

Sanitary Sewer Relocation
For

BOEING MILITARY AIRPLANE COMPANY
WICHITA, KANSAS

**INDUSTRIAL WASTEWATER
TREATMENT PLANT IMPROVEMENTS**

**1.0 MILLION GALLON
WASTEWATER STORAGE TANK**

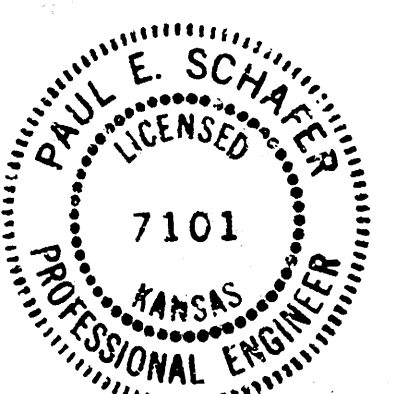
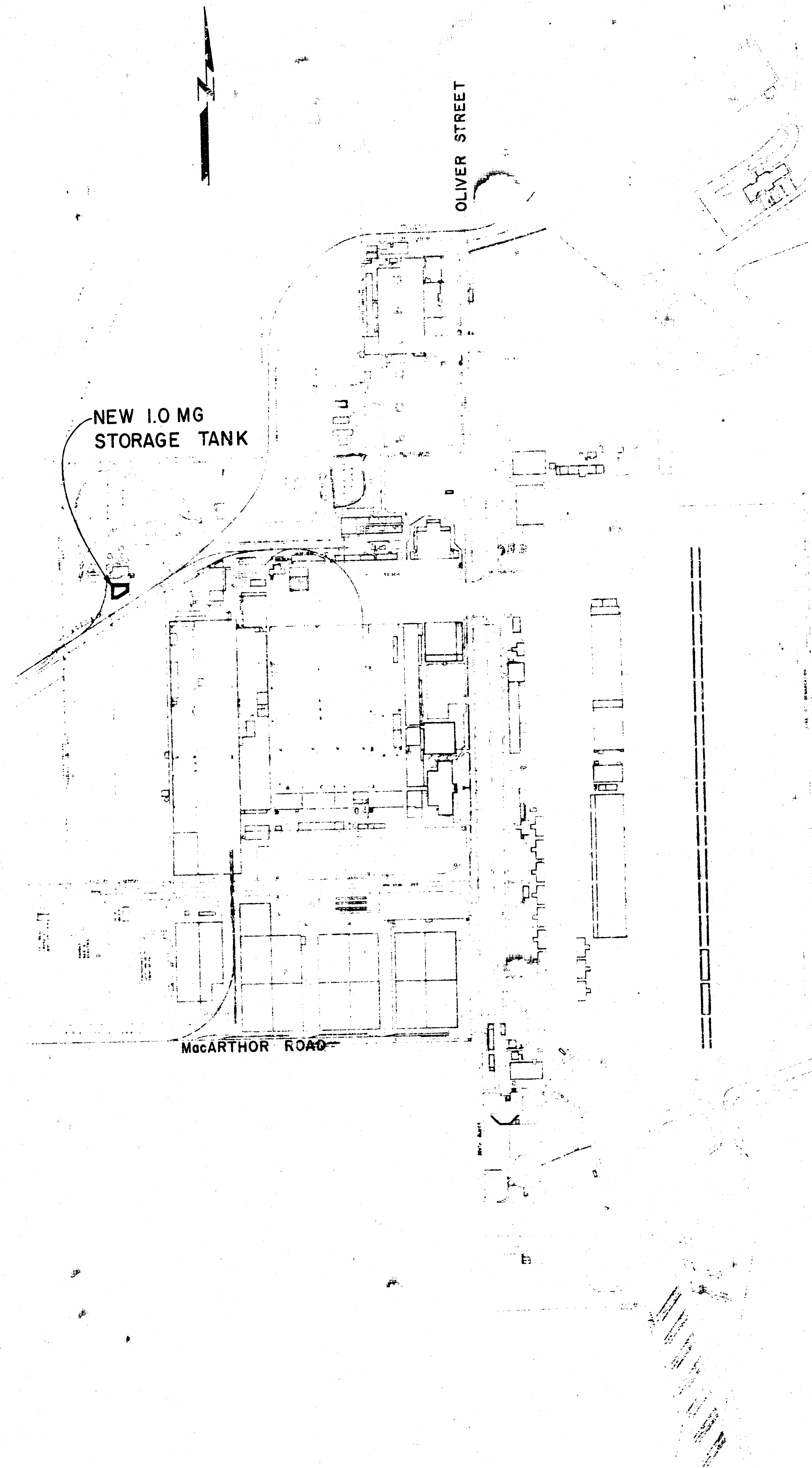
BLACK & VEATCH ENGINEERS-ARCHITECTS
KANSAS CITY, MISSOURI
PROJECT NO. 11903.001
1984

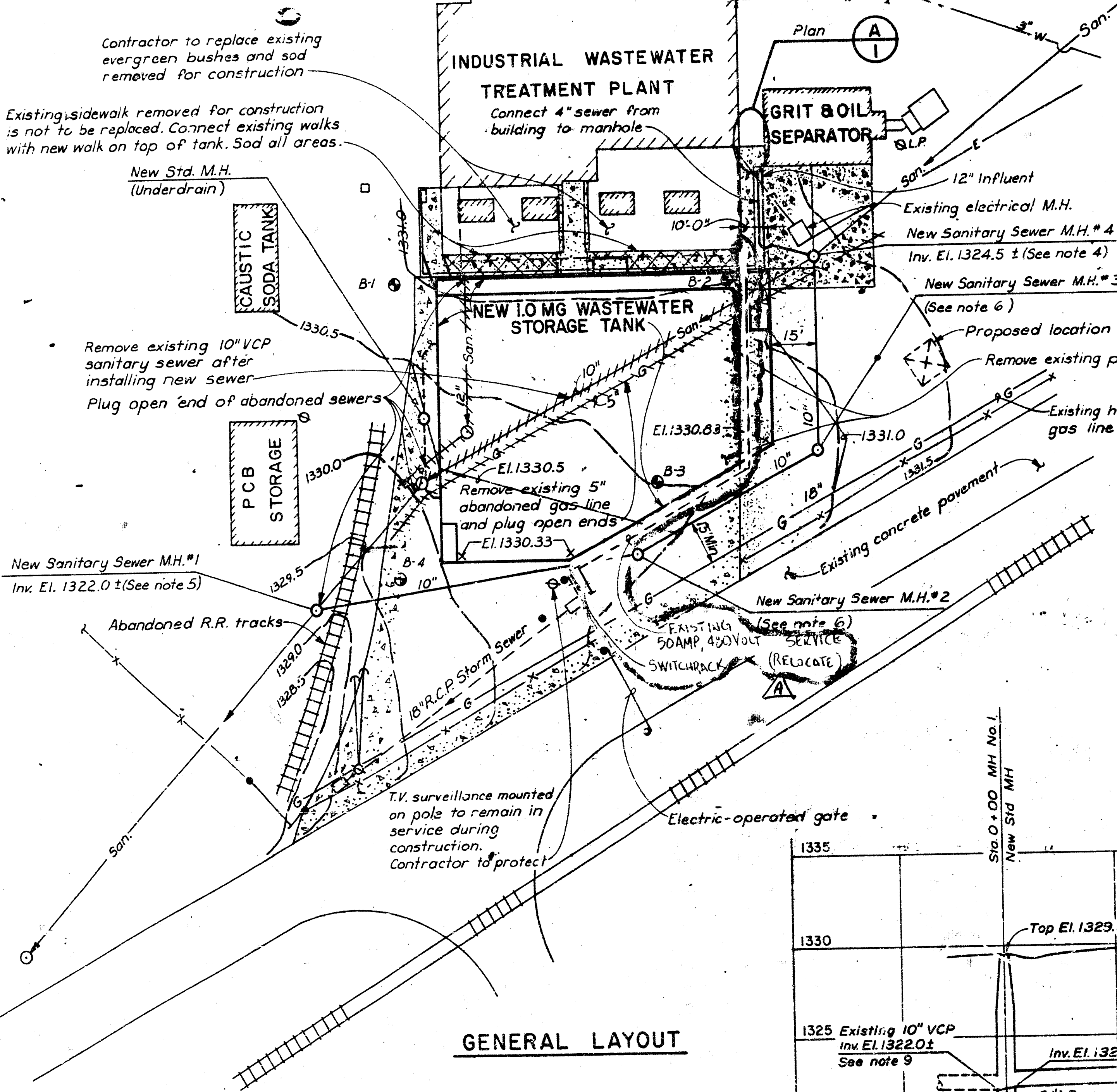
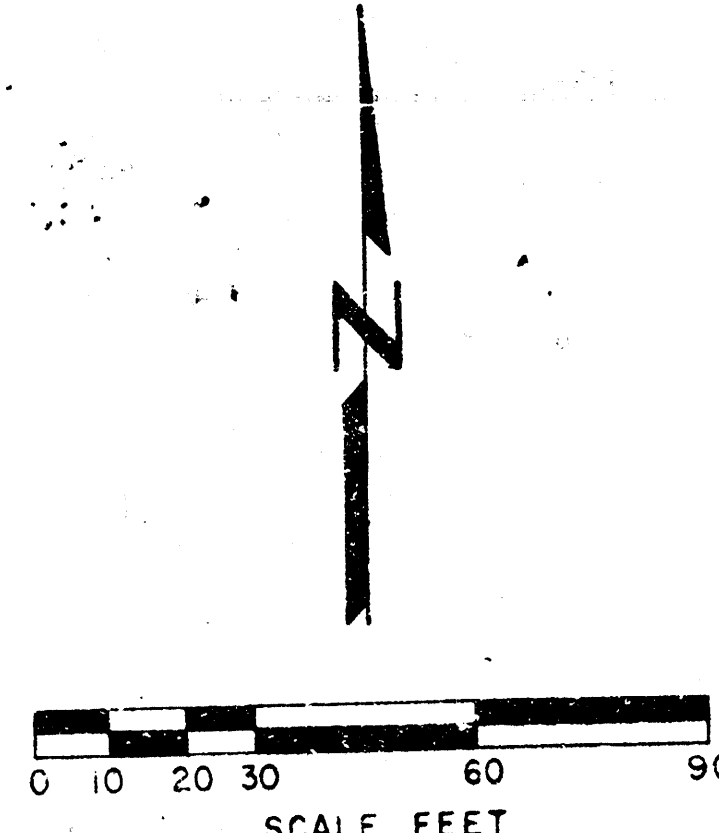
SHEET LIST:

