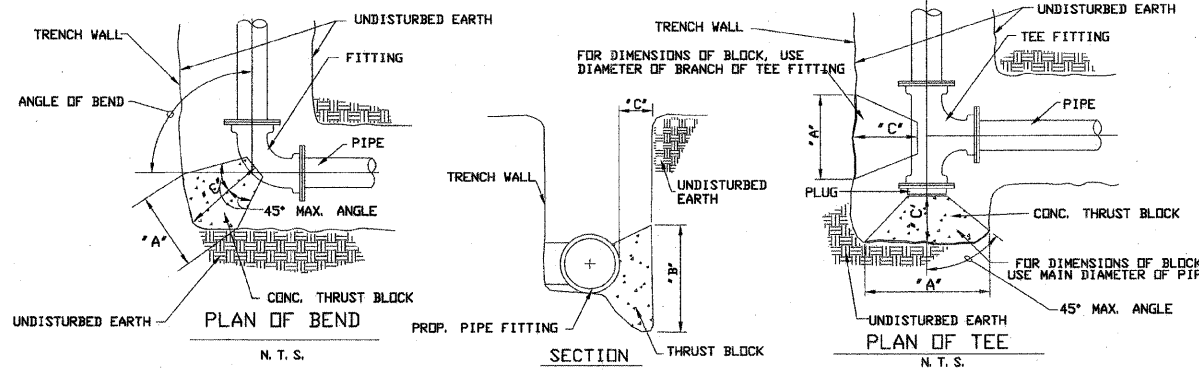


F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
8894	05-00073-01-PV	MADISON	68	26
STA. N.A.	TO STA. N.A.			
FED. ROAD DIST. NO.	ILLINOIS	FEDERAL AID PROJECT		



- NOTES:
1. ALL BENDS, TEES, PLUGS, FITTINGS OR OTHER SIGNIFICANT CHANGES IN ALIGNMENT SHALL BE BRACED WITH CAST-IN-PLACE CONCRETE THRUST BLOCKS. CONCRETE SHALL ACHIEVE 3,000 P. S. I. COMPRESSIVE STRENGTH @ 28 DAYS. FITTINGS WITH RETAINING GLANDS WILL NOT BE ALLOWED.
 2. "C" DIMENSION SHALL BE AS REQUIRED TO REACH UNDISTURBED EARTH BUT NOT LESS THAN VALUE LISTED IN TABLE.
 3. DIMENSIONS "A" AND "B" ARE BASED ON INTERNAL PIPE PRESSURE OF 100 P. S. I. AND BEARING ON THE UNDISTURBED SOIL OF 1500 P. S. F.
 4. "B" = HEIGHT OF THRUST BLOCK
 5. ALL PLUGS SHALL BE SEPARATED FROM THE CONCRETE THRUST BLOCK BY A 5 MIL LAYER OF PLASTIC SHEETING.
 6. RESTRAINED JOINTS SHALL BE ACCEPTABLE FOR PUSH ON PIPE IN LIEU OF CONCRETE THRUST BLOCKING. RESTRAINED JOINTS SHALL BE SERIES 2800 BELL RESTRAINING HARNESS AS MANUFACTURED BY EBAA IRON WORKS OR EQUAL.

HORIZONTAL THRUST RESTRAINT

SIZE	90° BEND			45° BEND			22-1/2° BEND			11-1/4° BEND			TEE OR PLUG		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
4" & 6"	2'-0"	1'-4"	9"	1'-6"	1'-0"	6"	1'-1"	0'-8"	6"	0'-9"	0'-6"	6"	2'-5"	1'-7"	1'-0"
8"	2'-8"	1'-10"	1'-0"	2'-0"	1'-4"	8"	1'-5"	1'-0"	8"	1'-0"	0'-8"	8"	3'-2"	2'-2"	1'-3"
12"	4'-0"	2'-8"	1'-6"	3'-0"	2'-0"	1'-0"	2'-2"	1'-5"	8"	1'-6"	1'-0"	8"	4'-10"	3'-2"	1'-11"

HORIZONTAL THRUST BLOCK DETAILS
N. T. S.

