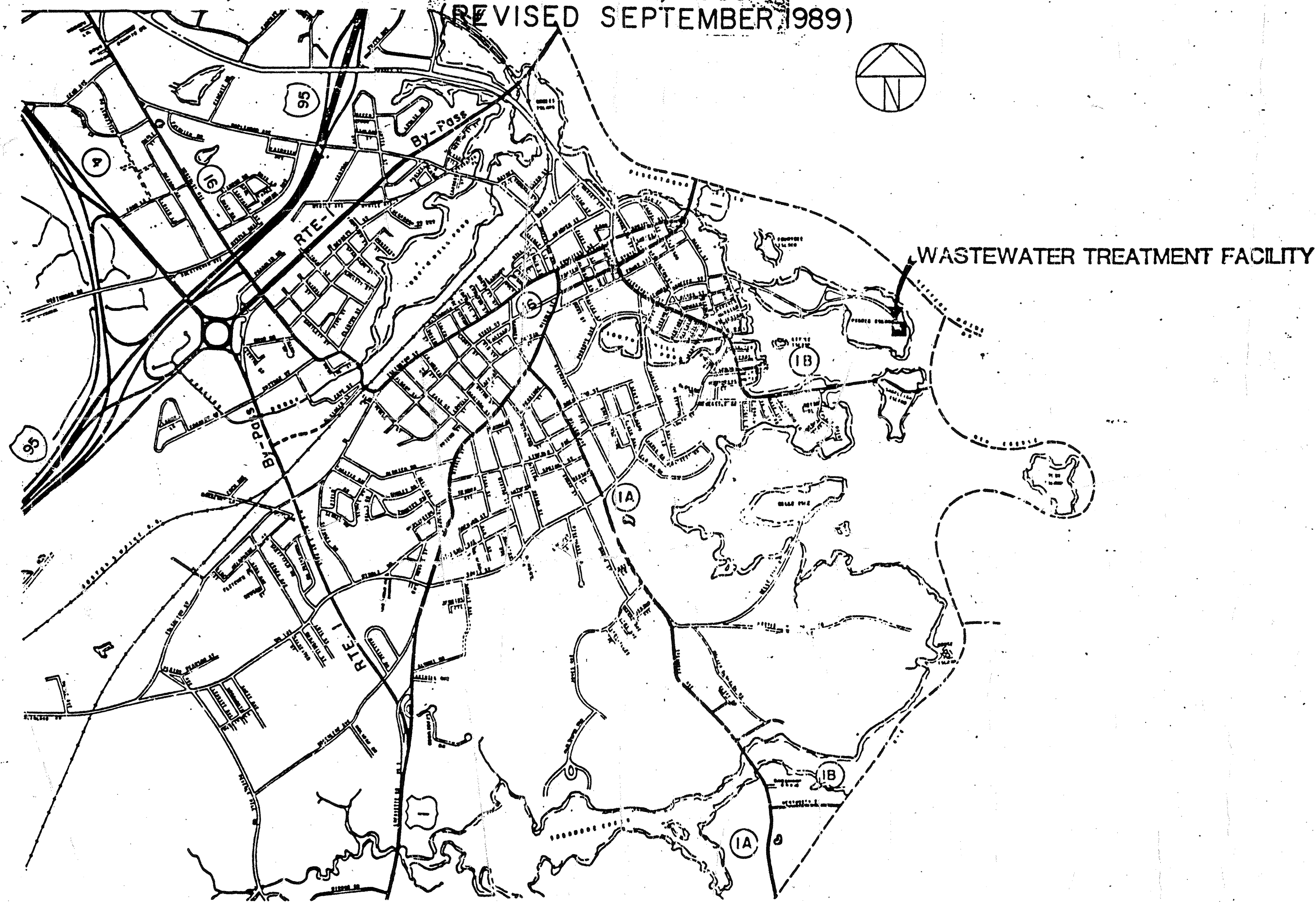


WASTEWATER TREATMENT FACILITY PORTSMOUTH, NEW HAMPSHIRE

WHITMAN & HOWARD INC.,
45 WILLIAM ST., WELLESLEY, MASS.

CONTRACT NO 3
NHWS & PCC PROJECT NO. C330196-200

SEPTEMBER, 1985
(REVISED SEPTEMBER 1989)



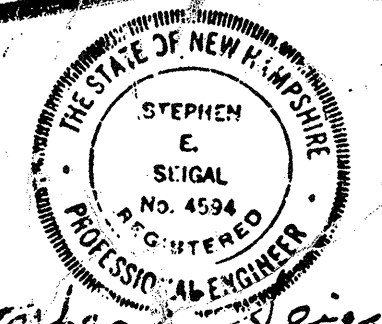
LOCUS MAP
NOT TO SCALE

GENERAL NOTES

LOCATION OF ALL UTILITIES AND SUBSURFACE STRUCTURES ARE FROM SURVEY AND RECORDS OF THE CITY AND ARE CONSIDERED APPROXIMATE BOTH AS TO SIZE AND LOCATION, AND ARE INDICATED ON THESE DRAWINGS TO GIVE THE BIDDERS A GENERAL IDEA OF EXISTING CONDITIONS TO BE INVESTIGATED BY THE BIDDER. IT IS UNDERSTOOD AND AGREED THAT EACH BIDDER WILL NOT RELY UPON THESE DRAWINGS FOR SUCH INFORMATION, BUT THAT EACH BIDDER SHALL MAKE VERIFICATIONS IN THE FIELD BY VARIOUS AVAILABLE METHODS, AND SHALL OBTAIN INFORMATION FROM AVAILABLE RECORDS, UTILITY CORPORATIONS AND INDIVIDUALS AS TO THE LOCATION OF ALL SUBSURFACE STRUCTURES.

ALL ELEVATIONS BASED ON U.S.G.S.

9/93



Stephen E. Seigal

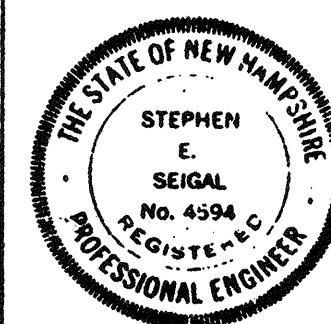
SHEET NUMBER	DRAWING NUMBER	DESCRIPTION
1	G-1	TITLE
2	G-2	INDEX
LANDSCAPE ARCHITECTURE		
3	LA-1	EXISTING CONDITIONS PLAN
4	LA-2	EXISTING CONDITIONS AND DEMOLITION PLAN
5	LA-3	PLANTING LAYOUT AND MATERIALS PLAN
6	LA-4	LAYOUT AND MATERIALS PLAN
7	LA-5	GRADING AND DRAINAGE PLAN
8	LA-6	GRADING AND DRAINAGE PLAN
9	LA-7	SITE DETAILS
10	LA-8	SITE DETAILS
ARCHITECTURAL		
11	A-1	ABBREVIATIONS AND SYMBOLS
CONTROL BUILDING		
12	1A-1	GROUND FLOOR PLAN
13	1A-2	BASEMENT PLAN
14	1A-3	ROOF PLAN AND DETAILS
15	1A-4	ELEVATIONS AND SECTIONS
SCUM CONCENTRATOR BUILDING		
16	2A-1	PLANS-ELEVATIONS-SECTIONS
SLUDGE PROCESSING BUILDING		
17	3A-1	PLANS
FILTER BUILDING		
18	8A-1	PLAN
19	8A-2	ELEVATIONS-BUILDING SECTIONS
20	8A-3	WALL SECTIONS-DETAILS
GENERAL ARCHITECTURAL		
21	GA-1	WALL SECTIONS AND DETAILS
22	GA-2	DOOR SCHEDULE AND DETAILS
23	GA-3	GEODESIC DOMES, RAILINGS AND DETAILS
24	GA-4	LOUVERS-WINDOWS AND DETAILS
25	GA-5	FINISH SCHEDULE
STRUCTURAL		
CONTROL BUILDING		
26	1S-1	BASEMENT AND FOUNDATION PLAN, SECTIONS, AND DETAILS
27	1S-2	GROUND FLOOR, PLAN, SECTIONS, AND DETAILS
28	1S-3	ROOF FRAMING, PLAN, SECTIONS, AND DETAILS
SCUM CONCENTRATOR BUILDING		
29	2S-1	FOUNDATION AND GROUND FLOOR PLANS
30	2S-2	ROOF PLAN AND SECTIONS
31	2S-3	SECTIONS
PRIMARY CLARIFIERS NOS. 1 & 2		
32	4S-1	PLANS AND SECTIONS
GRAVITY THICKENER		
33	5S-1	PLAN AND SECTIONS
CHLORINE CONTACT TANKS		
34	6S-1	PLAN, SECTIONS, AND DETAILS
CHEMICAL STORAGE TANKS		
35	7S-1	PLANS AND SECTIONS
FILTER BUILDING		
36	8S-1	PUMP ROOM FDN. AND GROUND FLOOR SLAB
37	8S-2	PLAN - BASE SLAB
38	8S-3	PLAN - FILTER AND GALLERY SLABS
39	8S-4	PLAN - GROUND FLOOR SLAB
40	8S-5	ROOF PLAN AND DETAILS
41	8S-6	SECTIONS AND DETAILS
42	8S-7	SECTIONS AND DETAILS
43	8S-8	PLAN - PUMP ROOM PLATFORM AND DETAILS
44	8S-9	MISCELLANEOUS STRUCTURES AND DETAILS
GENERAL STRUCTURAL		
45	GS-1	TYPICAL STRUCTURAL DETAILS

SHEET NUMBER	DRAWING NUMBER	DESCRIPTION
MECHANICAL		
46	M-1	ABBREVIATIONS AND SYMBOLS
47	M-2	SCHEMATIC FLOW DIAGRAM AND HYDRAULIC PROFILE
48	M-3	OUTSIDE PIPING EXISTING
49	M-4	OUTSIDE PIPING SCHEMATIC - NEW
CONTROL BUILDING		
50	1M-1	BASEMENT FLOOR PLANS AND SECTIONS
AERATED SLUDGE AND SEPTAGE HOLDING TANKS		
51	1/2M-2	PLAN AND SECTIONS
SCUM CONCENTRATOR BUILDING		
52	2M-1	PLANS, SECTIONS, AND DETAILS
AERATED GRIT CHAMBERS		
53	2M-2	PLANS, SECTIONS, AND DETAILS
SLUDGE PROCESSING BUILDING		
54	3M-1	BASEMENT FLOOR PLAN, SECTIONS, AND DETAILS
55	3M-2	FIRST FLOOR PLANS AND SECTIONS
56	3M-3	DEMOLITION PLANS
PRIMARY CLARIFIERS		
57	4M-1	PLAN, SECTIONS, AND DETAILS
GRAVITY THICKENER AND EFFLUENT METER STRUCTURE		
58	5M-1	PLAN, SECTIONS, AND DETAILS
CHLORINE CONTACT TANKS		
59	6M-1	PLAN AND SECTION
FILTER BUILDING		
60	8M-1	PLAN AND SECTIONS
61	8M-2	PLAN AND SECTIONS
62	8M-3	SECTIONS AND DETAILS
63	8M-4	SECTIONS AND DETAILS
GENERAL MECHANICAL		
64	GM-1	MISC. PLANS, SECTIONS, AND DETAILS
65	GM-2	MISCELLANEOUS STRUCTURES
66	GM-3	MISCELLANEOUS DETAILS
67	GM-4	ODOR CONTROL SYSTEM PLAN & SECTIONS
HVAC		
CONTROL BUILDING, THICKENER, SLUDGE HOLDING		
68	1HV-1	FLOOR PLANS AND DETAILS
69	1/5HV-2	FLOOR PLANS AND SECTIONS
SCUM CONCENTRATOR BUILDING		
70	2HVP-1	FLOOR PLANS AND SECTIONS
SLUDGE PROCESSING BUILDING		
71	3HV-1	FLOOR PLANS AND SECTIONS
FILTER BUILDING		
72	8HV-1	HEATING AND VENTILATION
73	8HV-2	HEATING AND VENTILATION
GENERAL HVAC		
74	HV-1	HVAC DETAILS, SCHEDULES, AND NOTES
PLUMBING		
CONTROL BUILDING		
75	1P-1	FLOOR PLAN
76	1P-2	FLOOR PLAN
SLUDGE PROCESSING BUILDING		
77	3P-1	FLOOR PLAN
FILTER BUILDING		
78	8P-1	PLAN AND SECTION

SHEET NUMBER	DRAWING NUMBER	DESCRIPTION
GENERAL PLUMBING		
79	P-1	PLUMBING DETAILS, SCHEDULE, AND RISER DIAGRAMS
ELECTRICAL		
80	E-1	LEGEND
81	E-2	SINGLE LINE DIAGRAM AND ELEVATIONS
82	E-3	SINGLE LINE DIAGRAM AND ELEVATIONS
83	E-4	SINGLE LINE DIAGRAM AND ELEVATIONS
84	E-5	CONTROL SCHEMATIC WIRING DIAGRAMS
85	E-6	CONTROL SCHEMATIC WIRING DIAGRAMS
86	E-7	CONTROL SCHEMATIC WIRING DIAGRAMS
87	E-8	RISER DIAGRAMS AND LIGHTING FIXTURE SCHEDULE
88	E-9	CONDUIT AND WIRE SCHEDULE
89	E-10	PANEL SCHEDULES
90	E-11	ELECTRICAL SITE PLAN
91	E-12	ELECTRICAL DUCT SECTIONS AND DETAILS
CONTROL BUILDING		
92	1E-1	BASEMENT POWER PLAN
93	1E-2	BASEMENT LIGHTING PLAN
94	1E-3	GROUND FLOOR POWER PLAN
95	1E-4	GROUND FLOOR LIGHTING PLAN
SCUM CONCENTRATOR BUILDING		
96	2E-1	POWER PLAN
97	2E-2	LIGHTING PLAN
SLUDGE PROCESSING BUILDING		
98	3E-1	DEMOLITION AND MODIFICATION PLAN
99	3E-2	BASEMENT PLAN
100	3E-3	GROUND FLOOR PLAN
101	4/5/6E-1	MISCELLANEOUS STRUCTURES
DESCRIPTION		
FILTER BUILDING		
102	8F-1	POWER PLAN
103	8E-2	LIGHTING PLAN
NHWS & PCD STANDARD DRAWING:		
104	STD-1	TRENCH SECTION
105	STD-2	MANHOLE SHEET 1
106	STD-3	MANHOLE SHEET 2

NO.	DESCRIPTION	DATE
3	REVISED TO RECORD PLAN	9/93
2	DWG. REVISED	9/89
	REVISED AS PER STATE COMMENTS	2/88
REVISIONS		

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING - 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED

DESIGNED BY: V. J. H.T.O. CHECKED BY: S.E.S. SCALE: NONE DATE: SEPT., 1985

DRAWING NO. G-2

JOB NO. 85-163

CONTRACT NO. 3

SHEET 2 OF 106 SHEETS

WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N.H.

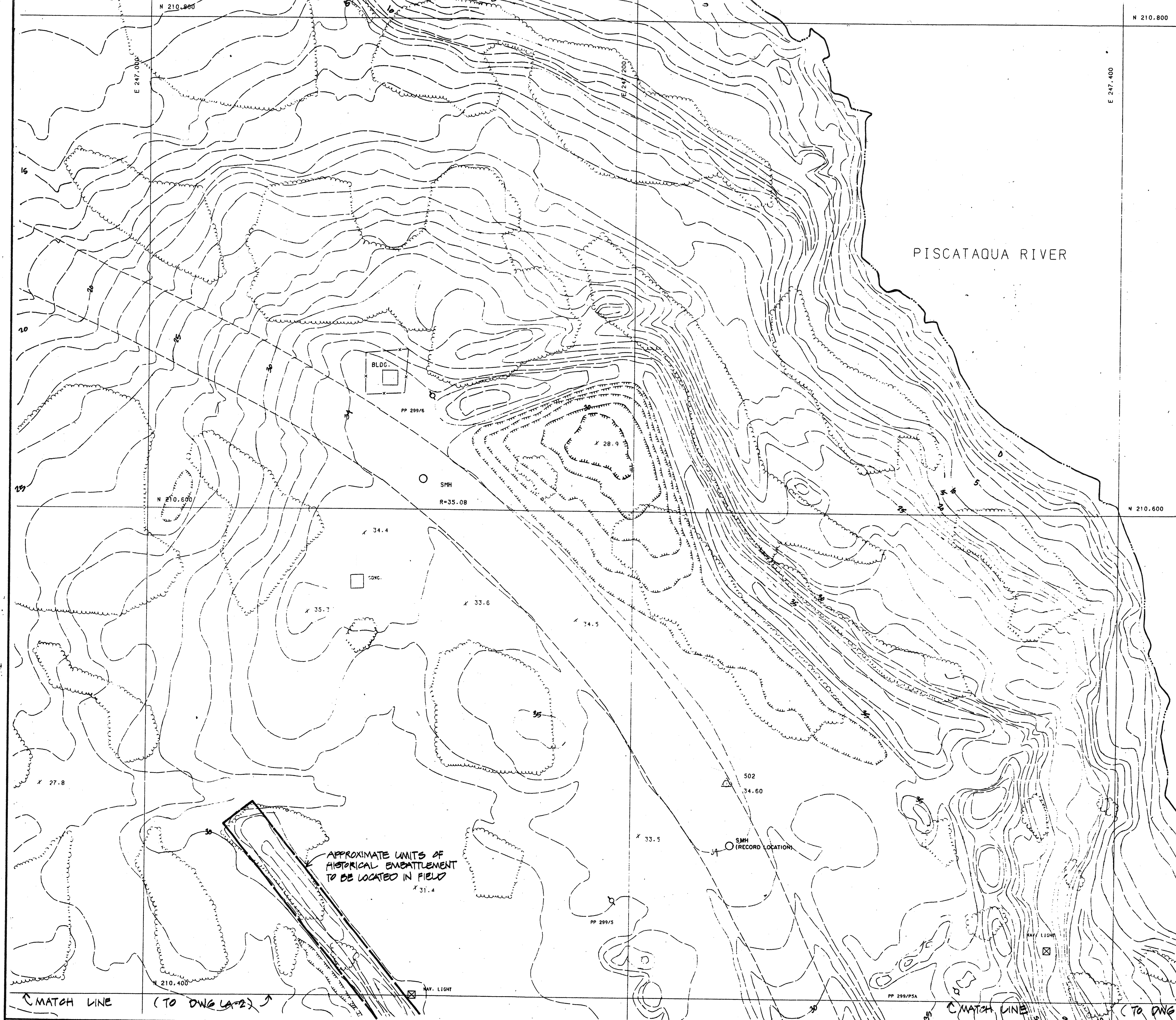
INDEX

GENERAL LEGEND

EXISTING		PROPOSED
---	LIMIT-OF-WORK LINE	---
---	INTERMEDIATE CONTOUR	---
---	INDEX CONTOUR	---
x 23.47	SPOT ELEVATION	+17.00
---	TREE LINE	---
---	FENCE LINE	---
B-12	BORING LOCATION AND NUMBER	---
N 210,000	SURVEY GRID	---
103	HORIZONTAL CONTROL POINT	---
PP 299/S	POWER POLE	---
L.R.	LIGHT POLE	---
SMH	SEWER / PROCESS MANHOLE	---
DMH	DRAIN MANHOLE	DMH
CB	CATCH BASIN	CB
GV	GATE VALVE	---
HYD	HYDRANT	---
NAV. LIGHT	NAVIGATION LIGHT (SEE GENERAL NOTE 10)	---
---	EDGE OF WATER	---
---	BIT. CONC. PAVT	---
	BIT. CONC. PAVT TO BE SCARIFIED AND REPAVED (SEE GENERAL NOTE 9)	---
	STONE MAINTENANCE STRIP	---

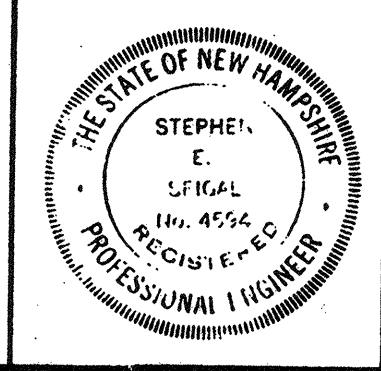
GENERAL NOTES

- EXISTING SURFACE CONDITIONS, MATERIALS, STRUCTURES AND TOPOGRAPHY ARE FROM AN UNDATED AERIAL SURVEY SUPPLIED BY THE CITY OF PORTSMOUTH.
- ADDITIONAL SURVEY WAS PERFORMED BY WHITMAN & HOWARD, INC. FROM 7/18 - 7/23/85.
- LOCATIONS OF EXISTING UNDERGROUND SERVICES, UTILITIES AND PIPING (AS SHOWN ON DWG. M-3) ARE COMPILED FROM THE FOLLOWING:
 - RECORD DWGS. ENTITLED "CITY OF PORTSMOUTH - SEWAGE TREATMENT PLANT PUMPING STATIONS AND APPURTENANT WORK" DATED MARCH 1968 AND UPDATED JUNE 1963, PREPARED BY METCALF & EDDY, BOSTON, MA.
 - DWGS. ENTITLED "TOWN OF NEW CASTLE - SEWERS, PUMPING STATIONS AND FORCE MAINS" DATED 8/74, REVISED 8/75, PREPARED BY CAMP, DRESSER & MCKEE, BOSTON, MA.
 - DWGS. ENTITLED "TOWN OF NEW CASTLE - RIVER ROAD AREA SEWERS" DATED 8/75, PREPARED BY CAMP, DRESSER & MCKEE, BOSTON, MA.
- REFER TO SPECIFICATIONS FOR BORING LOGS.
- THE HISTORICAL EMBATTLEMENT AS SHOWN ON THE DRAWINGS SHALL BE PROTECTED THROUGHOUT CONSTRUCTION BY TEMPORARY OR PERMANENT FENCING AROUND INDICATED BUFFER ZONE. ALL OBJECTS OF HISTORIC INTEREST FOUND ANYWHERE ON SITE DURING EXCAVATION AND CONSTRUCTION REMAINS THE PROPERTY OF THE CITY OF PORTSMOUTH.
- THE LIMIT-OF-WORK SHALL BE THE PROPOSED CHAIN LINK FENCE EXCEPT AS NECESSARY TO PROTECT HISTORICAL EMBATTLEMENT, OR WHERE INDICATED THIS:
 - ALL AREAS WITHIN THE LIMIT-OF-WORK NOT DESIGNATED FOR SELECTIVE CLEARING AND THINNING OR FOR LAWNS TO REMAIN SHALL BE CLEARED AND GRUBBED, AND ALL TOPSOIL STRIPPED.
 - ALL AREAS WITHIN THE LIMIT-OF-WORK NOT OTHERWISE OCCUPIED BY BUILDINGS, STRUCTURES, PAVEMENT, PLANTING BEDS, LAWNS TO REMAIN, ETC. SHALL RECEIVE 6" LOAM & SEED.
 - WHERE INDICATED, EXISTING BIT. CONC. PAVT. SHALL BE SCARIFIED AND REMOVED. ROADWAY GRAVEL SHALL BE USED FOR LEVELLING AND GRADING. PROPOSED BIT. CONC. PAVT. SHALL BE INSTALLED AS PER NEW ROADWAYS. CASTINGS FROM EXISTING STRUCTURES TO REMAIN SHALL BE ADJUSTED TO PROPOSED FINISH GRADE.
 - PROTECT NAVIGATION LIGHTS THROUGHOUT CONSTRUCTION TO ENSURE THEIR CONTINUOUS OPERATION. IF DAMAGE OCCURS OR IF POWER IS DISCONNECTED, NOTIFY THE ENGINEER IMMEDIATELY.



NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Drawing Revised	9/87

WHITMAN & HOWARD, INC.
 46 WILLIAM STREET, WELLESLEY, MASS.



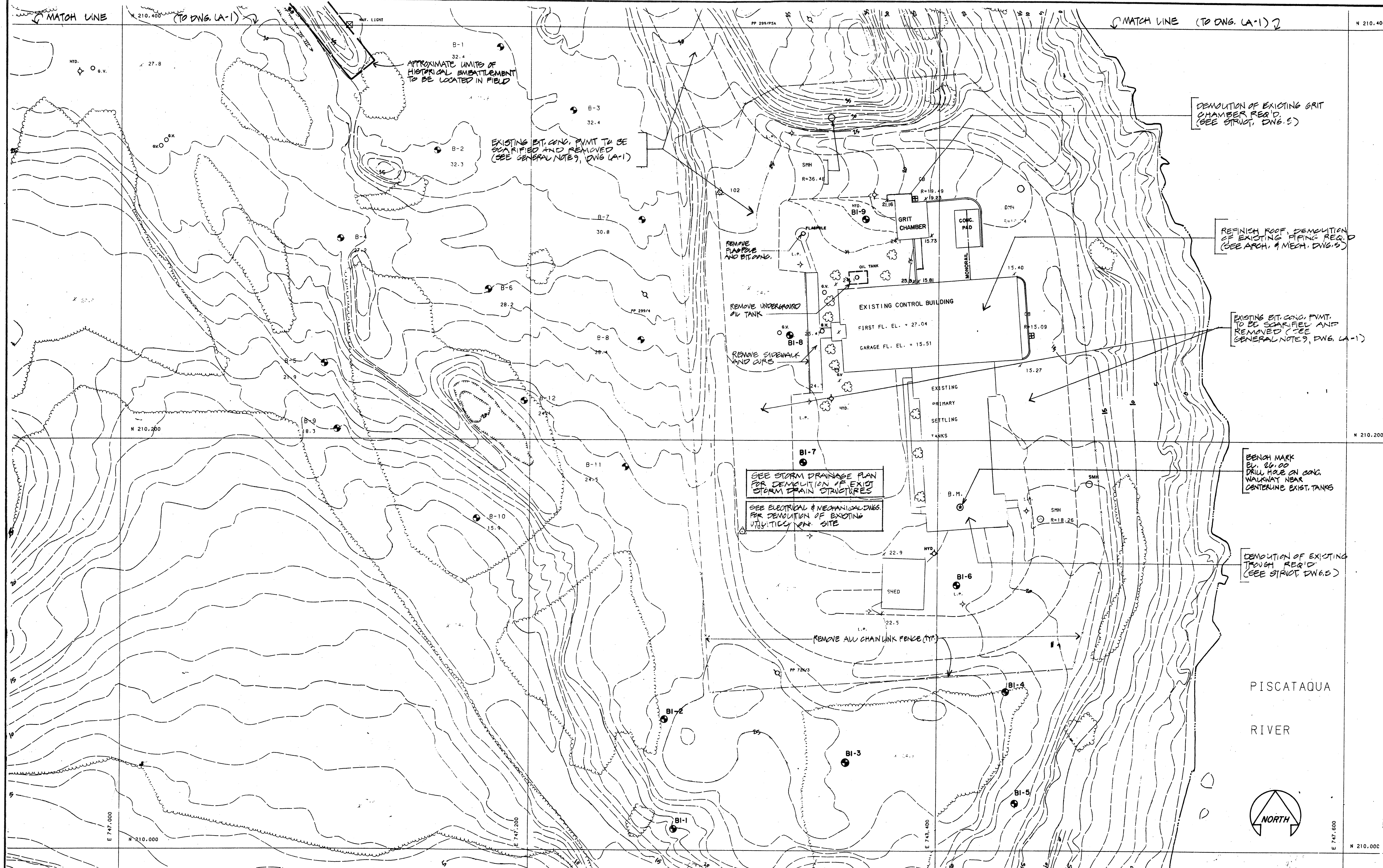
ORIGINAL FULL SIZE DRAWING = 4"
 REPRODUCTIONS MAY BE REDUCED SIZE

DRAWING NO. **LA-1**
 JOB NO. **85-163**
 CONTRACT NO. **3**

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
EXISTING CONDITIONS PLAN

APPROVED: *Stephen E. Stegal*
 DESIGNED/DRAWN: G.B.W. CHECKED: G.B.W. SCALE: 1"=20' DATE: SEPT. 1985

SHEET 3 OF 106 SHEETS



DEMOLITION OF EXISTING GRIT CHAMBER REQ'D. (SEE STRUCT. DWG. 5)

REFINISH ROOF, DEMOLITION OF EXISTING PIPING REQ'D. (SEE ARCH. & MECH. DWG. 5)

EXISTING BIT. CONC. PMMT. TO BE SCARIFIED AND REMOVED (SEE GENERAL NOTES, DWG. LA-1)

BENCH MARK EL. 26.00 DRILL HOLE ON CONC. WALKWAY NEAR CENTERLINE EXIST. TANKS

DEMOLITION OF EXISTING TROUGH REQ'D. (SEE STRUCT. DWG. 5)

SEE STORM DRAINAGE PLAN FOR DEMOLITION OF EXIST. STORM DRAIN STRUCTURES
SEE ELECTRICAL & MECHANICAL DWGS. FOR DEMOLITION OF EXISTING UTILITY VEH. SITE

APPROXIMATE LIMITS OF HISTORICAL EMBATTLEMENT TO BE LOCATED IN FIELD

EXISTING BIT. CONC. PMMT. TO BE SCARIFIED AND REMOVED (SEE GENERAL NOTE 9, DWG. LA-1)

REMOVE FLAGPOLE AND BITING

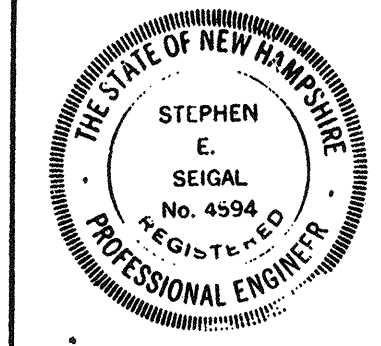
REMOVE UNDERGROUND OIL TANK

REMOVE SIDEWALK AND CURB

REMOVE A.W. CHAIN LINK FENCE (TYP.)

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Drawing Revised	9/89
REVISIONS		

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen E. Sigal*

DESIGNED/DRAWN: G.B.W. G.B.W. E.R.C. CHECKED SCALE: 1"=20' DATE: SEPT. 1985

DRAWING NO. **LA-2**
JOB NO. 85-163
CONTRACT NO. 3

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
EXISTING CONDITIONS AND DEMOLITION PLAN

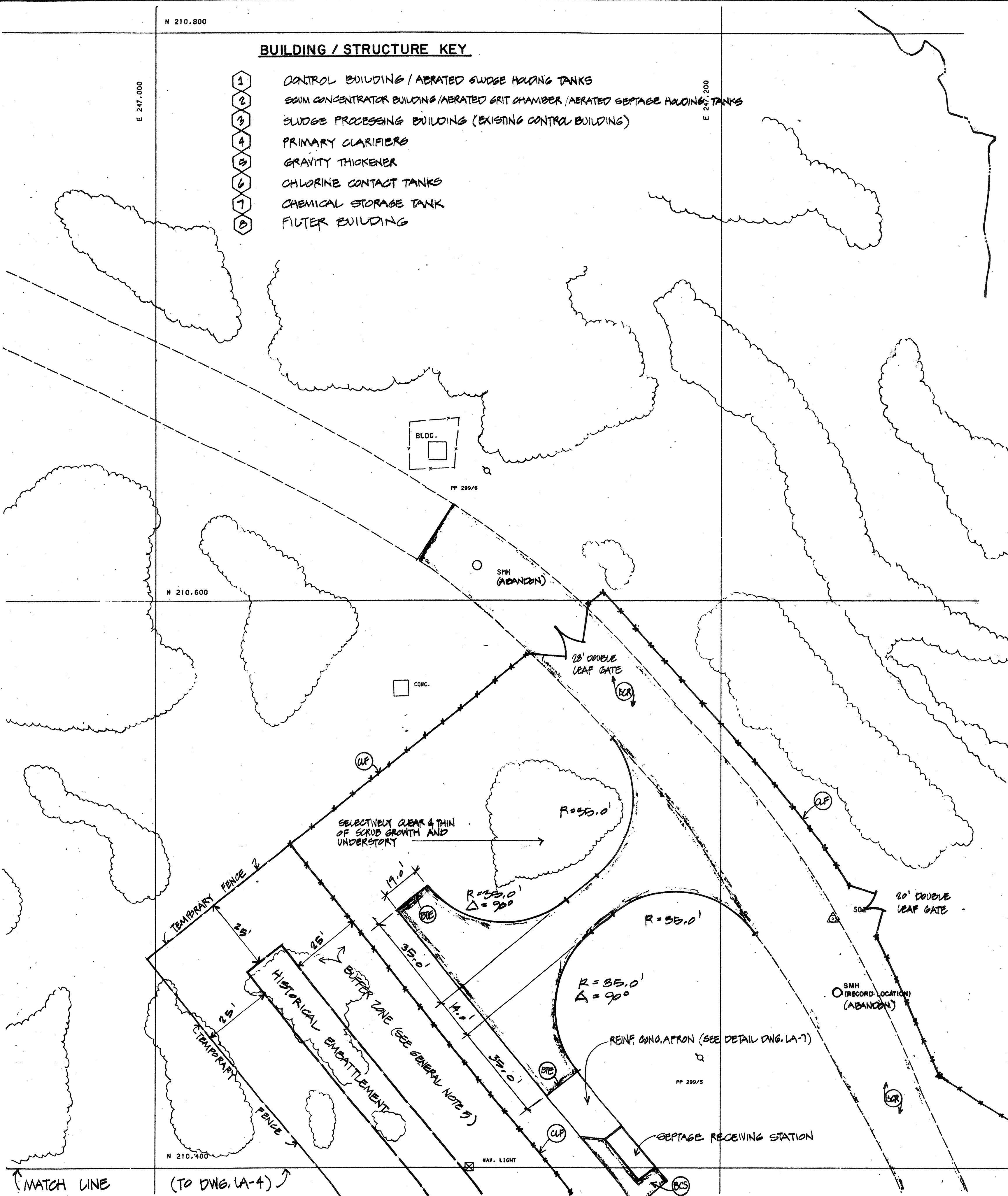
N 210.800

E 247.000

BUILDING / STRUCTURE KEY

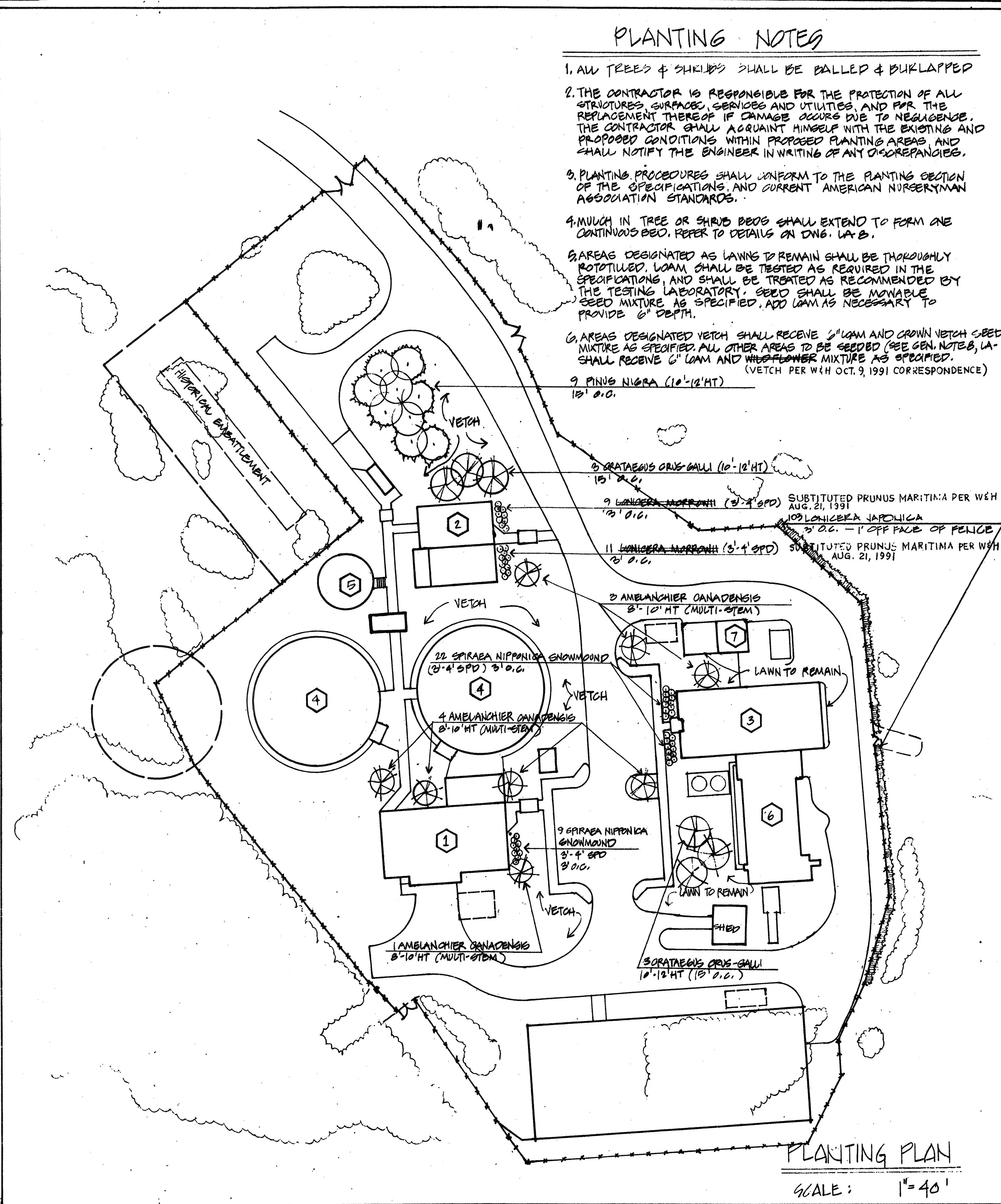
- 1 CONTROL BUILDING / AERATED SLUDGE HOLDING TANKS
- 2 SOUM CONCENTRATOR BUILDING / AERATED GRIT CHAMBER / AERATED SEPTAGE HOLDING TANKS
- 3 SLUDGE PROCESSING BUILDING (EXISTING CONTROL BUILDING)
- 4 PRIMARY CLARIFIERS
- 5 GRAVITY THICKENER
- 6 CHLORINE CONTACT TANKS
- 7 CHEMICAL STORAGE TANK
- 8 FILTER BUILDING

E 232.200



PLANTING NOTES

1. ALL TREES & SHRUBS SHALL BE BALLED & BULKAPPED
2. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL STRUCTURES, SURFACES, SERVICES AND UTILITIES, AND FOR THE REPLACEMENT THEREOF IF DAMAGE OCCURS DUE TO NEGLIGENCE. THE CONTRACTOR SHALL ACQUAINT HIMSELF WITH THE EXISTING AND PROPOSED CONDITIONS WITHIN PROPOSED PLANTING AREAS, AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES.
3. PLANTING PROCEDURES SHALL CONFORM TO THE PLANTING SECTION OF THE SPECIFICATIONS, AND CURRENT AMERICAN NURSERYMAN ASSOCIATION STANDARDS.
4. MUCH IN TREE OR SHRUB BOGS SHALL EXTEND TO FORM ONE CONTINUOUS BED. REFER TO DETAILS ON DWG. LA-8.
5. AREAS DESIGNATED AS LAWN TO REMAIN SHALL BE THOROUGHLY ROTOTILLED, LOAM SHALL BE TESTED AS REQUIRED IN THE SPECIFICATIONS, AND SHALL BE TREATED AS RECOMMENDED BY THE TESTING LABORATORY. SEED SHALL BE MIXABLE SEED MIXTURE AS SPECIFIED. ADD LOAM AS NECESSARY TO PROVIDE 6" DEPTH.
6. AREAS DESIGNATED VETCH SHALL RECEIVE 2" LOAM AND CROWN VETCH SEED MIXTURE AS SPECIFIED. ALL OTHER AREAS TO BE SEEDBED (SEE GEN. NOTE B, LA-1) SHALL RECEIVE 6" LOAM AND WHEATFLOUR MIXTURE AS SPECIFIED. (VETCH PER W/H OCT. 9, 1991 CORRESPONDENCE)
9. PINUS NIGRA (10'-12' HT) 15' O.C.
10. CRATAEGUS CRUS-GALLI (10'-12' HT) 15' O.C.
9. LONICERA MARRONNI (5'-4' SPD) 15' O.C. SUBSTITUTED PRUNUS MARITIMA PER W/H AUG. 21, 1991
11. LONICERA MARRONNI (5'-4' SPD) 15' O.C. SUBSTITUTED PRUNUS MARITIMA PER W/H AUG. 21, 1991
2. AMELANCHIER CANADENSIS 8'-10' HT (MULTI-STEM)
22. SPIRAEA NIPPONICA SNOWMOUND (3'-4' SPD) 3' O.C.
4. AMELANCHIER CANADENSIS 8'-10' HT (MULTI-STEM)
9. SPIRAEA NIPPONICA SNOWMOUND 3'-4' SPD 3' O.C.
3. CRATAEGUS CRUS-GALLI 10'-12' HT (15' O.C.)



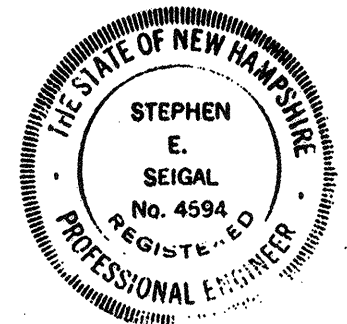
PLANTING PLAN

SCALE: 1"=40'



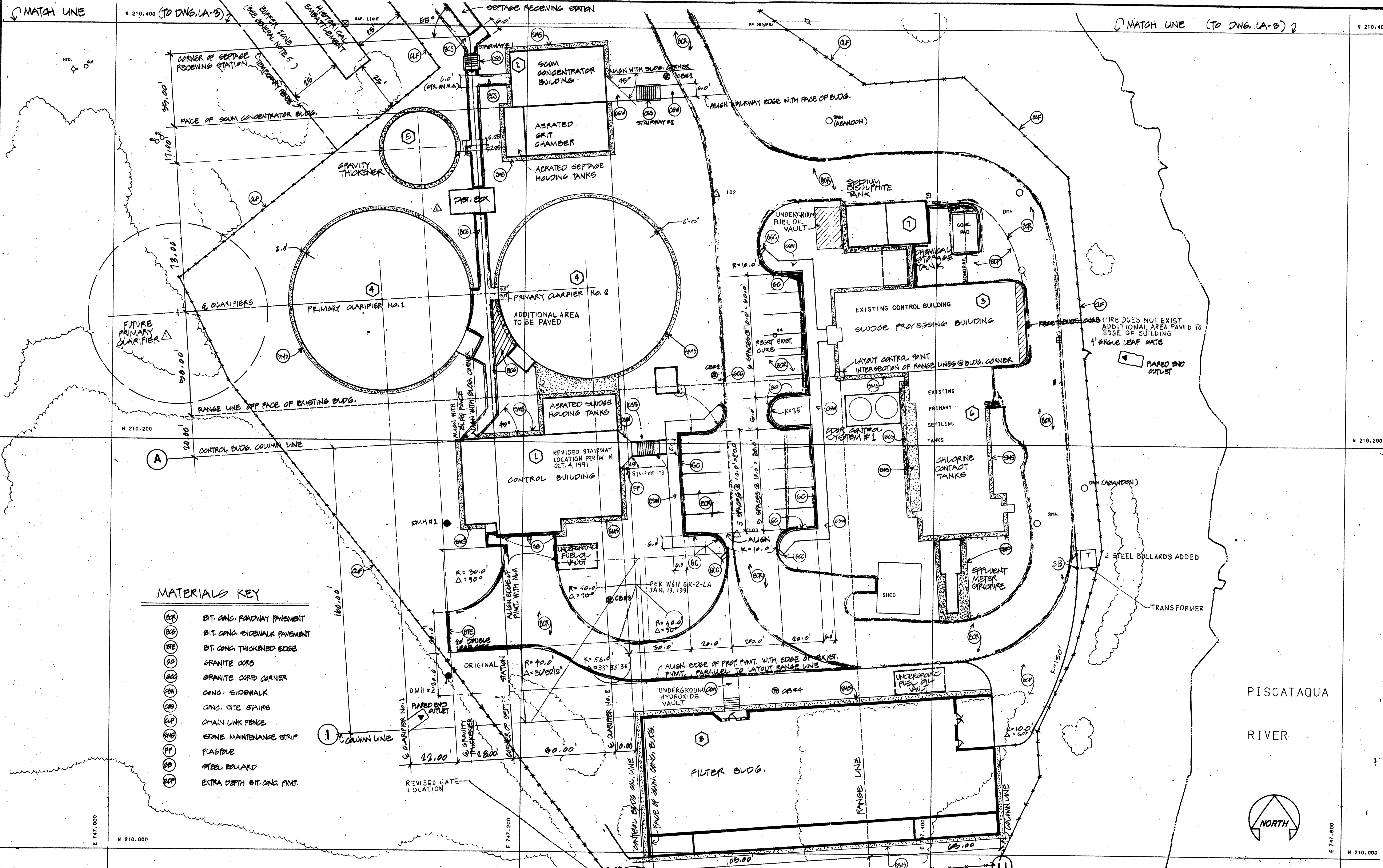
NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Drawing Revised	9/89
REVISIONS		

WHITMAN & HOWARD, INC.
 45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"			
REPRODUCTIONS MAY BE REDUCED SIZE			
DESIGNED/DRAWN	CHECKED	SCALE	DATE
G.B.W.	G.B.W.	E.R.C.	1"=20'
APPROVED		DATE	
Stephen E. Seigel		SEPT. 1985	
DRAWING NO. LA-3		JOB NO. 85-163	
CONTRACT NO. 3		SHEET 5 OF 106 SHEETS	

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
 PLANTING, LAYOUT AND MATERIALS PLAN



- MATERIALS KEY**
- (ECP) BIT. CONC. ROADWAY PAVEMENT
 - (ECS) BIT. CONC. SIDEWALK PAVEMENT
 - (ETE) BIT. CONC. THICKENED EDGE
 - (GC) GRANITE CURB
 - (GCC) GRANITE CURB CORNER
 - (CWN) CONC. SIDEWALK
 - (CS) CONC. SITE STAIRS
 - (CLF) CHAIN LINK FENCE
 - (MS) STONE MAINTENANCE STRIP
 - (FP) FLAGPOLE
 - (SB) STEEL BOLLARD
 - (EDP) EXTRA DEPTH BIT. CONC. PAVT.

NO.	DESCRIPTION	DATE
3	REVISED TO RECORD PLAN	9-93
2	DRAWING REVISED	9/89
1	ADDED FUT. PRI. CLAR., REV. DET. BOX	2/88
NO.	DESCRIPTION	DATE
REVISIONS		

WHITMAN & HOWARD, INC.
 45 WILLIAM STREET, WELLESLEY, MASS.



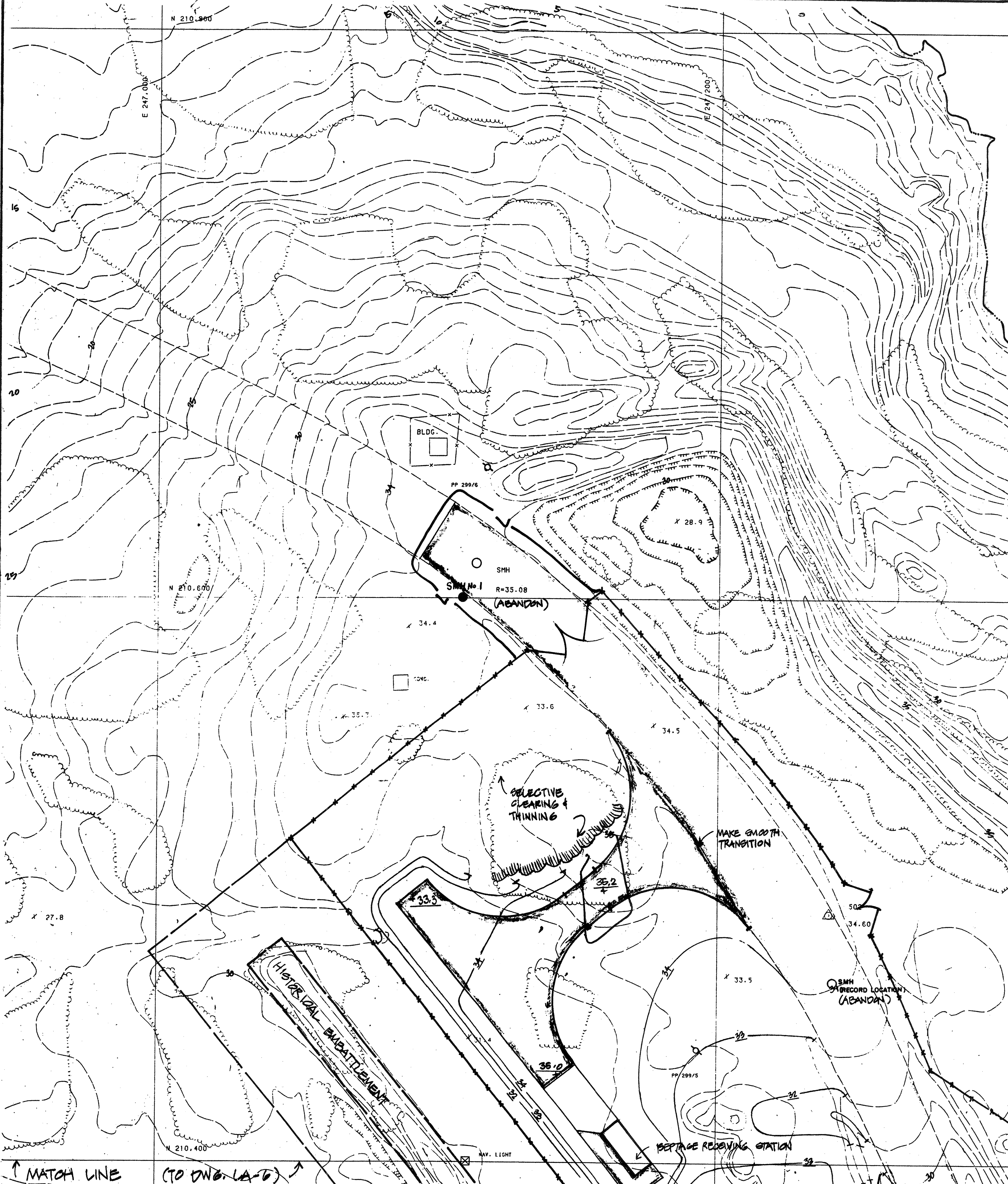
ORIGINAL FULL SIZE DRAWING - 4"
 REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen E. Sejal*

DESIGNED: G.B.W. DRAWN: G.B.W. CHECKED: E.R.C. SCALE: 1"=20' DATE: SEPT. 1985

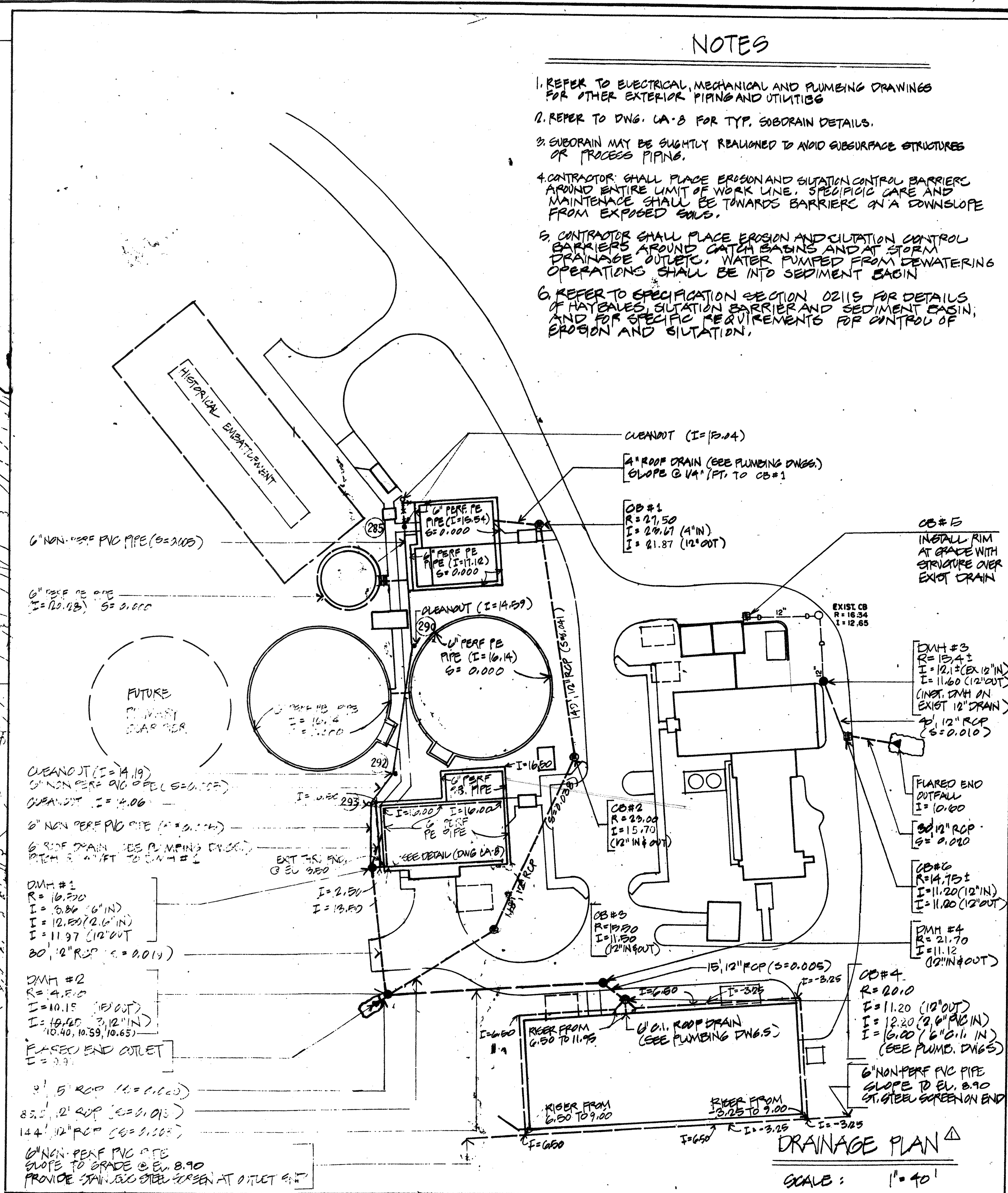
DRAWING NO. **LA-4**
 JOB NO. 85-163
 CONTRACT NO. 3

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
 LAYOUT AND MATERIALS PLAN



NOTES

1. REFER TO ELECTRICAL, MECHANICAL AND PLUMBING DRAWINGS FOR OTHER EXTERIOR PIPING AND UTILITIES
2. REFER TO DWG. LA-3 FOR TYP. SUBRAIN DETAILS.
3. SUBRAIN MAY BE SLIGHTLY REORIENTED TO AVOID SUBSURFACE STRUCTURES OR PROCESS PIPING.
4. CONTRACTOR SHALL PLACE EROSION AND SILTATION CONTROL BARRIERS AROUND ENTIRE LIMIT OF WORK LINE. SPECIFIC CARE AND MAINTENANCE SHALL BE TOWARDS BARRIERS ON A DOWNSLOPE FROM EXPOSED SOILS.
5. CONTRACTOR SHALL PLACE EROSION AND SILTATION CONTROL BARRIERS AROUND CATCH BASINS AND AT STORM DRAINAGE OUTLET. WATER PUMPED FROM DEWATERING OPERATIONS SHALL BE INTO SEDIMENT BASIN.
6. REFER TO SPECIFICATION SECTION 02115 FOR DETAILS OF HAYBALES, SILTATION BARRIER AND SEDIMENT BASIN; AND FOR SPECIFIC REQUIREMENTS FOR CONTROL OF EROSION AND SILTATION.



DRAINAGE PLAN

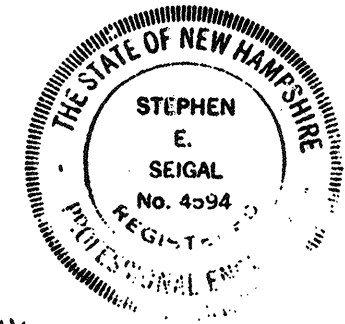
SCALE: 1" = 40'



a-1
37 of 46
ADDENDUM No. 1
ITEM No. 27

NO.	DESCRIPTION	DATE
4	REVISED TO RECORD PLAN	9-93
3	DRAWING REVISED (ADDENDUM #1)	11/89
2	Drawing Revised	9/89
1	REVISED SUBRAIN SYSTEM	2/88

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



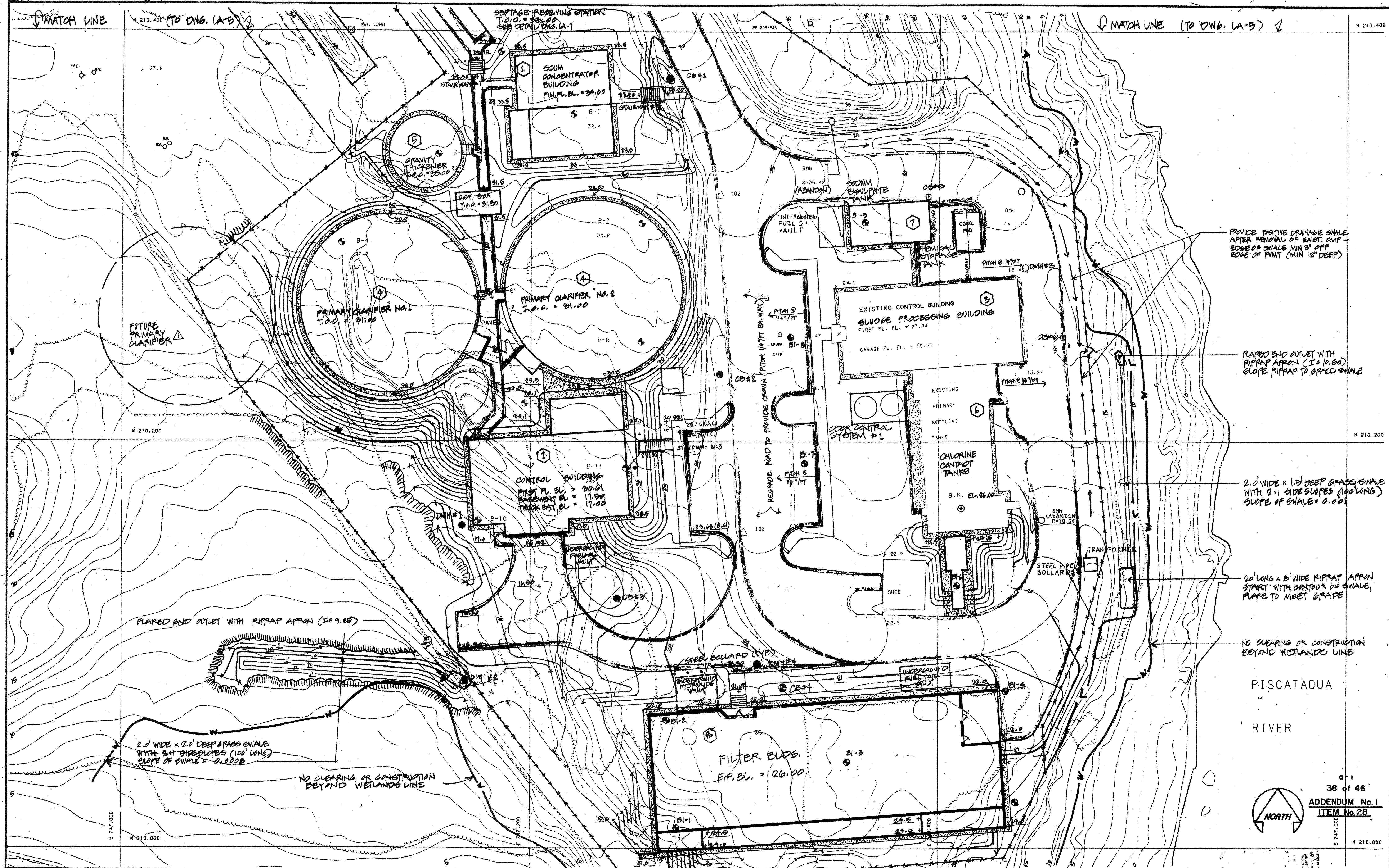
ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen E. Seigal*

DESIGNED/DRAWN: G.B.W. / G.B.W. / E.R.C. / DATE: SEPT. 1985

DRAWING NO. **LA-5**
JOB NO. **85-163**
CONTRACT NO. **3**

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
GRADING AND DRAINAGE PLAN



← MATCH LINE (TO DWG. LA-5)

→ MATCH LINE (TO DWG. LA-5)

FUTURE PRIMARY CLARIFIER

FLARED END OUTLET WITH RIPRAP APRON (I=9.85)

2.0' WIDE x 2.0' DEEP GRASS SWALE WITH 2:1 SIDE SLOPES (100' LONG) SLOPE OF SWALE = 0.0025

NO CLEARING OR CONSTRUCTION BEYOND WETLANDS LINE

PROVIDE POSITIVE DRAINAGE SWALE AFTER REMOVAL OF EXIST. CMP - EDGE OF SWALE MIN 8' OFF EDGE OF PINT (MIN 12' DEEP)

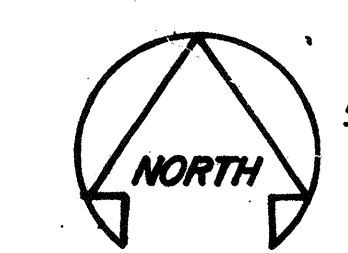
FLARED END OUTLET WITH RIPRAP APRON (I=10.60) SLOPE RIPRAP TO GRASS SWALE

2.0' WIDE x 1.5' DEEP GRASS SWALE WITH 2:1 SIDE SLOPES (100' LONG) SLOPE OF SWALE = 0.0025

20' LONG x 8' WIDE RIPRAP APRON START WITH CONTOUR OF SWALE, FLARE TO MEET GRADE

NO CLEARING OR CONSTRUCTION BEYOND WETLANDS LINE

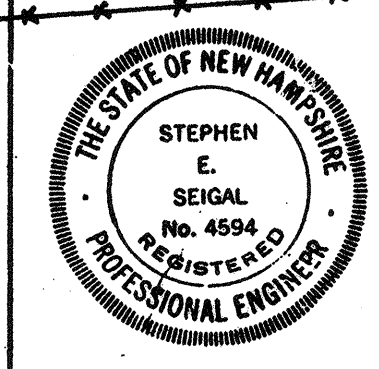
PISCATAQUA RIVER



0-1
38 of 46
ADDENDUM No. 1
ITEM No. 28

NO.	DESCRIPTION	DATE
4	REVISED TO RECORD PLAN	9-93
3	DRAWING REVISED (ADDENDUM #1)	11/89
2	Drawing Revised	9/89
1	ADDED PVT. PRI. CLAR. REV. DIST. BOX	2/88

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



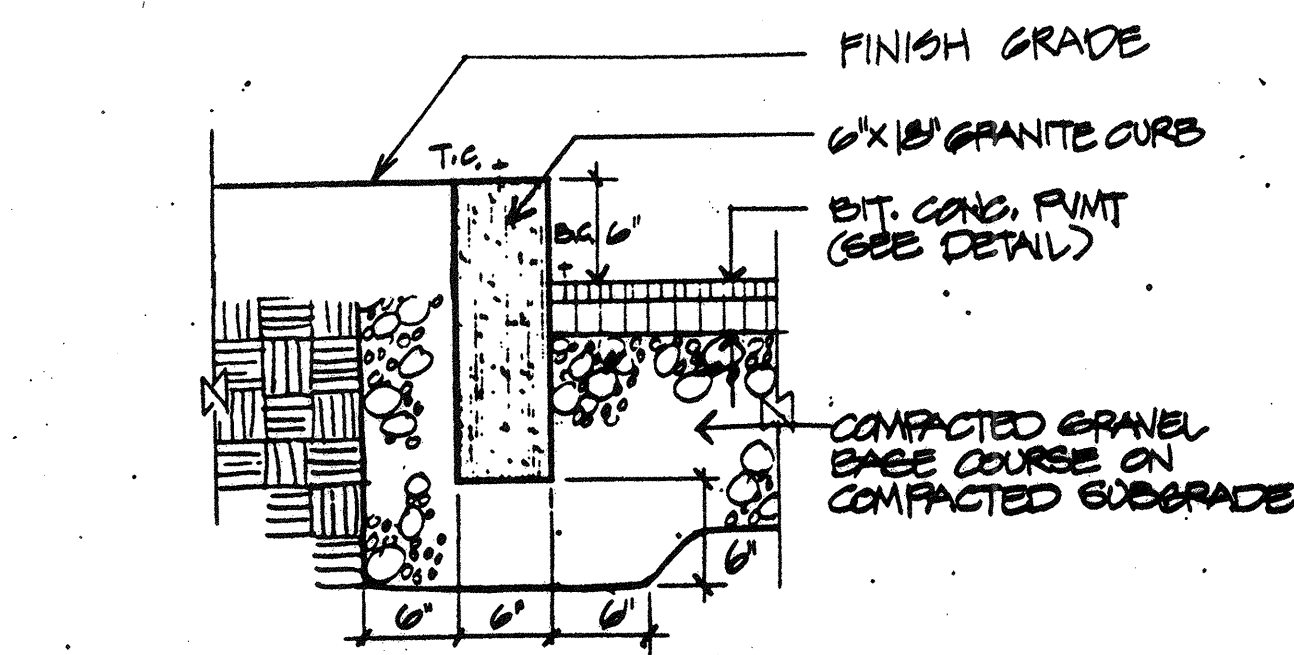
ORIGINAL FULL SIZE DRAWING - 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen E. Seigel*

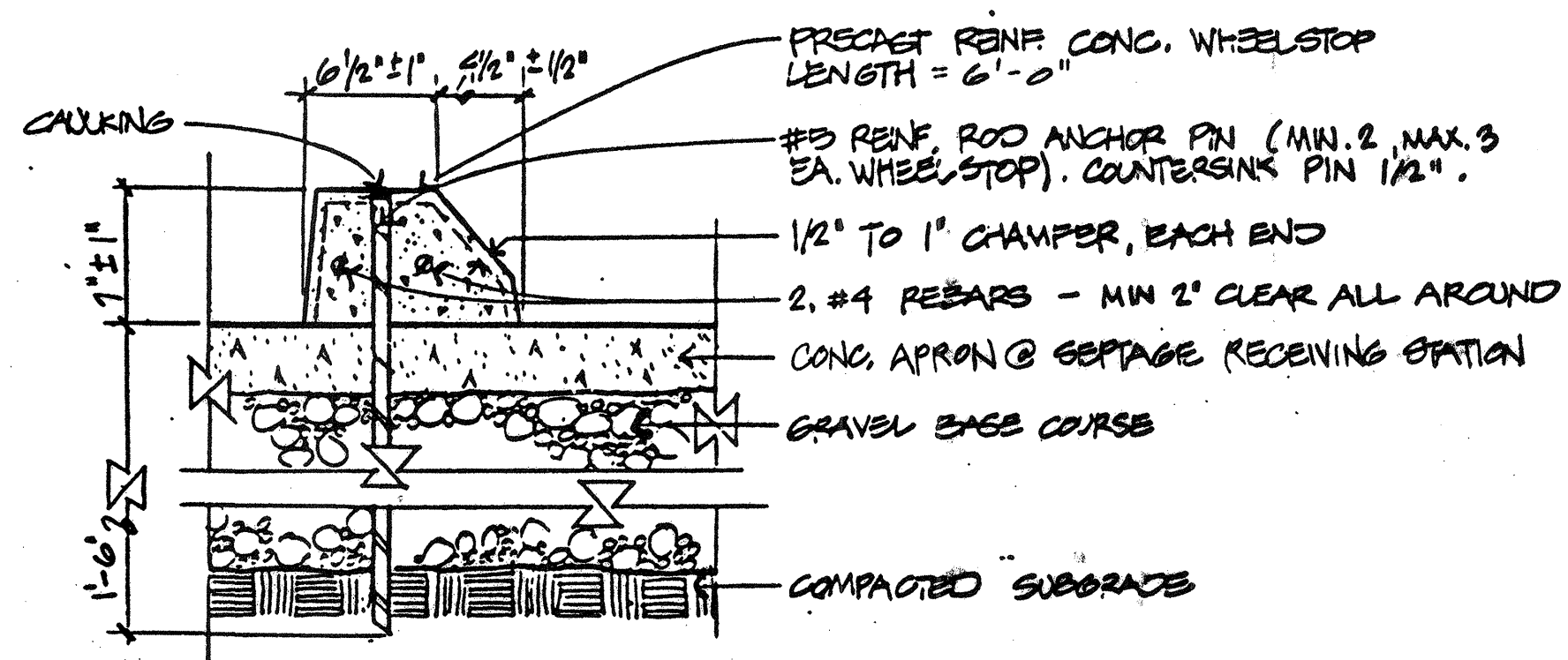
DESIGNED DRAWN CHECKED SCALE DATE
G.B.W. G.B.W. E.R.C. 1"=20' SEPT. 1985

DRAWING NO. **LA-6**
JOB NO. **85-163**
CONTRACT NO. **3**

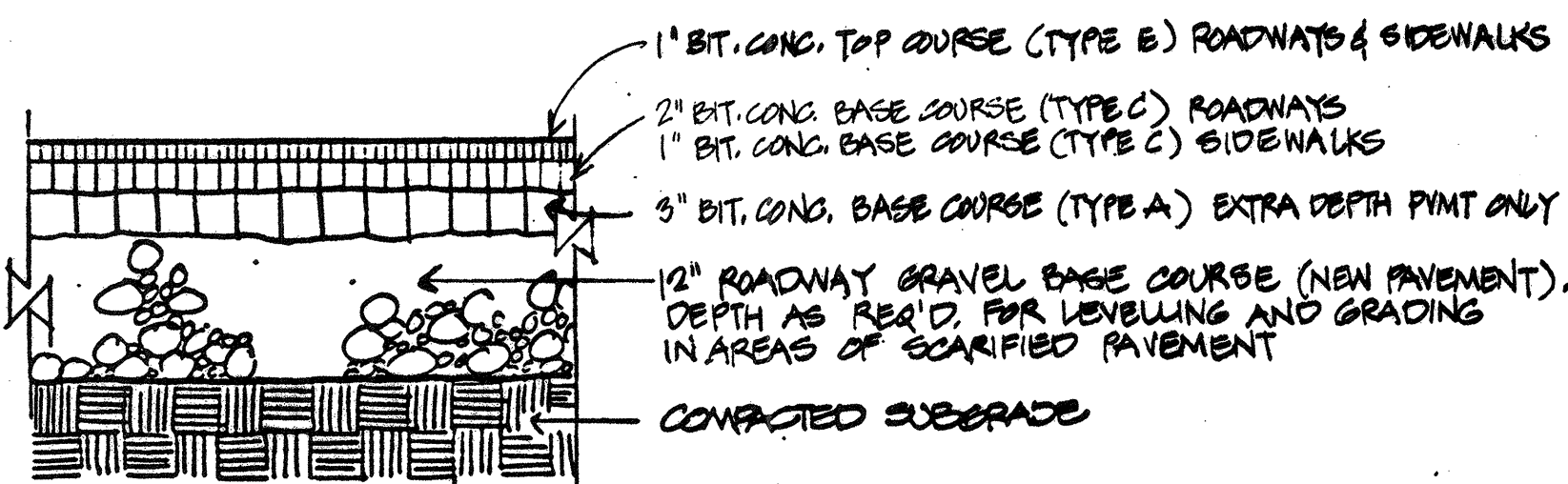
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
GRADING AND DRAINAGE PLAN



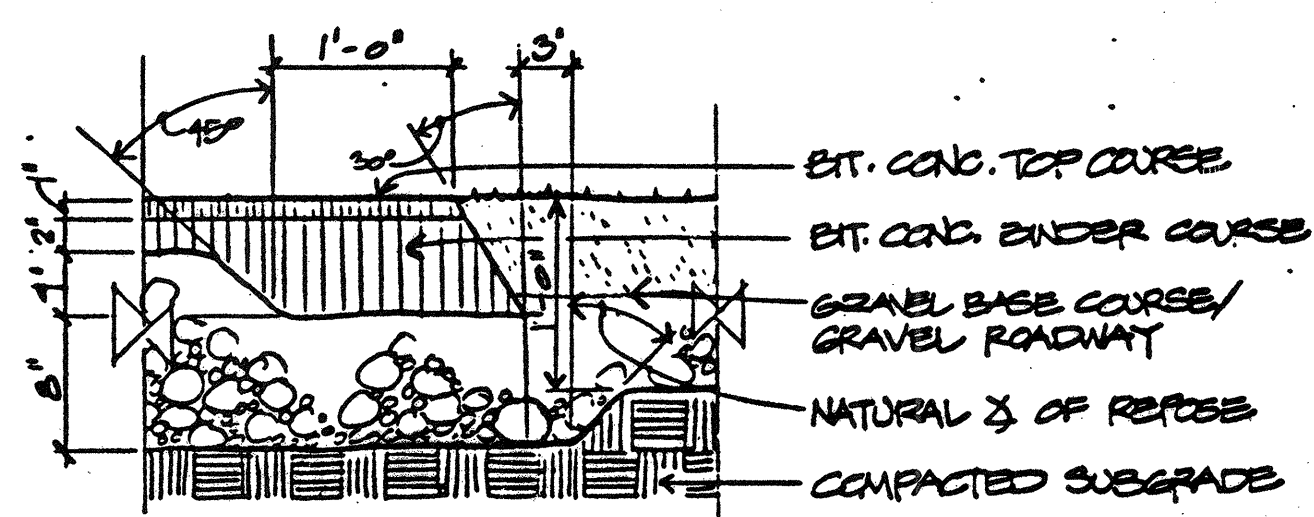
GRANITE CURB DETAIL
SCALE: 1" = 1'-0"



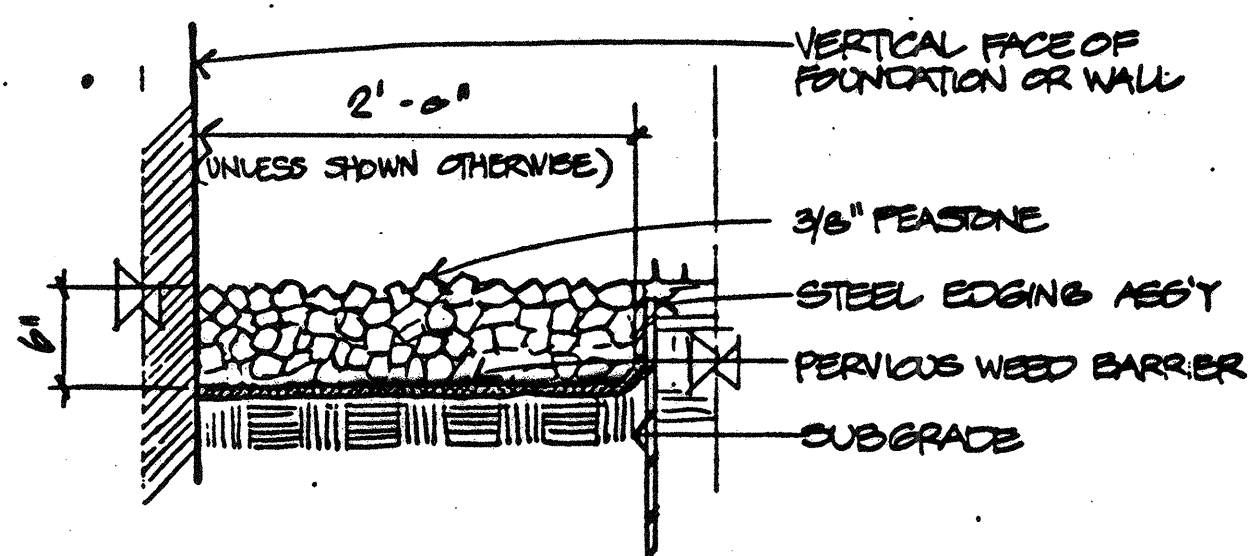
PRECAST WHEEL STOP
SCALE: 1 1/2" = 1'-0"



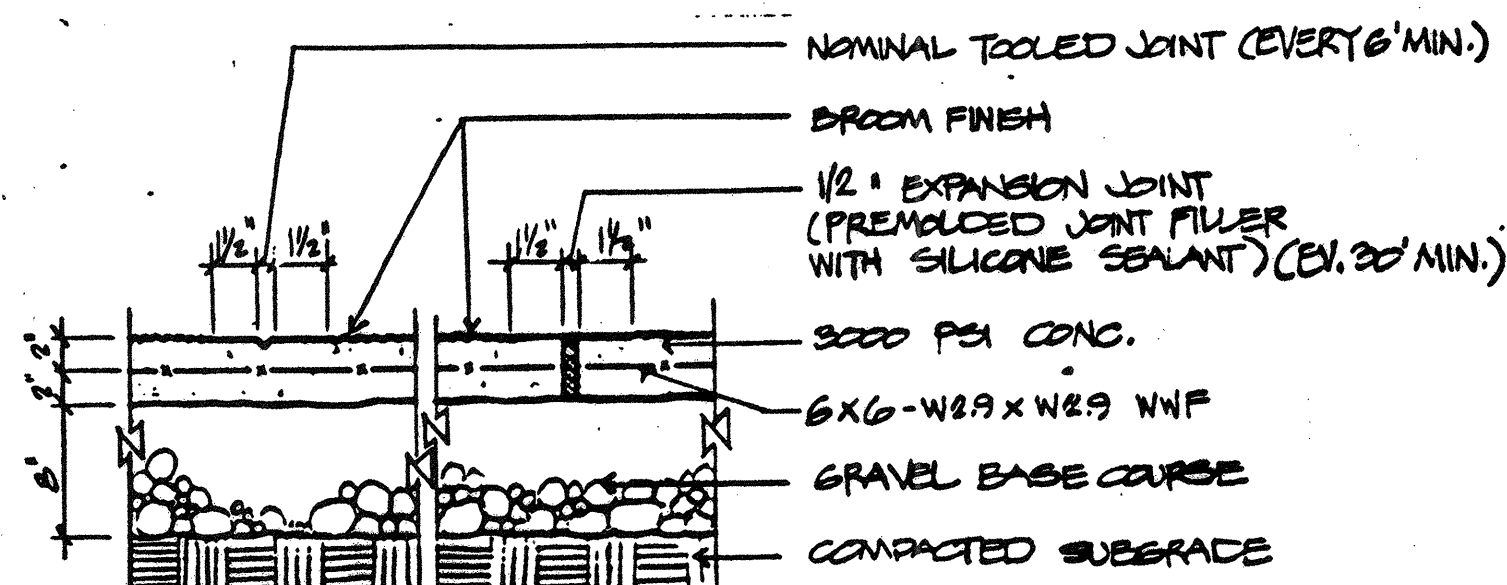
TYPICAL PAVEMENT SECTION



SECTION: THICKENED EDGE
BIT. CONC. PAVEMENT DETAILS
SCALE: 1" = 1'-0"

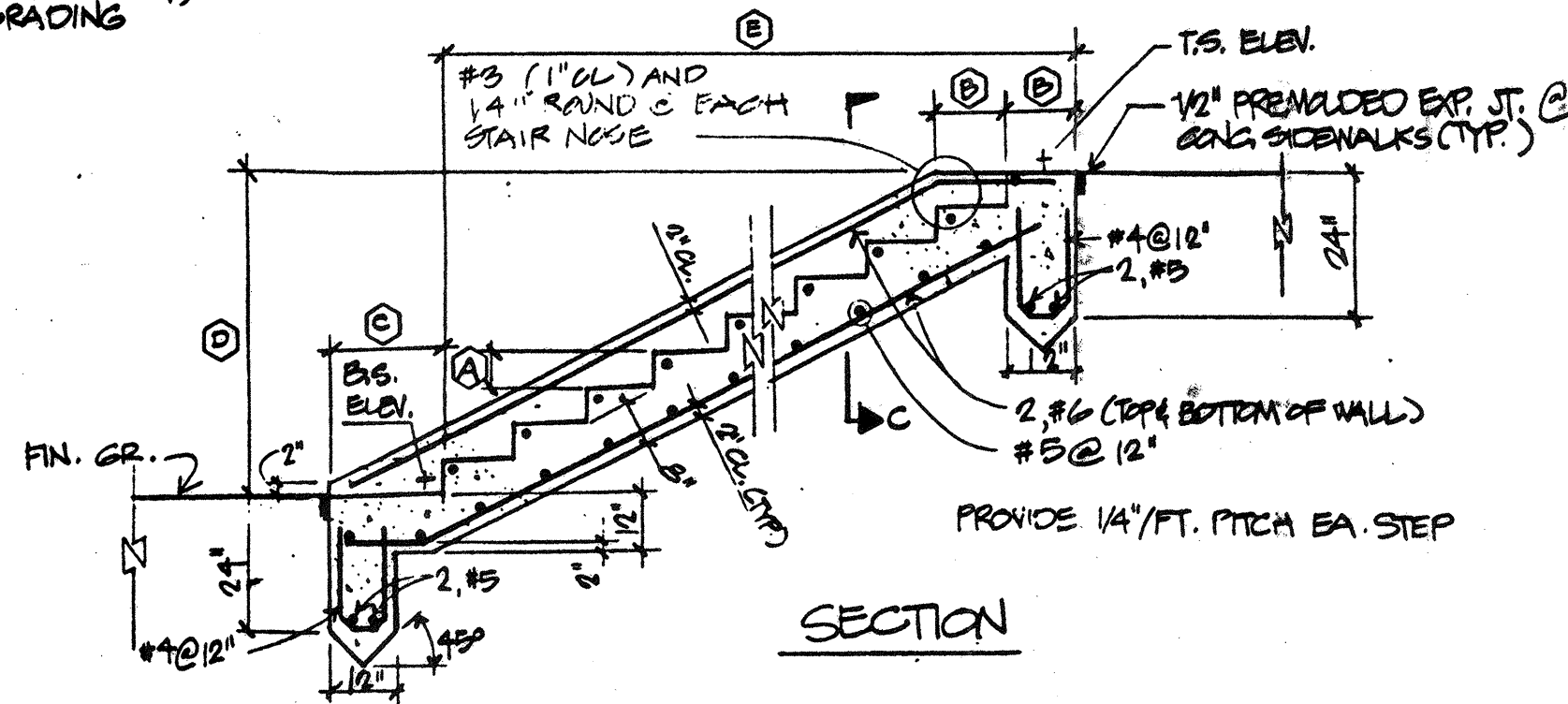


STONE MAINTENANCE STRIP
SCALE: 1" = 1'-0"

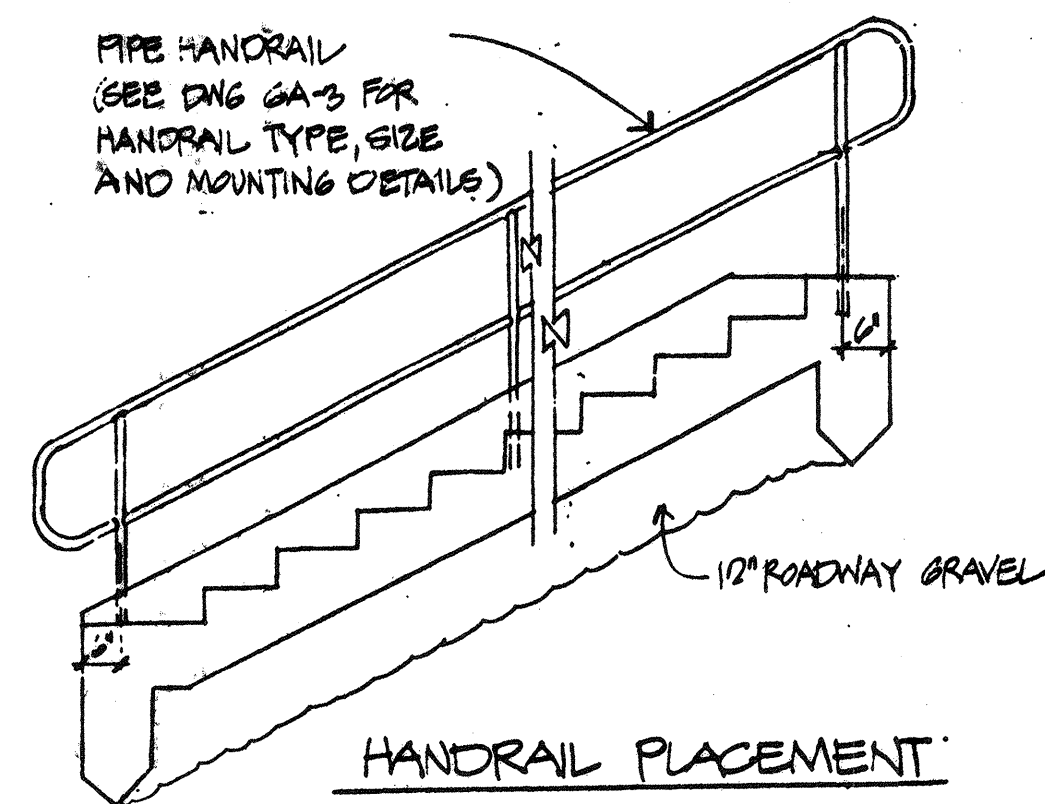


CONC. SIDEWALK DETAILS
SCALE: 1" = 1'-0"

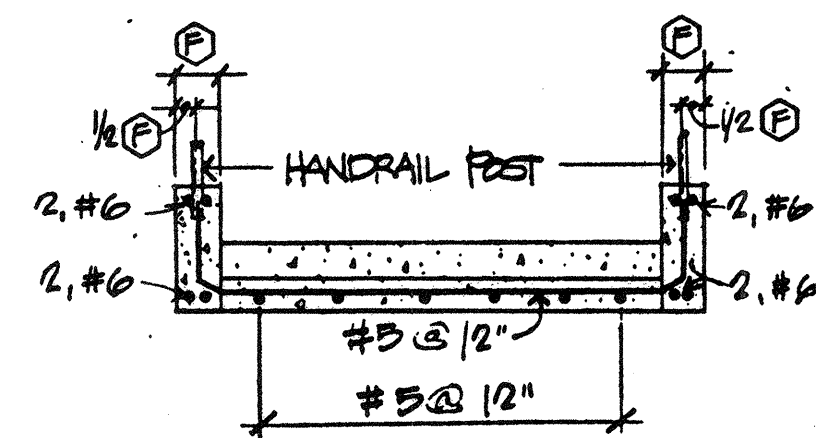
NOTE: INSTALL EXP. JT. ADJACENT TO BLDG. STRUCTURES ETC. & WHERE DIRECTED BY ENGINEER.



SECTION

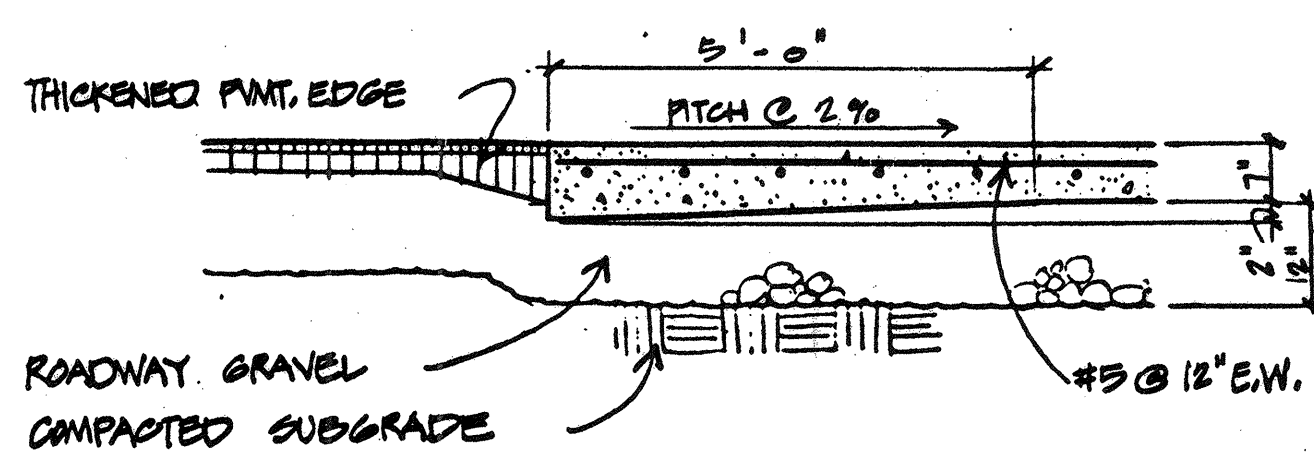


HANDRAIL PLACEMENT

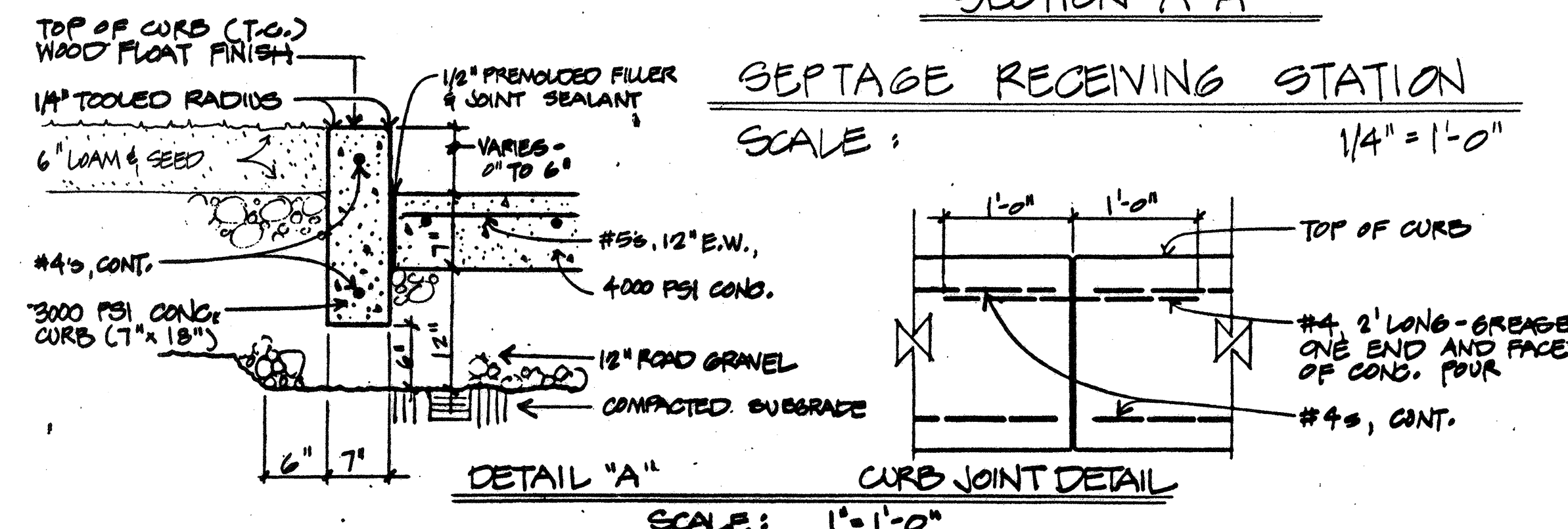


DETAILS - TYPICAL CONCRETE STAIRS
SCALE: 3/8" = 1'-0"

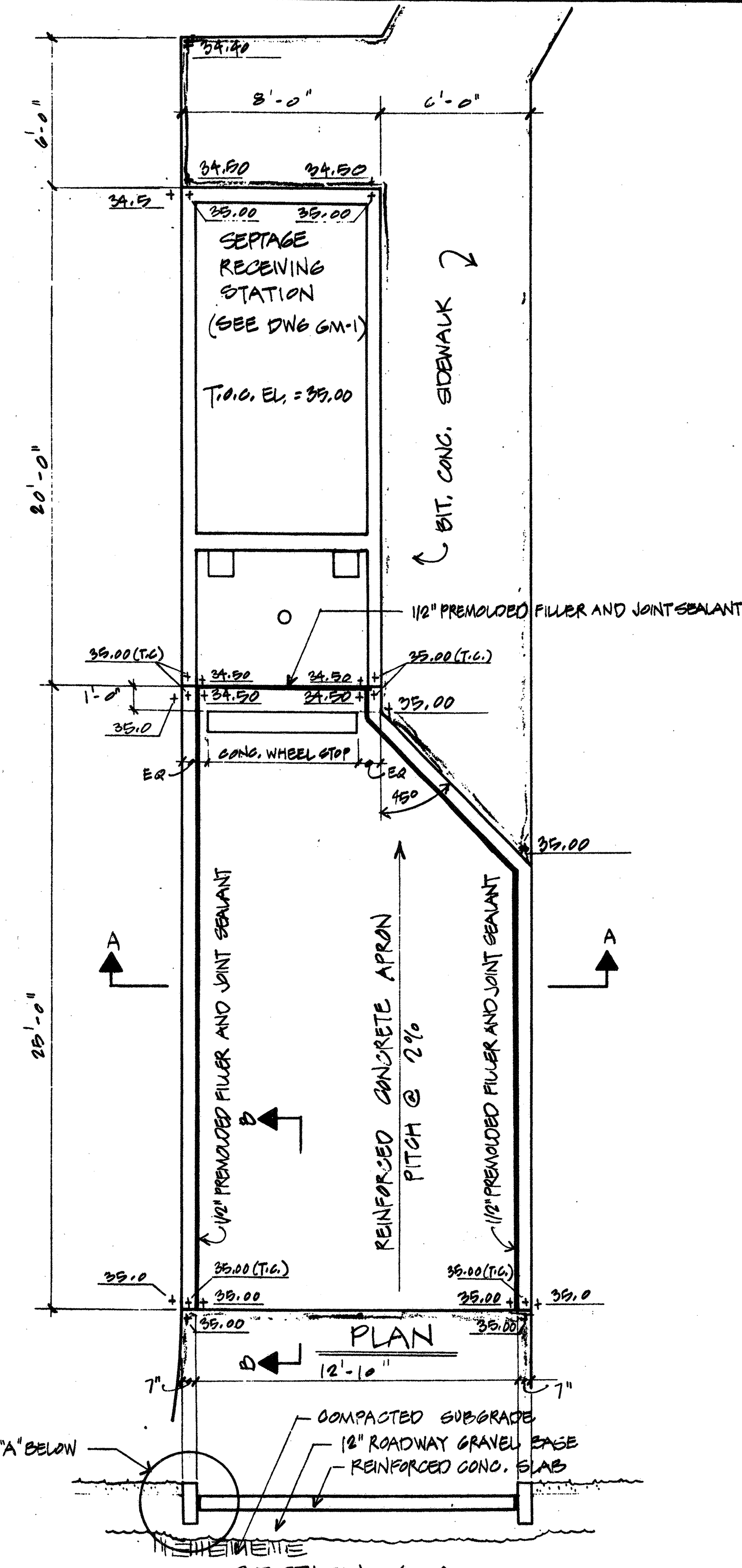
SITE STAIRWAY SCHEDULE								
STAIRWAY	①	②	③	④	⑤	T.S. ELEV.	B.S. ELEV.	
1	6'	12'	20'	11'-0"	5'-0"	8"	24.10	22.70
2	6'	12'	20'	5'-0"	10'-0"	8"	22.20	23.80
3	6'	12'	20'	5'-0"	10'-0"	8"	21.92	24.92



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



SEPTAGE RECEIVING STATION
SCALE: 1/4" = 1'-0"



SECTION A-A

CURB JOINT DETAIL
SCALE: 1" = 1'-0"

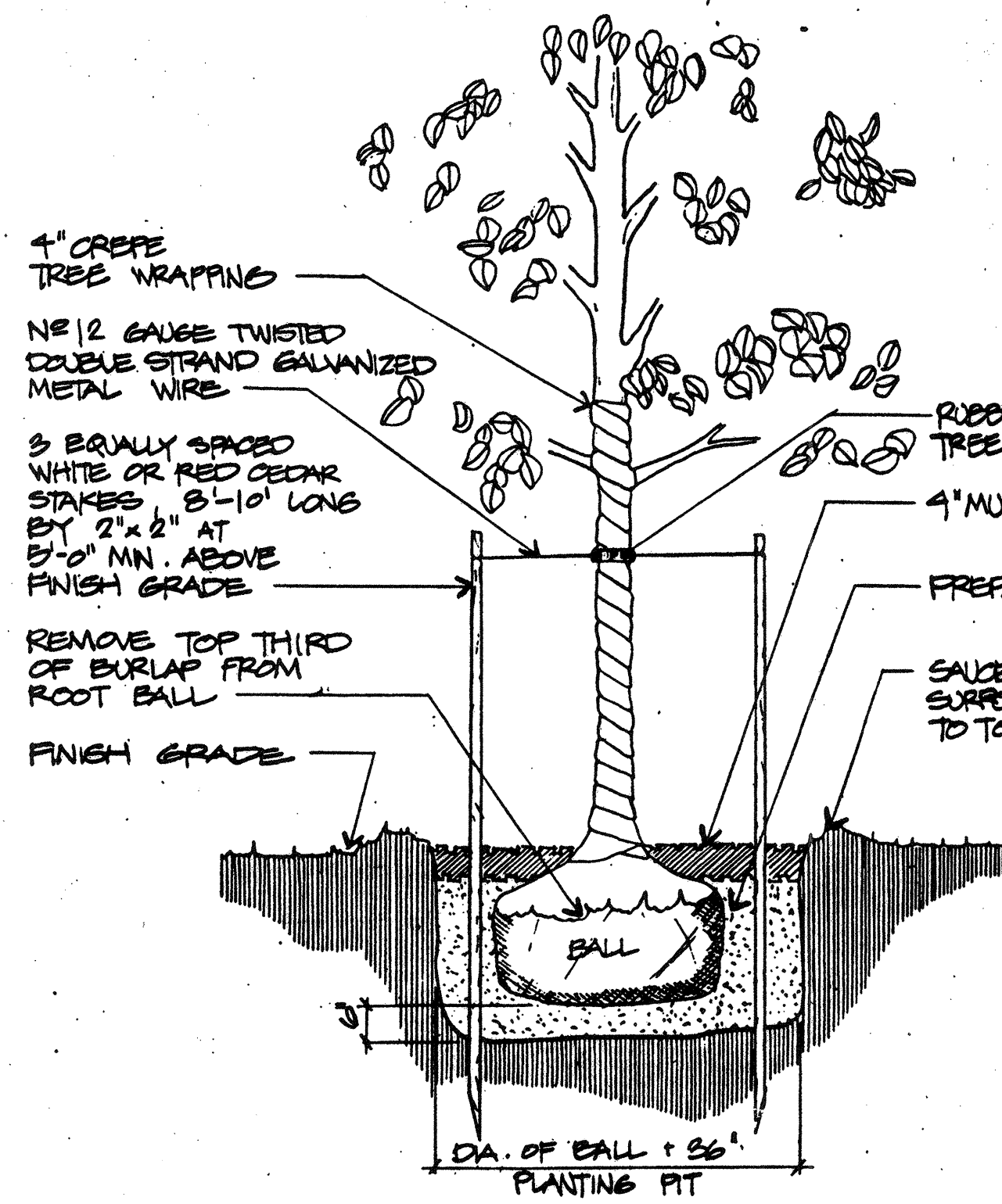
NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Drawing Revised	9/89
REVISIONS		

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.

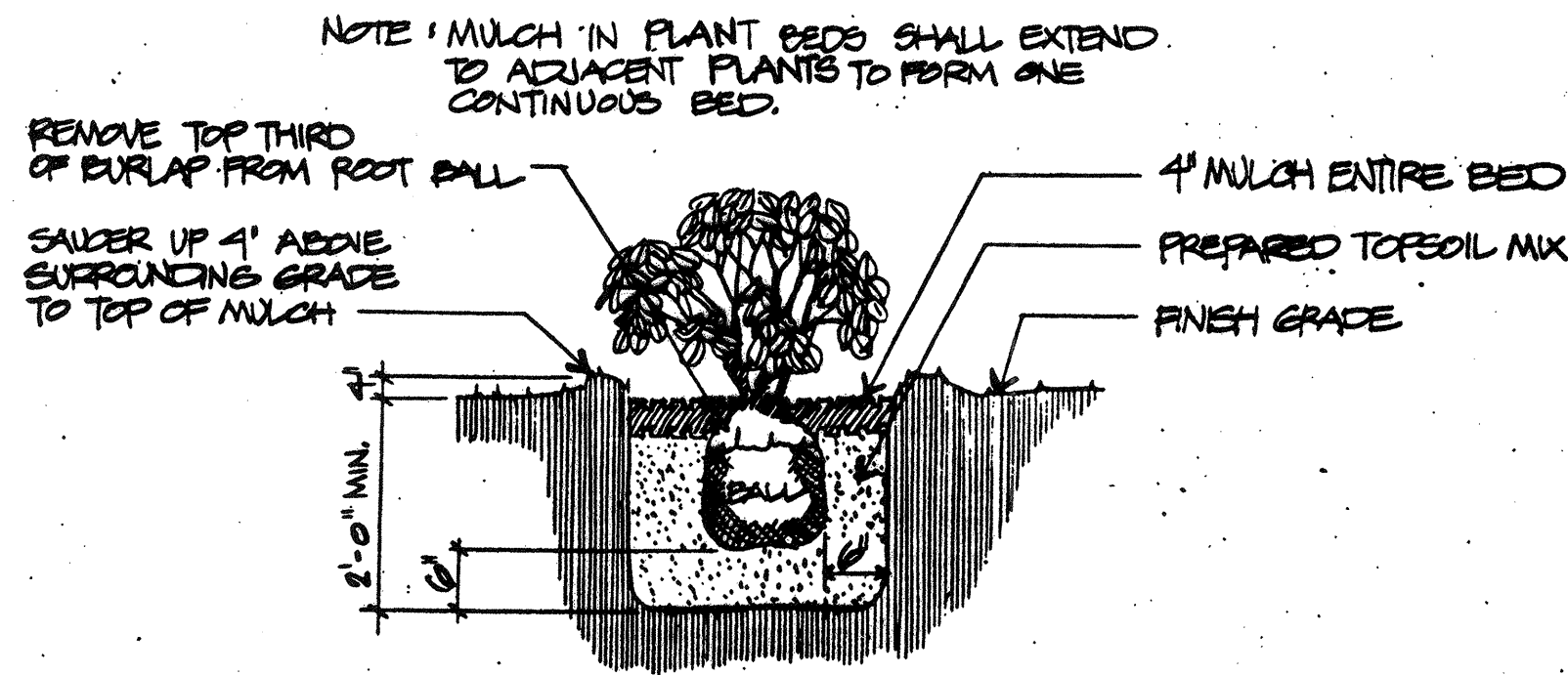


ORIGINAL FULL SIZE DRAWING = 4"			DRAWING NO. LA-7		
REPRODUCTIONS MAY BE REDUCED SIZE			JOB NO. 85-163		
APPROVED			CONTRACT NO. 3		
DESIGNED	DRAWN	CHECKED	SCALE	DATE	
G.B.W.	G.B.W.	E.R.C.	AS NOTED	SEPT. 1985	

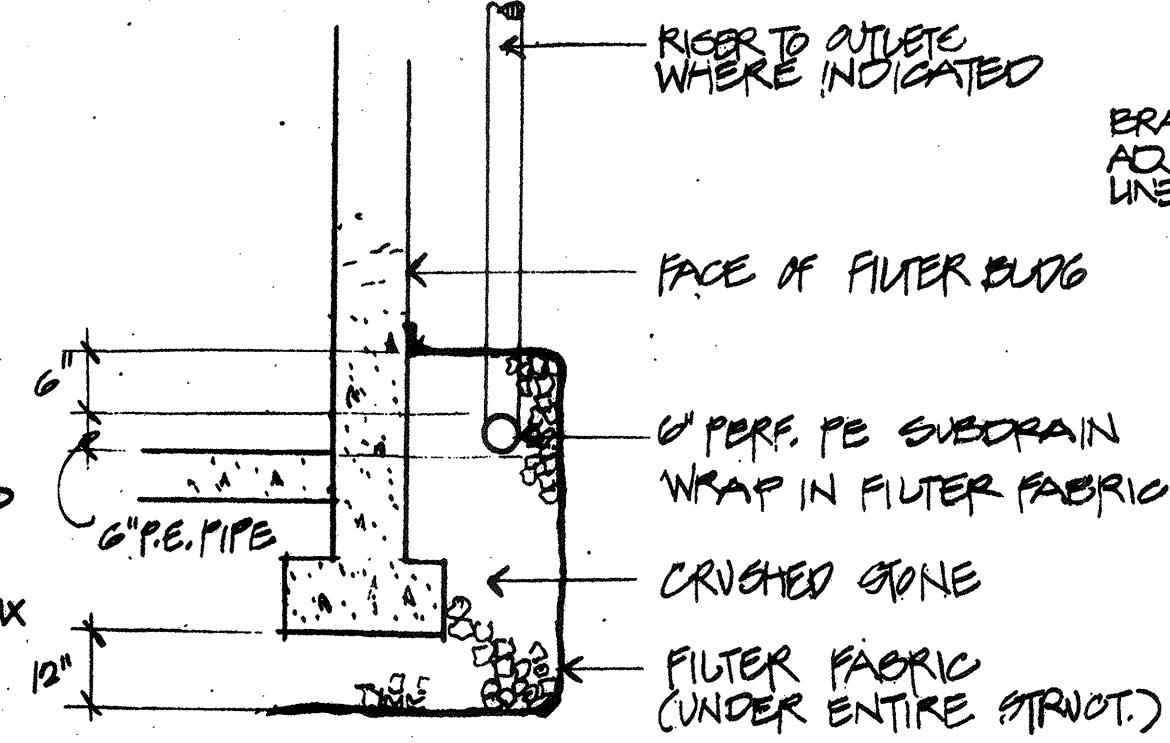
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
SITE DETAILS
SHEET 9 OF 106 SHEETS



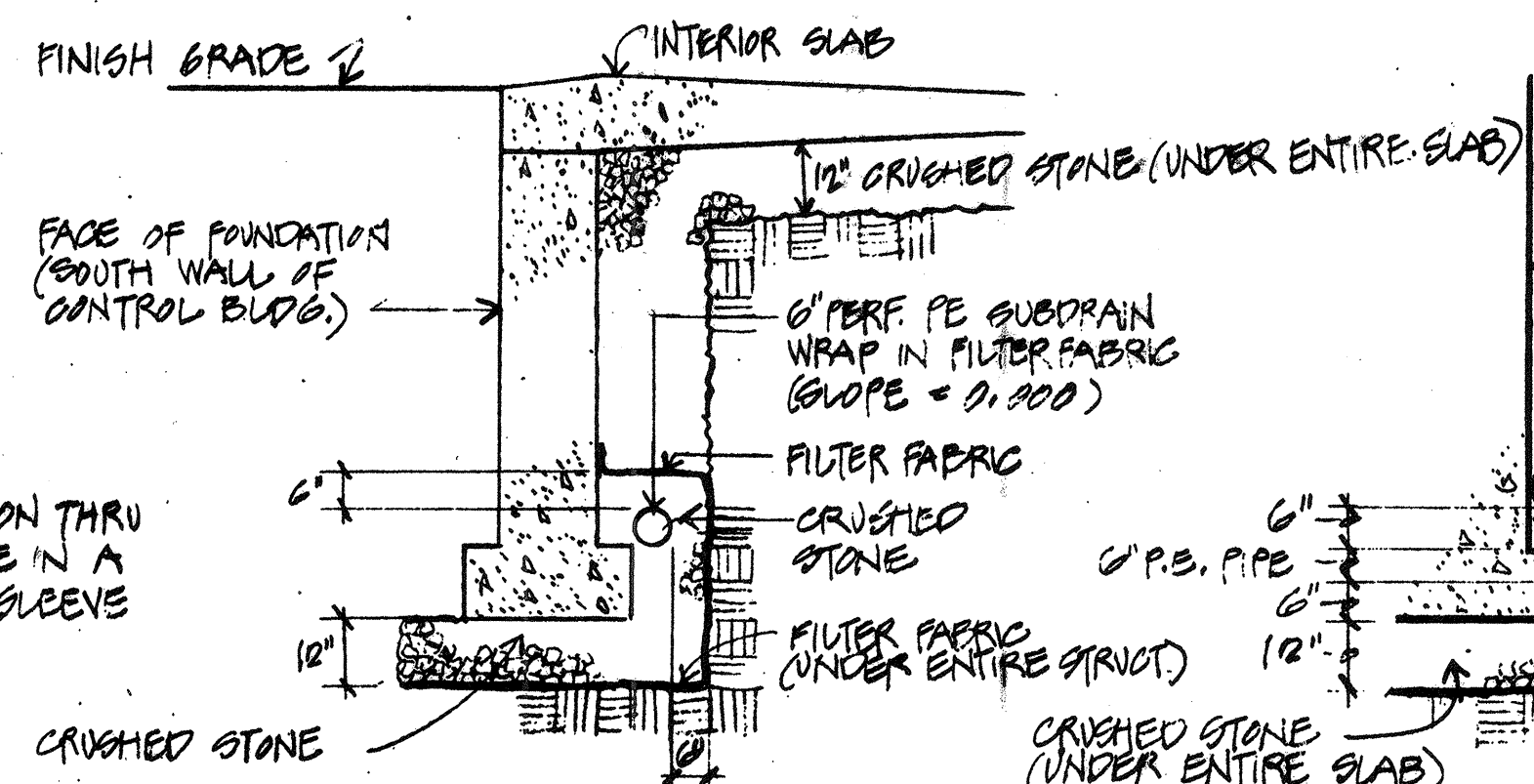
TREE PLANTING DETAIL
NOT TO SCALE



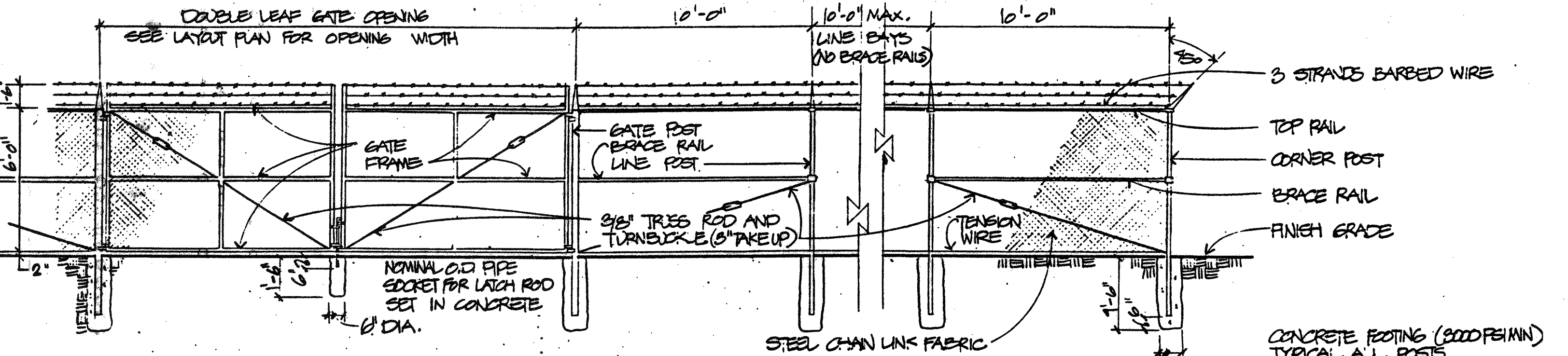
SHRUB PLANTING DETAIL
NOT TO SCALE



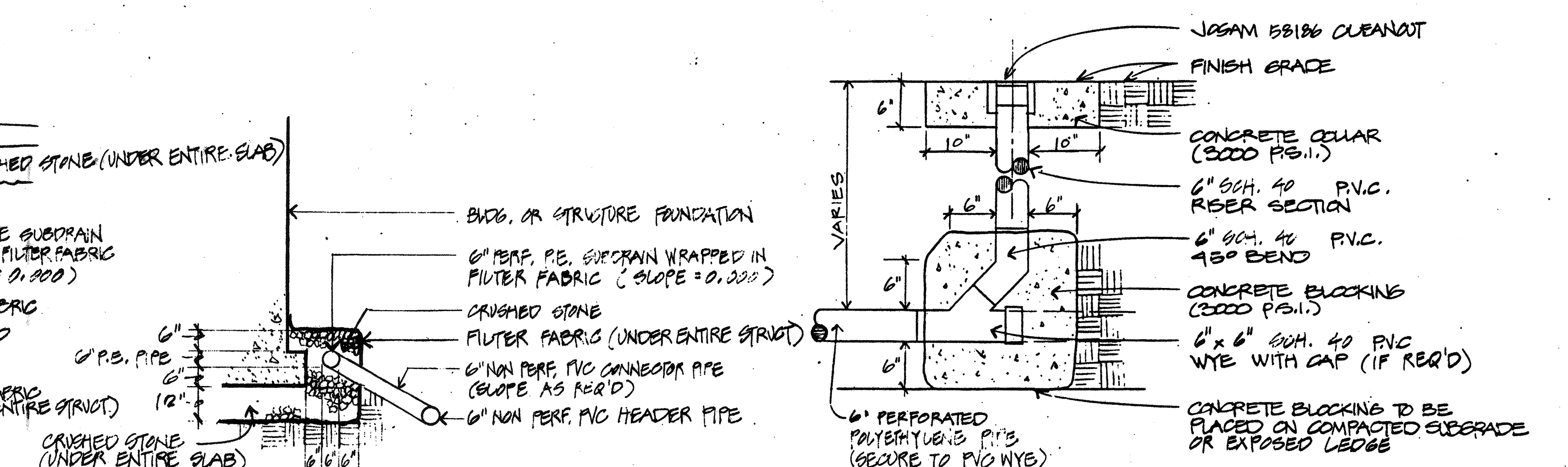
SUBDRAIN @ FILTER BUDG.



INTERIOR SUBDRAIN DETAIL
(@ SOUTH WALL OF CONTROL BUDG.)



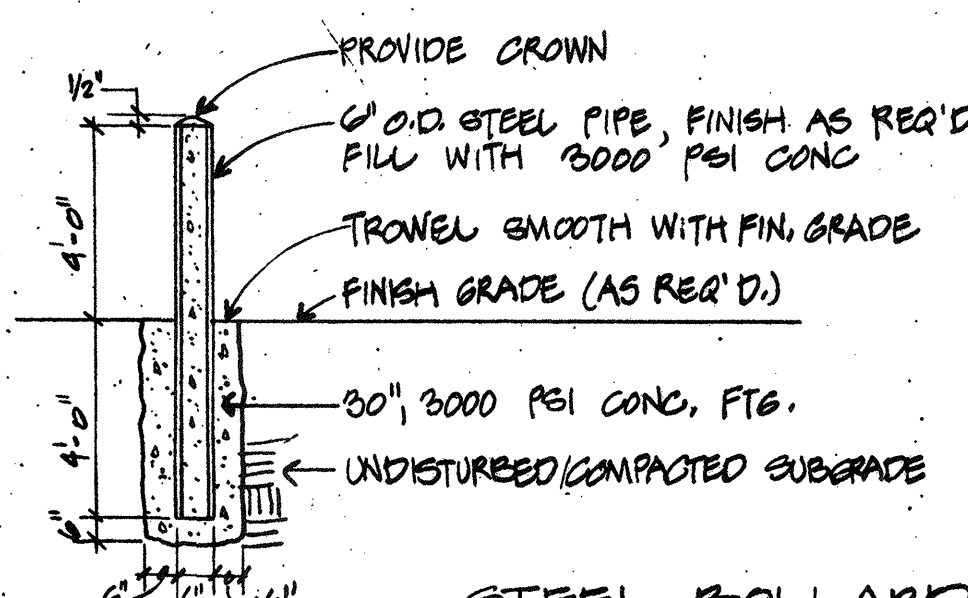
CHAIN LINK FENCE AND GATE
SCALE: 1/4" = 1'-0"



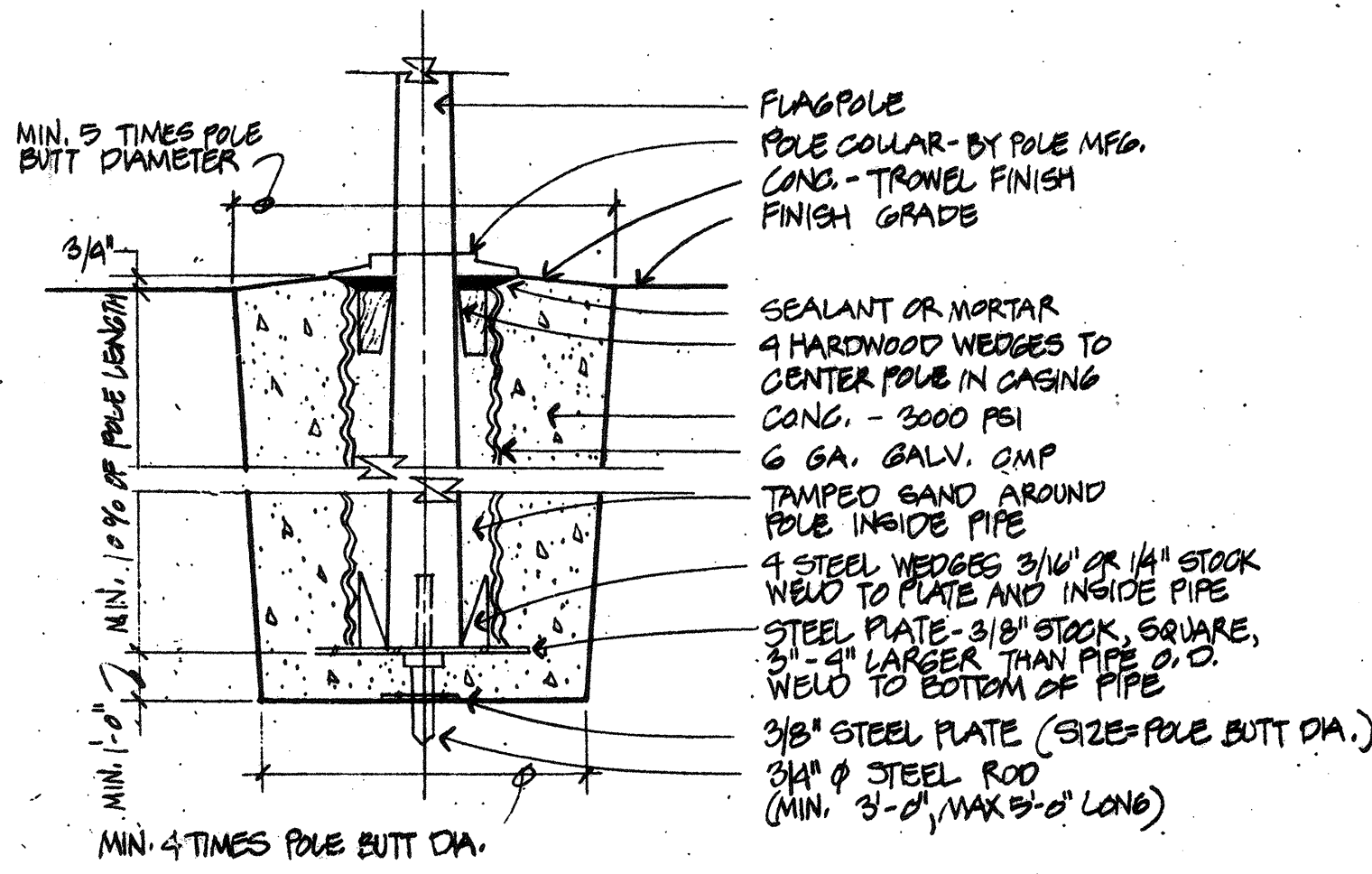
EXTERIOR SUBDRAIN DETAIL (TYPICAL)

CLEANOUT DETAIL

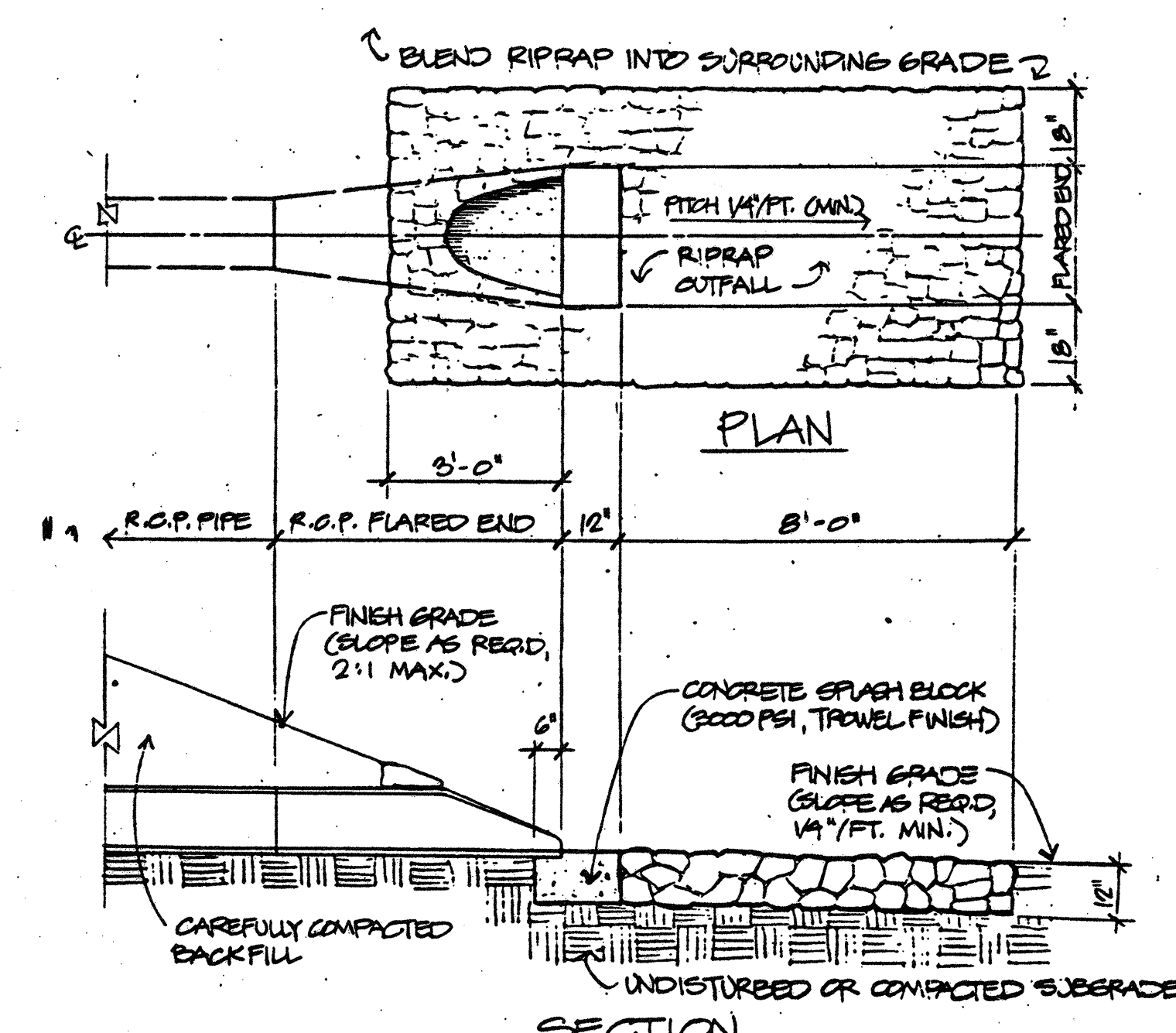
SUBDRAIN SYSTEM DETAILS
1" = 1'-0"



STEEL BOLLARD
SCALE: 1/4" = 1'-0"



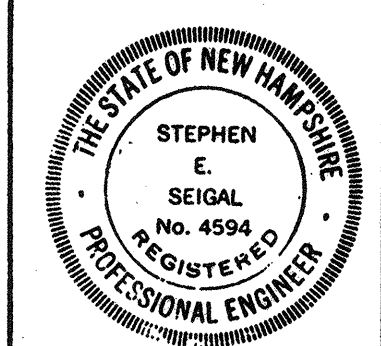
FLAGPOLE BASE
NOT TO SCALE



FLARED END AND RIPRAP @ OUTFALL
SCALE: 3/8" = 1'-0"

NO.	DESCRIPTION	DATE
3	REVISED TO RECORD PLAN	9-93
2	Drawing Revised	9/89
1	REVISED SUBDRAIN	2/88
REVISIONS		

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



DESIGNED/DRAWN: G.B.W. G.B.W. E.R.C. AS NOTED
CHECKED/SCALE: DATE: SEPT. 1985
APPROVED: Stephen E. Seigel
DATE: SEPT. 1985

DRAWING NO. **LA-8**
JOB NO. **85-163**
CONTRACT NO. **3**
SHEET 10 OF 106 SHEETS

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
SITE DETAILS

SYMBOLS USED AS ABBREVIATIONS:

- ANGLE
- CENTERLINE
- CHANNEL
- PENNY
- PERPENDICULAR
- PLATE
- ROUND

ABBREVIATIONS:

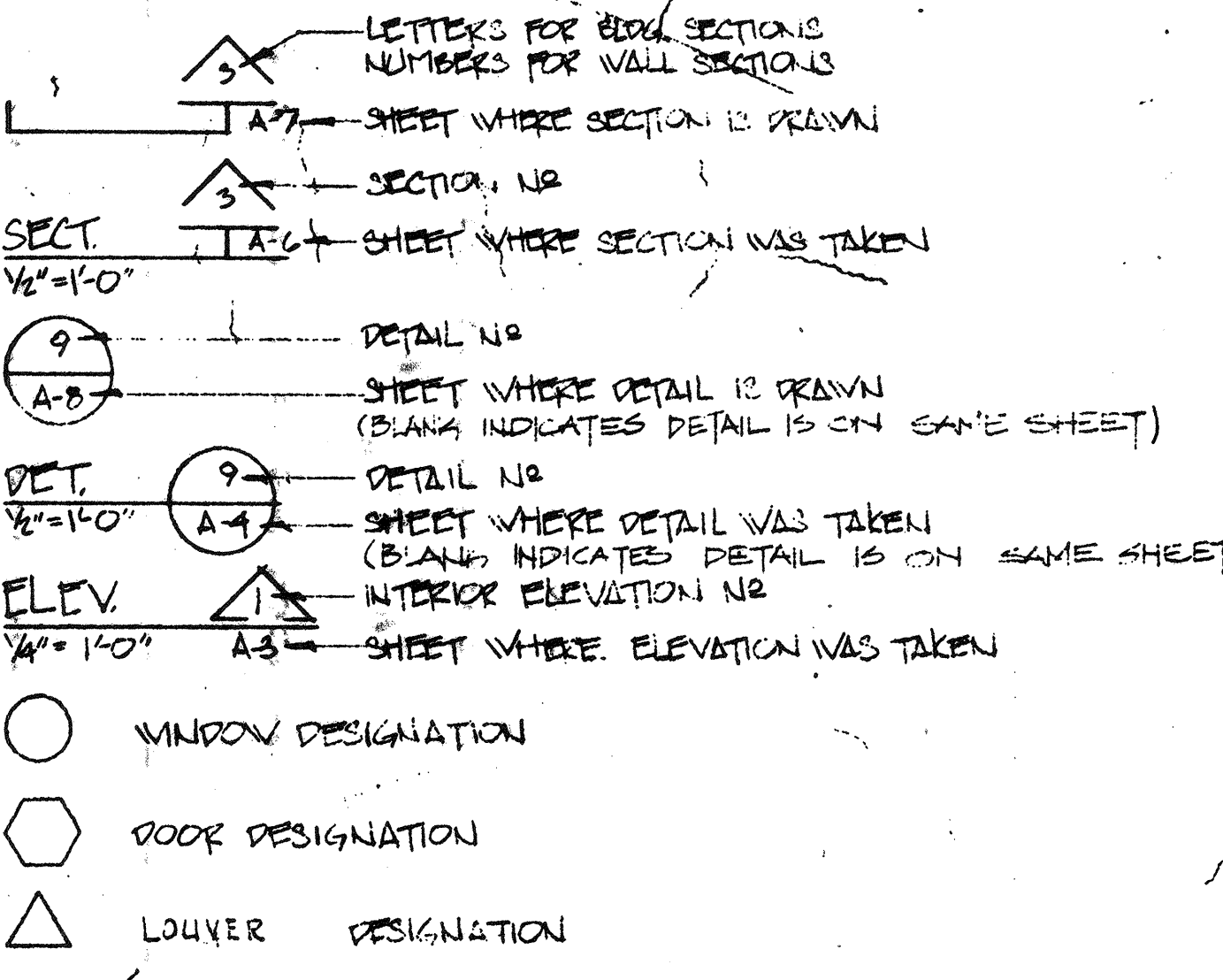
- ABF ABOVE
- AFF ABOVE FINISHED FLOOR
- ASF ABOVE SUSPENDED CEILING
- ACC ACCESS
- ACFL ACCESS FLOOR
- AP ACCESS PANEL
- AC ACOUSTICAL
- ACPL ACOUSTICAL PLASTER
- ACT ACOUSTICAL TILE
- ACR ACRYLIC PLASTIC
- ADD ADDENDUM
- ADH ADHESIVE
- ADJ ADJACENT
- ADJT ADJUSTABLE
- AGG AGGREGATE
- A/C AIR CONDITIONING
- ALT ALTERNATE
- AL ALUMINUM
- ANC ANCHOR, ANCHORAGE
- AB ANCHOR BOLT
- ANOD ANODIZED
- APX APPROXIMATE
- ARCH ARCHITECT (URAL)
- AD AREA DRAIN
- ASB ASBESTOS
- ASPH ASPHALT
- AT ASPHALT TILE
- AUTO AUTOMATIC
- BP BACK PLASTER (ED)
- BSMT BASEMENT
- BRG BEARING
- BPL BEARING PLATE
- BJT BED JOINT
- BM BENCH MARK
- BEL BELOW
- BET BETWEEN
- BVL BEVELED
- BIT BITUMINOUS
- BLK BLOCK
- BLKG BLOCKING
- BD BOARD
- BS BOTH SIDES
- BW BOTHWAYS
- BOT BOTTOM
- BRK BRICK
- BRZ BRONZE
- BUD BUILDING
- BUR BUILT UP ROOFING
- BBB BULLETIN BOARD
- CAB CABINET
- CAD CADMIUM
- CPT CARPET (ED)
- CSMT CASEMENT
- CI CAST IRON
- CIPC CAST-IN-PLACE CONCRETE
- CST CAST STONE
- CB CATCH BASIN
- CK CALK(ING) CAULK(ING)
- CLG CEILING
- CHT CEILING HEIGHT
- CEM CEMENT
- PCPL CEMENT PLASTER (PORTLAND)
- CM CENTIMETER(S)
- CER CERAMIC
- CT CERAMIC TILE
- CMT CERAMIC MOSAIC (TILE)
- CHBD CHALKBOARD
- CHAM CHAMFER
- CR CHROMIUM (PLATED)
- CIR CIRCLE
- CIRC CIRCUMFERENCE
- CLC CLEAR(ANCE)
- CLS CLOSURE
- COL COLUMN
- COMB COMBINATION
- COMPT COMPARTMENT
- COMPO COMPOSITION (COMPOSITE)
- COMP COMPRESSED (ED), (ION), (IBLE)
- CONC CONCRETE
- CMU CONCRETE MASONRY UNIT
- CON CONNECTION
- CONST CONSTRUCTION
- CONT CONTINUOUS OR CONTINUE
- CONTR CONTRACT(OR)
- CLL CONTRACT LIMIT ONE
- CJT CONTROL JOINT
- CPR COPPER
- CG COPPER GUARD
- CORR CORRUGATED
- CTR COUNTER
- CFL COUNTERFLASHING
- CS COUNTERSINK
- CTSK COUNTERSUNK SCREW
- CRS COURSE(S)
- CRG CROSS GRAIN
- CFT CUBIC FOOT
- CYD CUBIC YARD
- DPR DAMPER
- DF DAMPROOFING
- DL DEAD LOAD
- DEM DEMOLISH, DEMOLITION
- DMT DEMOUNTABLE
- DEP DEPRESSED
- DTL DETAIL
- DIAM DIAGONAL
- DJAM DIAMETER
- DM DIMENSION
- DPR DISPENSER
- DIV DIVISION
- DR DOOR

- DA DOUBLE
- DN DOWN
- DTA DETAIL ANCHOR
- DTA DETAIL ANCHOR SLOT
- DS DOWNSTAIR
- DRAIN DRAIN
- DRAINBOARD DRAINBOARD
- DRAINTILE DRAINTILE
- DWR DRAWER
- DWG DRAWING
- DF DRINKING FOUNTAIN
- DWA DUMBWAITER
- EF EACH FACE
- E EAST
- ELEC ELECTRICAL
- ELEC ELECTRICAL PANELBOARD
- EWG ELECTRIC WATER COOLER
- EL ELEVATION
- ELEV ELEVATOR
- EMER EMERGENCY
- ENC ENCLOSURE(URE)
- EQ EQUAL
- EQ EQUIPMENT
- ESC ESCALATOR
- EST ESTIMATE
- EXCA EXCAVATE
- EXH EXHAUST
- EXG EXISTING
- EXMP EXPANDED METAL PLATE
- EXP EXPANSION BOLT
- EXP EXPOSED
- EXT EXTERIOR
- EXS EXTRA STRONG
- FB FACE BRICK
- FOC FACE OF CONCRETE
- FOF FACE OF FINISH
- FOM FACE OF MASONRY
- FOS FACE OF STUDS
- FF FACTORY FINISH
- FAS FASTEN, FASTENER
- FN FENCE
- FBD FIREBOARD
- FGL FIBERGLASS
- FIN FINISHED
- FEE FINISHED FLOOR ELEVATION
- FEL FINISHED FLOOR LINE
- FA FIRE ALARM
- FBRK FIRE BRICK
- FE FIRE EXTINGUISHER
- FEC FIRE EXTINGUISHER CABINET
- FHS FIRE HOSE STATION
- FPL FIREPLACE
- FP FIREPROOF
- FRC FIRE-RESISTANT COATING
- FRT FIRE-RETARDANT
- FLG FLASHING
- FHMS FLATHEAD MACHINE SCREW
- FHWS FLATHEAD WOOD SCREW
- FLX FLEXIBLE
- FLR FLOOR(ING)
- FLCO FLOOR CLEANOUT
- FD FLOOR DRAIN
- FPL FLOOR PLATE
- FLUR FLUORESCENT
- FJT FLUSH JOINT
- FTG FOOTING
- FRG FORGED
- FRD FOUNDATION
- FRD FRAME(D), (ING)
- FRA FRESH AIR
- FS FULL SIZE
- FBO FURNISHED BY OTHERS
- FUR FURRED (ING)
- FUT FUTURE
- GA GAGE, GAUGE
- GV GALVANIZED
- GI GALVANIZED IRON
- GP GALVANIZED PIPE
- GSS GALVANIZED STEEL SHEET
- GKT GASKET(ED)
- GC GENERAL CONTRACT(OR)
- GL GLASS, GLAZING
- GLB GLASS BLOCK
- GLF GLASS FIBER
- GCMU GLAZED CONCRETE MASONRY UNITS
- GST GLAZED STRUCTURAL TILE
- GB GRAB BAR
- GD GRADE, GRADING
- GRN GRANITE
- GVL GRAVEL
- GF GROUND FACE
- GT GROUT
- GPDW GYPSUM DRY WALL
- GPL GYPSUM LATH
- GPPL GYPSUM PLASTER
- GPT GYPSUM TILE
- HH HAND HOLE
- HBD HARDBOARD
- HDW HARDWARE
- HWD HARDWOOD
- HJT HEAD JOINT
- HDR HEADER
- HTG HEATING
- HTG HEATING/VENTILATING/AIR CONDITIONING
- HD HEAVY DUTY
- HT HEIGHT
- HX HEXAGONAL
- HPT HIGH POINT
- HC HOLLOW CORE
- HM HOLLOW METAL
- HK HOOK(S)
- HOR HORIZONTAL
- HB HOSE BIBB
- HWH HOT WATER HEATER
- HD HEIGHT
- HT HEIGHT
- HX HEXAGONAL
- HPT HIGH POINT
- HC HOLLOW CORE
- HM HOLLOW METAL
- HK HOOK(S)
- HOR HORIZONTAL
- HB HOSE BIBB
- HWH HOT WATER HEATER
- INCIN INCINERATOR
- INCL INCLUDE(D), (ING)
- ID INSIDE DIAMETER
- INS INSULATE(D), (ION)

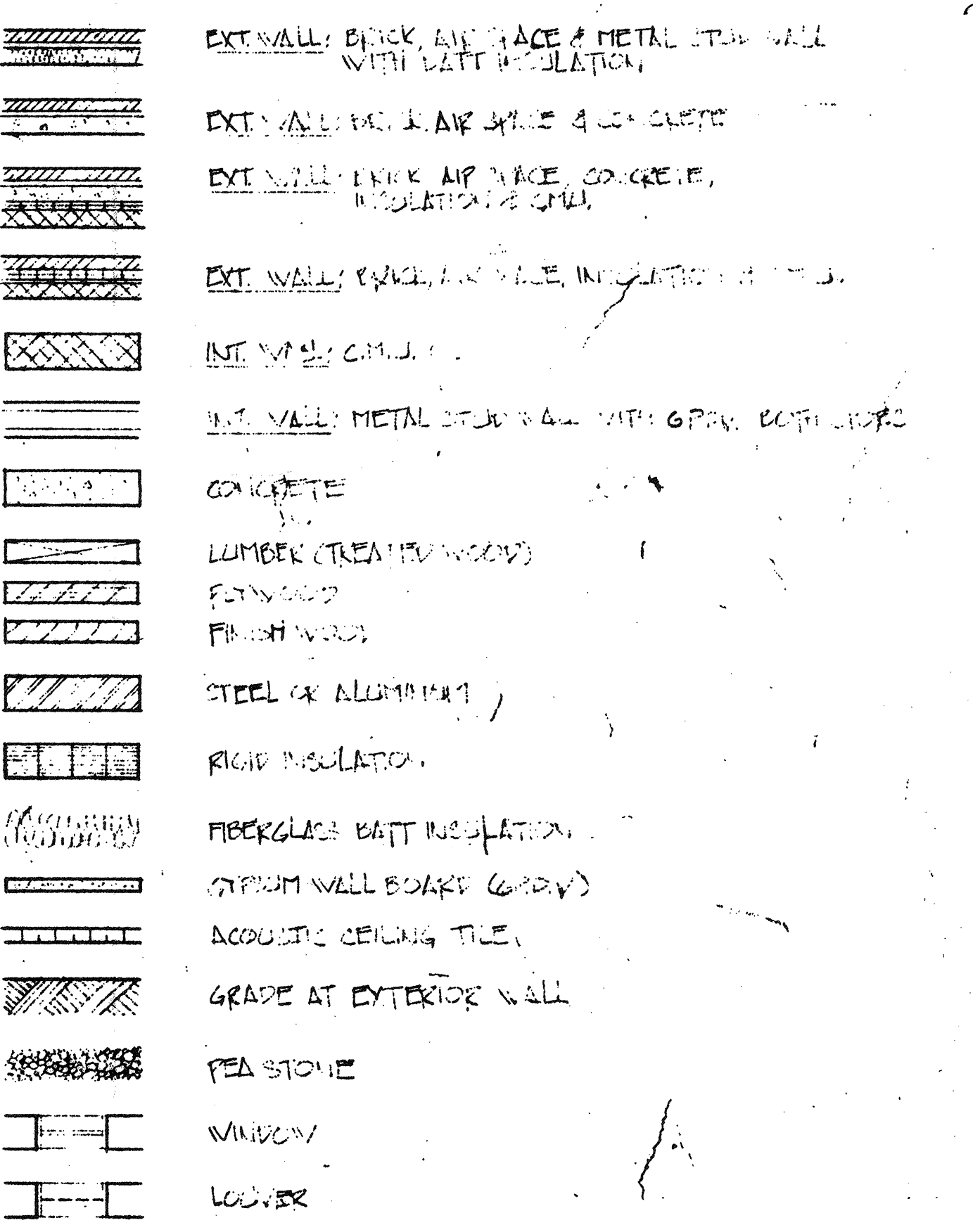
- INSULATING CONCRETE
- INSF INSULATING FILL
- INT INTERIOR
- ILK INTERLOCK
- INTM INTERMEDIATE
- INV INVERT
- IPS IRON PIPE SIZE
- JC JANITOR'S CLOSET
- JT JOINT
- JF JOINT FILLER
- J JOIST
- KCPK KEENE'S CEMENT PLASTER
- KPL KICKPLATE
- KIT KITCHEN
- KO KNOCKOUT
- LBL LABEL
- LAB LABORATORY
- LAD LADDER
- LB LAG BOLT
- LAM LAMINATE(D)
- LAV LAVATORY
- LH LEFT HAND
- L LENGTH
- LT LIGHT
- LC LIGHT CONTROL
- LP LIGHT PROOF
- LW LIGHTWEIGHT
- LWC LIGHTWEIGHT CONCRETE
- LMS LIMESTONE
- LTL LINTEL
- LL LIVE LOAD
- LVR LOUVER
- LPT LOW POINT
- MB MACHINE BOLT
- MI MALLEABLE IRON
- MH MANHOLE
- MFR MANUFACTURE(ER)
- MRB MARBLE
- MAS MASONRY
- MO MASONRY OPENING
- MTL MATERIAL(S)
- MAX MAXIMUM
- MCH MECHANIC(AL)
- MC MEDICINE CABINET
- MED MEDIUM
- MBR MEMBER
- MMB MEMBRANE
- MET METAL
- MFD METAL FLOOR DECKING
- MFR METAL FURRING
- MRD METAL ROOF DECKING
- MTHR METAL THRESHOLD
- M METER(S)
- MM MILLIMETER(S)
- MILWORK MILWORK
- MIN MINIMUM
- MIR MIRROR
- MISC MISCELLANEOUS
- MOD MODULAR
- MLD MOLDING, MOULDING
- MR MOP RECEPTOR
- MT MOUNT(ED), (ING)
- MOV MOVABLE
- MULL MULLION
- NL NAILABLE
- NAT NATURAL
- NI NICKEL
- NR NOISE REDUCTION
- NRC NOISE REDUCTION COEFFICIENT
- NOM NOMINAL
- NMT NONMETALLIC
- N NORTH
- NIC NOT IN CONTRACT
- NTS NOT TO SCALE
- OBS OBSCURE
- OC ON CENTER(S)
- OPA OPAQUE
- OPG OPENING
- OJ OPEN-WEB JOIST
- OPP OPPOSITE
- OPH OPPOSITE HAND
- OPS OPPOSITE SURFACE
- OD OUTSIDE DIAMETER
- OHMS OHMS
- OHWS OVALHEAD WOOD SCREW
- OA OVERALL
- OH OVERHEAD
- PNT PAINT(ED)
- PNL PANEL
- PB PANIC BAR
- PTD PAPER TOWEL DISPENSER
- PTR PAPER TOWEL RECEPTOR
- PAR PARALLEL
- PM PREPARED METAL
- PBD PARTICLE BOARD
- PTN PARTITION
- PV PAVE(D), (ING)
- PVMT PAVEMENT
- PED PEDESTAL
- PERF PERFORATE(D)
- PERI PERIMETER
- PLAS PLASTER
- PLAM PLASTIC LAMINATE
- PL PLATE
- PG PLATE GLASS
- PWD PLYWOOD
- PT POINT
- PVC POLYVINYL CHLORIDE
- PE PORCELAIN ENAMEL
- PTC POST-TENSIONED CONCRETE
- PCF POUNDS PER CUBIC FOOT
- PFL POUNDS PER LINEAL FOOT
- PSF POUNDS PER SQUARE FOOT
- PSI POUNDS PER SQUARE INCH
- PC PRECAST CONCRETE
- PCF PREFABRICATE(D)
- PFN PREFINISHED
- PRF PREFORMED

- PL PRESTRESSED CONCRETE
- PL PROPERTY LINE
- QT QUARRY TILE
- RBT RABBET, REBATE
- RAD RADIUS
- RL RAIL(ING)
- RWC RAINWATER CONDUCTOR
- REF REFERENCE
- RFL REFLECT(ED), (IVE), (OR)
- REFR REFRIGERATOR
- REG REGISTER
- RE REINFORCE(D), (ING)
- RCP REINFORCED CONCRETE PIPE
- REM REMOVE
- RES RESILIENT
- RET RETURN
- RA RETURN AIR
- RVS REVERSE (SIDE)
- REV REVISION(S), REVISED
- RHW RIGHT HAND
- RHW RIGHT OF WAY
- R RISE
- RVT RIVET
- RD ROOF DRAIN
- RFH ROOF HATCH
- RFG ROOFING
- RM ROOM
- RO ROUGH OPENING
- RB RUBBER BASE
- RBT RUBBER TILE
- RBL RUBBLE STONE
- SGFL SAFETY GLASS
- SCH SCHEDULE
- SCN SCREEN
- SNT SEALANT
- STG SEATING
- SEC SECTION
- SSK SERVICE SINK
- SHTH SHEATHING
- SHT SHEET
- SG SHEET GLASS
- SH SHELF, SHELVING
- SHO SHORR(D), (ING)
- SIM SIMILAR
- SKL SKYLIGHT
- SL SLEEVE
- SC SOLID CORE
- SP SOUNDPROOF
- S SOUTH
- SPC SPACER
- SPK SPEAKER
- SPL SPECIAL
- SPEC SPECIFICATION(S)
- SQ SQUARE
- SST STAINLESS STEEL
- STD STANDARD
- STA STATION
- ST STEEL
- STO STORAGE
- SD STORM DRAIN
- STR STRUCTURAL
- SCT STRUCTURAL CLAY TILE
- SUS SUSPENDED
- SYM SYMMETRY (ICAL)
- SYN SYNTHETIC
- SYS SYSTEM
- TKBD TACKBOARD
- TKS TACKSTRIP
- TEL TELEPHONE
- TV TELEVISION
- TC TERRA COTTA
- TZ TERRAZZO
- THK THICK(NESS)
- THR THRESHOLD
- TPTN TOILET PARTITION
- TPD TOILET PAPER DISPENSER
- TOL TOLERANCE
- TAG TONGUE AND GROOVE
- TSL TOP OF SLAB
- TST TOP OF STEEL
- TW TOP OF WALL
- TB TOWEL BAR
- T TRANSOM
- T TREAD
- TYP TYPICAL
- UC UNDERCUT
- UNF UNFINISHED
- UR URINAL
- VJ V-JOINT(ED)
- VB VAPOR BARRIER
- VAR VARNISH
- VNR VENEER
- VRM VERMICULITE
- VERT VERTICAL
- VG VERTICAL GRAIN
- VIN VINYL
- VAT VINYL ASBESTOS TILE
- VB VINYL BASE
- VF VINYL FABRIC
- VT VINYL TILE
- WSCT WAINSCOT
- WTW WALL TO WALL
- WH WALL HUNG
- WC WATER CLOSET
- WP WATERPROOFING
- WR WATER REPELLENT
- WS WATERSTOP
- WWF WELDED WIRE FABRIC
- W WEST
- WHB WHEEL BUMPER
- W WIDTH, WIDE
- WIN WINDOW
- WG WIRED GLASS
- WM WIRE MESH
- WO WITHOUT
- WD WOOD
- WB WOOD BASE
- WPT WORKING POINT

SYMBOLS



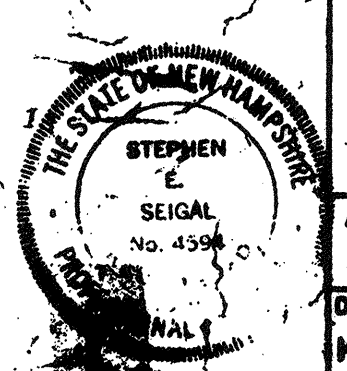
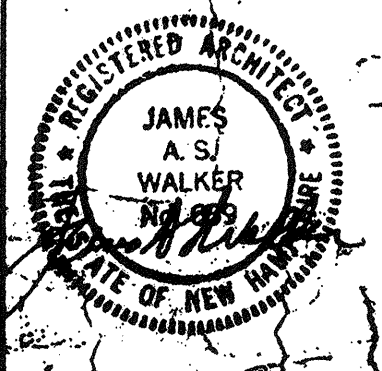
LEGEND



RECORD PLAN

WHITMAN & HOWARD, INC.

45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

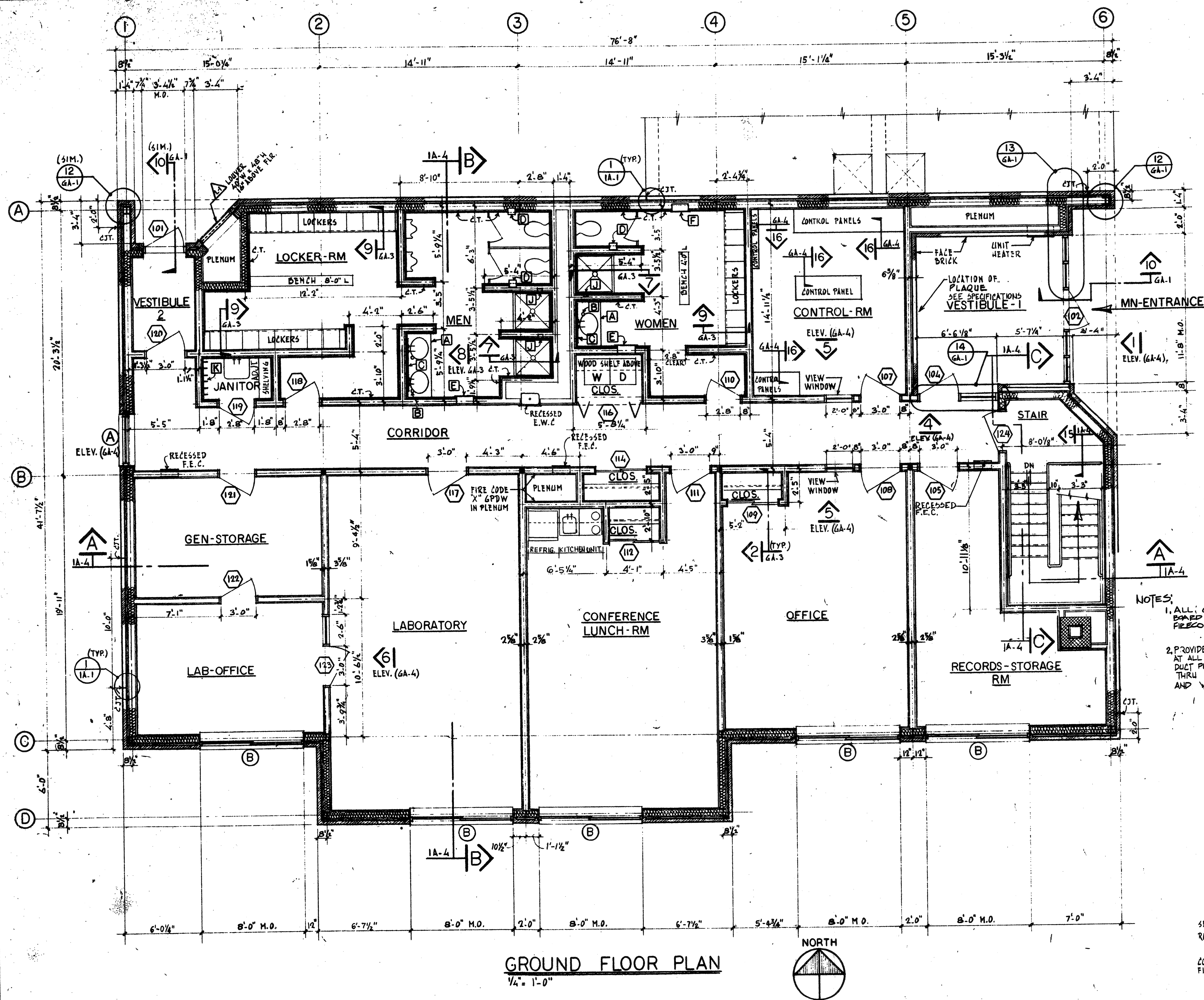
APPROVED
K.A.S. J.B. K.A.S.

DRAWING NO. A-1
JOB NO. 85-163
CONTRACT NO. 3

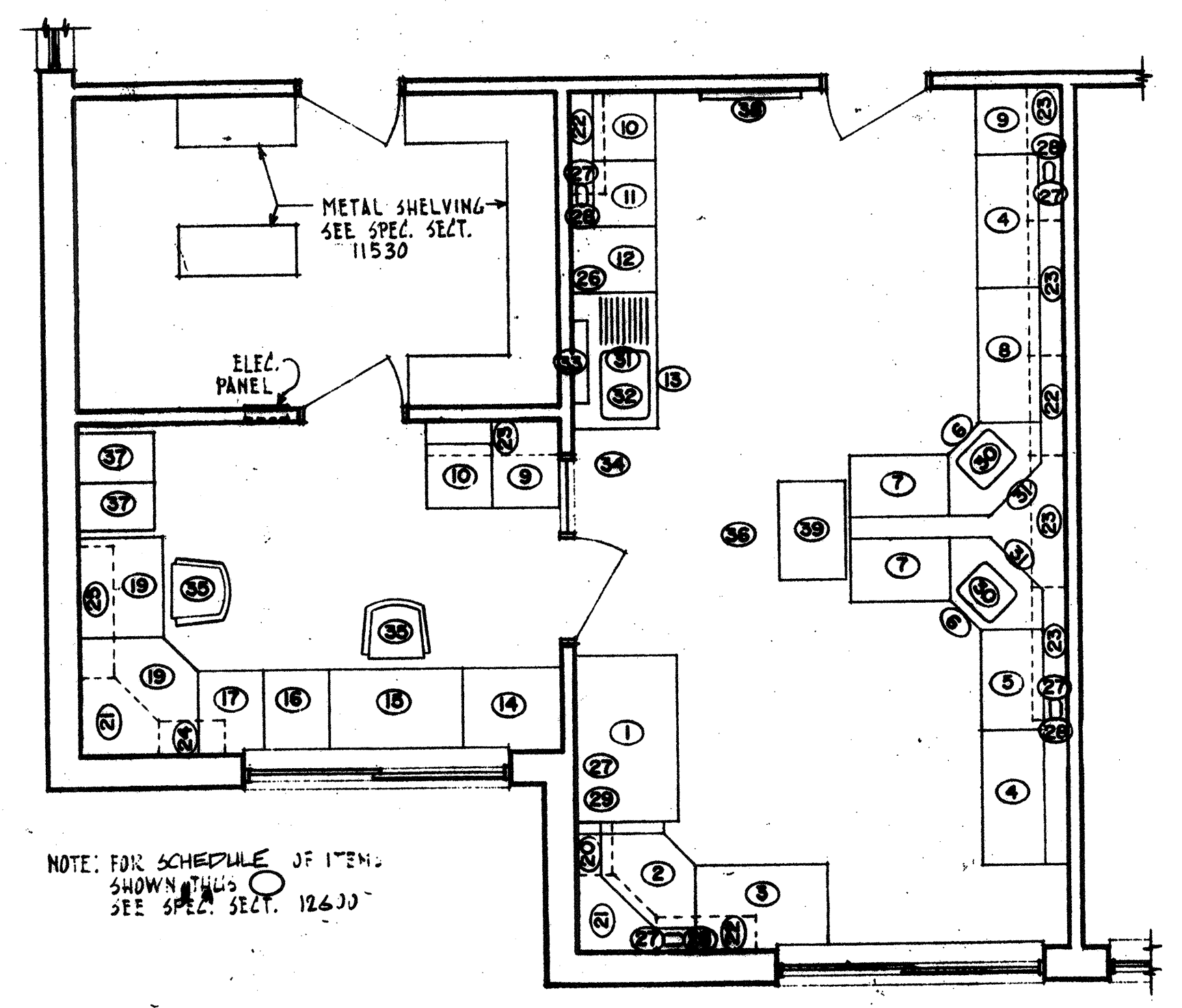
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.

ABBREVIATIONS, SYMBOLS AND LEGEND

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-83
1	DRAWING REVISED	9/83



GROUND FLOOR PLAN
1/4" = 1'-0"

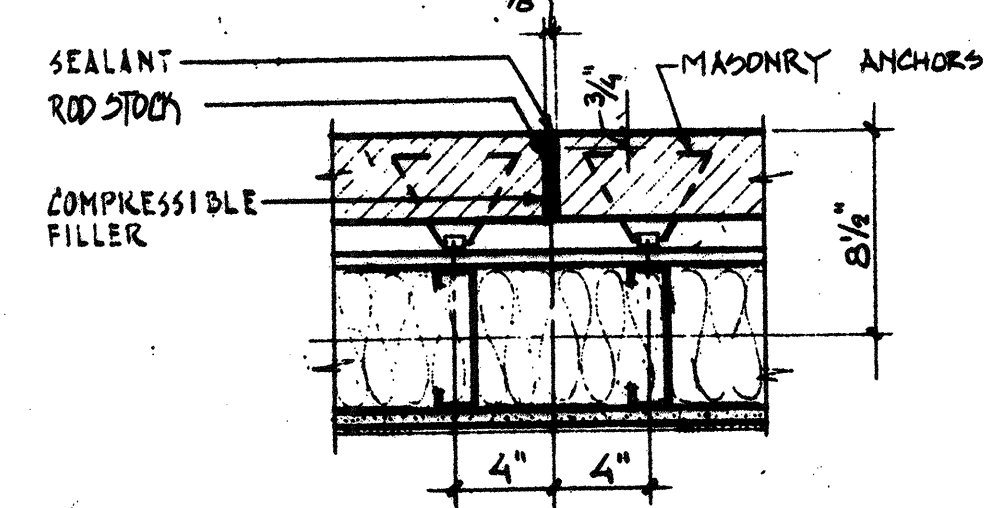


LABORATORY FURNISHINGS PLAN
1/4" = 1'-0"

NOTES:
1. ALL GYPSUM BOARD TO BE FIRECODE X.
2. PROVIDE FIRSTOPPING AT ALL PIPE, CONDUIT AND DUCT PENETRATIONS THRU FLOOR SLAB AND WALLS.

TOILET AND LOCKER-RM ACCESSORY SCHEDULE		
ITEM-DESCRIPTION	CATALOG NO.	REMARKS
A VANITY TOP	1099	1/± 5'-3" LONG 1/± 3'-6" LONG
B LIQUID SOAP DISPENSER	B-8684	
C MIRROR	B-290	1/48" W x 30" H 1/36" W x 30" H
D TOILET PAPER HOLDER	B-667	RECESSED
E PAPER TOWEL DISP./WASTE RECEPT.	B-3944	RECESSED
G SST. SHOWER CURTAIN ROD	B-6107	3-REQ'D
H VINYL SHOWER CURTAIN	204-2	3-REQ'D
I SST. SHOWER CURTAIN HOOKS	204-1	
J SOAP DISH AND BAK	B-4390	3-REQ'D
K SST. MOP & BROOM HOLDER	B-223	36" LONG - 4/HOLDERS

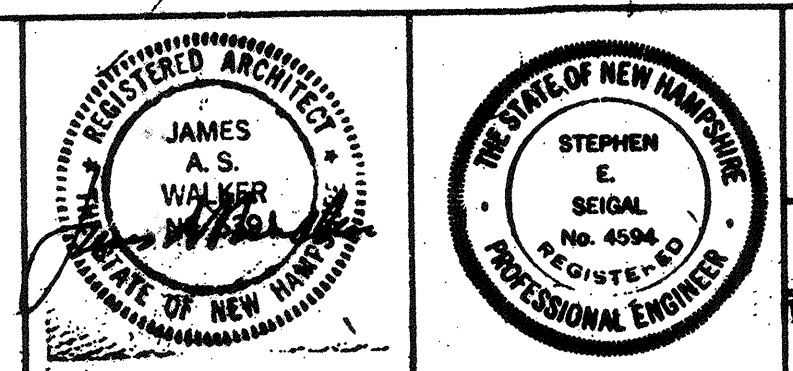
* DOBRICK ALL ITEMS SATIN FINISH



DETAIL MAS. CONTROL JOINT
1/4" = 1'-0"

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	8-93
1	Drawing Revised	7/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.

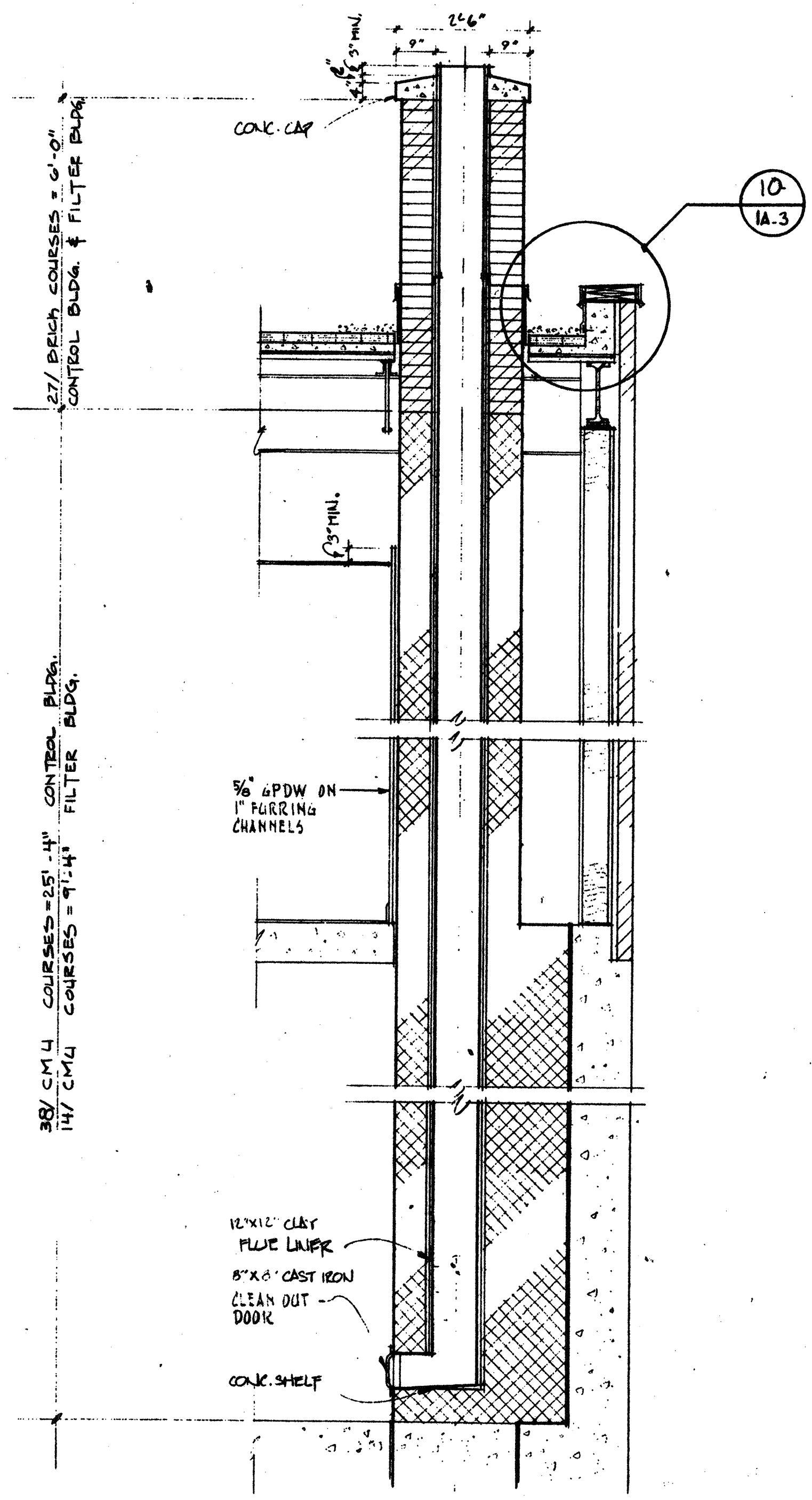
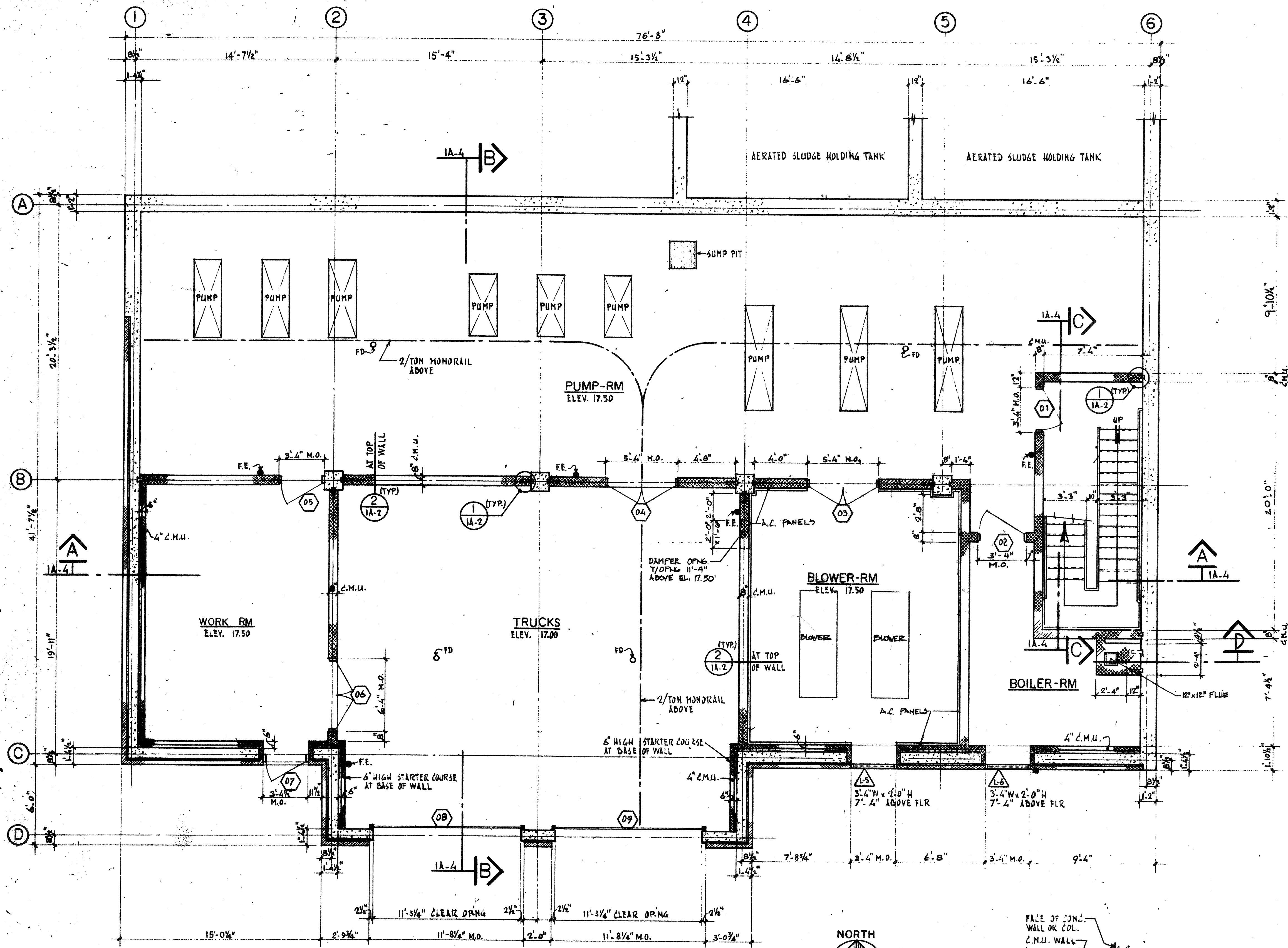


ORIGINAL FULL SIZE DRAWING = 9"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen E. Seigel*
DESIGNED/DRAWN: K.A.S. F.Z. CHECKED: K.A.S. SCALE: AS NOTED DATE: SEPT., 1985

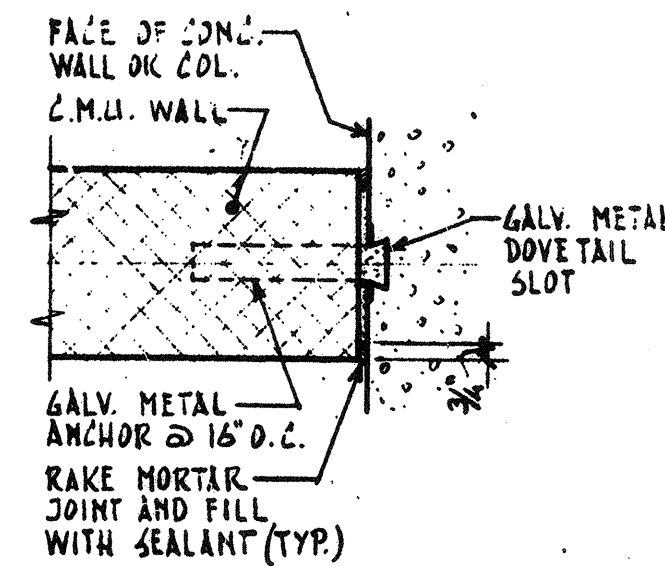
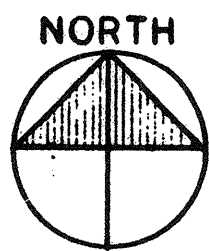
DRAWING NO.: **1A-1**
JOB NO.: 85-163
CONTRACT NO.: 3

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
CONTROL BUILDING
GROUND FLOOR PLAN

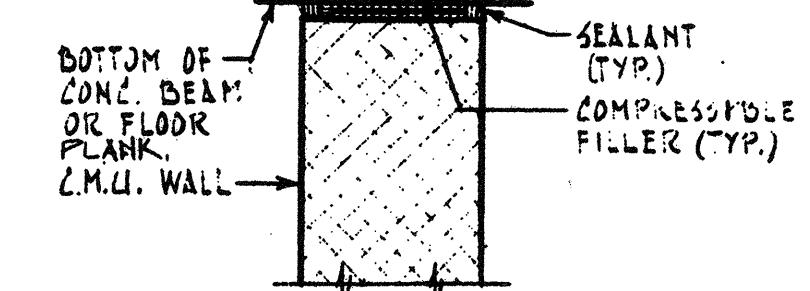


BASEMENT FLOOR PLAN

1/4" = 1'-0"
 NOTE: PROVIDE FIRESTOPPING AT ALL PIPE, CONDUIT AND DUCT PENETRATIONS THROUGH WALLS ON THIS FLOOR.



DETAIL 1
1/4" = 1'-0" 1A-2



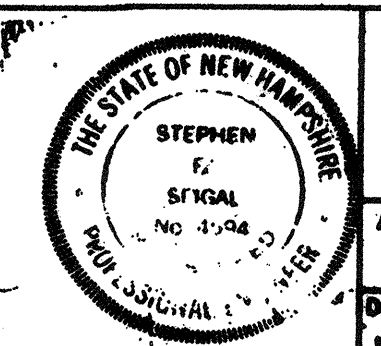
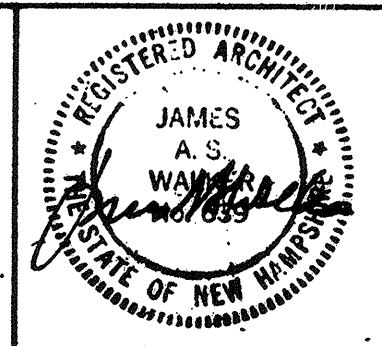
DETAIL 2
1/2" = 1'-0" 1A-2

SECTION D-1A-2 (CONTROL BUILDING SHOWN)
 1/2" = 1'-0"
 NOTE: SEE EXTERIOR WALL CONSTRUCTION AND BEAM FRAMING FOR FILTER BUILDING SEE DWG. 0A-1.

RECORD PLAN

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
 45 WILLIAM STREET, WELLESLEY, MASS.

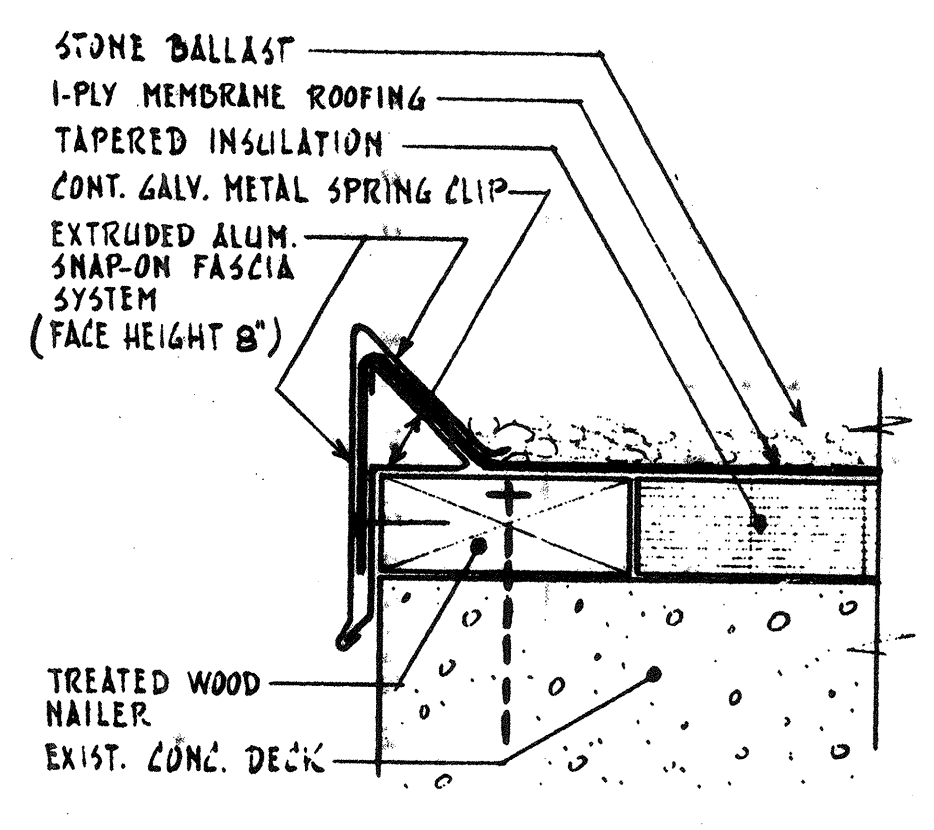
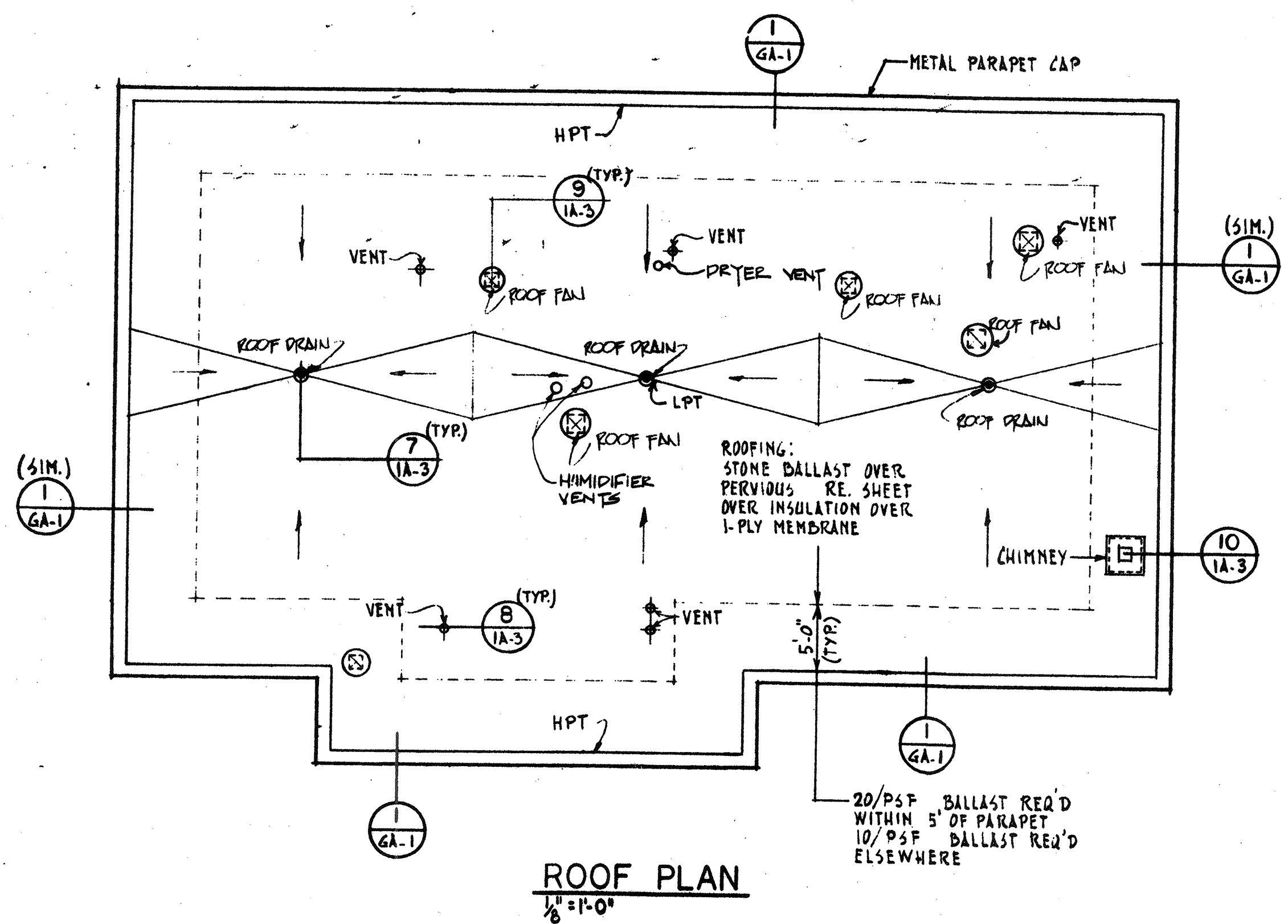


ORIGINAL FULL SIZE DRAWING = 4"
 REPRODUCTIONS MAY BE REDUCED SIZE

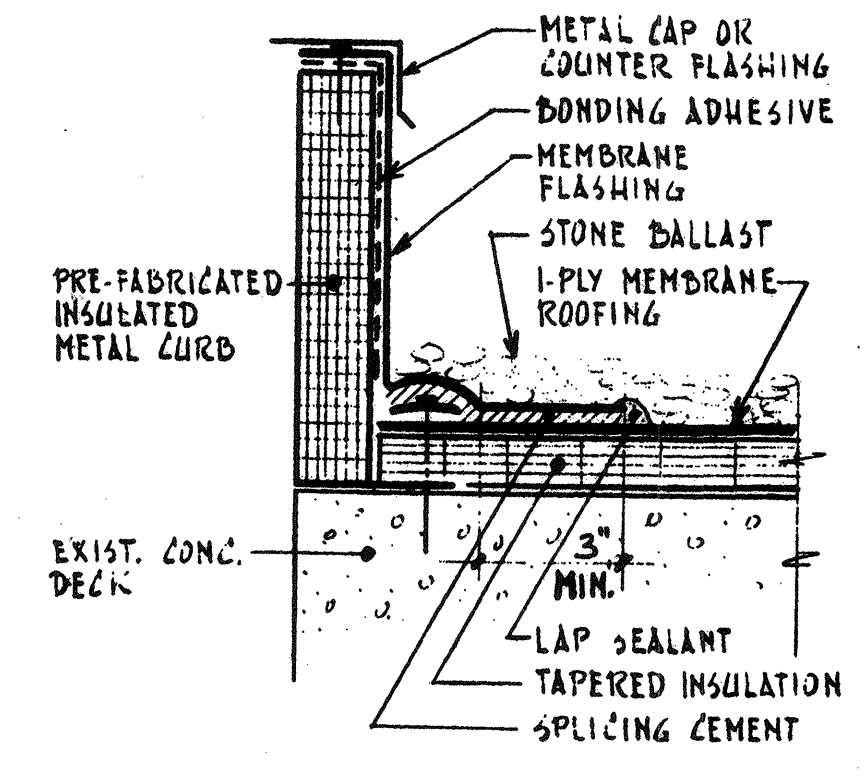
DESIGNED DRAWN: K.A.S. F.Z.
 CHECKED: K.A.S. AS NOTED
 DATE: SEPT. 1985

DRAWING NO. 1A-2
 JOB NO. 85-163
 CONTRACT NO. 3
 SHEET 13 OF 106 SHEETS

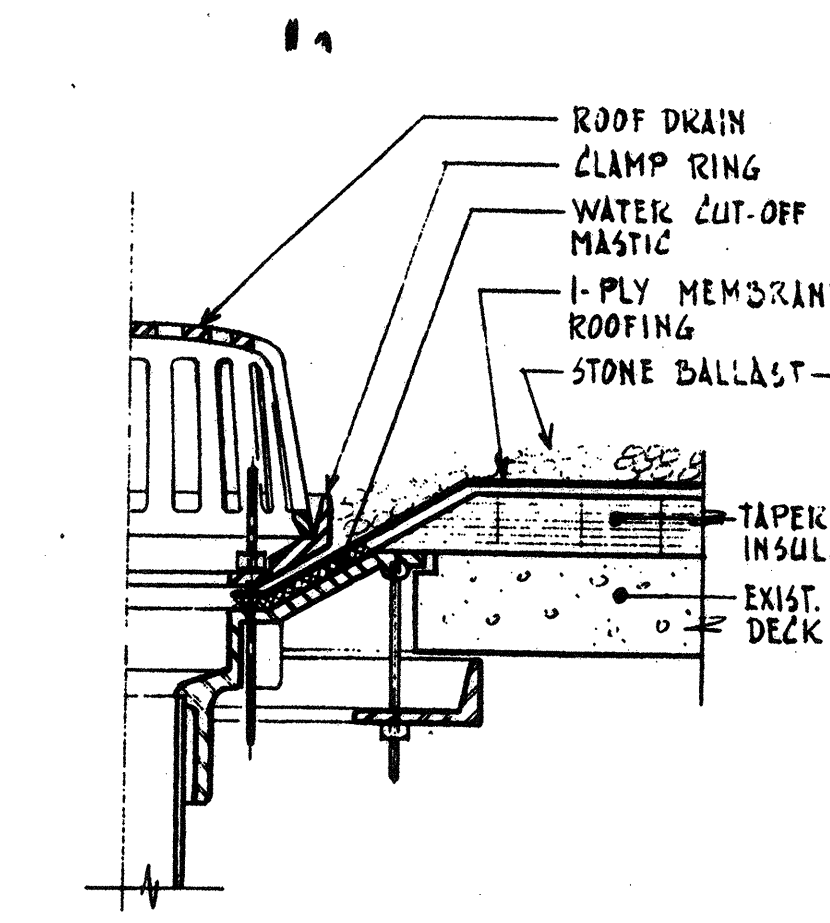
WASTEWATER TREATMENT FACILITY
 PORTSMOUTH, N.H.
 CONTROL BUILDING BASEMENT PLAN



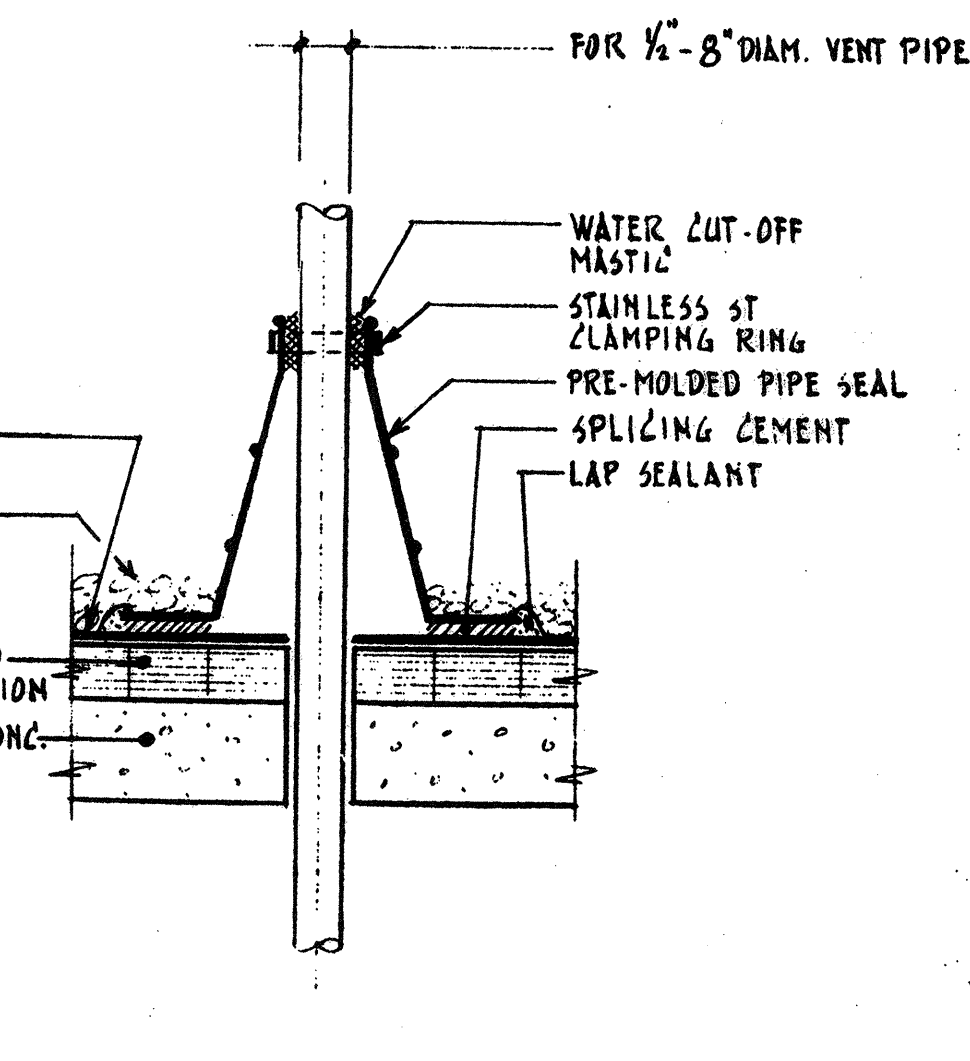
ROOF EDGE DETAIL ①
N.T.S.



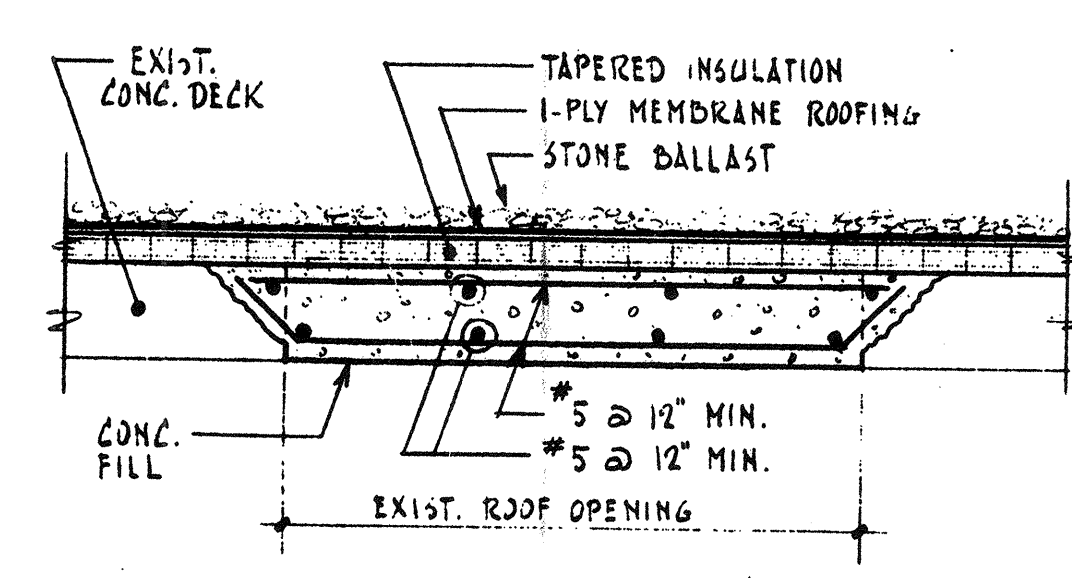
ROOF CURB DETAIL ②
N.T.S. (AT PANS, SKY-LIGHTS)



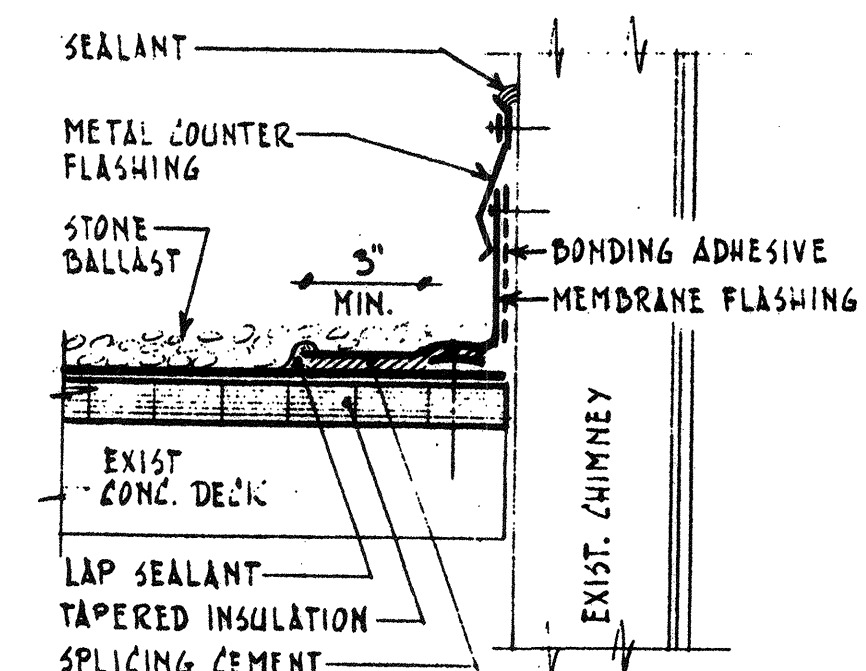
ROOF DRAIN DETAIL ③
N.T.S.



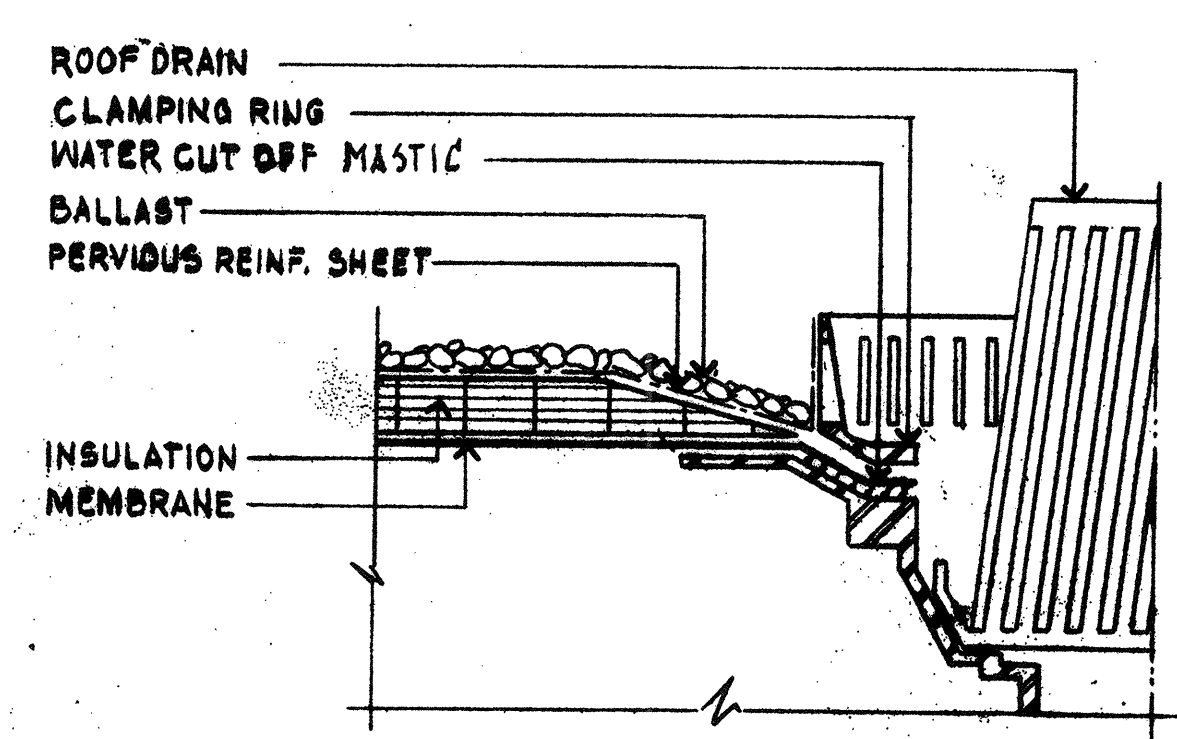
ROOF VENT-PIPE DETAIL ④
N.T.S.



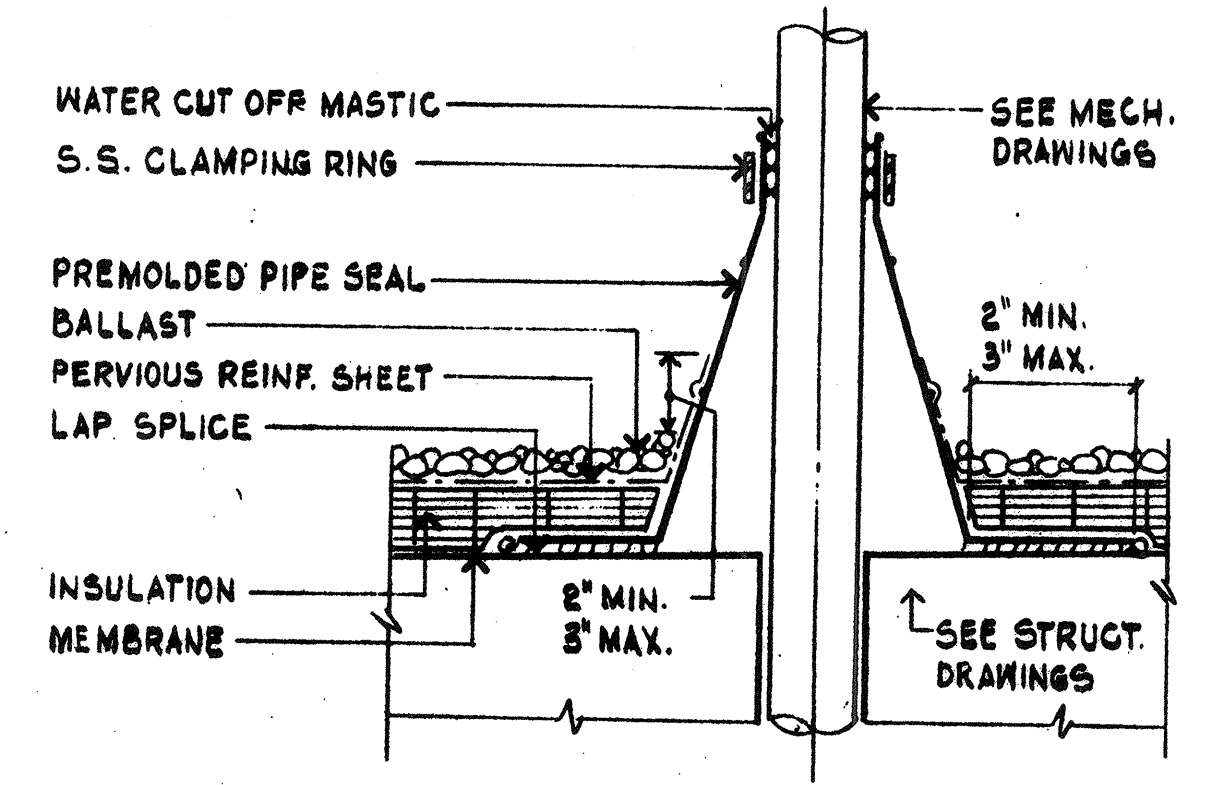
ROOF DETAIL ⑤
N.T.S.



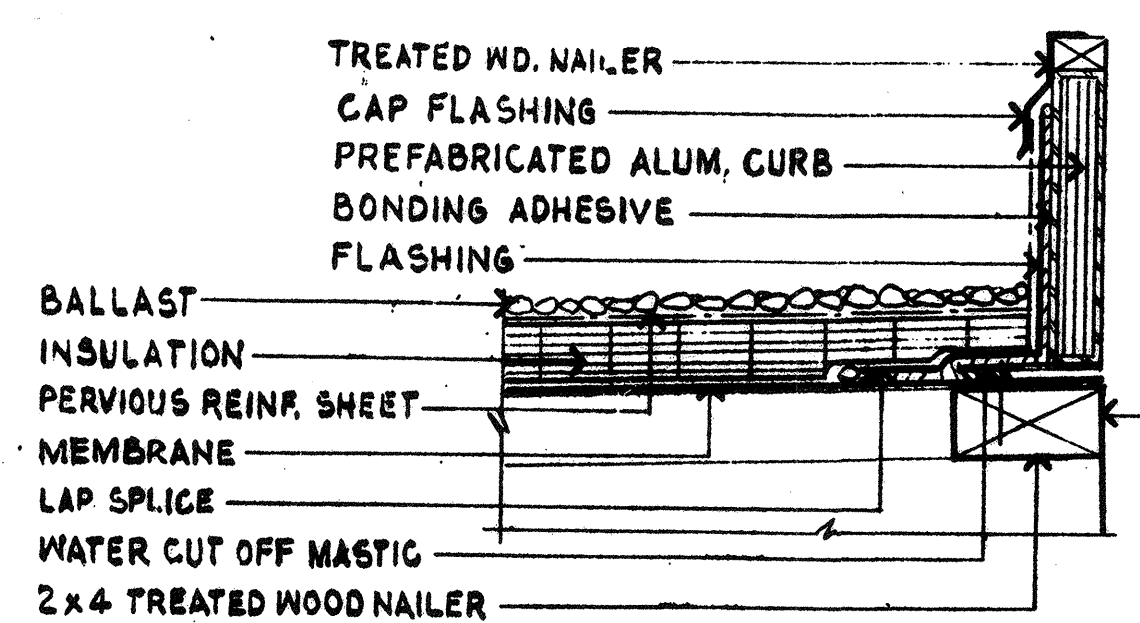
ROOF DETAIL ⑥
N.T.S.



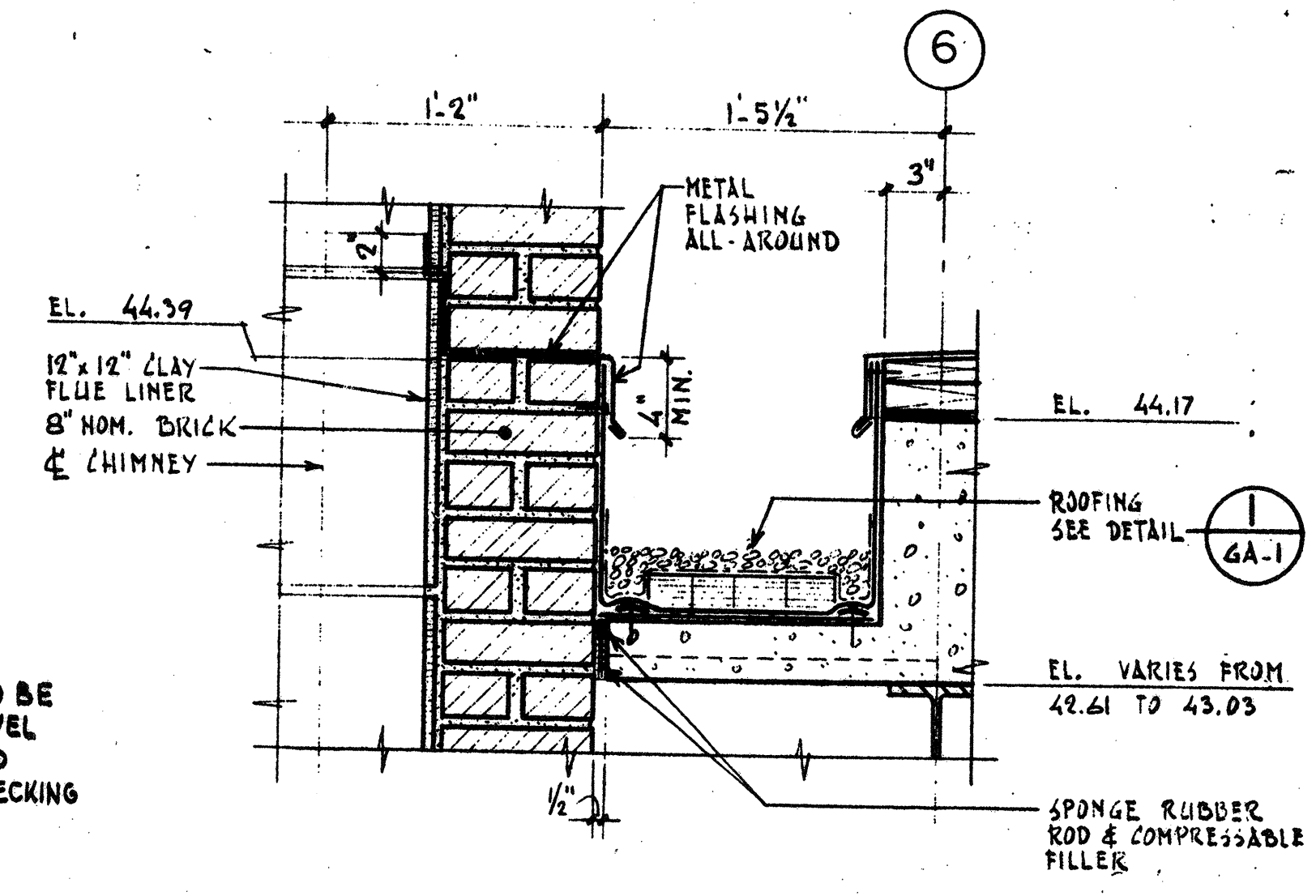
ROOF DRAIN DETAIL ⑦
N.T.S.



ROOF VENT-PIPE DETAIL ⑧
N.T.S.



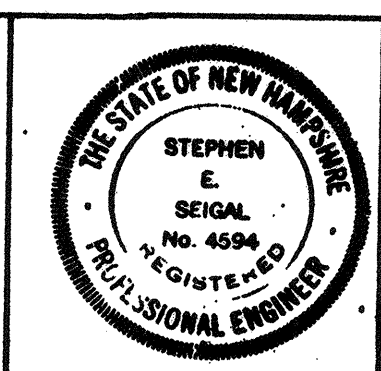
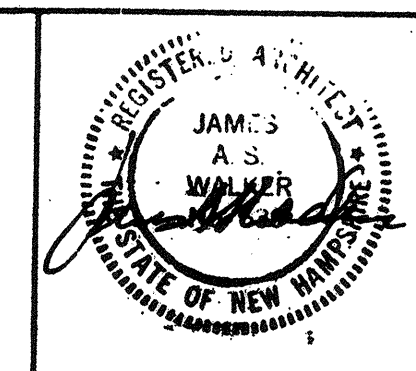
ROOF HATCH DETAIL ⑨
N.T.S. H & V CURBS SIMILAR



ROOFING AT CHIMNEY ⑩
1/2" = 1'-0"

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Drawing Revision	9/89
REVISIONS		

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



APPROVED
Stephen E. Seigel
DESIGNED/DRAWN: K.A.S. F.Z.
CHECKED/SCALE: K.A.S. AS NOTED
DATE: SEPT., 1985

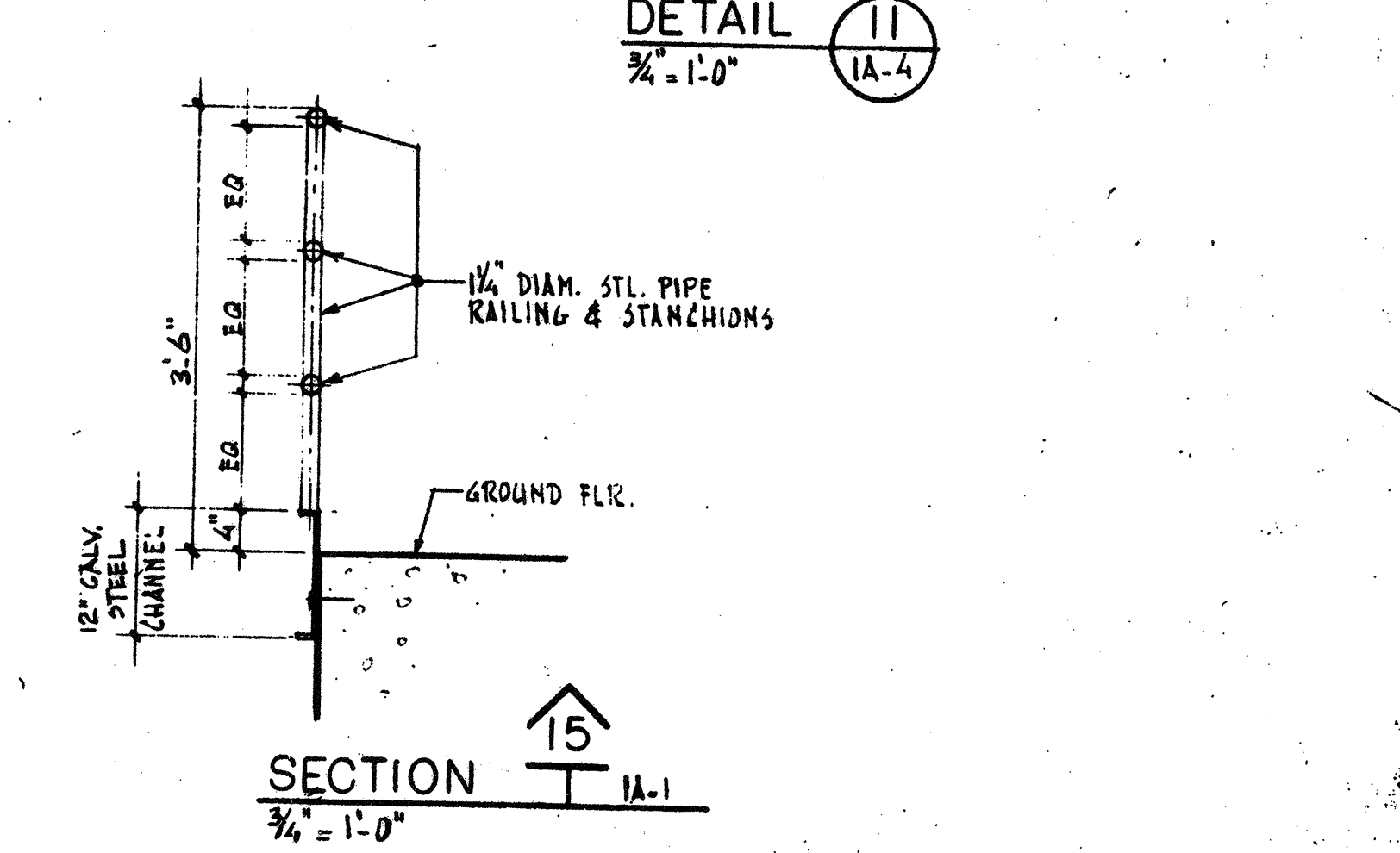
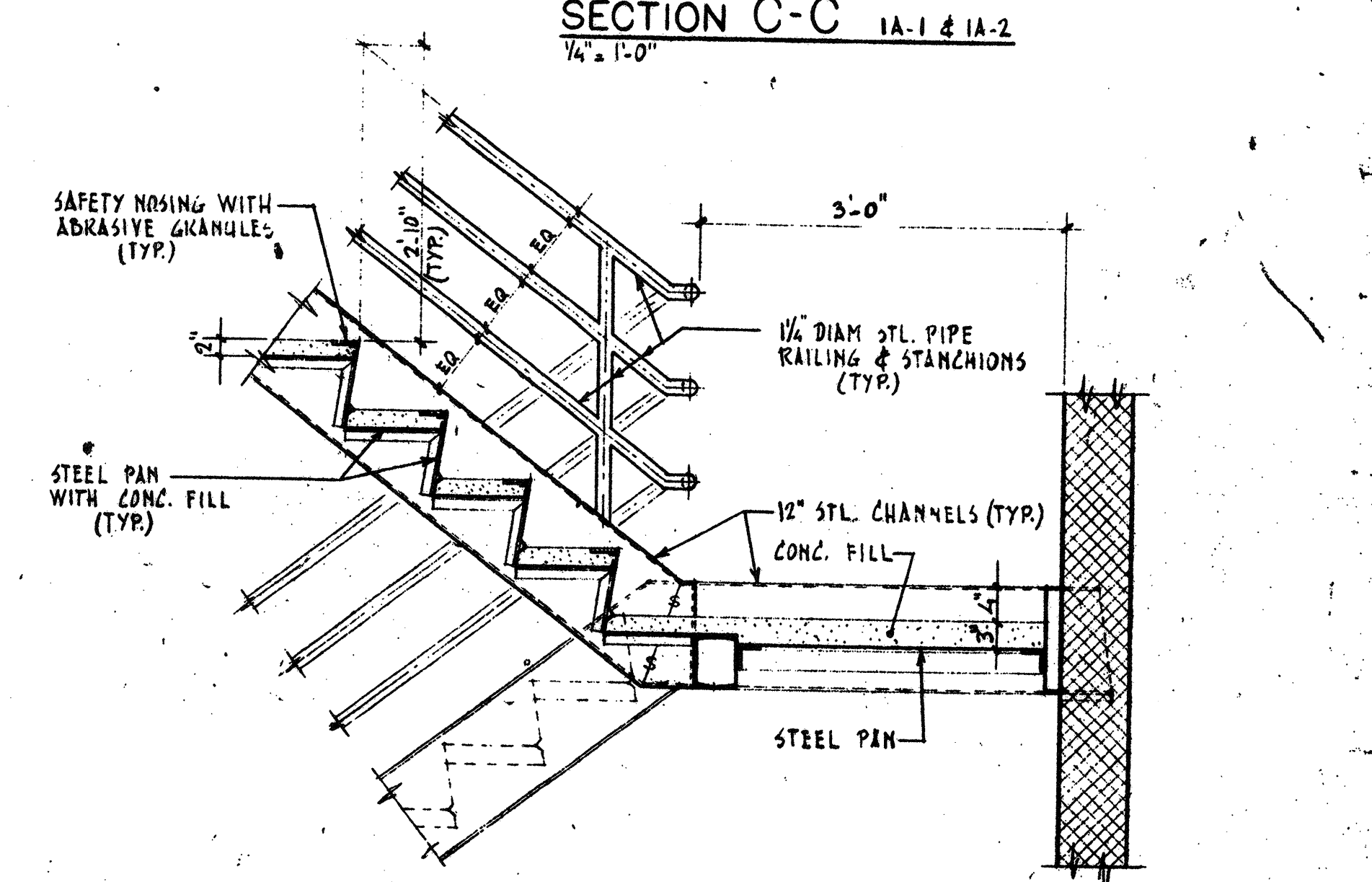
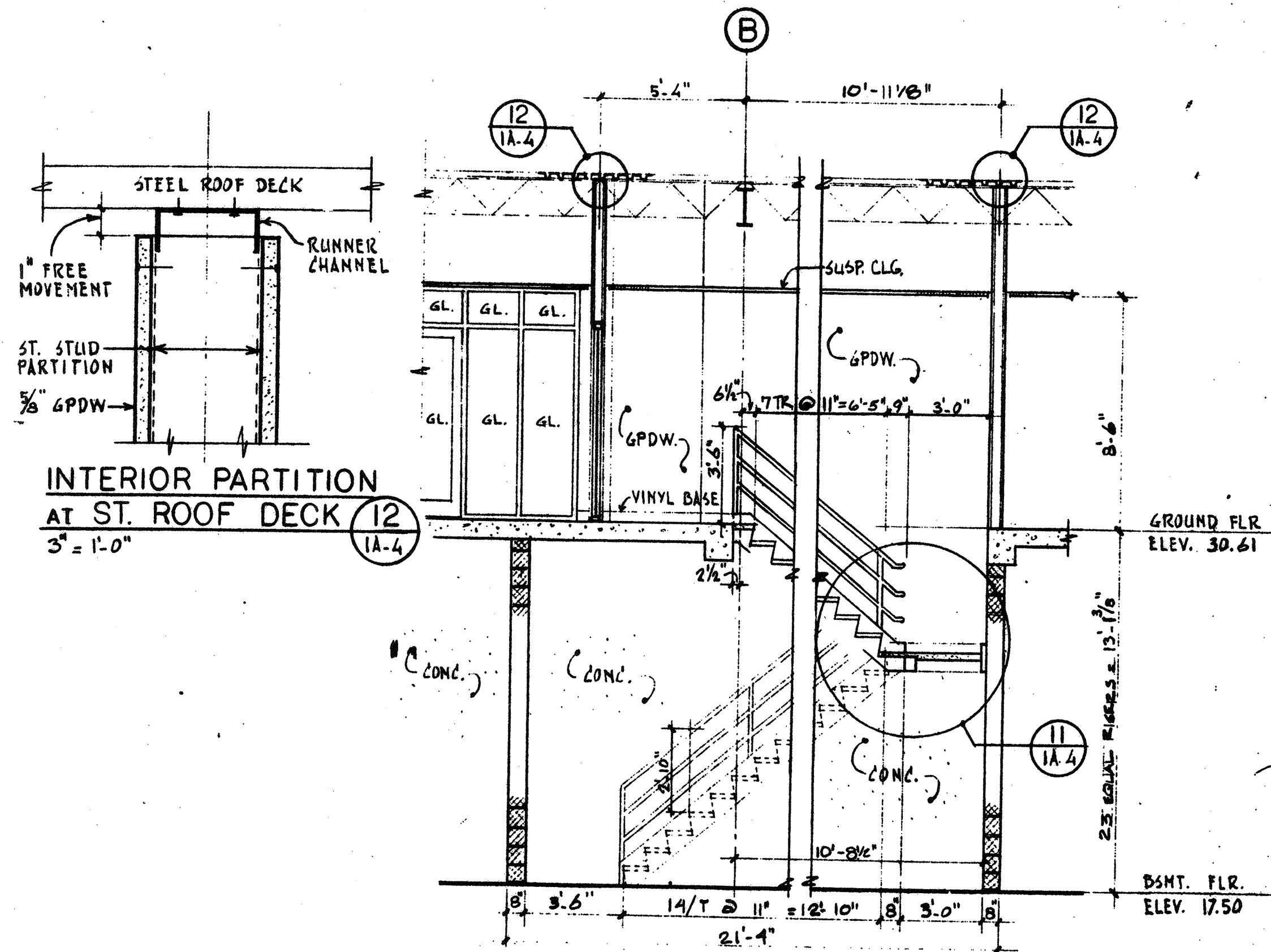
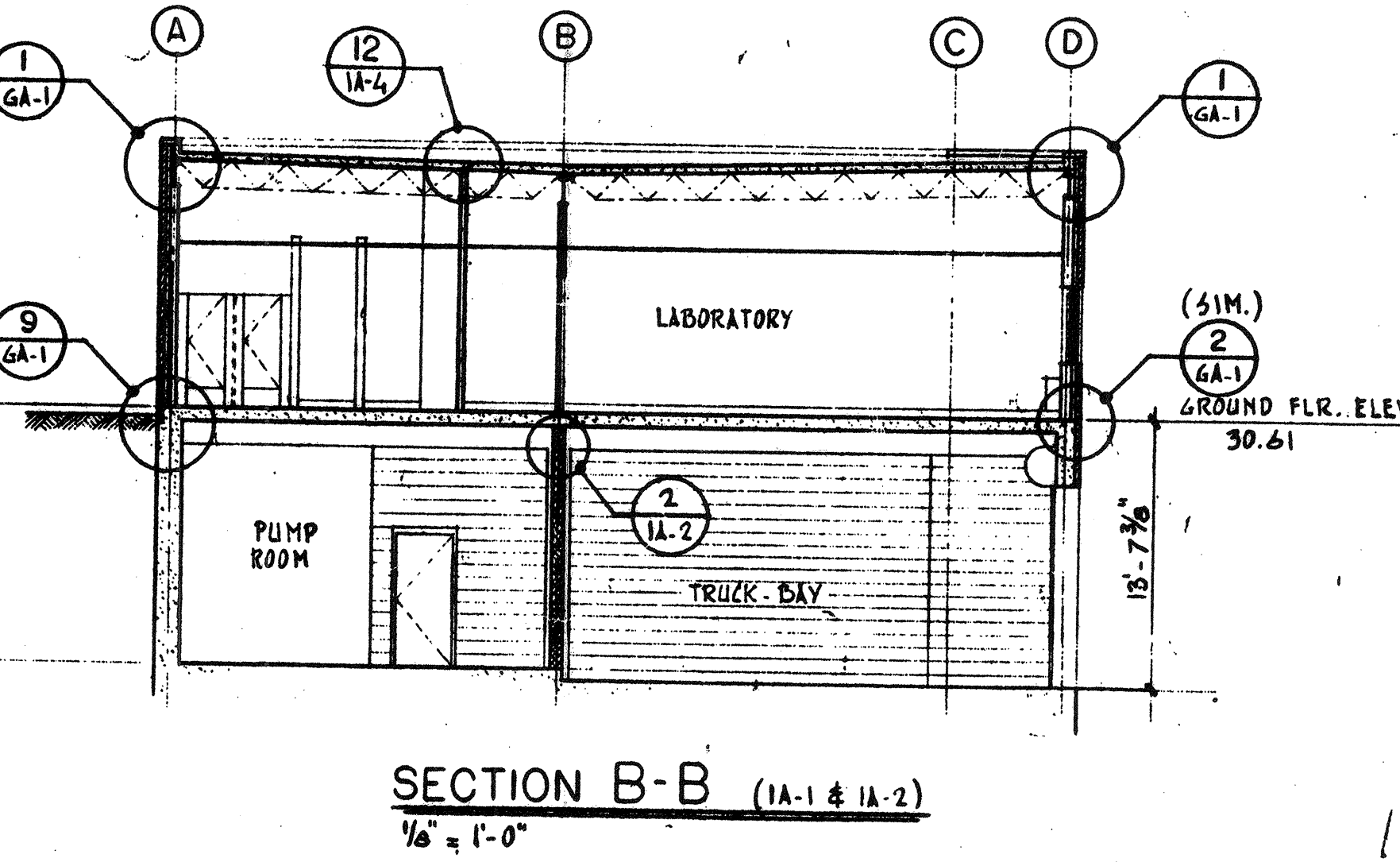
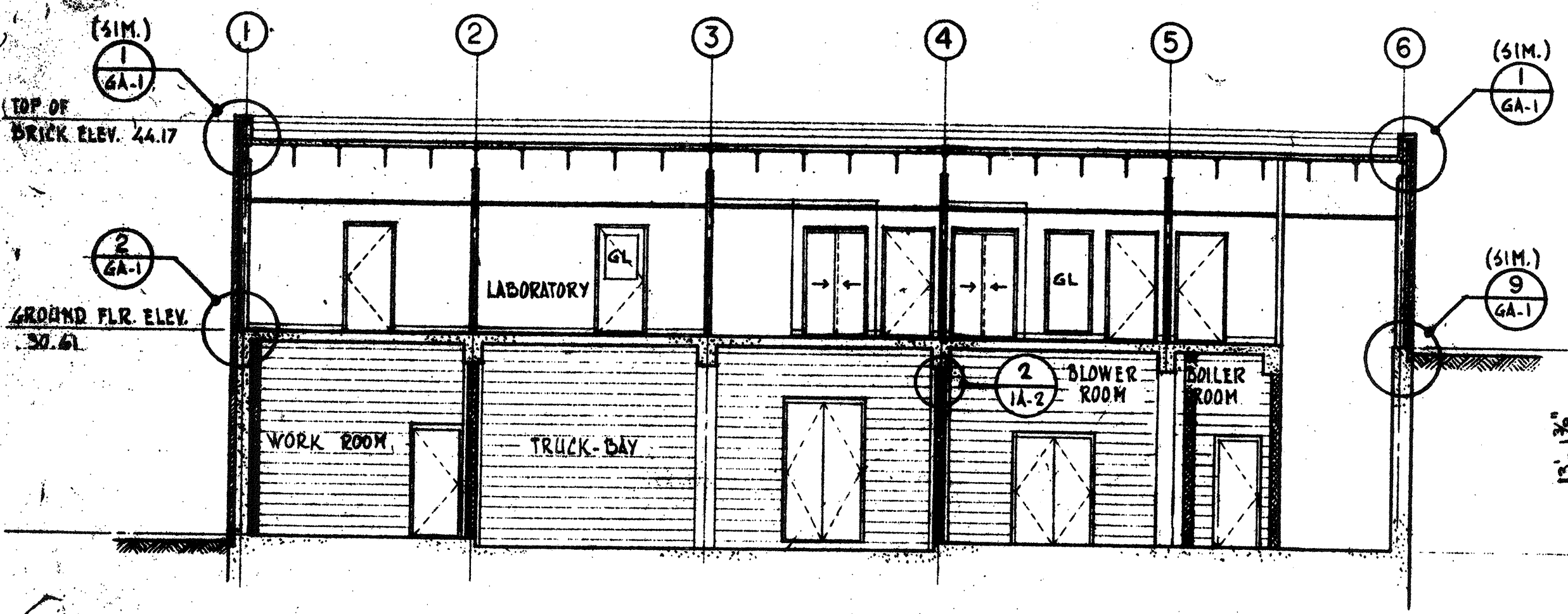
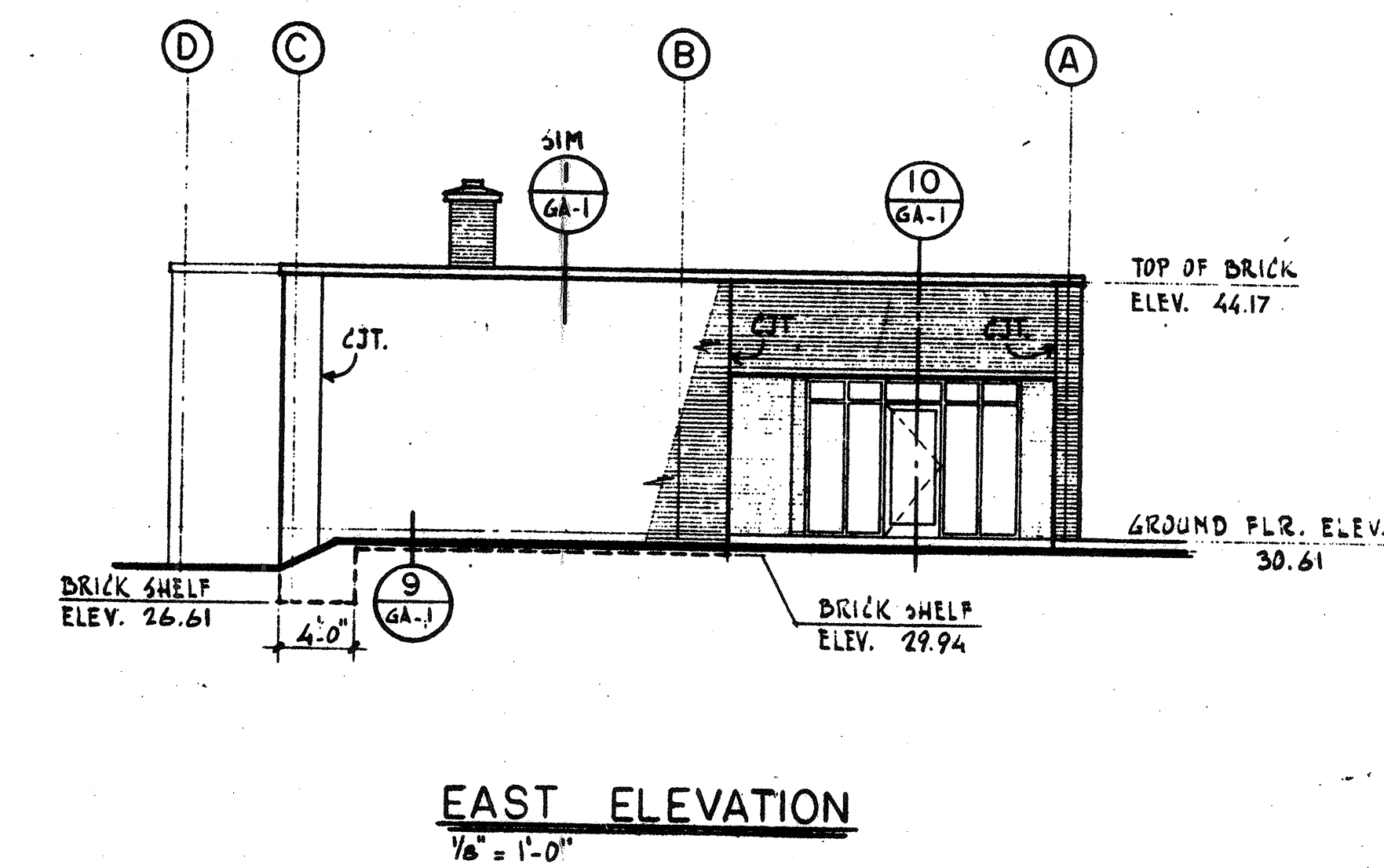
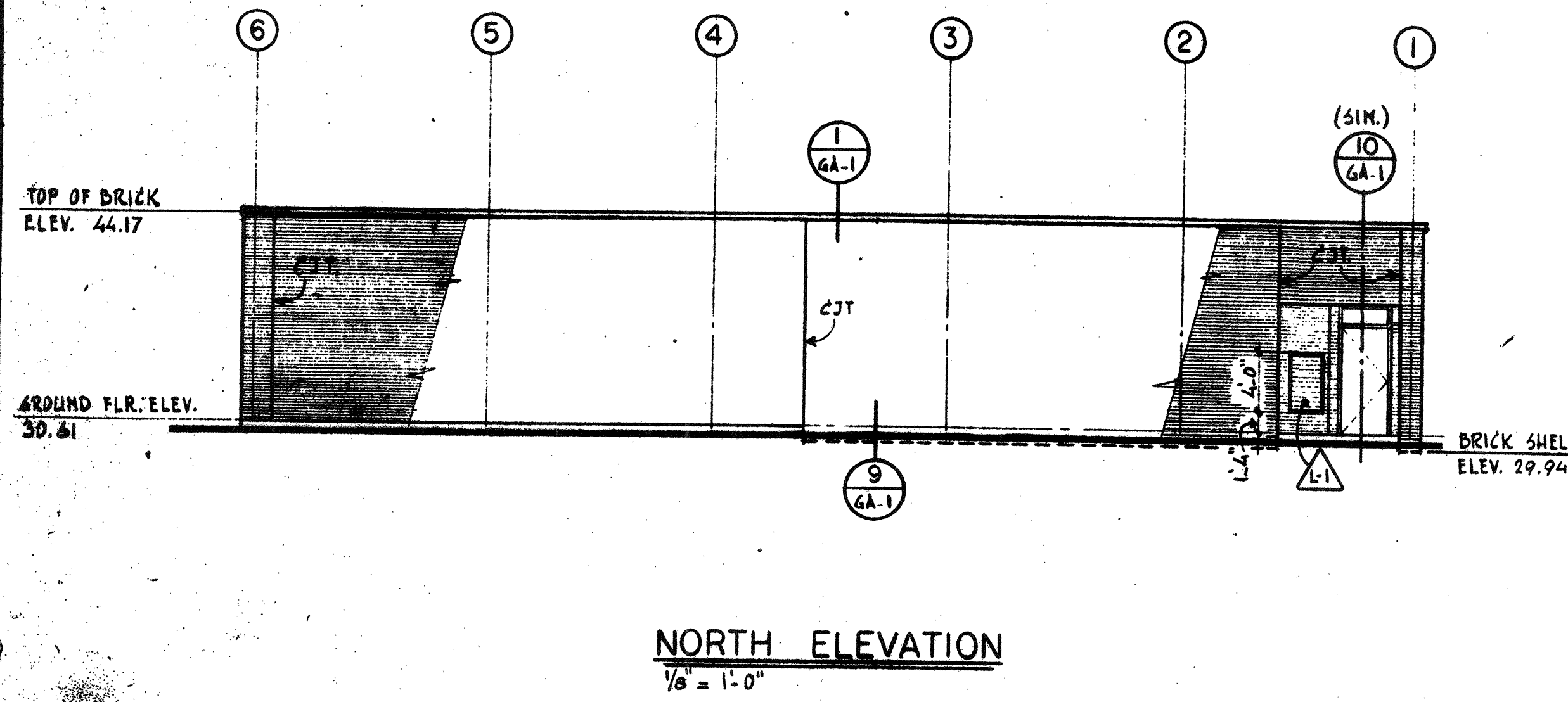
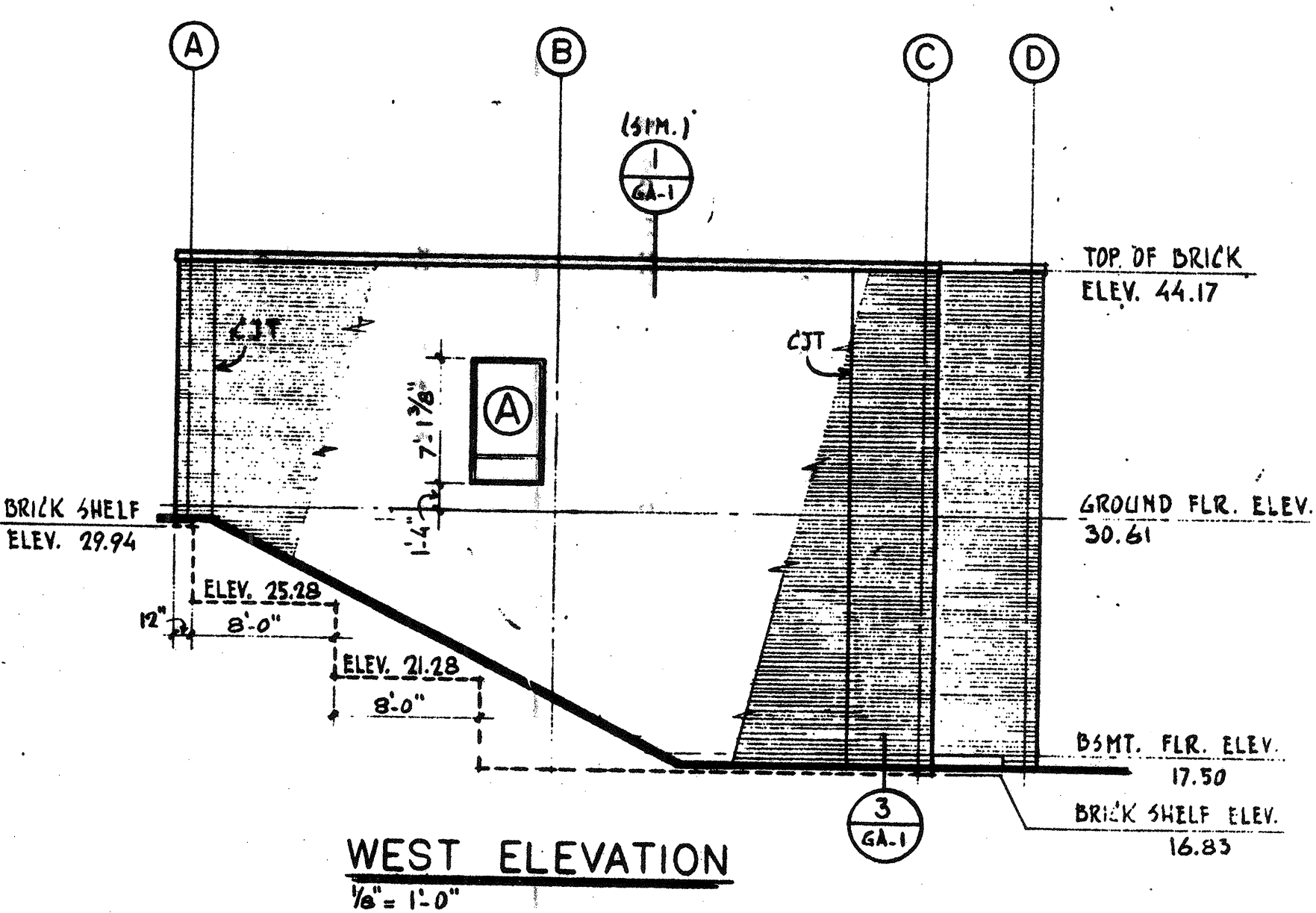
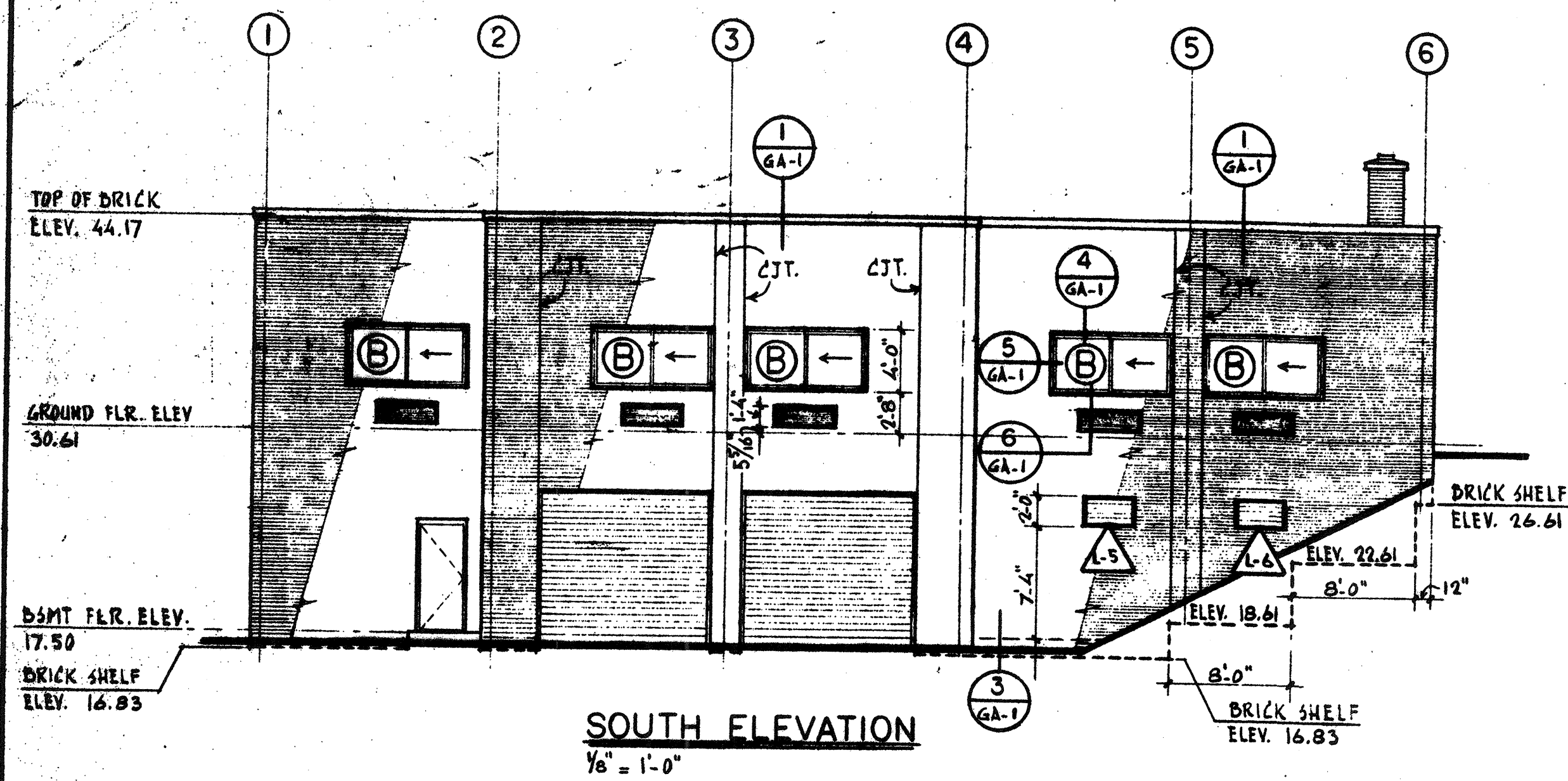
DRAWING NO. 1A-3
JOB NO. 85-163
CONTRACT NO. 3
SHEET 14 OF 106 SHEETS

WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N.H.