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

PROJECT No. 468-76-245-80001-000-000-033

LOCATION MAP



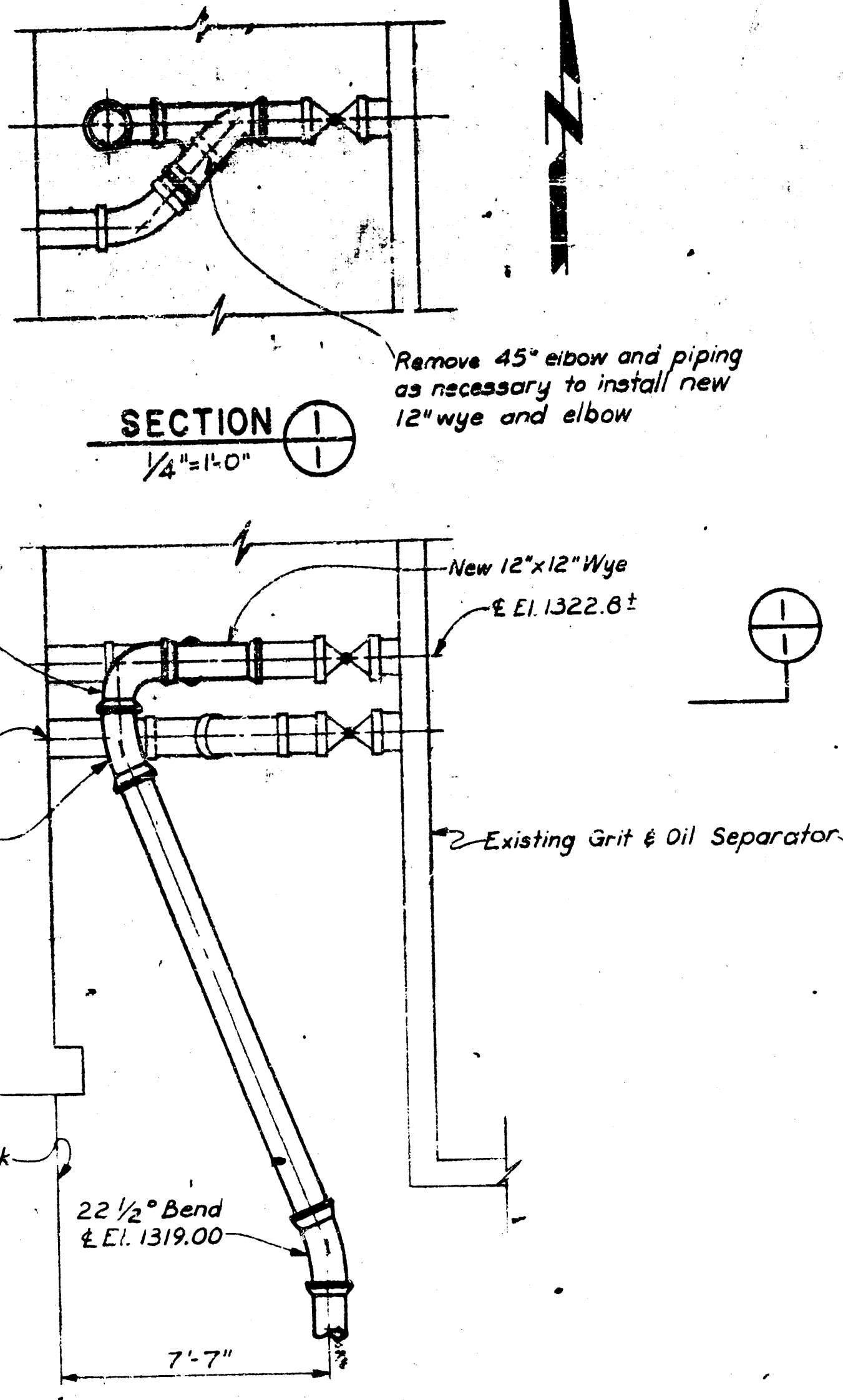


GENERAL NOTES

- All existing elevations and location of M.H. and pipelines pertaining to new construction shall be verified by the Contractor prior to construction.
- All concrete pavement, sidewalks, bushes, sod and gravel surfacing removed by Contractor shall be replaced to a equal or better condition.
- For details of Sanitary Sewer Manholes see Sheet 7.
- New Sanitary Manhole to be built over existing sewer. Inv. El. out to be 0.1 below existing sewer.
- New Sanitary Manhole to be built over existing sewer. Inv. El. of 1322.0, the new incoming sewer Inv. El. is to be set 0.1 foot above the existing outgoing sewer.

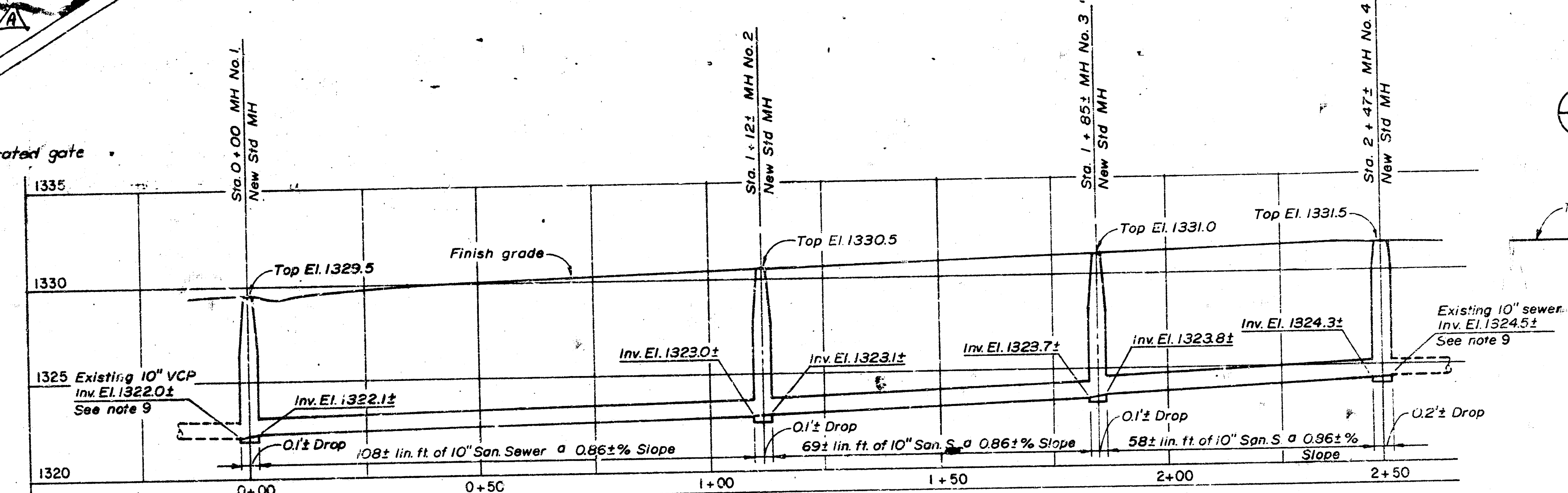
- Contractor to provide uniform slope on relocated sewer line between new manhole #1 and #4 with 0.1 foot of fall across manholes #2 and #3.
- Contractor to saw cut existing concrete pavement at edge of excavation. Provide expansion joint material between new and existing pavement sections and between new pavement and concrete structures.
- 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 until the final relocated sewer is installed and accepted.

- The invert elevations of the existing sewer is to be determined in the field by the Contractor.
- 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 the existing sewer invert at MH No. 1 and MH No. 4.



CONNECTION PLAN A

1/4\"/>



NEW SANITARY SEWER PROFILE

Horizontal Scale 1\"/>

Vertical Scale 1\"/>

ABBREVIATIONS

Alum	Aluminum
Angle	Angle
At	At
B-102	Beam Number
CI	Cast Iron
CIMH	Cast Iron Manhole
C	Centerline
Conc	Concrete
Cr	Course
Dia	Diameter
El	Elevation
EF	Each Face
EW	Each Way
G	Gas
HDPE	High Density Polyethylene
Inv	Invert
LP	Light Pole
MH	Manhole
MJ	Mechanical Joint
Min	Minimum
Max	Maximum
OD	Outside Diameter
PE	Plain End
PVC	Polyvinyl Chloride
RCP	Reinforced Concrete Pipe
Reinf	Reinforcing
San	Sanitary
Sh	Sheet
Std	Standard
SS	Stainless Steel
Sq	Square
SE	South East
SW	South West
Typ	Typical
VCP	Vitrified Clay Pipe
WWF	Welded Wire Fabric
W	With
W	Water

GENERAL SYMBOLS

[Symbol]	New structure
[Symbol]	Existing structure above ground
[Symbol]	Existing structure below ground
[Symbol]	New gravel surfacing
[Symbol]	Existing gravel surfacing
[Symbol]	Existing concrete pavement and sidewalk
[Symbol]	New concrete sidewalk and pavement
[Symbol]	Existing contour
[Symbol]	Finish grade contour
[Symbol]	Drill test hole or number
[Symbol]	Existing piping
[Symbol]	Existing piping to be removed or abandoned
[Symbol]	New piping
[Symbol]	Finish grade or pavement spot elevation
[Symbol]	Power pole
[Symbol]	Existing chain link fence
[Symbol]	Underground electrical duct bank

MATERIALS LEGEND

[Symbol]	New concrete (in section)
[Symbol]	Existing concrete (in section)
[Symbol]	Metals
[Symbol]	Compacted granular fill
[Symbol]	Finish grade

REFERENCE SYMBOLS

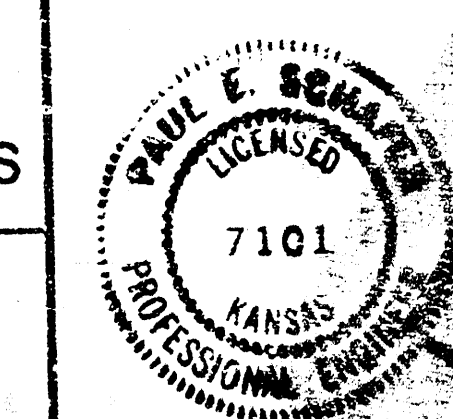
[Symbol]	Section number or detail letter
[Symbol]	Sheet where drawn
[Symbol]	Section number or detail letter
[Symbol]	Sheet where drawn
[Symbol]	Elevation letter
[Symbol]	Sheet where drawn

PROJECT NO.

