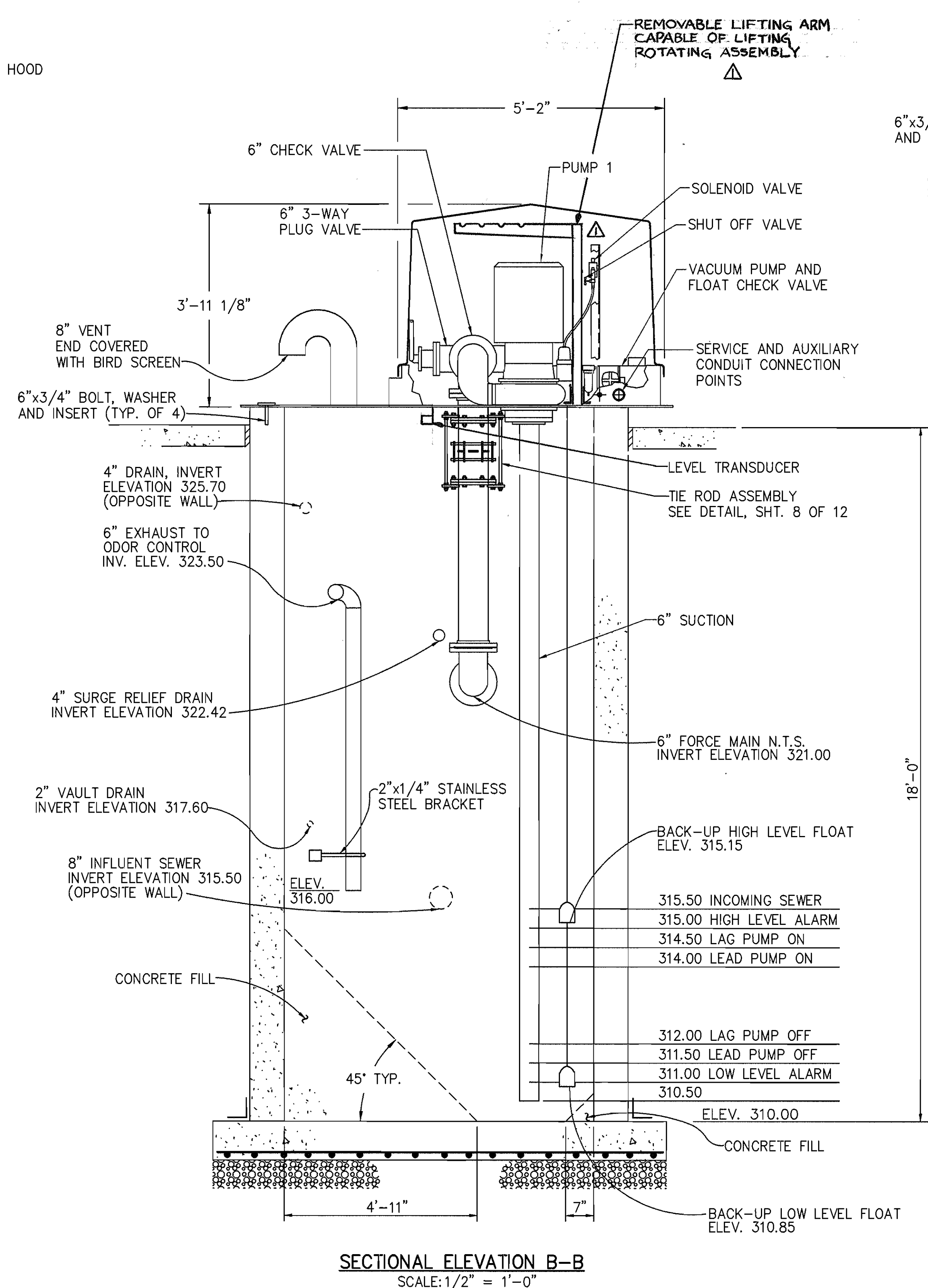
CONTROL BUILDING
PLAN & DETAILS
ARCHITECTURAL/STRUCTURAL

RESERVOIR OVERLOOK
PUMPING STATION
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 20-3664-D

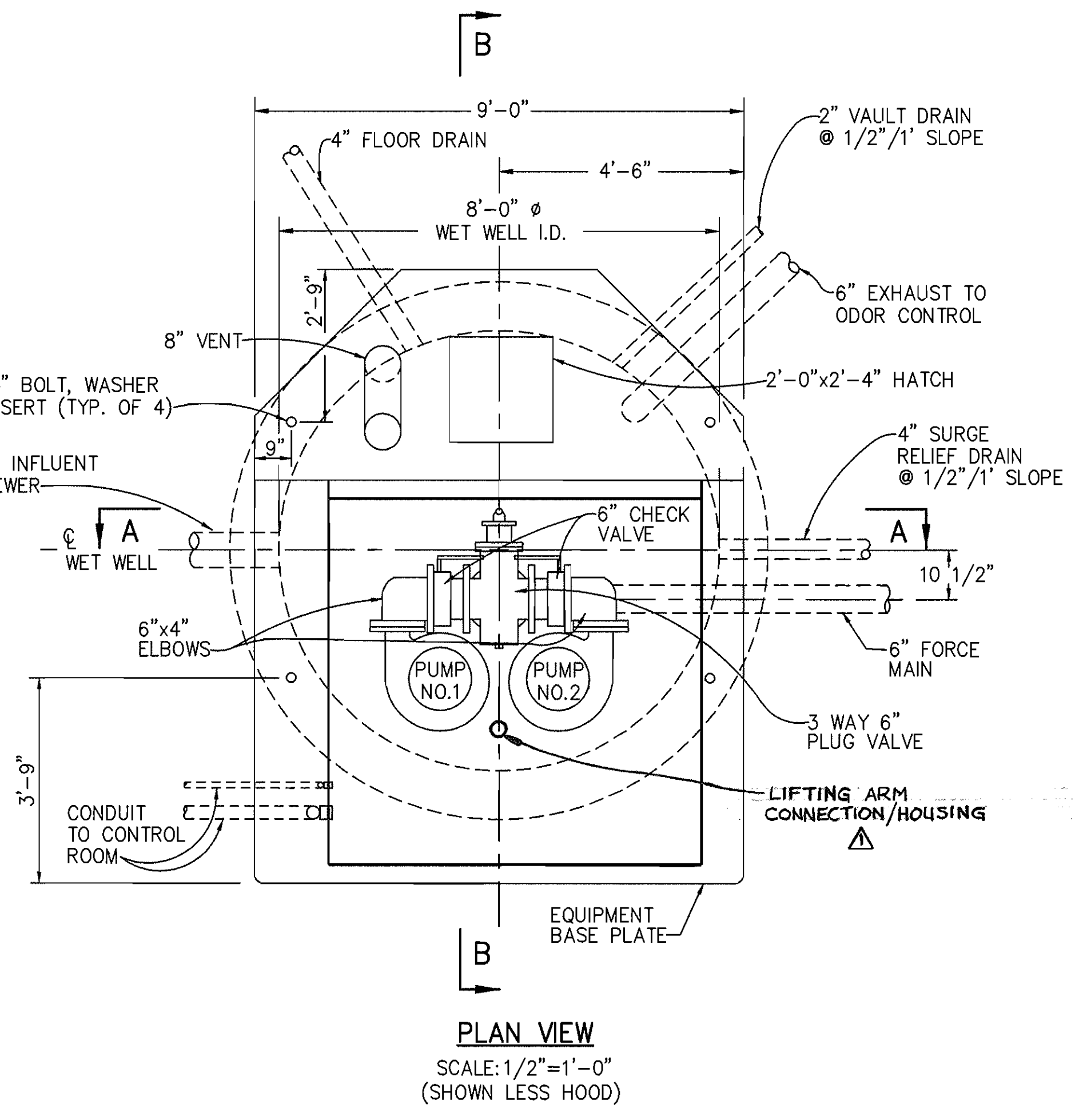
SCALE AS SHOWN
 SHEET 5 OF 12



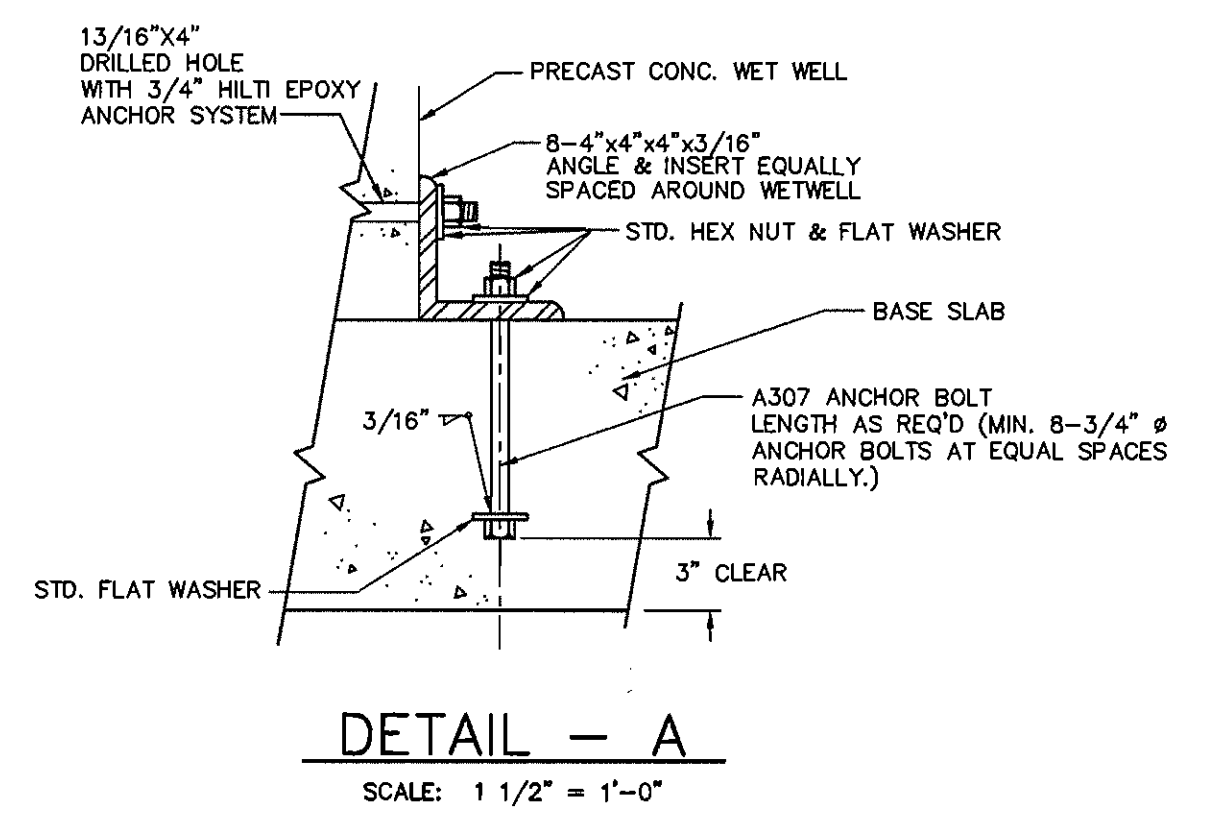
SECTIONAL ELEVATION A-A
SCALE: 1/2" = 1'-0"



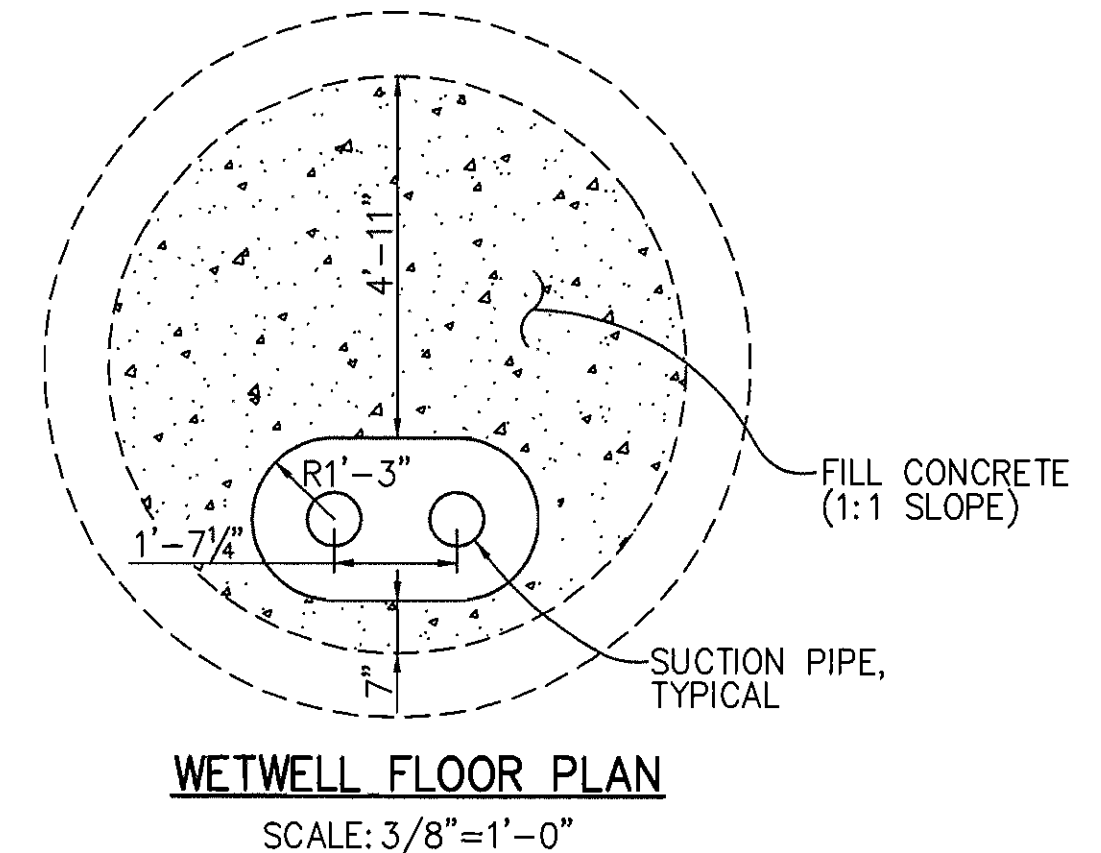
SECTIONAL ELEVATION B-B
SCALE: 1/2" = 1'-0"



PLAN VIEW
SCALE: 1/2" = 1'-0"
(SHOWN LESS HOOD)



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



WETWELL FLOOR PLAN
SCALE: 3/8" = 1'-0"

PUMPS: MODEL 4B2D 1760 RPM AS PROVIDED BY SMITH AND LOVELESS.
MOTORS: 20 HP 3 PHASE 60 HERTZ 460 VOLT.
IMPELLAR: 54L23

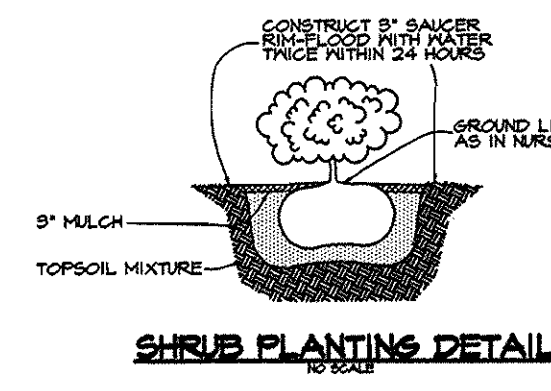
NOTE:
ALL CONNECTIONS BETWEEN WETWELL WALL AND PIPES SHALL BE SEALED WATER TIGHT WITH FLEXIBLE GASKET

K:\PROJECT\97356\REVISED\DWG\SHIT FR1.dwg 24 09 50:30 1998 RIEMER MUEGGE AND ASSOCIATES, INC.

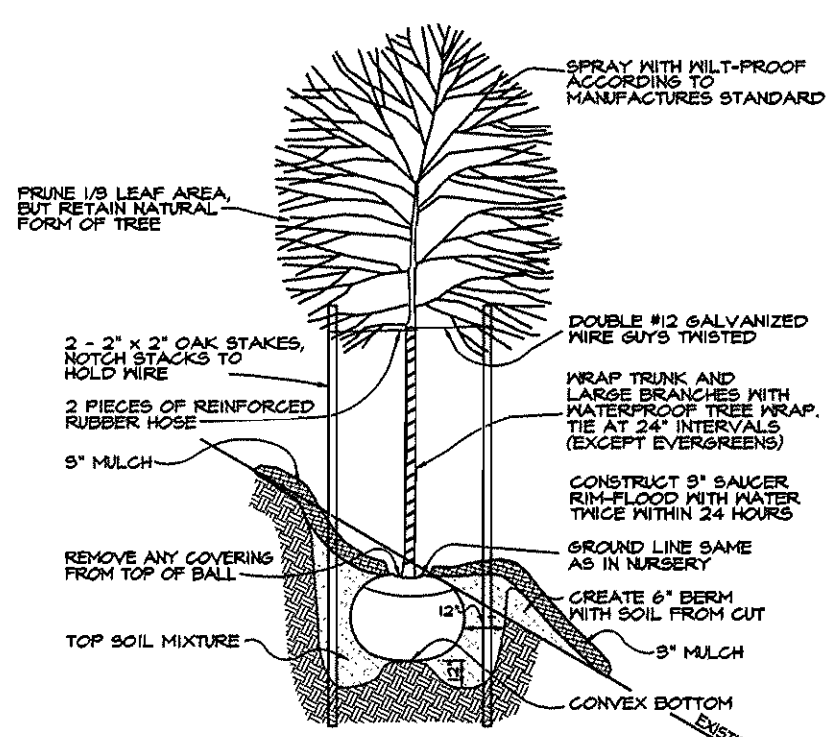
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Robert W. Ramin</i> 6-1-98 CHIEF, BUREAU OF UTILITIES DATE		DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND <i>Frank Donaldson</i> 12/5/98 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE		RIEMER MUEGGE & ASSOCIATES, INC. ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING 8818 Centre Park Drive • Suite 200 • Columbia, MD 21046 410-997-8900 FAX: 410-997-9282 97001/401MS/TITLESET.DWG				DES: J.S.C. DRN: E.L.R. CHK: G.C.L. DATE: 4/27/98 BY NO. REVISION DATE		WETWELL & PUMPING STATION MECHANICAL 600' SCALE MAP NO. 46 BLOCK NO. 16		RESERVOIR OVERLOOK PUMPING STATION 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 20-3664-D SCALE AS SHOWN SHEET 6 OF 12	
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LEGEND

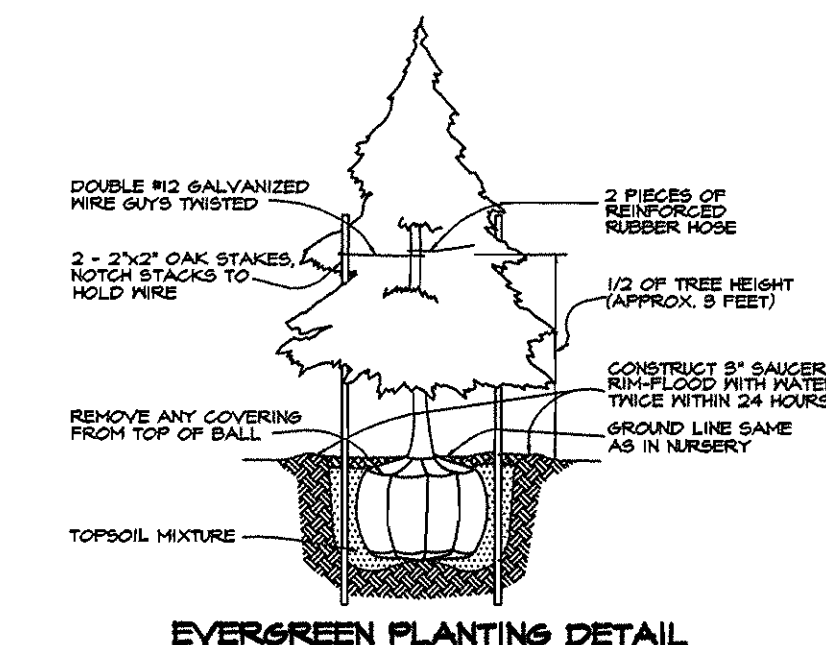
--- EXISTING CONTOUR
 --- PROPOSED SEWER LINE



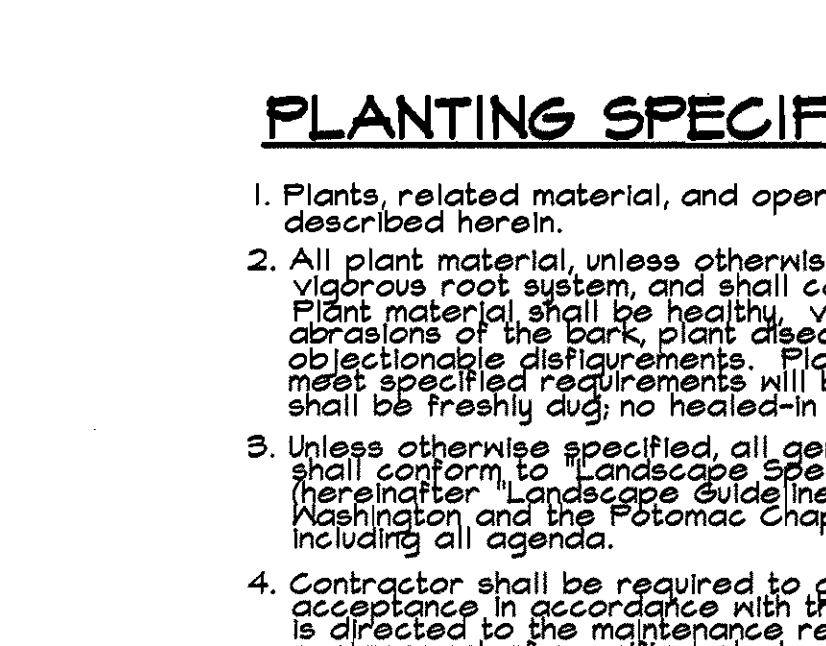
SHRUB PLANTING DETAIL



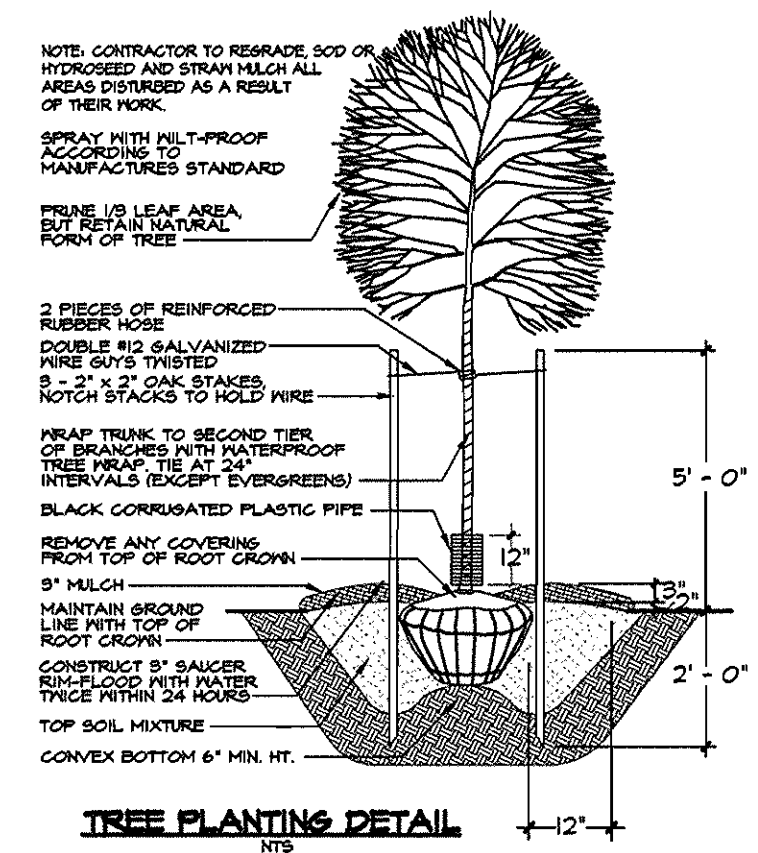
TREE PLANTING DETAIL



TREE PLANTING DETAIL FOR STEEP SLOPES



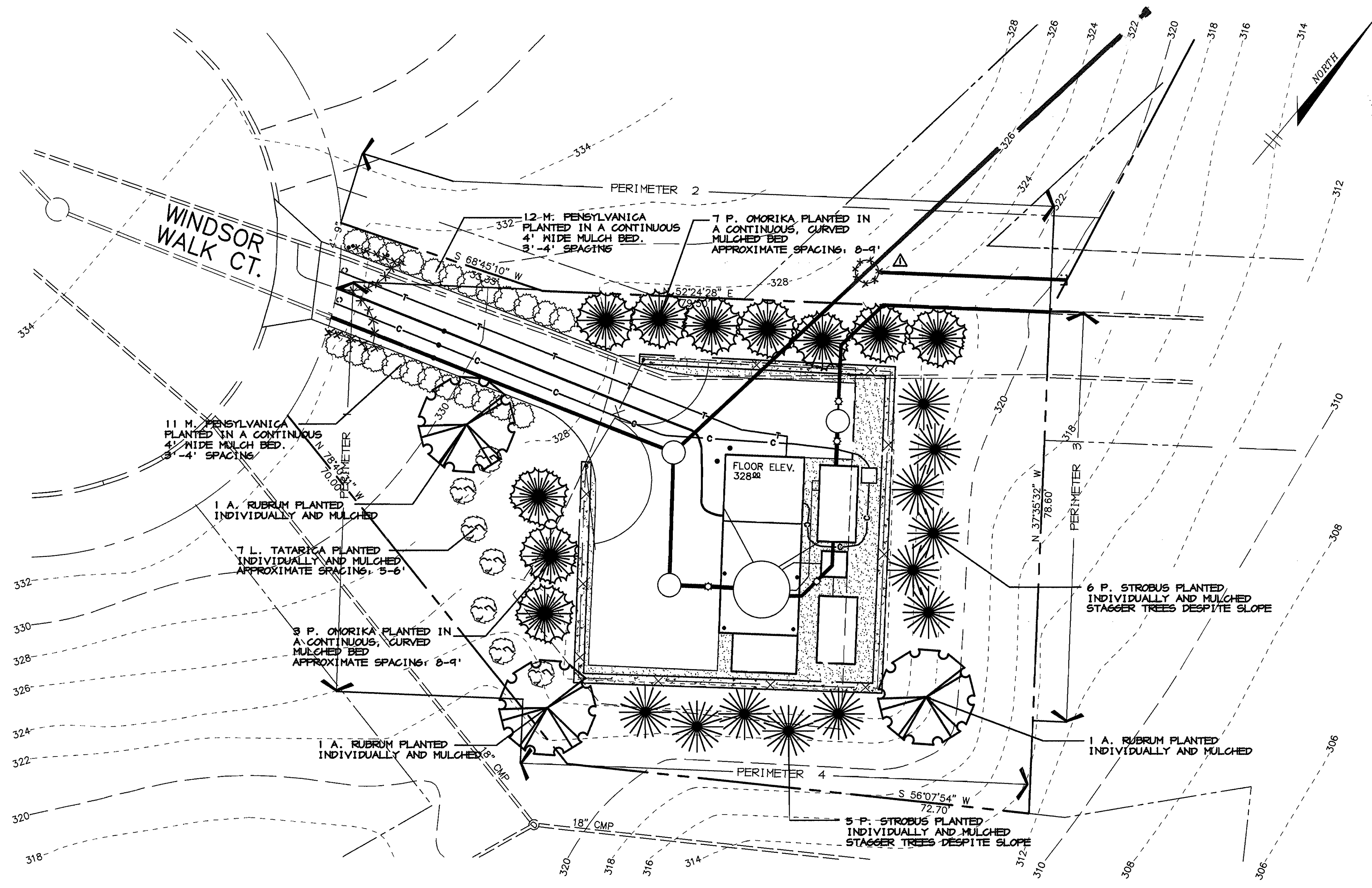
EVERGREEN PLANTING DETAIL



TREE PLANTING DETAIL

SCHEDULE A PERIMETER LANDSCAPE EDGE		
CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROPERTIES
LANDSCAPE TYPE	B	C
LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	65'	119'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO
NUMBER OF PLANTS REQUIRED:		
SHADE TREES	1	3
EVERGREEN TREES	2	6
SHRUBS	0	0
NUMBER OF PLANTS PROVIDED:		
SHADE TREES	2	1
EVERGREEN TREES	0	0
OTHER TREES (2:1 SUBSTITUTION)	0	0
SHRUBS (1:1 SUBSTITUTION)	16	12

COMMENTS:
 M. PENNSYLVANICA SHRUBS ARE SUBSTITUTED FOR SHADE & EVERGREEN TREES TO AVOID CONFLICTS WITH MAJOR UTILITIES ALONG THE ACCESS ROAD.



PLAN
 SCALE: 1" = 10'

PLANTING SCHEDULE

QTY	BOTANICAL / COMMON NAME	SIZE / SPACING
3	Acer rubrum October Glory / Red Maple	2 1/2" col. min. 14" ht. min. B & B
10	Picea omorika / Serbian Spruce	7'-8" ht. B & B
23	Myrica pensylvanica / Northern Bayberry	21"-24" ht.
7	Lonicera tatarica / Tatarian Honeyuckle	3'-3 1/2" ht.
11	Pinus strobus / White Pine	6'-7" ht. B & B

PERIMETER PLANTING CALCULATIONS

Perimeter	Requirement / Notes	Type	Plants
Perimeter 1	Non Residential Use to Roadway Front / Side	Type B	1 Shade Tree 2 Evgn. Trees
Perimeter 2	Non Residential Use to SFD	Type C	3 Shade Trees 6 Evgn. Trees
Perimeter 3	No requirement / abuts major open space / not visible from other land uses.		
Perimeter 4	No requirement / abuts major open space / not visible from other land uses.		

PLANTING SPECIFICATIONS

- Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein.
- All plant material, unless otherwise specified shall be nursery grown, uniformly branched, have a vigorous root system and shall conform to American Association of Nurserymen (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sunscald injuries, abrasions of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements. Plant material which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug; no heated-in plants or plants from cold storage will be accepted.
- Unless otherwise specified, all general conditions, planting operations, details and planting specification shall conform to "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Areas" (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architect, latest edition, including all agenda.
- Contractor shall be required to guarantee all plant material for a period of two years after date of acceptance in accordance with the appropriate section of the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the two year specifications including watering and replacement of specified plant material.
- Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.
- Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence at the drip line.
- Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within growing season of completion of site construction.
- Bid shall be based on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications.
- Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plan take precedence.
- All shrubs and groundcover areas shall be planted in continuous prepared planting beds mulched with composted hardwood mulch as detailed and specified except where noted on plans.
- Positive drainage shall be maintained in planting beds (minimum 2 percent slope).
- Planting mix shall be as follows: Deciduous Plants - Two parts topsoil, one part well-rotted cow or horse manure. Avoid use of standard fertilizer per cubic yard of planting mix. Evergreen Plants - two parts topsoil, one part humus or other approved organic material. Add 3 lbs. of evergreen (acidic) fertilizer per cubic yard of planting mix. Topsoil shall conform to the Landscape Guidelines.
- Weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Be sure to carefully check the chemical used to assure its adaptability to the specific groundcover to be treated.
- Mulch: Groundcover beds should be mulched with minimum 2 inches of shredded composted hardwood, or as specified on the details, whichever is greater.
- All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded.
- This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.

K:\PROJECT\97365\REVISED\DWG\SP3 Mon Mar 30 15:54:55 1998 RIEMER MUEGGE & ASSOCIATES, INCORPORATED

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Chief, Bureau of Utilities
 6-1-98

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
 Chief, Development Engineering Division

RIEMER MUEGGE & ASSOCIATES, INC.
 ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
 8818 Centre Park Drive • Suite 200 • Columbia, MD 21046
 410-997-8900 FAX: 410-997-8882
 OVERLOOK/1203-203

DAVID T. DOWS #830
 4/24/98

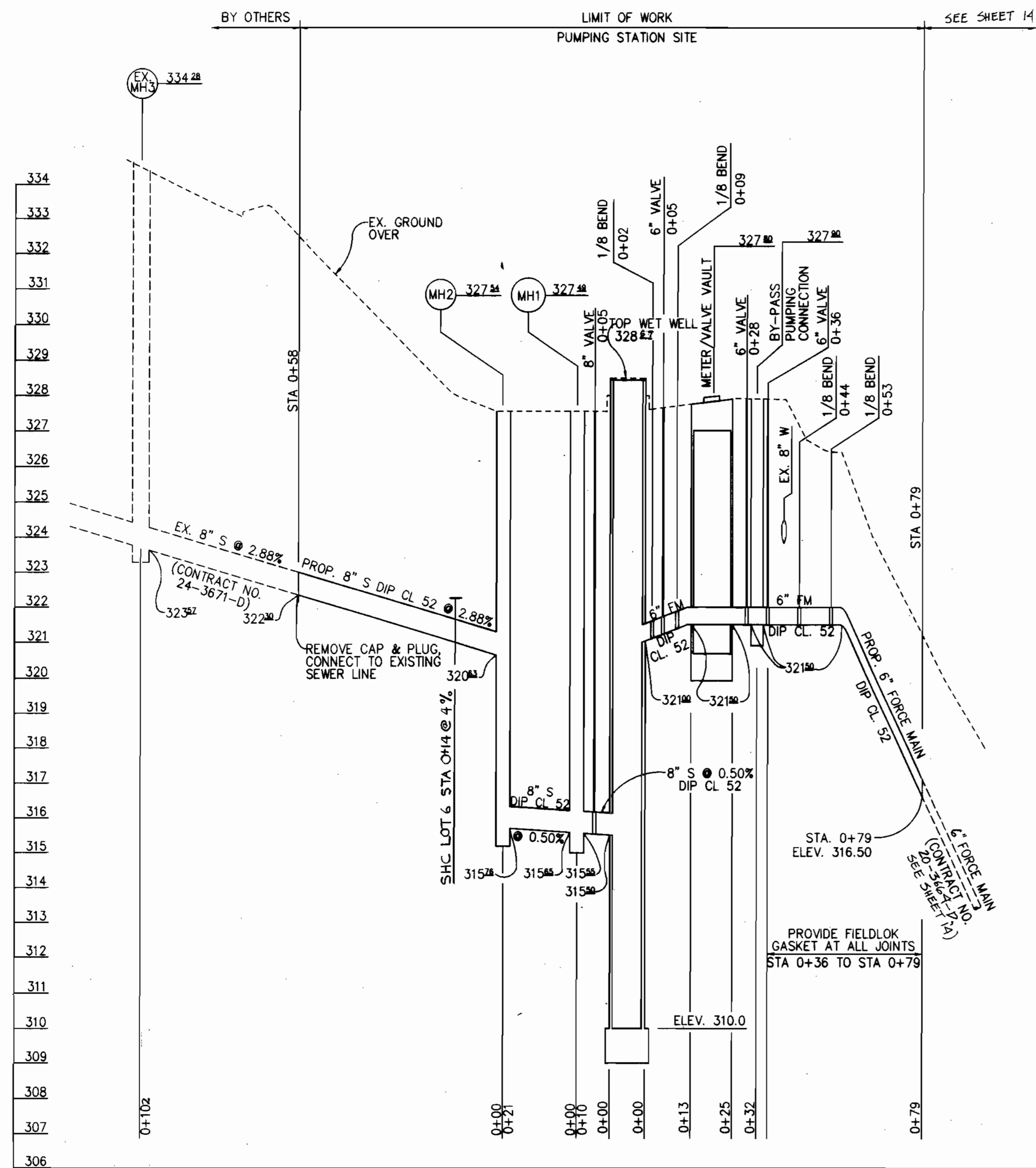
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DRN:	A.J.L.		
CHK:	D.T.D.		
DATE:	3/31/98		
BY	NO.	REVISION	DATE

600' SCALE MAP NO. 46 BLOCK NO. 16

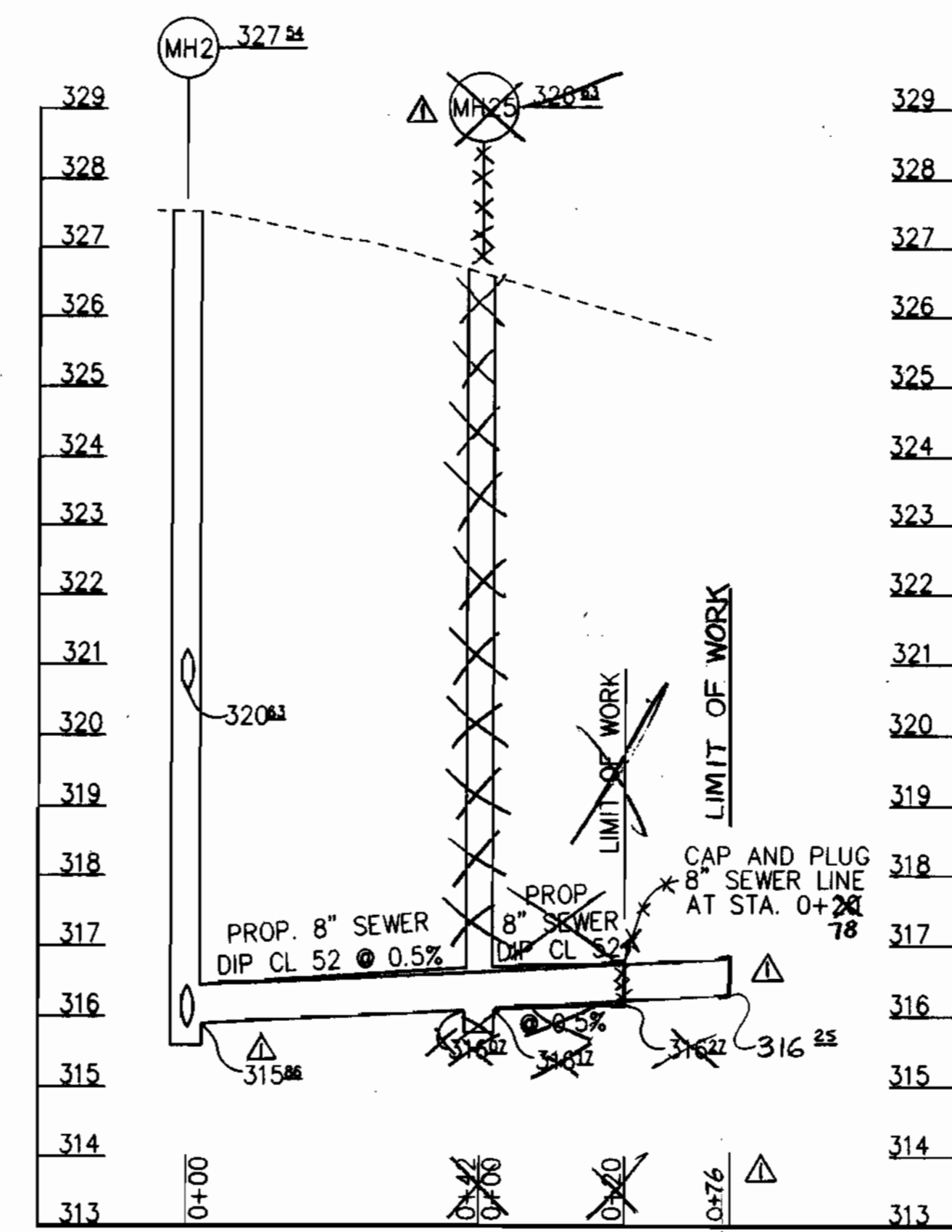
LANDSCAPE PLAN

**RESERVOIR OVERLOOK
 PUMPING STATION**
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 20-3664-D

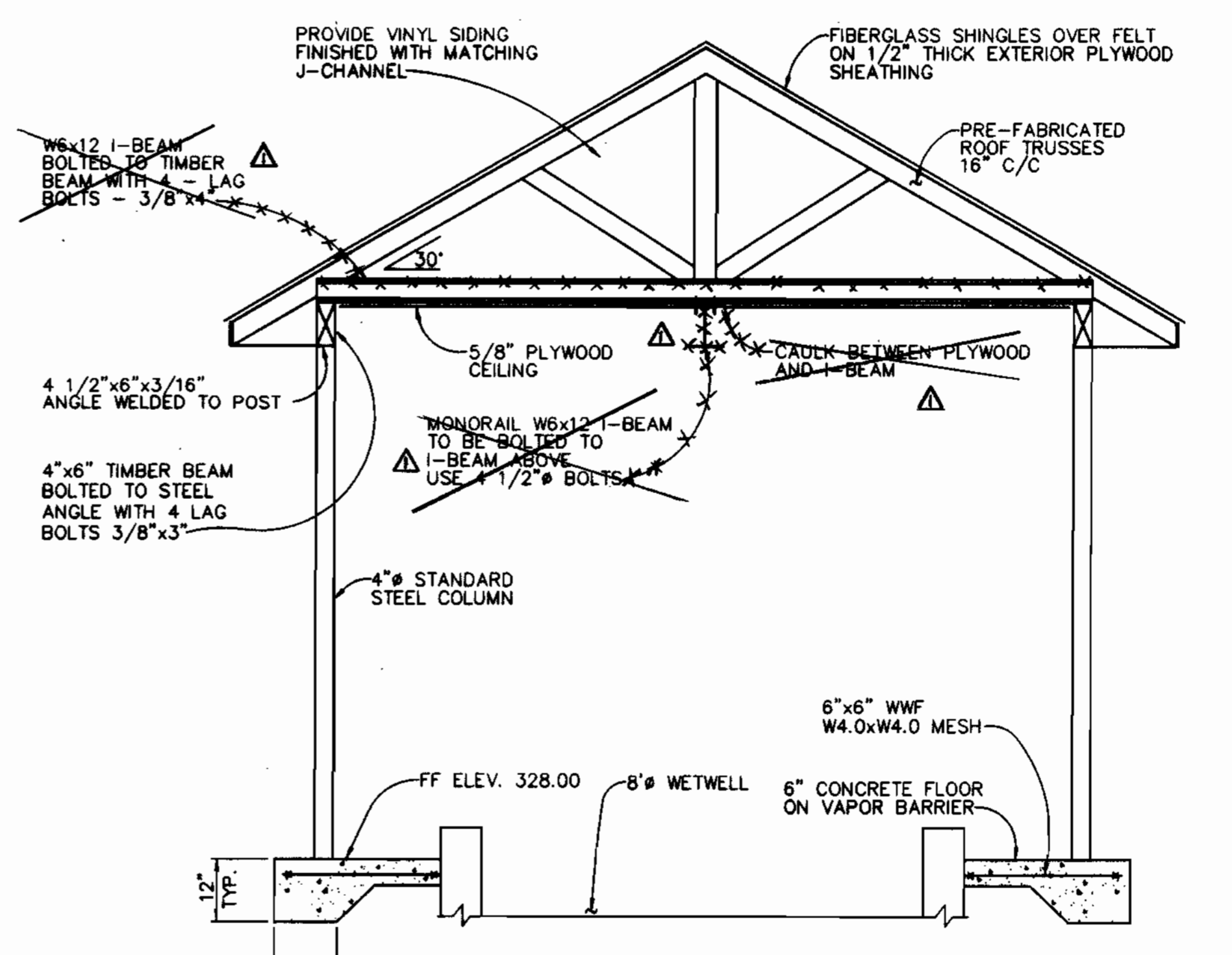
SCALE
 1" = 10'
 SHEET
 11 OF 12



PROFILE
 HORIZ.: 1"=20'
 VERT.: 1"=2'



PROFILE
 HORIZ.: 1"=20'
 VERT.: 1"=2'



SECTION B-B
 SCALE: 1/2" = 1'-0"
 NOTE: SEE SHEET 5 OF 15 FOR PLAN.

LOG OF BORING NO. PS-1 Sheet 1 of 1

PROJECT: Reservoir Overlook
 PROJECT NO: 88328-C
 PROJECT LOCATION: Howard County, Maryland
 DATE STARTED: December 10, 1987
 DATE COMPLETED: December 10, 1987
 DRILLING CONTRACTOR: HBE
 DRILLER: HBE
 CHECKED BY: J. Nisco
 SAMPLING METHOD: Split Spoon
 WATER LEVEL: 2 Dry
 DATE: 12/10/87
 CAVED IN: 11
 GROUND SURFACE ELEVATION: 320.0
 DATUM: MBL
 WEATHER: Cloudy
 GEOLOGY: HBE
 CHECKED BY: J. Nisco
 BACKGROUND OVA (PPM):

SAMPLE NUMBER	DEPTH (FT.)	DIAMETER (IN.)	REMARKS
S-1	1.8	0.8	2-1-3 4 320.0 0 BM Brown, moist, loose to medium-dense to very dense, micaceous coarse to fine SAND, thin to some silty silt. (S&M) AASHTO: A-4/A-2-4
S-2	1.8	1.0	6-6-5 11 5 Water Not Encountered While Drilling.
S-3	1.8	0.8	60-4 60 10 311.8 6M Very dense weathered spherulite to weathered rock.
Auger Refusal at 12.0 ft. Bottom of Hole at 12.0 ft.			

Coordinates: N: E:

GTA GEO-TECHNOLOGY ASSOCIATES, INC. 8000 JUNCTION DRIVE, SUITE 8 ANNAPOLIS JUNCTION, MARYLAND 20701

LOG OF BORING NO. PS-2 Sheet 1 of 1

PROJECT: Reservoir Overlook
 PROJECT NO: 88328-C
 PROJECT LOCATION: Howard County, Maryland
 DATE STARTED: December 10, 1987
 DATE COMPLETED: December 10, 1987
 DRILLING CONTRACTOR: HBE
 DRILLER: HBE
 CHECKED BY: J. Nisco
 SAMPLING METHOD: Split Spoon
 WATER LEVEL: 2 Dry
 DATE: 12/10/87
 CAVED IN: 8.0
 GROUND SURFACE ELEVATION: 310.0
 DATUM: MBL
 WEATHER: Cloudy
 GEOLOGY: HBE
 CHECKED BY: J. Nisco
 BACKGROUND OVA (PPM):

SAMPLE NUMBER	DEPTH (FT.)	DIAMETER (IN.)	REMARKS
S-1	1.8	0.8	1-1-2 3 310.0 0 BM Brown to gray, moist to dry, loose to very dense, coarse to fine SAND, thin to some silty silt. (S&M) AASHTO: A-2-4
S-2	1.8	0.8	2-3-4 8 5 Water Not Encountered While Drilling.
S-3	1.8	1	50-2 60 10 301.5 6M Very dense weathered spherulite to weathered rock.
Auger Refusal at 14.0 ft. Bottom of Hole at 14.0 ft.			

