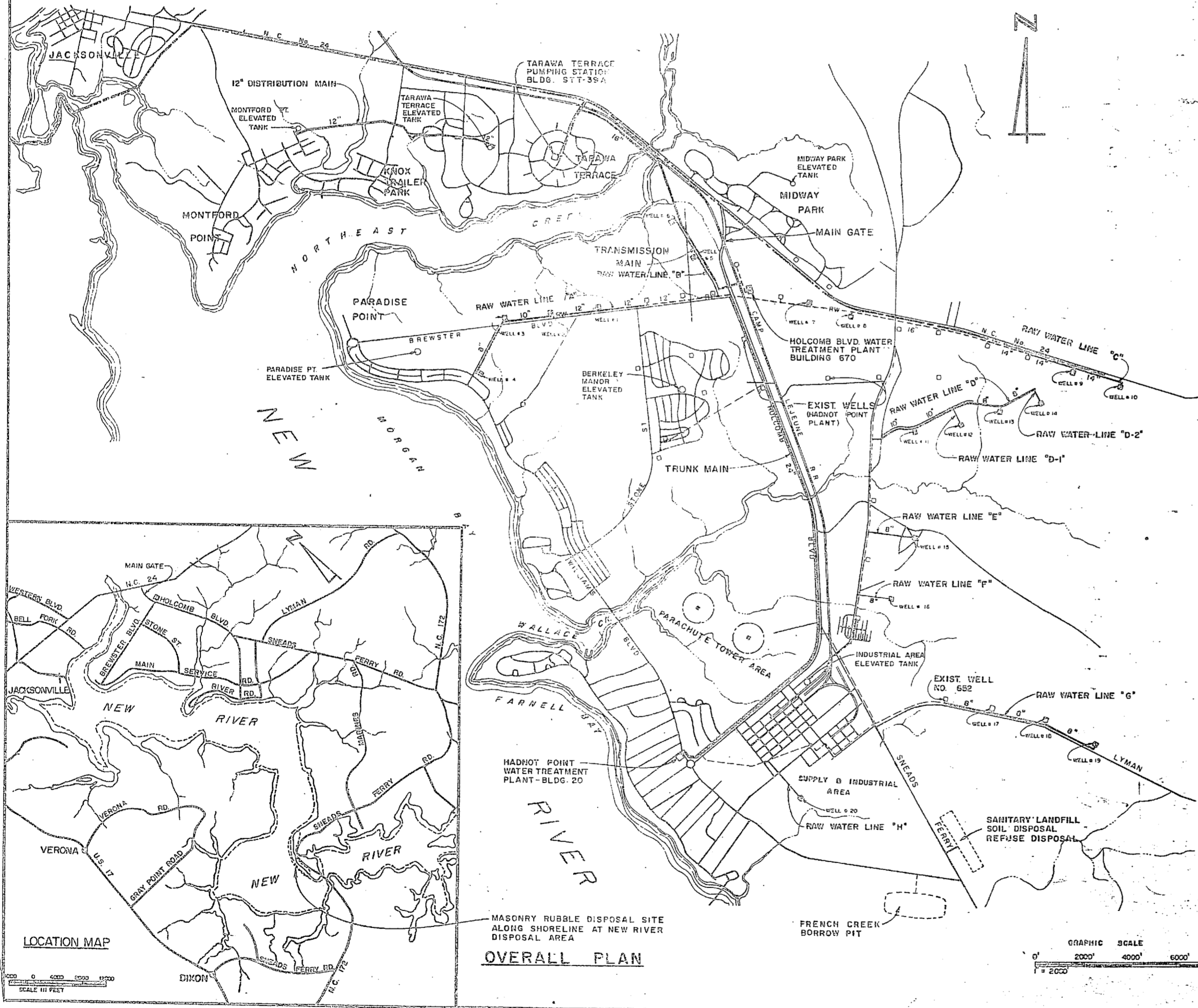
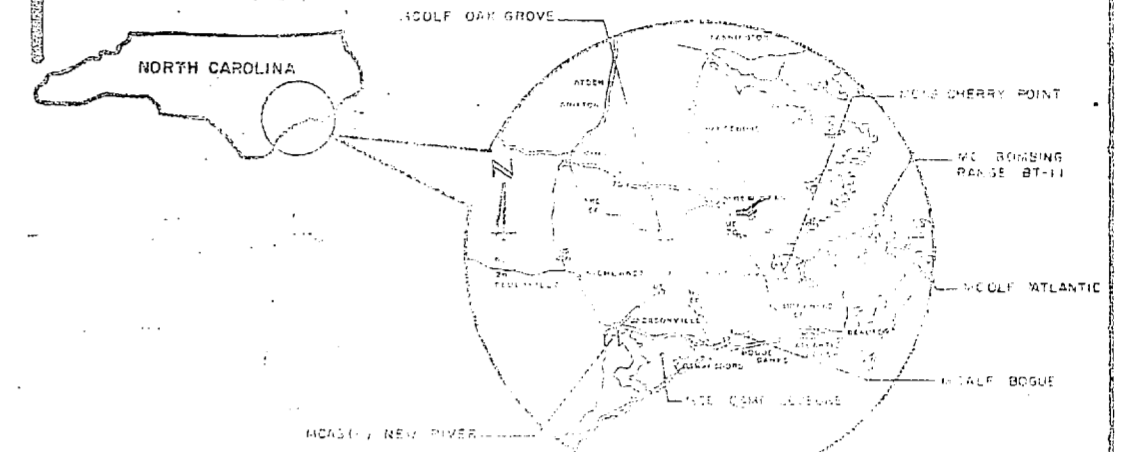


EXPANSION OF HOLCOMB BLVD. WATER TREATMENT PLANT

MARINE CORPS BASE

CAMP LEJEUNE, NORTH CAROLINA

REV#	DESCRIPTION	DATE	APPROVED



SCHEDULE OF DRAWINGS			
SHEET NO.	DESCRIPTION	DATE	BY
CS-1	4107534		
C-1	4107535		
C-2	4107536		
C-3	4107537		
C-4	4107538		
C-5	4107539		
C-6	4107540		
A-1	4107541		
A-2	4107542		
A-3	4107543		
A-4	4107544		
A-5	4107545		
A-6	4107546		
A-7	4107547		
A-8	4107548		
A-9	4107549		
S-1	4107550		
S-2	4107551		
S-3	4107552		
S-4	4107553		
S-5	4107554		
S-6	4107555		
S-7	4107556		
S-8	4107557		
S-9	4107558		
S-10	4107559		
S-11	4107560		
S-12	4107561		
S-13	4107562		
S-14	4107563		
S-15	4107564		
S-16	4107565		
M-1	4107566		
M-2	4107567		
M-3	4107568		
M-4	4107569		
M-5	4107570		
M-6	4107571		
M-7	4107572		
M-8	4107573		
M-9	4107574		
M-10	4107575		
U-1	4107576		
U-2	4107577		
U-3	4107578		
U-4	4107579		
U-5	4107580		

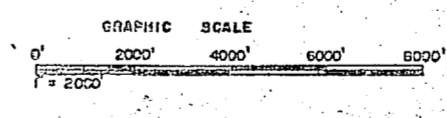
LEGEND
 □ EXISTING WELL
 □ NEW WELL

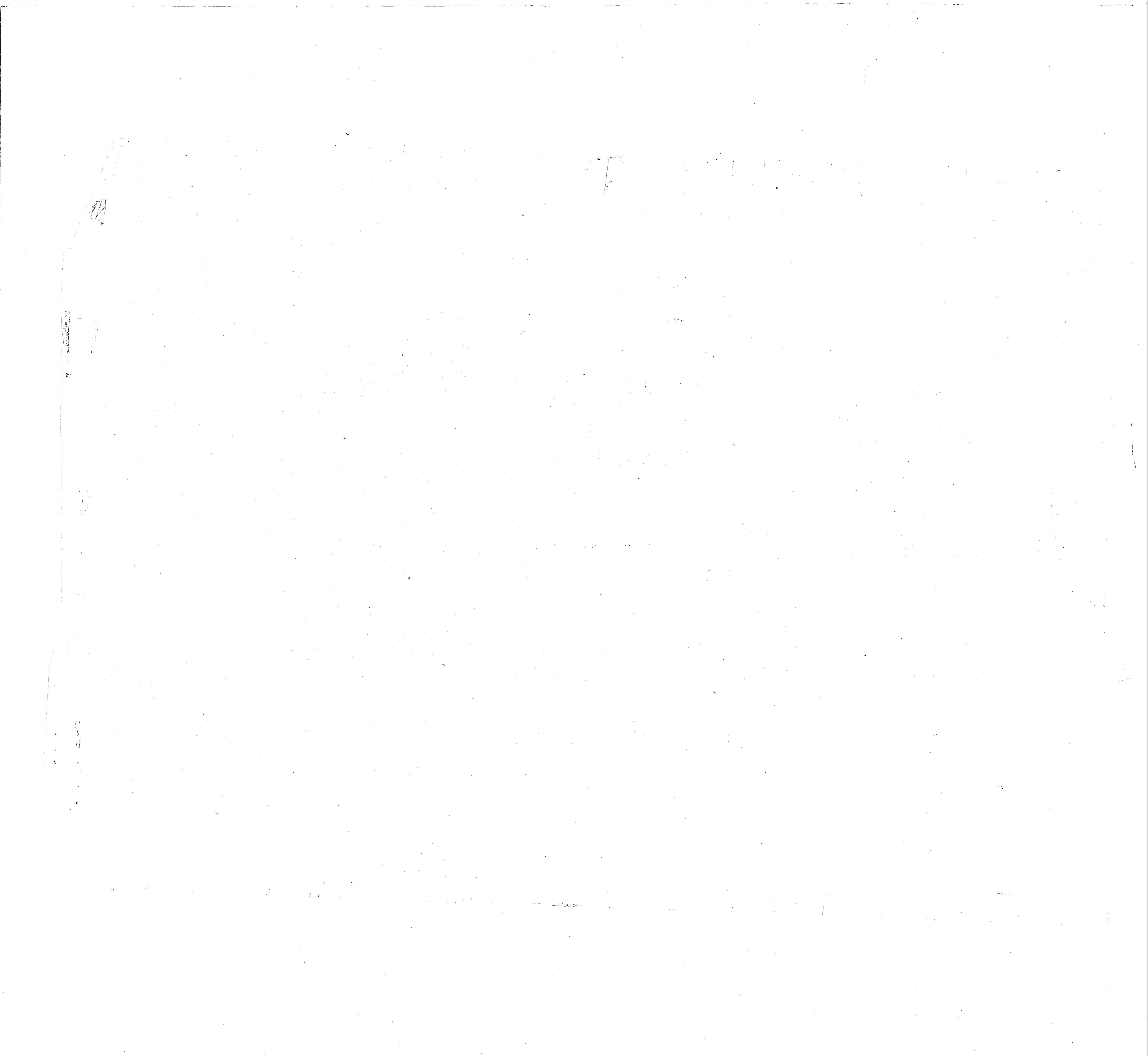
CS-1

DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 DATE: [Date]

ATLANTIC DIVISION
 CAMP LEJEUNE
 WATER TREATMENT PLANT
 LOCATION & VICINITY MAPS

4107534
 1162470-81-B-1020
 207554



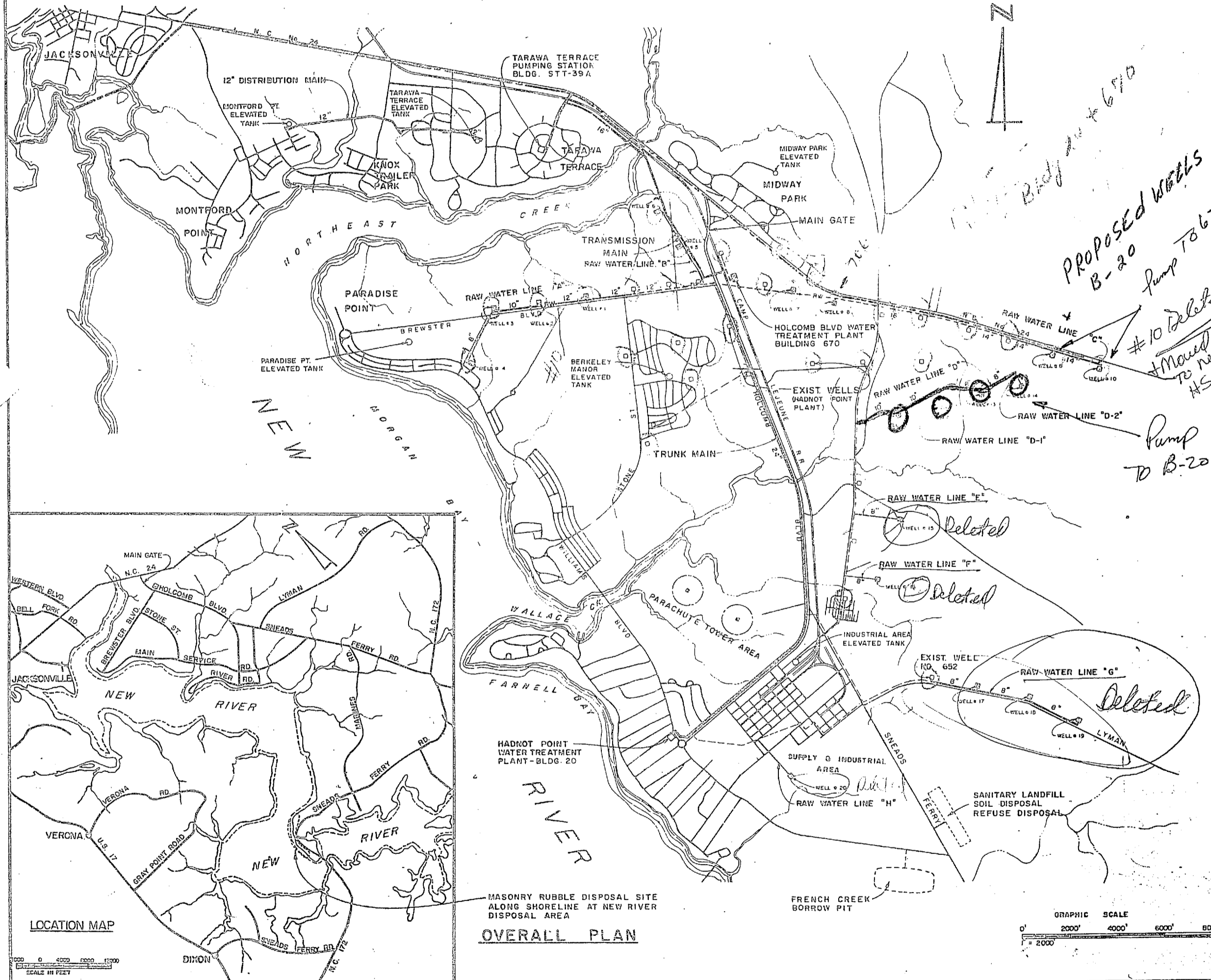
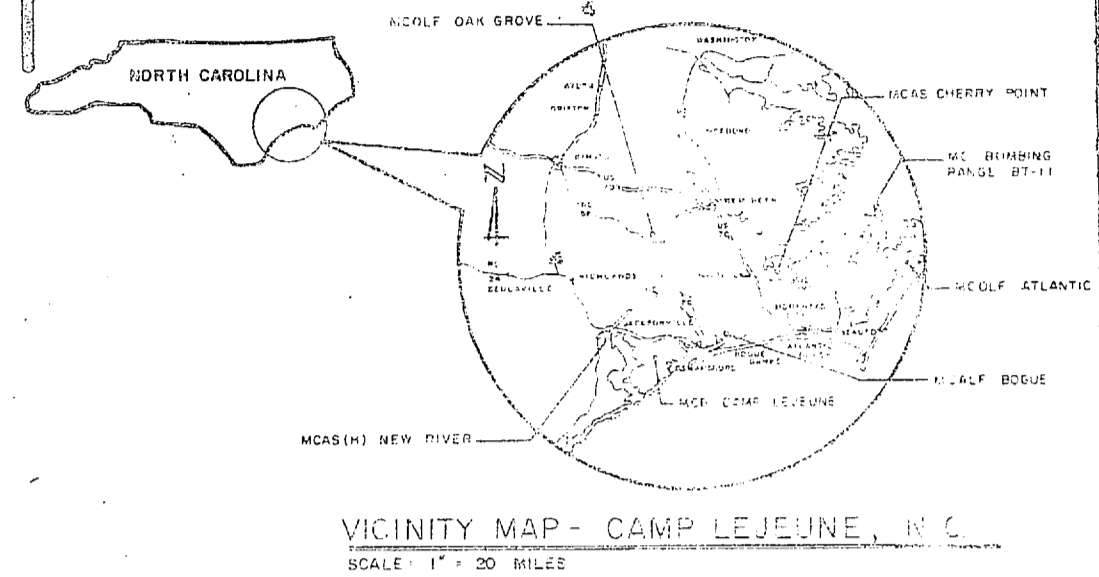


EXPANSION OF HOLCOMB BLVD. WATER TREATMENT PLANT

MARINE CORPS BASE

CAMP LEJEUNE, NORTH CAROLINA

REVISIONS		
SYN	DESCRIPTION	DATE APPROVED



Proposed wells B-20 Pump to 670

#10 Deleted + Moved to new HS.

Pump to B-20

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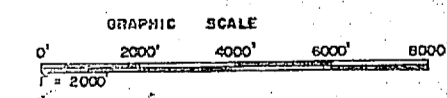
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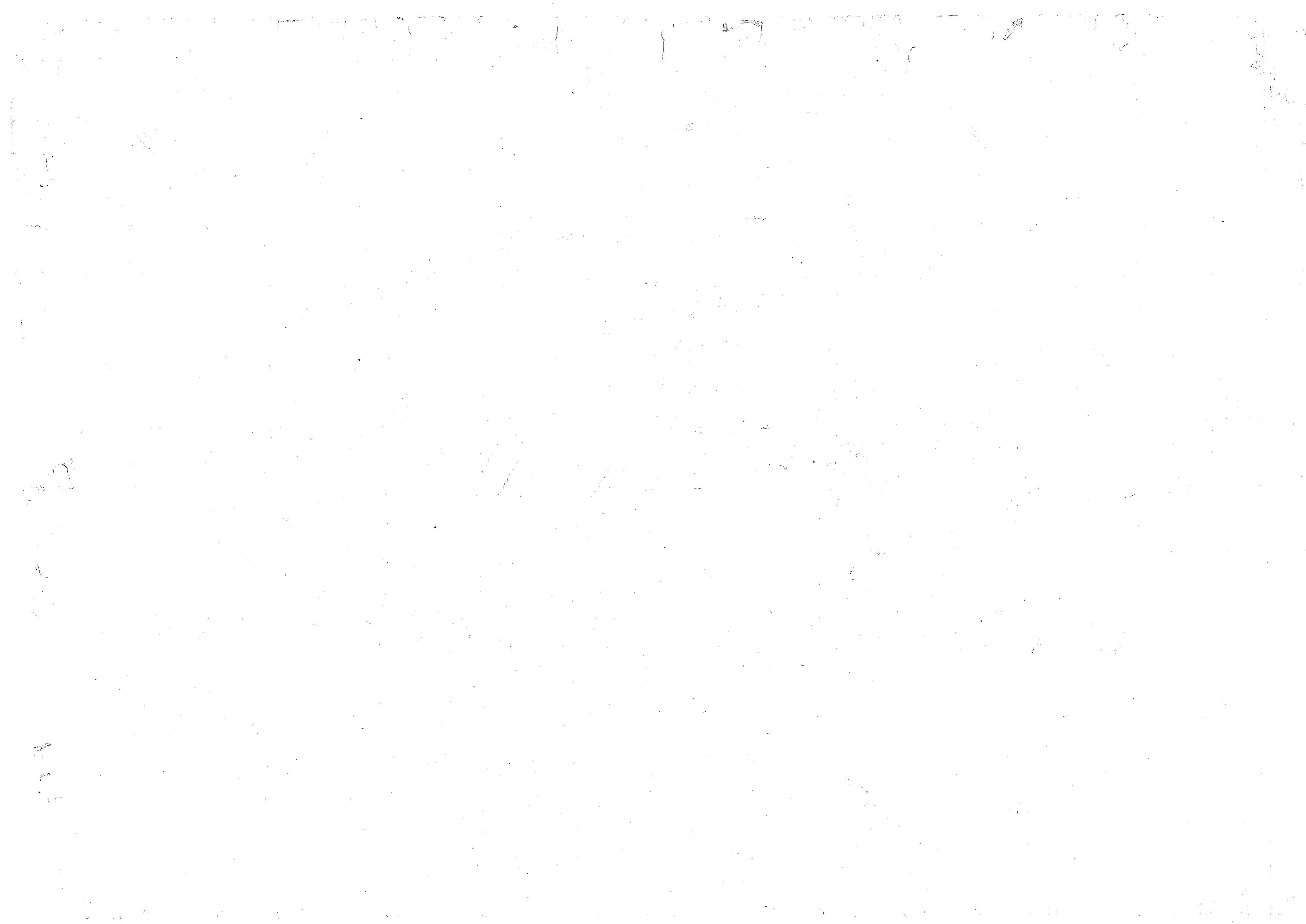
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SCHEDULE OF DRAWINGS					
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CS-1	4107534	LOCATION & VICINITY MAP	U-6	4107597	RAW WATER LINES 'C' & 'F'
C-1	4107535	SITE PLAN	U-7	4107598	TRANSMISSION MAIN & RW LINE 'B'
C-2	4107536	PIPING PLAN	U-8	4107599	TRANSMISSION MAIN & RW LINE 'B'
C-3	4107537	WELL SITES I THRU 6	U-9	4107599	TRANSMISSION MAIN
C-4	4107538	WELL SITES 7 THRU 10	U-10	4107599	TRANSMISSION MAIN
C-5	4107539	WELL SITES 11 THRU 15	U-11	4107599	TRUNK MAIN
C-6	4107540	WELL SITES 16 THRU 20	U-12	4107599	TRUNK MAIN
A-1	4107541	TREATMENT PLANT - 1ST FLOOR	U-13	4107599	TRUNK MAIN
A-2	4107542	TREATMENT PLANT - 2ND FLOOR	U-14	4107599	TRUNK MAIN
A-3	4107543	TREATMENT PLANT - ELEVATIONS	U-15	4107599	TRUNK MAIN
A-4	4107544	TREATMENT PLANT - BUILDING SECTIONS	U-16	4107599	TRUNK MAIN
A-5	4107545	TREATMENT PLANT - WALL SECTIONS	U-17	4107599	DISTRIBUTION MAIN
A-6	4107546	TREATMENT PLANT - WALL SECTIONS	U-18	4107599	DISTRIBUTION MAIN
A-7	4107547	TREATMENT PLANT - ROOF PLAN	U-19	4107599	DISTRIBUTION MAIN
A-8	4107548	RAW WATER PUMP STATION	U-20	4107599	DISTRIBUTION MAIN
A-9	4107549	FINISH WATER PUMP STATION	EUP-1	4107599	AERIAL DISTRIBUTION SITE PLAN
S-1	4107550	TREATMENT GALLERY FND. PLAN	EU-2	4107599	SCHEDULE OF POLES
S-2	4107551	TREATMENT GALLERY ROOF PLANS	E-1	4107599	ELECTRICAL SITE PLAN
S-3	4107552	FOUNDATION & FIRST FLOOR PLANS	E-2	4107599	ELECTRICAL PIPE GALLERY
S-4	4107553	SECOND FLOOR & ROOF PLANS	E-3	4107600	ELECTRICAL TREATMENT ADDITION
S-5	4107554	SECTIONS & DETAILS	E-4	4107601	ELECTRICAL FILTER GALLERY
S-6	4107555	STRUCTURAL SCHEDULES	E-5	4107602	ELECTRICAL EXISTING PUMP HOUSE
S-7	4107556	FILTER PLAN & SCHEDULE	E-6	4107603	ELECTRICAL RAW WATER PUMP STATION
S-8	4107557	ACID & CHLORINE STORAGE	E-7	4107604	ELECTRICAL FINISH WATER PUMP STATION
S-9	4107558	ACID & CHLORINE STORAGE	E-8	4107605	ELECTRICAL TYPICAL WELL HOUSE
S-10	4107559	RAW WATER RESERVOIR	E-9	4107606	ELECTRICAL EXISTING WELL HOUSE
S-11	4107560	RAW WATER RESERVOIR	E-10	4107607	ELECTRICAL TARAWA TERRACE
S-12	4107561	RAW WATER RESERVOIR - ALTERNATE			
S-13	4107562	FINISH WATER RESERVOIR			
S-14	4107563	FINISH WATER RESERVOIR			
S-15	4107564	FINISH WATER RESERVOIR			
S-16	4107565	RESERVOIR - MISC. DETAILS			
M-1	4107566	FILTER PIPING & PLANS			
M-2	4107567	EQUIPMENT & PIPING			
M-3	4107568	ACID & CHLORINE SYSTEMS			
M-4	4107569	RESERVOIR UNDERDRAIN SYSTEM			
M-5	4107570	PUMP STATION PIPING PLANS			
M-6	4107571	FINISH WATER PUMP STATION			
M-7	4107572	TARAWA TERRACE PUMP STATION			
M-8	4107573	TREATMENT PLANT - HVAC PLAN			
M-9	4107574	TREATMENT PLANT - PLUMBING PLAN			
M-10	4107575	CONTROL & FLOW DIAGRAM			
U-1	4107576	RAW WATER LINES 'A' & 'B'			
U-2	4107577	RAW WATER LINE 'D'			
U-3	4107578	RAW WATER LINE 'D'			
U-4	4107579	RAW WATER LINES 'D', 'D-1' & 'D-2'			
U-5	4107580	RAW WATER LINES 'C', 'E' & 'H'			

LEGEND
 EXISTING WELL
 NEW WELL

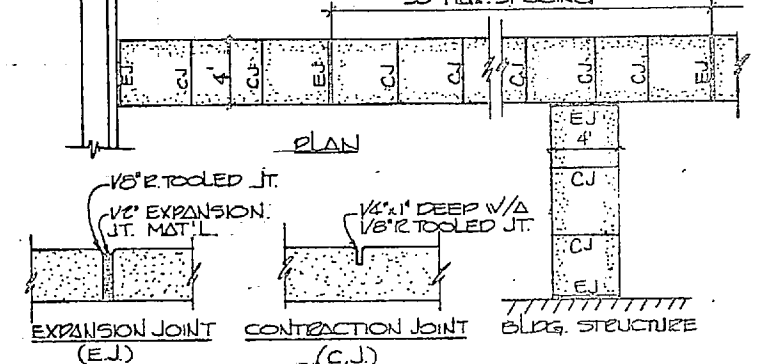
DEPARTMENT OF THE ARMY ENGINEERING CENTER WASHINGTON, D. C.		DEPARTMENT OF THE ARMY MARINE ENGINEERING CENTER ATLANTIC DIVISION FORT LEJUNE, NORTH CAROLINA	
PROJECT NO. 4107534 DRAWING NO. 4107534		CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT LOCATION & VICINITY MAPS	
DATE: 10/1/75 DRAWN BY: [Signature] CHECKED BY: [Signature]		SHEET NO. 1 OF 75 PROJECT NO. 4107534 DRAWING NO. 4107534	





REVISIONS		
SYM	DESCRIPTION	DATE APPROVED

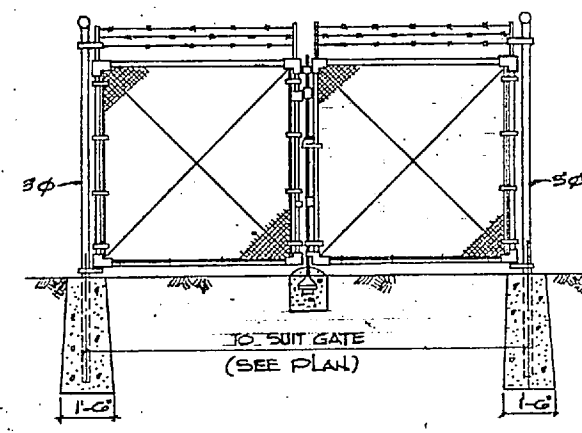
- NOTES**
1. SIDEWALK THICKNESS SHALL BE 4" UNLESS NOTED OTHERWISE.
 2. CONTRACTION JTS (C.J.) SPACE SAME AS SIDEWALK WIDTH.
 3. THICKEN SIDEWALK TO 6" AT DRIVEWAYS.
 4. THICKEN SIDEWALK TO 6" IN LAST 3' WHERE IT MEETS PAVE. V/NO CURB.
 5. 1/2" EXP. JT. (E.J.) BEGD AT 50' MAX. AT SIDEWALK JUNCTIONS AT STRUCTURES, AND AS NOTED ON SITE PLAN.
 6. PROVIDE A LAYER OF 1 1/2" BLDG FELT BETWEEN WALK & ADJ. PARALLEL CURB OR STRUCTURE.



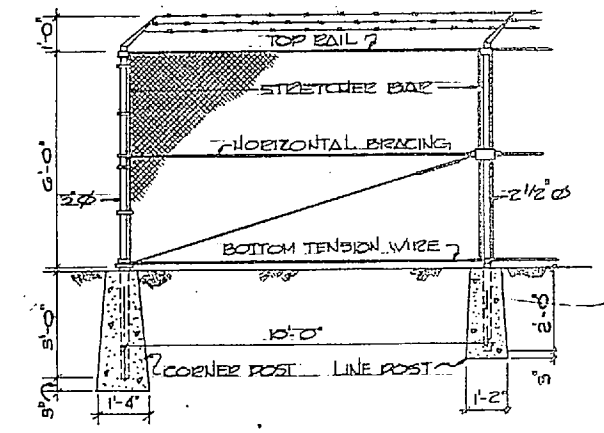
SIDEWALK JOINT DETAILS
NO SCALE

LEGEND

	NEW	EXISTING	EXIST-REMOVE
STRUCTURE	—	—	—
FENCE	—	—	—
STORM DRAIN	—	—	—
CLEARING LIMIT	—	—	—
POWER LINE	—	—	—
CONTOUR LINE	—	—	—
RAILROAD	—	—	—
UNDERGROUND CABLE	—	—	—
DRAINAGE SLOPE	—	—	—
SPOT ELEVATION	—	—	—
CATCH BASIN (C.B.)	—	—	—
COLE. SIDEWALK	—	—	—
ASPH. PAVEMENT	—	—	—
BOILING LOCATION (SEE SPECS FOR LOGS)	—	—	—

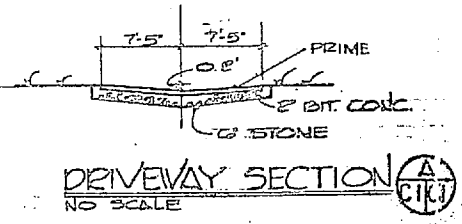


DOUBLE GATE DETAIL
NO SCALE



FENCE DETAIL
NO SCALE

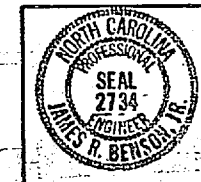
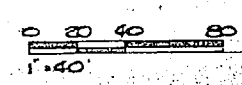
NOTE: WHERE NEW ASPH. PAVEMENTS MEET EXISTING PAVEMENTS, MATCH GRADE OF EXISTING PAVEMENT.



DRIVEWAY SECTION
NO SCALE

SITE PLAN
1" = 40'

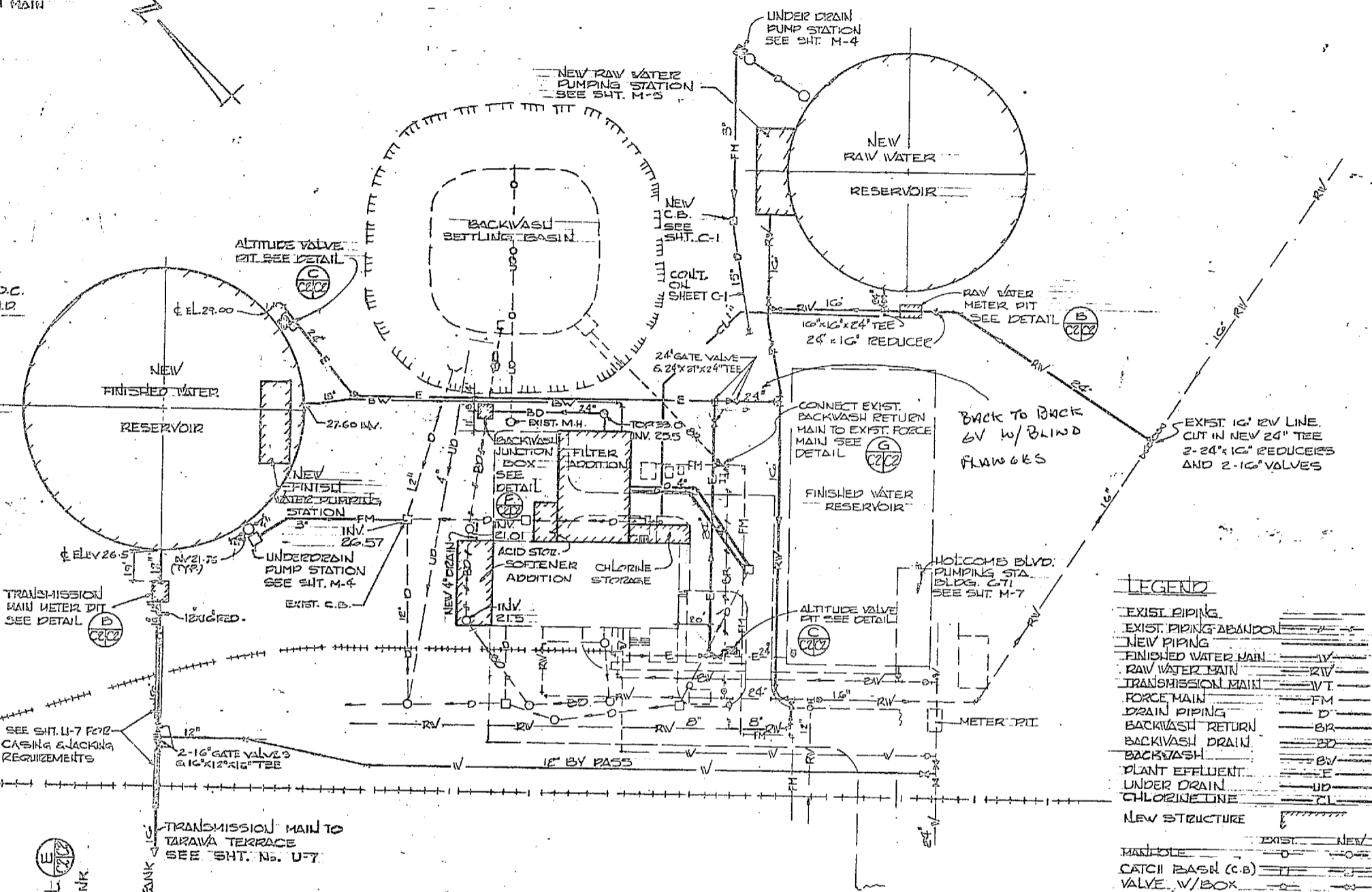
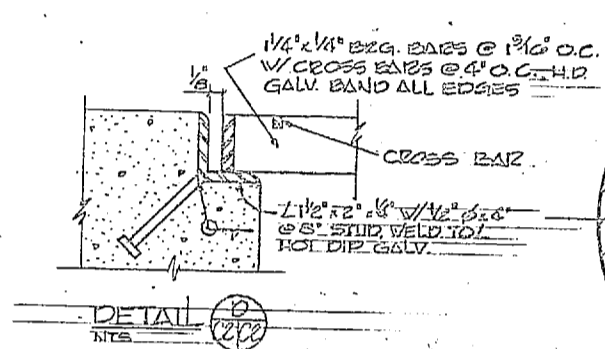
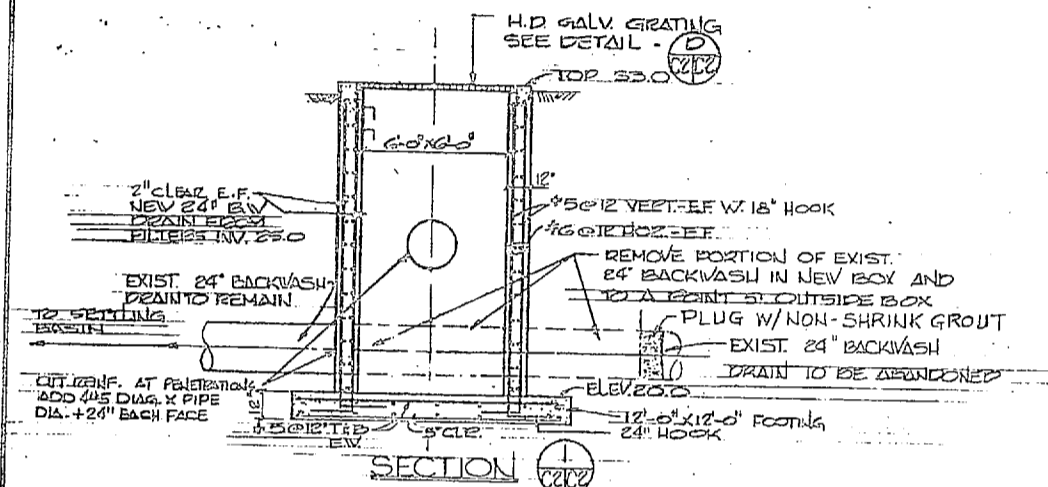
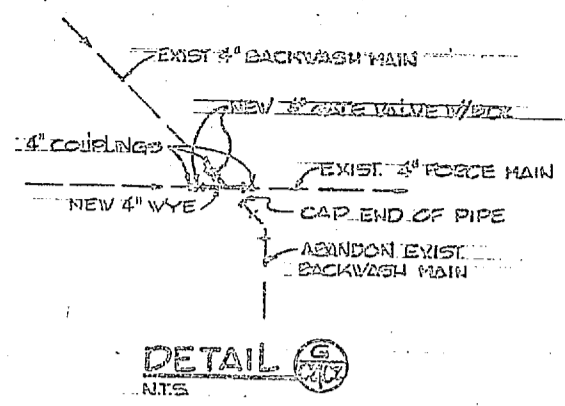
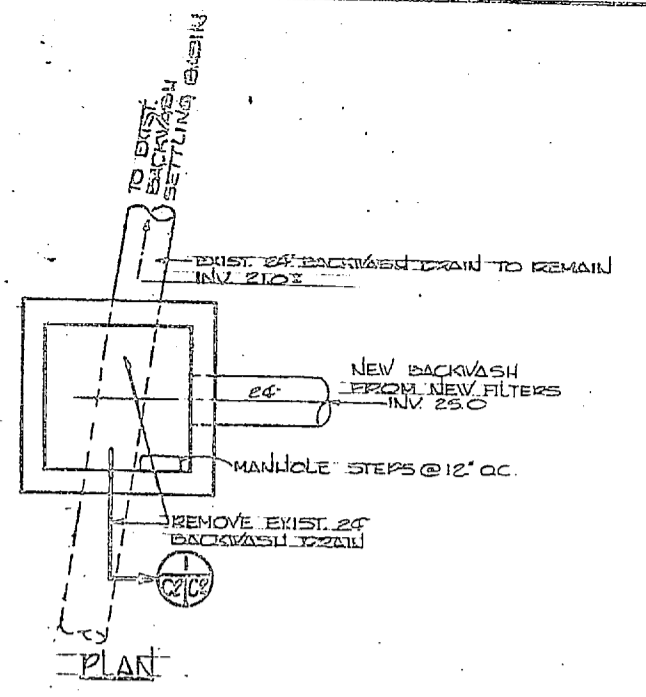
GRAPHIC SCALE



HENRY VOH OZDEN & ASSOCIATES CONSULTING ENGINEERS WASHINGTON, D.C.		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING DISTRICT 10 ATLANTIC DIVISION NORFOLK, VA.	
CAMP LEJEUNE EXPANSION OF HOLCOMBE BOULEVARD WATER TREATMENT PLANT		NORTH CAROLINA 4107555	
SITE PLAN		DATE: 05-81-16-94 SHEET: 2 OF 70	



REVISIONS			
SYN	DESCRIPTION	DATE	APPROVED

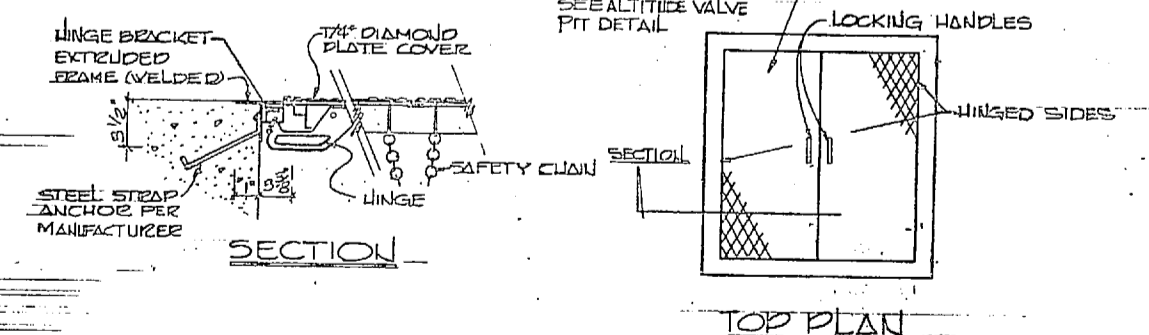
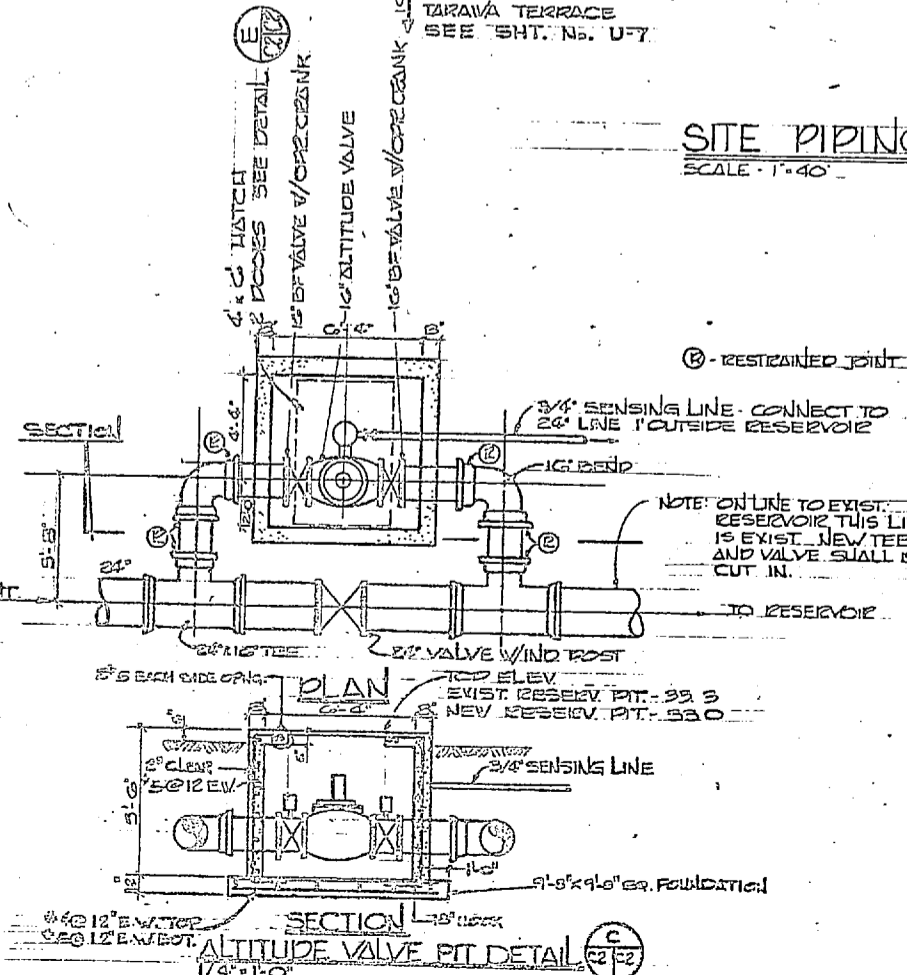
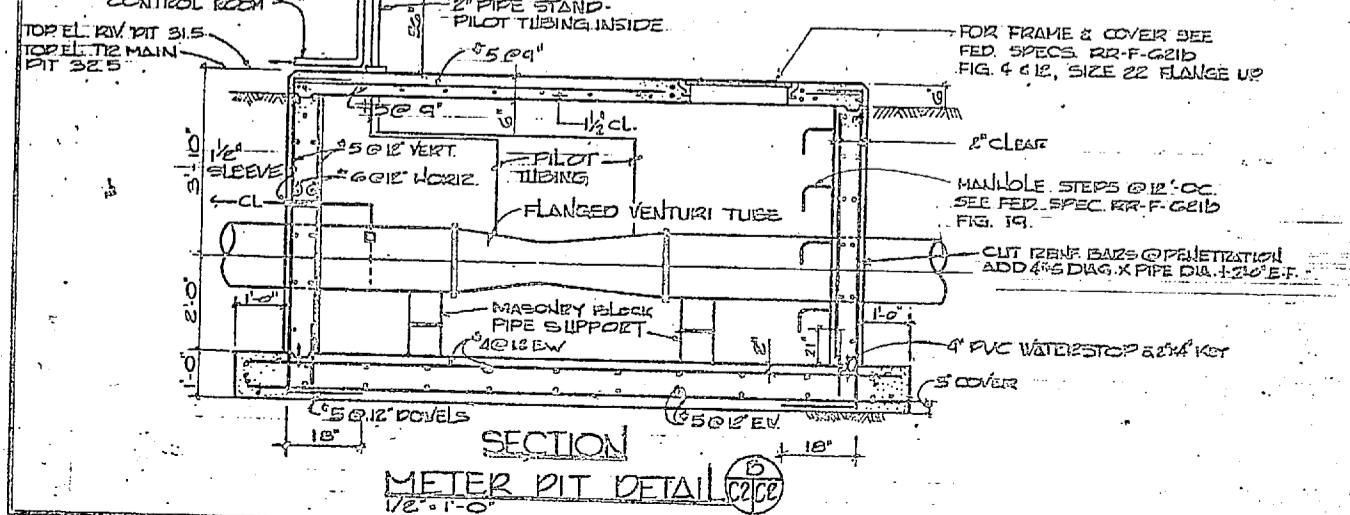
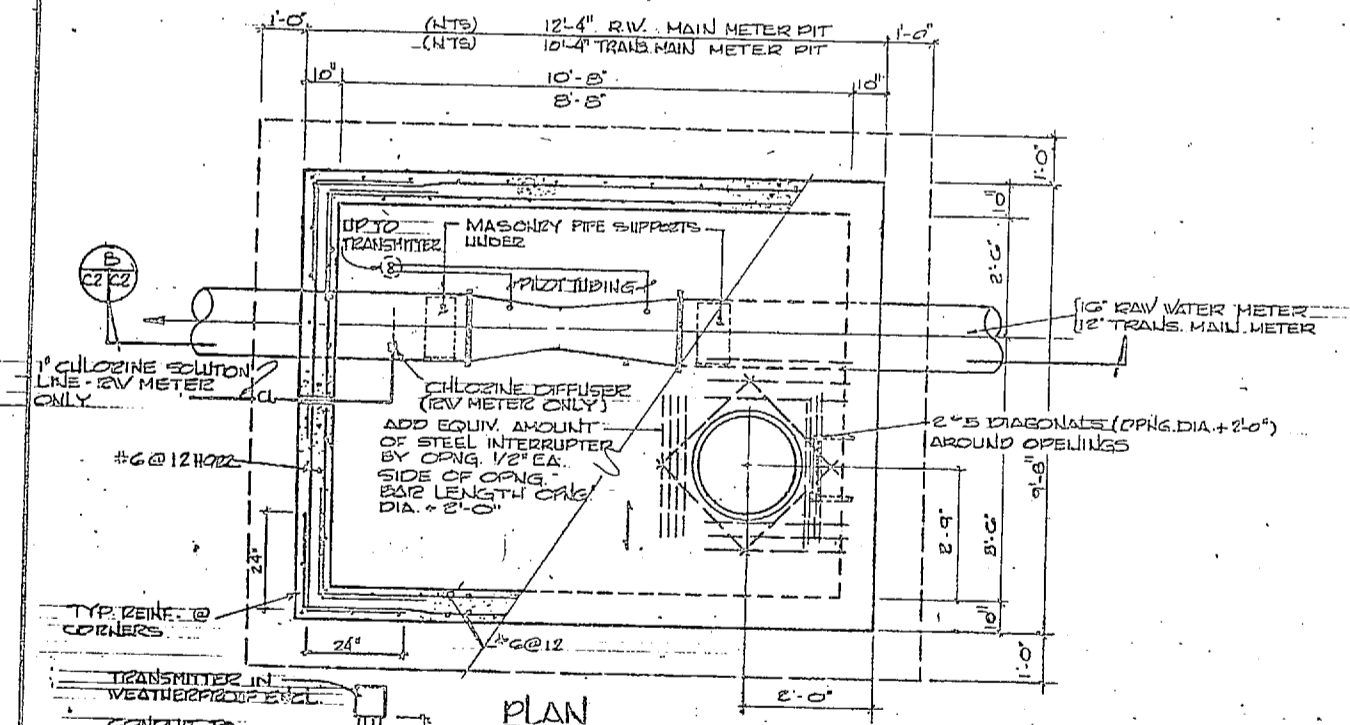


LEGEND

EXIST. PIPING	---
EXIST. PIPING ABANDON	---
NEW PIPING	---
FINISHED WATER MAIN	---W---
RAW WATER MAIN	---RW---
TRANSMISSION MAIN	---TM---
FORCE MAIN	---FM---
DRAIN PIPING	---D---
BACKWASH RETURN	---BR---
BACKWASH DRAIN	---BD---
BACKWASH	---BW---
PLANT EFFLUENT	---E---
UNDER DRAIN	---UD---
CHLORINE LINE	---CL---
NEW STRUCTURE	---

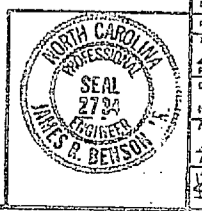
BACKWASH JUNCTION BOX DETAIL
1/4" = 1'-0"

SITE PIPING PLAN
SCALE: 1" = 40'



GRAPHIC SCALES

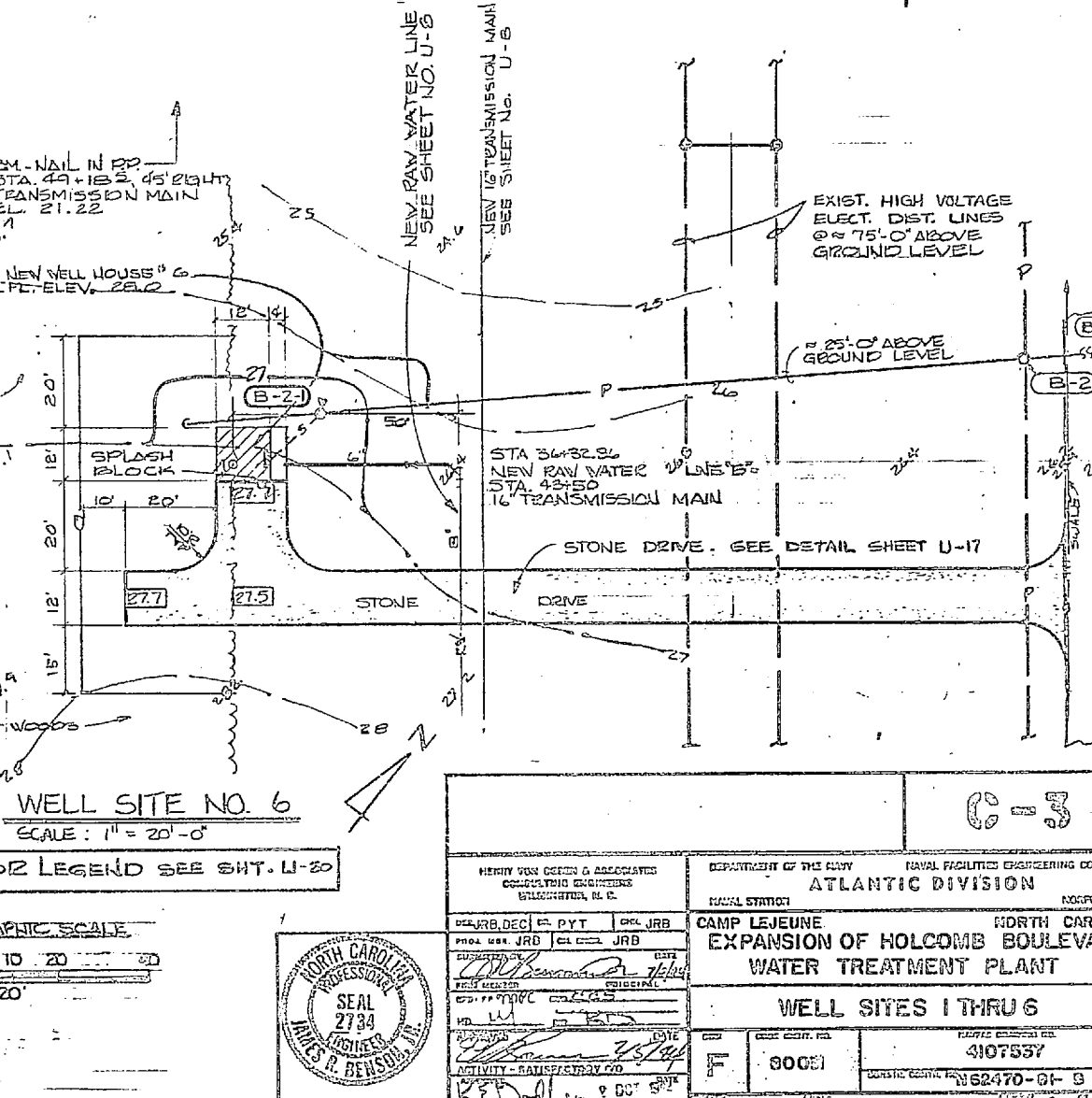
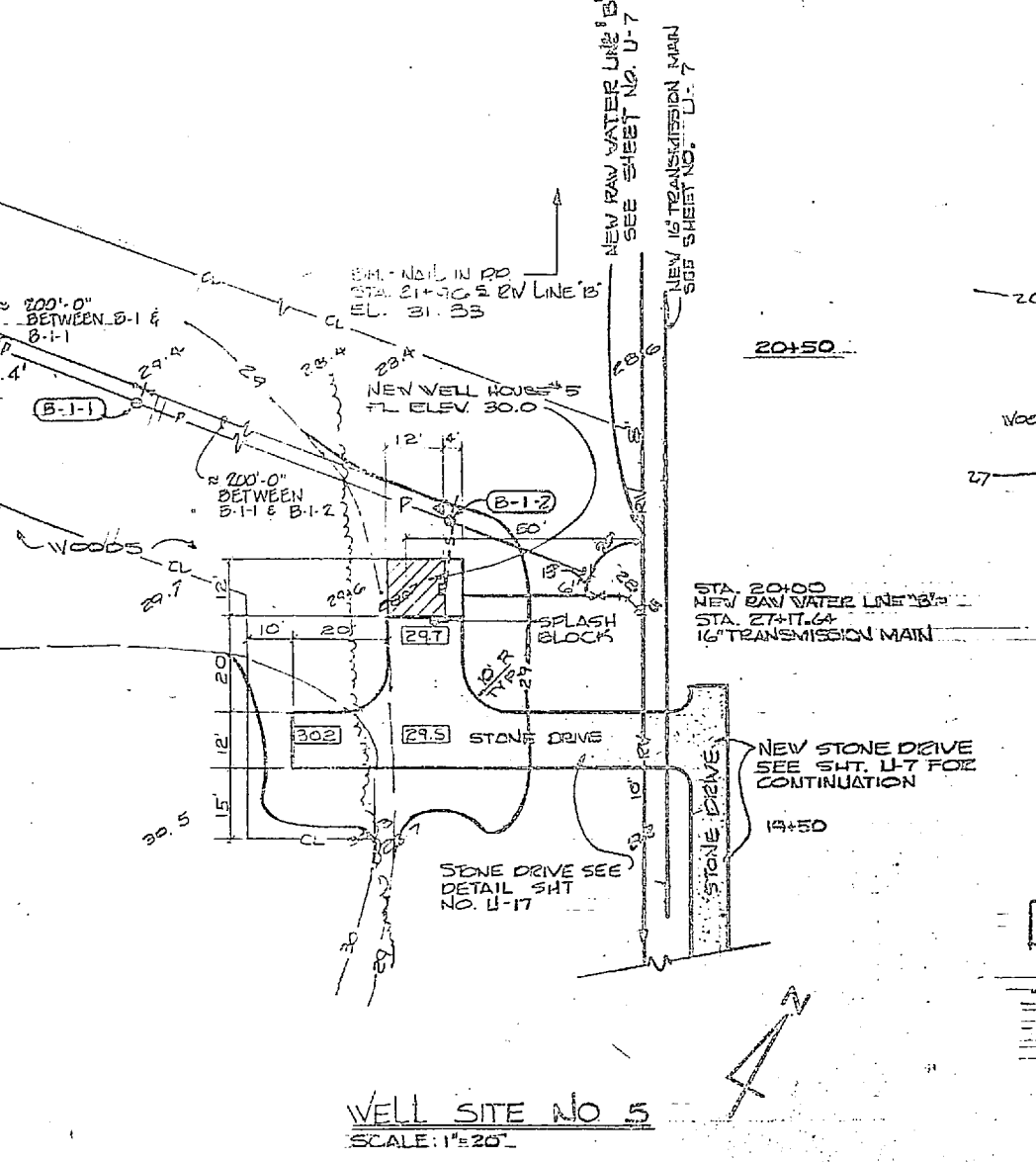
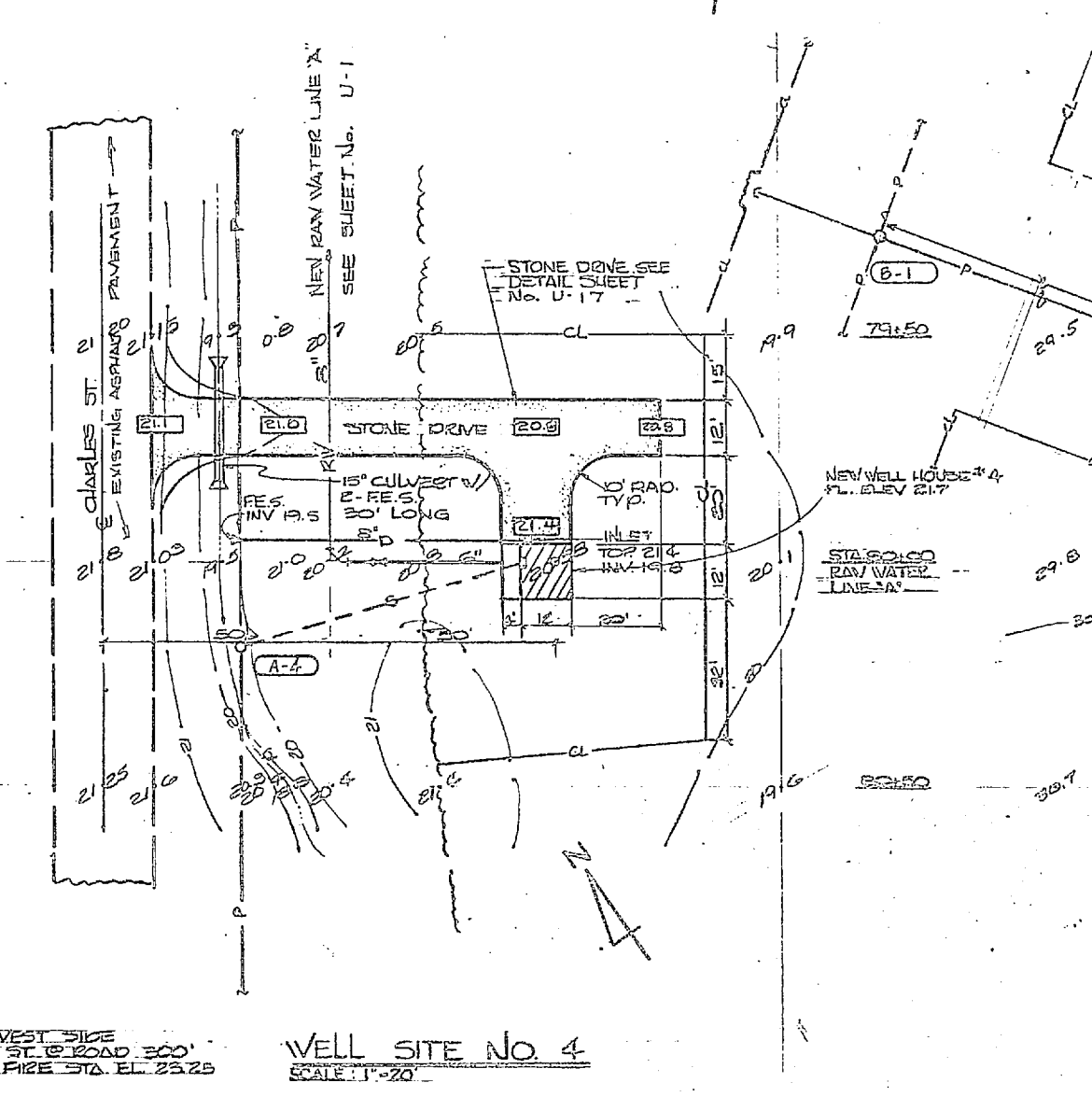
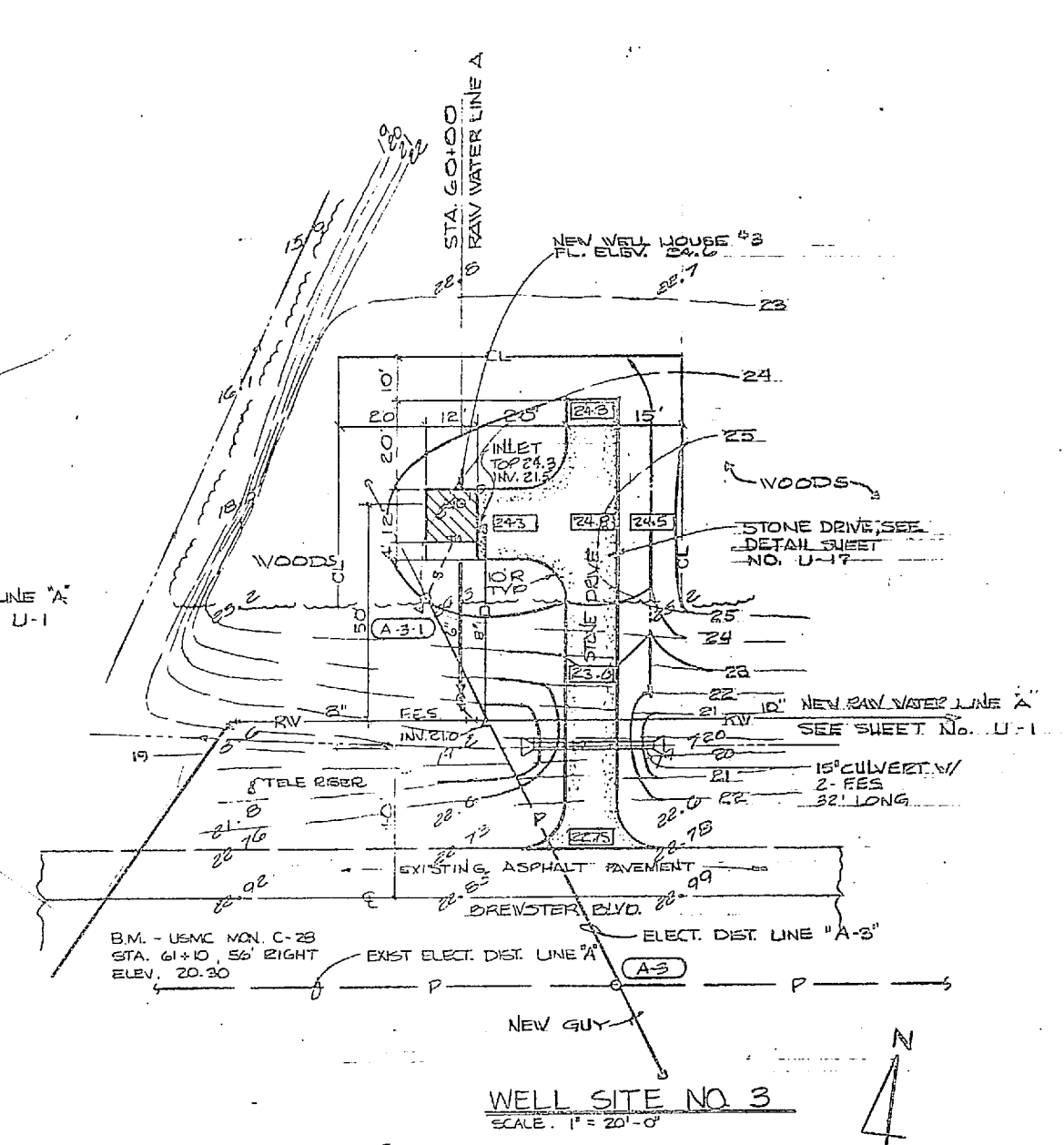
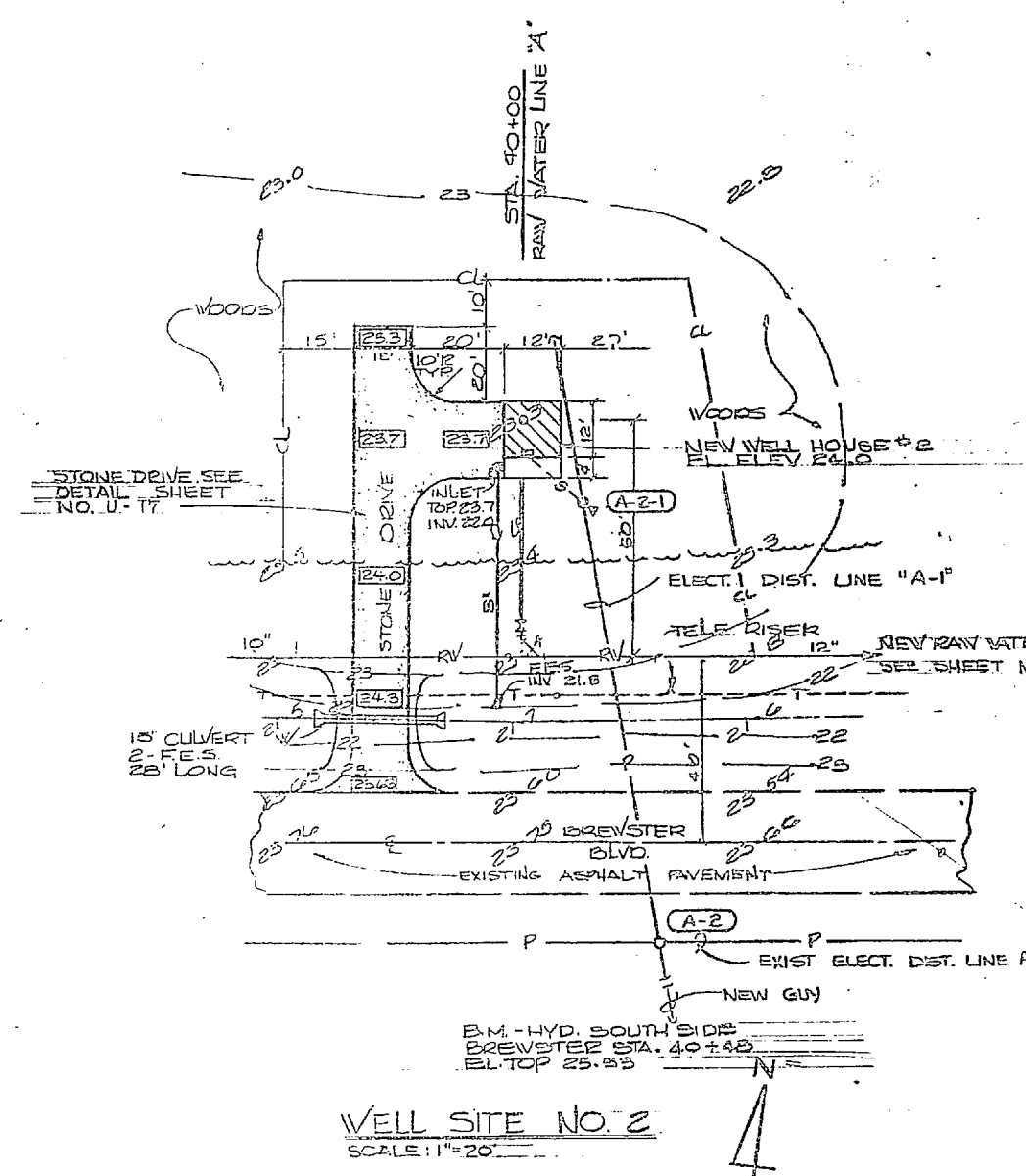
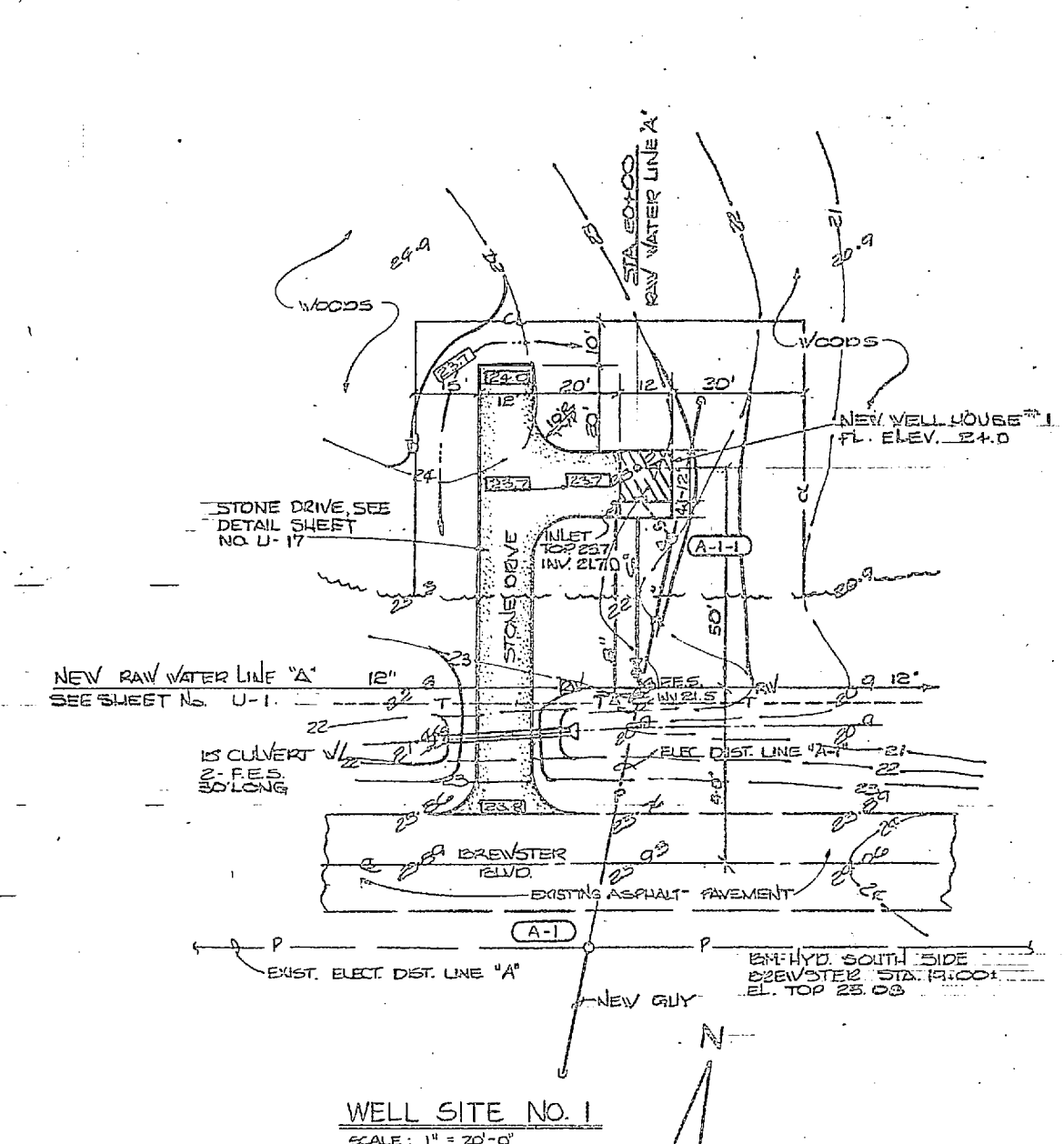
0 1 2 4 6 8
1/4" = 1'-0"
0 6 1 2 3 4
1/8" = 1'-0"
0 0 0 20
1" = 40'



DEPARTMENT OF THE NAVY ATLANTIC DIVISION NAVAL FACILITIES ENGINEERING DISTRICT CAMP LEJEUNE NORTH CAROLINA EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	
PROJECT NO. 80001 SHEET NO. 3 OF 76 DATE 05-31-1965	DRAWING NO. N62470-01-R-1544 SHEET 3 OF 76 207536



REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED

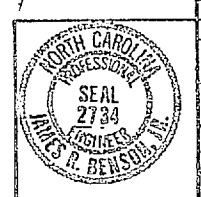
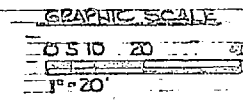


B.M. HYD. WEST SIDE
CHARLES ST. @ ROAD 200'
NORTH OF FIRE STA. EL. 23.25

WELL SITE NO. 4
SCALE: 1" = 20'-0"

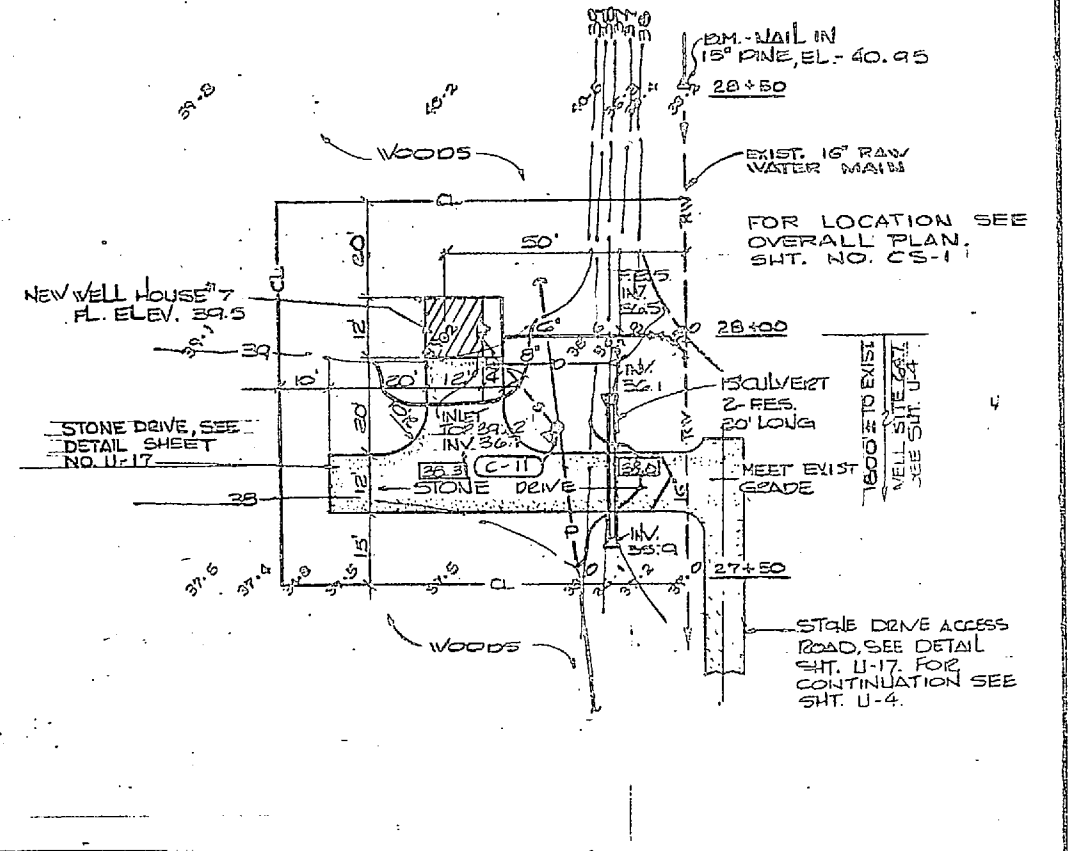
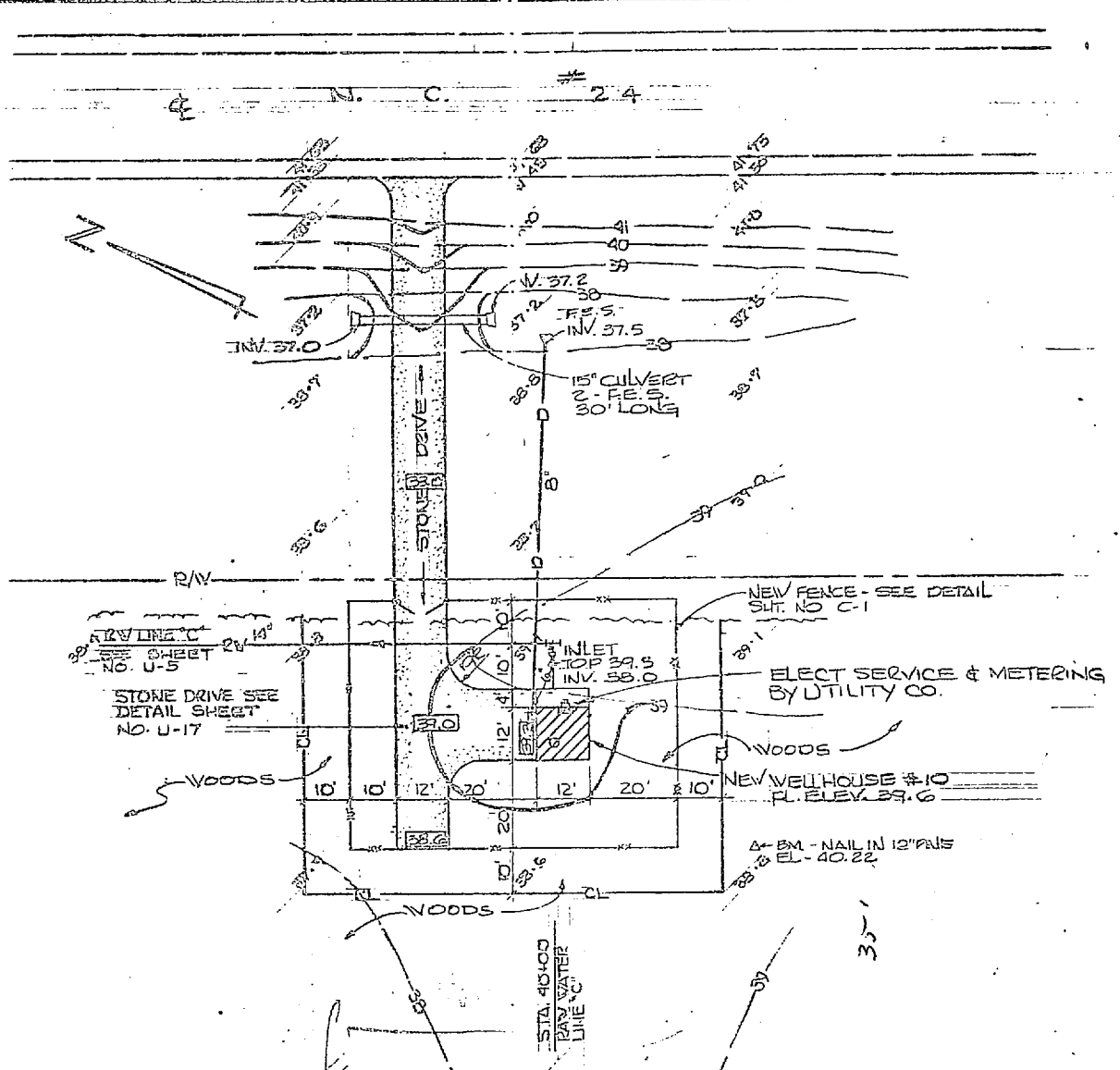
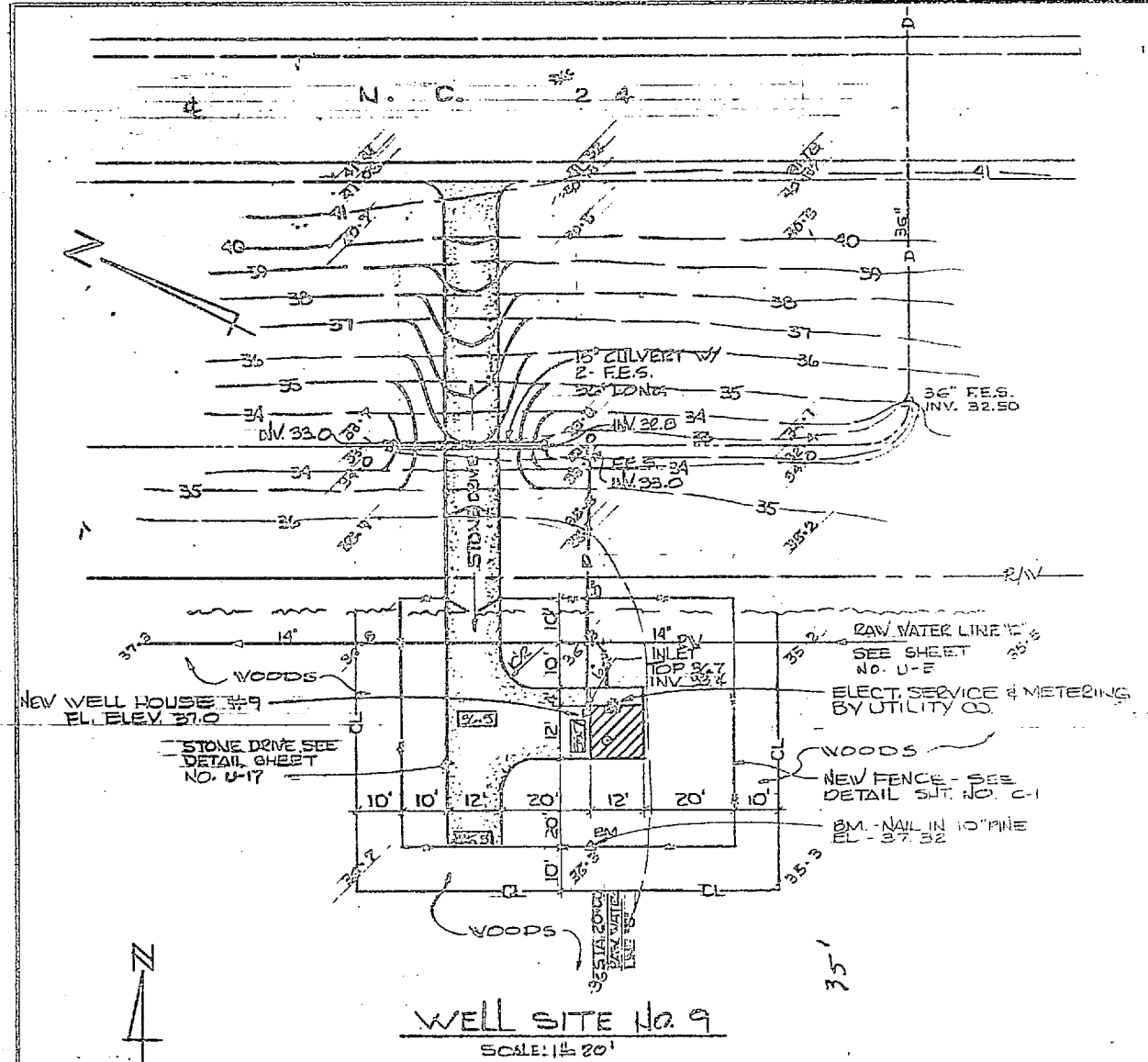
WELL SITE NO. 5
SCALE: 1" = 20'-0"

FOR LEGEND SEE SHT. U-20

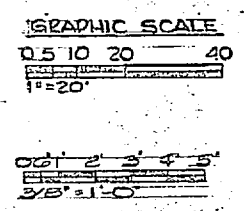
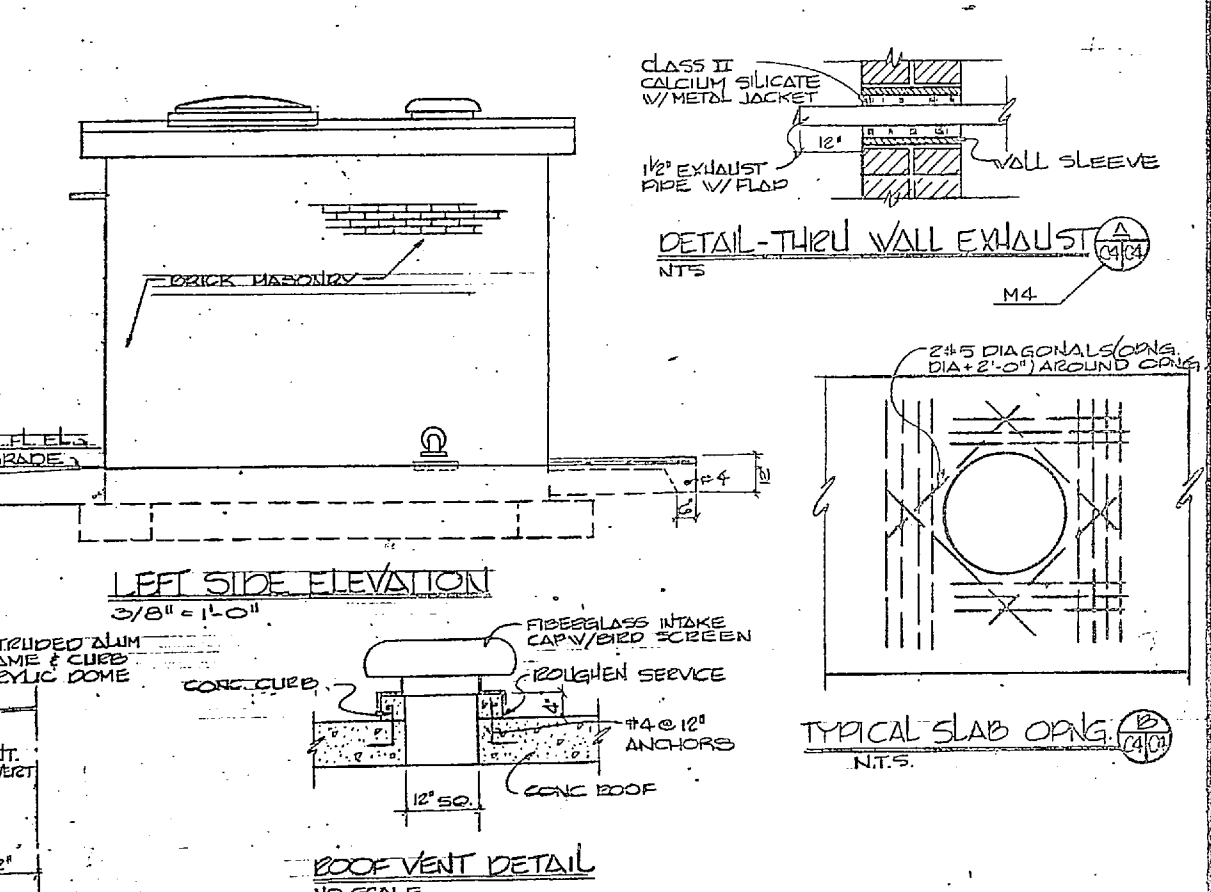
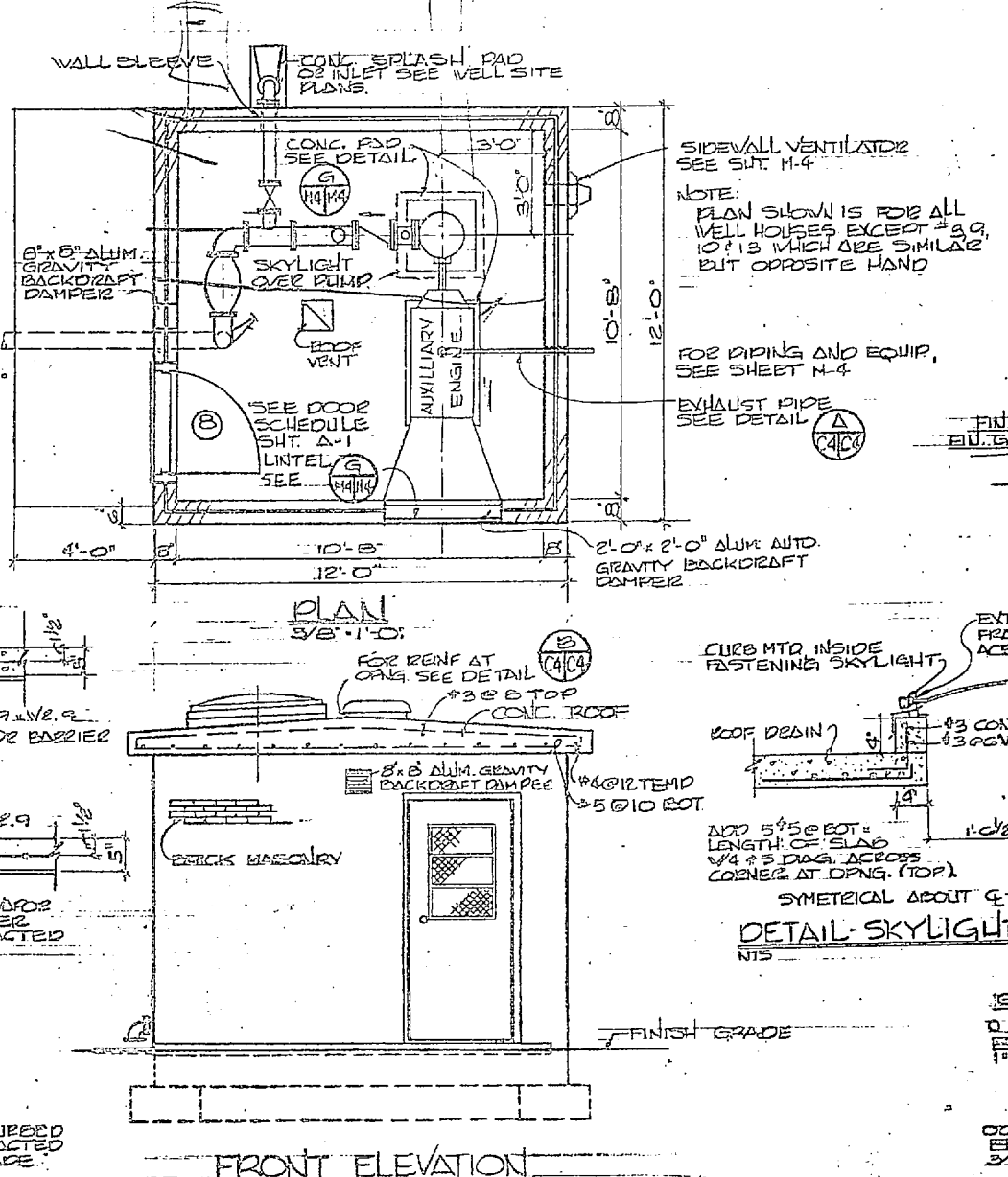
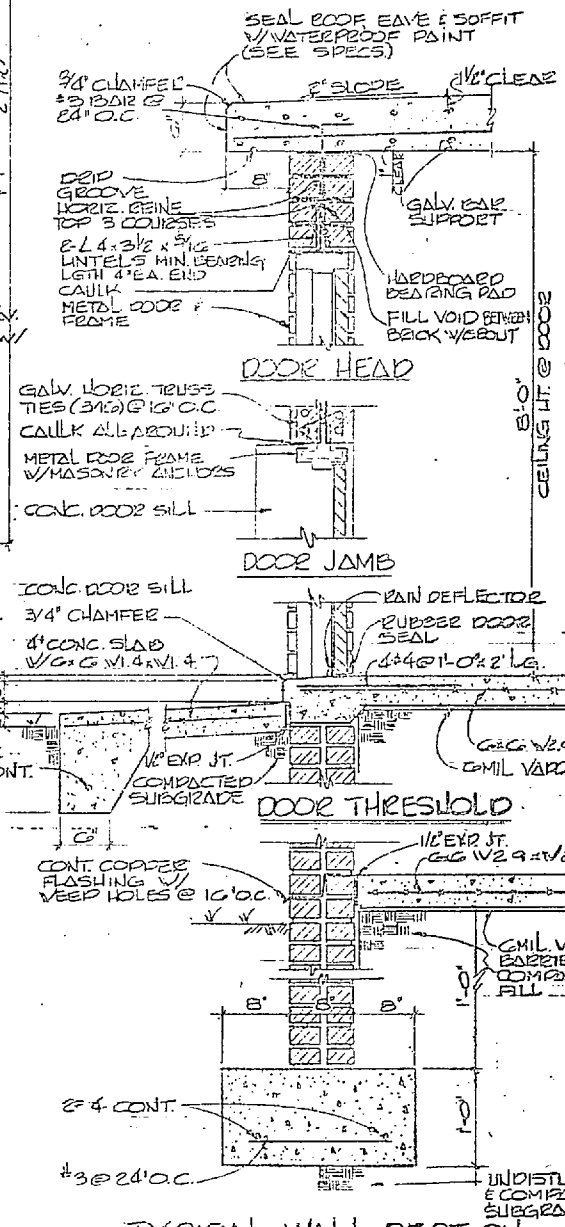
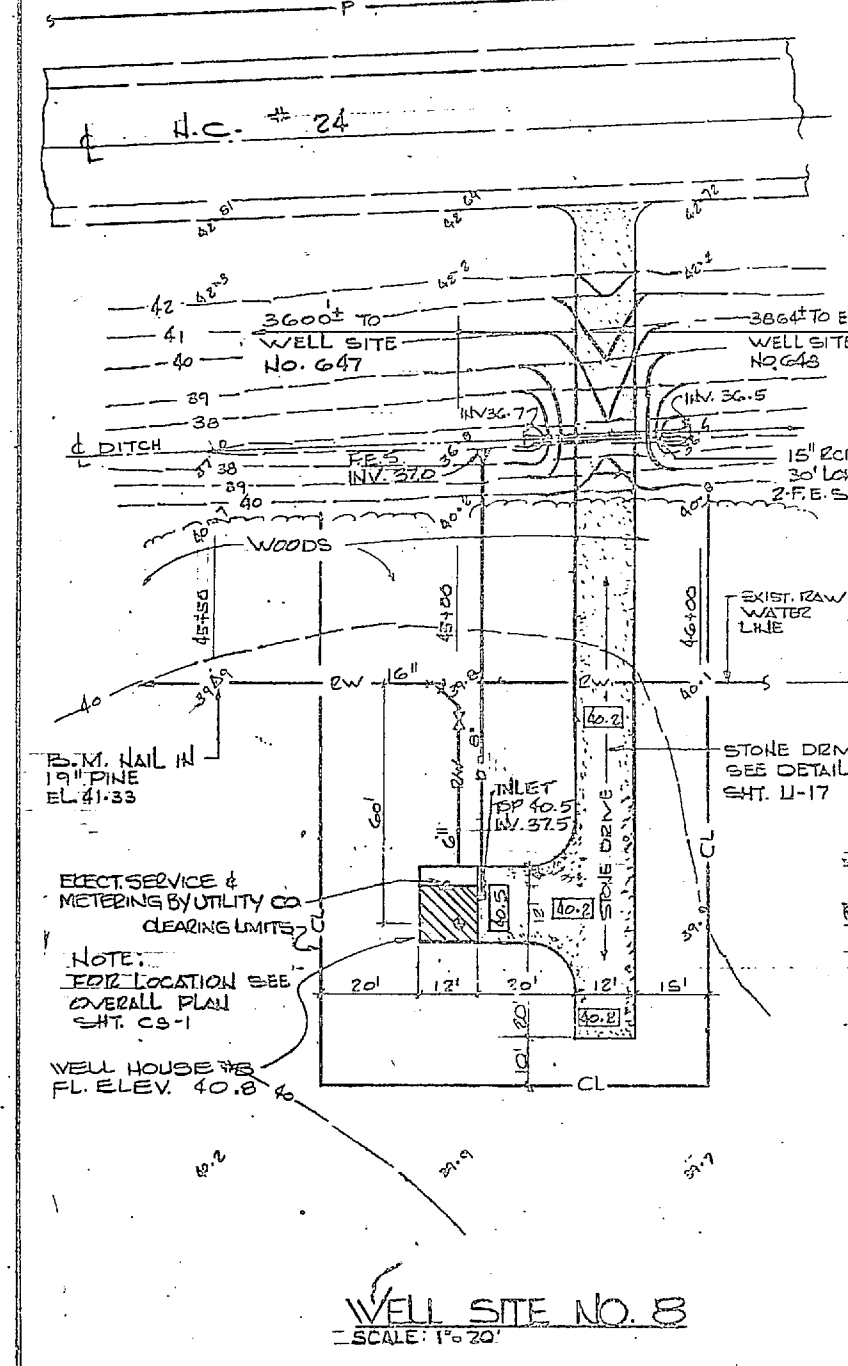


HENRY WISS GORDON & ASSOCIATES CONSULTING ENGINEERS RICHMOND, N. C.		DEPARTMENT OF THE ARMY RAVAIL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NORFOLK, VA.	
PROJECT ENGINEER J. W. WISS	DESIGNER J. W. WISS	DATE 10/1/64	NO. 4107537
CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT		WELL SITES 1 THRU 6	
SCALE: 1" = 20'-0"		DATE: 10-1-64	

REVISIONS		
NO.	DESCRIPTION	DATE



ROOM FINISH SCHEDULE				
AREA	FLOOR	WALLS	CEILING	REMARKS
WELL HOUSE	CONCRETE	BRICK	EXPOSED CONC.	



C-4

HENRY VAN OGDEN & ASSOCIATED CONSULTING ENGINEERS
2100 W. 10th St., Raleigh, N.C.

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
ATLANTIC DIVISION
NAVAL STATION
CAMP LEJEUNE
EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT

WELL SITES 7 THRU 10

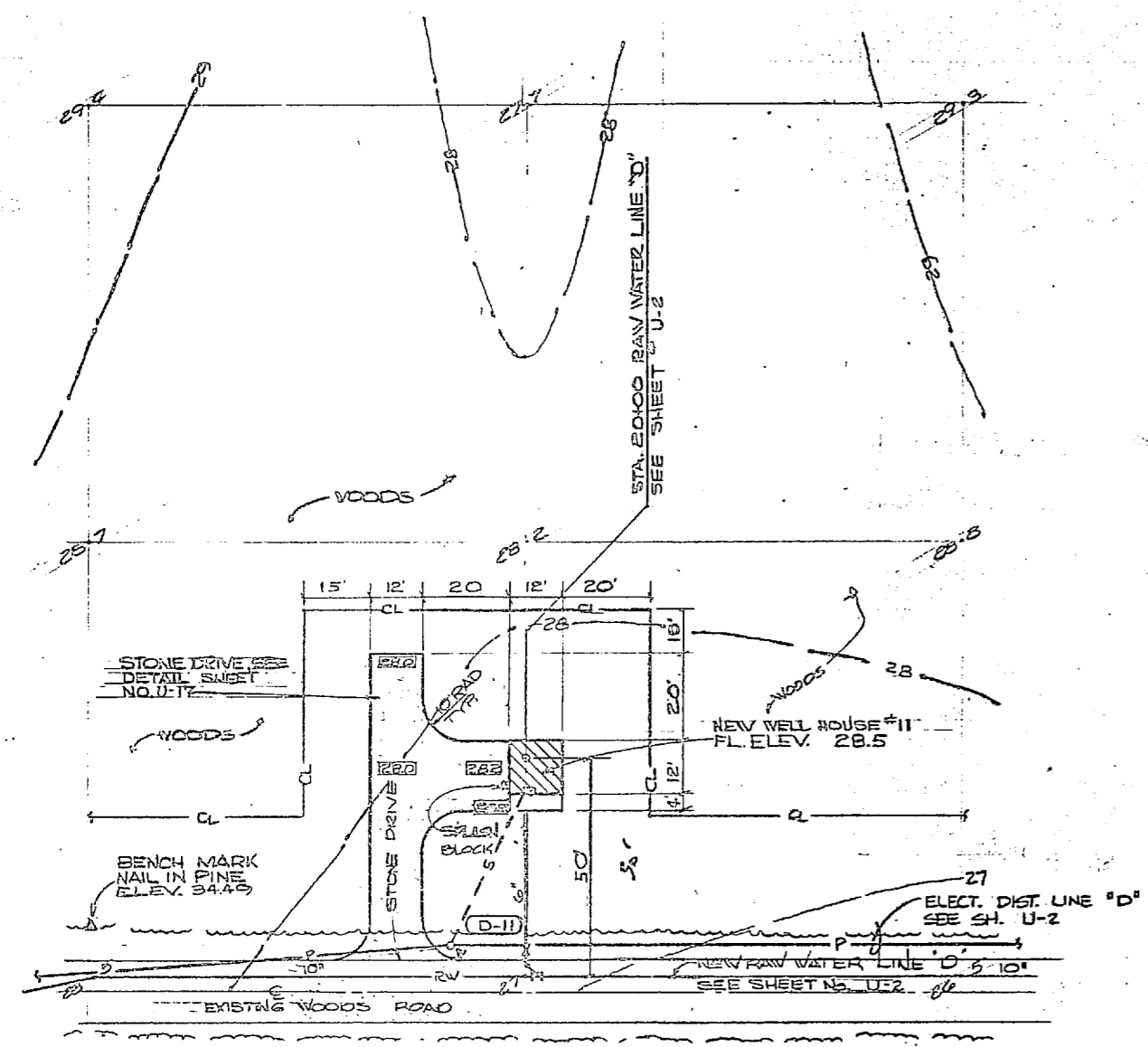
80091

DATE DRAWN: 11/27/68
DATE CHECKED: 12/10/68
DATE APPROVED: 12/10/68

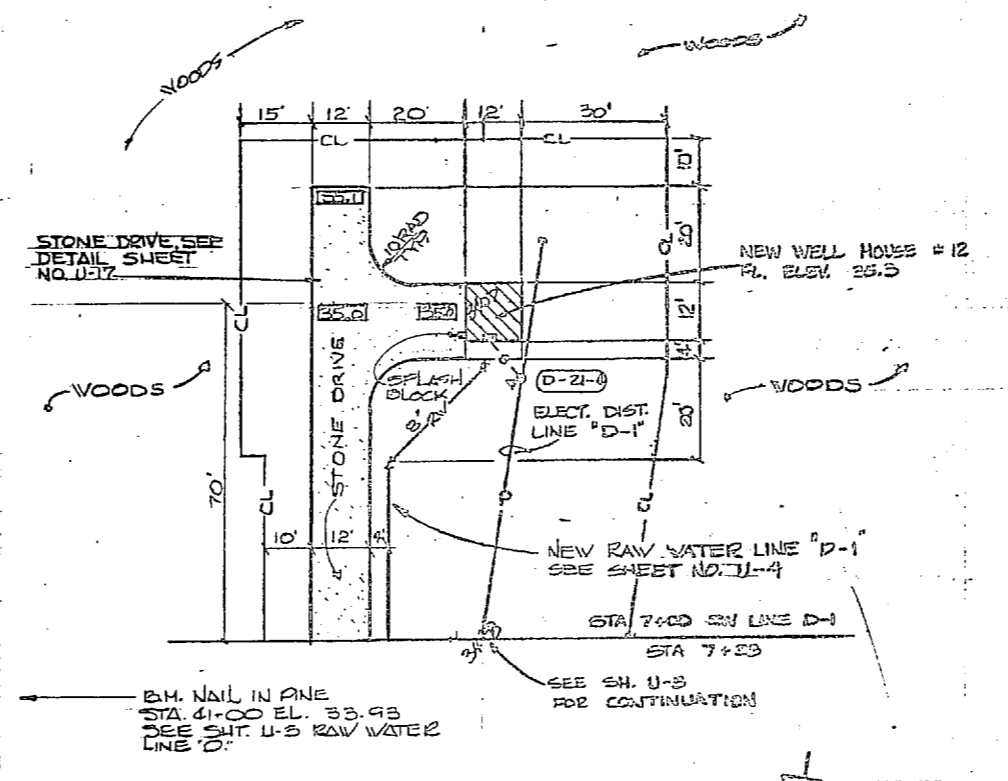
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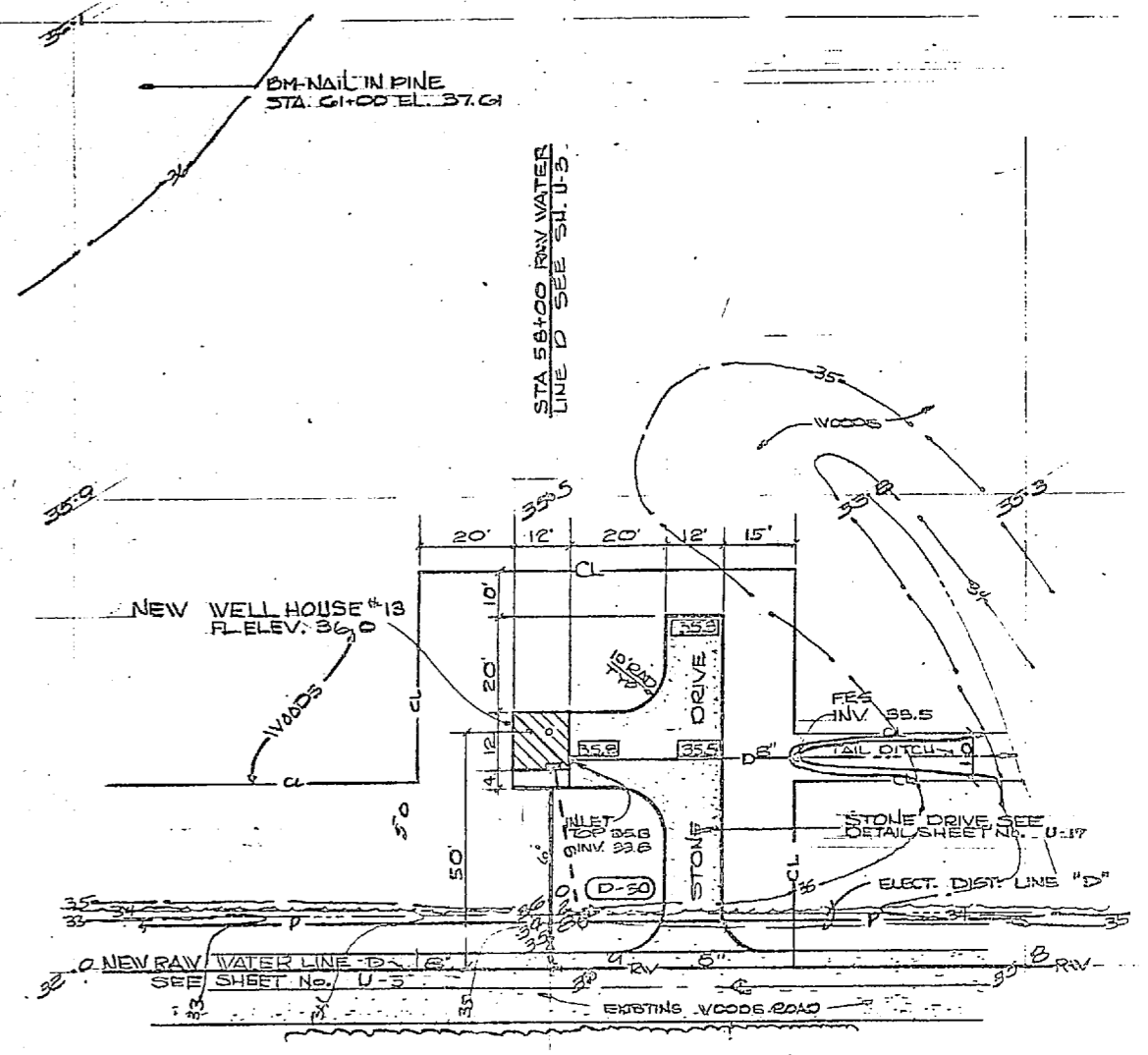
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED



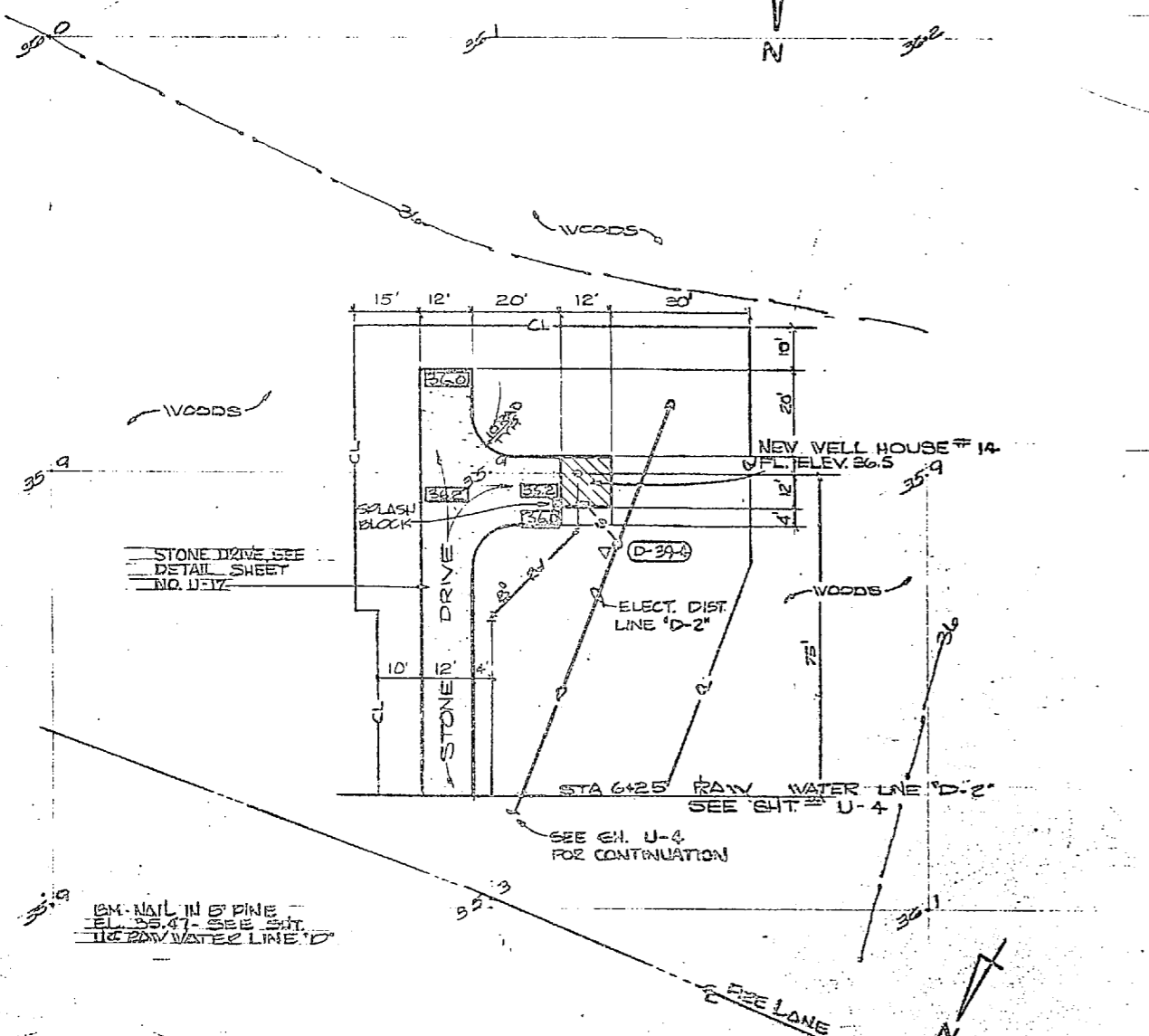
WELL SITE NO. 11
SCALE: 1"=20'



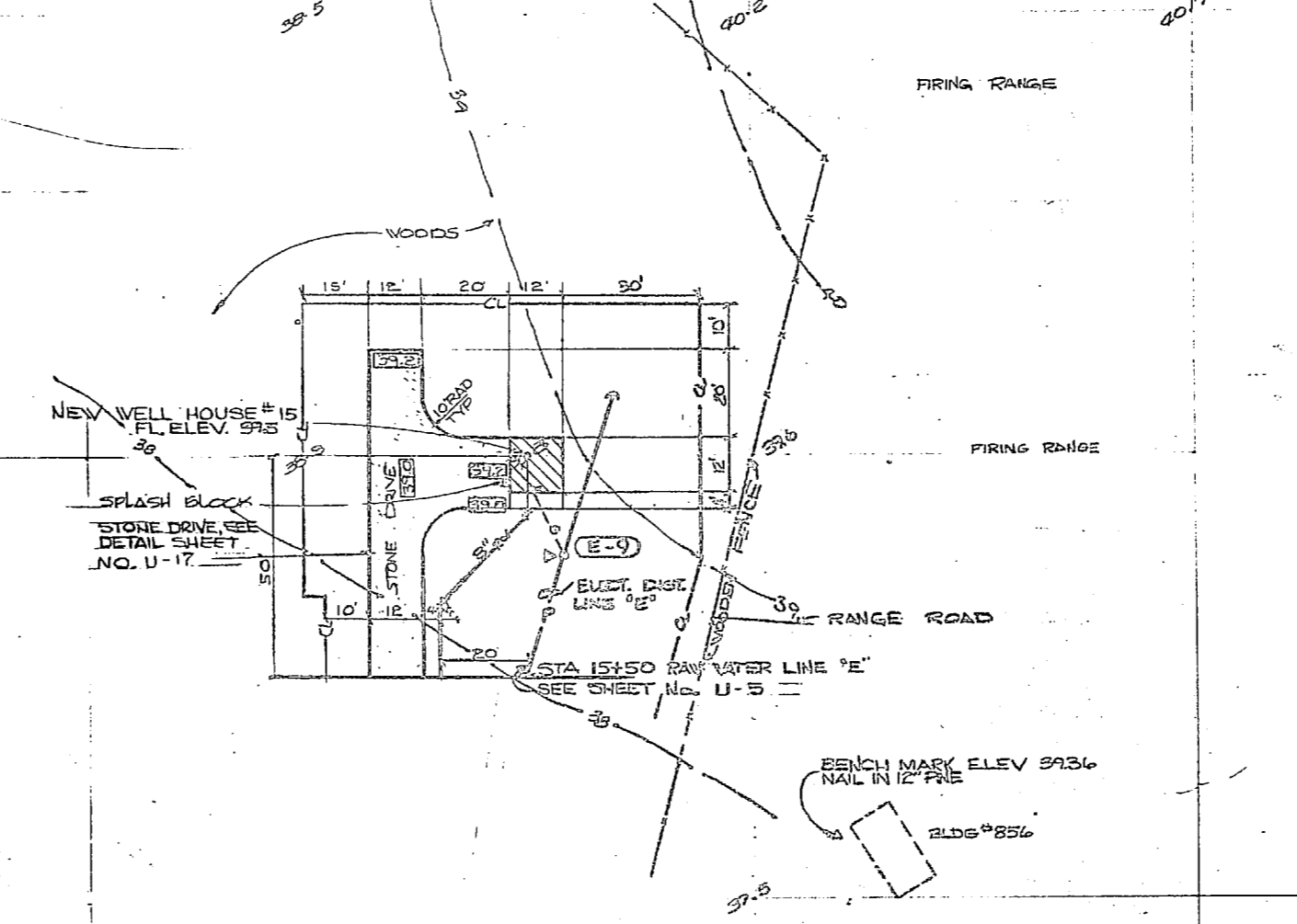
WELL SITE NO. 12
SCALE: 1"=20'



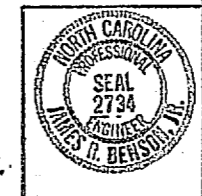
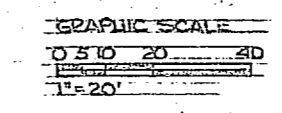
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SCALE: 1"=20'



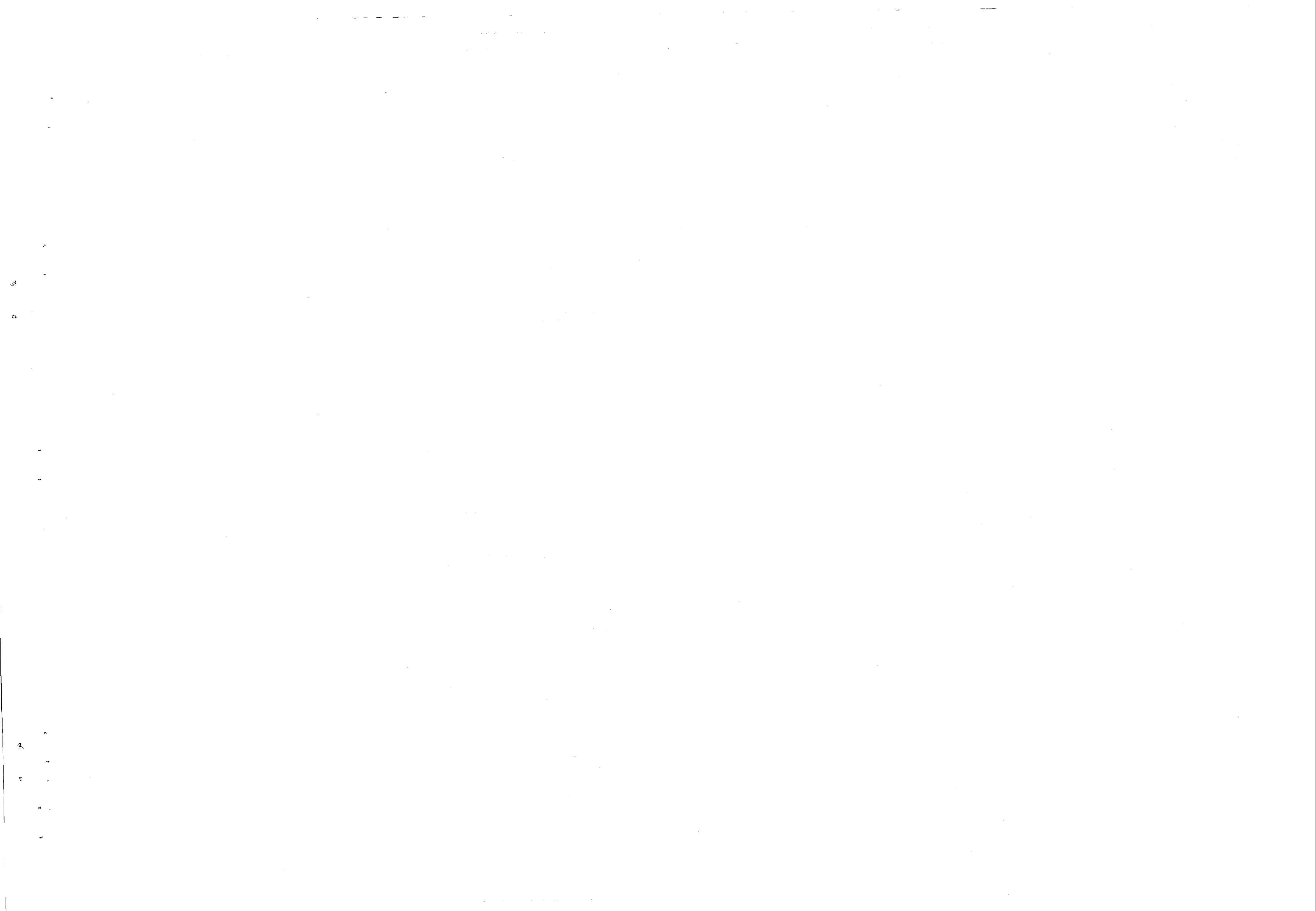
WELL SITE NO. 14
SCALE: 1"=20'



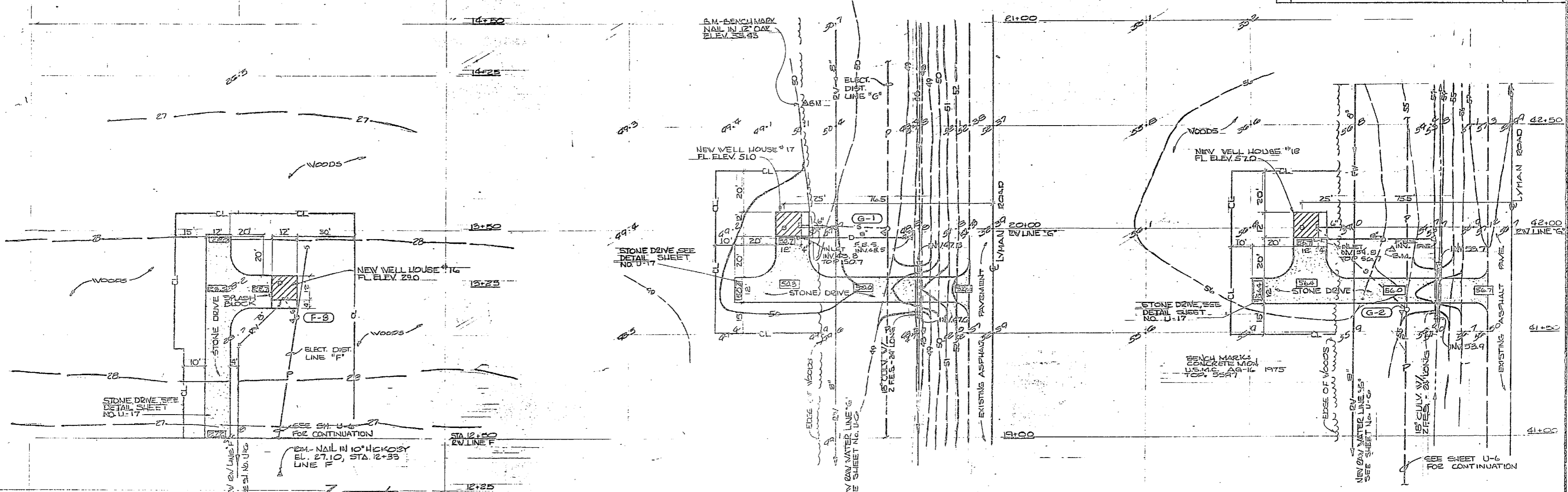
WELL SITE NO. 15
SCALE: 1"=20'



C-5	
LIBRARY FOR CREW & ASSOCIATED COLLECTIVE ENGINEERING CONSULTANTS, S. C.	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NORFOLK, VA.
DESIGNER: JRB CHECKED: JRB DATE: 7/6/68 PROJECT: EXPANSION OF HOLCOMBE BOULEVARD WATER TREATMENT PLANT	CAMP LEJEUNE NORTH CAROLINA WELL SITES 11 THRU 15 SHEET NO. 3005 DRAWING NO. 4107539
PROJECT: EXPANSION OF HOLCOMBE BOULEVARD WATER TREATMENT PLANT ACTIVITY: PRELIMINARY TO DATE: OCT 1968	NAVY CONTRACT NO. N62470-81-B-1344 CONTRACT NO. 68-01-74 AS ORDERED 05-81-1644