11903.001

BOEING MILITARY AIRPLANE CO.
INDUSTRIAL WASTEWATER PLANT IMPROVEMENTS

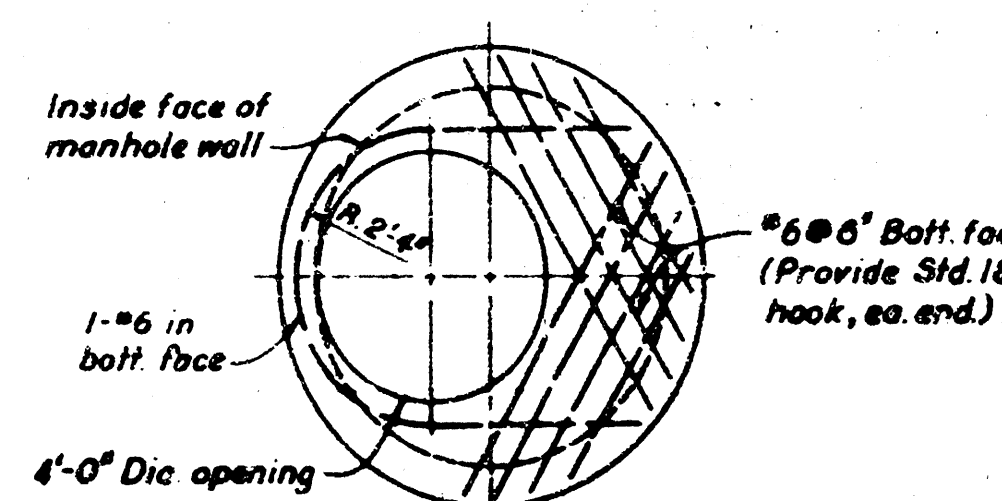
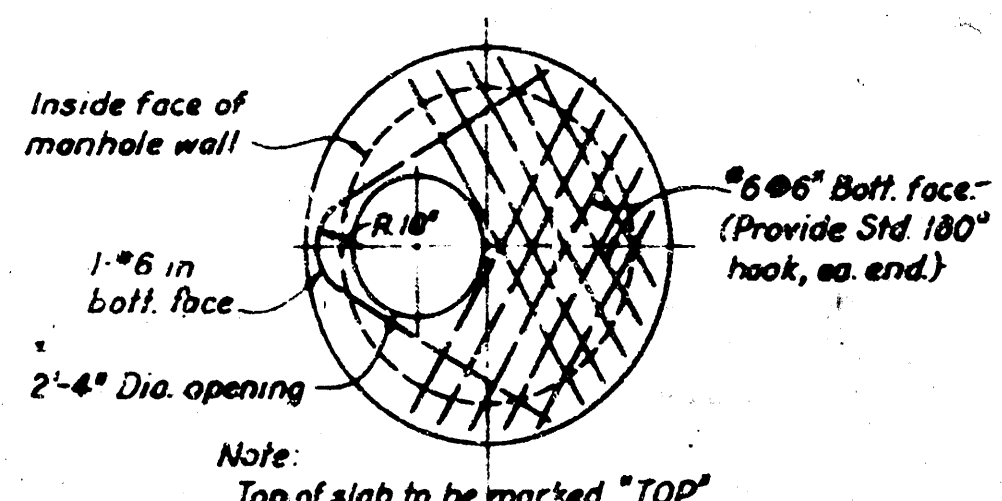
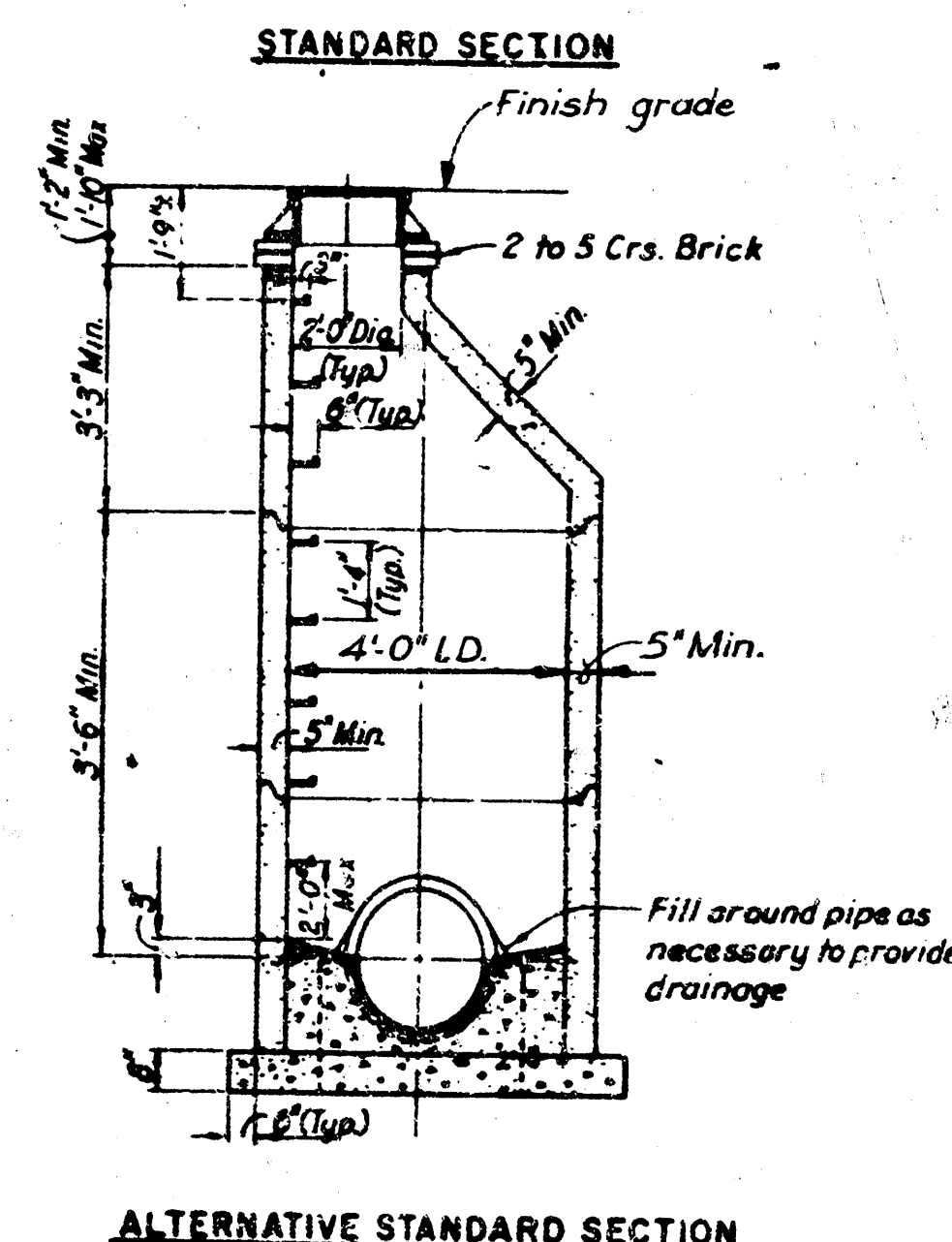