Coordinates: N: E:

GTA GEO-TECHNOLOGY ASSOCIATES, INC. 8000 JUNCTION DRIVE, SUITE 8 ANNAPOLIS JUNCTION, MARYLAND 20701

K:\PROJECT\197356\REVISION\PROFILE Fr. Apr 24 09 51:32 1998 RIEKER MUEGGE AND ASSOCIATES, INC.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND

RIEKER MUEGGE & ASSOCIATES, INC.
 ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
 8818 Centre Park Drive • Suite 200 • Columbia, MD 21046
 410-997-8900 FAX: 410-997-8988
 WWW.RMAA.COM

FRANK DONALDSON #8146

DES: J.S.C.	DATE: 4/27/98
DRN: E.L.R.	BY NO.
CHK: G.C.L.	REVISION
DATE: 4/27/98	DATE

SEWER/FORCE MAIN PROFILE & SECTION

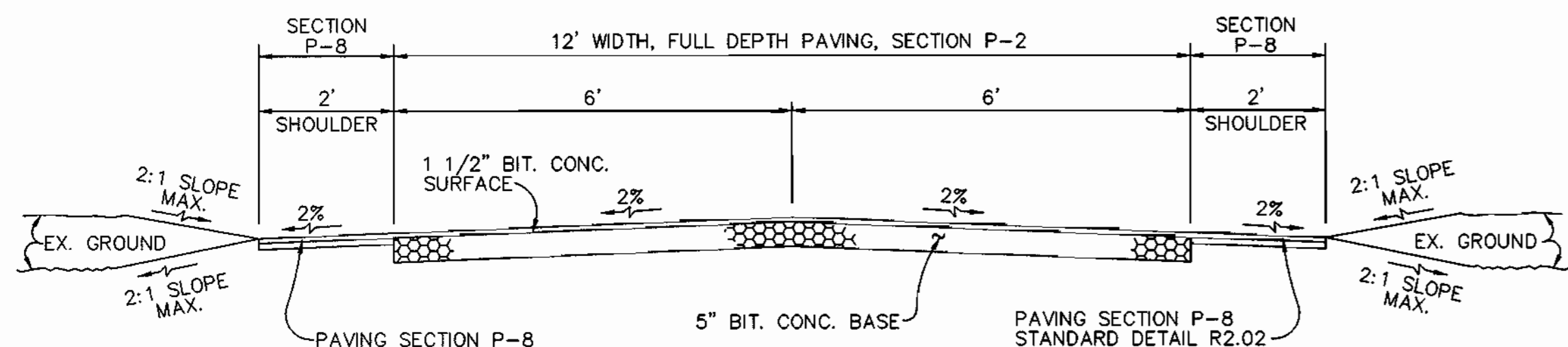
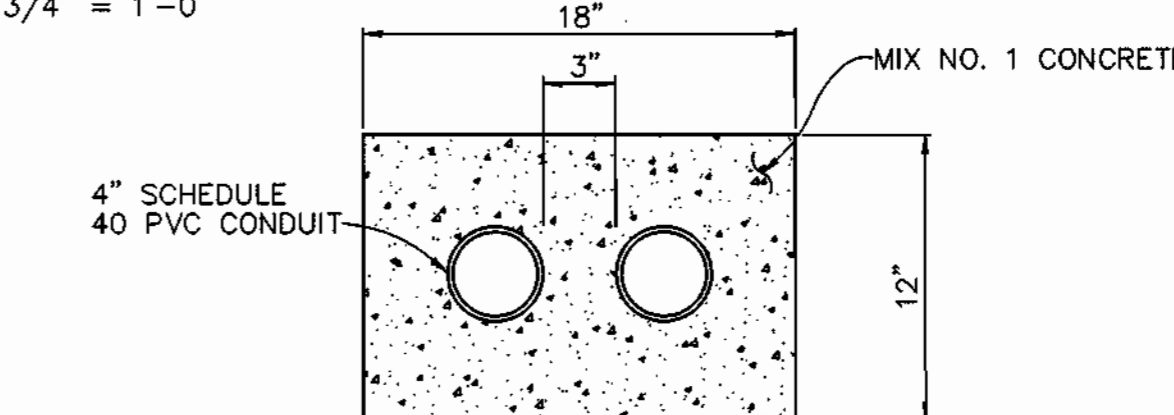
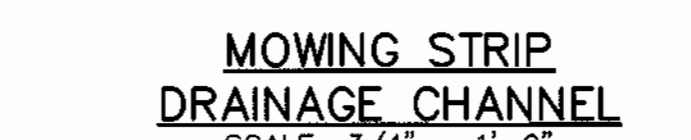
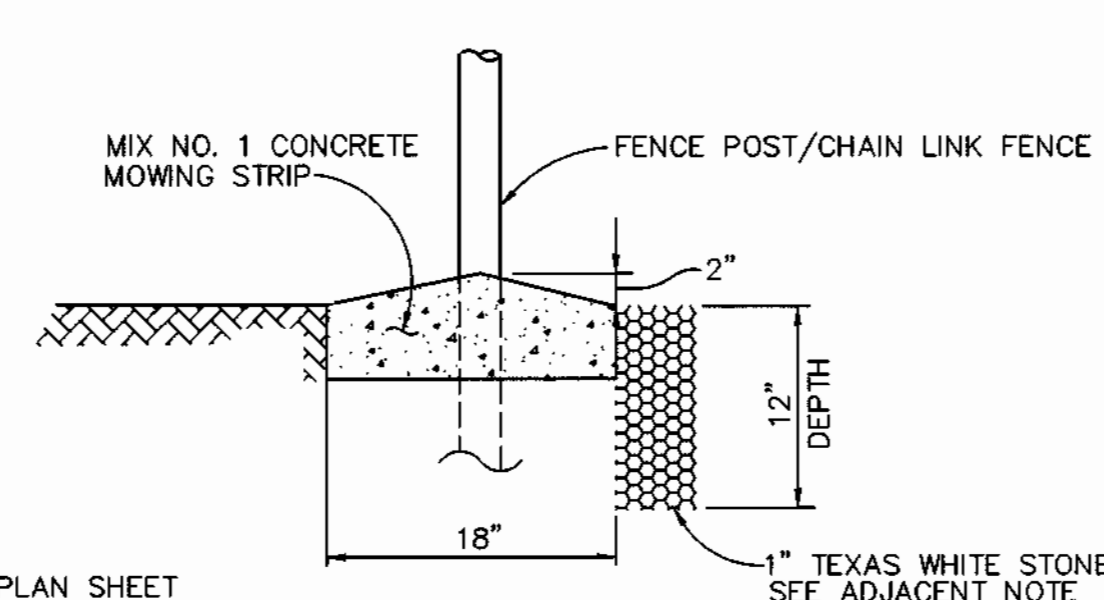
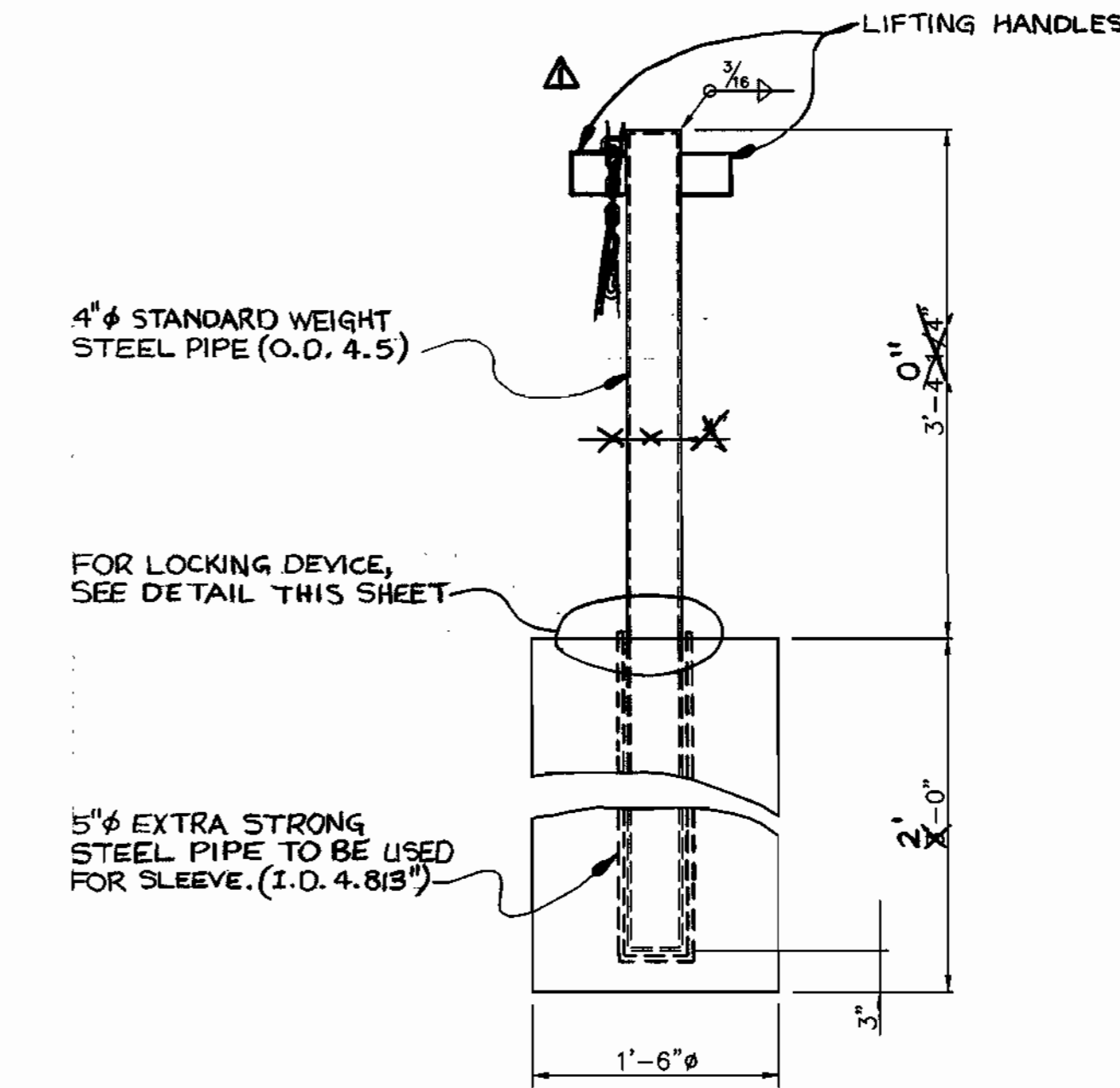
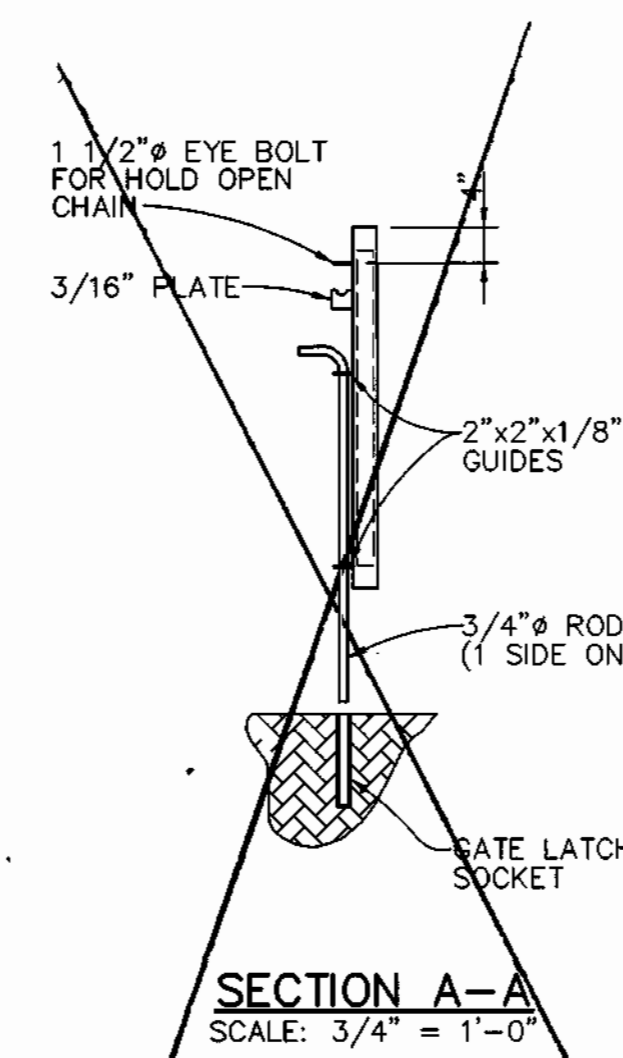
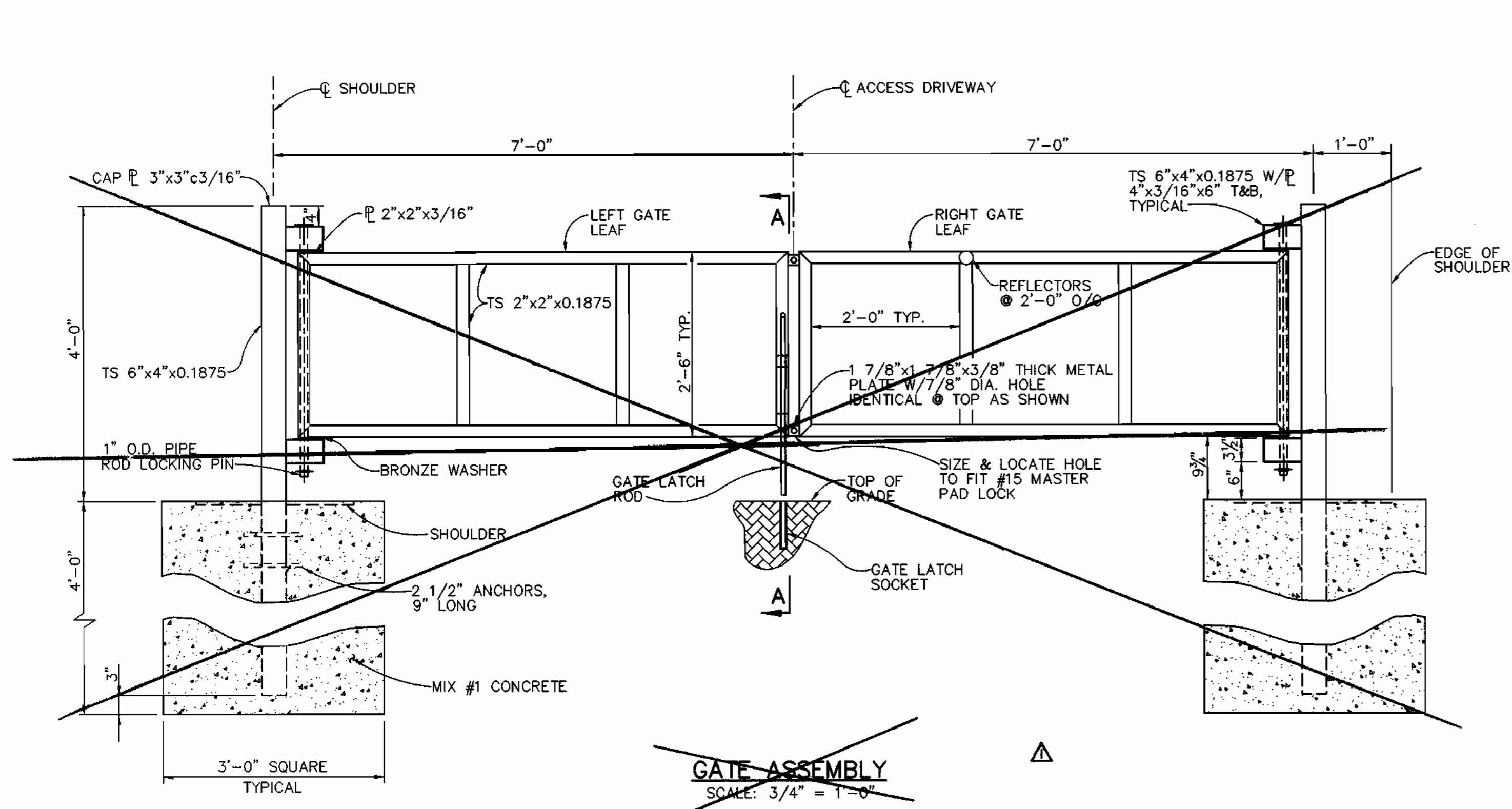
600' SCALE MAP NO. 46 BLOCK NO. 16

RESERVOIR OVERLOOK PUMPING STATION
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 20-3664-D

SCALE AS SHOWN
 SHEET 3 OF 15

5/1/98

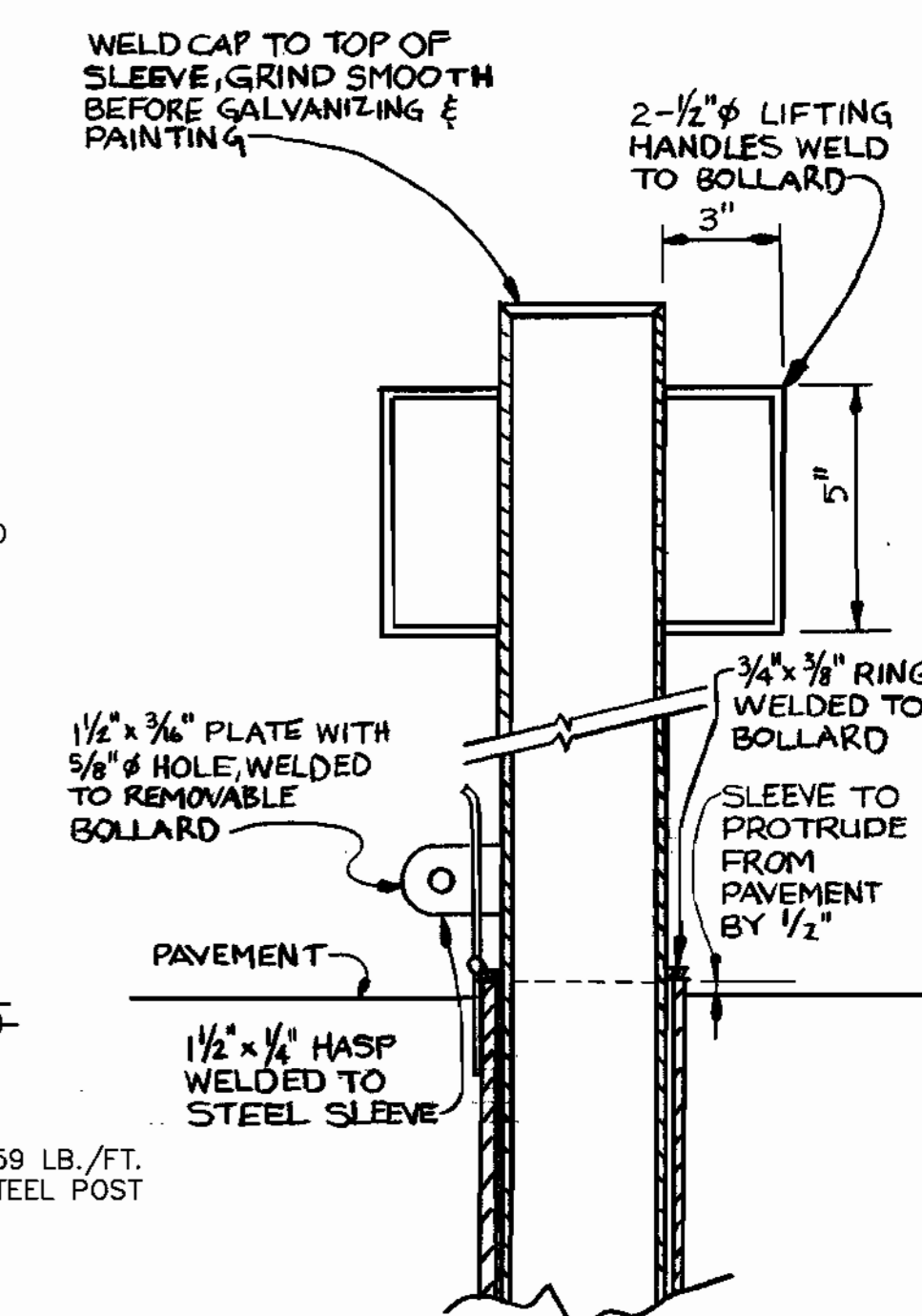
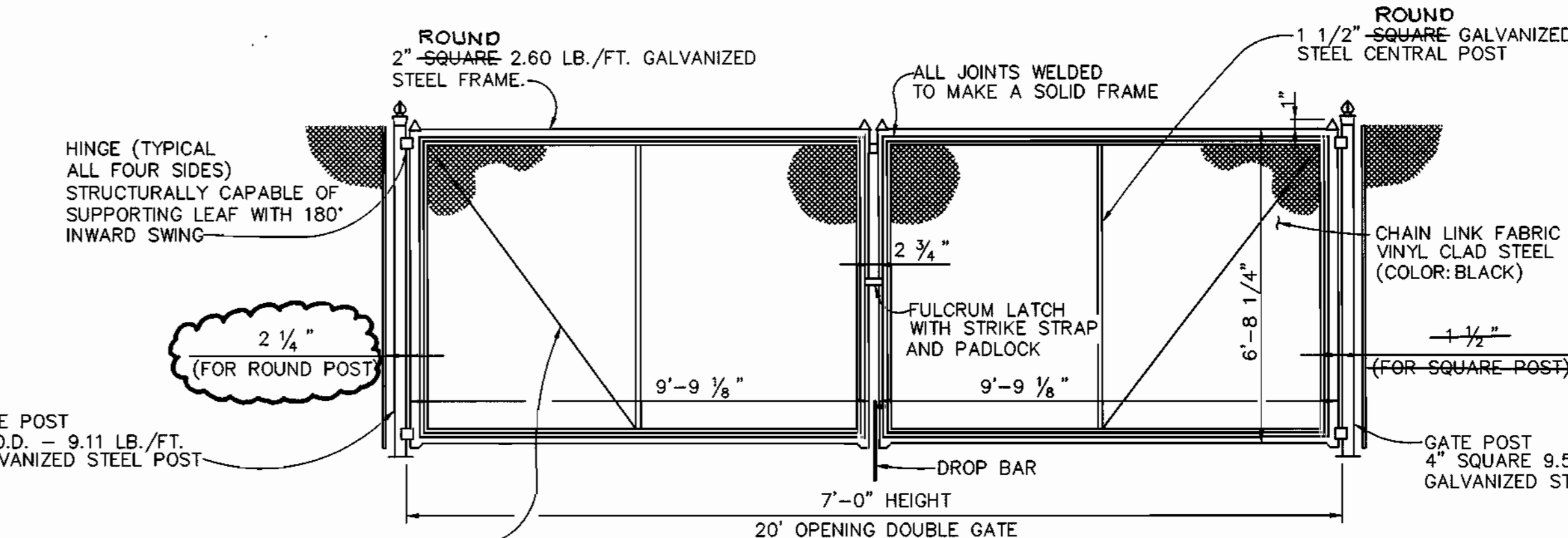
AS-BUILT 11/ /99



NOTE: PAVING SECTION SHOWN IS HOWARD COUNTY SECTION P-2; DETAIL R-2.01 FOR THE ACCESS DRIVEWAY; SECTION P-8 STANDARD DETAIL R-2.02 FOR THE SHOULDERS.

NOTE: PAVING FOR PARKING AREAS @ PUMPING STATION & TURN AROUND AREAS SAME AS TYPICAL SECTION FOR ACCESS DRIVEWAY; SECTION P-2

AS-BUILT
FRANK DONALDSON #814G



TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redistributed where a short-term vegetative cover is needed.

Seeding Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq.ft.).

Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushels per acre of annual ryegrass (3.2 lbs. per 1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.07 lbs. per 1000 sq.ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Refer to the 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seeding Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:

- 1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (9 lbs. per 1000 sq.ft.).
- 2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 1000 lbs. per acre 10-10-10 fertilizer (23 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.

Seeding: For the period March 1 thru April 30 and from August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs. per 1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs. per 1000 sq.ft.) of weeping lovegrass. During the period October 16 thru February 28, protect site by one of the following options:

- 1) 2 tons per acre of well-anchored mulch straw and seed as soon as possible in the spring.
- 2) Use sod.
- 3) Seed with 60 lbs. per acre Kentucky 31 Tall Fescue and mulch with 2 tons per acre well anchored straw.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Maintenance: Inspect all seeded areas and make needed repairs, replacements and reseedings.

K:\PROJECT\97356\REV\VISION\01\SH2.F11 May 1 08:38:51 1998 RIEMER MUEGGE AND ASSOCIATES, INC.

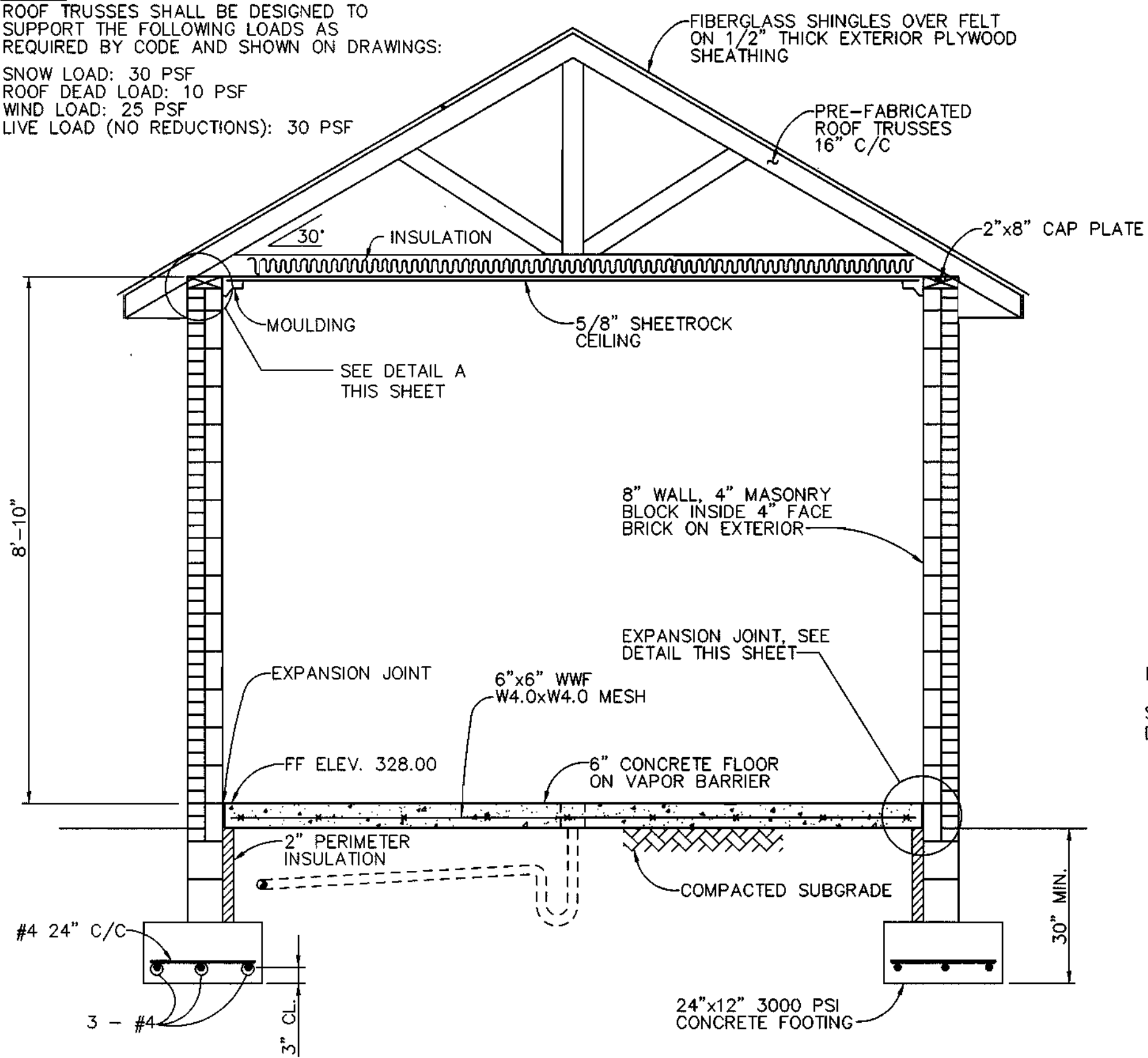
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND	RIEMER MUEGGE & ASSOCIATES, INC. ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING 8818 Centre Park Drive • Suite 200 • Columbia, MD 21045 410-997-8900 FAX: 410-997-9282 97081/401MS/11/11/97.DWG	DES: J.S.C. DRN: E.L.R. CHK: G.C.L. DATE: 4/27/98	<table border="1"> <tr> <th>NO.</th> <th>REVISION</th> <th>DATE</th> </tr> <tr> <td>1</td> <td>OMITTED GATE ASSEMBLY, MODIFIED GATE HOLD OPEN POST TO SECURITY BOLLARD, ADD BOLLARD LOCK DETAIL</td> <td>8/98</td> </tr> <tr> <td>2</td> <td>REVISE TOTAL SHEET #</td> <td>7/16/00</td> </tr> </table>	NO.	REVISION	DATE	1	OMITTED GATE ASSEMBLY, MODIFIED GATE HOLD OPEN POST TO SECURITY BOLLARD, ADD BOLLARD LOCK DETAIL	8/98	2	REVISE TOTAL SHEET #	7/16/00	600' SCALE MAP NO. 46 BLOCK NO. 16	RESERVOIR OVERLOOK PUMPING STATION 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 20-3664-D	SCALE AS SHOWN SHEET 4 OF 15
NO.	REVISION	DATE														
1	OMITTED GATE ASSEMBLY, MODIFIED GATE HOLD OPEN POST TO SECURITY BOLLARD, ADD BOLLARD LOCK DETAIL	8/98														
2	REVISE TOTAL SHEET #	7/16/00														

5/1/98

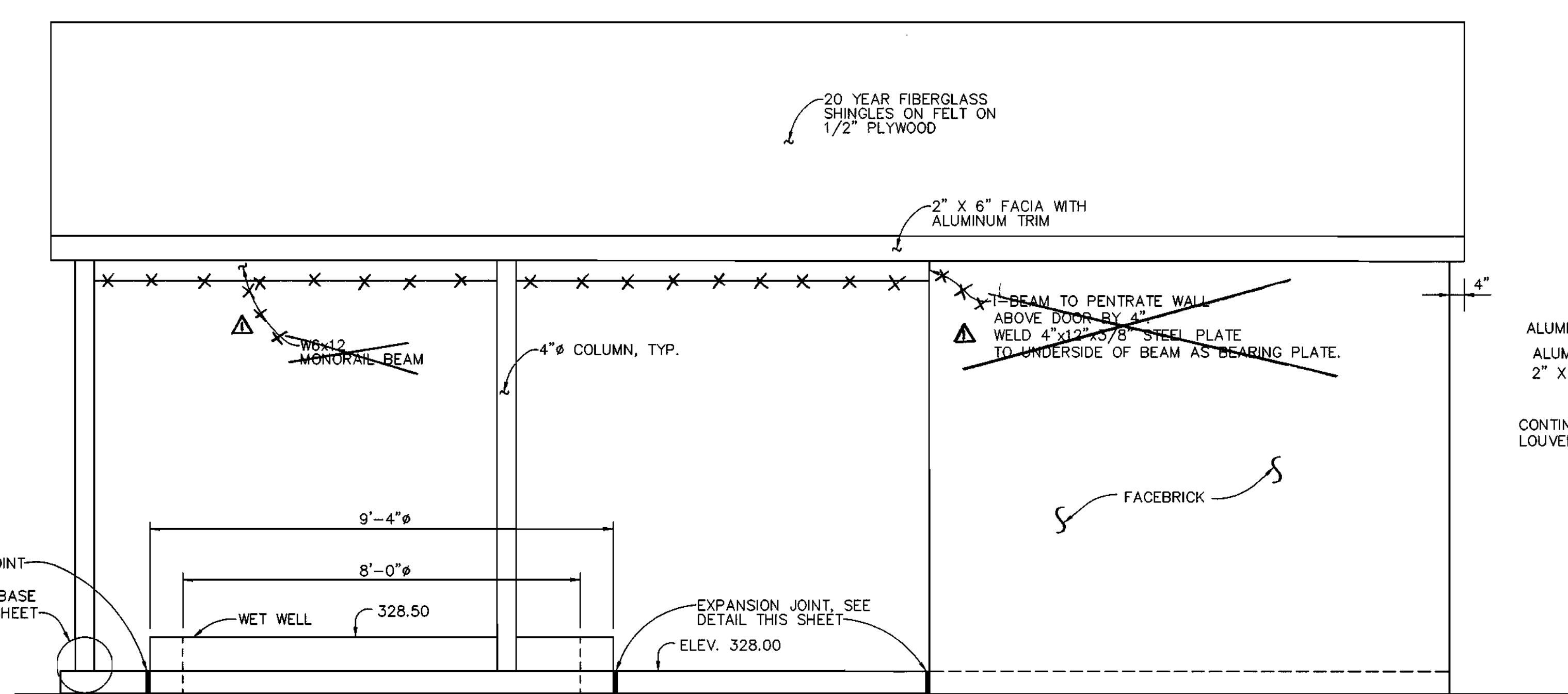
AS-BUILT 11/19/99

NOTE:
 ROOF TRUSSES SHALL BE DESIGNED TO SUPPORT THE FOLLOWING LOADS AS REQUIRED BY CODE AND SHOWN ON DRAWINGS:

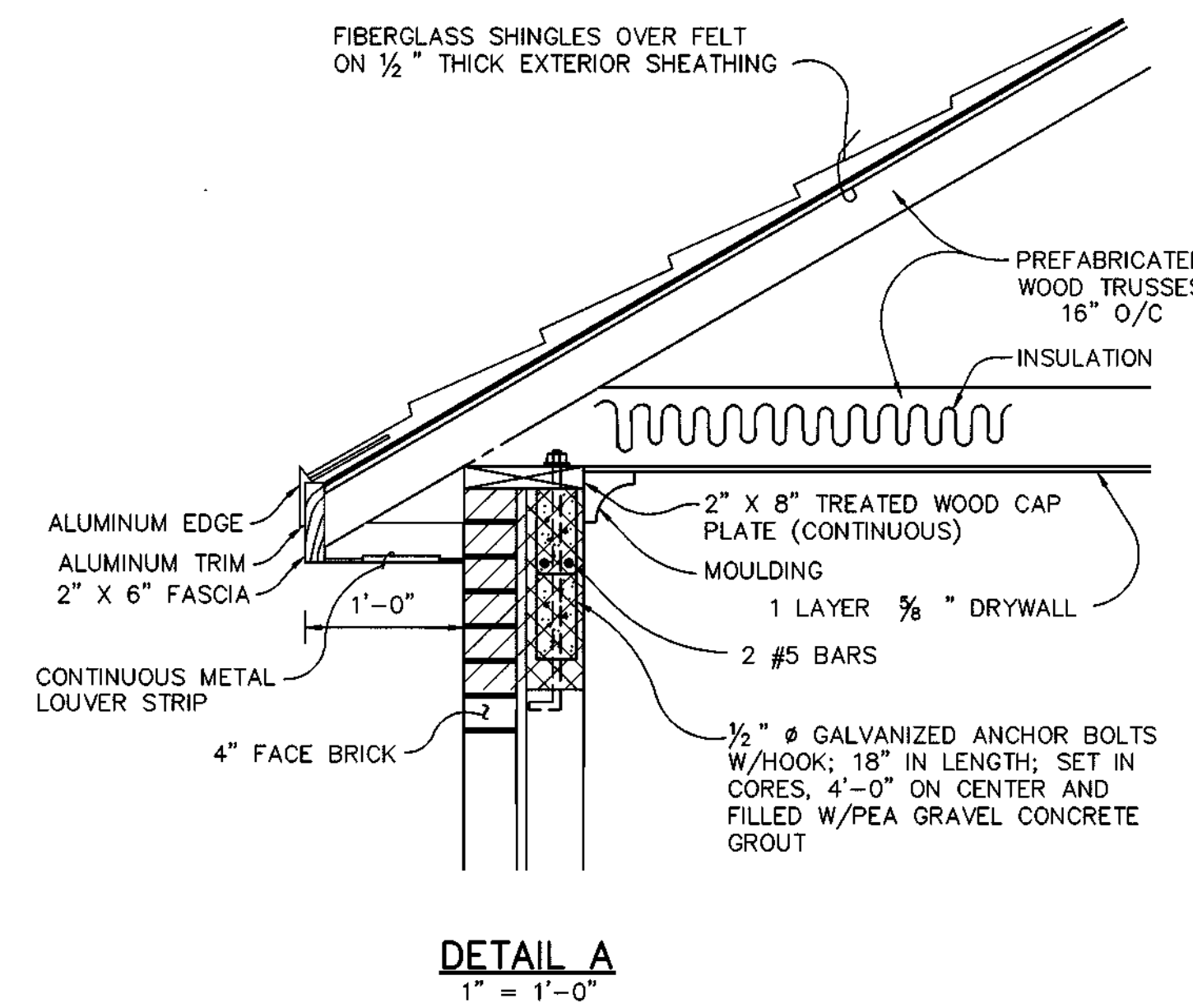
SNOW LOAD: 30 PSF
 ROOF DEAD LOAD: 10 PSF
 WIND LOAD: 25 PSF
 LIVE LOAD (NO REDUCTIONS): 30 PSF



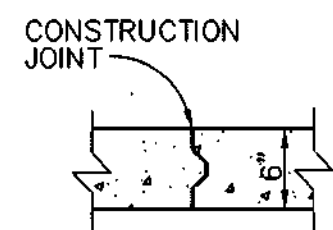
SECTION A-A
 1/2" = 1'-0"



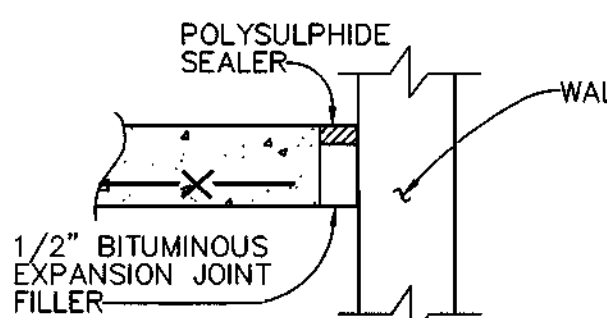
EAST ELEVATION
 1/2" = 1'-0"
 (WEST ELEVATION SIMILAR)



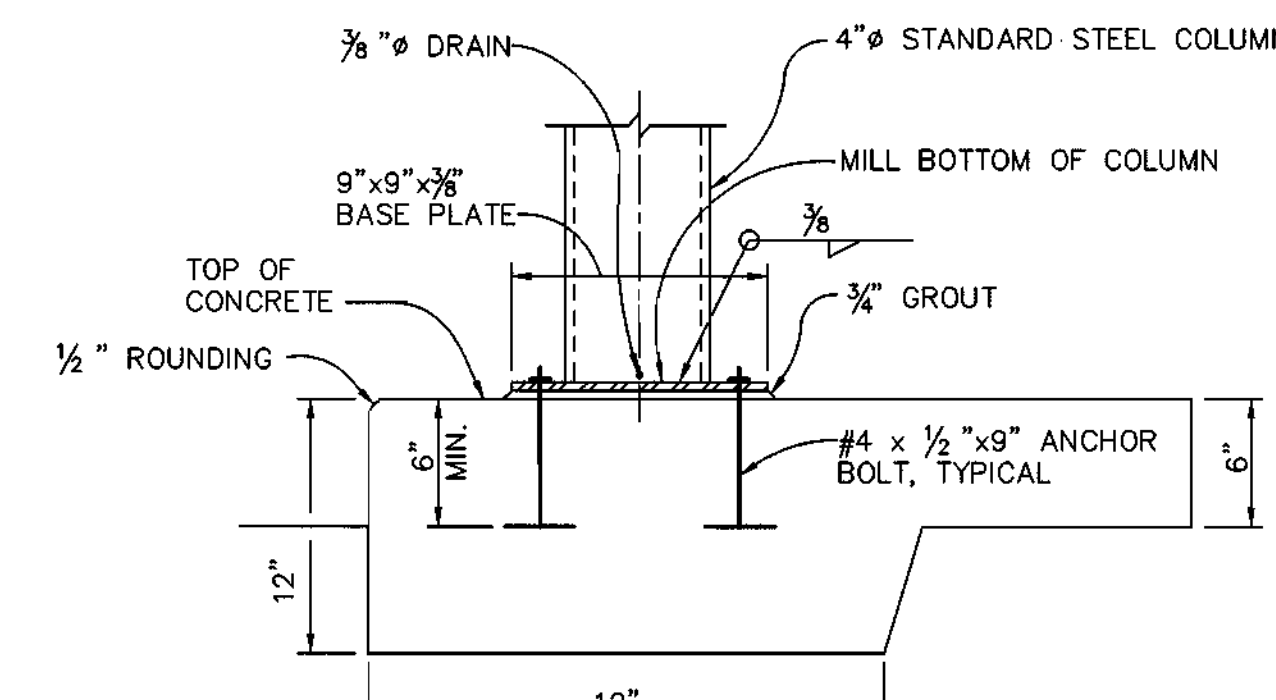
DETAIL A
 1" = 1'-0"



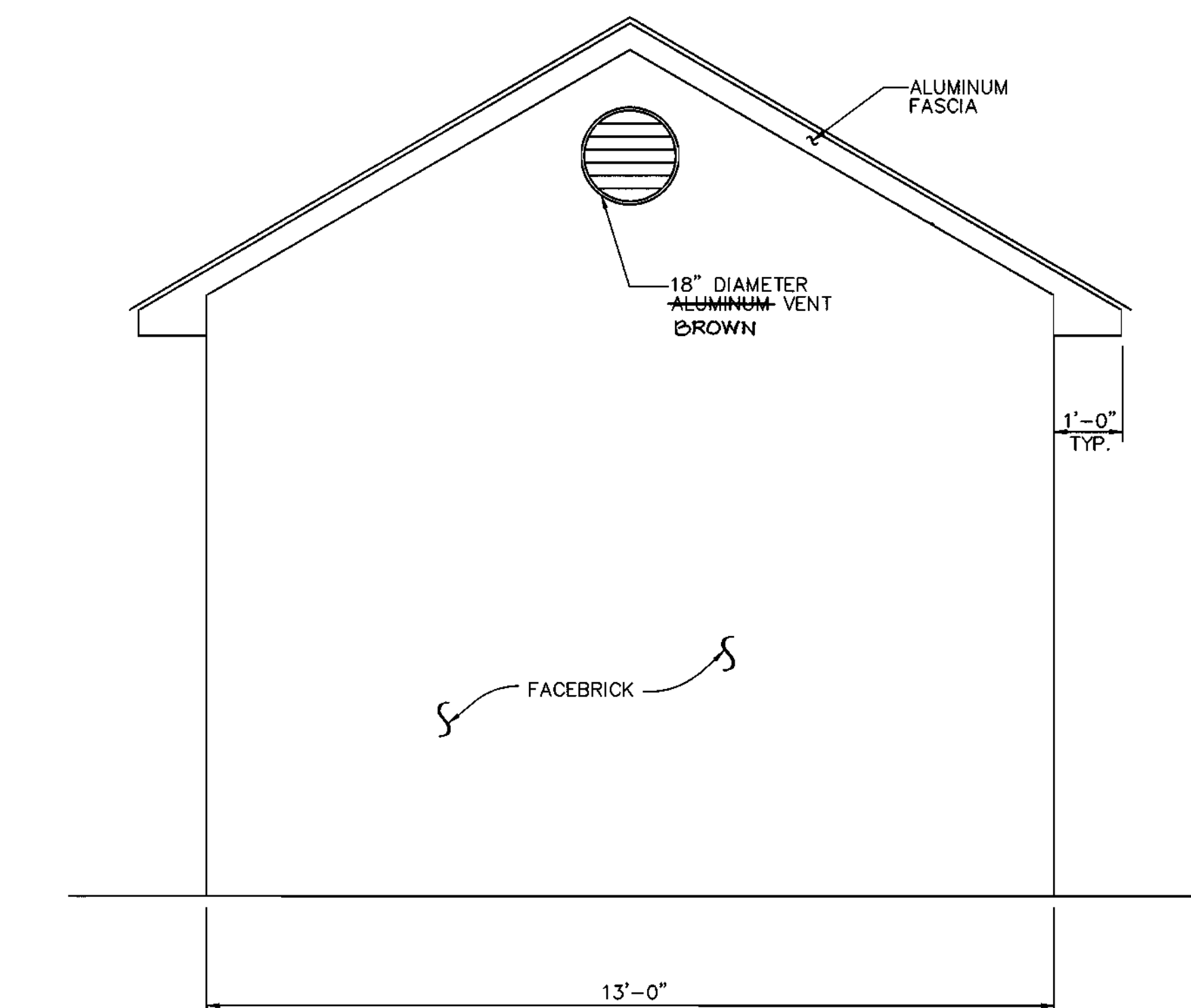
CONSTRUCT JOINT DETAIL
 N.T.S.



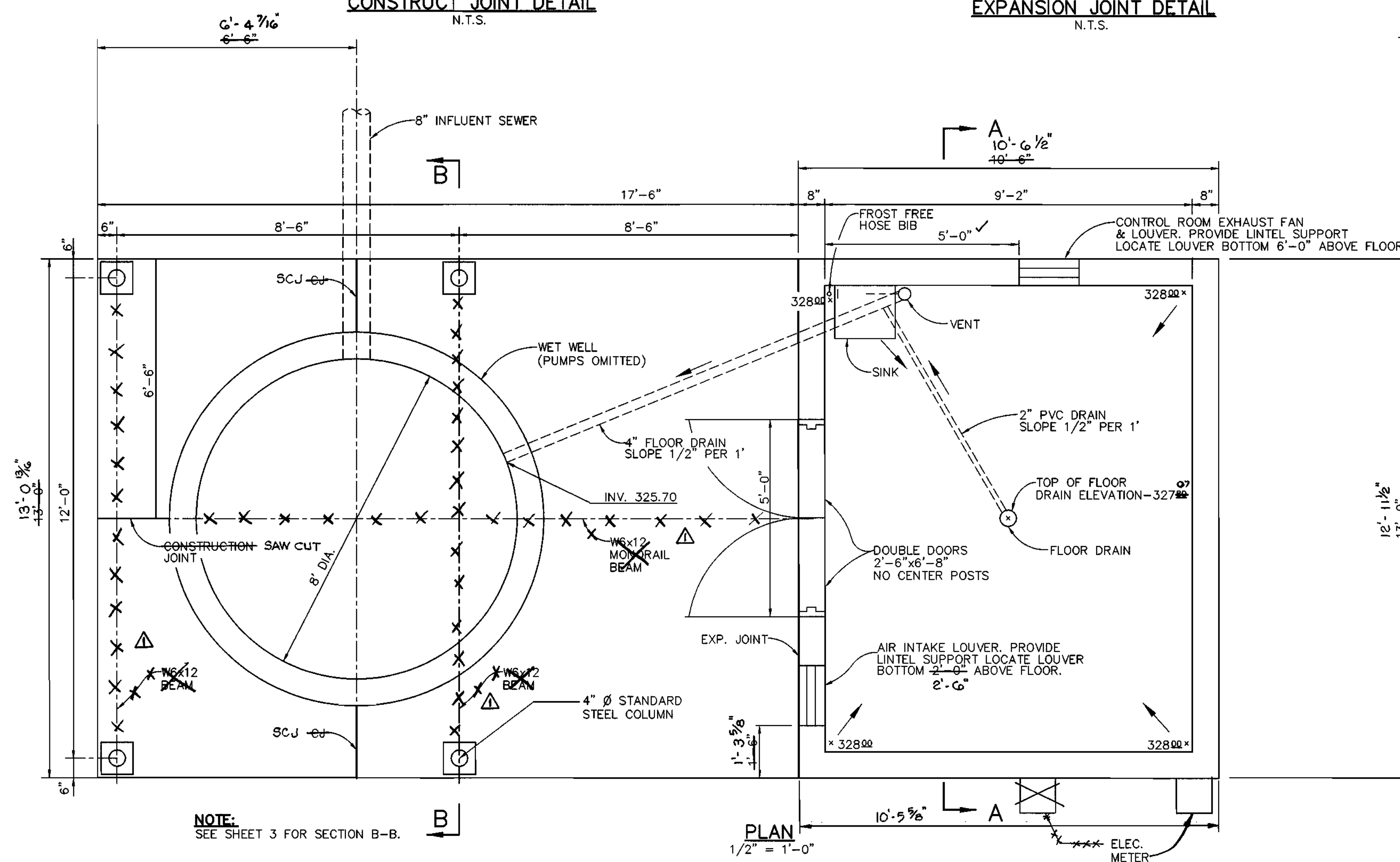
EXPANSION JOINT DETAIL
 N.T.S.



COLUMN BASE DETAIL
 N.T.S.

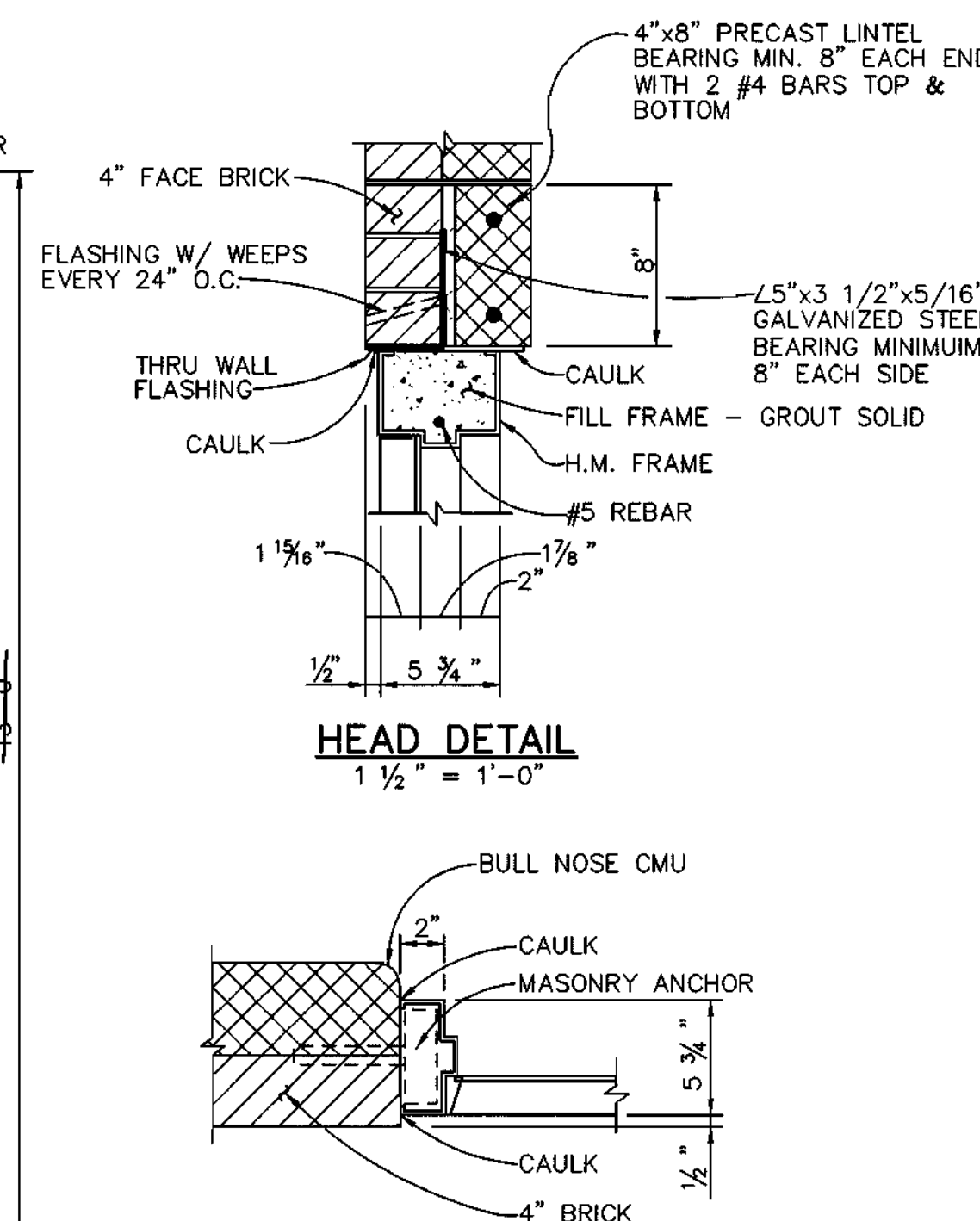


NORTH ELEVATION
 1/2" = 1'-0"

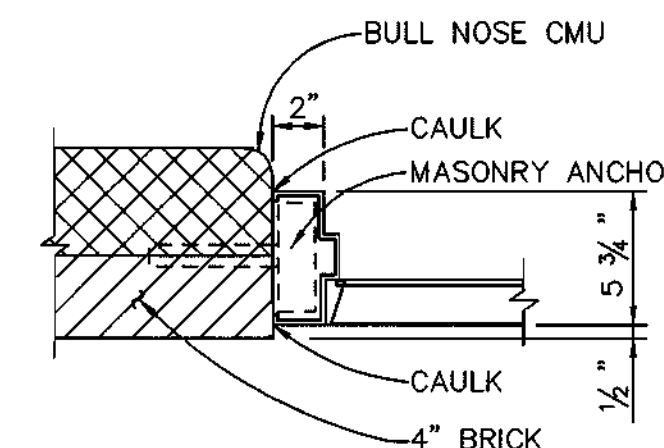


NOTE:
 SEE SHEET 3 FOR SECTION B-B.

