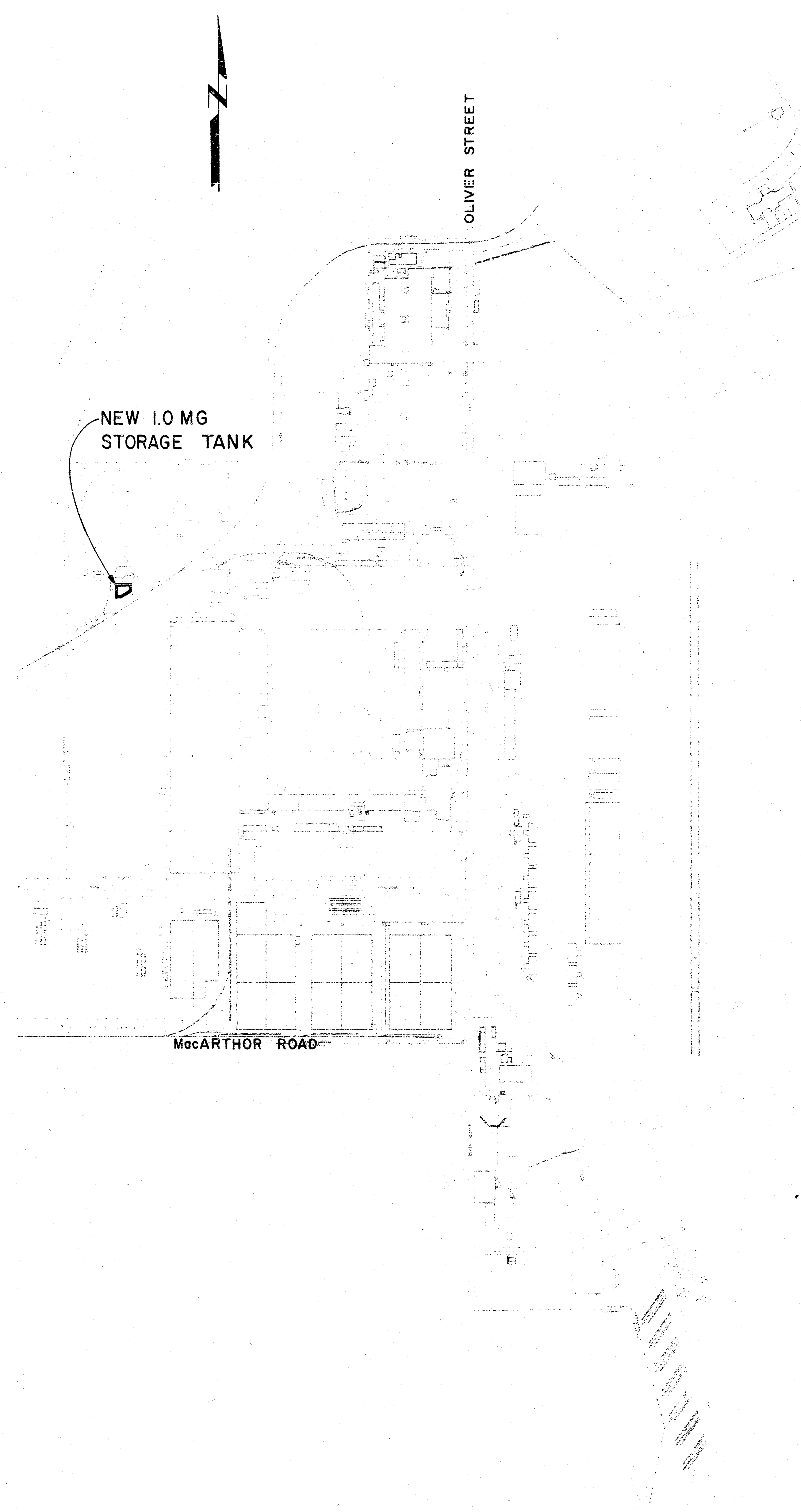




LOCATION MAP

BOEING MILITARY AIRPLANE COMPANY

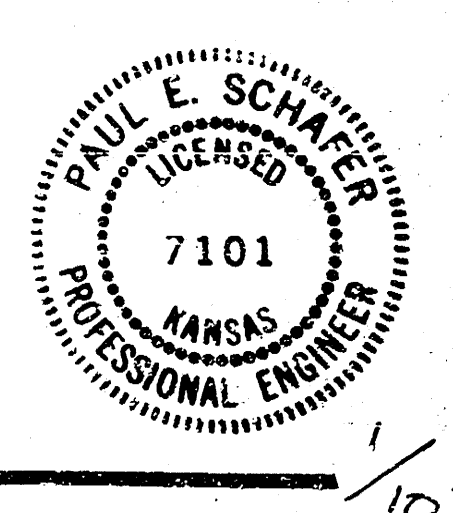
WICHITA, KANSAS

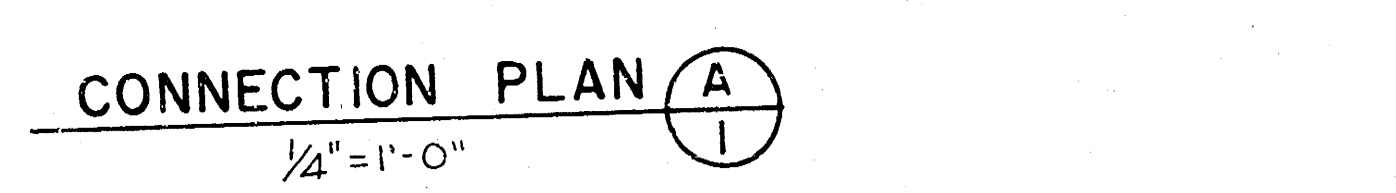
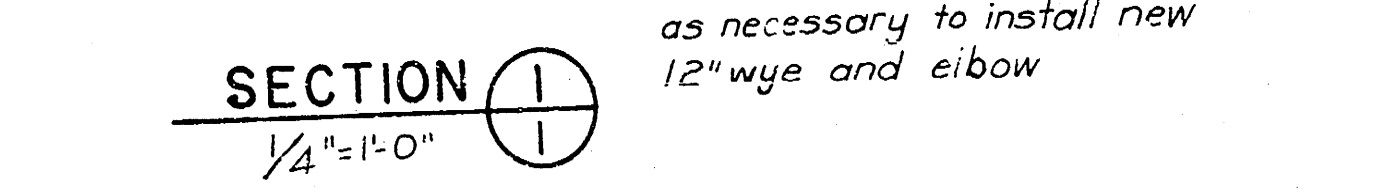
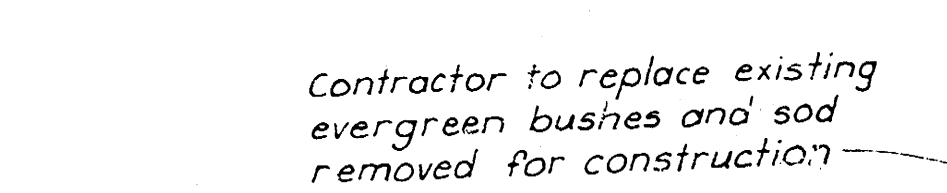
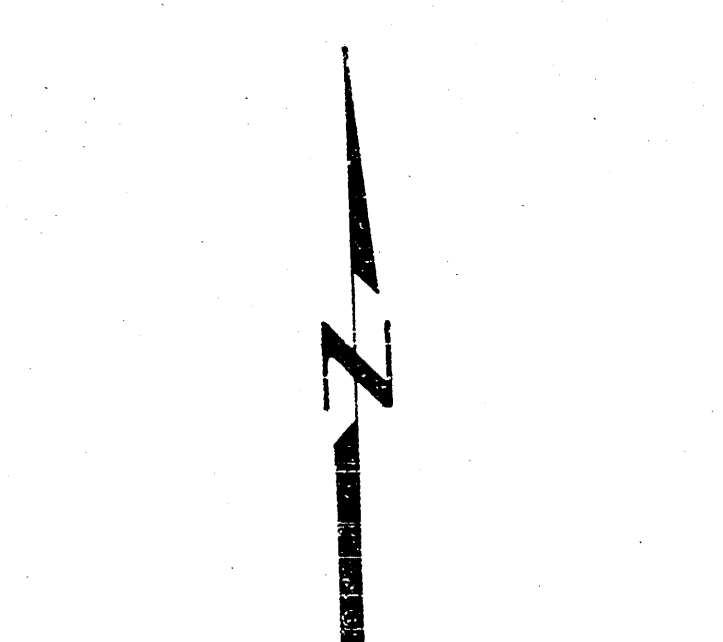
INDUSTRIAL WASTEWATER TREATMENT PLANT IMPROVEMENTS

1.0 MILLION GALLON WASTEWATER STORAGE TANK

BLACK & VEATCH ENGINEERS-ARCHITECTS
KANSAS CITY, MISSOURI
PROJECT NO. 11903.001
1984

- SHEET LIST:
1. GENERAL LAYOUT
 2. STORAGE TANK - PLAN AND SECTIONAL PLAN
 3. STORAGE TANK - REINFORCING PLANS
 4. STORAGE TANK - CONCRETE SECTIONS AND DETAILS
 5. PUMP STATION AND FLOW CONTROL M.H. - SECTIONS AND DETAILS
 6. STANDARD CONCRETE DETAILS
 7. MISCELLANEOUS DETAILS
 8. ELECTRICAL - PLAN VIEWS
 9. ELECTRICAL - SCHEMATICS AND ONE-LINES





Abbreviations

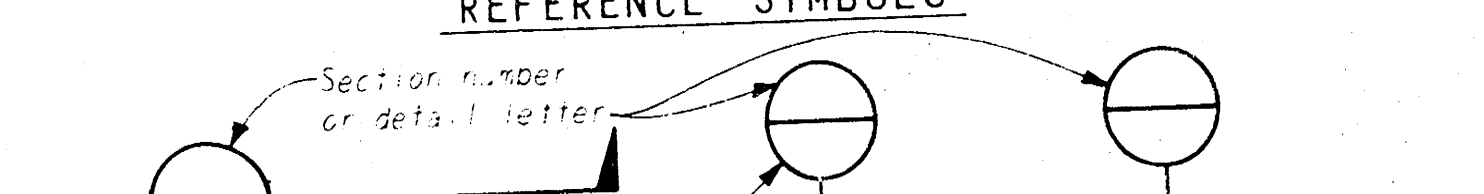
Alum.	Aluminum
Angle	Angle
A'	A'

GENERAL SYMBOLS

	New structure
	Existing structure above ground

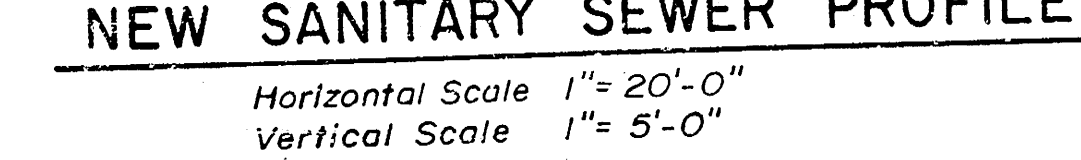
MATERIALS LEGEND

	New Concrete (in sections)
	Existing concrete (in sections)

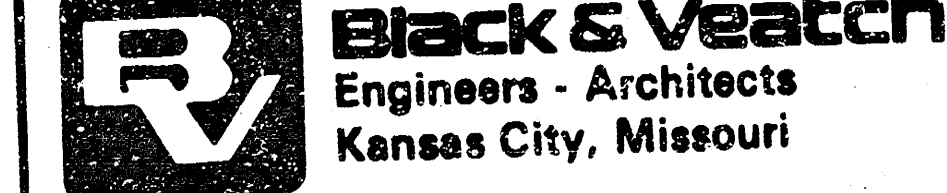


- GENERAL NOTES**

 1. All existing elevations and location of M.H. and pipelines pertaining to new construction shall be verified by the Contractor prior to construction.
 2. All concrete pavement, sidewalks, bushes, and gravel surfacing removed by Contractor shall be replaced to a equal or better condition.
 3. For details of Sanitary Sewer Manholes see Sheet 7.
 4. New Sanitary Manhole to be built over existing sewer. Inv. E. out to be 0.1 below existing sewer.
 5. New Sanitary Manhole to be built over existing sewer. Inv. E. out to be 0.1 below existing sewer. Inv. E. is
 6. Contractor to provide uniform slope on relocated sewer line between manhole #1 and #4 with 0.1 foot of fall across manholes #2 and #3.
 7. Contractor to saw cut existing concrete pavement at edge of excavation. Provide expansion joint material between new and existing pavement sections and between new pavement and concrete structures.
 8. Diversion of flow in the existing Sanitary Sewer during construction is the responsibility of the Contractor. Contractor to provide pumps, piping, etc. as necessary to handle the Sanitary Sewerage at the location where the relocated sewer is installed and
 9. The invert elevations of the existing sewer in the field by the Contractor.
 10. The sewer invert elevation on this profile were developed from as built drawings. Final invert elevations and slopes may vary, as determined by the Engineer, after Contractor verifies existing sewer invert at MH No. 1 and MH No. 4.