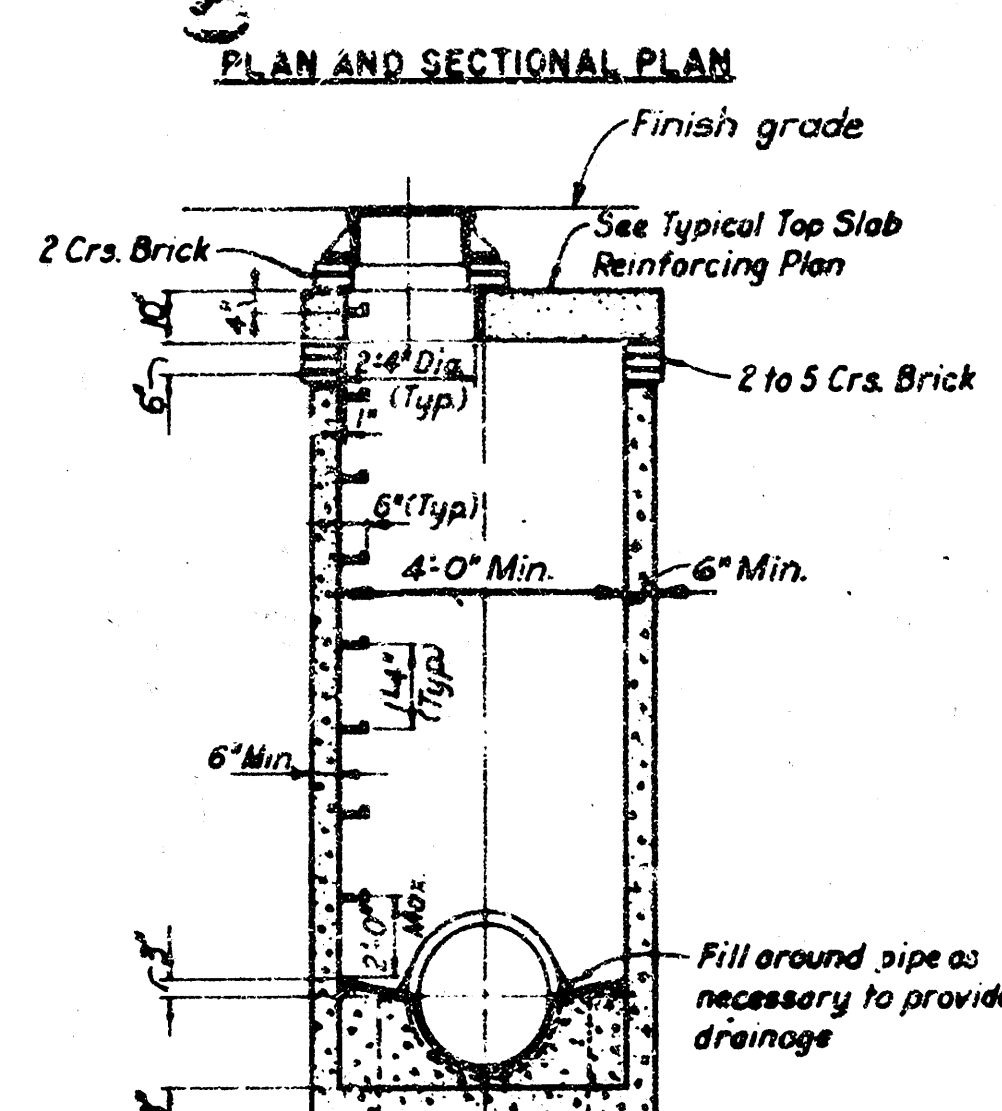
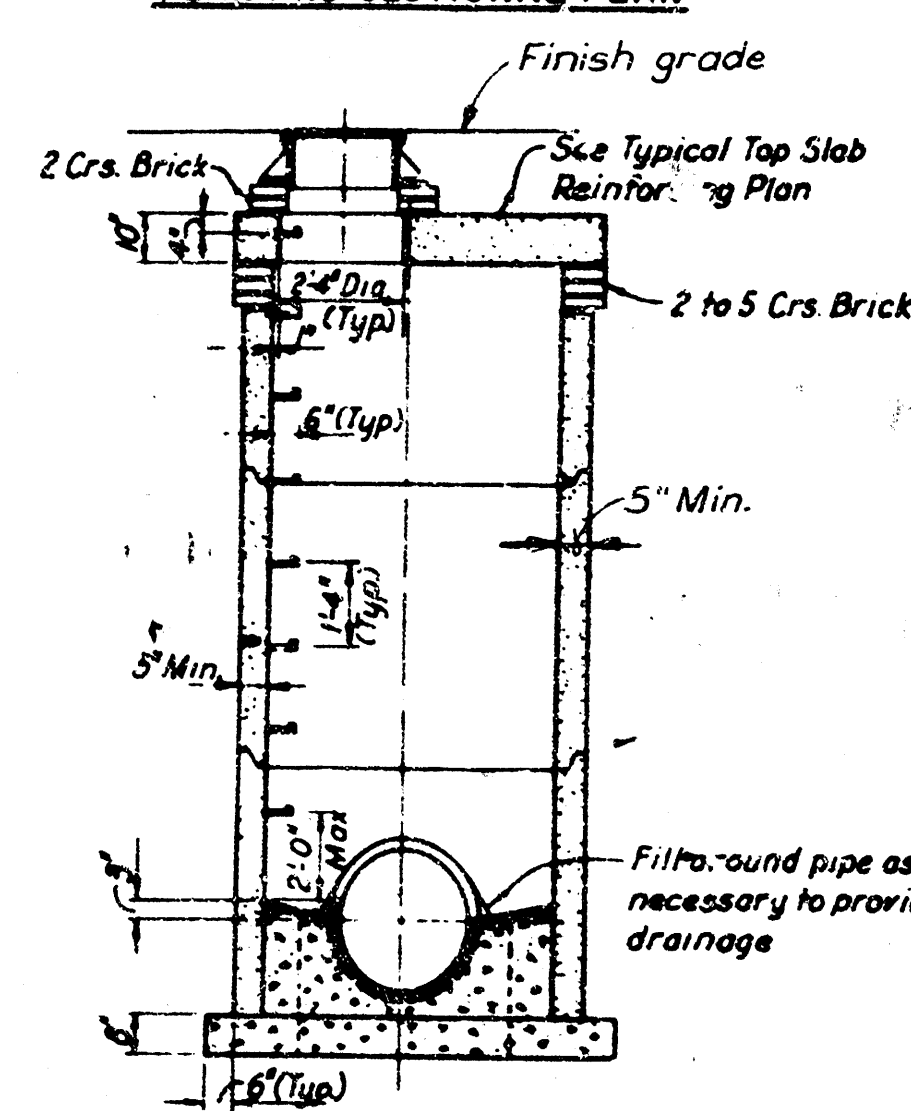
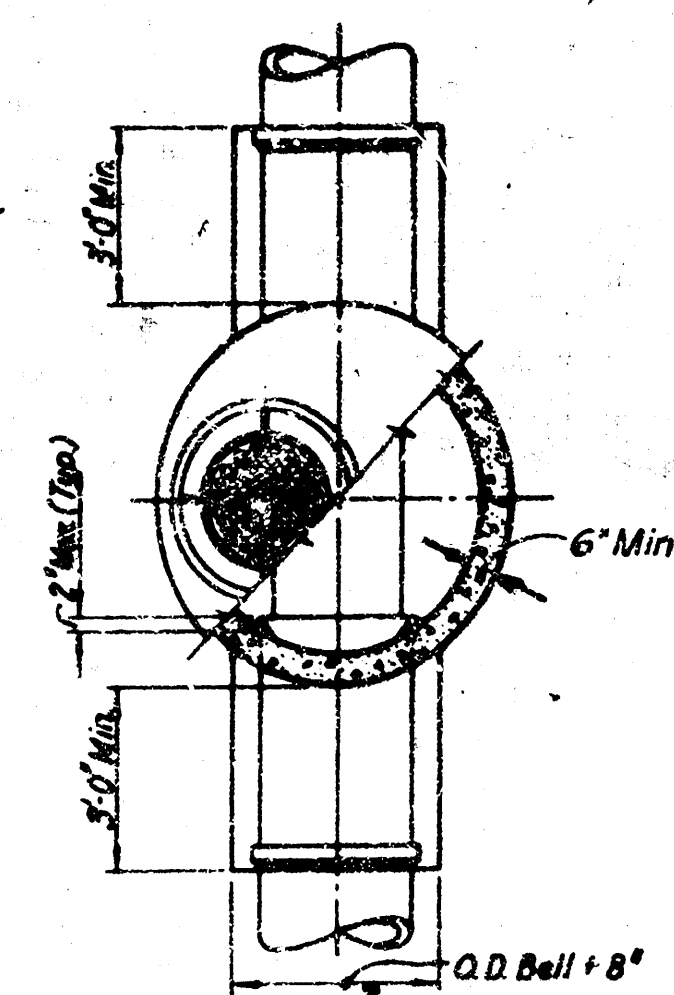
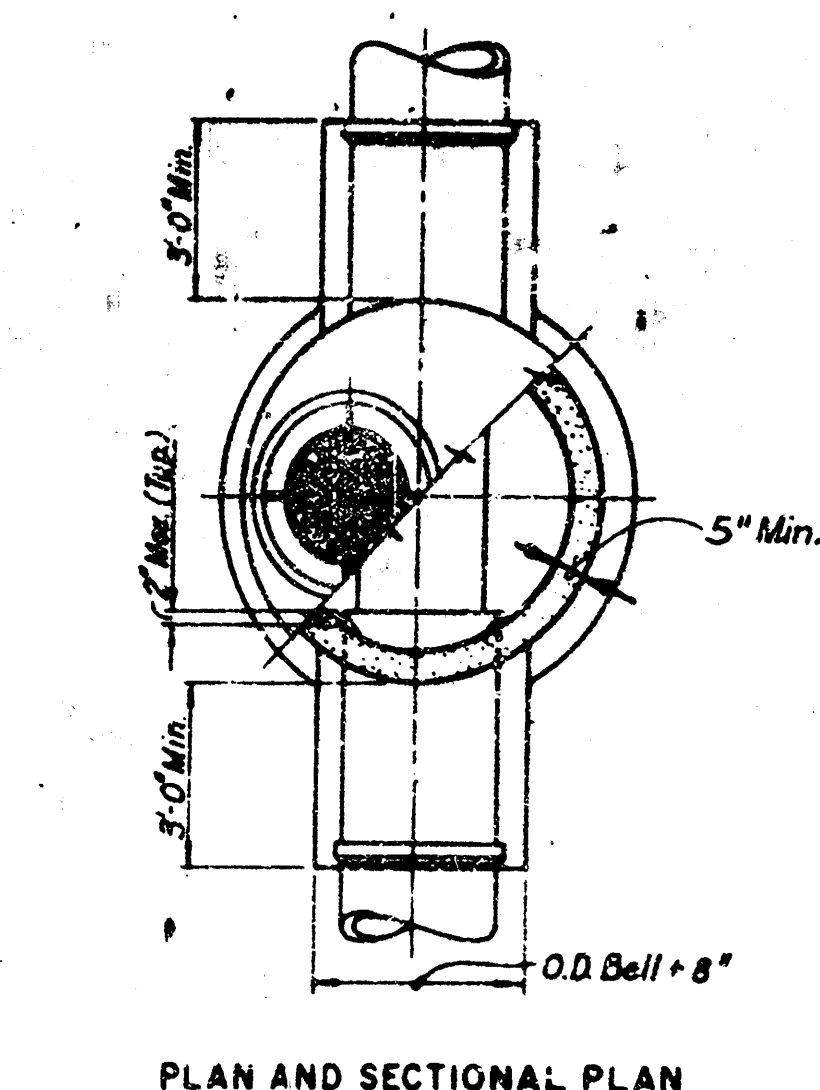
GENERAL LAYOUT
LEGEND