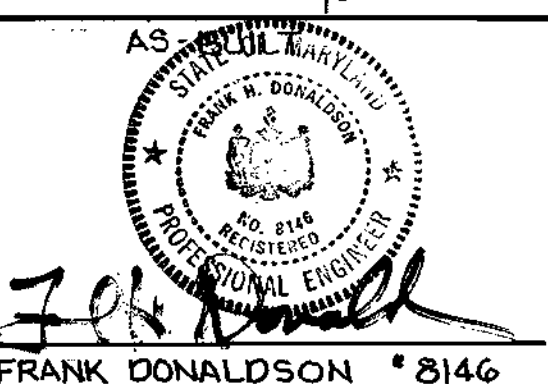
PLAN
 1/2" = 1'-0"



HEAD DETAIL
 1 1/2" = 1'-0"



JAMB DETAIL
 1 1/2" = 1'-0"



NORTH ELEVATION
 1/2" = 1'-0"

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND

RIEMER MUEGGE & ASSOCIATES, INC.
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 8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
 410-997-8900 FAX: 410-997-9282
 97001/40130/TITLESET.DWG



DES: J.S.C.	DATE: 8/98
DRN: E.L.R.	REVISE TOTAL SHEET # 11/6/00
CHK: G.C.L.	
DATE: 4/27/98	
BY NO.	REVISION
	DATE

CONTROL BUILDING
PLAN & DETAILS
ARCHITECTURAL/STRUCTURAL

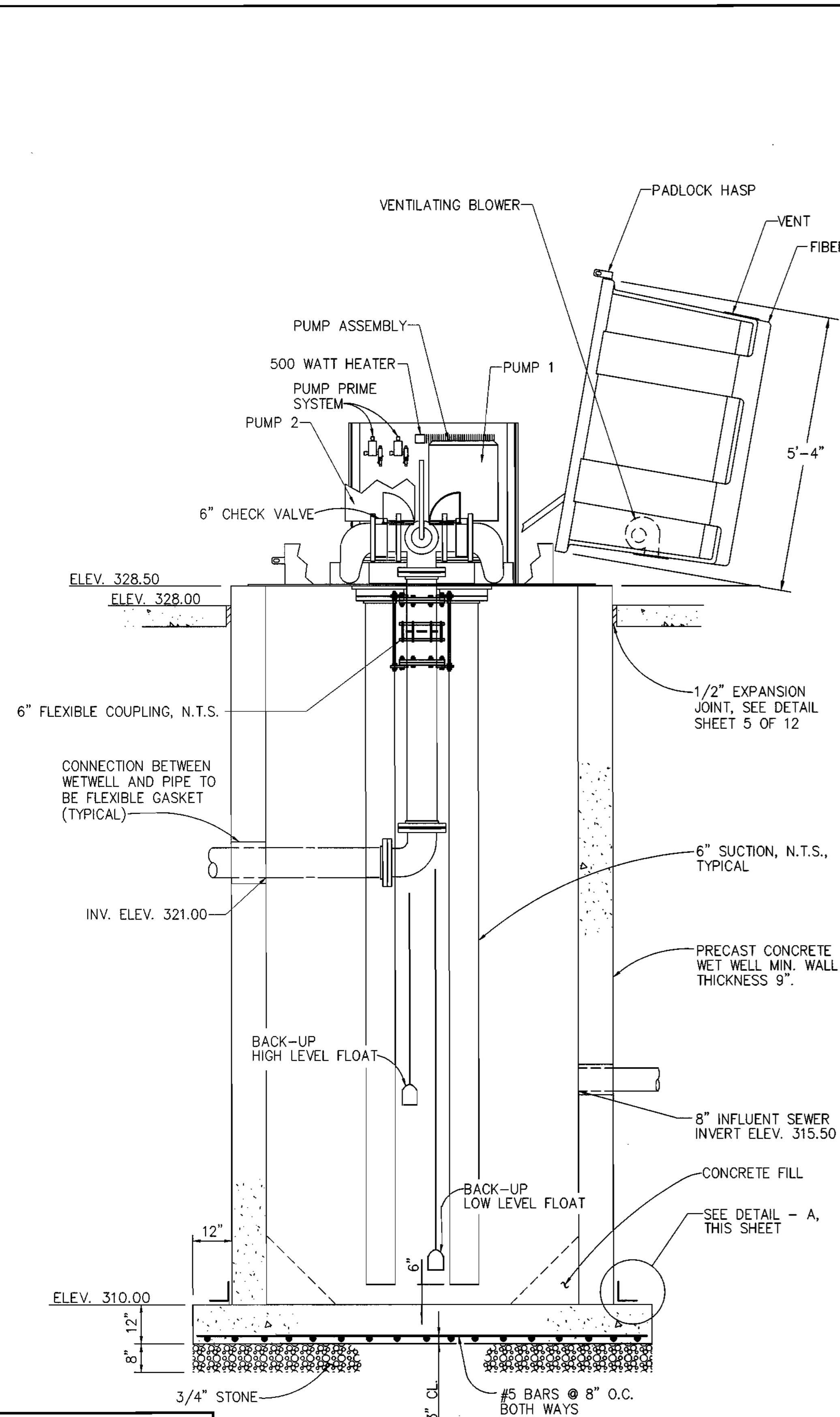
RESERVOIR OVERLOOK
PUMPING STATION
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 20-3664-D

SCALE
 AS
 SHOWN

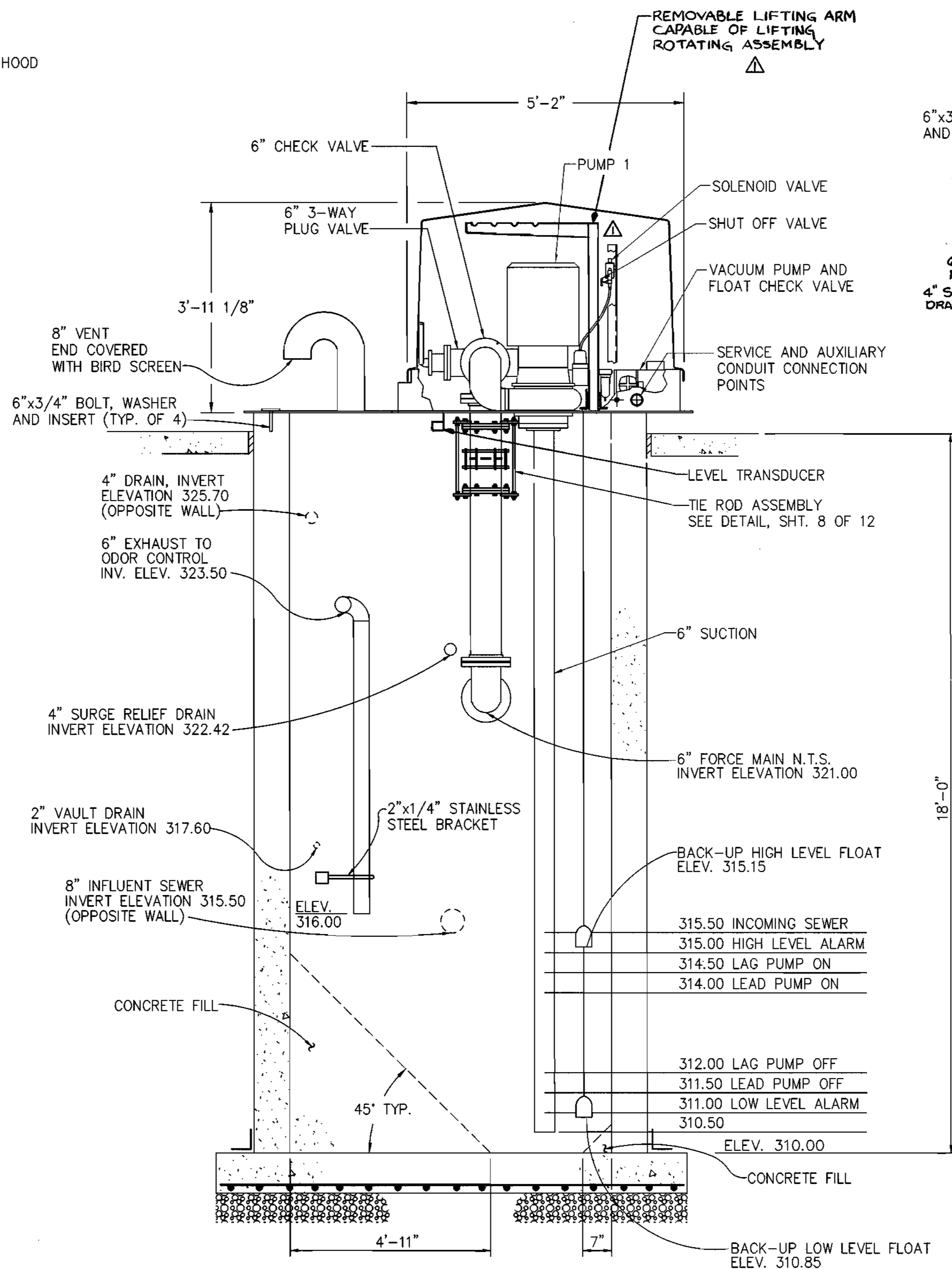
SHEET
 5 OF 15

5/1/98

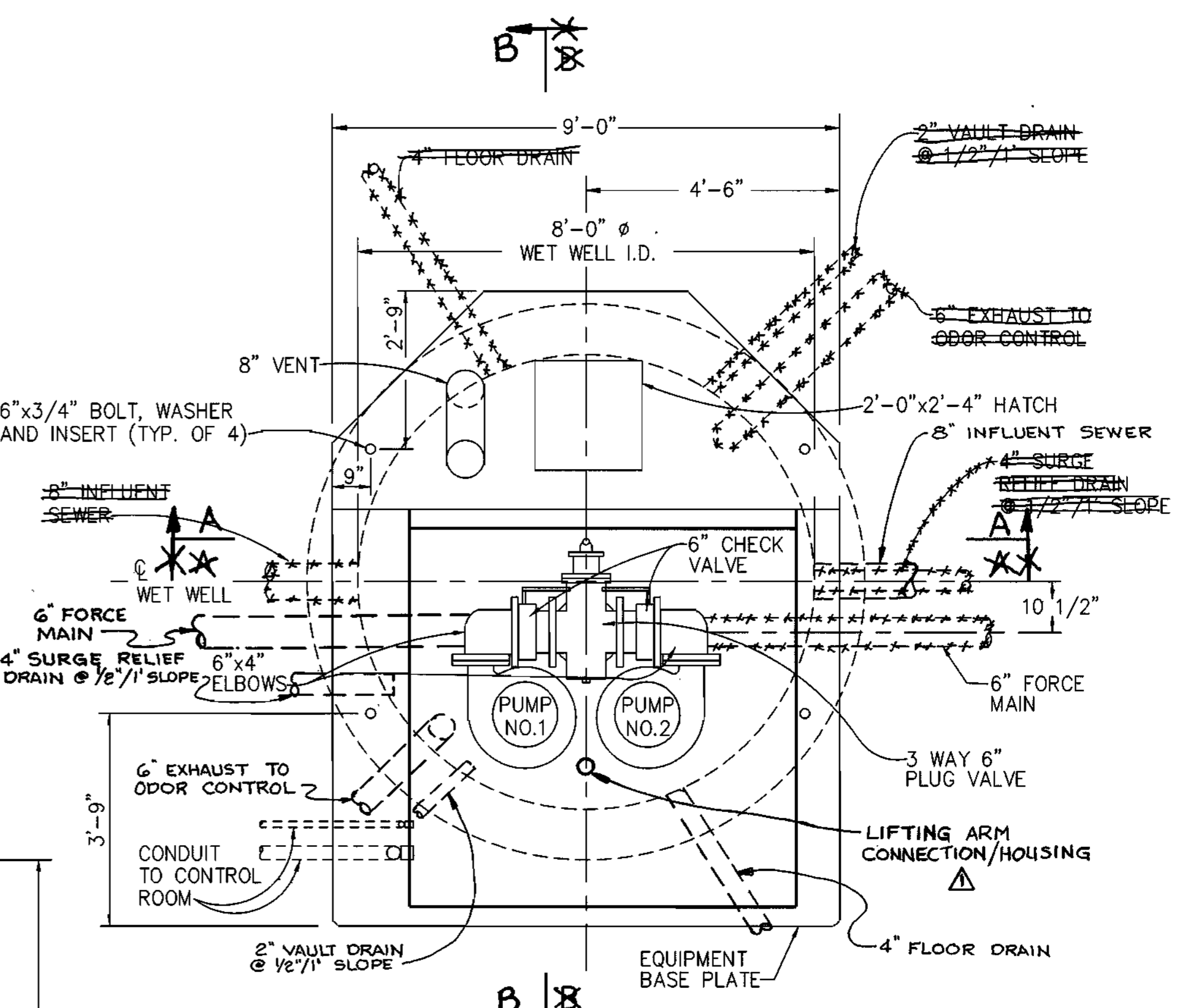
AS-BUILT 11/19/99



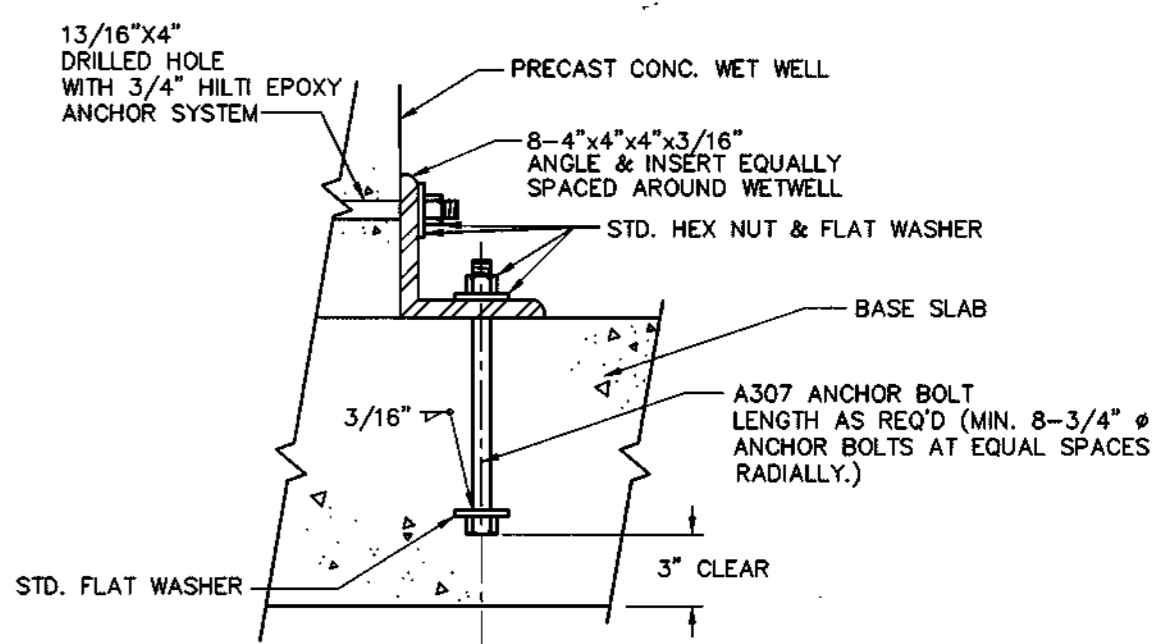
SECTIONAL ELEVATION A-A
SCALE: 1/2" = 1'-0"



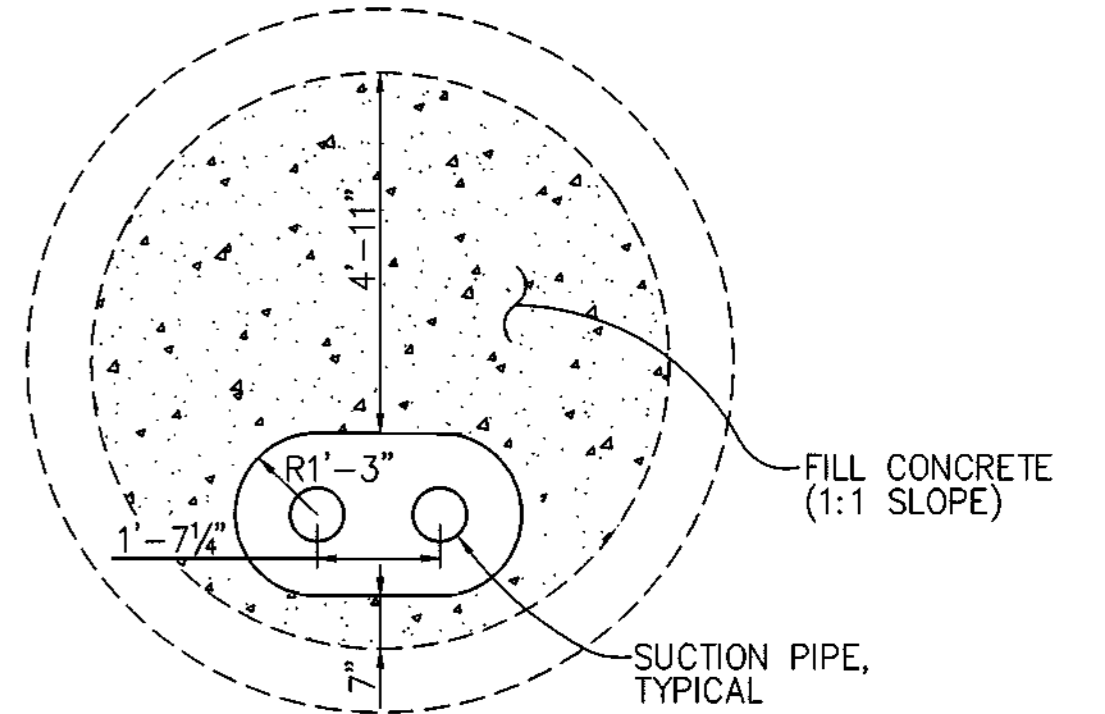
SECTIONAL ELEVATION B-B
SCALE: 1/2" = 1'-0"



PLAN VIEW
SCALE: 1/2" = 1'-0"
(SHOWN LESS HOOD)



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



WETWELL FLOOR PLAN
SCALE: 3/8" = 1'-0"

PUMPS: MODEL 4B2D 1760 RPM AS PROVIDED BY SMITH AND LOVELESS.
MOTORS: 20 HP 3 PHASE 60 HERTZ 460 VOLT.
IMPELLAR: 54L23

NOTE:
ALL CONNECTIONS BETWEEN WETWELL WALL AND PIPES SHALL BE SEALED WATER TIGHT WITH FLEXIBLE GASKET

AS-BUILT

FRANK DONALDSON #8146

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

Robert W. Benjamin
CHIEF, DEVELOPMENT ENGINEERING DIVISION

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
410-997-8900 FAX: 410-997-9282
97061/401MS/TTLSR01.DWG

STATE OF MARYLAND
PROFESSIONAL ENGINEER
FRANK DONALDSON #8146

DES:	J.S.C.	DATE:	4/27/98
DRN:	E.L.R.	BY:	NO.
CHK:	G.C.L.	REVISION:	
DATE:	4/27/98	DATE:	8/98
			7/16/00

WETWELL & PUMPING STATION MECHANICAL

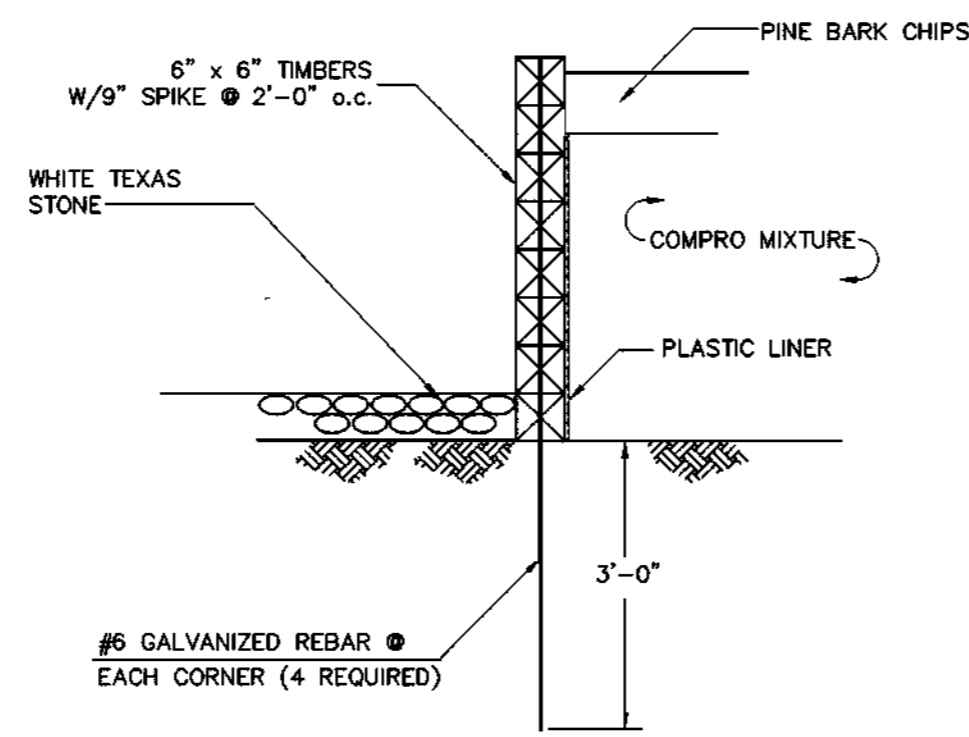
600' SCALE MAP NO. 46 BLOCK NO. 16

RESERVOIR OVERLOOK PUMPING STATION
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 20-3664-D

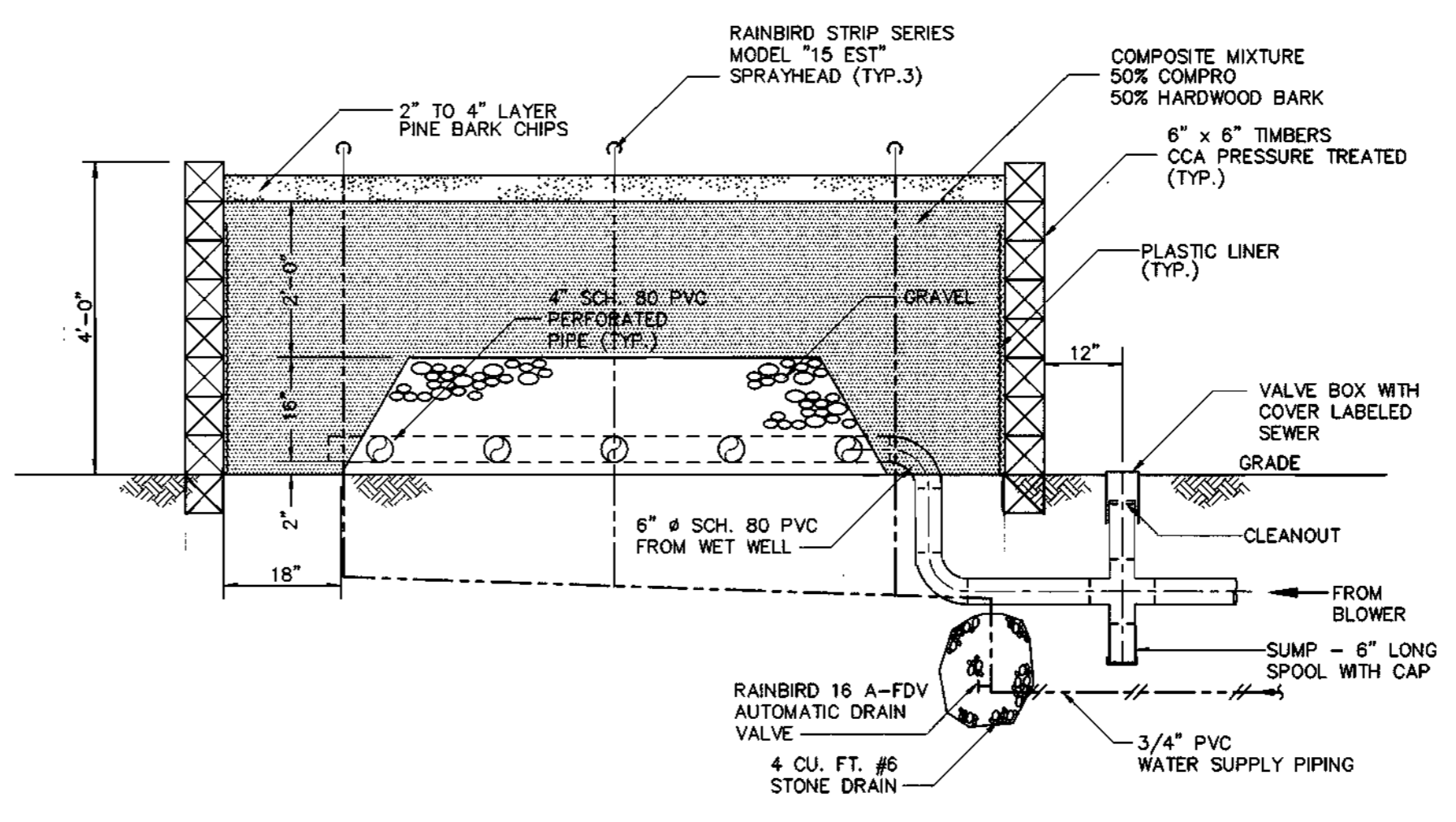
SCALE AS SHOWN
SHEET 6 OF 15

K:\PROJECT\97356\REVISED\DWG\SHIF F:\1 Apr 24 09:50:30 1998 RIEMER MUEGGE AND ASSOCIATES, INC.

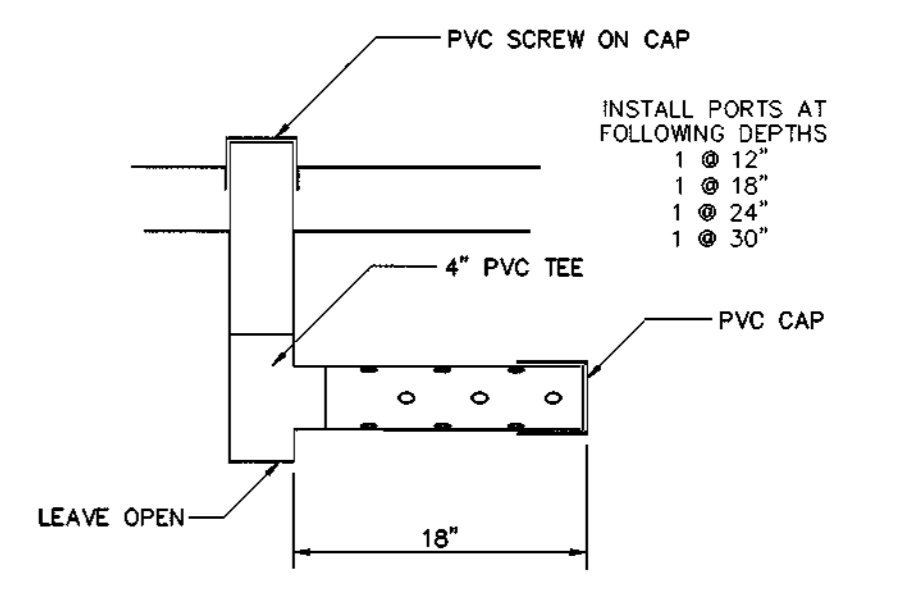
AS-BUILT 11/19/99



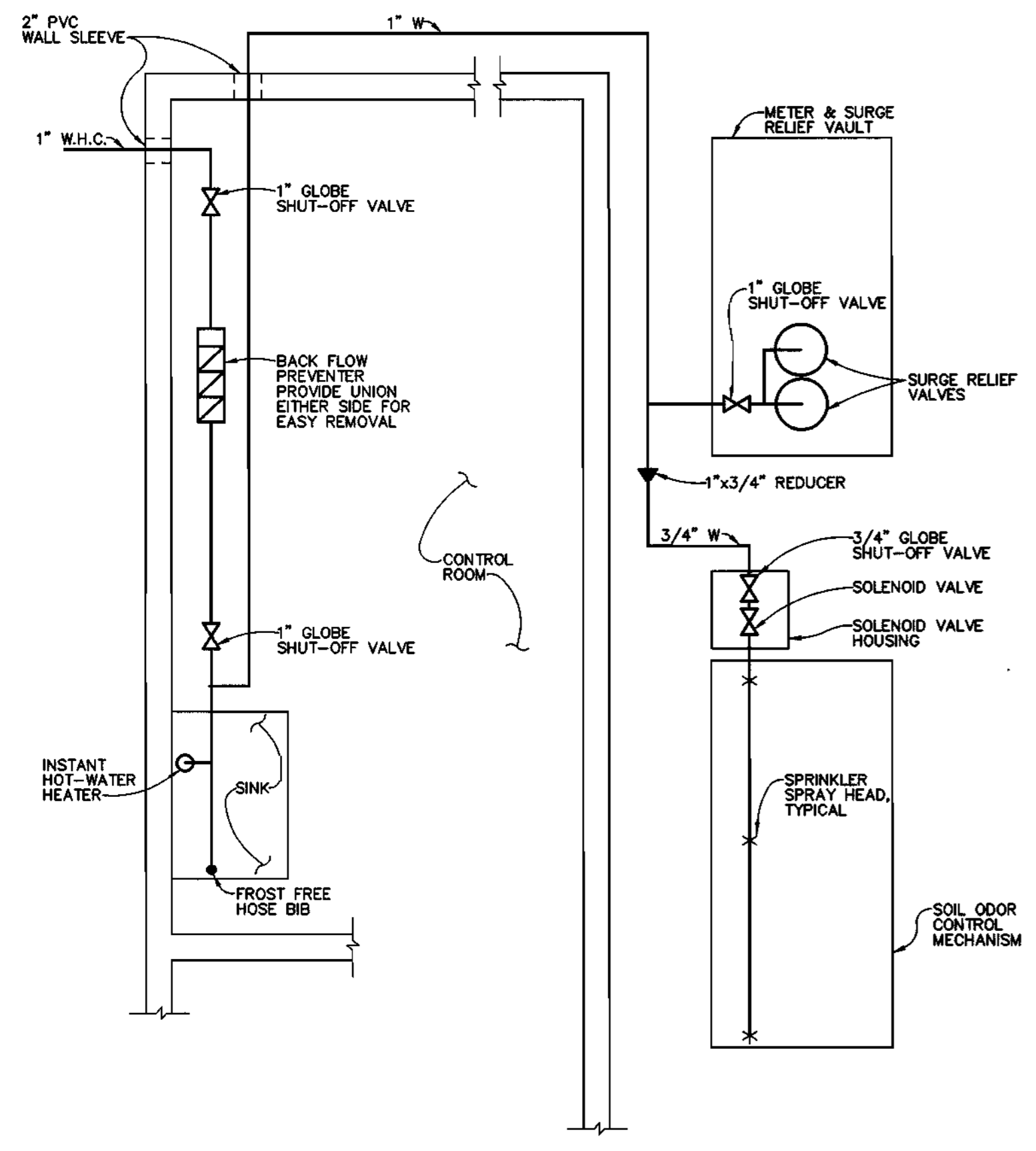
CORNER DETAIL
SCALE: 1/2" = 1'-0"



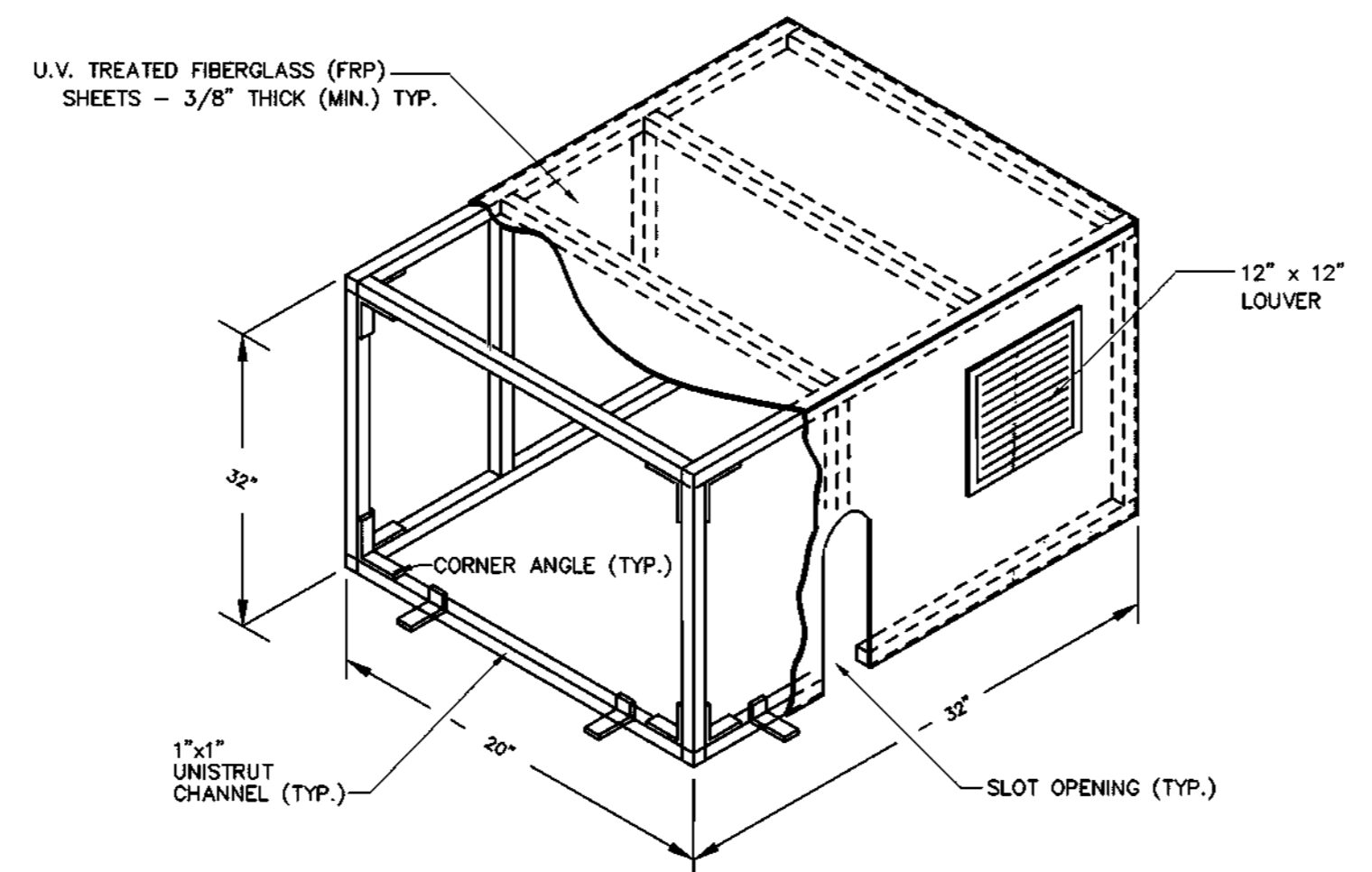
SECTION A-A
SCALE: 1/2" = 1'-0"



SAMPLING PORT
SCALE: 1" = 1'-0"

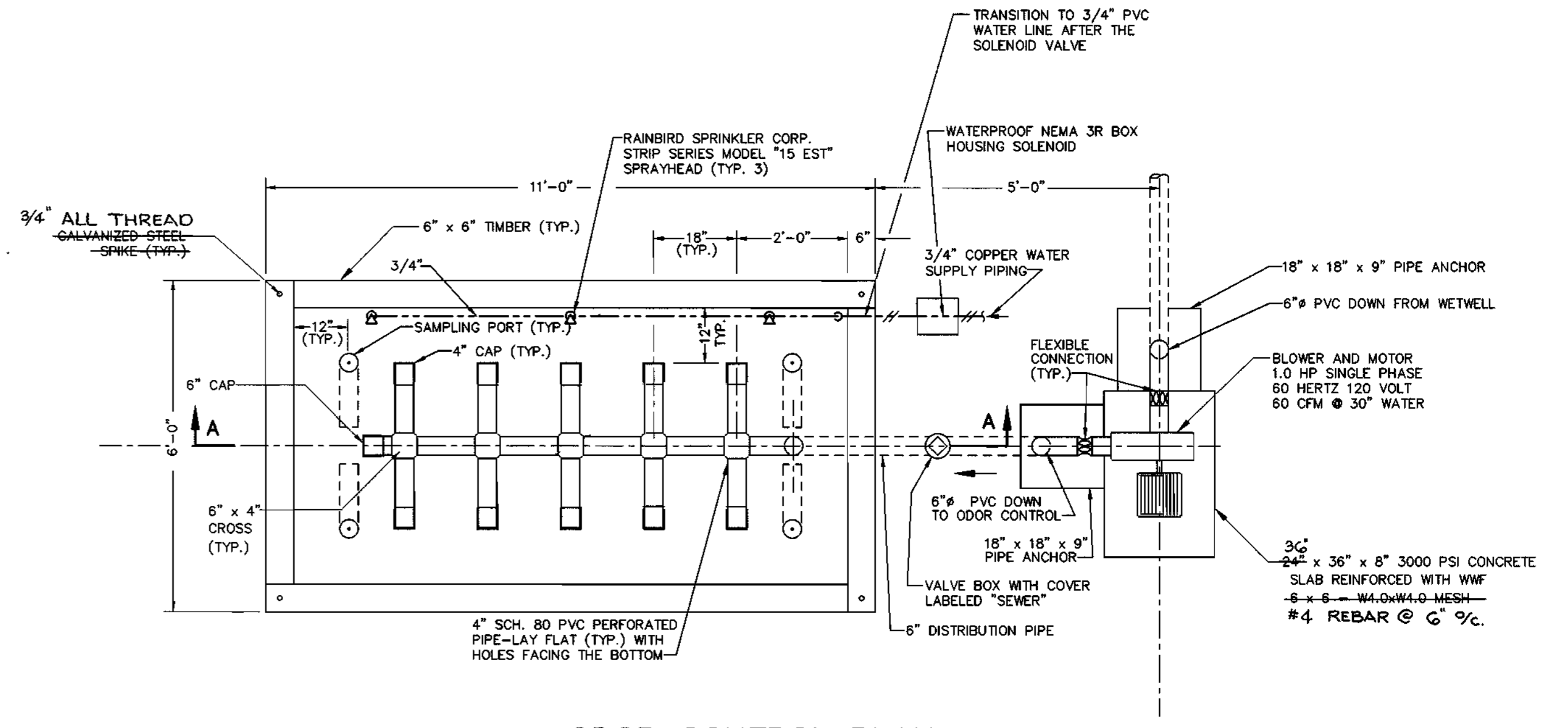


WATER SUPPLY SCHEMATIC
N.T.S.



BLOWER ENCLOSURE DETAIL
NOT TO SCALE

1. ALL DIMENSIONS ARE APPROXIMATE, CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
2. PROVIDE ADDITIONAL UNISTRUT AS REQUIRED FOR LOUVER SUPPORT AND RIGIDITY OF ENCLOSURE.
3. FIBERGLASS (FRP) SHEETS SHALL COVER ENTIRE STRUCTURE AND SHALL BE BOLTED TO UNISTRUT AS REQUIRED.
4. PROVIDE ADDITIONAL OPENINGS FOR PIPE PENETRATIONS AS REQUIRED.
5. STRUCTURE SHALL HAVE CORNER ANGLES (TWO PER SIDE) FOR BOLTING DOWN TO THE CONCRETE PAD.
6. ENCLOSURE SHALL HAVE 1/2" THICK U.L. APPROVED DUCT LINER GLUED TO INSIDE FACE OF FRP PANELS.



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

- NOTES:**
1. PROVIDE MINIMUM 24" MULCH MIXTURE BETWEEN GRAVEL AND TIMBER STRUCTURE.
 2. CONTAIN GRAVEL DURING PLACEMENT WITH TEMPORARY FRAMEWORK. REMOVE TEMPORARY FRAMEWORK AFTER COMPOSITE MIXTURE IS IN PLACE AROUND GRAVEL.
 3. 6 x 6 TIMBERS SHALL MEET AASHTO M168. MARINE GRADE, TREATED WITH CHROMATED COPPER ARSENATE (CCA) AT A RATE OF 2.5 LBS. PER CU. FT. OF WOOD AND SHALL MEET AASHTO M133.

AS-BUILT

Frank Donaldson
FRANK DONALDSON #8146

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Chief, Bureau of Utilities
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

Chieft. Development Engineering Division
CHIEFT. DEVELOPMENT ENGINEERING DIVISION DATE

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
410-997-8900 FAX: 410-997-9282
97081/401MS/UTL1887.DWG

STATE OF MARYLAND
FRANK DONALDSON #8146
PROFESSIONAL ENGINEER

DES: J.S.C.	SVP	2	REVISE TOTAL SHEET #	7/16/00
DRN: E.L.R.				
CHK: G.C.L.				
DATE: 4/27/98				
BY NO.		REVISION		DATE

ODOR CONTROL SYSTEM
MECHANICAL

600' SCALE MAP NO. 46 BLOCK NO. 16

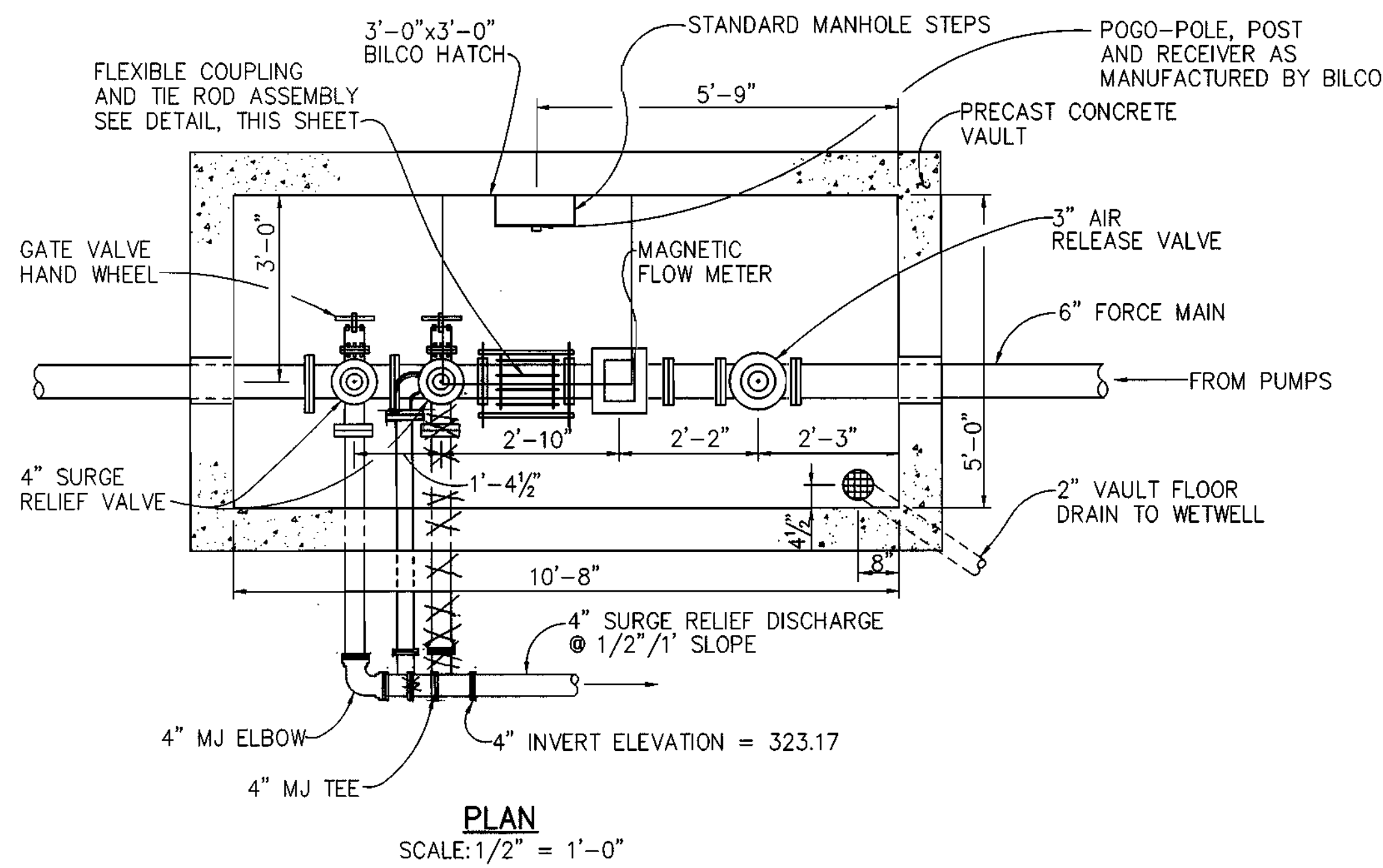
RESERVOIR OVERLOOK
PUMPING STATION
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 20-3664-D

SCALE AS SHOWN

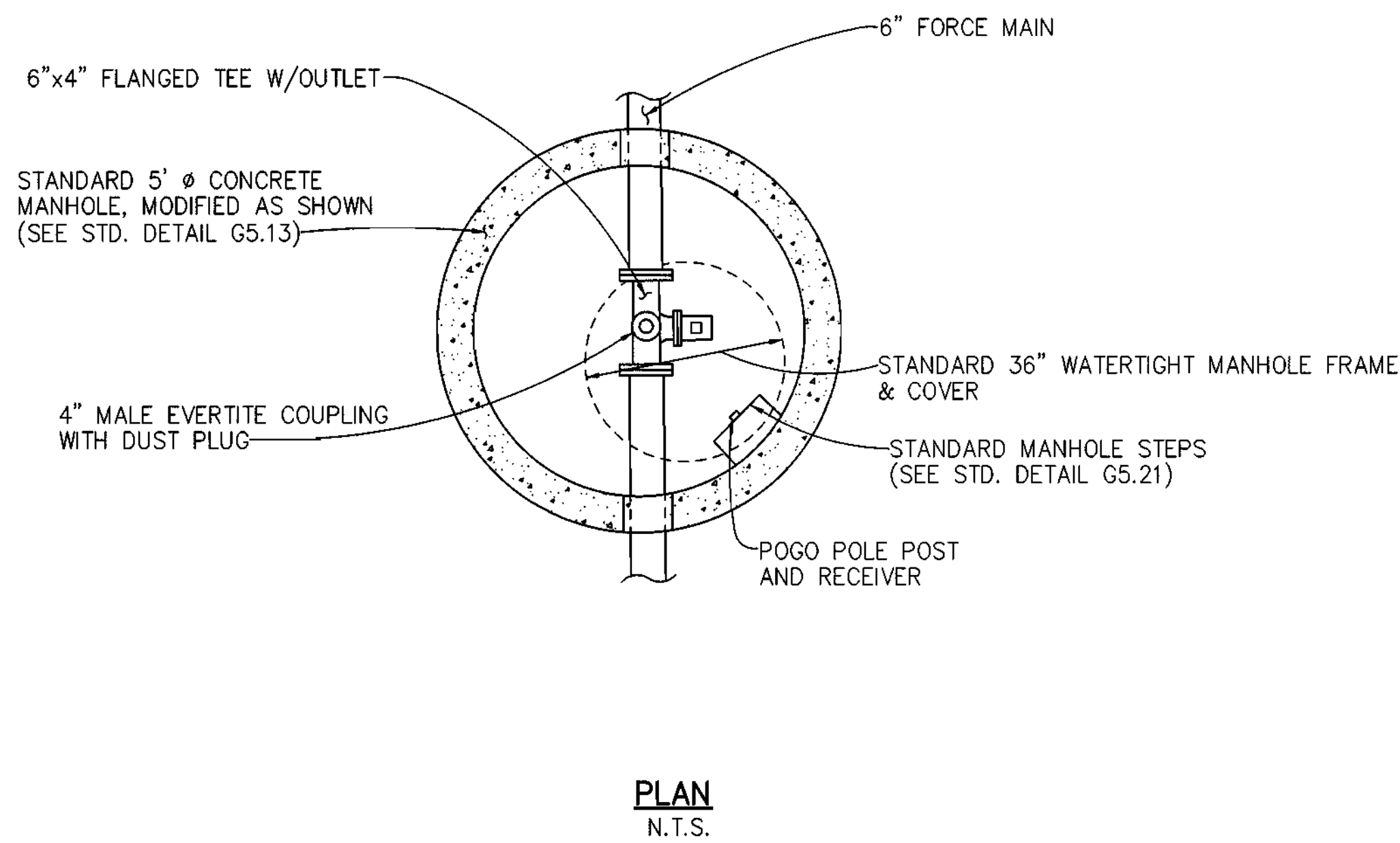
SHEET 7 OF 15

K:\PROJECT\9756\VIEW\510\UTL1887.DWG P1 Apr 24 09:49:46 1998 RIEMER MUEGGE AND ASSOCIATES, INC.