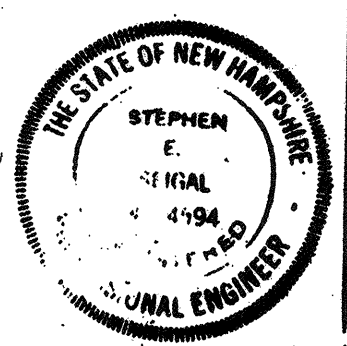
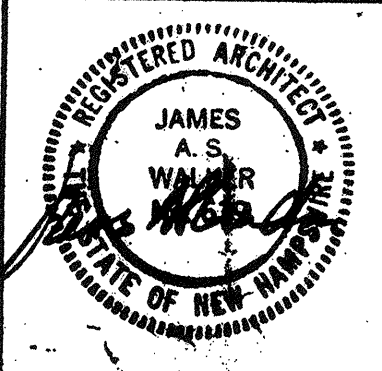
CONTROL BUILDING
ROOF PLAN AND DETAILS

RECORD PLAN



NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	8-93
1	Drawing Revised	7/89

WHITMAN & HOWARD, INC.
46 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING - 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen E. Seigel*

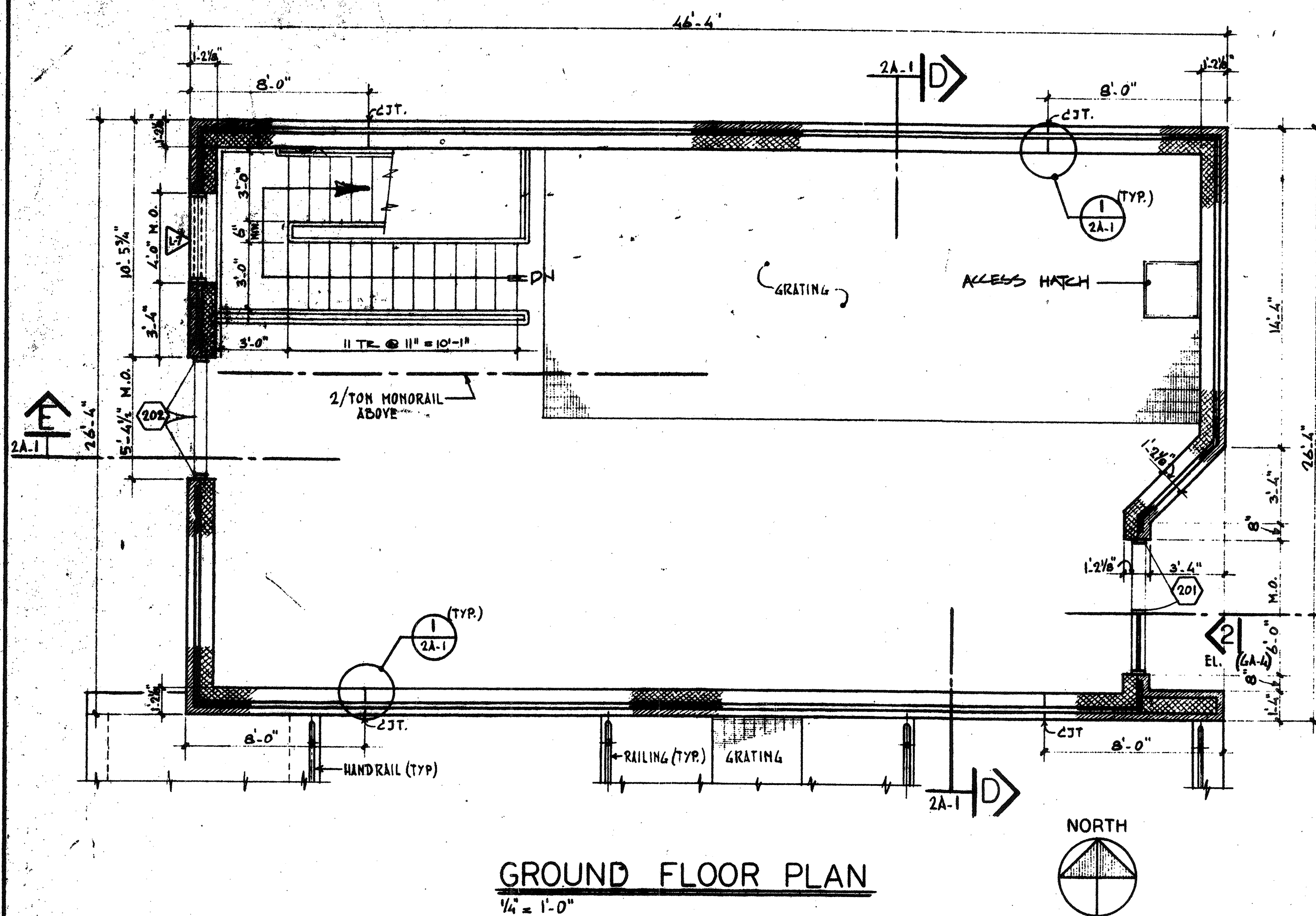
DESIGNED/DRAWN: K.A.S. F.Z. CHECKED/SCALE: K.A.S. AS NOTED DATE: SEPT., 1985

DRAWING NO. **1A-4**
JOB NO. **85-163**
CONTRACT NO. **3**

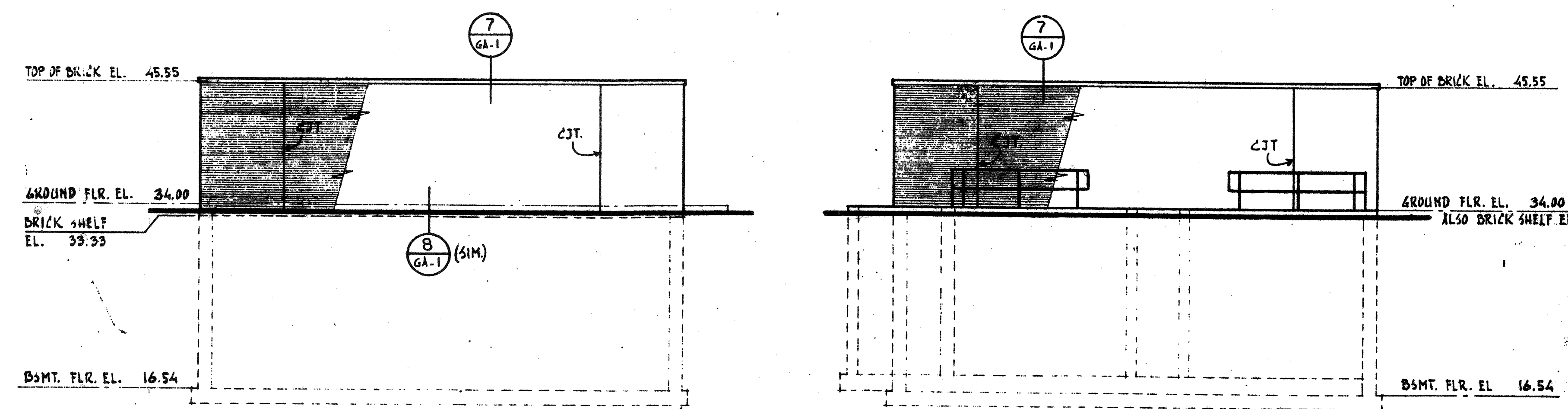
SHEET 15 OF 106 SHEETS

RECORD PLAN

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
CONTROL BUILDING
ELEVATIONS AND SECTIONS

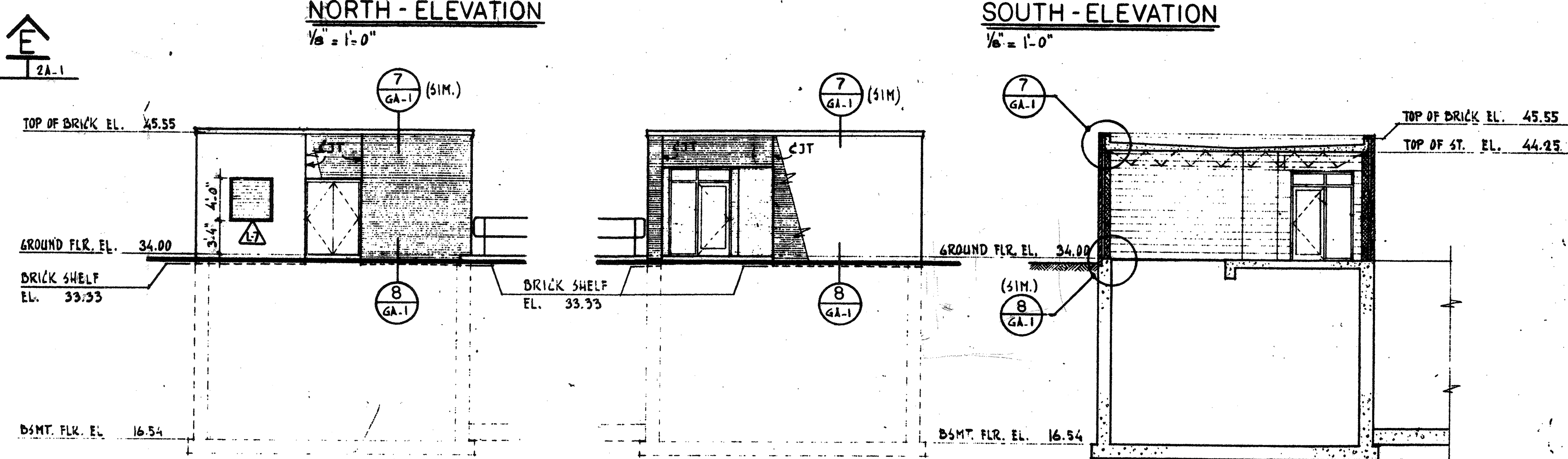


GROUND FLOOR PLAN
1/4" = 1'-0"



NORTH - ELEVATION
1/8" = 1'-0"

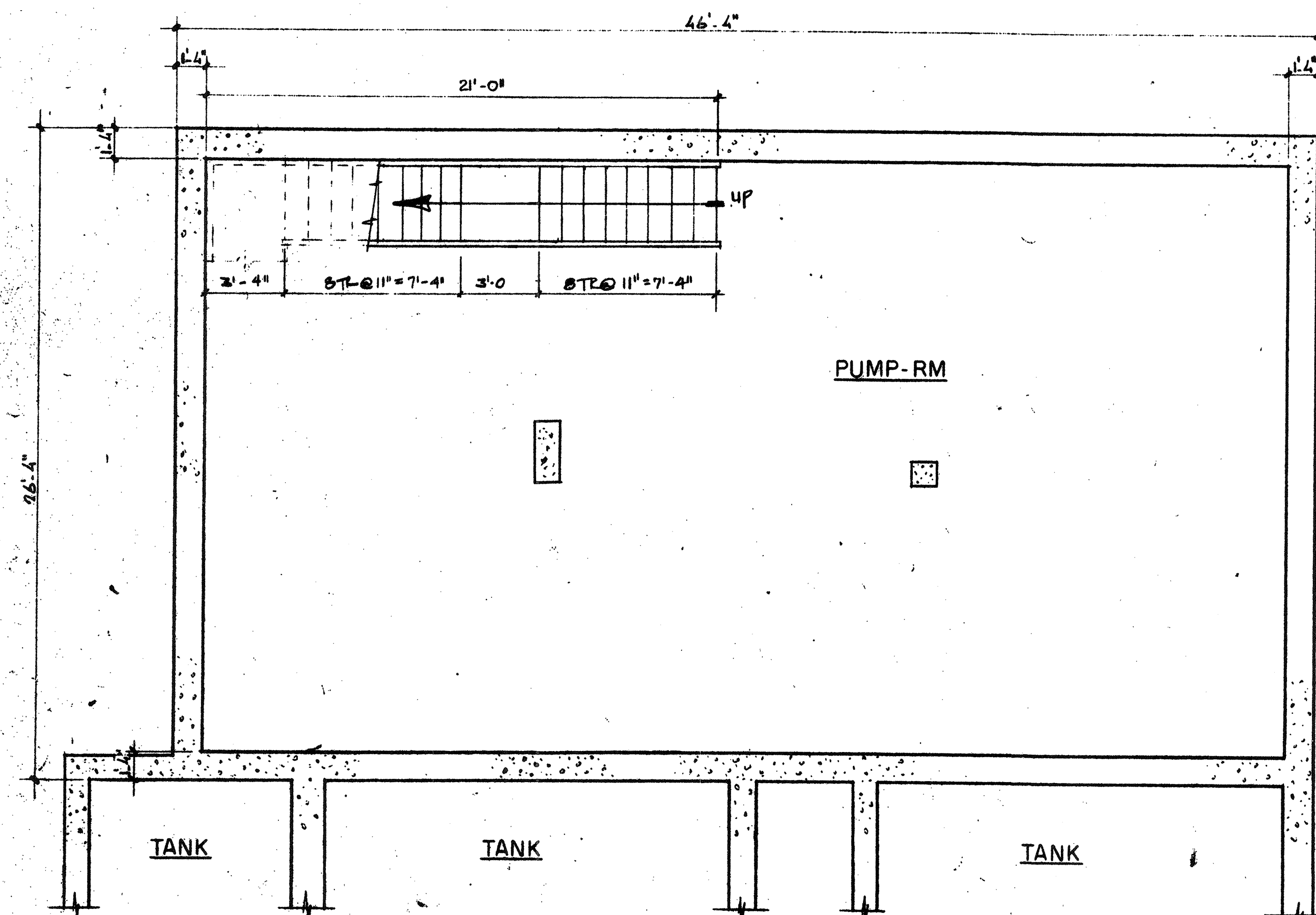
SOUTH - ELEVATION
1/8" = 1'-0"



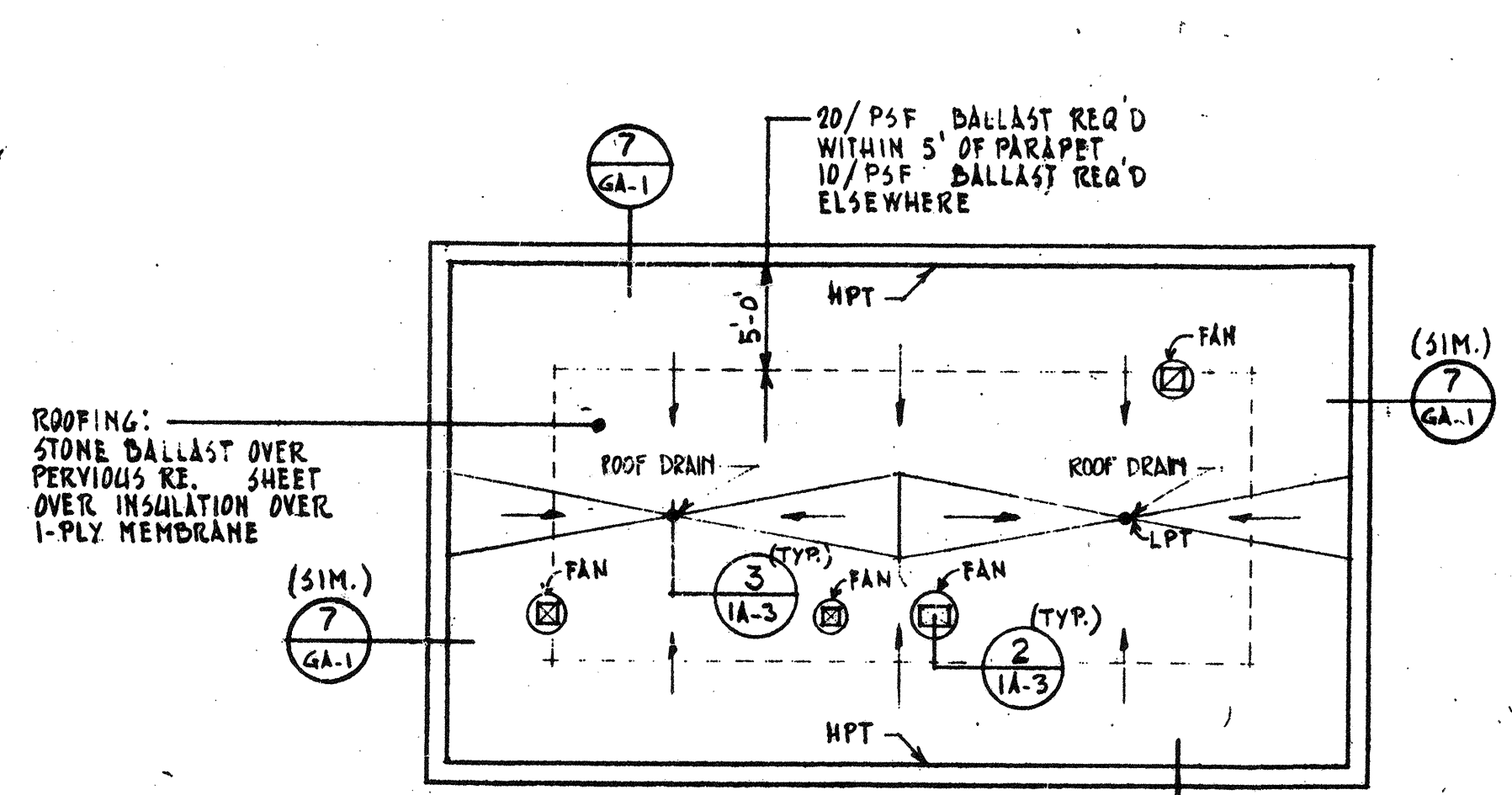
WEST - ELEVATION
1/8" = 1'-0"

EAST - ELEVATION
1/8" = 1'-0"

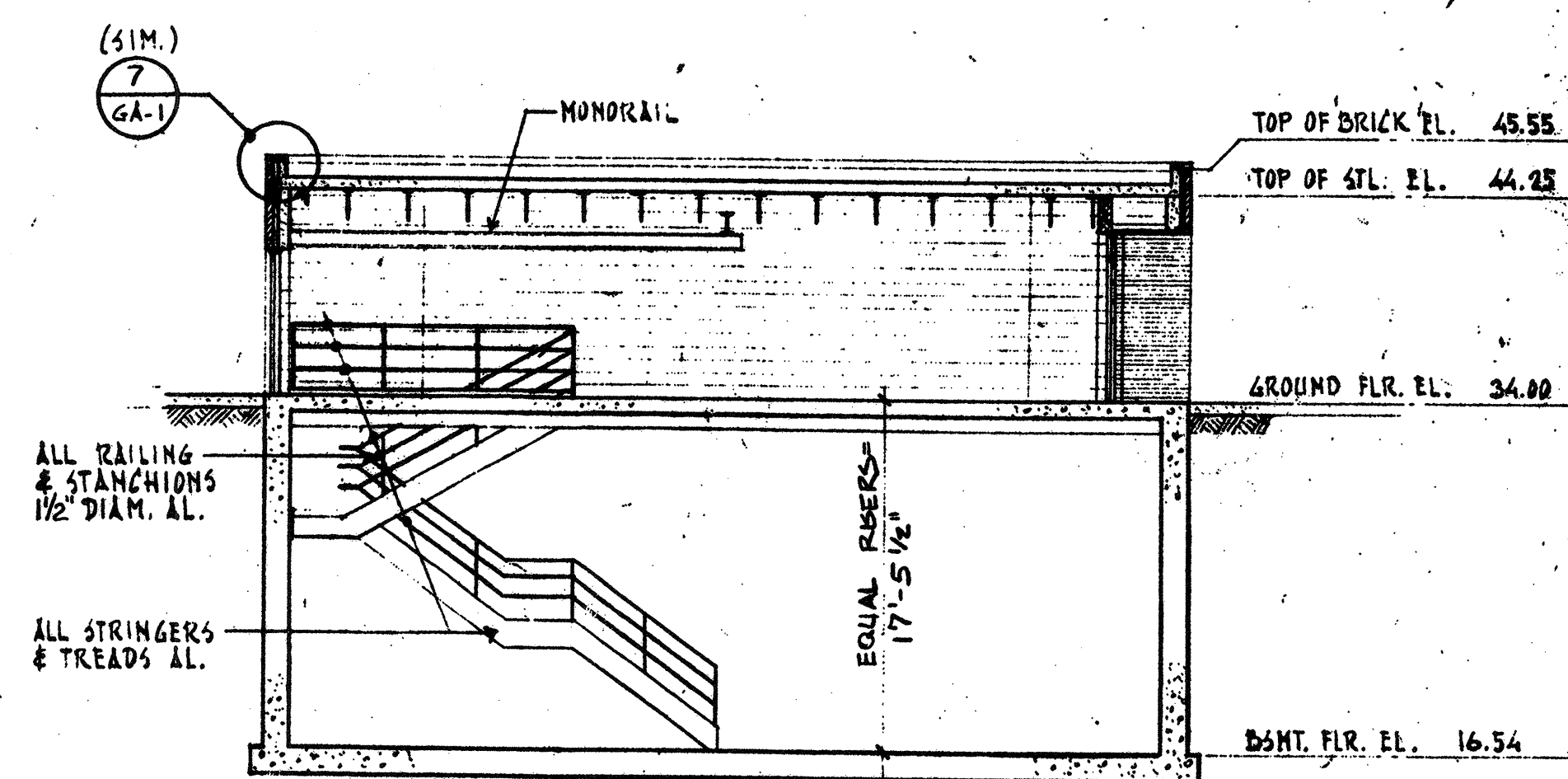
SECTION D-D (2A-1)
1/8" = 1'-0"



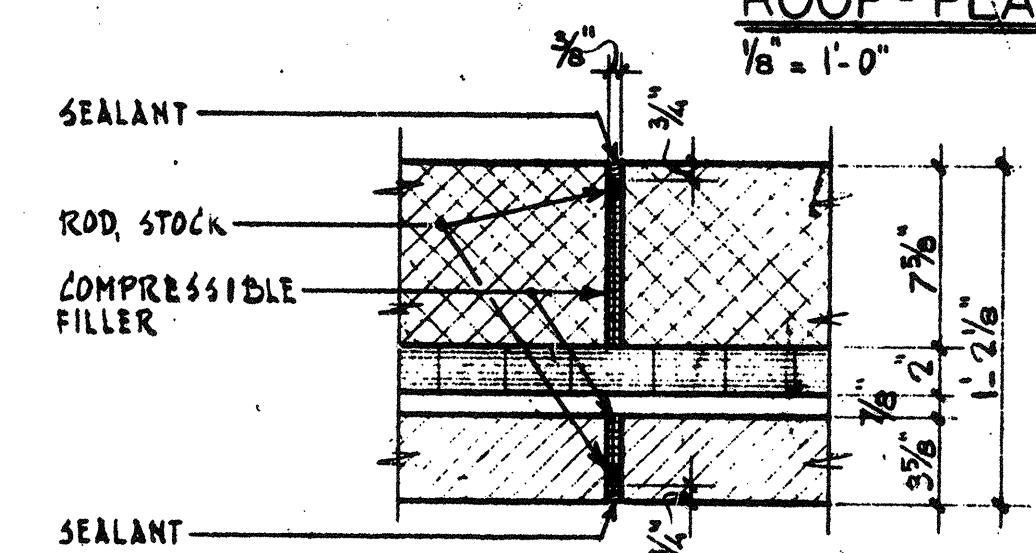
BASEMENT FLOOR PLAN
1/4" = 1'-0"



ROOF - PLAN
1/8" = 1'-0"



SECTION E-E (2A-1)
1/8" = 1'-0"

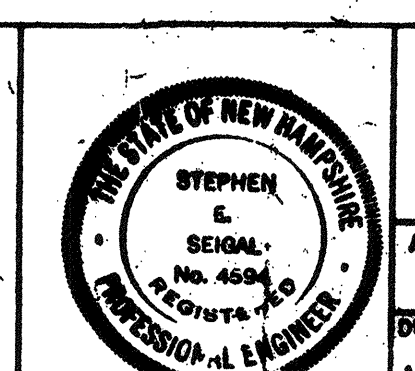
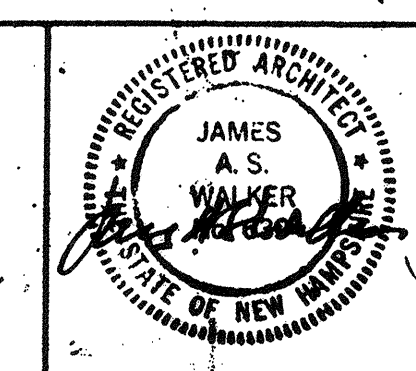


DETAIL MAS. CONTROL JOINT (CJT.)
1/2" = 1'-0"

RECORD PLAN

NO.	DESCRIPTION	DATE
E	REVISED TO RECORD PLAN	9-93
1	Drawing Revised	9/89
2	REVISIONS	

WHITMAN & HOWARD, INC.
48 WILLIAM STREET, WELLESLEY, MASS.

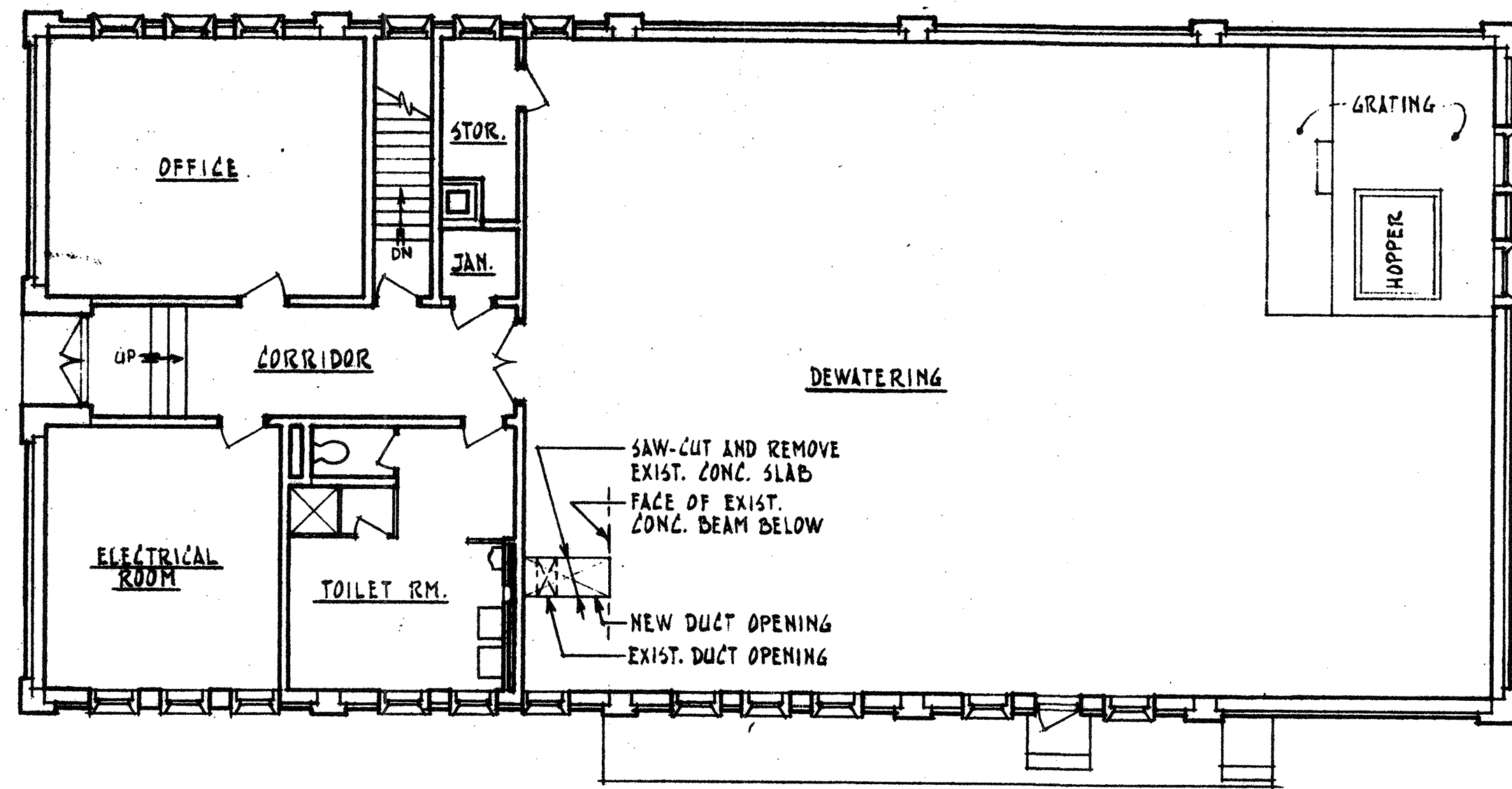


ORIGINAL FULL SIZE DRAWING - 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen E. Seigel*
DESIGNED/DRAWN: K.A.B. F.Z. CHECKED/SCALE: K.A.S. AS NOTED DATE: SEPT. 1985

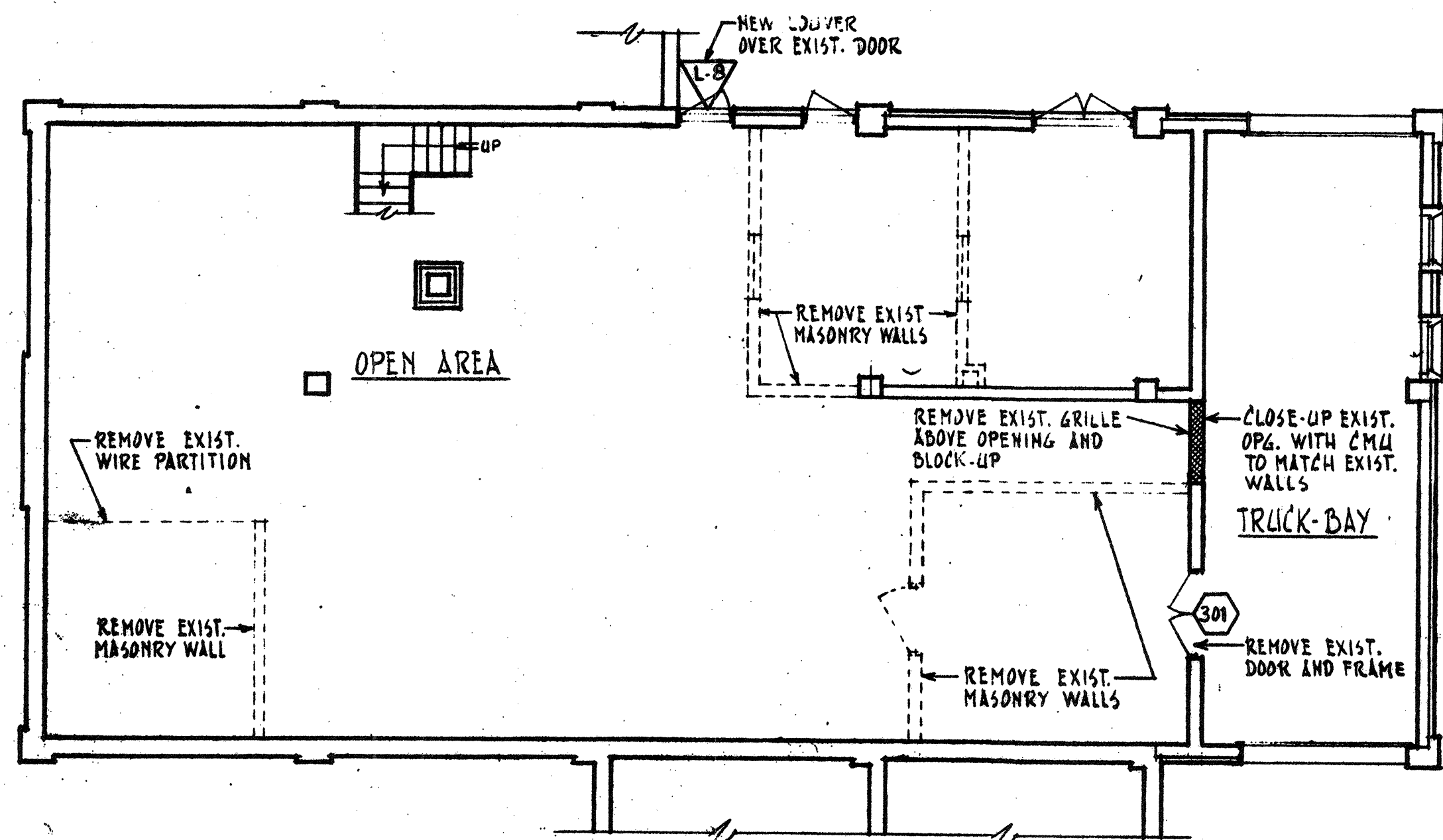
DRAWING NO. **2A-1**
JOB NO. **85-163**
CONTRACT NO. **3**

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
SCUM CONCENTRATOR BUILDING
PLANS - ELEVATIONS - SECTIONS



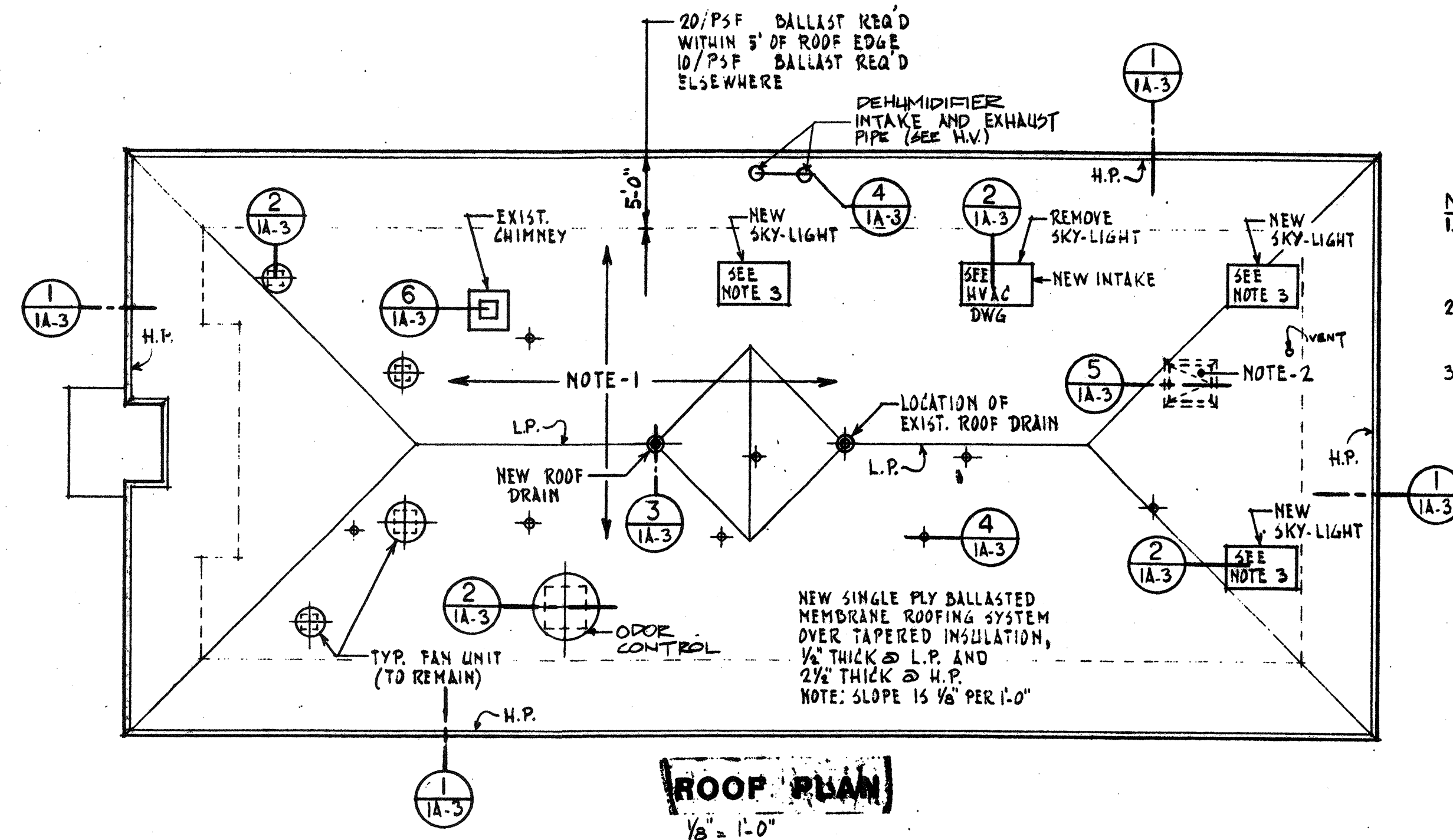
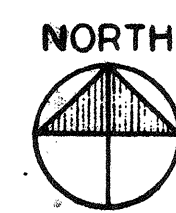
FIRST FLOOR PLAN

1/8" = 1'-0"



BASEMENT PLAN

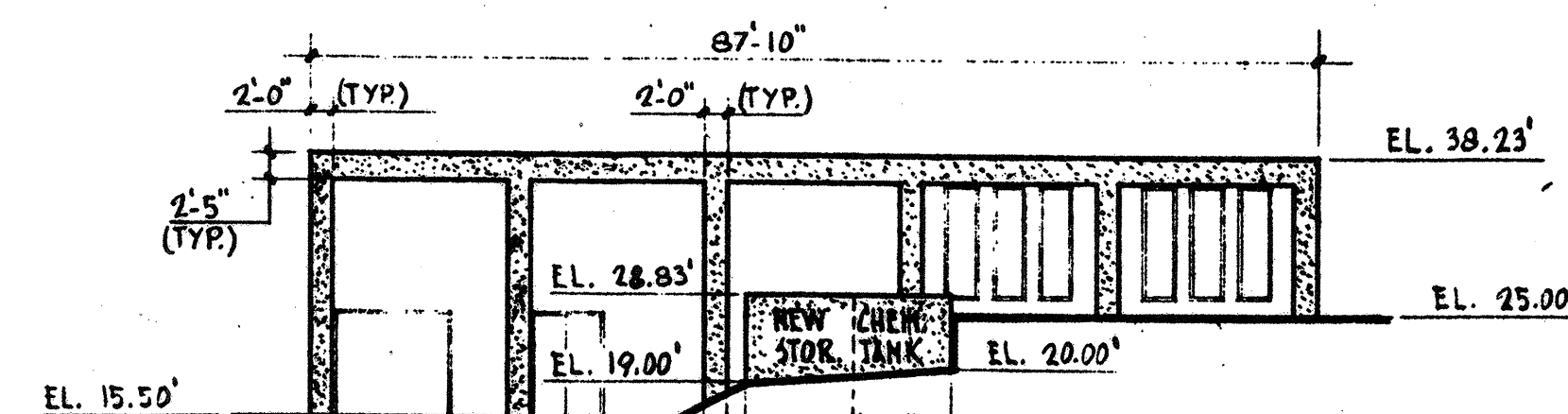
1/8" = 1'-0"



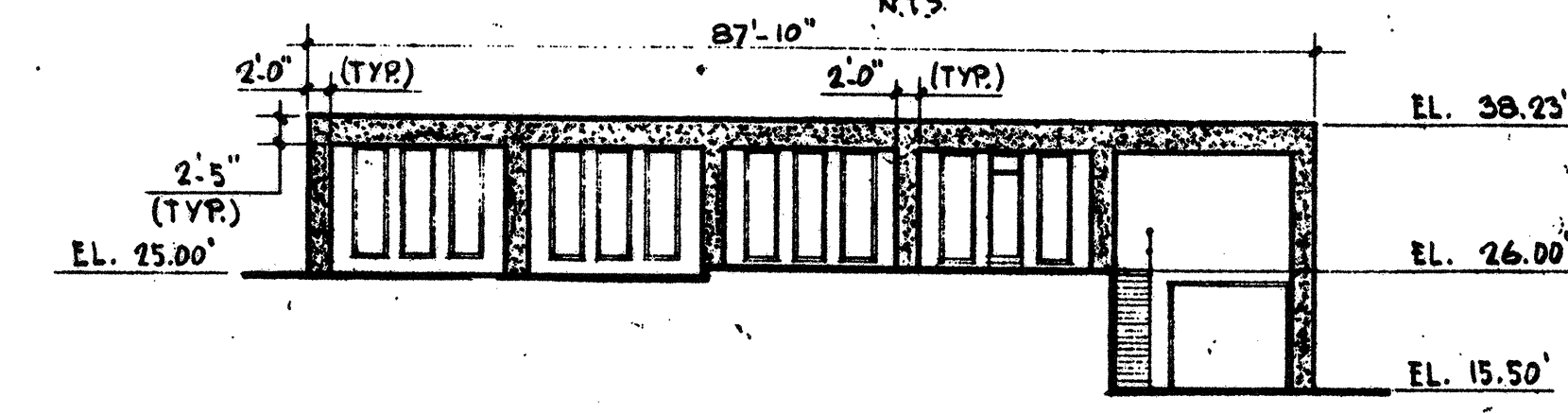
ROOF PLAN

1/8" = 1'-0"

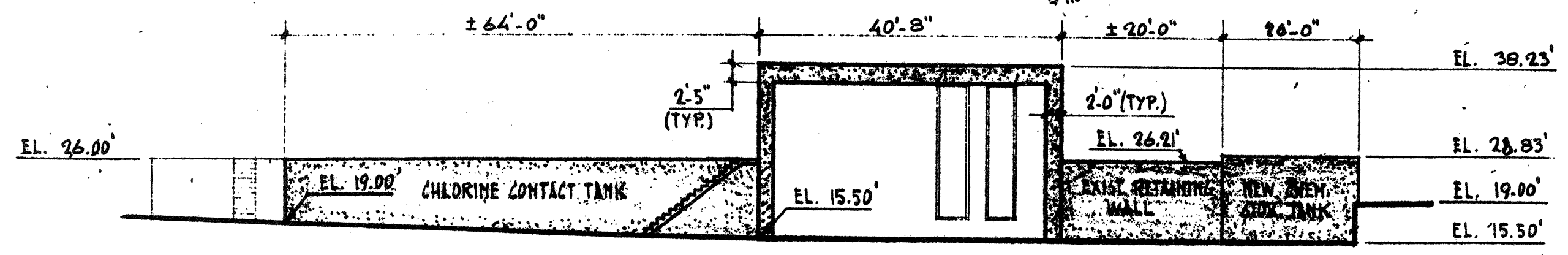
- NOTES:**
- ENTIRE BUILT-UP ROOFING SYSTEM IS TO BE REMOVED INCLUDING GRAVEL, FELTS, INSULATION, NAILERS & FLASHINGS, DOWN TO EXIST. CONC. ROOF SLAB.
 - EXIST. ROOF ACCESS HATCH IS TO BE REMOVED AND THE OPENING IS TO BE FILLED WITH CONCRETE SEE DETAIL 5 IA-3
 - REMOVE EXIST. SKY-LIGHTS AND REPLACE WITH NEW SKY-LIGHTS. SIZED TO SUIT EXISTING OPENING.



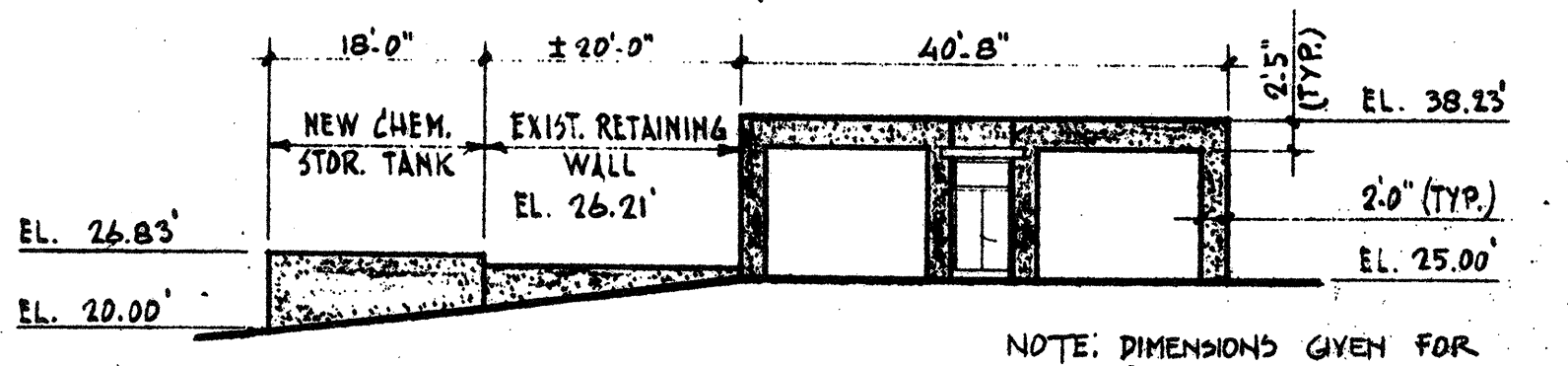
NORTH-ELEVATION



SOUTH-ELEVATION



EAST-ELEVATION



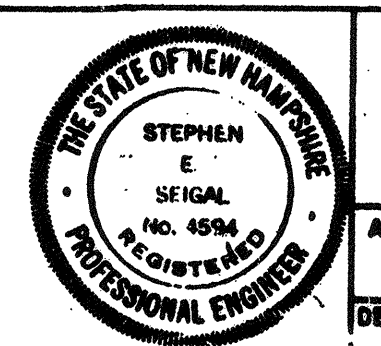
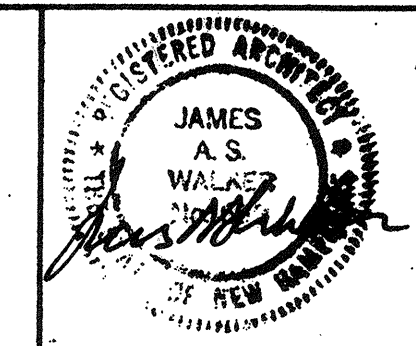
WEST-ELEVATION

CONCRETE-RESURFACING (SEE SPEC. SECT. 03720)

RECORD PLAN

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Drawing Revised	9/89
	REVISIONS	

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.

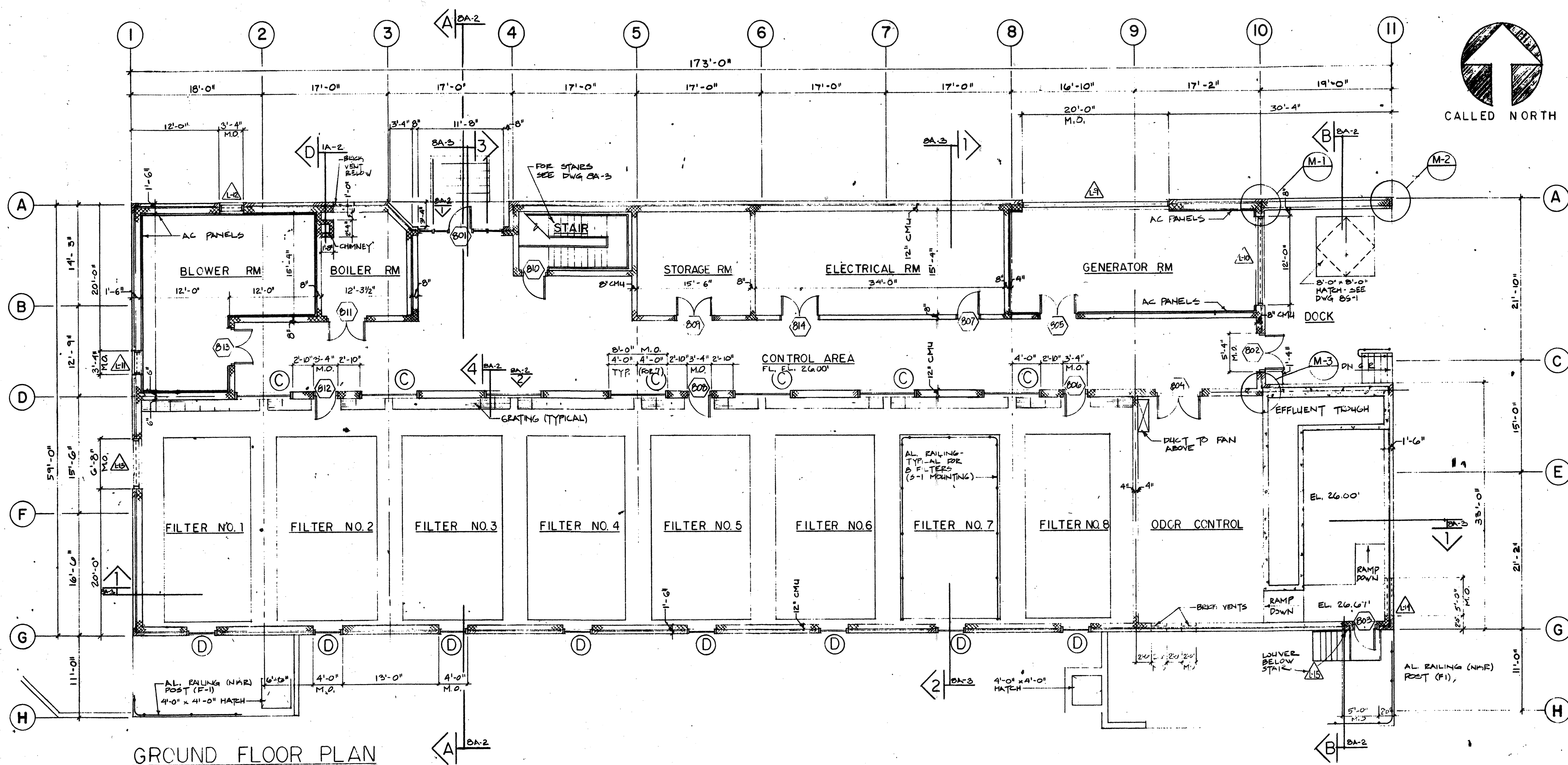


ORIGINAL FULL SIZE DRAWING - 4"
REPRODUCTIONS MAY BE REDUCED SIZE

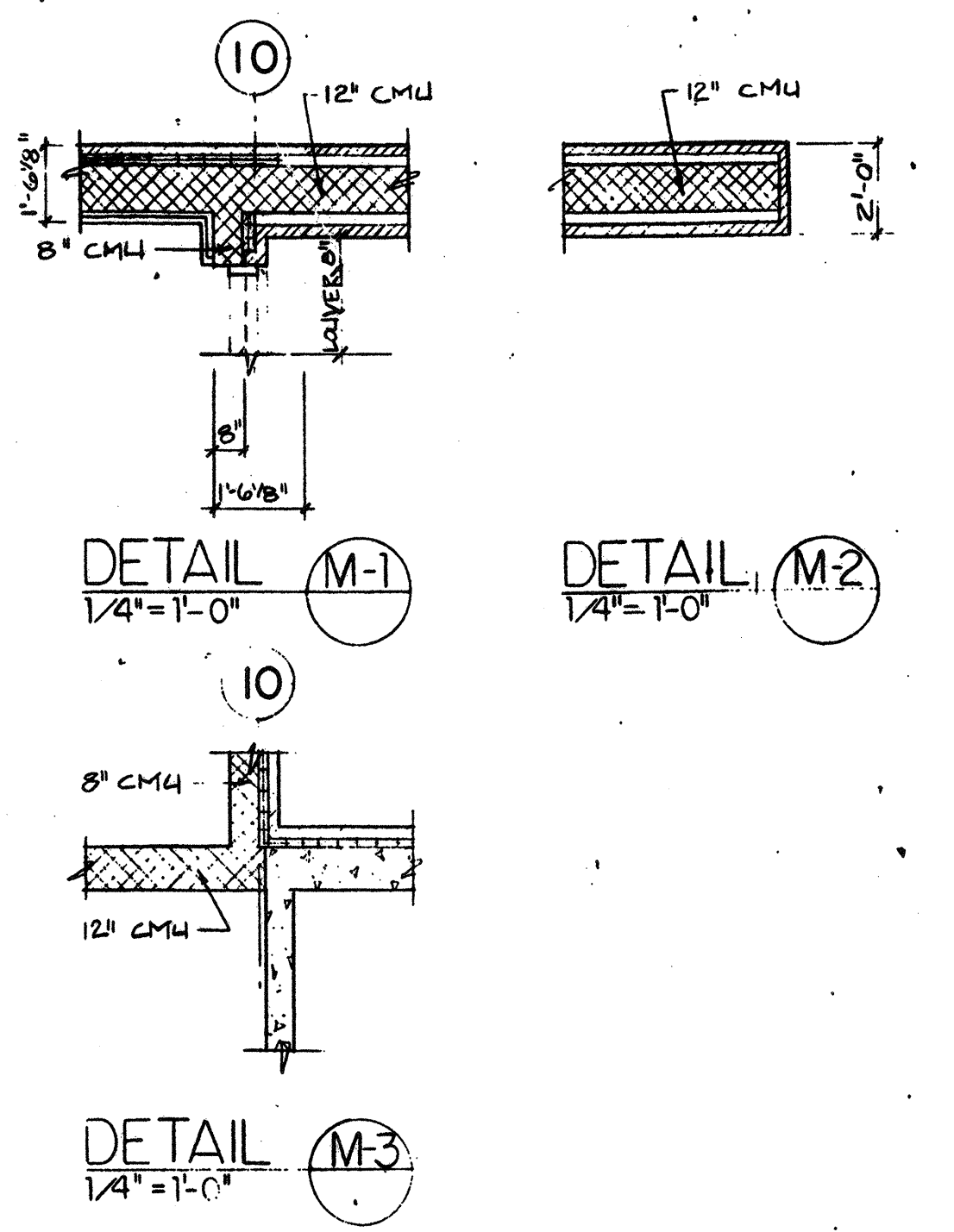
APPROVED: *Stephen E. Seigel*
DESIGNED/DRAWN: K.A.S. F.Z. CHECKED/SCALE: K.A.S. AS NOTED DATE: SEPT., 1988

DRAWING NO. **3A-1**
JOB NO. 85-163
CONTRACT NO. 3

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
SLUDGE PROCESSING BUILDING PLANS



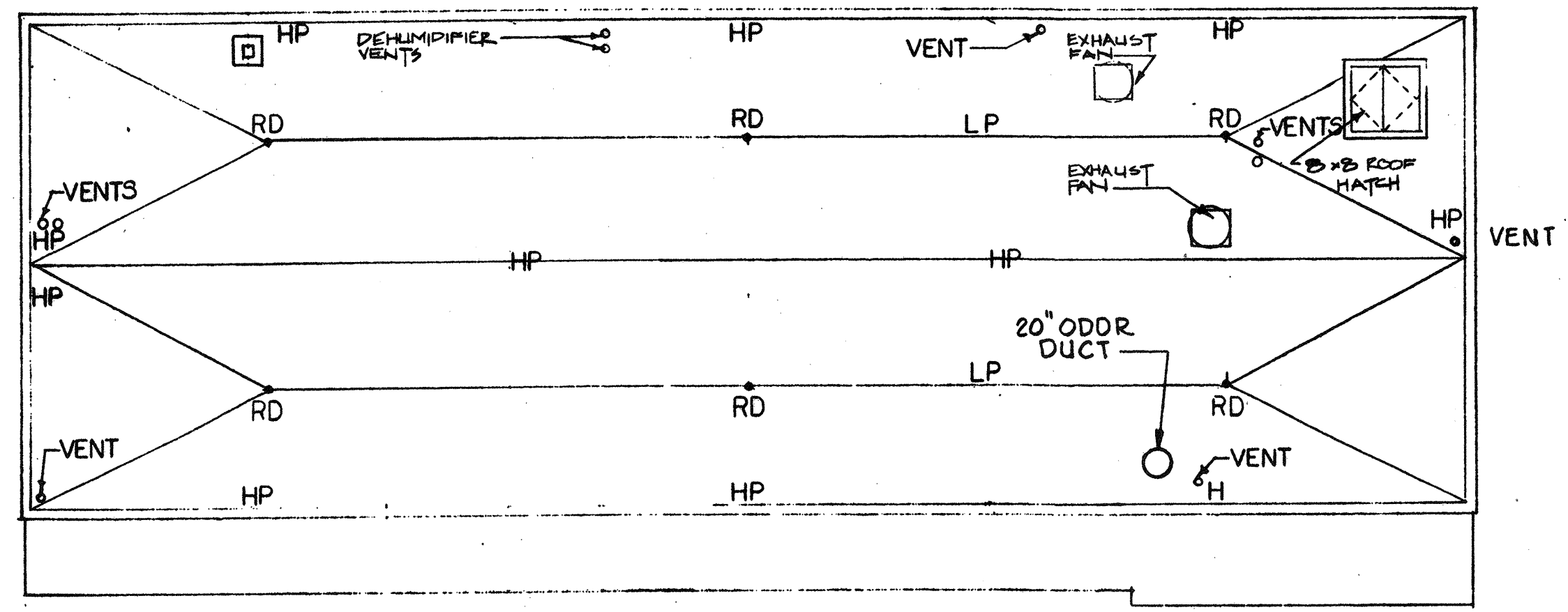
GROUND FLOOR PLAN
1/8" = 1'-0"



DETAIL M-1
1/4" = 1'-0"

DETAIL M-2
1/4" = 1'-0"

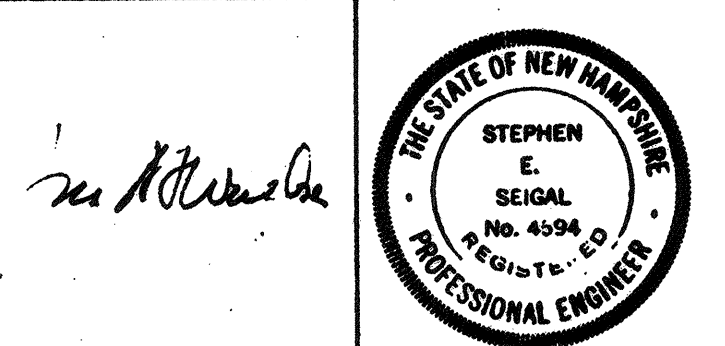
DETAIL M-3
1/4" = 1'-0"



ROOF PLAN
1/16" = 1'-0"

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	DRAWING ADDED SEPTEMBER 1989	1989

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

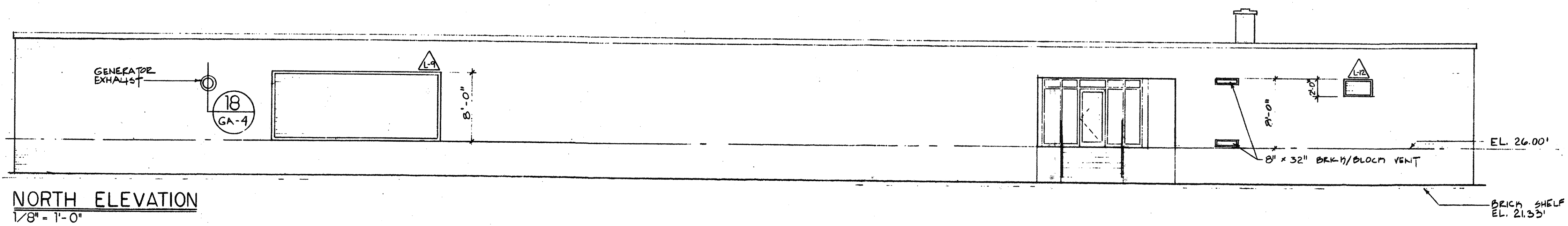
DESIGNED	DRAWN	CHECKED	SCALE	DATE
K.A.S.	L.B.B.	K.A.S.	AS NOTED	SEPT., 1989

DRAWING NO. **8A-1**
JOB NO. 85-163
CONTRACT NO. 3

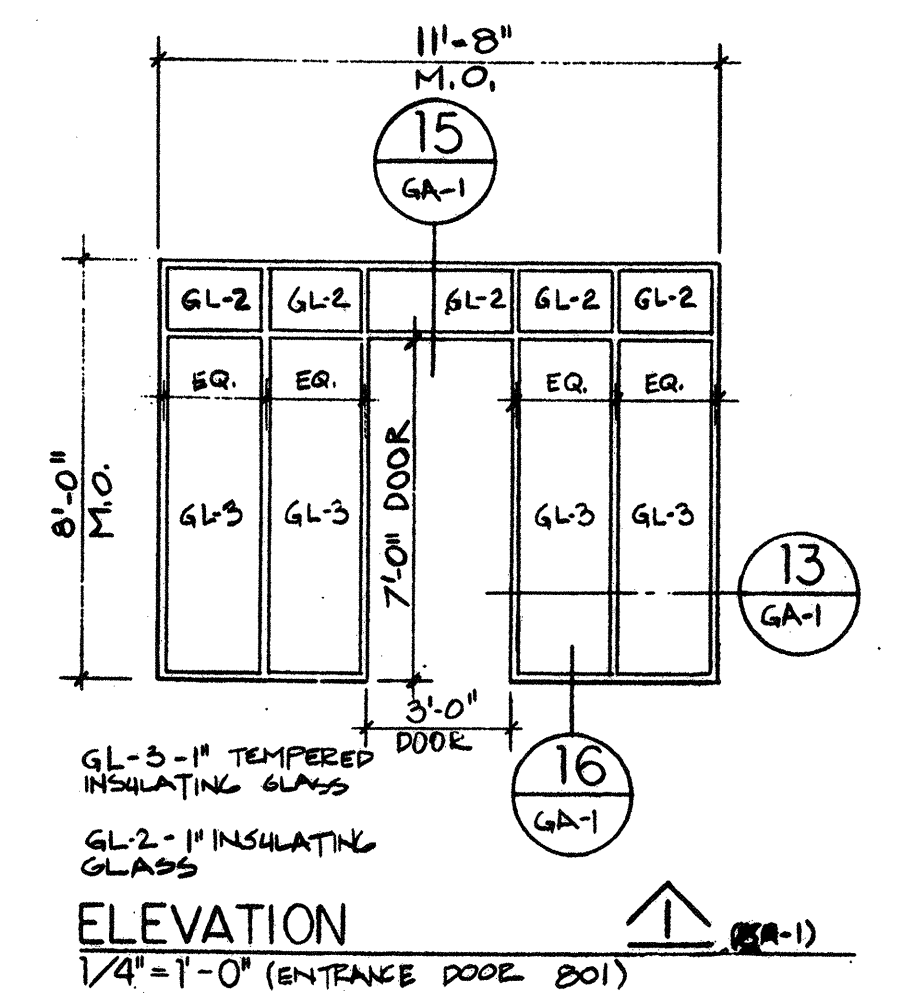
WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N H.

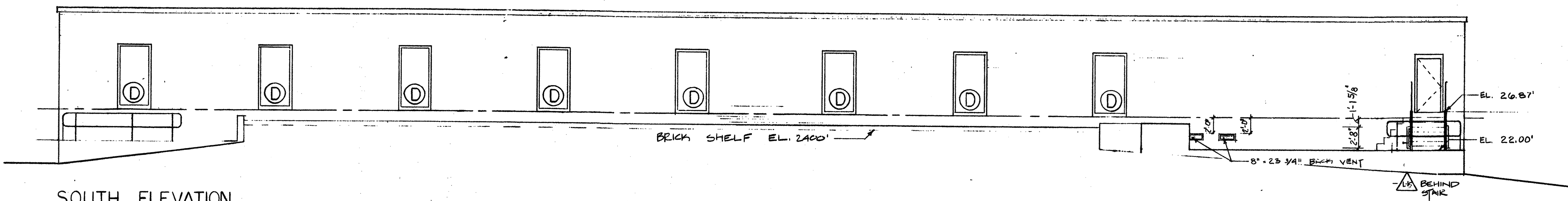
FILTER BUILDING PLAN



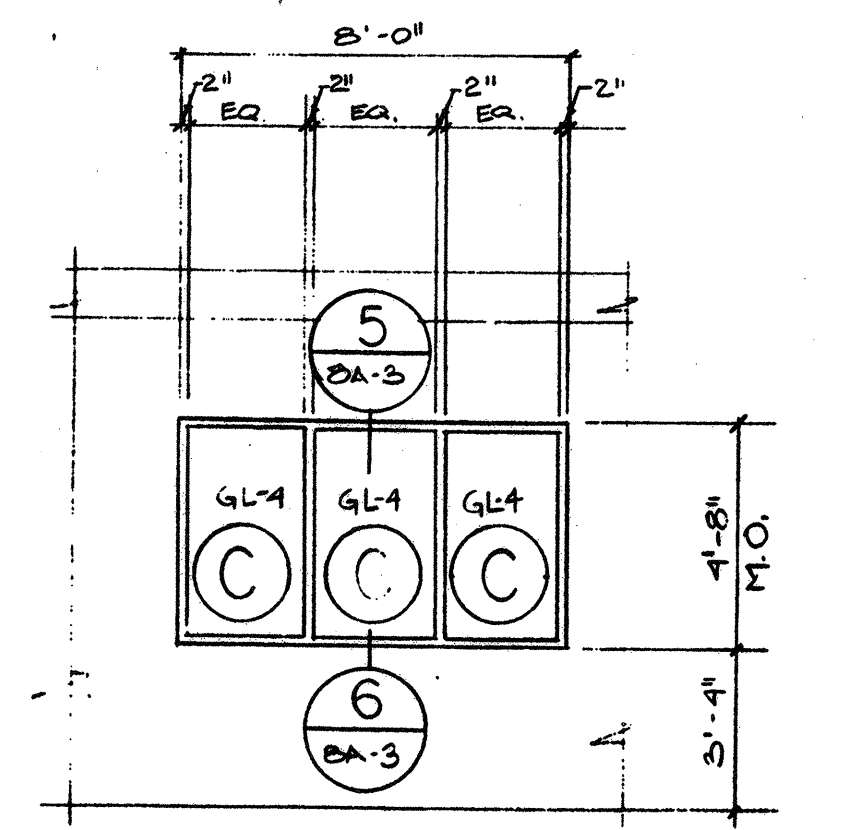
NORTH ELEVATION
1/8" = 1'-0"



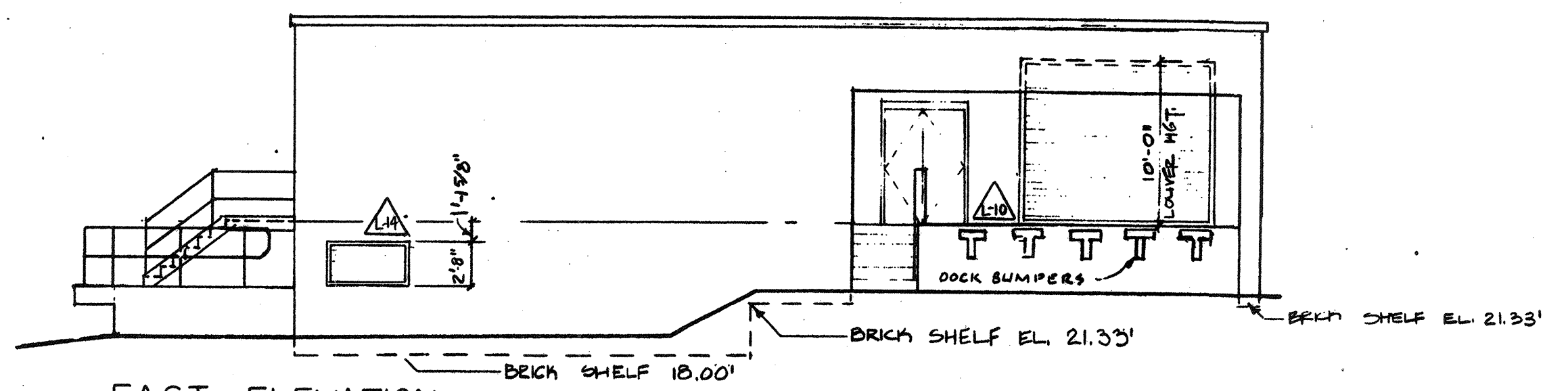
ELEVATION
1/4" = 1'-0" (ENTRANCE DOOR DOI)



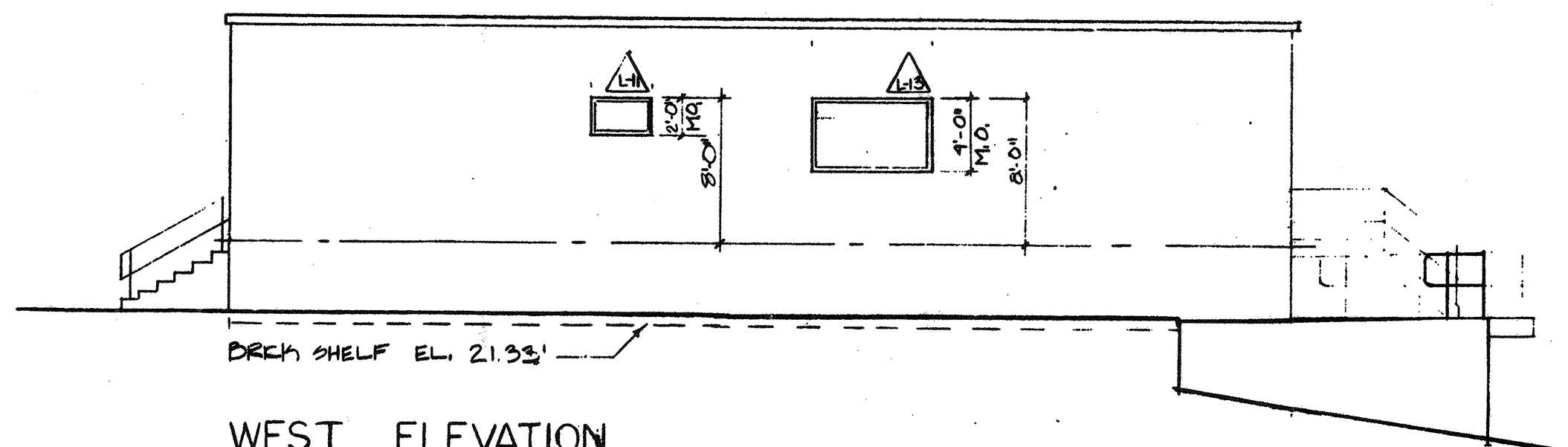
SOUTH ELEVATION
1/8" = 1'-0"



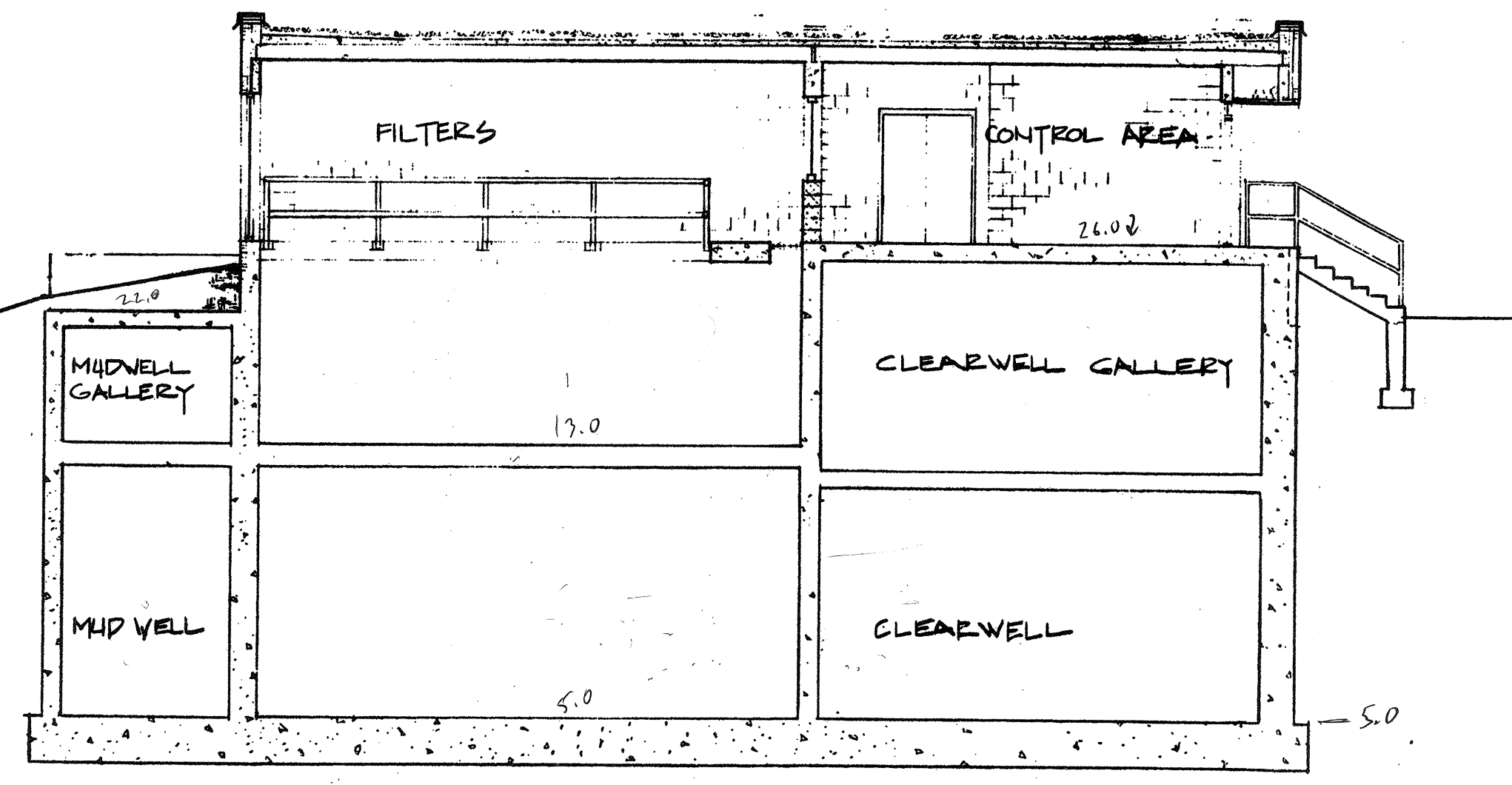
ELEVATION
1/4" = 1'-0" (16" WINDOWS)



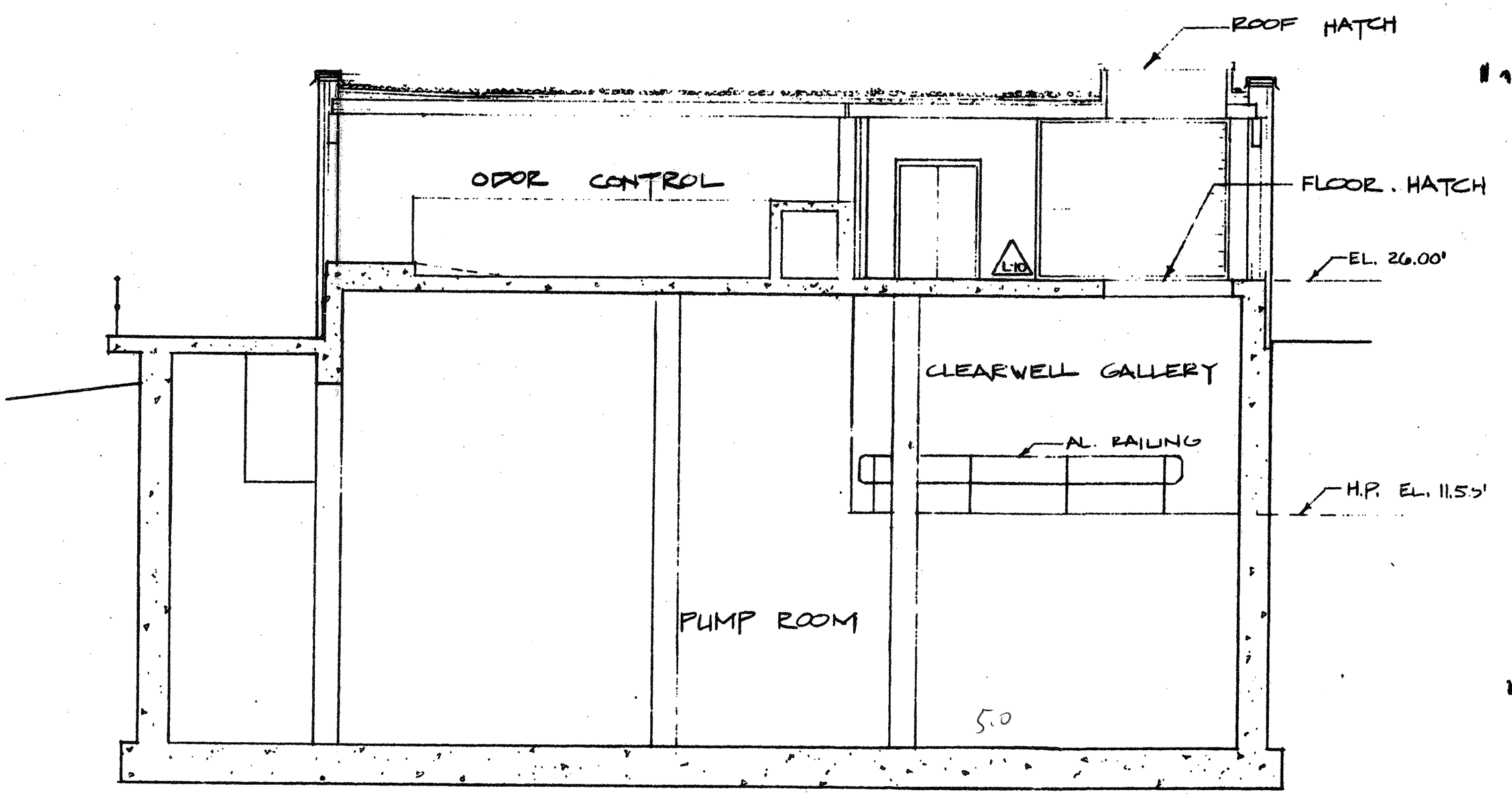
EAST ELEVATION
1/8" = 1'-0"



WEST ELEVATION
1/8" = 1'-0"

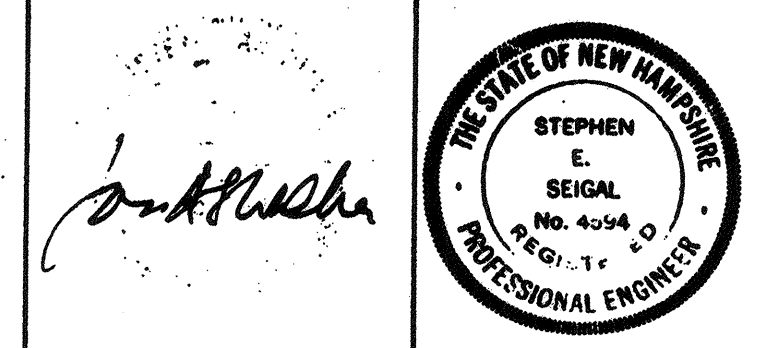


SECTION A-A (BA-1)
1/8" = 1'-0"



SECTION B-B (BA-1)
1/8" = 1'-0"

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

DRAWING NO. **8A-2**
JOB NO. 85-163
CONTRACT NO. 3

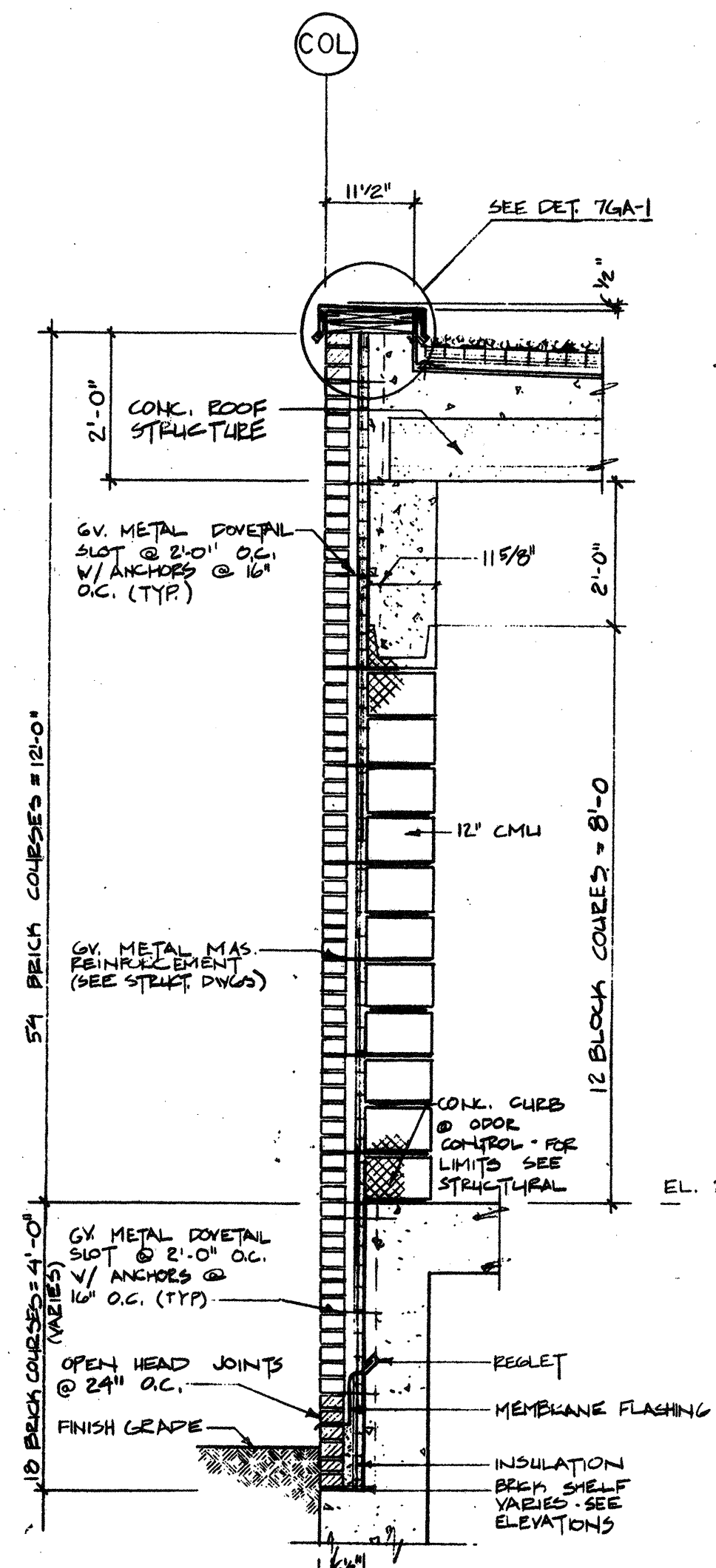
WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N. H.

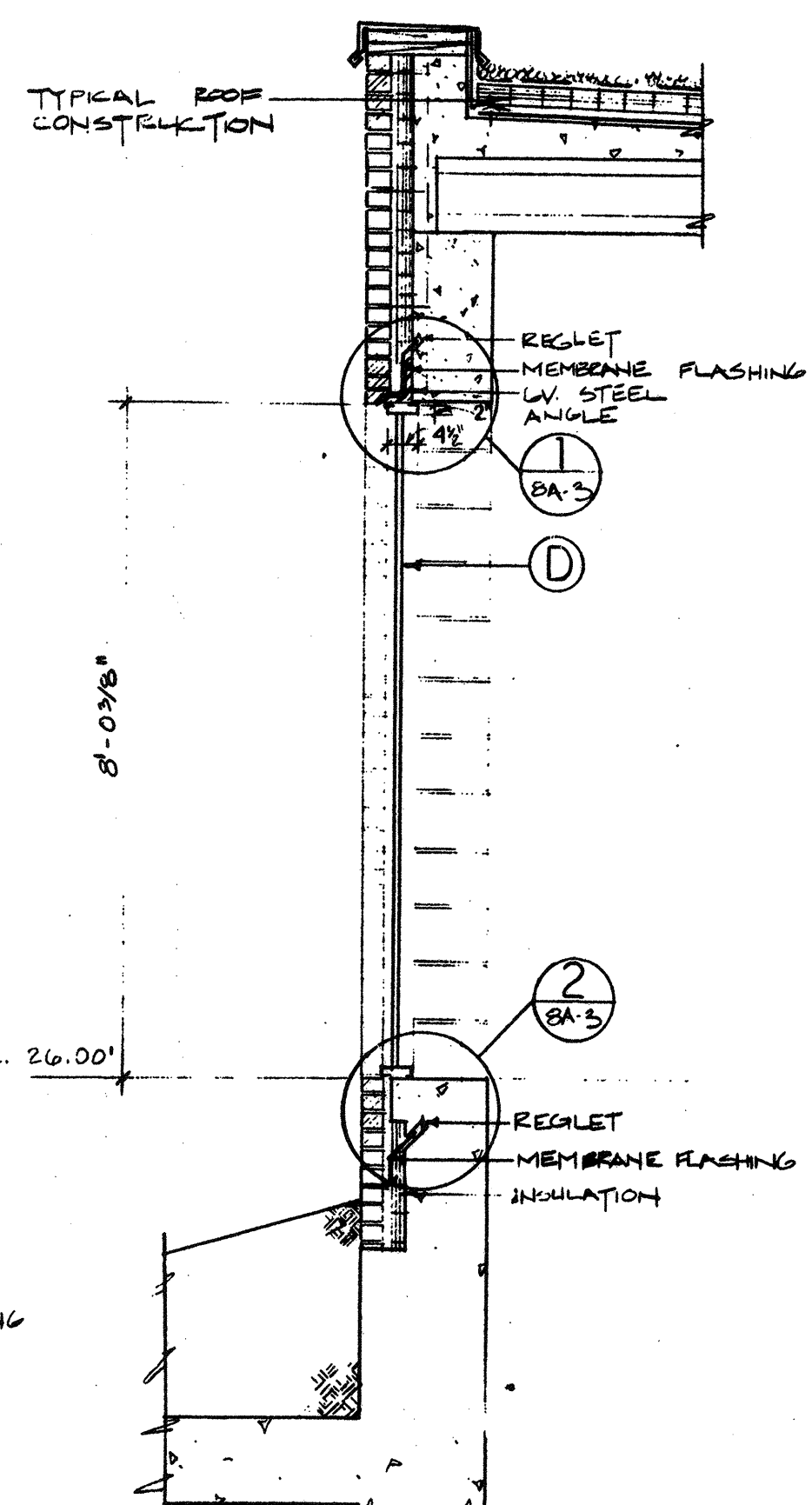
FILTER BUILDING
ELEVATIONS - BUILDING SECTIONS

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	DRAWING ADDED SEPTEMBER	1989
	REVISIONS	

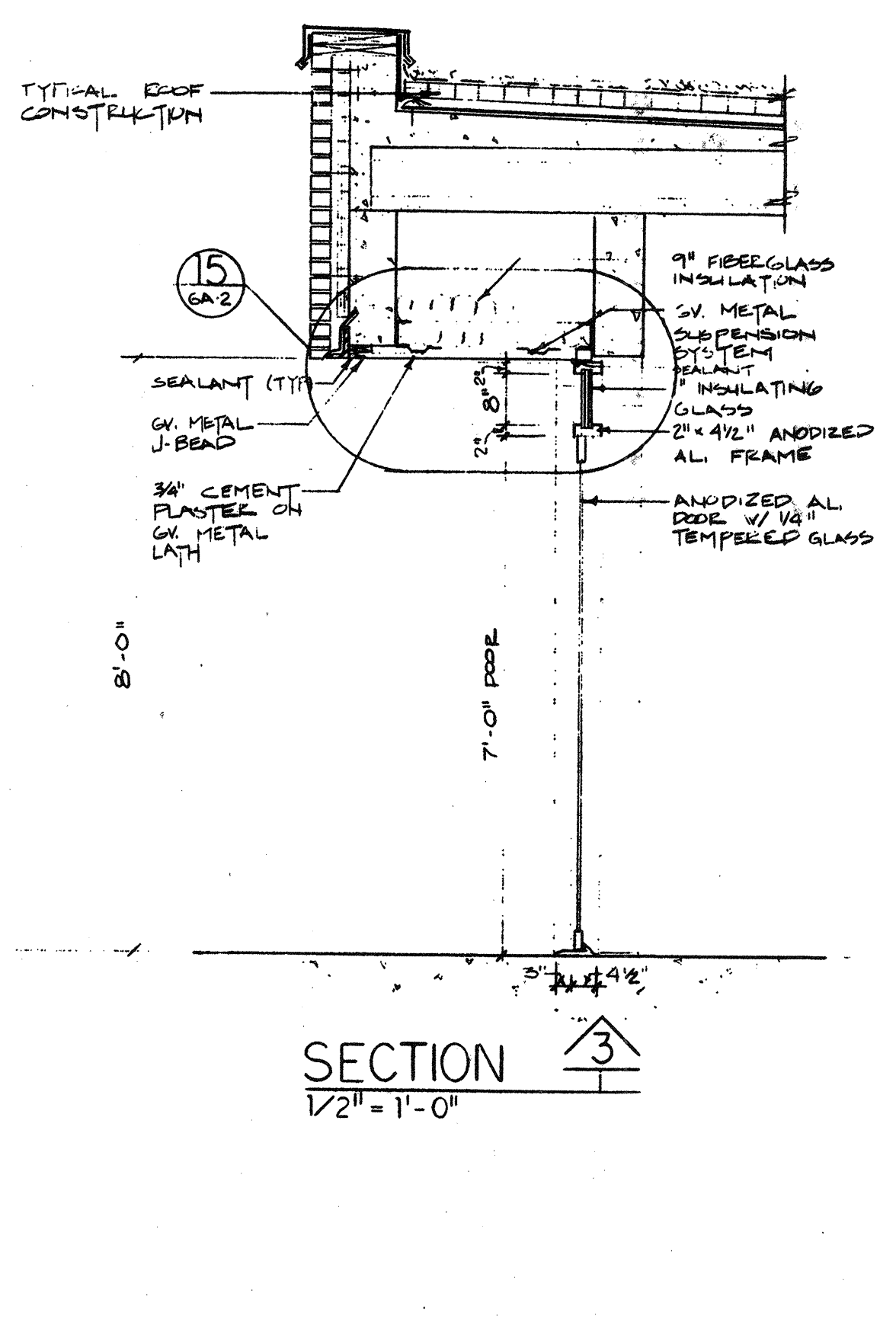
DESIGNED	DRAWN	CHECKED	SCALE	DATE
K.A.S.	L.B.B.	K.A.S.	AS NOTED	SEPT., 1989



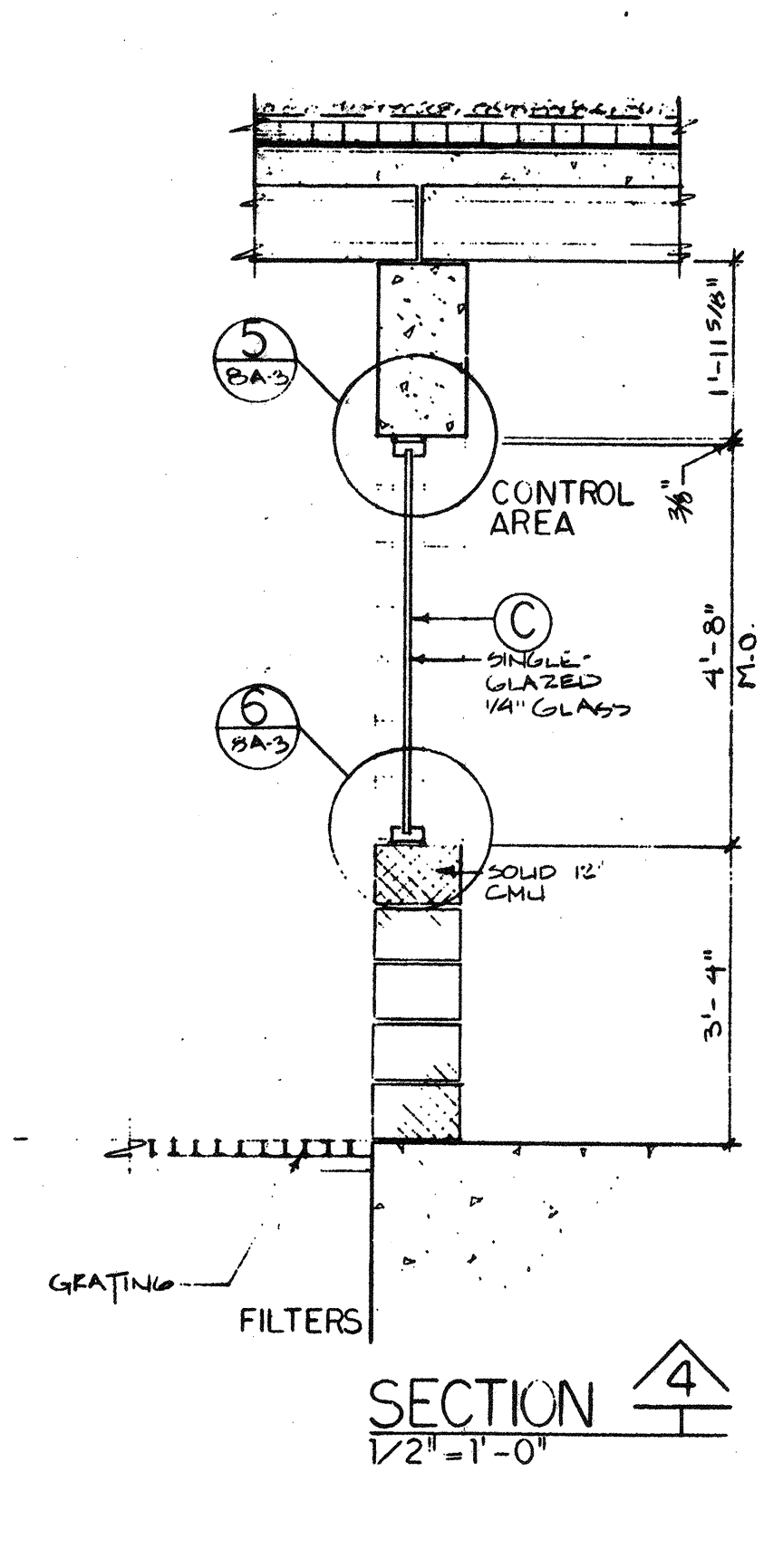
SECTION 1
1/2" = 1'-0"



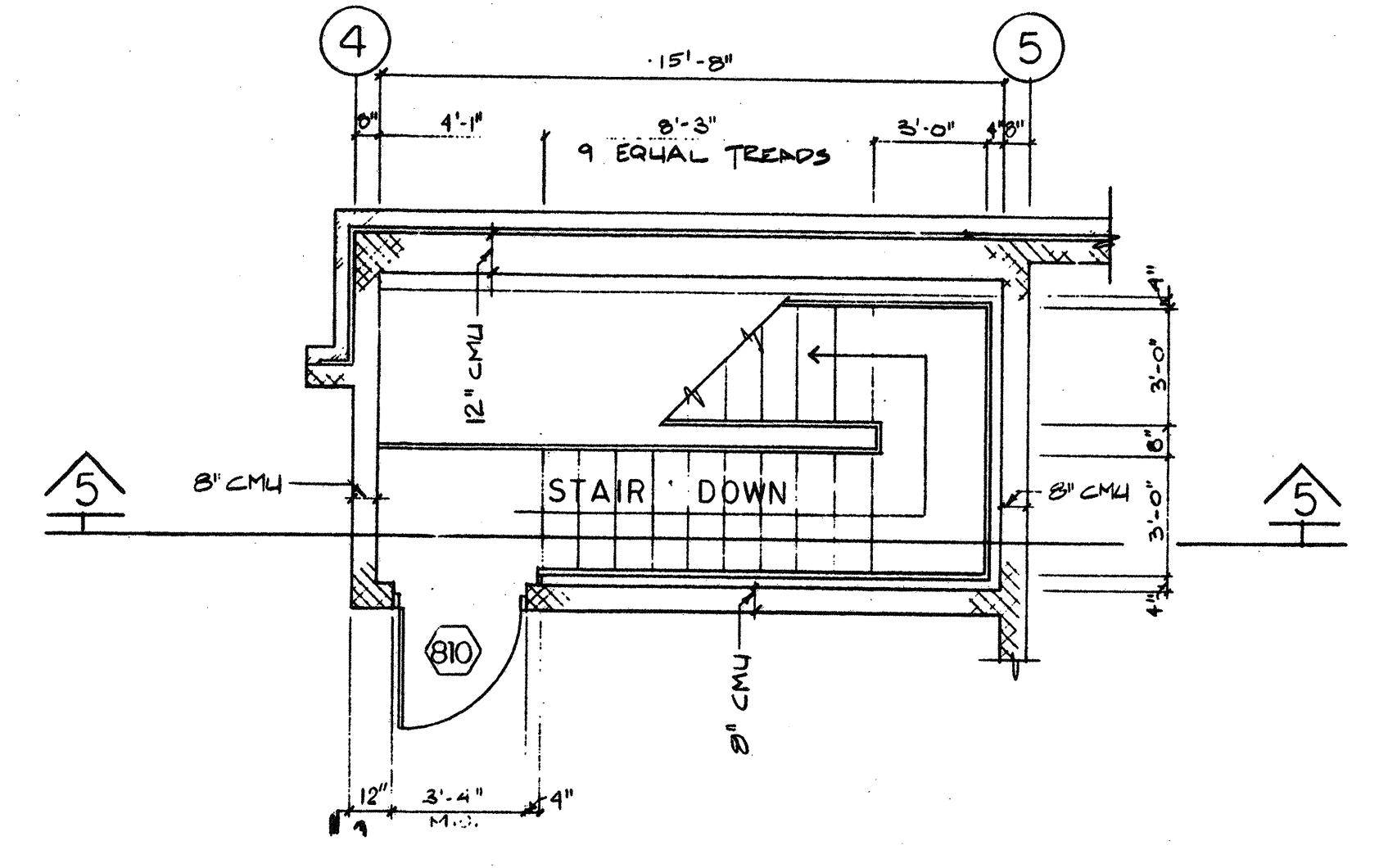
SECTION 2
1/2" = 1'-0"



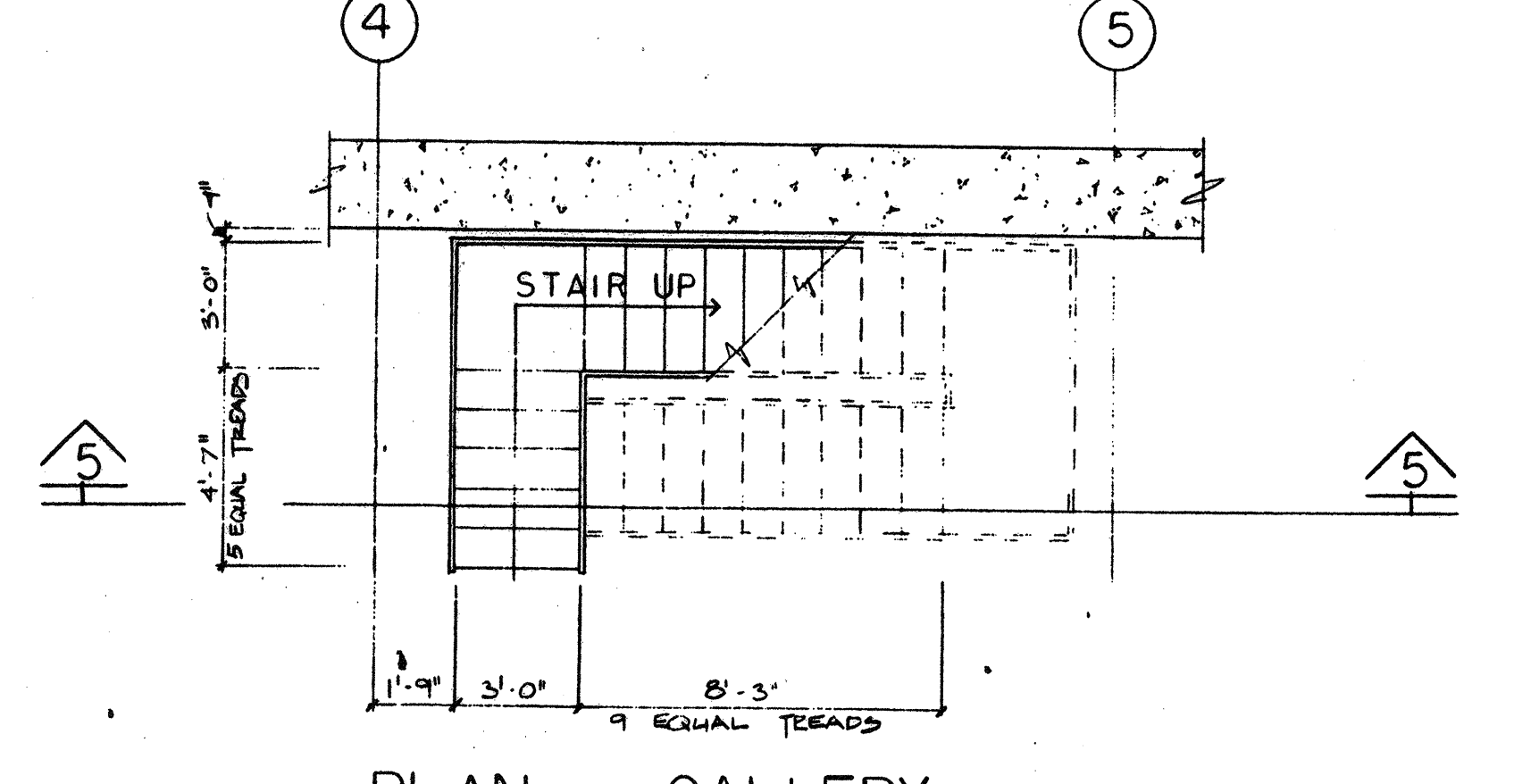
SECTION 3
1/2" = 1'-0"



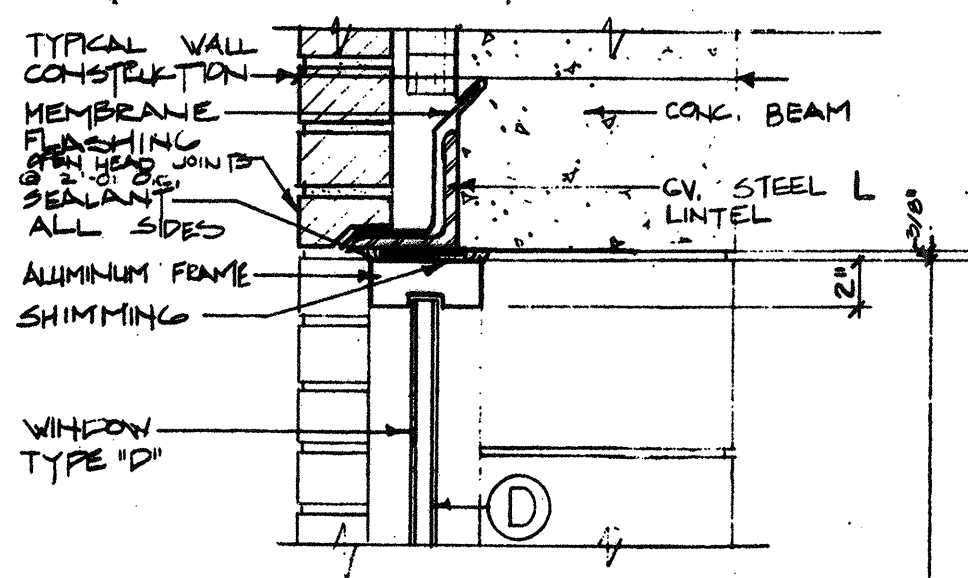
SECTION 4
1/2" = 1'-0"



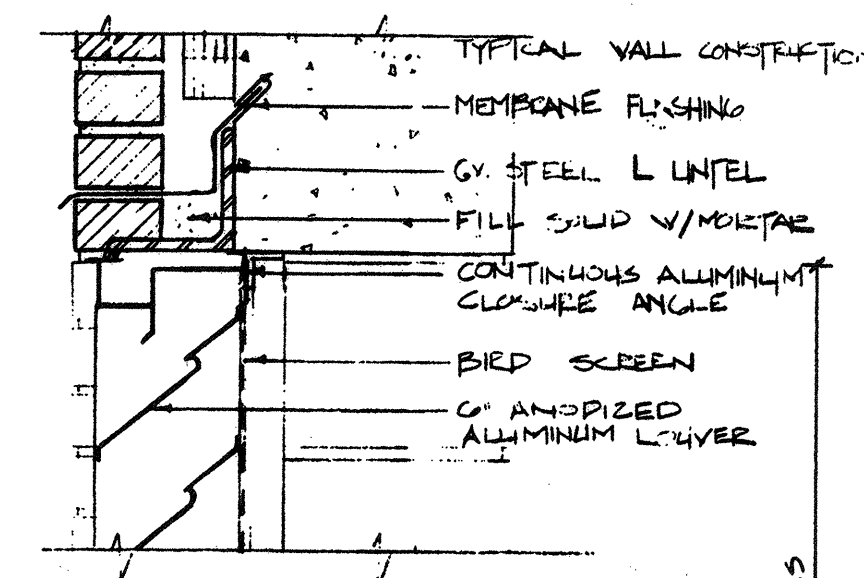
PLAN AT GROUND FLOOR
1/4" = 1'-0"



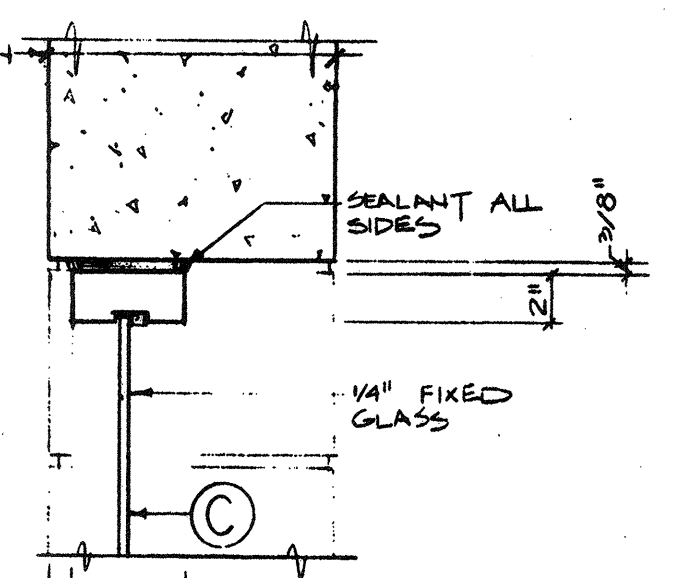
PLAN AT GALLERY
1/4" = 1'-0"



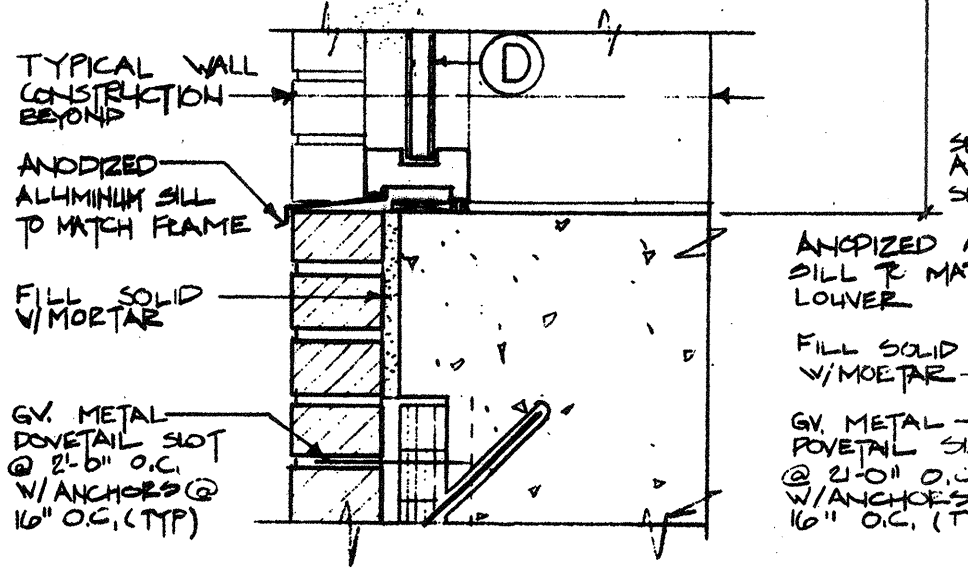
HEAD 1
1/2" = 1'-0"



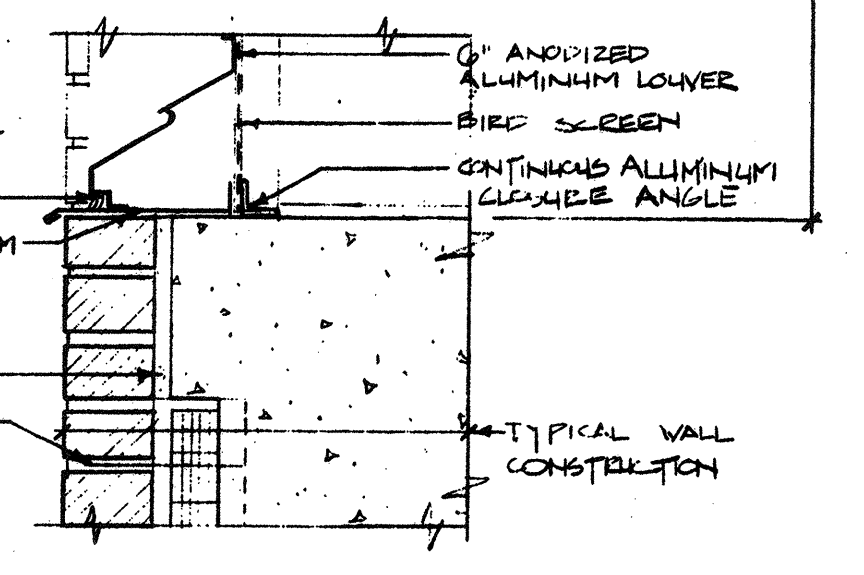
HEAD 3
1/2" = 1'-0"



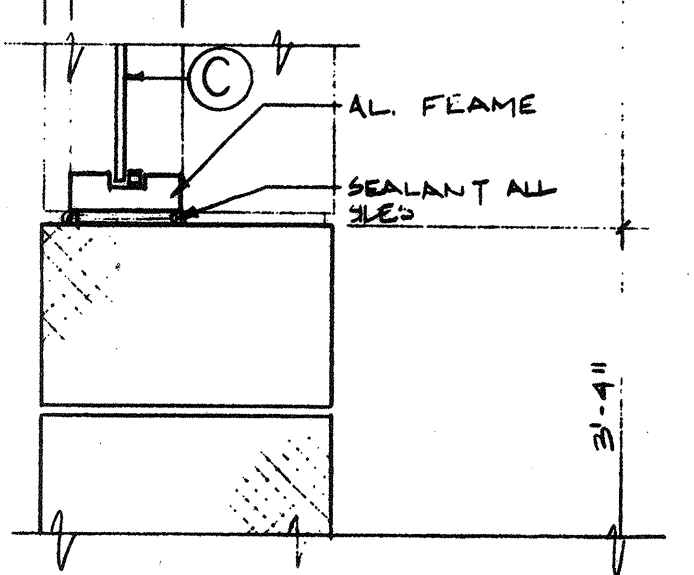
HEAD 5
1/2" = 1'-0"



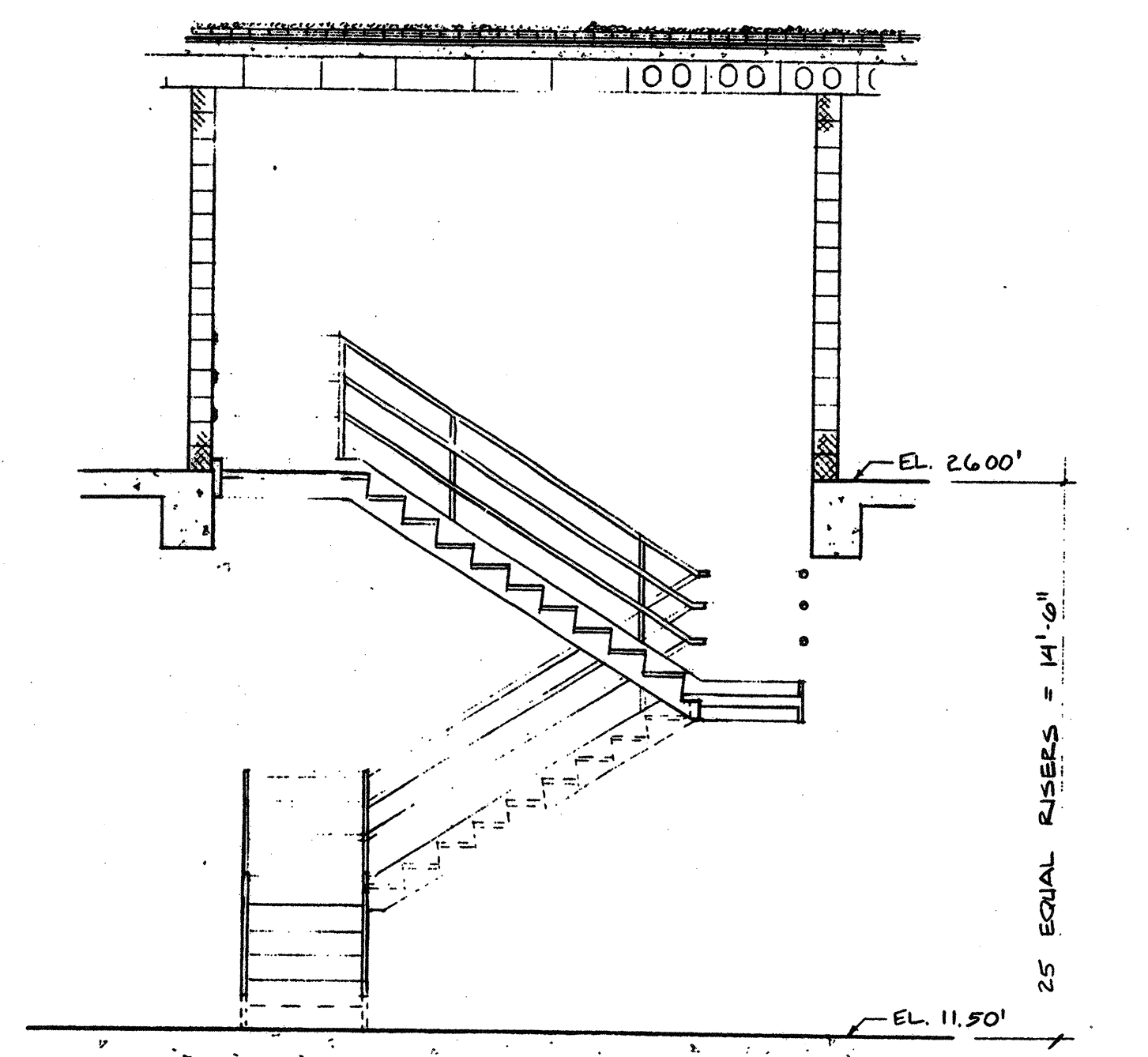
SILL 2
1/2" = 1'-0"



SILL 4
1/2" = 1'-0"



SILL 6
1/2" = 1'-0"



SECTION 5
1/4" = 1'-0"

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
7	DRAWING ADDED SEPTEMBER	1989
REVISIONS		

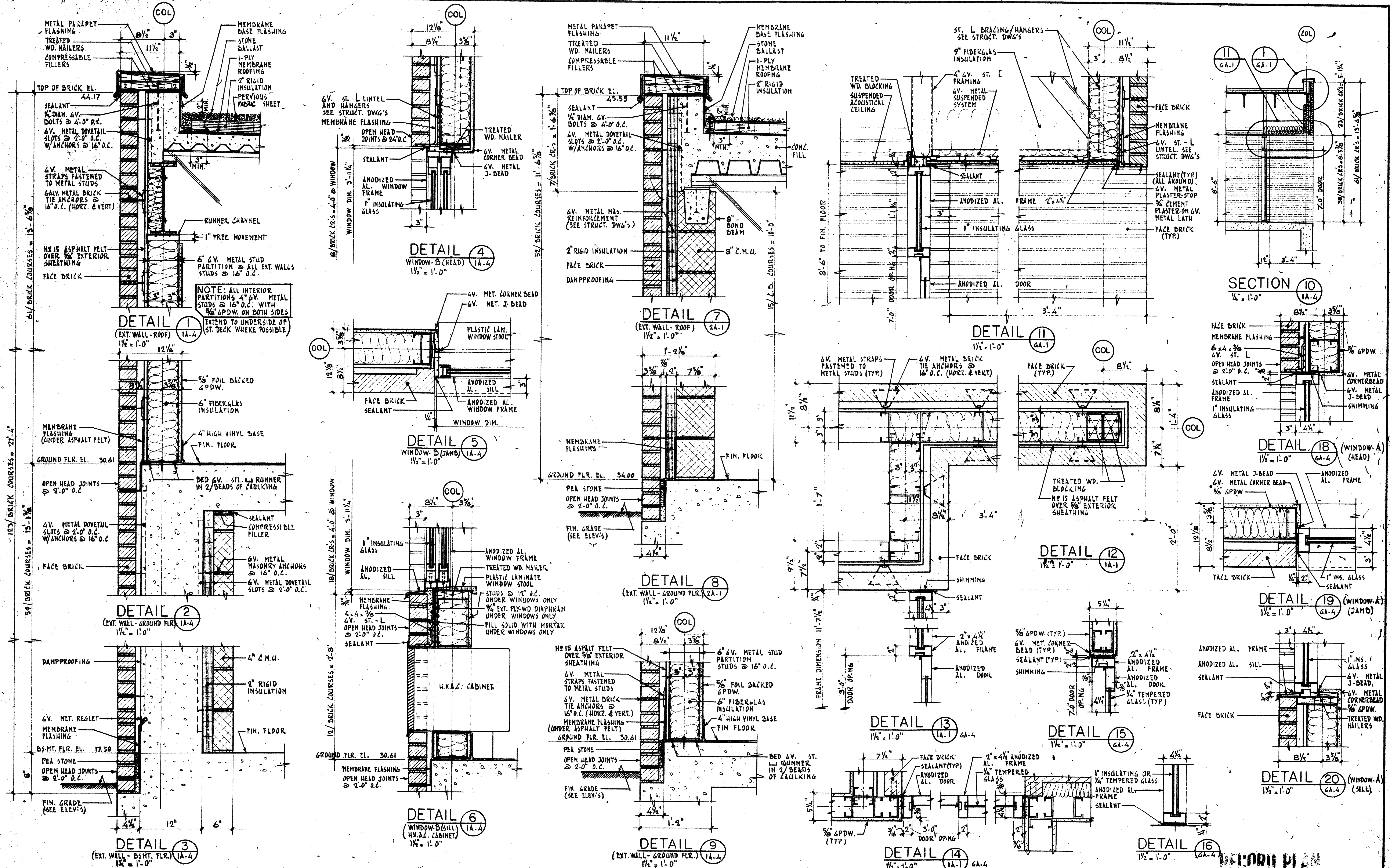
WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.

John A. Walker



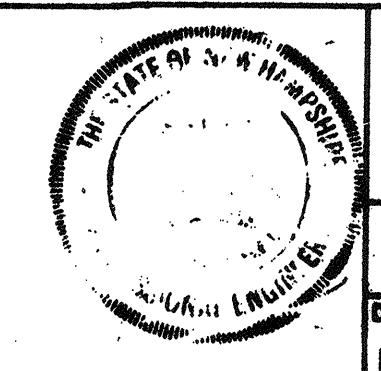
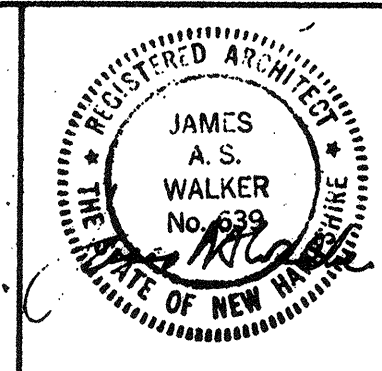
ORIGINAL FULL SIZE DRAWING = 4"			
REPRODUCTIONS MAY BE REDUCED SIZE			
DRAWING NO. 8A-3		JOB NO. 85-163	
APPROVED		CONTRACT NO. 3	
DESIGNED/DRAWN K.A.S. L.B.B.	CHECKED K.A.S.	SCALE AS NOTED	DATE SEPT., 1989
SHEET 20 OF 106 SHEETS			

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
FILTER BUILDING
WALL SECTION - DETAILS



NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-83
1	Drawing Revised	9/82

WHITMAN & HOWARD, INC.
 46 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING - 4"
 REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen F. Seigel*

DESIGNED/DRAWN: K.A.S. F.Z. CHECKED/SCALE: K.A.S. AS NOTED DATE: SEPT., 1985

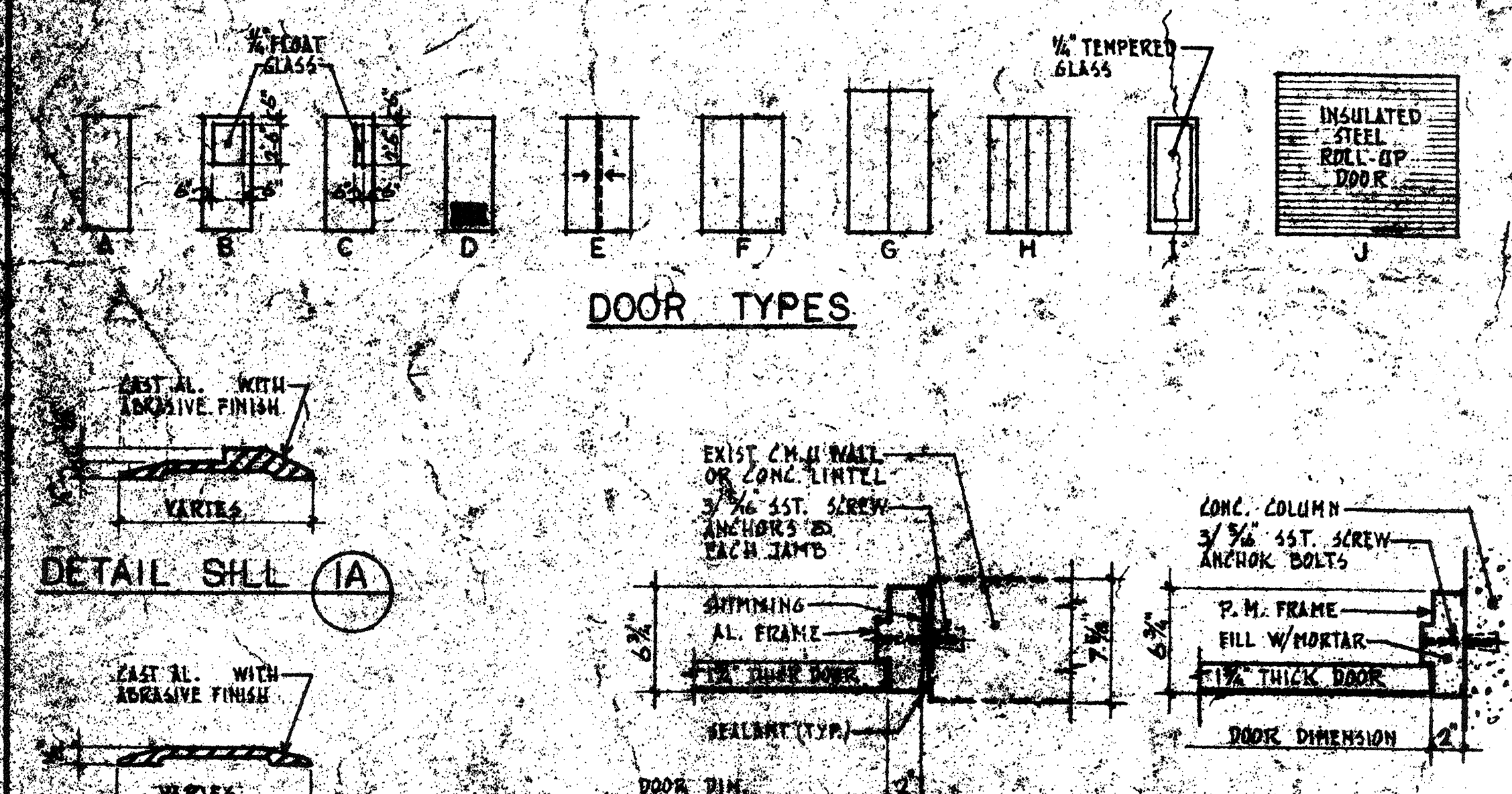
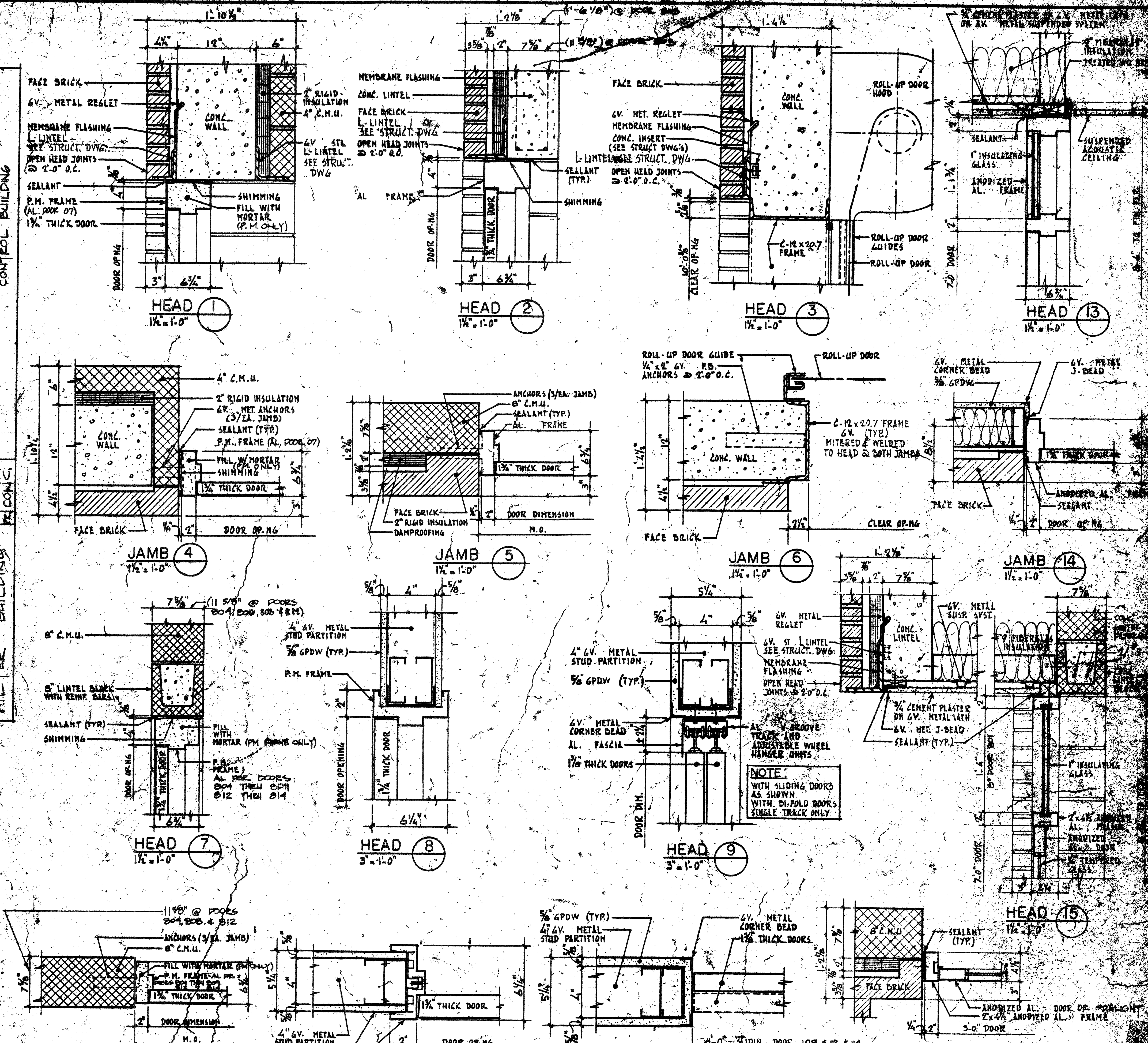
DRAWING NO. GA-1
 JOB NO. 85-163
 CONTRACT NO. 3

WASTEWATER TREATMENT FACILITY
 PORTSMOUTH, N. H.
 WALL SECTIONS AND DETAILS

SHEET 21 OF 106 SHEETS

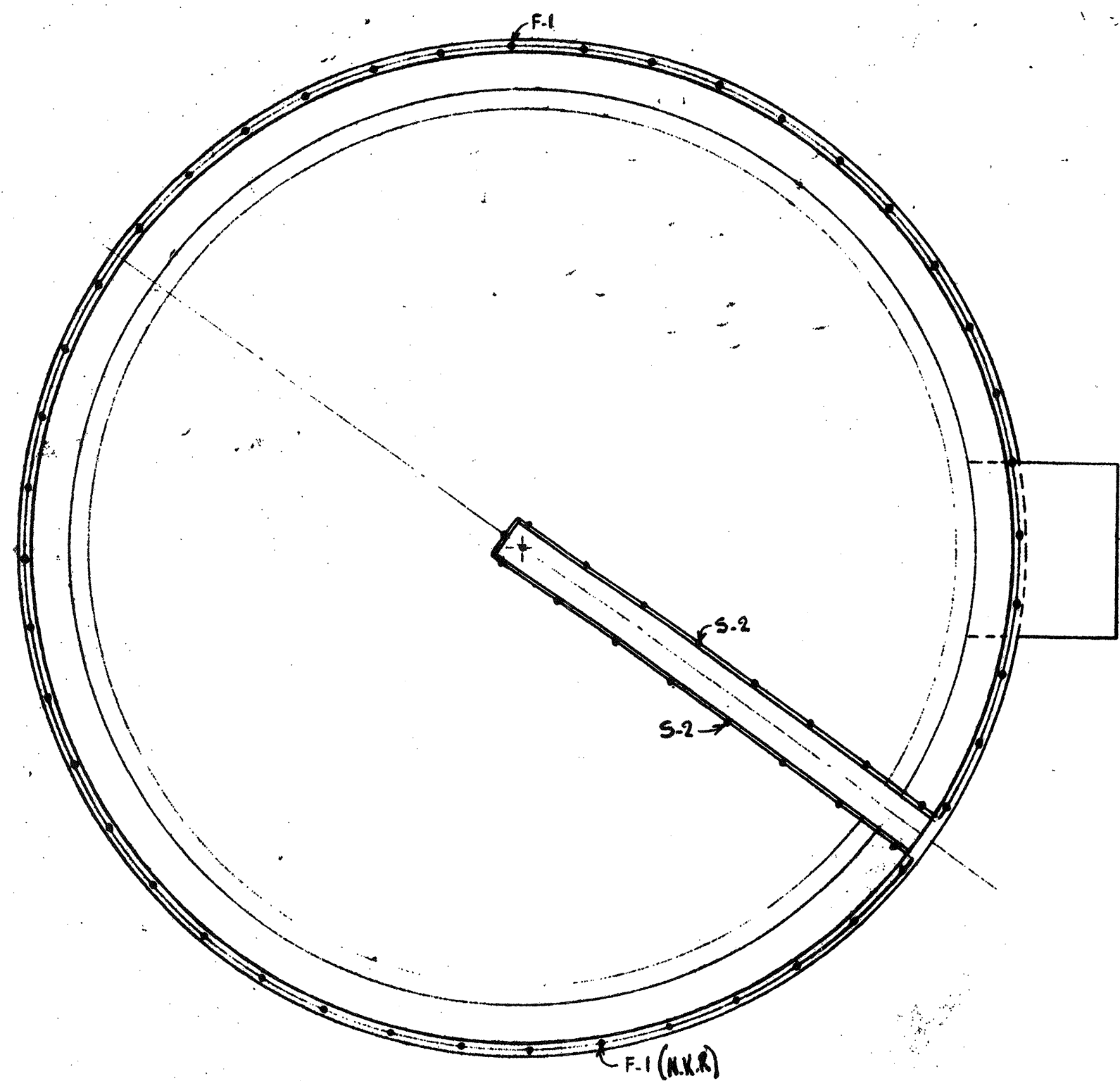
DOOR SCHEDULE

DOOR NO.	DOORS		FRAMES			REMARKS	DOOR NO.
	OPENING SIZE WIDTH x HEIGHT	MATL.	TYPE	HEAD	JAMB		
01	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	01
02	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	02
03	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	03
04	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	04
05	3'-0" x 7'-0"	H.M.	A	7	10/10A	B LABEL	05
06	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	06
07	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	07
08	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	08
09	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	09
10	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	10
11	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	11
12	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	12
13	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	13
14	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	14
15	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	15
16	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	16
17	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	17
18	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	18
19	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	19
20	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	20
21	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	21
22	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	22
23	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	23
24	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	24
25	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	25
26	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	26
27	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	27
28	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	28
29	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	29
30	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	30
31	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	31
32	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	32
33	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	33
34	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	34
35	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	35
36	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	36
37	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	37
38	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	38
39	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	39
40	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	40
41	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	41
42	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	42
43	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	43
44	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	44
45	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	45
46	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	46
47	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	47
48	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	48
49	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	49
50	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	50
51	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	51
52	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	52
53	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	53
54	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	54
55	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	55
56	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	56
57	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	57
58	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	58
59	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	59
60	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	60
61	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	61
62	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	62
63	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	63
64	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	64
65	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	65
66	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	66
67	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	67
68	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	68
69	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	69
70	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	70
71	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	71
72	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	72
73	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	73
74	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	74
75	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	75
76	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	76
77	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	77
78	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	78
79	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	79
80	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	80
81	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	81
82	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	82
83	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	83
84	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	84
85	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	85
86	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	86
87	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	87
88	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	88
89	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	89
90	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	90
91	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	91
92	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	92
93	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	93
94	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	94
95	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	95
96	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	96
97	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	97
98	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	98
99	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	99
100	3'-0" x 7'-0"	H.M.	A	7	10	B LABEL	100

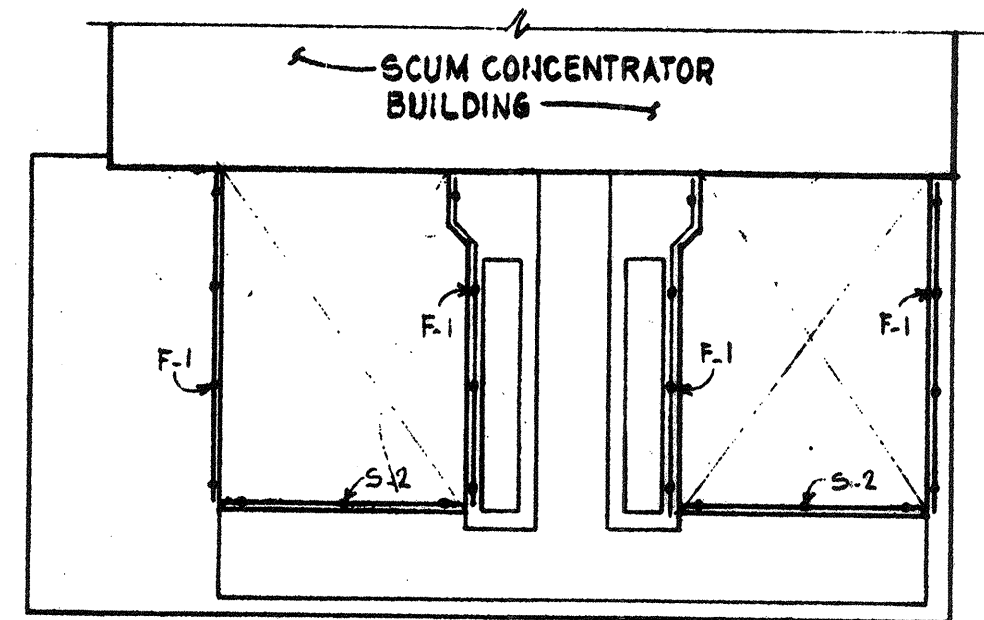


RECORD PLAN

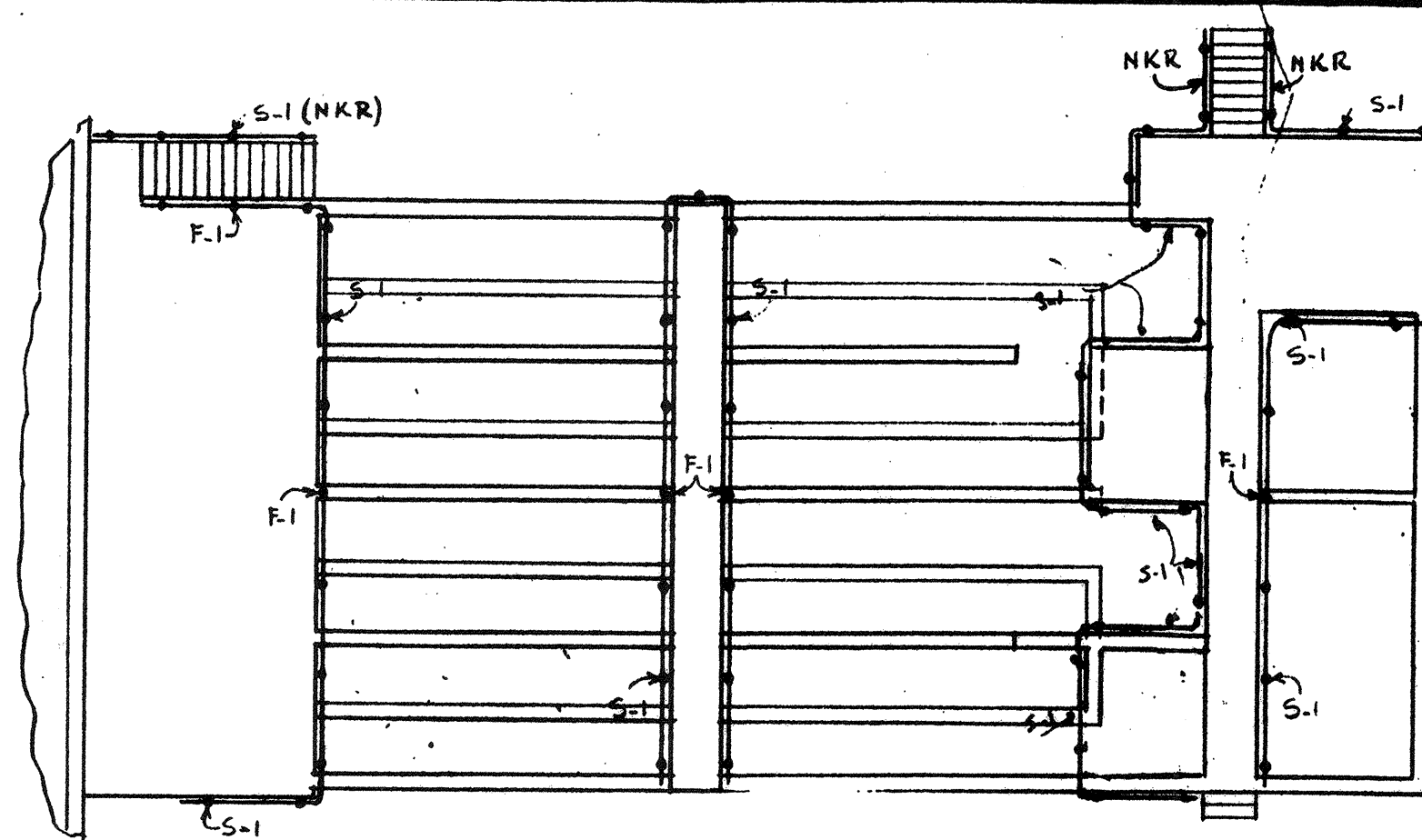
WHITMAN & HOWARD, INC. 45 WILLIAM STREET, WELLESLEY, MASS.			ORIGINAL FULL SIZE DRAWING 4" REPRODUCTIONS MAY BE REDUCED SIZE	DRAWING NO. GA-2 JOB NO. 85-163 CONTRACT NO. 3	WASTEWATER TREATMENT FACILITY PORTSMOUTH, N. H. DOOR SCHEDULE AND DETAILS
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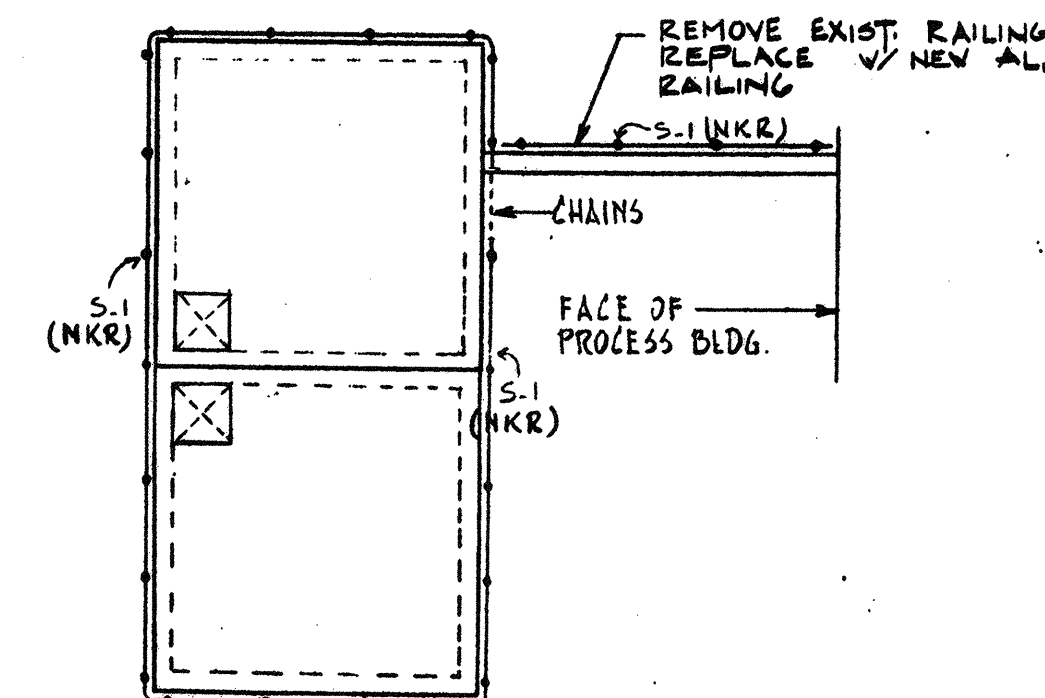
CLARIFIER
N.T.S. (2/CLARIFIERS)
(SEE DWG 45-1)



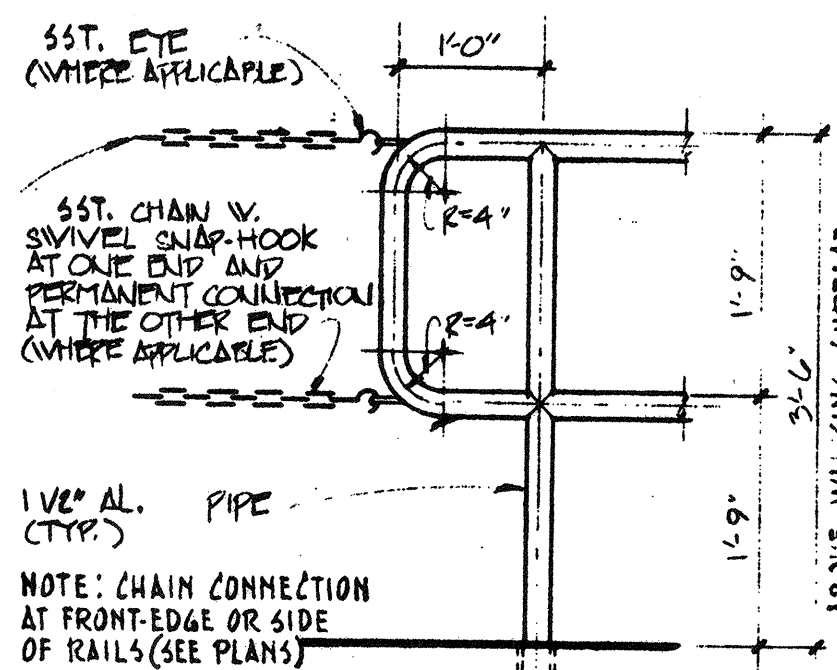
SCUM CONCENTRATOR BUILDING
AERATED GRIT CHAMBERS
3/4" = 1'-0"



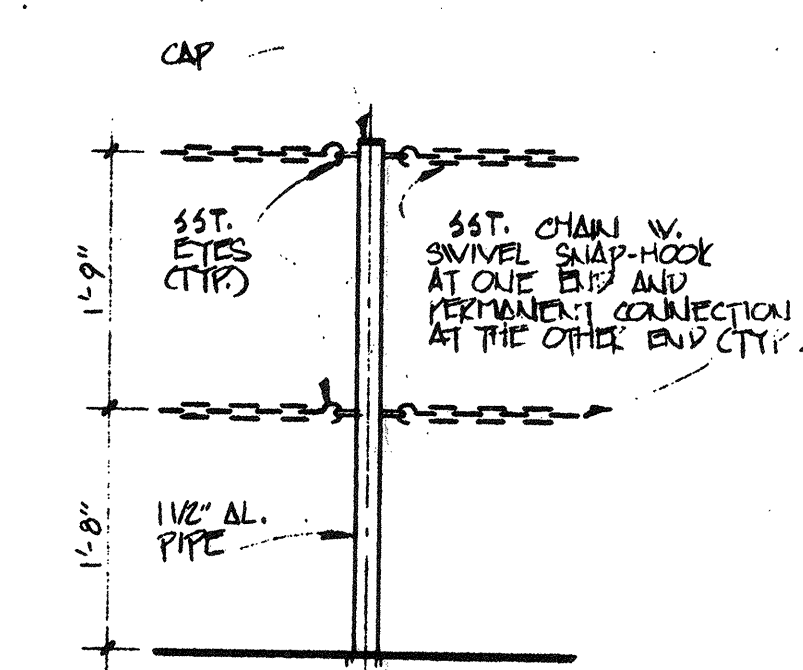
CHLORINE CONTACT TANK
3/4" = 1'-0" NOTE: REMOVE ALL EXIST. RAILING



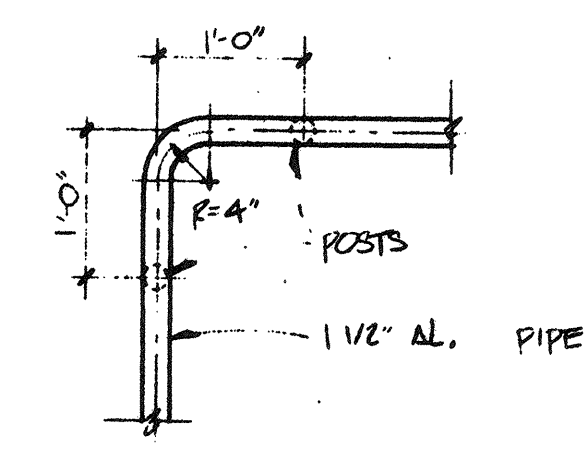
CHEMICAL STORAGE TANKS
N.T.S.



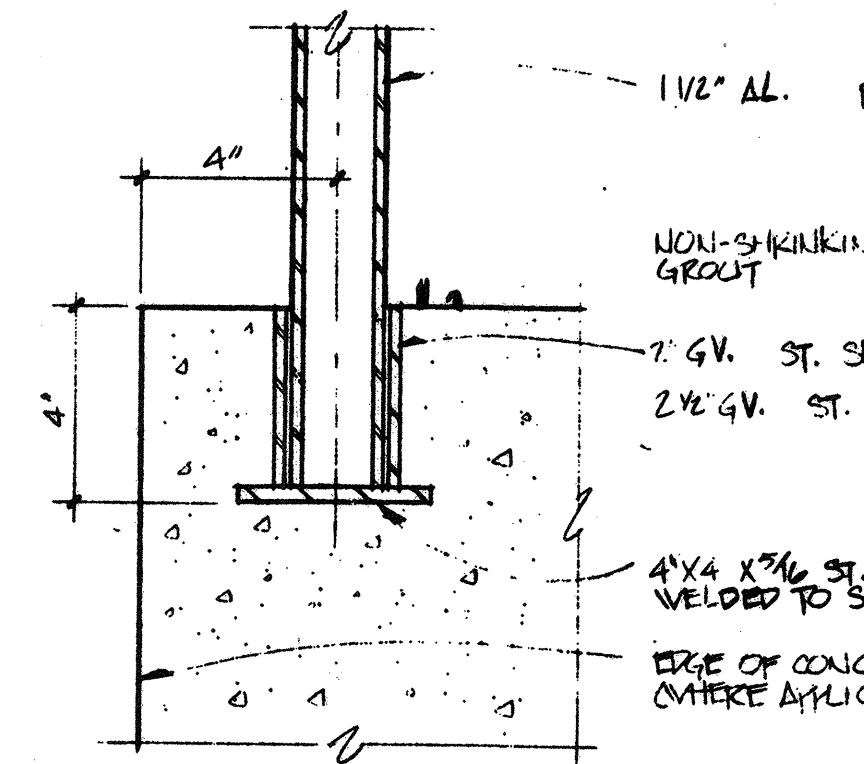
TYP. RAIL END
3/4" = 1'-0"



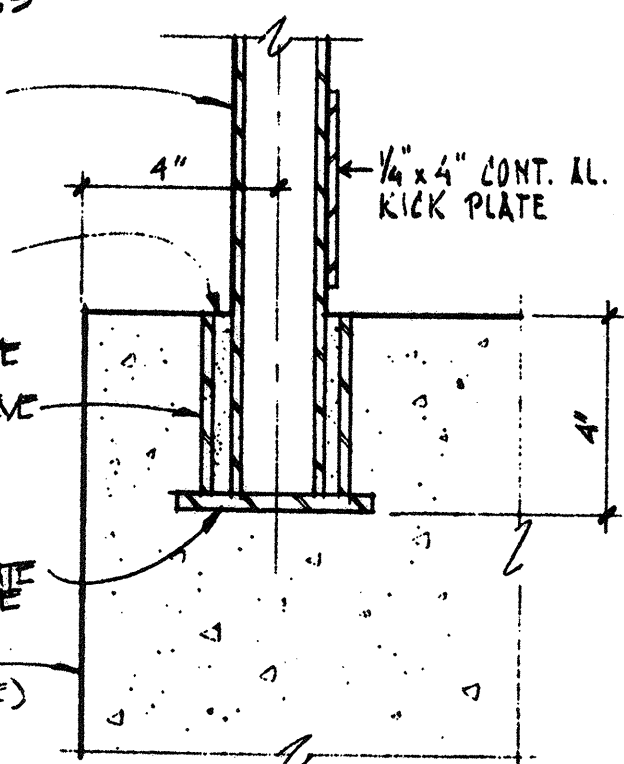
TYP. REMOVABLE POST
3/4" = 1'-0"



TOP-VIEW OF RAIL AND POSTS AT CORNER
3/4" = 1'-0"

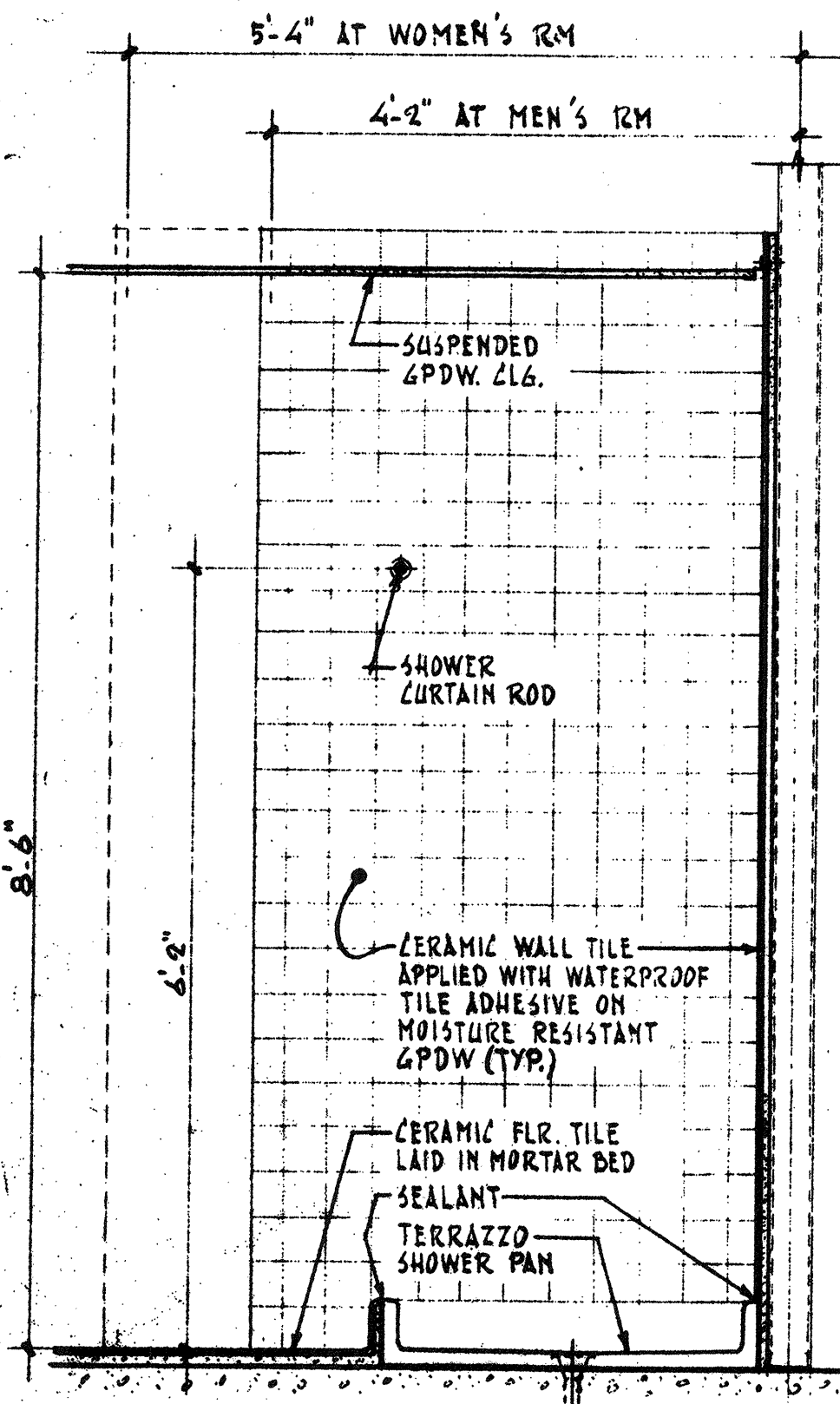


TYP. REMOVABLE POST (R-I)
3/4" = 1'-0"

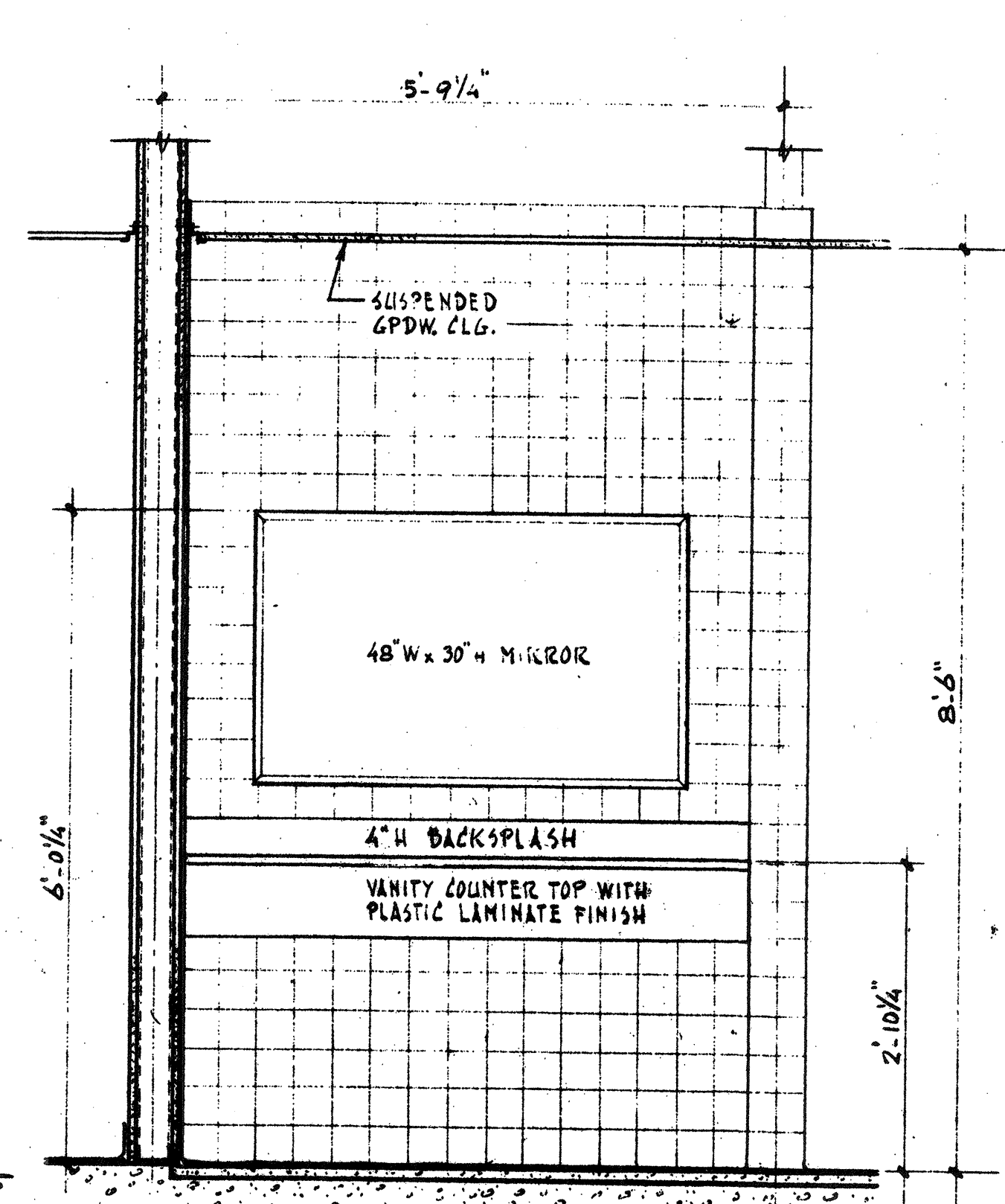


TYP. FIXED POST (F-I)
3/4" = 1'-0"

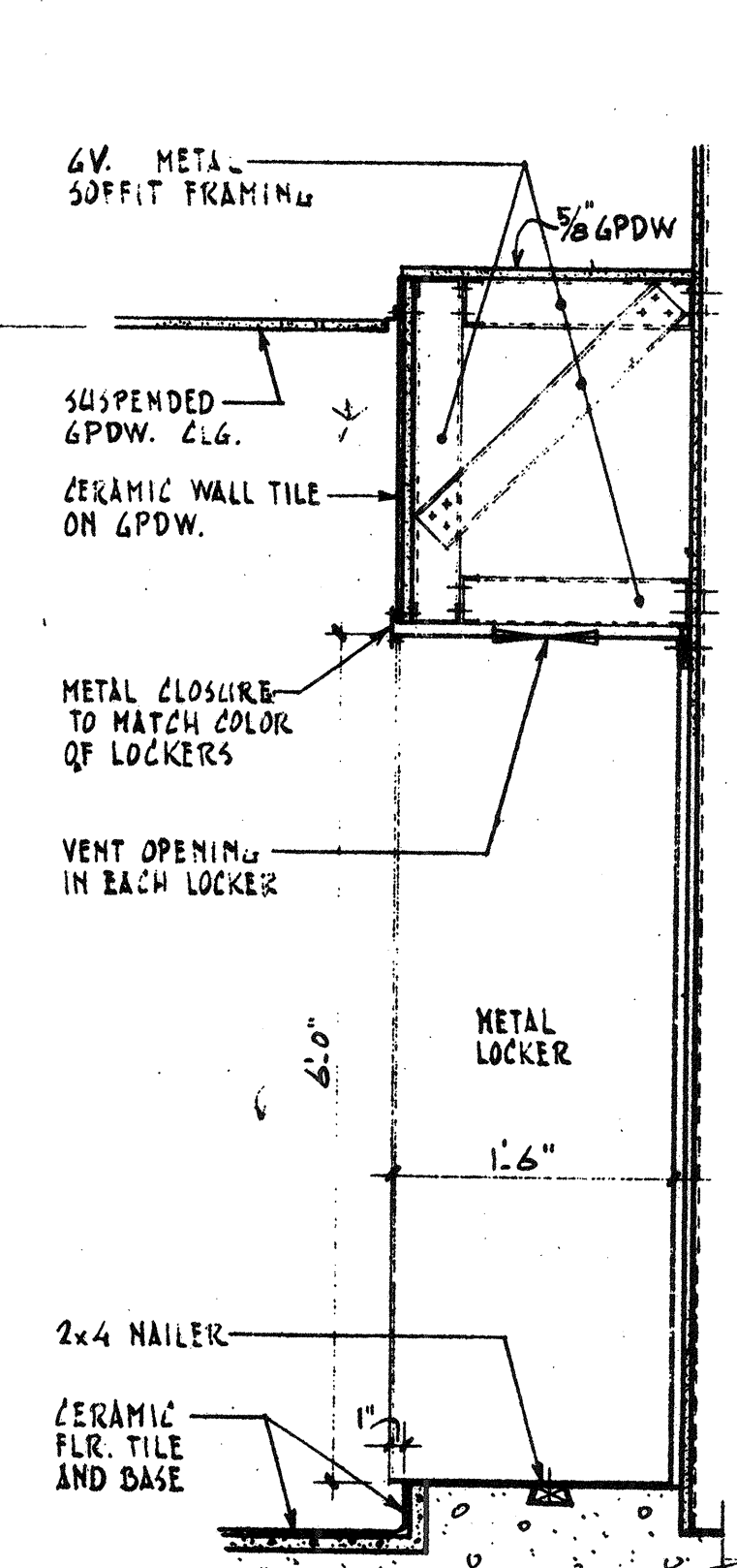
NOTE: KICK PLATES REQUIRED ON ALL RAILINGS SHOWN UNLESS NOTED MKR (NO KICKPLATE REQUIRED)



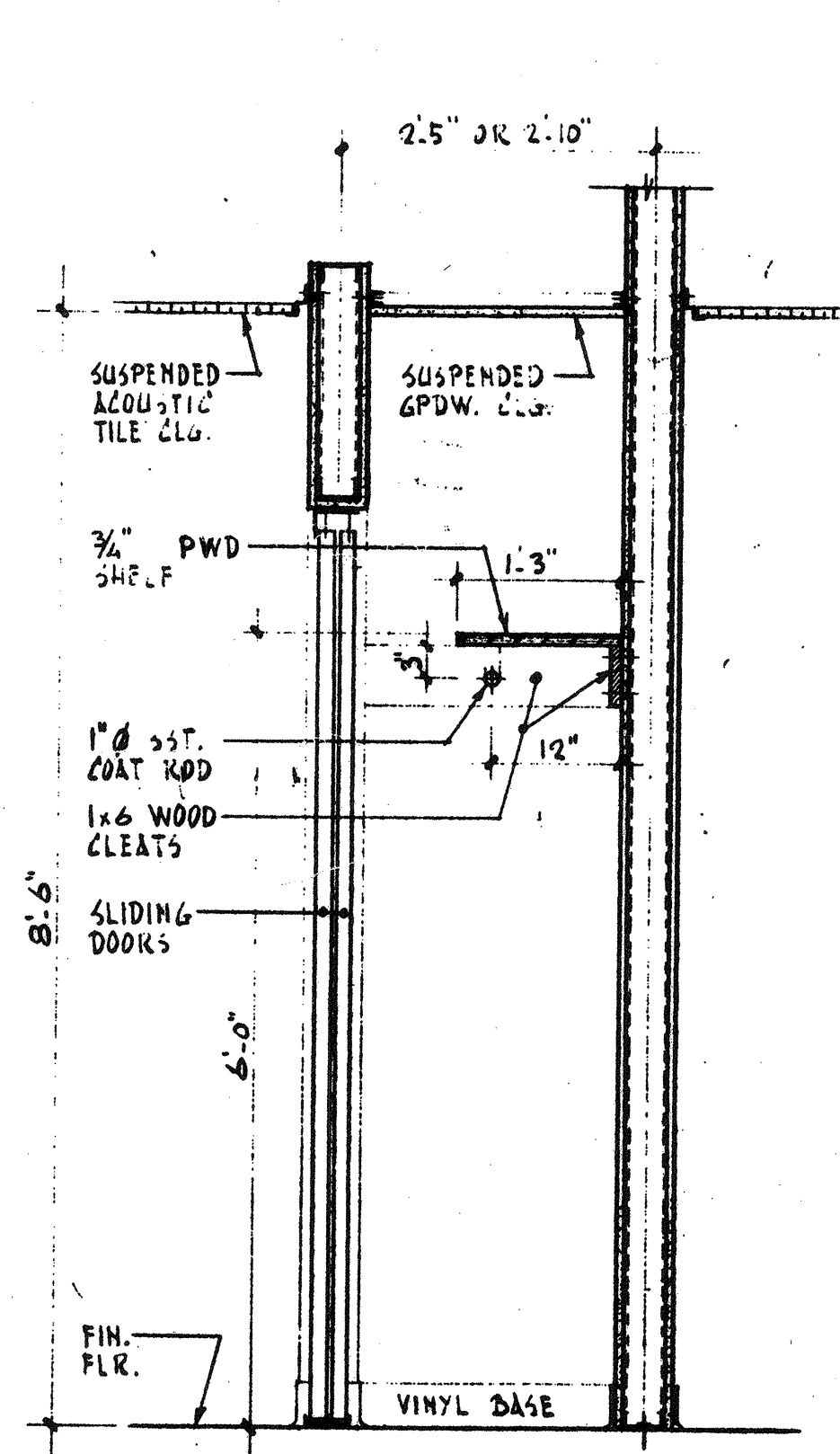
SECTION 1A-1
3/4" = 1'-0"



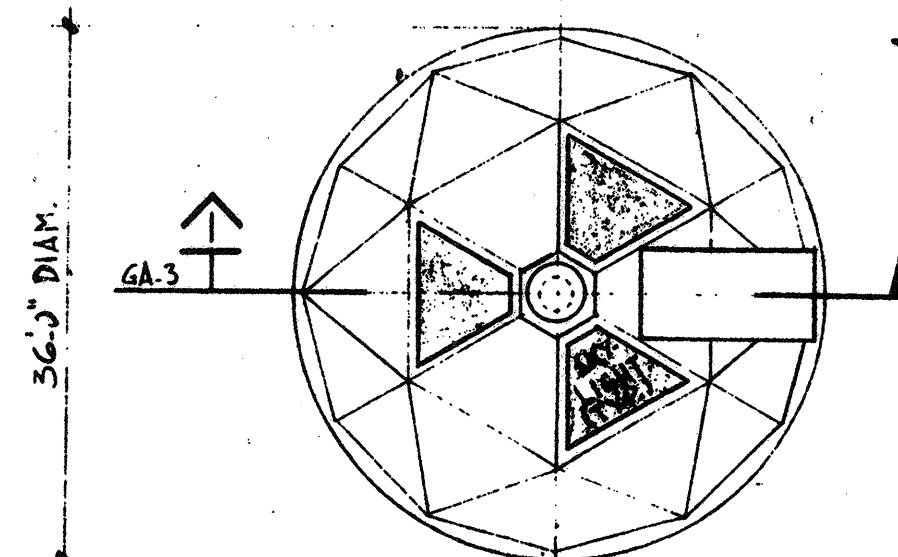
ELEVATION 1A-1
3/4" = 1'-0"



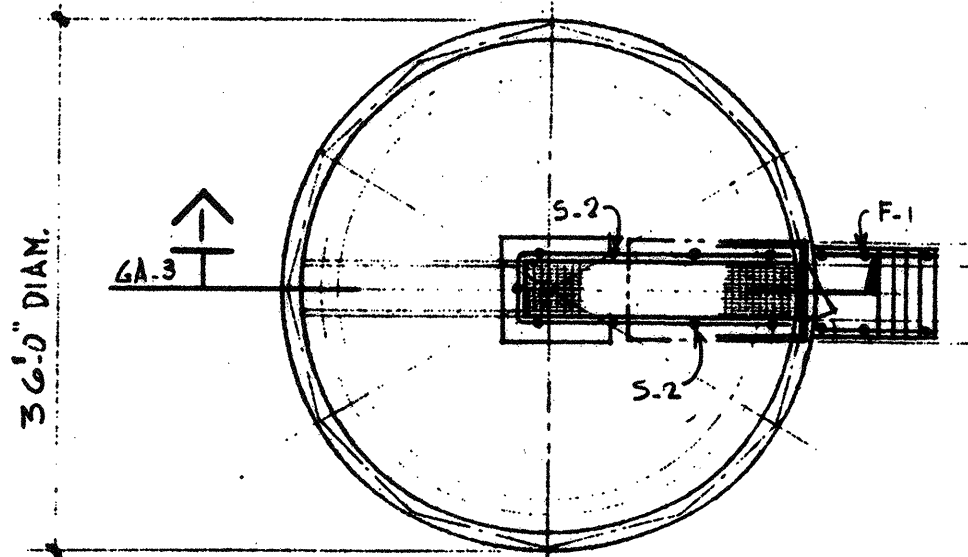
SECTION 1A-1
3/4" = 1'-0"



SECTION 2
3/4" = 1'-0"

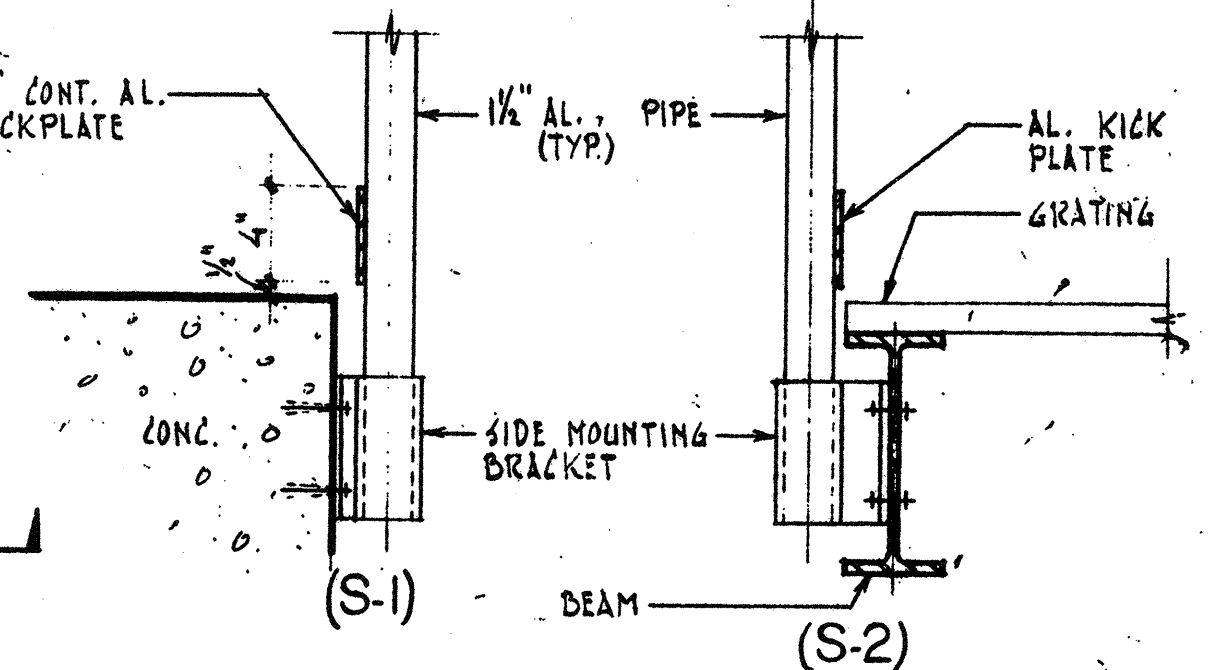


ROOF PLAN
N.T.S.

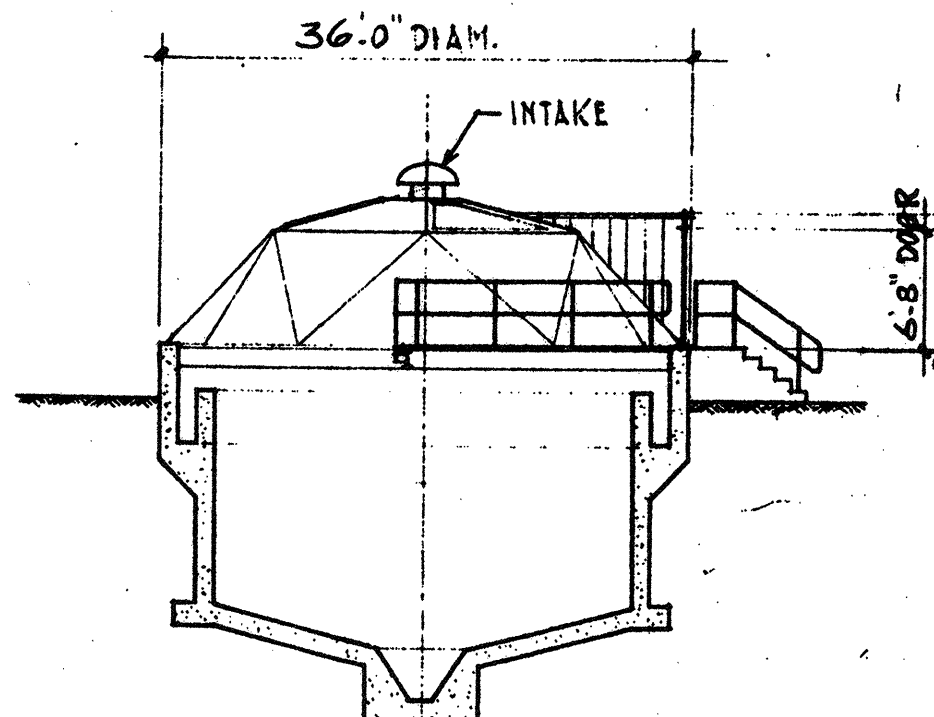


PLAN
N.T.S.

GRAVITY THICKENER (DOME)



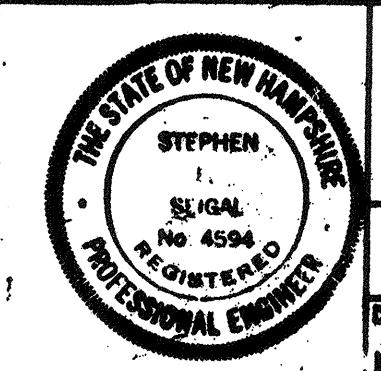
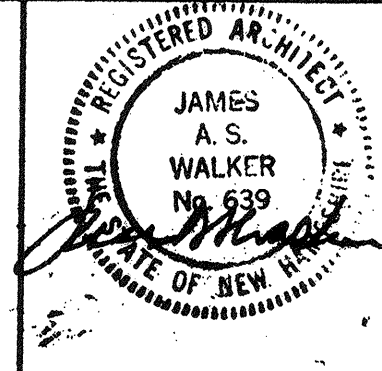
TYP. SIDE-MOUNTED POST
1/2" = 1'-0"



SECTION
N.T.S.

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING - 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen E. Seigel*
DESIGNED/DRAWN: K.A.S. F.Z. CHECKED: K.A.S. AS NOTED. SCALE: AS NOTED. DATE: SEPT., 1985

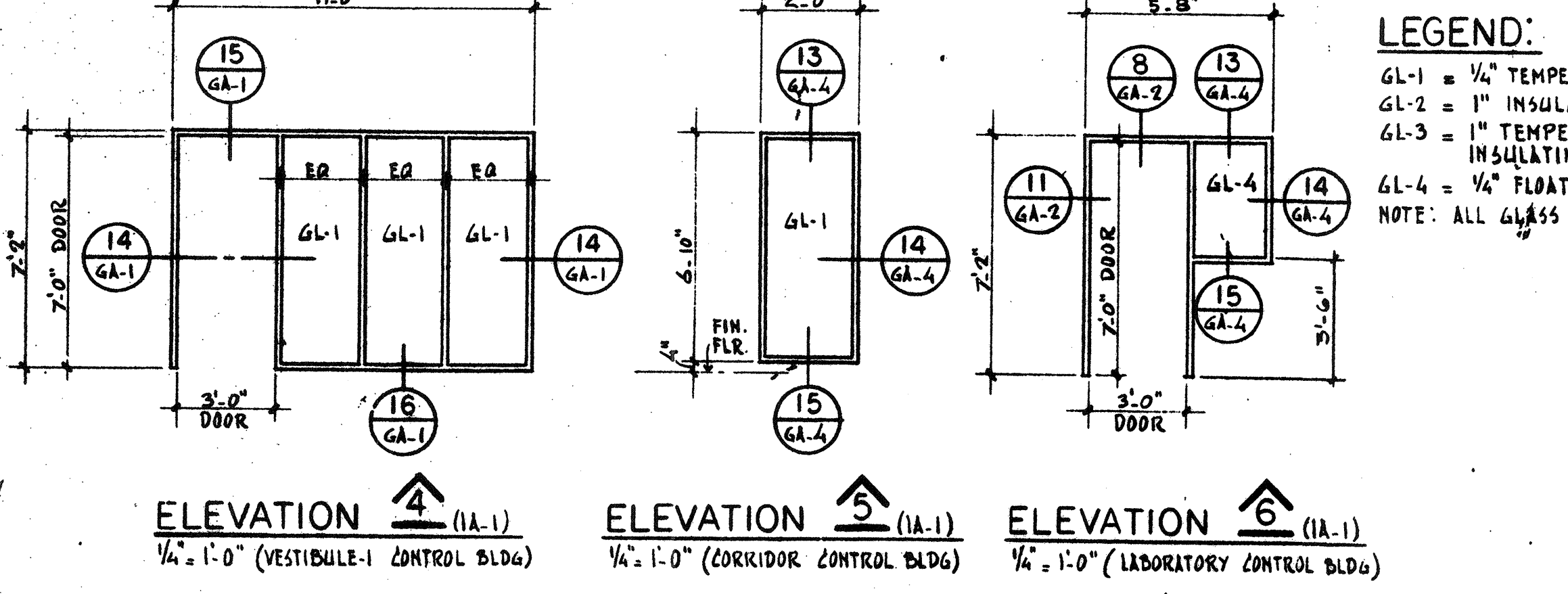
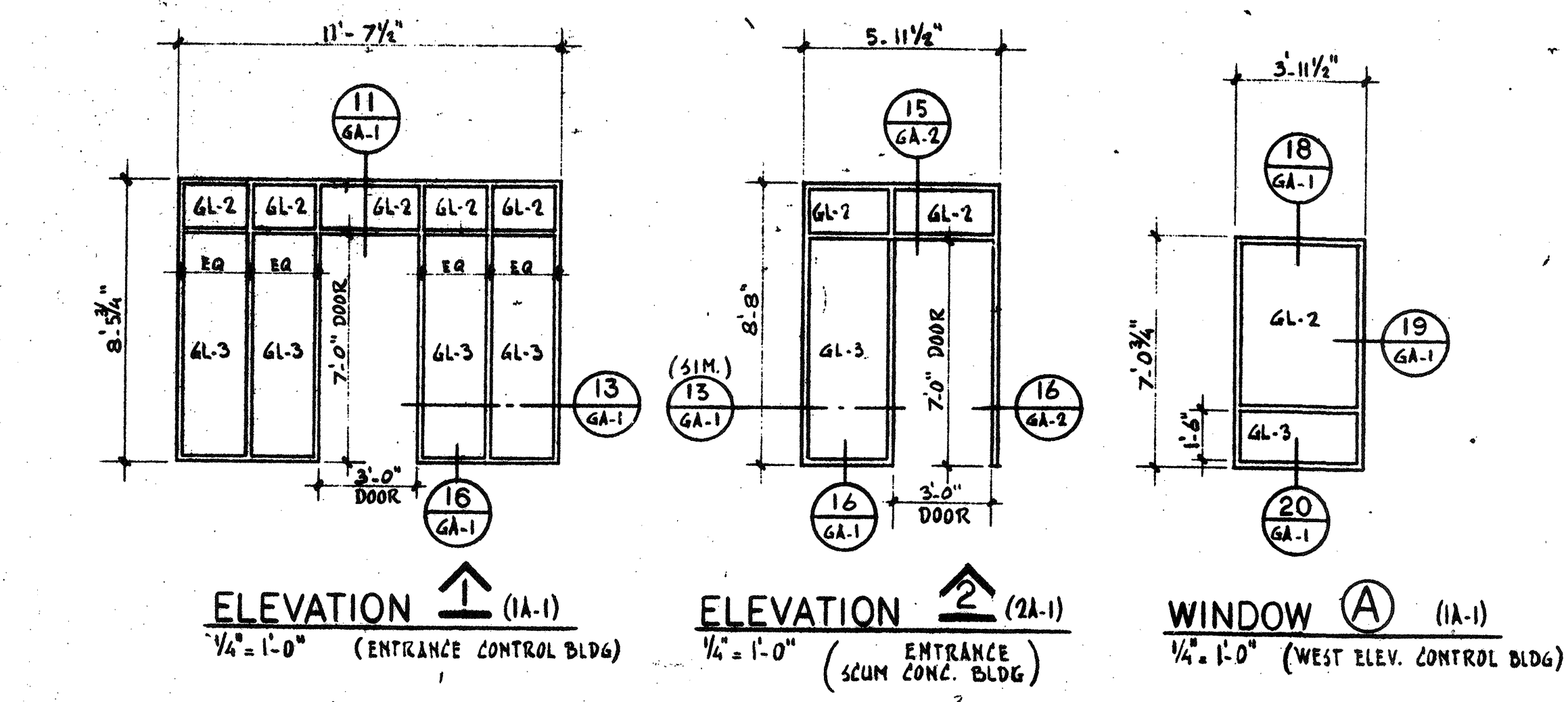
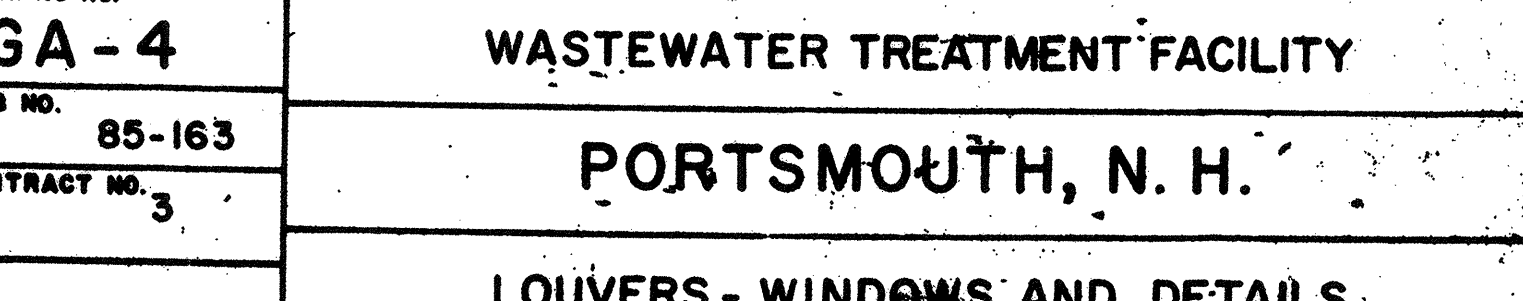
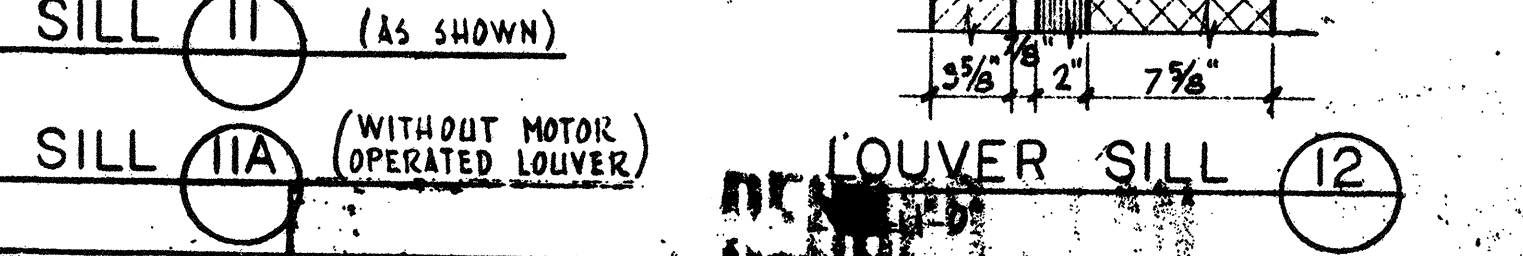
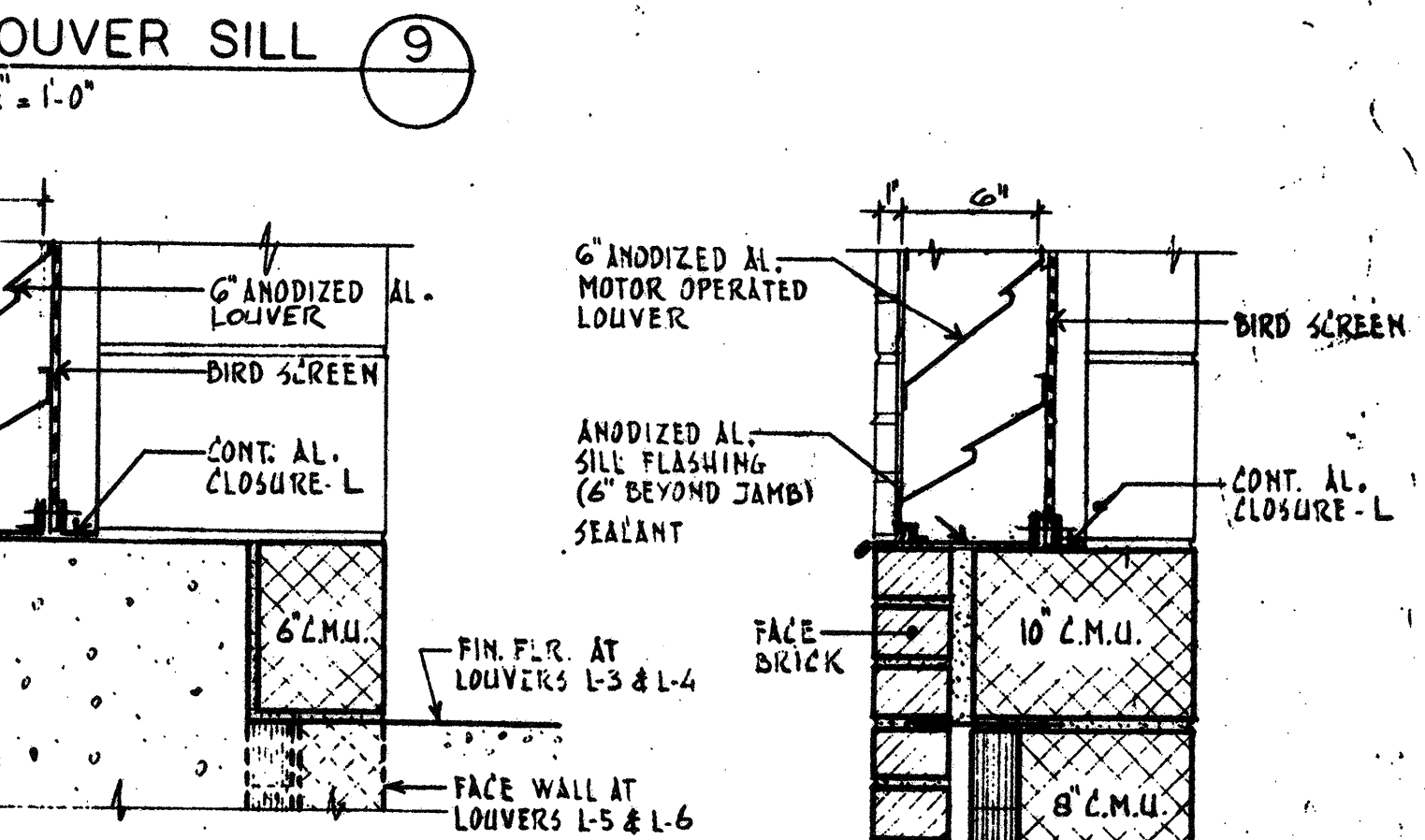
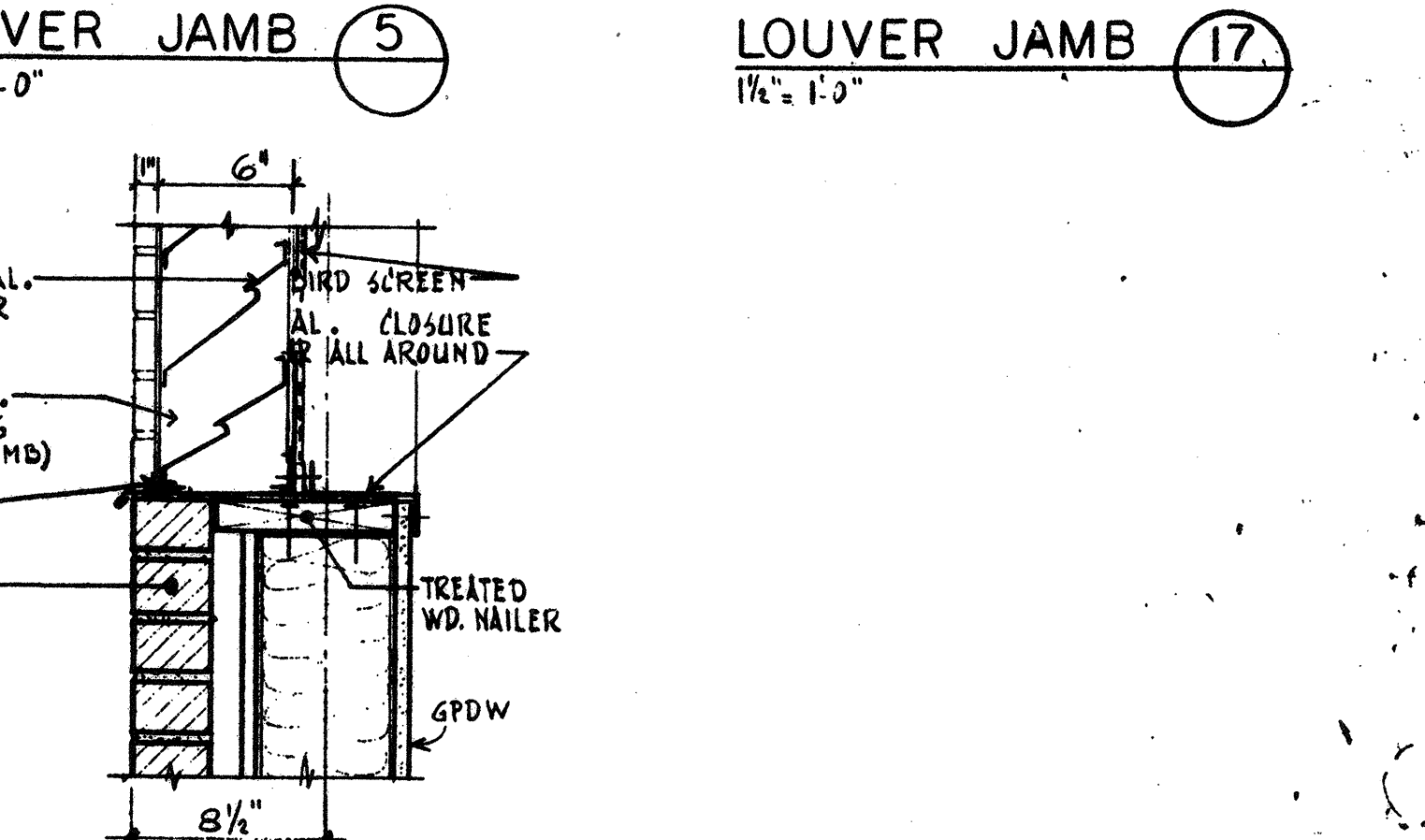
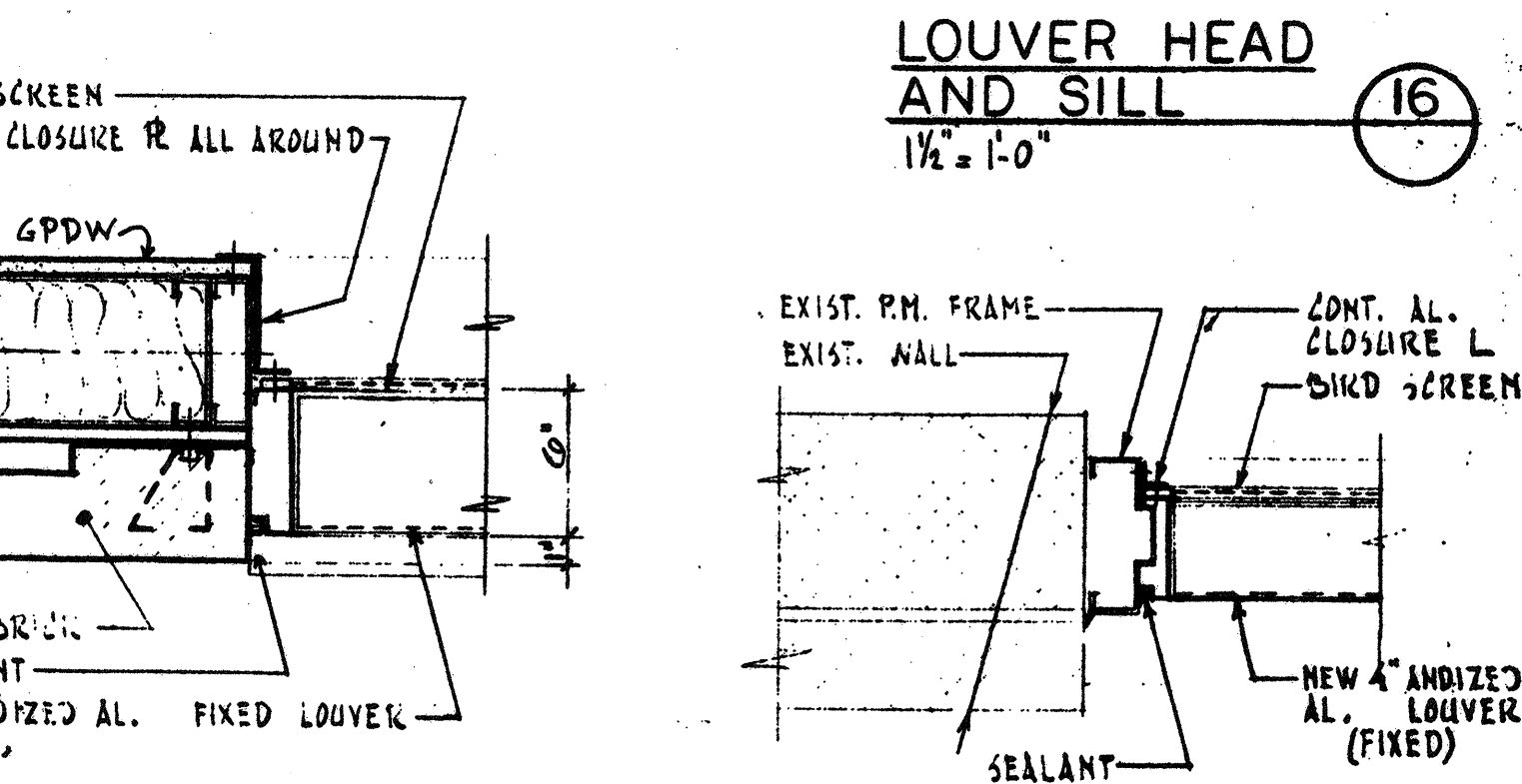
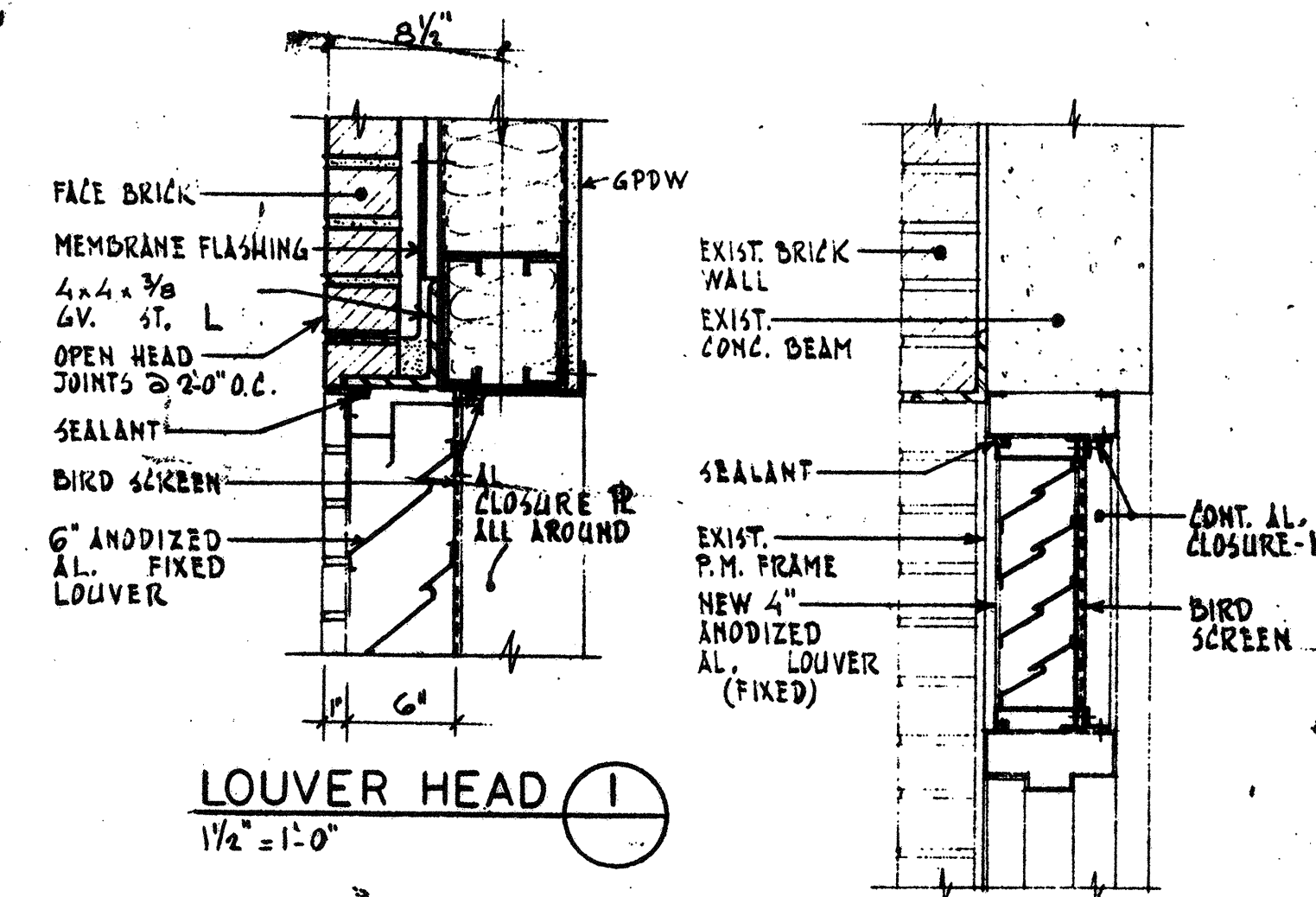
DRAWING NO. **GA-3**
JOB NO. 85-163
CONTRACT NO. 3

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.

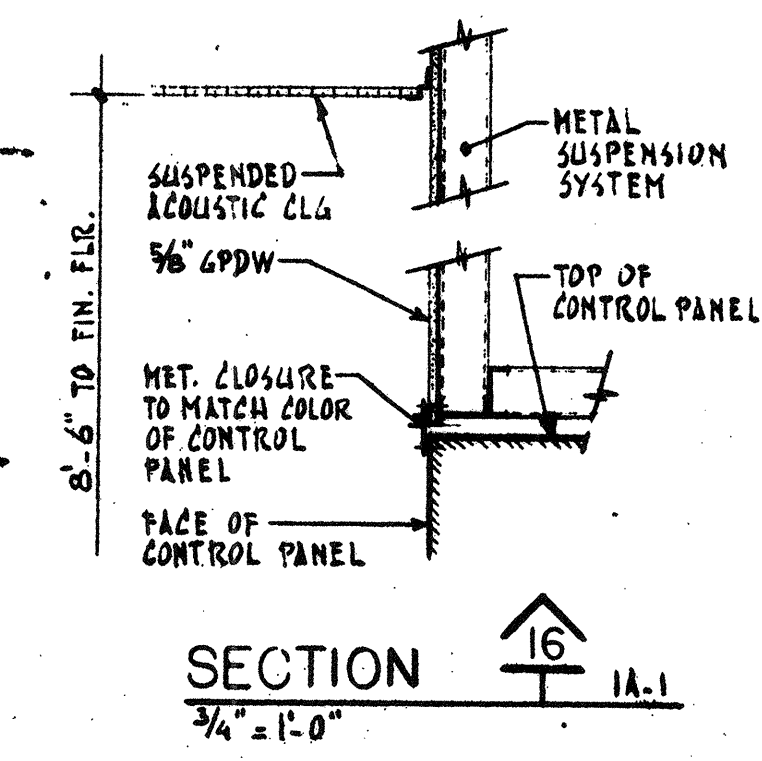
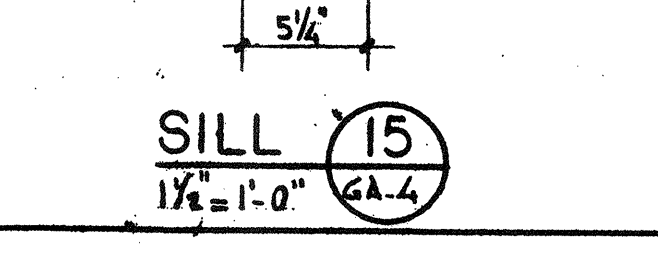
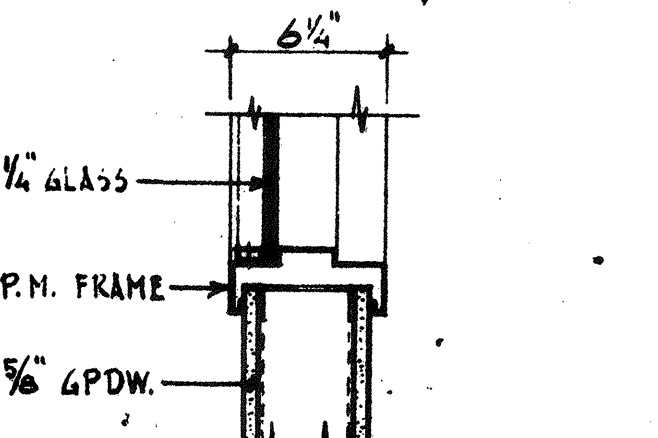
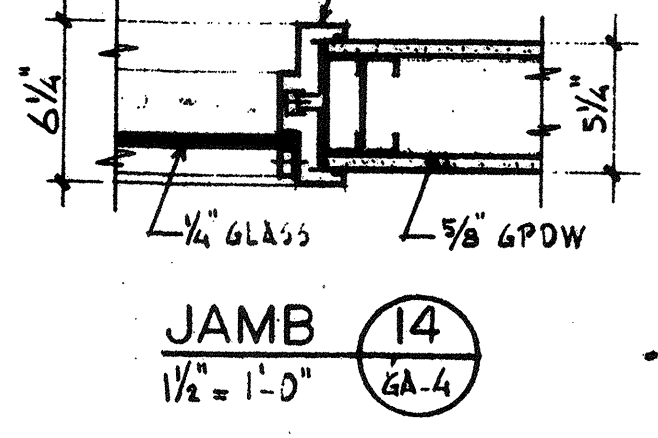
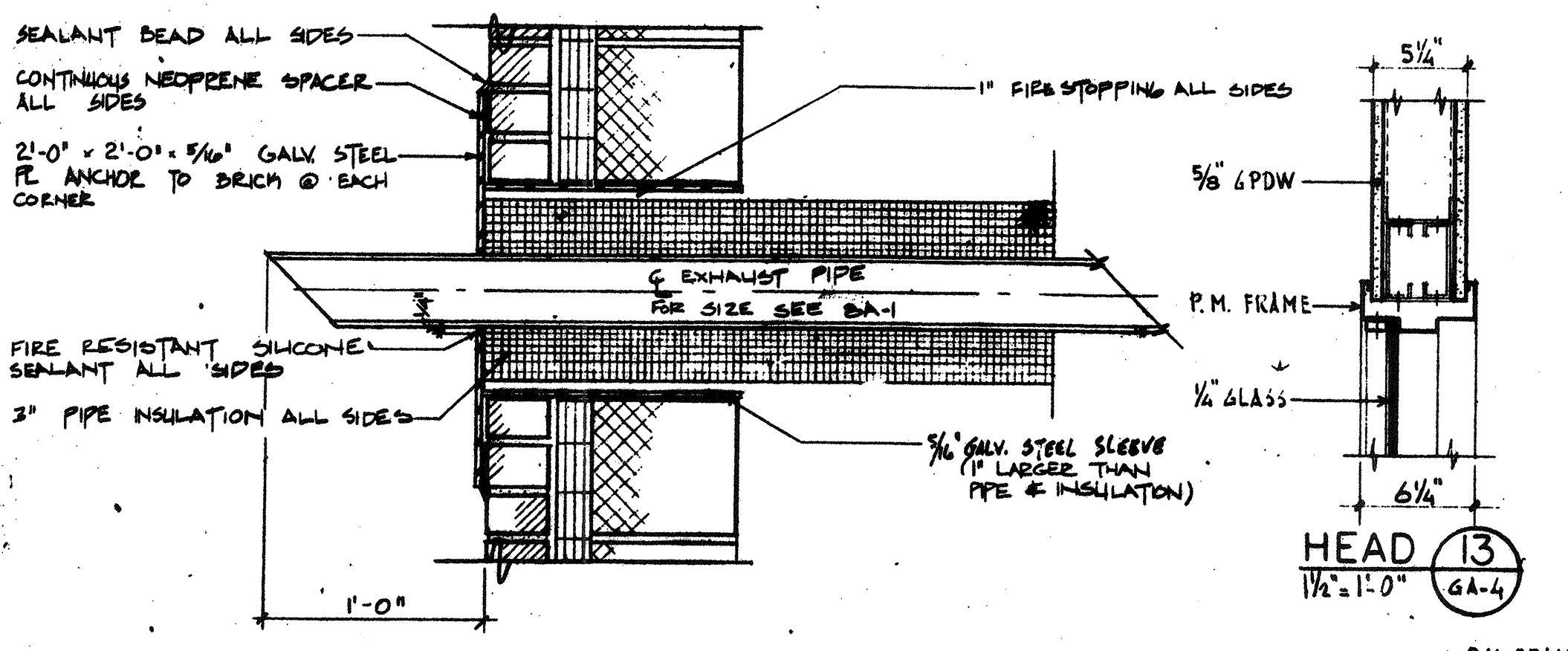
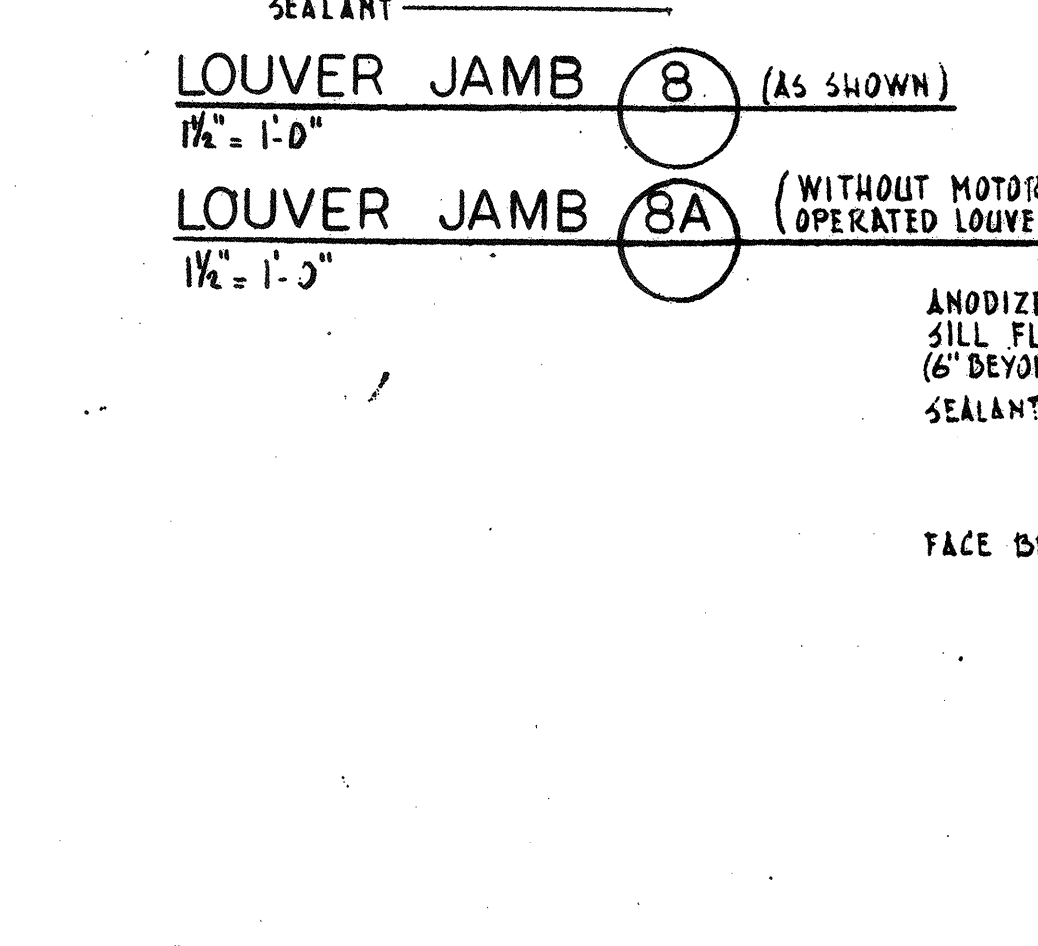
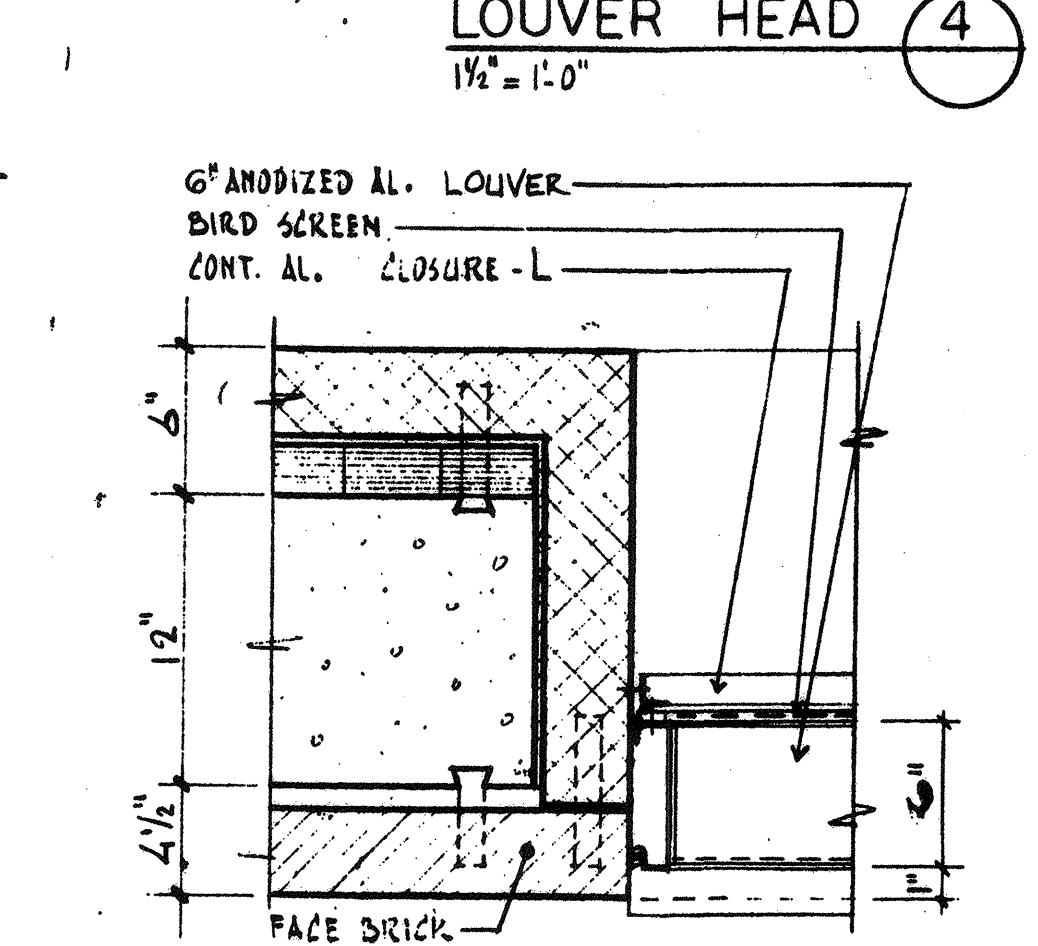
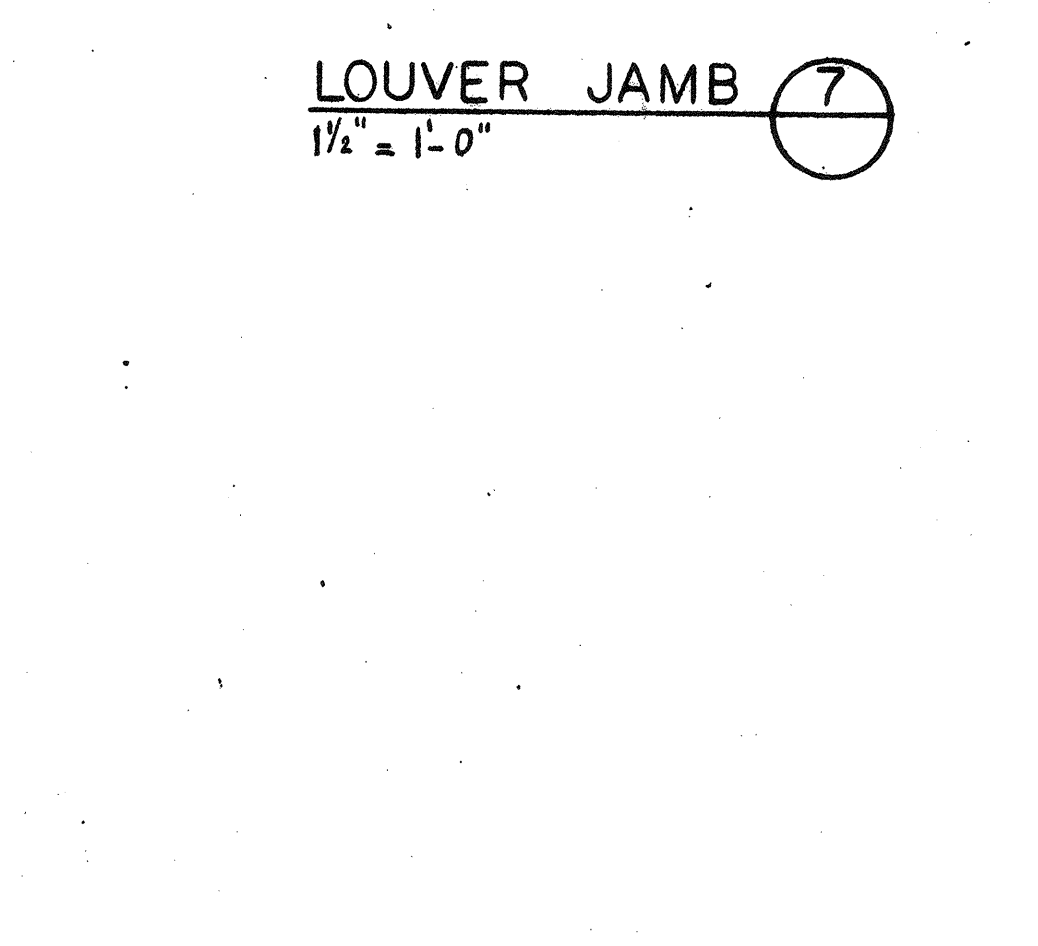
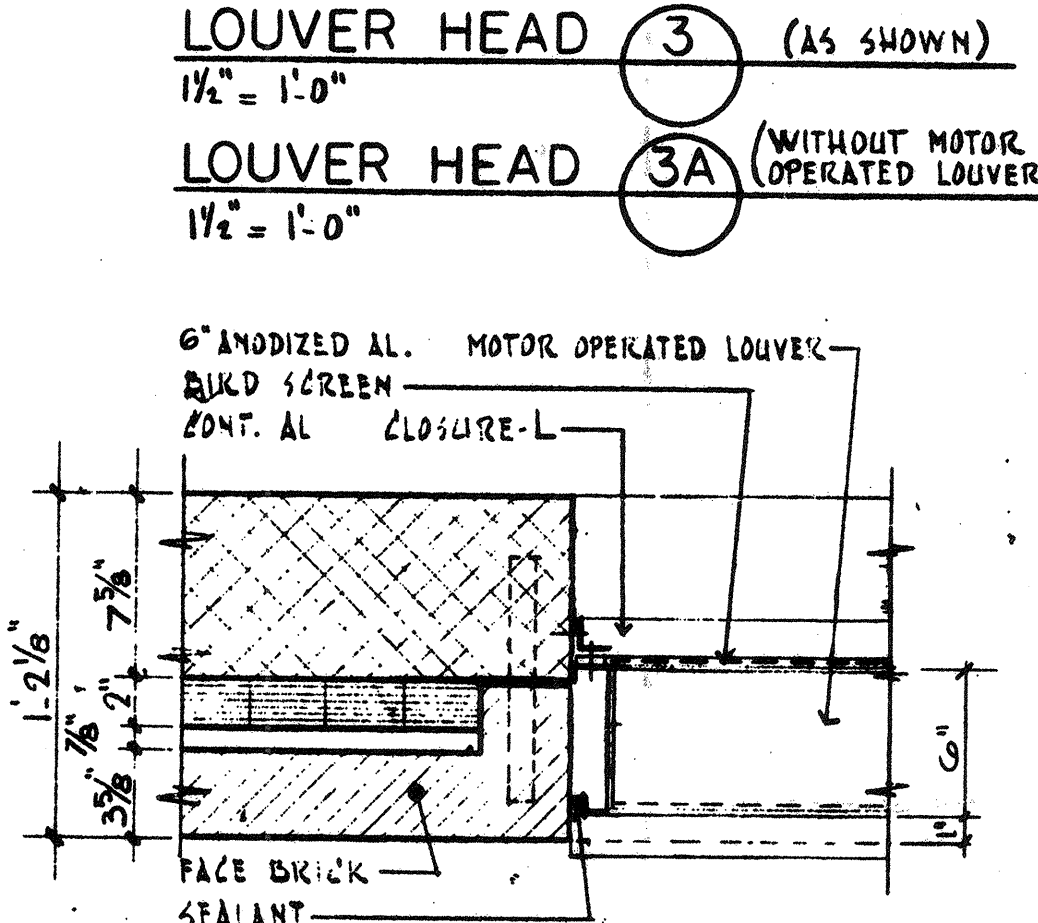
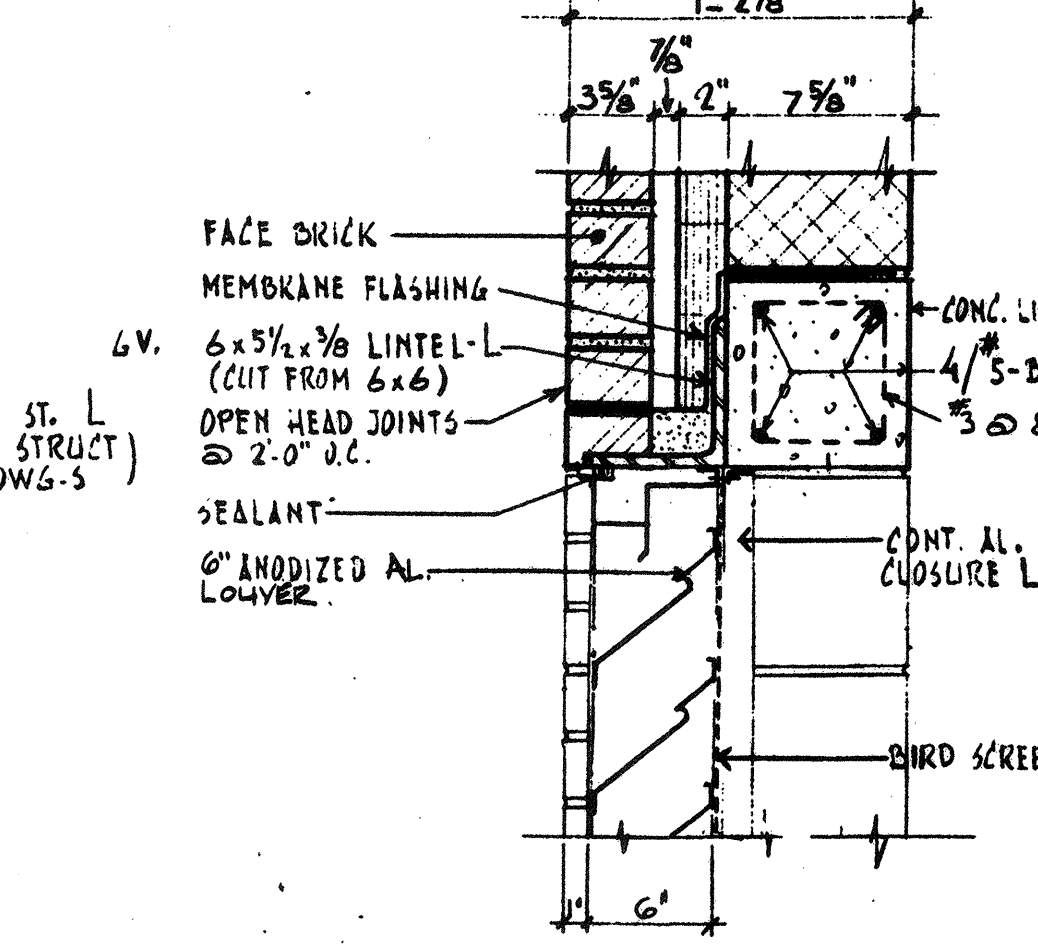
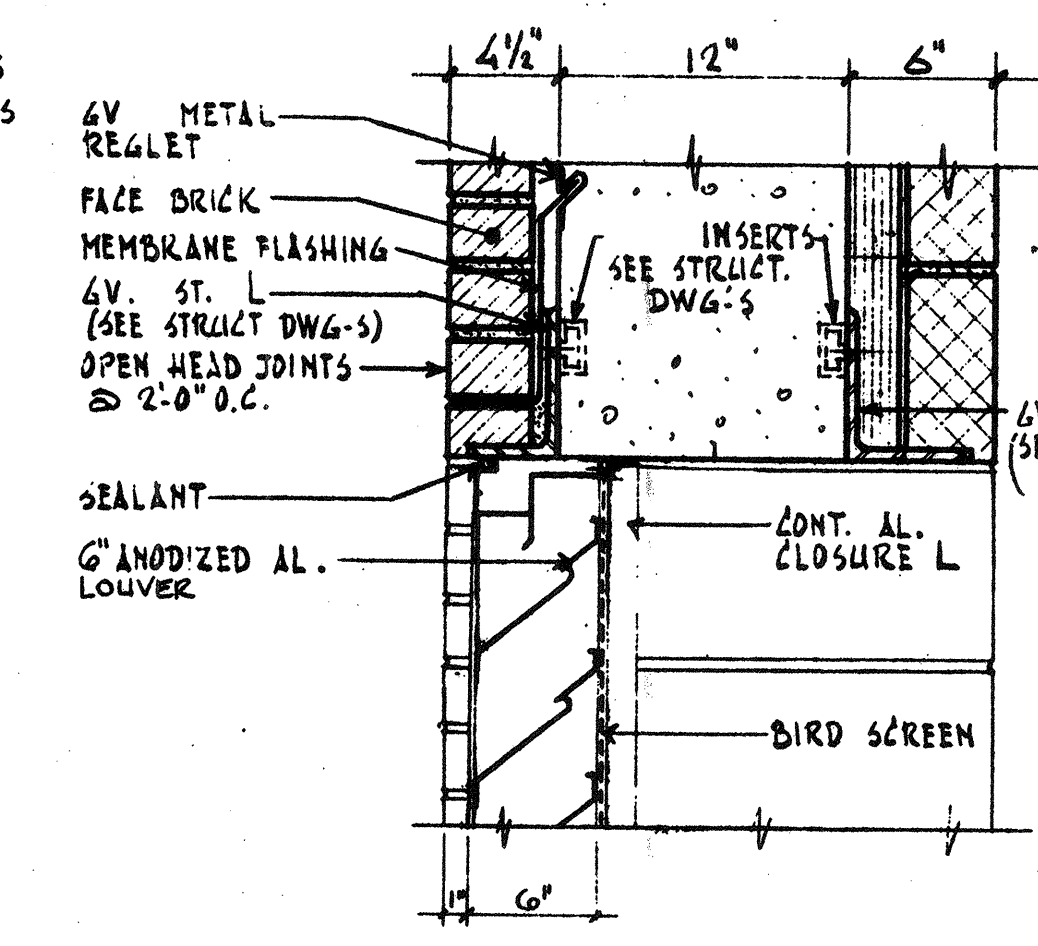
GEODESIC DOME, RAILINGS, AND DETAILS

LOUVER SCHEDULE

LOUVER NO	LOCATION	OP-NG SIZE W x H	TYPE	MODEL	DETAILS			REMARKS	LOUVER NO
					HEAD	JAMB	SILL		
L-1	CONTROL BLDG	3'-4" x 4'-0"	FIXED	G110	1	5	9		L-1
L-2	CONTROL BLDG	3'-4" x 2'-0"	MOTOR OPERATED	G940	3A	8A	11A		L-2
L-3	CONTROL BLDG	3'-4" x 2'-0"	FIXED	G110	3A	8A	11A		L-3
L-4	SCUM CONC. BLDG	4'-0" x 4'-0"	MOTOR OPERATED	G940	4	7	12		L-4
L-5	SL. PROCESS BLDG	3'-0" x 1'-2"	FIXED	4110	16	17	16		L-5
L-6	FILTER BLDG	20'-0" x 8'-0"	MOTOR OPERATED	G940	3BA-3	7	3BA-3		L-6
L-7	FILTER BLDG	12'-0" x 10'-0"	FIXED	G110	3BA-3	7	11		L-7
L-8	FILTER BLDG	3'-4" x 2'-0"	MOTOR OPERATED	G940	3BA-3	7	3BA-3		L-8
L-9	FILTER BLDG	6'-8" x 4'-0"	MOTOR OPERATED	G940	3BA-3	7	3BA-3		L-9
L-10	FILTER BLDG	5'-0" x 2'-8"	MOTOR OPERATED	G940	3BA-3	7	3BA-3	* CONC. EACH UP WALL	L-10

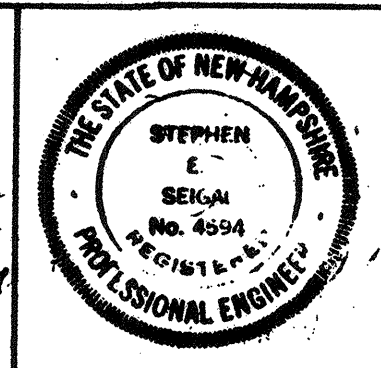
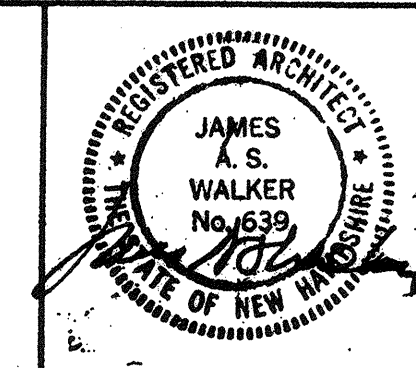


LEGEND:
GL-1 = 1/4" TEMPERED GLASS
GL-2 = 1" INSULATING GLASS
GL-3 = 1" TEMPERED INSULATING GLASS
GL-4 = 1/4" FLOAT GLASS
NOTE: ALL GLASS CLEAR



NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Drawing Revised	9/87

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED
Stephen E. Segal

DESIGNED/DRAWN: K.A.S. F.Z.
CHECKED/SCALE: K.A.S. AS NOTED
DATE: SEPT., 1985

DRAWING NO. GA-4
JOB NO. 85-163
CONTRACT NO. 3

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
LOUVERS - WINDOWS AND DETAILS

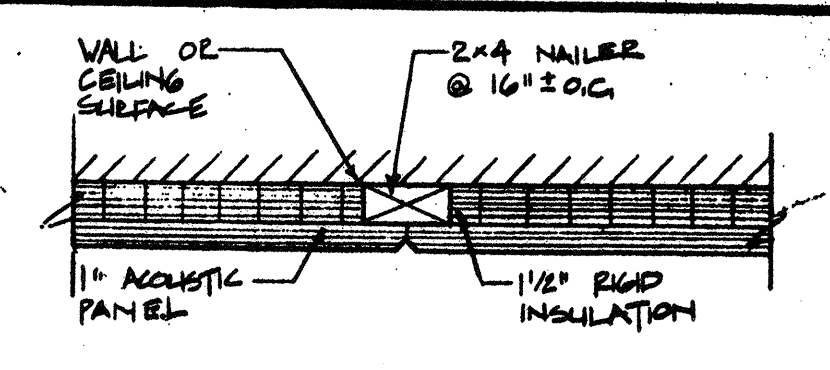
ROOM FINISH SCHEDULE

ROOM	FLOOR	BASE	N-WALL	E-WALL	S-WALL	W-WALL	CEILING	DOOR	FRAME	REMARKS
VESTIBULE-1	CONC.	BRICK	BRICK	AL. / GLASS	AL. / GLASS	BRICK	ACT.	AL. / GLASS	AL.	EXTERIOR PLASTER 3/8" FT. - PAINT
CORRIDOR	CONC.	GPDW	GPDW	GPDW	GPDW	GPDW	ACT.	WD.	ST. *	* INCLUDING VIEW WINDOWS
RECORD STORAGE	CONC.	GPDW	GPDW	GPDW	GPDW	GPDW	ACT.	WD.	ST.	
CONTROL ROOM	CONC.	GPDW	GPDW	GPDW	GPDW	GPDW	ACT.	WD.	ST. *	* INCLUDING VIEW WINDOW
OFFICE	CONC.	GPDW	GPDW	GPDW	GPDW	GPDW	ACT.	WD.	ST. *	* INCLUDING VIEW WINDOW
CONFERENCE	CONC.	GPDW	GPDW	GPDW	GPDW	GPDW	ACT.	WD.	ST.	
LENCH ROOM	CONC.	GPDW	GPDW	GPDW	GPDW	GPDW	ACT.	WD.	ST. *	* INCLUDING VIEW WINDOW
LABORATORY	CONC.	GPDW	GPDW	GPDW	GPDW	GPDW	ACT.	WD.	ST. *	* INCLUDING VIEW WINDOW
LAUNDRY'S CLOSET	CONC.	GPDW	GPDW	GPDW	GPDW	GPDW	WD.	ST.		
LOCKER ROOM	CONC.	GPDW	GPDW	GPDW	GPDW	GPDW	WD.	ST.		
MEN	CONC.	GPDW	GPDW	GPDW	GPDW	GPDW	WD.	ST.		
WOMEN	CONC.	GPDW	GPDW	GPDW	GPDW	GPDW	WD.	ST.		
LAUNDRY	CONC.	GPDW	GPDW	GPDW	GPDW	GPDW	WD.	ST.		
STAIR	CONC.	GPDW	GPDW	GPDW	GPDW	GPDW	ACT.			STAIRS, STRINGERS & RAIL - PAINT
CLOSETS	CONC.	GPDW	GPDW	GPDW	GPDW	GPDW	WD.	ST.		
VESTIBULE-2	CONC.	GPDW	GPDW	GPDW	GPDW	GPDW	ACT.	WD.	ST.	
GENERAL STORAGE	CONC.	GPDW	GPDW	GPDW	GPDW	GPDW	ACT.	WD.	ST.	
LAB. OFFICE	CONC.	GPDW	GPDW	GPDW	GPDW	GPDW	ACT.	WD.	ST. *	* INCLUDING VIEW WINDOW
STAIR BELOW GROUND FLR	CONC.	CMU/CONC.	CMU	CONC.	CMU	CMU	ST.	ST.		
PUMP ROOM	CONC.	CONC/CMU	CONC.	CMU	CMU	CONC.	CONC.	ST.	ST.	MONO-RAIL PAINT
BOILER ROOM	CONC.	CONC/CONC	CMU	CONC/CONC	CMU	CMU	CONC.	ST.	ST.	
BLOWER ROOM	CONC.	CONC.	AC PANELS	AC PANELS	AC PANELS	AC PANELS	AC PANELS	ST.	ST.	
TRUCKS	CONC.	CONC/CONC	CMU	CMU	CONC/CONC	CMU	CONC.	ST.	ST.	MONO-RAIL PAINT
WORK ROOM	CONC.	CONC.	CMU	CMU	CMU	CONC.	CONC.	ST.	ST.	
SCUM CONCENTRATOR	CONC.	CONC.	CMU	CMU	CMU	CONC.	CONC.	ST.	ST.	MONO-RAIL PAINT
PUMP ROOM	CONC.	CONC/CMU	CONC.	CONC.	CONC/CMU	CONC.	CONC.	ST.	ST.	