[illegible]

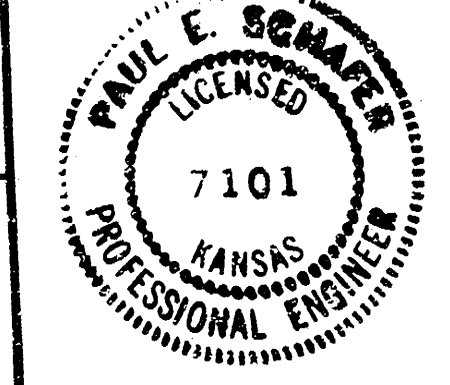
DESIGNED _____
DETAILED SCH
CHECKED RAM
APPROVED [Signature]



PROJECT NO.
11903.001

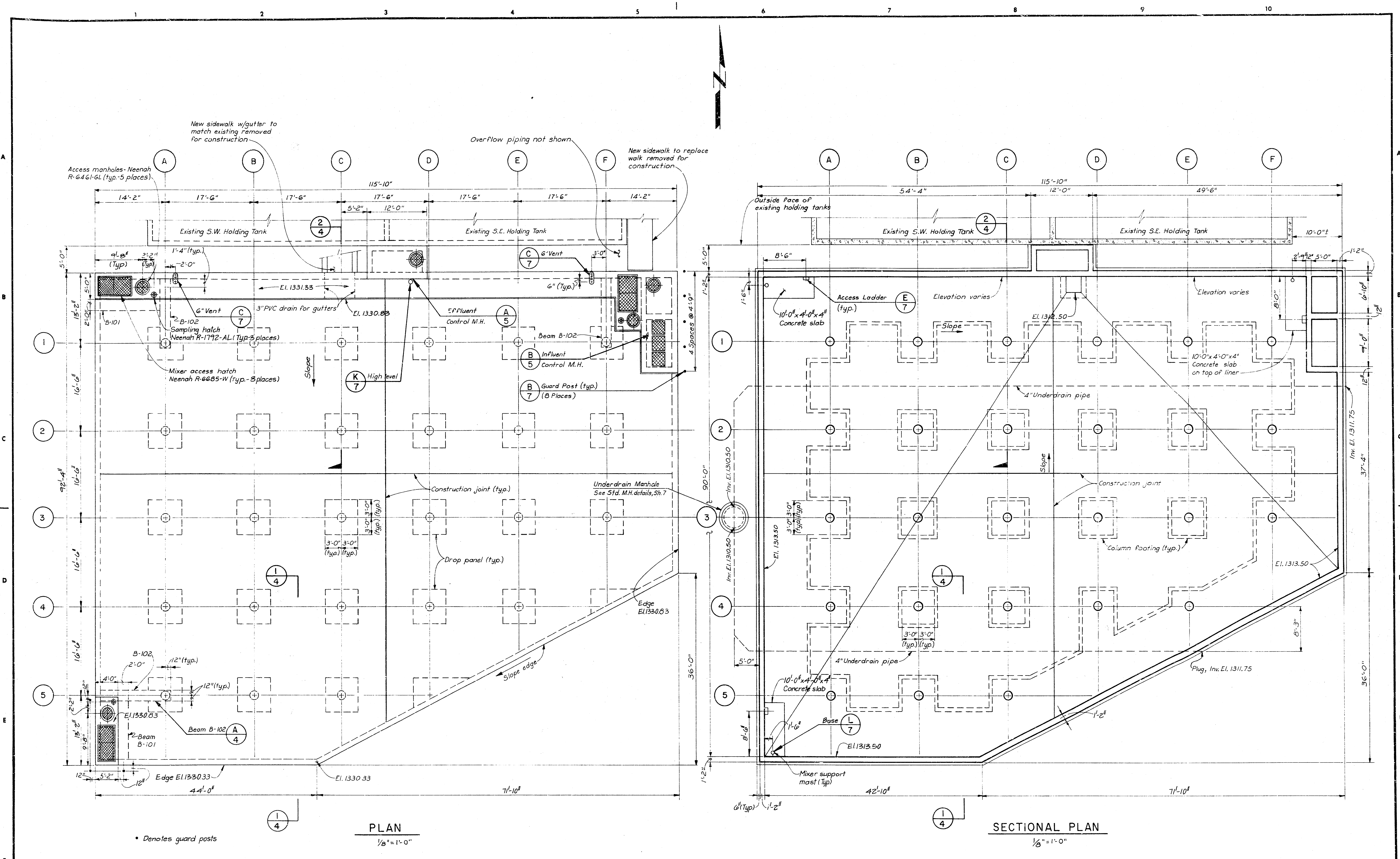
BOEING MILITARY AIRPLANE CO.
INDUSTRIAL WASTEWATER PLANT IMPROVEMENTS

LEGEND



1 OF 9

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B&V-C-2096-A

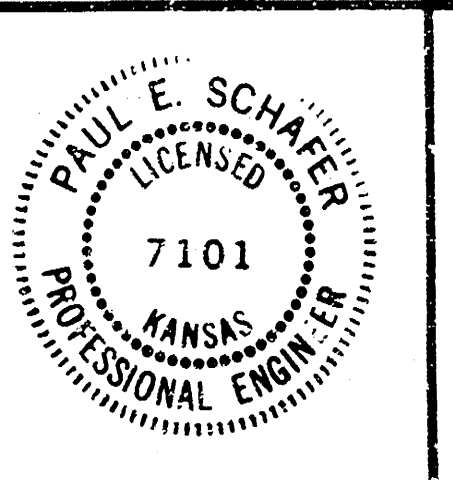
NO.	BY	CHK	APP	DATE	REVISIONS AND RECORD OF ISSUE
1					
2					
3					
4					
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6					
7					
8					
9					
10					

DESIGNED: MPS
 DETAILED: SCH
 CHECKED: RAM
 APPROVED: [Signature]
 DATE: 3/10/84



PROJECT NO.
11903.001

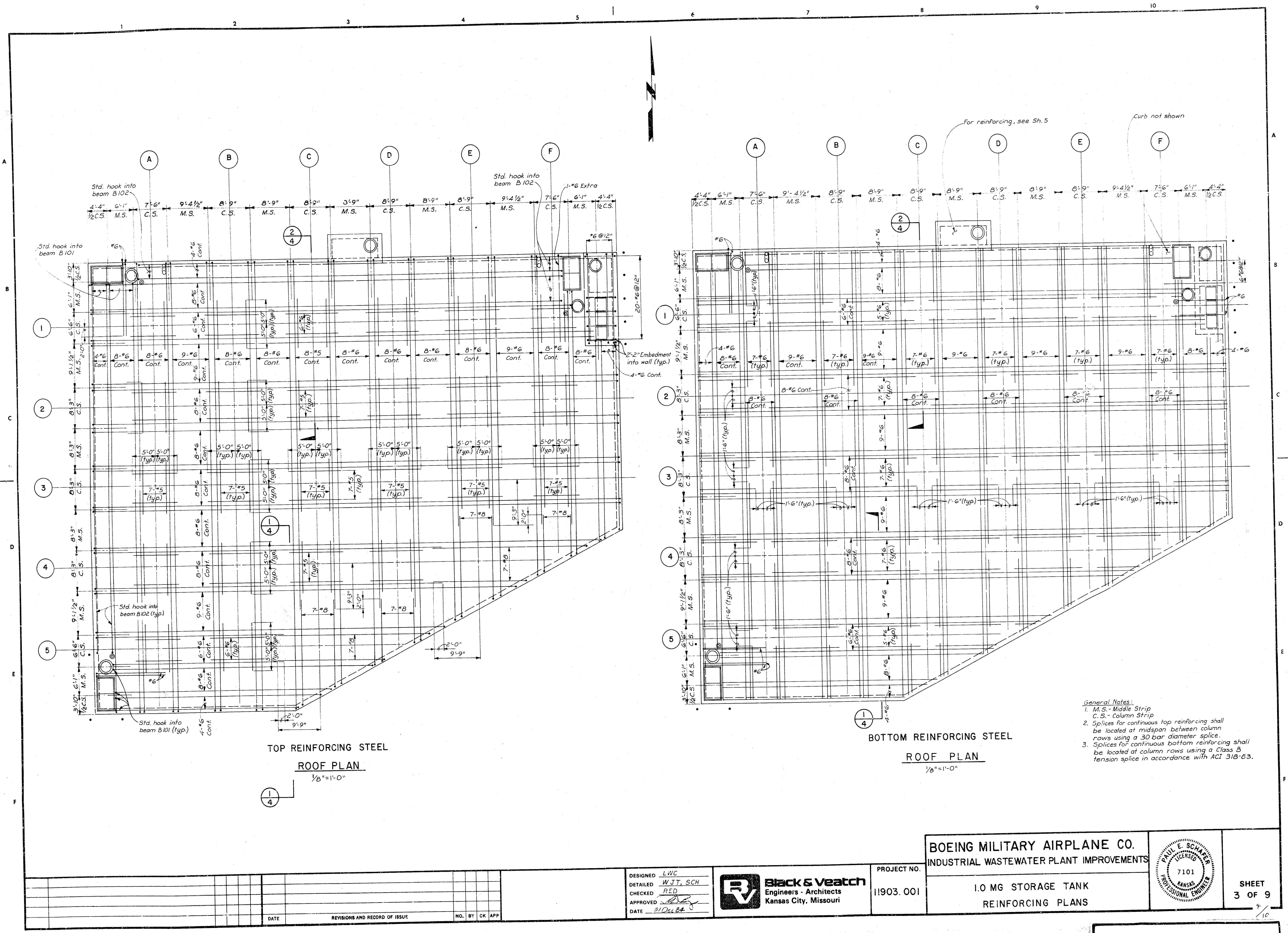
BOEING MILITARY AIRPLANE CO.
INDUSTRIAL WASTEWATER PLANT IMPROVEMENTS
 I.O MG STORAGE TANK
 PLAN & SECTIONAL PLAN



SHEET
2 OF 9

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BAV-C-2436-A

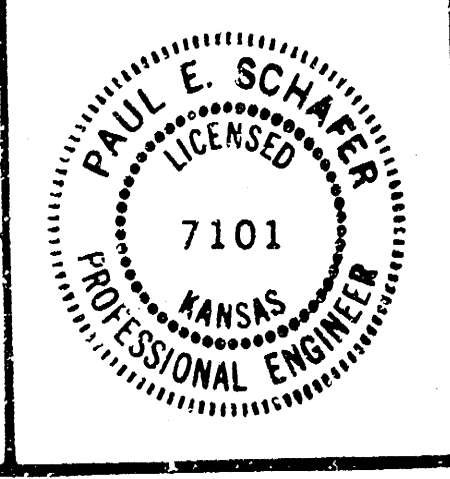


- General Notes:
1. M.S. - Middle Strip
 2. C.S. - Column Strip
 3. Splices for continuous top reinforcing shall be located at midspan between column rows using a 30 bar diameter splice.
 4. Splices for continuous bottom reinforcing shall be located at column rows using a Class B tension splice in accordance with ACI 318-83.