VERTICAL THRUST RESTRAINT-UPWARD BEND

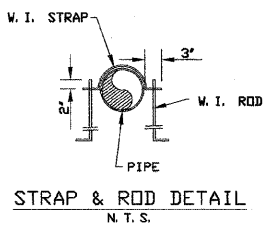
BEND	SIZE									
	6"	8"	10"	12"	16"	20"	24"	30"	36"	
1/4"	G 6"	8"	10"	1'-0"	1'-4"	1'-8"	2'-0"	2'-6"	3'-0"	
	H 1'-2"	1'-4"	1'-6"	1'-8"	2'-0"	2'-4"	2'-8"	3'-2"	3'-10"	
	J 7"	7"	8"	8"	9"	10"	1'-0"	1'-1"	1'-2"	
1/2"	G 9"	1'-0"	1'-6"	1'-4"	2'-3"	3'-0"	3'-6"	4'-2"	5'-4"	
	H 1'-2"	1'-4"	1'-6"	1'-8"	2'-0"	2'-4"	2'-8"	3'-2"	4'-0"	
	J 8"	9"	10"	11"	1'-2"	1'-4"	1'-6"	1'-8"	2'-0"	
3/4"	G 1'-3"	1'-8"	2'-1"	2'-6"	3'-4"	4'-2"	5'-0"	6'-3"	7'-6"	
	H 1'-2"	1'-4"	1'-6"	1'-10"	2'-6"	3'-0"	3'-4"	4'-0"	5'-0"	
	J 8"	9"	10"	11"	1'-2"	1'-4"	1'-6"	2'-3"	2'-8"	

VERTICAL THRUST RESTRAINT-DOWNWARD BEND

BEND	SIZE									
	6"	8"	10"	12"	16"	20"	24"	30"	36"	
1/4"	D 1'-6"	1'-9"	2'-0"	3'-0"	3'-6"	4'-0"	4'-9"	4'-6"	5'-0"	
	E 1'-3"	1'-6"	1'-9"	2'-0"	2'-3"	2'-6"	2'-9"	3'-0"	4'-0"	
	F 2'-0"	2'-6"	2'-9"	3'-0"	4'-0"	5'-0"	5'-9"	6'-6"	7'-0"	
1/2"	D 2'-0"	3'-4"	3'-8"	4'-0"	4'-4"	4'-8"	5'-0"	5'-4"	6'-0"	
	E 1'-9"	2'-3"	2'-6"	2'-6"	2'-6"	2'-8"	3'-8"	4'-6"	5'-6"	
	F 2'-6"	2'-8"	3'-10"	4'-0"	5'-6"	7'-6"	8'-6"	8'-6"	10'-0"	
3/4"	D 2'-6"	3'-0"	4'-0"	4'-6"	5'-2"	5'-6"	6'-0"	6'-6"	7'-6"	
	E 2'-6"	2'-9"	3'-0"	3'-6"	4'-6"	4'-6"	5'-6"	6'-0"	6'-0"	
	F 3'-0"	4'-0"	4'-6"	4'-9"	6'-6"	8'-0"	9'-6"	11'-0"	11'-6"	