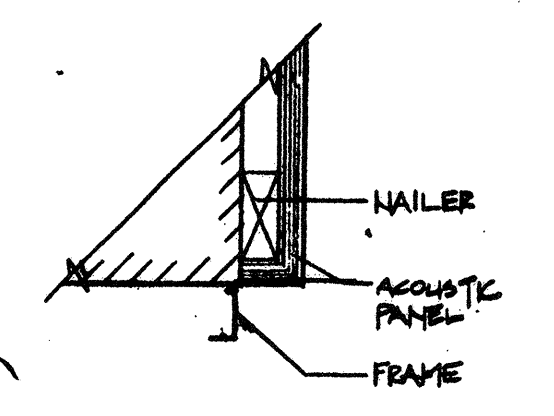
ROOM FINISH SCHEDULE NOTES:
 ① EXISTING FINISH TO REMAIN
 ② CERAMIC WALL TILE CARRIED FULL HEIGHT OF ROOM
 ③ VINYL FLOOR TILE TO BE SLATE PATTERN

ROOM FINISH SCHEDULE

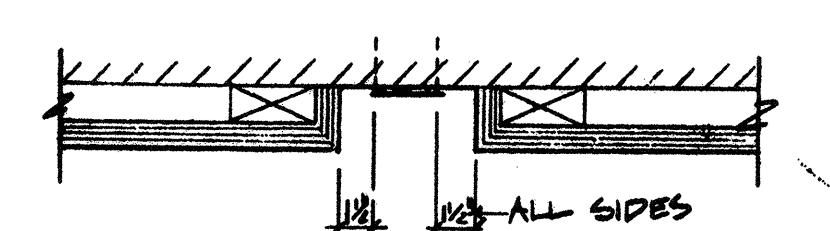
ROOM	FLOOR	BASE	N-WALL	E-WALL	S-WALL	W-WALL	CEILING	DOOR	FRAME	REMARKS
OFFICE	EXIST. CONC.	EXIST. CMU	EXIST. CMU	EXIST. CMU	EXIST. CMU	EXIST. CMU	EXIST. PLAS.	ST.	ST.	
ELECTRIC ROOM	EXIST. CONC.	EXIST. CMU	EXIST. CMU	EXIST. CMU	EXIST. CMU	EXIST. CMU	EXIST. CONC.	ST.	ST.	
TOILET	EXIST. CONC.	EXIST. GCMU	EXIST. GCMU	EXIST. GCMU	EXIST. GCMU	EXIST. GCMU	EXIST. PLAS.	ST.	ST.	
CORRIDOR	EXIST. CONC.	EXIST. CMU	EXIST. CMU	EXIST. CMU	EXIST. CMU	EXIST. CMU	EXIST. CONC.	ST.	ST.	
JAUNTOR				EXISTING	TO REMAIN					
STORAGE				EXISTING	TO REMAIN					
RENEWING	EXIST. CONC.	EXIST. CMU	EXIST. CMU	EXIST. CMU	EXIST. CMU	EXIST. CMU	EXIST. CONC.	ST.	ST.	
TRUCK BAY	EXIST. CONC.	EXIST. CONC.	EXIST. CMU	EXIST. CMU	EXIST. CMU	EXIST. CMU	EXIST. CONC.	ST.	ST.	
OPEN AREA	EXIST. CONC.	EXIST. CONC.	EXIST. CONC.	EXIST. CONC.	EXIST. CONC.	EXIST. CONC.	EXIST. CONC.	ST.	ST.	
CONTROL AREA	CONC.	CMU	CMU	CMU	CMU	CMU	CONC. PLANK	AL.	AL.	① DOORS 810-811 (PNT)
BLOWER ROOM	CONC.	CMU	CMU	CMU	CMU	CMU	CONC. PLANK	AL.	AL.	
BLOWER ROOM	CONC.	CMU	CMU	CMU	CMU	CMU	CONC. PLANK	STEEL	STEEL	
STAIR	CONC.	CMU	CMU	CMU	CMU	CMU	CONC. PLANK	STEEL	STEEL	STAIR STRINGERS (PNT) INC. IMPROVED PORTION OF PNT & BARR.
STORAGE ROOM	CONC.	CMU	CMU	CMU	CMU	CMU	CONC. PLANK	AL.	AL.	
ELECTRICAL ROOM	CONC.	CMU	CMU	CMU	CMU	CMU	CONC. PLANK	AL.	AL.	
GENERATOR ROOM	CONC.	CMU	CMU	CMU	CMU	CMU	CONC. PLANK	AL.	AL.	
ODOR CONTROL	CONC.	CMU	CMU	CMU	CMU	CMU	CONC. PLANK	AL.	AL.	CONC. EFFLUENT TROUGH (PNT)
FILTERS	CONC.	CMU	CMU	CMU	CMU	CMU	CONC. PLANK	AL.	AL.	
CLEARWELL GALLERY	CONC.	CONC.	CONC.	CONC.	CONC.	CONC.	CONC.			CONC. COLS. (PNT)
MUD WELL GALLERY	CONC.	CONC.	CONC.	CONC.	CONC.	CONC.	CONC.			
PUMP ROOM	CONC.	CONC.	CONC.	CONC.	CONC.	CONC.	CONC.			COLS (PNT), PUMP PADS & STANDS (PNT)



CEILING AND WALL

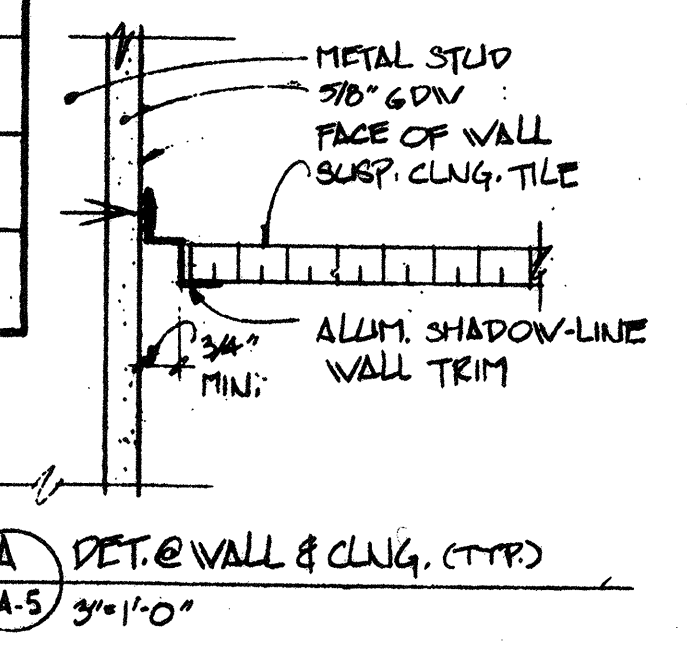


DOORS AND WALL OPENINGS

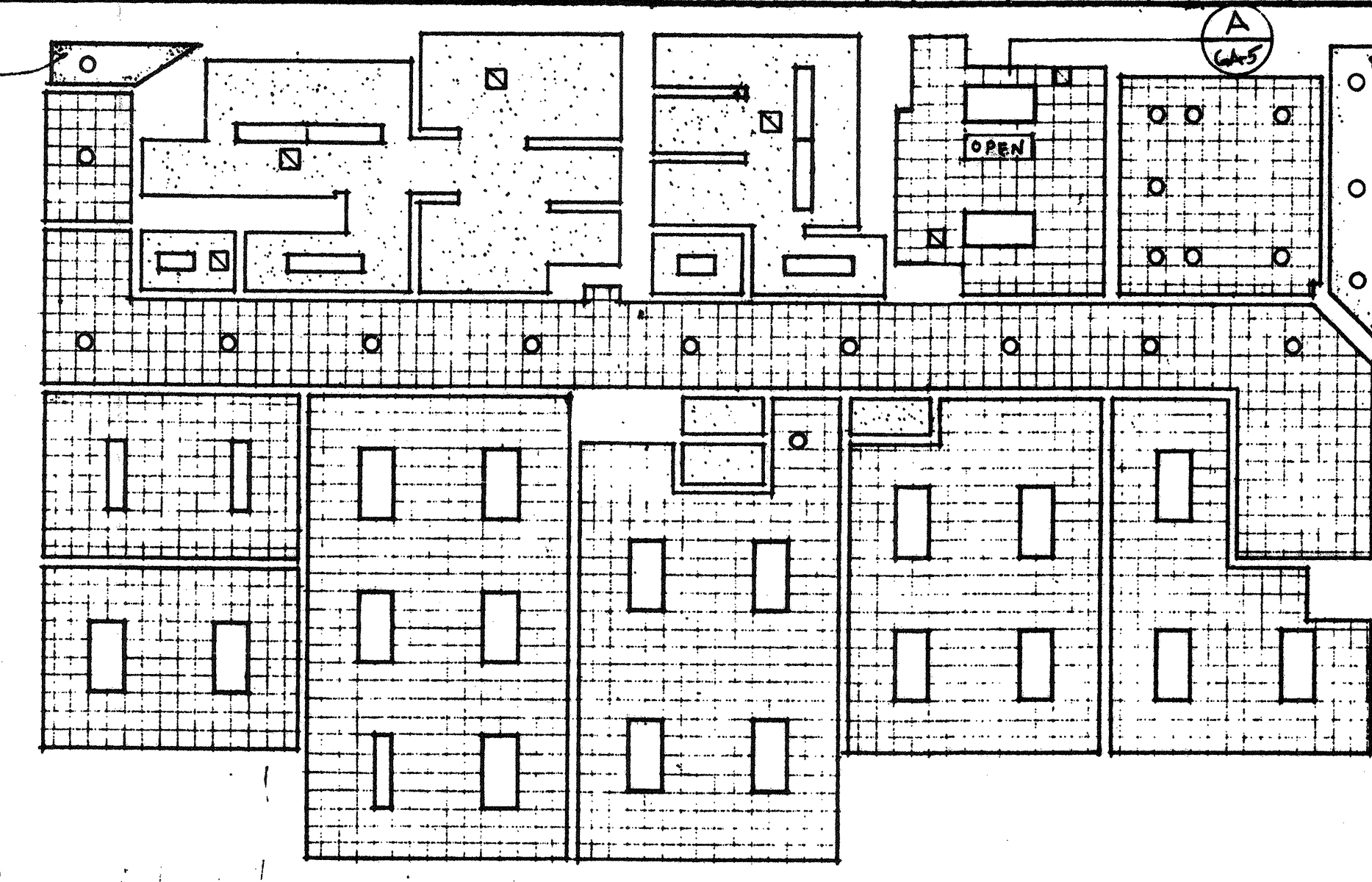


WALL MOUNTED ITEMS
 LIGHT SWITCHES, OUTLETS, ETC.

ACOUSTIC PANEL DETAILS



CEMENT PLASTER



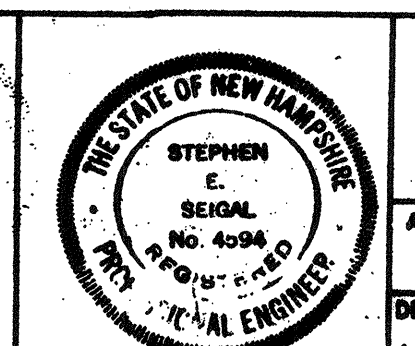
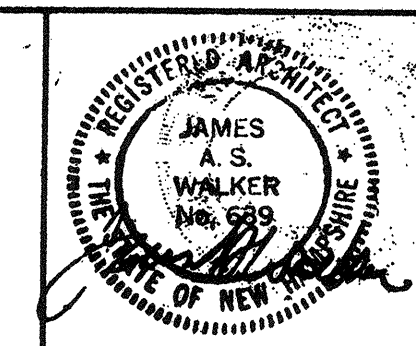
CEMENT PLASTER

REFLECTED CEILING PLAN-CONTROL BUILDING
 1/8" = 1'-0"

- LEGEND
- 12"x12" ACOUSTIC TILE
 - ACCESS. PANEL
 - 3/8" GPDW
 - CEMENT PLASTER
 - 2"x4" RECESSED FLOOR FIXTURES
 - SURFACE MOUNTED FIXTURES
 - DOWN LIGHTS
 - REGISTERS

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Drawing Revised	8/88

WHITMAN & HOWARD, INC.
 45 WILLIAM STREET, WELLESLEY, MASS.



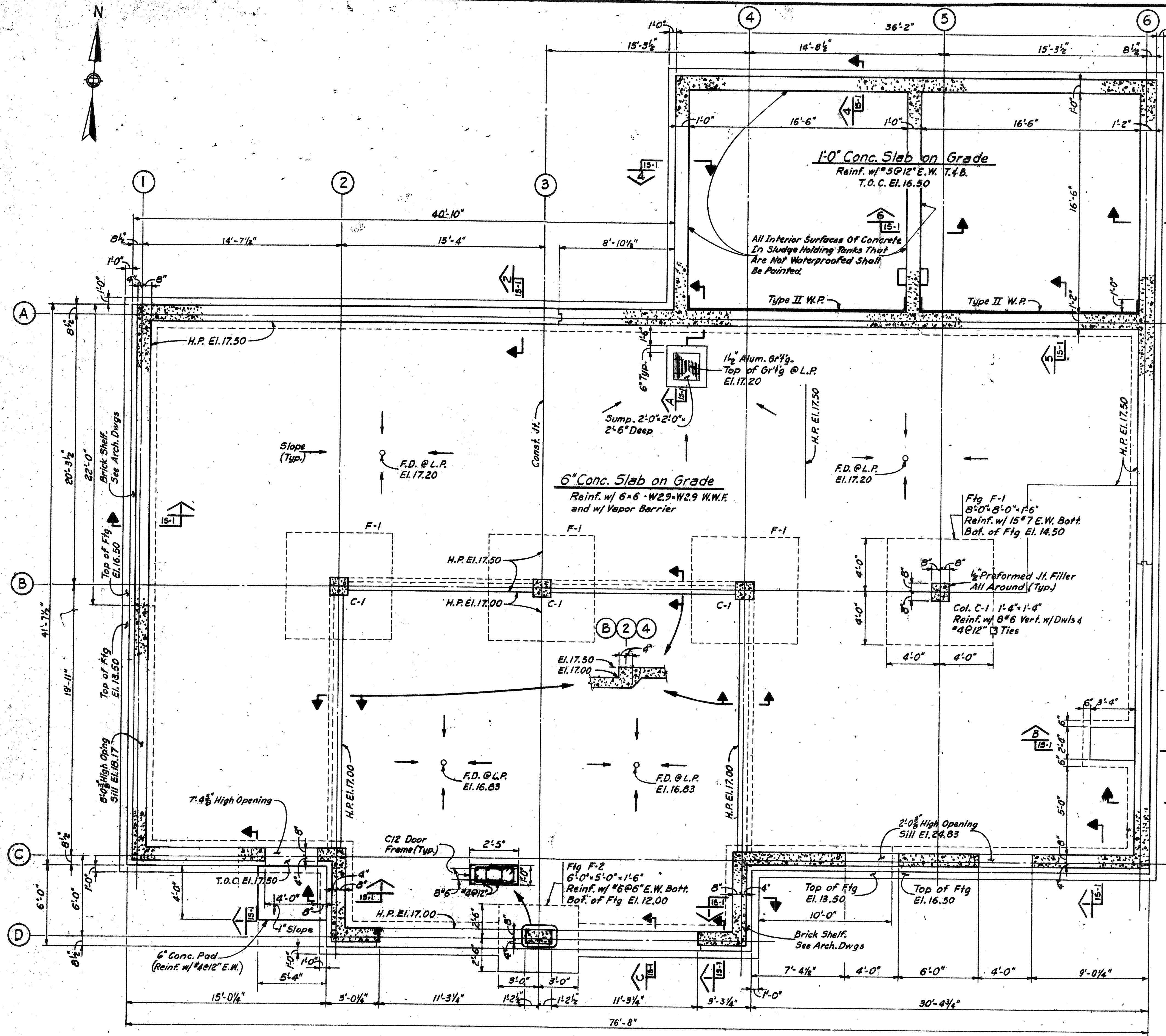
ORIGINAL FULL SIZE DRAWING - 4"
 REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen E. Sigal*

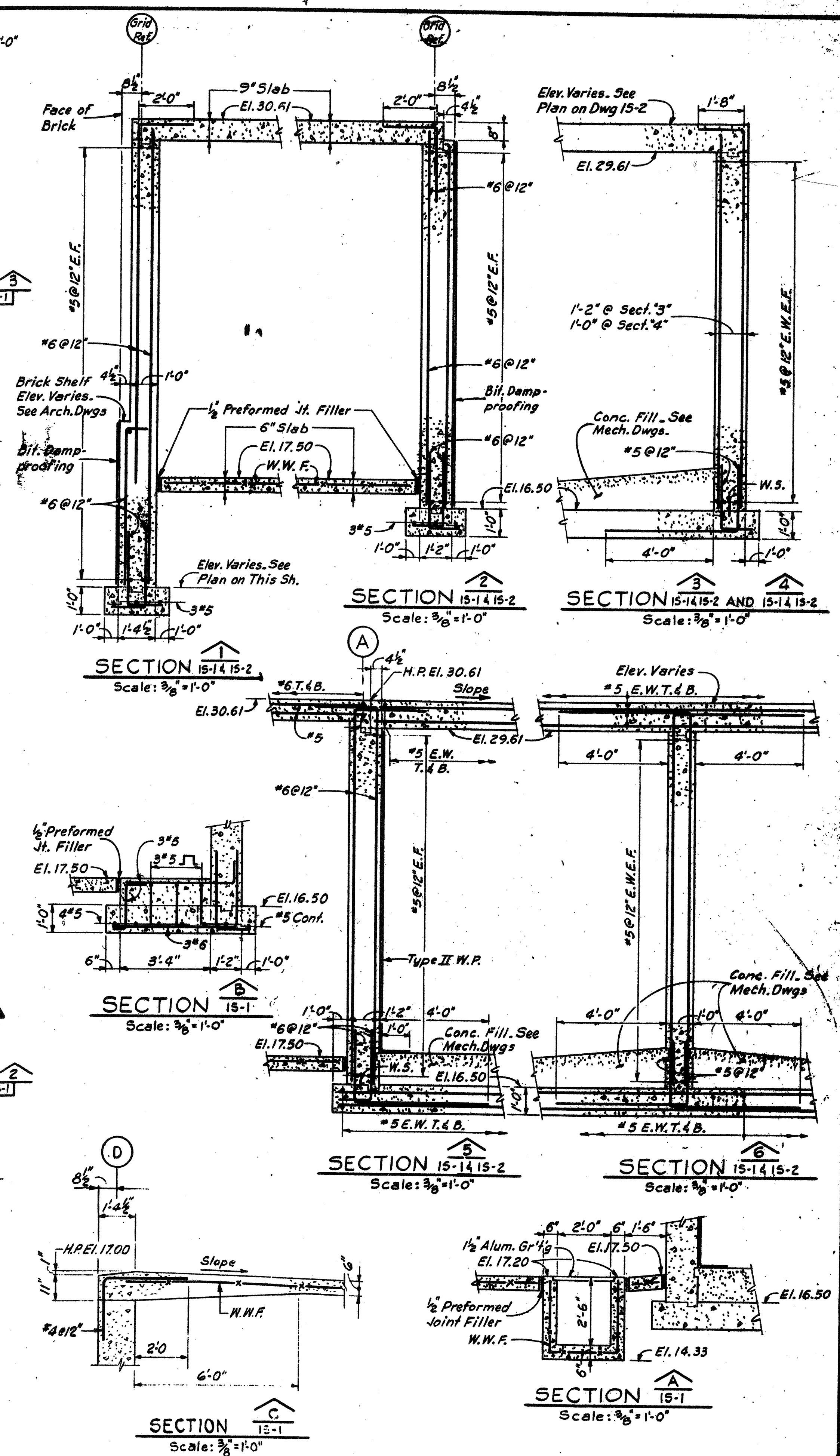
DESIGNED/DRAWN: K.A.S., F.Z. CHECKED: K.A.S. SCALE: AS NOTED DATE: SEPT., 1985

DRAWING NO. GA-5
 JOB NO. 85-163
 CONTRACT NO. 3

RECORD PLAN
 WASTEWATER TREATMENT FACILITY
 PORTSMOUTH, N. H.
 FINISH SCHEDULE



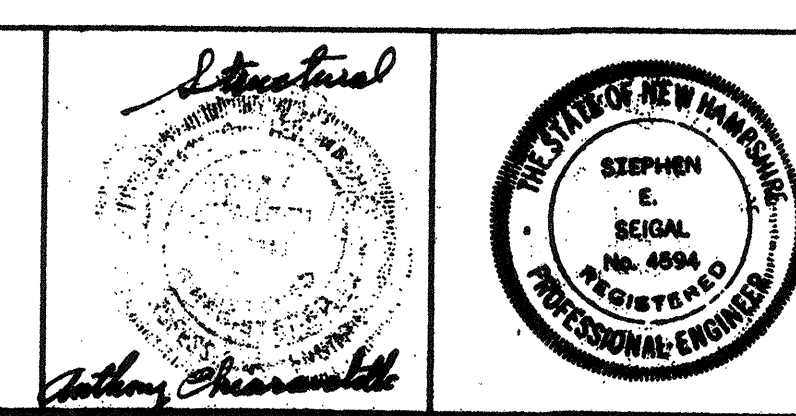
BASEMENT AND FOUNDATION PLAN
Scale: 1/8" = 1'-0"



Notes:
For General Notes 4 Typ. Struct. Details See Dwg 65-1.
For Rock Excavation Details See Dwg 65-1.

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
7	Drawing Revised	9/89

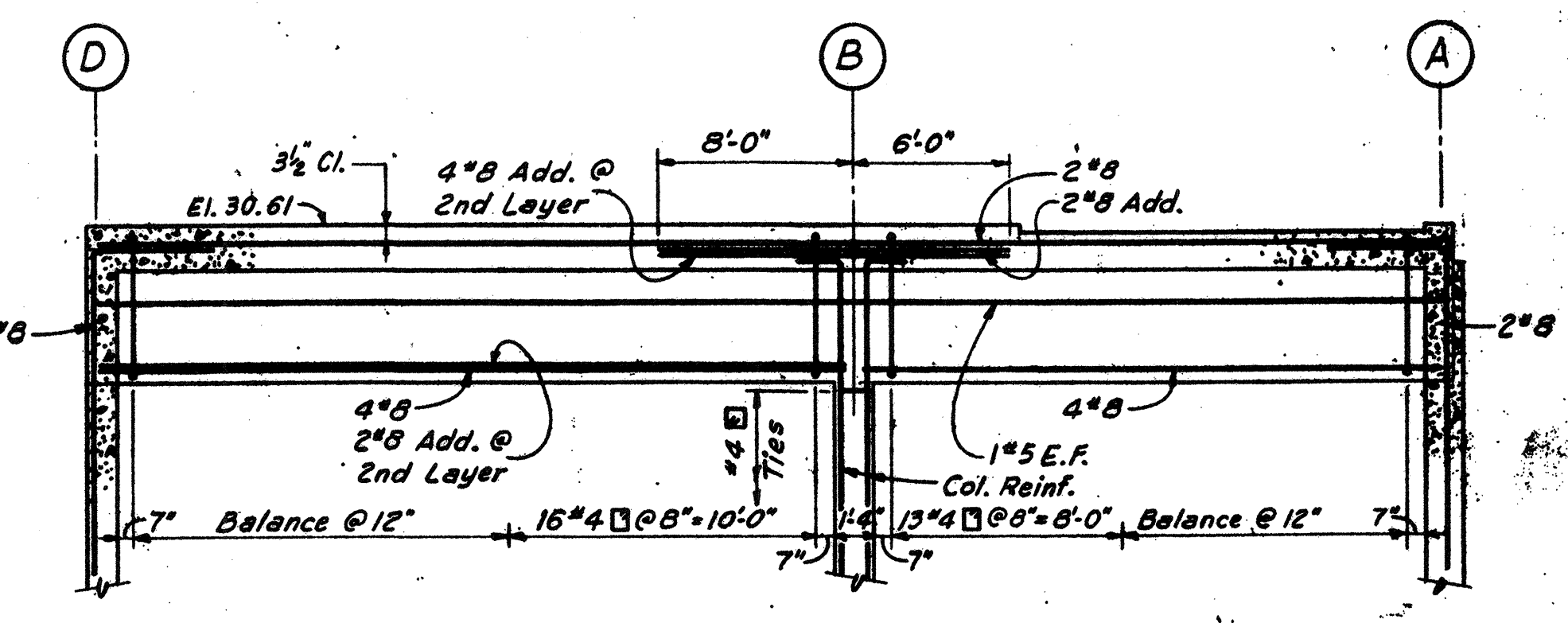
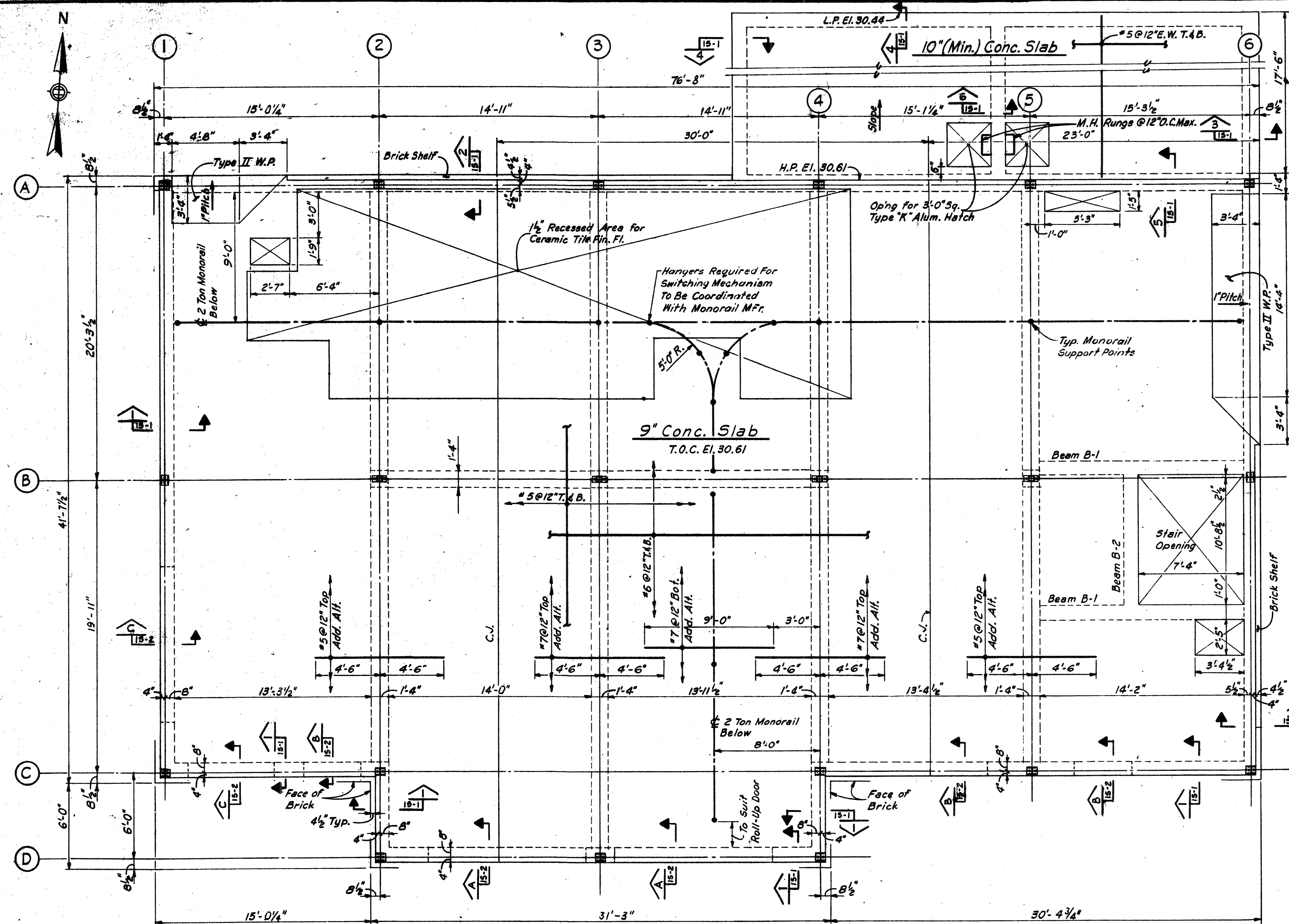
WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



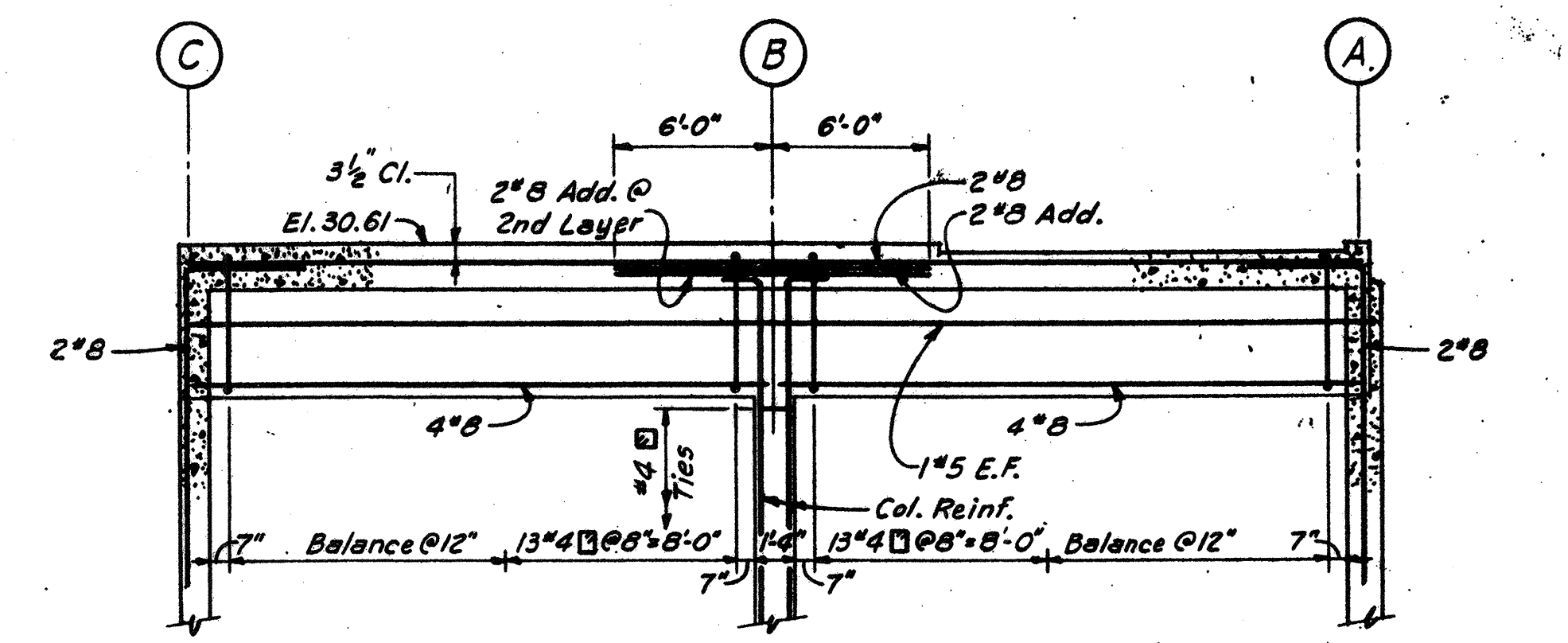
APPROVED
STEPHEN E. SEIGAL
DESIGNED/DRAWN W.J.F. F.P. CHECKED A.C. SCALE AS NOTED DATE SEPT. 1985

DRAWING NO. **IS-1**
JOB NO. 85-163
CONTRACT NO. 3
SHEET 26 OF 106 SHEETS

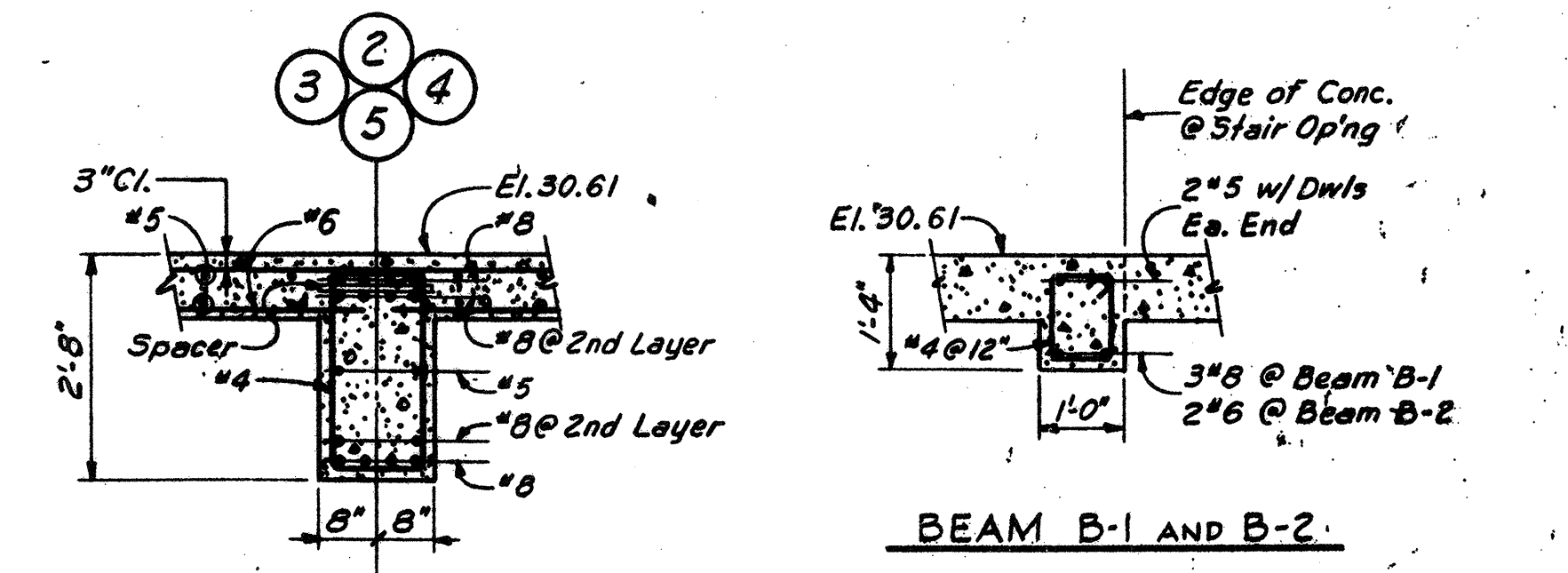
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
CONTROL BUILDING
BASEMENT & FOUNDATION PLAN, SECTIONS AND DETAILS



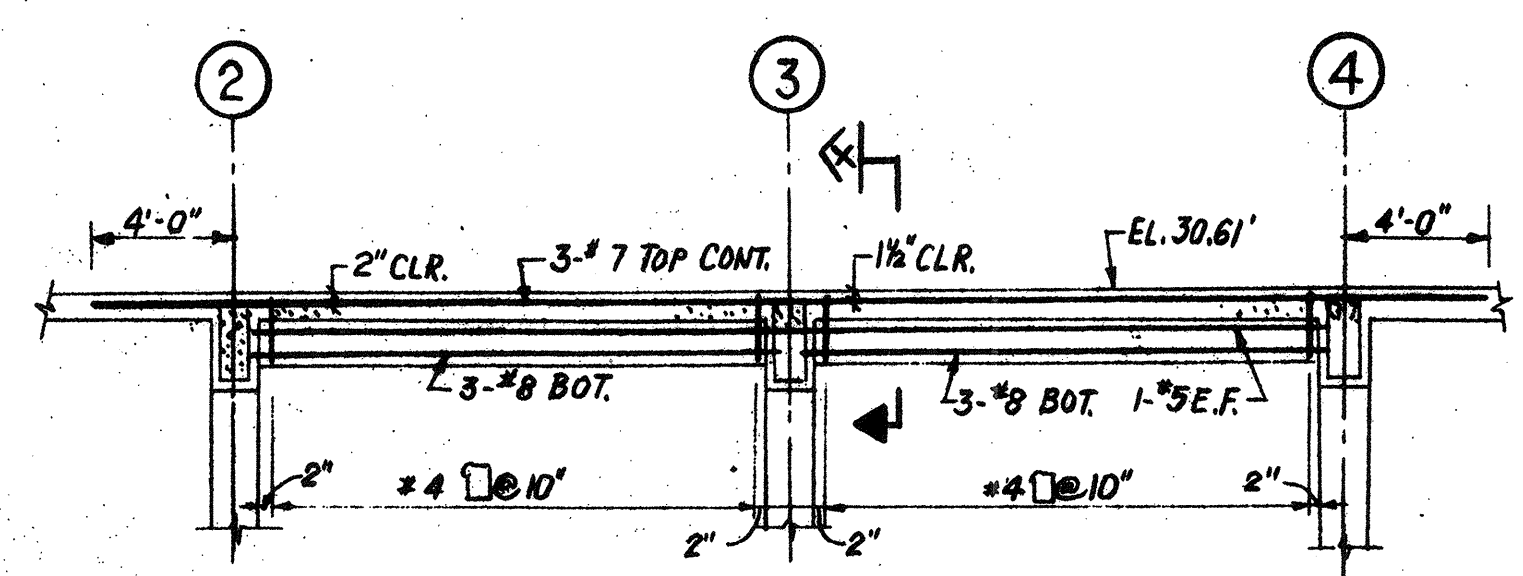
BEAM ELEVATION AT LINE 3
Not to Scale



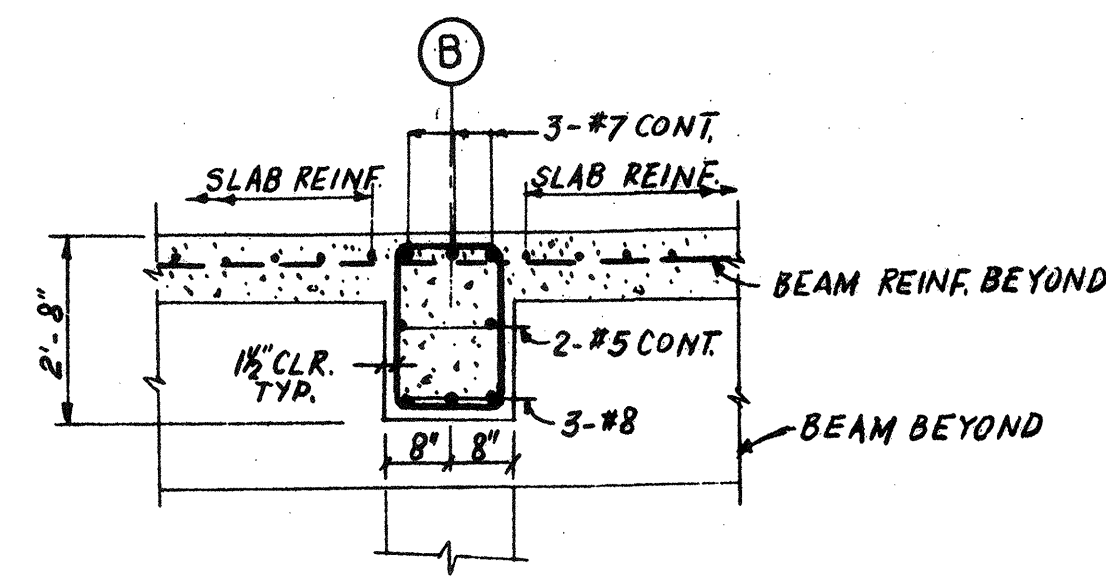
BEAM ELEVATION AT LINE 2, 4 & 5
Not to Scale



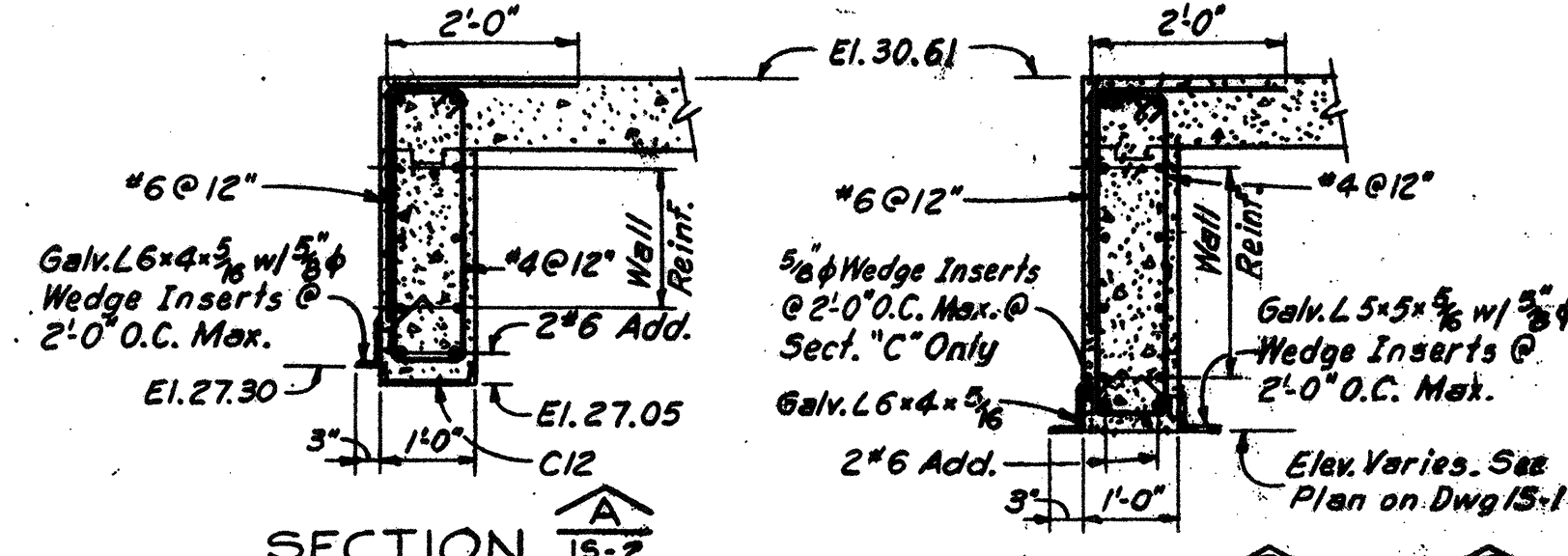
CONCRETE BEAM DETAILS
Scale: 1/2\"/>



BEAM ELEVATION AT LINE B
BETWEEN COLUMN LINES 2, 3, 4
NOT TO SCALE



SECTION B
Scale: 1/2\"/>



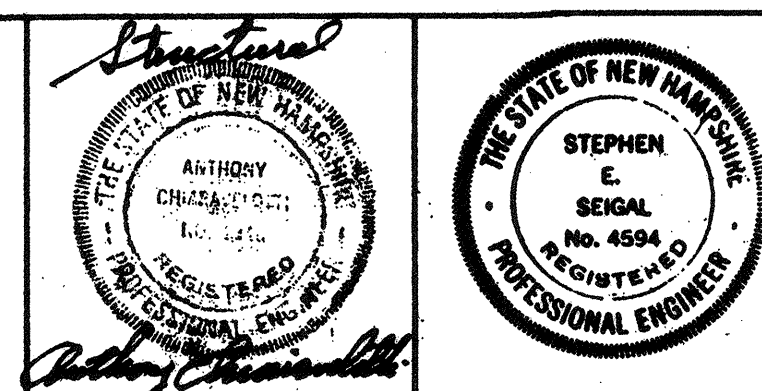
SECTION 15-2 AND 15-2
Scale: 1/2\"/>

GROUND FLOOR PLAN
Scale: 1/4\"/>

Place East-West Slab Reinf. First and Last.
Place East-West Slab Top Reinf. 3\"/>

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLANS	9-93
1	Drawing Revised	9/87
REVISIONS		

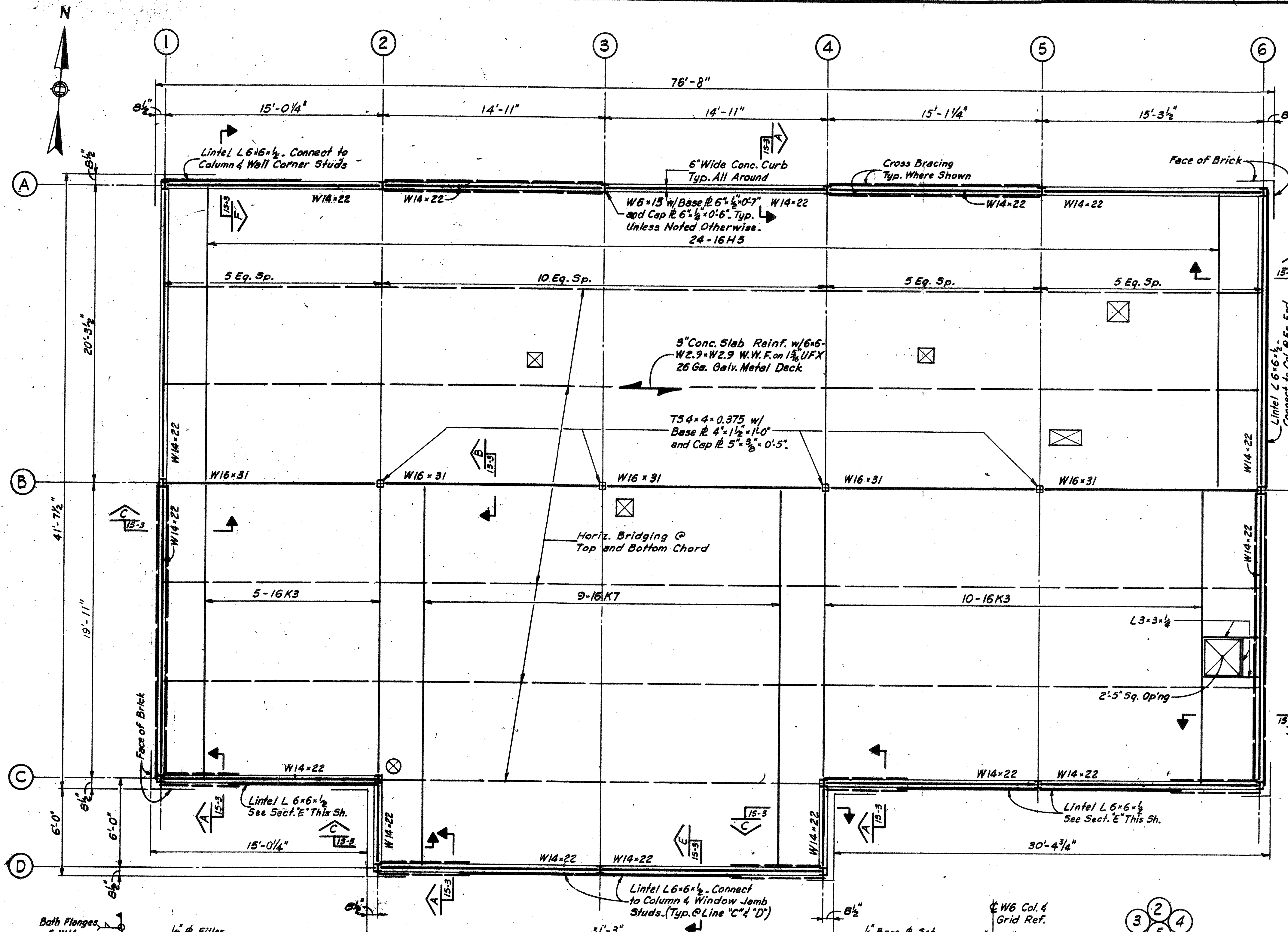
WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



APPROVED: *Stephen E. Segal*
DESIGNED/DRAWN: W.J.F. F.P. CHECKED: A.C. SCALE: AS NOTED DATE: SEPT. 1985

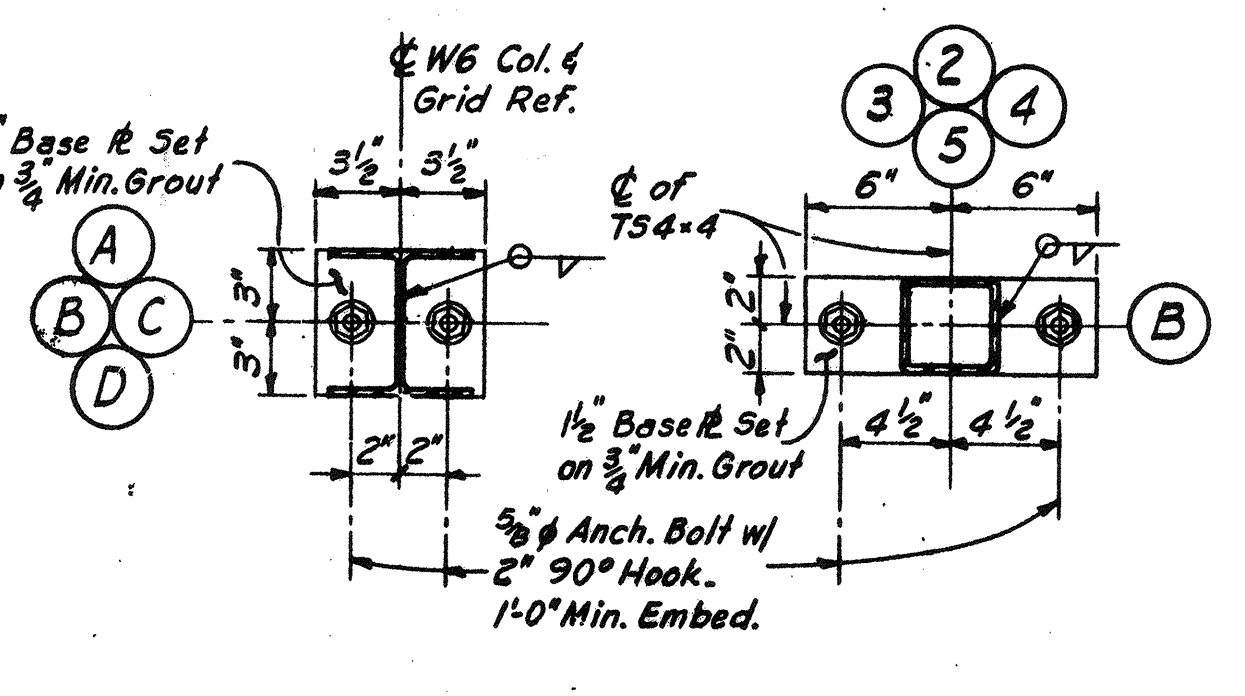
DRAWING NO. **IS-2**
JOB NO. 85-163
CONTRACT NO. 3
SHEET 27 OF 106 SHEETS

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
CONTROL BUILDING
GROUND FLOOR PLAN, SECTIONS AND DETAILS

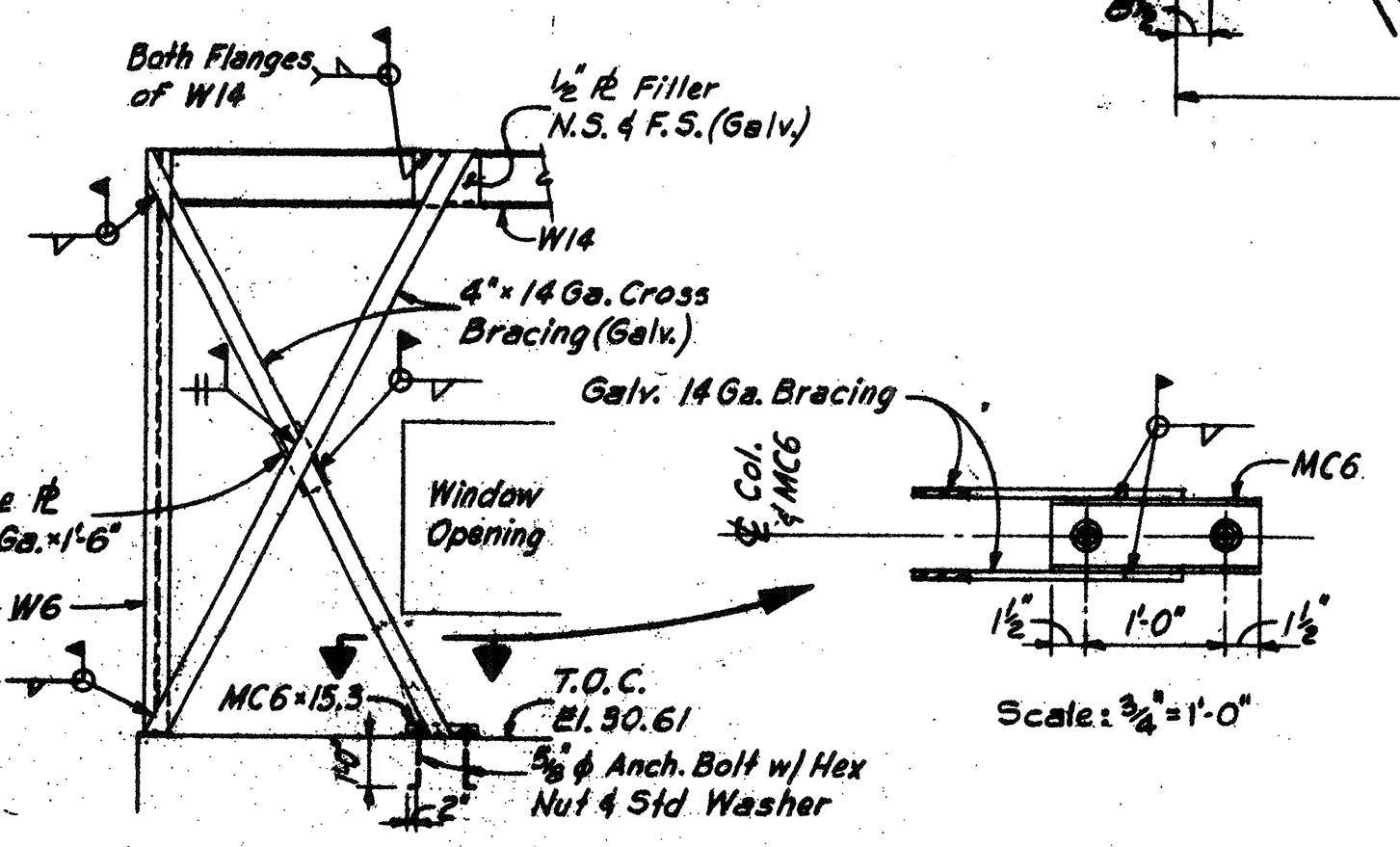


ROOF FRAMING PLAN
Scale: 1/4" = 1'-0"

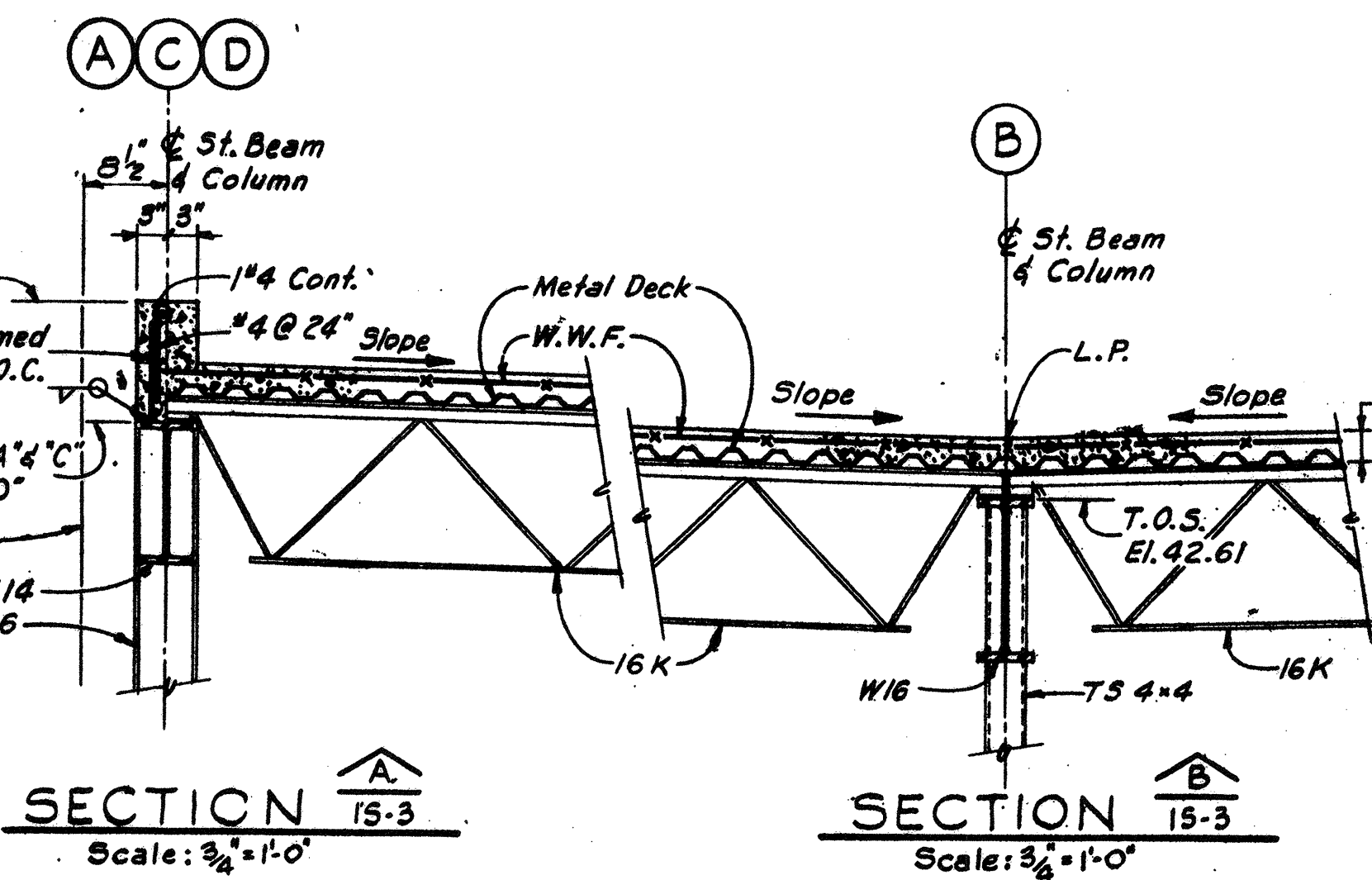
Extend Bottom Chord of St. Joist and Connect to Columns at Line "2", "3", "4" and "5".
All Light Gage Metal Framing Welds Shall Be of Sufficient Length to Develop The Full Strength of The Member Being Joined and Shall Conform to A.W.S..
All Light Gage Cross Bracing Material Shall Be A.S.T.M. A446 Grade D.
Roof Live Load : 45 PSF



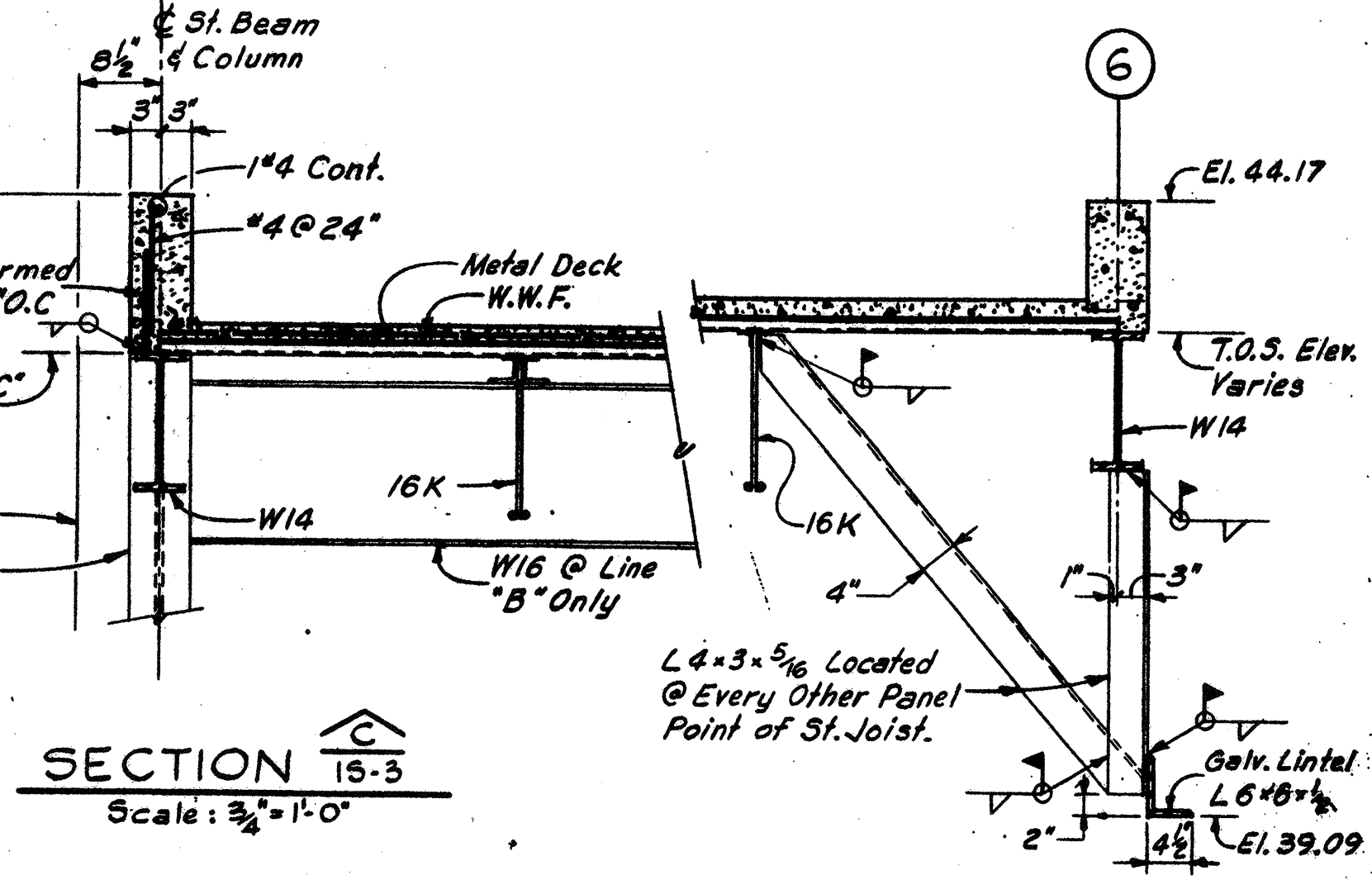
COLUMN BASE PLATE DETAILS
Scale: 1/2" = 1'-0"



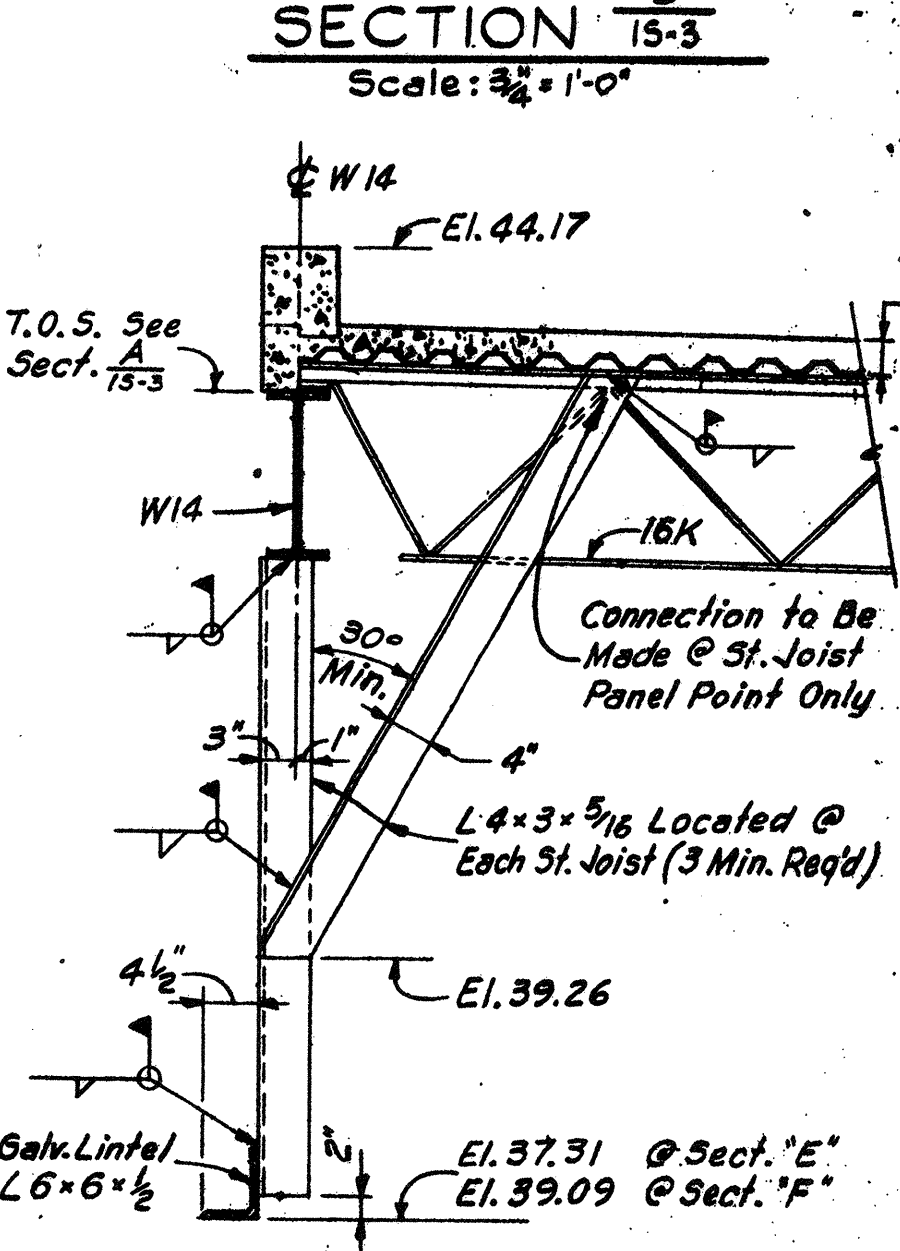
CROSS BRACING ELEVATION
Scale: 1/4" = 1'-0"



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



SECTION C-D
Scale: 3/4" = 1'-0"

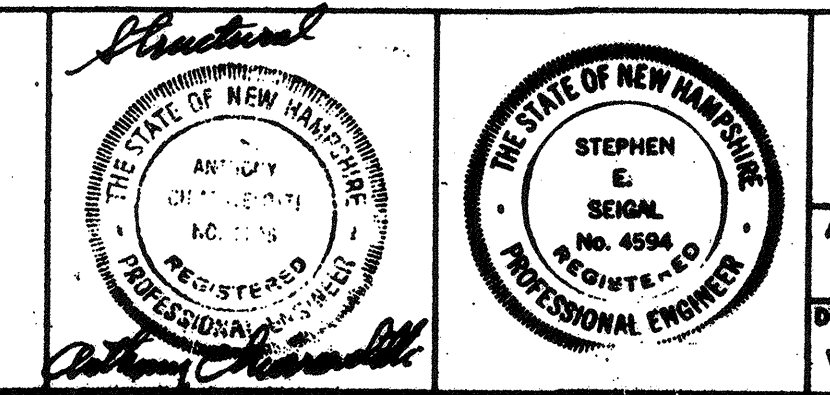


SECTION E-F AND G-H
Scale: 3/4" = 1'-0"

RECORD PLAN

NO.	REVISIONS	DATE
2	REVISED TO RECORD PLAN	9-93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



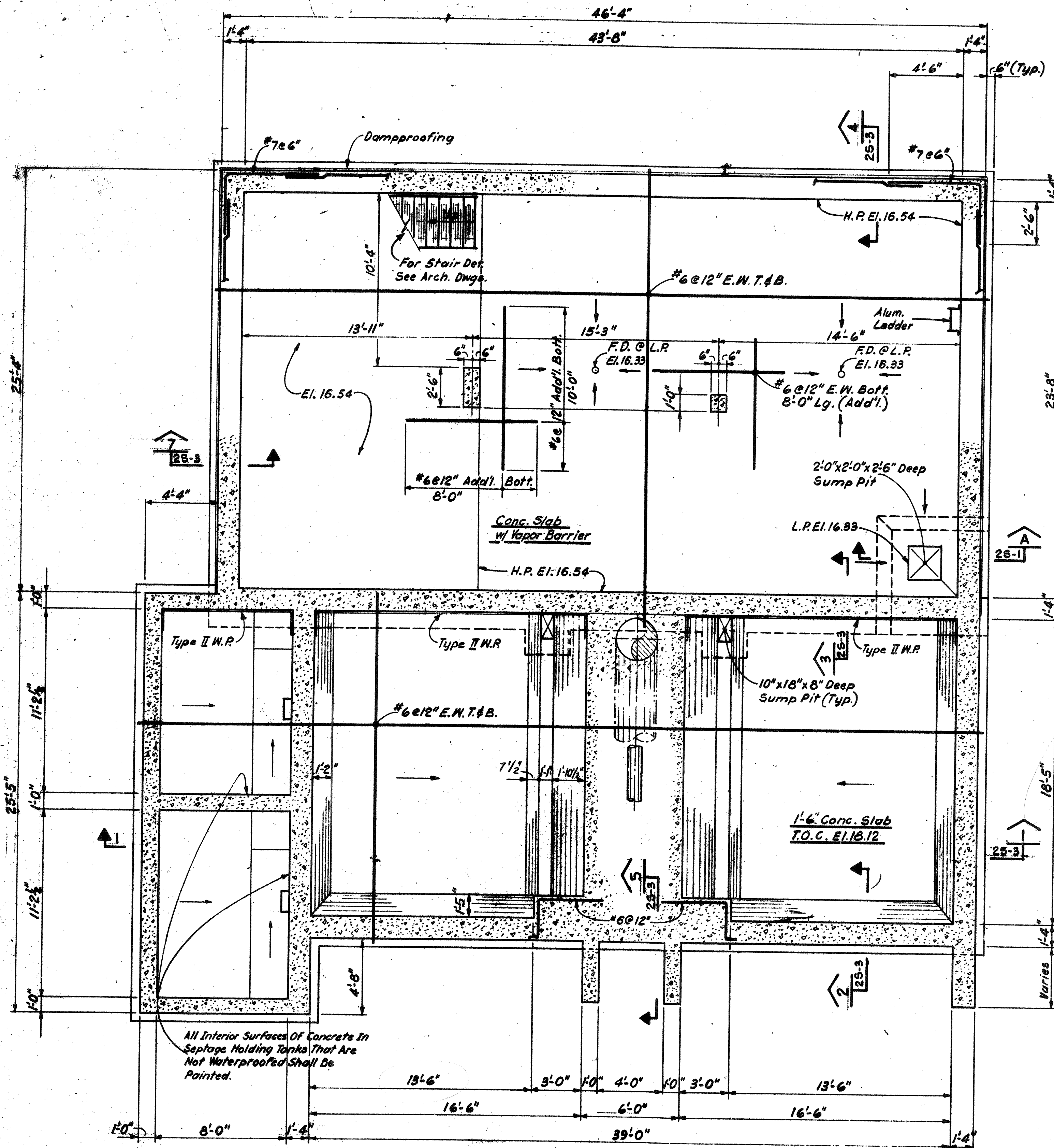
ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen E. Seigel*

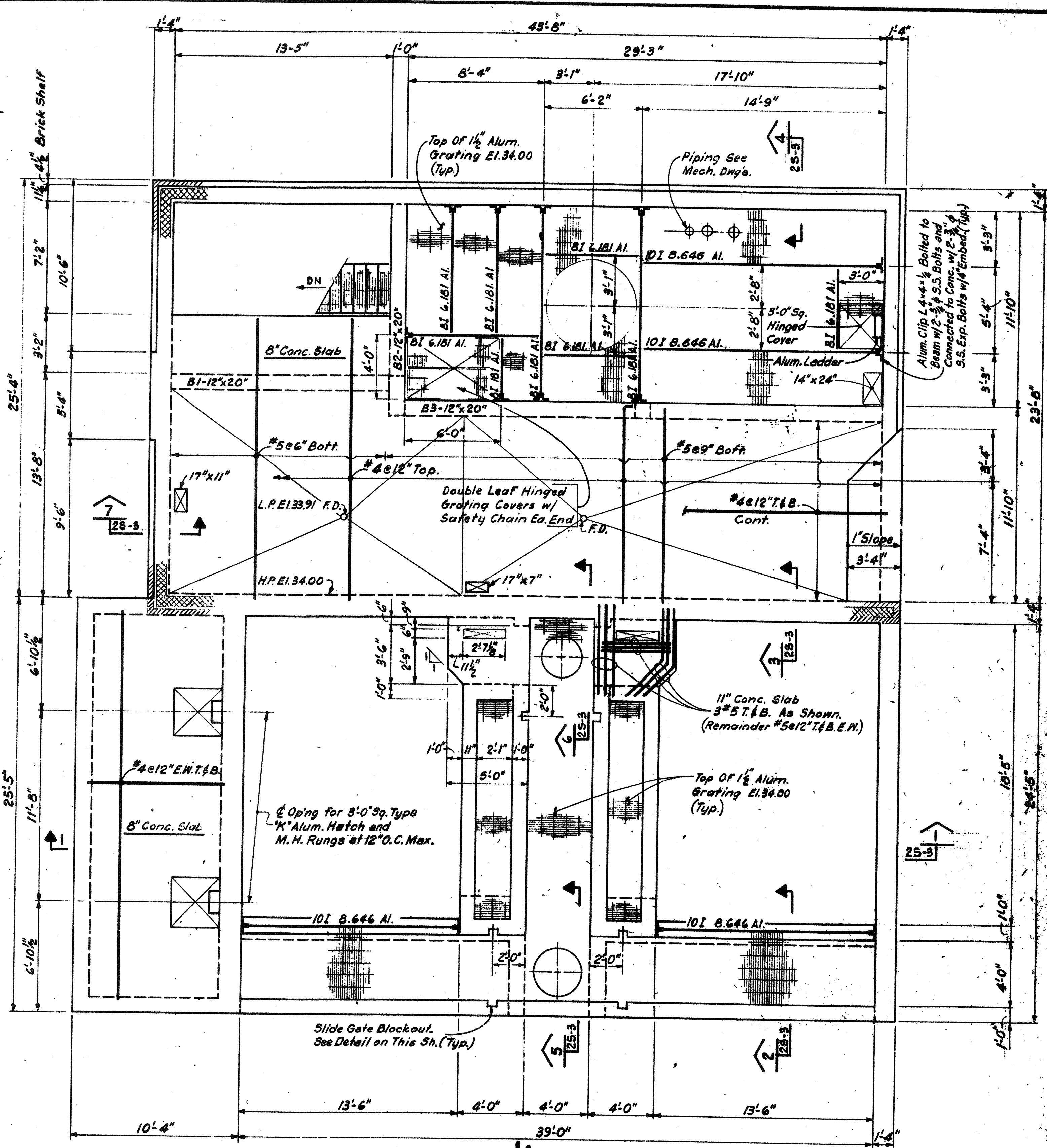
DESIGNED DRAWN: W.J.F. F.P. CHECKED: A.C. SCALE: AS NOTED DATE: SEPT. 1985

DRAWING NO. **IS-3**
JOB NO. **85-163**
CONTRACT NO. **3**

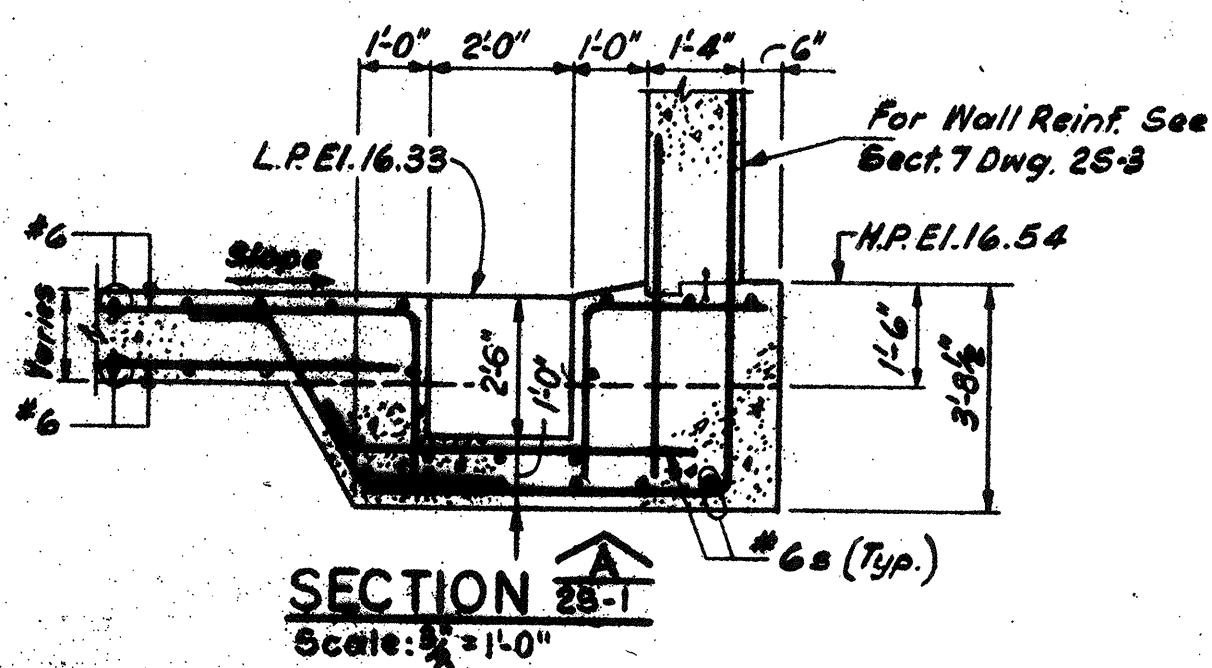
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
CONTROL BUILDING
ROOF FRAMING PLAN, SECTIONS AND DETAILS



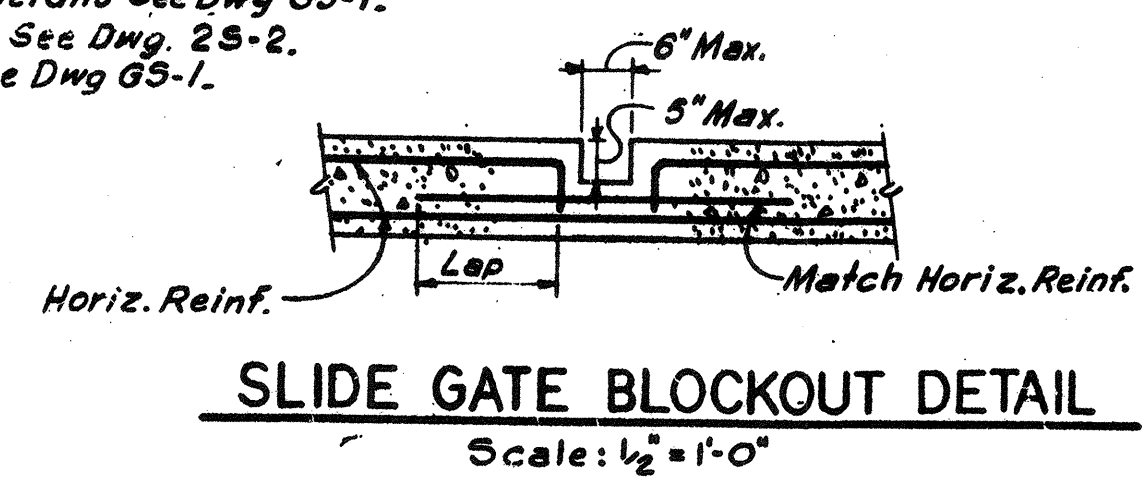
FOUNDATION PLAN
Scale: 1/4" = 1'-0"



GROUND FLOOR PLAN
Scale: 1/4" = 1'-0"



SECTION 25-1
Scale: 1/2" = 1'-0"

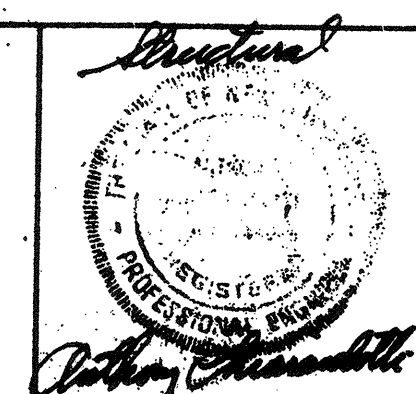


SLIDE GATE BLOCKOUT DETAIL
Scale: 1/2" = 1'-0"

Notes:
For General Notes & Typ. Struct. Details See Dwg GS-1.
For Col's. & Beams B1, B2 & B3 See Dwg. 25-2.
For Rock Excavation Details See Dwg GS-1.

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	DRAWING REVISED	7/89
REVISIONS		

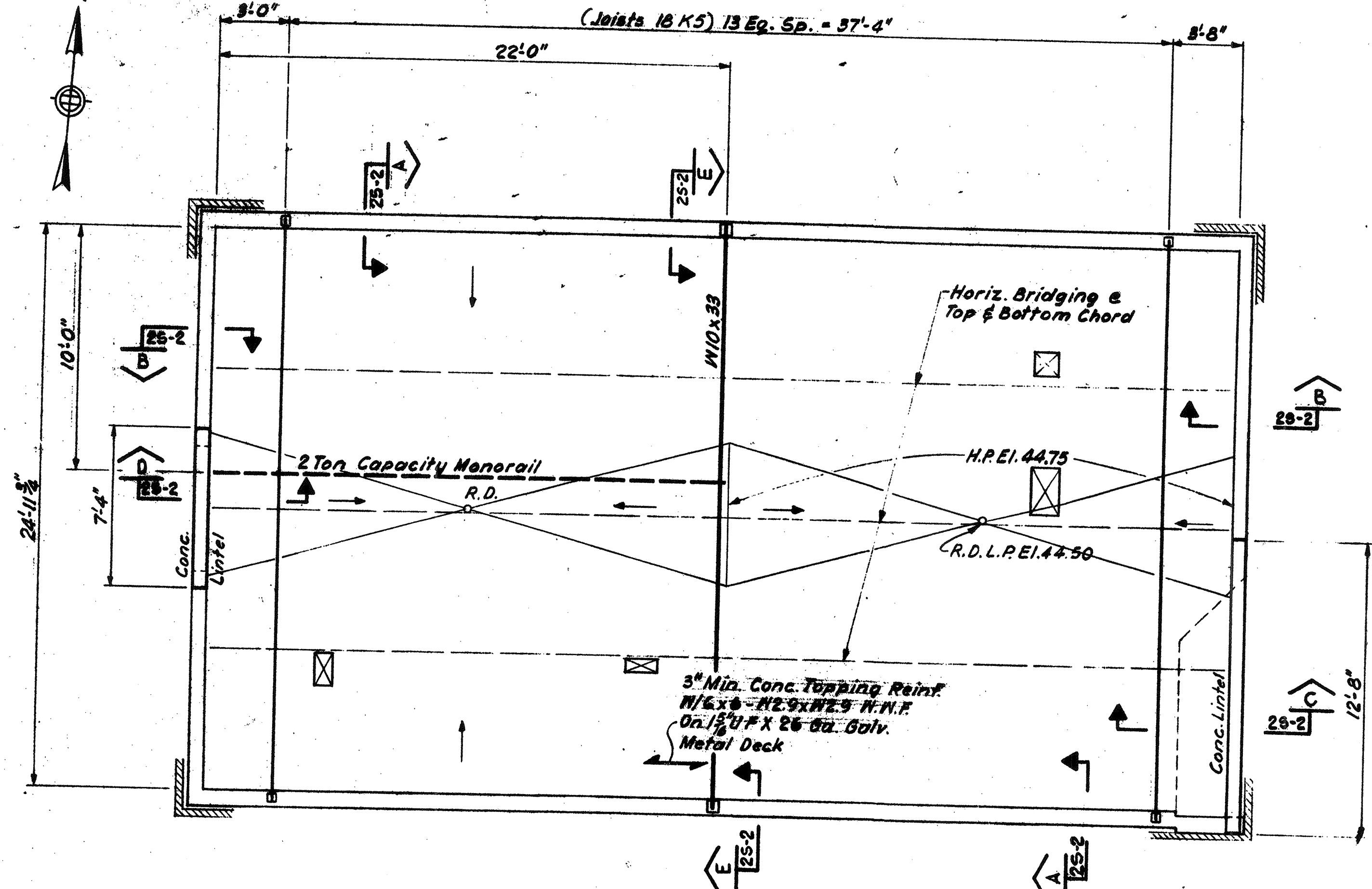
WHITMAN & HOWARD, INC.
46 WILLIAM STREET, WELLESLEY, MASS.



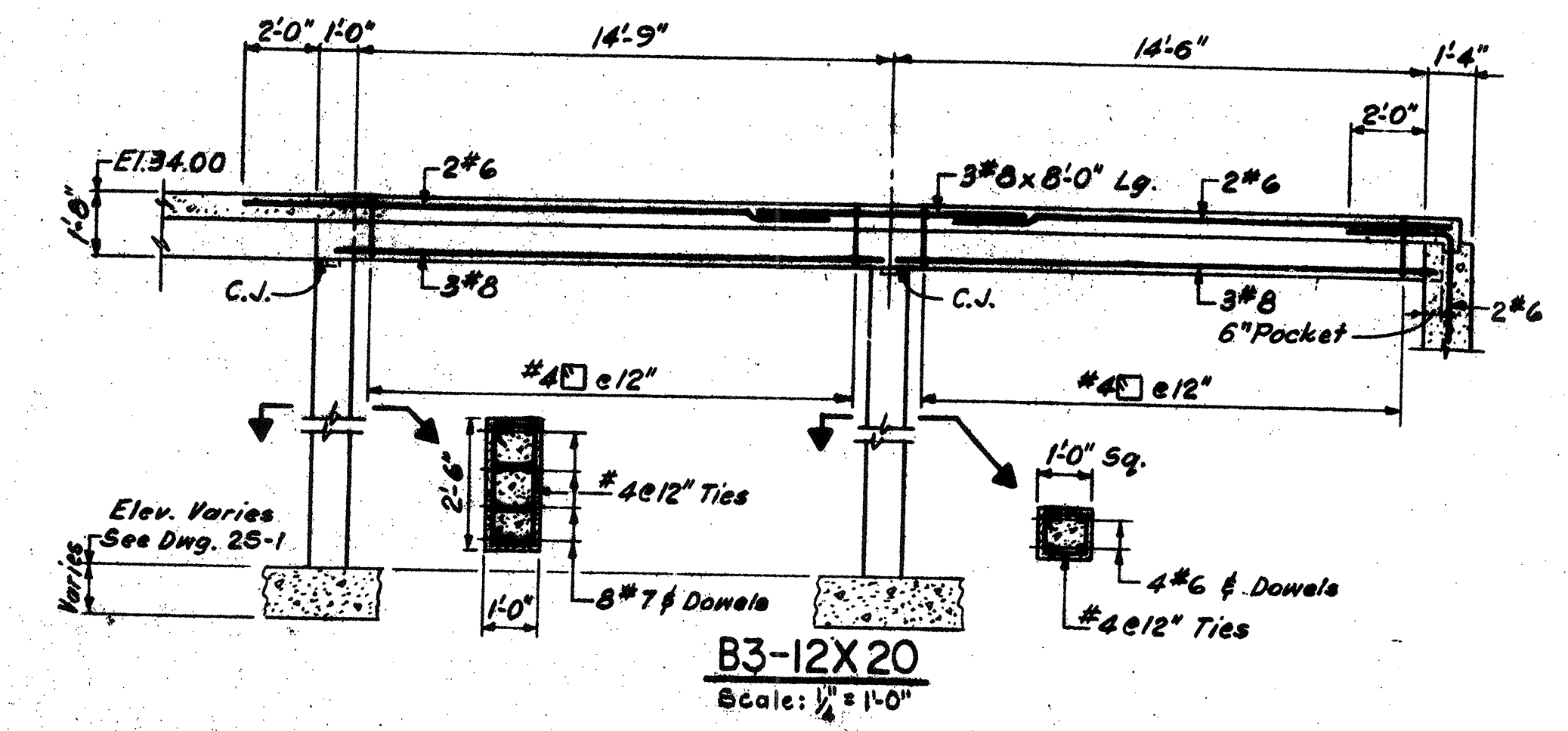
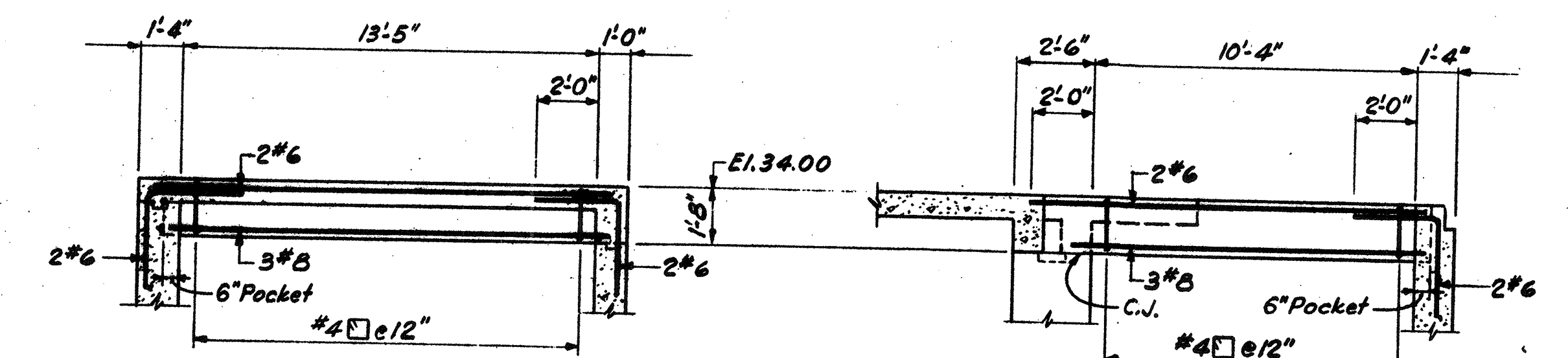
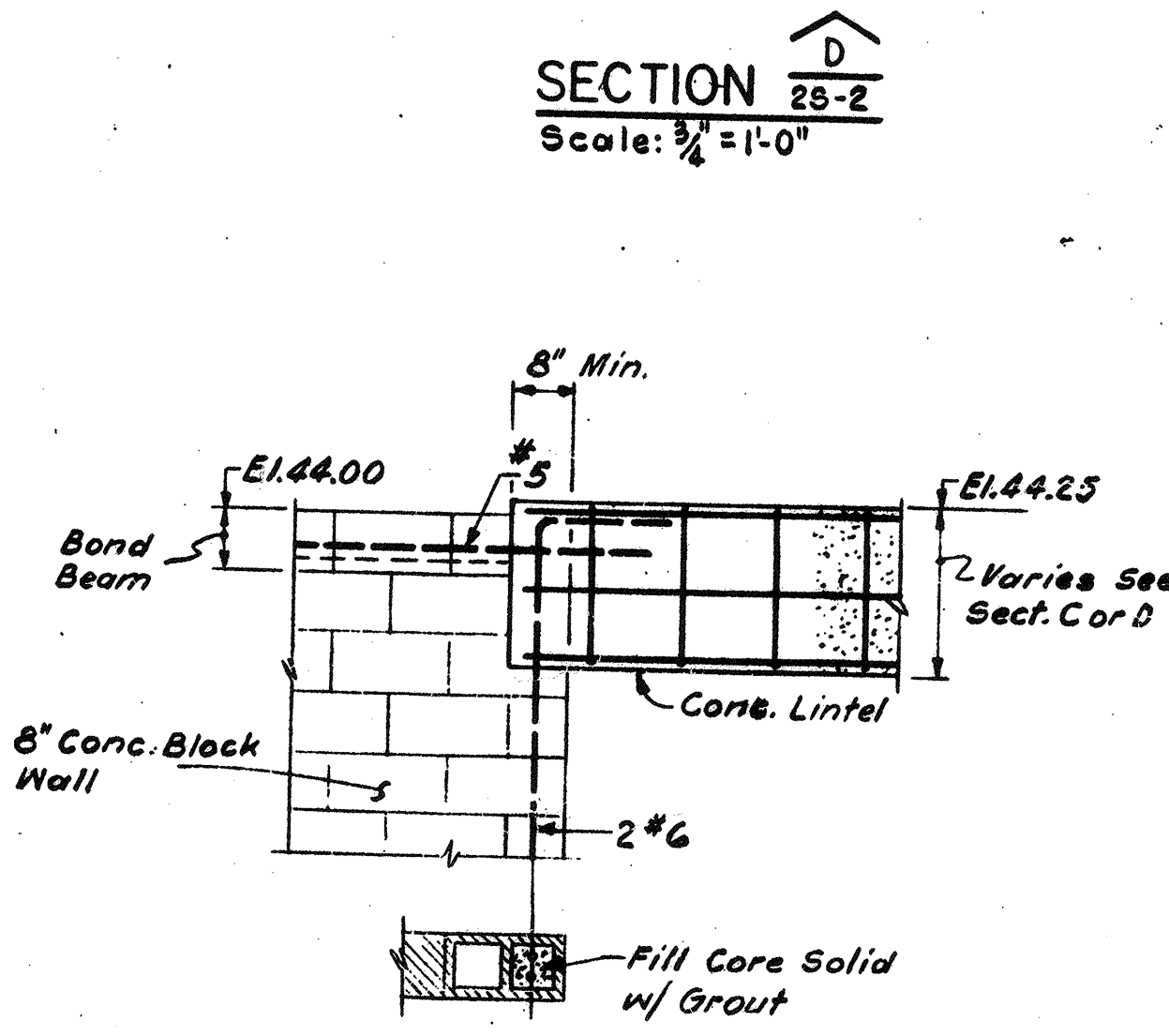
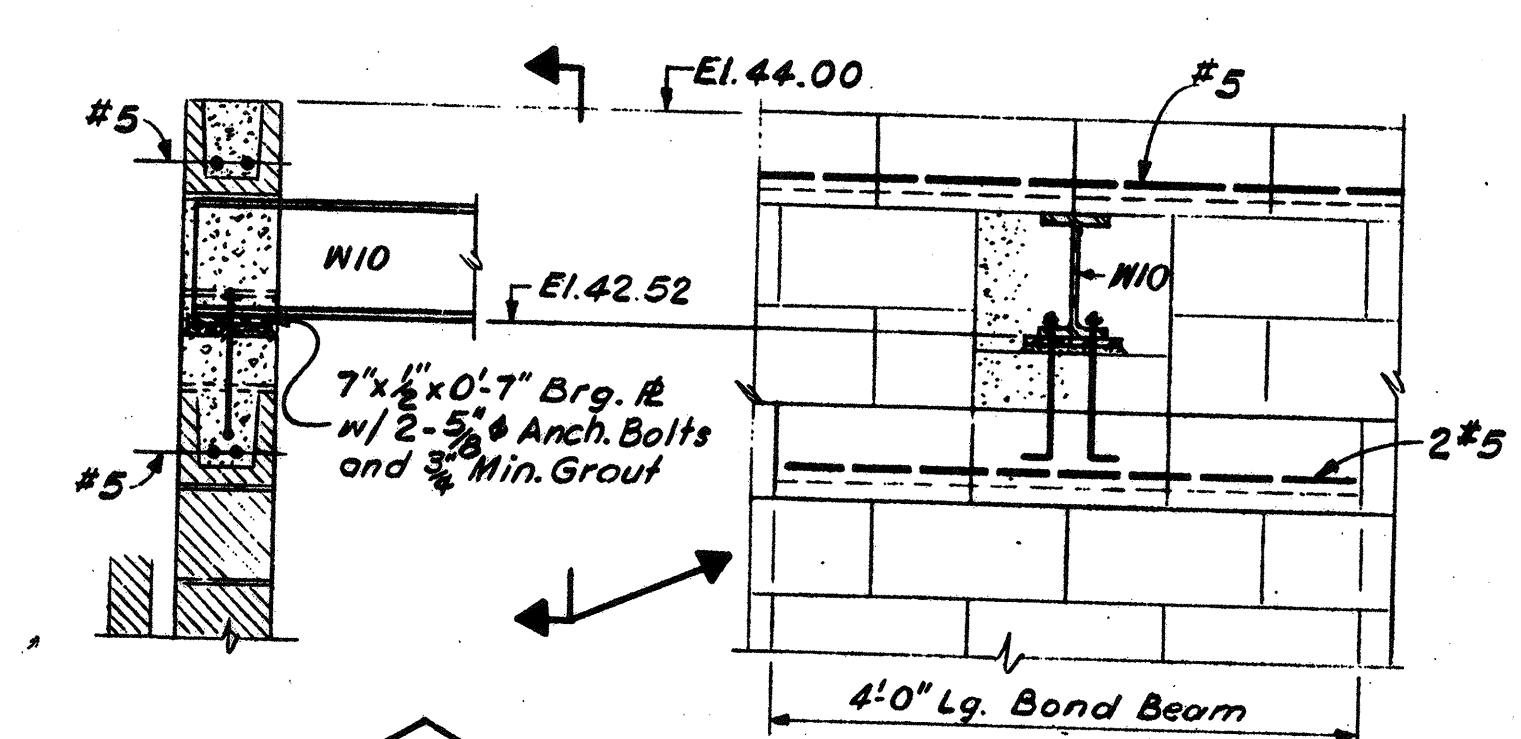
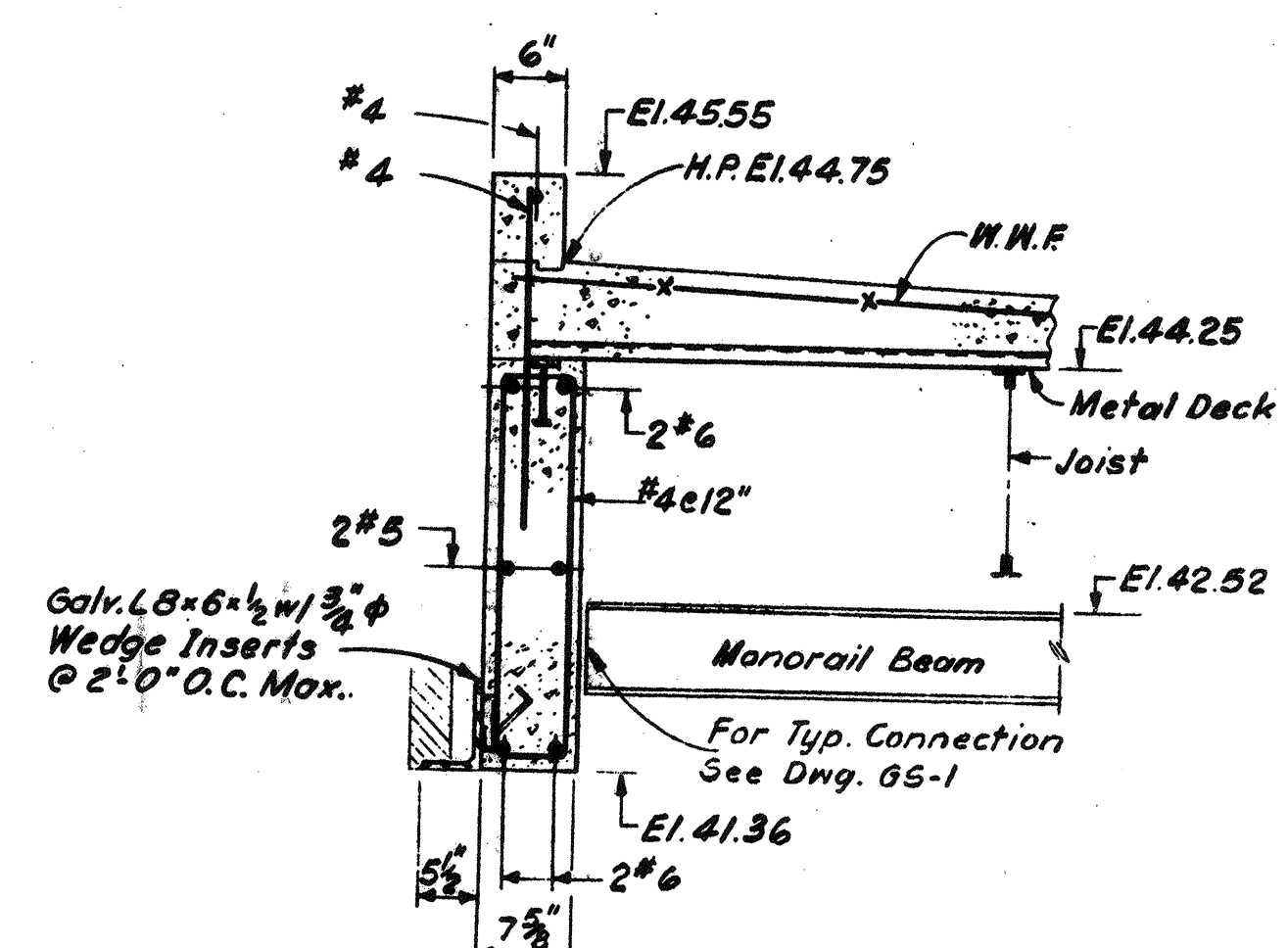
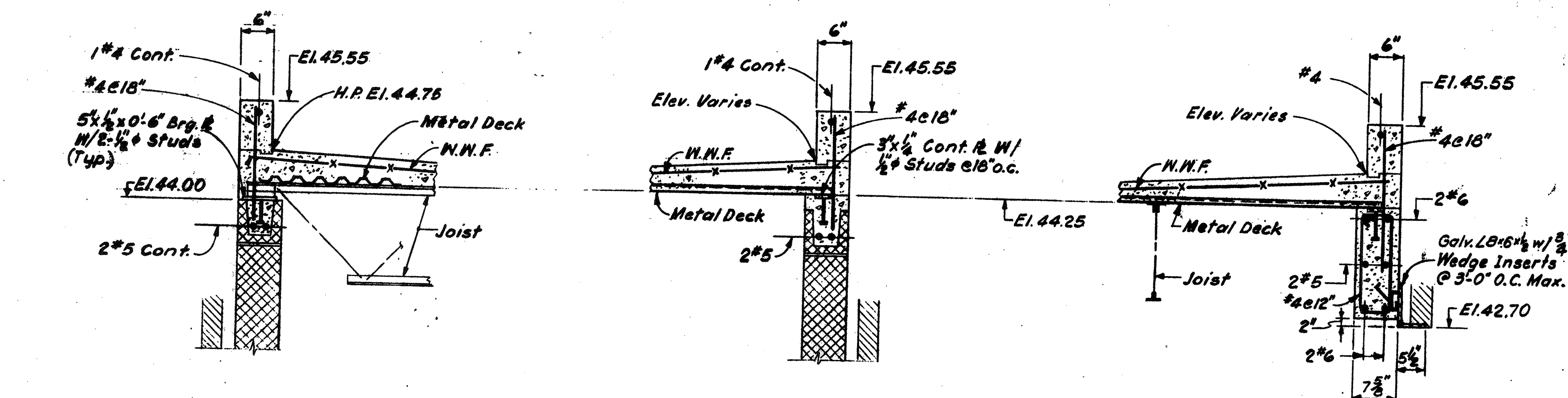
APPROVED
Stephen E. Seigel
DESIGNED/DRAWN: A.L. E.W. A.C. AS NOTED
CHECKED/SCALE: AS NOTED
DATE: SEPT. 1985

DRAWING NO. **25-1**
JOB NO. 85-163
CONTRACT NO. 3

RECORD PLAN
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
SCUM CONCENTRATOR BUILDING
FOUNDATION AND GROUND FLOOR PLANS

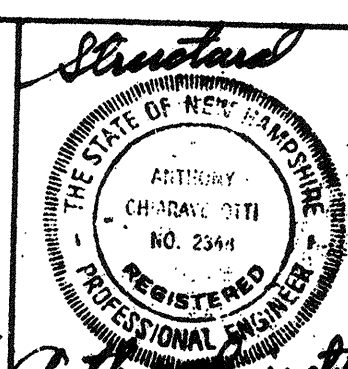


ROOF PLAN
Scale: 1/4" = 1'-0"
Roof Live Load: 45 PSF



NO.	REVISIONS	DATE
2	REVISED TO RECORD PLAN	9-93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



DESIGNED/DRAWN: A.L. E.W. A.C. AS NOTED

CHECKED: Stephen E. Seigel

SCALE: AS NOTED

DATE: SEPT. 1985

DRAWING NO. 2S-2

JOB NO. 85-163

CONTRACT NO. 3

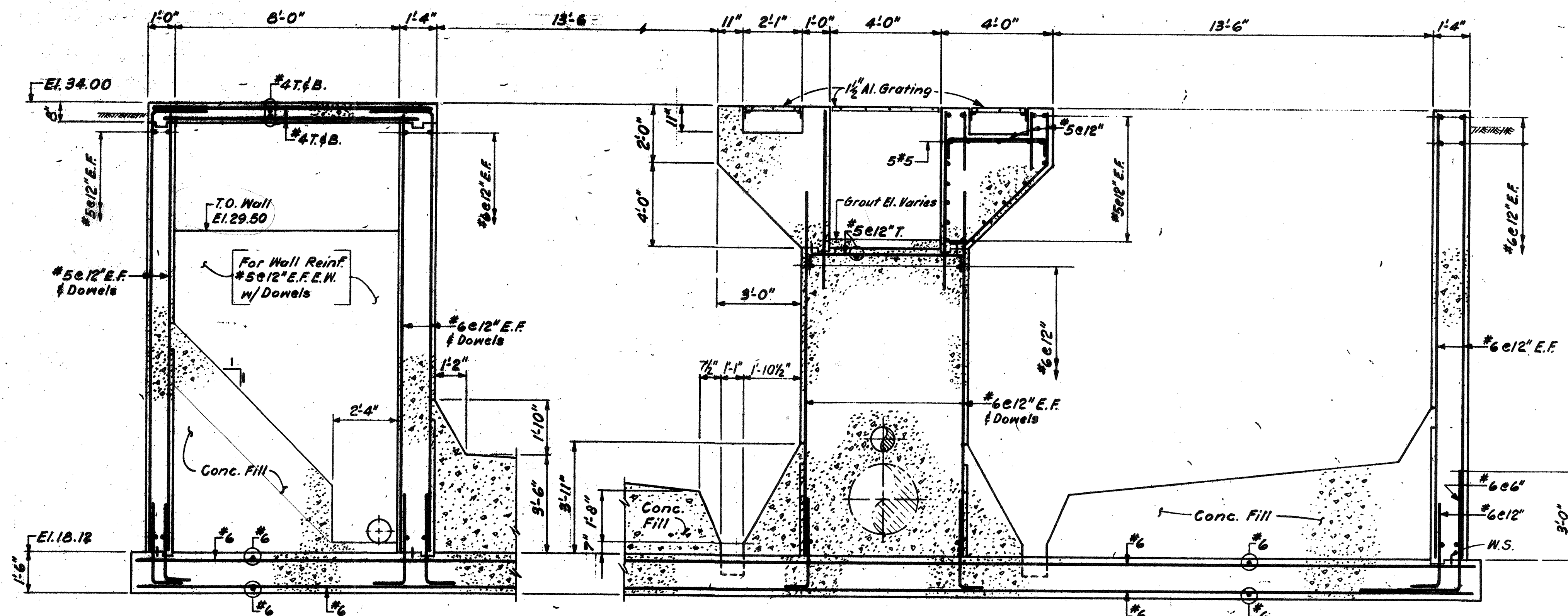
SHEET 30 OF 106 SHEETS

RECORD PLAN

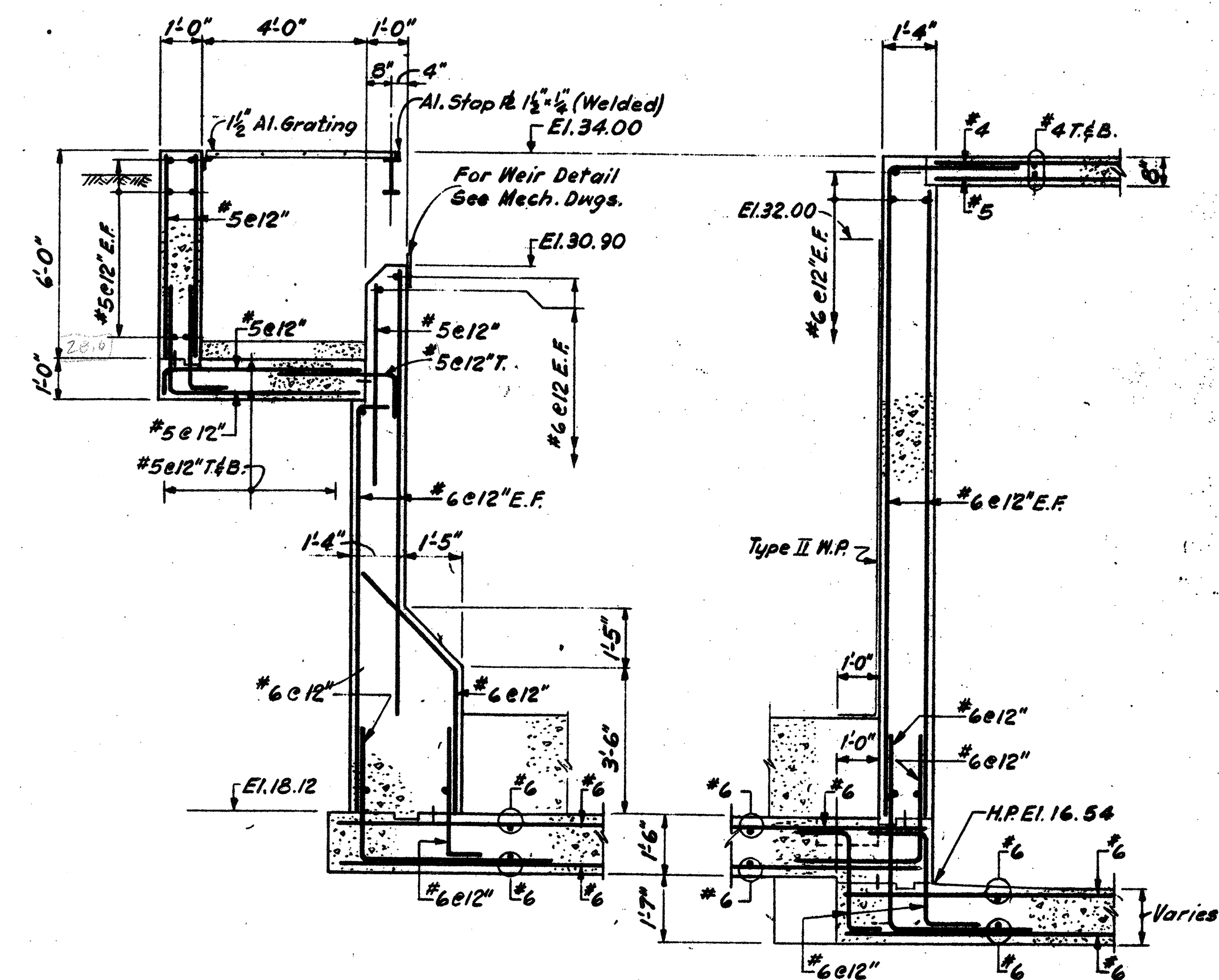
WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N. H.

SCUM CONCENTRATOR BUILDING
ROOF PLAN AND SECTIONS

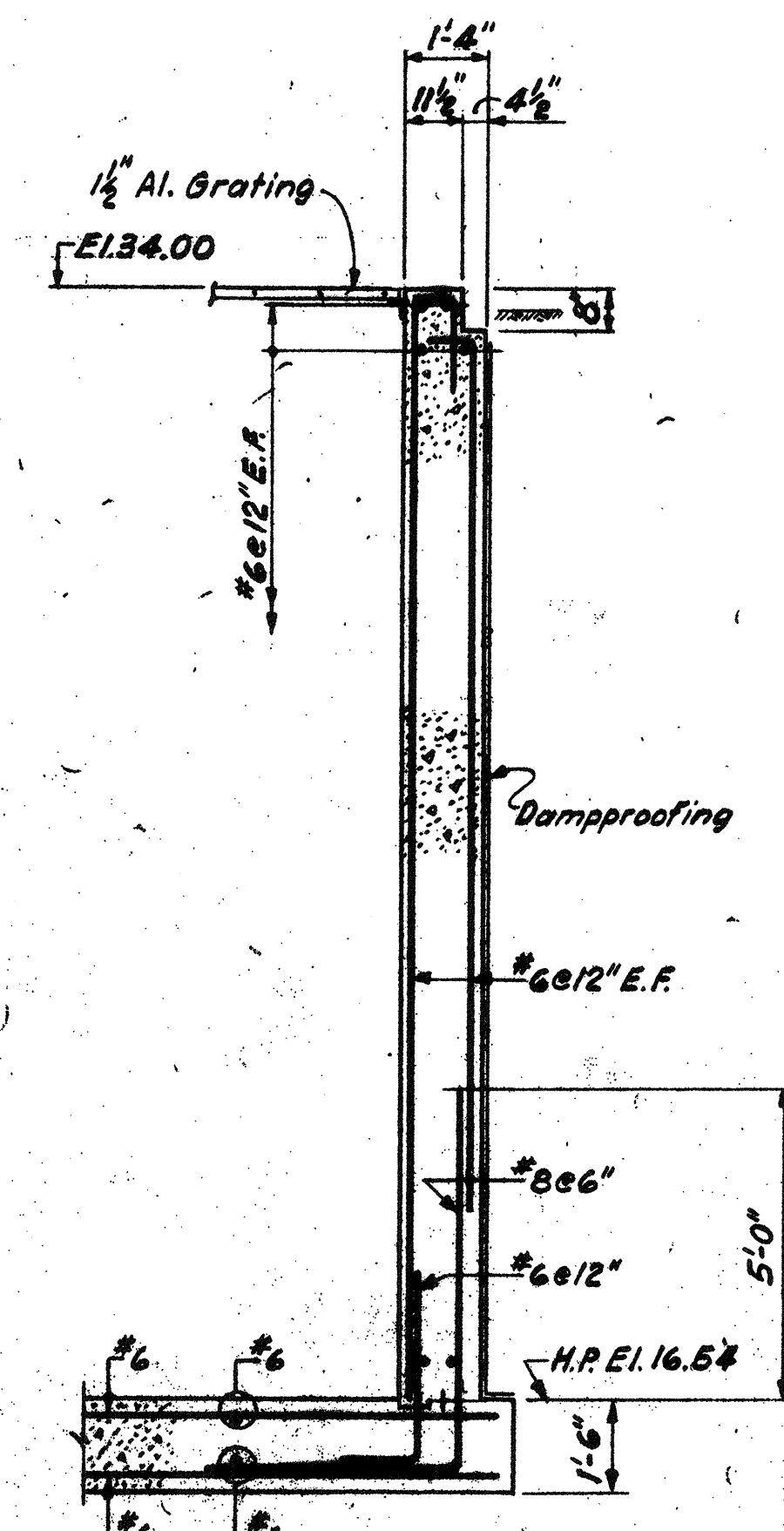


SECTION 1
25-1
NOT TO SCALE

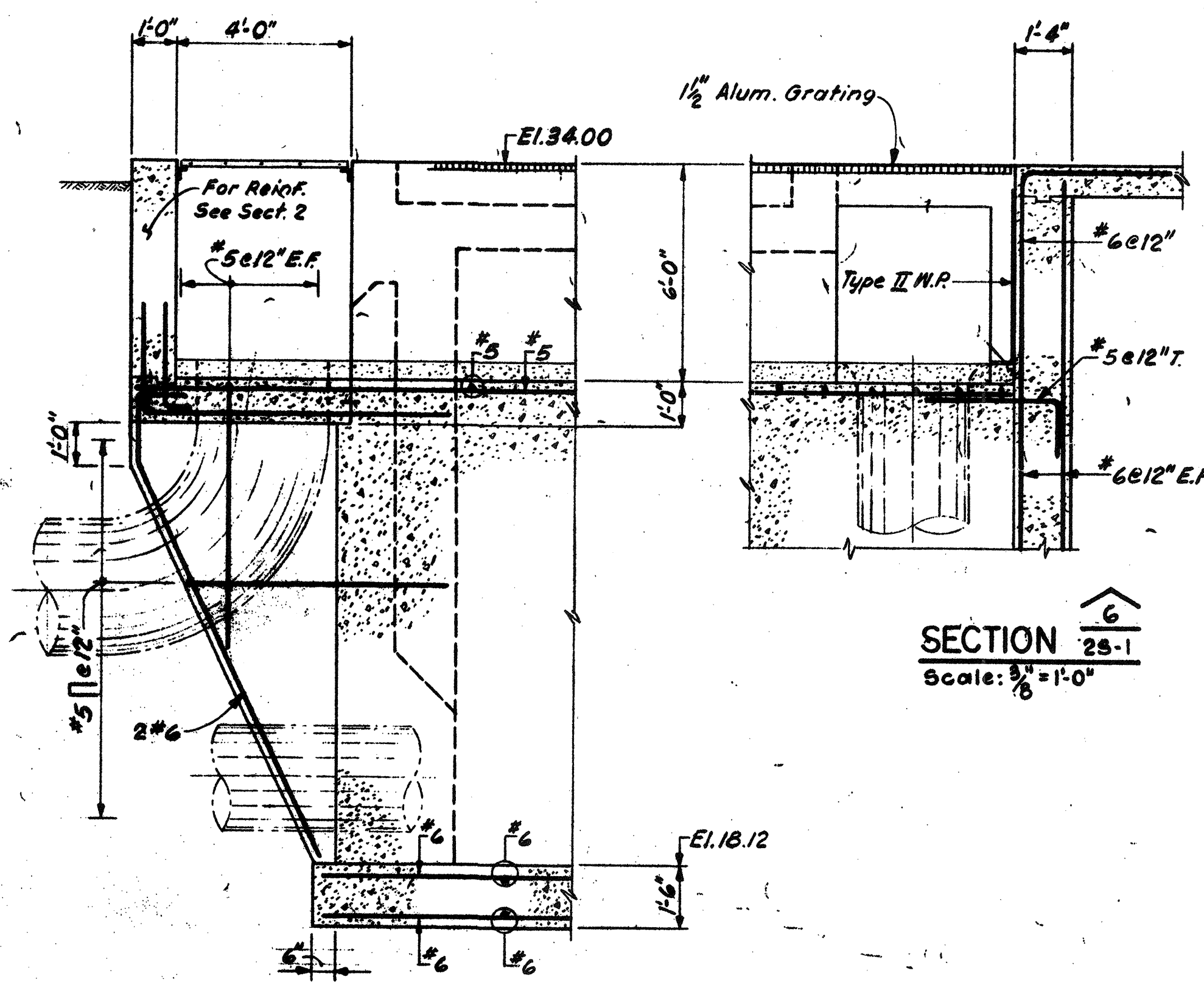


SECTION 2
25-1
Scale: 3/8" = 1'-0"

SECTION 3
25-1
Scale: 3/8" = 1'-0"

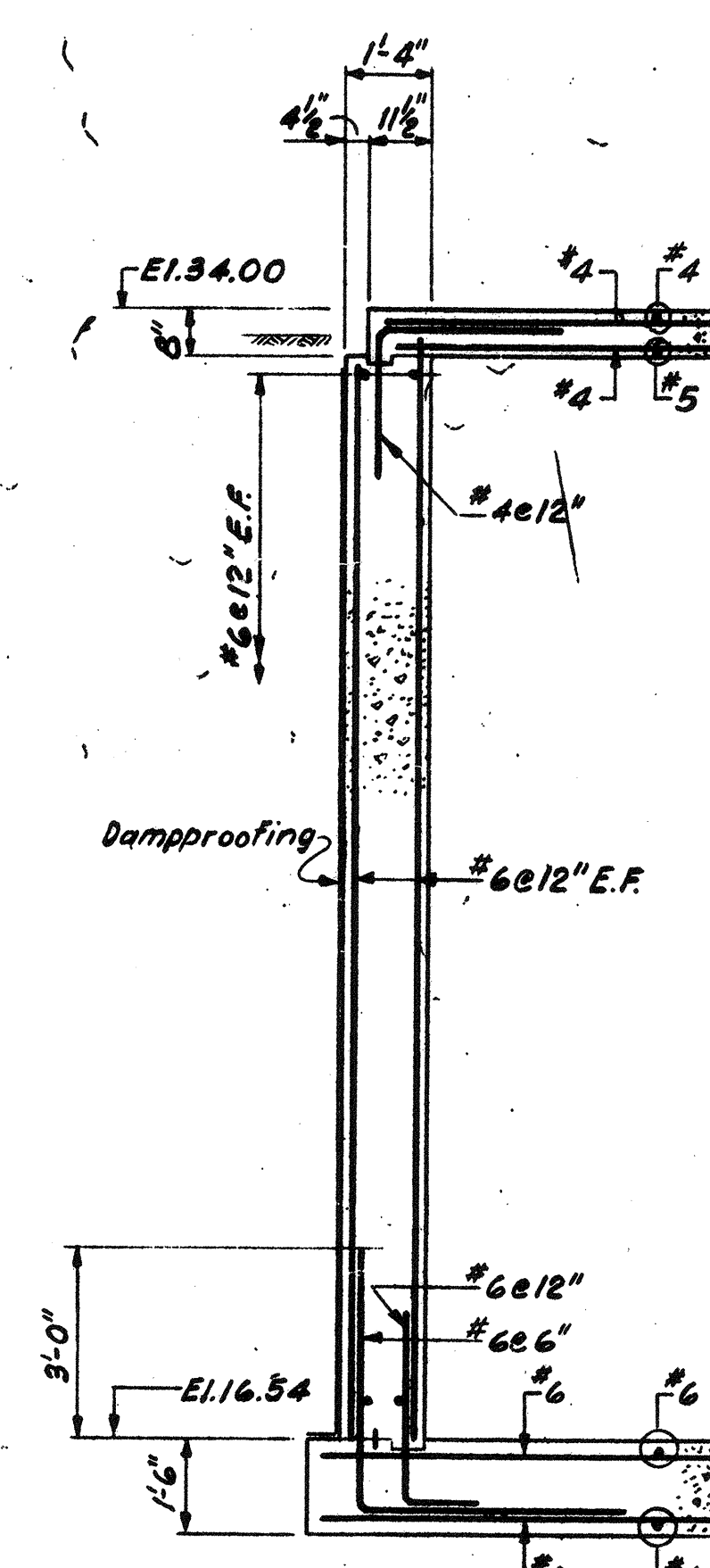


SECTION 4
25-1
Scale: 3/8" = 1'-0"



SECTION 5
25-1
Scale: 3/8" = 1'-0"

SECTION 6
25-1
Scale: 3/8" = 1'-0"

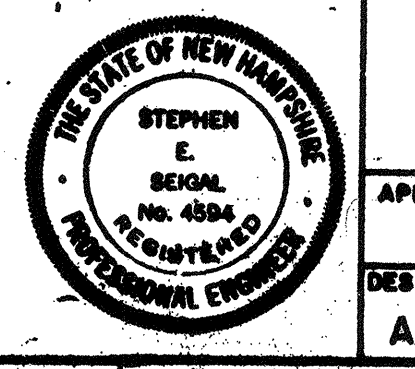
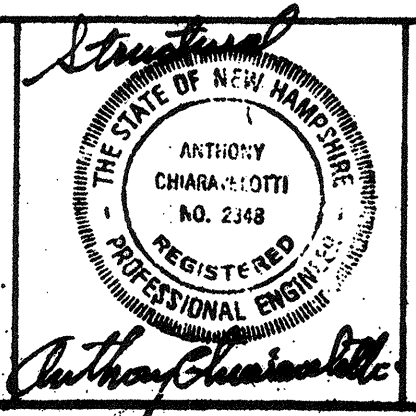


SECTION 7
25-1
Scale: 3/8" = 1'-0"

RECORD PLAN

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-83
1	Drawing Revised	9/83
	REVISIONS	

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

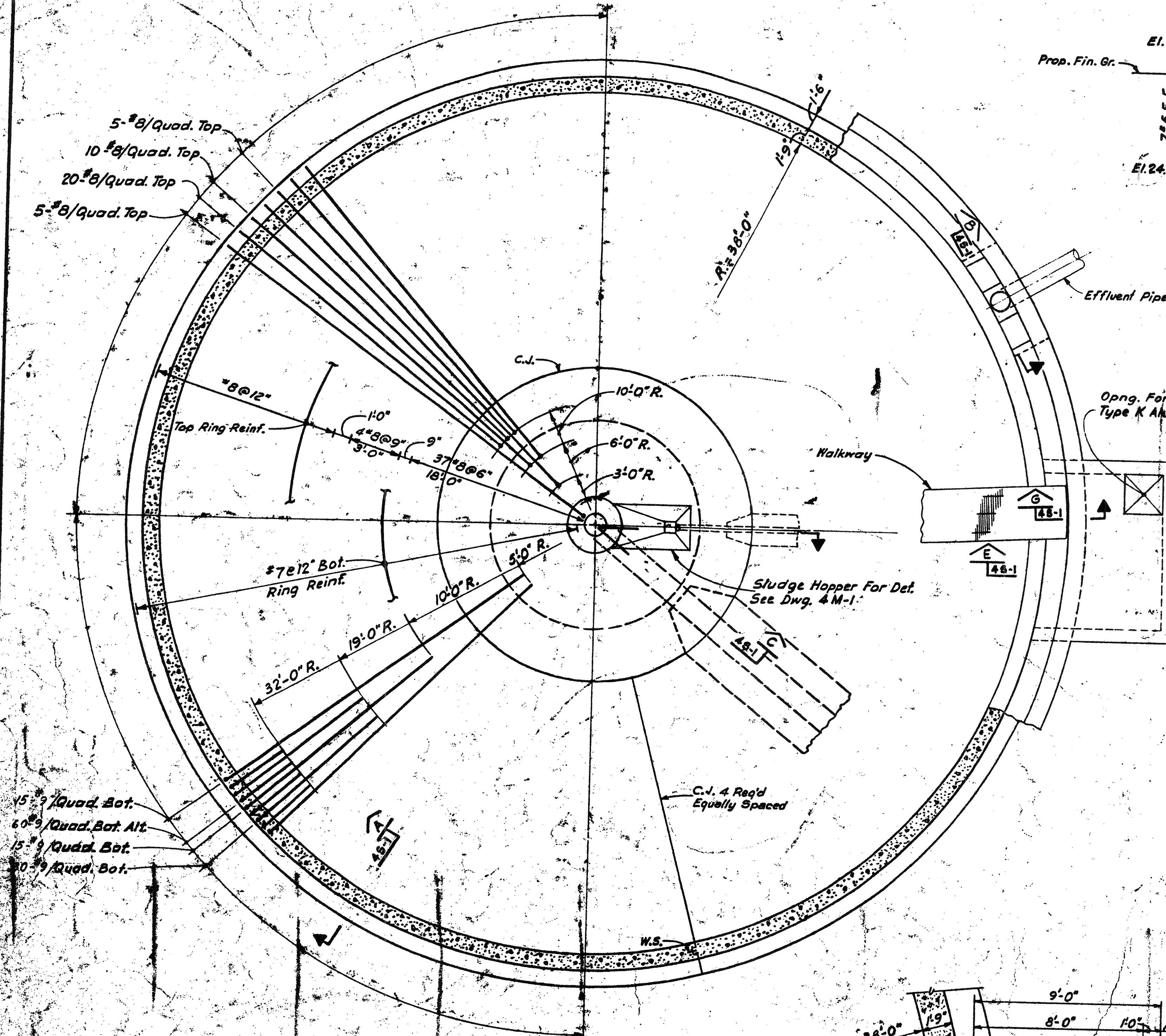
APPROVED: *Stephen E. Sejal*

DESIGNED DRAWN: A.L. E.W.
CHECKED SCALE: A.C. AS NOTED
DATE: SEPT. 1985

DRAWING NO. 2S-3
JOB NO. 85-163
CONTRACT NO. 3

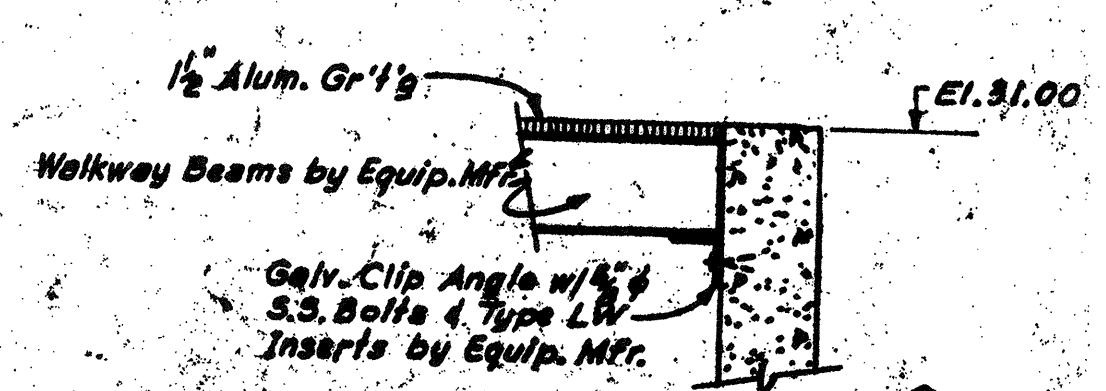
SHEET 31 OF 106 SHEETS

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
SCUM CONCENTRATOR BUILDING SECTIONS

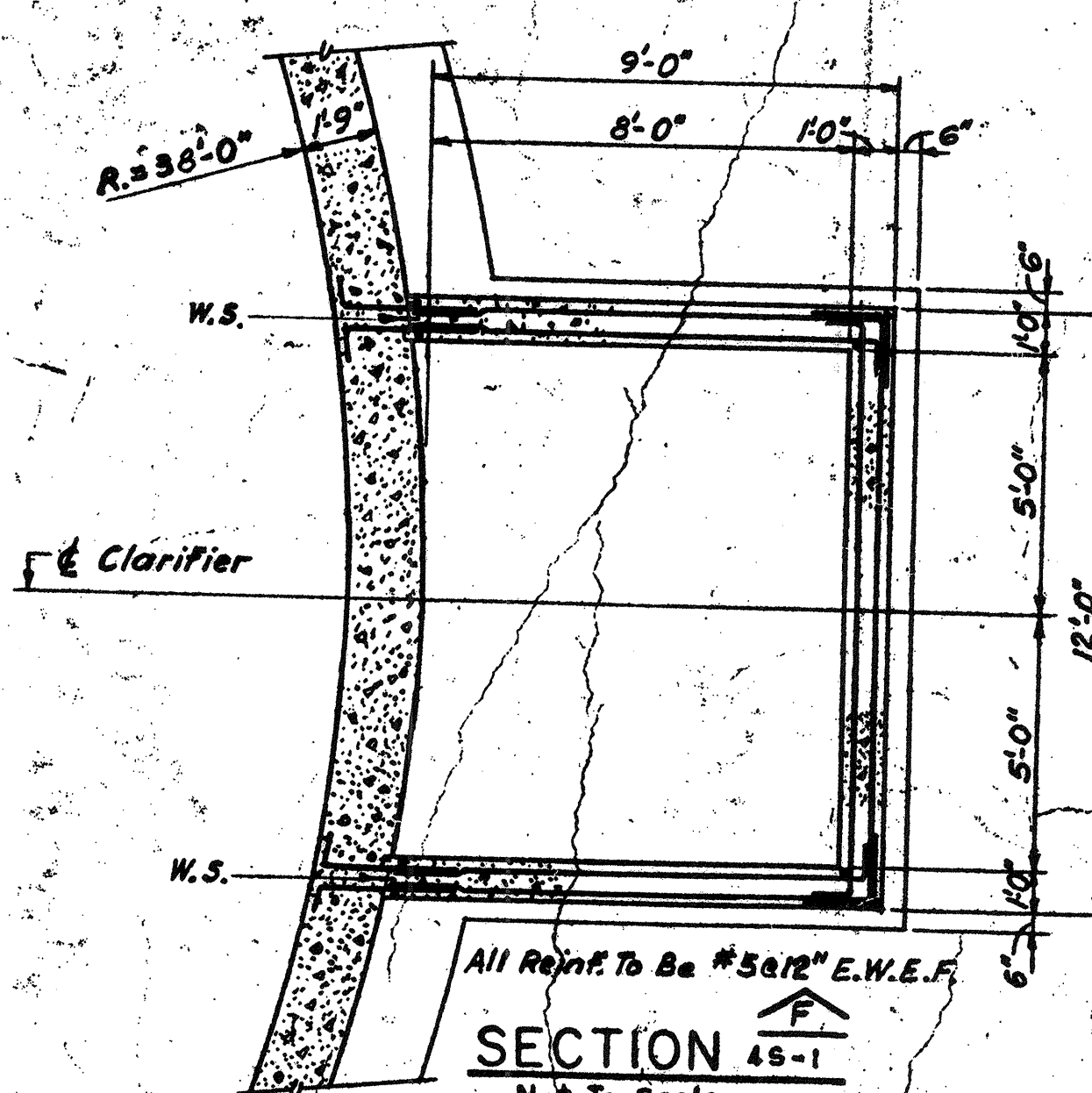


PLAN
Not to Scale

For Mech. Details & Orientation Of Pipes See Mech. Dwg.

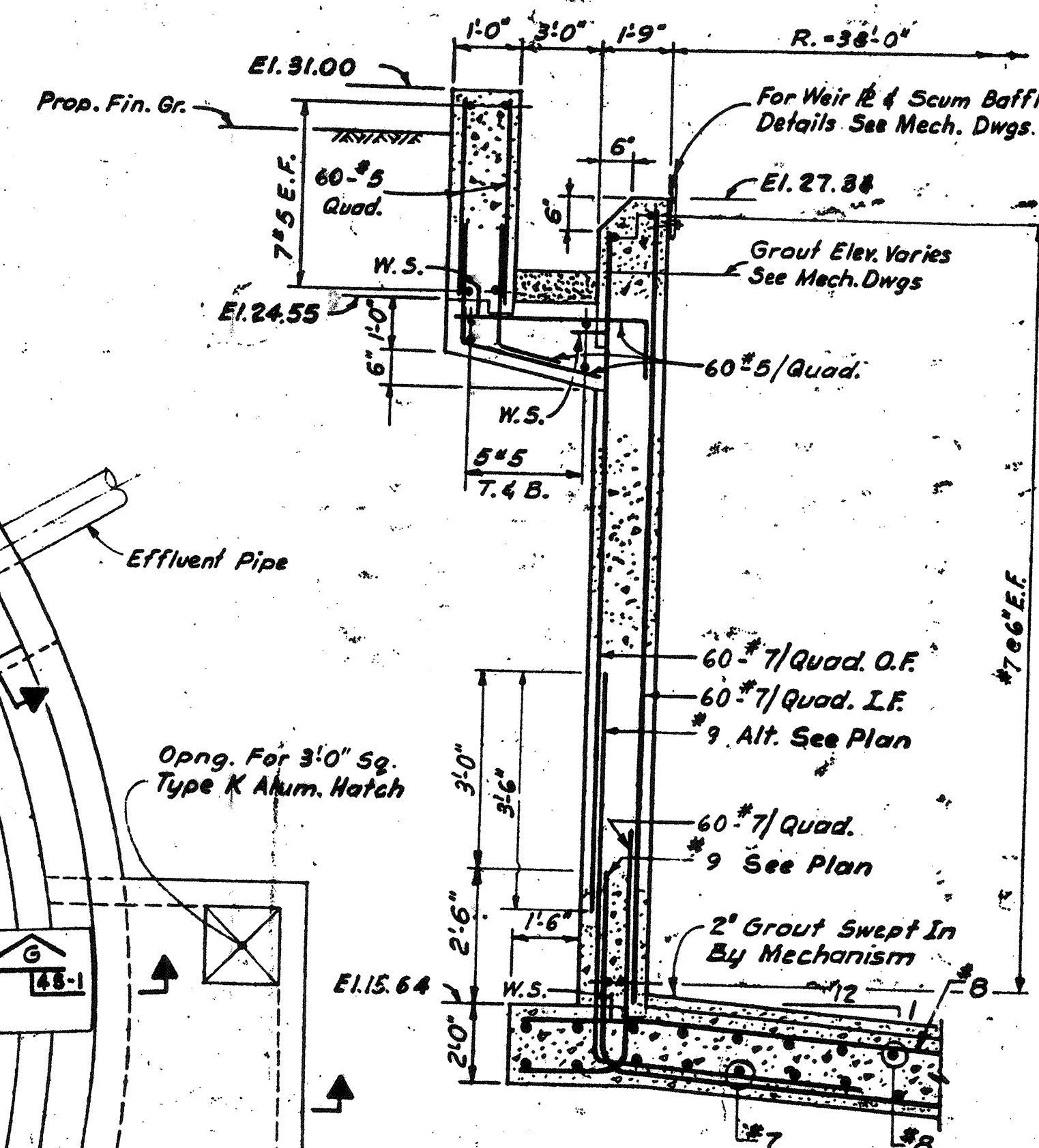


SECTION G
Not to Scale

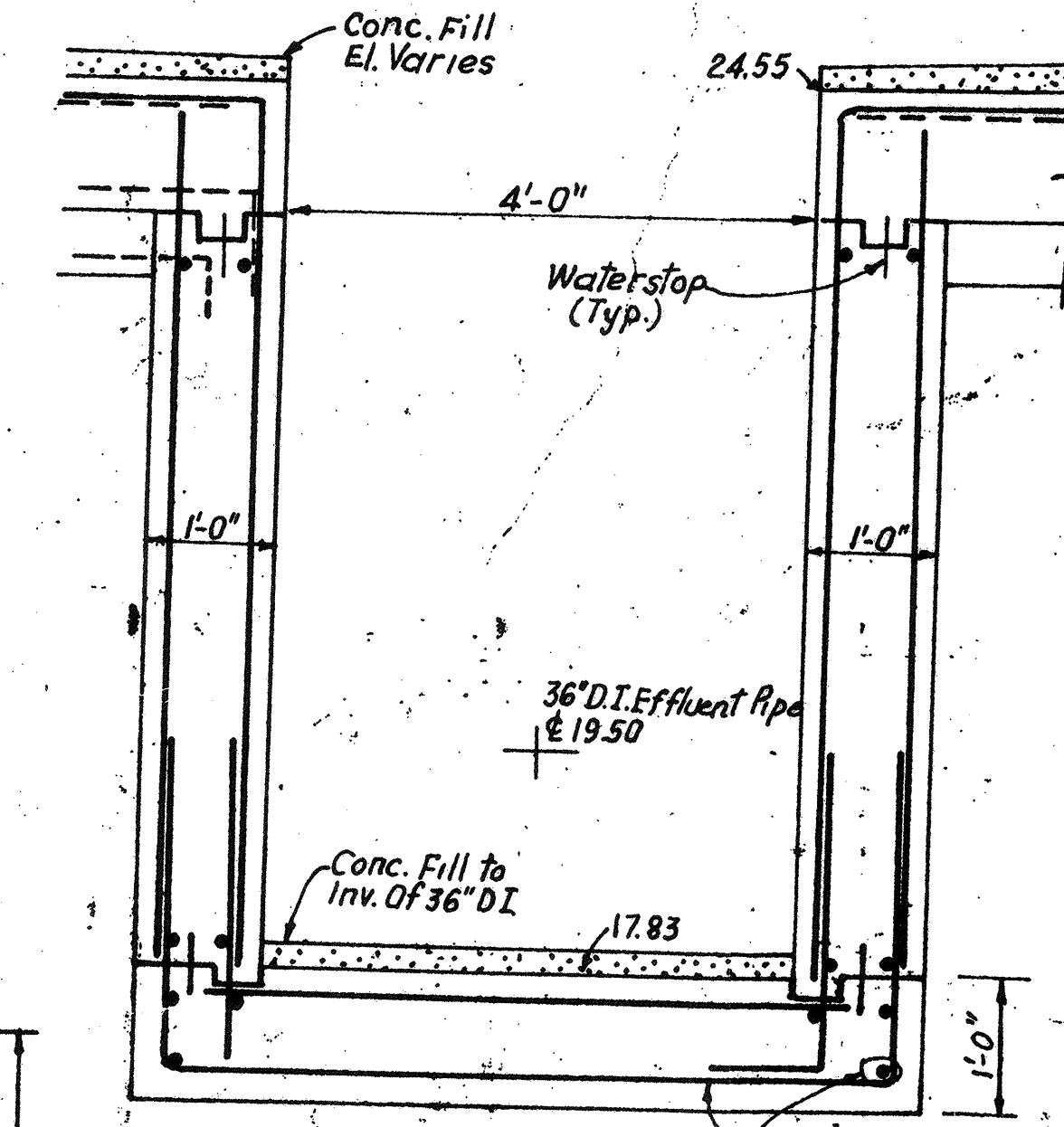


SECTION F
Not to Scale

All Reinf. To Be #5 @ 12" E.W.E.F.

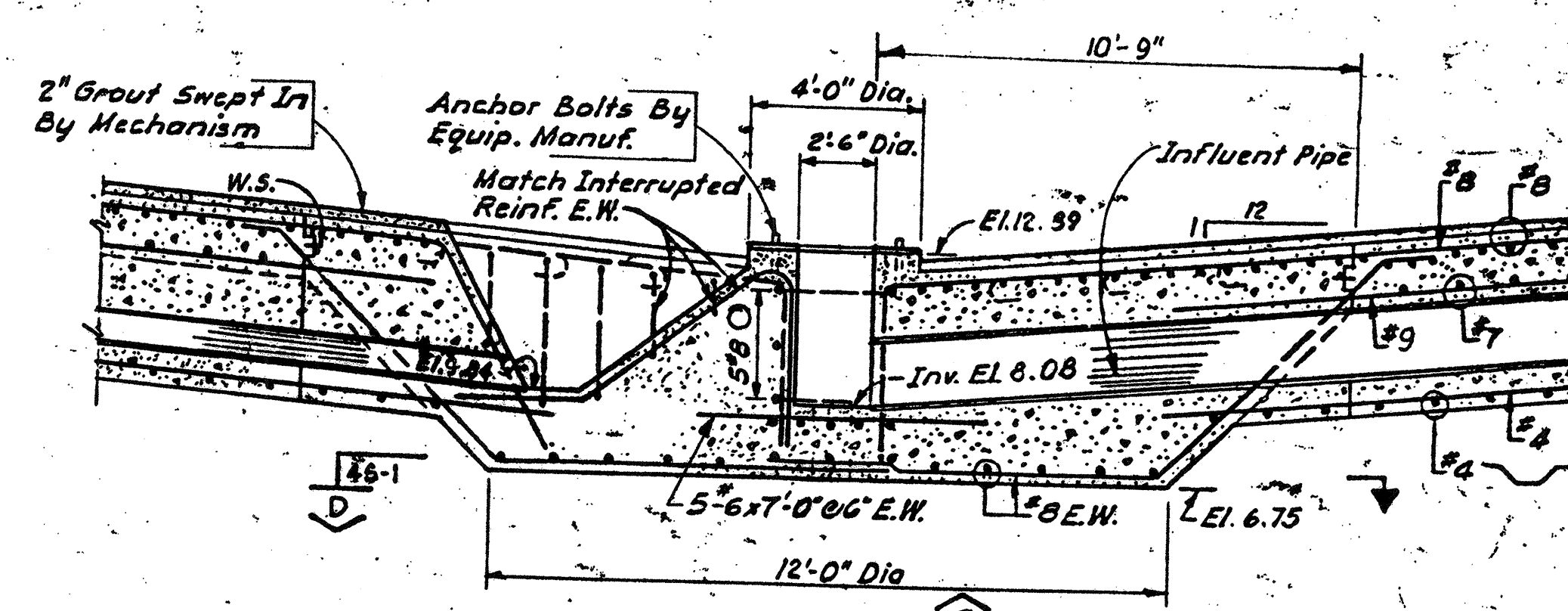


SECTION A
Not to Scale

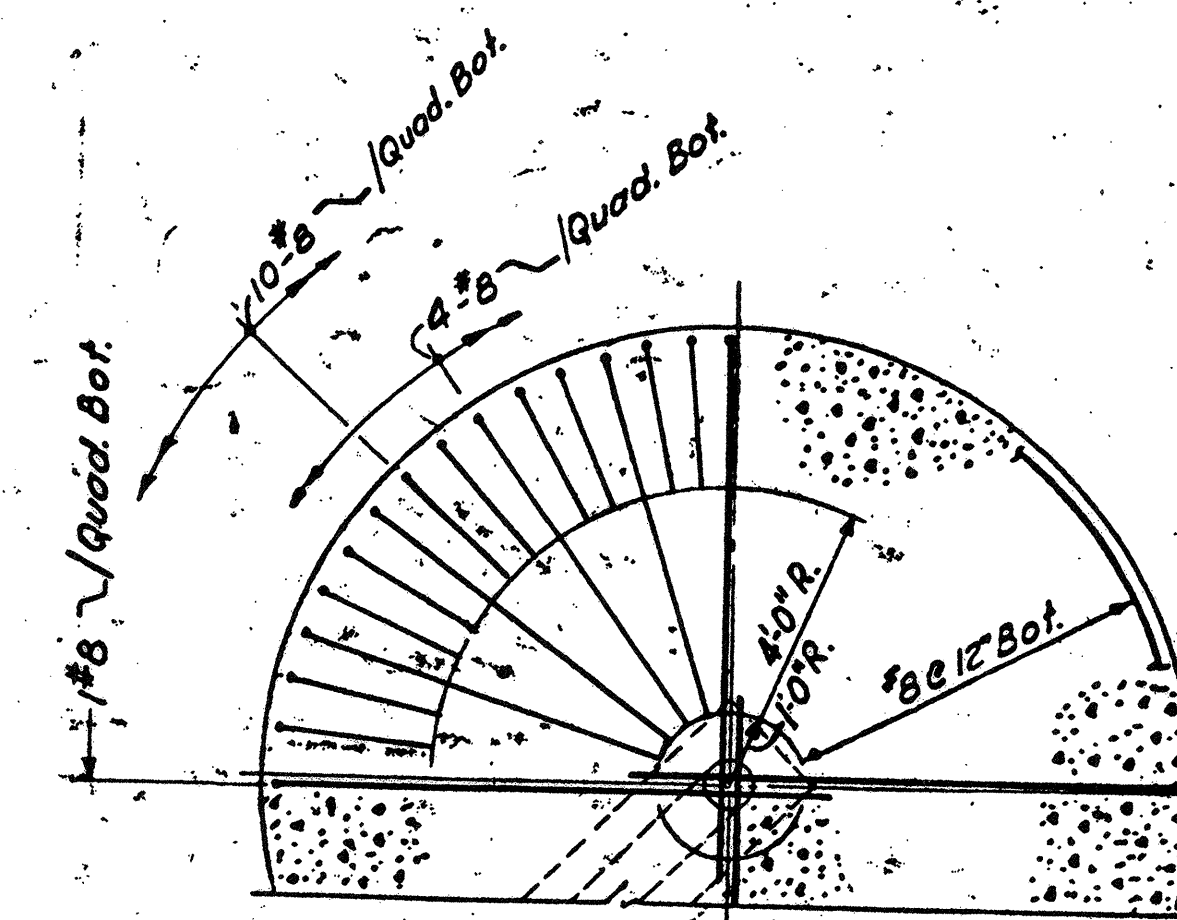


SECTION B
NOT TO SCALE

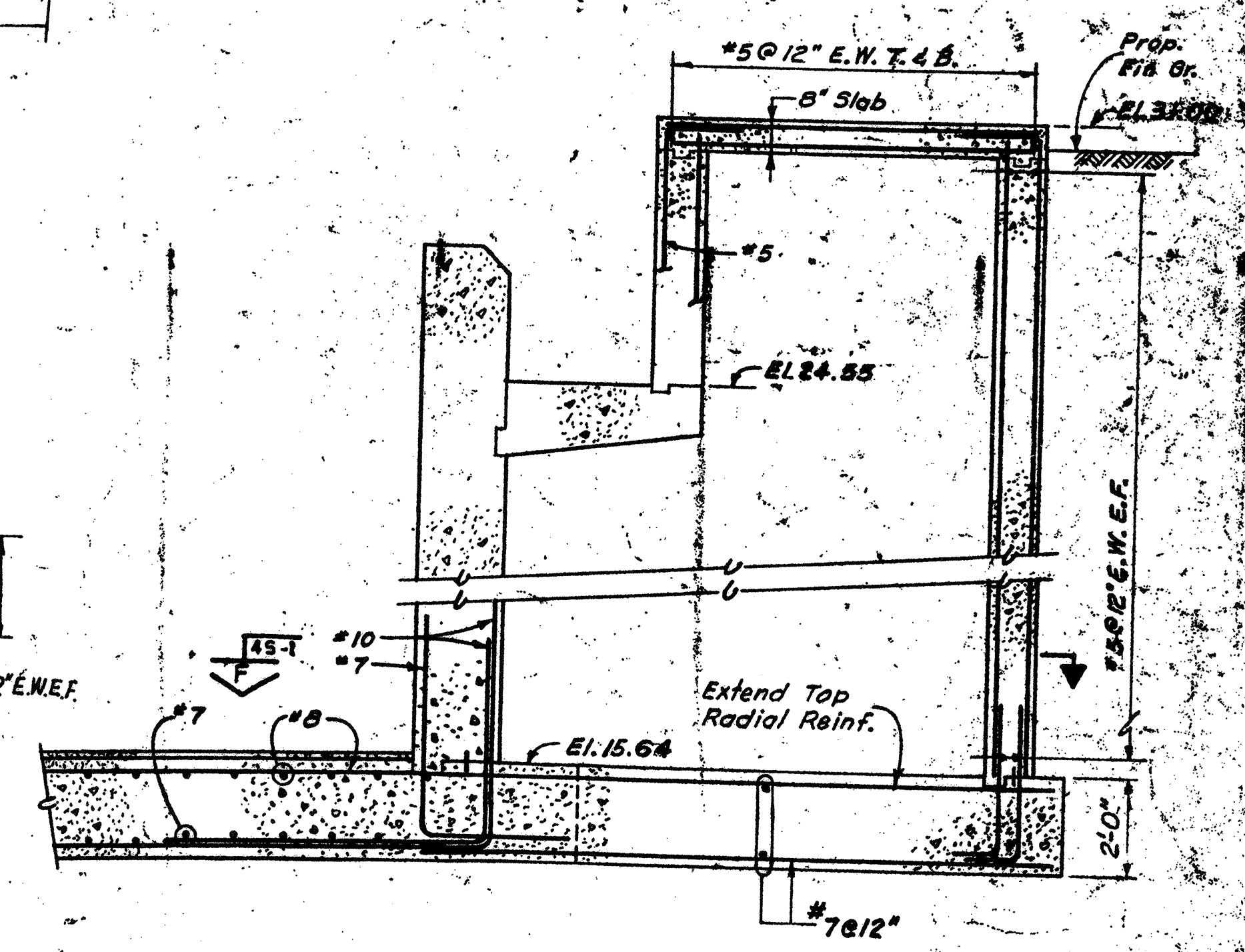
Notes:
For General Notes & Typ. Struct. Details See Dwg. 65-1.
For Rock Excavation Details See Dwg. 63-1.



SECTION C
Not to Scale



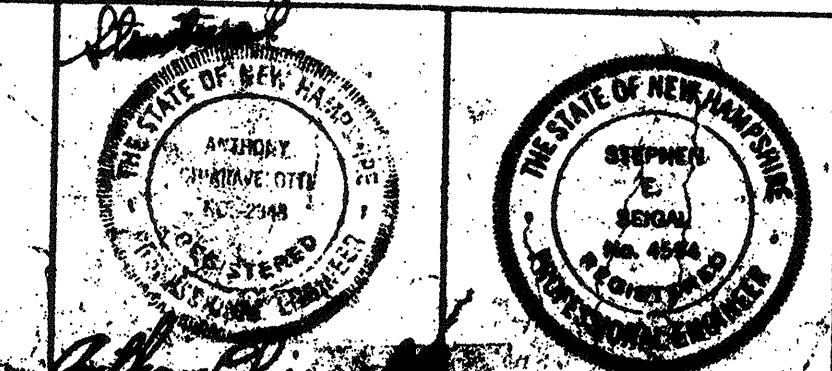
SECTION D
Not to Scale



SECTION E
Scale: 3/8" = 1'-0"

2	REVISE TO RECORD PLAN	9-93
1	PLANING REVISED	9/89
	DESIGNED BY	WLS
	CHECKED BY	

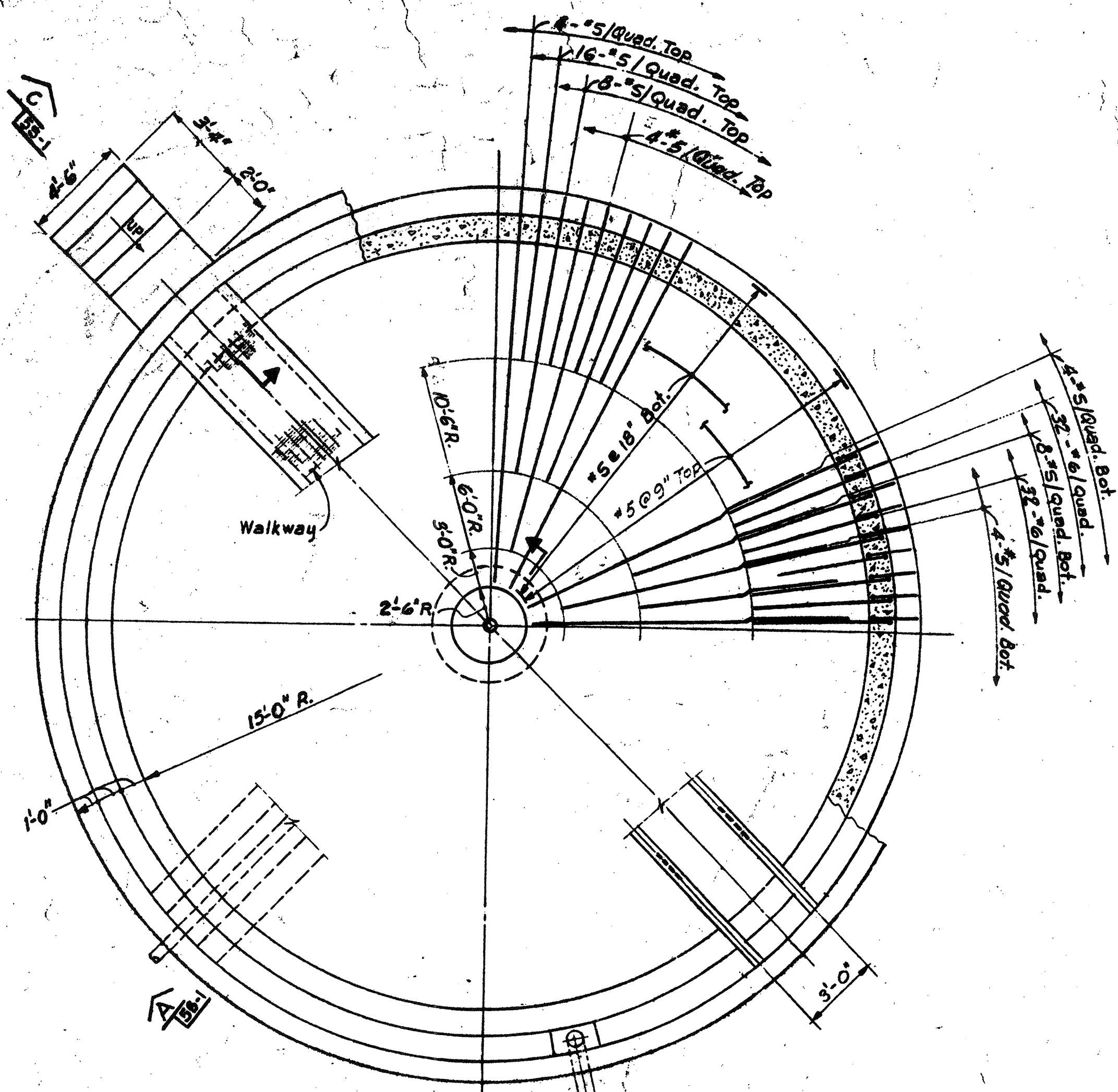
WHITMAN & HOWARD, INC.
45 WILLIAM STREET
MASS.



APPROVED: *Stephen E. Seigel*
CHECKED SCALE: A.C. AS NOTED
DATE: SEPT. 1993

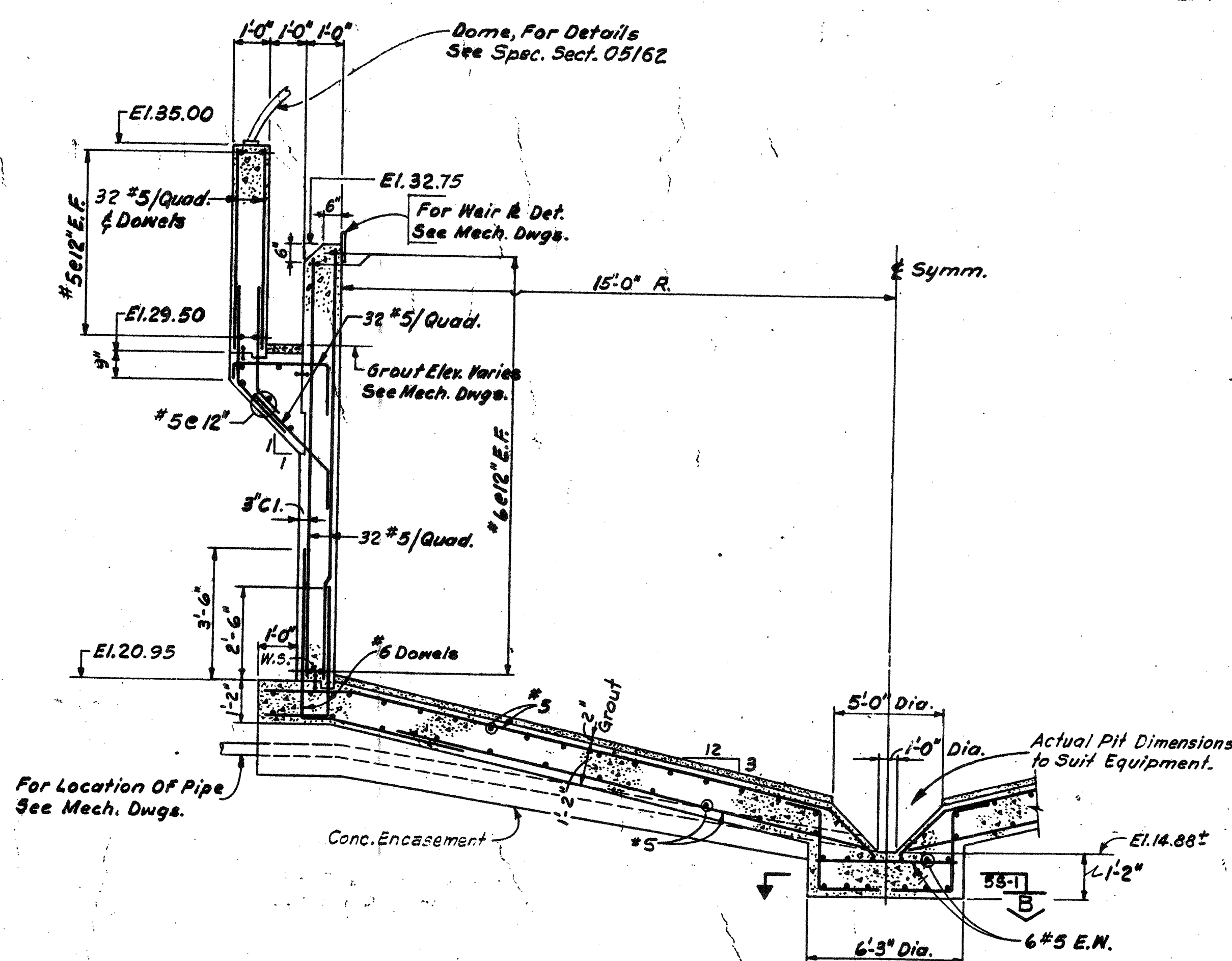
DRAWING NO. **45-1**
JOB NO. 85-163
CONTRACT NO. 3

RECORD PLAN
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
PRIMARY CLARIFIER
PLAN AND SECTIONS

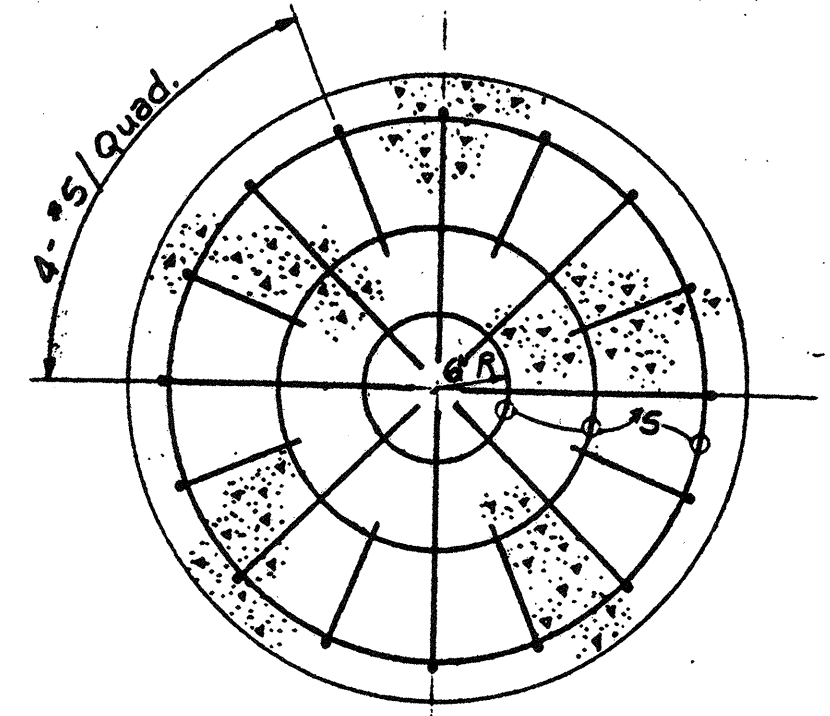


PLAN
N.T.S.

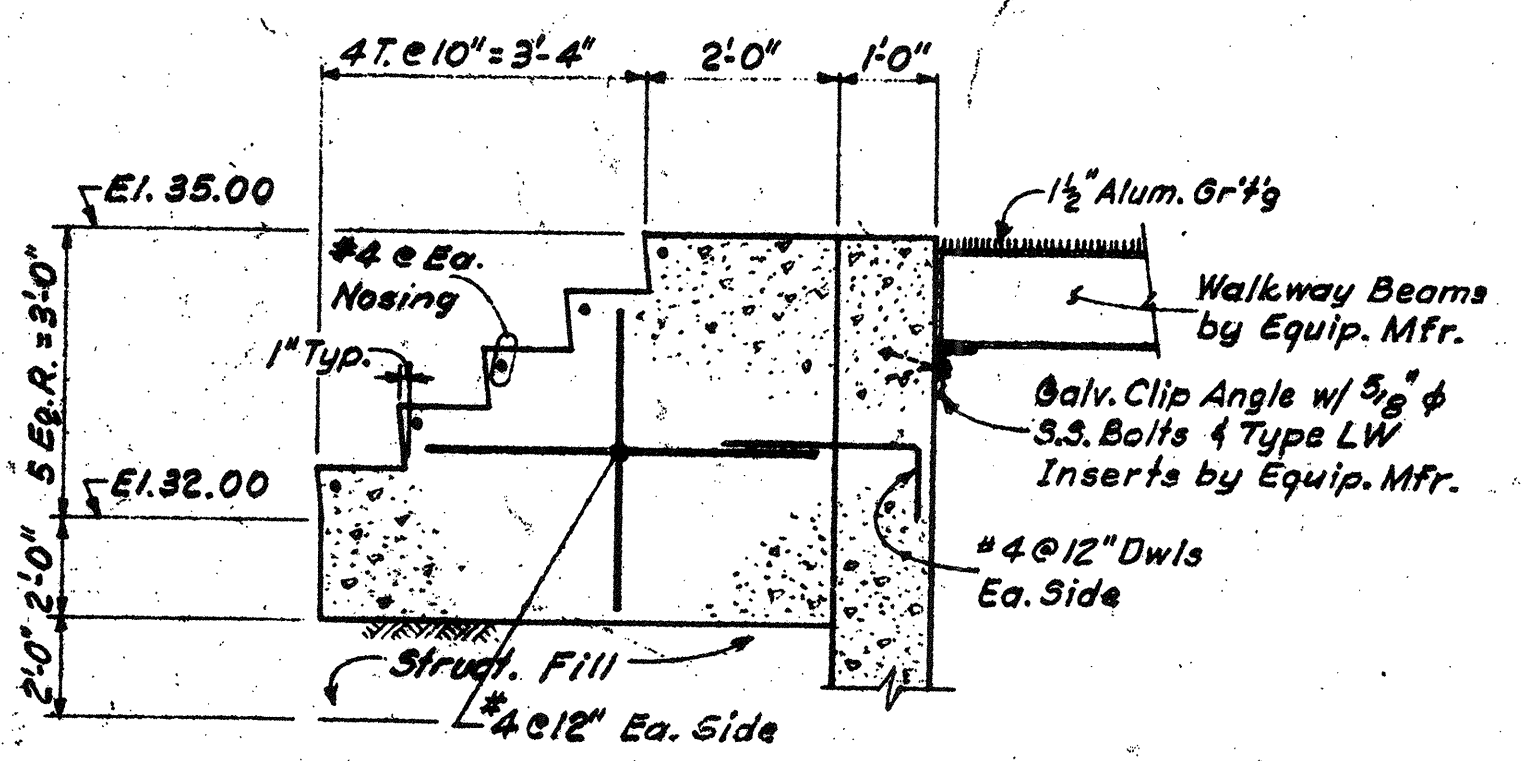
For Mech. Details & Orientation Of Pipes See Mech. Dwg.



SECTION 55-1
N.T.S.



SECTION 58-1
N.T.S.

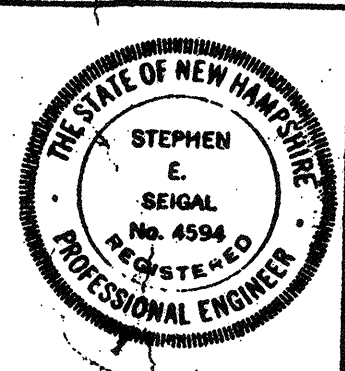
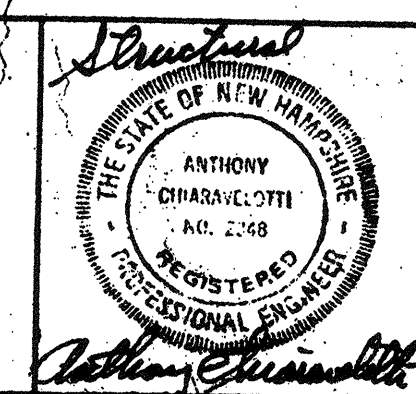


SECTION 58-1
N.T.S.

Notes:
For General Notes & Typ. Struct. Details See Dwg. 65-1.
For Rock Excavations Details See Dwg. 65-1.

NO.	DESCRIPTION	DATE
2	REVISE TO RECOR PLAN	9-93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



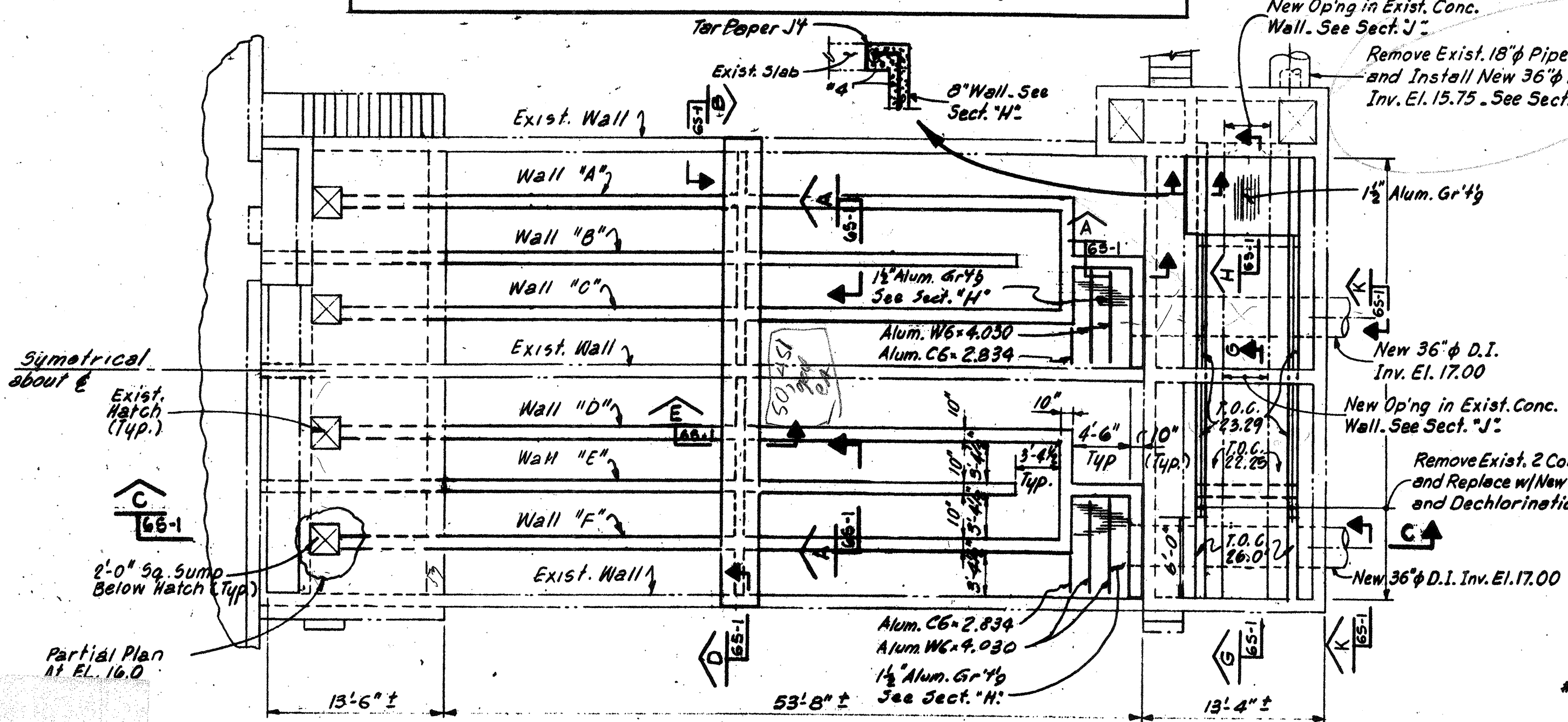
DESIGNED/DRAWN				CHECKED/SCALE		DATE	
W.J.F.	E.W.	A.C.	AS NOTED			SEPT. 1985	

DRAWING NO.	5S-1
JOB NO.	85-163
CONTRACT NO.	3

RECORD PLAN
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
GRAVITY THICKENER
PLAN AND SECTIONS

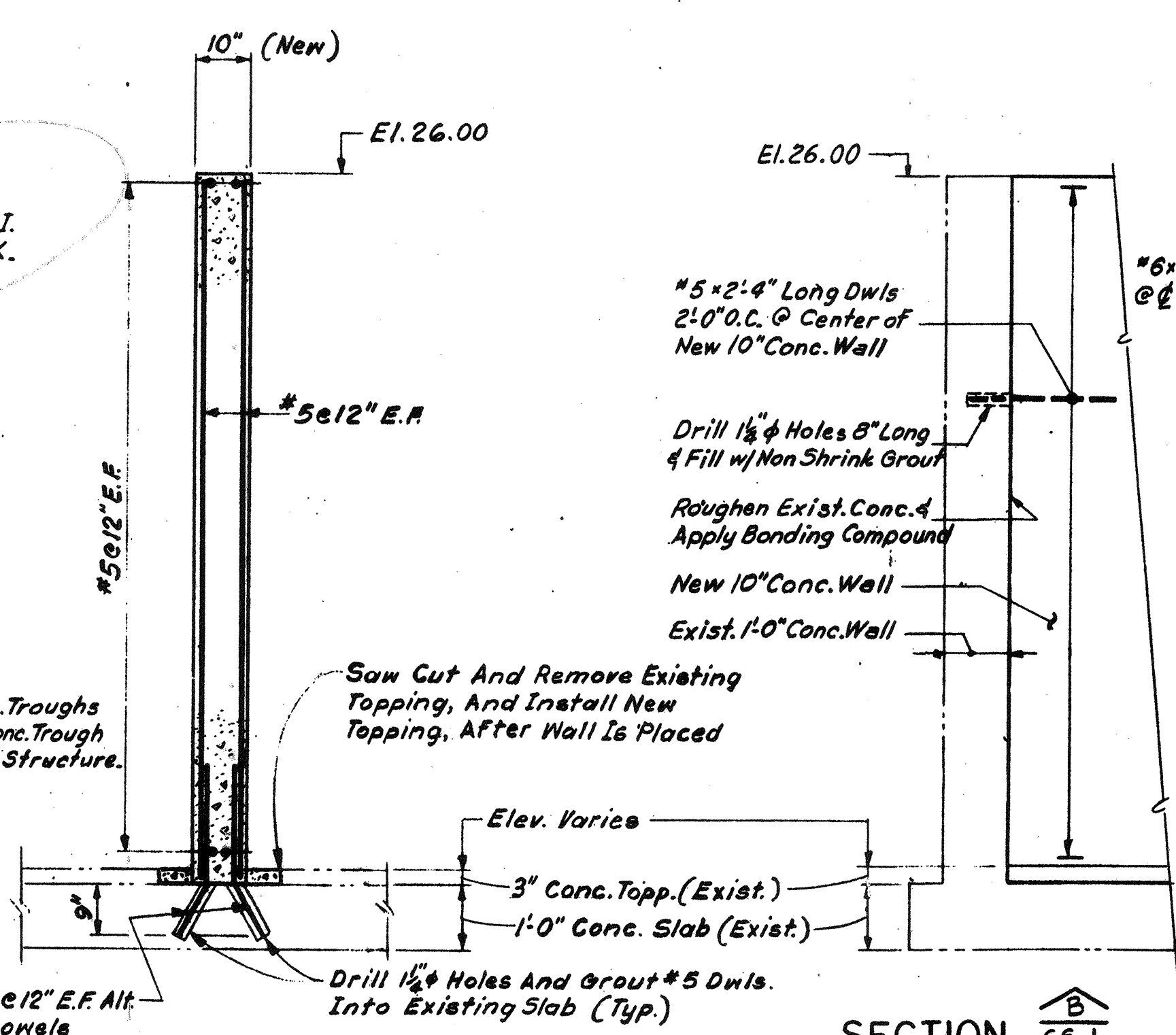
All Information for Existing Construction Was Taken from Plans of "City of Portsmouth, N.H. - Sewage Treatment Plant" Designed by "Metcalf & Eddy Engineers - Boston, Mass. Dated March 1963.

Verify Dimensions and Advise The Engineer Immediately of Any Discrepancies.



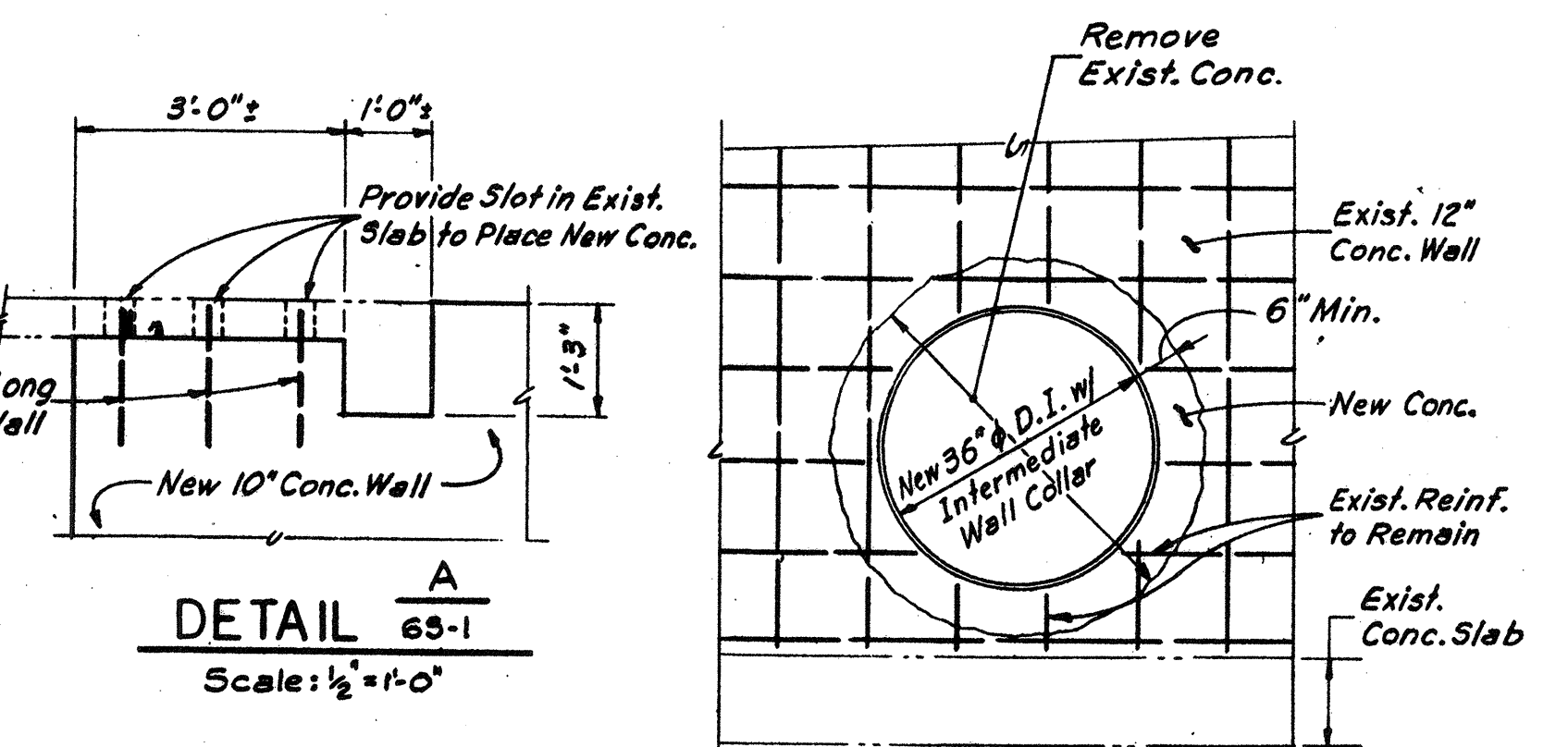
PLAN - EL. 26.0
Scale: 1/8" = 1'-0"

Wherever Exist. Conc. Is Saw-cut, The Reinf. Shall Be Cut Back 1/2" From Face of Conc. and Patched w/ Non Shrink Grout.



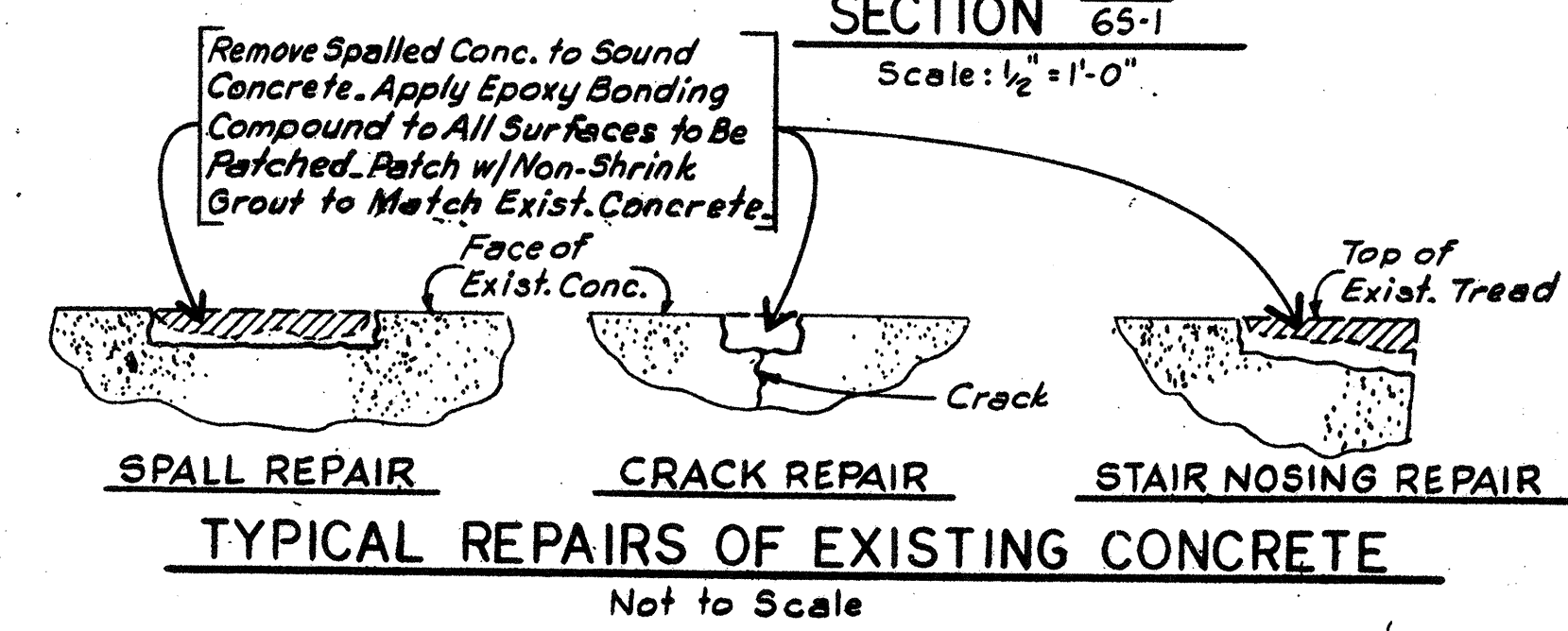
SECTION A (Typ. ALL WALLS)
Scale: 1/2" = 1'-0"

TYPICAL INTERSECTION OF ALL NEW CONC. WALLS AND EXIST. WALLS.

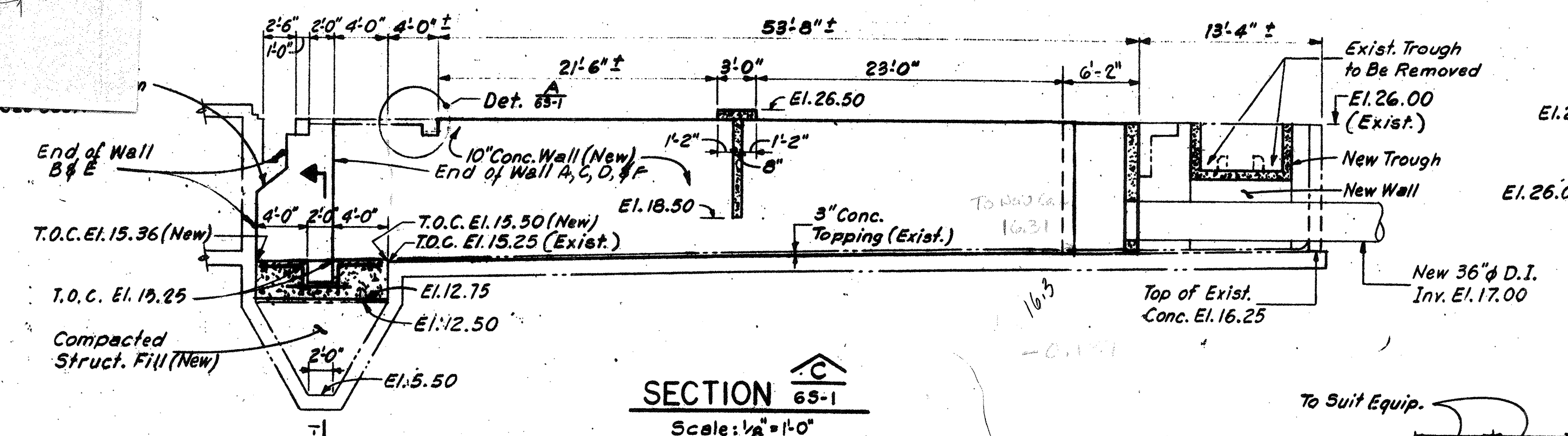


DETAIL A
Scale: 1/2" = 1'-0"

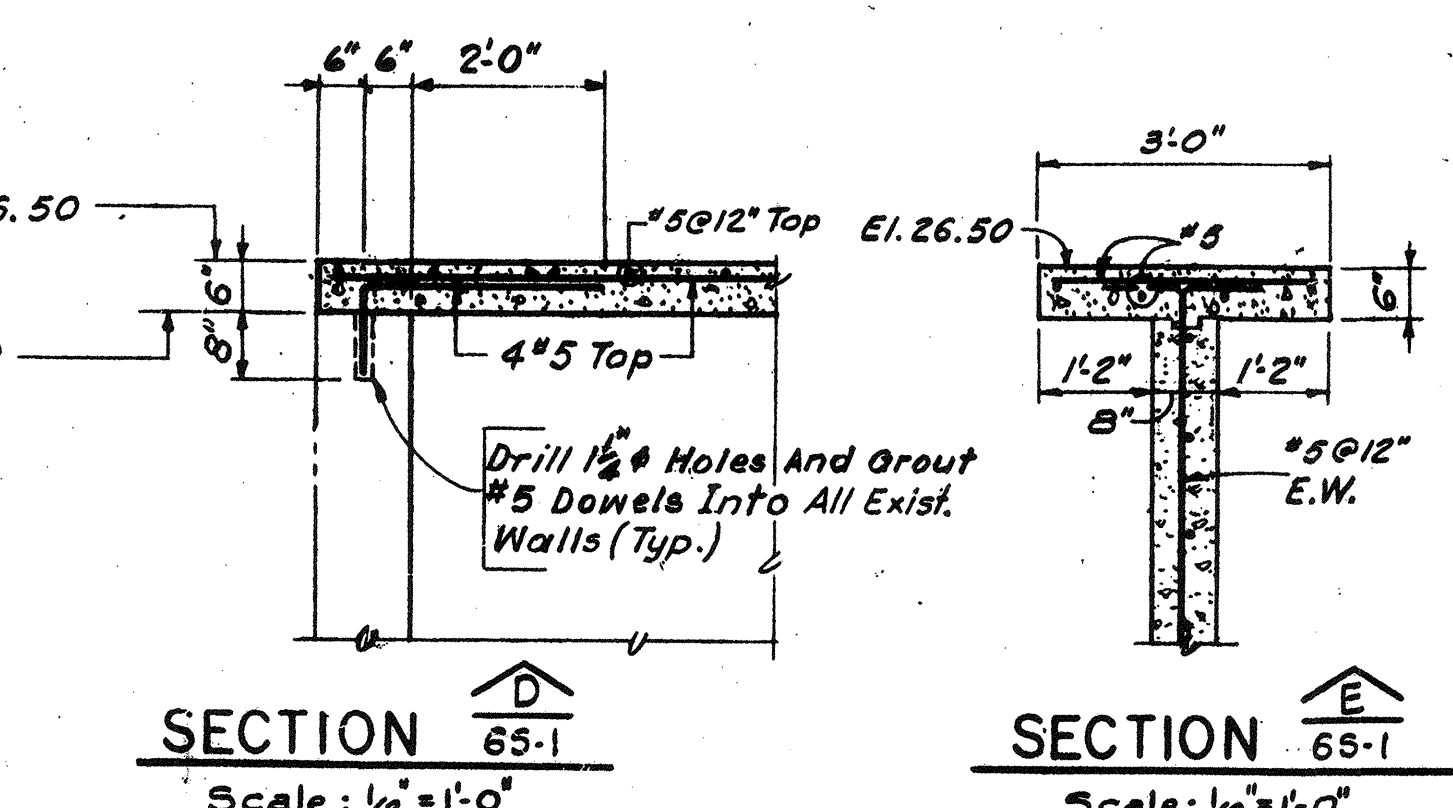
SECTION K
Scale: 1/2" = 1'-0"



TYPICAL REPAIRS OF EXISTING CONCRETE
Not to Scale

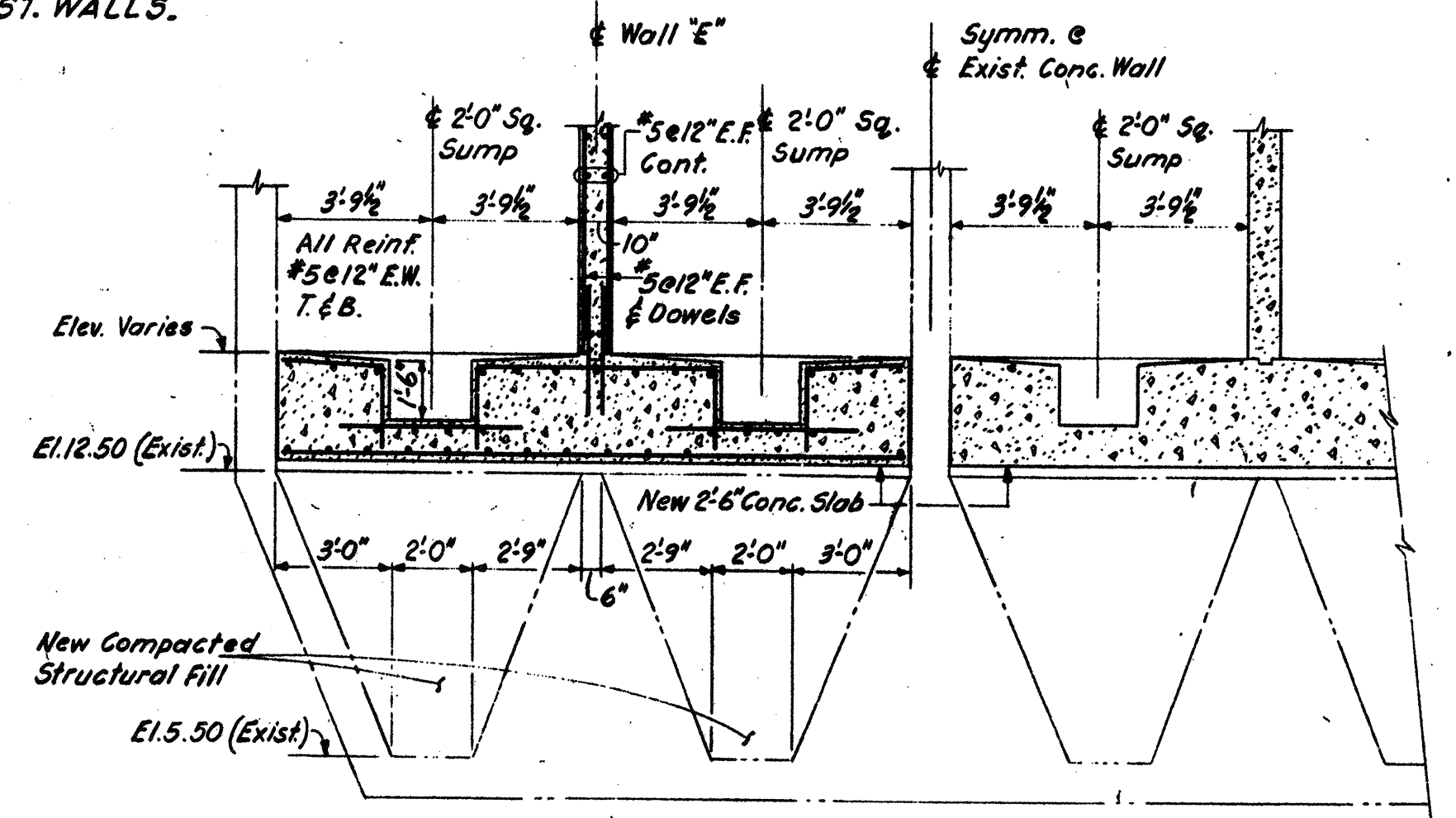


SECTION C
Scale: 1/8" = 1'-0"

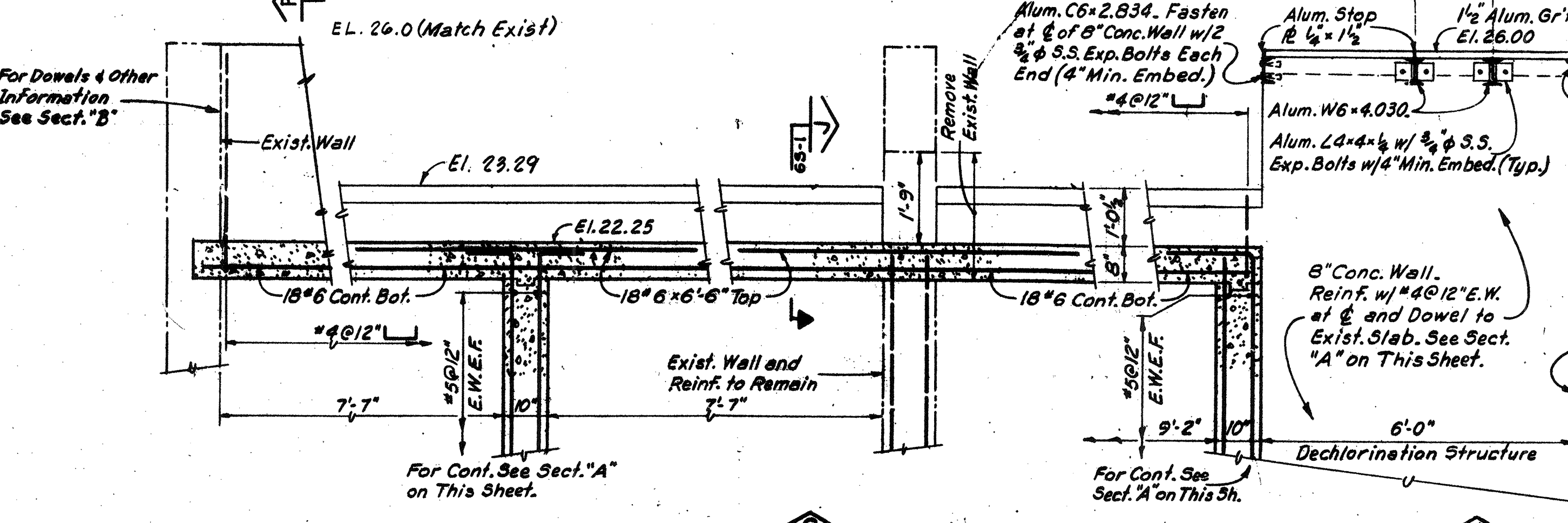


SECTION D
Scale: 1/2" = 1'-0"

SECTION E
Scale: 1/2" = 1'-0"

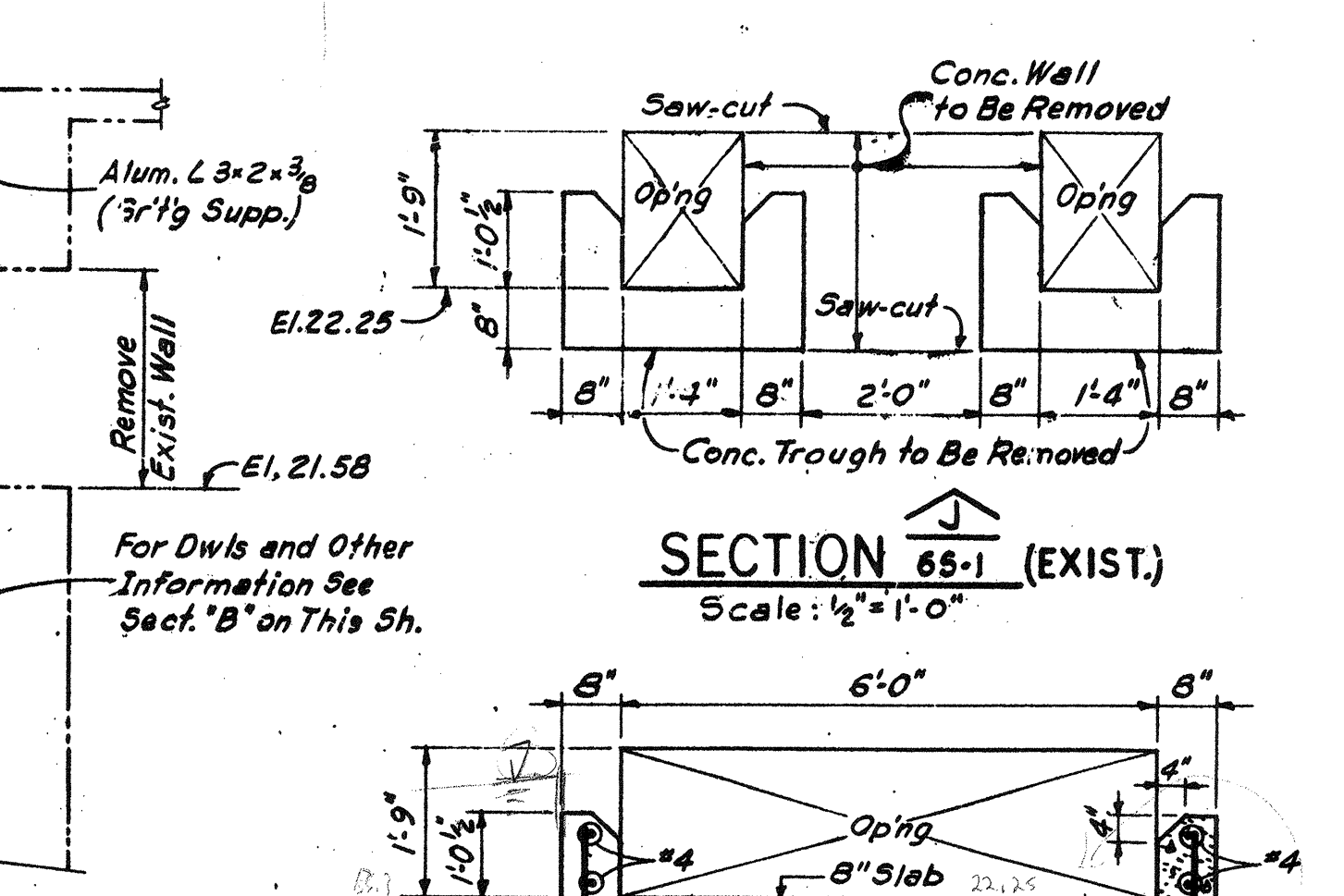


SECTION F
Scale: 1/2" = 1'-0"



SECTION G
Scale: 1/2" = 1'-0"

SECTION H
Scale: 1/2" = 1'-0"



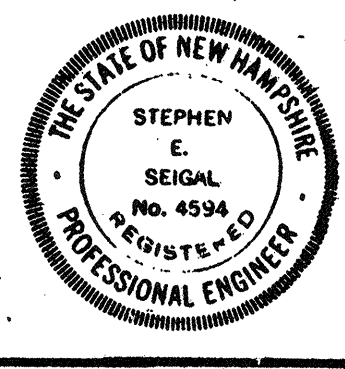
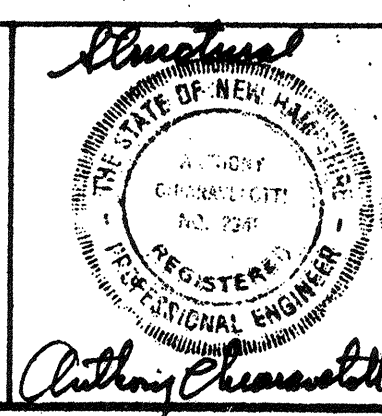
SECTION J (EXIST.)
Scale: 1/2" = 1'-0"

SECTION J (NEW)
Scale: 1/2" = 1'-0"

Note: For General Notes & Typ. Struct. Details See Dwg 65-1. For Other Information See Mech. Drawings.

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Drawing Revised	3/89
	REVISIONS	

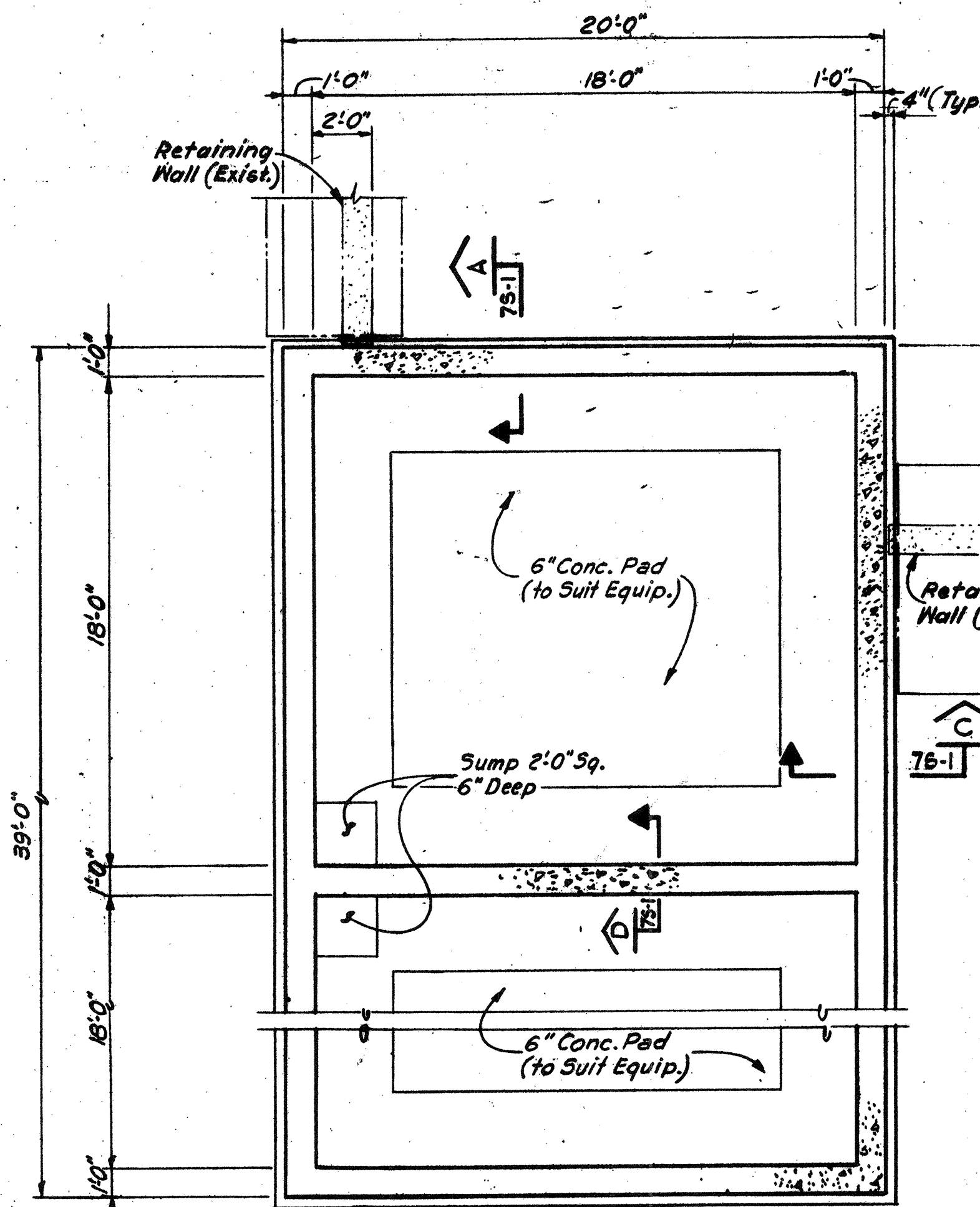
WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



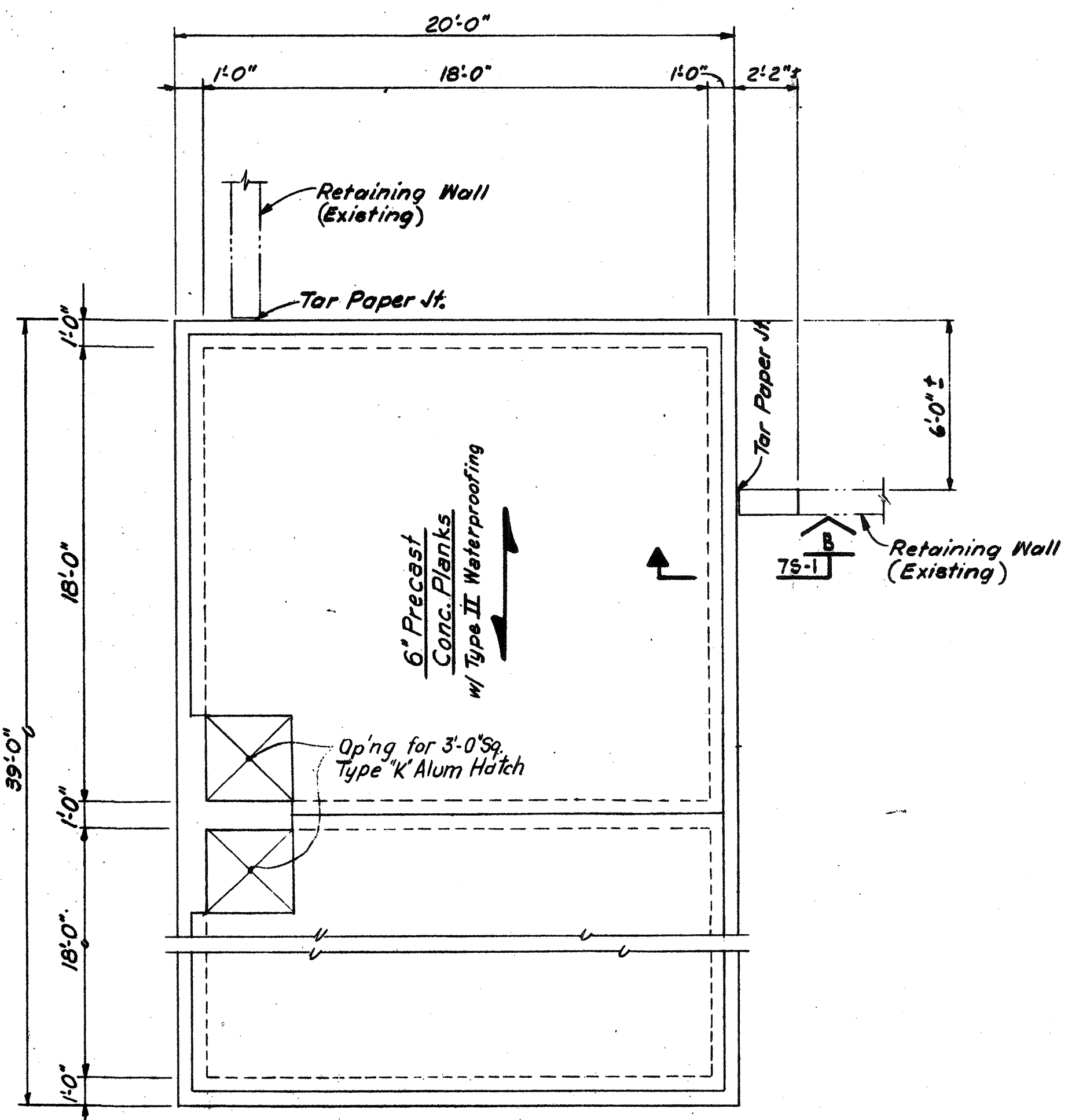
APPROVED: *Stephen E. Seigel*
DESIGNED: W.W.F. DRAWN: E.W. CHECKED: A.C. SCALE: AS NOTED DATE: SEPT. 1985

DRAWING NO. 65-1
JOB NO. 85-163
CONTRACT NO. 3

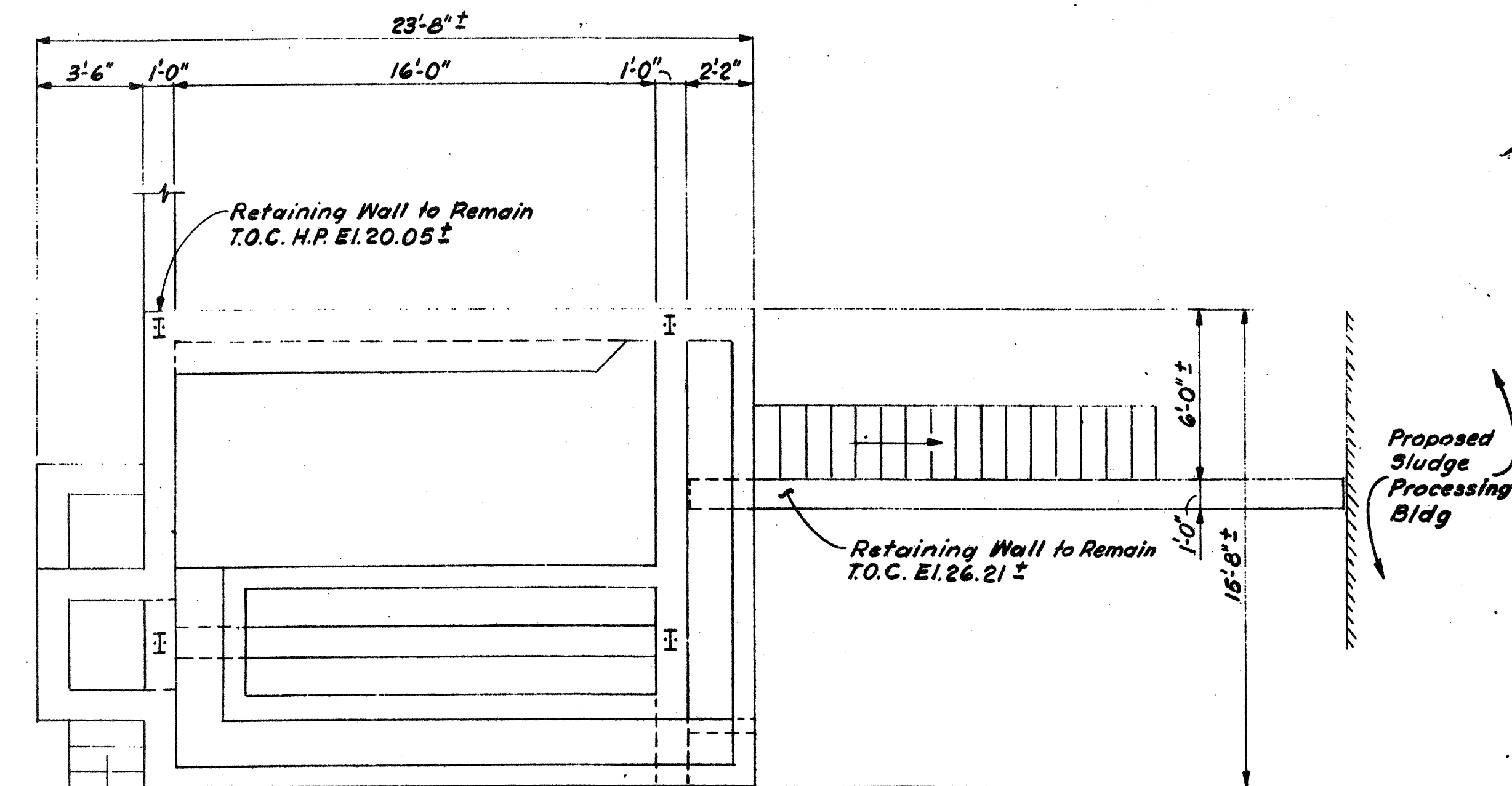
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
CHLORINE CONTACT TANK
PLAN, SECTIONS AND DETAILS



FOUNDATION PLAN
Scale: 1/4" = 1'-0"

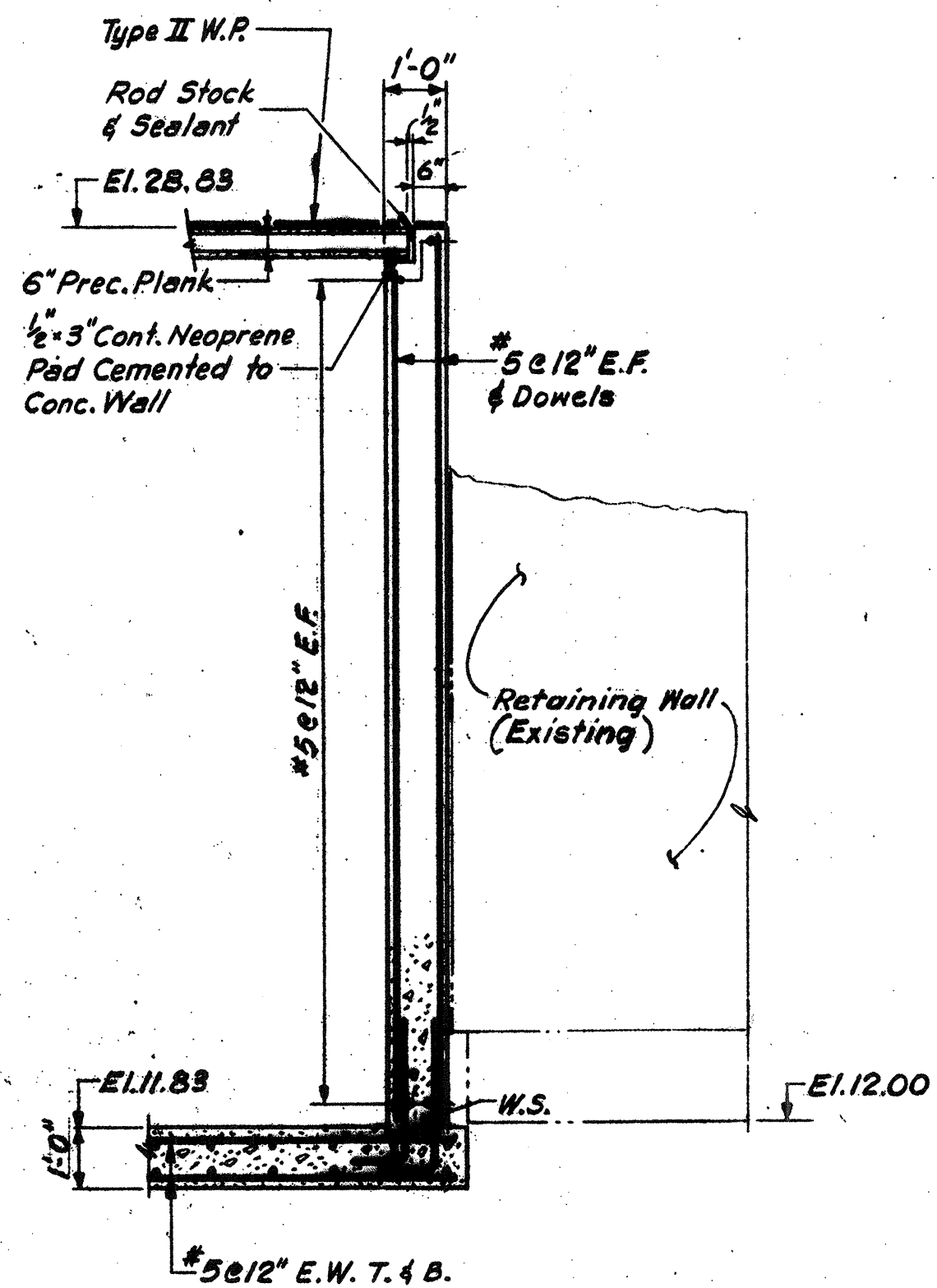


ROOF PLAN
Scale: 1/4" = 1'-0"

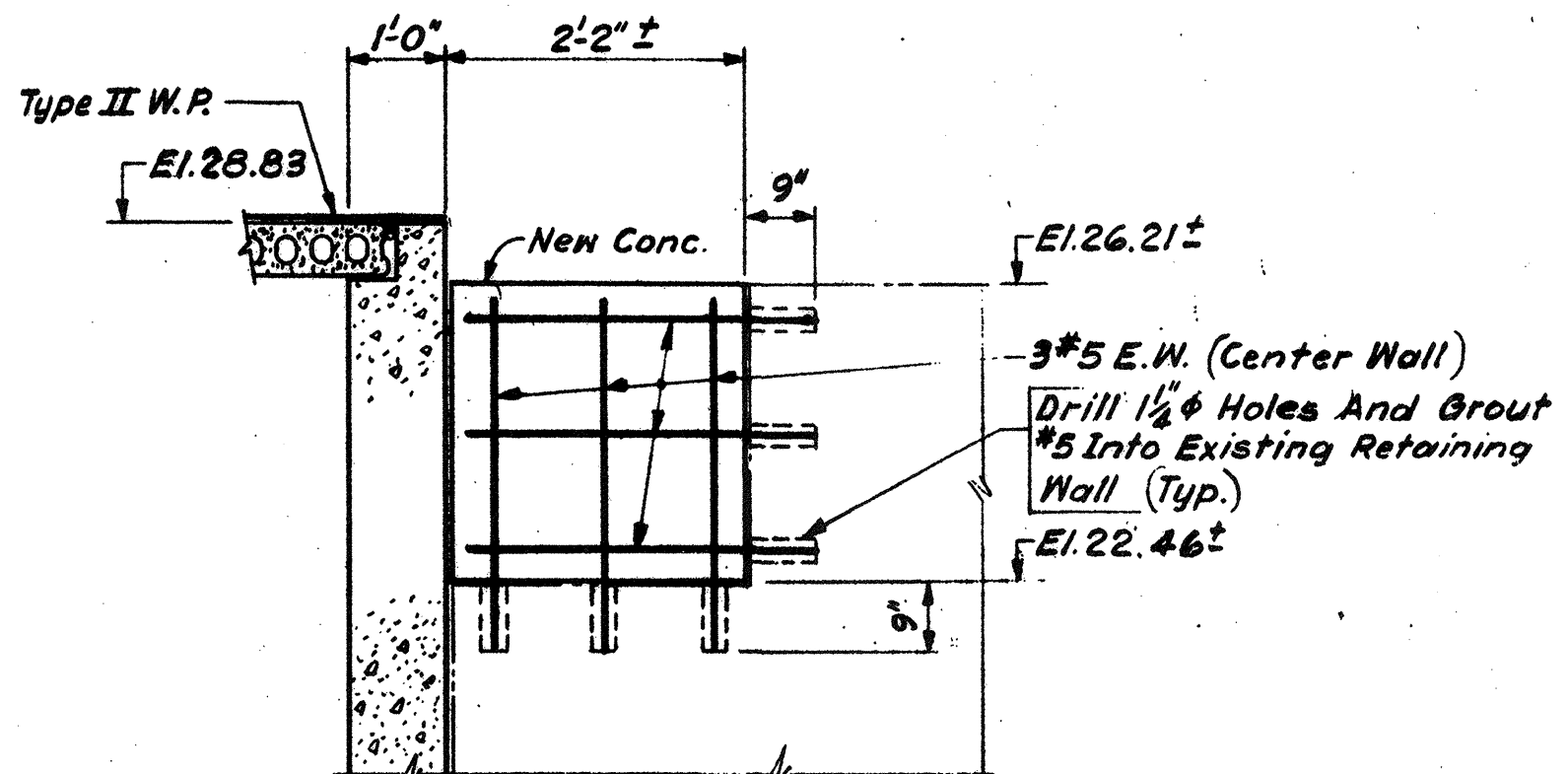


Note:
Demolish Entire Structure Including Stairs, Except Retaining Walls Which Are to Remain.
Manorail And Framing Is To Be Removed And Stored In A Location Directed By The Owner.