BOEING MILITARY AIRPLANE CO.
INDUSTRIAL WASTEWATER PLANT IMPROVEMENTS

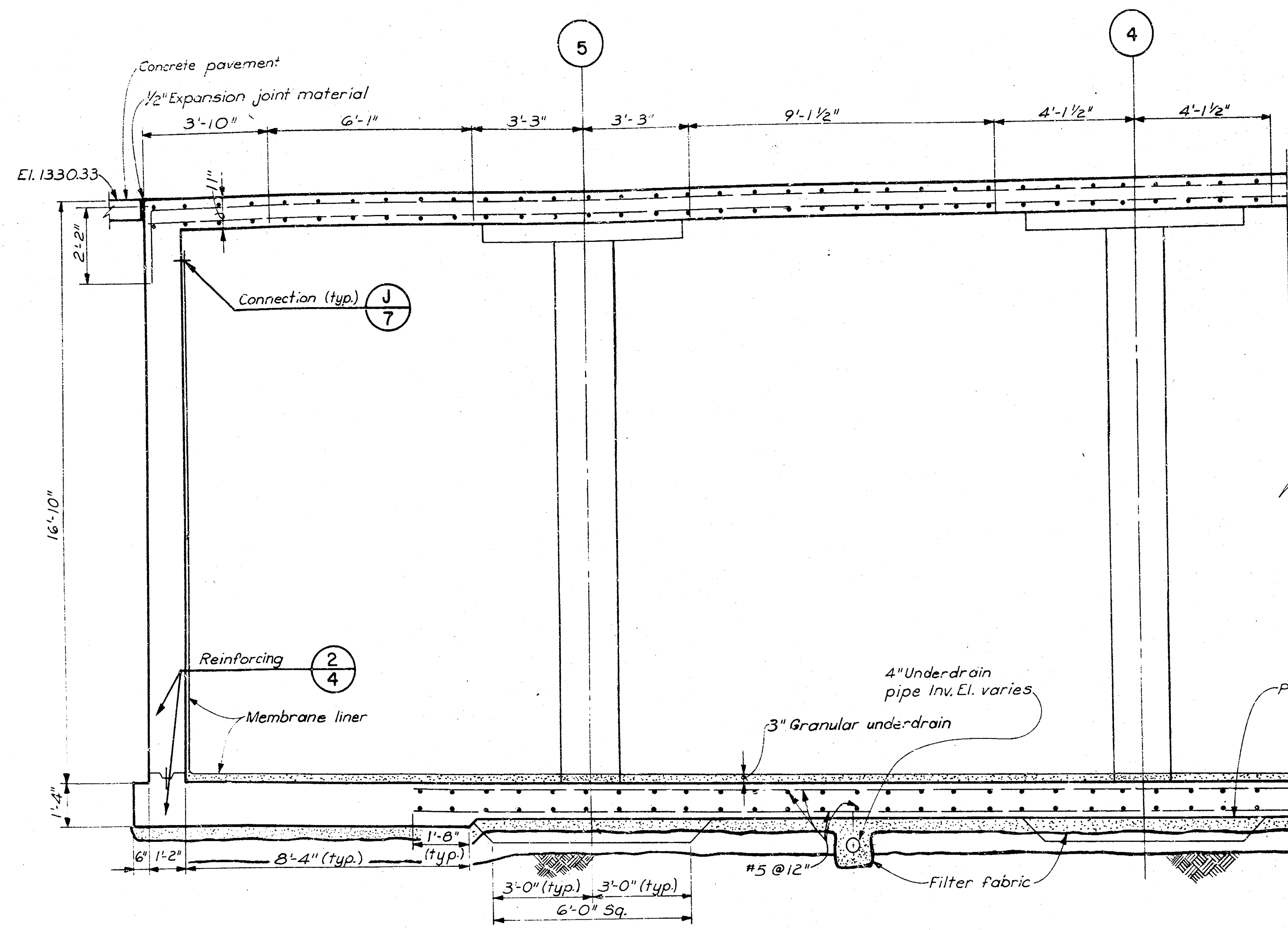
PROJECT NO.
11903.001

1.0 MG STORAGE TANK
REINFORCING PLANS



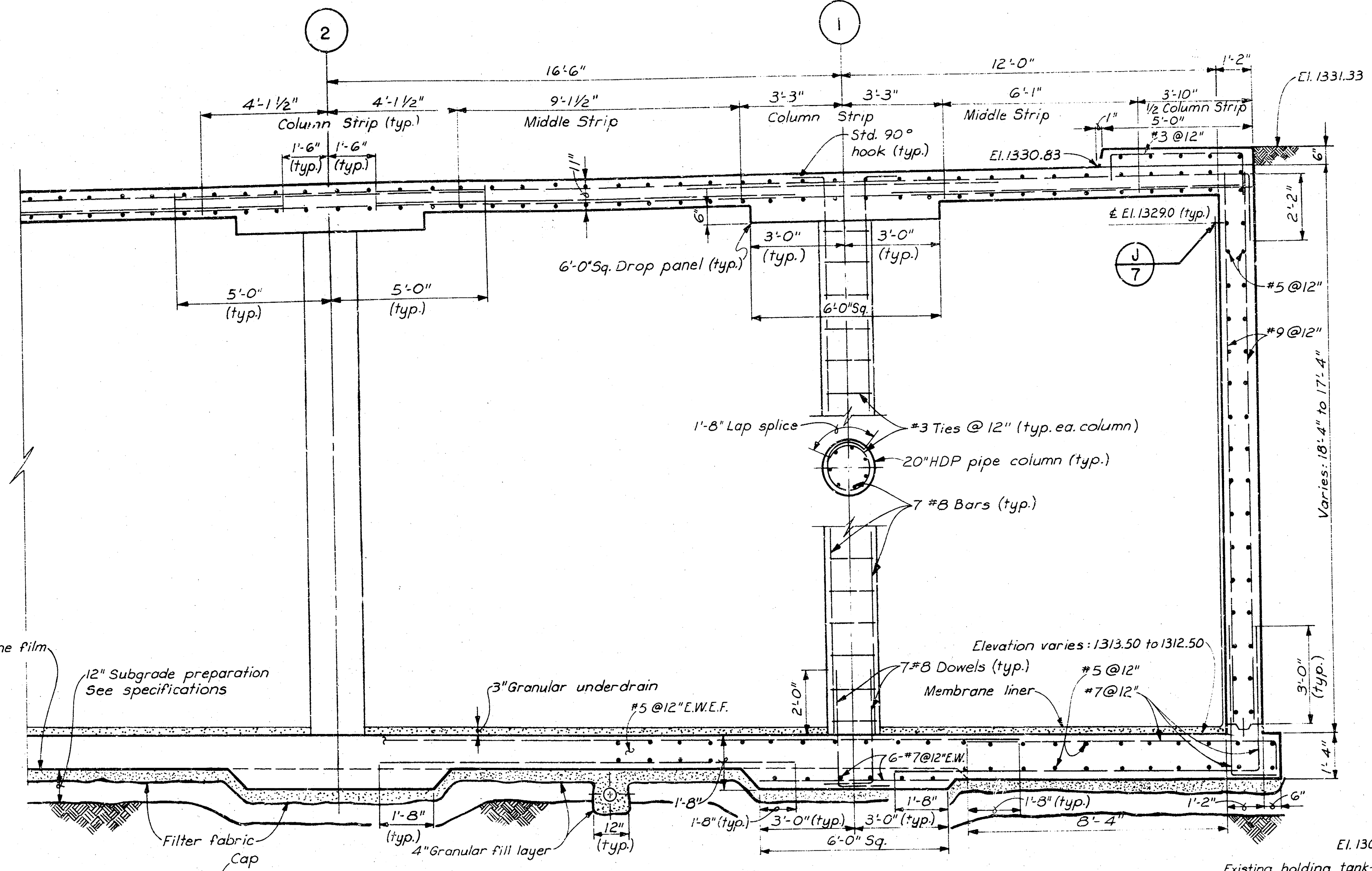
SHEET
3 OF 9

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AVAILABLE COPY



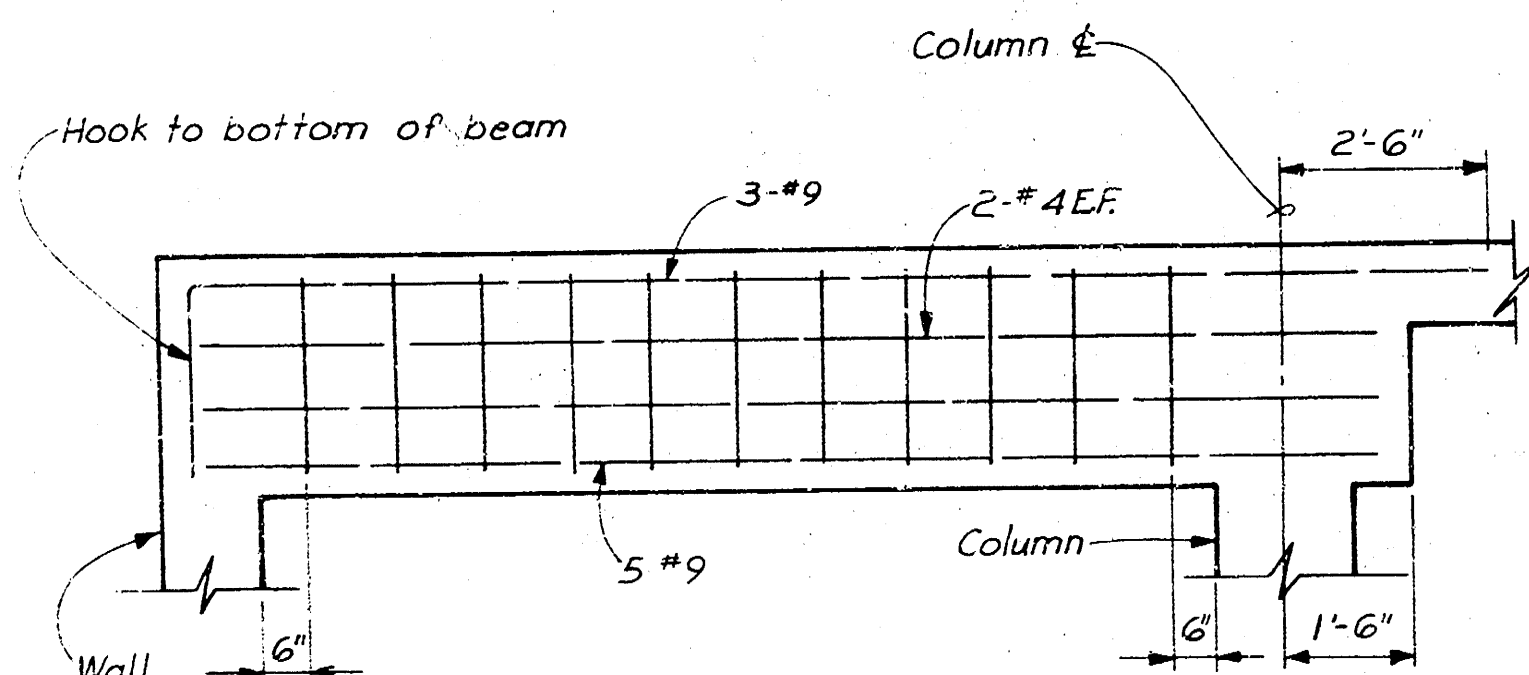
TYPICAL MIDDLE STRIP

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



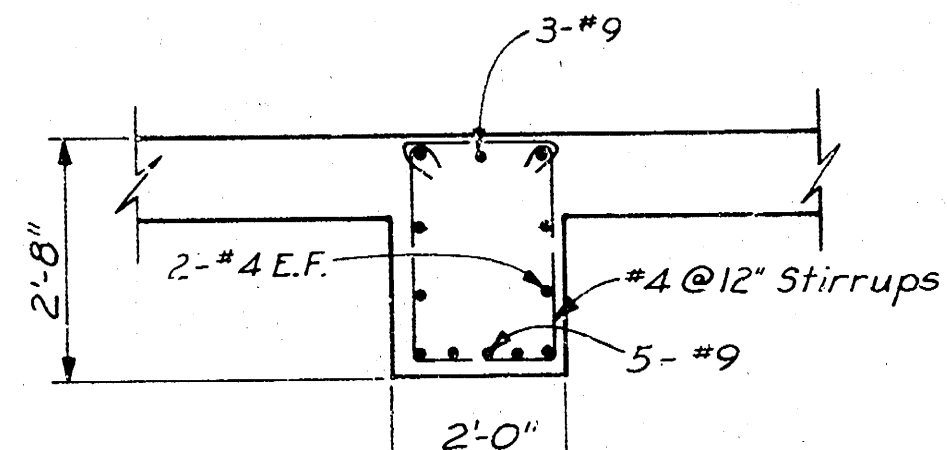
TYPICAL COLUMN STRIP

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

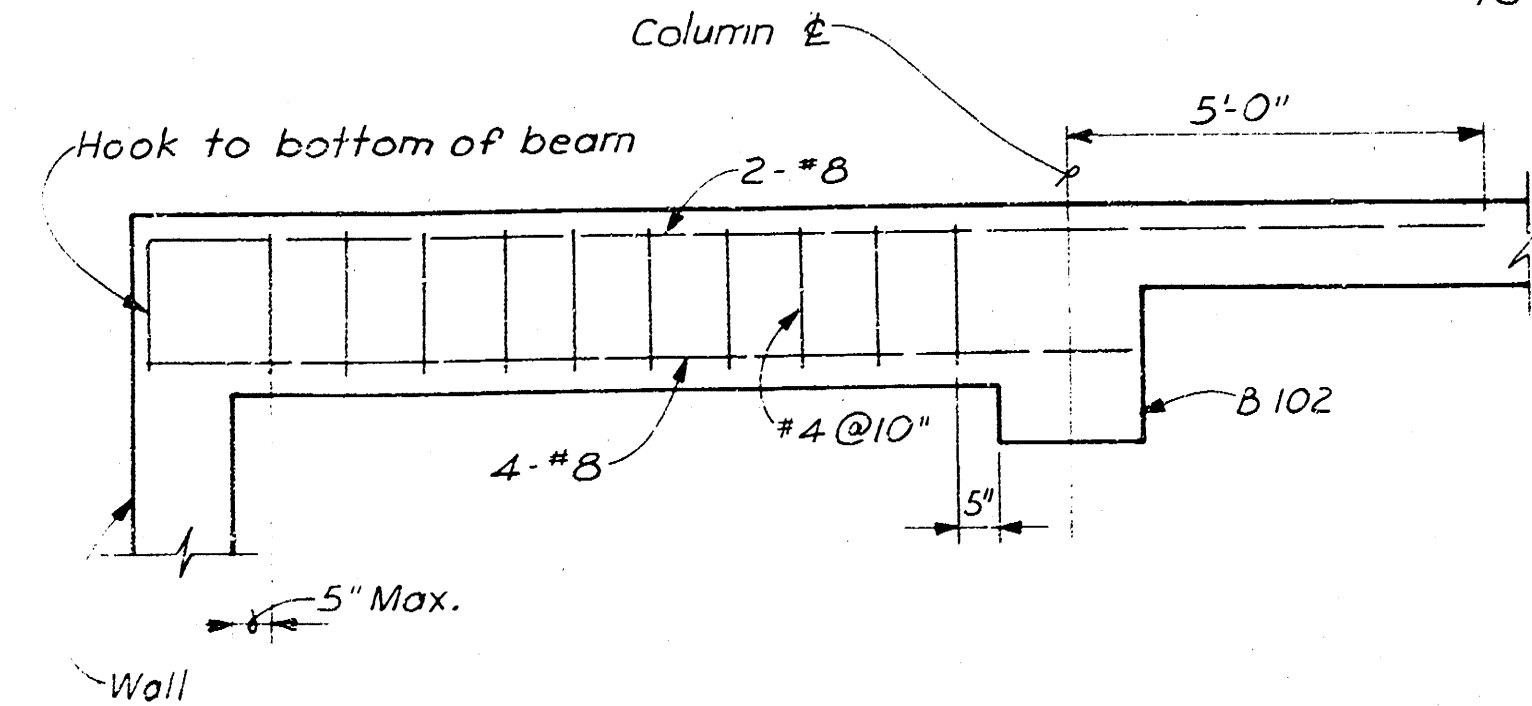


ELEVATION

BEAM DETAIL BIO2
3/8"=1'-0"

