

PIPING REQUIREMENTS

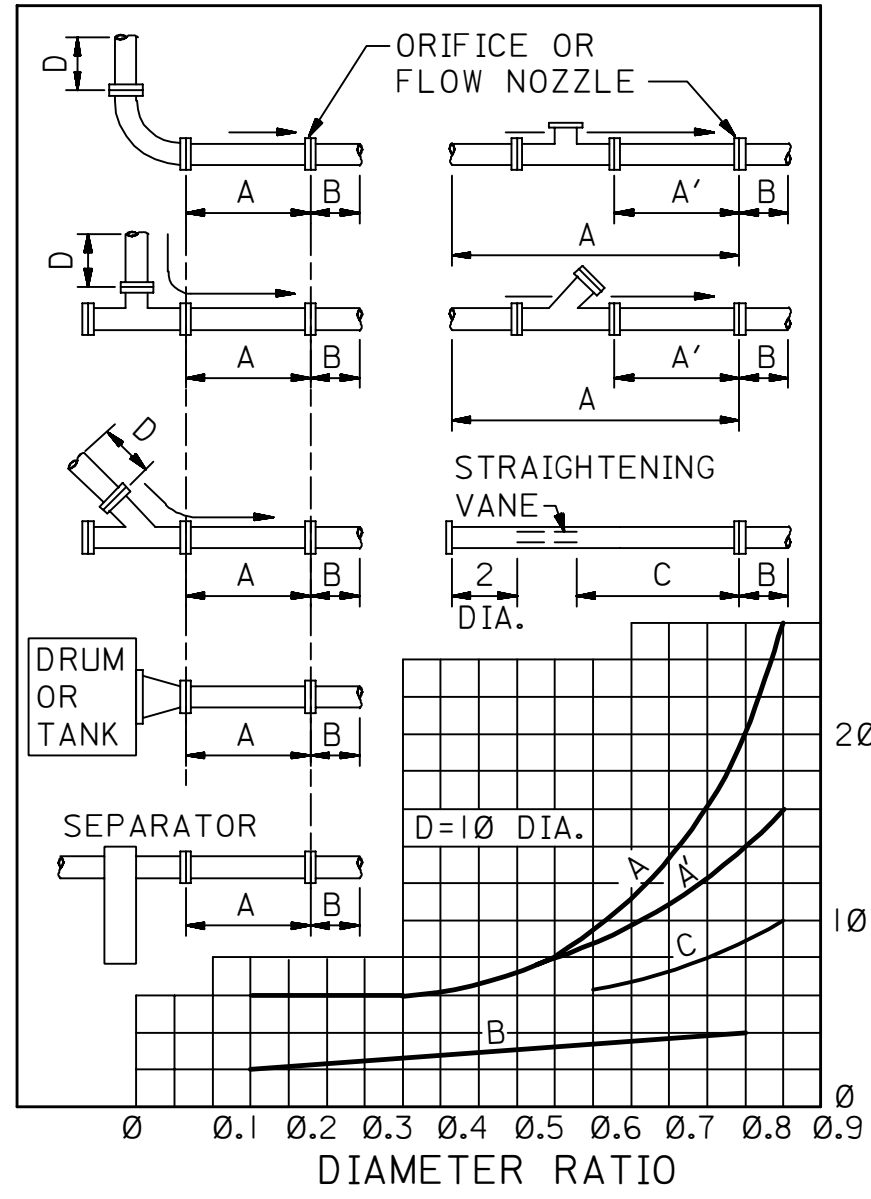
TYPICAL PIPING ARRANGEMENTS

NOTES:

- DO NOT USE STRAIGHTENING VANES IN NEWCONSTRUCTION PIPING.
- NEW CONSTRUCTION PIPING DESIGN SHALL USE 0.75 DIAMETER RATIO (BETA) FOR STRAIGHTPIPE SELECTION.
- REVISIONS TO EXISTING PIPING MAY USEACTUAL DIAMETER RATIO IF REQUIRED.
- DIMENSIONS ARE MINMUM. THESE LENGTHS HAVE BEEN DETERMINED AS NECESSARY TO HOLD FLOW MEASUREMNT ERRORS DUE TO PIPING CONFIGURATIONS TO LESS THAN± 0.5 PERCENT. THIS± 0.5 PERCENT TOLERANCE CAN BE ELIMINATED BY DOUBLING BOTH-UPSTREAM AND DOWNSTREAM STRAIGHT PIPE LENGTHS.
- A MINIMUM OF 4 PIPE DIAMETERS SHALLBE PROVIDED ON THE DOWN STREAM SIDE OF THE PRIMARY ELEMENT.
- FIGURES 1 THRU 16 FOR TYPICAL PIPINGARRANGEMENTS WITH FITTINGS OR BENDS IN SAME PLANE. FIGURE 17 THRU 25 FOR TYPICAL PIPING ARRANGEMENTS WITH FITTINGS AND BENDS NOT IN SAME PLANE. FIGURE 26 THRU 37 FOR TYPICAL BOILER-OUTLET ARRANGEMENTS.
- FOR METERS IN GAS SALES SERVICE, THESTRAIGHT RUN REQUIREMENTS SHALL BE PER STANDARD DRAWING AB-036379.
- DIAMETER RATIO (BETA C/O) REFERS TO FLOW ELEMENT ORIFICE DIAMETER (d) DIVIDED BY PIPE INSIDE DIAMETER (D)
- REFERENCES:
API- RP550 PART 1, SECTION 1
ASME "FLUID METERS THEIR THEORY AND APPLICATIONS"
SIXTH EDITION 1971