DESIGNED MPS
CHECKED SCH
APPROVED RAM
DATE 3/20/84

Black & Veatch
Engineers - Architects
Kansas City, Missouri

FILMED FROM THE BEST
AVAILABLE COPY

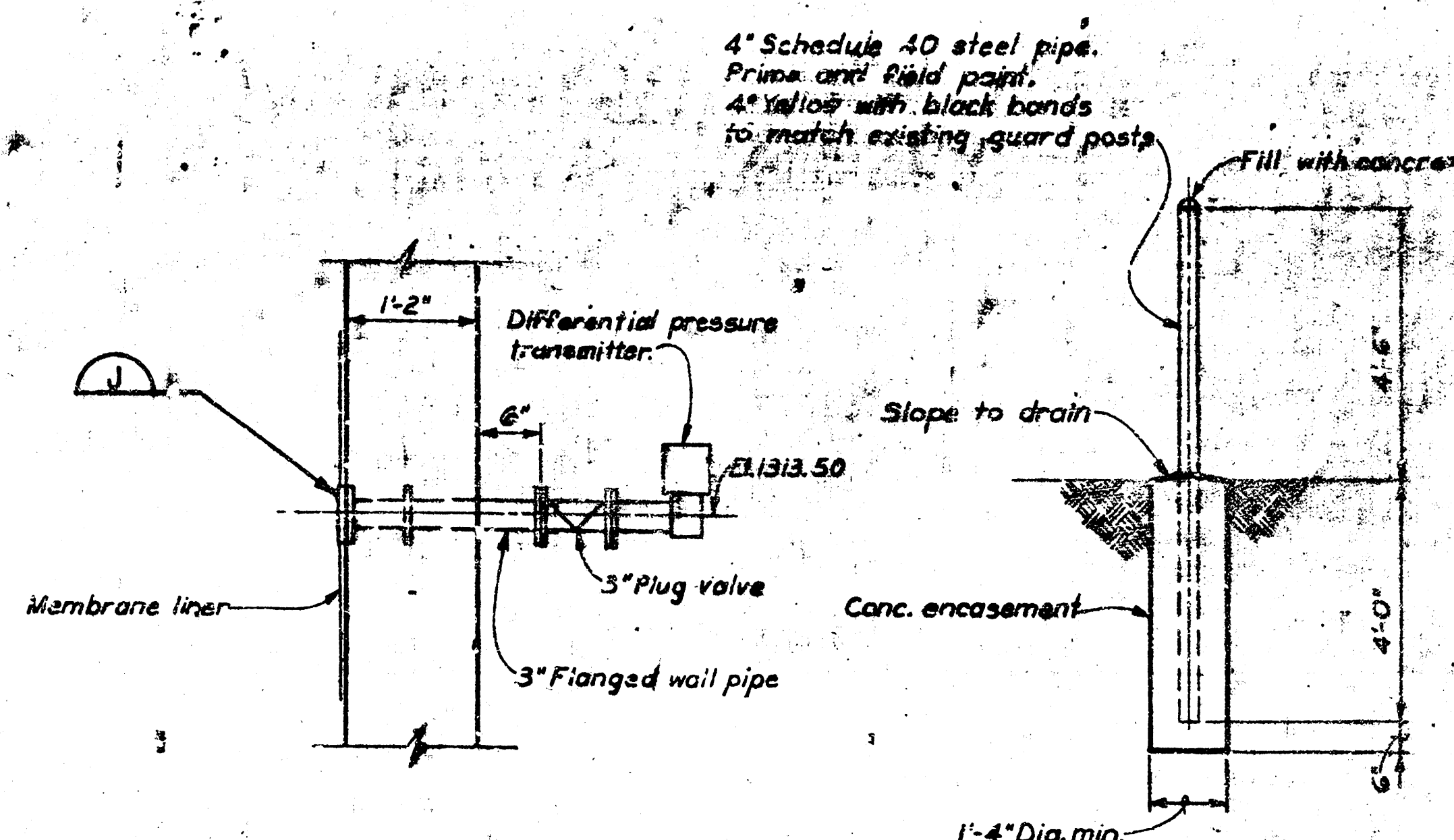


GENERAL MANHOLE NOTES

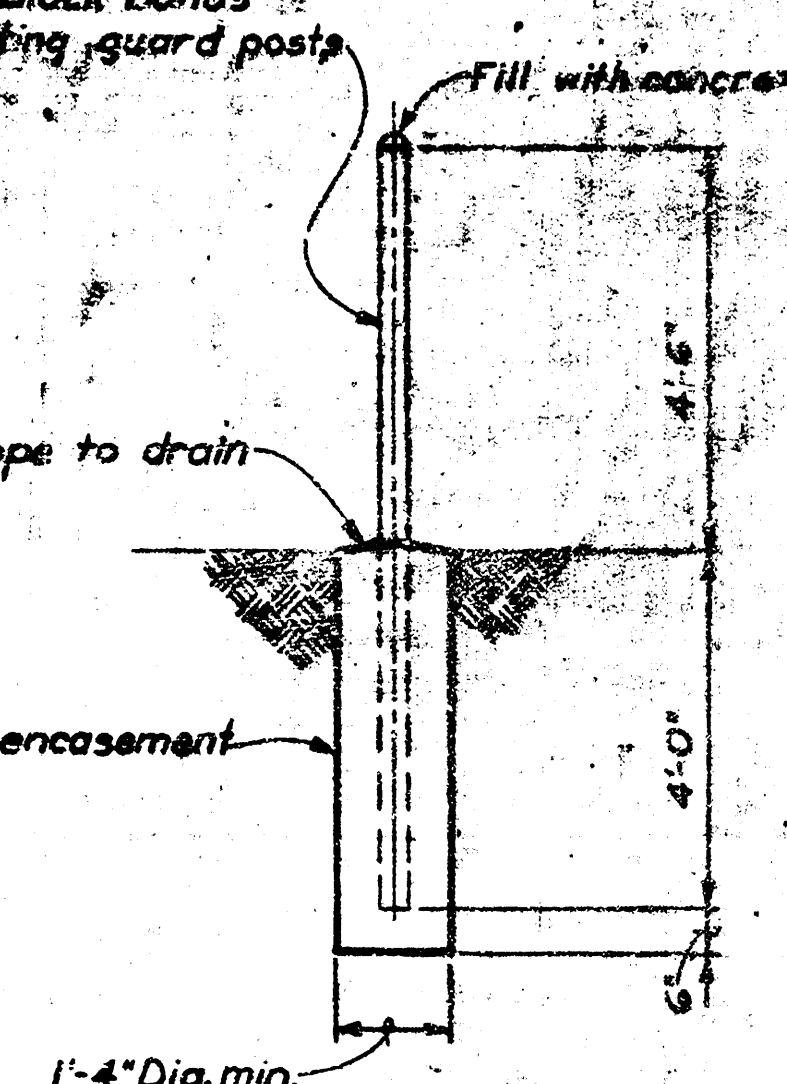
1. All manhole rings to be set in mortar.
2. Any material excavated beneath pipe entering or leaving manholes shall be replaced with concrete; such concrete fill shall extend to the center of the pipe for a distance of at least 3'-0" from face of manhole and shall terminate at c bell.
3. When reinforcing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

LEGEND

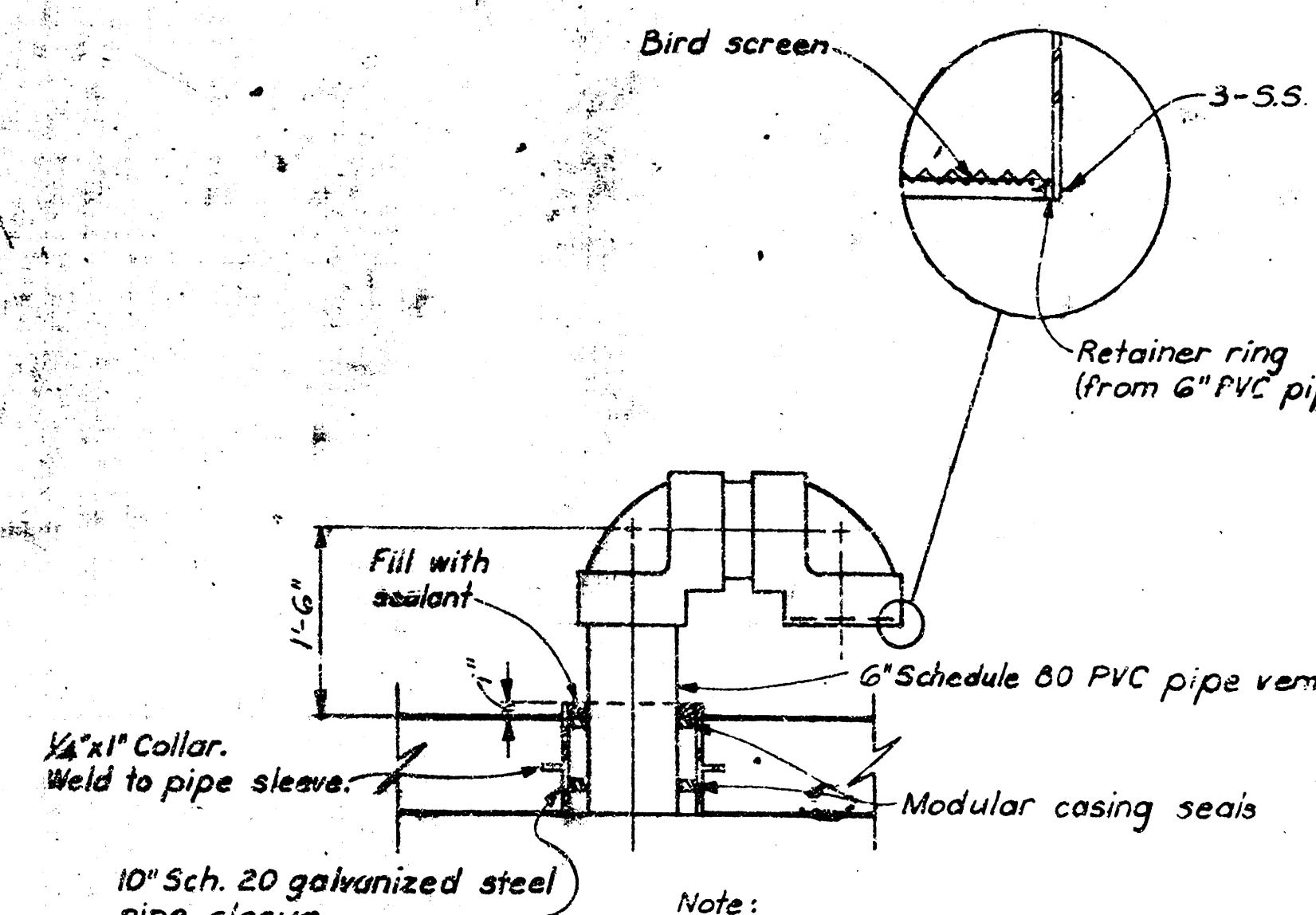
 Concrete poured in place
 Precast concrete
 Brick masonry