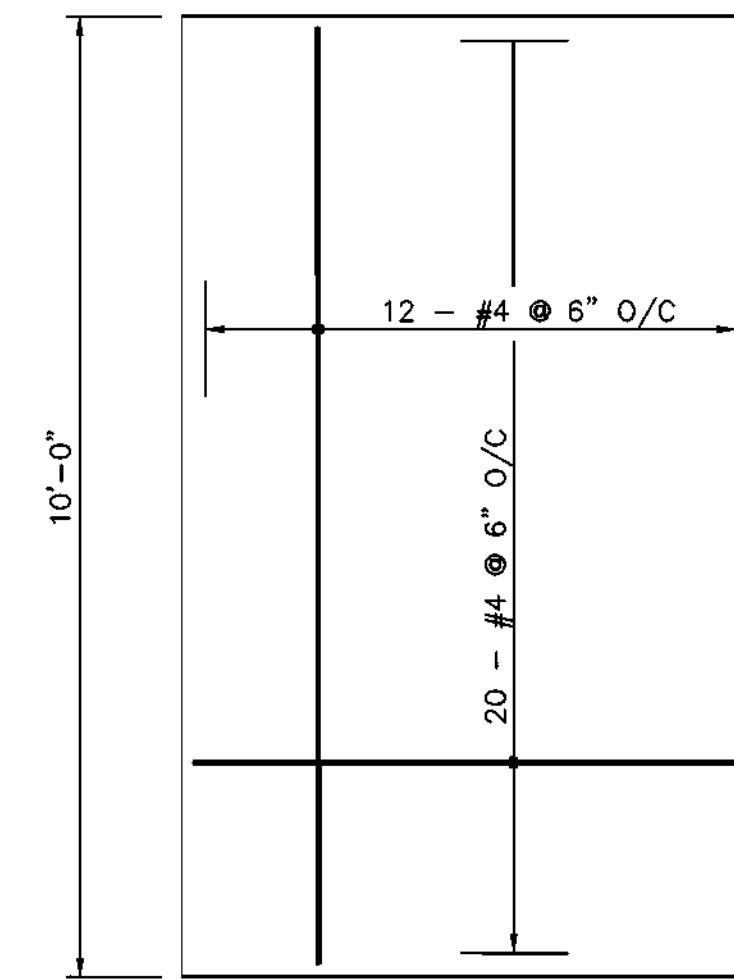
AS-BUILT 11/19/99



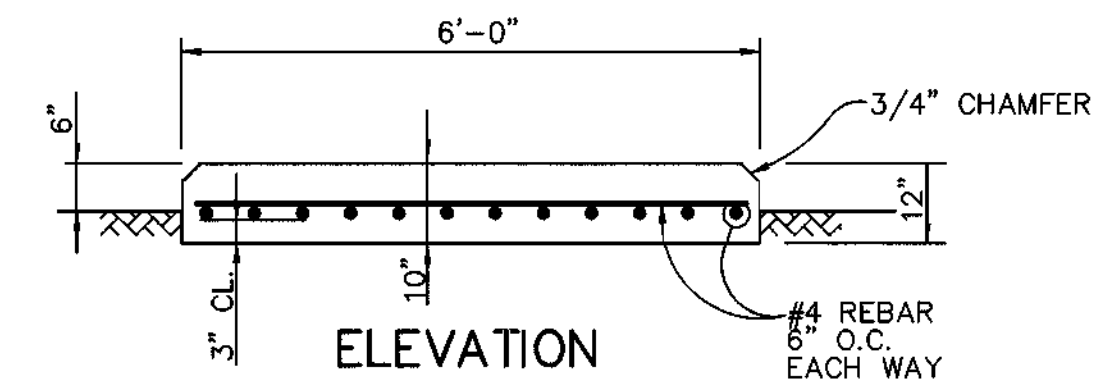
PLAN
SCALE: 1/2" = 1'-0"



PLAN
N.T.S.

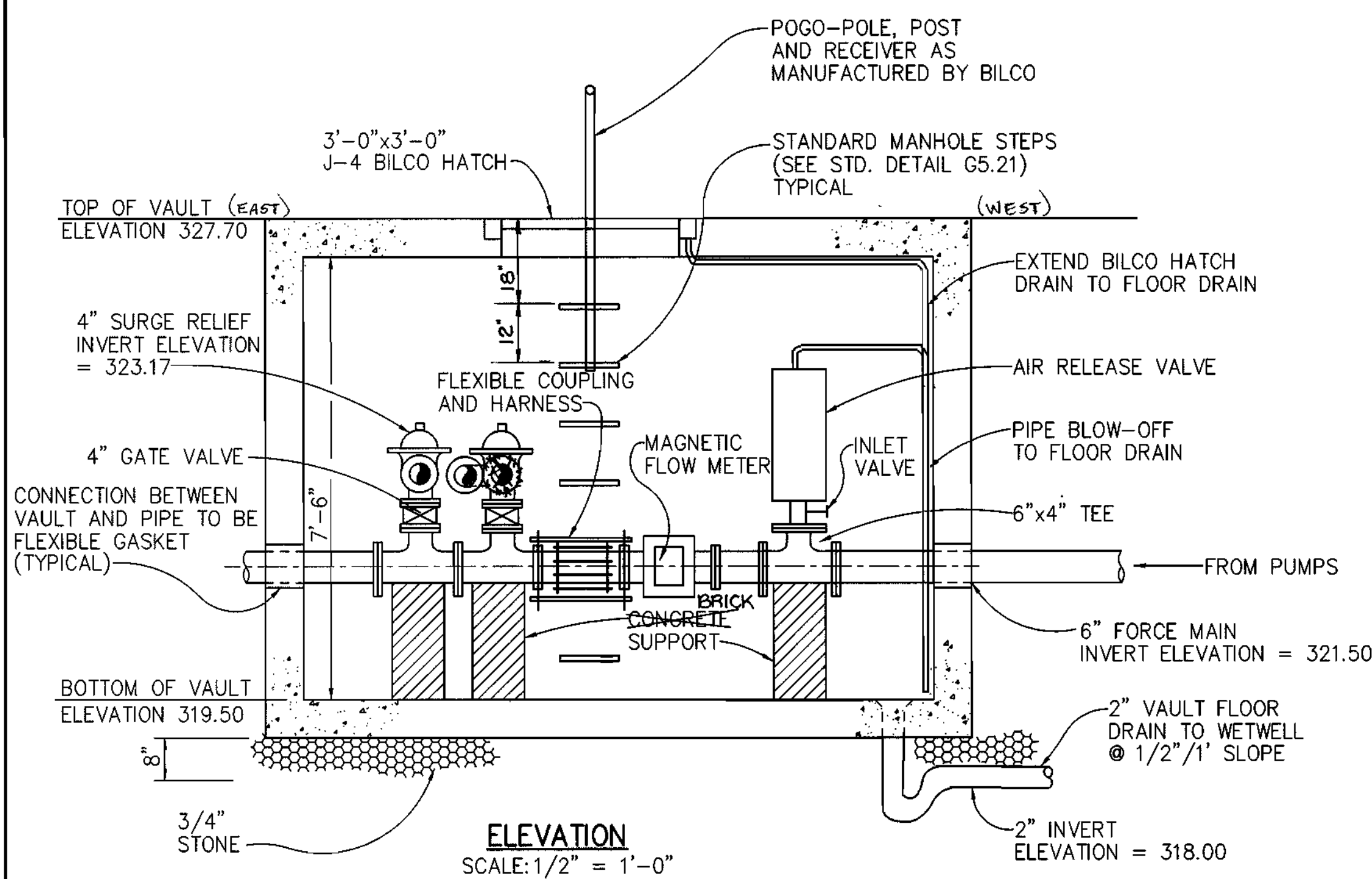


PLAN



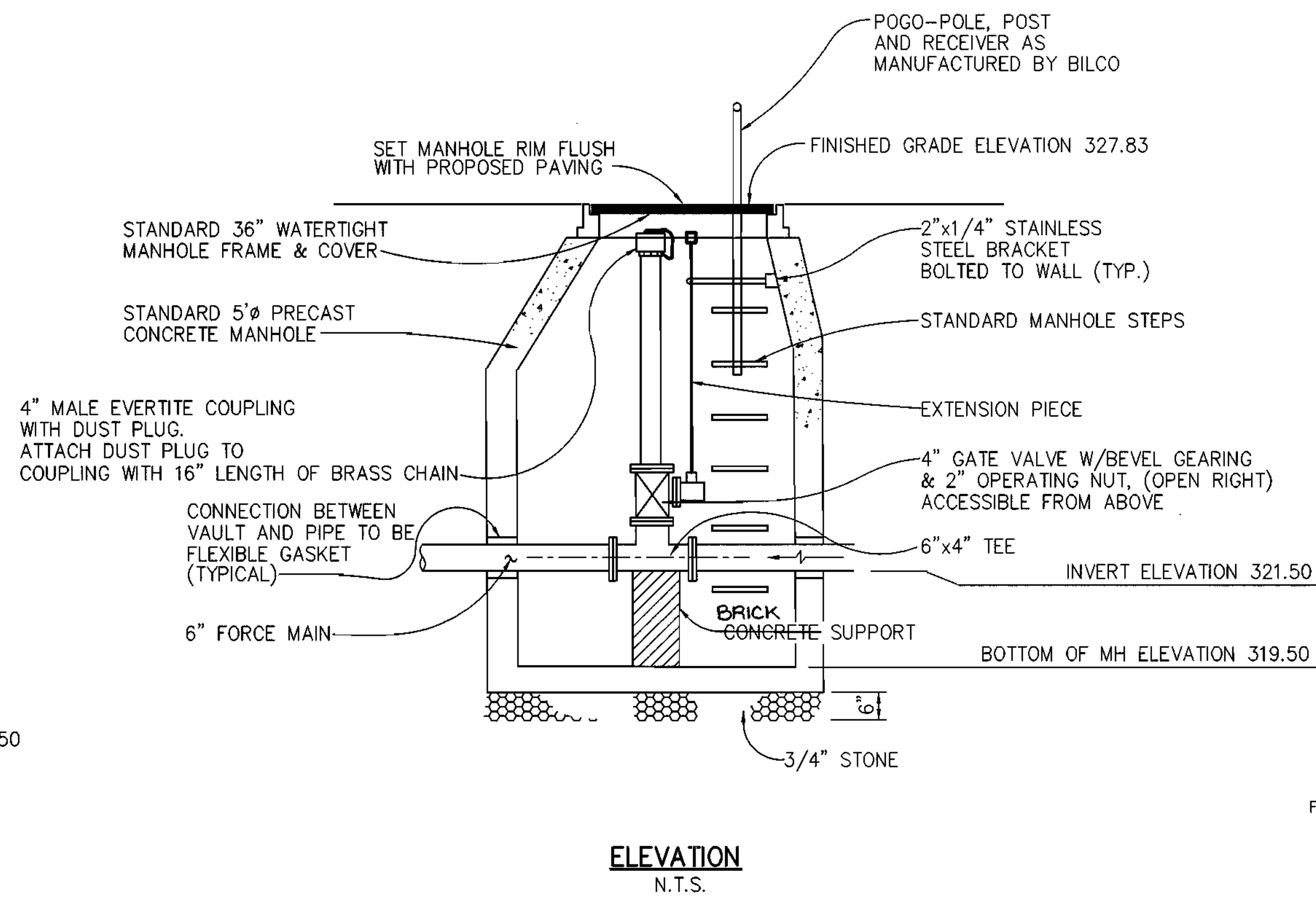
ELEVATION

GENERATOR PAD DETAIL
NOT TO SCALE



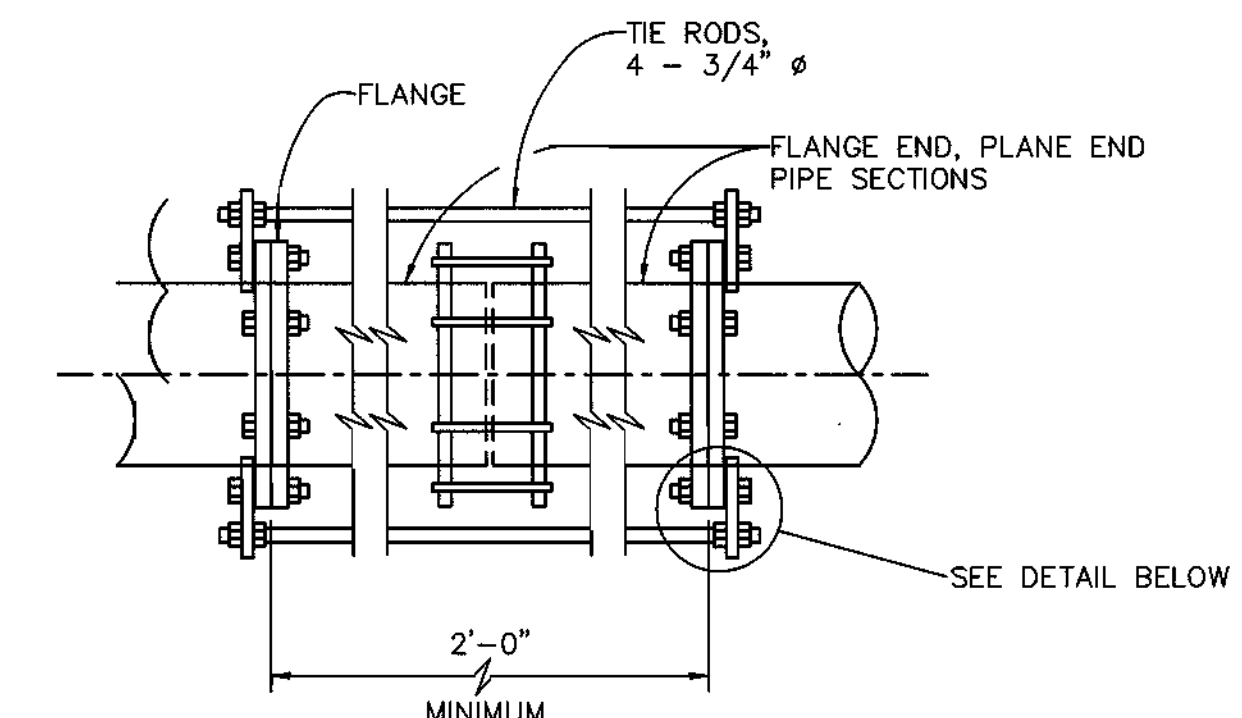
ELEVATION
SCALE: 1/2" = 1'-0"

METER AND SURGE RELIEF VAULT

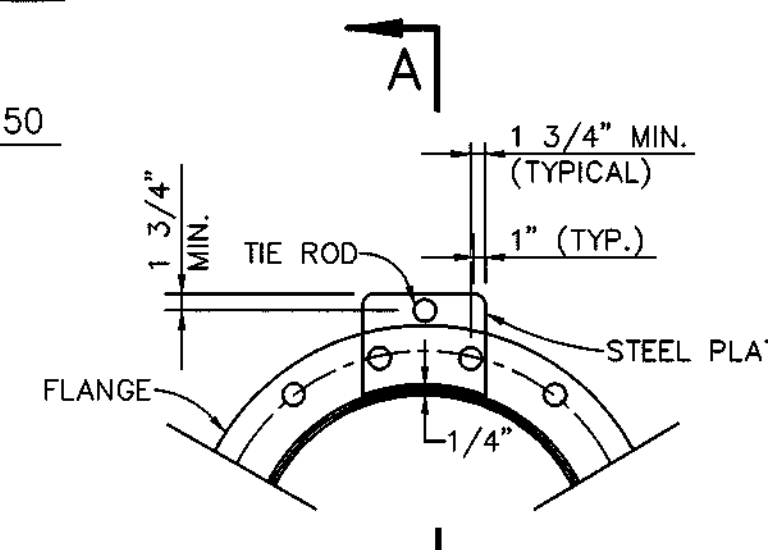


ELEVATION
N.T.S.

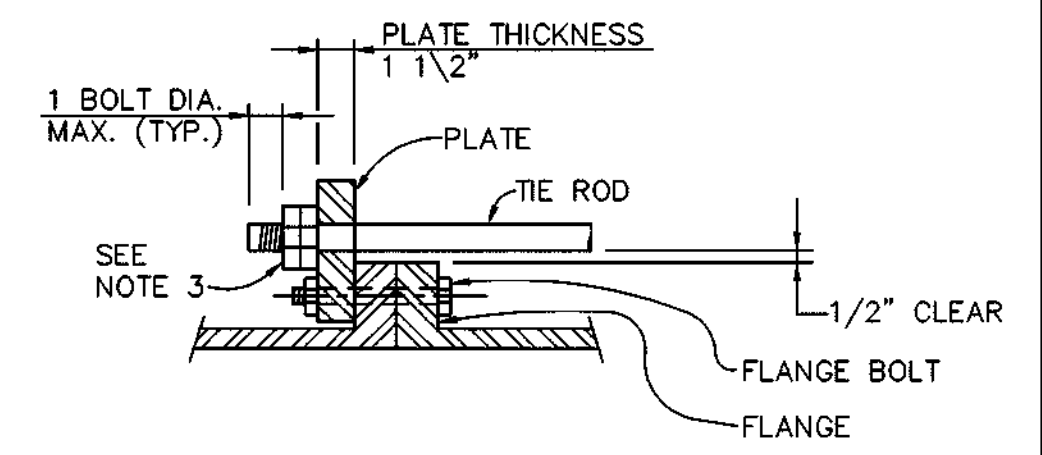
BY-PASS PUMPING MANHOLE



PLAN



ELEVATION



SECTION A-A

NOTES

1. TIE RODS SHALL CONFORM TO ASTM A-588 SPECIFICATION.
2. STEEL PLATE SHALL CONFORM TO ASTM A-36 SPECIFICATION.
3. INSIDE NUT TO BE HAND TIGHT AND TWO NUTS SHALL BE TIGHTENED AGAINST EACH OTHER.
4. WHEN THE STRAPPING ASSEMBLY IS LOCATED NEAR THE FLANGED VALVE, PROVIDE A FLANGED SPOOL PIECE (1" MIN. LENGTH) BETWEEN THE VALVE AND ASSEMBLY IN ORDER TO AVOID STRAPPING DIRECTLY TO THE VALVE.

TIE ROD ASSEMBLY
NOT TO SCALE

AS-BUILT

FRANK DONALDSON #8146

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

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FRANK DONALDSON #8146

DES:	J.S.C.	5/19	2	REVISE TOTAL SHEET #	7/16/00
DRN:	E.L.R.				
CHK:	G.C.L.				
DATE:	4/27/98				
BY:	NO.			REVISION	DATE

METER/VALVE VAULT AND
BY-PASS PUMPING MANHOLE

RESERVOIR OVERLOOK
PUMPING STATION
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 20-3664-D

SCALE
AS
SHOWN

SHEET
8 OF 15

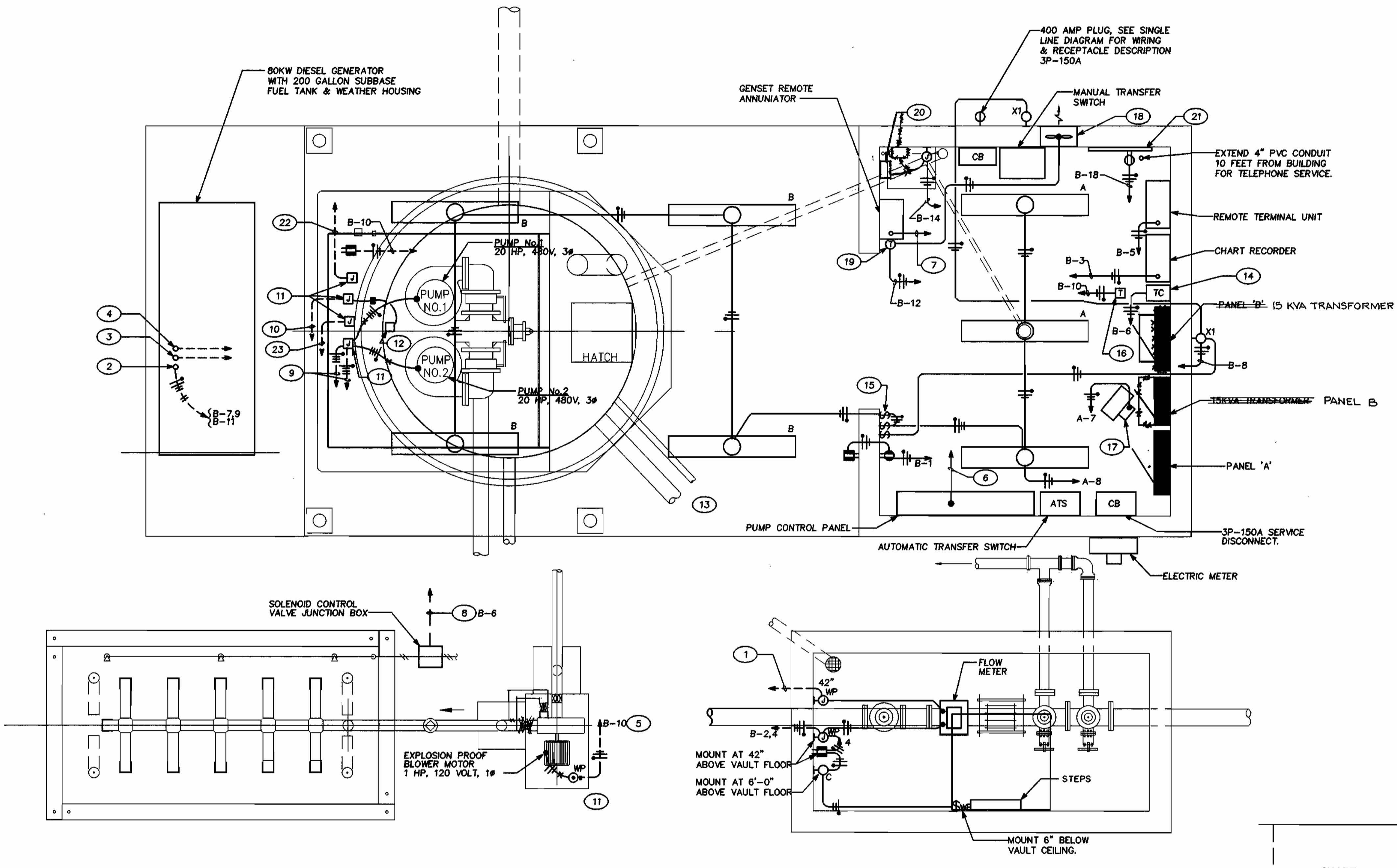
5/1/98

AS-BUILT 11/19/99

600' SCALE MAP NO. 46 BLOCK NO. 16

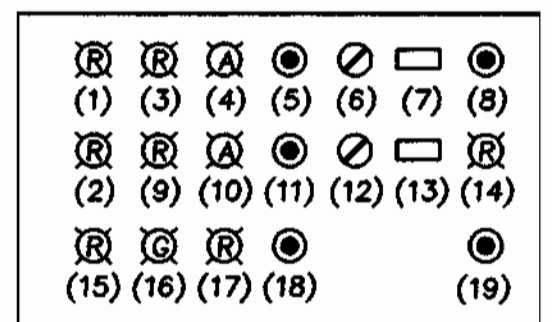
PLAN NOTES:

- 1 1/2" CONDUIT WITH DATA CABLE TO CHART RECORDER.
- 2 PROVIDE CONNECTION TO GENSET BATTERY CHARGER, BATTERY HEATER & BLOCK HEATER.
- 3 PROVIDE 2#10 & 1#10 GROUND IN 3/4" CONDUIT FROM 12VDC BATTERY SUPPLY TO TELEMETRY POWER SUPPLY IN REMOTE TERMINAL UNIT.
- 4 PROVIDE 2#14 IN 1" CONDUIT TO GENERATOR REMOTE ANNUNCIATOR PANEL.
- 5 TO PANEL A VIA BLOWER MOTOR MANUAL MOTOR STARTER SWITCH. PROVIDE CONDUIT SEAL AT HOMERUN.
- 6 PROVIDE 3#18 IN 1-1/2" CONDUIT TO REMOTE TERMINAL UNIT FOR ALARMS. PROVIDE 10#14 IN 3/4" CONDUIT TO REMOTE TERMINAL UNIT FOR LEVEL CONTROLS.
- 7 4#18 IN 1/2" CONDUIT TO TELEMETRY CONTROL PANEL FOR GENERATOR FAILURE & GENERATOR RUN.
- 8 2 #12 & 1 #12 GROUND IN 3/4" CONDUIT TO REPEAT CYCLE TIMER IN CONTROL ROOM. PROVIDE CONNECTION TO SOLENOID VALVE.
- 9 PROVIDE 2 SETS OF 3 #8 & 1 #10 GROUND IN 1" CONDUIT. PROVIDE 3 #8 & 1 #10 GROUND IN LIQUIDTIGHT FLEXIBLE METAL CONDUIT TO EACH PUMP MOTOR.
- 10 PROVIDE 3/4" CONDUIT WITH RG-62U COAXIAL CABLE FROM WET WELL TRANSDUCER TO ULTRASONIC LEVEL CONTROLLER.
- 11 PROVIDE CONDUIT STUP-UP WITH CONDUIT SEAL & LIQUIDTIGHT FLEXIBLE METAL CONDUIT CONNECTION TO MOTOR.
- 12 PROVIDE PVC COATED STEEL CHANNEL & MOUNT LEVEL TRANSDUCER IN WET WELL. LOCATION TO BE AS RECOMMENDED BY MANUFACTURER. PROVIDE CONDUIT SEALS AT PENETRATION TO WET WELL.
- 13 SEE ELEVATION ON THIS DRAWING.
- 14 REPEAT CYCLE TIMER FOR CONTROL OF SOLENOID VALVE.
- 15 PROVIDE IDENTIFICATION CABLES FOR EACH SWITCH AS FOLLOWS "CANOPY LIGHTS", "STATION LIGHTS", AND "SECURITY LIGHTS".
- 16 BLOWER MOTOR MANUAL MOTOR STARTER SWITCH, MOUNT ABOVE REPEAT CYCLE TIMER.
- 17 PROVIDE UNIT HEATER: 3 KW, 480 VOLT, 1ϕ (Q-MARK No. "MUH-03-41" OR EQUAL). HEATER SHALL CONTAIN LOW VOLTAGE CONTROL TRANSFORMER AND INTERNAL THERMOSTAT. PROVIDE CEILING MOUNTING BRACKET.
- 18 PROVIDE STEEL PROPELLER WALL FAN, EQUAL TO "COOK No. 10515D, 1150 RPM, FAN SIZE 8, 1/25 HP, 120 VOLT, 1ϕ.
- 19 PROVIDE LINE VOLTAGE THERMOSTAT WITH ON-OFF CONTROL FOR FAN MOTOR.
- 20 INSTANT HOT WATER HEATER: 4.6 KW, 208 VOLT, 1ϕ.
- 21 PROVIDE 4"x4"x3/4" THICK FIRE RATED TELEPHONE BACKBOARD.
- 22 PROVIDE 13 #12 IN 1" CONDUIT TO PUMP CONTROL PANEL. PROVIDE LIQUIDTIGHT FLEXIBLE METAL CONDUIT CONNECTIONS TO VENTILATION MOTOR, HEATER, AND (2) VACUUM PUMPS AND (2) SOLENOID VALVES.
- 23 PROVIDE 4 #14 IN 3/4" CONDUIT TO REMOTE TERMINAL UNIT FOR BACKUP HIGH LEVEL AND LOW LEVEL ALARM FLOAT. PROVIDE 4 #14 TO FLOAT SWITCH IN WET WELL. PROVIDE CONDUIT SEAL AT PENETRATION TO WET WELL.



STATION PLAN - ELECTRICAL

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

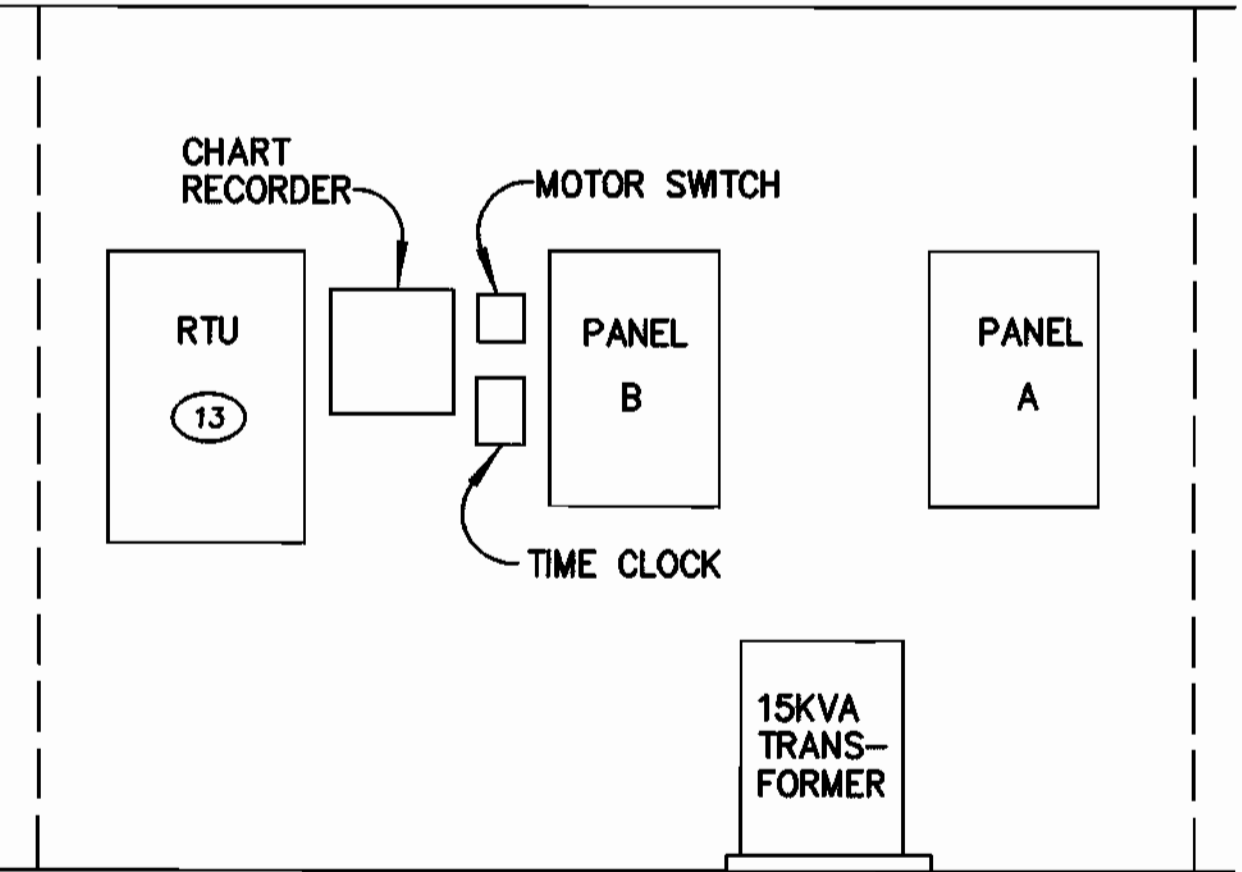


REMOTE TERMINAL UNIT (RTU) ELEVATION

NO SCALE
 NOTES: ENCLOSURE TO BE NEMA 1 WITH KEY-LOCKED HANDLE - PIANO HINGED DOOR. VIEW WINDOW SHALL ALLOW FULL VIEW OF ULTRASONIC LEVEL INDICATORS.

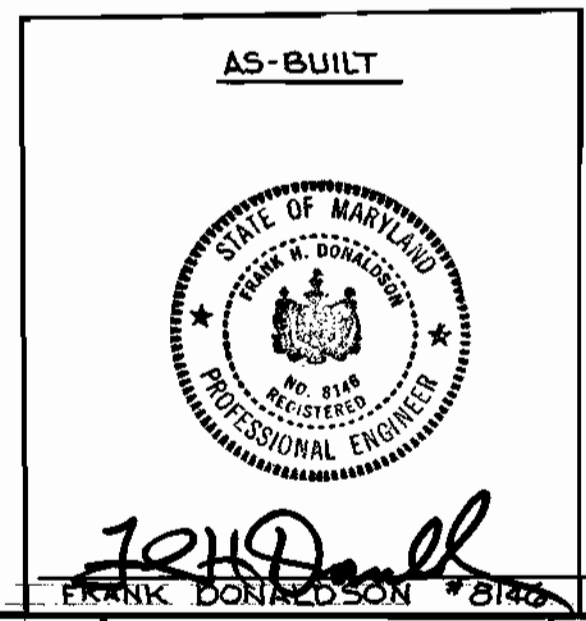
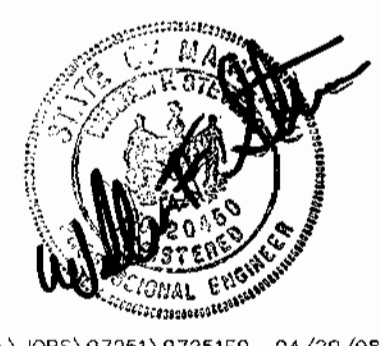
(RTU) NAMEPLATES

- 1) HIGH WET WELL LEVEL
- 2) LOW WET WELL LEVEL
- 3) PUMP #1 RUNNING
- 4) PUMP #1 OVER-TEMPERATURE
- 5) PUMP #1 RESET
- 6) PUMP #1 H-O-A SELECTOR SWITCH
- 7) PUMP #1 RUNNING TIME METER
- 8) PUMP #1 ALTERNATOR
- 9) PUMP #2 RUNNING
- 10) PUMP #2 OVER-TEMPERATURE
- 11) PUMP #2 RESET
- 12) PUMP #2 H-O-A SELECTOR SWITCH
- 13) PUMP #2 RUNNING TIME METER
- 14) ULTRASONIC LEVEL CONTROL FAIL
- 15) GENERATOR FAIL
- 16) GENERATOR RUN
- 17) TELEMETRY FAIL
- 18) TELEMETRY TEST SWITCH
- 19) ULTRASONIC LEVEL CONTROL RESET

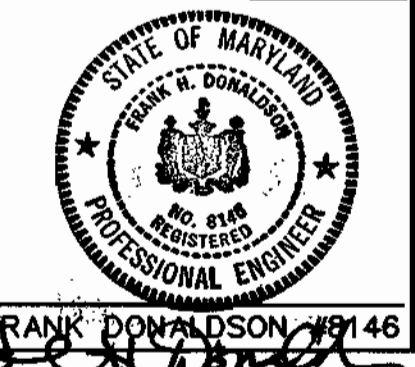


CONTROL ROOM ELEVATION NORTH WALL
 SCALE: 1/2" = 1'-0"

SRBR
 Siegel, Rutherford, Bradstock, & Ridgway, Inc.
 CONSULTING ENGINEERS
 757 Frederick Road Suite 300 - Catonsville, Maryland 21228
 Phone (410) 869-7282 - Facsimile (410) 869-7362



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 ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
 8618 Centre Park Drive • Suite 200 • Columbia, MD 21045
 410-997-9900 FAX: 410-997-9282
 www.riemermuegge.com



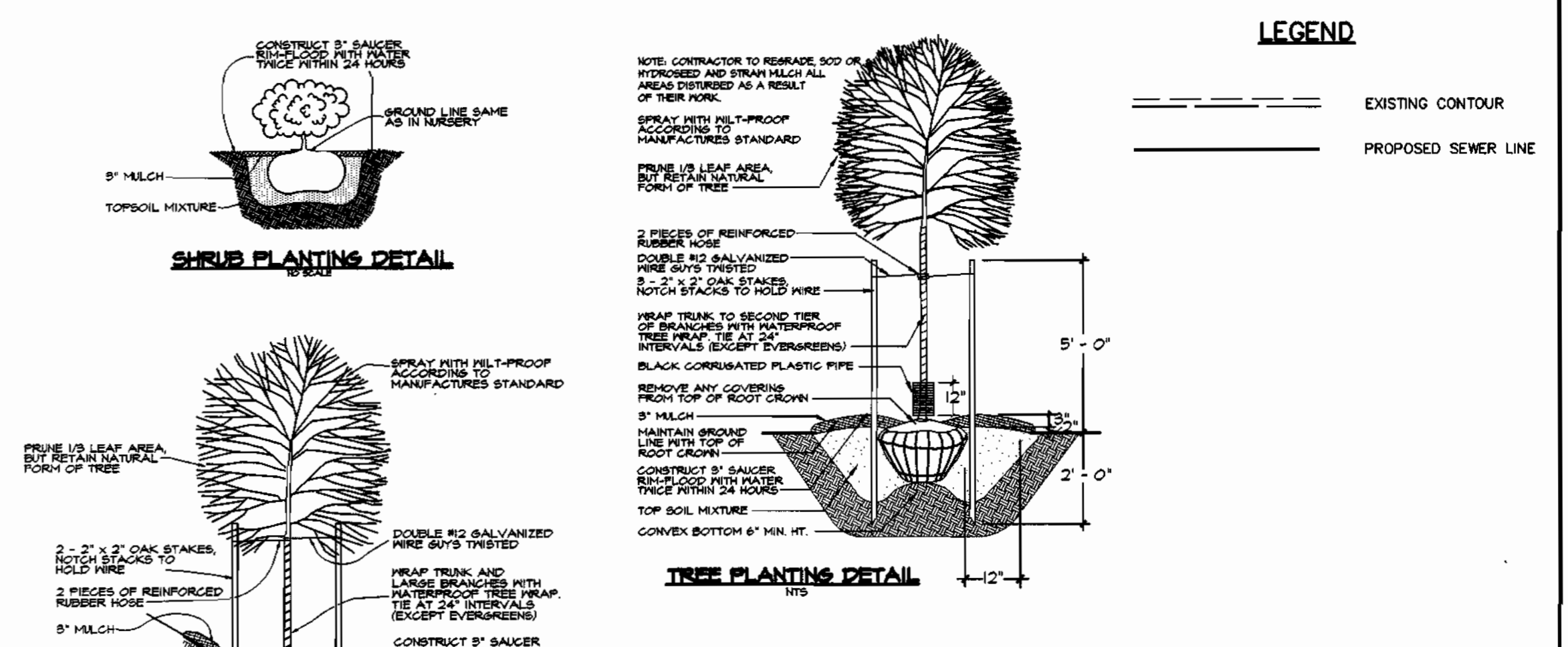
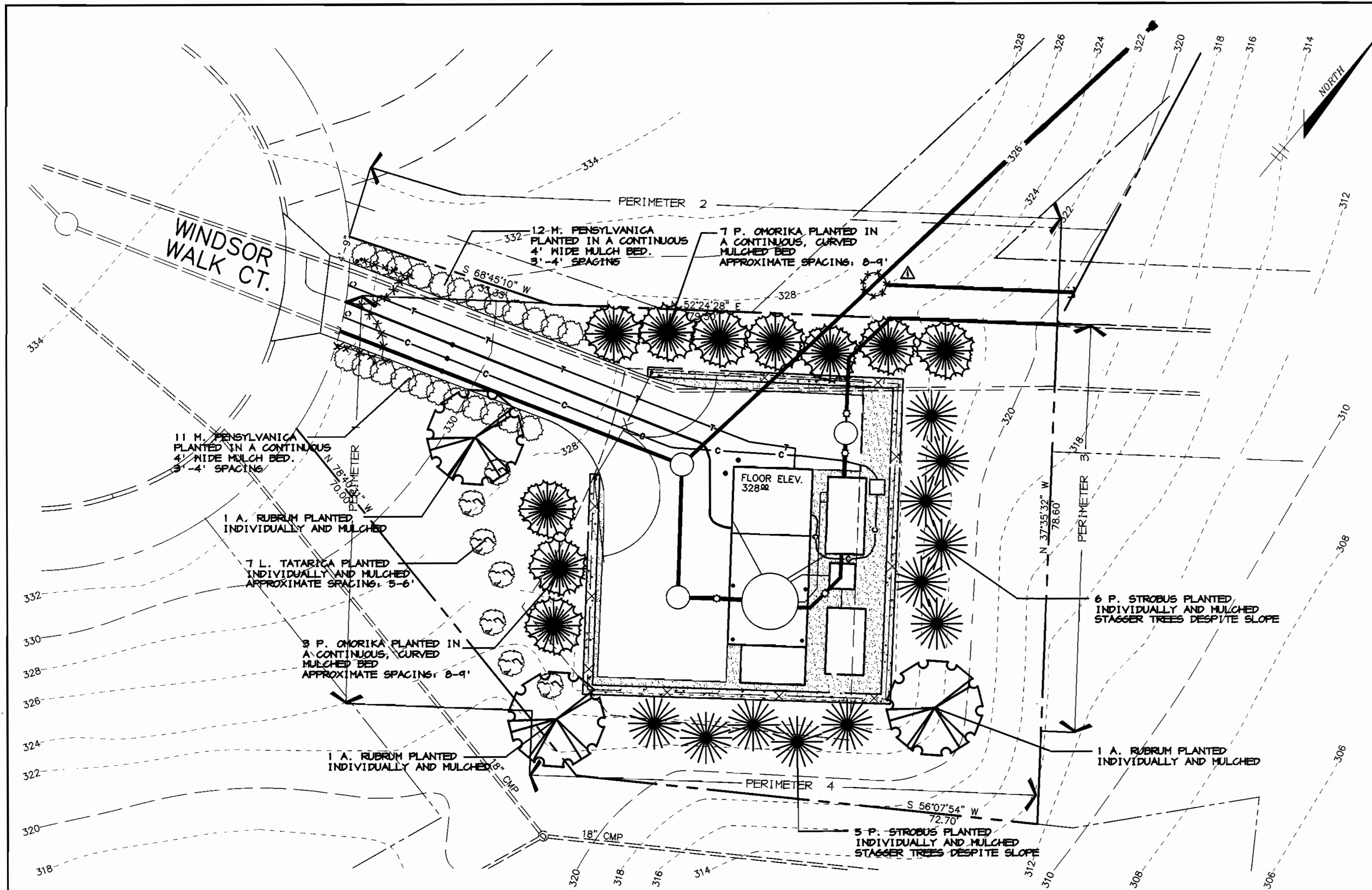
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DRN: TZG				
CHK: WFS				
DATE: 4/27/98				
BY: NO.		REVISION		DATE

ELECTRICAL STATION PLAN
 600' SCALE MAP NO. 46 BLOCK NO. 16
 AS-BUILT 11/19/99

RESERVOIR OVERLOOK PUMPING STATION
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 20-3664-D
 SCALE AS SHOWN
 SHEET 9 OF 15

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Robert M. Rutherford
 CHIEF, BUREAU OF UTILITIES
 6-1-98 DATE

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
 Frank Donaldson
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 6/5/99 DATE



**SCHEDULE A
PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROPERTIES
LANDSCAPE TYPE	B	C
LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	65'	115'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO
NUMBER OF PLANTS REQUIRED: SHADE TREES EVERGREEN TREES SHRUBS	1 0 0	3 6 0
NUMBER OF PLANTS PROVIDED: SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION) SHRUBS (0:1 SUBSTITUTION)	2 0 0 10	1 10 0 12

COMMENTS:
M. PENNSYLVANICA SHRUBS ARE SUBSTITUTED FOR SHADE & EVERGREEN TREES TO AVOID CONFLICTS WITH MAJOR UTILITIES ALONG THE ACCESS ROAD.

PLANTING SPECIFICATIONS

- Plants, related material, and operations shall meet the detailed description as given on the plans and as described hereon.
- All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to American Association of Nurseries (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sunscald injuries, abrasions of the bark, plant disease, insect damage, and all forms of insect infestations or objectionable displacements. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug; no heated-in plants or plants from cold storage will be accepted.
- Unless otherwise specified, all general conditions, planting operations, details and planting specification shall conform to Landscape Specification Guidelines for Baltimore-Washington Metropolitan Area (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architect, latest edition, including all agenda.
- Contractor shall be required to guarantee all plant material for a period of two years after date of acceptance in accordance with the appropriate section of the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the two year specifications including watering and replacement of specified plants material.
- Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning site work. Contractor shall make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.
- Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence at the drip line.
- Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within growing season of site construction.
- Bid shall be based on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications.
- Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plan take precedence.
- All shrubs and groundcover areas shall be planted in continuous prepared planting beds mulched with composted hardwood mulch as detailed and specified except where noted on plans.
- Positive drainage shall be maintained in planting beds (minimum 2 percent slope).
- Planting mix shall be as follows: Deciduous Plants - Two parts topsoil, one part well-rotted cow or horse manure. Add 5 lbs of standard fertilizer per cubic yard of planting mix. Evergreen Plants - two parts topsoil, one part humus or other approved organic material. Add 3 lbs of evergreen (acidic) fertilizer per cubic yard of planting mix. Topsoil shall conform to the Landscape Guidelines.
- Need Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: Be sure to carefully check the chemical used to assure its compatibility to the specific groundcover to be treated.
- Mulch: Groundcover beds should be mulched with minimum 2 inches of shredded composted hardwood, or as specified on the details, whichever is greater.
- All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded.
- This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.

PLAN
SCALE: 1" = 10'

PLANTING SCHEDULE

QTY	BOTANICAL / COMMON NAME	SIZE / SPACING
3	Acer rubrum / October Glory / Red Maple	2 1/2" cal. min. 14' ht. min. B x B
10	Picea omorika / Serbian Spruce	7'-8" ht. B x B
23	Myrica pensylvanica / Northern Bayberry	2'-2 1/2" ht.
7	Lonicera tatarica / Tatarian Honeysuckle	3'-3 1/2" ht.
11	Pinus strobus / White Pine	6"-7" ht. B x B

PERIMETER PLANTING CALCULATIONS

Perimeter	Use	Type	Plants
Perimeter 1	Non Residential Use to Roadway Front / Side	Type B	1 Shade Tree 2 Evgr. Trees
Perimeter 2	Non Residential Use to SFD	Type C	3 Shade Trees 6 Evgr. Trees
Perimeter 3	No requirement / abuts major open space / not visible from other land uses.		
Perimeter 4	No requirement / abuts major open space / not visible from other land uses.		

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DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Robert Benner</i> 6-1-98 CHIEF, BUREAU OF UTILITIES DATE	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND <i>David T. Dows</i> 6/1/98 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE	RIEMER MUEGGE & ASSOCIATES, INC. ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING 8618 Centreville Park Drive • Suite 200 • Columbia, MD 21046 410-997-0900 FAX: 410-997-9525 07/01/92/12/93	DES: D.T.D. DRN: A.J.L. CHK: D.T.D. DATE: 3/31/98 BY NO. REVISION DATE	REVISIONS 1 REVISED SEWER ALIGNMENT 8/98 2 REVISE TOTAL SHEET # 7/16/00	LANDSCAPE PLAN RESERVOIR OVERLOOK PUMPING STATION 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 20-3664-D SCALE 1" = 10' SHEET 11 OF 15
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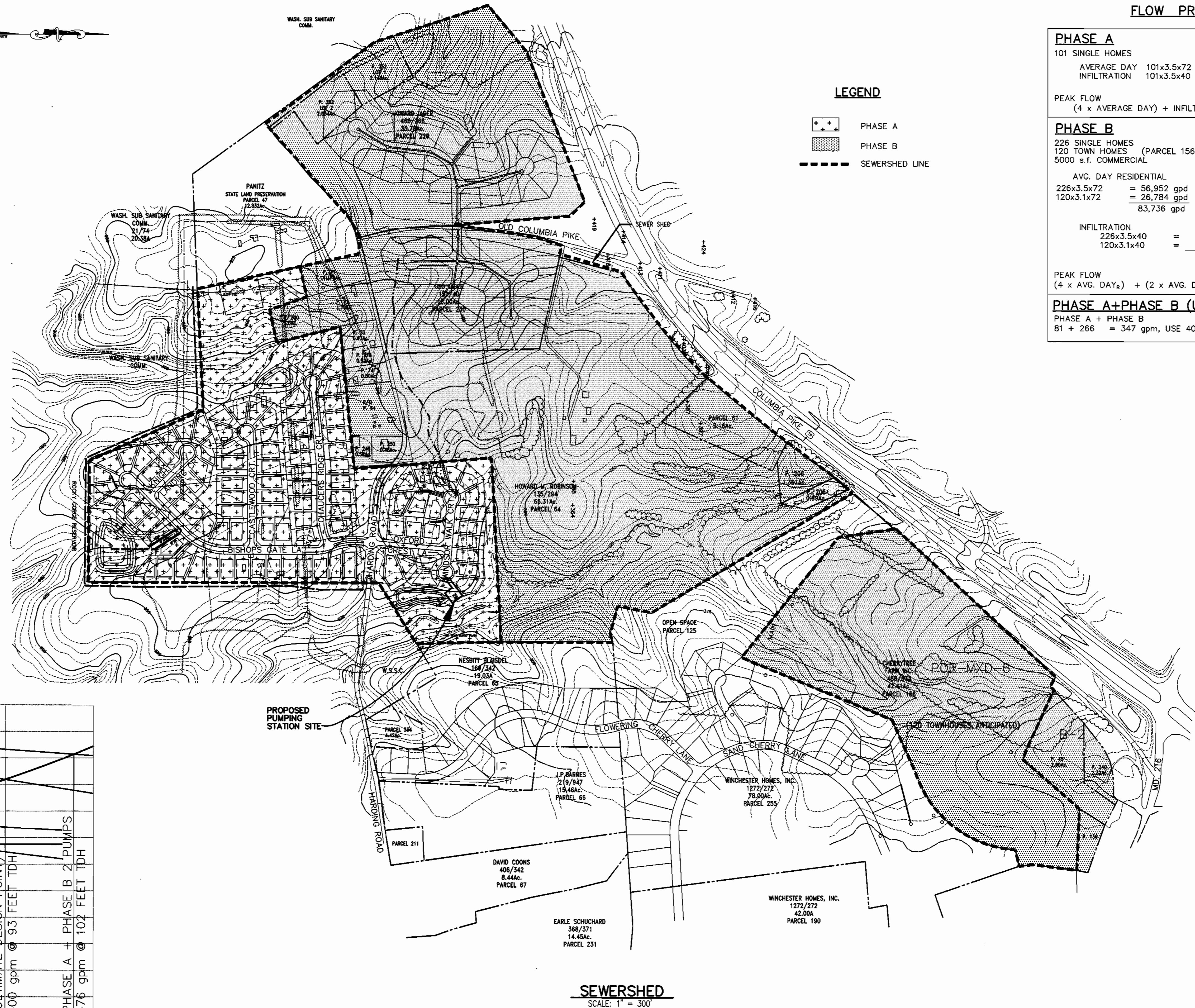
AS-BUILT 11/1999

FLOW PROJECTIONS

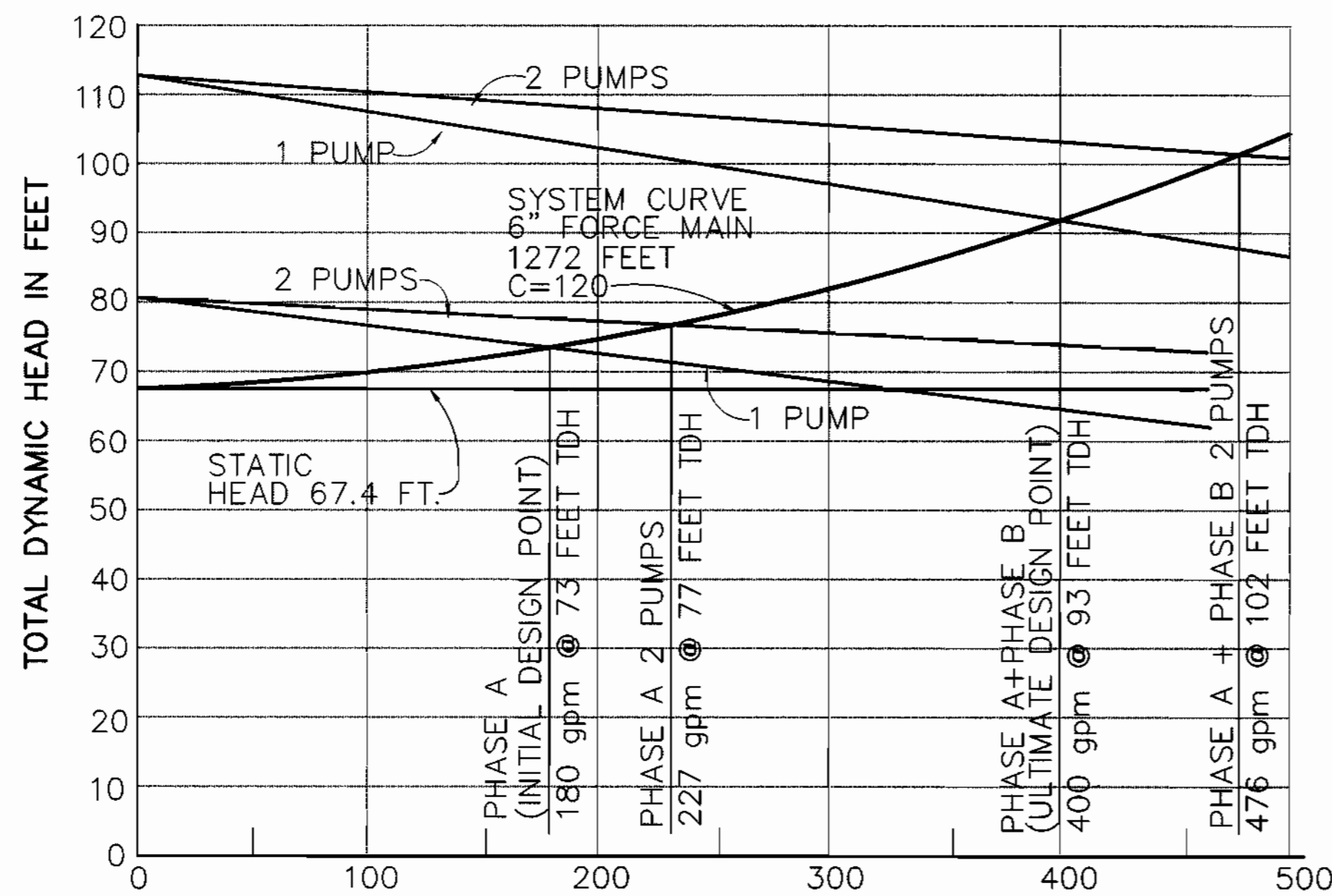
PHASE A		
101 SINGLE HOMES		
AVERAGE DAY	101x3.5x72	= 25,452 gpd
INFILTRATION	101x3.5x40	= 14,140 gpd
PEAK FLOW (4 x AVERAGE DAY) + INFILTRATION = 81 gpm, USE 180 gpm		
PHASE B		
226 SINGLE HOMES		
120 TOWN HOMES (PARCEL 156)		
5000 s.f. COMMERCIAL		
AVG. DAY RESIDENTIAL		AVG. DAY COMMERCIAL
226x3.5x72	= 56,952 gpd	5000 x .05
120x3.1x72	= 26,784 gpd	= 250 gpd
	83,736 gpd	
INFILTRATION		
226x3.5x40	= 31,640 gpd	
120x3.1x40	= 14,880 gpd	
	46,520 gpd	
PEAK FLOW (4 x AVG. DAY _R) + (2 x AVG. DAY _C) + INFILTRATION = 266 gpm		
PHASE A+PHASE B (ULTIMATE PEAK FLOW)		
PHASE A + PHASE B		
81 + 266	= 347 gpm, USE 400 gpm	

LEGEND

- PHASE A
- PHASE B
- SEWERSHED LINE



NOTE:
 PUMPS: MODEL 4B2D 1760 RPM AS PROVIDED BY SMITH AND LOVELESS.
 MOTORS: 20 HP 3 PHASE 60 HERTZ 460 V.
 IMPELLAR: S4L23.



