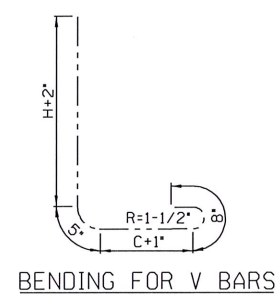
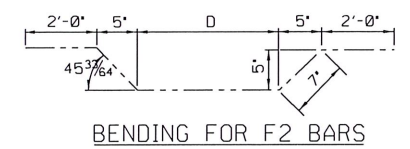
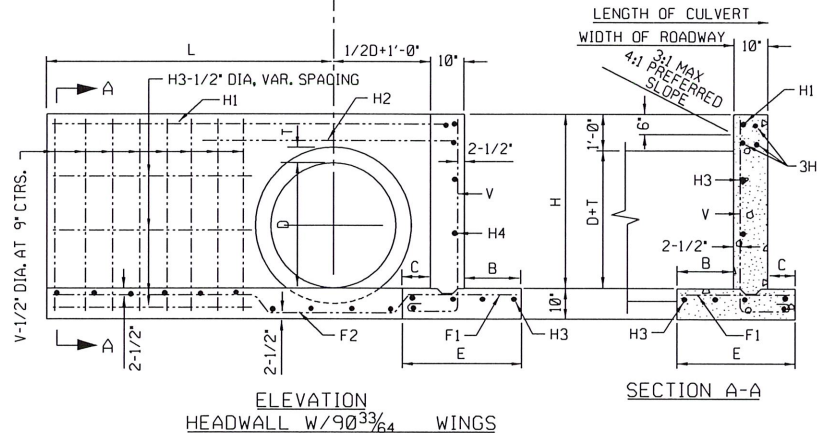
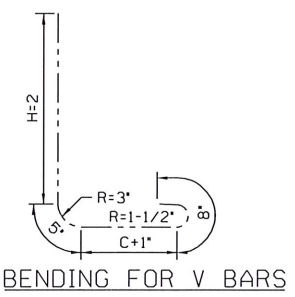
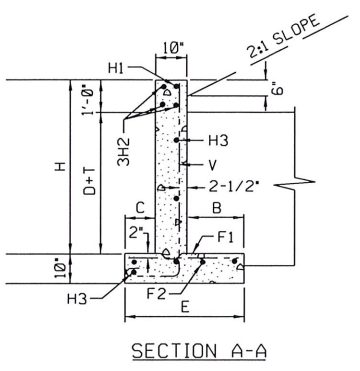
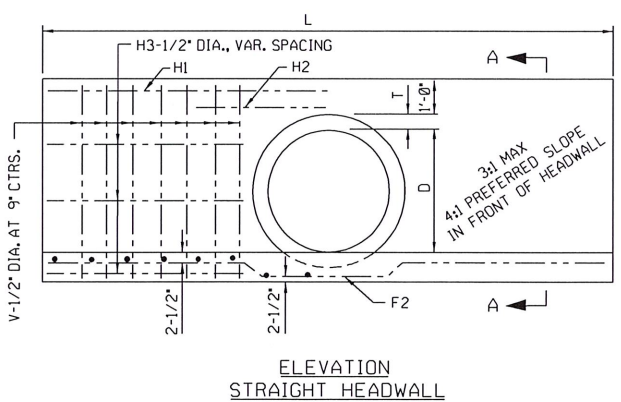
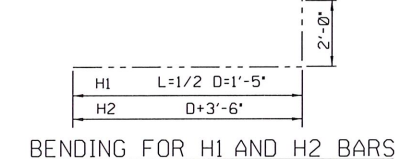
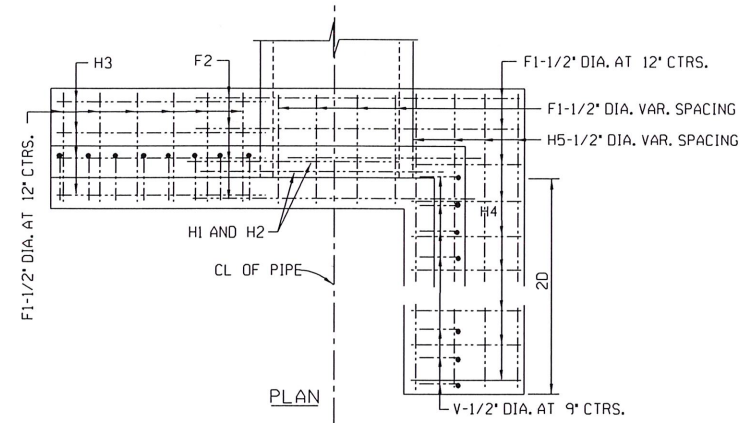
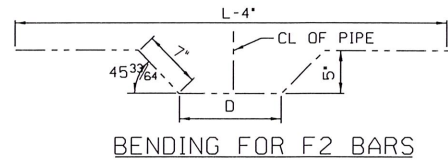
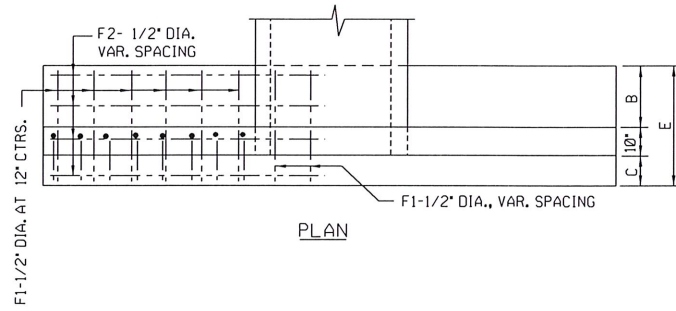