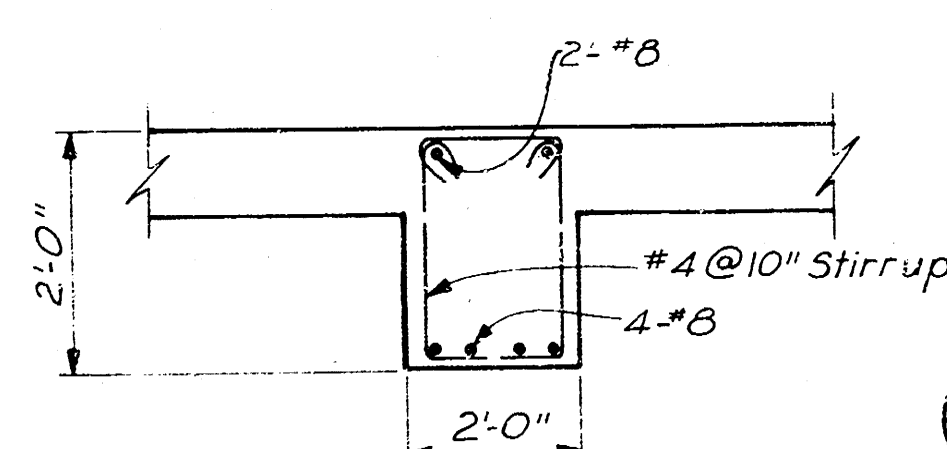


SECTION

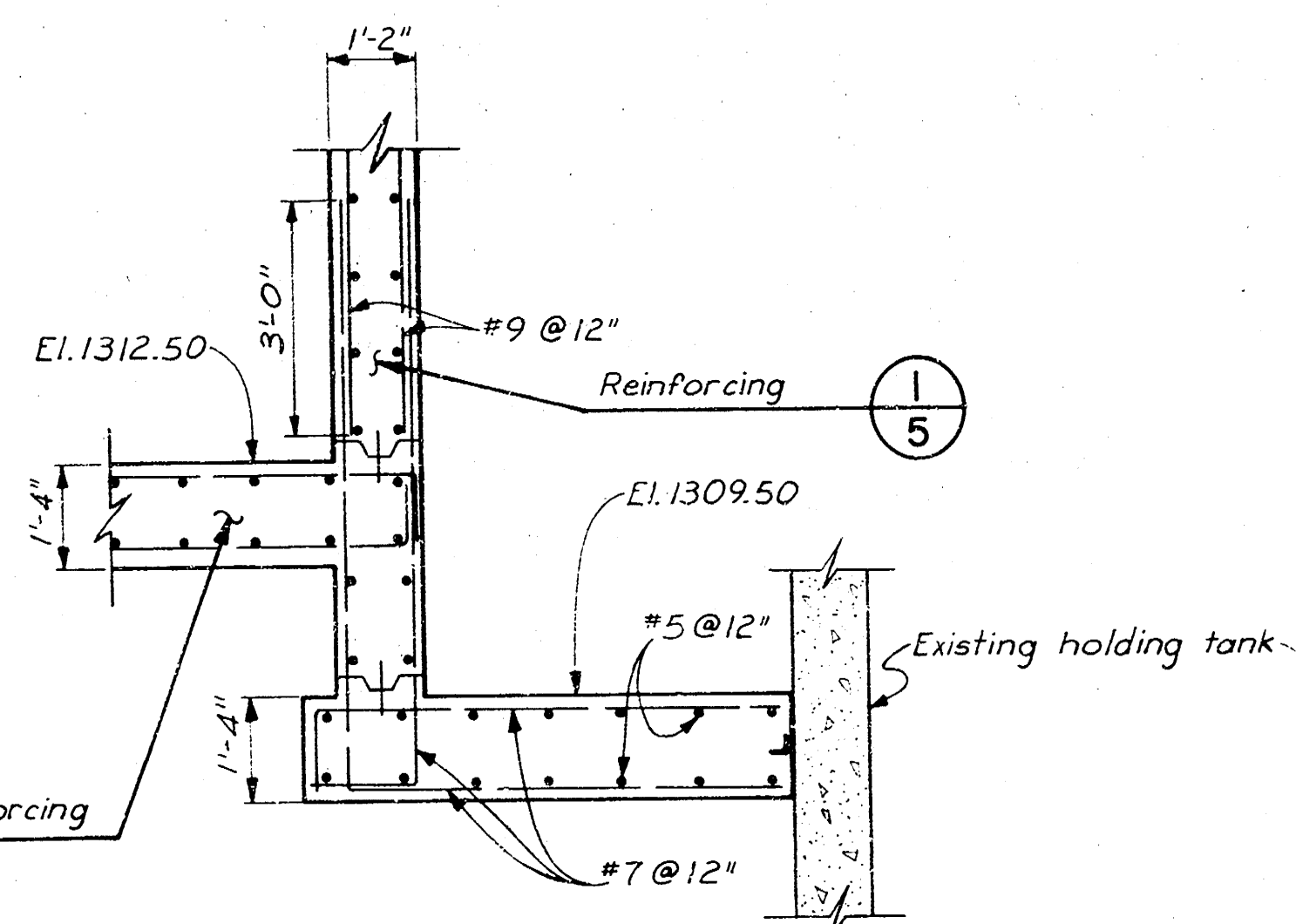


ELEVATION

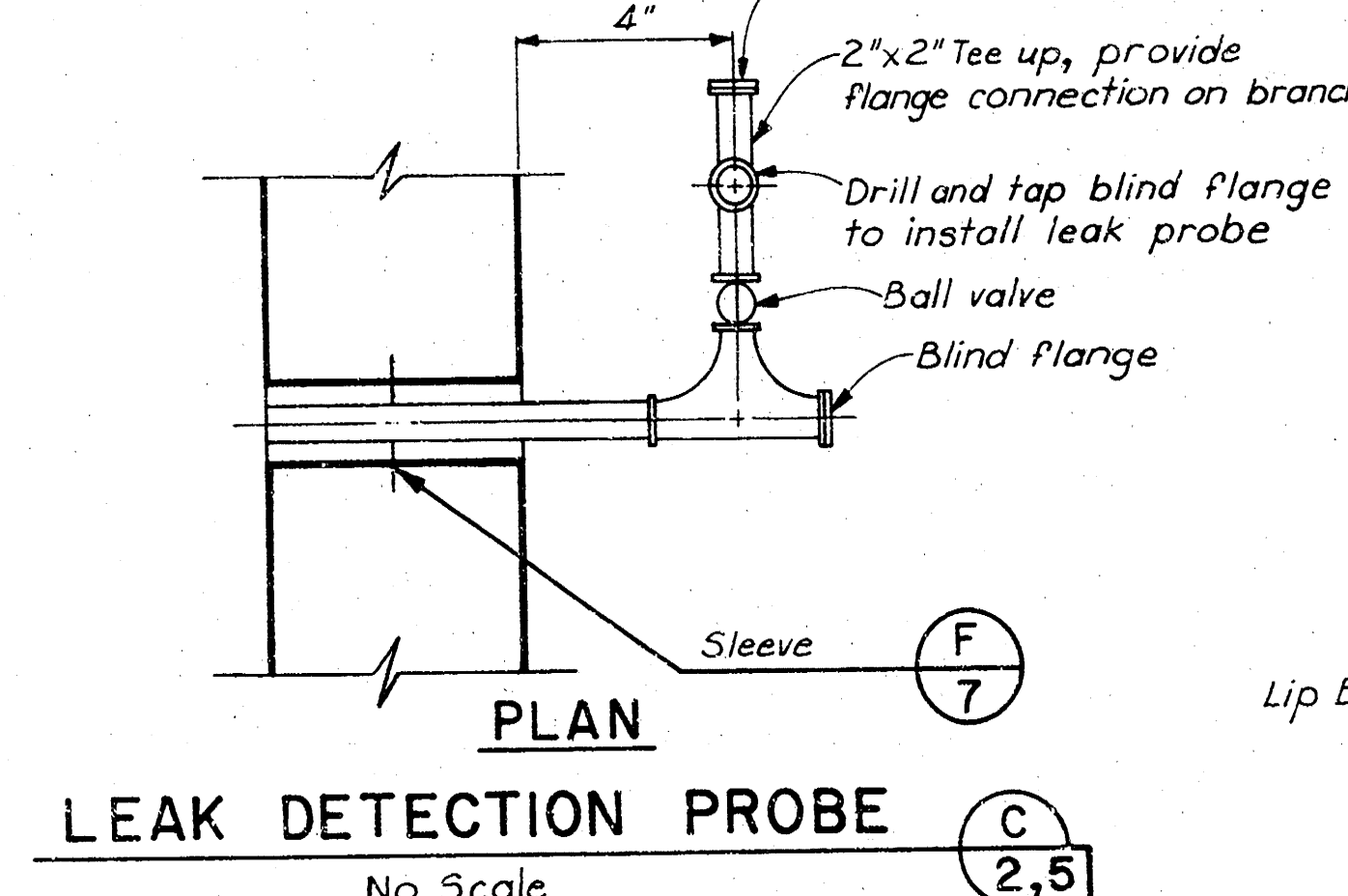
BEAM DETAIL BIO1
3/8"=1'-0"