SYSTEM/PUMP CURVES

SCALE: HORIZ. 1" = 60 gpm VERT. 1" = 20' TDH

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND

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 410-997-8900 FAX: 410-997-9282
 9709/401MS/TTLSRST.DWG



DES: J.S.C.	SIP	Z	REVISE TOTAL SHEET #	7/16/00
DRN: E.L.R.				
CHK: G.C.L.				
DATE: 4/27/98	BY NO.	REVISION	DATE	

SEWERSHED MAP/SYSTEM CURVE

RESERVOIR OVERLOOK PUMPING STATION
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 20-3664-D

SCALE AS SHOWN

SHEET 12 OF 15

600' SCALE MAP NO. 46 BLOCK NO. 16
AS-BUILT 11/ /99

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RESERVOIR OVERLOOK PUMPING STATION HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS CONTRACT NO. 20-3664-D

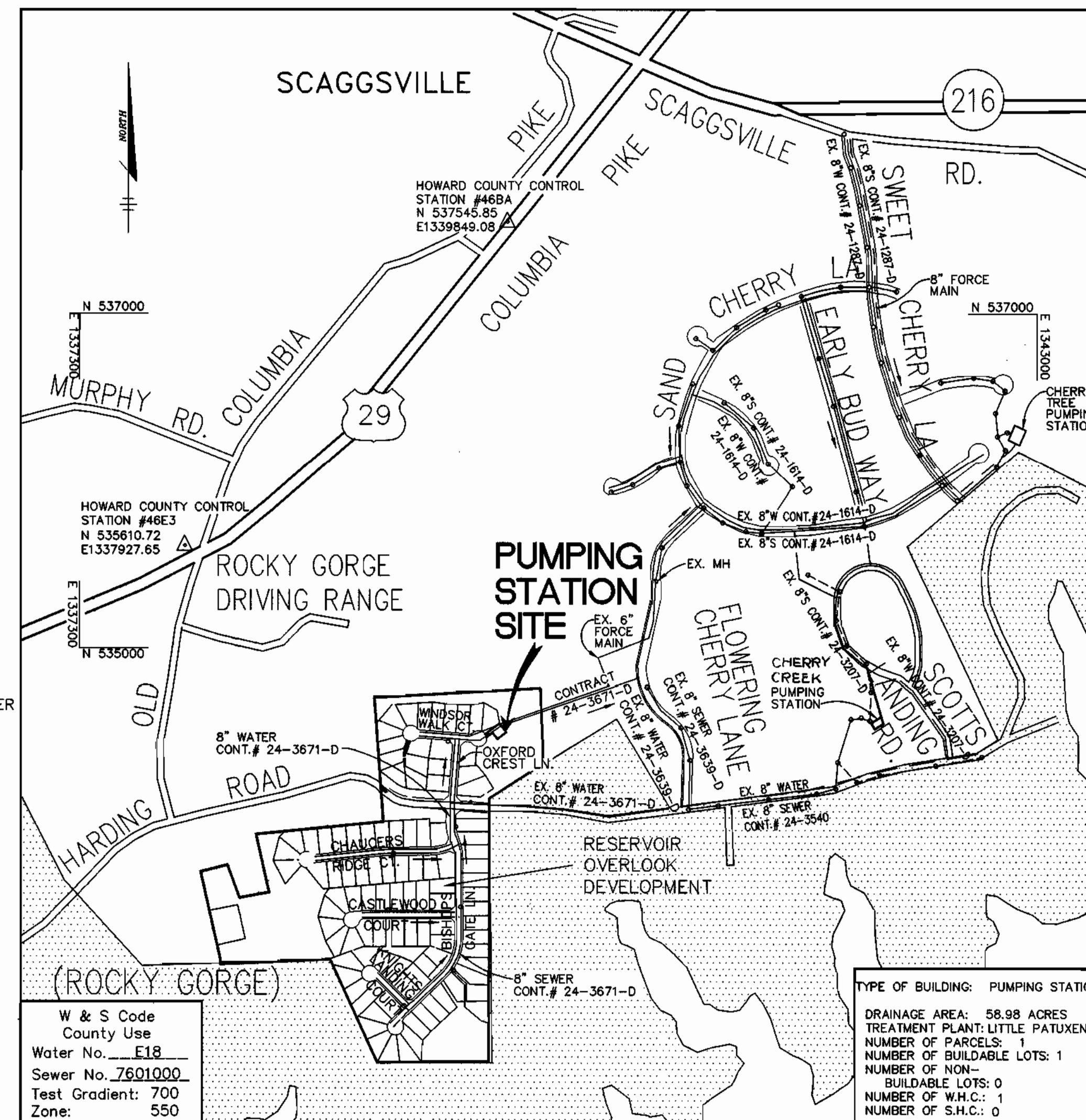
INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	SITE PLAN
3	SEWER/FORCE MAIN PROFILE & SECTION
4	FENCE & ACCESS ROAD DETAILS
5	CONTROL BUILDING PLAN AND DETAILS - ARCHITECTURAL/STRUCTURAL
6	WETWELL & PUMPING STATION - MECHANICAL
7	ODOR CONTROL SYSTEM - MECHANICAL
8	METER/VALVE VAULT AND BY-PASS PUMPING MANHOLE
9	ELECTRICAL STATION PLAN
10	ELECTRICAL LINE DIAGRAMS/PANEL BOARDS
11	LANDSCAPE PLAN
12	SEWERSHED MAP/SYSTEM CURVE

GENERAL NOTES

- Approximate location of existing mains are shown. The contractor shall take all necessary precautions to protect existing mains and services and maintain uninterrupted supply. Any damage incurred shall be repaired immediately to the satisfaction of the Engineer at the Contractor's expense.
- All horizontal controls are based on Maryland State Coordinates.
- All vertical controls are based on U.S.G.S. datum.
- All pipe elevations shown \curvearrowright are invert elevations.
- Clear all utilities by a minimum of 6". Clear all poles by 2'-0" minimum.
- For details not shown on the drawings, and for materials and construction methods use Howard County Design Manual, Volume IV, Standard Specifications and Details for Construction, (Latest Edition). The contractor shall have a copy of Volume IV on the job.
- Where test pits have been made on existing utilities, they are noted by the symbol \oplus at the location of the test pit. A note or notes containing the results of the test pit or pits is included on the drawings. Existing utilities in the vicinity of the proposed work for which test pits have not been dug shall be located by the contractor two weeks in advance of construction operations at his own expense.
- Contractor shall notify the following utility companies or agencies at least five working days before starting work shown on these plans:

State Highway Administration	531-5533
Baltimore Gas & Electric Co. Contractor Services	850-4620
Baltimore Gas & Electric Co. Underground Damage Control	787-9068
Miss Utility	1-800-257-7777
Colonial Pipeline Co.	795-1390
Bureau of Utilities, Howard County Department of Public Works	313-4900
- Trees and shrubs are to be protected from damage to maximum extent. Trees and shrubs located within the construction strip are not to be removed or damaged by the contractor.
- All water mains to be D.I.P. Class 52 unless otherwise noted.
- Tops of all water mains to have a minimum of 3-1/2' cover unless otherwise noted.
- Valves adjacent to tees shall be strapped to tees.
- All fittings shall be buttressed or anchored with concrete in accordance with the Standard Details unless otherwise provided for on the drawings.
- The contractor shall not operate any water main valves on the existing water system.
- All water house connections shall be for inside meter setting unless otherwise noted on plans or in specifications.
- All sewer mains shall be D.I.P. Class 52 unless otherwise noted.
- All manholes shall be 4'-0" inside diameter unless otherwise noted.
- Force mains shall be D.I.P. CL 52.
- Manholes shown with 12" and 16" walls are for brick manholes only.
- Manholes can be either brick or precast concrete structures.
- Contractor is solely responsible for construction means, methods, techniques, sequences, procedures, and safety precautions and programs.
- The contractor shall notify the Bureau of Highways, Howard County, at (410) 313-7450 at least five (5) working days before any open cut of any County road or boring/jacking operation in County roads for laying water/sewer mains or house connections. The approval of these drawings will constitute compliance with DPW requirements per Section 18.114(a) of the Howard County Code.
- Howard County DPW is hereby granted permission to access private lots shown on these plans in order to maintain public water and sewer house connections.



QUANTITIES

ITEMS	QUANTITIES ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	MANUFACTURER / SUPPLIER
PUMPING STATION: COMPLETE - IN - PLACE	1 EACH			
8" SEWER, D.I.P.	167 L.F.	157 L.F.	DIP	US PIPE
6" FORCE MAIN	79 L.F.	72 L.F.	DIP	US PIPE
1" W.H.C.	76 L.F.	75 L.F.	COPPER	US PIPE
4" S.H.C.	22 L.F.	24 L.F.	DIP	US PIPE

LEGEND

- ===== EXISTING WATER
- EXISTING STORM DRAIN/SANITARY SEWER
- ===== EXISTING FORCE MAIN
- 200 ----- EXISTING CONTOUR LINES
- PROPERTY LINE
- RIGHT OF WAY
- PROPOSED W.H.C.
- PROPOSED SANITARY SEWER
- PROPOSED FORCE MAIN
- C-C-C- PROPOSED ELECTRIC CONDUIT
- T-T-T- PROPOSED TELEPHONE CONDUIT
- ⊕ PS-1 SOILS BORING

RESERVOIR OVERLOOK PUMPING STATION

VICINITY MAP SCALE: 1"=600'

BY THE DEVELOPER:

I/WE CERTIFY THAT ALL DEVELOPMENT & CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 4-24-98
DEVELOPER DATE

BY THE ENGINEER:

I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 5/1/98
ENGINEER DATE

NAME OF UTILITY CONTRACTOR: *Carver & Co.*

Sediment control measures for this contract will be implemented in accordance with Section 219 of the Specifications and as shown on the Drawings.

F-99-61

Review for Howard Soil Conservation District and meets technical requirements.

[Signature] 4/1/98
NATURAL RESOURCES CONSERVATION SERVICE DATE

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

[Signature] 6/1/98
HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

[Signature] 6-1-98
CHIEF, BUREAU OF UTILITIES DATE

[Signature] 6/1/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21046
410-997-8900 FAX: 410-997-9282
97061/40102/ATLDRY.DWG

[Signature] 5/1/98
FRANK DONALDSON #8146 DATE

DES: J.S.C.	REVISED ESTIMATED QUANTITY 8" SEWER DIP	8/98
DRN: E.L.R.		
CHK: G.C.L.		
DATE: 4/27/98		
BY NO.	REVISION	DATE

TITLE SHEET

600' SCALE MAP NO. 46 BLOCK NO. 16

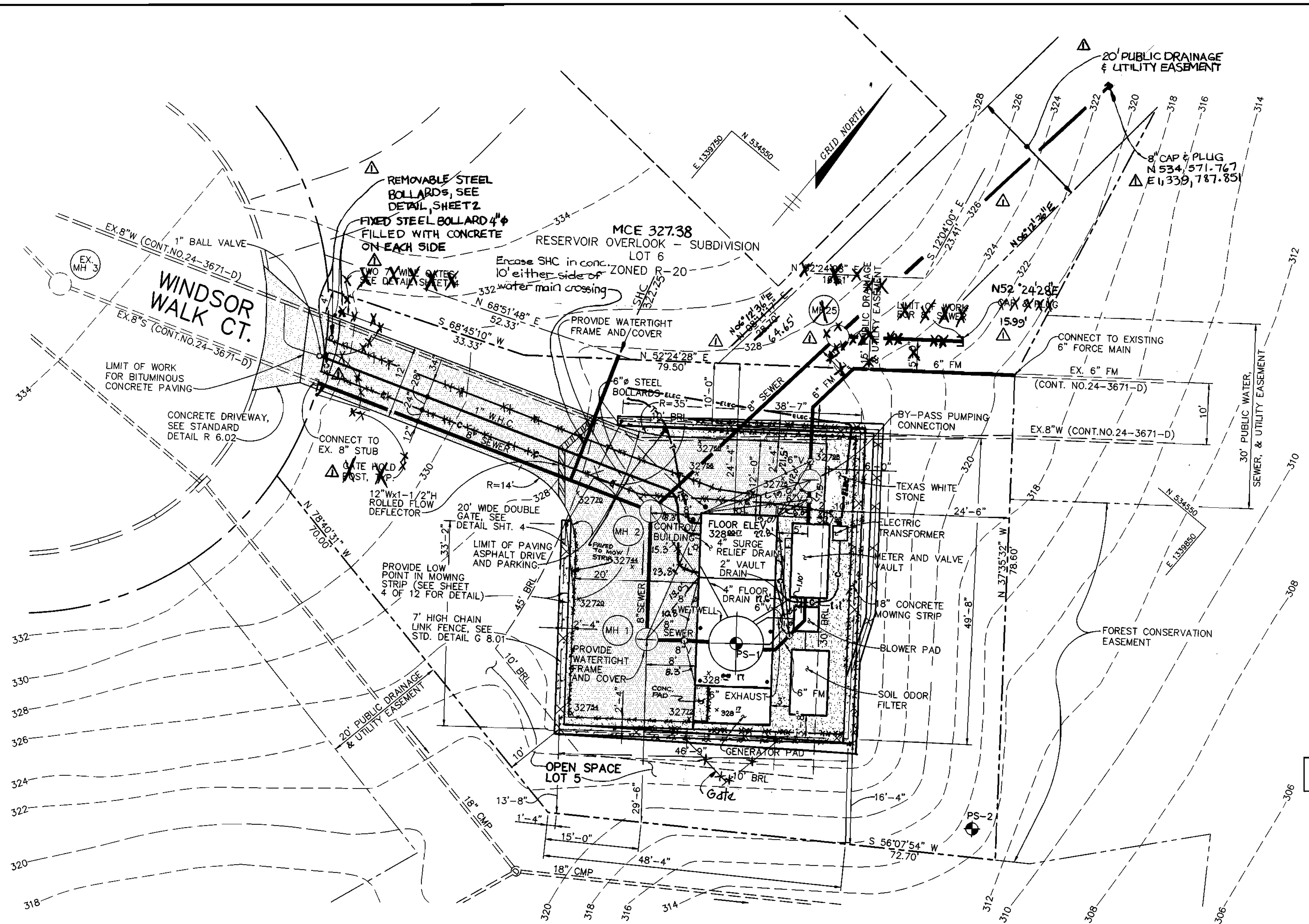
RESERVOIR OVERLOOK PUMPING STATION
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 20-3664-D

SCALE AS SHOWN

SHEET 1 OF 12

AS-BUILT 11/19/99

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PLAN
SCALE: 1" = 10'

GENERAL SITE NOTES:

- 1) PRESENT ZONING IS R-20.
- 2) ALL EXTERIOR LIGHTING OF BUILDING WILL BE DIRECTED DOWNWARD.
- 3) THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 46E3 & 46BA WERE USED FOR THIS PROJECT.
- 4) WATER & SEWER ARE PUBLIC, PROVIDED UNDER CONT. NO. 24-3671-D. DRAINAGE AREA IS LITTLE PATUXENT.
- 5) UNLESS OTHERWISE NOTED, PROPERTY LINES FOR OPEN SPACE LOT 5 DEFINE LIMIT OF CONTRACT.

SITE ANALYSIS:

- 1) AREA OF LOT 7,771 SQ.FT./0.178 ACRES
- 2) PRESENT ZONING R-20
- 3) PROPOSED USE OF STRUCTURE: WASTEWATER PUMPING STATION
- 4) FLOOR SPACE OF PUMPING STATION BUILDING: 107 SQ.FT.(CONTROL ROOM)
- 5) MAXIMUM NUMBER OF EMPLOYEES: NORMALLY ONE (1) VISIT PER DAY BY BUREAU OF UTILITIES MAINTENANCE PERSONNEL
- 6) NUMBER OF PARKING SPACES REQUIRED: TWO (2) PER HOWARD COUNTY DESIGN MANUAL, VOLUME II
- 7) NUMBER OF PARKING SPACES PROVIDED: TWO (2)
- 8) BUILDING COVERAGE OF SITE: 364 SQ.FT.
- 9) PAVED AREA OF SITE: 1908 SQ.FT.: 0.044 ACRES

SHEET NOTES:

- 1) PRIOR TO CONSTRUCTION, THE DEVELOPER OF RESERVOIR OVERLOOK SUBDIVISION WILL SET MONUMENTS AT EACH PROPERTY CORNER OF OPEN SPACE LOT 5 AND WILL ESTABLISH BENCHMARKS AT TWO OF THE PROPERTY CORNER MONUMENTS. THE PROPERTY LINES AND BENCHMARKS THUS ESTABLISHED SHALL BE USED BY THE CONTRACTOR AS HORIZONTAL AND VERTICAL CONTROL FOR CONSTRUCTION STAKEOUT.
- 2) 6" FORCE MAIN SHALL BE CLASS 52 D.I.P.
- 3) SEE SHEET 3 OF 12 FOR PROFILE OF THE SEWER/FORCE MAIN WITHIN THE LIMITS OF THE PUMPING STATION SITE.
- 4) SEE SHEET 3 OF 12 FOR SOILS BORING PROFILE.
- 5) SEDIMENT AND EROSION CONTROL FOR THIS SITE IS INCLUDED IN THE RESERVOIR OVERLOOK LOTS 1 THRU 109 PROJECT F-98-61 OF WHICH THIS PUMPING STATION SITE FORMS A PART.
- 6) STORMWATER MANAGEMENT FOR THIS SITE IS INCLUDED IN THE RESERVOIR OVERLOOK LOTS 1 THRU 109 PROJECT F-98-61 OF WHICH THIS PUMPING STATION SITE FORMS A PART.
- 7) PROPERTY LINES FOR OPEN SPACE LOT 5 ARE PROVIDED BY MILDENBERG AND BOENDER, WHO PREPARED THE PLAT FOR RESERVOIR OVERLOOK LOTS 1 THRU 109.
- 8) SITE NOT SUBJECT TO 100 YEAR FLOODING. FLOOD ELEVATIONS ARE BEYOND LIMITS OF PLAN.
- 9) ALL ELECTRIC CONDUITS SHALL BE CONCRETE ENCASED. SEE DETAIL ON SHEET 4 OF 12.

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AS-BUILT

Frank Donaldson
FRANK DONALDSON #8146

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert Benjamin 6/1/98
CHIEF, BUREAU OF UTILITIES DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

Robert Benjamin 6/1/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
410-997-8900 FAX: 410-997-9282
M/PROJECT/OVERLOOK/PLAN.DWG

Frank H. Donaldson
FRANK H. DONALDSON #8146

DES: G.C.L.	8/98
DRN: E.L.R.	
CHK: G.C.L.	
DATE: 4/27/98	
BY NO.	REVISION
DATE	600' SCALE MAP NO. 46 BLOCK NO. 16

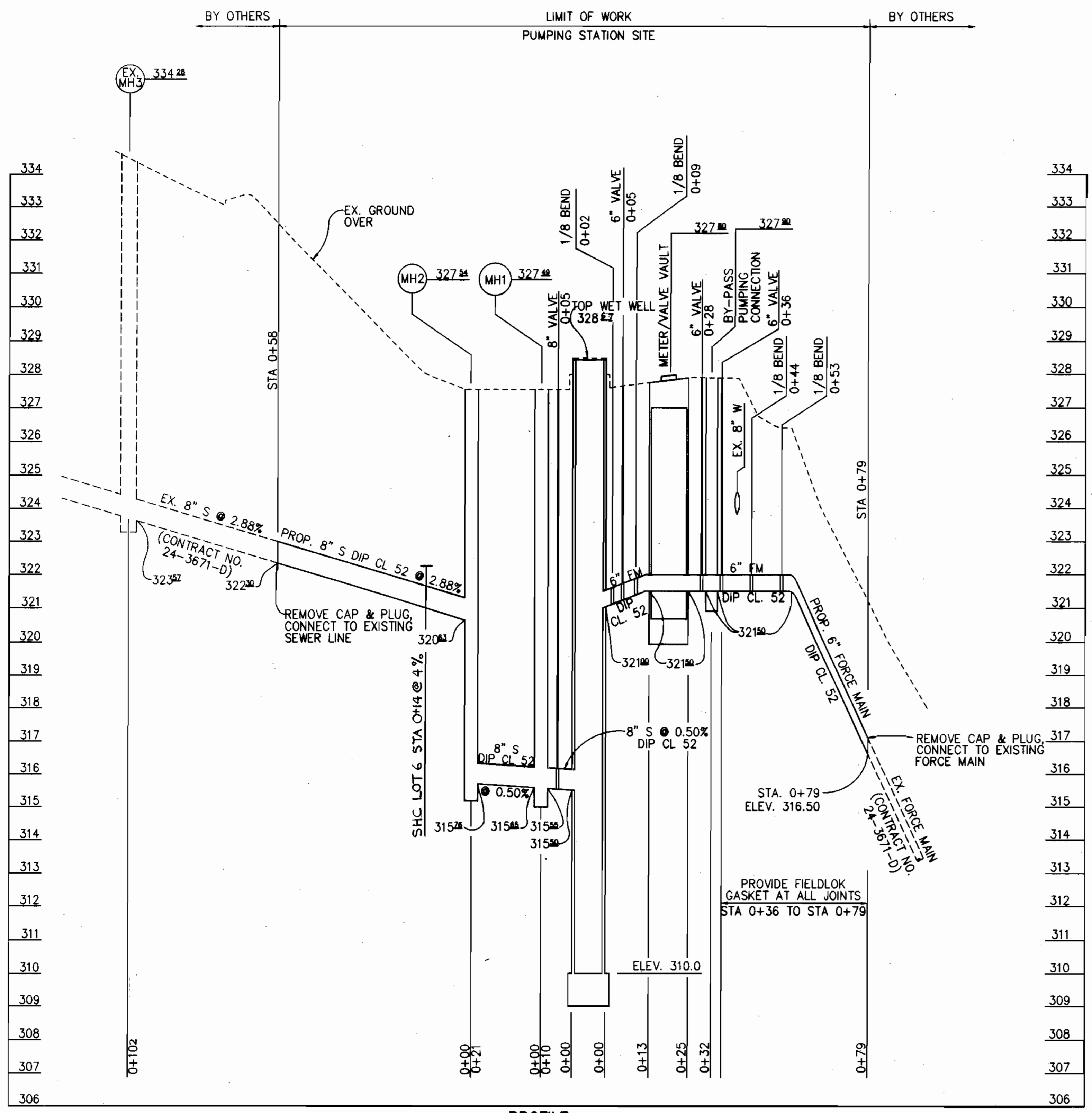
SITE PLAN

RESERVOIR OVERLOOK PUMPING STATION
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 20-3664-D

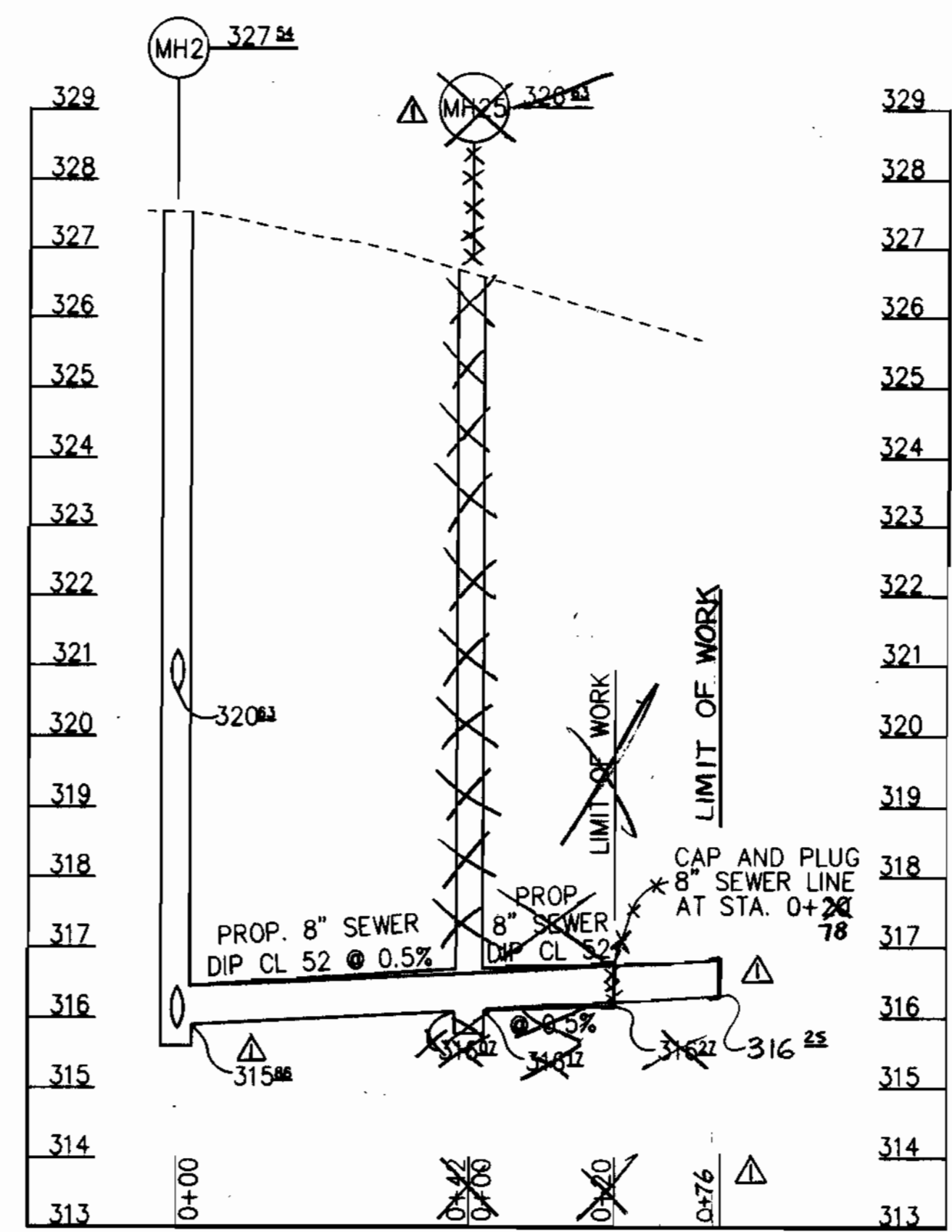
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SHEET 2 OF 12

5/1/98

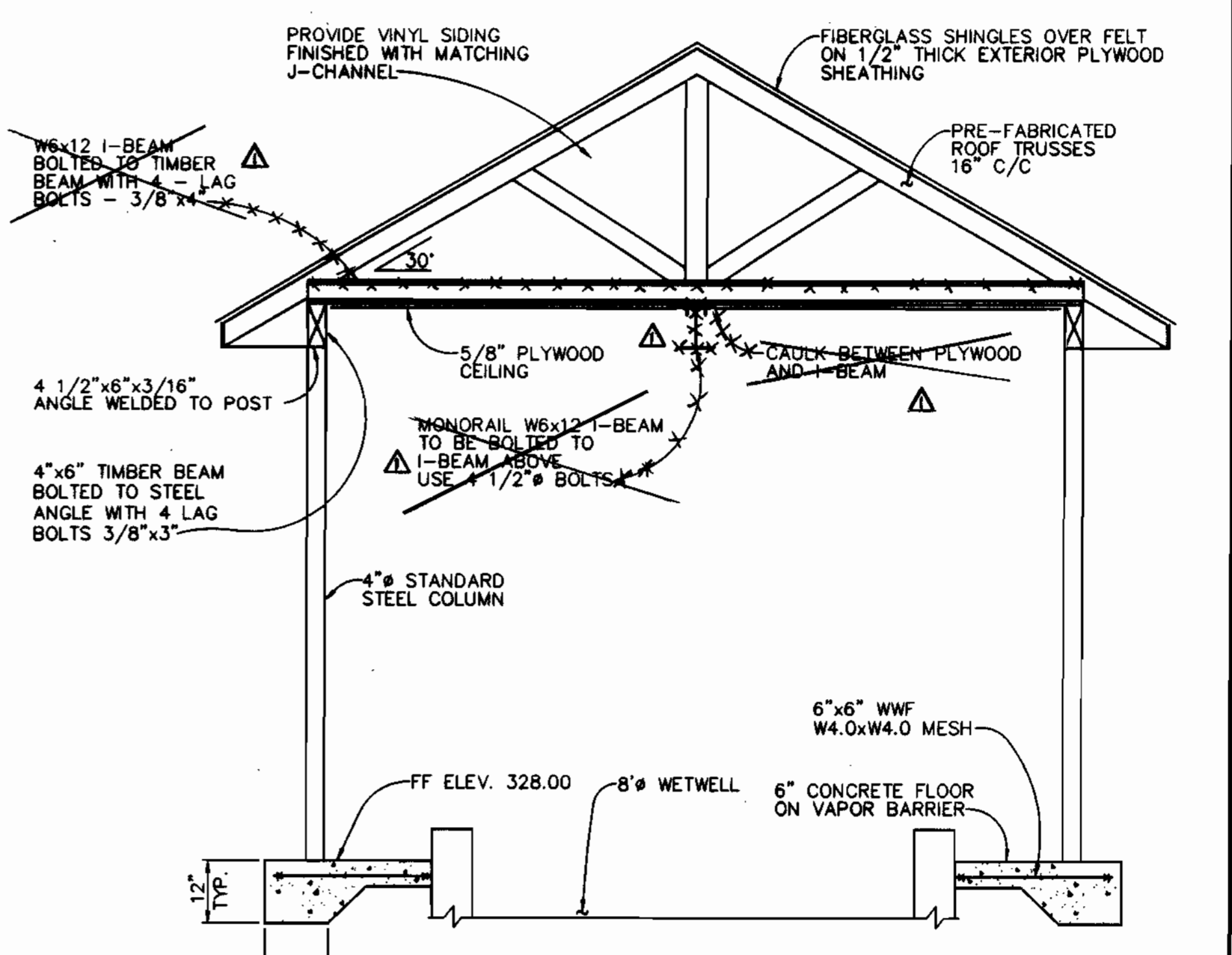
AS-BUILT 11/19/99



PROFILE
 HORIZ.: 1"=20'
 SCALE: VERT.: 1"=2'



PROFILE
 HORIZ.: 1"=20'
 SCALE: VERT.: 1"=2'



SECTION B-B
 SCALE: 1/2" = 1'-0"
 NOTE: SEE SHEET 5 OF 12 FOR PLAN.

LOG OF BORING NO. PS-1 Sheet 1 of 1

PROJECT: Reservoir Overlook
 PROJECT NO: 20326-C
 PROJECT LOCATION: Howard County, Maryland

DATE STARTED: December 10, 1987
 DATE COMPLETED: December 10, 1987

DRAWING CONTRACTOR: HBE
 DRILLER: HBE
 CHECKED BY: J. Nisco

WATER LEVEL: 2 Dry 2 Dry 2
 DATE: 12/10/87
 CAVED IN: 1-1-1

GROUND SURFACE ELEVATION: 320.0
 DATUM: MSL
 WEATHER: Cloudy
 GROUNDWATER: MBL
 CHECKED BY: J. Nisco

SAMPLE NUMBER	DEPTH (FT.)	REMARKS
S-1	1.5	0.8 2-1-3 4 320.0 0' BM Brown, moist, loess to medium-dense to very dense. Moderate coarse to fine SAND, little to some silt & clay. S&M AASHTO: A-4/A-2-4
S-2	1.5	1.0 9-6-8 11 5' Water Not Encountered While Drilling.
S-3	1.5	0.5 50M 80 10' 201.8 0M Very dense weathered saprolite to weathered rock.
S-4	1.5	1 50M 80 10' 298.0 Auger Refused at 12.0 ft. Bottom of Hole at 12.0 ft.

NOTES: GEO-TECHNOLOGY ASSOCIATES, INC. 8000 JUNCTION DRIVE, SUITE 8 ANNAPOLIS JUNCTION, MARYLAND 20701

LOG OF BORING NO. PS-2 Sheet 1 of 1

PROJECT: Reservoir Overlook
 PROJECT NO: 20326-C
 PROJECT LOCATION: Howard County, Maryland

DATE STARTED: December 10, 1987
 DATE COMPLETED: December 10, 1987

DRAWING CONTRACTOR: HBE
 DRILLER: HBE
 CHECKED BY: J. Nisco

WATER LEVEL: 2 Dry 2 Dry 2
 DATE: 12/10/87
 CAVED IN: 1-1-1

GROUND SURFACE ELEVATION: 310.0
 DATUM: MBL
 WEATHER: Cloudy
 GROUNDWATER: MBL
 CHECKED BY: J. Nisco

SAMPLE NUMBER	DEPTH (FT.)	REMARKS
S-1	1.5	0.3 1-1-2 5 210.0 0' BM Brown to gray, moist to dry, loess to very dense, coarse to fine SAND, little to some clayey silt. S&M AASHTO: A-2-4
S-2	1.5	0.5 2-3-6 8 8' Water Not Encountered While Drilling.
S-3	1.5	1 50M 80 10' 201.8 0M Very dense weathered saprolite to weathered rock.
S-4	1.5	1 50M 80 10' 298.0 Auger Refused at 14.0 ft. Bottom of Hole at 14.0 ft.

NOTES: GEO-TECHNOLOGY ASSOCIATES, INC. 8000 JUNCTION DRIVE, SUITE 8 ANNAPOLIS JUNCTION, MARYLAND 20701

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND

RIEMER MUEGGE & ASSOCIATES, INC.
 ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
 8818 Centre Park Drive • Suite 200 • Columbia, MD 21046
 410-997-8800 FAX: 410-997-8888
 WWW: 410.997.8888

FRANK DONALDSON #8146
 DATE: 4/27/98

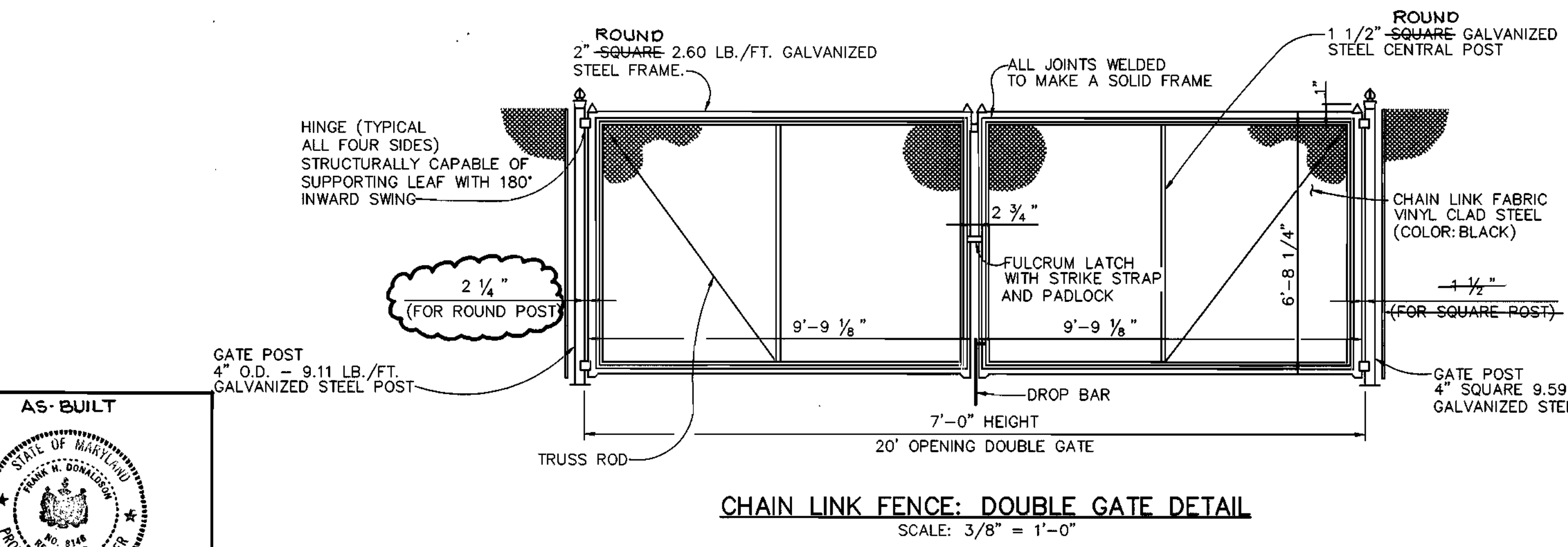
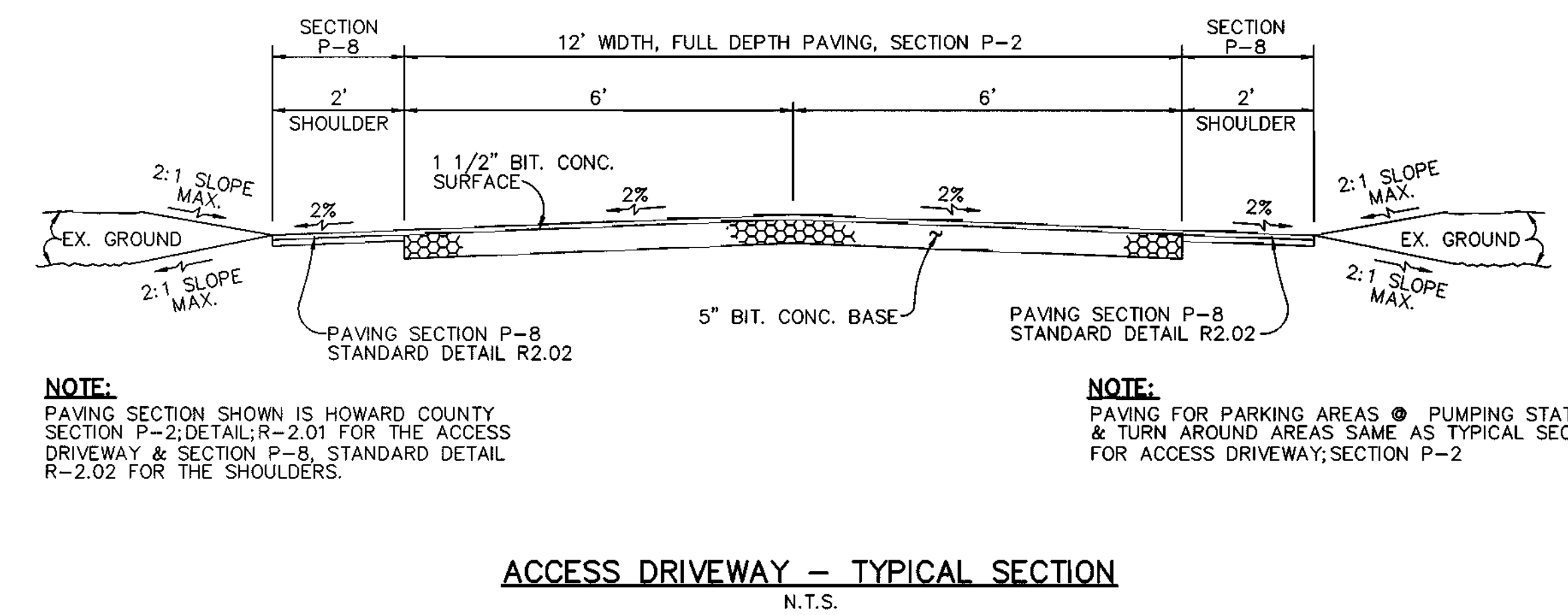
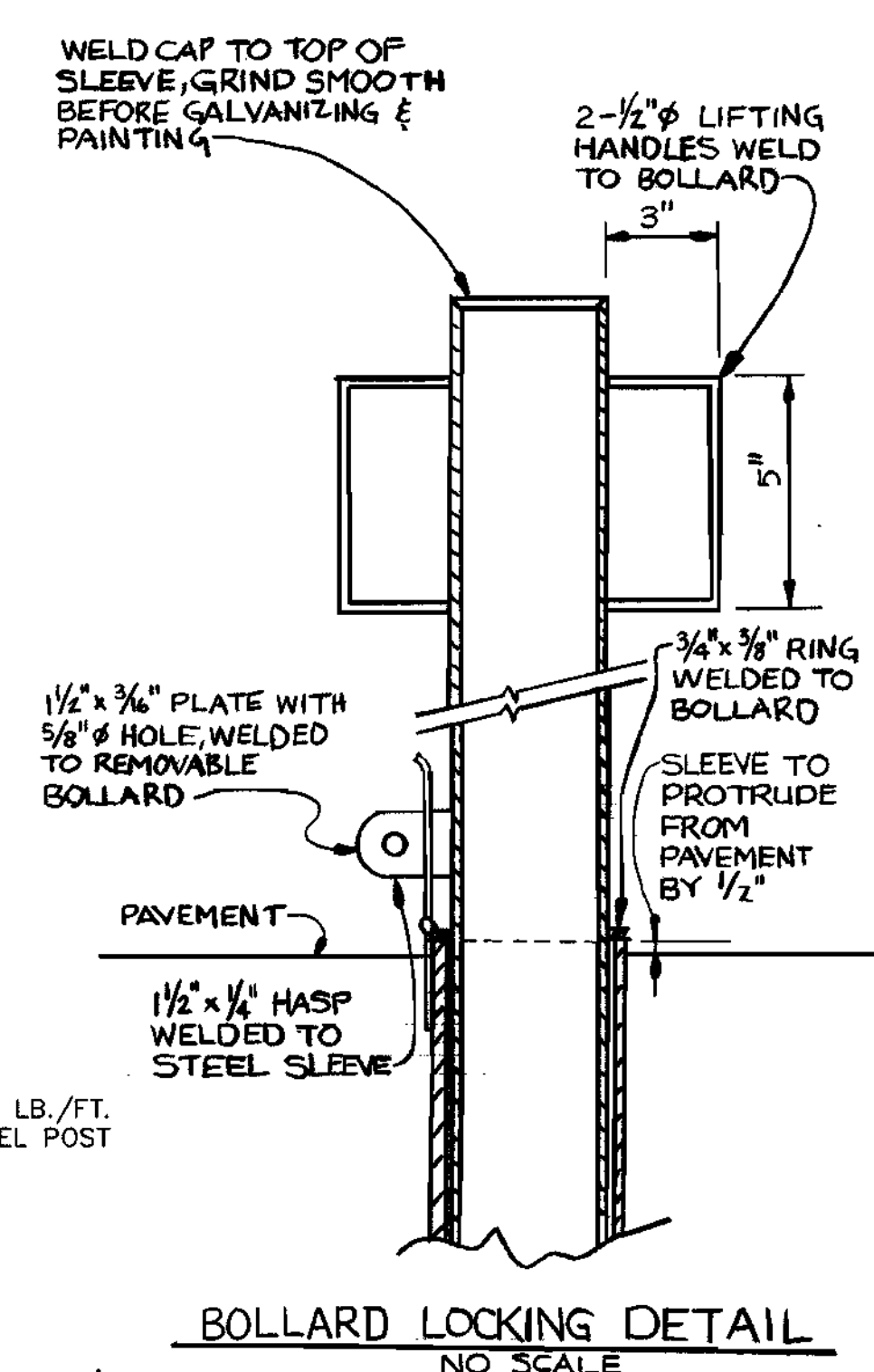
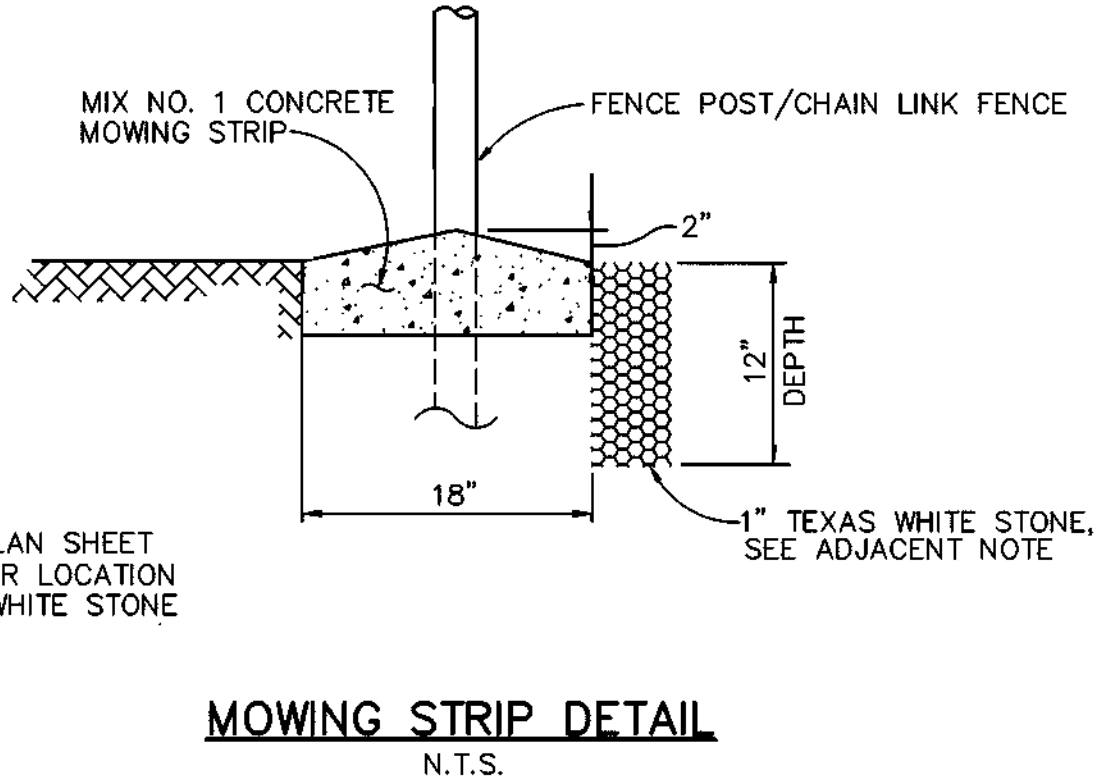
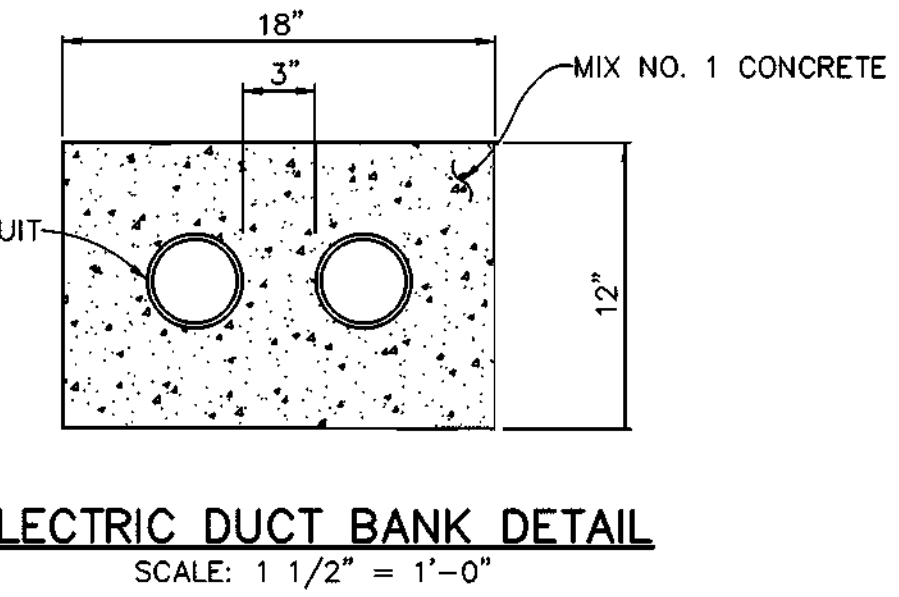
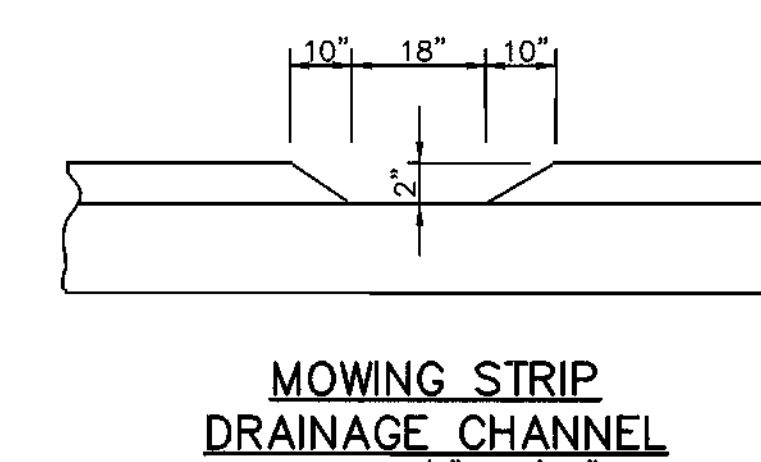
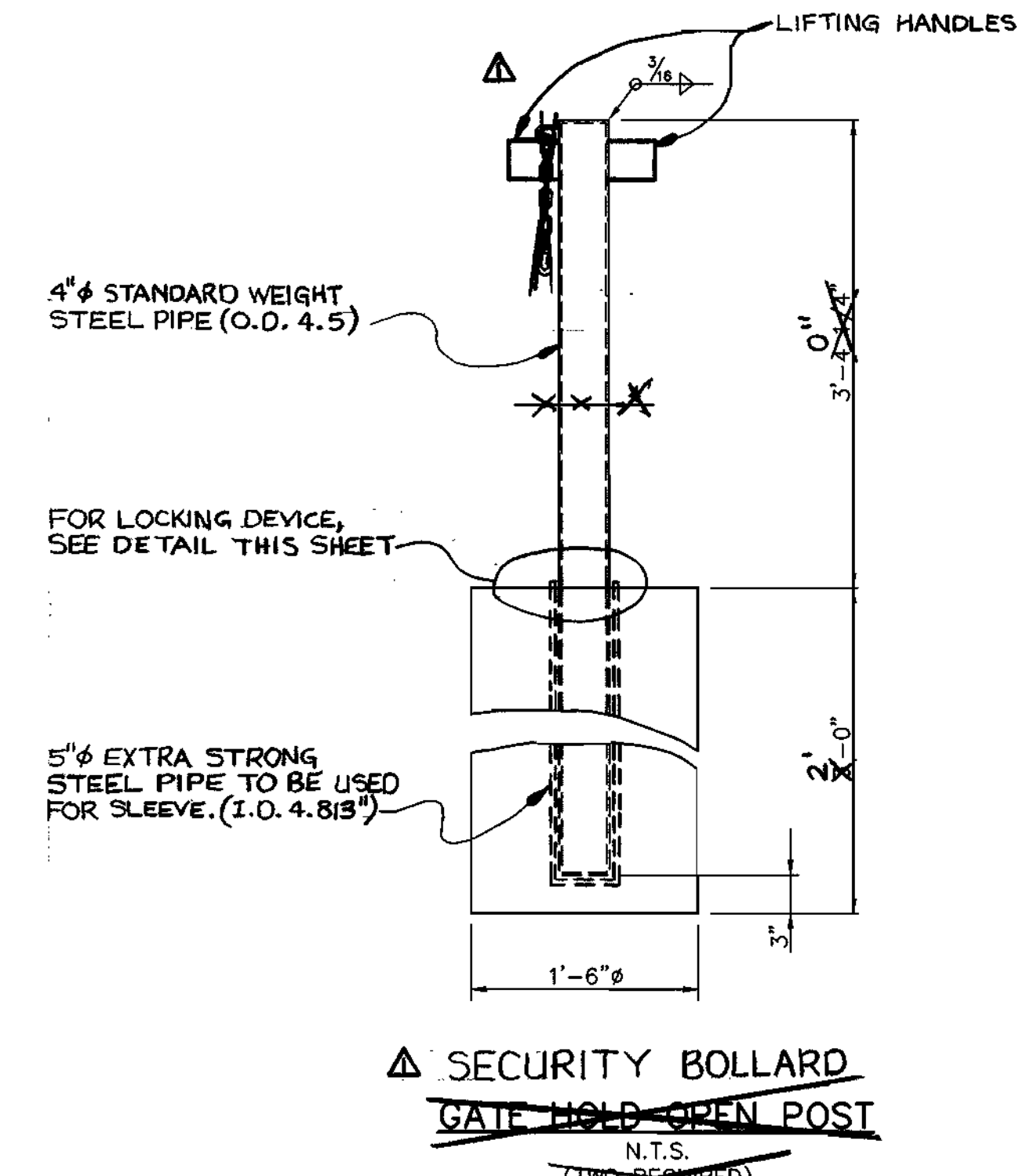
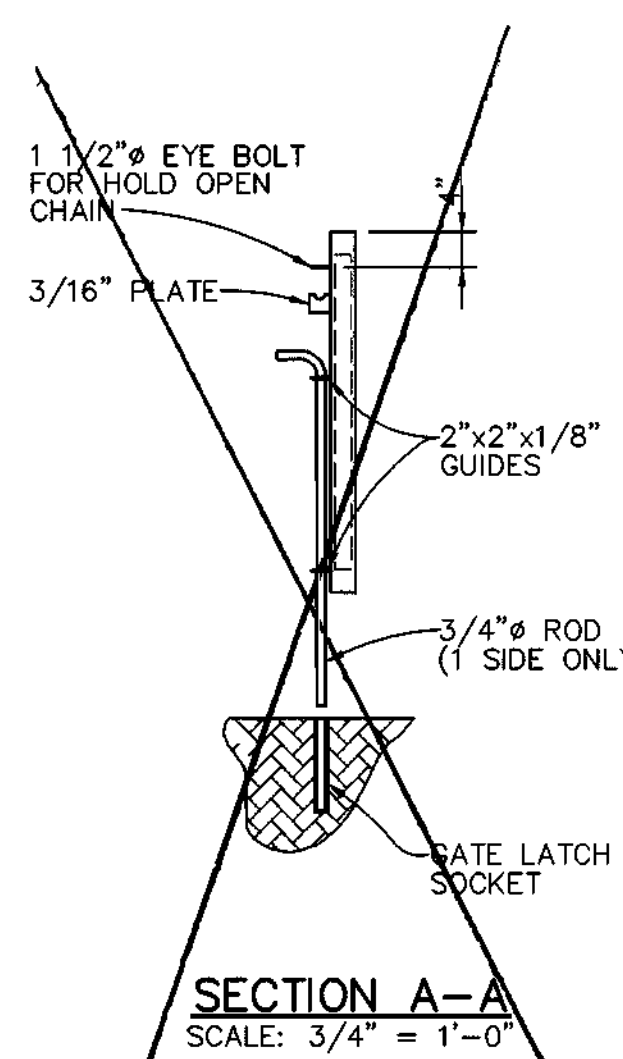
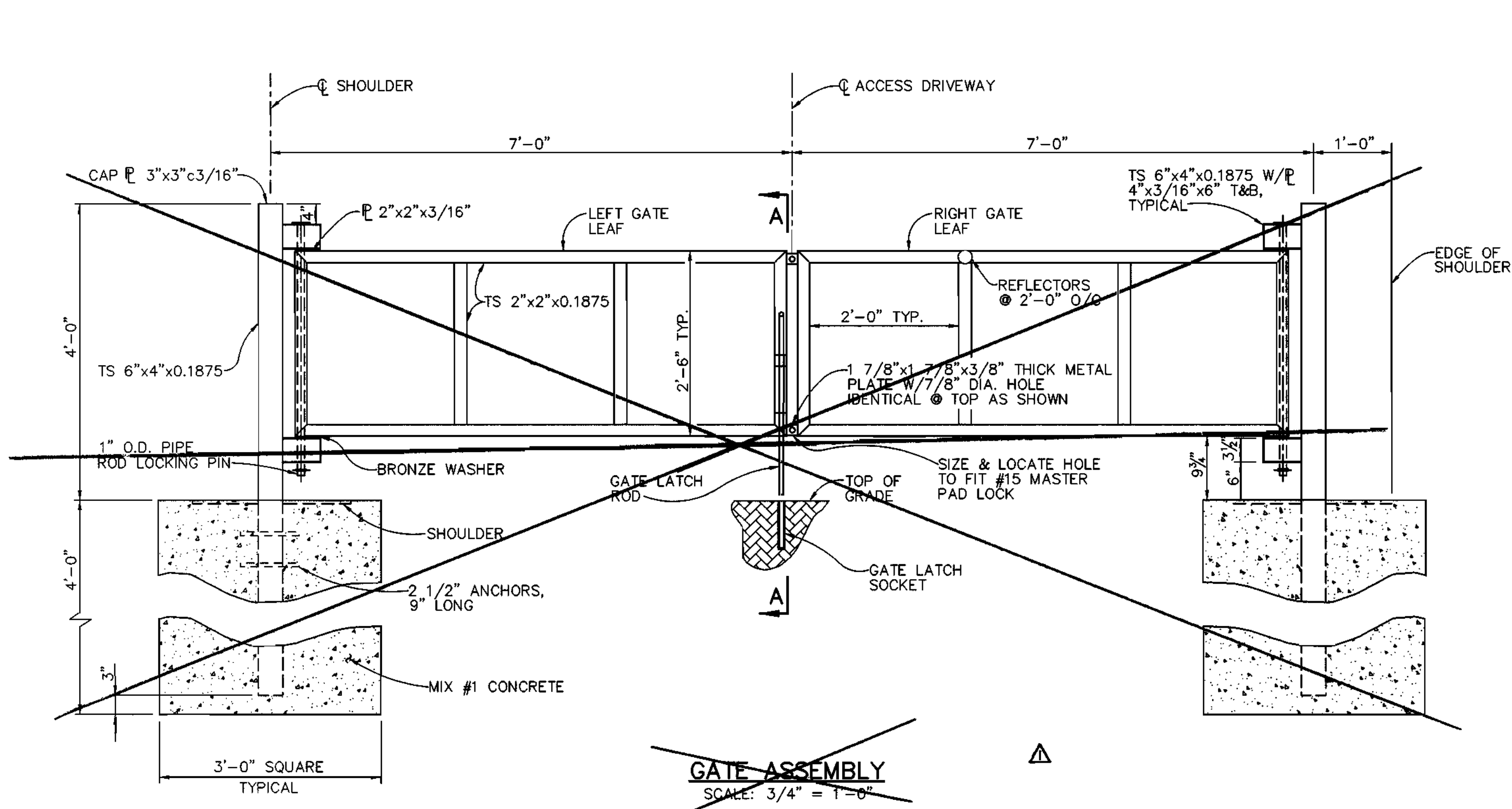
DES: J.S.C.	DATE: 9/98
DRN: E.L.R.	
CHK: G.C.L.	
BY NO.	REVISION
DATE	600' SCALE MAP NO. 46 BLOCK NO. 16