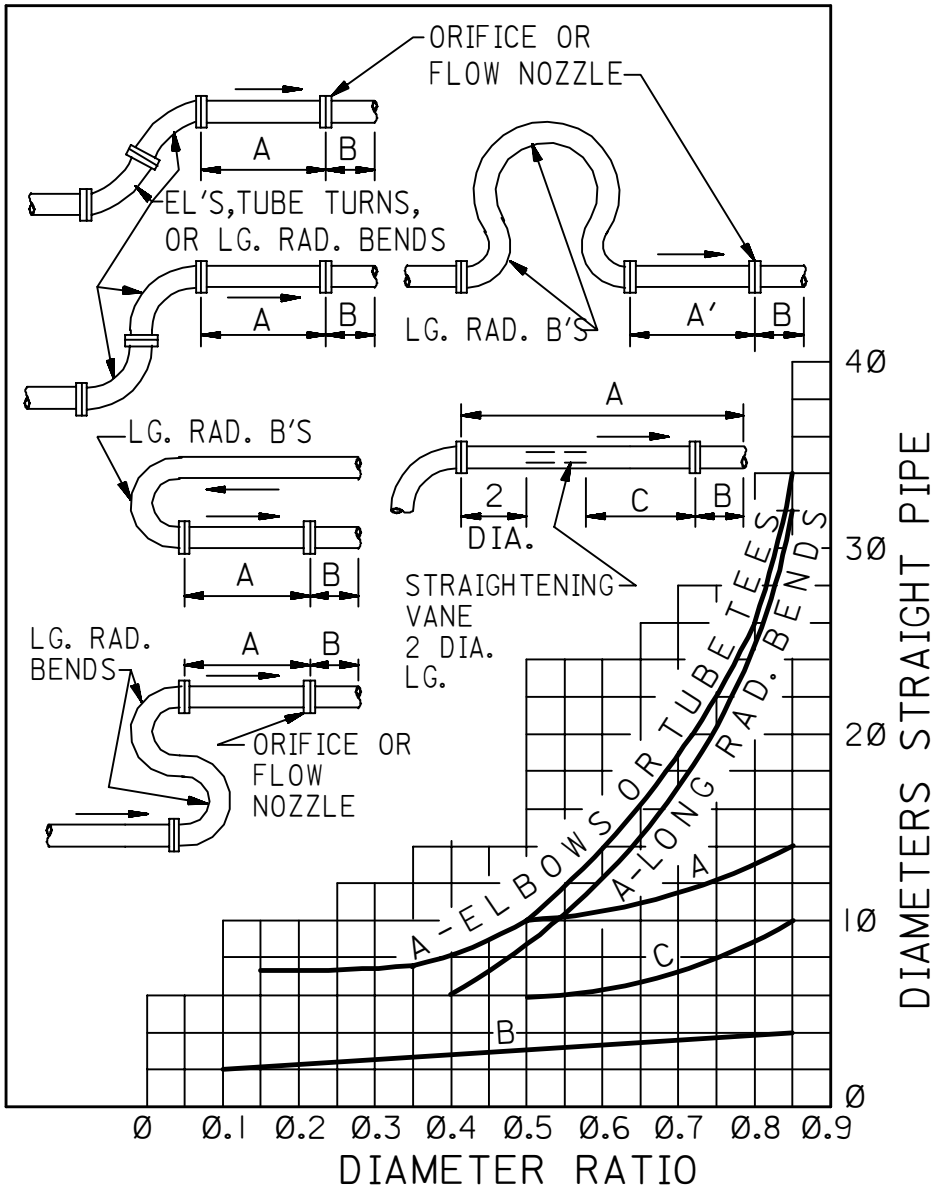
SCHEDULE-1

FOR ORIFICES AND FLOW NOZZLES
ALL FITTINGS IN SAME PLANE



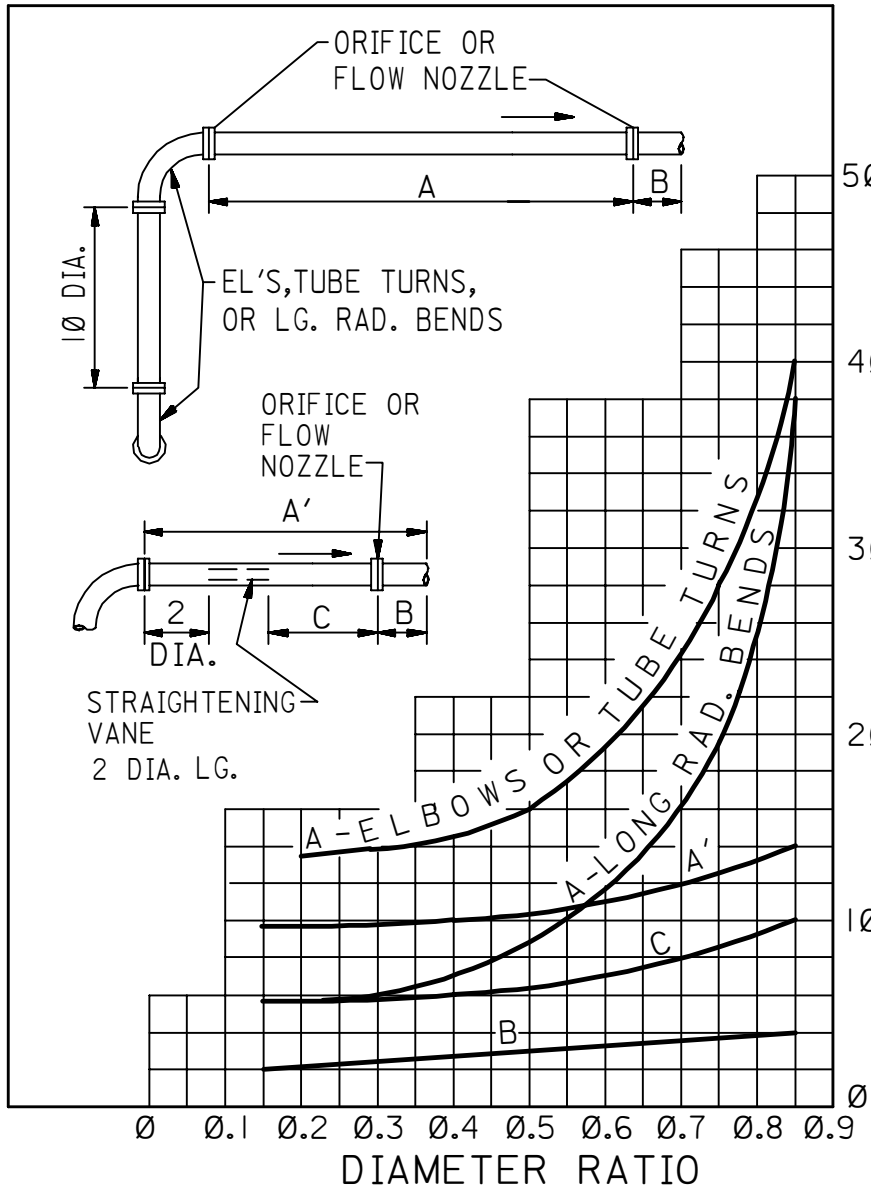
SCHEDULE-2

FOR ORIFICES AND FLOW NOZZLES
ALL FITTINGS IN SAME PLANE