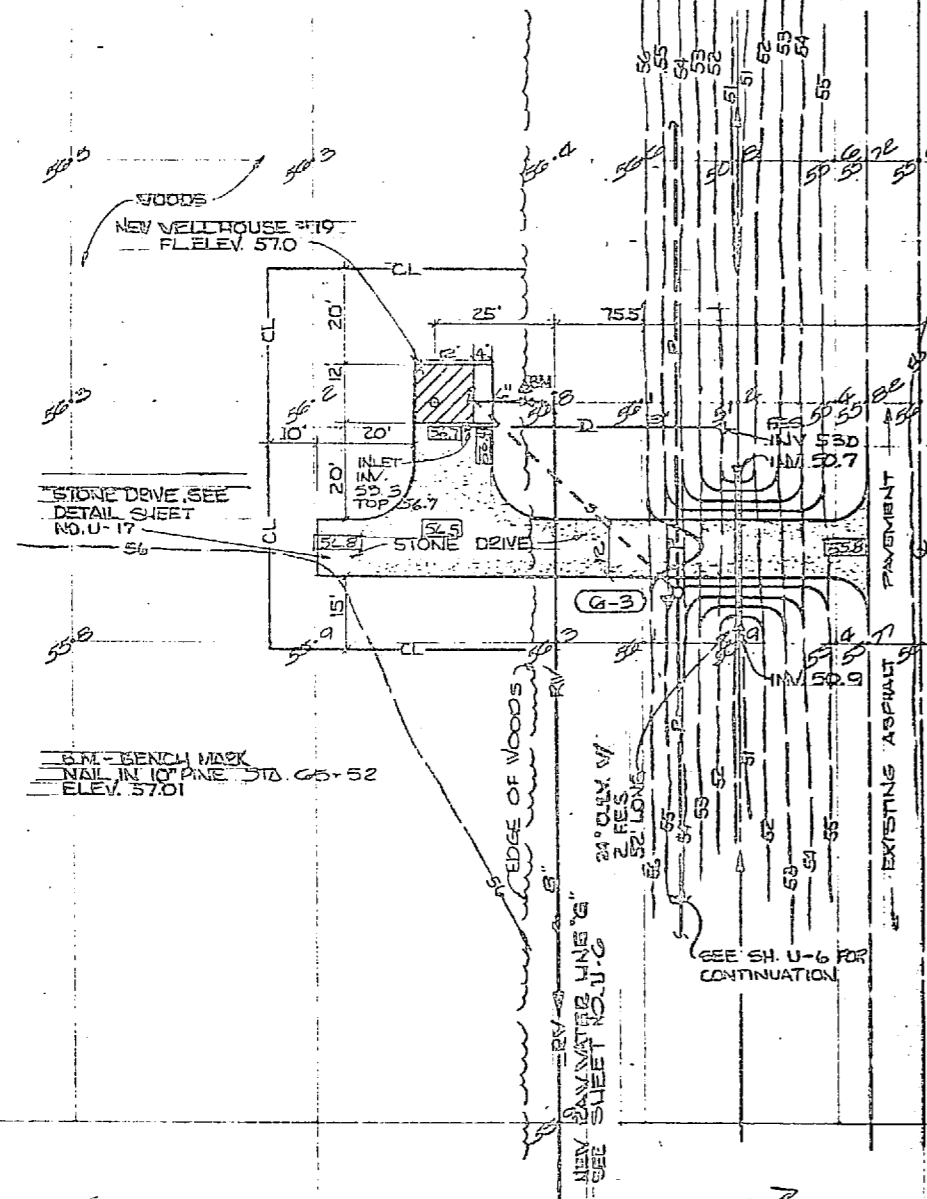
REVISIONS			
SYN	DESCRIPTION	DATE	APPROVED



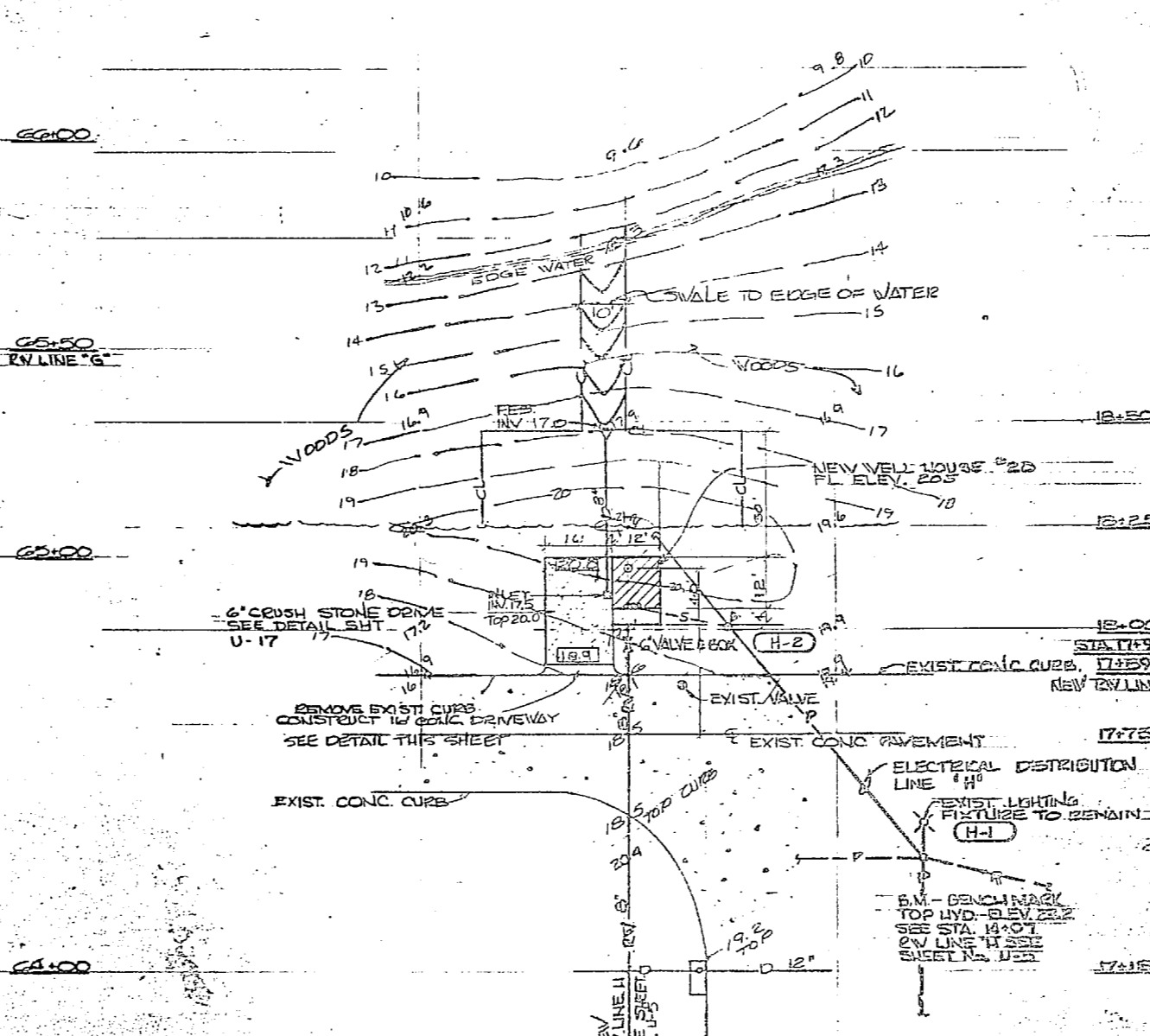
WELL SITE NO 16
SCALE: 1"=20'

WELL SITE NO 17
SCALE: 1"=20'

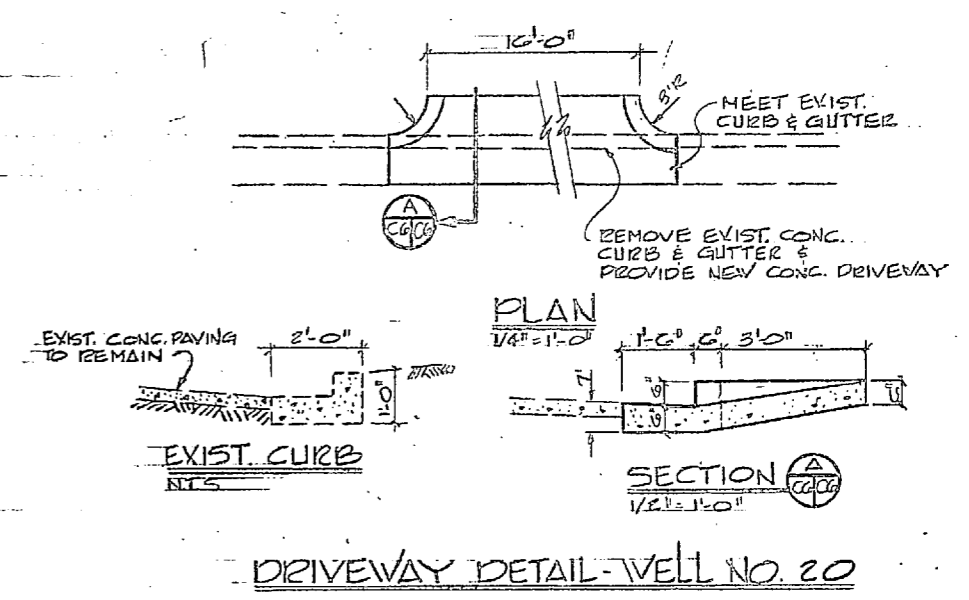
WELL SITE NO 18
SCALE: 1"=20'



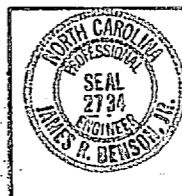
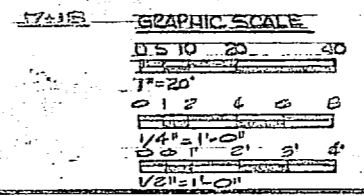
WELL SITE NO. 19
SCALE: 1"=20'



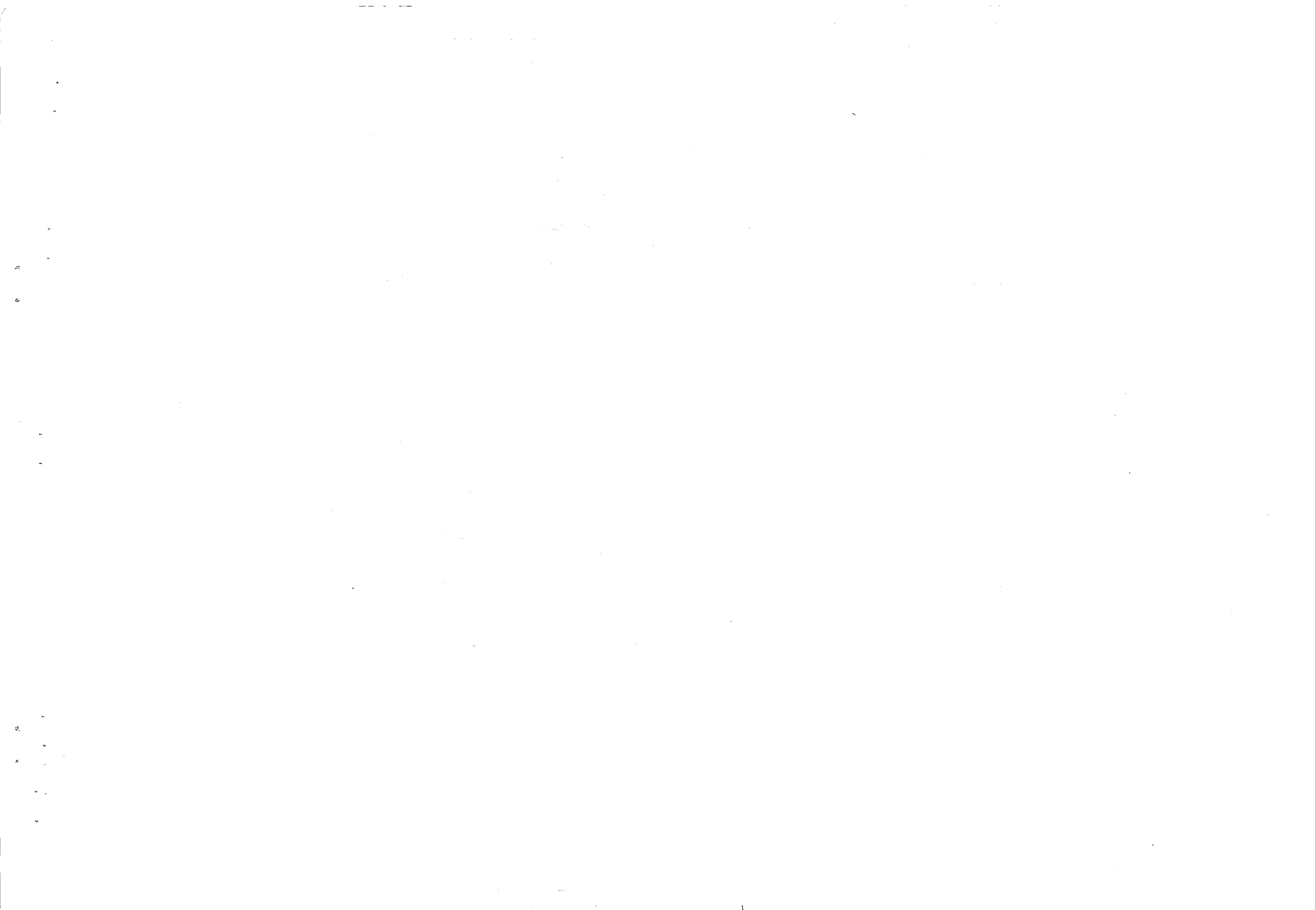
WELL SITE NO 20
SCALE: 1"=20'



DRIVEWAY DETAIL - WELL NO. 20



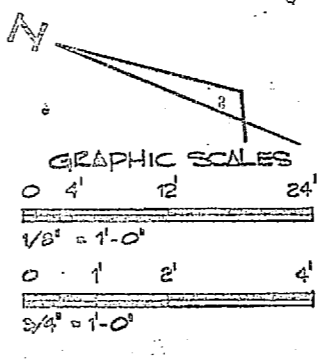
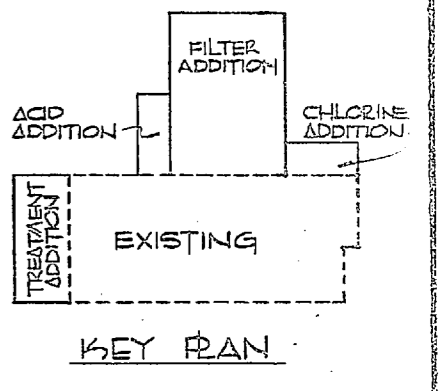
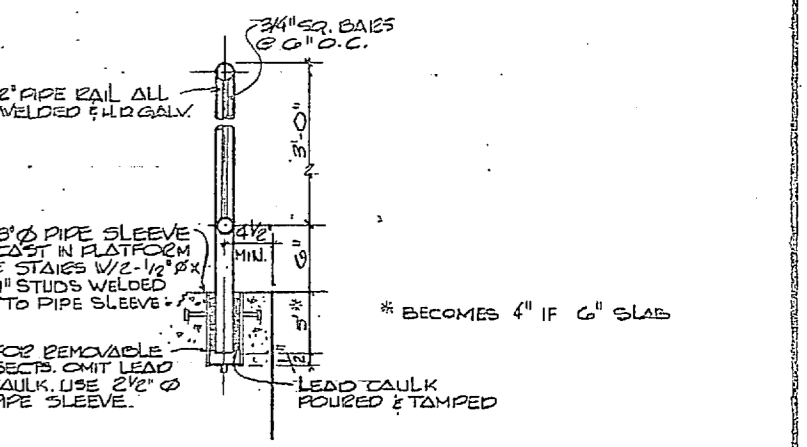
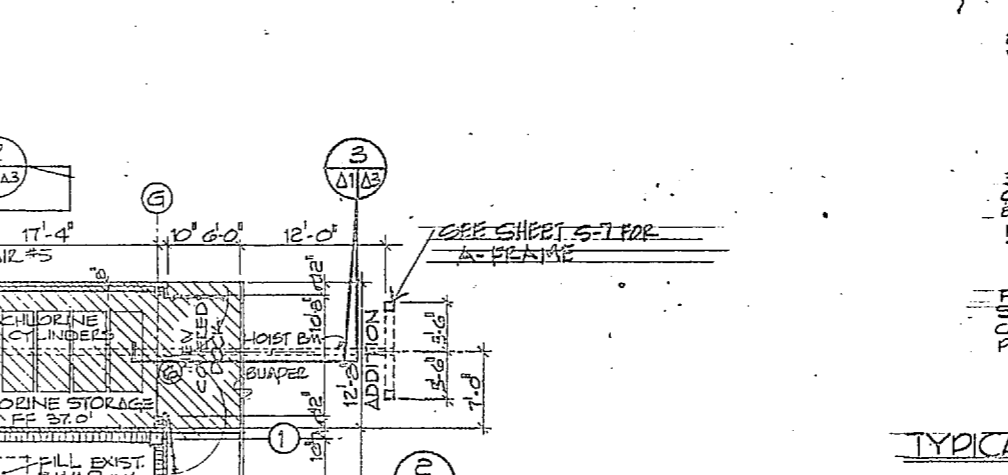
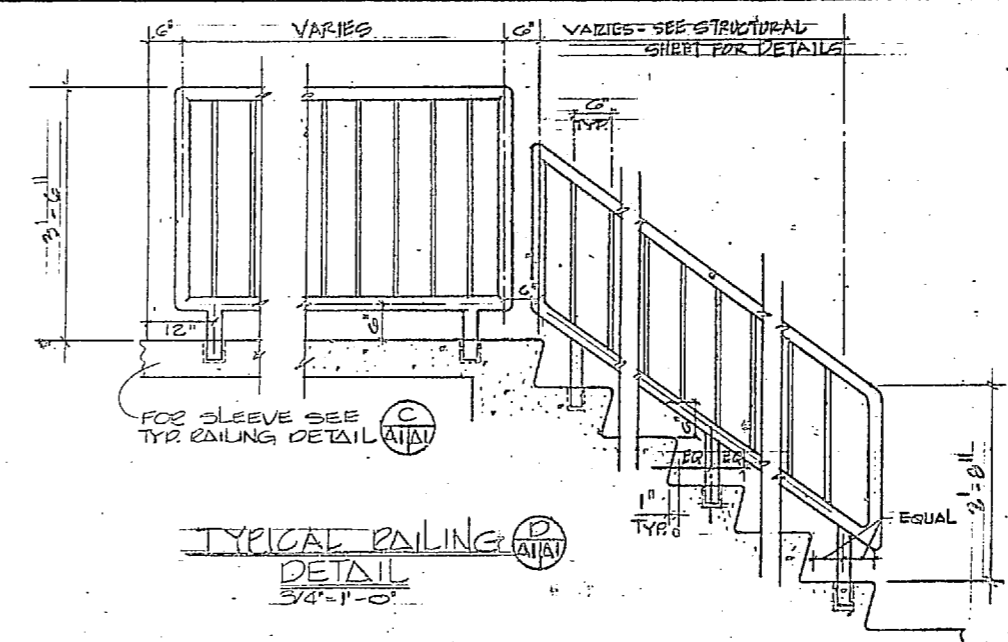
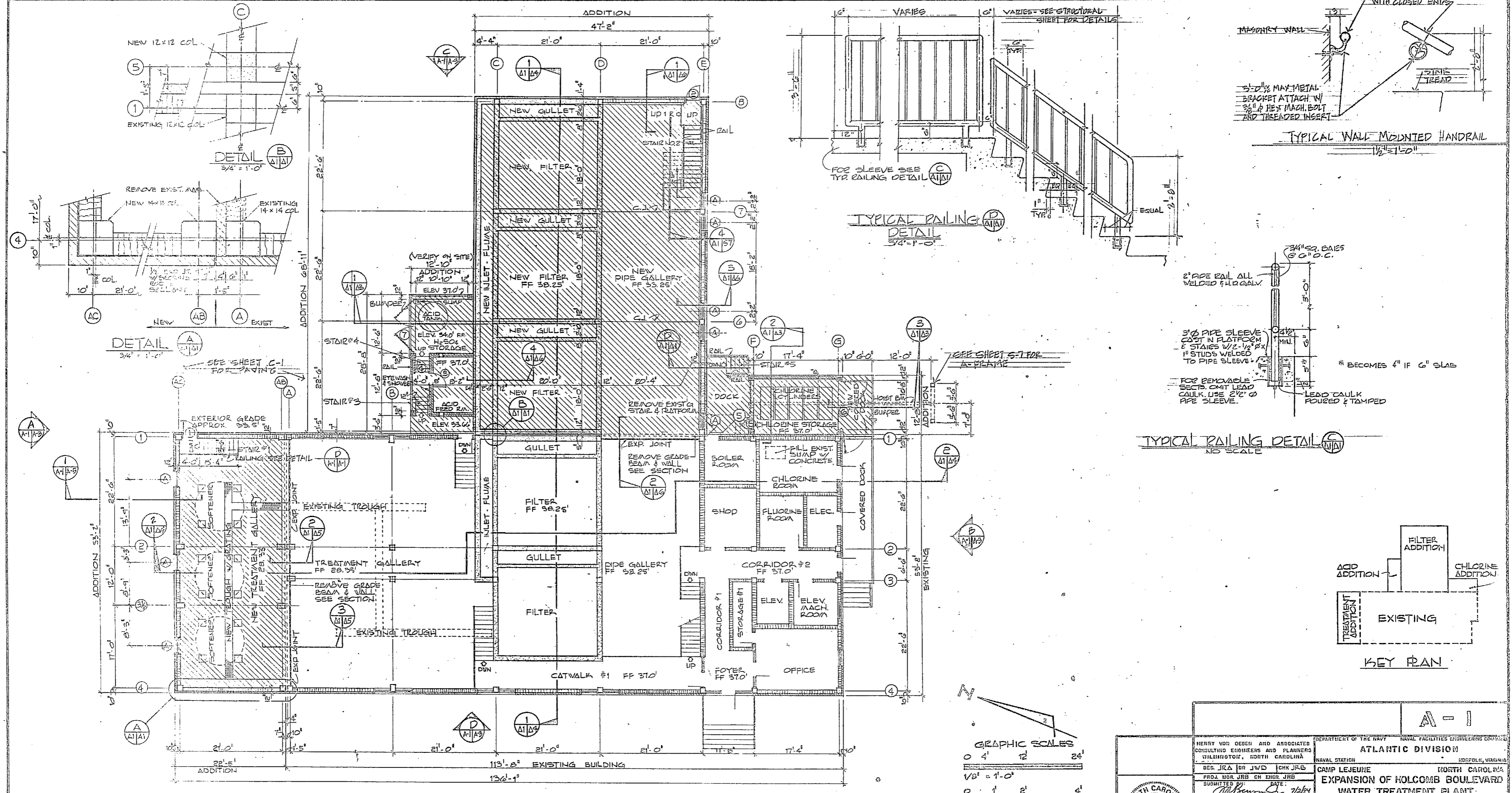
JERRY VON BORN & ASSOCIATES CONSULTING ENGINEERS WELLSVILLE, N.C.		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMANDANT ATLANTIC DIVISION NAVAL STATION	
CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT		NORTH CAROLINA 4107540 1975	
WELLSITES 16 THRU 20 30001		05-81-16-44 2075-0	



DOOR SCHEDULE							ROOM FINISH SCHEDULE					
SYMBOL	SIZE	TYPE	GLAZING	LOUVERS	FRAME	REMARKS	AREA	FLOOR	WALLS	WAINSCOT	CEILING	REMARKS
①	3'-0" x 7'-0" x 1 3/4"	HOLLOW METAL	24" x 36" WIRE GLASS	NONE	HOLLOW METAL		TREATMENT GALLERY	CONCRETE	PAINTED CONCRETE & M.S. BLK	NONE	PAINTED EXPOSED CONC.	
②	DO	DO	DO	DO	DO		PIPE GALLERY	DO	DO	DO	DO	
③	DO	DO	DO	DO	DO		FILTER GALLERY	QUARRY TILE	DO	DO	DO	PROVIDE QUARRY TILE BASE
④	GATE 3'-0" x 9'-2"	ALUM. CHAIN LINK FABRIC	NONE	NONE	GALV. STEEL		CHLORINE STORAGE	CONCRETE	BRCK & ALUMINUM CHAIN LINK FABRIC	DO	PAINTED EXPOSED CONC.	
⑤	DO	DO	DO	DO	DO		DO STORAGE	DO	DO	DO	DO	
⑥	(UNEQUAL GATES) 10'-0" x 8'-0"	DO	DO	DO	DO	PROVIDE PAIR OF UNEQUAL GATE TO FIT 10'-0" OPENING W/ ONE GATE NOTCHED @ HOIST BEAM	COR FEED	DO	BRCK	DO	DO	
⑦	(EQUAL GATES) 5'-9" x 9'-0" PR	DO	DO	DO	DO	SEE FINISH WATER & CR RAW WATER PUMP BUILDINGS, SEE SHEETS A-3, A-9	PUMP HOUSES RAW & FIN WATER	DO	DO	DO	PAINTED JOISTS W/ EXPOSED DECK	RAW WATER PUMP HOUSE HAS ONE PAINTED MASONRY BLOCK WALL
⑧	3'-0" x 6'-8" x 1 3/4"	HOLLOW METAL	24" x 36" WIRE GLASS	DO	HOLLOW METAL							
⑨	4'-0" x 6'-8" x 1 3/4"	DO	NONE	DO	DO	DO						
⑩	3'-0" x 6'-8" x 1 3/4"	DO	DO	DO	DO	DO						
⑪	3'-0" x 6'-10" x 1 3/4"	DO	DO	DO	DO	DO						
⑫	3'-0" x 6'-10" x 1 3/4" PR	DO	DO	DO	DO	DO						

REVISIONS		
NO.	DESCRIPTION	DATE

WINDOW SCHEDULE					
SYMBOL	SIZE	TYPE	GLAZING	LINTEL	REMARKS
A	3'-4" x 21'-4" x 2" (SEE ELEVATIONS)	ALUMINUM AWNING	MATCH EXISTING	CONCRETE	MATCH EXISTING WINDOW (FRAME, GLAZING & INSULATED PANEL)
B	12'-0" x 2'-8" x 2" (3 EQ. UNITS @ 4')	DO	DO	DO	MATCH EXISTING WINDOW (FRAME & GLAZING)
C	8'-0" x 2'-0" x 2" (2 EQ. UNITS @ 4')	DO	DO	CONC./ST. LANG.	WINDOWS FOR BOTH FINISH WATER & RAW WATER PUMP HOUSES



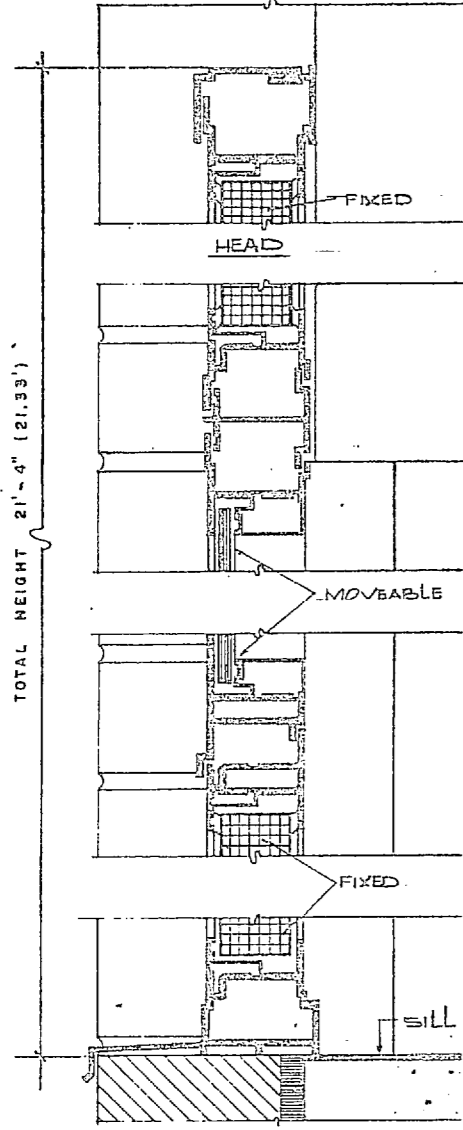
A-1

HENRY VON OEBER AND ASSOCIATES CONSULTING ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA		DEPARTMENT OF THE NAVY - NAVAL FACILITIES ENGINEERING CONTROL ATLANTIC DIVISION NAVAL STATION - NORFOLK, VIRGINIA	
DES. JRA JRB JVD JHK JRS PROJ. MGR. JRB ON ENGR. JRB SUBMITTED BY: DATE:		CAMP LEJEUNE - NORTH CAROLINA EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	
FIRM NUMBER: 26164 E.P.D. PROJECT NO.: 157 NO. 1235 - DIR. 125		TREATMENT PLANT 1ST-FLOOR SIZE: CODE IDENT. NO.: 4107541 80091 - 4107541	
APPROVED: [Signature] DATE: 7/1/64 ACTIVITY - SATISFACTORY TO		SCALE: AS SHOWN SPEC. 05-61-1644 SHEET 0 OF 74	

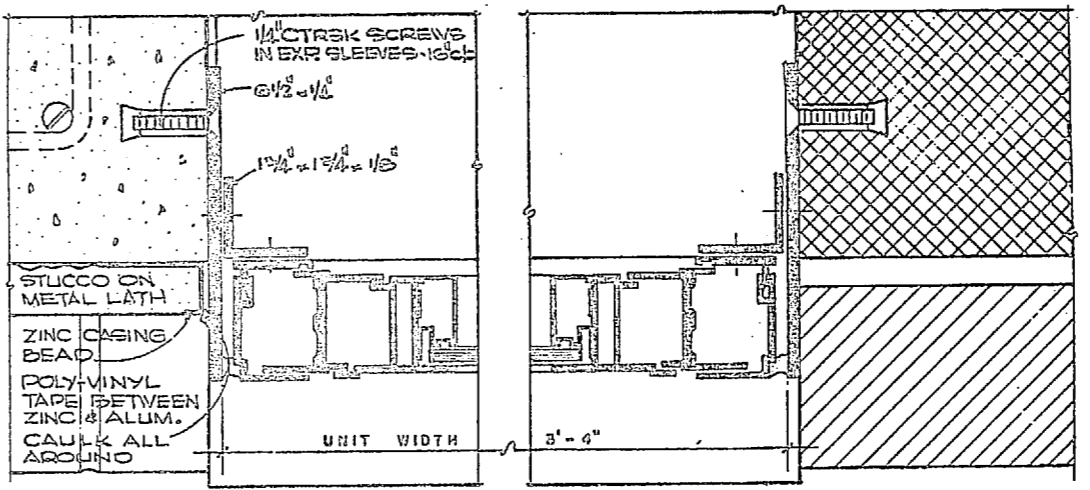
FIRST FLOOR COMPOSITE PLAN
1/8" = 1'-0"



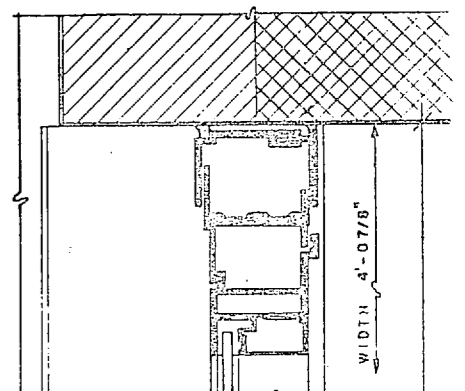
REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED



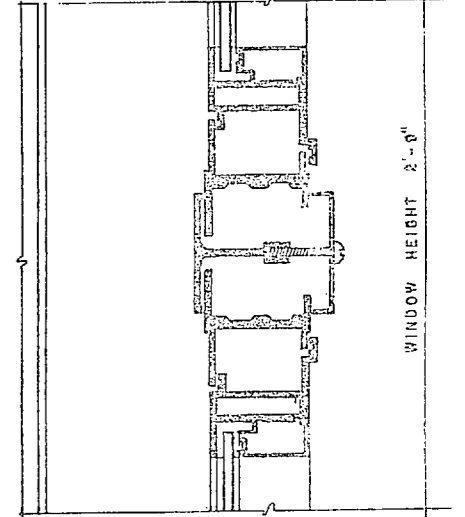
WINDOW DETAIL
SCALE 6" = 1'-0"



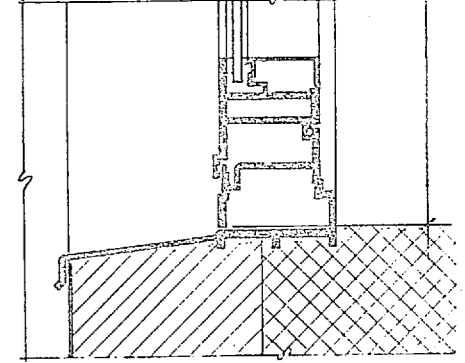
WINDOW DETAIL
SCALE 6" = 1'-0"



JAMB/HEAD

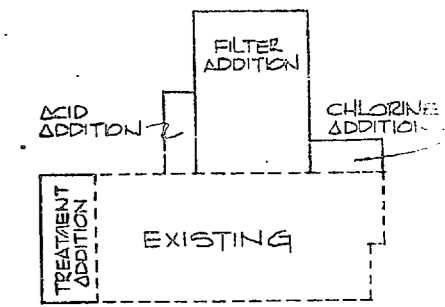


MULLION

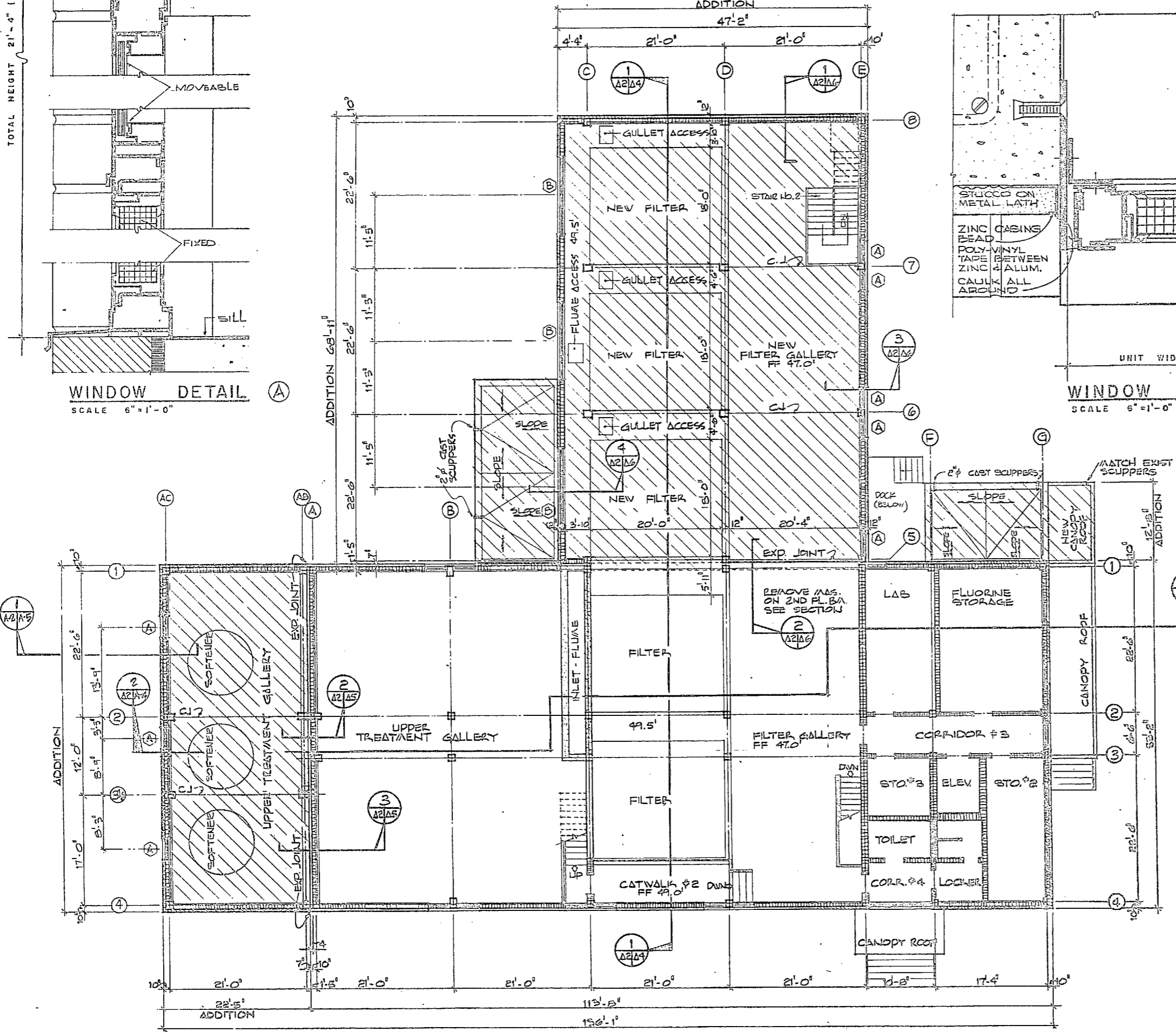


SILL

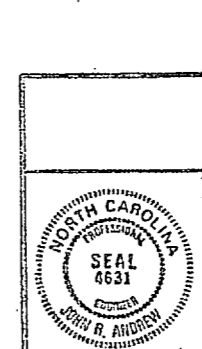
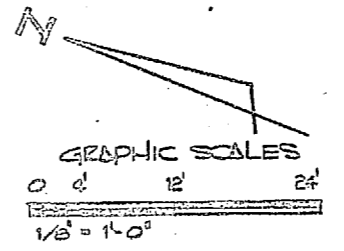
DETAIL OF CLERESTORY WINDOWS
SCALE 6" = 1'-0"



KEY PLAN



SECOND FLOOR COMPOSITE PLAN
SCALE 1/8" = 1'-0"



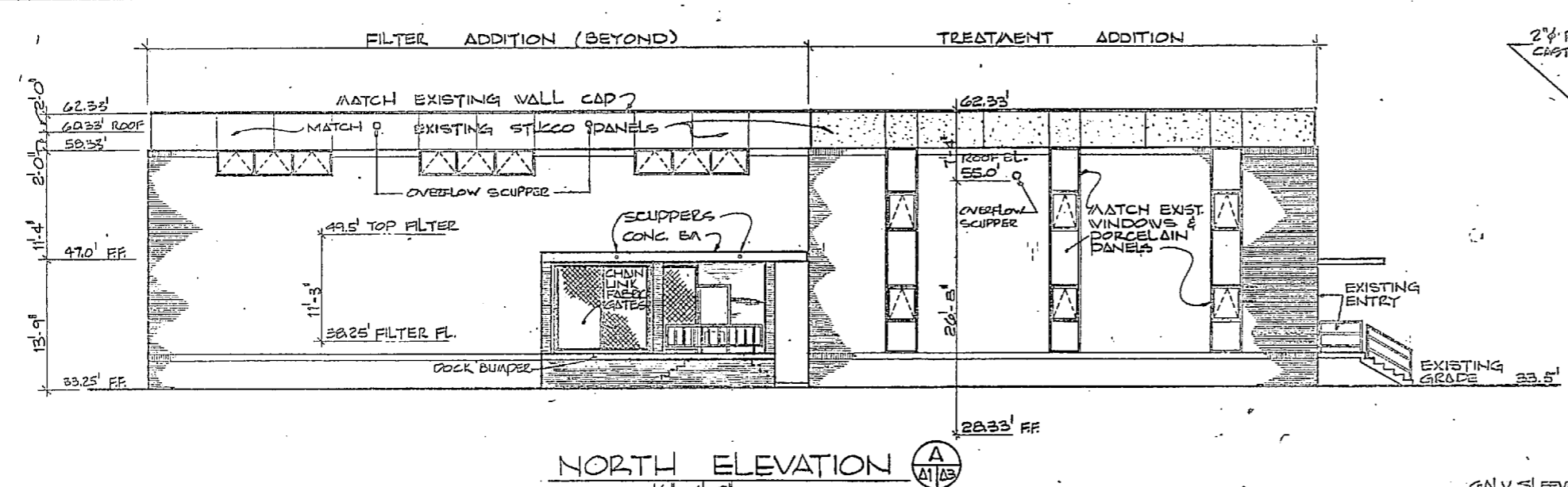
HENRY VON OESE AND ASSOCIATES CONSULTING ENGINEERS AND PLANNERS DULHURST, NORTH CAROLINA			ATLANTIC DIVISION		
DESIGNED BY: JWB, JVB, EHR, JVB			PRINCIPAL: JVB		
SUBMITTED BY: JWB			DATE: 7/84		
FIRM MEMBER: JWB			PRINCIPAL: JVB		
CFD/FP: JWB, JVB, EHR			DATE: 7/84		
NO. 4631			DATE: 7/84		
ACTIVITY - SATISFACTORY TO			DATE: 7/84		
APPROVED: [Signature]			DATE: 7/84		
FOR: [Signature]			DATE: 7/84		
FOR: [Signature]			DATE: 7/84		
FOR: [Signature]			DATE: 7/84		

PROPERTY OF THE NAVY - NAVAL FACILITIES ENGINEERING CENTER			NORTH CAROLINA		
CAMP LEJEUNE			EXPANSION OF HOLCOMB BOULEVARD		
WATER TREATMENT PLANT			TREATMENT PLANT - 2ND FLOOR		
NO. 4631			DATE: 7/84		
ACTIVITY - SATISFACTORY TO			DATE: 7/84		
APPROVED: [Signature]			DATE: 7/84		
FOR: [Signature]			DATE: 7/84		
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FOR: [Signature]			DATE: 7/84		

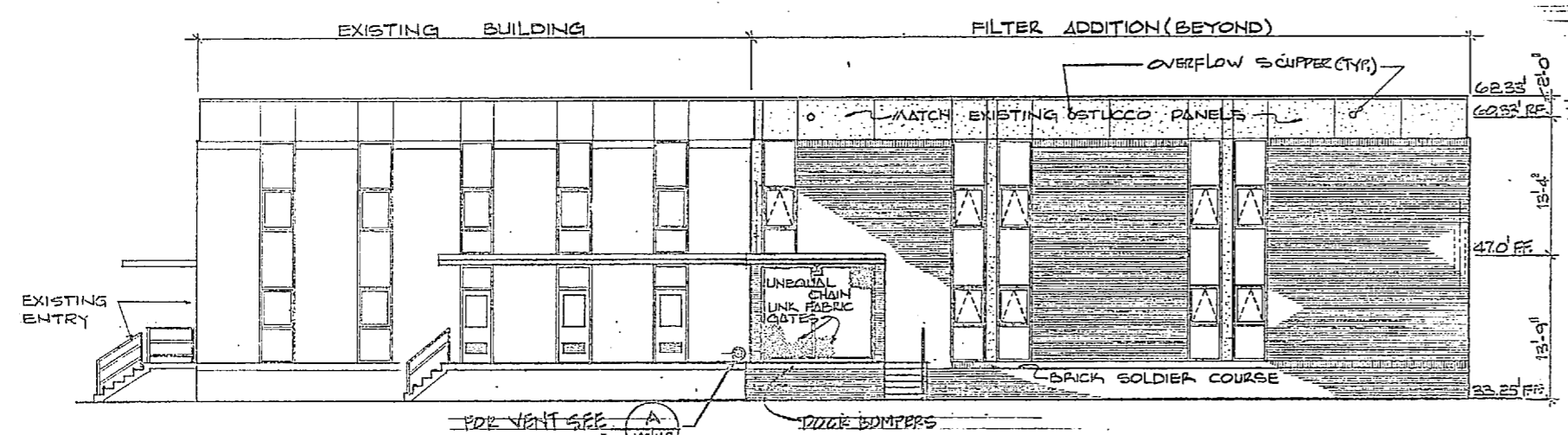
SCALE: 3/8" = 1'-0"

A-2

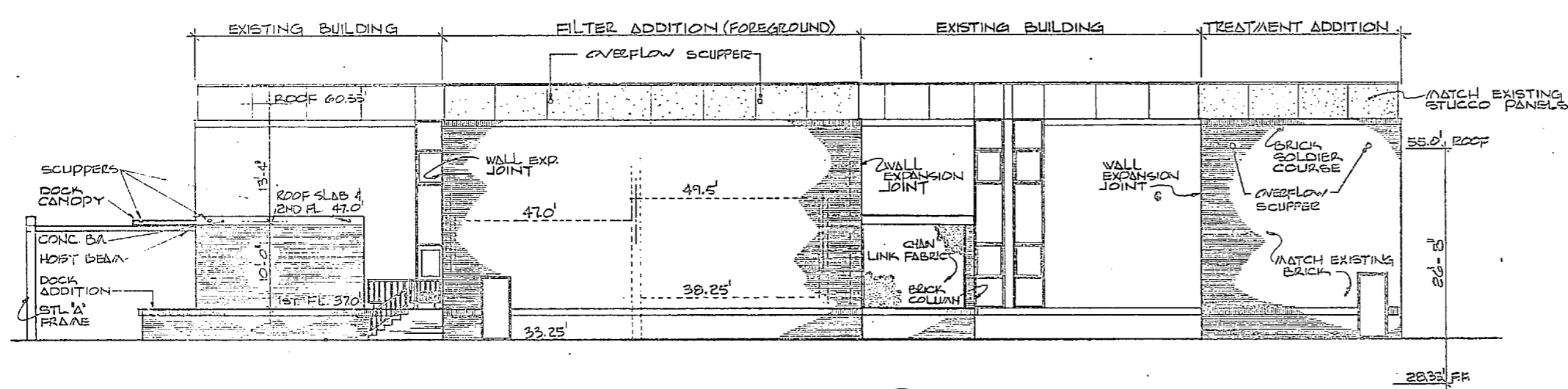
REVISIONS		
SYM	DESCRIPTION	DATE APPROVED



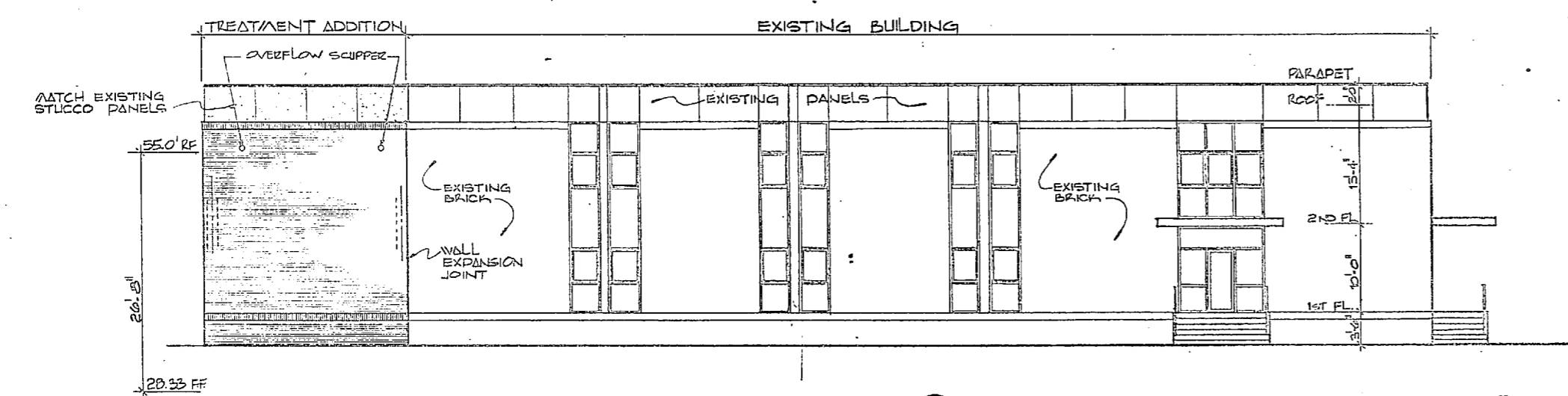
NORTH ELEVATION
1/8" = 1'-0"



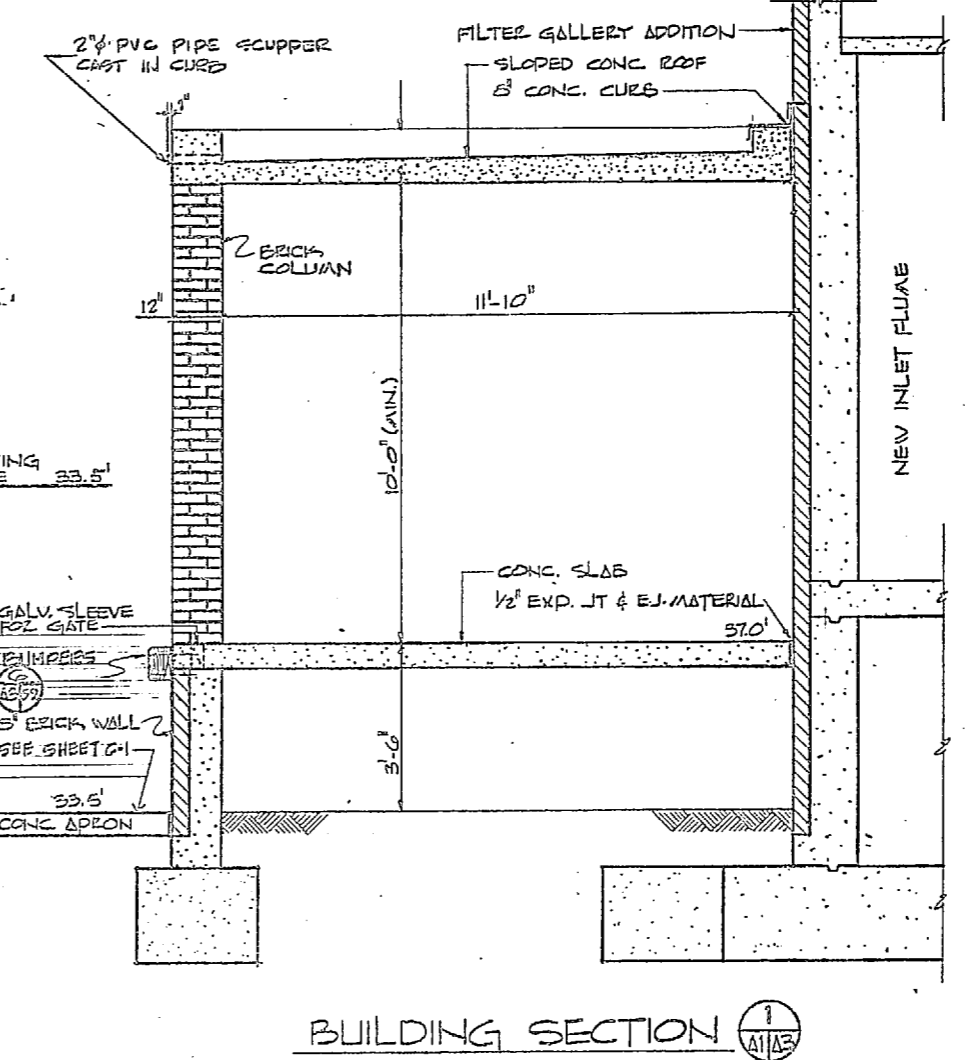
SOUTH ELEVATION
1/8" = 1'-0"



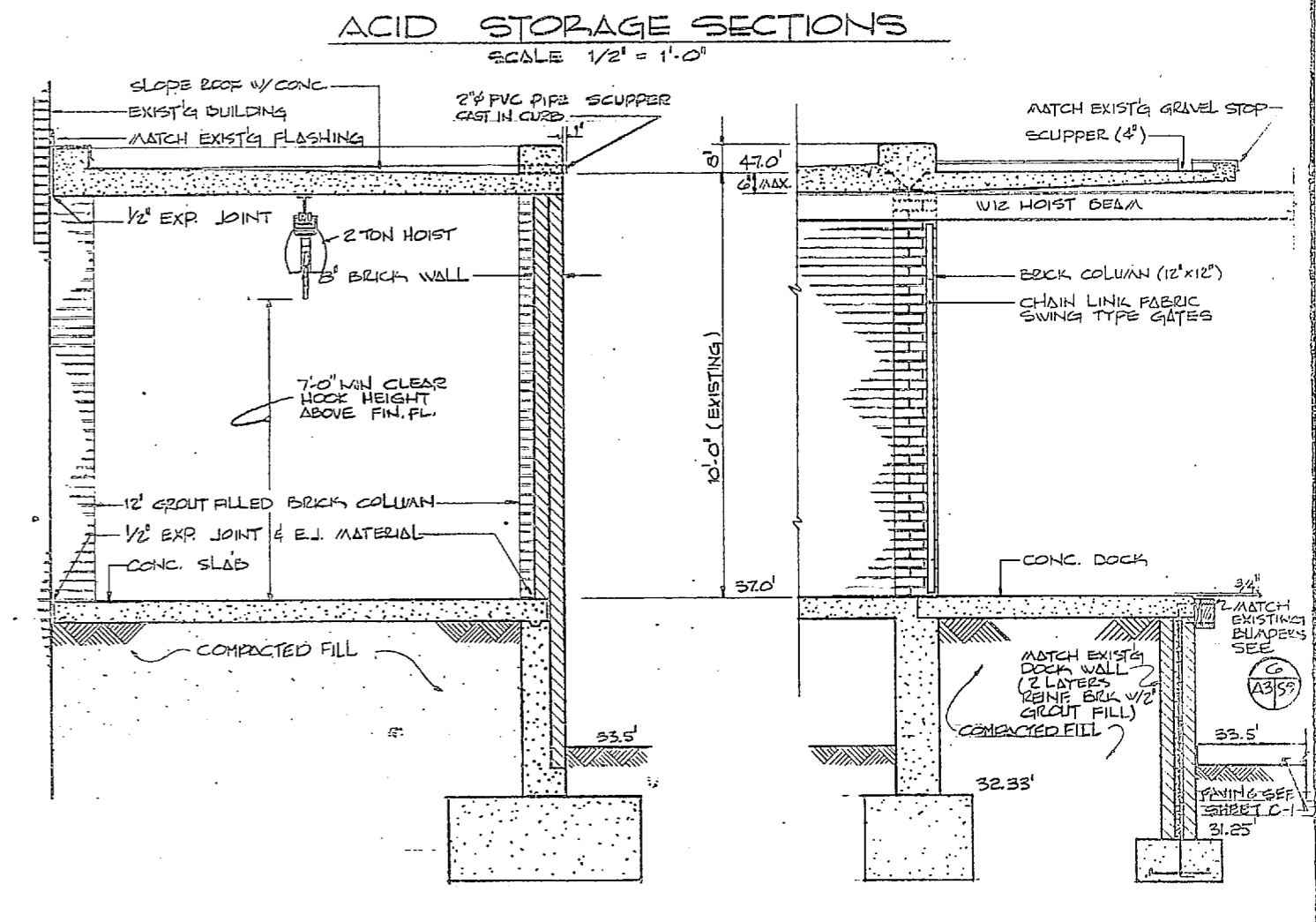
EAST ELEVATION
1/8" = 1'-0"



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



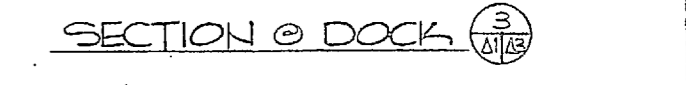
BUILDING SECTION 1
1/8" = 1'-0"



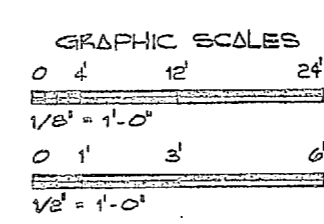
ACID STORAGE SECTIONS
SCALE 1/2" = 1'-0"



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

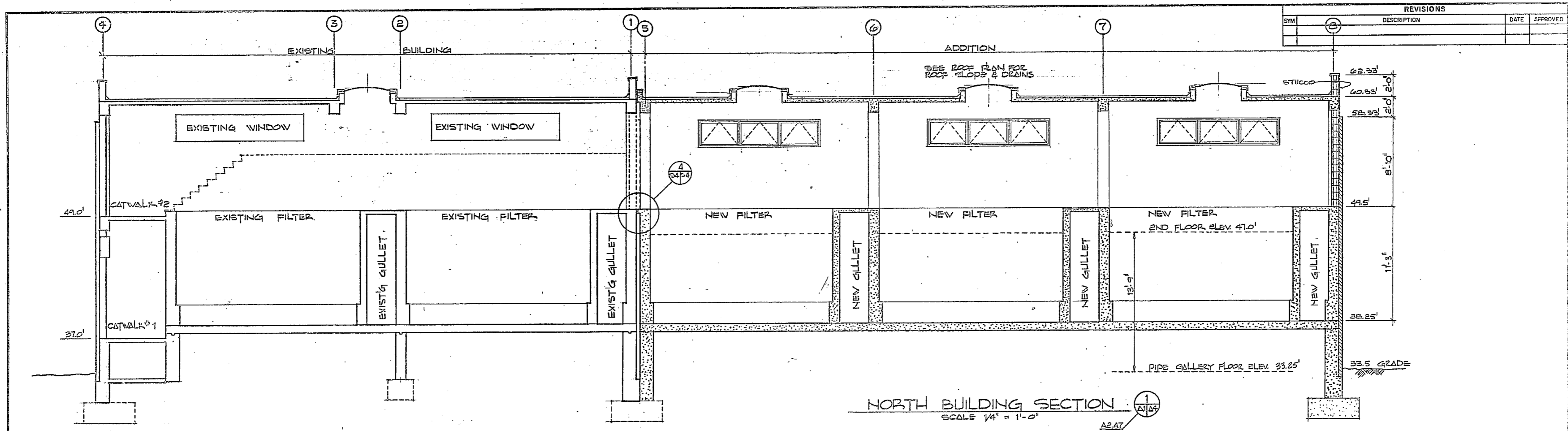


SECTION @ DOCK
1/8" = 1'-0"

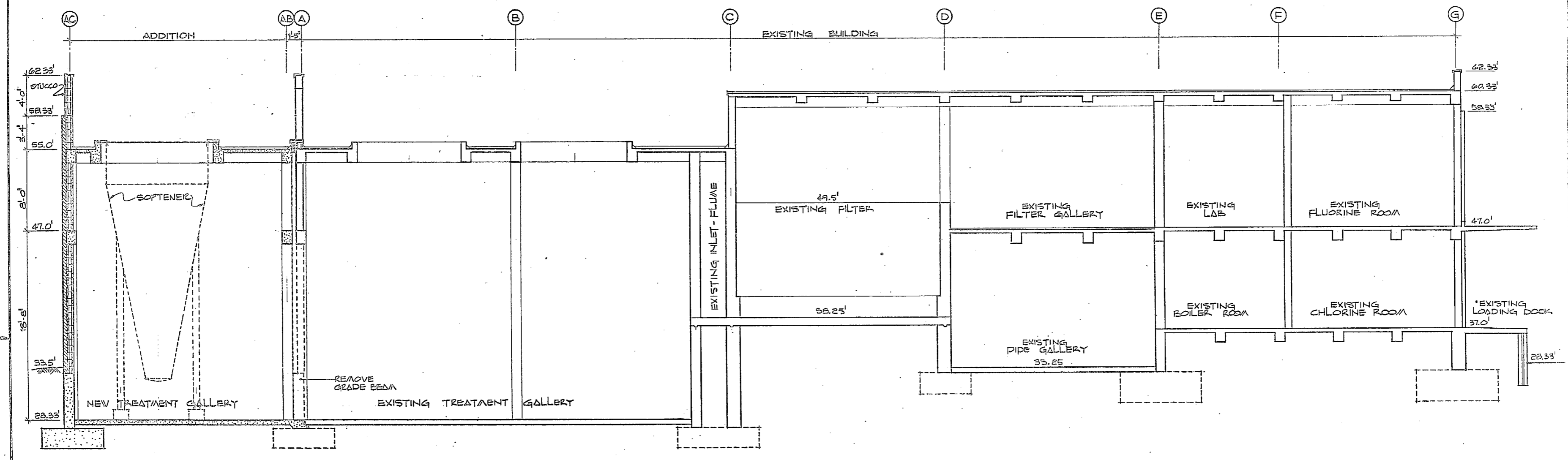


	HENRY VON OEGEN AND ASSOCIATED CONSULTING ENGINEERS AND PLANNERS WELLSBORO, NORTH CAROLINA	DEPARTMENT OF THE NAVY - NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NAVAL STATION - NORFOLK, VIRGINIA
	DES. JRB DR. JWD CHK. JRB PROJ. MGR. JRB CH. ENR. JRB	CAMP LEJEUNE - NORTH CAROLINA EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT
	SUBMITTED BY: [Signature] DATE: 7/24/64 FIRM MEMBER: [Signature] PRINCIPAL: [Signature]	TREATMENT PLANT ELEVATIONS SHEET NO. 4107543
	APPROVED BY: [Signature] DATE: 7/24/64 ACTIVITY - SATISFACTORY TO SUPERVISOR: [Signature]	SCALE: 800S1 SPEC. 05-81-1644 SHEET 10 OF 74 207543



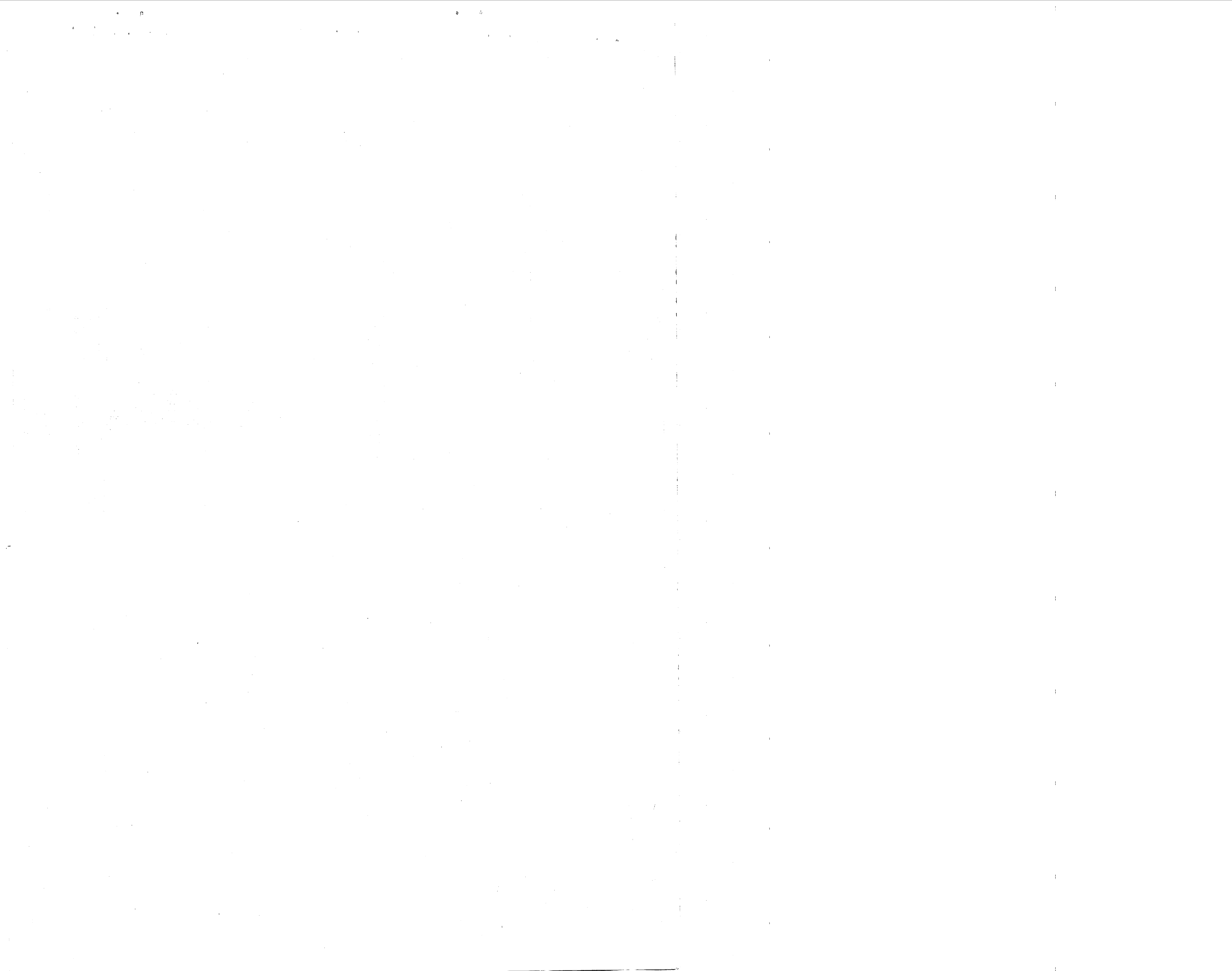


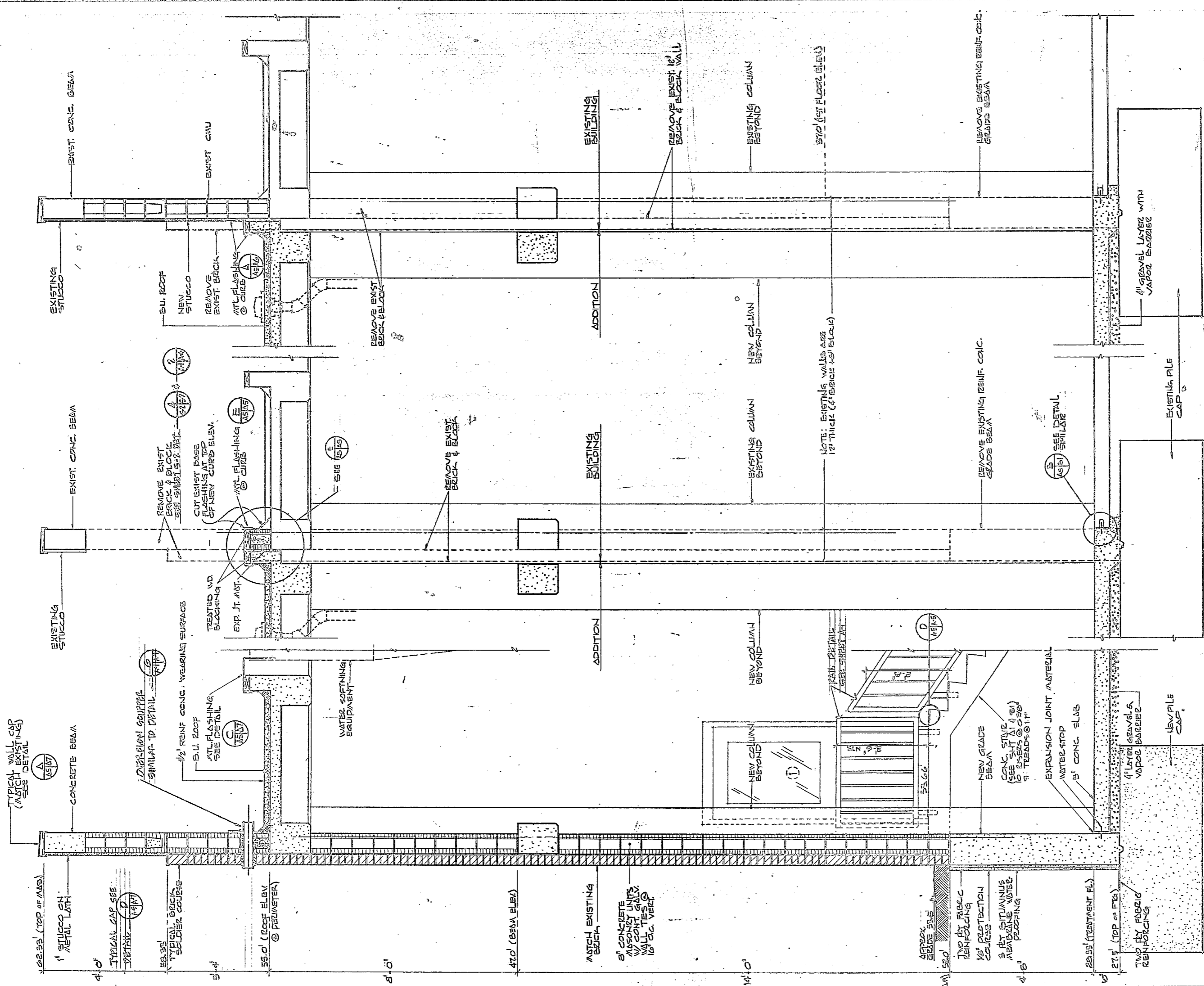
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
1			



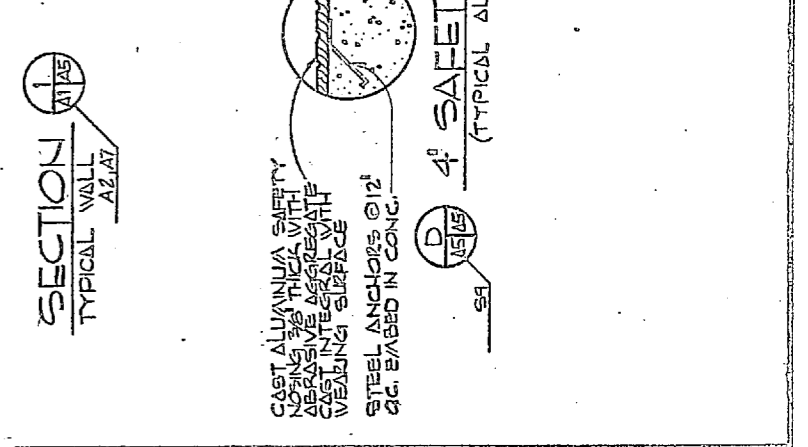
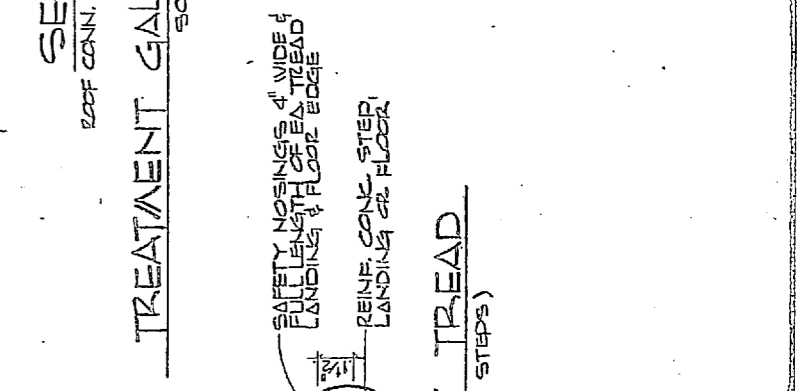
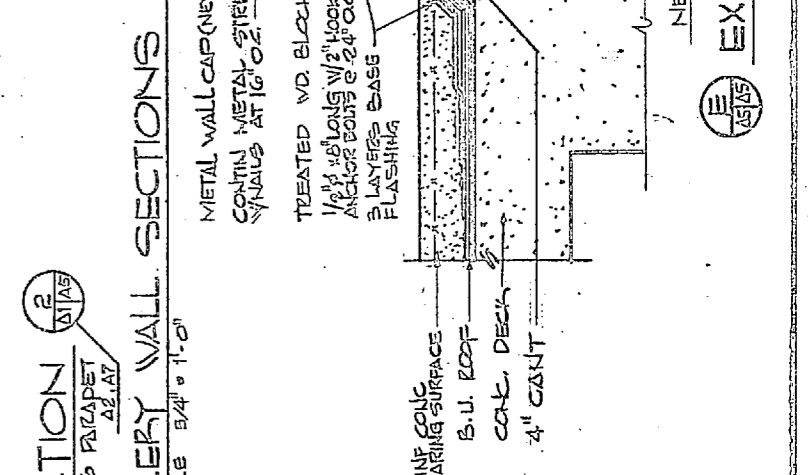
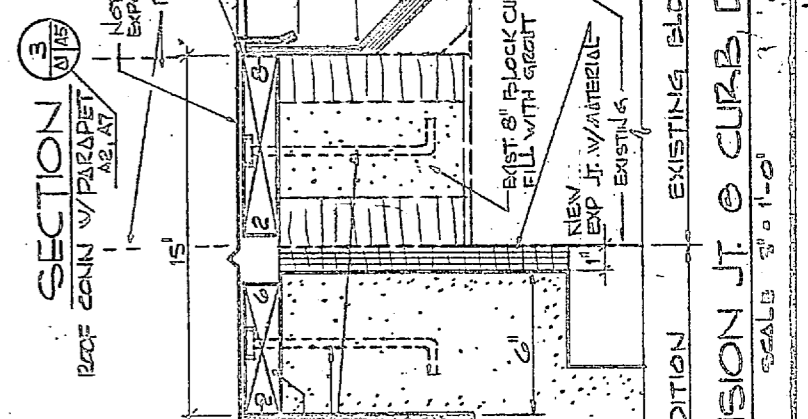
EAST BUILDING SECTION
SCALE 1/4" = 1'-0"
A2.AT

	HENRY VON OESSEN AND ASSOCIATES CONSULTING ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA DES. J.R.D. OR J.V.D. CHK. J.R.B. PROJ. MGR. J.R.B. OR ENGR. J.R.B. SUBMITTED BY: [Signature] DATE: 7/24/64 FIRM MEMBER: [Signature] PRINCIPAL APPROVED BY: [Signature] DATE: 7/24/64 ACTIVITY - SATISFACTORY OR FOR EPD FOR COMMANDER, NAVFAC	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NAVAL STATION CAMP LEJEUNE NORTH CAROLINA EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT
	TREATMENT PLANT - BUILDING SECTIONS SIZE: 80091 NAVFAC CRYSTAL NO. 4107544 CONSTR. CONTR. NO. N62470-81-B-1644 SCALE: AS SHOWN SPEC: 05-81-1644 SHEET 11 OF 74	A-4
	101 5 11 1/4" = 1'-0"	
	EPD 050 10 207544	





REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED



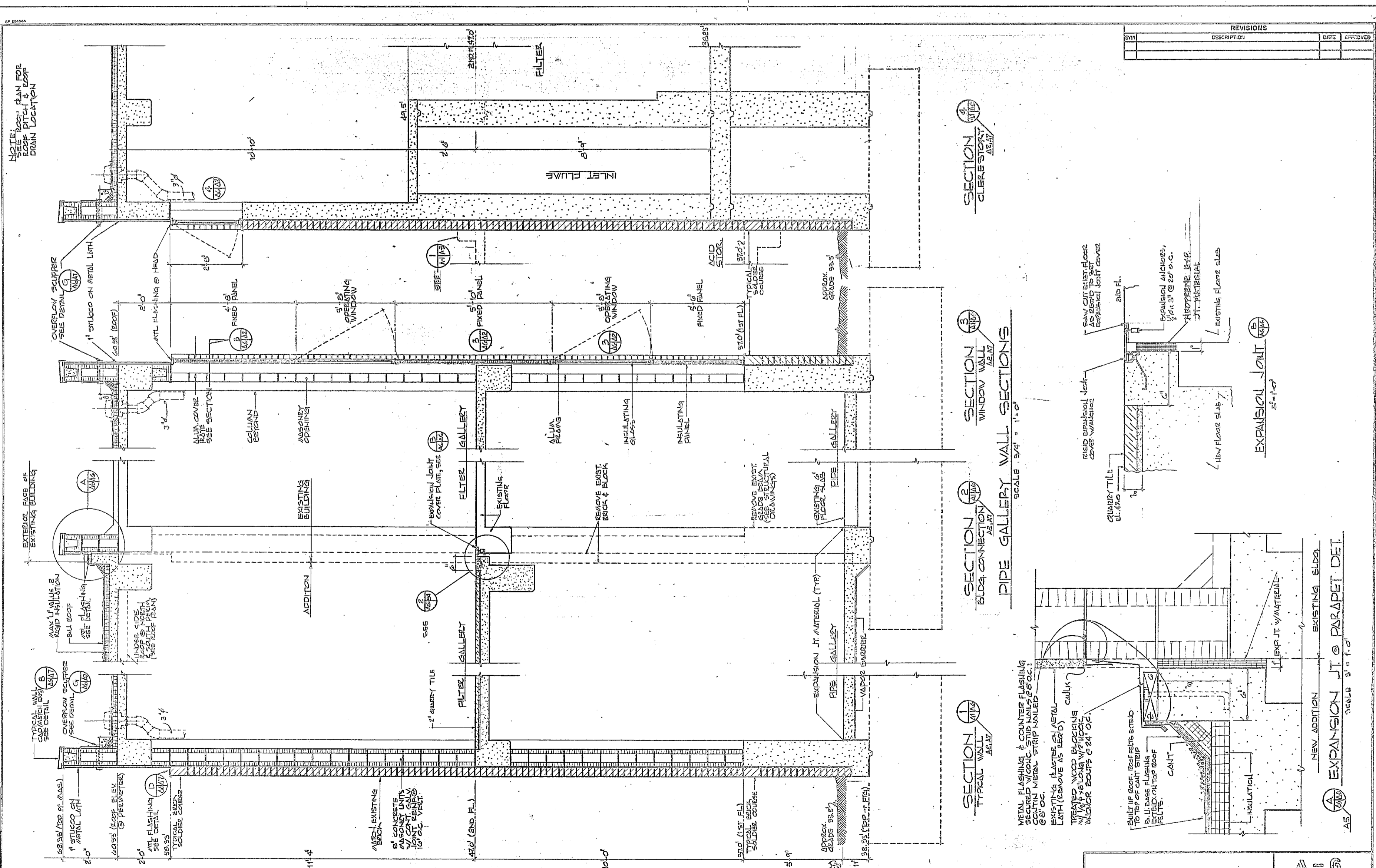
		HENRY VON OESSEN AND ASSOCIATED CONSULTING ENGINEERS AND PLANNERS WASHINGTON, NORTH CAROLINA		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION	
		DES. JKA DR. JVD CHR. JRS SUBMITTED BY DR. JRS FIRM MEMBER PRINCIPAL NO. 245 DIV. 44		NAVAL STATION NORFOLK, VIRGINIA PROJ. NO. JRB CH. ENR. JRB CARP. LEJEUNE NORTH CAROLINA EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	
APPROVED BY DATE JOHN R. LAURENT		APPROVED BY DATE CARP. LEJEUNE		TREATMENT PLANT - WALL SECTIONS SIZE: 12" X 18" (1/4" = 1'-0") NAVFAC DRAWING NO. 4107543 80081 2015TH. COAST. CO. N62470-81-3-1344 SHEET 12 OF 17	

EXPANSION JT. @ CURB DET. SCALE 3/4" = 1'-0"

A-5

2078





REVISIONS		
NO.	DESCRIPTION	DATE

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

SECTION 5
WINDOW WALL
SCALE 3/4" = 1'-0"

SECTION 2
BLOCK CONNECTION
SCALE 3/4" = 1'-0"

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

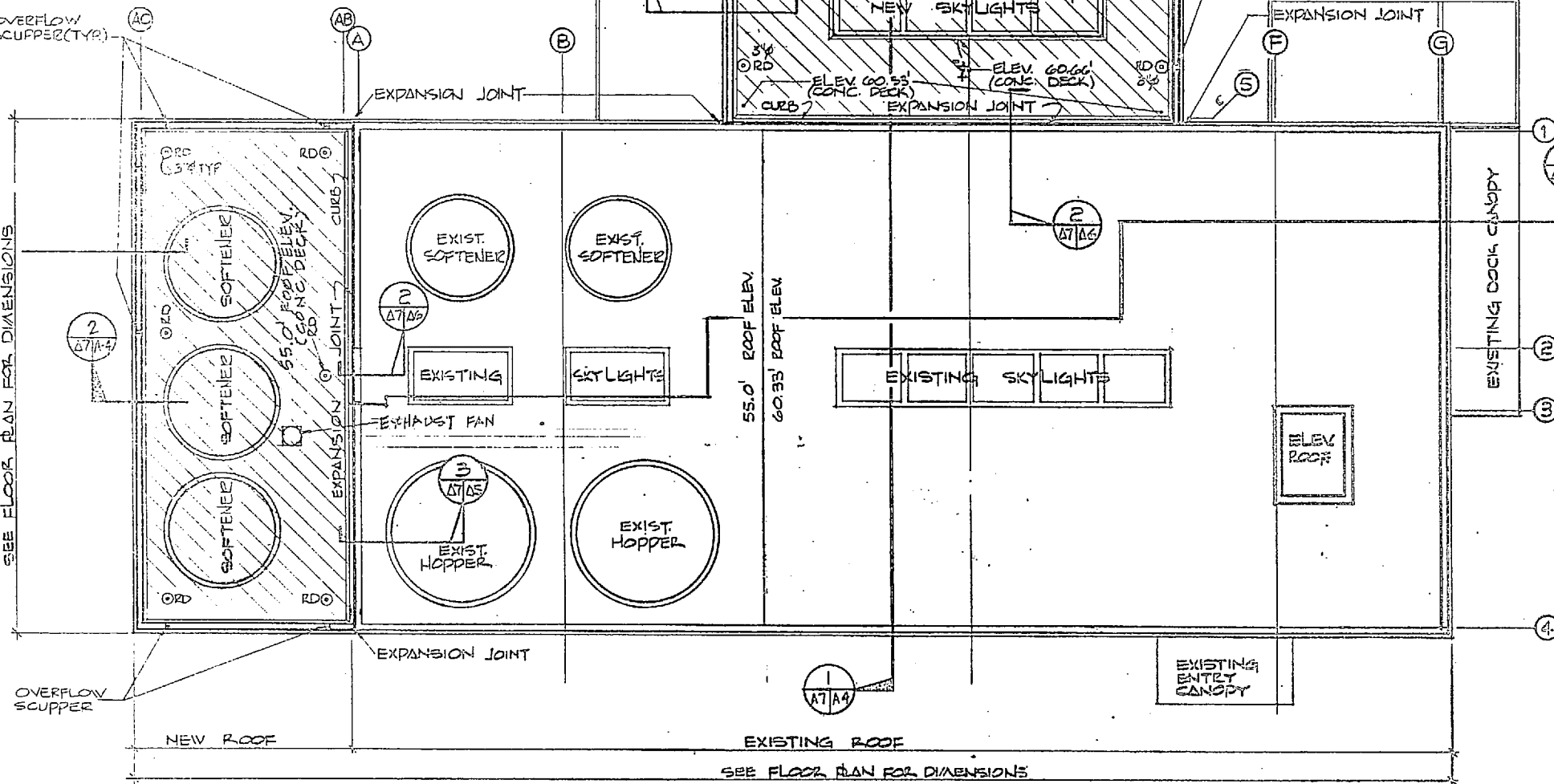
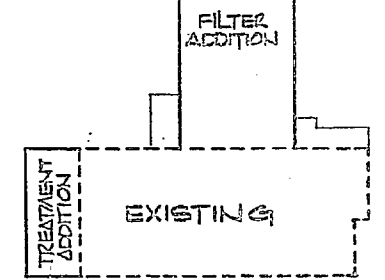
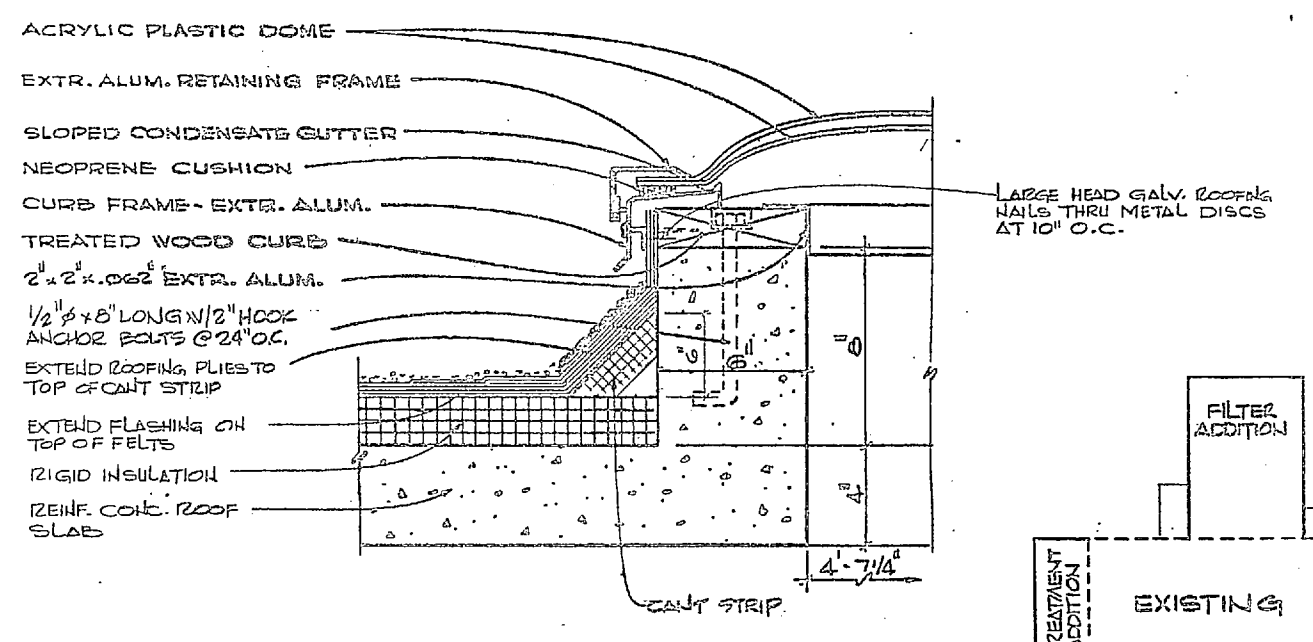
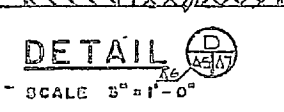
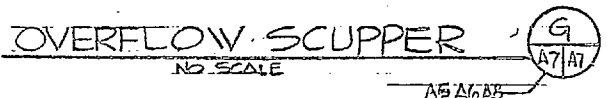
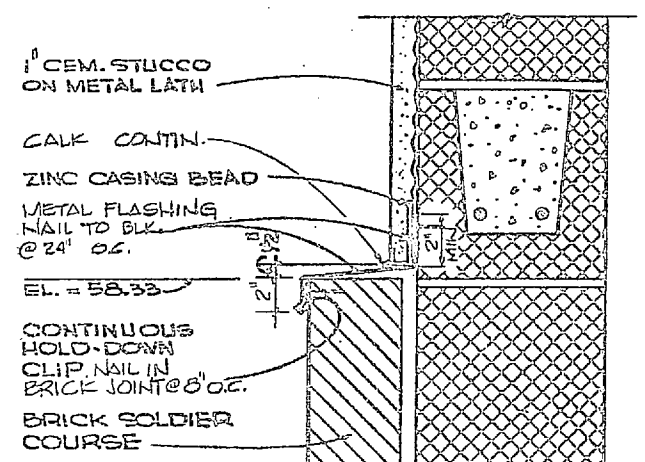
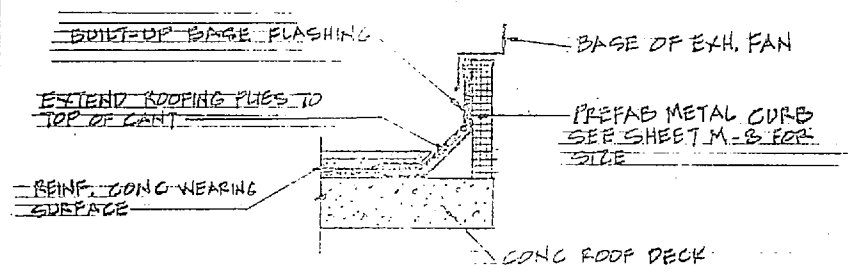
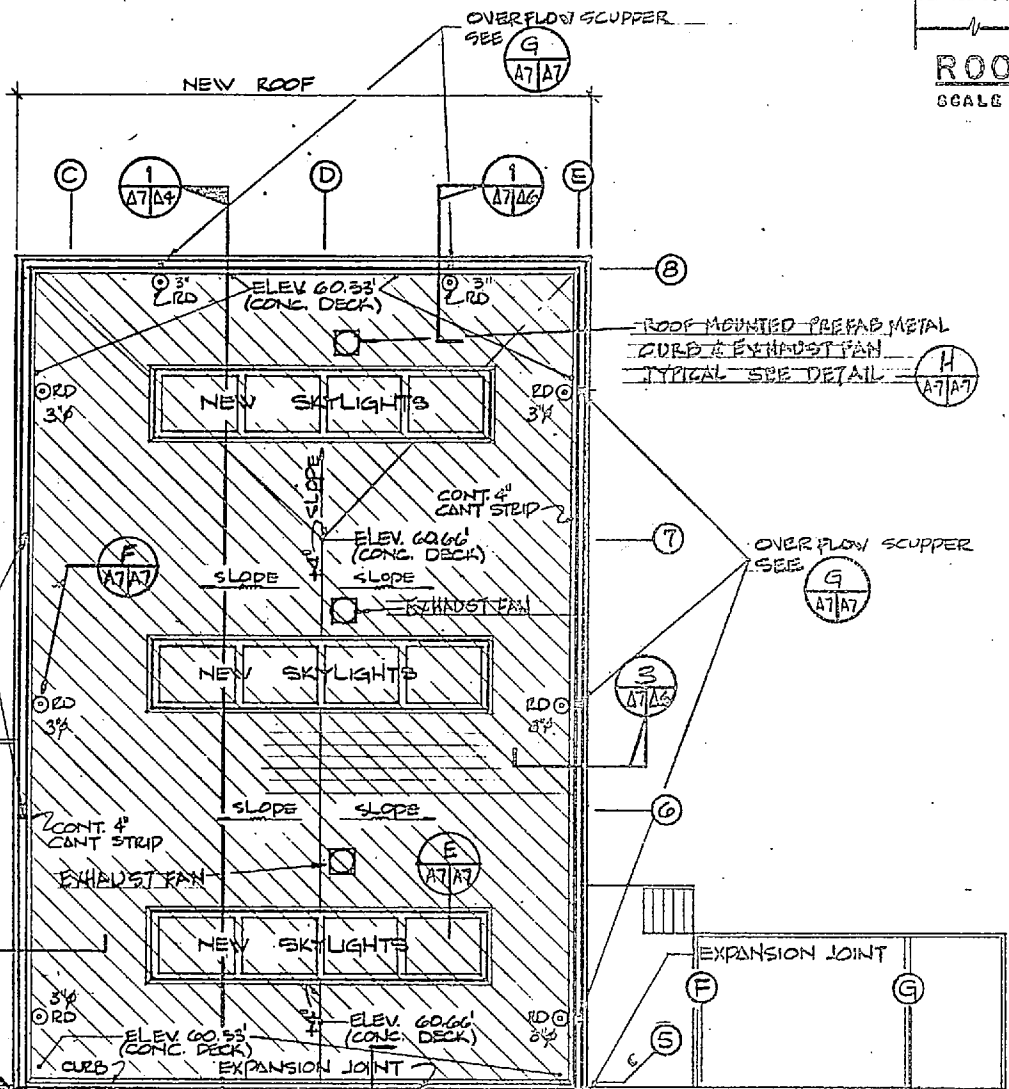
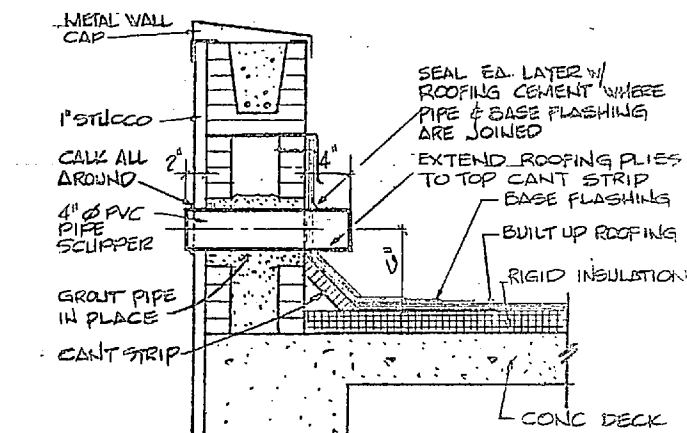
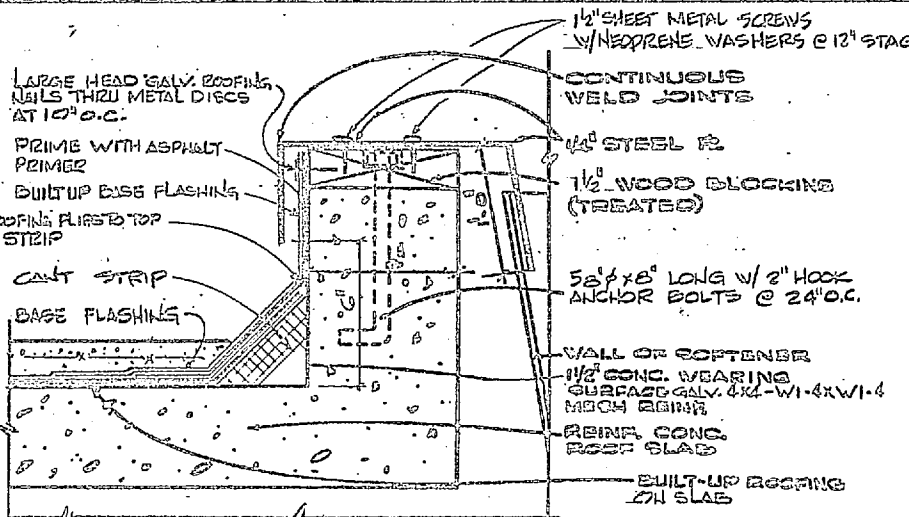
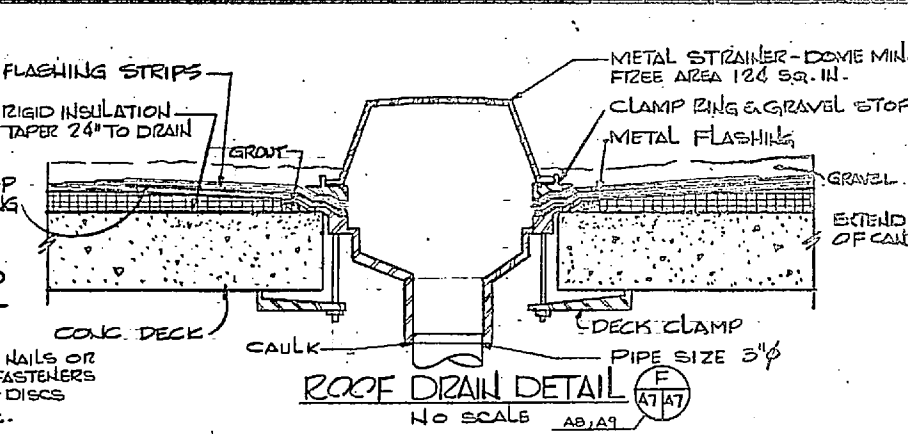
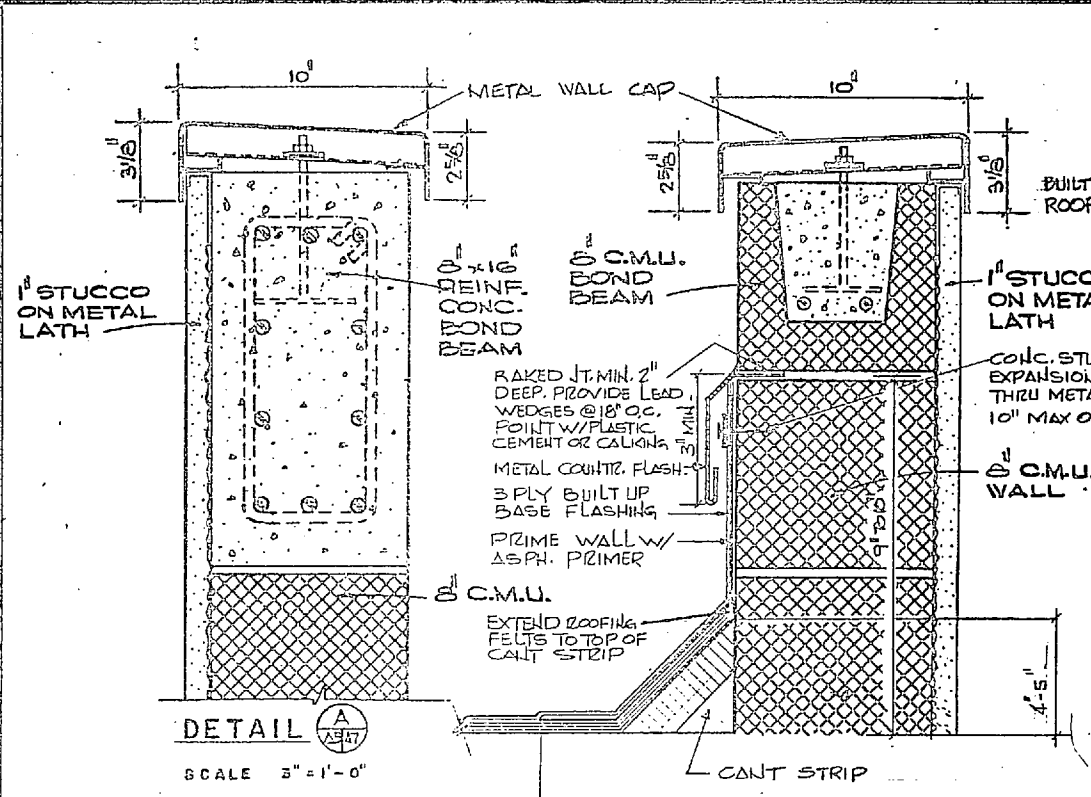
PIPE GALLERY WALL SECTIONS
SCALE 3/4" = 1'-0"

EXPANSION JOINT
SCALE 3/4" = 1'-0"

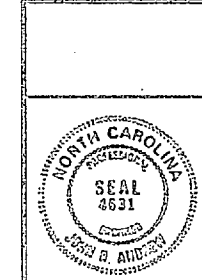
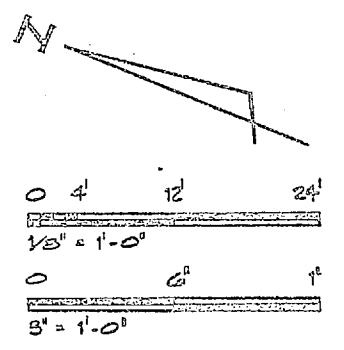
EXPANSION JT @ PARAPET DET.
SCALE 3/4" = 1'-0"

	HENRY VAN COTT AND ASSOCIATES ARCHITECTS ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING CENTER ATLANTIC DIVISION CAMP LEJEUNE, NORTH CAROLINA	
	DES. JEA DR. JVD CHECKED BY JEA DATE 10/1/54	PROJECT NO. 41073-45 DRAWING NO. 41073-45 SHEET NO. 22	EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT TREATMENT PLANT - WALL SECTIONS
	SCALE 3/4" = 1'-0" DATE 10/1/54	DRAWING NO. 41073-45 SHEET NO. 22	PROJECT NO. 41073-45 DRAWING NO. 41073-45 SHEET NO. 22
	SCALE 3/4" = 1'-0" DATE 10/1/54	PROJECT NO. 41073-45 DRAWING NO. 41073-45 SHEET NO. 22	PROJECT NO. 41073-45 DRAWING NO. 41073-45 SHEET NO. 22

REVISIONS	
DATE	DESCRIPTION



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

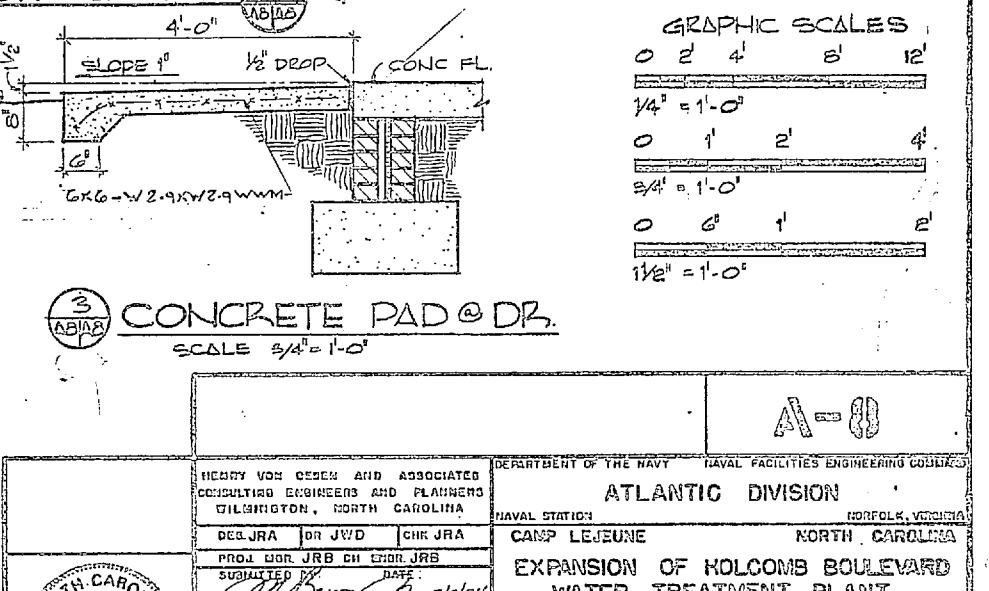
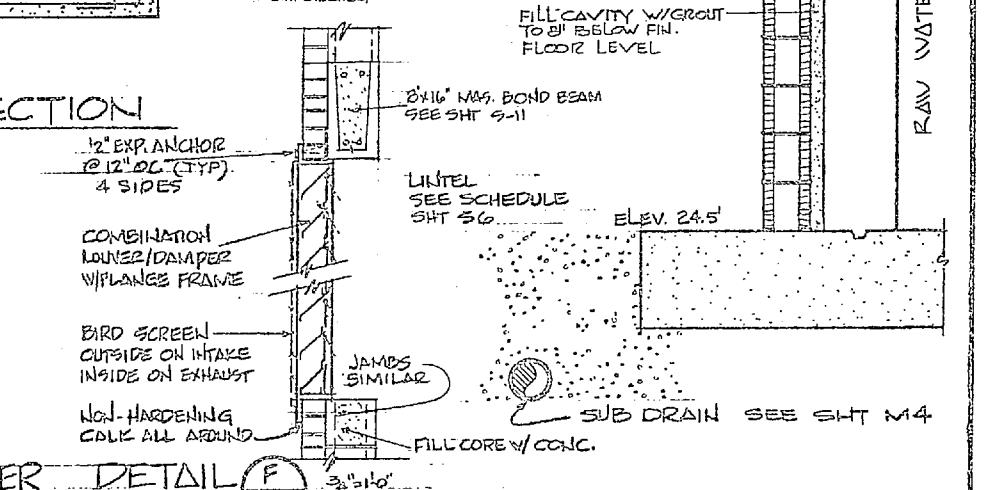
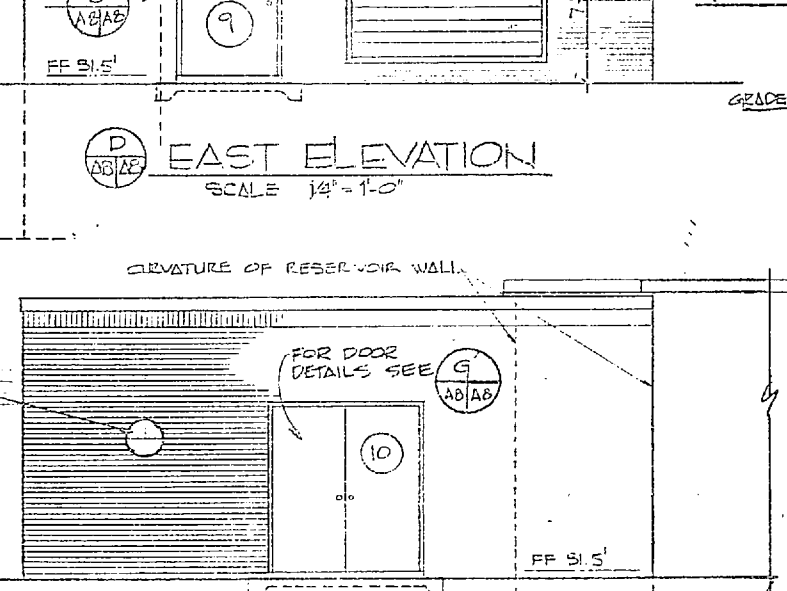
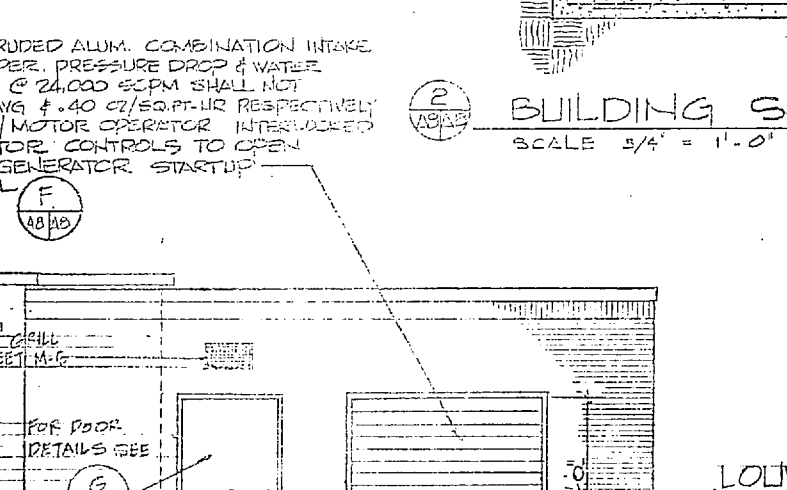
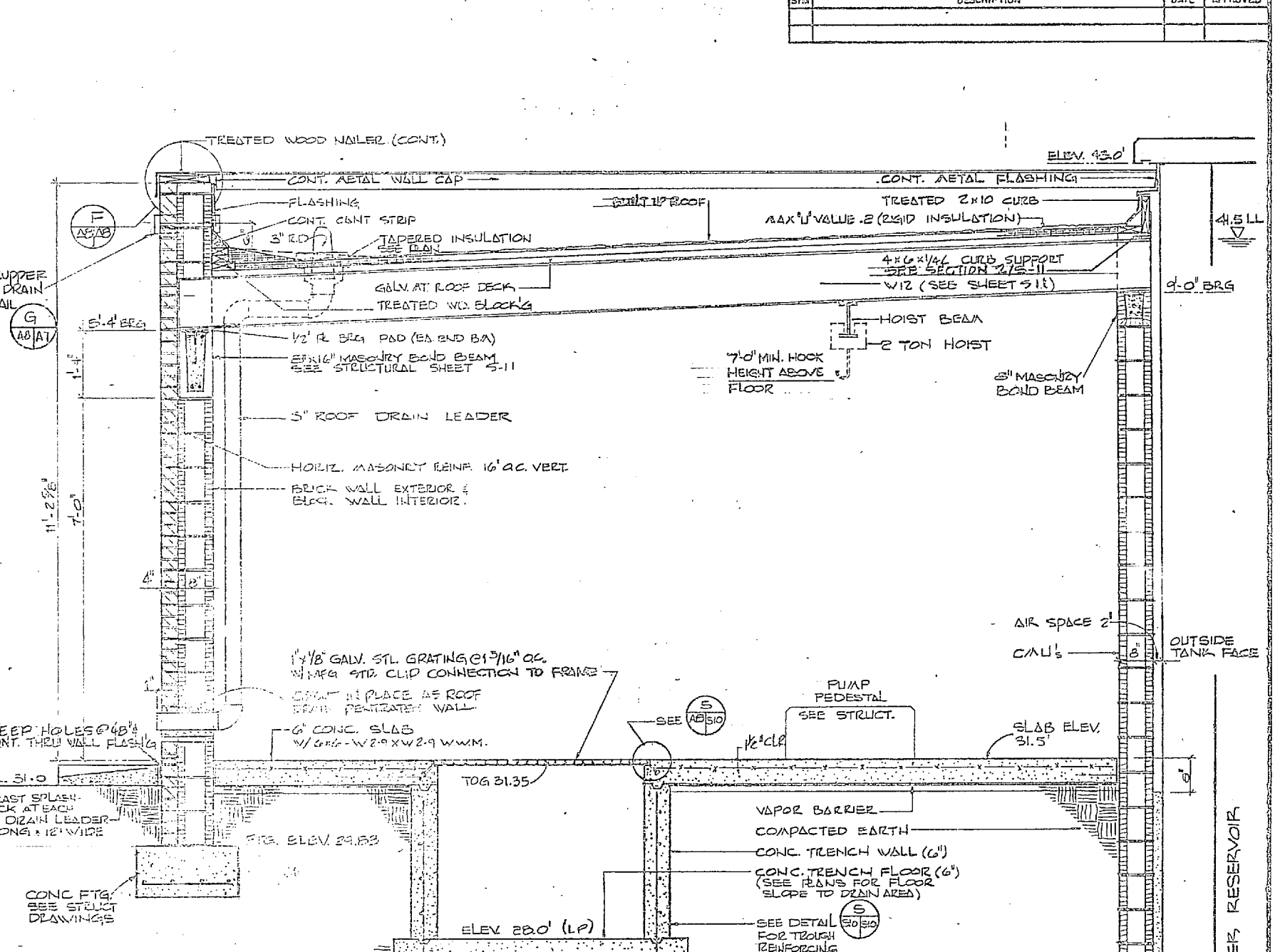
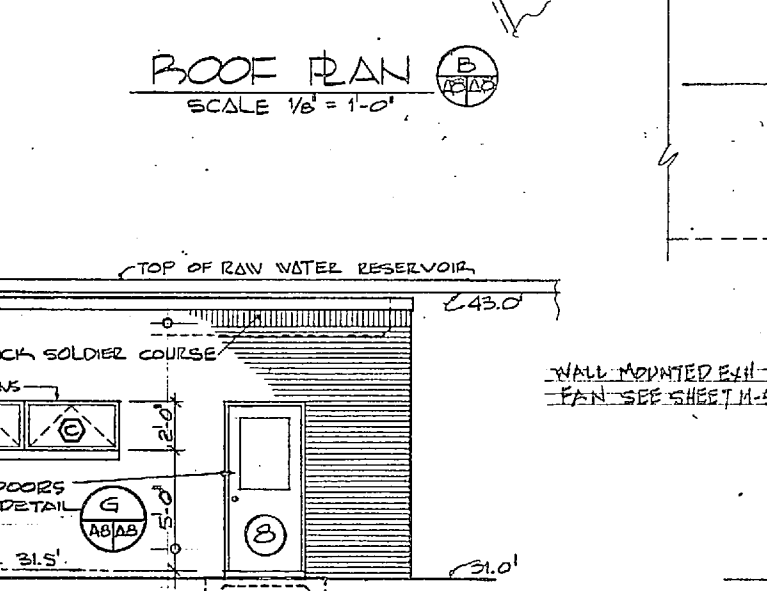
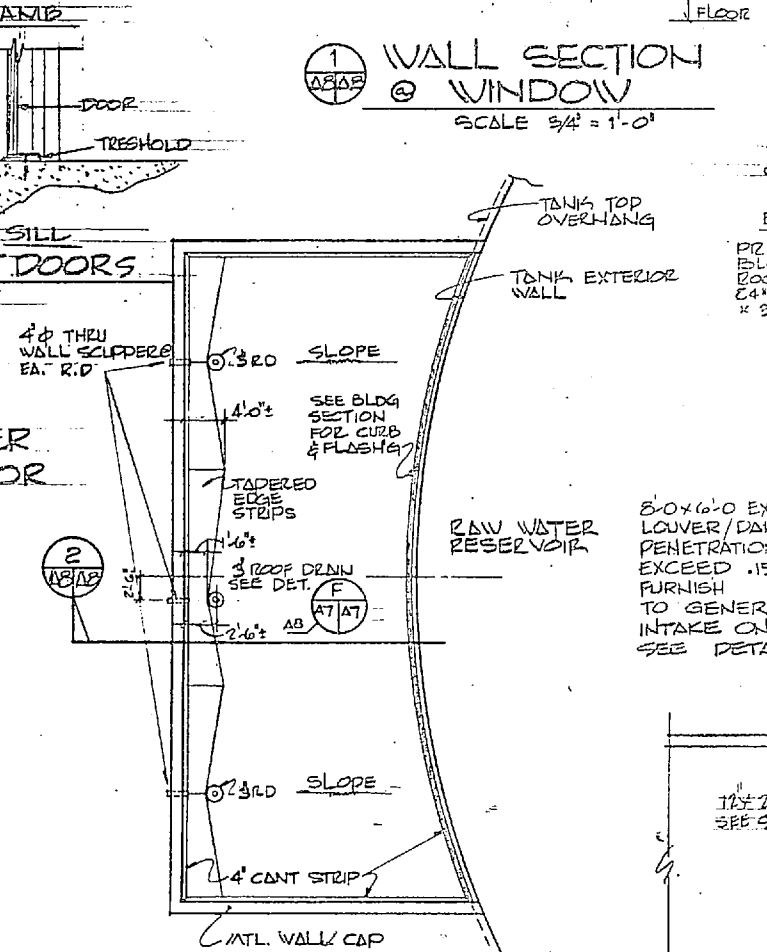
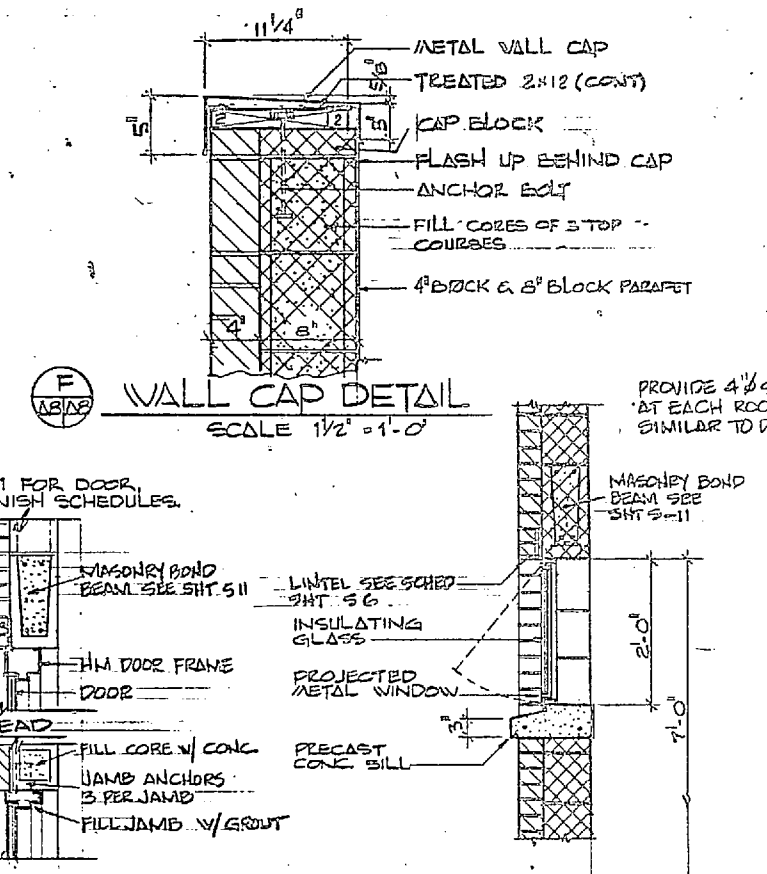
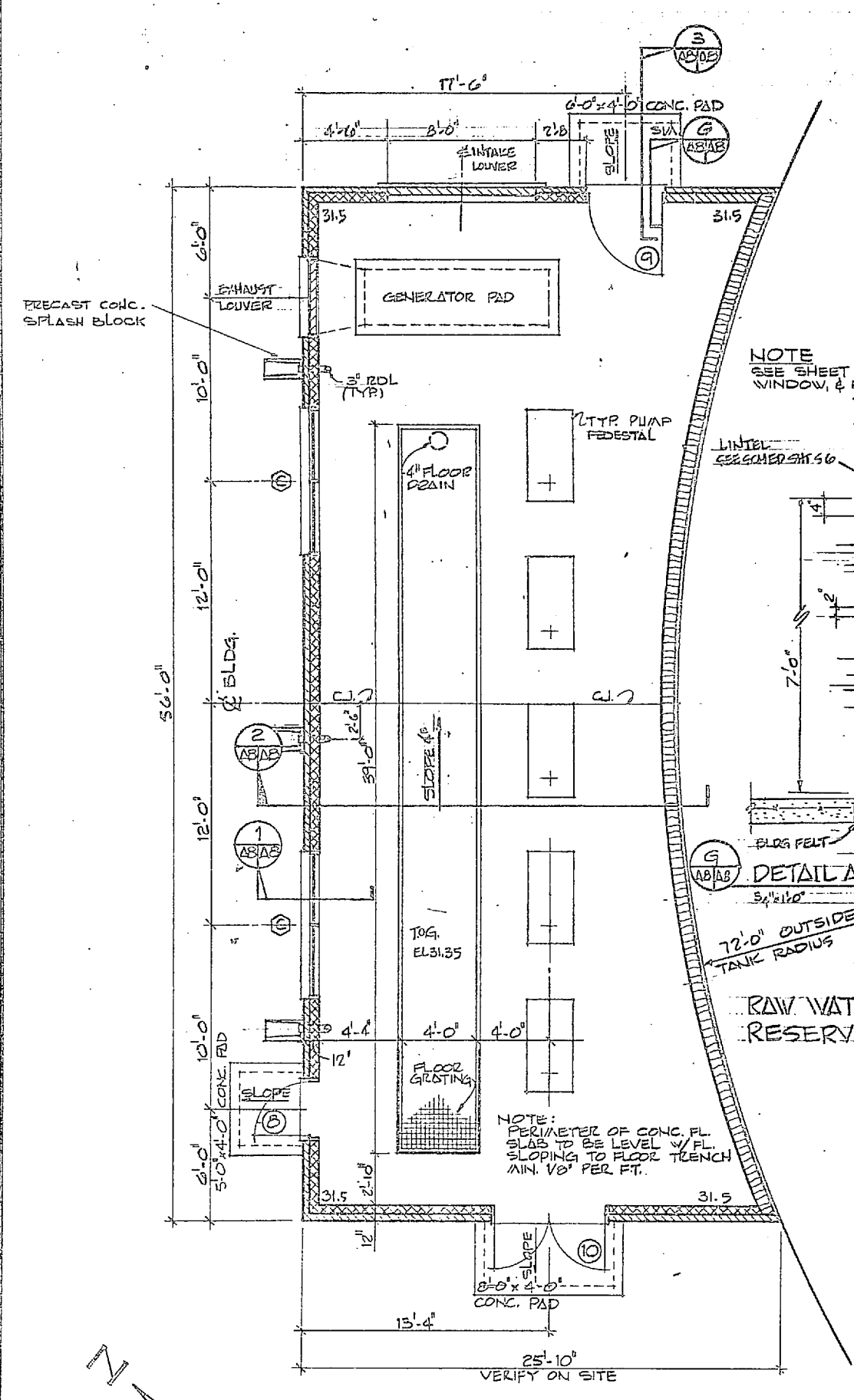


HENRY WOOD GORDON AND ASSOCIATED CONSULTING ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA		ATLANTIC DIVISION	
DES. J.R.A. DR. J.W.D. E.H.R. J.R.D.		DRAWN BY: J.W.D.	
PROJ. NO. J.R.D. EN. J.R.D.		DATE: 7/26/64	
SHEET NO. 76247		PROJECT NO. 1082470-01-5-10-4	
CHECKED BY: J.W.D.		DATE: 7/26/64	
APPROVED BY: J.W.D.		DATE: 7/26/64	
FOR E.O. FOR COMMANDER: NAVSTA		SCALE: AS SHOWN	
SPEC. 05-01-1044		SHEET 14 OF 72	

A-7



REV.	DESCRIPTION	DATE	APPROVED

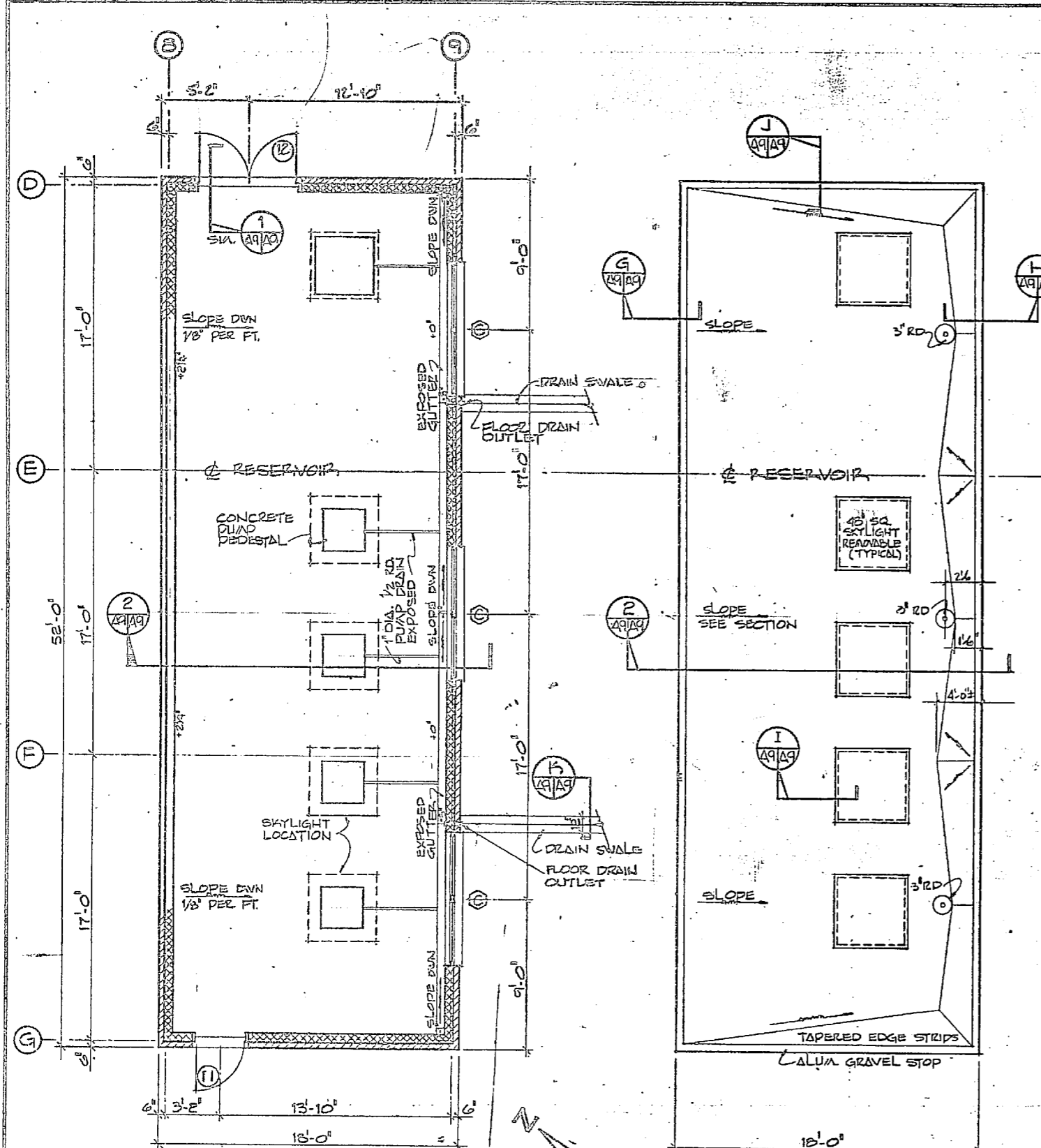


GRAPHIC SCALES

0 2 4 8 12'
1/4" = 1'-0"
0 1 2 4'
3/4" = 1'-0"
0 1 2'
1/2" = 1'-0"