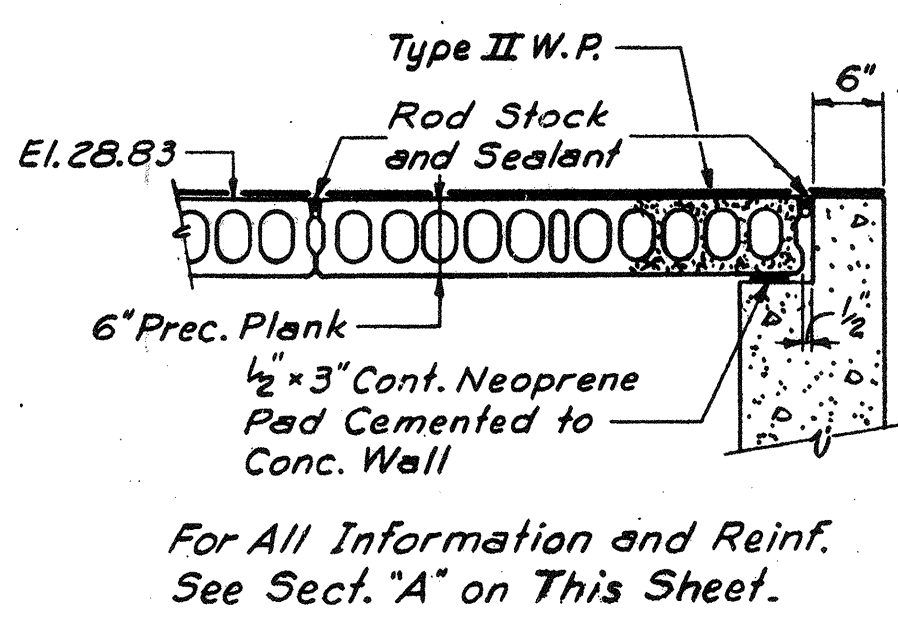
DEMOLITION PLAN
(EXIST. AERATED GRIT CHAMBER)
Scale: 1/4" = 1'-0"



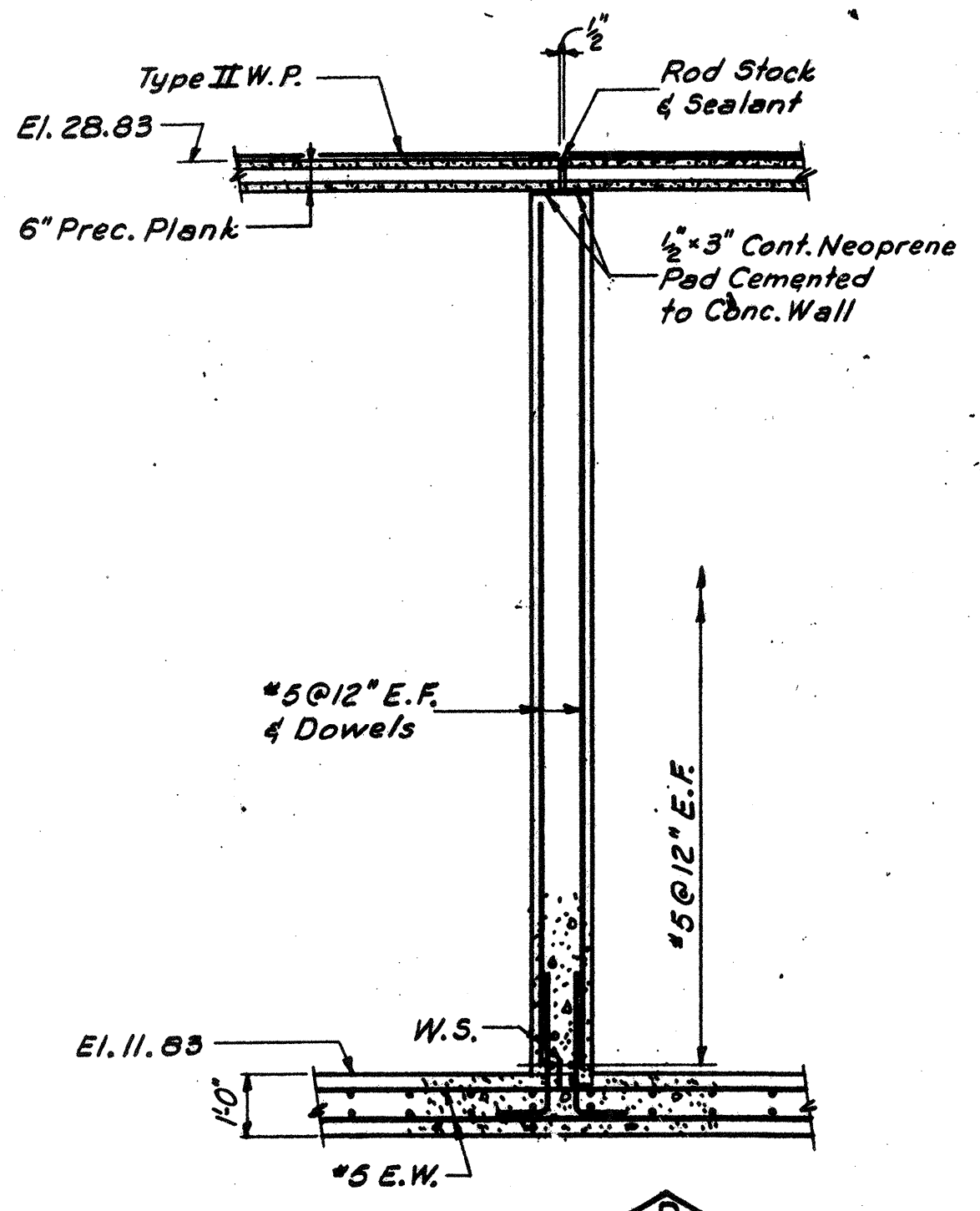
SECTION A-A
Scale: 3/8" = 1'-0"



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



SECTION C-C
Scale: 3/4" = 1'-0"

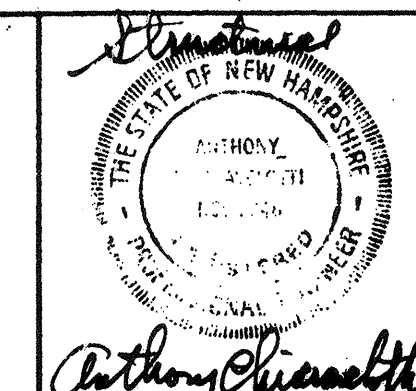


SECTION D-D
Scale: 3/8" = 1'-0"

Notes:
For General Notes & Typ. Struct. Details See Dwg 65-1.
For Rock Excavation Details See Dwg 65-1.

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen E. Seigel*

DESIGNED DRAWN CHECKED SCALE DATE
W.J.F. E.W. A.C. AS NOTED SEPT. 1985

DRAWING NO. **75-1**
JOB NO. 85-163
CONTRACT NO. 3

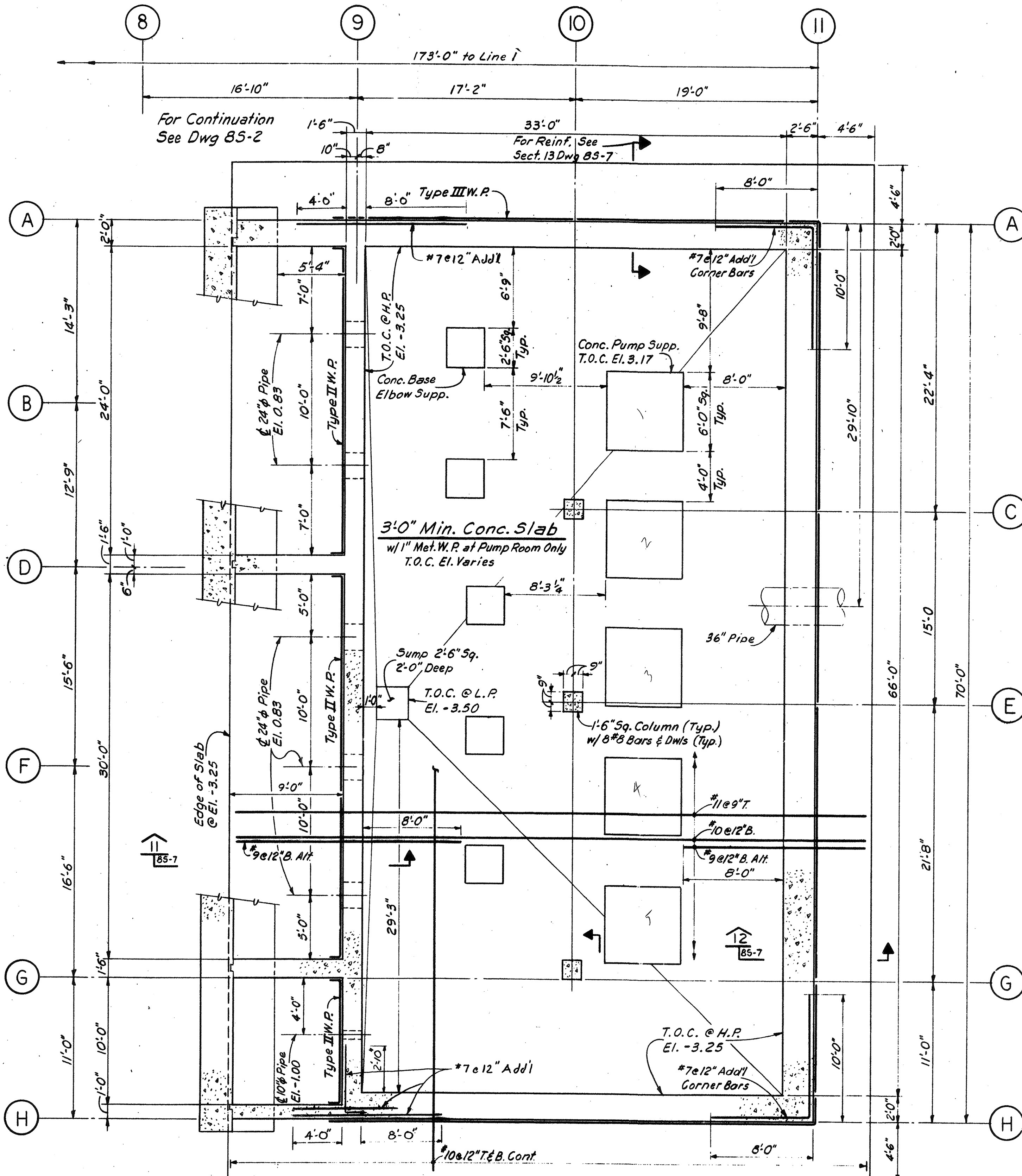
RECORD PLAN

WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N. H.

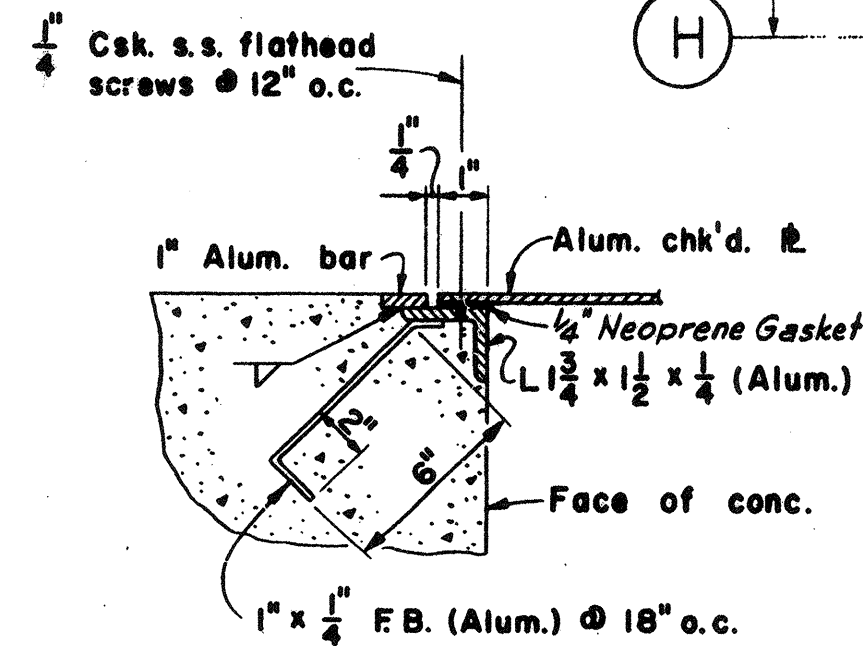
CHEMICAL STORAGE TANK
PLANS AND SECTIONS

SHEET 35 OF 106 SHEETS

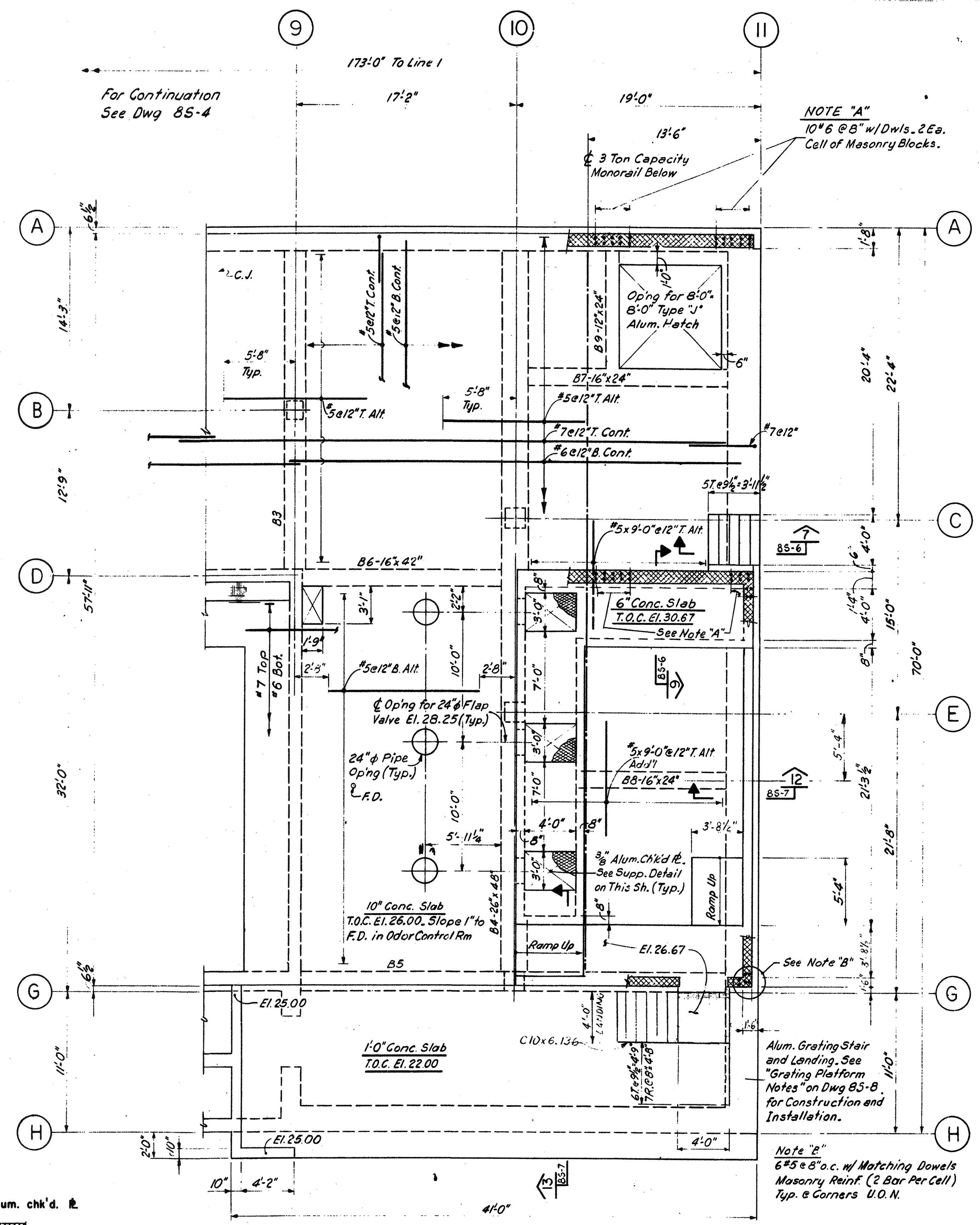


PUMP ROOM FOUNDATION PLAN

Conc. Pump Supp. to Be Reinf. w/ 2#7 [Vert. & Dwls and #4@12" Horiz.
 Conc. Base Elbow Supp. to Be Reinf. w/ #7 [Vert. & Dwls and #4@12" Ties.



CHECKED PLATE SUPPORT DETAIL
 Not to Scale



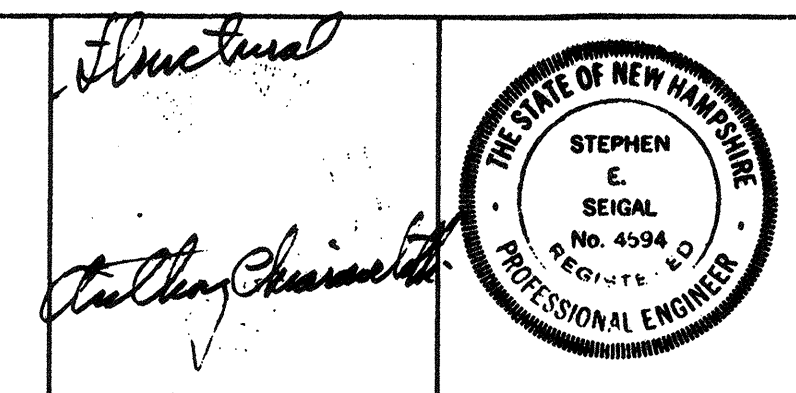
PUMP ROOM GROUND FLOOR PLAN

All End Wall Masonry Reinforcing (Lines (D) & (E)) To Be Doweled To Concrete w/ Matching Reinforcing

Notes:
 For General Notes and Typical Structural Details See Dwg GS-1.
 For Rock Excavation Details See Dwg GS-1.
 For Beam Details See Dwg GS-8.

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Dwg. Added	9-89
NO.	DESCRIPTION	DATE
	REVISIONS	

WHITMAN & HOWARD, INC.
 45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"
 REPRODUCTIONS MAY BE REDUCED SIZE

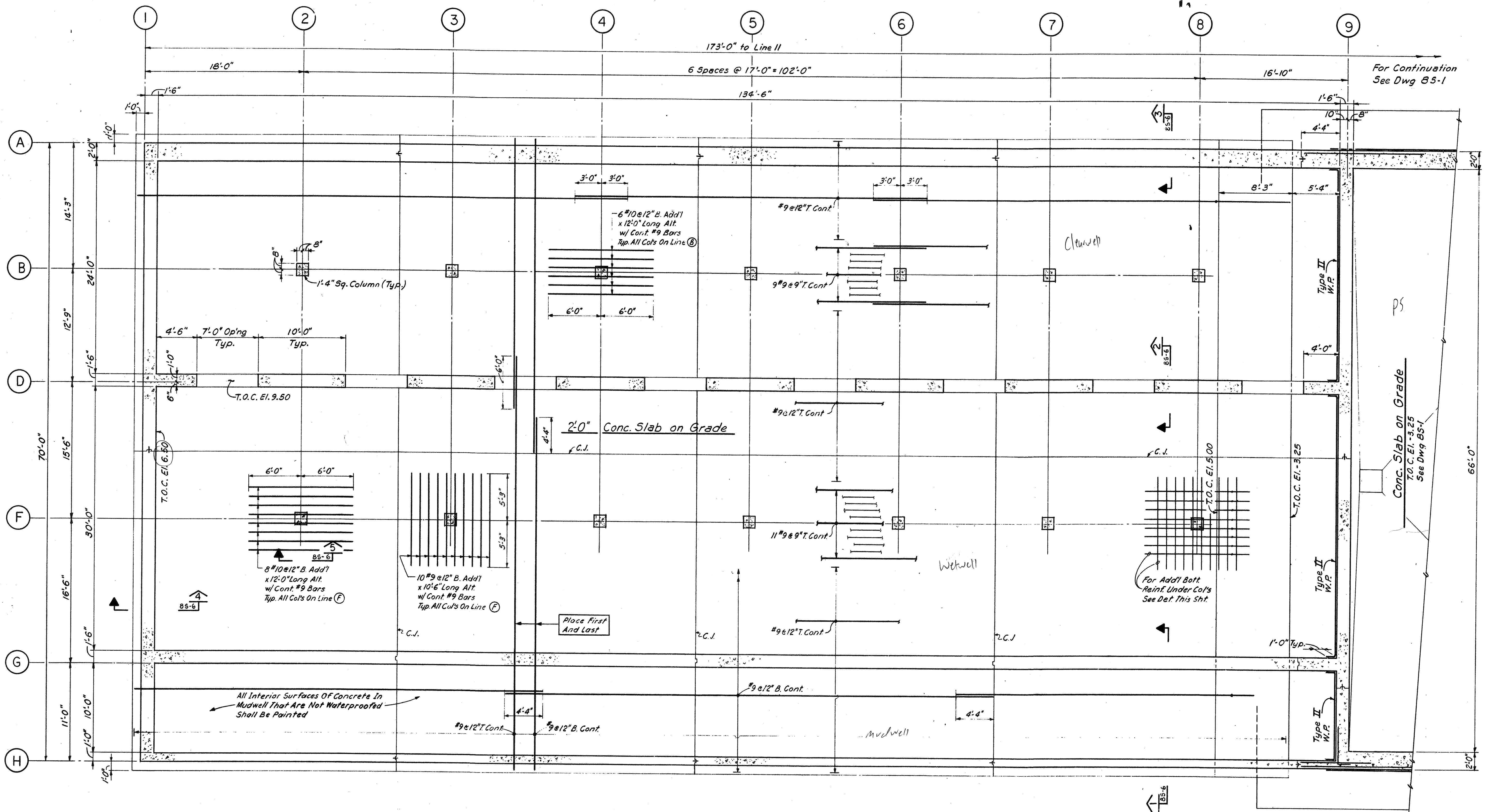
DESIGNED	DRAWN	CHECKED	SCALE	DATE
R.J.D.	E.W.	A.C.	3/16" = 1'-0"	SEPT. 1989

DRAWING NO. **8S-1**
 JOB NO. 85-163
 CONTRACT NO. 3

WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N.H.

FILTER BUILDING
 PUMP ROOM FDN. & GROUND FLOOR SLAB

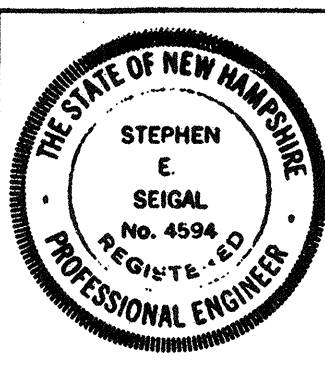


PLAN-BASE SLAB

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Dwg Added	9-89
	REVISIONS	

WHITMAN & HOWARD, INC.
 45 WILLIAM STREET, WELLESLEY, MASS.

Structural
Anthony Chiaramonte



ORIGINAL FULL SIZE DRAWING = 4"
 REPRODUCTIONS MAY BE REDUCED SIZE

DESIGNED	DRAWN	CHECKED	SCALE	DATE
R.J.D.	E.W.	A.C.	3/16" = 1'-0"	SEPT. 1989

DRAWING NO. **8S-2**

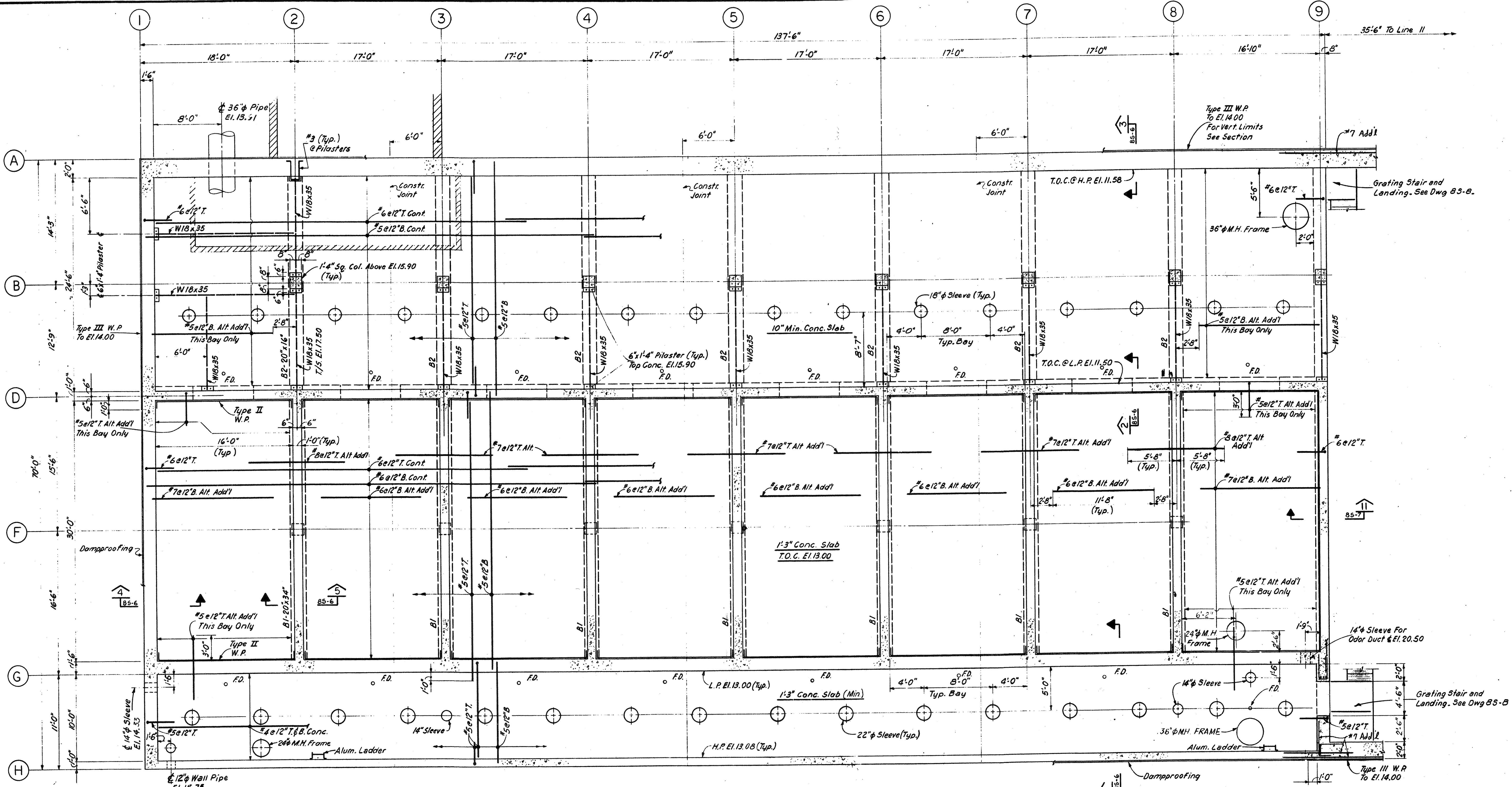
JOB NO. 85-163

CONTRACT NO. 3

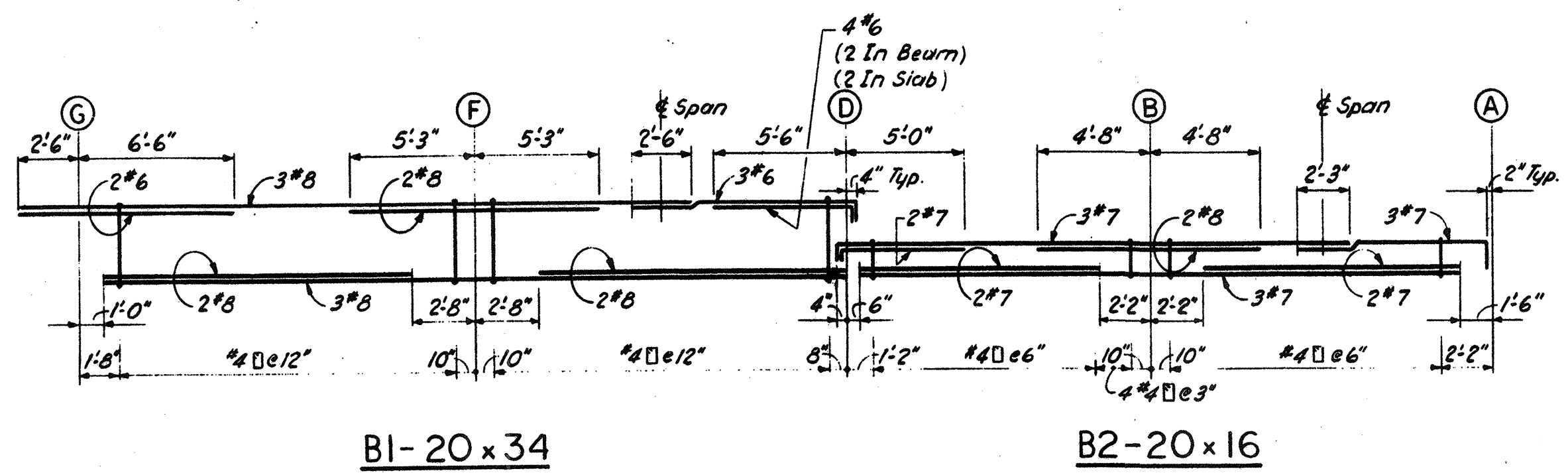
WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N. H.

FILTER BUILDING
 PLAN - BASE SLAB



PLAN-FILTER & GALLERY SLAB



BI-20x34

B2-20x16

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Dwg. Added	9-89

WHITMAN & HOWARD, INC.
 45 WILLIAM STREET, WELLESLEY, MASS.

Structural
Anthony Chianetta
 THE STATE OF NEW HAMPSHIRE
 STEPHEN E. SEIGAL
 No. 4594
 PROFESSIONAL ENGINEER

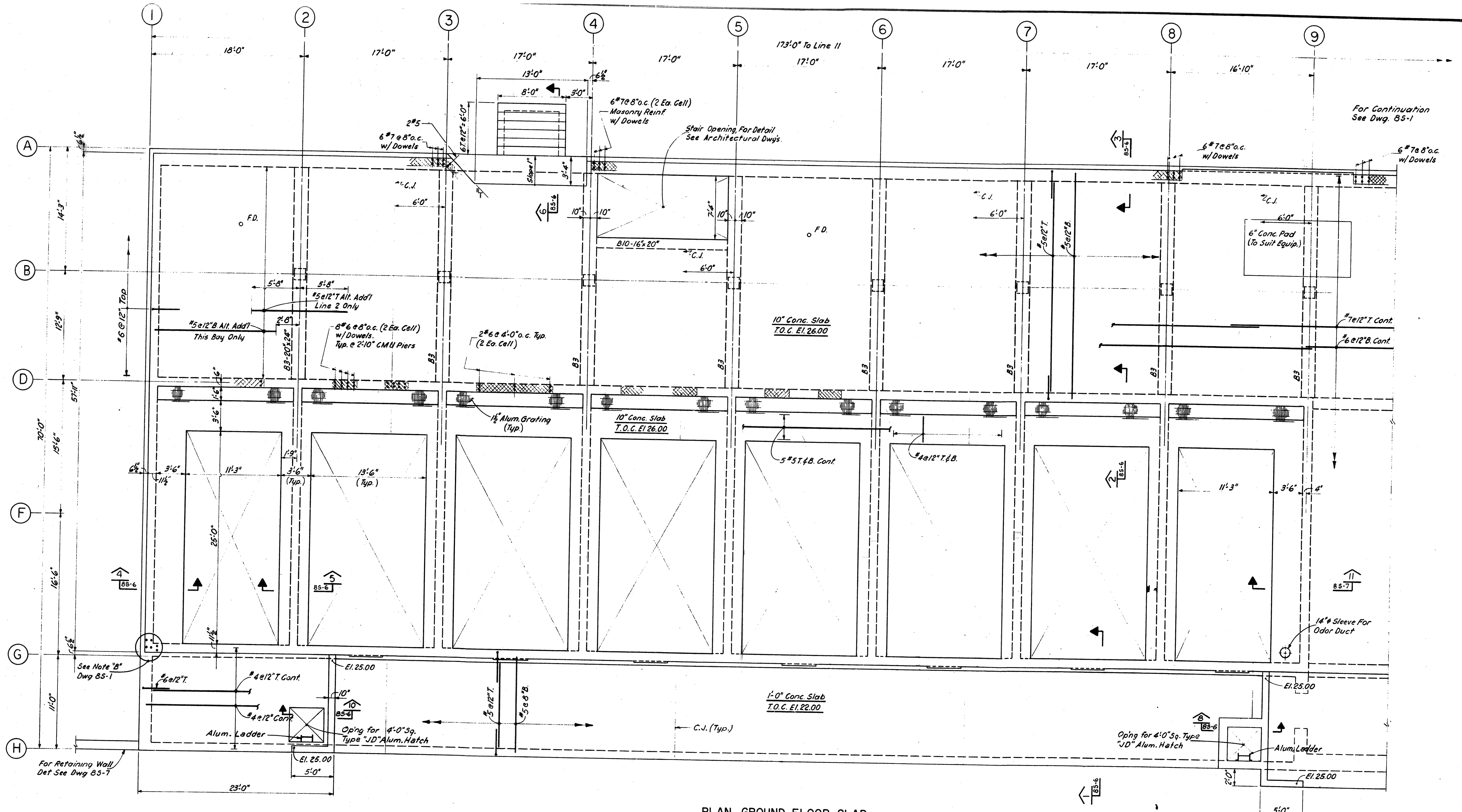
ORIGINAL FULL SIZE DRAWING = 4"
 REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED

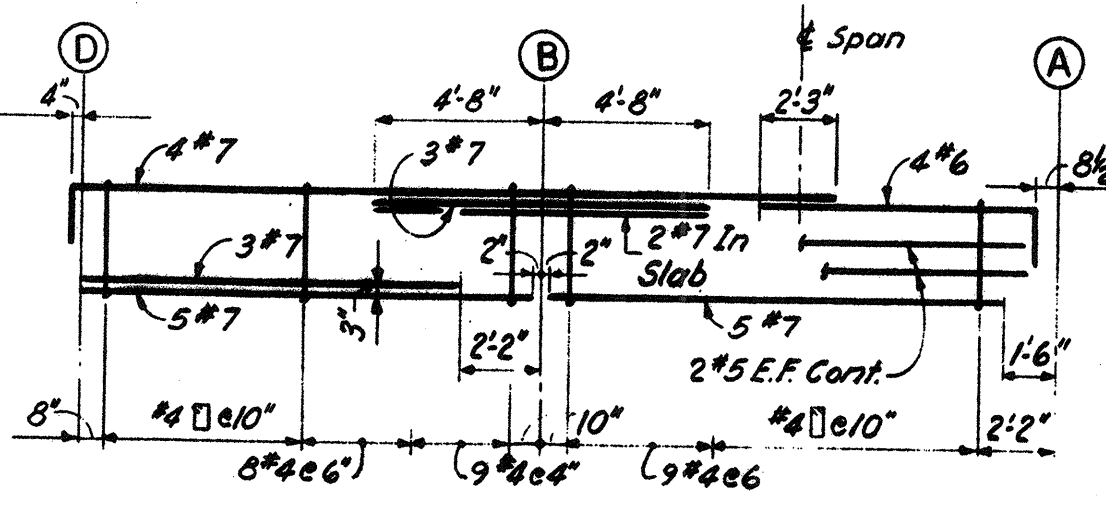
DESIGNED	DRAWN	CHECKED	SCALE	DATE
R.J.D.	E.W.	A.C.	3/16" = 1'-0"	SEPT. 1989

DRAWING NO. **8S-3**
 JOB NO. 85-163
 CONTRACT NO. 3
 SHEET 38 OF 106 SHEETS

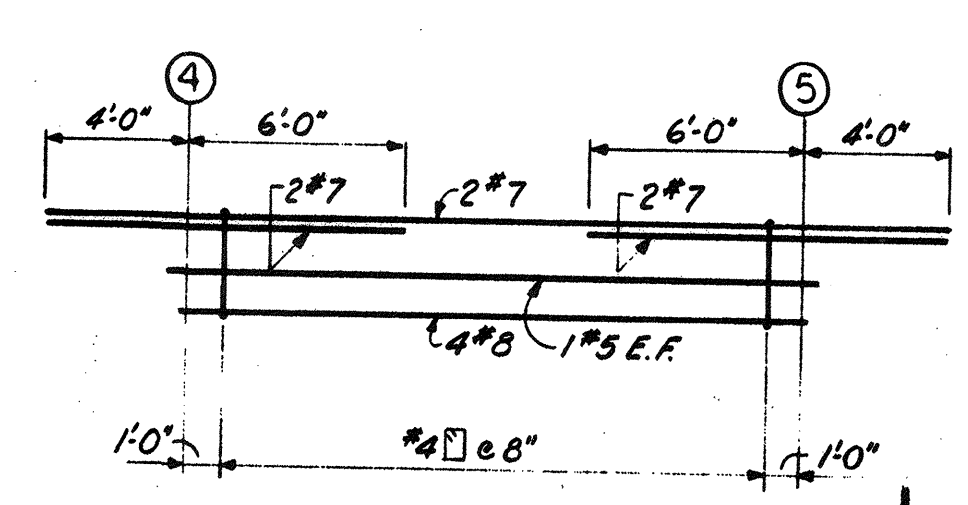
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
 FILTER BUILDING
 PLAN-FILTER & GALLERY SLABS



PLAN - GROUND FLOOR SLAB



B3-20x24

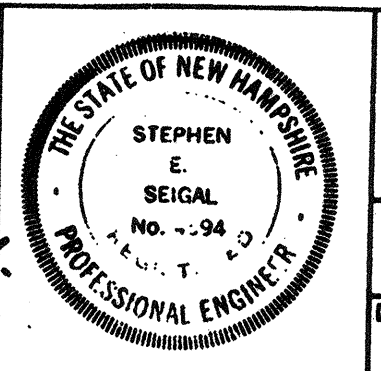


BIO-16x20

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Dwg. Added	9-89
	REVISIONS	

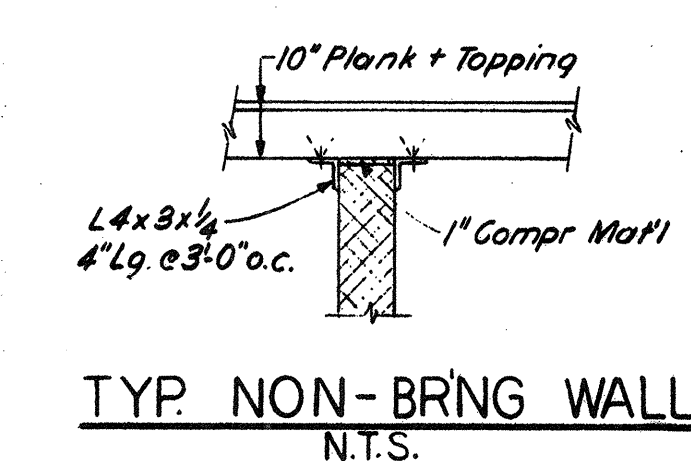
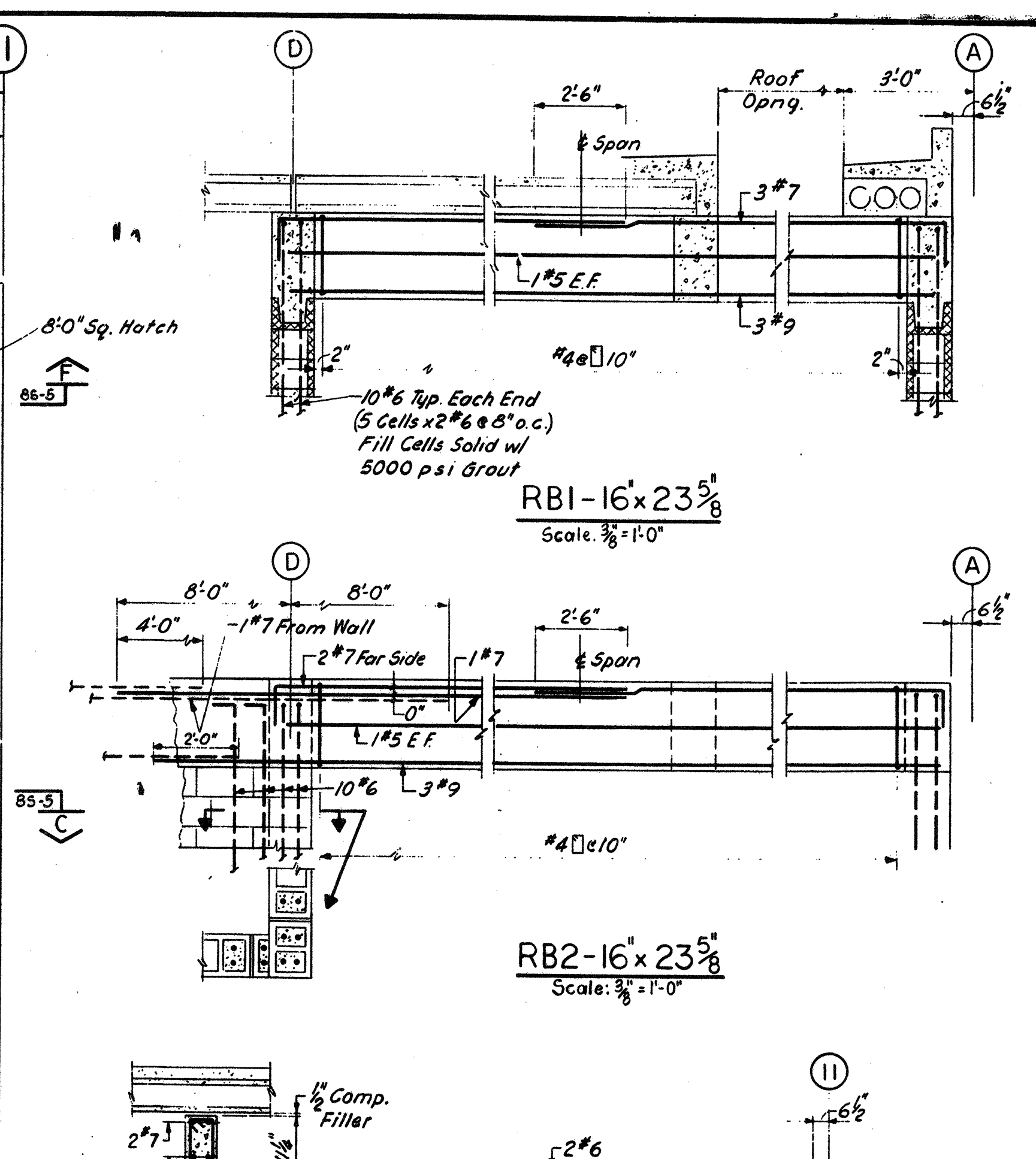
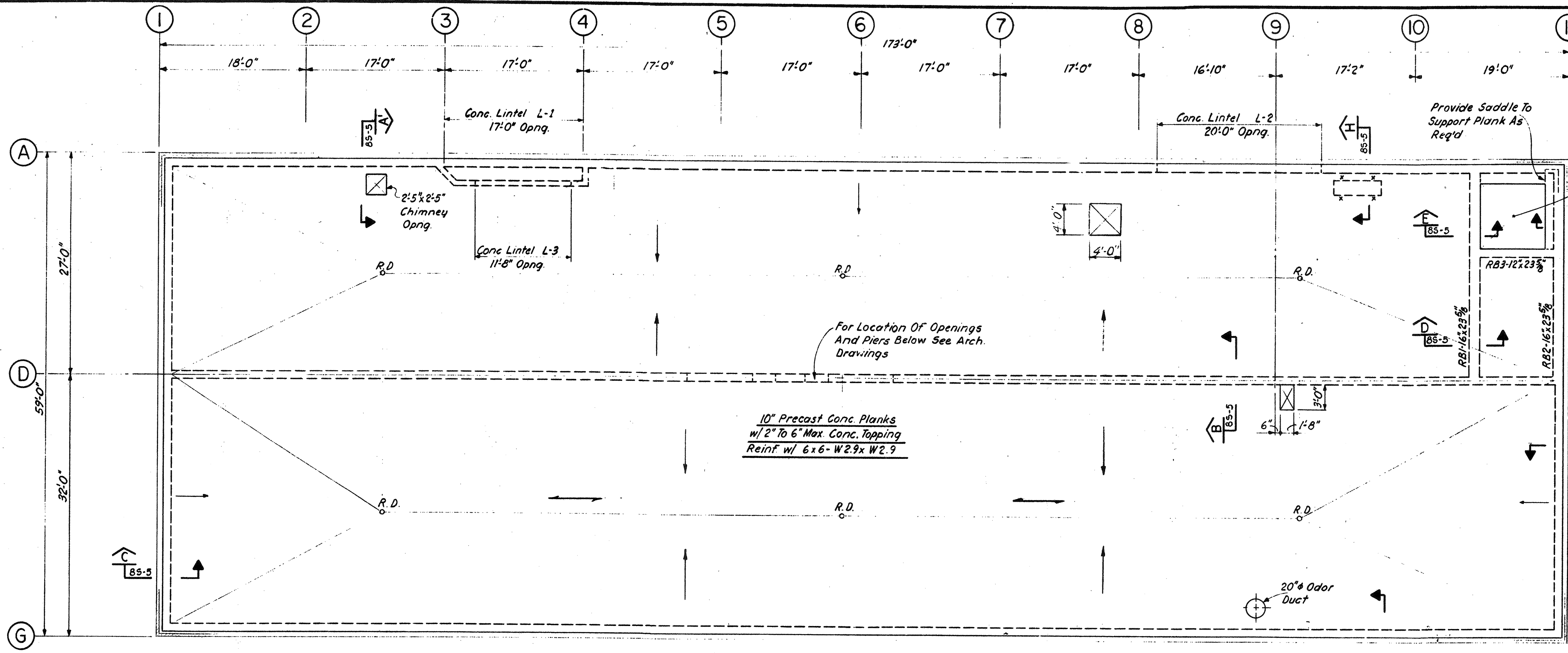
WHITMAN & HOWARD, INC.
 45 WILLIAM STREET, WELLESLEY, MASS.

Structural
Stephen E. Seigal



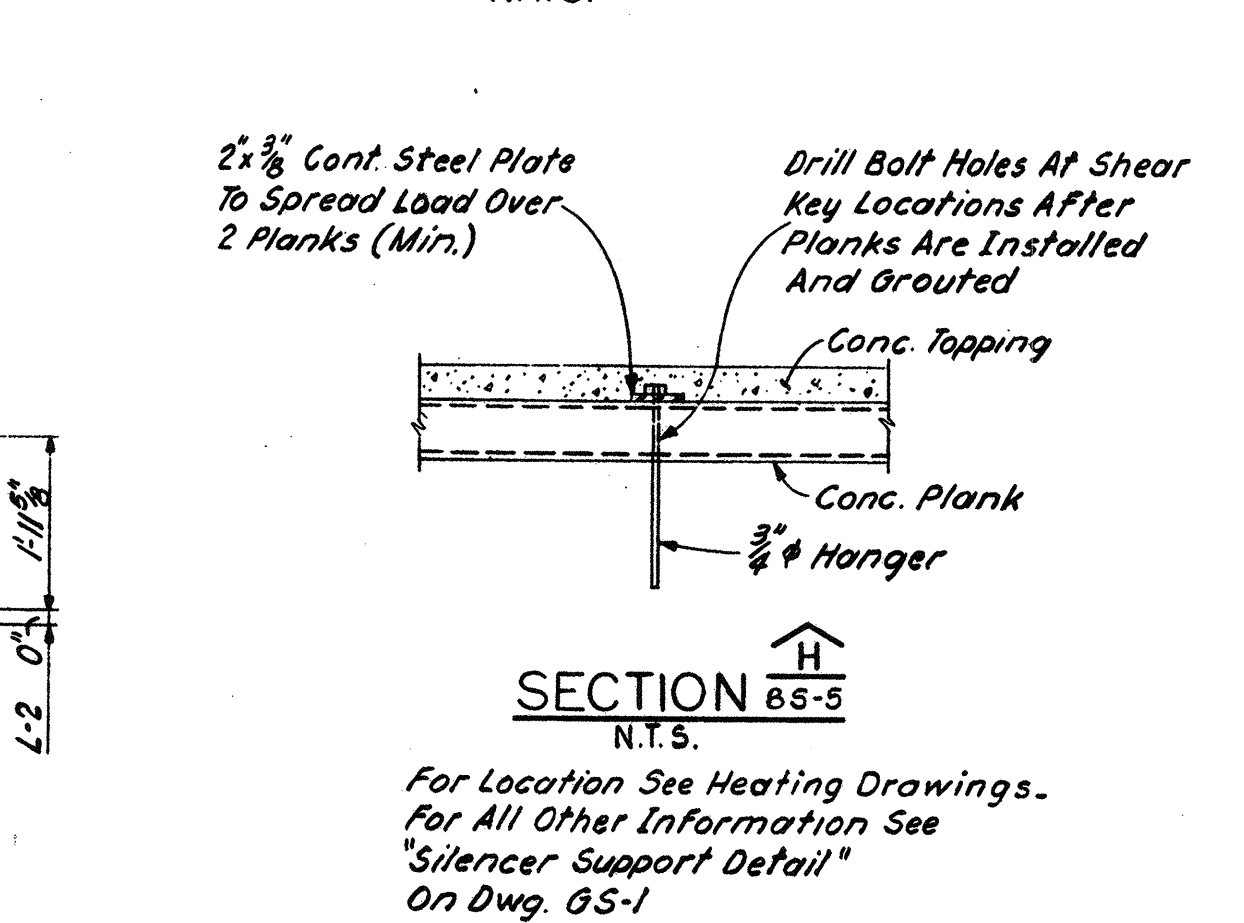
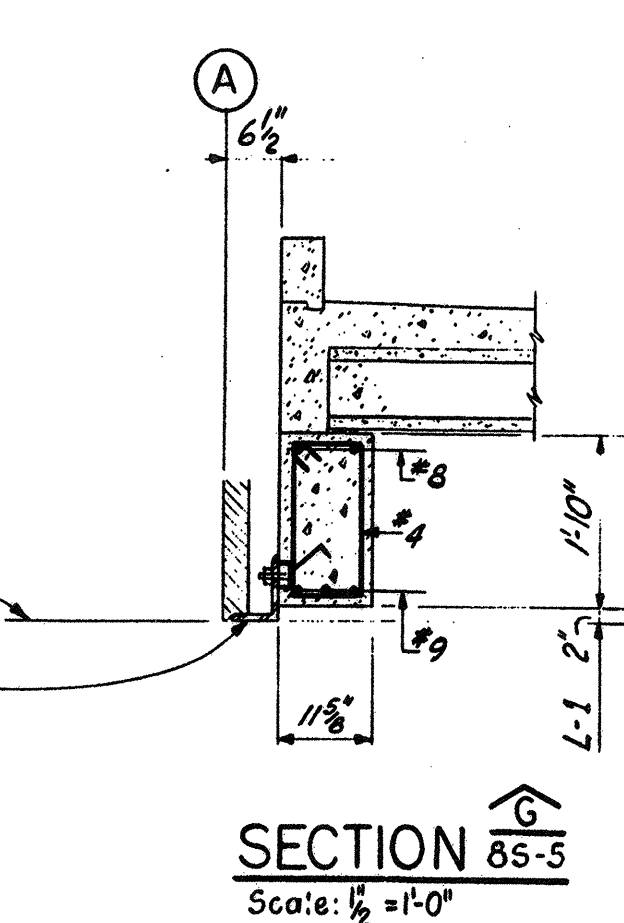
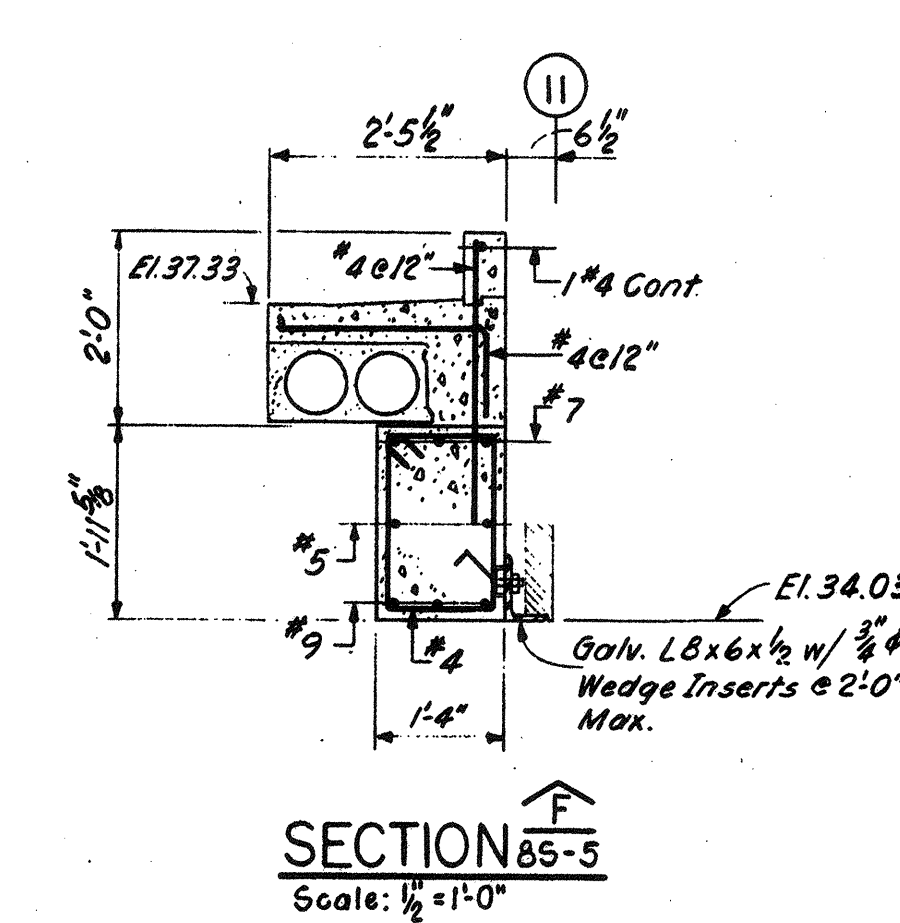
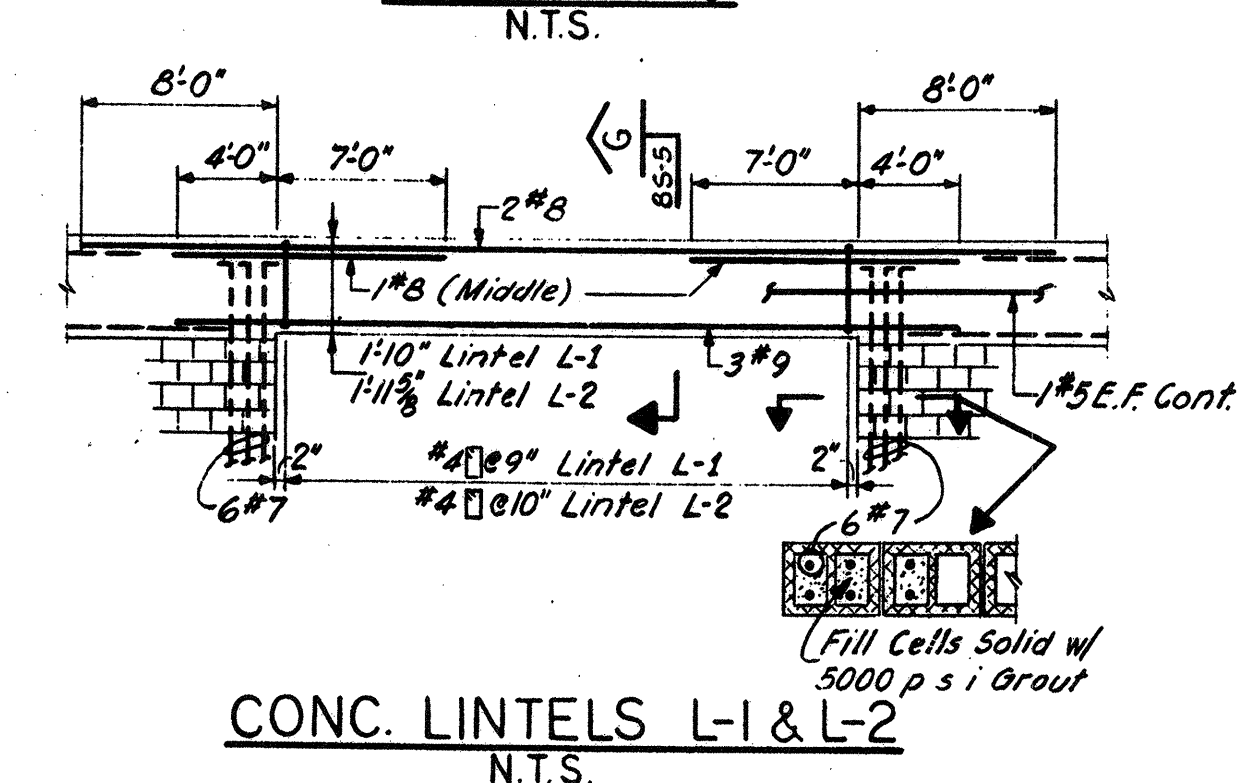
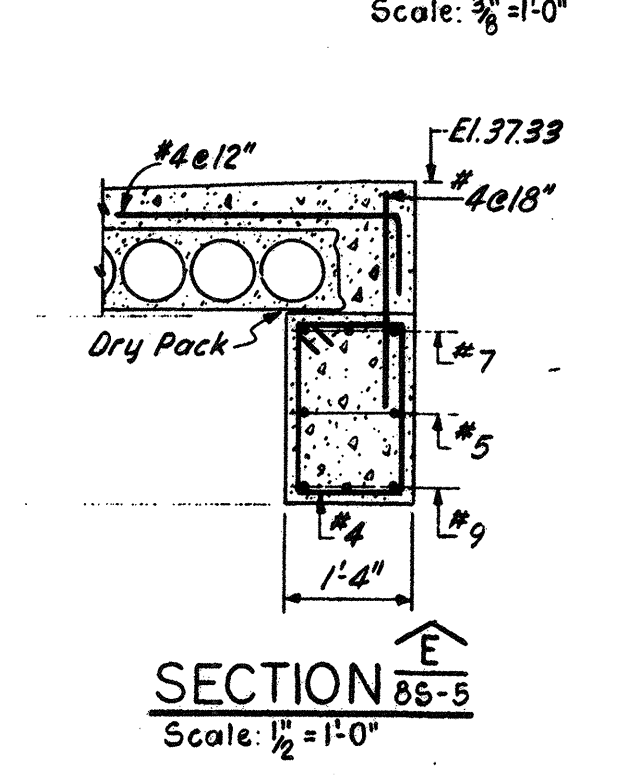
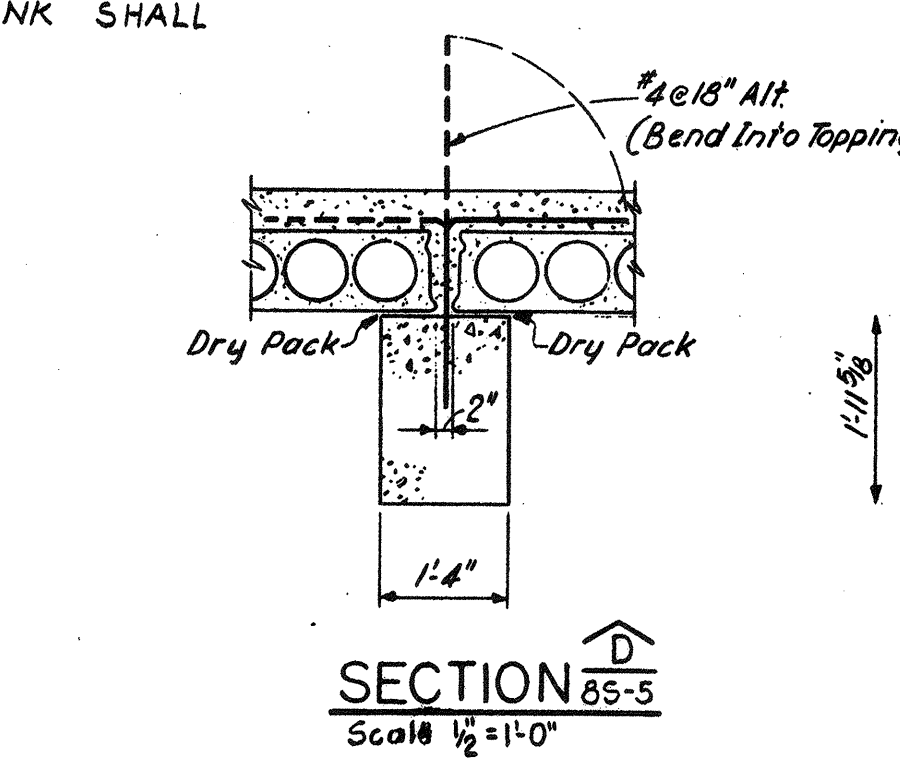
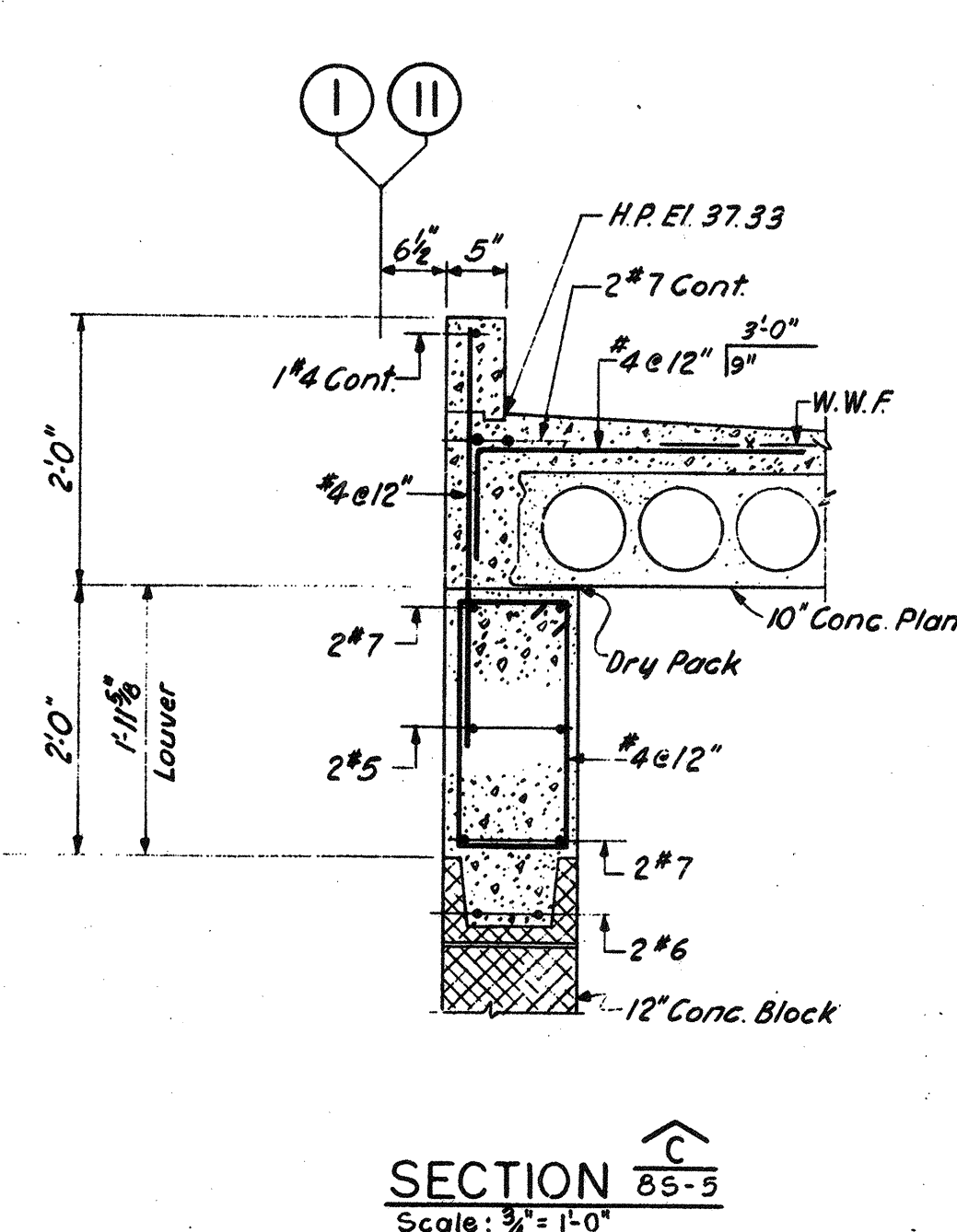
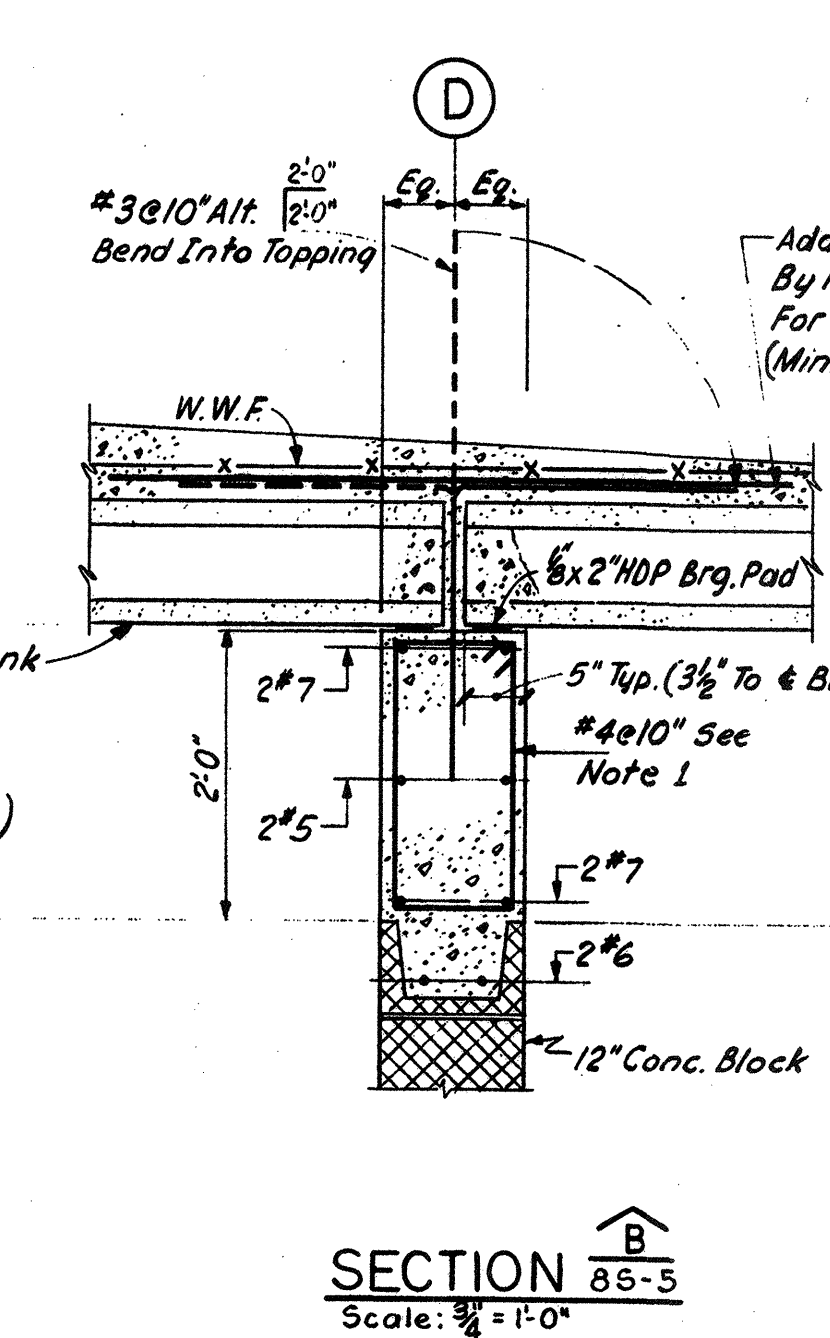
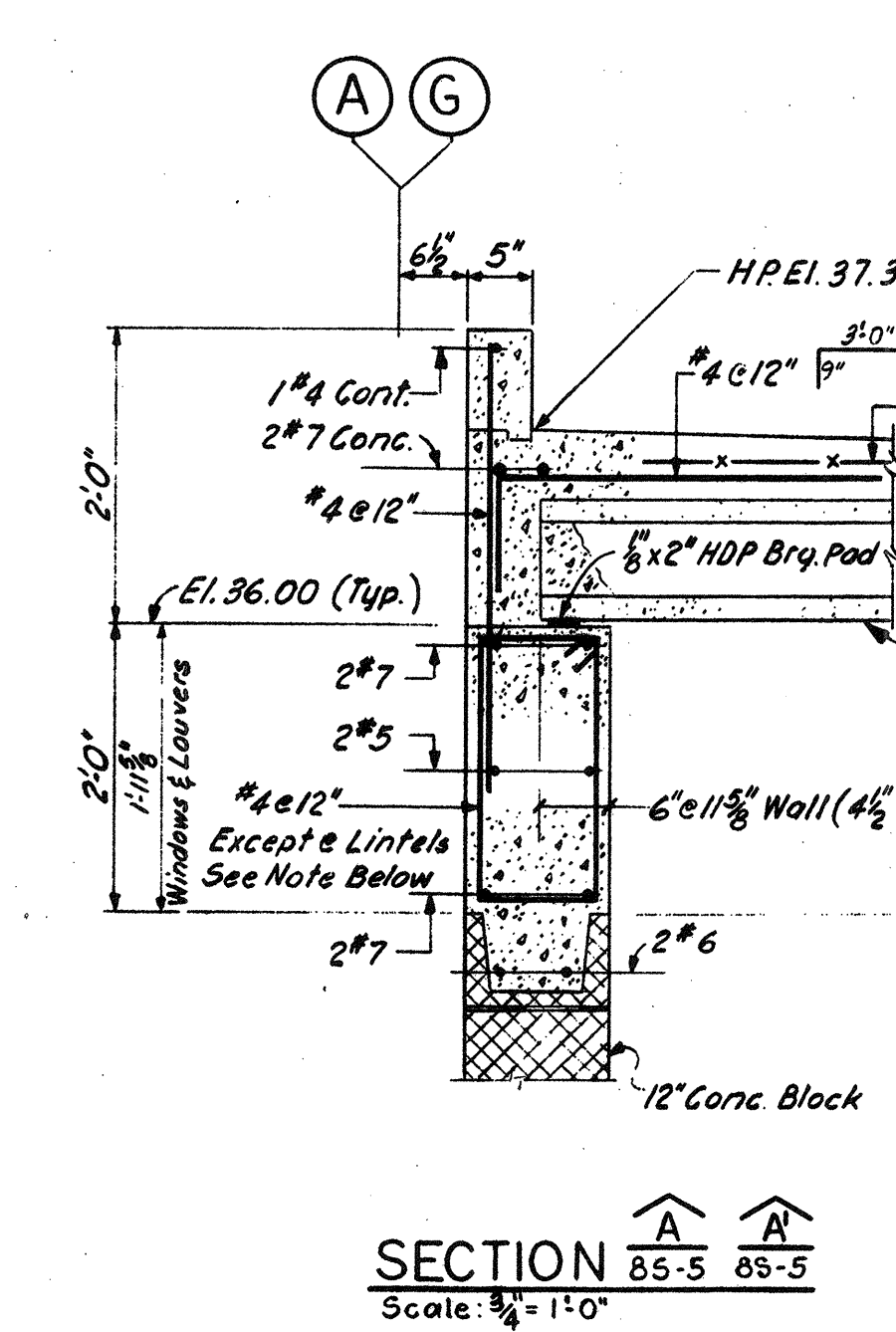
ORIGINAL FULL SIZE DRAWING = 4"				DRAWING NO. 8S-4	
REPRODUCTIONS MAY BE REDUCED SIZE				JOB NO. 85-163	
APPROVED				CONTRACT NO. 3	
DESIGNED	DRAWN	CHECKED	SCALE	DATE	
R.J.D.	E.W.	A.C.	3/16" = 1'-0"	SEPT. 1989	SHEET 39 OF 106 SHEETS

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
 FILTER BUILDING
 PLAN - GROUND FLOOR SLAB



ROOF PLAN Scale: 1/8" = 1'-0"

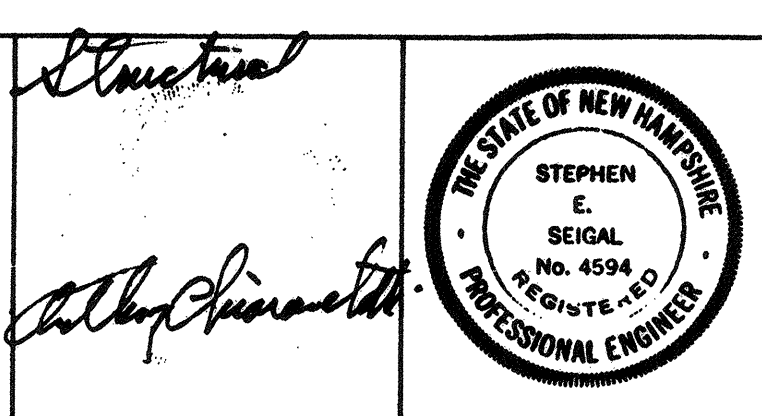
NOTE: STRANDS FOR PRECAST PLANK SHALL HAVE MIN. 2" CONC. COVER



Note 1: Provide #4e10" Over Openings Greater Than Or Equal To 8'-0", Start Spacing Of Stirrups @ 2" From Edge Of Supports.

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Dwg. Added	9-89

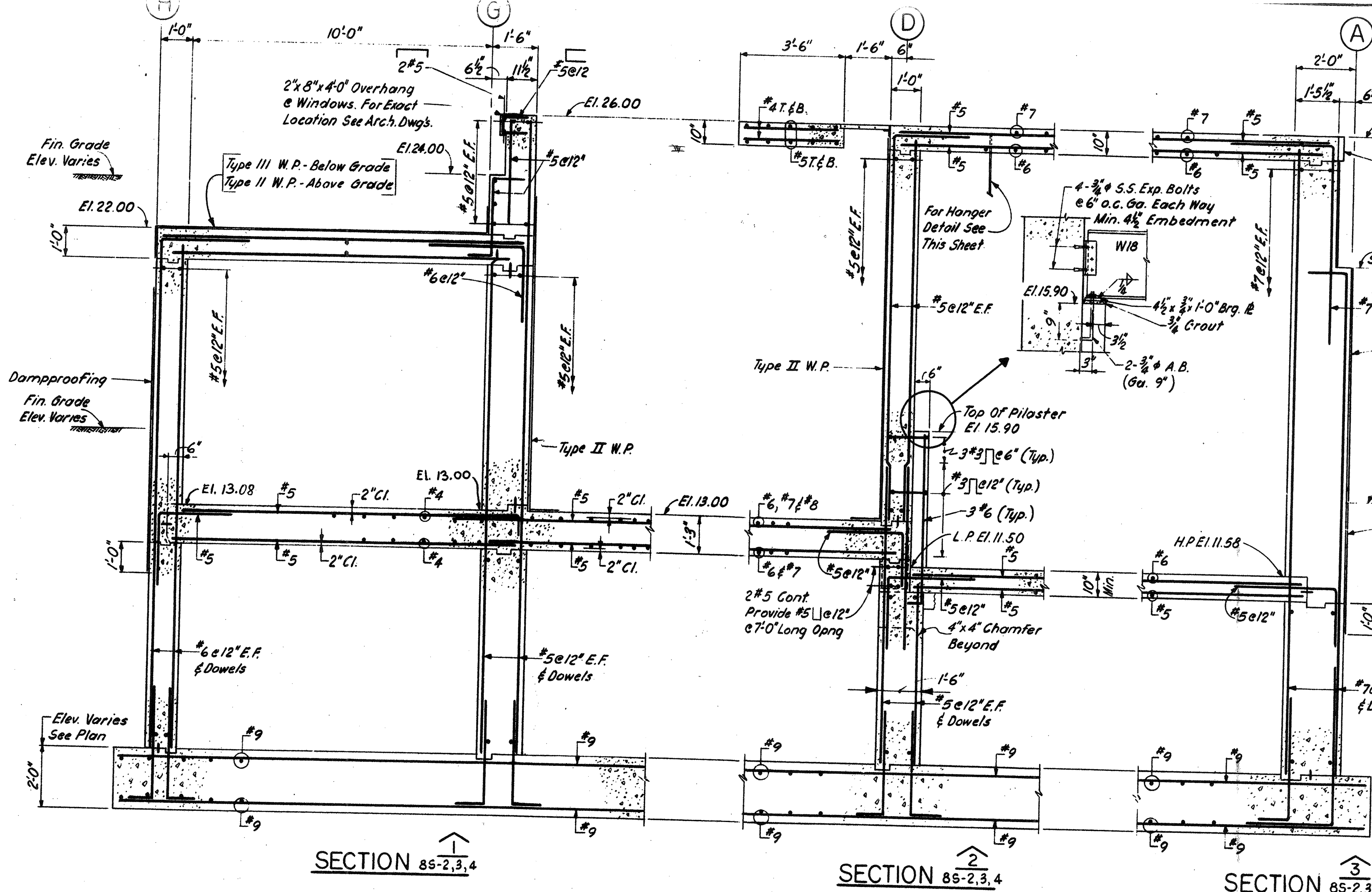
WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



DESIGNED/DRAWN				CHECKED		SCALE		DATE	
R.J.D.	E.W.	A.C.	AS NOTED			SEPT. 1989			

DRAWING NO. 85-5
JOB NO. 85-163
CONTRACT NO. 3
SHEET 40 OF 106 SHEETS

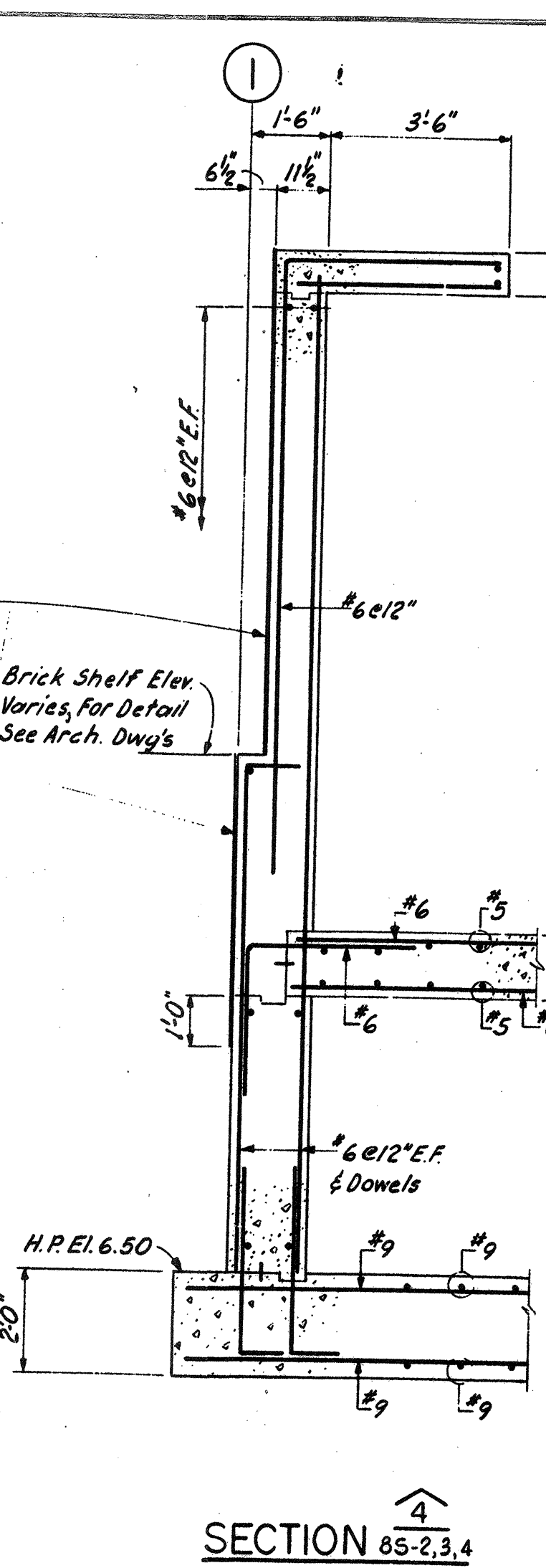
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
FILTER BUILDING
ROOF PLAN & DETAILS



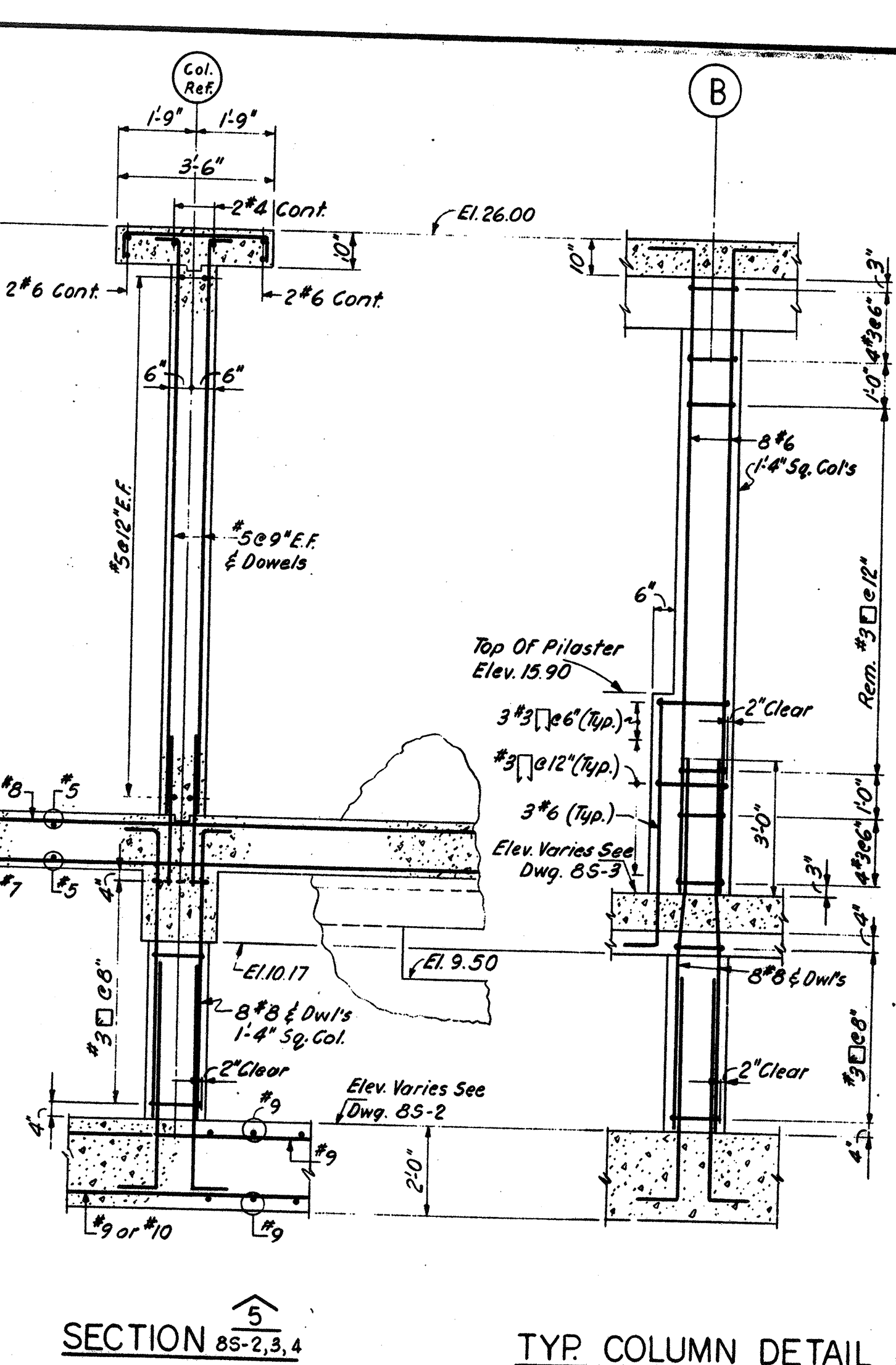
SECTION 1 85-2,3,4

SECTION 2 85-2,3,4

SECTION 3 85-2,3,4

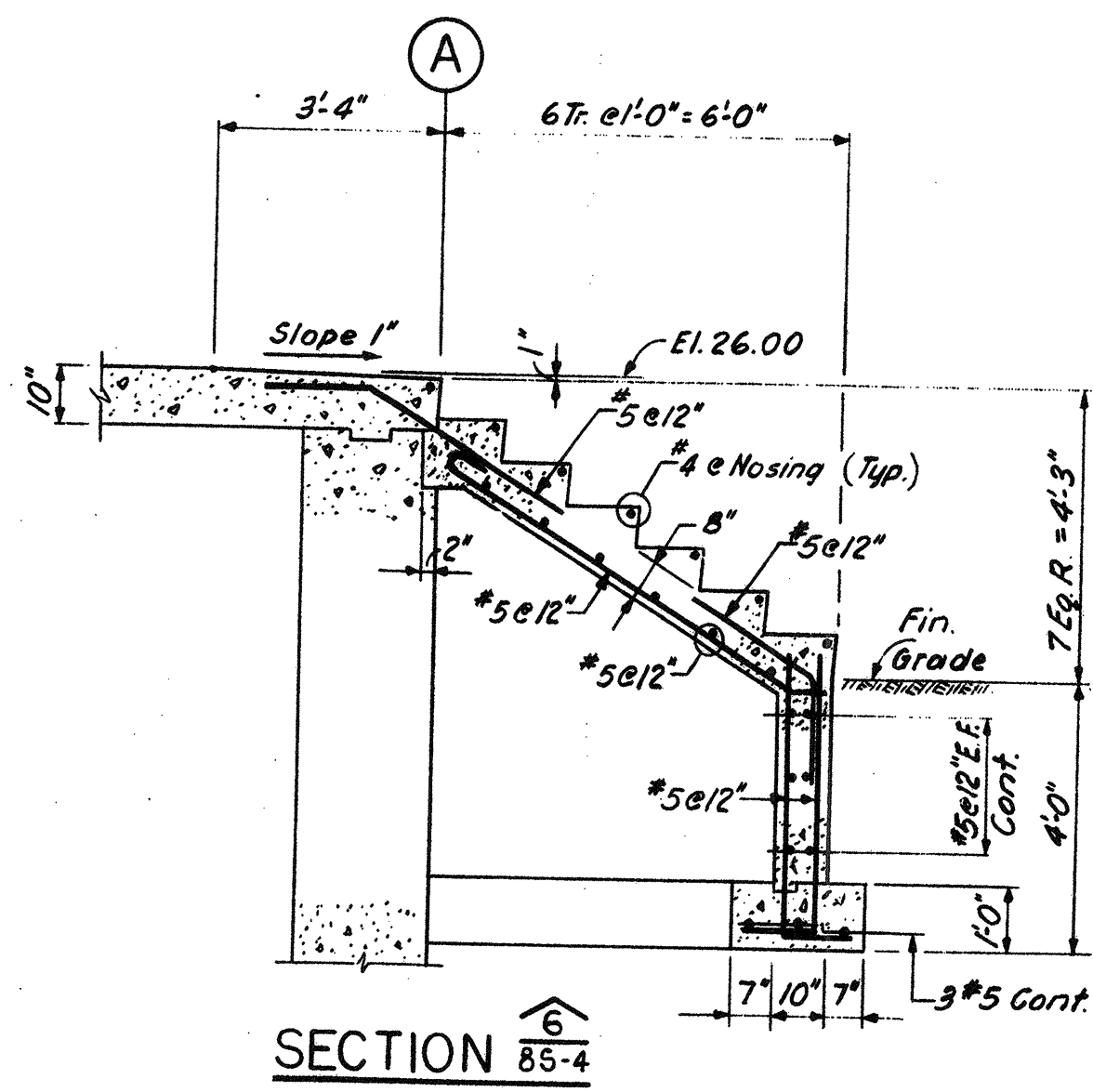


SECTION 4 85-2,3,4

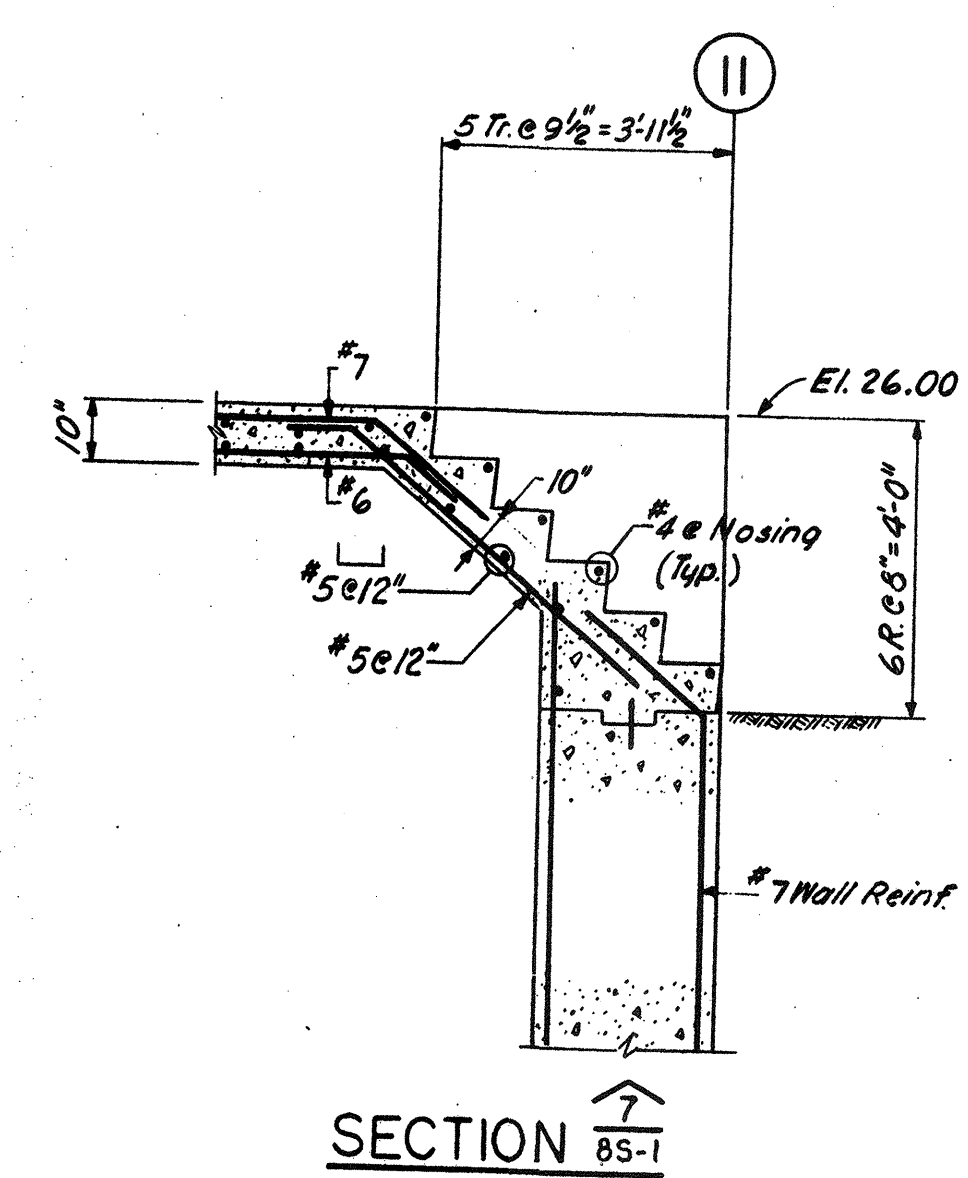


SECTION 5 85-2,3,4

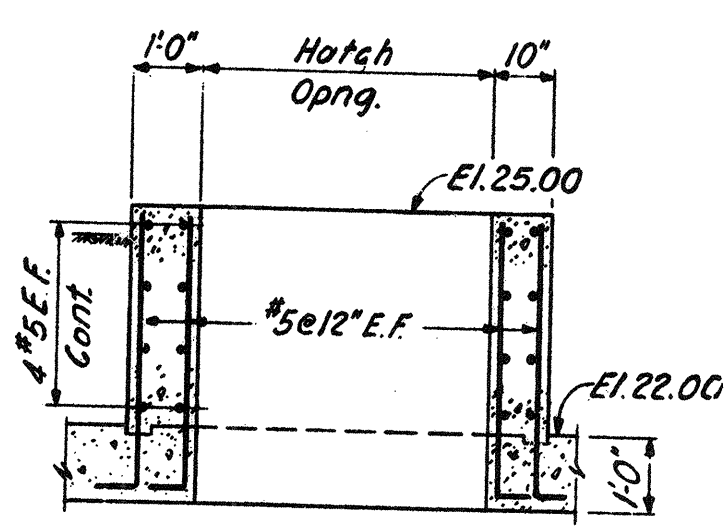
TYP. COLUMN DETAIL



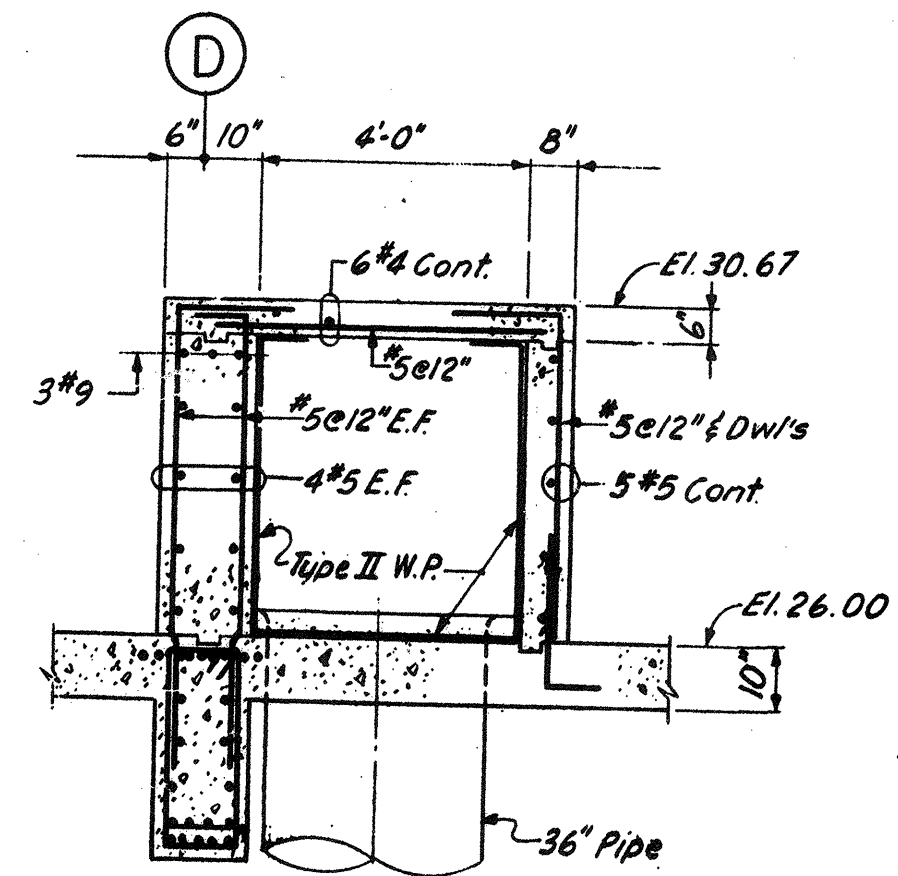
SECTION 6 85-4



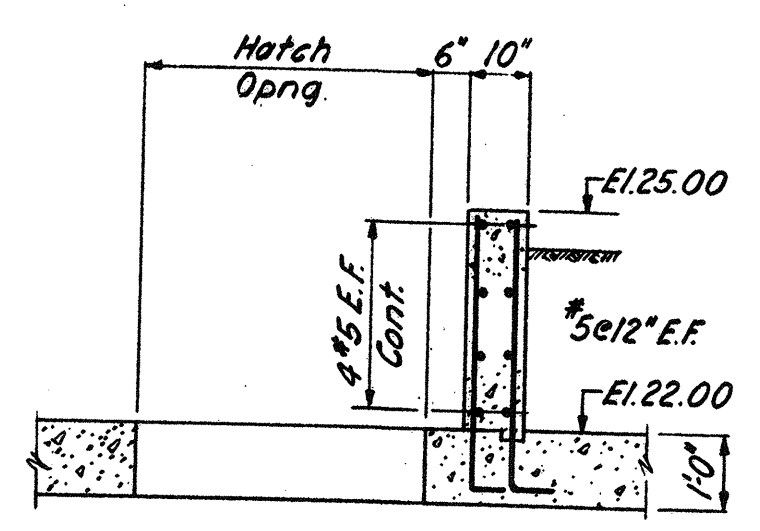
SECTION 7 85-1



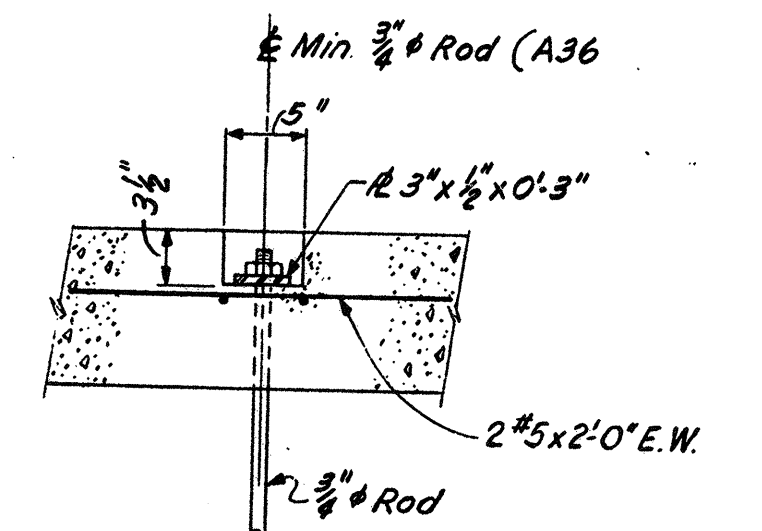
SECTION 8 85-16,4



SECTION 9 85-1



SECTION 10 85-4

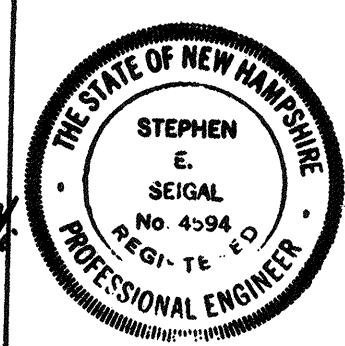


TYP. HANGER DETAIL
1'-0"

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	3-93
1	Dwg Added	9-89
	REVISIONS	

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.

Stephen E. Seigal
Professional Engineer



DESIGNED		CHECKED		SCALE		DATE	
R.J.D.	E.W.	A.C.	3/8" = 1'-0"	SEPT. 1989	SHEET 41 OF 106 SHEETS		

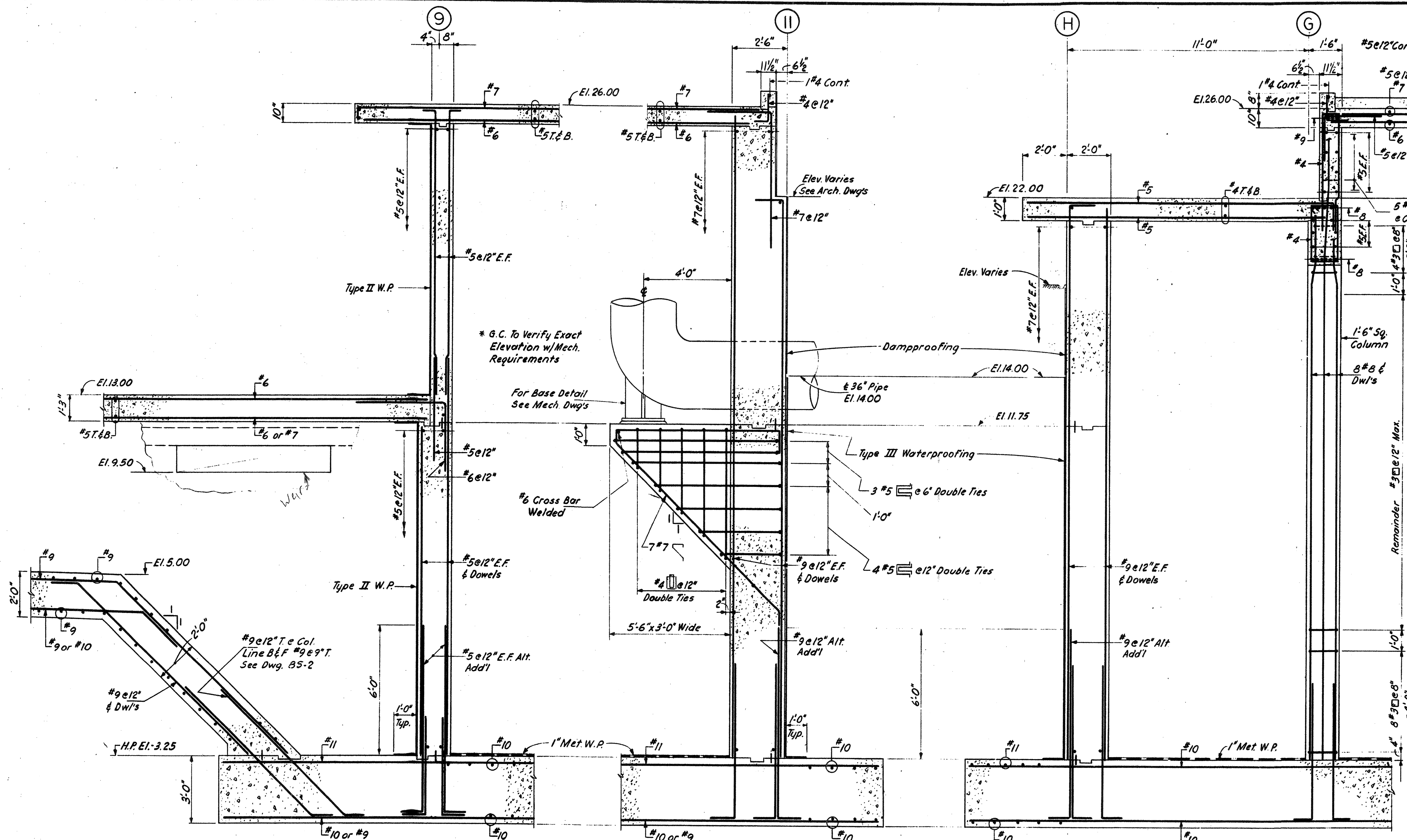
ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

DRAWING NO. **85-6**
JOB NO. 85-163
CONTRACT NO. 3

WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N.H.

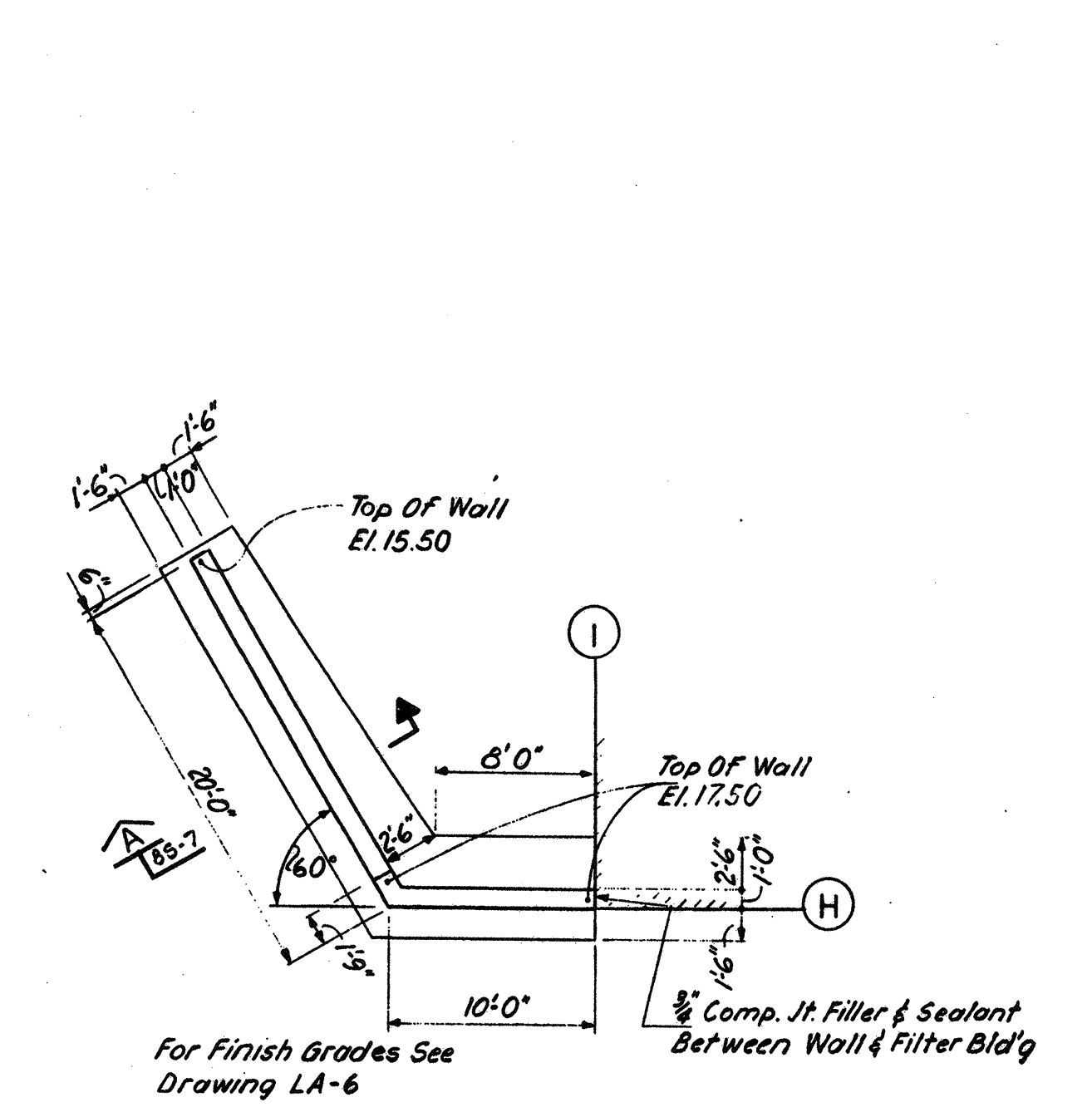
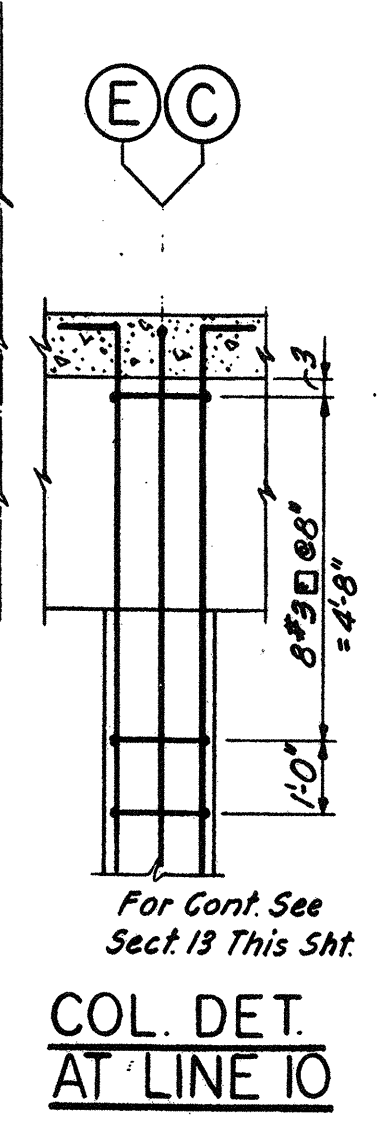
FILTER BUILDING
SECTIONS & DETAILS



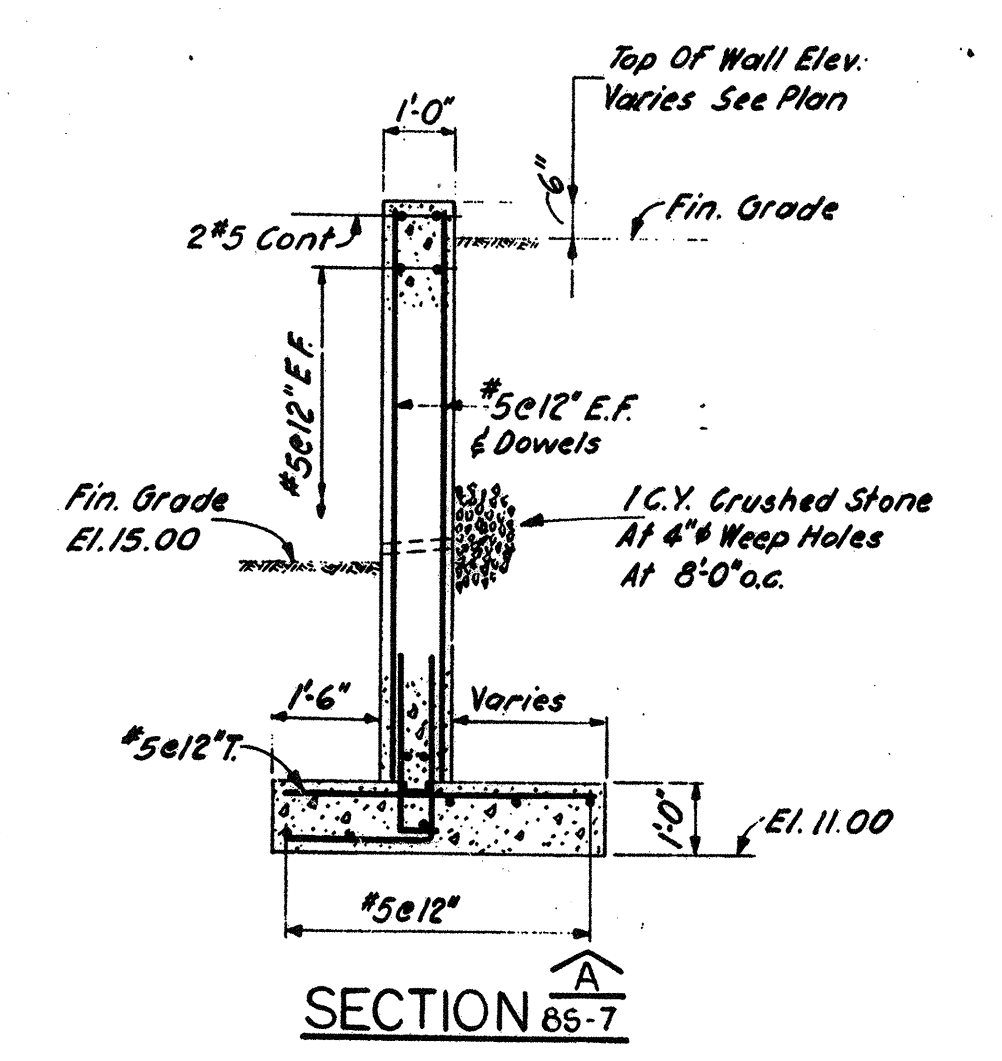
SECTION 11
85-1, 2, 3, 4

SECTION 12
85-1

SECTION 13
85-1



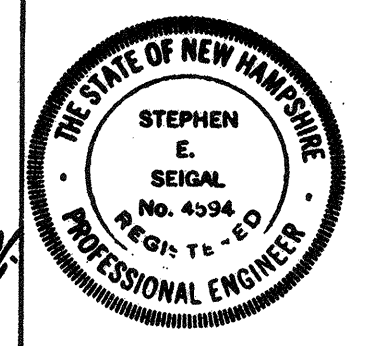
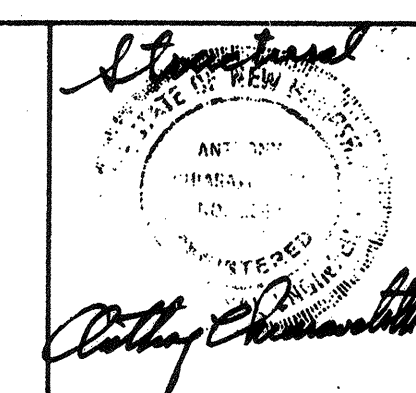
PLAN-RETAINING WALL
1/8" = 1'-0"



SECTION A
85-7

NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Dwg. Added	9-89
	REVISIONS	

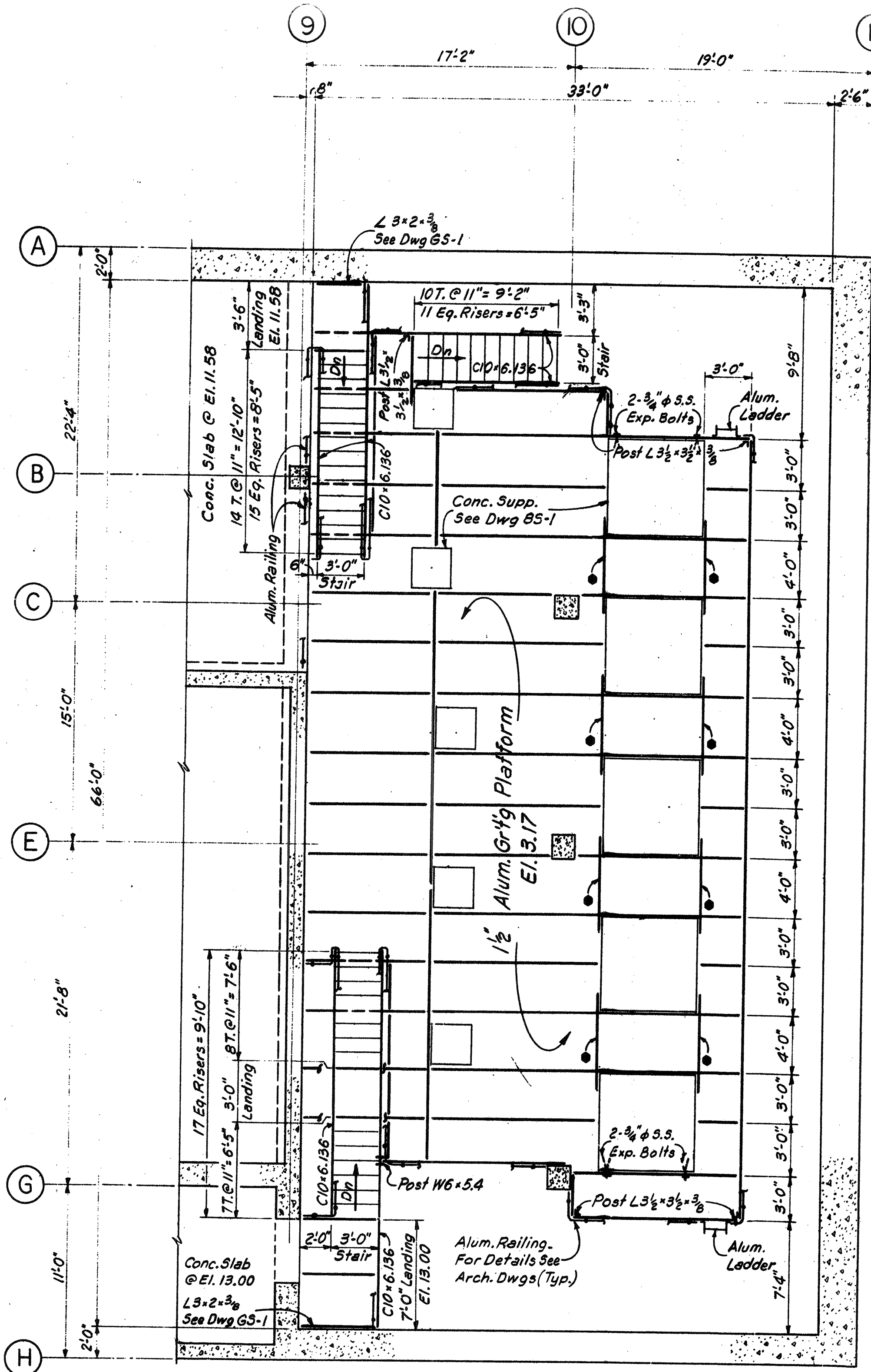
WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



DESIGNED/DRAWN: R.J.D. / E.W.
CHECKED: A.C.
SCALE: 3/8" = 1'-0"
DATE: SEPT. 1989

DRAWING NO. **8S-7**
JOB NO. 85-163
CONTRACT NO. 3
SHEET 42 OF 106 SHEETS

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
FILTER BUILDING
SECTIONS & DETAILS

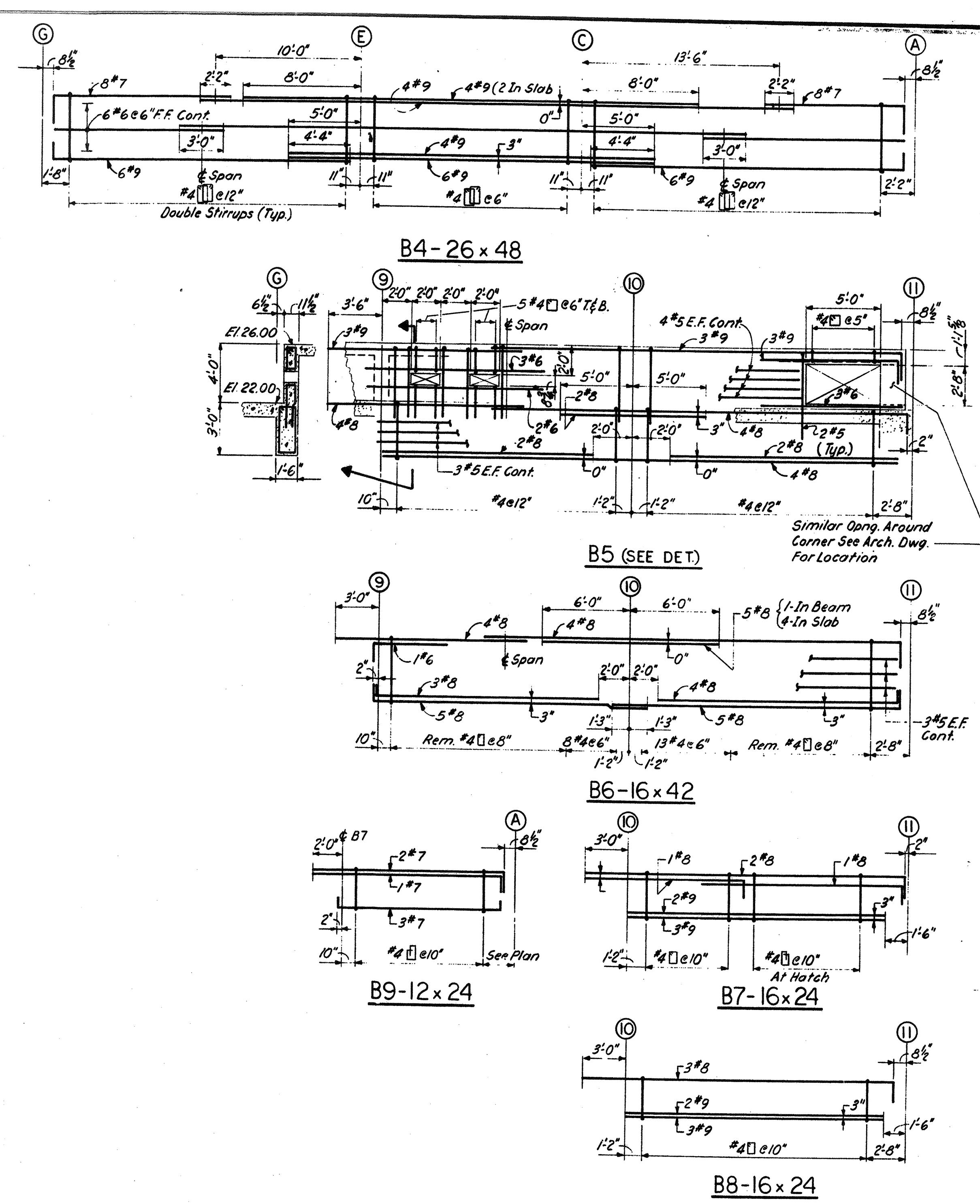


PLAN PUMP ROOM GRATING PLATFORM
Scale: 3/16" = 1'-0"

For Size and Location of All Concrete Supports See Dwg B5-1.
All Stair Treads to Be Aluminum Grating.

GRATING PLATFORM NOTES

- 1) All framing shall be aluminum construction.
- 2) All support members for grating platform shall be C8 X 5.789.
- 3) All grating for platform and stair landings shall be 1-1/2" deep.
- 4) All framing connections shall be made with minimum two 3/4" ϕ S.S. bolts and 3-1/2 X 3-1/2 X 3/8 clip angles.
- 5) All connections to concrete shall be made with 2 angles, 3-1/2 X 3-1/2 X 3/8, and two 3/4" ϕ S.S. expansion bolts per angle at 4-1/2" O.C. with 4" minimum embedment and located at 4-1/2" minimum from any edge of concrete unless noted otherwise on the plan. Where webs are flat against concrete use minimum two 3/4" ϕ S.S. expansion bolts at 4-1/2" minimum O.C. vertical gauge. Minimum embedment and edge distance as previously noted.
- 6) Top of all framing members shall be at El. 3.04 unless noted thus ● on the plan.
- 7) Top of all framing members noted thus ● on the plan shall be at El. 2.37.
- 8) All framing members located at the edge of the platform shall be provided with a continuous welded stop plate, 1-1/2" X 1/4", at the outer edge of the top flange.
- 9) All intermediate grating support members shall be provided with a continuous welded stop plate, 1-1/2" X 1/4" at the center of the top flange.
- 10) Post L 3-1/2 X 3-1/2 X 3/8 shall have a base plate 4" X 3/8" X 0'-4" (welded), set one 3/4" minimum grout and fastened to the concrete slab with one 3/4" ϕ S.S. expansion bolt with 4" minimum embedment.
- 11) Post W6 X 5.4 shall have a base plate 7" X 3/8" X 0'-7" (welded), set on 3/4" minimum grout and fastened to the concrete slab w/two 3/4" ϕ S.S. expansion bolts at 4-1/2" on center w/4" minimum embedment.
- 12) All stair stringers shall be C10 X 6.136 with welded full moment splice as required between sloping part and horizontal part of stringer at landings. Top of stringers at landing shall be 4" above top of grating.
- 13) For aluminum railing and kick plate details see drawing GA-3.



NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Dwg Added	9-89
REVISIONS		

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.

Stephen E. Seigel
Professional Engineer



ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

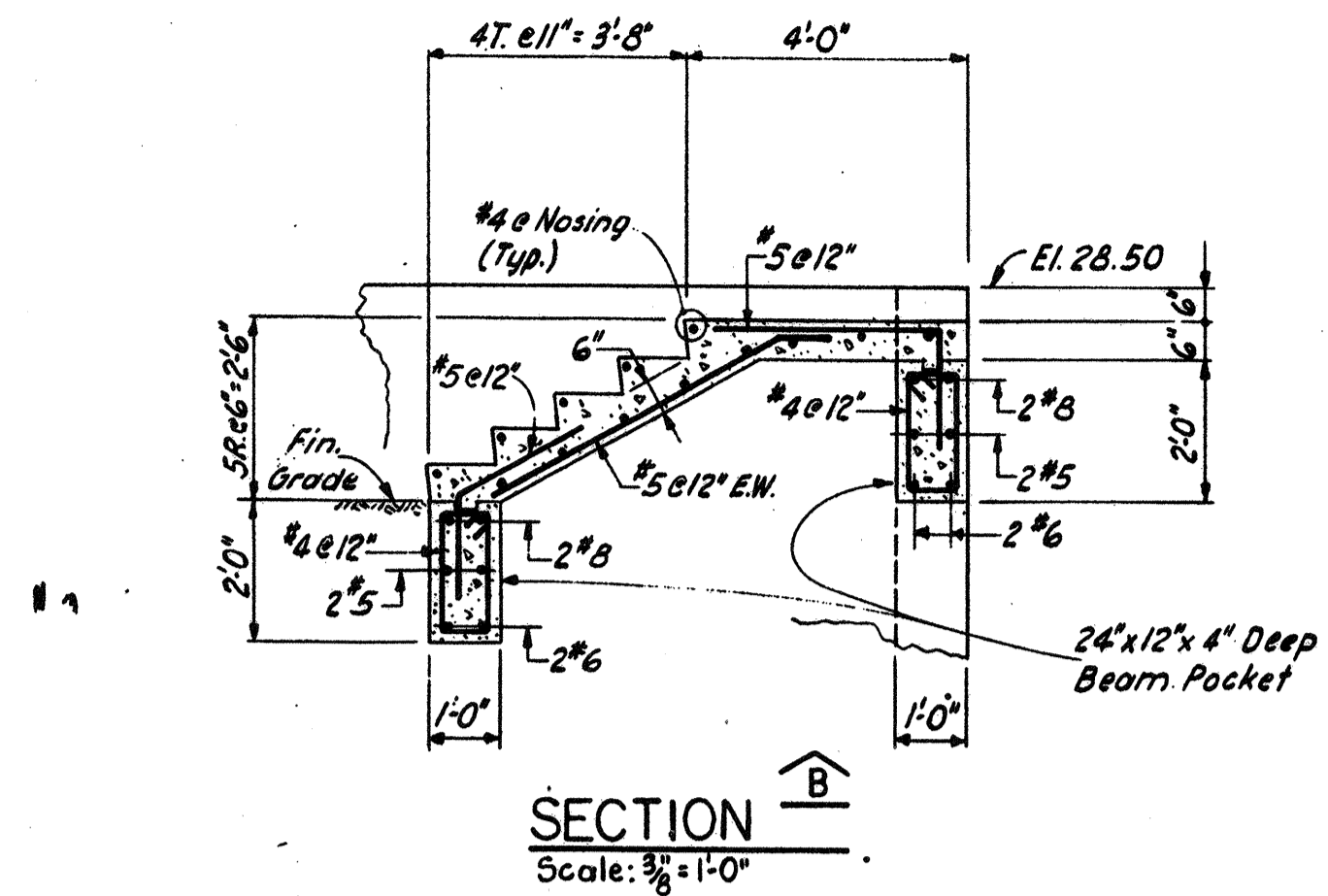
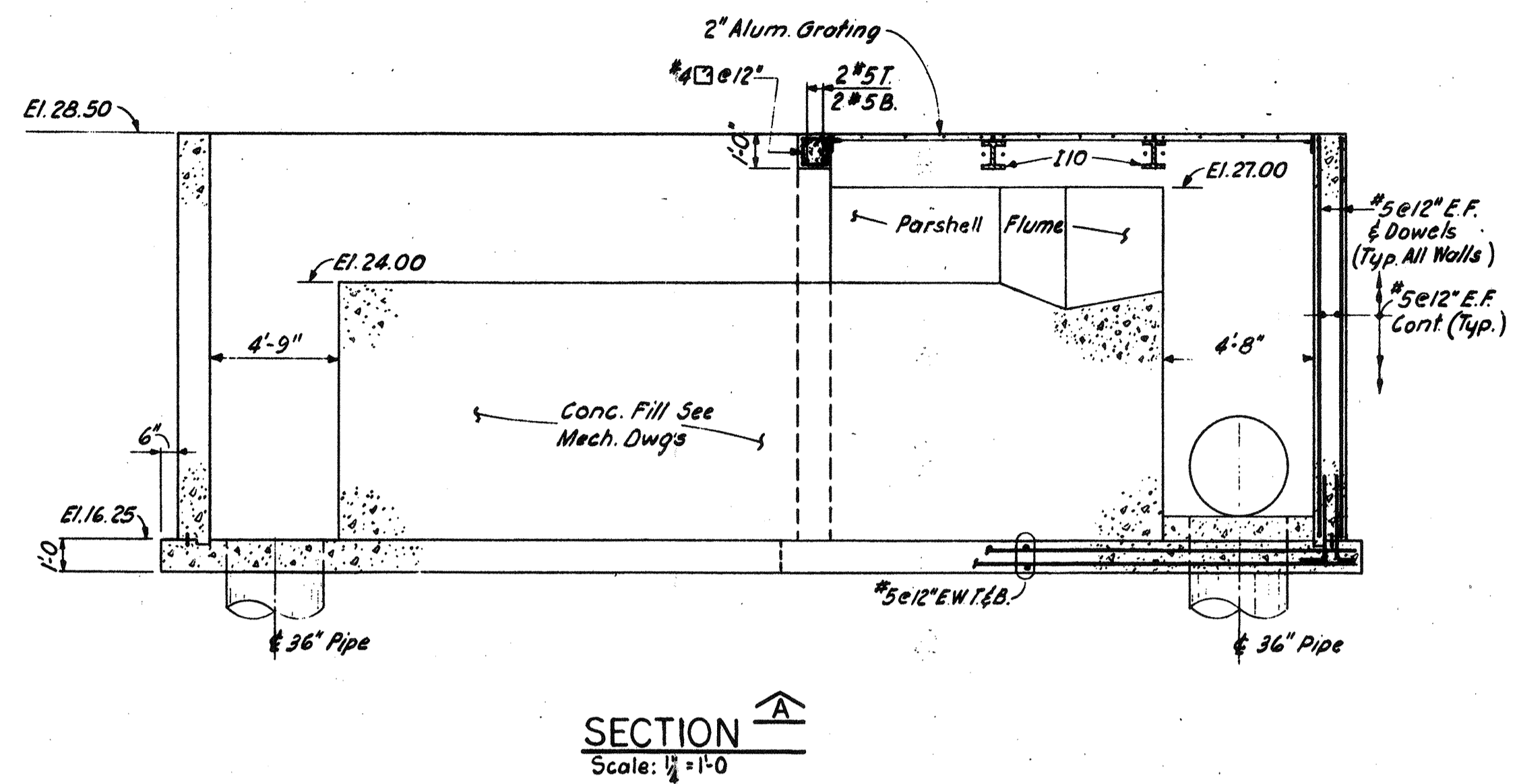
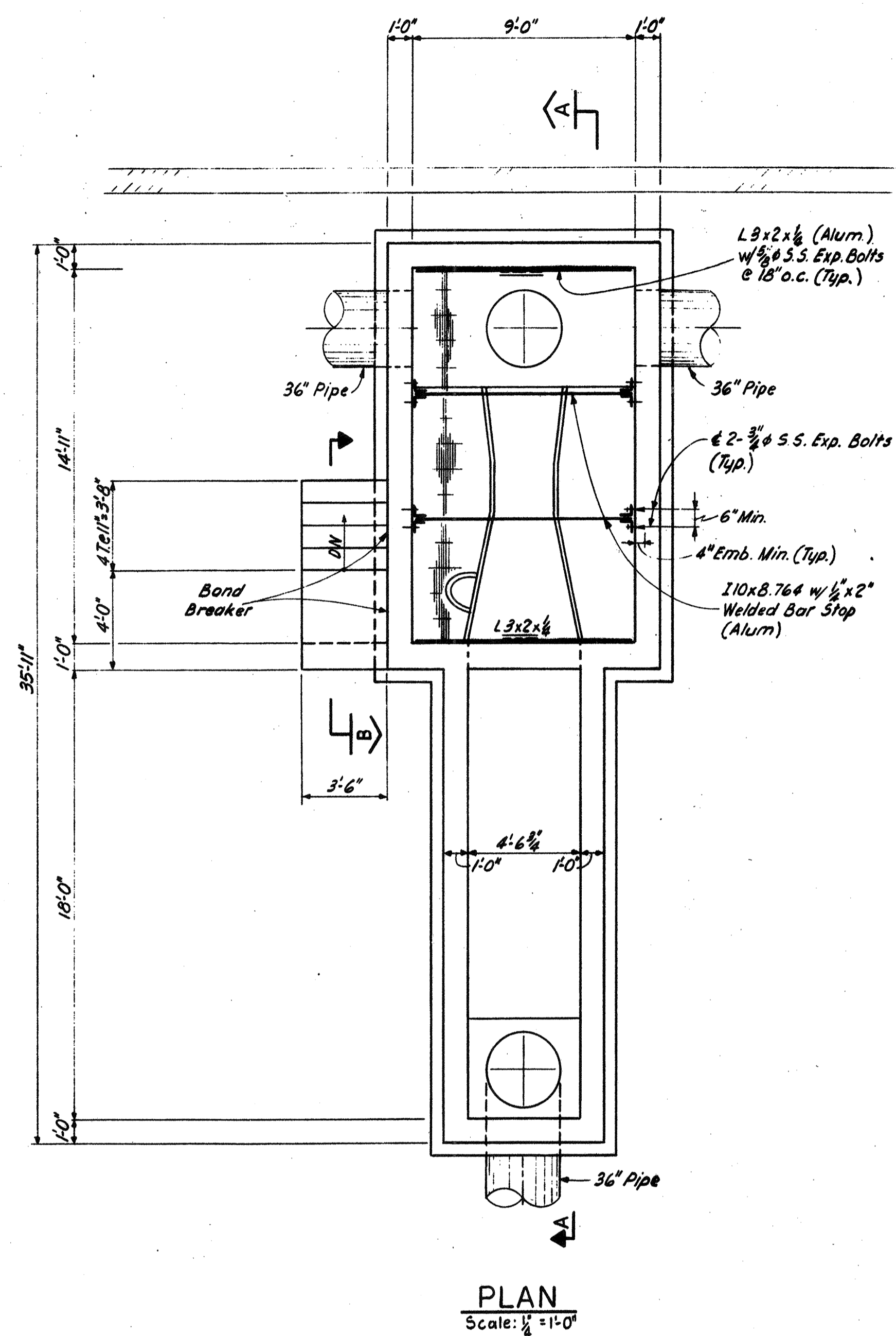
DESIGNED	DRAWN	CHECKED	SCALE	DATE
R.J.D.	E.W.	A.C.	AS NOTED	SEPT. 1989

DRAWING NO. **8S-8**
JOB NO. 85-163
CONTRACT NO. 3

WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N.H.

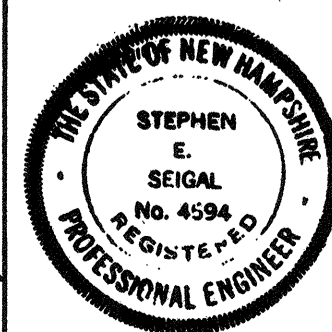
FILTER BUILDING
PUMP ROOM PLATFORM & DETAILS



NO.	DESCRIPTION	DATE
2	REVISED TO RECORD PLAN	9-93
1	Dwg. Ass'd	9-89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.

Whitman & Howard
Professional Engineer



ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

DESIGNED	DRAWN	CHECKED	SCALE	DATE
R.J.D.	E.W.	A.C.	AS NOTED	SEPT. 1989

DRAWING NO.	8S-9
JOB NO.	85-163
CONTRACT NO.	3

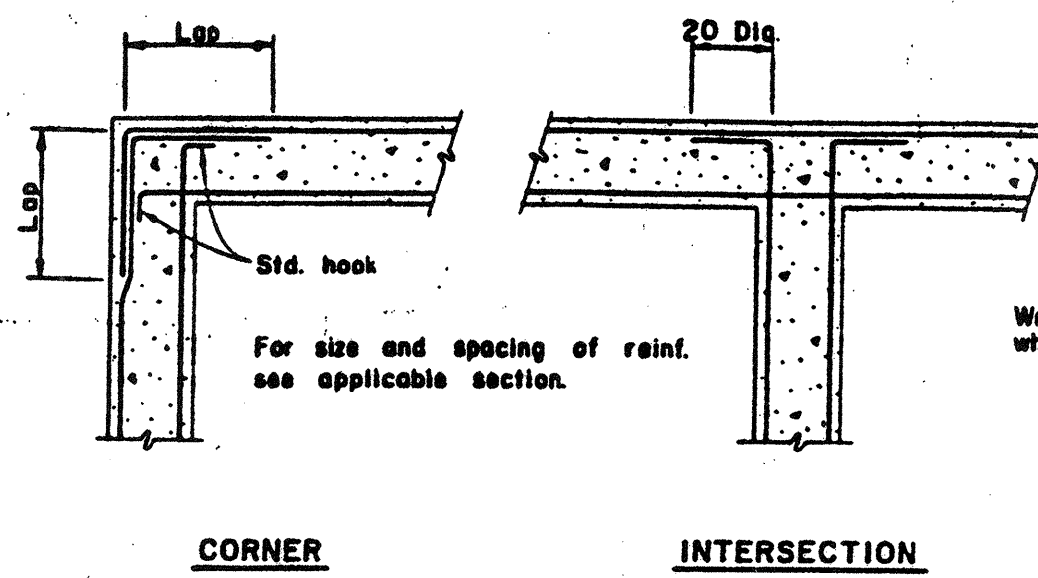
WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N.H.

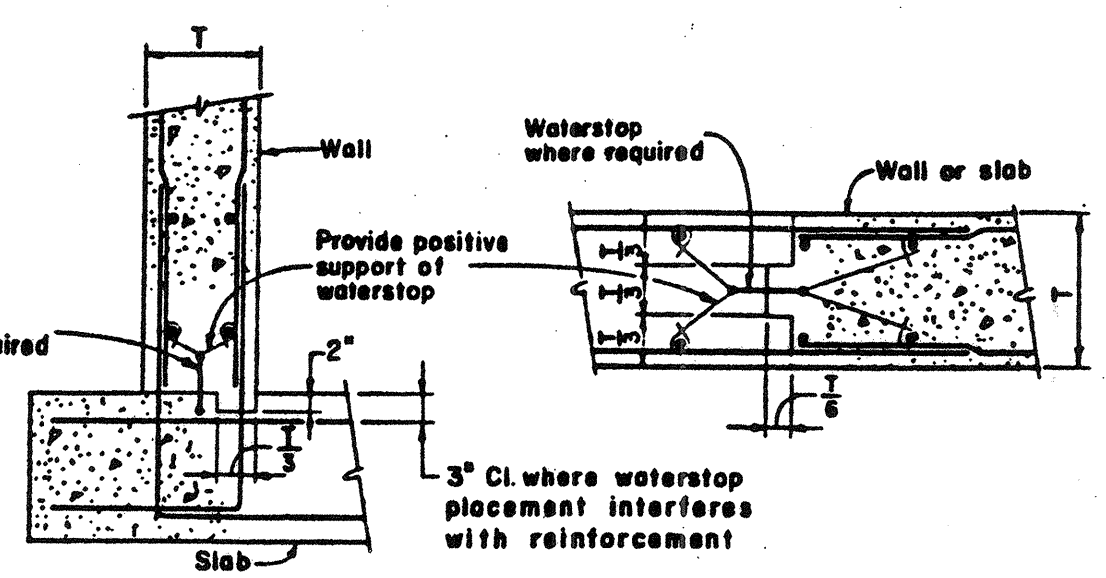
FILTER BUILDING
MISC. STRUCTURES & DETAILS

CONCRETE PROTECTION FOR REINFORCEMENT (a)				
MEMBER	EXPOSED TO			
	AIR	WEATHER & AIR OVER LIQUID	EARTH & LIQUID	SALT WATER
FOOTING	—	—	3"	4"
WALL COLUMN BEAM	1 1/2"	2"	2"(b)	3"(b)
SLAB JOINT	TOP	1 1/2"(c)	2"	3"
	BOTTOM	3/4"	2"	2"(b)

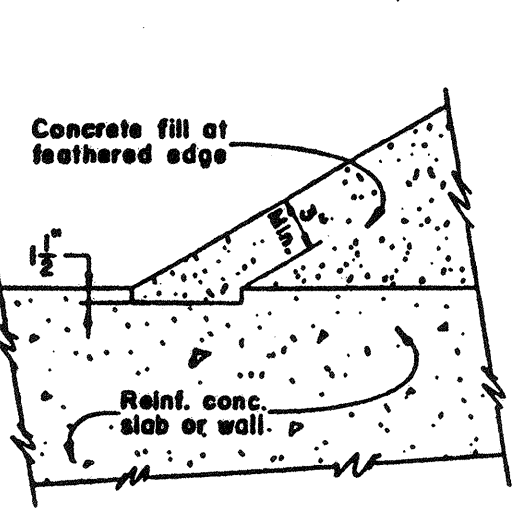
(a) Applicable to all cast-in place concrete except as otherwise shown on the drawings.
 (b) Increase 1" when cast against earth.
 (c) 3/4" when membrane or wearing surface used.



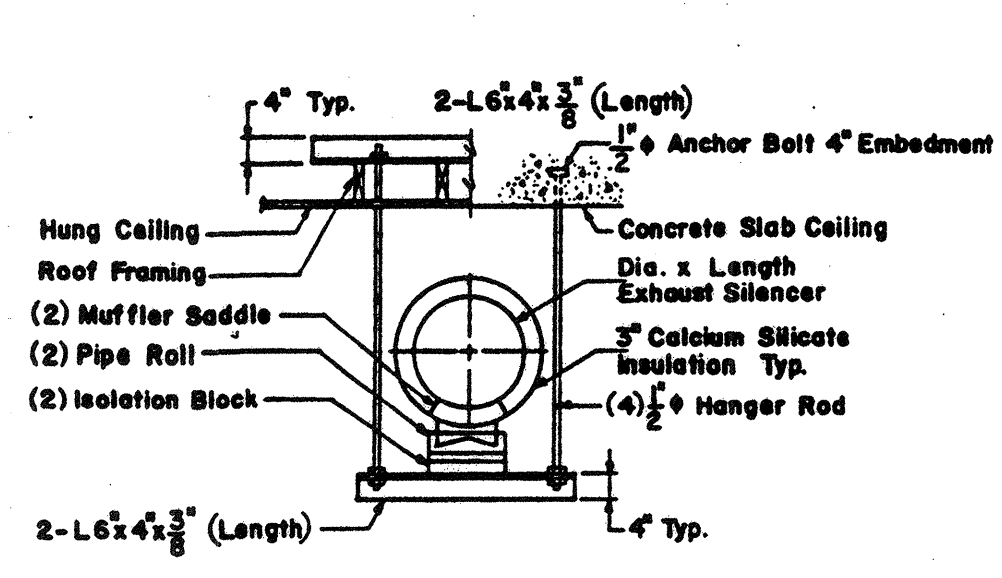
WALL REINF. DETAILS
 (UNLESS OTHERWISE NOTED)
 Note: Vert. reinf. not shown.



CONSTRUCTION JOINT DETAILS
 (UNLESS OTHERWISE NOTED)



CONCRETE FILL AT SLAB OR WALL DETAIL



SILENCER SUPPORT DETAIL

- GENERAL**
- These notes and typical details shall apply to all structures in the project, as applicable.
 - Structural drawings shall be used in conjunction with Architectural, Mechanical, Electrical, Plumbing, Heating and Ventilation drawings and specifications. Drawings shall be referred to for size and location of opening for vents, pipes, ducts, etc.
 - All dimensions and conditions must be verified in the field and any discrepancies shall be brought to the attention of the Engineer before proceeding with the effected portion of work.

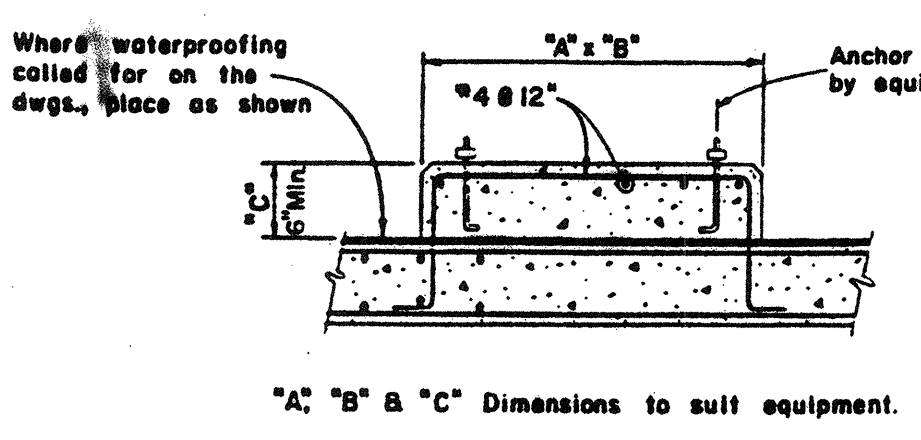
- FOUNDATIONS**
- No backfill shall be placed against foundation walls which have not been cured for at least 7 days.
 - Backfill shall not be placed against foundation walls until supporting framed slabs have been poured and the forms removed. Granular backfill shall be placed and compacted on all sides of the structure simultaneously.
 - No footings shall be poured on loose or disturbed soils, in water nor on frozen ground.
 - A minimum of 12 inches of compacted crushed stone shall be placed beneath all foundation mats, footings, and slab-on-grade.
 - Compact all fill under the footings, slab on grade and any other areas under building to 95% maximum density as specified. Verify field density as specified.
 - Structures must be protected against buoyancy at all times during construction.

- CONCRETE**
- All concrete shall have a minimum 28-day compressive strength of 4000 psi, unless otherwise noted.
 - All concrete work shall conform to the latest building code requirements for reinforced concrete, ACI 318.
 - Reinforcing steel shall comply with the following:
 - ASTM Designation A615 Grade 60.
 - Provisions of ACI 318-83, except as to minimum lap and cover.

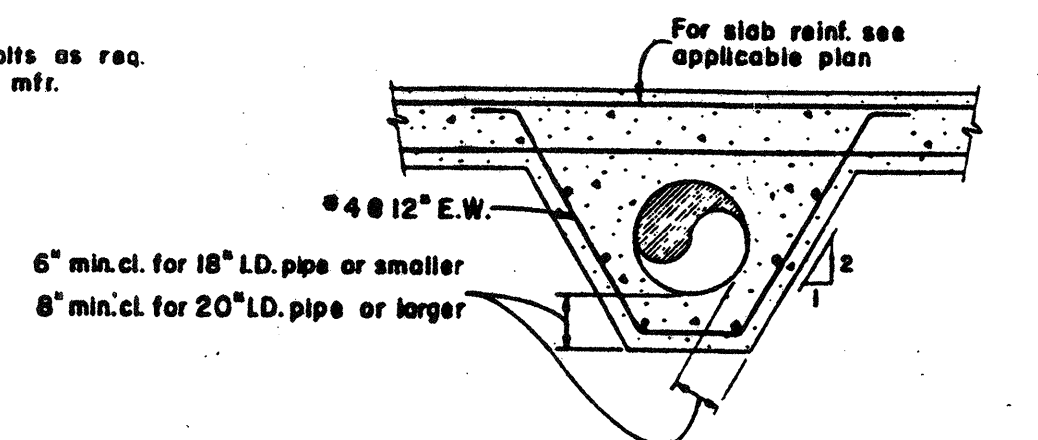
- Reinforcement cover shall comply with the table, "Concrete Protection for Reinforcement", unless otherwise noted.
- For minimum bar splice lengths see table shown on this drawing.
- Welded wire fabric shall conform to ASTM A-185.
 - Contractor shall coordinate locations of floor drains, piping, electrical conduits, grounds, sleeves, inserts, etc. with concrete construction.
 - Construction joints, in walls and slabs, shall be keyed. Use of construction joints other than those shown on the drawings will require approval of the Engineer.
 - Waterstops are not necessarily shown at every joint; but where they are shown, it is intended that they be complete and continuous throughout the particular structure. Waterstops in vertical joints shall extend to the elevation of finish ground grade, unless otherwise noted.
 - Exterior surface of concrete walls shall be damp-proofed where indicated. Limits to be from top of footing or slab to 6" below finish grade, unless otherwise noted.
 - Provide all necessary chairs, chair bars, spacers, etc., wired securely to hold reinforcement in position. These accessories shall be plastic coated where concrete is to be exposed to weather or moisture.
 - Do not penetrate beams or columns where not shown on structural drawing without approval of the Engineer.
 - All exposed corners of concrete beams and walls shall have a 1/2" chamfer unless noted.
 - Shoring for all cantilever sections shall remain in place until concrete has reached its 28-day design strength.
 - Vapor barrier, where indicated, shall be placed in the largest practical sheets.
 - Prestressed concrete roof or floor planks shall conform to ACI 318-83, 435, 512.

- STRUCTURAL STEEL**
- All structural steel shall conform to ASTM Designation A-36, unless otherwise noted.
 - All bolted connections shall be 3/4" ASTM A-325 bearing type bolts (unless otherwise noted).
 - Shapes noted "Galv" on drawings shall be hot dip galvanized in accordance with ASTM A-123.
 - All welding shall be done by certified welders and shall conform to A.W.S. Specifications, amended to date.
 - Structural steel encased in concrete shall not be painted, but is to be free of all grease, rust, scale and other foreign matter.
 - Anchor bolts shall be ASTM A-307.
 - It is not intended that structural steel or anchors shall come in contact with non-ferrous metal. Should this occur, the non-ferrous metal shall be covered with a heavy coating of alkali-resistance bituminous paint at the point of contact.

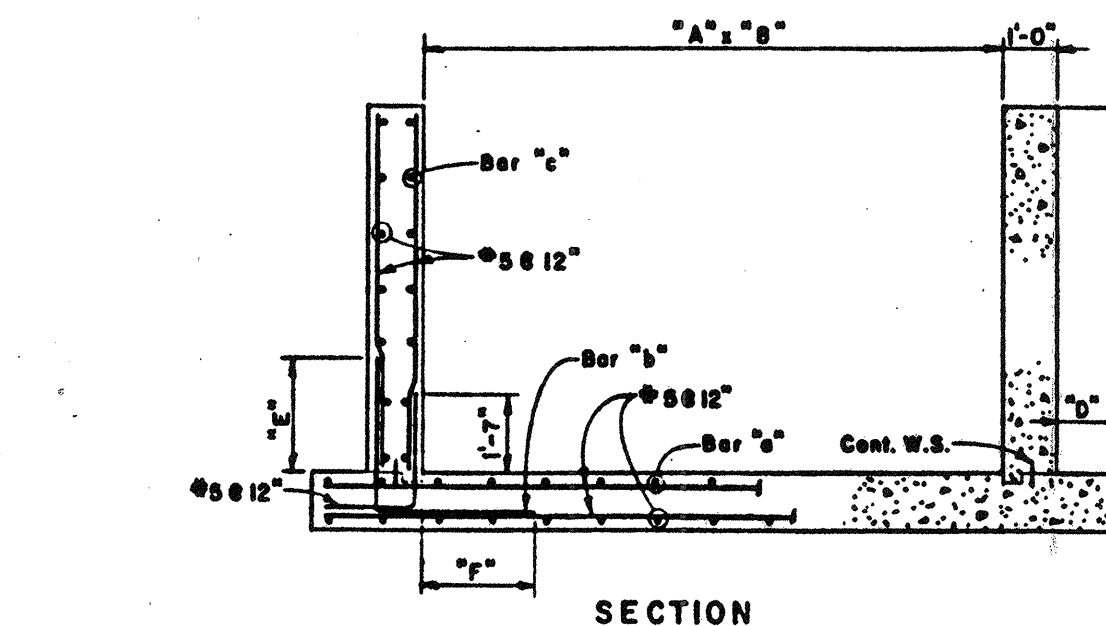
- STEEL JOISTS & METAL DECK**
- Joists shall be designed and fabricated by a member of the Steel Joist Institute in accordance with the Institute's latest specification.
 - Joist bridging shall be designed and installed in accordance with the Steel Joist Institute specification and as indicated.
 - Supports for mechanical equipment, sprinklers and lights hung from steel joist shall be located at panel points.
- MASONRY**
- Concrete masonry units shall conform to ASTM C-90. Grade N-1. Mortar shall be Type "M" as specified. Grout shall be "Fine" type conforming to ASTM C-476.
 - Concrete masonry units shall be a minimum unit compressive strength of 2000 psi measured on the net section as determined by the unit test method in accordance with ASTM C-140. The minimum concrete masonry strength, f'_m , at 28 days shall be 1350 psi as measured on the net section.



EQUIPMENT PAD DETAIL



PIPE ENCASEMENT DETAIL



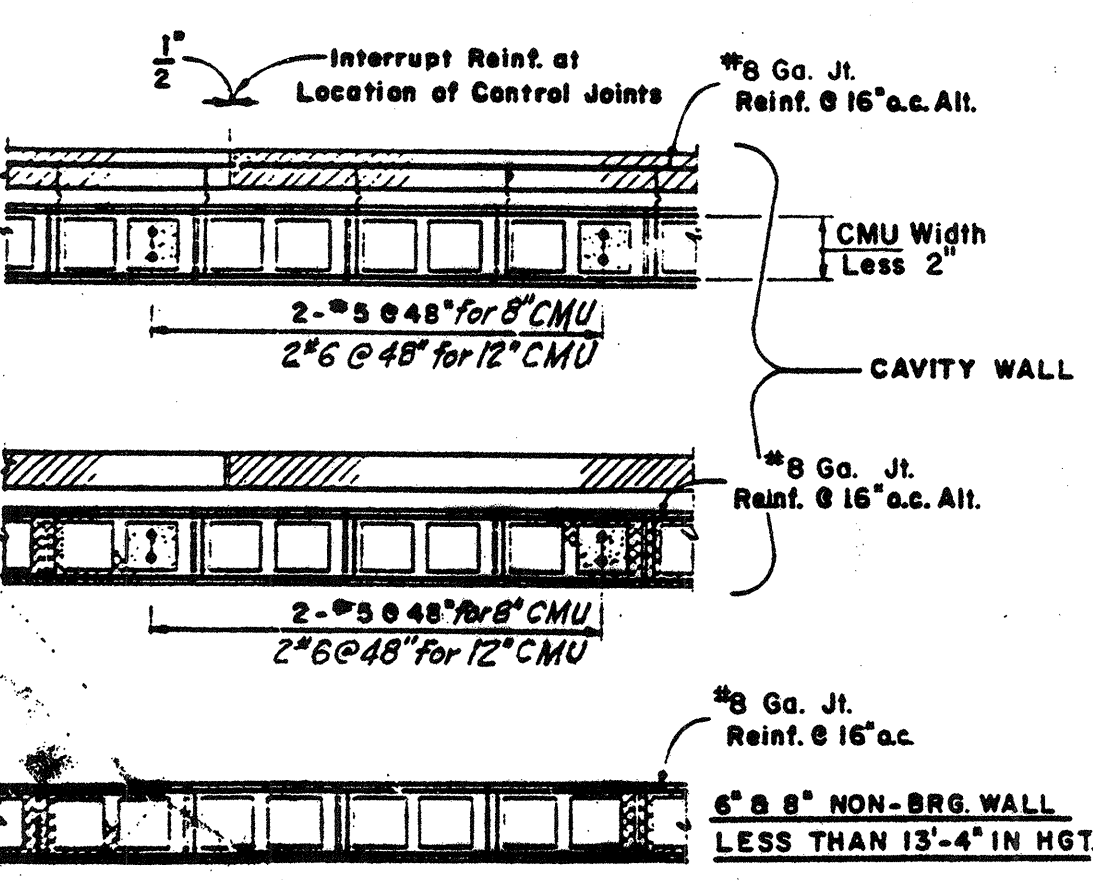
FUEL TANK VAULT DETAILS

MINIMUM RE-BAR SPLICE LENGTHS (in.)*			
		$f_y = 60,000$	
		$f_c = 4,000$	
BAR SIZE	TOP BARS**	OTHER BARS	
4	23	16	
5	29	20	
6	34	24	
7	43	31	
8	58	41	
9	71	52	
10	92	65	
11	113	81	

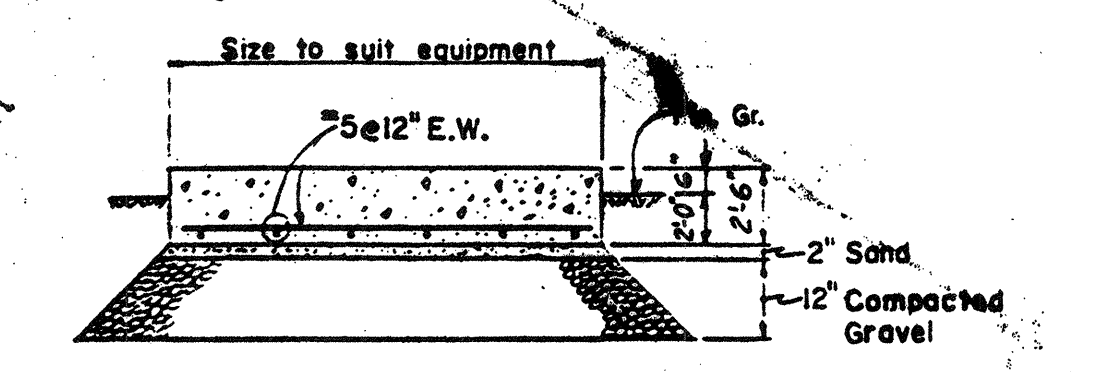
* This table is based on normal weight concrete and class "C" splices with bars 6" or more apart. Where spacing between bars is less than 6" refer to A.C.I. requirements.
 ** As defined by A.C.I. 318-83.

CONCRETE VAULT													
FUEL TANK	GAL.	DIA.	LENGTH	A	B	C	D	E	F	a	b	c	d
550	4'-0"	8'-6"	8'-0"	10'-6"	6'-6"	6'-6"	6'-6"	1'-7"	10'	5/8"12"	5/8"12"	5/8"12"	5/8"12"
1,000	4'-0"	11'-0"	8'-0"	15'-0"	6'-6"	6'-6"	6'-6"	1'-7"	10'	5/8"12"	5/8"12"	5/8"12"	5/8"12"
2,000	6'-6"	14'-0"	10'-0"	18'-0"	9'-0"	9'-0"	9'-0"	2'-0"	2'-6"	5/8"12"	5/8"12"	5/8"12"	5/8"12"
4,000	6'-6"	21'-0"	10'-0"	25'-0"	9'-0"	9'-0"	9'-0"	2'-0"	2'-6"	5/8"12"	5/8"12"	5/8"12"	5/8"12"
8,000	8'-0"	19'-6"	12'-0"	23'-6"	11'-0"	11'-0"	11'-0"	3'-0"	3'-0"	5/8"12"	5/8"12"	5/8"12"	5/8"12"
10,000	8'-0"	30'-8"	12'-0"	34'-8"	11'-0"	11'-0"	11'-0"	2'-0"	3'-4"	7/8"12"	7/8"12"	7/8"12"	7/8"12"

Concrete Vault Dimensions May Be Altered to Suit Tanks Whose Diameter and Length Vary from Those Shown.

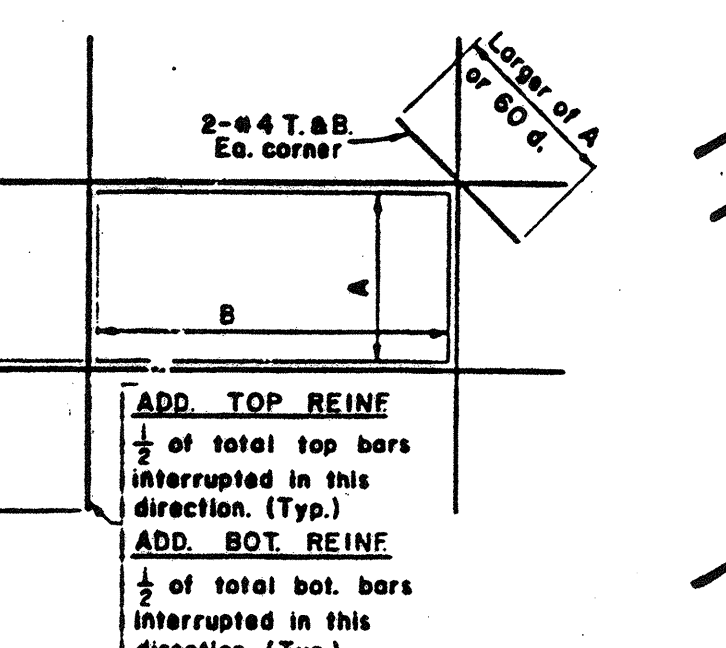


TYP. MASONRY REINFORCING DETAILS
 Note: Where Running Bond is Specified, Use 2 Cell Blocks As Shown Above All 12" Bearing Walls to Be Reinforced with 2'5 @ 48" Vert.

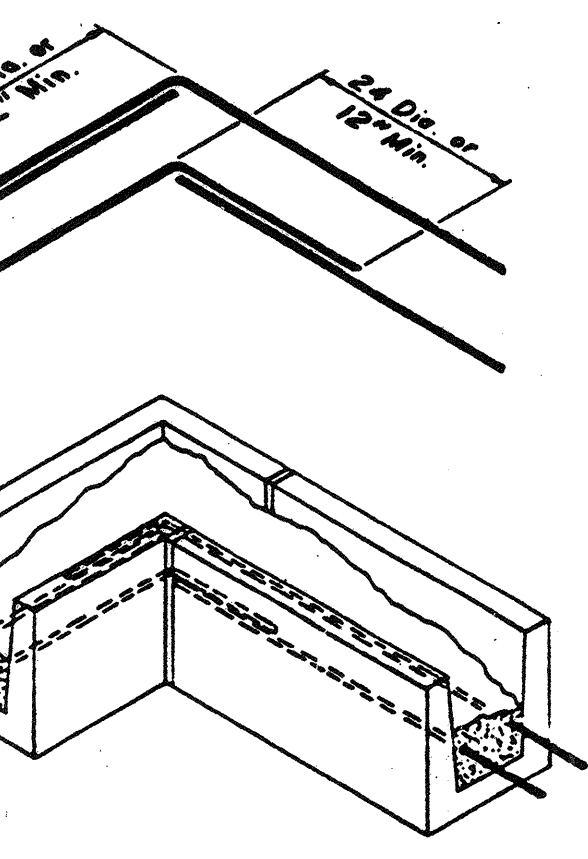


TRANSFORMER PAD DET.
 N.T.S.

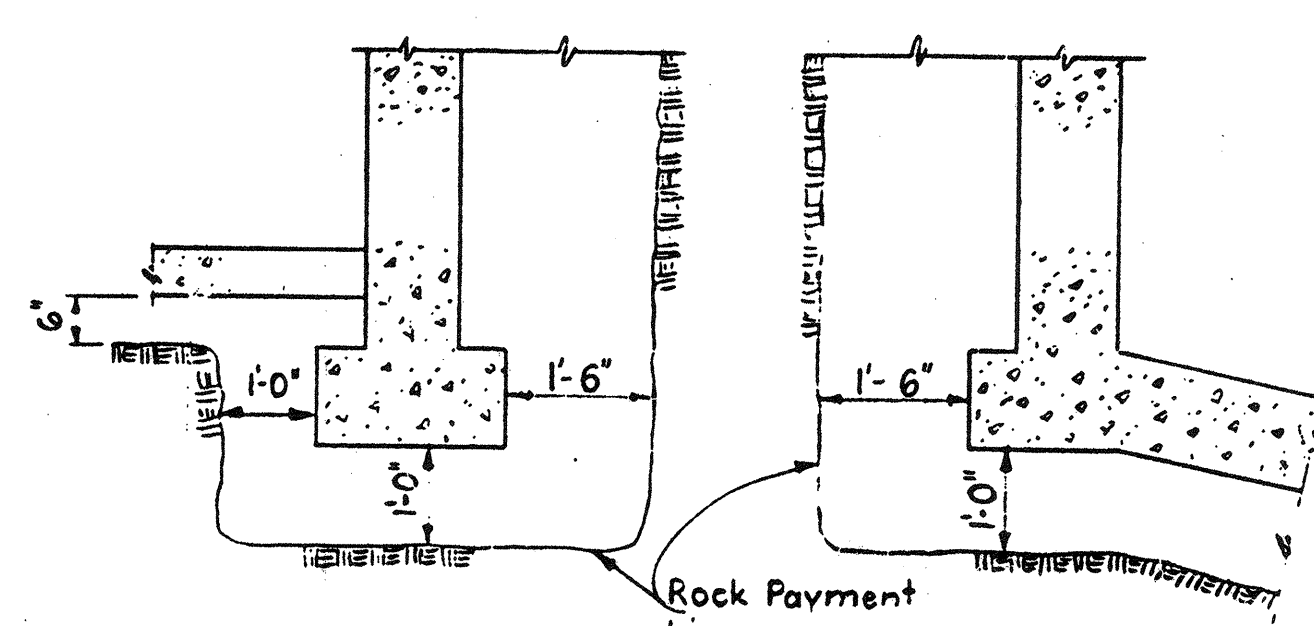
G.C. to Coordinate Pad Detail to Suit Power Company Requirements.



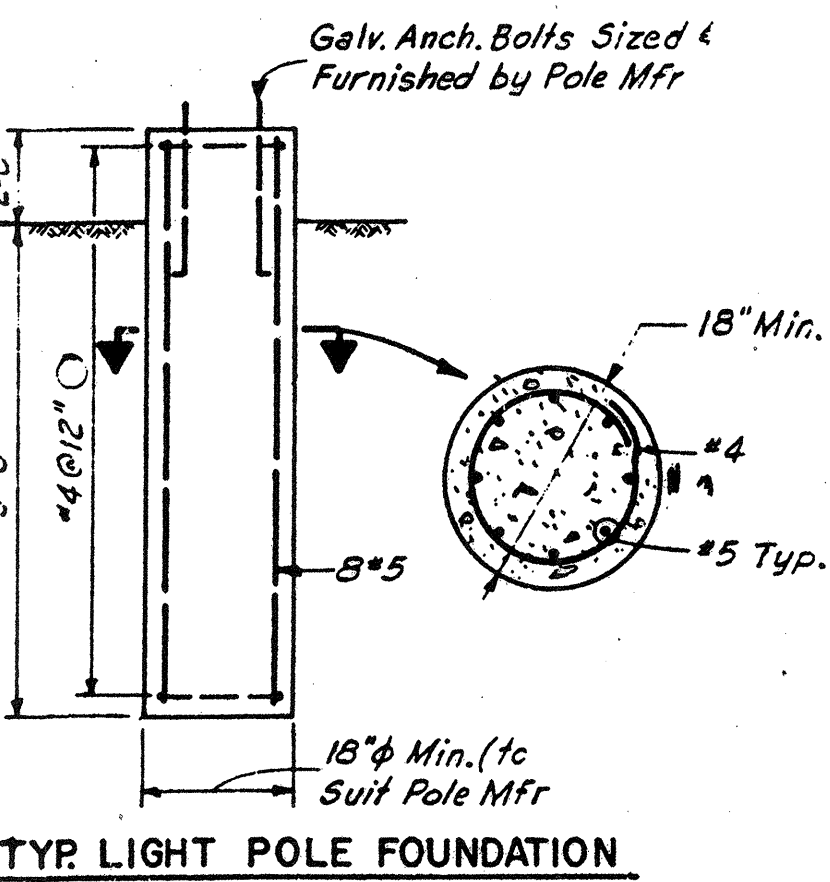
ADDITIONAL REINFORCING AROUND WALL AND SLAB OPENINGS GREATER THAN 1'-0" x 1'-0" OR 1'-0" DIAMETER
 (UNLESS OTHERWISE NOTED)



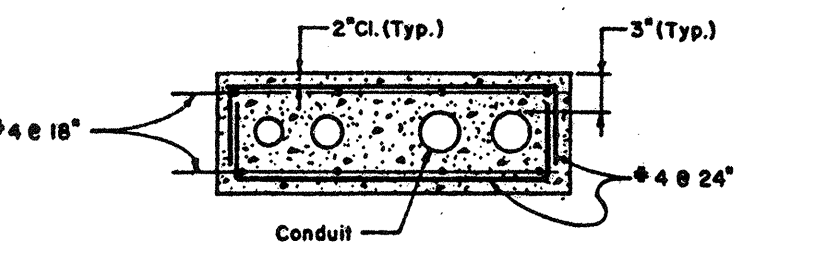
BOND BEAM CORNER DETAIL



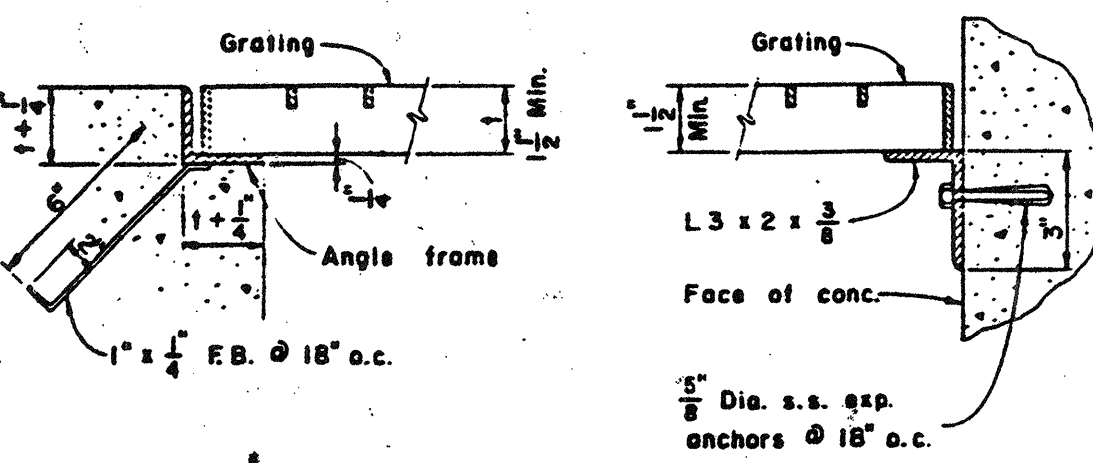
SPREAD FOOTING
BASE SLAB
TYPICAL ROCK EXCAVATION DETAILS



TYP. LIGHT POLE FOUNDATION

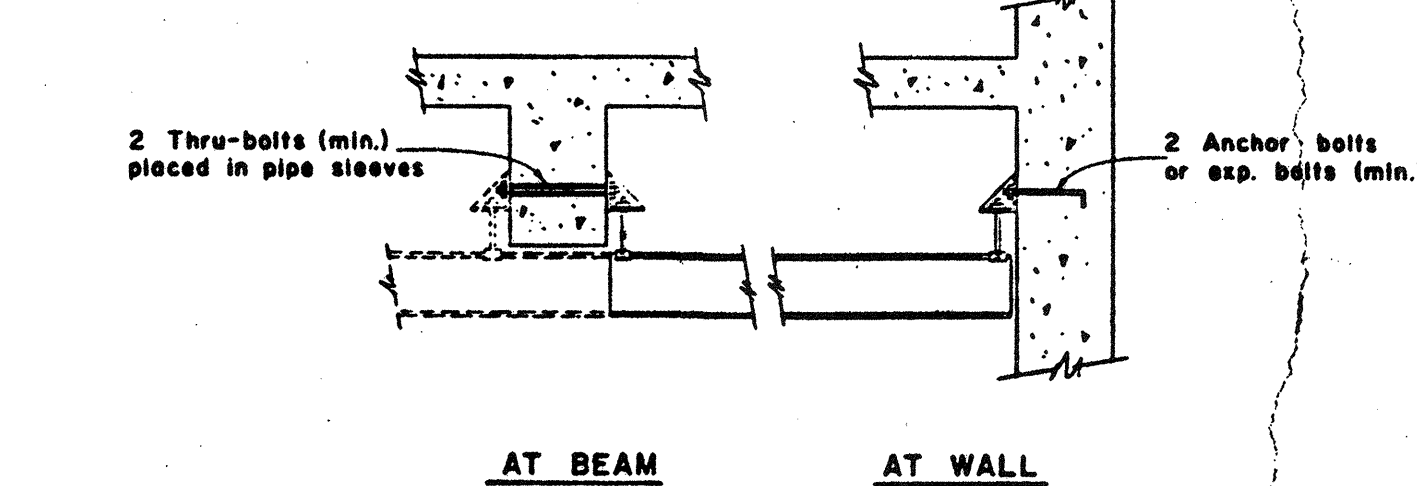


TYPICAL DUCTBANK REINFORCING DETAIL
 For size of ductbank and conduits see electrical drawings.

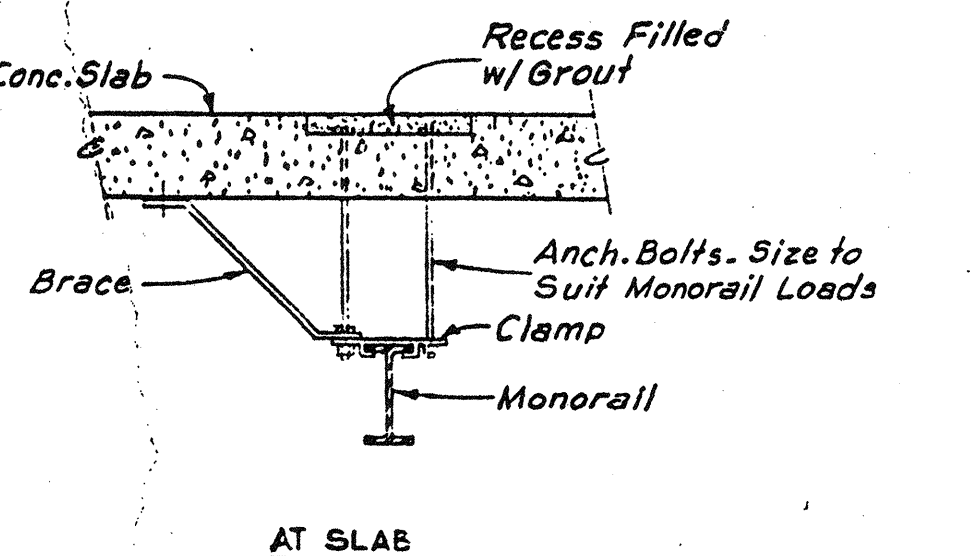


TYPICAL GRATING SUPPORT DETAILS

- Notes:**
- Bond all edges and openings.
 - Angle frame to be mitered and welded.
 - All aluminum construction.



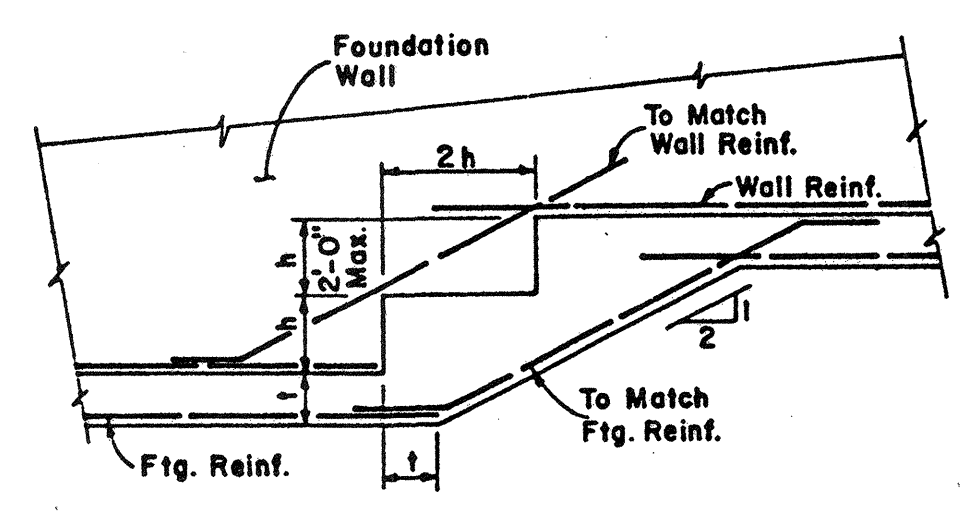
AT BEAM
AT WALL



AT SLAB

TYPICAL MONORAIL CONNECTION DETAILS

- Notes:**
- Details also apply to bridge cranes and support beams.
 - Pipe sleeves by general contractor.
 - All necessary angles, clamps, hangers, bolts, etc. by monorail mfr. Actual number, size and spacing of bolts as required by design.

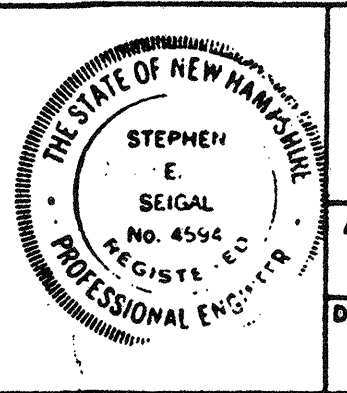


TYP. FOOTING STEP DETAIL

2	REVISED TO RECORD PLAN	9-93
1	CONCRETE REVISIONS	9/89
1	ORIGINAL	JAT

WHITMAN & HOWARD, INC.
 45 WILLIAM STREET, WELLESLEY, MASS.

Structural
 Stephen E. Seigel
 Anthony P. ...



ORIGINAL FULL SIZE DRAWING = 4"
 REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: Stephen E. Seigel

DESIGNED	DRAWN	CHECKED	SCALE	DATE
A.L.	E.W.	A.C.	NOT TO SCALE	SEPT. 1985

DRAWING NO.	GS-1
JOB NO.	85-163
CONTRACT NO.	3

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
TYPICAL STRUCTURAL DETAILS

SHEET 45 OF 106 SHEETS

ABBREVIATIONS AND SYMBOLS

ABBREVIATION	SYMBOL		DESCRIPTION
	LESS THAN 4 INCHES	4 INCHES & GREATER	
B.EL.			BASE ELBOW
B.V.			BALL VALVE
B.C.V.			BALL CHECK VALVE
BF.V.			BUTTERFLY VALVE
BL.FLG.			BLIND FLANGE
C.L.			CENTER LINE
C.O.V.			CYLINDER OPERATED VALVE
C.V.			CHECK VALVE
D.V.			DIAPHRAGM VALVE
ECC.RED.			ECCENTRIC REDUCER
EL.			ELBOW
F.HYD.			FIRE HYDRANT
F.D.			FLOOR DRAIN
FLG. & FL.			FLANGE AND FLARE
FLEX. CPLG.			FLEXIBLE COUPLING
G.V.			GATE VALVE
GL.V.			GLOBE VALVE
H.B.			HOSE BIB
H.W.			HAND WHEEL
K.V.			KNIFE VALVE
LAT.			LATERAL
M.H.			MANHOLE
M.O.V.			MOTOR OPERATED VALVE
M.F.M.			MAGNETIC FLOW METER
P.R.V.			PRESSURE (REDUCING/REGULATING) VALVE
P.V.			PLUG VALVE
RED.			REDUCER, REDUCING
RM.			ROTOMETER
S.OPER.			SOLENOID OPERATED
TEE			TEE
T.V.			THROTTLE VALVE
3-WAY PV			THREE WAY PLUG VALVE
Y.HYD.			YARD HYDRANT
			PNEUMATIC OPERATED VALVE

ABBREVIATIONS

ABBREVIATION	DESCRIPTION
AD	AIR DUCT
AFF	ABOVE FINISH FLOOR
AI	AIR INTAKE
AL.	ALUMINUM
C.FLG.	COMPANION FLANGE
CHEM.	CHEMICAL
CHLOR.DIFF.	CHLORINE DIFFUSER
CPB	CHEMICAL PULL BOX
CPLG.	COUPLING
CONC.	CONCRETE
C.O.	CLEAN OUT
CHLOR.V	CHLORINE VACUUM
CSK.	COUNTERSUNK
DIA.	DIAMETER
DISCH.	DISCHARGE
D & T	DRILL AND TAP
ELEV.	ELEVATION
EQUIP.	EQUIPMENT
EXP.	EXPANSION
FIN. GR.	FINISHED GRADE
FL. EL.	FLOOR ELEVATION
FIN. FL. EL.	FINISH FLOOR ELEVATION
FLG.	FLANGE
H.P.	HIGH POINT
H.W.L.	HIGH WATER LEVEL
INV.	INVERT
LG.	LONG
L.R.	LONG RADIUS
L.W.L.	LOW WATER LEVEL
MAX.	MAXIMUM
M.J.	MECHANICAL JOINT
M.W.L.	MAXIMUM WATER LEVEL
MIN.	MINIMUM
M.V.	MUD VALVE
M.F.M.	MAGNETIC FLOW METER
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OPER.	OPERATOR
P.E.	PLAIN END
PL.	PLATE
P.S.I.	POUNDS PER SQUARE INCH
RED.	REDUCER, REDUCING
RM.	ROTOMETER
S.G.	SLIDE GATE
SHT.	SHEET
SL.G	SLUICE GATE
S.O.	SIDE OUTLET
SQ.	SQUARE
S.R.	SHORT RADIUS
S.S.	STAINLESS STEEL
SUCT.	SUCTION
TL.V.	TELESCOPING VALVE
T.O.C.	TOP OF CONCRETE
TYP.	TYPICAL
VEN.	VENTURI
V.O.R.	VALVE ON RISER
W/	WITH
WEIR EL.	WEIR CREST ELEVATION
W.L. EL.	WATER LEVEL ELEVATION
W.P.	WALL PIPE
W.S.	WALL SLEEVE

ABBREVIATIONS FOR USAGE

ABBREVIATION	DESCRIPTION	PAINTING CODE
AL	ALUM	PURPLE W/ GRAY BANDS
AS	AIR SUPPLY	GREEN
ATDr	AERATION TANK DRAIN	BROWN W/ GRAY BANDS
ATE	AERATION TANK EFFLUENT	GRAY
ATI	AERATION TANK INFLUENT	GRAY
BPDr	BELT PRESS DRAIN	BROWN W/ GRAY BANDS
BPF	BELT PRESS FEED (SLUDGE)	BROWN
BPS	BELT PRESS SUCTION (SLUDGE)	BROWN
CA	COMPRESSED AIR	GREEN
CHLOR.	CHLORINE	YELLOW
CHLOR.G.	CHLORINE GAS	YELLOW
CHLOR.DIFF.	CHLORINE DIFFUSER	YELLOW
CHLOR.SOL.	CHLORINE SOLUTION	YELLOW
CScD	CONCENTRATED SCUM DISCHARGE	BROWN W/ WHITE BANDS
CW	CITY WATER	BLUE
Dr	DRAIN	BLACK
DSD	DIGESTED SLUDGE DISCHARGE	BROWN W/ BLACK BANDS
DSS	DIGESTED SLUDGE SUCTION	BROWN W/ BLACK BANDS
EFF.	EFFLUENT	GRAY
FUEL	FUEL	RED
FS	FROTH SPRAY (PLANT WATER)	GRAY W/ BLUE BANDS
FS	FROTH SPRAY (PROTECTED CITY WATER)	BLUE W/ GRAY BANDS
FTO	FLOTATION THICKENER OVERFLOW	GRAY
GAS	GAS	ORANGE
GD	GRIT DISCHARGE	GRAY W/ BLACK BANDS
GO	GRIT OVERFLOW	GRAY
GS	GRIT SUCTION	GRAY
GTO	GRAVITY THICKENER OVERFLOW	GRAY
HW	HEATING WATER	BLUE W/ RED BANDS
INFL.	INFLUENT	GRAY
LS	LIME SLURRY	PURPLE W/ WHITE BANDS
PCE	PRIMARY CLARIFIER EFFLUENT	GRAY
PCI	PRIMARY CLARIFIER INFLUENT	GRAY
PMER	POLYMER	PURPLE
PPW	PROTECTED POTABLE WATER	BLUE W/ GRAY BANDS
PScS	PRIMARY SCUM SUCTION	BROWN W/ WHITE BANDS
PSD	PRIMARY SLUDGE DISCHARGE	BROWN W/ RED BANDS
PSS	PRIMARY SLUDGE SUCTION	BROWN W/ RED BANDS
PW	PLANT WATER (EFFLUENT)	GRAY W/ BLUE BANDS
RASD	RETURN ACTIVATED SLUDGE DISCHARGE	BROWN W/ YELLOW BANDS
RASS	RETURN ACTIVATED SLUDGE SUCTION	BROWN W/ YELLOW BANDS
ScO	SCUM OVERFLOW	GRAY
ScD	SCUM DISCHARGE	BROWN W/ WHITE BANDS
SOD.HYPO.	SODIUM HYPOCHLORITE	PURPLE W/ GREEN
SScS	SECONDARY SCUM SUCTION	BROWN W/ WHITE BANDS
SCE	SECONDARY CLARIFIER EFFLUENT	GRAY
SCI	SECONDARY CLARIFIER INFLUENT	GRAY
SDr	SANITARY DRAIN	GRAY
SL	SAMPLER LINE	GRAY
SPD	SEPTAGE DISCHARGE	BROWN W/ BLACK BANDS
SPPD	SUMP PUMP DISCHARGE	GRAY
SPS	SEPTAGE SUCTION	BROWN W/ BLACK BANDS
SSD	STABILIZED SLUDGE DISCHARGE	BROWN W/ BLACK BANDS
SSS	STABILIZED SLUDGE SUCTION	BROWN W/ BLACK BANDS
TSD	THICKENED SLUDGE DISCHARGE	BROWN W/ GREEN BANDS
TSS	THICKENED SLUDGE SUCTION	BROWN W/ GREEN BANDS
TW	TOWN WATER (POTABLE)	BLUE
WASD	WASTE ACTIVATED SLUDGE DISCHARGE	BROWN W/ BLUE BANDS
WASS	WASTE ACTIVATED SLUDGE SUCTION	BROWN W/ BLUE BANDS
PCW	PROTECTED CITY WATER	

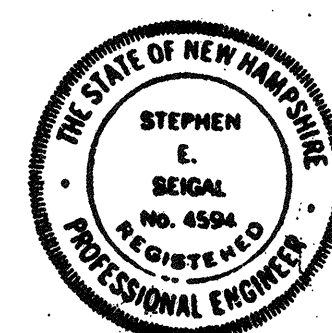
ABBREVIATIONS FOR PIPE TYPES

ABBREVIATION	DESCRIPTION
C.I.	CAST IRON PIPE
CU	COPPER PIPE
D.I.	DUCTILE IRON PIPE
FRP	REINFORCED THERMOSETTING RESIN PIPE
GALV.	GALVANIZED PIPE
P.C.C.P.	PRESTRESSED CONCRETE CYLINDER PIPE
POLY.	POLYETHYLENE PIPE
P.V.C.	POLYVINYL CHLORIDE PIPE
R.C.	REINFORCED CONCRETE PIPE
S	STEEL PIPE
S.S.	STAINLESS STEEL PIPE

RECORD PLAN

NO.	DESCRIPTION	DATE
2	Revised to Record Plan	9/93
	REVISED AS PER STATE COMMENTS	2/88

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.

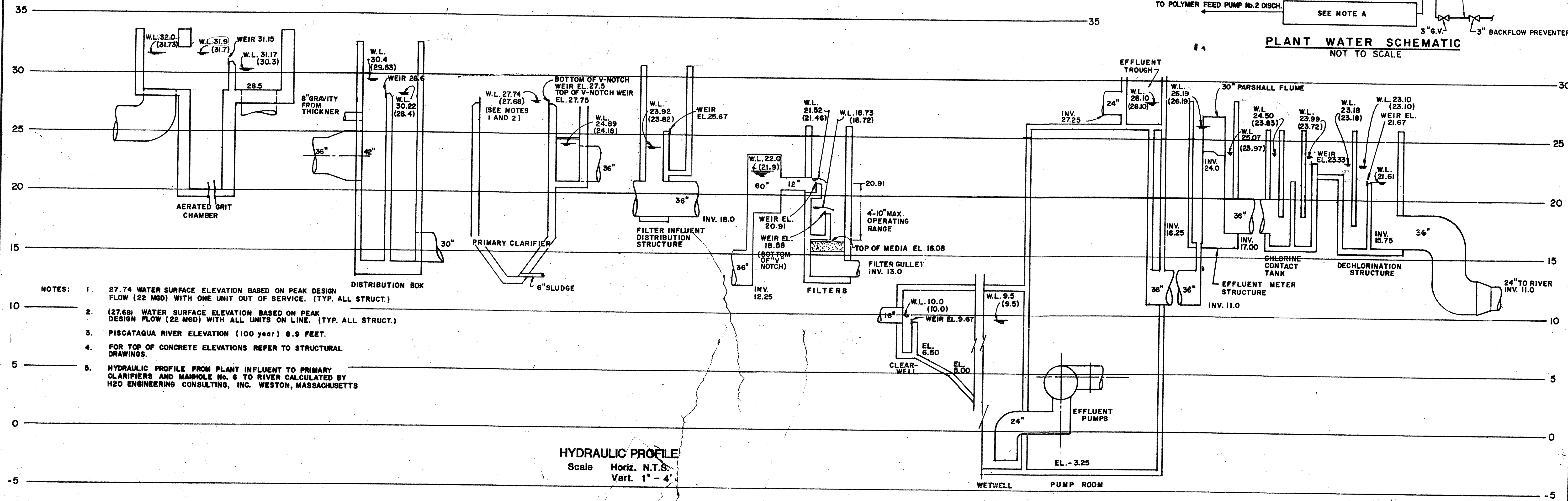
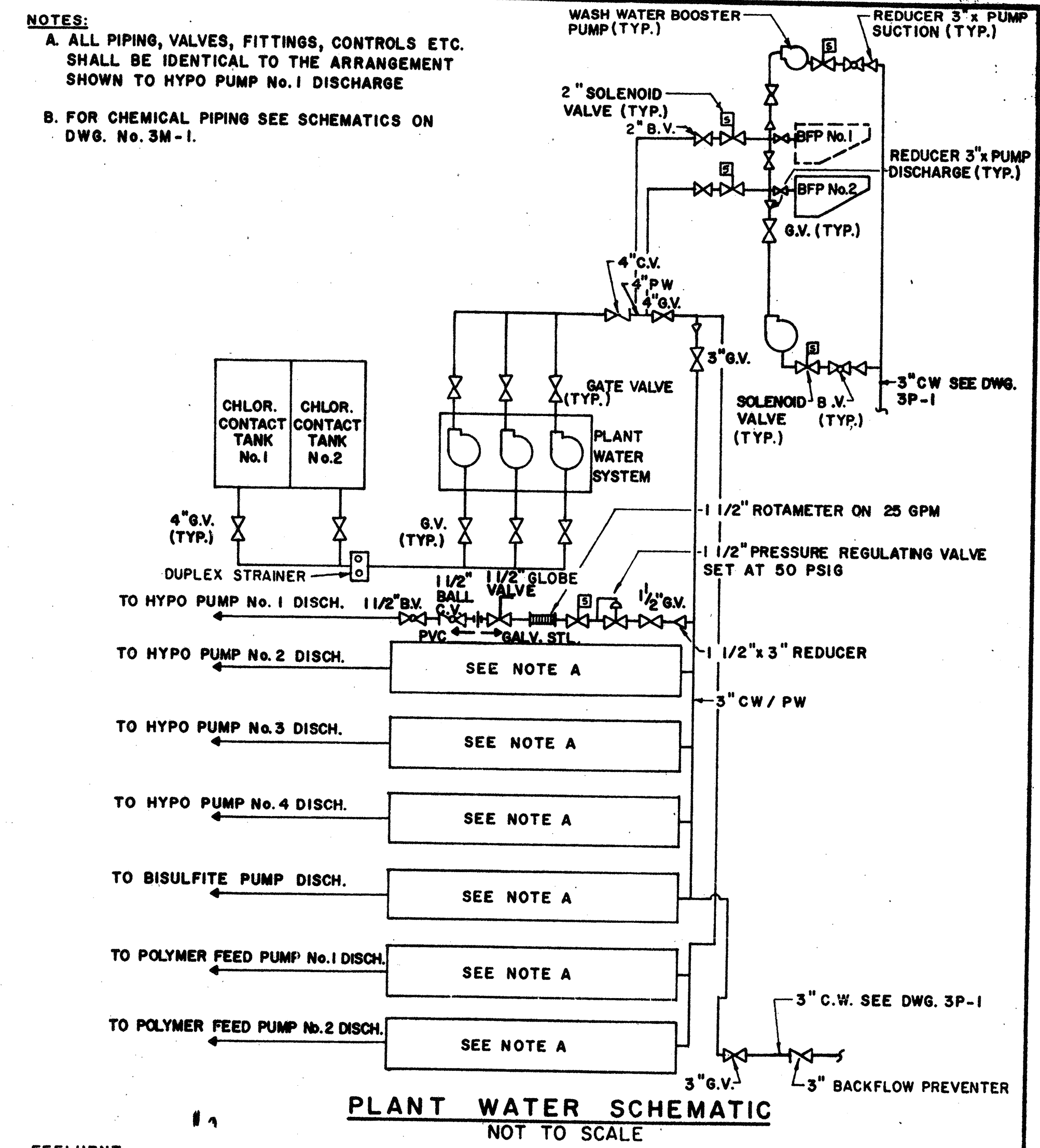
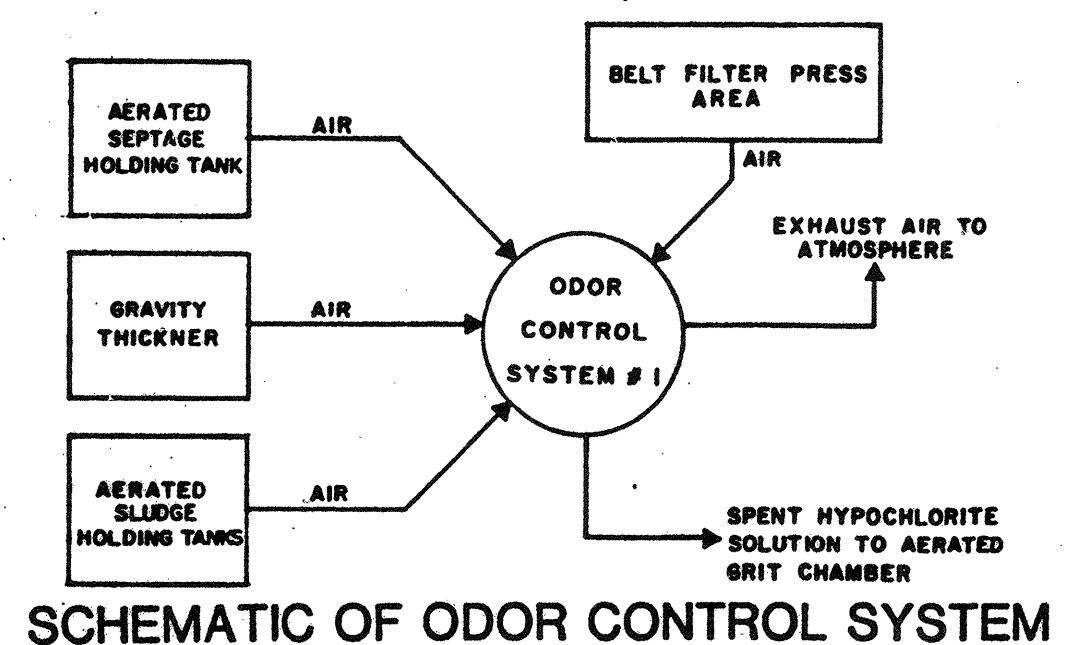
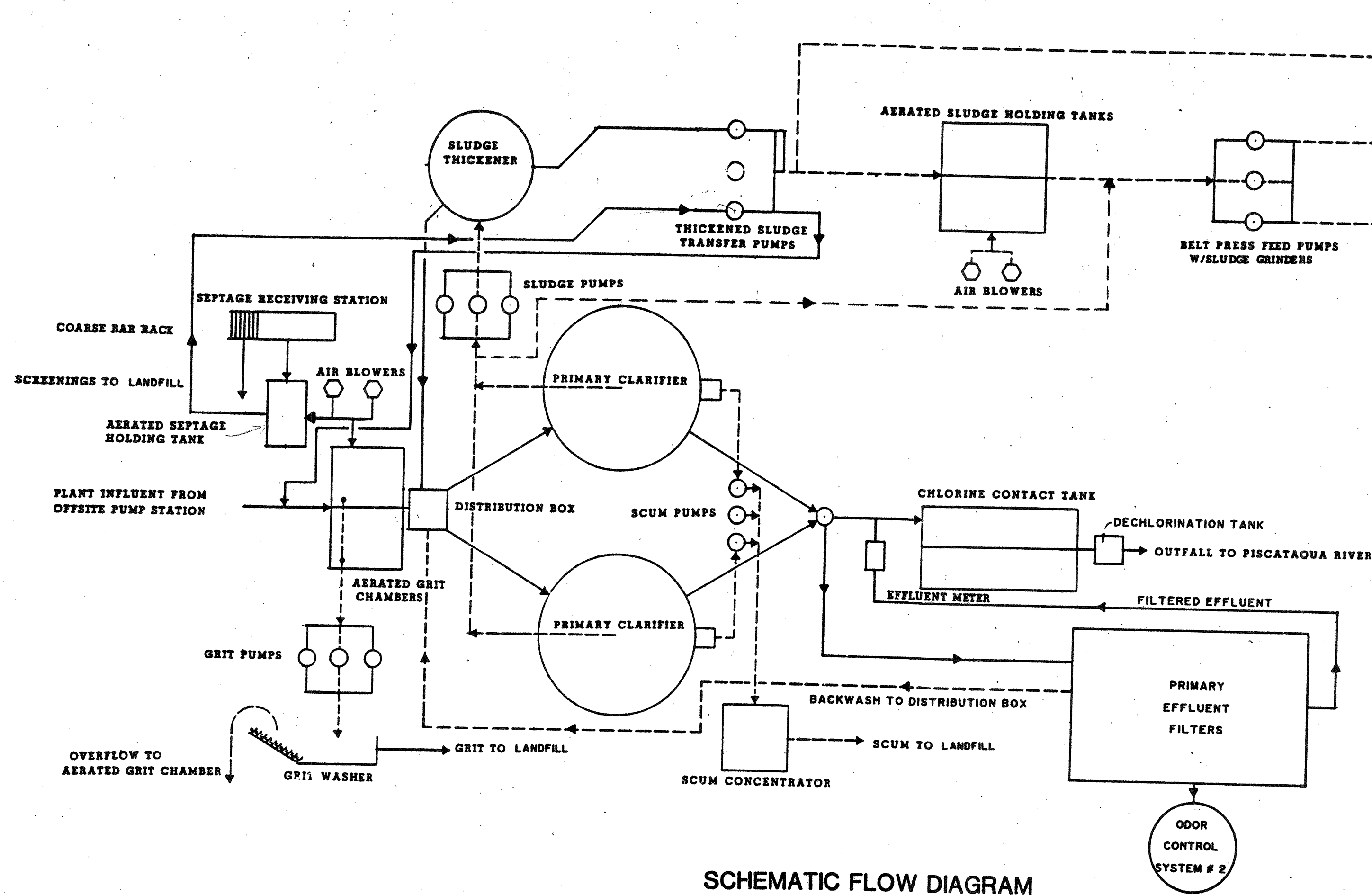


ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

DRAWING NO. M-1
JOB NO. 85-163
CONTRACT NO. 3

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.

ABBREVIATIONS AND SYMBOLS



- NOTES:**
- 27.74 WATER SURFACE ELEVATION BASED ON PEAK DESIGN FLOW (22 MGD) WITH ONE UNIT OUT OF SERVICE. (TYP. ALL STRUCT.)
 - (27.68) WATER SURFACE ELEVATION BASED ON PEAK DESIGN FLOW (22 MGD) WITH ALL UNITS ON LINE. (TYP. ALL STRUCT.)
 - PISCATAQUA RIVER ELEVATION (100 year) 8.9 FEET.
 - FOR TOP OF CONCRETE ELEVATIONS REFER TO STRUCTURAL DRAWINGS.
 - HYDRAULIC PROFILE FROM PLANT INFLUENT TO PRIMARY CLARIFIERS AND MANHOLE No. 6 TO RIVER CALCULATED BY H2O ENGINEERING CONSULTING, INC. WESTON, MASSACHUSETTS

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.

ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: _____

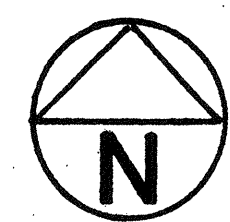
DESIGNED BY: RBS
CHECKED BY: JCS
SCALE: AS NOTED
DATE: SEPT. 1985

DRAWING NO. **M-2**
JOB NO. 85-163
CONTRACT NO. 3

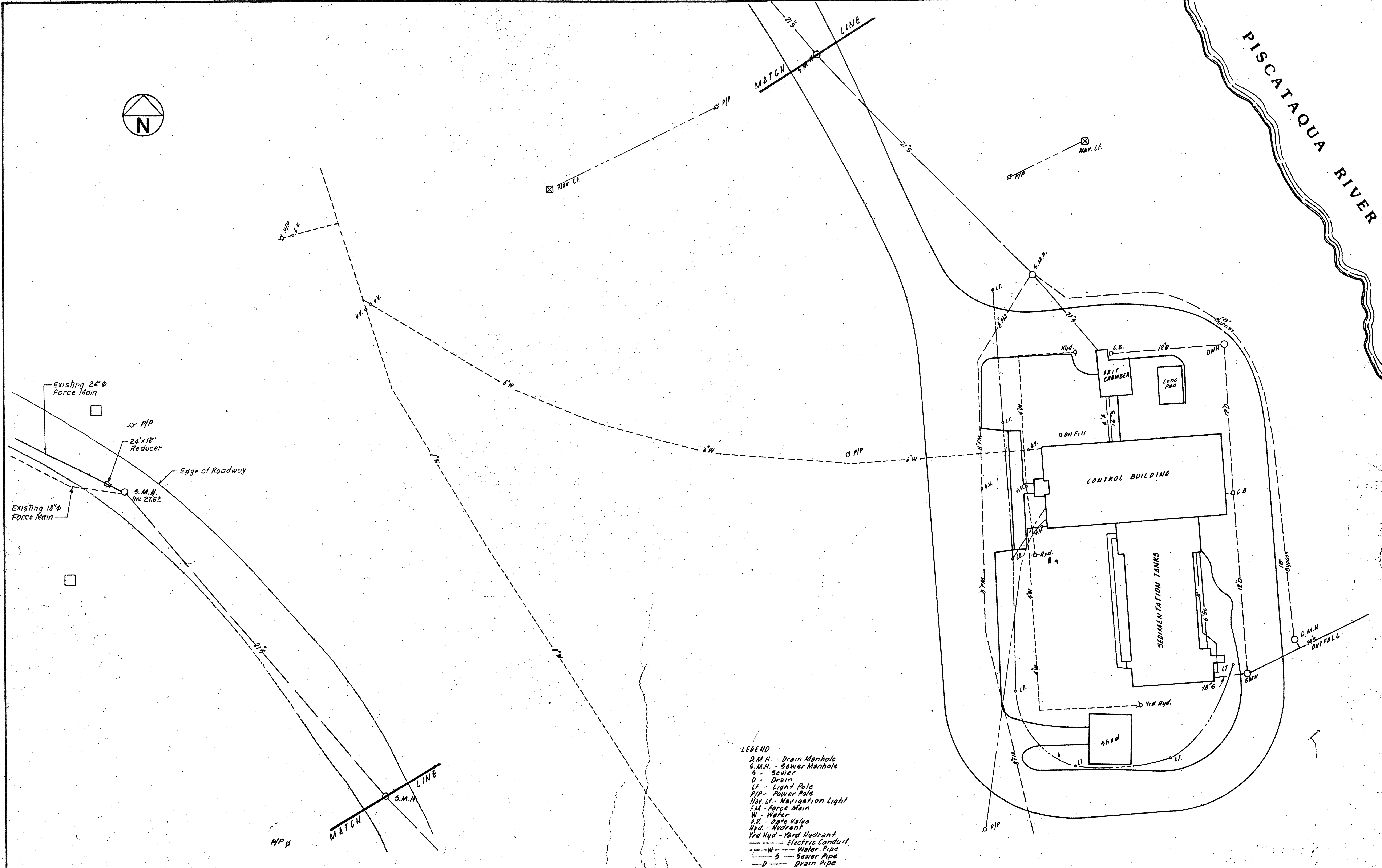
WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N.H.

SCHEMATIC FLOW DIAGRAM & HYDRAULIC PROFILE



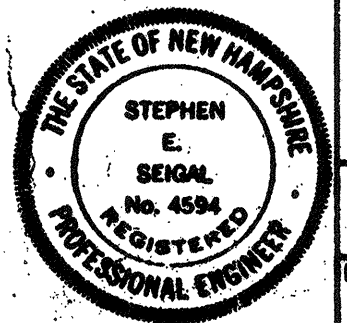
PISCATAQUA RIVER



- LEGEND
- D.M.H. - Drain Manhole
 - S.M.H. - Sewer Manhole
 - S - Sewer
 - D - Drain
 - Lt. - Light Pole
 - PIP - Power Pole
 - Nav. Lt. - Navigation Light
 - F.M. - Force Main
 - W - Water
 - B.V. - Gate Valve
 - Hyd. - Hydrant
 - Yrd. Hyd. - Yard Hydrant
 - Electric Conduit
 - W- Water Pipe
 - S- Sewer Pipe
 - D- Drain Pipe

NO.	DESCRIPTION	DATE
2	Revised to Record Plan	9/93
1	Drawing Revised	9/87
REVISIONS		

WHITMAN & HOWARD, INC.
 45 WILLIAM STREET, WELLESLEY, MASS.

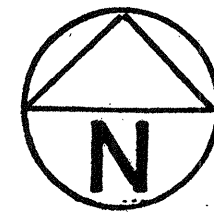


ORIGINAL FULL SIZE DRAWING = 4"
 REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen E. Seigel*
 DESIGNED: TEP, DRAWN: JCS, CHECKED: SES, SCALE: 1" = 20'-0", DATE: SEPT, 1985

DRAWING NO. **M-3**
 JOB NO. 85-163
 CONTRACT NO. 3

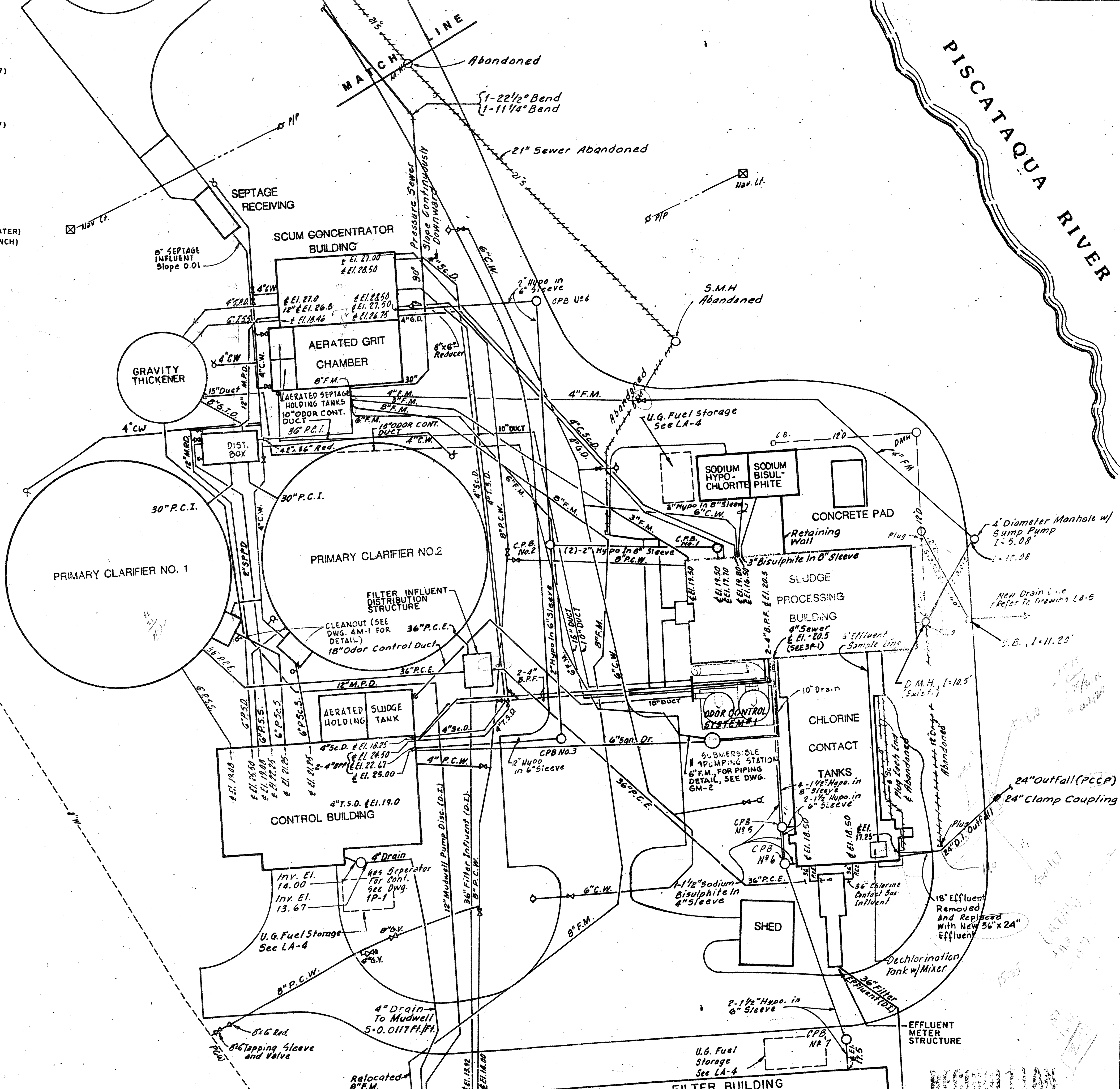
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
 OUTSIDE PIPING EXISTING



NOTES:

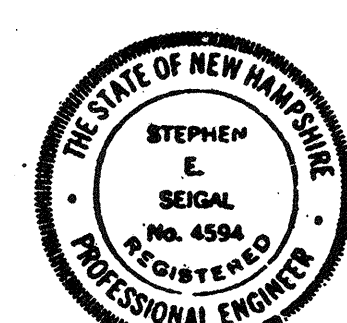
- Existing manholes that are to be abandoned will be demolished to two feet below finished grade and filled in with structural fill. Frames and covers are to remain the property of the owner.
- All piping shall have a minimum of five feet of cover unless otherwise shown or approved by the engineer. All scum piping (i.e. PScS, ScD, and CScD) shall have a minimum of six feet of cover.
- All bends in grit, sludge and scum piping shall have cleanouts. See detail on Drawing GM-3.
- All grit, sludge and scum piping shall be glass lined.
- All piping from or into a structure shall have two flexible couplings within three feet of the structure face.
- Locations of existing piping are approximate. The precise locations and elevations shall be determined by the contractor as required for connection to or crossing of existing lines. Any piping disturbed during construction shall be repaired and/or replaced in conformance with the specifications and as directed by the Engineer. Existing piping shall be relocated or rerouted as required for the installation of new piping. Piping to be abandoned shall be disconnected, plugged, capped, or removed at locations shown and as directed by the Engineer.
- CW and PPW pipes larger than 2 inch shall be D.I., pipes 2 inches and smaller shall be CU or PVC.
- Refer to Drawing M-1 for Abbreviations and Symbols.

ABBREVIATION	TYPE OF PIPE
BPF	DI (SEE NOTE 4)
CScD	DI (SEE NOTE 4)
CW	DI, CU (SEE NOTE 7)
Dr	DI
GD	DI (SEE NOTE 4)
GTO	DI
PCE	DI
PCI	DI
PM	DI CU (SEE NOTE 7)
PScS	DI (SEE NOTE 4)
PSD	DI (SEE NOTE 4)
PSS	DI (SEE NOTE 4)
ScD	DI (SEE NOTE 4)
SOD.HYPO.	POLY IN PVCC
SDr	DI
SPD	DI
SPPD	DI
TSD	DI (SEE NOTE 4)
TSS	DI (SEE NOTE 4)
DUCTS	PVC
F.M.(FORCE MAIN)	DI (4-INCH AND GREATER)
F.M.(FORCE MAIN)	PVC (LESS THAN 4-INCH)



NO.	DESCRIPTION	DATE
3	Revised To Record Plan	9/93
2	Drawing Revised	9/89
REVISED AS PER STATE COMMENTS 2/88		
REVISIONS		

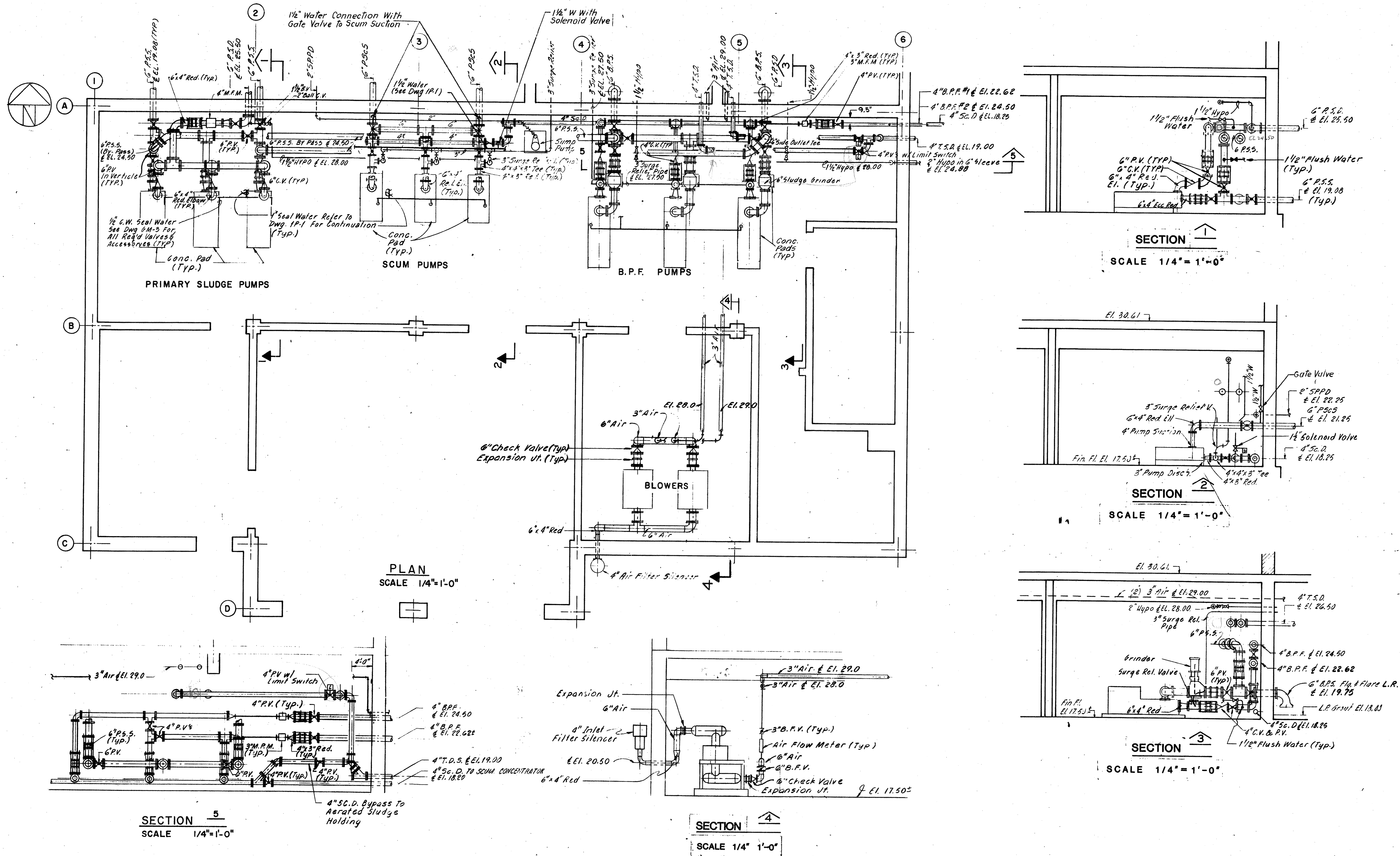
WHITMAN & HOWARD, INC.
 45 WILLIAM STREET, WELLESLEY, MASS.