SEWER/FORCE MAIN PROFILE & SECTION

RESERVOIR OVERLOOK PUMPING STATION
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 20-3664-D

SCALE AS SHOWN
 SHEET 3 OF 12

K:\PROJECTS\19356\REVISED\PROFILE.FRT 04/24/98 09:51:32 1998 RIEMER MUEGGE AND ASSOCIATES, INC.



TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redistributed where a short-term vegetative cover is needed.

Seeding Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq.ft.).

Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushels per acre of annual ryegrass (3.2 lbs. per 1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.07 lbs. per 1000 sq.ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 80 lbs. per 1000 sq.ft.) of unrattled small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rote and methods not covered.

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seeding Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:

- 1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 800 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (9 lbs. per 1000 sq.ft.).
- 2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 1000 lbs. per acre 10-10-10 fertilizer (23 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.

Seeding: For the period March 1 thru April 30 and from August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs. per 1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs. per 1000 sq.ft.) of weeping lovegrass. During the period October 16 thru February 28, protect site by one of the following options:

- 1) 2 tons per acre of well-anchored mulch straw and seed as soon as possible in the spring.
- 2) Use sod.
- 3) Seed with 60 lbs. per acre Kentucky 31 Tall Fescue and mulch with 2 tons per acre well anchored straw.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 80 lbs. per 1000 sq.ft.) of unrattled small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Maintenance: Inspect all seeded areas and make needed repairs, replacements and reseedings.

AS-BUILT

FRANK DONALDSON #8146

FRANK DONALDSON #8146

5/1/98

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8816 Centre Park Drive • Suite 200 • Columbia, MD 21045
410-997-8900 FAX: 410-997-9252
97081/40118/TT12587.DWG

DES: J.S.C.
DRN: E.L.R.
CHK: G.C.L.
DATE: 4/27/98

OMITTED GATE ASSEMBLY, MODIFIED GATE HOLD OPEN POST TO SECURITY BOLLARD, AND BOLLARD LOCK DETAIL 8/98

FENCE & ACCESS ROAD DETAILS

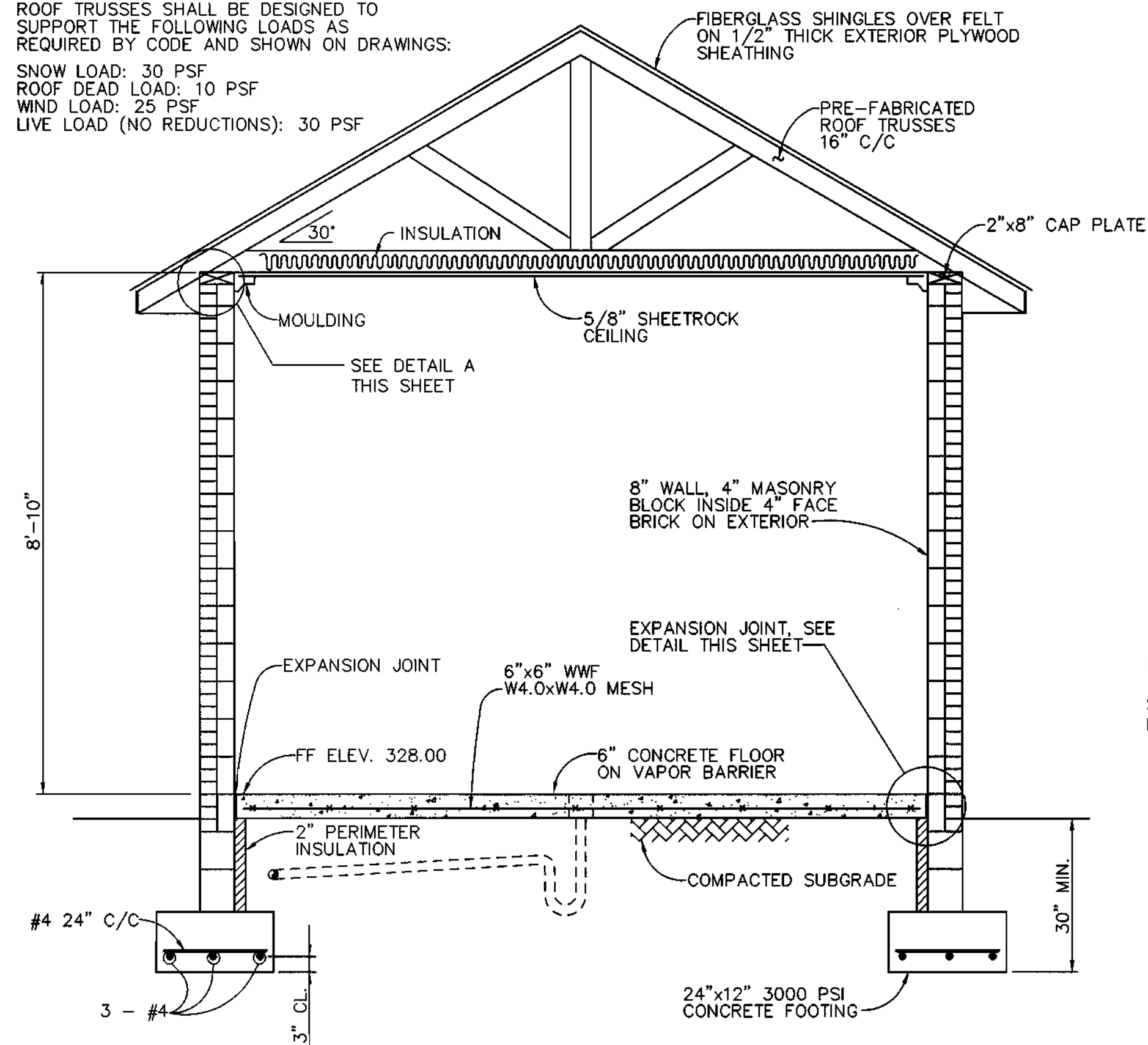
600' SCALE MAP NO. 46 BLOCK NO. 16

RESERVOIR OVERLOOK PUMPING STATION
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 20-3664-D

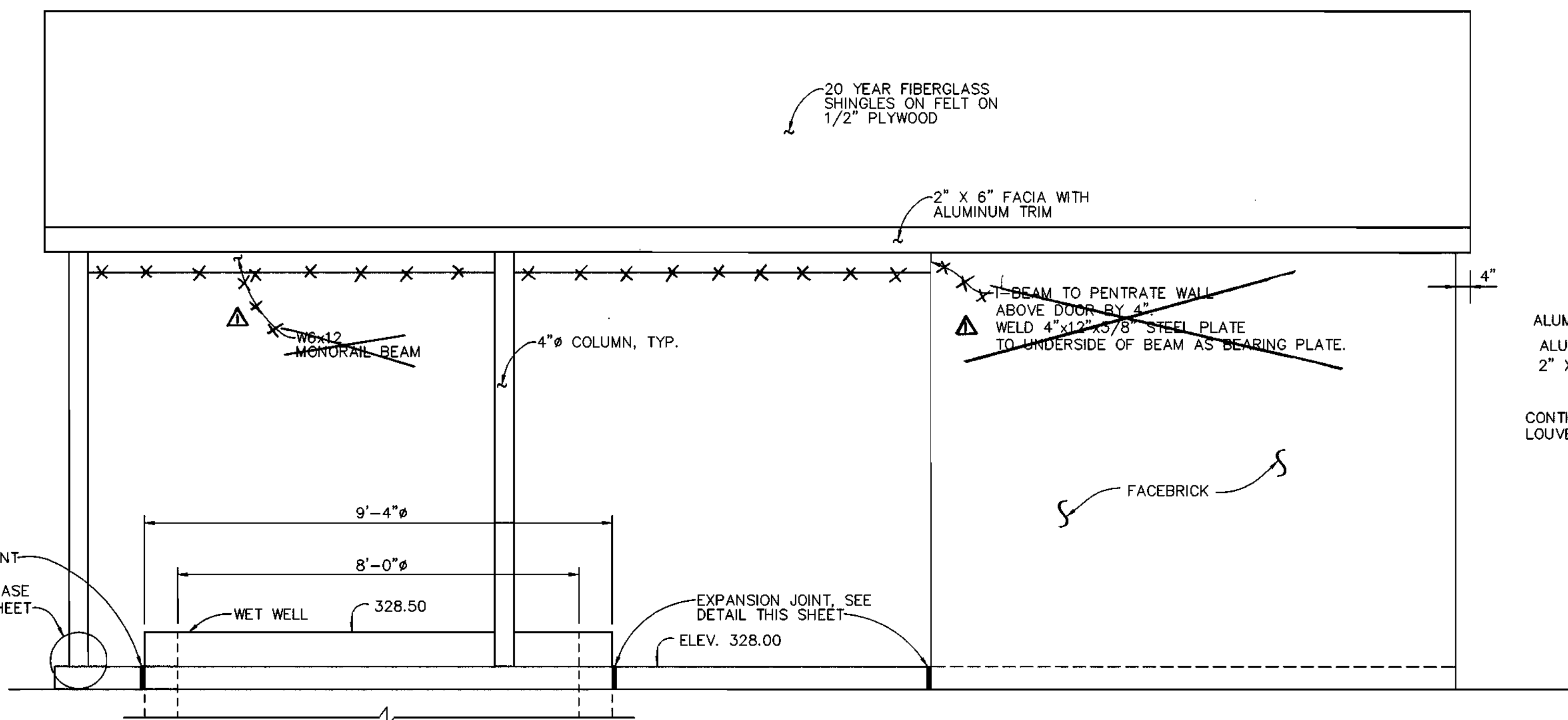
SCALE AS SHOWN
SHEET 4 OF 12

M:\PROJECT\97256\REV\VISION\DWG\SH12.FR1.MBY 1 08:38:51 1998 RIEMER MUEGGE AND ASSOCIATES, INC.

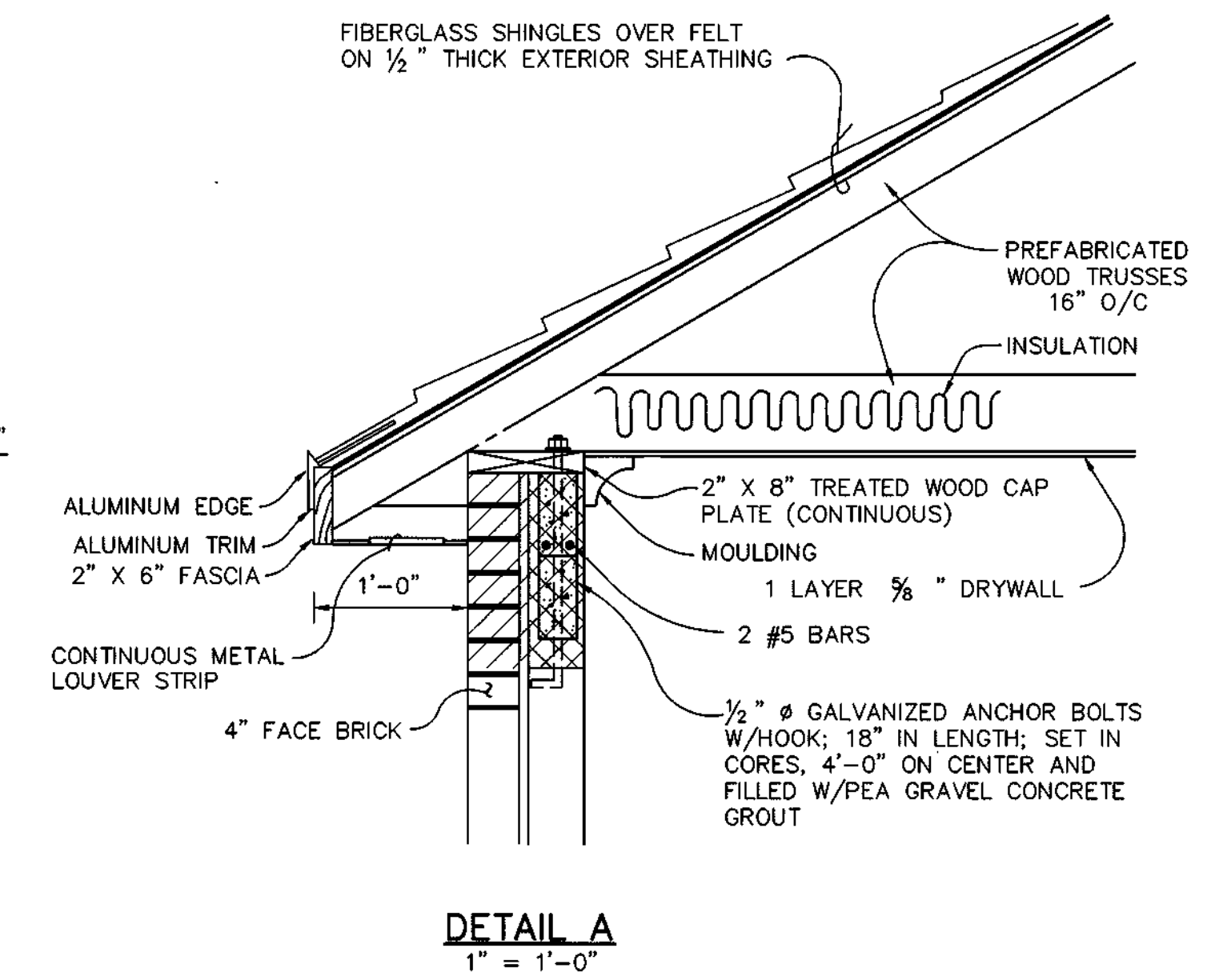
NOTE:
 ROOF TRUSSES SHALL BE DESIGNED TO SUPPORT THE FOLLOWING LOADS AS REQUIRED BY CODE AND SHOWN ON DRAWINGS:
 SNOW LOAD: 30 PSF
 ROOF DEAD LOAD: 10 PSF
 WIND LOAD: 25 PSF
 LIVE LOAD (NO REDUCTIONS): 30 PSF



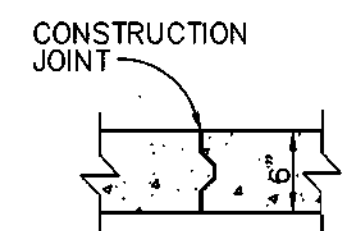
SECTION A-A
 1/2" = 1'-0"



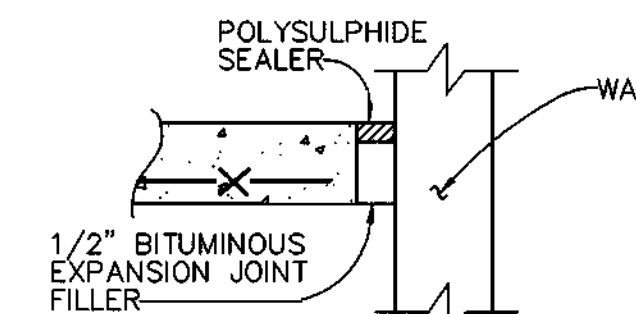
EAST ELEVATION
 1/2" = 1'-0"
 (WEST ELEVATION SIMILAR)



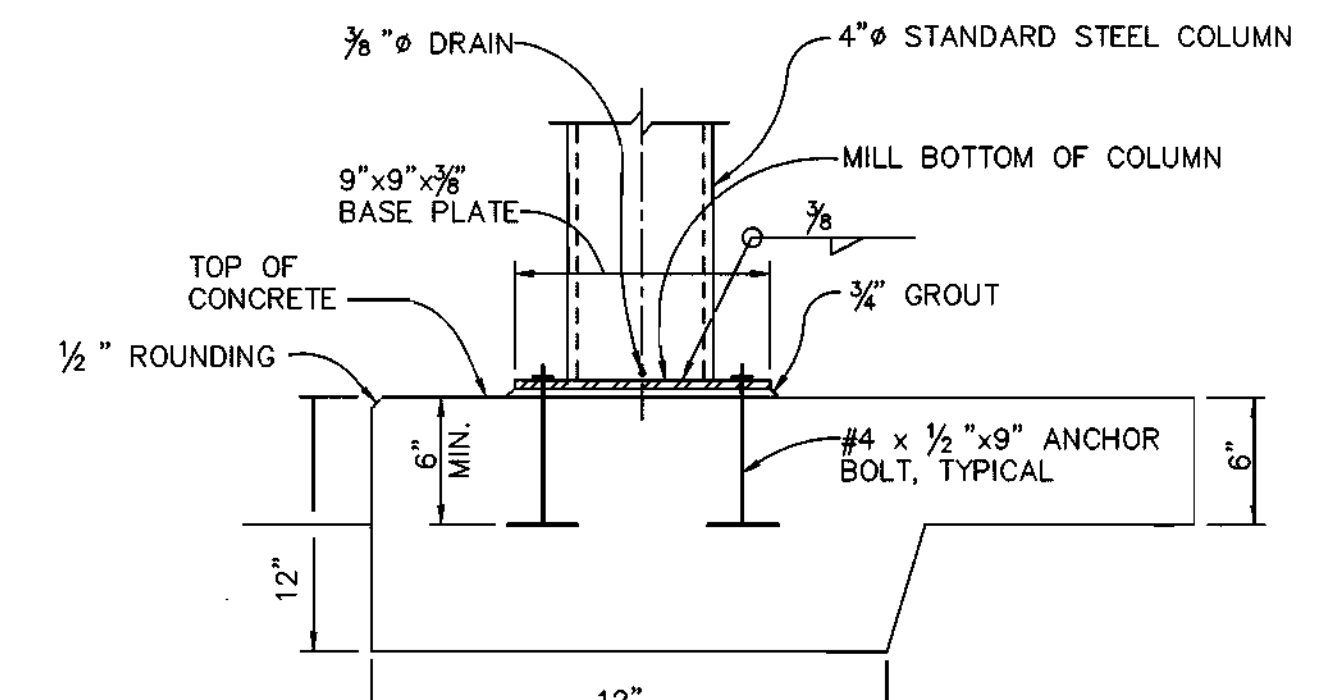
DETAIL A
 1" = 1'-0"



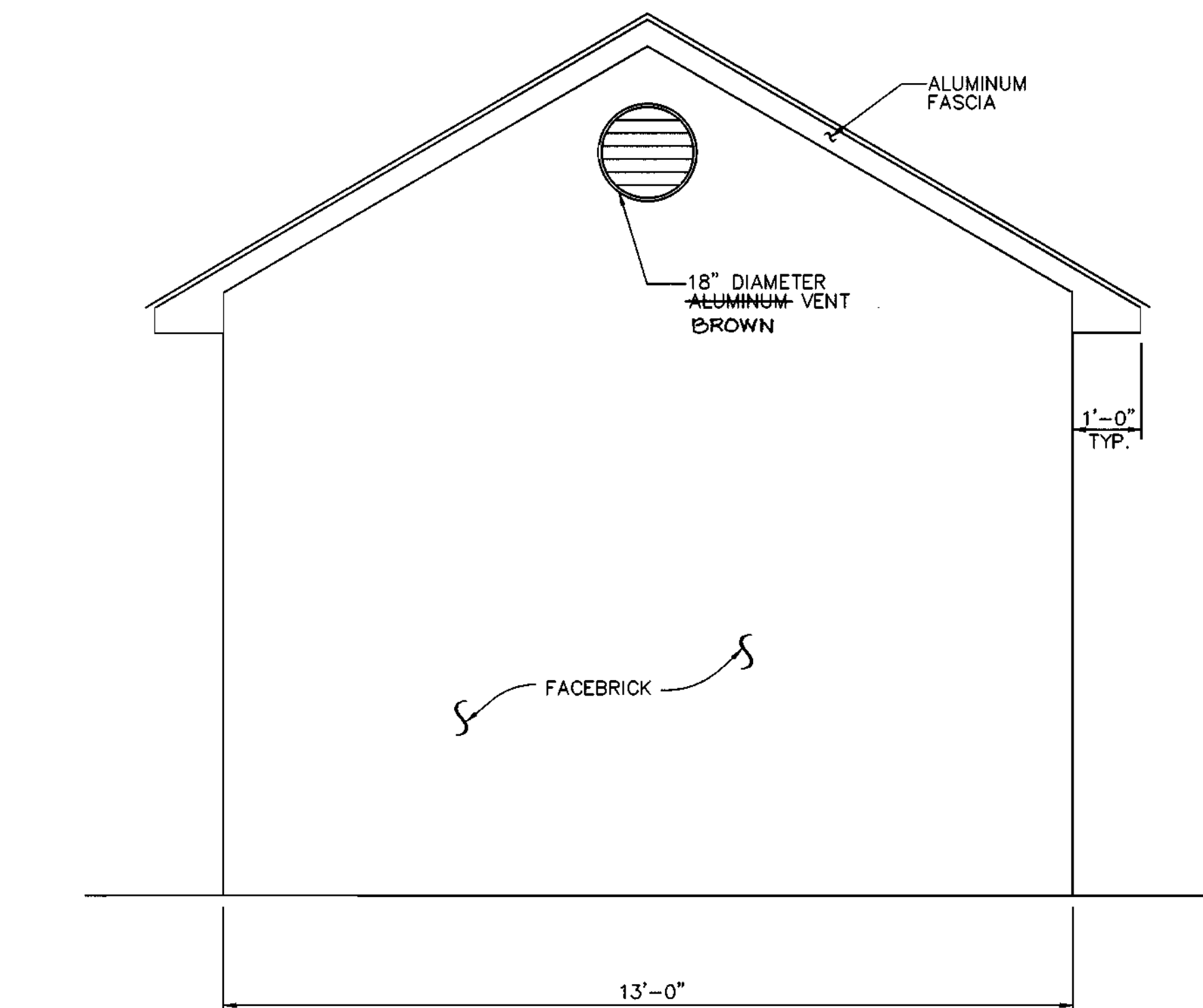
CONSTRUCT JOINT DETAIL
 N.T.S.



EXPANSION JOINT DETAIL
 N.T.S.

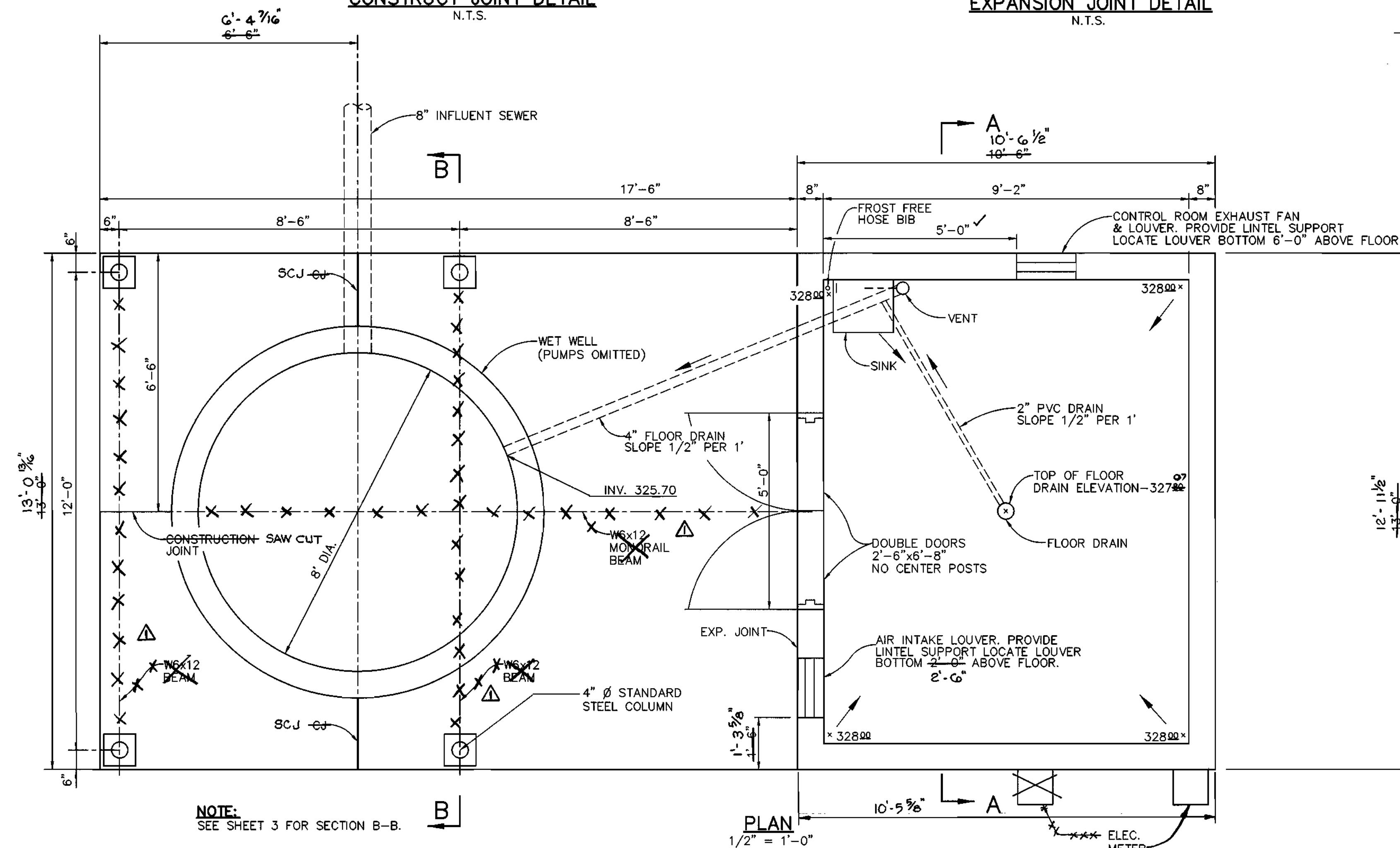


COLUMN BASE DETAIL
 N.T.S.



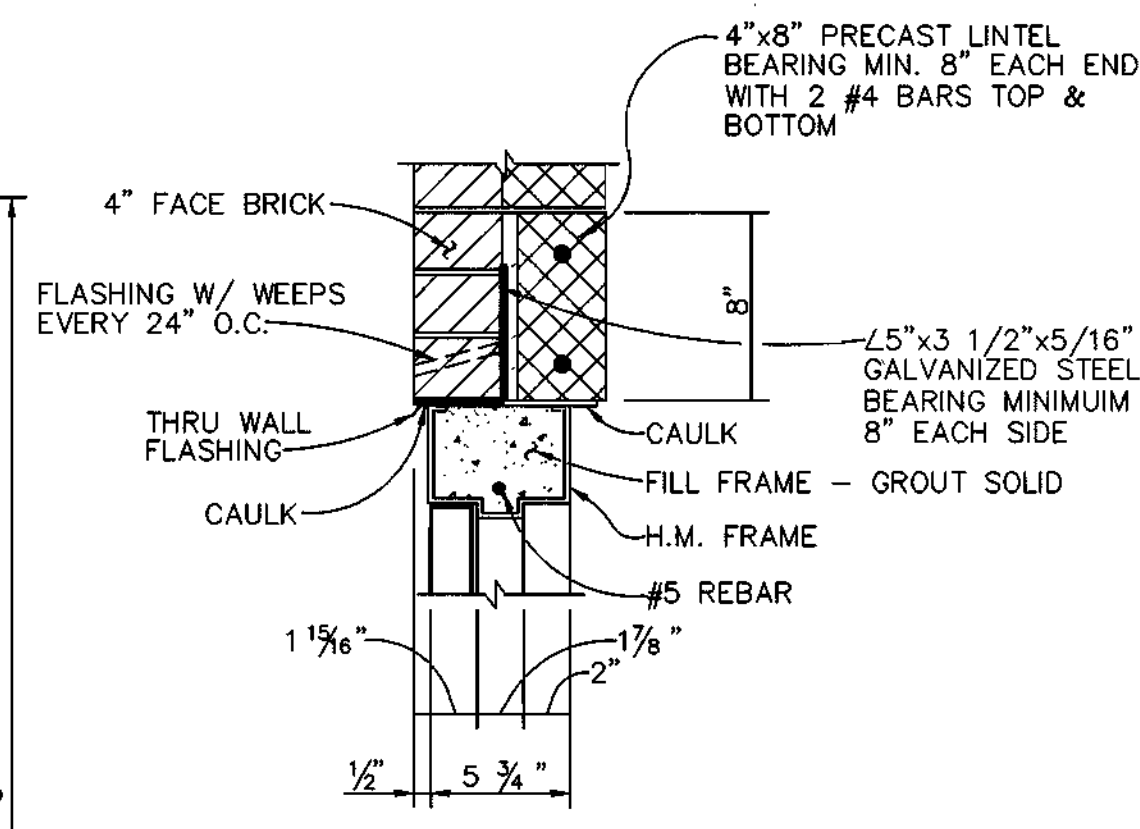
NORTH ELEVATION
 1/2" = 1'-0"

AS BUILT
 STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 FRANK DONALDSON #8146

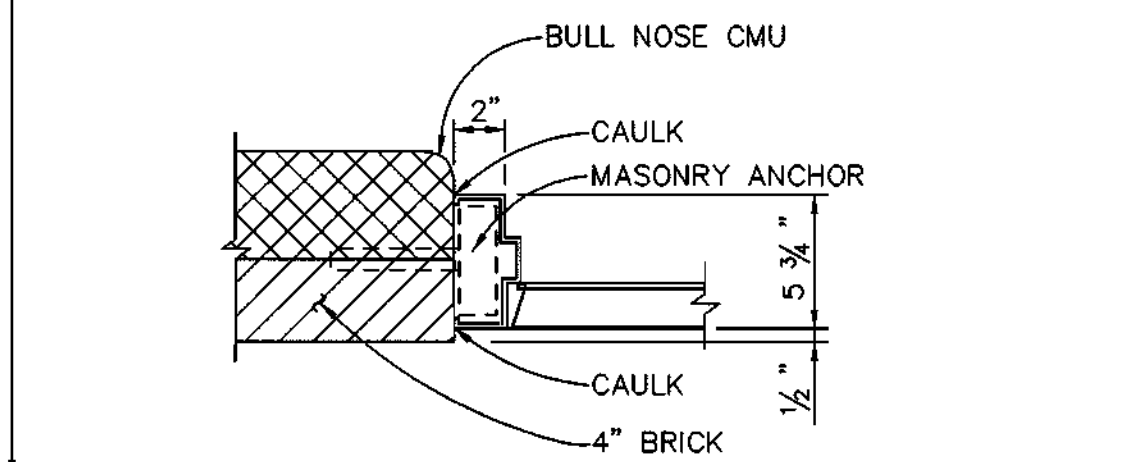


PLAN
 1/2" = 1'-0"

NOTE:
 SEE SHEET 3 FOR SECTION B-B.



HEAD DETAIL
 1 1/2" = 1'-0"



JAMB DETAIL
 1 1/2" = 1'-0"

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 CHIEF, BUREAU OF UTILITIES
 DATE: 6-1-98

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 6/1/98

RIEMER MUEGGE & ASSOCIATES, INC.
 ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
 8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
 410-997-8900 FAX: 410-997-9282
 97061/401MS/TTL/SHIT.DWG

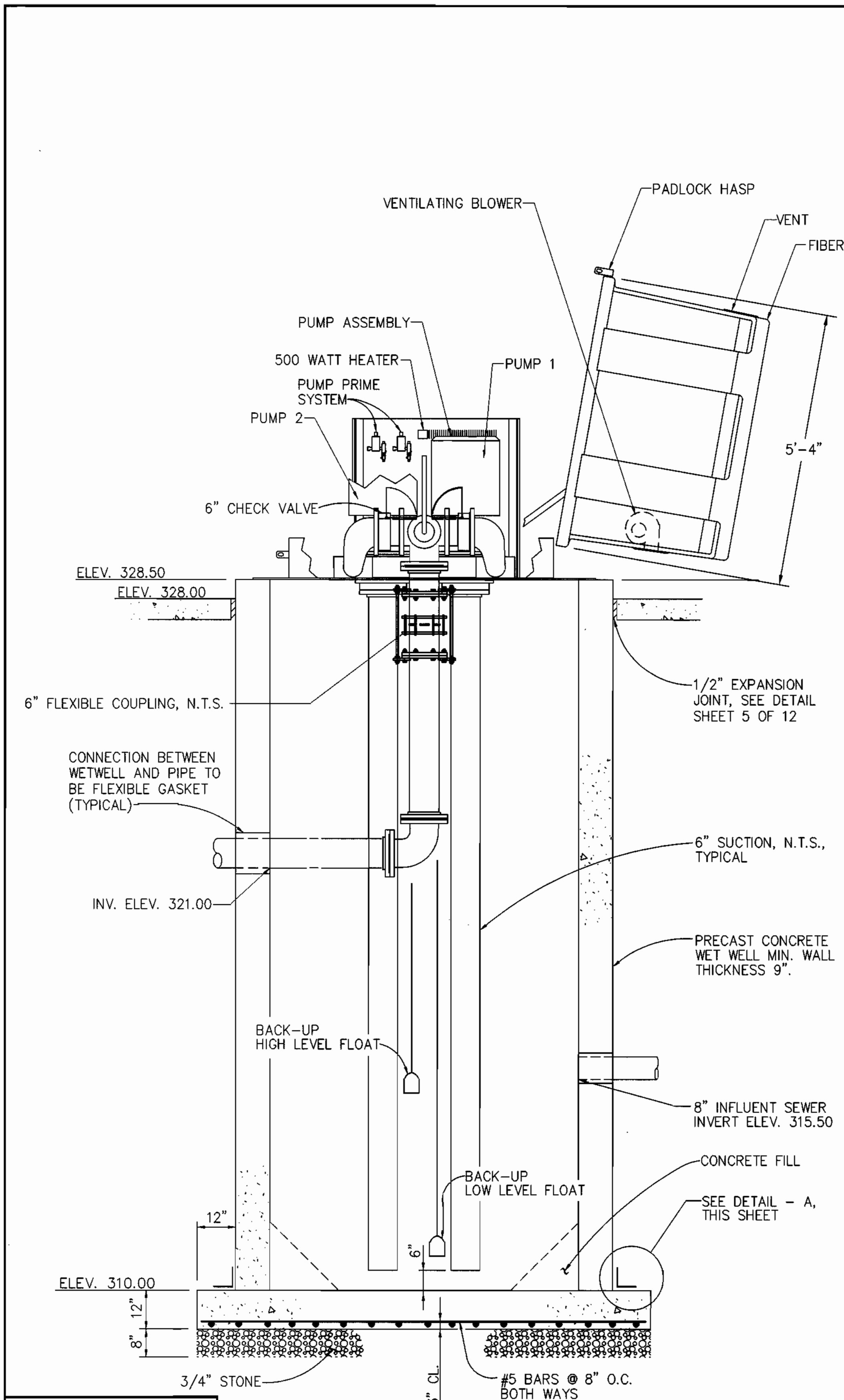
STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 FRANK DONALDSON #8146
 DATE: 4/27/98

DES:	J.S.C.	OMITTED MONORAIL BEAM & HOIST	8/98
DRN:	E.L.R.		
CHK:	G.C.L.		
DATE:	4/27/98		
BY:	NO.	REVISION	DATE

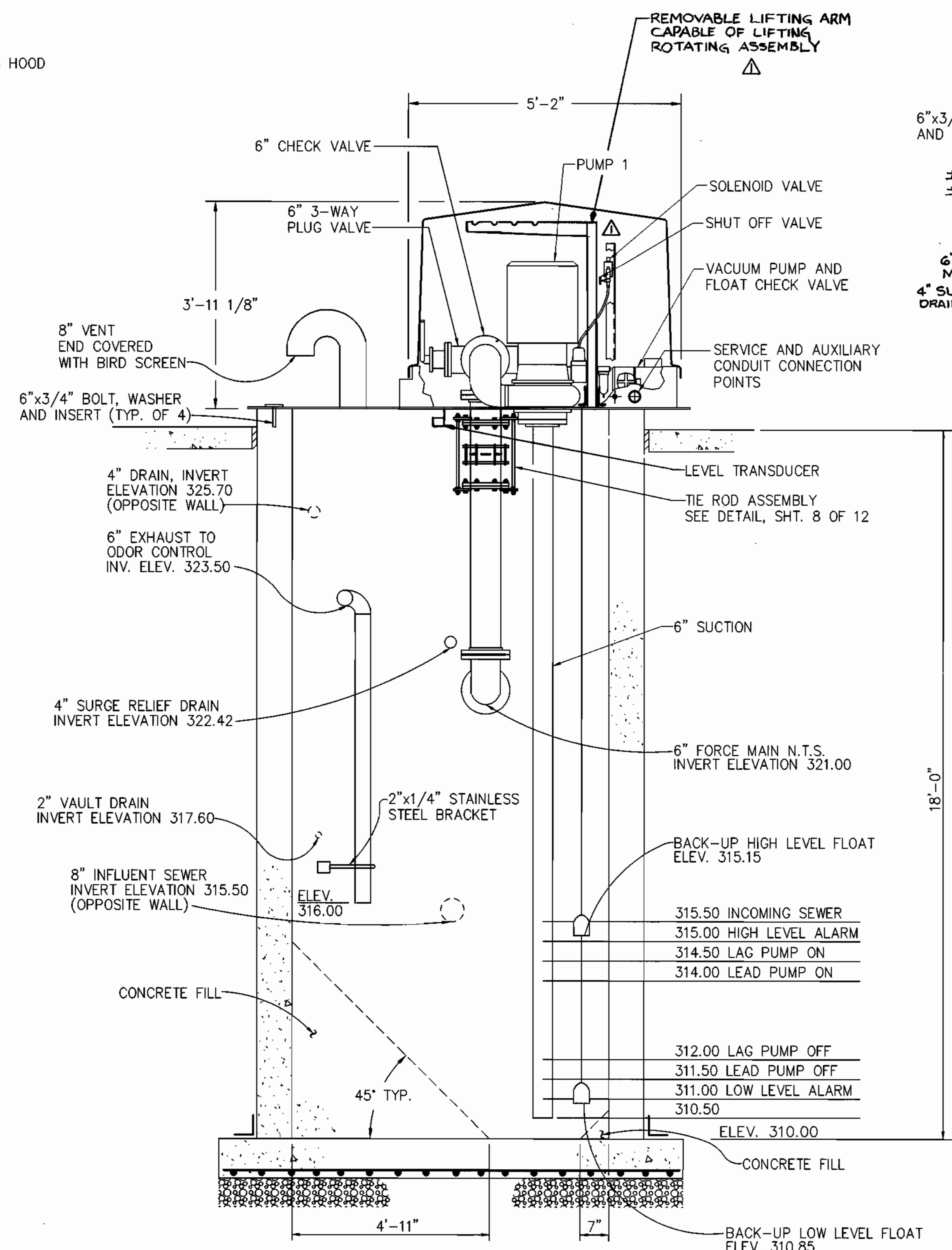
CONTROL BUILDING
PLAN & DETAILS
ARCHITECTURAL/STRUCTURAL

RESERVOIR OVERLOOK
PUMPING STATION
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 20-3664-D
 SCALE AS SHOWN
 SHEET 5 OF 12