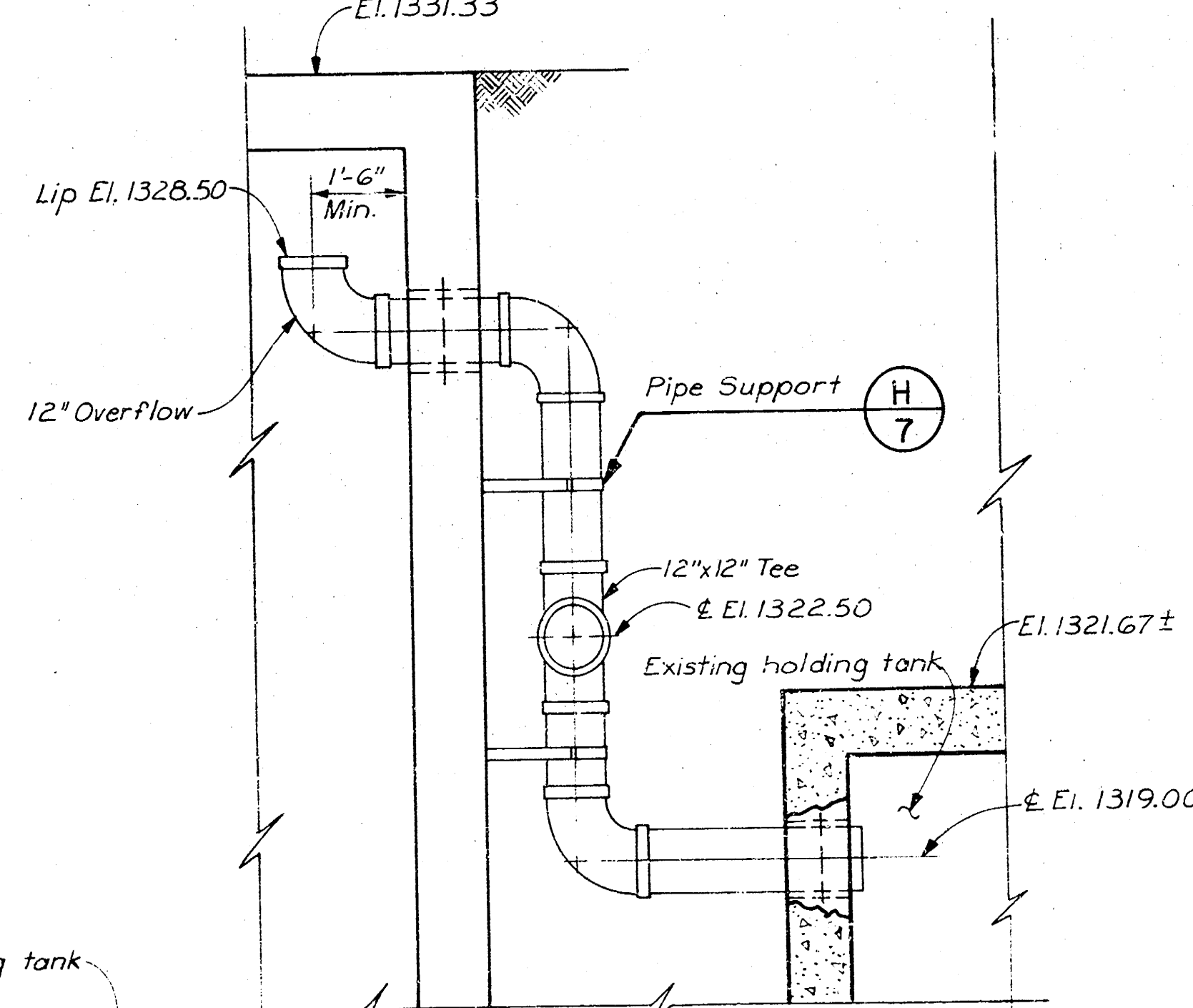
SECTION



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



LEAK DETECTION PROBE
No Scale



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

BOEING MILITARY AIRPLANE CO.
INDUSTRIAL WASTEWATER PLANT IMPROVEMENTS
1.0 MG STORAGE TANK
CONCRETE SECTIONS AND DETAILS

PAUL E. SCHAEFER
LICENSED
7101
KANSAS
PROFESSIONAL ENGINEER

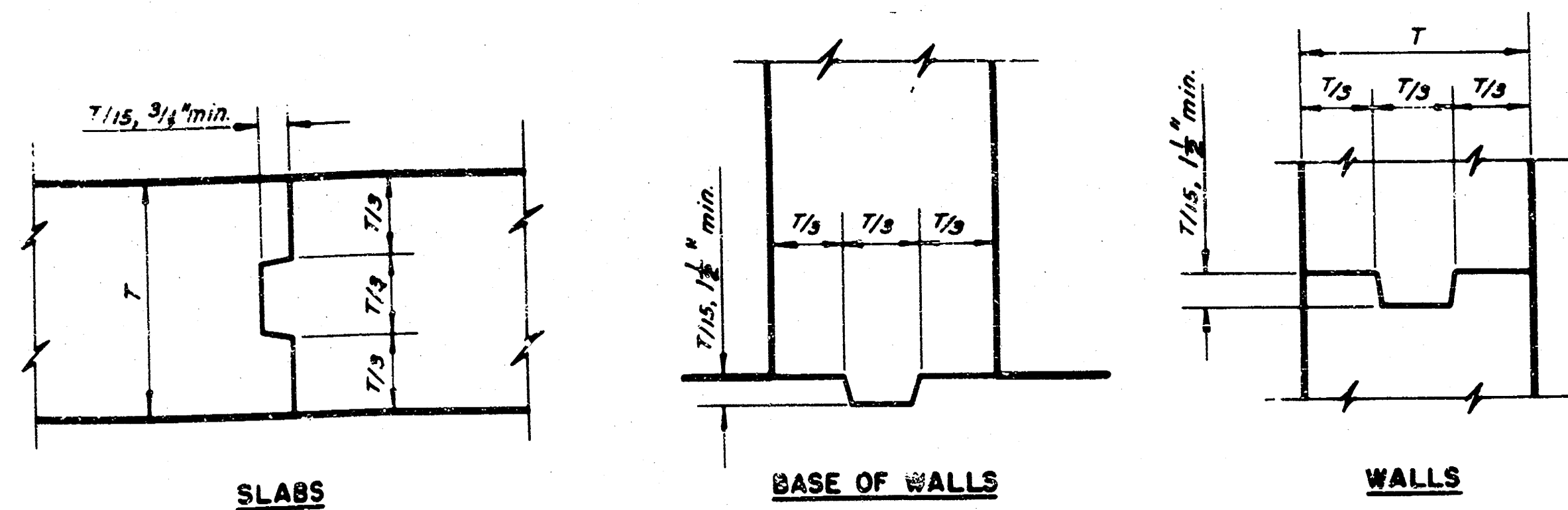
SHEET
4 OF 9
5/10

DESIGNED MPS, LWC
CHECKED SCH, RED
APPROVED [Signature]
DATE 3/10/82

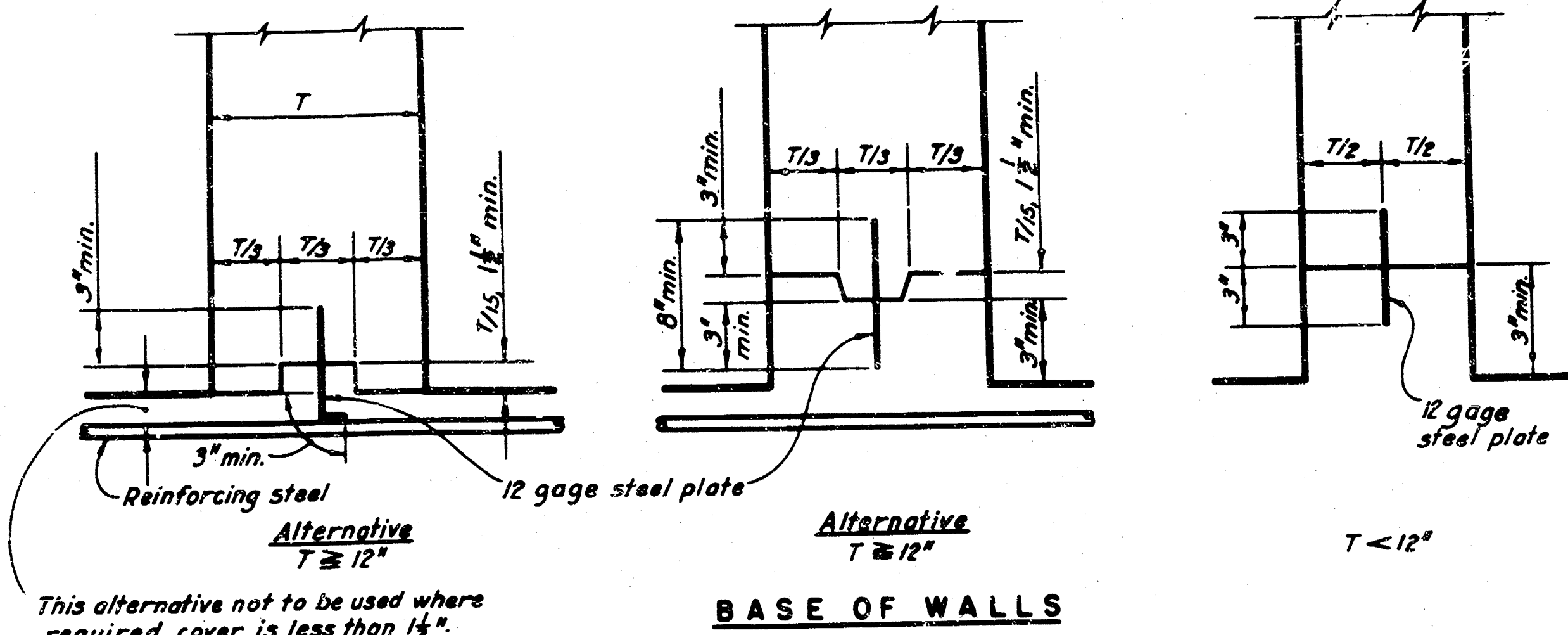
Black & Veatch
Engineers - Architects
Kansas City, Missouri

PROJECT NO.
11903.001

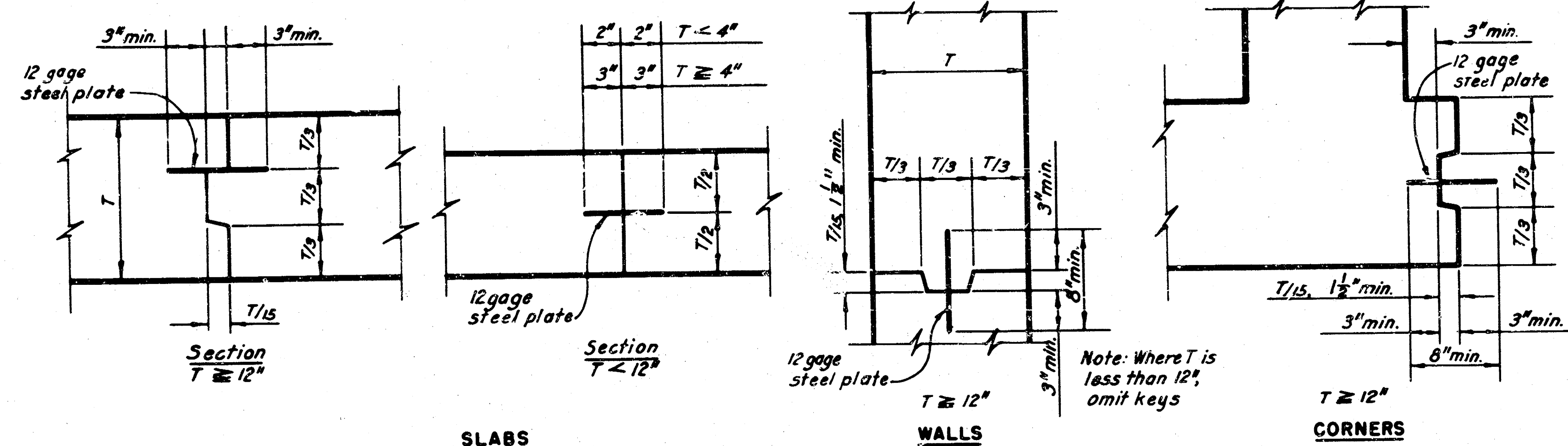
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JOINTS WITHOUT WATER STOPS



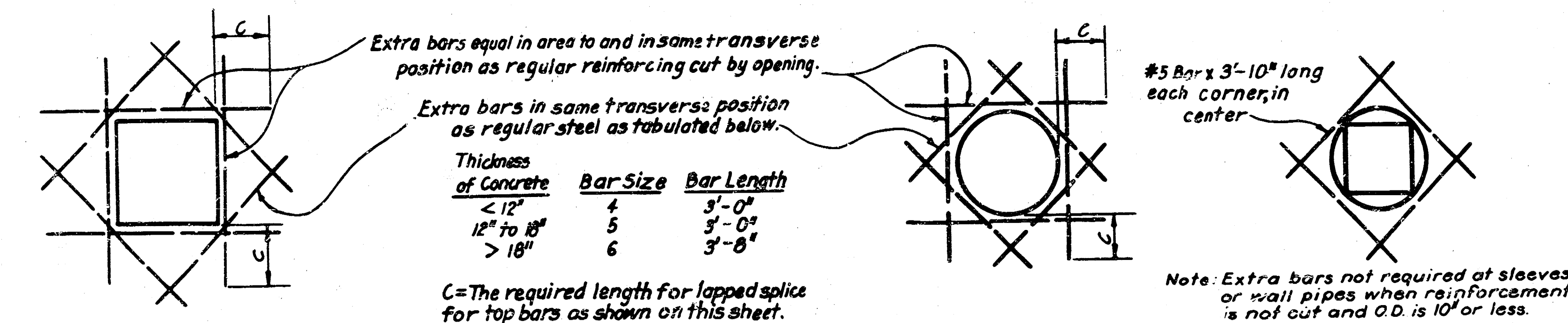
SPACERS FOR WALL REINFORCEMENT



WATERTIGHT JOINTS

TYPICAL CONSTRUCTION JOINTS

Note: Reinforcing steel is to be carried across all construction joints.



FOR RECTANGULAR OPENINGS LARGER THAN 2" DIAGONAL

FOR CIRCULAR OPENINGS LARGER THAN 21" DIAMETER

FOR OPENINGS 21" AND SMALLER IN DIAMETER OR DIAGONAL

TYPICAL EXTRA REINFORCING AT OPENINGS

GENERAL NOTE:
Details on this sheet apply to the entire set of plans except where specifically shown otherwise.

BAR SIZE	LENGTH OF LAPPED SPLICES FOR REIN. ORCING IN INCHES		LENGTH OF EMBEDMENT FOR END ANCHORAGE OF REINFORCING WITH STANDARD HOOKS IN INCHES	
	* TOP BARS	OTHERS	* TOP BARS	OTHERS
3	20	20	14	14
4	23	20	16	16
5	29	20	20	18
6	37	26	26	20
7	50	36	36	22
8	66	47	44	26
9	83	60	55	32
10	106	76	66	41
11	130	93	78	52
14	Not Permitted		108	79
18	Not Permitted		158	119

* Top bars are horizontal bars so placed that more than 12" of concrete is cast in the member below the bar. Horizontal bars in walls are to be provided with laps as required for top bars.

Except as otherwise indicated on the plans, embedment lengths for end anchorage and lapped splices shall be not less than (no minus tolerance) shown above. Lapped splices shall not be made at points of maximum stress as determined by the Engineer, and shall not be spaced closer than 6 inches on center. If splices are staggered so that no more than 1/2 are spliced in a lap splice length, the splice length can be reduced to 75% of the lengths tabulated above.

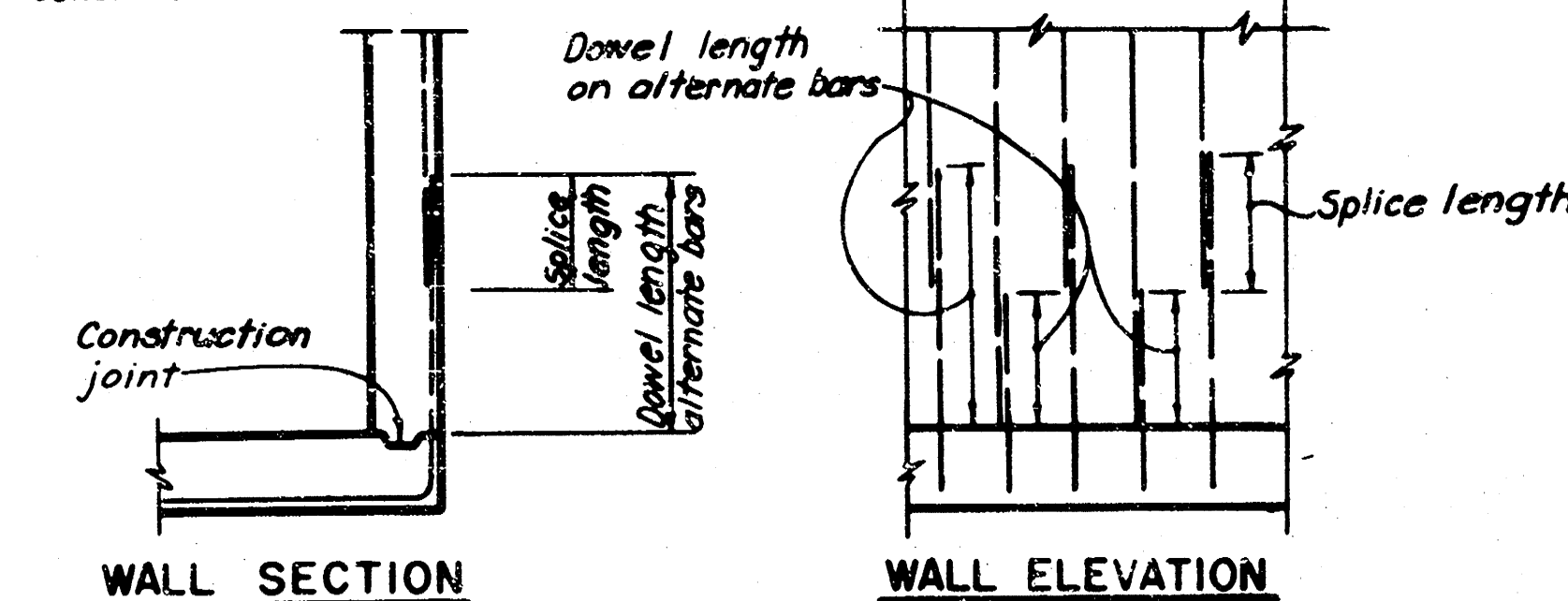
CONCRETE COVER FOR REINFORCEMENT

LOCATION	MINIMUM COVER
Unformed surfaces adjacent to excavation	3"
Formed or top surfaces exposed to weather or saturated air, submerged or in contact with earth	2"
#6 or larger bars	1 1/2"
#5 or smaller bars	1"