APPROVED: *Stephen E. Seigel*
 ORIGINAL FULL SIZE DRAWING = 4"
 REPRODUCTIONS MAY BE REDUCED SIZE
 DATE: SEPT, 1985
 SCALE: 1"=20'-0"

DRAWING NO. **M-4**
 JOB NO. **85-163**
 CONTRACT NO. **3**
 SHEET 49 OF 106 SHEETS

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
OUTSIDE PIPING SCHEMATIC - NEW



SECTION 5
SCALE 1/4" = 1'-0"

SECTION 4
SCALE 1/4" = 1'-0"

SECTION 1
SCALE 1/4" = 1'-0"

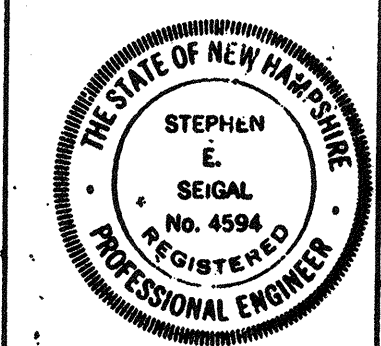
SECTION 2
SCALE 1/4" = 1'-0"

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

PLAN
SCALE 1/4" = 1'-0"

NO.	DESCRIPTION	DATE
3	Revised To Record Plan	9/93
2	Drawing Revised	9/89
	REVISED AS PER STATE COMMENTS	2/88
	REVISIONS	

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED
Stephen E. Seigal
DESIGNED/DRAWN: T.E.P. D.T.C. CHECKED: S.E.S. SCALE: AS NOTED DATE: SEPT. 1985

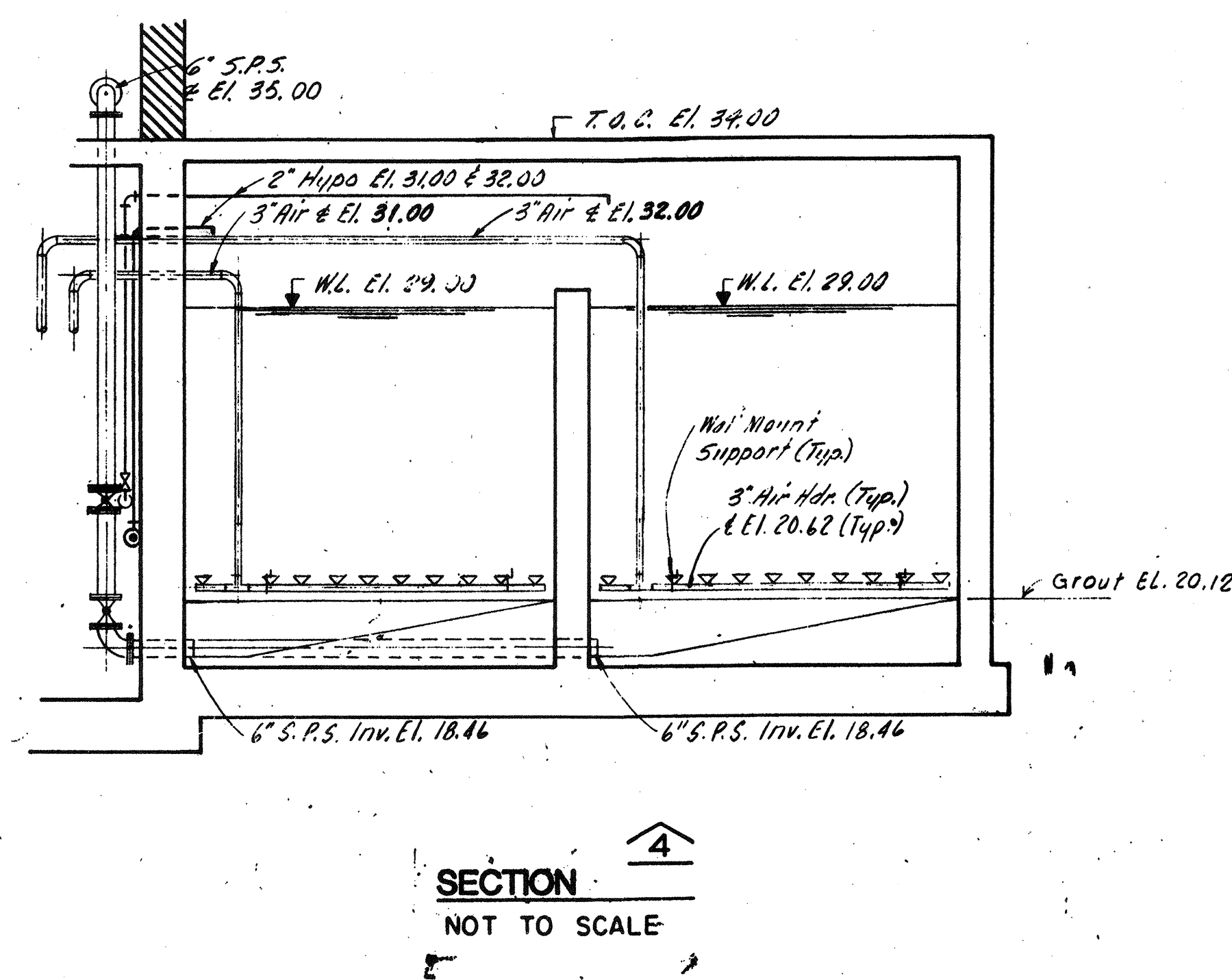
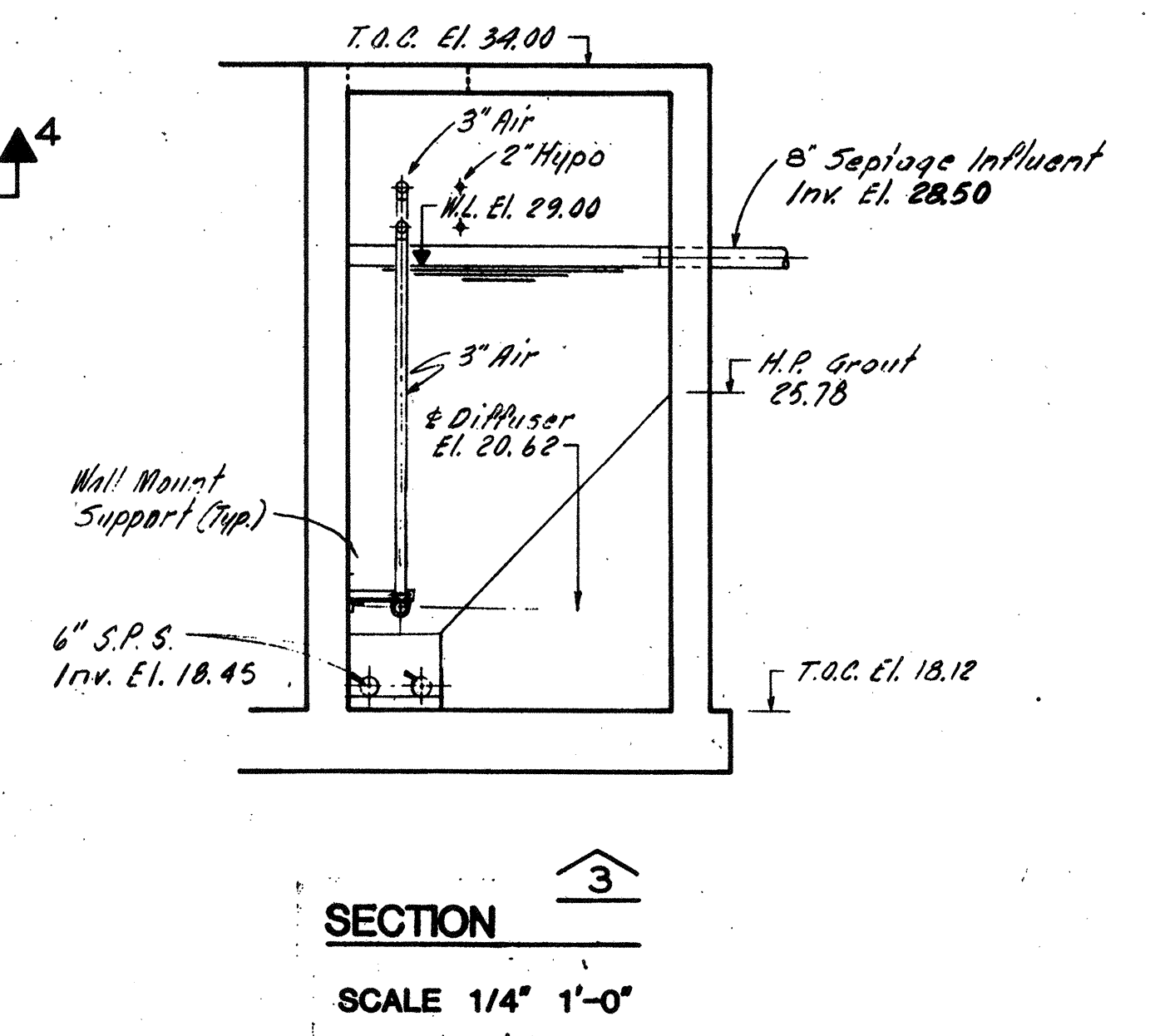
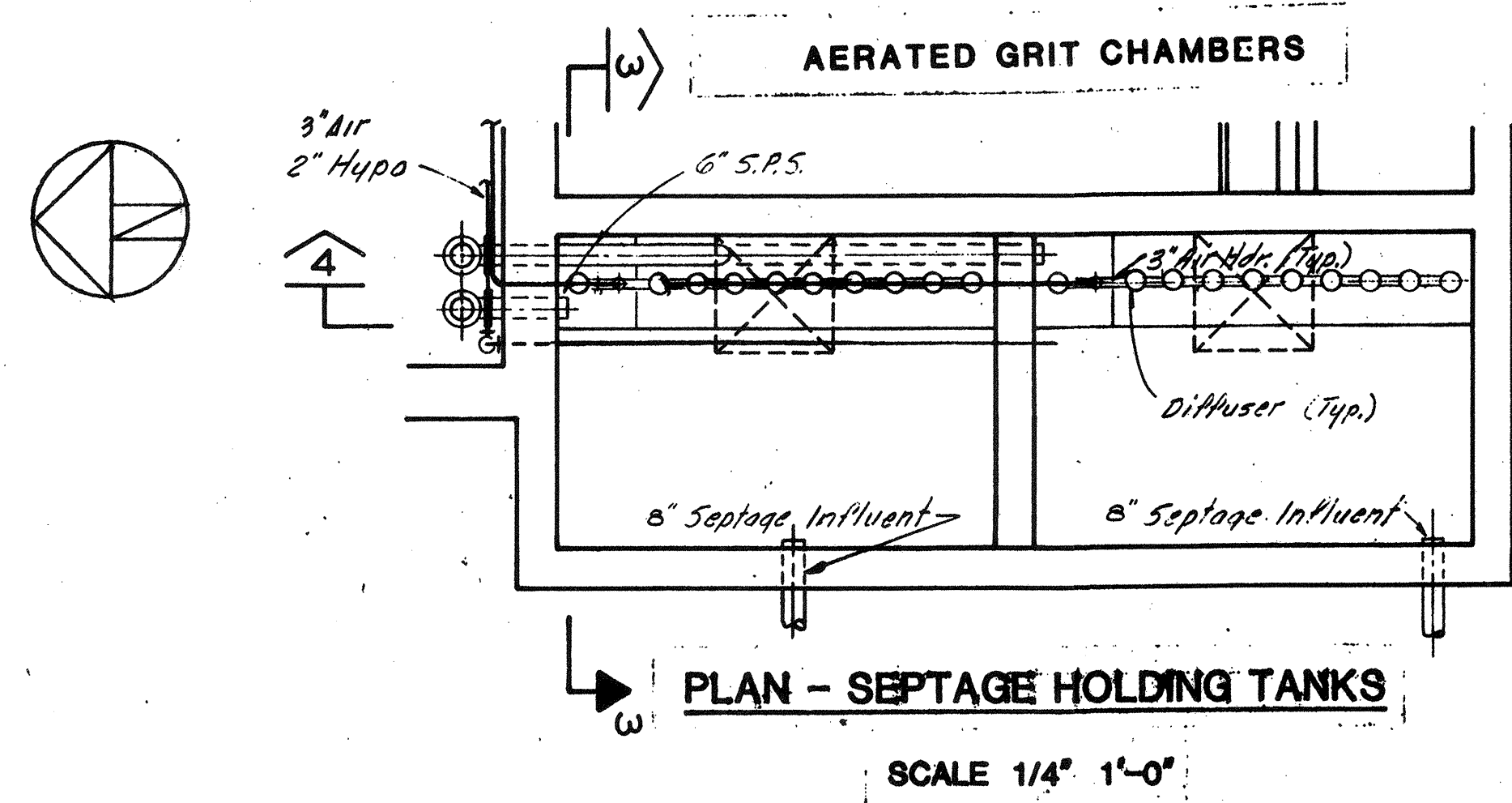
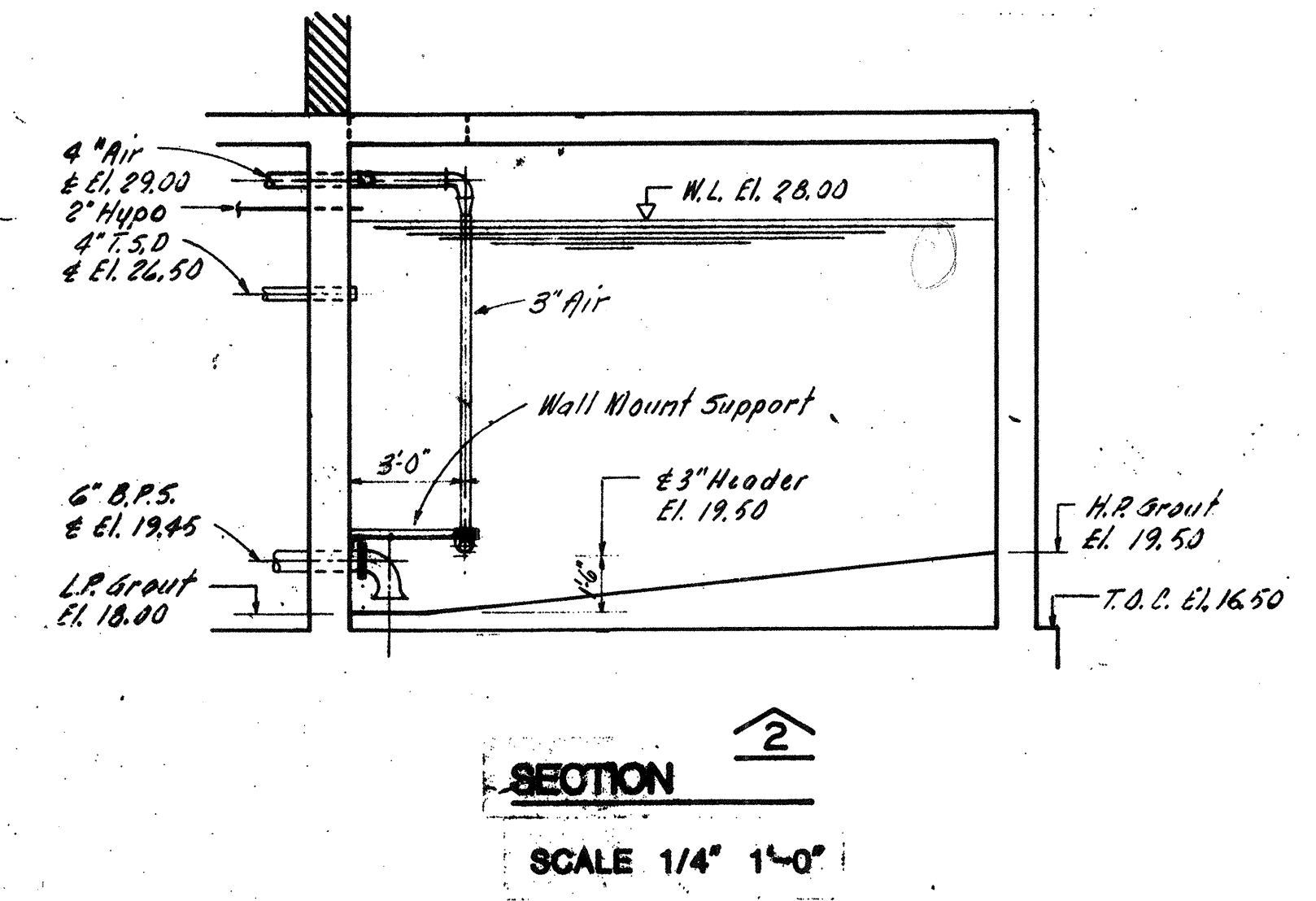
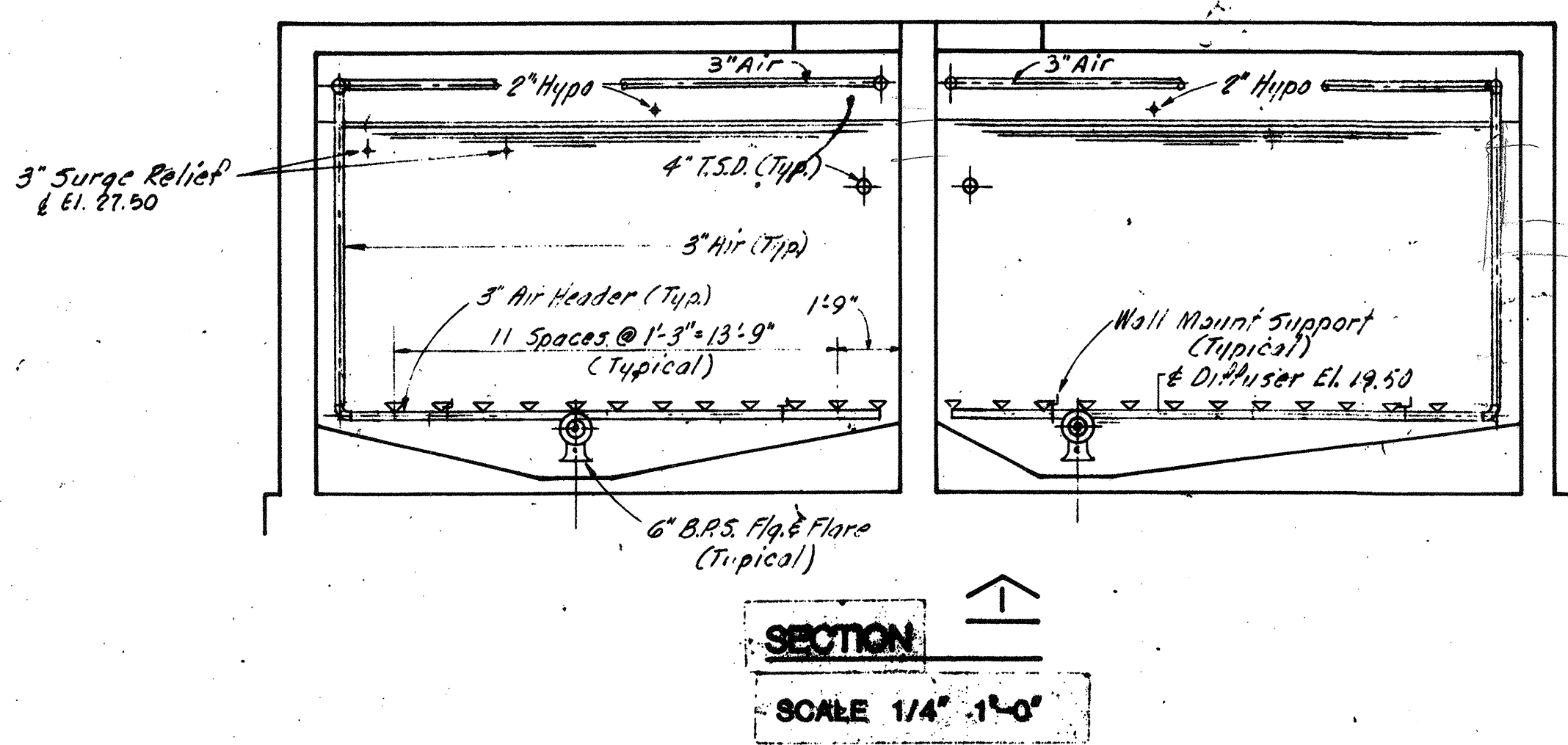
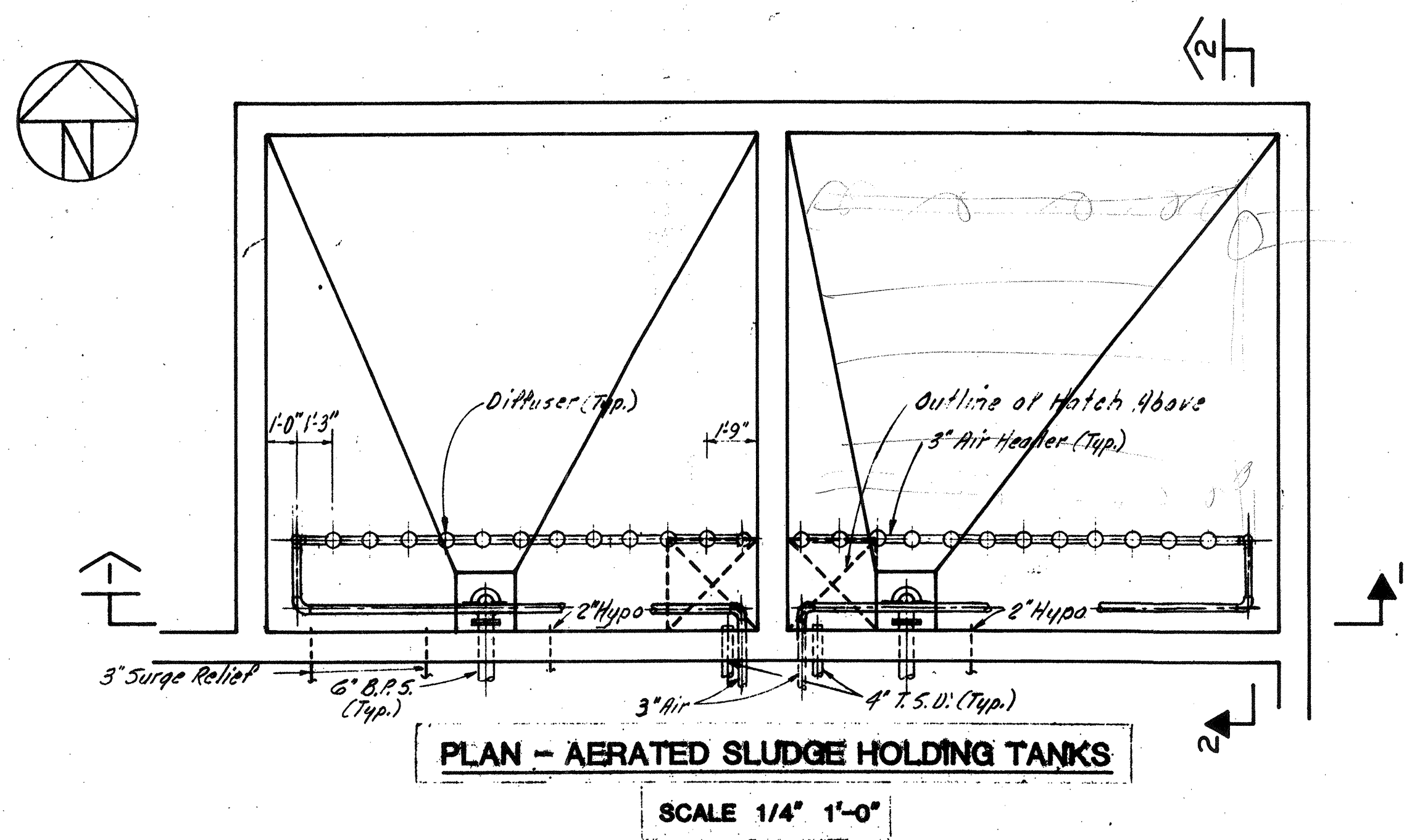
DRAWING NO. **IM-1**
JOB NO. **85-163**
CONTRACT NO. **3**

WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N.H.

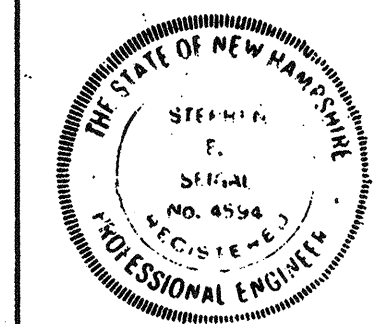
CONTROL BUILDING

BASEMENT FLOOR PLAN AND SECTIONS



NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89

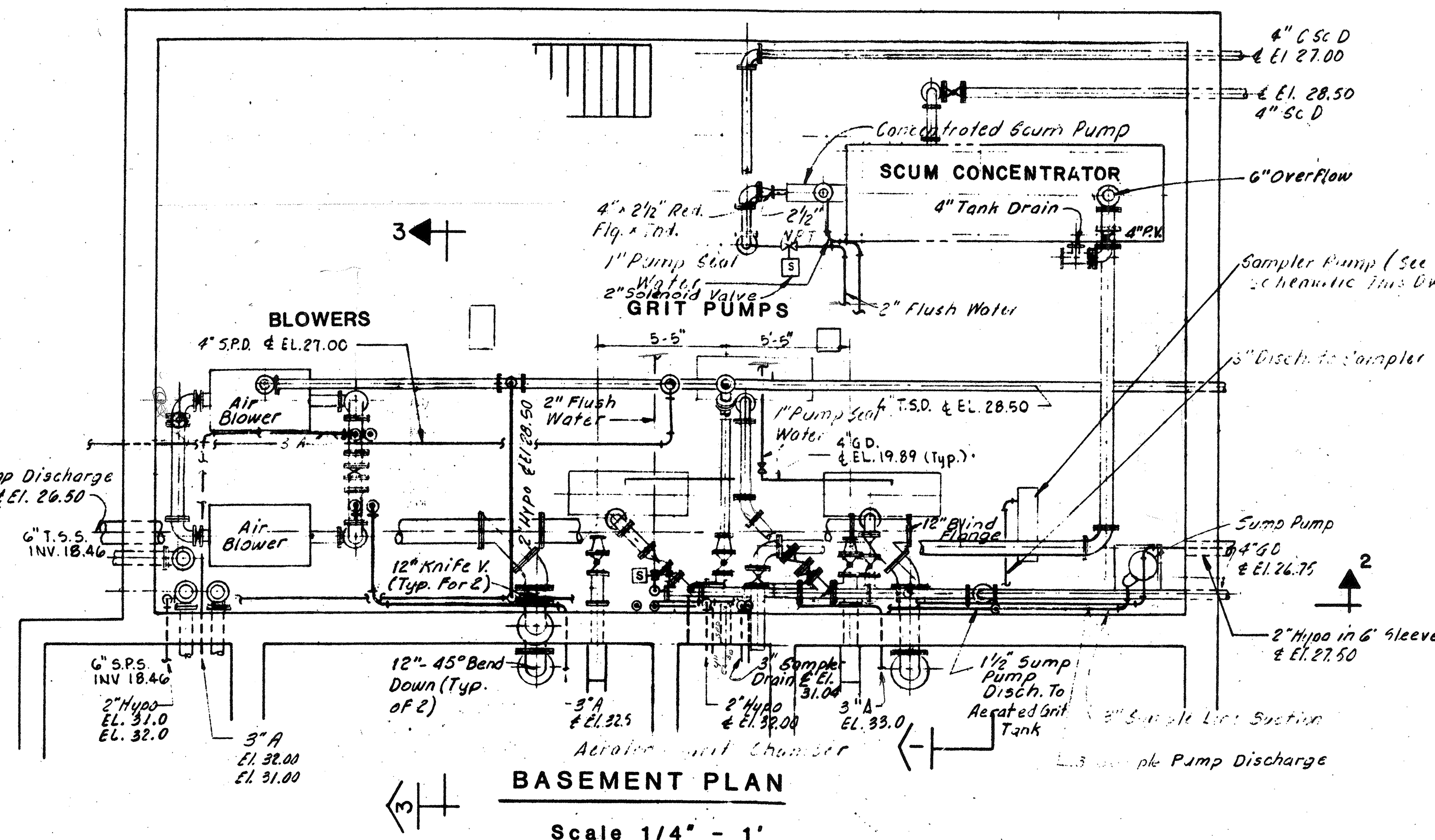
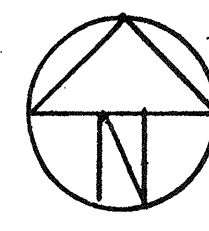
WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



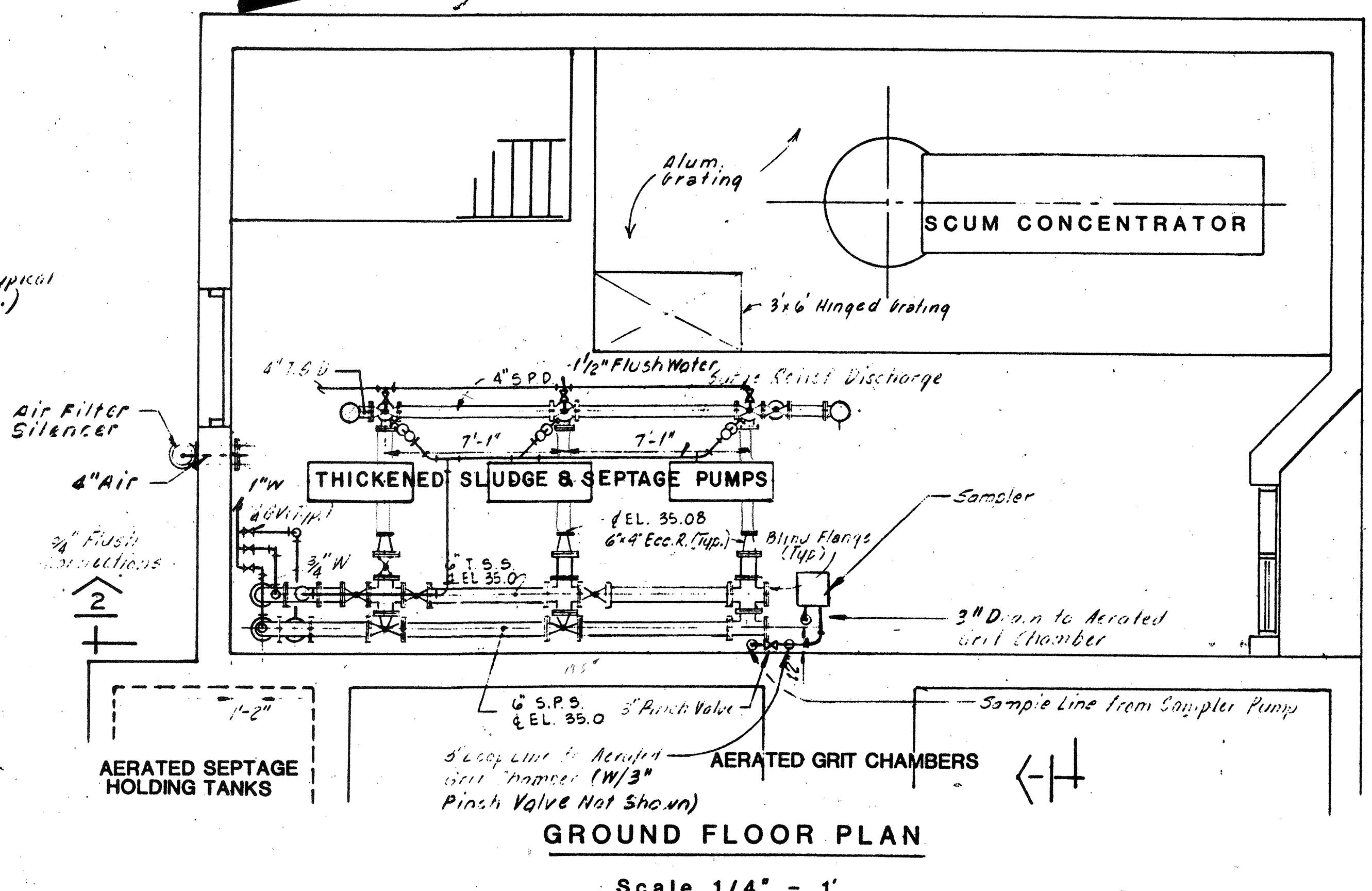
APPROVED				DESIGNED DRAWN		CHECKED		SCALE		DATE	
Stephen E. Szejda				T.E.P.		D.T.C.		S.E.S.		AS NOTED	
										SEPT. 1985	
										SHEET 51 OF 106 SHEETS	

DRAWING NO. **1/2M-2**
JOB NO. **85-163**
CONTRACT NO. **3**

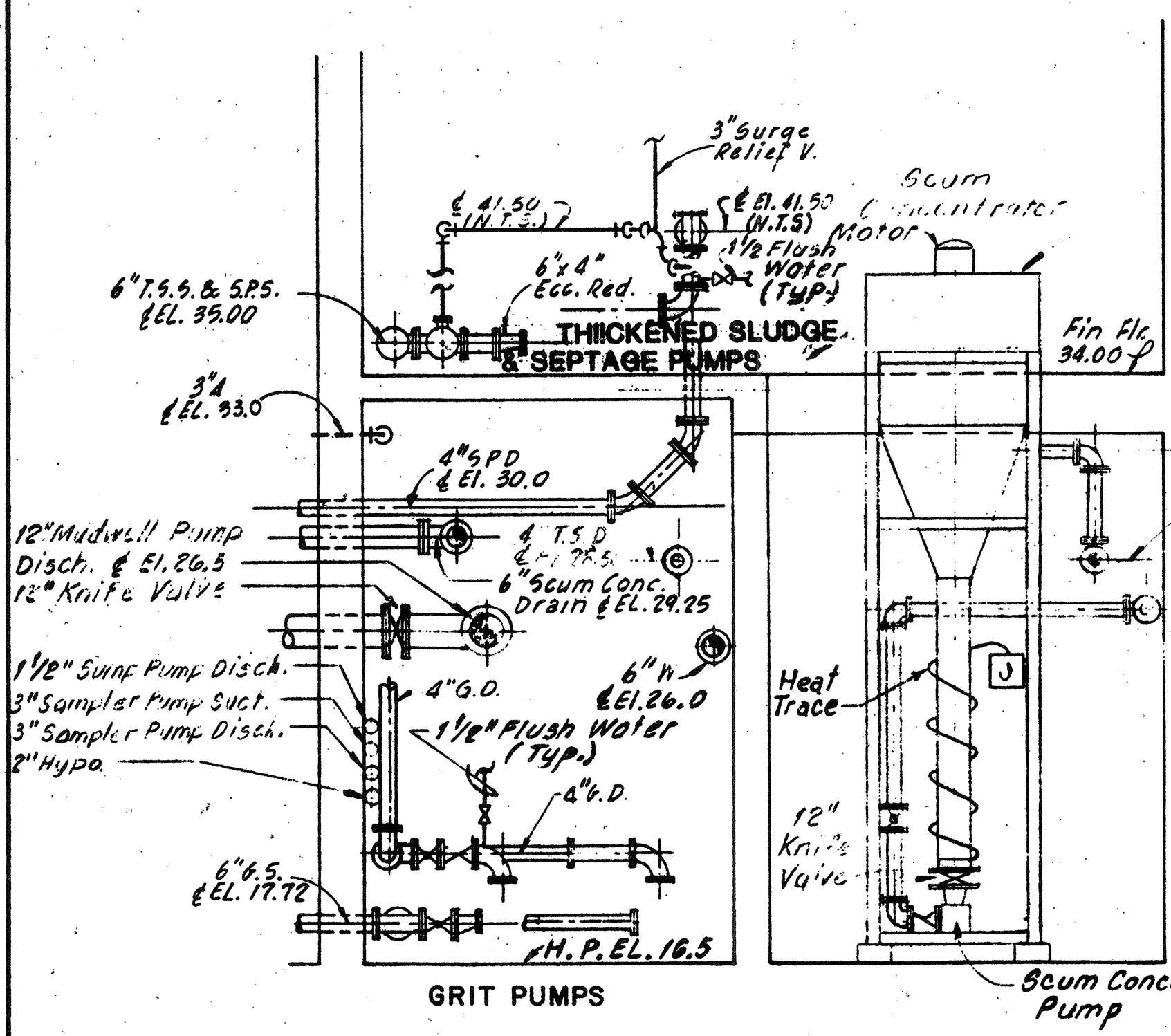
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
AERATED SLUDGE & SEPTAGE HOLDING TANKS
PLANS & SECTIONS



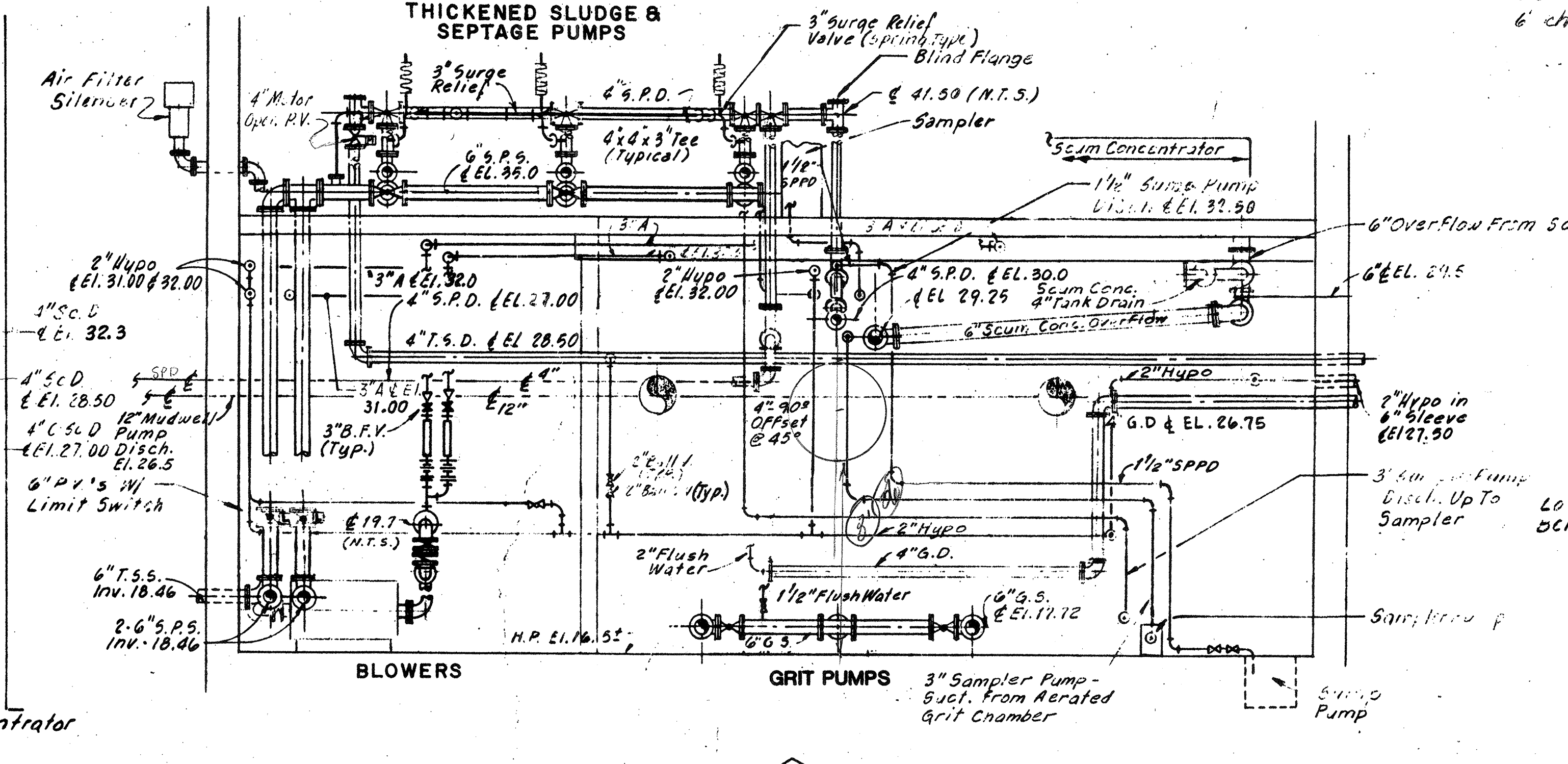
BASEMENT PLAN
Scale 1/4" - 1'



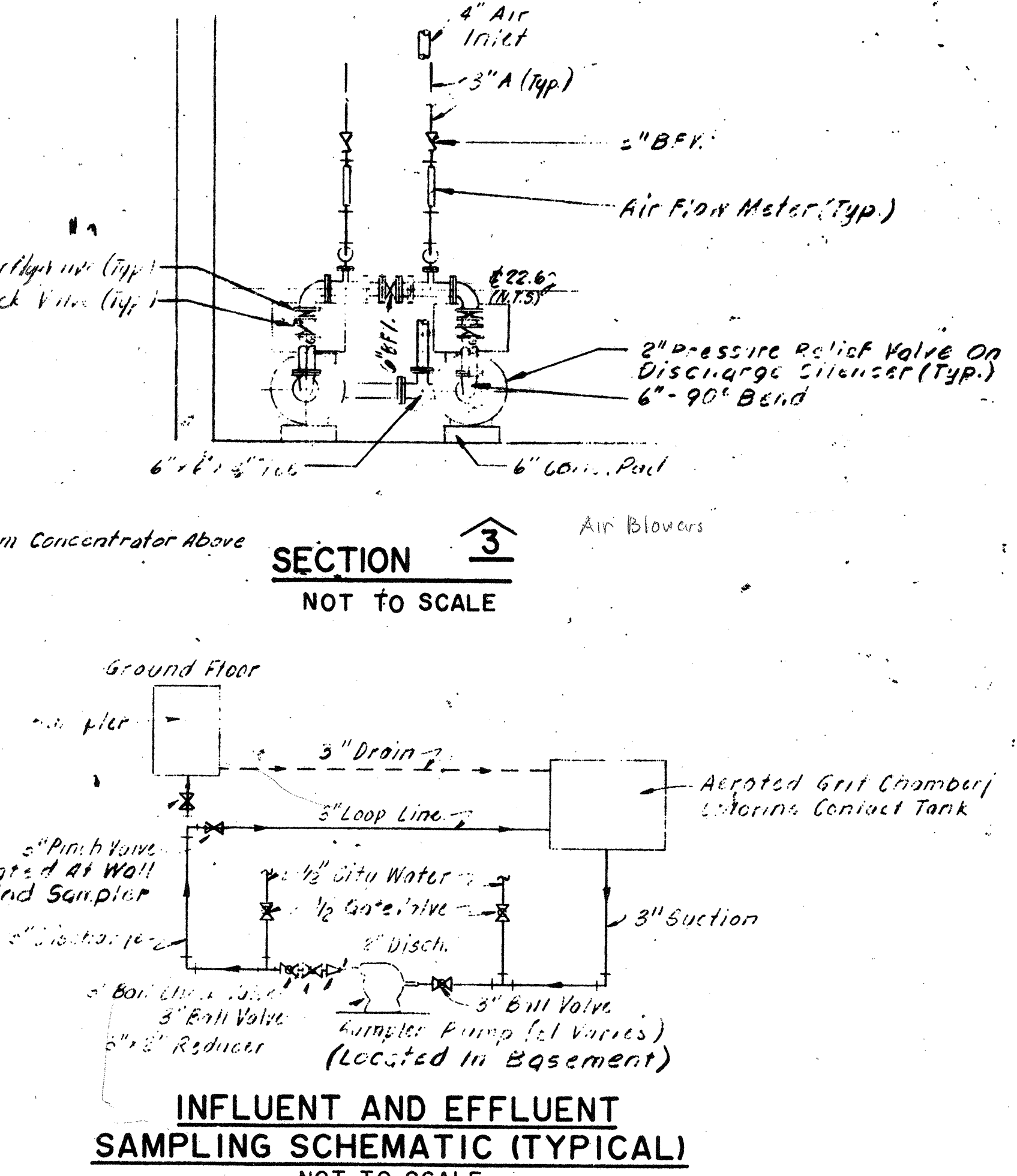
GROUND FLOOR PLAN
Scale 1/4" - 1'



SECTION 1
NOT TO SCALE



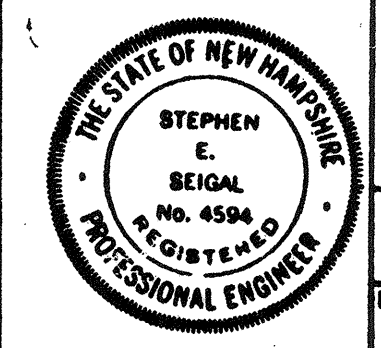
SECTION 2
NOT TO SCALE



SECTION 3
NOT TO SCALE

NO.	DESCRIPTION	DATE
3	Revised To Record Plan	9/93
2	Drawing Revised	5/91
REVISED AS PER STATE COMMENTS		
		2/88

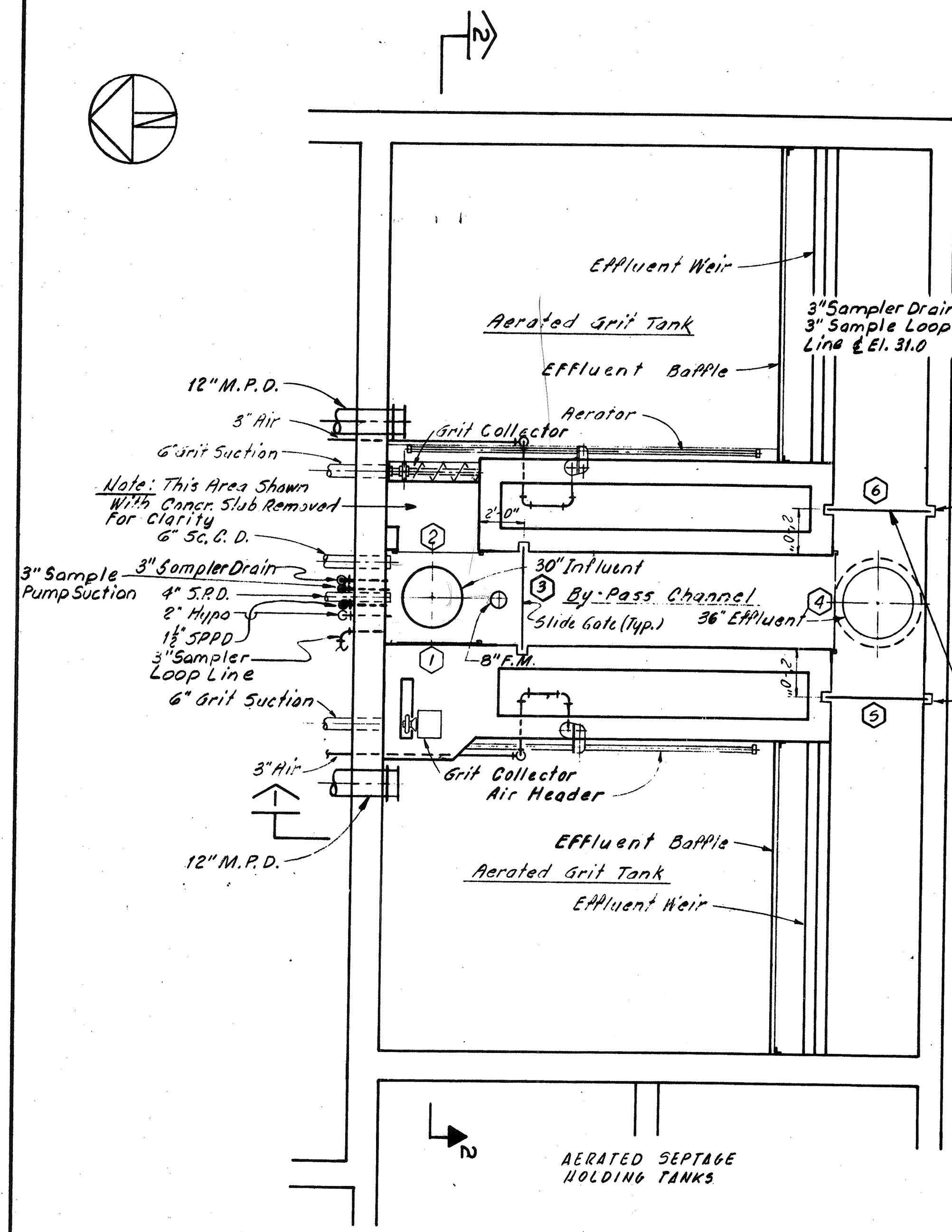
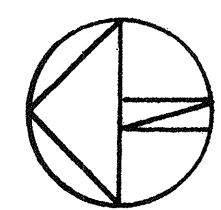
WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



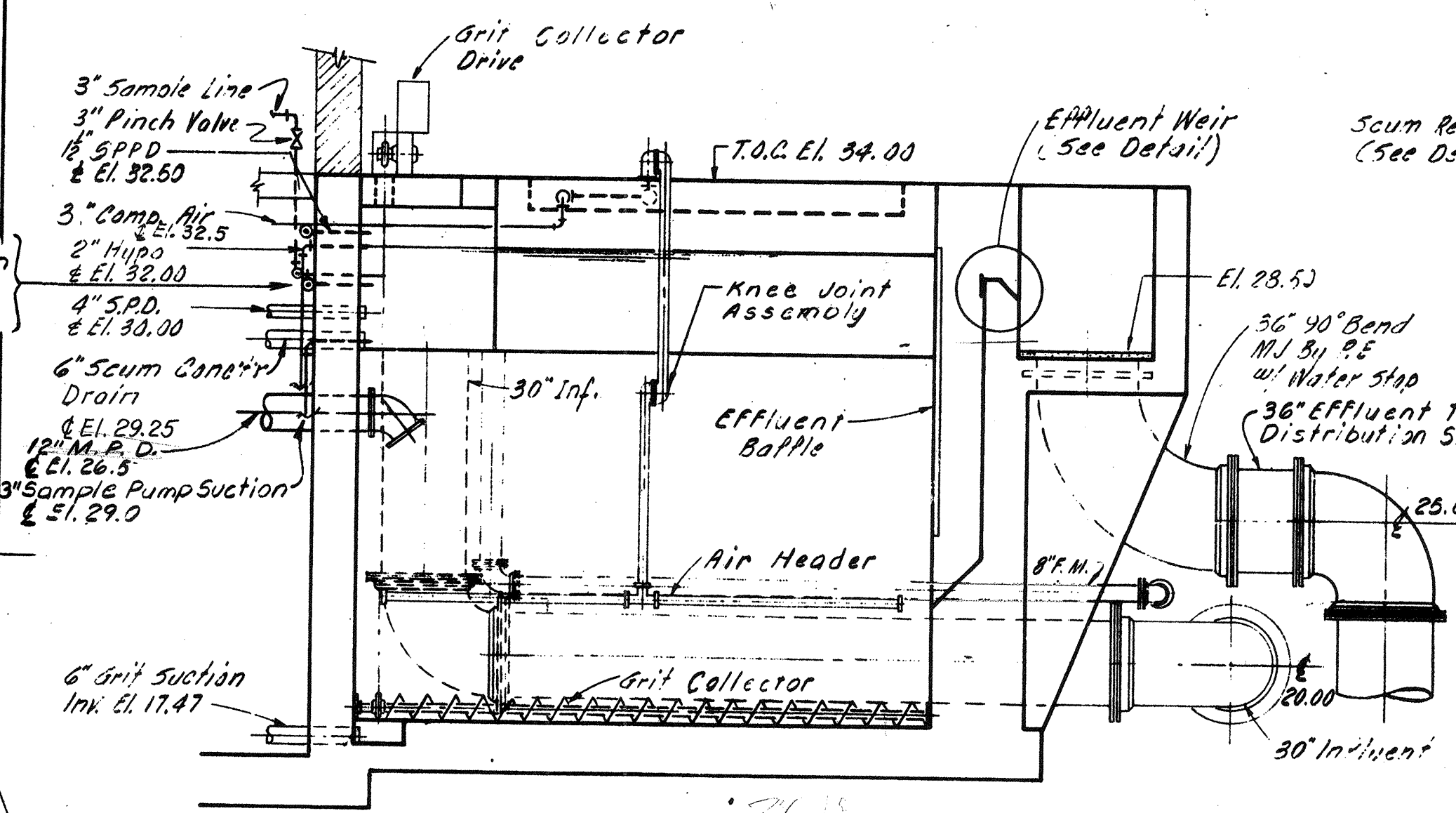
APPROVED: *Stephen E. Seigel*
DESIGNED BY: TEP
CHECKED BY: SES
SCALE: AS NOTED
DATE: SEPT. 1985
SHEET 52 OF 106

DRAWING NO. **2M-1**
JOB NO. **85-163**
CONTRACT NO. **3**

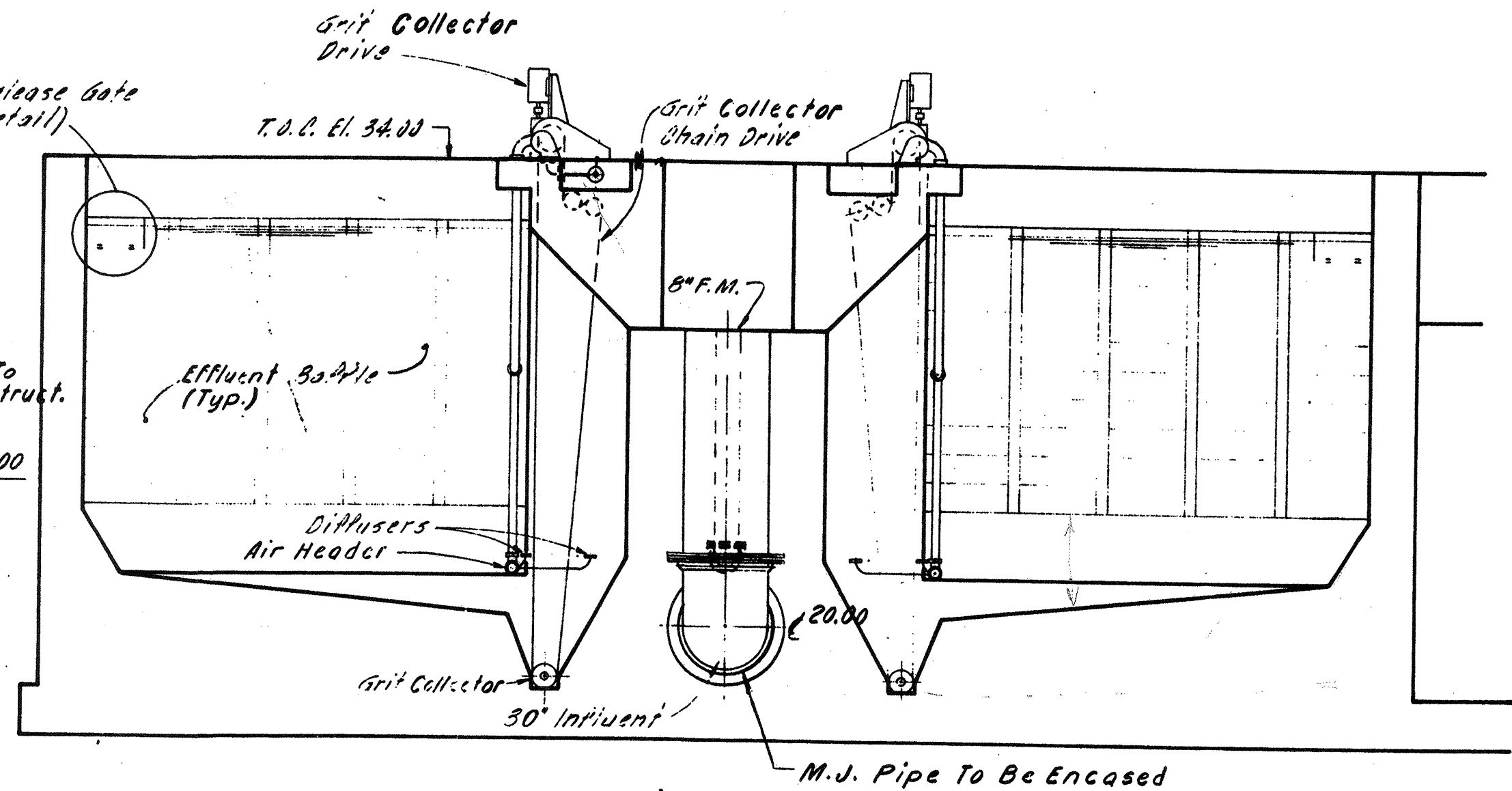
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
SCUM CONCENTRATOR BUILDING
PLANS, SECTIONS, & SCHEMATIC



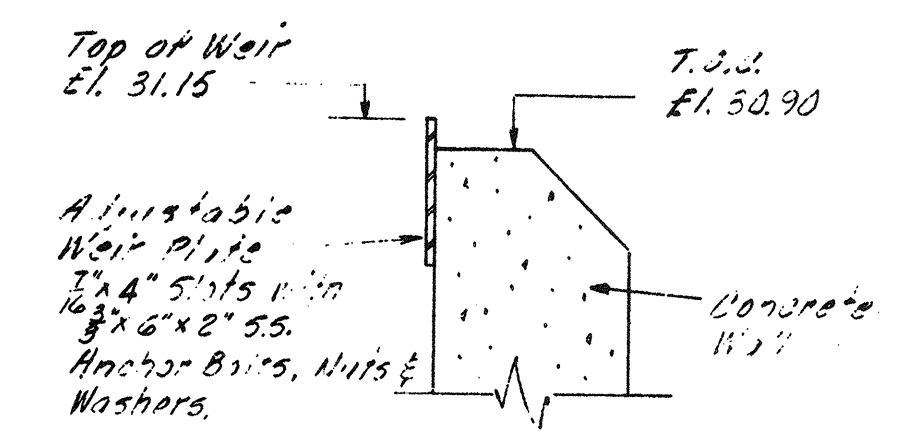
PLAN - AERATED GRIT CHAMBERS
SCALE 1/4" 1'-0"



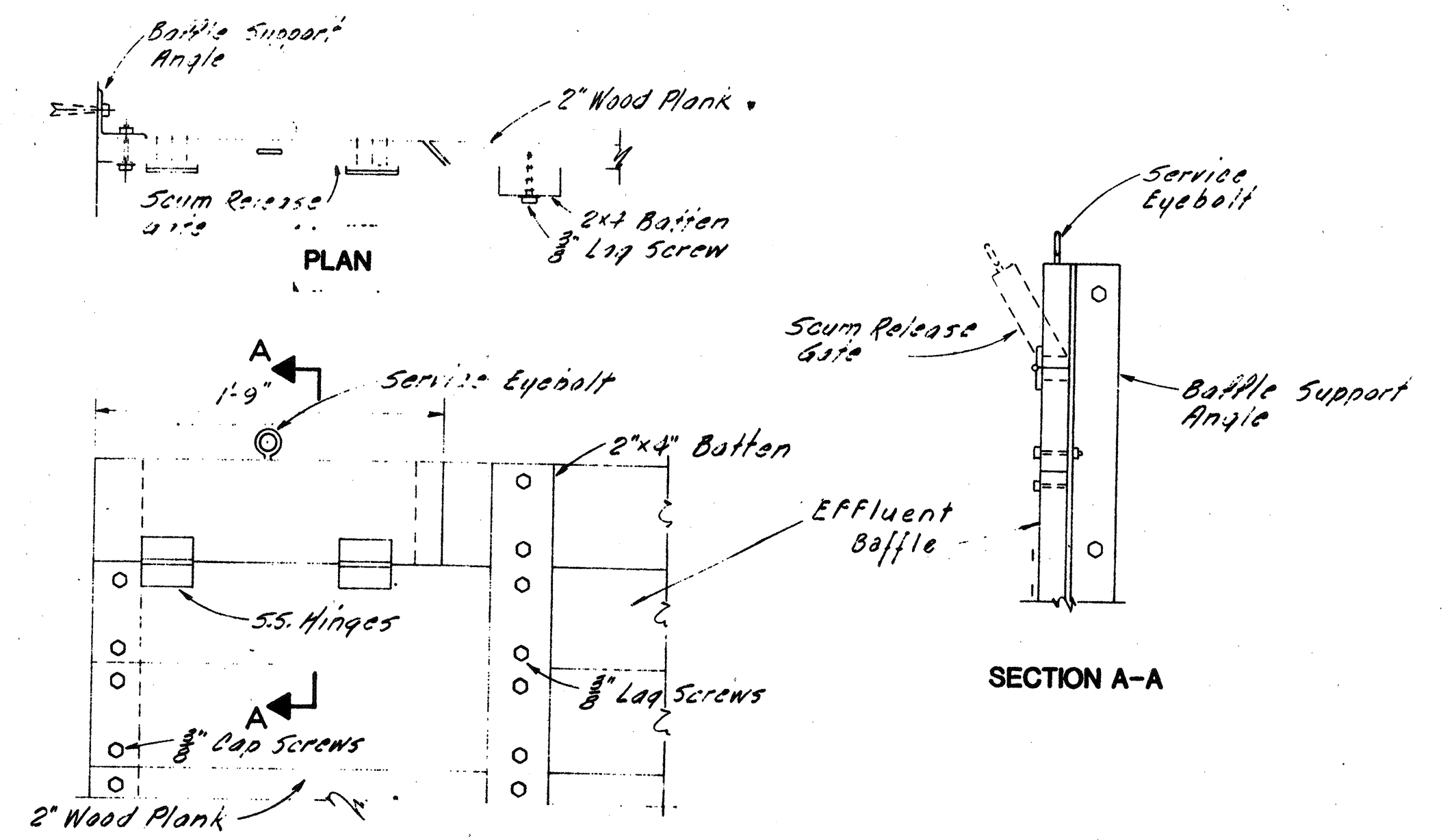
SECTION 1
SCALE 1/4" 1'-0"



SECTION 2
SCALE 1/4" 1'-0"



EFFLUENT WEIR DETAIL
NOT TO SCALE



SCUM RELEASE GATE DETAILS
NOT TO SCALE

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89
REVISIONS		

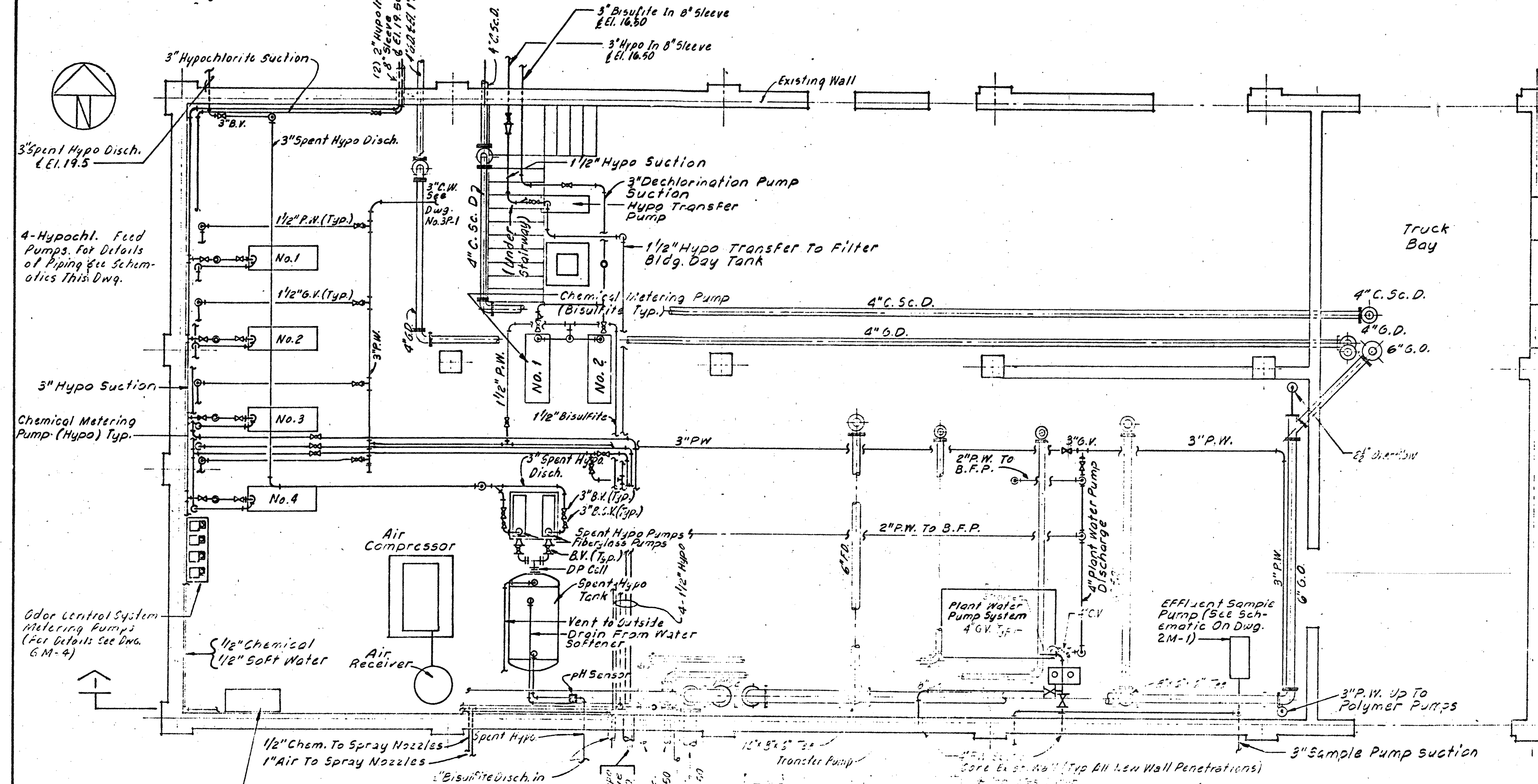
WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"				DRAWING NO. 2M-2	
REPRODUCTIONS MAY BE REDUCED SIZE				JOB NO. 85-163	
APPROVED: <i>Stephen E. Seigal</i>				CONTRACT NO. # 1 3	
DESIGNED/DRAWN	CHECKED	SCALE	DATE	SHEET 63 OF 106 SHEETS	
T.E.P.	D.T.C.	S.E.S.	AS NOTED	SEPT. 1985	

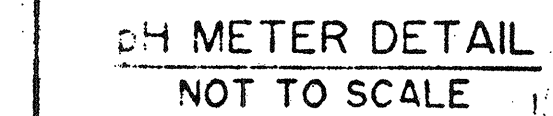
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
AERATED GRIT CHAMBERS
PLANS, SECTIONS & DETAILS

For Typ. Valve Configuration...
On Water Lines See Plant #...
Schema on Dwg. M-2.

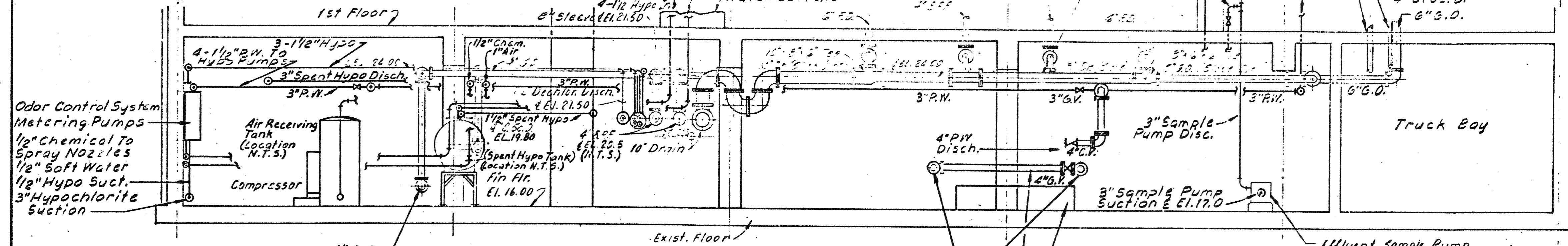


BASEMENT FLOOR PLAN

SCALE 1/4" 1'-0"

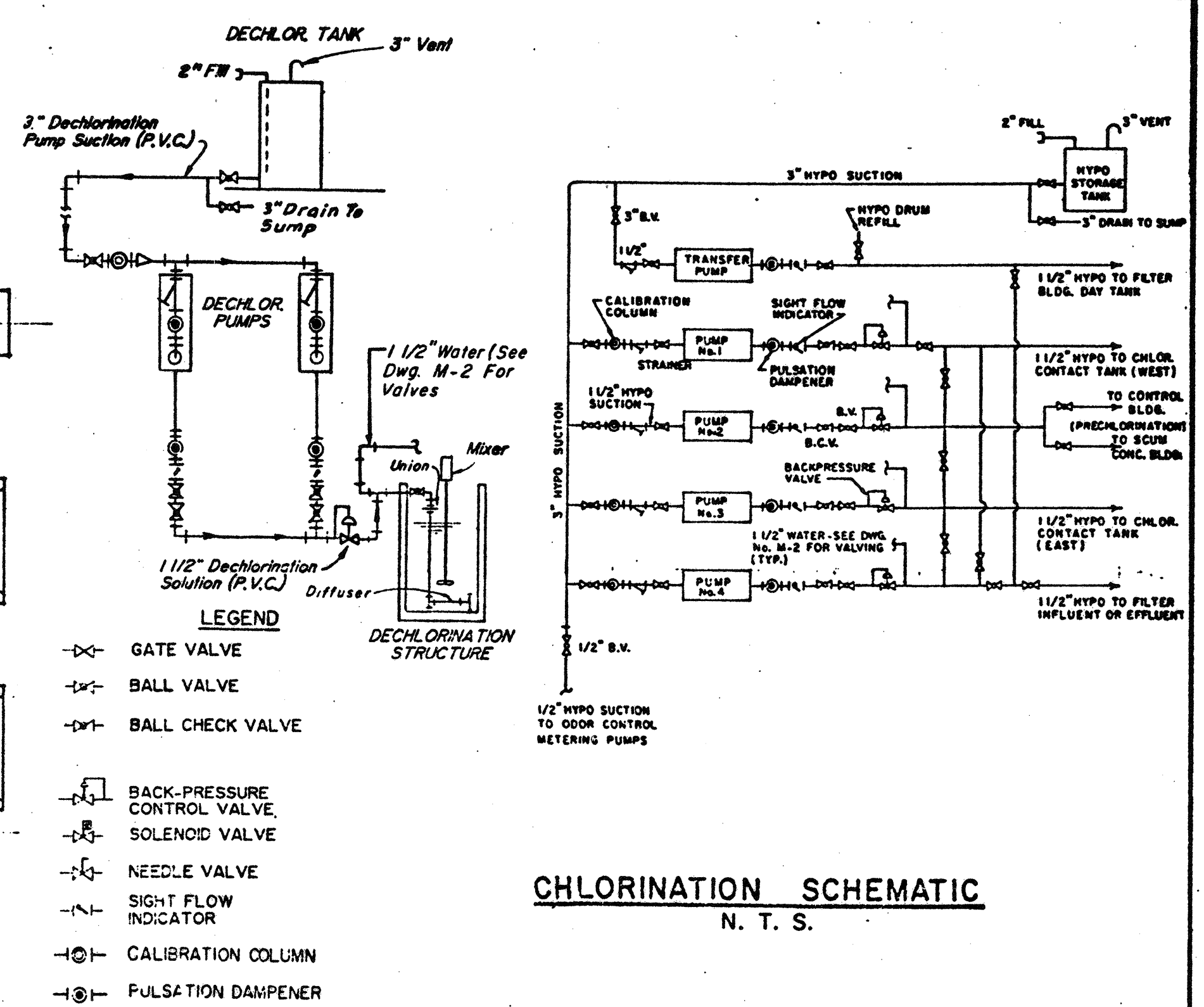


pH METER DETAIL
NOT TO SCALE

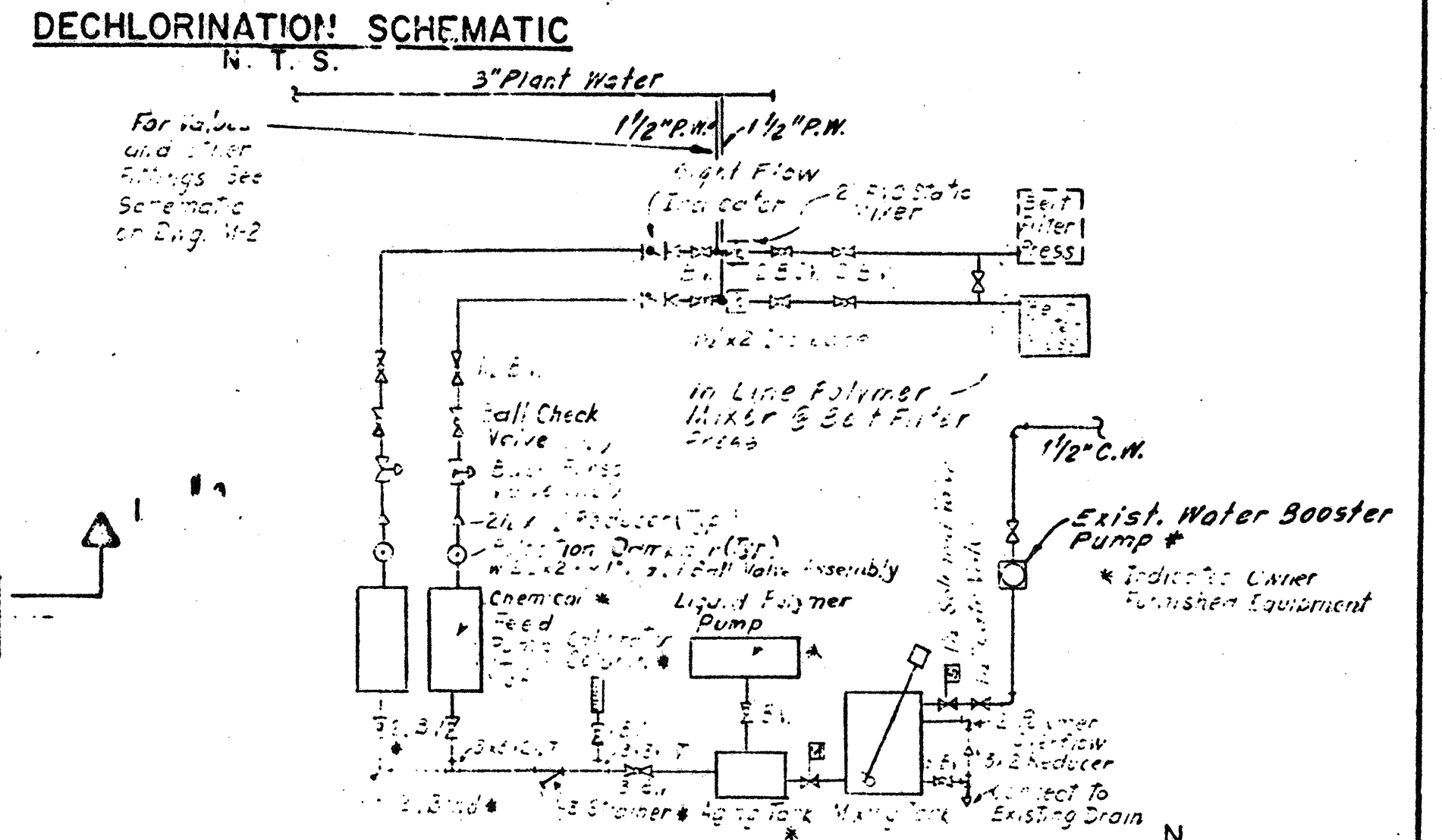


SECTION

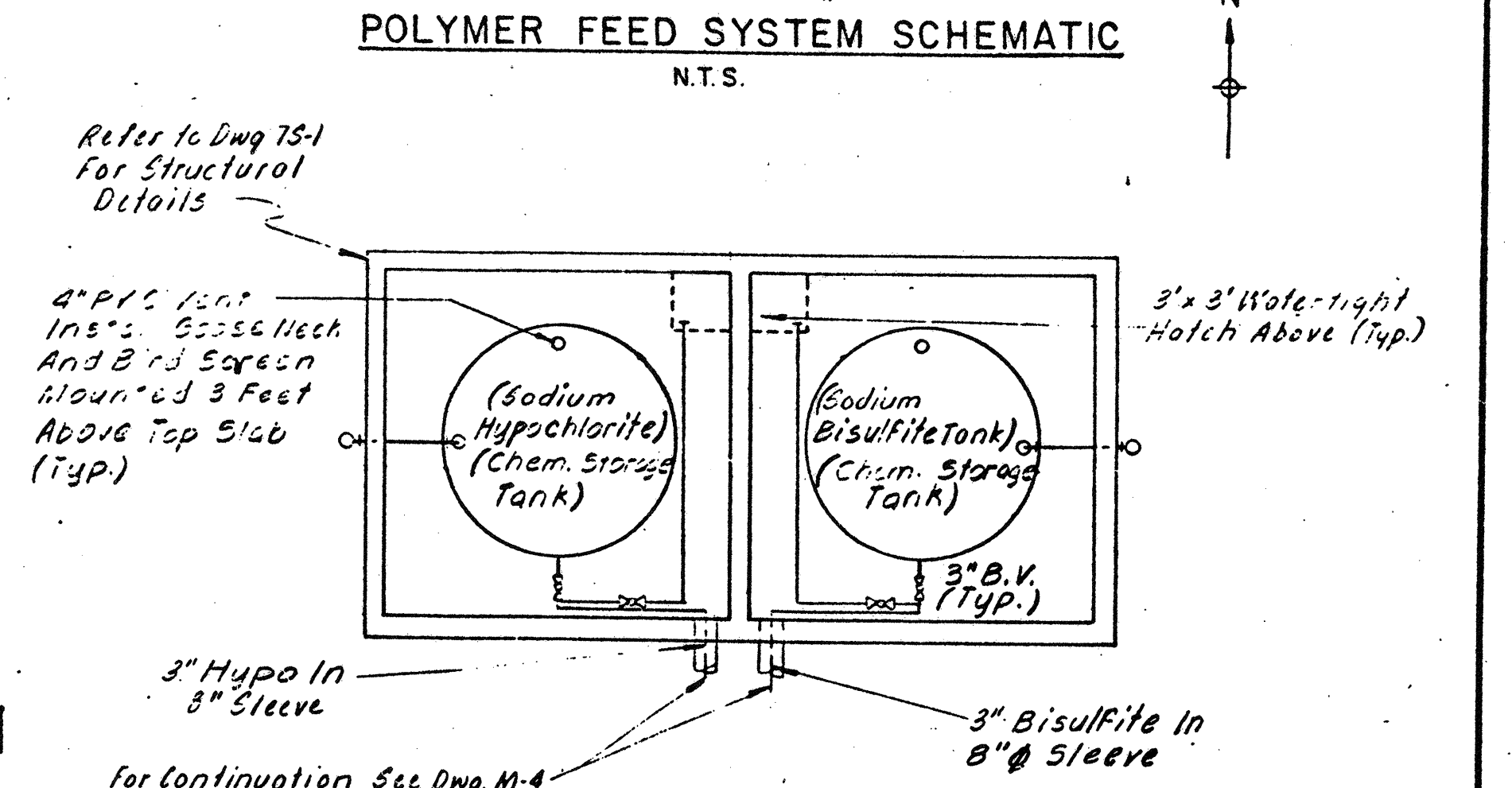
SCALE 1/4" 1'-0"



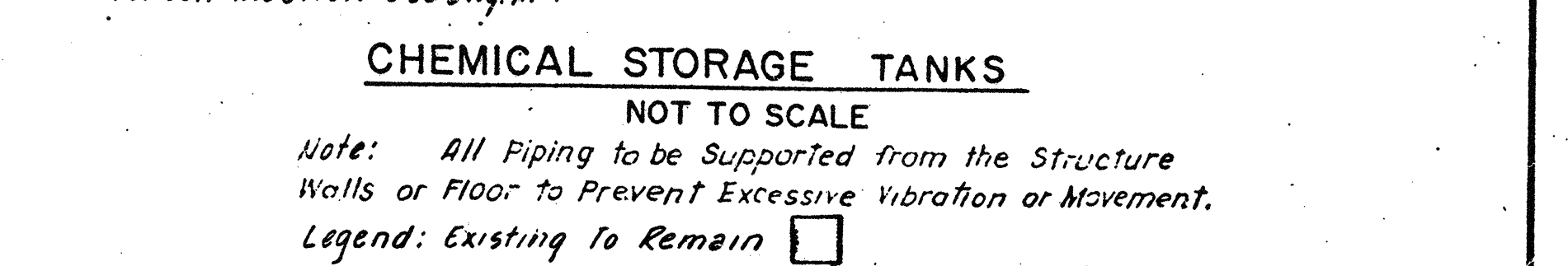
CHLORINATION SCHEMATIC
N. T. S.



DECLORINATION SCHEMATIC
N. T. S.



POLYMER FEED SYSTEM SCHEMATIC
N.T.S.

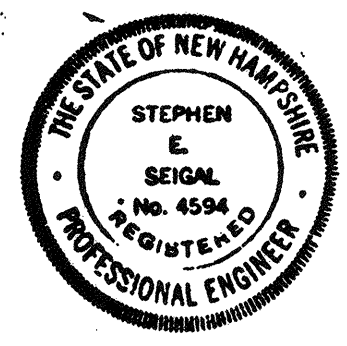


CHEMICAL STORAGE TANKS
NOT TO SCALE

Note: All Piping to be Supported from the Structure Walls or Floor to Prevent Excessive Vibration or Movement.
Legend: Existing to Remain

NO.	DESCRIPTION	DATE
3	Revised To Record Plan	9/93
2	Drawing Revised	9/89
	REVISED AS PER STATE COMMENTS	2/88

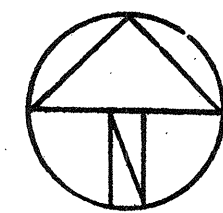
WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



APPROVED: *Stephen E. Veigel*
DESIGNED: T.E.P. DRAWN: D.T.C. CHECKED: S.E.S. SCALE: AS NOTED DATE: SEPT. 1985

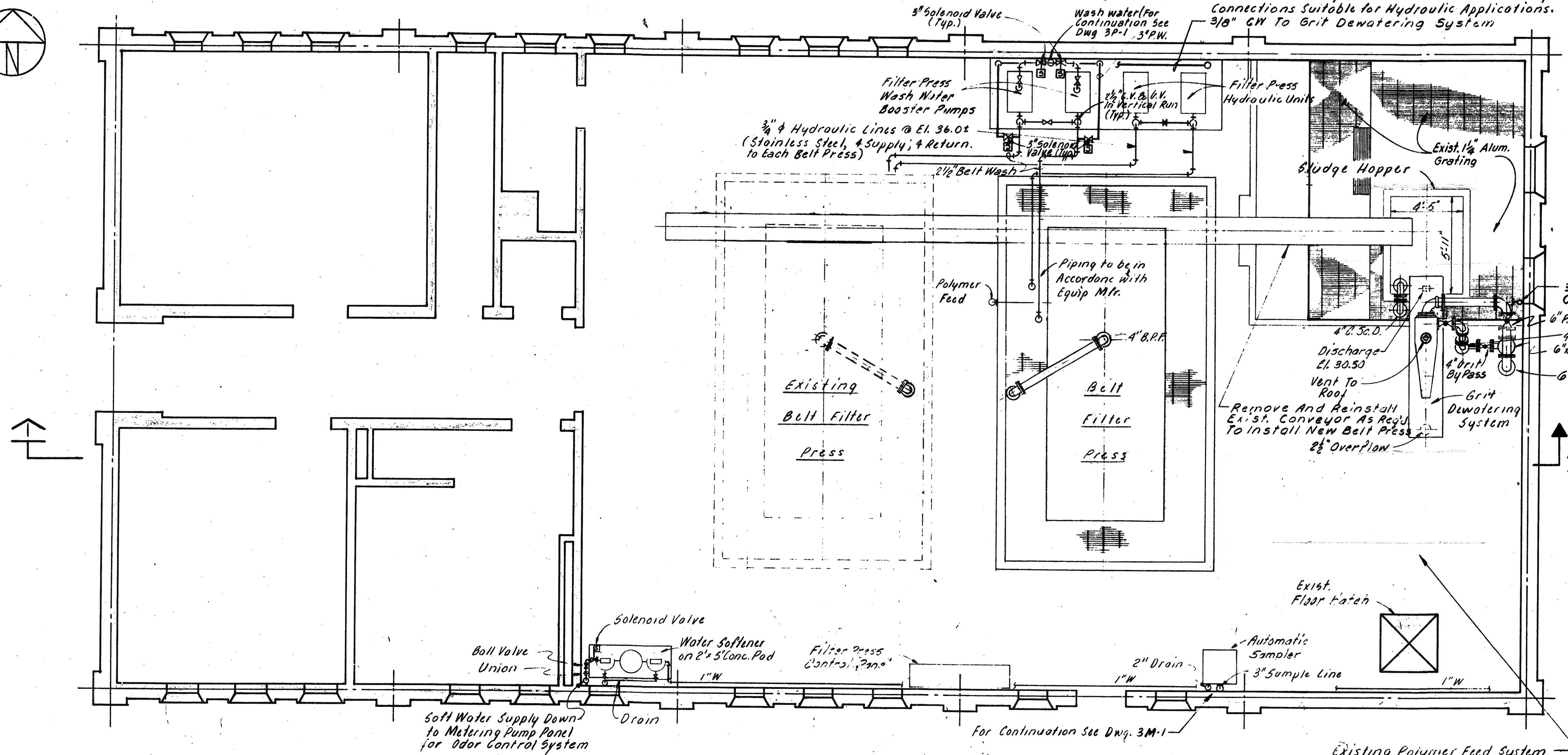
DRAWING NO. **3M-1**
JOB NO. 85-163
CONTRACT NO. 3

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
SLUDGE PROCESSING BUILDING
BASEMENT FLOOR-PLAN, SECTIONS & SCHEMATIC

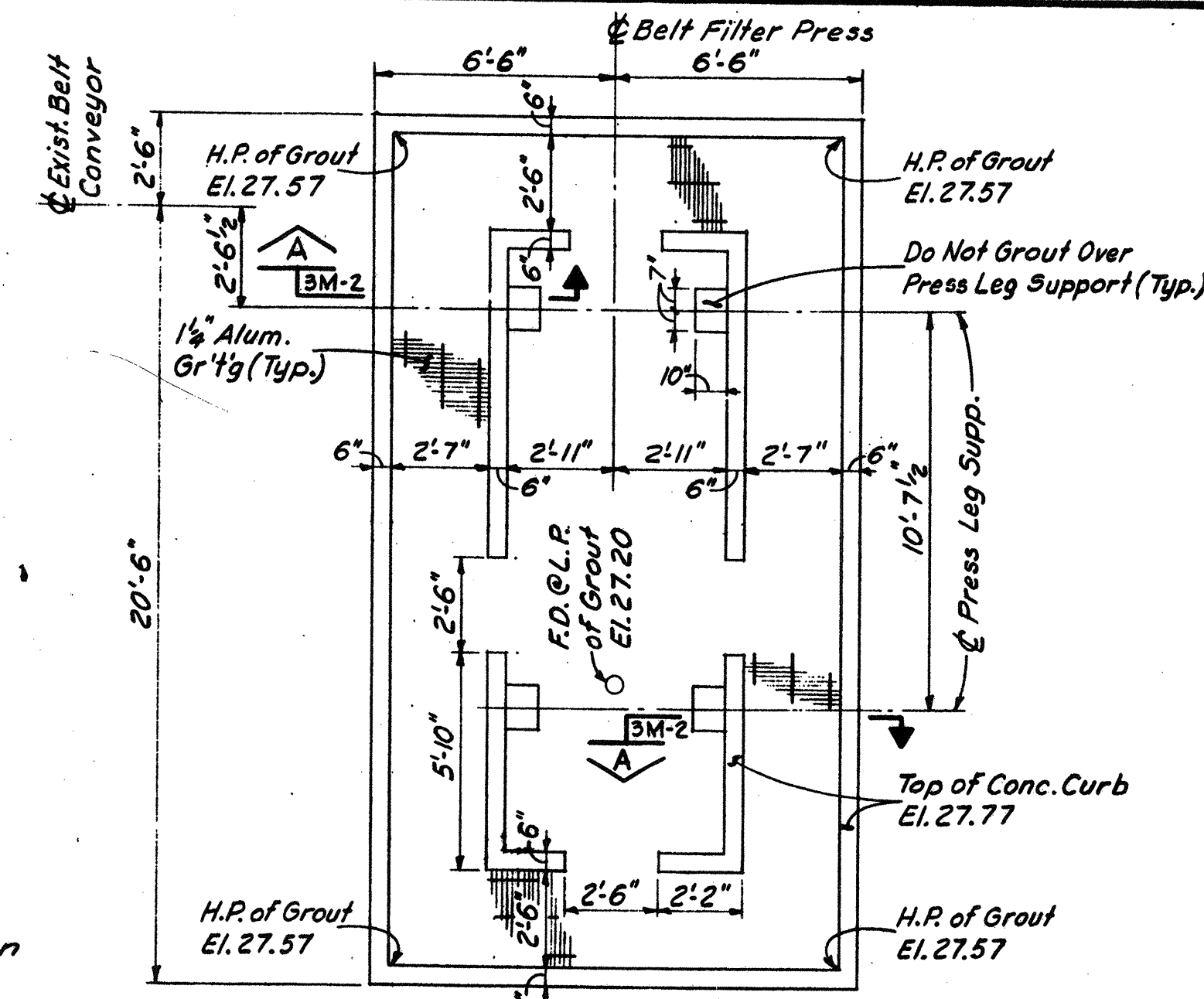


The Contractor Shall Install a New Wash Water Booster Pump and a New Hydraulic Unit and Shall Reconfigure the Existing Units as Shown Here

NOTE: Hydraulic Lines Shall be Fully Annealed Seamless Type 304 Austenitic Stainless Steel Hydraulic Tubing Meeting ASTM A269 Requirements. The Tubing Shall Match the Existing Tubing and all Fittings Shall be Stainless Steel Swagelok Flareless Mechanical Grip Connections Suitable for Hydraulic Applications. 3/8" CW To Grit Dewatering System

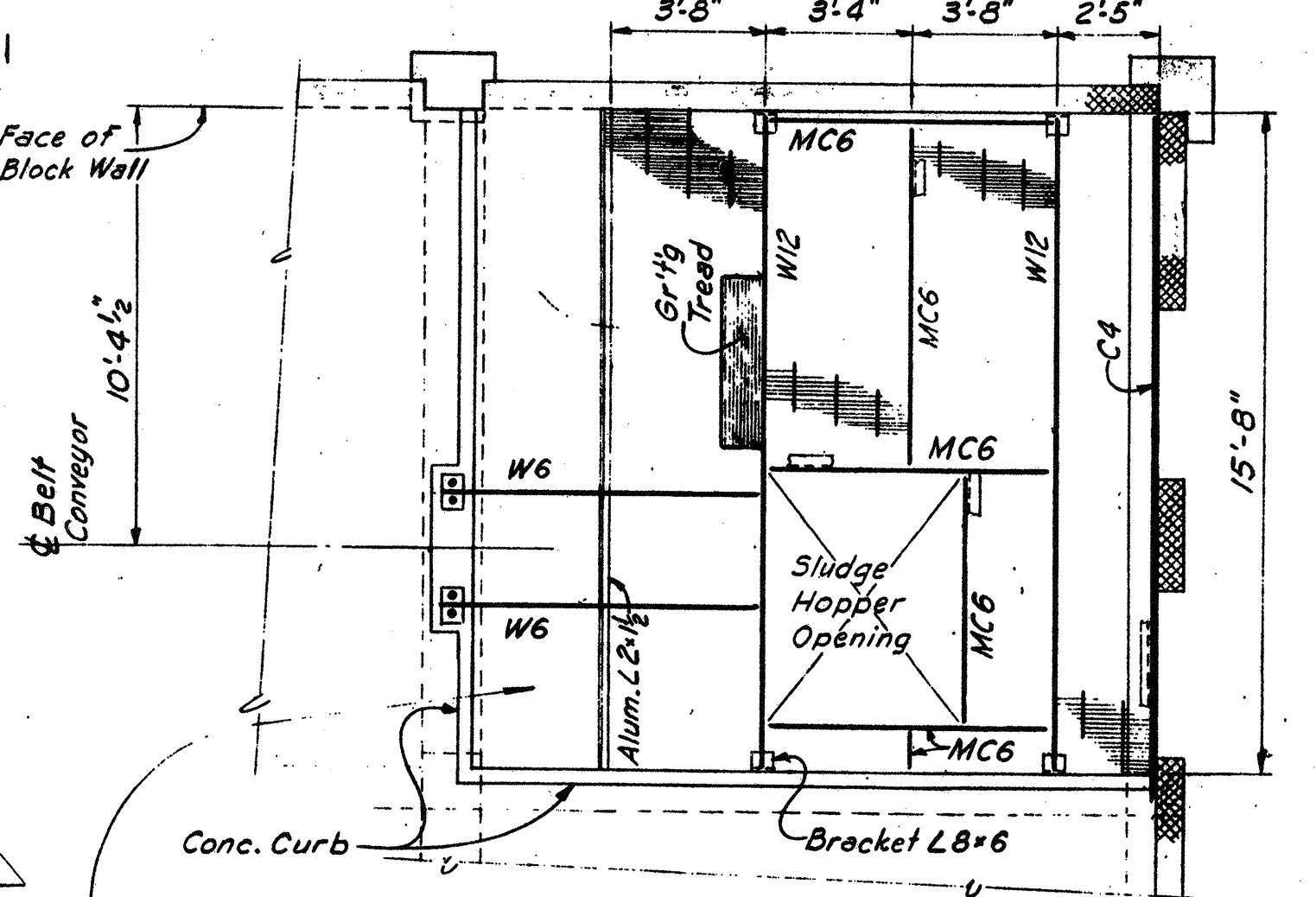


FIRST FLOOR PLAN
SCALE: 1/4" = 1' - 0"



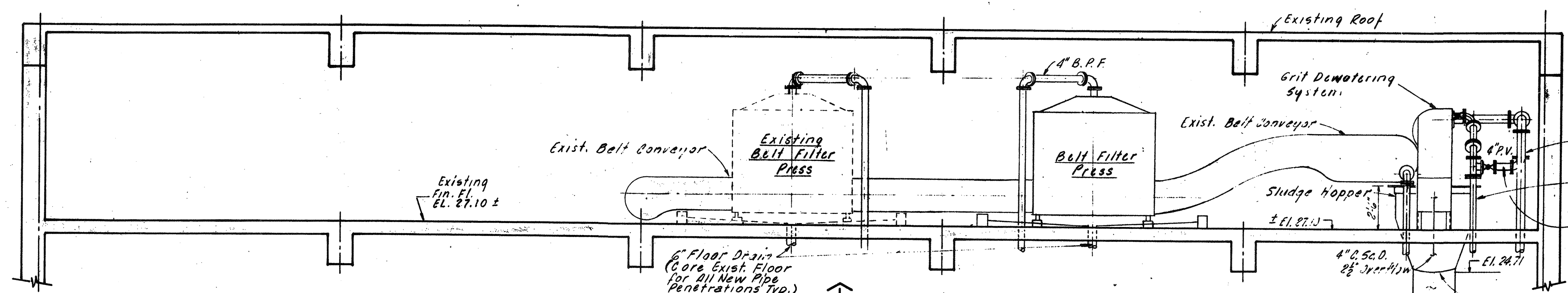
BELT FILTER PRESS FOUNDATION PLAN
Scale: 1/4" = 1' - 0"

All Material to be New Unless Noted Otherwise. For General Notes & Typ. Struct. Details See Dwg. GS-1.

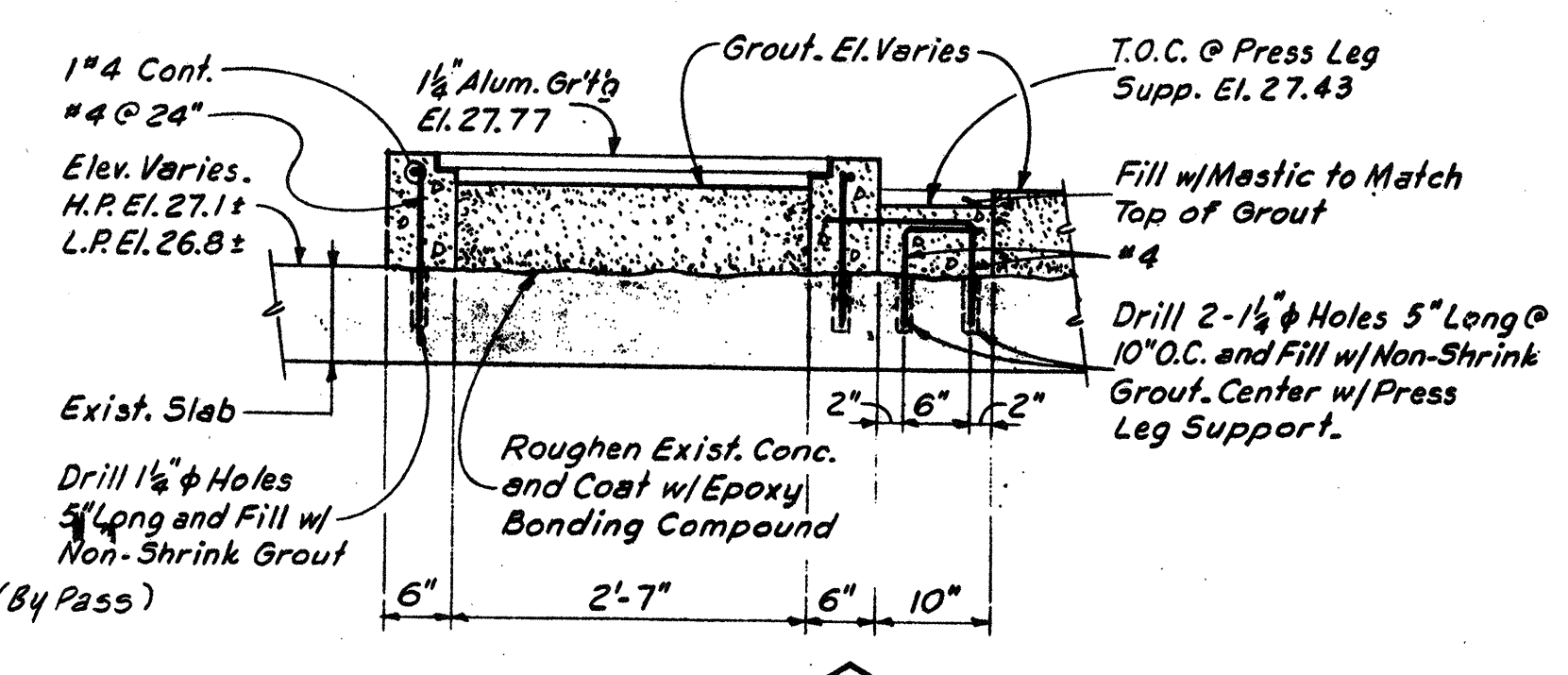


EXIST. FRAMING PLAN - SLUDGE HOPPER AREA
Scale: 1/4" = 1' - 0"

Remove and Reinstall Exist. Framing and Grating as Required to Install New Belt Filter Press.



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

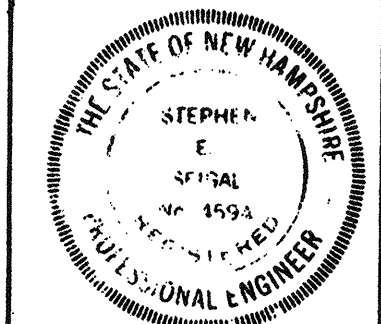


SECTION 3M-2
Scale: 3/4" = 1' - 0"

LEGEND
Existing To Remain

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89

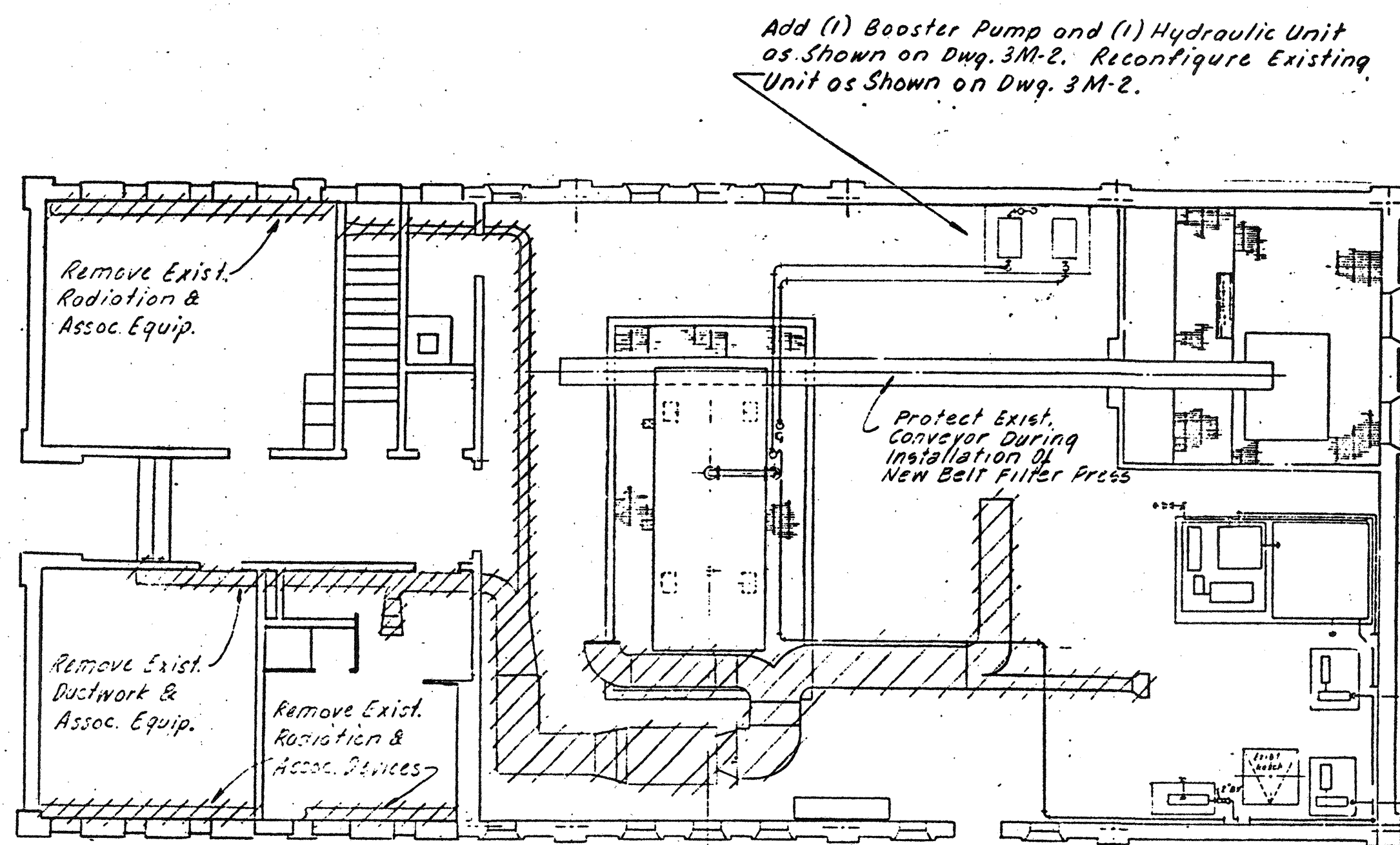
WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



APPROVED
Stephen E. Seigel
DESIGNED DRAWN CHECKED SCALE DATE
T.E.P. D.T.C. S.E.S. AS NOTED SEPT. 1985

DRAWING NO. **3M-2**
JOB NO. 85-163
CONTRACT NO. 13
SHEET 55 OF 106 SHEETS

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
SLUDGE PROCESSING BUILDING
FIRST FLOOR PLANS AND SECTIONS

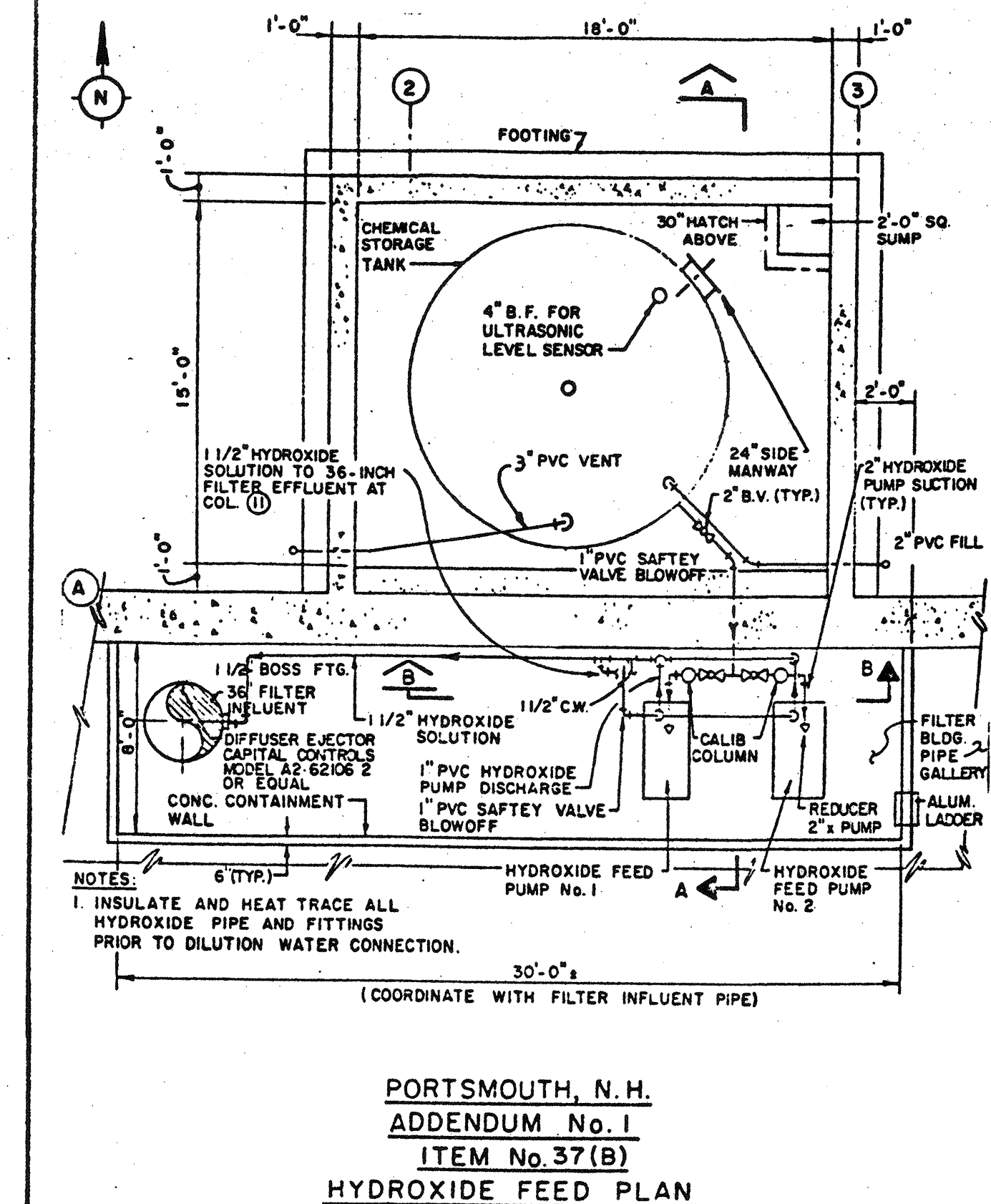


Add (1) Booster Pump and (1) Hydraulic Unit as Shown on Dwg. 3M-2. Reconfigure Existing Unit as Shown on Dwg. 3M-2.

NOTE: Cross-Hatched Areas to be Demolished.

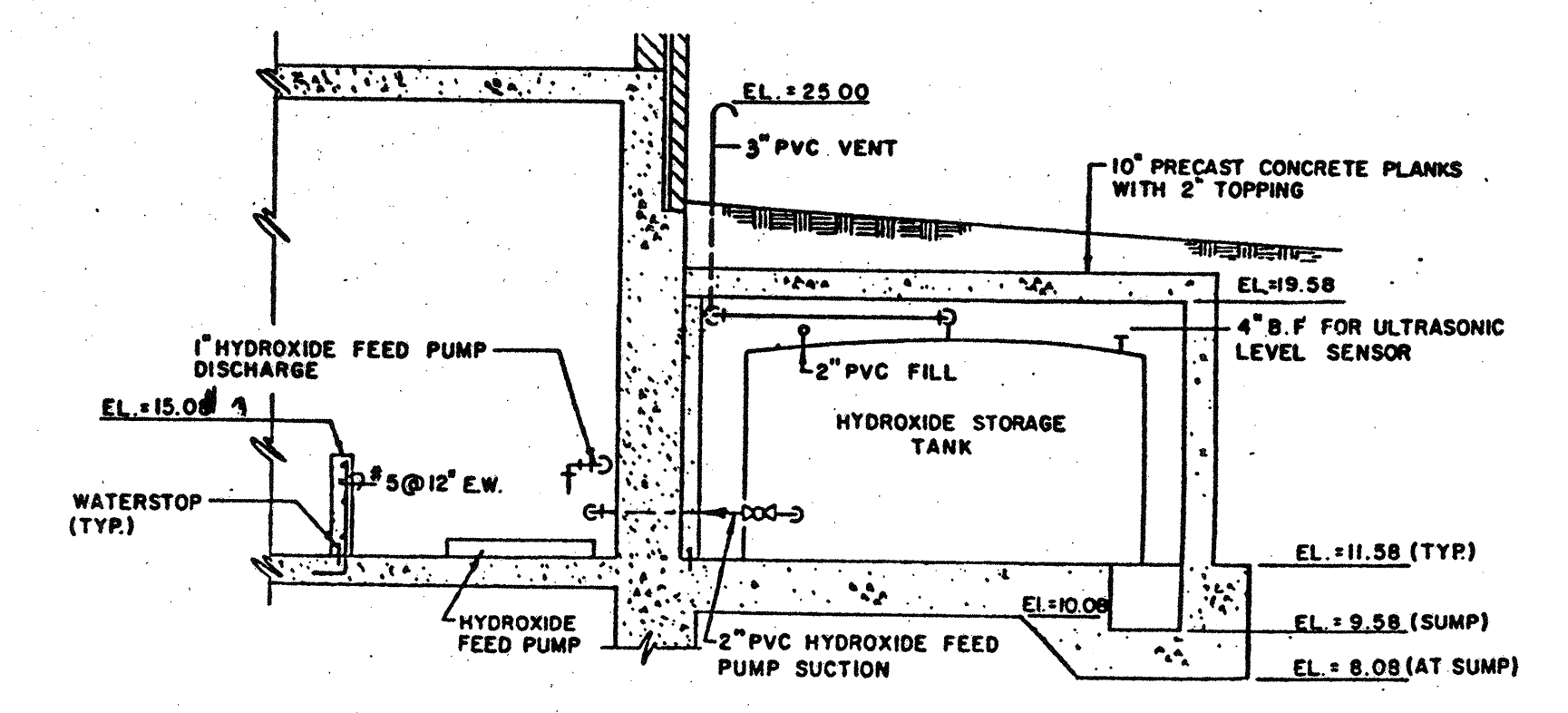
FIRST FLOOR PLAN
SCALE 1/8" 1'-0"

Relocate Polymer Feed System & Pumps to the Basement.
Note: The Belt Filter Press shall remain in operation while relocating the Polymer Feed System. See Specs.



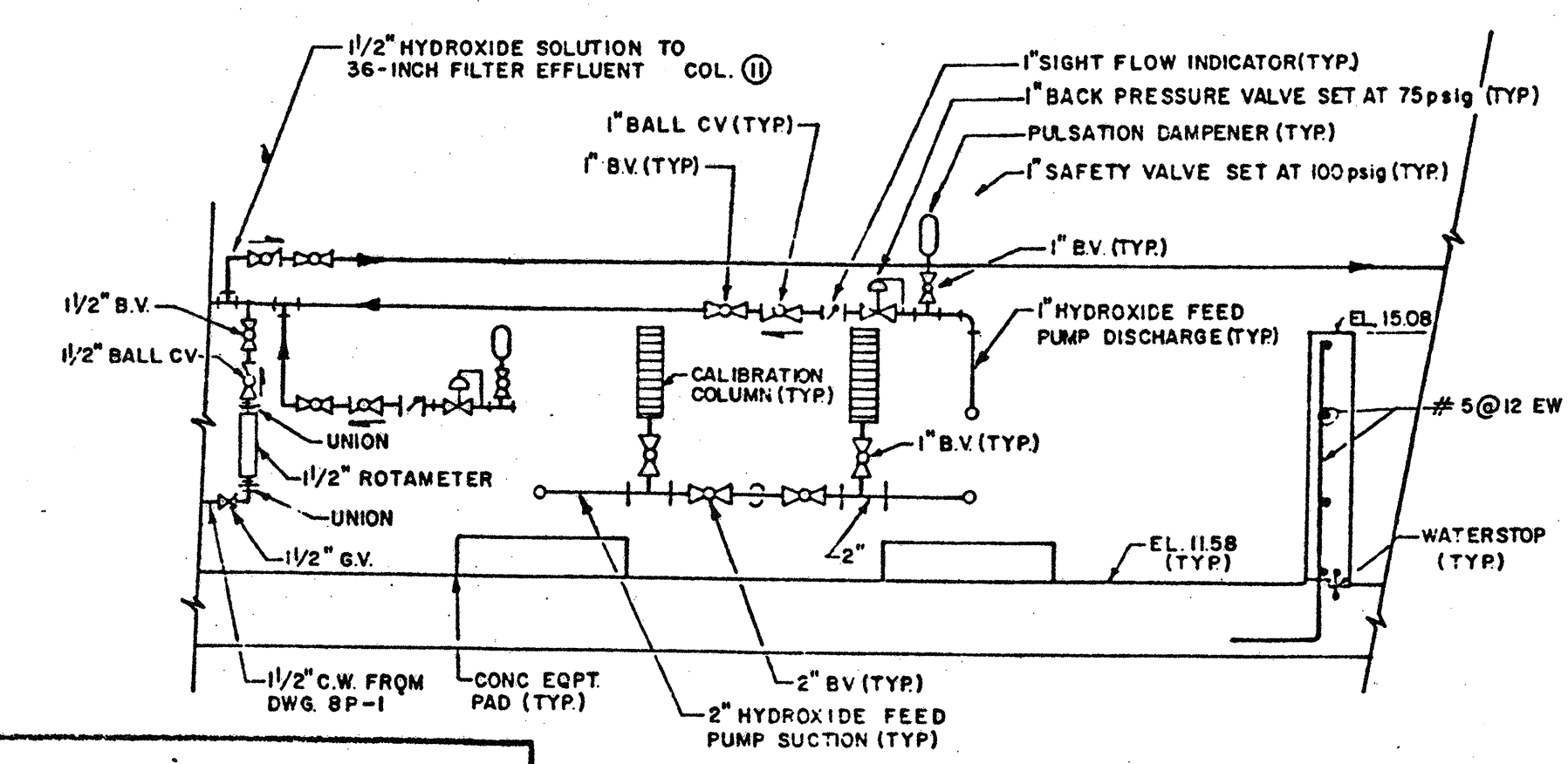
PORTSMOUTH, N.H.
ADDENDUM No. 1
ITEM No. 37(B)
HYDROXIDE FEED PLAN

0-1
42 of 46



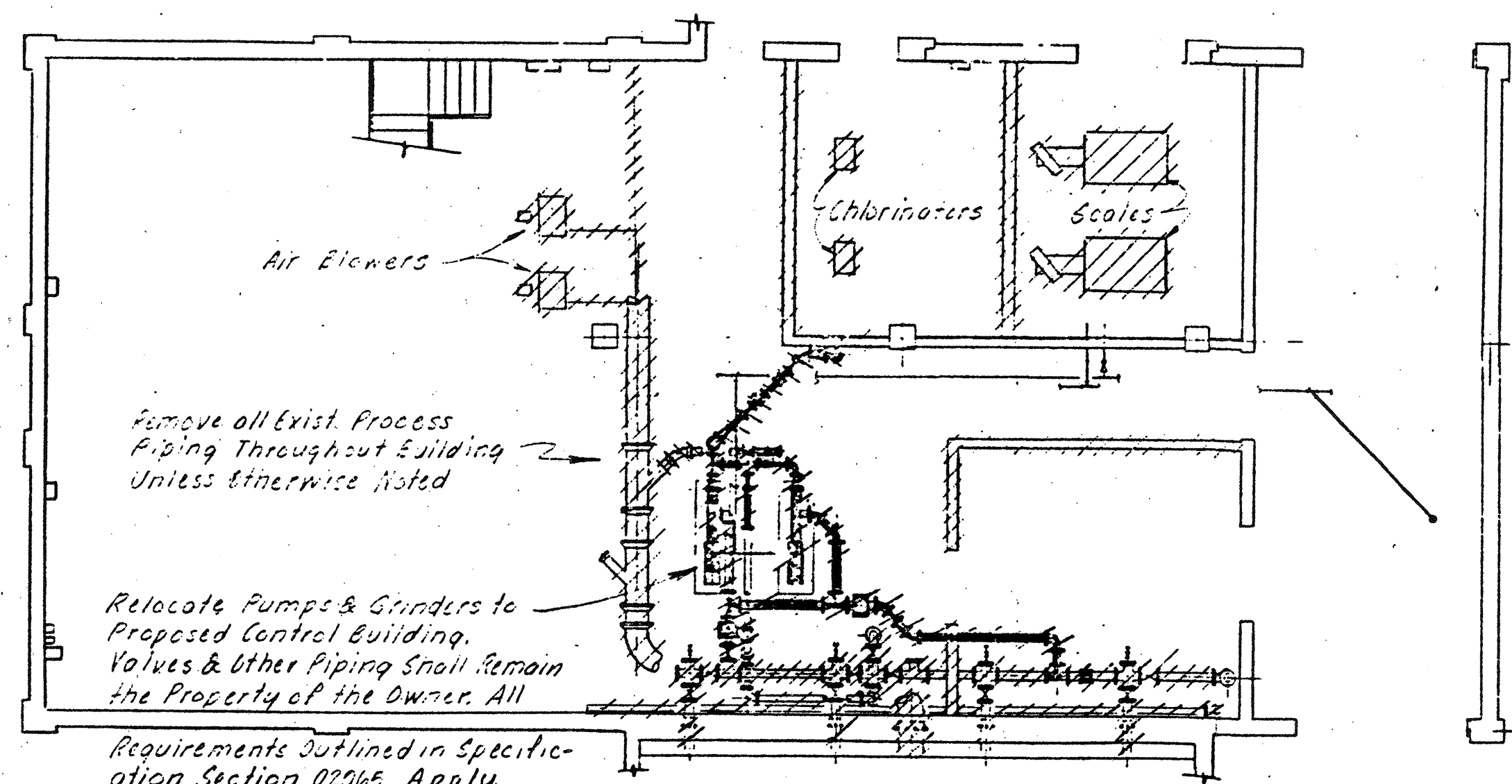
SECTION A
PORTSMOUTH, N.H.
ADDENDUM No. 1
ITEM No. 37(B)
HYDROXIDE FEED SECTION

0-1
43 of 46



SECTION B
PORTSMOUTH, N.H.
ADDENDUM No. 1
ITEM No. 37(B)
FILTER BUILDING SECTIONS
(See Dwg's. 8M)

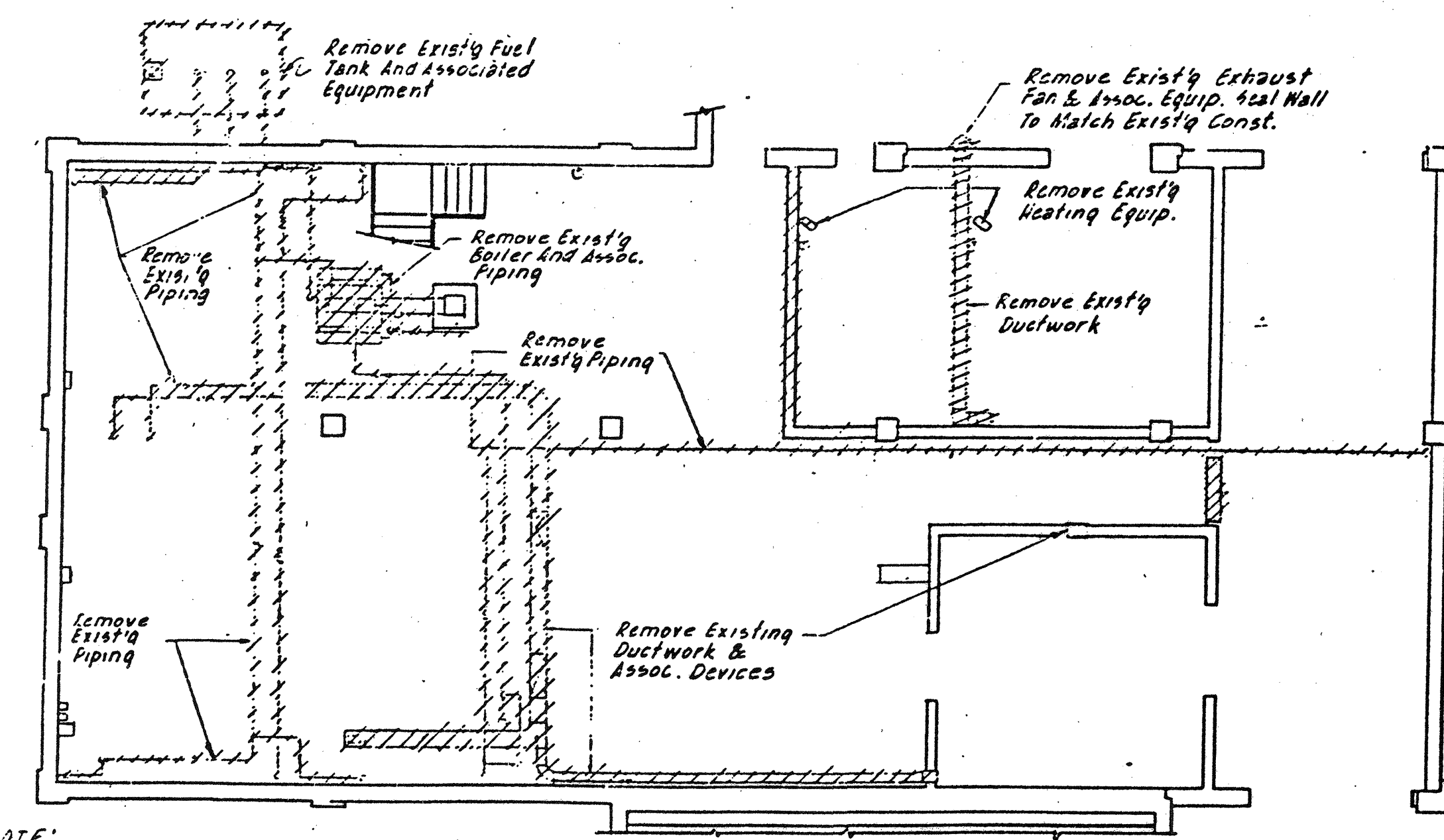
0-1
44 of 46



NOTE: Cross-Hatched Areas to be Demolished.

BASEMENT FLOOR PLAN
SCALE 1/8" 1'-0"

Use Exist. 6" Sludge Suctions as Sleeves for 4 inch Plant Water Suction - See 3M-1 for details.

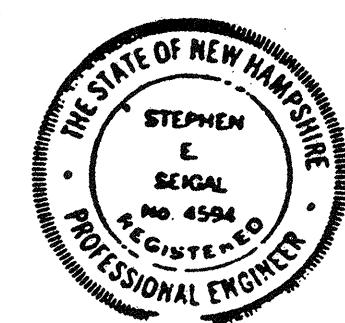


NOTE: Cross-Hatched Areas to be Demolished.

BASEMENT FLOOR PLAN
SCALE 1/8" 1'-0"

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen E. Sajal*

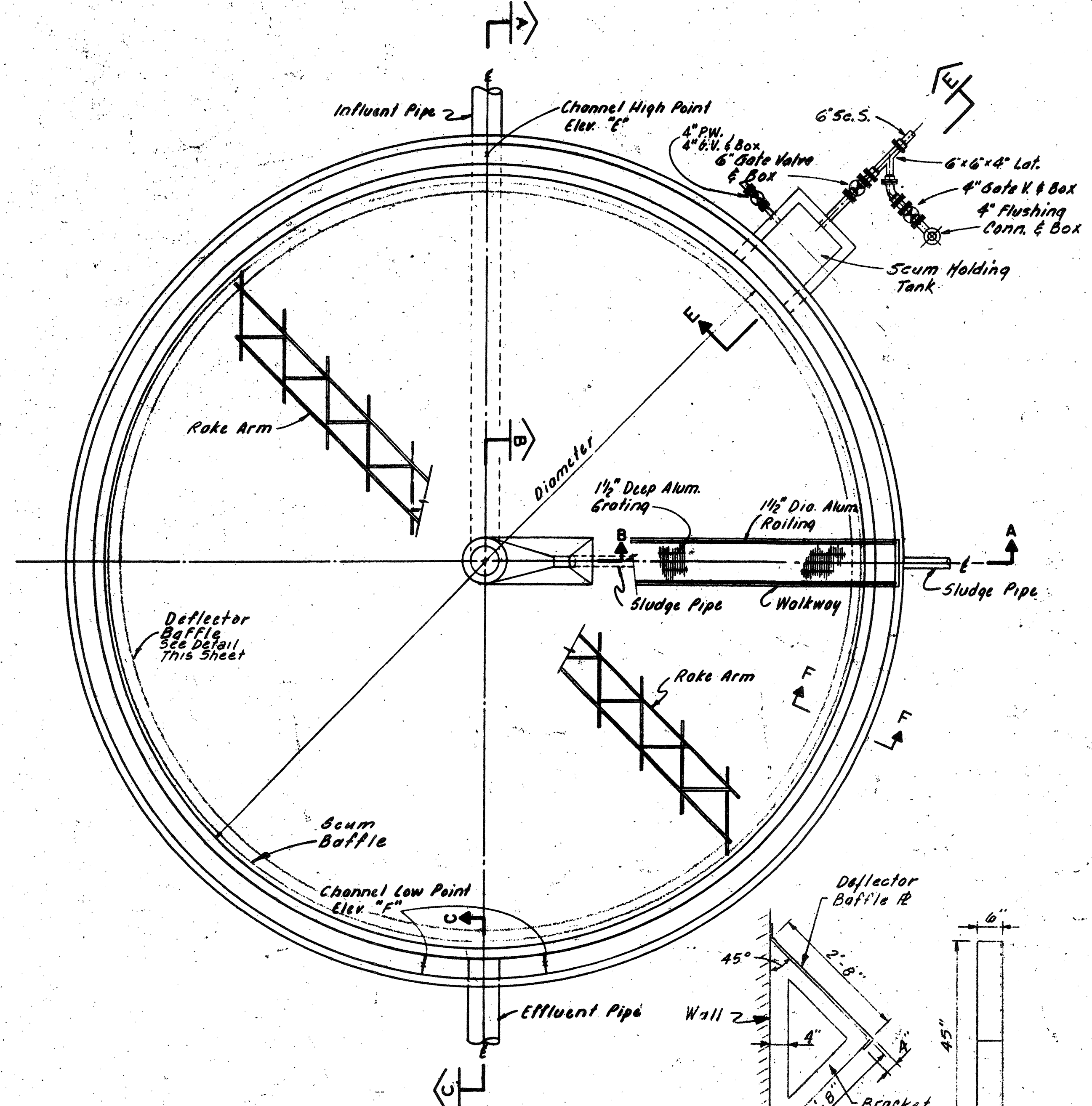
DESIGNED/DRAWN: T.E.P.
CHECKED: S.E.S.
SCALE: AS NOTED
DATE: SEPT. 1985

DRAWING NO. **3M-3**
JOB NO. 85-163
CONTRACT NO. 3

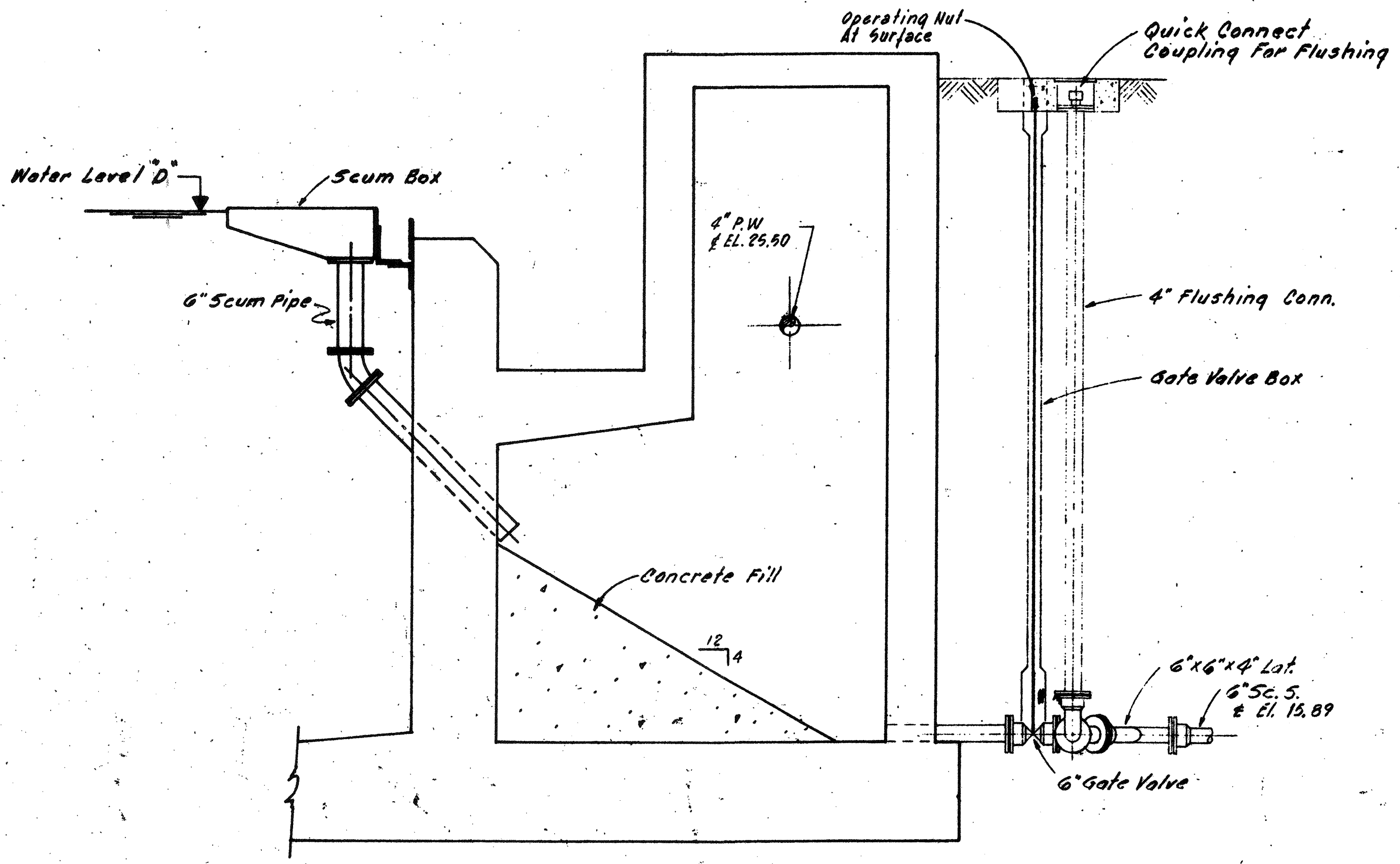
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
SLUDGE PROCESSING BUILDING
MODIFICATIONS TO EXISTING LAYOUT

CLARIFIER DIMENSIONS	
Clarifier Diameter	76.00
Sidewater Depth	18.00
Channel Width	3.00
Influent Pipe Diameter	2.50
Sludge Pipe Diameter	0.5
Effluent Pipe Diameter	5.0

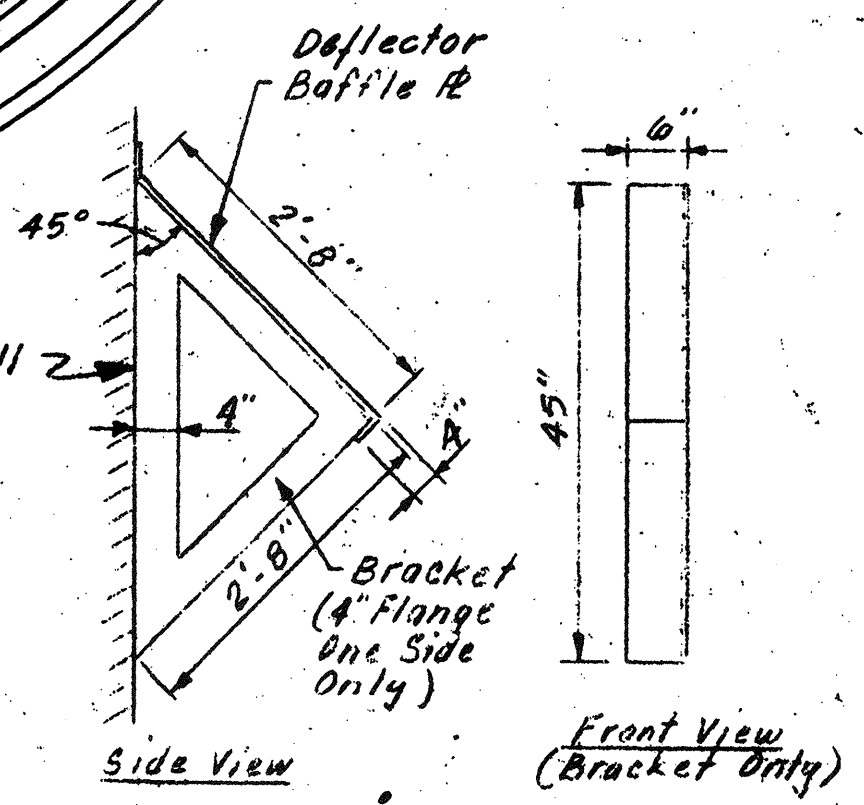
ELEVATIONS		
"A"	Top of Concrete	31.00
"B"	Top of Concrete	27.34
"C"	Top of Grout	15.81
"D"	Water Level	27.74
"E"	Channel High Point	24.90
"F"	Channel Low Point	24.75
"G"	Channel Concrete	24.55
"H"	Sludge Pipe Invert	9.84
"I"	Influent Pipe Invert	8.08
"J"	Effluent Pipe Invert	18.00
"K"	Effluent Box Invert	21.33



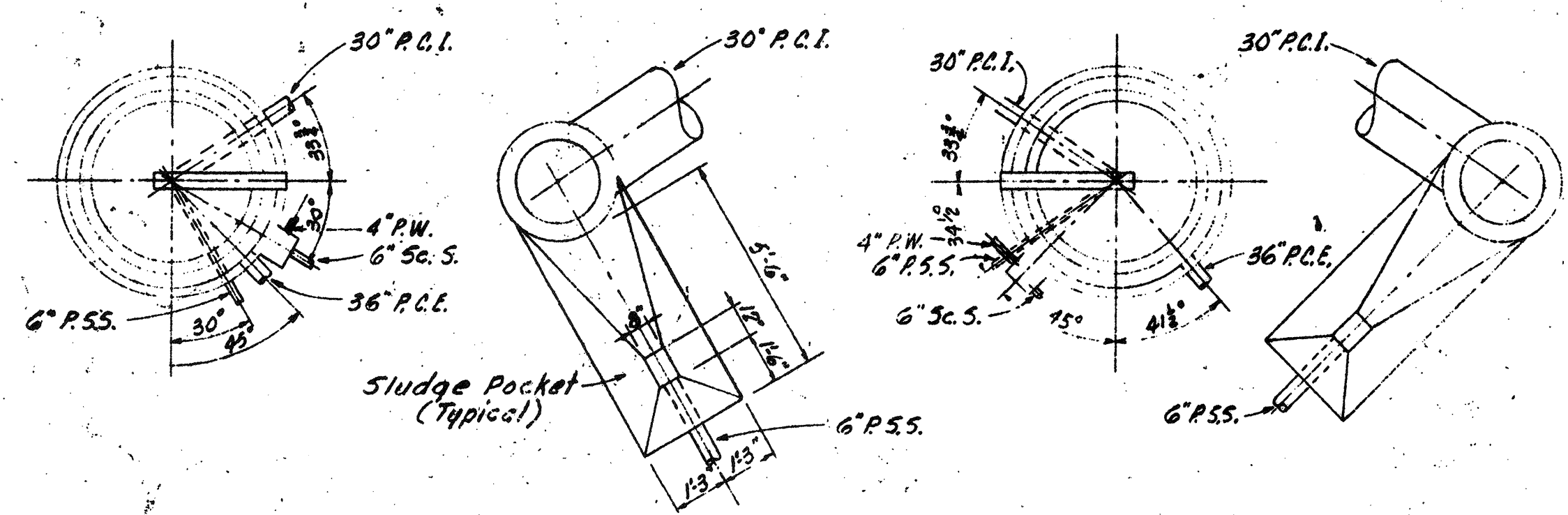
PLAN - CLARIFIER
Not To Scale



SECTION E
SCALE 1/2" = 1'-0"



DETAIL Baffle Support
Not To Scale

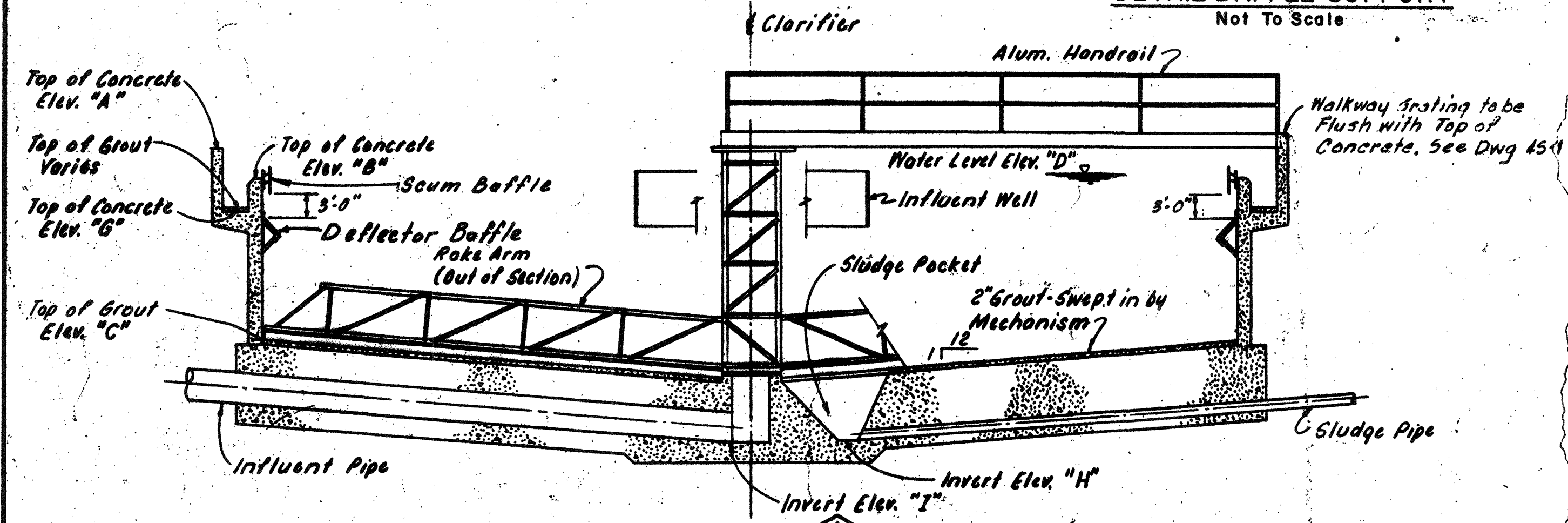


CLARIFIER NO. 1

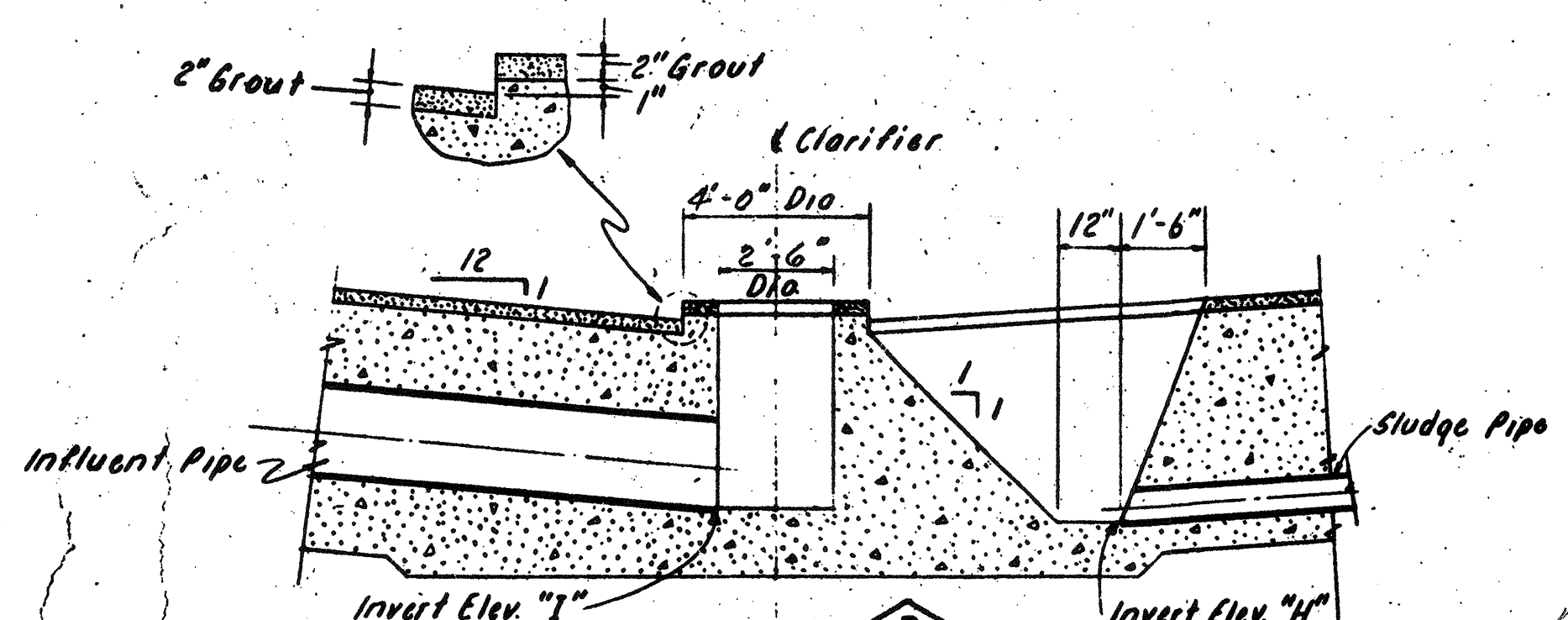
CLARIFIER NO. 2

CLARIFIER NO. 2

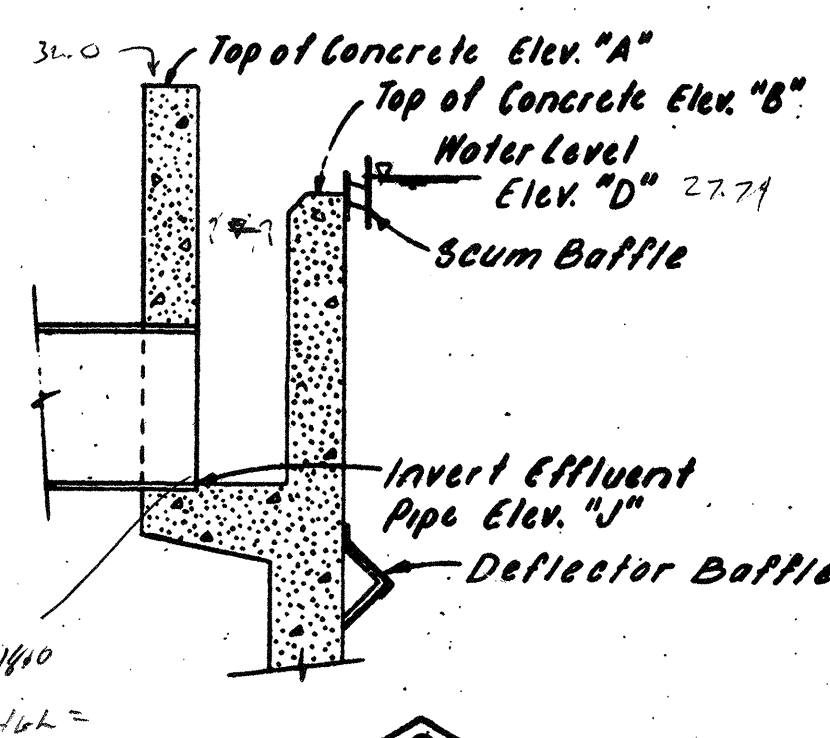
KEY-PLAN
NOT TO SCALE



SECTION A
Not To Scale



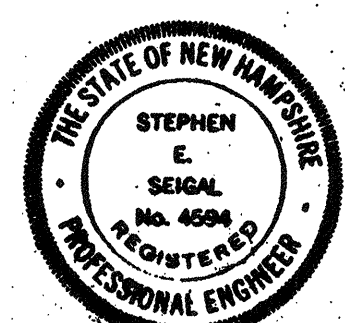
SECTION B
Not To Scale



SECTION C
Not To Scale

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



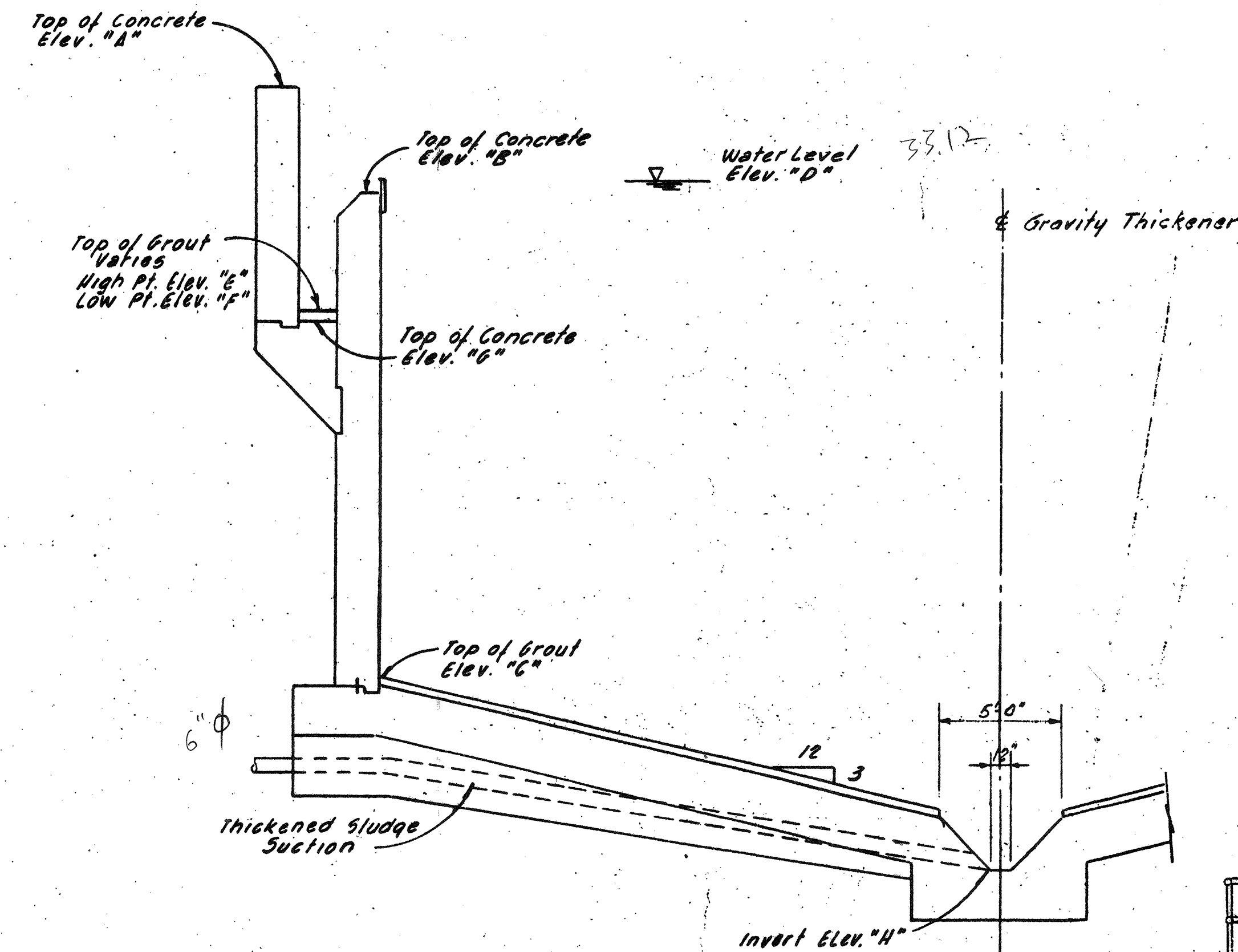
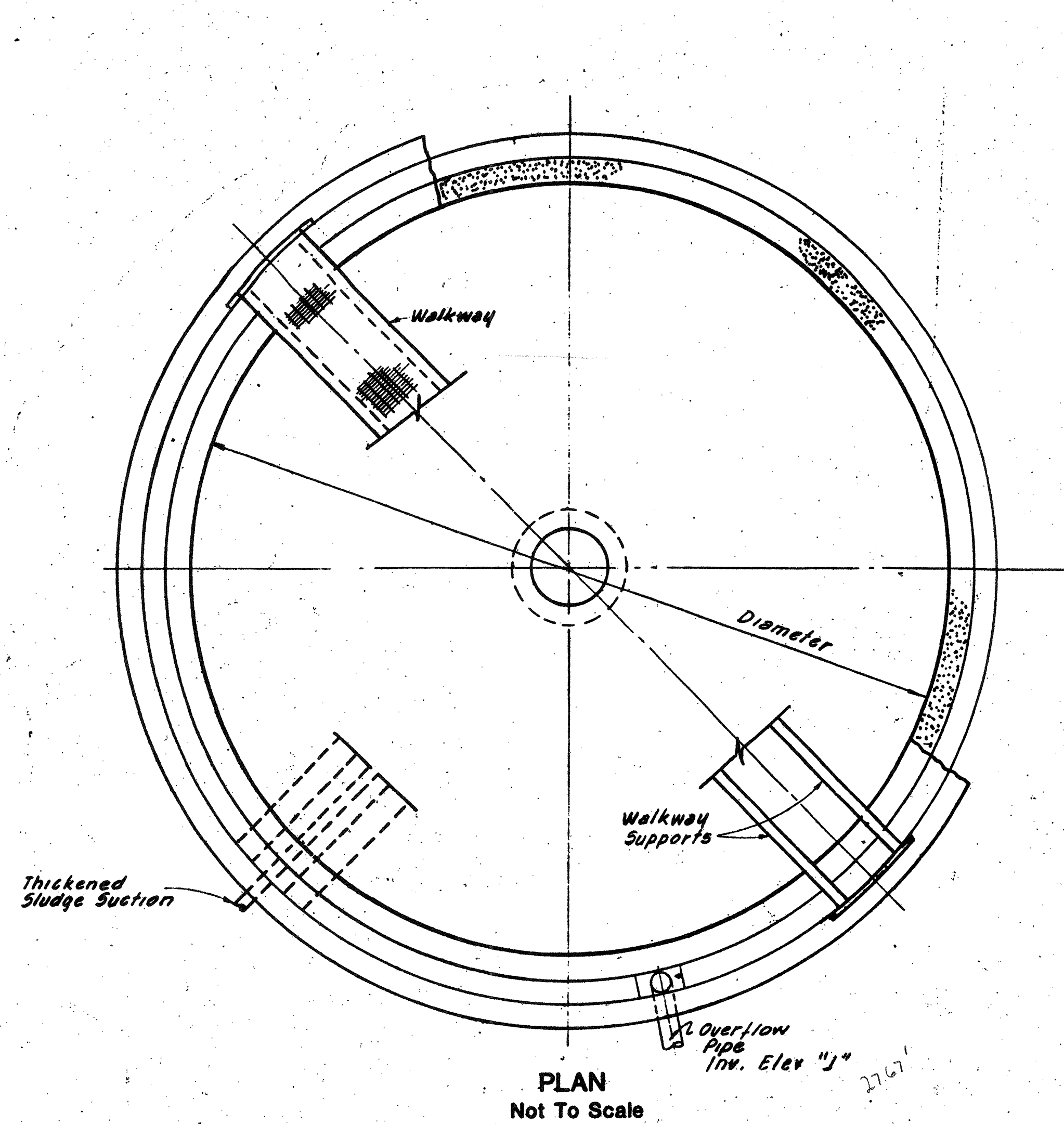
ORIGINAL FULL SIZE DRAWING - 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen E. Seigel*

CHECKED: S.E.S. AS NOTED
DATE: SEPT. 1985

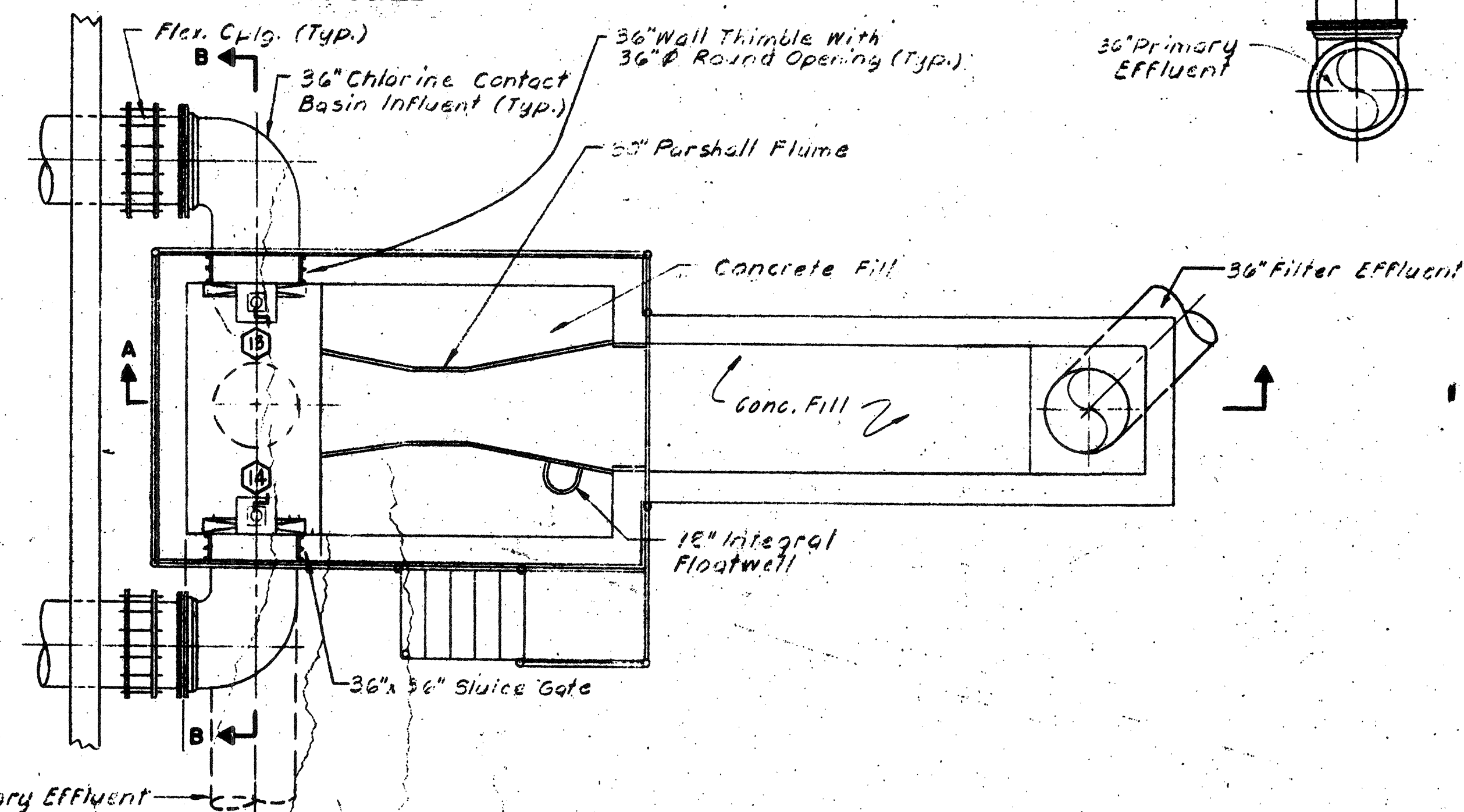
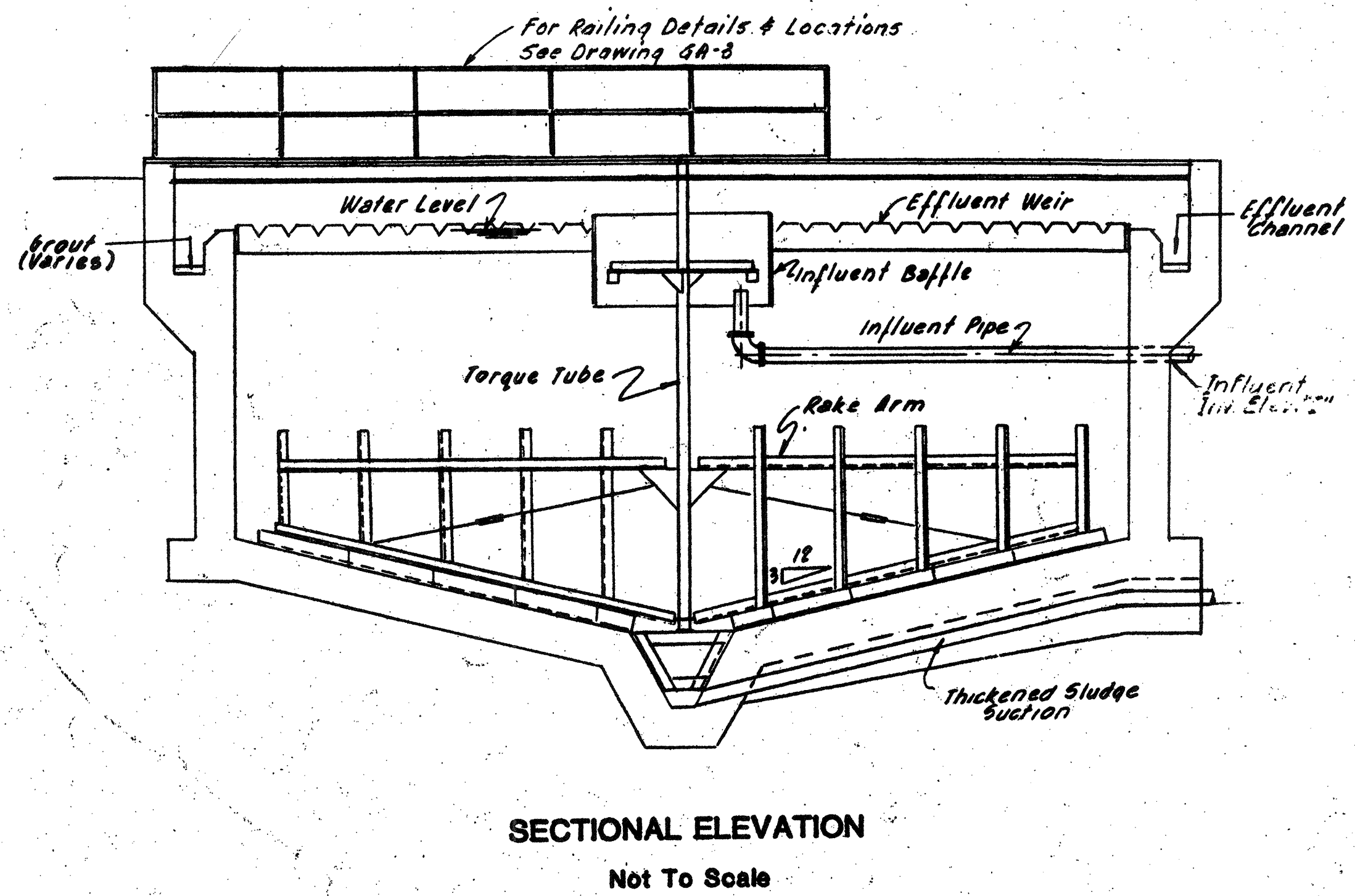
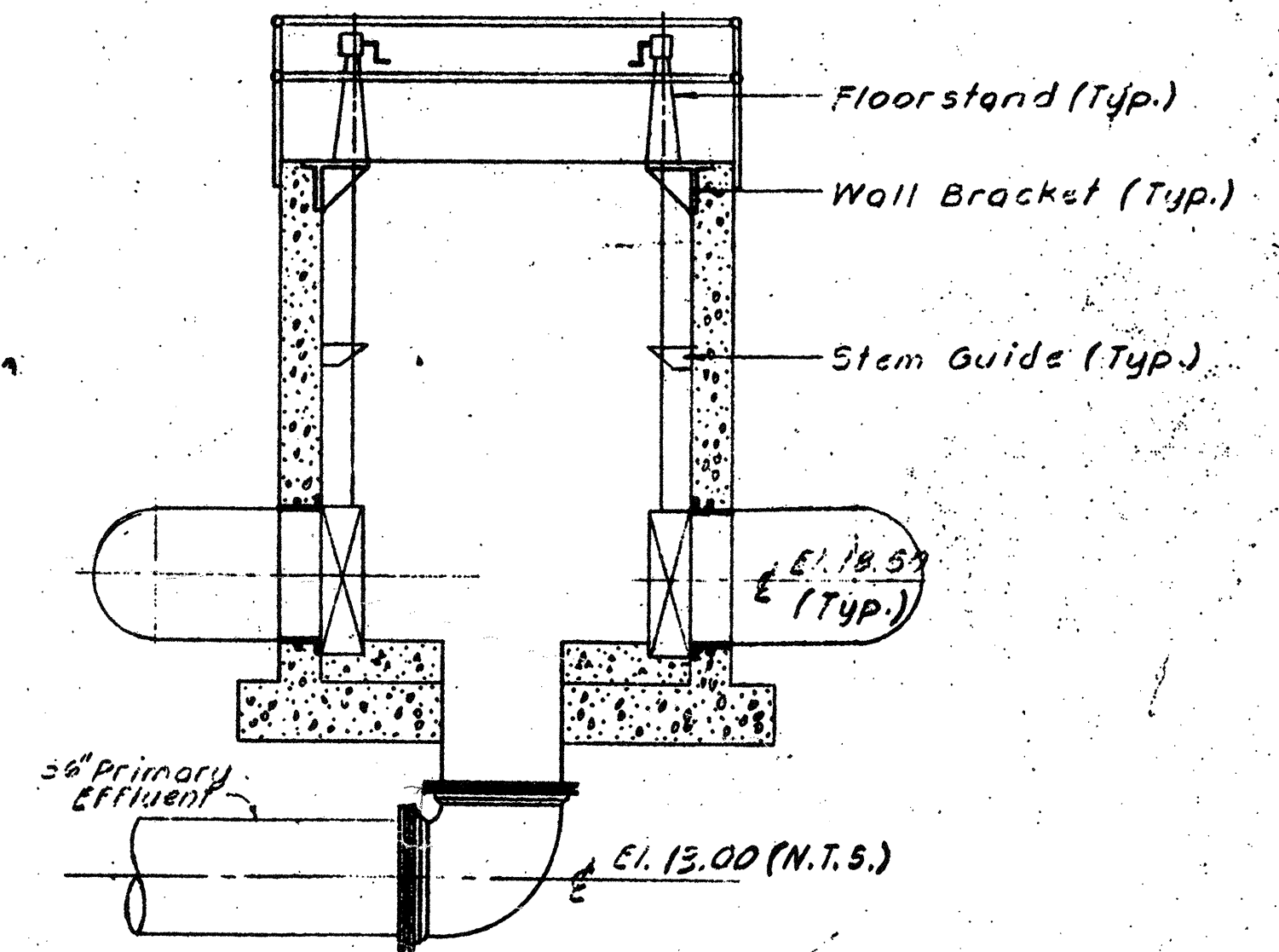
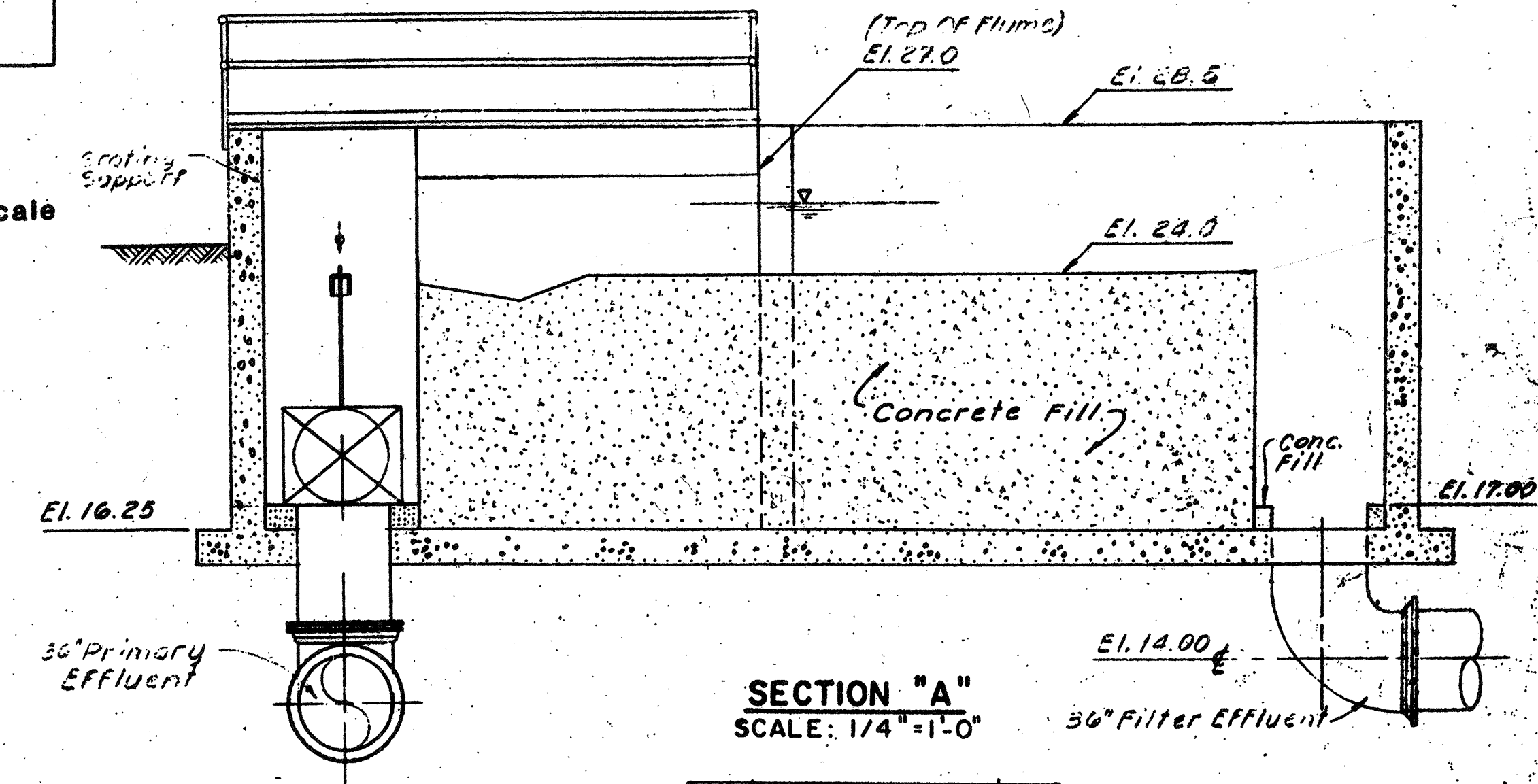
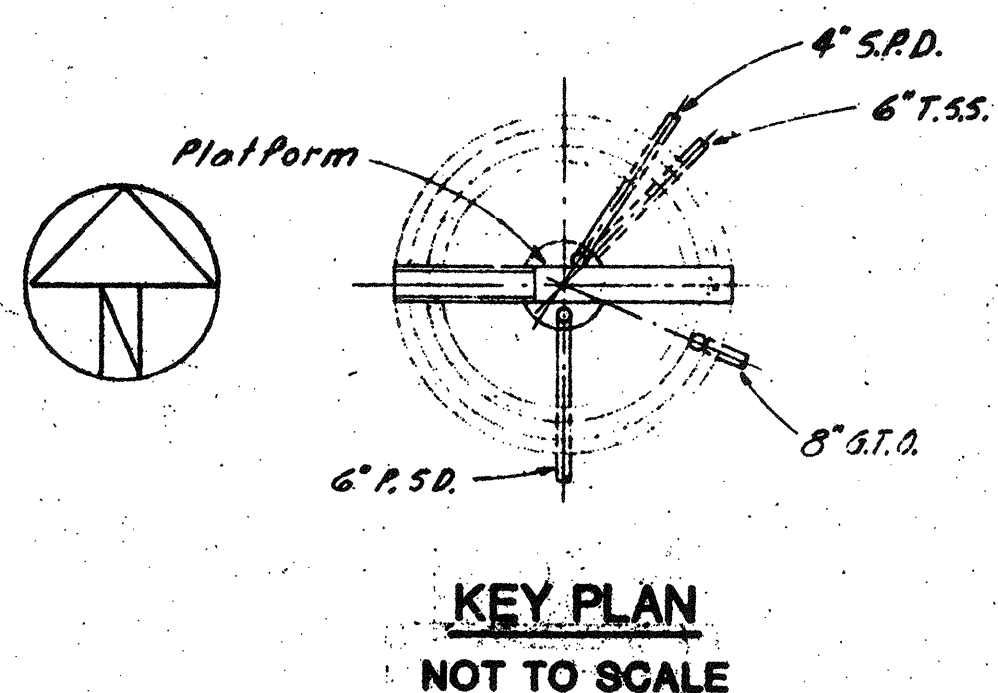
DRAWING NO. **4M-1**
JOB NO. 85-163
CONTRACT NO. 3

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
PRIMARY CLARIFIERS
PLANS, SECTION AND DETAILS



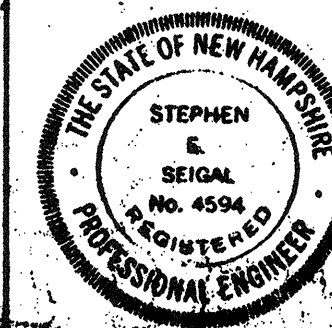
THICKENER DIMENSIONS	
Thickener Diameter	30'-0"
Sidewater Depth	12'-0"
Channel Width	1'-0"
Influent Pipe Diameter	*
Sludge Pipe Diameter	6"
Overflow Pipe Dia.	8"
* Influent Pipe Dia. PSD=6", SPD=4"	

ELEVATIONS		
"A"	Top of Concrete	35.00'
"B"	Top of Concrete	32.75'
"C"	Top of Grout	21.12'
"D"	Water Level	33.12'
"E"	Channel High Point	29.84'
"F"	Channel Low Point	29.67'
"G"	Channel Concrete	29.80'
"H"	Sludge Pipe Invert	14.88'
"I"	Influent Pipe Invert	27.0'
"J"	Overflow Pipe Inv	27.67'



REVISIONS	DATE
Revised to Record Plan.	9/93
Drawing Revised	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY



ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

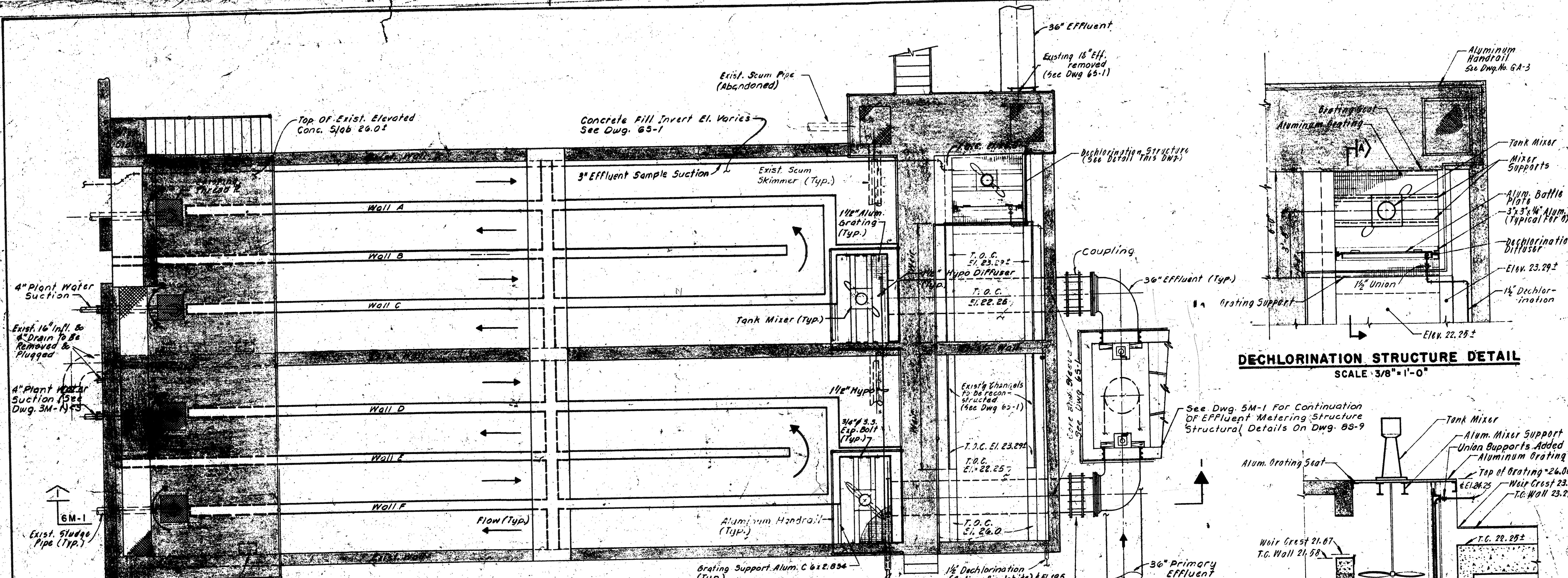
APPROVED
Stephen E. Howard

DRAWING NO.
5M-1
JOB NO.
35-103

WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N.H.

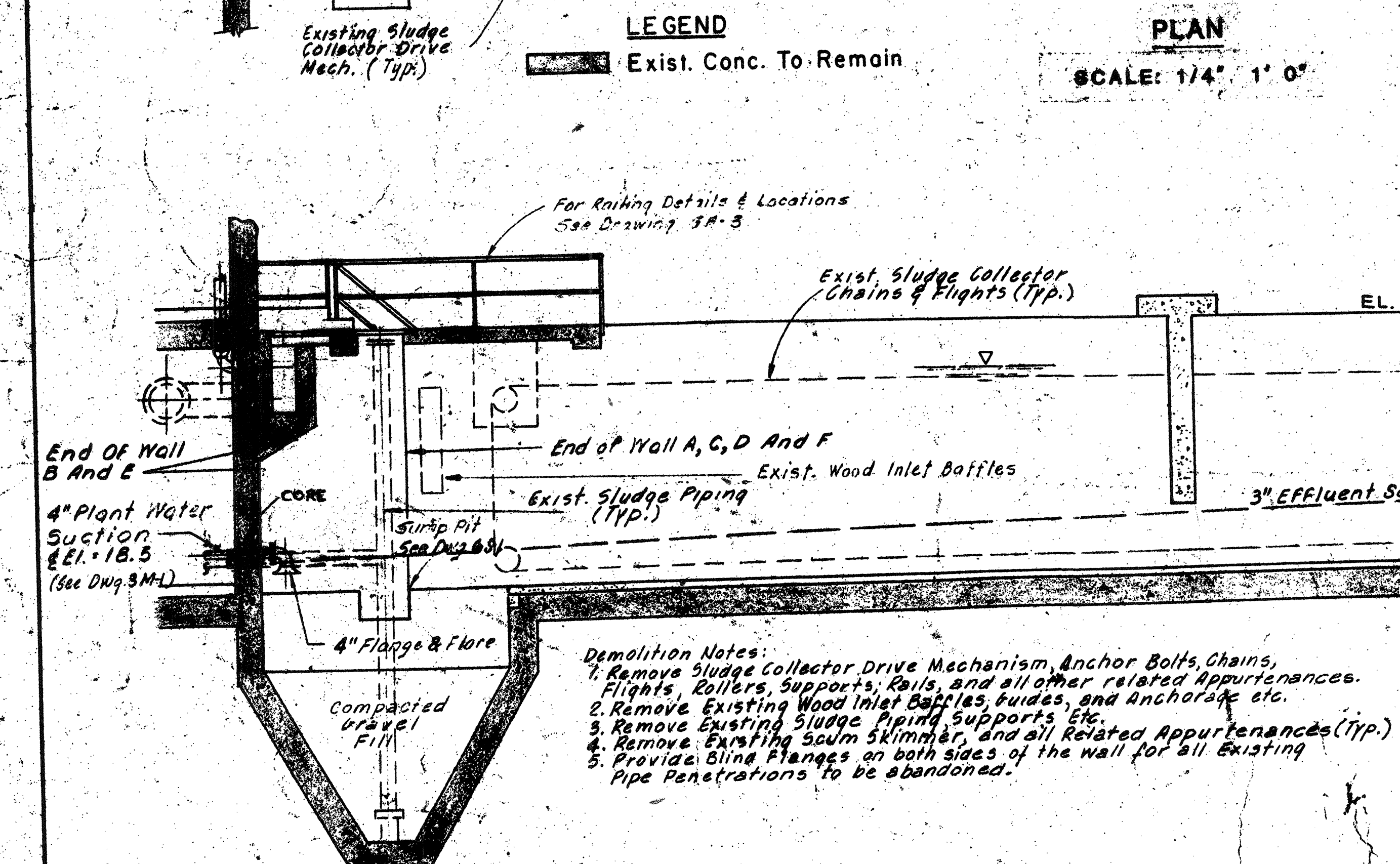
GRAVITY THICKENERS W/ EFFLUENT METER
PLAN, SECTIONS & DETAILS



DECHLORINATION STRUCTURE DETAIL
SCALE 3/8" = 1'-0"

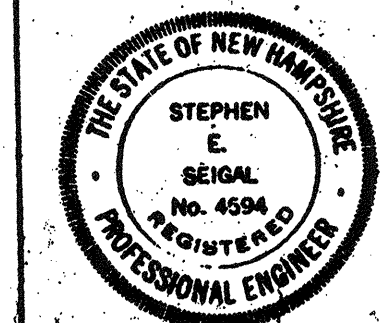
SECTION A
SCALE 3/8" = 1'-0"

BAFFLE PLATE DETAIL
SCALE 3/8" = 1'-0"



SECTION 6M-1
SCALE 1/4" = 1'-0"

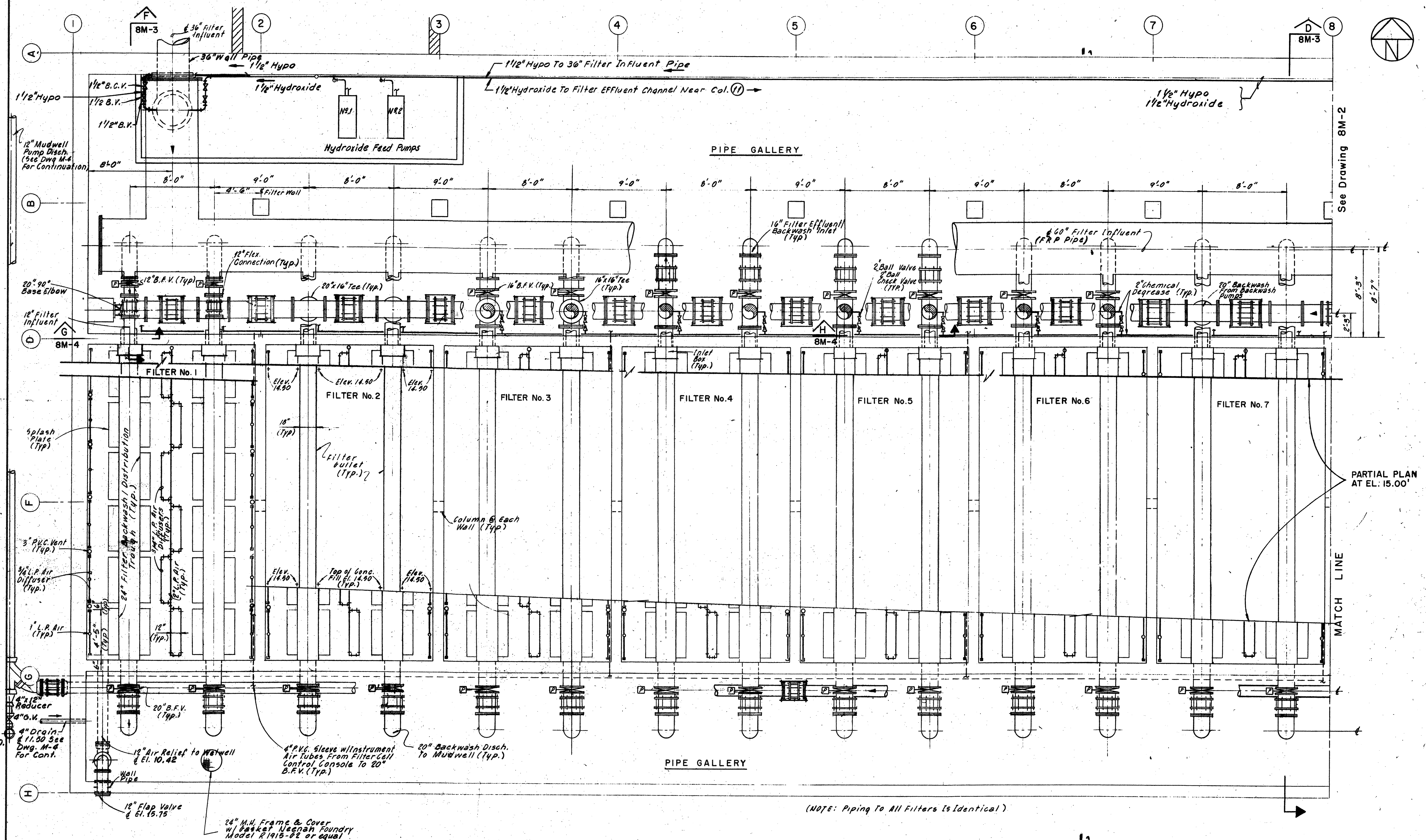
WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"				DRAWING NO. 6M-1	
REPRODUCTIONS MAY BE REDUCED SIZE				JOB NO. 85-163	
APPROVED <i>Stephen E. Seigel</i>				CONTRACT NO. 3	
DESIGNED/DRAWN	CHECKED	SCALE	DATE	SHEET 59 OF 106 SHEETS	
T.E.P. D.T.C.	B.E.S.	AS NOTED	SEPT. 1985		

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
CHLORINE CONTACT TANKS
PLAN AND SECTION

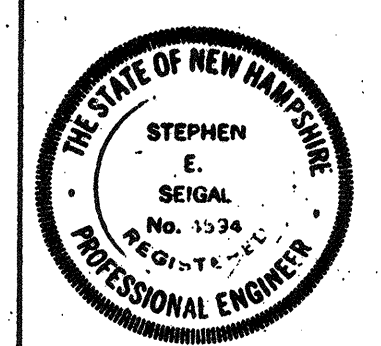
DESCRIPTION	DATE
Revised To Record Plans	9/93
Drawing Revised	9/89



PLAN - FILTERS AT EL. 21.0
SCALE: 1/4" = 1'-0"

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Added	9/89

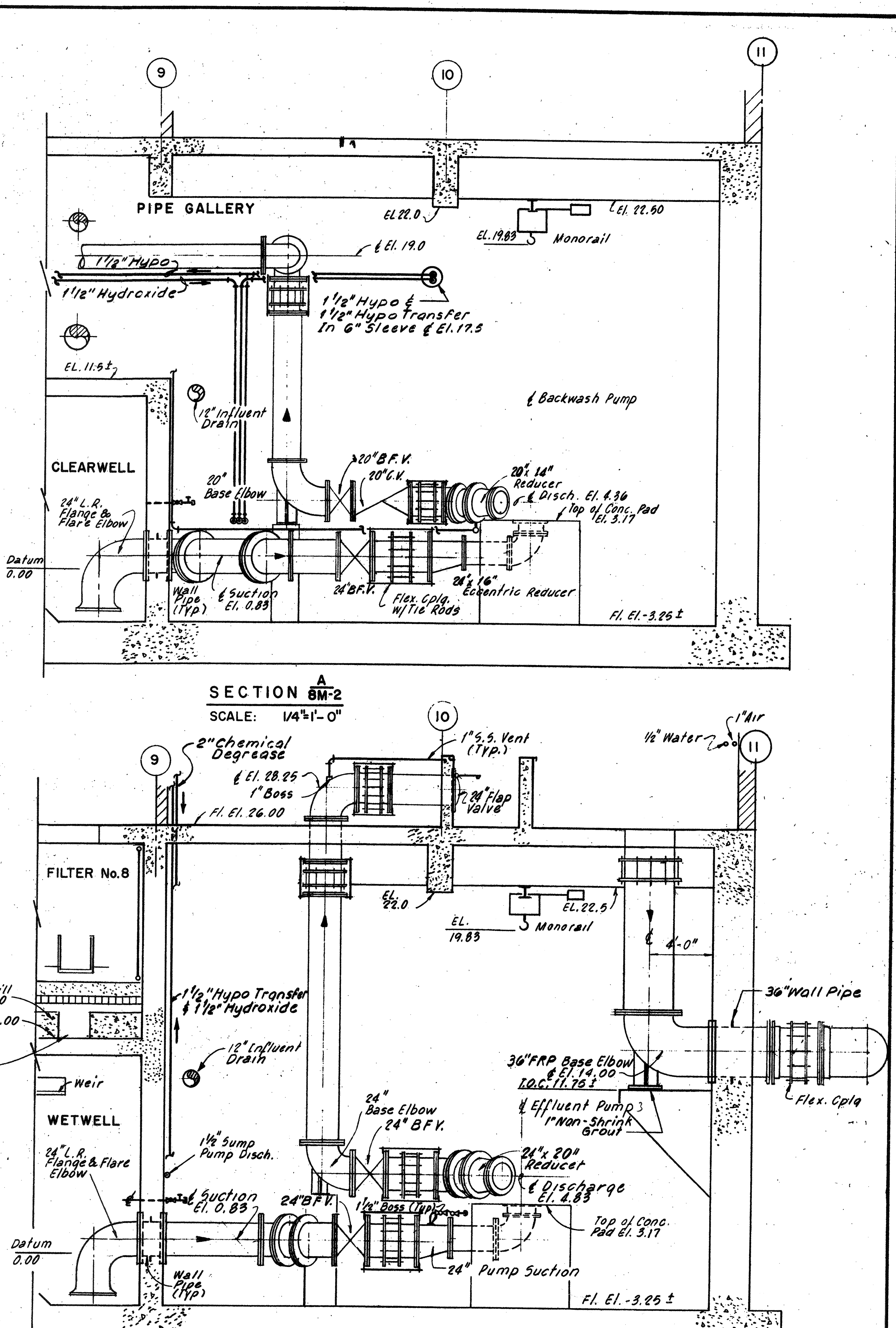
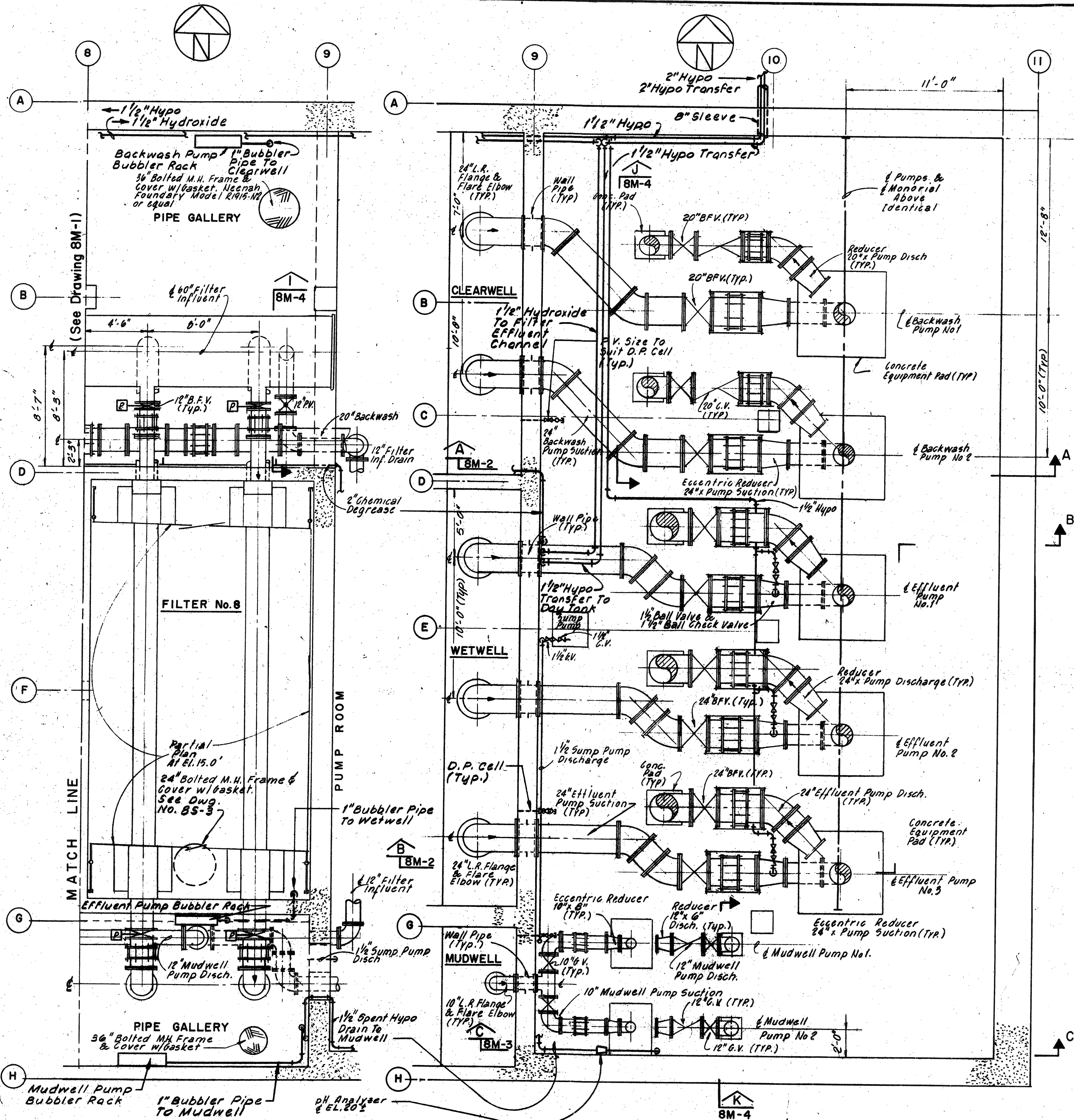
WHITMAN & HOWARD, INC.
46 WILLIAM STREET, WELLESLEY, MASS.



DESIGNED/DRAWN R.B.S. JCS				CHECKED RBS		SCALE AS NOTED		DATE SEPT., 1939	
APPROVED									

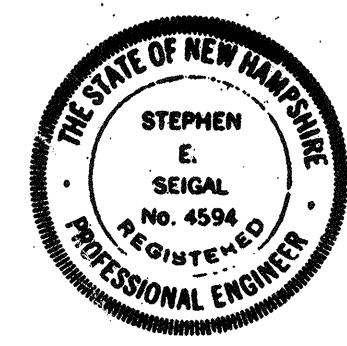
DRAWING NO. 8M-1
JOB NO. 85-163
CONTRACT NO. 3
SHEET 60 OF 106 SHEETS

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
FILTER BUILDING
PLAN AND SECTIONS



NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Added	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

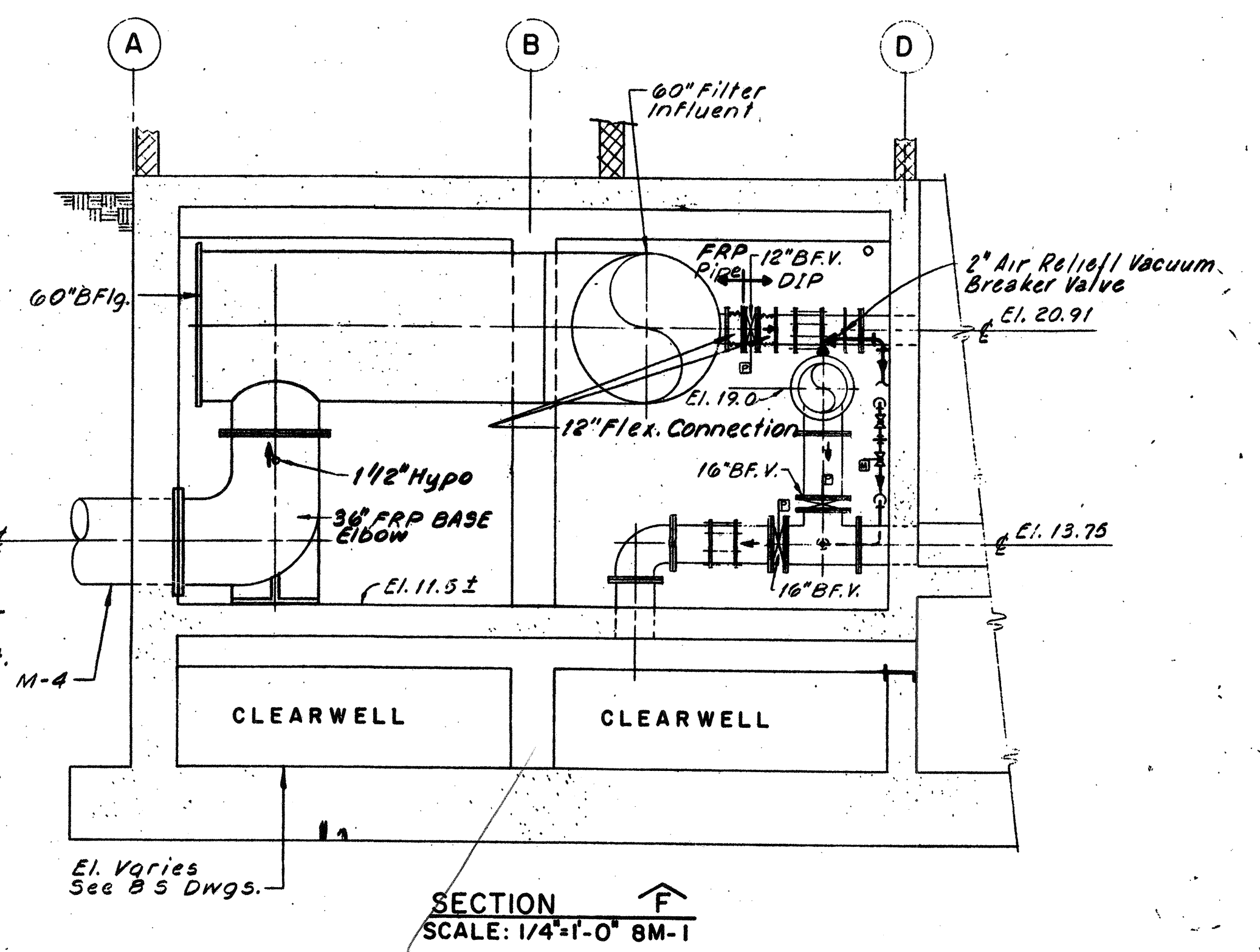
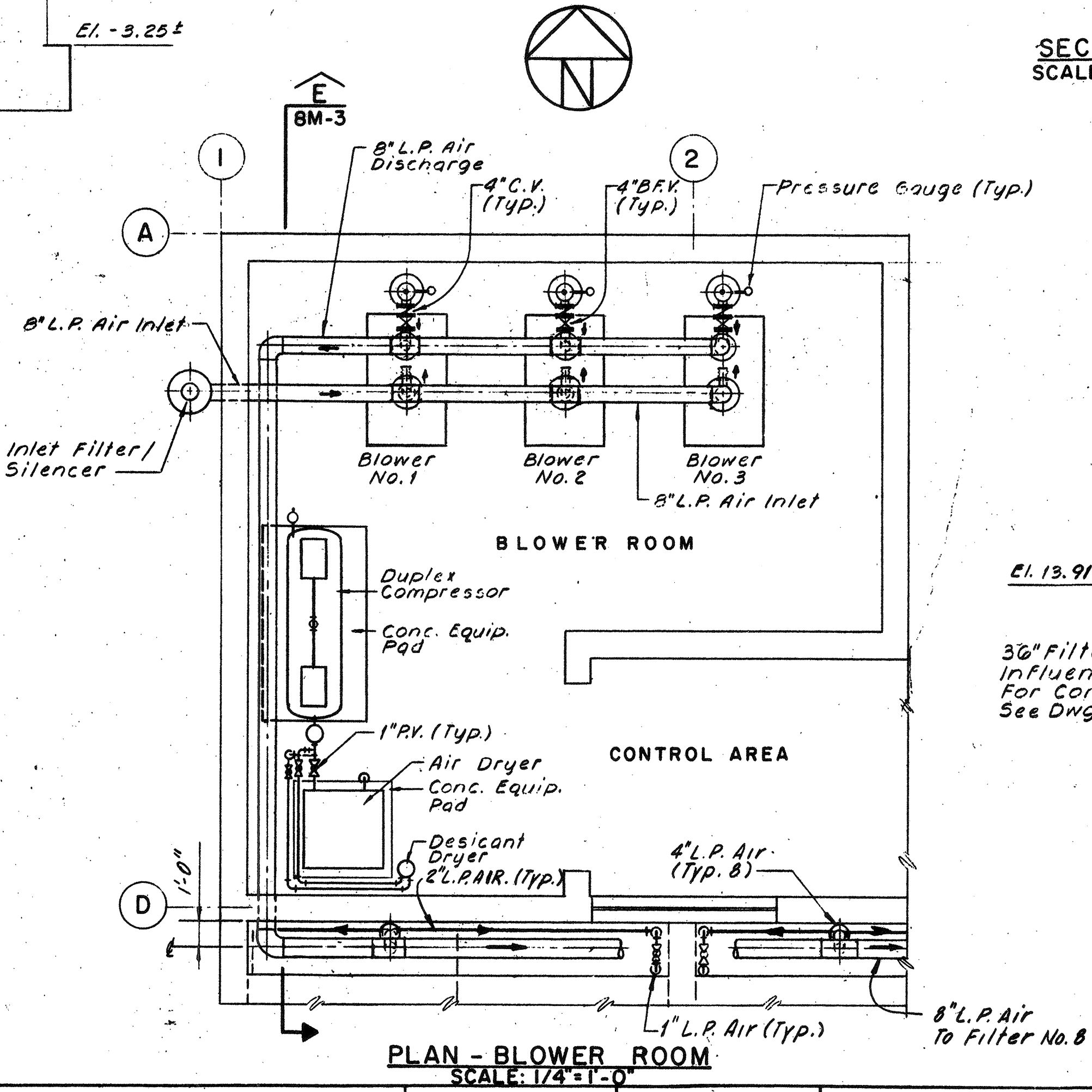
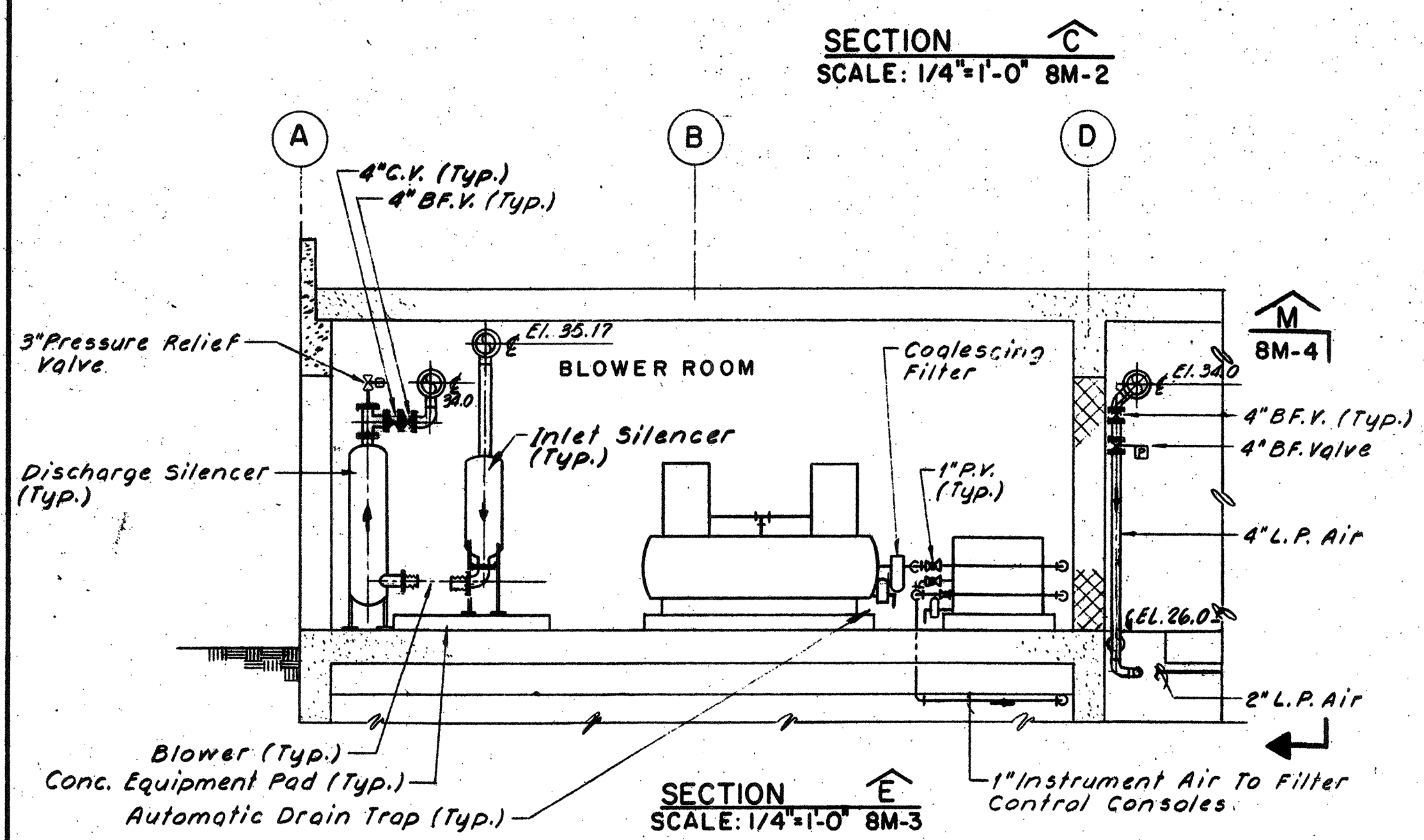
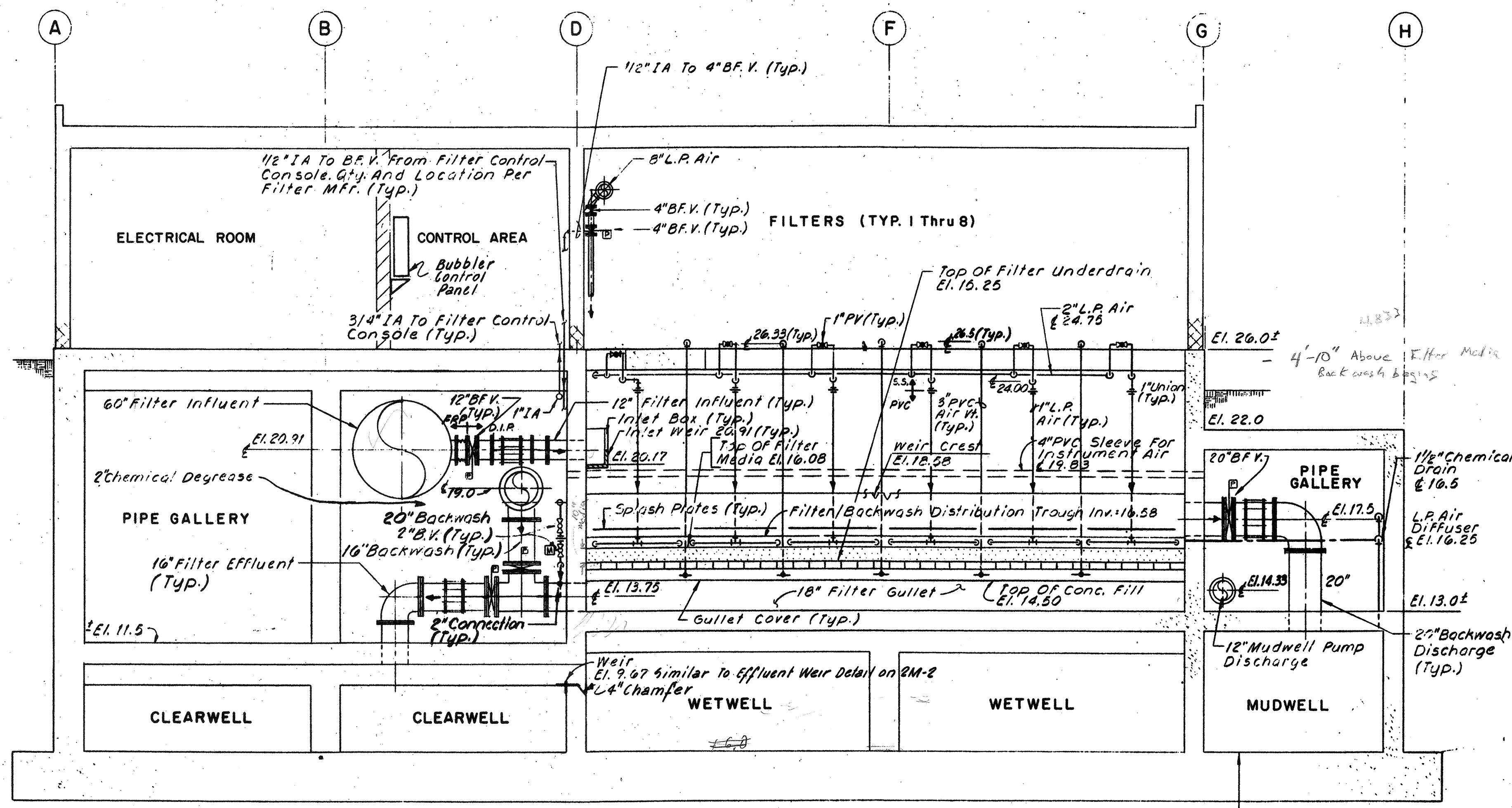
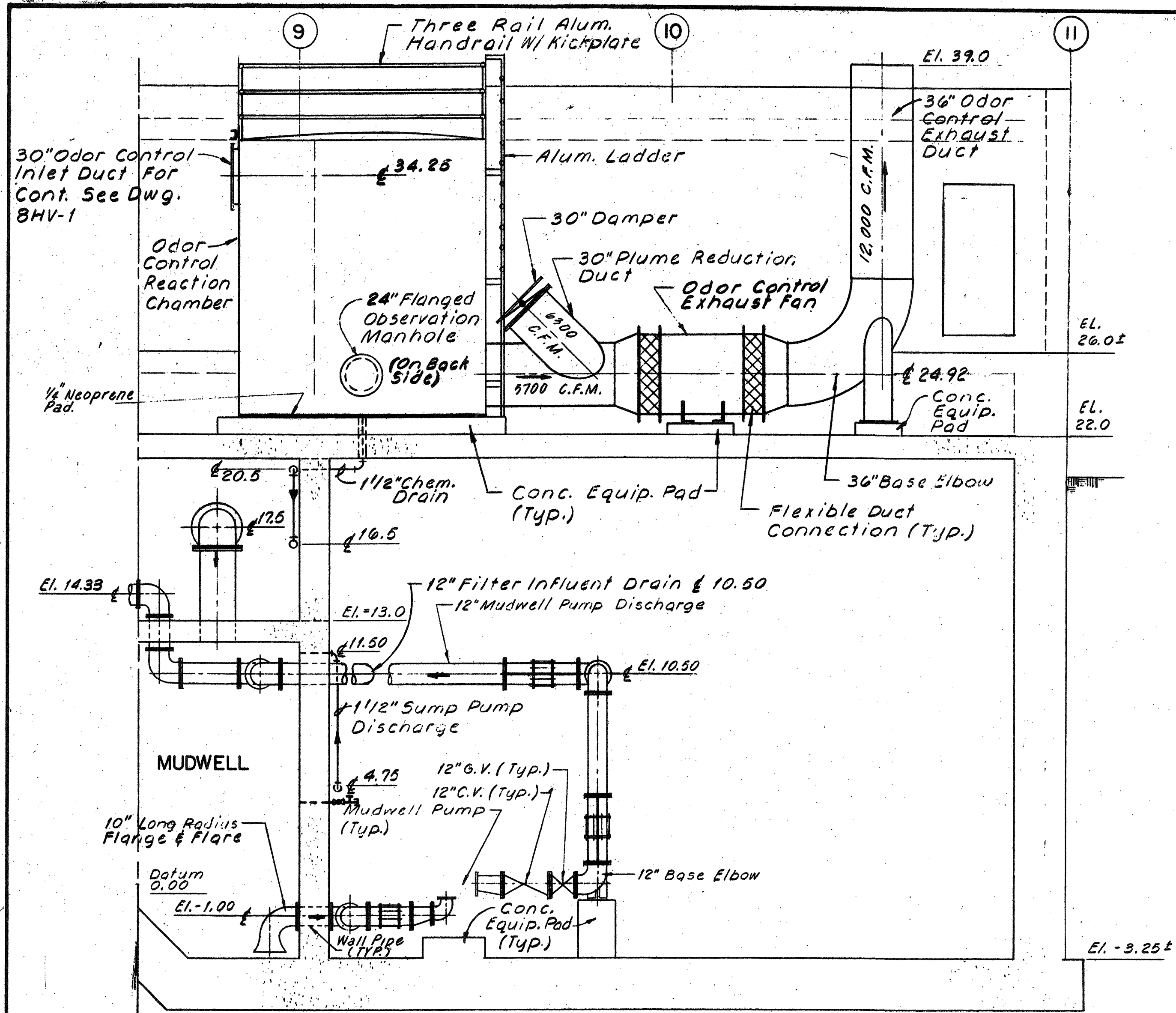
DRAWING NO. **8M-2**
JOB NO. 85-163
CONTRACT NO. 3

WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N. H.

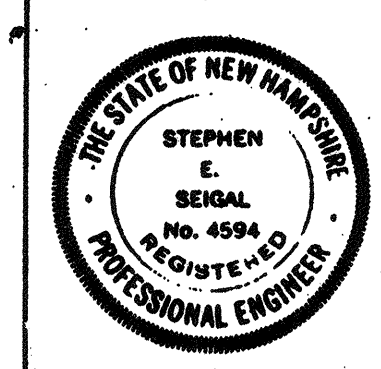
FILTER BUILDING
PLAN AND SECTIONS

DESIGNED/DRAWN	CHECKED	SCALE	DATE
RBS	JCS	AS NOTED	SEPT., 1989



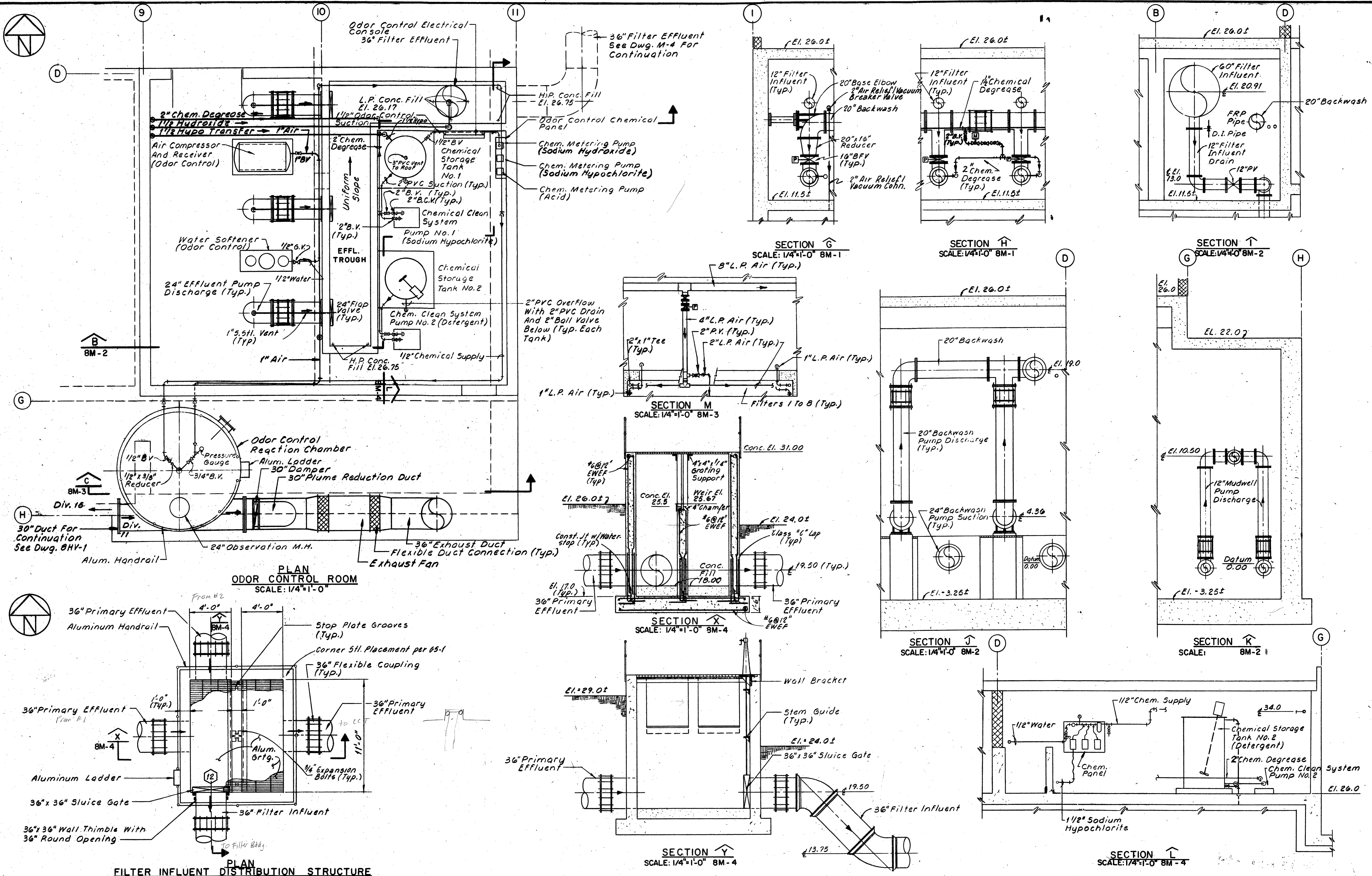
NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Added	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



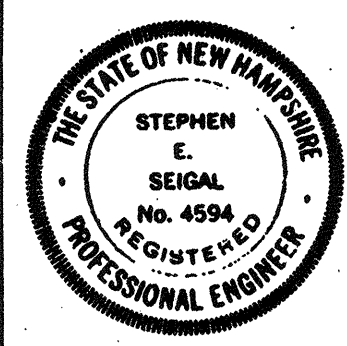
ORIGINAL FULL SIZE DRAWING = 4"			
REPRODUCTIONS MAY BE REDUCED SIZE			
DESIGNED	DRAWN	CHECKED	SCALE
RBS	HTO	RBS	AS NOTED
DATE		DATE	
SEPT., 1989		SEPT., 1989	

DRAWING NO.	8M-3
JOB NO.	85-163
CONTRACT NO.	3
WASTEWATER TREATMENT FACILITY	
PORTSMOUTH, N.H.	
FILTER BUILDING SECTIONS & DETAILS	



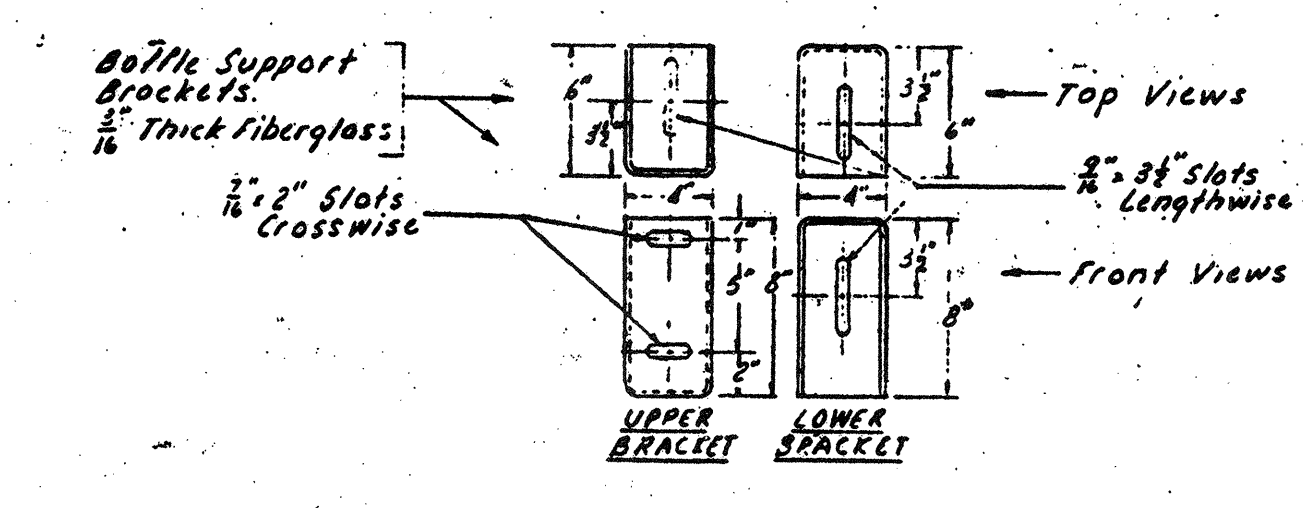
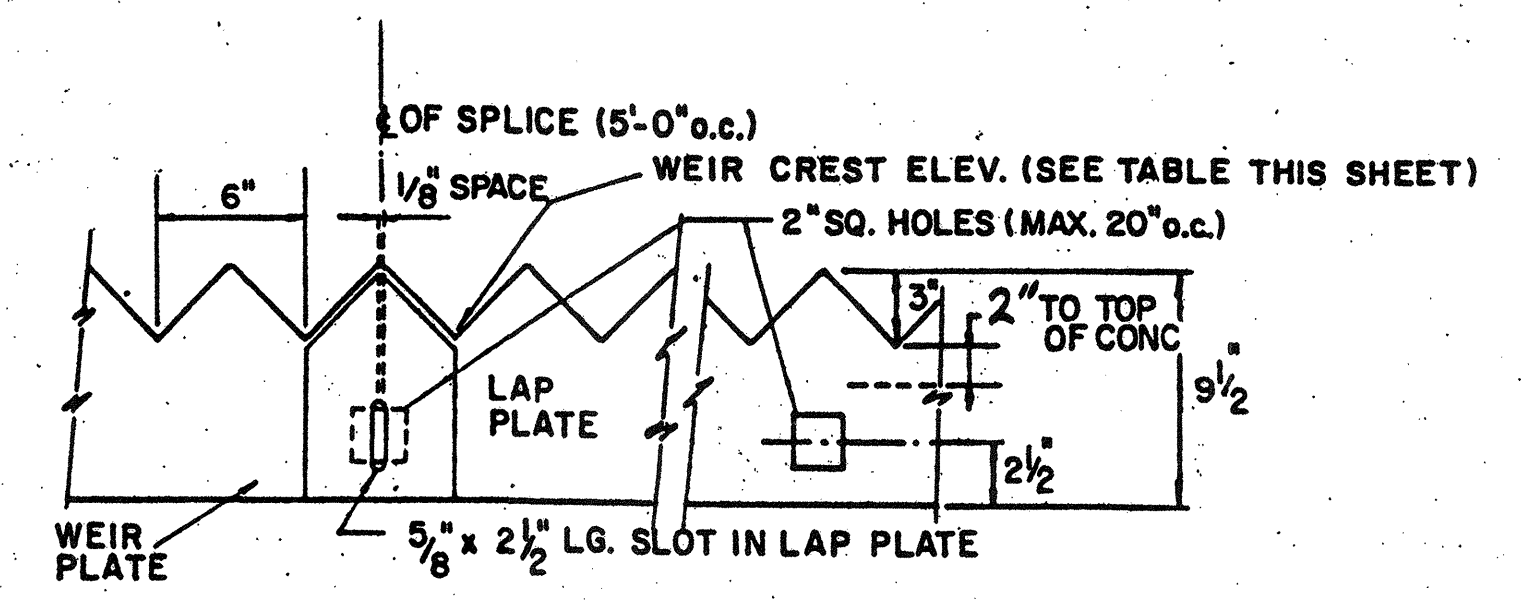
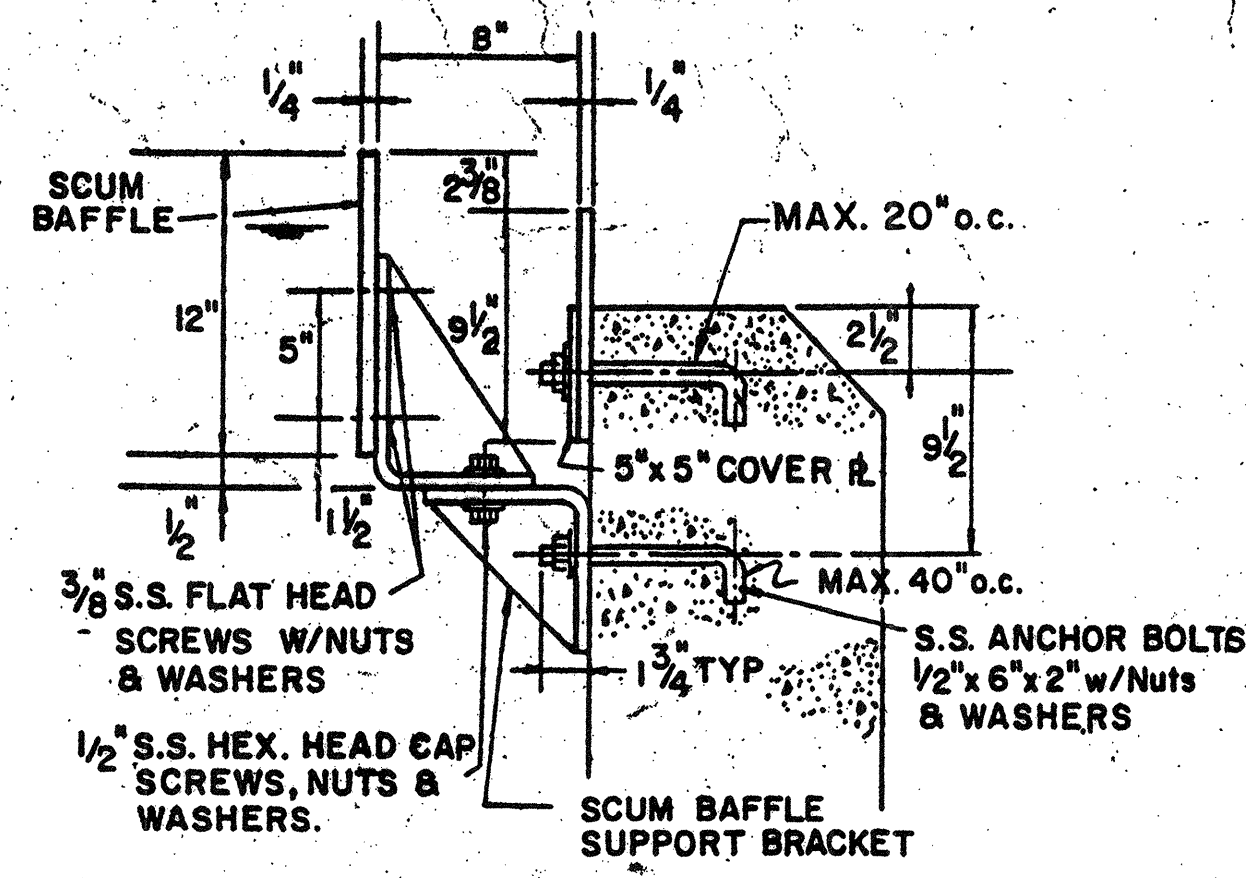
NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Added	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"			
REPRODUCTIONS MAY BE REDUCED SIZE			
APPROVED			
DESIGNED	DRAWN	CHECKED	SCALE
RBS	HTO	RBS	AS NOTED
DATE		DATE	
SEPT., 1989		SEPT., 1989	
SHEET 63 OF 106 SHEETS		DRAWING NO. 8M-4	
		JOB NO. 85-163	
		CONTRACT NO. 3	

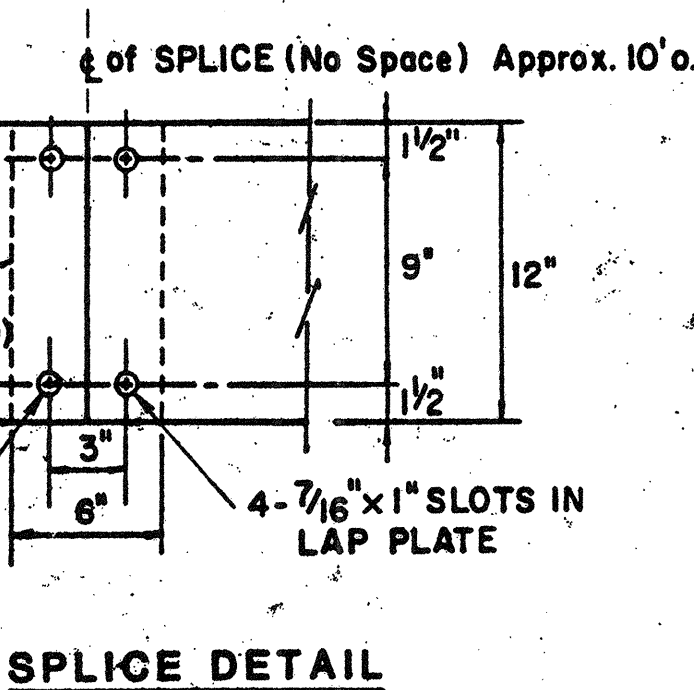
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
FILTER BUILDING
SECTIONS & DETAILS



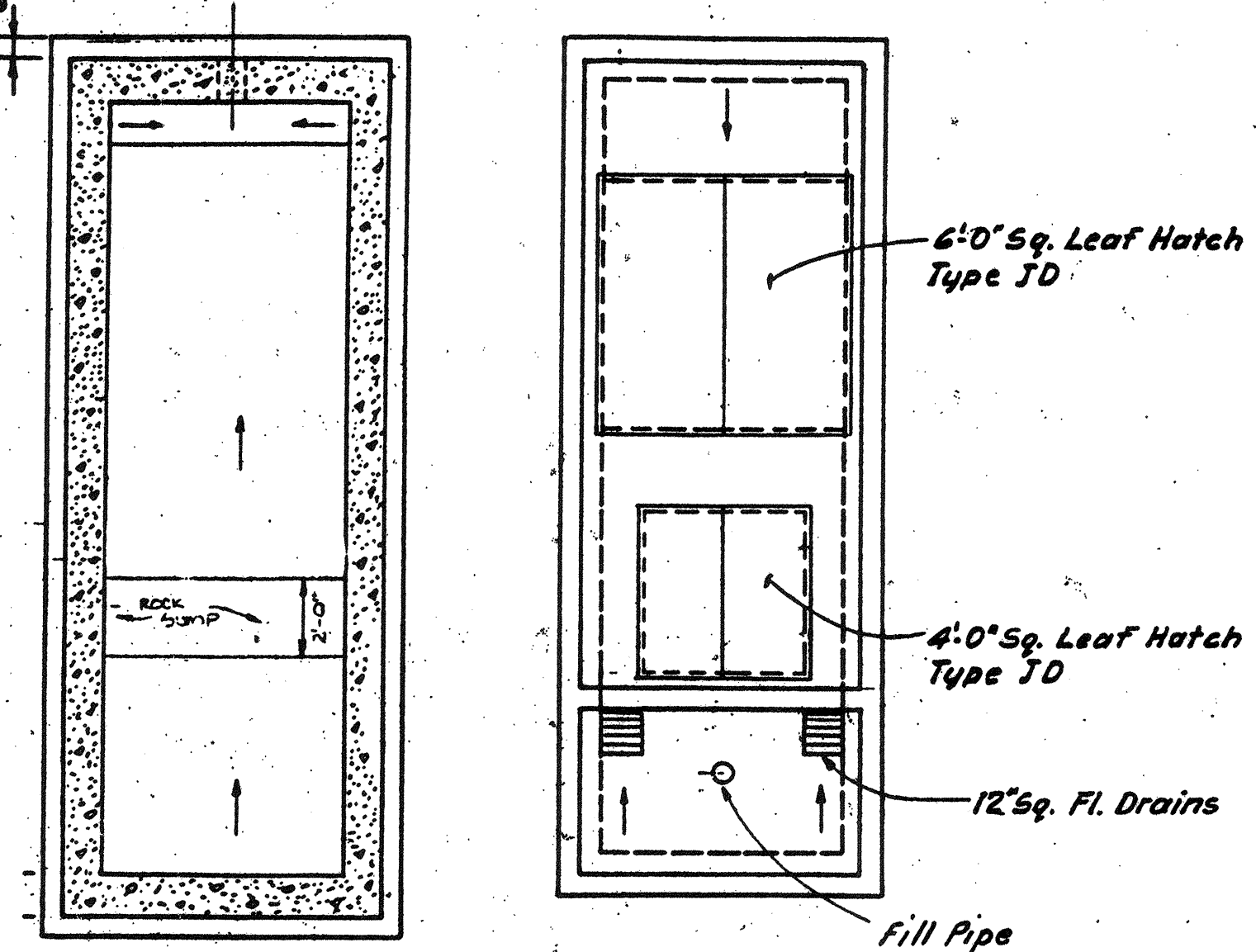
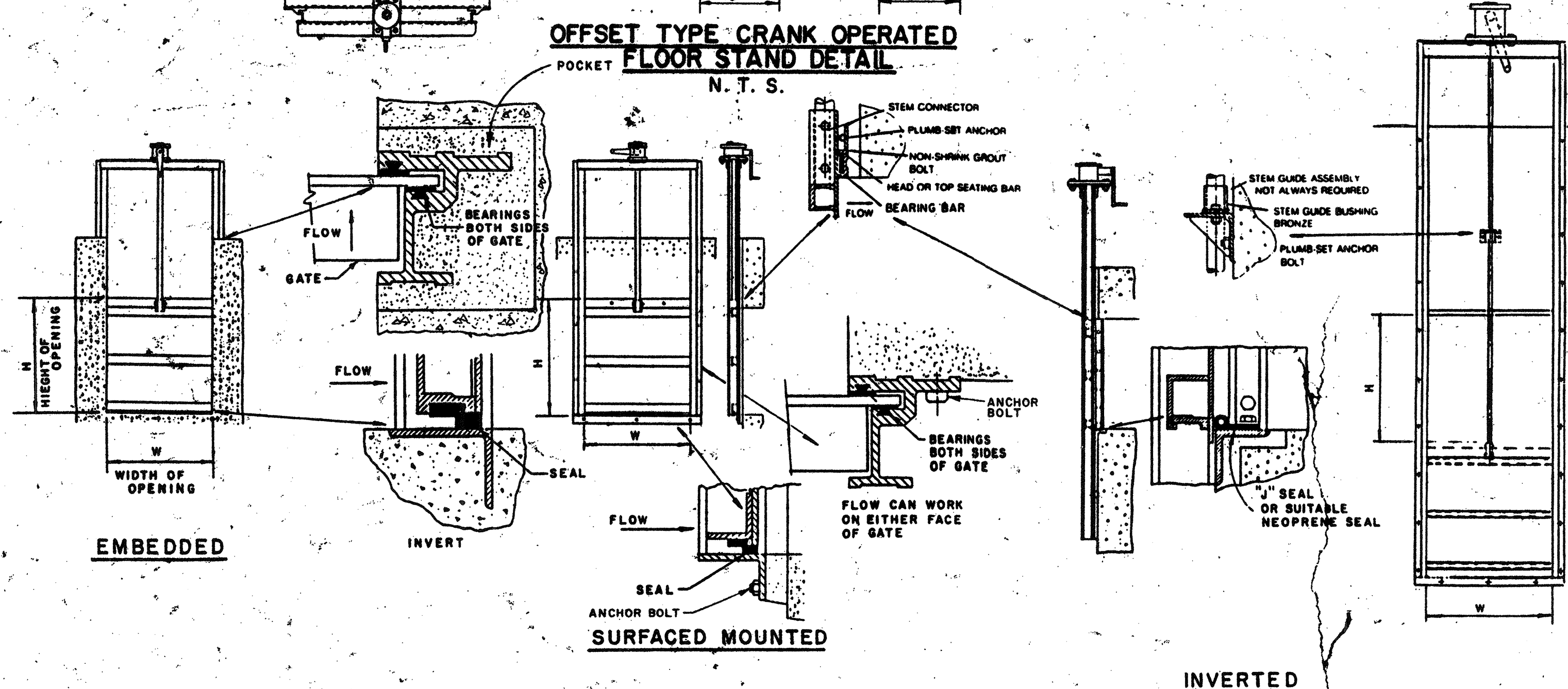
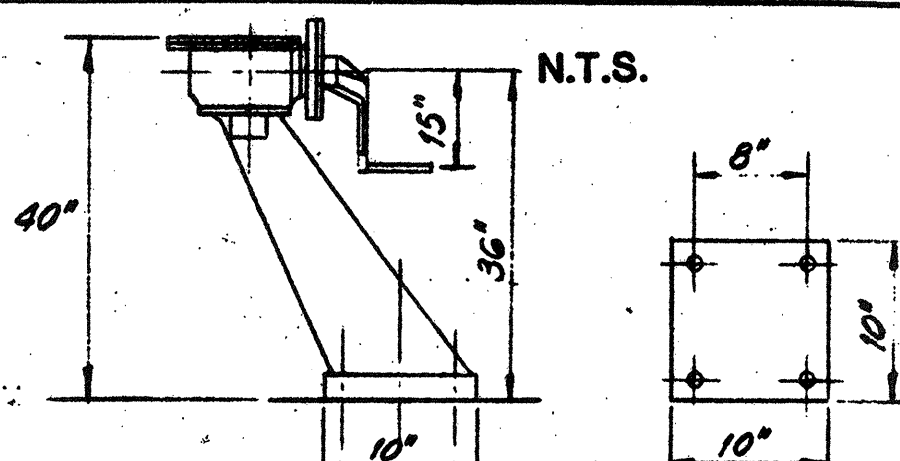
WEIR CREST ELEVATIONS

LOCATION	ELEVATION
Primary Clarifier N#1 & N#2	27.50
Gravity Thickener	30.00

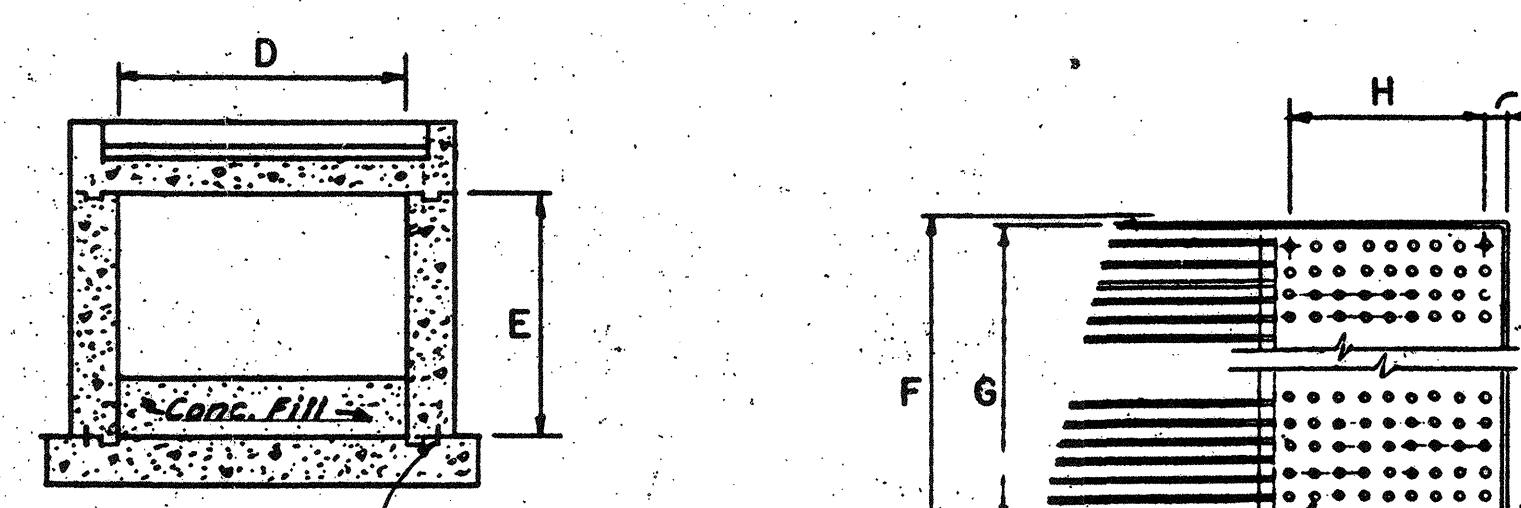
Note: All Weirs & Baffles to be Fiberglass Construction.