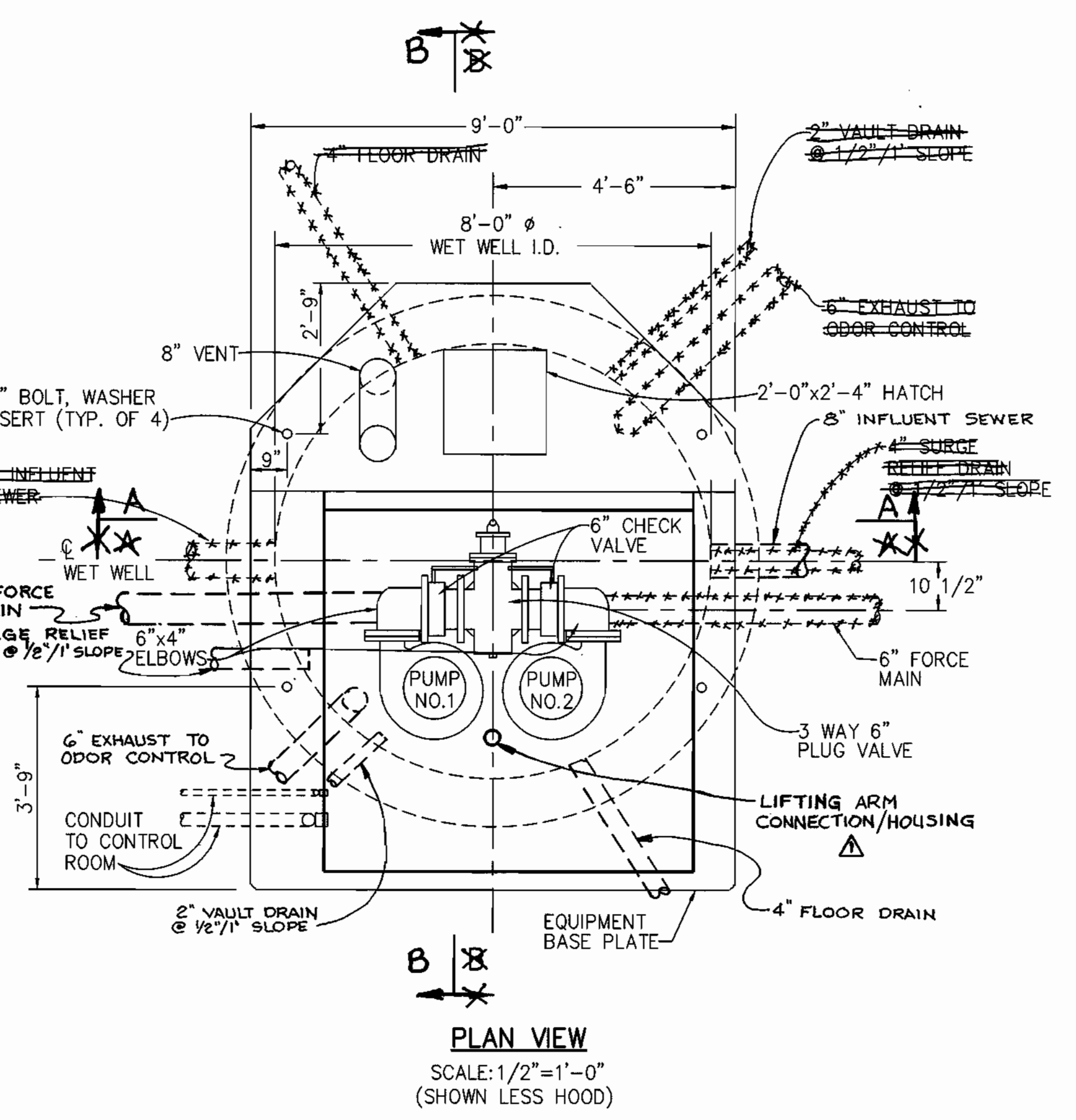
5/1/98 AS-BUILT 11/19/99



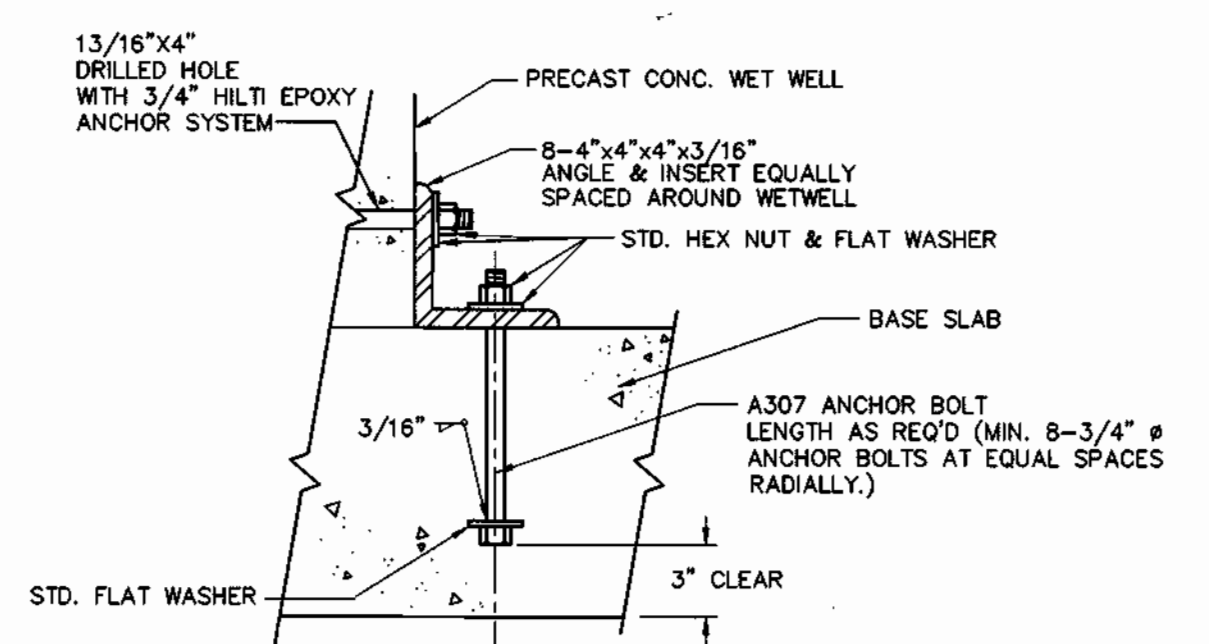
SECTIONAL ELEVATION A-A
SCALE: 1/2" = 1'-0"



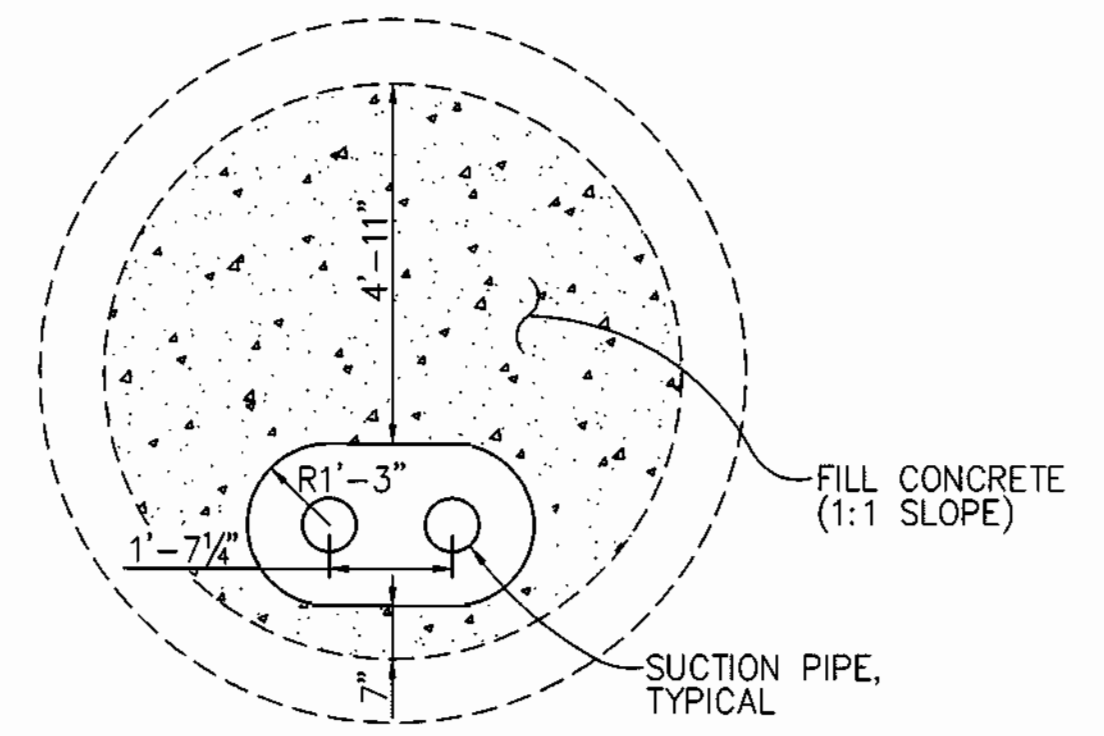
SECTIONAL ELEVATION B-B
SCALE: 1/2" = 1'-0"



PLAN VIEW
SCALE: 1/2" = 1'-0"
(SHOWN LESS HOOD)



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



WETWELL FLOOR PLAN
SCALE: 3/8" = 1'-0"

PUMPS: MODEL 4B2D 1760 RPM AS PROVIDED BY SMITH AND LOVELESS.
MOTORS: 20 HP 3 PHASE 60 HERTZ 460 VOLT.
IMPELLAR: 54L23

NOTE:
ALL CONNECTIONS BETWEEN WETWELL WALL AND PIPES SHALL BE SEALED WATER TIGHT WITH FLEXIBLE GASKET

AS-BUILT

FRANK DONALDSON #8146

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert B. ...
CHIEF, BUREAU OF UTILITIES

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

Frank Donaldson
CHIEF, DEVELOPMENT ENGINEERING DIVISION

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
410-997-8900 FAX: 410-997-9282
9701/40158/7/11/88T.DPG

FRANK DONALDSON #8146

DES:	J.S.C.	ADDED REMOVABLE LIFTING ARM & CONNECTION/HOUSING FOR ARM	8/98
DRN:	E.L.R.		
CHK:	G.C.L.		
DATE:	4/27/98		
BY:	NO.	REVISION	DATE

WETWELL & PUMPING STATION MECHANICAL

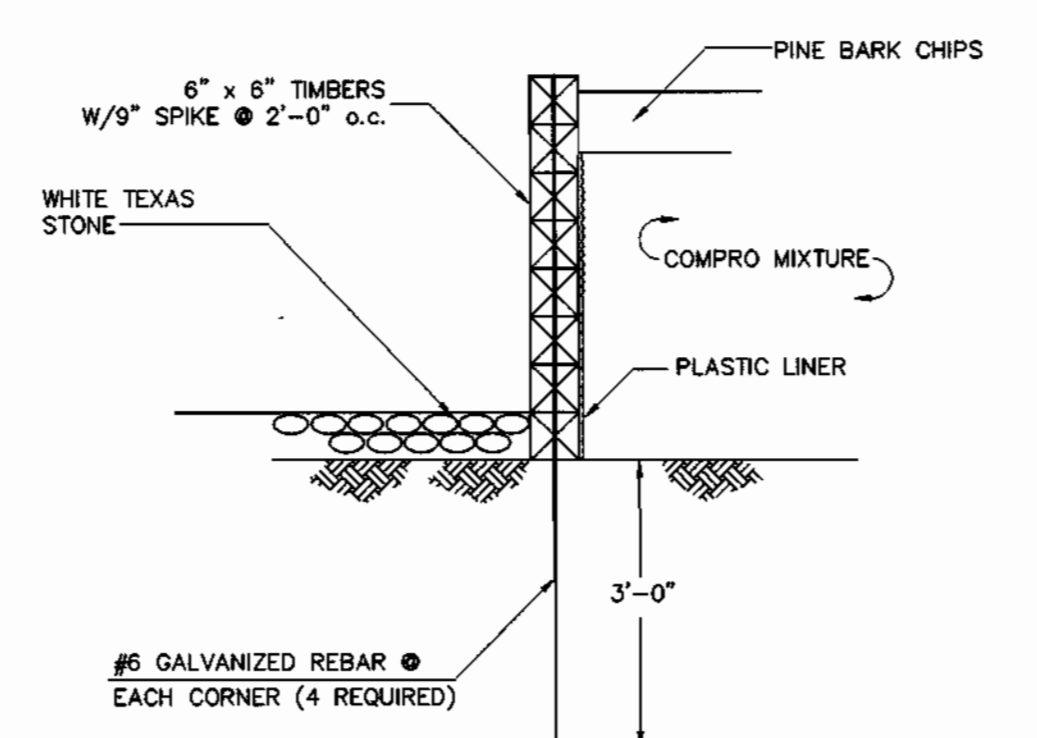
600' SCALE MAP NO. 46 BLOCK NO. 16

RESERVOIR OVERLOOK PUMPING STATION
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 20-3664-D

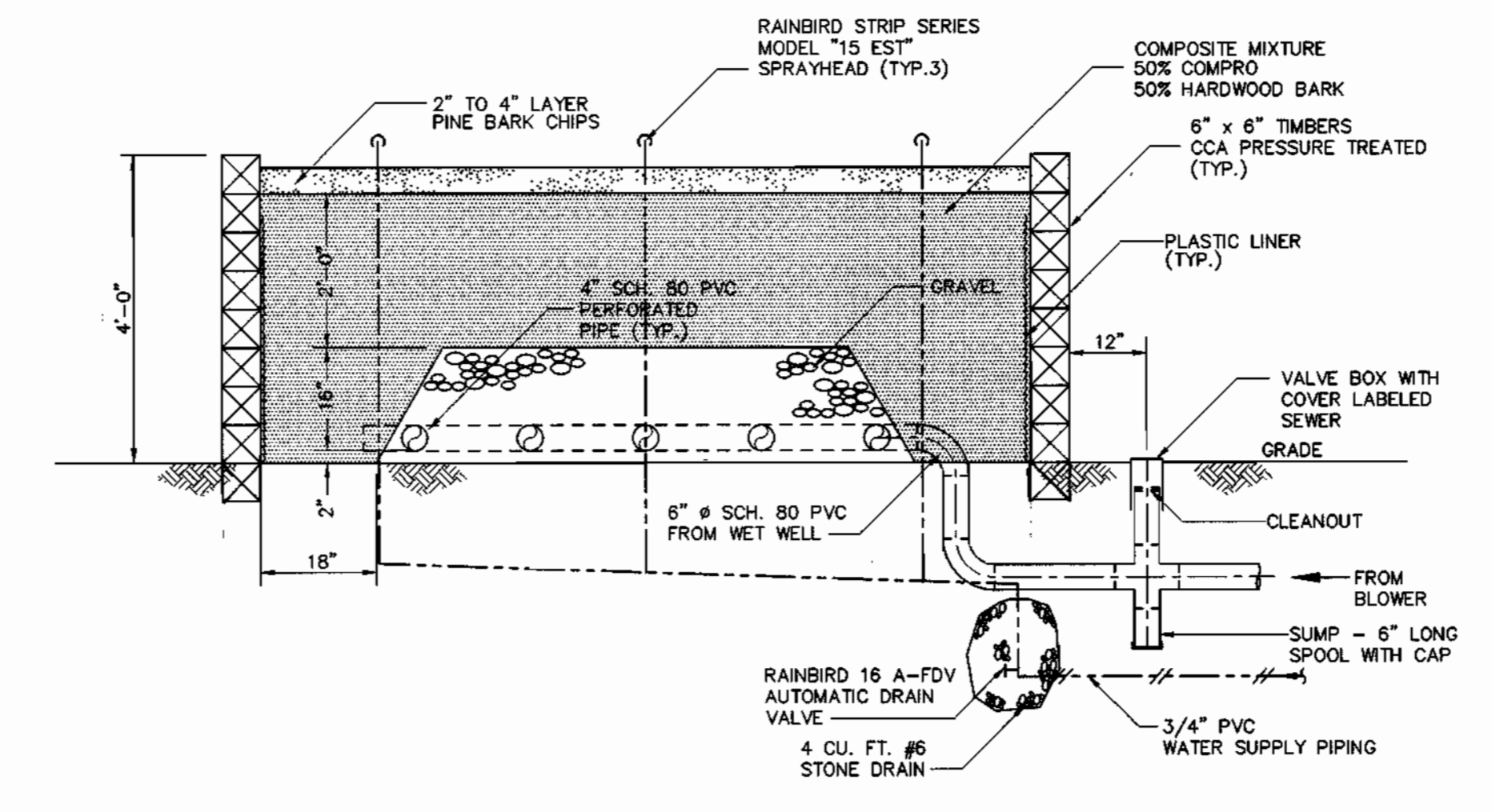
SCALE AS SHOWN
SHEET 6 OF 12

AS-BUILT 11/19/99

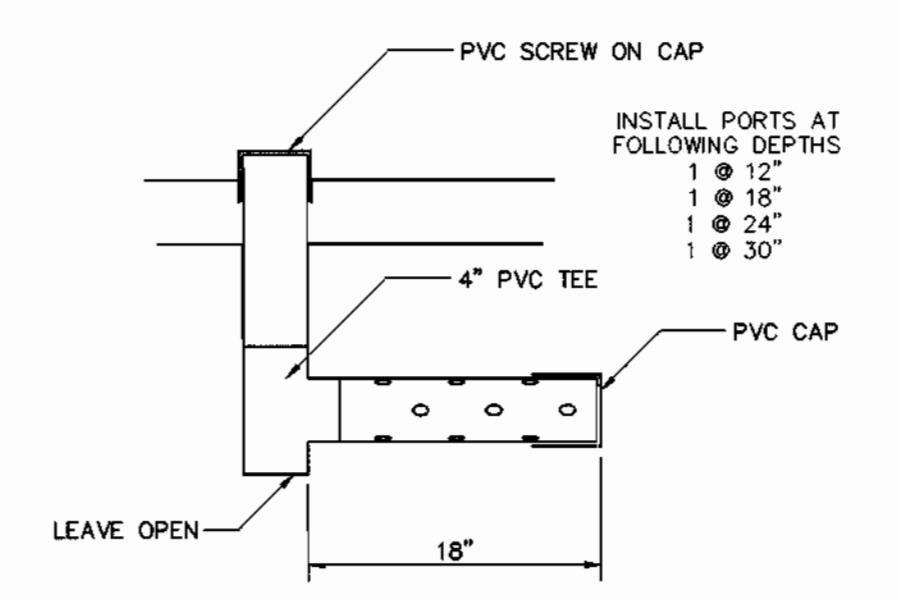
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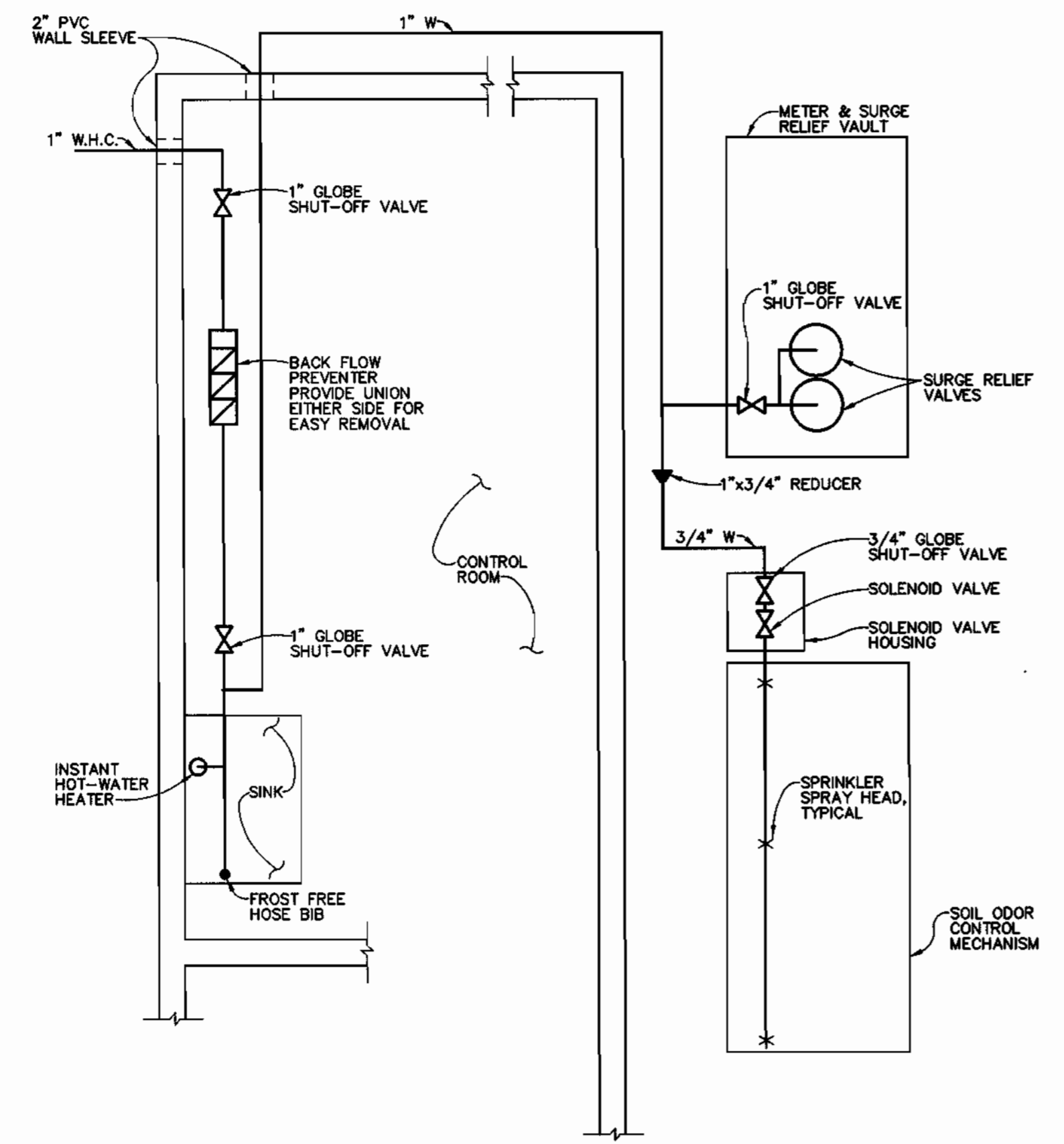
CORNER DETAIL
SCALE: 1/2" = 1'-0"



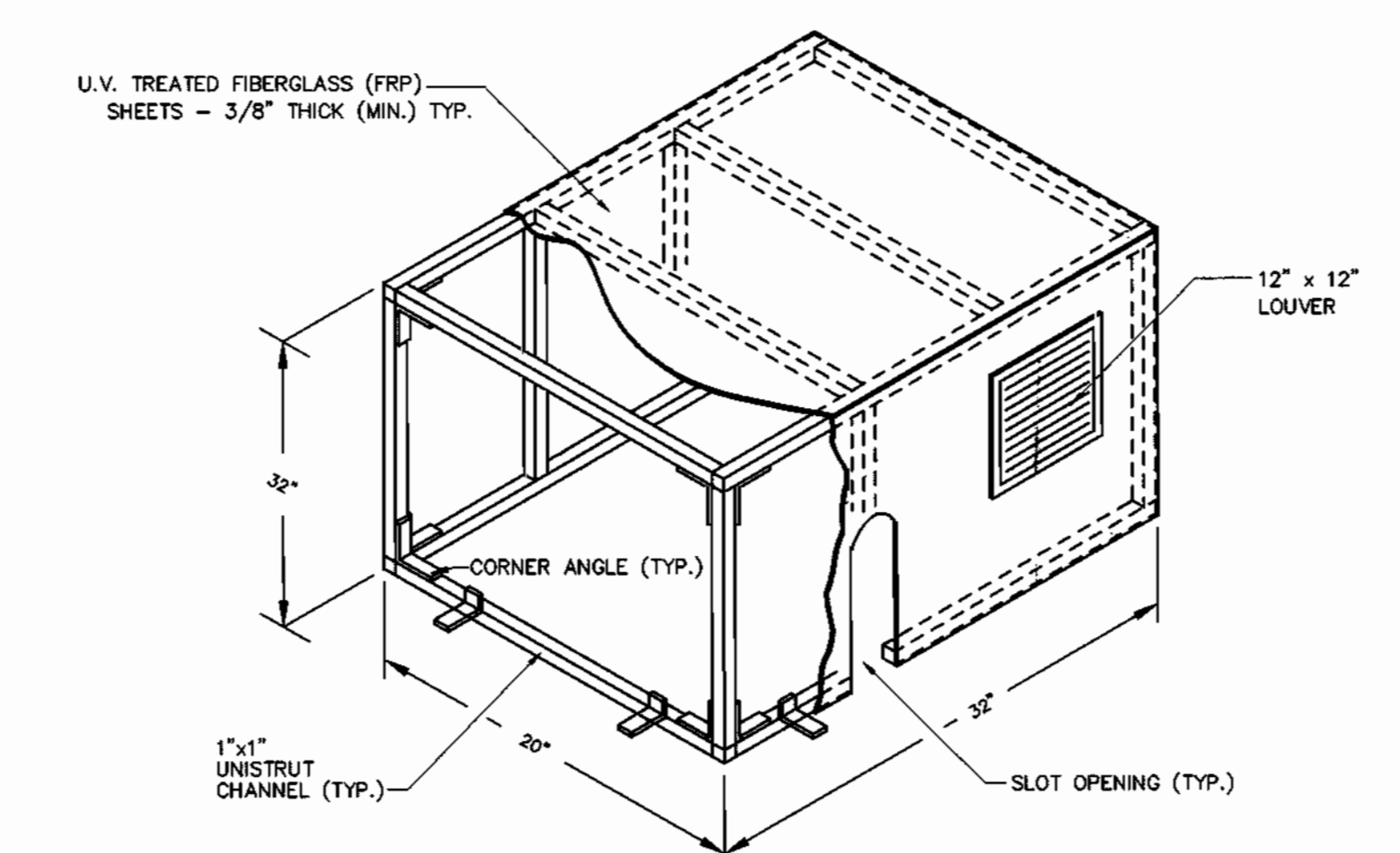
SECTION A-A
SCALE: 1/2" = 1'-0"



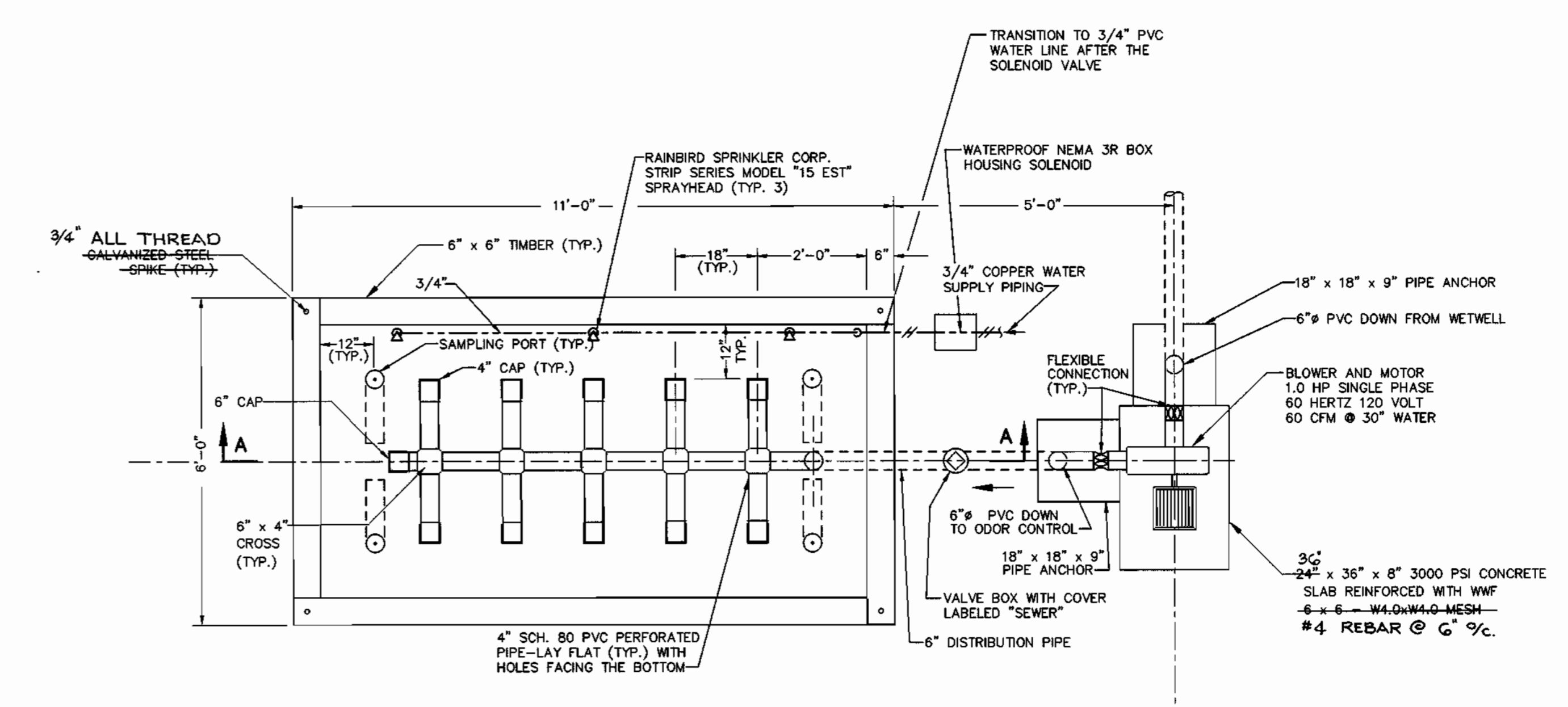
SAMPLING PORT
SCALE: 1" = 1'-0"



WATER SUPPLY SCHEMATIC
N.T.S.



BLOWER ENCLOSURE DETAIL
NOT TO SCALE



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

1. ALL DIMENSIONS ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
2. PROVIDE ADDITIONAL UNISTRUT AS REQUIRED FOR LOUVER SUPPORT AND RIGIDITY OF ENCLOSURE.
3. FIBERGLASS (FRP) SHEETS SHALL COVER ENTIRE STRUCTURE AND SHALL BE BOLTED TO UNISTRUT AS REQUIRED.
4. PROVIDE ADDITIONAL OPENINGS FOR PIPE PENETRATIONS AS REQUIRED.
5. STRUCTURE SHALL HAVE CORNER ANGLES (TWO PER SIDE) FOR BOLTING DOWN TO THE CONCRETE PAD.
6. ENCLOSURE SHALL HAVE 1/2" THICK U.L. APPROVED DUCT LINER GLUED TO INSIDE FACE OF FRP PANELS.

- NOTES:**
1. PROVIDE MINIMUM 24" MULCH MIXTURE BETWEEN GRAVEL AND TIMBER STRUCTURE.
 2. CONTAIN GRAVEL DURING PLACEMENT WITH TEMPORARY FRAMEWORK. REMOVE TEMPORARY FRAMEWORK AFTER COMPOSITE MIXTURE IS IN PLACE AROUND GRAVEL.
 3. 6 x 6 TIMBERS SHALL MEET AASHTO M168. MARINE GRADE, TREATED WITH CHROMATED COPPER ARSENATE (CCA) AT A RATE OF 2.5 LBS. PER CU. FT. OF WOOD AND SHALL MEET AASHTO M133.

AS-BUILT

FRANK DONALDSON #8146

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

6-1-98
DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

5/1/98
DATE

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
410-997-8900 FAX: 410-997-9282
97061/401185/77711887.DWG

FRANK DONALDSON #8146

DES:	J.S.C.				
DRN:	E.L.R.				
CHK:	G.C.L.				
DATE:	4/27/98				
BY:	NO.	REVISION	DATE		

ODOR CONTROL SYSTEM MECHANICAL

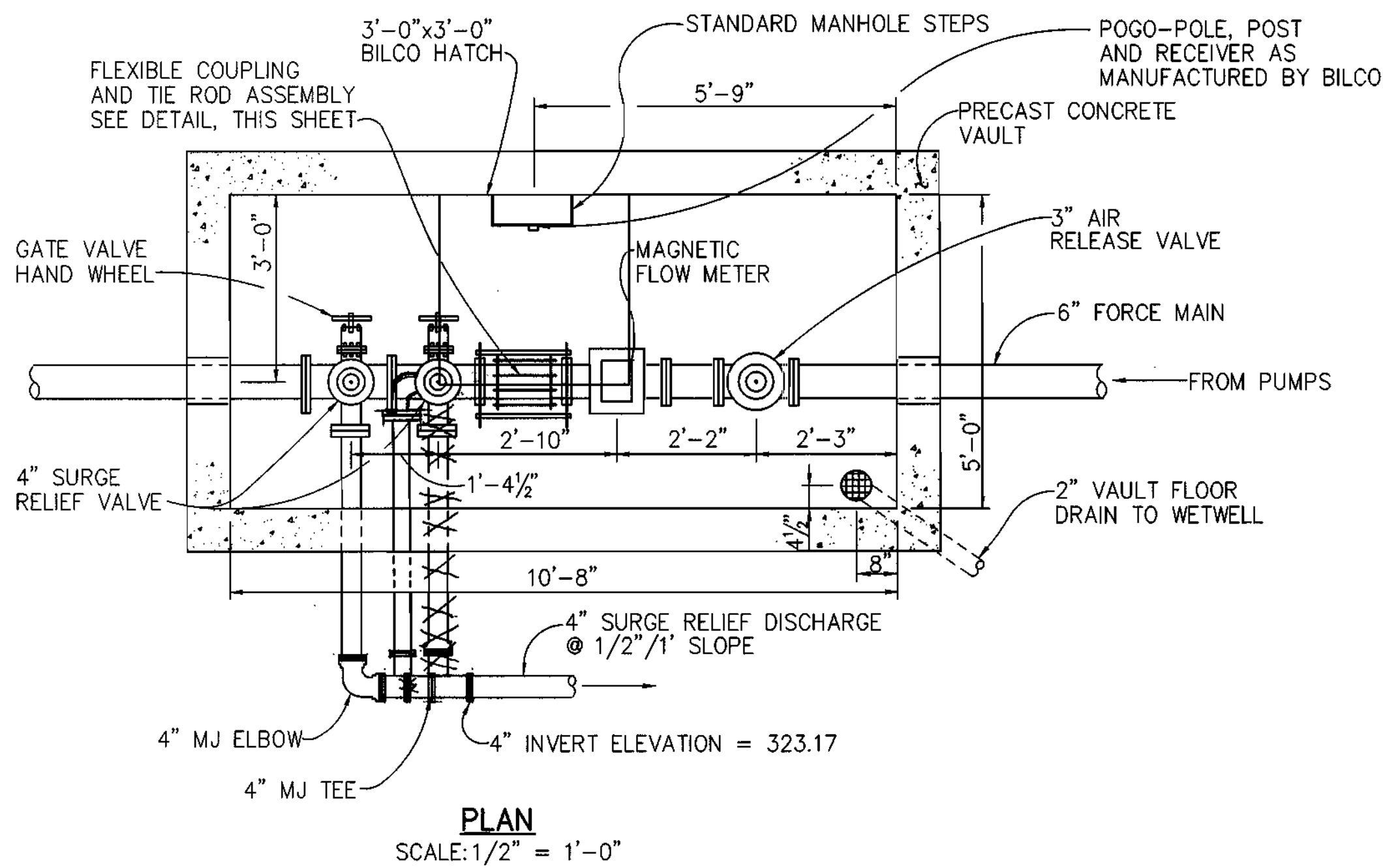
600' SCALE MAP NO. 46 BLOCK NO. 16

RESERVOIR OVERLOOK PUMPING STATION
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 20-3664-D

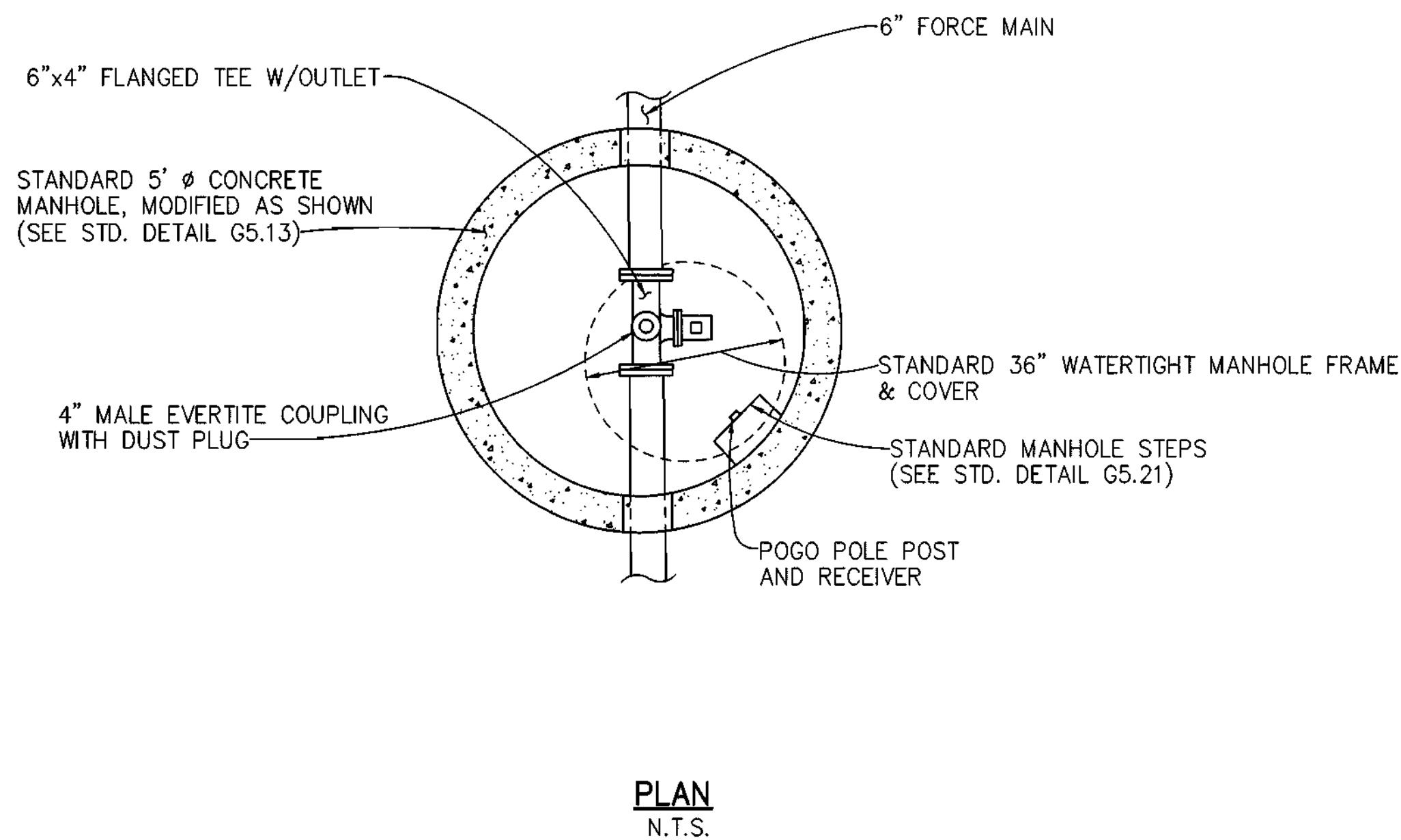
SCALE AS SHOWN
SHEET 7 OF 12

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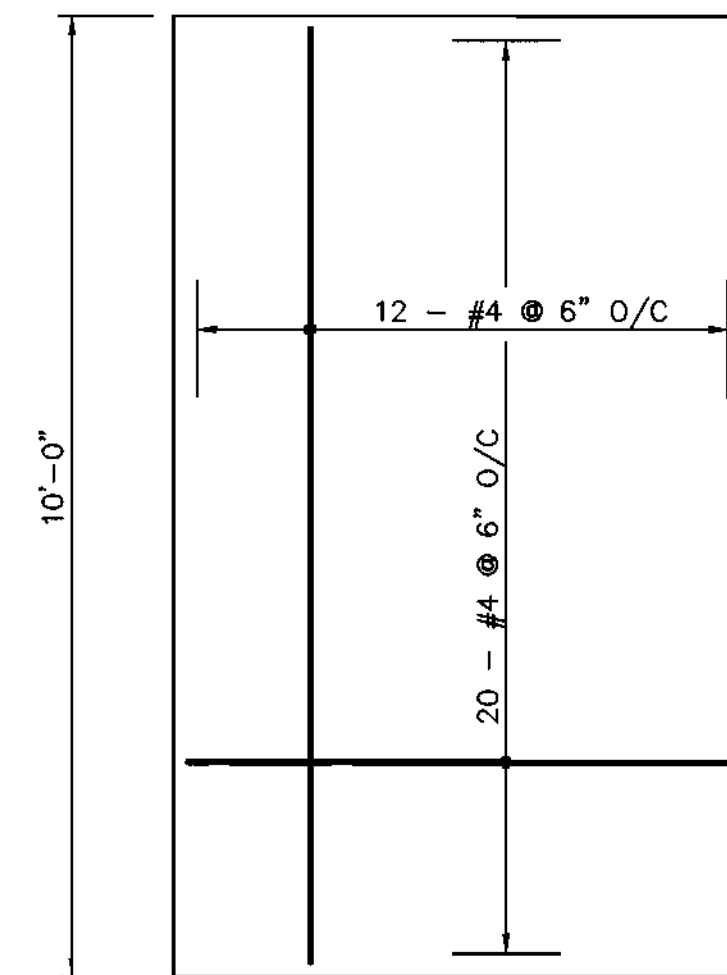
AS-BUILT 11/19/99



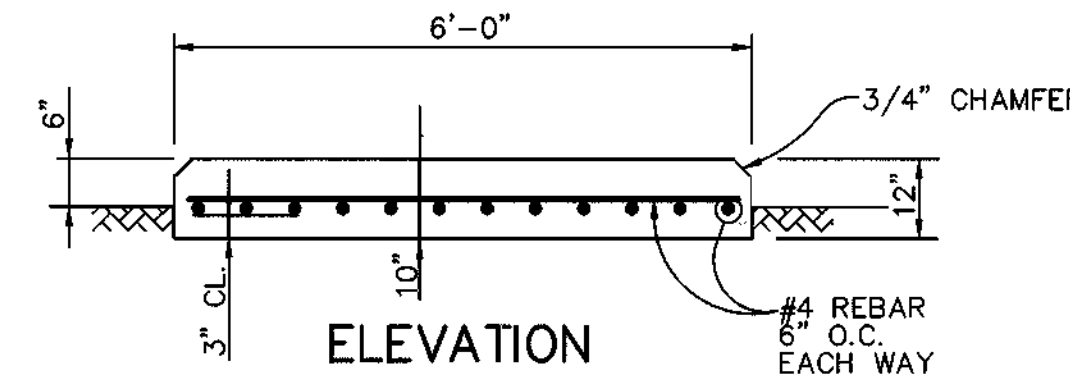
PLAN
SCALE: 1/2" = 1'-0"



PLAN
N.T.S.

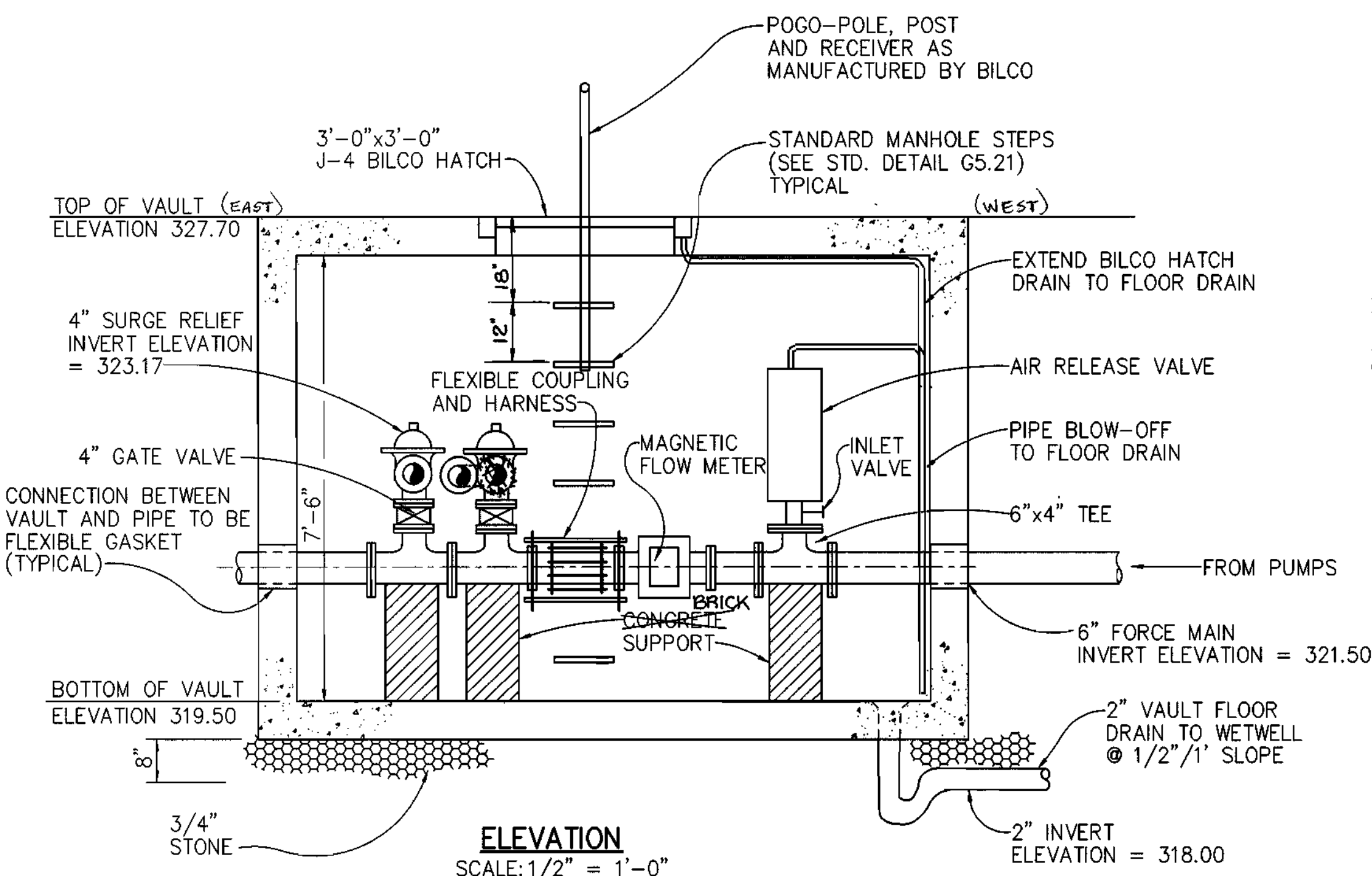


PLAN



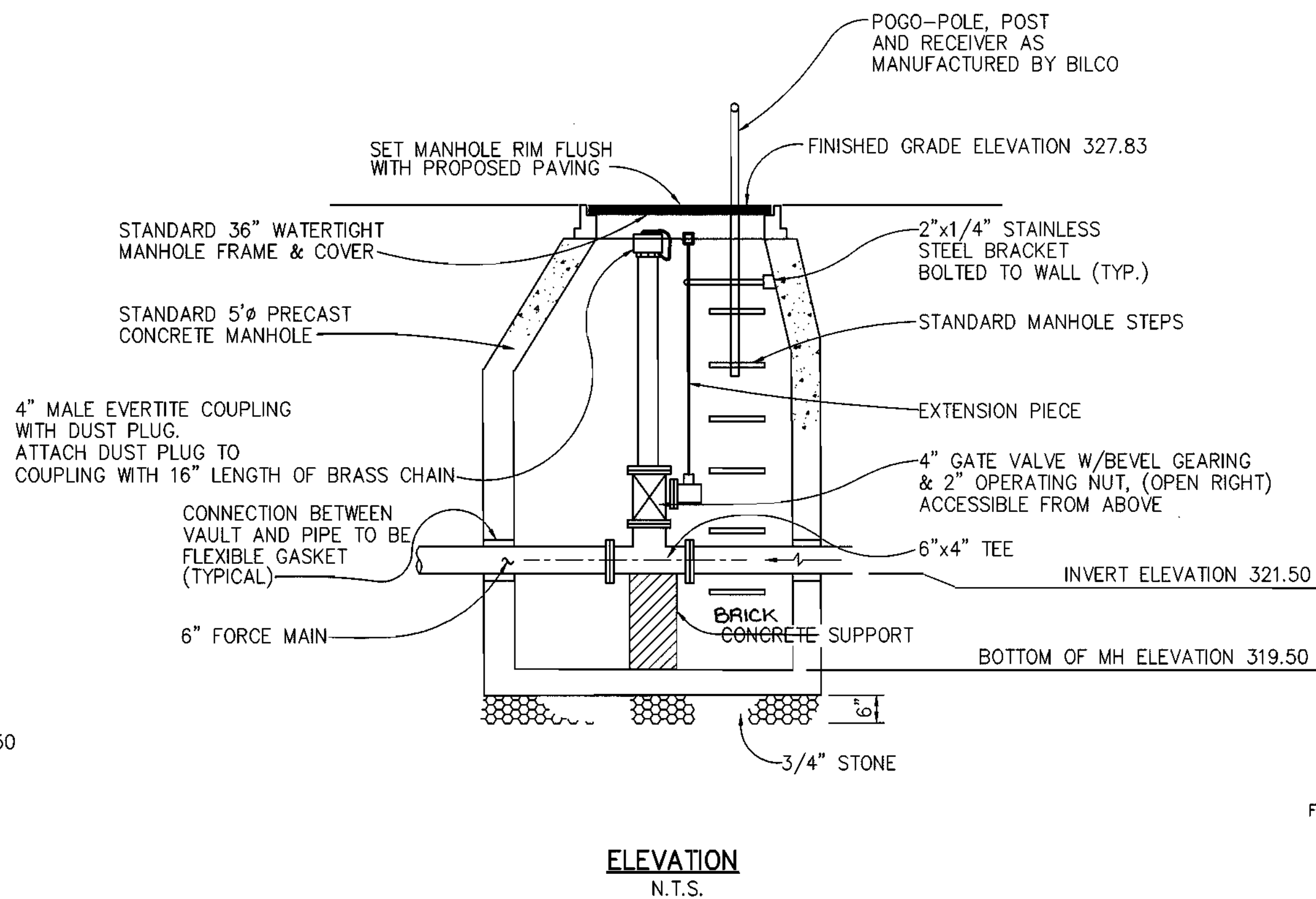
ELEVATION

GENERATOR PAD DETAIL
NOT TO SCALE



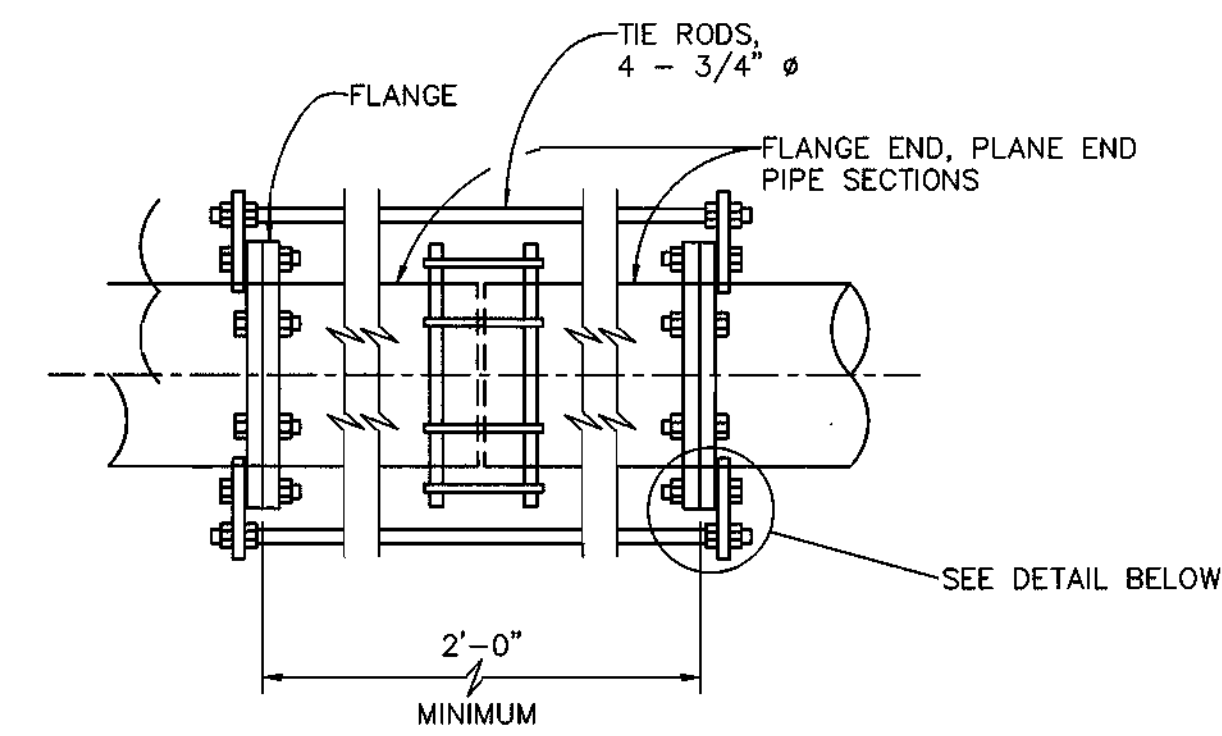
ELEVATION
SCALE: 1/2" = 1'-0"

METER AND SURGE RELIEF VAULT

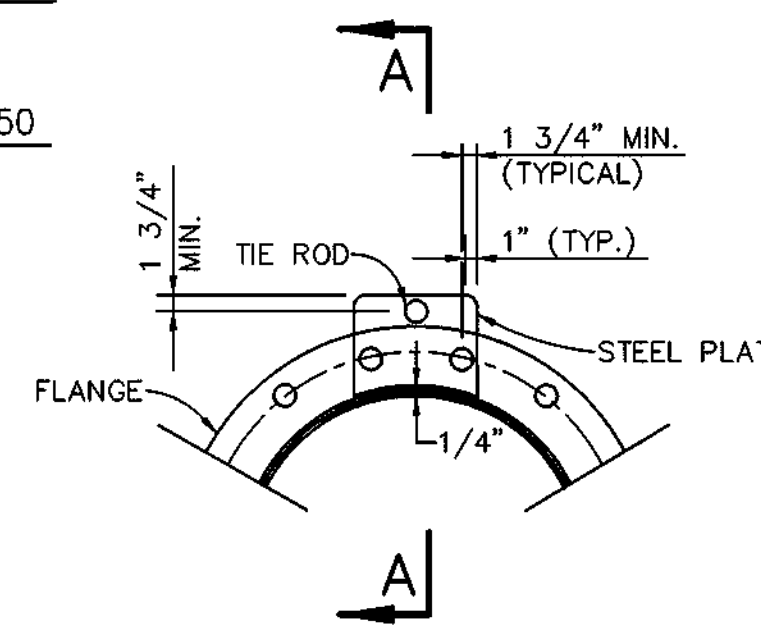


ELEVATION
N.T.S.

