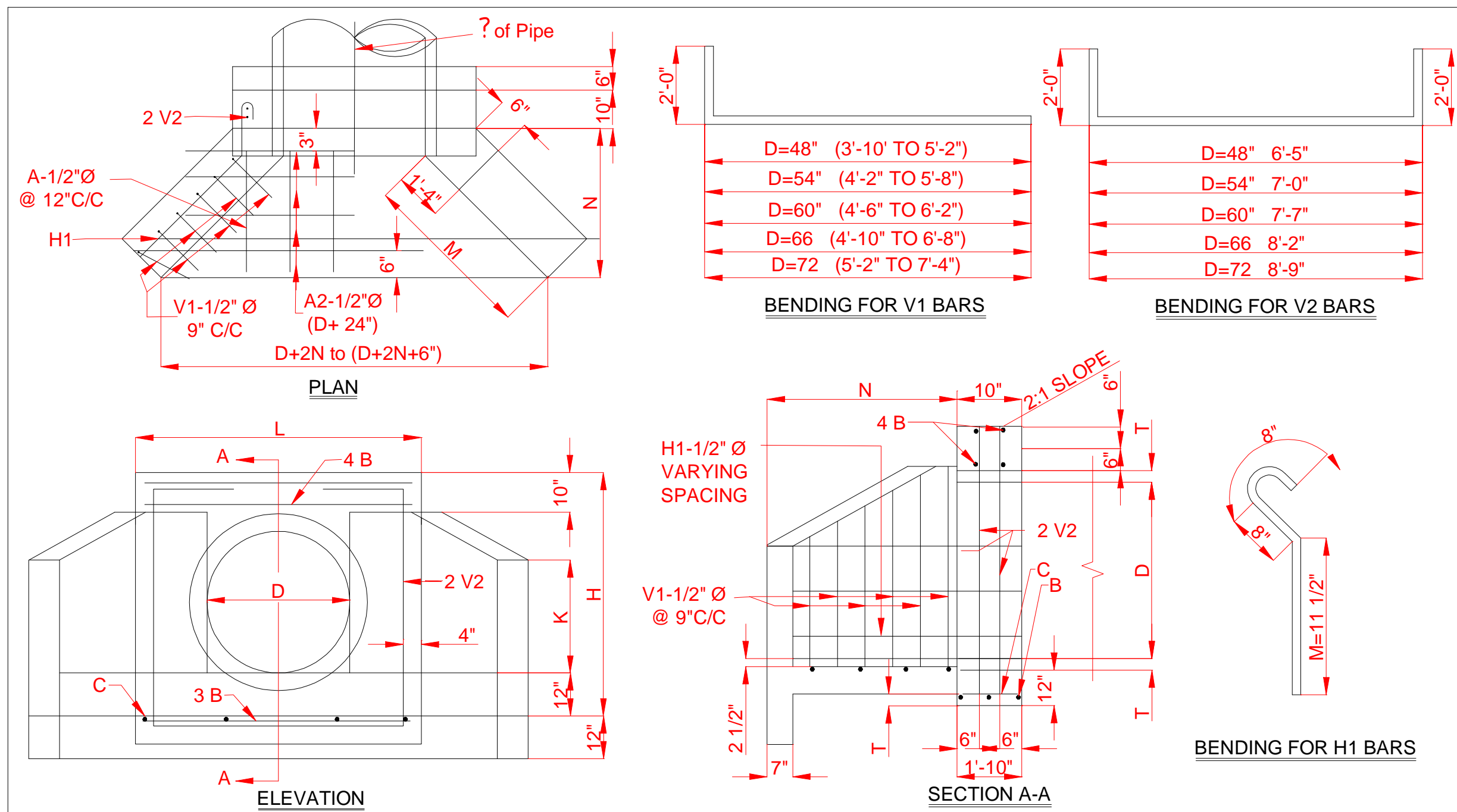