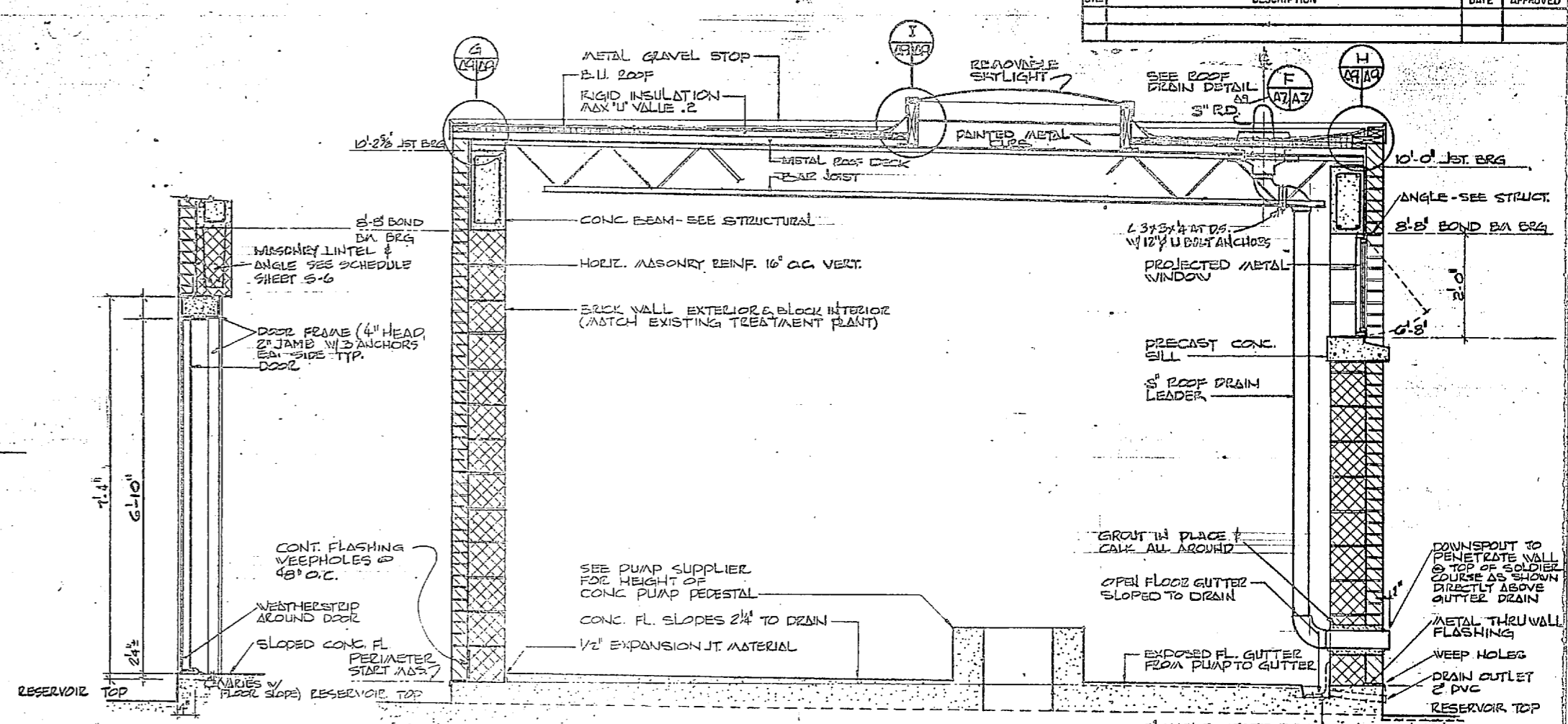
		ATLANTIC DIVISION NORTH CAROLINA EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT RAW WATER PUMP-STATION
PROJECT NO. 80091 SHEET NO. 15 OF 75 DATE 10/15/58	DRAWN BY: [Signature] CHECKED BY: [Signature]	PROJECT NO. 4107548 SHEET NO. 15 OF 75 DATE 10/15/58

REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED



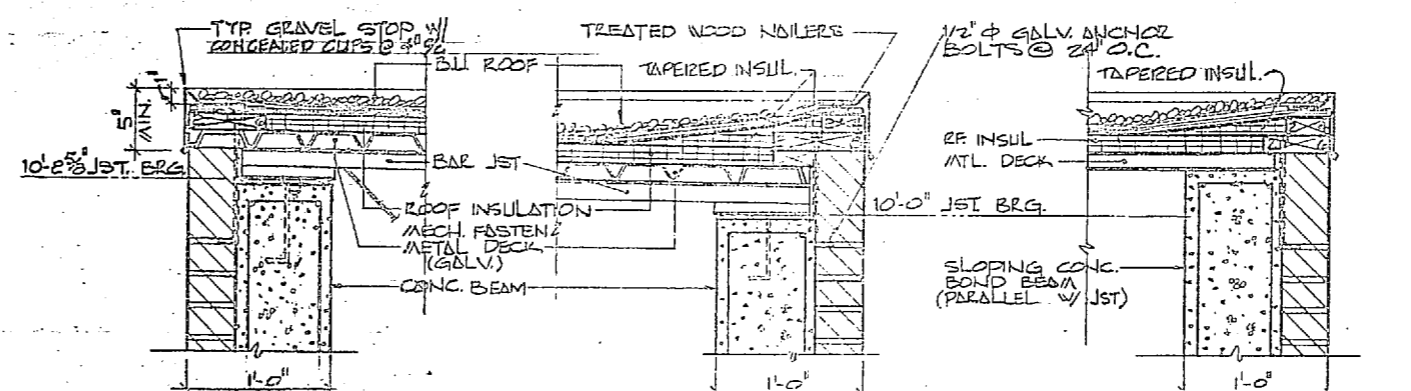
FLOOR PLAN
SCALE 1/4" = 1'-0"

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



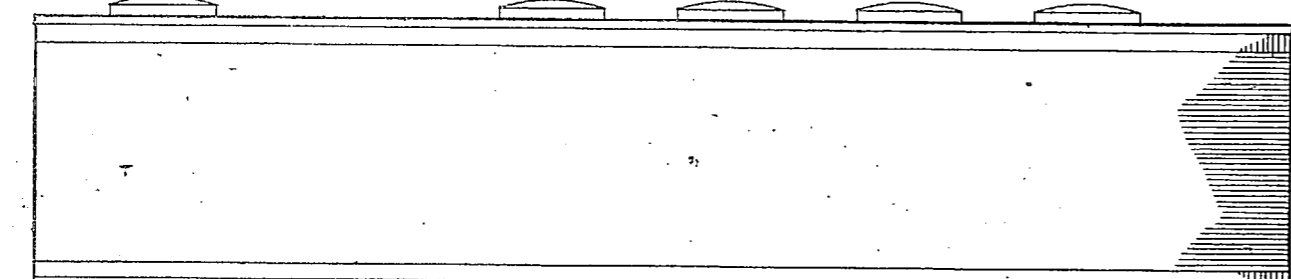
1 WALL SECTION @ DOOR
SCALE 3/4" = 1'-0"

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

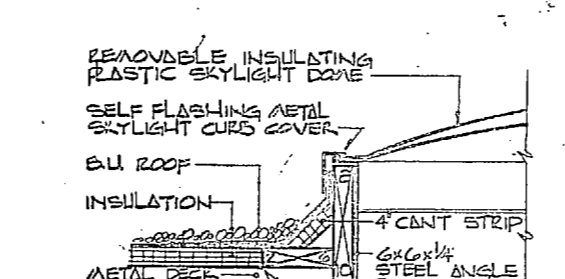


3 HIGH SIDE SLOPING ROOF EAVE CONDITIONS
SCALE 1 1/2" = 1'-0"

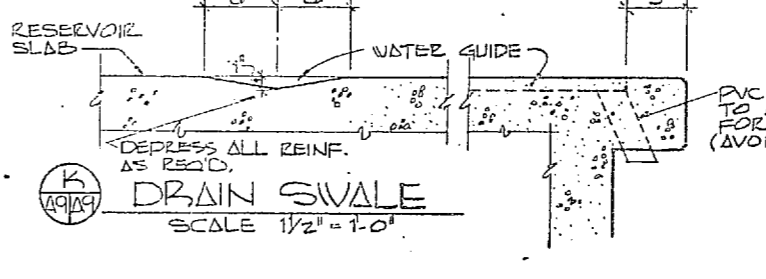
4 LOW SIDE SLOPING ROOF EAVE CONDITIONS
SCALE 1 1/2" = 1'-0"



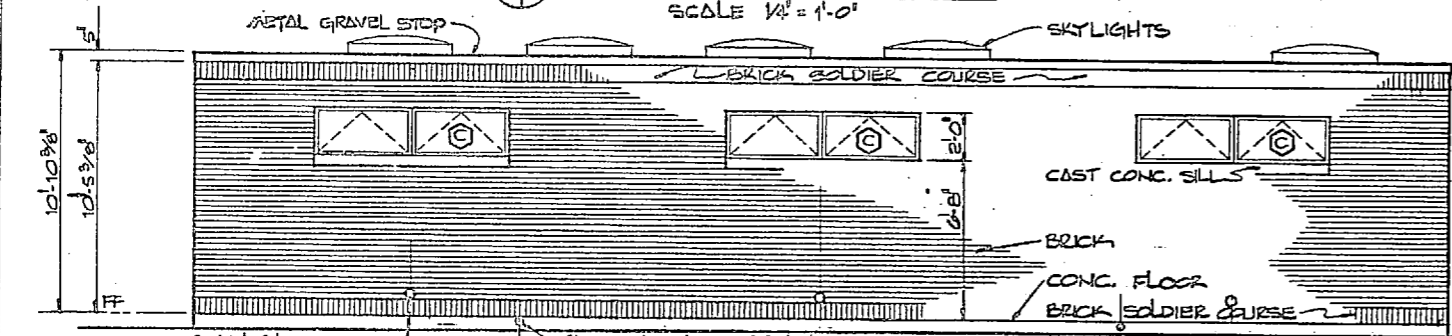
5 NORTH ELEVATION
SCALE 1/4" = 1'-0"



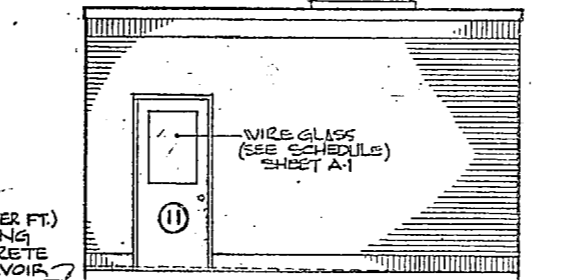
6 SKYLIGHT CURB DET.
SCALE 1 1/2" = 1'-0"



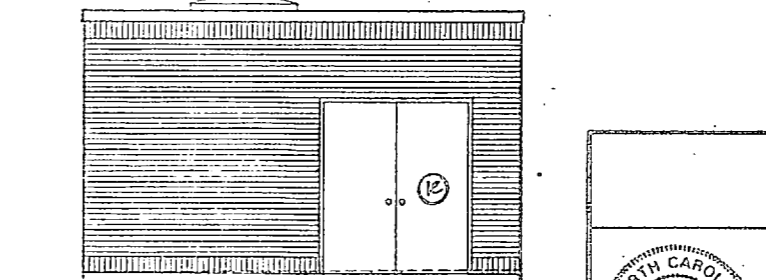
7 DRAIN SWALE
SCALE 1 1/2" = 1'-0"



8 SOUTH ELEVATION
SCALE 1/4" = 1'-0"



9 WEST ELEVATION
SCALE 1/4" = 1'-0"



10 EAST ELEVATION
SCALE 1/4" = 1'-0"

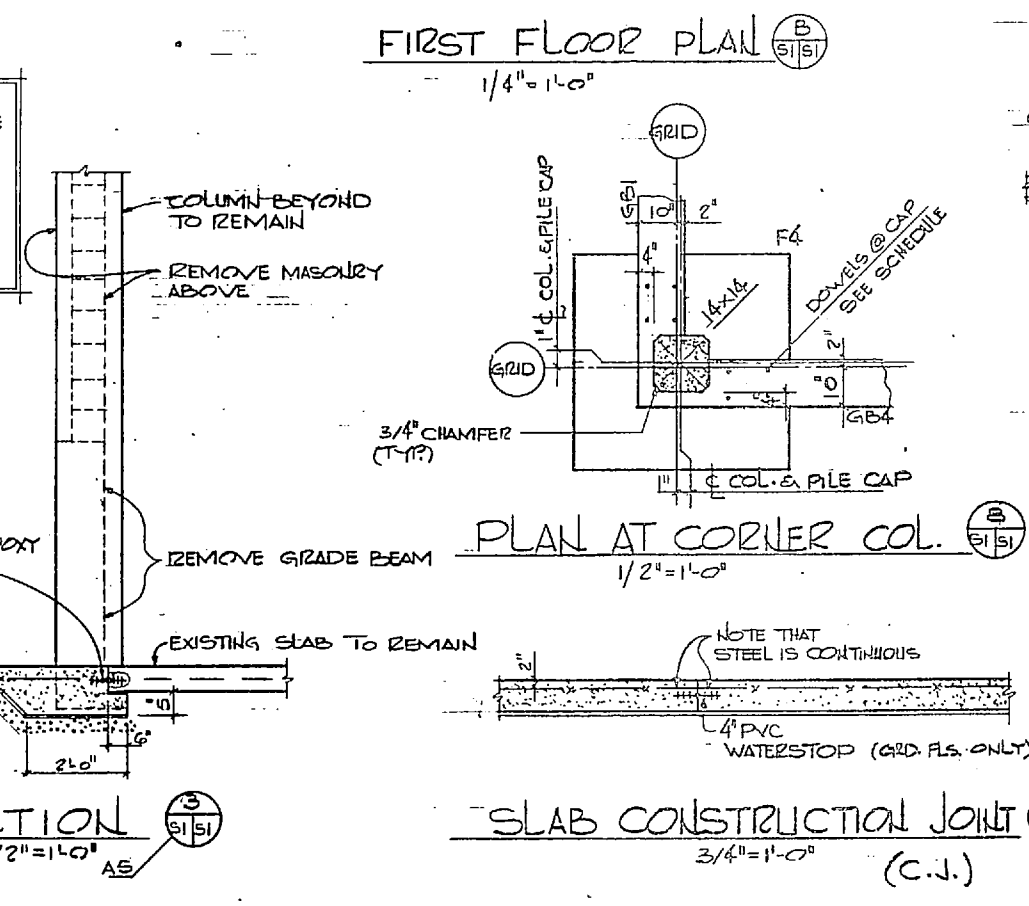
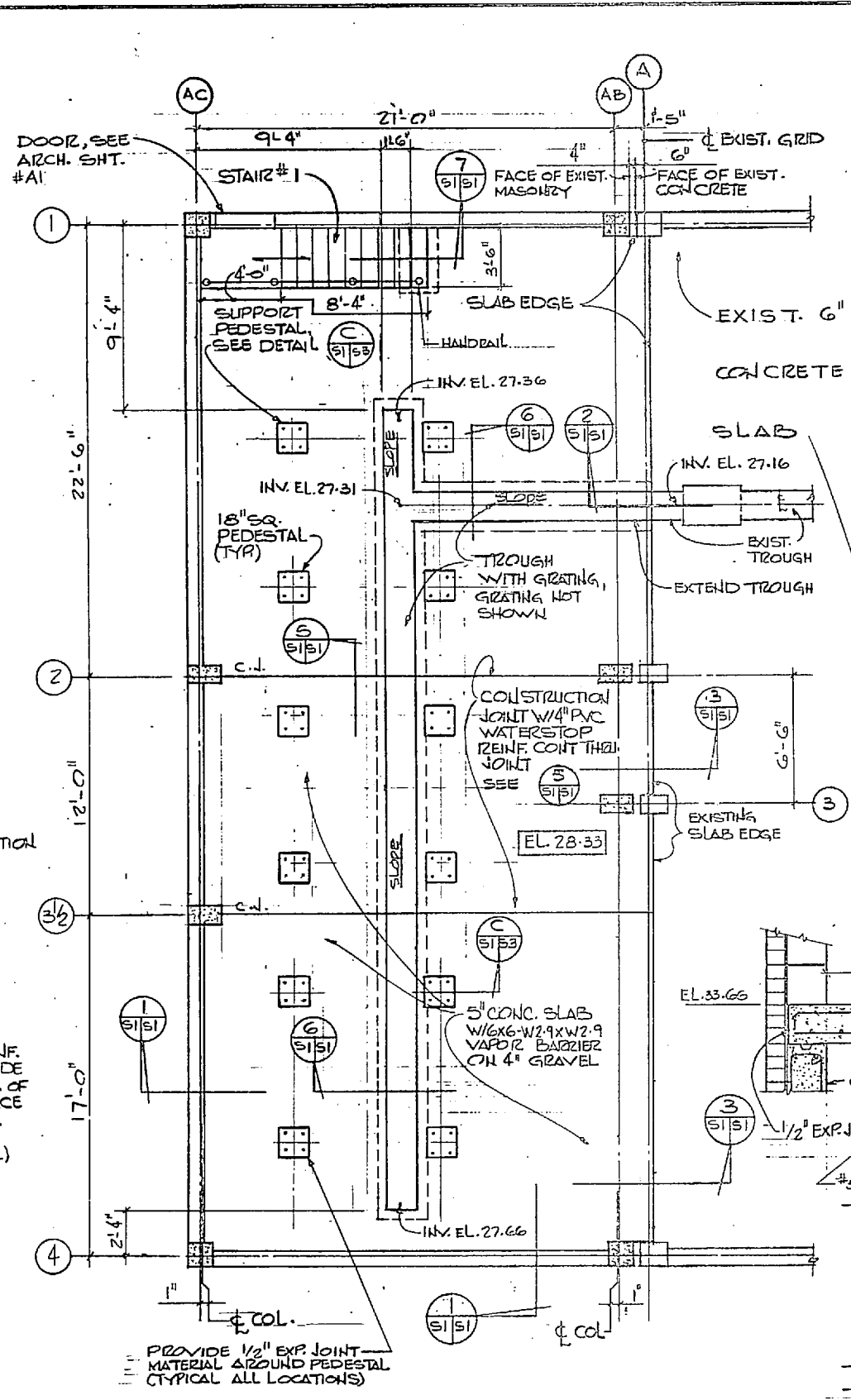
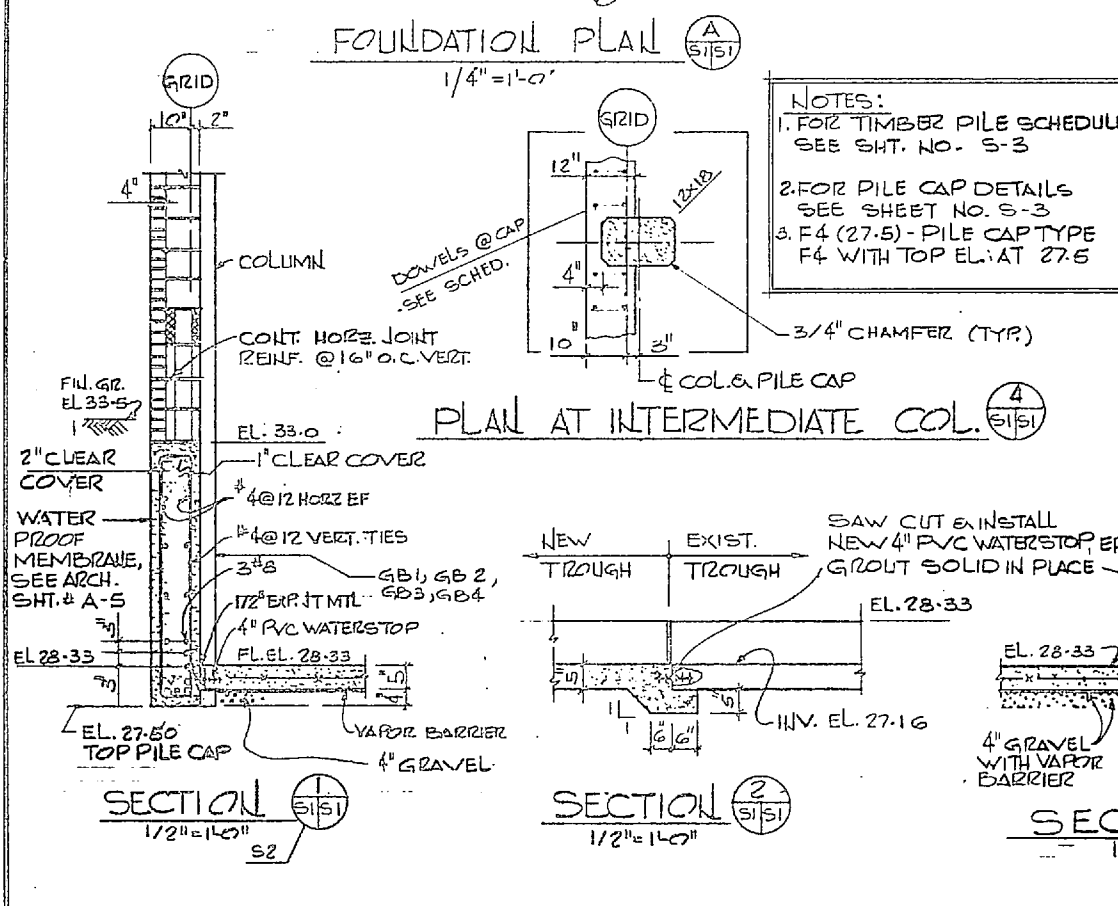
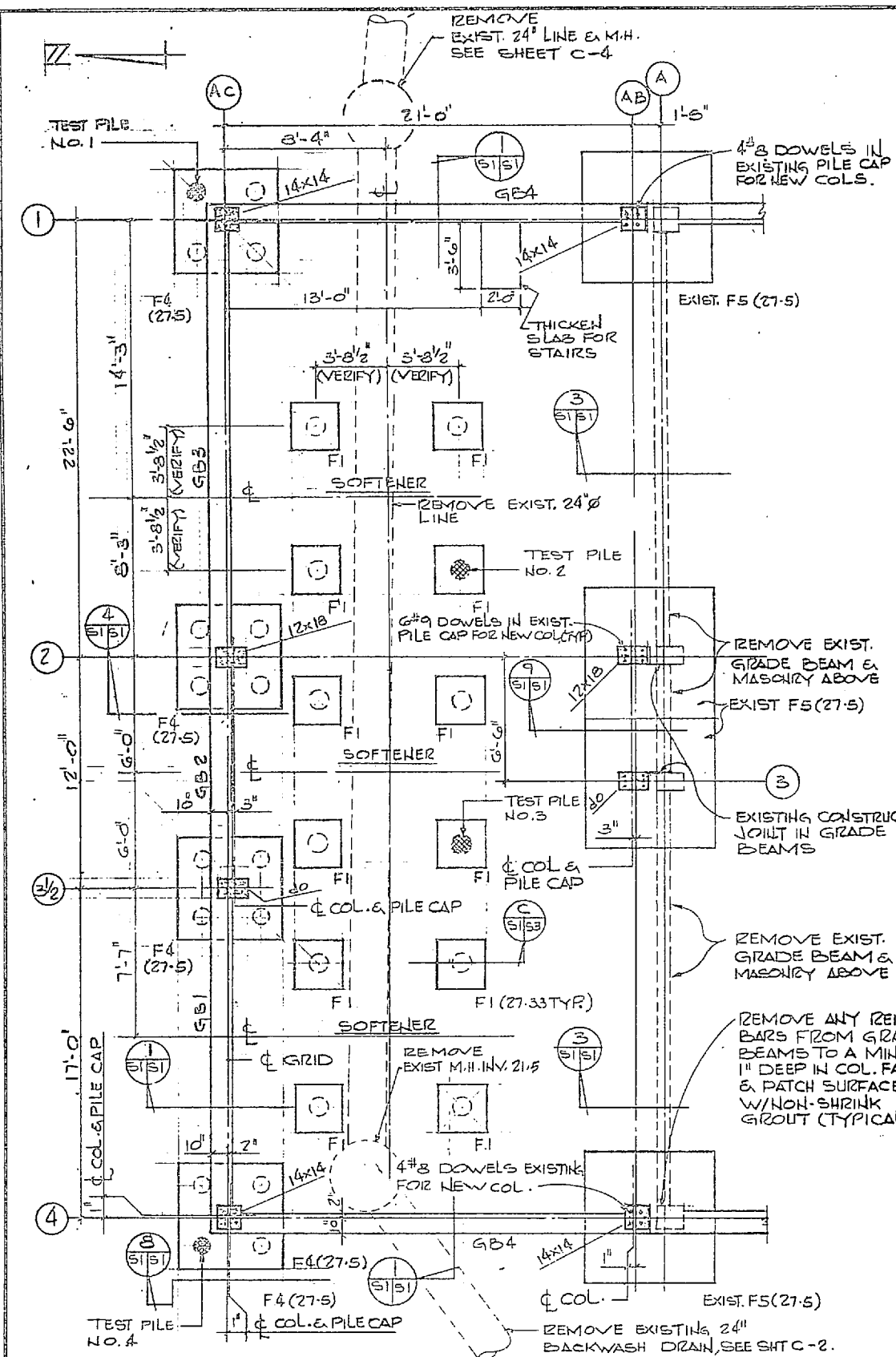
GRAPHIC SCALES

0	2	4	8	12
1/4" = 1'-0"				
0	1	2	4	
3/4" = 1'-0"				
0	0	1	2	
1/2" = 1'-0"				

NOTE: SEE SHEET A-1 FOR DOOR, WINDOW & ROOM FINISH SCHEDULE

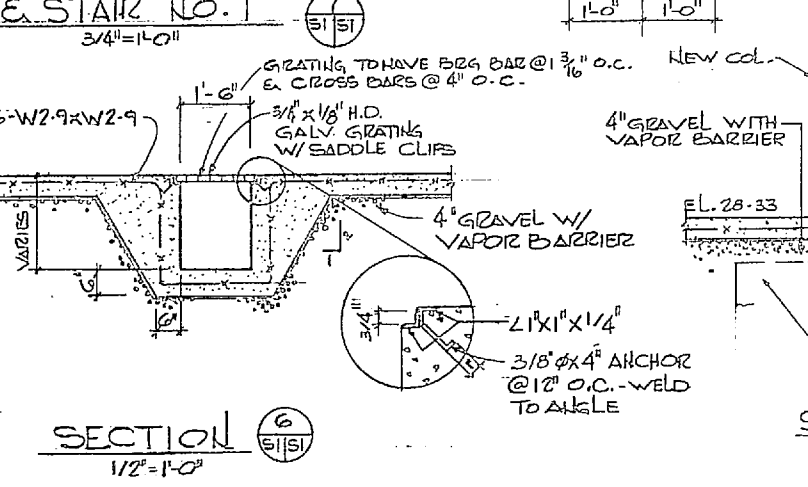
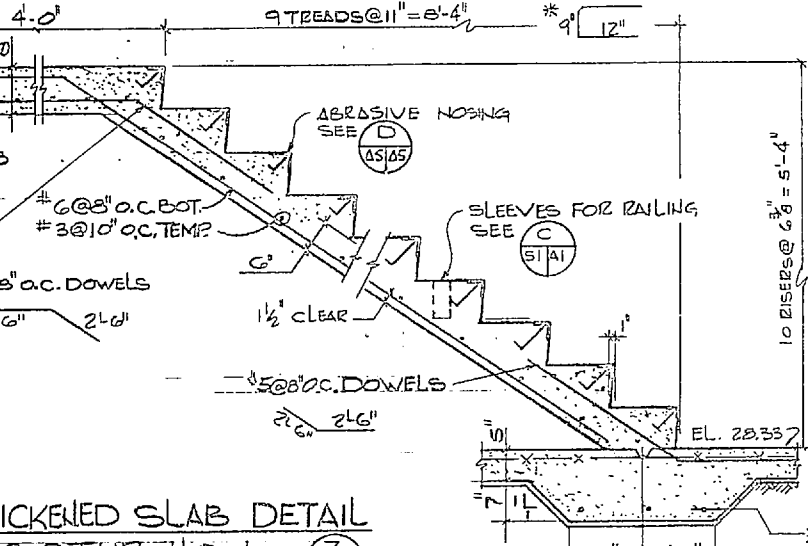
	A-9 ATLANTIC DIVISION CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT FINISH WATER PUMP STATION	
	HENRY VON OESSEN AND ASSOCIATED CONSULTING ENGINEERS AND ARCHITECTS DILLSHOTO, NORTH CAROLINA DEC JRA [DR] JVD [CHR] JRA PROJ. MGR. JRB [CH] ENR. JRD DESIGNED BY [Signature] CHECKED BY [Signature] DATE 7/2/54 ACTIVITY - SATISFACTORY TO [Signature]	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND NORFOLK, VIRGINIA NAVAL STATION CAMP LEJEUNE NORTH CAROLINA NAVFAC DRAWING NO. 4107549 CONSTR. CONTR. NO. N62470-8-B-1844 SPEC. 05-BI-1844 SHEET 16 OF 74 207549





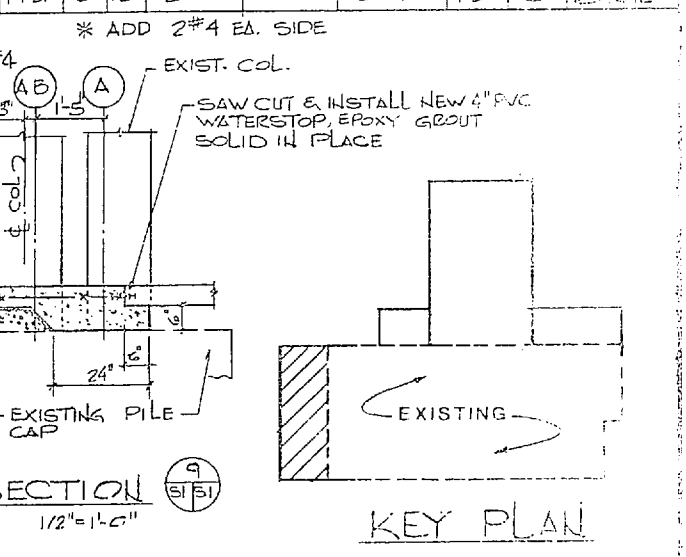
SLAB SCHEDULE					
MARK	DEPTH	REINFORCING		REMARKS	
		BOTTOM	TOP		
S21	4"	#4 @ 12" O.C.	#4 @ 12" O.C.	#3 @ 15" O.C.	
S22	4"	do	do	do	
S23	4"	do	do	do	
S24	4"	do	do	do	
S25	4"	#5 @ 5' O.C.	#5 @ 5' O.C.	#4 @ 12" O.C.	
S26	4"	do	do	do	
S27	4"	do	do	do	
S28	4"	#4 @ 12" O.C.	#4 @ 12" O.C.	#3 @ 15" O.C.	
S31	4"	#4 @ 12" O.C.	#4 @ 12" O.C.	#3 @ 15" O.C.	
S32	4"	do	do	do	
S33	4"	do	do	do	
S34	4"	do	do	do	
S35	4"	do	do	do	
S36	4"	do	do	do	
S37	6"	do	do	#4 @ 12" O.C.	
S38	6"	#6 @ 9" O.C.	#6 @ 9" O.C.	#4 @ 12" O.C.	

GRADE BEAM SCHEDULE							
MARK	SIZE	REINFORCING		REMARKS			
		TOP	BOTTOM				
G21	12 66	3#5	2#5	2#5	#4 @ 12" VERT EF		
G22	12 66	do	do	do	do		
G23	12 66	do	do	do	do		
G24	12 66	do	do	do	do		
G25	12 66	do	do	do	do		
G26	12 66	do	do	do	do		
G27	8 12	2#5	1#7	2#5	#4 @ 12" TIES		
G28	8 12	do	do	do	do		
G29	8 12	do	do	do	do		
G30	8 12	do	do	do	do		
G31	8 12	do	do	do	do		
G32	8 12	do	do	do	do		
G33	8 12	do	do	do	do		
G34	8 12	do	do	do	do		
G35	8 12	do	do	do	do		
G36	8 12	do	do	do	do		
G37	8 12	do	do	do	do		
G38	8 12	do	do	do	do		
G39	8 12	do	do	do	do		
G40	8 12	do	do	do	do		



REVISIONS					
SYM	DESCRIPTION	DATE	APPROVED		

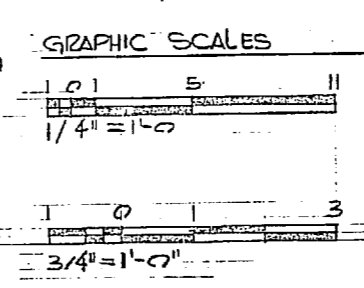
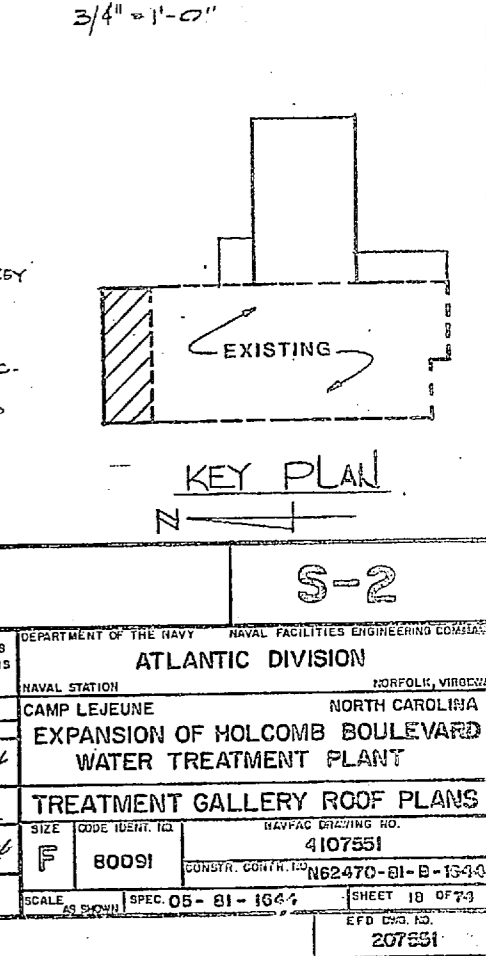
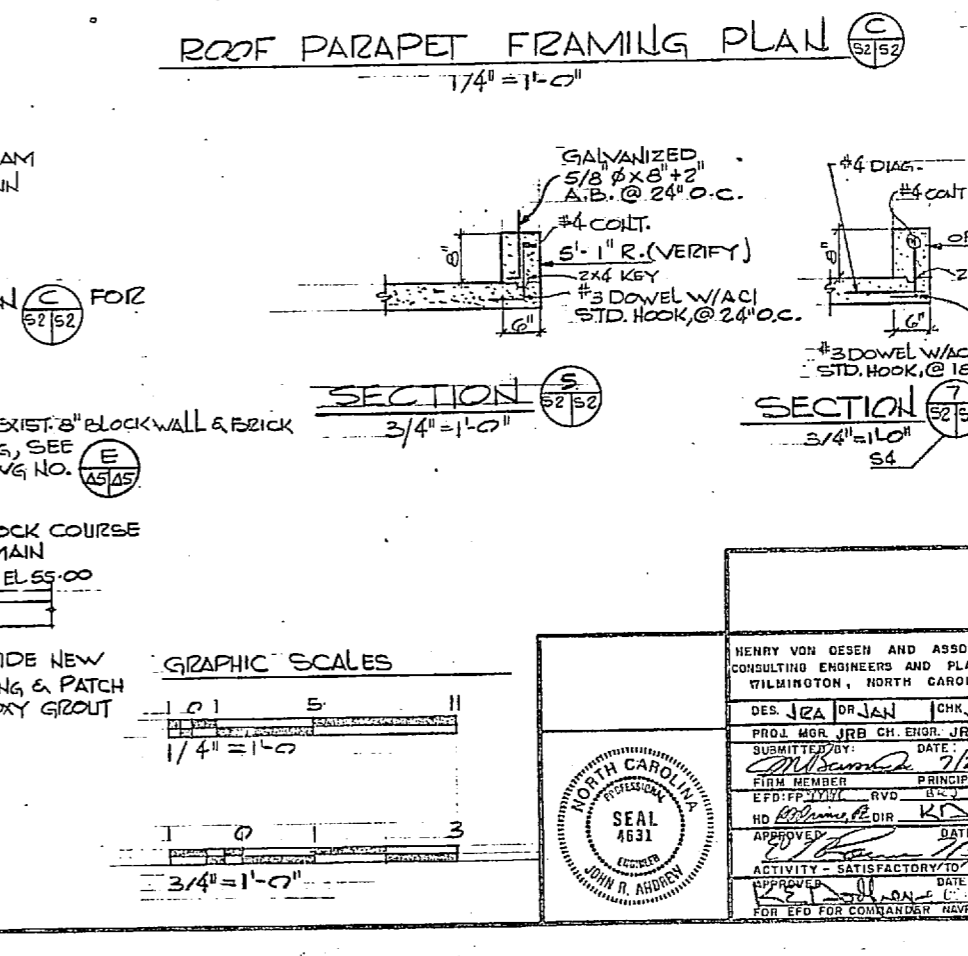
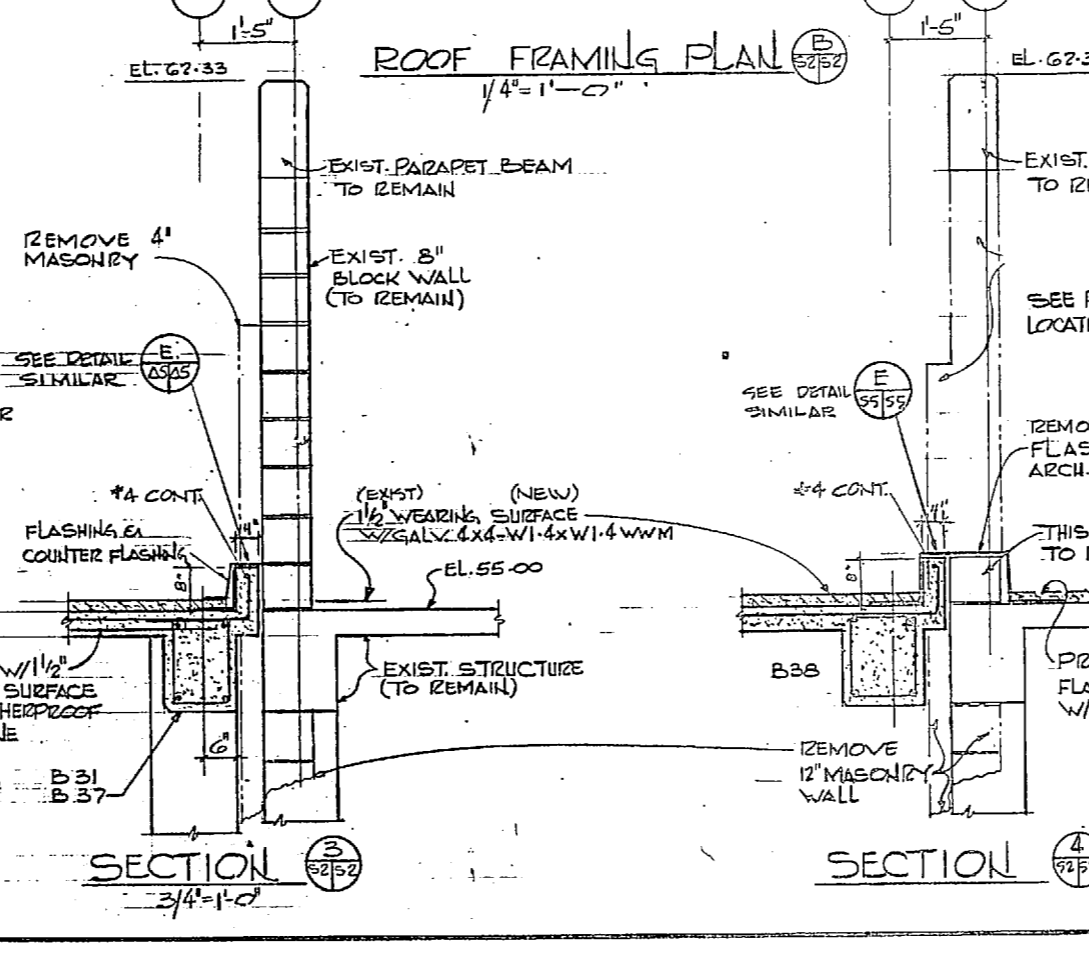
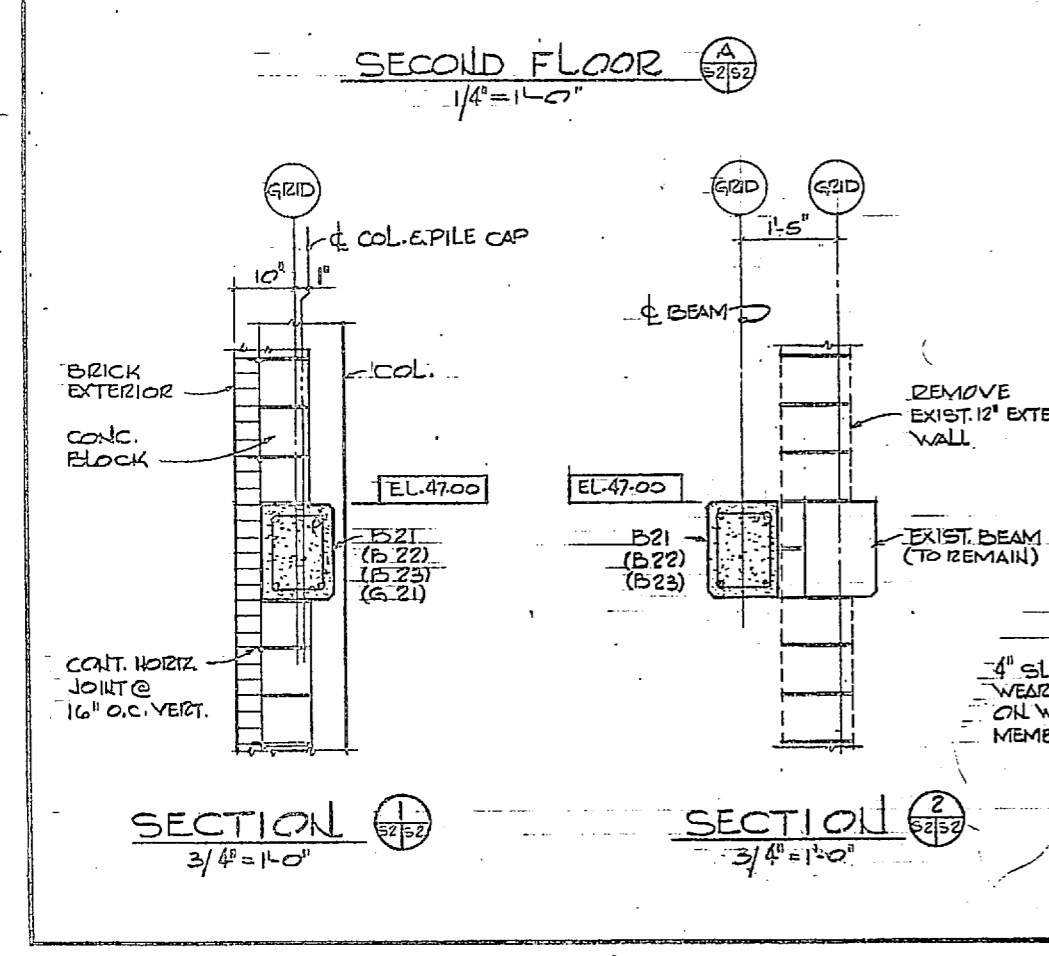
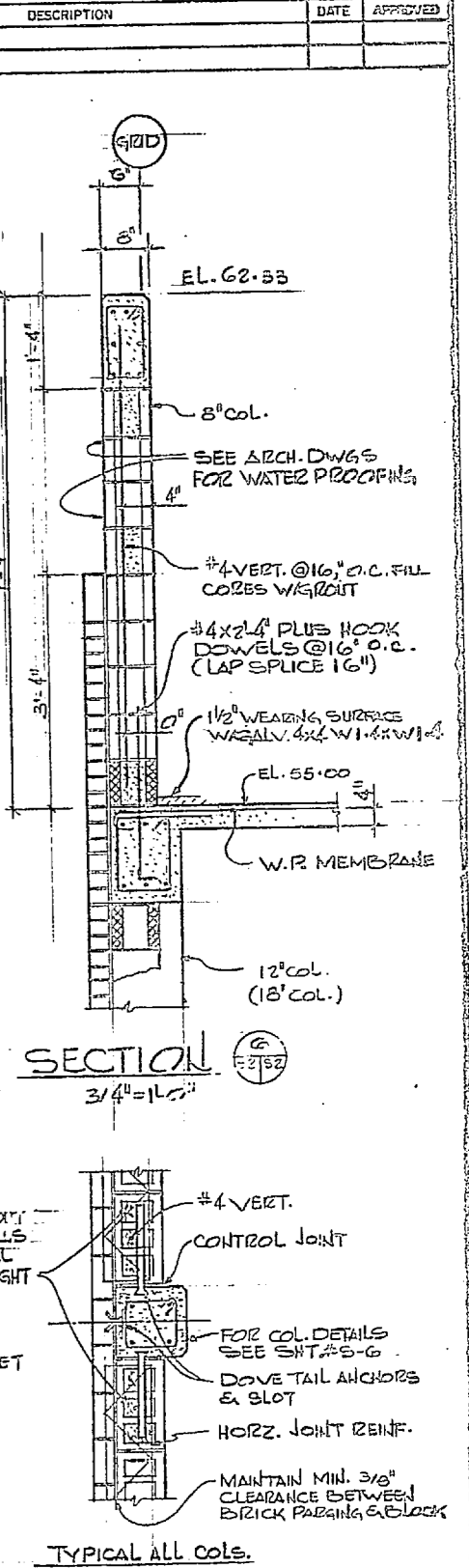
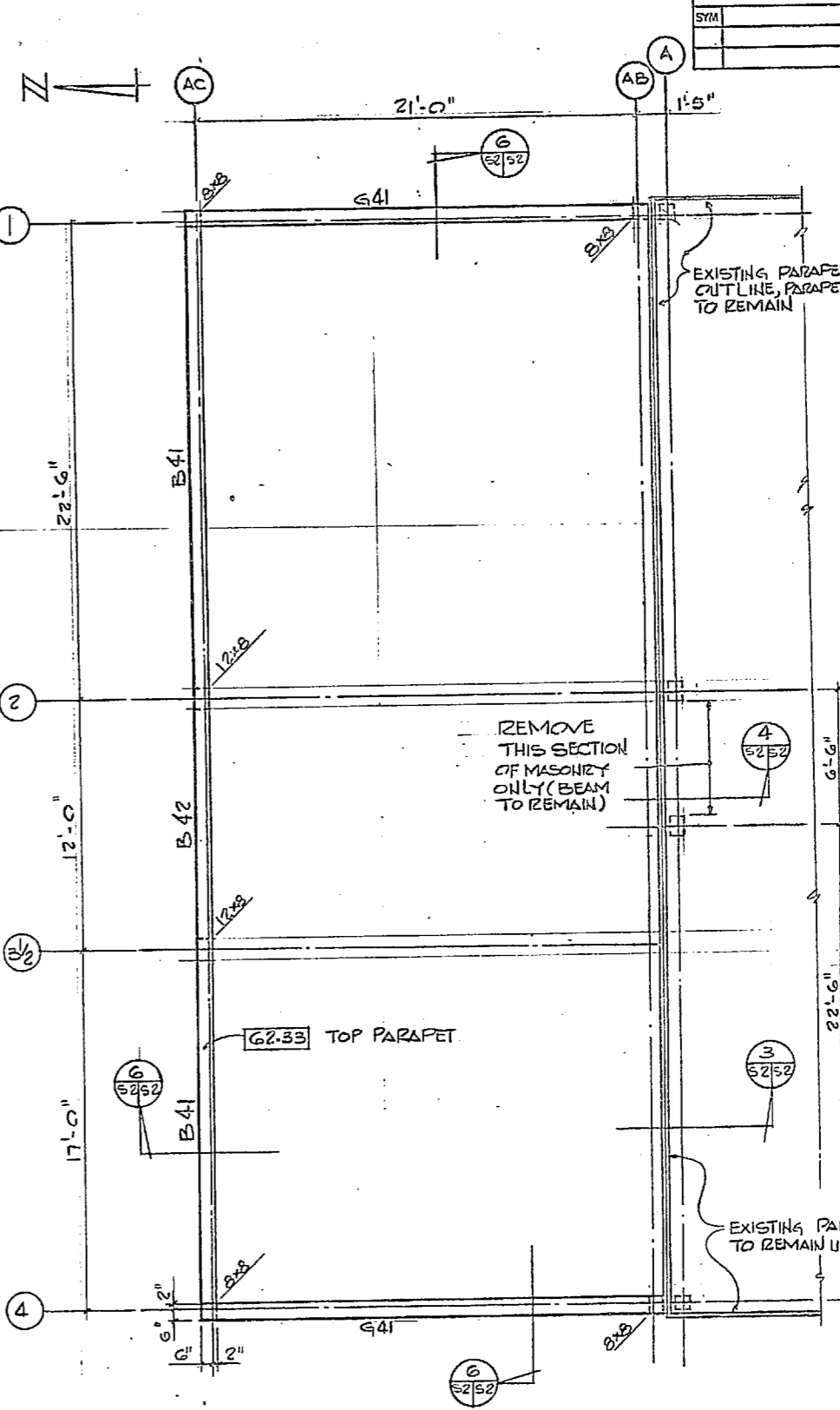
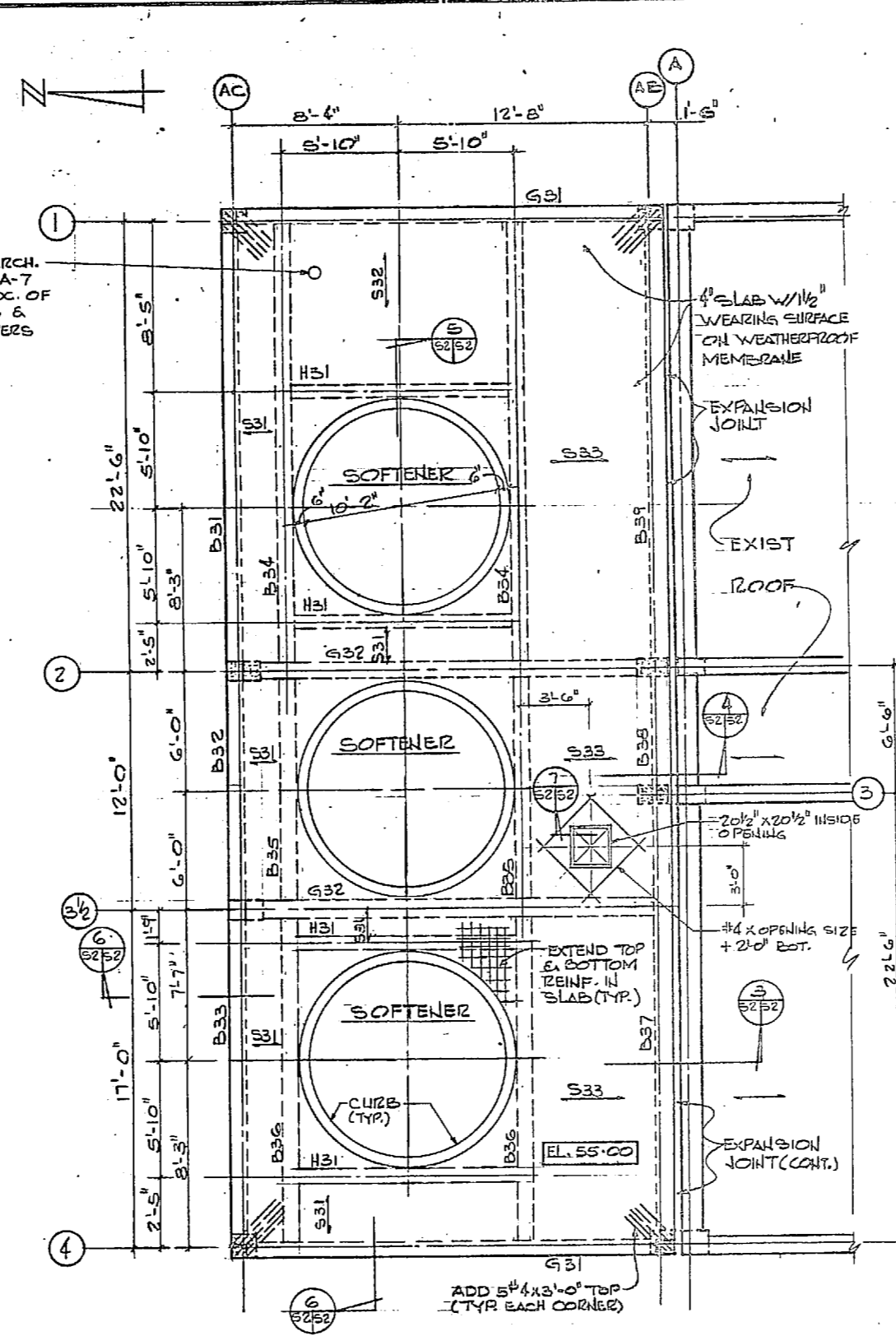
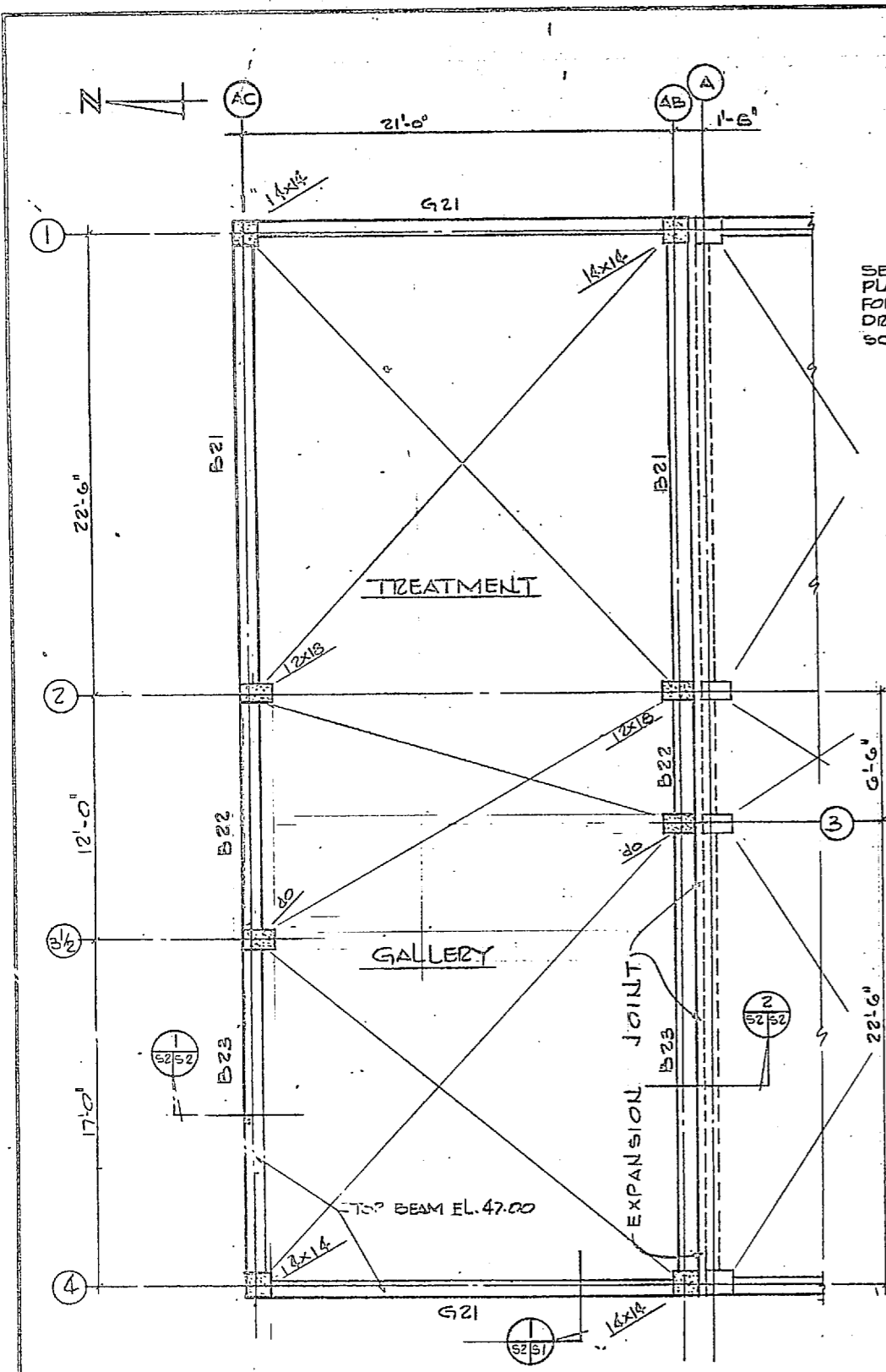
HEADER, BEAM & GIRDER SCHEDULE						
MARK	SIZE	LONGITUDINAL		STIRRUPS/TIES	REMARKS	
		BOT.	TOP			
H21	12 16	5#4	—	#6	#3	
H22	12 24	5#6	—	4#4	#3	
H23	12 24	3#10	—	2#4	#3	
H31	12 16	2#5	—	1#4	#3	
H32	12 16	2#5	—	2#7	#3	
H33	12 16	5#5	—	2#5	#3	
H34	12 24	2#5	—	3#4	#3	
H41	8 16	3#4	—	3#4	#3	
H42	12 16	5#4	—	3#5	#3	
H43	12 16	5#4	—	3#5	#3	
H44	12 16	5#4	—	3#5	#3	
H45	12 16	5#4	—	3#5	#3	
H46	12 16	5#4	—	3#5	#3	
H47	12 16	5#4	—	3#5	#3	
H48	12 16	5#4	—	3#5	#3	
H49	12 16	5#4	—	3#5	#3	
H50	12 16	5#4	—	3#5	#3	
H51	8 16	3#4	—	3#4	#3	
H52	8 16	do	—	do	do	
H53	12 12	2#5	—	2#4	#3	
H54	10 14	2#6	—	2#5	#3	
H55	16 12	5#7	—	2#5	#3	
H56	10 14	2#6	—	2#4	#3	
H57	8 12	2#6	—	2#4	#3	



GRAPHIC SCALES 1 0 1 5 11 1/4" = 1'-0" 1 0 2 5 1/2" = 1'-0" 1 0 1 3 3/4" = 1'-0"		SEAL 4631 NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER JOHN R. ANDREWS		HENRY VON OESER AND ASSOCIATES CONSULTING ENGINEERS AND ARCHITECTS WILMINGTON, NORTH CAROLINA				DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMANDER ATLANTIC DIVISION			
PROJECT NO. 4107550		DATE 11/26/87		SHEET NO. 17 OF 24		CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT					
DRAWN BY: [Signature]		CHECKED BY: [Signature]		SCALE: AS SHOWN		TREATMENT GALLERY FDN. PLAN					
PROJECTED BY: [Signature]		DATE 11/26/87		SHEET NO. 17 OF 24		NAVFAC DRAWING NO. 4107550 CONSTR. CONTR. NO. 162470-81-B-1544					
APPROVED BY: [Signature]		DATE 11/26/87		SHEET NO. 17 OF 24		SCALE: AS SHOWN SPEC: 05-81-1644					



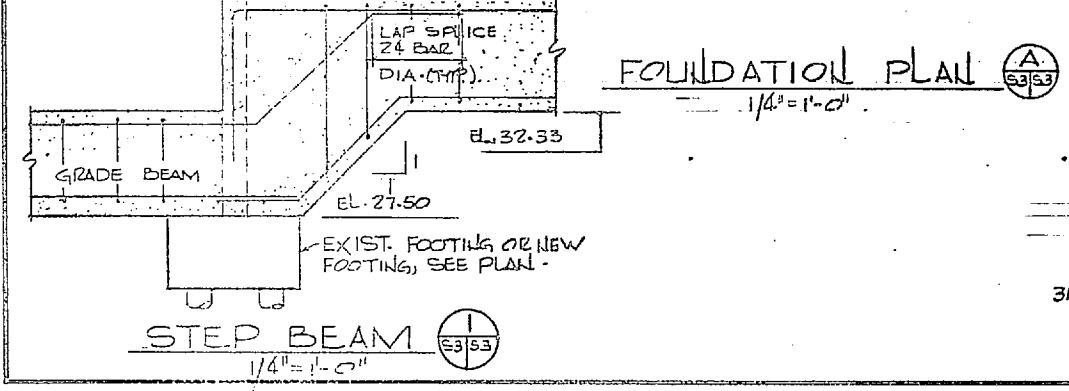
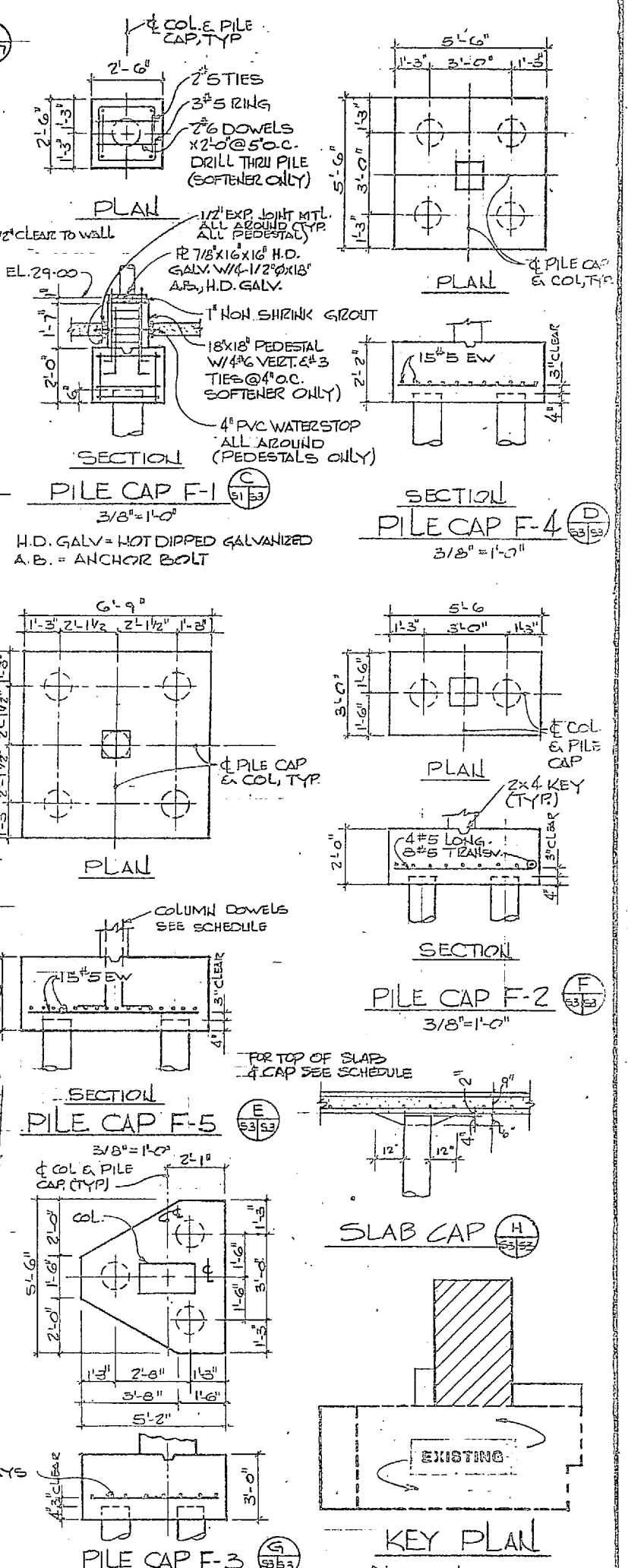
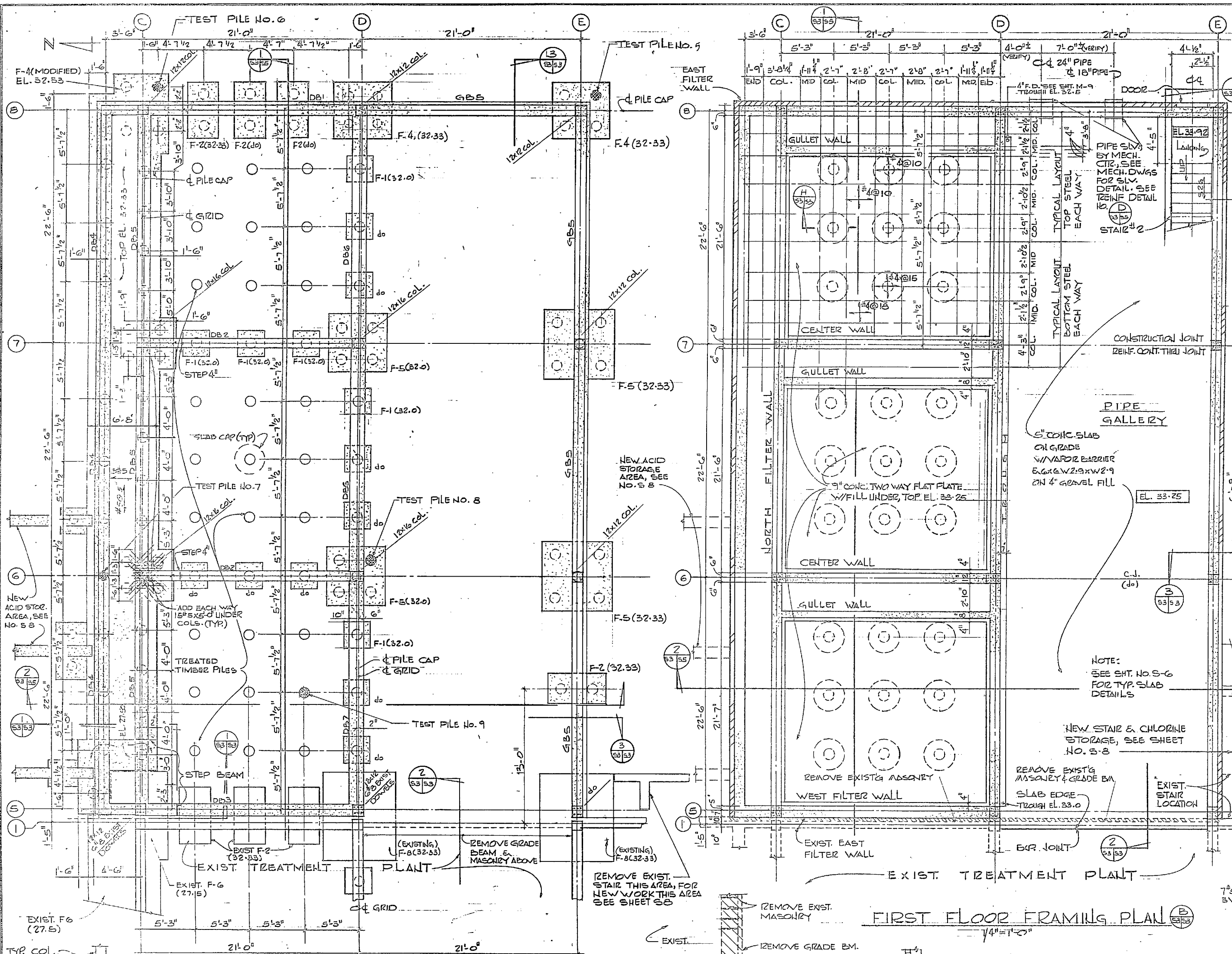
REVISIONS		
NO.	DESCRIPTION	DATE



	HENRY VON GESE AND ASSOCIATES CONSULTING ENGINEERS AND PLANNERS DUBLIN, NORTH CAROLINA	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING CENTER ATLANTIC DIVISION NORTH CAROLINA
	DES. JEA JAN 1964 PROJ. MGR. JEB CH. ENGR. JEB SUPERVISOR DATE CHECKED DATE IN CHARGE DATE	CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT
	TREATMENT GALLERY ROOF PLANS SHEET NO. 4107551 DRAWING NO. N62470-B1-B-1543	SCALE: AS SHOWN SPEC. 05-81-1043 SHEET 10 OF 13 EFD 055 13 207551
	ACTIVITY - SATISFACTORY DATE	DATE

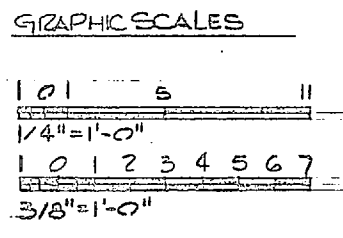
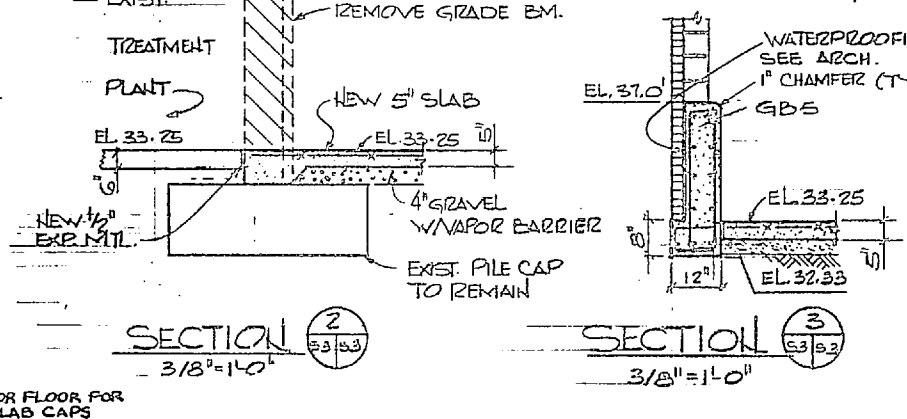


REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED



TOP EL. PILE CAP	BASE BID PILE LENGTH
27.5, 27.33	39 FEET
32.33, 32.0	44 FEET
38.25	49 FEET

PILE CAPACITY = 20 TONS



HENRY VON OESSEN AND ASSOCIATES
CONSULTING ENGINEERS AND PLANNERS
WILMINGTON, NORTH CAROLINA

DESIGNED BY: JZA, DR. JAN, GHR, JZA
SUBMITTED BY: JRB, CH, ENIG, JRB
FILM MEMBER: JRB
PRINCIPAL: JRB
DATE: 12/1/53

APPROVED BY: JRB
DATE: 12/1/53

FOR E.P. FOR COMMANDER NAVFAC

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND

ATLANTIC DIVISION

NAVAL STATION
CAMP LEJEUNE
NORTH CAROLINA

EXPANSION OF HOLCOMB BOULEVARD
WATER TREATMENT PLANT

FOUNDATION & FIRST FLOOR PLANS

FOUNDATION NO. 4107552

80091

NAVFAC BRANCH NO. 4107552

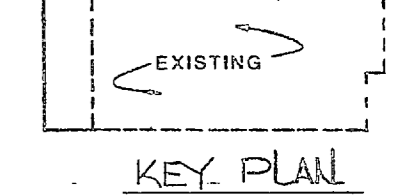
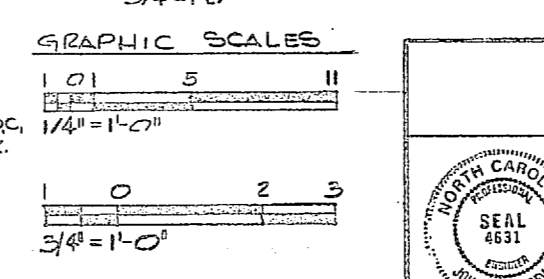
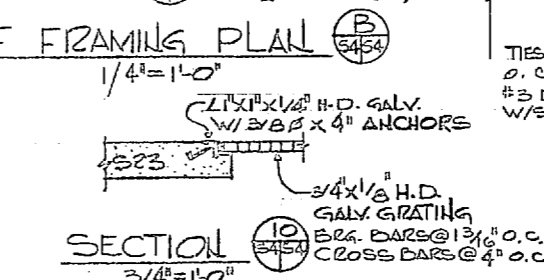
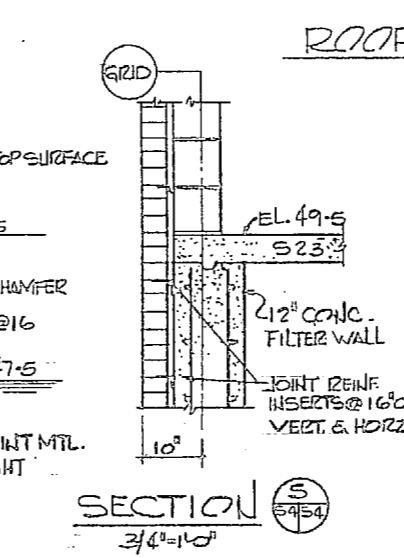
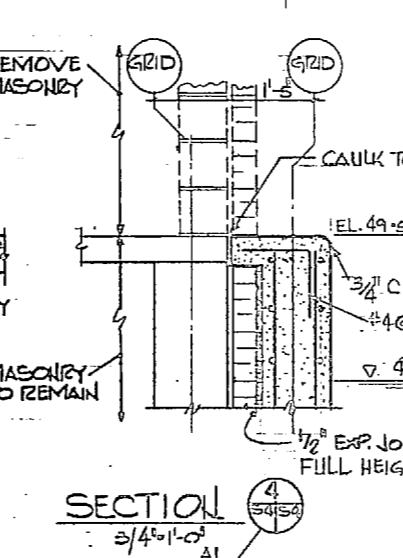
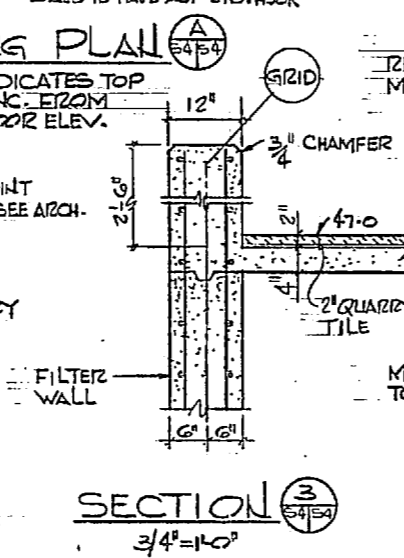
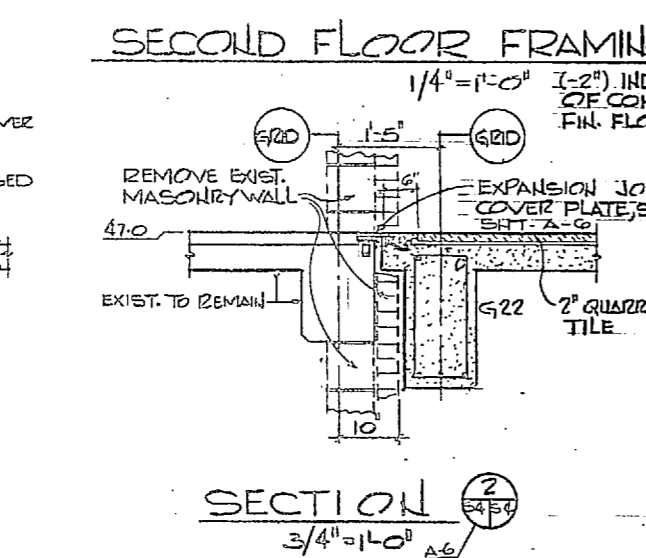
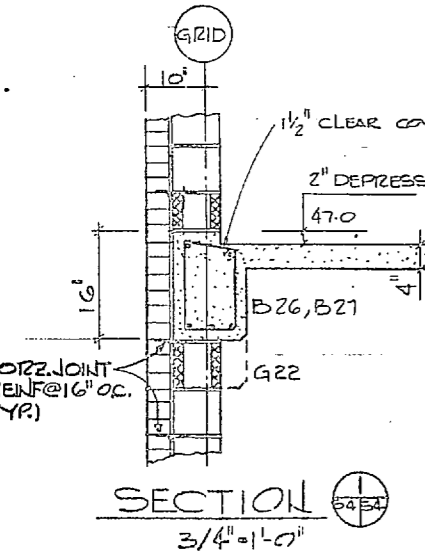
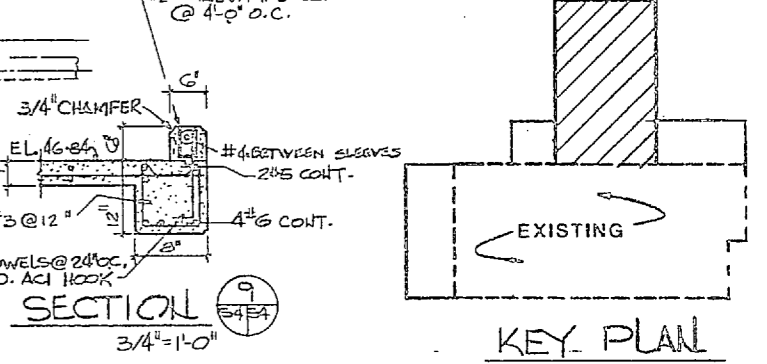
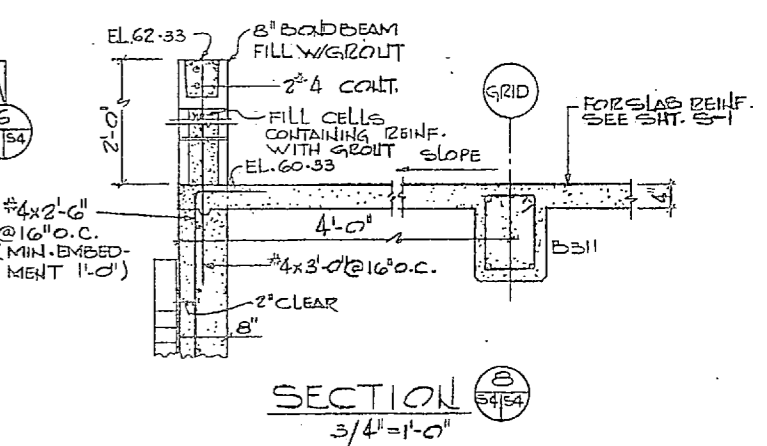
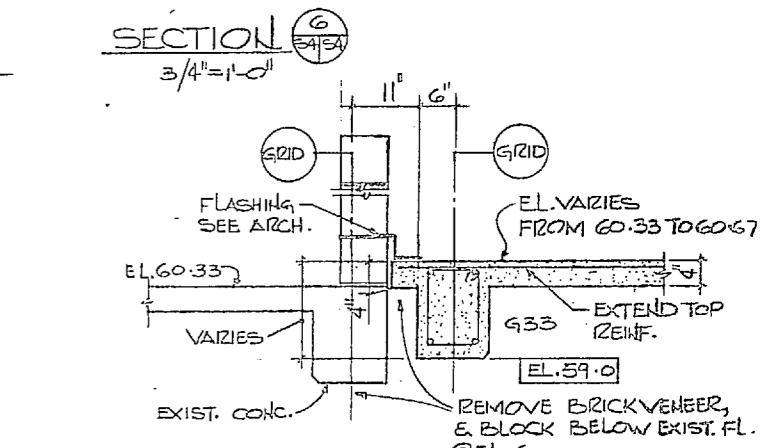
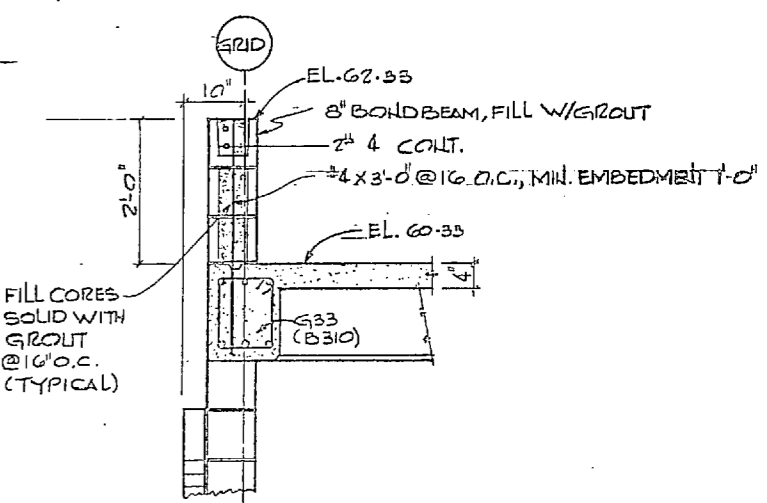
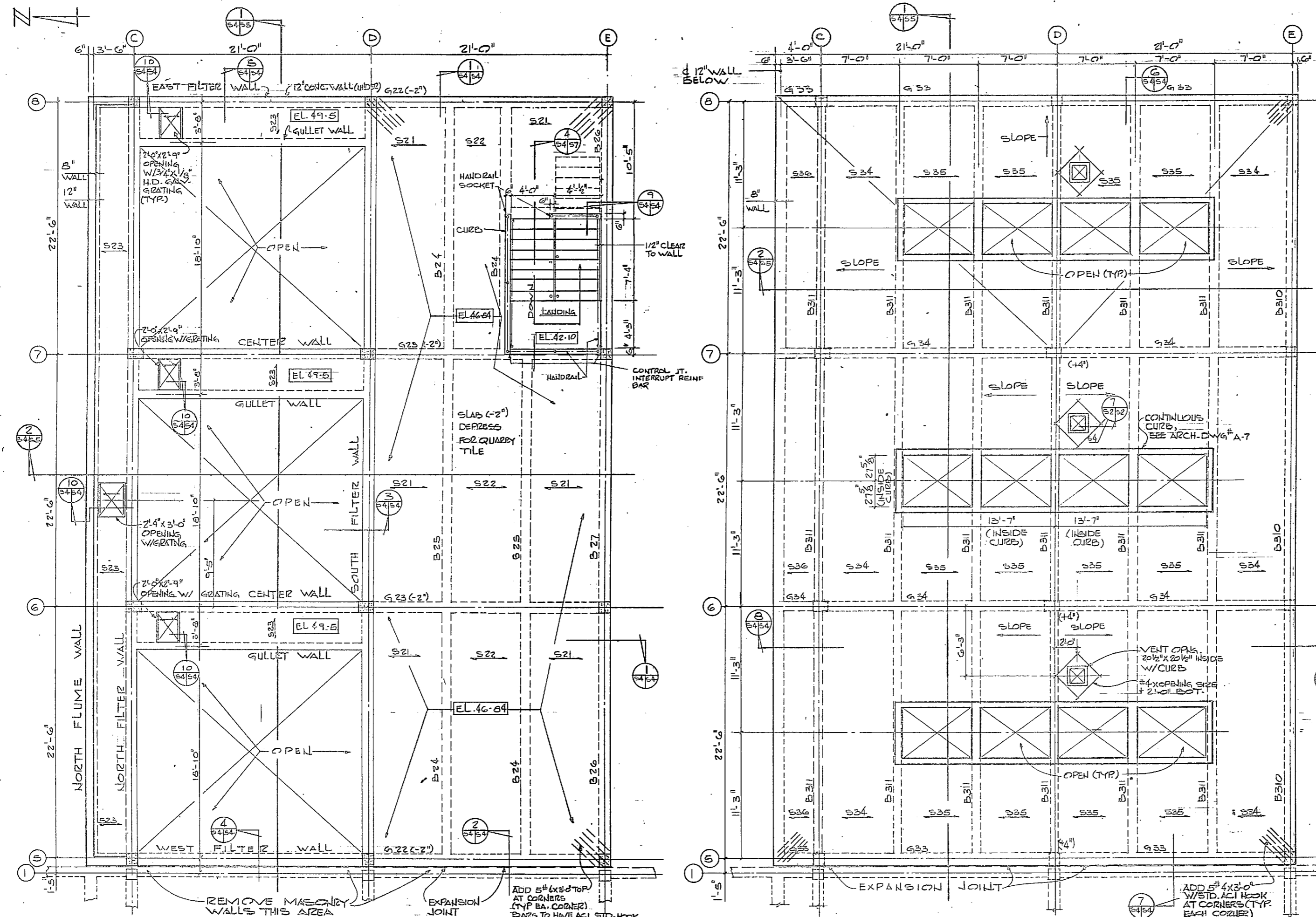
NS2470-CI-B-1644

SHEET 19 OF 74

207552

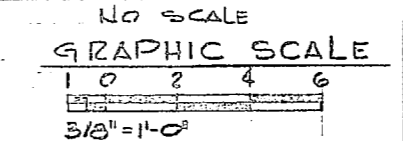
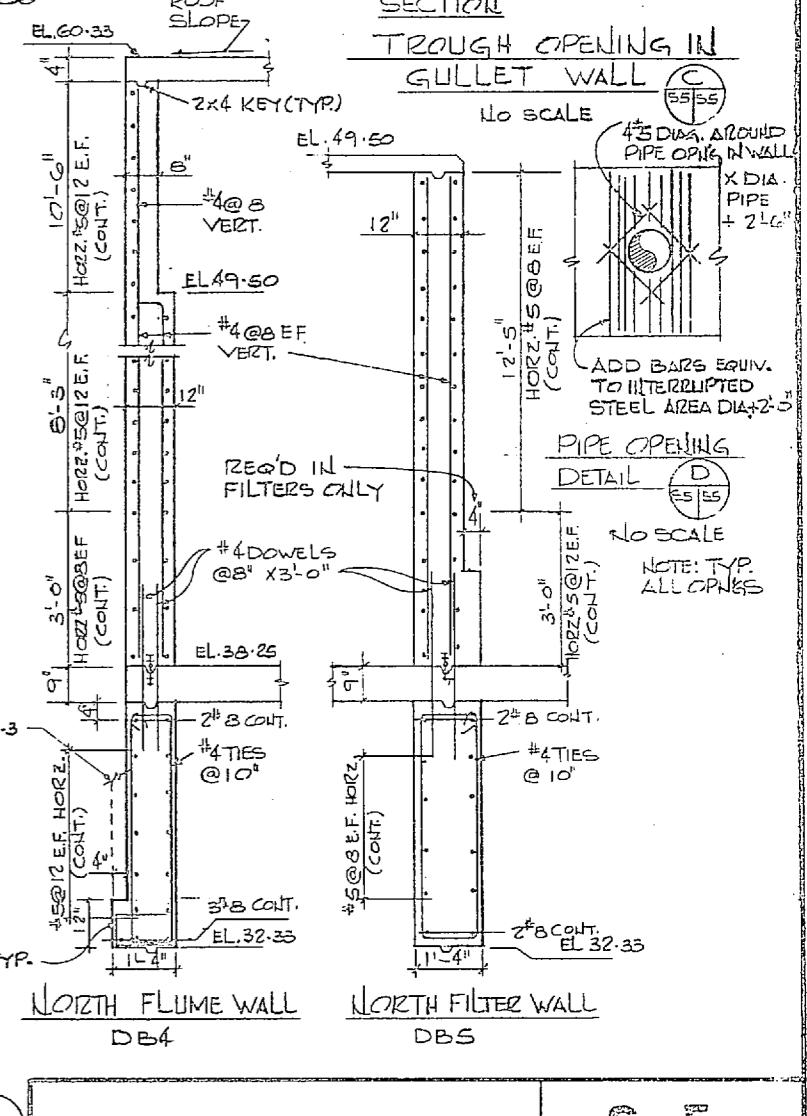
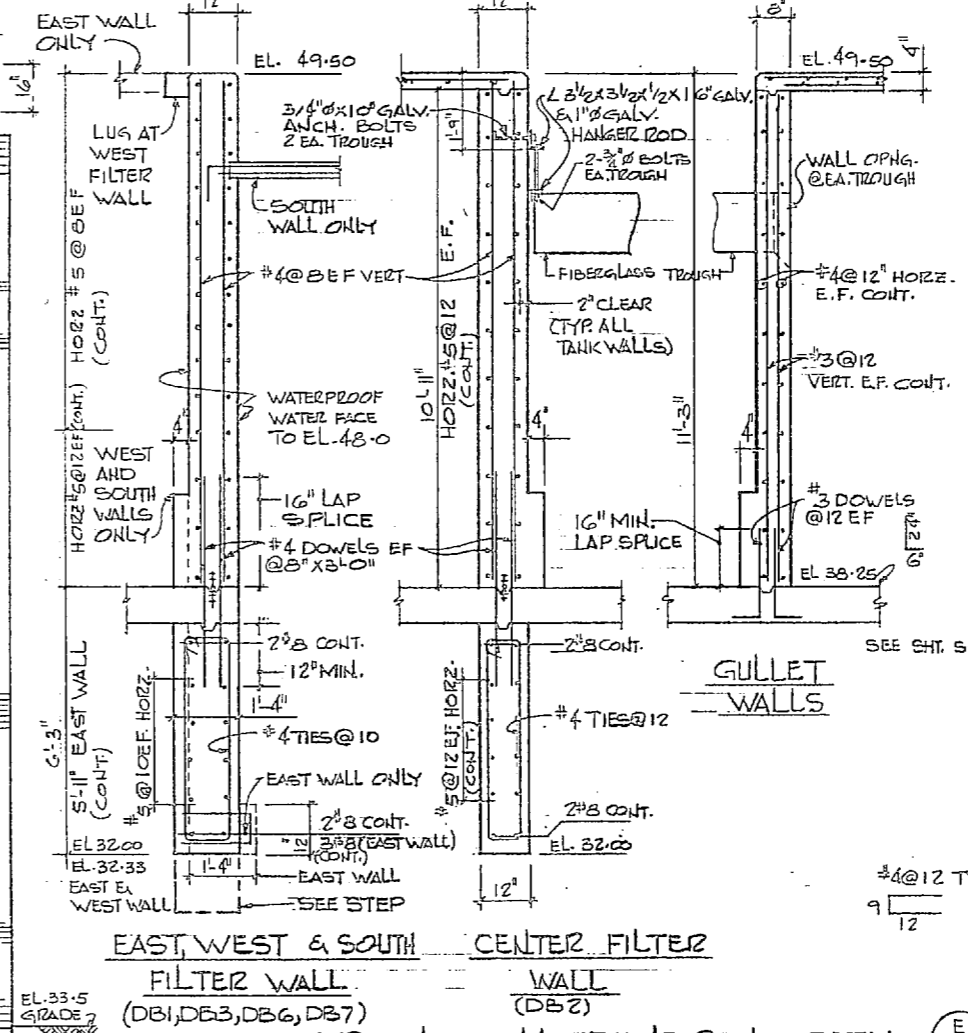
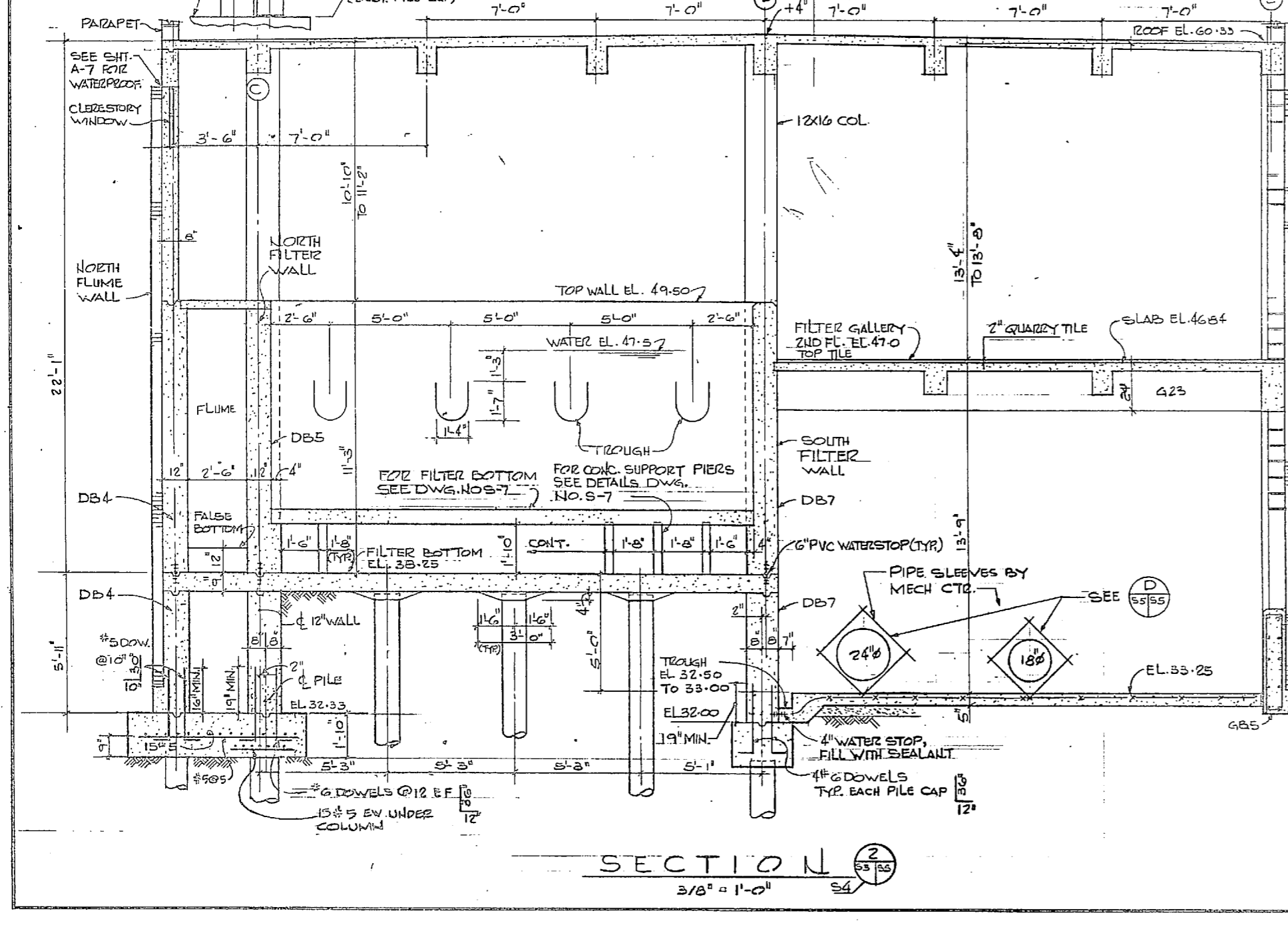
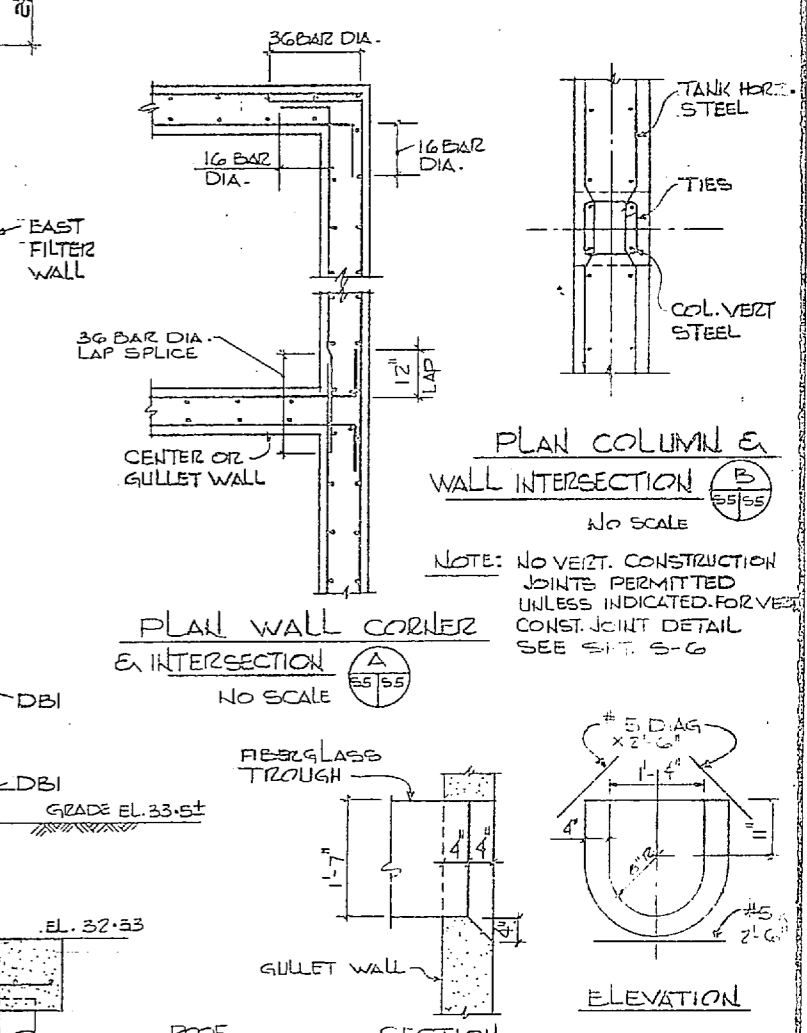
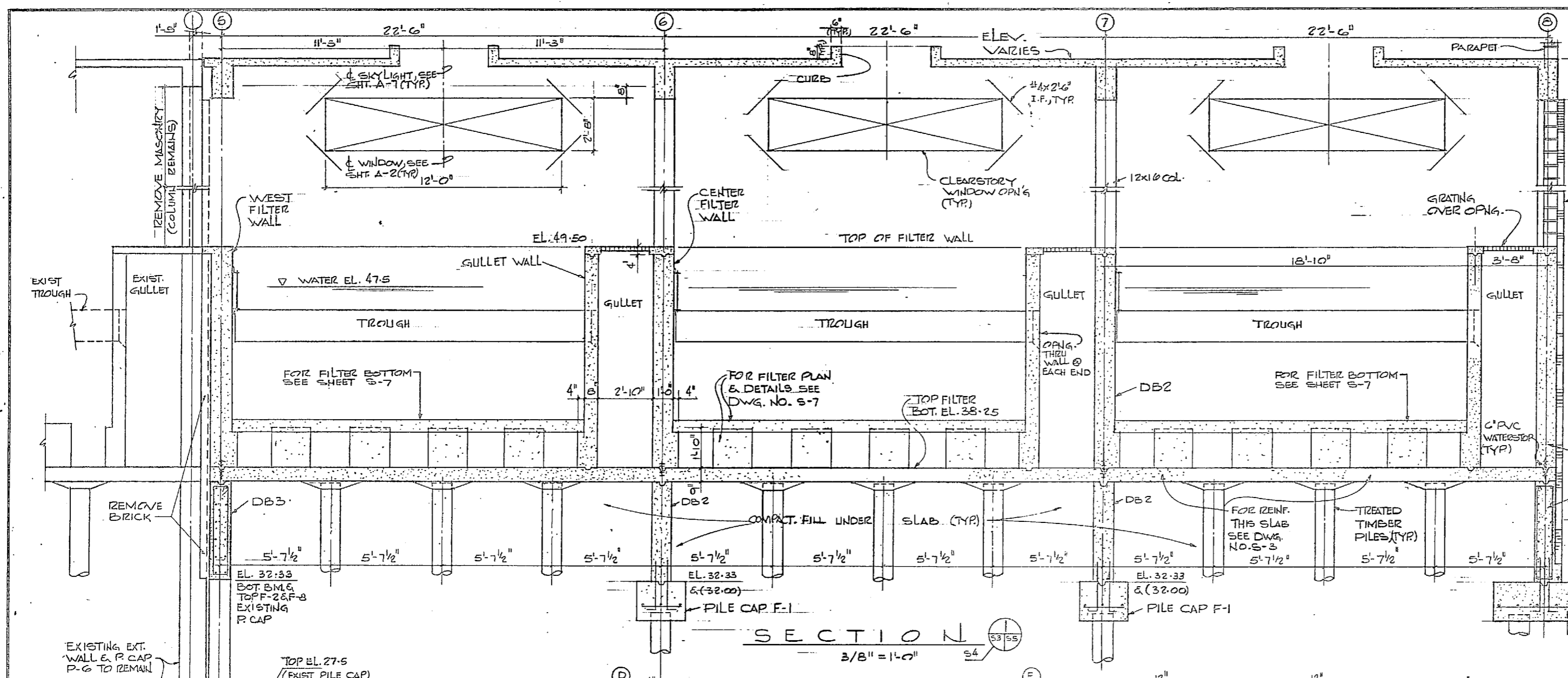


REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED



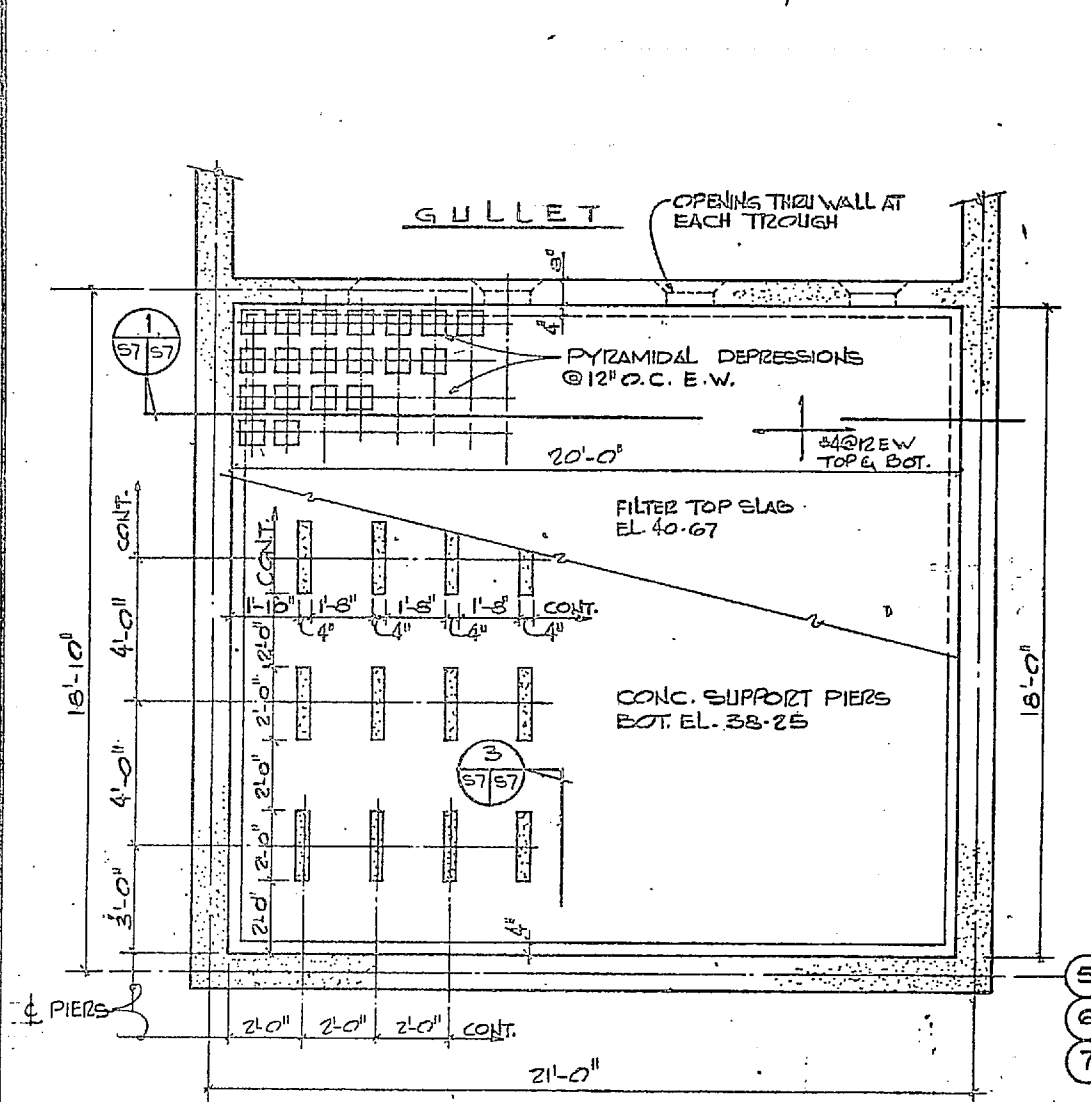
	HENRY WOH DEN AND ASSOCIATES CONSULTING ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND	
	DESIGNED BY: DR. JAN SMITH PROJECT NO.: JRS CH ENGR JRS SUBMITTED: DATE: 7/16/64	NAVAL STATION CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	HAVAC DIVISION NORTH CAROLINA PROJECT NO.: 4107553
	APPROVED: DATE: 7/16/64 ACTIVITY: SATISFACTORY TO	SIZE: 11 x 17 SCALE: AS SHOWN SPEC: 05-81-1644	SHEET 20 OF 72 207553
	SEAL 4631 JOHN R. JOHNSON	S-4	107553

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED

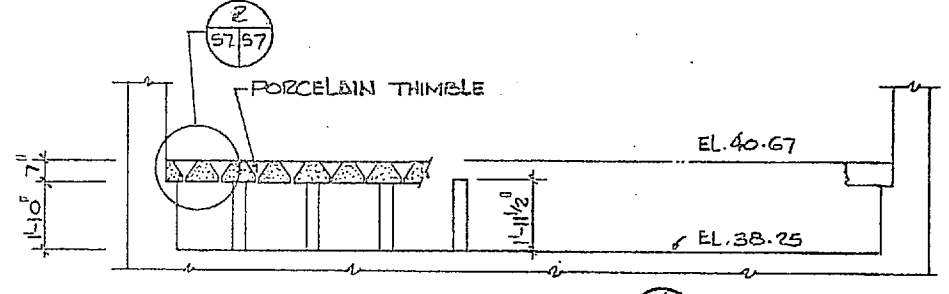


	HENRY VON OEBEN AND ASSOCIATES CONSULTING ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND	
	PROJECT NO. JRB CH ENGR. JRB		ATLANTIC DIVISION	
	SUBMITTED BY: DATE: 2/14/54		NAVAL STATION CAMP LEJEUNE NORTH CAROLINA	
	PROJECT NO. JRB CH ENGR. JRB		EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	
APPROVED BY: DATE: 2/24/54		SECTION & DETAILS		
ACTIVITY - SATISFACTORY TO DATE		SIZE: 8 1/2\"/>		
FOR EFD FOR COMMANDER NAVFAC		SCALE: AS SHOWN	SPEC: 05-81-1644	SHEET 21 OF 74

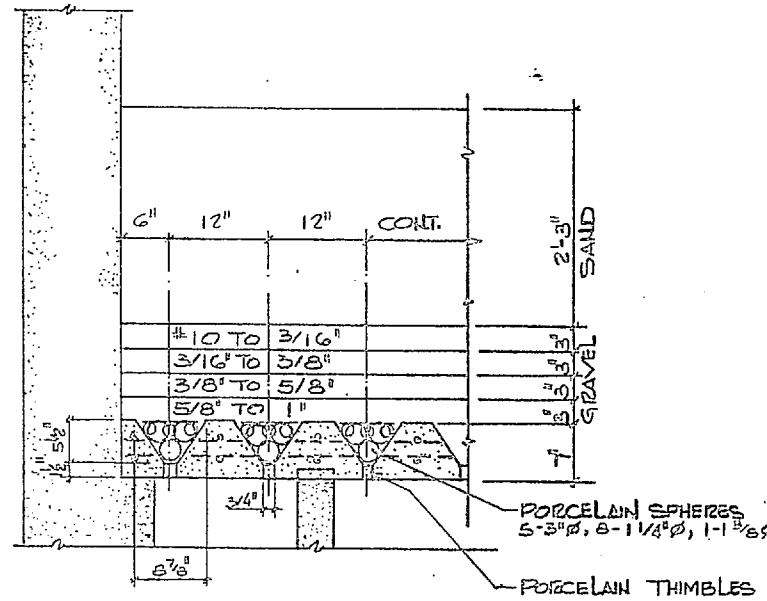
REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED



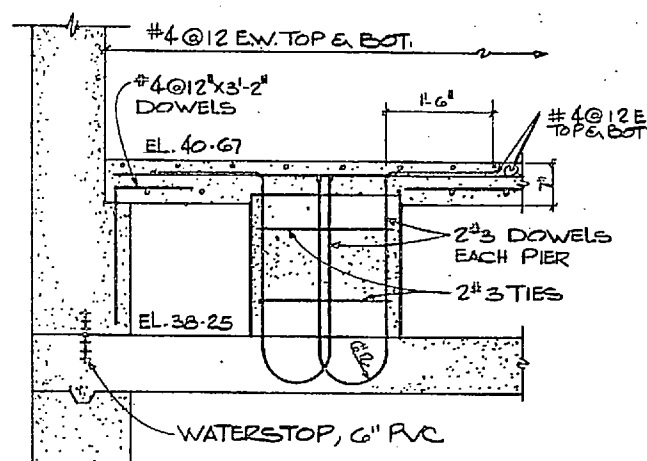
PLAN FILTER BOTTOM
3/8" = 1'-0"



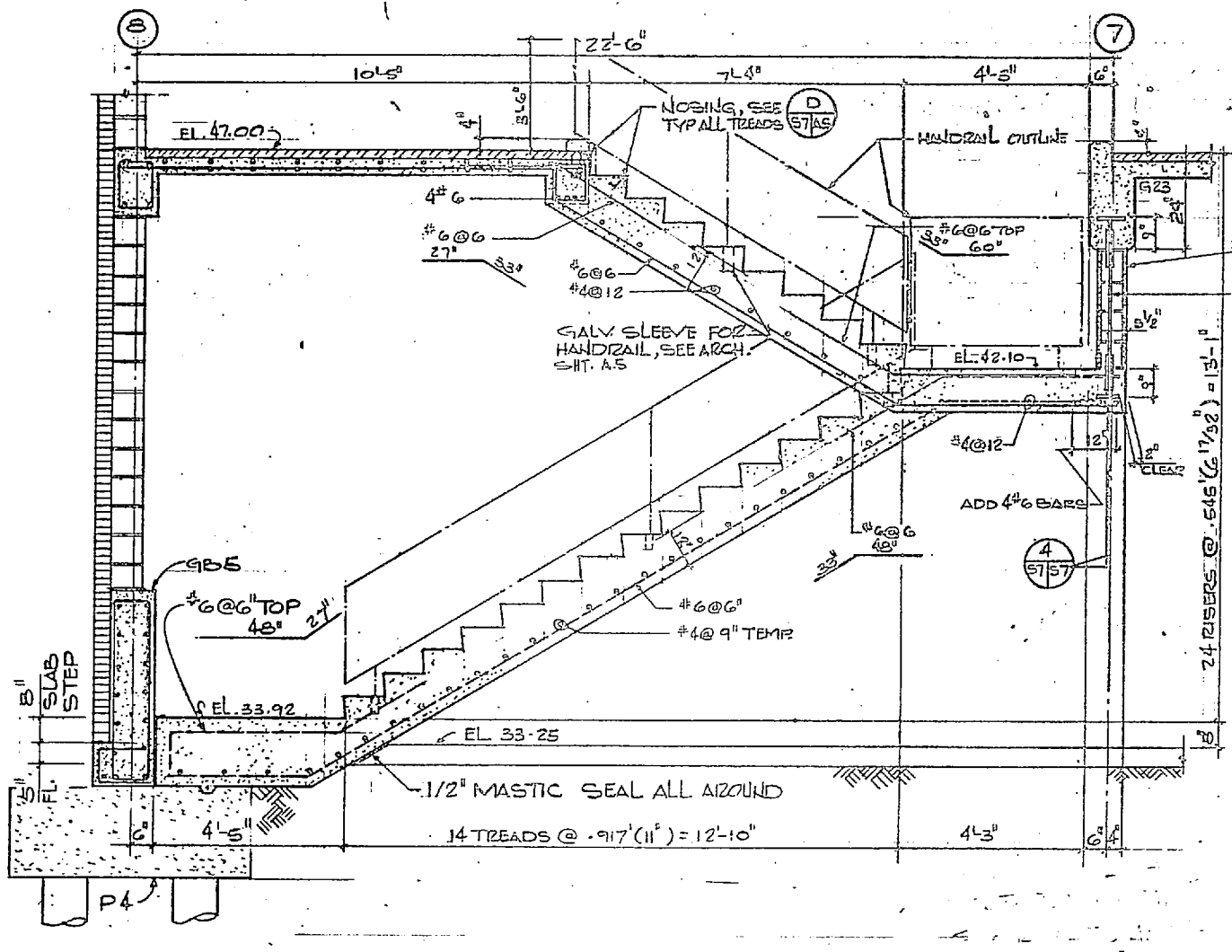
SECTION 1
3/8" = 1'-0"



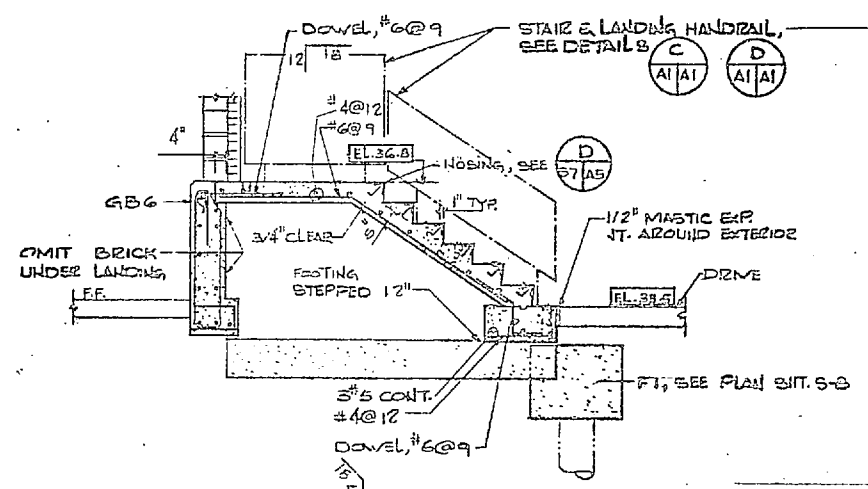
SECTION 2
1" = 1'-0"



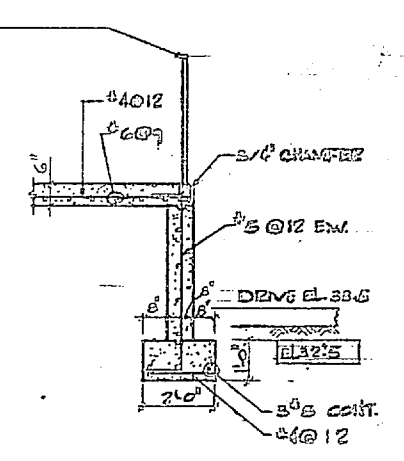
SECTION 3
3/4" = 1'-0"



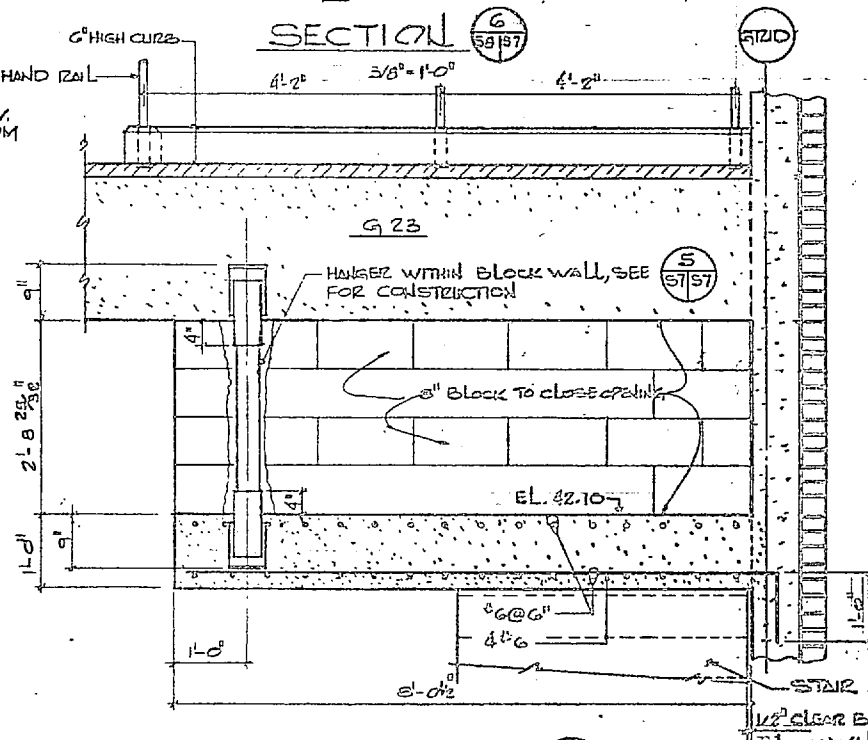
STAIR NO. 2
SECTION 4
1/2" = 1'-0"



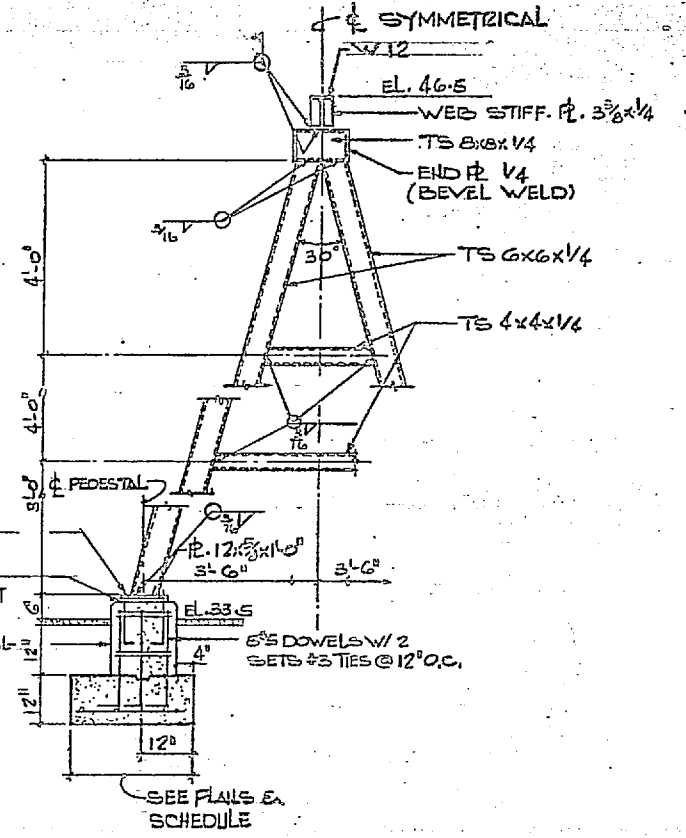
SECTION 5
3/8" = 1'-0"



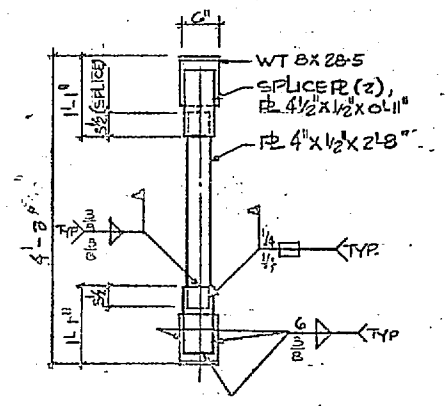
SECTION 6
3/8" = 1'-0"



SECTION 7
3/4" = 1'-0"

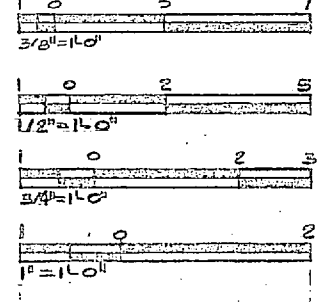


SECTION 8
1/2" = 1'-0"



SECTION 9
3/4" = 1'-0"

GRAPHIC SCALES



S-7

	HENRY VOH GEBEN AND ASSOCIATED CONSULTING ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING CONTROL
	DES. JON J. VAN PROJ. ENG. J. R. CHEN SUBMITTED BY DATE APPROVED DATE	NAVAL STATION CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT
FILTER PLAN & SECTIONS		
SIZE 11" x 17"		SPEC. 05-81-1644



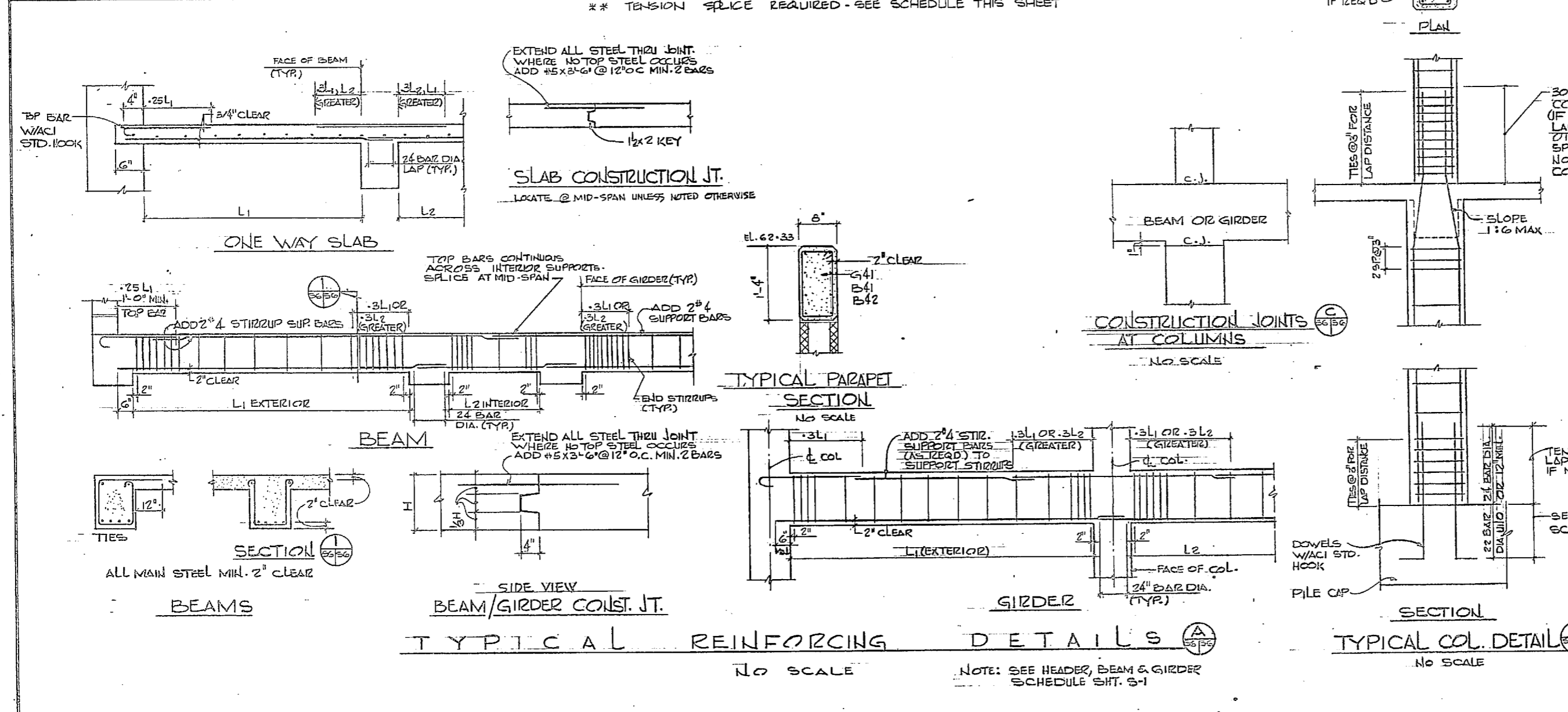
REVISIONS			
SY#	DESCRIPTION	DATE	APPROVED

COLUMN SCHEDULE												
MARK (BY GRID LINE)	1 AC 4 AC	2 AC 3 1/2 AC	1 AB 4 AB	2 AB 3 AB	C5 C8	C6 C7	D5 D8	D6 D7	E5 E8	E6 E7	CO2 CL. STORAGE COLUMNS	
TOTAL No. cols.	2	2	2	2	2	2	2	2	2	2	2	8
PARAPET EL. 62-33	SIZE VERT. STEEL TIES											
ROOF EL. 60-33	SIZE VERT. STEEL TIES	8x8 4#8	12x8 6#6	8x8 4#8								
2ND FL. EL. 47-0	SIZE VERT. STEEL TIES	14x14 6#8	12x18 6#6	14x14 6#8	12x18 6#7	12x12 6#8	12x16 6#9	12x12 6#8	12x16 4#7	12x12 6#8	12x12 4#8	
1ST FL. EL. 37-0	SIZE VERT. STEEL TIES	14x14 6#8	12x18 6#9	14x14 6#8	12x18 6#9	12x12 6#8	12x16 6#9	12x12 6#8	12x16 4#7	12x12 6#8	12x12 4#9	12x12 MASONRY 4#5 20#8"
GROUND FL. EL. 33-25	SIZE VERT. STEEL TIES											
BASEMENT EL. 28-33	SIZE VERT. STEEL TIES											
PILE CAP TOP EL.		F4 27-5	F5 27-5	EXIST. 27-5	EXIST. 27-5	EXIST. F4 32-33	32-33	EXIST. F4 32-33	F5 32-33	EXIST. F4 32-33	F5 32-33	F1, F2 VARIES
DOWELS W/A CI STD. HOOK		6#8	6#9	(4#8 EXIST.)	(6#9 EXIST.)	(6#8 EXIST.)	(6#9 EXIST.)	(6#8 EXIST.)	4#7	(6#8 EXIST.)	(6#8 EXIST.)	4#9

TENSION SPICE SCHEDULE	
BAR NO.	CONTACT SPICE LENGTH
#8	20"
#9	33"

LINTEL SCHEDULE		NO SUPERIMPOSED LOADS
MARK	SECTION	DESCRIPTION
L1		SIZE 8"x8" (NOMINAL) - CMU (TYP.) REINF. 2#4 BOTTOM ALLOW 6" MIN. BEARING EA. SIDE OF M.O. MAX. M.O. 4'-0"
L2		SIZE 6"x6" (NOMINAL) REINF. 2#4 BOTTOM ALLOW 6" MIN. BEARING EA. SIDE OF M.O. MAX. M.O. 8'-0"
L3		SIZE 12"x8" (NOMINAL) REINF. 3#5 BOTTOM ALLOW 6" MIN. BEARING EA. SIDE OF M.O. MAX. M.O. 6'-0"
L4		BRICK VENEER ON CMU OR STUD WALL UP TO 4'-0" H.O. USE 2 1/2"x3 1/2"x 8" SPANS 4'-0" TO 6'-0" L 6 x 3 1/2 x 8/16 SPAN 6'-0" TO 8'-0" L 6 x 3 1/2 x 9/16 ALLOW 6" MIN. BEARING EA. SIDE M.O. FOR 8" BRICK WALL, USE TWO ANGLES OF THE SAME SIZE AS NOTED ABOVE.
L5		PRECAST CONC. LINTEL W/4#3 TIES AT 3' LONG. REINF. UP TO 6'-0" SPAN W/4#4 SPANS 6'-0" TO 8'-0" USE 2#5 ALLOW 6" MIN. BEARING EA. SIDE M.O.