PATH NAME: /E1/PARTS/STD/DGN/STDS/776-STD-PIPE-HDWALLS-15-42.DGN LFW 05/16/2012



DIMENSIONS AND QUANTITIES FOR HEADWALLS WITH 90 ^{33/64} WINGS																									
DIMENSIONS								REINFORCING STEEL												QUANTITIES*					
D	AREA S.F.	T	H	L	E	B	C	F1-1/2" DIA. NO.	F1-1/2" DIA. LGTH.	F2-1/2" DIA. NO.	F2-1/2" DIA. LGTH.	H1-1/2" DIA. NO.	H1-1/2" DIA. LGTH.	H2-1/2" DIA. NO.	H2-1/2" DIA. LGTH.	H3-1/2" DIA. NO.	H3-1/2" DIA. LGTH.	H4-1/2" DIA. NO.	H4-1/2" DIA. LGTH.	H5-1/2" DIA. NO.	H5-1/2" DIA. LGTH.	V-1/2" DIA. NO.	V-1/2" DIA. LGTH.	CLASS 'A' CONC., C.Y.	REINF. STEEL, LBS.
15"	1.23	2-1/4"	2' 5-1/4"	3'-0"	2'-2"	10"	6"	10	1'-10"	3	6'-5"	1	7'-0"	3	6'-9"	5	2'-0"	2	3'-0"	4	3'-10"	7	4'-3"	1.09	84
18"	1.77	2-1/2"	2' 8-1/2"	3'-6"	2'-3"	11"	6"	10	1'-11"	3	6'-8"	1	7'-8"	3	7'-0"	5	2'-0"	2	3'-6"	4	4'-5"	9	4'-6"	1.32	97
24"	3.14	3"	3'-3"	4'-6"	2'-7"	1'-3"	6"	14	2'-3"	3	7'-2"	1	8'-11"	3	7'-6"	6	3'-1"	3	4'-6"	4	5'-9"	11	5'-1"	1.94	131
30"	4.91	3-1/2"	3' 9-1/2"	5'-6"	2'-10"	1'-4"	8"	16	2'-6"	3	7'-8"	1	10'-2"	3	8'-0"	6	3'-9"	3	5'-6"	4	6'-10"	14	5'-9"	2.59	163
36"	7.07	4"	4'-4"	7'-0"	3'-1"	1'-7"	8"	19	2'-9"	4	8'-2"	1	11'-11"	3	8'-6"	7	5'-0"	4	6'-6"	4	8'-1"	17	6'-4"	3.47	216
42"	9.62	4-1/2"	4' 10-1/2"	8'-0"	3'-4"	1'-8"	10"	21	3'-0"	4	8'-8"	1	13'-2"	3	9'-0"	7	5'-8"	4	7'-6"	4	9'-2"	19	7'-0"	4.32	252