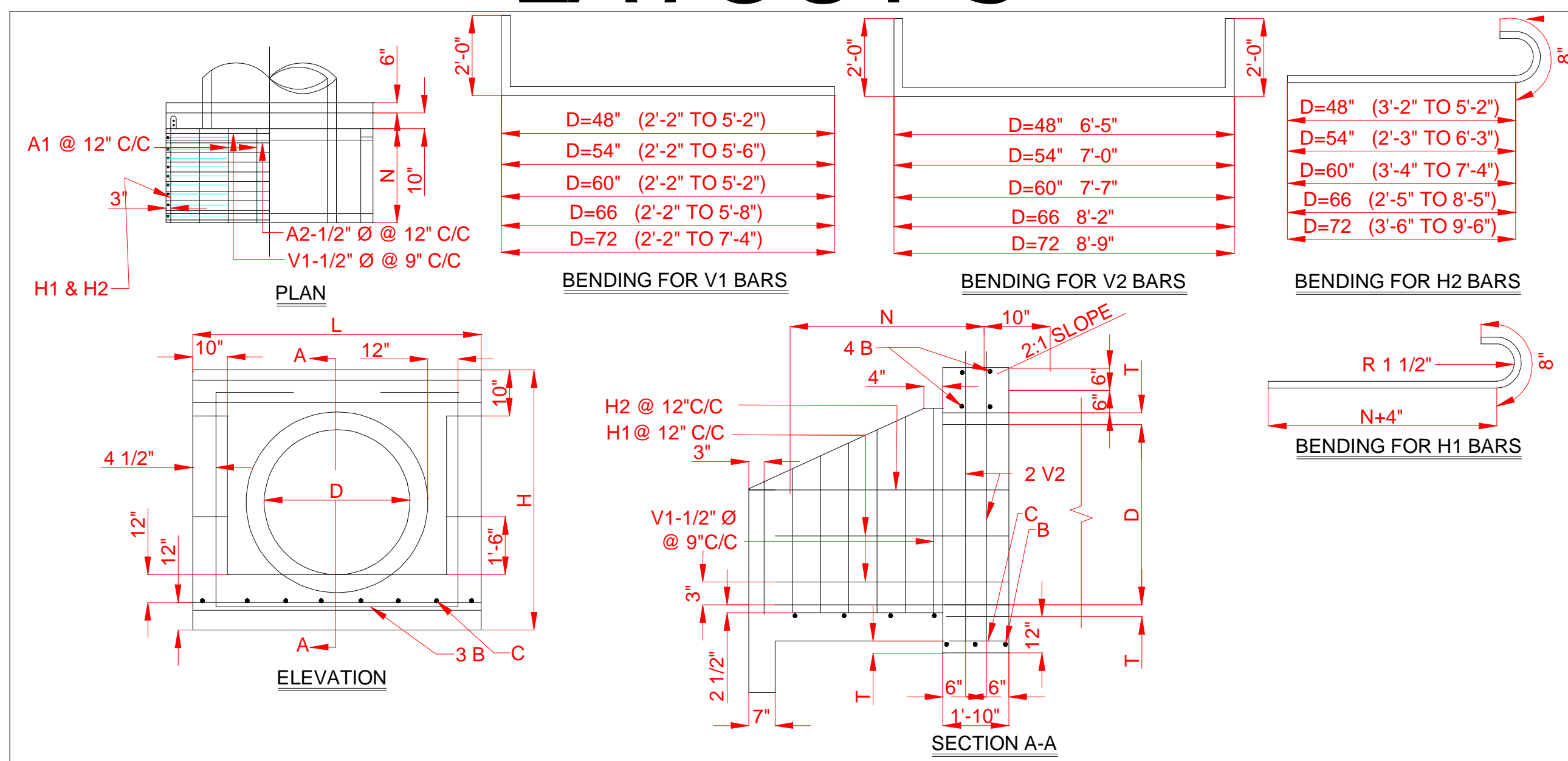