- GENERAL**
- DESIGN LIVE LOADS: ROOF = 30 PSF, FLOOR - OFFICES = 60 PSF, FILTER GALLERY = 75 PSF, PASSAGEWAYS = 100 PSF, WIND 115 MPH, SEISMIC ZONE 1.
 - ERECT EXTERIOR CMU WALLS IN CONJUNCTION W/ERECTION OF CONC. FRAME. DESIGN BASED ON EXTERIOR MASONRY AND INTERIOR CONC. SHEAR WALLS FOR LATERAL SUPPORT.
- FOUNDATIONS**
- ALLOWABLE SOIL BEARING PRESSURE OF 1,000 PSF.
 - BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE 2'-0" MIN. BELOW FINISHED GRADE OR 1'-0" BELOW EXIST. GRADE WHICHEVER IS LOWER.
 - PILING SHALL BE TIMBER PILE PRESSURE TREATED WITH COAL TAR CREOSOTE OR WATERBORNE PRESERVATIVE (ACA OR CCA) IN ACCORDANCE WITH APCA BOOK OF STANDARDS C1-74 AND C3-74. SEE SPECS. FOR BID LENGTH. DRIVE TEST PILES BEFORE ORDERING. BEARING CAPACITY IS 20 TONS.
 - WALLS ACTING AS RETAINING WALLS SHALL NOT BE BACKFILLED UNTIL CONCRETE HAS ATTAINED DESIGN STRENGTH.
- CONCRETE**
- CONC. COMPRESSIVE STRENGTH IN 28 DAYS: PILE, FOOTINGS, SLABS ON GRADE = 3000 PSI ALL OTHER MEMBERS 4000 PSI.
 - REINF. STEEL ASTM 615, GRADE 60, WELDED WIRE MESH ASTM A185.
 - REINF. STEEL SHALL HAVE THE FOLLOWING CLEAR CONCRETE COVER: FOOTINGS, PILE CAPS = 3", BEAMS, GIRDERS = 2" TANK WALLS = 2", SLABS ON GRADE = 1-1/2", SLABS = 3/4".
 - DOWELS & CONTINUOUS REINF. SHALL HAVE A MIN. LAP OF 24 BAR DIAMETERS - 12" MIN. UNLESS NOTED OTHERWISE.
 - CHAMFER ALL EXPOSED EDGES 3/4" x 45 DEGREES.
 - PROVIDE EXTRA REINF. AT OPENINGS THRU WALLS OR SLABS OF MIN. 4#5 DIAG. BARS.
 - CONSTRUCTION JOINTS IN FLOORS SHALL BE LOCATED NEAR THE MIDDLE OF THE SPANS OF SLABS, BEAMS OR GIRDERS UNLESS A BEAM INTERSECTS A GIRDER AT THIS POINT. PROVISIONS SHALL BE MADE FOR TRANSFER OF SHEAR & OTHER FORCES THRU THE JOINT.
 - COMPRESSION LAP SPICE IN COLUMNS SHALL BE 24 BAR DIA OR 12" MIN. TENSION SPICE WHERE INDICATED ON PLANS SHALL BE AS SHOWN IN DETAIL.
- STRUCTURAL MASONRY**
- EXTERIOR CONC. MASONRY WALLS ARE CONSIDERED TO BE STRUCTURAL MASONRY.
 - COMPRESSIVE STRENGTH OF MASONRY UNITS: CLAY UNITS = 2000 PSI; CONC. UNITS GRADE N, TYPE 1.
 - ULT. COMP. STRENGTH OF MORTAR AT 28 DAYS SHALL BE 1800 PSI MIN. (TYPE H OR S).
 - TIE WYTHES W/HORIZONTAL REINF. AS SPECIFIED.
 - MAINTAIN MIN. 3/8" CLEARANCE BETWEEN PARGING ON BRICK & CONC. BLOCK WALLS.
 - MIN. BEARING FOR LINTELS 8" (CONC.) ALL LINTEL BLOCK TO BE FILLED W/3000 PSI CONC. W/2#5 CONT. USE 4" x 3-1/2" x 5/16" FOR STEEL LINTELS - MIN. BEARING 4". SEE LINTEL SCHEDULE.
- REFERENCE DESIGN CODES**
- NAVFAC DM-2, DM-7
 - AISC
 - ACI 318-77
 - IN 5-809-3



ELEVATION TYPICAL WALL CONSTRUCTION JOINT
 LAP SPICE 36 BAR DIA.
 2 x 4" KEY
 VERT. REINF. CONT. THRU JOINT
 6" PVC WATERSTOP

NO SCALE

U.N.O. = UNLESS NOTED OTHERWISE

5-6

HENRY VON OEBEN AND ASSOCIATED
 CONSULTING ENGINEERS AND PLANNERS
 WILMINGTON, NORTH CAROLINA

NAVY STATION
 CAMP LEJEUNE
 EXPANSION OF HOLCOMB BOULEVARD
 WATER TREATMENT PLANT

ATLANTIC DIVISION
 NORTH CAROLINA
 STRUCTURAL SCHEDULES

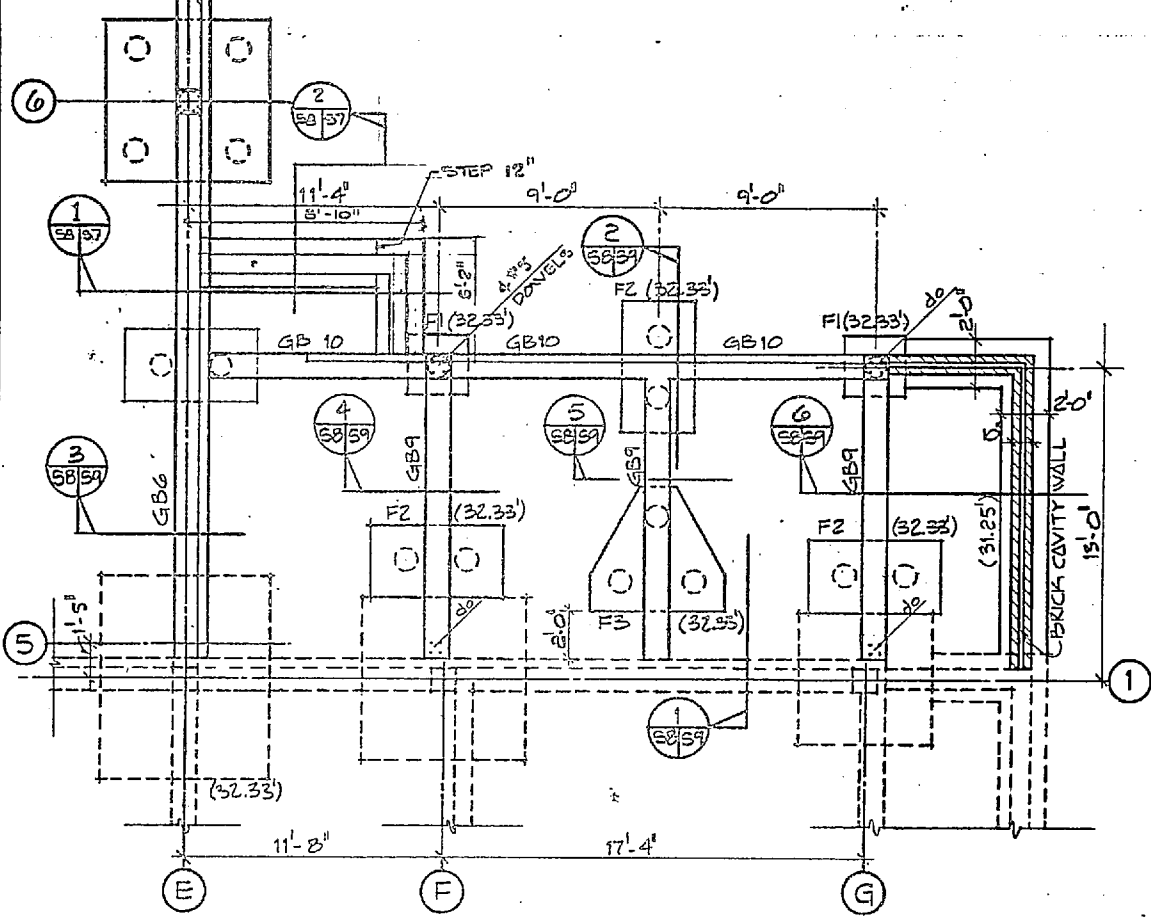
APPROVED: *[Signature]* DATE: 7/2/84
 ACTIVITY - SATISFACTORY TO DATE: 7/2/84

SCALE: AS SHOWN SPEC 05-81-1644 SHEET 22 OF 74
 NAVFAC DRAWING NO. 182470-01-B-1644

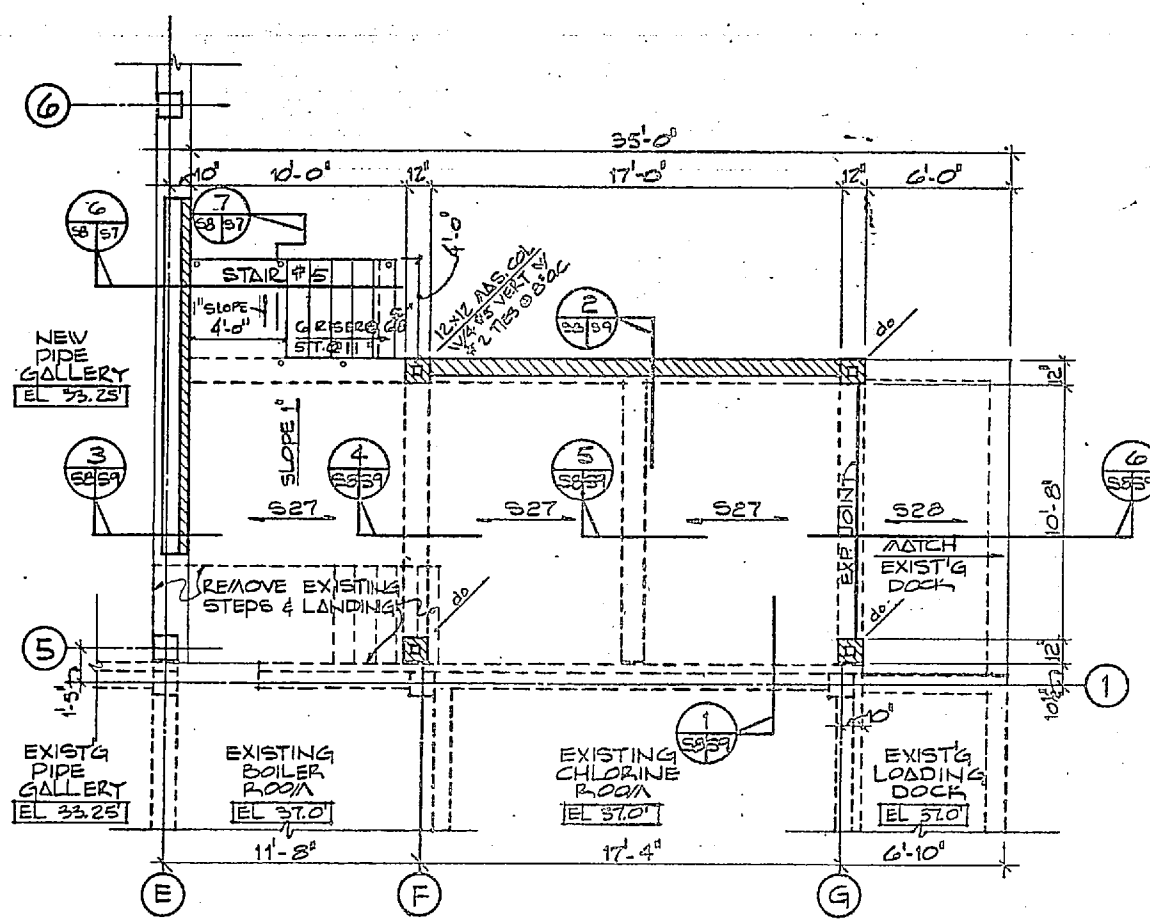
NOTE: SEE HEADER, BEAM & GIRDER SCHEDULE SHEET 5-1



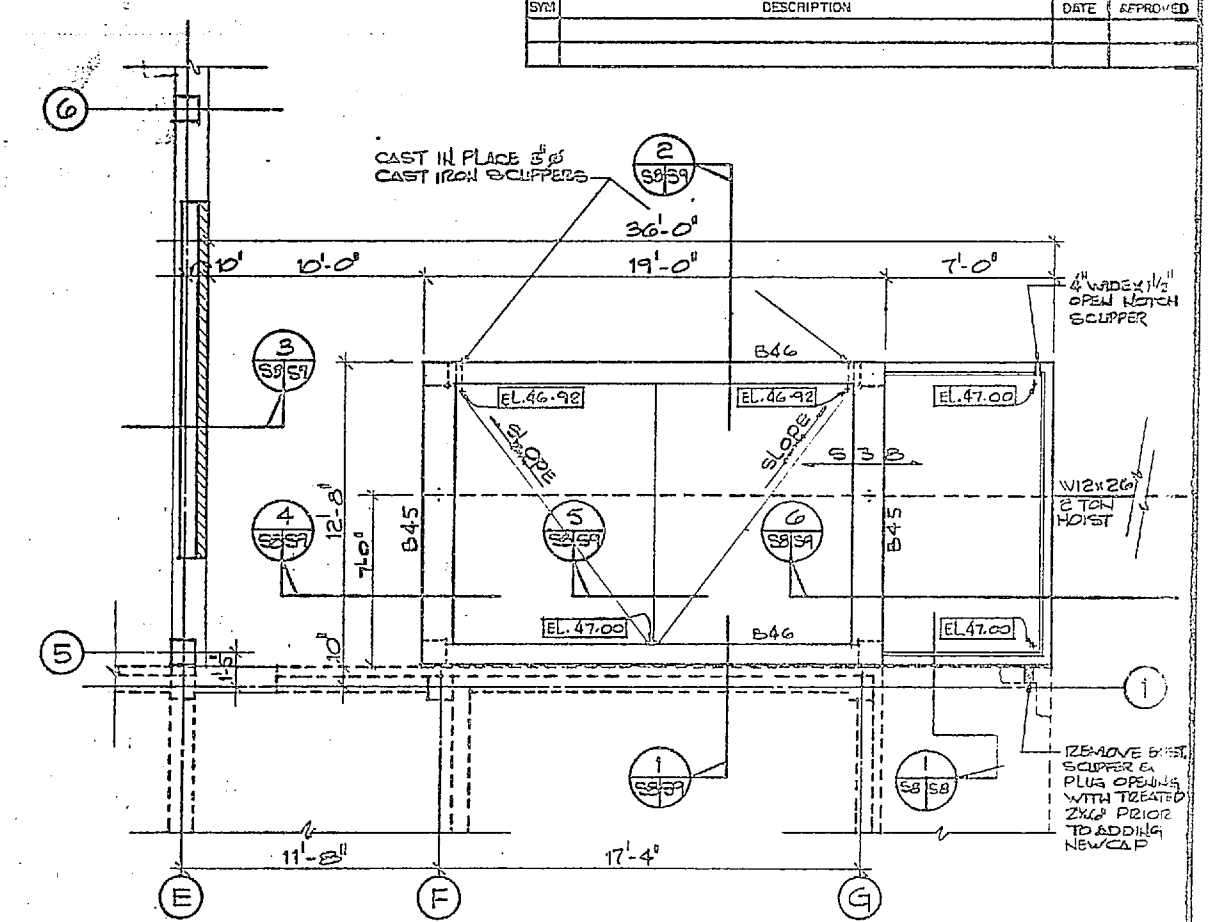
REVISIONS			
SYN	DESCRIPTION	DATE	APPROVED



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



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

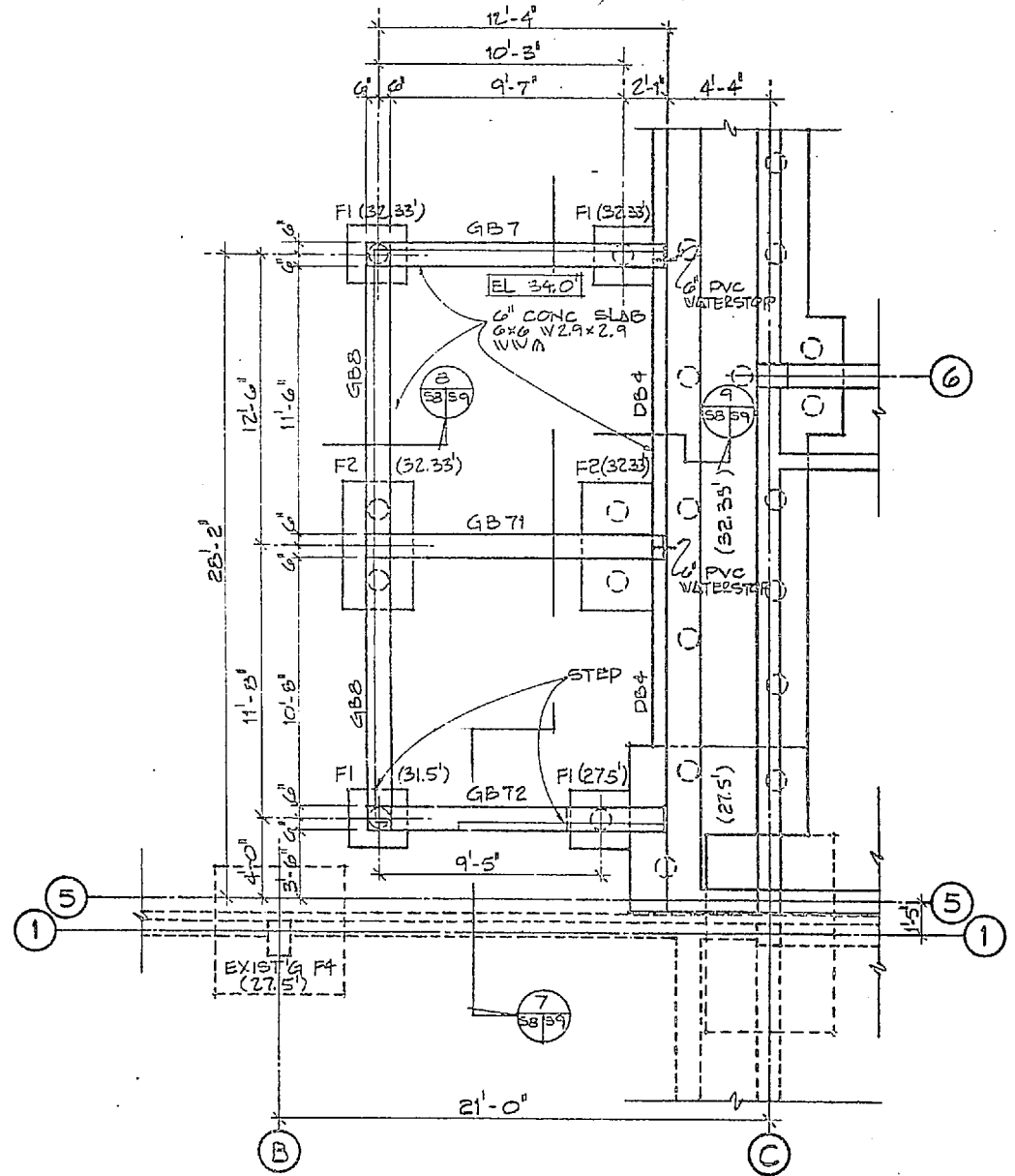


ROOF FRAMING PLAN
1/4" = 1'-0"

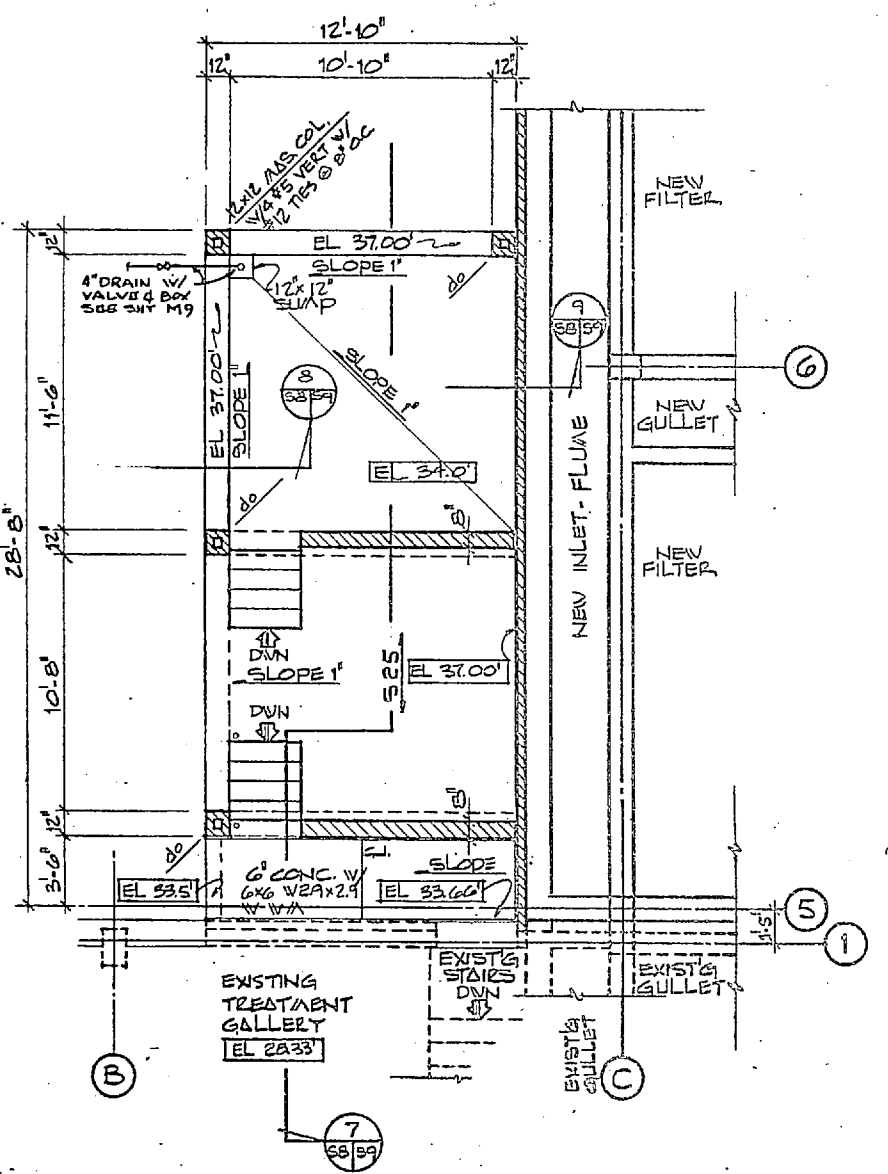
NOTES:
1. FOR TIMBER PILE SCHEDULE SEE SHT. NO. 2-3.
2. FOR PILE CAP DETAILS SEE SHT. NO. 3.
3. F-4(27.5) - PILE CAP TYPE F-4 W/ TOP EL. 27.5



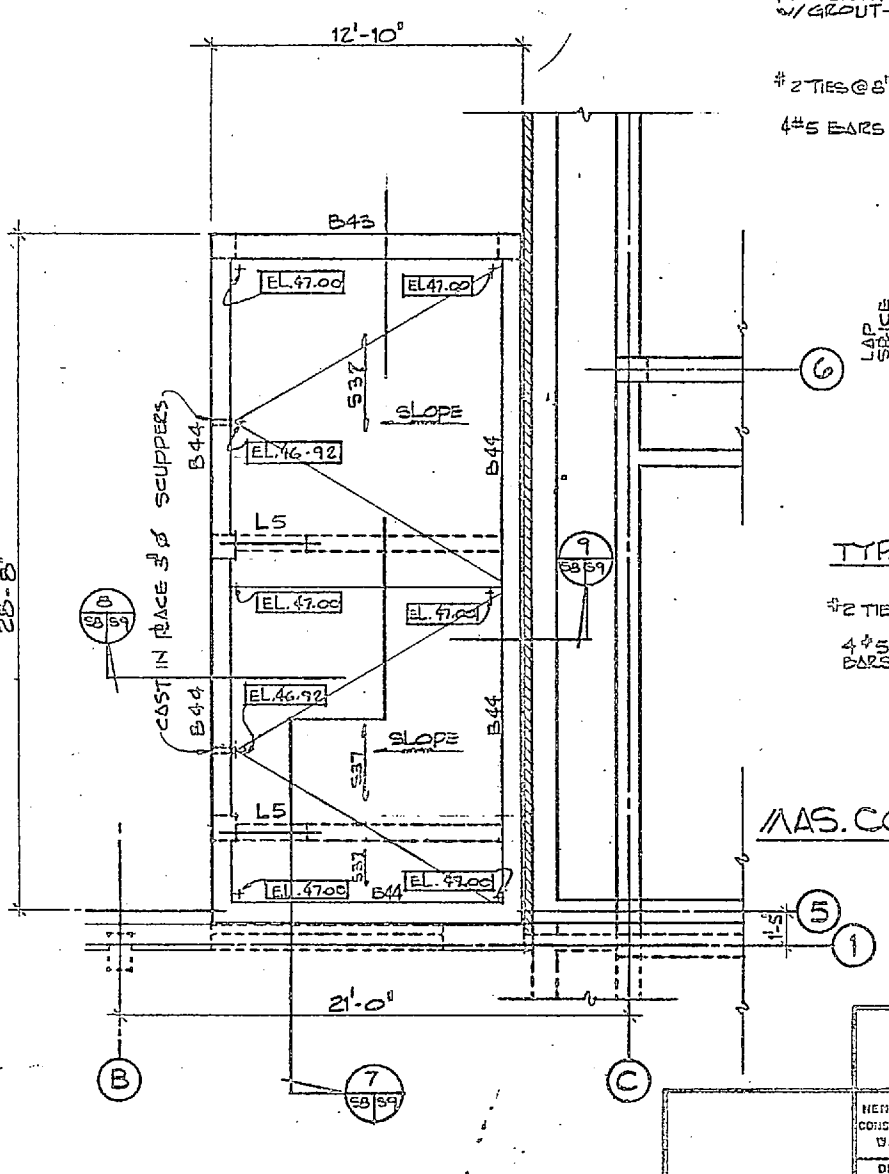
CHLORINE STORAGE
A-1



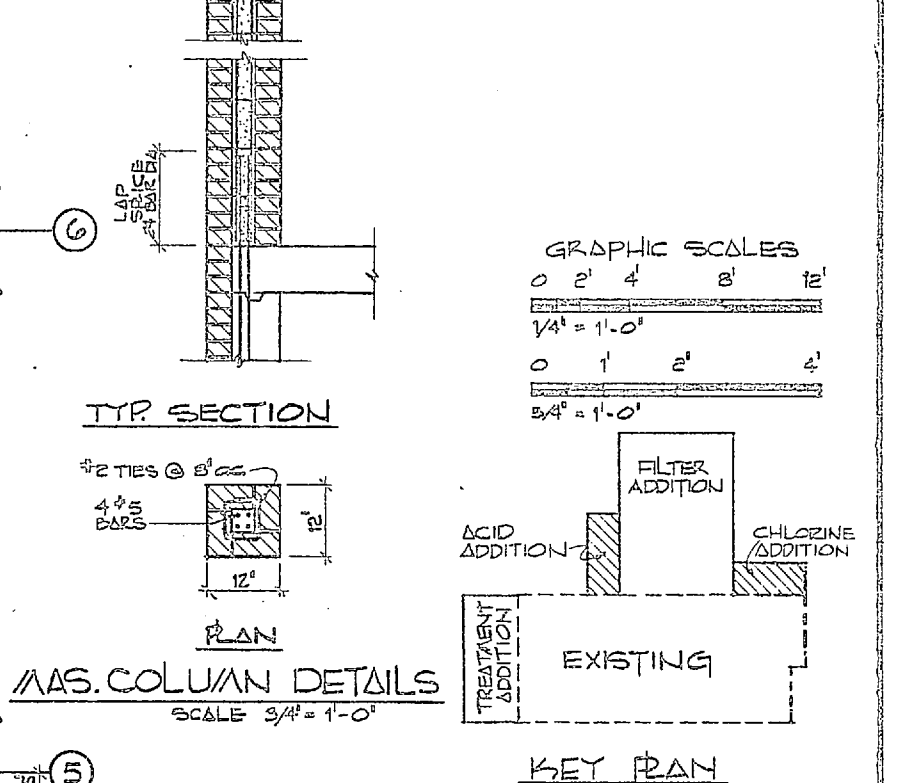
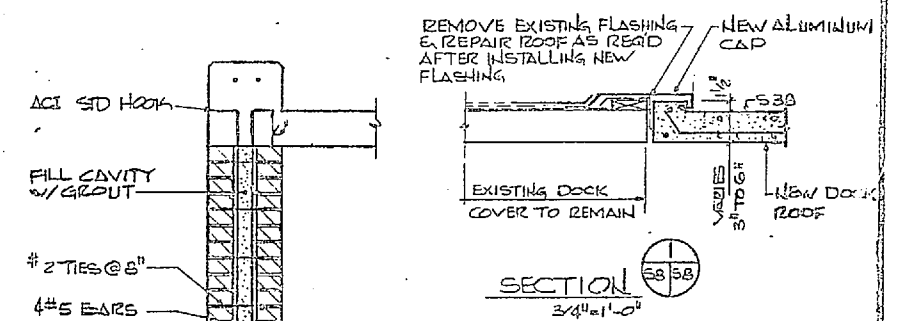
FOUNDATION PLAN
1/4" = 1'-0"



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



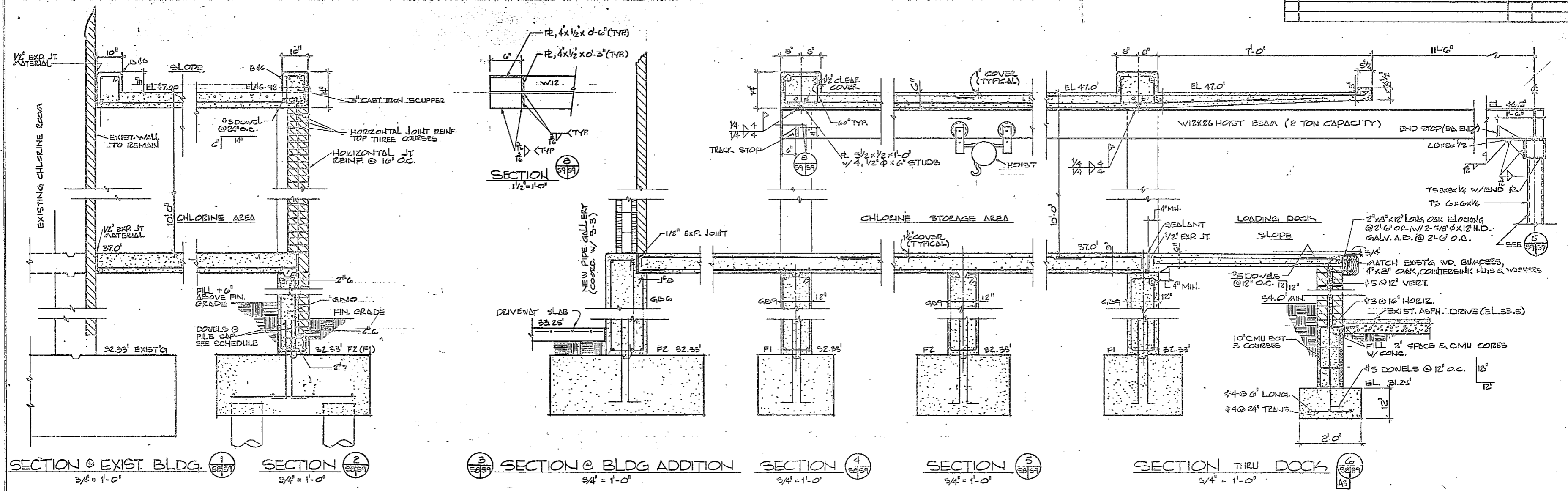
ROOF FRAMING PLAN
1/4" = 1'-0"



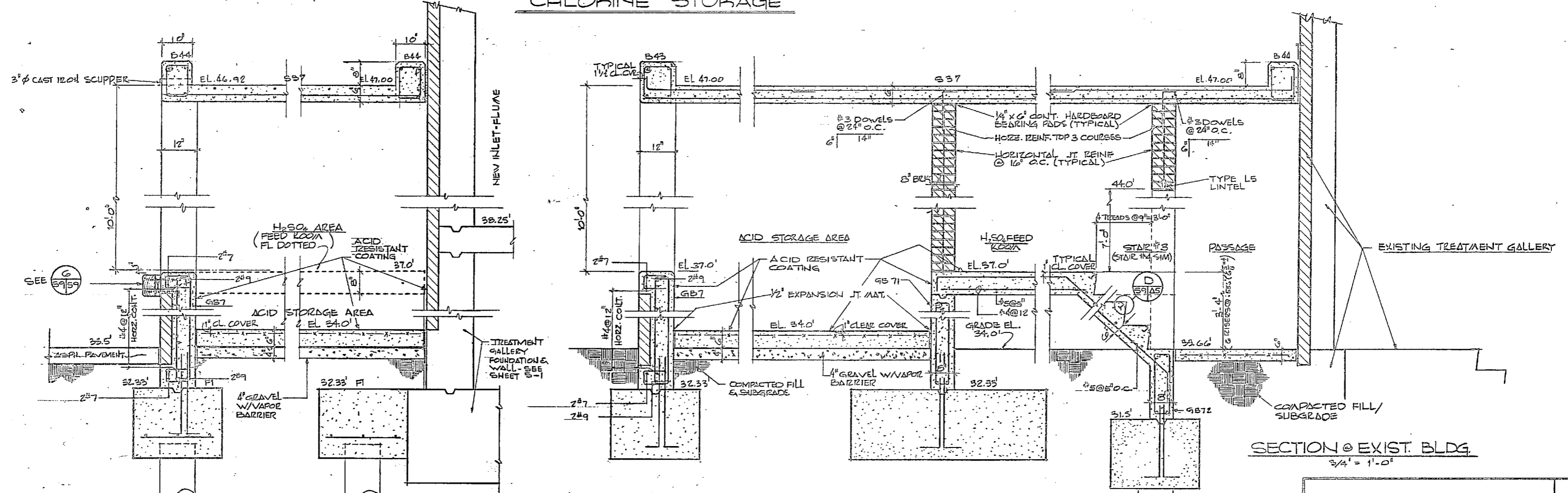
	HENRY VON OESCH AND ASSOCIATES CONSULTING ENGINEERS AND ARCHITECTS DULHURST, NORTH CAROLINA	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING CONTRACTOR ATLANTIC DIVISION NAVAL STATION CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	
	PROJ. DIR. JWB CHIEF ENGR. JRB DATE: 1/1/57 FIG. NO. 5-8 TITLE: ACID & CHLORINE STORAGE	NORTH CAROLINA SEAL 4091	SHEET NO. 4107557 NAVFAC DESIGN NO. N62470-0-B-1644 SHEET 24 OF 74
	ACTIVITY - SATISFACTORY TO APPROVED: [Signature] DATE: 1/1/57 FOR EFO FOR COMMANDER NAVFAC	SCALE: AS SHOWN SPEC. 05-61-1644	SHEET 24 OF 74 207557
	SEAL OF THE ENGINEER HENRY VON OESCH AND ASSOCIATES DULHURST, NORTH CAROLINA		SHEET 24 OF 74 207557



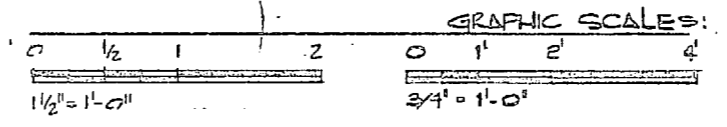
REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED



CHLORINE STORAGE



ACID STORAGE

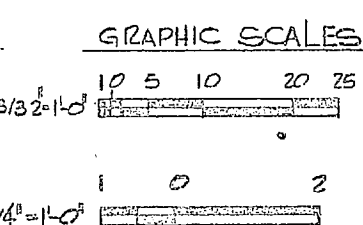
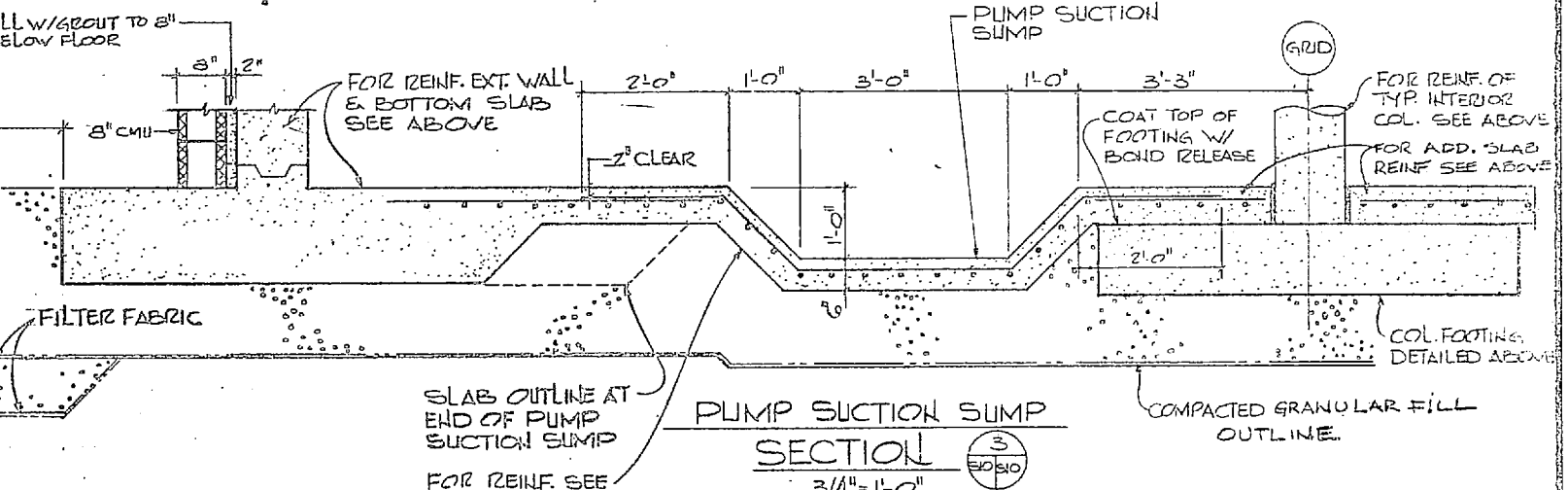
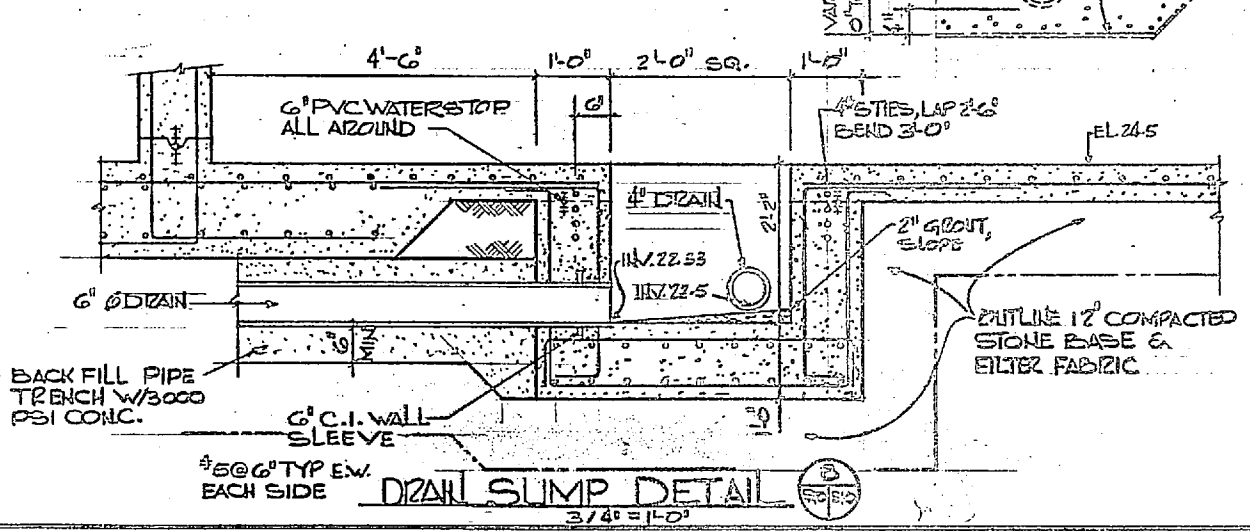
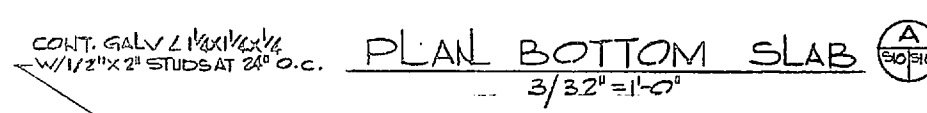
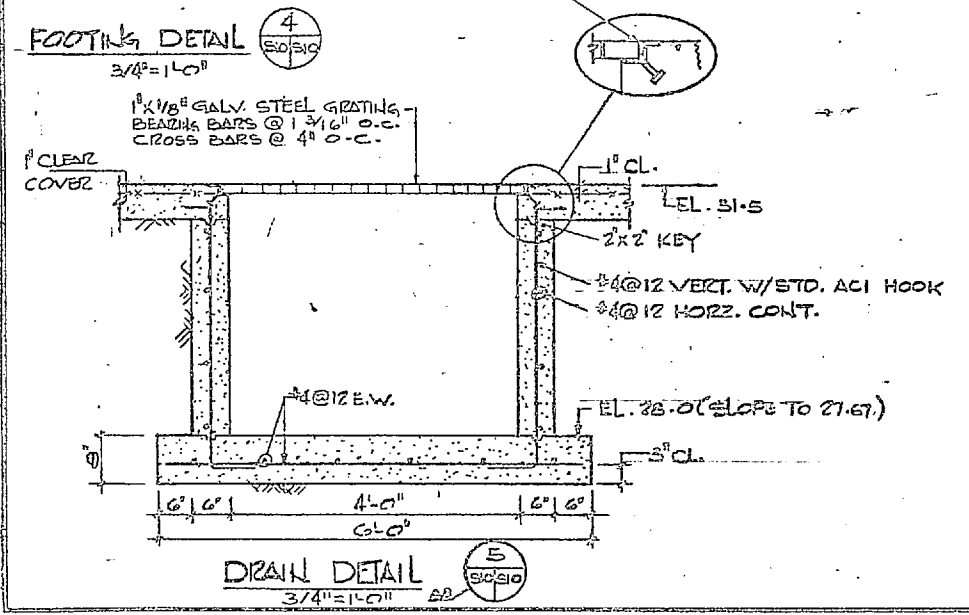
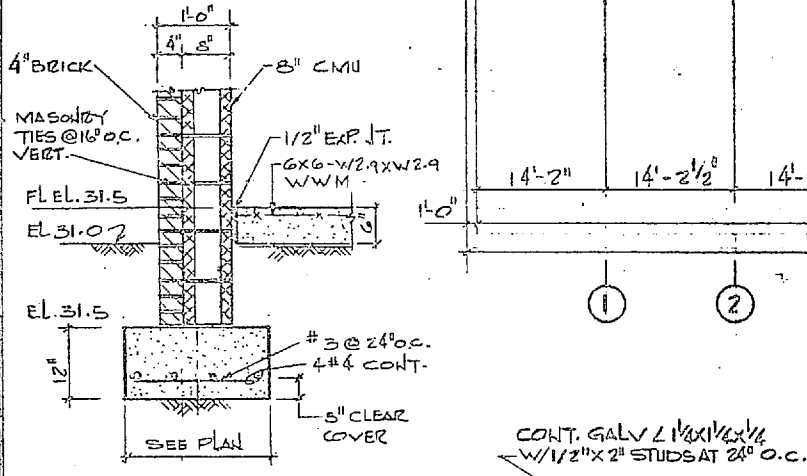
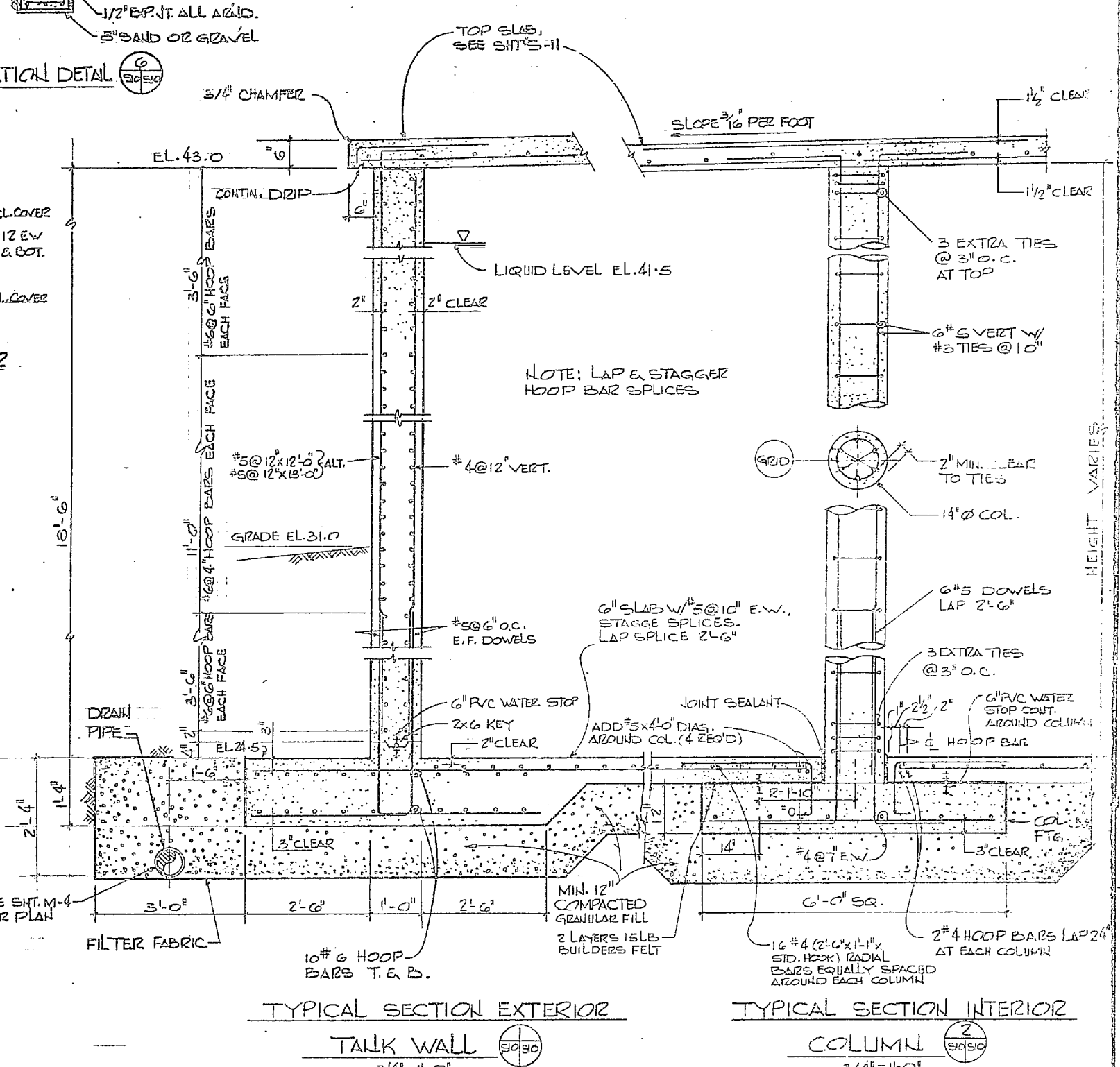
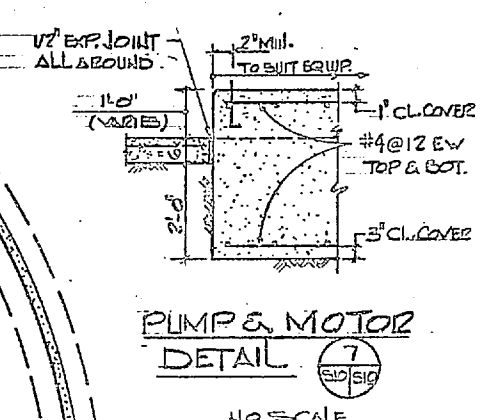
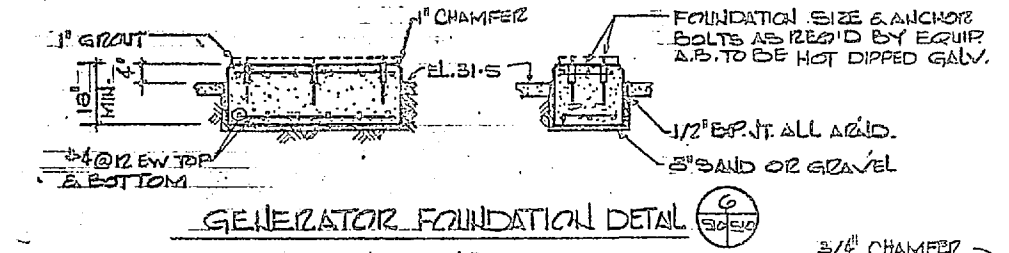
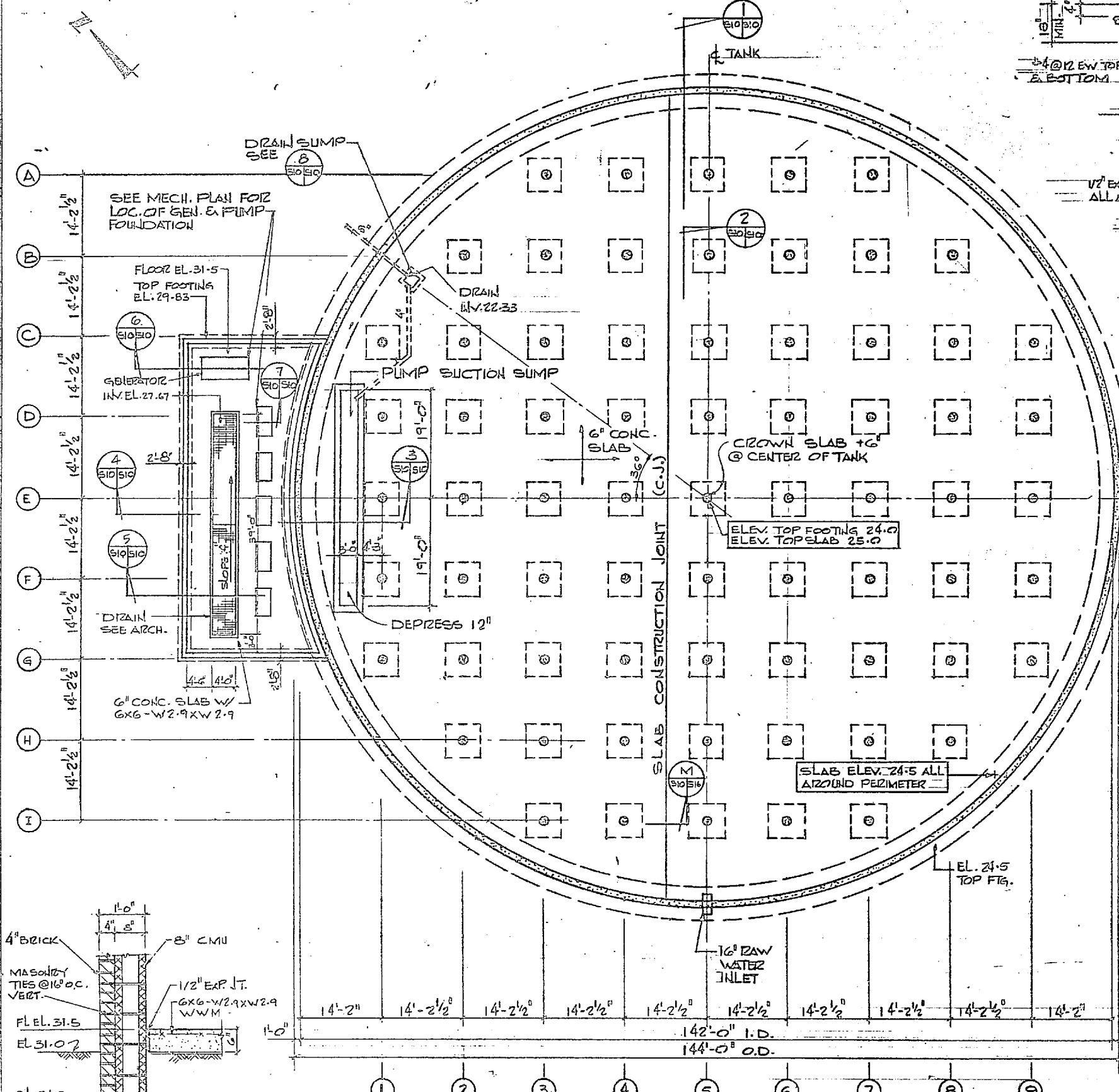


S-9

	HENRY VON OESSEN AND ASSOCIATES CONSULTING ENGINEERS AND PLANNERS DILWORTH, NORTH CAROLINA	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND NAVAL STATION CAMP LEJEUNE NORTH CAROLINA
	DESIGNED BY: JVA CHECKED BY: JVA PROJECT: USR JRB CH ENGR JRB SUBMITTED BY: JVA DATE: 7/2/89 TITLE: ACID STORAGE	ATLANTIC DIVISION EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT
	APPROVED: JVA DATE: 7/2/89 ACTIVITY: SATISFACTORY TO DATE	ACID & CHLORINE STORAGE SIZE: 60091 NAVFAC DESIGN ID: 4107555 CONSTR. CONTR. NO: N62470-BI-B-154-3
	FOR EPD FOR COMMANDER NAVFAC	SCALE: AS SHOWN SPEC: 05-BI-154-4 SHEET 25 OF 73 EFB DDD. 10. 207558



REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED



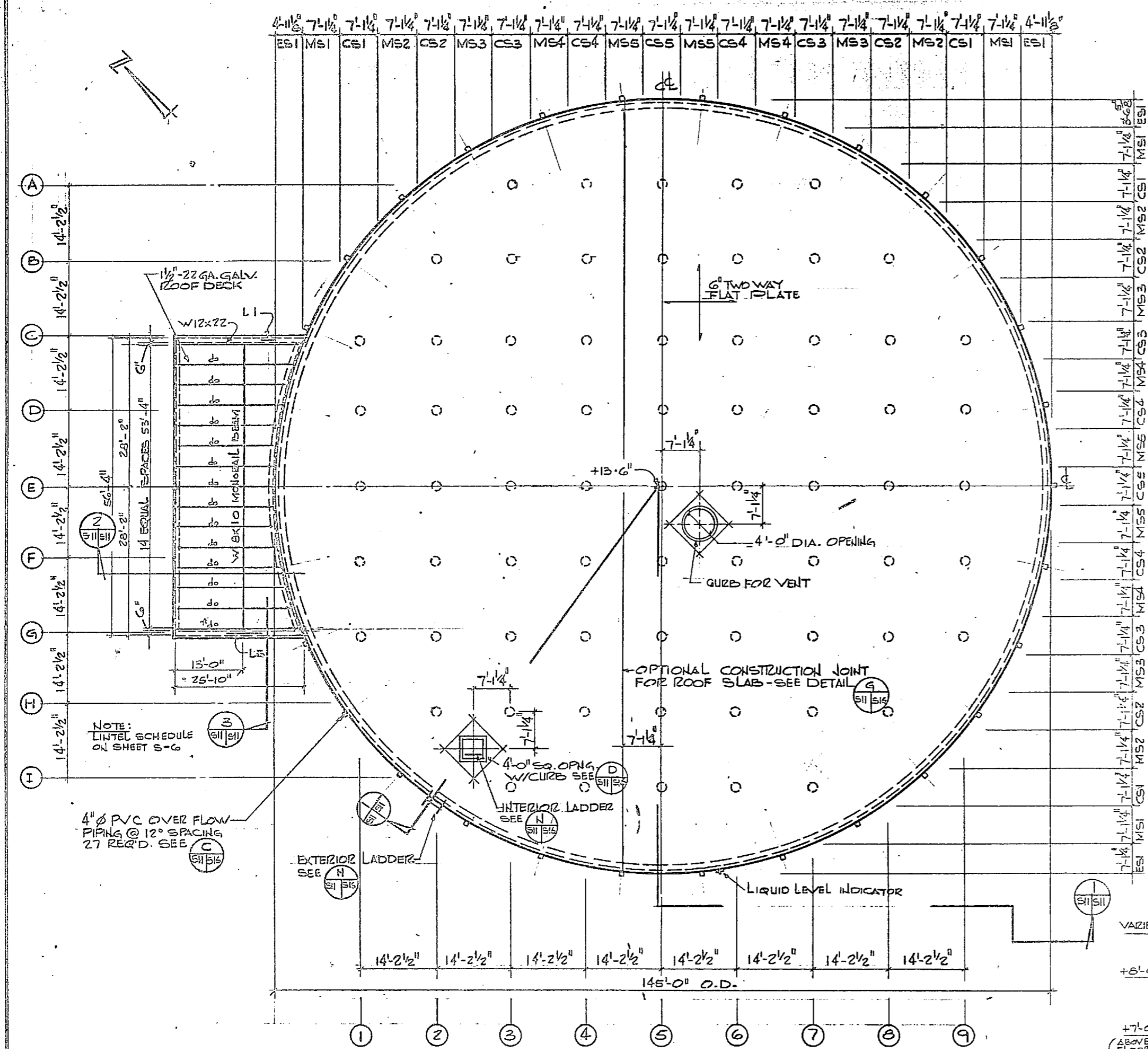
S-10

HENRY VON OEDEN AND ASSOCIATES CONSULTING ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND	
DESIGNED BY JAN CML/JEA PROJECT MANAGER CH ENGR JRB SUBMIT DATE 7/16/64 FIRM NUMBER PRINCIPAL		NAVAL STATION ATLANTIC DIVISION CAMP LEJEUNE NORTH CAROLINA EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	
NO. OF SHEETS REVISED DATE 7/16/64 BY DATE 7/16/64 FOR EFD FOR COMMANDER NAVFAC		RAW WATER RESERVOIR NAVFAC DRAWING NO. 4107559 CONSTR. CONTR. NO. N62470-B-B-1594	
SCALE AS SHOWN		SPEC 05-BI-1644	

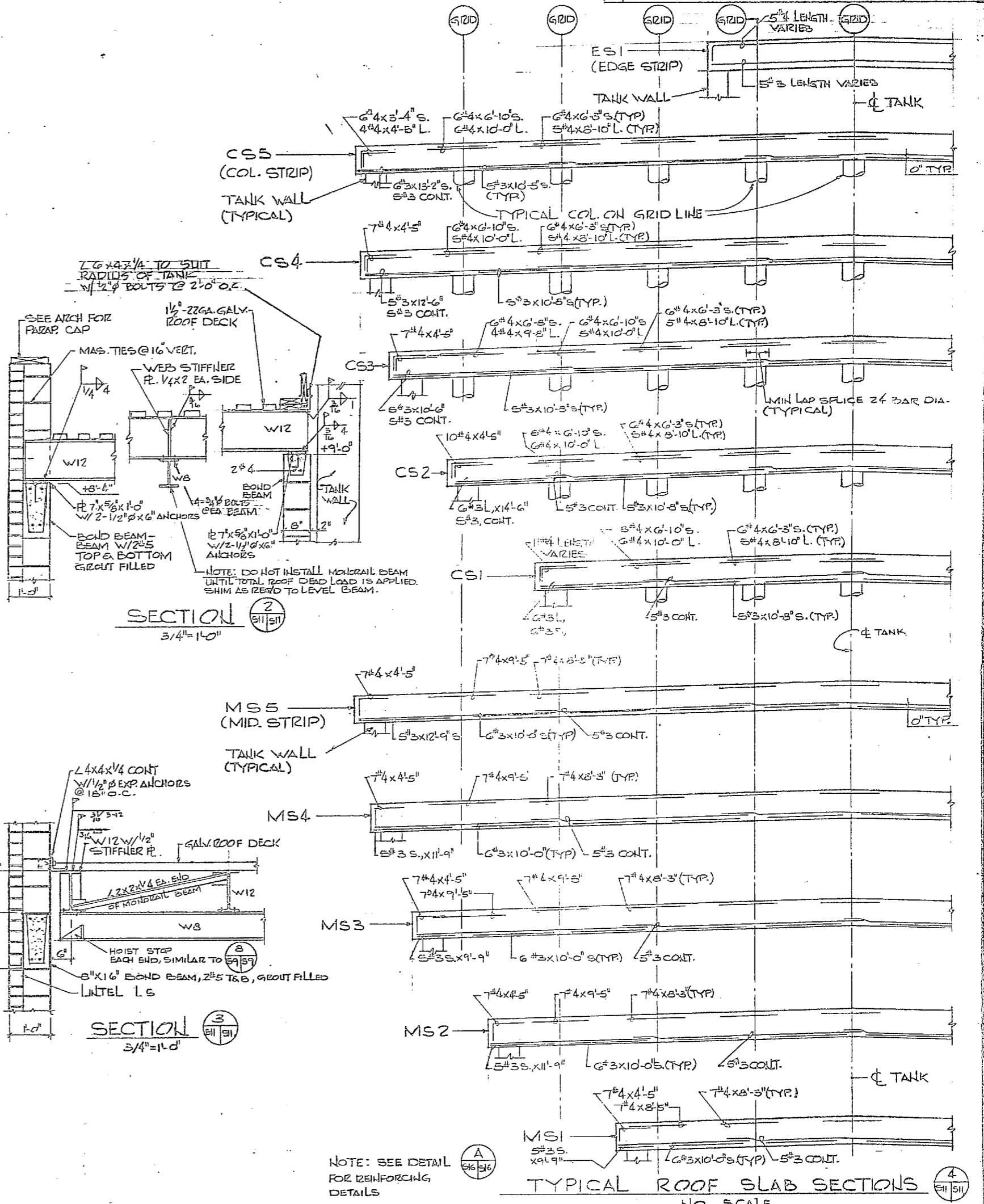
SHEET 26 OF 27
 EFD 056 12
 207559



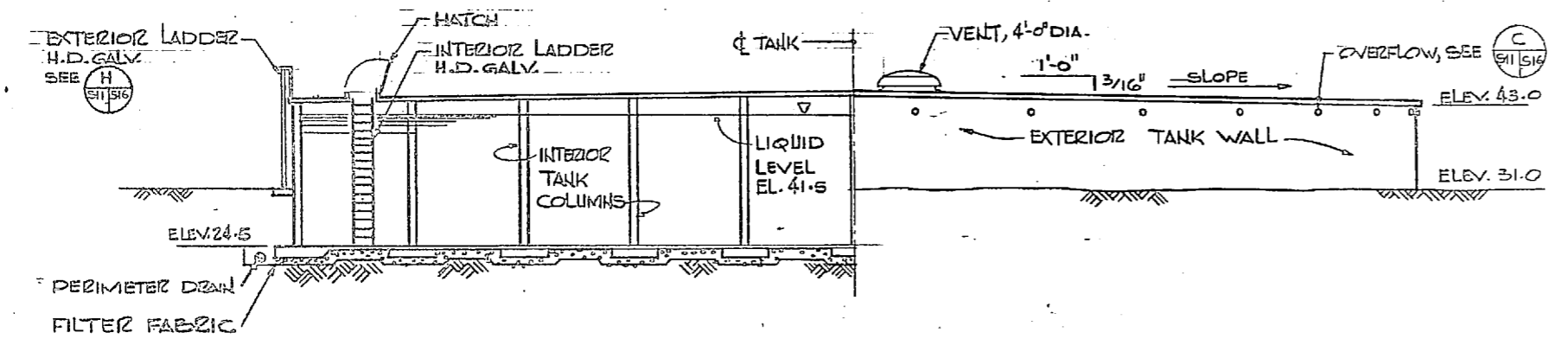
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED



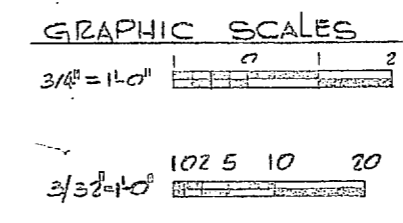
PLAN TOP SLAB
3/32" = 1'-0"



TYPICAL ROOF SLAB SECTIONS
NO SCALE

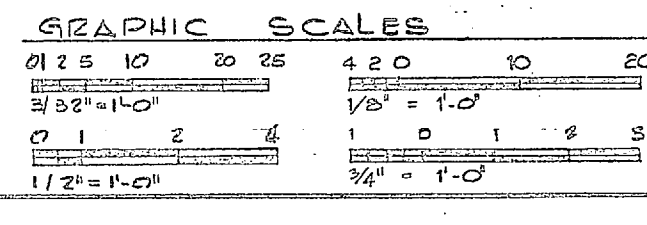
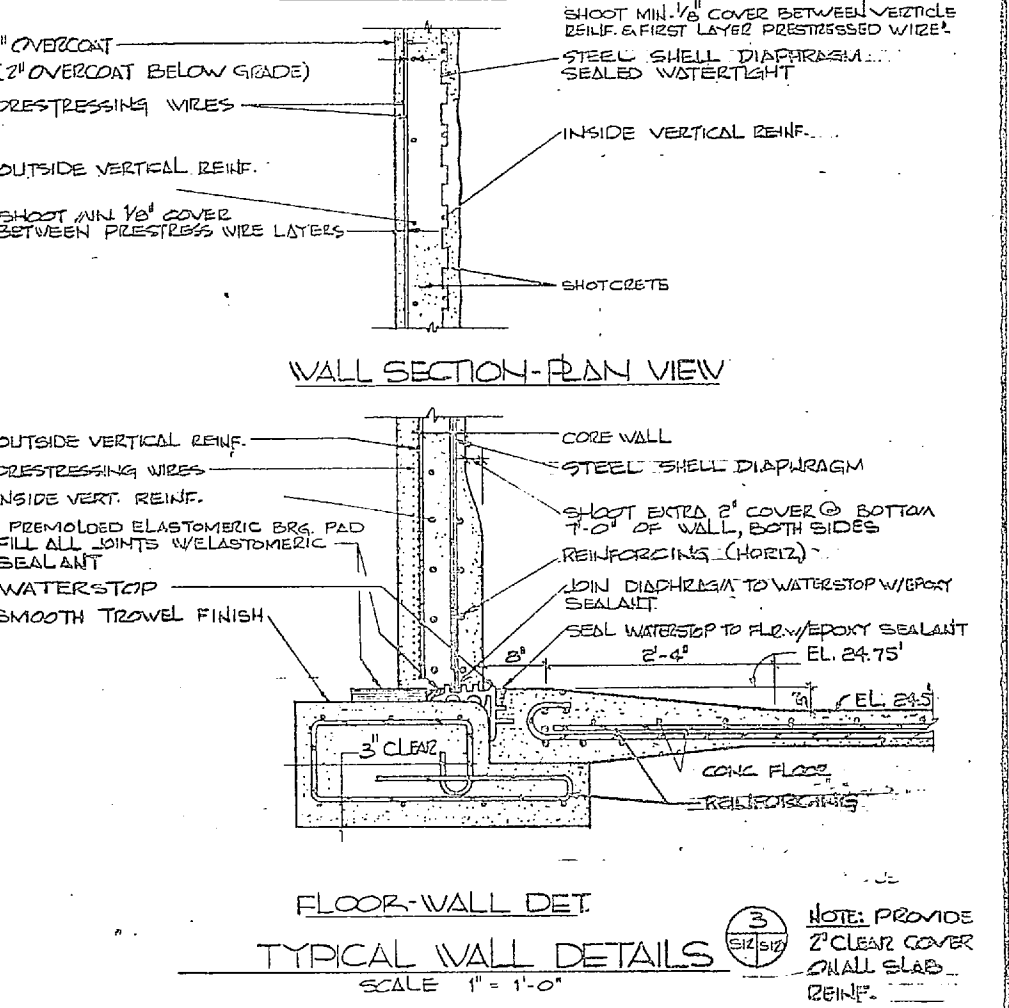
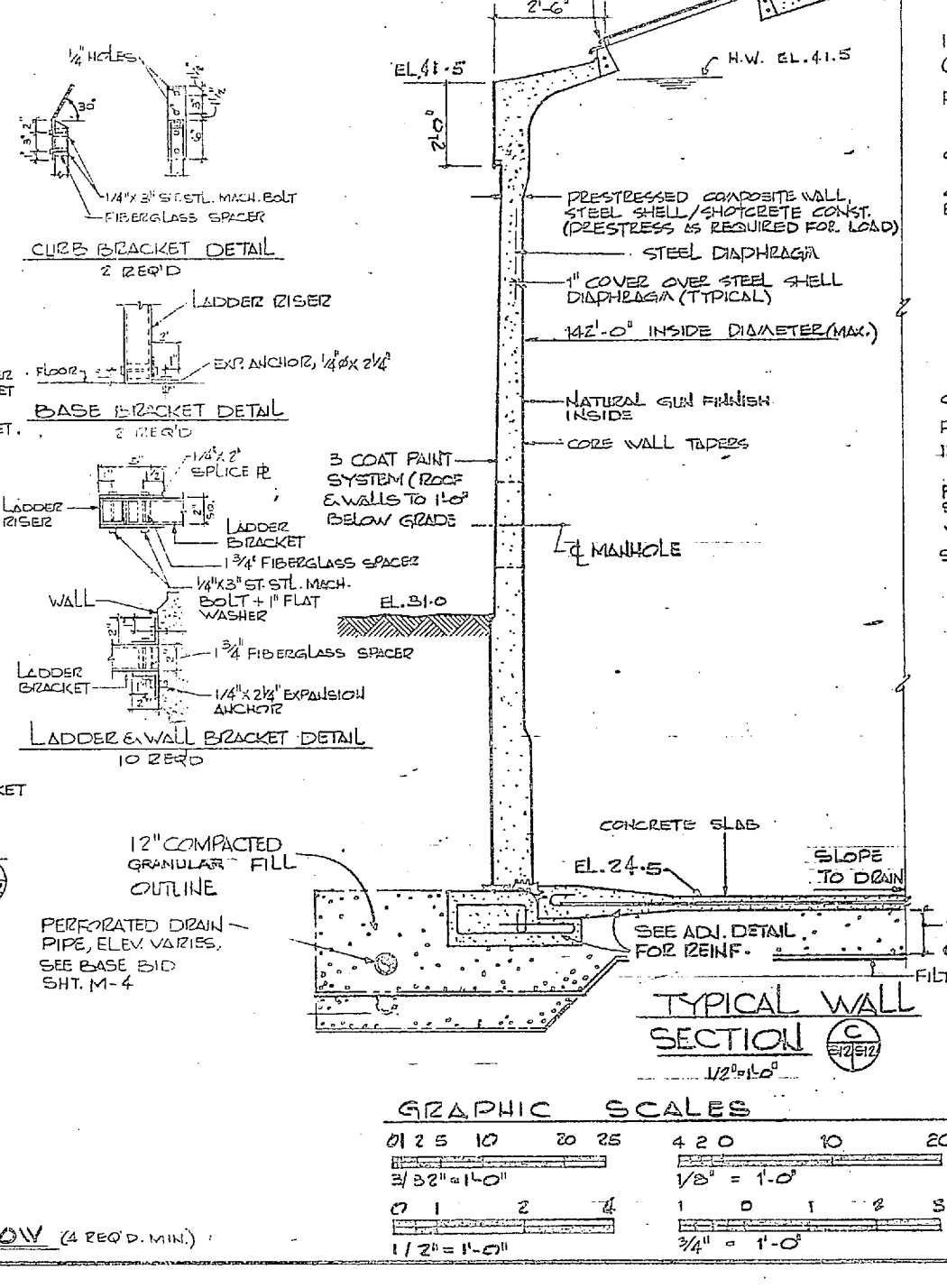
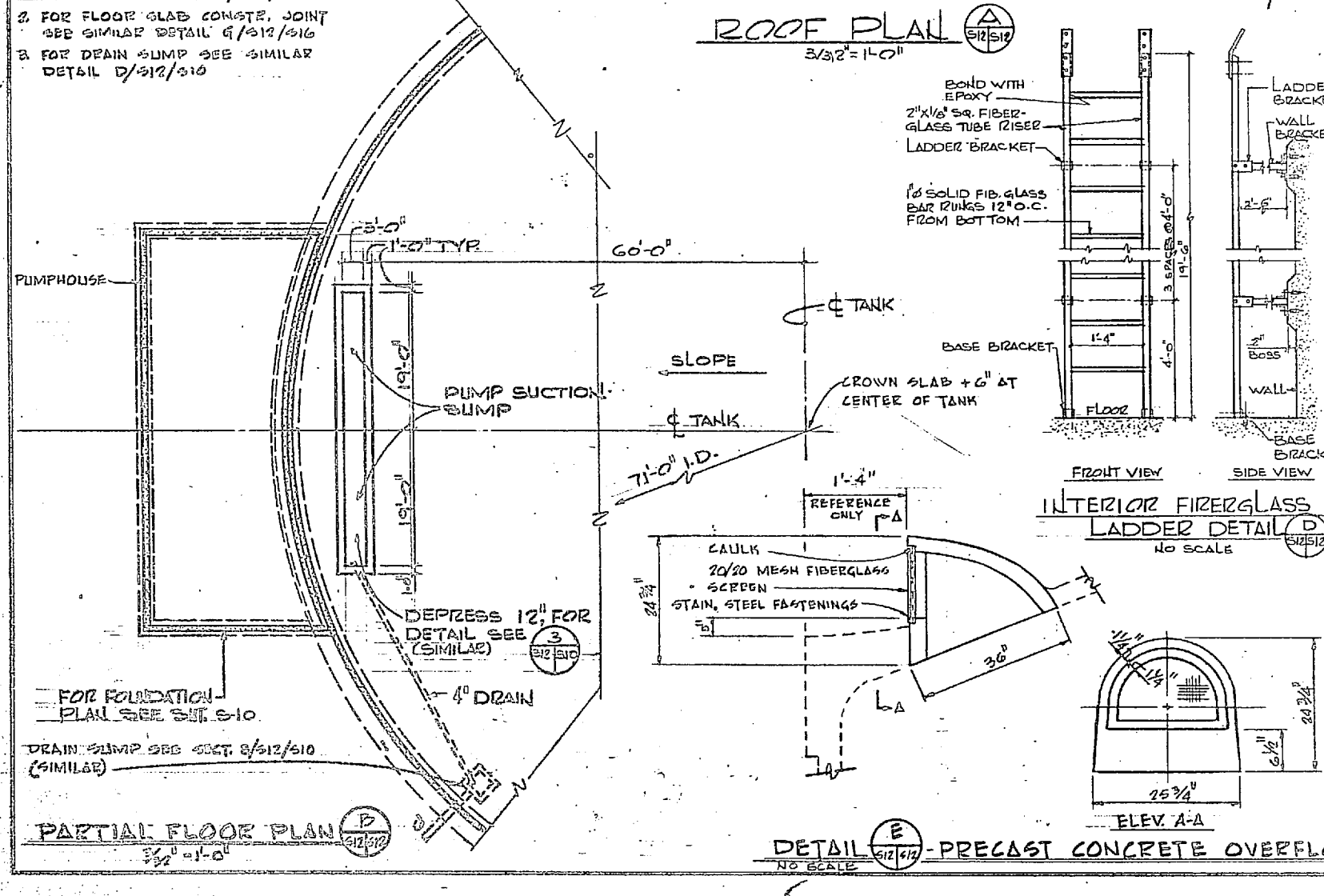
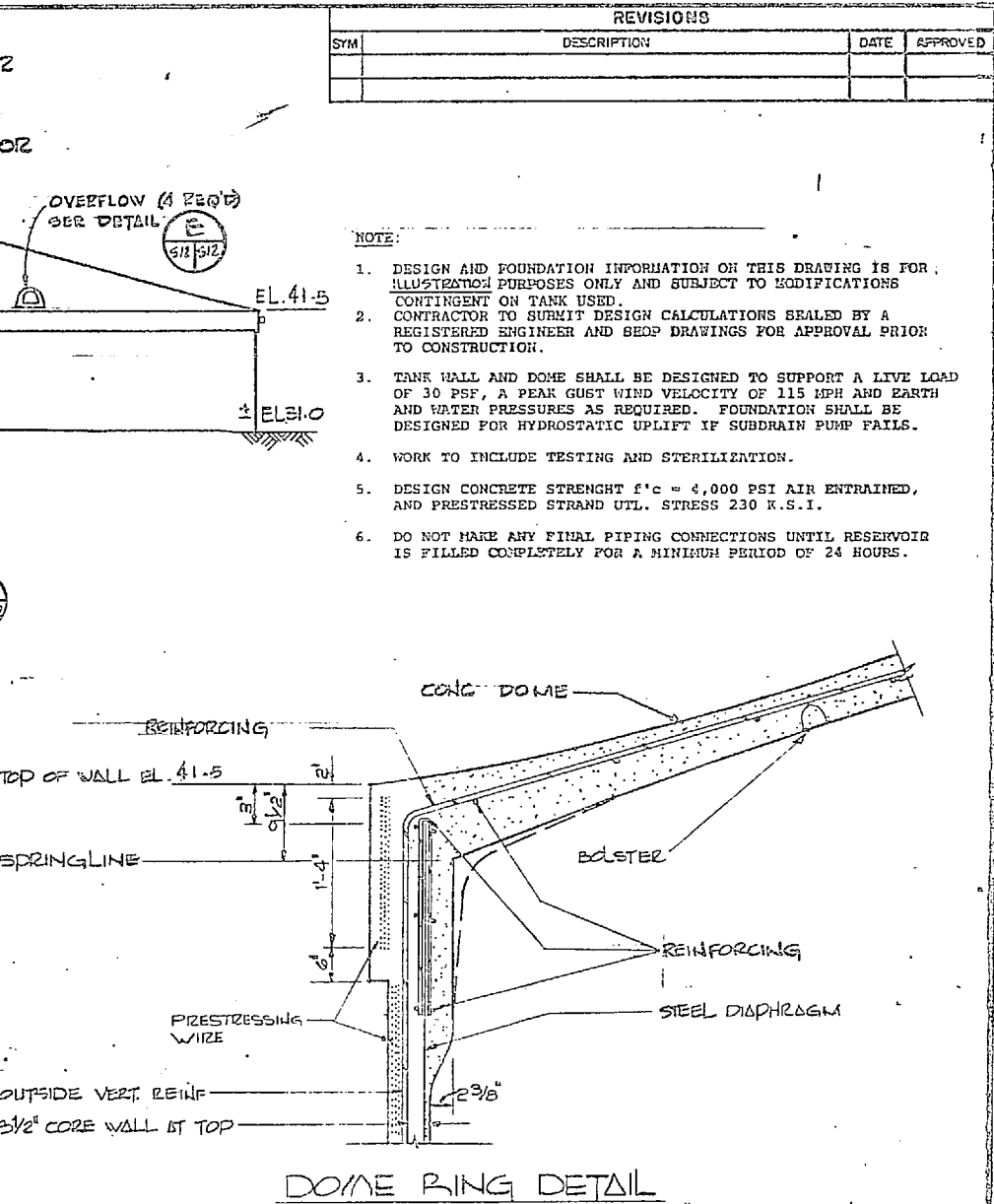
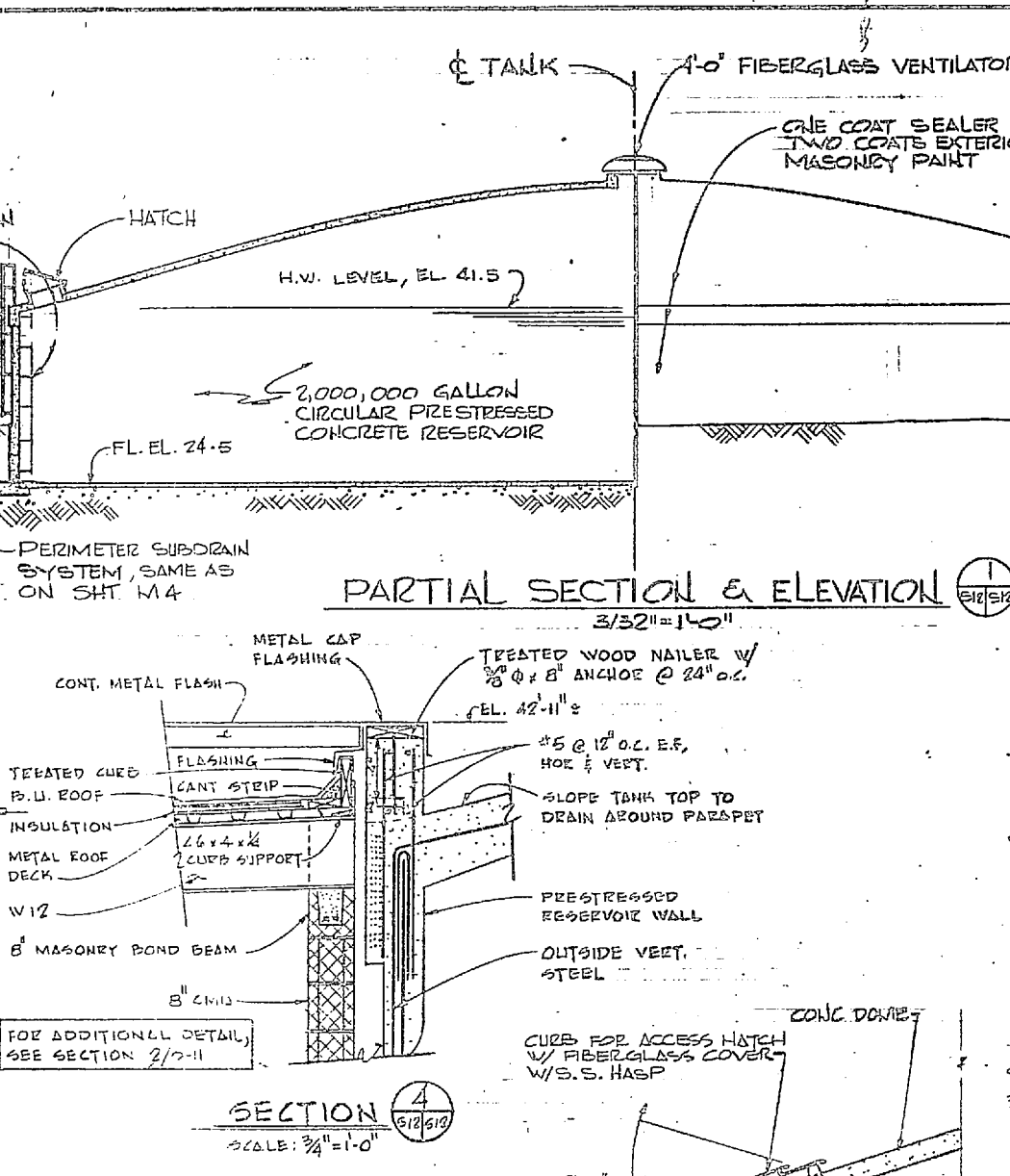
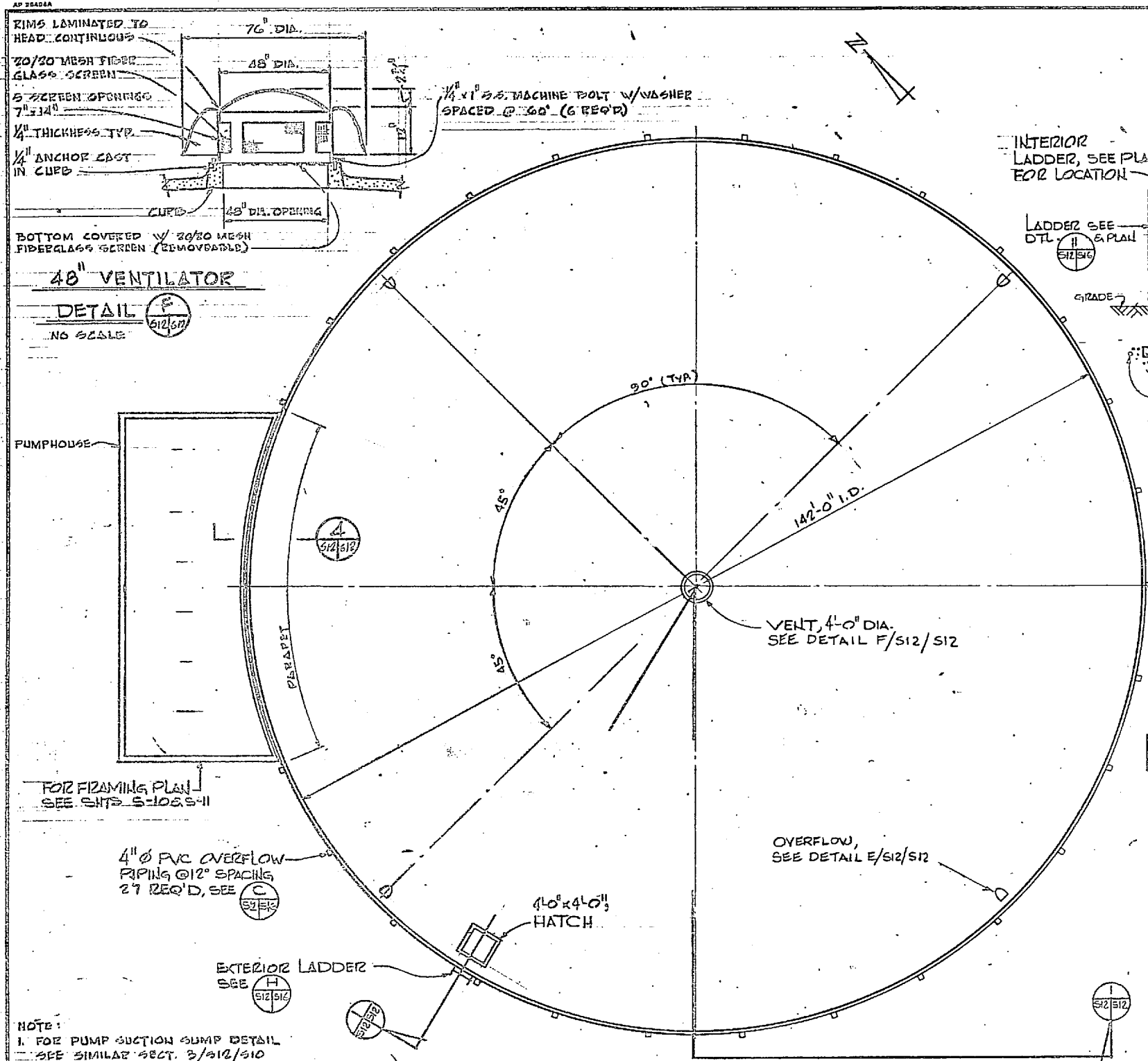


PARTIAL SECTION & ELEVATION
3/32" = 1'-0"



	HENRY VON OESSEN AND ASSOCIATES CONSULTING ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
	DES/DEC DR/JAN CHN/J2A PROJ. MGR. JRB CH ENGR. JRB	NAVAL STATION ATLANTIC DIVISION NORFOLK, VIRGINIA
	SUBMITTED BY: <i>Chad Sumner</i> DATE: 7/15/54 FIRM NUMBER: 4107580 EFD NUMBER: RVD HD: <i>William A. Ginn</i> DATE: 7/15/54	CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT
	APPROVED: <i>William A. Ginn</i> DATE: 7/15/54 ACTIVITY - SATISFACTORY TO: <i>William A. Ginn</i> FOR EFD FOR COMNAVSTA NAJFAC	RAW WATER RESERVOIR NAVFAC DRAWING NO. 4107580 CONSTR. CONTR. NO. NG2470-BI-B-1644 SCALE: AS SHOWN SPEC. 03-BI-1644 SHEET 27 OF 74 207580

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED



5-12

IDENTIFICATION OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND

ATLANTIC DIVISION

NAVAL STATION NORFOLK, VIRGINIA

CAMP LEJEUNE NORTH CAROLINA

EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT

RAW WATER RESERVOIR-ALTERNATE

SIZE 80091 NAVPAC DRAWING NO. 4107561

DATE 1/28/64

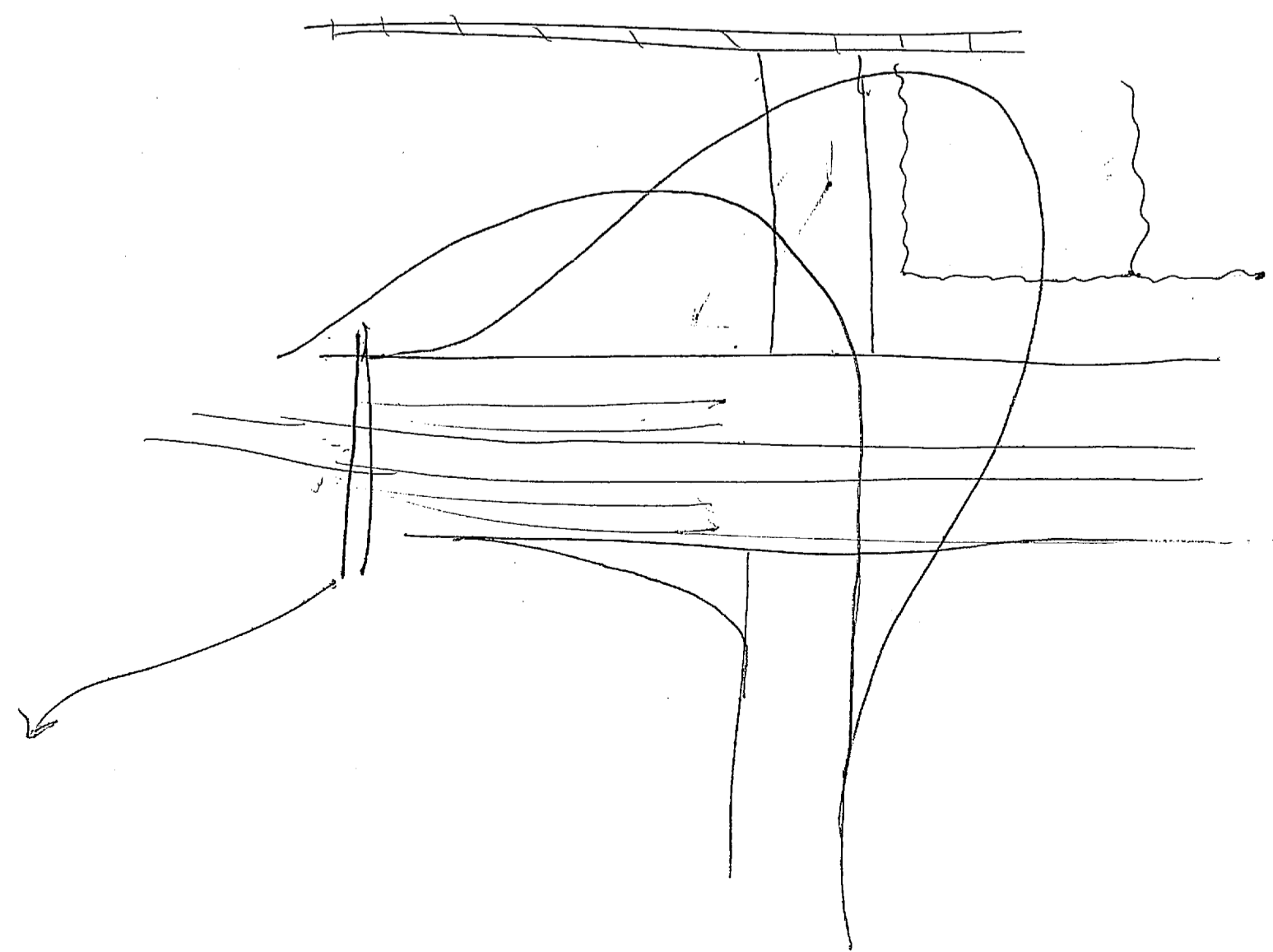
ACTIVITY - SATISFACTORY TO DATE

FOR EPO FOR COMMANDER NAVFAC

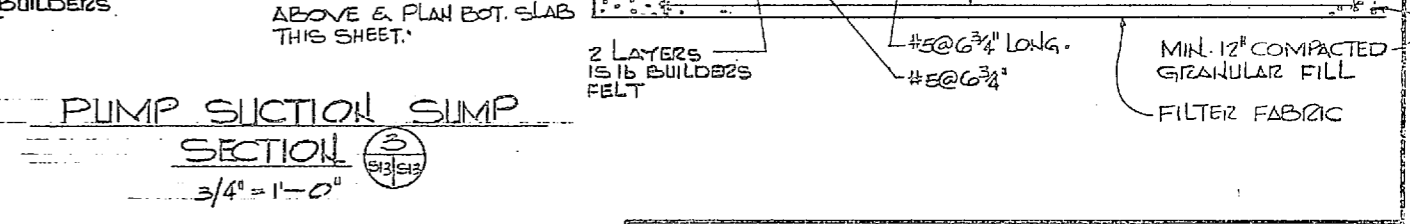
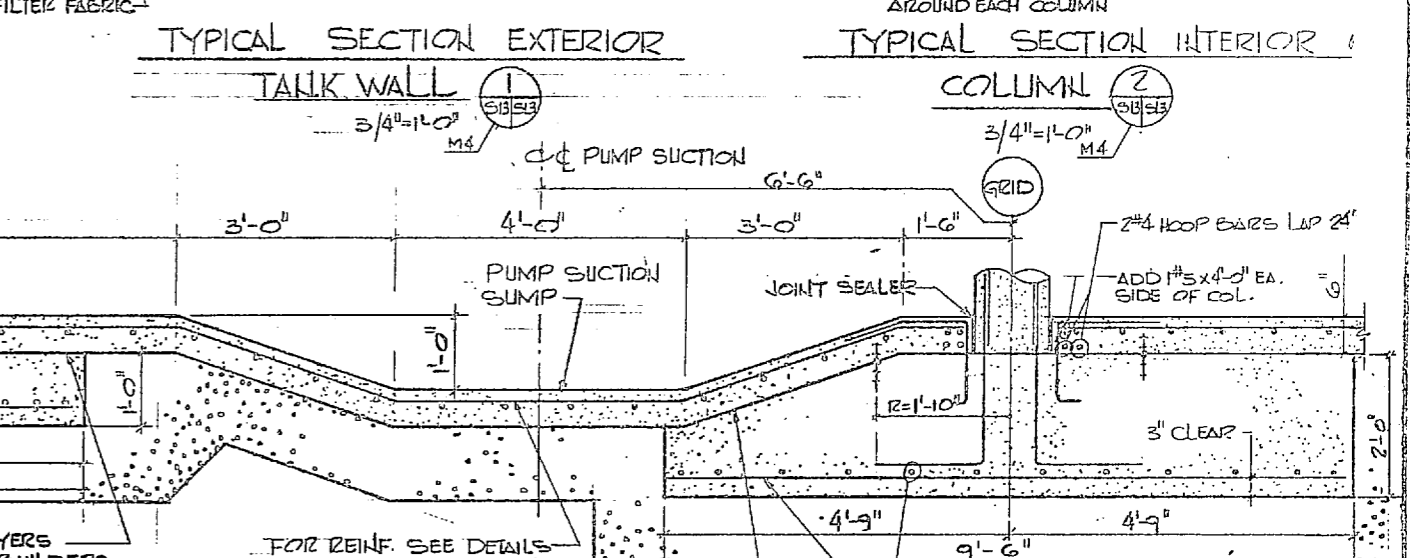
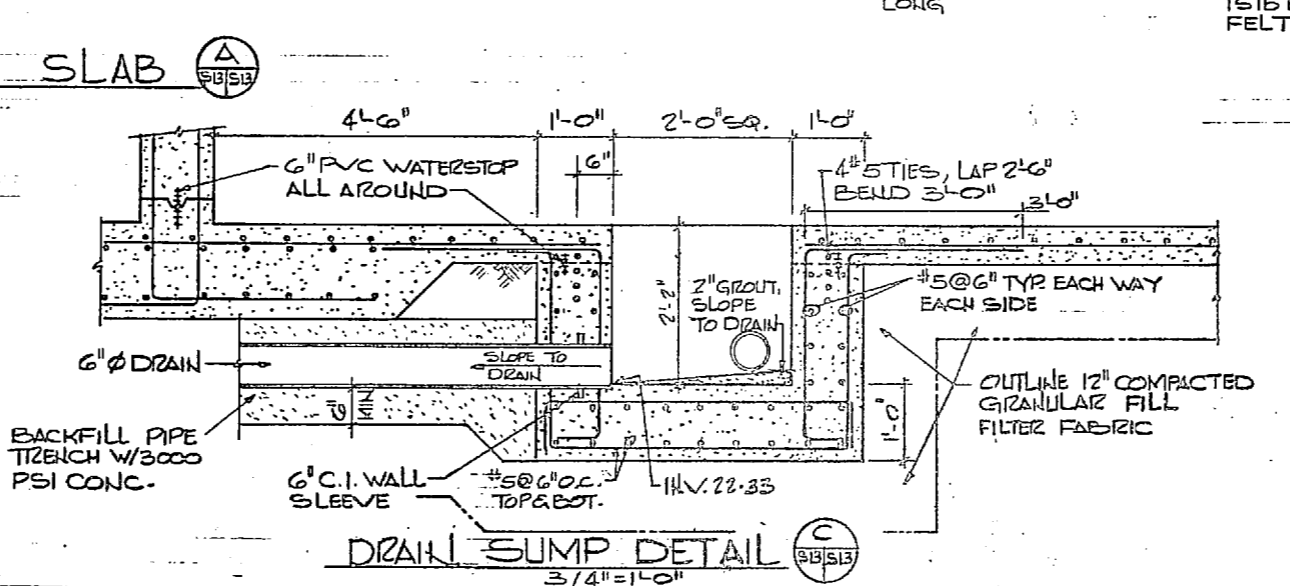
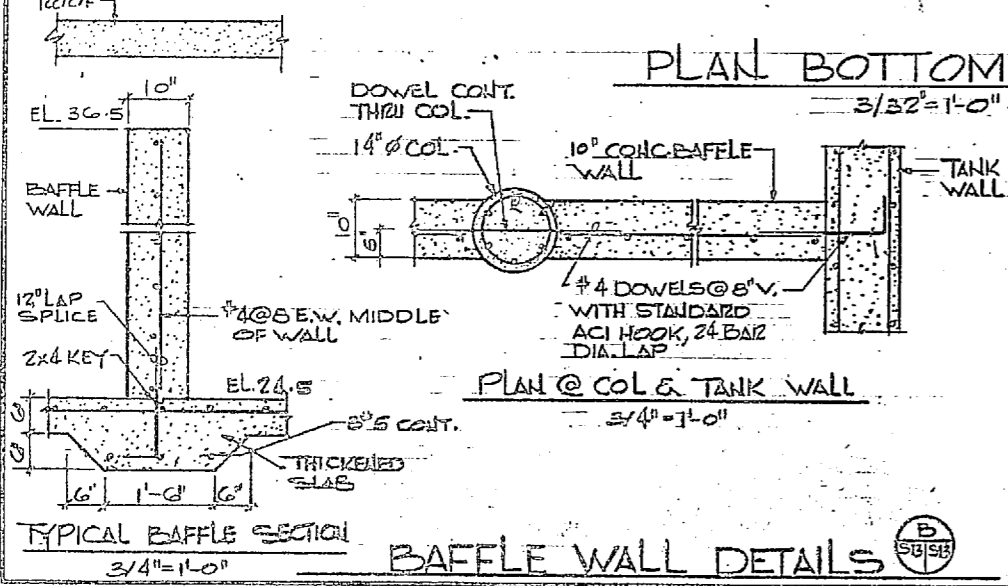
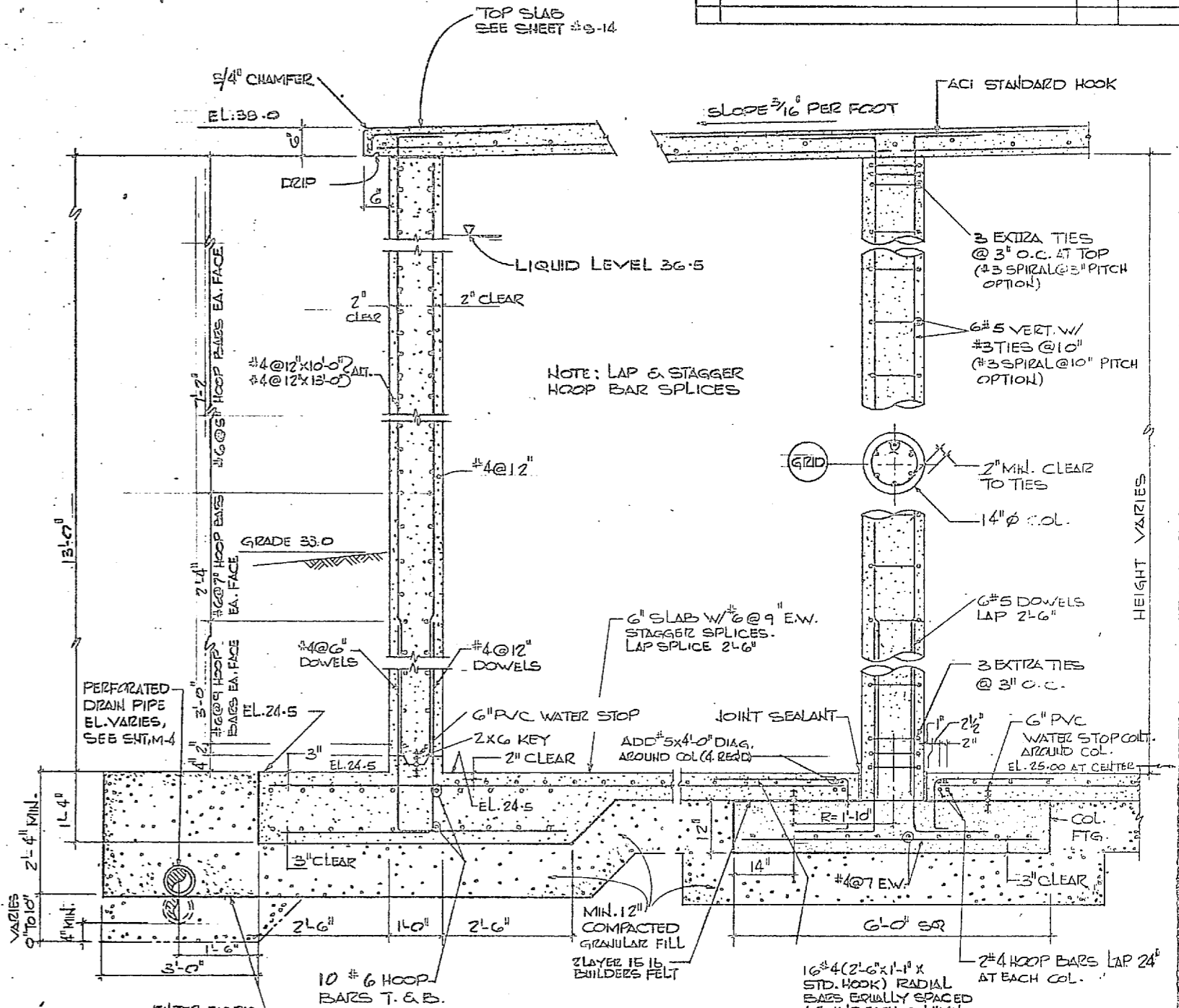
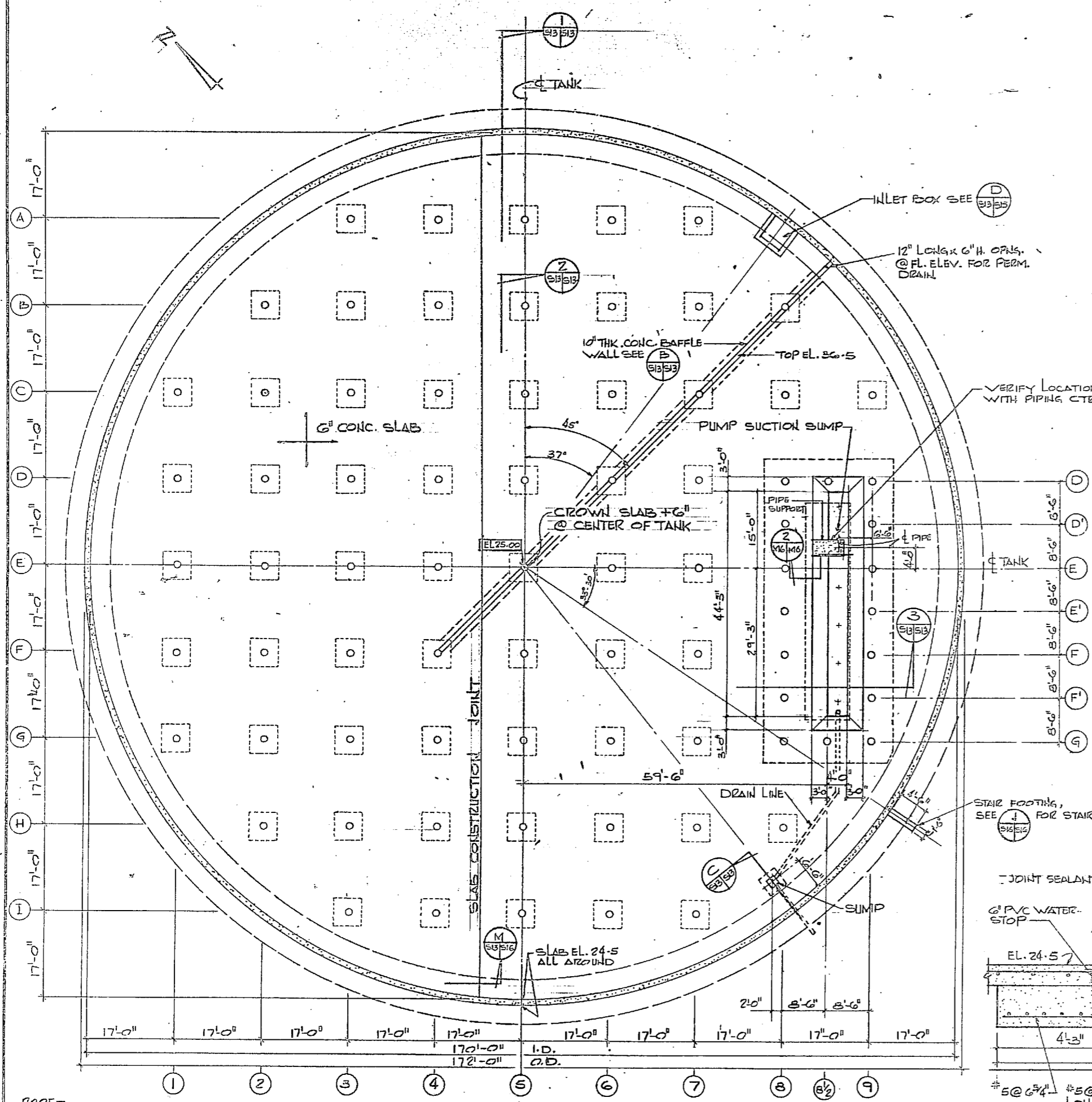
SCALE 1/4" = 1'-0"

SHEET 20 OF 72

207861



REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED

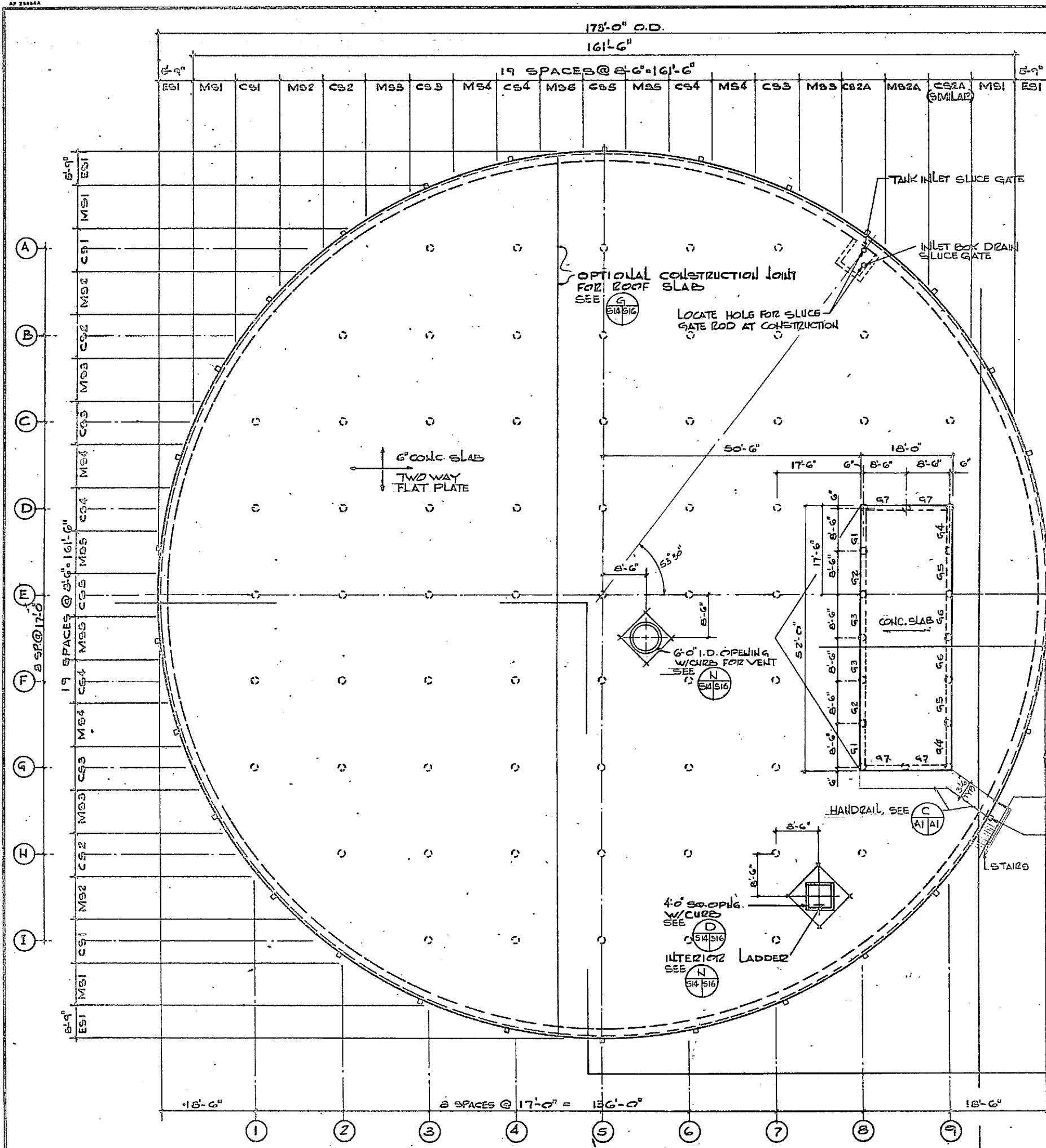


S-13

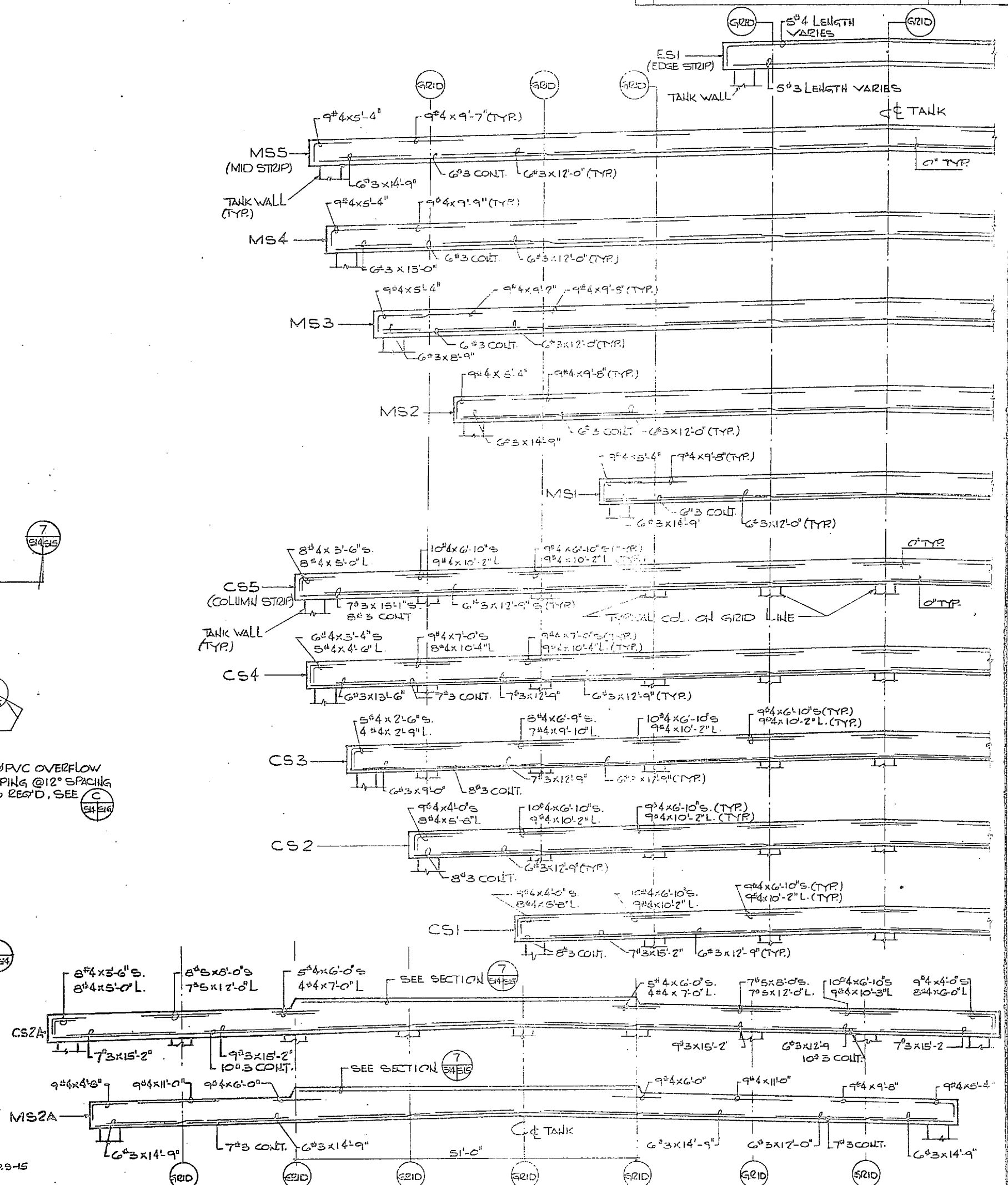
HENRY VON OESCH AND ASSOCIATES CONSULTING ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND	
PROJECT: CAMP LEJEUNE SUBMITTED BY: JRB DATE: 11/14/44		NAVAL STATION: NORFOLK, VIRGINIA	
DESIGNED BY: JRB CHECKED BY: JRB DATE: 11/14/44		CAMP LEJEUNE NORTH CAROLINA	
DRAWN BY: JRB DATE: 11/14/44		EXPANSION OF HOLCOMB BLVD WATER TREATMENT PLANT	
APPROVED BY: JRB DATE: 11/14/44		FINISH WATER RESERVOIR	
ACTIVITY - SATISFACTORY TO DATE		DRAWING NO. 4 107562	
FOR EPO FOR COMMANDER NAVAL		SCALE: AS SHOWN	

SHEET 25 OF 74
207562

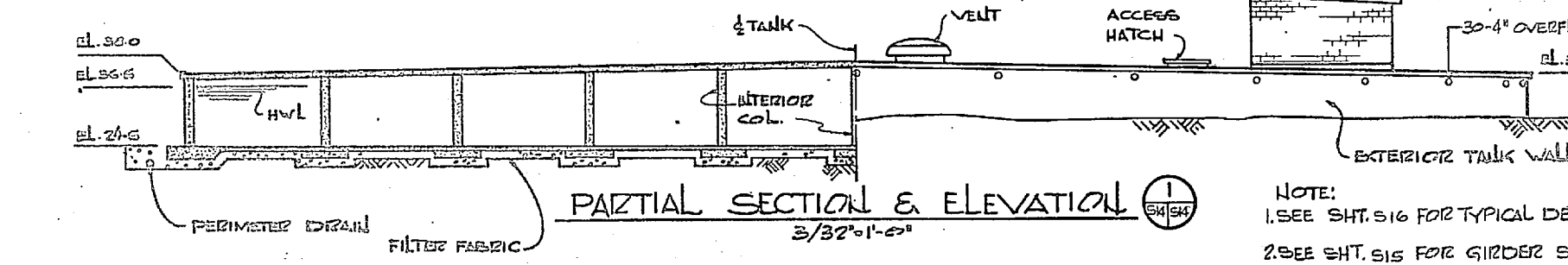
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED



PLAN TOP SLAB
3/32"=1'-0"



TYPICAL ROOF SLAB SECTIONS
NO SCALE



PARTIAL SECTION & ELEVATION
3/32"=1'-0"

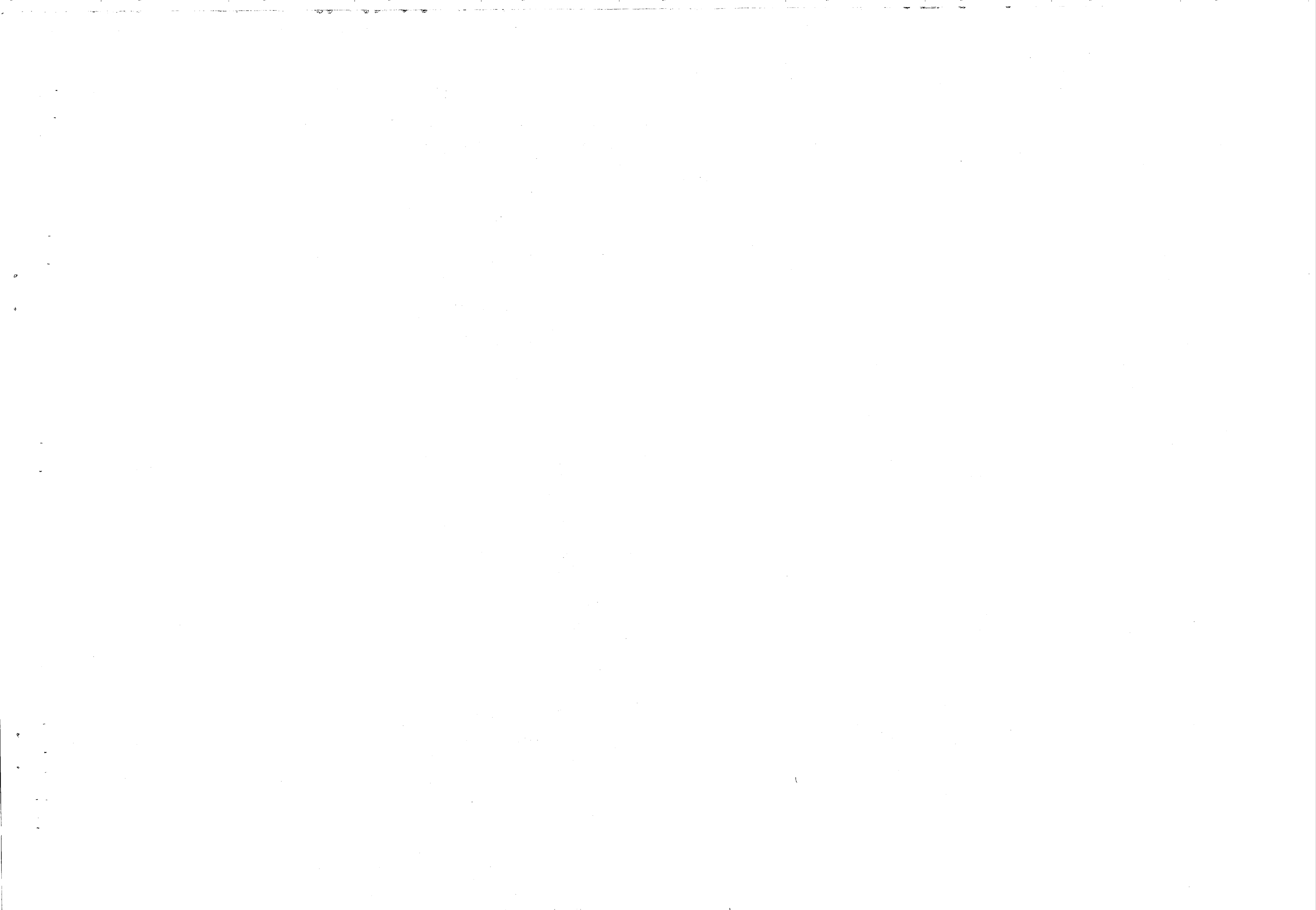
NOTE:
1. SEE SHT. 516 FOR TYPICAL DETAILS, REINF. DETAILS
2. SEE SHT. 515 FOR GIRDER SCHEDULE.