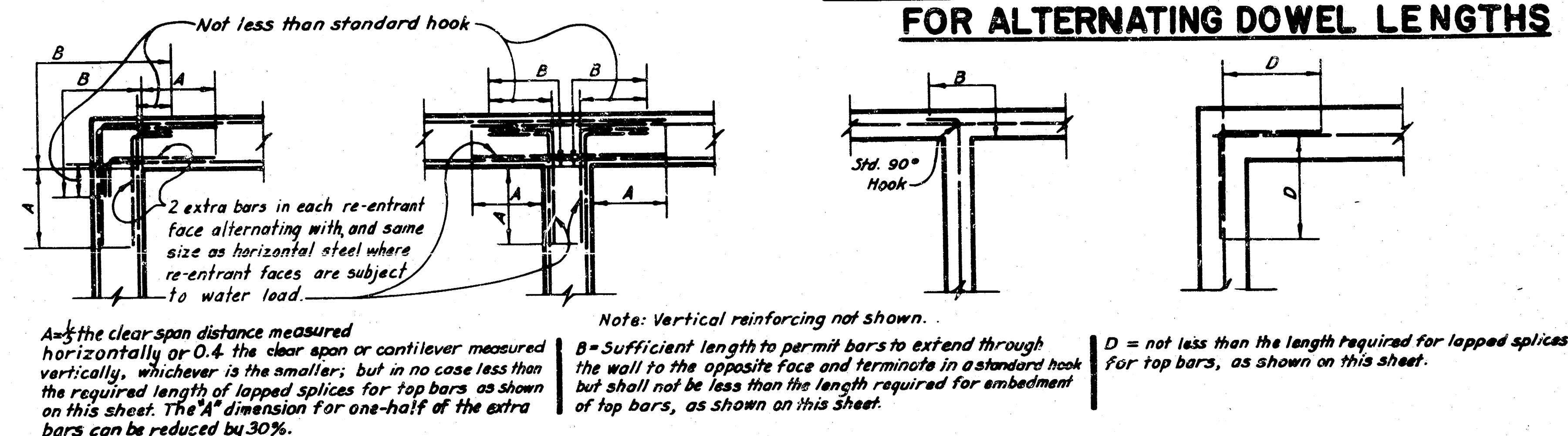
Other locations

Bars in beams or girders, including stirrups and column spirals or ties
Slabs, walls and joist
#14 and #18
#11 and smaller

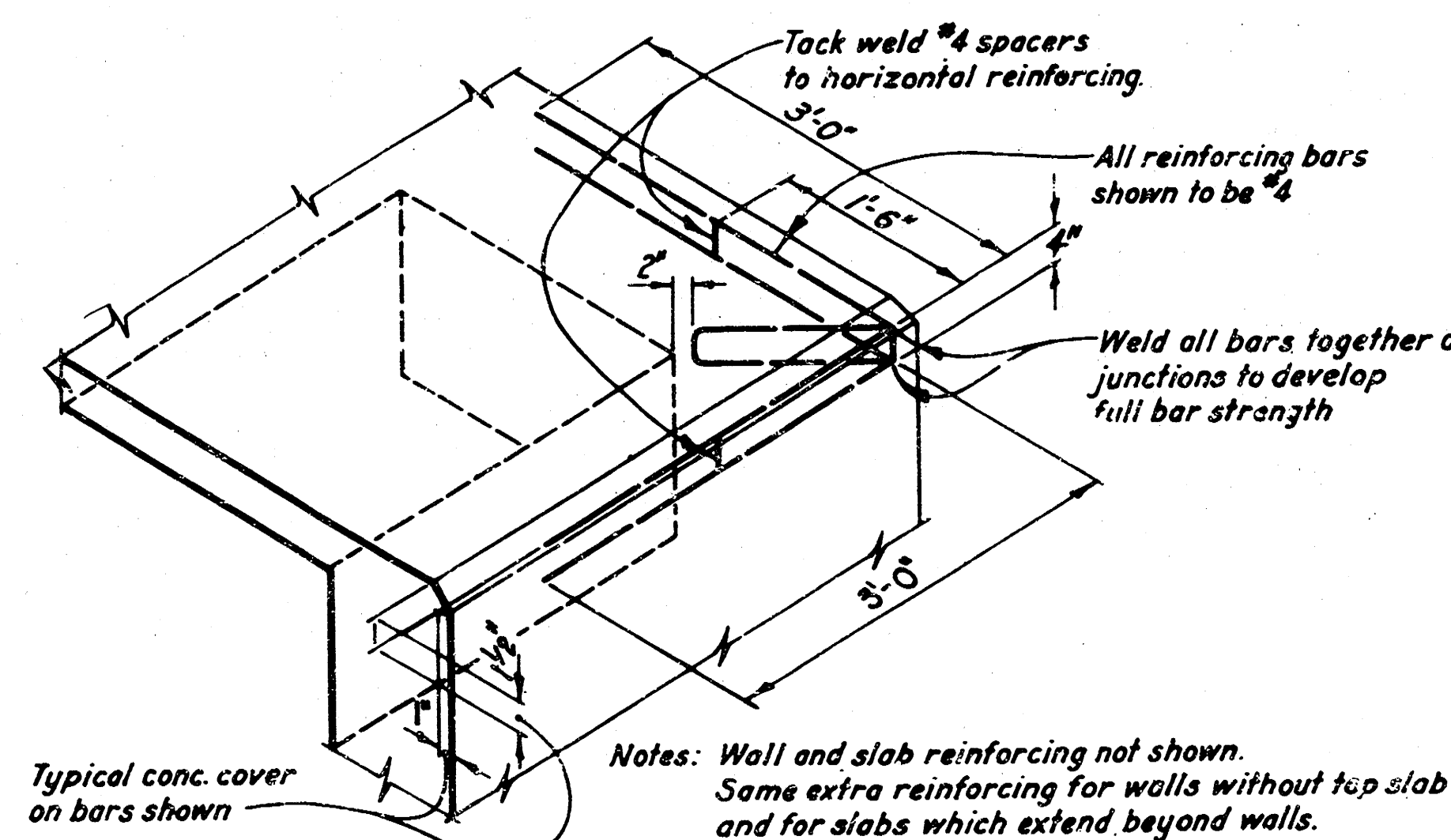
Cover for reinforcing steel shall not be less than the minimum given above (no minus tolerance), and shall not exceed the minimum by more than 1/2 inch where the concrete thickness is 24 inches or less, or more than 1/2 inch where the concrete thickness is more than 24 inches.



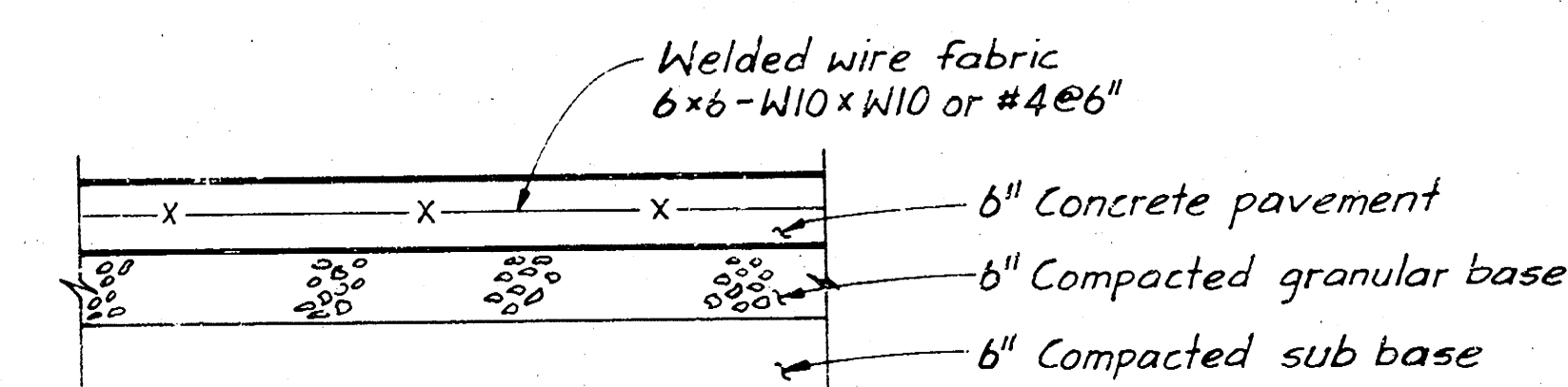
TYPICAL WALL JOINT REINFORCING DETAILS FOR ALTERNATING DOWEL LENGTHS



TYPICAL CORNER REINFORCING DETAILS



EXTRA CORNER REINFORCING AT TOP OF WALLS AND / OR SLABS WHICH ARE TO SUPPORT MASONRY



Notes:
1. Provide sawed joint at 10'-0" on centers
2. Provide 1/2" Exp. joint material between pavement & new structure.

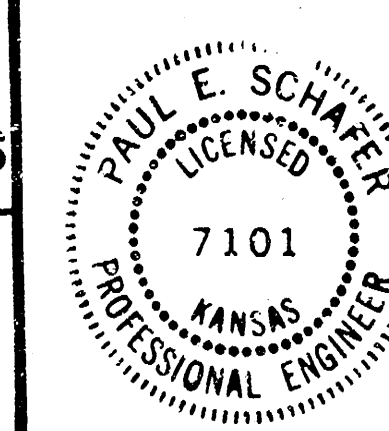
CONCRETE PAVEMENT SECTION

No Scale

BOEING MILITARY AIRPLANE CO.
INDUSTRIAL WASTEWATER PLANT IMPROVEMENTS

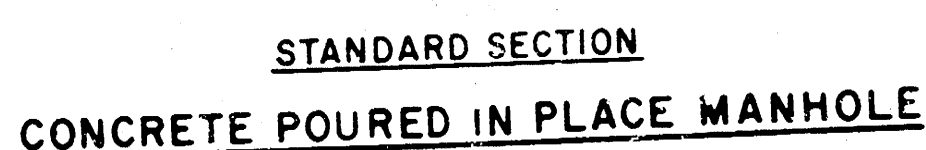
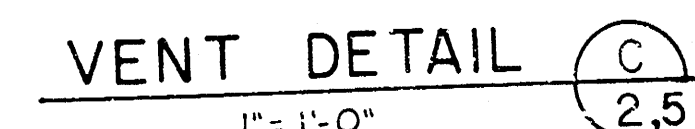
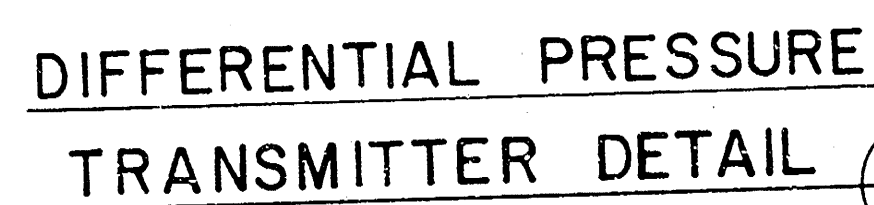
PROJECT NO.
11903.001

STANDARD CONCRETE DETAILS



SHEET
6 OF 9

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- GENERAL MANHOLE NOTES

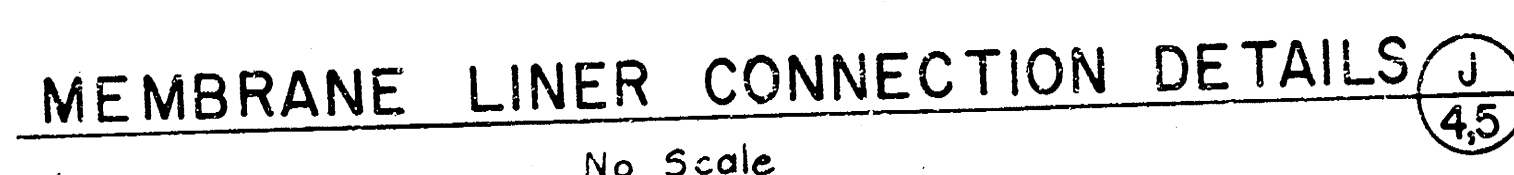
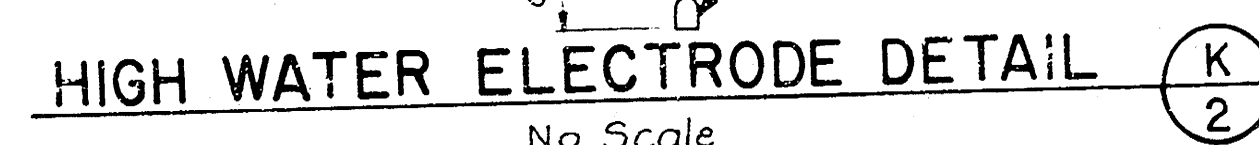
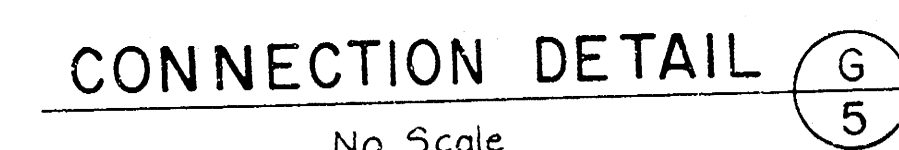
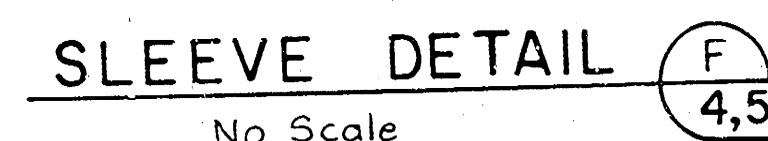
1. All manhole rings to be set in mortar.
2. Any material excavated beneath pipe entering or leaving manholes shall be replaced with concrete; such concrete fill shall extend to the center of the pipe for a distance of at least 3'-0" from face of manhole and shall terminate at a bell.
3. Wall reinforcing in precast manhole circular sections to be ASTM C-76 Class III.
4. Manhole steps in precast manholes to be grouted in with expanding grout.
5. Manhole inverts shown as pour in concrete. At contractors option, inverts may be set in sand and mortar. Provide 1" minimum cement mortar finish, all inverts.