# LAYOUT 2



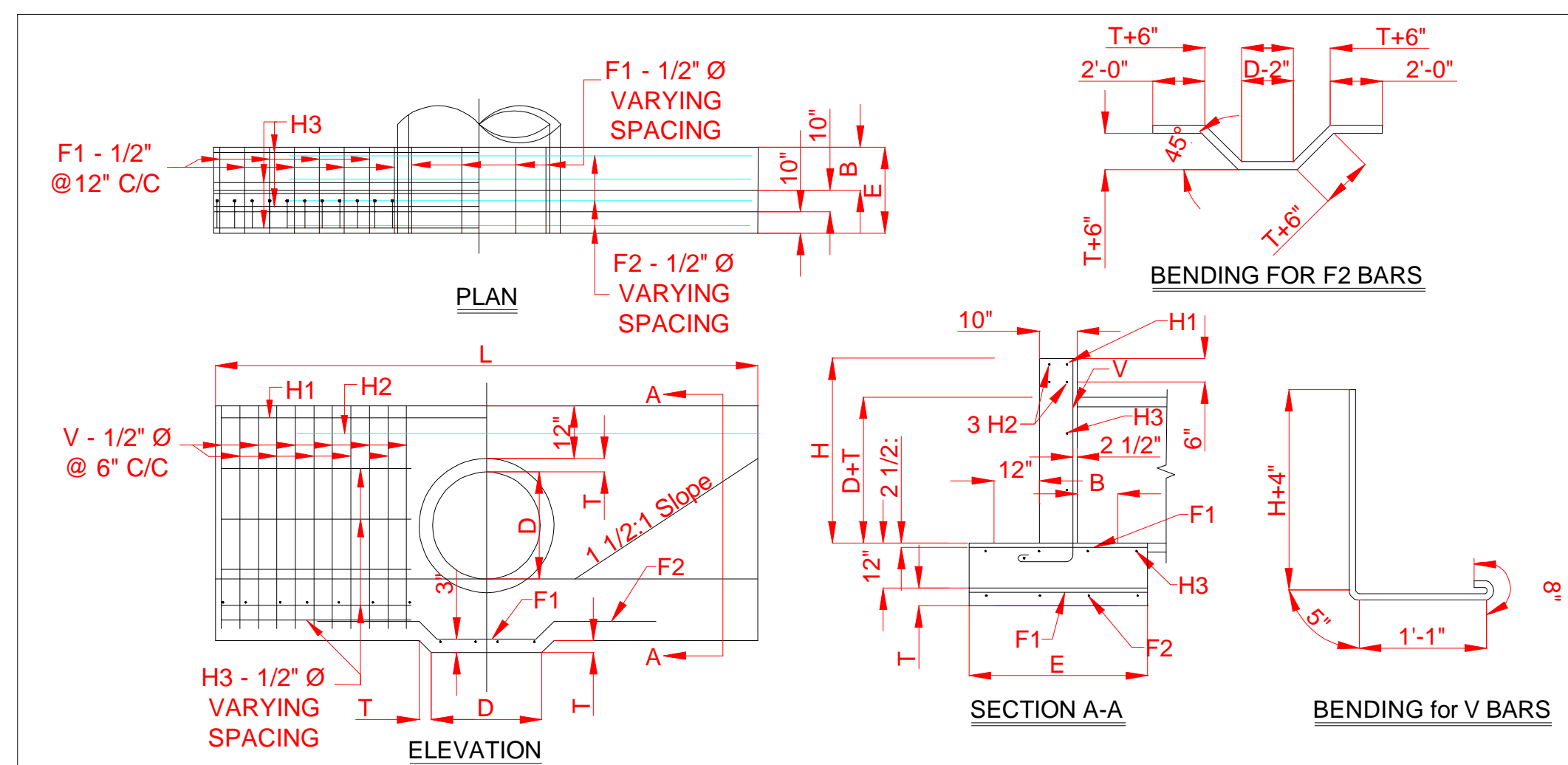
DIMENSIONS											QUANTITIES				
D	AREA SQ FT	T	H	L	M	N	A1-1/2" Ø	A2-1/2" Ø	B-1/2" Ø	C-1/2" Ø	H1-1/2" Ø	V1-1/2" Ø	V2-1/2" Ø	CLASS "A" CONC C.Y.	REINF. STEEL LBS
48"	12.57	5"	5'-5"	3'-2"	6'-4"	5'-3"	3'-9"	7	3'-5"	4	9'-0" AV.	7	6'-0"	3.81	184
54"	15.90	5 1/2"	5'-11 1/2"	3'-2"	6'-10"	5'-3"	3'-9"	7	3'-5"	4	9'-0" AV.	7	6'-0"	4.54	214
60"	19.63	6"	6'-6"	4'-2"	7'-10"	7'-1"	5'-0"	7	4'-2"	5	9'-0" AV.	7	6'-0"	6.20	281
66"	23.76	6 1/2"	7'-0 1/2"	4'-2"	7'-10"	7'-1"	5'-0"	7	4'-2"	5	9'-0" AV.	7	6'-0"	7.22	325
72"	28.27	7"	7'-7"	4'-2"	7'-10"	7'-1"	5'-0"	7	4'-2"	5	9'-0" AV.	7	6'-0"		