GRAPHIC SCALE
3/32"=1'-0"
0 2.5 10 20

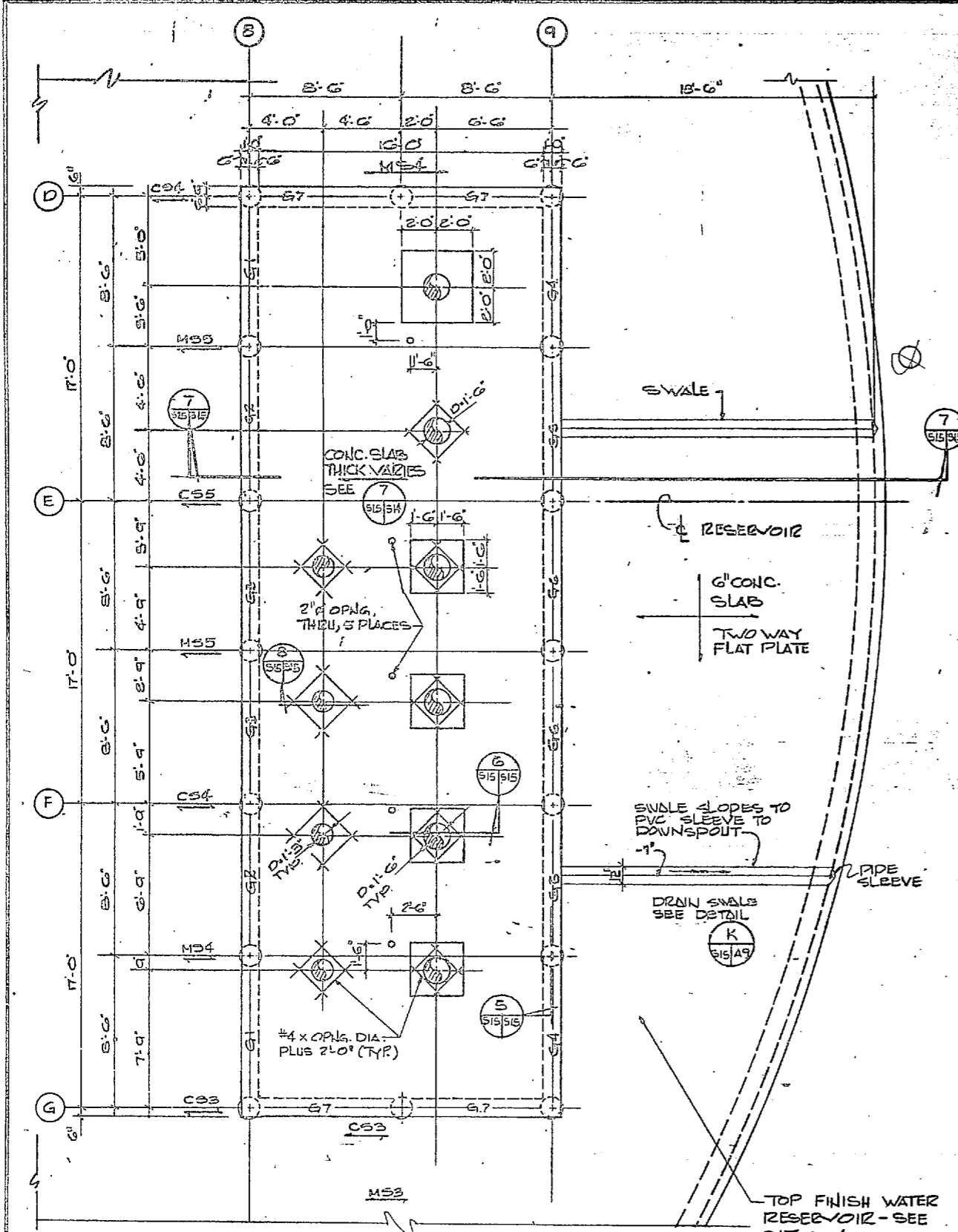
S14

HENRY VON GASEN AND ASSOCIATES CONSULTING ENGINEERS AND PLANNERS WILMINGTON 3, NORTH CAROLINA		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING DIVISION ATLANTIC DIVISION NAVAL STATION NORFOLK, VIRGINIA	
DES. DOC. DR. J. W. [unclear] CHK. J. R. [unclear] PROJ. MGR. J. R. [unclear] EN. ENDR. J. R. [unclear] SUBMITTED BY: [unclear] DATE: 7/5/64 FIRM MEMBER: [unclear] PRINCIPAL		EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT FINISH WATER RESERVOIR	
ETD. P. 11-21-64 RVD. [unclear] H. 10-15-64 J. R. [unclear] APPROVED BY: [unclear] DATE: 7/5/64 ACTIVITY - SATISFACTORY TO DATE: [unclear] FOR USE FOR COMMANDER NAVFAC		SIZE: 11x17 NAVFAC DRAWING NO: 4107563 CONSTR. CONTR. NO: N62470-BI-B-1517-B SCALE: AS SHOWN SPEC 05-BI-1644	

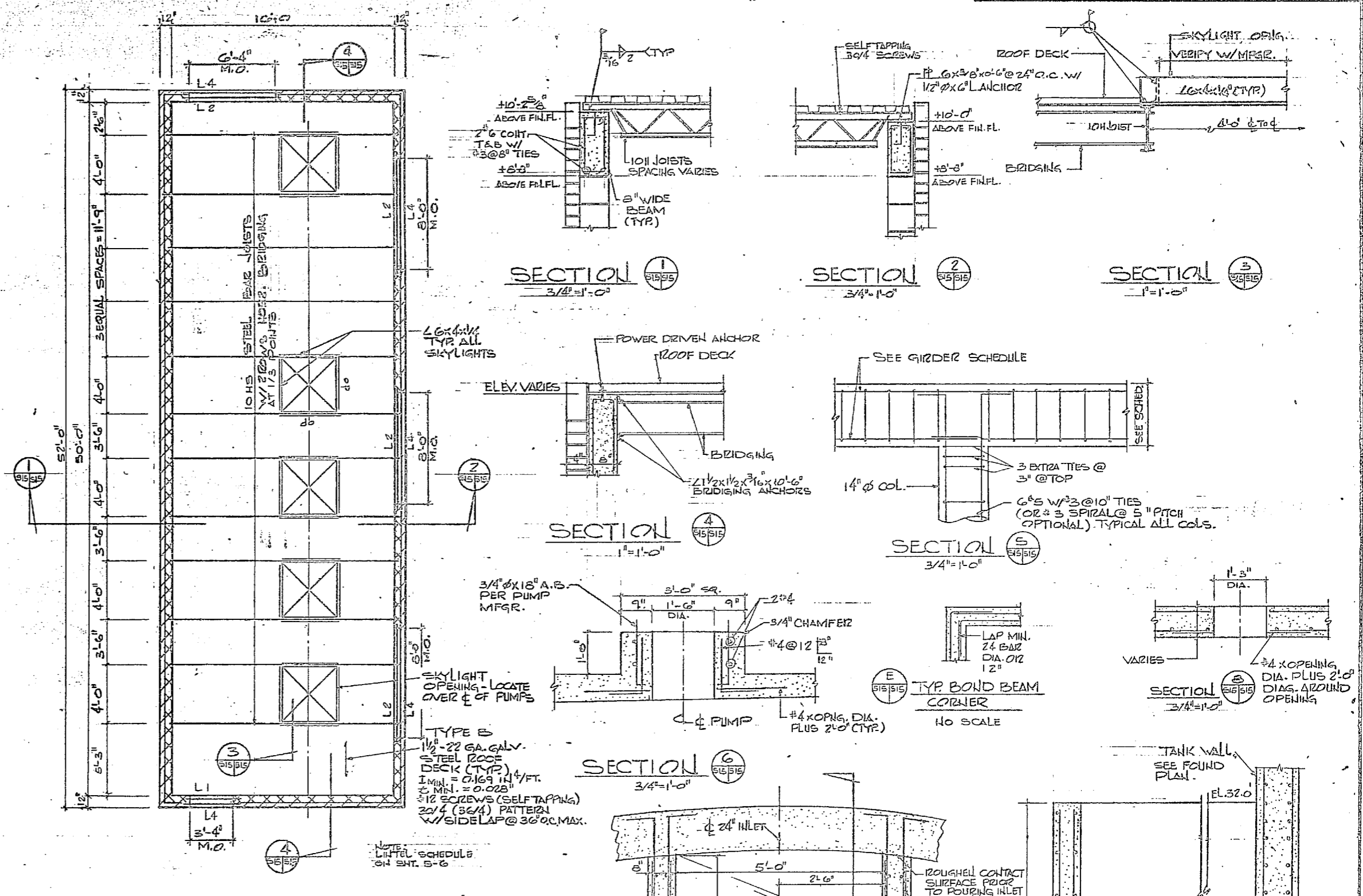




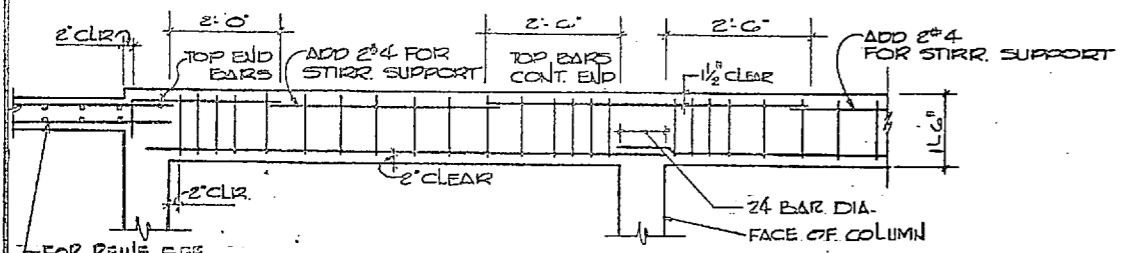
REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED



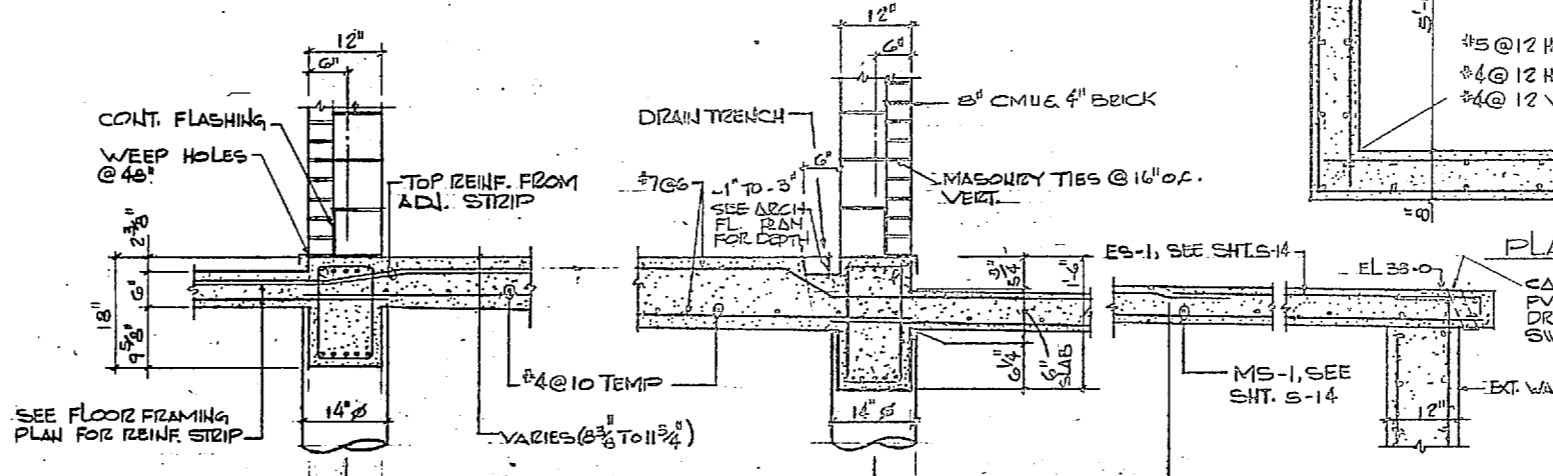
FLOOR FRAMING PLAN
1/4"=1'-0"



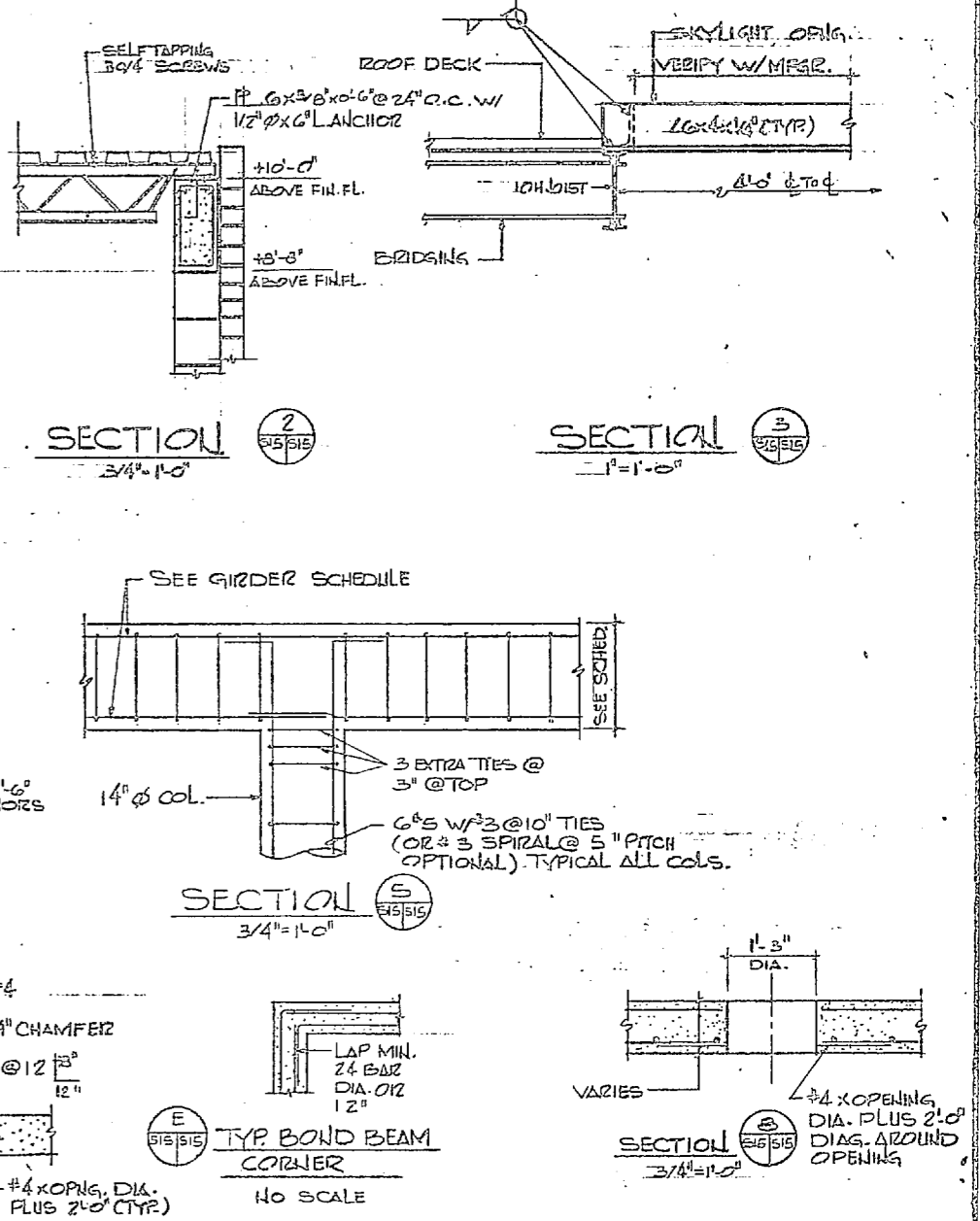
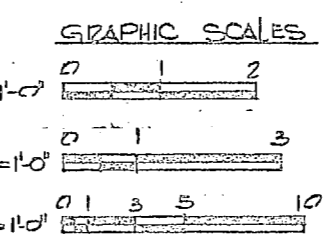
ROOF FRAMING PLAN
1/4"=1'-0"



TYPICAL GIRDER DETAIL
1/4"=1'-0"



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



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

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

SECTION 3
1"=1'-0"

SECTION 4
1"=1'-0"

SECTION 5
3/4"=1'-0"

SECTION 6
3/4"=1'-0"

SECTION 7
3/4"=1'-0"

GIRDER SCHEDULE						
MARK	SIZE	TOP BARS		STIRRUPS		REMARKS
		CONC.	CONT. END	SIZE	TYPE	
G1	12x18	5#4	2#4	5#5	#3	70# REINFORC.
G2	12x18	4#4	—	5#5	#3	57# REINFORC.
G3	12x18	5#4	—	5#5	#3	59# REINFORC.
G4	12x18	2#5	2#4	5#5	#3	75# REINFORC.
G5	12x18	5#4	—	5#5	#3	70# REINFORC.
G6	12x18	5#4	—	5#5	#3	70# REINFORC.
G7	12x18	5#4	—	5#5	#3	70# REINFORC.
G8	18x18	2#4	2#4	5#5	#3	49# REINFORC.

S-15

HENRY VON OEPER AND ASSOCIATED CONSULTING ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING CENTER

ATLANTIC DIVISION

NAVAL STATION CAMP LEJEUNE NORTH CAROLINA

EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT

FINISH WATER RESERVOIR

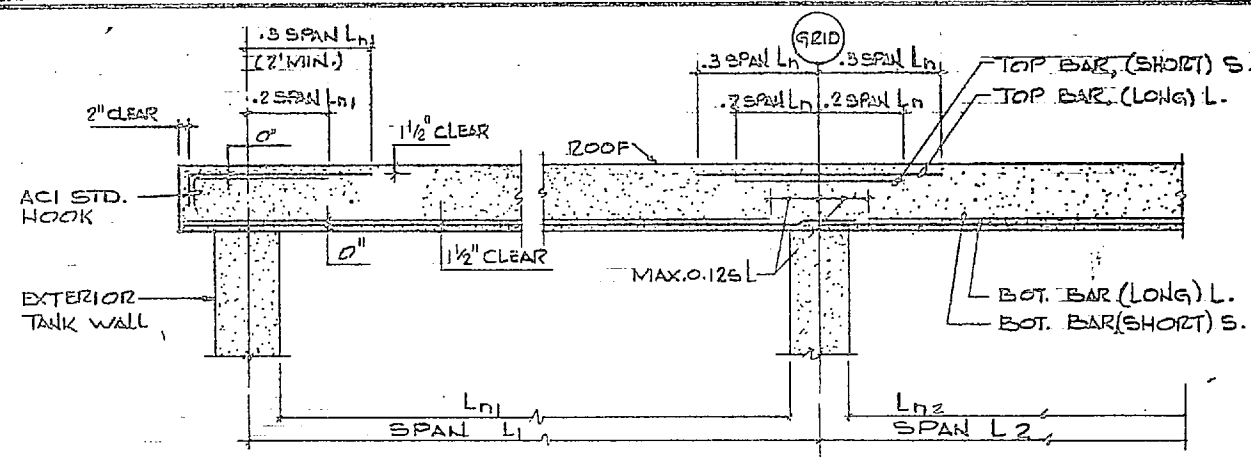
NO. 10123

DATE 7/16/64

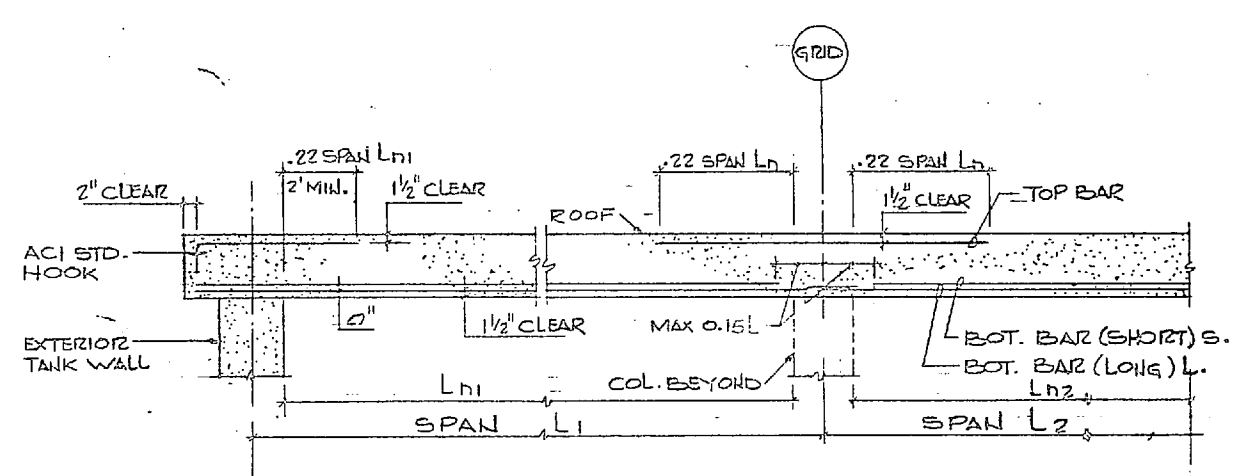
SCALE 1/4"=1'-0"

SHEET 31 OF 70

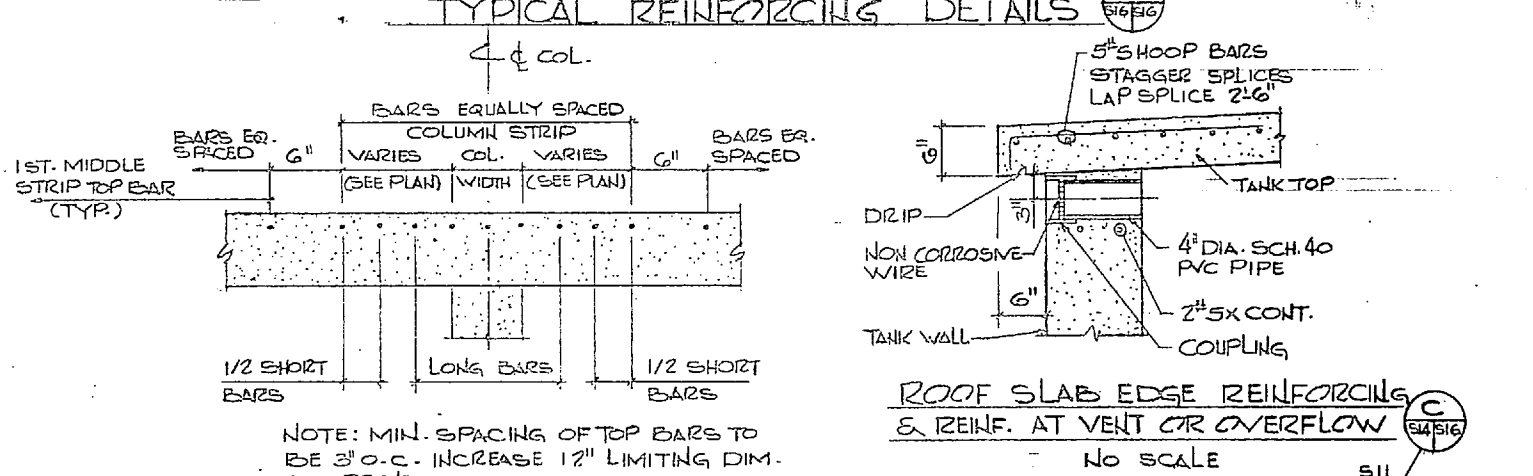
REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED



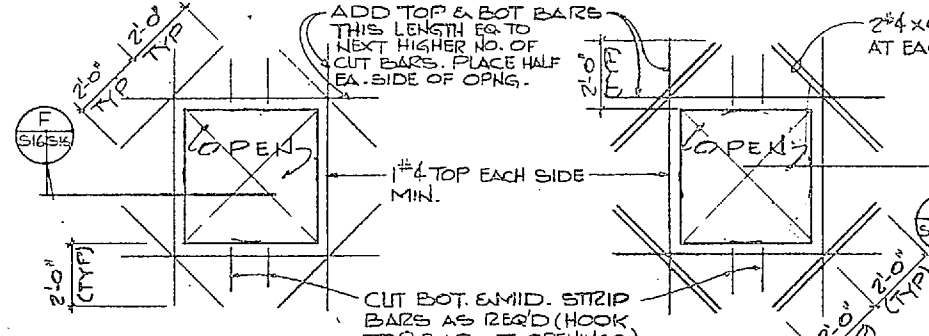
COLUMN STRIP
NO SCALE



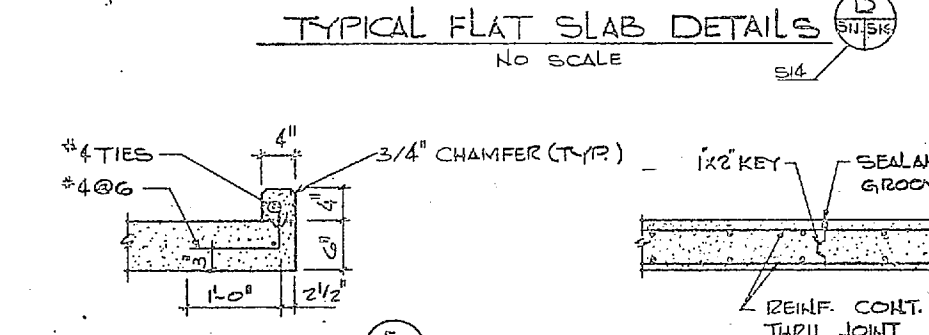
MIDDLE STRIP
NO SCALE



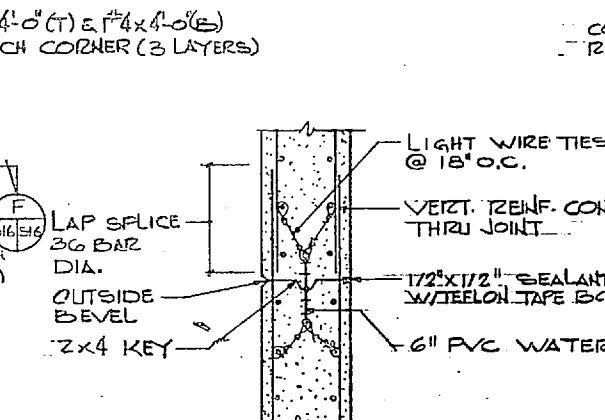
TYPICAL REINFORCING DETAILS
NO SCALE



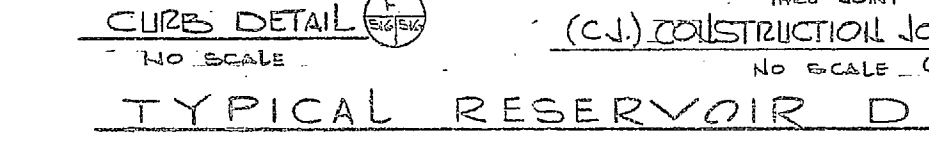
TOP BAR PLACING
NO SCALE



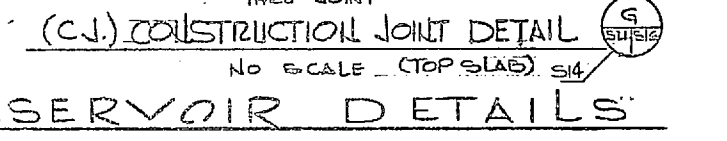
TYPICAL FLAT SLAB DETAILS
NO SCALE



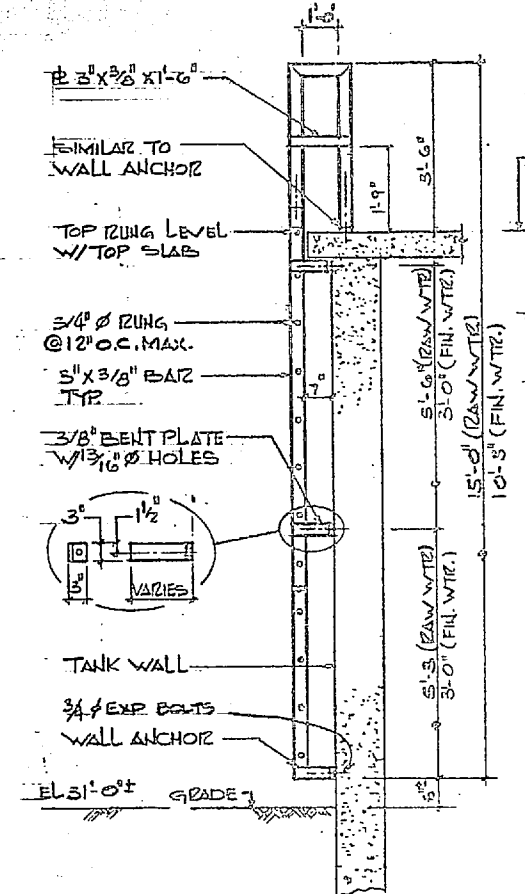
ELEVATION TYPICAL WALL CONSTRUCTION JOINT
NO SCALE



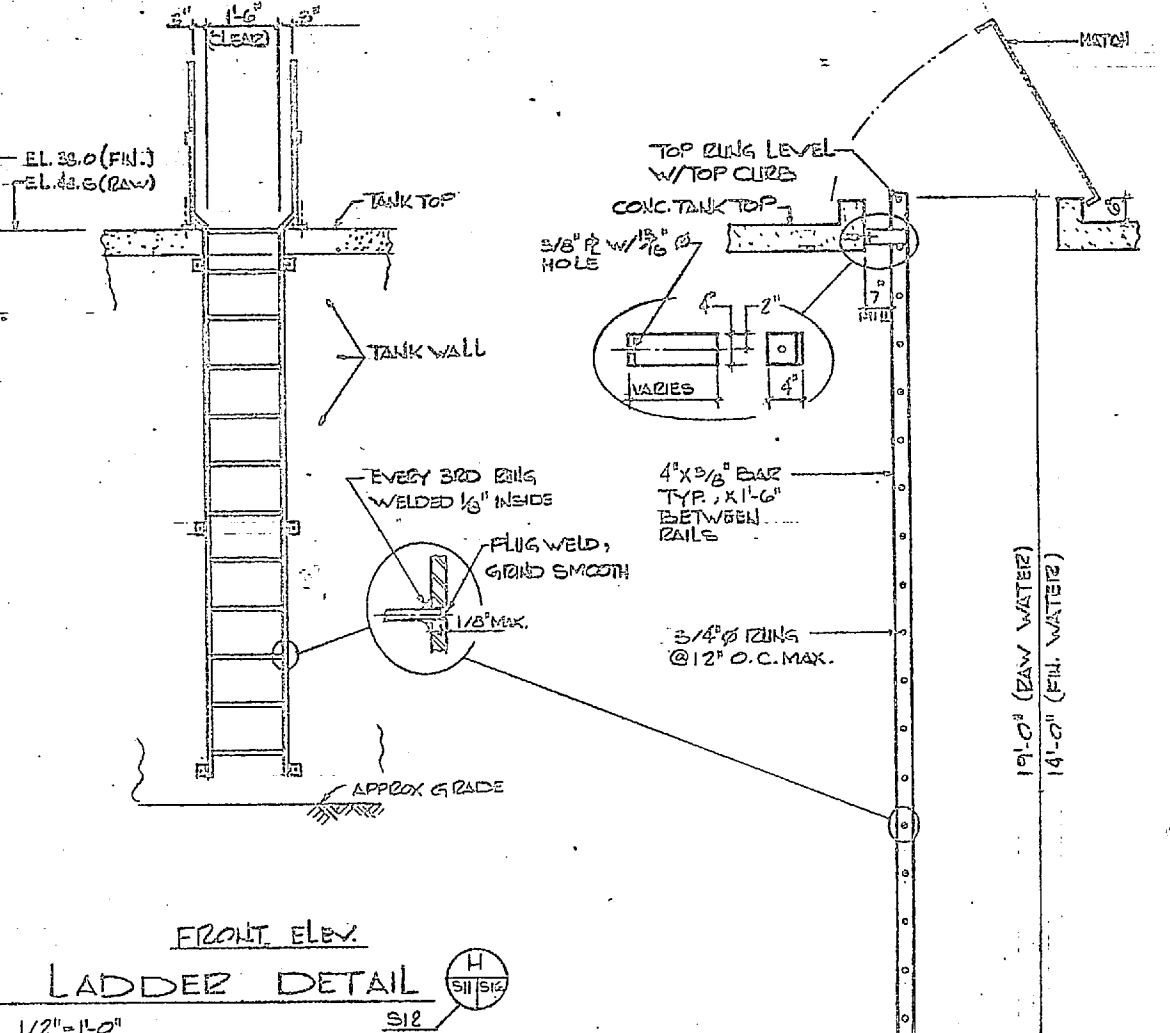
CLIPS DETAIL
NO SCALE



(C.J.) CONSTRUCTION JOINT DETAIL
NO SCALE (TOP SLAB) S14

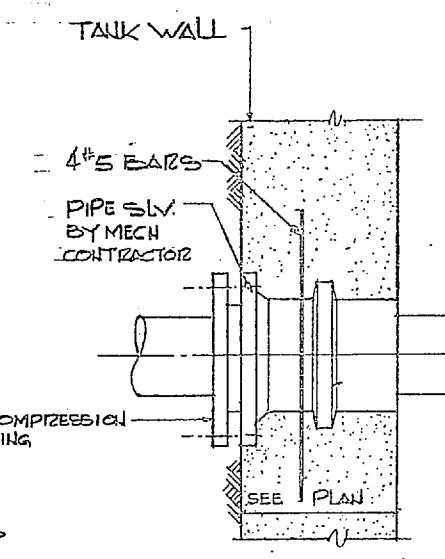


SIDE ELEV. EXTERIOR LADDER DETAIL
1/2" = 1'-0"

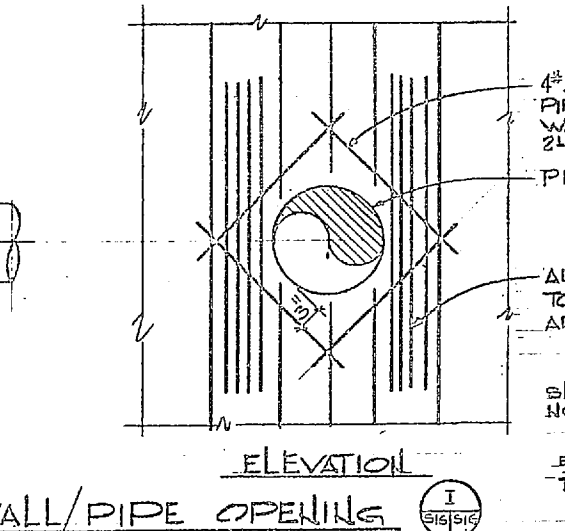


FRONT ELEV. EXTERIOR LADDER DETAIL
1/2" = 1'-0"

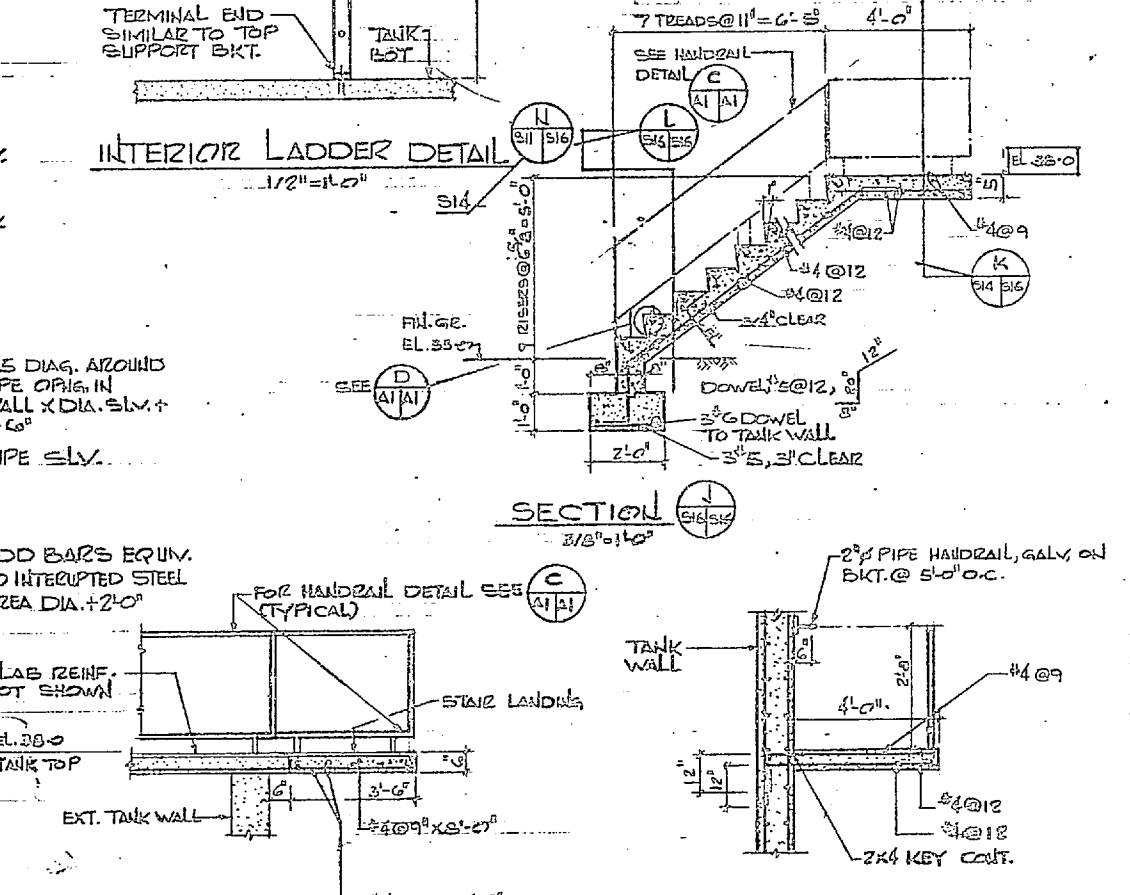
- LADDER NOTES**
1. ALL WELDED CONSTRUCTION WELDS GRIND SMOOTH AFTER FABRICATION
 2. ALL METAL SHALL BE HOT DIPPED GALV. AFTER FABRICATION
 3. FASTENERS ARE 3/8" X 4" EMBEDMENT GALV. EXPANSION ANCHORS W/ LOCK WASHERS, JAM NUT & PAL NUT



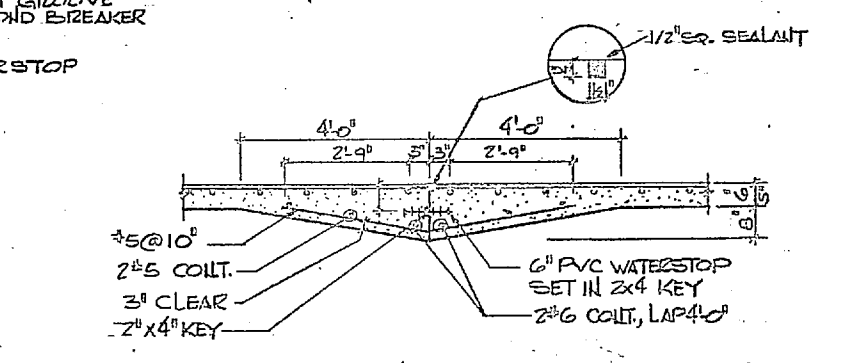
SECTION TYPICAL WALL/PIPE OPENING
1/2" = 1'-0"



ELEVATION TYPICAL WALL/PIPE OPENING
1/2" = 1'-0"

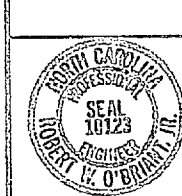
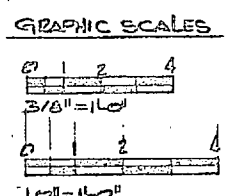


INTERIOR LADDER DETAIL
1/2" = 1'-0"



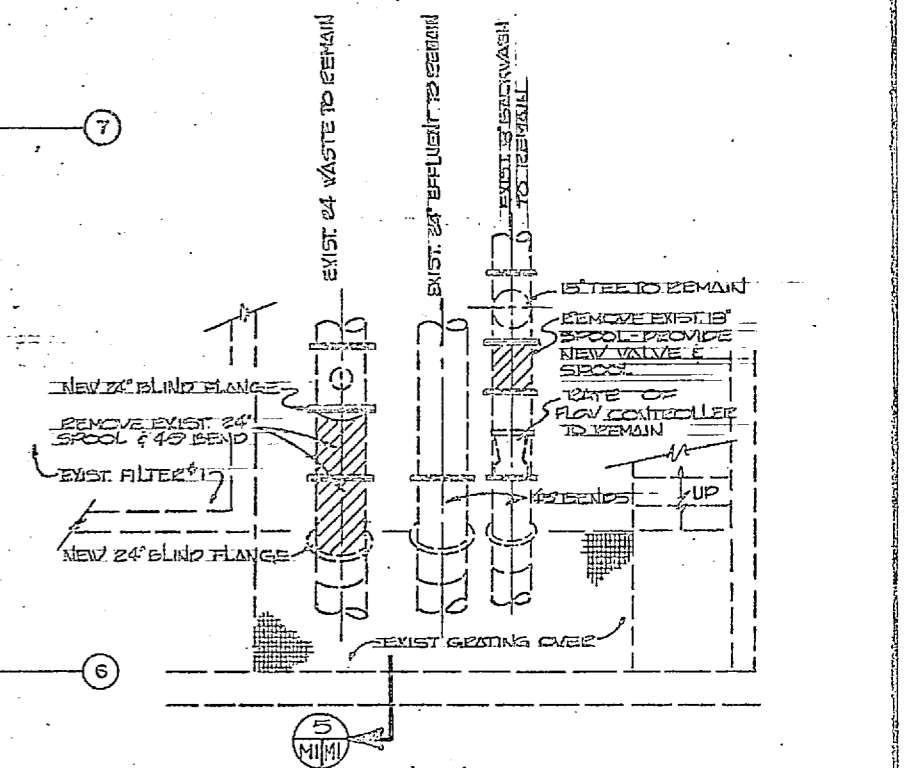
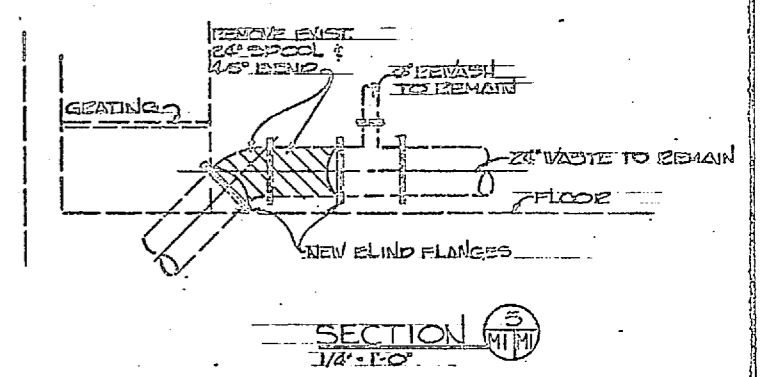
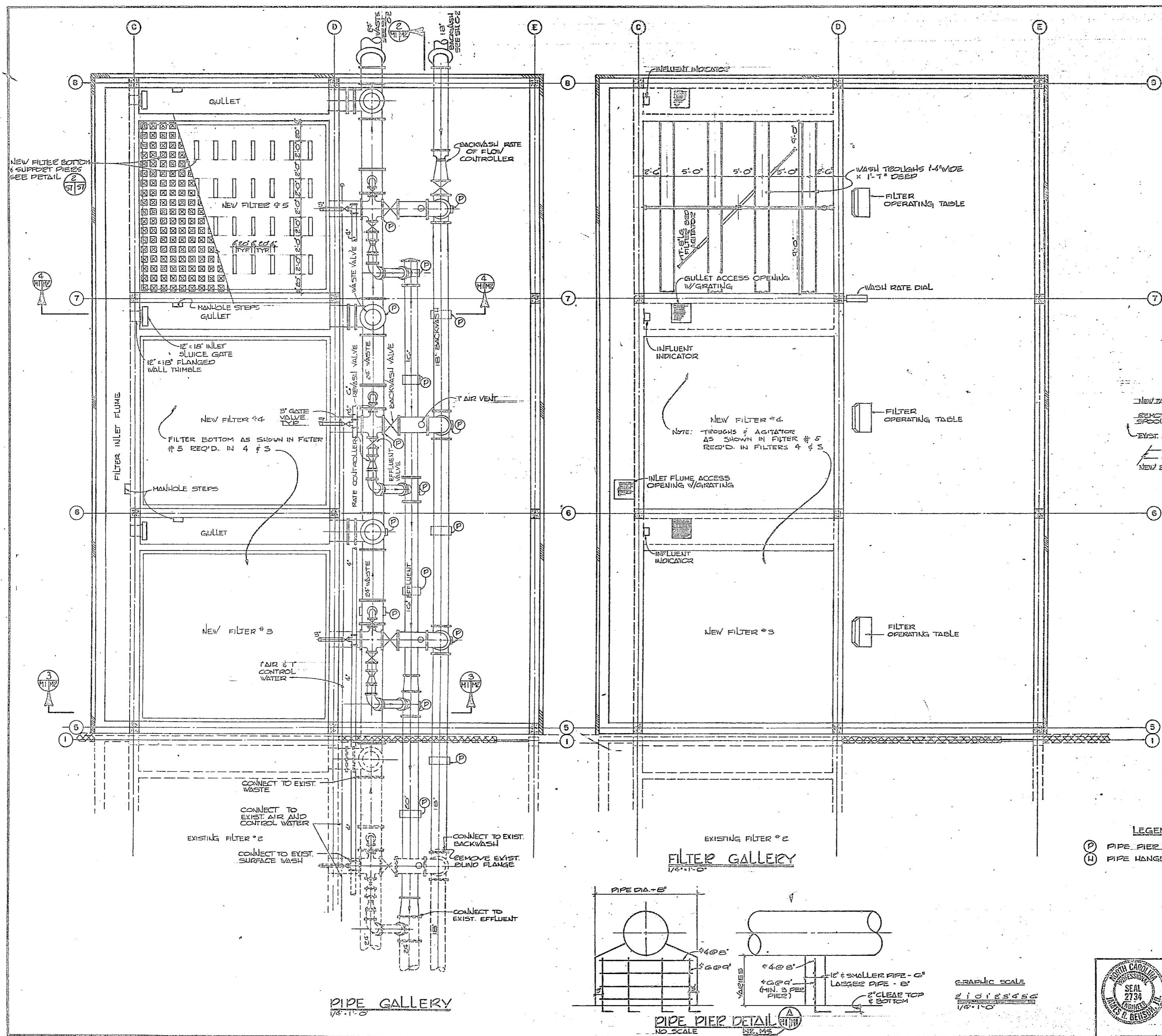
FLOOR SLAB CONSTRUCTION JOINT (OPTIONAL)
NO SCALE

- RESERVOIR STRUCTURAL NOTES**
- GENERAL**
1. DESIGN LIVE LOADS: ROOF - 30 PSF
PREFABRICATED FLOOR - 100 PSF
 2. CONTRACTOR TO SHORE AND BRACE NEW SLAB. FORMS SHALL NOT BE REMOVED UNTIL SLAB HAS ACHIEVED 33% OF F'C
- CONCRETE**
1. CONCRETE COMPRESSIVE AT 28 DAYS:
 - FOOTINGS 3,000 PSI
 - SLABS, BEAMS, GIRDERS, COLUMNS, WALLS AND ALL OTHER CONCRETE UNLESS NOTED OTHERWISE 4,000 PSI
 2. REINFORCING STEEL ASTM A615, GRADE 60. WELDED WIRE MESH ASTM A185 (65 KSI).
 3. CLEAR CONCRETE COVER ON REINFORCING STEEL:
 - COLUMNS, WALLS 2" SLAB OR GRADE 1 1/2"
 - FOOTINGS 3" ELEVATED SLAB 1 1/2"
 4. DOWELS AND CONTINUOUS REINFORCING SHALL HAVE A MINIMUM LAP OF 24 BAR DIAMETER OR 12" MINIMUM UNLESS NOTED OTHERWISE.
 5. PROVIDE AIR ENTRAINMENT OF 4 TO 6 PERCENT.
 6. CHAMFER ALL EXPOSED EDGES 3/4" X 45 DEGREES.
 7. PROVIDE EXTRA REINFORCING AT OPENINGS THROUGH WALLS OR SLABS OF MINIMUM 4 # 5 DIAGONALS. SEE DETAILS, T/S15/S16. USE STRENGTHENED BAR CHAIRS OR DELSTERS FOR ALL SLABS, ETC.
- STRUCTURAL MASONRY**
1. ALL EXTERIOR AND INTERIOR MASONRY WALLS ARE CONSIDERED STRUCTURAL MASONRY. SEE NOTES SHEET S-6.

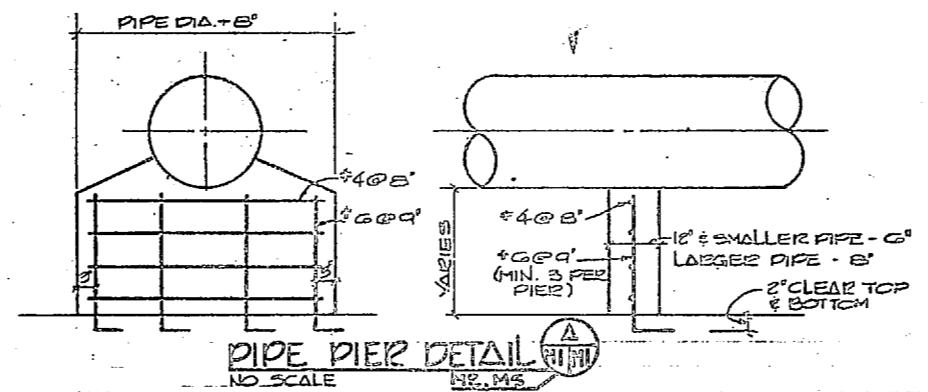
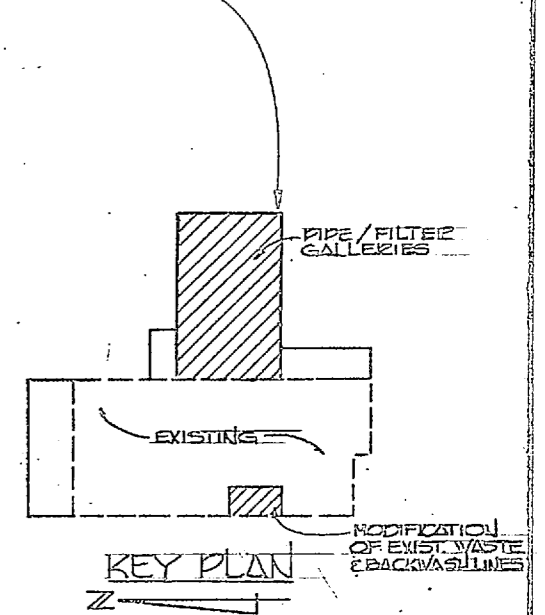


DESIGNER AND ASSOCIATED ENGINEERS AND PLANNERS		DEPARTMENT OF THE NAVY	
HENRY VON OESSEN AND ASSOCIATED ENGINEERS AND PLANNERS COLUMBIA, NORTH CAROLINA		NAVAL FACILITIES ENGINEERING CENTER ATLANTIC DIVISION PORTFOLK, VIRGINIA	
DESIGNER: H. VON OESSEN	CHECKED: J. W. HARRIS	NAVAL STATION: CAMP LEJEUNE	NORTH CAROLINA
PROJ. NO. JRB-01-ENR-JRG	DATE: 1/19/64	EXPANSION OF HCLCOMB BOULEVARD WATER TREATMENT PLANT	
SUBMITTED BY: H. VON OESSEN	DATE: 1/19/64	RESERVOIR-MISC. DETAILS	
FIELD ENGINEER: H. VON OESSEN	DATE: 1/19/64	PROJECT NO. 4107565	
NO. OF SHEETS: 1	TOTAL: 1	SHEET 32 OF 72	
APPROVED: H. VON OESSEN		SPEC. 05-01-1644	
FOR EFB FOR COMMANDER IN CHIEF		LFD 053 NO. 207366	

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED



PLAN
MODIFICATION OF EXISTING WASTE & BACKWASH LINES
 1/4\"/>

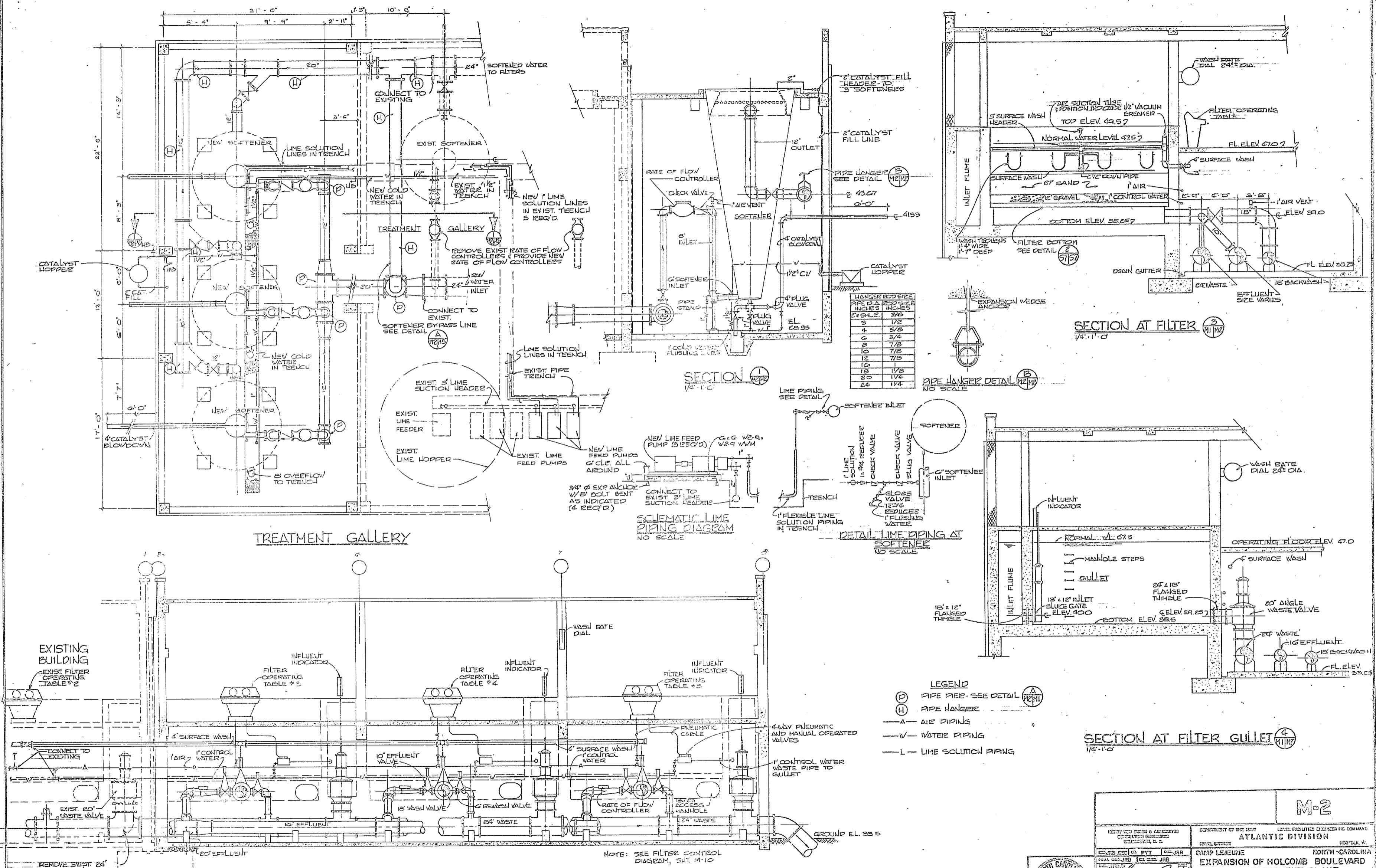


GRAPHIC SCALE
 1\"/>



M-I	
HENRY W. KEENE & ASSOCIATES CONSULTING ENGINEERS WILMINGTON, D. C.	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING CENTER ATLANTIC DIVISION NAVAL STATION NORFOLK, VA.
PROJ. MGR. JRB DESIGNED BY JRB CHECKED BY JRB DATE 10/15/74	CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT FILTER PIPING & PLANS
SHEET NO. 60091 DATE 10/15/74	DRAWING NO. 4107563 PROJECT NO. 162470-01-B-1344 DATE 05-21-1944

REVISIONS		
SYM	DESCRIPTION	DATE APPROVED



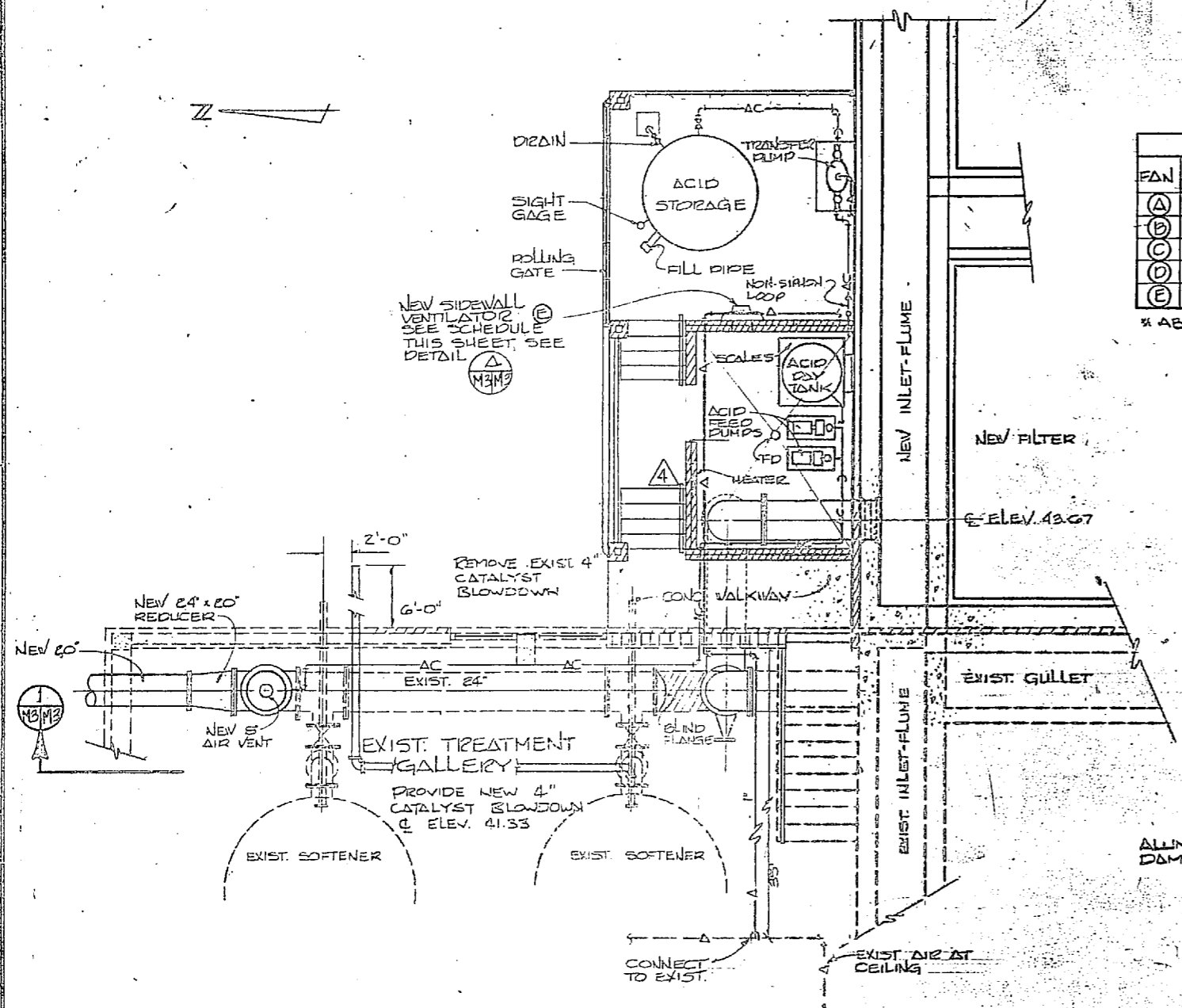
HANGER ROD SIZE	PIPE DIA	ROD PIPE THICKNESS
3	1/2	3/8
4	5/8	3/4
6	7/8	7/8
8	1	1
10	1 1/8	1 1/8
12	1 1/4	1 1/4
14	1 1/2	1 1/2
16	1 3/4	1 3/4
18	1 7/8	1 7/8
20	2	2
24	2 1/2	2 1/2



M-2	
NORTH CAROLINA DEPARTMENT OF THE ENVIRONMENT COMMUNITY ENGINEERING DIVISION 1000 WEST GARDEN STREET RALEIGH, N.C. 27603 PROJECT NO. 100-100-100-100 DATE: 10/1/65	NORTH CAROLINA DEPARTMENT OF THE ENVIRONMENT COMMUNITY ENGINEERING DIVISION 1000 WEST GARDEN STREET RALEIGH, N.C. 27603 PROJECT NO. 100-100-100-100 DATE: 10/1/65
ATLANTIC DIVISION	
CAMP LEJEUNE	
EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	
EQUIPMENT & PIPING	
DRAWN BY: JRB CHECKED BY: JRB DATE: 10/1/65	NORTH CAROLINA DEPARTMENT OF THE ENVIRONMENT COMMUNITY ENGINEERING DIVISION 1000 WEST GARDEN STREET RALEIGH, N.C. 27603 PROJECT NO. 100-100-100-100 DATE: 10/1/65
NORTH CAROLINA DEPARTMENT OF THE ENVIRONMENT COMMUNITY ENGINEERING DIVISION 1000 WEST GARDEN STREET RALEIGH, N.C. 27603 PROJECT NO. 100-100-100-100 DATE: 10/1/65	NORTH CAROLINA DEPARTMENT OF THE ENVIRONMENT COMMUNITY ENGINEERING DIVISION 1000 WEST GARDEN STREET RALEIGH, N.C. 27603 PROJECT NO. 100-100-100-100 DATE: 10/1/65

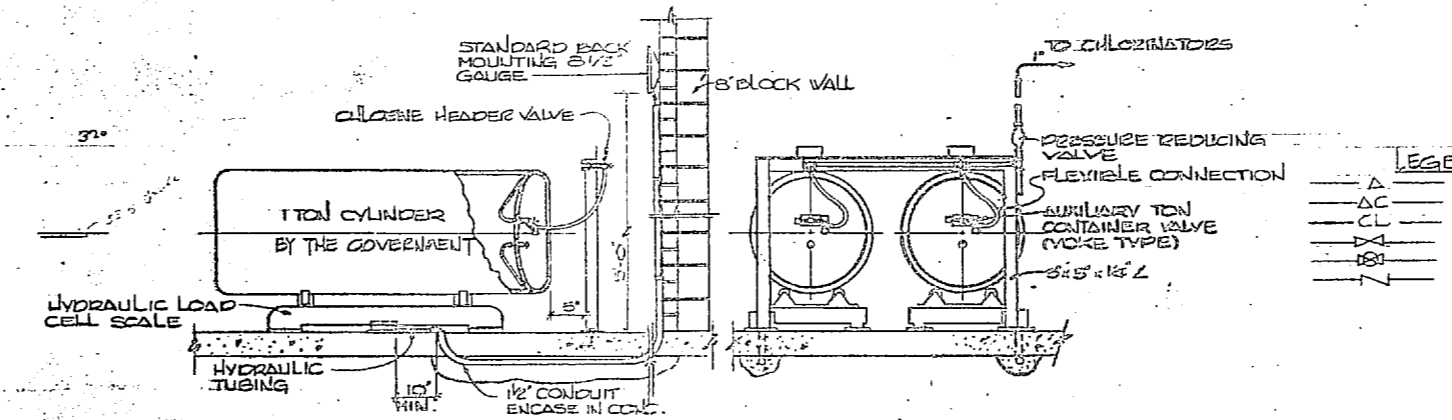
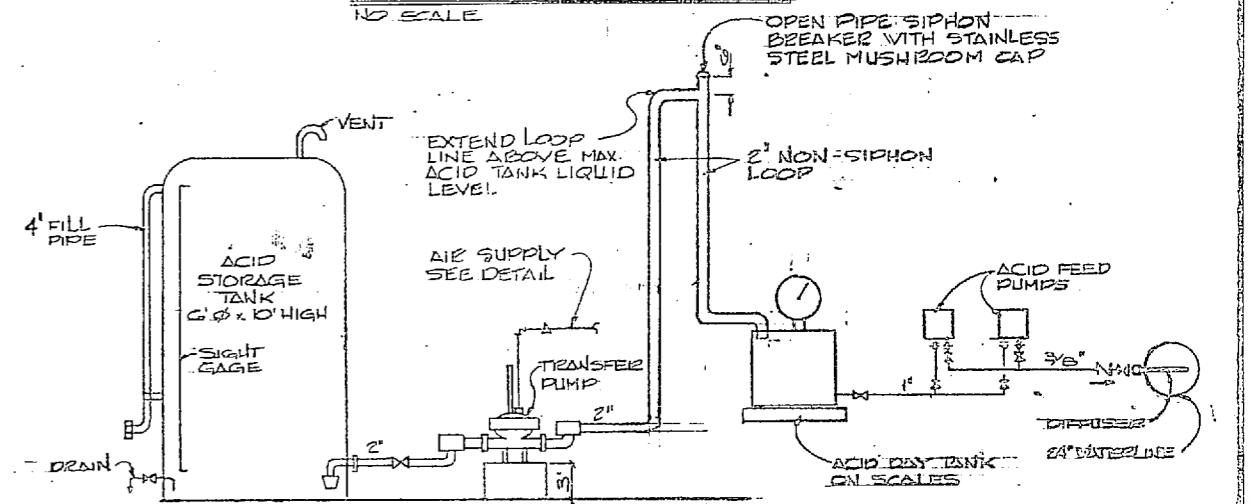
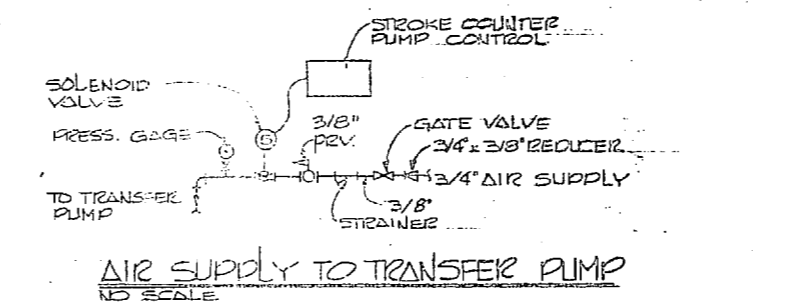
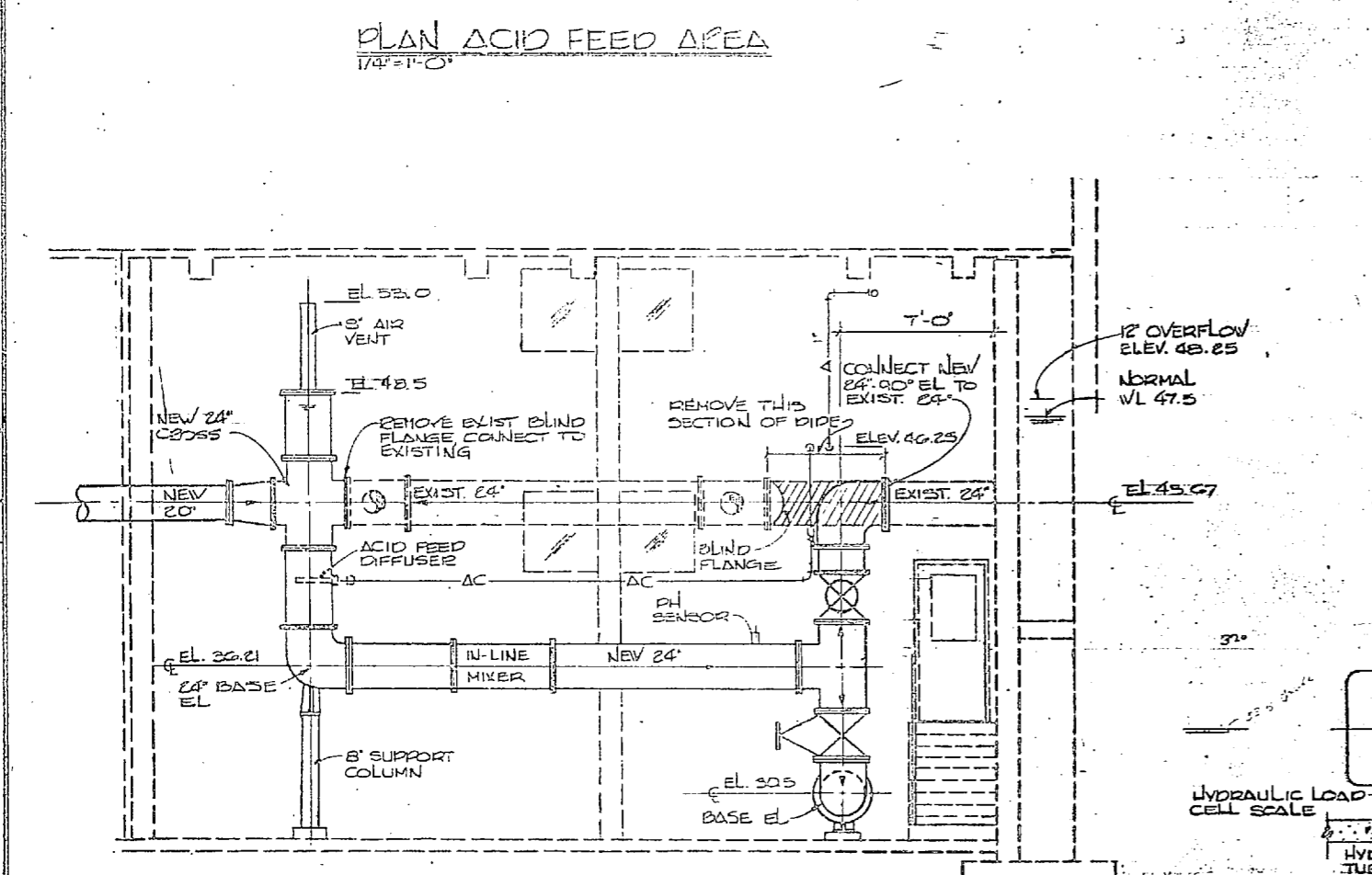
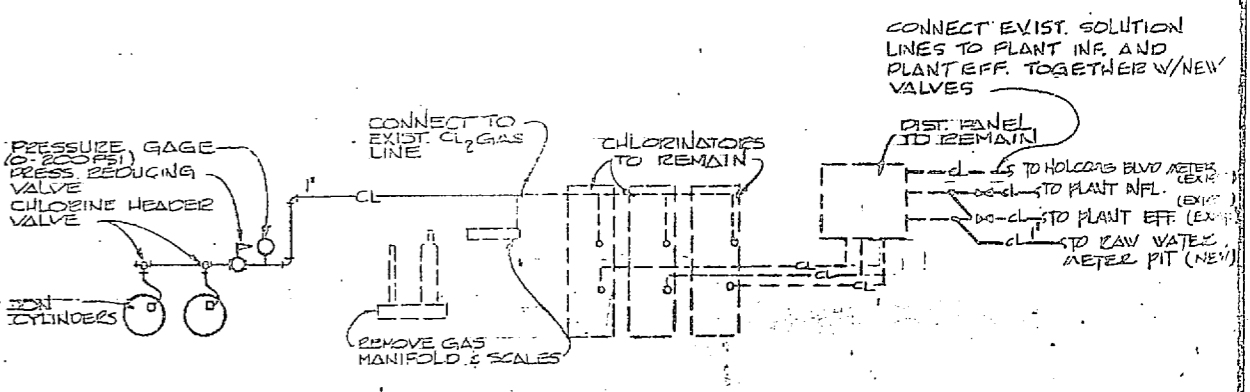
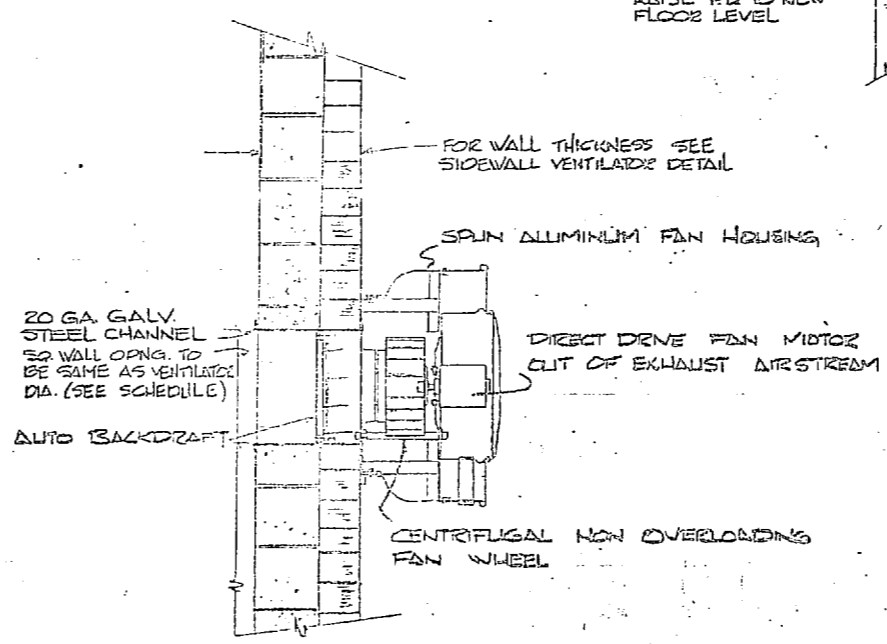
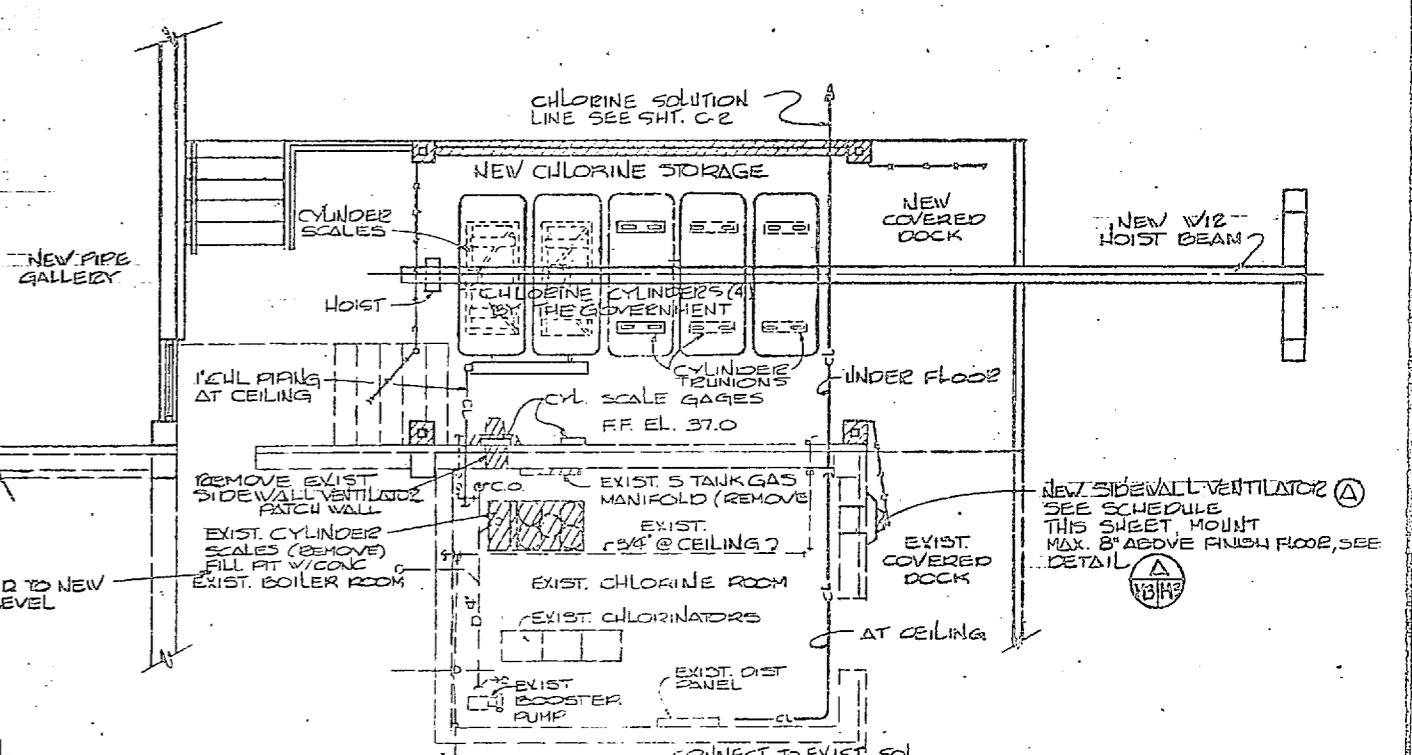
012345678
1/8" = 1'-0"

REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED



FAN	MINIMUM CFM	HP	STATIC PRESSURE	D.A.	RPM	VOLTAGE	MOUNTING HEIGHT	WALL THICKNESS
(A)	1870	1/4	1/8	18"	860	120V. 1Ø	8' AFF. 12"	EXIST.
(B)	220	1/60	1/8	8"	1300	120V. 1Ø	5' AFF. 8"	
(C)	888	1/12	1/8	12"	11400	120V. 1Ø	5' AFF. 12"	
(D)	920	1/8	1/8	10"	1530	120V. 1Ø	5' AFF. 10"	
(E)	100	1/100	1/8	8"	1300	120V. 1Ø	5' AFF. 8"	

1/4" ABOVE FINISHED FLOOR



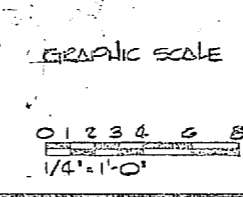
- LEGEND
- A — AIR PIPING
 - AC — ACID PIPING
 - CL — CHLORINE PIPING
 - G — GLOBE VALVE
 - V — CHECK VALVE



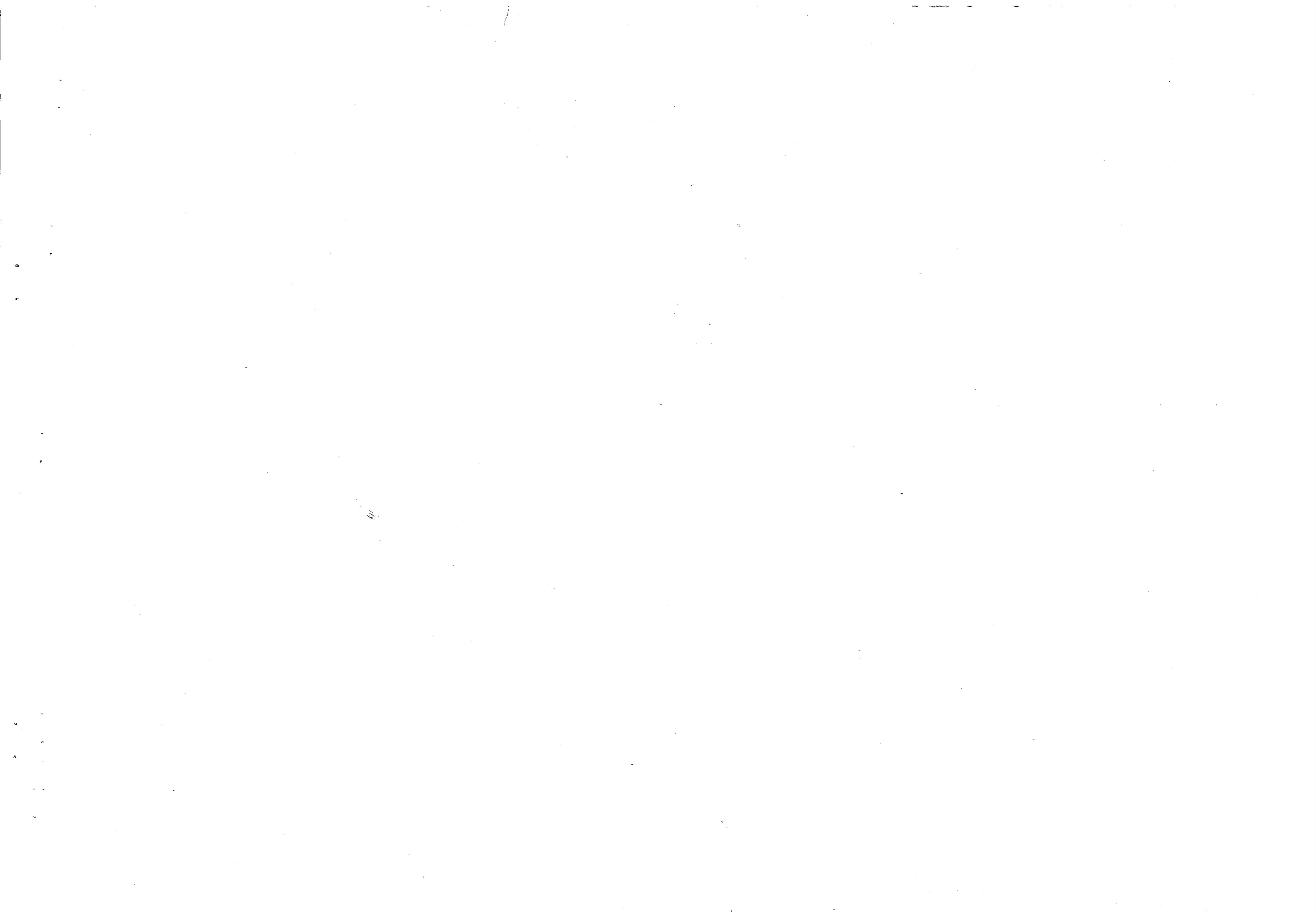
HENRY VON OEDEN AND ASSOCIATES
CONSULTING ENGINEERS AND PLANNERS
DUBLINGTON, NORTH CAROLINA

DES. JEB JRB PTT DIR JRB
SUBMITTED DATE 12/14/94
FIRM NUMBER 2734
EFD: PFRACU RVD G.S.S. GEM
NO. 14 WELDON ST.
APPROVED DATE 12/14/94
ACTIVITY - SATISFACTORY JOB
DRAWN BY DATE
FOR EFD FOR COMMUNICATION PURPOSES

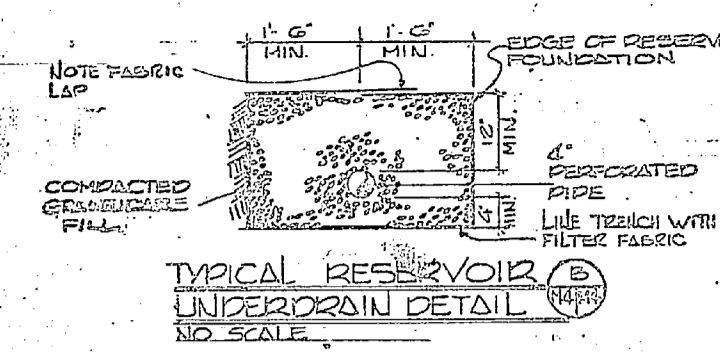
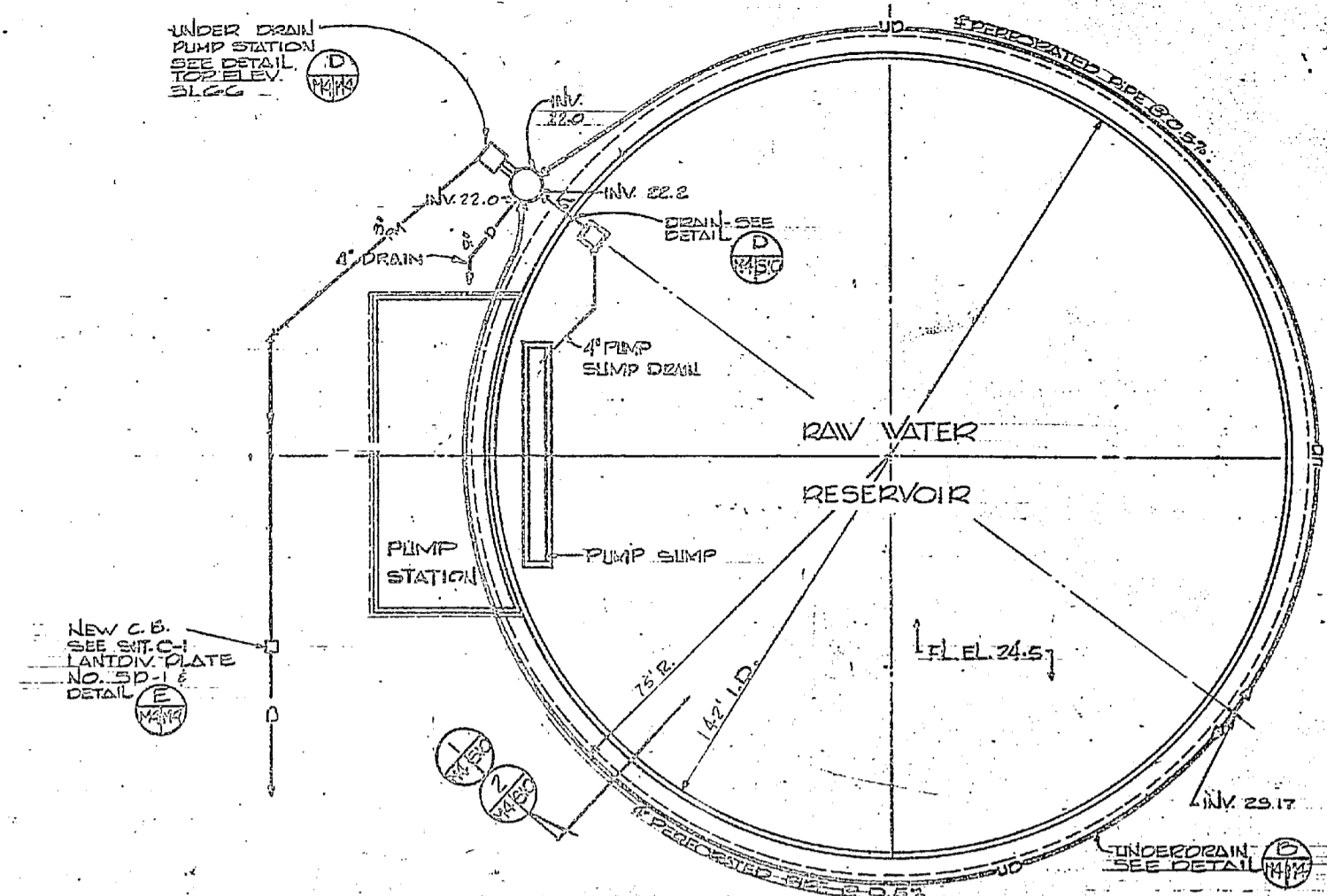
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
ATLANTIC DIVISION
CAMP LEJEUNE NORTH CAROLINA
EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT
ACID AND CHLORINE SYSTEMS
SCALE: AS SHOWN
EPC. 05-01-1644
SHEET 35 OF 74



M-3

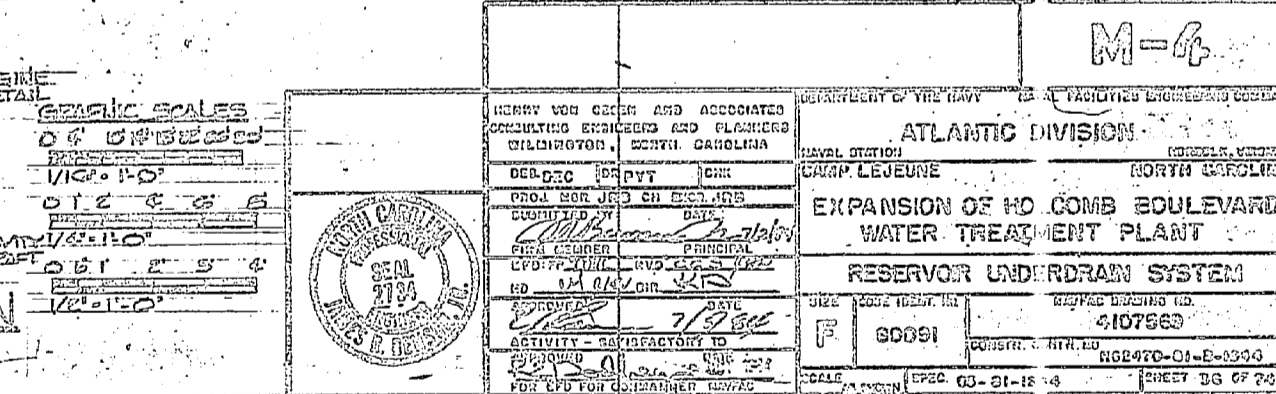
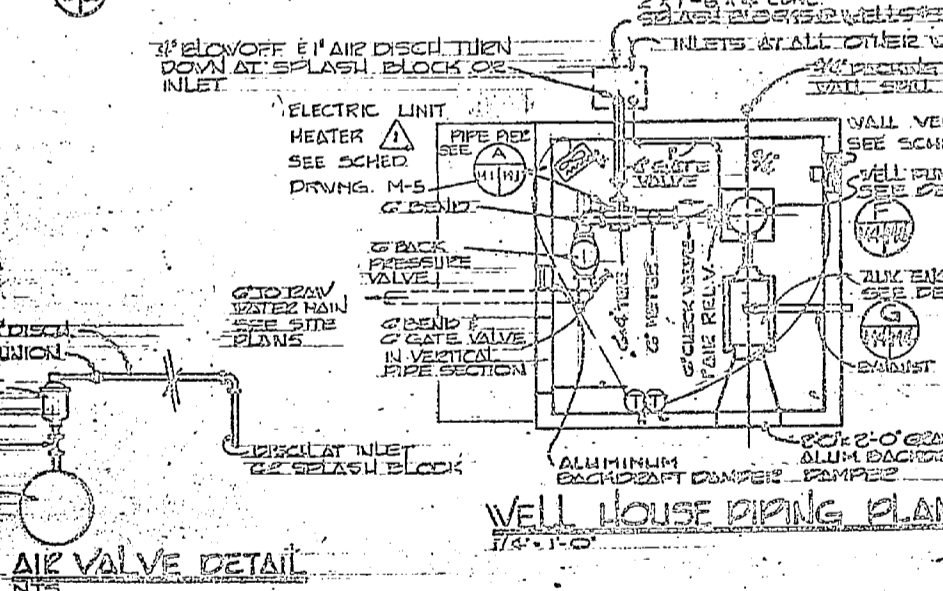
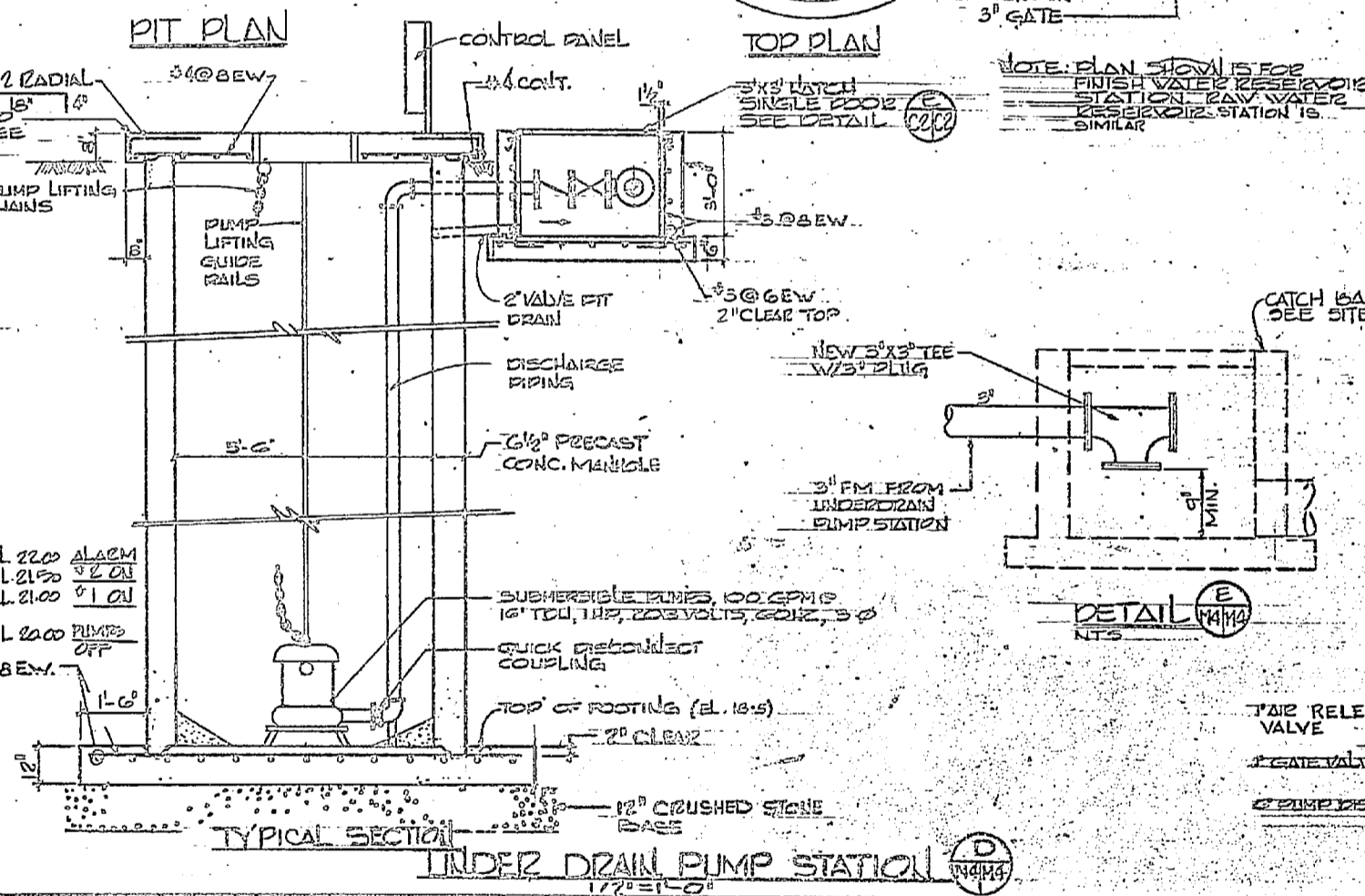
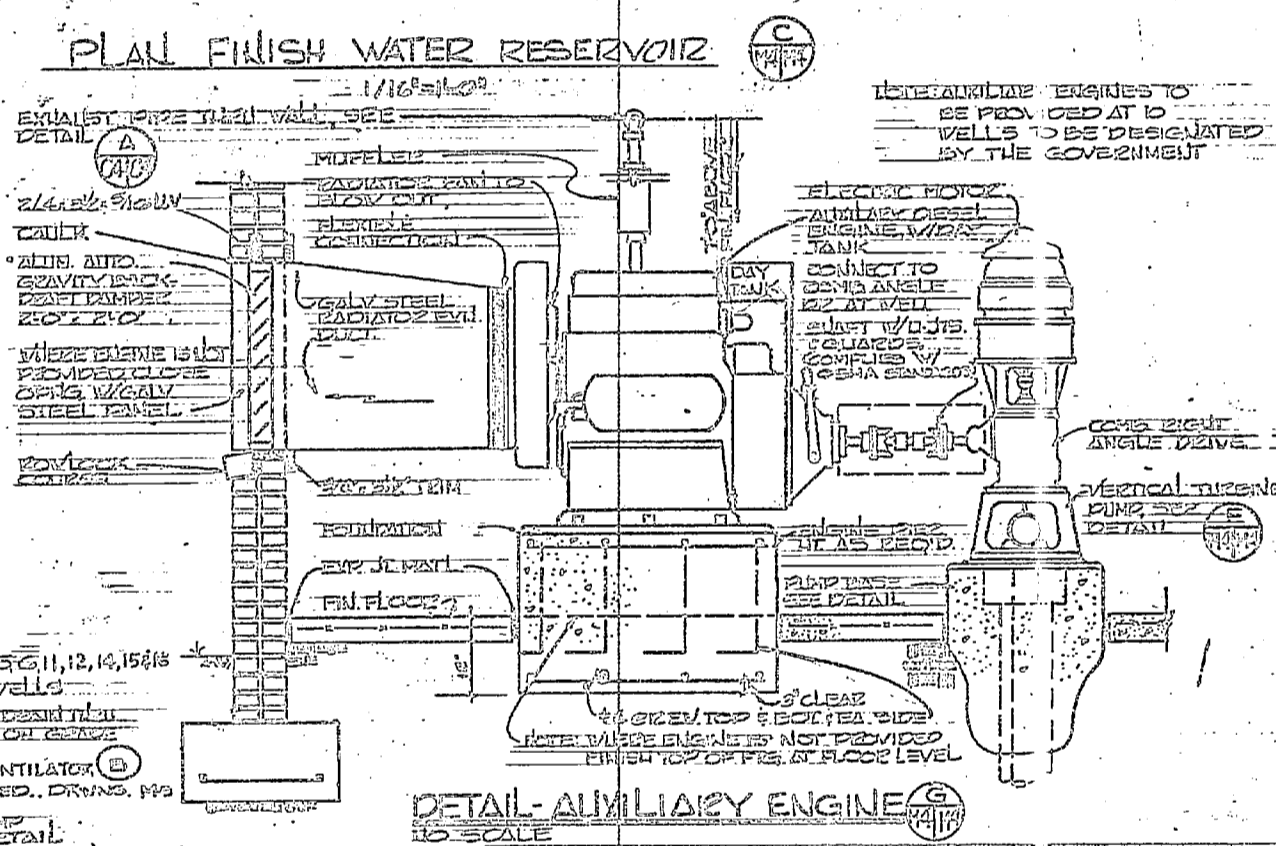
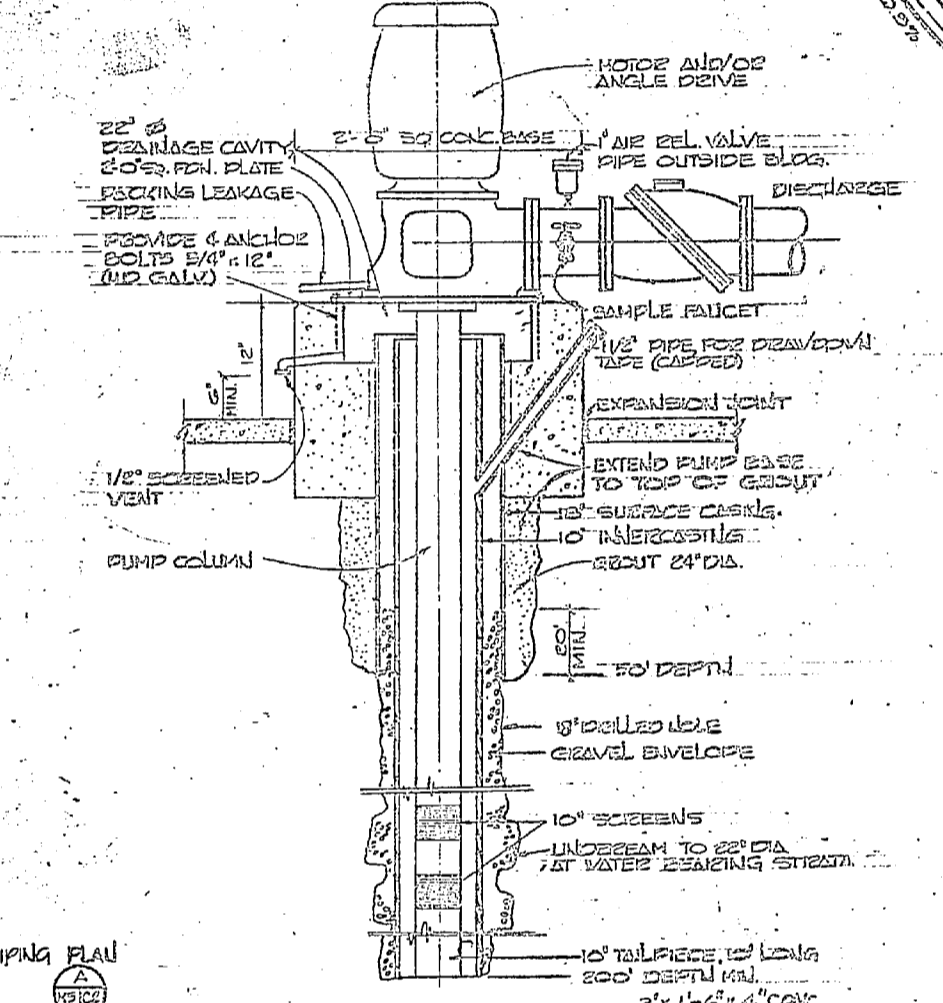
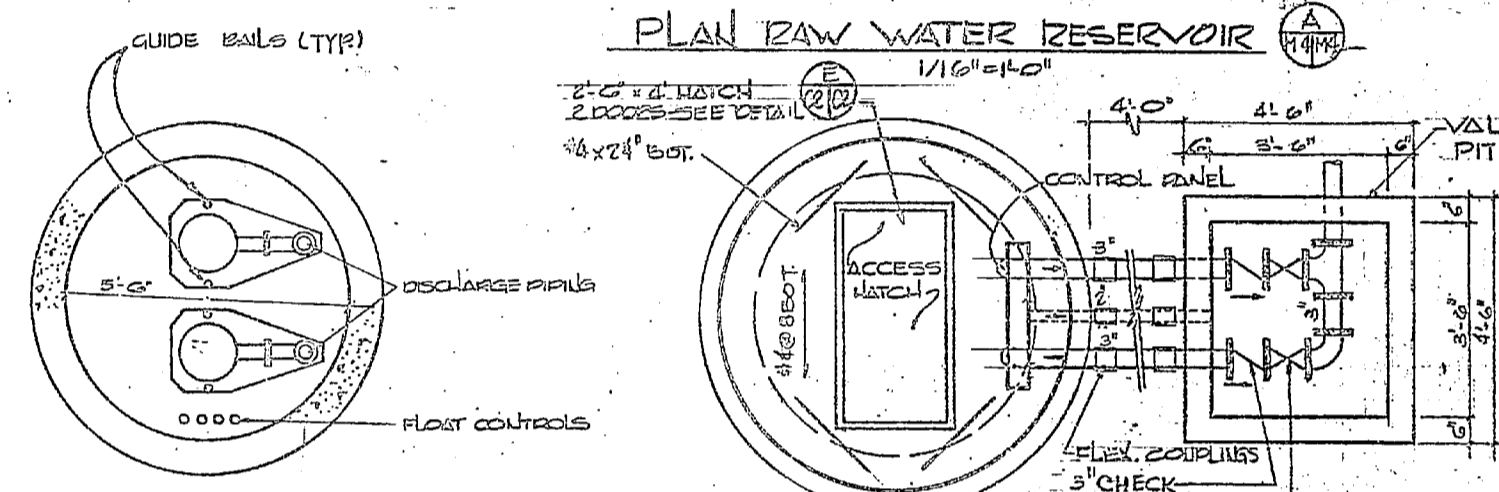
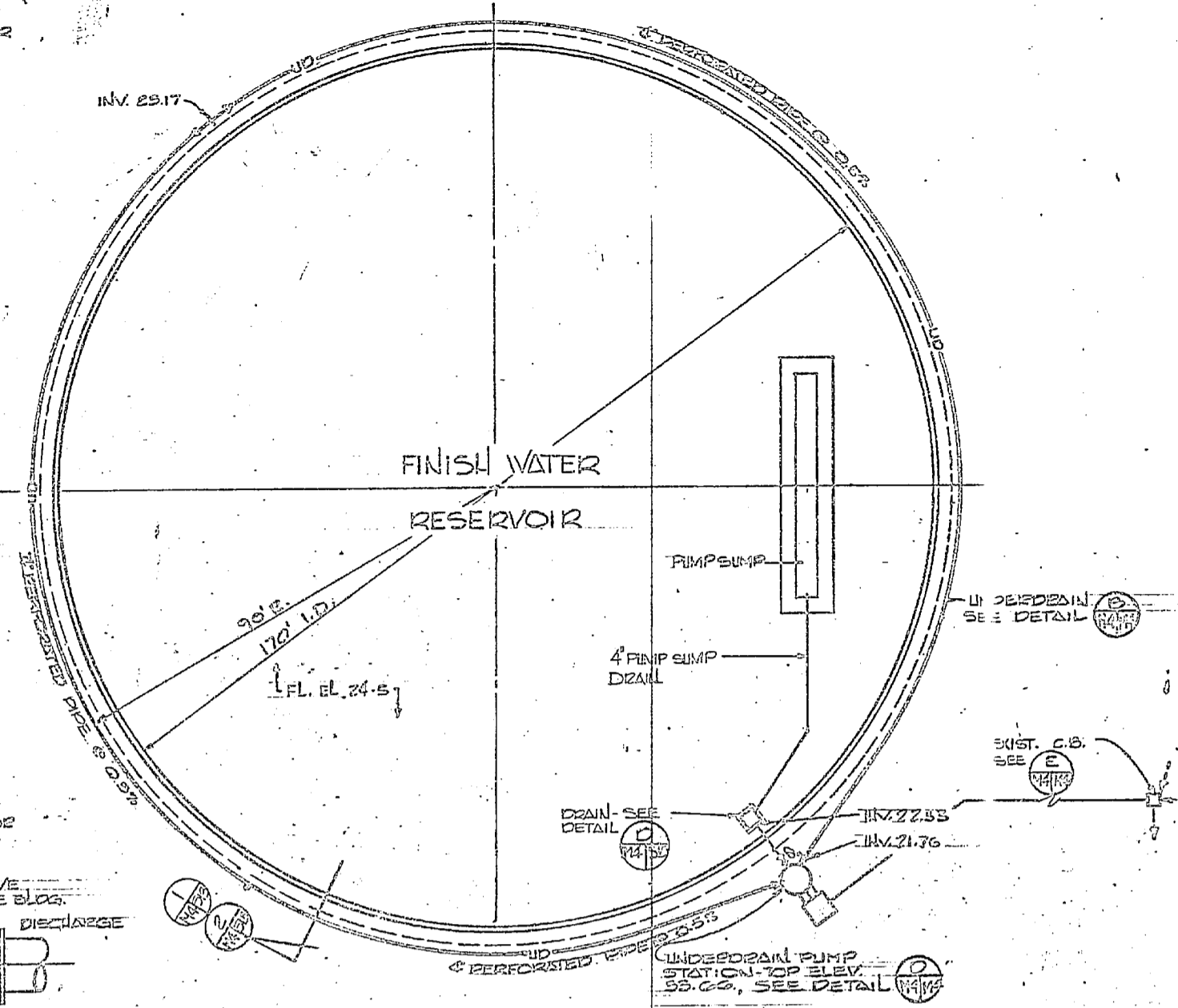


REVISIONS		
NO.	DESCRIPTION	DATE



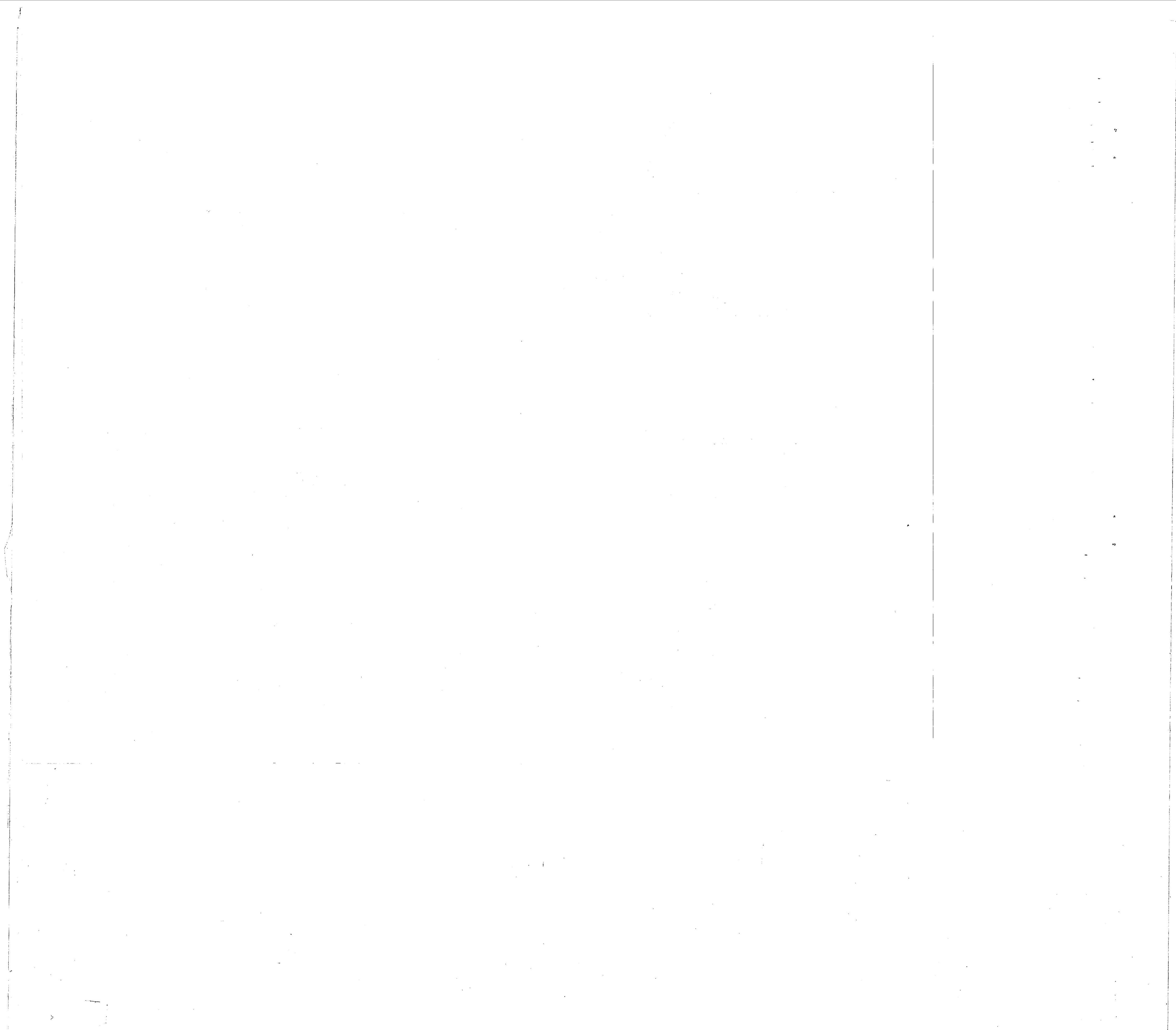
WELL PUMP SCHEDULE

WELL	QPM	22H	22H	UP	ELECTRICAL
1	220	124	1750	15	3ø-208V
2	220	128	1750	15	3ø-208V
3	220	132	1750	15	3ø-208V
4	220	136	1750	15	3ø-208V
5	220	140	1750	15	3ø-208V
6	220	144	1750	15	3ø-208V
7	220	148	1750	15	3ø-208V
8	220	152	1750	15	3ø-208V
9	220	156	1750	15	3ø-208V
10	220	160	1750	15	3ø-208V
11	220	164	1750	15	3ø-208V
12	220	168	1750	15	3ø-208V
13	220	172	1750	15	3ø-208V
14	220	176	1750	15	3ø-208V
15	220	180	1750	15	3ø-208V
16	220	184	1750	15	3ø-208V
17	220	188	1750	15	3ø-208V
18	220	192	1750	15	3ø-208V
19	220	196	1750	15	3ø-208V
20	220	200	1750	15	3ø-208V

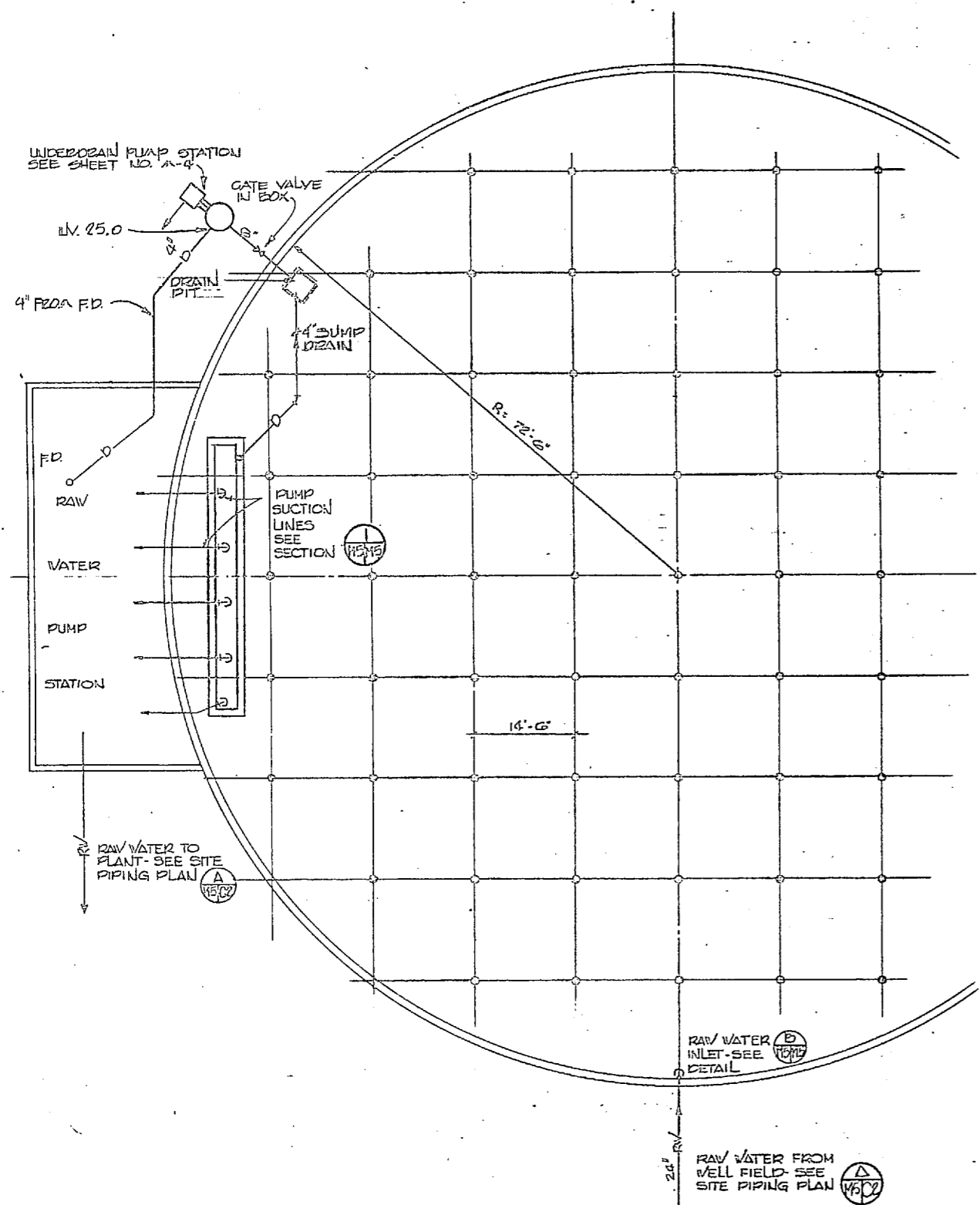


ATLANTIC DIVISION
 EXPANSION OF NO COMB BOULEVARD
 WATER TREATMENT PLANT
 RESERVOIR UNDERDRAIN SYSTEM

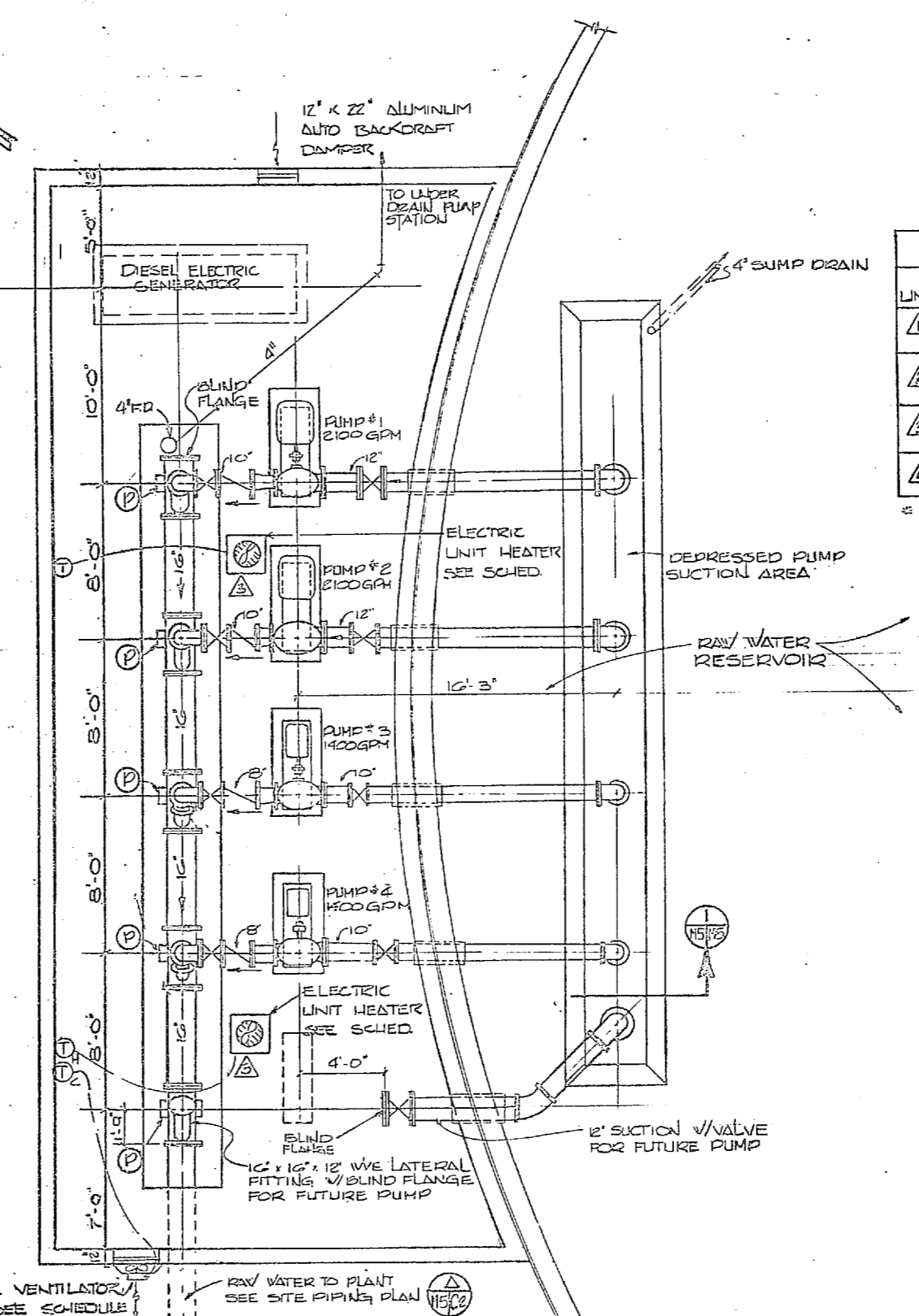
DATE: 7/28/60
 DRAWN BY: J. H. [unreadable]
 CHECKED BY: [unreadable]
 PROJECT NO: 610783
 SHEET NO: 30 OF 29



REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED



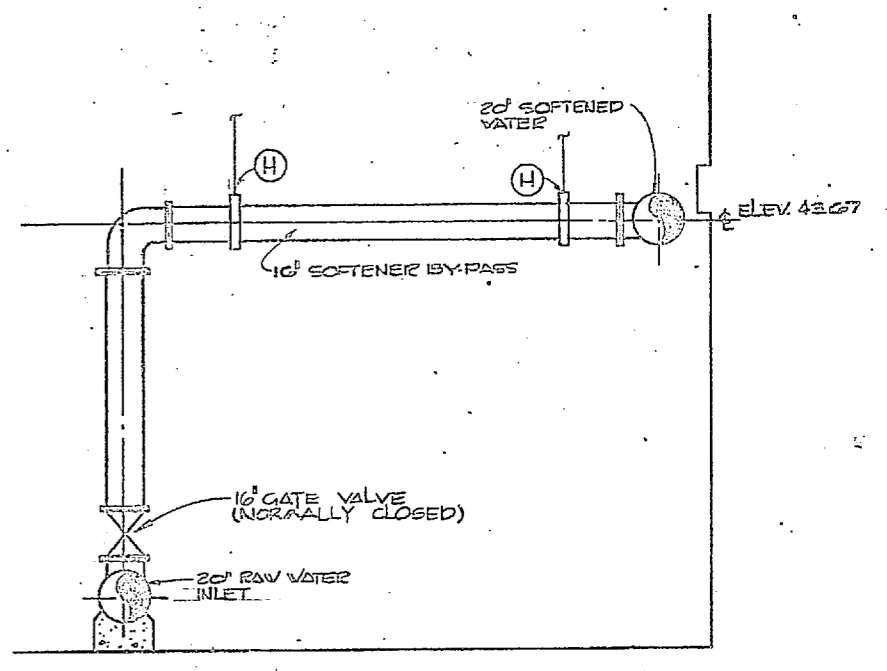
PIPING PLAN - RAW WATER RESERVOIR
3/82 = 1'-0"



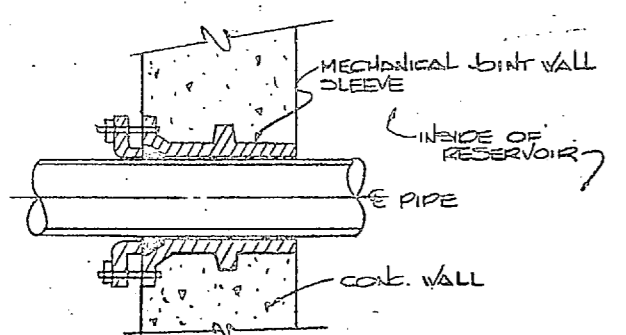
PLAN - RAW WATER PUMP STATION
1/4" = 1'-0"

UNIT	TYPE	LOCATION	MIN. CFM	MPH	MIN. KV	LIP	VOLT.	STAGES	MTG. HT. -"
△	HORIZONTAL UNIT HEATER	WELL HOUSES	265	10.0	293	1/25	208V 3φ	1	6'-0"
△	VERTICAL UNIT HEATER	FINISH WATER PUMP HOUSE	444	16.8	492	1/20		2	8'-0"
△		RAW WATER PUMP HOUSE	431	16.3	478			2	6'-0"
△	FORCED AIR WALL INSERT HEATER	ACID FEED ROOM	100	4.0	1.17	1/25	120V 1φ	1	18"

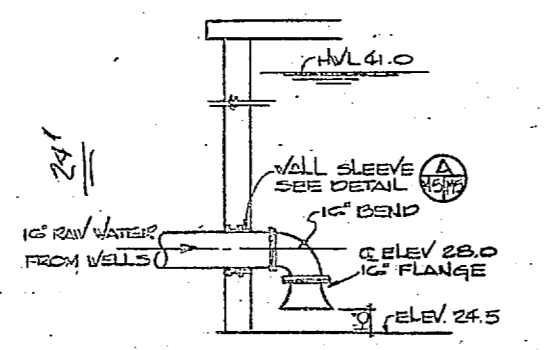
△ ABOVE FINISHED FLOOR



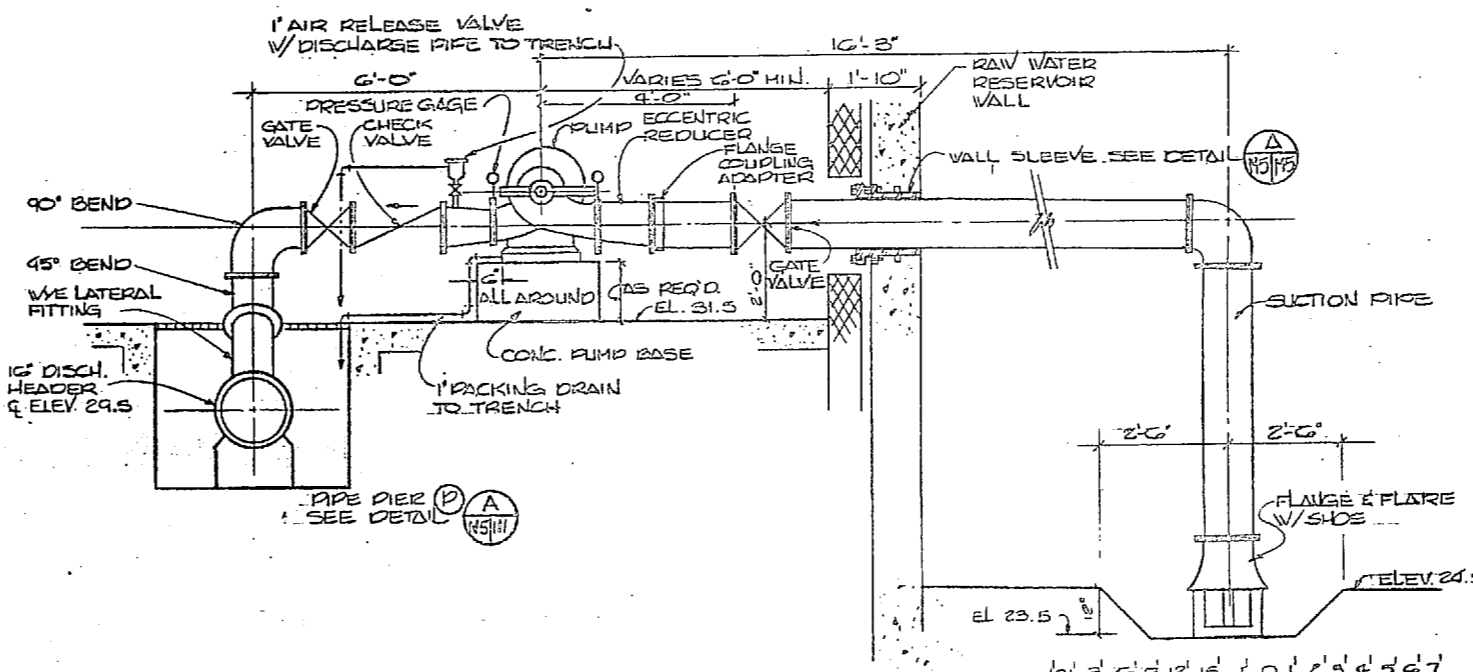
SOFTENER BY-PASS DETAIL
1/4" = 1'-0"



TYPICAL WALL SLEEVE
NO SCALE
NOTE: PROVIDE SLEEVE AT EACH PIPE PASSING THRU RESERVOIR WALL



RAW WATER INLET DETAIL
NO SCALE



TYPICAL SECTION THRU PUMP
1/2" = 1'-0"

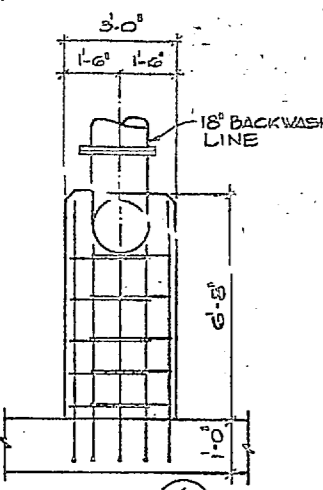
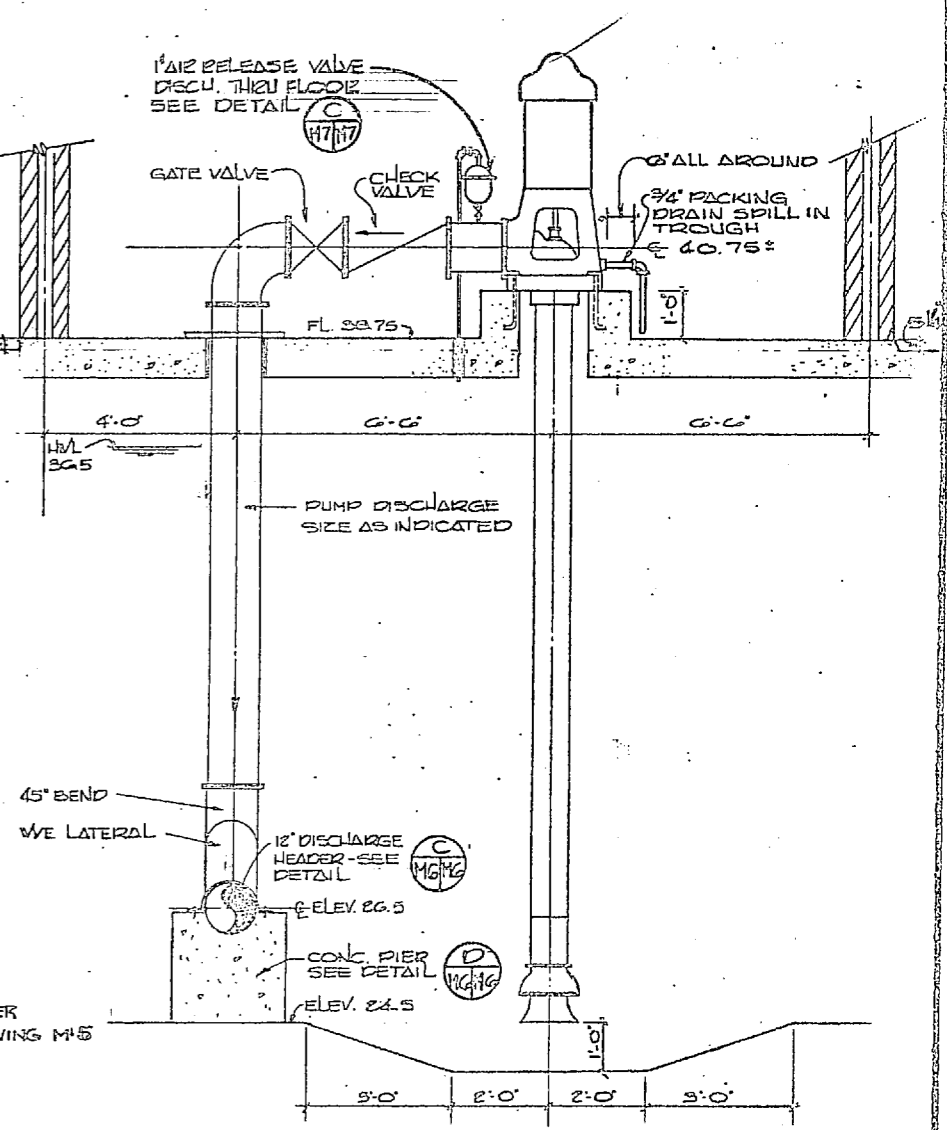
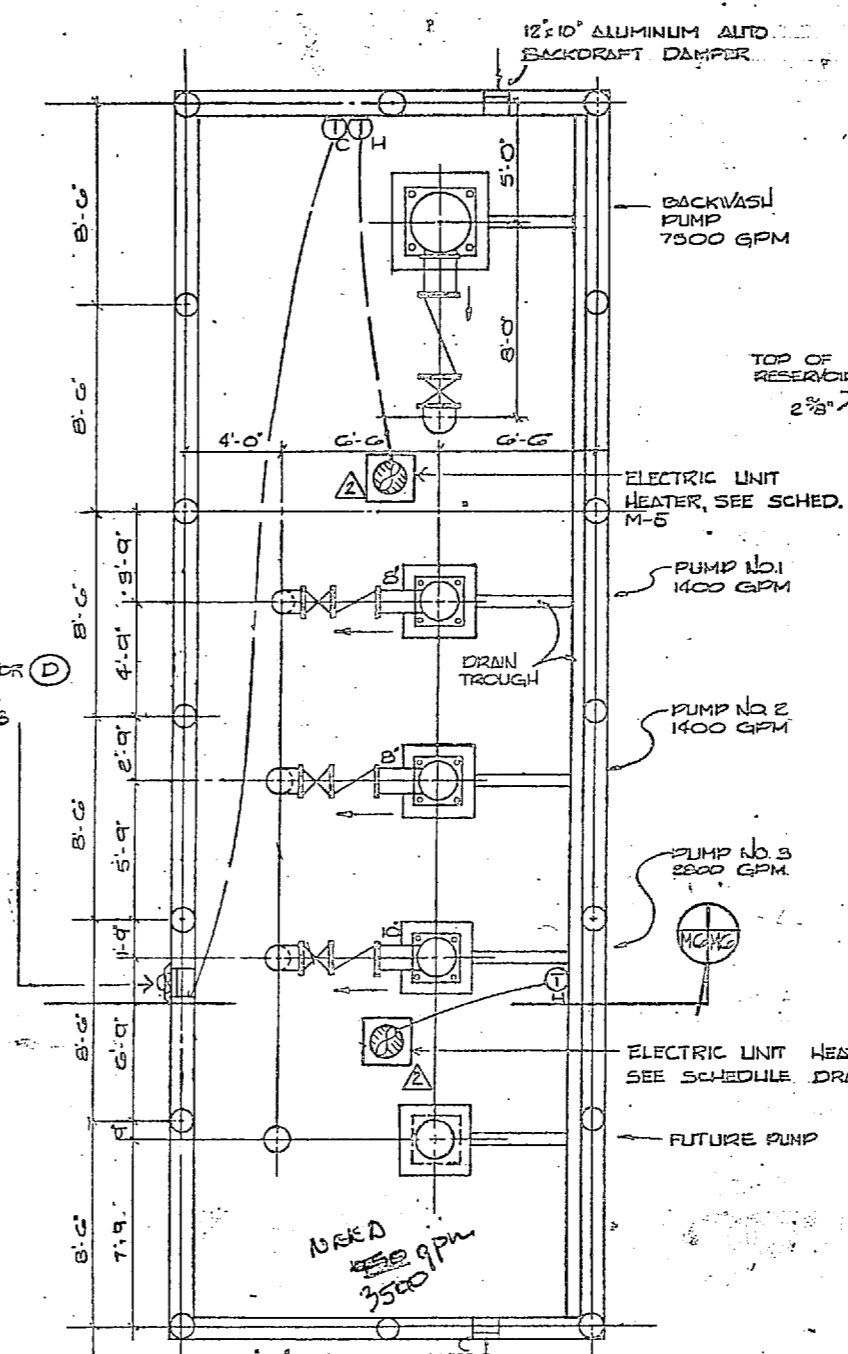
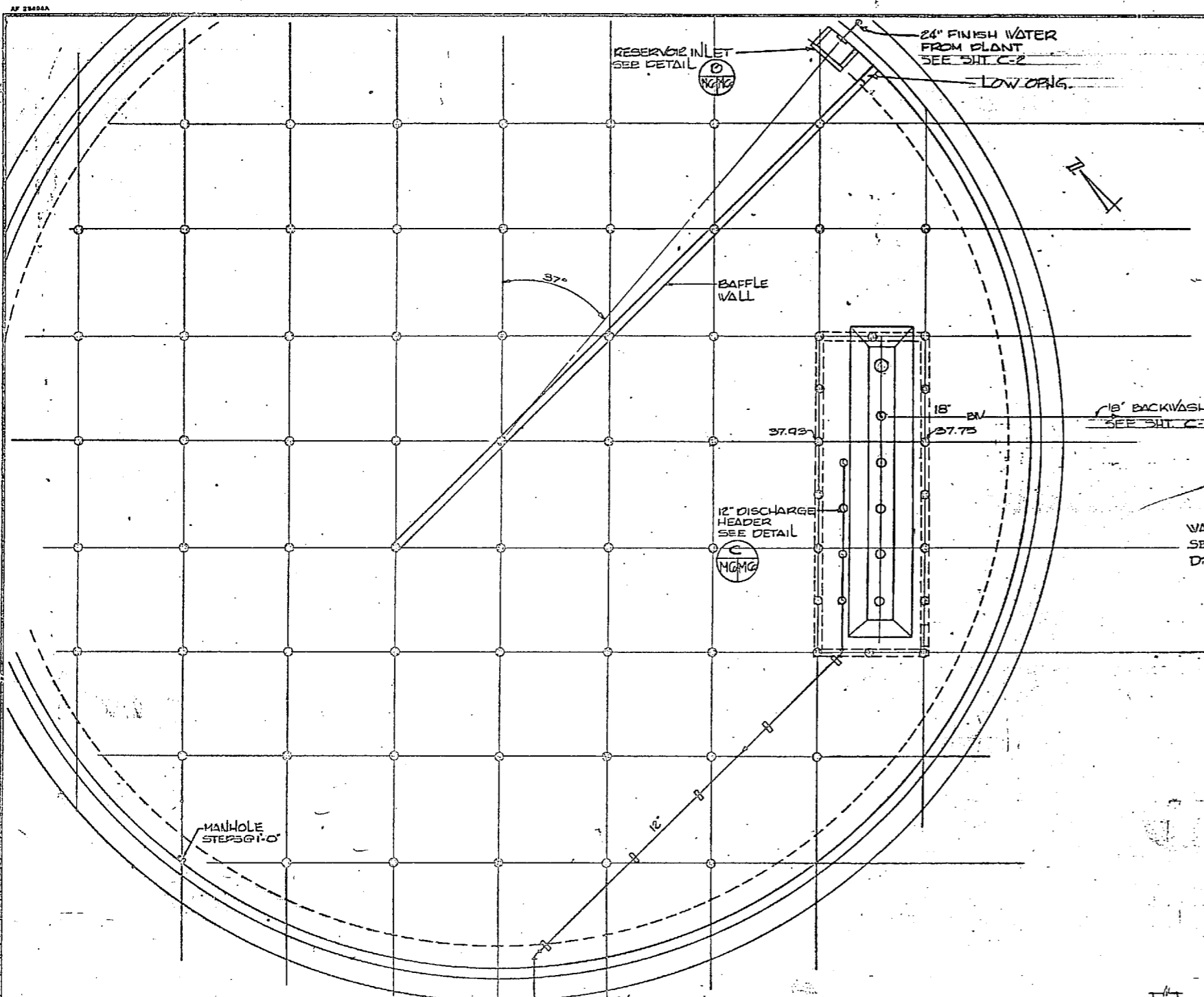
PUMP NO.	GPM	IDH FEET	2PM	HP	ELECTRICAL
1	2100	29	1200	20	30 - 460V.
2	2100	29	1200	20	30 - 460V.
3	1400	29	1200	20	30 - 460V.
4	1400	29	1200	20	30 - 460V.