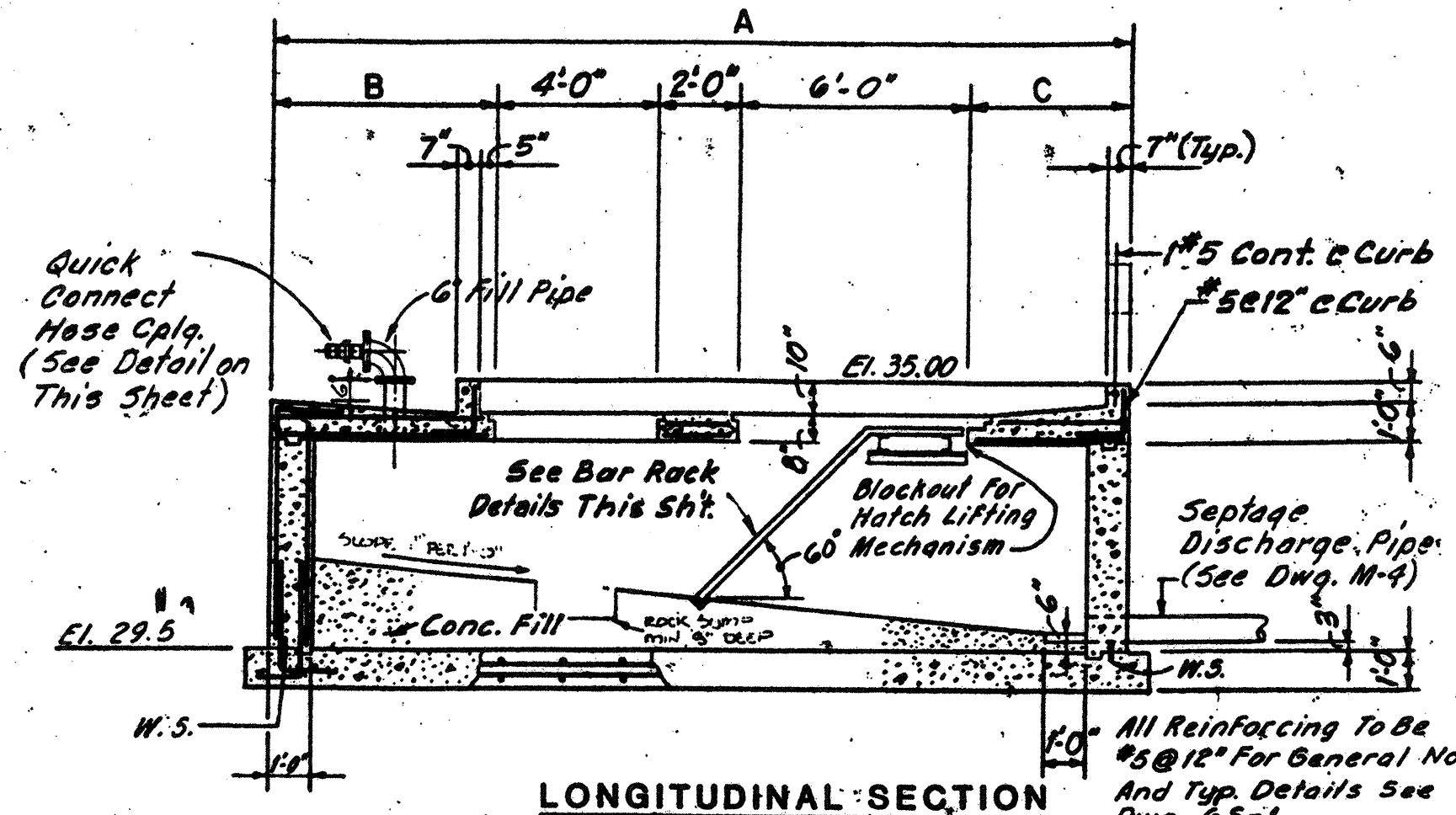
TYPICAL WEIR & BAFFLE PLATE DETAILS FOR CIRCULAR TANKS



INSIDE PLAN OUTSIDE PLAN

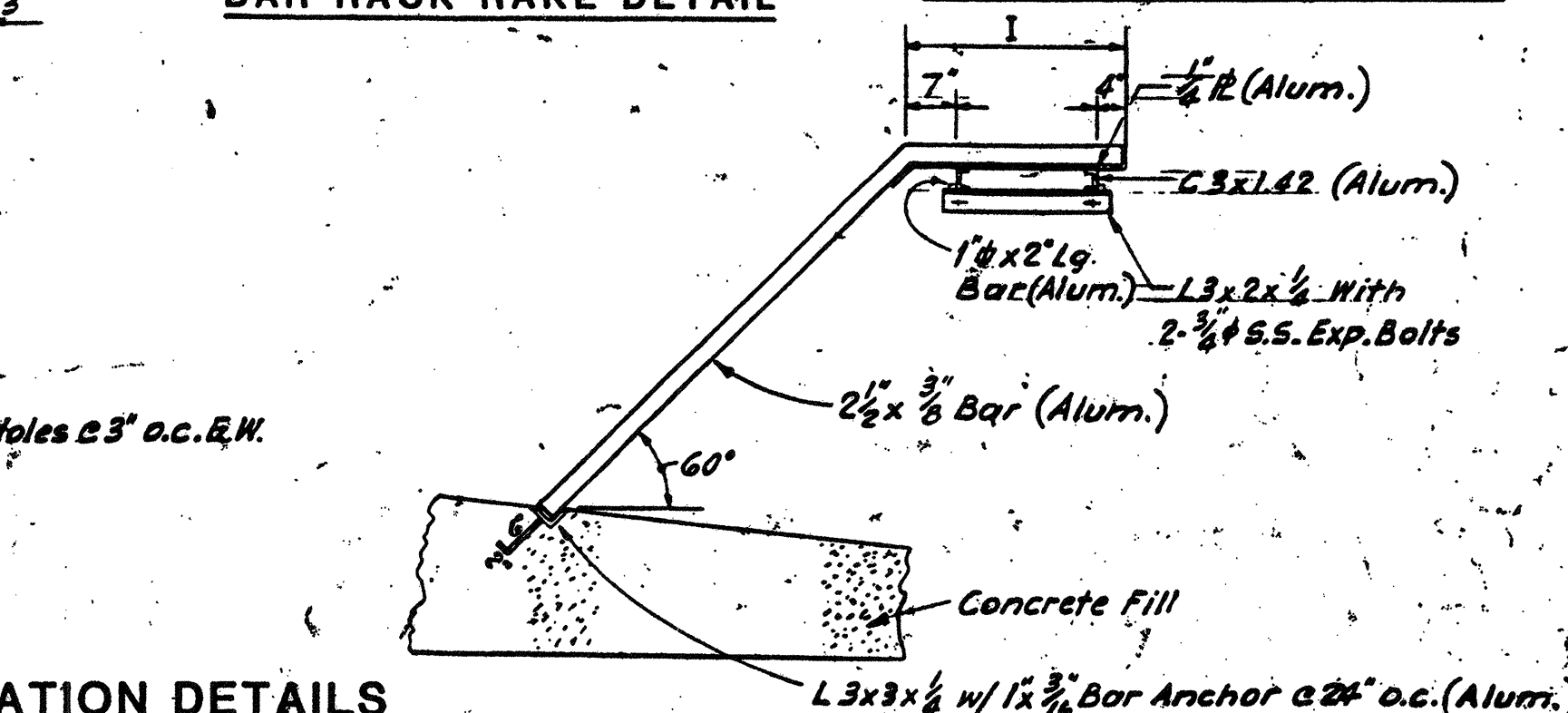


CROSS SECTION BAR RACK DETAIL



DIMENSIONS

Letter	Dimension
A	20'-6"
B	5'-6"
C	3'-0"
D	6'-0"
E	4'-0"
F	5'-10"
G	23 Spcs @ 3" = 5'-9"
H	2'-0"
I	2'-6"

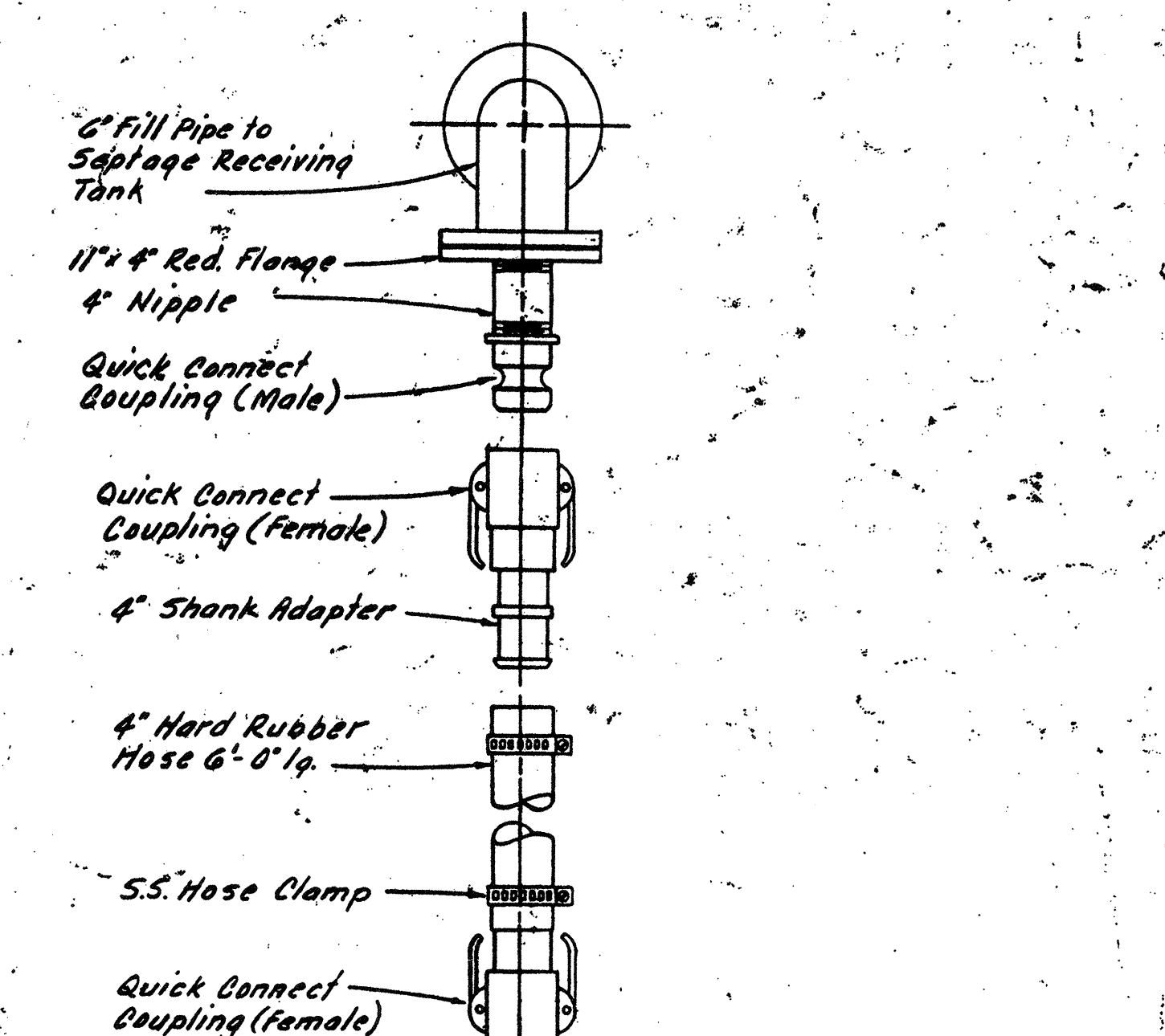


BAR RACK RAKE DETAIL

GATE SCHEDULE

GATE NO.	LOCATION	GATE SIZE W	GATE SIZE H	REMARKS	TYPE
1	Grit Chamber	"	4'-0"	Surface Mounted	Slide Gate
2	"	"	"	"	"
3	"	"	"	Embedded	"
4	"	"	"	Surface Mounted	"
5	"	"	"	Embedded	"
6	"	"	"	"	"
7	Distr. Box	2'-6"	2'-6"	Surface Mounted	Slide Gate
8	"	"	"	Mounted	"
9	"	"	"	Offset Crank	"
10	"	No gate	No gate	2'-6" Wall Thimble	Plate Cover
11	"	No gate	No gate	2'-6" Sq. Wall Thimble	Plate Cover
12	Filter Inlet Str.	3'-0"	3'-0"	Wall Thimble, Vert Crank	Flush Inv. Slide Gate
13	Affluent Meter	"	"	"	"
14	Affluent Meter	"	"	"	"

GATE SCHEDULE



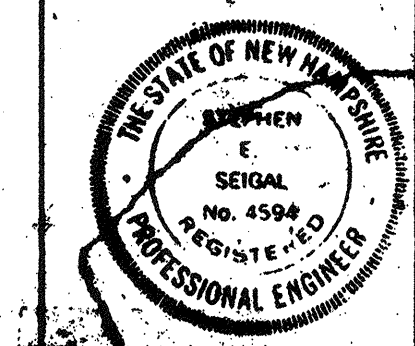
QUICK-CONNECT HOSE DETAILS FOR TRUCK DELIVERY CONNECTION

REVISIONS

NO.	DESCRIPTION	DATE
3	Revised To Record Plan	9/93
2	Drawing Revised	9/89
1	REVISED AS PER STATE COMMENTS	2/88

WHITMAN & HOWARD, INC.

45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"

REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: [Signature]

DESIGNED BY: [Signature]

CHECKED BY: [Signature]

SCALE: AS NOTED

DATE: SEPT. 1985

DRAWING NO. GM-1

JOB NO. 85-163

CONTRACT NO. 3

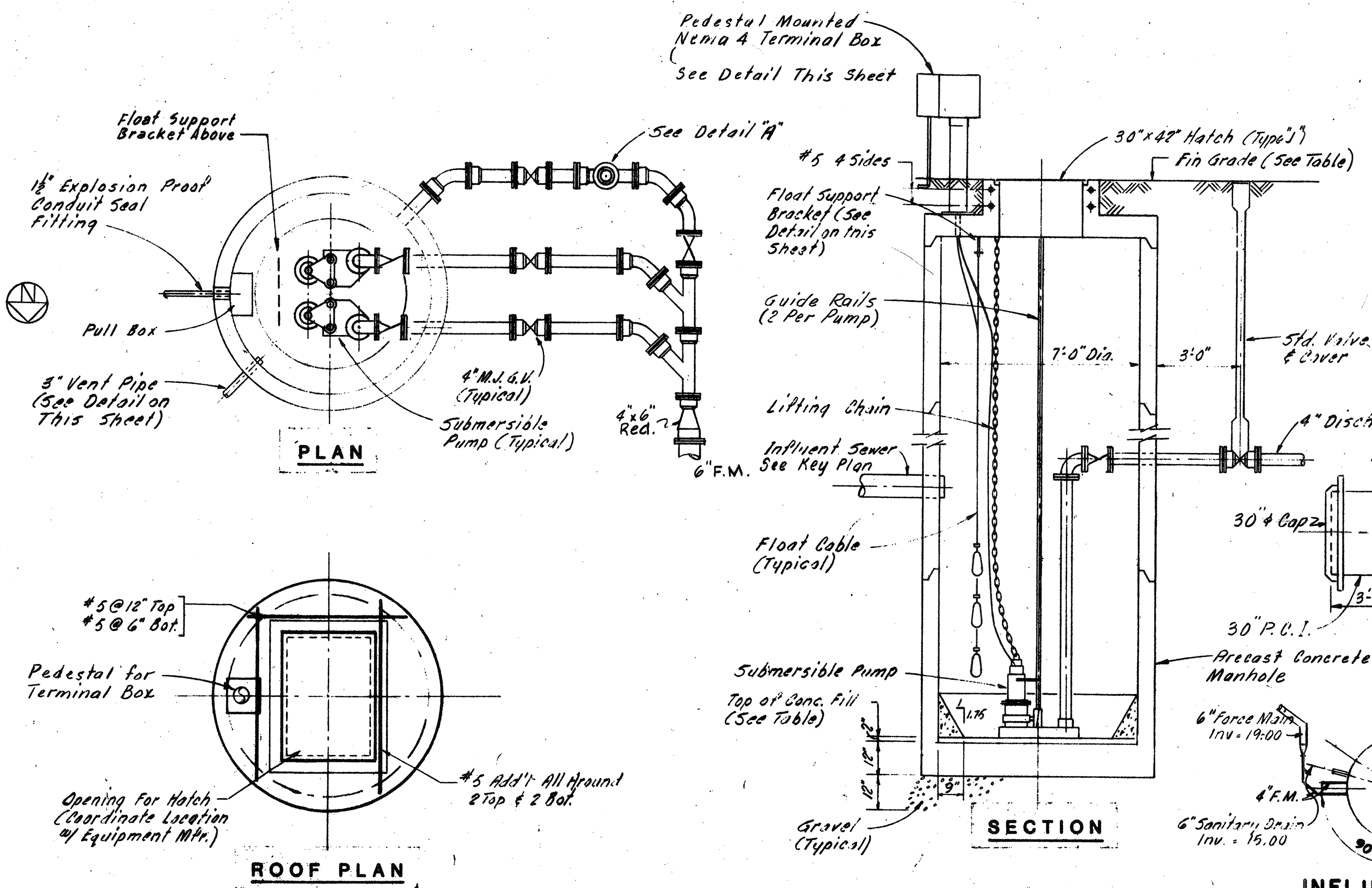
SHEET 64 OF 106 SHEETS

WASTEWATER TREATMENT FACILITY

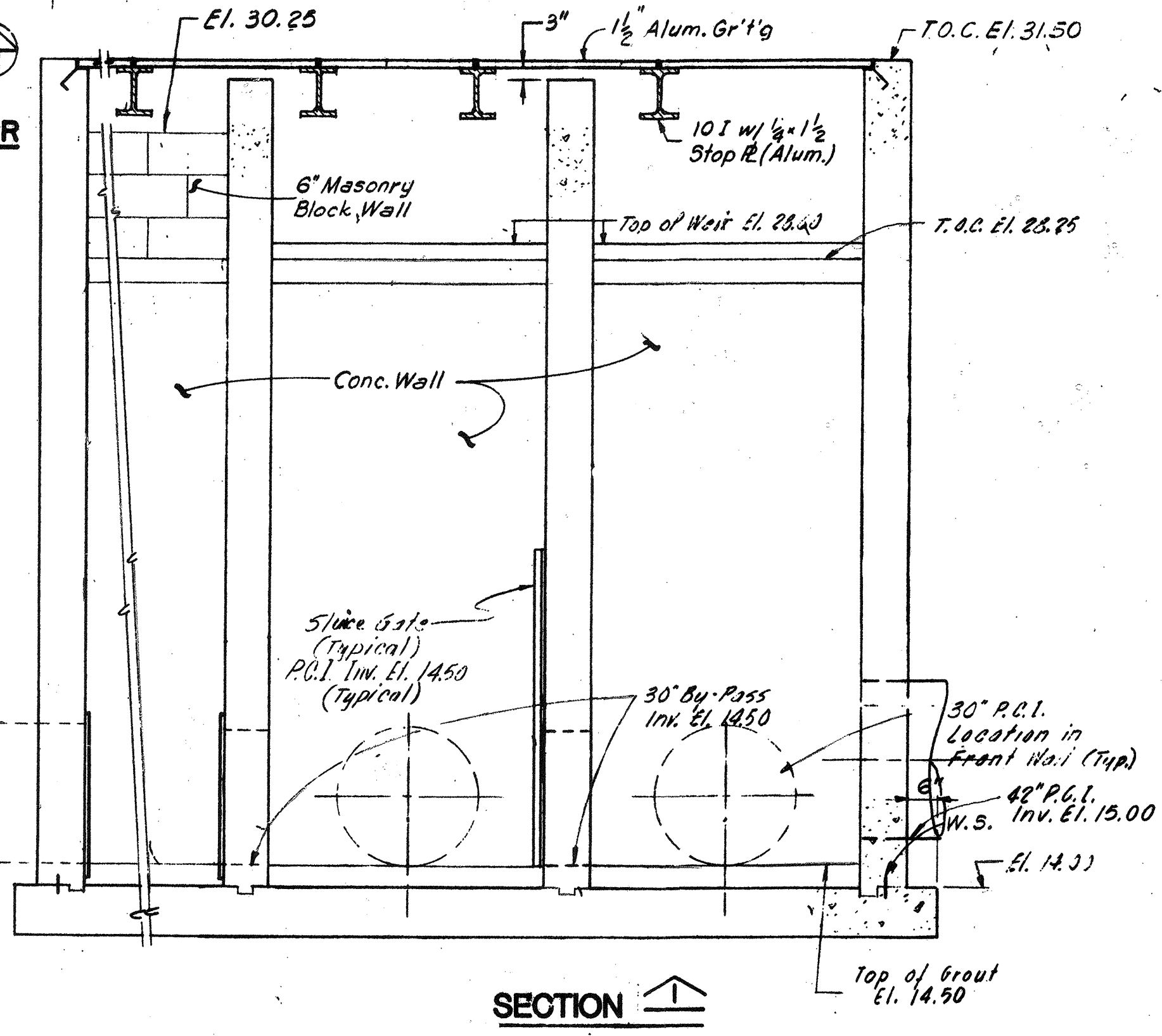
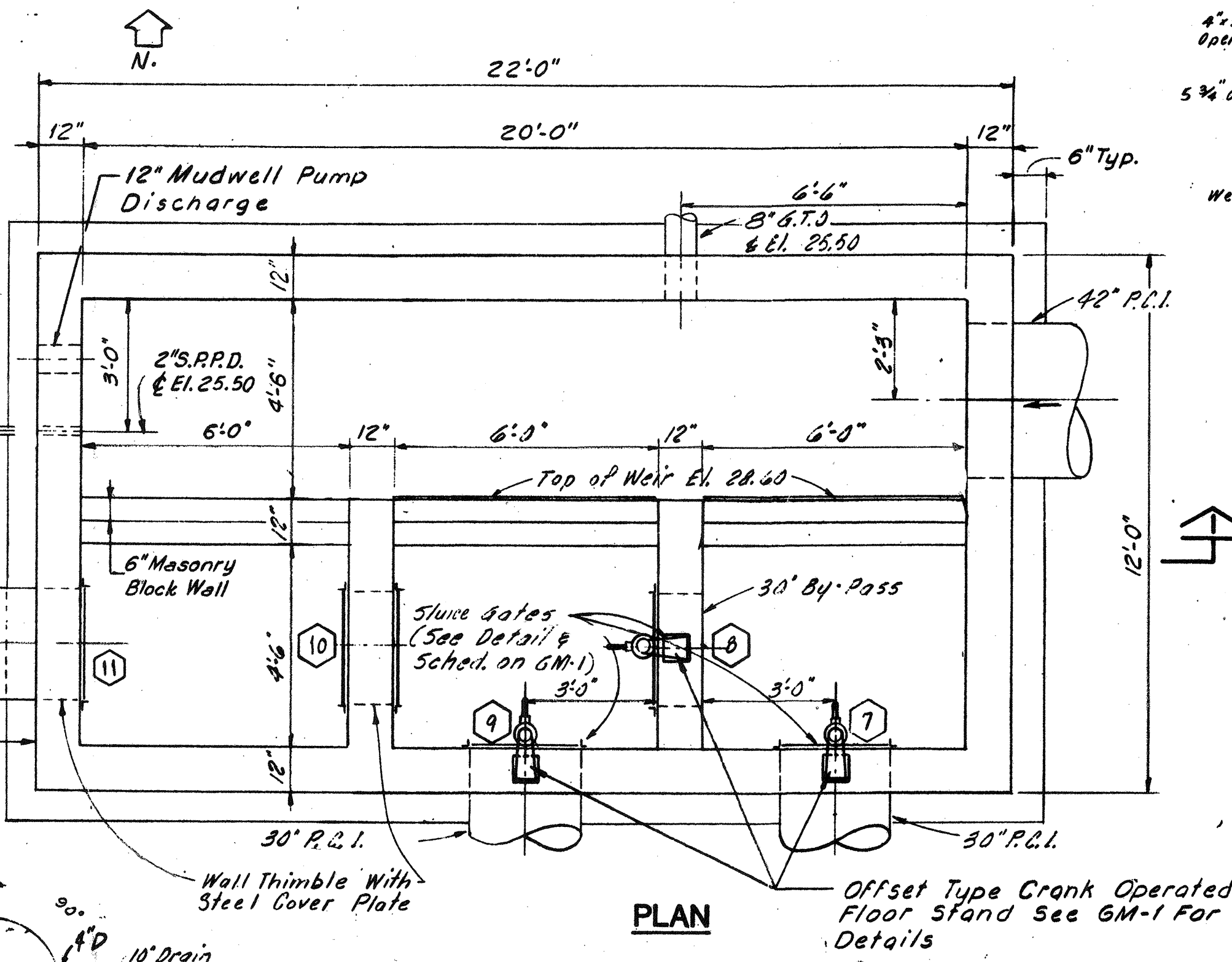
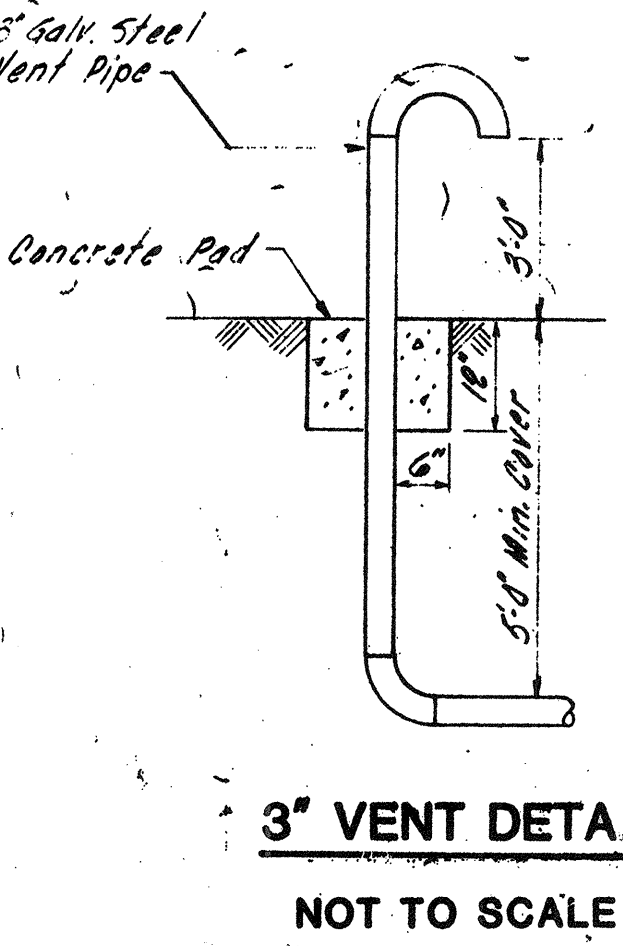
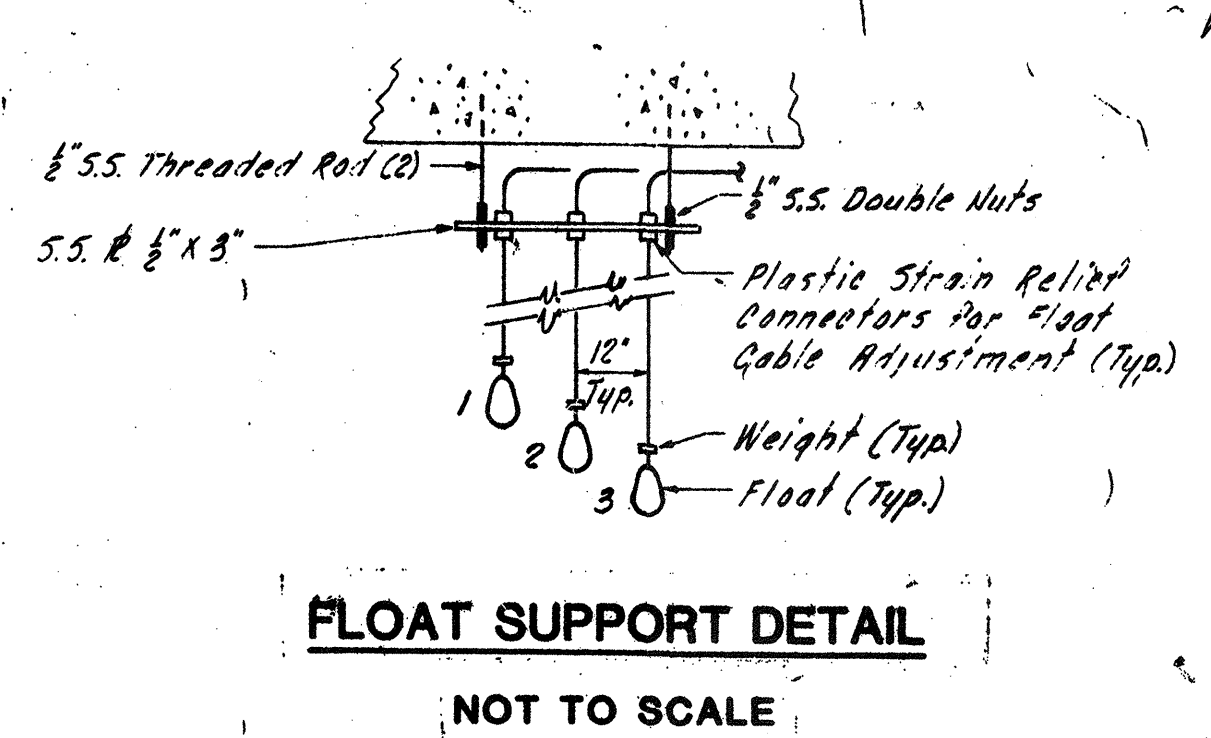
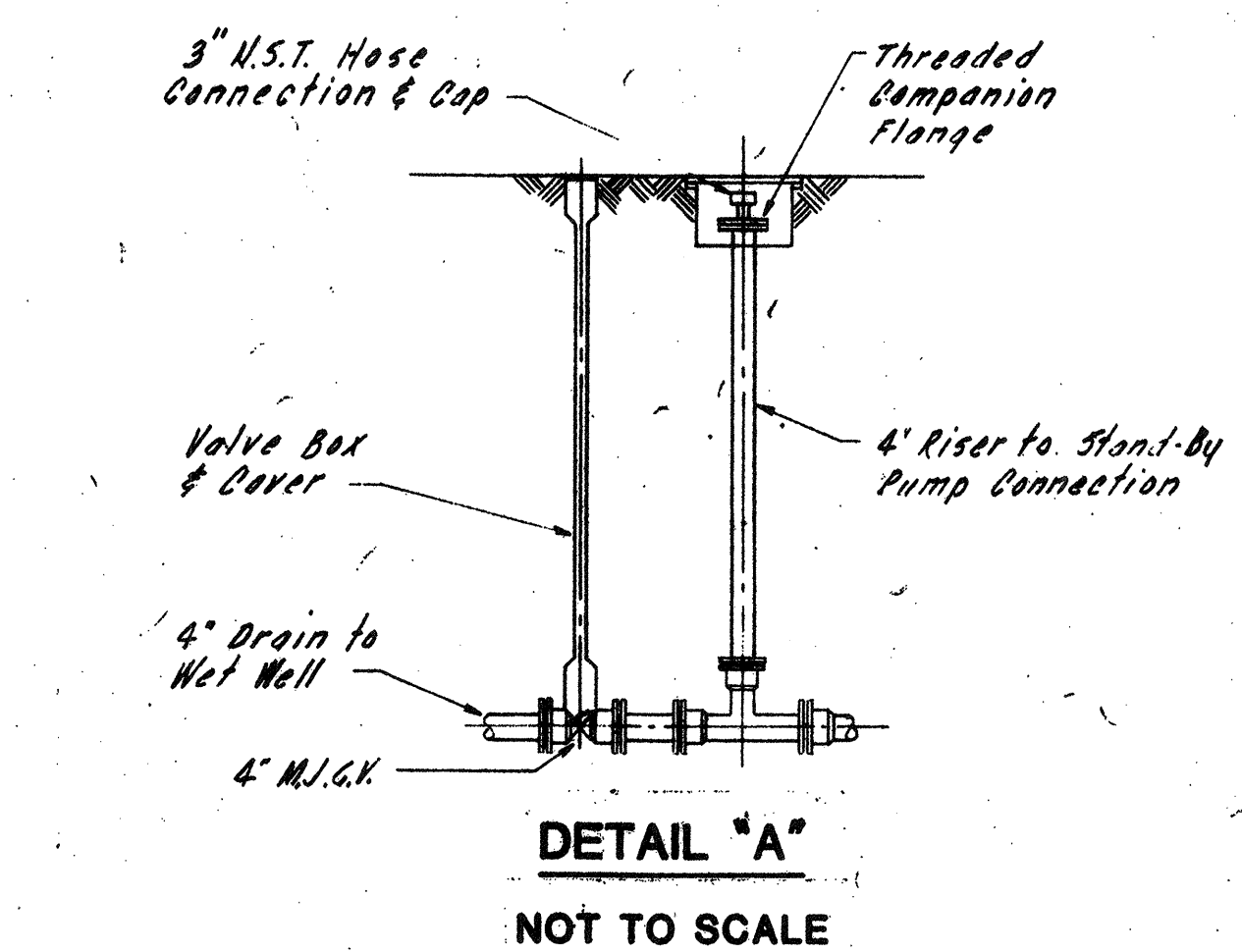
PORTSMOUTH, N.H.

GENERAL MECHANICAL

MISC. PLANS, SECTIONS AND DETAILS

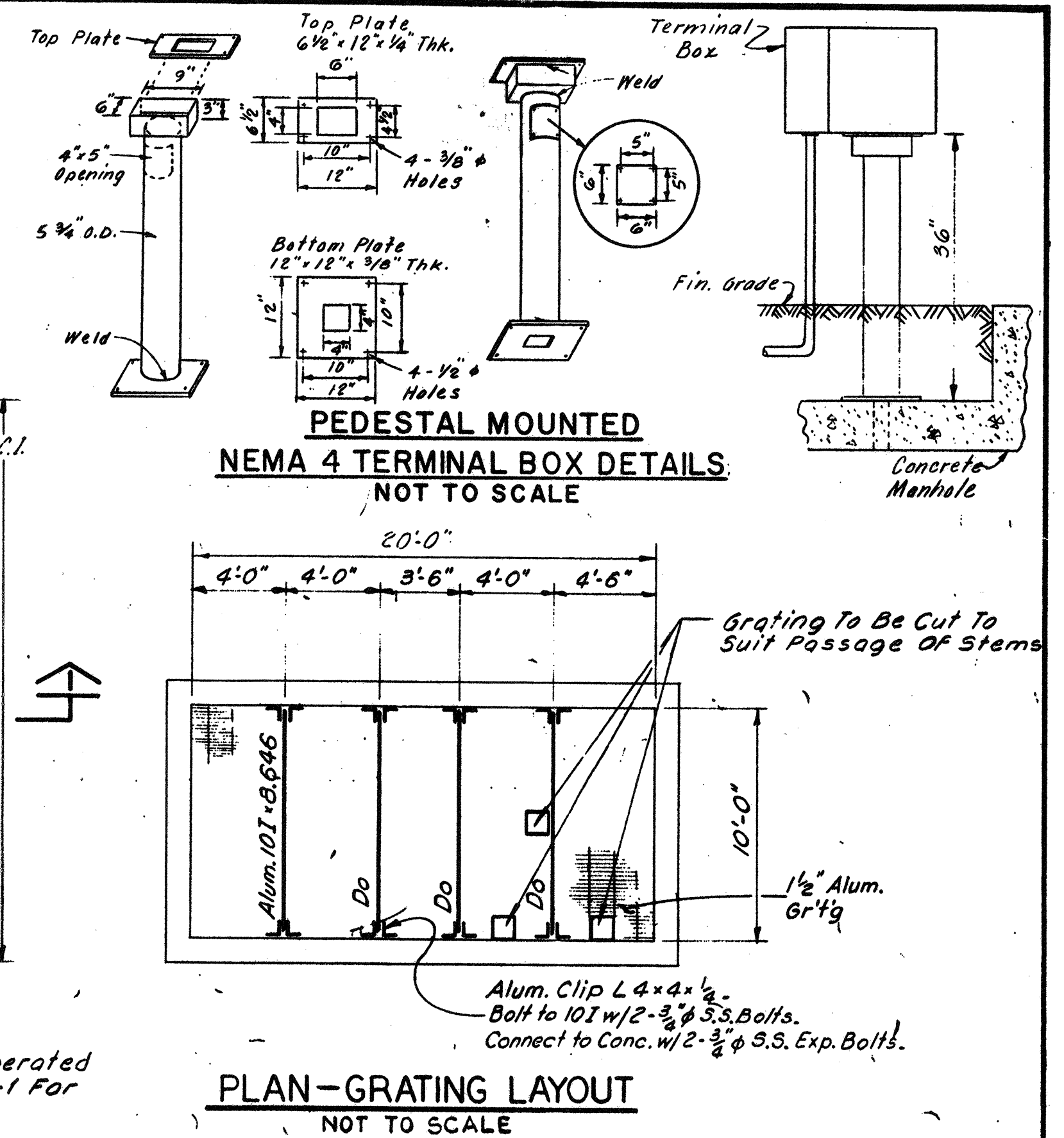


SUBMERSIBLE PUMP STATION
NOT TO SCALE

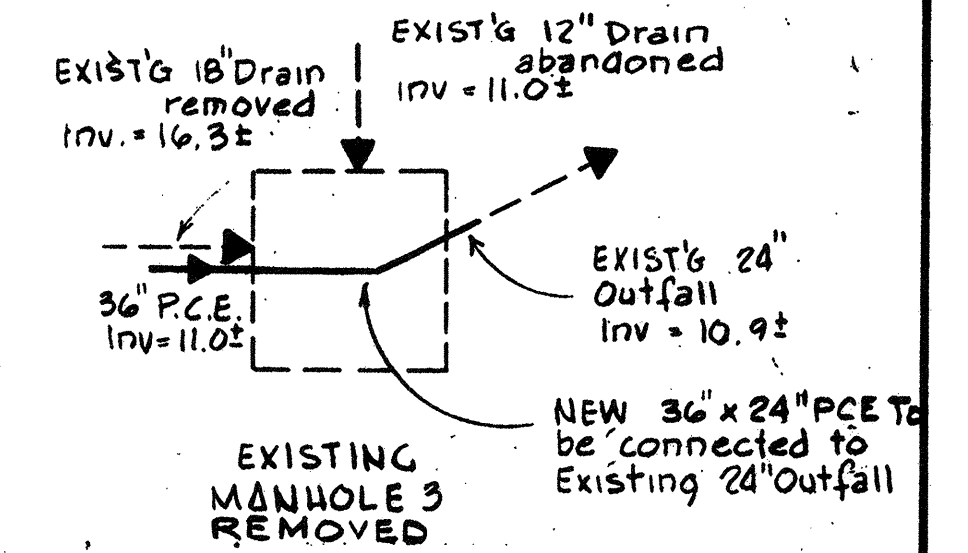
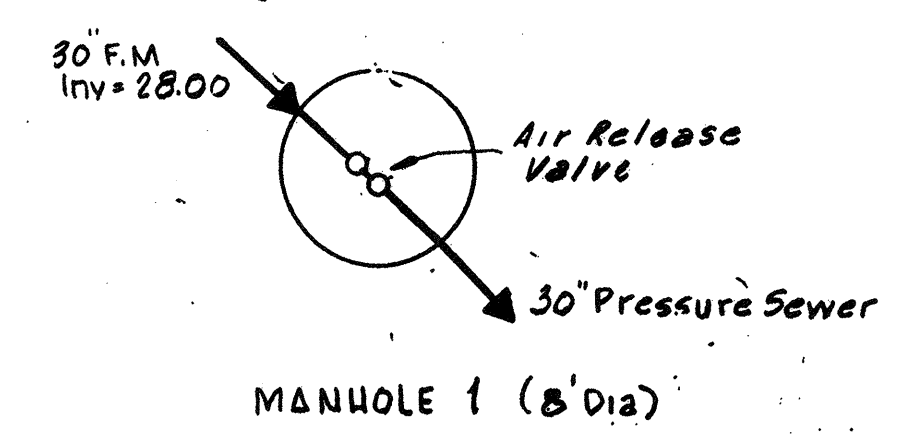


DISTRIBUTION BOX
SCALE 3/8" = 1'-0"

Slab Reinf. to Be #5 @ 12" E.W.T. & B.
Wall Reinf. to Be #5 @ 12" E.W.E.F. & #6 @ 12" E.F. Dowels & Corner Bars.
For General Notes & Typ. Structural Details See Dwg G3-1.



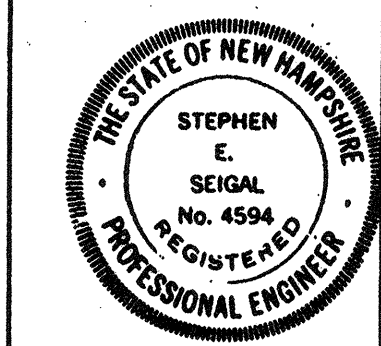
PLAN-GRATING LAYOUT
NOT TO SCALE



PUMP STATION LOCATION	INF. SEWER ELEV.	T.O.C. FILL ELEV.	FIN. GRADE ELEV.	WET WELL ELEVATIONS		
				HIGH WATER	PUMP ON	PUMP OFF
W. W. T. F. (See Drawing M-4)	See Key Plan This Sheet	4.50	24.00	14.00	13.50	7.00

NO.	DESCRIPTION	DATE
3	Revised To Record Plan	9/93
2	Drawing Revised	7/89
	REVISED AS PER STATE COMMENTS	2/88

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.

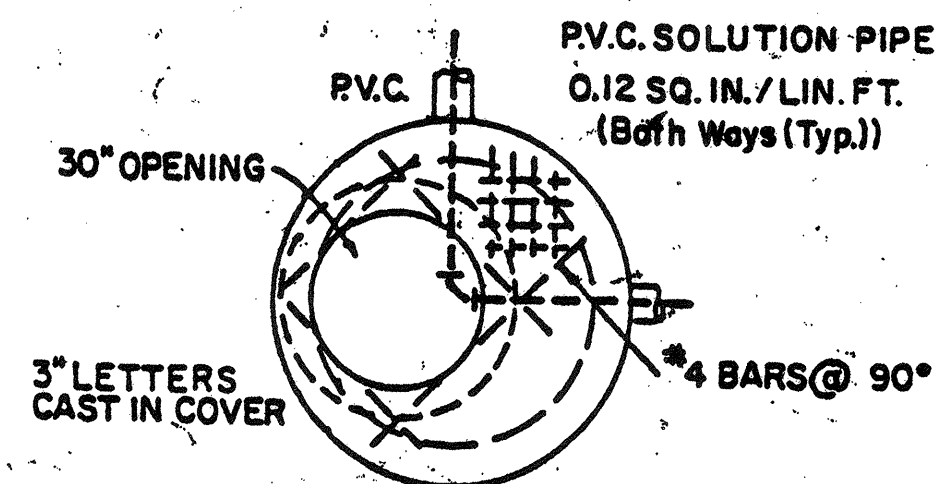
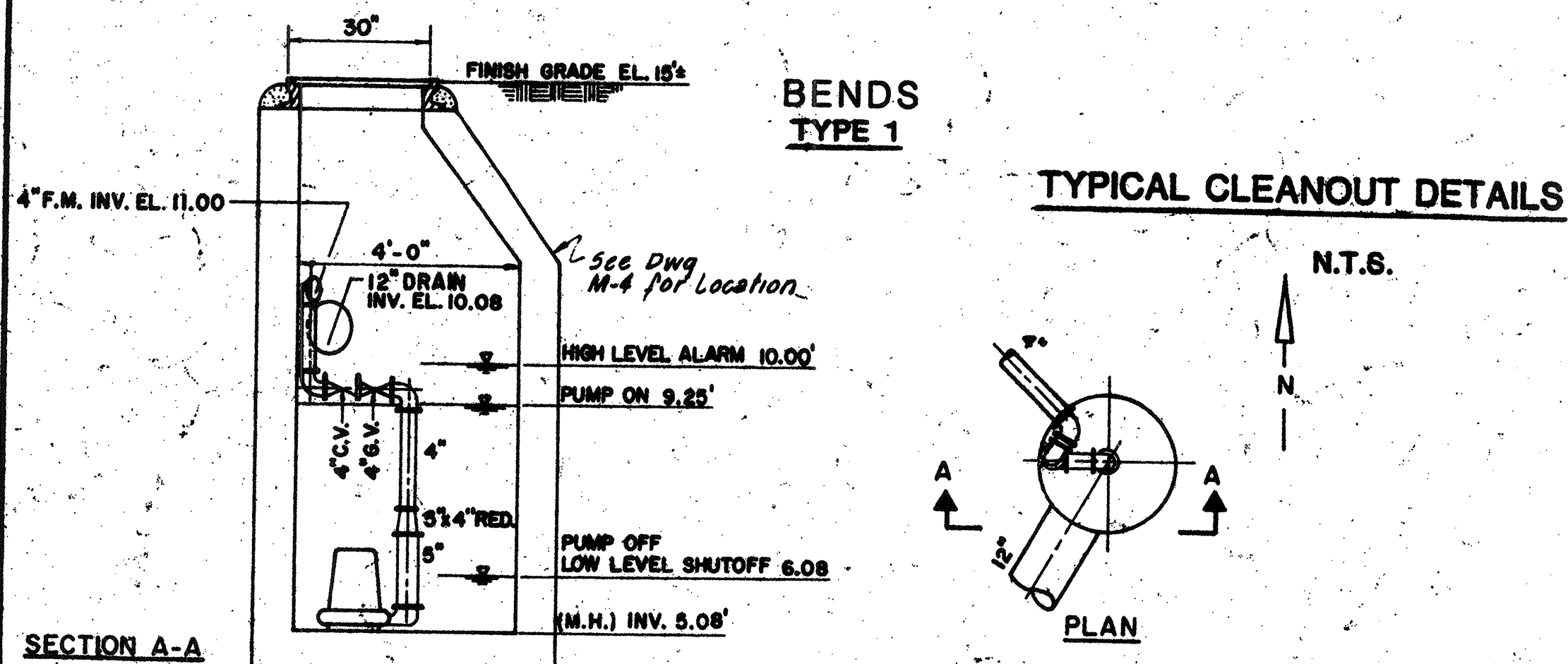
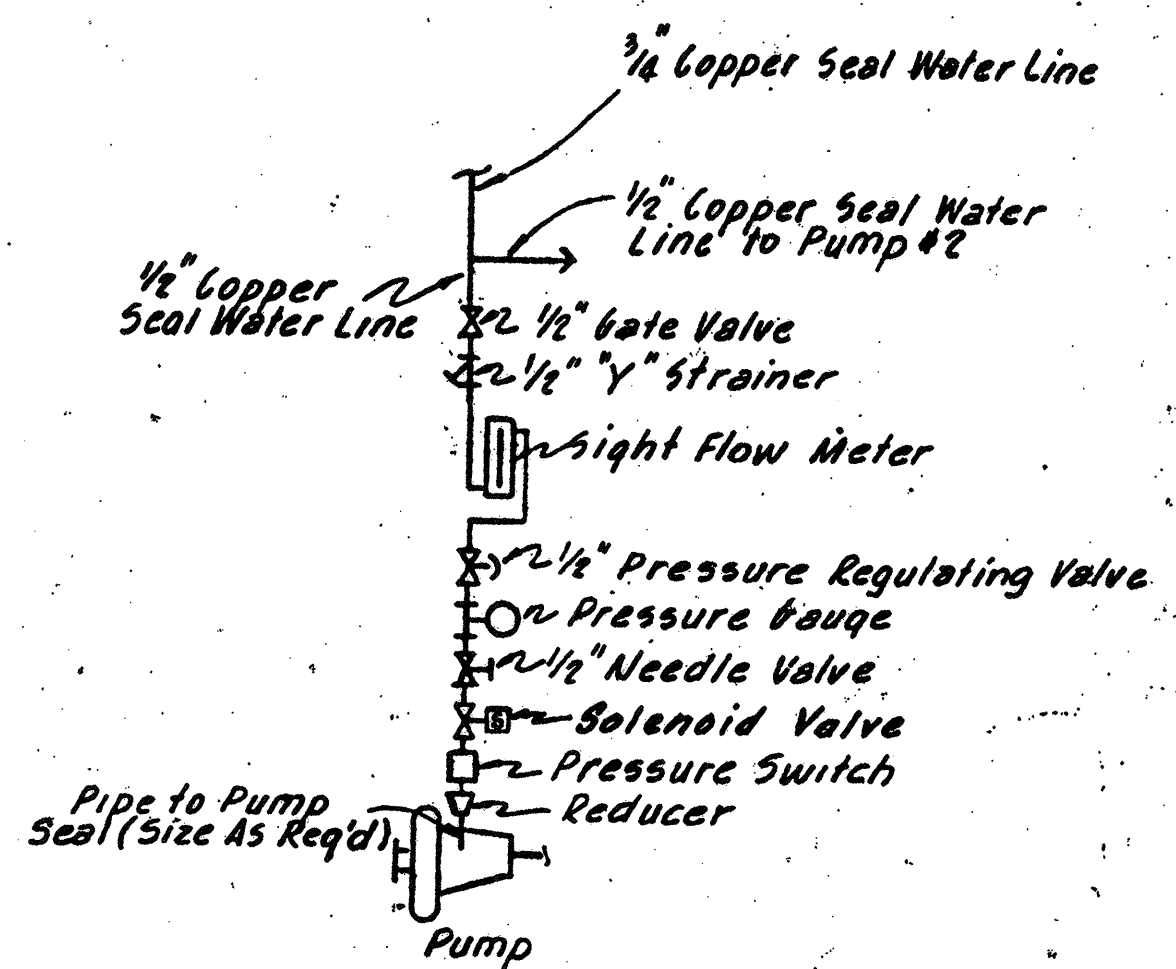
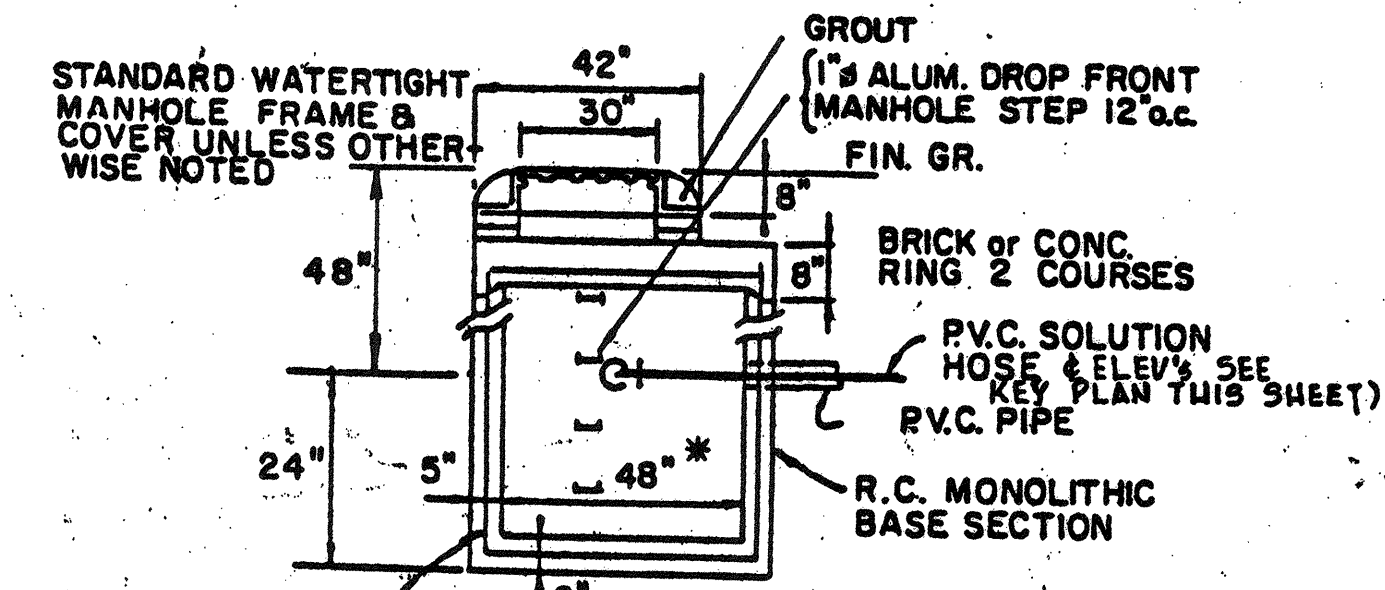
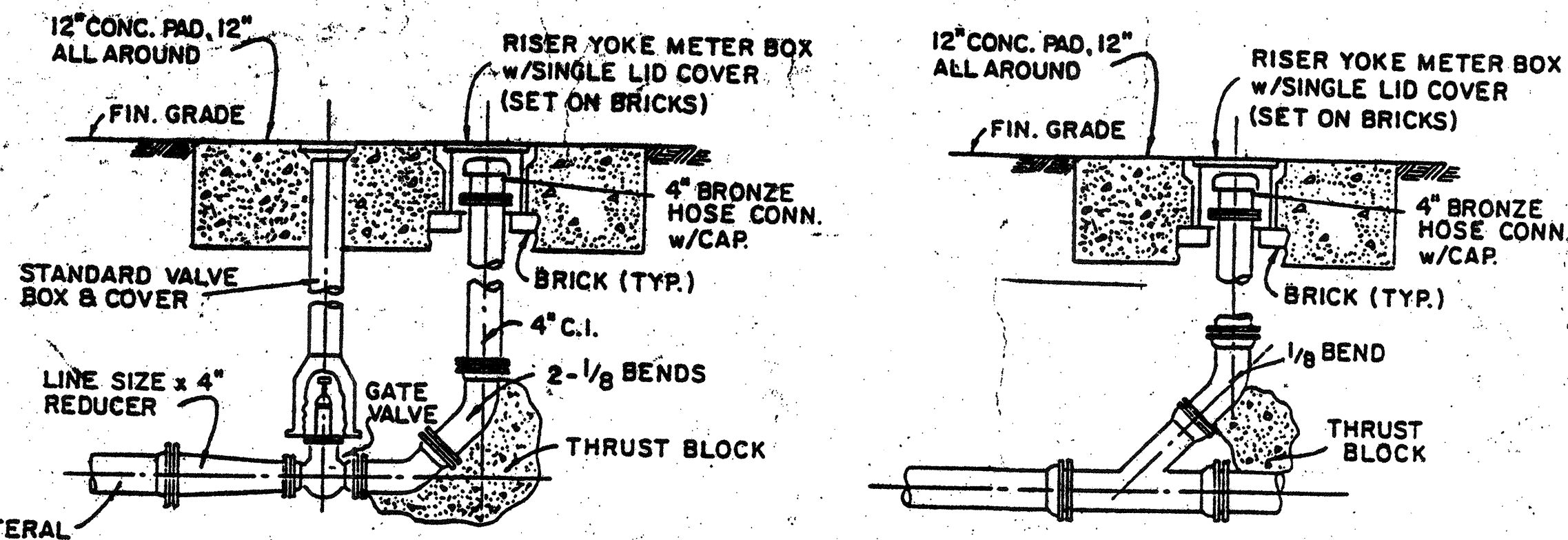


APPROVED: *Stephen E. Seigel*

DESIGNED/DRAWN: T.E.P. D.T.C. S.E.S.
CHECKED/SCALE: AS NOTED
DATE: SEPT 1985

DRAWING NO. **GM-2**
JOB NO. 85-163
CONTRACT NO. 3
SHEET 65 OF 106 SHEETS

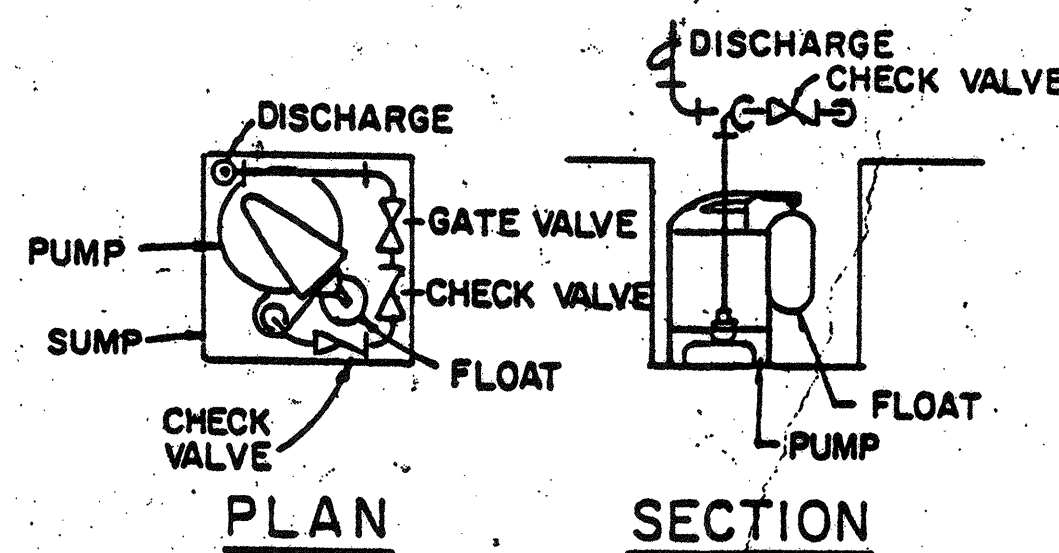
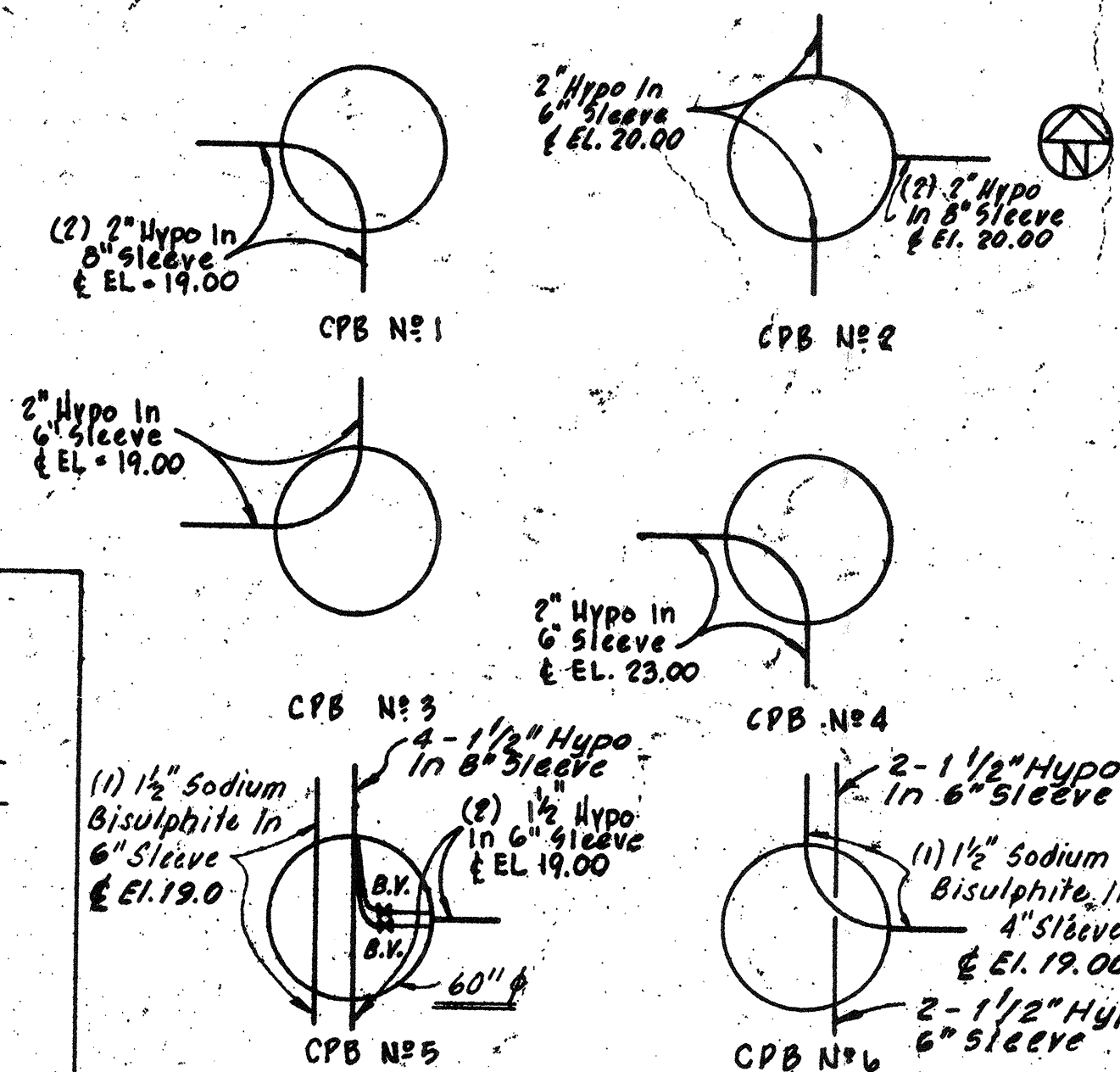
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
GENERAL MECHANICAL MISCELLANEOUS STRUCTURES



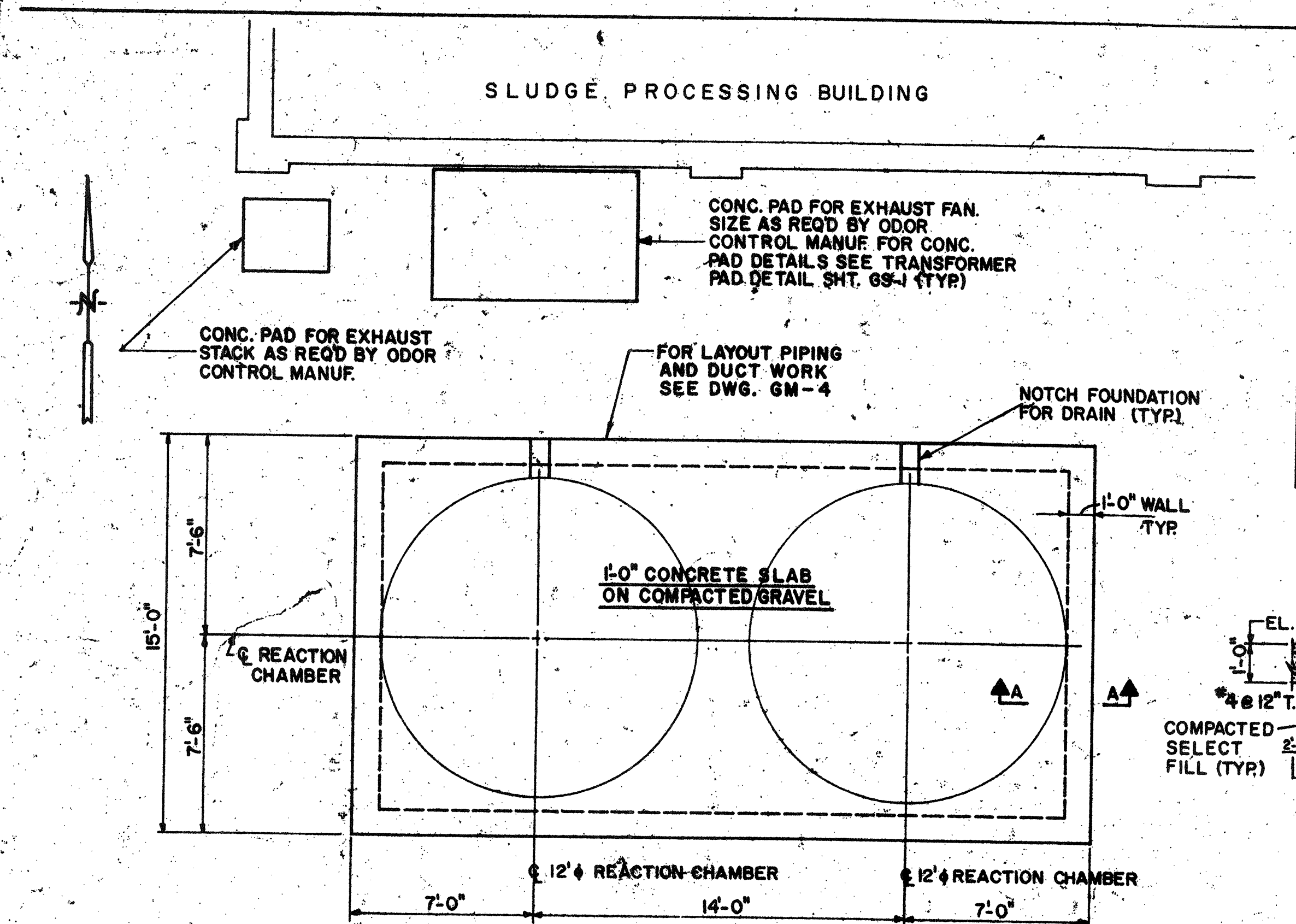
SCHEMATIC OF TYPICAL PUMP SEAL-WATER PIPING
N.T.S.

SECTION A-A
DETAIL OF 4\"/>

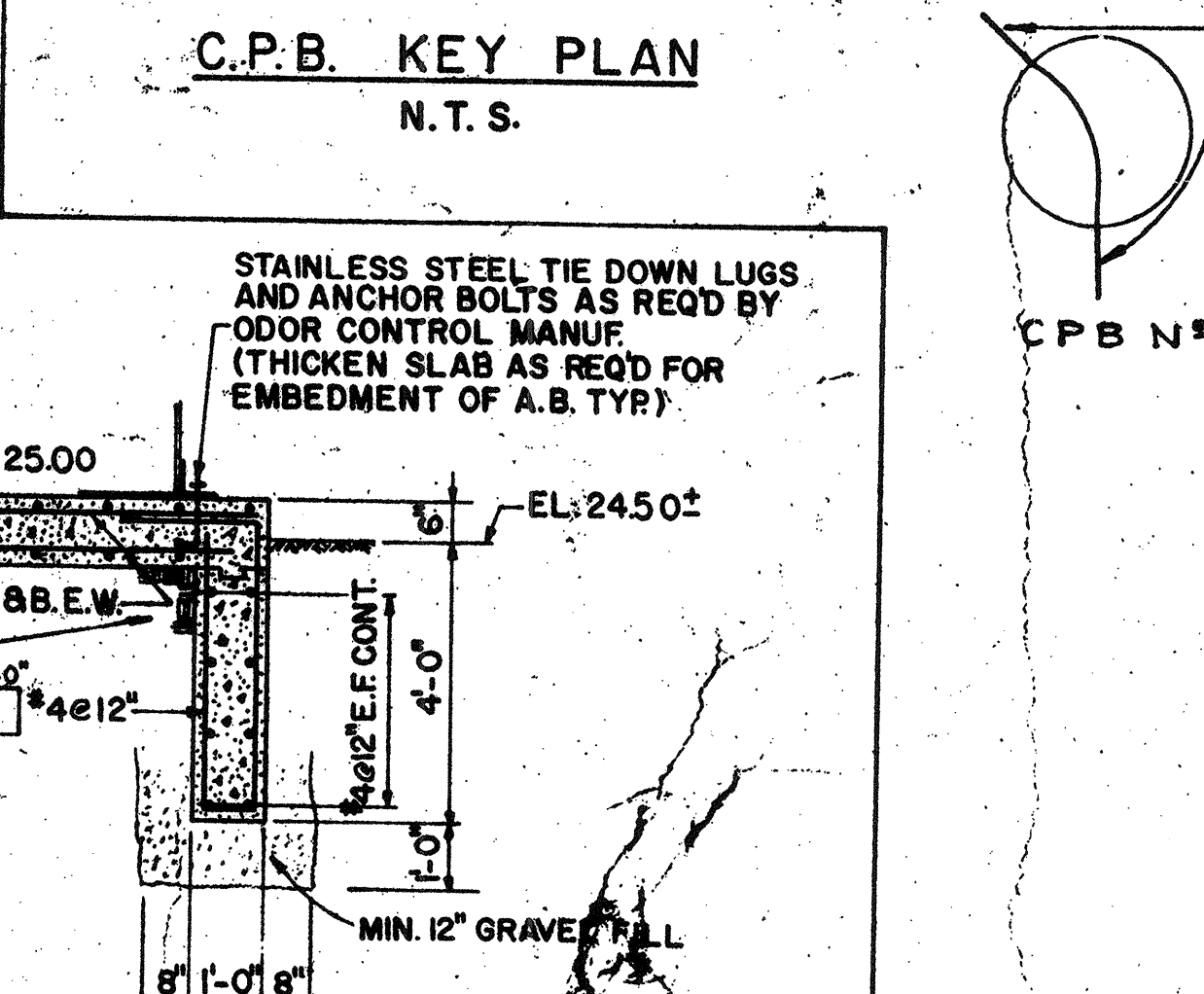
CHEMICAL PULL BOX DETAIL (C.P.B.)
N.T.S.



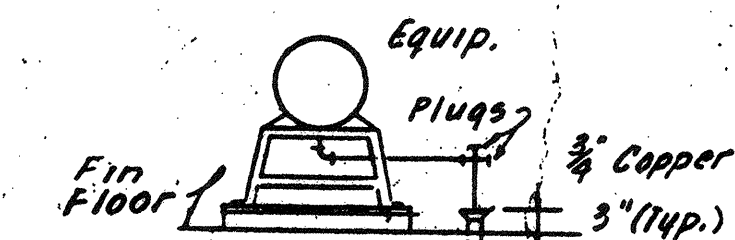
SUMP PUMP DETAILS
N.T.S.



REACTION CHAMBERS FOUNDATIONS
SCALE: 1/4\"/>



SECTION A-A
SCALE: 3/8\"/>

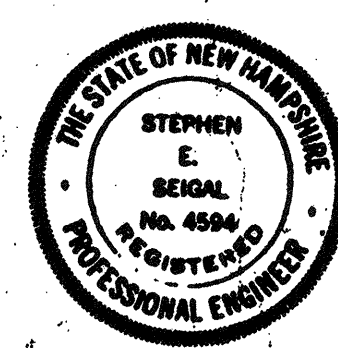


TYPICAL EQUIPMENT DRAIN
NOT TO SCALE

Note: Plunger Pumps Have 4 Drainage Connections. Plunger Sluffing Box Drains to be Piped to Frame Drainage Troughs. Drainage Troughs to be piped to Equipment Drain.

NO.	DESCRIPTION	DATE
3	Revised To Record Plan	9/93
2	Drawing Revised	
1	Original	

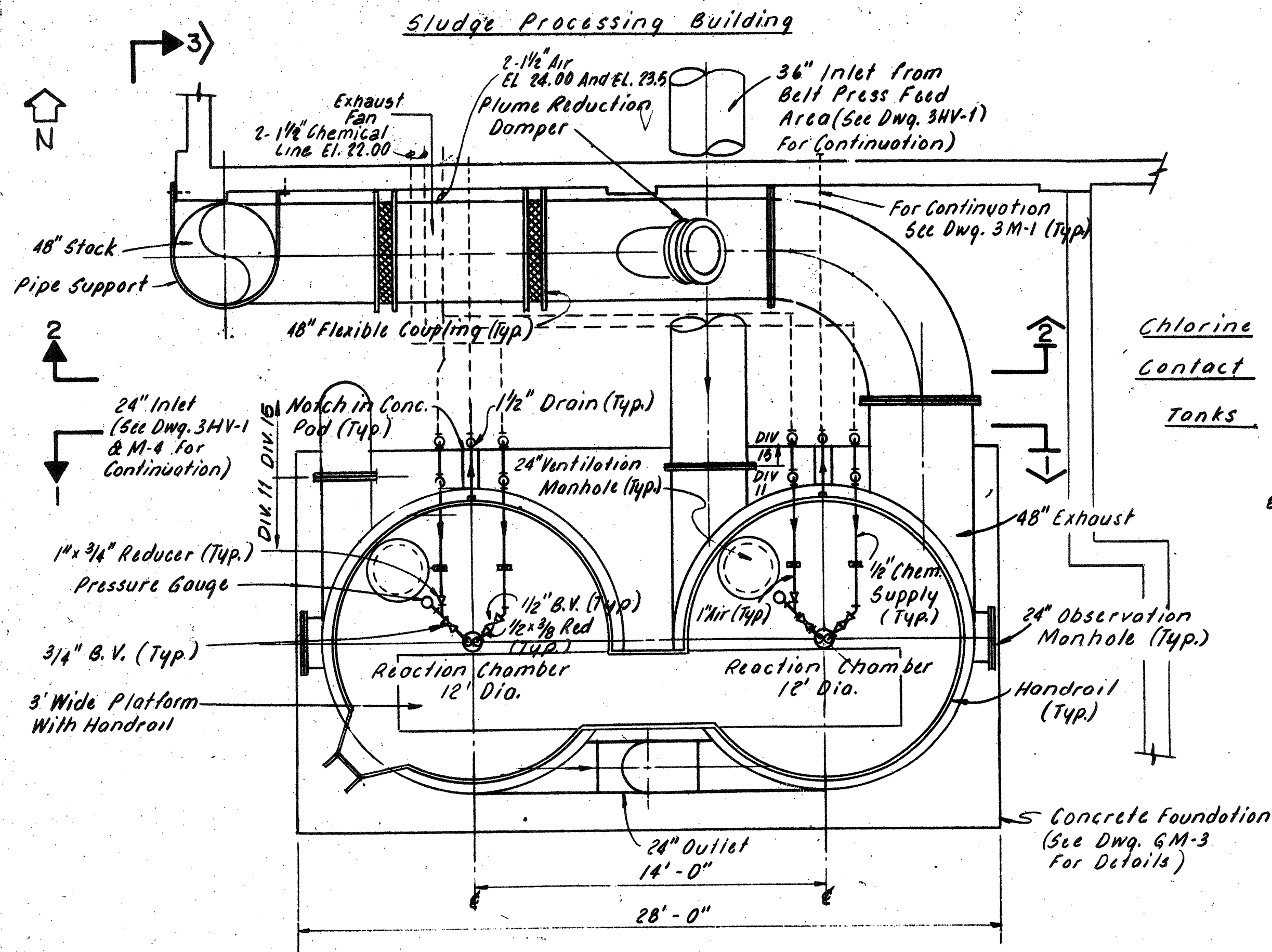
WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



DESIGNED/DRAWN: T.E.P. D.T.C. S.E.S.
CHECKED: AS NOTED
SCALE: AS NOTED
DATE: SEPT. 1985

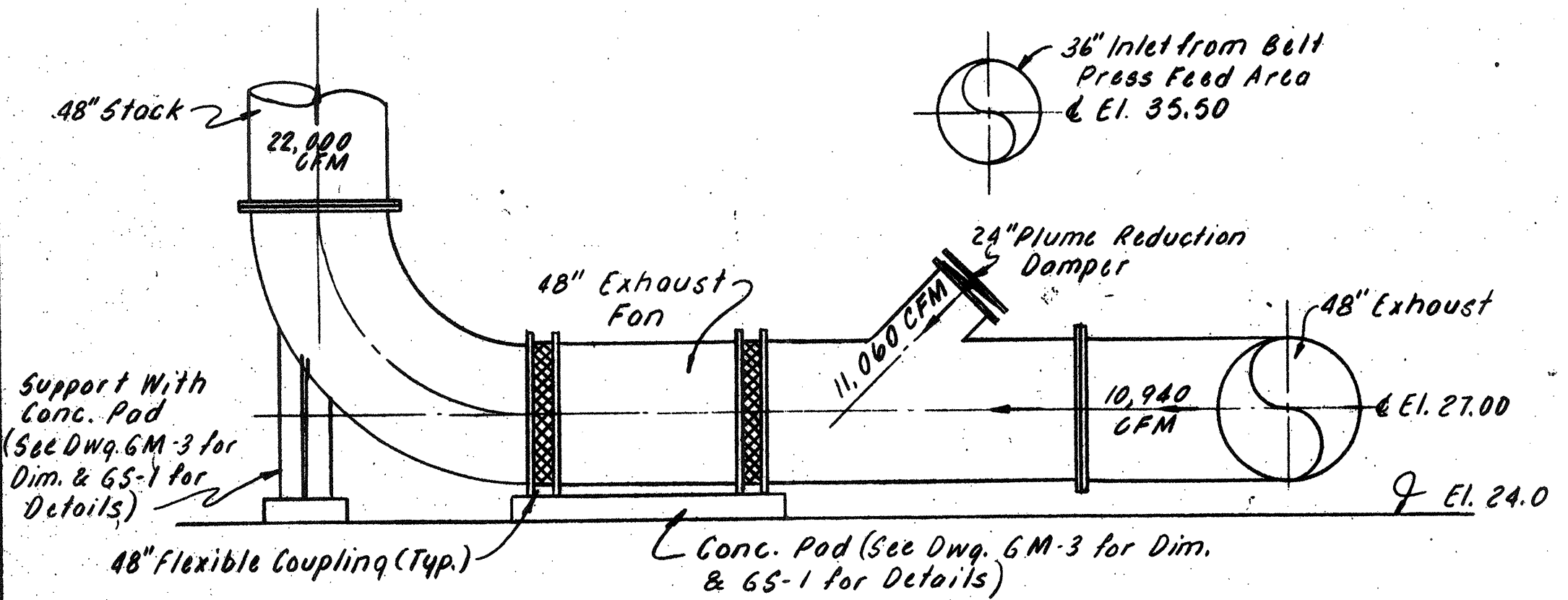
DRAWING NO. **GM-3**
JOB NO. **85-163**
CONTRACT NO. **3**
SHEET 66 OF 106 SHEETS

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
GENERAL MECHANICAL MISCELLANEOUS DETAILS

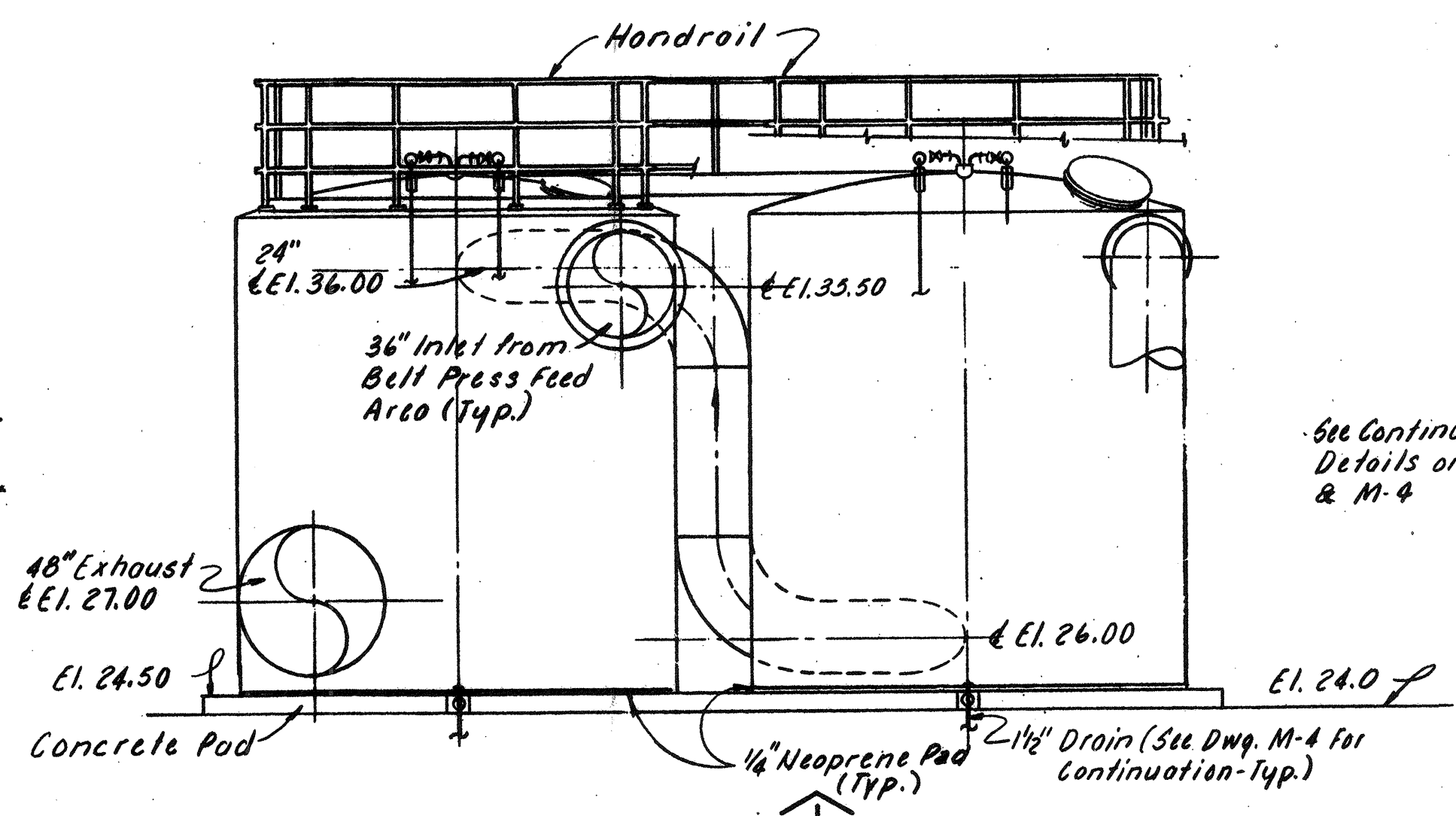


PLAN
SCALE: 1/4" = 1' - 0"

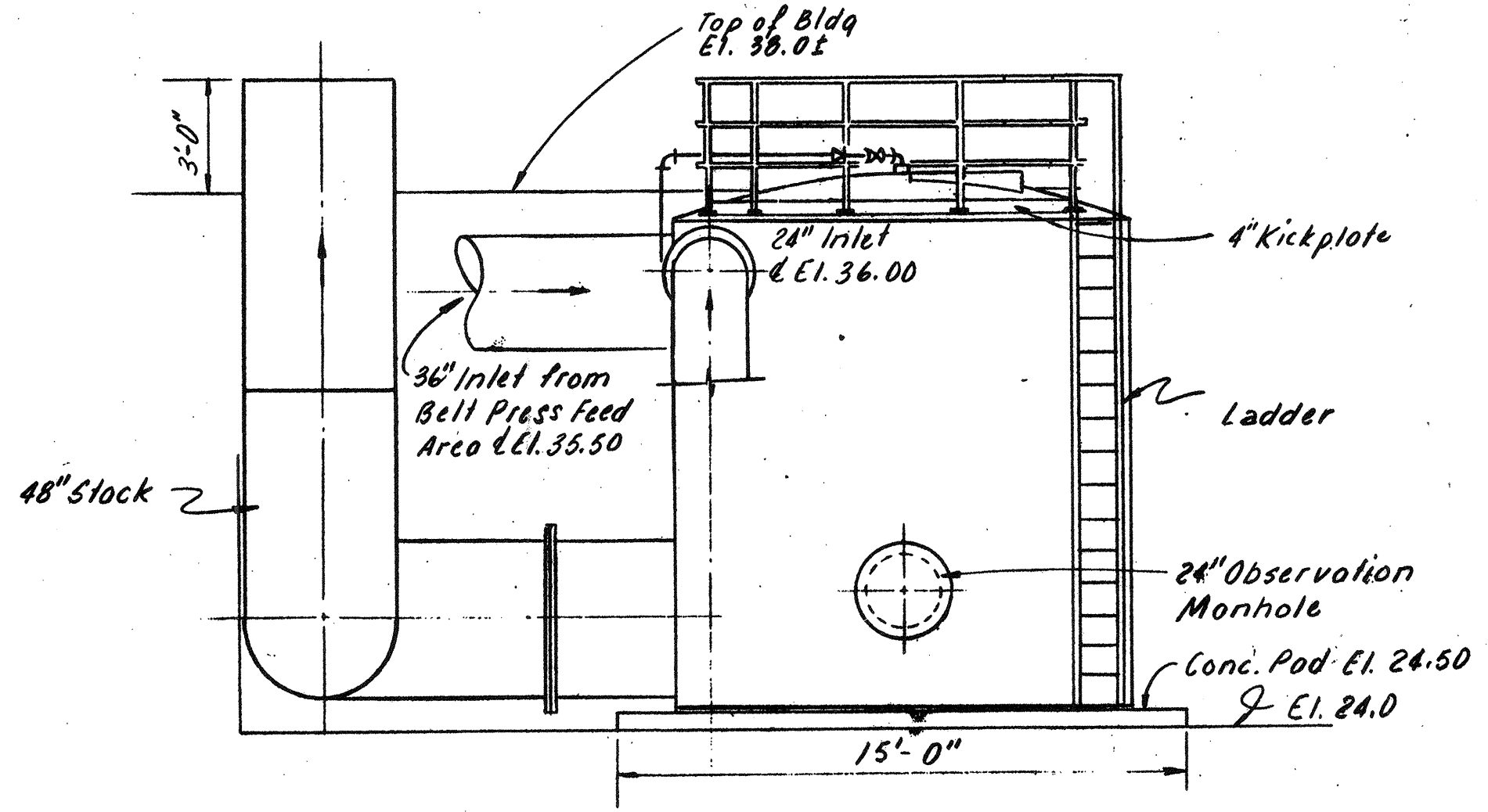
NOTE:
All chemical lines, air supply, and drain lines to be insulated and heat traced by the supplier.



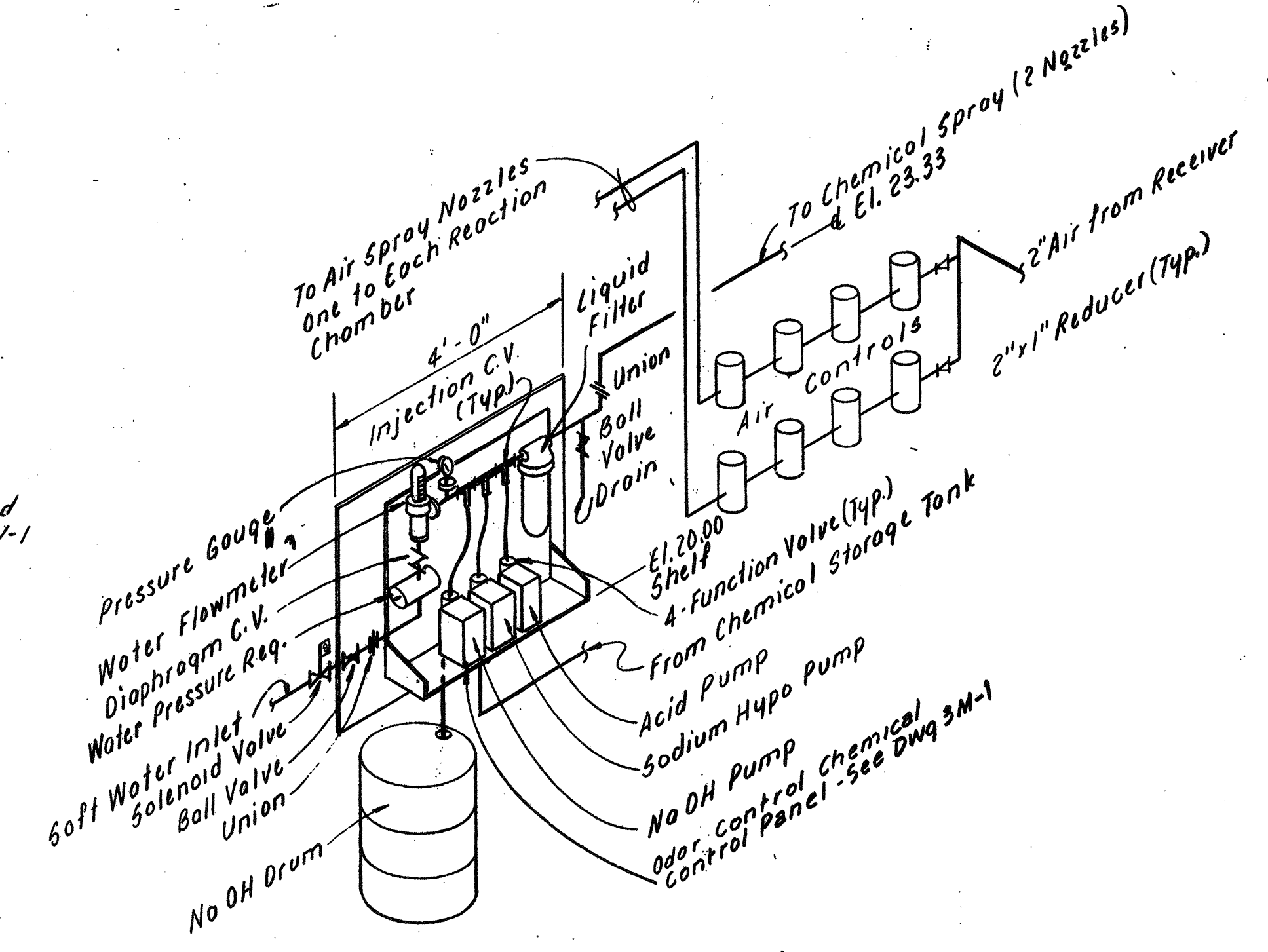
SECTION 2
SCALE: 1/4" = 1' - 0"



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



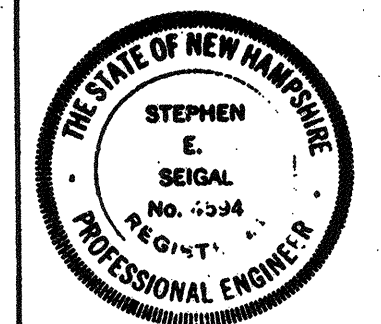
SECTION 3
SCALE: 1/4" = 1' - 0"



CHEMICAL METERING PUMPS AND AIR CONTROL PANEL SCHEMATIC
NOT TO SCALE

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Added	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.

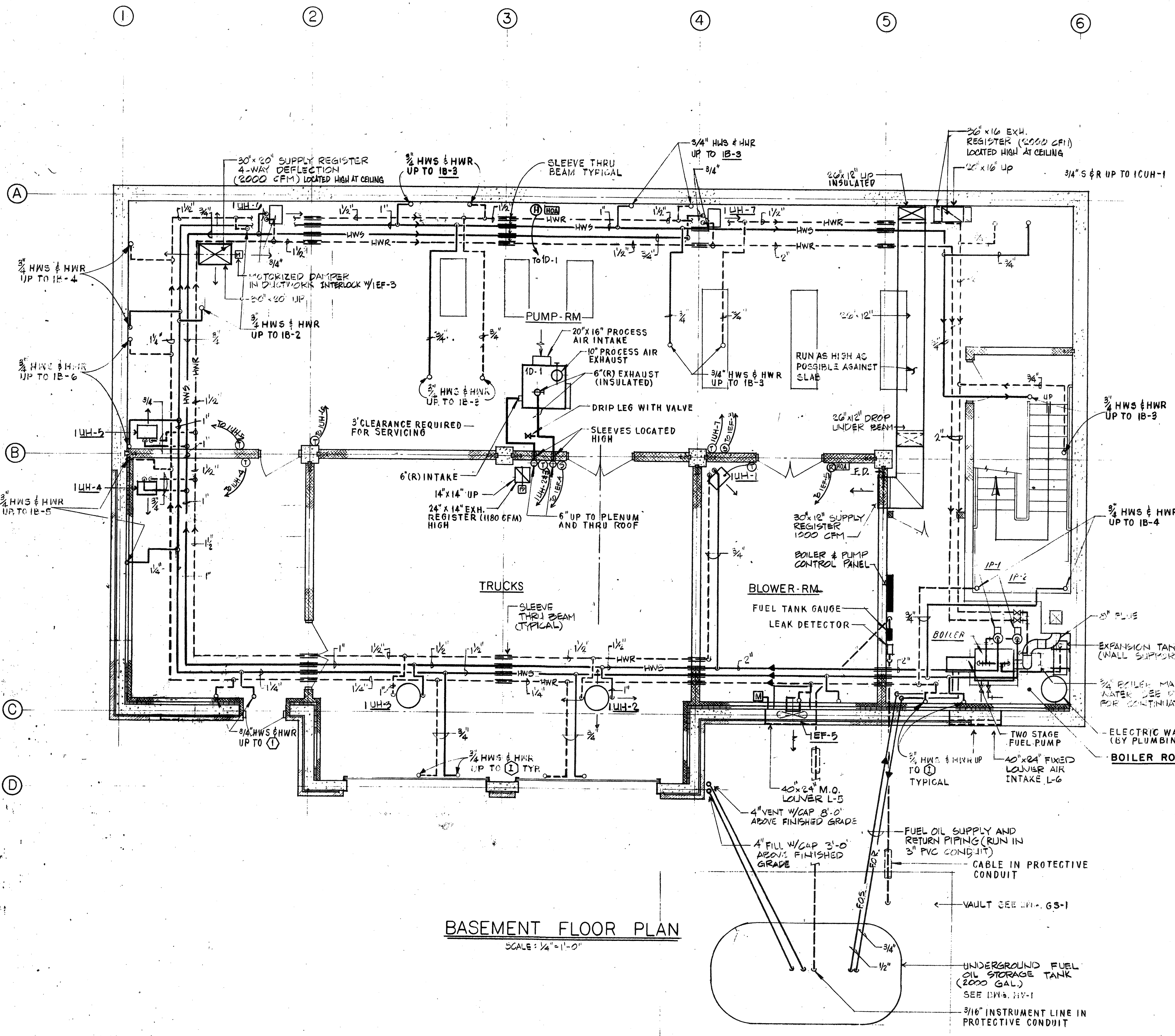


DESIGNED DRAWN				CHECKED SCALE		DATE	
V.J.	N.T.	S.E.S.	AS NOTED	SEPT. 1989	SHEET 67 OF 106 SHEETS		

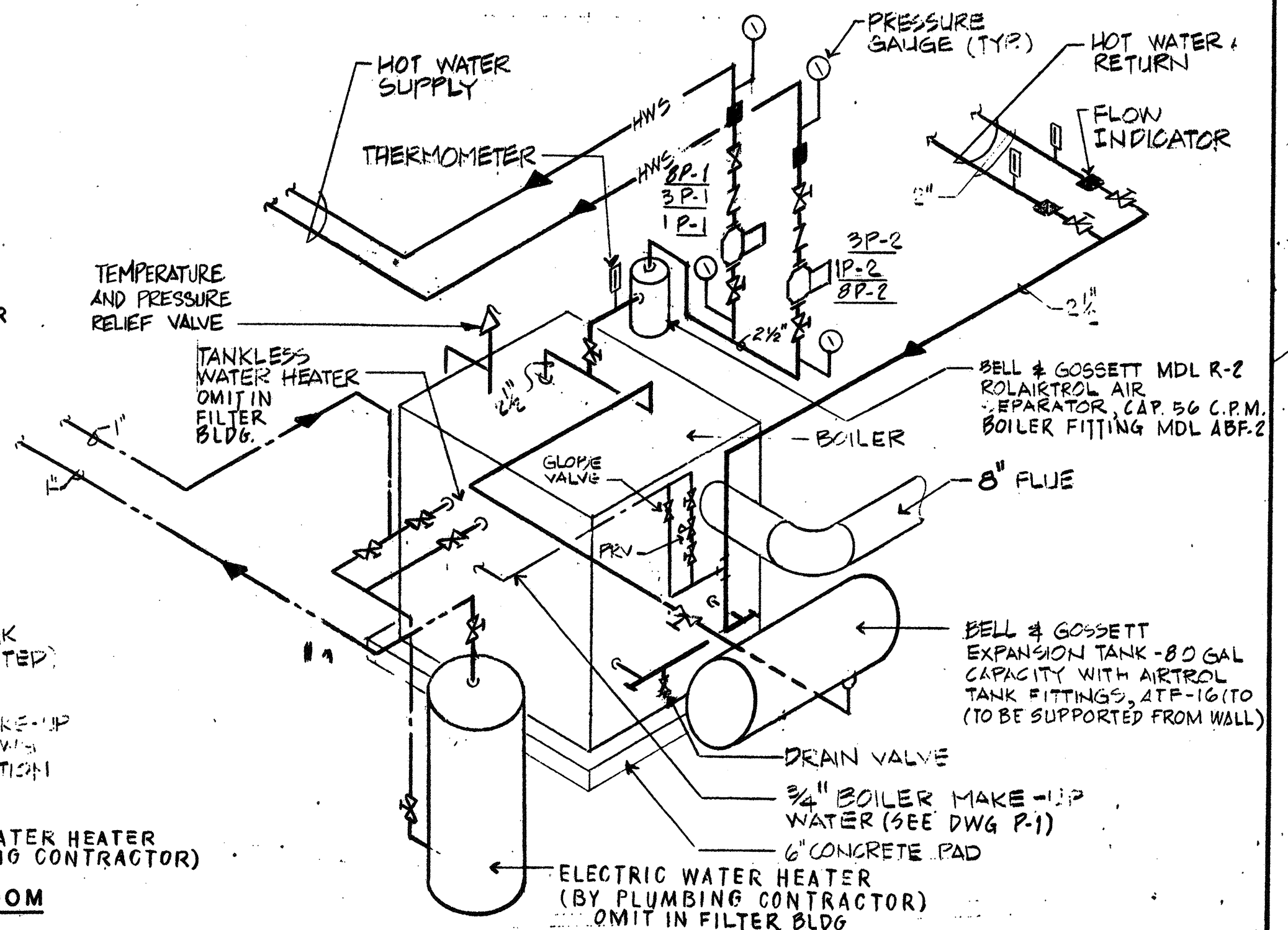
DRAWING NO.	GM-4
JOB NO.	85-163
CONTRACT NO.	3

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
ODOR CONTROL SYSTEM
PLAN AND SECTIONS

RECORD PLAN



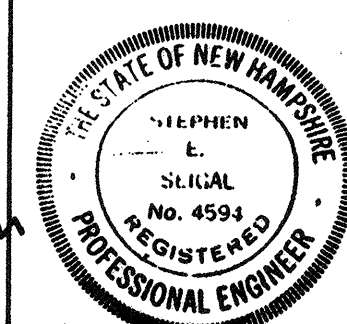
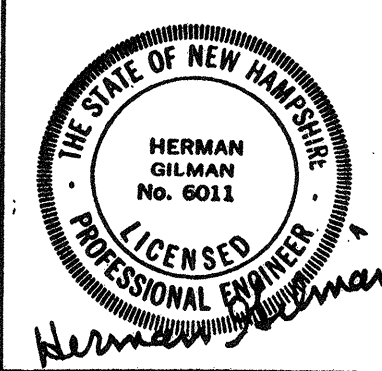
BASEMENT FLOOR PLAN
SCALE: 1/4" = 1'-0"



BOILER PIPING SCHEMATIC
TYPICAL FOR CONTROL BUILDING, SLUDGE PROCESS BUILDING, AND FILTER BUILDING

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89
REVISIONS		

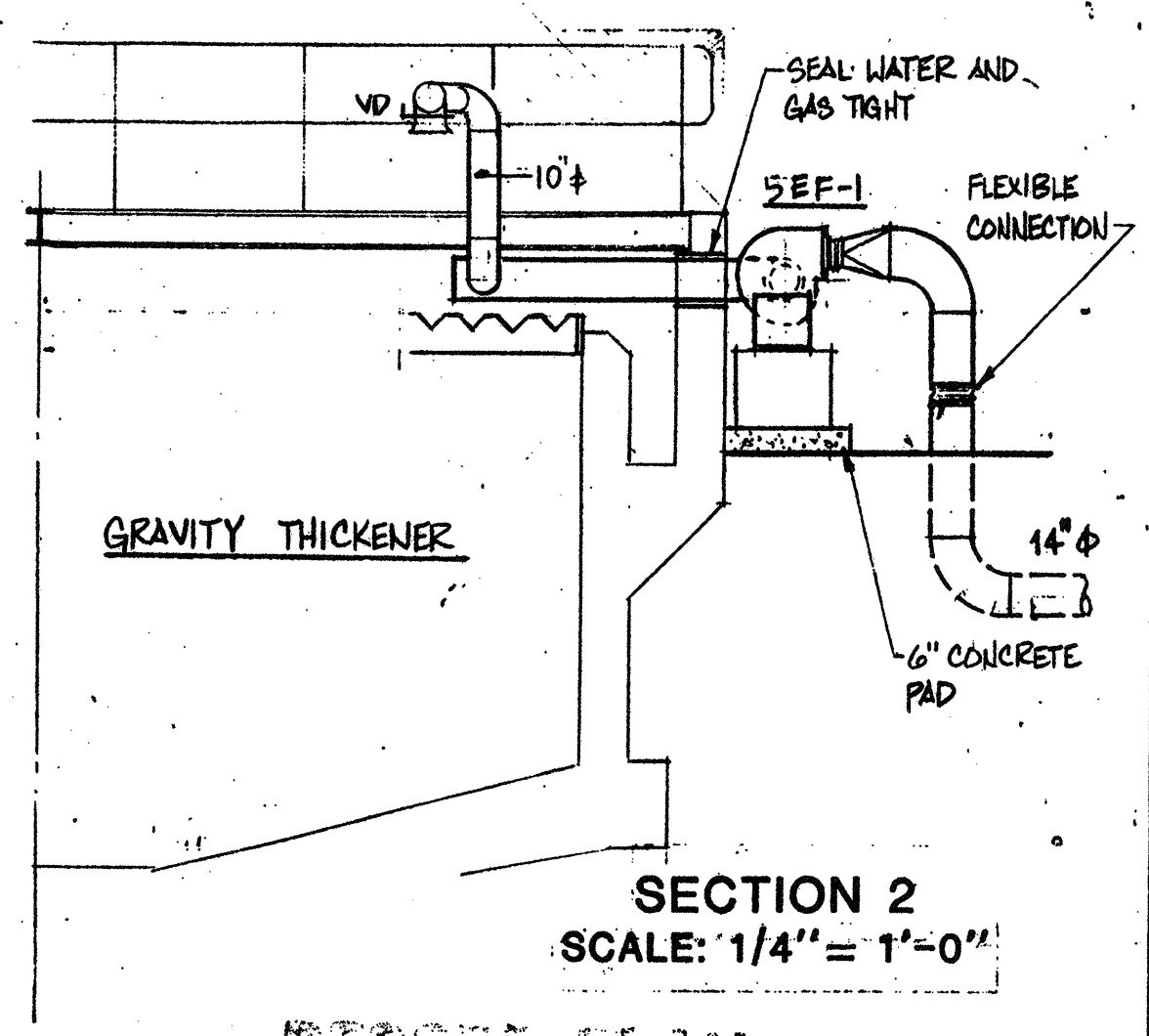
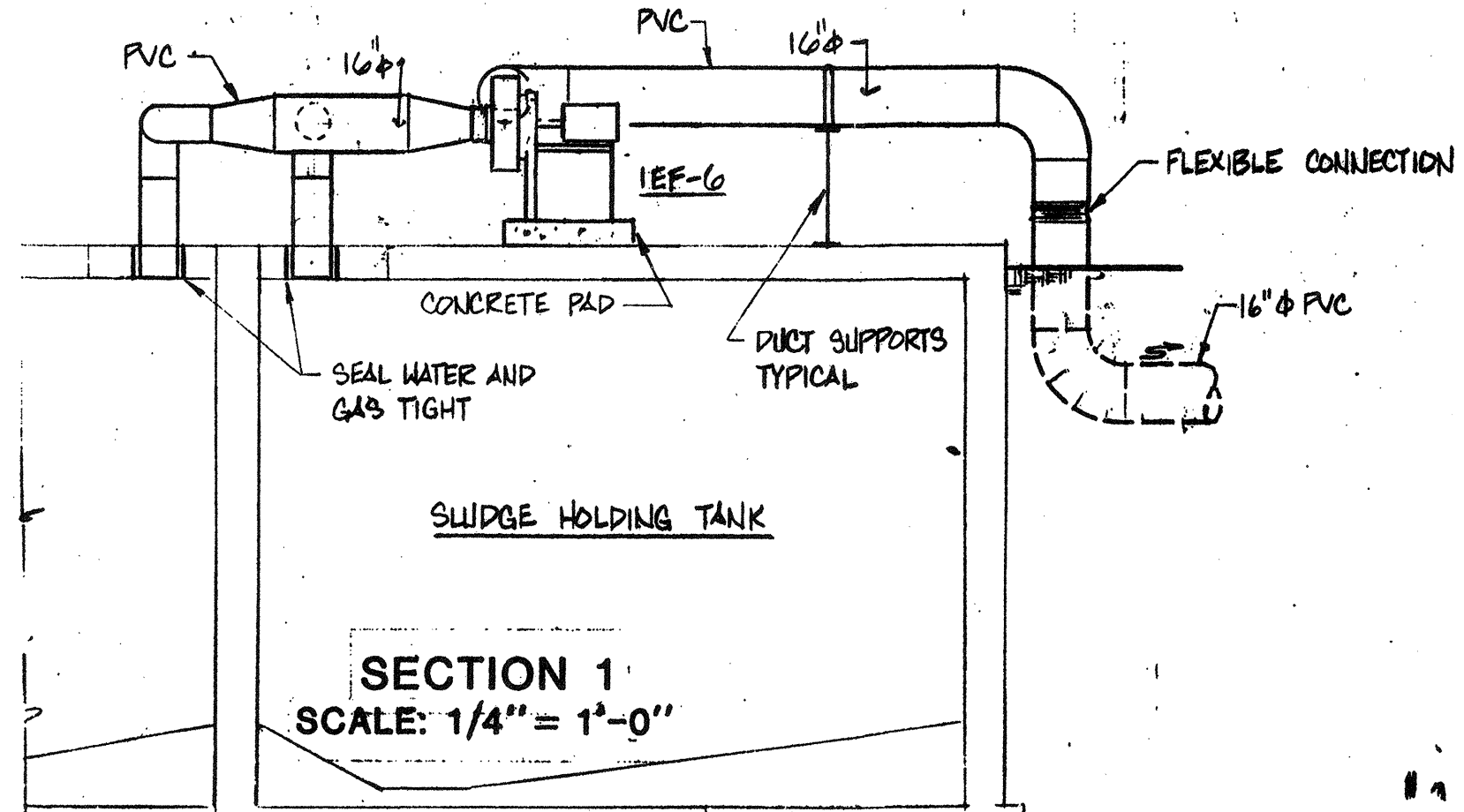
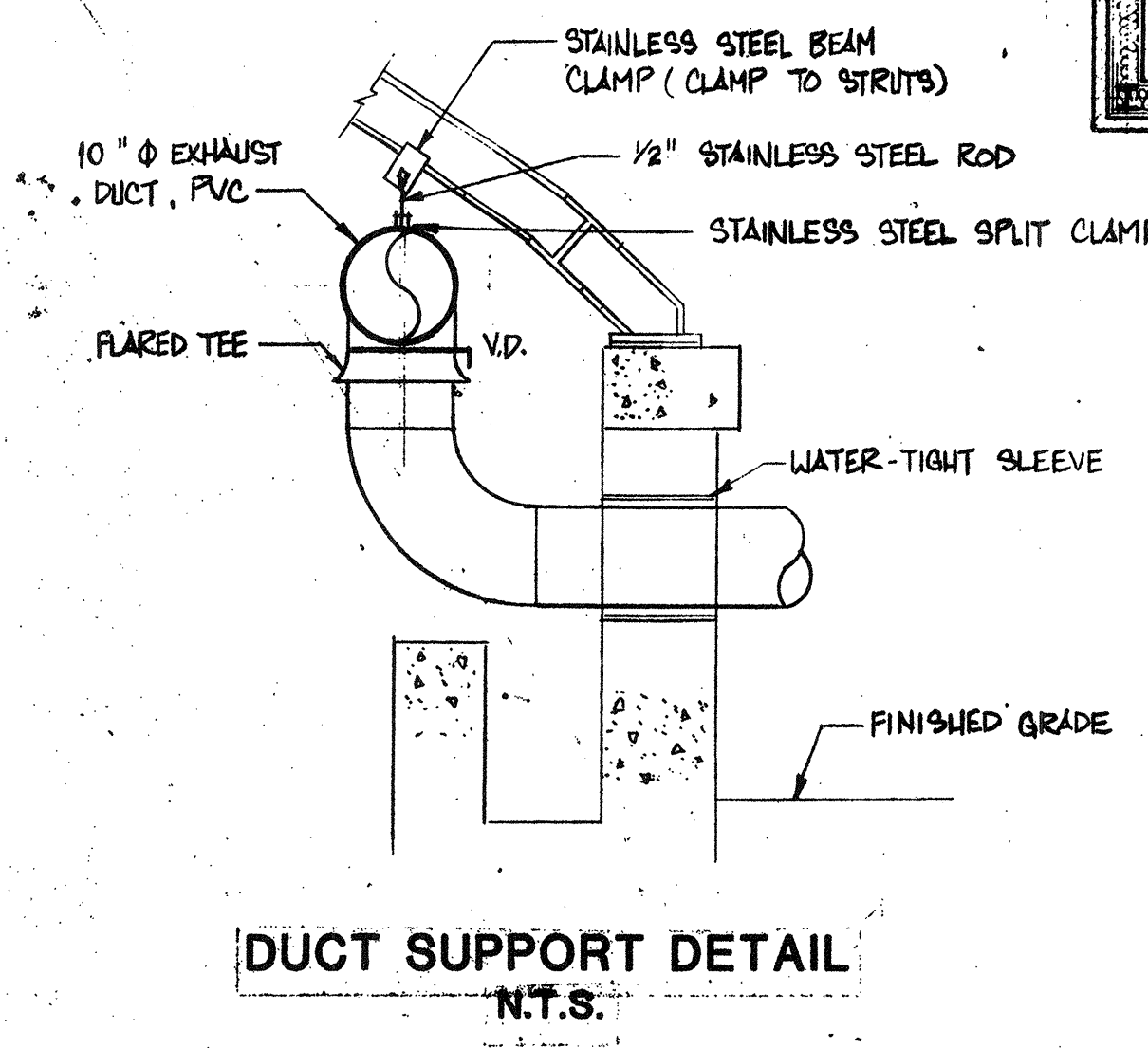
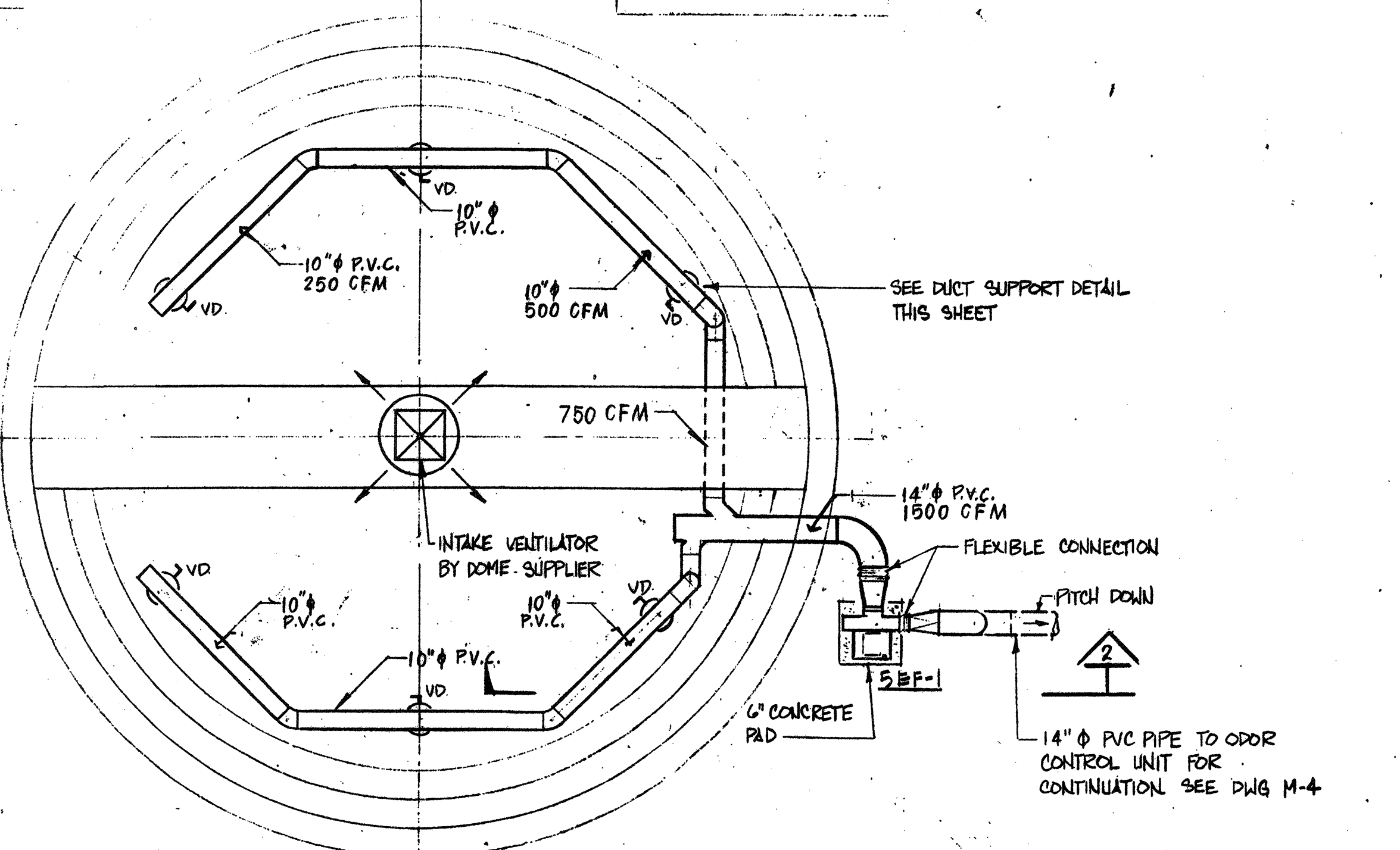
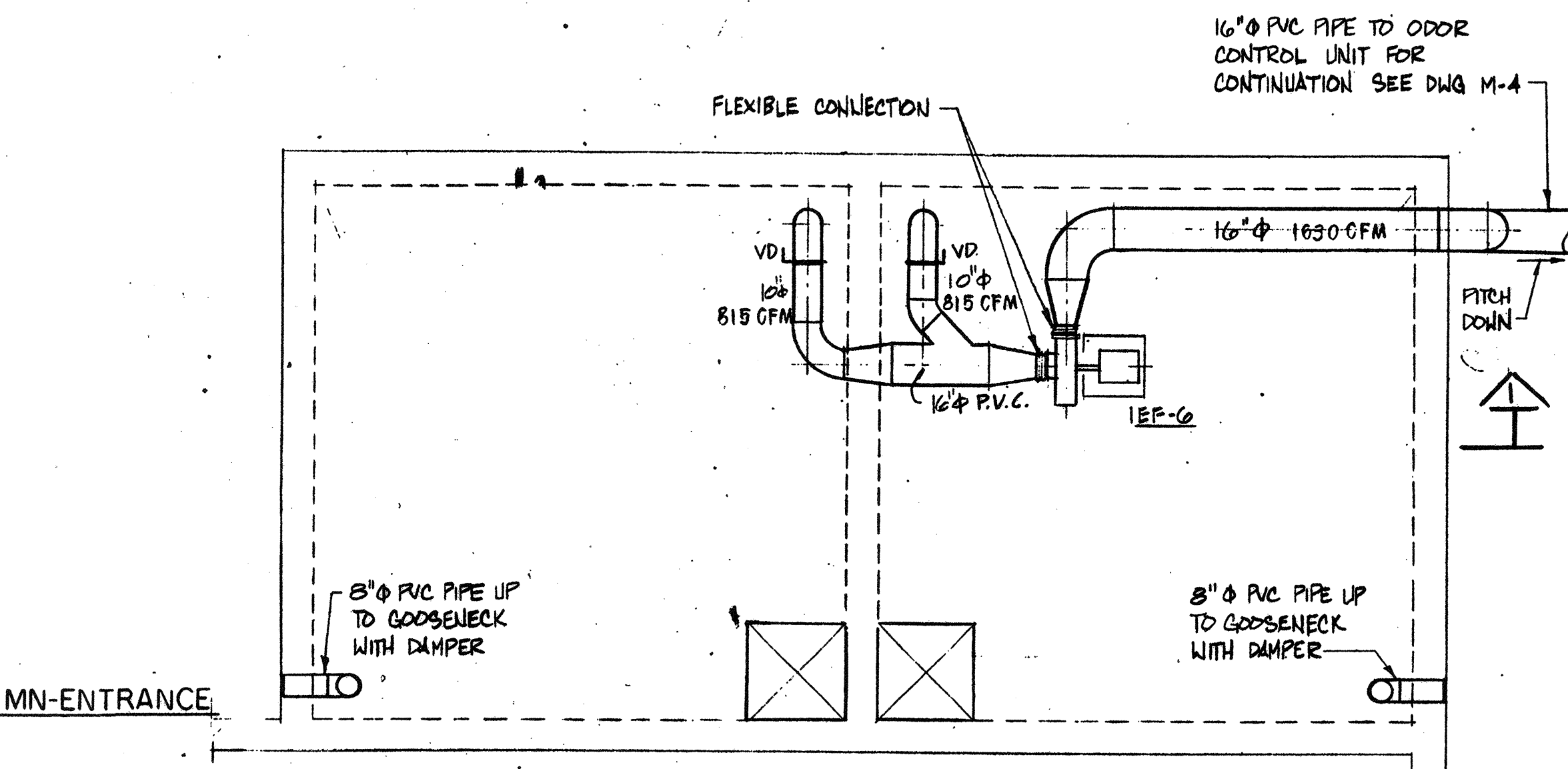
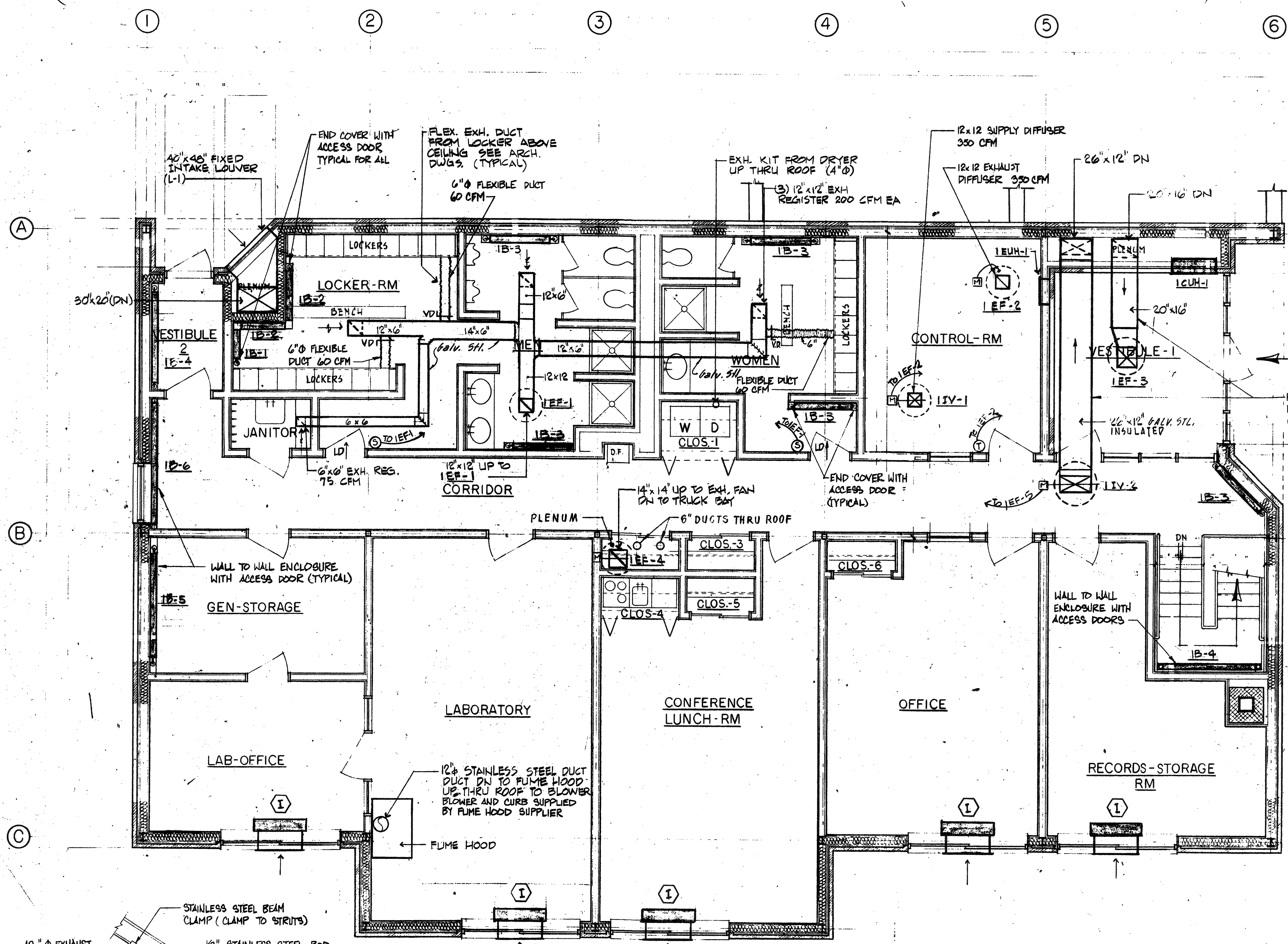
WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



APPROVED: *Stephen E. Segal*
DESIGNED/DRAWN: A.A. M.O. H.G. AS NOTED
CHECKED/SCALE: []
DATE: SEPT. 1985

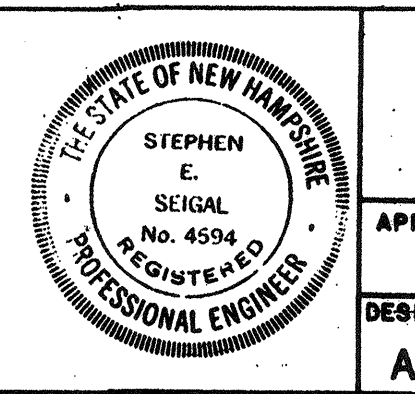
DRAWING NO. **1HV-1**
JOB NO. **85-163**
CONTRACT NO. **3**

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
CONTROL BUILDING
FLOOR PLANS & DETAILS



NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



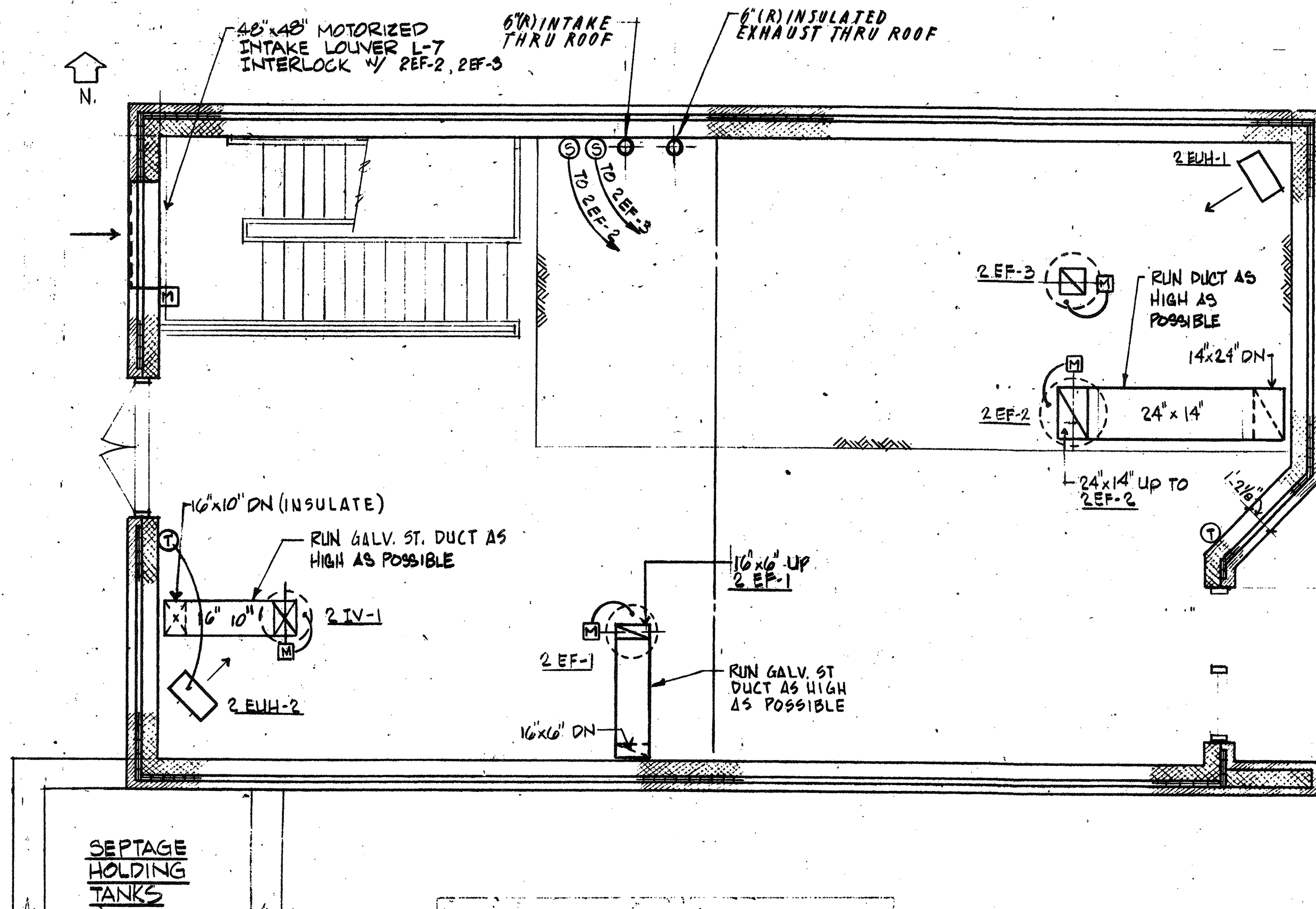
ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen E. Seigal*

DESIGNED/DRAWN: A.A. M.O. SHEETED SCALE: H.G. AS NOTED DATE: SEPT. 1985

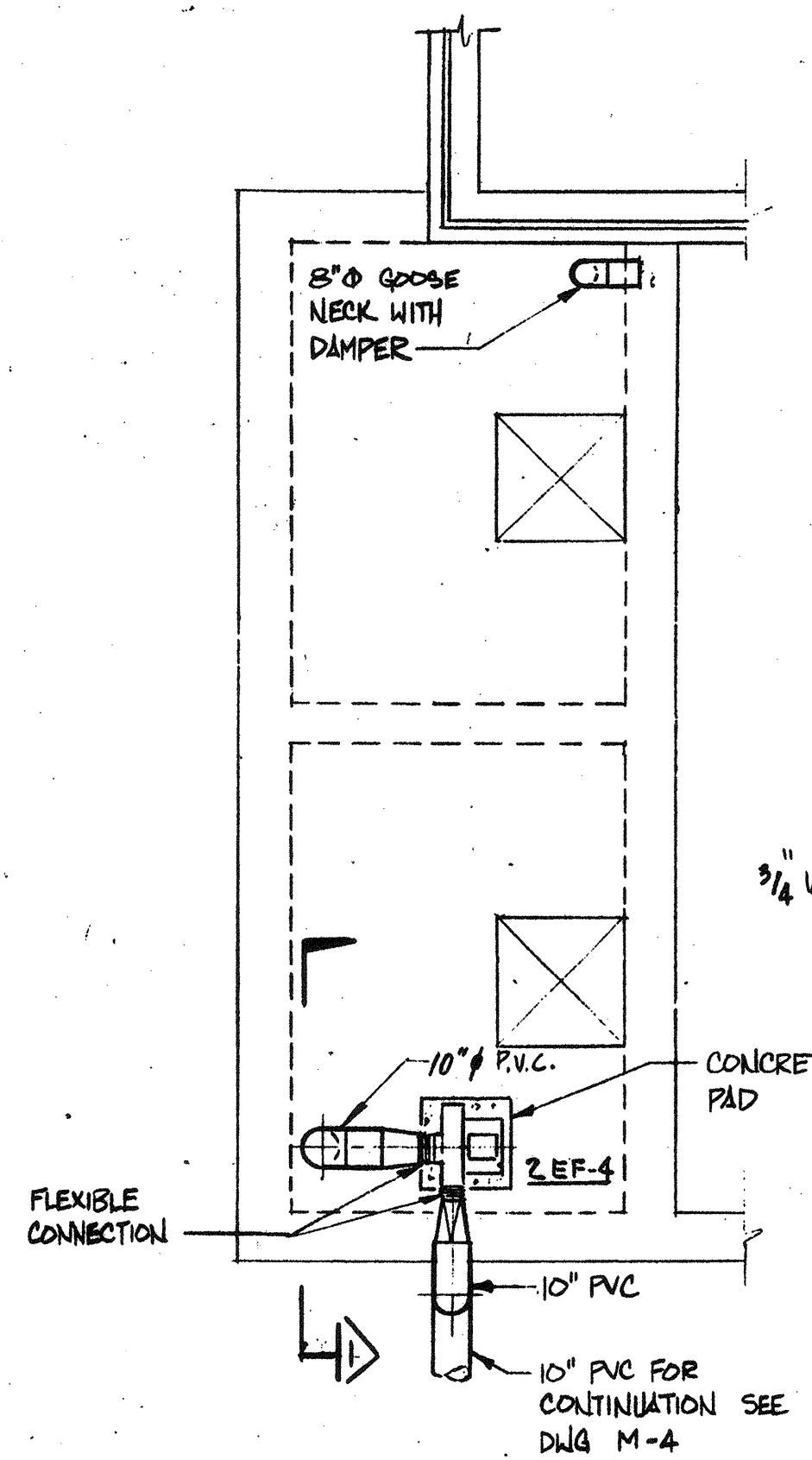
DRAWING NO. 1/5 HV-2
JOB NO. 85-163
CONTRACT NO. 3

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
THICKNER & SLUDGE HOLDING BLDGS
FLOOR PLAN & SECTIONS



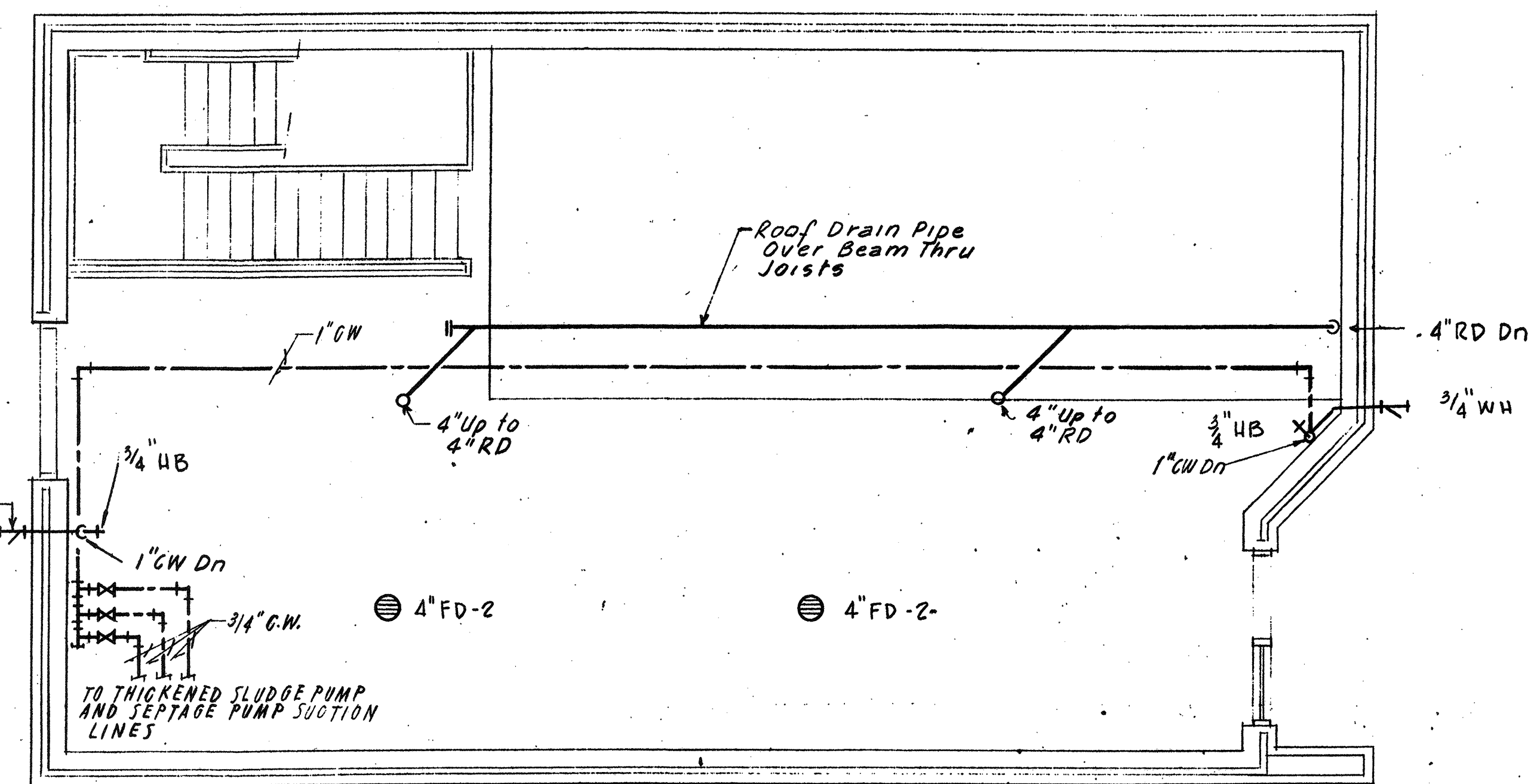
GROUND FLOOR PLAN

Scale 1/4" = 1'



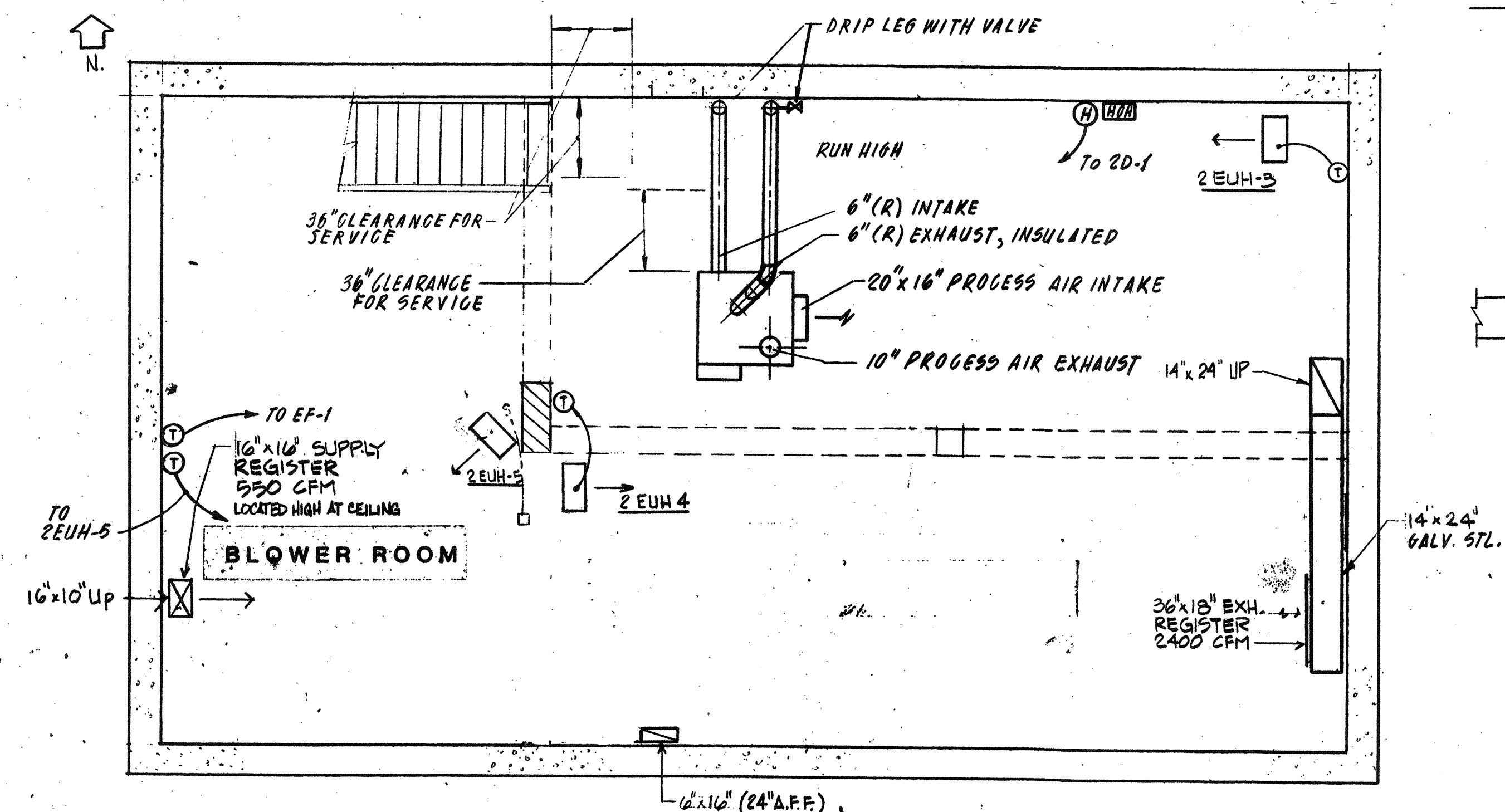
SEPTAGE HOLDING TANKS

Scale: 1/4" = 1'-0"



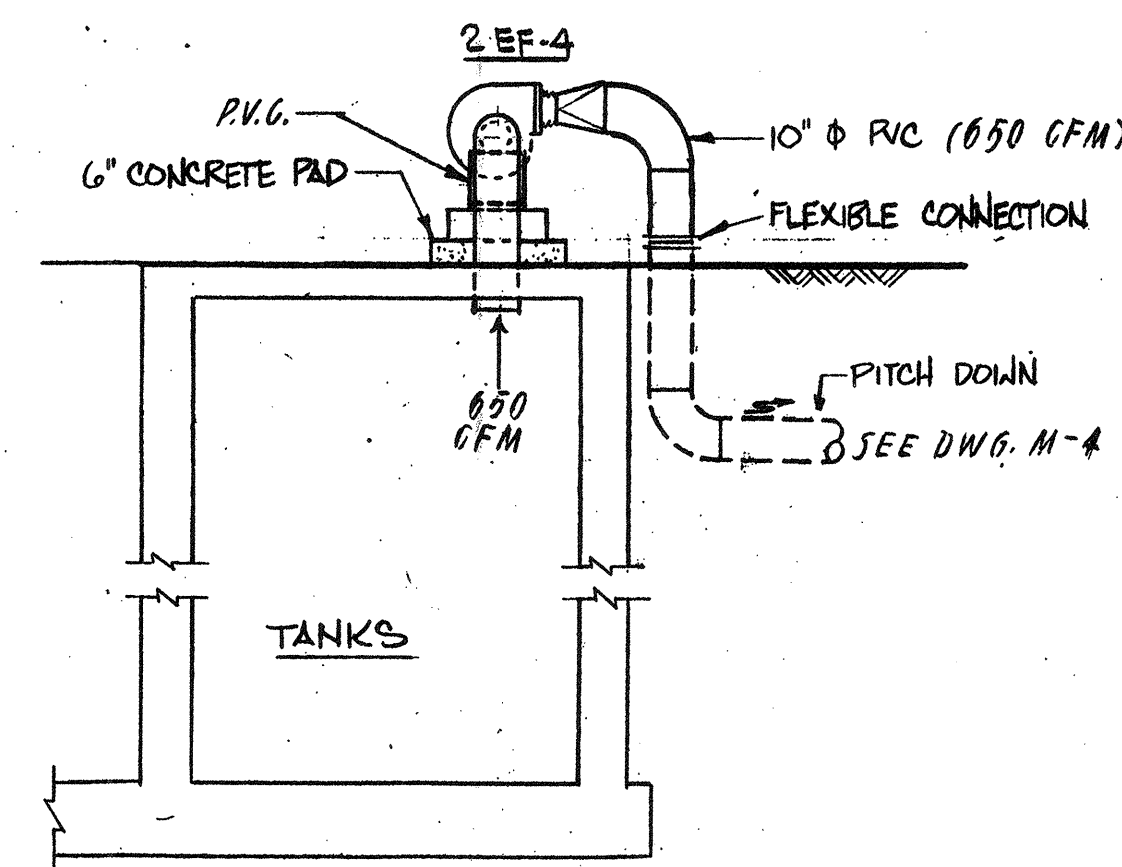
GROUND FLOOR PLAN

Scale 1/4" = 1'



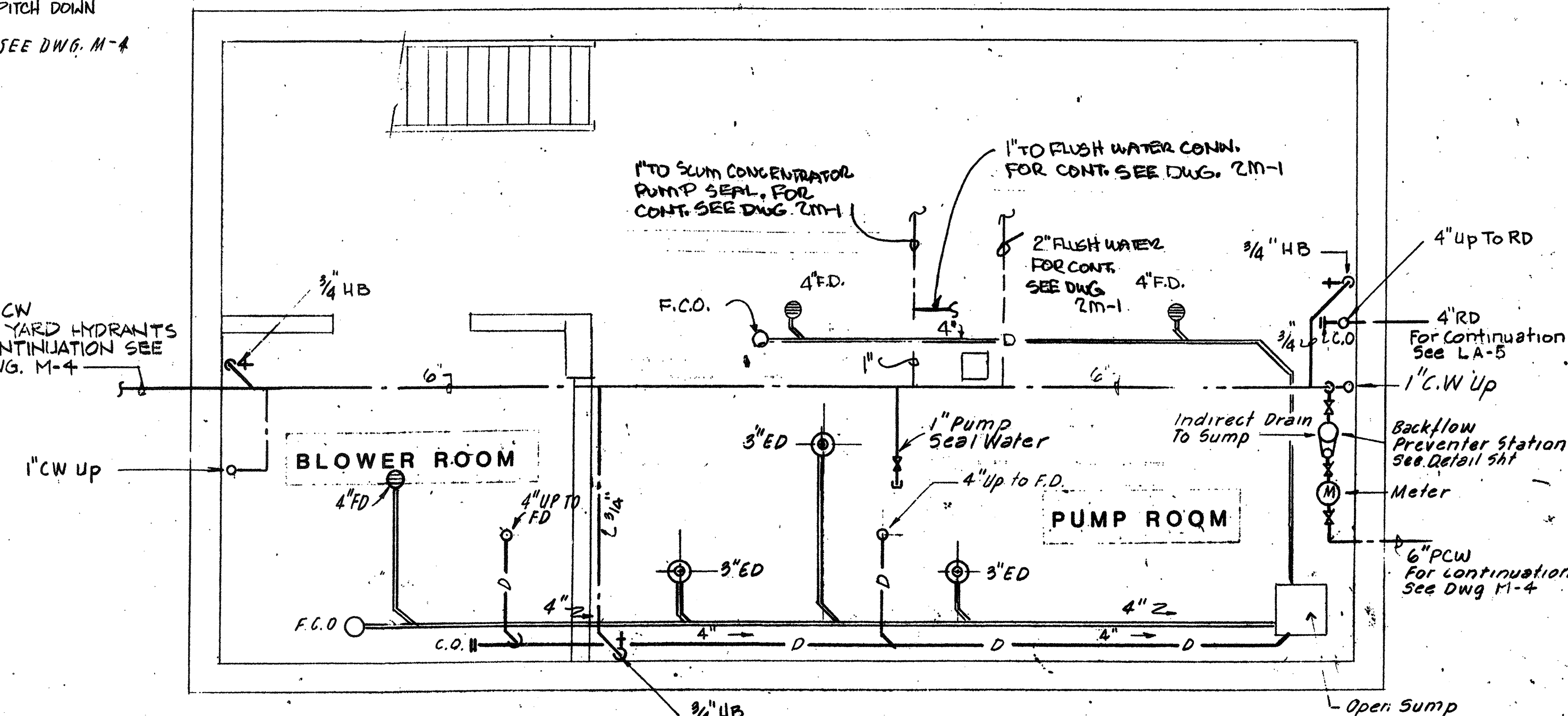
BASEMENT FLOOR PLAN

Scale 1/4" = 1'



SECTION 1

Scale: 1/4" = 1'-0"

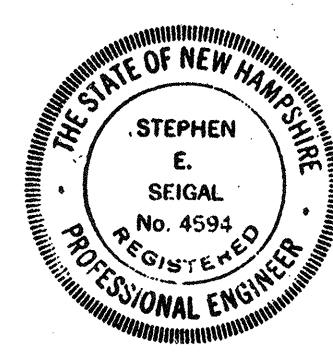
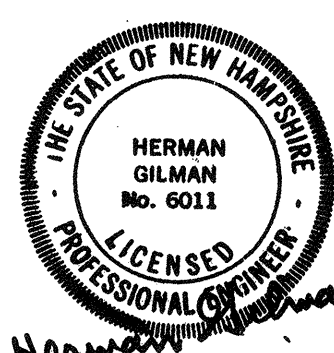


BASEMENT FLOOR PLAN

Scale 1/4" = 1'

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen E. Sigal*

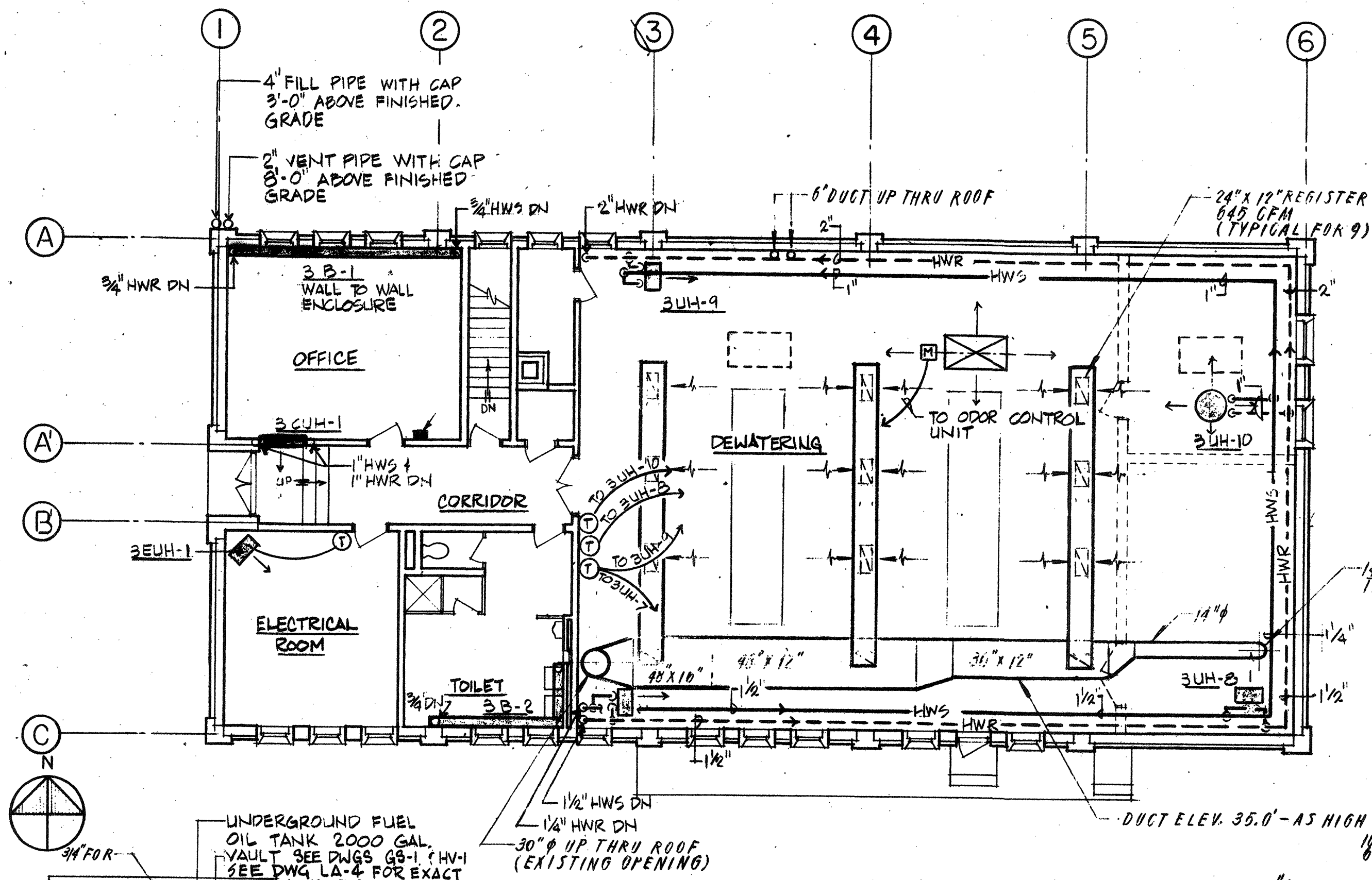
DESIGNED: HG
CHECKED: S
SCALE: AS NOTED
DATE: SEPT. 1985

DRAWING NO. **2HVP-1**
JOB NO. 85-163
CONTRACT NO. 3

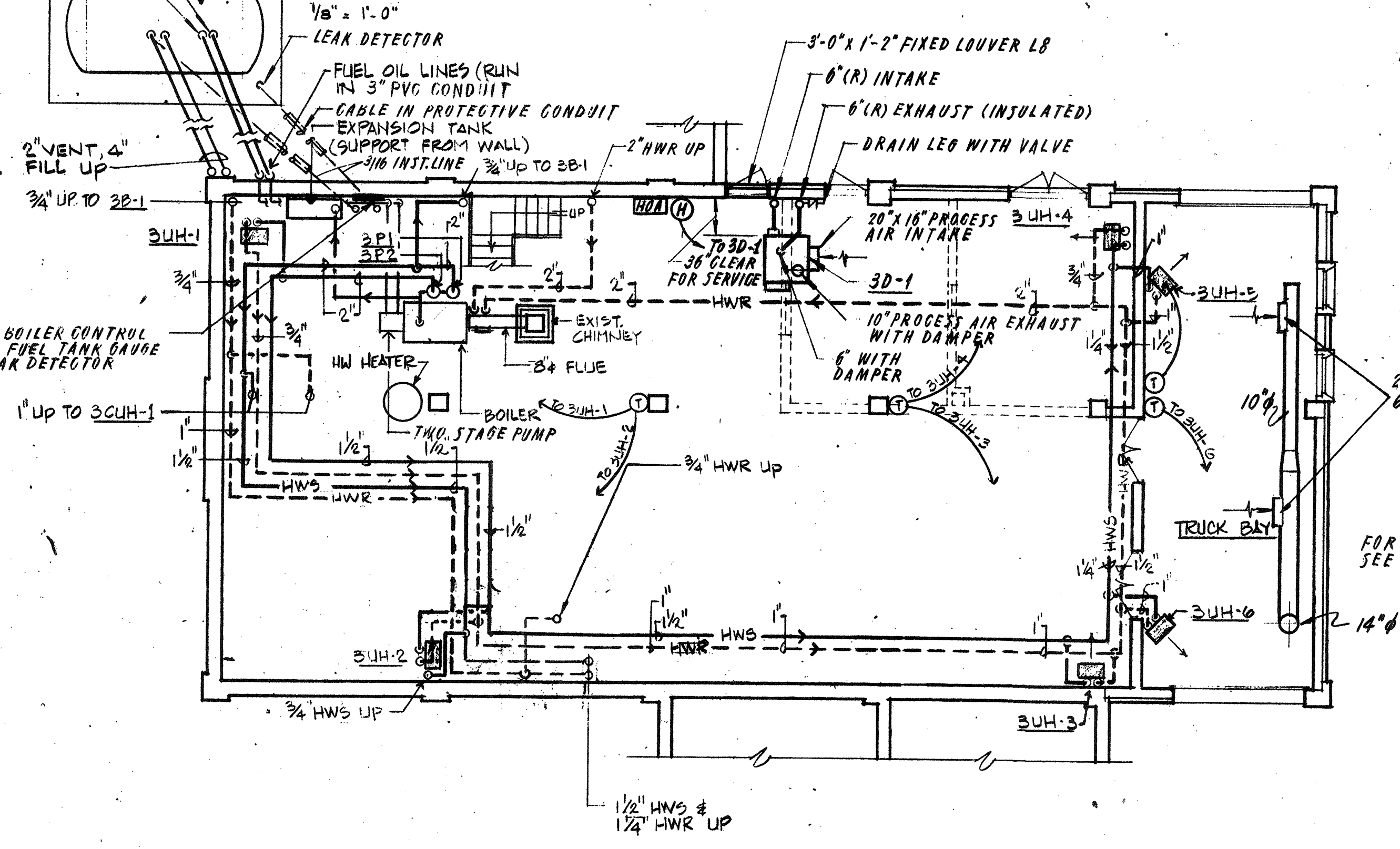
WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N.H.

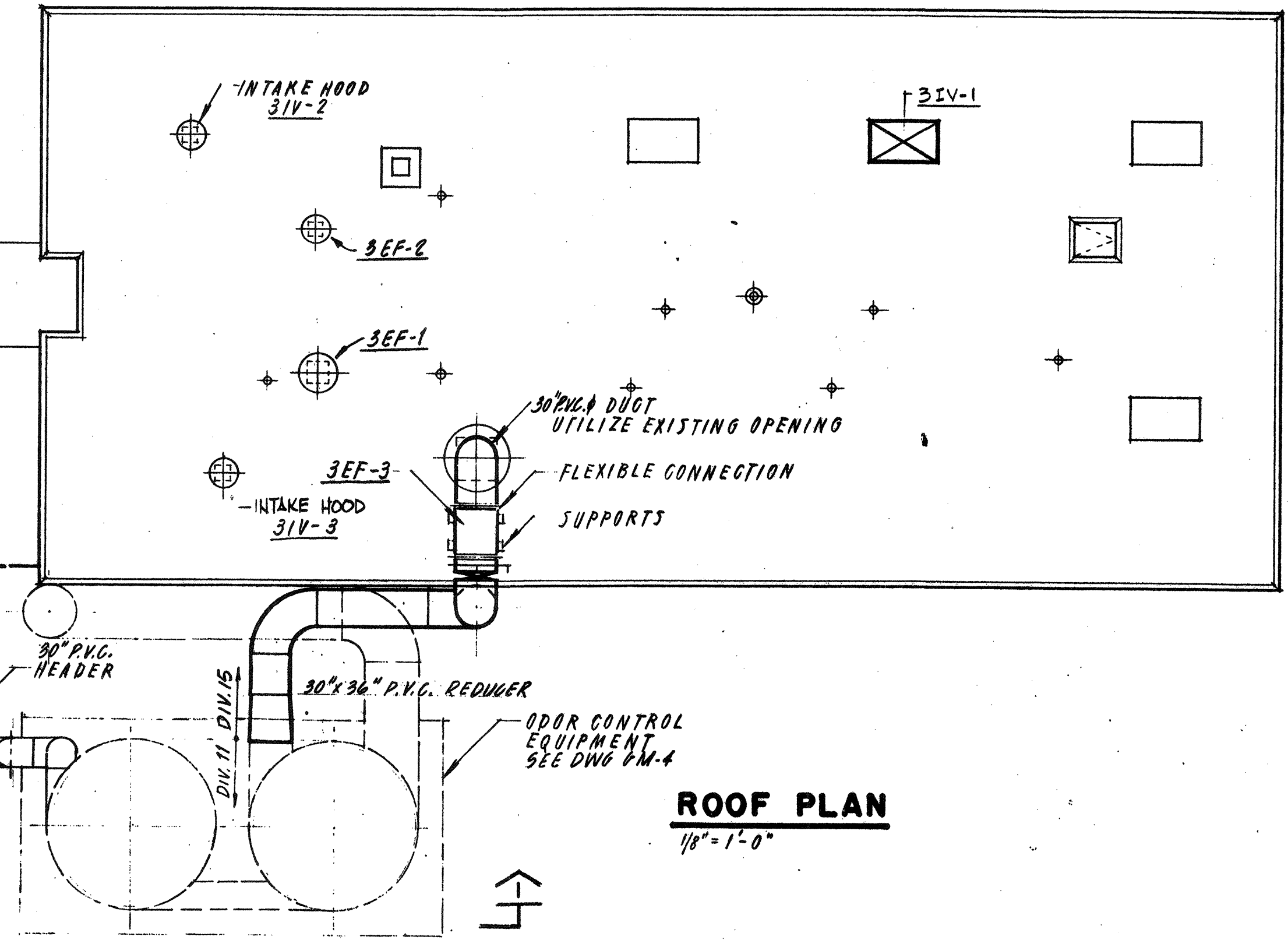
SCUM CONCENTRATOR BUILDING
FLOOR PLANS & SECTIONS



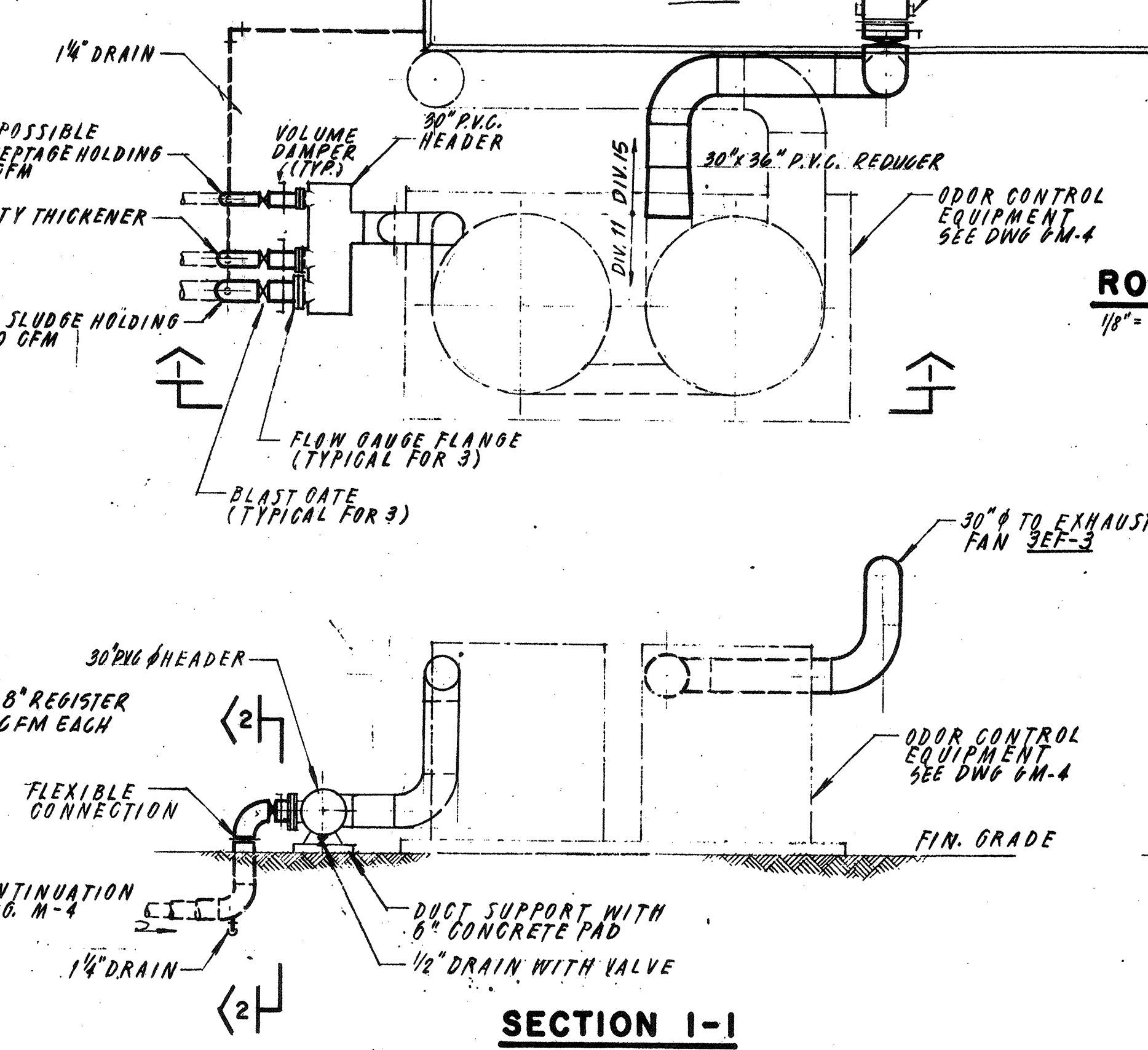
FIRST FLOOR PLAN
1/8" = 1'-0"



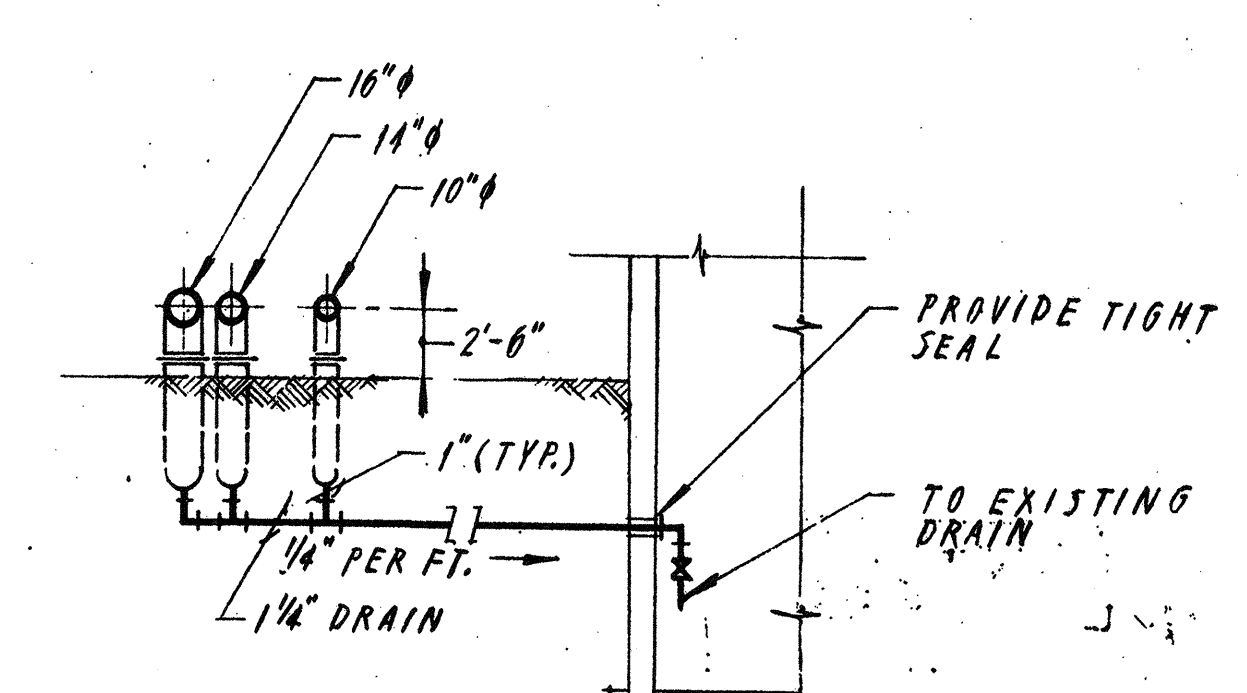
BASEMENT PLAN
1/8" = 1'-0"



ROOF PLAN
1/8" = 1'-0"



SECTION I-1
N.T.S.



SECTION 2-2
N.T.S.

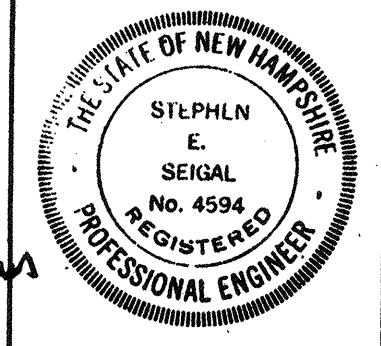
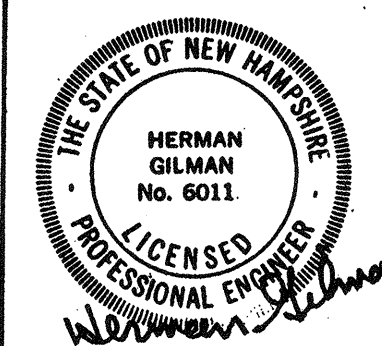
DEMOLITION NOTES

1. REMOVE EXISTING AHU-1, AHU-2, AHU-3 AND ALL ASSOCIATED DUCTWORK, PIPING & CONTROLS.
2. REMOVE BOILER, BASEBOARDS, HEATING EQUIPMENT AND ALL ASSOCIATED PIPING & CONTROLS.
3. REMOVE EXISTING UNDERGROUND OIL STORAGE TANK AND ALL ASSOCIATED PIPING.
4. REMOVE ELECTRIC UNIT HEATERS AND VENTILATION SYSTEMS IN CHLORINE ROOM AND SCALE ROOM.
5. REMOVE 36" INTAKE VENTILATOR ON ROOF.
6. REMOVE EXISTING EXHAUST FAN AND CURBS AND REPLACE WITH NEW EXHAUST FANS 3EF1 AND 3EF-2 AND NEW CURBS. REMOVE EXISTING AIR INTAKE HOODS AND CURBS AND REPLACE WITH NEW AIR INTAKE HOODS.

3IV-2 AND 3IV-3 AND NEW CURBS, DUCTWORK, DIFFUSERS AND CONTROLS IN OFFICE, ELECTRICAL ROOM AND TOILET TO REMAIN.

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89

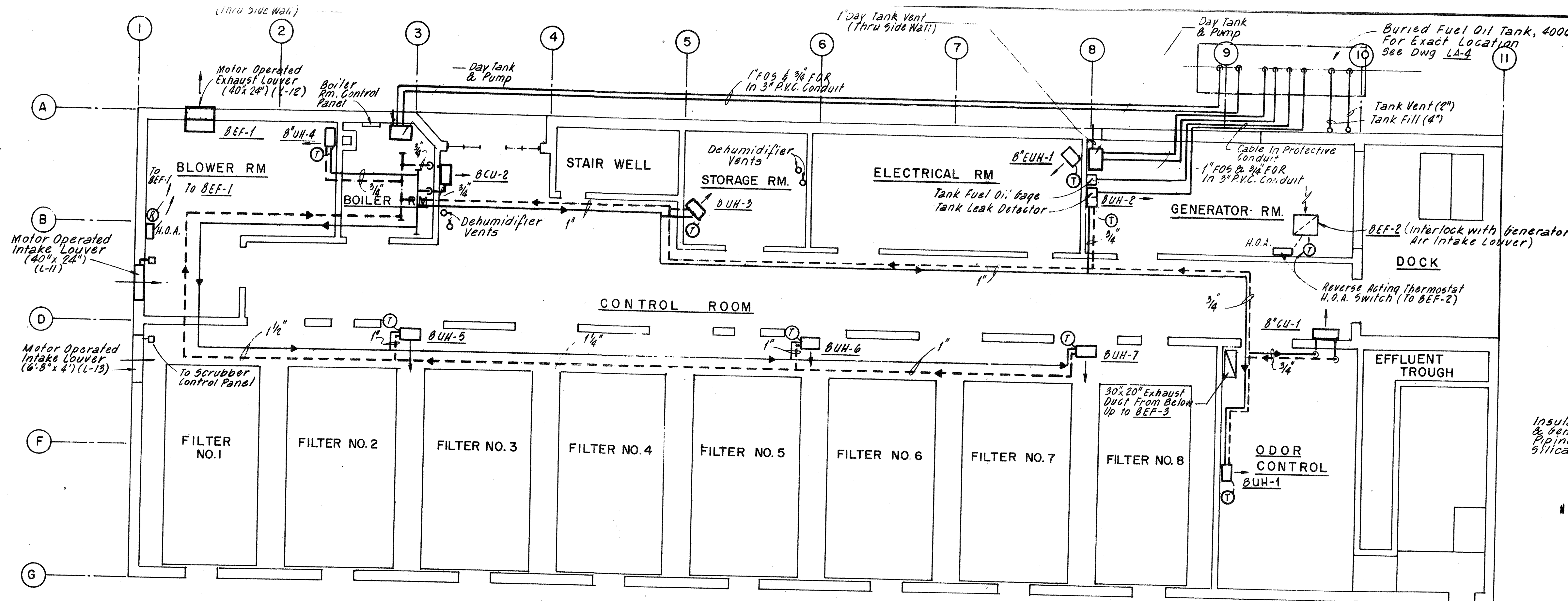
WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING - 4"			
REPRODUCTIONS MAY BE REDUCED SIZE			
DESIGNED	DRAWN	CHECKED	SCALE
A.A.	M.O.	H.G.	AS NOTED
APPROVED			DATE
Stephen E. Seegal			SEPT. 1985

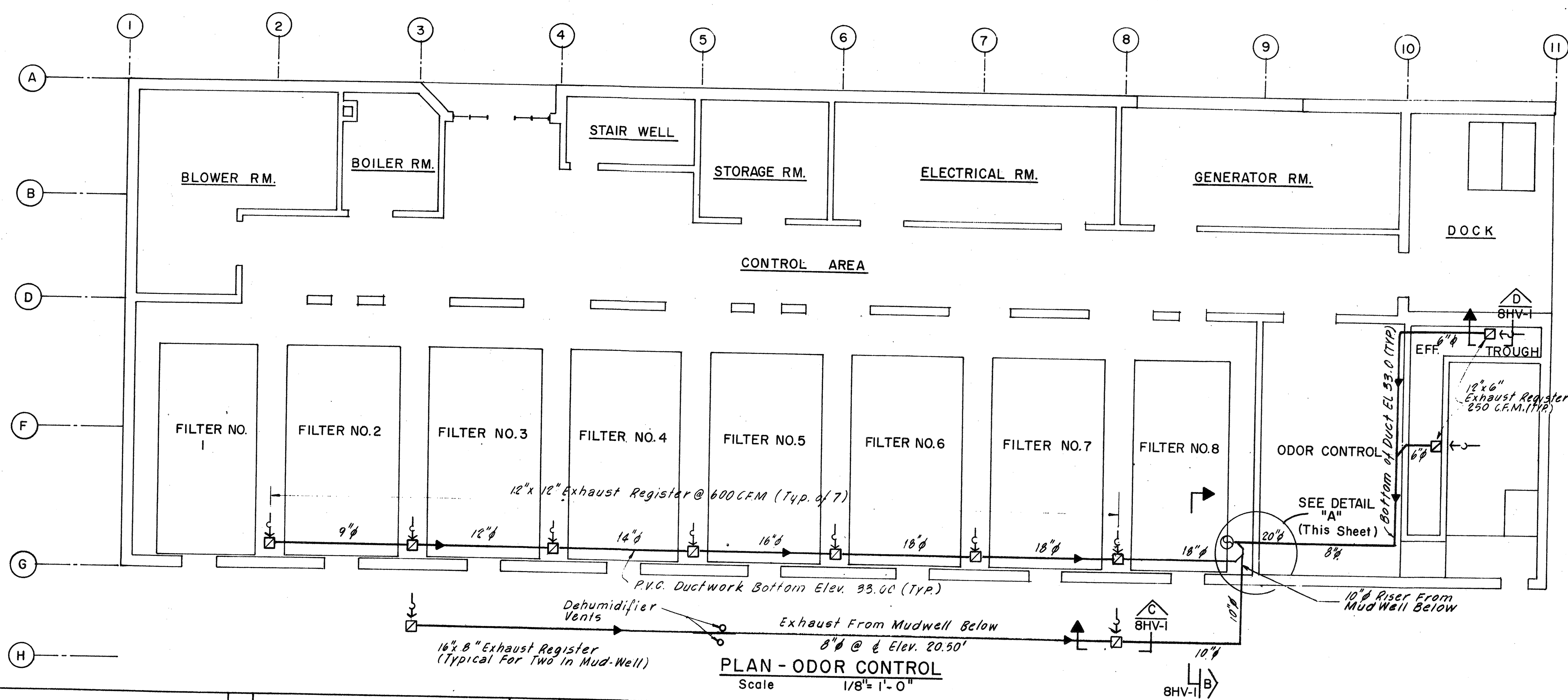
DRAWING NO.	3HV-1
JOB NO.	85-163
CONTRACT NO.	3
SHEET 71 OF 106 SHEETS	

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
SLUDGE PROCESSING BUILDING
FLOOR PLANS & SECTION



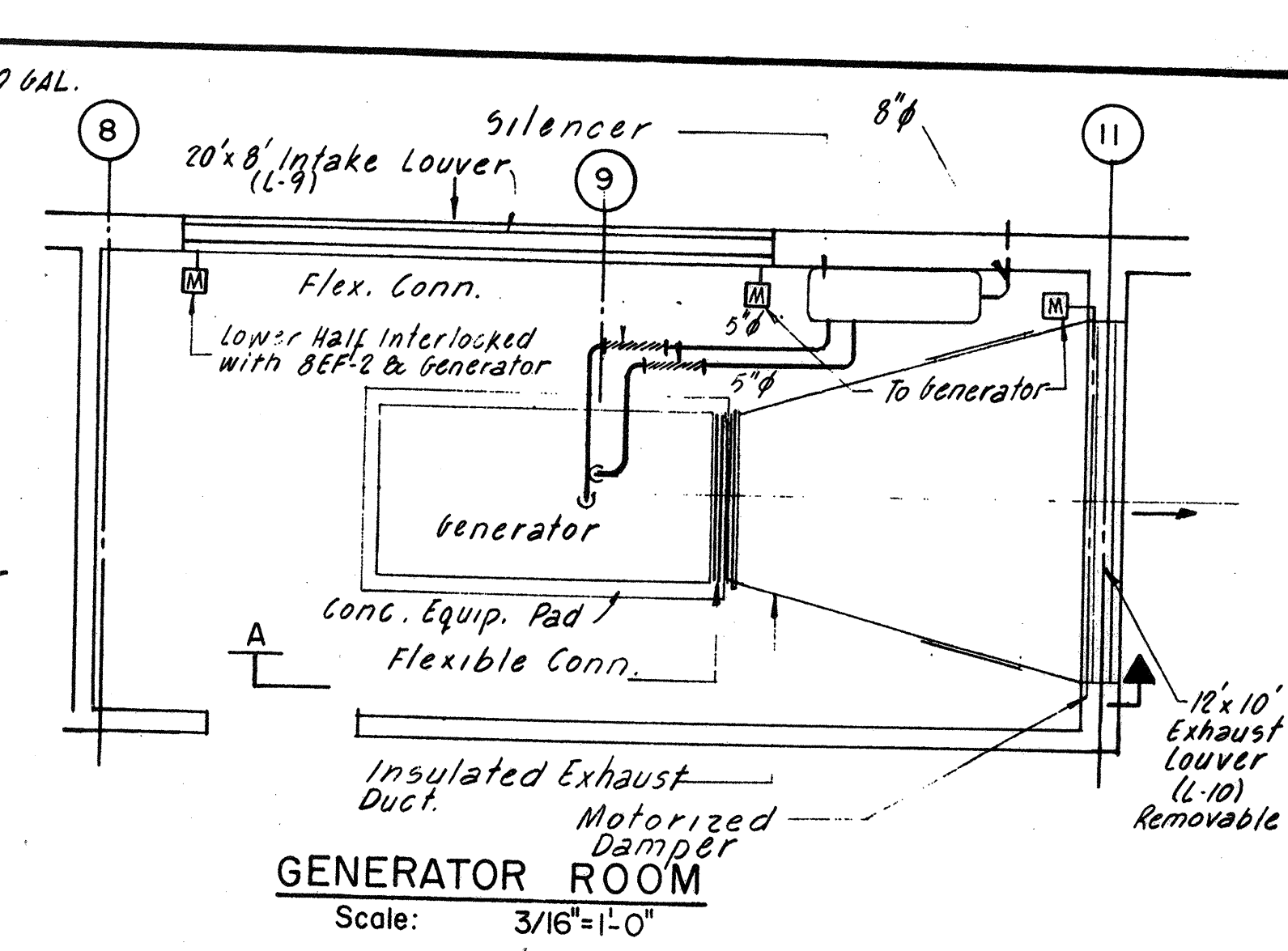
PLAN - HEATING & VENTILATING

Scale 1/8" = 1'-0"



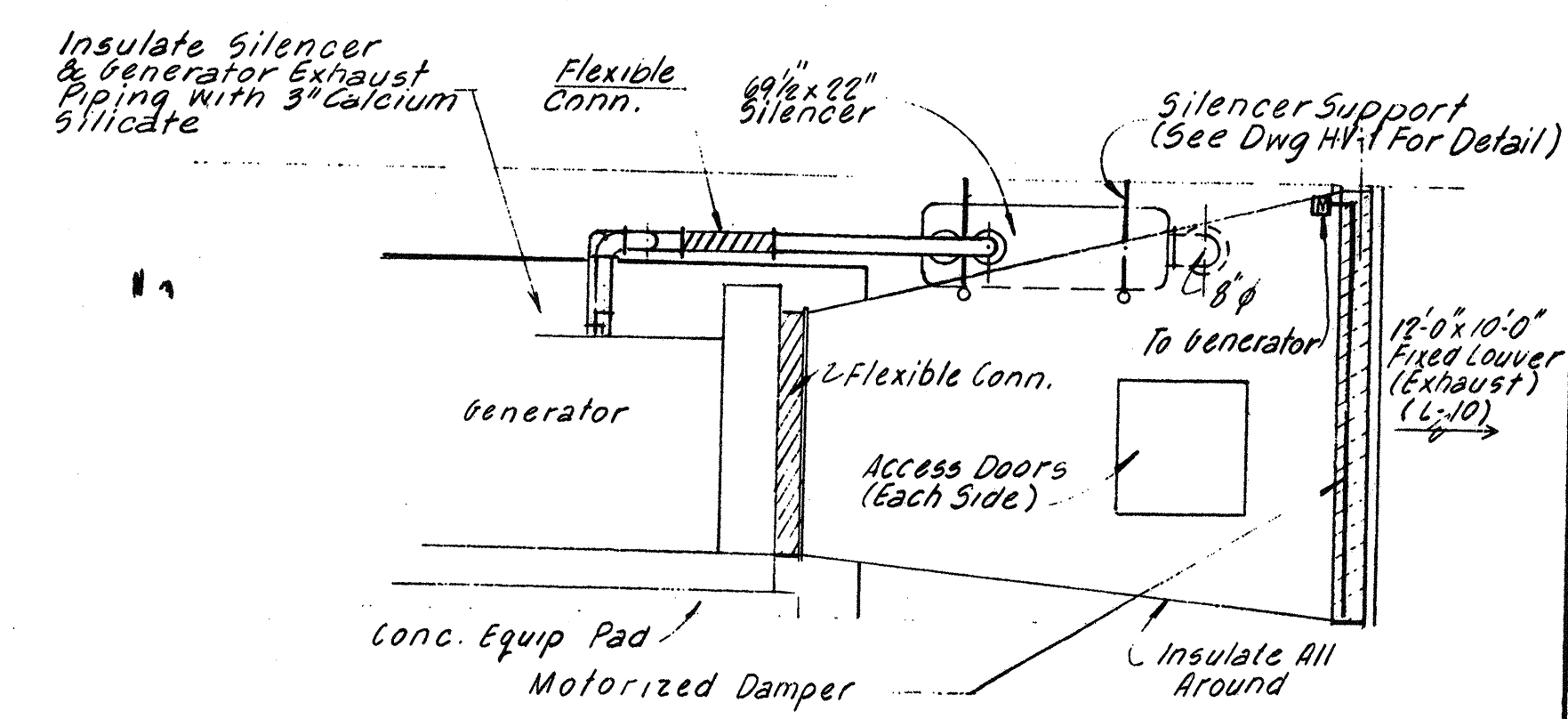
PLAN - ODOR CONTROL

Scale 1/8" = 1'-0"



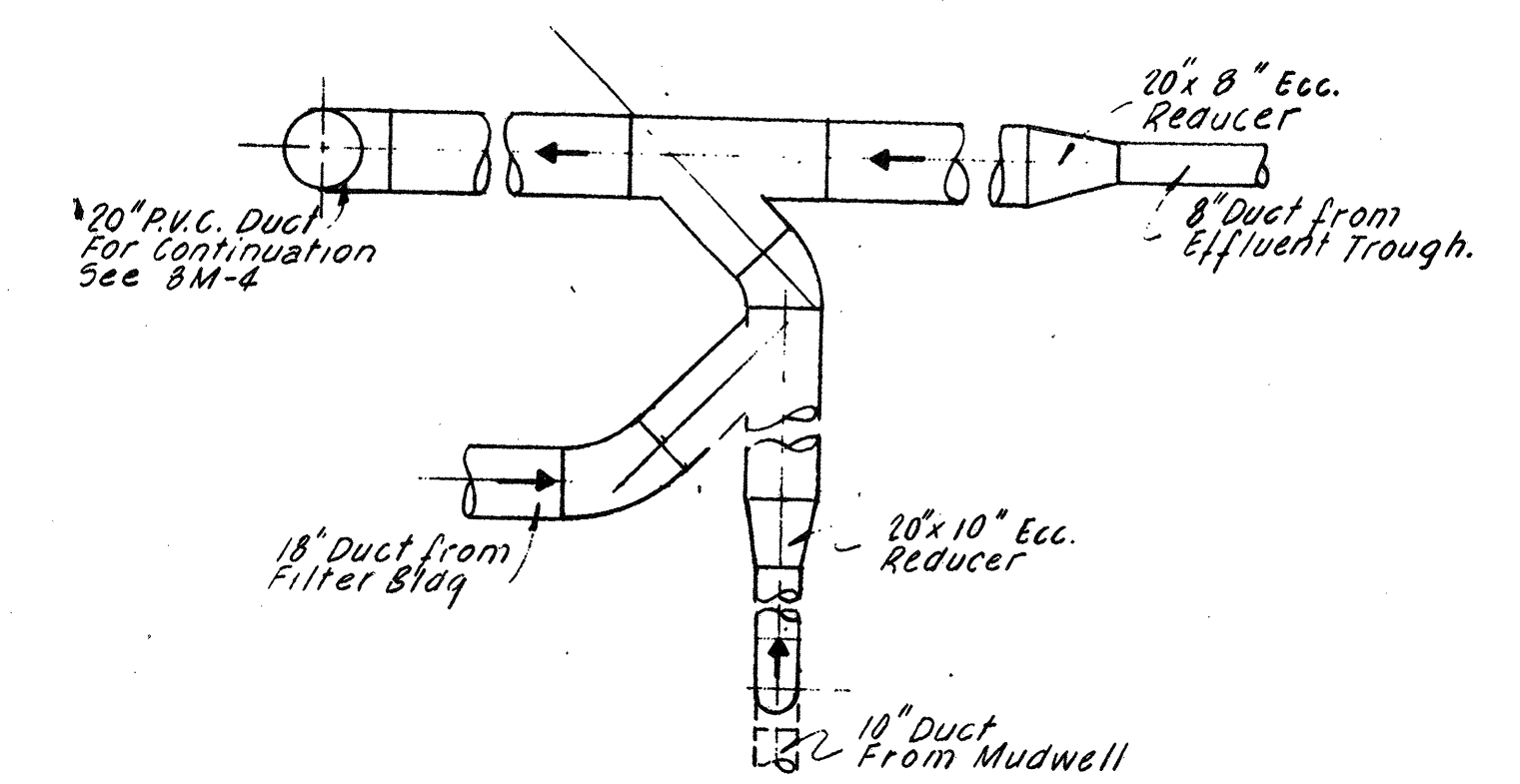
GENERATOR ROOM

Scale: 3/16" = 1'-0"



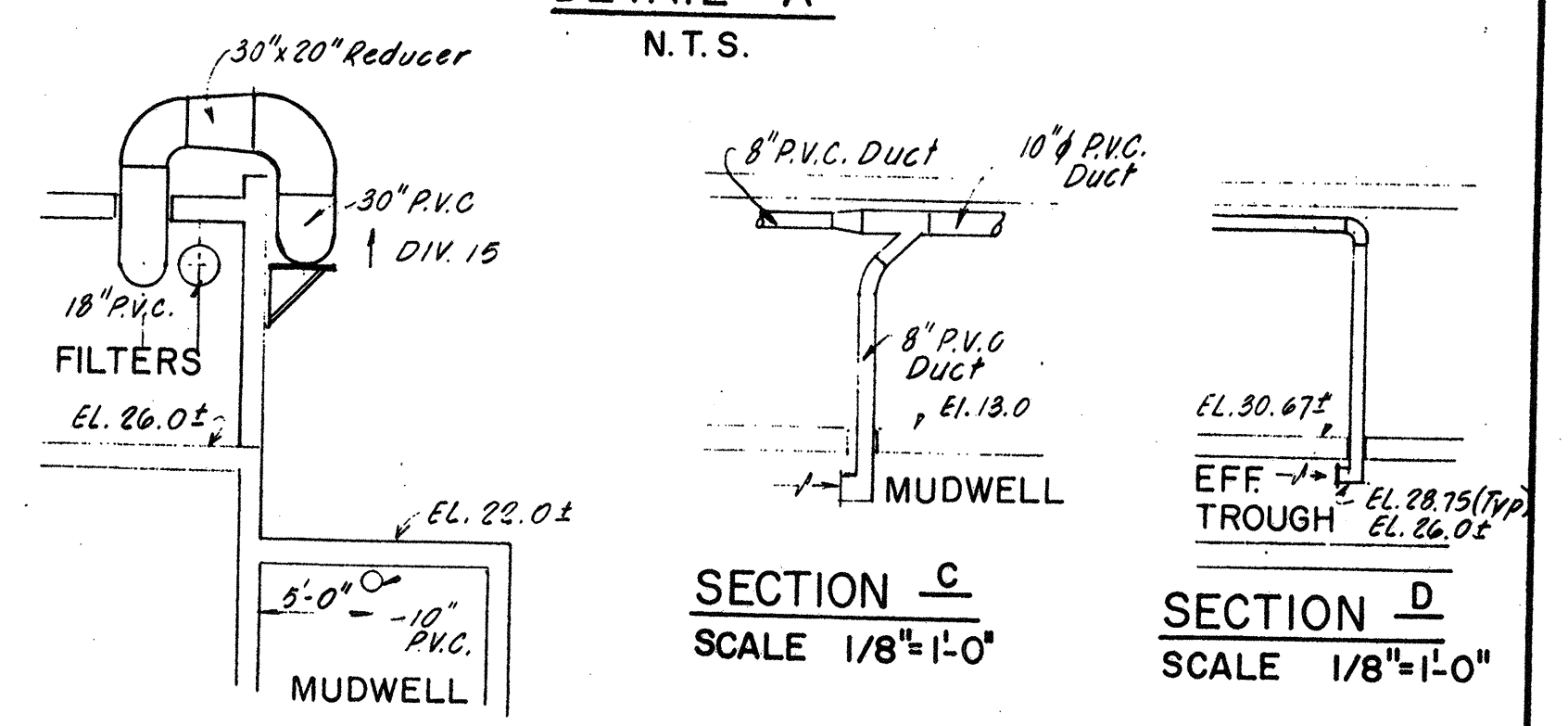
SECTION A

SCALE 1/4" = 1'-0"



DETAIL "A"

N.T.S.



SECTION B

SCALE 1/8" = 1'-0"

SECTION C

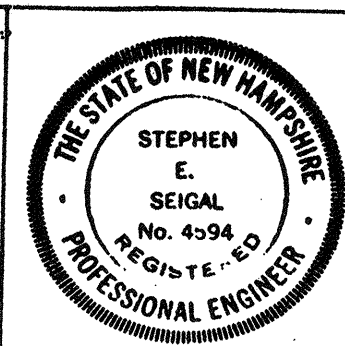
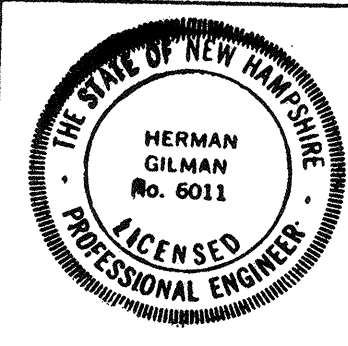
SCALE 1/8" = 1'-0"

SECTION D

SCALE 1/8" = 1'-0"

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Added	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED

DESIGNED DRAWN HG JCS
CHECKED HG JCS
SCALE AS NOTED
DATE SEPT, 1989

DRAWING NO. **8HV-1**

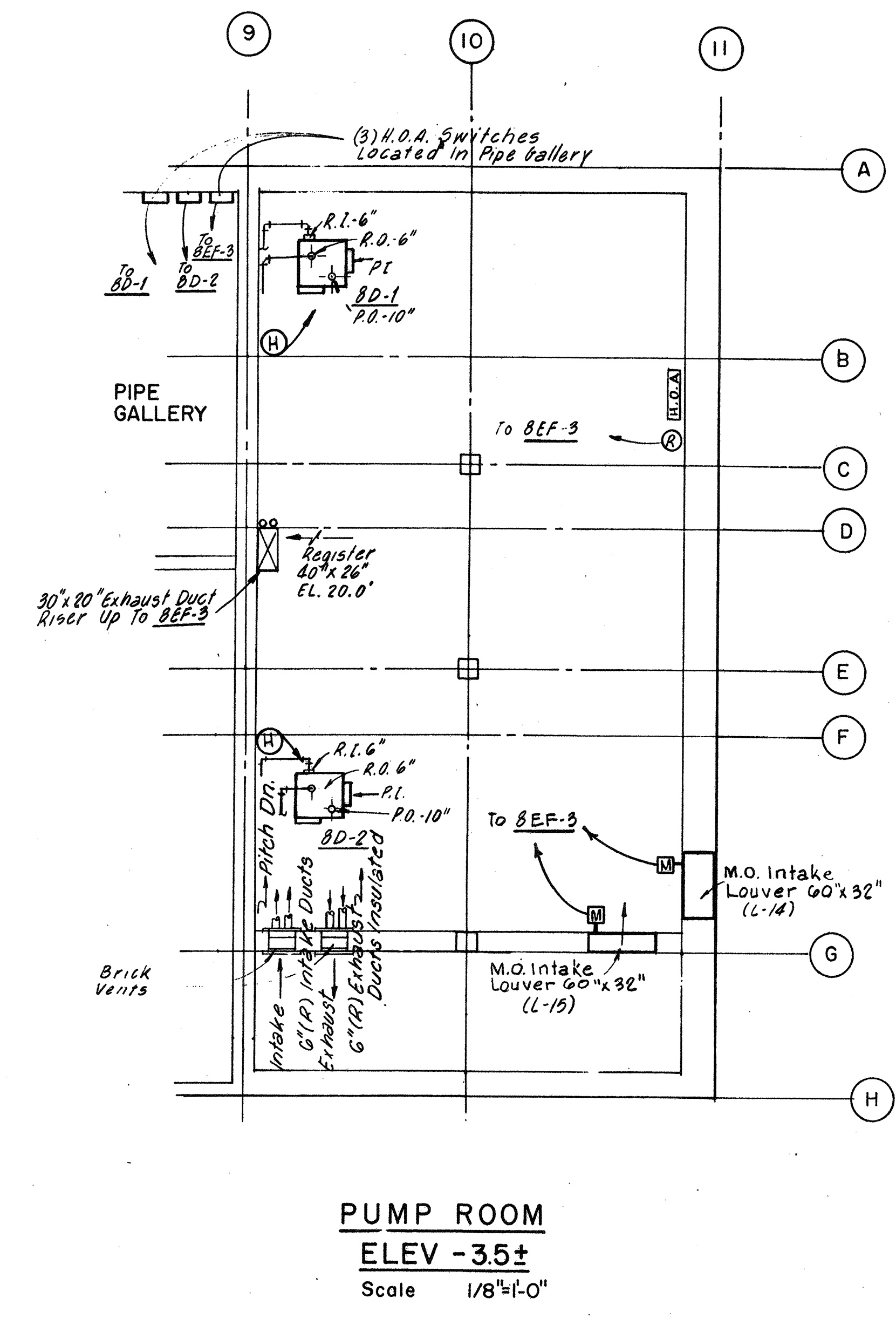
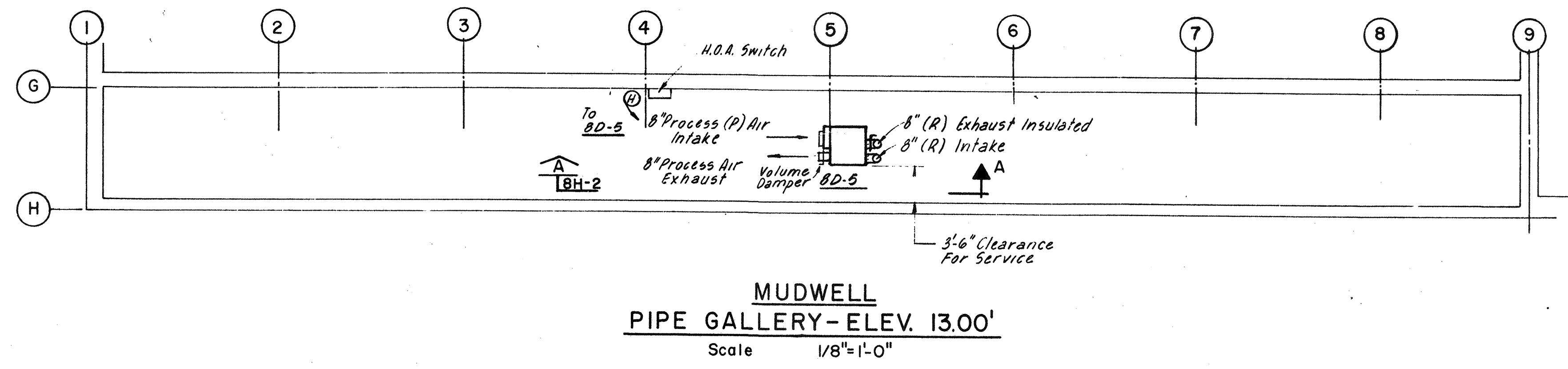
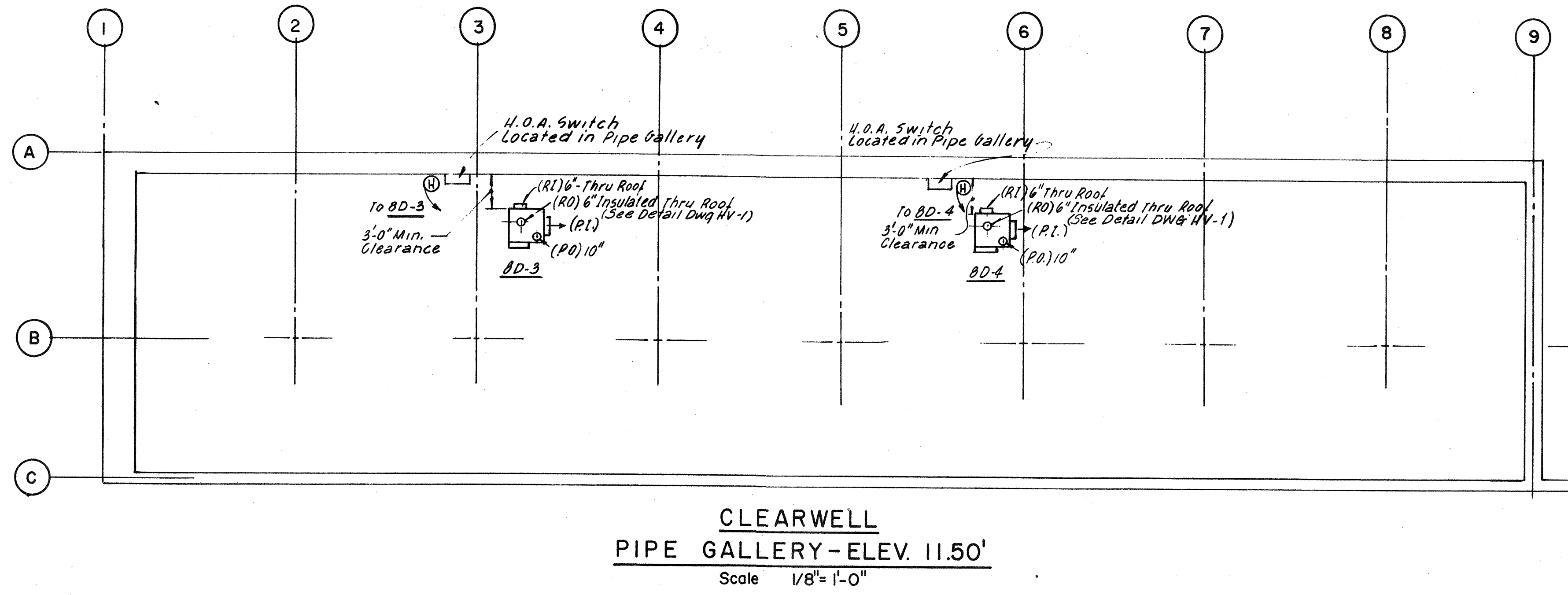
JOB NO. 85-163

CONTRACT NO. 3

WASTEWATER TREATMENT FACILITY

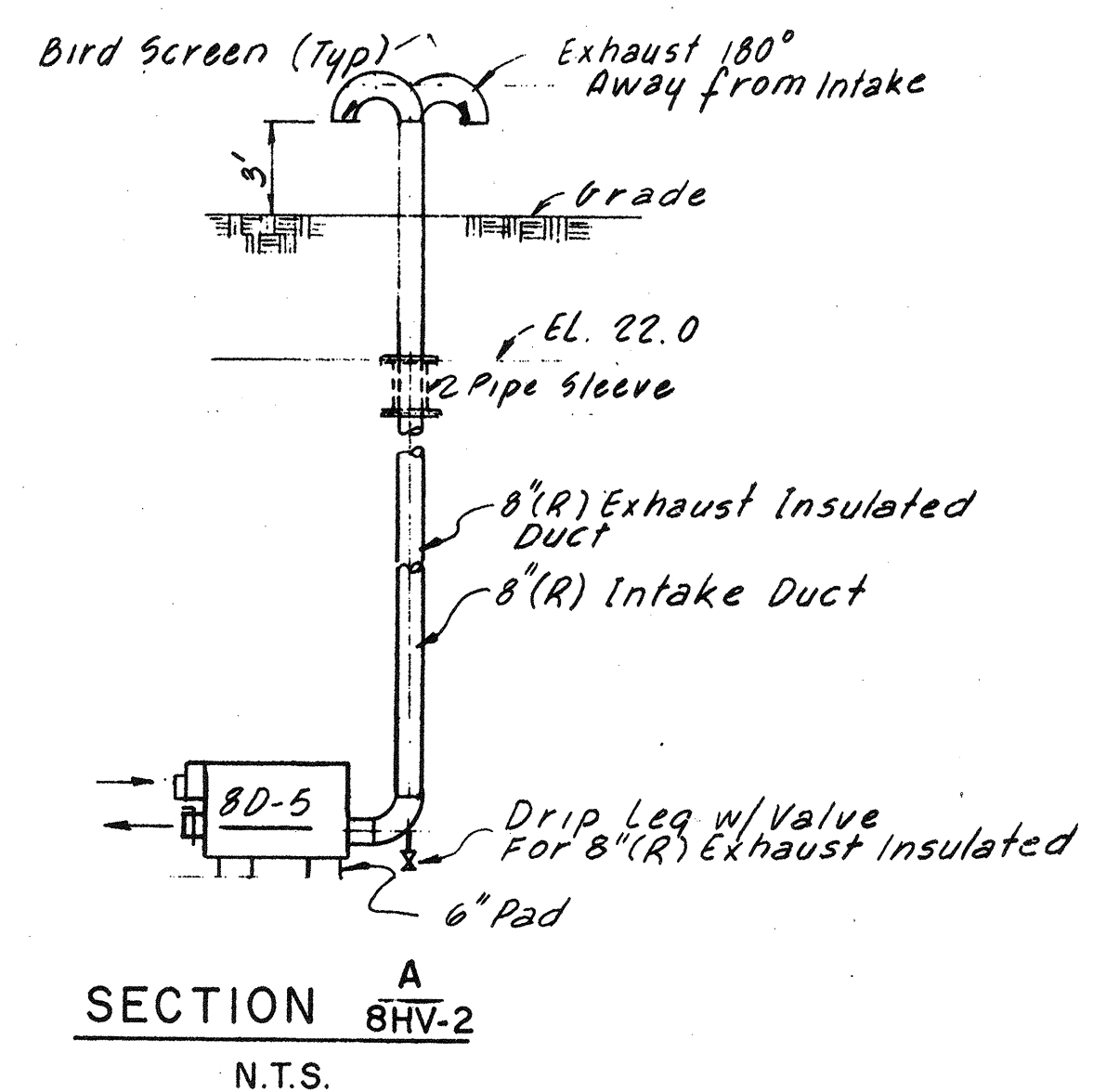
PORTSMOUTH, N.H.

FILTER BUILDING
HEATING AND VENTILATING



DEHUMIDIFIER SCHEDULE								
SYMBOL	SIZE	C.F.M.	K.W.	CURRENT		REACTIVE C.F.M.	DUCT SIZE	REMARKS
				V	PH			
8D-5	R-300	300	10.0	480	3	140	(2) 8"	
1D-1	RC-500	500	11.0	480	3	135	(2) 6"	
2D-1	"	"	"	"	"	"	"	
3D-1	"	"	"	"	"	"	"	
8D-1	"	"	"	"	"	"	"	
8D-2	"	"	"	"	"	"	"	
8D-3	"	"	"	"	"	"	"	
8D-4	"	"	"	"	"	"	"	

Design Based On "Dryomatic" or Approved Equal



NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Added	9/89
REVISIONS		

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.

ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

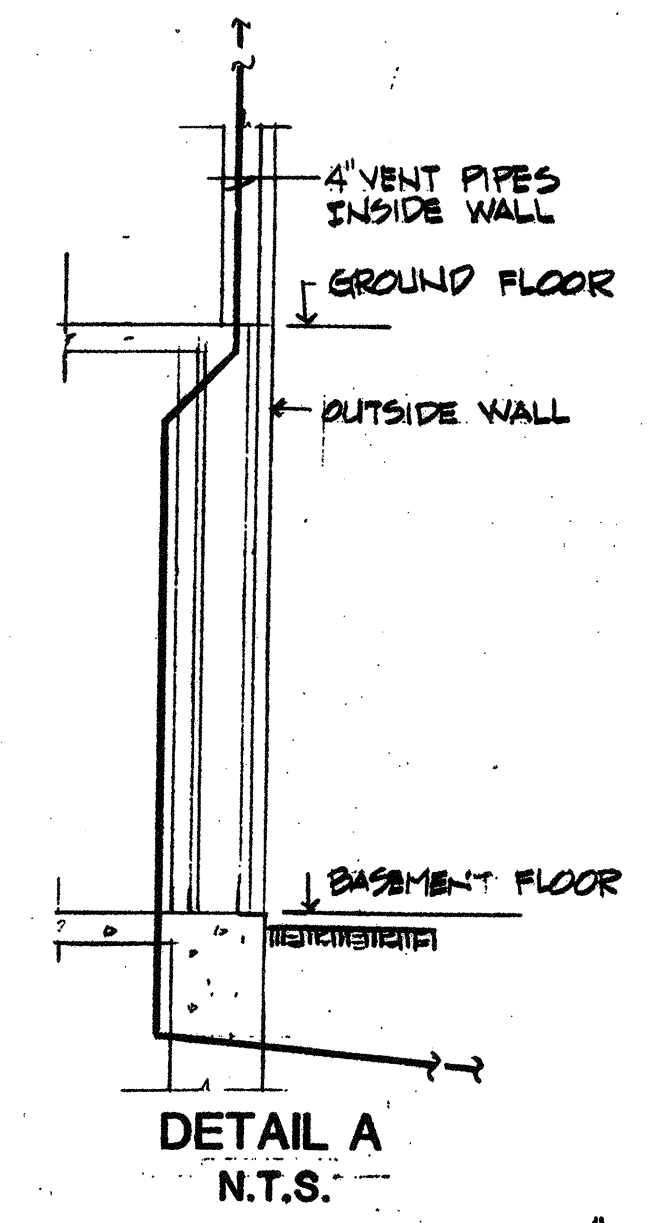
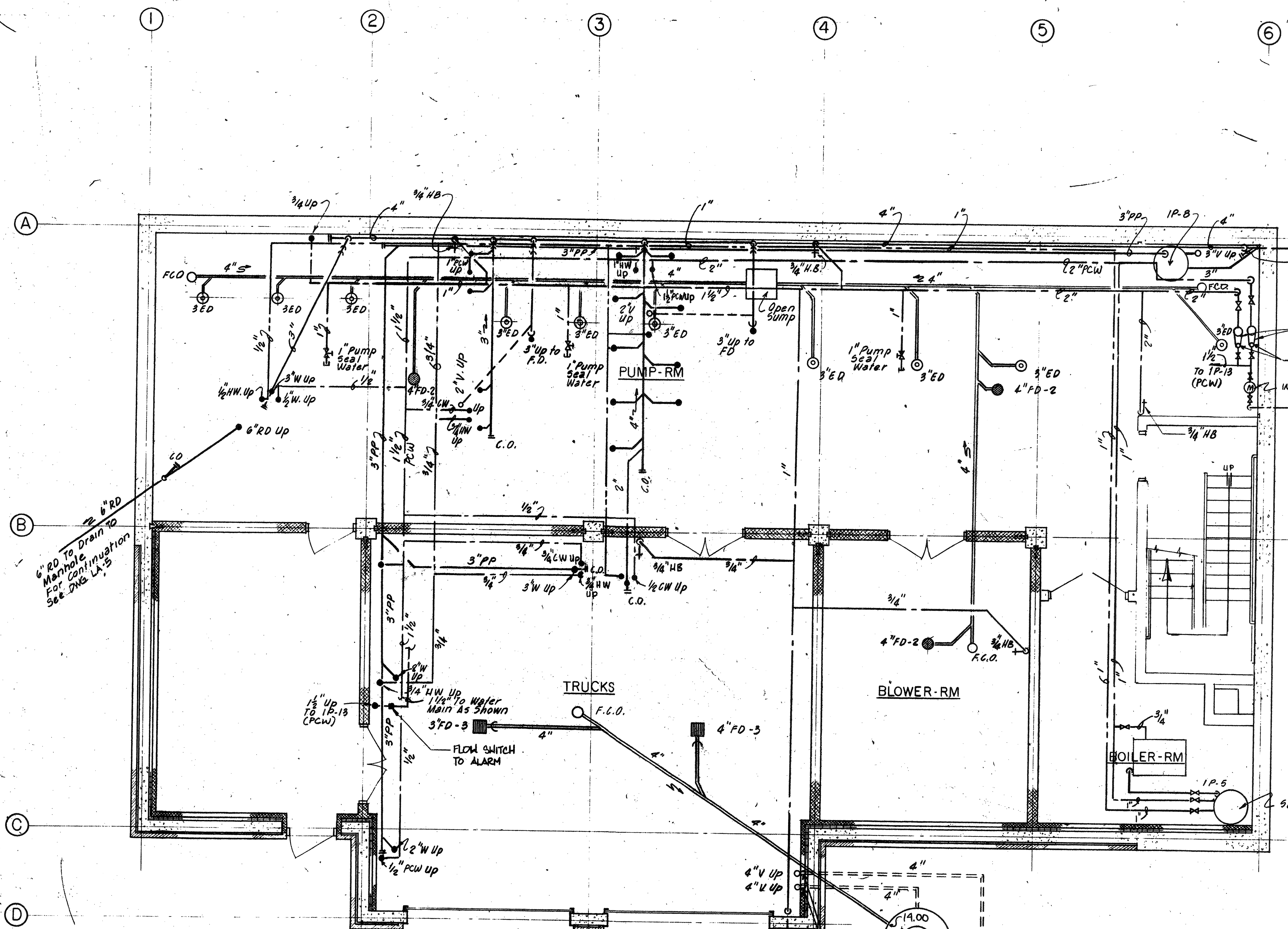
APPROVED

DESIGNED DRAWN H.G. J.C.S. CHECKED H.G. SCALE AS NOTED DATE SEPT. 1989

DRAWING NO. **8HV-2**
JOB NO. 85-163
CONTRACT NO. 3

SHEET 73 OF 106 SHEETS

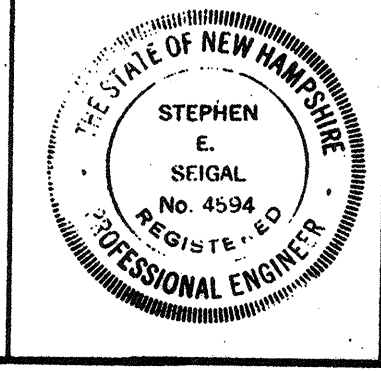
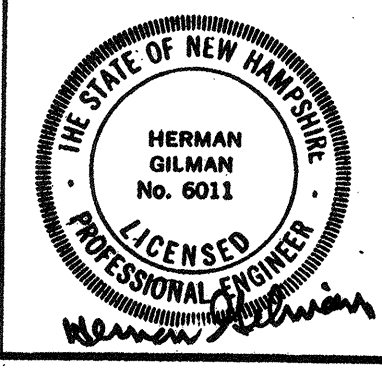
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
FILTER BUILDING
HEATING AND VENTILATING



BASEMENT FLOOR PLAN

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89
REVISIONS		

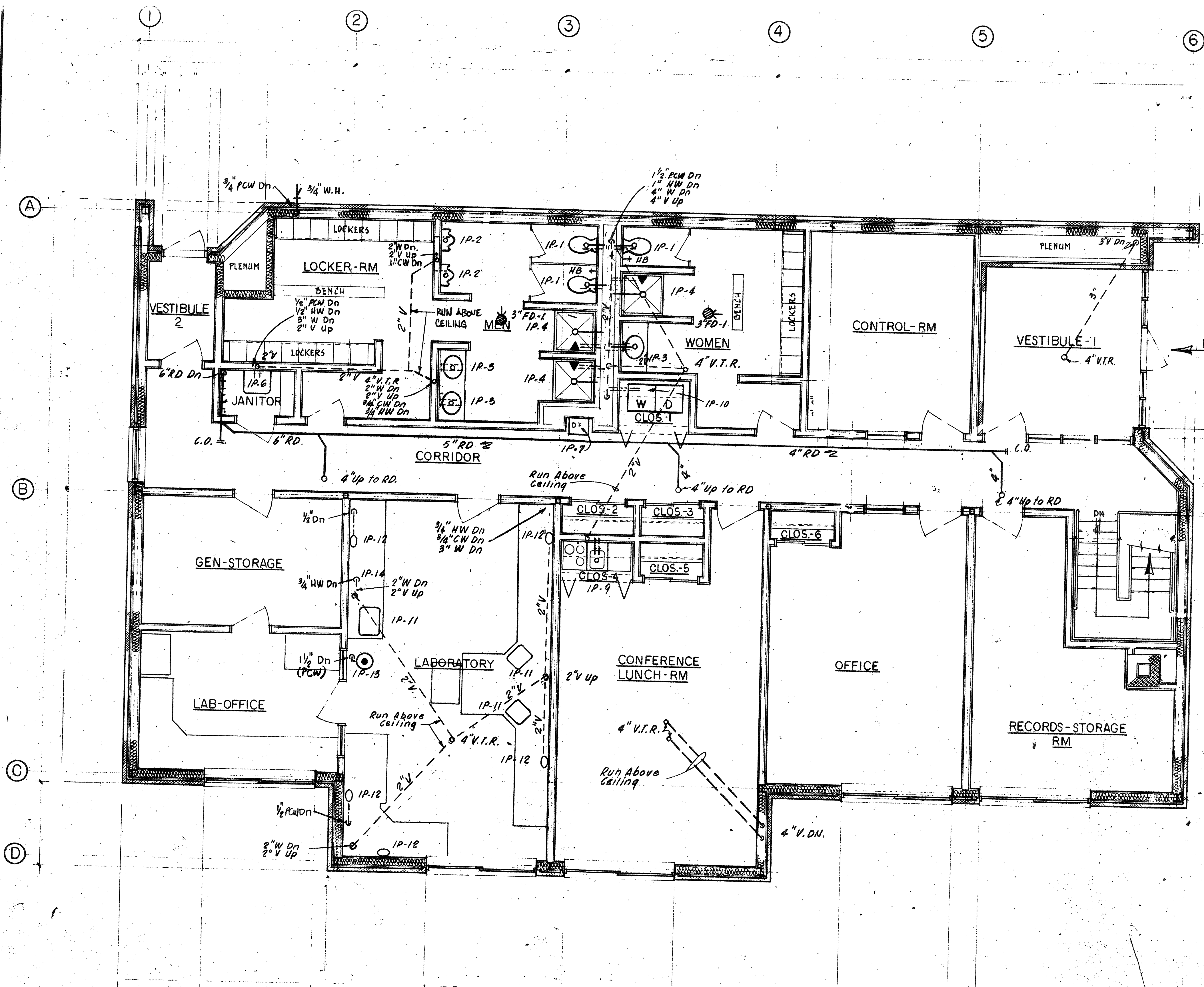
WHITMAN & HOWARD, INC.
 45 WILLIAM STREET, WELLESLEY, MASS.



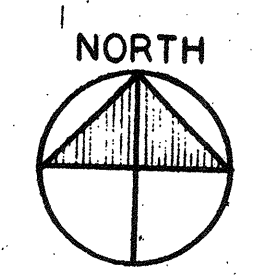
APPROVED: *Stephen E. Seigal*
 DESIGNED/DRAWN: AA JCS
 CHECKED: AA
 SCALE: AS NOTED
 DATE: SEPT, 1985

DRAWING NO. **1P-1**
 JOB NO. **85-163**
 CONTRACT NO. **3**
 SHEET **75** OF 106 SHEETS

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
CONTROL BUILDING
FLOOR PLAN



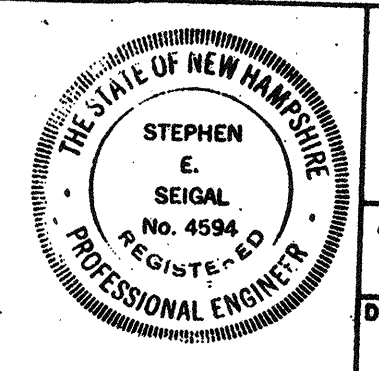
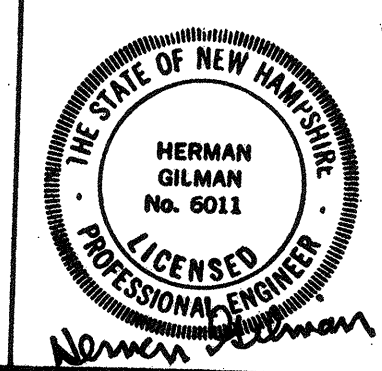
GROUND FLOOR PLAN
 1/4" = 1'-0"



RECORD PLAN

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
 45 WILLIAM STREET, WELLESLEY, MASS.



DESIGNED DRAWN				CHECKED		SCALE		DATE	
AA	JCS	AA	AA	AS NOTED	SEPT. 1985				

DRAWING NO.	1P-2
JOB NO.	85-163
CONTRACT NO.	3

WASTEWATER TREATMENT FACILITY

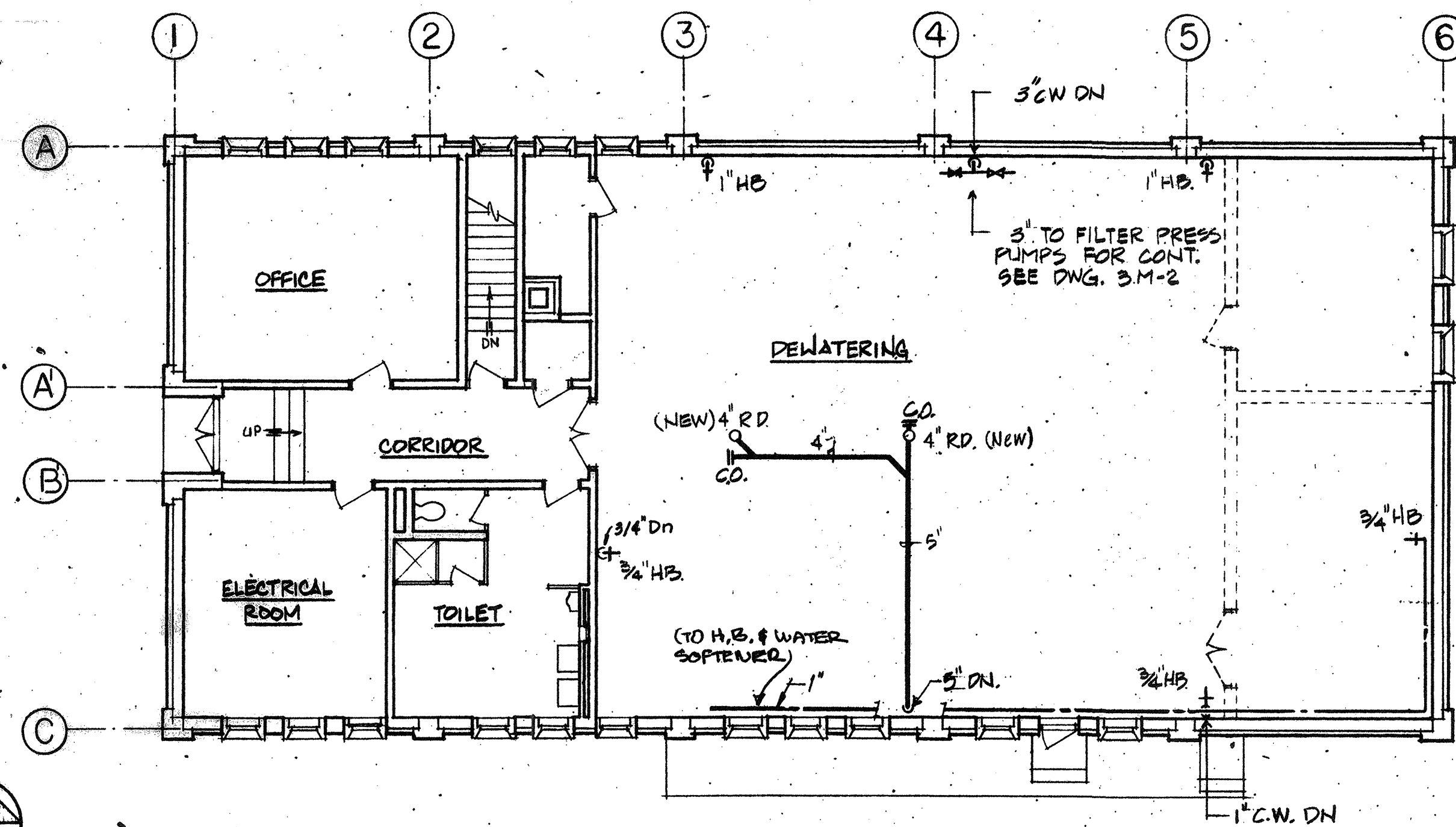
PORTSMOUTH, N.H.

CONTROL BUILDING
 FLOOR PLAN

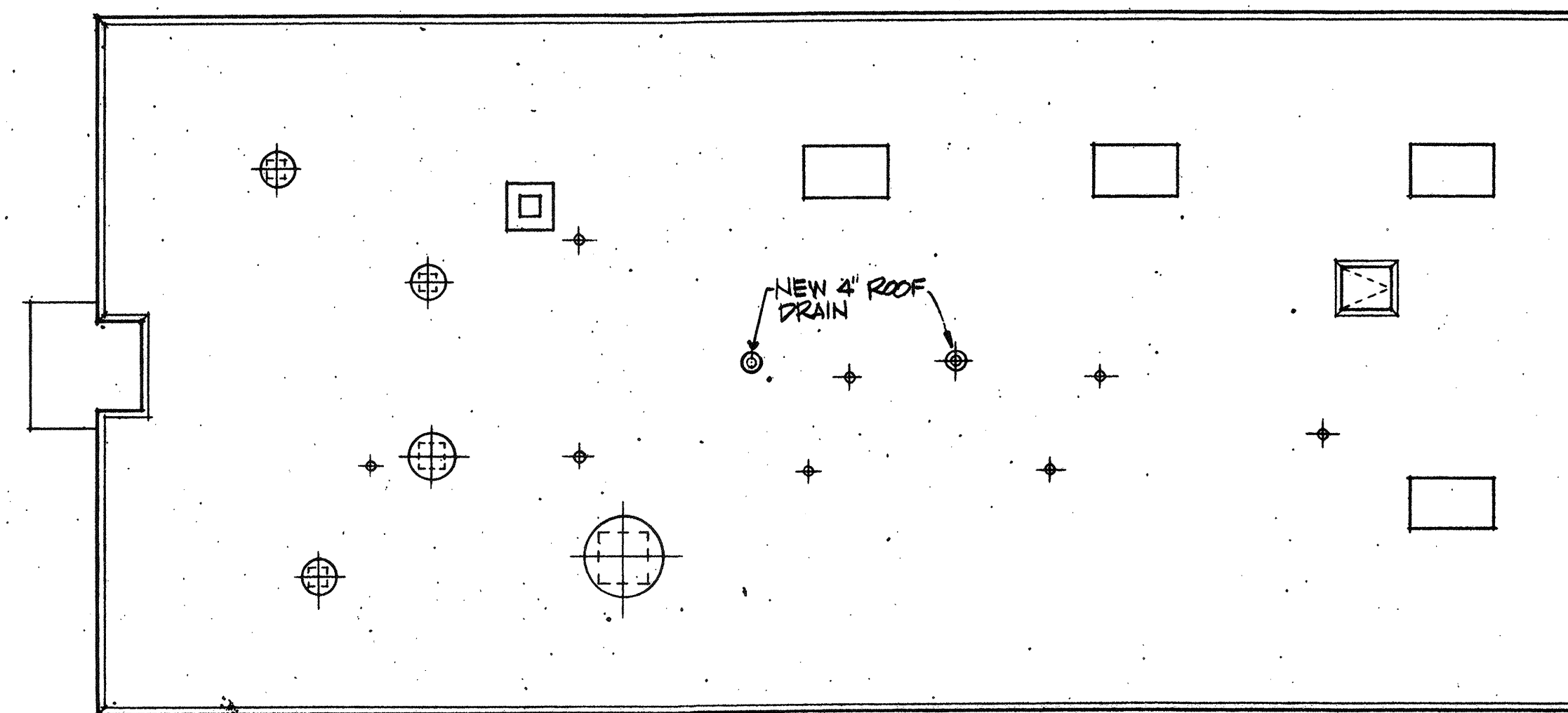
GROUND

SHEET 76 OF 106 SHEETS

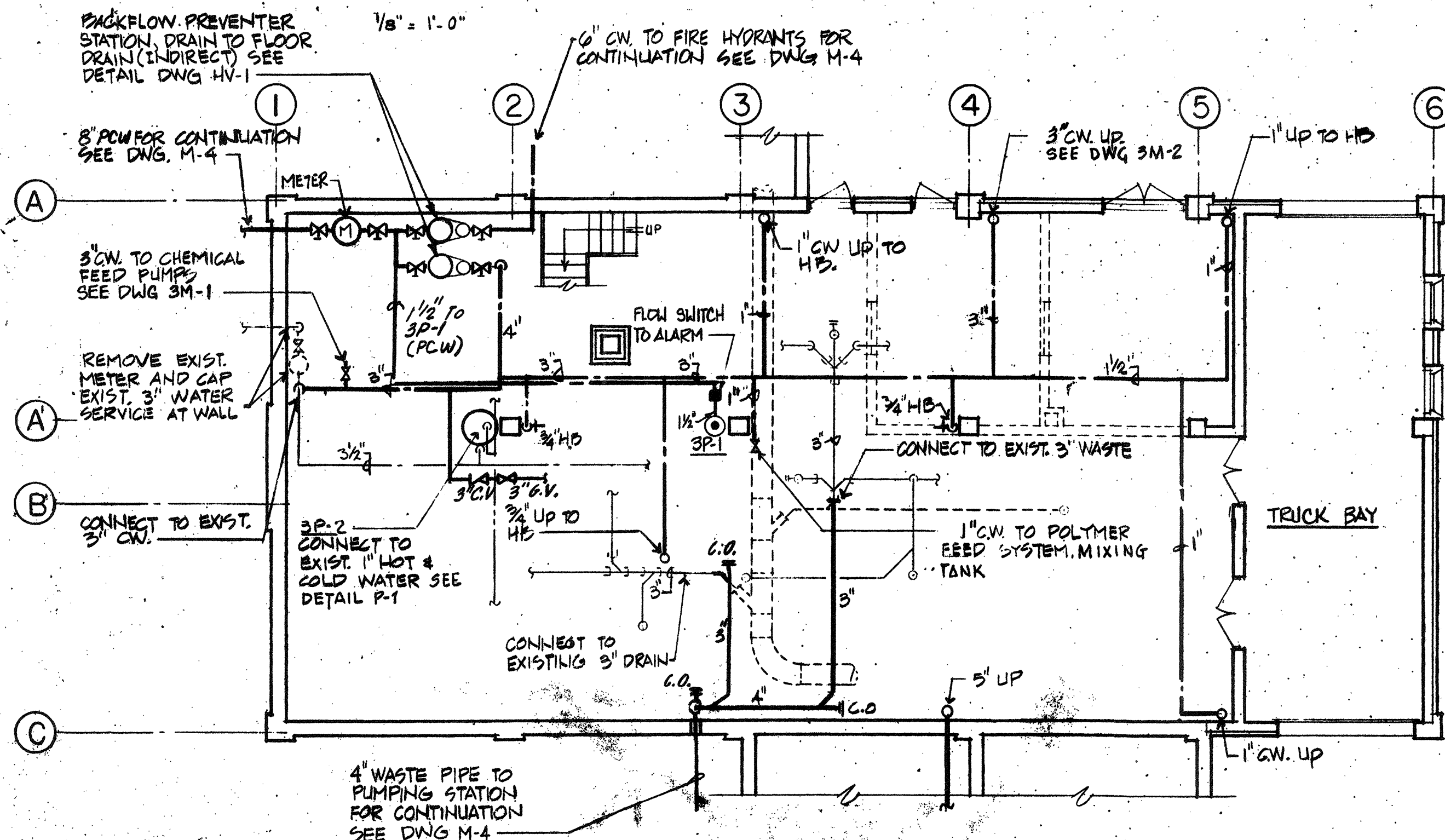
FOTOBAM/BROOKSIDE 267-24836



FIRST FLOOR PLAN
1/8" = 1'-0"



ROOF PLAN
1/8" = 1'-0"



BASEMENT PLAN
1/8" = 1'-0"

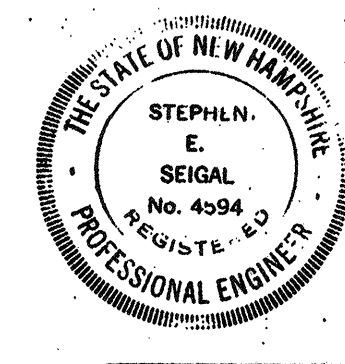
LEGEND
 - - - - - EXISTING TO BE REMOVED
 ———— EXISTING TO REMAIN
 ———— NEW WORK

NOTE:
 REMOVE AND CAP HOT & COLD WATER PIPES AT CEILING AT MAINS IN EXISTING HOPPER, CHEMICAL MIXING, CHLORINATION, SCALE AND CHEMICAL STORAGE ROOMS.