# LAYOUT 3



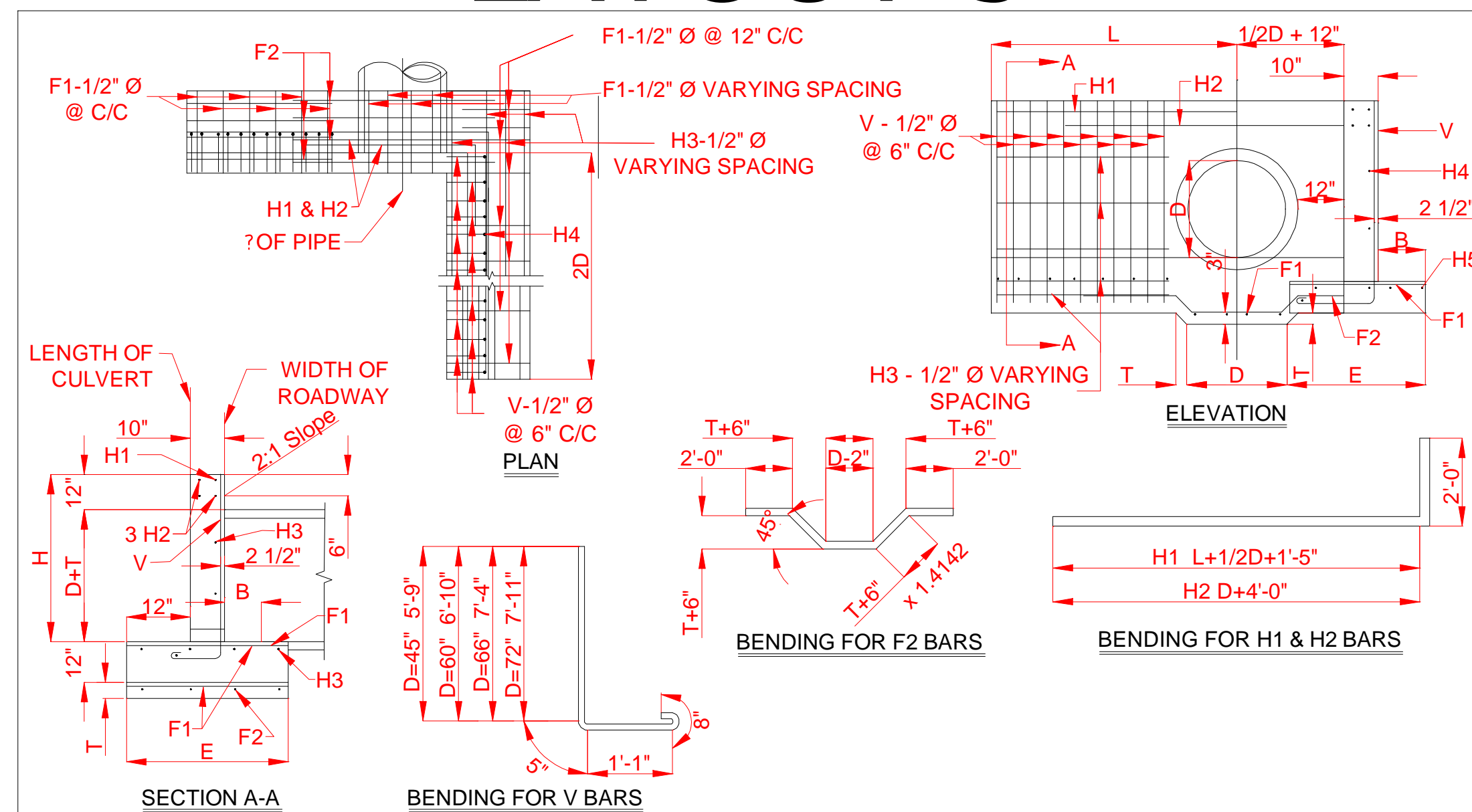
DIMENSIONS & QUANTITIES FOR HEADWALLS WITH U-TYPE WINGS											*FOR ONE HEADWALL QUANTITIES				
DIMENSIONS											REINFORCING STEEL		QUANTITIES		
D	AREA SQ FT	T	H	L	N	A1-1/2" Ø	A2-1/2" Ø	B-1/2" Ø	C-1/2" Ø	H1-1/2" Ø	H2-1/2" Ø	V1-1/2" Ø	V2-1/2" Ø	CLASS "A" CONC C.Y.	REINF. STEEL LBS
48"	12.57	5"	5'-5"	7'-8"	6'-6"	7	6'-2"	7	7'-4"	7	1'-6"	4	7'-6"	4.56	234
54"	15.90	5 1/2"	5'-11 1/2"	8'-2"	3'-1"	7	7'-3"	8	7'-10"	7	1'-6"	4	8'-7"	5.49	270
60"	19.63	6"	6'-6"	8'-8"	4'-2"	8	8'-4"	9	8'-4"	7	1'-6"	4	9'-8"	6.50	321
66"	23.76	6 1/2"	7'-0 1/2"	9'-2"	4'-3"	8	9'-5"	10	8'-10"	8	1'-6"	4	10'-9"	7.58	364
72"	28.27	7"	7'-7"	9'-4"	5'-8"	9	10'-6"	11	9'-4"	7	1'-6"	4	11'-10"	8.75	423