M-5

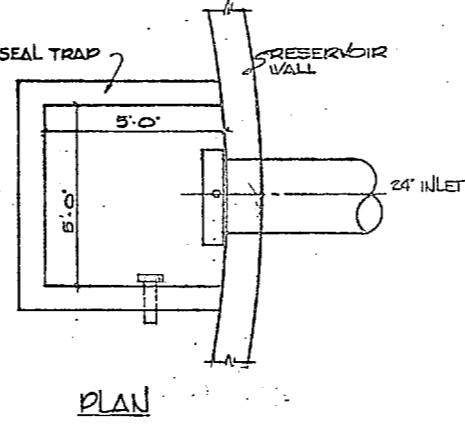
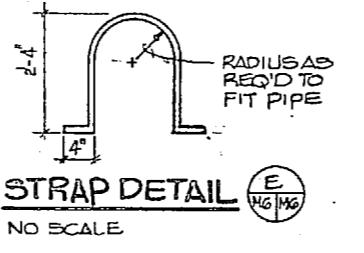
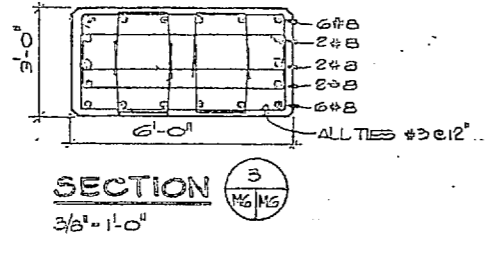
<p>HENRY VON DESER AND ASSOCIATED CONSULTING ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA</p> <p>DES. JRB OR PYT CHR. JRB PROJ. MGR. JRB CH. ENGR. JRB</p> <p>DATE: 7/2/82 ACTIVITY: SATISFACTORY</p>	<p>DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING CENTER</p> <p style="text-align: center;">ATLANTIC DIVISION</p> <p>NAVAL STATION CAMP LEJEUNE NORTH CAROLINA</p> <p style="text-align: center;">EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT</p> <p style="text-align: center;">PUMP STATION PIPING PLANS</p> <p>SCALE: AS SHOWN SPEC 05-81-1644 SHEET 37 OF 70</p>
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REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED



PIPING PLAN - FINISH WATER RESERVOIR
3/32" = 1'-0"



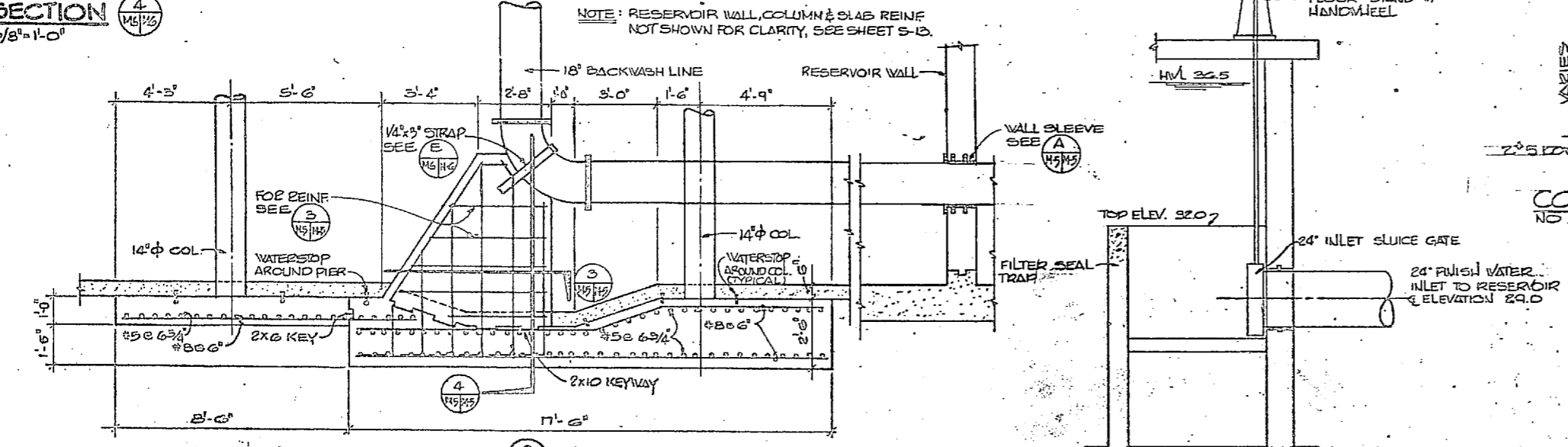
PLAN

SECTION 4
3/8" = 1'-0"

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

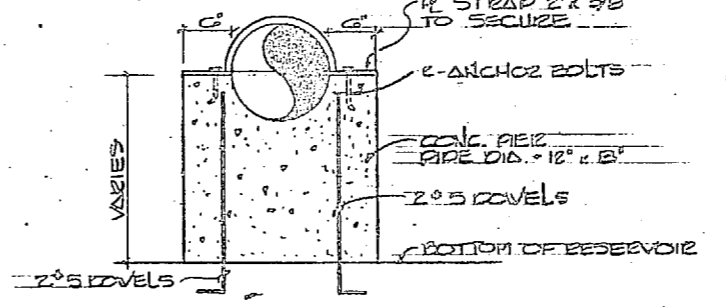
STRAP DETAIL
NO SCALE

PLAN

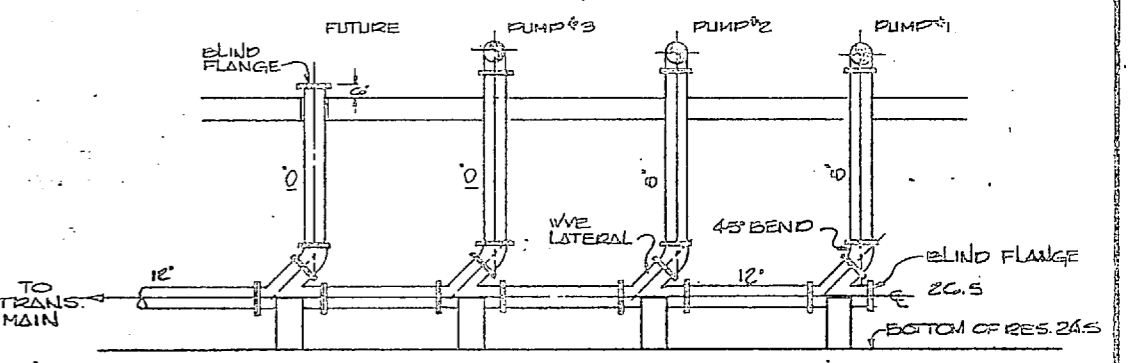


SECTION 2
3/8" = 1'-0"

SECTION INLET DETAIL
NO SCALE



CONCRETE PIER DETAIL
NO SCALE



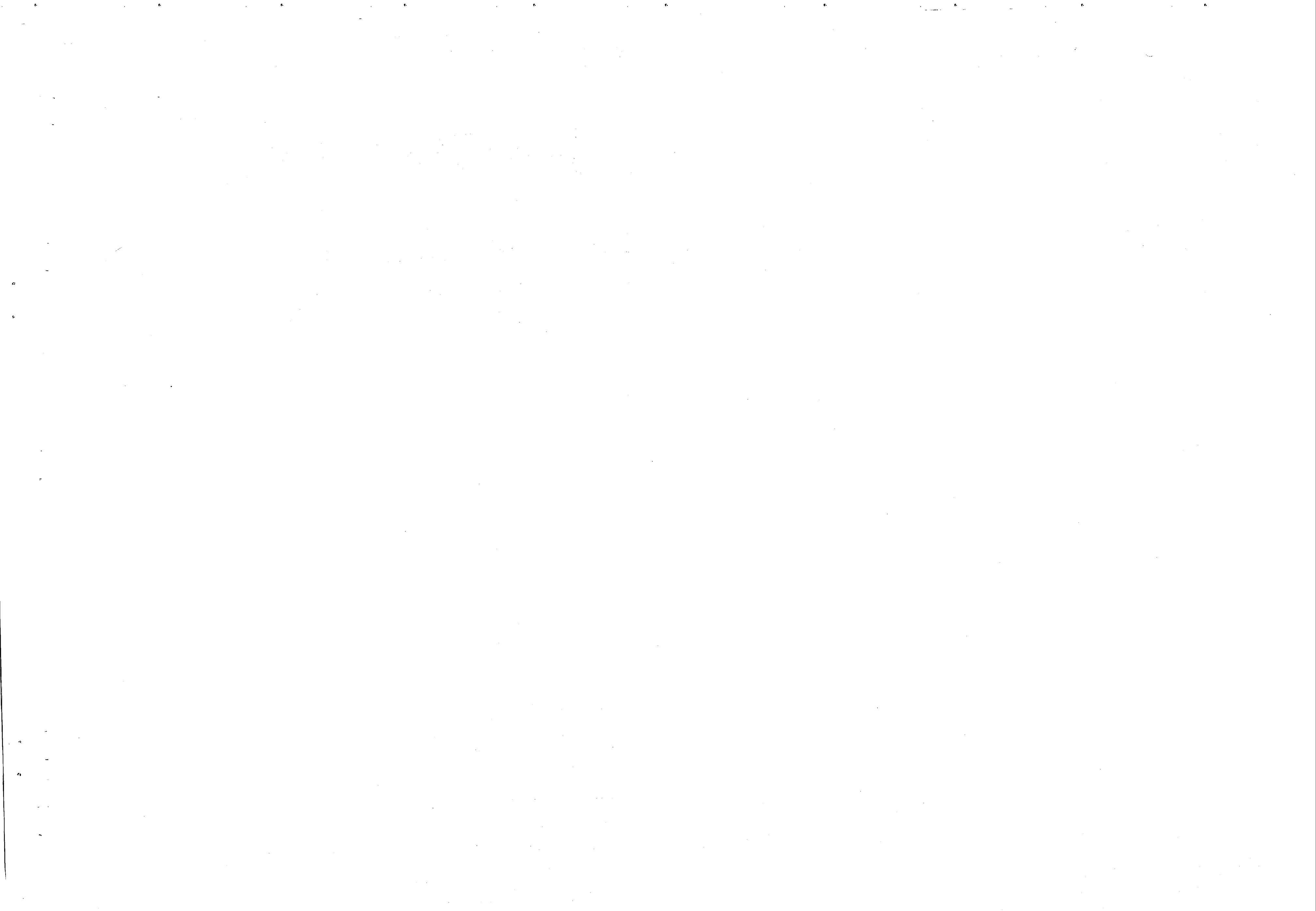
DISCHARGE HEADER DETAIL
1/4" = 1'-0"

FINISH WATER PUMP SCHEDULE					
PUMP NO.	GPM	TDH FEET	EDM	HP	ELECTRICAL
1	1400	39	1200	20	3φ - 460V
2	1400	39	1200	20	3φ - 460V
3	2800	74	1750	75	3φ - 460V
BACKWASH	1500	50	1200	125	3φ - 460V
SLUDGE TRAP	2000	175	1750	125	3φ - 460V
5-BL. TR. GR.	3500	154	1750	200	3φ - 460V

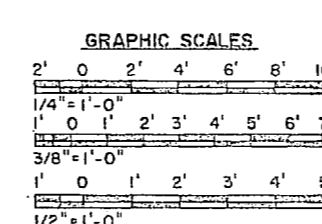
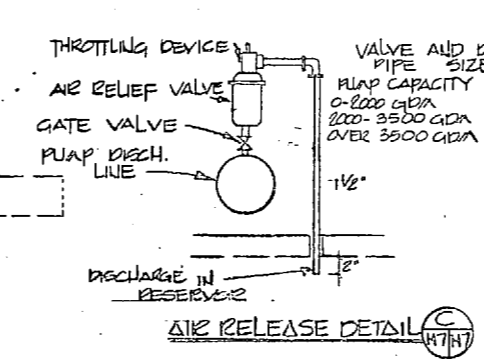
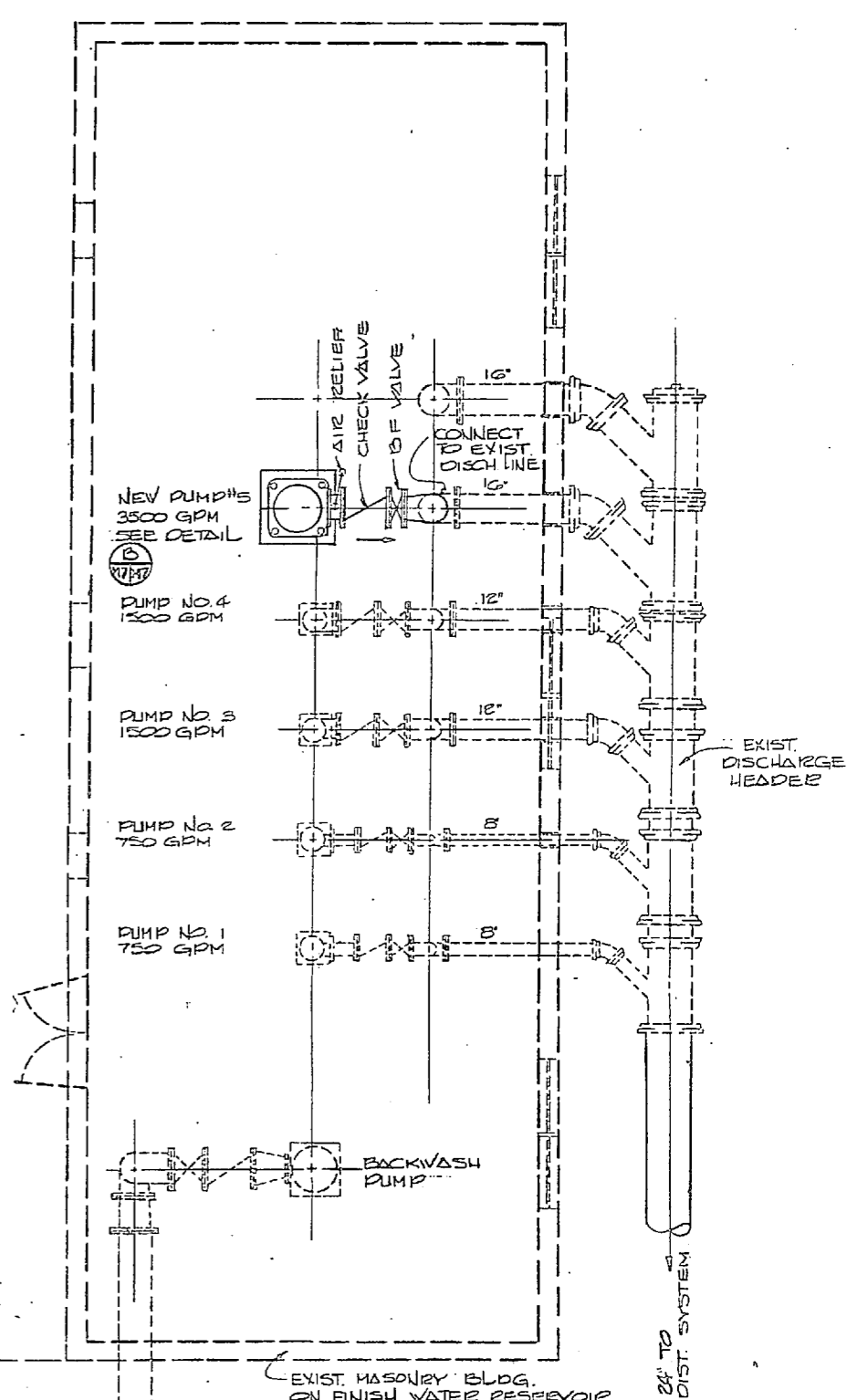
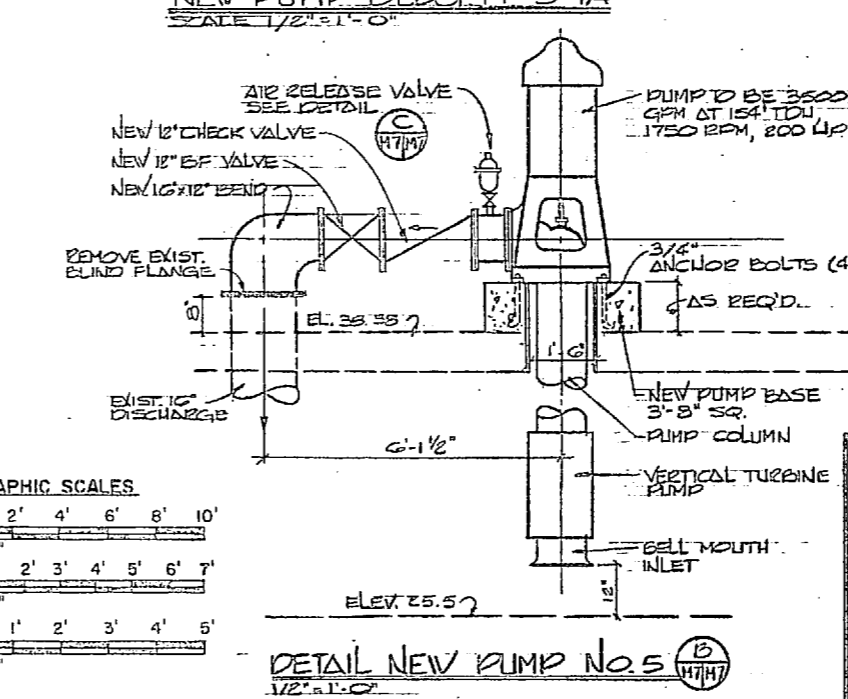
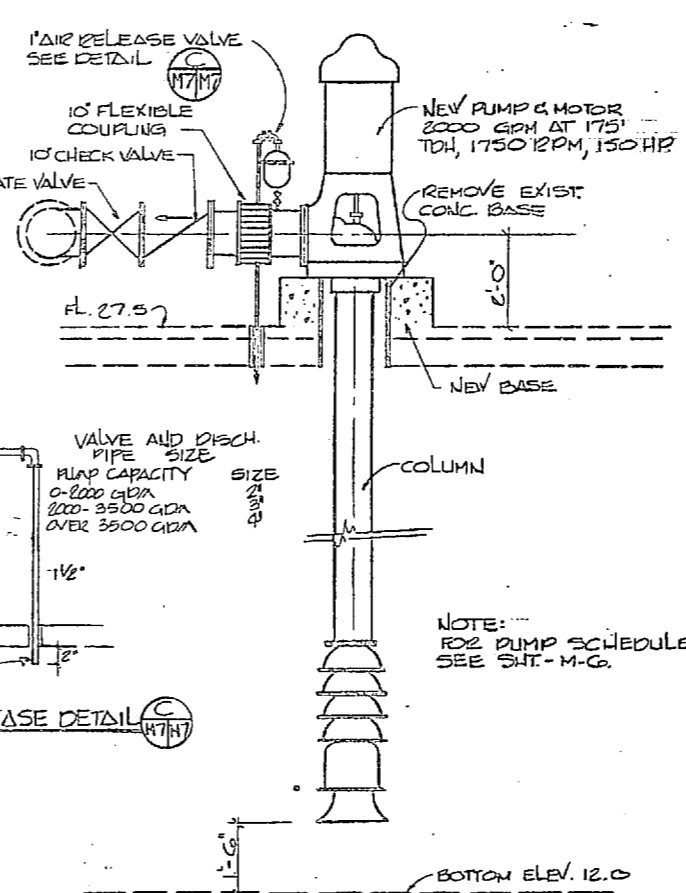
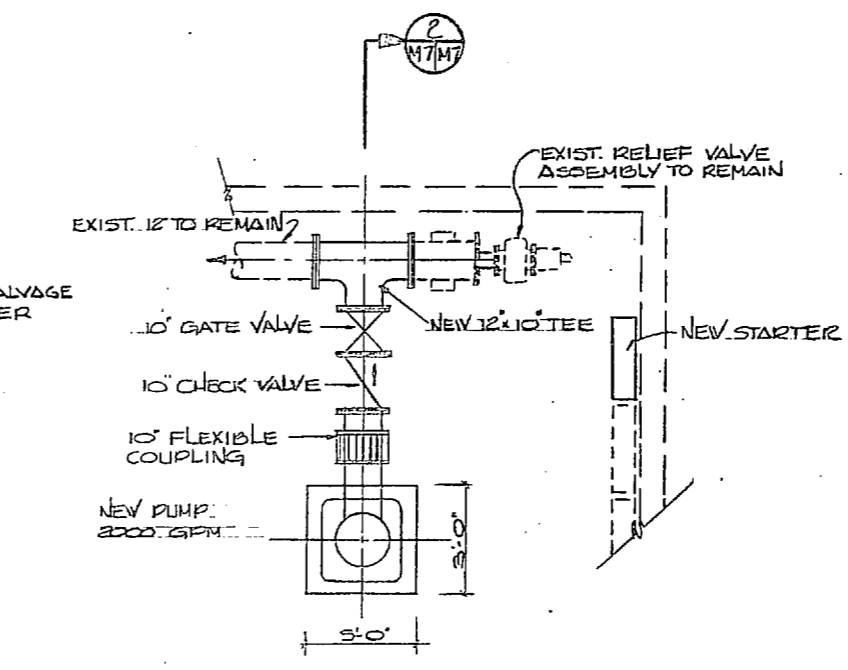
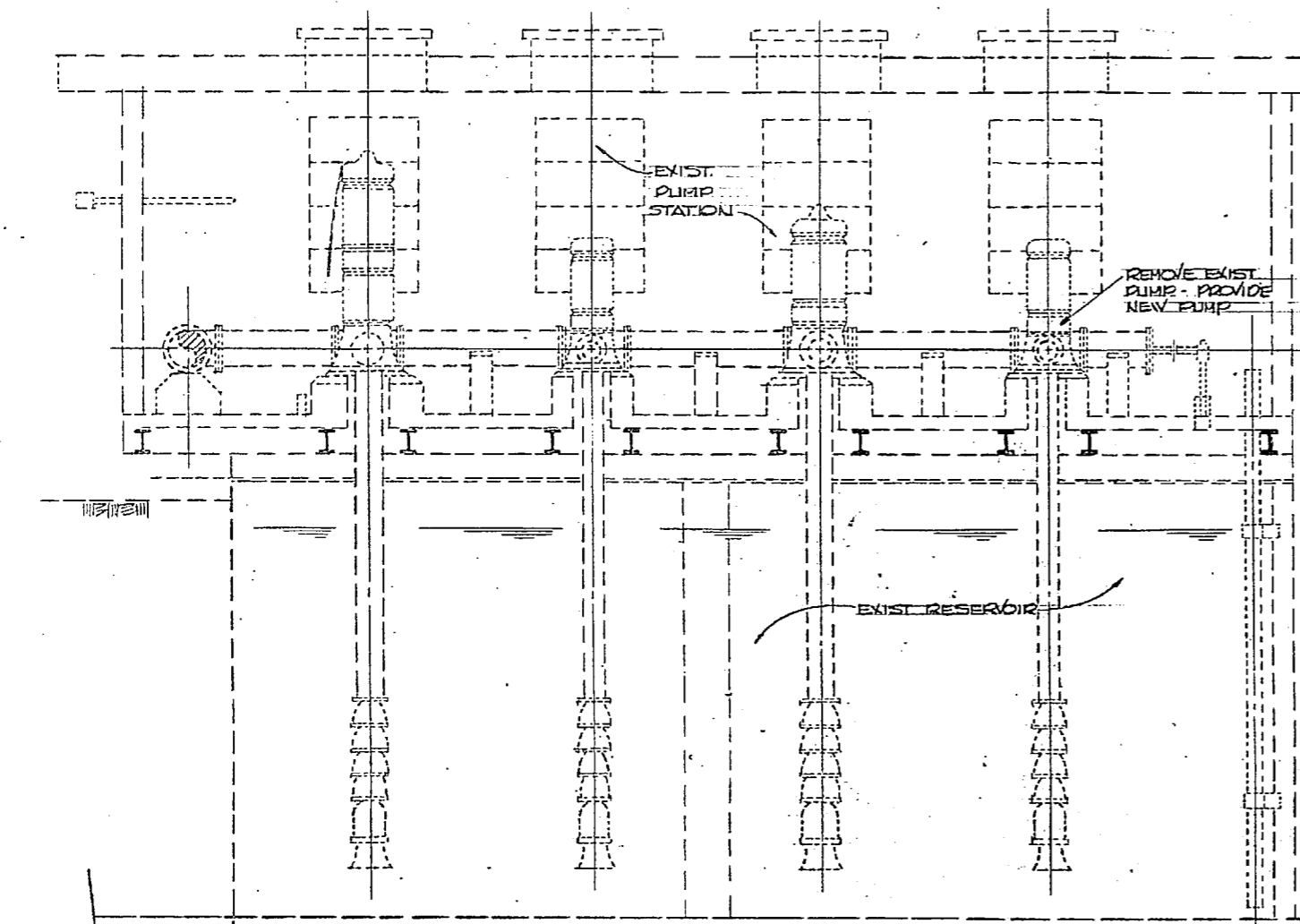
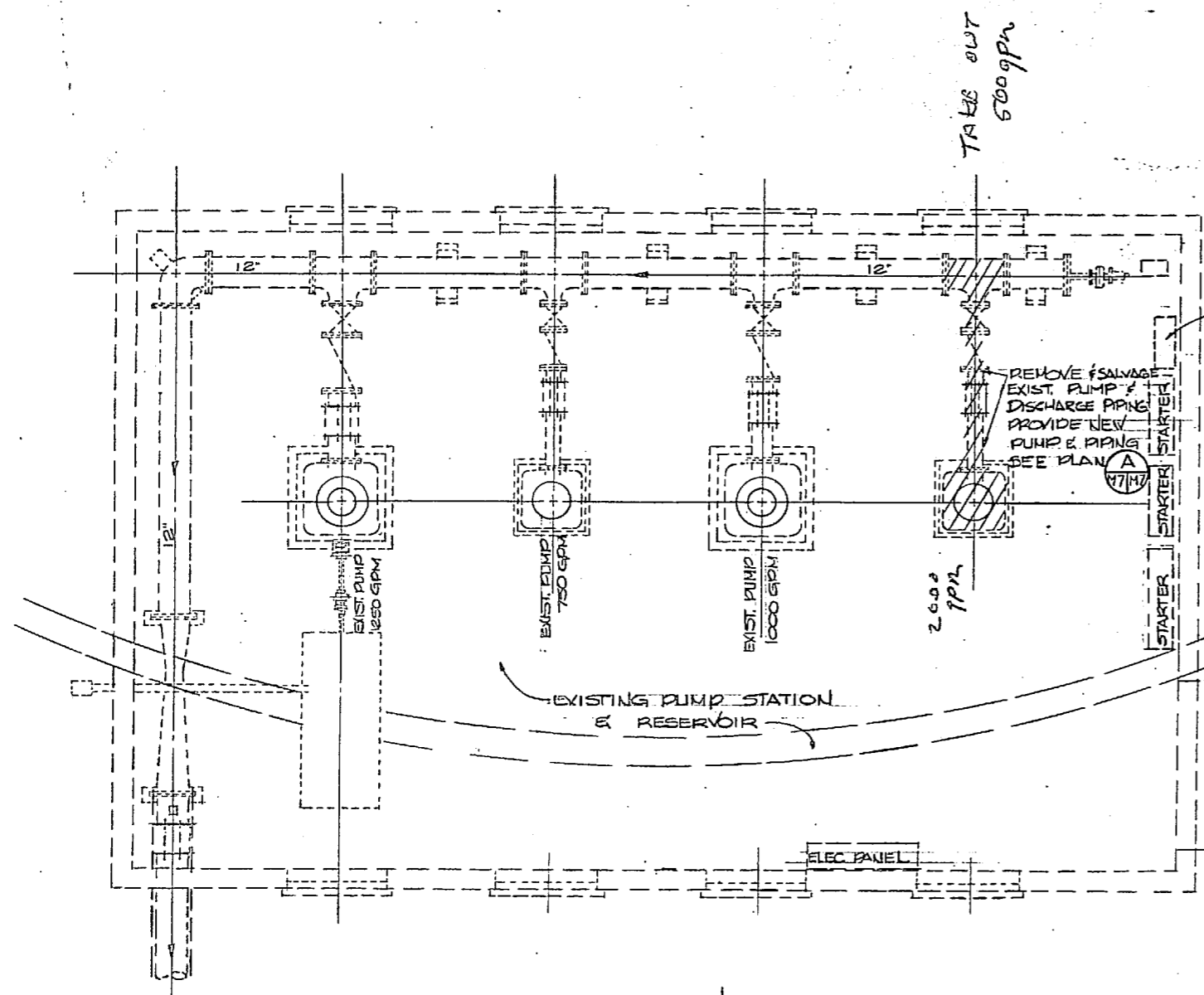
GRAPHIC SCALES	
4" = 0'	4" = 8'
2" = 0'	2" = 4'
1" = 0'	1" = 2'
1/2" = 0'	1/2" = 1'
3/8" = 0'	3/8" = 0.75'
3/16" = 0'	3/16" = 0.375'

M-6

HENRY VON OEGEN AND ASSOCIATED CONSULTING ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION CAMP LEJEUNE, NORTH CAROLINA	
DESIGNED BY: JRD DRAWN BY: JRD CHECKED BY: JRD SUBMITTED BY: JRD		NAVAL STATION: ISOLDES, VIRGINIA PROJECT: EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	
APPROVED: [Signature] DATE: 7/19/64		FINISH WATER PUMPING STATION SIZE: 30091 SHEET NO: 4107377	



REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED



HENRY VON OESSEN AND ASSOCIATES CONSULTING ENGINEERS AND PLANNERS DUBLINGTON, NORTH CAROLINA		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND	
DES. JRB		ATLANTIC DIVISION	
PROJ. MGR. JRB		NAVAL STATION	
SUBMITTED BY: [Signature]		CAMP LEJEUNE	
DATE: 2/26/64		NORTH CAROLINA	
FIRM NUMBER: [Signature]		EXPANSION OF HOLCOMB BOULEVARD	
EFO: FP, JRB		WATER TREATMENT PLANT	
NO. 111		TARAWA TERRACE PUMPING STATION	
DATE: 2/26/64		NAVFAC DRAWING NO.	
ACTIVITY - SATISFACTORY TO		4107572	
APPROVED: [Signature]		CONSTR. CONTR. NO.	
DATE: 2/26/64		N62470-81-5-1644	
FOR EFO FOR COMMANDER NAVFAC		SCALE: AS SHOWN	
		SPEC. 05-81-1644	
		SHEET 39 OF 74	
		EFO 620, 10	

M-7



REVISIONS			
SYMBOL	DESCRIPTION	DATE	APPROVED

UNIT HEATER SCHEDULE

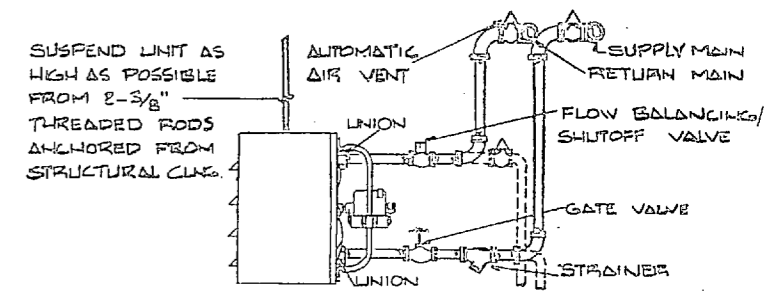
UNIT	CFM	WPD	HP	GPM	RPM	RUNOUT	TYPE	MBH
①	1311	0.69	1/8	4.96	1550	1"	HORIZONTAL	49.6
②	1311	0.69	1/8	4.96	1550	1"	HORIZONTAL	49.6
③	1479	0.55	1/8	5.59	1550	1"	HORIZONTAL	55.9
④	1479	0.55	1/8	5.59	1550	1"	HORIZONTAL	55.9
⑤	1241	0.27	1/8	4.69	850	1"	VERTICAL	46.9
⑥	1241	0.27	1/8	4.69	850	1"	VERTICAL	46.9

NOTE: ALL UNIT HEATERS SELECTED FOR 190° EWT
60° EAT & 20° WTD ACROSS COIL.
VOLTAGE FOR ALL UNITS IS 120V. 1Ø

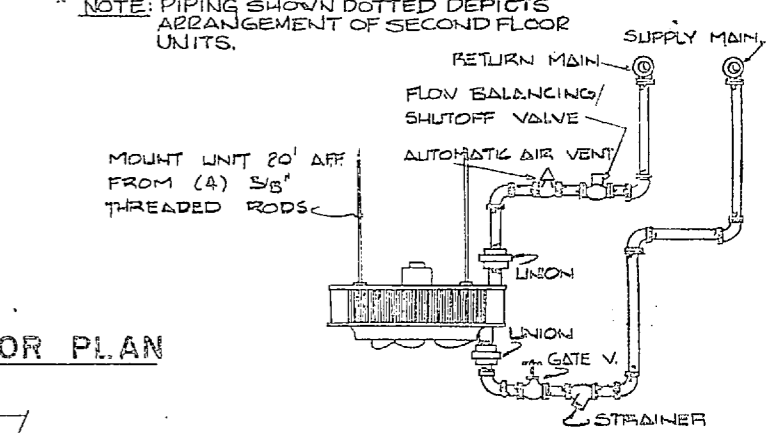
ROOF VENTILATOR SCHEDULE

UNIT	CFM	S.P. (H ₂ O)	HP	BHP	RPM	TIP SPEED	ROOF OPENING
①	2668	0.125	1/4	0.23	730	3536	20 1/2"
②	2668	0.125	1/4	0.23	730	3536	20 1/2"
③	2668	0.125	1/4	0.23	730	3536	20 1/2"
④	3181	0.125	1/2	0.36	855	4141	20 1/2"

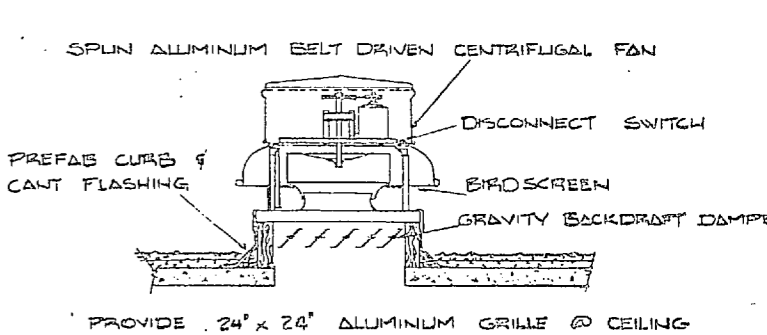
NOTE: ALL UNITS TO USE 18" DIAMETER CENTRIFUGAL ROOF EXHAUSTERS
SPUN ALUMINUM CONSTRUCTION
VOLTAGE FOR ALL UNITS IS 120 V. 1Ø



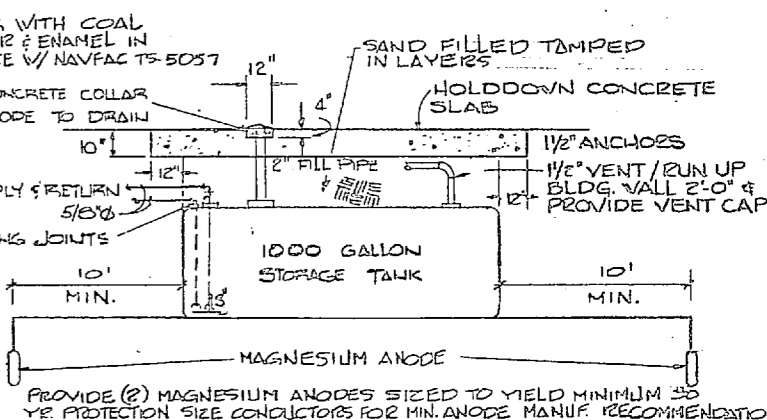
A DETAIL HORIZONTAL UNIT HEATER
NO SCALE
NOTE: PIPING SHOWN DOTTED DEPICTS ARRANGEMENT OF SECOND FLOOR UNITS.



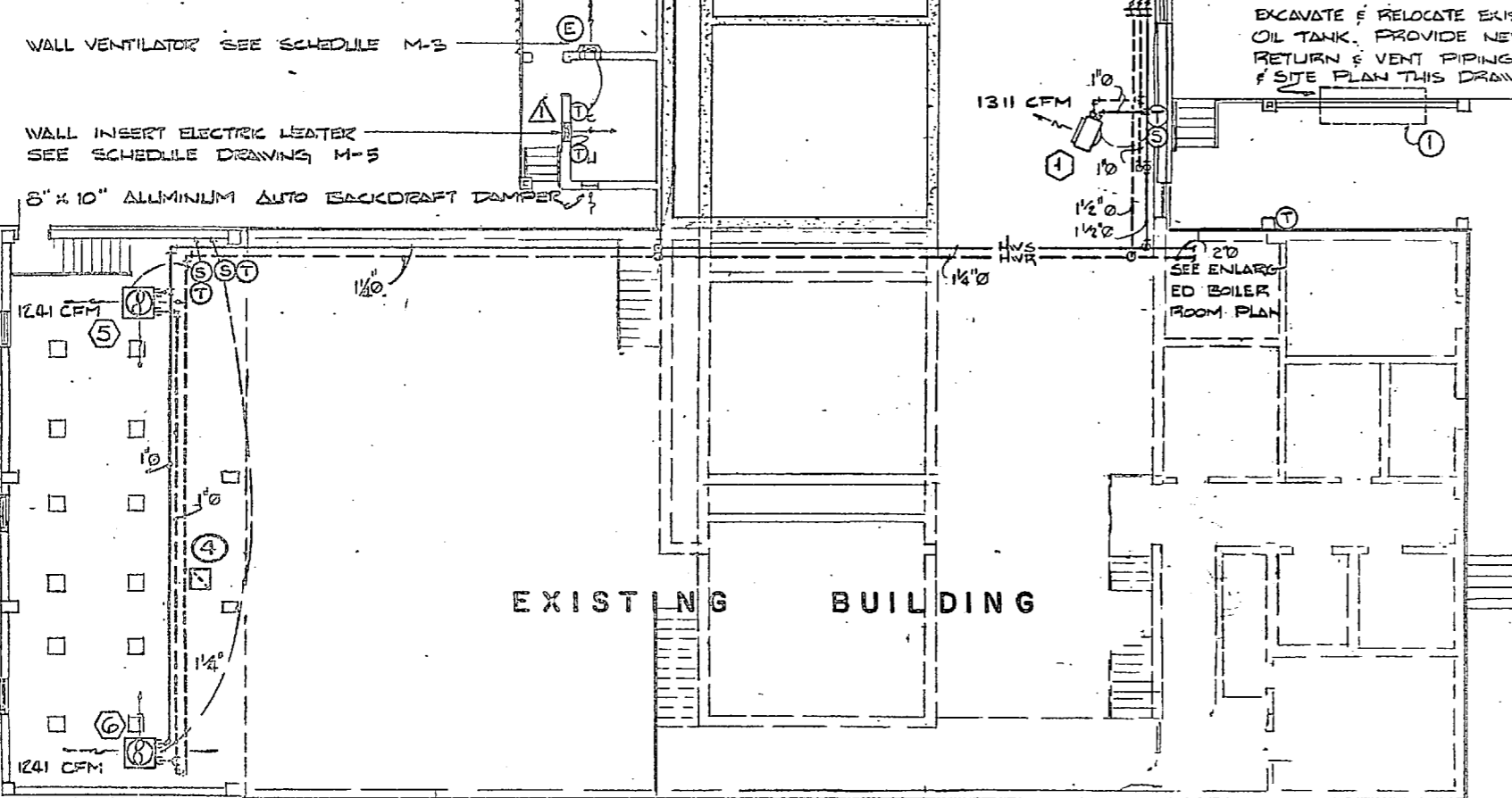
B DETAIL VERTICAL UNIT HEATER
NO SCALE



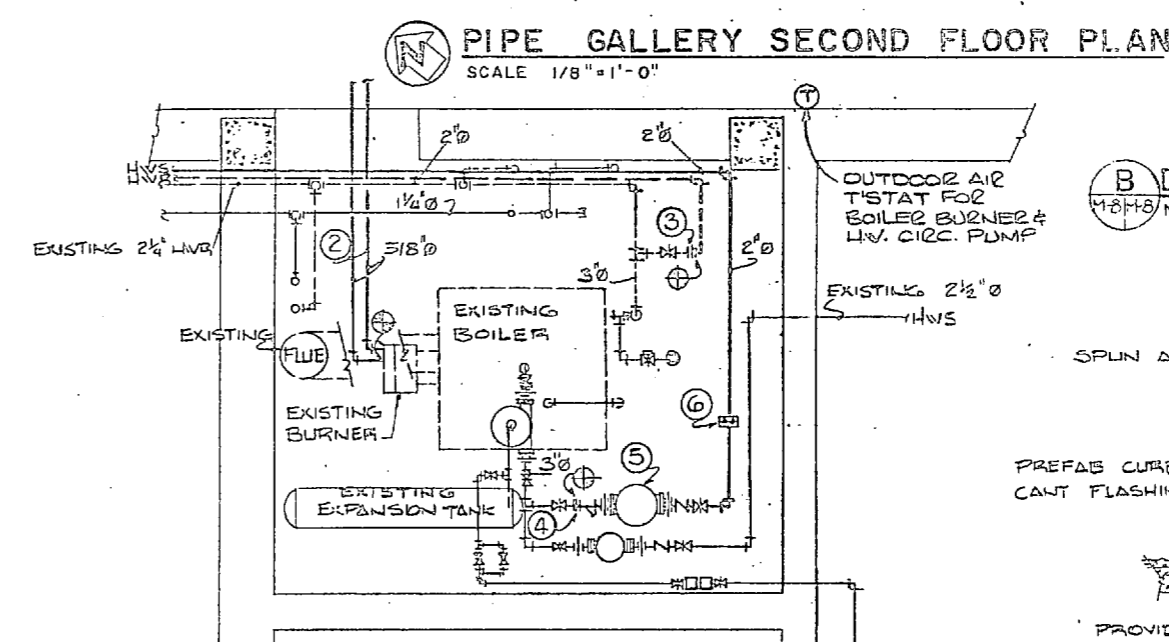
C DETAIL POWER ROOF VENTILATOR
NO SCALE



D DETAIL OIL TANK INSTALLATION
NO SCALE



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



BOILER ROOM PLAN
SCALE 1/2" = 1'-0"

KEYED NOTES

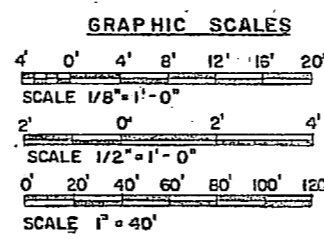
- RELOCATE EXISTING 1000 GALLON UNDERGROUND OIL STORAGE TANK SEE DETAIL 'D' THIS DRAWING.
- REMOVE EXISTING 3/8" OIL SUPPLY & RETURN LINES / PROVIDE NEW 3/8" COPPER SUPPLY & RETURN TUBING. CONNECT W/ EXISTING BURNER. (TYPE 'K' HARD DRAWN COPPER).
- CONNECT NEW 2" HW RETURN TO EXISTING HW SYSTEM / REMOVE EXISTING CAPPED NIPPLE & EXTEND NEW RETURN FROM GATE VALVE
- CONNECT NEW 2" HW SUPPLY TO EXISTING HW SYSTEM / REMOVE EXISTING CAPPED NIPPLE & EXTEND NEW SUPPLY FROM GATE VALVE
- PROVIDE NEW INLINE CENTRIFUGAL HW CIRCULATING PUMP TO PERFORM AS FOLLOWS:

GPM	FT. HEAD	BHP	HP	RPM	VOLTAGE	MIN. EFFICIENCY
3048	27'	0.39	1/2	1750	120V. 1Ø	50%

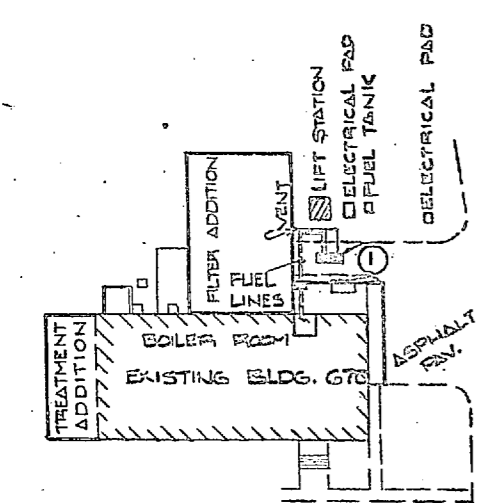
- PROVIDE INLINE BALANCING TYPE FLOW MEASURING DEVICE POSITION MINIMUM 3' DOWNSTREAM OF ELBOW. FLOW SHALL BE 30.48 GPM WHEN SYSTEM IS BALANCED.

LEGEND

- GATE VALVE
- CHECK VALVE
- GUARD PROTECTED DRAIN VALVE
- TEMP. PRESSURE RELIEF VALVE
- STRAINER
- NEW TO EXISTING POINT OF CONNECTION
- UNIT HEATER SENTINEL SWITCH MTD. 45' AFT. SINGLE POLE, 20 AMP, 120V.
- THERMOSTAT
- FLOW SWITCH



BOILER ROOM PIPING ISOMETRIC
NO SCALE



BLDG. 670 SITE PLAN
SCALE 1" = 40'

PROFESSIONAL SEAL
HENRY VON OEDEN AND ASSOCIATES
CONSULTING ENGINEERS AND PLANNERS
WILMINGTON, NORTH CAROLINA

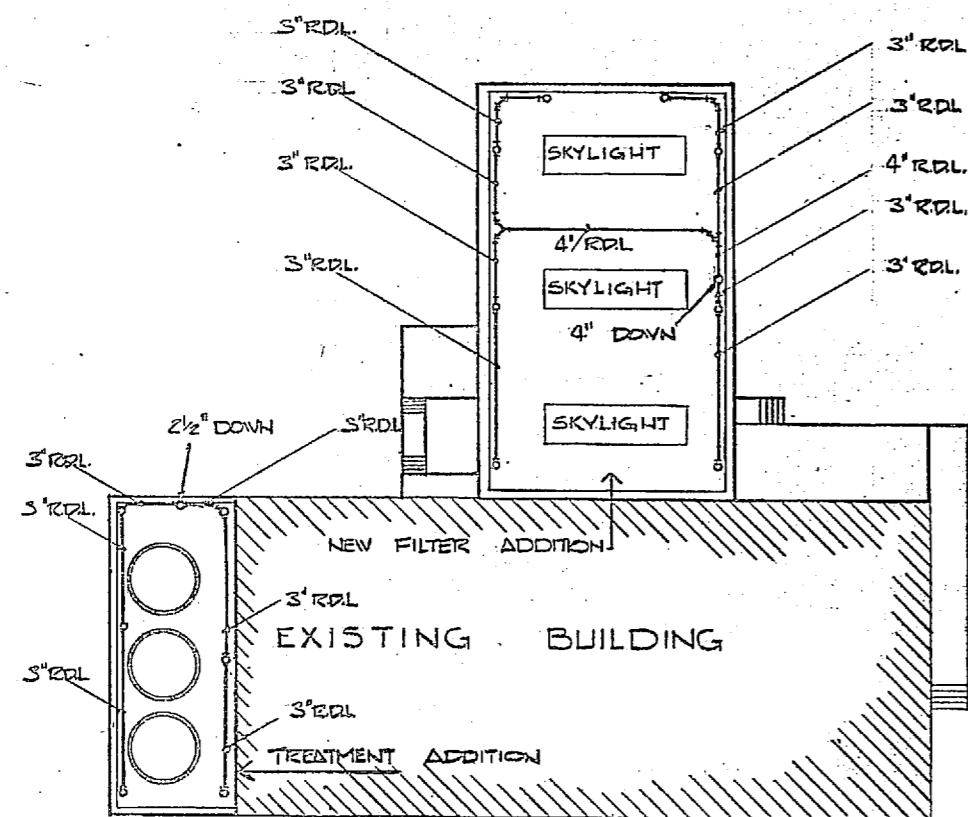
ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CAMP LEJEUNE
NORTH CAROLINA

EXPANSION OF HOLCOMB BOULEVARD
WATER TREATMENT PLANT
TREATMENT PLANT HEATING & VENTILATING PLAN

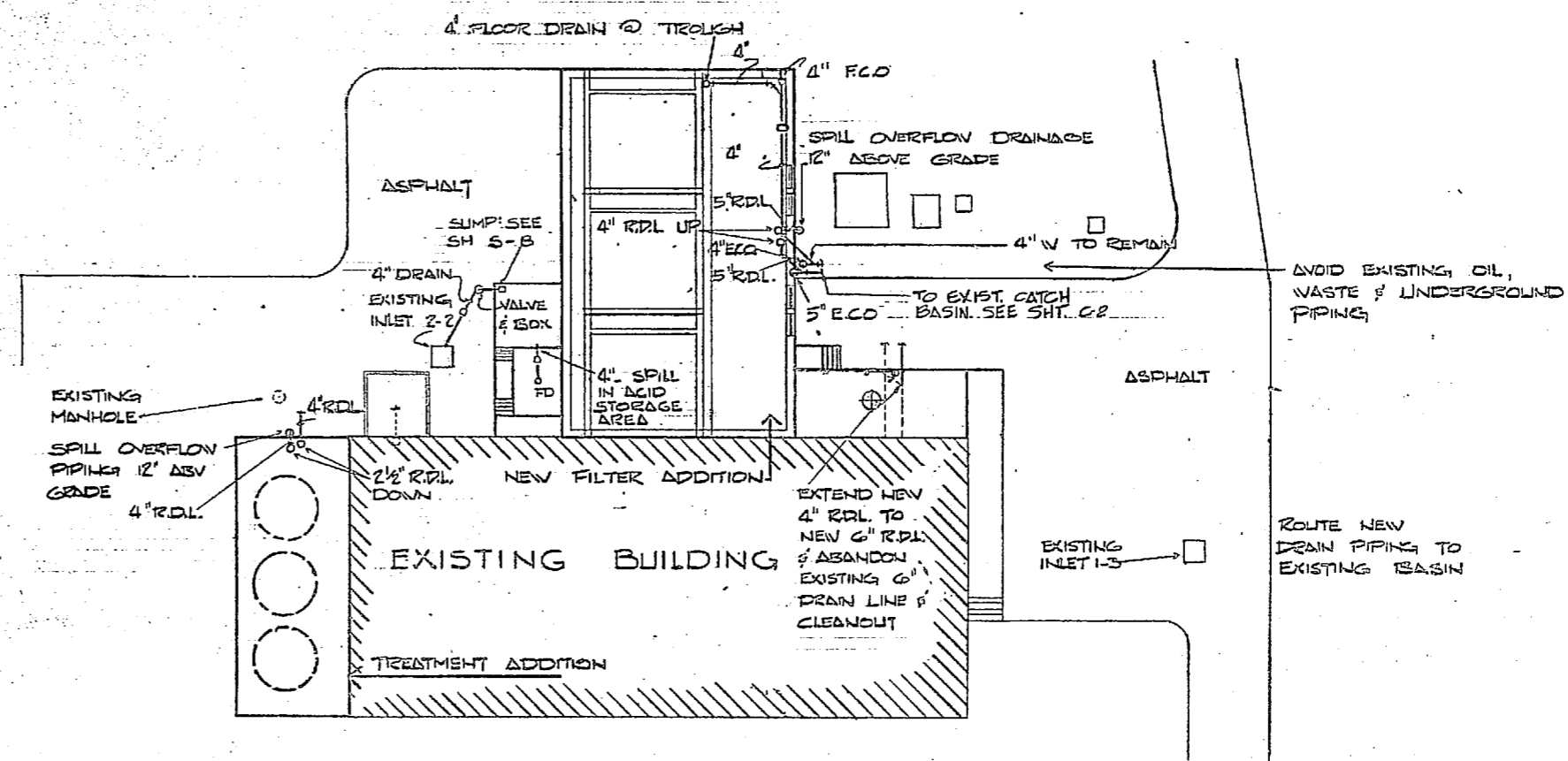
PROJECT NO. 60091
DATE: 2/6/94
SHEET 40 OF 74



REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED



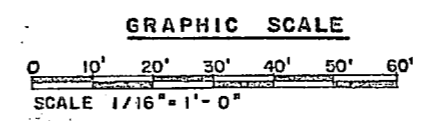
SECOND FLOOR PLAN
 BLDG. 670 (PIPING SHOWN AT CEILING)
 SCALE 1/16" = 1'-0"



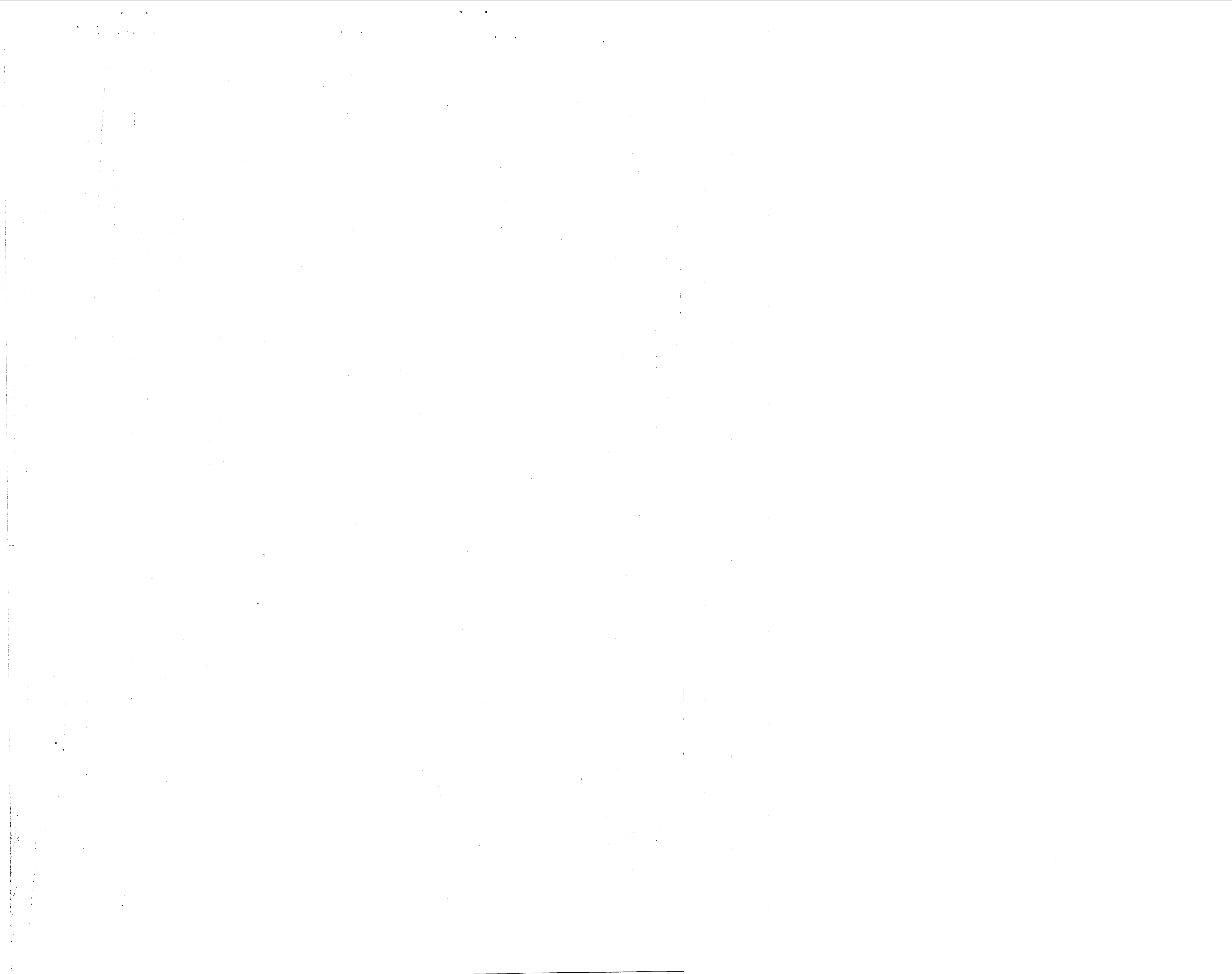
FIRST FLOOR & PREMISES PLAN
 BLDG. 670
 SCALE 1/16" = 1'-0"

PLUMBING LEGEND

- D— NEW DRAIN LINE
- NEW ROOF DRAIN LEADER
- NEW OVERFLOW ROOF DRAIN LEADER
- EXISTING LINE TO REMAIN
- EXISTING LINE, ABANDON
- ⊕ POINT OF CONNECTION NEW TO EXISTING
- ⊙ CLEANOUT
- ROOF DRAIN
- OVERFLOW ROOF DRAIN
- R.D.L. ROOF DRAIN LEADER
- F.C.O. FLOOR CLEANOUT
- E.C.O. EXTERIOR CLEANOUT



		M-9	
		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NAVAL STATION NORFOLK, VIRGINIA CAMP LEJEUNE NORTH CAROLINA	
HENRY VON DEBEN AND ASSOCIATES CONSULTING ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA		DES. TMJ/JRB CH ENGR. JRB SUBMITTED BY: <i>[Signature]</i> DATE: <i>[Date]</i> FIRM VENDOR: <i>[Signature]</i> PRINCIPAL EFD: PFL/STW RVD <i>[Signature]</i> HD: ALLEN DIR <i>[Signature]</i>	
APPROVED: <i>[Signature]</i> DATE: <i>[Date]</i> ACTIVITY: SATISFACTORY TO: <i>[Signature]</i> DATE: <i>[Date]</i> APPROVED: <i>[Signature]</i> DATE: <i>[Date]</i> FOR STD FOR COMBASSET NAVFAC		EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT TREATMENT PLANT PLUMBING PLAN SIZE: 80091 CODE IDENT. NO.: 8107574 CONSTN. CONTR. NO.: NG2470-81-B-16-2 SCALE: AS SHOWN SPEC. 05-81-1644 SHEET 41 OF 74 EFD DWS NO. 207574	



REVISIONS			
SY#	DESCRIPTION	DATE	APPROVED

RAW WATER RES. LEVEL ELEV. FT.	RISING WATER LEVEL READ-UP	FALLING WATER LEVEL READ-DOWN
30.75	HIGH WATER ALARM	
30.5	STOP PUMP #3	STOP HIGH WATER ALARM
30.0	STOP PUMP #1, START #3	START PUMP #3
29.5	STOP PUMPS #3&4, START #1	STOP PUMP #3, START PUMP #1
29.0	STOP PUMP #2, START #3	STOP PUMP #1, START PUMPS #3 & #4
28.5	STOP LV ALARM	STOP PUMP #3, START PUMP #2
28.0		LOW WATER ALARM
27.0	RESTORE BLDG. G71 PUMPS	
26.0	RESTORE TR. MAIN & BV PUMPS	BLDG. G71 BACKWASH & SERVICE PUMP SHUTDOWN
25.0		TR. MAIN & BACKWASH PUMP SHUTDOWN

NOTE: PUMPS 3 & 4 TO BE MANUALLY ALTERNATED
 PUMPS 1 & 2 TO BE MANUALLY ALTERNATED
 PUMPS 3 & 4 TO BE AUTOMATICALLY ALTERNATED
 * OPERATOR COMMANDS SELECTION OF PARADISE PT., BEEKLEY MANOR, OR HIGHWAY PARK ELEVATED TANK

SELECTED ELEV. TANK LEVEL ELEVATION - FT.	RISING WATER LEVEL READ-UP	FALLING WATER LEVEL READ-DOWN
161.5	HIGH WATER ALARM	
161.0	STOP PUMP #102&2	STOP HIGH WATER LEVEL ALARM
159.0	STOP PUMP #3 (A), START #102 #2	START PUMP #102 #2
157.5	STOP PUMP #4 (B)	STOP PUMP #102, START PUMP #3 (A)
156.0	STOP PUMP #3, START #3 & 4	START PUMP #4 (B)
154.0		STOP PUMP #3 & 4, START PUMP #5
152.0	STOP LOW WATER ALARM	
151.0		LOW WATER ALARM

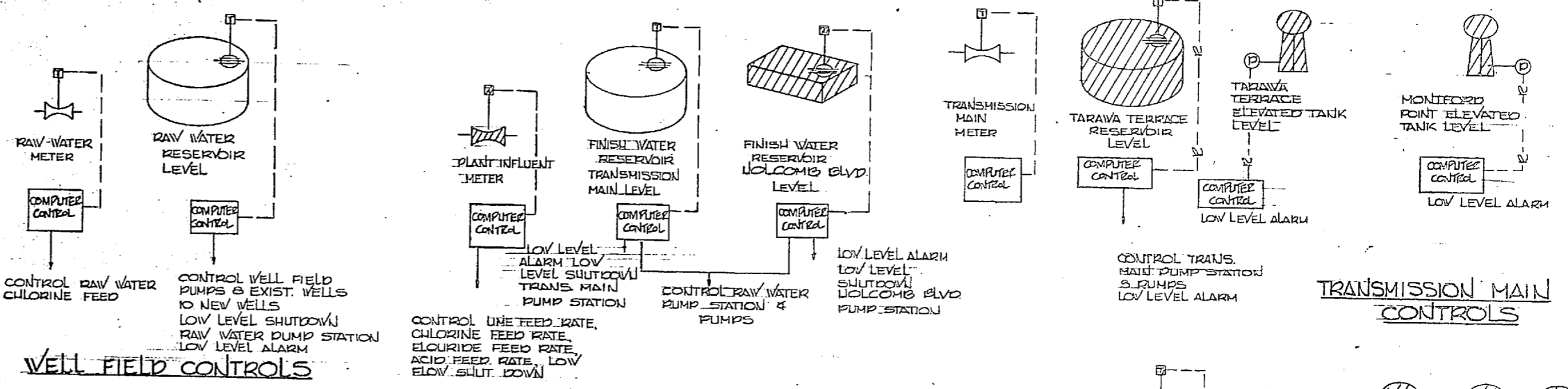
NOTE: PUMPS 1, 2, 3 & 4 ARE EXISTING
 PUMPS 1 & 2 TO BE AUTOMATICALLY ALTERNATED

RAW WATER RES. LEVEL ELEV. - FT.	RISING WATER LEVEL READ-UP	FALLING WATER LEVEL READ-DOWN
42.0	HIGH WATER ALARM	
41.5	STOP STEP 1	STOP HIGH WATER ALARM
41.0	STOP STEP 2	START STEP 1
40.5	STOP STEP 3	START STEP 2
40.0	STOP STEP 4	START STEP 3
39.5		START STEP 4
36.5	STOP LOW WATER ALARM	
36.0		LOW WATER ALARM
28.0	RESTART BV PUMPS	RAW WATER PUMP SHUTDOWN

TARAWA TERRACE RESERVOIR LEVEL ELEV. - FT.	RISING WATER LEVEL READ-UP	FALLING WATER LEVEL READ-DOWN
21.5	HIGH WATER ALARM	
21.0	STOP PUMP #102&2	STOP HIGH WATER ALARM
20.5	STOP PUMPS #3, START #102 #2	START PUMP #102 #2
20.0		STOP PUMPS #3, START #3
19.0	STOP LOW WATER ALARM	
15.0	RESTART BLDG. G71 PUMP	LOW WATER ALARM
14.0		BLDG. G71 PUMP SHUTDOWN

NOTE: PUMPS #1 & #2 TO BE AUTOMATICALLY ALTERNATED

METER	MAIN SIZE	THROAT SIZE	MAXIMUM FLOW	MINIMUM FLOW	MAXIMUM DIFFERENTIAL
RAW WATER	16"	9.0"	7.2 MGD	1.0 MGD	100 INCHES
TR. MAIN	12"	7.2"	4.0 MGD	2.0 MGD	100 INCHES

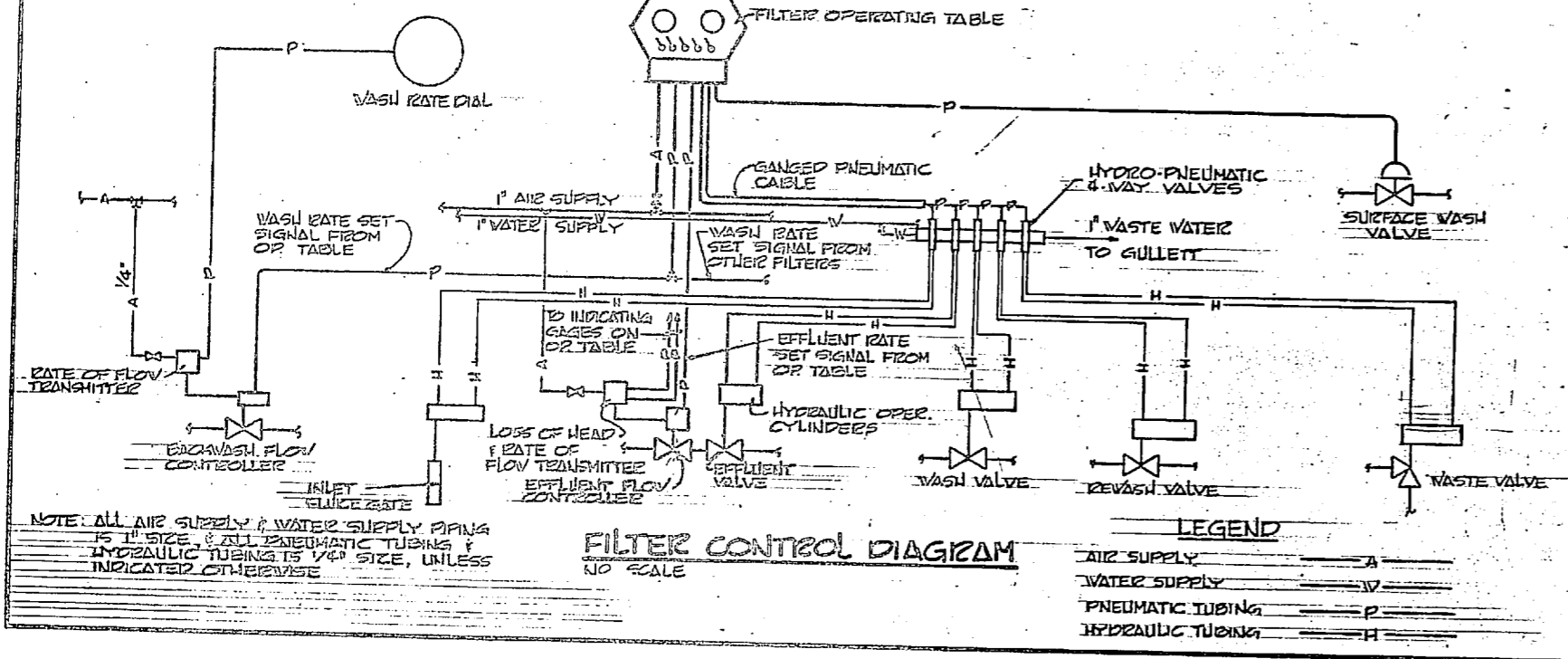
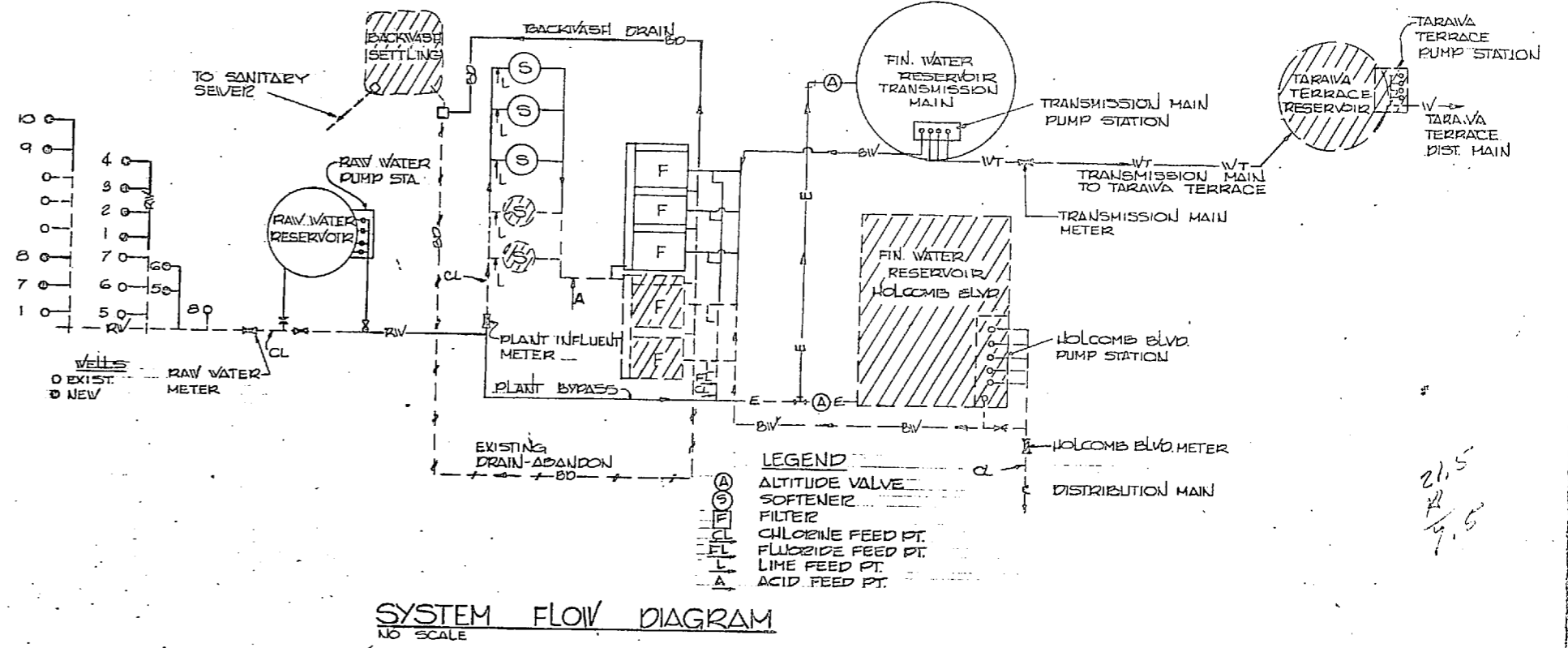


SYSTEM CONTROLS/INSTRUMENTATION

NOTE: ALL INDICATOR-RECORDER DEVICES LOCATED IN THE MAIN CONTROL PANEL IN THE TREATMENT PLANT OFFICE.

LEGEND

- NEW DEVICE/STRUCTURE
- ▨ EXIST. DEVICE/STRUCTURE
- LOCAL (HARDWIRE) SIGNAL PATH
- - - REMOTE (RADIO) SIGNAL PATH
- ⊙ PRESSURE OPERATED LEVEL TRANSMITTER
- ⊞ TRANSMITTER



NOTE: ALL AIR SUPPLY & WATER SUPPLY PIPING IS 1/2" SIZE & ALL PNEUMATIC TUBING & HYDRAULIC TUBING IS 1/4" SIZE, UNLESS INDICATED OTHERWISE

LEGEND

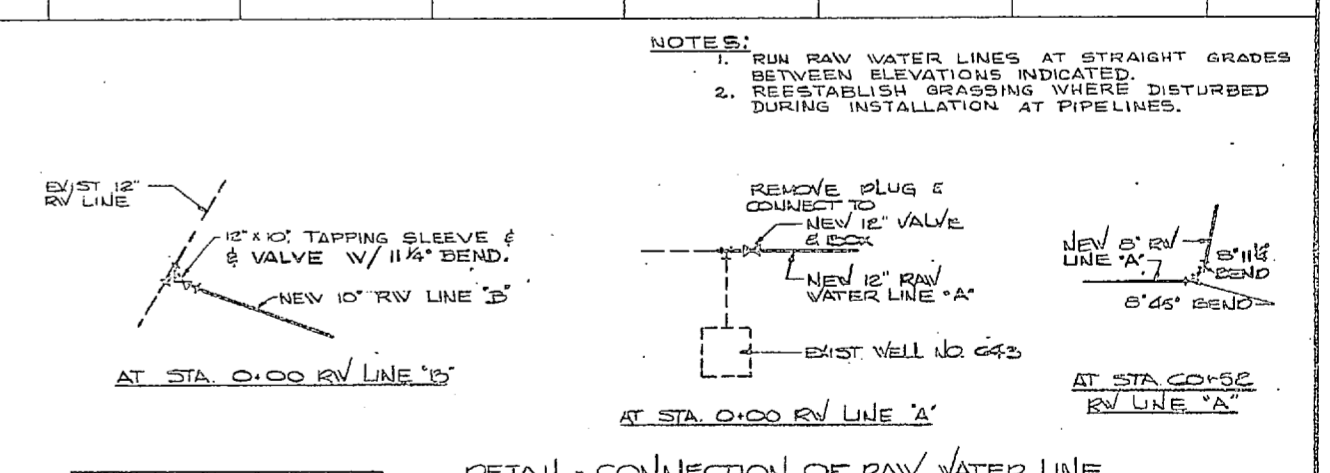
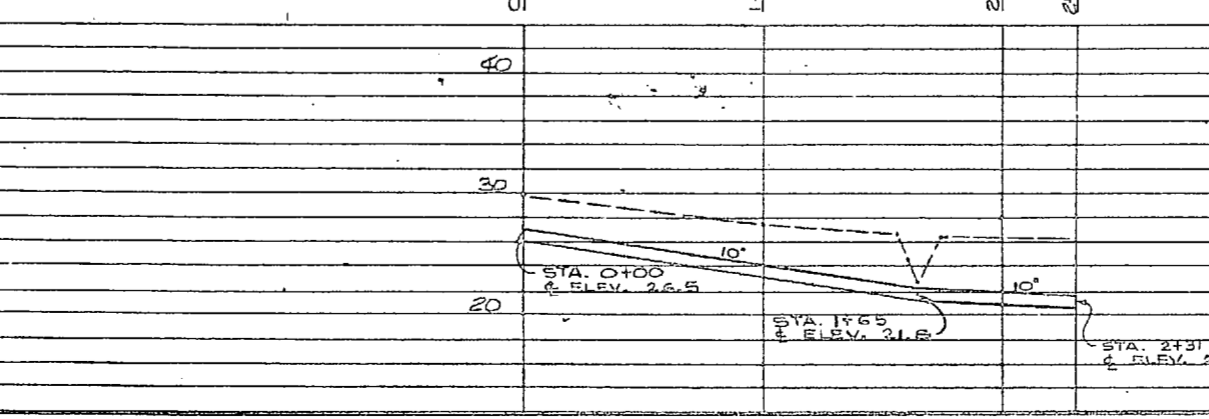
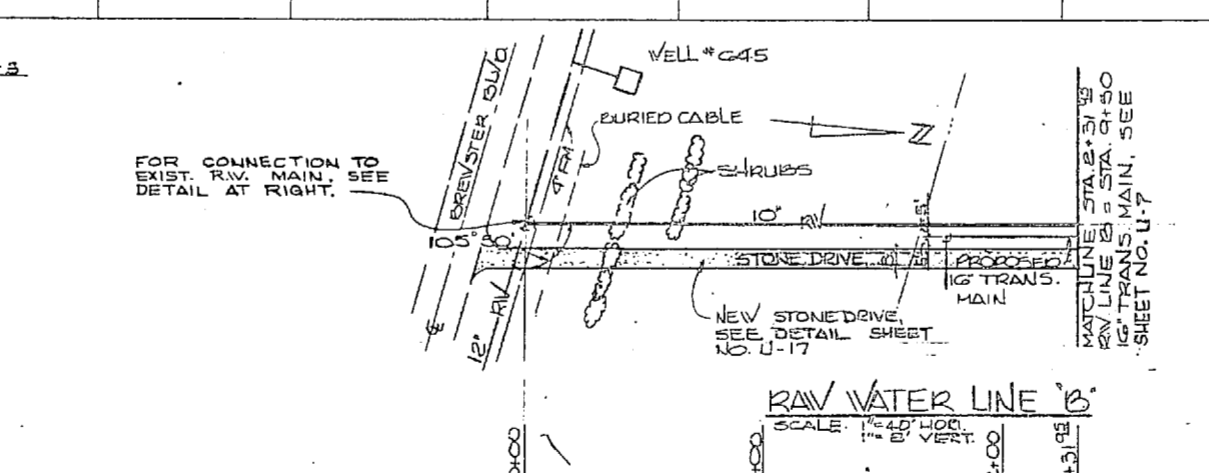
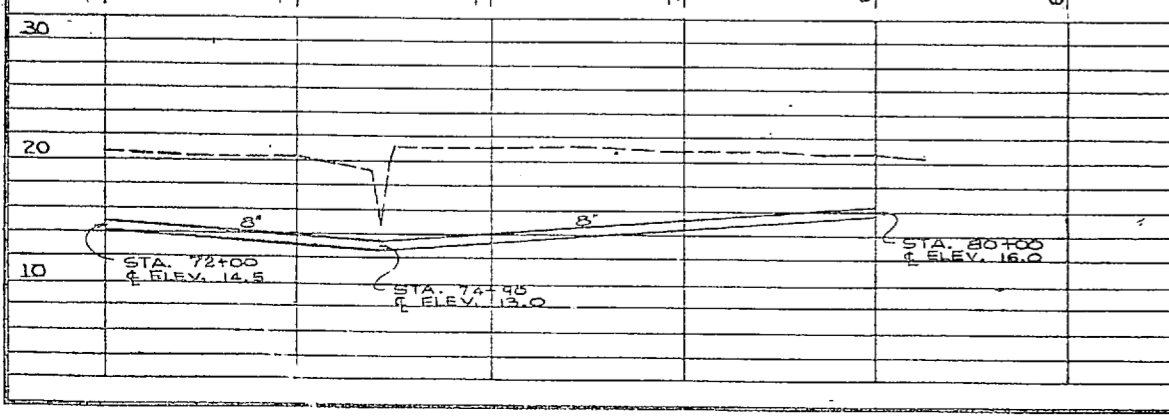
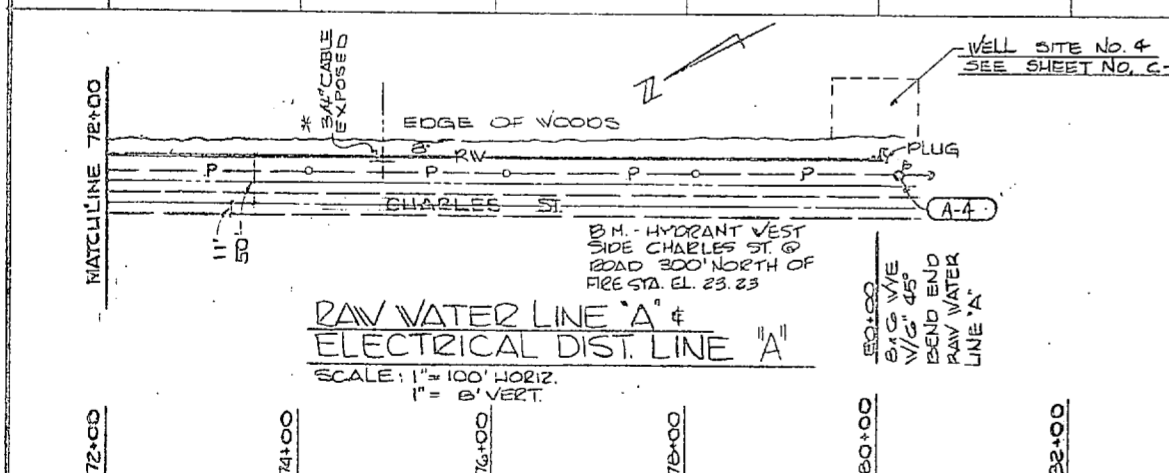
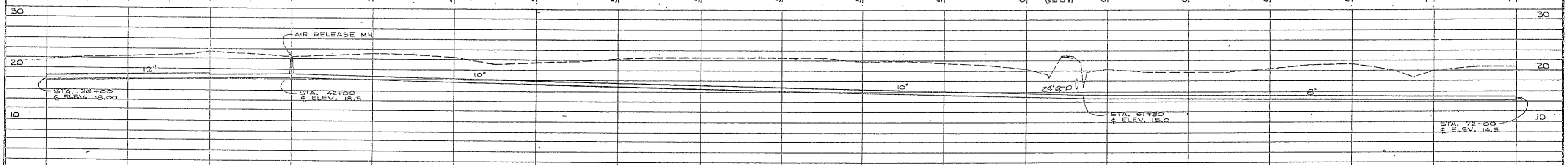
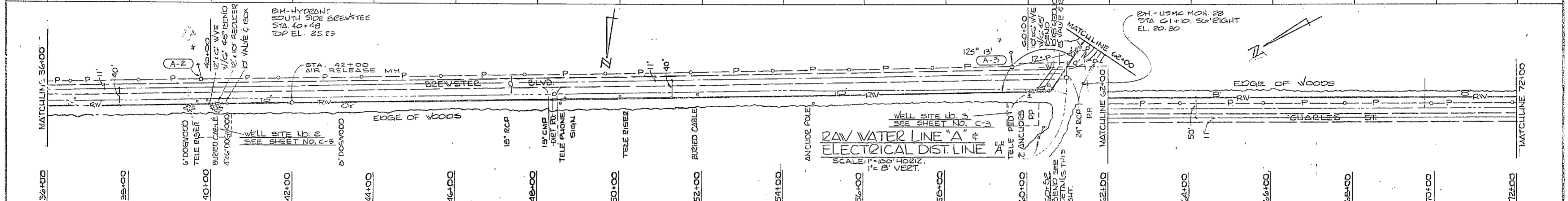
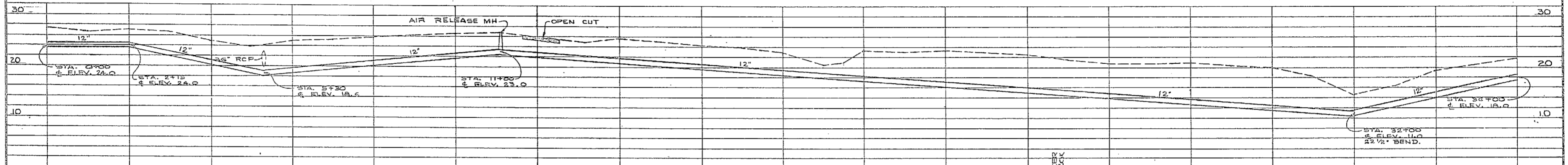
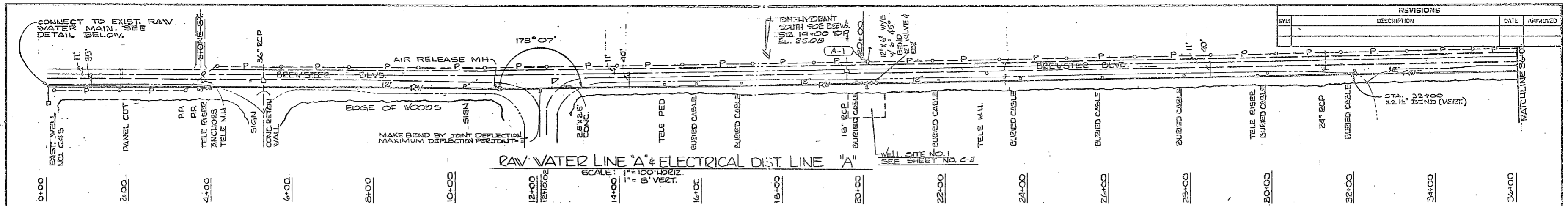
- AIR SUPPLY
- WATER SUPPLY
- PNEUMATIC TUBING
- HYDRAULIC TUBING



M-10	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND	
NAVAL STATION ATLANTIC DIVISION	
CAMP LEJEUNE NORTH CAROLINA	
EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	
CONTROL & FLOW DIAGRAMS	
DATE: 8/2/75	SCALE: AS SHOWN
PROJECT NO: 60091	NAVY PROJECT NO: NS2470-81-9-1644
DATE: 8/2/75	SCALE: AS SHOWN



REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED



GRAPHIC SCALES

VERTICAL
 0' 2' 4' 8' 16'
 1" = 8'

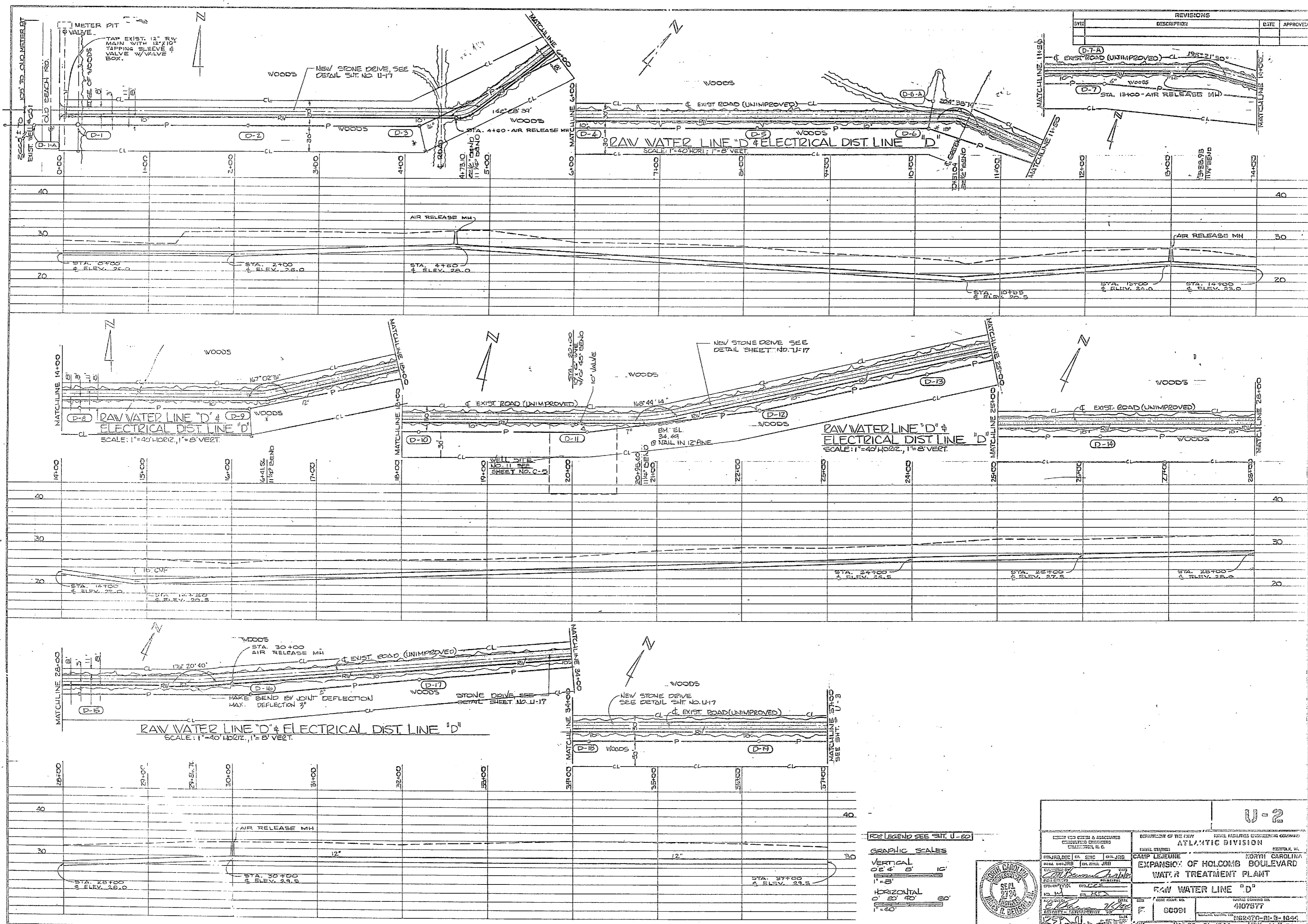
HORIZONTAL
 0' 20' 40'
 1" = 40'

HORIZONTAL
 0' 50' 100'
 1" = 100'

FOR LEGEND SEE SHEET U-20

		U-1	
NORTH CAROLINA PROFESSIONAL ENGINEER JAMES R. DENNIS NO. 2736		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING DISTRICT ATLANTIC DIVISION CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT RAW WATER LINES 'A' & 'B'	
PROJECT NO. 00091		DRAWING NO. 0107576	
DATE 05-31-1944		SHEET 43 OF 73	

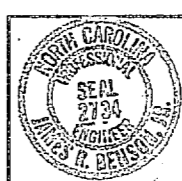




REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED

FOR LEGEND SEE SH. U-20

GRAPHIC SCALES
 VERTICAL
 0" = 4' = 10'
 1" = 8'
 HORIZONTAL
 0" = 20' = 40'
 1" = 20'

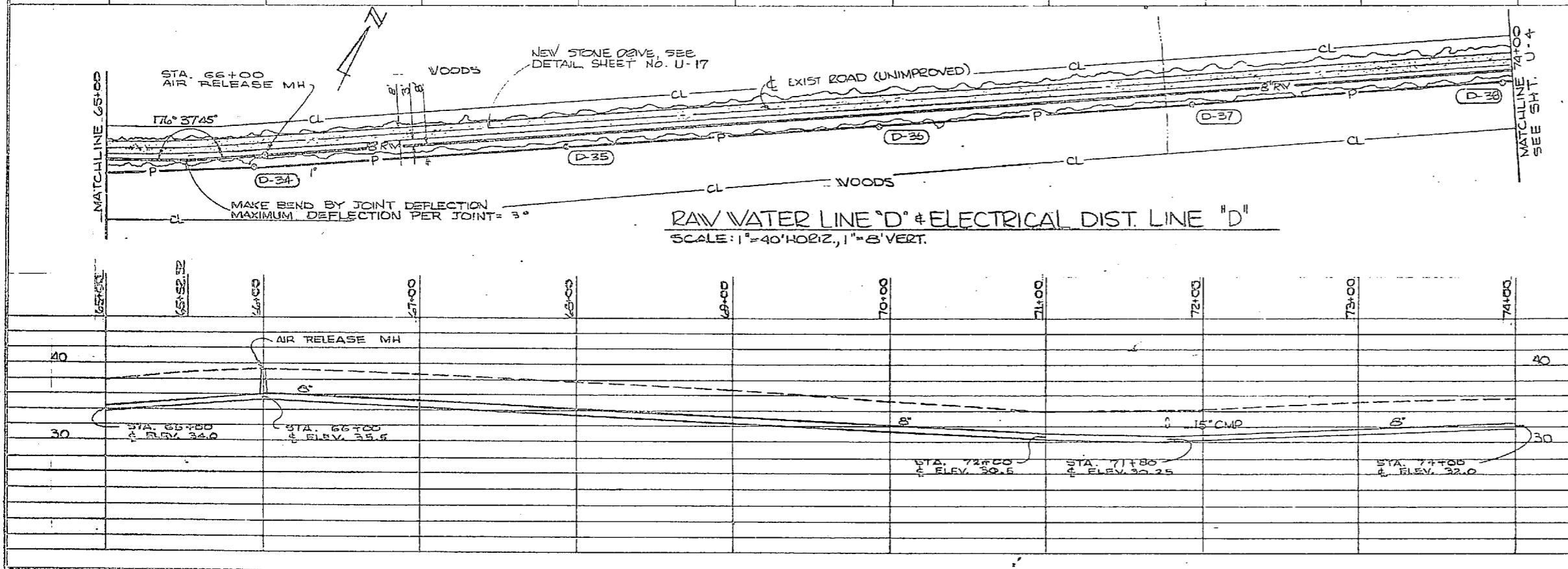
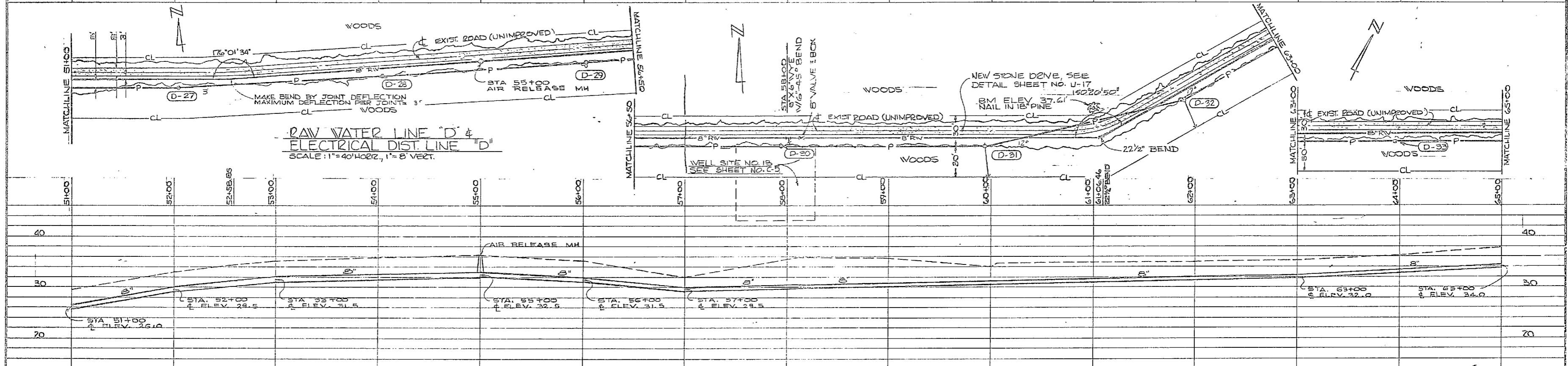
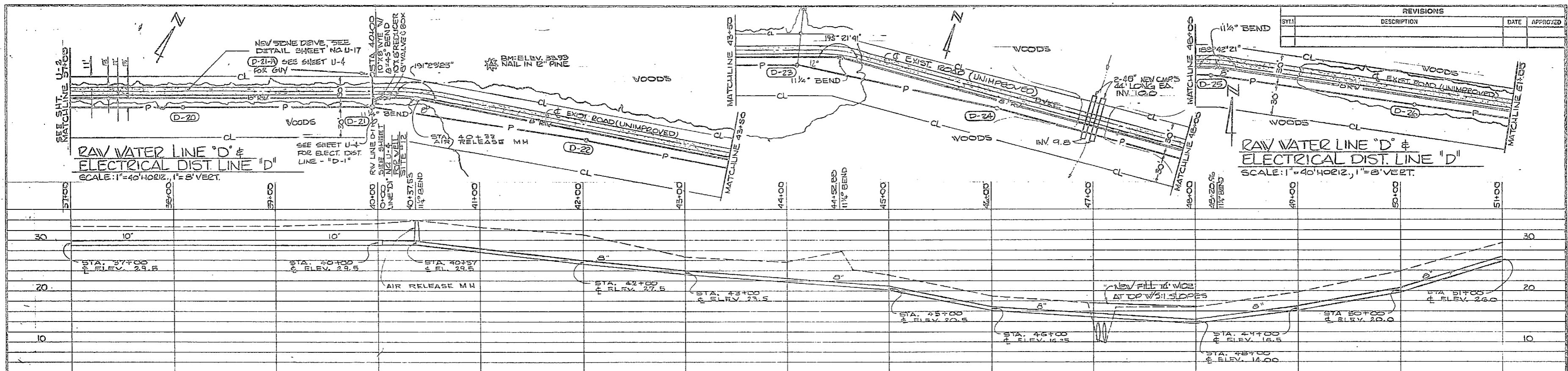


DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION		NORTHERN VA. CAMP LEJEUNE NORTH CAROLINA
EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT		
RAW WATER LINE "D"		DRAWING NO. 4107577
PROJECT NO. 80091	SHEET NO. 05-01-1844	DATE 1964

U-2

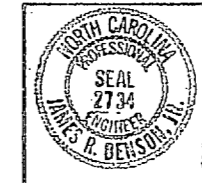


REVISIONS			
SYH	DESCRIPTION	DATE	APPROVED



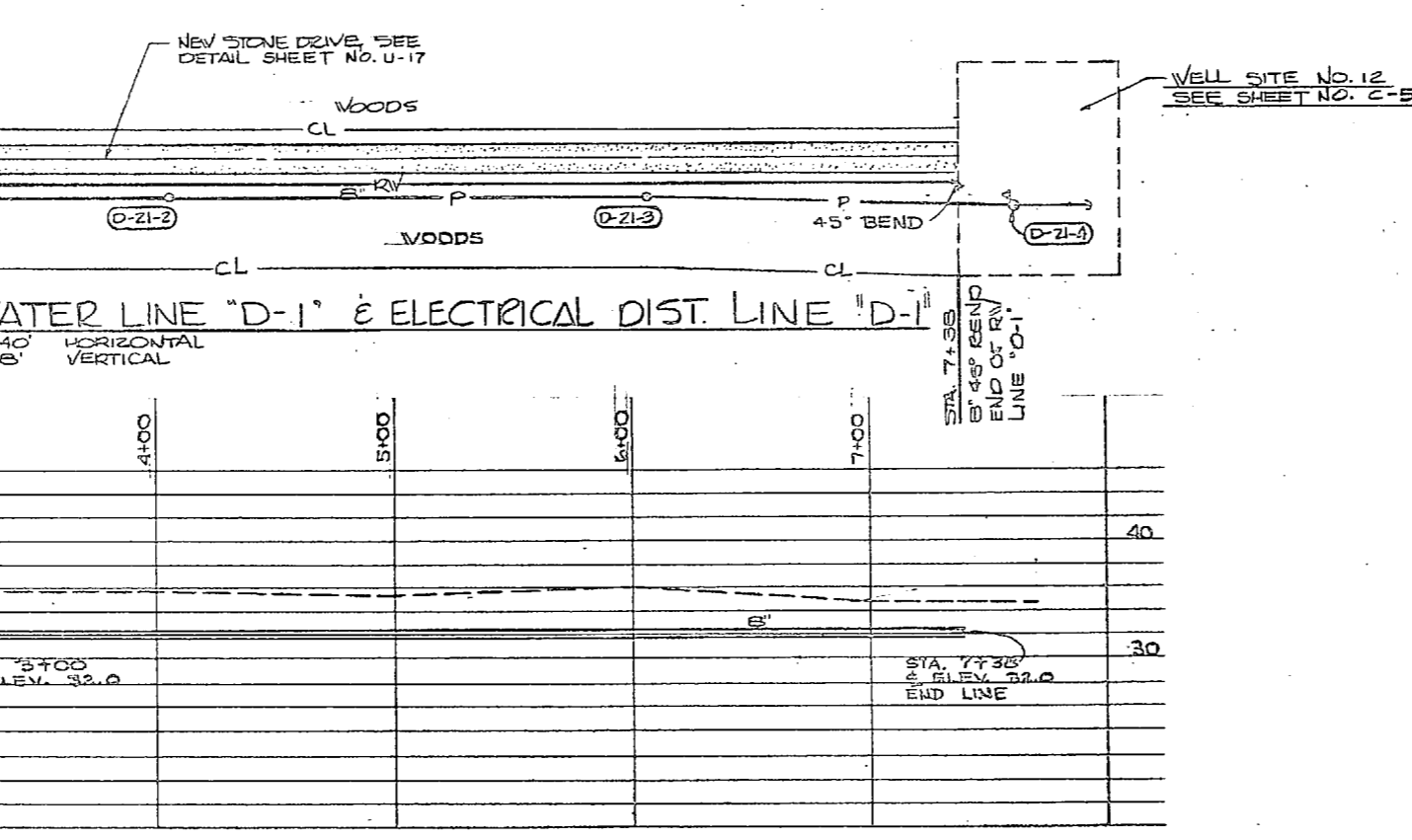
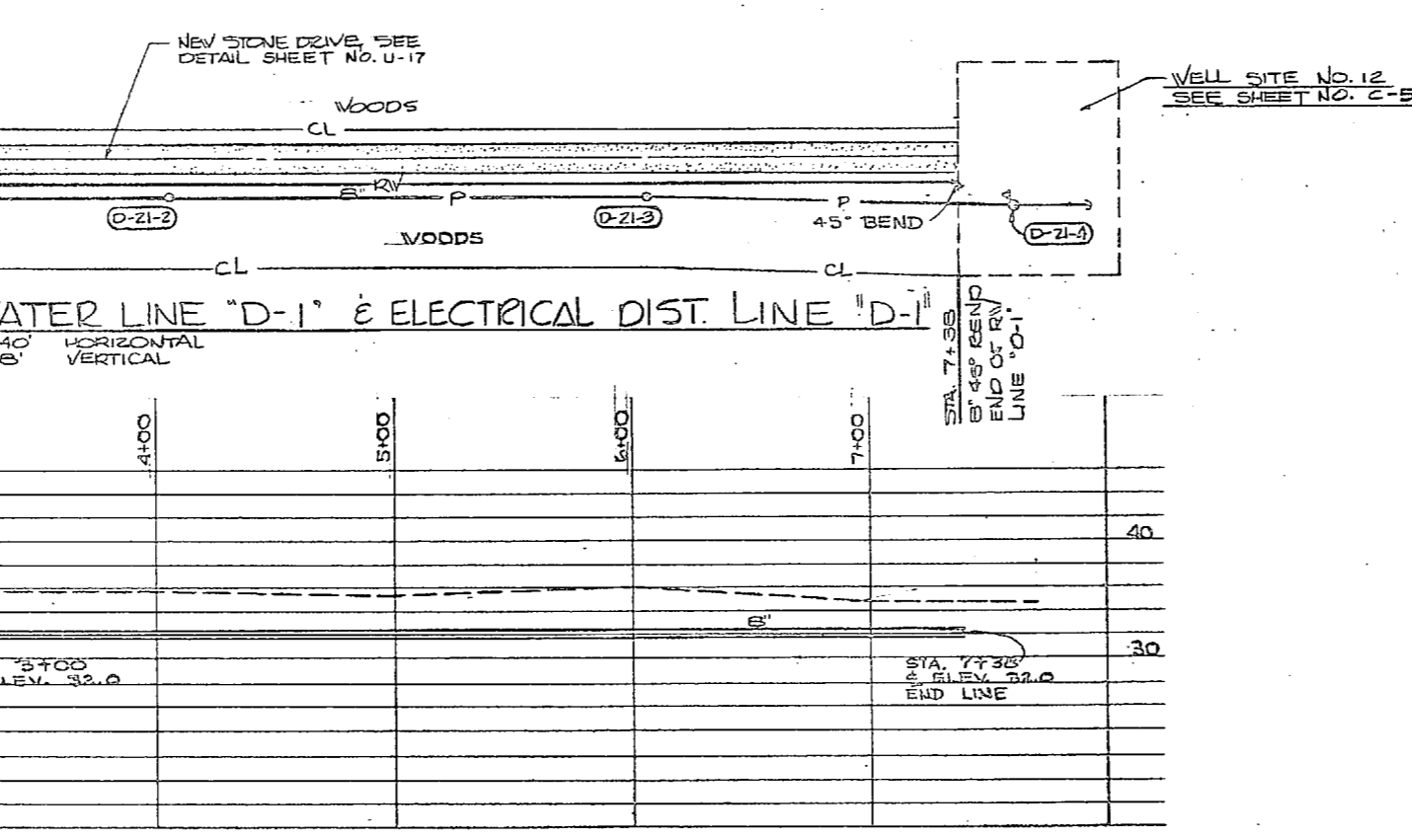
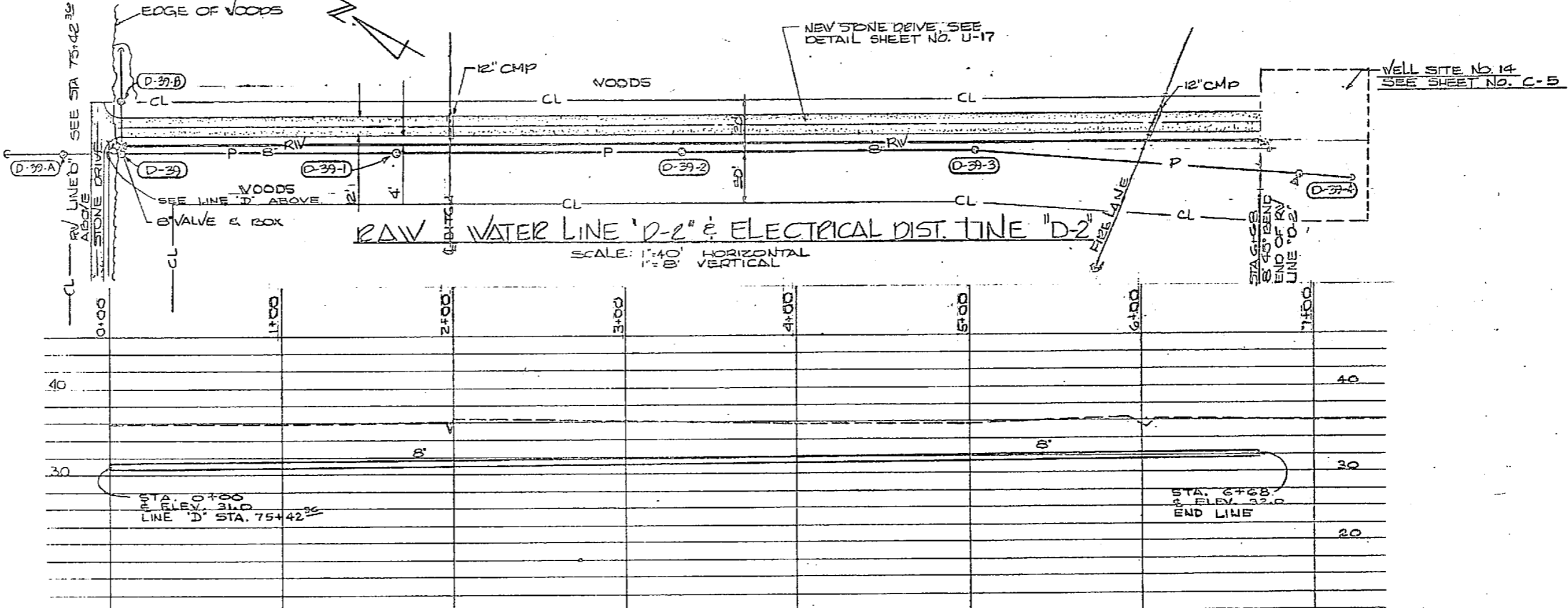
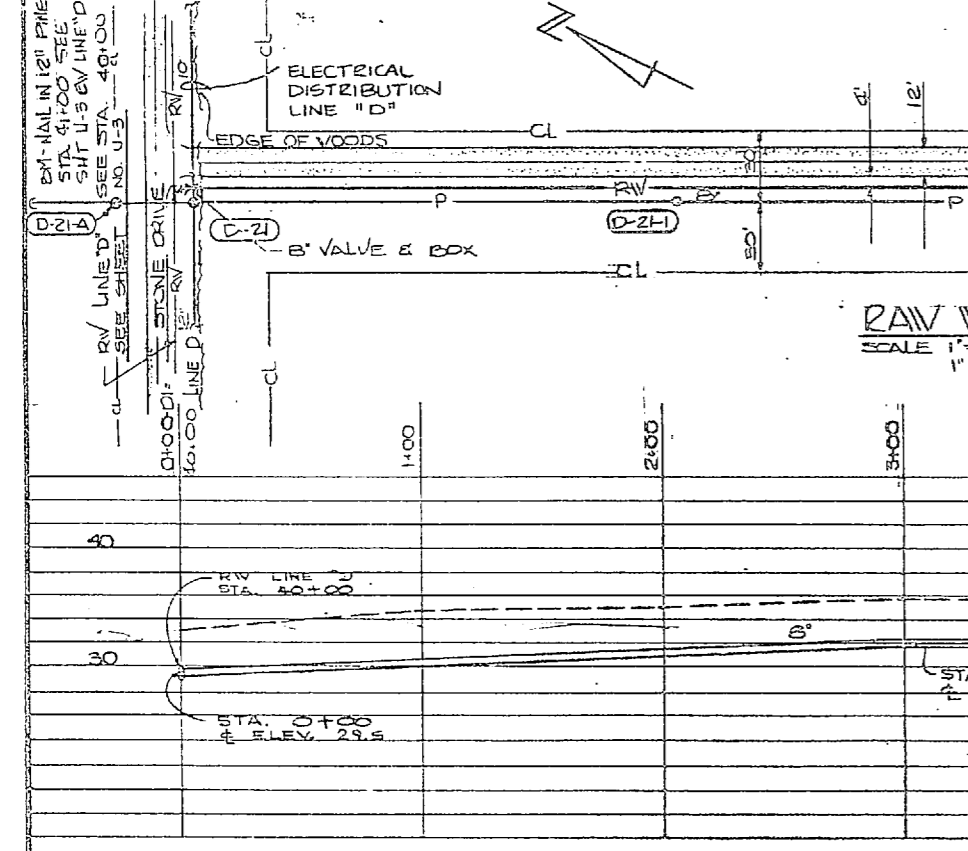
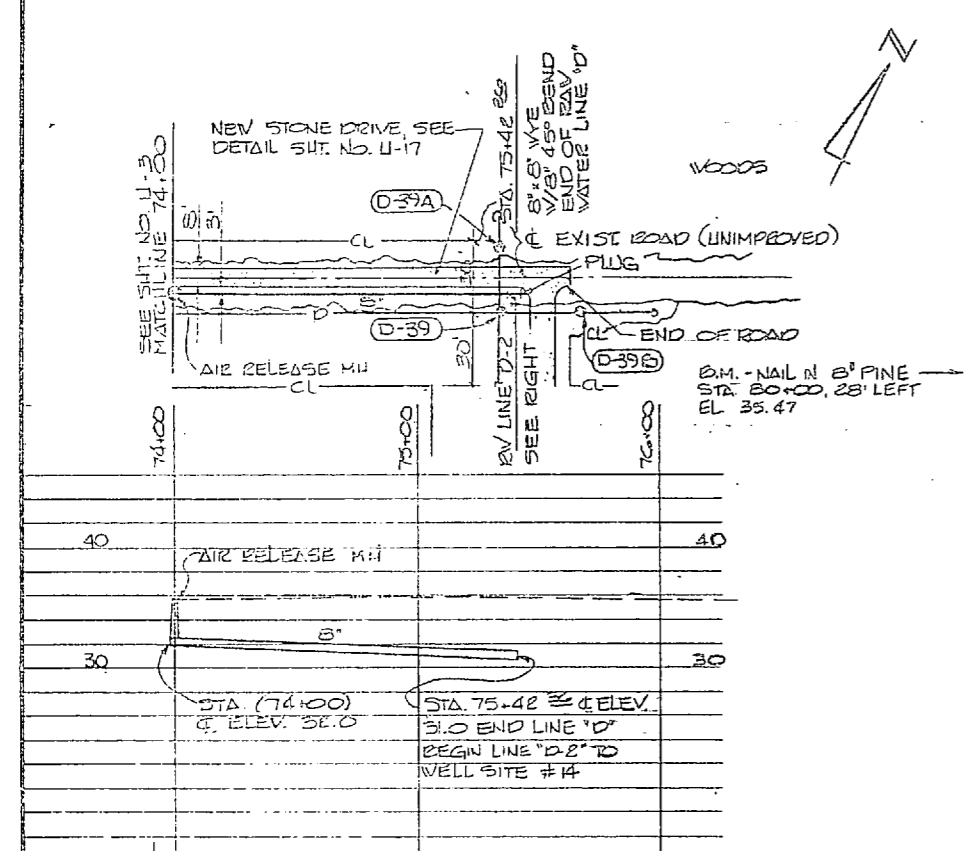
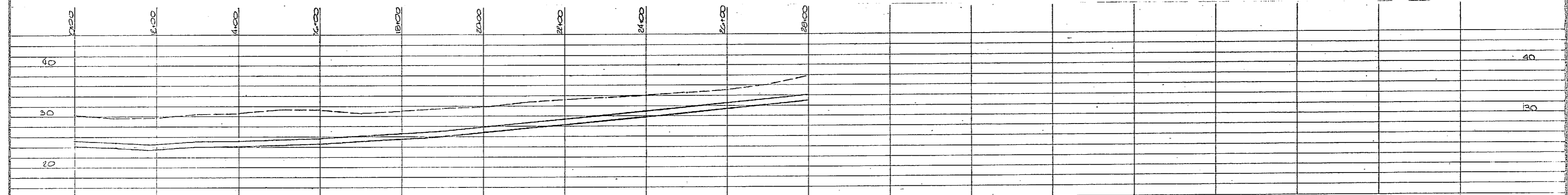
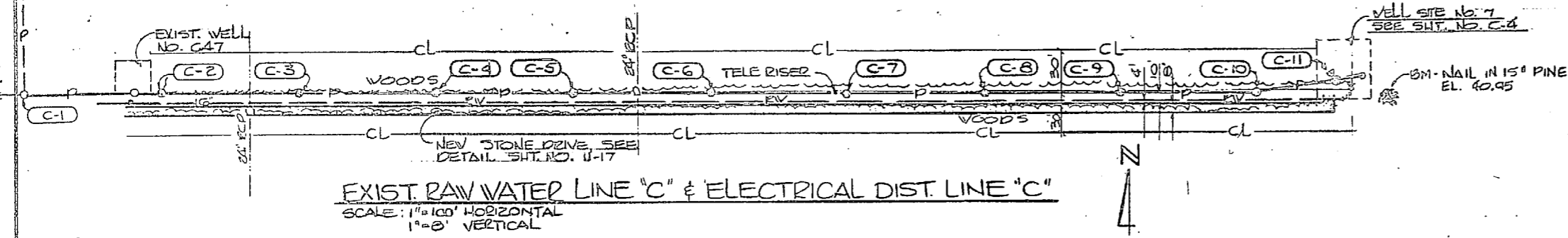
FOR LEGEND SEE SHIT U-20