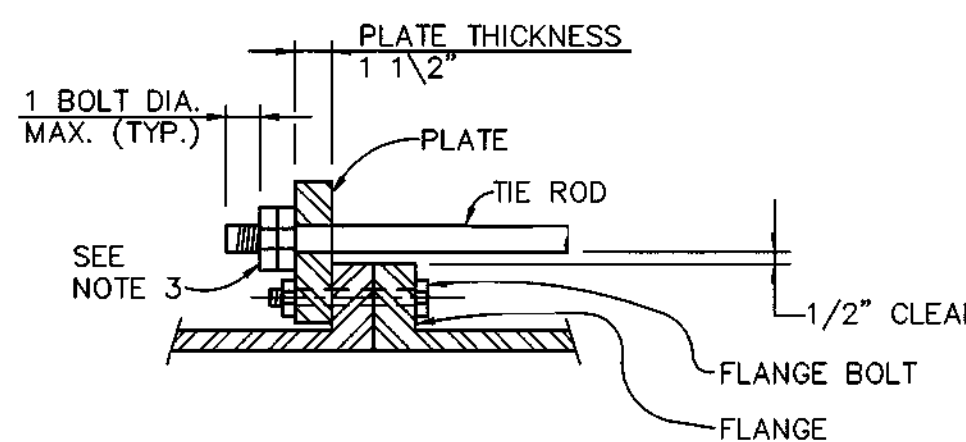
BY-PASS PUMPING MANHOLE



PLAN



ELEVATION



SECTION A-A

NOTES

1. TIE RODS SHALL CONFORM TO ASTM A-588 SPECIFICATION.
2. STEEL PLATE SHALL CONFORM TO ASTM A-36 SPECIFICATION.
3. INSIDE NUT TO BE HAND TIGHT AND TWO NUTS SHALL BE TIGHTENED AGAINST EACH OTHER.
4. WHEN THE STRAPPING ASSEMBLY IS LOCATED NEAR THE FLANGED VALVE, PROVIDE A FLANGED SPOOL PIECE (1" MIN. LENGTH) BETWEEN THE VALVE AND ASSEMBLY IN ORDER TO AVOID STRAPPING DIRECTLY TO THE VALVE.

TIE ROD ASSEMBLY
NOT TO SCALE

AS-BUILT

FRANK DONALDSON #8146

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert N. Berman
CHIEF, BUREAU OF UTILITIES

6-1-98
DATE

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND

Chief, Development Engineering Division

6-1-98
DATE

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
410-997-8900 FAX: 410-997-9282
97061/401MS/TTLSHRT.DWG

Professional Engineer Seal for Frank Donaldson, No. 8146, State of Maryland.

FRANK DONALDSON #8146

DES:	J.S.C.			
DRN:	E.L.R.			
CHK:	G.C.L.			
DATE:	4/27/98			
BY:	NO.	REVISION	DATE	

METER/VALVE VAULT AND
BY-PASS PUMPING MANHOLE

600' SCALE MAP NO. 46 BLOCK NO. 16

RESERVOIR OVERLOOK
PUMPING STATION
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 20-3664-D

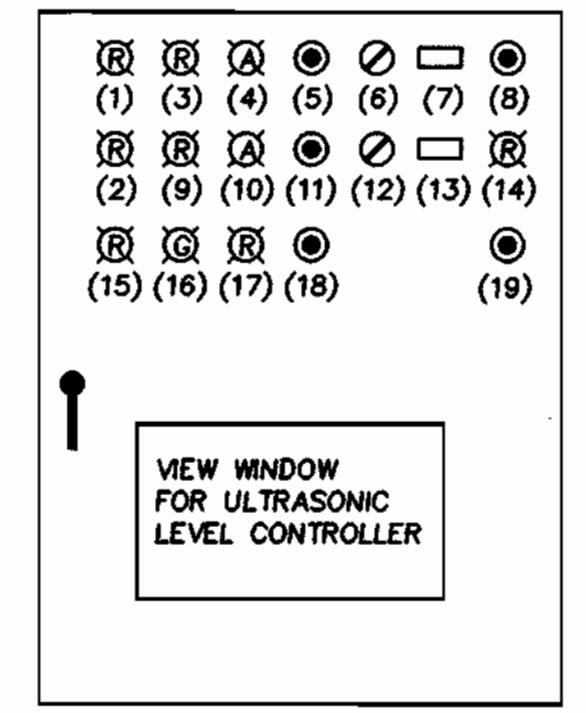
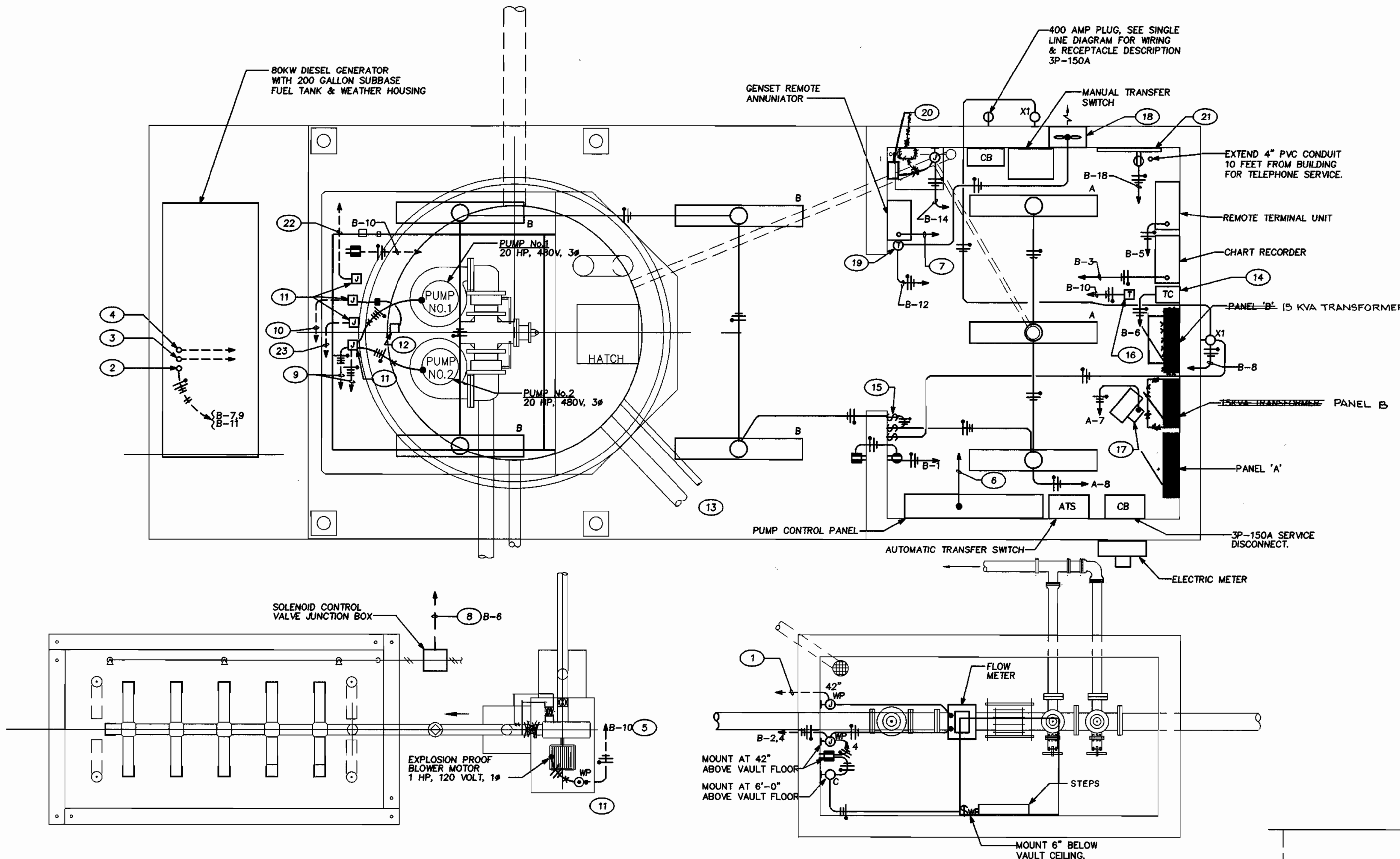
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SHEET
8 OF 12

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5/1/98 AS-BUILT 11/19/98

- PLAN NOTES:**
- 1 1/2" CONDUIT WITH DATA CABLE TO CHART RECORDER.
 - 2 PROVIDE CONNECTION TO GENSET BATTERY CHARGER, BATTERY HEATER & BLOCK HEATER.
 - 3 PROVIDE 2#10 & 1#10 GROUND IN 3/4" CONDUIT FROM 12VDC BATTERY SUPPLY TO TELEMETRY POWER SUPPLY IN REMOTE TERMINAL UNIT.
 - 4 PROVIDE 24#14 IN 1" CONDUIT TO GENERATOR REMOTE ANNUNCIATOR PANEL.
 - 5 TO PANEL A VIA BLOWER MOTOR MANUAL MOTOR STARTER SWITCH. PROVIDE CONDUIT SEAL AT HOMERUN.
 - 6 PROVIDE 32#18 IN 1-1/2" CONDUIT TO REMOTE TERMINAL UNIT FOR ALARMS. PROVIDE 10#14 IN 3/4" CONDUIT TO REMOTE TERMINAL UNIT FOR LEVEL CONTROLS.
 - 7 4#18 IN 1/2" CONDUIT TO TELEMETRY CONTROL PANEL FOR GENERATOR FAILURE & GENERATOR RUN.
 - 8 2 #12 & 1 #12 GROUND IN 3/4" CONDUIT TO REPEAT CYCLE TIMER IN CONTROL ROOM. PROVIDE CONNECTION TO SOLENOID VALVE.
 - 9 PROVIDE 2 SETS OF 3 #8 & 1 #10 GROUND IN 1" CONDUIT. PROVIDE 3 #8 & 1 #10 GROUND IN LIQUIDTIGHT FLEXIBLE METAL CONDUIT TO EACH PUMP MOTOR.
 - 10 PROVIDE 3/4" CONDUIT WITH RG-62U COAXIAL CABLE FROM WET WELL TRANSDUCER TO ULTRASONIC LEVEL CONTROLLER.
 - 11 PROVIDE CONDUIT STUP-UP WITH CONDUIT SEAL & LIQUIDTIGHT FLEXIBLE METAL CONDUIT CONNECTION TO MOTOR.
 - 12 PROVIDE PVC COATED STEEL CHANNEL & MOUNT LEVEL TRANSDUCER IN WET WELL. LOCATION TO BE AS RECOMMENDED BY MANUFACTURER. PROVIDE CONDUIT SEALS AT PENETRATION TO WET WELL.
 - 13 SEE ELEVATION ON THIS DRAWING.
 - 14 REPEAT CYCLE TIMER FOR CONTROL OF SOLENOID VALVE.
 - 15 PROVIDE IDENTIFICATION CABLES FOR EACH SWITCH AS FOLLOWS "CANOPY LIGHTS", "STATION LIGHTS", AND "SECURITY LIGHTS".
 - 16 BLOWER MOTOR MANUAL MOTOR STARTER SWITCH, MOUNT ABOVE REPEAT CYCLE TIMER.
 - 17 PROVIDE UNIT HEATER: 3 KW, 480 VOLT, 1φ (Q-MARK No. "MUH-03-41" OR EQUAL). HEATER SHALL CONTAIN LOW VOLTAGE CONTROL TRANSFORMER AND INTERNAL THERMOSTAT. PROVIDE CEILING MOUNTING BRACKET.
 - 18 PROVIDE STEEL PROPELLER WALL FAN, EQUAL TO "COOK No. 105150, 1150 RPM, FAN SIZE B, 1/25 HP, 120 VOLT, 1φ.
 - 19 PROVIDE LINE VOLTAGE THERMOSTAT WITH ON-OFF CONTROL FOR FAN MOTOR.
 - 20 INSTANT HOT WATER HEATER: 4.6 KW, 208 VOLT, 1φ.
 - 21 PROVIDE 4"x4"x3/4" THICK FIRE RATED TELEPHONE BACKBOARD.
 - 22 PROVIDE 13 #12 IN 1" CONDUIT TO PUMP CONTROL PANEL. PROVIDE LIQUIDTIGHT FLEXIBLE METAL CONDUIT CONNECTIONS TO VENTILATION MOTOR, HEATER, AND (2) VACUUM PUMPS AND (2) SOLENOID VALVES.
 - 23 PROVIDE 4 #14 IN 3/4" CONDUIT TO REMOTE TERMINAL UNIT FOR BACKUP HIGH LEVEL AND LOW LEVEL ALARM FLOAT. PROVIDE 4 #14 TO FLOAT SWITCH IN WET WELL. PROVIDE CONDUIT SEAL AT PENETRATION TO WET WELL.

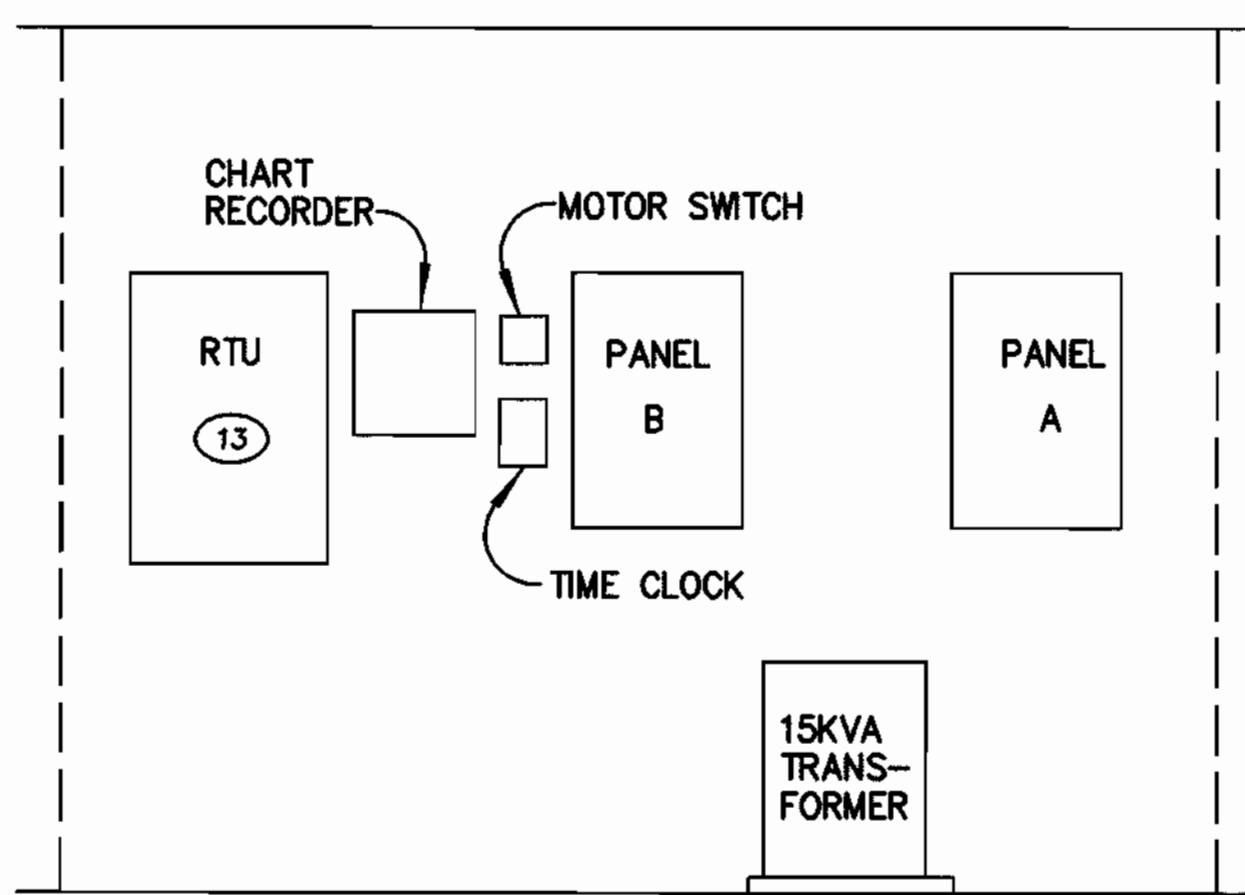


REMOTE TERMINAL UNIT (RTU) ELEVATION

NO SCALE
 NOTES: ENCLOSURE TO BE NEMA 1 WITH KEY-LOCKED HANDLE - PIANO HINGED DOOR. VIEW WINDOW SHALL ALLOW FULL VIEW OF ULTRASONIC LEVEL INDICATORS.

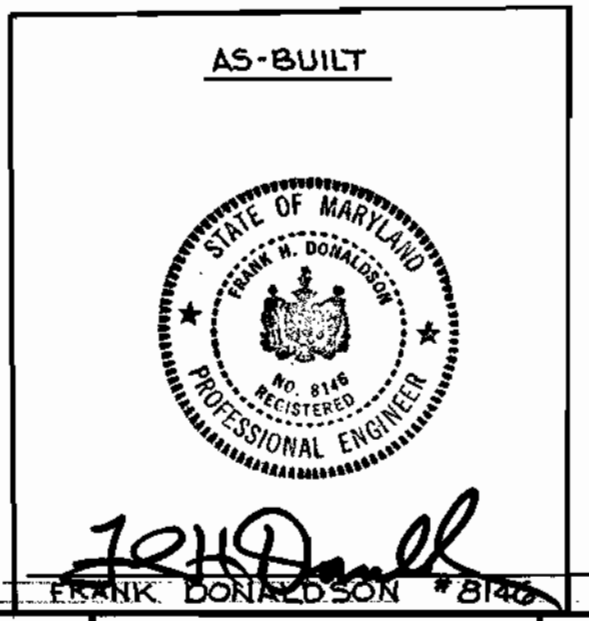
- (RTU) NAMEPLATES**
- (1) HIGH WET WELL LEVEL
 - (2) LOW WET WELL LEVEL
 - (3) PUMP #1 RUNNING
 - (4) PUMP #1 OVER-TEMPERATURE
 - (5) PUMP #1 RESET
 - (6) PUMP #1 H-O-A SELECTOR SWITCH
 - (7) PUMP #1 RUNNING TIME METER
 - (8) PUMP #1 ALTERNATOR
 - (9) PUMP #2 RUNNING
 - (10) PUMP #2 OVER-TEMPERATURE
 - (11) PUMP #2 RESET
 - (12) PUMP #2 H-O-A SELECTOR SWITCH
 - (13) PUMP #2 RUNNING TIME METER
 - (14) ULTRASONIC LEVEL CONTROL FAIL
 - (15) GENERATOR FAIL
 - (16) GENERATOR RUN
 - (17) TELEMETRY FAIL
 - (18) TELEMETRY TEST SWITCH
 - (19) ULTRASONIC LEVEL CONTROL RESET

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



CONTROL ROOM ELEVATION NORTH WALL
 SCALE: 1/2" = 1'-0"

SRBR
 Siegel, Rutherford, Bradstock, & Ridgway, Inc.
 CONSULTING ENGINEERS
 757 Frederick Road Suite 300 - Catonsville, Maryland 21228
 Phone (410) 869-7282 - Facsimile (410) 869-7362



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DATE: 6-1-98

DEPARTMENT OF PLANNING & ZONING
 HOWARD COUNTY, MARYLAND
 DATE: 5/1/98

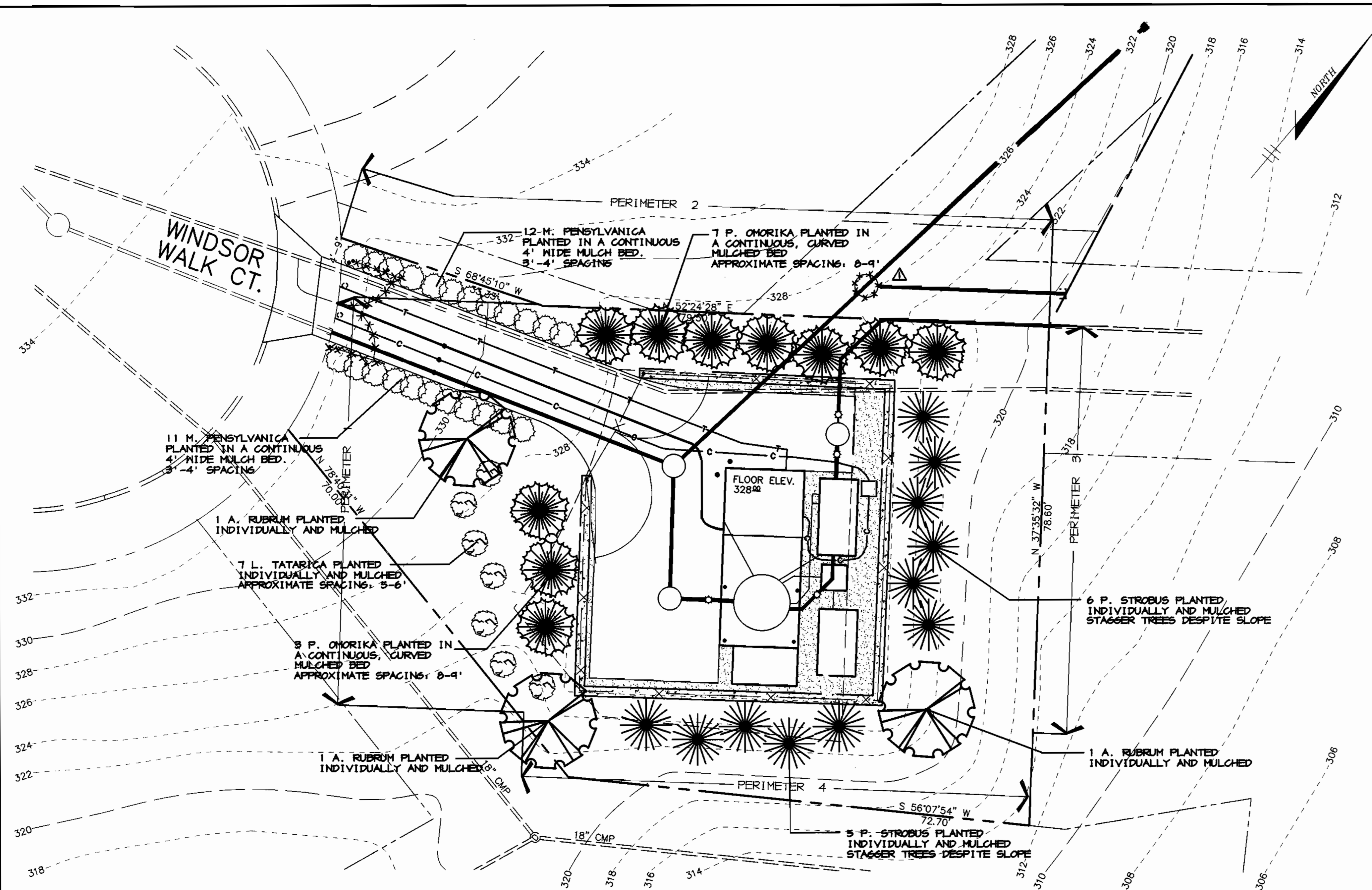
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 ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
 8818 Centre Park Drive • Suite 200 • Columbia, MD 21046
 410-997-9900 FAX: 410-997-9288
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DES:	WFS				
DRN:	TZG				
CHK:	WFS				
DATE:	4/27/98				
BY:	NO.	REVISION	DATE		

ELECTRICAL STATION PLAN
 600' SCALE MAP NO. 46 BLOCK NO. 16
 AS-BUILT 11/19/99

RESERVOIR OVERLOOK PUMPING STATION
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 CONTRACT NO. 20-3664-D
 SCALE AS SHOWN
 SHEET 9 OF 12



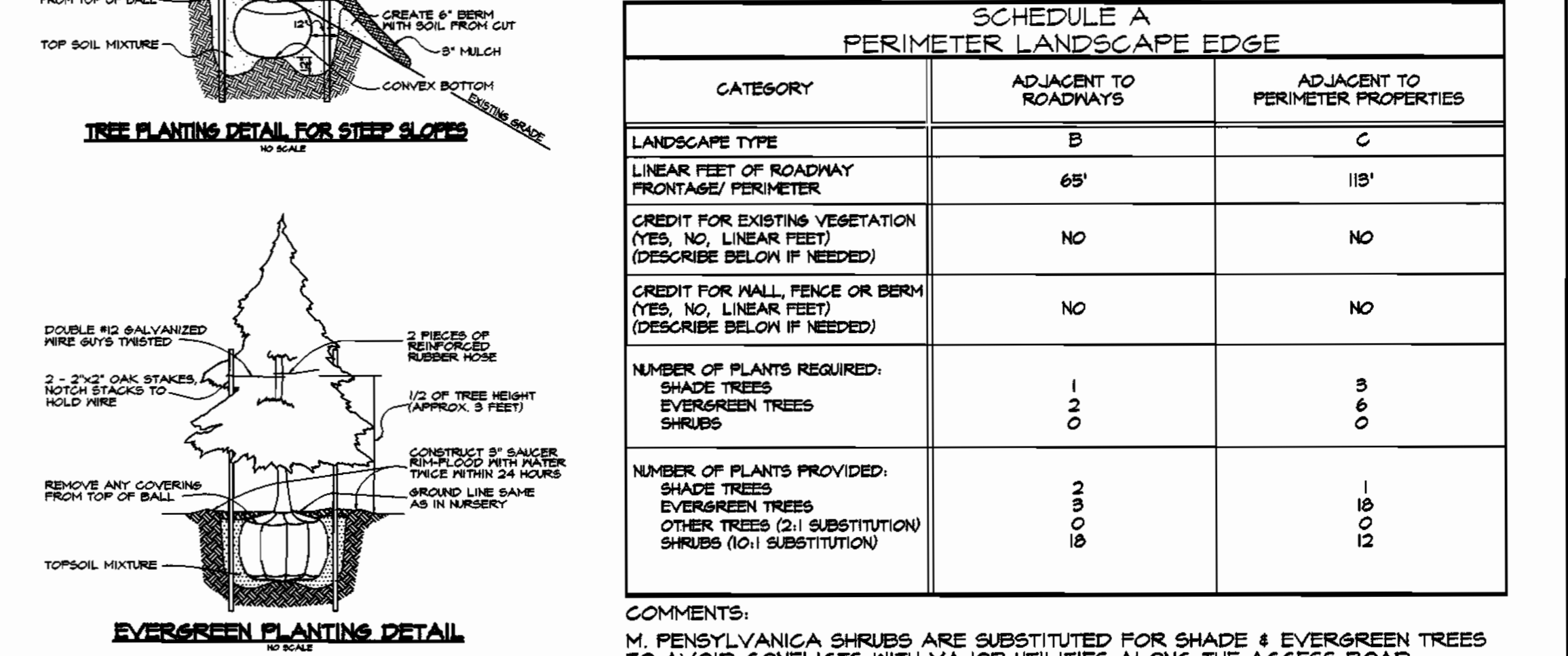
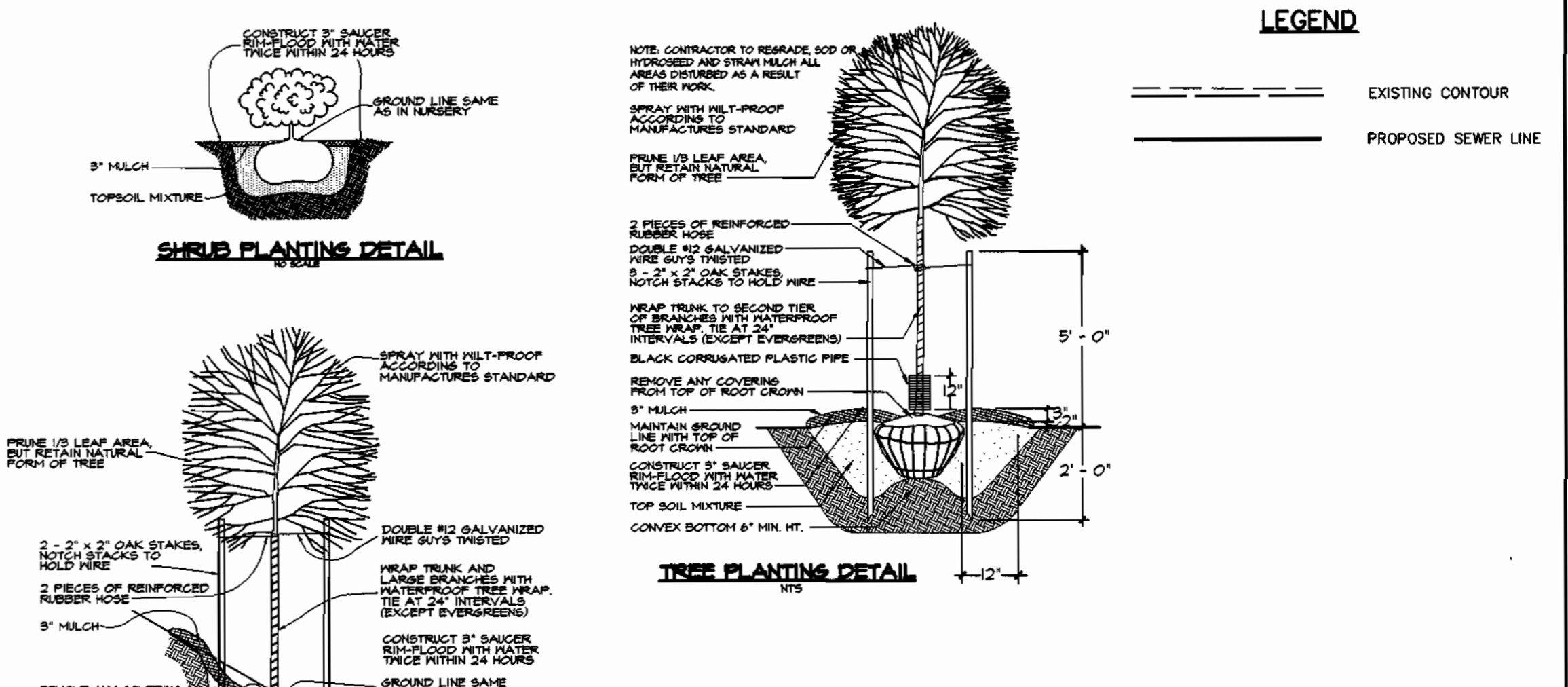
PLAN
SCALE: 1" = 10'

PLANTING SCHEDULE

QTY	BOTANICAL / COMMON NAME	SIZE / SPACING
3	Acer rubrum / October Glory / Red Maple	2 1/2' cal. min. 14" ht. min. B & D
10	Picea omorika / Serbian Spruce	7'-8' ht. B & D
23	Myrica pensylvanica / Northern Bayberry	2'-2 1/2' ht.
7	Lonicera tatarica / Tatarian Honeysuckle	9'-9 1/2' ht.
11	Pinus strobus / White Pine	6'-7' ht. B & D

PERIMETER PLANTING CALCULATIONS

Perimeter	Non Residential Use to Roadway Front / Side	Type	Plants
Perimeter 1	Non Residential Use to Roadway Front / Side	Type B	1 Shade Tree 2 Evgn. Trees
Perimeter 2	Non Residential Use to SPD	Type C	3 Shade Trees 6 Evgn. Trees
Perimeter 3	No requirement / abuts major open space / not visible from other land uses.		
Perimeter 4	No requirement / abuts major open space / not visible from other land uses.		



SCHEDULE A PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROPERTIES
LANDSCAPE TYPE	B	C
LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	65'	119'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO
NUMBER OF PLANTS REQUIRED:		
SHADE TREES	1	3
EVERGREEN TREES	0	0
SHRUBS	1	6
NUMBER OF PLANTS PROVIDED:		
SHADE TREES	0	1
EVERGREEN TREES	0	0
OTHER TREES (2) SUBSTITUTION/ SHRUBS (10) SUBSTITUTION	16	12

COMMENTS:
M. PENNSYLVANICA SHRUBS ARE SUBSTITUTED FOR SHADE & EVERGREEN TREES TO AVOID CONFLICTS WITH MAJOR UTILITIES ALONG THE ACCESS ROAD.

PLANTING SPECIFICATIONS

- Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein.
- All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and conform to American Nurserymen's Association (AANA) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, unsound injuries, abrasions of the bark, plant disease, insect pest eggs, borers, and all forms of insect infestations of objectionable dimensions. Plant material which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug; no heated-in plants or plants from cold storage will be accepted.
- Unless otherwise specified, all general conditions, planting operations, details and planting specification shall conform to Landscape Specification Guidelines for Baltimore-Washington Metropolitan Area (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architect, latest edition, including all agenda.
- Contractor shall be required to guarantee all plant material for a period of two years after date of acceptance in accordance with the appropriate section of the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the two year specifications including watering and replacement of specified plant material.
- Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.
- Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence at the drip line.
- Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within growing season of completion of site construction.
- Bid shall be based on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications.
- Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plan take precedence.
- All shrubs and groundcover areas shall be planted in continuous prepared planting beds mulched with composted hardwood mulch as detailed and specified except where noted on plans.
- Positive drainage shall be maintained in planting beds (minimum 2 percent slope).
- Planting mix shall be as follows: Deciduous Plants - Two parts topsoil, one part well-rotted cow or horse manure. Add one lb of standard fertilizer per cubic yard of planting mix. Evergreen Plants - two parts topsoil, one part humus or other approved organic material. Add 3 lbs of evergreen (acidic) fertilizer per cubic yard of planting mix. Topsoil shall conform to the Landscape Guidelines.
- Weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Location: Be sure to carefully check the chemical used to assure its adaptability to the specific groundcover to be treated.
- Mulch: Groundcover beds should be mulched with minimum 2 inches of shredded composted hardwood, or as specified on the details, whichever is greater.
- All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded.
- This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.

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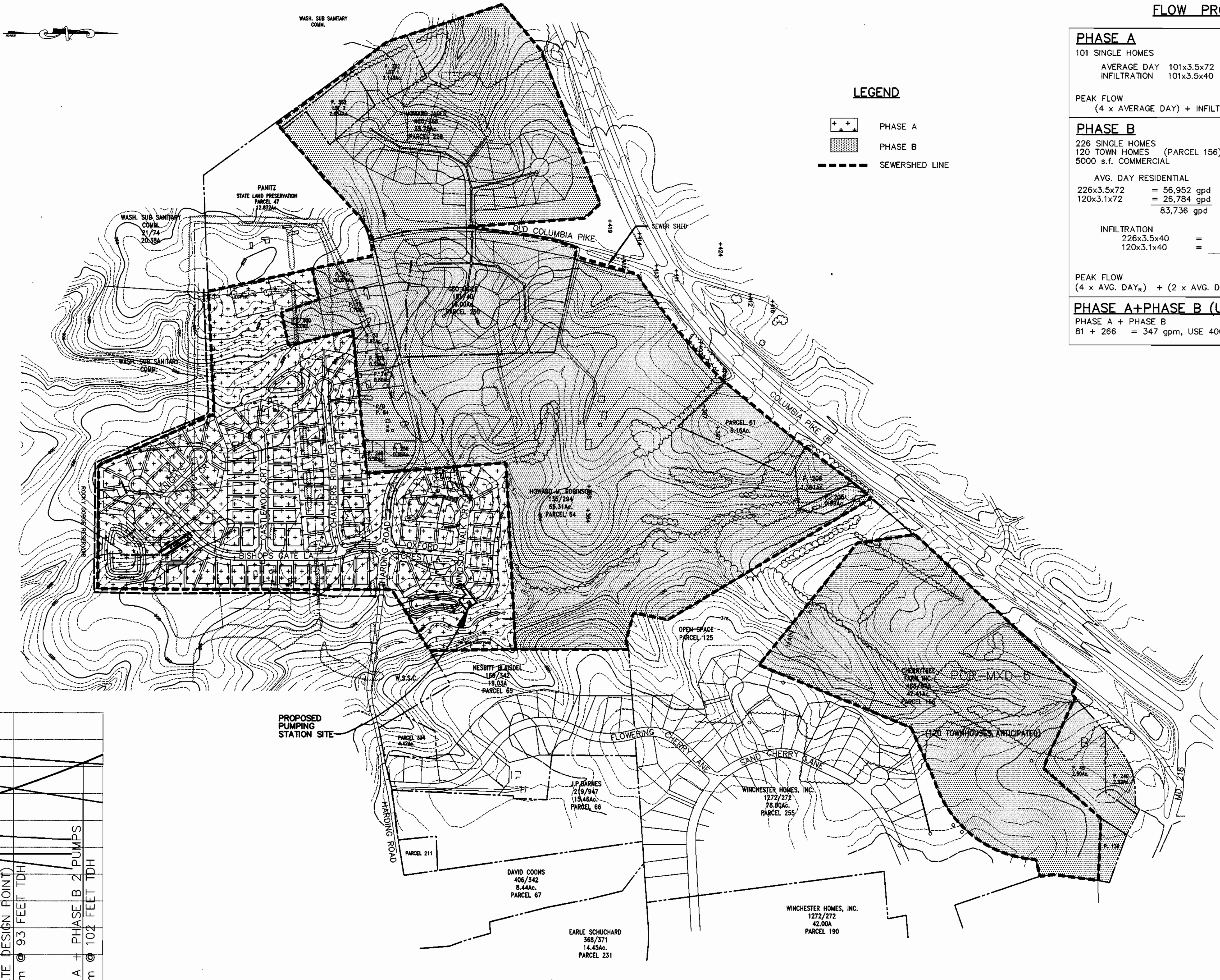
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Robert M. Benjamin</i> 6-1-98 CHIEF, BUREAU OF UTILITIES DATE	DEPARTMENT OF PLANNING & ZONING HOWARD COUNTY, MARYLAND <i>David F. Dows</i> 6/1/98 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE	RIEMER MUEGGE & ASSOCIATES, INC. ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING 6818 Centre Park Drive • Suite 300 • Columbia, MD 21046 410-997-8900 FAX: 410-997-8988 www.riemer.com	DES: D.T.D. DRN: A.J.L. CHK: D.T.D. DATE: 3/31/98 BY NO. REVISION DATE 600' SCALE MAP NO. 46 BLOCK NO. 16
LANDSCAPE PLAN		RESERVOIR OVERLOOK PUMPING STATION 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND CONTRACT NO. 20-3664-D	
AS-BUILT 11/ /99		SCALE 1" = 10' SHEET 11 OF 12	

FLOW PROJECTIONS

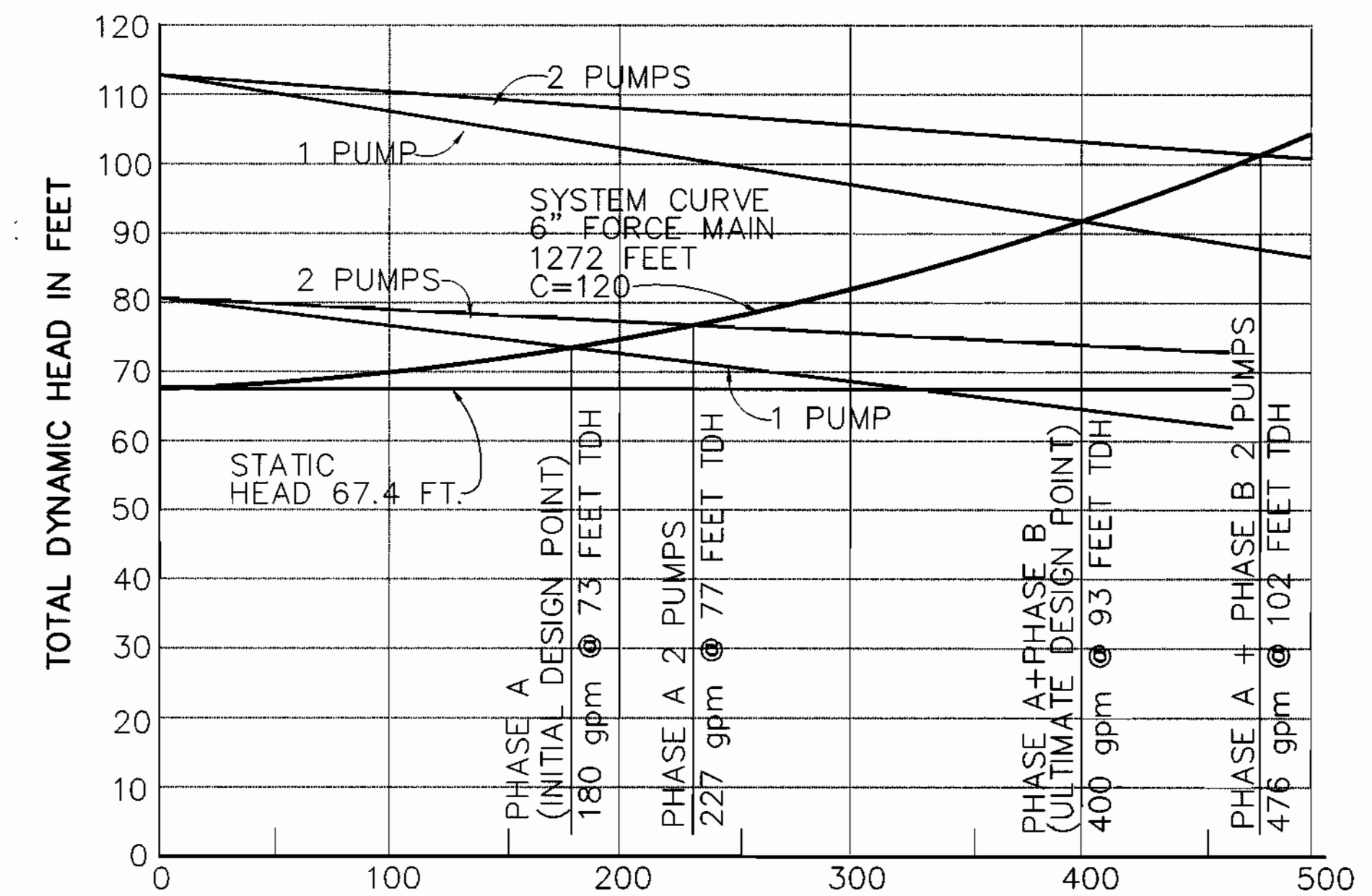
PHASE A	
101 SINGLE HOMES	
AVERAGE DAY 101x3.5x72 = 25,452 gpd	
INFILTRATION 101x3.5x40 = 14,140 gpd	
PEAK FLOW (4 x AVERAGE DAY) + INFILTRATION = 81 gpm, USE 180 gpm	
PHASE B	
226 SINGLE HOMES (PARCEL 156)	
120 TOWN HOMES (PARCEL 156)	
5000 s.f. COMMERCIAL	
AVG. DAY RESIDENTIAL 226x3.5x72 = 56,952 gpd	AVG. DAY COMMERCIAL 5000 x .05 = 250 gpd
120x3.1x72 = 26,784 gpd	
83,736 gpd	
INFILTRATION 226x3.5x40 = 31,640 gpd	
120x3.1x40 = 14,880 gpd	
46,520 gpd	
PEAK FLOW (4 x AVG. DAY _A) + (2 x AVG. DAY _C) + INFILTRATION = 266 gpm	
PHASE A+PHASE B (ULTIMATE PEAK FLOW)	
PHASE A + PHASE B 81 + 266 = 347 gpm, USE 400 gpm	

LEGEND

- PHASE A
- PHASE B
- SEWERSHED LINE



NOTE:
PUMPS: MODEL 4B2D 1760 RPM AS PROVIDED BY SMITH AND LOVELESS.
MOTORS: 20 HP 3 PHASE 60 HERTZ 460 V. IMPELLAR: S4L23.



SYSTEM/PUMP CURVES

SCALE: HORIZ. 1" = 60 gpm VERT. 1" = 20' TDH

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Robert B. ...
CHIEF, BUREAU OF UTILITIES
DATE: 6-1-98

DEPARTMENT OF PLANNING & ZONING
HOWARD COUNTY, MARYLAND
...
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 6/1/98

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STATE OF MARYLAND
FRANK DONALDSON #8146
5/1/98

DES: J.S.C.			
DRN: E.L.R.			
CHK: G.C.L.			
DATE: 4/27/98			
BY NO.		REVISION	

SEWERSHED MAP/SYSTEM CURVE
600' SCALE MAP NO. 46 BLOCK NO. 16
AS-BUILT 11/99

RESERVOIR OVERLOOK PUMPING STATION
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. 20-3664-D

SCALE AS SHOWN
SHEET 12 OF 12

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