# LAYOUT 4

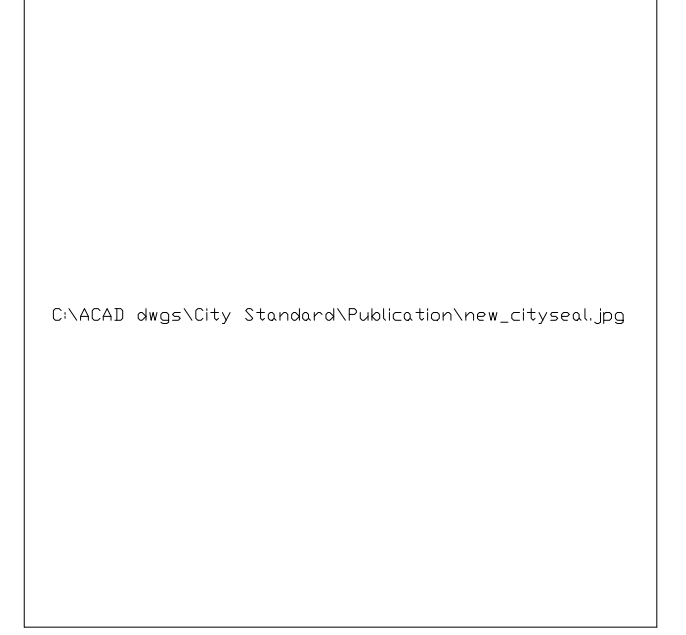


DIMENSIONS & QUANTITIES FOR STRAIGHT HEADWALLS											*FOR ONE HEADWALL QUANTITIES			
DIMENSIONS											REINFORCING STEEL		QUANTITIES	
D	AREA SQ FT	T	H	L	E	B	F1-1/2" Ø	F2-1/2" Ø	H1-1/2" Ø	H2-1/2" Ø	H3-1/2" Ø	V-1/2" Ø	CLASS "A" CONC C.Y.	REINF. STEEL LBS
48"	12.57	5"	5'-5"	18'-0"	3'-9"	1'-11"	18	3'-5"	4	10'-5"	1	17'-8"	5.14	305
54"	15.90	5 1/2"	5'-11 1/2"	20'-0"	4'-0"	2'-2"	20	3'-8"	4	11'-0"	1	19'-8"	6.19	355
60"	19.63	6"	6'-6"	22'-0"	4'-3"	2'-5"	24	3'-11"	5	11'-8"	1	21'-8"	7.34	421
66"	23.76	6 1/2"	7'-0 1/2"	24'-0"	4'-6"	2'-8"	25	4'-2"	5	12'-3"	1	23'-3"	8.58	476
72"	28.27	7"	7'-7"	26'-0"	4'-10"	3'-0"	27	4'-6"	5	12'-10"	1	25'-8"	10.01	529

# LAYOUT 5



DIMENSIONS & QUANTITIES FOR HEADWALLS WITH 90° WINGS											*FOR ONE HEADWALL QUANTITIES			
DIMENSIONS											REINFORCING STEEL		QUANTITIES	
D	AREA SQ FT	T	H	L	E	B	F1-1/2" Ø	F2-1/2" Ø	H1-1/2" Ø	H2-1/2" Ø	H3-1/2" Ø	H4-1/2" Ø	CLASS "A" CONC C.Y.	REINF. STEEL LBS
48"	12.57	5"	5'-0"	9'-0"	3'-9"	1'-11"	22	3'-5"	4	10'-5"	1	14'-0"	6.14	347
54"	15.90	5 1/2"	5'-11 1/2"	10'-0"	4'-0"	2'-2"	24	3'-8"	4	11'-0"	1	15'-8"	7.39	410