GRAPHIC SCALES
VERTICAL
0' 2' 4' 8' 16'
1"=8'
HORIZONTAL
0' 20' 40' 80'
1"=40'



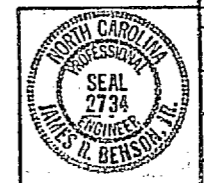
FEDERAL VEVE CORSE & ASSOCIATES POLYGRAPHIC ENGINEERS WASHINGTON, D. C.		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION	
		NAVAL STATION CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	NORTH CAROLINA RICHMOND ST.
PROJECT: JRB DRAWN BY: JRB CHECKED BY: JRB DATE: 7/27/64	SHEET: 45 OF 74 TITLE: RAW WATER LINE "D"	CODE IDENT. NO.: 60091	NAVY DRAWING FILE: 4107578
SCALE: AS SHOWN	DATE: 05-81-1644	SHEET: 45 OF 74	207578

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED



FOR LEGEND SEE SHT. U-20

GRAPHIC SCALES
 VERTICAL
 0" = 5' 10"
 1" = 5'
 HORIZONTAL
 0" = 20' 40'
 1" = 40'

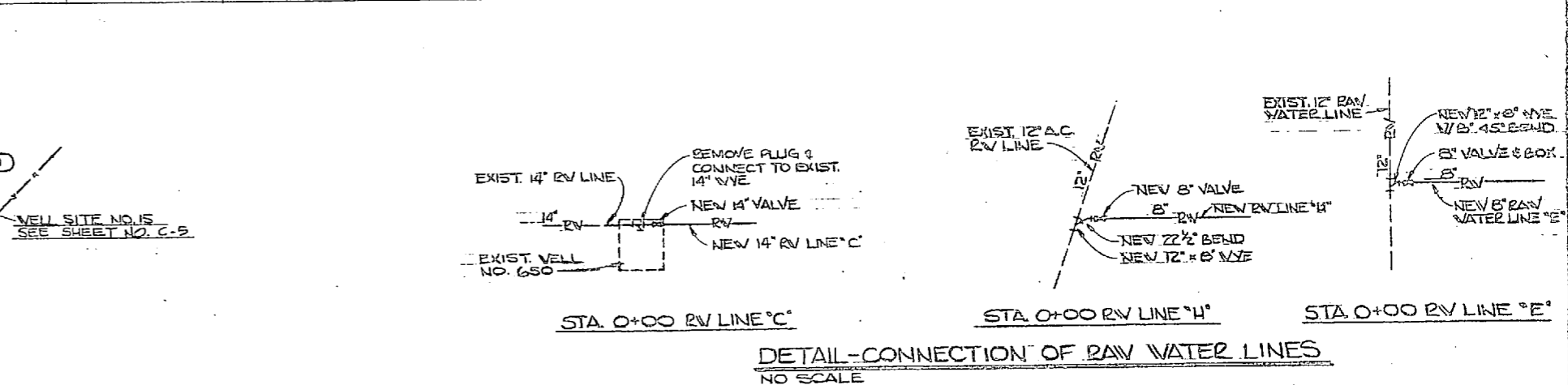
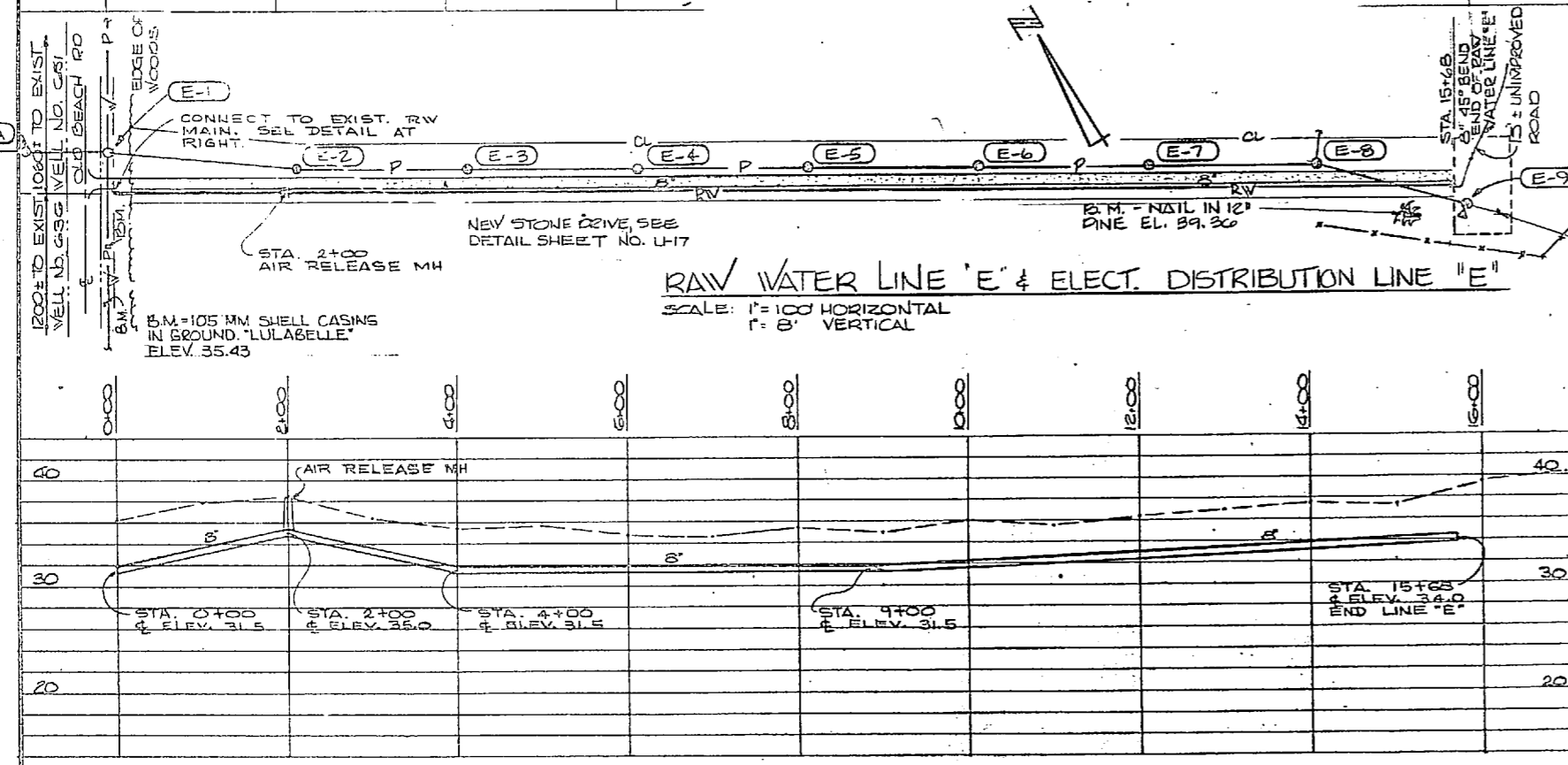
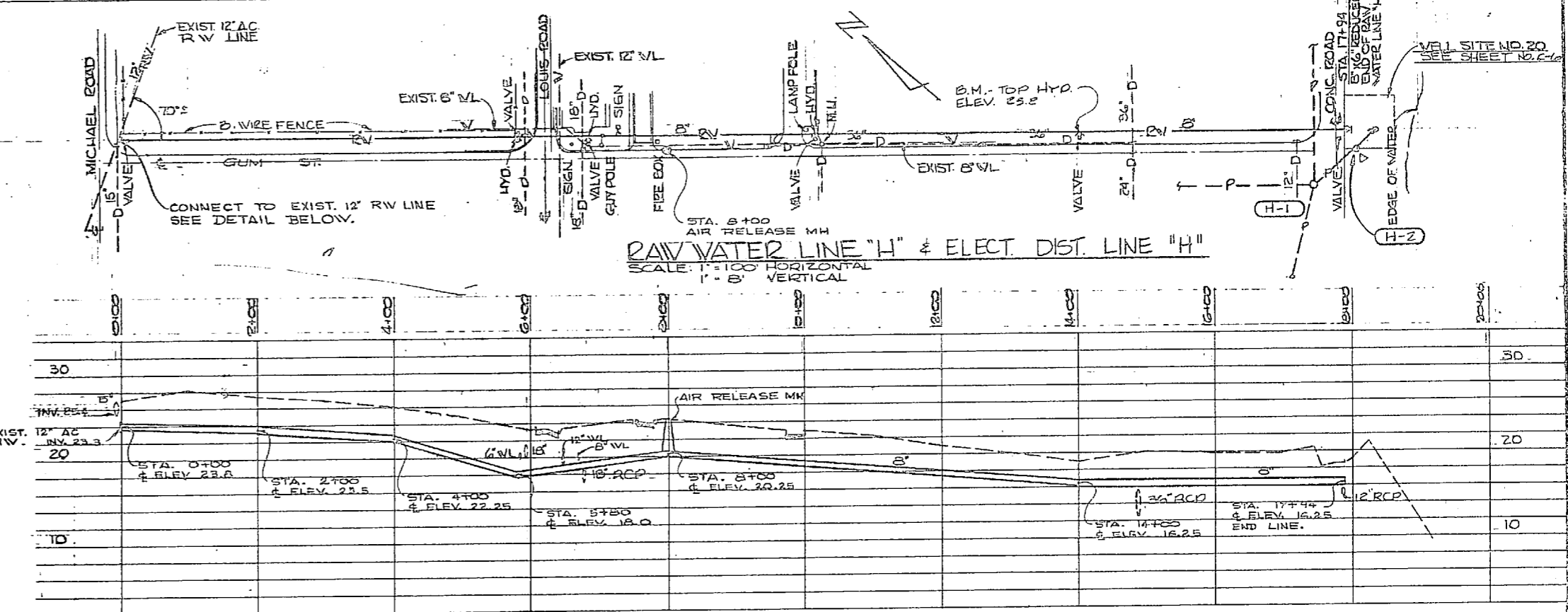
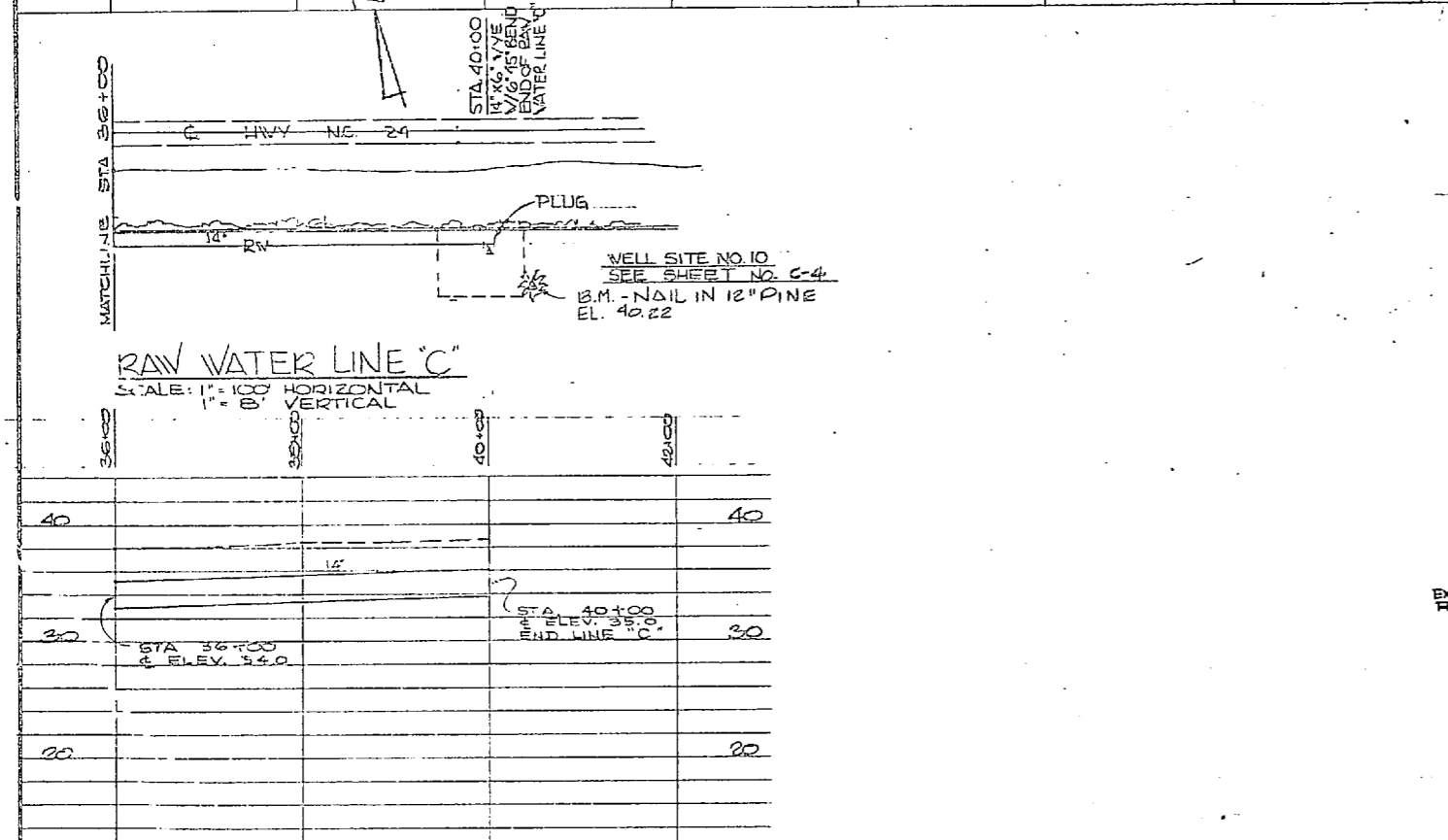
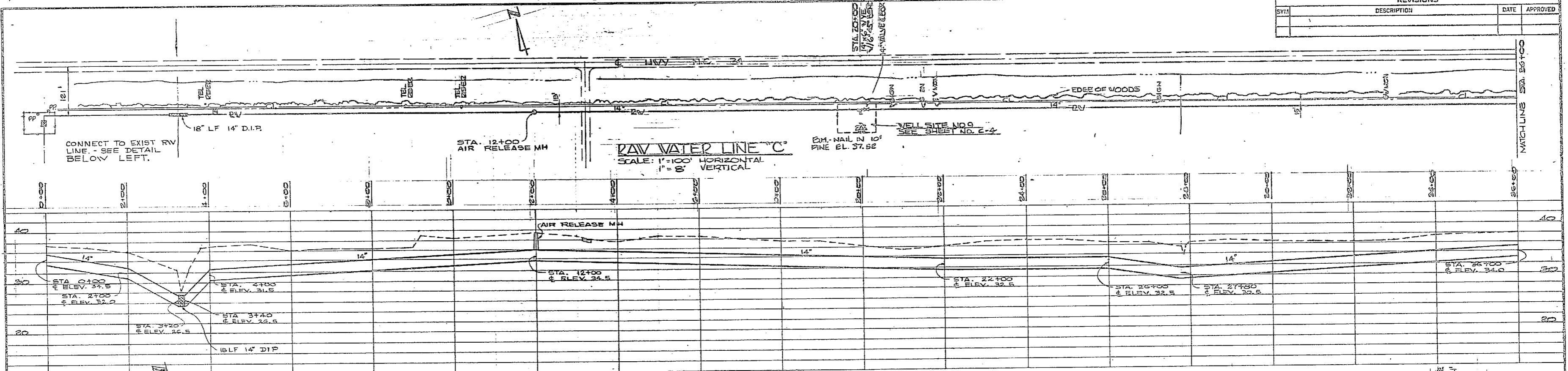


U-4

HENRY WOH OCEAN & ASSOCIATES CONSULTING ENGINEERS WILMINGTON, N. C.		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NORTH CAROLINA	
PROJECT MANAGER: SMC, PVT DESIGNED BY: SMC, PVT CHECKED BY: SMC, PVT		NAVAL STATION: CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	
DRAWN BY: SMC, PVT DATE: 7/7/64		RAW WATER LINES "D", "D-1" & "D-2"	
APPROVED: SMC, PVT DATE: 7/7/64		NVAAC DRAWING NO. 410757D	
ACTIVITY - SATISFACTORY TO		CORONA, CALIF. FORM 82470-81-B-1844	
SCALE: AS SHOWN		SHEET 46 OF 74	
SHEET NO. 05-81-1644		SHEET NO. 20757D	



REVISIONS		DATE	APPROVED
SYM	DESCRIPTION		



FOR LEGEND SEE SHEET U-20

GRAPHIC SCALES

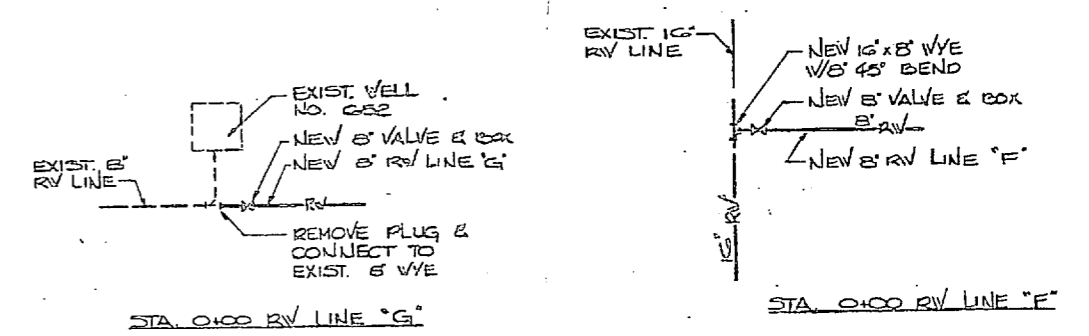
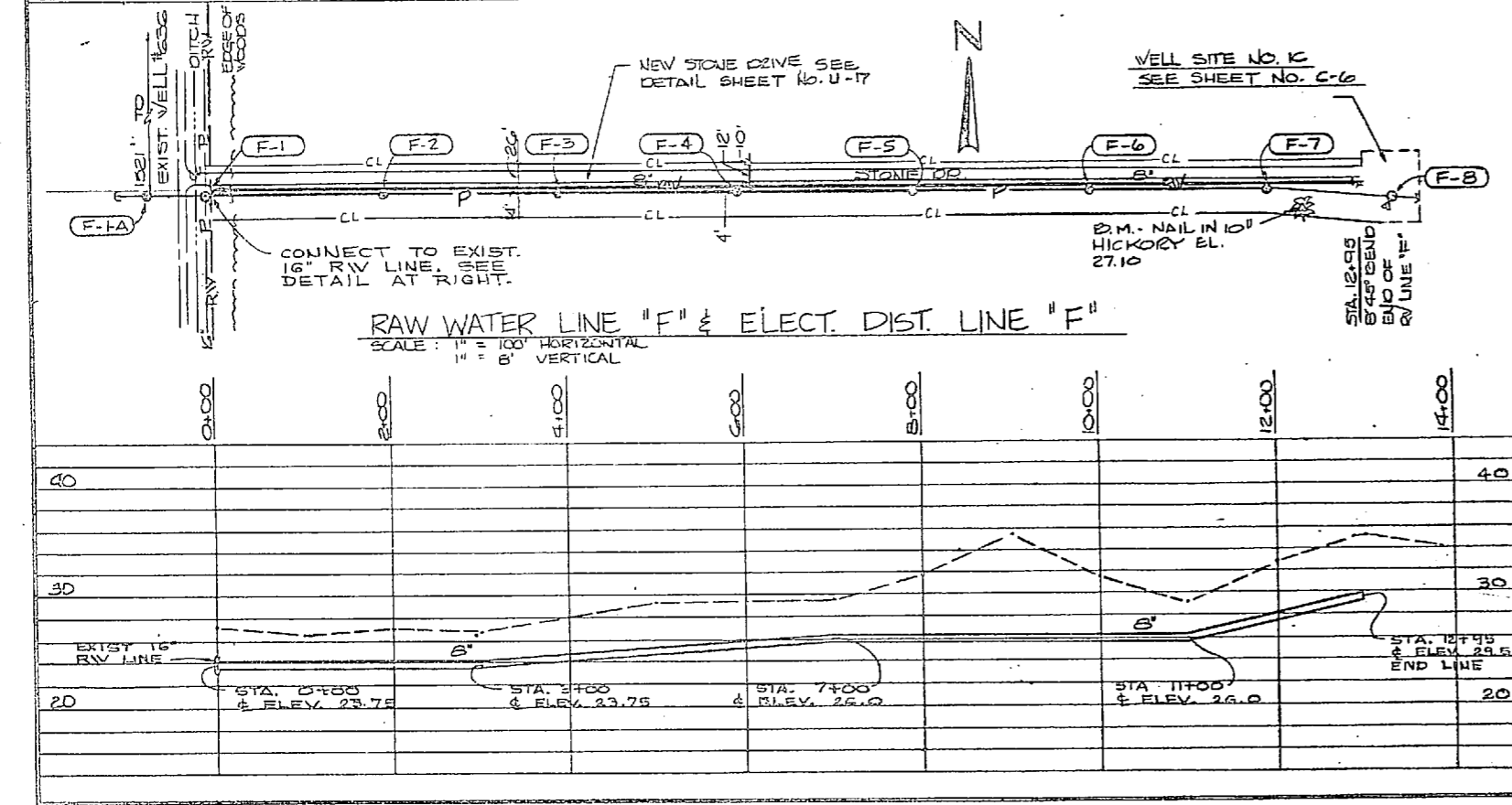
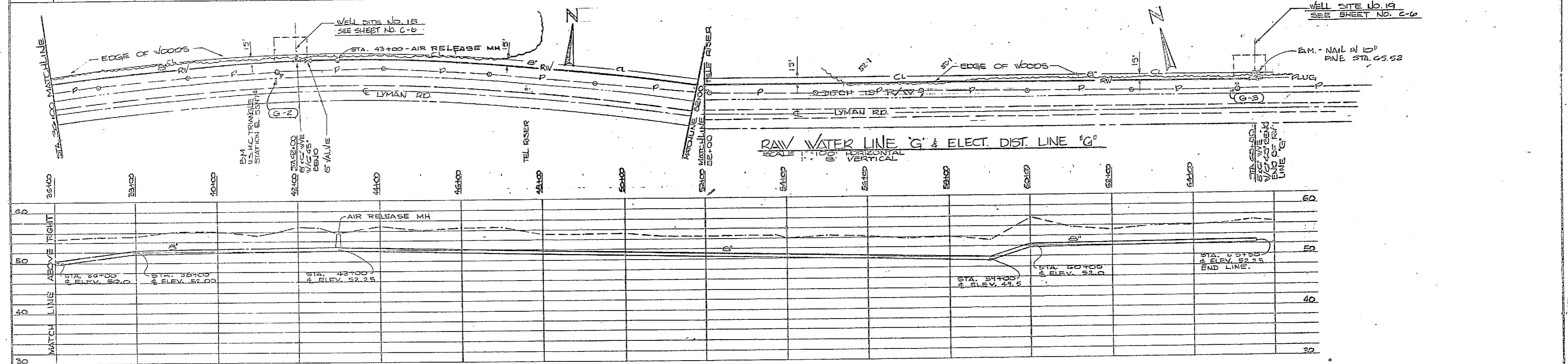
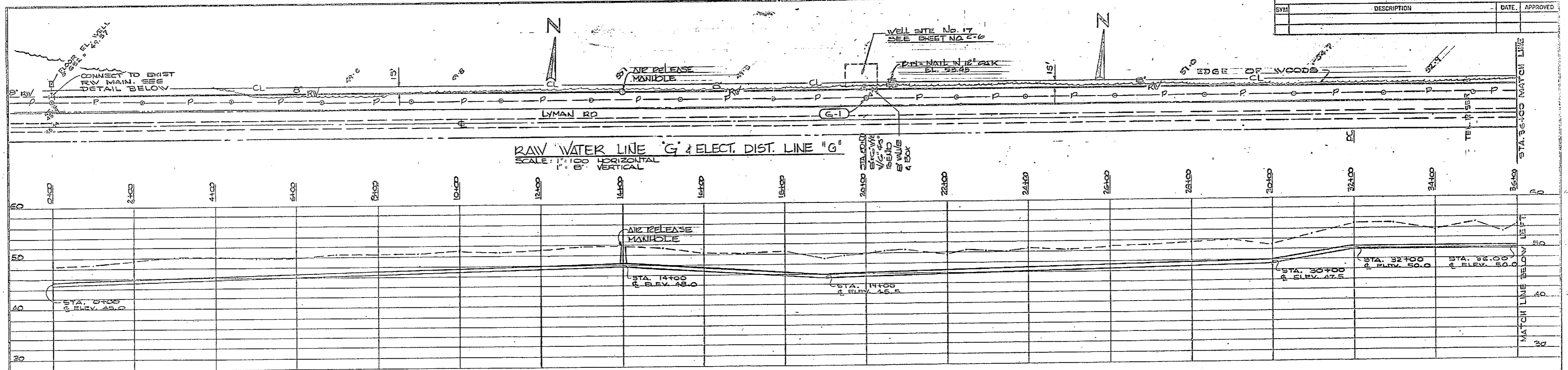
VERTICAL
0 2 4 8 12
1" = 8'

HORIZONTAL
0 50 100 200
1" = 100'



LEGNEY WOOD GIBSON & ASSOCIATES CONSULTING ENGINEERS WILMINGTON, N. C.		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NAVAL STATION CAMP LEJEUNE NORTH CAROLINA	
PROJECT NO. JRB DATE DRAWN BY CHECKED BY APPROVED BY	SMC JRB JRB JRB JRB	PROJECT TITLE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	SHEET NO. U-5
DRAWING NO. 4107680	PROJECT NO. 80091	DRAWING TITLE RAW WATER LINES 'C', 'E' & 'H'	PROJECT NO. 162470-01-D-1044
DATE 11/24	SCALE AS SHOWN	PROJECT NO. 06-61-1644	SHEET NO. 47

REVISIONS			
SV#	DESCRIPTION	DATE	APPROVED



DETAIL CONNECTION OF RV LINES
NO SCALE

FOR LEGEND SEE SHT. U-20

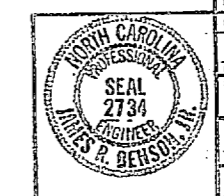
GRAPHIC SCALES

VERTICAL
0" 2" 4" 8" 16"

HORIZONTAL
0' 50' 100' 200'

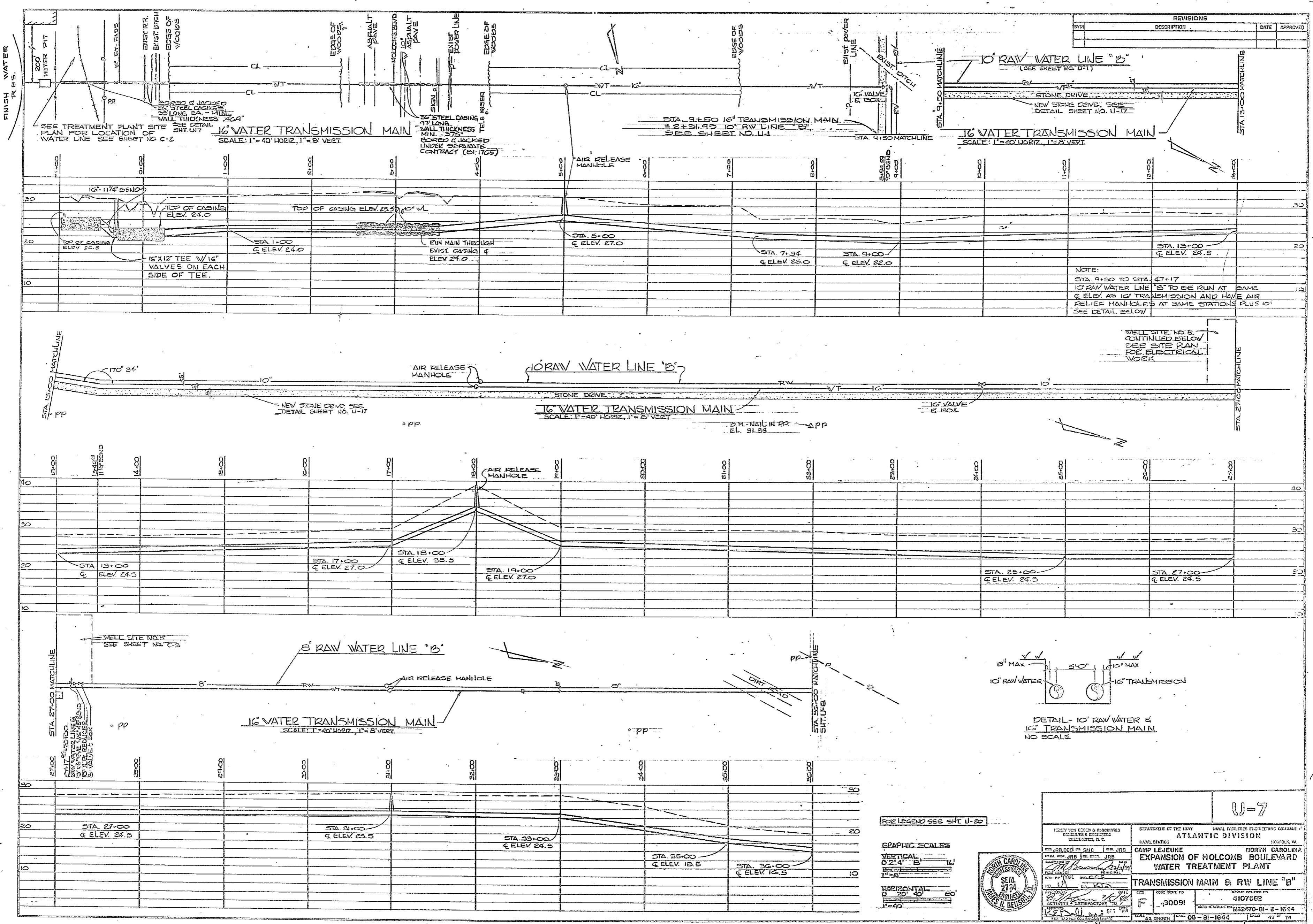
1" = 8'

1" = 100'



U-6	
GENEY VON OTZCH & ASSOCIATES CONSULTING ENGINEERS WASHINGTON, D. C.	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NORTH CAROLINA
DESIGNED BY: JRB CHECKED BY: JRB DRAWN BY: JRB DATE: 11/11/83	NAVAL STATION CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT
RAW WATER LINES 'G' & 'F'	
PROJECT NO. 80091	NAVY DRAWING NO. 4107581
DATE: 11/11/83	SCALE: AS SHOWN
NAVY FORM 100-10 (REV. 1-74)	

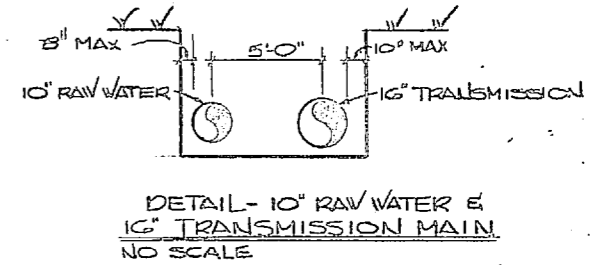




REVISIONS		
NO.	DESCRIPTION	DATE

NOTE:
 STA. 9+50 TO STA. 47+17
 10" RAW WATER LINE IS TO BE RUN AT
 SAME
 ELEV. AS 16" TRANSMISSION AND HAVE AIR
 RELIEF MANHOLES AT SAME STATIONS PLUS 10'
 SEE DETAIL BELOW

WELL SITE NO. 5
 CONTINUED BELOW
 SEE SITE PLAN
 FOR ELECTRICAL
 WORK

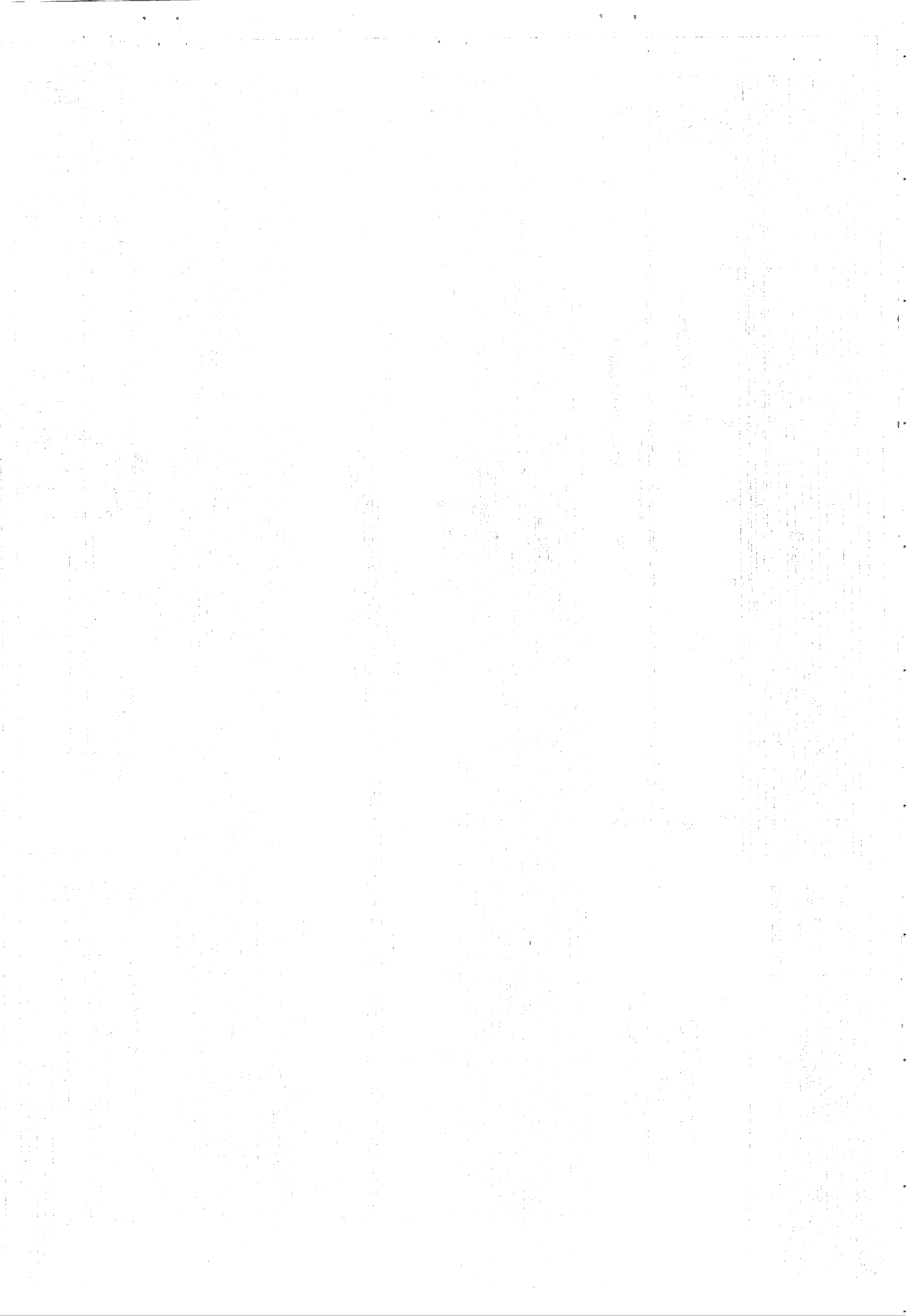


FOR LEGEND SEE SHIT U-22

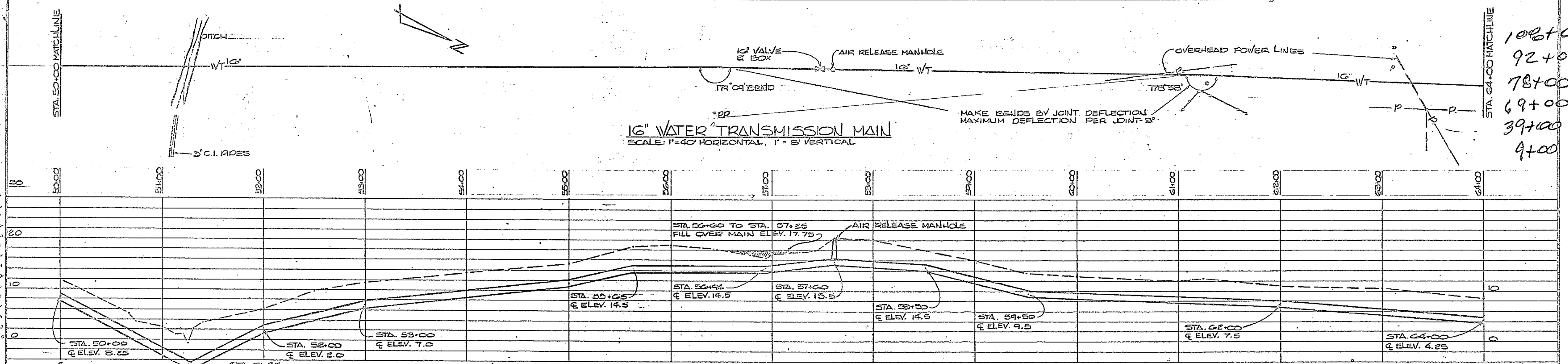
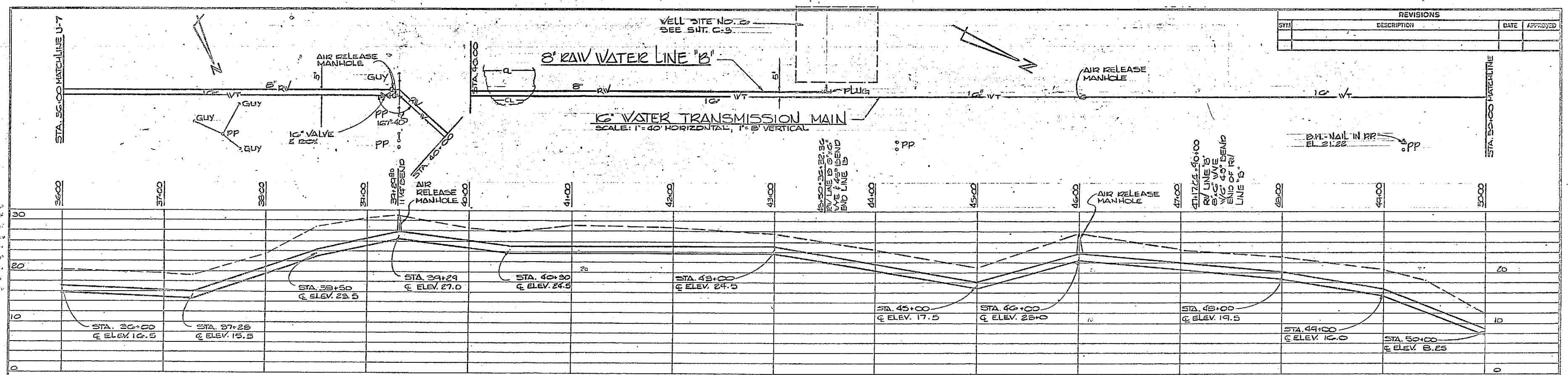
GRAPHIC SCALES
 VERTICAL
 0" = 4' 0" = 8' 0" = 16'
 1" = 4'
 HORIZONTAL
 0" = 20' 0" = 40' 0" = 60'
 1" = 20'



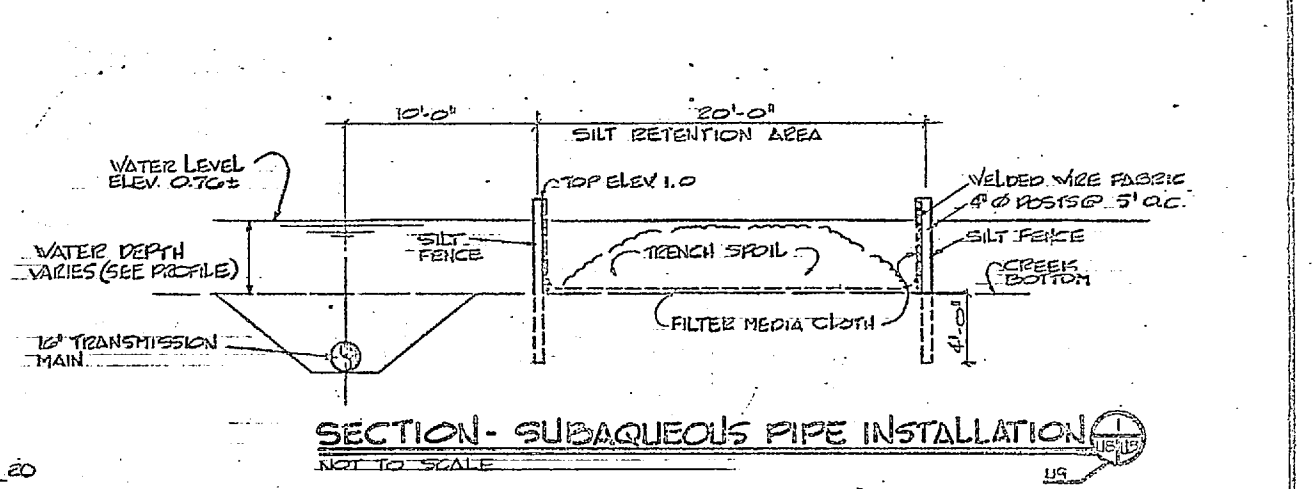
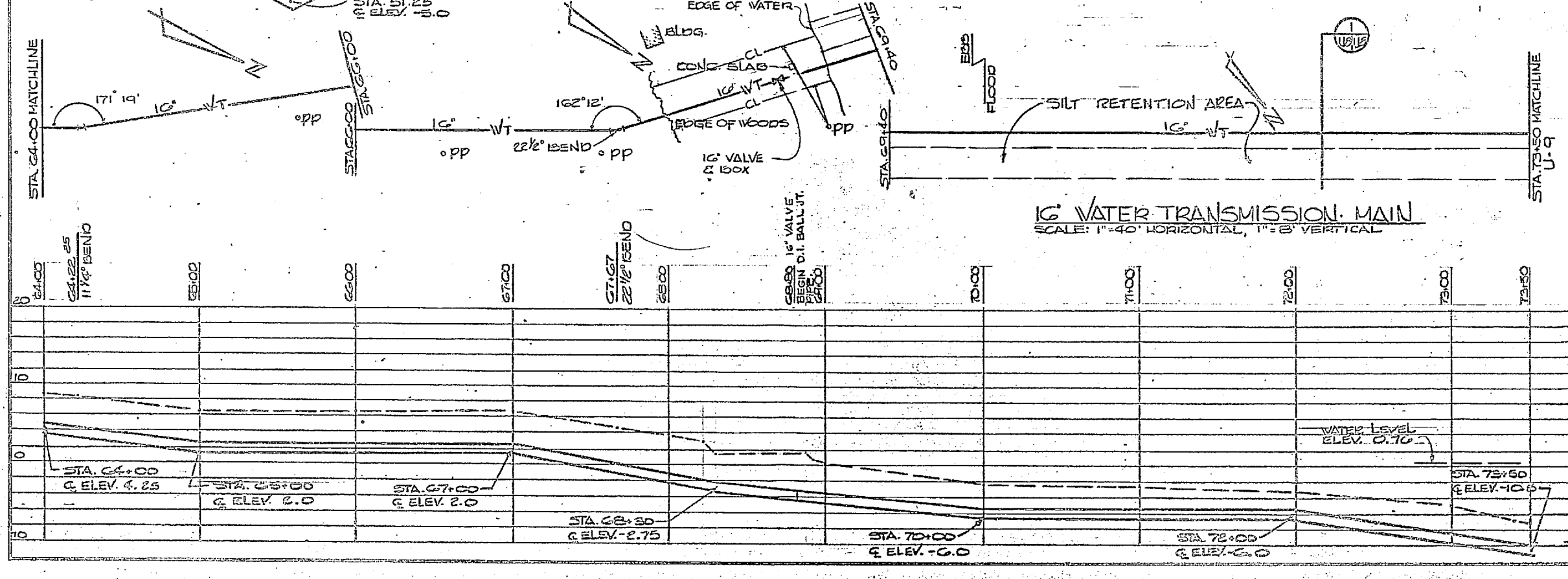
U-7	
NORTH CAROLINA PROFESSIONAL ENGINEER STATE NO. 2734 LICENSE NO. 4107562 J. W. ...	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING DIVISION ATLANTIC DIVISION CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT TRANSMISSION MAIN & RW LINE "B" SHEET NO. U-7 30091 4107562 152470-B1-B-1644 08-81-1644 207582



REVISIONS			
SYN	DESCRIPTION	DATE	APPROVED



102+00
92+00
78+00
69+00
39+00
9+00



FOR LEGEND SEE SHT. U-20

GRAPHIC SCALES
VERTICAL
0' 4' 8' 12'
1" = 8'
HORIZONTAL
0' 20' 40' 60'
1" = 40'

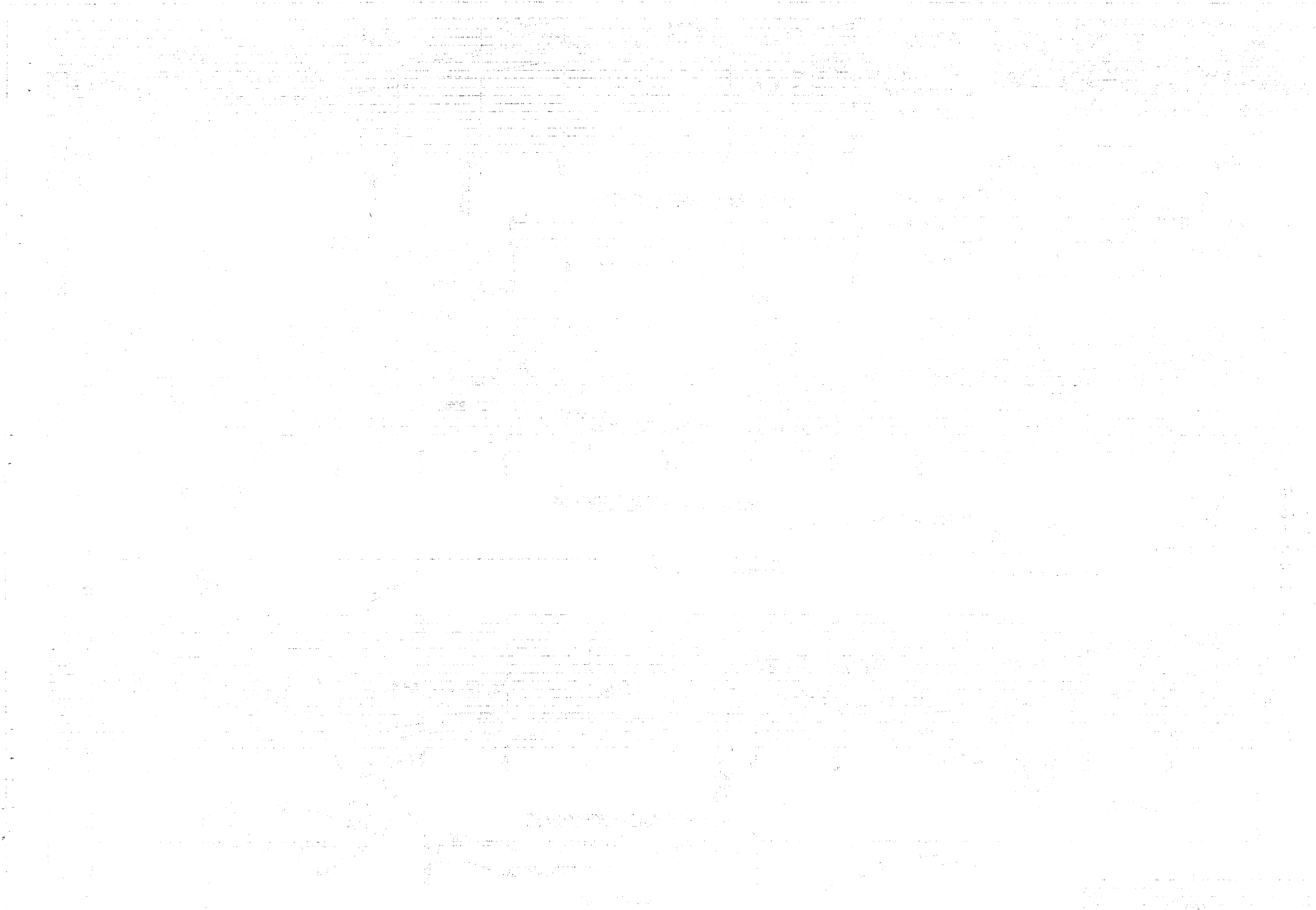
WATER LEVEL ELEV. 0.75

U-8

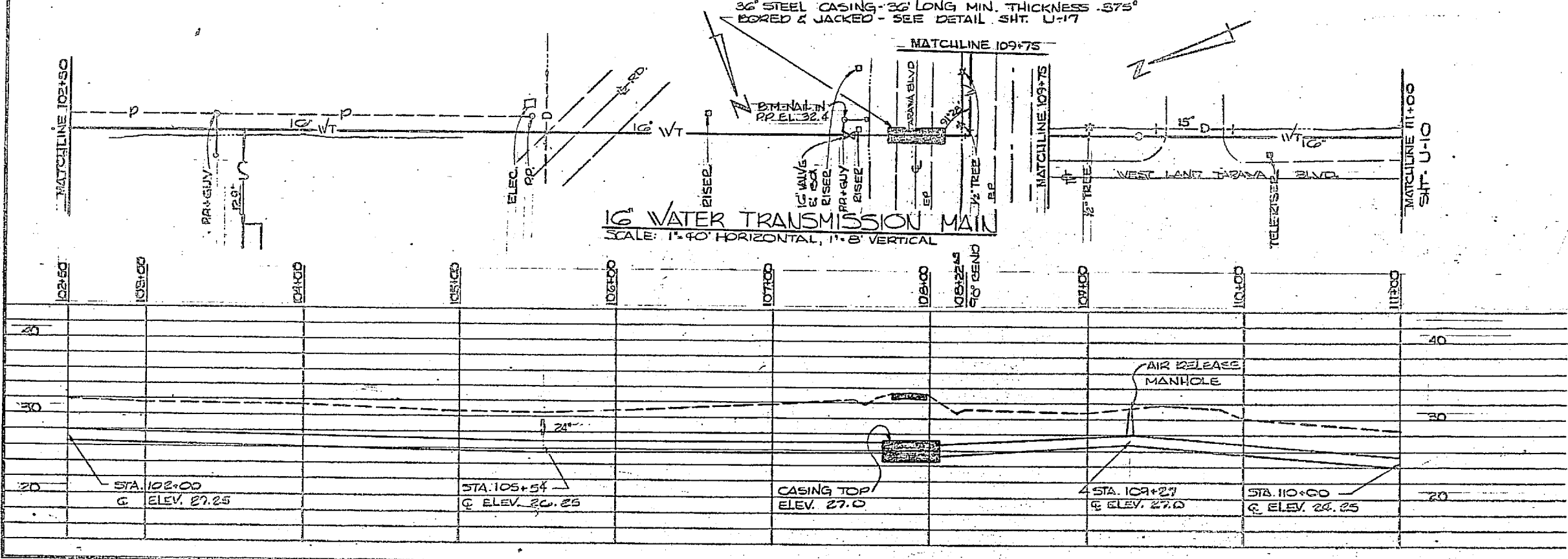
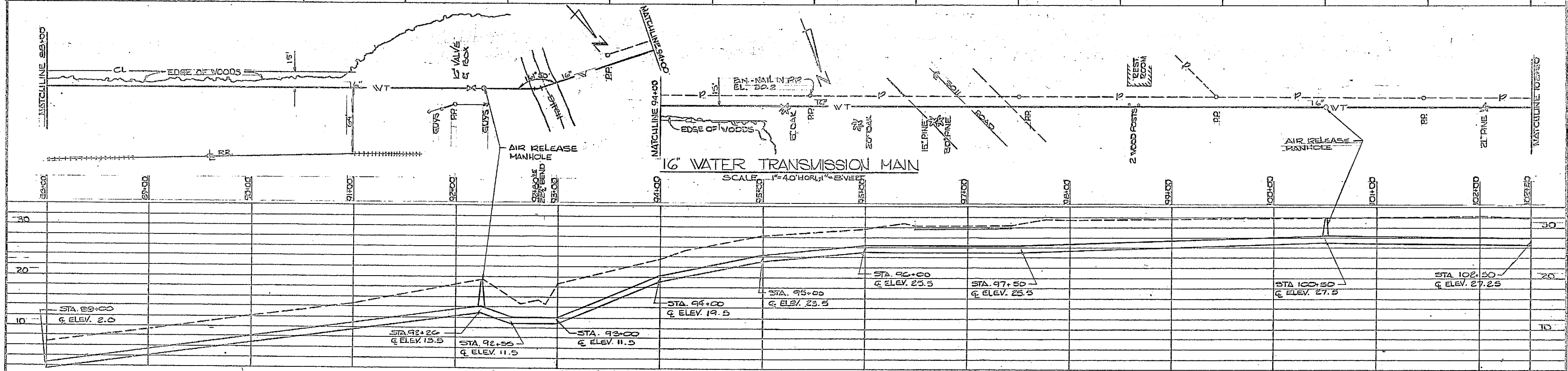
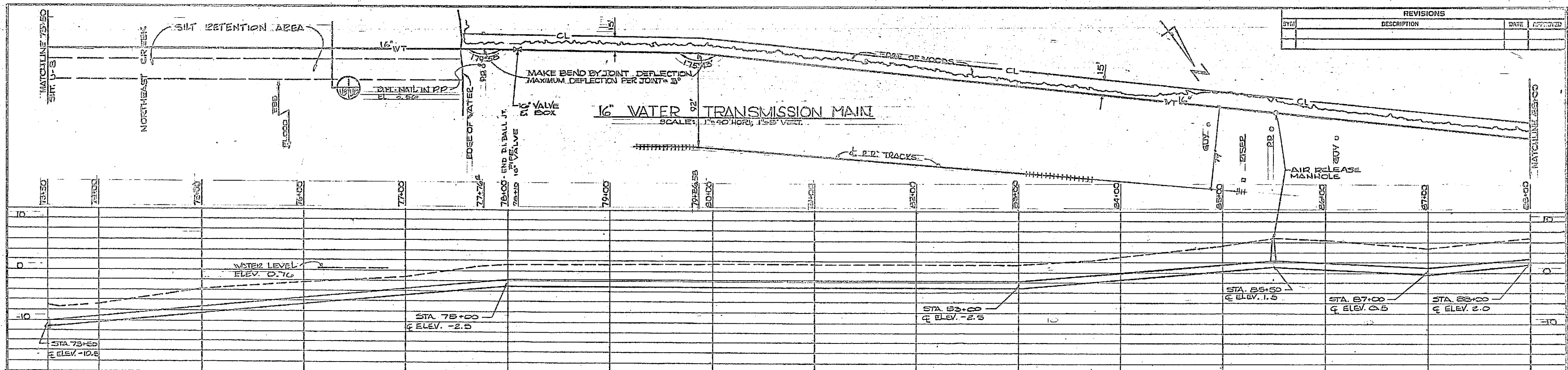
KELLY KOEHN & ASSOCIATES CONSULTING ENGINEERS WASHINGTON, D.C.	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION CARP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT
PROJECT NO. 60091 SHEET NO. 410758	TRANSMISSION MAIN & RW LINE "B" DATE: 7/14/94 DRAWN BY: JRB CHECKED BY: JRB APPROVED BY: JRB DATE: 7/14/94

162470-01-B-4399

207299

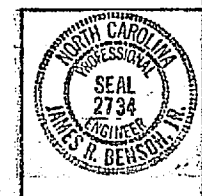
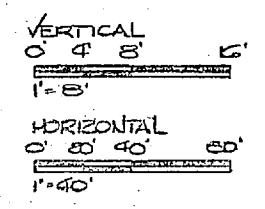


REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED



For Legend see sht. U-22

GRAPHIC SCALES

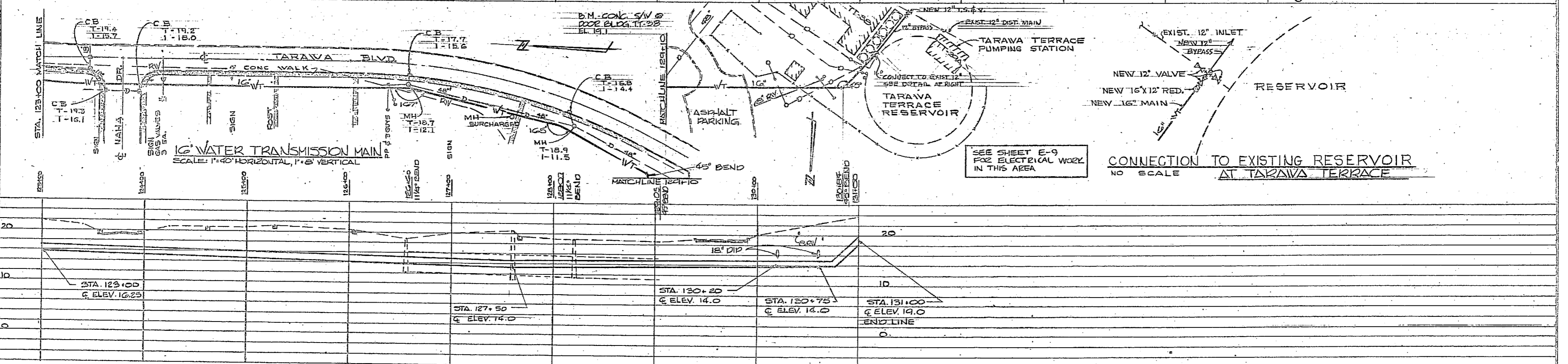
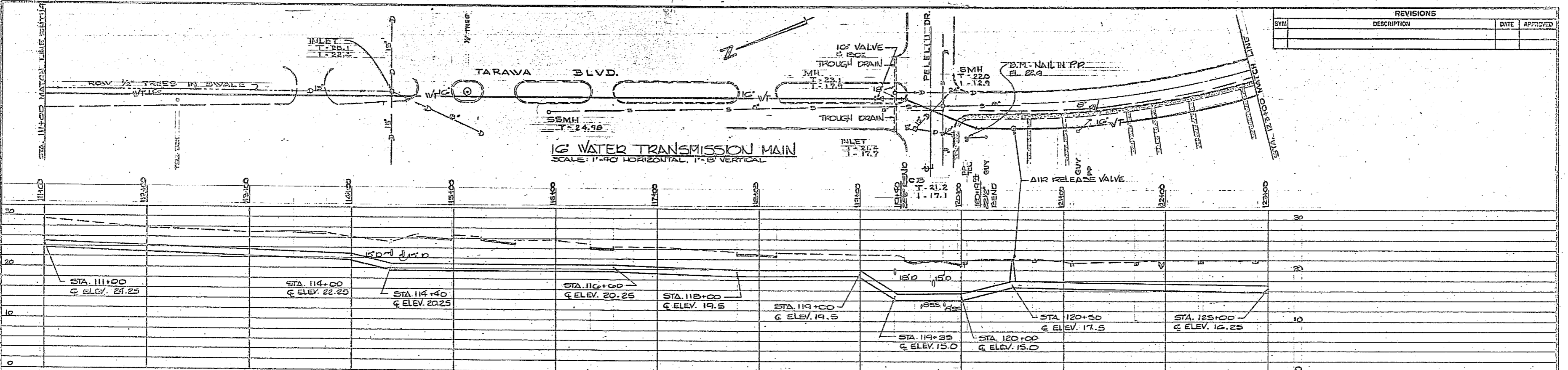


DEPARTMENT OF THE NAVY ATLANTIC DIVISION		NAVAL STATION CAMP LEJEUNE NORTH CAROLINA	
DESIGNER: JRS/DEC CHECKER: JRB		PROJECT: EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	
DRAWN: JRS/DEC CHECKED: JRB		TITLE: TRANSMISSION MAIN	
DATE: 7/74		NAVY DRAWING NO.: 4107564	
ACTIVITY: SATISFACTORY TO		MILITARY STANDARD: 162470-BI-B-1644	
SCALE: AS SHOWN		05-81-1644	

U-9



REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED

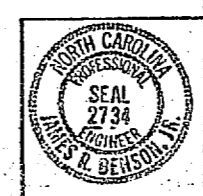
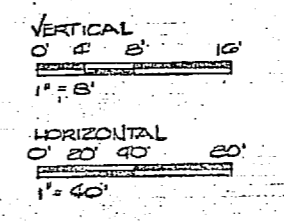


SEE SHEET E-9 FOR ELECTRICAL WORK IN THIS AREA

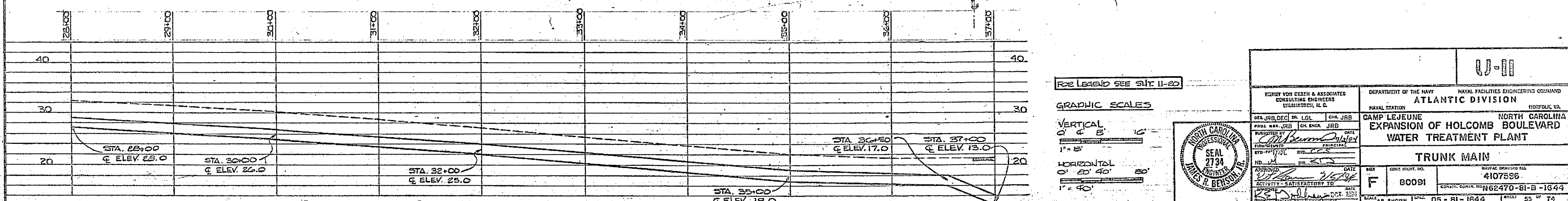
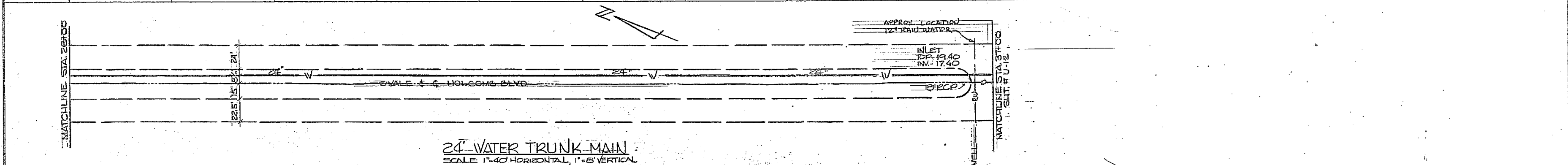
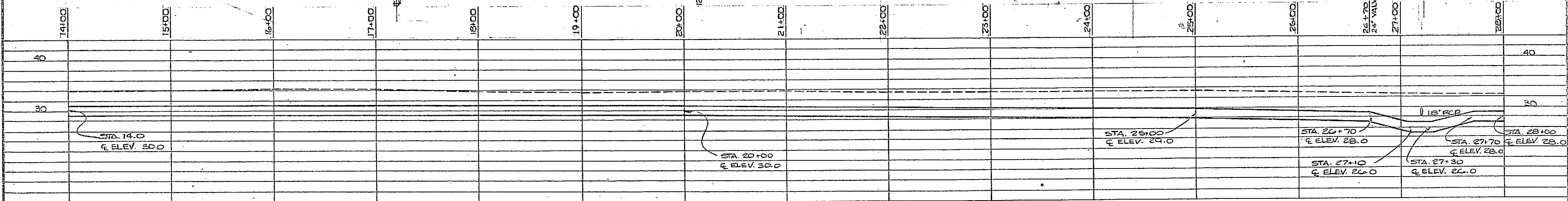
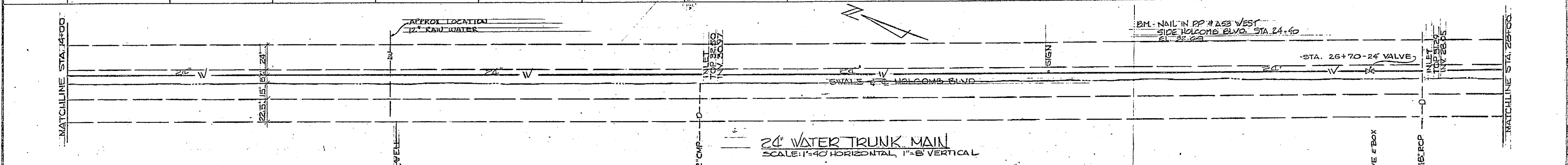
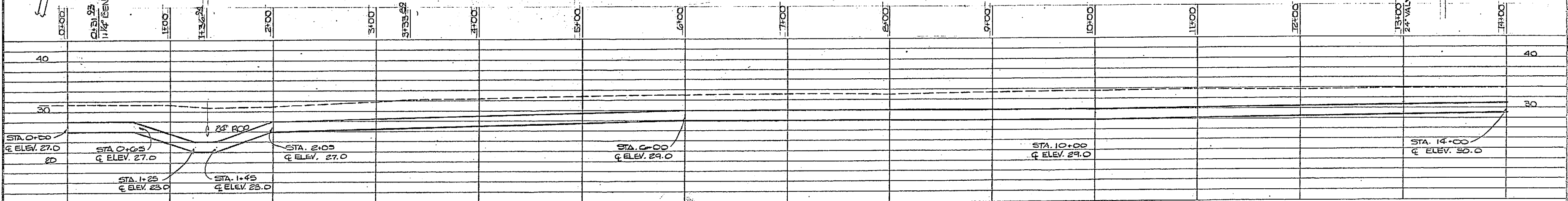
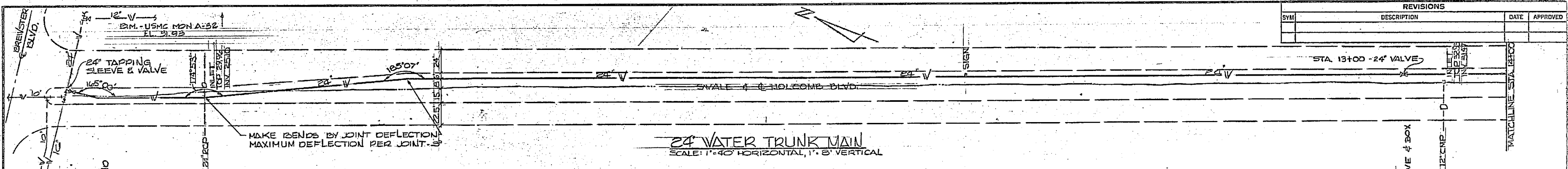
CONNECTION TO EXISTING RESERVOIR AT TARAIVA TERRACE
NO SCALE

FOR LEGEND SEE SHEET U-20

GRAPHIC SCALES



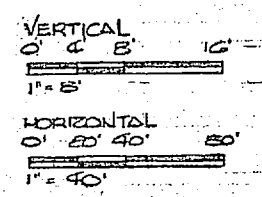
CIVILITY FOR OSECH & ASSOCIATES CONSULTING ENGINEERS WASHINGTON, D.C.		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NAVAL STATION CAMP LEJEUNE NORTH CAROLINA NORFOLK, VA.	
DESIGNED BY: JRB DRAWN BY: JRB CHECKED BY: JRB DATE: 7/15/94	PROJECT NO.: 80091 SHEET NO.: 52 OF 74	TITLE: TRANSMISSION MAIN	U-10
ACTIVITY: Satisfactory to DATE: 7/15/94	CODE BOOK NO.: 80091	REPORT DRAWING NO.: 4107585	NAVY DRAWING NO.: NG2470-81-B-1944
SCALE: AS SHOWN	SPEC: 05-81-1644	E.F.A. Dwg. No.: 207585	207585



REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED

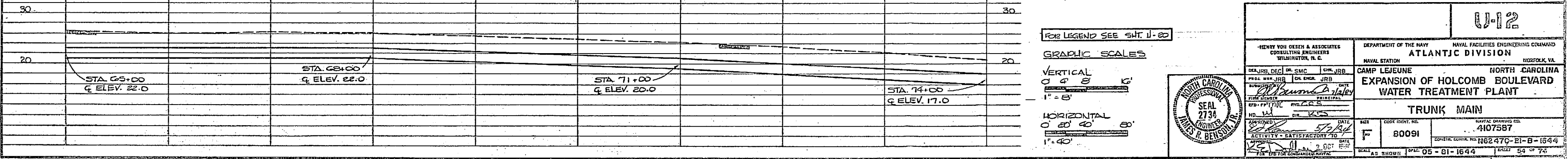
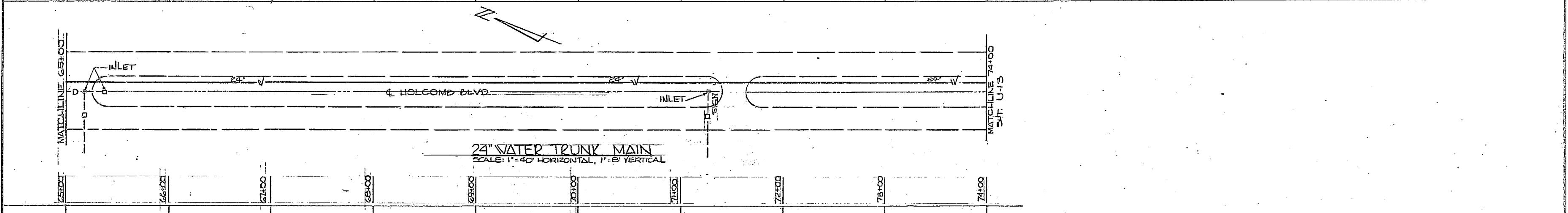
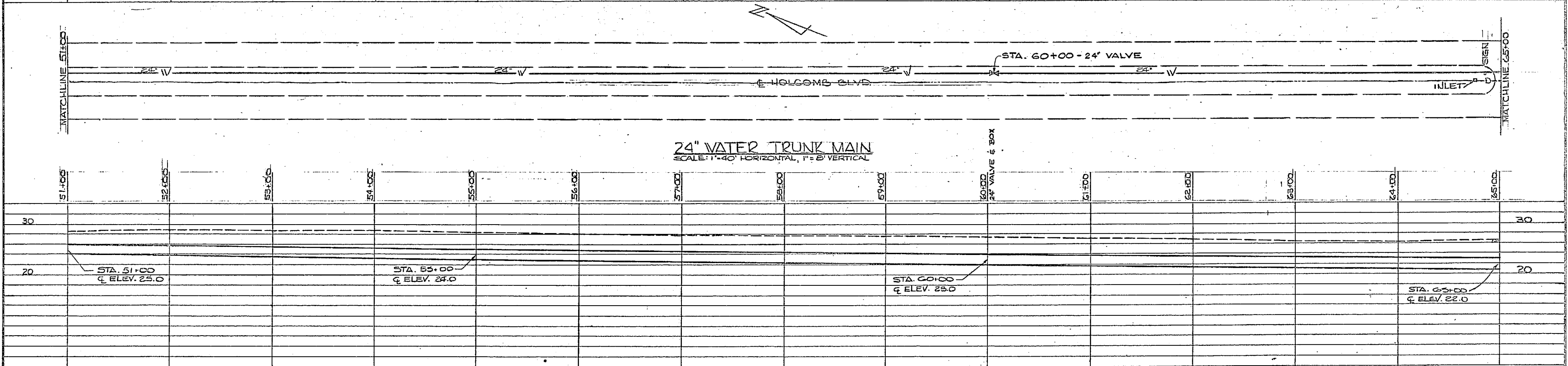
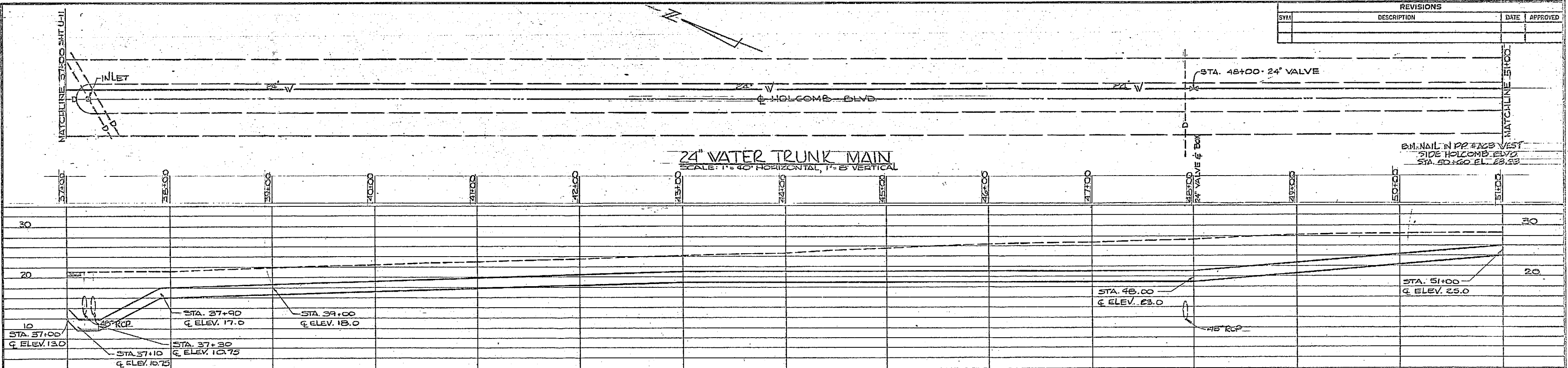
FOR LEGEND SEE SLIT II-20

GRAPHIC SCALES



ENGINEER SIGMUND W. GIBSON & ASSOCIATES CONSULTING ENGINEERS WILMINGTON, N. C.		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NAVAL STATION CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	
DESIGNED BY JRB	CHECKED BY JRB	DATE 11/23/74	PROJECT NO. 60091
APPROVED BY JRB		DATE 11/23/74	SHEET NO. 55 OF 74
TITLE TRUNK MAIN		NAVY FACILITIES ENGINEERING COMMAND 4107586	NAVY FACILITIES ENGINEERING COMMAND 62470-81-B-1644

REVISIONS			
SYN	DESCRIPTION	DATE	APPROVED

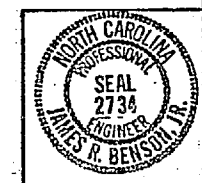


FOR LEGEND SEE SH. U-20

GRAPHIC SCALES

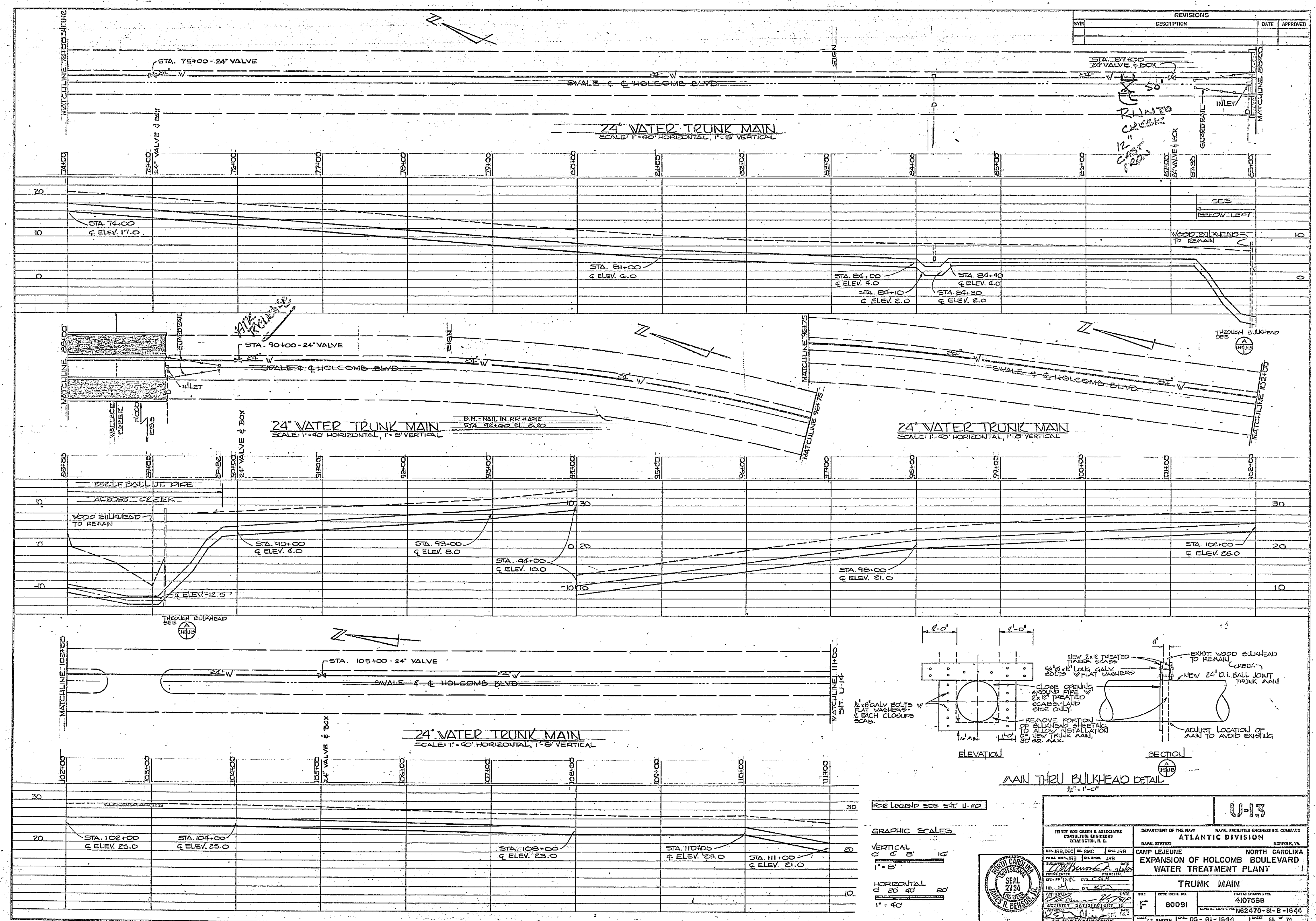
VERTICAL
0 4 8 6'
1" = 8'

HORIZONTAL
0 20' 40' 80'
1" = 40'

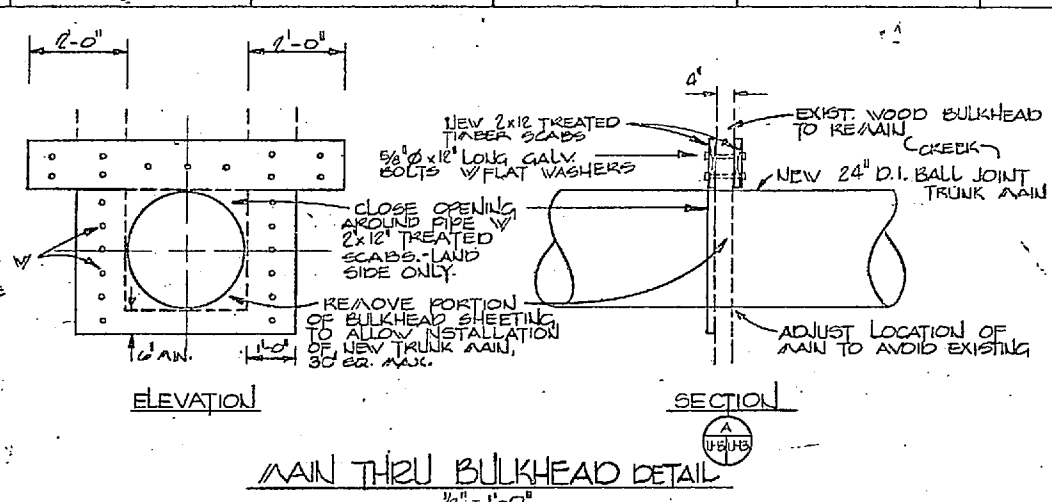


HENRY VOH DESEN & ASSOCIATES CONSULTING ENGINEERS WASHINGTON, D. C.		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	
DR. JRB	DR. SMC	CH. JRB	DATE
PR. JRB	CH. ENGR. JRB	DATE	5/2/84
PR. JRB	PR. JRB	DATE	5/2/84
NO. 12	DIR. VCS	DATE	5/2/84
ACTIVITY - SATISFACTORY TO	DATE	DATE	5/2/84
SCALE AS SHOWN	SHEET 05 - 81 - 1644	TOTAL SHEETS 54 OF 74	PROJECT NO. 4107587

U-12

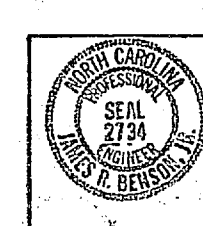


NO.	REVISIONS	DATE	APPROVED



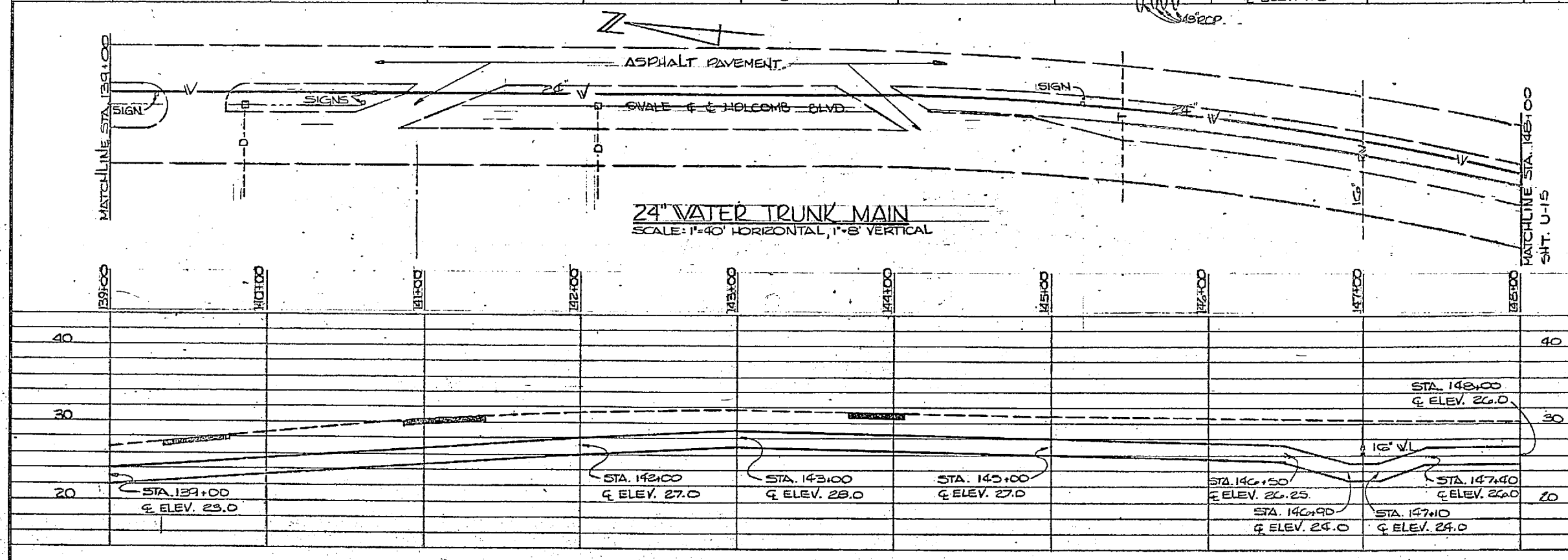
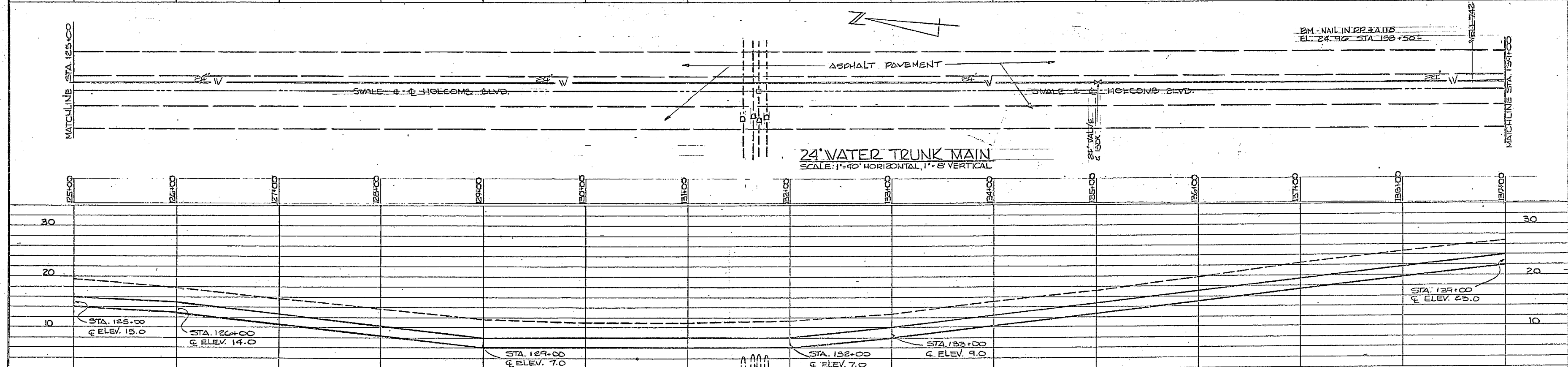
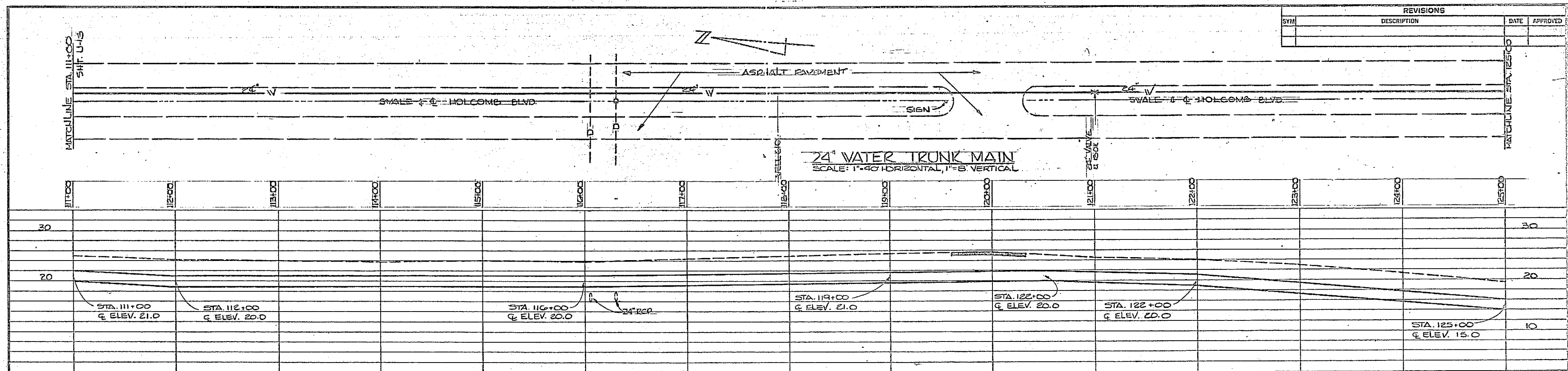
FOR LEGEND SEE SHEET U-22

GRAPHIC SCALES
 VERTICAL
 0' 10' 20' 30'
 1" = 5'
 HORIZONTAL
 0' 20' 40' 60'
 1" = 40'



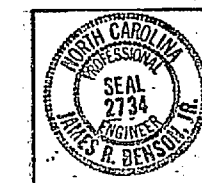
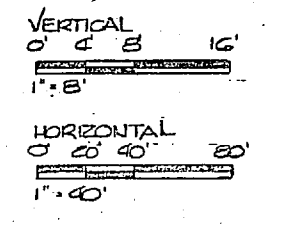
HENRY W. CORTH & ASSOCIATES CORPORATE ENGINEERS DURHAM, N. C.		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION	
CAMP LEJEUNE		NORTH CAROLINA	
EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT		TRUNK MAIN	
NO. 80091	DATE 05-81-1944	DRAWING NO. 410758B	
DRAWN BY SHOWN		CHECKED BY SHOWN	

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED



FOR LEGEND SEE SHEET U-20

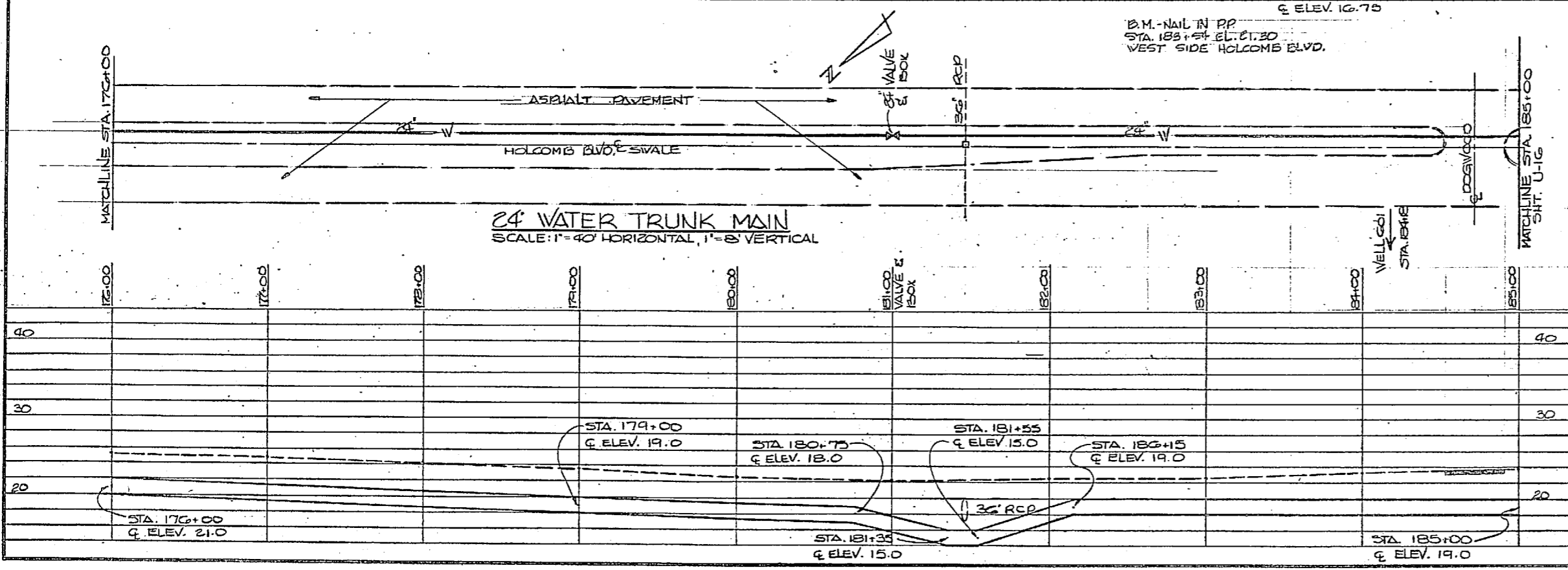
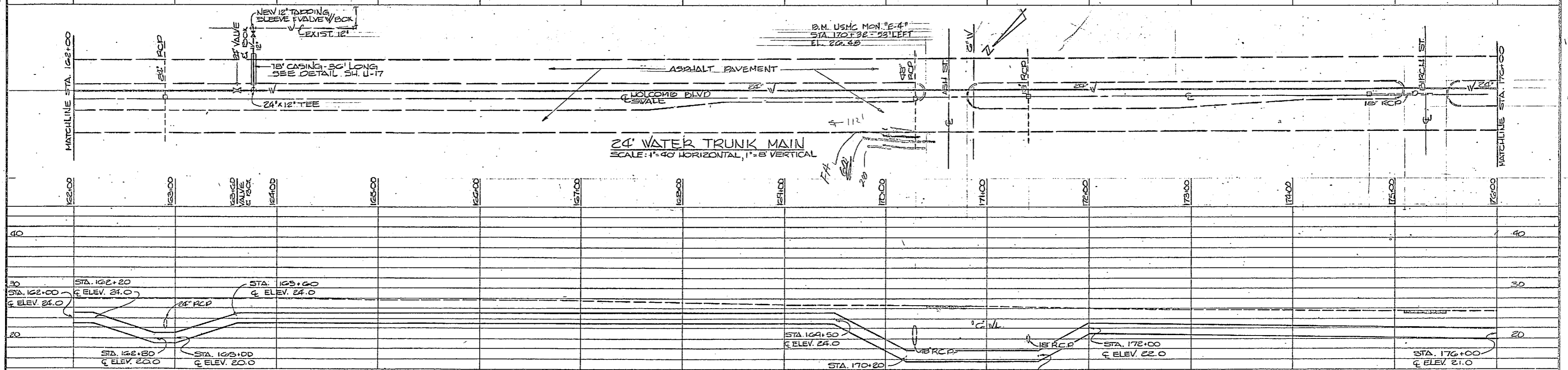
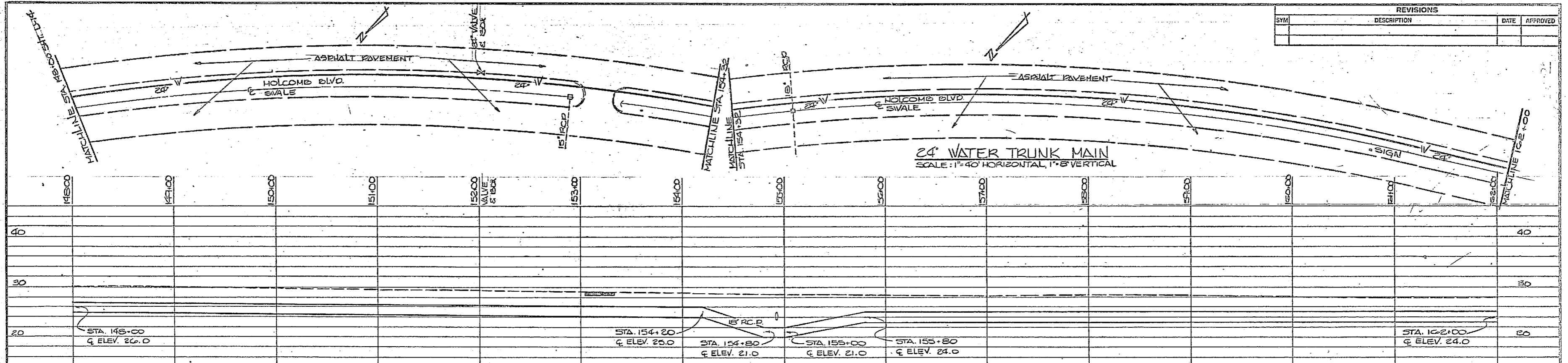
GRAPHIC SCALES



HENRY MOH GEBEL & ASSOCIATES CONSULTING ENGINEERS WILMINGTON, N. C.		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NORFOLK, VA.	
PROJECT: CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT		NAVAL STATION: NORTH CAROLINA	
DESIGNED BY: [Signature] CHECKED BY: [Signature]		TRUNK MAIN	
DATE: 7/29/99	SCALE: AS SHOWN	NAVY IDENT. NO.: 80091	NAVY DRAWING NO.: 4107569
ACTIVITY - SATISFACTORY TO		N 62470-81-B-1644	
FOR USE FOR CONSTRUCTION		SHEET 56 OF 74	

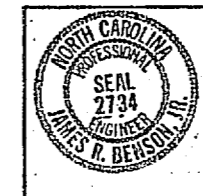


REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED



FOR LEGEND SEE SHEET U-20

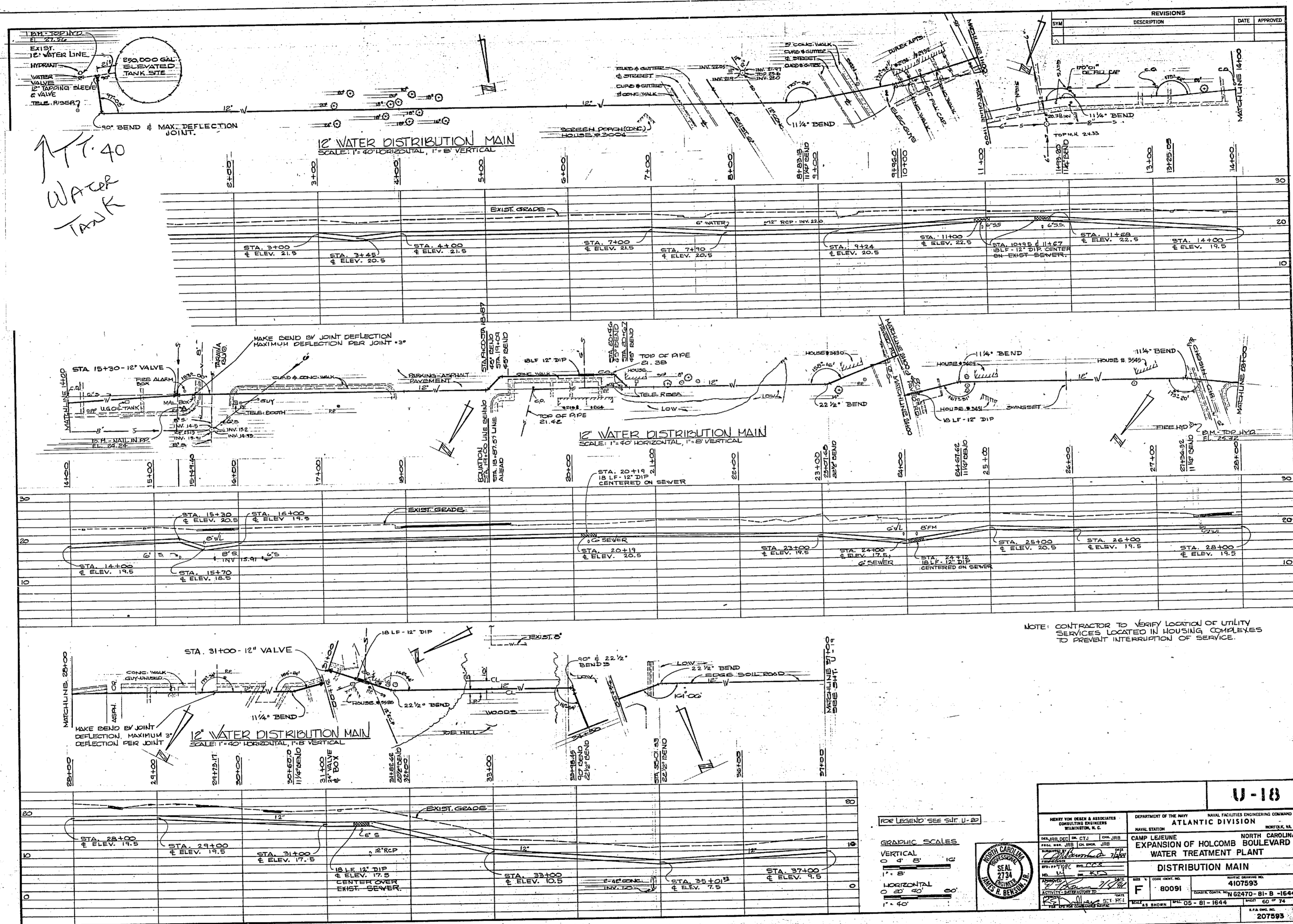
GRAPHIC SCALES
VERTICAL
0' 4' 8' 16'
1"=8'
HORIZONTAL
0' 20' 40' 80'
1"=40'



U-15	
HENRY VON DEER & ASSOCIATES CONSULTING ENGINEERS WASHINGTON, D. C.	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION FPOB NORFOLK, VA.
DES. JRB, DEC PROJ. MGR. JRB CHECKED BY JRB	DATE 7/29/94 ACTIVITY - SATELITE FACILITY TO
CAMP LEJEUNE NORTH CAROLINA EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	
TRUNK MAIN	
NO. 30091	NAVY DRAWING NO. 4107590
SCALE: AS SHOWN	DATE: 05-81-1644
207590	







ATT. 40
WATER
TANK

NO.	REVISIONS	DATE	APPROVED

NOTE: CONTRACTOR TO VERIFY LOCATION OF UTILITY SERVICES LOCATED IN HOUSING COMPLEXES TO PREVENT INTERRUPTION OF SERVICE.

FOR LEGEND SEE SHEET U-2

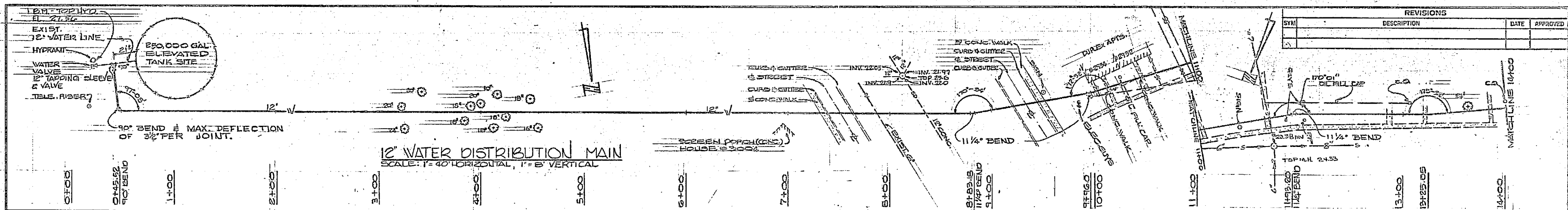
GRAPHIC SCALES
VERTICAL
0 4 8 12
1" = 8'
HORIZONTAL
0 20 40
1" = 40'



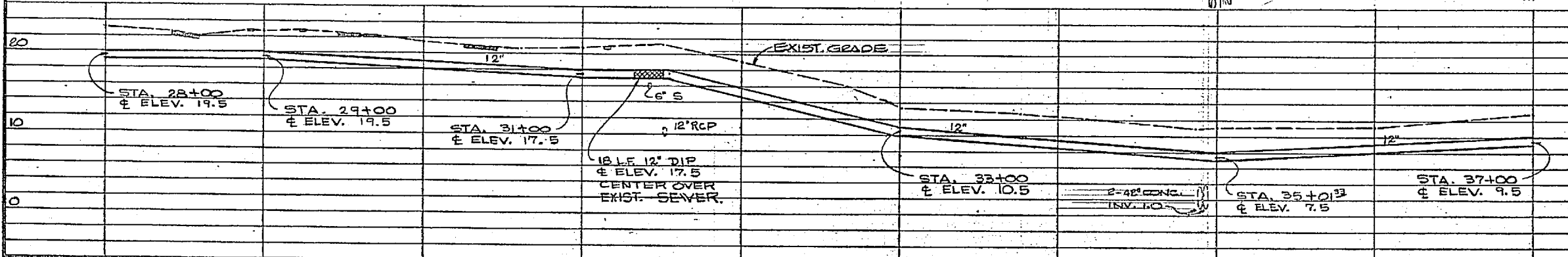
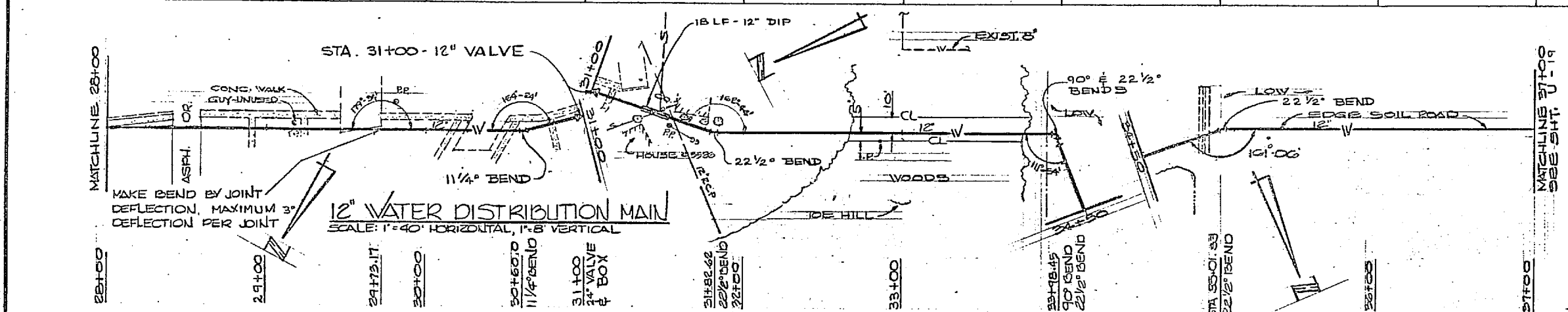
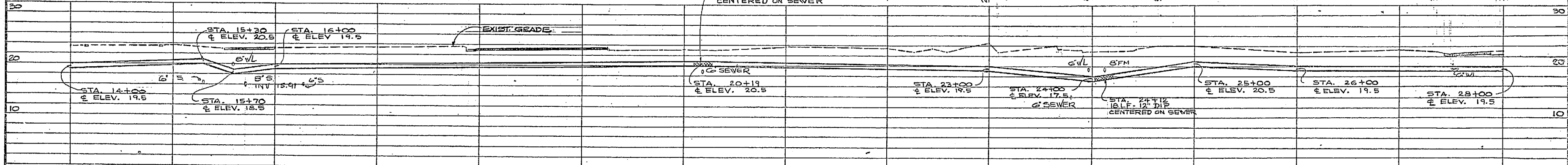
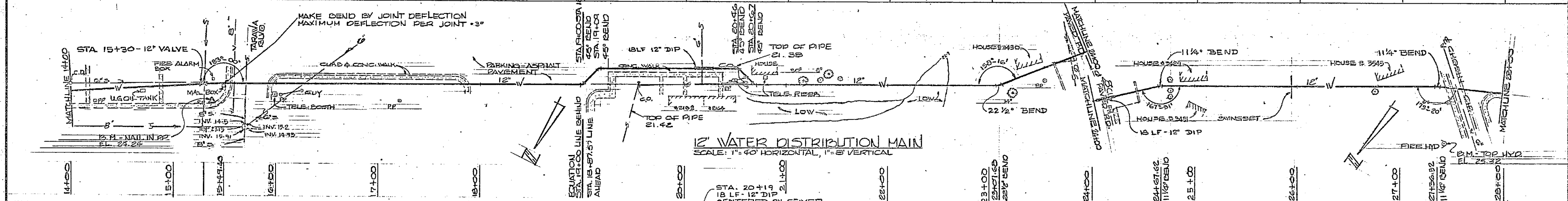
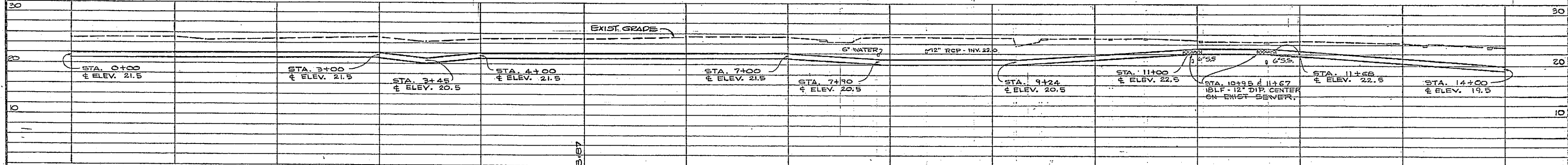
U-18	
<small> DEWITT HOWE DESIGN & ASSOCIATES CONSULTING ENGINEERS WASHINGTON, D. C. </small>	<small> DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NORFOLK, VA. </small>
<small> PROJECT NO. 62470-81-B-1644 DRAWING NO. 4107593 DATE: 05-81-1644 </small>	<small> CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT DISTRIBUTION MAIN </small>

↑ T.T. 40
WATER
TANK



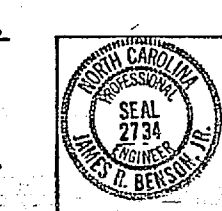
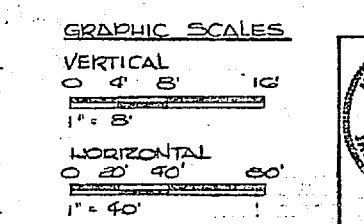


REVISIONS		
NO.	DESCRIPTION	DATE



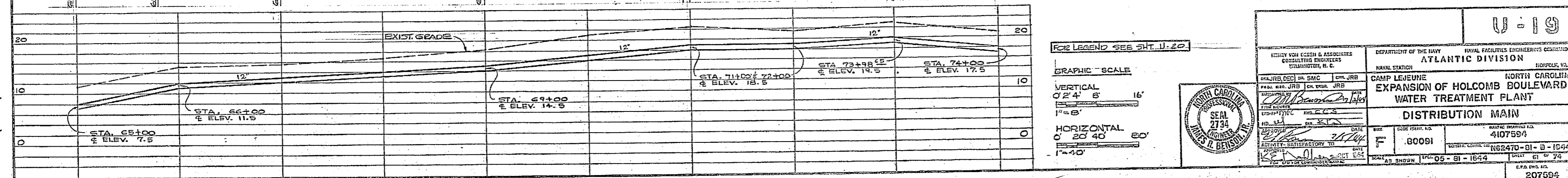
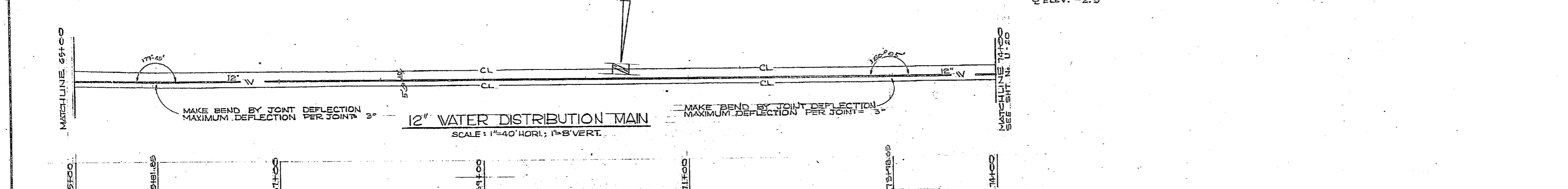
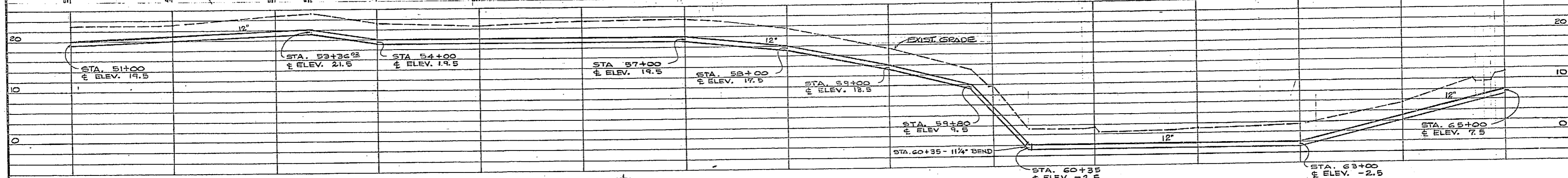
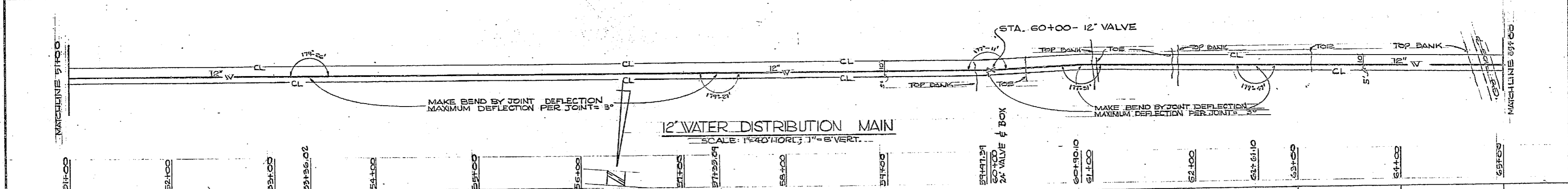
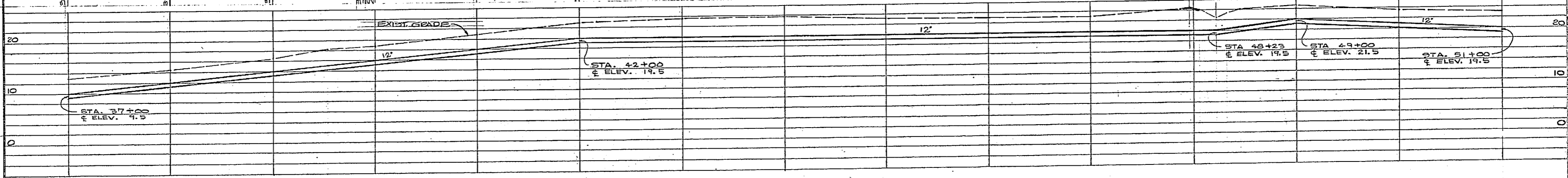
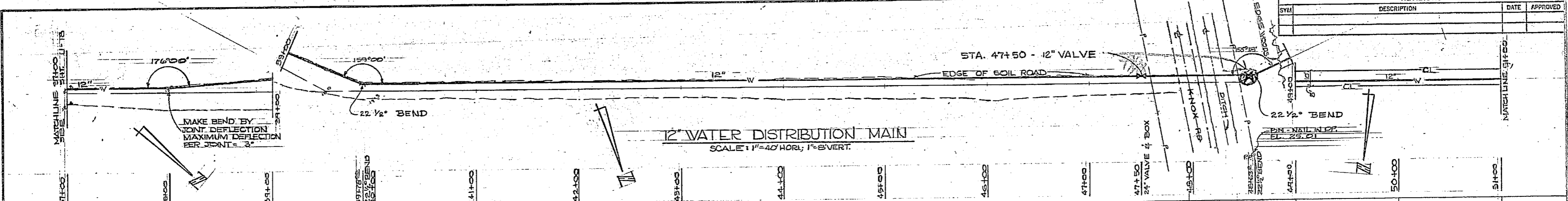
NOTE: CONTRACTOR TO VERIFY LOCATION OF UTILITY SERVICES LOCATED IN HOUSING COMPLEXES TO PREVENT INTERRUPTION OF SERVICE.