LEGEND

-  Concrete poured in place
 Precast concrete
 Brick masonry



PIPE SIZE	SLEEVE SIZE
1/2"	* 2"
3/4" & 1"	* 3"
1 1/4" & 1 1/2"	* 3 1/2"
2" & 2 1/2"	* 4"
3" & 3 1/2"	* 5"
4"	* 6"
Larger than 4"	Pipe O.D. + 2" (1)



DESIGNED MPS
 DETAILED SCH
 CHECKED RAM
 APPROVED [Signature]
 DATE 31 Dec 84

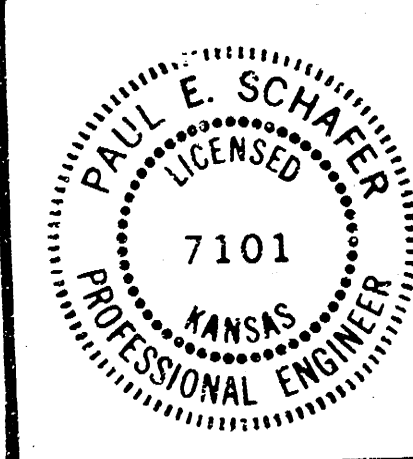


Black & Veatch
Engineers - Architects
Kansas City, Missouri

PROJECT NO.	11903.001
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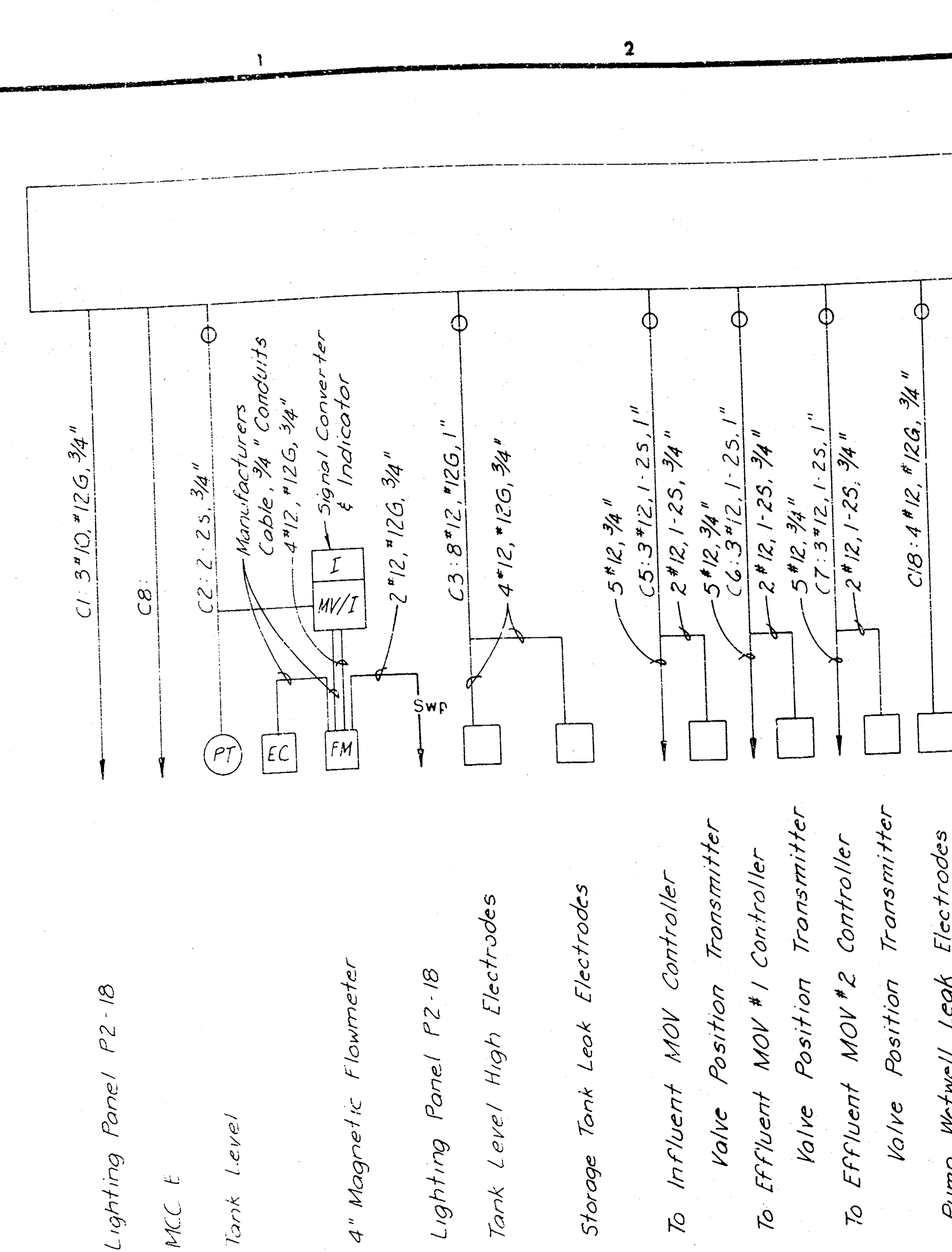
BOEING MILITARY AIRPLANE CO.
INDUSTRIAL WASTEWATER PLANT IMPROVEMENTS

MISCELLANEOUS DETAILS

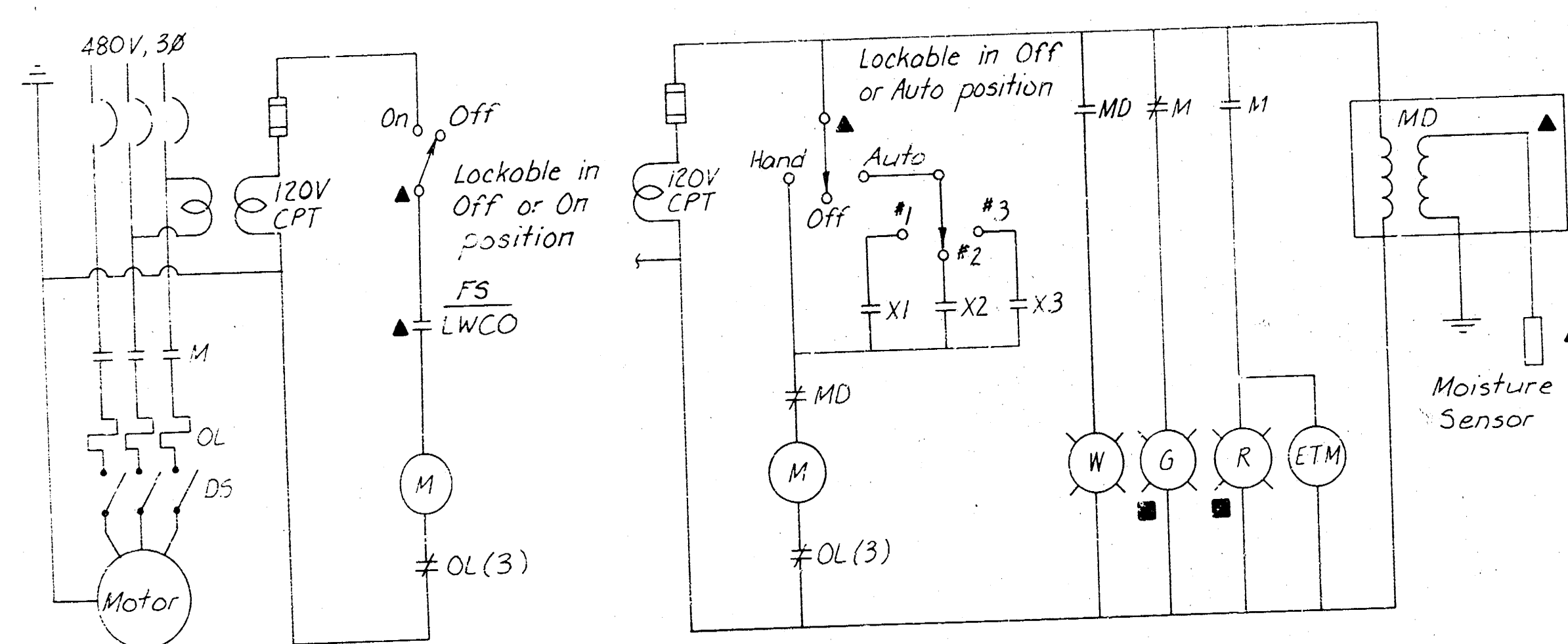


SHEET
7 OF 9
 $\frac{8}{10}$

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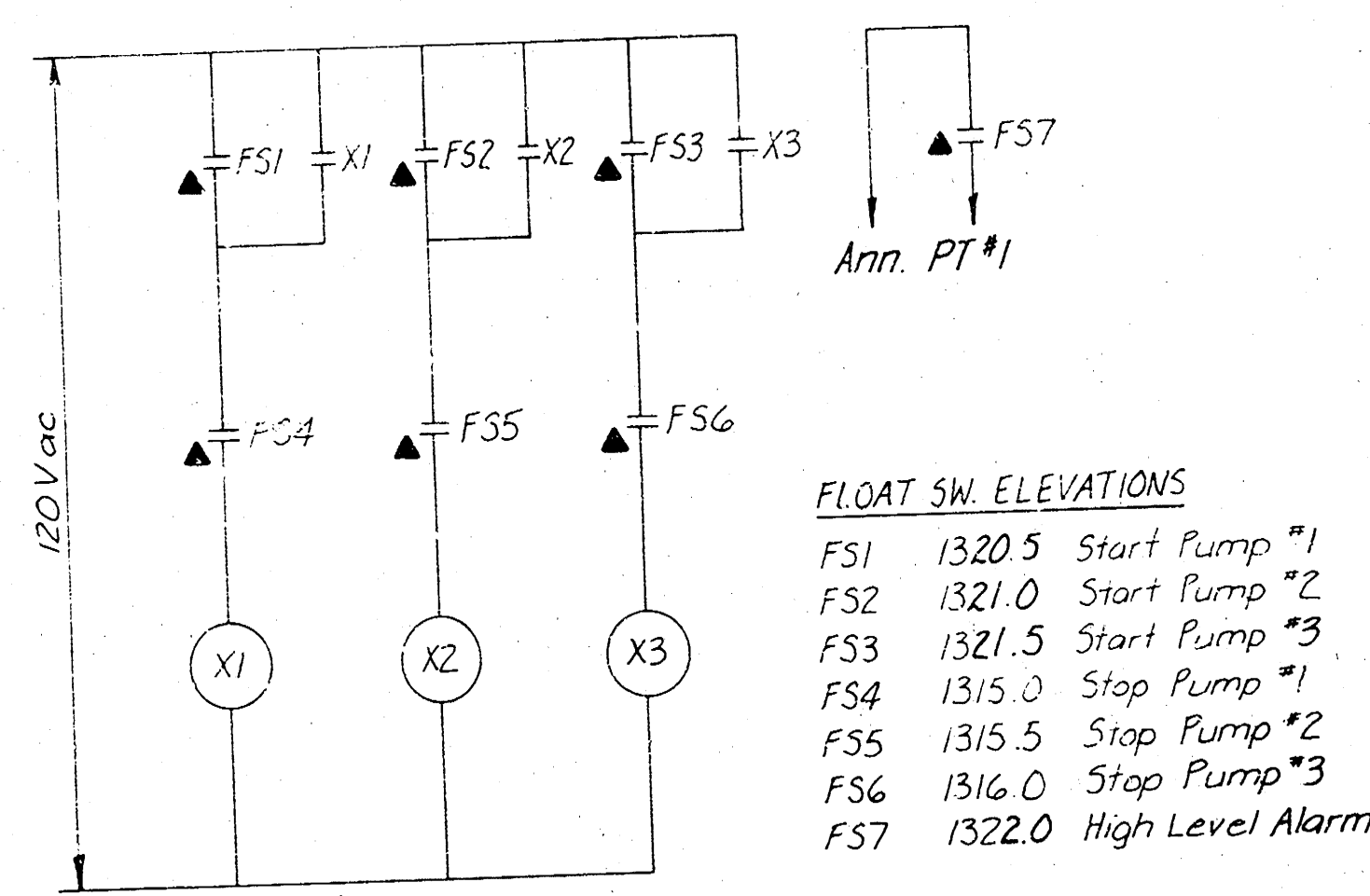
CONTROL PANEL ONE-LINE DIAGRAM



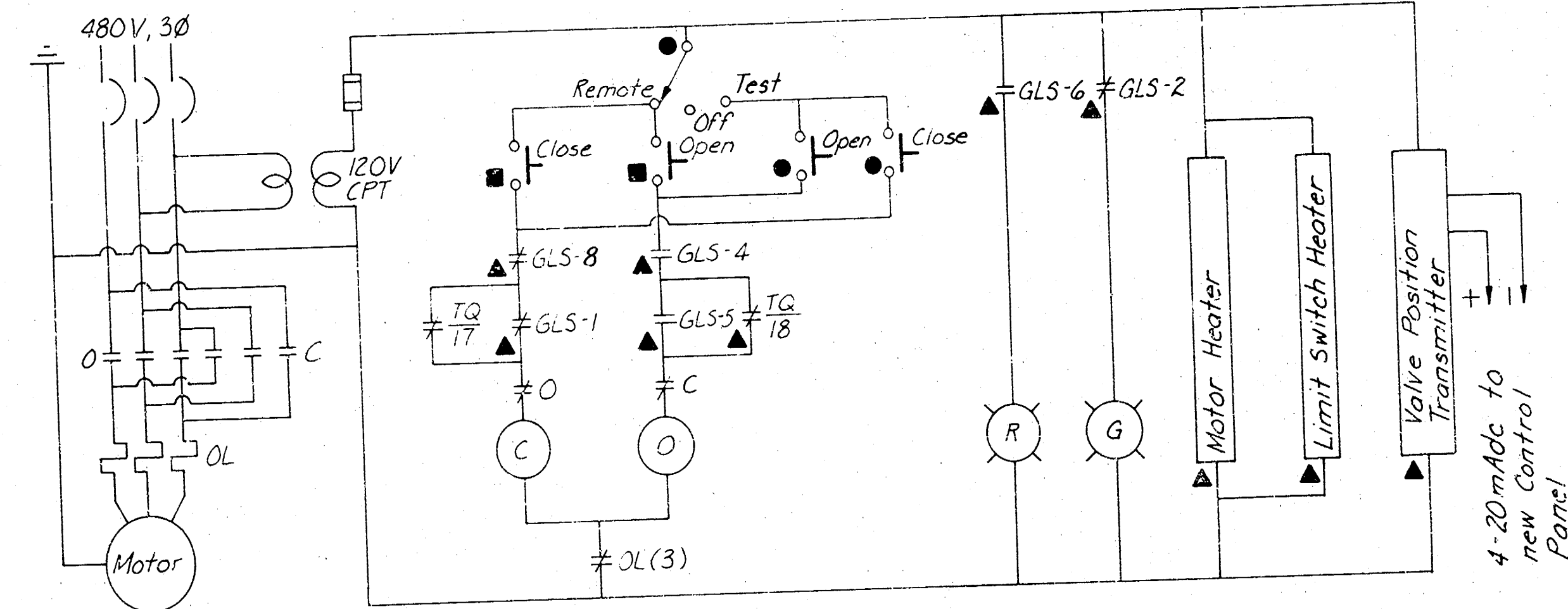
SUBMERSIBLE MIXERS (3)