60"	19.63	6"	6'-6"	11'-0"	4'-3"	2'-5"	26	3'-11"	5	11'-8"	1	16'-11"	8.75	482
66"	23.76	6 1/2"	7'-0 1/2"	12'-0"	4'-6"	2'-8"	30	4'-2"	5	12'-3"	1	18'-2"	10.23	551
72"	28.27	7"	7'-7"	13'-0"	4'-10"	3'-0"	31	4'-6"	5	12'-10"	1	19'-5"	11.95	612



PREPARED BY:  
The City of Midwest City  
Development Services Department  
100 N. Midwest Blvd.  
Midwest City, Oklahoma 73112

- GENERAL NOTES:**
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH MIDWEST CITY STANDARD SPECIFICATIONS.
  - ALL EXPOSED CONCRETE SURFACES SHALL HAVE A CARBORUNDUM FINISH.
  - ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" CHAMFER.
  - ALL REINFORCED STEEL SHALL CONFORM TO AASHTO M-179 (ASTM C-76)
  - MINIMUM DEPTH OF FILL OVER CULVERTS SHALL BE 1'-0"
  - WALL THICKNESS (DIMENSION "T") OF PIPES SHOWN, ARE TAKEN FROM "WALL B" COLUMN OF ASTM AND AASHTO TABLES.

## CITY STANDARD DETAILS

### CAST-IN-PLACE CONCRETE HEADWALLS FOR 48" TO 72" REINFORCED CONCRETE PIPE

C:\Dev\serv\Engineering\City Standard Details\Concrete Headwalls.dwg

CITY ENGINEER: J. Derek Jackson  
SCALE: N.T.S.  
DRAWN BY: TEB  
DATE: 6 July 2005