RECORD PLAN

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9-89
REVISIONS		

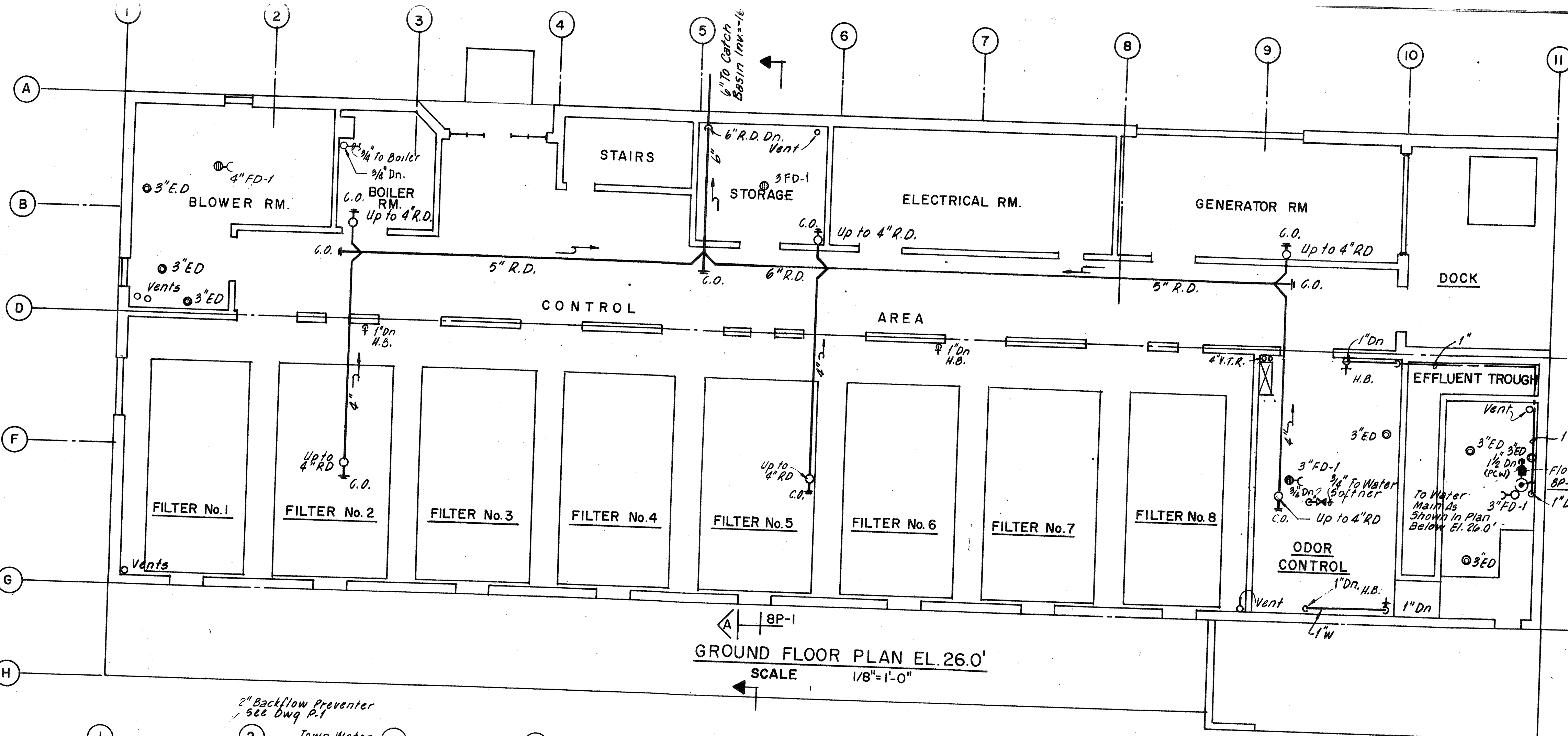
WHITMAN & HOWARD, INC.
 45 WILLIAM STREET, WELLESLEY, MASS.



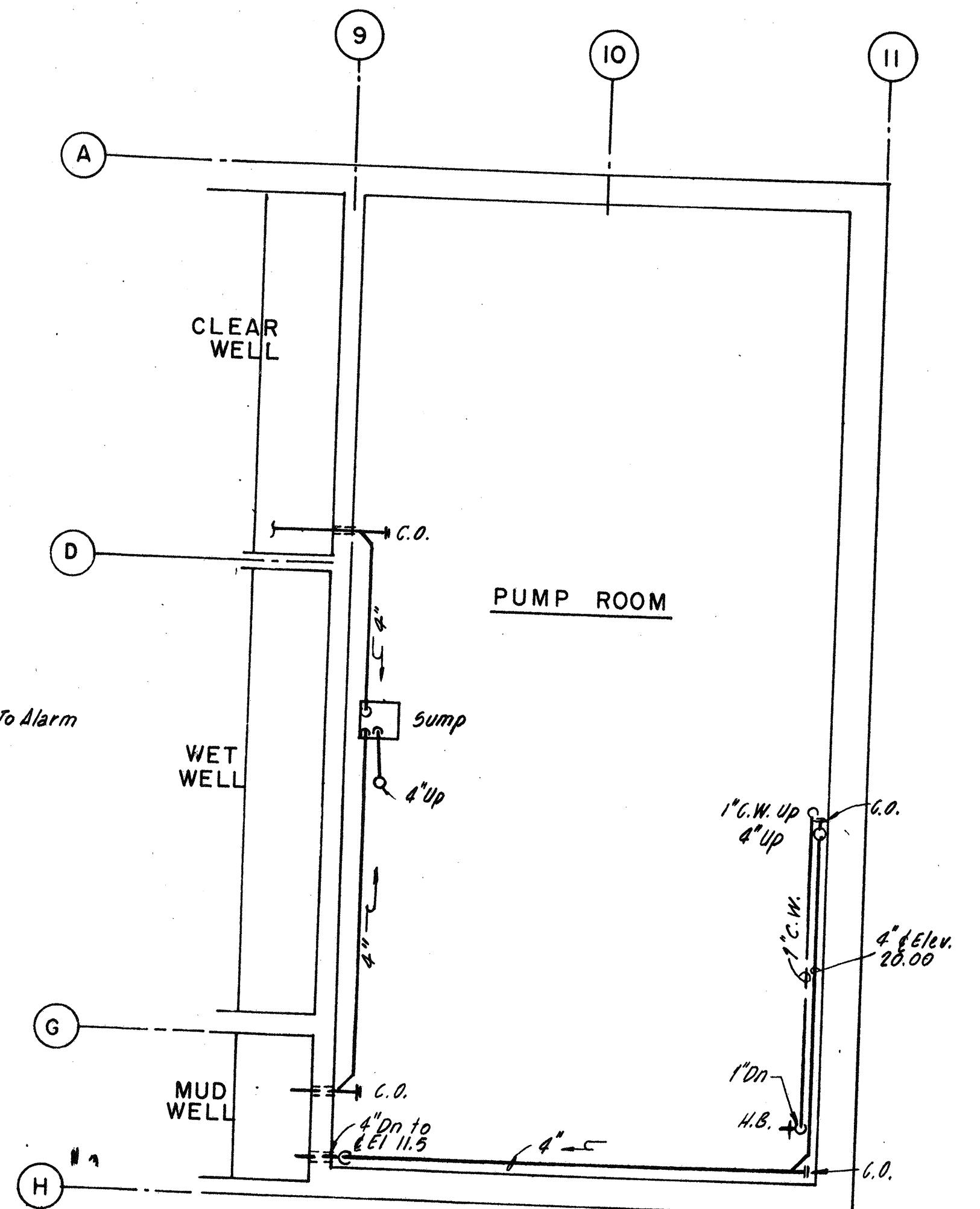
DESIGNED/DRAWN		CHECKED/SCALE		DATE
A.A.	M.O.	H.G.	AS NOTED	SEPT. 1985

DRAWING NO.	3P-1
JOB NO.	85-163
CONTRACT NO.	3
SHEET 77 OF 106 SHEETS	

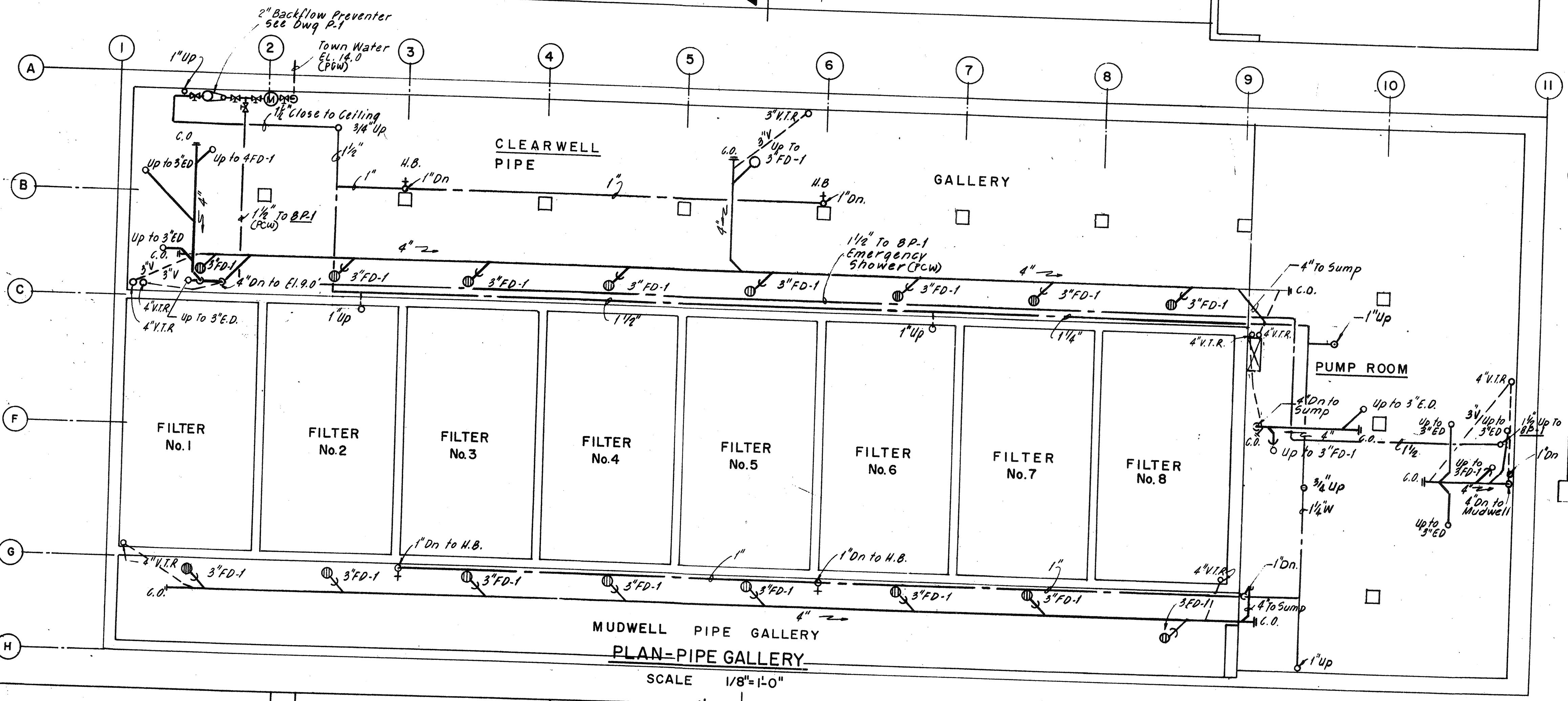
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
SLUDGE PROCESSING BUILDING
FLOOR PLANS



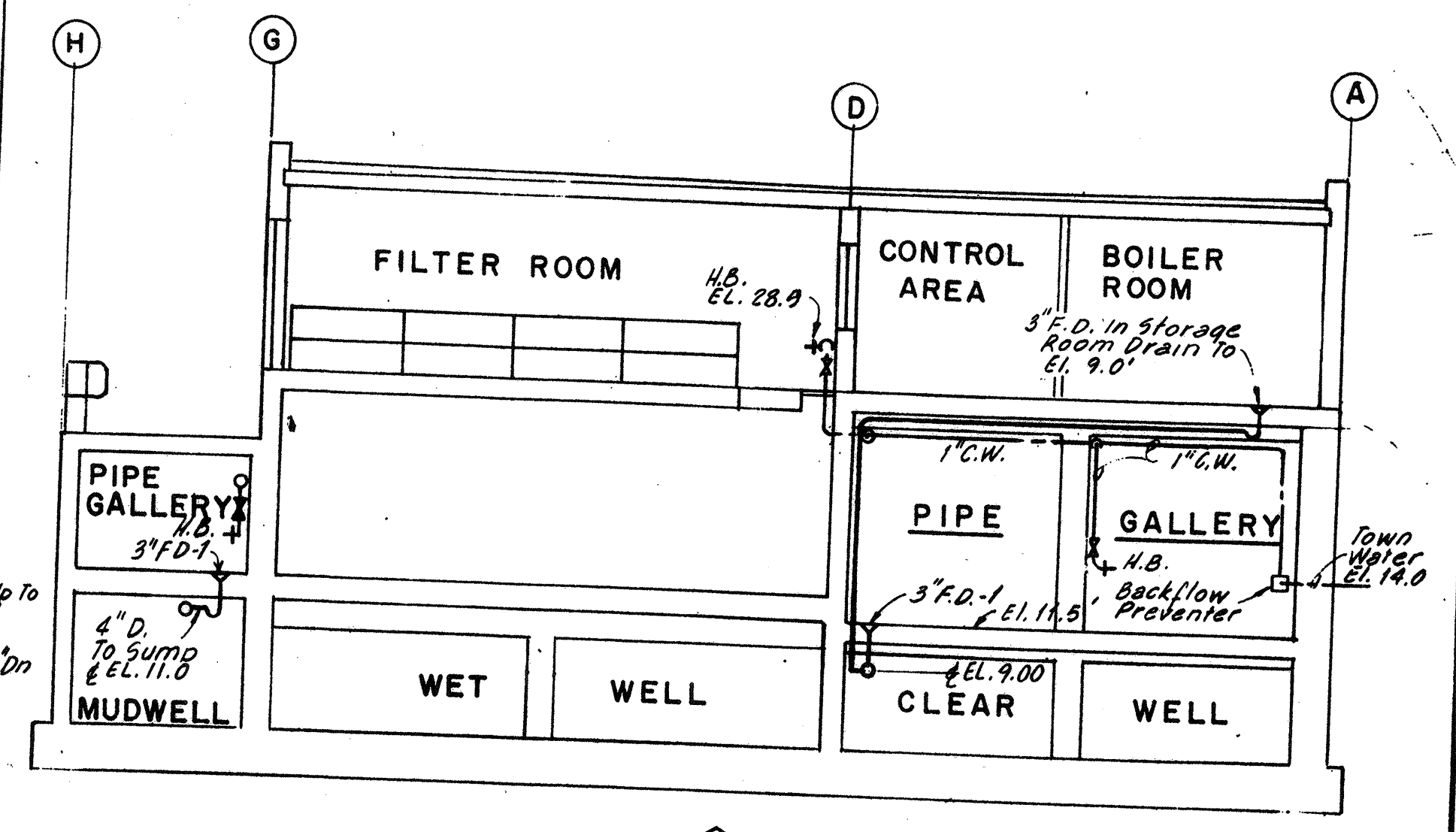
GROUND FLOOR PLAN EL. 26.0'
SCALE 1/8"=1'-0"



PLAN - PUMP ROOM FL. EL. -3.25
SCALE: 1/8"=1'-0"



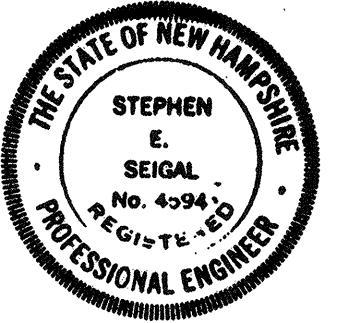
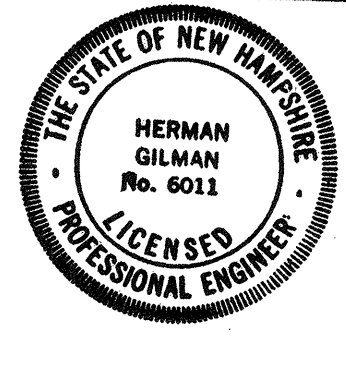
PLAN-PIPE GALLERY
SCALE 1/8"=1'-0"



SECTION A-8P-1
SCALE 1/8"=1'-0"

NO.	DESCRIPTION	DATE
1	Revised To Record Plan	9/93
2	Drawing Added	9/89
REVISIONS		

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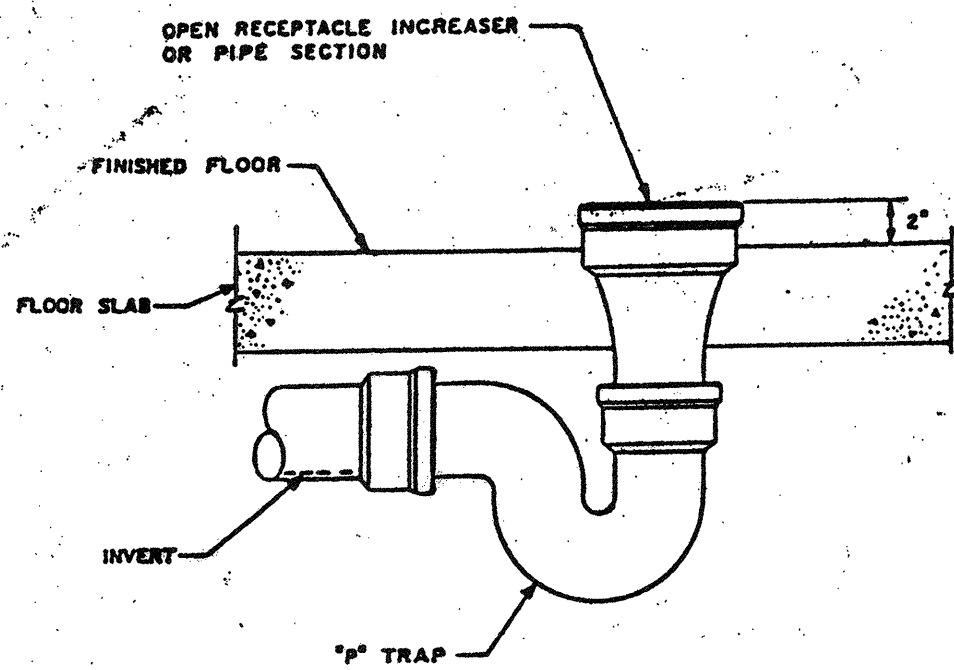
ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

DESIGNED	DRAWN	CHECKED	SCALE	DATE
J.A.	J.C.S.	J.A.	AS NOTED	SEPT, 1989

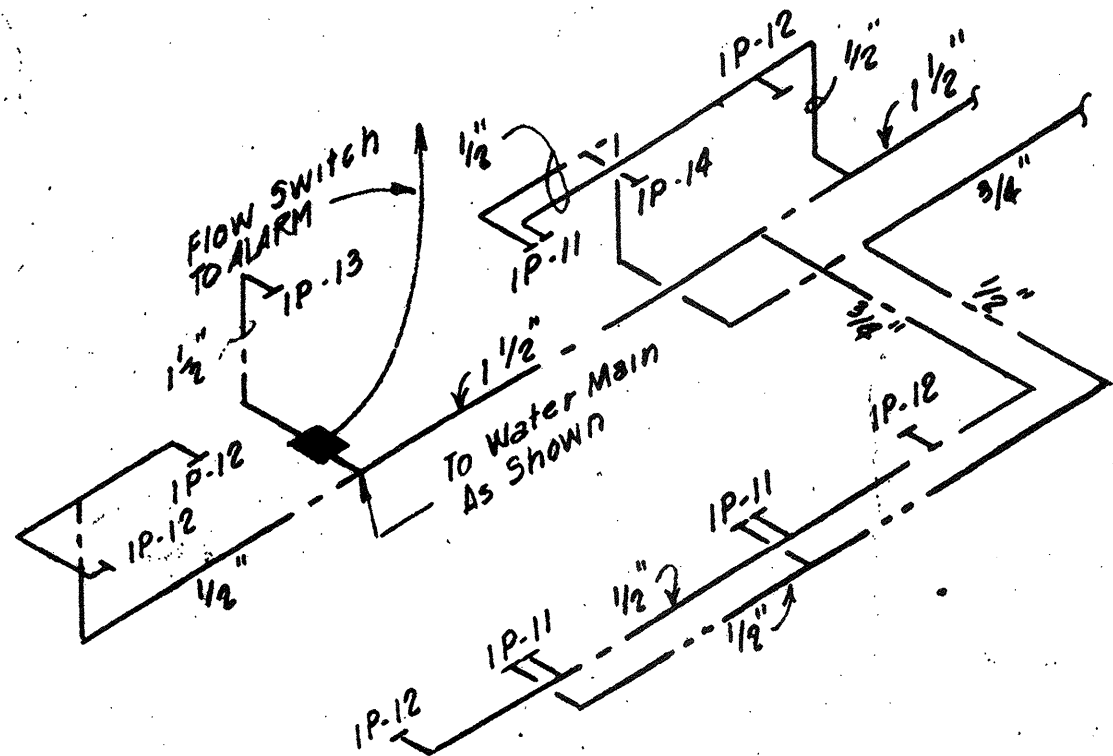
DRAWING NO.
8P-1
JOB NO.
85-163
CONTRACT NO.
3

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.

FILTER BUILDING
PLANS AND SECTION



EQUIPMENT DRAIN DETAIL
Not To Scale



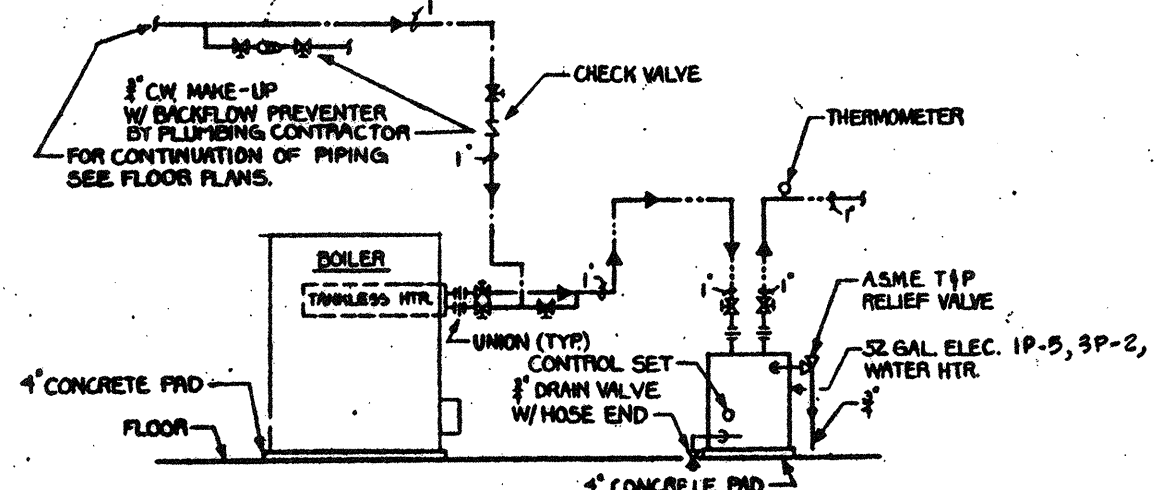
LAB HOT & COLD WATER RISER DIAGRAM
Not To Scale

FIXTURE NO.	FIXTURE	MODEL	SOIL WASTE	COLD WATER	HOT WATER	VENT	MANUFACTURER		
							DESIGN	APPROVED	EQUALS
IP-1	WATER CLOSET	K-4430-ET	4"	1"	-	3"	KOHLER	AMERICAN STANDARD; CRANE	
IP-2	URINAL	K-4980-T	2"	1"	-	2"	"	"	"
IP-3	LAVATORY	K-2925	2"	1/2"	1/2"	2"	"	"	"
IP-4	SHOWER	KM-36"x36"	3"	1/2"	1/2"	2"	FAIT	MILLS; KOHLER	
IP-5	ELECTRIC WATER HEATER	52 GALLON PE-52-2	-	1"	-	-	RUUD	A.O. SMITH; BRADFORD-WHITE	
IP-6	SERVICE SINK	K-6716	3"	1/2"	1/2"	2"	KOHLER	AMERICAN STANDARD; CRANE	
IP-7	ELECTRIC WATER COOLER	RC-B-A	1 1/2"	1/2"	-	1 1/2"	HALSEY-TAYLOR	OB519; JUST	
IP-8	NEUTRALIZATION TANK	30 GAL.	3"	-	-	3"	T&G		
IP-9	KITCHEN SINK		1 1/2"	1/2"	1/2"	1 1/2"	-	PIPING, FITTINGS, TRAP & FINAL CONNECTIONS BY PLUMBING CONTR.	
IP-10	WASHER	STANDPIPE WITH TRAP	2"	1/2"	1/2"	1 1/2"	-		
IP-11	LAB SINK		2"	1/2"	1/2"	2"	-		
IP-12	CUP SINK		2"	1/2"	-	2"	-		
* IP-13	EMERGENCY EYEWASH & SHOWER		-	1 1/2"	-	-	-		
* IP-14	DISHWASHER	WITH APPROVED AIR GAP CONN.	2"	-	1/2"	2"	-		
* 3P-1	EMERGENCY SHOWER & EYEWASH	SE-603	-	1 1/2"	-	-	SPEARMAN		
* 3P-2	ELECTRIC WATER HEATER	52 GALLON PE-52-2	-	1"	1"	-	RUUD	A.O. SMITH; BRADFORD WHITE	
* 8P-1	EMERGENCY SHOWER & EYEWASH	SE-603	-	1 1/2"	-	-	SPEARMAN		

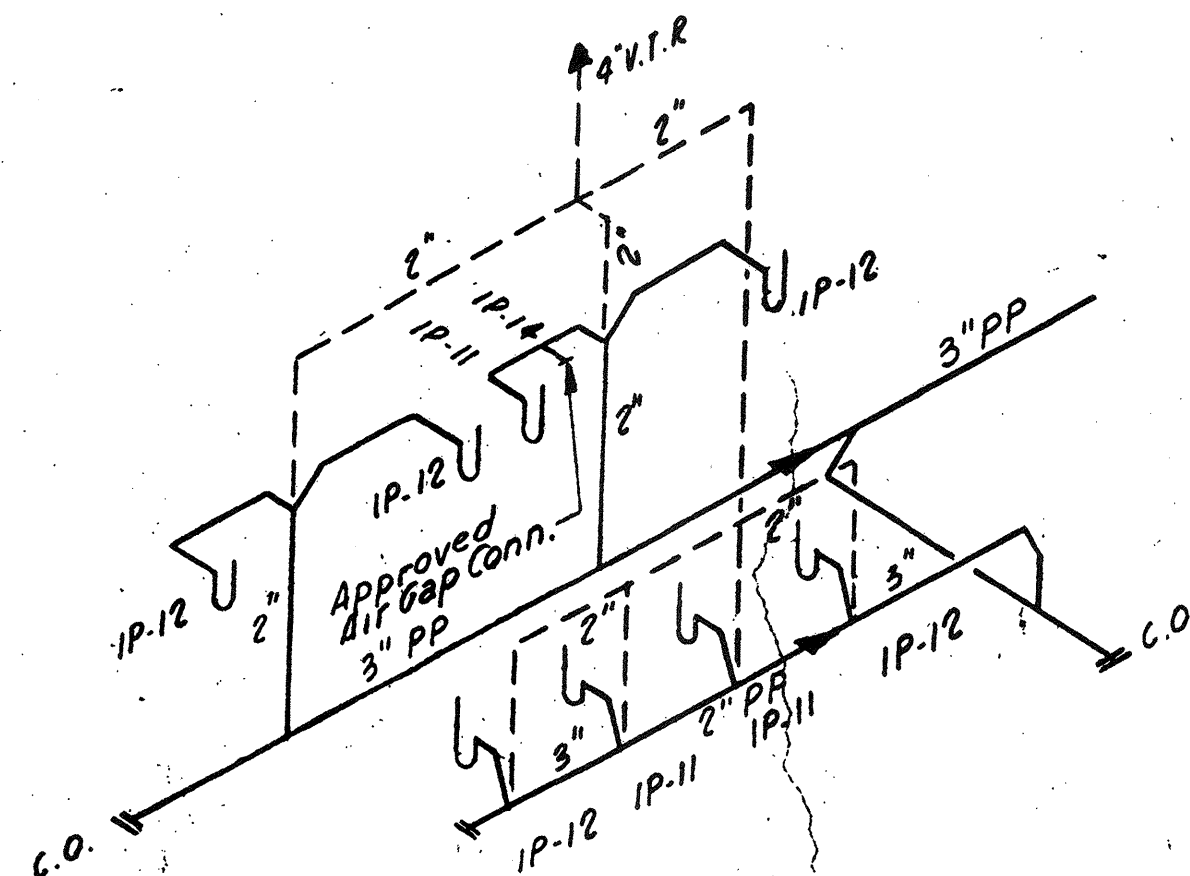
* FLOW SWITCHES BY PLUMBING CONTRACTOR
IP-5; 3P-2: 480V 3Ø

GENERAL NOTES

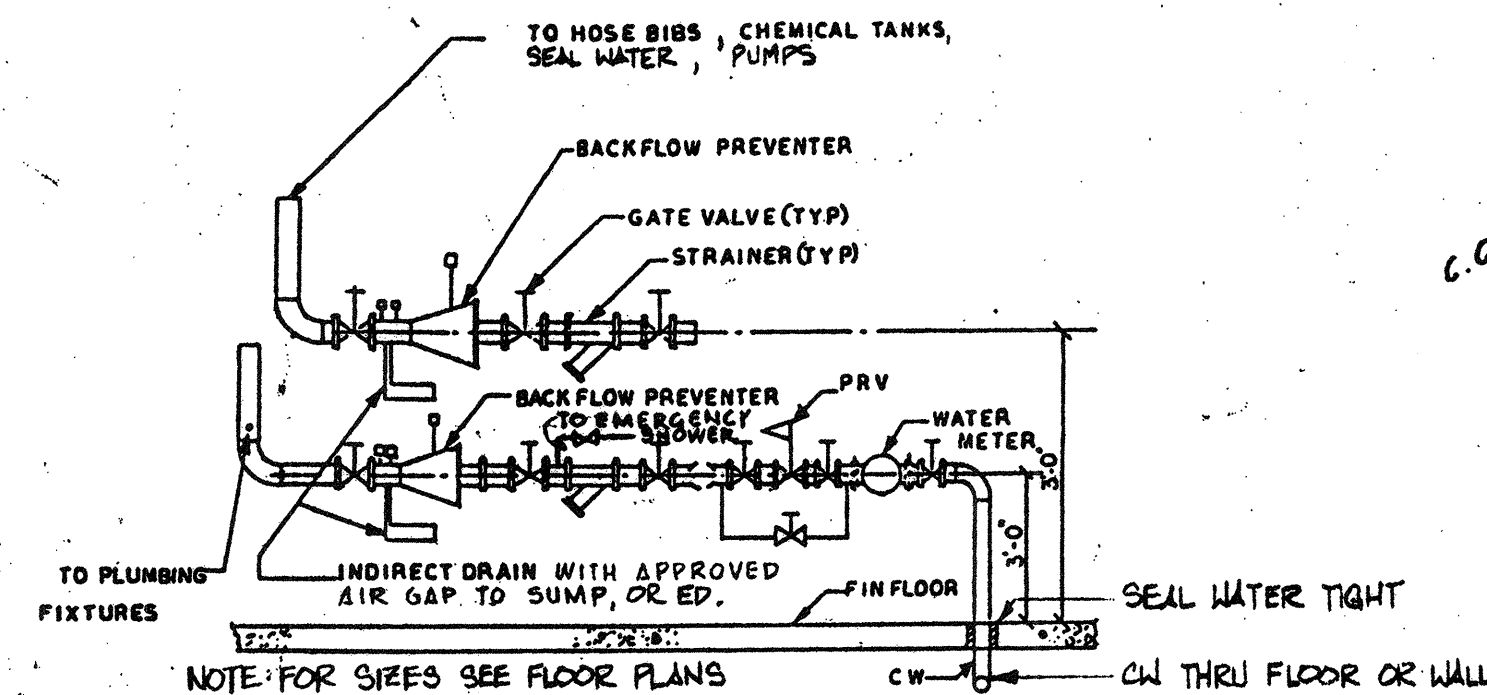
- ALL SANITARY WASTE, DRAINS, VENTS ETC. SHALL BE PITCHED DOWN AT A SLOPE OF 1/4" FT., UNLESS OTHERWISE NOTED.
- FURNISH & INSTALL DRAW-OFF VALVES AT ALL LOW POINTS OF WATER SYSTEMS TO PROVIDE COMPLETE DRAINAGE OF ALL LINES.
- INSTALL SHUT-OFF VALVES & AIR CHAMBERS ON ALL FIXTURES & EQUIPMENT.
- COORDINATE & VERIFY, IN THE FIELD, ALL LOCATIONS SHOWN ON DRAWINGS TO AVOID INTERFERENCE WITH OTHER TRADES AND BUILDING CONDITIONS.
- FURNISH AND INSTALL ALL SLEEVES, HANGERS, AND ALL NECESSARY ITEMS REQUIRED FOR THE COMPLETE INSTALLATION OF EQUIPMENT.
- ALL RUNS AND UNITS ARE SHOWN DIAGRAMMATICALLY. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD.
- REFER TO ARCHITECTURAL AND STRUCTURAL PLANS AND DETAILS FOR EXACT LOCATIONS AND DETAILS OF VENT PIPES AND OTHERS THROUGH THE ROOF.
- ALL BACKFLOW PREVENTERS SHALL BE LOCATED 3'-0" ABOVE FINISHED FLOOR ACCESSIBLE AND APPROVED.
- ALL HOSE BIBBS SHALL BE LOCATED 3'-0" ABOVE FINISHED FLOOR EXCEPT IN TOILET ROOMS AND LOCKER ROOMS.
- ALL EQUIPMENT SHALL BE INSTALLED AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER, AND AS SPECIFIED.
- ALL PENETRATIONS INTO WET WELL, CHLORINE ROOM AND CHLORINATOR ROOM SHALL BE GAS AND WATER TIGHT.
- ALL FIXTURES REQUIRING SUPPORT SHALL BE SUPPORTED WITH FLOOR STANDING CARRIERS AS MANUFACTURED BY JOSAM (JURN; SMITH; COMPARABLE MODEL OR EQUAL MAY BE USED).
- PROVIDE CEILING AND WALL ACCESS PANELS AS REQUIRED, AND AS SHOWN IN DRAWINGS.
- ALL DRAIN AND VENT LINES TO NEUTRALIZING TANK SHALL BE POLYPROPYLENE PIPE.
- ALL PIPING SYSTEMS INCLUDING ROOF DRAIN PIPING SHALL BE INSULATED.
- WALLS AND FLOOR SLAB PENETRATIONS REFER TO SECTION 07900.



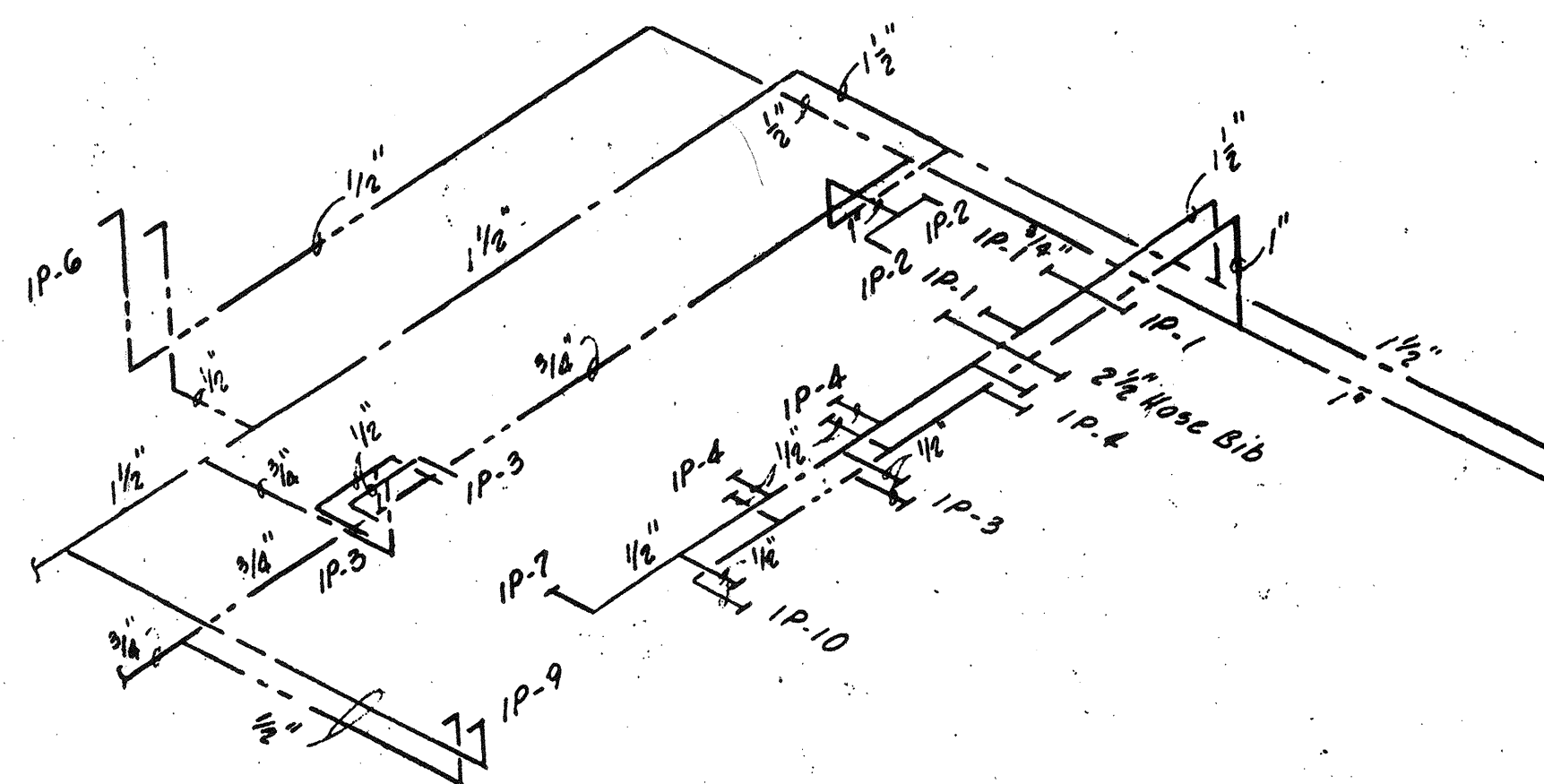
HOT WATER HEATER PIPING (TYP.)
Not To Scale



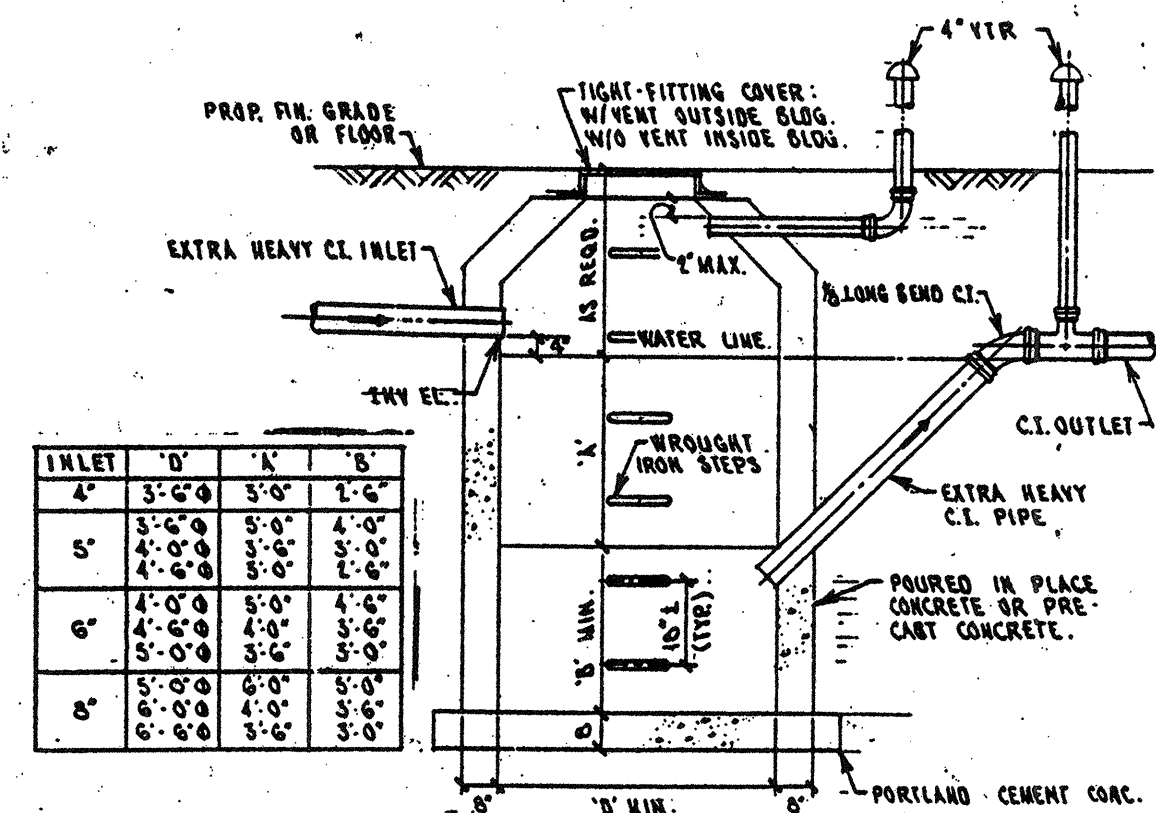
LAB WASTE RISER DIAGRAM
Not To Scale



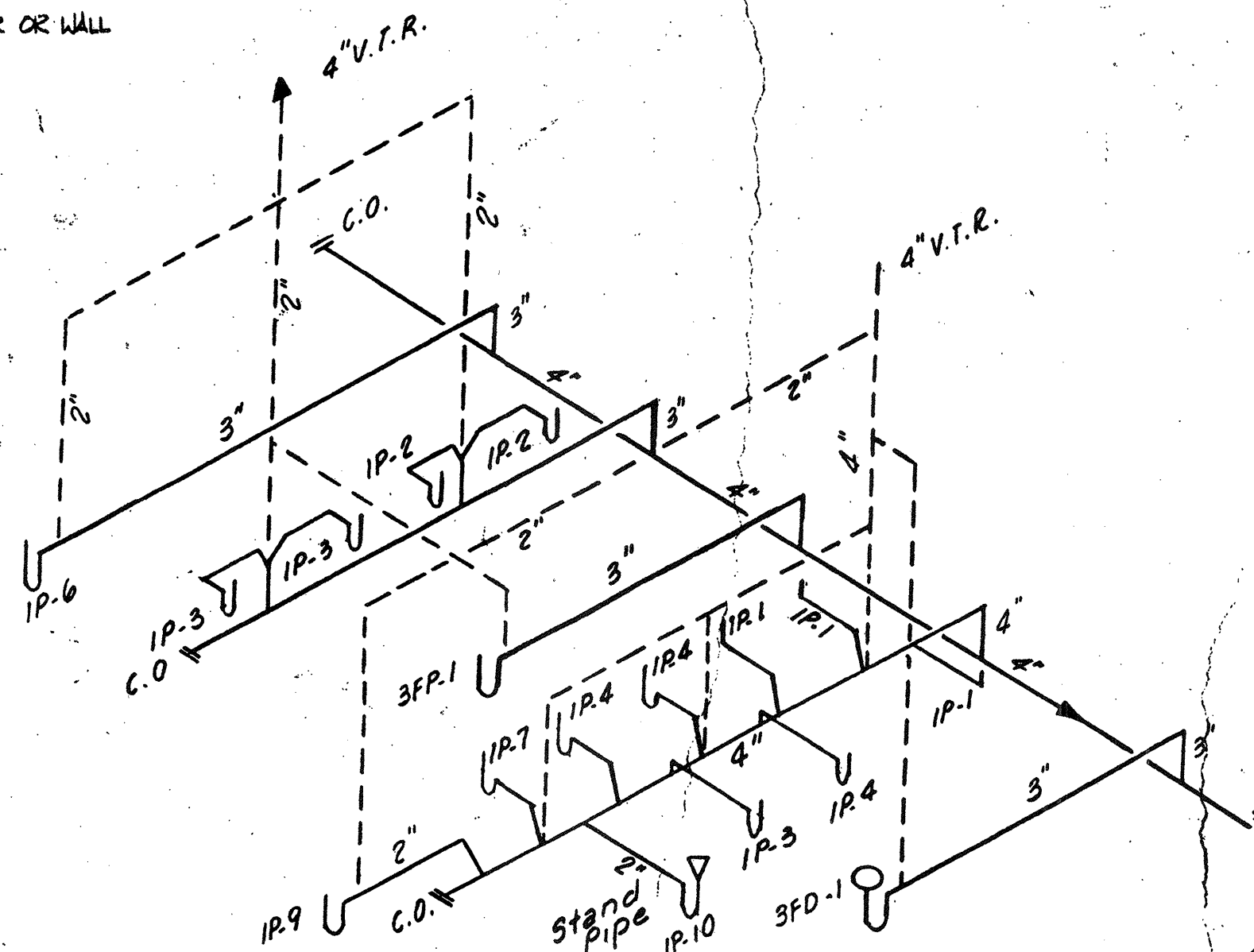
BACKFLOW PREVENTER DETAIL-TYPICAL
Not To Scale



TOILETS HOT & COLD WATER RISER DIAGRAM
Not To Scale



GAS SEPARATOR DETAIL
Not To Scale



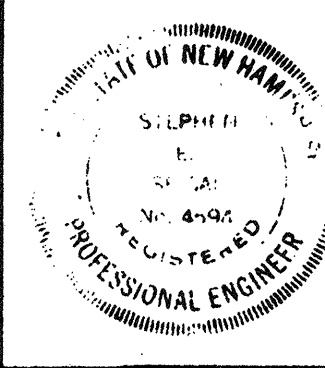
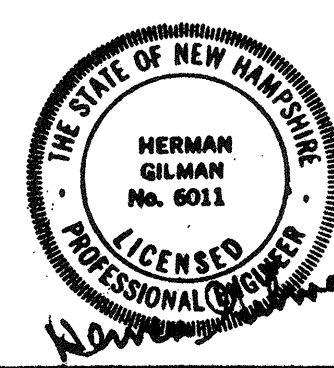
TOILETS WASTE & VENT RISER DIAGRAM
Not To Scale

LEGEND

- CW - COLD WATER
- HW - HOT WATER
- WASTE SANITARY
- WASTE BELOW SLAB OR CAST IN CONCRETE
- FLOOR DRAIN LINE
- PITCH DOWN IN DIRECTION OF ARROW
- DIRECTION OF FLOW
- V - VENT
- GATE VALVE
- PRV - PRESSURE REDUCING VALVE
- STRAINER
- BACKFLOW PREVENTER
- UNION
- WH - WALL HYDRANT
- HB - HOSE BIBB
- FLOOR DRAIN WITH TRAP (TYPE FD-1)
- FLOOR DRAIN (TYPE FD-2)
- FD FLOOR DRAIN
- FLOOR DRAIN WITH TRAP (TYPE FD-3)
- FLOOR DRAIN (TYPE FD-4)
- P&T PRESSURE AND TEMPERATURE RELIEF VALVE
- CO - CLEANOUT
- DCO DROP CLEANOUT
- FCO FLOOR CLEANOUT
- WCO WALL CLEANOUT
- VTR VENT THRU ROOF
- AFF ABOVE FINISHED FLOOR
- INV. EL. INVERT ELEVATION
- PP POLYPROPYLENE
- RD ROOF DRAIN
- HWR - HOT WATER RETURN VALVE
- ED - EQUIPMENT DRAIN WITH TRAP
- ED - EQUIPMENT DRAIN
- == VENT BELOW SLAB OR CAST IN CONCRETE

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"			
REPRODUCTIONS MAY BE REDUCED SIZE			
DESIGNED	DRAWN	CHECKED	SCALE
AA	JCS	AA	As Noted
APPROVED			DATE
Stephen E. Seigel			SEPT, 1985

DRAWING NO.	P-1
JOB NO.	85-163
CONTRACT NO.	3
SHEET	79 OF 106 SHEETS

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
PLUMBING DETAILS, SCHEDULE AND RISER DIAGRAMS

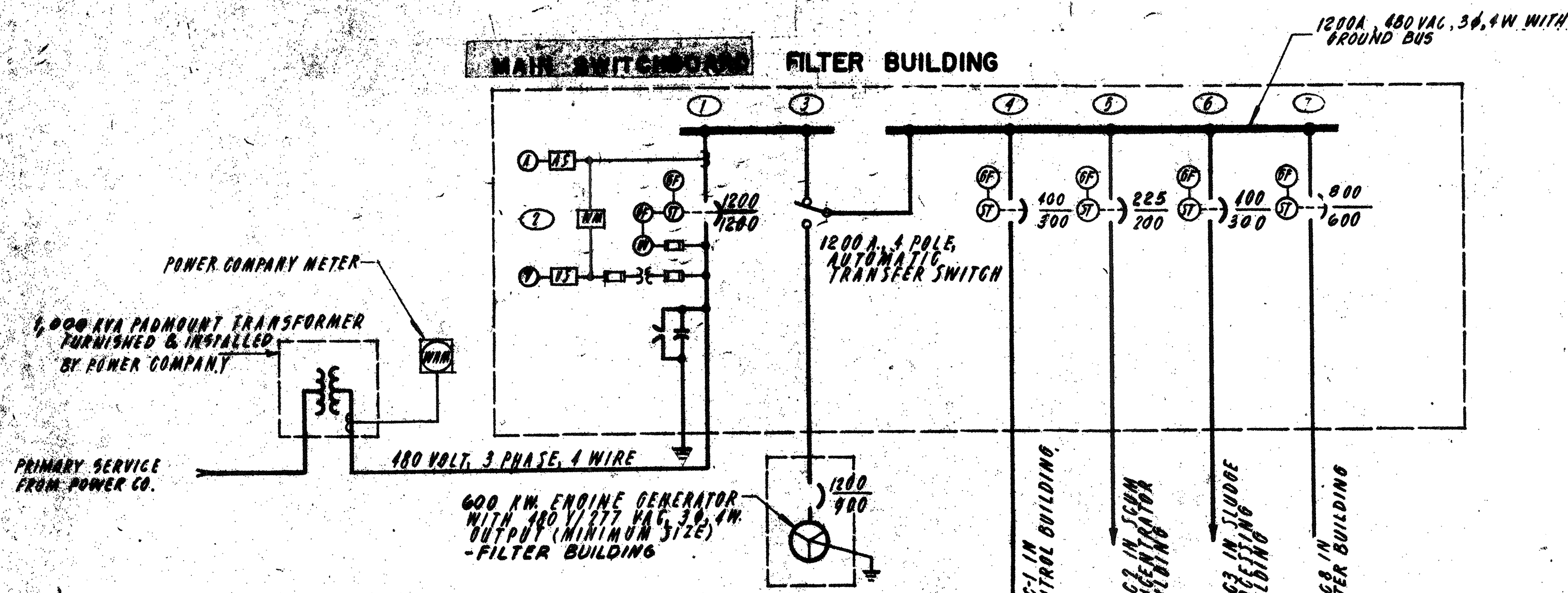
LEGEND	
SYMBOLS	DESCRIPTION
	COMBINATION MOTOR CIRCUIT PROTECTOR AND FULL-VOLTAGE NON-REVERSING MAGNETIC ACROSS THE LINE STARTER.
	MOLDED CASE AIR CIRCUIT BREAKER (3 POLE UNLESS OTHERWISE NOTED).
	PHASE FAILURE RELAY
	UNDERTVOLTAGE RELAY
	CURRENT TRANSFORMER (C.T.)
	POTENTIAL TRANSFORMER (P.T.)
	POWER TRANSFORMER
	LIGHTNING ARRESTER
	SURGE CAPACITOR
	GROUND
	FUSE
	MOTOR, NUMBER INDICATES HORSEPOWER
	AMMETER SWITCH, THREE PHASE
	VOLTMETER SWITCH, THREE PHASE
	VOLTMETER
	AMMETER
	WATT-HOUR METER
	ELECTRIC HEATING UNIT
	MOTOR OVERLOAD HEATER
	SHORT TRIP RELAY
	GROUND FAULT RELAY AND ZERO SEQUENCING TRANSFORMERS.
	PUSHBUTTON CONTROL STATION MOMENTARY CONTACT TYPE, STOP START.
	PUSHBUTTON CONTROL STATION MOMENTARY CONTACT START, PUSH-PULL STOP WITH PILOT AND LOCKOUT-DEVICE
	HAND-OFF-AUTOMATIC SELECTOR SWITCH
	SELECTOR SWITCH
	PUSHBUTTON CONTROL STATION MOMENTARY TYPE WITH LOCK-OUT DEVICE, (STOP-START).
	PUSHBUTTON CONTROL STATION MOMENTARY TYPE WITH LOCK-OUT DEVICE, (STOP).
	PUSHBUTTON CONTROL STATION-PUSH/PULL TYPE WITH LOCKOUT DEVICE AND PILOT LIGHT, (STOP)
	FLOW SWITCH
	PRESSURE SWITCH
	LIMIT SWITCH
	HIGH WATER ALARM - CONDUCTANCE TYPE
	SELECTOR SWITCH - 2 POSITION: ON-OFF
	SOLENOID VALVE
	OVER-TEMPERATURE THERMAL SWITCH
	POWER FACTOR CORRECTION CAPACITOR
	PRESSURE RELIEF VALVE ALARM SWITCH
	JUNCTION BOX & FLOAT SWITCH
	STROKE ADJUSTMENT
	ORP SENSOR
	pH PROBE

LEGEND	
SYMBOLS	DESCRIPTION
	FURNISHED BY OTHERS
	THERMOSTAT "OD" DENOTES OUTDOOR TYPE
	LEVEL PROBE OR SENSOR
	LEVEL INDICATOR TRANSMITTER
	TACHOMETER GENERATOR
	TIME CLOCK
	CENTER LINE
	EMBEDDED MOTOR THERMAL DETECTORS
	CORROSION RESISTANT
	WEATHERPROOF (NEMA 4X UNLESS OTHERWISE NOTED).
	FLOW INDICATING TRANSMITTER
	FLOW METER
	FLOW METER ZERO RETURN UNIT
	MAIN INSTRUMENT CONTROL PANEL
	VARIABLE SPEED GEAR DRIVE-MANUALLY OPERATED
	VARIABLE SPEED GEAR DRIVE-MOTOR OPERATED
	FAST-SLOW PUSHBUTTON STATION
	ABOVE FINISHED FLOOR
	ABOVE FINISHED GRADE
	SPEED INDICATOR
	INDICATES THAT ALL ELECTRICAL EQUIPMENT INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE NEMA 4X CONSTRUCTION EXCEPT WHERE OTHERWISE NOTED.
	CEILING OUTLET - FLUORESCENT LIGHTING FIXTURE. "A" INDICATES FIXTURE TYPE, "B" INDICATES CONTROLLED BY SWITCH "6", "3" INDICATES CIRCUIT NUMBER.
	CEILING OUTLET AND INCANDESCENT LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE.
	OUTLET AND UNDERCABINET FLUORESCENT LIGHTING FIXTURE NOTATION SAME AS ABOVE.
	WALL OUTLET AND INCANDESCENT VAPOR TIGHT LIGHTING FIXTURE, NOTATIONS SAME AS ABOVE.
	CEILING OUTLET AND EXIT SIGN
	WALL OUTLET AND EXIT SIGN (S = SURFACE MOUNT; E = END MOUNT). (DOUBLE FACE; SINGLE FACE).
	EMERGENCY LIGHTING BATTERY UNIT WITH LIGHT HEADS, NUMBER OF HEADS AS SHOWN.
	REMOTE EMERGENCY LIGHTING HEAD, WALL MOUNTED.
	REMOTE EMERGENCY LIGHTING FIXTURE CEILING MOUNTED.
	DUPLEX RECEPTACLE, GROUNDING TYPE.
	20A, 240V RECEPTACLE FOR LAB.
	DUPLEX RECEPTACLE & PEDESTAL BOX FOR DESK TOP MOUNTING.
	TELEPHONE SYSTEM REMOTE BELL.
	TELEPHONE OUTLET & TELEPHONE UNIT, WALL OR DESK TYPE PER RISER DIAGRAM ON DRAWING 3E-1.
	MANUAL FIRE ALARM STATION
	FIRE ALARM HORN & LIGHT COMBINATION
	SMOKE DETECTOR PHOTOELECTRIC TYPE
	HEAT DETECTOR, COMBINATION RATE-OF-RISE AND FIXED TEMPERATURE.
	HEAT DETECTOR, FIXED TEMPERATURE (NUMBER INDICATES TEMPERATURE SETTING).
	FIRE ALARM SYSTEM REMOTE ANNUNCIATOR.

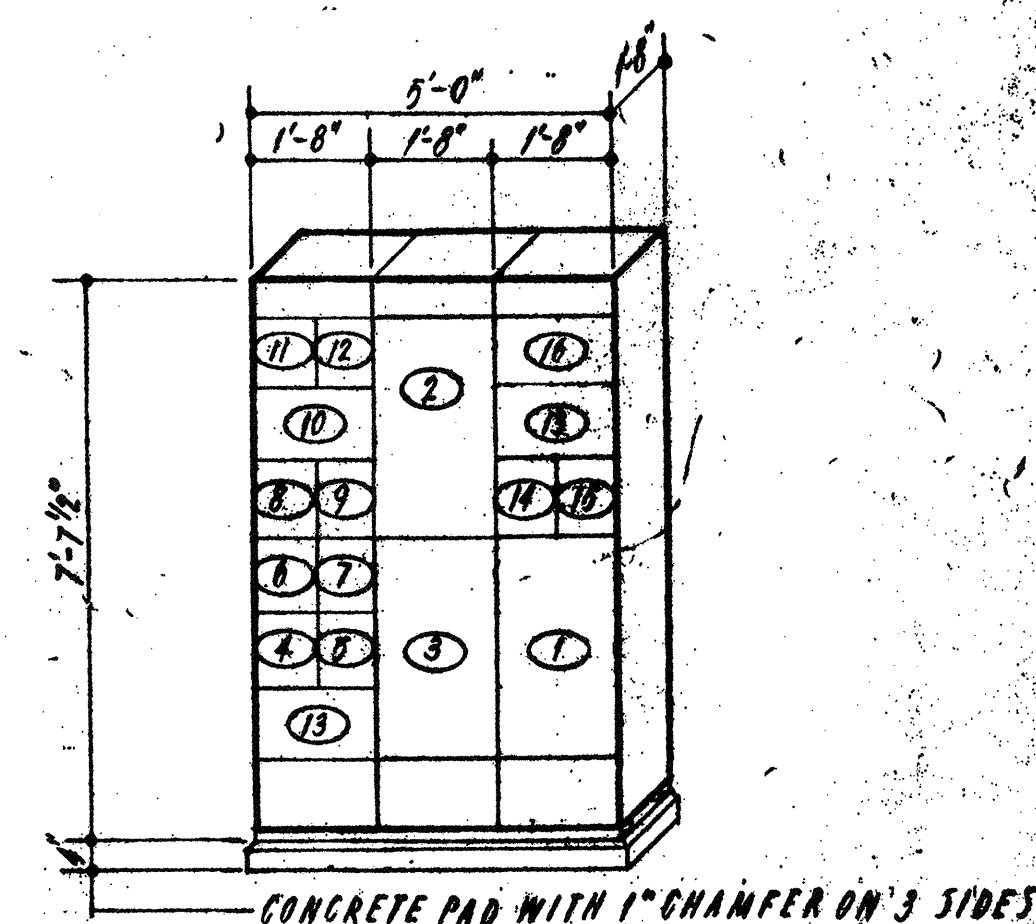
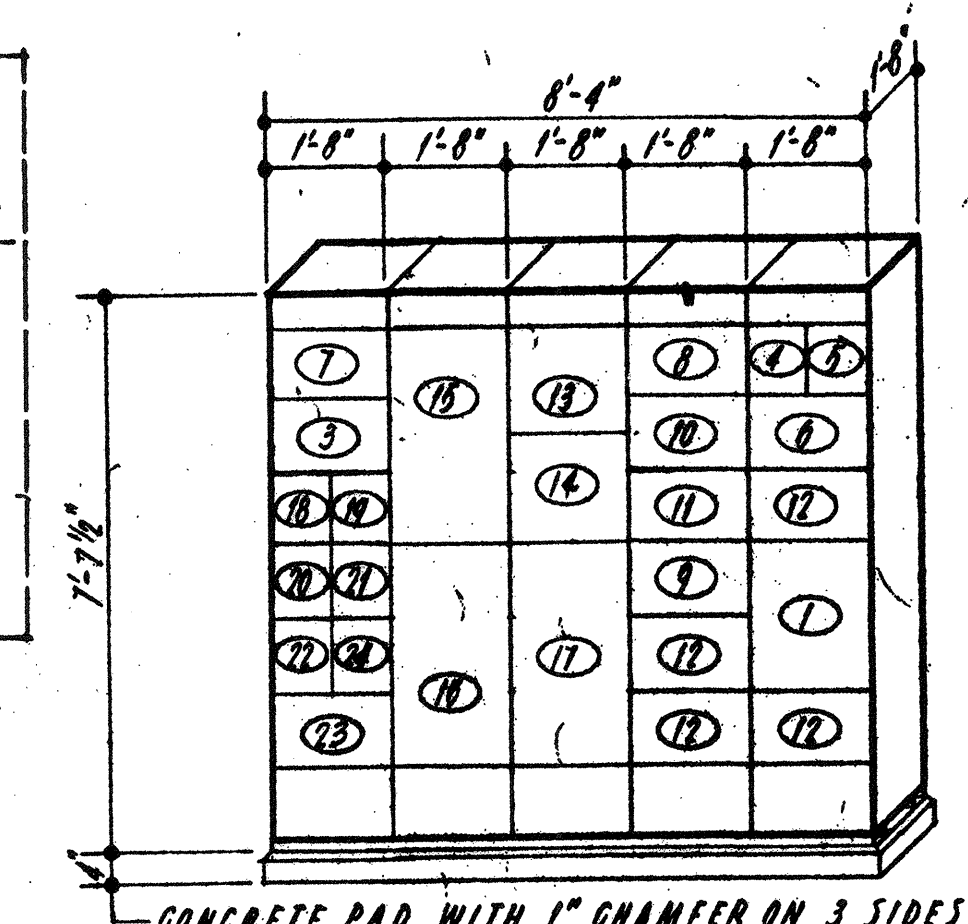
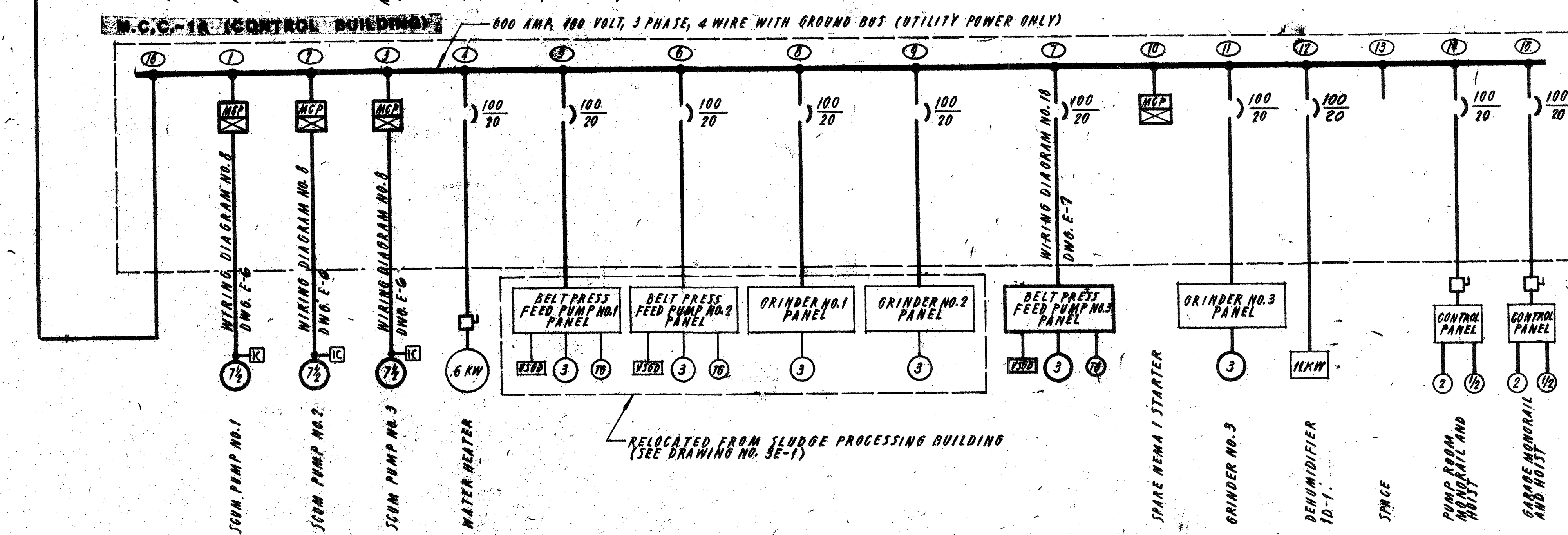
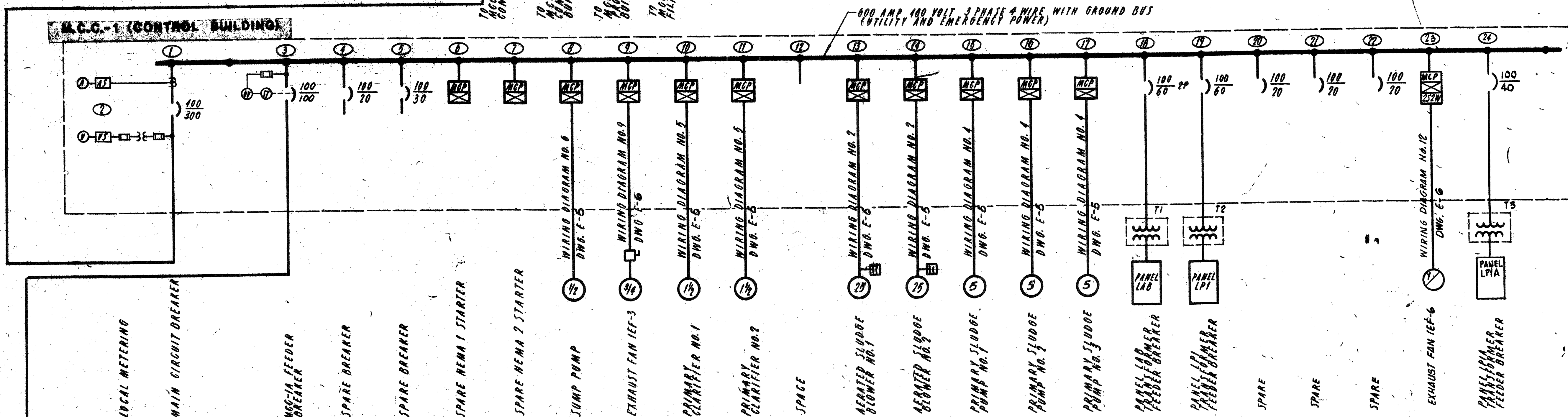
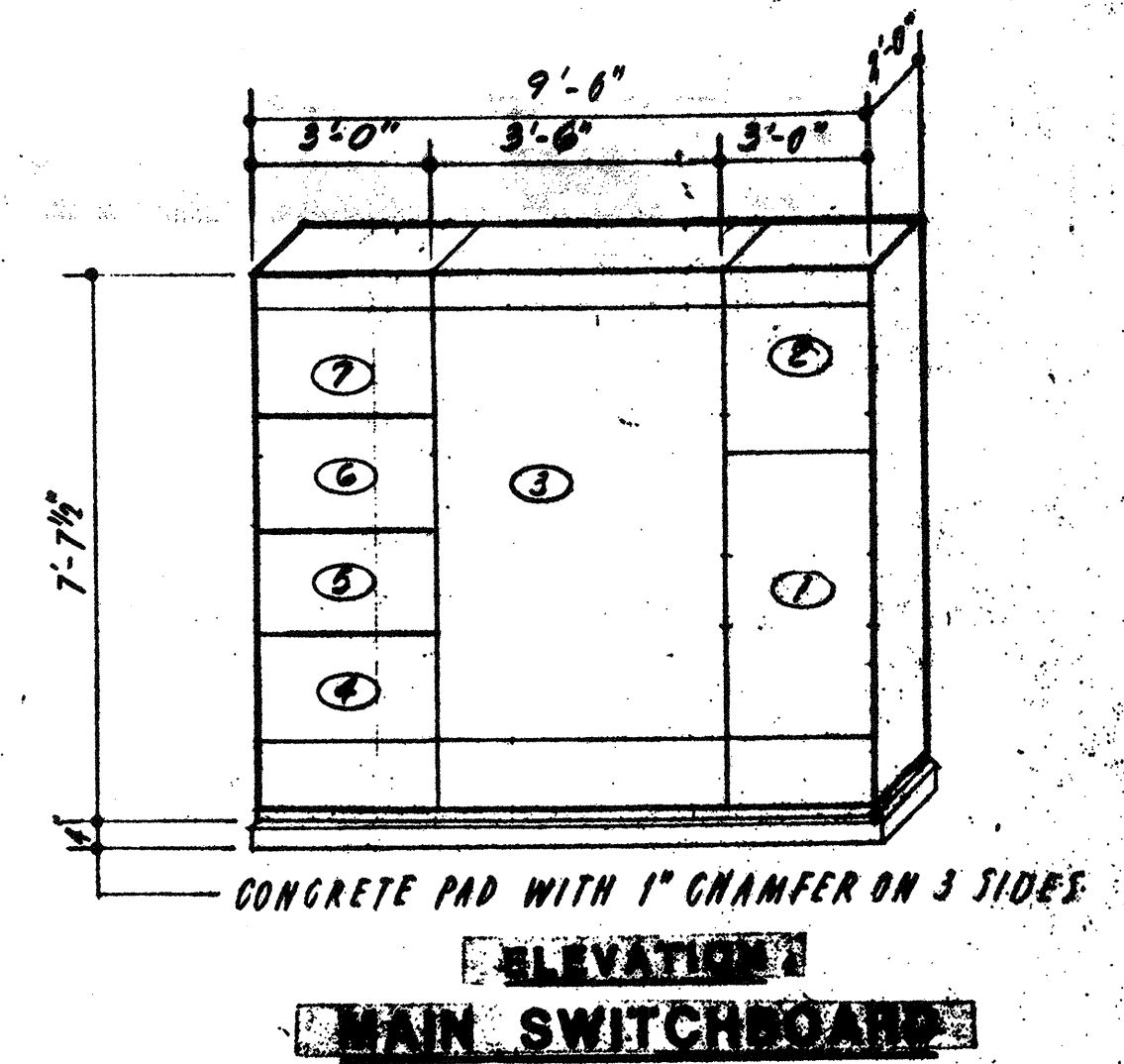
LEGEND	
SYMBOLS	DESCRIPTION
	SINGLE POLE SWITCH (P-INDICATES PILOT LIGHT-TYPICAL)
	SINGLE POLE SWITCH CONTROLLING LIGHTS "6".
	DOUBLE POLE SWITCH
	THREE WAY SWITCH
	FOUR WAY SWITCH
	MOTOR RATED SWITCH WITHOUT OVERLOAD PROTECTION
	LIGHTING DIMMER SWITCH (POSITIVE ON-OFF TYPE).
	SURFACE MOUNTED PANELBOARD 208Y/120 VAC, 3Ø, 4W.
	SURFACE MOUNTED PANELBOARD 120Y/240 VAC, 1Ø, 3W.
	JUNCTION BOX
	MOTOR S DENOTES HORSEPOWER
	DISCONNECT SWITCH
	MOTOR OPERATED DAMPER
	EMPTY CONDUIT NUMERALS DENOTES SIZE
	ONE, TWO CONDUCTOR, NO. 16 AWG, TWISTED SHIELDED CABLE.
	1-INCH CONDUIT CONTAINING 3#8 AWG COPPER WIRE.
	CONDUIT TURNING UP
	CONDUIT TURNING DOWN
	EXPOSED CONDUIT HOMERUN TO EQUIPMENT OR DEVICE NOTED.
	EXAMPLE: HOMERUN TO PANEL, LPI, CIRCUITS "1" & "3", 3/4"Ø (MINIMUM) 3#12 & GROUND WIRE.
	CONDUIT RUN EXPOSED (HASH MARKS DENOTE THE NUMBER OF #12 AWG CONDUCTORS IF MORE THAN TWO EXCLUDING GROUND WIRE, 3/4"Ø MINIMUM). (X INDICATES CONDUIT SEALING FITTING)
	CONDUIT RUN CONCEALED (2#12 & GROUNDWIRE - 3/4" UNLESS OTHERWISE NOTED).
	CONDUIT DIRECT BURIAL IN EARTH.
	CONDUITS ENCASED IN CONCRETE
	CONCEALED CONDUIT HOMERUN, NOTATIONS SAME AS ABOVE
	ELECTRIC UNIT HEATER
	HOT WATER UNIT HEATER
	HOT WATER HEATER
	CABINET UNIT HEATER
	PLUG IN CONNECTION
	MANUAL MOTOR STARTER, TOGGLE SWITCH TYPE, WITH OVERLOAD PROTECTION (P INDICATES PILOT LIGHT).
	UTILITY GO. POLE
	STREET LIGHT, POLE AND POLE BASE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. (ARROW INDICATES ORIENTATION OF REFLECTOR)
	WALL MOUNTED ENCLOSED CIRCUIT BREAKER
	GROUND ROD
	CONTACTOR
	DEHUMIDIFIER
	DENOTES ALL ELECTRICAL EQUIPMENT AND THE INSTALLATION THEREOF LOCATED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL CONFORM TO THE N.E.C. FOR A CLASS I, DIVISION 1, GROUP D HAZARDOUS AREA.
	CEILING-MOUNTED SPEAKER
	WALL-MOUNTED SPEAKER; "WP" = WEATHERPROOF

LEGEND	
SYMBOLS	DESCRIPTION
	SECURITY SYSTEM MAGNETIC WINDOW SWITCH
	SECURITY SYSTEM GLASS BREAKAGE DETECTOR
	SECURITY SYSTEM MAGNETIC DOOR SWITCH R INDICATES ROLL UP DOOR
	SECURITY SYSTEM ALARM SIREN
	SECURITY SYSTEM KEY-OPERATED SECURE/ACCESS SWITCH
	CLOCK RECEPTACLE & CLOCK WITH 12" CIRCULAR FACE
	FLOW MONITOR CONTROL PANEL
	PUSHBUTTON, NORMALLY OPEN, MOMENTARY CONTACT
	PUSHBUTTON, NORMALLY CLOSED, MOMENTARY CONTACT
	PUSHBUTTON, MAINTAINED TYPE
	PUSHBUTTON, PUSH-PULL-MAINTAINED TYPE, WITH INTEGRAL PILOT LIGHT (L.O. INDICATES MECHANICAL LOCKOUT DEVICE WITH PROVISION FOR PADLOCKING)
	TWO POSITION SELECTOR SWITCH, ON-OFF LABEL SWITCH "TEST-OFF-TEST ON"
	THREE POSITION SELECTOR SWITCH
	TWO POSITION SELECTOR SWITCH
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
	TIMER CONTACT, NORMALLY OPEN, TIME CLOSED WHEN ENERGIZED.
	TIMER CONTACT, NORMALLY CLOSED, TIME OPEN WHEN ENERGIZED.
	LIMIT SWITCH CONTACT, NORMALLY OPEN
	LIMIT SWITCH CONTACT, NORMALLY CLOSED
	LIQUID LEVEL SWITCH, NORMALLY OPEN
	LIQUID LEVEL SWITCH, NORMALLY CLOSED
	TEMPERATURE ACTUATED SWITCH, NORMALLY OPEN
	TEMPERATURE ACTUATED SWITCH, NORMALLY CLOSED
	CONTROL RELAY
	ALARM RELAY
	ADJUSTABLE TIME DELAY RELAY, TIMING RANGE AS SHOWN ON DRAWINGS
	ADJUSTABLE PROGRAM TIMER, TIMING RANGE AS SHOWN ON DRAWINGS
	CONTROL POWER TRANSFORMER
	CONTROL PANEL
	CORROSION RESISTANT
	MOTOR OPERATED VALVE
	2 SPEED MOTOR
	COMBINATION MOTOR CIRCUIT PROTECTOR AND MAGNETIC STARTER AS FOLLOWS - 552 W - 2 SPEED 2 WINDINGS RYMK = REDUCED VOLTAGE NON-REVERSING AUTO TRANSFORMER
	QUADRUPLEX RECEPTACLE, GROUNDING TYPE
	FILTER CONTROL MAIN PANEL
	VARIABLE FREQUENCY DRIVE CONTROLLER

WHITMAN & HOWARD, INC. 45 WILLIAM STREET, WELLESLEY, MASS.				ORIGINAL FULL SIZE DRAWING - 4" REPRODUCTIONS MAY BE REDUCED SIZE	DRAWING NO. E-1 JOB NO. 85-163 CONTRACT NO. 3	WASTEWATER TREATMENT FACILITY PORTSMOUTH, N. H.
2 Revised To Record Plan 9/93 1 Drawing Revised 7/87		APPROVED <i>Stephen Seigel</i> DESIGNED/DRAWN: JFC/JCS CHECKED/SCALE: DLR DATE: SEPT. 1985		SHEET 90 OF 108 SHEETS	LEGEND	

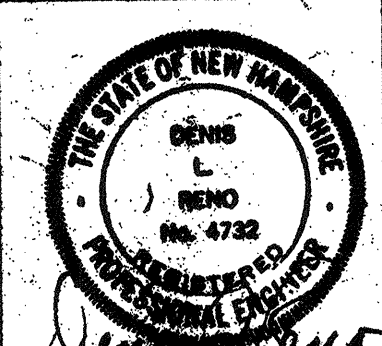


TRANSFORMER SCHEDULE			
NO.	KVA	VOLTAGE	LOCATION
T1	25	480-120/240, 1Φ, 3W.	CONTROL BUILDING
T2	45	480-208Y/120, 3Φ, 4W.	CONTROL BUILDING
T3	30	480-208Y/120, 3Φ, 4W.	CONTROL BUILDING
T4	30	480-208Y/120, 3Φ, 4W.	SCUM CONCENTRATOR
T5	45	480-208Y/120, 3Φ, 4W.	SLUDGE PROCESS BLDG.
T6	45	480-208Y/120, 3Φ, 4W.	FILTER BUILDING.



NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/89
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
 45 WILLIAM STREET, WELLESLEY, MASS.

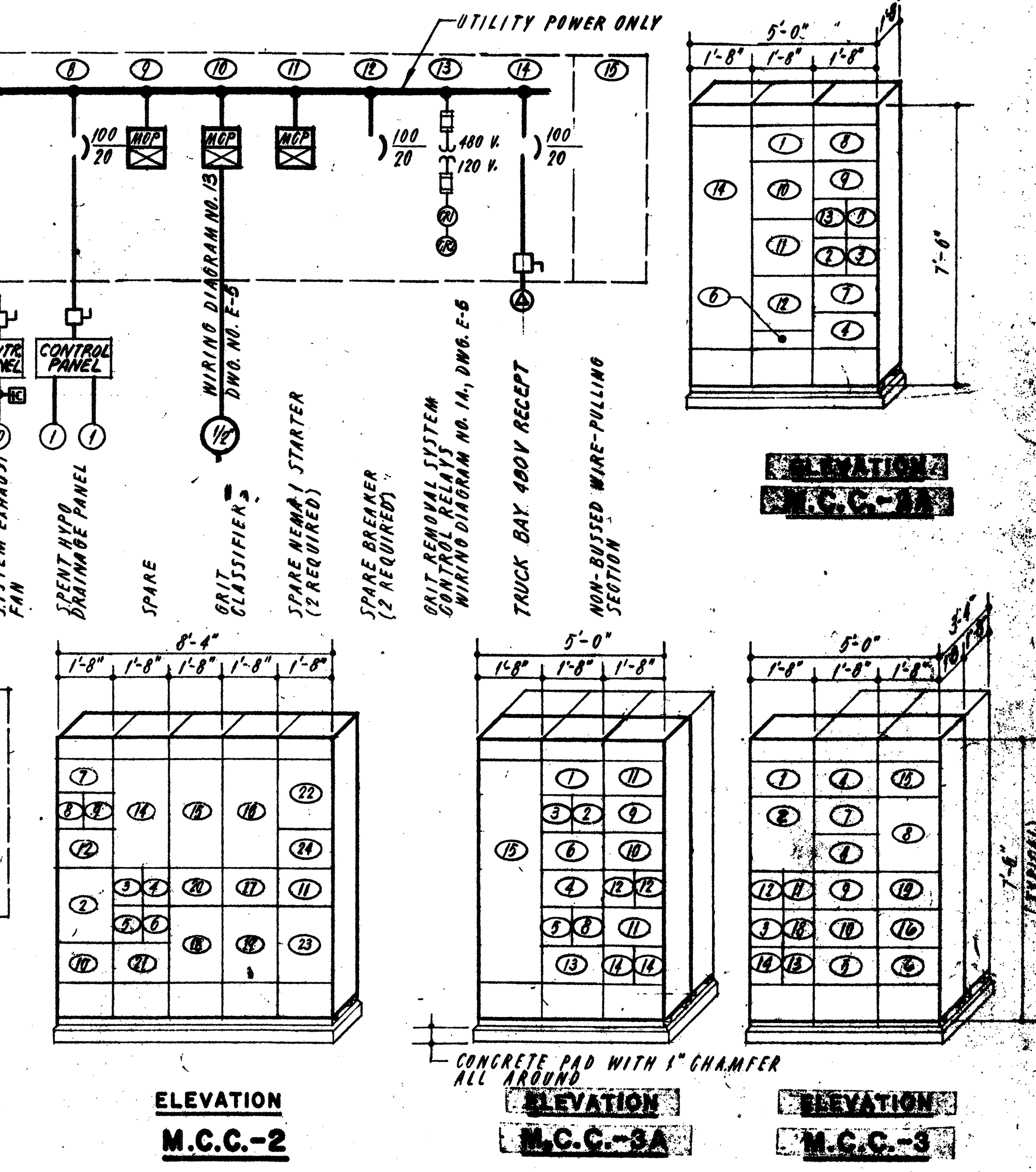
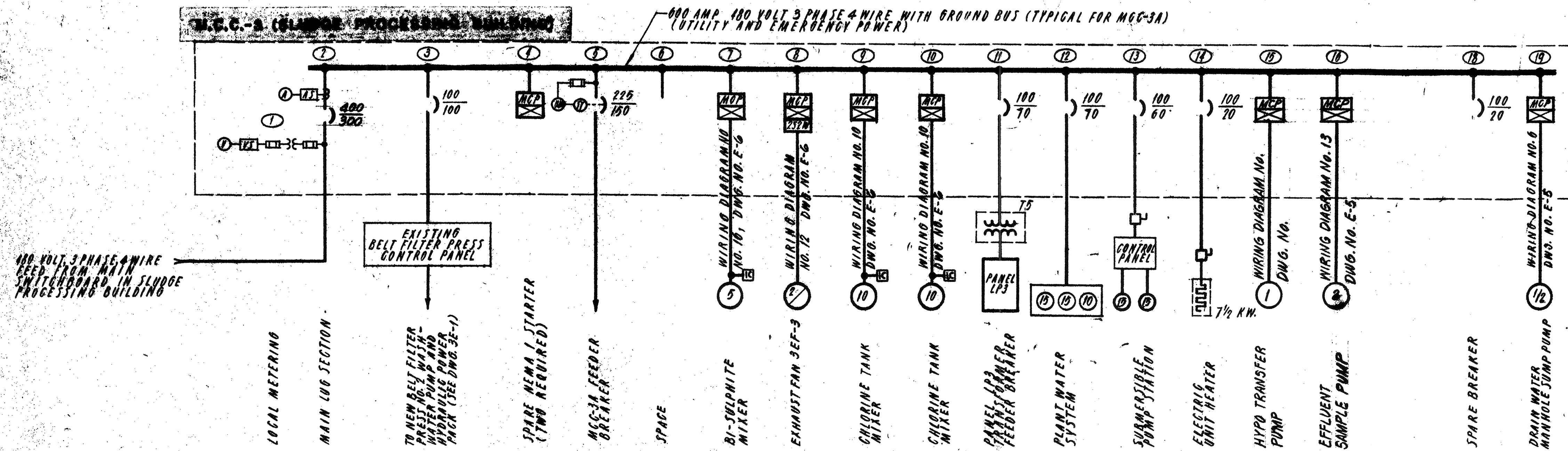
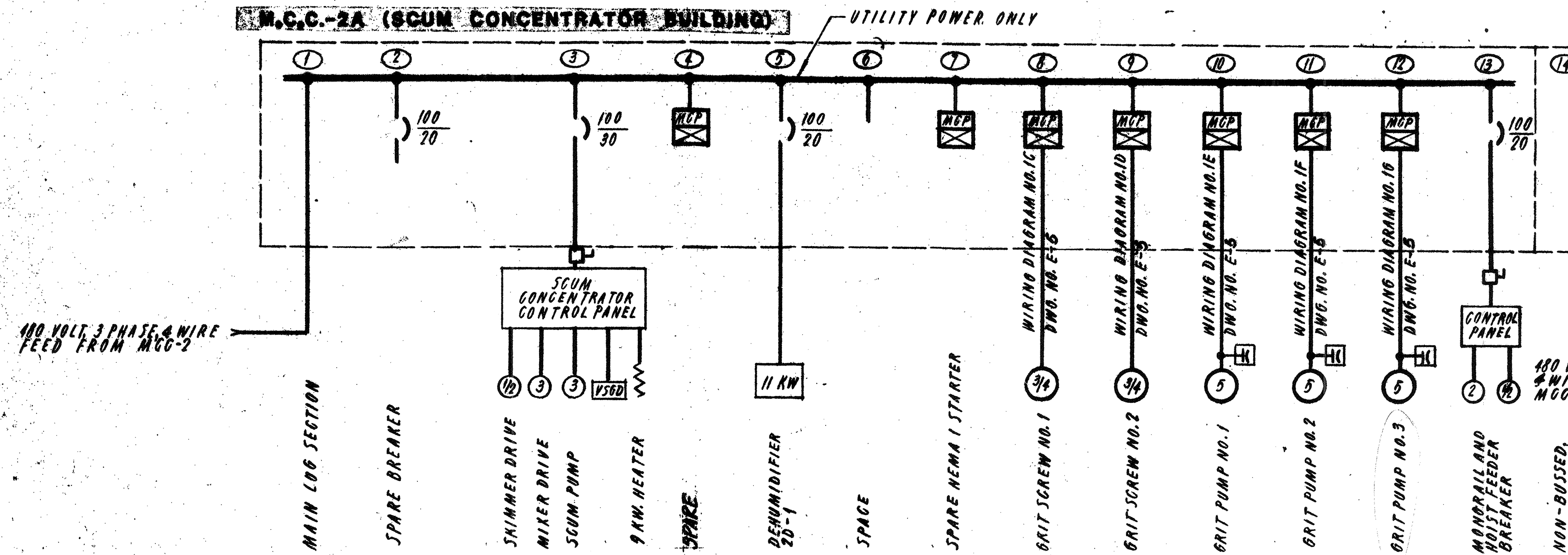
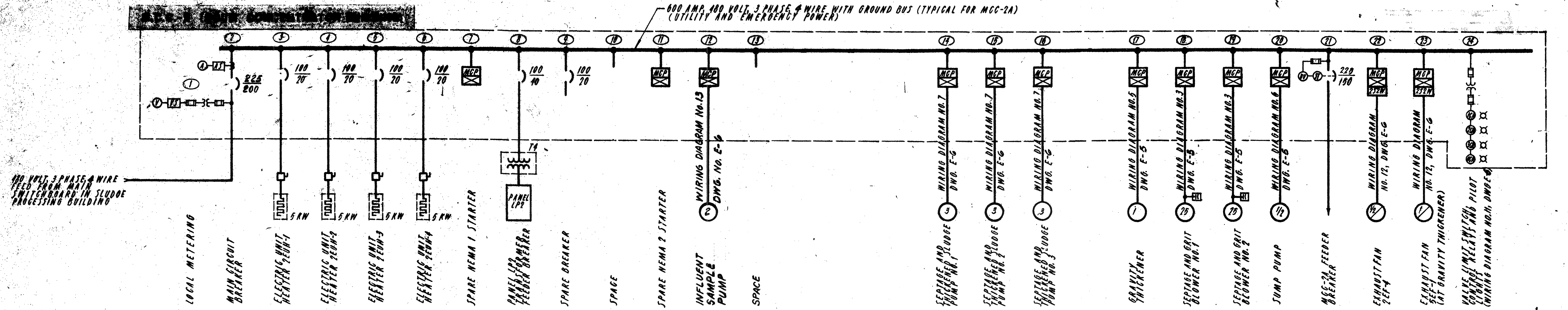


APPROVED: *Stephen E. Seigel*
 DESIGNER: R.M.B. E.C.C. D.L.R. NONE
 DATE: SEPT. 1985

DRAWING NO. **E-2**
 JOB NO. 85-163
 CONTRACT NO. 3

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
 SINGLE LINE DIAGRAMS & ELEVATIONS

RECORD PLAN



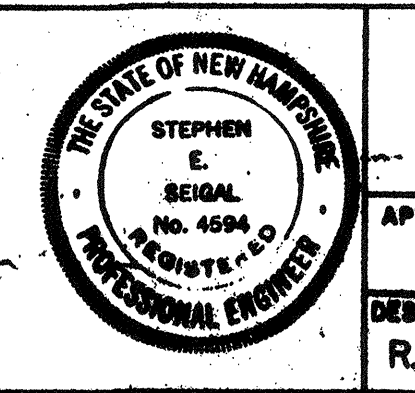
400 VOLT 3 PHASE 4 WIRE FEED FROM MAIN SWITCHBOARD IN SLUDGE PROCESSING BUILDING

400 VOLT 3 PHASE 4 WIRE FEED FROM MCC-2

400 VOLT 3 PHASE 4 WIRE FEED FROM MAIN SWITCHBOARD IN SLUDGE PROCESSING BUILDING

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/88
1	Drawing Revised	9/89
REVISIONS		

WHITMAN & HOWARD, INC.
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ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen E. Seigel*

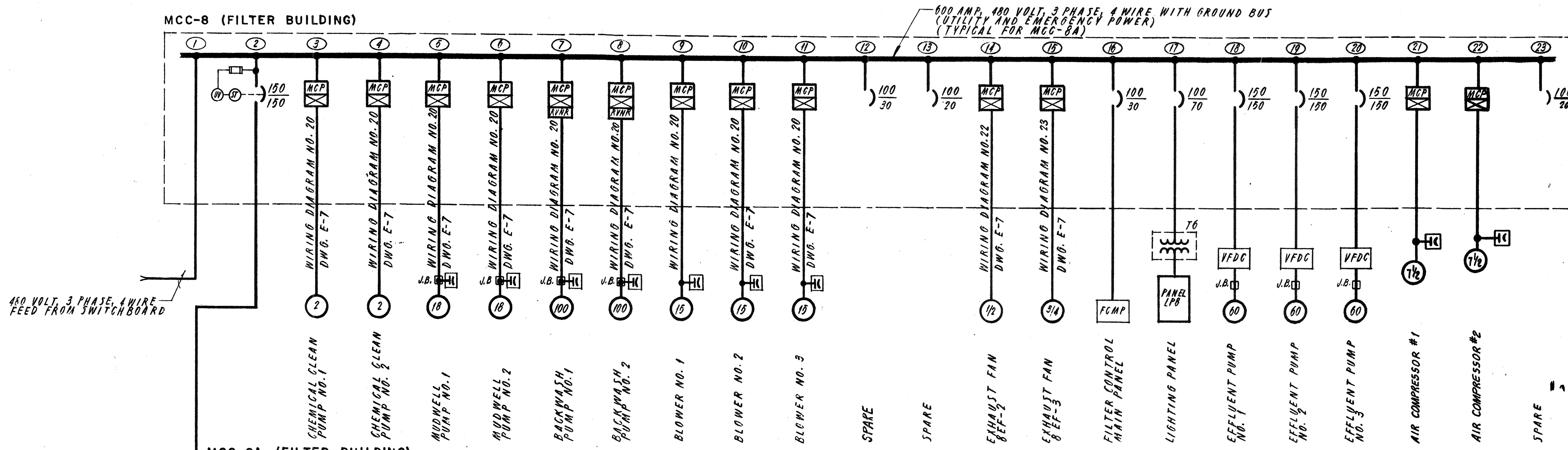
DESIGNED DRAWN: R.M.B. E.C.C. CHECKED: D.L.R. SCALE: AS NOTED DATE: SEPT, 1985

DRAWING NO. **E-3**
JOB NO. 85-163
CONTRACT NO. 3

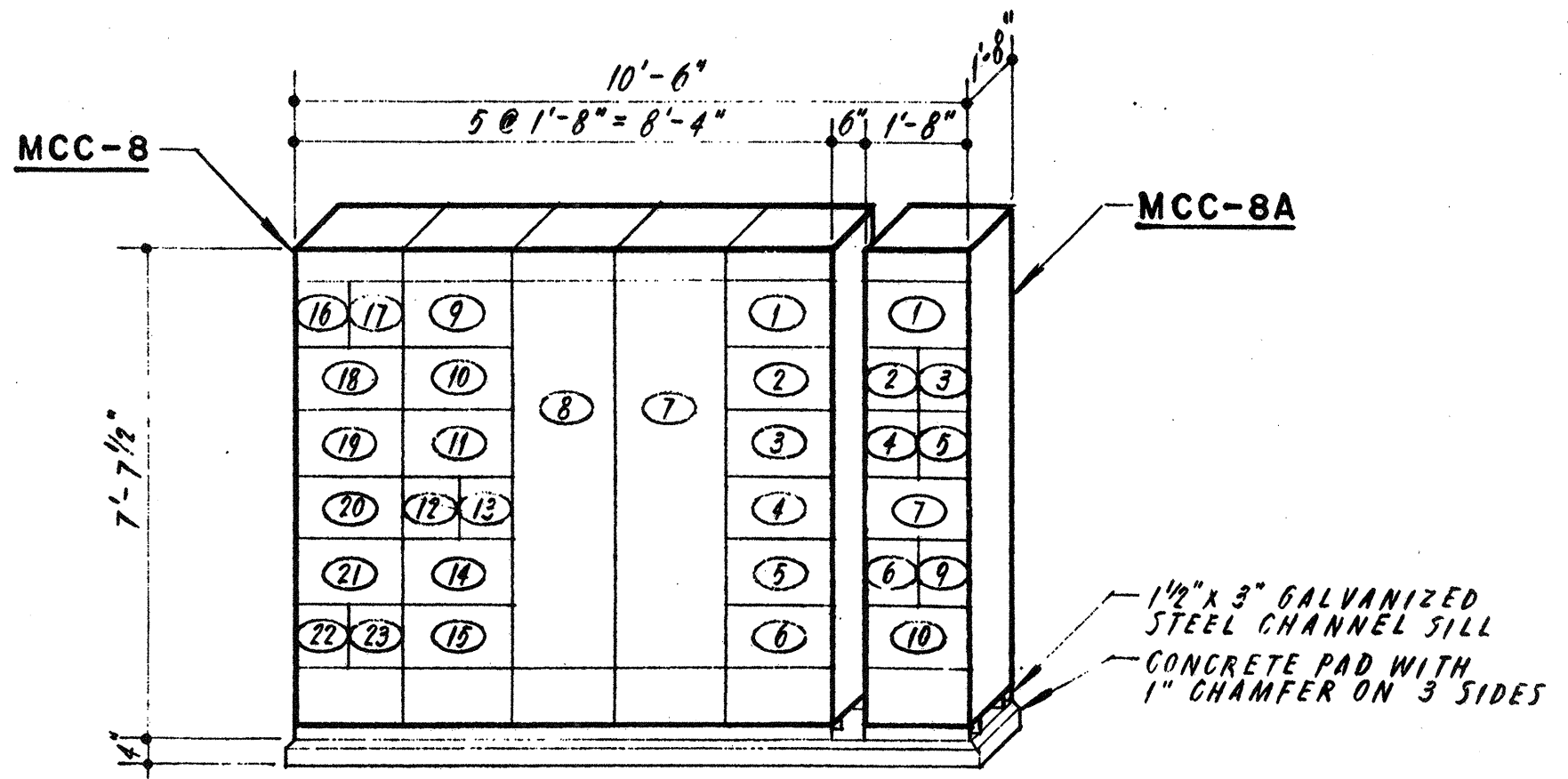
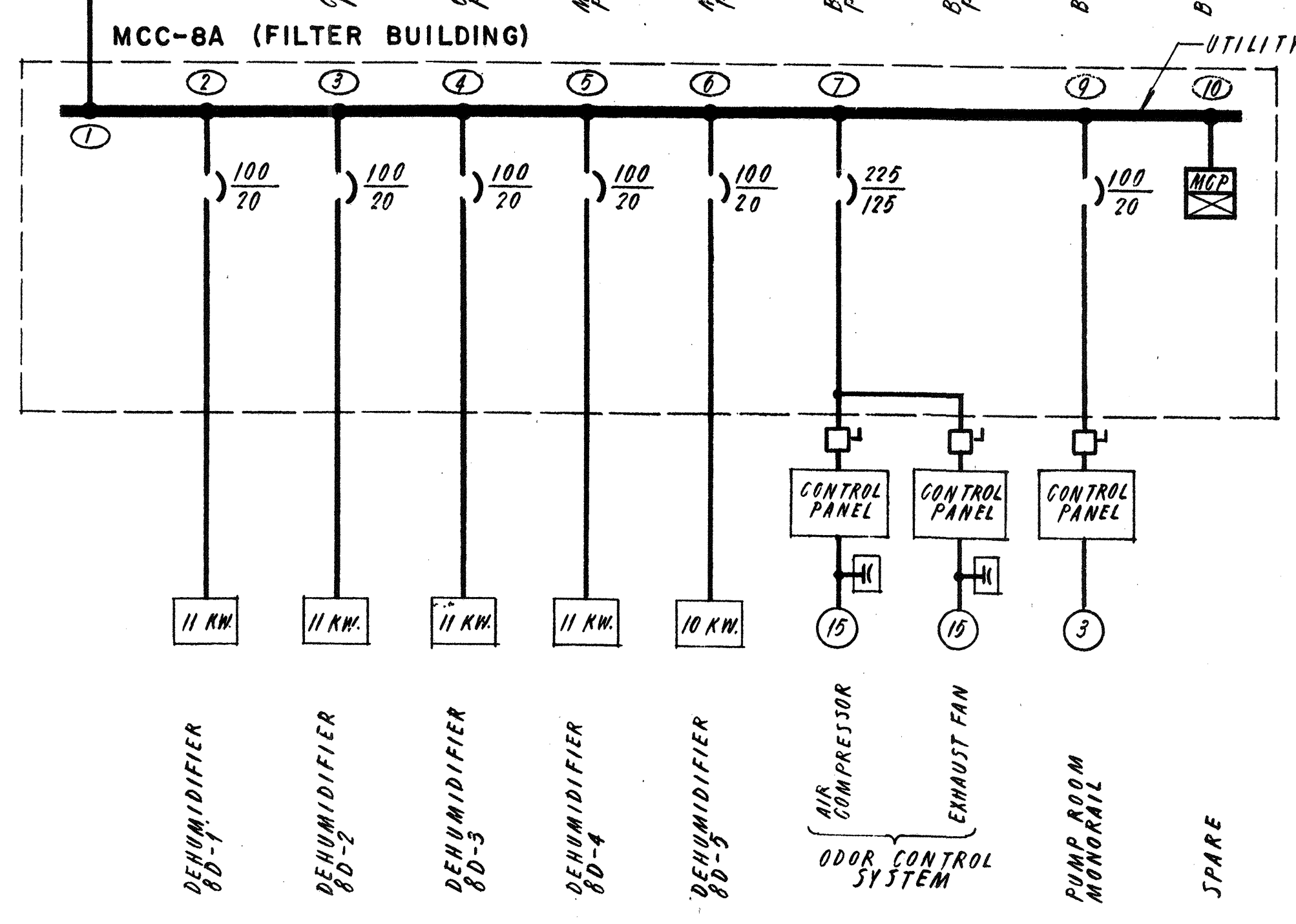
SHEET 82 OF 106 SHEETS

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
SINGLE LINE DIAGRAMS & ELEVATIONS

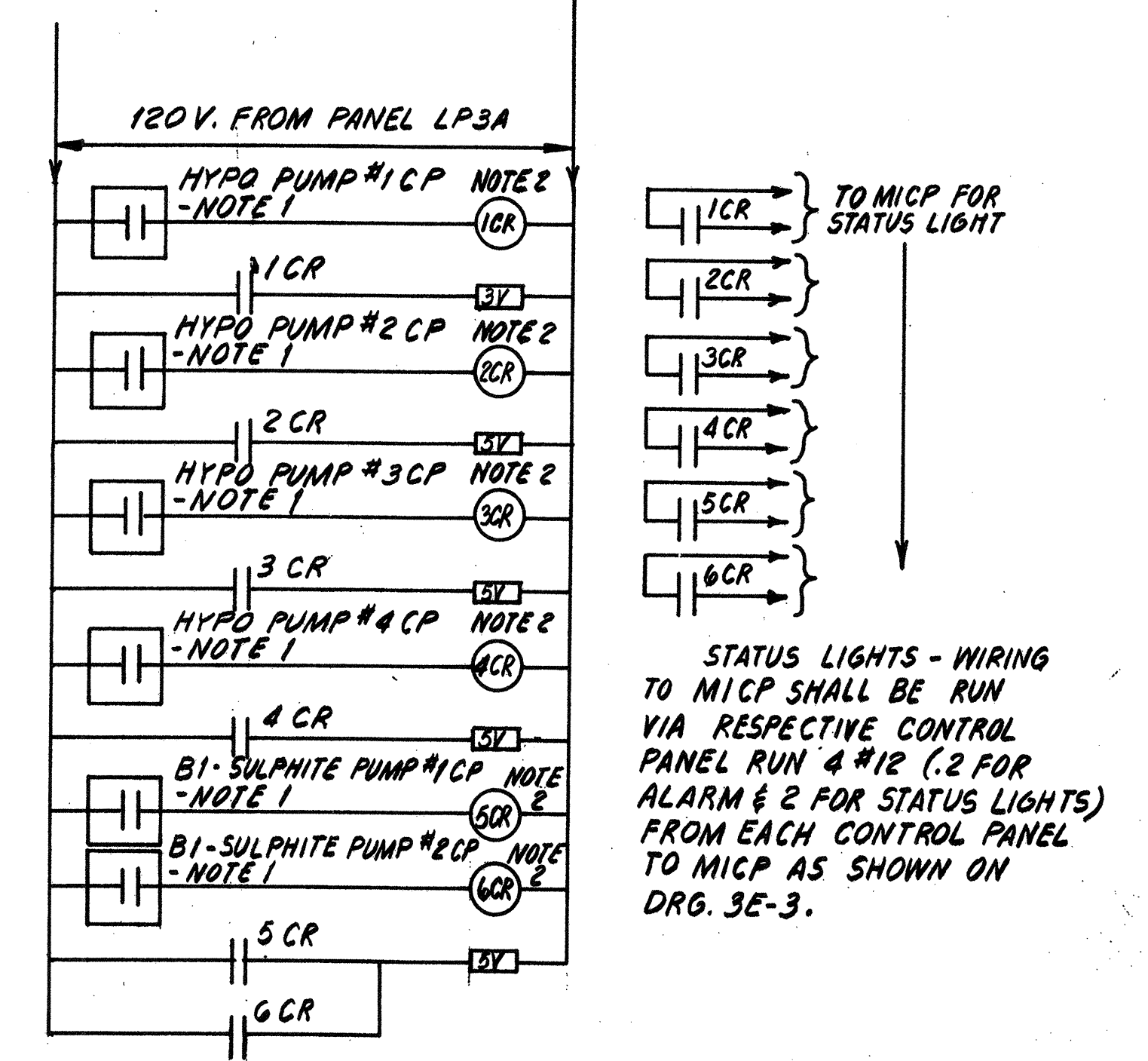
RECORD PLAN



480 VOLT, 3 PHASE, 4 WIRE FEED FROM SWITCHBOARD



ELEVATION
MCC-8 AND MCC-8A



WIRING DIAGRAM - CHEMICAL PUMPS SV

- NOTES:**
- CONTACTS ARE EXISTING STATUS INDICATING CONTACT AT CONTROL PANELS AS NOTED.
 - RELAYS 1 CR THROUGH 6 CR SHALL BE FURNISHED, INSTALLED AND WIRED IN NEMA 4 ENCLOSURE BY E. C. THE ENCLOSURE SHALL BE LOCATED NEAR THE CHEMICAL PUMPS.

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
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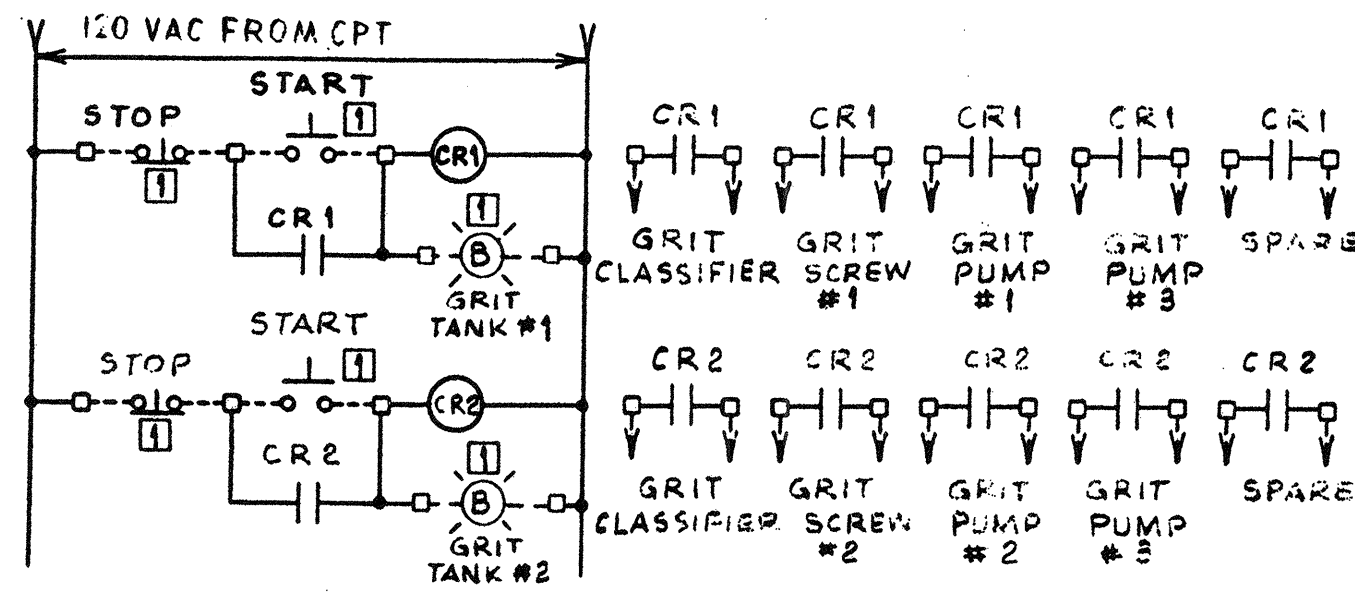
ORIGINAL FULL SIZE DRAWING - 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED _____

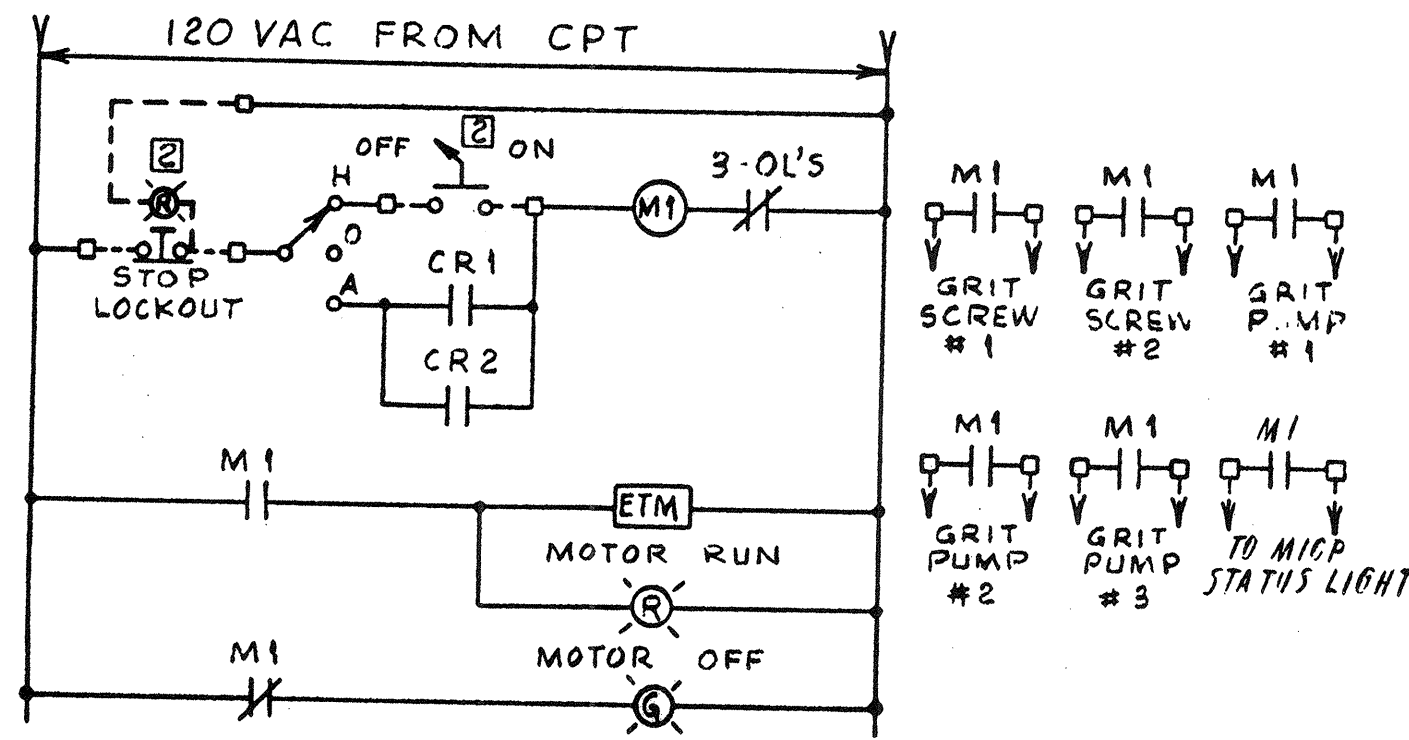
DESIGNED _____ DRAWN _____ CHECKED _____ SCALE _____ DATE _____

DRAWING NO.	E-4
JOB NO.	85-163
CONTRACT NO.	3

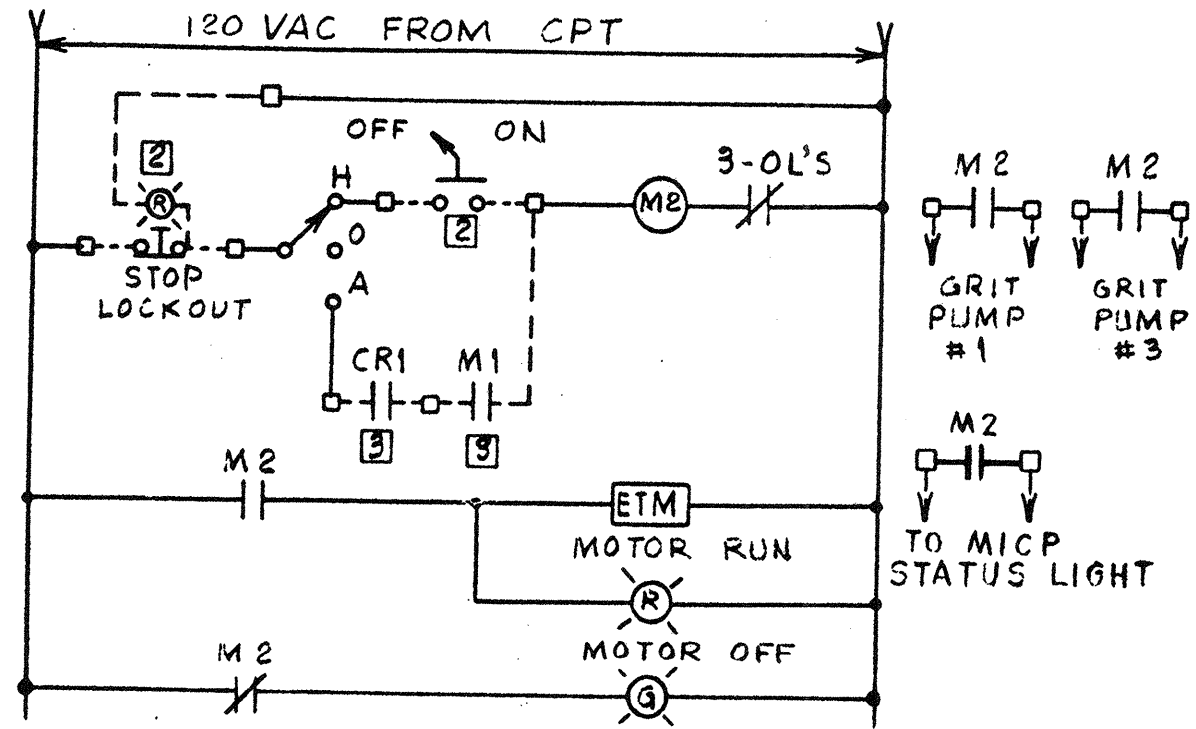
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
SINGLE LINE DIAGRAMS AND ELEVATION



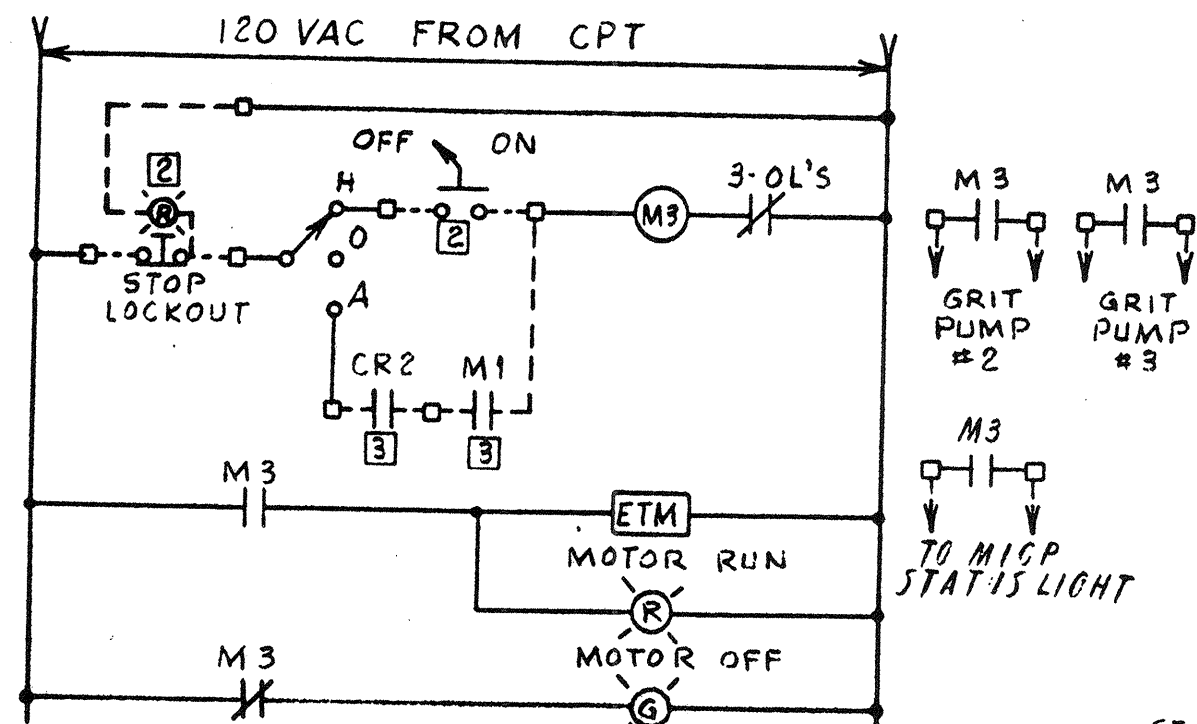
WIRING DIAGRAM NO. 1A
GRIT REMOVAL SYSTEM START/STOP



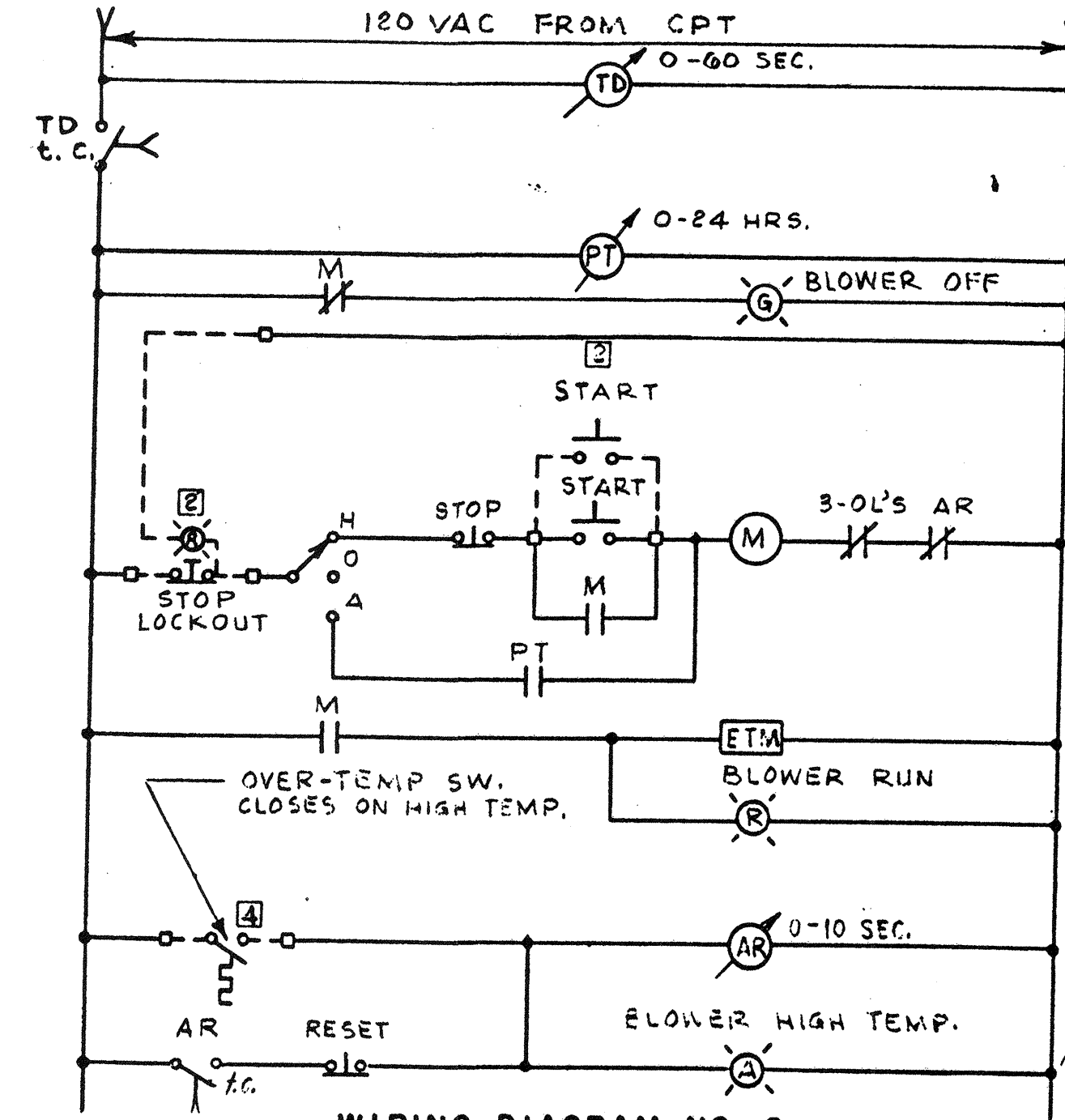
WIRING DIAGRAM NO. 1B
GRIT CLASSIFIER



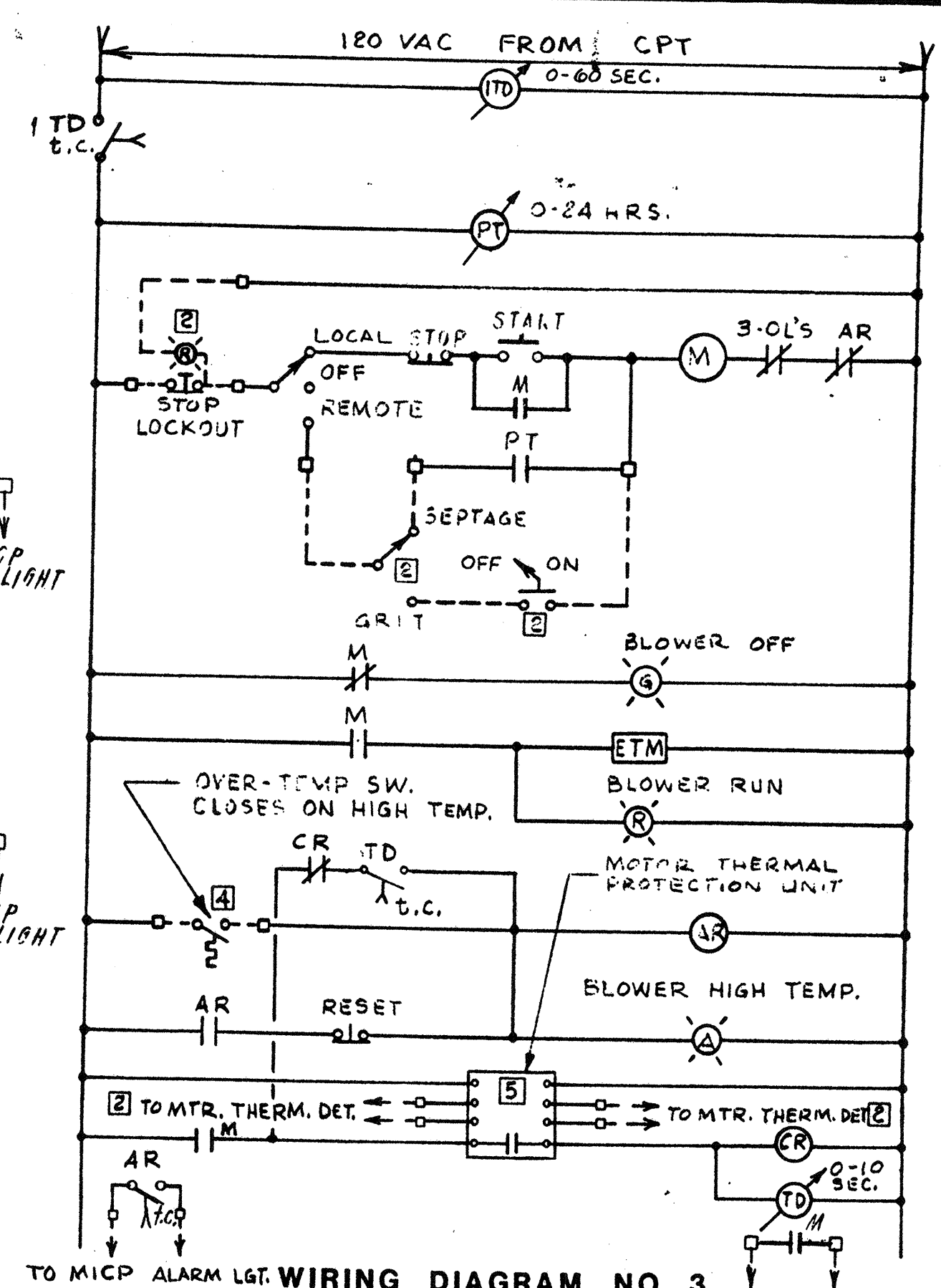
WIRING DIAGRAM NO. 1C
GRIT SCREW NO. 1



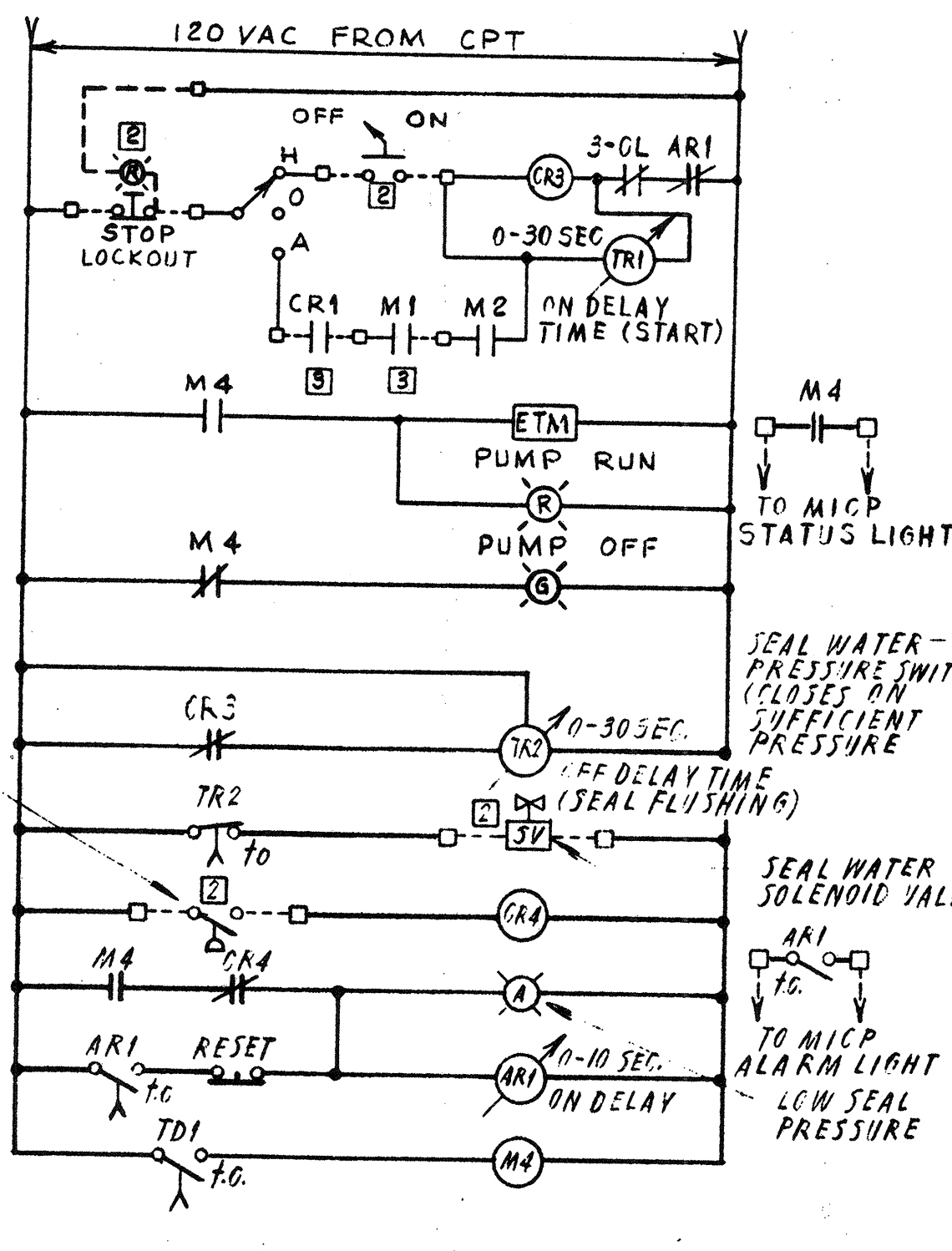
WIRING DIAGRAM NO. 1D
GRIT SCREW NO. 2



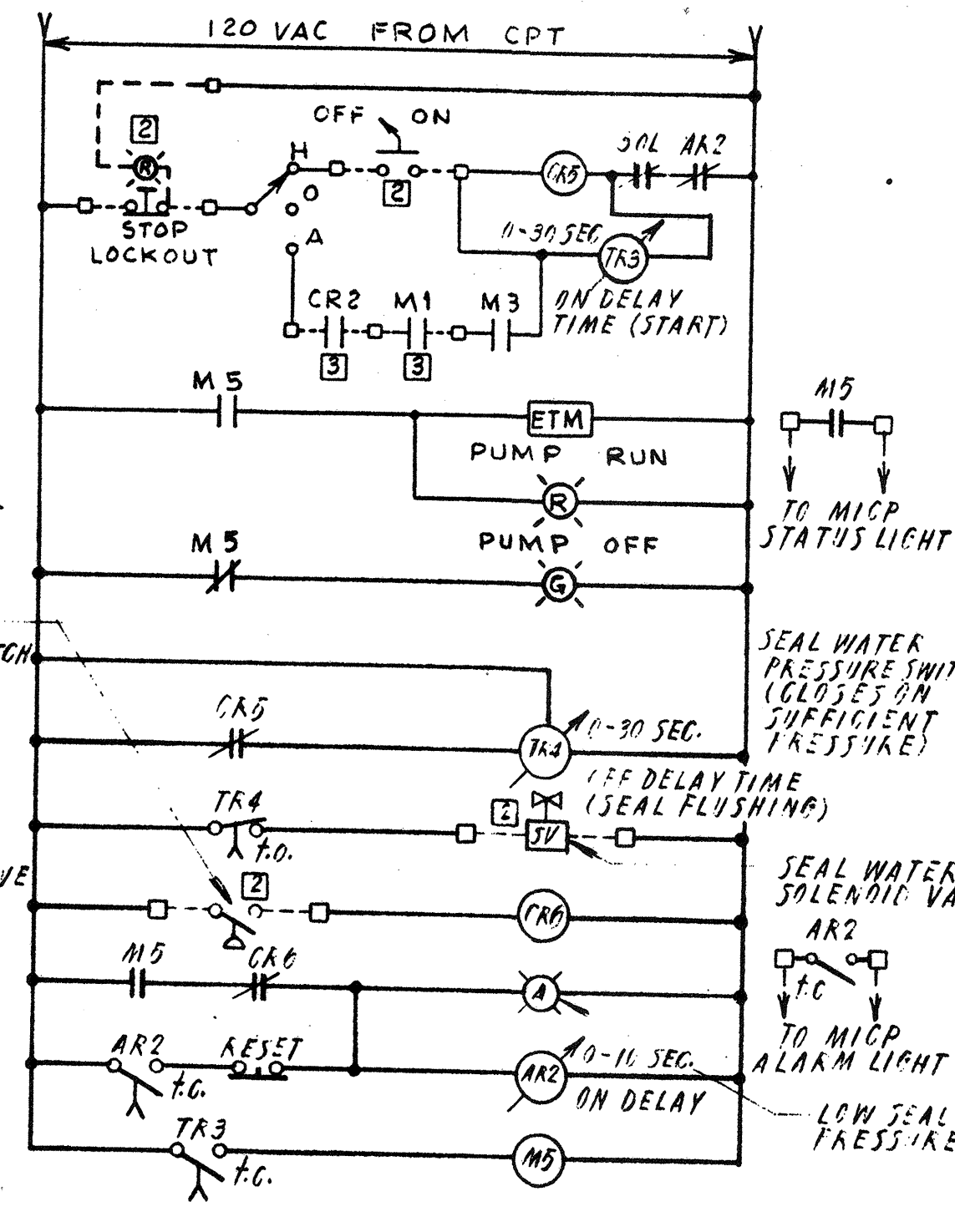
WIRING DIAGRAM NO. 2
AERATED SLUDGE BLOWER
(TYPICAL FOR 2)



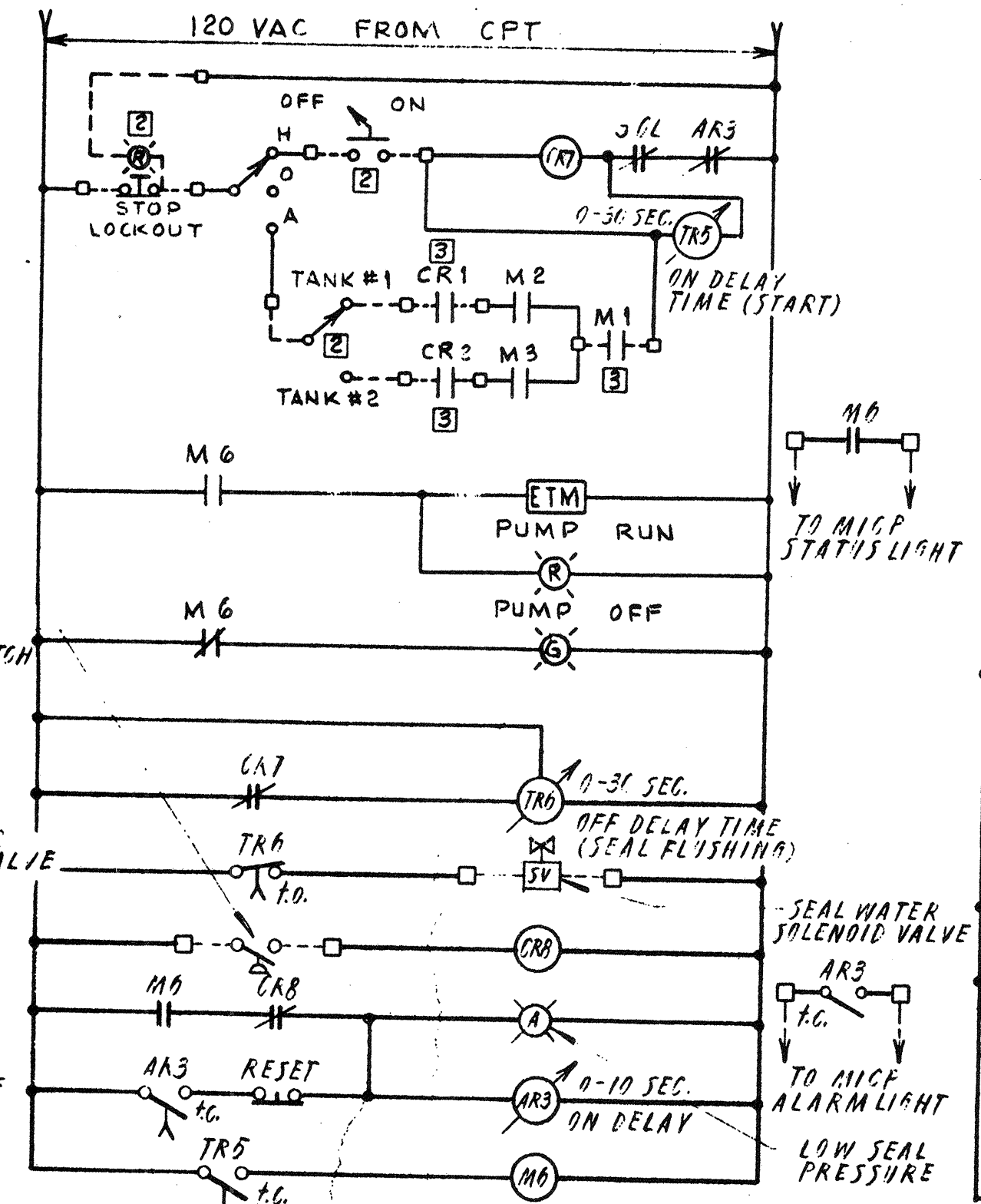
WIRING DIAGRAM NO. 3
SEPTAGE/GRIT BLOWER (TYPICAL FOR 2)



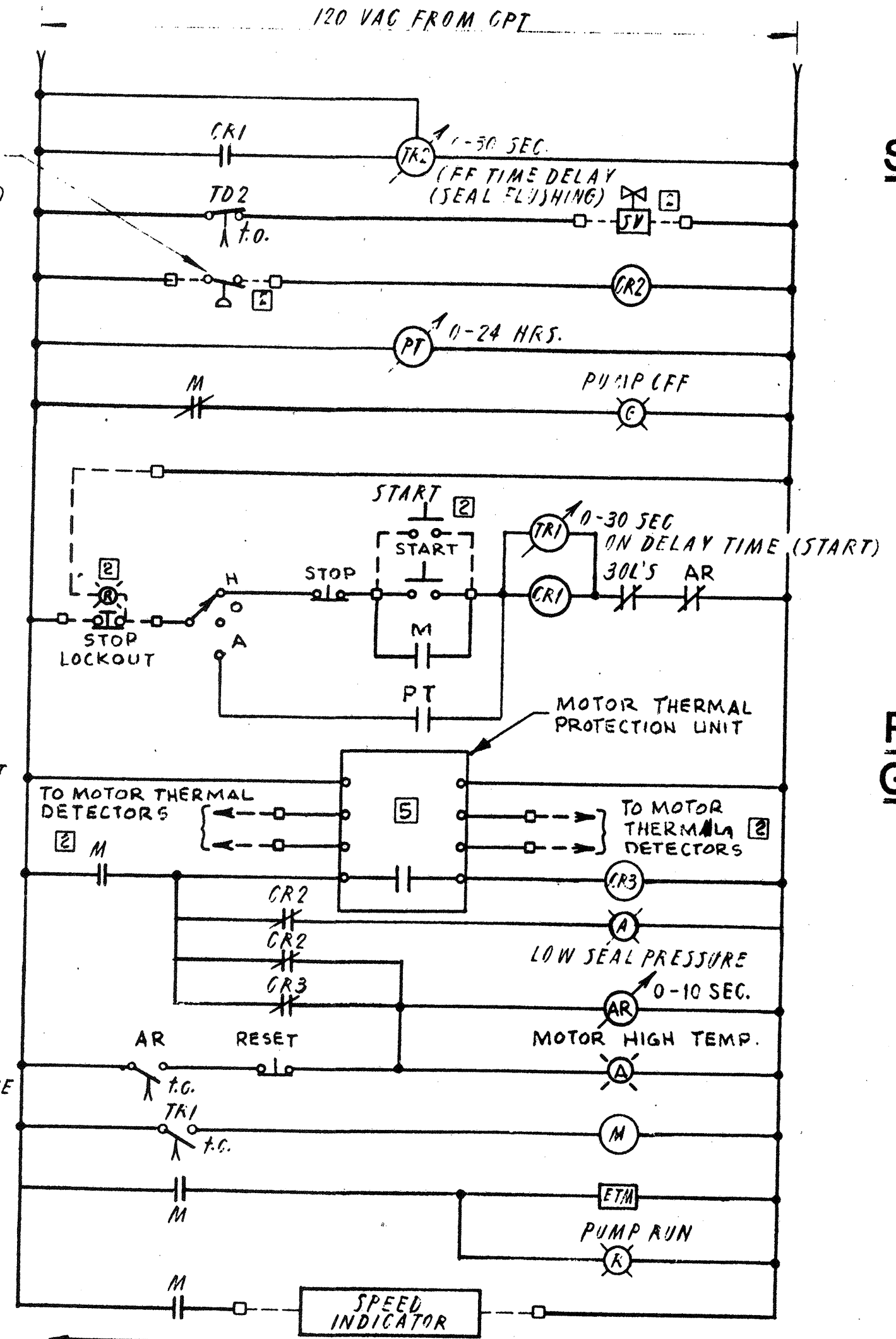
WIRING DIAGRAM NO. 1E
GRIT PUMP NO. 1



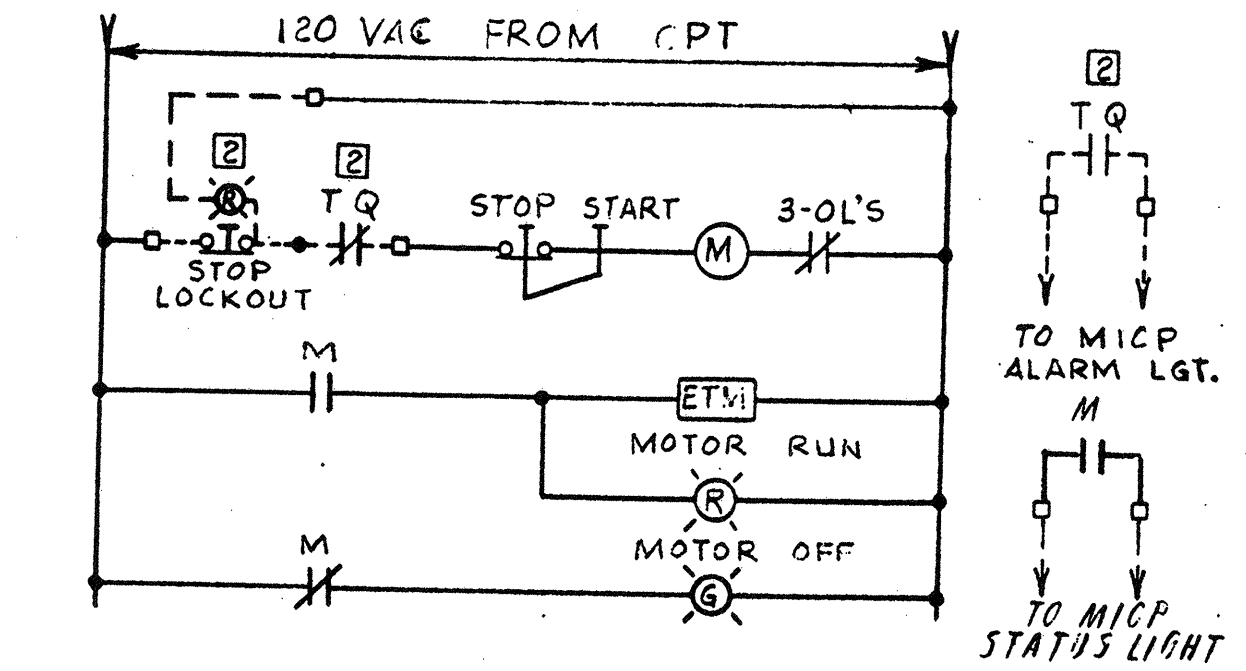
WIRING DIAGRAM NO. 1F
GRIT PUMP NO. 2



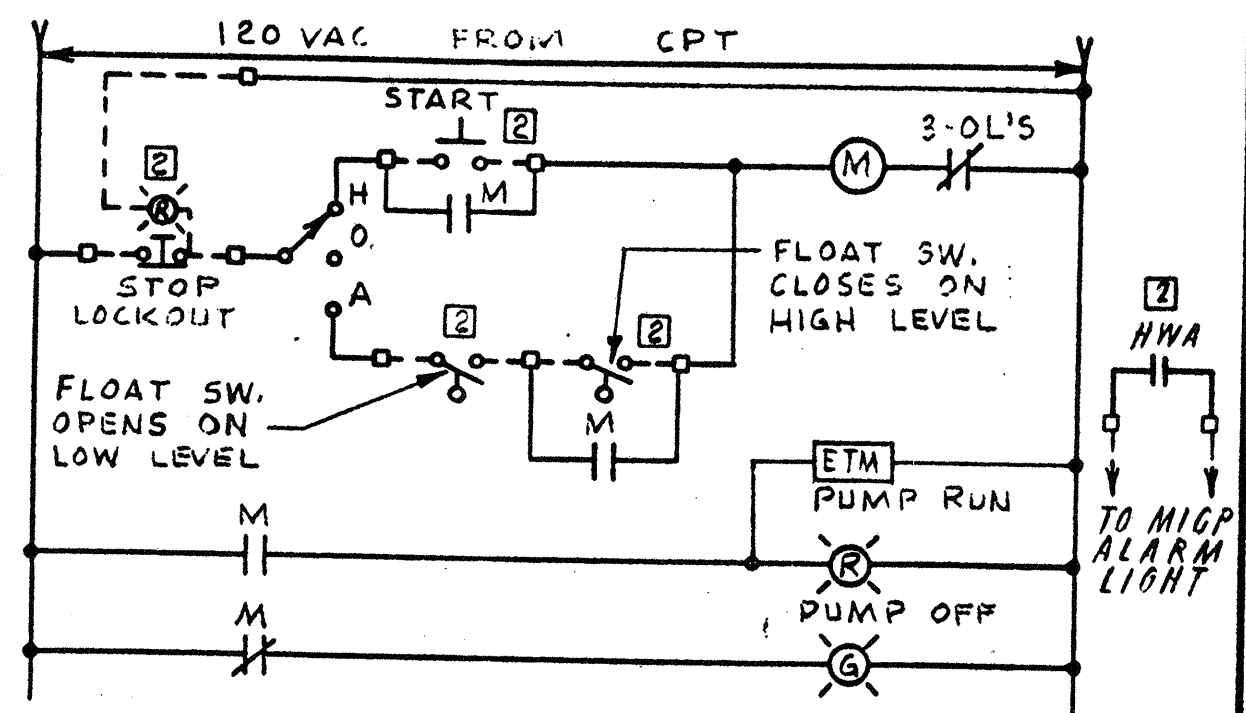
WIRING DIAGRAM NO. 1G
GRIT PUMP NO. 3



WIRING DIAGRAM NO. 4
PRIMARY SLUDGE PUMP (TYPICAL FOR 3)



WIRING DIAGRAM NO. 5
PRIMARY CLARIFIER (TYPICAL FOR 2)
GRAVITY THICKENER (TYPICAL FOR 1)

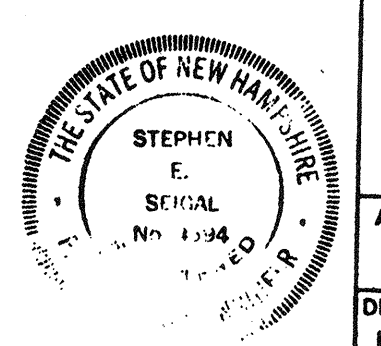
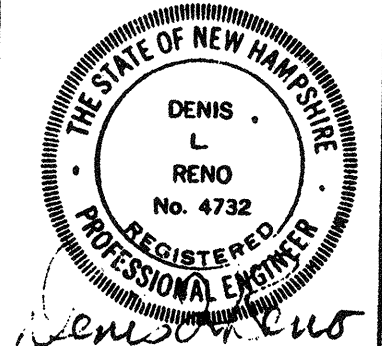


WIRING DIAGRAM NO. 6
TYPICAL SUMP PUMP

WIRING DIAGRAM NO. 1 - GRIT REMOVAL SYSTEM

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	7/99
1	Drawing Revised	7/87

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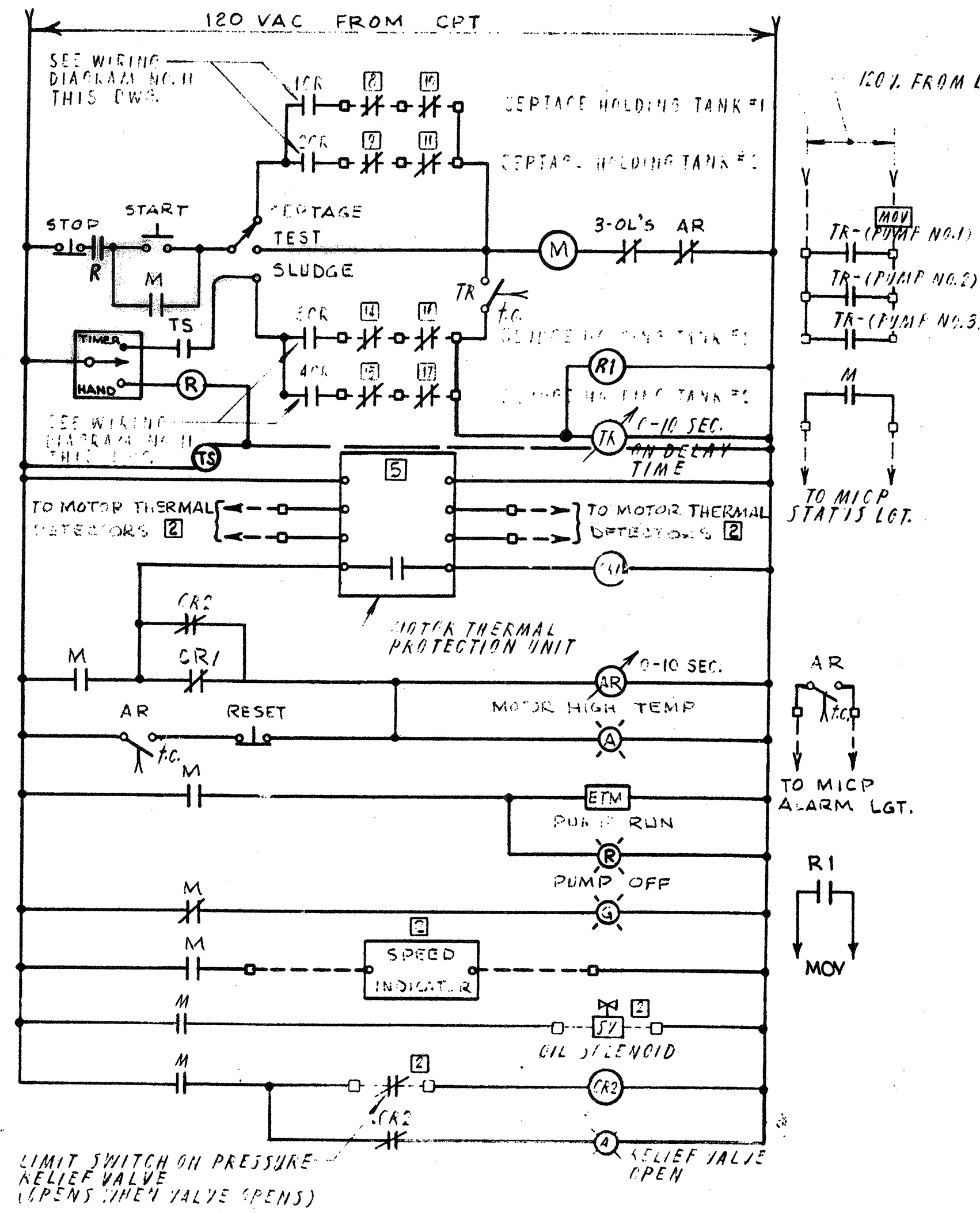


ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

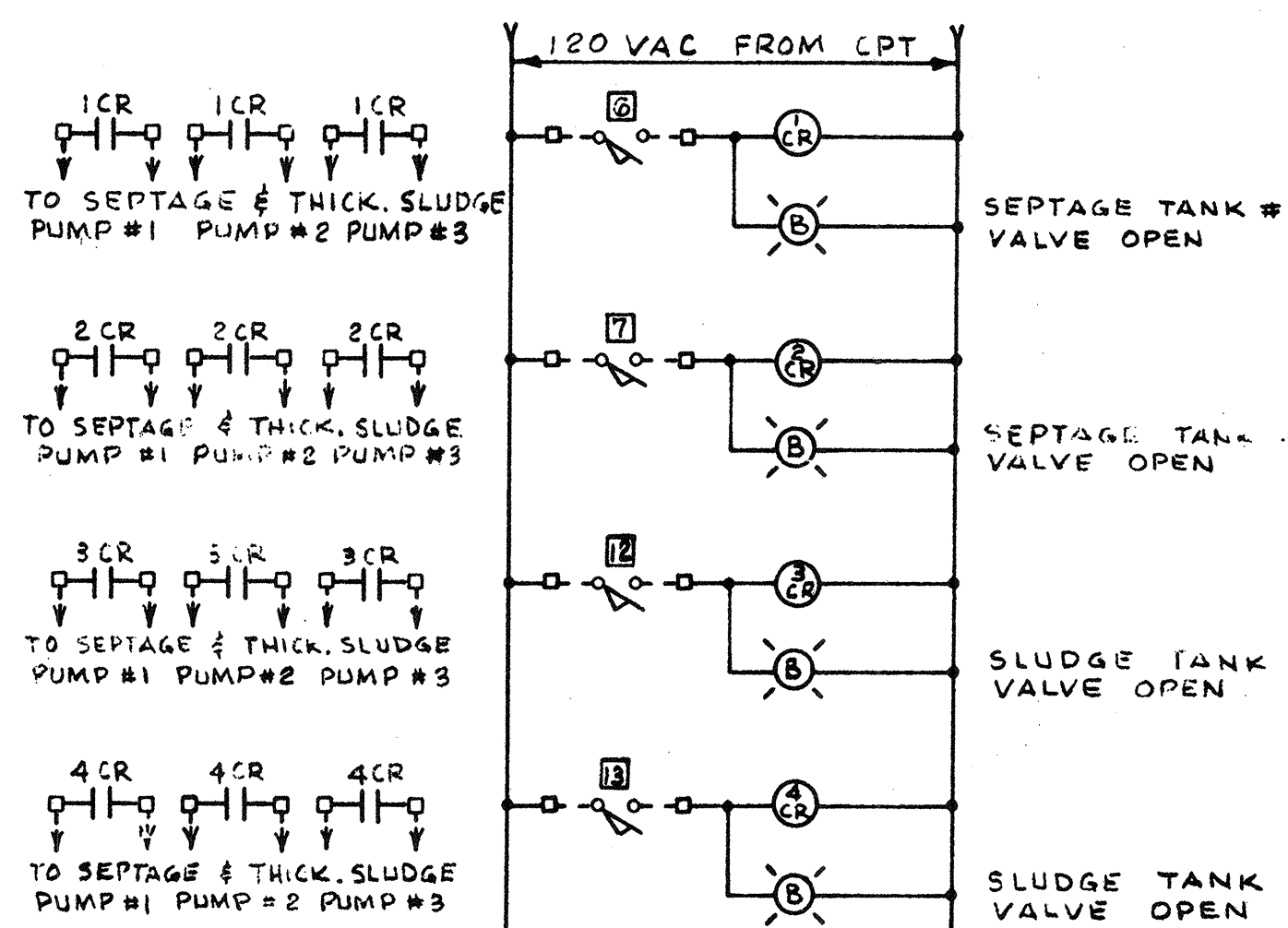
DRAWING NO. **E-5**
JOB NO. 85-163
CONTRACT NO. 3

APPROVED: *Stephen E. Seigel*
DESIGNED DRAWN: R.M.B. E.C.C. CHECKED: D.L.R. SCALE: NO SCALE DATE: SEPT, 1985

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
CONTROL SCHEMATIC WIRING DIAGRAM



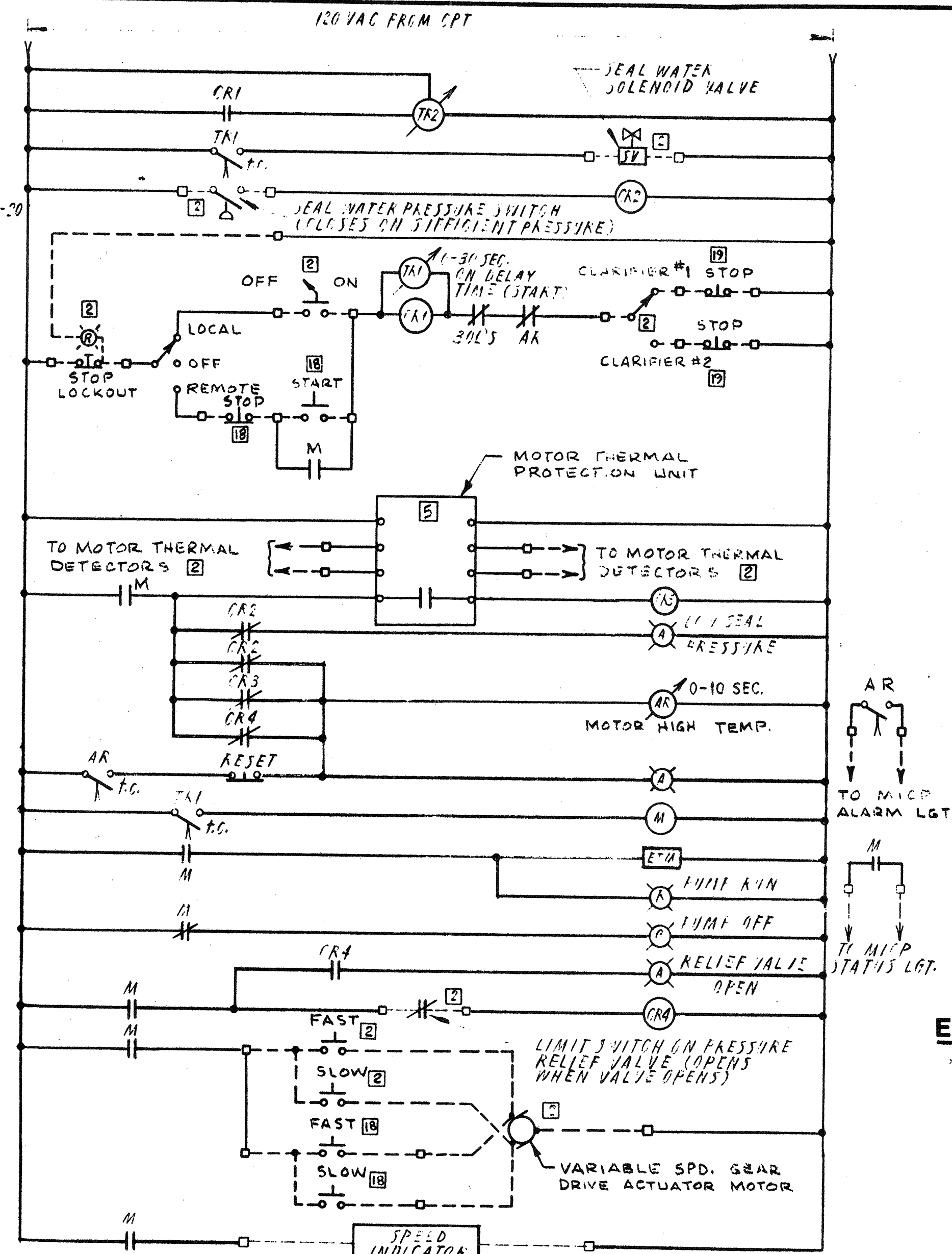
WIRING DIAGRAM NO. 7
SEPTAGE AND THICKENED SLUDGE PUMP
(TYPICAL FOR 3)



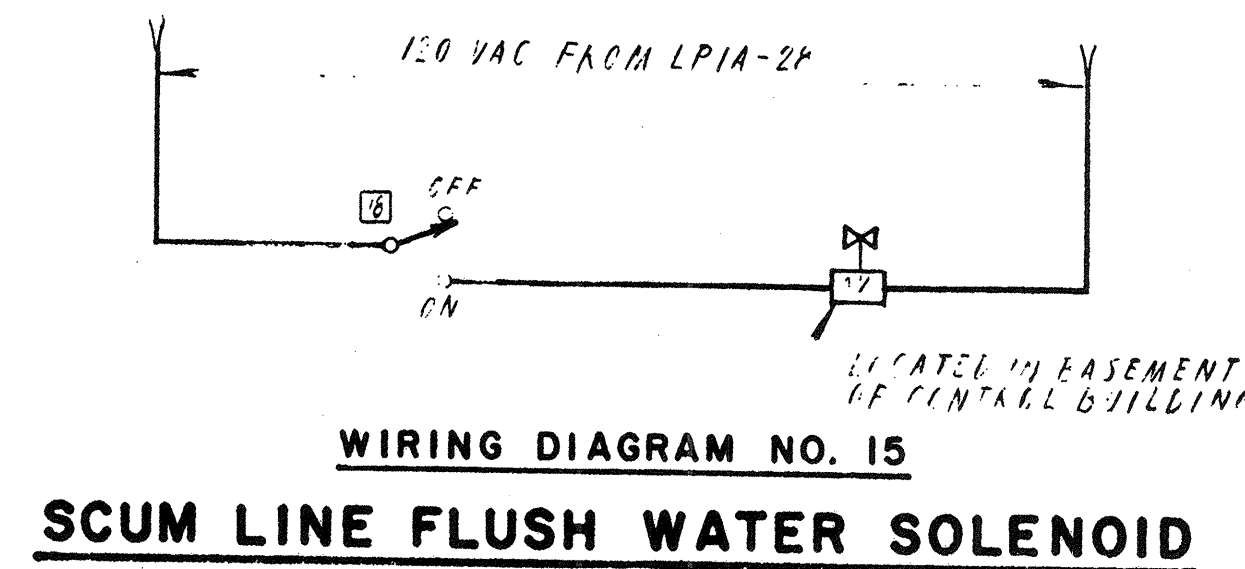
WIRING DIAGRAM NO. 11
VALVE LIMIT SWITCHES

(SEPTAGE HOLDING TANKS #1 & #2)
(SLUDGE HOLDING TANKS #1 & #2)

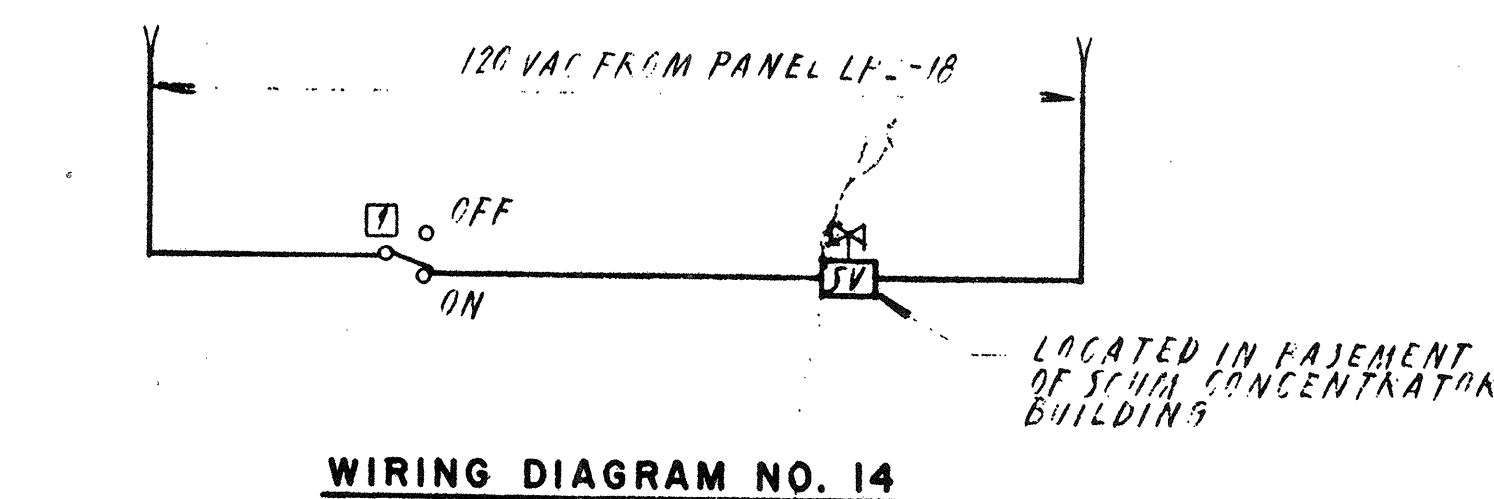
NO.	DESCRIPTION	DATE
1	Revised To Record Plan	9/93
2	Original Revised	9/87



WIRING DIAGRAM NO. 8
SCUM PUMP
TYPICAL FOR 3

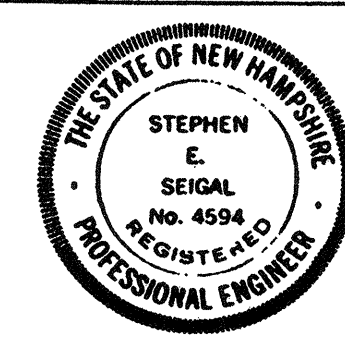
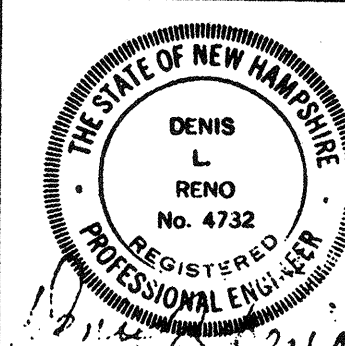


WIRING DIAGRAM NO. 15
SCUM LINE FLUSH WATER SOLENOID



WIRING DIAGRAM NO. 14
GRIT LINE FLUSH WATER SOLENOID

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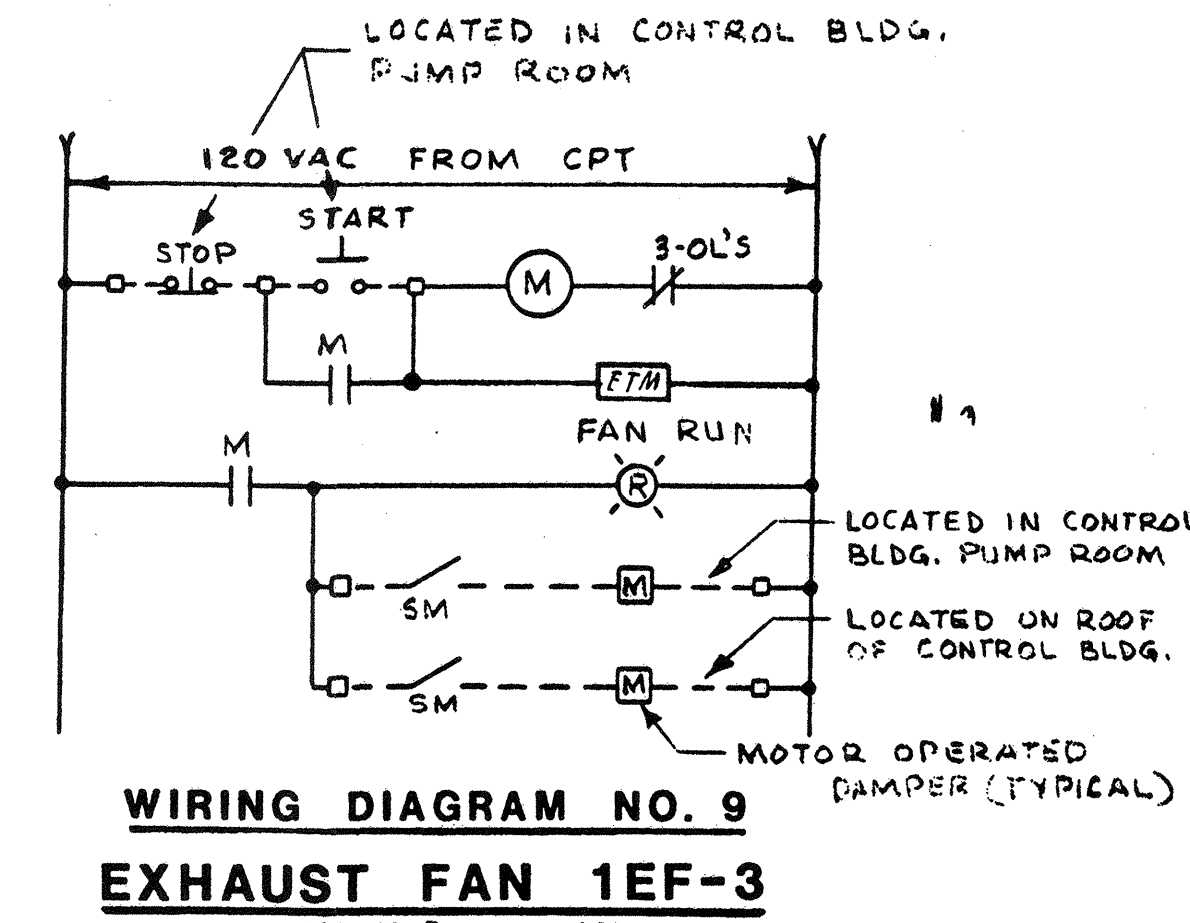
ORIGINAL FULL SIZE DRAWING - 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen E. Seigel*

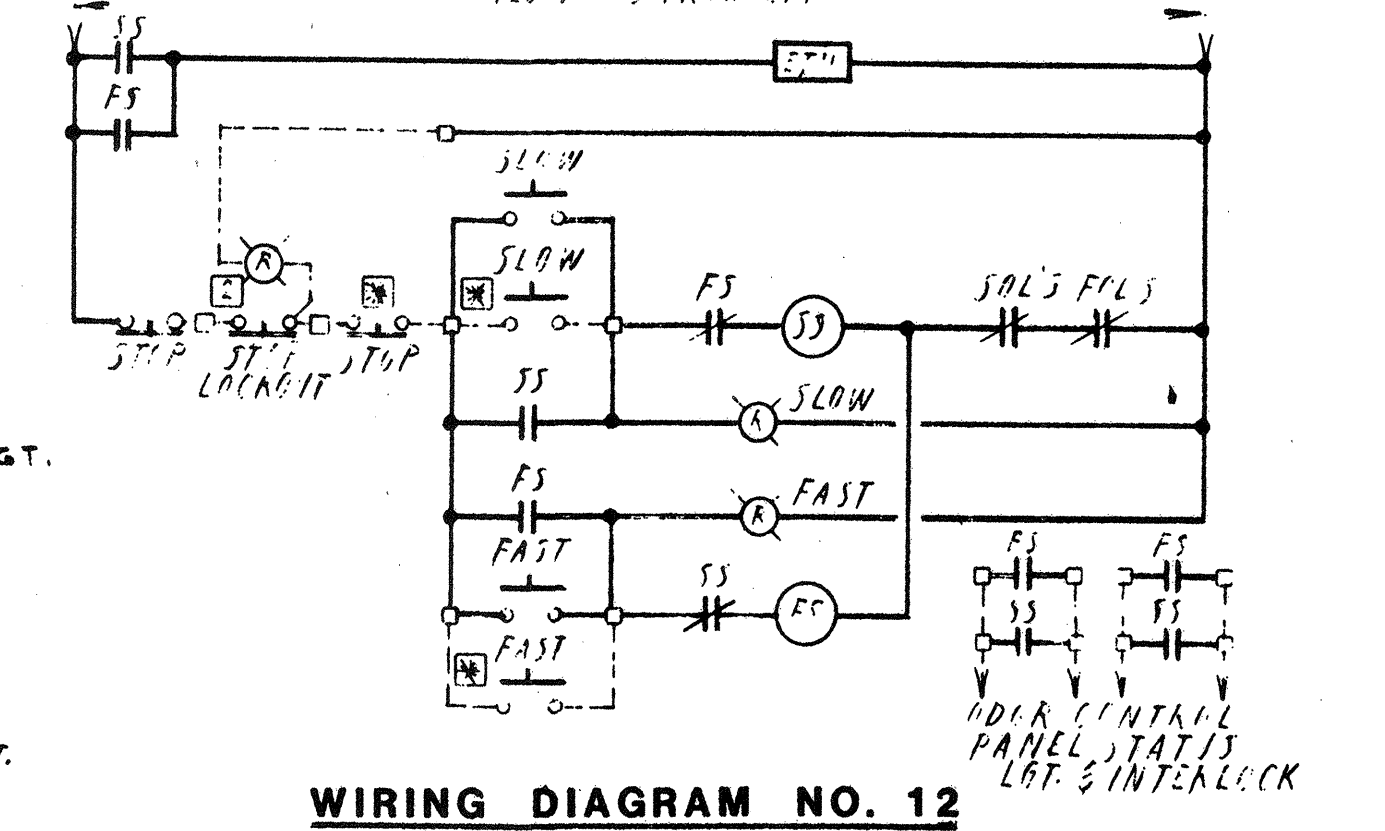
DESIGNED/DRAWN: R.M.B. E.C.C. D.L.R. NO SCALE
DATE: SEPT., 1985

DRAWING NO. **E-6**
JOB NO. 85-163
CONTRACT NO. 3

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
CONTROL SCHEMATIC WIRING DIAGRAMS

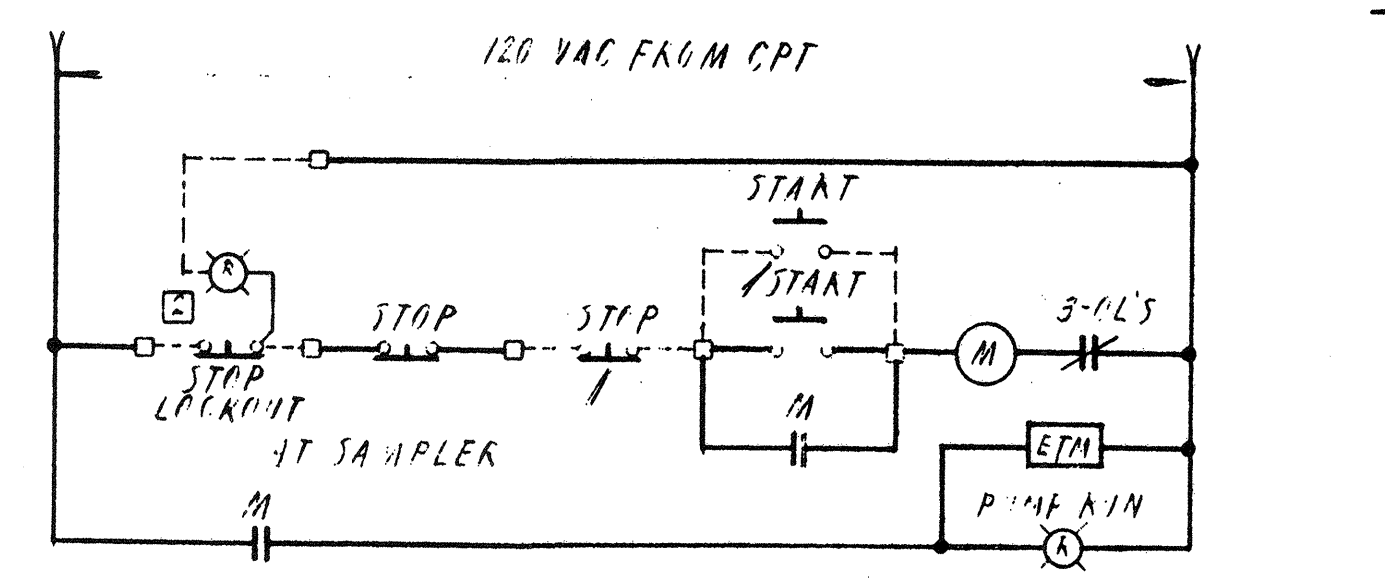


WIRING DIAGRAM NO. 9
EXHAUST FAN 1EF-3

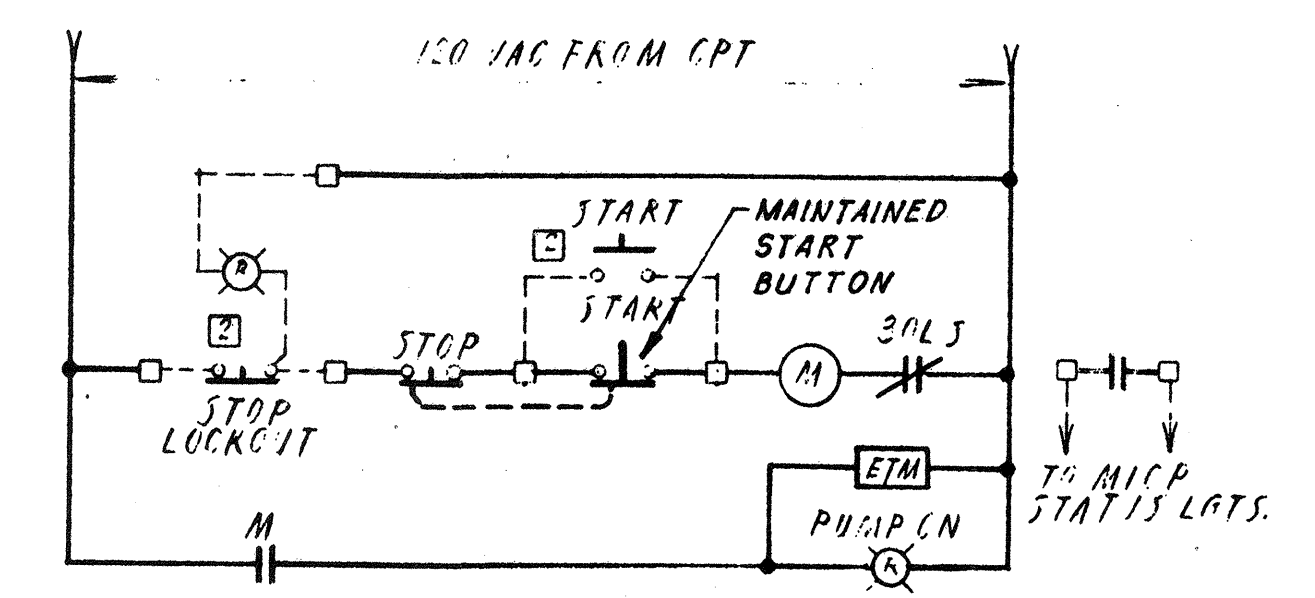


WIRING DIAGRAM NO. 12
EXHAUST FANS 1EF-6, 2EF-4, 3EF-3 & 5EF-1

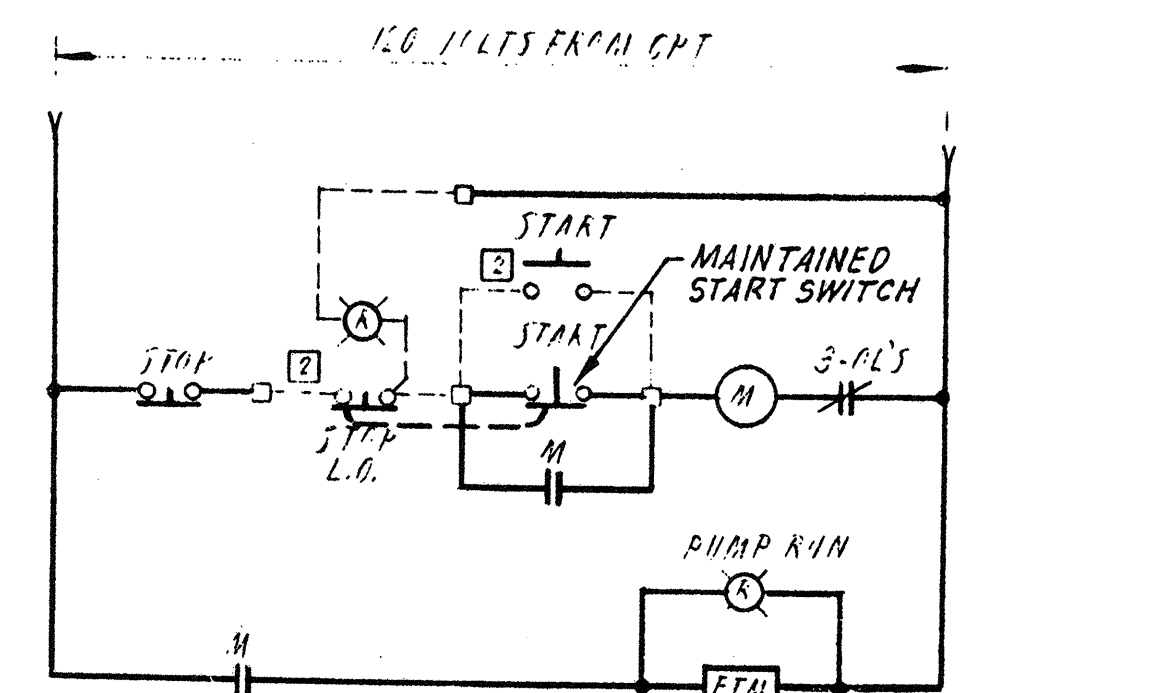
* REMOTE CONTROL STATIONS LOCATED AT SCRUBBER EXCEPT FOR 3EF-3 WHICH IS IN FILTER PRESS ROOM



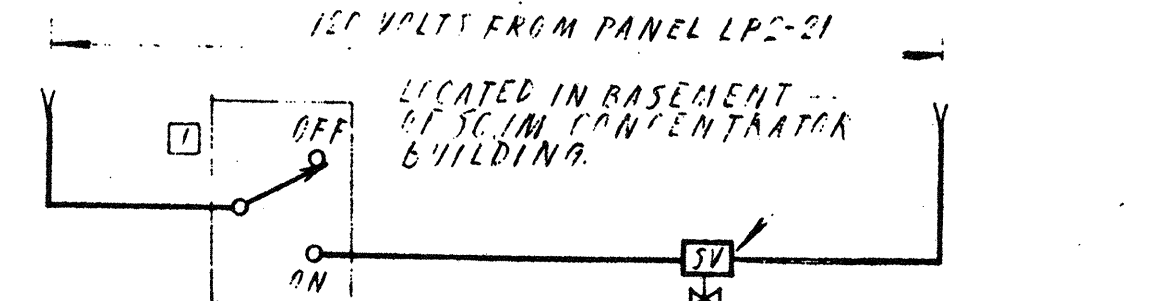
WIRING DIAGRAM NO. 13
INFLUENT AND EFFLUENT SAMPLE PUMPS



WIRING DIAGRAM NO. 10
CHLORINE TANK MIXER
(TYPICAL FOR 2)



WIRING DIAGRAM NO. 16
BI-SULPHITE MIXER

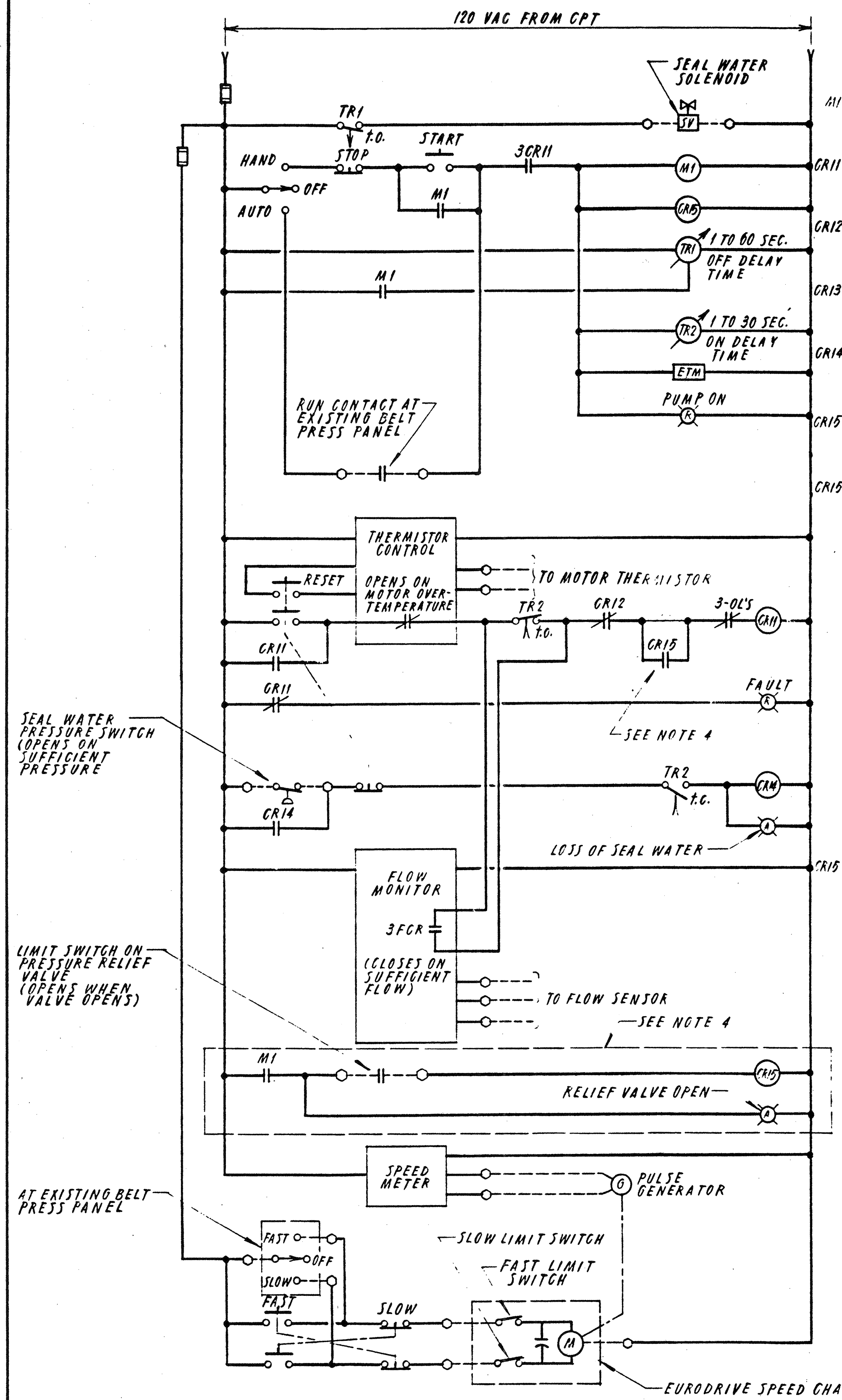


WIRING DIAGRAM NO. 17

CONCENTRATED SCUM WATER FLUSH LINE

NOTES

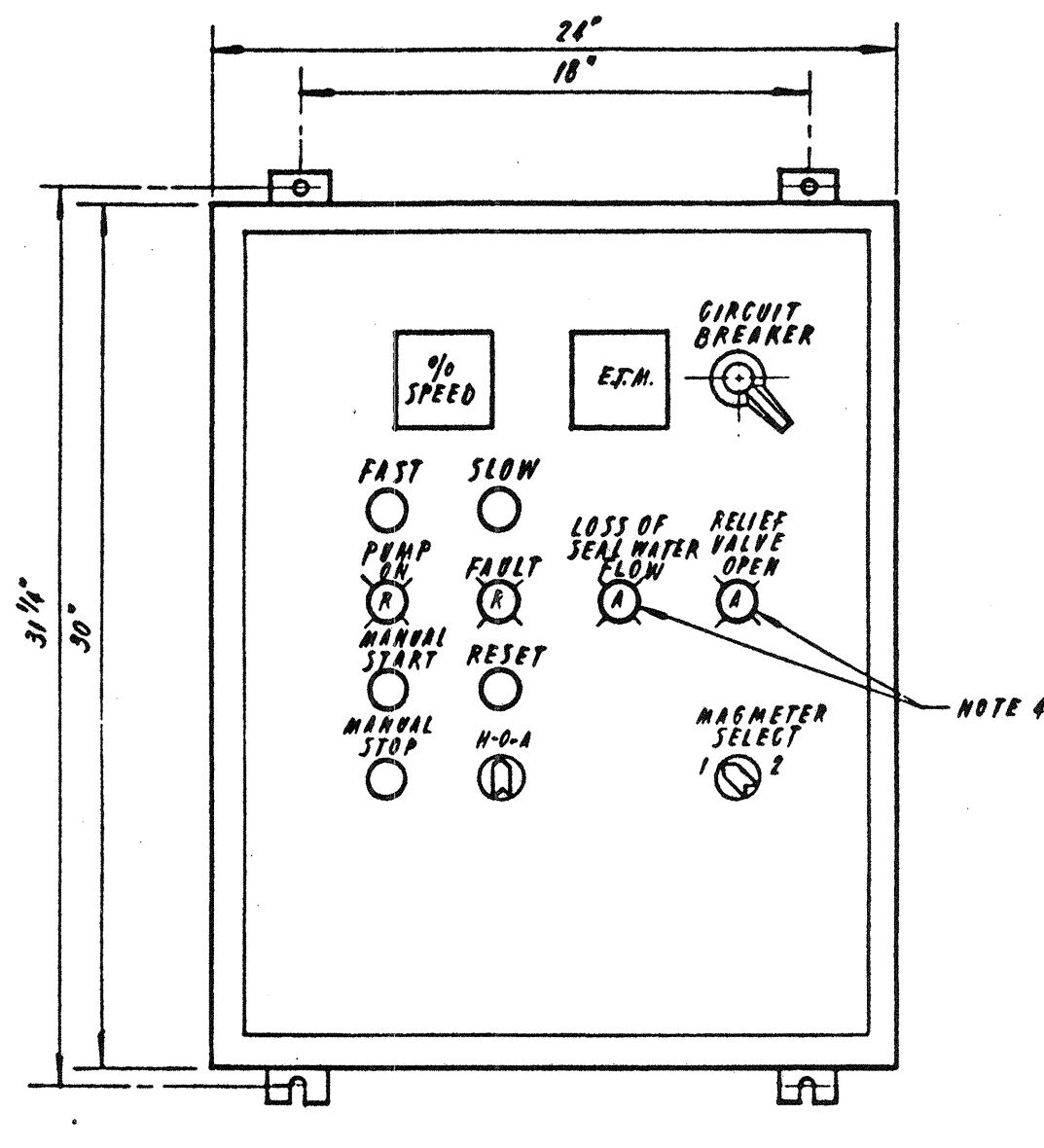
- LOCATED AT GRIT CLASSIFIER.
 - LOCATED AT MOTOR.
 - LOCATED IN MCC-3 (SLUDGE PROCESS BLDG.).
 - LOCATED IN BLOWER DISCHARGE PIPING.
 - MOTOR THERMAL PROTECTION UNIT FURNISHED BY MOTOR SUPPLIER AND INSTALLED BY MOTOR CONTROL CENTER MANUFACTURER.
 - CONTACT ON LIMIT SWITCH LOCATED ON SEPTAGE HOLDING TANK #1 SUCTION PIPING VALVE (SCUM CONCENTRATOR BUILDING-BLOWER ROOM). CONTACT CLOSURES WHEN VALVE IS FULL OPEN.
 - SAME AS [6] EXCEPT ON SEPTAGE HOLDING TANK #2 SUCTION PIPING VALVE.
 - CONTACT LOCATED IN AND PART OF S.H. TANK CONTROL PANEL CP-1 IN SCUM CONCENTRATOR BUILDING. CONTACT OPENS ON SEPTAGE HOLDING TANK #1 LOW LEVEL.
 - SAME AS [8] EXCEPT CONTACT OPENS ON SEPTAGE HOLDING TANK #2 LOW LEVEL.
 - CONTACT LOCATED IN AND PART OF S.H. TANK CONTROL PANEL CP-1 IN SCUM CONCENTRATOR BUILDING (BACK-UP LOW LEVEL FROM FLOAT SWITCH). CONTACT OPENS ON SEPTAGE HOLDING TANK #1 LOW LEVEL.
 - SAME AS [10] EXCEPT CONTACT OPENS ON SEPTAGE HOLDING TANK #2 LOW LEVEL.
 - CONTACT ON LIMIT SWITCH LOCATED ON SLUDGE HOLDING TANK #1 DISCHARGE PIPING VALVE (CONTROL BUILDING-PUMP ROOM). CONTACT CLOSURES WHEN VALVE IS FULL OPEN.
 - SAME AS [12] EXCEPT ON SLUDGE HOLDING TANK #2 DISCHARGE PIPING VALVE.
 - CONTACT LOCATED IN AND PART OF MAIN INSTRUMENT CONTROL PANEL (M.I.C.P.) IN CONTROL BUILDING. CONTACT OPENS ON SLUDGE HOLDING TANK #1 HIGH LEVEL.
 - SAME AS [14] EXCEPT CONTACT OPENS ON SLUDGE HOLDING TANK #2 HIGH LEVEL.
 - CONTACT LOCATED IN AND PART OF MAIN INSTRUMENT CONTROL PANEL (M.I.C.P.) IN CONTROL BUILDING (BACK-UP HIGH LEVEL FROM FLOAT SWITCH). CONTACT OPENS ON SLUDGE HOLDING TANK #1 HIGH LEVEL.
 - SAME AS [16] EXCEPT CONTACT OPENS ON SLUDGE HOLDING TANK #2 HIGH LEVEL.
 - LOCATED NEXT TO SCUM CONCENTRATOR CONTROL PANEL
 - LOCATED AT CLARIFIER.
- INDICATES FIELD WIRING EXTERNAL TO M.C.C.
□ INDICATES TERMINAL POINT WITHIN M.C.C. FOR FIELD WIRING.



WIRING DIAGRAM NO. 18
BELT PRESS FEED PUMP NO. 3

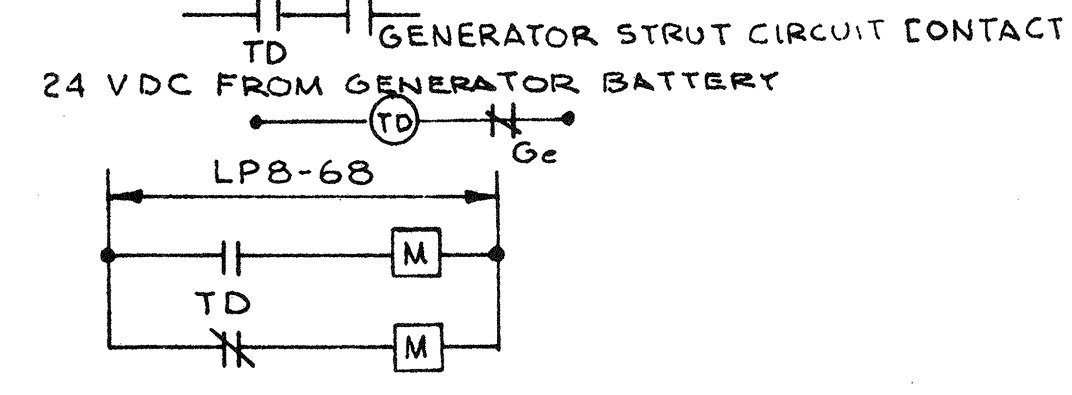
TYPICAL FOR EXISTING BELT PRESS FEED PUMP PANELS NO. 1 & NO. 2 EXCEPT FOR RELAY CR15, RELIEF VALVE OPEN LIGHT AND MAGNETIC FLOW METER SELECTOR SWITCHES.

(WIRING DIAGRAM BASED ON MACHINE DRIVE COMPANY PUMP ELEMENTARY DIAGRAM, DWG. NO. 0988-01-0320, DATED 9/9/88.)

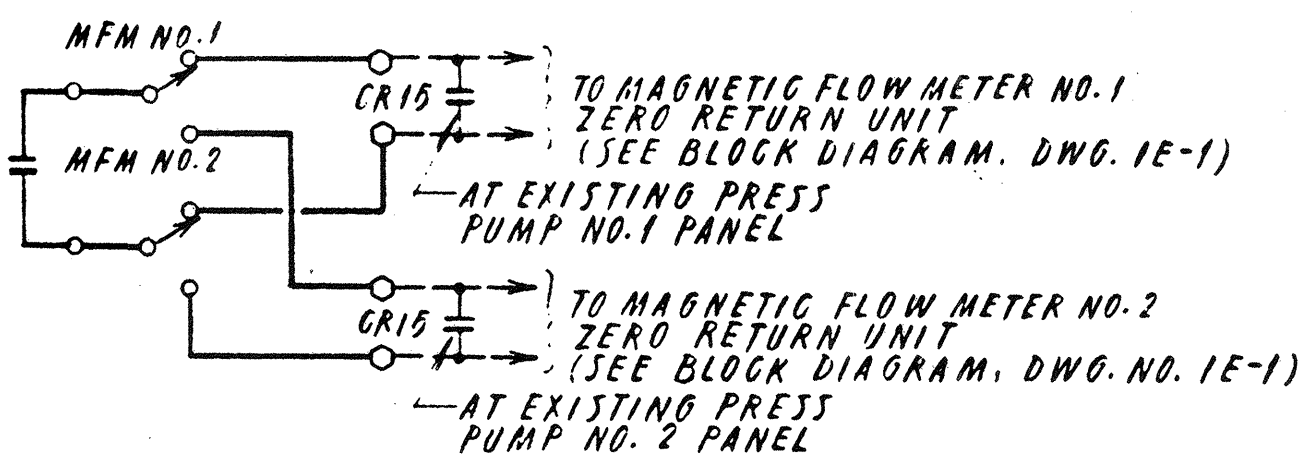


FRONT ELEVATION
BELT PRESS FEED PUMP PANEL
 N. T. S.

(FURNISHED UNDER SECTION 11315)

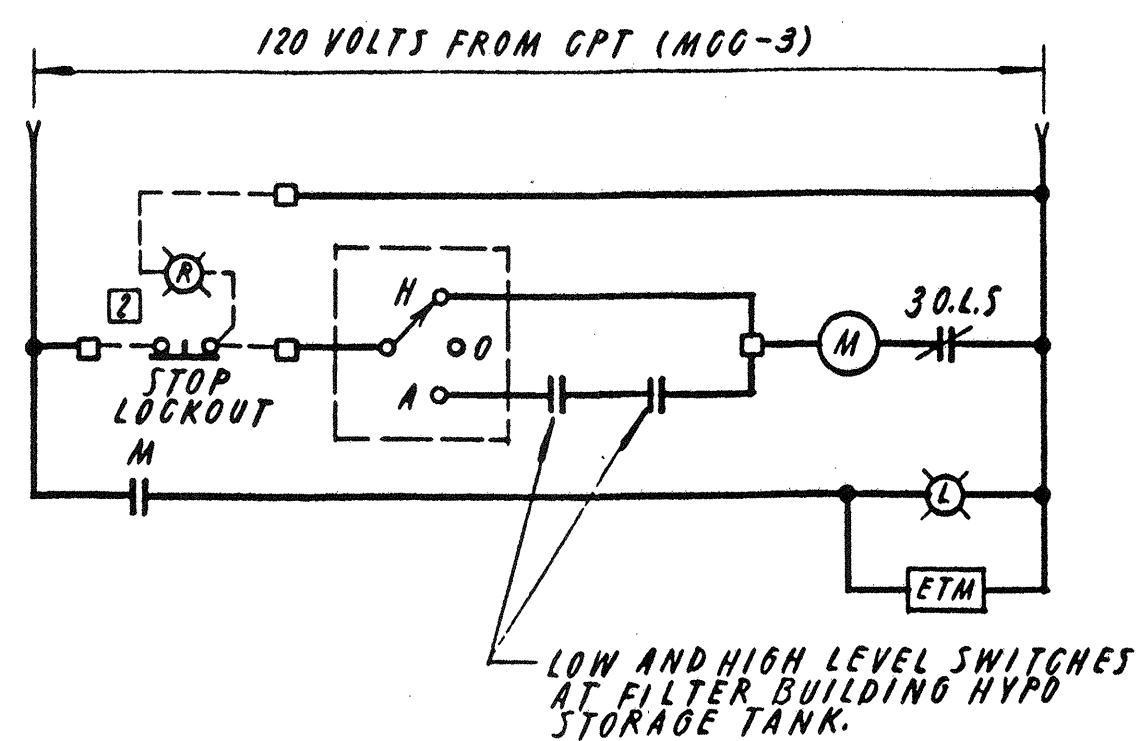


WD # 25
 GENERATOR START DELAY FOR LOUVER OPENING

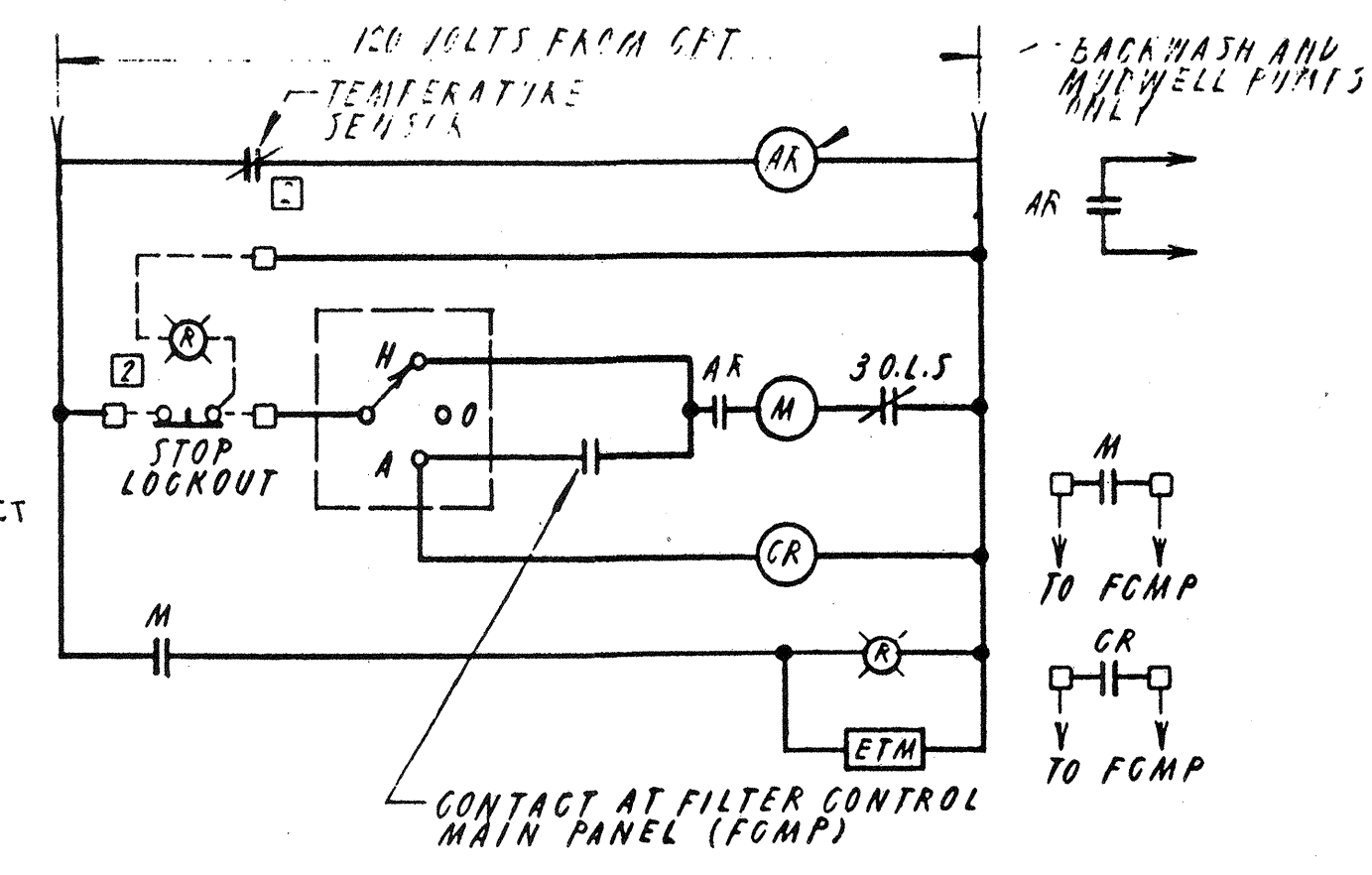


WIRING DIAGRAM NO. 21
EXHAUST FAN 8EF-1 & 8EF-2

- NOTES**
- EXCEPT AS NOTED, ALL ITEMS ARE LOCATED IN BELT PRESS FEED PUMP PANEL.
 - INDICATES TERMINAL POINT WITHIN PANEL FOR FIELD WIRING.
 - INDICATES FIELD WIRING EXTERNAL TO PANEL.
 - RELIEF VALVE RELAY CR10 AND ALARM LIGHT FURNISHED AS PART OF BELT PRESS FEED PUMP PANEL NO. 3 BY VENDOR UNDER DIVISION. FOR EXISTING BELT PRESS FEED PUMP PANELS NO. 1 AND NO. 2, ELECTRICAL CONTRACTOR SHALL FURNISH, INSTALL AND WIRE RELAY CR10 AND ALARM LIGHT. THE EXISTING PANEL AND WIRING SHALL BE MODIFIED TO SUIT.

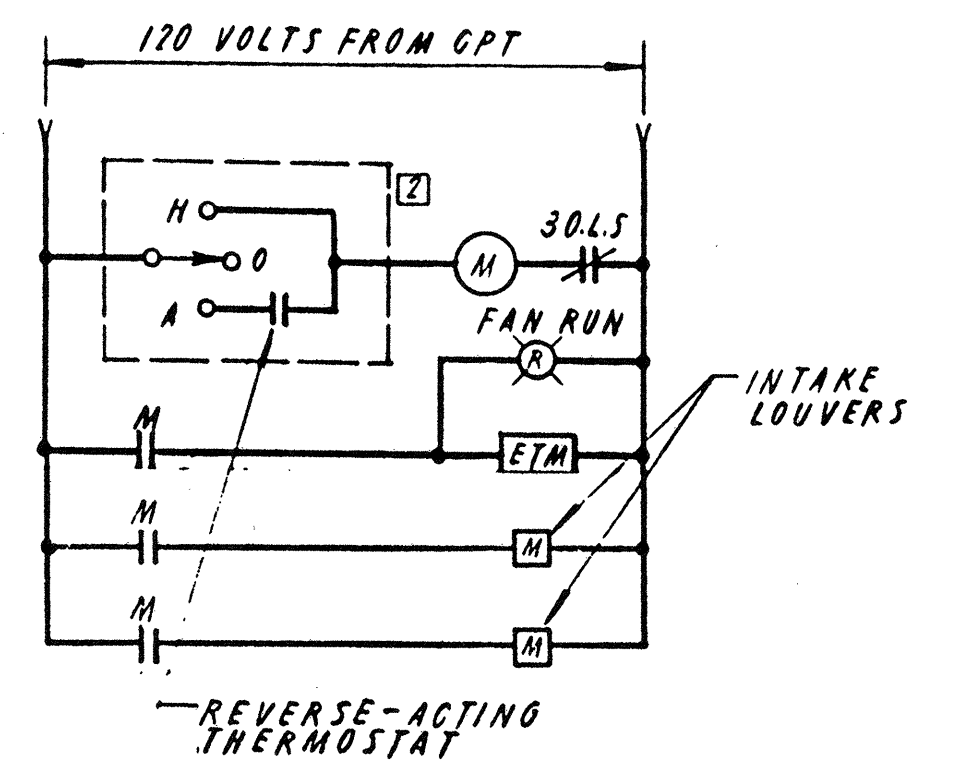


WIRING DIAGRAM NO. 19
HYPOTRANSFER PUMP

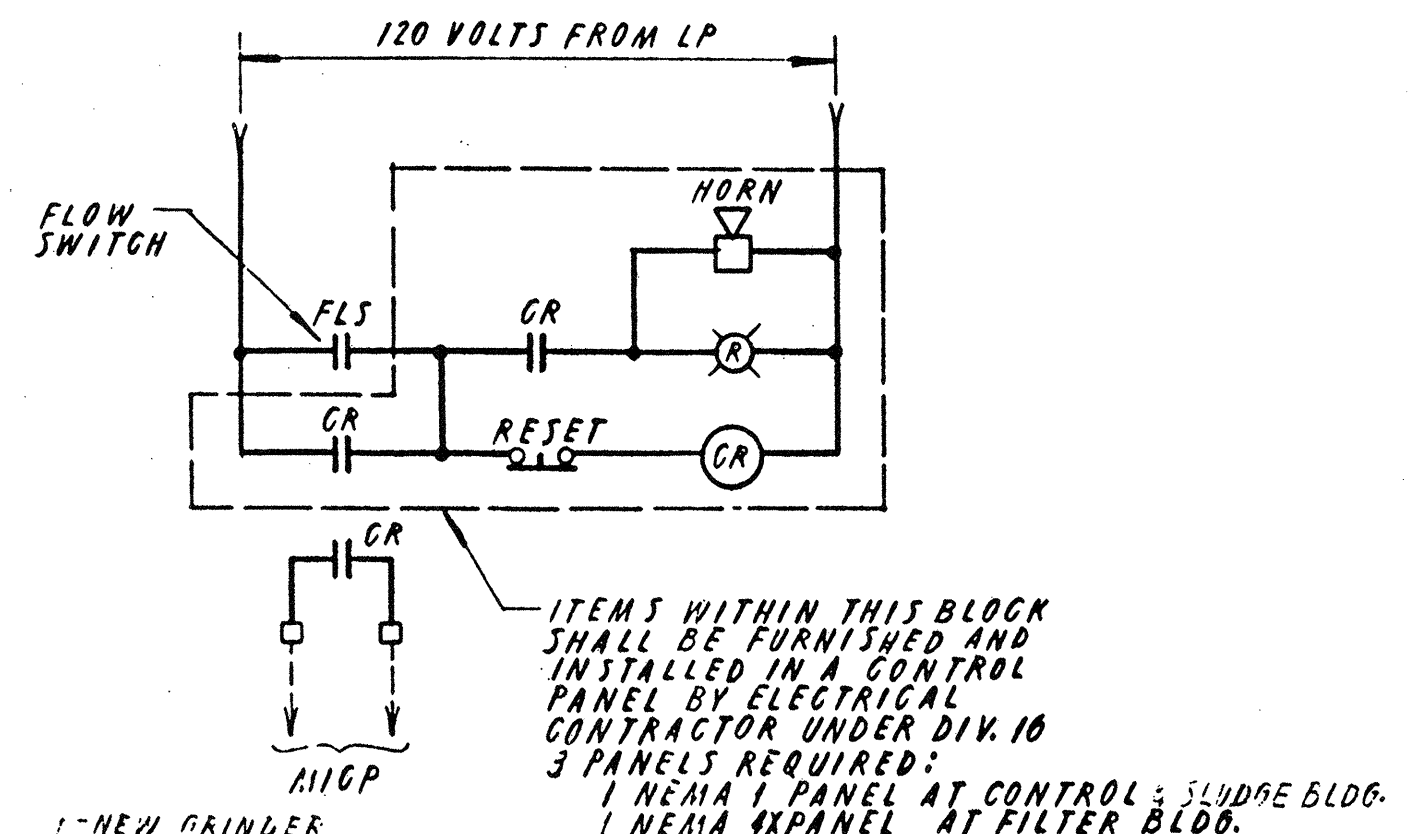


WIRING DIAGRAM NO. 20
BACKWASH PUMP

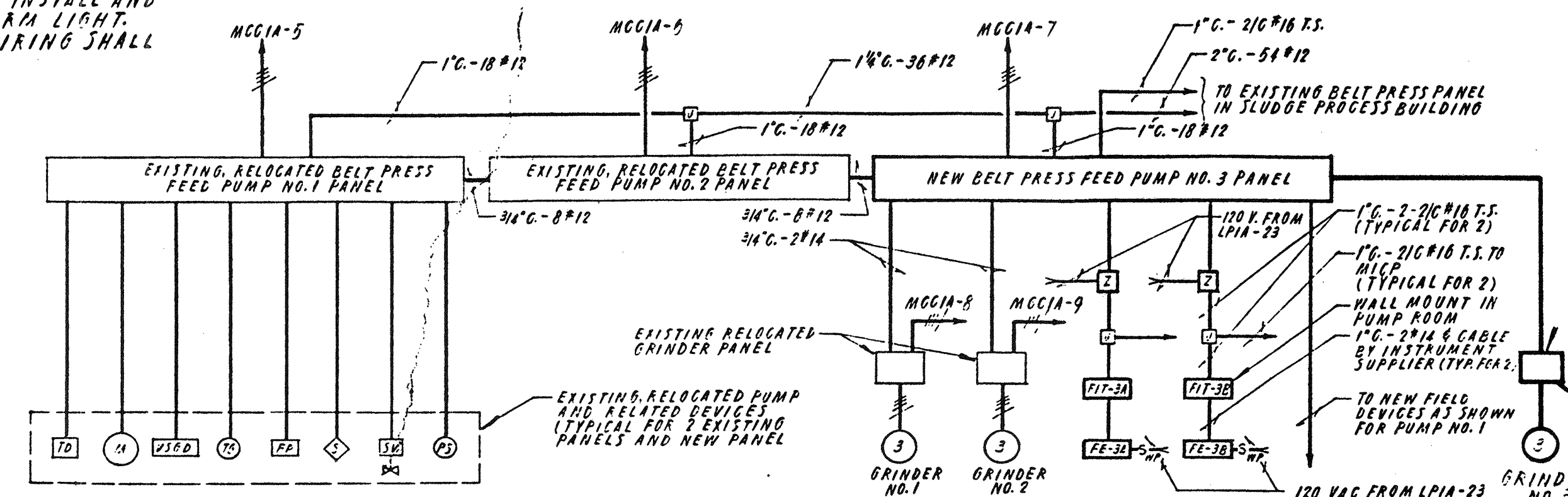
(TYPICAL FOR BLOWERS, MUDWELL PUMPS AND CHEMICAL CLEAN PUMPS)
 NOTE: CONTROL CIRCUIT FOR BACKWASH PUMPS SHALL BE REDUCED VOLTAGE, AUTO-TRANSFORMER TYPE.



WIRING DIAGRAM NO. 23
EXHAUST FAN 8EF-3



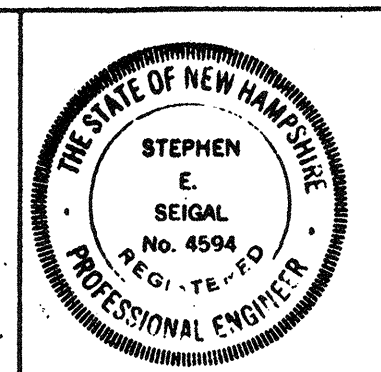
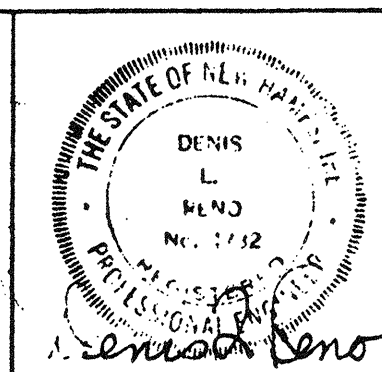
WIRING DIAGRAM NO. 24
EMERGENCY EYEWASH ALARM



BELT PRESS FEED PUMP INTERCONNECTION DIAGRAM

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89
NO.	DESCRIPTION	DATE
REVISIONS		

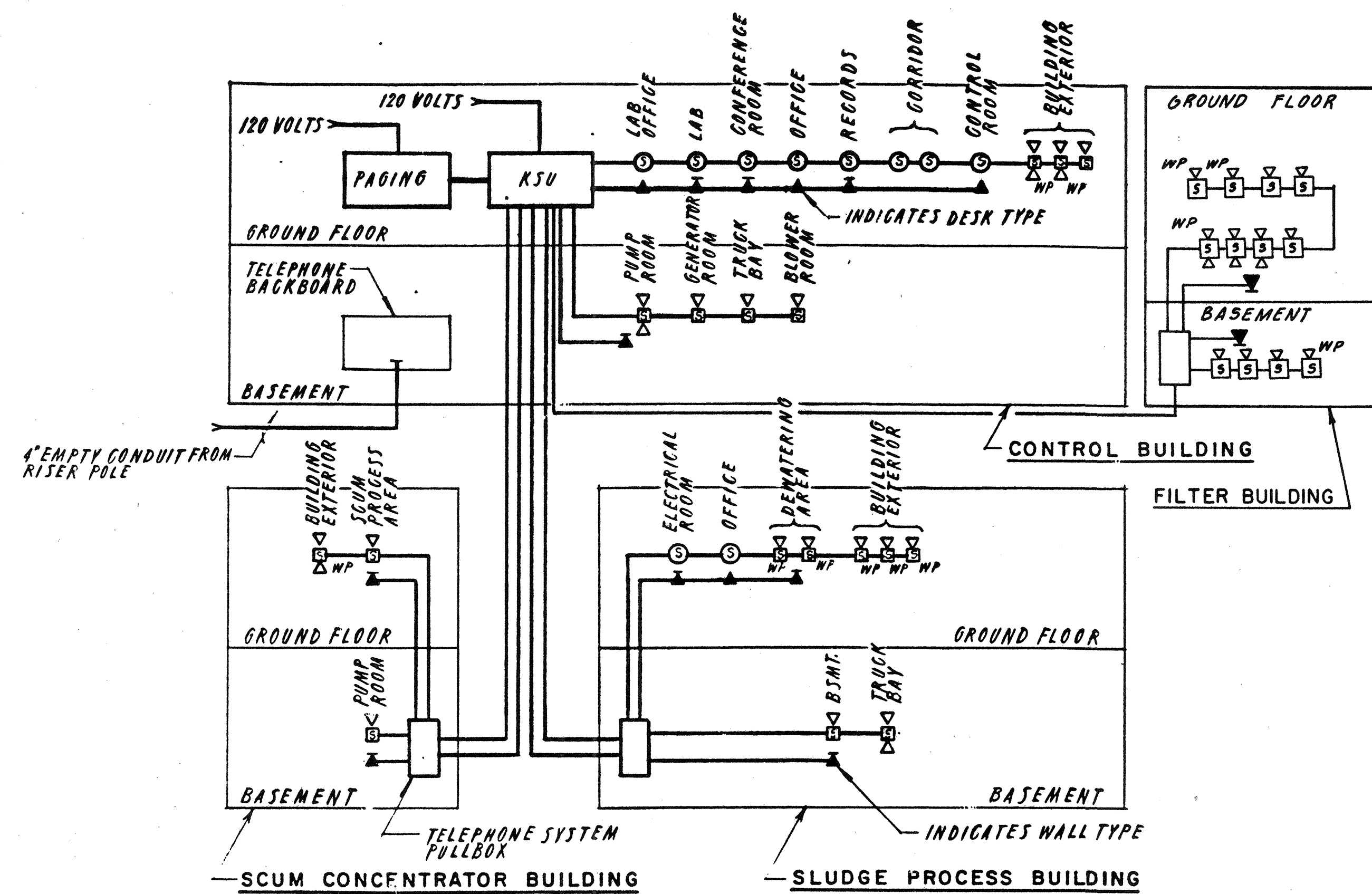
WHITMAN & HOWARD, INC.
 45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"			
REPRODUCTIONS MAY BE REDUCED SIZE			
APPROVED	DESIGNED/DRAWN	CHECKED	SCALE
	R.K.C. E.C.C.	D.L.R.	AS NOTED
DATE	SEPT., 1985		

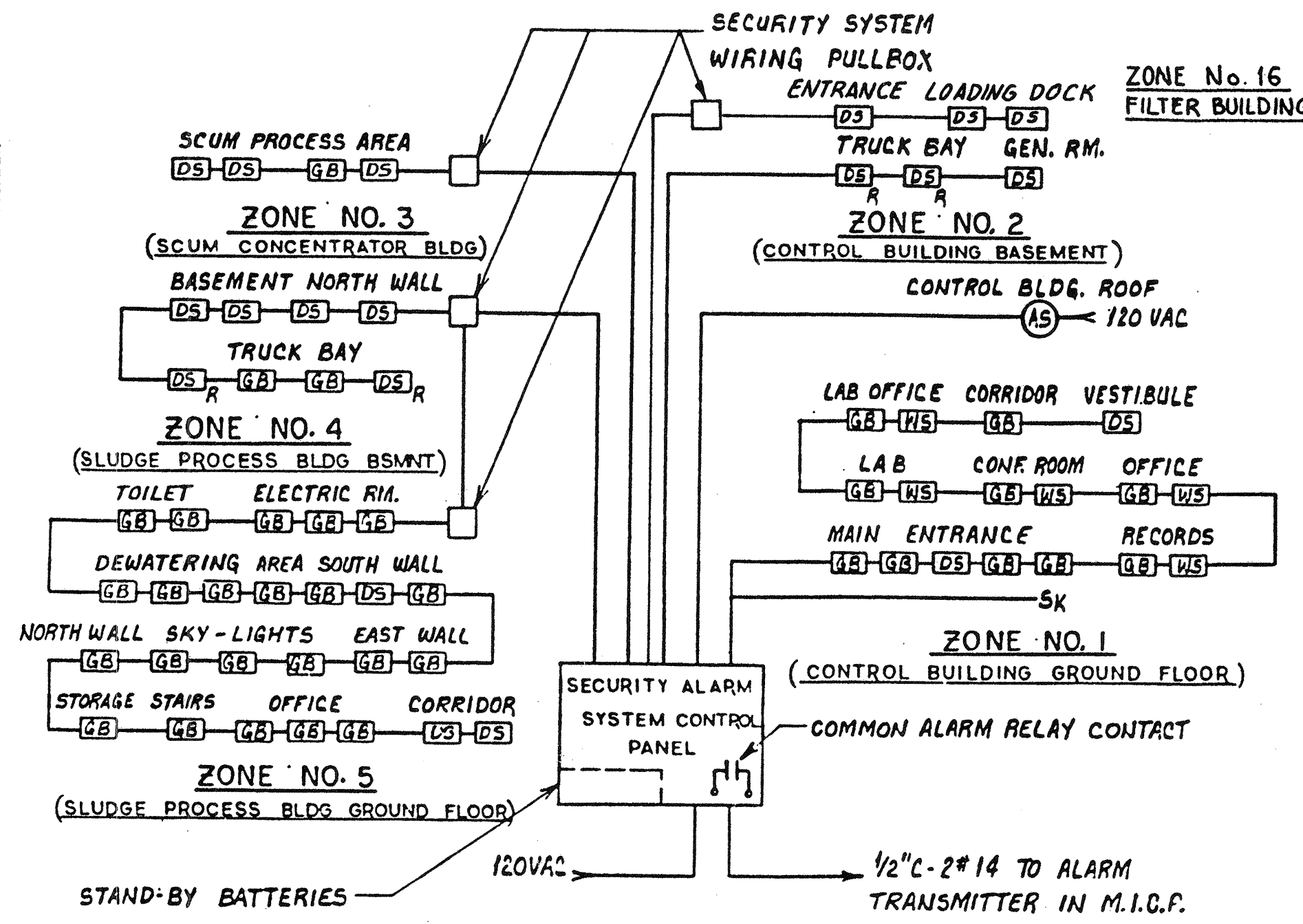
DRAWING NO.	E-7
JOB NO.	85-163
CONTRACT NO.	3
SHEET 86 OF 106 SHEETS	

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
CONTROL SCHEMATIC WIRING DIAGRAMS



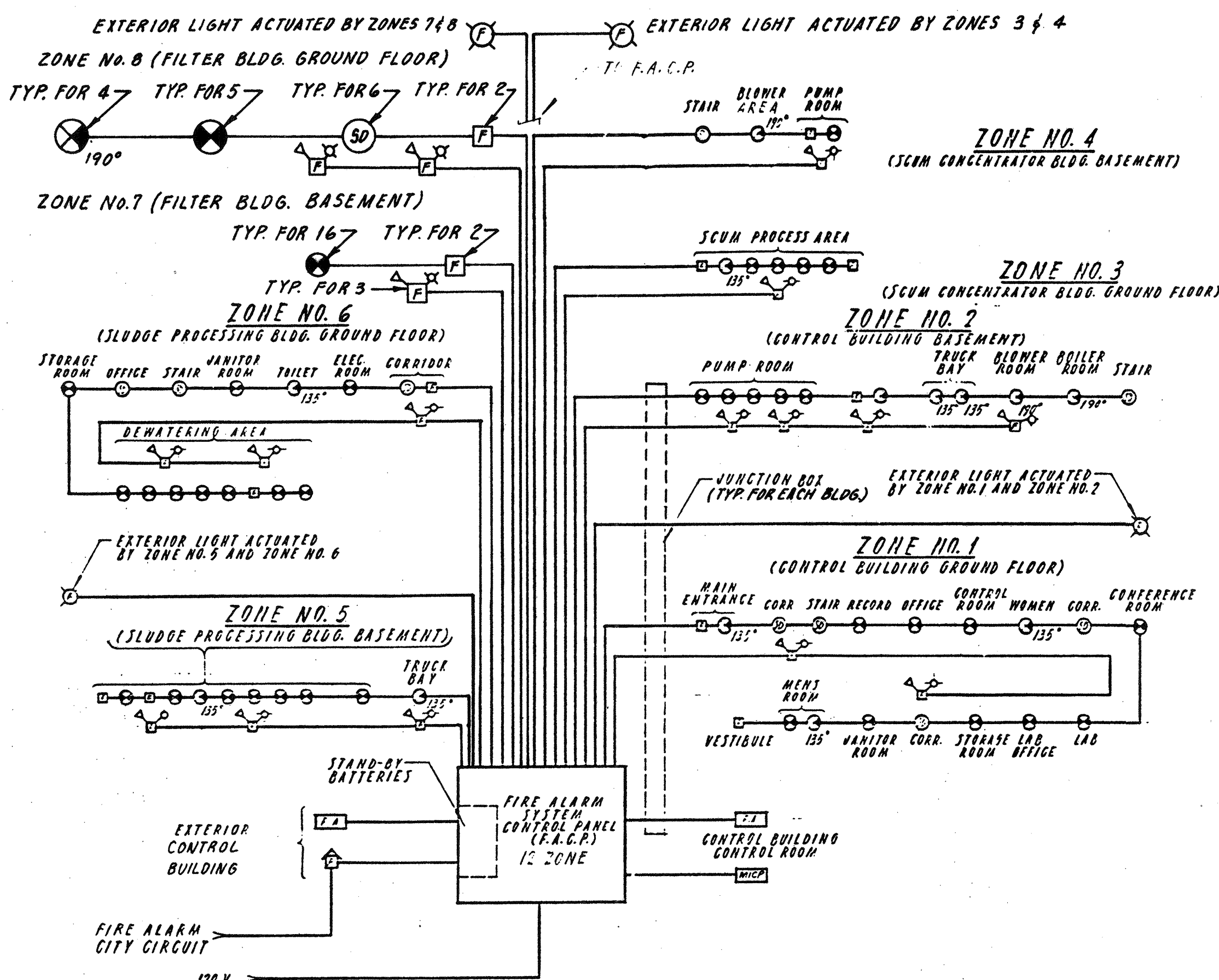
PAGING AND INTERCOM SYSTEM RISER DIAGRAM

N. T. S.



SECURITY SYSTEM RISER DIAGRAM

N.T.S.



FIRE ALARM RISER DIAGRAM

N.T.S.