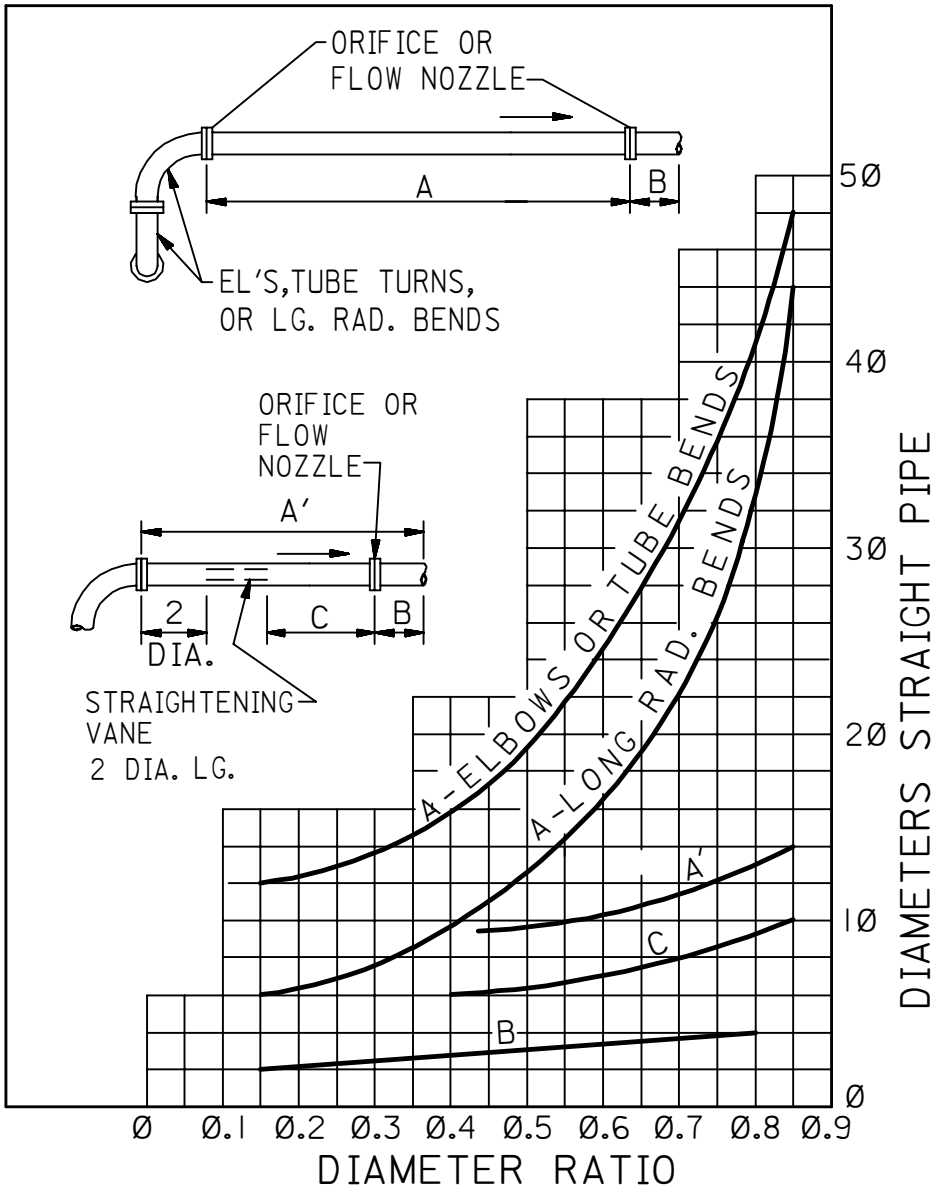
SCHEDULE-3

FOR ORIFICES AND FLOW NOZZLES
FITTINGS IN DIFFERENT PLANES



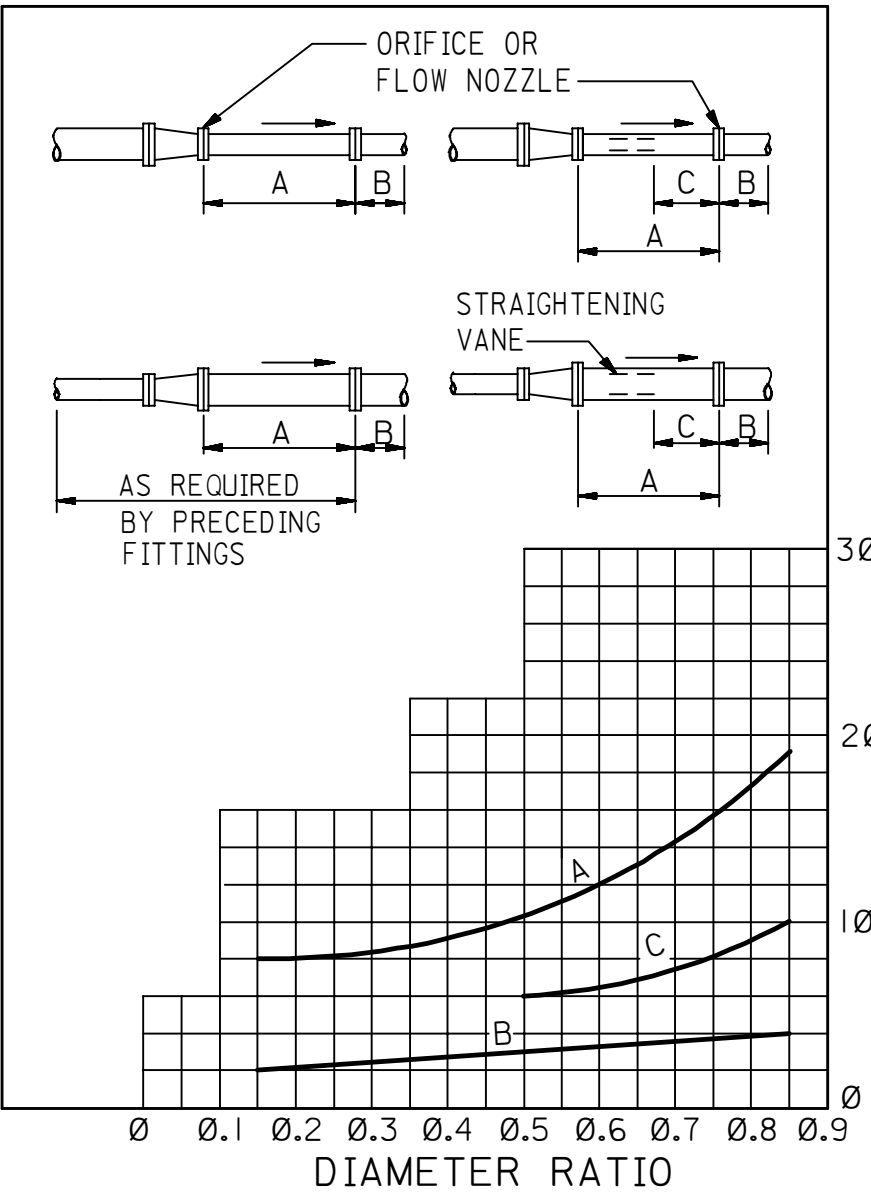
SCHEDULE-4

FOR ORIFICES AND FLOW NOZZLES
FITTINGS IN DIFFERENT PLANES