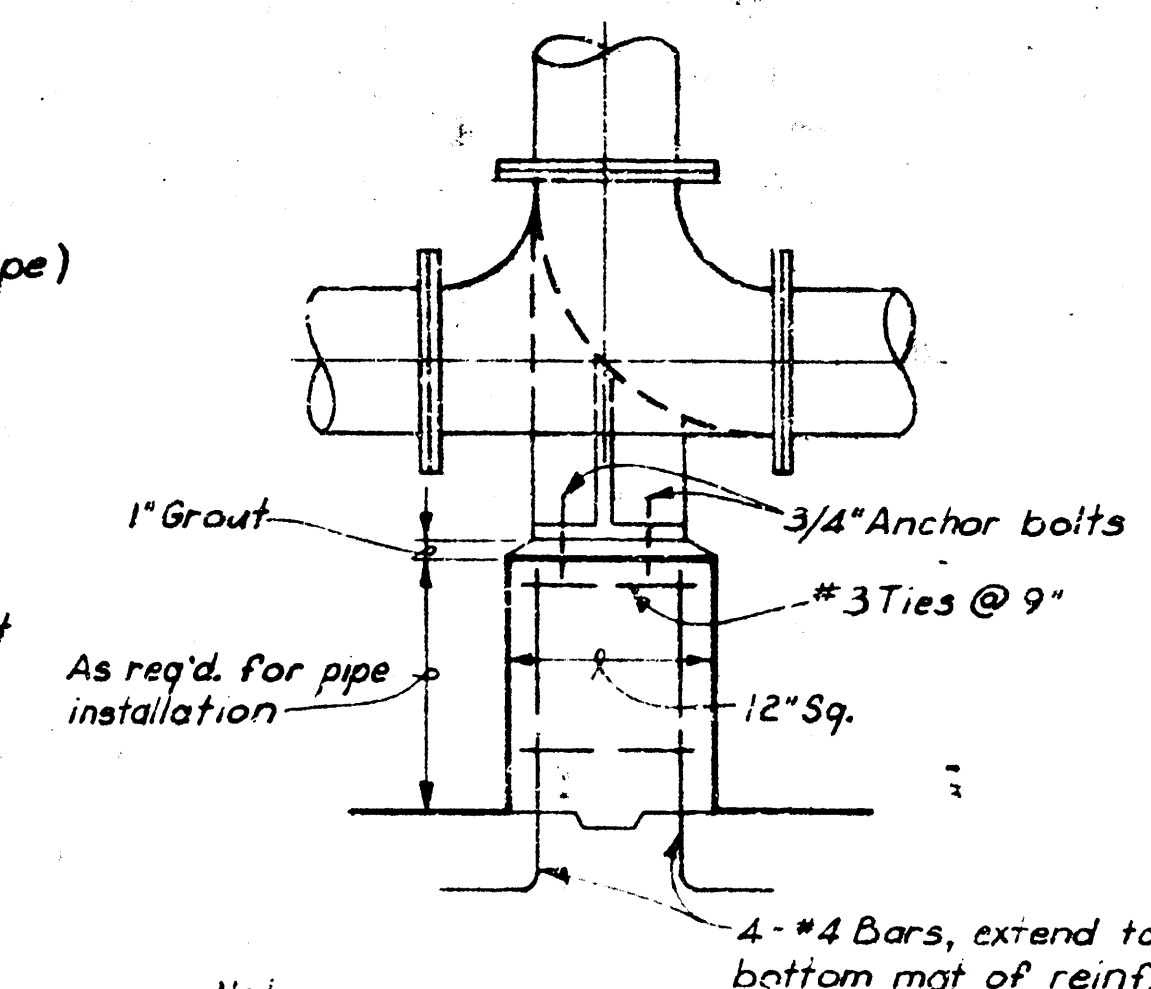
DIFFERENTIAL PRESSURE
TRANSMITTER DETAIL (A
No Scale 5