* FOR ONE HEADWALL

DIMENSIONS AND QUANTITIES FOR STRAIGHT HEADWALLS																					
DIMENSIONS								REINFORCING STEEL												QUANTITIES*	
D	AREA S.F.	T	H	L	E	B	C	F1-1/2" DIA. NO.	F1-1/2" DIA. LGTH.	F2-1/2" DIA. NO.	F2-1/2" DIA. LGTH.	H1-1/2" DIA. NO.	H1-1/2" DIA. LGTH.	H2-1/2" DIA. NO.	H2-1/2" DIA. LGTH.	H3-1/2" DIA. NO.	H3-1/2" DIA. LGTH.	V-1/2" DIA. NO.	V-1/2" DIA. LGTH.	CLASS 'A' CONC., C.Y.	REINF. STEEL, LBS.
15"	1.23	2-1/4"	2' 5-1/4"	6'-0"	2'-2"	10"	6"	6	1'-10"	3	6'-0"	1	5'-8"	3	5'-3"	4	2'-0"	6	4'-3"	0.78	56
18"	1.77	2-1/2"	2' 8-1/2"	7'-0"	2'-3"	11"	6"	8	1'-11"	3	7'-0"	1	6'-8"	3	5'-6"	4	2'-4"	8	4'-6"	0.98	70
24"	3.14	3"	3'-3"	9'-0"	2'-7"	1'-3"	6"	11	2'-3"	3	9'-0"	1	8'-8"	3	6'-0"	4	3'-1"	10	5'-1"	1.46	95
30"	4.91	3-1/2"	3' 9-1/2"	11'-0"	2'-10"	1'-4"	8"	11	2'-6"	3	11'-0"	1	10'-8"	3	6'-6"	6	3'-9"	12	5'-9"	2.00	122
36"	7.07	4"	4'-4"	14'-0"	3'-1"	1'-7"	8"	16	2'-9"	4	14'-0"	1	13'-8"	3	7'-0"	6	5'-0"	14	6'-4"	2.85	170
42"	9.62	4-1/2"	4' 10-1/2"	16'-0"	3'-4"	1'-8"	10"	16	3'-0"	4	16'-0"	1	15'-8"	3	7'-6"	6	5'-8"	16	7'-0"	3.58	198

* FOR ONE HEADWALL

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF TULSA STANDARD SPECIFICATIONS.
- ALL EXPOSED CONCRETE SURFACES SHALL HAVE A CARBORUNDUM FINISH.
- ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" CHAMFER.
- REINFORCED CONCRETE PIPE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-170 (ASTM C-76) CLASS III UNLESS OTHERWISE DESIGNATED.
- MINIMUM DEPTH OF FILL OVER CULVERTS SHALL BE 1'-0" WITH 6" AT HEADWALL.
- WALL THICKNESS (DIMENSION 'T') OF PIPES SHOWN ARE TAKEN FROM 'WALL B' COLUMN OF ASTM AND AASHTO TABLES.

[Signature]
CITY ENGINEER

[Signature]
DESIGN MANAGER

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

STANDARD PIPE HEADWALLS
15" TO 42"

DATE: MARCH 2022 STD. 776

REVISION	BY	DATE