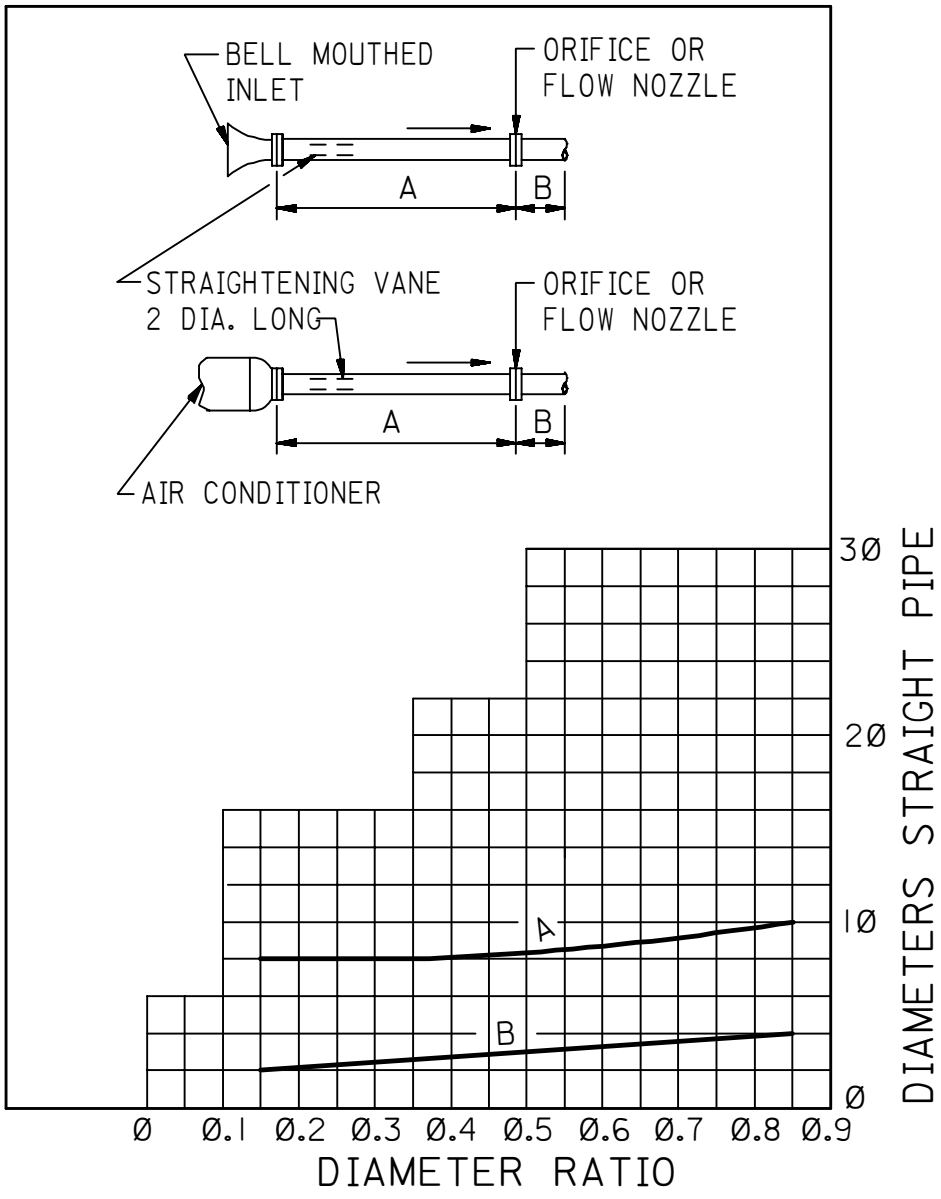
SCHEDULE-5

FOR ORIFICES AND FLOW NOZZLES
WITH RECORDERS AND EXPANDERS



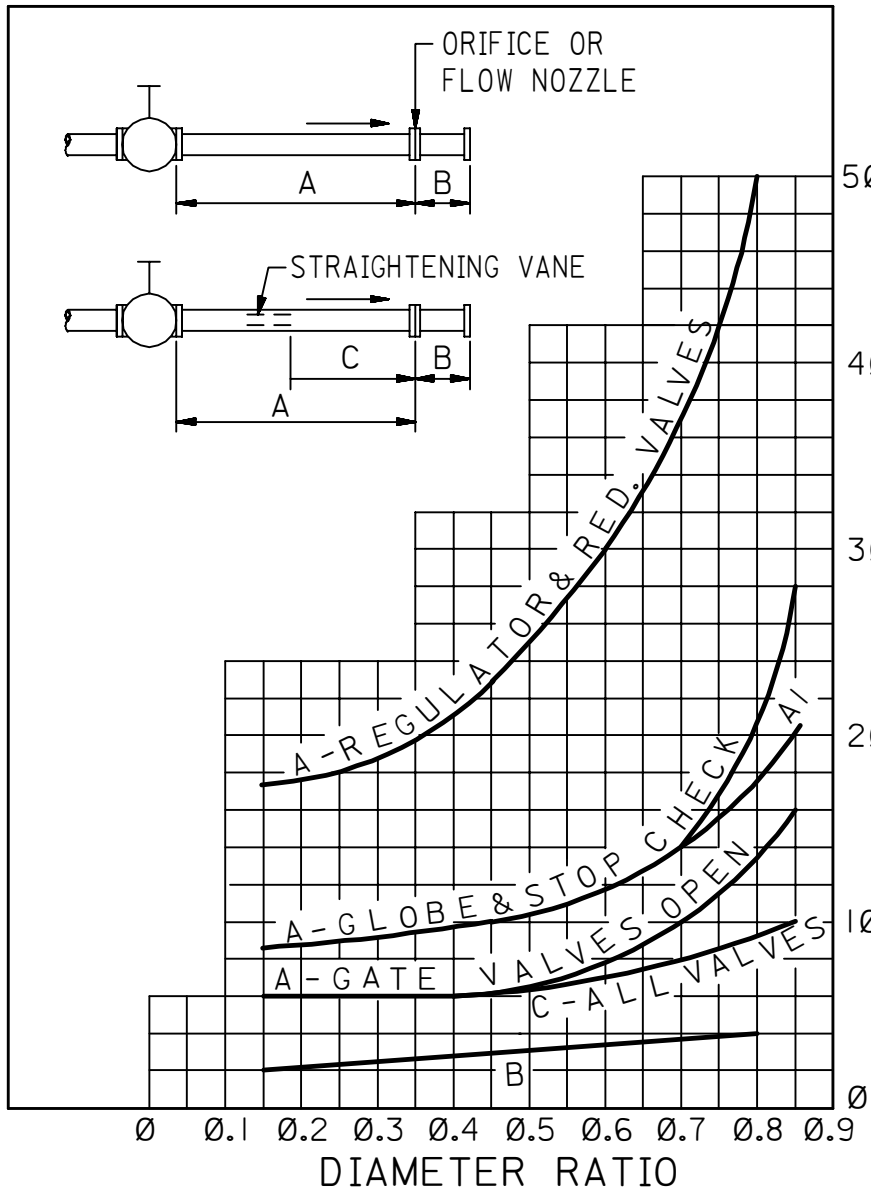
SCHEDULE-6

FOR ORIFICES AND FLOW NOZZLES