GUARD POST DETAIL (B
2

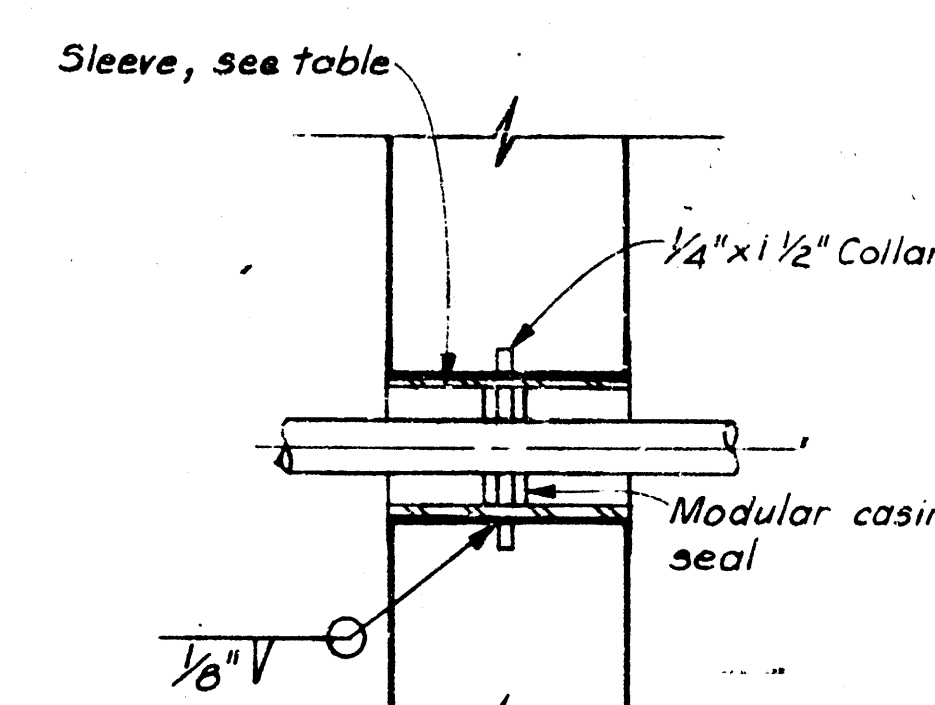


VENT DETAIL

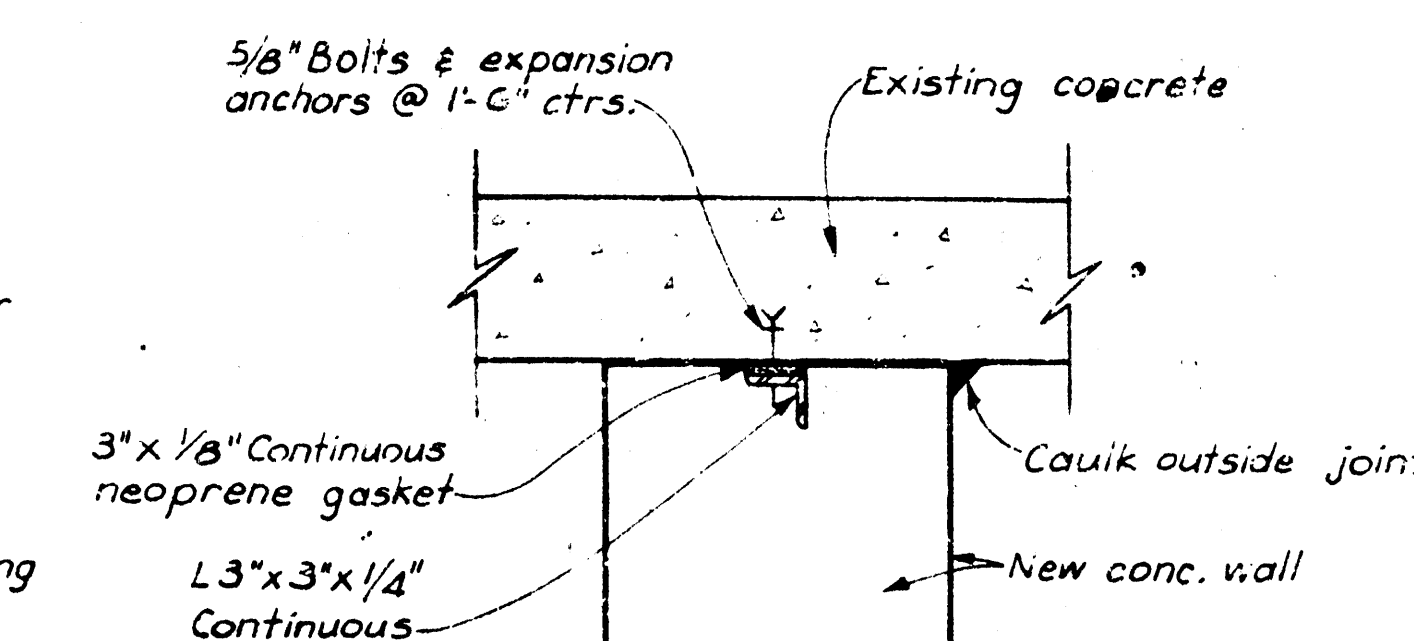


PIPE SUPPORT DETAIL (D)
No Scale 5

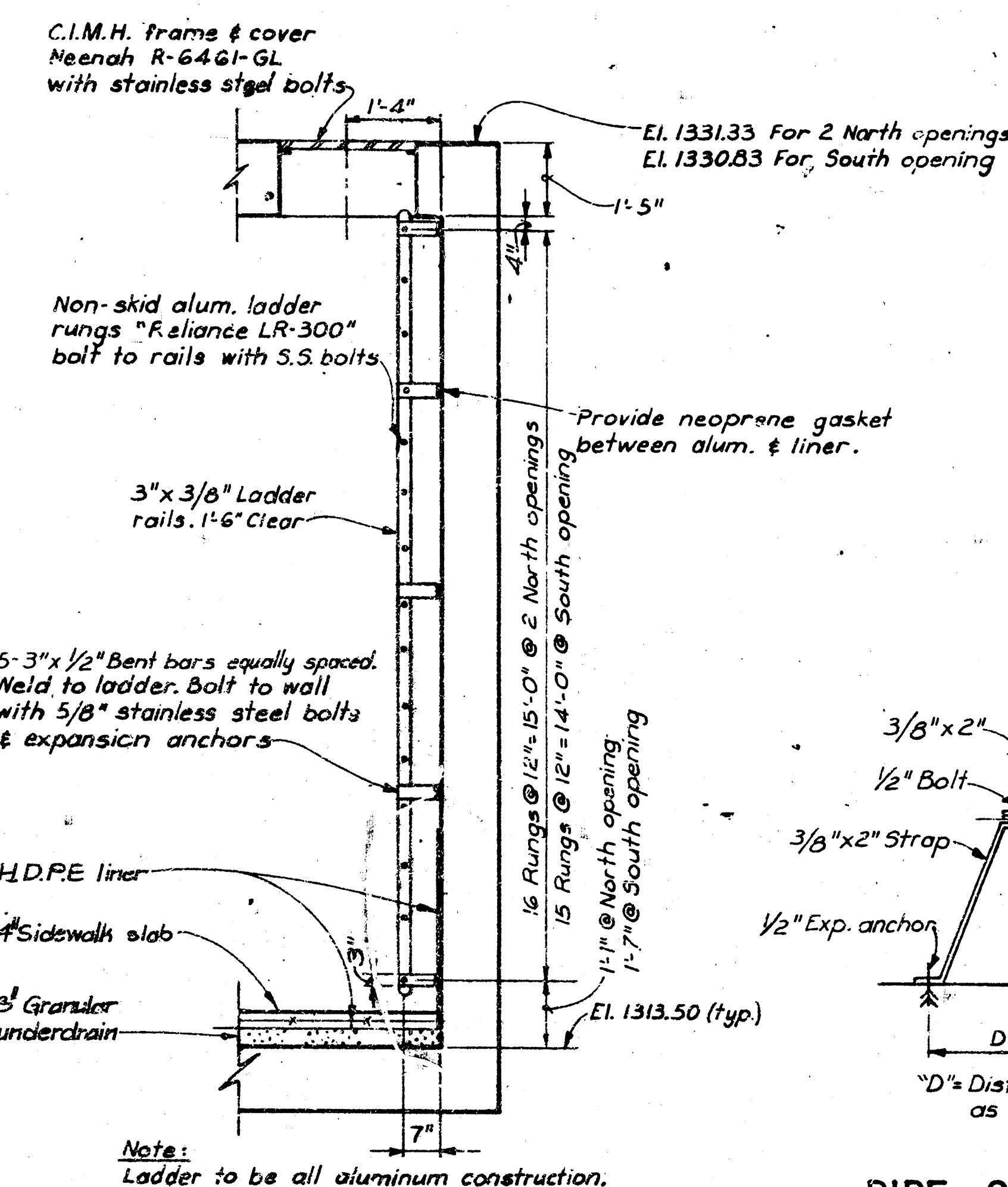
PIPE SIZE	SLEEVE SIZE
1/2"	* 2"
3/4" & 1"	* 3"
1 1/4" & 1 1/2"	* 3 1/2"
2" & 2 1/2"	* 4"
3" & 3 1/2"	* 5"
4"	* 6"
Larger than 4"	Pipe O.D. + 2" (1)



SLEEVE DETAIL (F)
No Scale 4.5



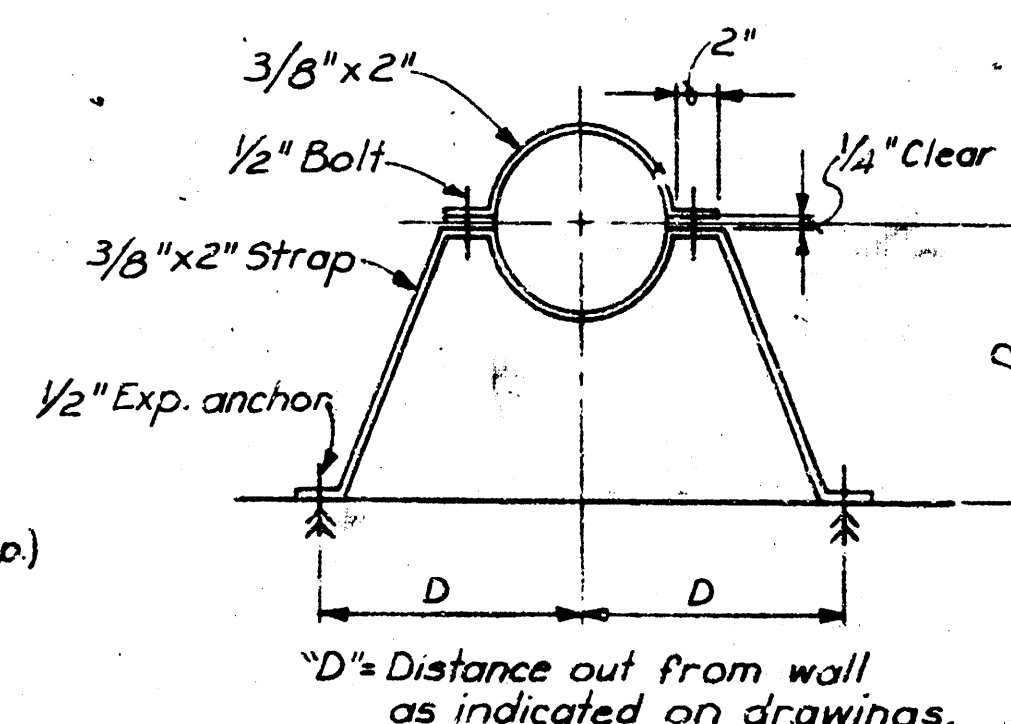
CONNECTION DETAIL



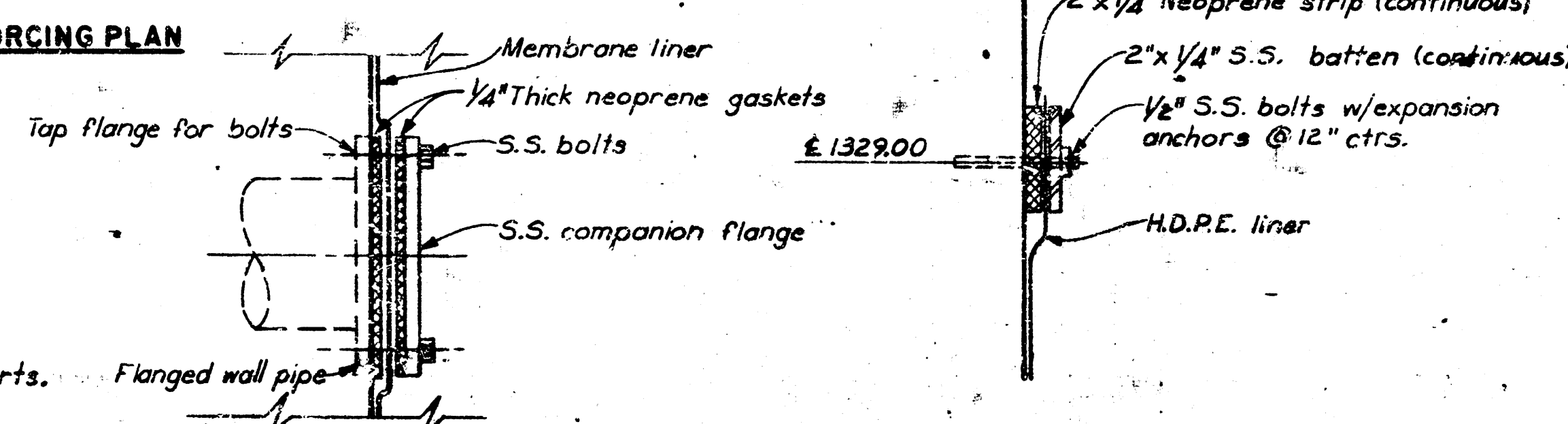
LADDER DETAIL

No. 504

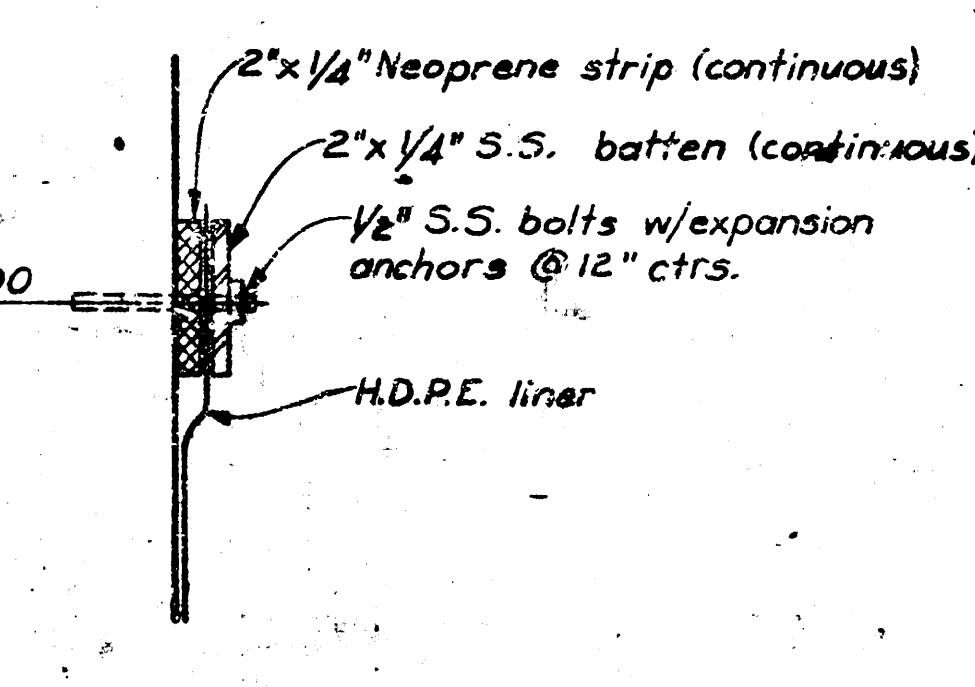
(E 25)