FOR LEGEND SEE SHEET U-20



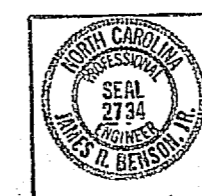
U-18	
HENRY VON OESCH & ASSOCIATES CONSULTING ENGINEERS WILMINGTON, N. C.	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NORFOLK, VA.	
CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	
DISTRIBUTION MAIN	
NO. 80091	DATE: 7/4/64
SCALE: AS SHOWN	DATE: 7/4/64

REVISIONS	DATE	APPROVED



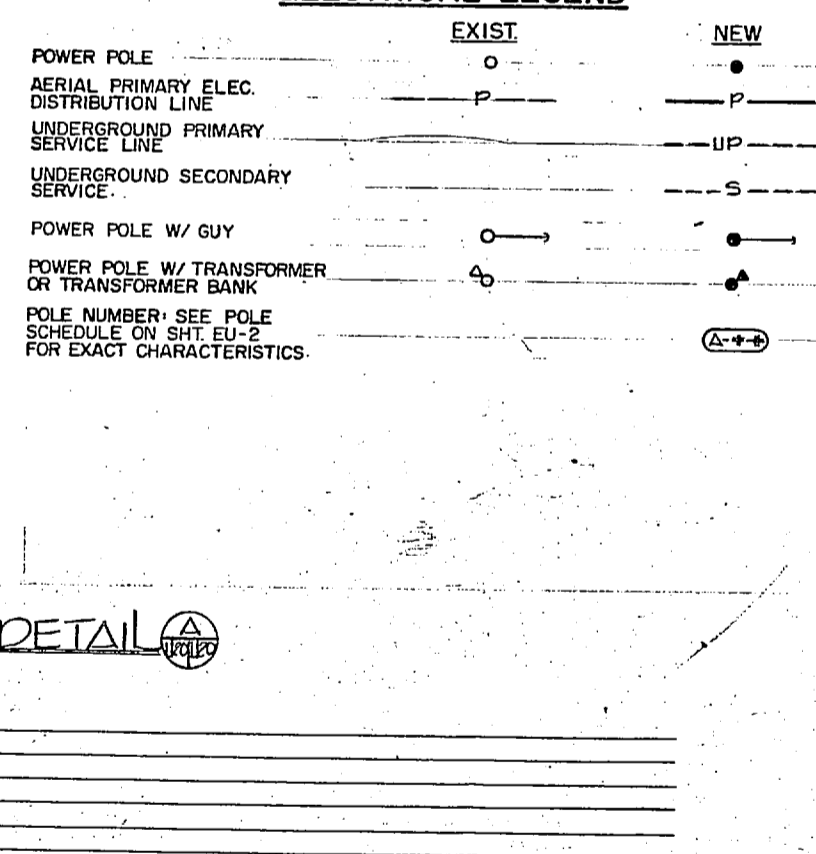
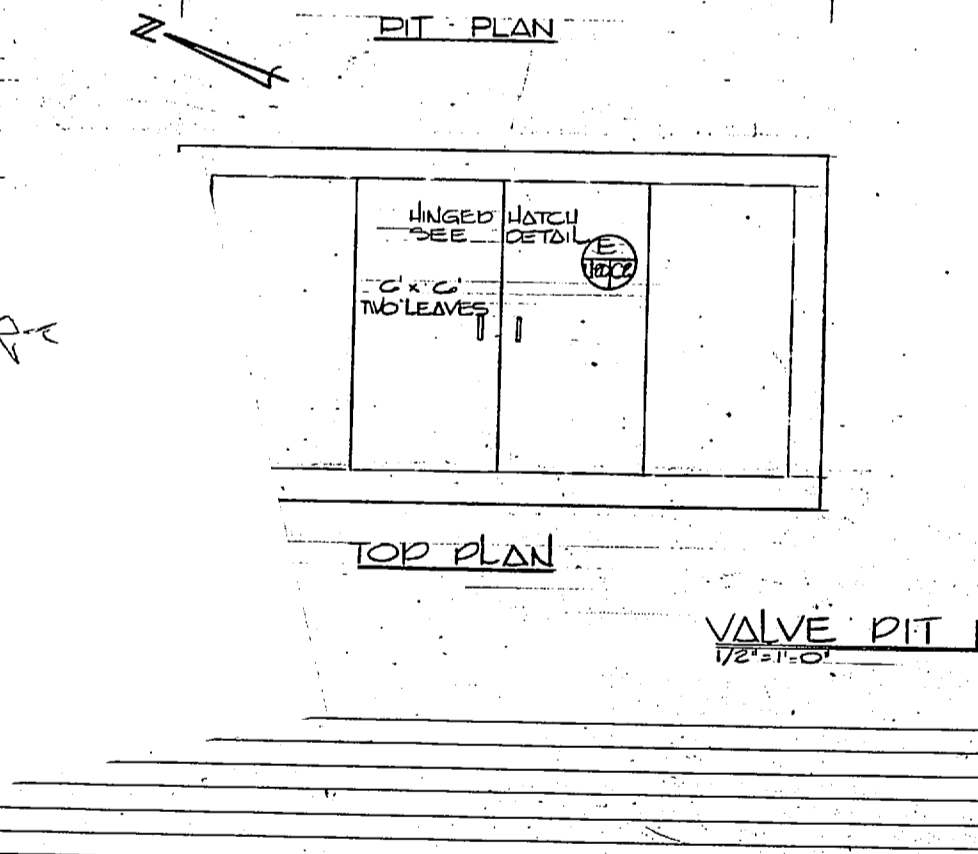
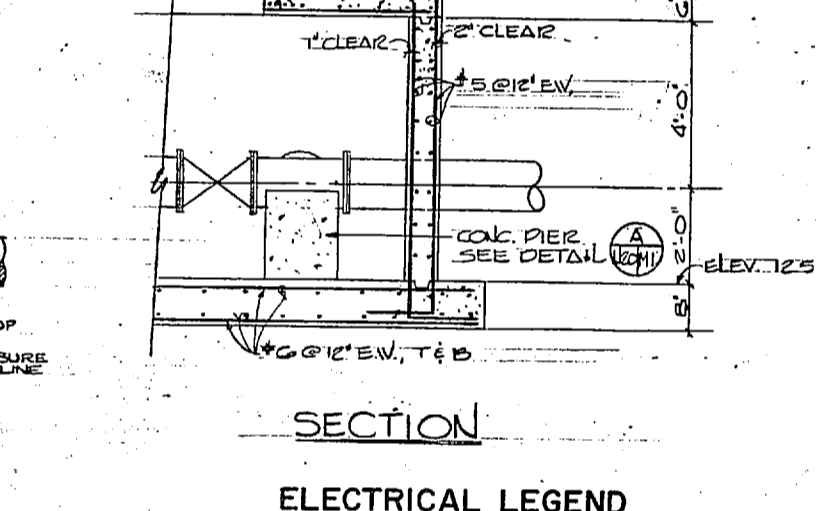
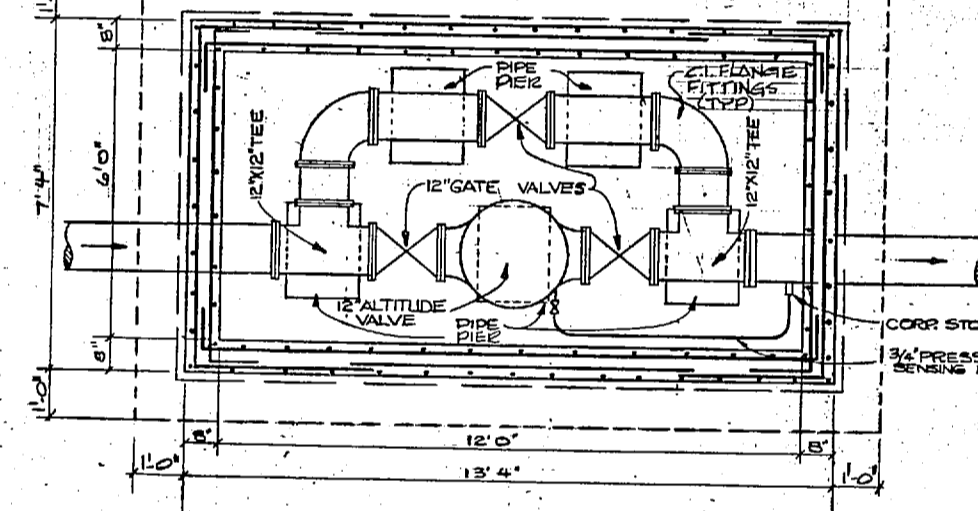
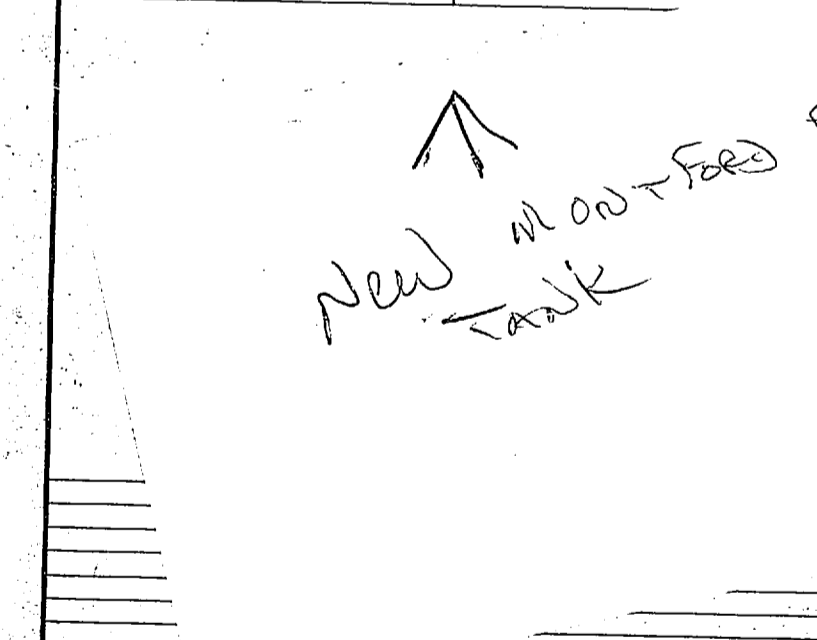
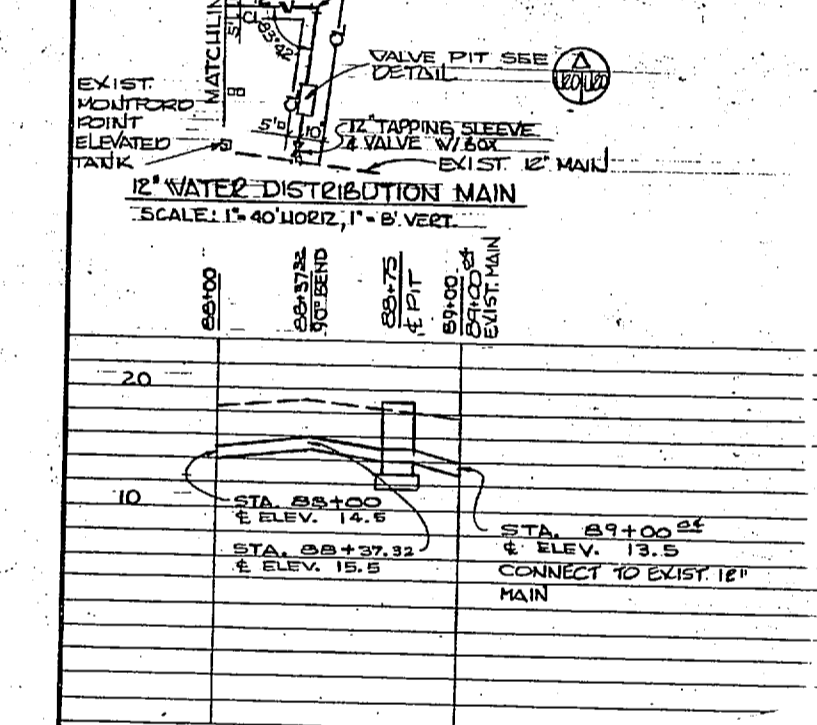
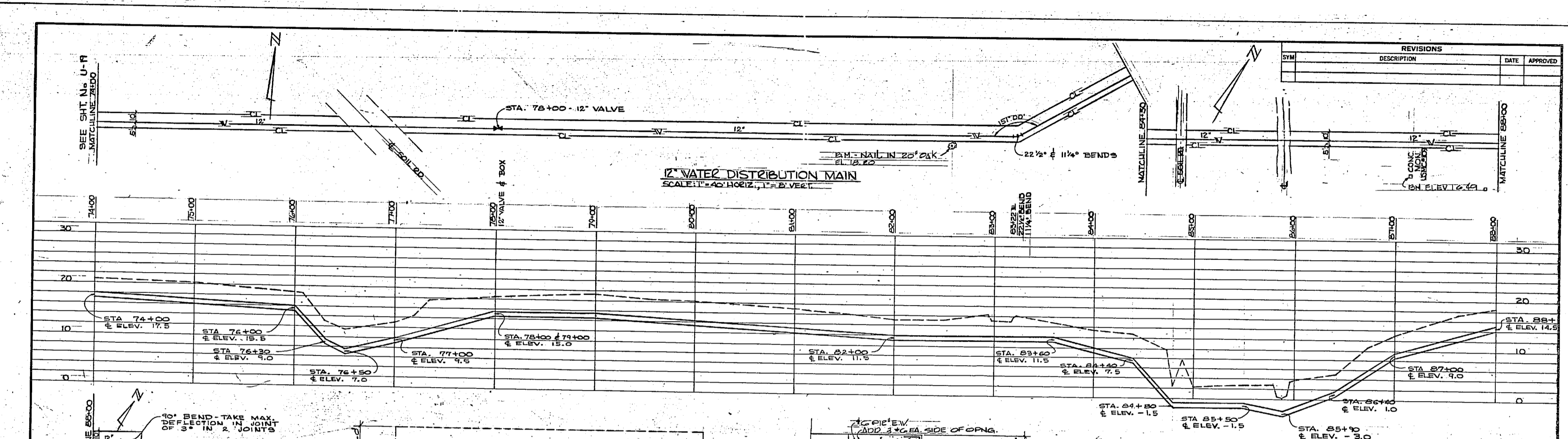
FOR LEGEND SEE SHT. U-20

GRAPHIC SCALE
 VERTICAL
 0" 2' 4" 8" 16"
 1" = 8'
 HORIZONTAL
 0" 20' 40' 80'
 1" = 40'



KENNY VAN KECEN & ASSOCIATES CONSULTING ENGINEERS COLLETON, N. C.		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NORFOLK, VA.	
PROJ. MGR. JRB DESIGNED BY JRB CHECKED BY JRB DATE 2/1/64		NAVAL STATION CAMP LEVEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	
TITLE DISTRIBUTION MAIN		DRAWING NO. 4107554	
SCALE AS SHOWN		PROJECT NO. 60091	
SHEET NO. 19		TOTAL SHEETS 24	

U-19



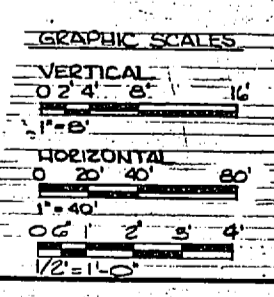
WELL SITES & PLAN & PROFILE LEGEND

	EXIST	NEW
FORCE MAIN	FM	FM
FINISH WATER MAIN	W	W
RAW WATER MAIN	RW	RW
BACKWASH RETURN	BR	BR
BACKWASH DRAIN	BD	BD
BACKWASH	BW	BW
PLANT EFFLUENT	E	E
UNDERDRAIN	UD	UD
TRANSMISSION MAIN	WT	WT
DRAIN LINE	D	D
SANITARY SEWER	S	S
TELEPHONE LINE	T	T
UNDERGROUND CABLE	UGC	UGC
DITCH		
FENCE		
RAILROAD		
VALVE		
MANHOLE		
CLEANOUT		
INLET JUNCTION BOX		
REDUCER		
CULVERT W/2 FES		
VALVE FIT		
BUILDINGS, HOUSES		
BENCH MARK		
CLEARING LIMIT		
EDGE OF WOODS		
TREE		
EDGE OF WATER		
STONE DRIVE		

ELECTRICAL LEGEND

	EXIST	NEW
POWER POLE	○	●
AERIAL PRIMARY ELEC. DISTRIBUTION LINE	— P —	— P —
UNDERGROUND PRIMARY SERVICE LINE	— UP —	— UP —
UNDERGROUND SECONDARY SERVICE	— S —	— S —
POWER POLE W/ GUY	○ —	● —
POWER POLE W/ TRANSFORMER OR TRANSFORMER BANK	○ —	● —
POLE NUMBER SEE POLE SCHEDULE ON SHEET ED-5 FOR EXACT CHARACTERISTICS	○ —	● —

New Manhole Feeds to Tank

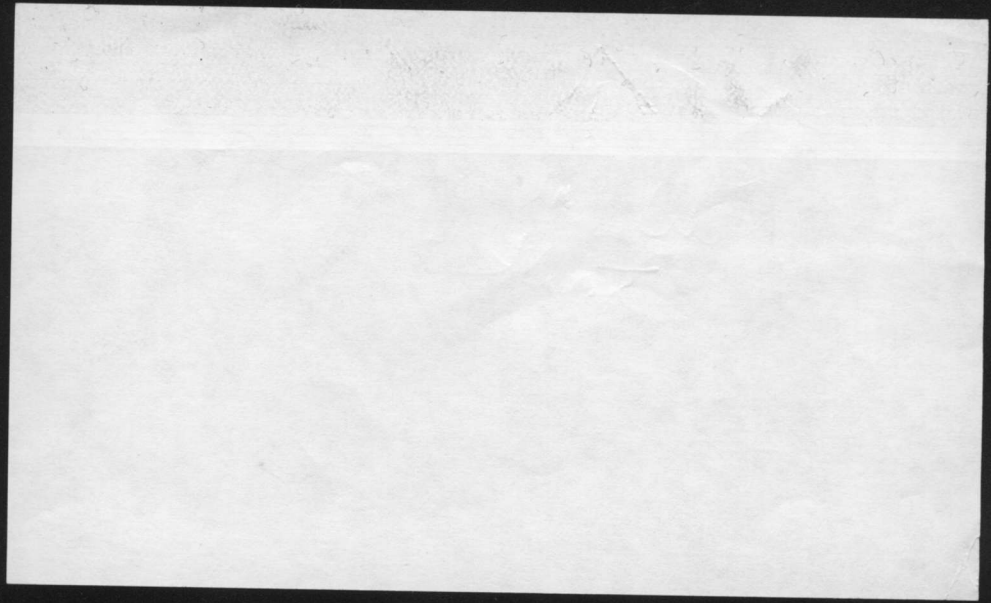


U-20	
HERBERT FORBES & ASSOCIATES CONSULTING ENGINEERS WELLSVILLE, N.C.	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NORFOLK, VA.
PROJECT NO. 80091 DRAWING NO. 4107595 SHEET NO. 62 OF 74	CAMP LEAUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT DISTRIBUTION MAIN
DATE: 11/1/74 BY: [Signature] CHECKED: [Signature]	TITLE: [Signature] DATE: 11/1/74

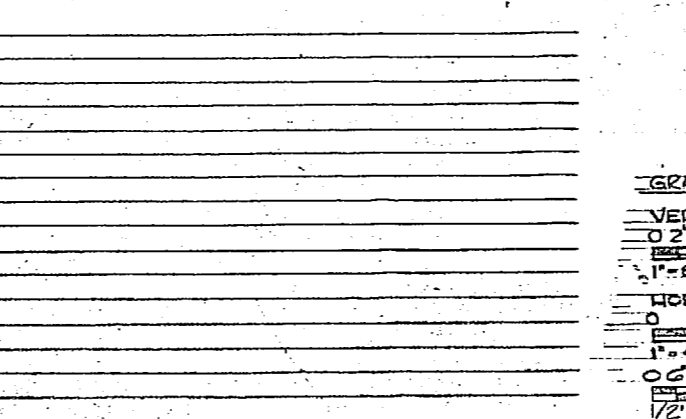
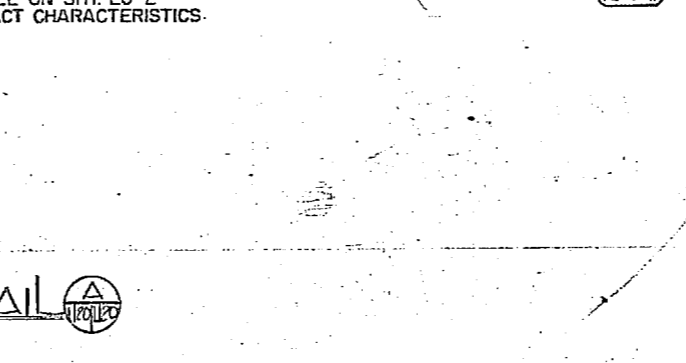
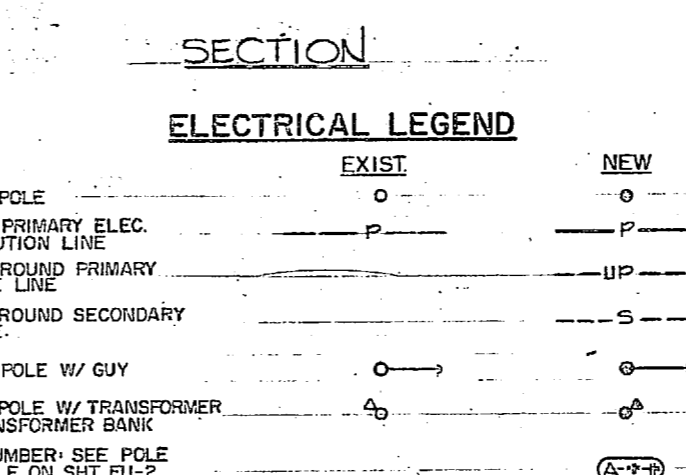
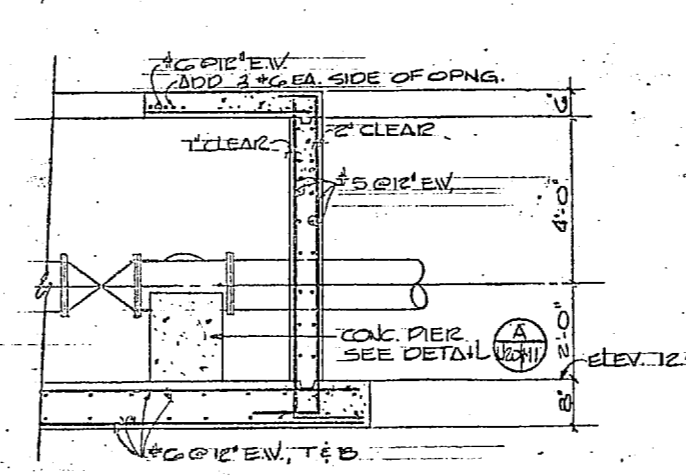
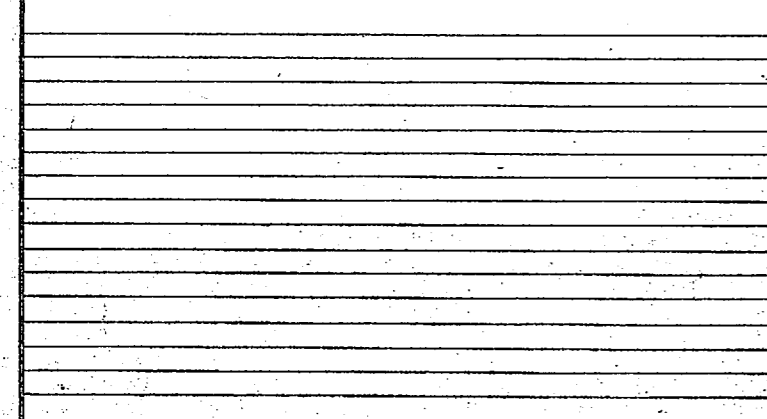
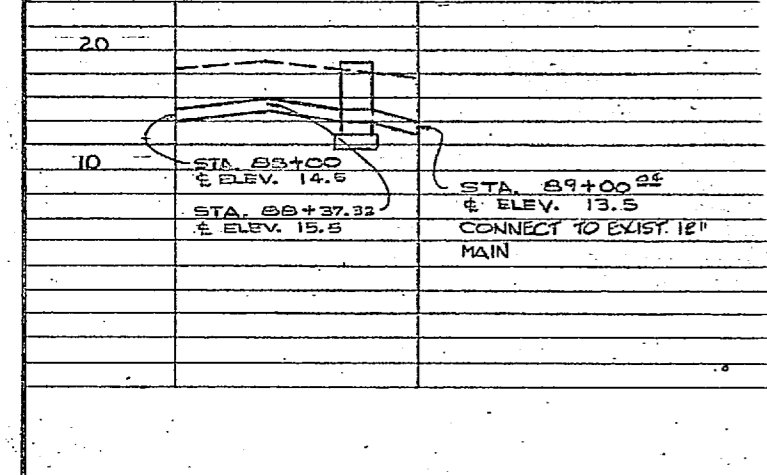
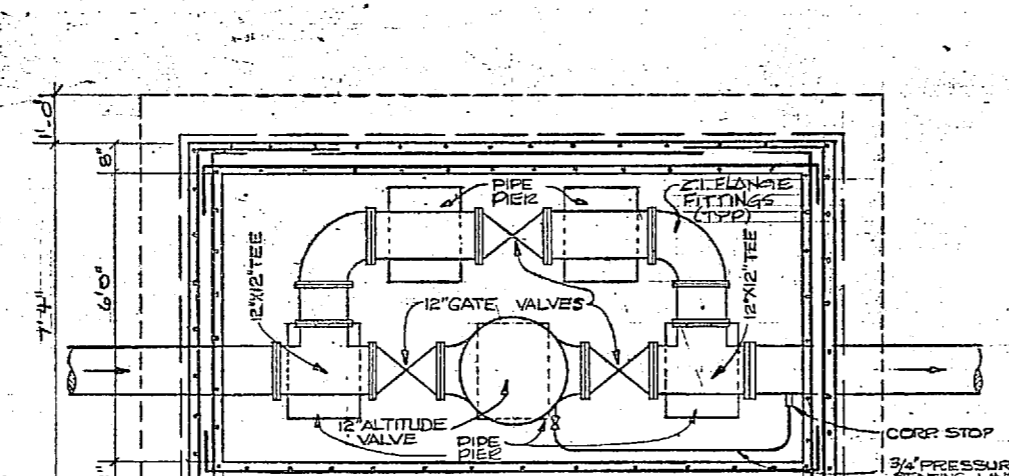
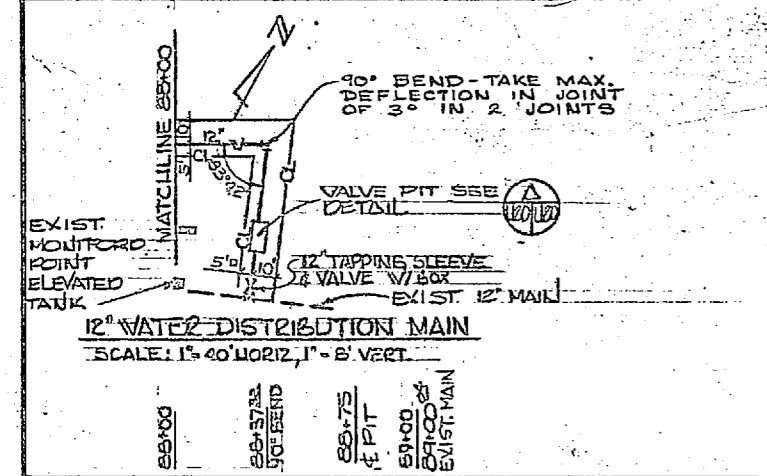
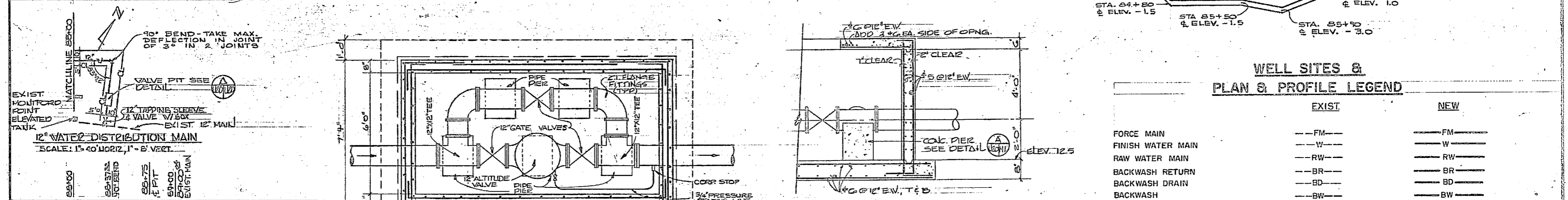
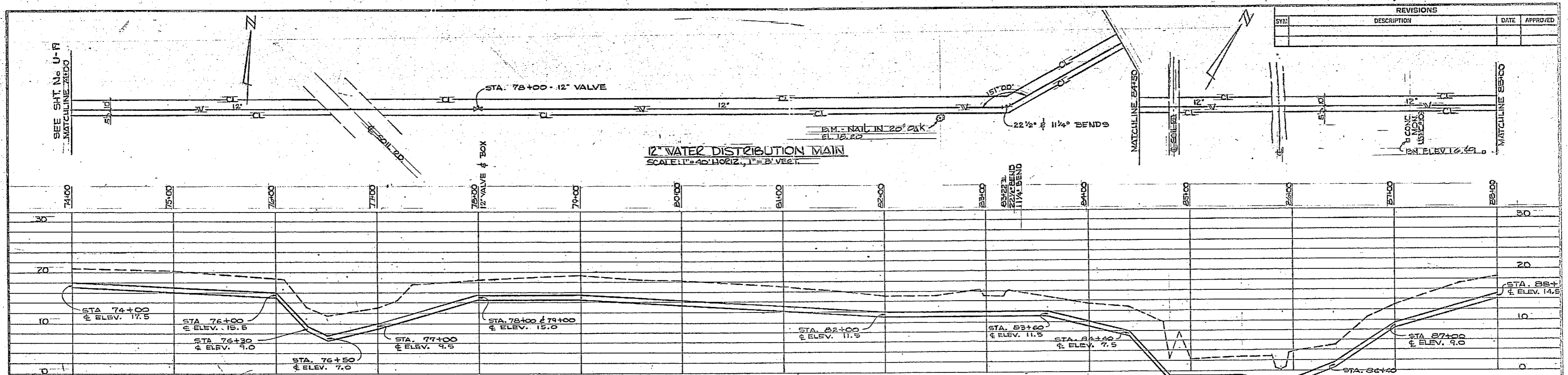




New Mon-Fred Pt
Tank



REVISIONS			
SYN	DESCRIPTION	DATE	APPROVED

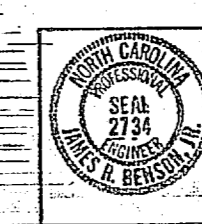
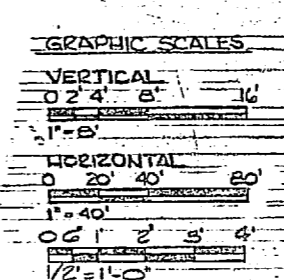


WELL SITES & PLAN & PROFILE LEGEND

	EXIST	NEW
FORCE MAIN	--- FM ---	--- FM ---
FINISH WATER MAIN	--- W ---	--- W ---
RAW WATER MAIN	--- RW ---	--- RW ---
BACKWASH RETURN	--- BR ---	--- BR ---
BACKWASH DRAIN	--- BD ---	--- BD ---
BACKWASH	--- BW ---	--- BW ---
PLANT EFFLUENT	--- E ---	--- E ---
UNDERDRAIN	--- UD ---	--- UD ---
TRANSMISSION MAIN	--- WT ---	--- WT ---
DRAIN LINE	--- D ---	--- D ---
SANITARY SEWER	--- S ---	--- S ---
TELEPHONE LINE	--- T ---	--- T ---
UNDERGROUND CABLE	--- UGC ---	--- UGC ---
DITCH	---	---
FENCE	---	---
RAILROAD	---	---
VALVE	---	---
MANHOLE	---	---
CLEANOUT	---	---
INLET JUNCTION BOX	---	---
REDUCER	---	---
CULVERT W/2 FES	---	---
VALVE PIT	---	---
BUILDINGS, HOUSES	---	---
BENCH MARK	---	---
CLEARING LIMIT	---	---
EDGE OF WOODS	---	---
TREE	---	---
EDGE OF WATER	---	---
STONE DRIVE	---	---

ELECTRICAL LEGEND

	EXIST	NEW
POWER POLE	○	○
AERIAL PRIMARY ELEC. DISTRIBUTION LINE	— P —	— P —
UNDERGROUND PRIMARY SERVICE LINE	---	--- UP ---
UNDERGROUND SECONDARY SERVICE LINE	---	--- S ---
POWER POLE W/ GUY	○ →	○ →
POWER POLE W/ TRANSFORMER OR TRANSFORMER BANK	⊙	⊙
POLE NUMBER: SEE POLE SCHEDULE ON SHIT. EU-2 FOR EXACT CHARACTERISTICS.	⊙	⊙

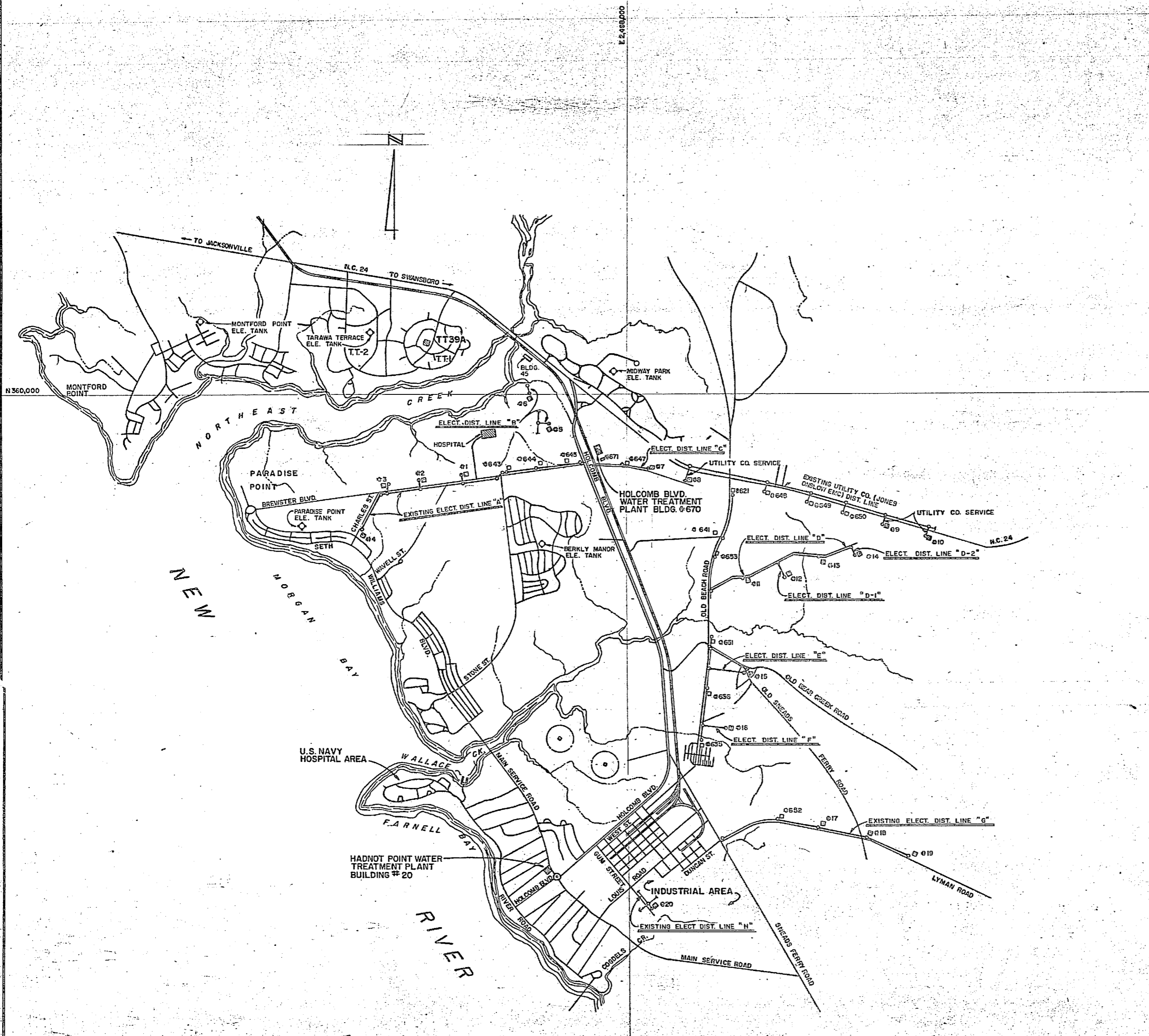


U-20	
HENRY VON DESER & ASSOCIATES CONSULTING ENGINEERS WASHINGTON, D. C.	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NORFOLK, VA.	
NAVAL STATION CAMP LEJEUNE NORTH CAROLINA EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	
DISTRIBUTION MAIN	
DESIGNED BY: JRB	CHECKED BY: JRB
DATE: 7/24/64	SCALE: AS SHOWN
PROJECT NO.: N62470-81-B-1544	SHEET NO.: 52 OF 74
DATE: 05-81-1944	BY: JRB

AP 33484A

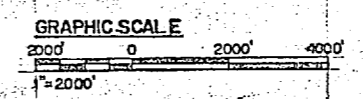
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED

ELECTRICAL LEGEND			
SYMBOL	EXISTING	NEW	DESCRIPTION
□	□	□	WELL SITE
—○—	—○—	—○—	POWER POLE & PRIMARY AERIAL SERVICE



CROSS-REFERENCE INDEX	
ELECT. DIST. LINE	SHEET NUMBER
A	U-1
B	C-3
C	U-4
D	U-2, U-3, U-4
D-1	U-4
D-2	U-4
E	U-5
F	U-6
G	U-6
H	U-5

ELECTRICAL DISTRIBUTION SYSTEM FOR WELLS #1-20
SCALE: 1"=2000'



	HENRY VON OESSEN AND ASSOCIATES CONSULTING ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA	DEPARTMENT OF THE NAVY, NAVAL FACILITIES ENGINEERING COMPLEX ATLANTIC DIVISION NAVAL STATION, NORFOLK, VIRGINIA	
	DES: RDM PRS: M.C.T.J. CHK: RDM PROJ. MGR: J.R.B. CH. ENGR: J.R.B.	CAMP LEJEUNE, NORTH CAROLINA EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	ELECTRICIAN: J. J. [Signature] DATE: 7/26/64 FIRM MEMBER: [Signature] - PRINCIPAL
	APPROVED: [Signature] DATE: 7/26/64 ACTIVITY - SATISFACTORY TO: [Signature] FOR EFO FOR COMMANDER NAVFAC	SIZE: 8009I NAVFAC DRAWING NO.: 4107596 CONSTR. CORTH. NO.: NS2470-81-B-1644	SHEET 03 OF 24 SCALE: AS SHOWN SPEC: 05-81-1644
	207585	207585	207585



SCHEDULE OF POLES

NOTE: X-FB, 15F23-N ETC ARE POLE DETAIL DESIGNATION SYMBOLS. REFER TO LAYOUT SKETCHES 13-152021-11 THROUGH 13-152021-15 BOUND WITH SECTION 1502 OF THE SPECIFICATIONS FOR AN EXPLANATION AND PROPER USE OF THE SYMBOLS.

Roses in field
New Hk 7

REVISIONS		
NO.	DESCRIPTION	DATE

POLE NUMBER	EQUIPMENT	WELL SITE NO.		POLE	CROSSARM CONSTRUCTION	HORIZONTAL CONSTRUCTION	HORIZONTAL ANGLE CONSTRUCTION	SHEET NUMBER REFERENCE	ARMLESS CONSTRUCTION	TRANSFORMER	PROTECTIVE EQUIP UNDERGROUND	ZANCHOR	CONDUIT RISER		REMARKS	
		EXIST	NEW										TYPE	WIRE SIZE		
A-1, A-2	EXISTING NEW	1, 2	X - 30	X-FB	15F23		U-1, C-3									
A-3	EXISTING NEW	3	X - 30	DX-DE-FB X-FB	15F23		U-1, C-3								REMOVE X-FB & 1-T (6 25 KV)	
A-4	EXISTING NEW	4	X - 30	X-FB	15F23		U-1, C-3								3/8 WIRE DELTA CONNECTED 12.47 KV PRIMARY	
A-1-1, A-2-1, A-3-1		1, 2, 3	X - 30	DX-DE-FB X-FB	15F23		U-1, C-3								3/8 WIRE DELTA CONNECTED 12.47 KV PRIMARY	
B-1	EXISTING NEW	5	X - 30	X-FB	15F23-N		C-3								COMMUNICATIONS CABLE TO REMAIN	
B-2	EXISTING NEW	6	X - 30	X-FB	15F23-N		C-3								COMMUNICATIONS CABLE TO REMAIN	
B-1-1		5	X - 30	X-FB	15F23-N		C-3									
B-1-2, B-2-1		5, 6	X - 30	DX-DE-FB X-FB	15F23-N		C-3									
B-2-A		6	X - 30	X-FB	15F23-N		C-3								SPAN GUY POLE ONLY	
C-1	EXISTING NEW	7	X - 30	DX-DE-FB X-FB	15F23-N		U-4								CONNECT EXISTING 15F23-N TO 15F23-N	
C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-9		7	X - 30	X-FB	15F23-N		U-4									
C-11		7	X - 30	DX-DE-FB X-FB	15F23-N		U-4, C-4								CONNECT EXISTING 15F23-N TO 15F23-N	
EXISTING RAW WATER LINE C		8					U-5								AERIAL SERVICE AND METERING BY UTILITY CO.	
D-1	EXISTING NEW	9	X - 30	DX-DE-FB X-FB	15F23-N		U-2									
D-1-A, D-2-A, D-2-A, D-2-A, D-2-A, D-2-A		9	X - 30	X-FB	15F23-N		U-2, U-3								SPAN GUY POLE ONLY	
D-6, D-23		10	X - 30	X-FB	15F23-N		U-2, U-3									
D-7, D-25, D-27		10	X - 30	X-FB	15F23-N		U-2, U-3									
D-8, D-9, D-31, D-32		10	X - 30	X-FB	15F23-N		U-2, U-3									
D-2, D-4, D-5, D-8, D-10, D-11, D-12, D-13, D-14, D-15, D-16, D-17, D-18, D-19, D-20, D-21, D-22, D-24, D-26, D-28, D-29, D-30, D-34, D-35, D-36, D-37, D-38		10	X - 30	X-FB	15F23-N		U-2, U-3									
D-30		11	X - 30	DX-DE-FB X-FB	15F23-N		U-3, U-5								UNDER GROUND	
D-21 (SEE D-21 BELOW)		11	X - 30	X-FB	15F23-N		U-2, C-5									
D-99 (SEE D-99 ABOVE RIGHT)		11	X - 30	X-FB	15F23-N		U-2									
D-15		11	X - 30	X-FB	15F23-N		U-2, C-5								UNDER GROUND	
D-21		11	X - 30	DX-DE-FB X-FB	15F23-N		U-3, U-4									
D-21-A		11	X - 30	X-FB	15F23-N		U-3, U-4								SPAN GUY POLE ONLY	
D-21-1, D-21-2, D-21-3		11	X - 30	X-FB	15F23-N		U-4									
D-21-4		11	X - 30	DX-DE-FB X-FB	15F23-N		U-4, U-5								UNDER GROUND	

POLE NUMBER	EQUIPMENT	WELL SITE NO.		POLE	CROSSARM CONSTRUCTION	HORIZONTAL CONSTRUCTION	HORIZONTAL ANGLE CONSTRUCTION	SHEET NUMBER REFERENCE	ARMLESS CONSTRUCTION	TRANSFORMER	PROTECTIVE EQUIP UNDERGROUND	ZANCHOR	CONDUIT RISER		REMARKS	
		EXIST	NEW										TYPE	WIRE SIZE		
D-29			X - 30	DX-DE-FB X-FB			15F23-N	U-4								
D-29-A, D-29-B			X - 30	X-FB			15F23-N	U-4								SPAN GUY POLE ONLY
D-29-1, D-29-2, D-29-3			X - 30	X-FB			15F23-N	U-4								
D-29-4			X - 30	DX-DE-FB X-FB			15F23-N	U-4, C-9							UNDER GROUND	
E-1	EXISTING NEW		X - 30	X-FB	15F23-N		U-5									
E-1-A			X - 30	DX-DE-FB			U-5									EXTEND 3RD CONDUCTOR FROM POLE - X ON U-5 TO POLE E-1 - 15F23-N. CONVERT CENTER 4-DE INSULATOR ON POLE - X WITH EDGE INSULATOR.
E-2, E-3, E-4, E-5, E-6, E-7, E-8			X - 30	X-FB	15F23-N		U-5									SPAN GUY POLE ONLY
E-9			X - 30	DX-DE-FB X-FB			15F23-N	U-5, C-9							UNDER GROUND	
E-8			X - 30	X-FB	15F23-N		U-5									
F-1	EXISTING NEW		X - 30	DX-DE-FB X-FB			15F23-N	U-6								CONNECT EXISTING 15F23-N TO 15F23-N
F-1-A			X - 30	X-FB			U-6									SPAN GUY POLE ONLY
F-2, F-3, F-4, F-5, F-6, F-7			X - 30	X-FB	15F23-N		U-6									
F-8			X - 30	DX-DE-FB X-FB			15F23-N	U-6, C-6							UNDER GROUND	
G-1, G-2	EXISTING NEW		X - 30	X-FB			U-6, C-6	LP3-N								LOWER NEUTRAL
G-3			X - 30	X-FB			U-6, C-6									
H-1	EXISTING NEW		X - 30	DX-DE-FB X-FB			15F23-N	U-5, C-6								AREA LIGHTING FIXTURE & SECONDARY TO REMAIN. CONVERT EXISTING 15F23-N TO 15F23-N
H-2			X - 30	DX-DE-FB X-FB			15F23-N	U-5, C-6							UNDER GROUND	

NOTES: (1) ALL PRIMARY IS 3/8 4 WIRE 12.47/7.2 KV, WYE CONNECTED. 3/4 AWG BARE STRANDED COPPER LND.
 (2) ALL TRANSFORMER CONNECTIONS ARE WYE: WYE, 12.47/7.2 KV: 120/208 V, 3/8 4 WIRE UNLESS NOTED TO BE DELTA: WYE, 12.47 KV: 120/208 V.
 (3) ALL GUNTS ARE 5/8" WITH 10" ANCHOR. SPAN GUNTS ARE 5/16"

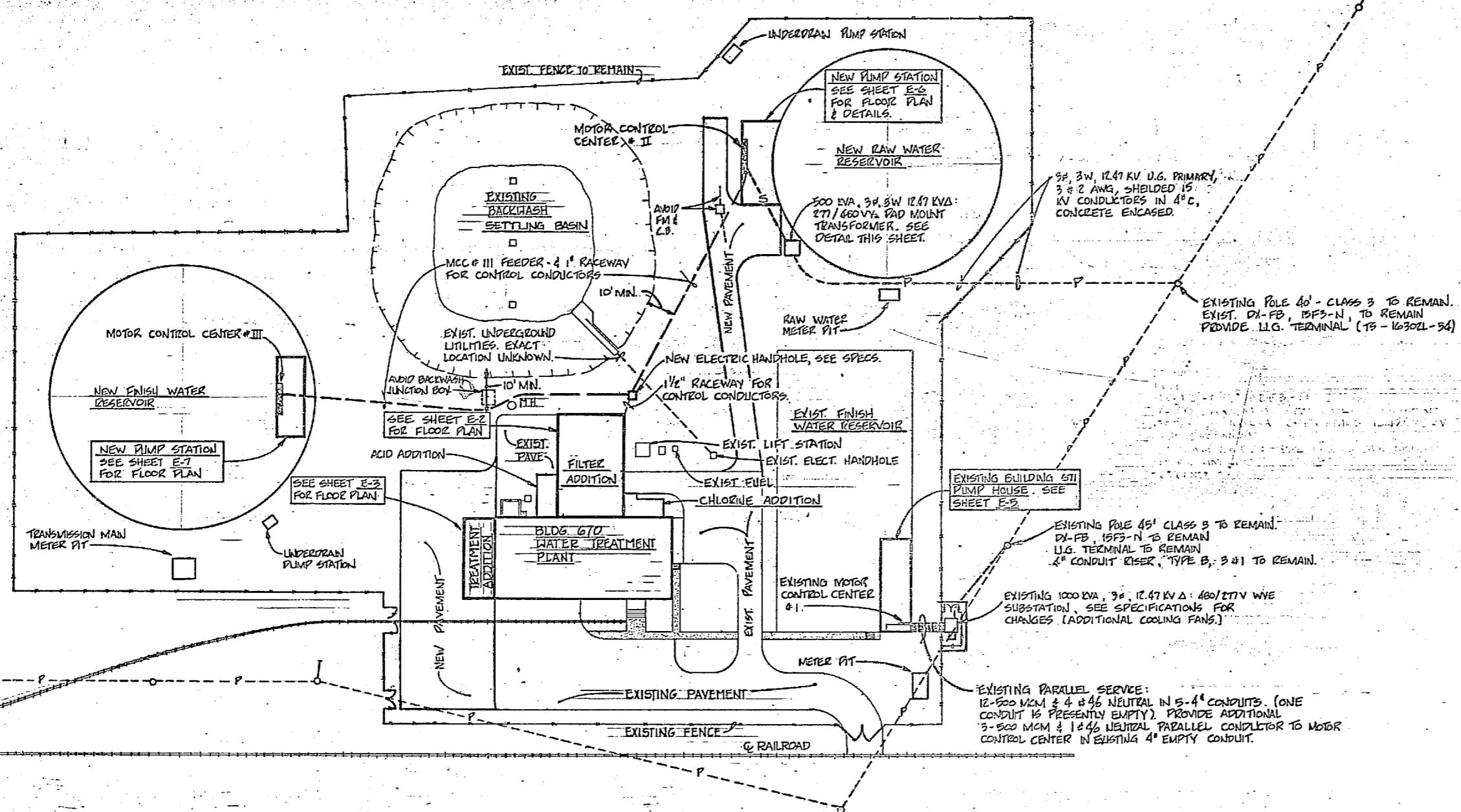
SIZE	GRADE	TEMPERATURE, °F	SPANS FOR STRANDED COPPER WIRE FOR DIFFERENT SPAN LENGTHS (MEDIUM TENSION DISTRICTS)				
			100 FT.	125 FT.	150 FT.	175 FT.	200 FT.
4	ALL	90	55	59	15	185	25
		60	8	12	18	24	32
		90	12	17	23.5	30	39

HENRY VOIGT BECHTOLD ASSOCIATES CONSULTING ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND	
DESIGNED BY: R. M. MYERS		DRAWN BY: J. L. BROWN	
CHECKED BY: J. L. BROWN		DATE: 5/2/60	
PROJECT: EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT		SHEET NO. 64 OF 76	
SCHEDULE OF POLES		SCALE: AS SHOWN	
SITE: 80091		SPEC: 05-61-1644	

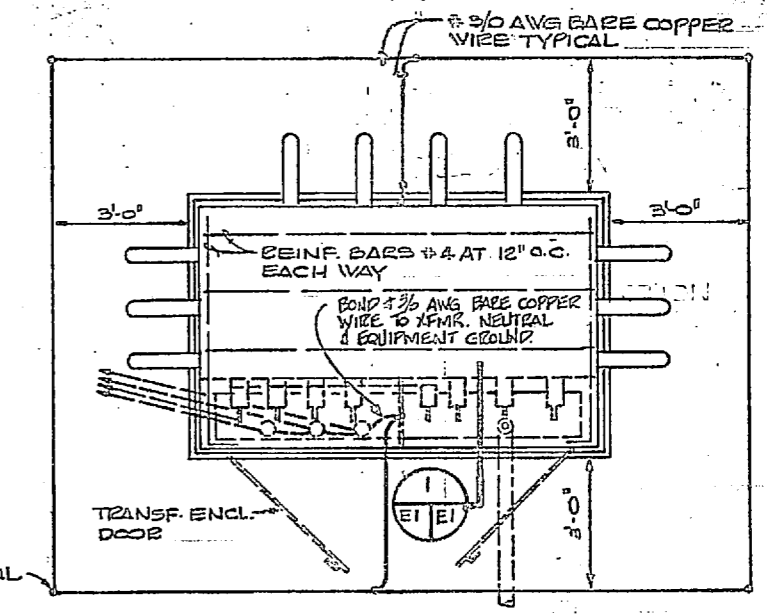


REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED

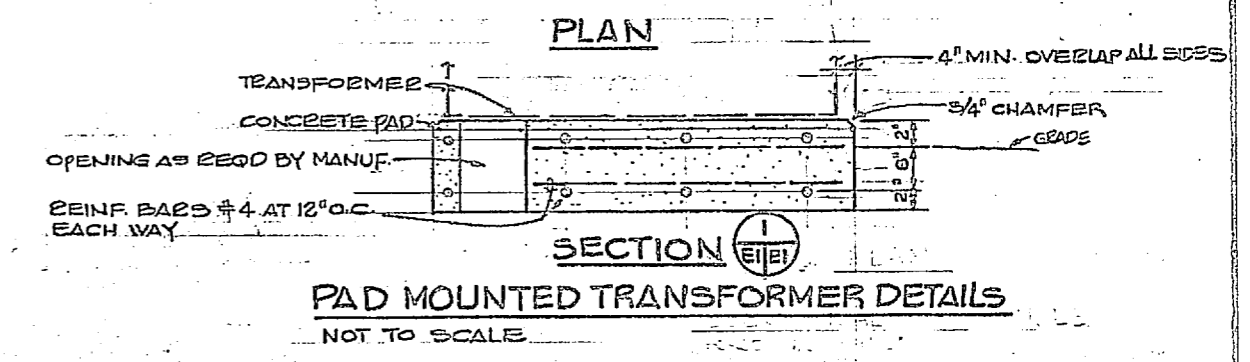
SYMBOL		DESCRIPTION
EXIST.	NEW	
○	○	POWER POLE
—P—	—P—	AERIAL PRIMARY SERVICE
—P—	—P—	UNDERGROUND PRIMARY SERVICE
—S—	—S—	UNDERGROUND SECONDARY SERVICE CONDUIT, SIZE INDICATED ON PLAN.
—S—	—S—	UNDERGROUND CONDUIT



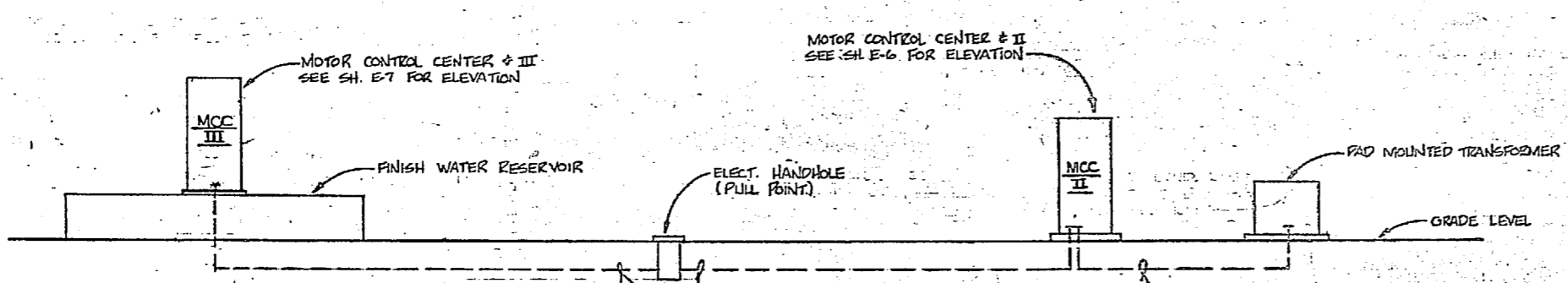
ELECTRICAL SITE PLAN - HOLCOMB BLVD. WATER TREATMENT PLANT
SCALE: 1" = 40'-0"



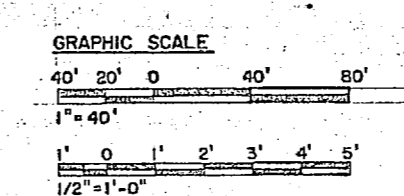
3/4" Ø x 10'-0" ENDS ROD TYPICAL FOR G.



SECTION (I-I)
PAD MOUNTED TRANSFORMER DETAILS
NOT TO SCALE



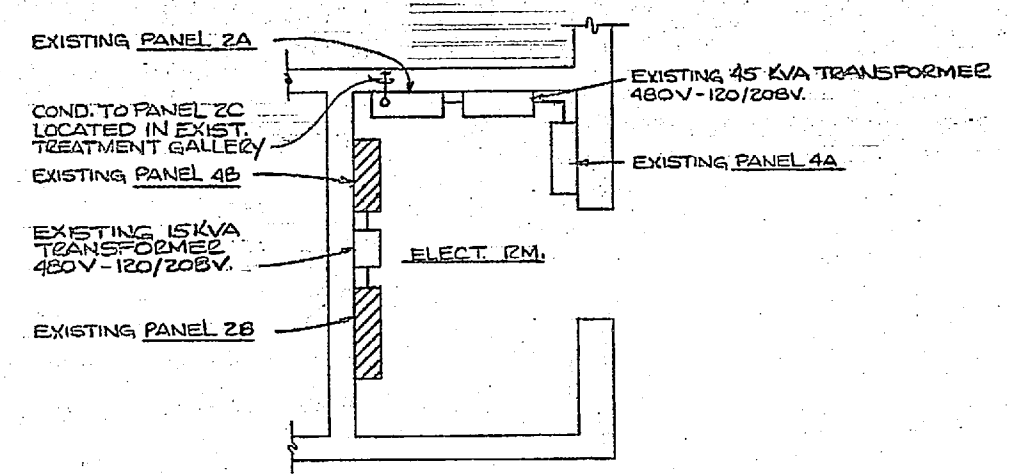
SITE PLAN - POWER RISER
NOT TO SCALE



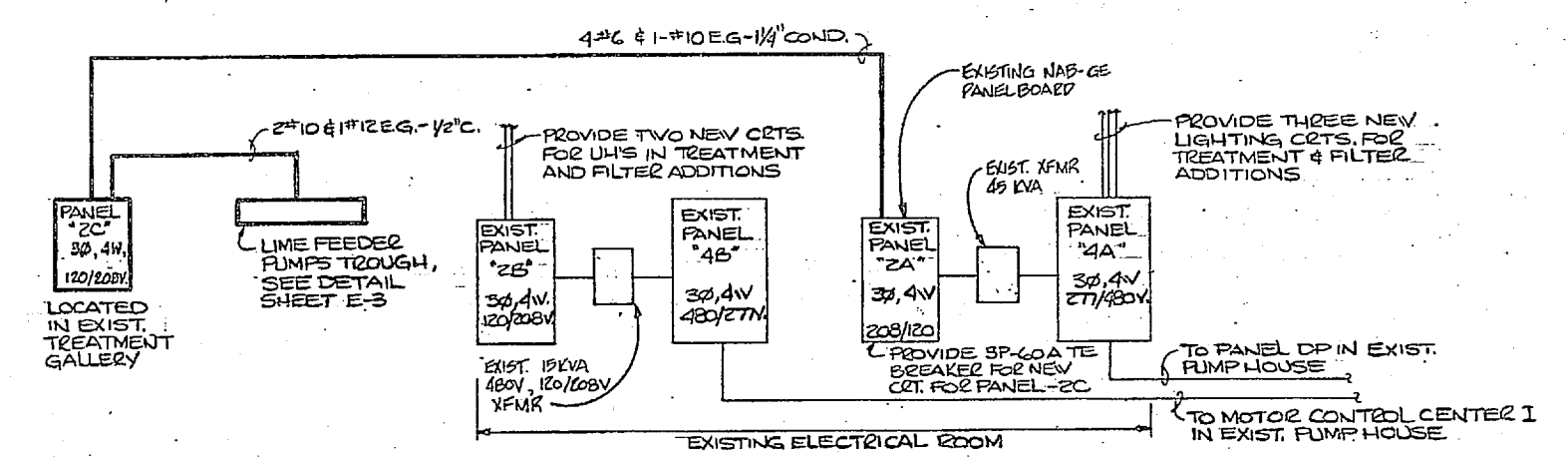
	HENRY VON DESEN AND ASSOCIATES CONSULTING ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA	DEPARTMENT OF THE NAVY - NAVAL FACILITIES ENGINEERING CENTER ATLANTIC DIVISION NAVAL STATION CAMP LEJEUNE, NORTH CAROLINA	
	DES: RDM DRN: GBH ICH: RDM	PROJECT MGR: JRB CH ENGR: JRB	EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT
	APPROVED: <i>[Signature]</i> DATE: 2 JULY 00	SIZE: 100% (100%) SHEET NO.: 80091	ELECTRICAL SITE PLAN NAVFAC DRAWING NO.: 4107598
	ACTIVITY - SATISFACTORY TO FOR EPD FOR COMMANDER NAVFAC	SCALE: AS SHOWN SPEC: 05-81-1644	SHEET 55 OF 75 207598



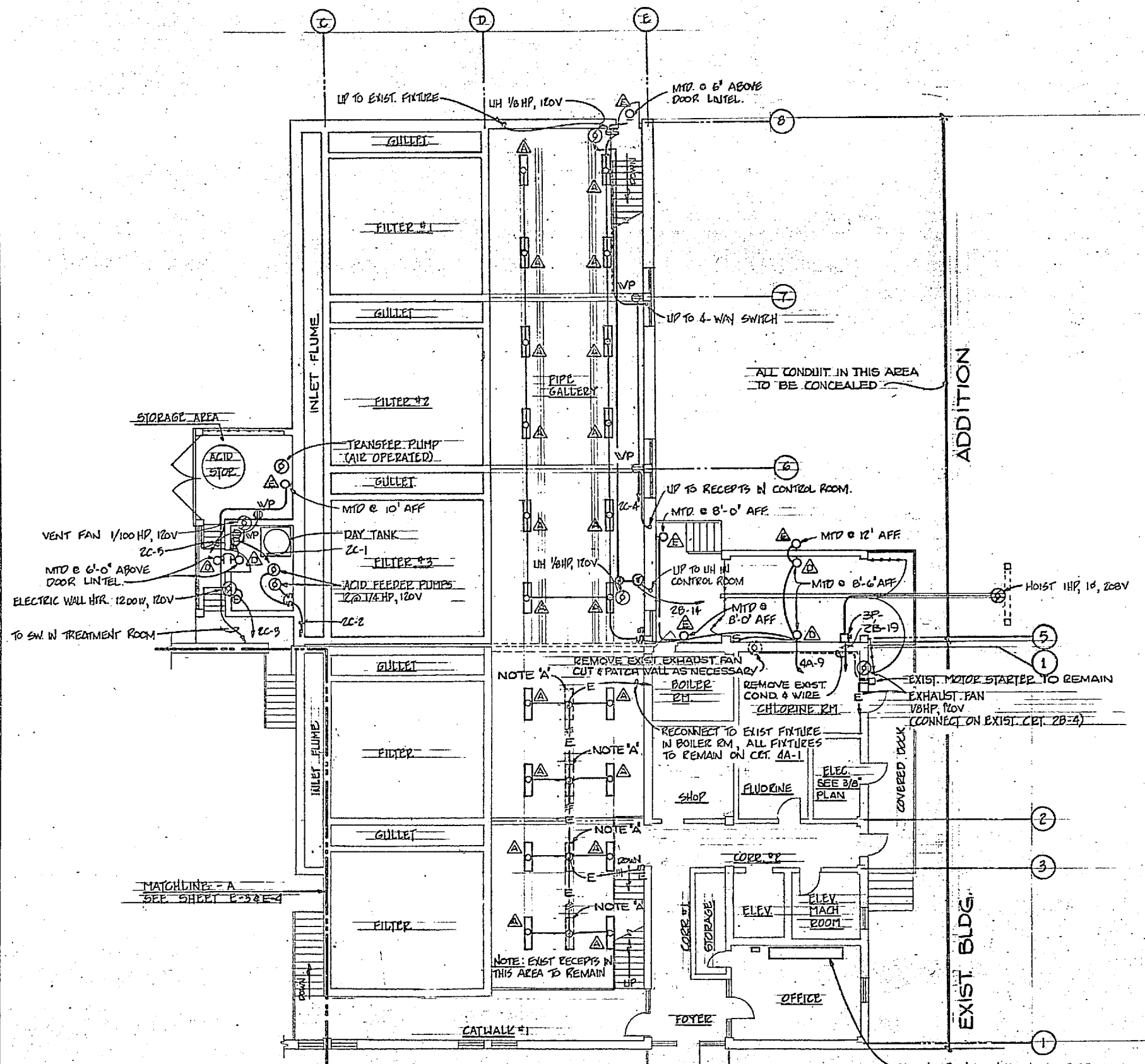
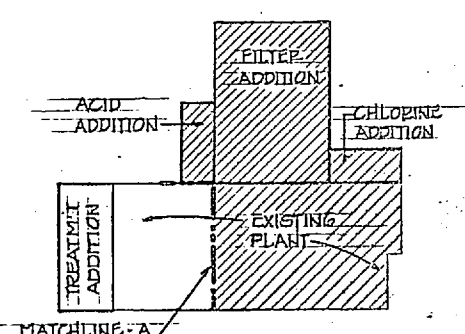
REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED



EXISTING ELECTRIC ROOM
SCALE: 3/8"=1'-0"
NOTE: SEE SH. E-4 FOR PANEL SCHEDULES 4A, 2A & 2B.

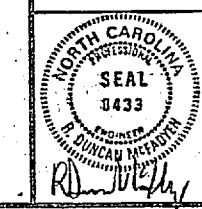
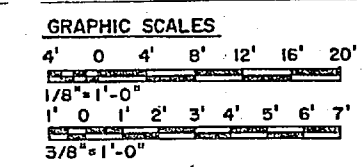


POWER RISE
NOT TO SCALE
NOTE: ALL EXISTING PANELBOARD, TRANSFORMERS, CONDUIT & WIRE TO REMAIN UNLESS OTHERWISE INDICATED ON DRAWINGS, SCHEDULES AND RISE.



NOTE 'A':
REMOVE EXISTING 1x4 FLUORESCENT FIXTURE AND TURN OVER TO GOVT. WHERE INDICATED (---) REMOVE CONDUIT AND WIRE IN ITS ENTIRETY, OR CUT FLUSH AT CLG. & PATCH AS NECESSARY. WHERE INDICATED REUSE EXISTING JUNCTION BOX, CONDUIT AND WIRE. CONNECT SURFACE MTD. FLUORESCENT FIXTURES TYPE Δ WITH 2#12 & 1#12 EG - 1/2" C.

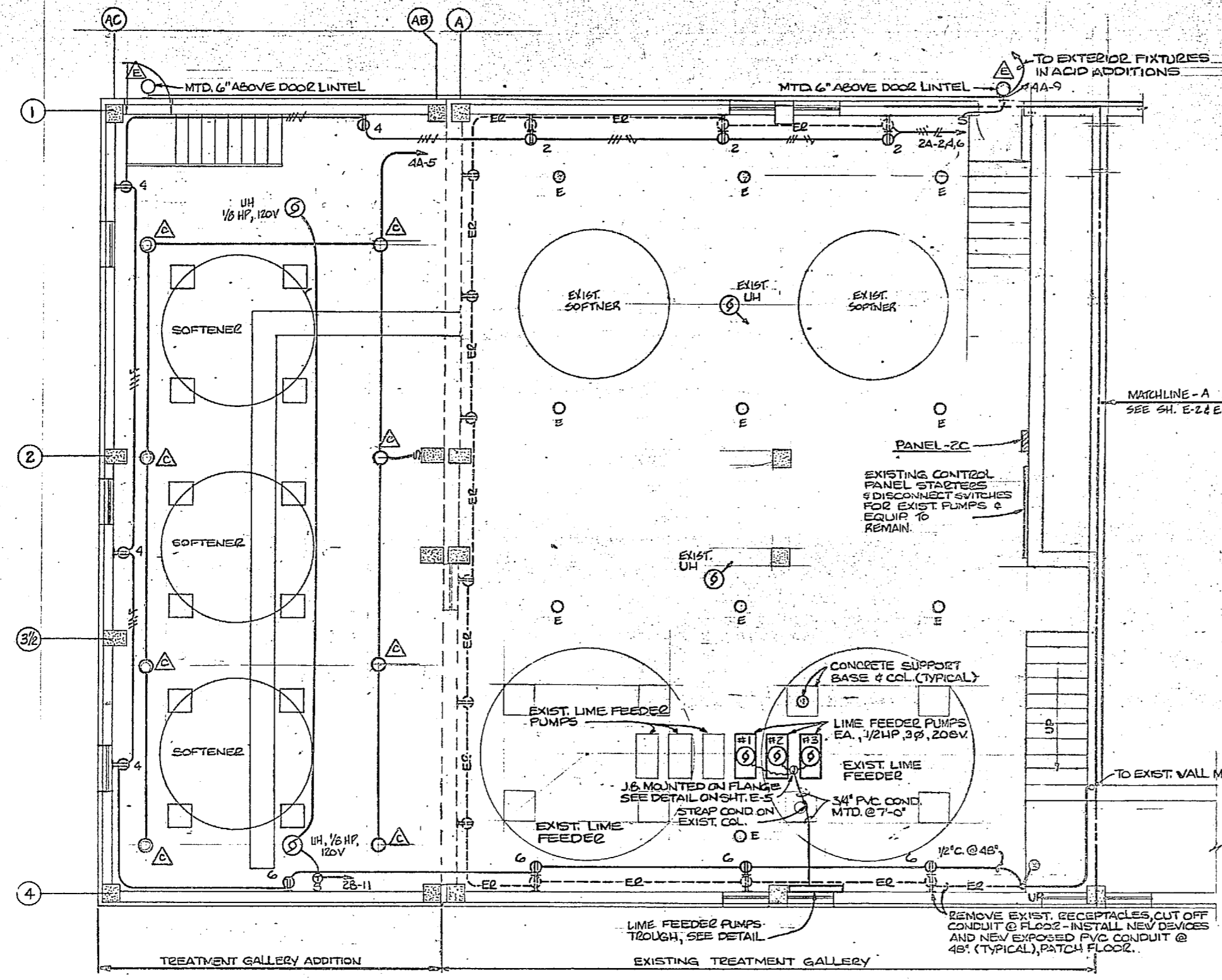
PIPE GALLERY AND PARTIAL FIRST FLOOR PLAN - BUILDING 670
SCALE: 1/8"=1'-0"



HENRY VON OESCH AND ASSOCIATES CONSULTING ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA		DEPARTMENT OF THE NAVY - NAVAL FACILITIES ENGINEERING COMMAND	
DES. RDM PRJ. MGR. JRB SUBMITTER: JRB NO. 212 DATE: 7/28/74		ATLANTIC DIVISION NAVAL STATION CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	
FIRM MEMBER: JRB PRINCIPAL: JRB EFD: JRB NO. 212 DATE: 7/28/74		ELECTRICAL PIPE GALLERY CODE IDENT. NO. 4107599	
APPROVED: JRB ACTIVITY - SATISFACTORY TO: JRB DATE: 7/28/74		SIZE: 80091 CONSTR. CONTR. NO. N62470-81-B-1543	
FOR EFD FOR COMMANDER NAVFAC		SCALE: AS SHOWN SPEC: 05-81-1644 SHEET 65 OF 74	

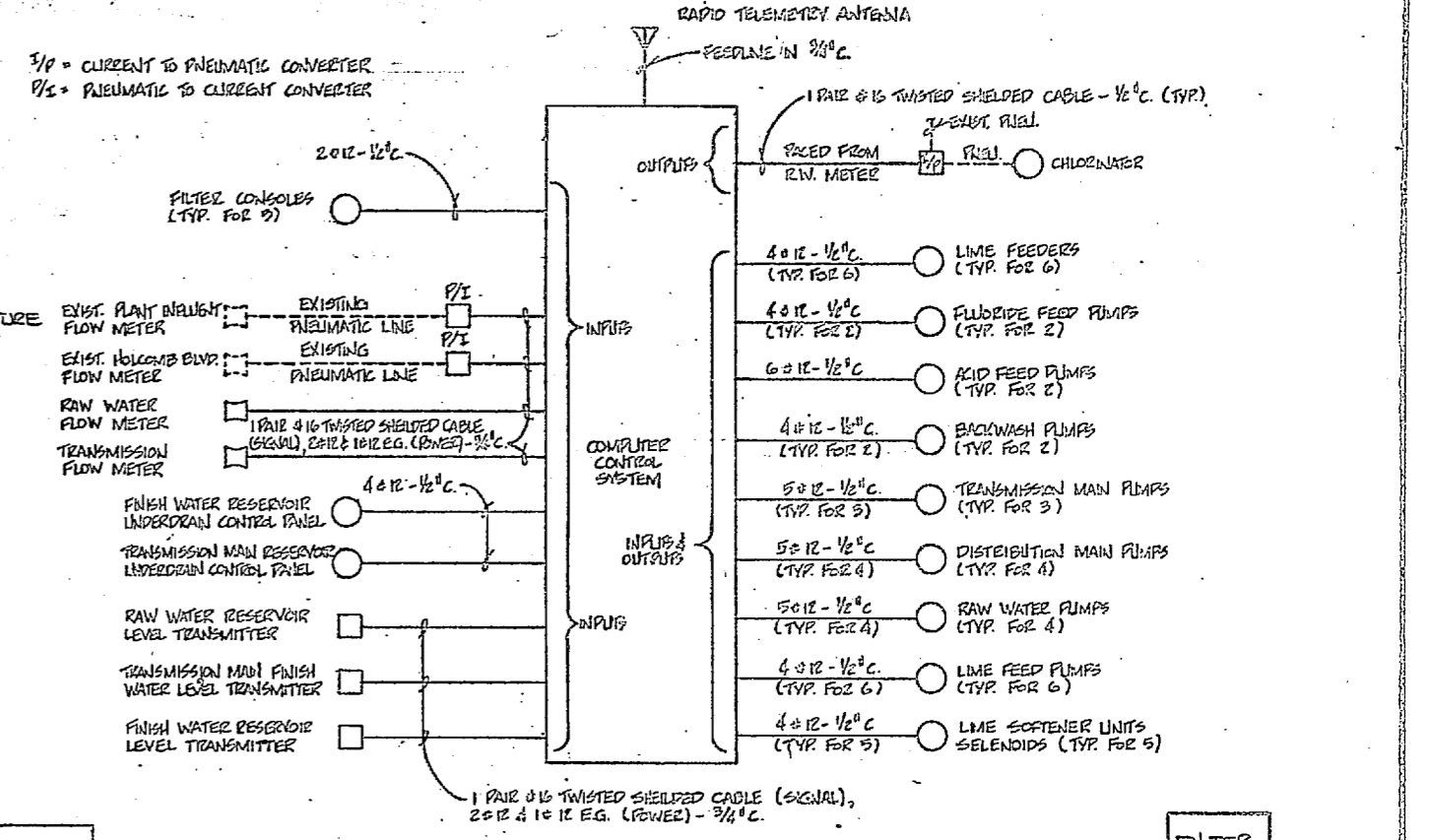


REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED



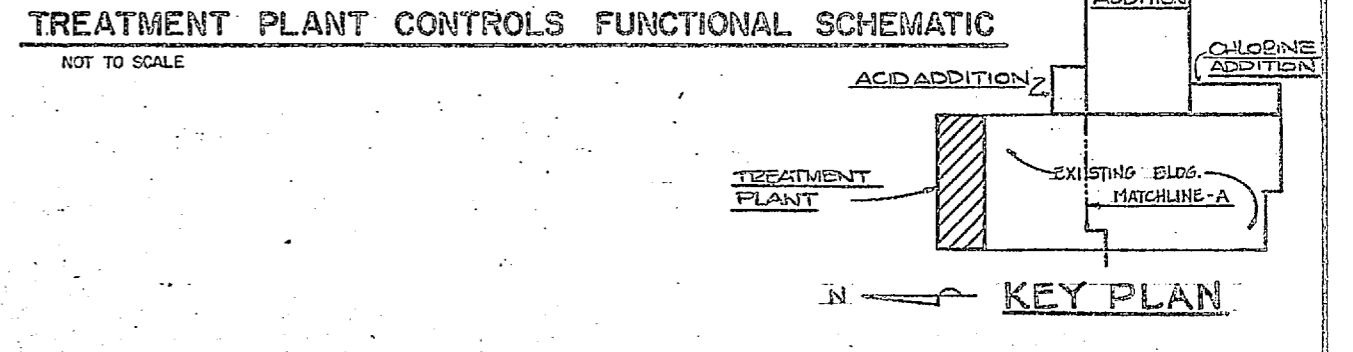
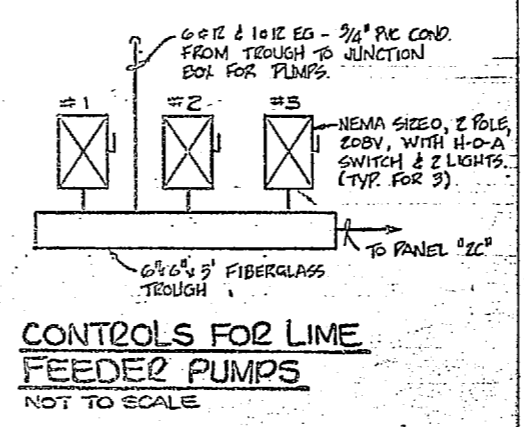
ELECTRICAL LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
□	CEILING OUTLET WITH FLUORESCENT LIGHTING FIXTURE	—	CONDUIT EXPOSED
□	FLUORESCENT LIGHTING FIXTURE, REMOVE - CEILING OUTLET TO REMAIN AS JUNCTION BOX, INSTALL AS BLANK	—	CONDUIT TURNED DOWN
○	CEILING OUTLET WITH PENDANT MOUNTED W.I.D. LIGHTING FIXTURE	—	CONDUIT TURNED UP
○	WALL MOUNTED INCANDESCENT OR W.I.D. LIGHTING FIXTURE	—	EXISTING CONDUIT TO REMAIN
○	20A, 20VAC DUPLEX GROUNDING RECEPTACLE, WEATHERPROOF, INSTALL AT 18" AFF, UNO.	—	HOMERUN TO PANEL AND CIRCUIT BREAKER, N.C., NUMBER INDICATE NO. OF CIRCUITS
○	20A, 120VAC DUPLEX GROUNDING RECEPTACLE, WEATHERPROOF, INSTALL AT 18" AFF, UNO.	—	DENOTES EXISTING WORK CONNECTED TO NEW WORK
○	COMBINATION SWITCH AND DISCONNECT SWITCH	—	FLEXIBLE CONDUIT
○	DISCONNECT SWITCH	—	TERMINATED AT 45° AFF
○	JUNCTION BOX	—	EXISTING SWITCHES TO REMAIN
○	ELECTRIC MOTOR, ELECTRICAL CHARACTERISTICS INDICATED ON DRAWINGS	—	SWITCH, SINGLE POLE, 20A, 120V, 150°F, 150°F
—	EXISTING CONDUIT AND WIRE, REMOVE.	—	SWITCH, THREE WAY
—	CONDUIT UNDERGROUND	—	SWITCH, FOUR WAY
—		—	SWITCH, MANUAL MOTOR CONTROL
—		—	POWER PANEL
—		—	LIGHTING PANEL
—		—	EXISTING LIGHT FIXTURE TO REMAIN

TREATMENT ADDITION - BUILDING 670
 SCALE: 1/4" = 1'-0"
 NOTE: ALL RECEPTACLES SHALL BE WEATHERPROOF & INSTALLED 48" AFF.



LIGHTING FIXTURE SCHEDULE					
FIXTURE SYMBOL	STYLE & TYPE - SEE SPECS FOR NAVFAC SKETCH NO.	NUMBER & TYPE OF LAMPS	VOLTS	MOUNTING	REMARKS
△	NL-5	2-F34T12 CW/RS	277	CEILING SURFACE	DAMP LOCATION, ENERGY SAVING BALLAST
△	NL-45, TYPE A	1-100W	277	WALL-HIT AS INDICATED ON DWGS.	DAMP LOCATION
△	NL-22, TYPE B	1-100W METAL HALIDE	277	CEILING-PENDANT	PROVIDE FROST HOOD HANGERS
△	NL-47, TYPE C	1-35W HRS.	277	WALL-HIT AS INDICATED ON DWGS.	WET LOCATION
△	NL-47, TYPE C	1-35W HRS.	277	WALL-HIT AS INDICATED ON DWGS.	WET LOCATION
△	NL-47, TYPE C	1-35W HRS.	120	WALL-HIT AS INDICATED ON DWGS.	WET LOCATION

ABBREVIATIONS			
AFF	ABOVE FINISHED FLOOR	KVA	KILO VOLT AMPERE
A	AMPERES	MIN.	MINIMUM
COND. OR C.	CONDUIT	MTD.	MOUNTED
CLG.	CEILING	N	NEUTRAL
CCT.	CIRCUIT	NF	NON-FUSIBLE
COB.	CORRIDOR	RECEPT.	RECEPTACLE
DN.	DOWN	SW.	SWITCH
DISC. SW.	DISCONNECT SWITCH	S/O	SPACE ONLY
E.G.	EQUIPMENT GROUND	SECT.	SECTION
E. OR EXIST.	EXISTING	VP	WEATHER PROOF
EL.	ELEVATION	UH	UNIT HEATER
ELEC.	ELECTRICAL	PVC	POLYVINYLCHLORIDE
F.	FUSIBLE	V	VOLT
HQA.	HAND OFF AUTOMATIC	∅	PHASE
HP	HORSE POWER	UG	UNDERGROUND
HRS.	HIGH PRESSURE SODIUM	W	WATTS
		YPMK	TRANSFORMER

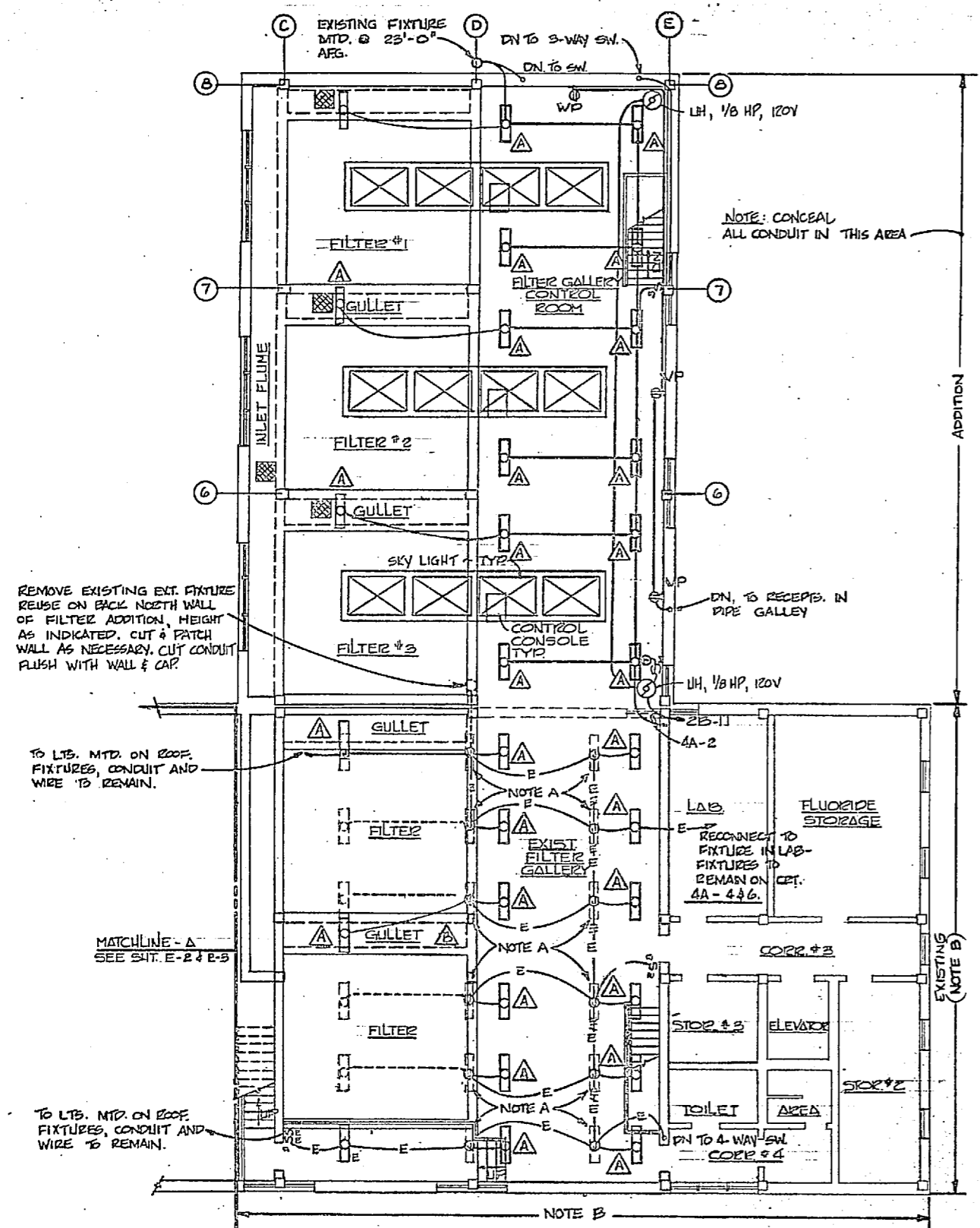


GRAPHIC SCALE: 1/4" = 1'-0"

SEAL 3433

NAVY FACILITIES ENGINEERING DIVISION
 ATLANTIC DIVISION
 CAMP LEJEUNE NORTH CAROLINA
 EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT
 ELECTRICAL TREATMENT ADDITION
 SHEET 67 OF 79
 207600

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED



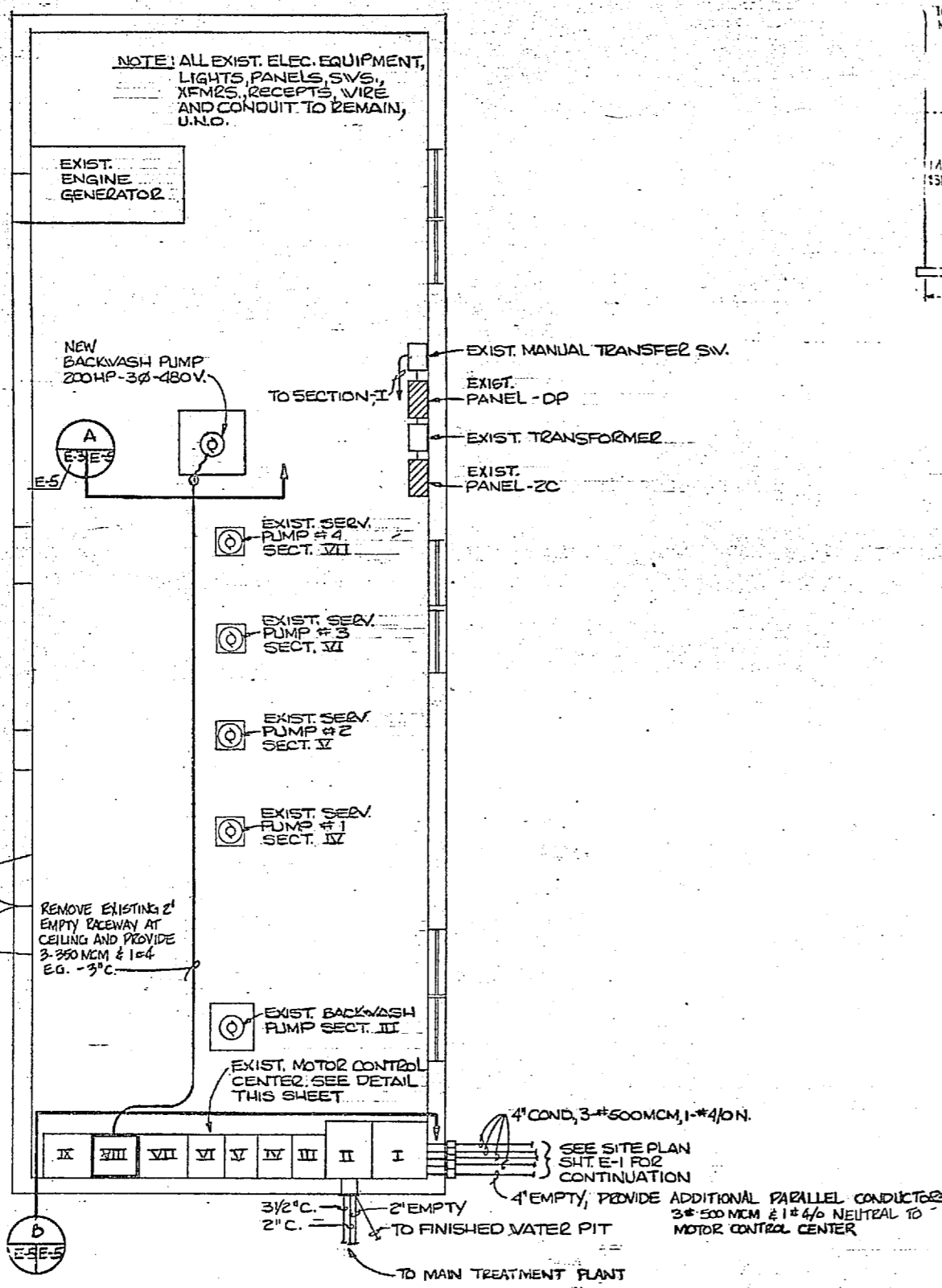
FILTER ADDITION - BUILDING 670
SCALE 1/8"=1'-0"

- NOTES:**
- A- REMOVE EXISTING 1x4 FLUORESCENT FIXTURE AND TUB/ COVER TO OWNER WHERE INDICATED (---) REMOVE CONDUIT AND WIRE IN ITS ENTIRETY, OR CUT AT CLG. AND PATCH AS NECESSARY WHERE INDICATED REUSE EXISTING JUNCTION BOX, COND. & WIRE. CONNECT SURFACE MOUNTED FLUORESCENT FIXTURES TYPE Δ WITH 1/2" EXPOSED PVC CONDUIT. & 2x12 ANG & 1x12 F.G.
 - B- ALL ELECTRICAL EQUIPMENT, RECEPTACLES, UH'S, VENT FANS, ETC. IN THIS AREA TO REMAIN.

EXISTING PANEL-2A												PANEL 2C													
3 PHASE, 4 WIRE, 120/208 VOLTS, 225 AMPERE BUS, 225 AMPERE MAIN CIRC. BRK., 100% NEUTRAL												3 PHASE, 4 WIRE, 120/208 VOLTS, 100 AMPERE BUS, 50 AMPERE MAIN CIRC. BRK., 100% NEUTRAL, SURFACE MOUNTING, NEMA-4 ENCLOSURE, EQUIPMENT GROUND BUS, INTEGRATED EQUIPMENT PANELS OF 10, 000 RMS & CLASS 125													
DESIGNATION TO BE TYPED IN PANEL CIRCUIT DIRECTORY	PHASE LOADING			CUT. BUS. TEMP.	AIC	CCT. NO.	ABC	CCT. NO.	AIC	CUT. BUS. TEMP.	PHASE LOADING	DESIGNATION TO BE TYPED IN PANEL CIRCUIT DIRECTORY	PHASE LOADING			CUT. BUS. TEMP.	AIC	CCT. NO.	ABC	CCT. NO.	AIC	CUT. BUS. TEMP.	PHASE LOADING	DESIGNATION TO BE TYPED IN PANEL CIRCUIT DIRECTORY	
	A	B	C								A	B	C									A	B	C	
EXIST. RECEPT.																									VENT FAN
SPARE																									ELECTRIC WALL HTZ
EXIST. RECEPT.																									RECEPT. - ACID ROOM
SPARE																									SPARE
EXIST. CONTROL PANEL																									SPARE
EXIST. LIME FEEDER PUMPS																									LIME FEED PUMP #1/2/3
EXIST. FLUORIDE MIXER																									HEATER
EXIST. CHEM. SOL. MIXER																									EXIST. FLUORIDE MIX PUMPS
EXIST. DUST COLLECTOR																									EXIST. CHEM. SOL. MIXER
EXIST. A/C																									EXIST. CHEM. SOL. MIXER
EXIST. ELEC. WATER HEATER																									EXIST. FLUORIDE HOPPER
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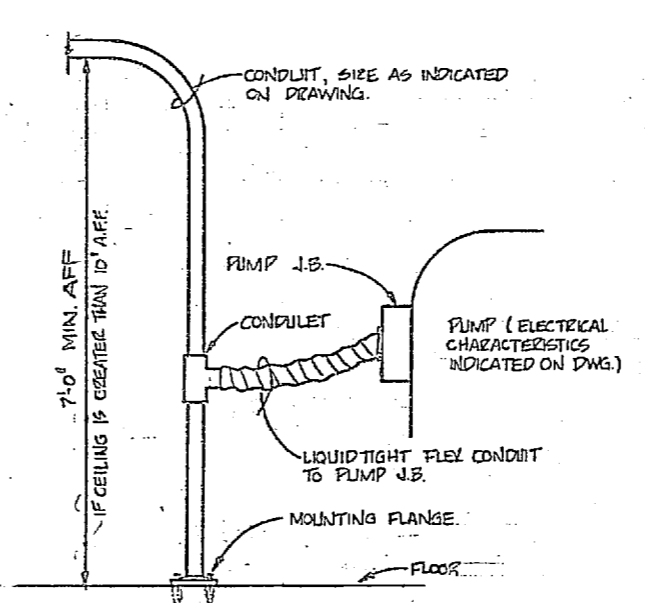
REVISIONS		
NO.	DESCRIPTION	DATE



1600 A. M.C.B.	Z0A Z0A	100A 100A	BACK WASH PUMP	3ØV PUMP #1	3ØV PUMP #2	3ØV PUMP #3	3ØV PUMP #4	NEW BACK WASH PUMP	FUTURE EXIST. SPACE CUBICLE
	Z25 A		125HP 3Ø-480V	40HP 3Ø-480V	40HP 3Ø-480V	75HP 3Ø-480V	75HP 3Ø-480V	200HP 3Ø-480V (SEE NOTE BELOW)	(EXIST. SPACE CUBICLE)
METER SECTION	Z25 A								
	S/O S/O								

B EXISTING MOTOR CONTROL CENTER
 E-5 NOT TO SCALE

SECTION VIII: PROVIDE COMBINATION FUSED SWITCH AND REDUCED VOLTAGE AUTO-TRANSFORMER, MAGNETIC STARTER, HAND-OFF-AUTOMATIC SWITCH, RED & GREEN SIGNAL LIGHTS AND CONTROL VOLTAGE TRANSFORMER.

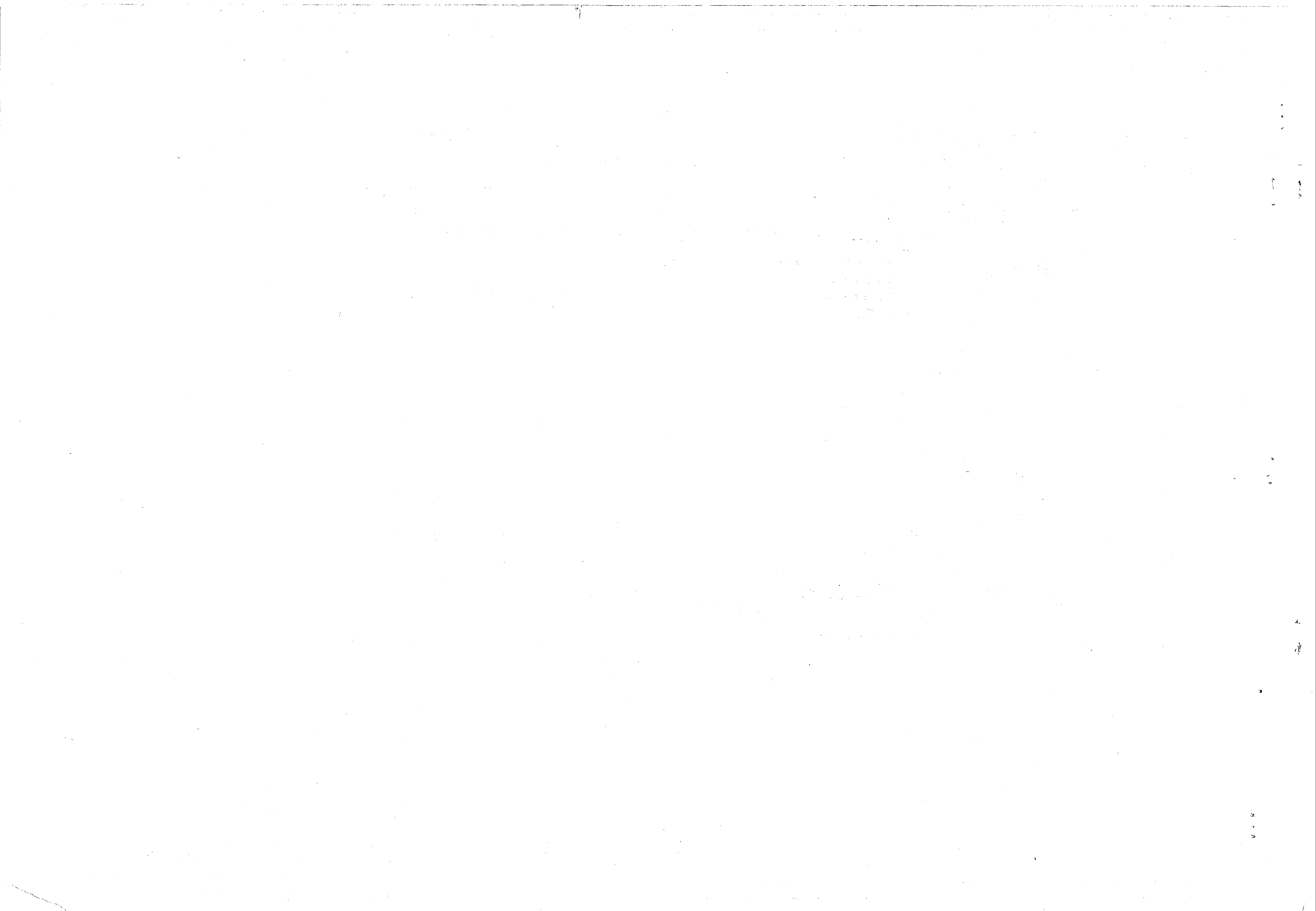


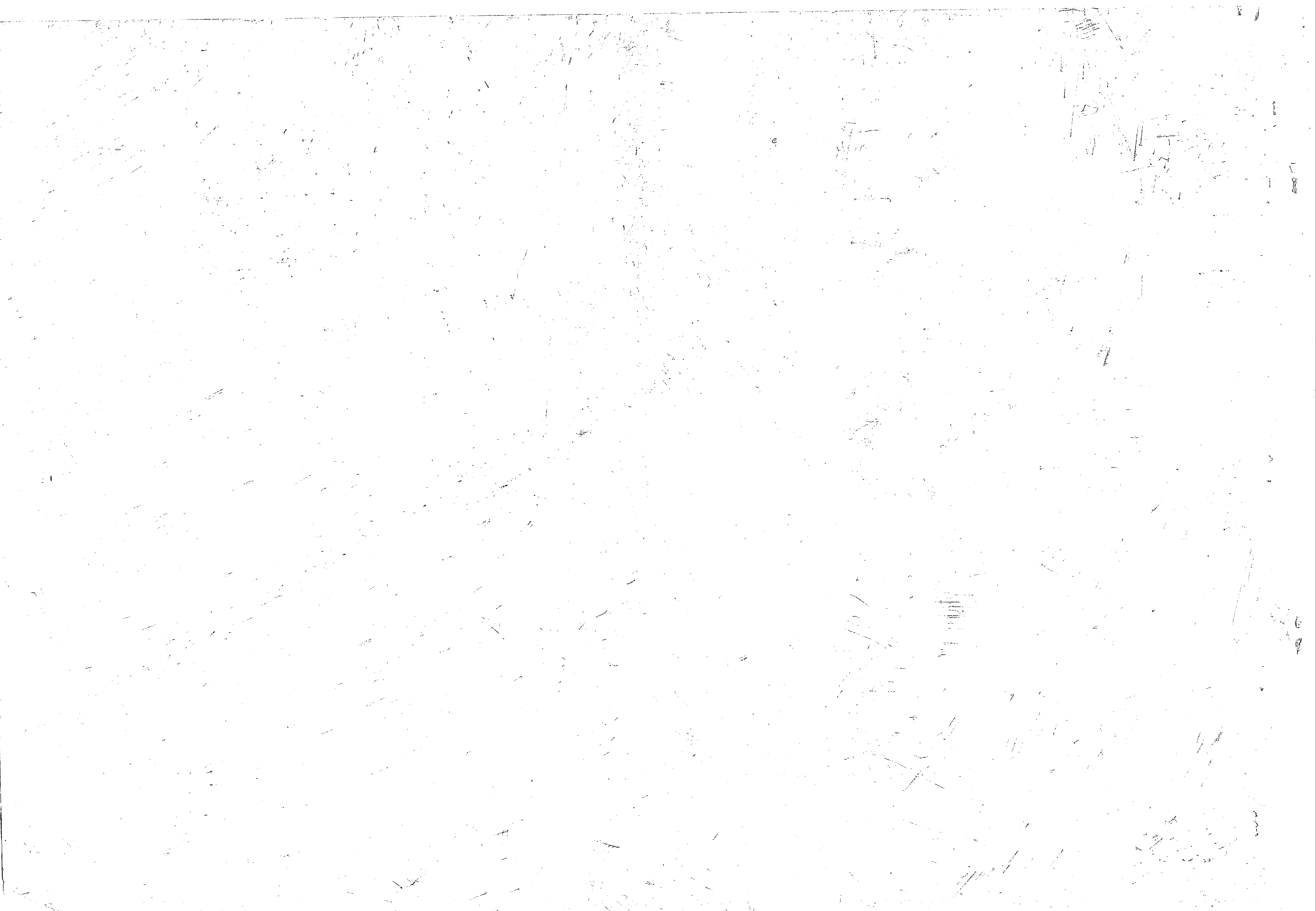
A CONDUIT CONNECTION AT PUMP (TYPICAL)
 E-5 OVERHEAD FEEDERS ONLY NOT TO SCALE

EXISTING PUMP HOUSE - BLDG. 671
 SCALE 1/4" = 1'-0"

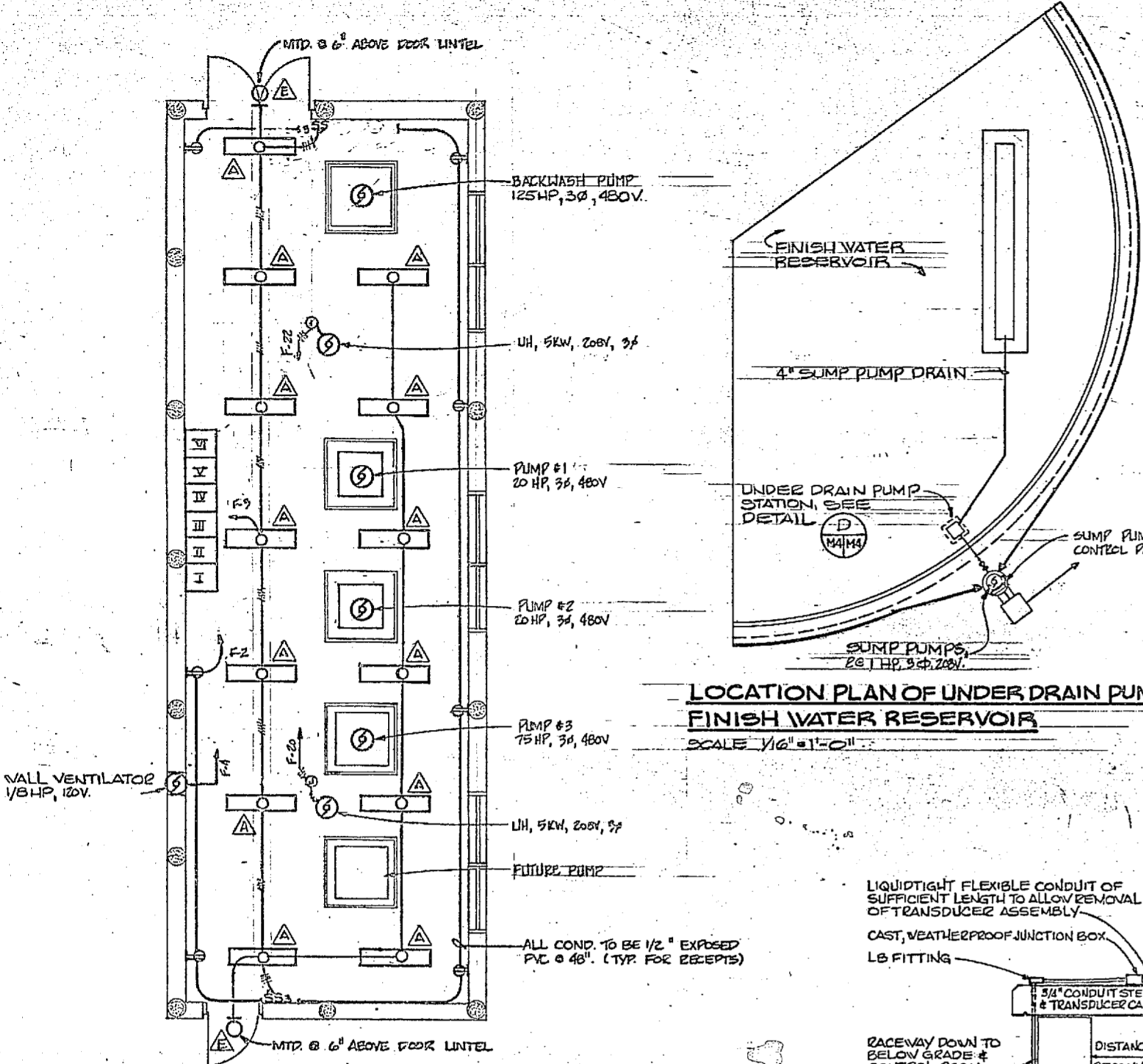
GRAPHIC SCALES
 2' 0" 2' 4" 6" 8" 10"
 1/4" = 1'-0"

	HENRY VON DESSEN AND ASSOCIATES CONSULTING ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA	DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION CAMP LEJEUNE, NORTH CAROLINA
	DES. RDM DRGBH CHK RDM PROJ. MGR. JRS CH. ENGR. JRS DATE: 7/2/64	NAVAL STATION CAMP LEJEUNE EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT
	ELEC. DIVISION DATE: 7/2/64	ELECTRICAL EXISTING PUMP HOUSE SIZE: 4107602 NAVFAC DRAWING NO. 4107602
	SCALE: 1/4" = 1'-0"	SHEET 08 OF 72 SPEC. 05-B-1644





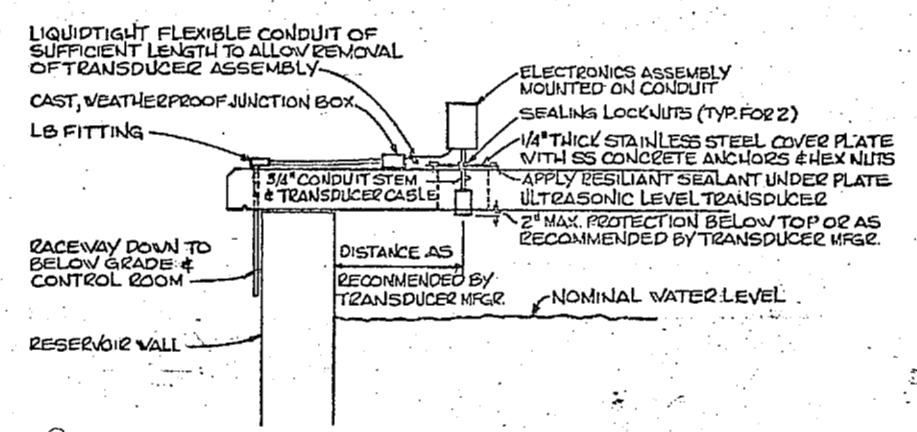
REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED



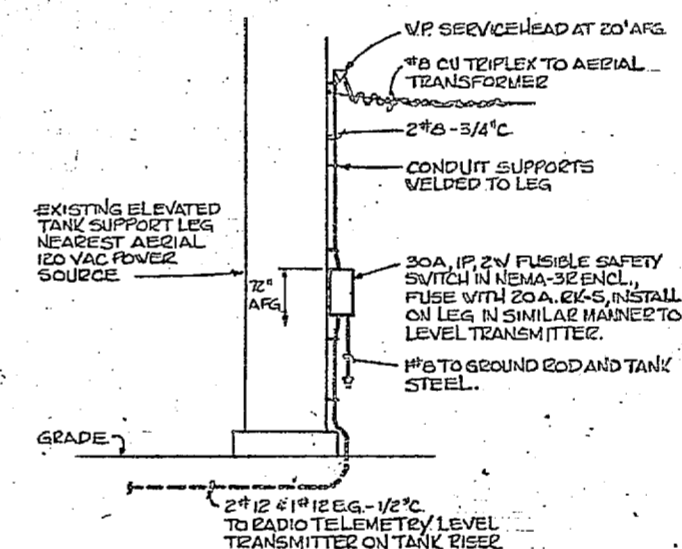
LOCATION PLAN OF UNDER DRAIN PUMP STATION-FINISH WATER RESERVOIR
 SCALE 1/16" = 1'-0"

PUMP HOUSE FLOOR PLAN-FINISH WATER RESERVOIR
 SCALE 1/4" = 1'-0"

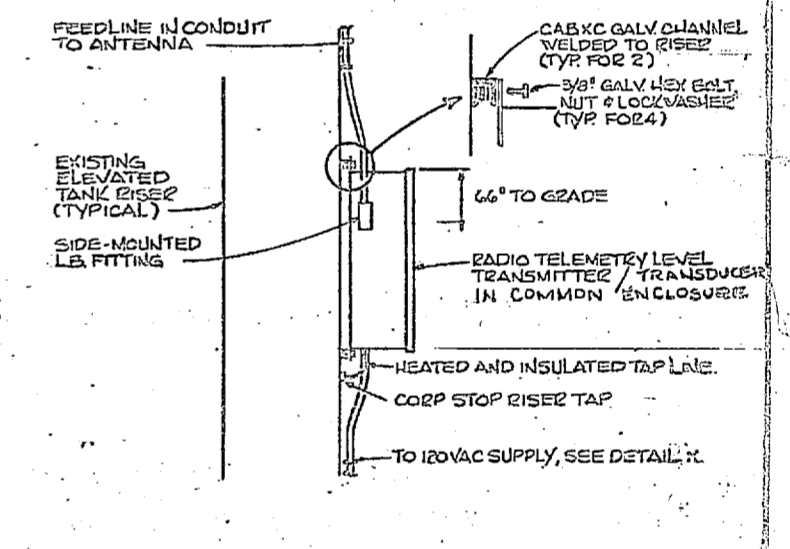
NOTE: ALL RECEPTACLES SHALL BE WEATHERPROOF & INSTALLED 48" AER.
 ALL SWITCHES SHALL BE WEATHERPROOF.



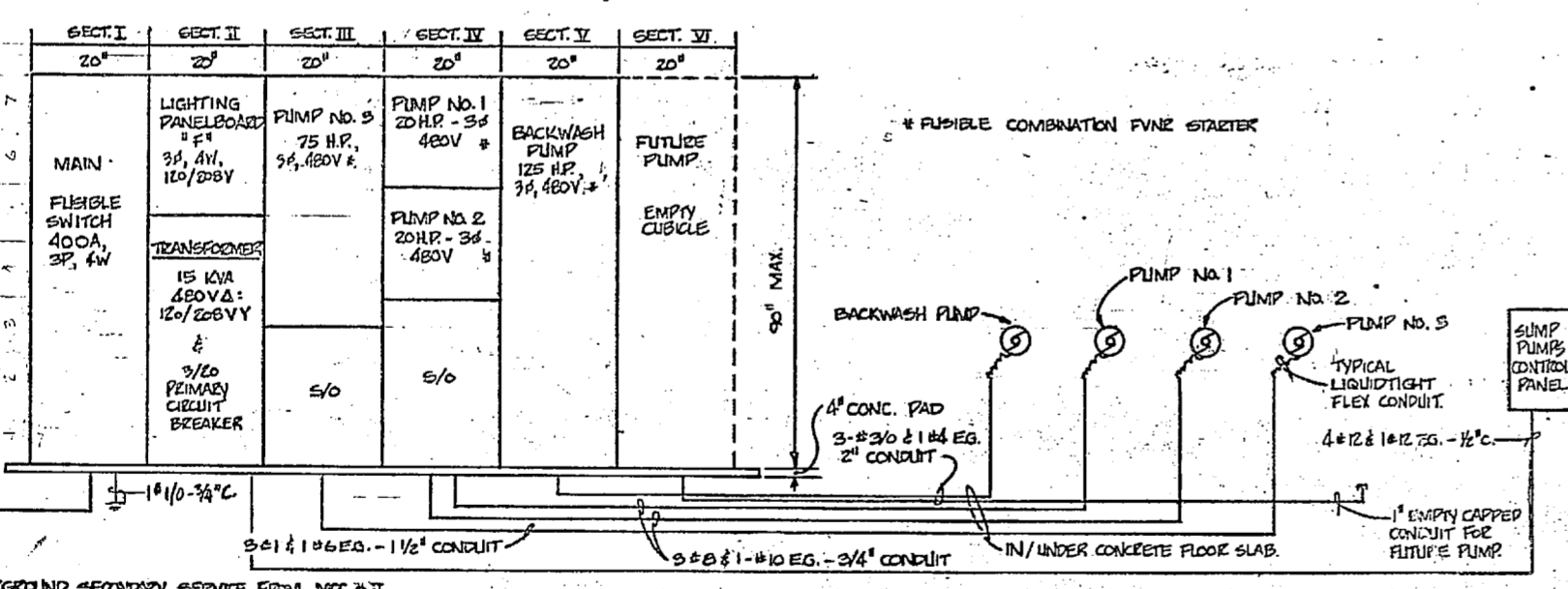
RESERVOIR LEVEL TRANSMITTER MOUNTING DETAIL
 NOT TO SCALE



ELEVATED TANK LEVEL TRANSMITTER POWER SUPPLY DETAIL
 NOT TO SCALE



ELEVATED TANK LEVEL TRANSMITTER MOUNTING DETAIL
 NOT TO SCALE



MOTOR CONTROL CENTER # III (MCC # III) ELEVATION AND FINISH WATER RESERVOIR POWER RISER DIAGRAM
 NOT TO SCALE

PANEL F													
3 PHASE, Δ WYE, 120/208 VOLTS, 100 AMPERE BUS, 60 AMPERE MAIN CBT. BCK. 100% NEUTRAL, SURFACE MOUNTING, NEMA-1 ENCLOSURE, EQUIPMENT GROUND BUS, INTEGRATED EQUIPMENT GROUNDING OF 10, 000 PDMS, SYMMETRICAL AMPERES MINIMUM													
DESIGNATION TO BE TYPED IN PANEL CIRCUIT DIRECTORY	PHASE	LOADING	CUT OFF	AC	CHK NO.	ABC	CUT NO.	AC	CUT	PHASE	LOADING	DESIGNATION TO BE TYPED IN PANEL CIRCUIT DIRECTORY	
	A	B	C							A	B	C	
SPACE				1/20	10K	1			2	10K	1/20	1260	RECEPTACLES
LIGHTS		1600				3			4			250	VENT FAN - 1/8 H.P.
SPACE						5			6				50
						7			8				
						9			10				
5/0						11			12				
						13			14				
						15			16				
						17			18				
SUMP PUMPS CONTROL PANEL	475			3/20		19			20	3/20	1667	1667	INIT HEATER
SPACE						21			22	3/20	1667	1667	INIT HEATER
						23			24				
						25			26				
						27			28				
						29			30				
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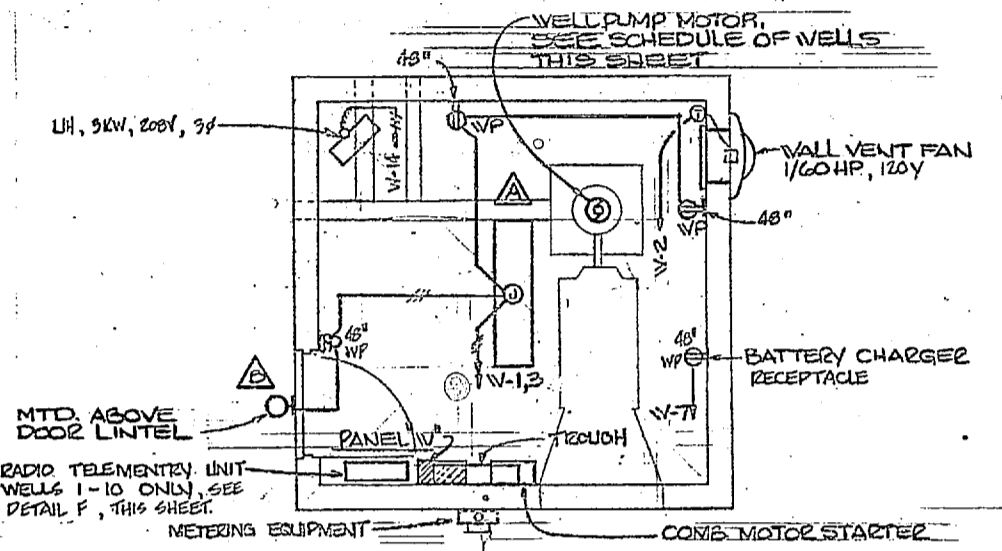
108.7

REVISIONS		
NO.	DESCRIPTION	DATE APPROVED

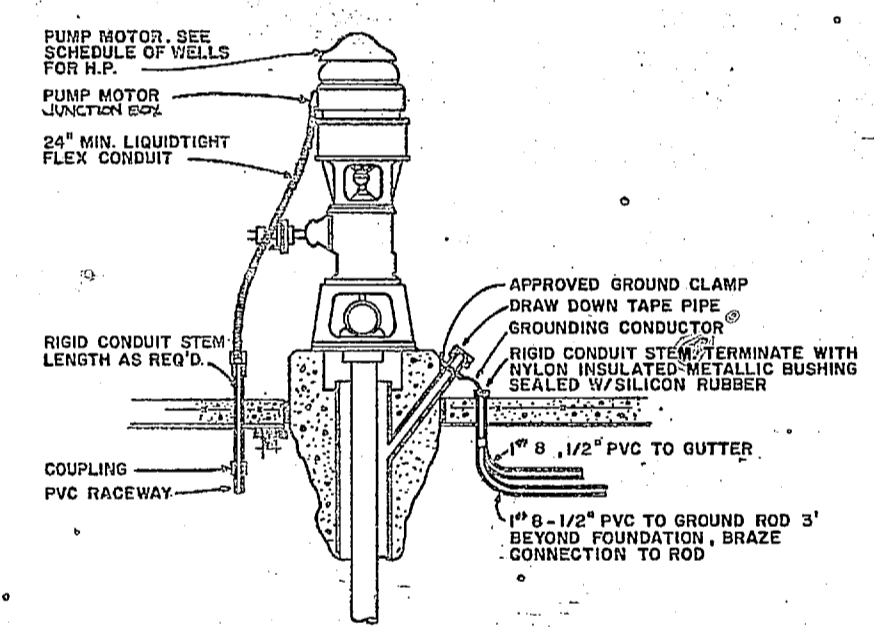
PANEL W SCHEDULE																
3Ø, 4 WIRE, 120/208 VOLTS, 100 AMPERE BUS, 60 AMPERE MAIN CIRCUIT BREAKER, 100% NEUTRAL, SURFACE MOUNTING NEMA-4 ENCLOSURE, EQUIPMENT GROUND BUS, INTEGRATED EQUIPMENT RATING OF 10,000 RMS SYMMETRICAL AMPERES MINIMUM, D.L.S.C. LABEL REQ'D, FIBERGLASS ENCLOSURE.																
DESIGNATION TO BE TYPED IN PANEL CIRCUIT DIRECTORY	PHASE LOADINGS			CCT. BRK. TRIP	AL.	CCT. NO.	ABC			CCT. NO.	AL.	CCT. BRK. TRIP	PHASE LOADINGS			DESIGNATION TO BE TYPED IN PANEL CIRCUIT DIRECTORY
	A	B	C				A	B	C							
LIGHTINGS	200			1/20	10	1				2	10	1/20	55		VENT FAN - 1/60 H.P.	
RECEPTACLES		360				5				4			100		RADIO TELEMETRY UNIT	
SPACE						6									SPACE	
BATTERY CHARGER	100					7				8					SPACE	
SPACE						9				10						
SPACE						11				12						
SPACE						13				14			1000			
SPACE						15				16			1000		UNIT HEATER	
SPACE						17				18						
NAMEPLATE	300	360				SUB-TOTAL "A"				SUB-TOTAL "B"			1000	1000		
PANEL W						SUB-TOTAL "A"			1300	360		SUB-TOTAL "B"				
3Ø, 4W						GROSS TOTAL			1300	1460	1000	VOLT-AMPERES				
120/208V.						LINE CURRENT			11.3	12.2	0.9	AMPERES				

SCHEDULE OF WELLS						
WELL SITE NO.	SECONDARY SERVICE RISER COND.	WIRE	PUMP HP	MOTOR STARTER NEMA SIZE	PUMP FEEDER COND.	WIRE
1	1 1/2"	4-04	15	2	1"	3-04 1-10 EG.
2			15			
3			15			
4			15			
5	1"	4-06	10		3/4"	3-06 1-10 EG.
6			10			
7			10			
8			10			
9			10			
10			10			
11	1 1/2"	4-04	15		1"	3-04 1-10 EG.
12			15			
13			15			
14		4-05	20	3	1 1/4"	3-04 1-10 EG.
15		4-06	10	2	3/4"	3-06 1-10 EG.
16			10			
17	1 1/4"	4-05	20	3	1 1/4"	3-04 1-10 EG.
18			20	3	1 1/4"	
19			20	3	1 1/4"	
20		4-06	10	2	3/4"	3-06 1-10 EG.

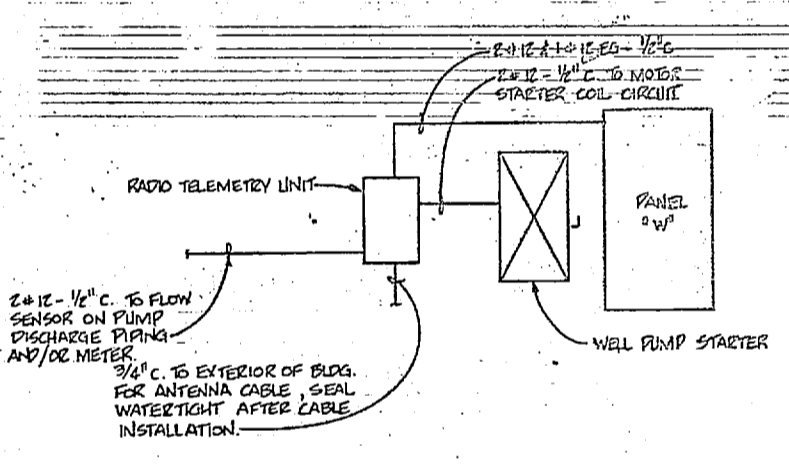
* NOTE: ALL PUMPS ARE 3Ø-208V COMBINATION STARTER & DISC. SW. SHOWN CONTRACTOR MAY ELECT TO USE SEPARATE STARTER AND DISC. SW.



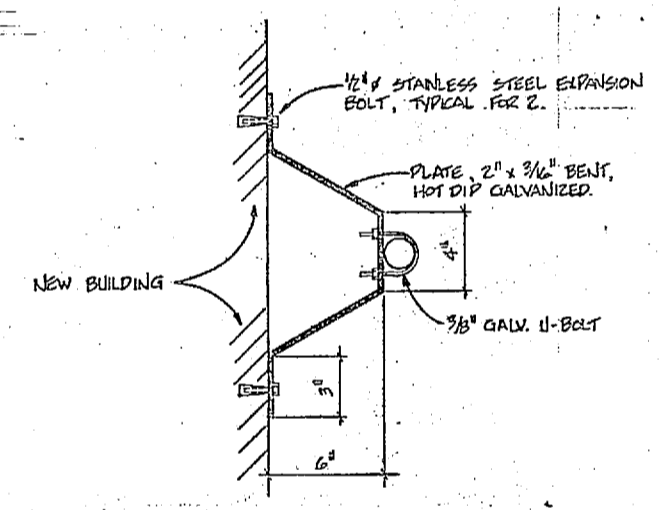
WELL HOUSE PLAN, TYPICAL FOR WELLS NO. 1 THRU NO. 20
SCALE 3/8"=1'-0"



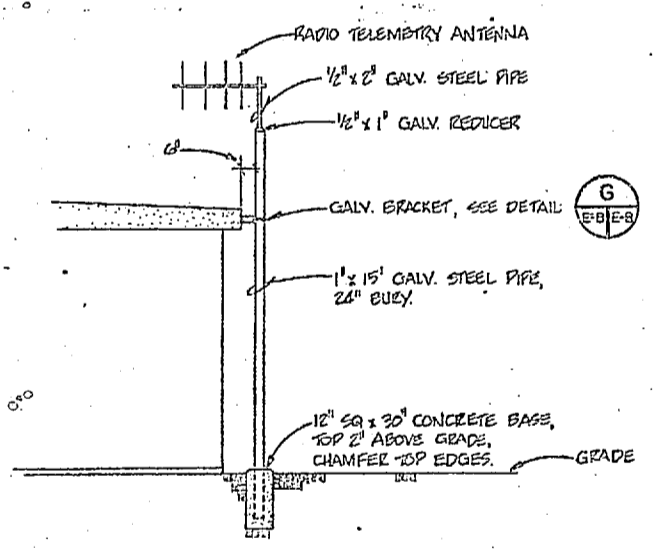
DETAIL - WELL CASING GROUND AND MOTOR CONNECTION
NO SCALE



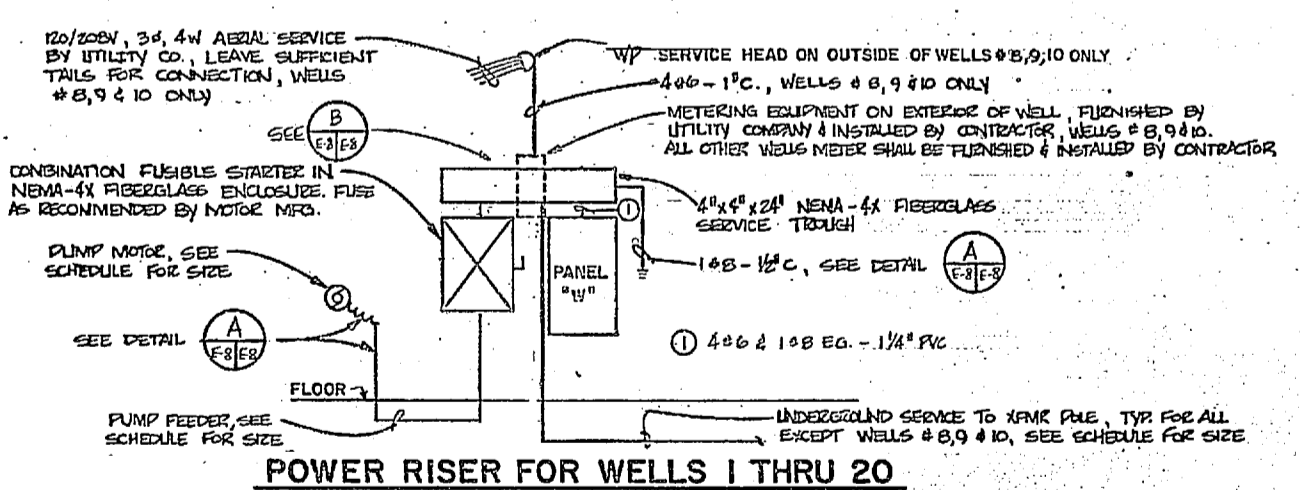
TYPICAL RADIO TELEMETRY UNIT INSTALLATION DETAIL
NOT TO SCALE



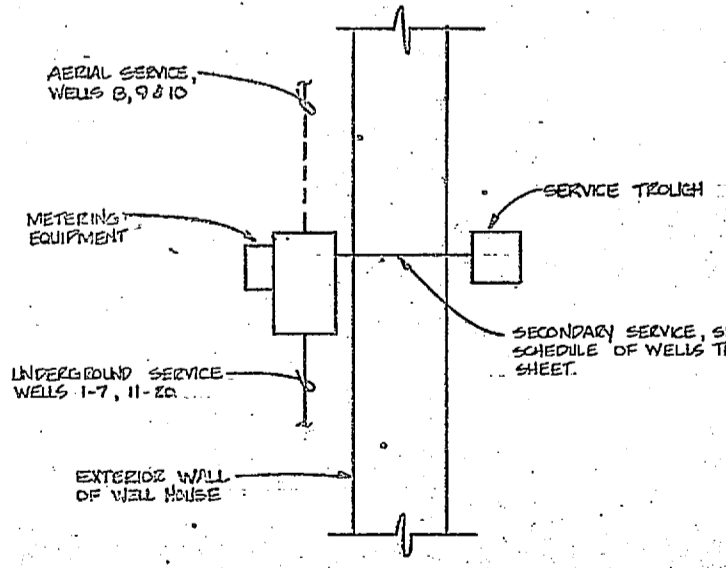
MOUNTING BRACKET DETAIL
NOT TO SCALE



TYPICAL RADIO TELEMETRY ANTENNA INSTALLATION DETAIL
NOT TO SCALE



POWER RISER FOR WELLS 1 THRU 20
NO SCALE



METERING / SERVICE TROUGH DETAIL
NO SCALE

	HENRY VON OESSEN AND ASSOCIATES CONSULTING ENGINEERS AND PLANNERS WILMINGTON, NORTH CAROLINA	DEPARTMENT OF THE NAVY - NAVAL FACILITIES ENGINEERING COMMAND ATLANTIC DIVISION NORFOLK, VIRGINIA
	DES. RDM (OR GBH, CD) ENR RDM PROJ. MGR. JRB ENR ENR JRB	NAVAL STATION CAPT. LEJUNE NORTH CAROLINA
	DATE: 4/18/64 BY: JRB CHECKED: JRB DATE: 7/15/64	EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT
	APPROVED: [Signature] DATE: 7/15/64 ACTIVITY SATISFACTORY TO: [Signature] DATE: 7/15/64	ELECTRICAL TYPICAL WELL HOUSE DRAWING NO. 4107605 SCALE: AS SHOWN SHEET NO. 05-BI-1644