IN ATMOSPHERIC INTAKE



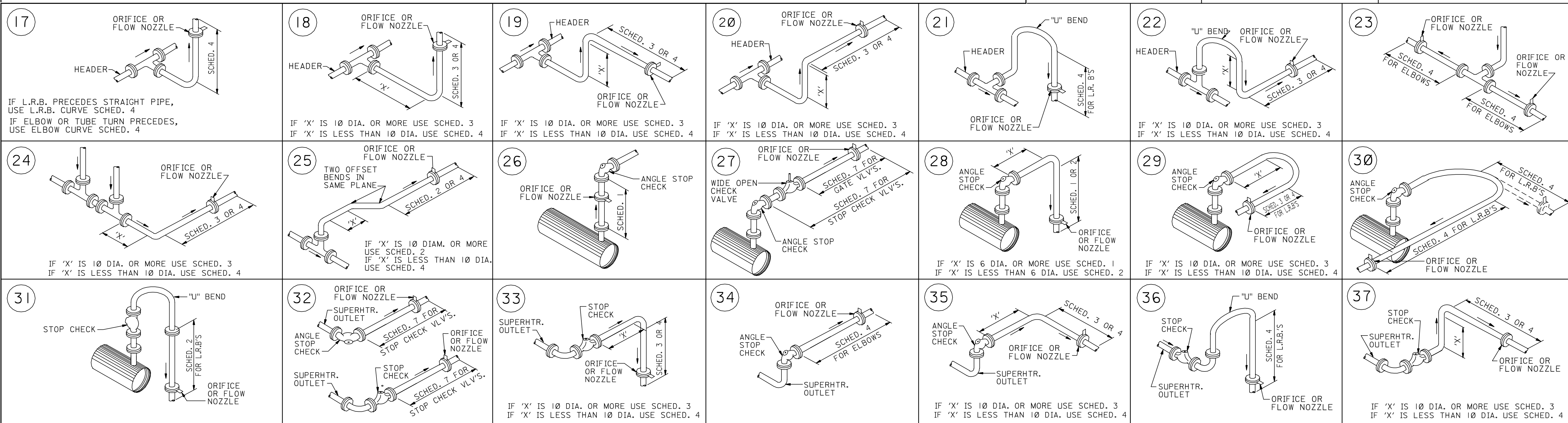
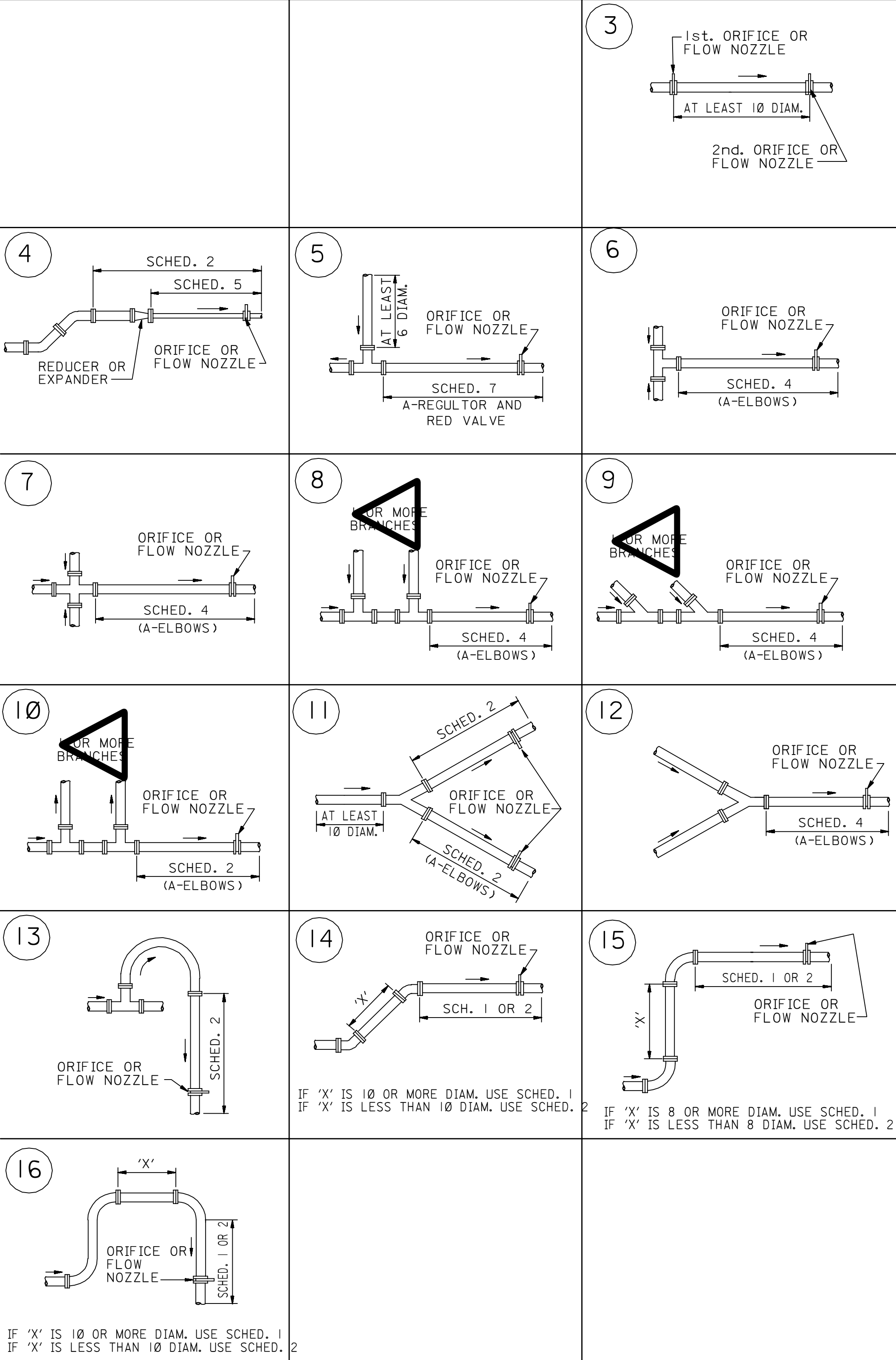
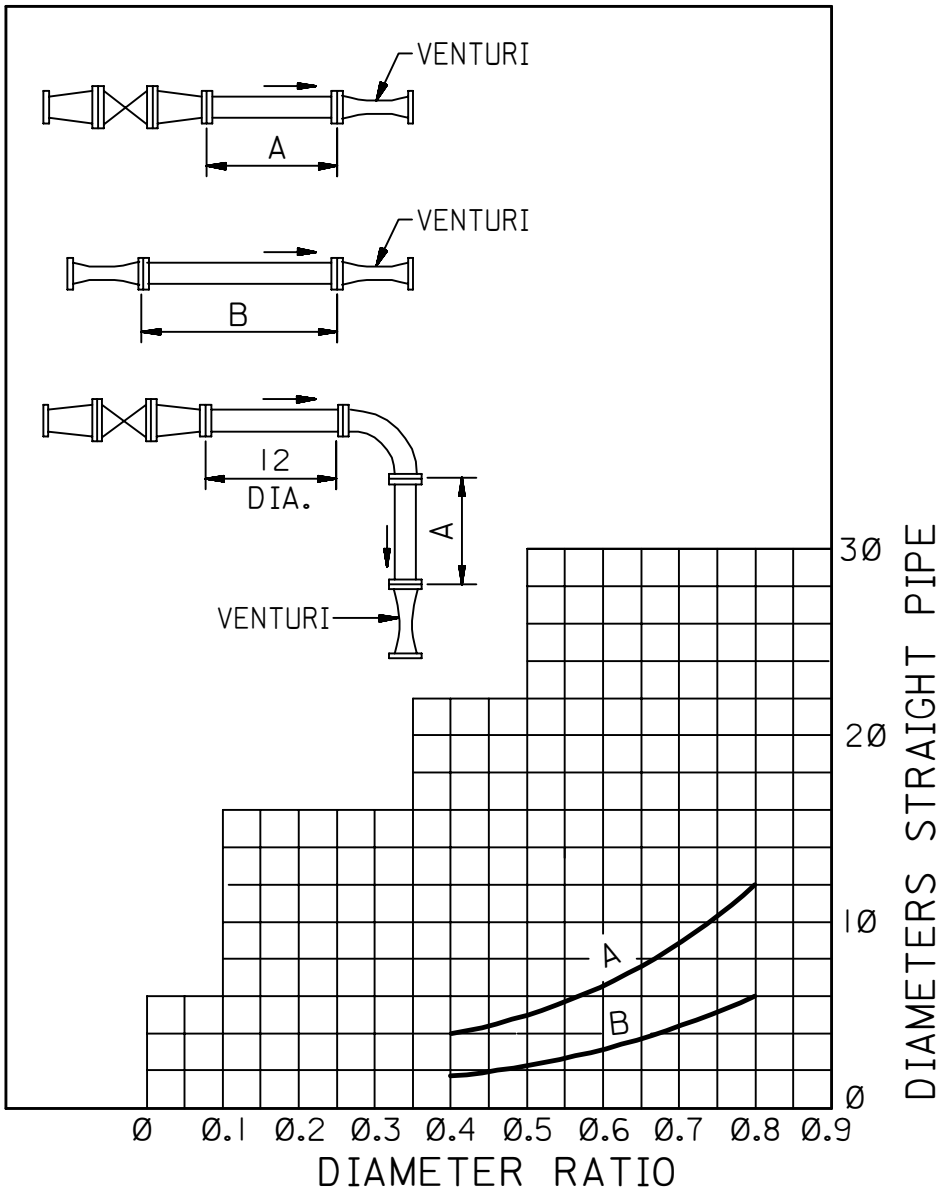
SCHEDULE-7

VALVES



SCHEDULE-8

FOR VENTURI TUBES



DWG. RESPONSIBILITY :
INSTRUMENTS STANDARD COMMITTEE

REV. NO.	DATE	BY	DESCRIPTION	CHKD	CERT.	APPD.
07	MAY02	MHJ	REVISED NOTE-2			
06	NOV96	RCR	CHGD. MANDATORY DRAWING NOTE TO DRAWING RESPONSIBILITY NOTE.			
05	04-17-89	RLO	REDRAWN, CHANGED DWG. SIZE FROM 'B' TO 'A', ADDED TYP. INSTALL. NOTE.			

SAUDI ARABIAN OIL COMPANY

DRAWN BY _____ CHECKED BY _____ SCALE: NONE
DATE STARTED _____ DATE COMPLETED 12-17-53
OPR'G. DEPT. _____ ENG. DEPT. _____
APP'D. FOR CONSTR. _____

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED
CERTIFIED DATE

STRAIGHT PIPE REQUIREMENTS
FOR ORIFICES, FLOW NOZZLES
AND VENTURI TUBES

PLANT NO.	INDEX	DRAWING NO.	SHT. NO.	REV. NO.
990	J	AA-036197	001	07