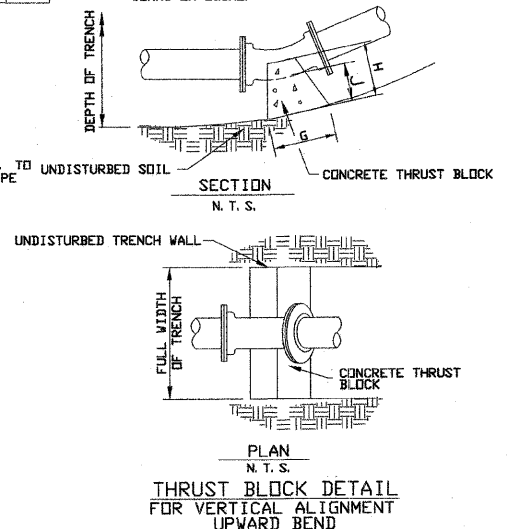
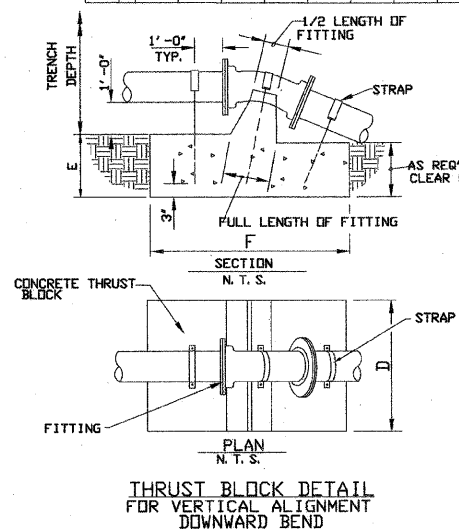
- NOTES:
1. ALL H & J DIMENSIONS TO BE AS REQUIRED TO BEAR AGAINST UNDISTURBED EARTH BUT NOT LESS THAN LISTED IN THRUST BLOCK TABLE.
 2. ALL CAST-IN-PLACE CONCRETE SHALL BE 3000 P. S. I. @ 28 DAYS.
 3. ALL CAST-IN-PLACE CONCRETE SHALL BE PLACED THE FULL WIDTH OF TRENCH FROM UNDISTURBED WALL TO UNDISTURBED WALL.
 4. RESTRAINED JOINTS SHALL BE ACCEPTABLE FOR PUSH ON PIPE IN LIEU OF CONCRETE THRUST BLOCKING. RESTRAINED JOINTS SHALL BE SERIES 2800 BELL RESTRAINING HARNESS AS MANUFACTURED BY EBAA IRON WORKS OR EQUAL.

- NOTES:
1. ALL CAST-IN-PLACE CONCRETE SHALL BE PLACED BEARING AGAINST UNDISTURBED EARTH. THRUST BLOCK DIMENSIONS SHALL BE AS REQUIRED TO BEAR AGAINST UNDISTURBED EARTH BUT NOT LESS THAN LISTED IN THRUST BLOCK TABLE.
 2. ALL CAST-IN-PLACE CONCRETE SHALL BE 3000 P. S. I. @ 28 DAYS.
 3. ALL STRAPS TO BE 3"W X 1/2" WROUGHT IRON. APPLY TWO COATS OF APPROVED BITUMINOUS PAINT TO EXPOSED STRAP.
 4. ALL RODS TO BE WROUGHT IRON AS SHOWN ON TABLE, THREADED ONE END AND BENT THE OTHER. APPLY TWO COATS OF APPROVED BITUMINOUS PAINT TO EXPOSED AREAS.



ROD SCHEDULE

PIPE SIZE	ROD SIZE (IN)	NO. REQ' D.
6"	3/4"	6
8"	3/4"	6
10"	3/4"	6
12"	3/4"	6
16"	3/4"	6
20"	3/4"	8
24"	3/4"	10
30"	3/4"	10
36"	3/4"	12



VERTICAL THRUST BLOCK DETAILS
N. T. S.

REVISIONS

NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

WATER MAIN DETAILS

SCALE: VERT. N.A.
HORIZ. N.A.

DRAWN BY AJK
CHECKED BY JWB

DATE

DATE
BY
SURVEYED
ALIGNMENT CHECKED
NOTE BOOK NO.
PT. OF WAY CHECKED
FIELD FILE MADE

DATE
BY
PROFILE
SURVEYED
ALIGNMENT CHECKED
NOTE BOOK NO.
E.M. NOTED
STRUCTURE NOTATIONS OK'D