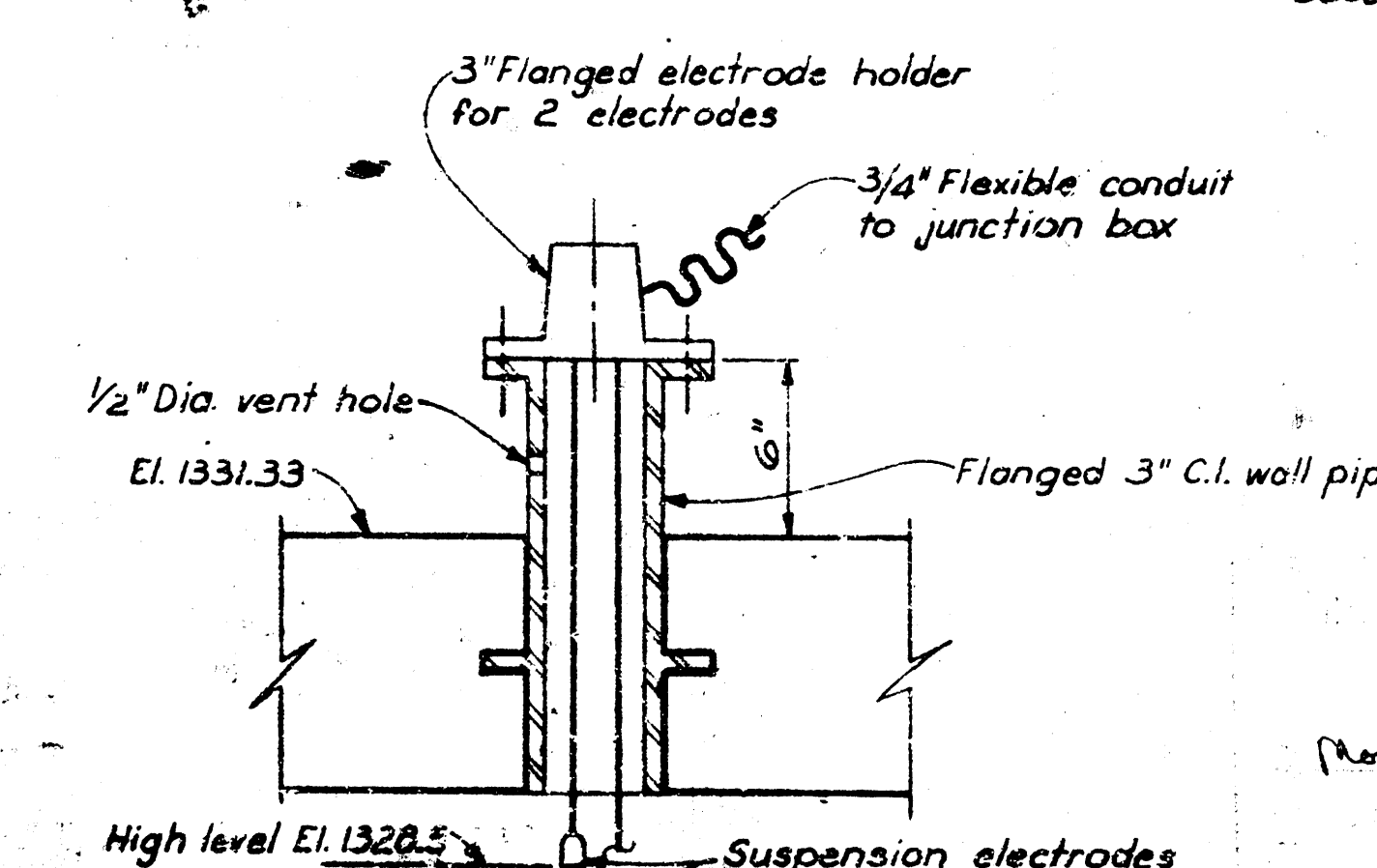
PIPE SUPPORT DETAIL



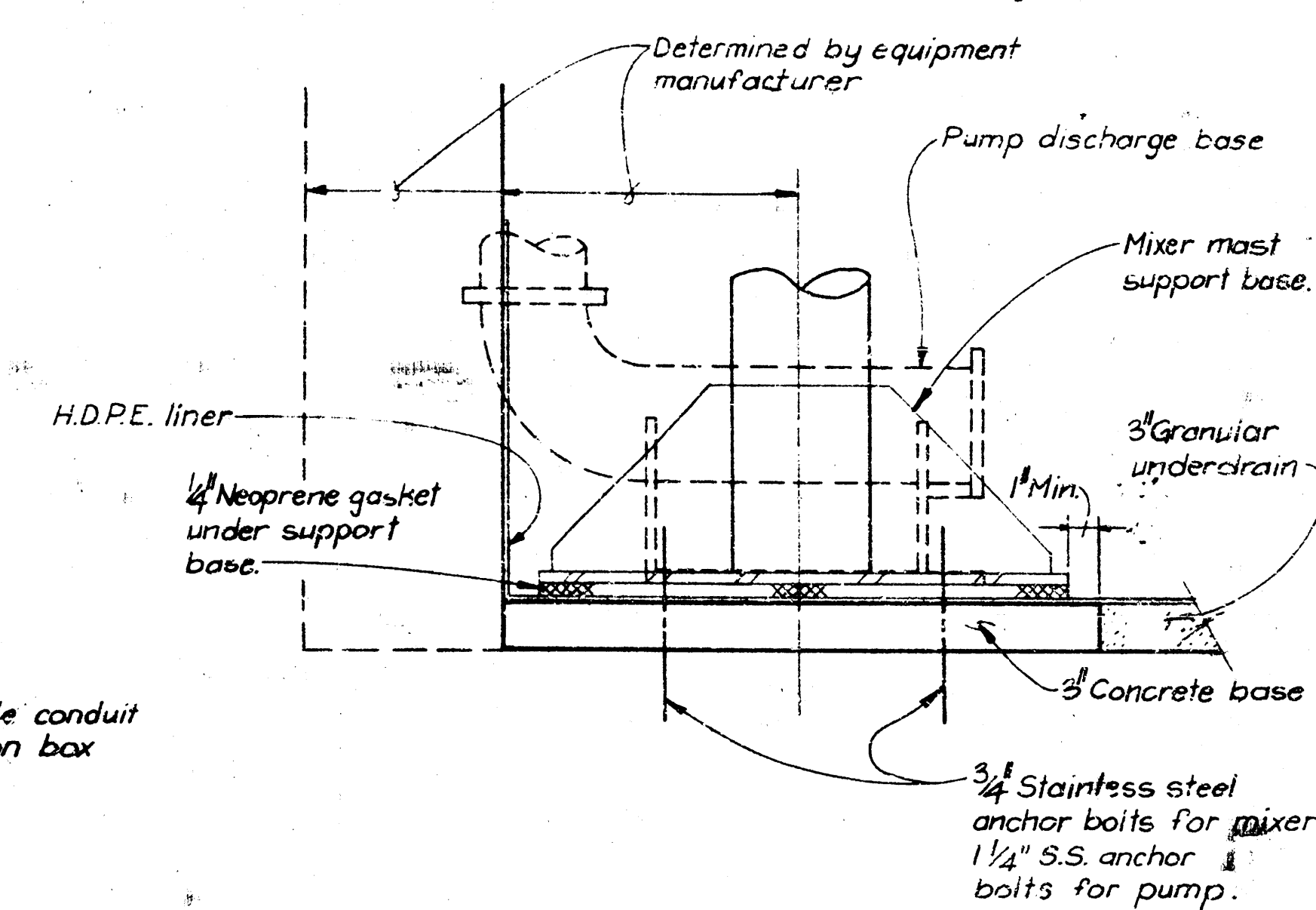
PIPE CONNECTIONS



TOP OF WALL



HIGH WATER ELECTRODE DETAIL (K
2



BASE DETAIL (L)
No Scale 2.5

MEMBRANE LINER CONNECTION DETAILS

CHECKED BY: L.C.
DATE: 2-3-85

BOEING MILITARY AIRPLANE CO.
INDUSTRIAL WASTEWATER PLANT IMPROVEMENTS

PROJECT NO
14903.00

MISCELLANEOUS DETAILS

A circular professional engineer seal for Paul E. Schafer. The outer ring contains the text "PAUL E. SCHAFER" at the top and "PROFESSIONAL ENGINEER" at the bottom. Inside this ring, the word "LICENSED" is at the top and "KANSAS" is at the bottom. In the center of the seal is the license number "7101".

SHEET
7 OF 9

FILMED FROM THE BEST
AVAILABLE COPY