SUBMERSIBLE PUMPS (3)

SUBMERSIBLE PUMP LEVEL CONTROLS



PUMP FAILURE ALARM



MOTOR OPERATED VALVES (3)

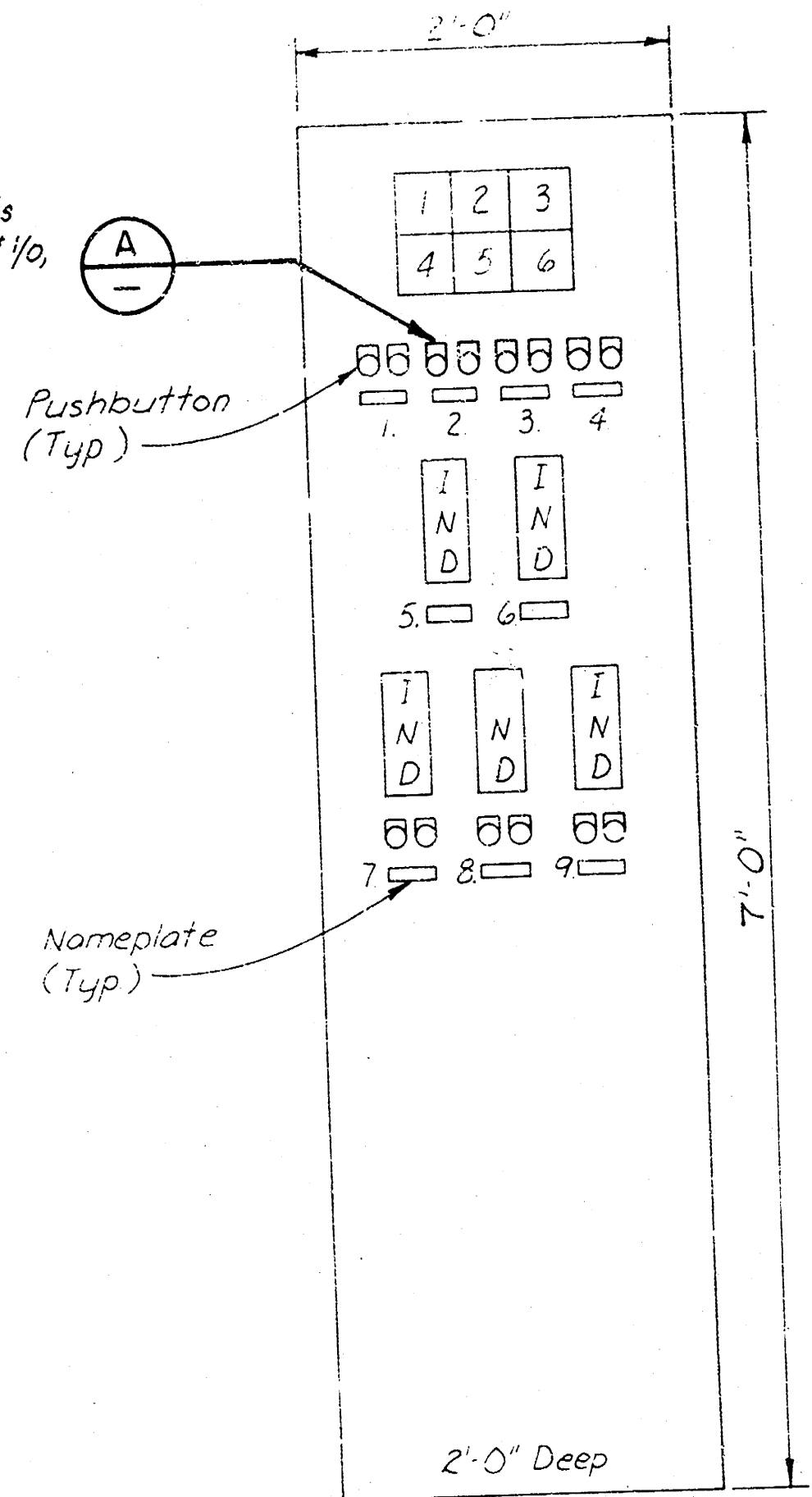
VALVE POSITION	VALVE POSITION		
	FULL OPEN 01	INTERMEDIATE POSITION 951	FULL CLOSED 1001
1			
2			
3			
4			
5			
6			
7			
8			

TG-17 OPENS ON HIGH CLOSING TORQUE
TG-18 OPENS ON HIGH OPENING TORQUE
--- CONTACT CLOSED

MOTOR OPERATED VALVE SWITCH DEVELOPMENT

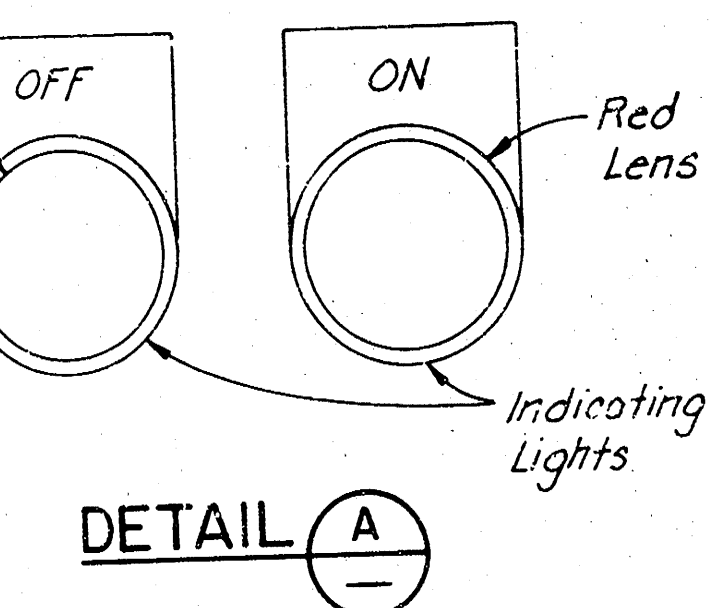
- DEVICE LEGEND
- ▲ REMOTE MOUNTED FROM STARTER AT EQUIPMENT
 - LOCATED ON NEW CONTROL PANEL
 - LOCATED AT MOTOR OPERATED VALVE CONTROLLER

NEW CONTROL PANEL



- NAMEPLATE LEGEND
1. ANNUNCIATOR
 2. SUBMERSIBLE PUMP 1
 3. SUBMERSIBLE PUMP 2
 4. SUBMERSIBLE PUMP 3
 5. TANK LEVEL
 6. TANK EFFLUENT FLOW
 7. INFLUENT VALVE
 8. EFFLUENT VALVE 1
 9. EFFLUENT VALVE 2
- ANNUNCIATOR LEGEND
1. TANK LEVEL HIGH
 2. WETWELL LEVEL HIGH
 3. STORAGE TANK LEAK
 4. PUMP WETWELL LEAK
 5. SPARE
 6. SPARE

Annunciator Alarm Points and Tank Effluent Flow signal shall be capable of retransmitting to BMAC central computer system. Wiring for these points by others.

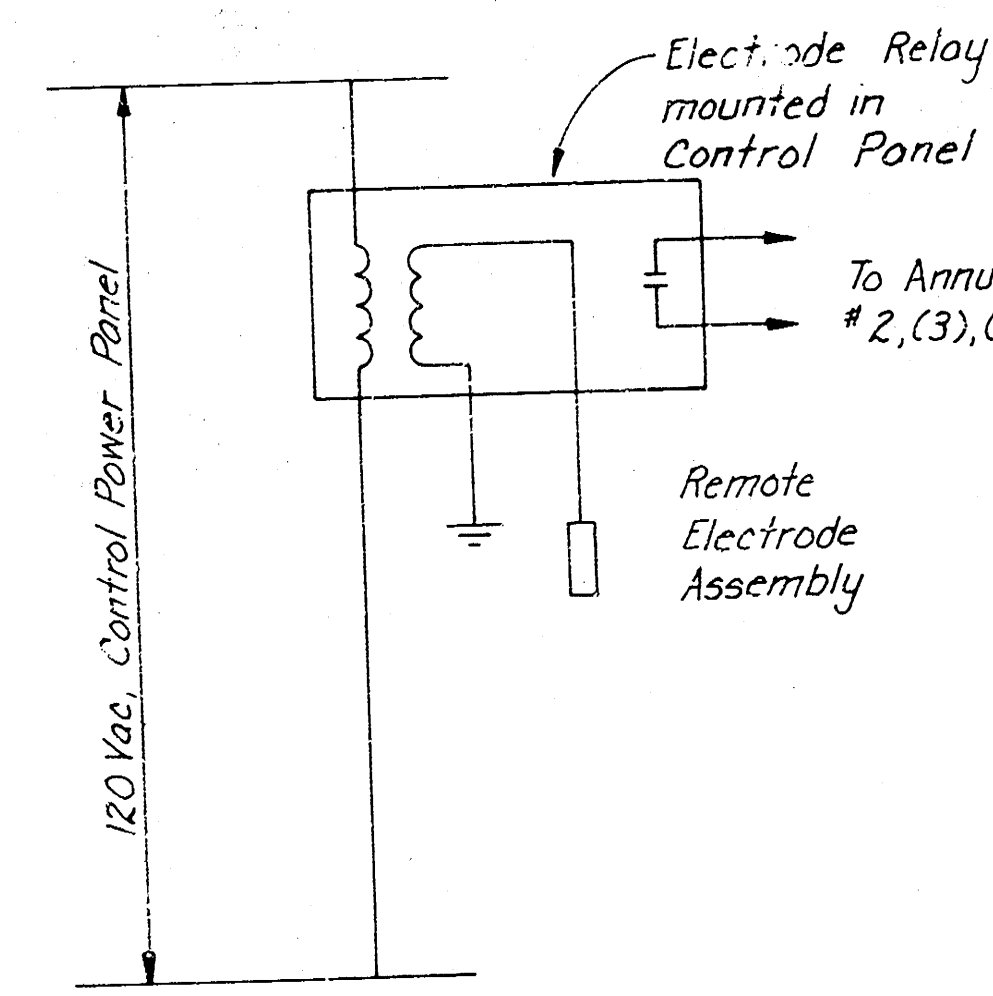


MCC E FRONT VIEW

1	10
2A	2B
3	8
4	4
5	11
6	

MOTOR CONTROL CENTER NO. MCC E
MCC LOCATION INDUSTRIAL WASTEWATER PLANT ENCLOSURE:
NEMA TYPE 1 WITH GASKETED DOORS
ARRANGEMENT:
SINGLE FACE, FRONT ONLY, MOUNTING UNITS STRAIGHT
NOT ACCESSIBLE FROM REAR
REAR REMOVABLE PLATES
MAIN BUS AT TOP
INCOMING FEEDER ENTERS TOP
OUTGOING FEEDERS ENTER TOP
CONTROL WIRING ENTERS TOP
GROUND BUS
CHARACTERISTICS:
MAIN BUS RATING 600 AMP
BUS BRACING AT 22,000 AMPERE SYMMETRICAL
WIRING NEMA CLASS 2, TYPE B

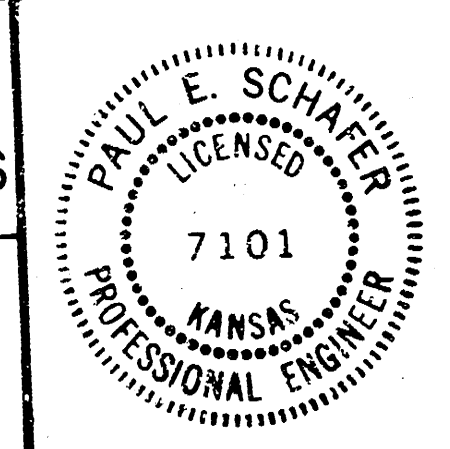
ELECTRODE RELAY (Typ of 3)



Annunciator Wetwell Level High Retransmitting Alarm contact
To BMAC Central Computer System

BOEING MILITARY AIRPLANE CO.
INDUSTRIAL WASTEWATER PLANT IMPROVEMENTS

ELECTRICAL
SCHEMATICS AND ONE-LINES



SHEET
9 OF 9

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DESIGNED JDK
DETAILED JKE
CHECKED JAW
APPROVED D.E. Clark
DATE 12-27-84

Black & Veatch
Engineers - Architects
Kansas City, Missouri

PROJECT NO.
11903.001

DATE REVISIONS AND RECORD OF ISSUE NO. BY CK APP