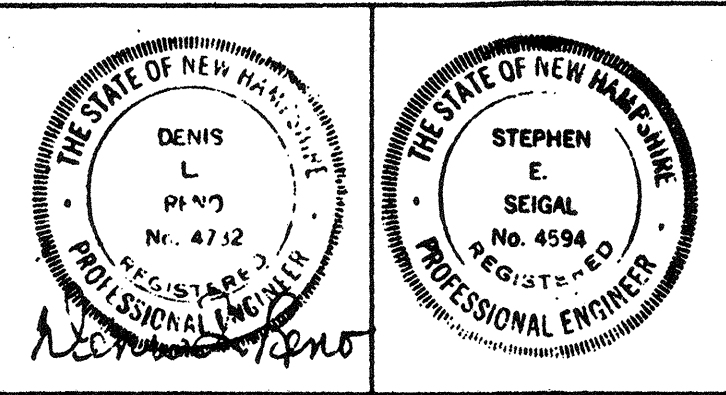
LIGHTING FIXTURE SCHEDULE									
FIXTURE TYPE	MANUFACTURER	WATTS/FIXT.	CATALOG NO.	FIXTURE			VOLTS	REMARKS	
				MTG.	LAMP	NO.			
A	KEENE	85	KWP 210	FLUOR.	PEND.	2-40CW/KS/WM	120	NOTE #1	
A1	KEENE	85	KWP 210	FLUOR.	SURF.	2-40CW/KS/WM	120	NOTE #1	
B	BENJAMIN THOMAS	85	FL 1024-4U	FLUOR.	PEND.	2-40CW/KS/WM	120	NOTE #1, #2	
B1	BENJAMIN THOMAS	115	FL 1034-4U	FLUOR.	PEND.	3-40CW/KS/WM	120	NOTE #1, #2	
B2					SURF.				
C	KEENE	85	KOP 210	FLUOR.	PEND.	2-40CW/KS/WM	120	NOTE #1	
C1	KEENE	115	KOP 340	FLUOR.	SURF.	3-40CW/KS/WM	120	NOTE #1	
D	KEENE	85	CWB 240	FLUOR.	WALL	2-40CW/KS/WM	120	NOTE #1, #3, #5	
D1	KEENE	85	CWB X 210	FLUOR.	WALL	2-40CW/KS/WM	120	NOTE #1, #4, #5	
D2	KEENE	50	CWB X 220 HPF	FLUOR.	WALL	2-20CW/KS	120		
D3	KEENE	75	CWB X 230	FLUOR.	WALL	2-30CW/KS	120		
E	KEENE	150	HPJ 2260 440	FLUOR.	RECESS.	4-40CW/KS/WM	120	NOTE #1, #6	
E1	KEENE	85	HPJ 1270 240	FLUOR.	RECESS.	2-40CW/KS/WM	120	NOTE #1, #6	
F	KEENE	85	CBS 210	FLUOR.	SURF.	2-40CW/KS/WM	120	NOTE #1, #5	
F1	KEENE	170	AMB 242 AC1	FLUOR.	SURF.	4-40CW/KS/WM	120	NOTE #1	
G	HALC	60	H17-720	INCAND.	RECESS.	1-60W.A19	120	U.L. LIST. WET LOC.	
H	HALC	150	H7707-1600BA-TRM-6P	INCAND.	RECESS.	1-150W.A21	120	NOTE #6, #7	
H1	HALC	150	H77371-4600BA	INCAND.	RECESS.	1-150W.A40	120	NOTE #6, #7	
H2	HALC	100	H7707-1600BA-TRM-6P	INCAND.	RECESS.	1-100W.A19	120	NOTE #6, #7	
V	MCPHILBEH	150	43A-9213P	INCAND.	RECESS.	1-150W.A23	120	NOTE #8	
K	MARKSTONE	50	20-TS-27	FLUOR.	RECESS.	2-20CW/KS	120	NOTE #9	
L	MARKSTONE	50	KAB40ACE	FLUOR.	SURF.	1-40CW/KS/WM	120	UNDER CABINET	
M	MARKSTONE	45	RAB35AC1	FLUOR.	SURF.	1-30CW/KS	120	UNDER CABINET	
N	MORRIS-KVATZON	60	HL-RL 240-3	FLUOR.	WALL	2-40CW/KS/WM	120	NOTE #1	
O	KILLARI	300	HDB-4-501	INCAND.	STATIONARY	1-300W.HPS35	120	NOTE #10	
P	GARLIC		EA-14-F-250HPS-6AA	HPS	POLE	1-250W.H.H.	200	NOTES #11, #12	
V	GARLIC		EA-14-F-250HPS-6AA	HPS	POLE	1-250W.H.H.	200	NOTES #11, #12	
S	GARLIC		EA-14-F-250HPS-6AA	HPS	WALL	1-250W.H.H.	200	NOTE #11	
S1	GARCO		BE-17-F-150HPS-6AA	HPS	WALL	1-150W.H.P.S.	120	NOTE #11	
T	KEENE		707 250 LX	HPS	SURF.	1-250W HPS	120	NOTE #13	
U	KEENE		DGC 151 LX	HPS	SURF.	1-150 HPS	120	NOTE #13	
T1	KEENE		761 250 LX	HPS	PEND.	1-250 HPS	120	NOTE #13	

NOTES

- FURNISH WITH ENERGY EFFICIENT LAMPS AND BALLASTS.
- FURNISH WITH REFLECTOR END COVERS AND 30°X30° LOUVER.
- DOWNLIGHT ONLY
- UPLIGHT AND DOWNLIGHT
- FURNISH WITH MATTE BLACK TRIM.
- FIXTURE SHALL BE SUITABLE FOR INSTALLATION IN SUSPENDED, CONCEALED SPLINE CEILING CONSTRUCTION.
- FURNISH WITH WHITE TRIM RING.
- FIXTURE SHALL BE UL LISTED FOR WET LOCATION AND SUITABLE FOR INSTALLATION IN PLASTER CEILING CONSTRUCTION.
- FIXTURE SHALL BE SUITABLE FOR INSTALLATION IN GYPSUM DRY-BOARD CEILING CONSTRUCTION.
- EXPLOSIONPROOF FIXTURE. FURNISH WITH F.V.C. COATINGS.
- FURNISH WITH PHOTOCELL.
- FURNISH WITH 20 FT. ROUND, TAPERED, ALUMINUM POLE, KINGTON STANDARD CORPORATION MODEL NO. 1908-2050674-BA (BRONZE ANODIZED FINISH). FURNISH WITH ANCHOR BOLTS, MOUNTING HARDWARE.
- FIXTURE SHALL BE COMPLETELY ENCLOSED AND LISTED FOR DAMP LOCATIONS.

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/89
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED

DESIGNED DRAWN R.K.C. E.C.C.
CHECKED D.L.R.
SCALE AS NOTED
DATE SEPT., 1985

DRAWING NO. **E-8**
JOB NO. **85-163**
CONTRACT NO. **3**

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
RISER DIAGRAMS AND LIGHTING FIXTURE SCHEDULE

SHEET 87 OF 106 SHEETS

CONDUIT AND WIRE SCHEDULE

COND. NO.	DESTINATION		COND.	SIZE CONDUCTORS	REMARKS
	FROM	TO			
11	RISEK POLE	PALMOUNT TRANSF.	3"	PRIMARY CABLES	FURNISHED & INSTALLED BY POWER COMPANY
22	RISEK POLE	PALMOUNT TRANSF.	5"	SPARE	INSTALL PULLWIRE
23	PALMOUNT TRANSF.	MAIN SWITCHBOARD	4-4"	4#500 MCM (PHENOLIC AND 4#4 GND.)	INSTALL PULLWIRE
24	PALMOUNT TRANSF.	MAIN SWITCHBOARD	4-4"	SPARE	INSTALL PULLWIRE
25	PALMOUNT TRANSF.	METERING BACKBD.	1 1/2"	METER WIRING	
26	MAIN SWITCHBOARD	MCC-1 (CONTROL BLDG.)	4"	4#500 MCM & 1#4 GND.	
27		MCC-2 (SCUM CONC.)	4"	4#500 MCM & 1#4 GND.	
28		MCC-1 (CONTROL BLDG.)	4"	SPARE	INSTALL PULLWIRE
29		MCC-2 (SCUM CONC.)	4"	SPARE	INSTALL PULLWIRE
30		MCC-3 (SLUDGE BLDG.)	4"	4#500 MCM & 1#4 GND.	
31	MAIN SWITCHBOARD	MCC-3 (SLUDGE BLDG.)	4"	SPARE	INSTALL PULLWIRE
32	PUMP STATION C.P.	PUMP STATION	1"	2#10 (PUMPS 1 & 2)	
33	PUMP STATION C.P.	PUMP STATION	2"	4-5/8" FLOAT CONTACTS & 2#12 (PUMPS 1 & 2 OVERTEMP & SEAL LEAK)	
614	SLUDGE PROCESSING BUILDING	CONTROL BUILDING	4"	4#12 (PRESSES 1 & 2)	
				2#12 (SYSTEM ON)	
				2#12 (PUMP FAIL)	
				2#12 (PUMP ON)	
				2#12 (PUMP OFF)	
				2#12 (PUMP ON)	
				2#12 (PUMP OFF)	
				2#12 (PUMP ON)	
				2#12 (PUMP OFF)	
				2#12 (PUMP ON)	
615	SCUM CONCENTRATOR BUILDING	CONTROL BUILDING	4"	12#12 (CRIT SYSTEM START-STOP)	
				10#12 (CRIT CLASSIFIER INTERLOCK)	
				8#12 (SPARE)	
				20#12 (2#4 & 2#1 ON LIGHTS) INTERLOCK	
				2#12 (S.V. CONTROL) VIA MCC-2A8 MCC-3A	
				2#12 (S.V. CONTROL) VIA MCC-2A8 MCC-3A	
				10#12 (PUMP CONTROL) VIA MCC-2A8 MCC-3A	
				10#12 (PUMP CONTROL) VIA MCC-2A8 MCC-3A	
				10#12 (PUMP CONTROL) VIA MCC-2A8 MCC-3A	
				10#12 (PUMP CONTROL) VIA MCC-2A8 MCC-3A	
616	SCUM CONCENTRATOR BUILDING	CONTROL BUILDING	4"	4#12 (BLOWERS 1 & 2)	
				4#12 (CRIT PUMP 1, 2, 3)	
				4#12 (SEPT PUMP 1, 2, 3)	
				4#12 (CRIT SCREW 1, 2)	
				4#12 (GAS TANKER)	
				4#12 (CRIT TANKS 1, 2, 3 LOW SEAL PRESSURE)	
				4#12 (GAS TANKER) TANK OVERLOAD VIA MCC-2	
				4#12 (BLOWERS 1 & 2) OVERTEMPERATURE	
				4#12 (SEPT PUMP 1, 2, 3) OVERTEMPERATURE	
				4#12 (SEPT TANK FLOOD)	
617	FILTER BUILDING	CONTROL BUILDING	4"	6#12 (ALARM & SPARE)	
				2#12 (ALARM)	
				2#12 (ALARM)	
				2#12 (ALARM)	
				2#12 (ALARM)	
				2#12 (ALARM)	
				2#12 (ALARM)	
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				2#12 (ALARM)	
				2#12 (ALARM)	

CONDUIT AND WIRE SCHEDULE

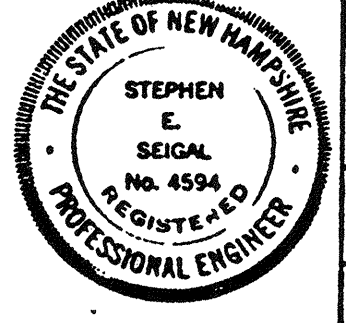
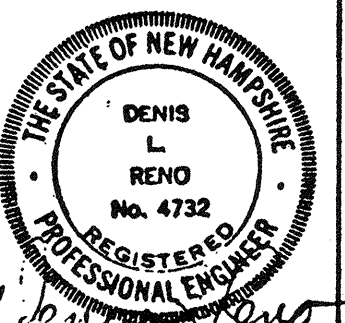
COND. NO.	DESTINATION		COND.	SIZE CONDUCTORS	REMARKS
	FROM	TO			
618	SLUDGE PROCESSING BUILDING	CONTROL BUILDING	4"	10#12 (2#4 ON LIGHT INTERLOCK)	
				1#12 (SPARE)	
619	MISCELLANEOUS STRUCTURES		4"	6#12 (INTERLOCKS, ALARMS) VIA MCC-3A	
				4#12 (SPARE)	
620	GRAVITY THICKENER	MCC-2-11	1 1/4"	4#12 (DRIVE MOTOR)	
				4#12 (TRIP ALARM)	
621	GRAVITY THICKENER	L12-15	1"	5#12 (LIGHT & RECEIPT)	
				5#12 (LIGHT & RECEIPT)	
622	GRAVITY THICKENER DEF-1	MCC-2-23	1 1/4"	8#12 (FAN MOTOR)	
				2#12 (SEAL PUMP)	
623	SEALING STATION	DEF-2	1"	2#12 (LOCK CONTACTS IN TANKS) 2#12 (SEAL PUMP)	
				2#12 (SEAL PUMP)	
624	PRIMARY CLASSIFIER	MCC-1-10	1 1/4"	1#12 (DRIVE MOTOR)	
				1#12 (TRIP ALARM)	
625	PRIMARY CLASSIFIER	L11A-10	1 1/4"	1#12 (DRIVE MOTOR)	
				1#12 (TRIP ALARM)	
626	PRIMARY CLASSIFIER	MCC-1-1-1-3	1 1/4"	1#12 (DRIVE MOTOR)	
				1#12 (TRIP ALARM)	
627	PRIMARY CLASSIFIER	L11A-25, 26	1"	4#12 (CLASSIFIER) 2#12 (RECEPTACLE)	
				4#12 (CLASSIFIER) 2#12 (RECEPTACLE)	
628	SLUDGE PROCESSING BUILDING	CHLORINE CONTACT TANKS	1 1/4"	5#12 (CLASSIFIER) 2#12 (RECEPTACLE)	
				5#12 (CLASSIFIER) 2#12 (RECEPTACLE)	
629	LP2-10, 11, 12, 13	RECEPT. FLOW METER	1"	8#12 (2#12 GND.)	
				8#12 (2#12 GND.)	
630	MCC-3	HYPO PUMP NO. 4 C.P.	4"	10#12 (6 SPARE)	
				2#12	
631	MCC-3	HYPO PUMP NO. 4 C.P.	4"	10#12 (6 SPARE)	
				2#12	
632	MCC-3	HYPO PUMP NO. 4 C.P.	4"	10#12 (6 SPARE)	
				2#12	
633	MCC-3	HYPO PUMP NO. 4 C.P.	4"	10#12 (6 SPARE)	
				2#12	

CONDUIT AND WIRE SCHEDULE

COND. NO.	DESTINATION		COND.	SIZE CONDUCTORS	REMARKS
	FROM	TO			
634	RISEK POLE	F.A. MASTER BOX	2"	4#12 (2#4 ON LIGHT INTERLOCK)	
				4#12 (2#4 ON LIGHT INTERLOCK)	
635	F.A. CONTROL PANEL	DEVICES AS SHOWN ON DWG.	2"	4#12 (2#4 ON LIGHT INTERLOCK)	
				4#12 (2#4 ON LIGHT INTERLOCK)	
636	CONTROL BUILDING	SLUDGE PROCESSING BUILDING	4"	1#12 (FLOW SIGNAL)	
				1#12 (FLOW SIGNAL)	
637	CONTROL BUILDING	SCUM CONCENTRATOR BUILDING	2"	1#12 (FLOW SIGNAL)	
				1#12 (FLOW SIGNAL)	
638	CONTROL BUILDING	CHLORINE CONTACT TANKS	2"	1#12 (FLOW SIGNAL)	
				1#12 (FLOW SIGNAL)	
639	CONTROL BLDG.	FILTER BLDG.	2"	1#12 (FLOW SIGNAL)	
				1#12 (FLOW SIGNAL)	
640	RISEK POLE	TELEPHONE BACKBD.	4"	4#12 (INCOMING TELEPHONE SERVICE)	
				4#12 (INCOMING TELEPHONE SERVICE)	
641	TEL. INTERCOM. / WIRING SYSTEM IN CONTROL BLDG.	DEVICES AS SHOWN ON DWG.	2"	4#12 (INCOMING TELEPHONE SERVICE)	
				4#12 (INCOMING TELEPHONE SERVICE)	
642	SECURITY SYSTEM CONTROL PANEL	DEVICES AS SHOWN ON DWG.	2"	4#12 (SECURITY SYSTEM WIRING)	
				4#12 (SECURITY SYSTEM WIRING)	
643	SLUDGE PROCESSING BUILDING	HYPO STORAGE TANK	1"	4#12 (FLOW SIGNAL)	
				4#12 (FLOW SIGNAL)	
644	SLUDGE PROCESSING BUILDING	HYPO STORAGE TANK	1"	4#12 (FLOW SIGNAL)	
				4#12 (FLOW SIGNAL)	
645	SLUDGE PROCESSING BUILDING	HYPO STORAGE TANK	1"	4#12 (FLOW SIGNAL)	
				4#12 (FLOW SIGNAL)	
646	SLUDGE PROCESSING BUILDING	HYPO STORAGE TANK	1"	4#12 (FLOW SIGNAL)	
				4#12 (FLOW SIGNAL)	
647	SLUDGE PROCESSING BUILDING	HYPO STORAGE TANK	1"	4#12 (FLOW SIGNAL)	
				4#12 (FLOW SIGNAL)	
648	SLUDGE PROCESSING BUILDING	HYPO STORAGE TANK	1"	4#12 (FLOW SIGNAL)	
				4#12 (FLOW SIGNAL)	
649	MCC-3	HYPO PUMP NO. 4 C.P.	4"	10#12 (6 SPARE)	
				2#12	
650	MCC-3	HYPO PUMP NO. 4 C.P.	4"	10#12 (6 SPARE)	
				2#12	

WHITMAN & HOWARD, INC.

45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4" REPRODUCTIONS MAY BE REDUCED SIZE

DESIGNED	DRAWN	CHECKED	SCALE	DATE
RMB	RMB	DLR	NONE	SEPT, 1985

DRAWING NO.	E-9
JOB NO.	85-163
CONTRACT NO.	3

WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N.H.

CONDUIT AND WIRE SCHEDULE

2	Revised To Record Plan	9/83
1	Drawing Revised	9/87
NO.	DESCRIPTION	DATE
	REVISIONS	

PANEL SCHEDULE LP-8

Table with columns: CIR. NO., APPLICATION, LOAD (KVA, H.P.), CIR. BRKR. (POLES, TRIP), REMARKS. Includes items like LIGHTING BLOWER RM., ELECTRICAL RM., STORAGE RM., GENERATOR RM., etc.

PANEL SCHEDULE LPI

Table with columns: CIR. NO., APPLICATION, LOAD KVA (A, B, C), CIR. BRKR. (POLES, TRIP), REMARKS. Includes items like ITG - MEN'S & JANITOR, RECEPT - MEN'S & JANITOR, etc.

PANEL SCHEDULE LP1A

Table with columns: CIR. NO., APPLICATION, LOAD KVA (A, B, C), CIR. BRKR. (POLES, TRIP), REMARKS. Includes items like ITG - PUMP ROOM, RECEPT - PUMP ROOM, etc.

PANEL SCHEDULE LAB

Table with columns: CIR. NO., APPLICATION, LOAD KVA (A, B, C), CIR. BRKR. (POLES, TRIP), REMARKS. Includes items like ITG - LAB, RECEPT - LAB OFFICE, etc.

PANEL SCHEDULE (LP-8 CONT.)

Table with columns: CIR. NO., SEE LAST COLUMN, LOAD (KVA, H.P.), CIR. BRKR. (POLES, TRIP), ASBUILT APPLICATION. Includes items like PUMP ROOM RECEPT., G.F.I. REC. OUTSIDE, etc.

PANEL SCHEDULE LP2

Table with columns: CIR. NO., APPLICATION, LOAD KVA (A, B, C), CIR. BRKR. (POLES, TRIP), REMARKS. Includes items like ITG - GROUND FLOOR, RECEPT - GROUND FLOOR, etc.

PANEL SCHEDULE LP3A

Table with columns: CIR. NO., APPLICATION, LOAD KVA (A, B, C), CIR. BRKR. (POLES, TRIP), REMARKS. Includes items like SOD. HYPOCHLOR. PANEL #3, UNIT HTR. #5 & 6, etc.

PANEL SCHEDULE LP3

Table with columns: CIR. NO., APPLICATION, LOAD KVA (A, B, C), CIR. BRKR. (POLES, TRIP), REMARKS. Includes items like SCUM-1, 3UH-7.5, 9 E10, SLUDGE BIN ACTUATOR, etc.

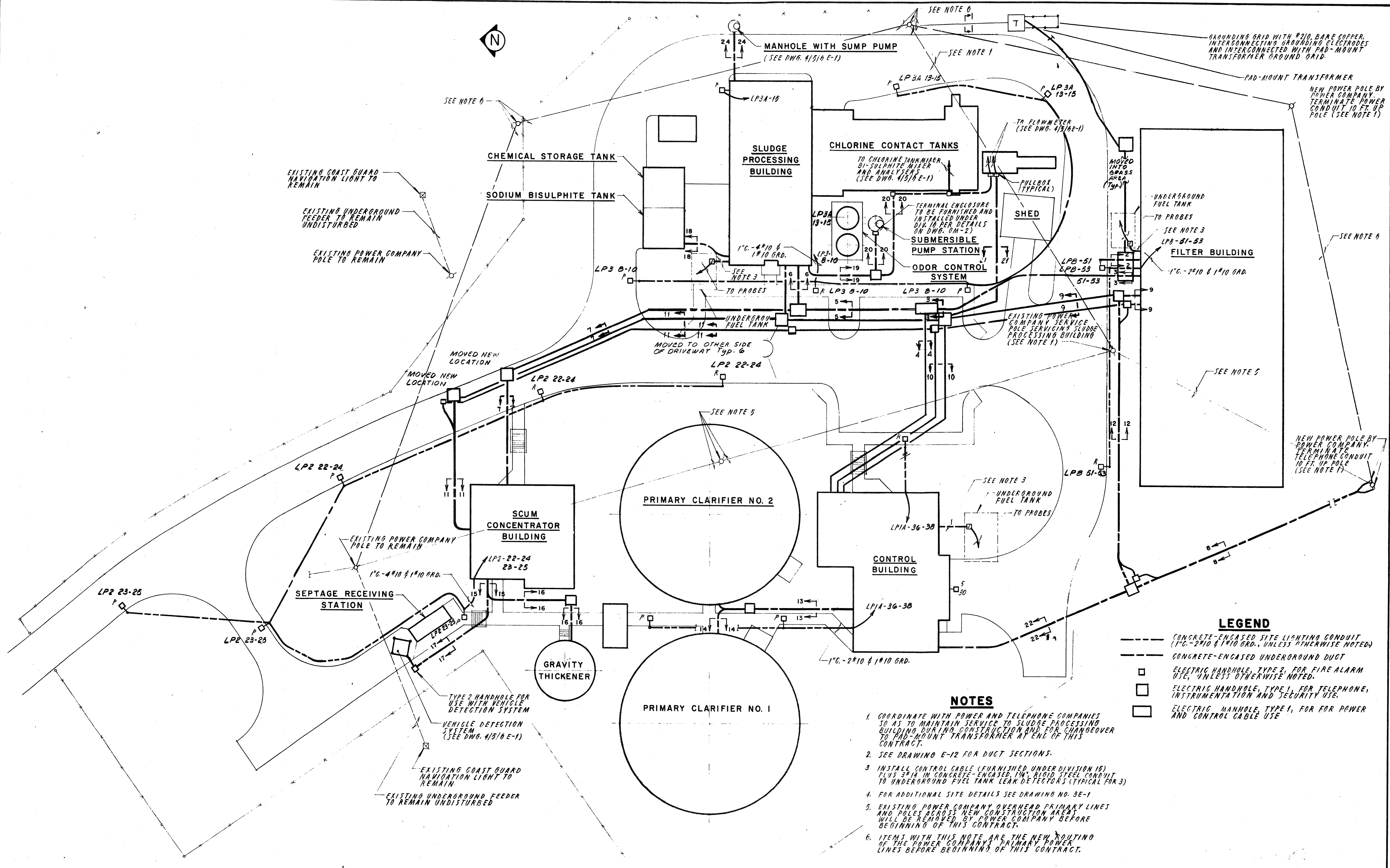
Table with columns: CIR. NO., APPLICATION. Includes items like SPARE, GEN. FUEL TANK ALARM, etc.

Table with columns: NO., DESCRIPTION, DATE. Includes entries like 2 Revised To Record Plan 9/93, 1 Drawing Added 9/89.

WHITMAN & HOWARD, INC. 45 WILLIAM STREET, WELLESLEY, MASS. Includes professional engineer seals for DENIS L. RENO and STEPHEN E. BEGAL.

DRAWING NO. E-10, JOB NO. 85-163, CONTRACT NO. 3. Includes title 'ORIGINAL FULL SIZE DRAWING = 4" REPRODUCTIONS MAY BE REDUCED SIZE' and date 'SEPT., 1989'.

WASTEWATER TREATMENT FACILITY, PORTSMOUTH, N. H. PANEL SCHEDULES. Includes sheet number 'SHEET 89 OF 106 SHEETS'.



LEGEND

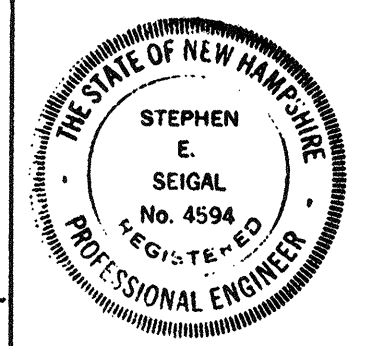
- CONCRETE-ENGASED SITE LIGHTING CONDUIT (1"Ø-2#10 & 1"Ø10 GRD., UNLESS OTHERWISE NOTED)
- CONCRETE-ENGASED UNDERGROUND DUCT
- ELECTRIC HANDHOLE, TYPE 2, FOR FIRE ALARM USE, UNLESS OTHERWISE NOTED.
- ELECTRIC HANDHOLE, TYPE 1, FOR TELEPHONE, INSTRUMENTATION AND SECURITY USE.
- ELECTRIC MANHOLE, TYPE 1, FOR POWER AND CONTROL CABLE USE

NOTES

1. COORDINATE WITH POWER AND TELEPHONE COMPANIES SO AS TO MAINTAIN SERVICE TO SLUDGE PROCESSING BUILDING DURING CONSTRUCTION AND FOR CHANGEOVER TO PAD-MOUNT TRANSFORMER AT END OF THIS CONTRACT.
2. SEE DRAWING E-12 FOR DUCT SECTIONS.
3. INSTALL CONTROL CABLE (FURNISHED UNDER DIVISION 15) PLUS 3/4" IN CONCRETE, 1/4" RIGID STEEL CONDUIT TO UNDERGROUND FUEL TANK LEAK DETECTORS (TYPICAL FOR 3)
4. FOR ADDITIONAL SITE DETAILS SEE DRAWING NO. 3E-1
5. EXISTING POWER COMPANY OVERHEAD PRIMARY LINES AND PILES ACROSS NEW CONSTRUCTION AREA WILL BE REMOVED BY POWER COMPANY BEFORE BEGINNING OF THIS CONTRACT.
6. ITEMS WITH THIS NOTE ARE THE NEW ROUTING OF THE POWER COMPANY'S PRIMARY POWER LINES BEFORE BEGINNING OF THIS CONTRACT.

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Added	9/89
REVISIONS		

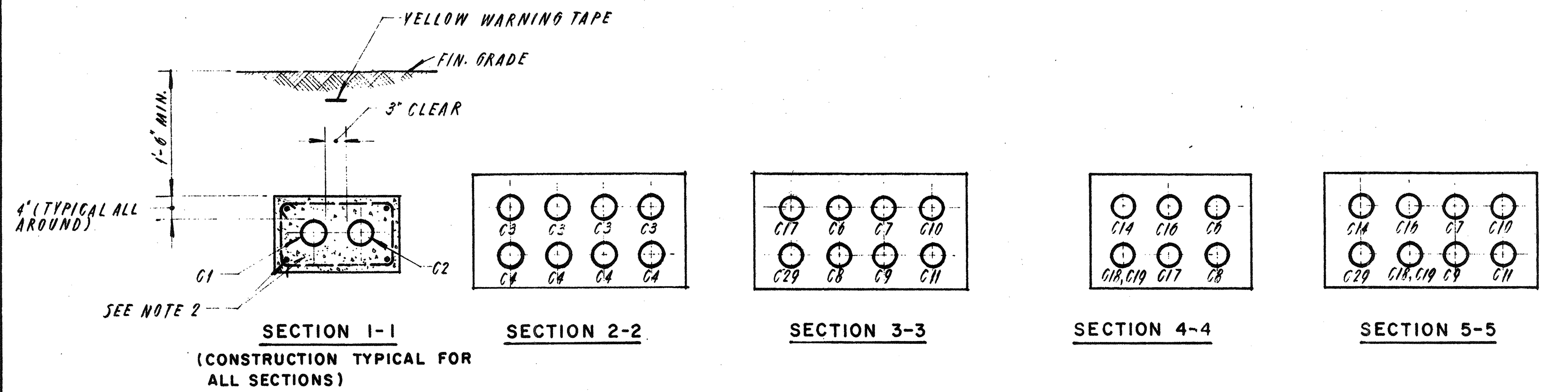
WHITMAN & HOWARD, INC.
 45 WILLIAM STREET, WELLESLEY, MASS.



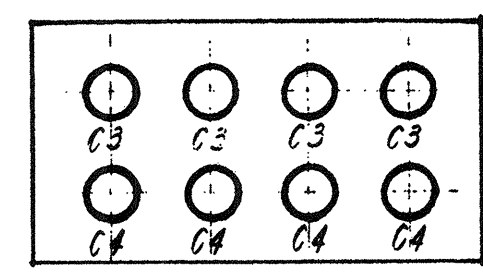
Stephen E. Seigal

ORIGINAL FULL SIZE DRAWING - 4"		DRAWING NO. E-11	
REPRODUCTIONS MAY BE REDUCED SIZE		JOB NO. 85-163	
APPROVED		CONTRACT NO. 3	
DESIGNED/DRAWN	CHECKED	SCALE	DATE
R.K.C.	E.C.C.	D.L.R.	1" = 20'
SEPT., 1989		SHEET 90 OF 106 SHEETS	

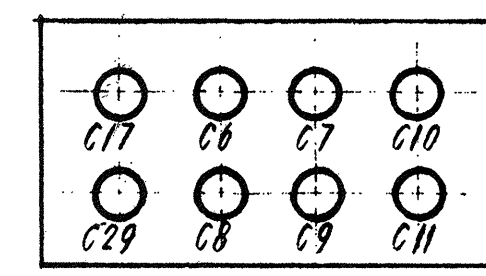
WASTEWATER TREATMENT FACILITY	
PORTSMOUTH, N.H.	
ELECTRICAL SITE PLAN	



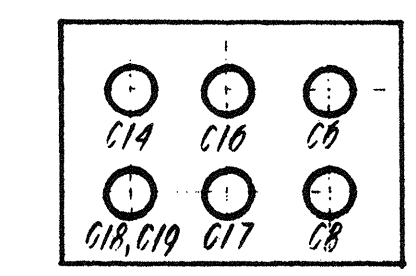
SECTION 1-1
(CONSTRUCTION TYPICAL FOR ALL SECTIONS)



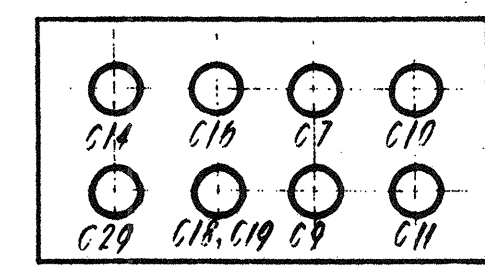
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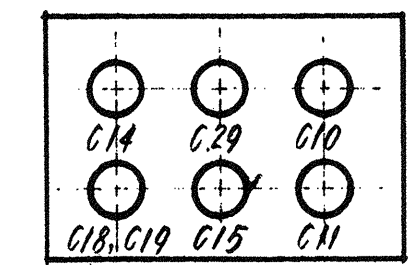
SECTION 3-3



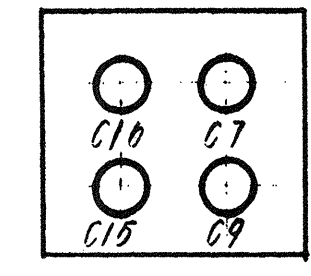
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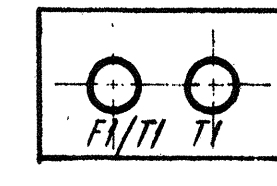
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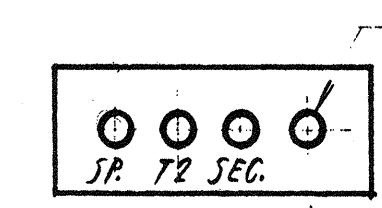
SECTION 6-6



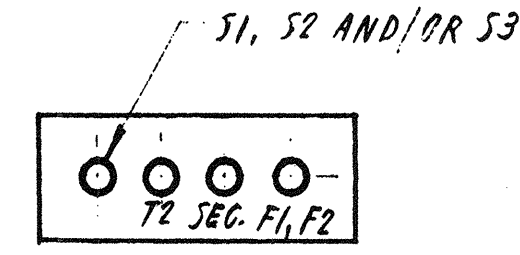
SECTION 7-7



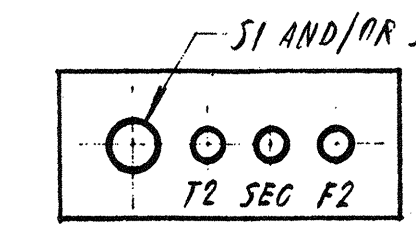
SECTION 8-8



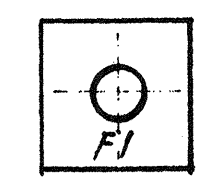
SECTION 9-9



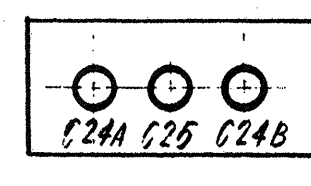
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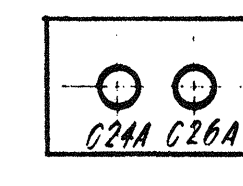
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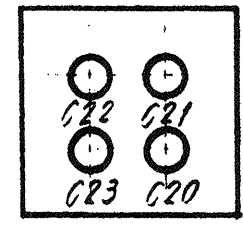
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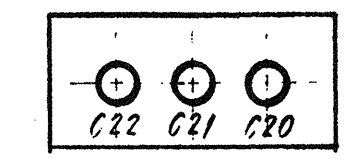
SECTION 13-13



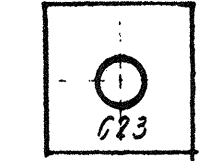
SECTION 14-14
(TYPICAL FOR 2 CLARIFIERS)



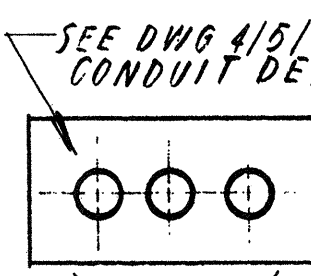
SECTION 15-15



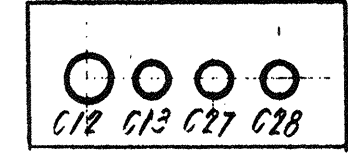
SECTION 16-16



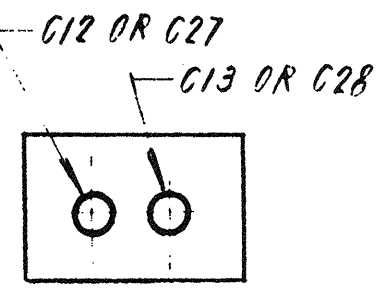
SECTION 17-17



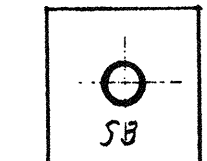
SECTION 18-18



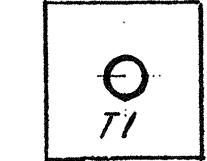
SECTION 19-19



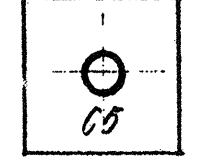
SECTION 20-20



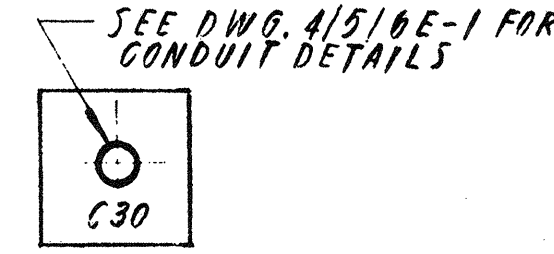
SECTION 21-21



SECTION 22-22



SECTION 23-23



SECTION 24-24

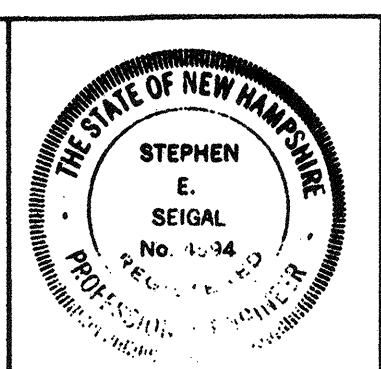
NOTES

1. DIMENSIONS TYPICAL FOR ALL DUCT BANKS, UNLESS OTHERWISE NOTED.
2. FOR REINFORCING REQUIREMENTS SEE DIVISION 3 OF SPECIFICATIONS.
3. FOR CONDUIT SIZE AND CONDUCTOR INFORMATION REFER TO CONDUIT AND WIRE SCHEDULE ON DWG. E-9.

DUCT BANK SECTIONS

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Added	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



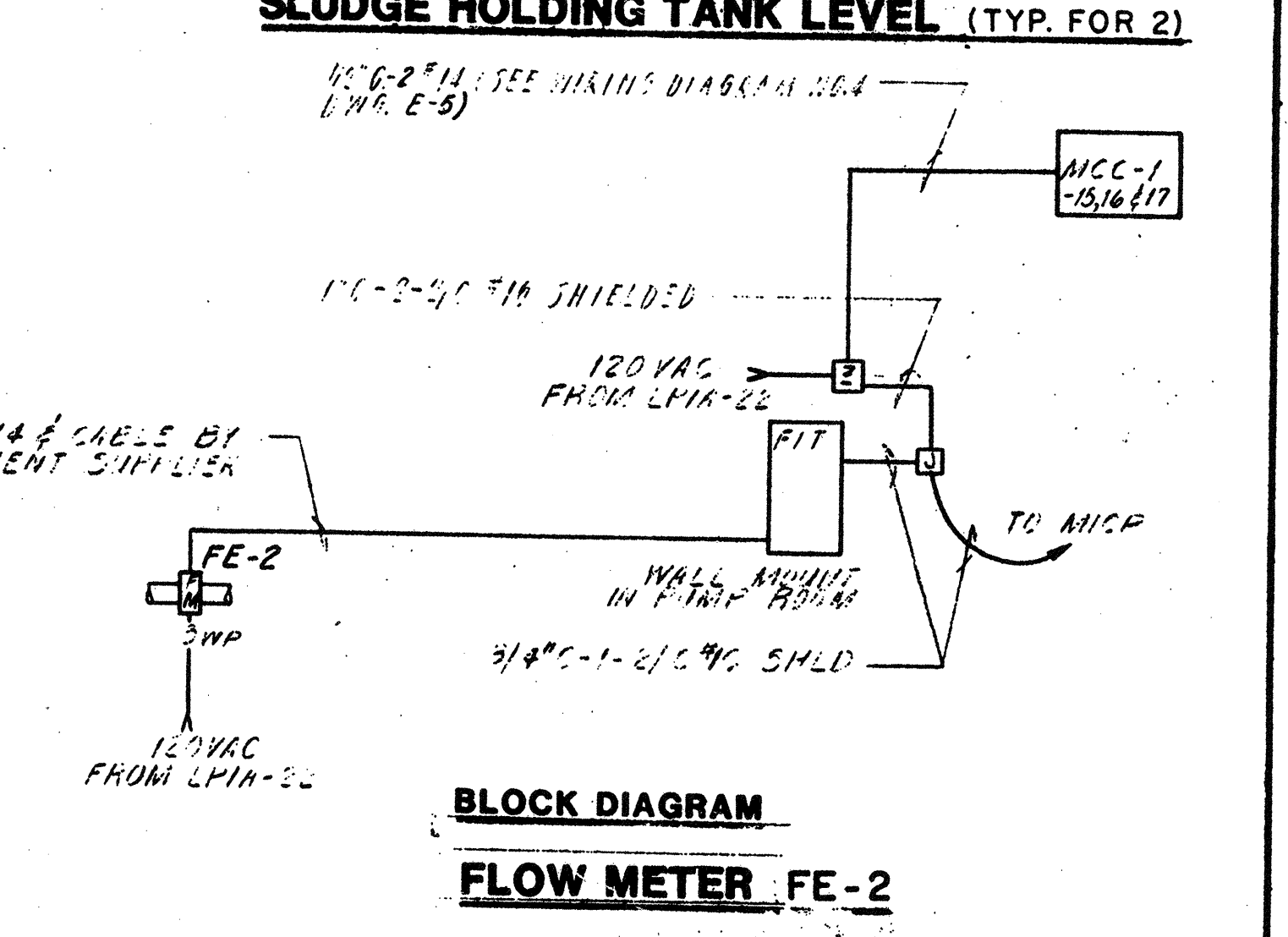
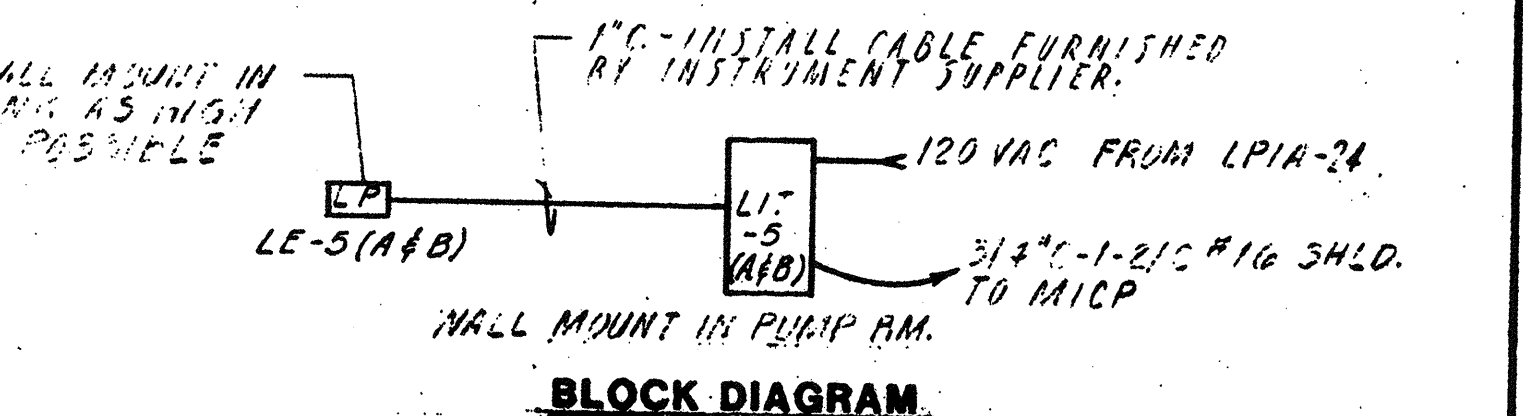
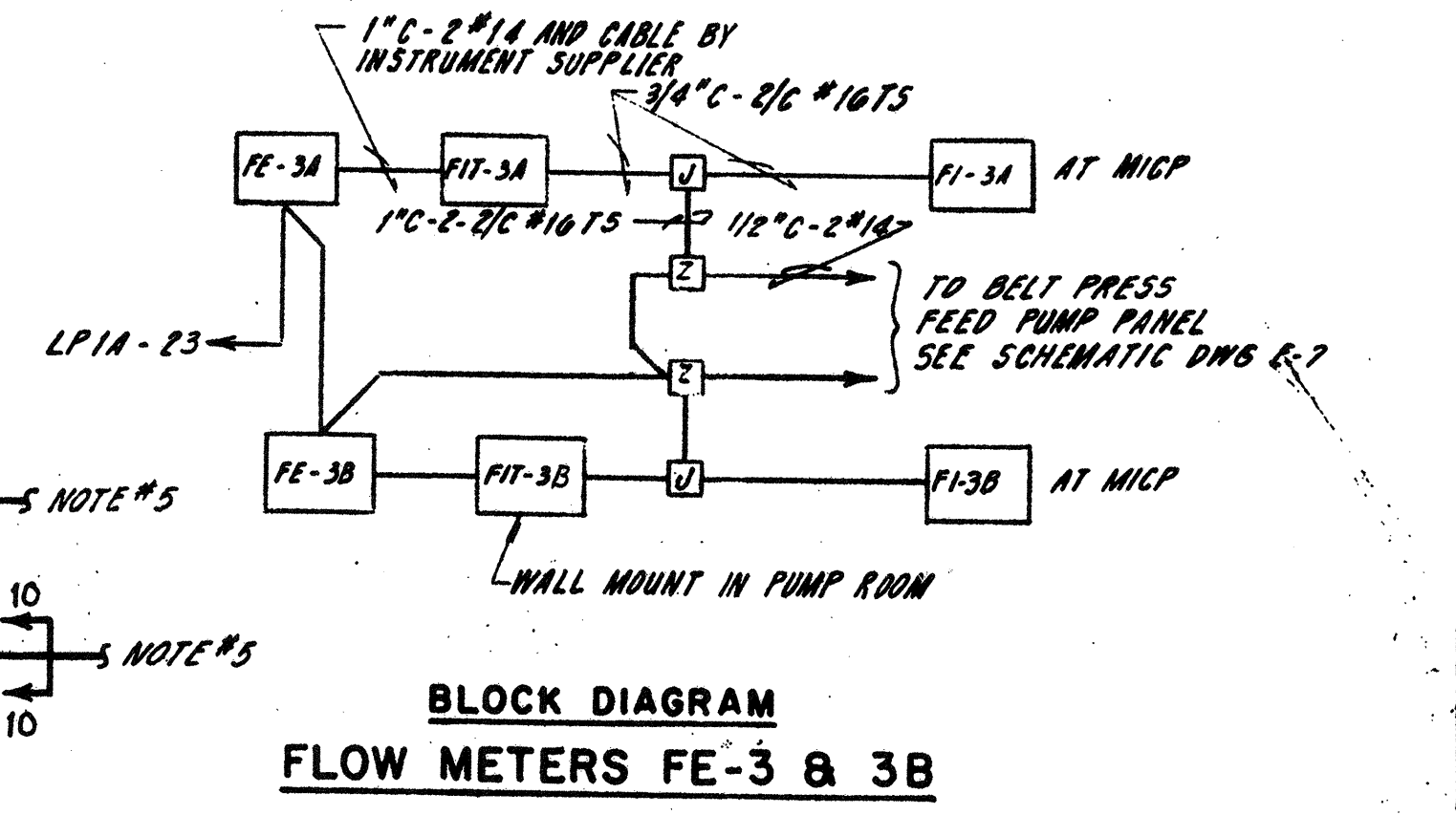
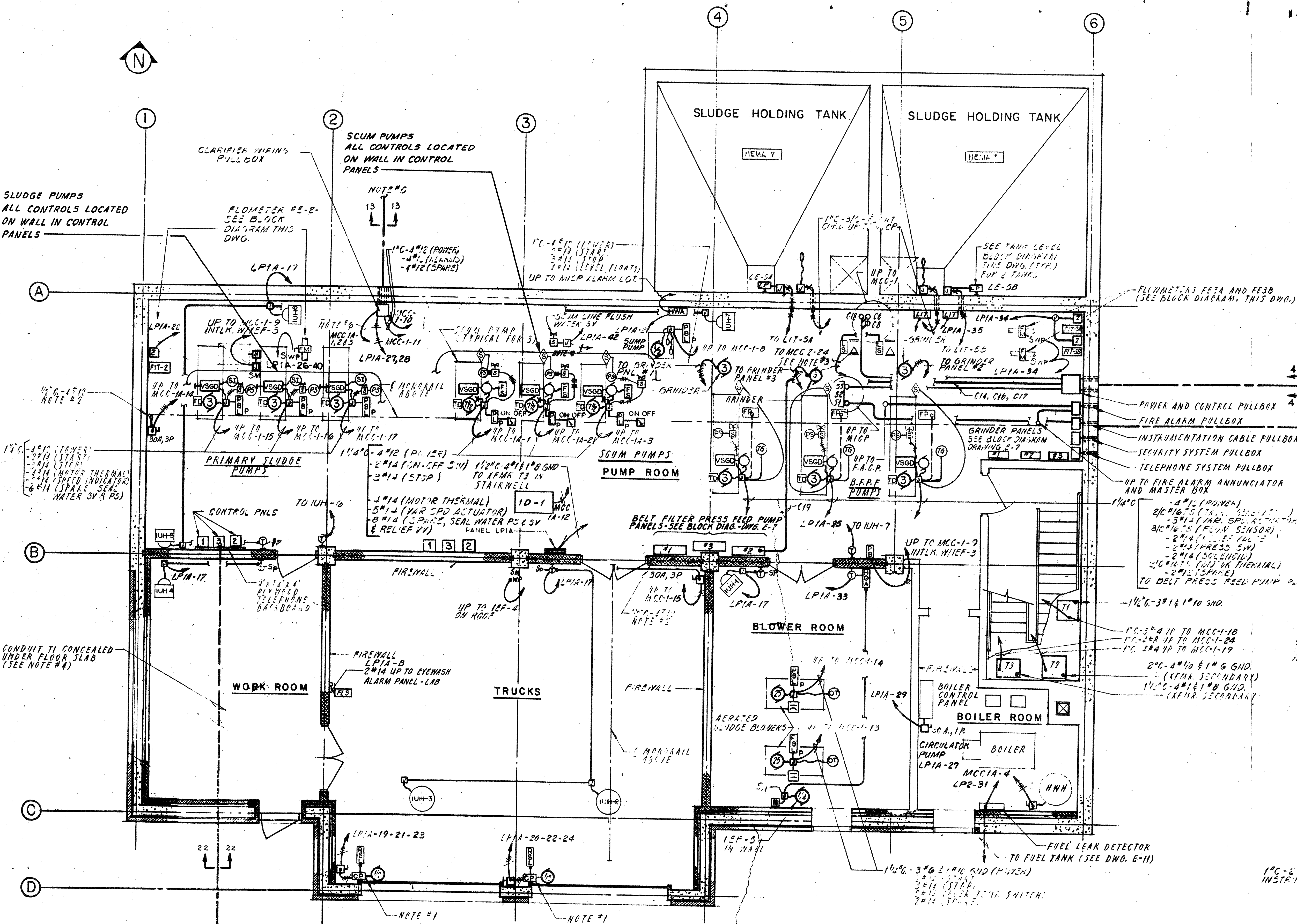
DESIGNED/DRAWN				CHECKED		SCALE		DATE	
RKC/ECC				D.L.R.		NONE		SEPT. 1989	
APPROVED				SHEET 91 OF 106 SHEETS					

DRAWING NO. **E-12**
JOB NO. **85-163**
CONTRACT NO. **3**

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
SECTIONS AND DETAILS

NOTES

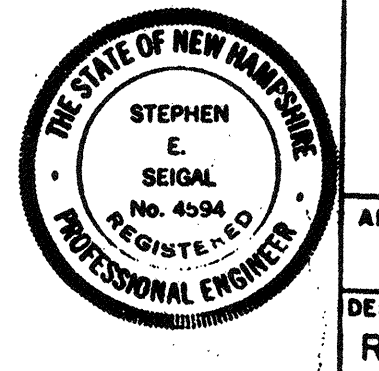
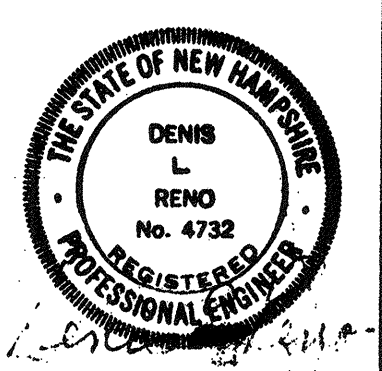
1. MOTOR-OPERATED OPERATOR CONTROL PANEL AND PUSHBUTTON STATION FURNISHED BY ODMR MANUFACTURER. FURNISH AND INSTALL ALL CONDUIT AND WIRE BETWEEN CONTROL PANEL AND FOUNDATION STATION. AS REQUIRED BY ODMR MANUFACTURER.
2. CONNECT TO MONORAIL AS RECOMMENDED BY MANUFACTURER.
3. 3/4"Ø-4#12 BRASS SQUARE TAP W/LE LIGHT SWITCHES TO MCC-1-24 FOR POWER & CONTROL PB 8 & 2-10 (SEE ALSO NOTE 4)
4. REFER TO CONDUIT & WIRE SCHEDULE, DWG. E-9, FOR CONTINUATION OF CONDUCTORS.
5. FOR CONTINUATION OF WIRE BANK SECTION SEE DWG. E-11)
6. 1"Ø-1"Ø-12 TO MCC-1A. INTERLOCK WITH SCUM PUMPS NO. 1 & 2 (SEE DISCUSSION LOCATED AT CLARIFIERS) SEE WIRING DIAGRAM NO. 3, DWG. E-5.
7. 3/4"Ø FROM SCUM LINE BY CONTROL PULL BOX WITH 2#12 AND VIA PULL BOX AND C16 TO ON/OFF SWITCH AT SCUM BUILDING.



BASEMENT FLOOR PLAN
SCALE 1/4" = 1'-0"

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/87

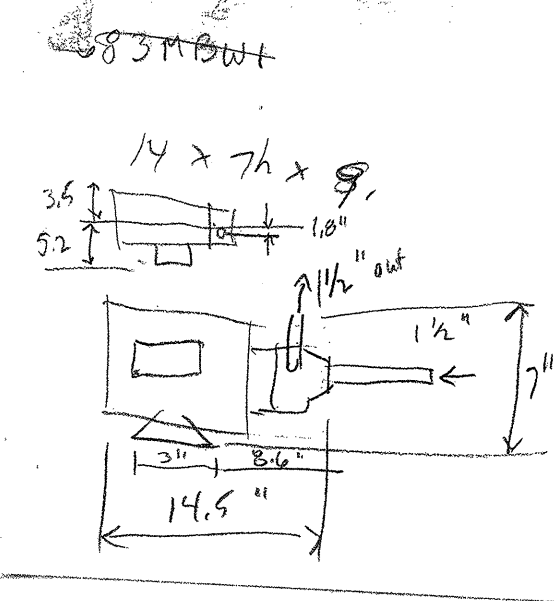
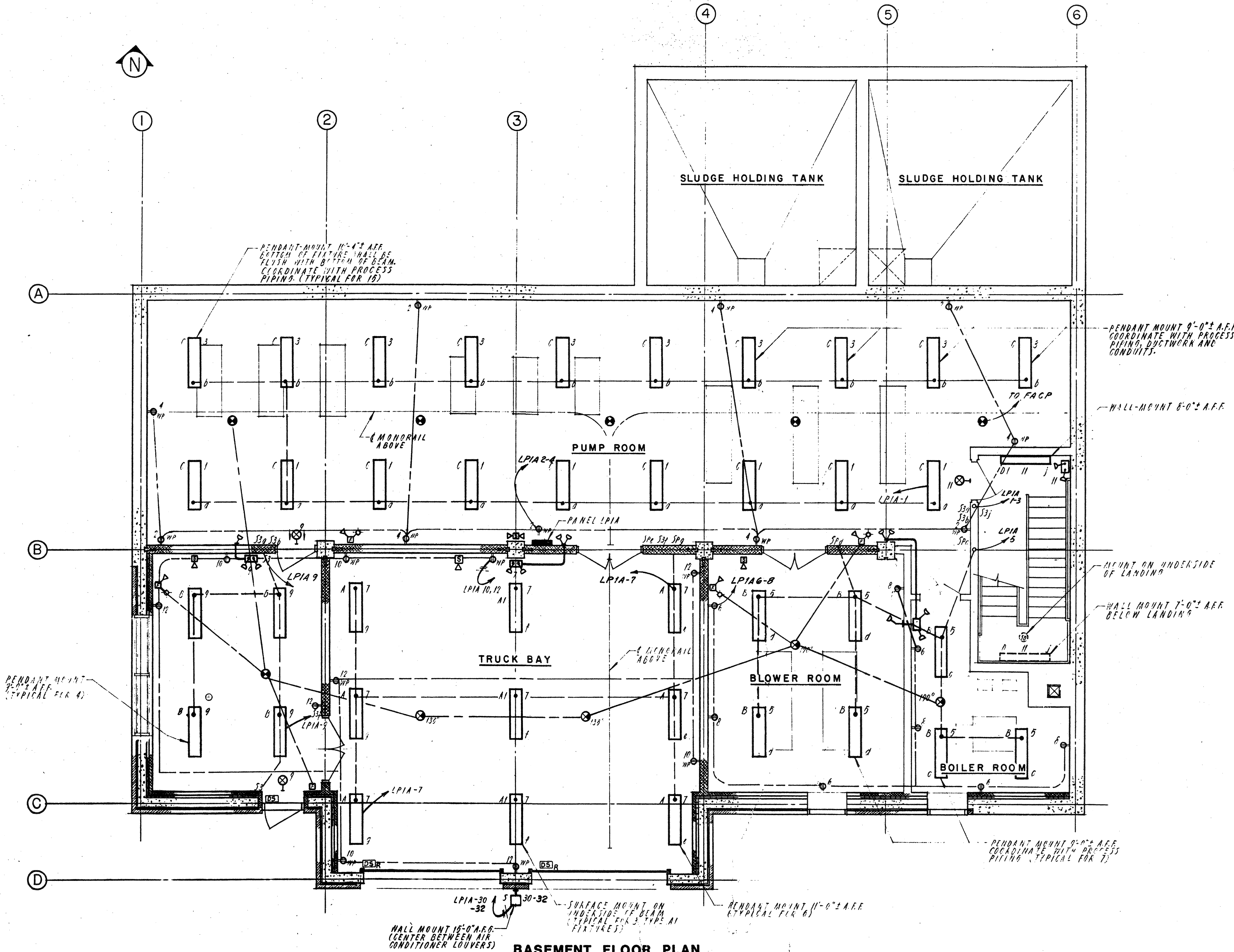
WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



DESIGNED DRAWN R.M.B. E.C.C.
CHECKED SCALE D.L.R. AS NOTED
DATE SEPT, 1985

DRAWING NO. **1E-1**
JOB NO. 85-163
CONTRACT NO. 3

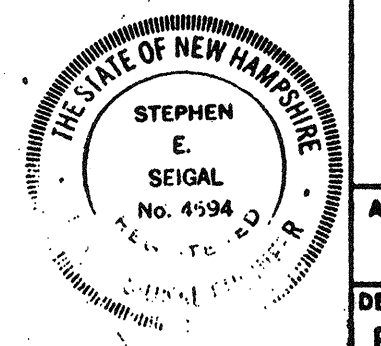
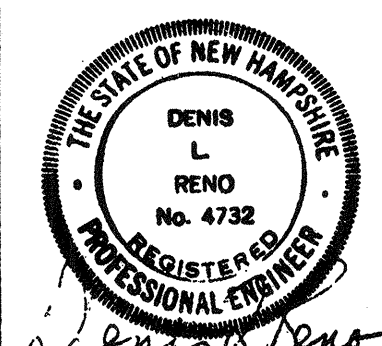
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
CONTROL BUILDING
BASEMENT POWER PLAN



BASEMENT FLOOR PLAN
SCALE 1/4" = 1'-0"

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

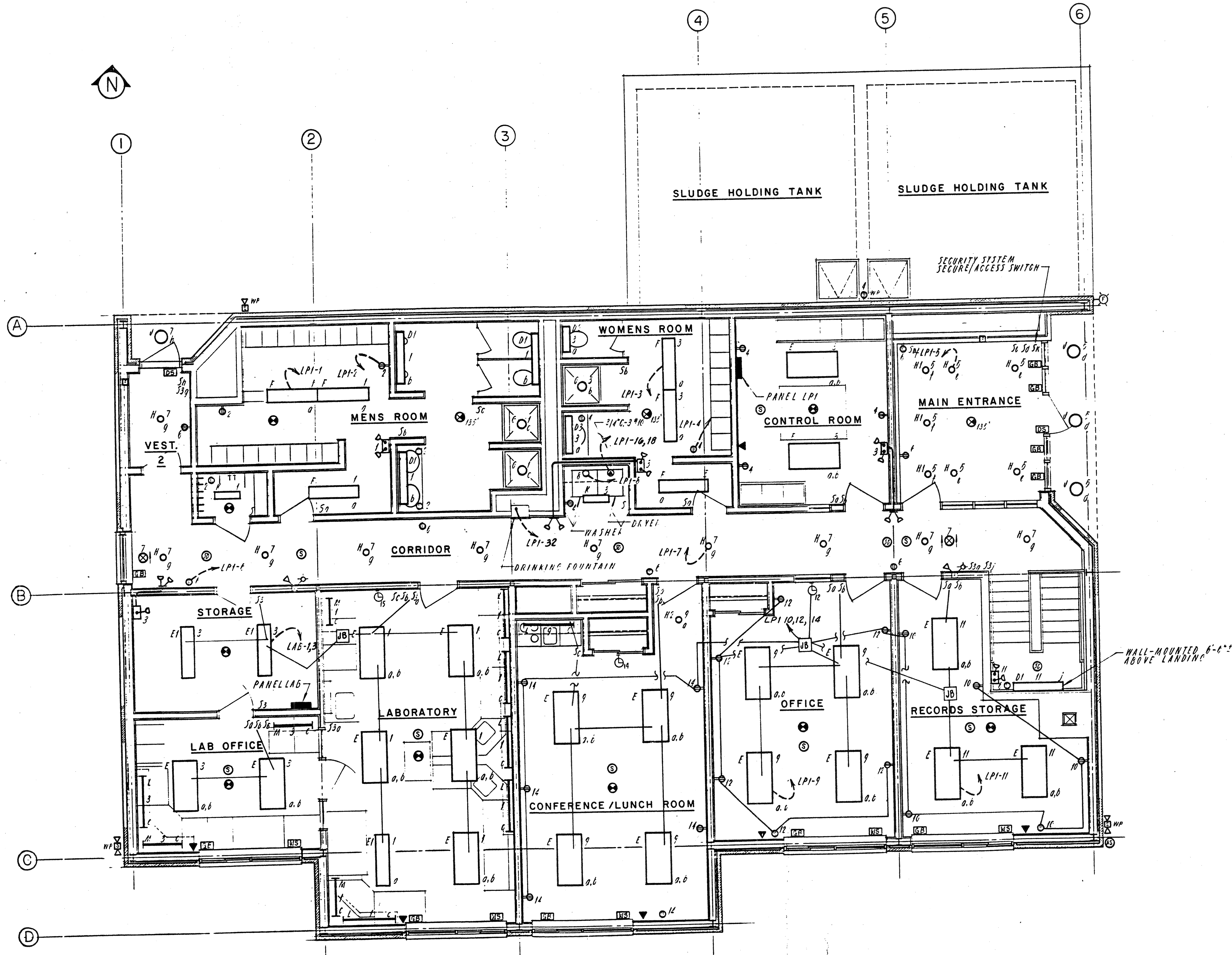
DESIGNED	DRAWN	CHECKED	SCALE	DATE
R.M.B.	E.C.C.	D.L.R.	AS NOTED	SEPT., 1985

DRAWING NO.	1E-2
JOB NO.	85-163
CONTRACT NO.	3

WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N.H.

CONTROL BUILDING
BASEMENT LIGHTING PLAN

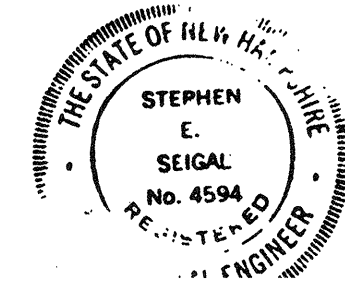
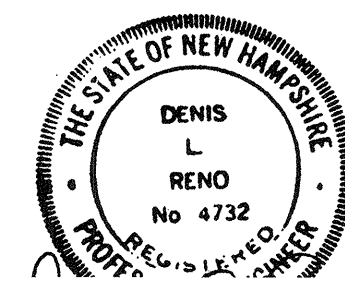


GROUND FLOOR PLAN
SCALE 1/4" = 1'-0"

2	Revised To Record Plan	9/93
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WHITMAN & HOWARD, INC.

45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

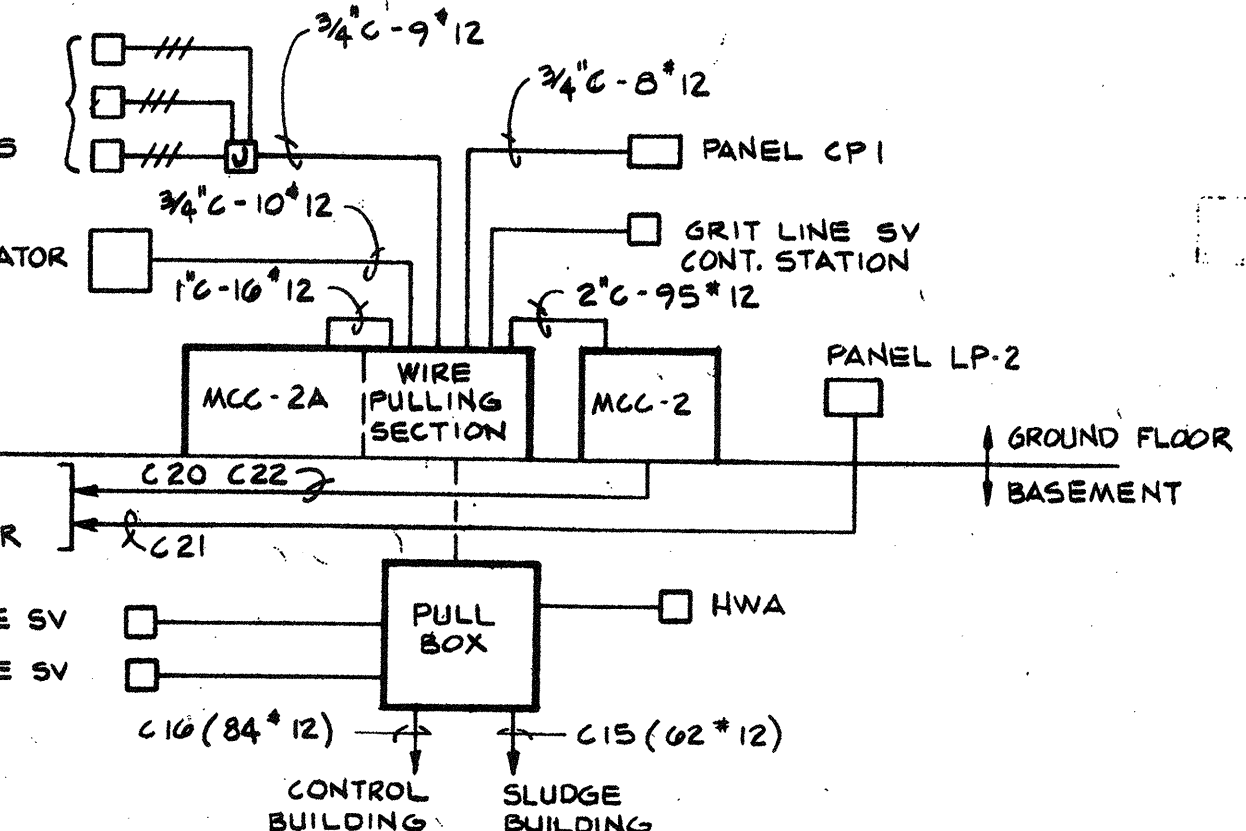
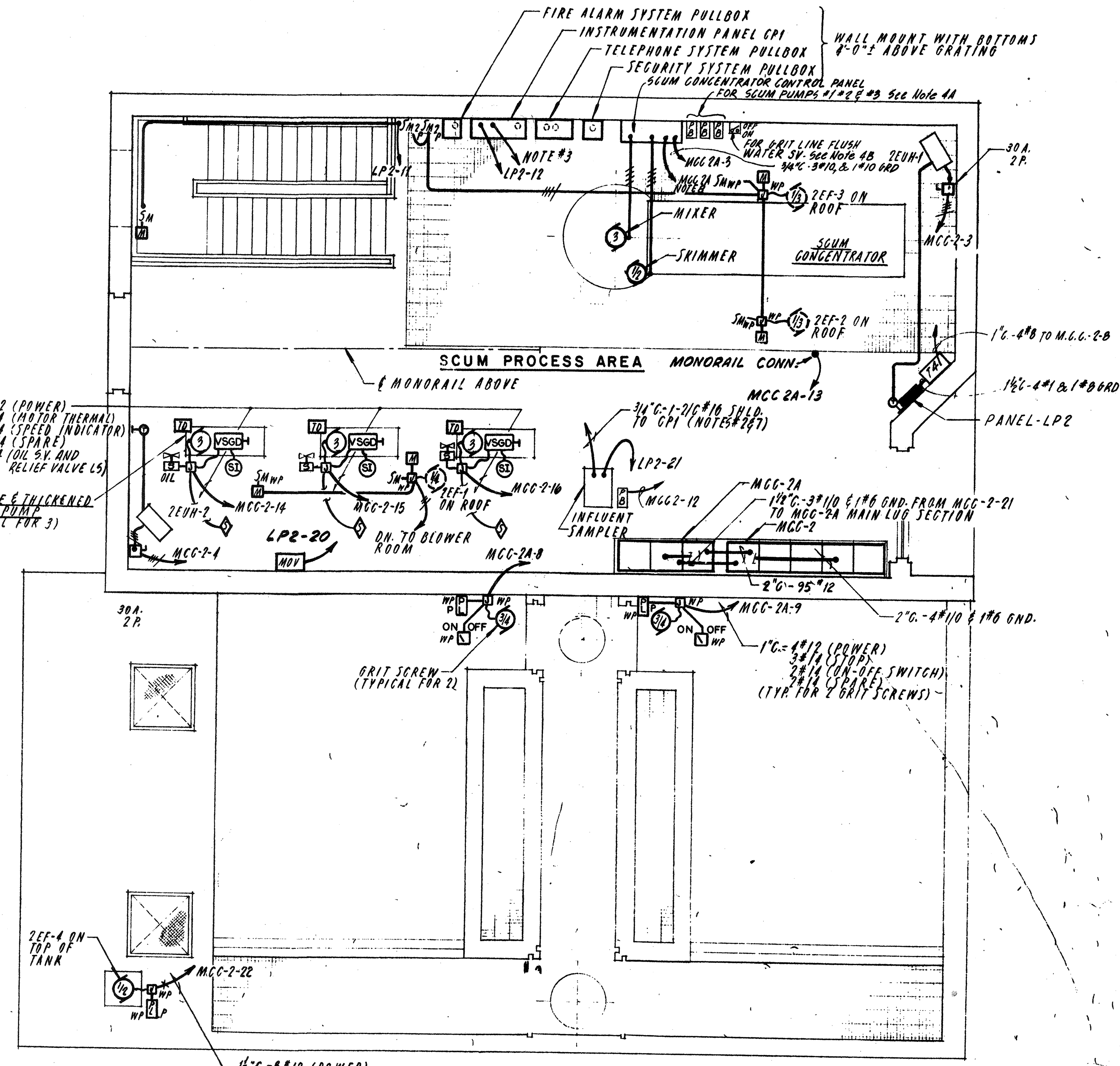
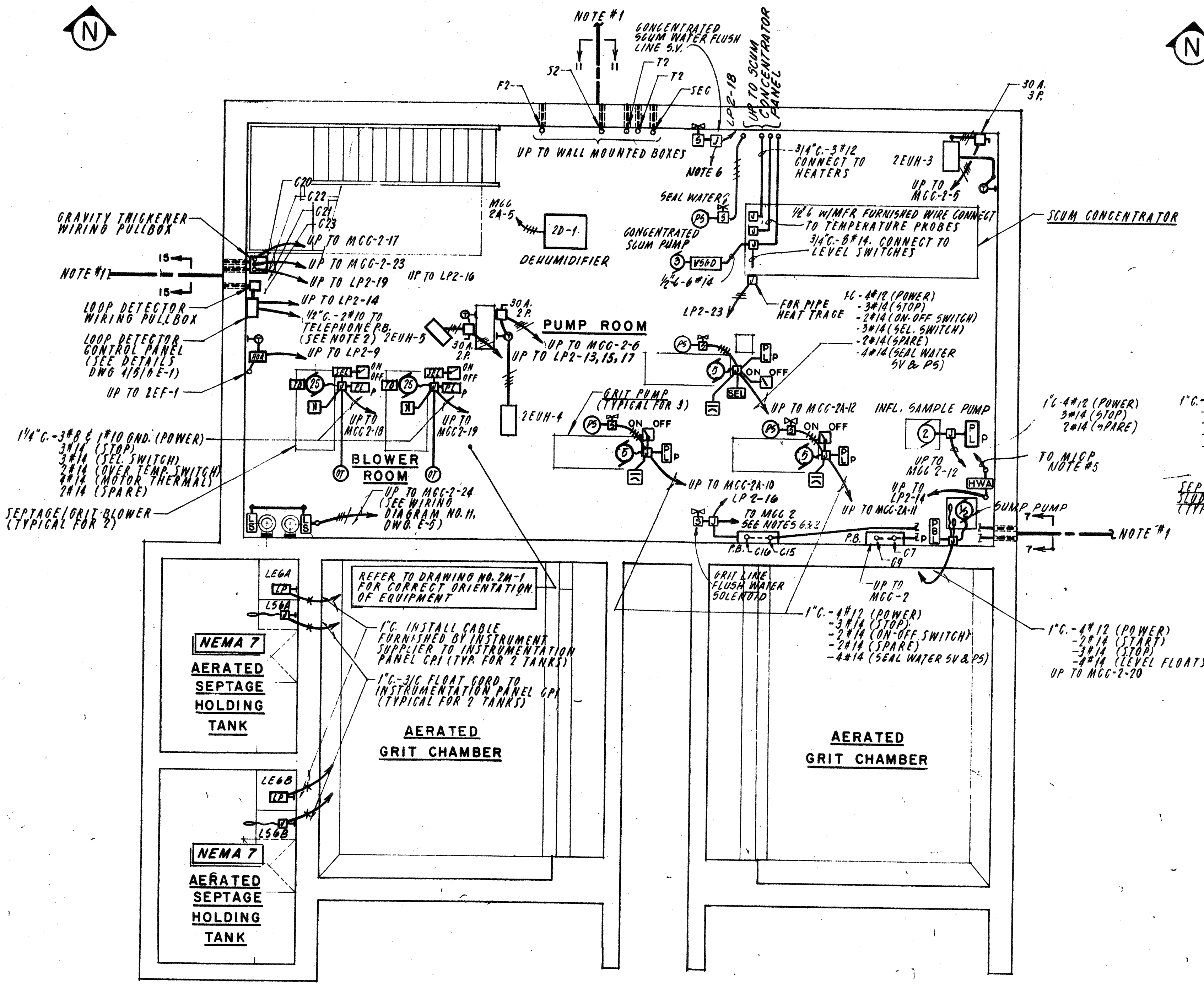
APPROVED *Stephen E. Seigal*
DESIGNED/DRAWN _____ CHECKED/SCALE _____ DATE _____

DRAWING NO. **1E-4**
JOB NO. **85-163**
CONTRACT NO. **3**

WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N.H.

CONTROL BUILDING
GROUND FLOOR LIGHTING PLAN

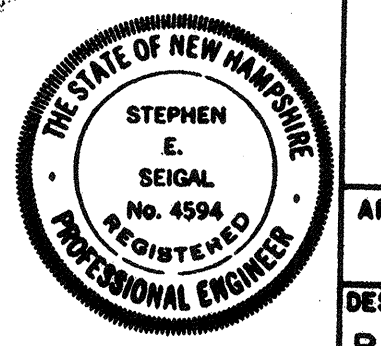
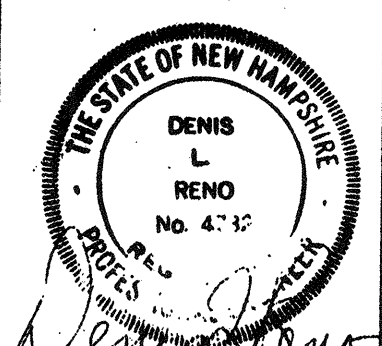


NOTES

- FOR CONTINUATION AND DUCT BANK SECTION SEE DWG. E-11.
- REFER TO CONDUIT AND WIRE SCHEDULE, DWG. E-9, FOR CONTINUATION OF CONDUCTORS.
- FROM PANEL CPI:
 1 1/4" C-12#14 (SEPTAGE LOW TANK LEVEL CONTACT)
 1 1/4" C-12#14 (LOW TANK LEVEL BACK-UP CONTACT)
 TO MCG-2-14, 15, 16 INTERLOCK WITH SEPTAGE AND THICKENED SLUDGE PUMPS NO. 1, 2 AND 3 (SEE WIRING DIAGRAM NO. 7, DWG. NO. E-8).
 1/2" C-12 TO M.I.C.P. IN CONTROL BUILDING VIA MCG2A-10 AND HIGH LEVEL SEPTAGE TANKS NO. 1 AND NO. 2 ALARM LIGHTS - LLA6D, LLA6G, AND LHA6D AND G16.
- 1" C. FROM CONTROL STATIONS TO MCG2A WITH:
 A- 1" C-4#12 VIA MCG2A TO MCG1A-1, 2 AND 3 (CONTROL BUILDING) IN G16
 B- 2" C-2#12 VIA MCG2A TO LPIA-28 (CONTROL BUILDING) IN G16
- 3/4" C.-2#12 FROM HWA TO M1CP (CONTROL BUILDING) VIA PB#G16
- 3/4" C.- FROM GRIT LINE SOLENOID VALVE JUNCTION BOX AND CONCENTRATED SCUM LINE SOLENOID VALVE WITH 2#12 EACH VIA P.BOX G15 AND MCG3A TO ON/OFF SWITCH AT SLUDGE BUILDING.
- 3/4" C.-2#12 FROM INFLUENT SAMPLER TO CP-1 AND VIA CP-1 AND S2 TO M1CP (CONTROL BUILDING)
- 3/4" C.-9#12 FROM SCUM CONCENTRATOR PANEL TO SLUDGE BUILDING VIA MCG2A AND CONDUIT G15

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



APPROVED: *Stephen E. Seigel*
DESIGNED/DRAWN: R.M.B. E.C.C. CHECKED: D.L.R. SCALE: AS NOTED DATE: SEPT., 1985

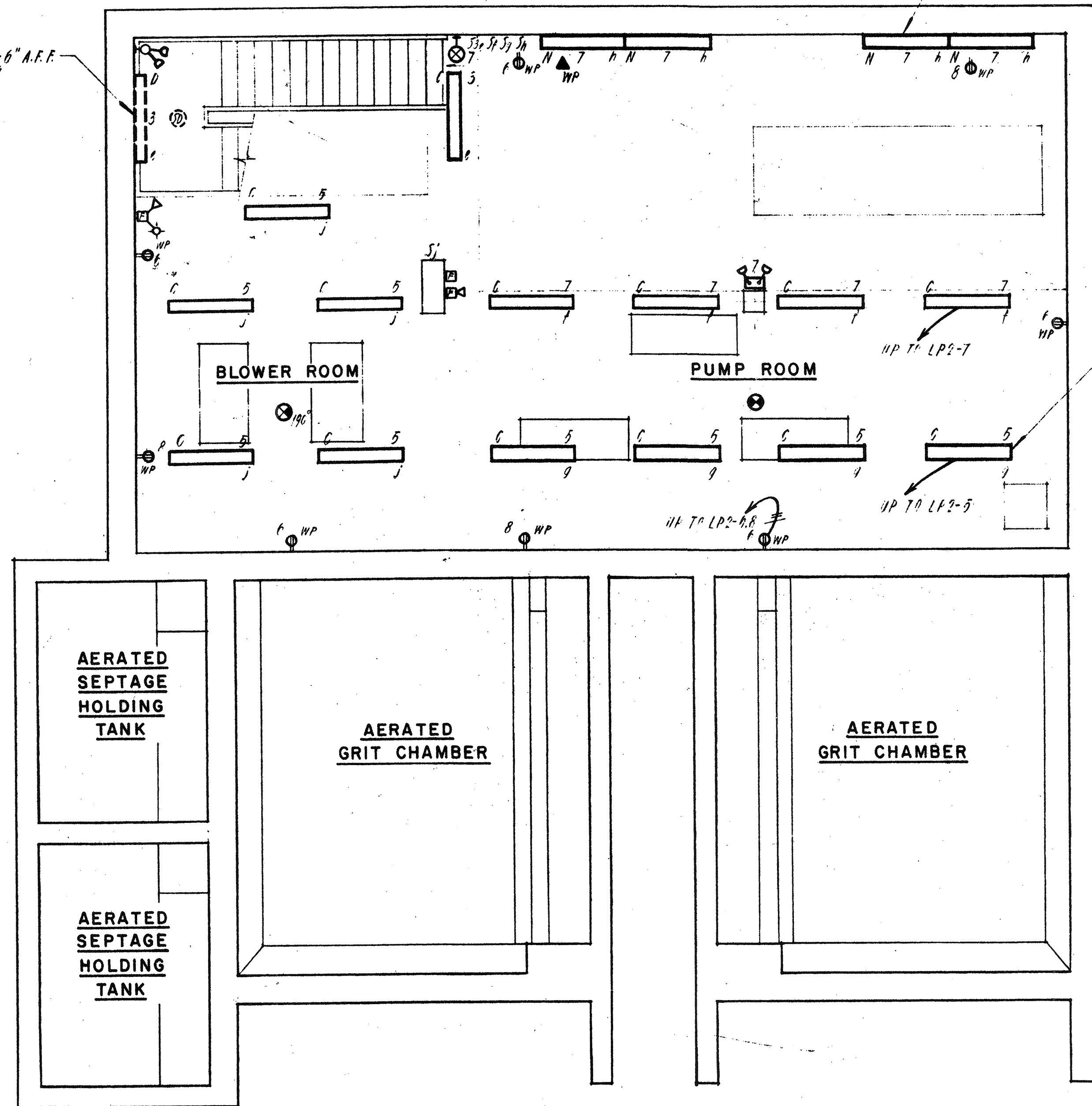
DRAWING NO. **2E-1**
JOB NO. 85-163
CONTRACT NO. 3
SHEET 96 OF 106 SHEETS

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
SCUM CONCENTRATOR BUILDING
POWER PLAN



WALL-MOUNT 7'-6" A.F.F.
BELOW LANDING

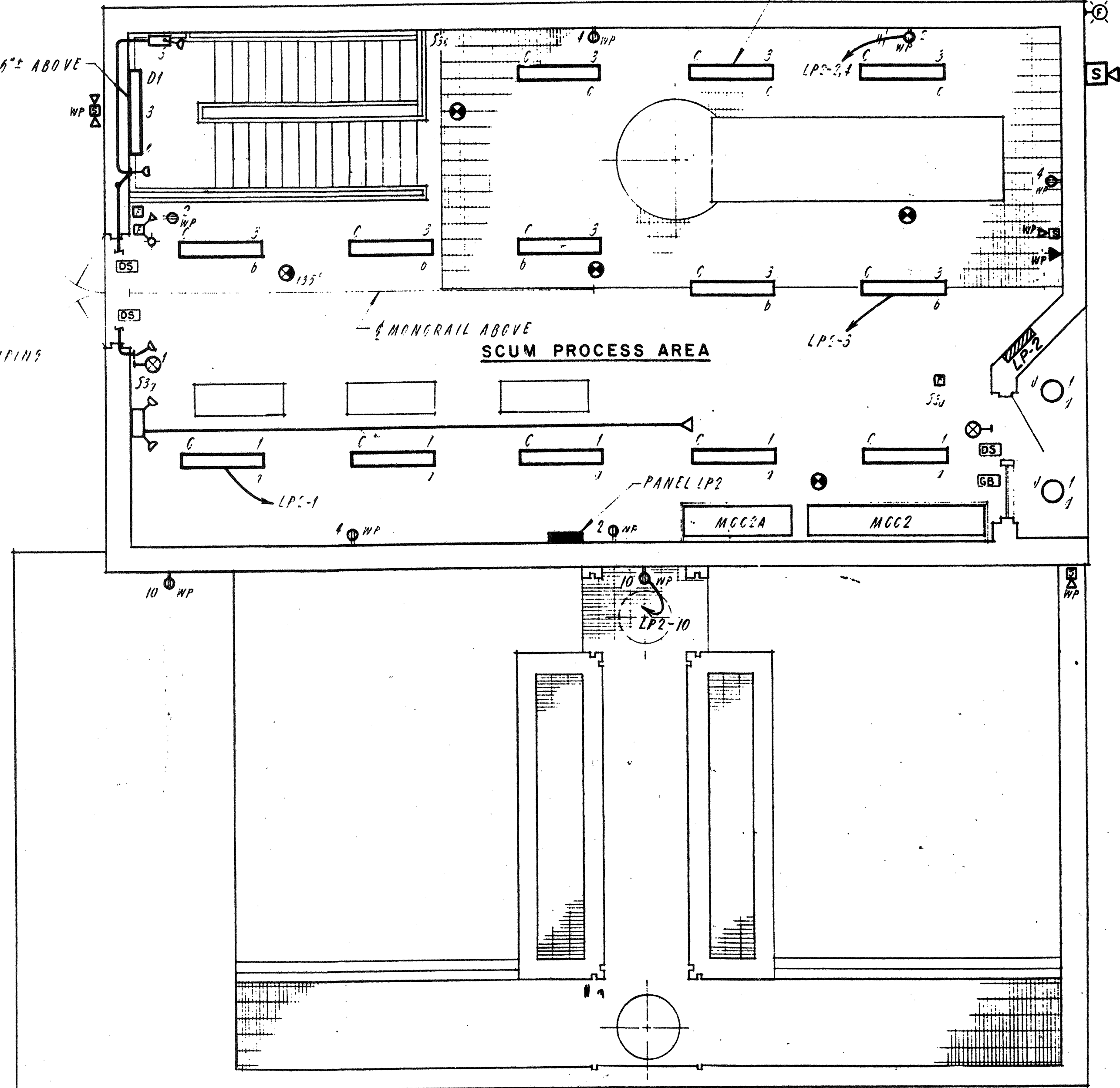
WALL-MOUNT 10'-0" A.F.F.
(TYPICAL FOR 4)



BASEMENT FLOOR PLAN
SCALE 1/4" 1'-0"

WALL MOUNT 6'-9" ABOVE
LANDING

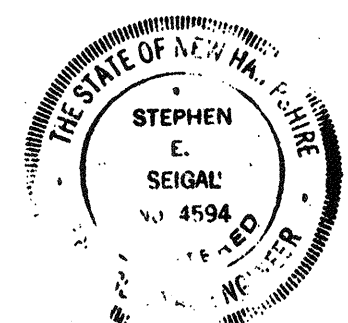
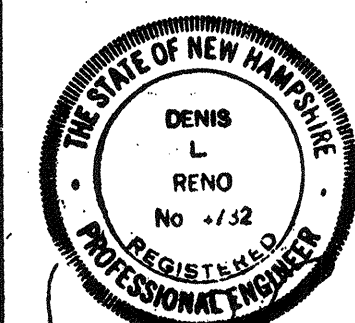
PENDANT MOUNT 12'-0" A.F.F.
COORDINATE WITH PROCESS PIPING
(TYPICAL FOR 14)



GROUND FLOOR PLAN
SCALE 1/4" 1'-0"

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

DRAWING NO.
2E-2

JOB NO.
85-163

CONTRACT NO.
3

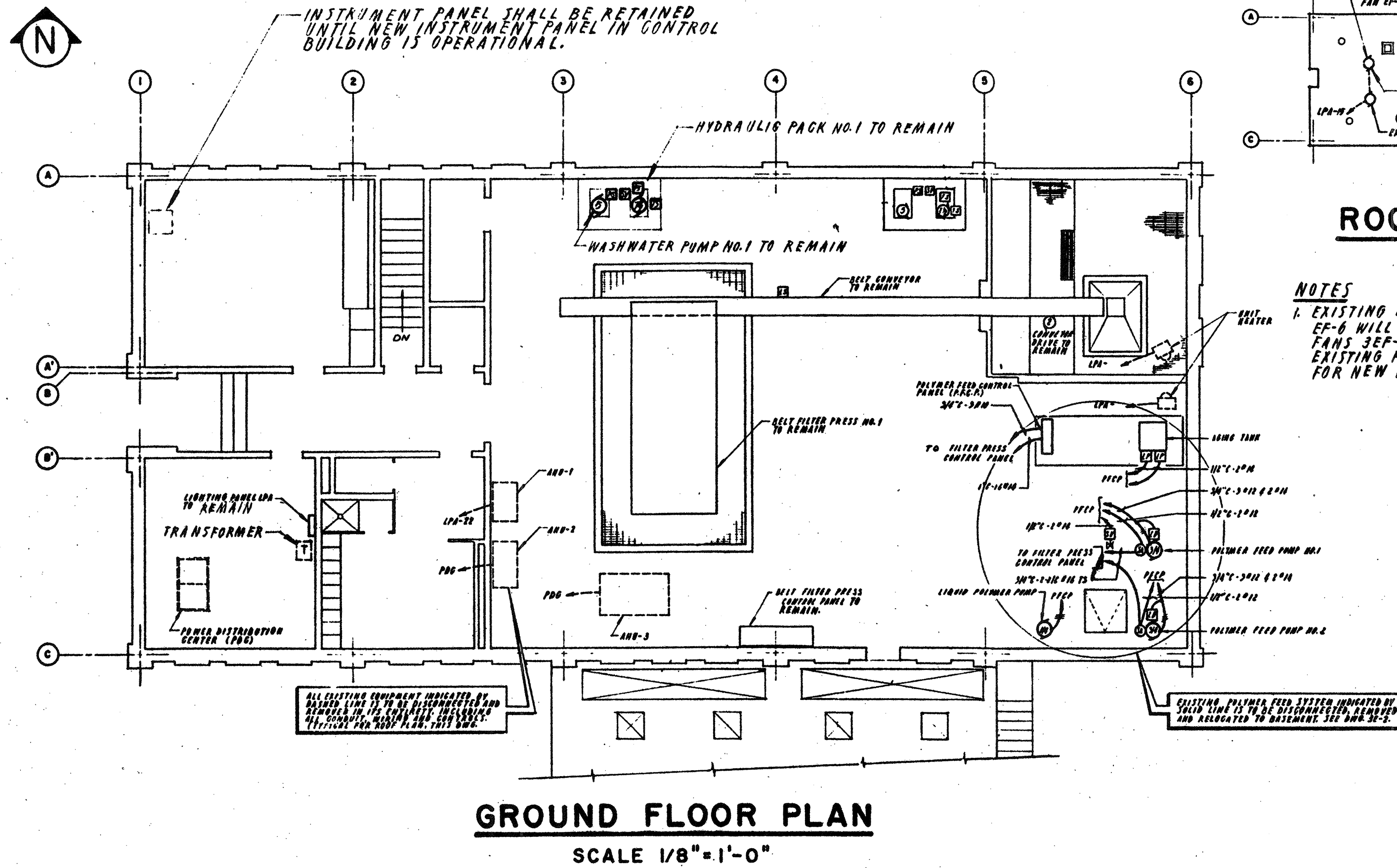
WASTEWATER TREATMENT FACILITY

PORTSMOUTH, N.H.

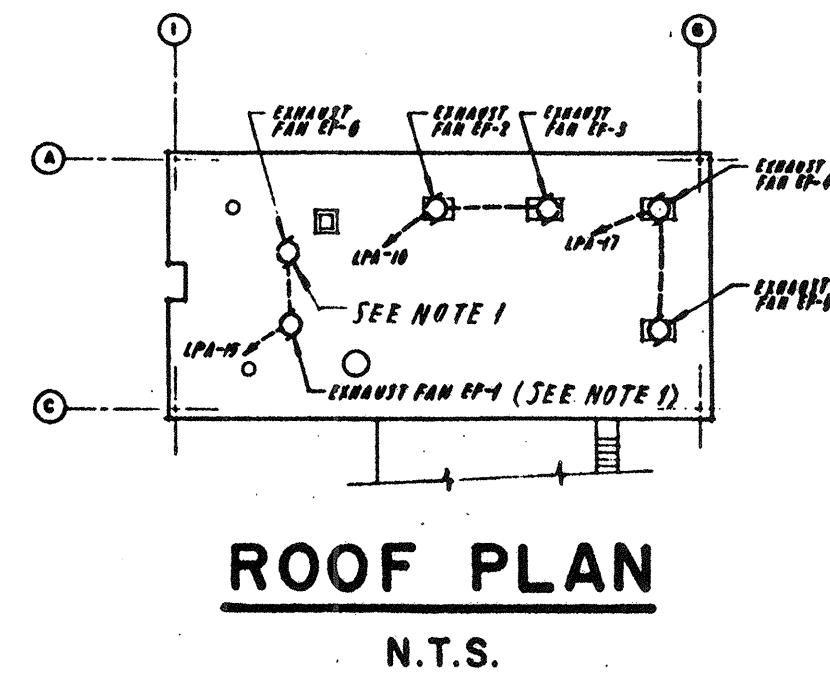
SCUM CONCENTRATOR BUILDING
LIGHTING PLAN

DESIGNED/DRAWN	CHECKED	SCALE	DATE
R.M.B.	E.C.C.	D.L.R.	AS NOTED
APPROVED			DATE
<i>Stephen E. Seigel</i>			SEPT., 1985

SHEET 97 OF 106 SHEETS

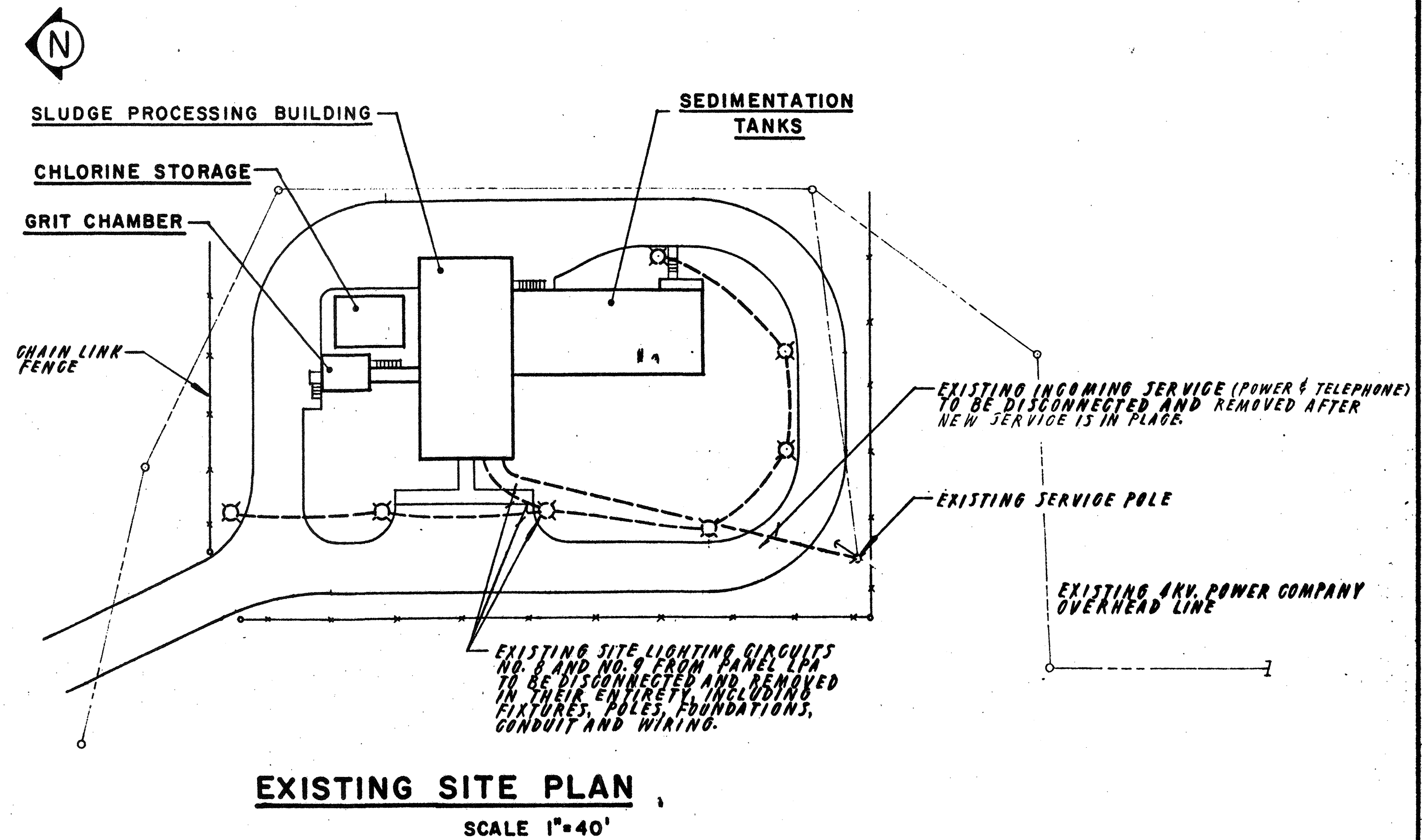


GROUND FLOOR PLAN
SCALE 1/8" = 1'-0"

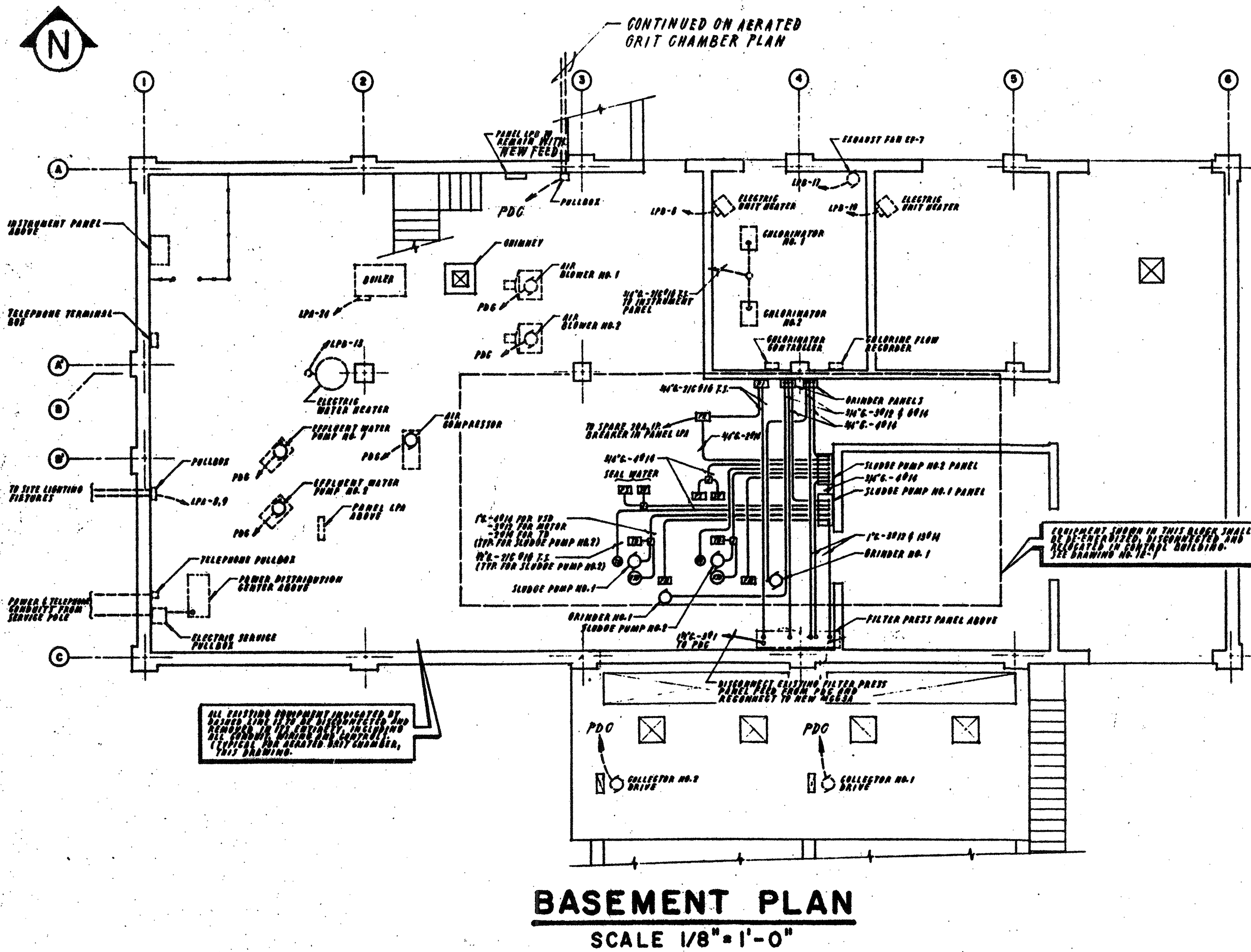


ROOF PLAN
N.T.S.

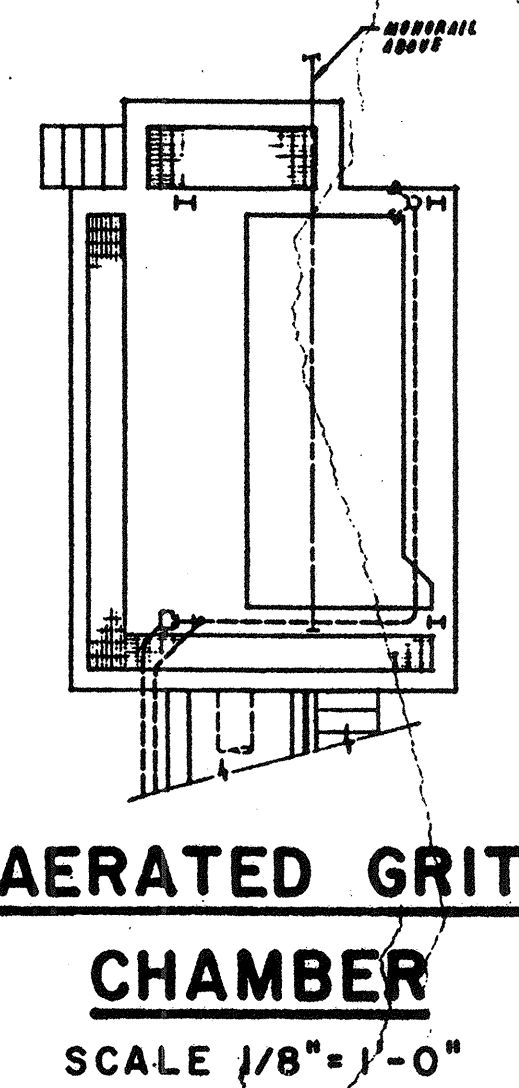
NOTES
1. EXISTING EXHAUST FANS EF-1 AND EF-2 WILL BE REPLACED BY NEW FANS SEP-1 AND SEP-2. RE-USE EXISTING FEEDERS AND CONTROLS FOR NEW FANS.



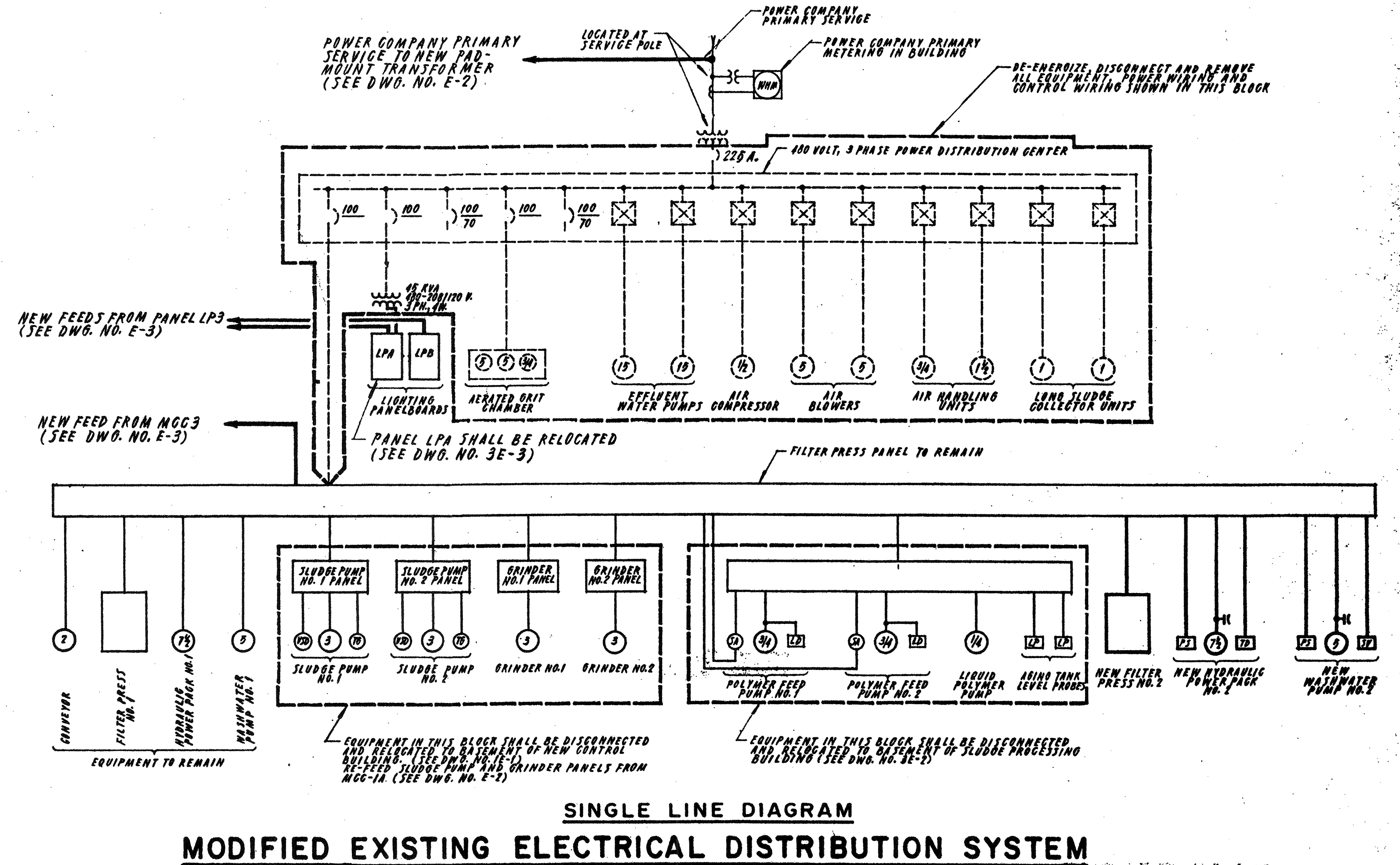
EXISTING SITE PLAN
SCALE 1" = 40'



BASEMENT PLAN
SCALE 1/8" = 1'-0"



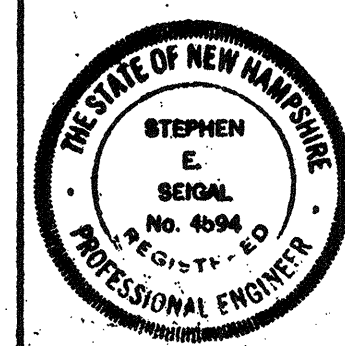
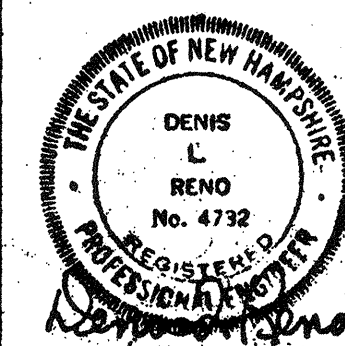
AERATED GRIT CHAMBER
SCALE 1/8" = 1'-0"



SINGLE LINE DIAGRAM
MODIFIED EXISTING ELECTRICAL DISTRIBUTION SYSTEM
N.T.S.

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



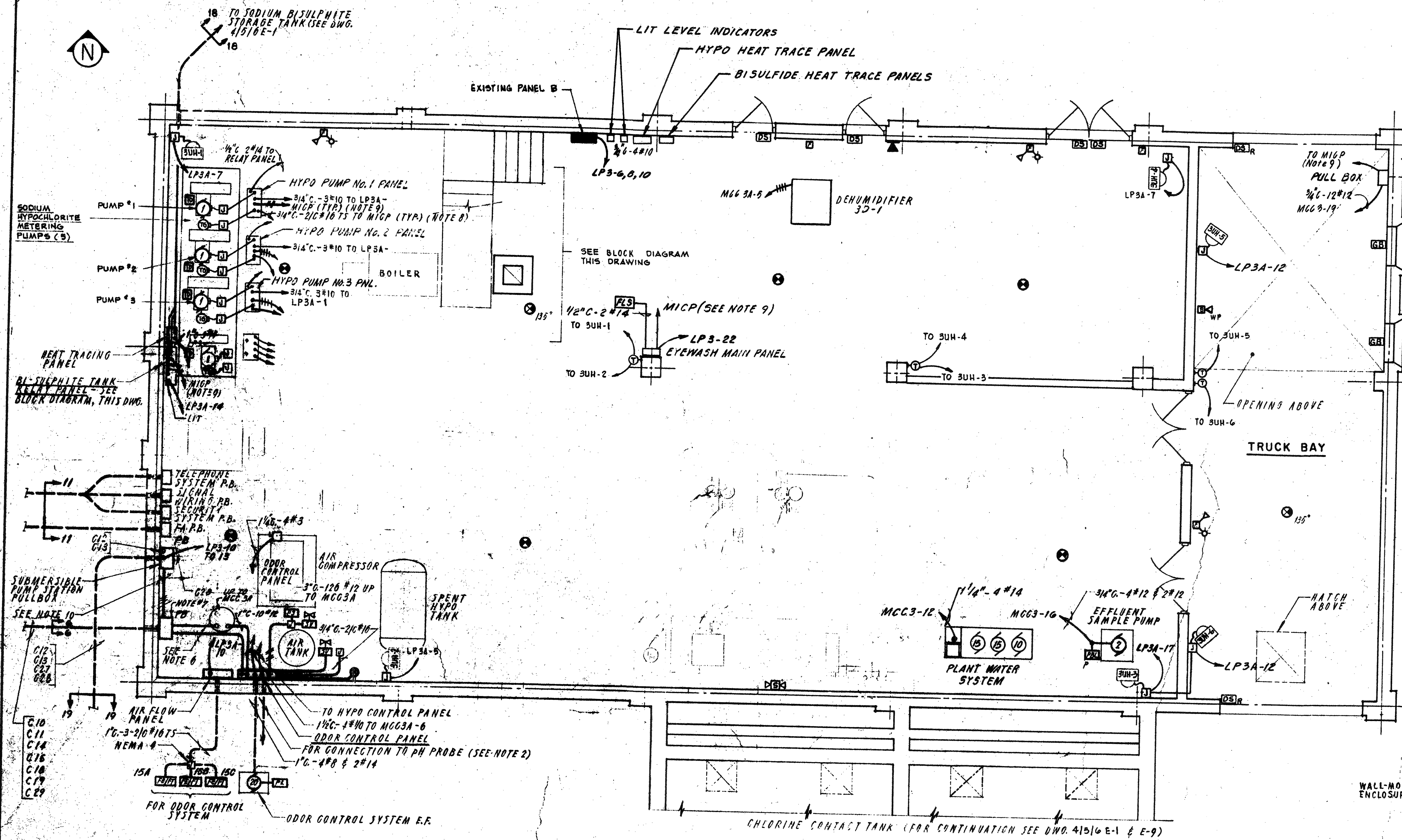
ORIGINAL FULL SIZE DRAWING = 4"			
REPRODUCTIONS MAY BE REDUCED SIZE			
APPROVED	DESIGNED/DRAWN	CHECKED	SCALE
	R.K.C./E.C.C.	D.L.R.	AS NOTED
DATE	DATE		DATE
SEPT., 1989	SEPT., 1989		SEPT., 1989

DRAWING NO.	3E-1
JOB NO.	85-163
CONTRACT NO.	3

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.

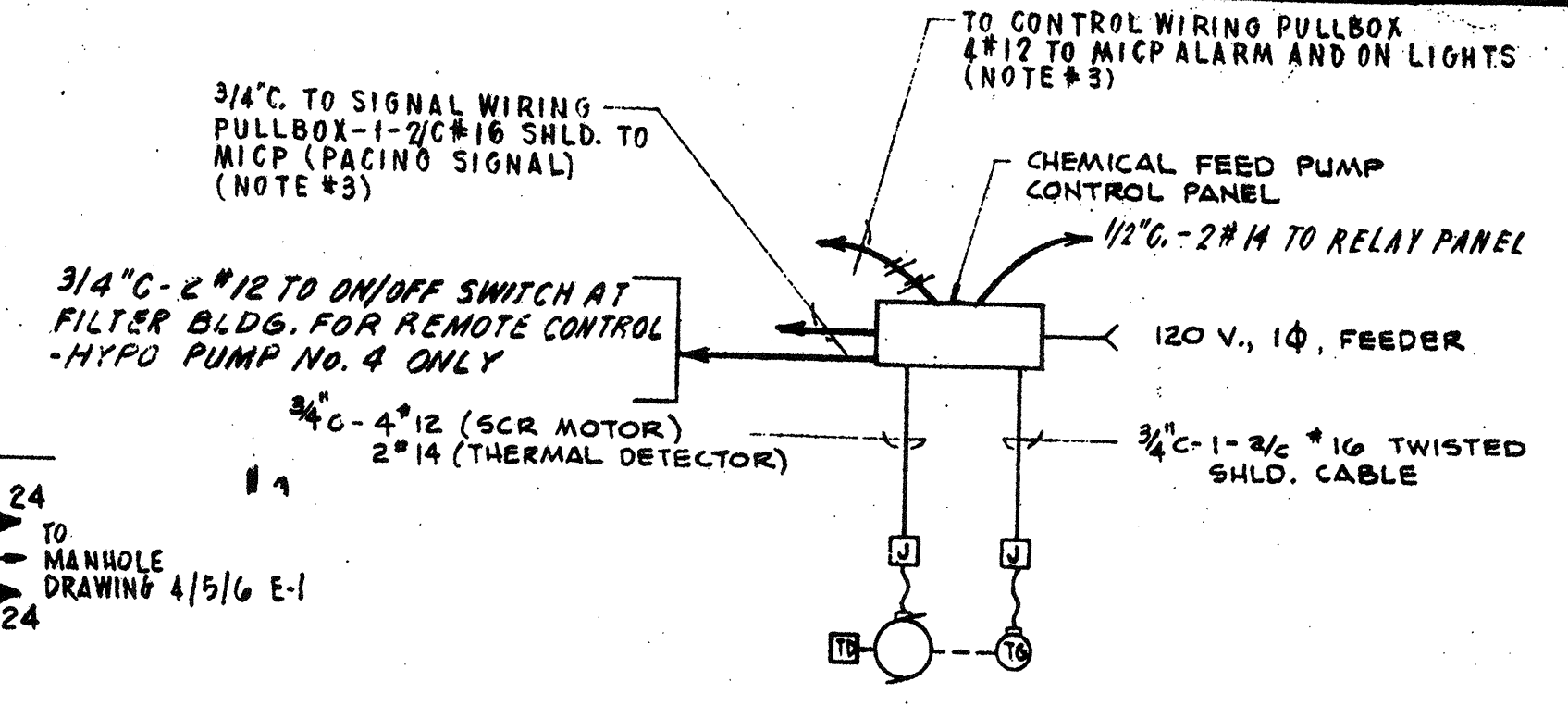
SLUDGE PROCESSING BUILDING
DEMOLITION AND MODIFICATION PLAN

RECORD PLAN

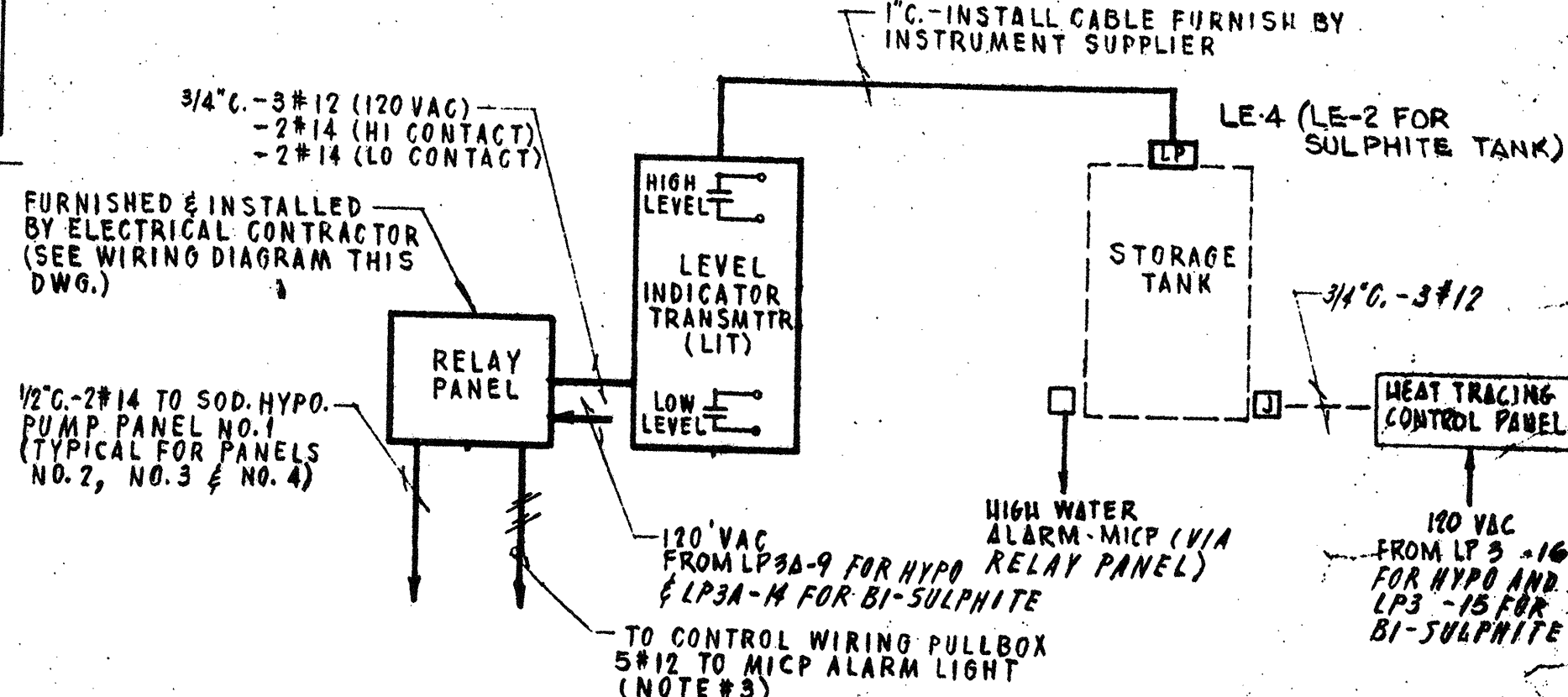


BASEMENT FLOOR PLAN
SCALE 1/4" = 1'-0"

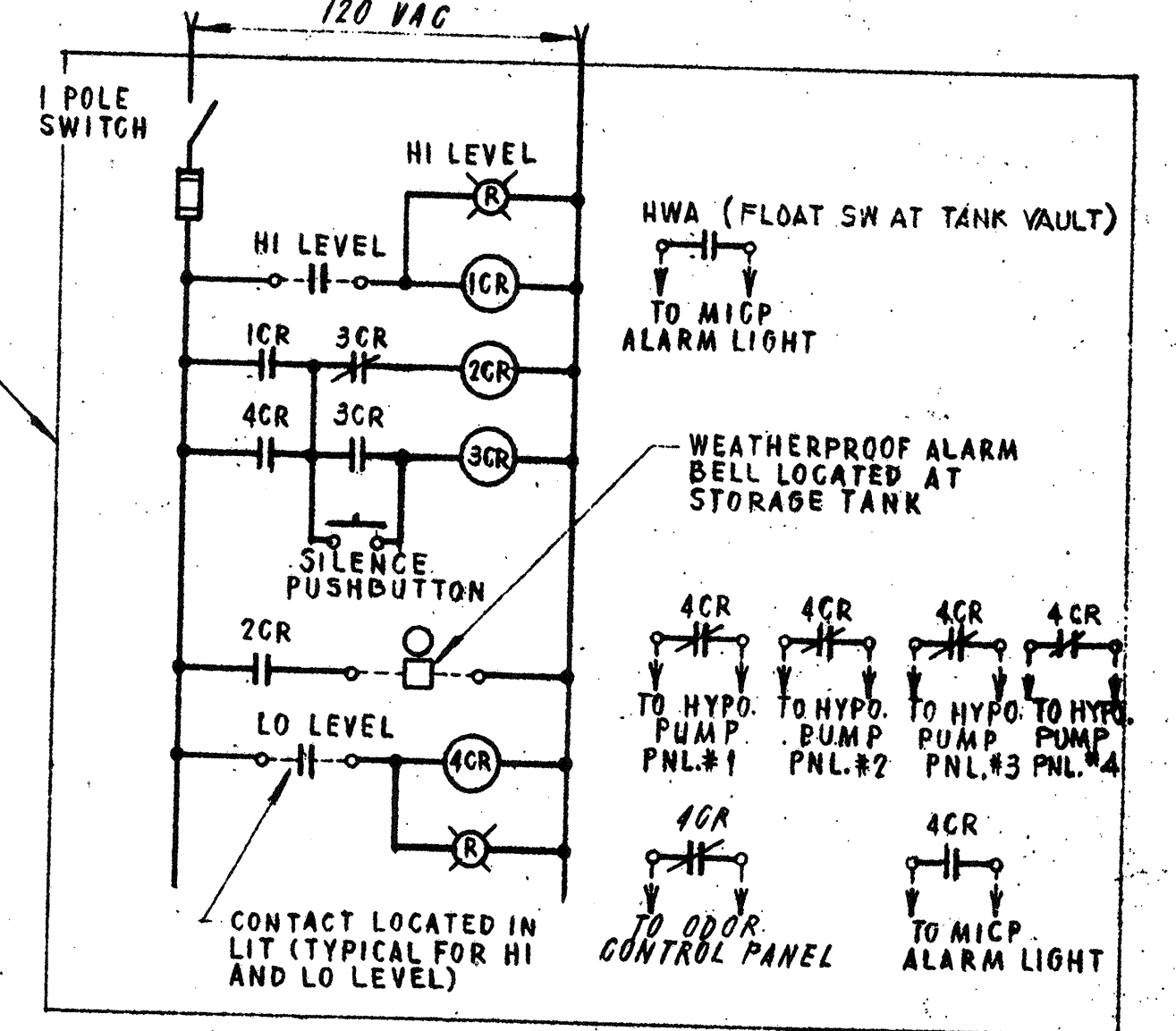
- FOR CONTINUATION AND DUCT BANK SECTION SEE DWG. E-11 & E-12
- FROM ODOR CONTROL SYSTEM PANEL INSTALL 3/4" C. WITH PH PROBE WIRE FURNISHED BY MANUFACTURER.
- FOR CONTINUATION OF CONDUCTORS REFER TO CONDUIT AND WIRE SCHEDULE ON DWG. E-9.
- THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO PROVIDE SUFFICIENT NUMBER OF FLOOR AND WALL PENETRATIONS TO SERVE THE EQUIPMENT. FOR DRILL SEPARATE HOLES FOR CONDUITS PENETRATING THE FLOOR SLAB, THE ENGINEER SHALL BE CONSULTED BEFORE ANY DEVIATION FROM THIS METHOD IS IMPLEMENTED.
- GROUT AROUND ALL CONDUITS PENETRATING WALL AND FLOOR SLABS. CONDUIT SHALL BE PACKED WITH DUCT SEAL AFTER WIRING HAS BEEN INSTALLED.
- 1/4" C. WITH 40#12-4#12 VIA CIATOMICP VIA C14, 20#12 VIA C15 TO MCC-3-22, 23 FOR REF-4 & EF-1 CONTROLS/STATUS, AND 1/2" C. TO MCC-1-23 FOR 1EF-6 CONTROLS/STATUS.
- REFER TO CONDUIT & WIRE SCHEDULE DWG E-9 FOR ALL WIRING INTO PULL BOX.
- ROUTE SHIELDED CABLES TO MICP VIA SIGNAL PULLBOX AND CONDUIT 51.
- ALARM AND STATUS WIRING TO MICP VIA PULLBOX AND CONDUIT C14
- 4#12 FROM SUBMERSIBLE PUMPING STATION TO MICP FOR STATUS AND ALARM.



BLOCK DIAGRAM
SODIUM HYPOCHLORITE FEED PUMPS
TYPICAL FOR PUMPS NO. 1, 2, 3, AND 4
AND FOR BI-SULPHITE PUMPS #1 AND #2



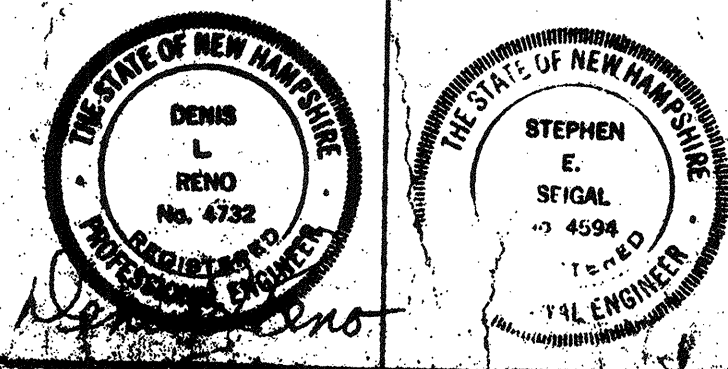
BLOCK DIAGRAM
HYPOCHLORITE STORAGE TANK LEVEL
TYPICAL FOR SODIUM BI-SULPHITE STORAGE TANK LEVEL EXCEPT ONLY TWO BI-SULPHITE (DECHLORINATION) PUMP PANELS



WIRING DIAGRAM
HYPOCHLORITE TANK LEVEL RELAY PANEL
TYPICAL FOR SODIUM BI-SULPHITE TANK LEVEL RELAY PANEL (EXCEPT FOR TWO SODIUM BI-SULPHITE PUMPS INSTEAD OF 4 HYPO PUMPS)

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



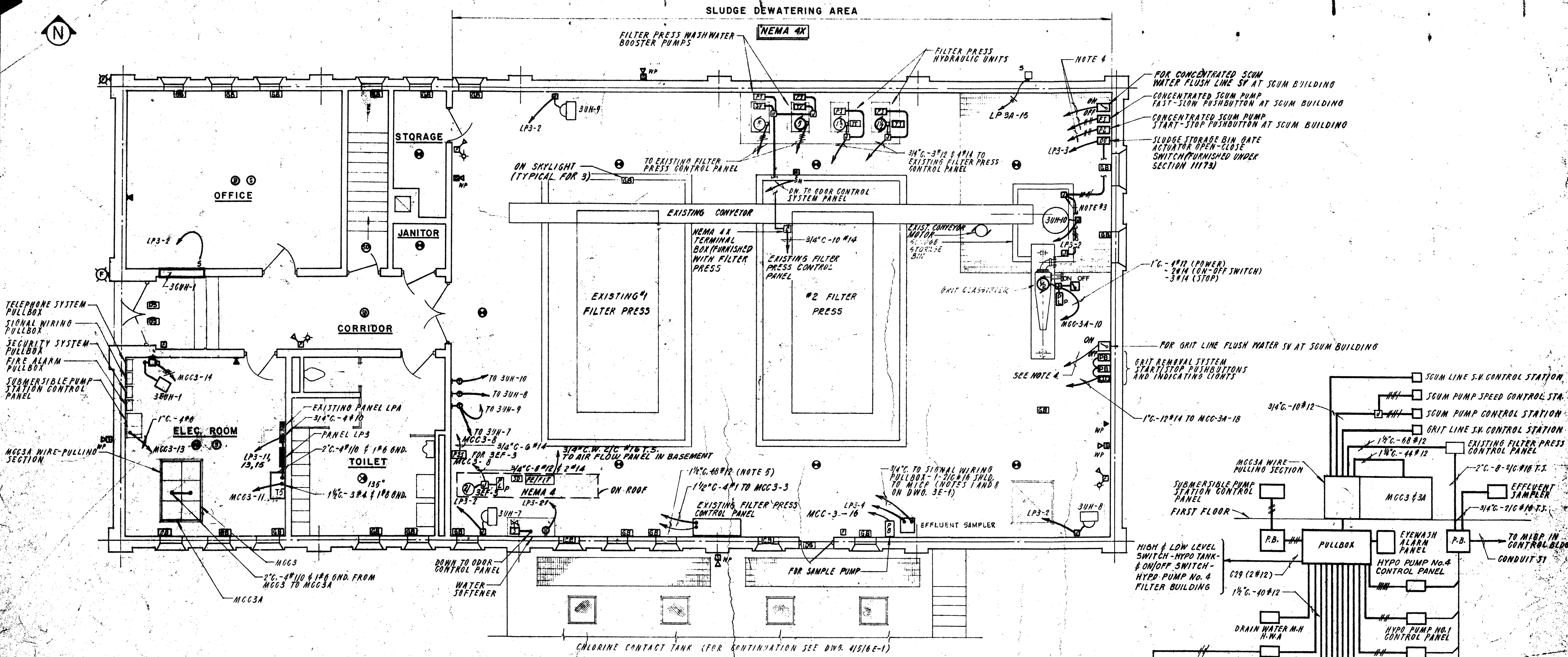
ORIGINAL FULL SIZE DRAWING - 4"
REPRODUCTIONS MAY BE REDUCED SIZE

APPROVED: *Stephen E. Seigel*

DESIGNED BY: R.M.B. CHECKED BY: J.A.Z. SCALE: D.L.R. AS NOTED DATE: SEPT. 1985

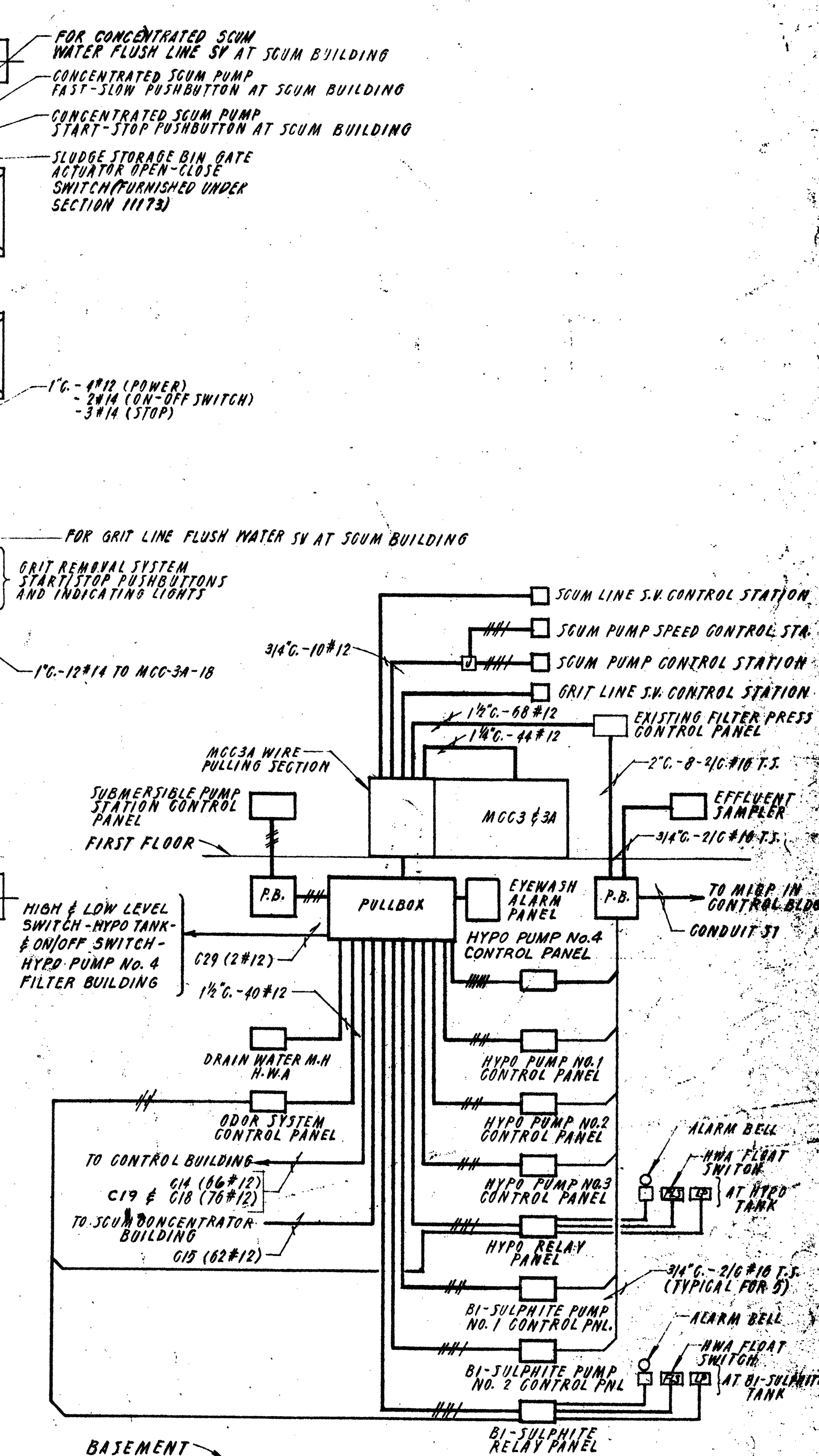
DRAWING NO. **3E-2**
JOB NO. 85-163
CONTRACT NO. 3

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
SLUDGE PROCESSING BUILDING



GROUND FLOOR PLAN
SCALE 1/4" = 1'-0"

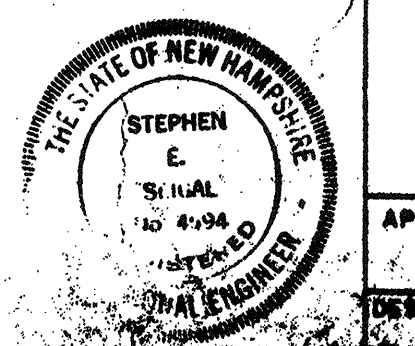
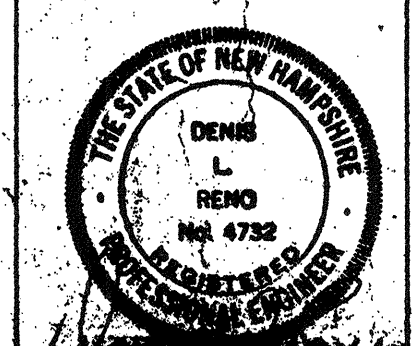
- NOTES**
- FOR CONTINUATION OF CONDUCTORS REFER TO CONDUIT AND WIRE SCHEDULE ON DWG. E-9.
 - WALL-MOUNT WITH BOTTOMS 4'-0" A.F.F.
 - CONNECT TO SLUDGE STORAGE BIN ACTUATOR AS RECOMMENDED BY MANUFACTURER.
 - CONDUITS FROM CONCENTRATED SCUM PUMP, SCUM LINE SV AND GRIT LINE SV CONTROL STATIONS TO SCUM BUILDING VIA MCC3A, CONDUIT G15 AND PULLBOX.
 - CONDUIT WITH 3/4" 1/2" VIA MCC3A TO MFCP (PART OF G14) AND 60# 1/2" VIA MCC3A TO BELT PRESS FEED PUMP PANEL AT CONTROL BUILDING (G19).



BLOCK DIAGRAM
CONTROL/STATUS/INSTRUMENTATION
WIRING
(FROM SLUDGE BUILDING TO SCUM, FILTER AND CONTROL BLDGS)
N.T.S.

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89

WHITMAN & HOWARD, INC.
46 WILLIAM STREET, WELLESLEY, MASS.



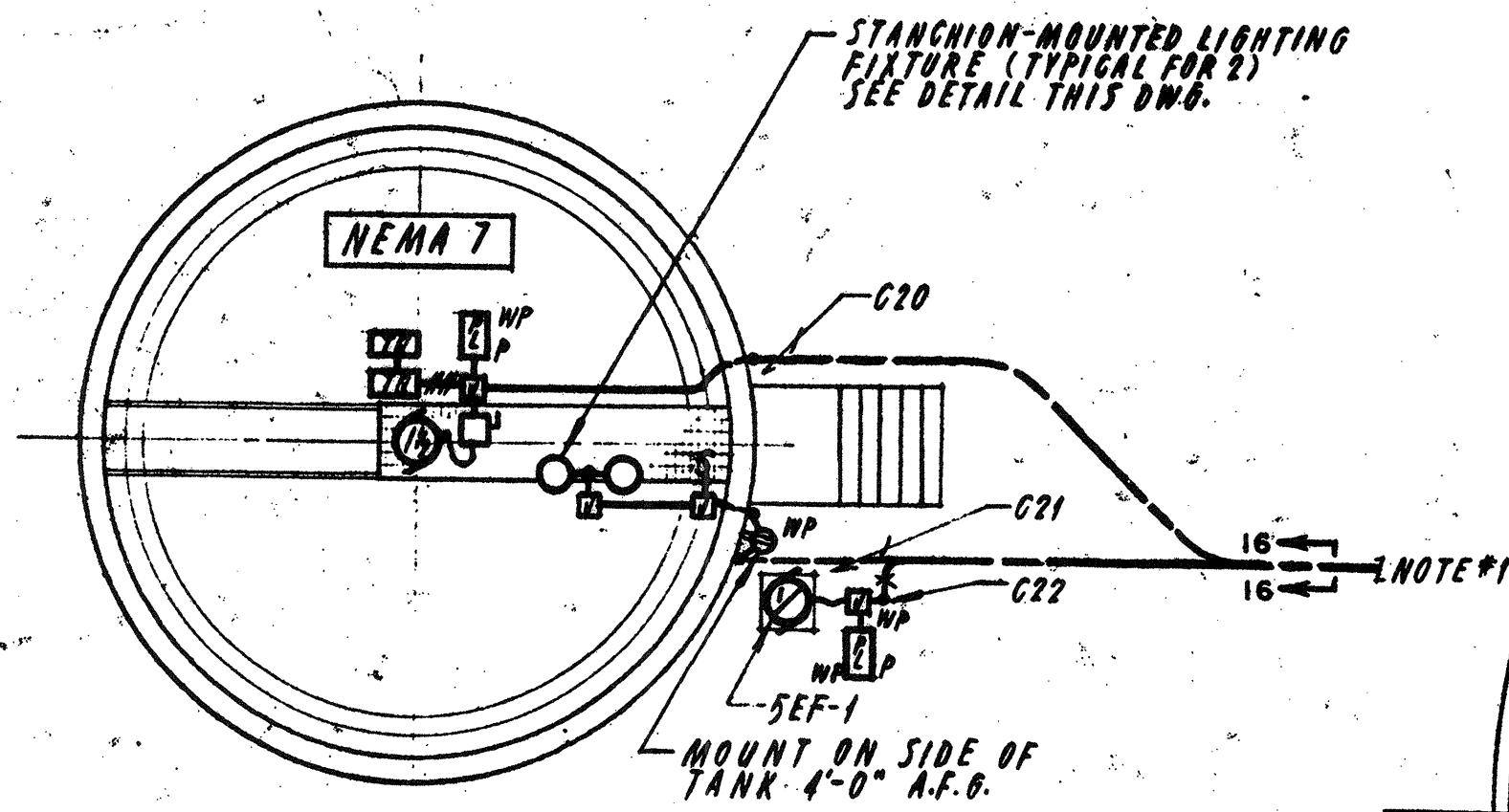
ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED-SIZE

APPROVED: *Stephen E. Seigel*

DESIGNED/DRAWN: [] CHECKED: [] SCALE: [] DATE: []

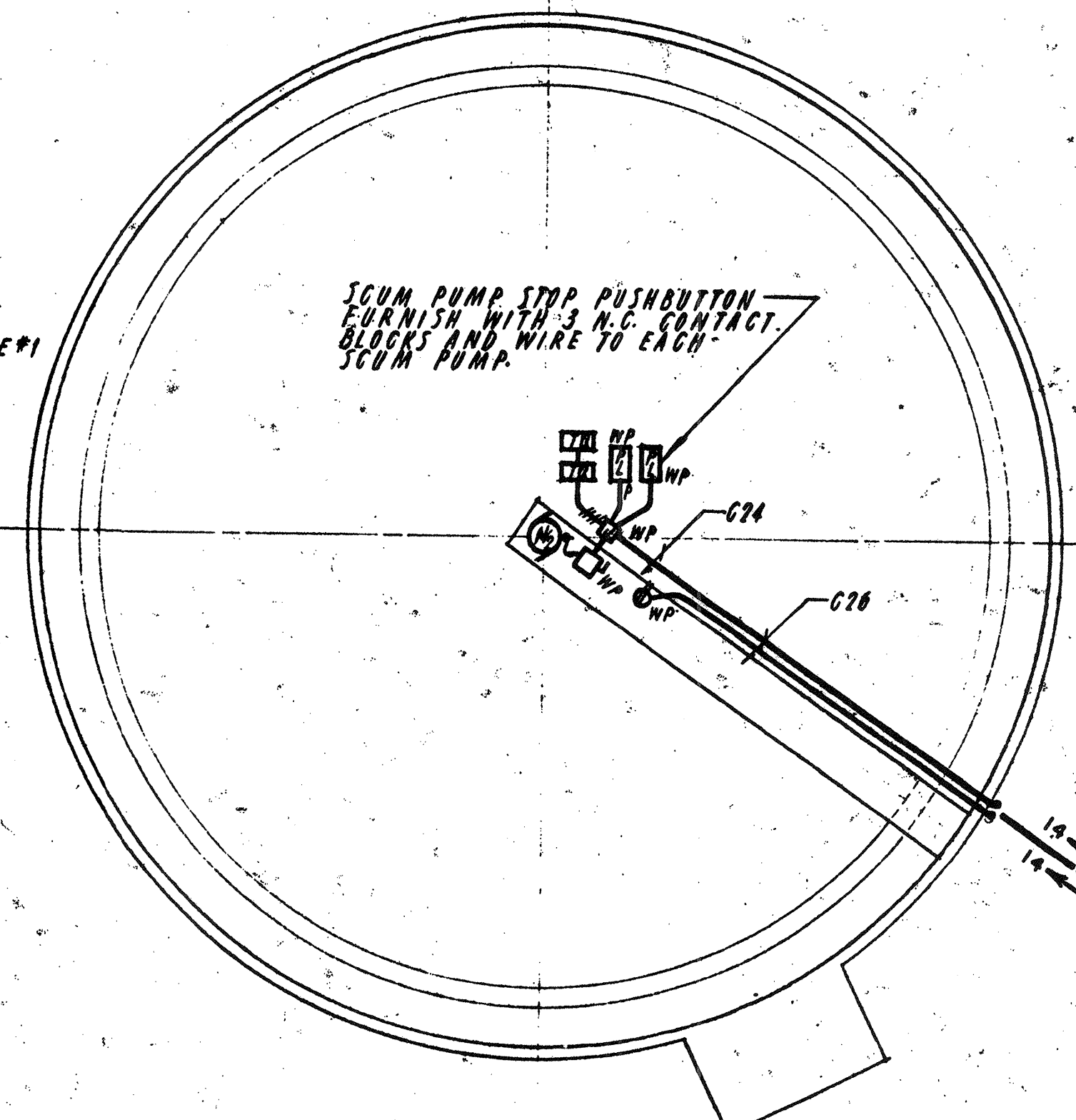
DRAWING NO. **3E-3**
JOB NO. **85-163**
CONTRACT NO. **3**

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
SLUDGE PROCESSING BUILDING



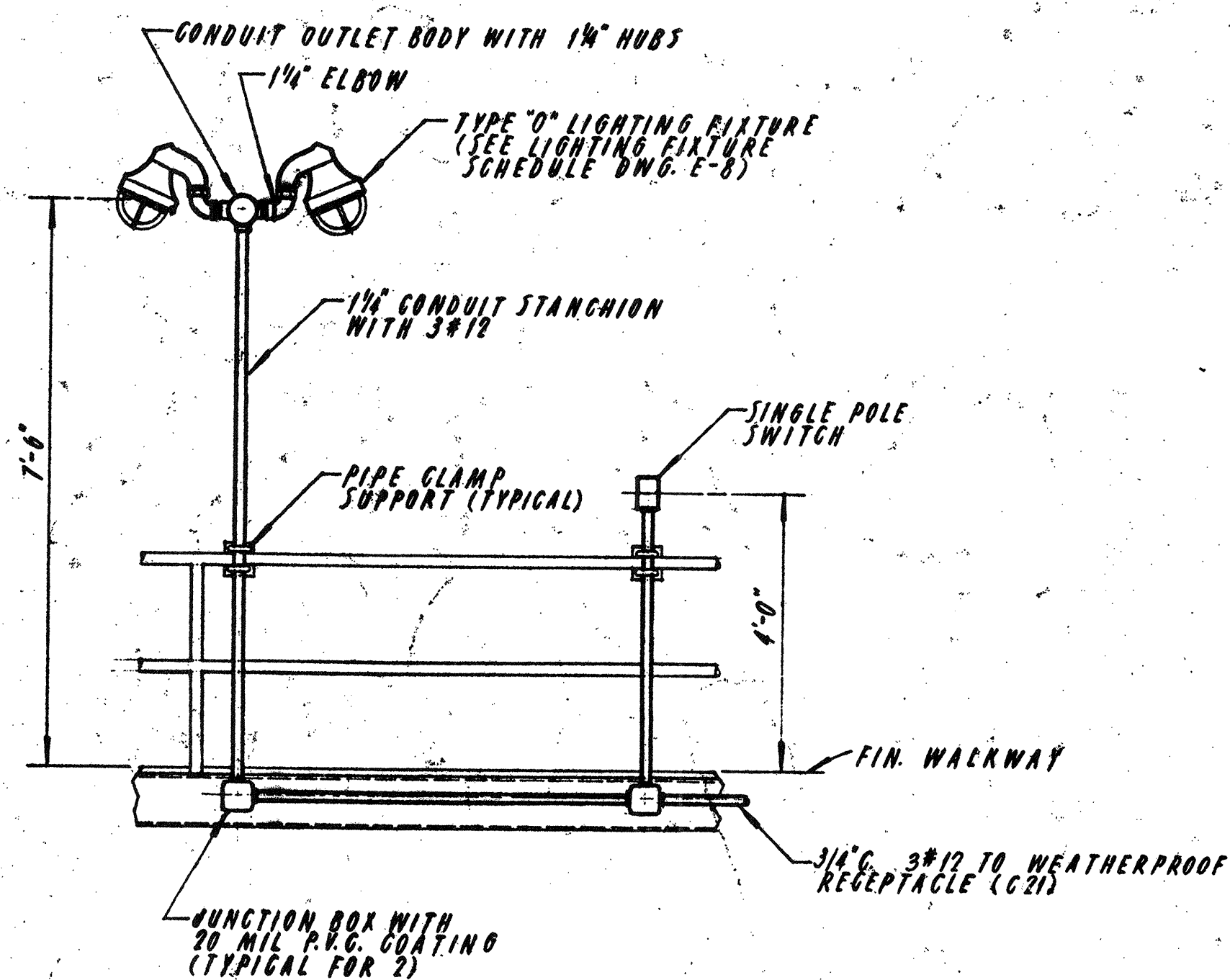
GRAVITY THICKENER

SCALE 1/8" 1'-0"



CLARIFIER

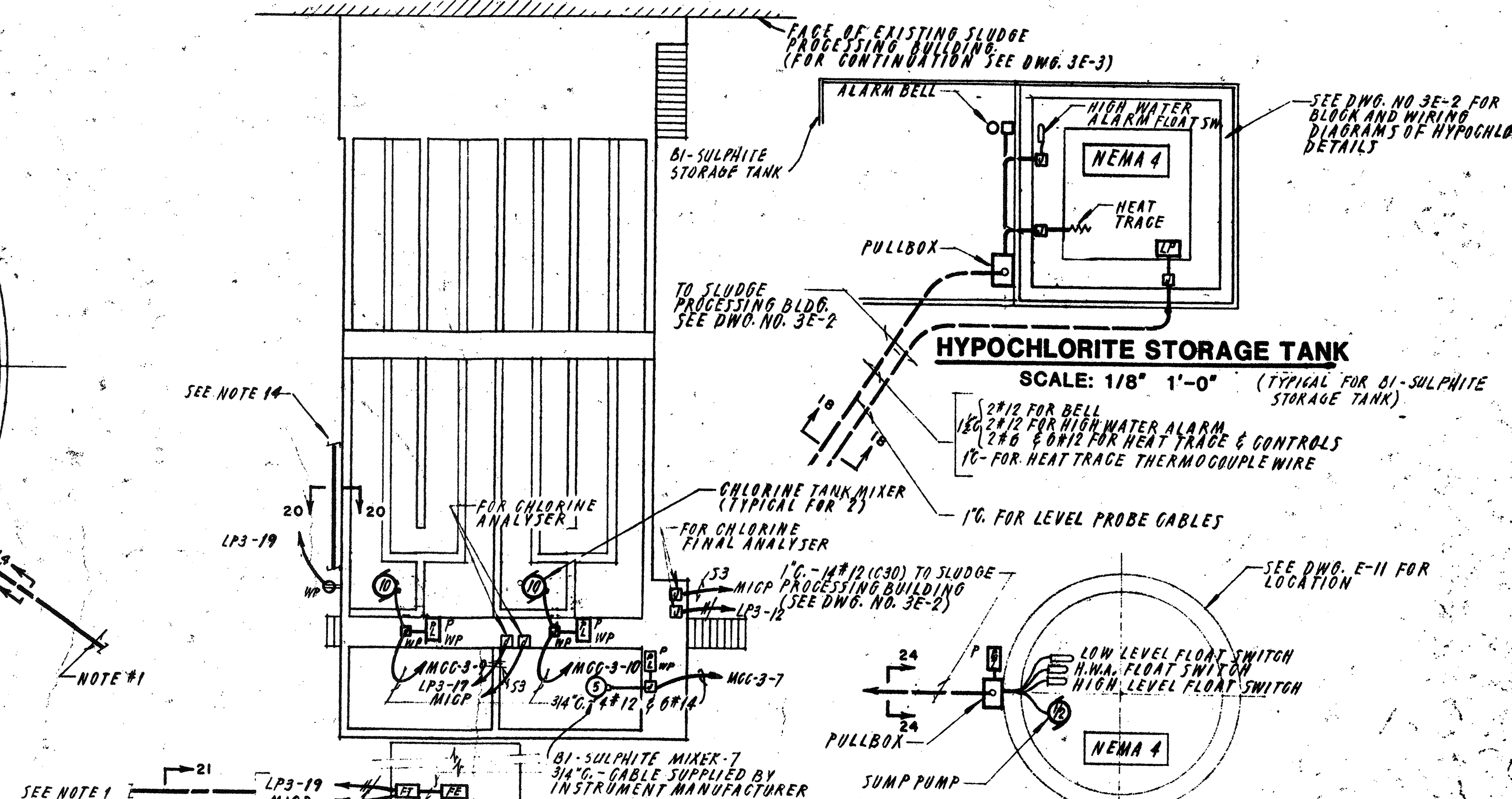
SCALE 3/32" 1'-0"
[TYPICAL FOR 2]



GRAVITY THICKENER WALKWAY DETAIL

NOT TO SCALE

1. FOR CONTINUATION AND DUCTBANK SECTION SEE DWG. E-9

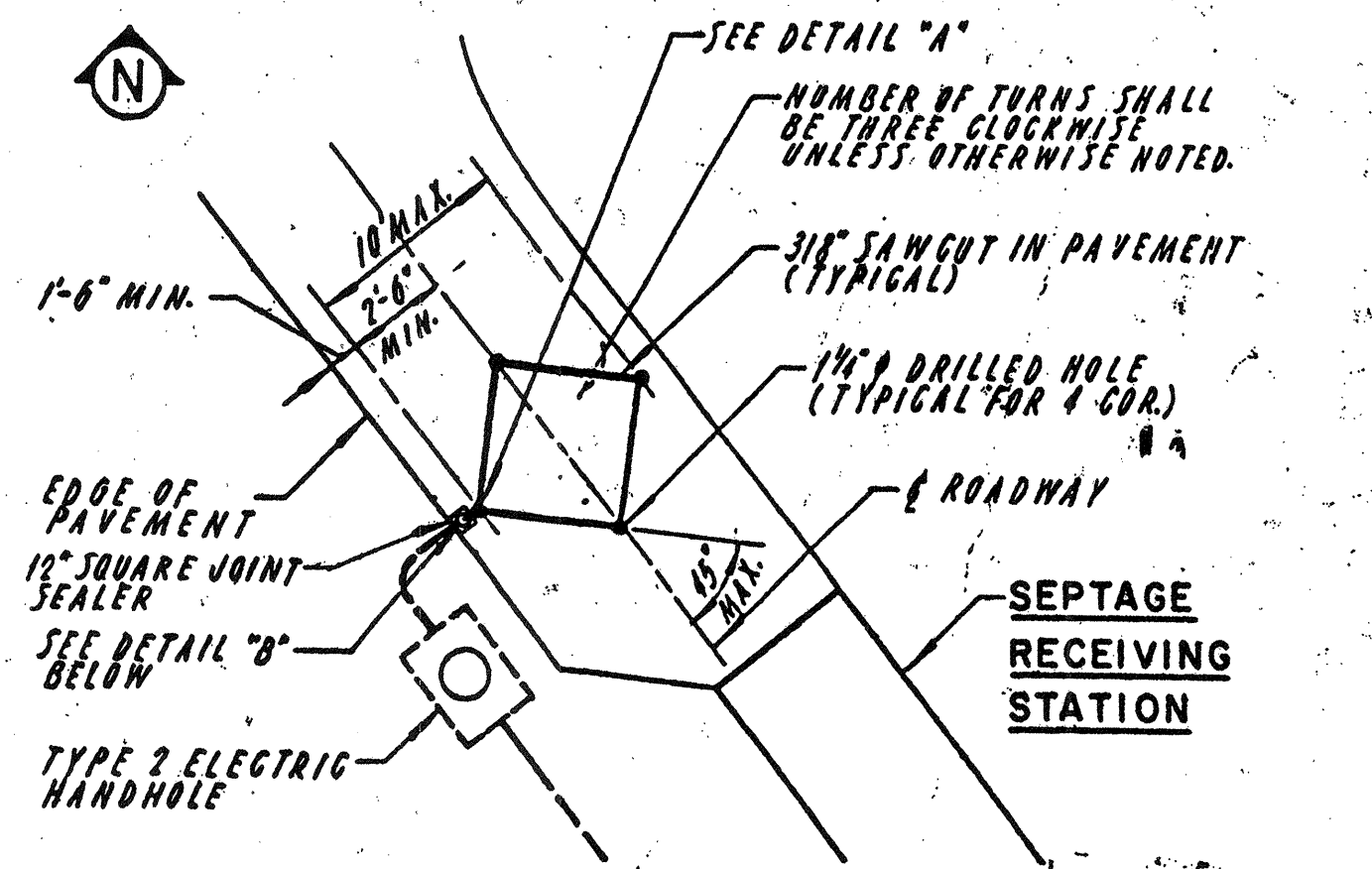


EXISTING CHLORINE CONTACT TANK

SCALE 3/32" 1'-0"

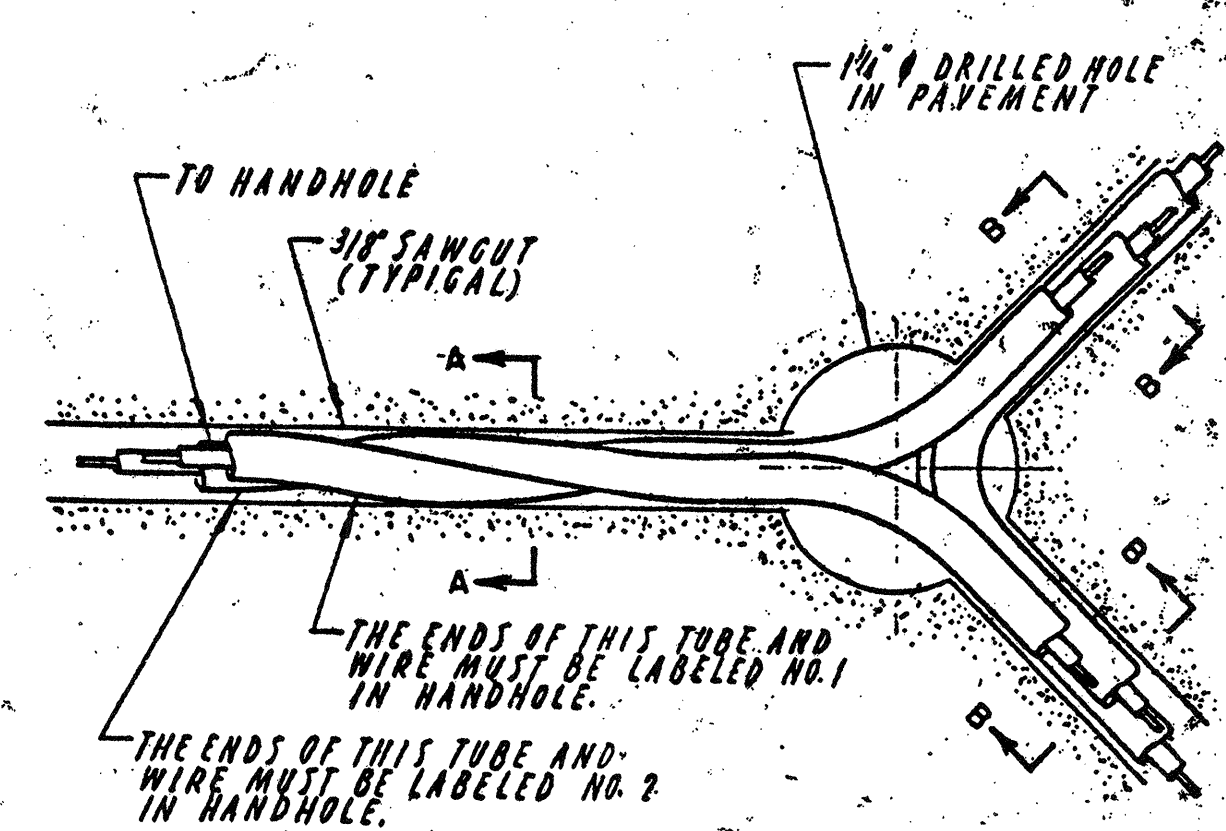
MANHOLE WITH SUMP PUMP

N.T.S.



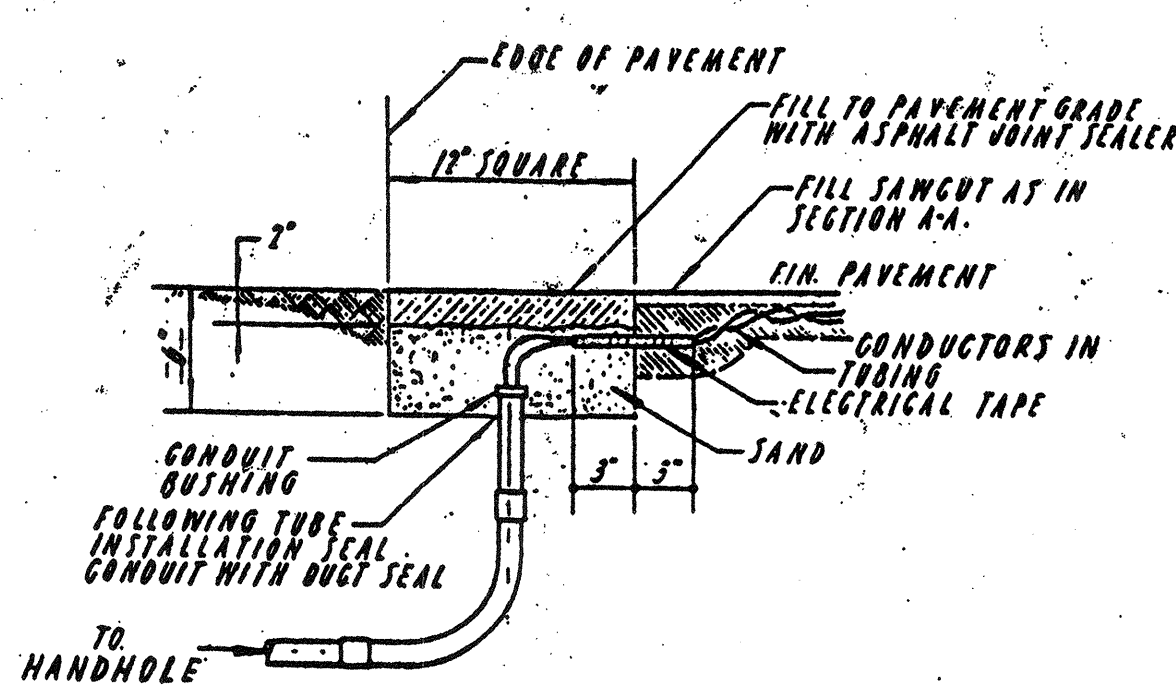
VEHICLE DETECTION SYSTEM LOOP PLAN

SCALE 1" 10"



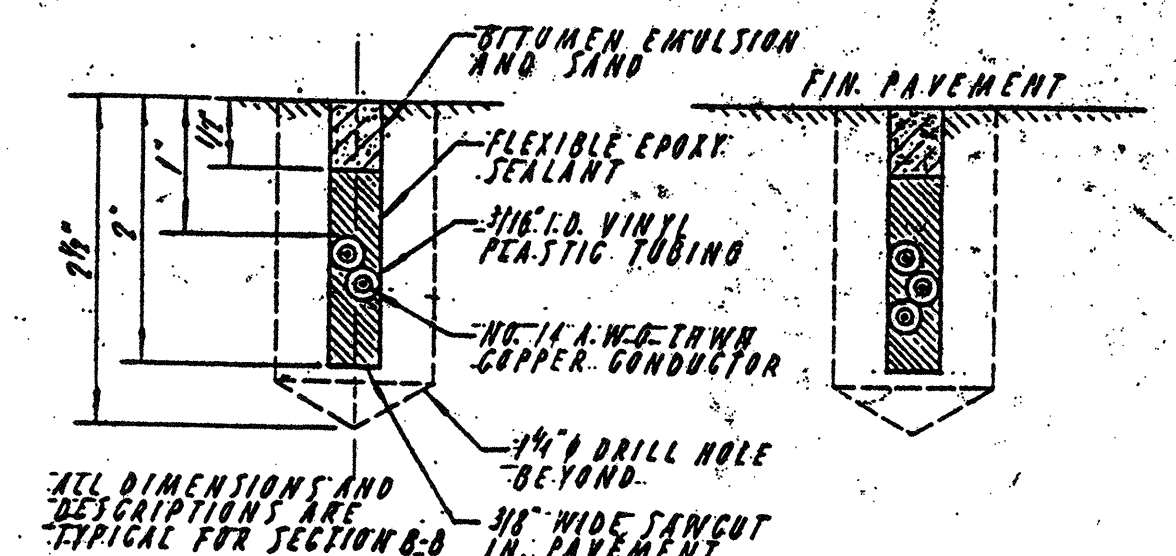
DETAIL A

N.T.S.



DETAIL B

N.T.S.



SECTION A-A

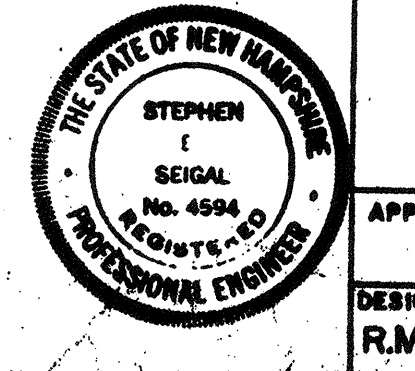
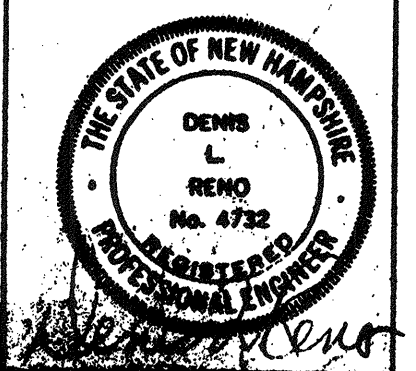
N.T.S.

SECTION B-B

N.T.S.

NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	Drawing Revised	9/89
REVISIONS		

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.

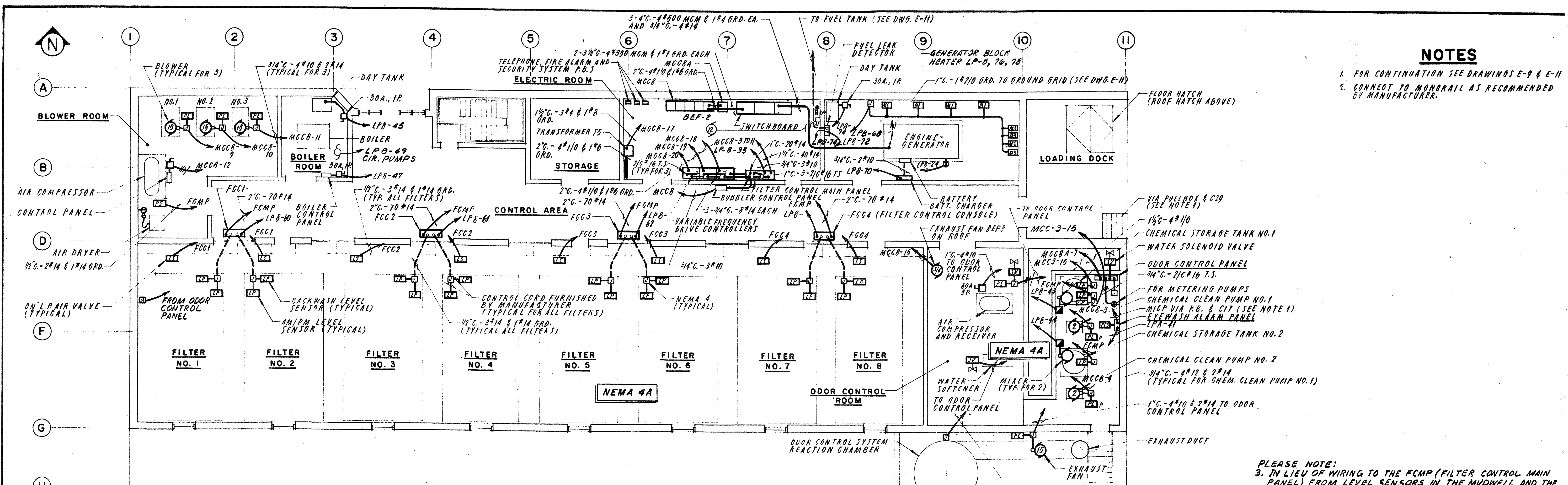


ORIGINAL FULL SIZE DRAWING = 4"
REPRODUCTIONS MAY BE REDUCED SIZE

DESIGNED	DRAWN	CHECKED	SCALE	DATE
R.M.B.	E.C.C.	D.L.R.	AS NOTED	SEPT. 1985

DRAWING NO.	4/5/6E-1
JOB NO.	85-163
CONTRACT NO.	3
SHEET 101 OF 106 SHEETS	

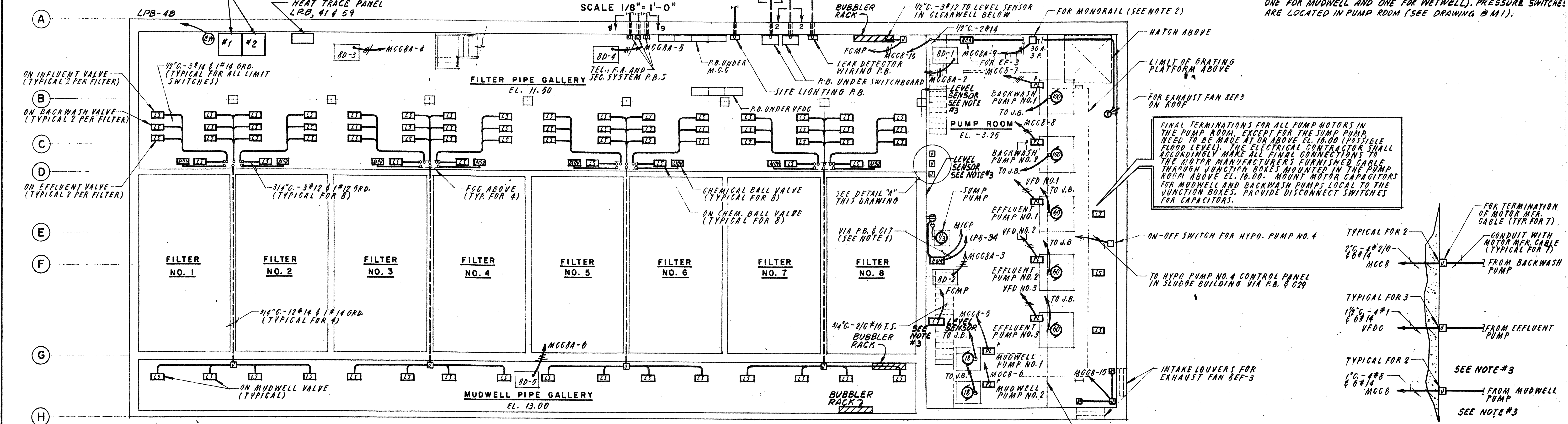
WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N.H.
MISCELLANEOUS STRUCTURES



NOTES
 1. FOR CONTINUATION SEE DRAWINGS E-9 & E-11
 2. CONNECT TO MONORAIL AS RECOMMENDED BY MANUFACTURER.

GROUND FLOOR PLAN

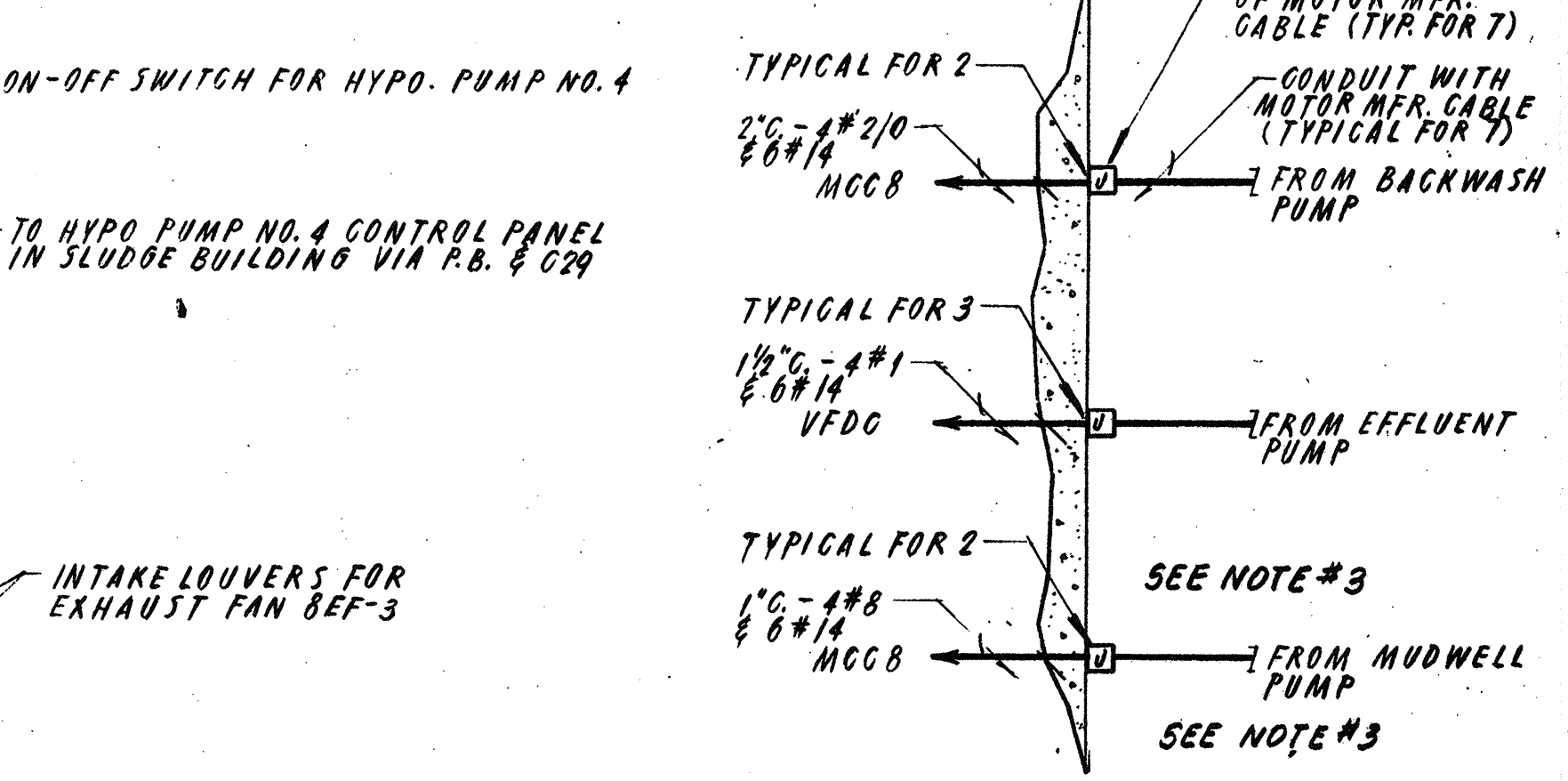
SCALE 1/8" = 1'-0"



BASEMENT FLOOR PLAN

SCALE 1/8" = 1'-0"

PLEASE NOTE:
 3. IN LIEU OF WIRING TO THE FCMP (FILTER CONTROL MAIN PANEL) FROM LEVEL SENSORS IN THE MUDWELL AND THE CLEARWELL, PROVIDE WIRING 3/4" C 1/4" #12 TO THE FCMP FROM EACH OF 3 PRESSURE SWITCHES (ONE FOR CLEARWELL, ONE FOR MUDWELL AND ONE FOR WETWELL). PRESSURE SWITCHES ARE LOCATED IN PUMP ROOM (SEE DRAWING B M1).

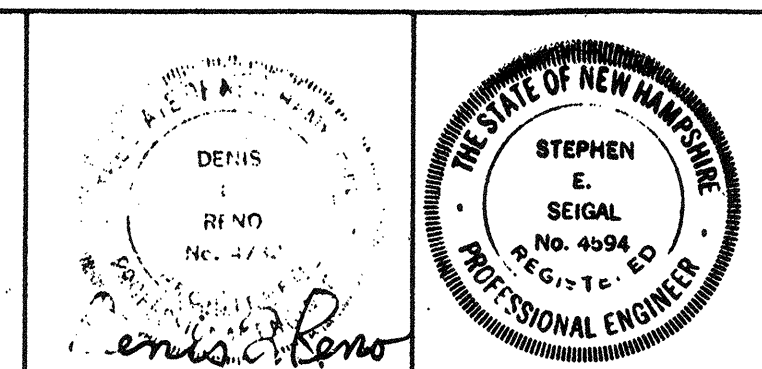


DETAIL "A"

N.T.S.

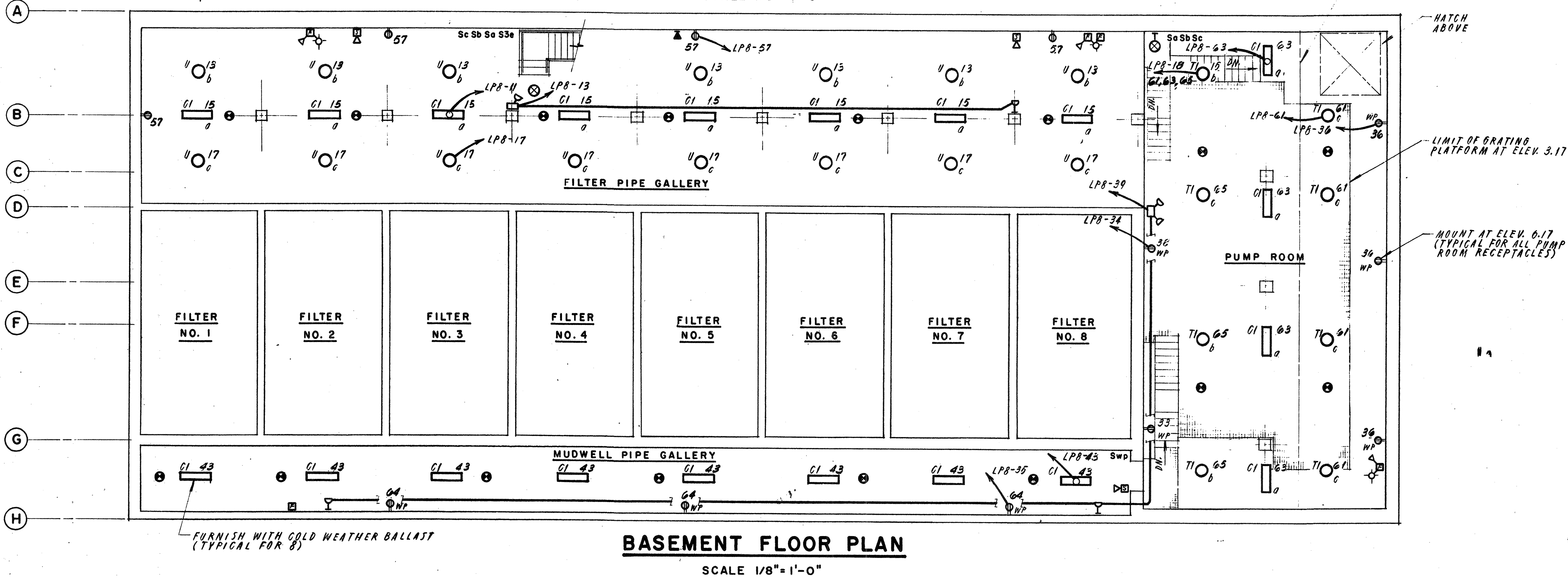
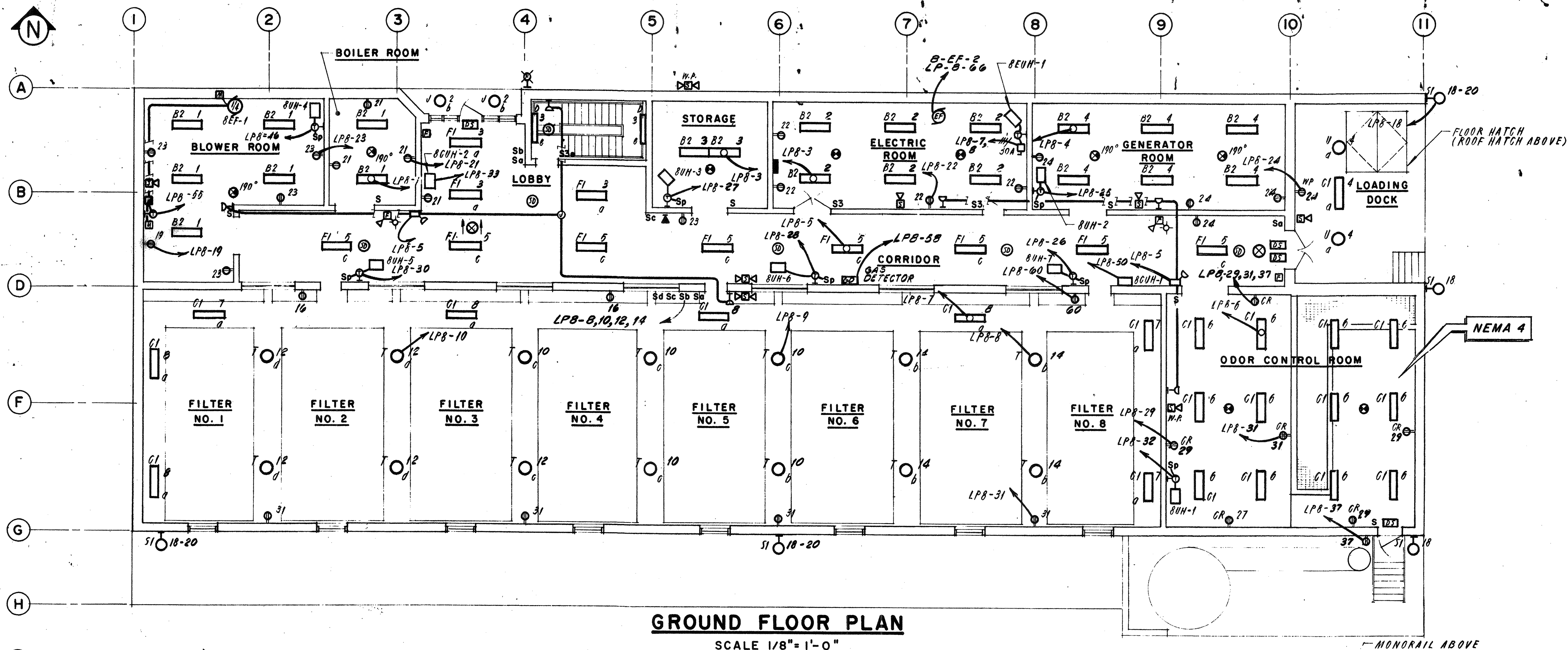
NO.	DESCRIPTION	DATE
2	Revised To Record Plan	9/93
1	DRAWING ADDED	SEPT. 89

WHITMAN & HOWARD, INC.
 45 WILLIAM STREET, WELLESLEY, MASS.



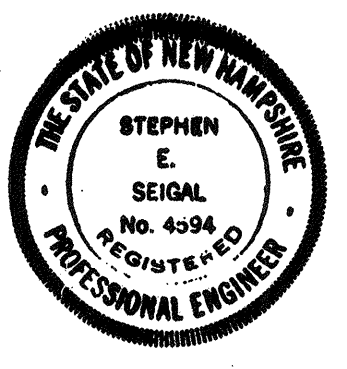
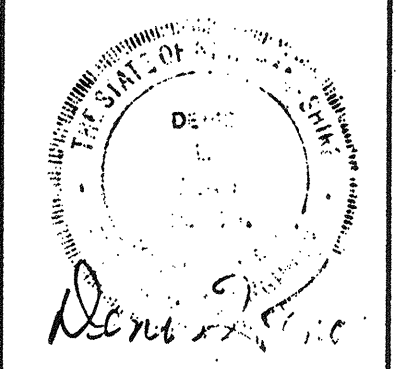
DRAWING NO. 8E-1			
JOB NO. 85-163			
CONTRACT NO. 3			
DESIGNED/DRAWN	CHECKED	SCALE	DATE
R.K.C./E.C.C.	D.L.R.	AS NOTED	SEPT., 1989

WASTEWATER TREATMENT FACILITY
PORTSMOUTH, N. H.
FILTER BUILDING POWER PLAN



NO.	DESCRIPTION	DATE
1	Revised To Record Plan	9/93
2	Drawing Added	9/87
REVISIONS		

WHITMAN & HOWARD, INC.
45 WILLIAM STREET, WELLESLEY, MASS.



DESIGNED/DRAWN				CHECKED		SCALE		DATE	
R.K.C.				E.C.C.		D.L.R.		AS NOTED	
APPROVED								SEPT., 1989	

DRAWING NO.	8E-2
JOB NO.	85-163
CONTRACT NO.	3
WASTEWATER TREATMENT FACILITY	
PORTSMOUTH, N.H.	
FILTER BUILDING LIGHTING PLANS	

NOTES:

- ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE. REFILL WITH BEDDING MATERIAL. SEE ALSO NOTE 7.
- BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33, STONE SIZE NO. 67.

100% PASSING	1 INCH SCREEN
90-100% PASSING	3/4 INCH SCREEN
20-55% PASSING	3/8 INCH SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE

WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, GRADED SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1 1/2 INCH SHALL BE USED

- SAND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER, SO GRADED THAT 90-100% PASSES A 1/2 INCH SIEVE AND NOT MORE THAN 15% WILL PASS A # 200 SIEVE. BLANKET MAY BE OMITTED FOR CAST-IRON, DUCTILE IRON AND REINFORCED CONCRETE PIPE PROVIDED HOWEVER, THAT NO STONE LARGER THAN 2" IS IN CONTACT WITH THE PIPE.
- SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALK-WAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX IN. IN LARGEST DIMENSION, OR ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.

IN CROSS-COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLY RECONSTRUCTION, WHEN NECESSARY WILL BE PRESERVED.

- BASE COURSE, IF ORDERED BY THE ENGINEER, SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE STATE OF NEW HAMPSHIRE, DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS.
- WOOD SHEETING, IF REQUIRED, WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.

- W = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES; FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.

- FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUND TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.

- CONCRETE FOR ENCASEMENT SHALL CONFORM TO THE REQUIREMENTS FOR CLASS A (3000#) CONCRETE OF THE NEW HAMPSHIRE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS STANDARD SPECIFICATIONS AS FOLLOWS:

CEMENT: 6.0 BAGS PER CUBIC YARD
 WATER: 5.75 GALLONS PER BAG CEMENT
 MAXIMUM SIZE OF AGGREGATE: 1 INCH

NOTES CONTD:

- NEW HAMPSHIRE WATER SUPPLY AND POLLUTION CONTROL COMMISSION DESIGN STANDARDS REQUIRE 10 FT. SEPARATION. HOWEVER, SHOULD CONSTRUCTION OPERATIONS REVEAL OR EXPOSE A WATERLINE (MAIN OR SERVICE) RUNNING APPROXIMATELY PARALLEL AND LESS THAN 10 FT. HORIZONTALLY FROM THE PROPOSED SEWER INSTALLATION AND WHERE IT IS NOT PRACTICABLE TO RELOCATE THE SEWER, THE FOLLOWING METHODS OF PROTECTION MUST BE EMPLOYED.

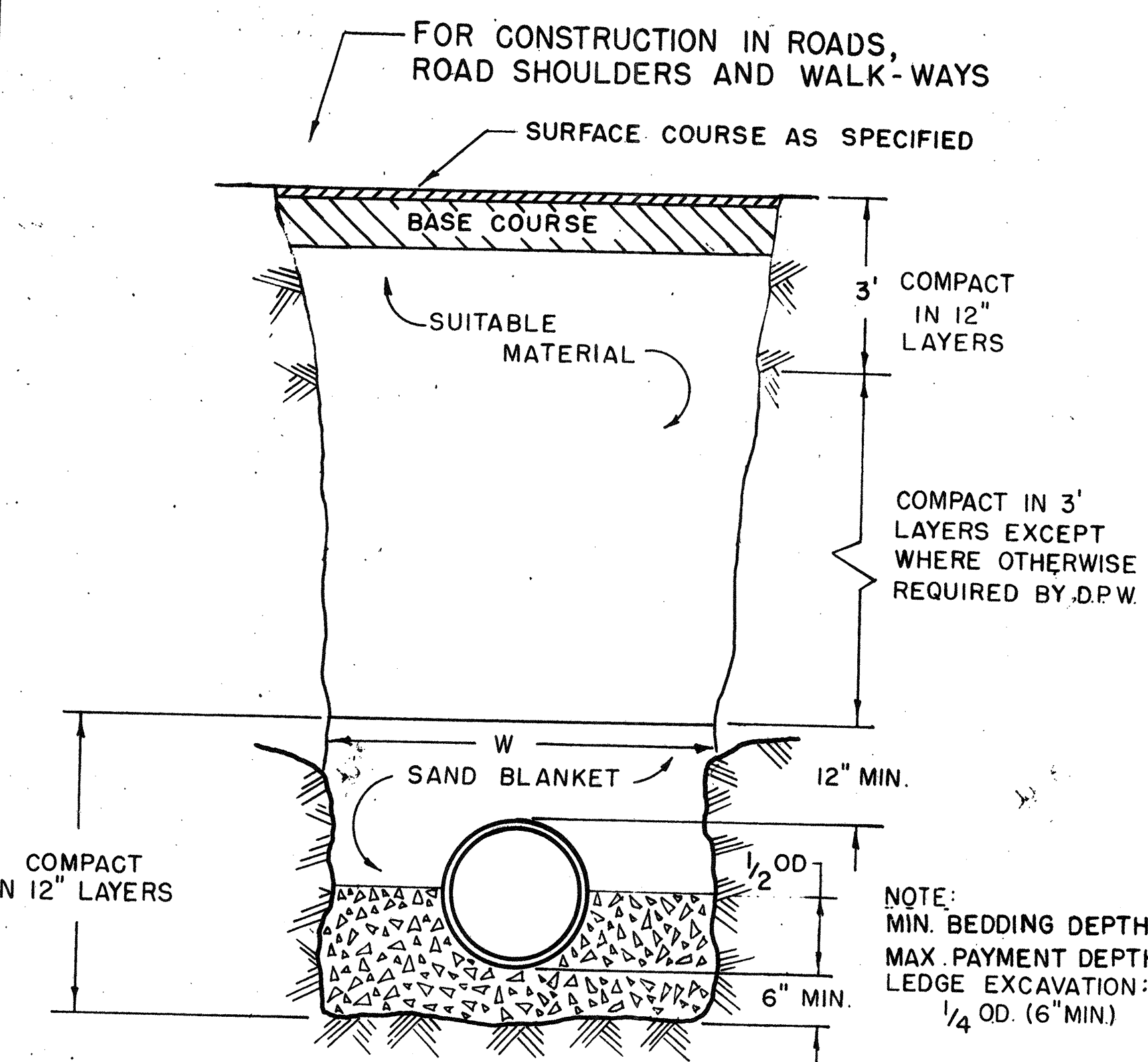
A. IF THE WATERLINE CAN BE KEPT AT LEAST 18 IN. ABOVE AND 3 FT. TO ONE SIDE OF THE SEWER, AS SHOWN AND SUPPORTED ON A BENCH OF ORIGINAL SOIL, NO OTHER PROTECTION IS REQUIRED.

B. IF THE ABOVE SEPARATION CANNOT BE ACHIEVED, THE SEWER SHALL BE ENCASED IN CONCRETE, AS SHOWN ON THESE DRAWINGS, OR ELSE CAST-IRON OR DUCTILE IRON PIPE OF THE SAME SIZE SHALL BE UTILIZED. APPROPRIATE MANUFACTURED FITTINGS SHALL BE EMPLOYED TO ADAPT THE IRON PIPE TO THE CONTRACT SEWER PIPE.

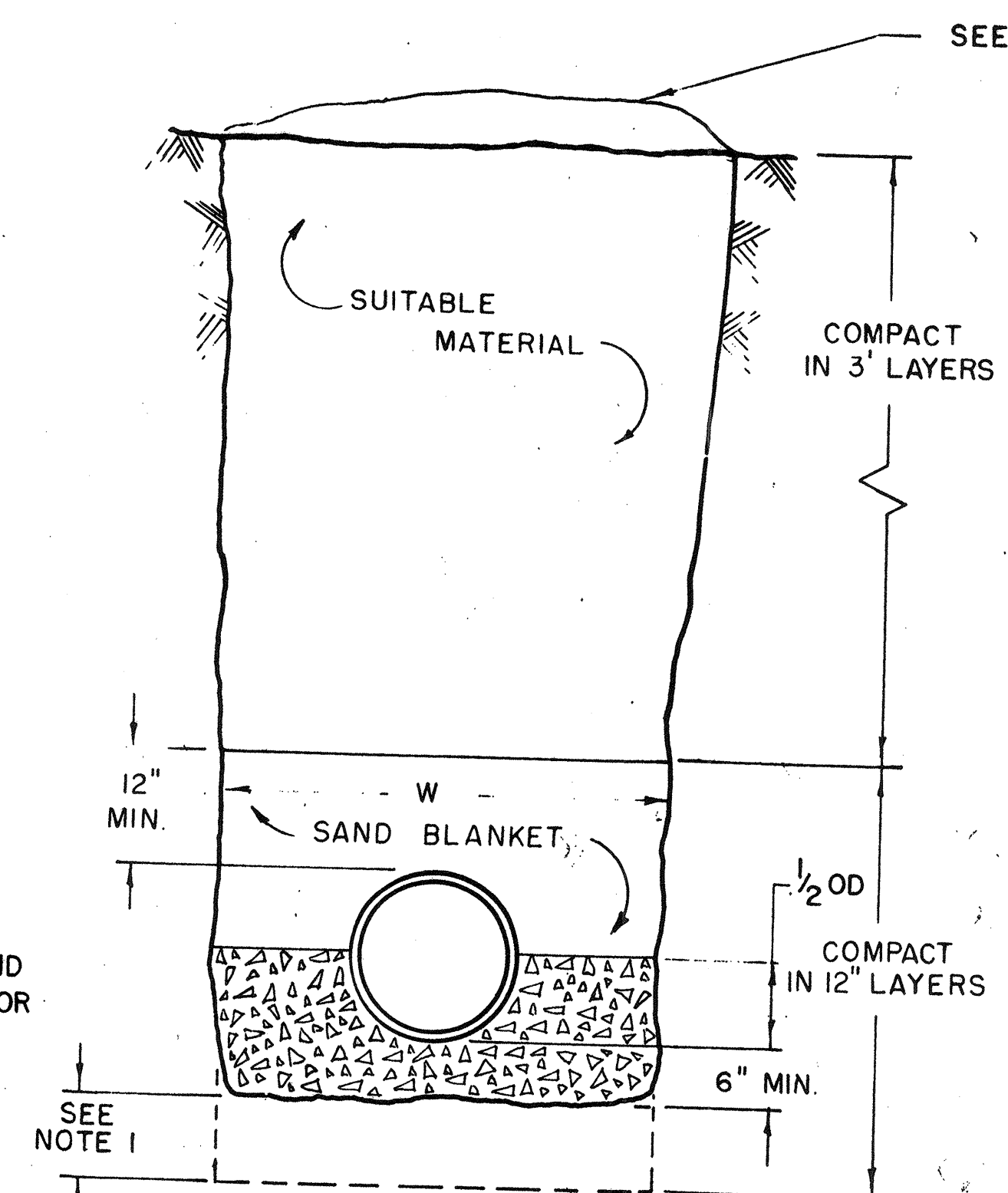
SHOULD THE WATERLINE CROSS-OVER THE NEW SEWER WITH LESS THAN 18 IN. SEPARATION, THE SEWER FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE WATERLINE SHALL BE ENCASED IN CONCRETE AS SHOWN, OR ELSE CAST IRON OR DUCTILE IRON PIPE SHALL BE UTILIZED. APPROPRIATE MANUFACTURED FITTINGS SHALL BE EMPLOYED TO ADAPT THE IRON PIPE TO THE CONTRACT SEWER PIPE. AS AN ALTERNATIVE, THE WATERLINE MAY BE RAISED, IF FEASIBLE, TO ACHIEVE THE REQUIRED VERTICAL SEPARATION.

SHOULD THE WATERLINE IN EITHER SITUATION BE AT OR BELOW THE SEWER ELEVATION, THE WATERLINE OR THE SEWER MUST BE RELOCATED TO ACHIEVE 10 FT. HORIZONTAL SEPARATION OR THE WATERLINE RAISED TO ACHIEVE THE REQUIRED VERTICAL SEPARATION.

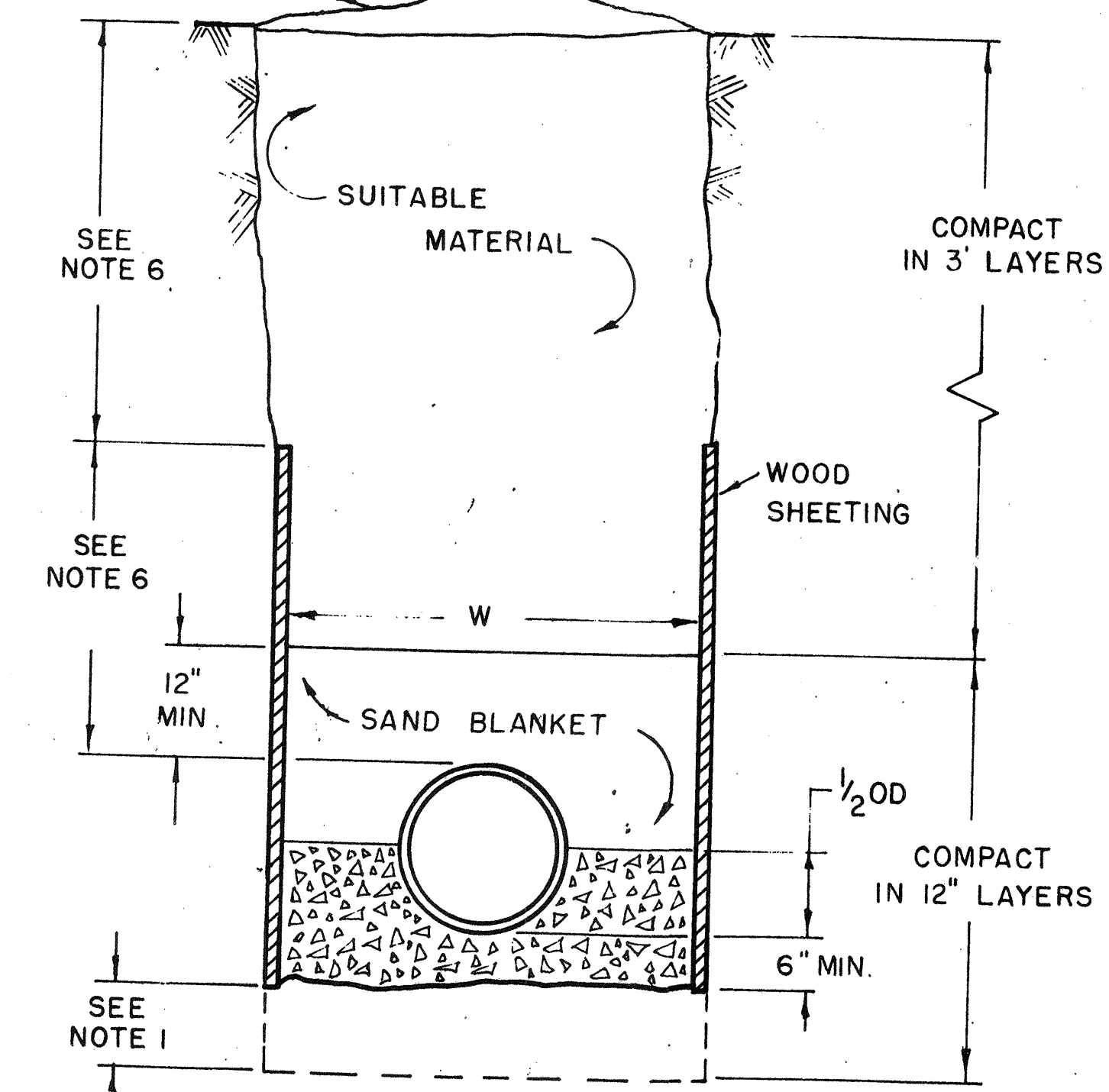
- IF FULL ENCASEMENT IS UTILIZED, DEPTH OF CONCRETE BELOW PIPE SHALL BE 1/4 I.D. (4" MIN.) BLOCK SUPPORT SHALL BE SOLID CONCRETE BLOCKS



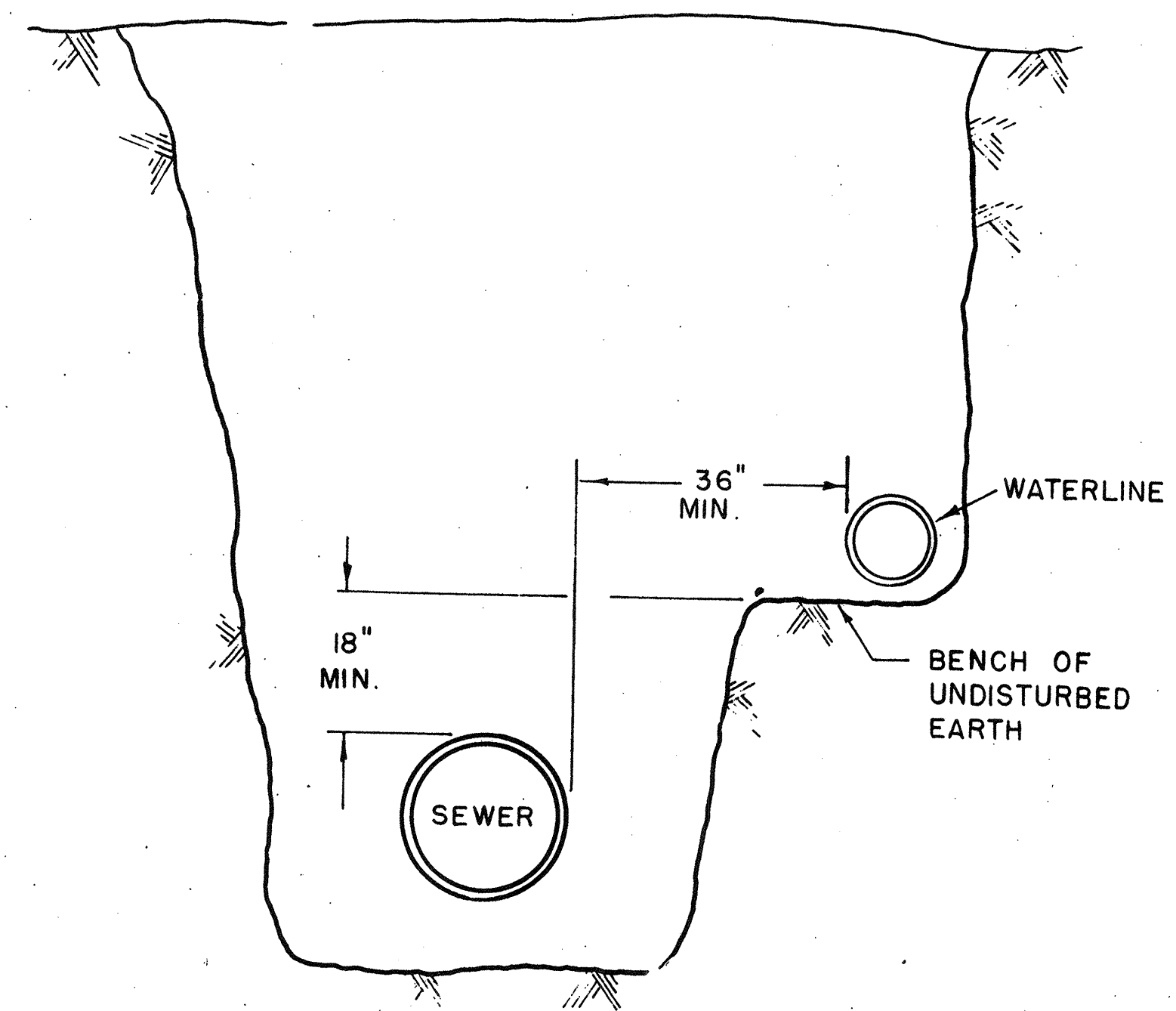
LEDGE CONSTRUCTION



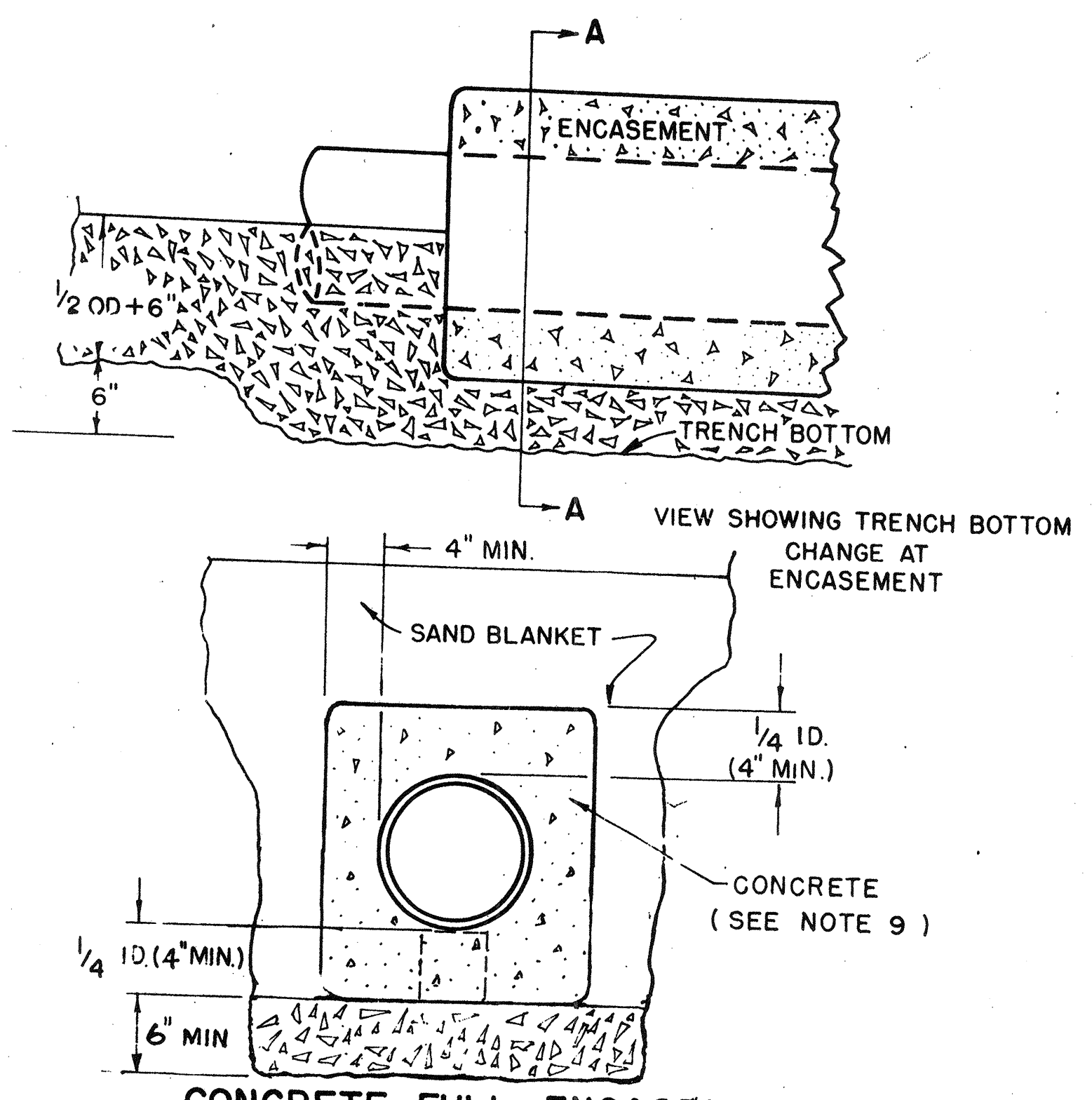
EARTH CONSTRUCTION



EARTH CONSTRUCTION WITH SHEETING



WATER AND SEWER IN SAME TRENCH
 (SPECIAL CONDITIONS SEE NOTE 10)



CONCRETE FULL ENCASEMENT

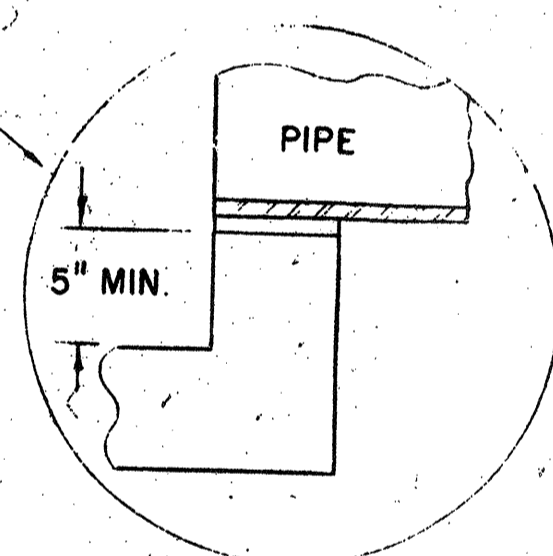
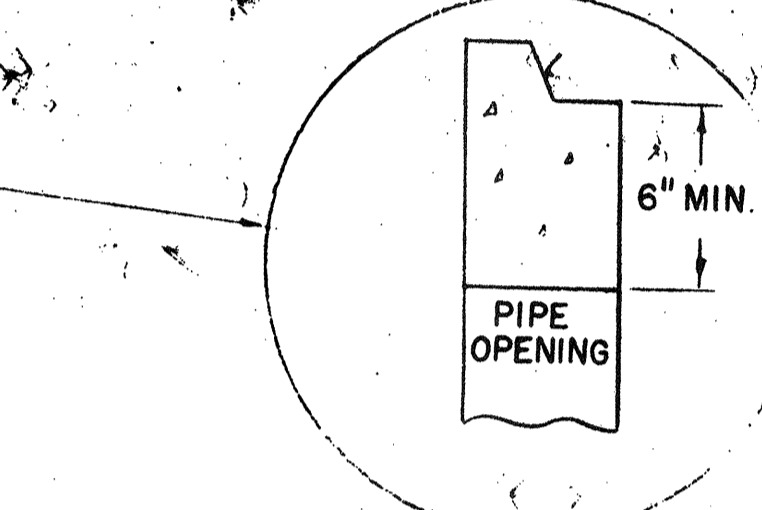
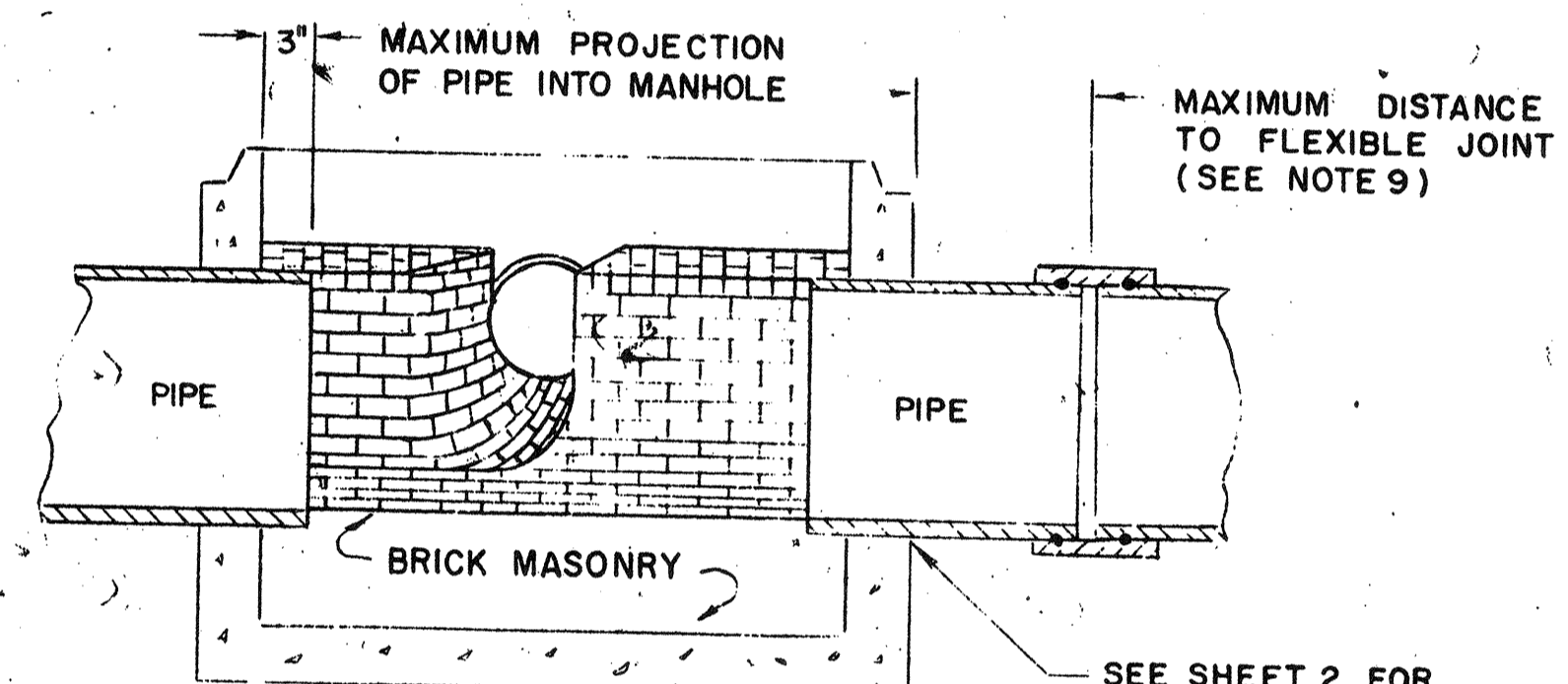
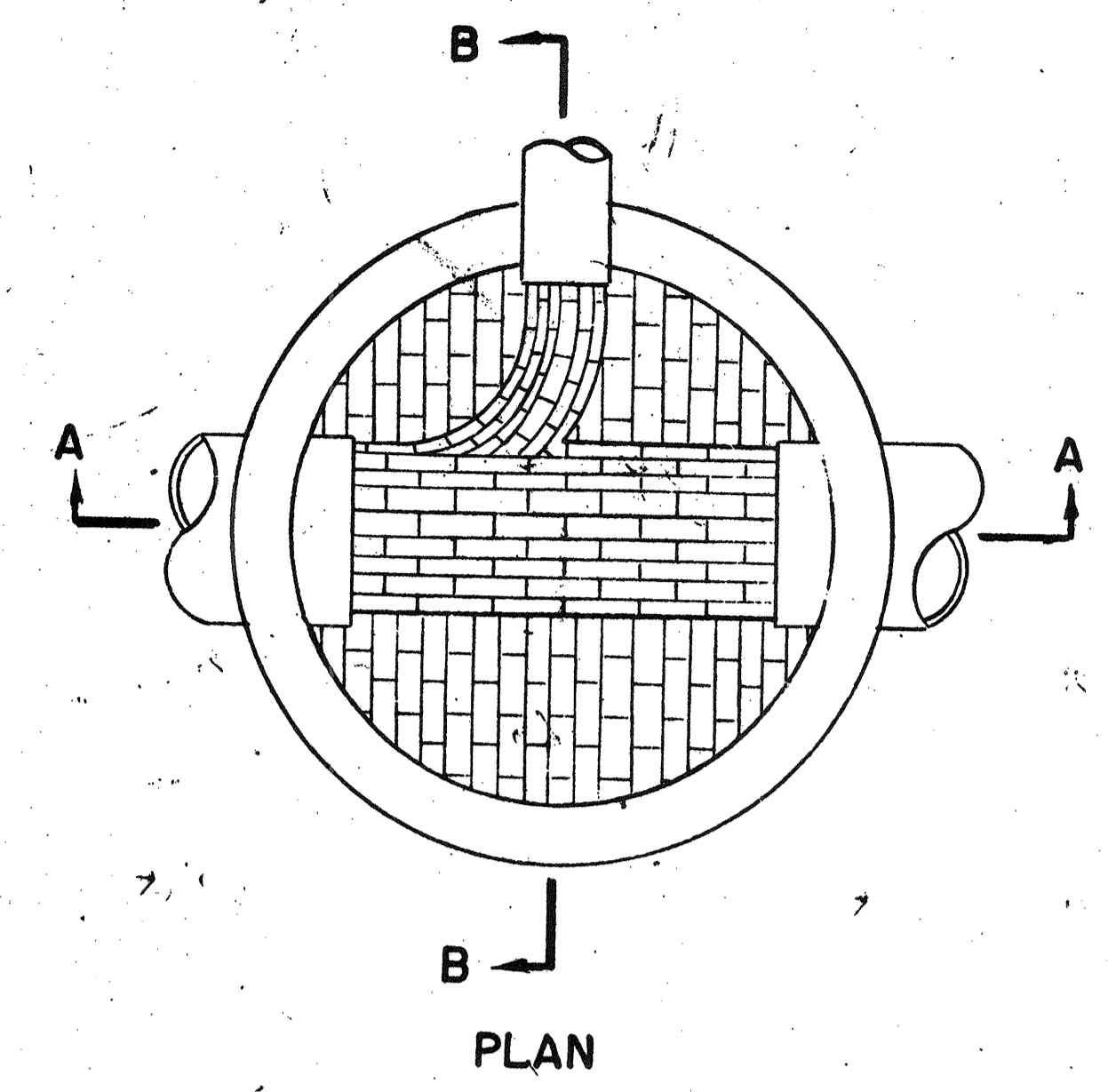
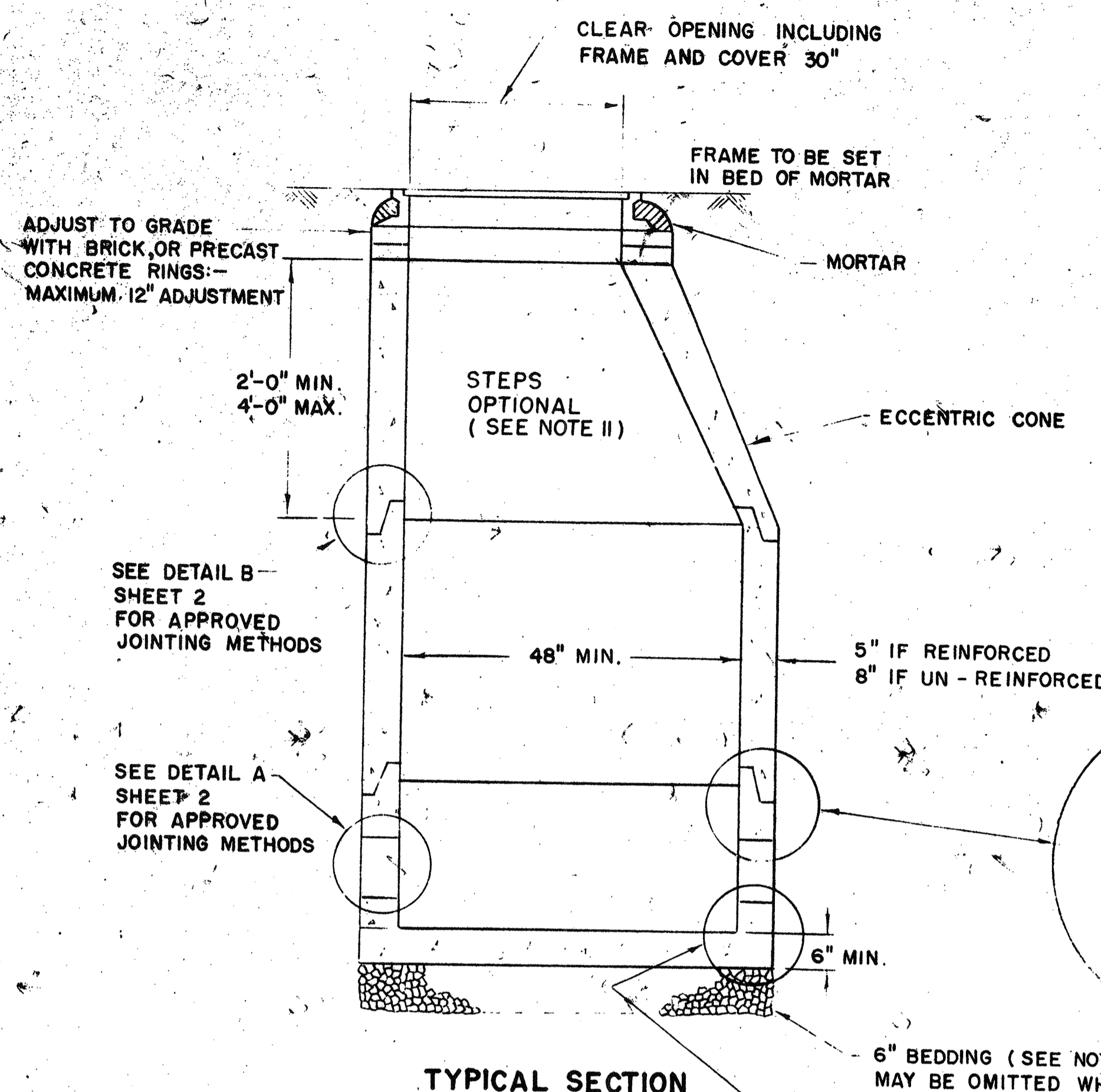
(SEE NOTE 11)
 SECTION A-A

REVISIONS	
DATE	CHANGE
AUG 74	SAND BLANKET SPECIFICATION; MINOR CHANGES IN DESCRIPTION
DEC 74	REVISED LAST PARAGRAPH IN NOTE 10B
JAN 76	ADDED NOTE 11
DEC 77	FULL ENCASEMENT SHOWN REPLACING ARCH.

NEW HAMPSHIRE
 WATER SUPPLY & POLLUTION CONTROL
 COMMISSION

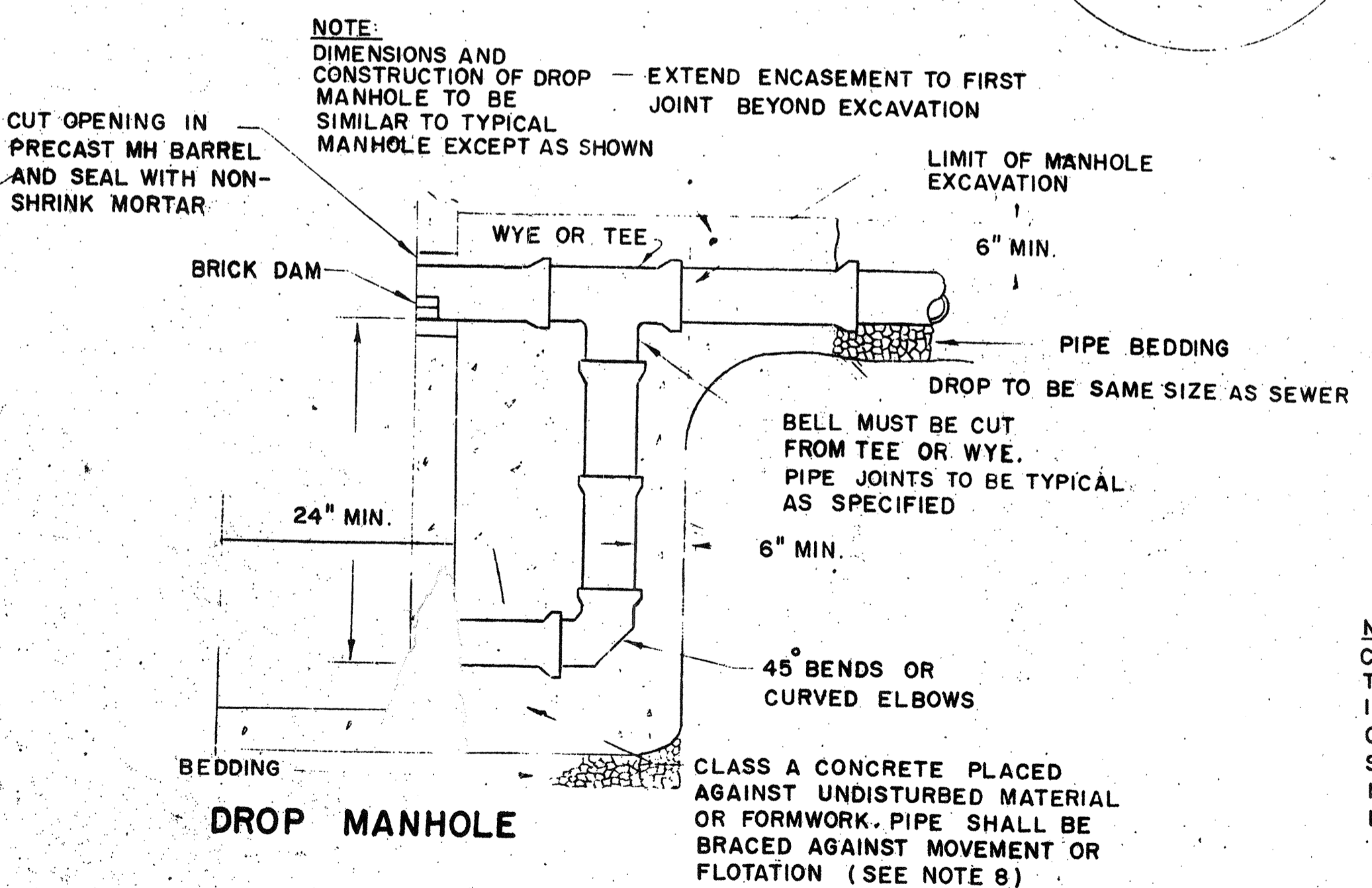
STANDARD TRENCH SECTION

SHEET 104 OF 106 SHEETS
 SCALE: NONE
 APRIL 1973



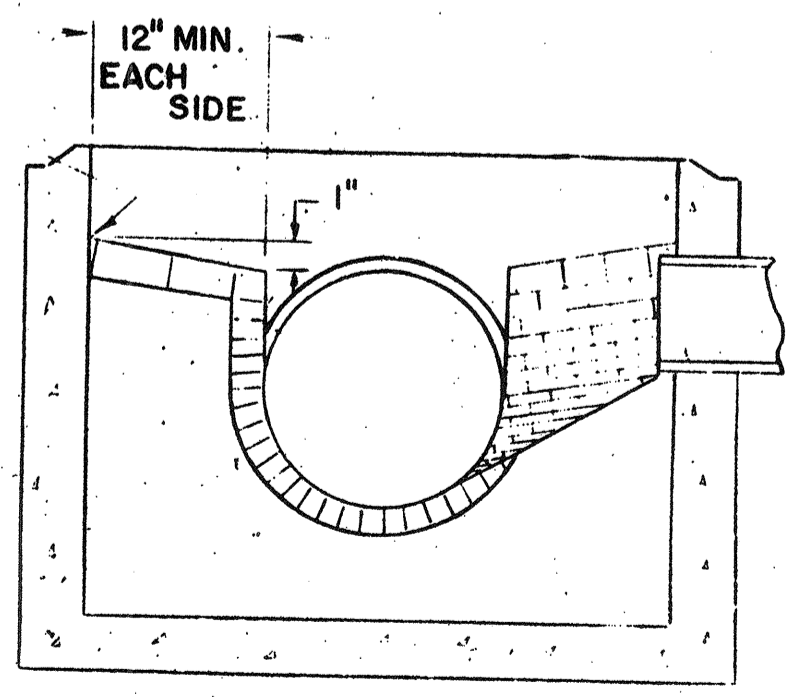
BASE SECTION TO BE FULL WALL THICKNESS AND MONOLITHIC TO A POINT 6" ABOVE THE PIPE CROWN

SECTION A-A



NOTE: DIMENSIONS AND CONSTRUCTION OF DROP - EXTEND ENCASEMENT TO FIRST JOINT BEYOND EXCAVATION SIMILAR TO TYPICAL MANHOLE EXCEPT AS SHOWN

NOTE: CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT. INVERT BRICKS SHALL BE LAID ON EDGE



SECTION B-B

NOTE: INVERT AND SHELF TO BE PLACED AFTER LEAKAGE TEST

NOTE: SEPARATE CONSTRUCTION SPECIFICATIONS ARE ATTACHED OR INCLUDED IN THE CONTRACT DOCUMENTS. THESE STANDARD MANHOLE DRAWINGS ARE NOT COMPLETE WITHOUT THESE SPECIFICATIONS

NOTES:

- IT IS THE INTENTION OF THE COMMISSION THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAKPROOF QUALITIES CONSIDERED NECESSARY BY THE COMMISSION FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES MAY BE AN ASSEMBLY OF PRECAST SECTIONS, WITH OR WITHOUT STEEL REINFORCEMENT, WITH ADEQUATE JOINTING, OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH OR WITHOUT REINFORCEMENT. IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H-20 LOADING) WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.
- BARRELS AND CONE SECTIONS SHALL BE PRECAST REINFORCED OR NON-REINFORCED CONCRETE, OR POURED IN PLACE REINFORCED OR NON-REINFORCED CONCRETE.
- PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C 478.
- LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS.
- INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY.
- FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. A 3-INCH (MINIMUM HEIGHT) LETTER "S" FOR SEWERS OR "D" FOR DRAINS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
- BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C 33
 100% PASSING 1 INCH SCREEN 0-10% PASSING #4 SIEVE
 90-100% PASSING 3/4 INCH SCREEN 0-5% PASSING #8 SIEVE
 20-55% PASSING 3/8 INCH SCREEN
 WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, SCREENED GRAVEL OR CRUSHED STONE 1 1/2 INCH TO 1/2 INCH SHALL BE USED.
- CONCRETE FOR DROP SUPPORT SHALL CONFORM TO THE REQUIREMENT FOR CLASS A (3000*) CONCRETE OF THE NEW HAMPSHIRE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS STANDARD SPECIFICATIONS AS FOLLOWS:
 CEMENT: 6.0 BAGS PER CUBIC YARD
 WATER: 5.75 GALLONS PER BAG CEMENT
 MAXIMUM SIZE OF AGGREGATE: 1 INCH.
- FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES:
 RCP & CI PIPE - ALL SIZES - 48"
 AC & VC PIPE - UP THROUGH 12" DIA. - 18"
 AC & VC PIPE - LARGER THAN 12" DIA. - 36"
- SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H-20 LOADS.
- MANHOLE STEPS MAY BE PERMITTED UPON REQUEST BY THE OWNER AS SECONDARY ADDITIONAL SAFETY FEATURE SUPPLEMENTARY TO THE PRIMARY PORTABLE LADDER ENTRY AND WHEN INSTALLED UNDER THE FOLLOWING CONDITIONS:
 1. THE STEPS SHALL BE MANUFACTURED OF 5/8 INCH ROUND STAINLESS STEEL OR FORGED ALUMINUM ALLOY. THEY SHALL BE SHAPED SO THAT THEY CANNOT BE PULLED OUT OF THE CONCRETE WALL IN WHICH THEY ARE EMBEDDED.
 2. THE STEPS SHALL BE EMBEDDED IN THE CONCRETE BY THE MANUFACTURER DURING MANUFACTURE OR IMMEDIATELY FOLLOWING REMOVAL OF THE FORMS. SECURING THE STEPS WITH MORTAR IN DRILLED OR CAST HOLES, WILL NOT BE ACCEPTABLE.
 3. THE STEPS SHALL BE OF THE DROP TYPE WITH A DEPRESSED SECTION FOR HANDHOLD, APPROXIMATELY 14" X 10" IN DIMENSION.

RECORD PLAN

REVISIONS	
DATE	CHANGE
DEC 74	ADDED NOTE II A BLOWUP OF MH BASE AT PIPE SECTION
NEW HAMPSHIRE WATER SUPPLY & POLLUTION CONTROL COMMISSION	
STANDARD MANHOLE SHEET 1 OF 2	
SCALE: NONE SHEET 105 OF 106 SHEETS	DATE: JUNE 1973