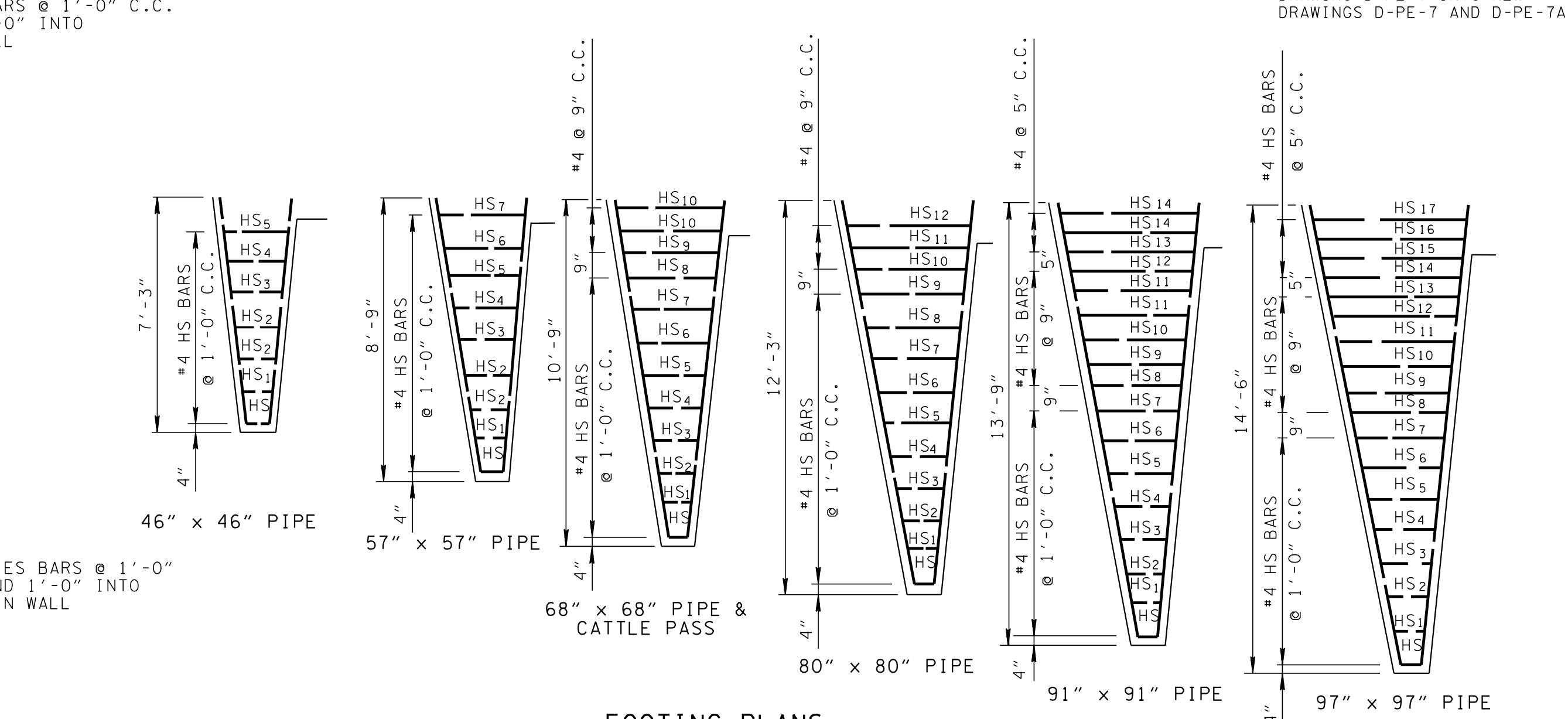
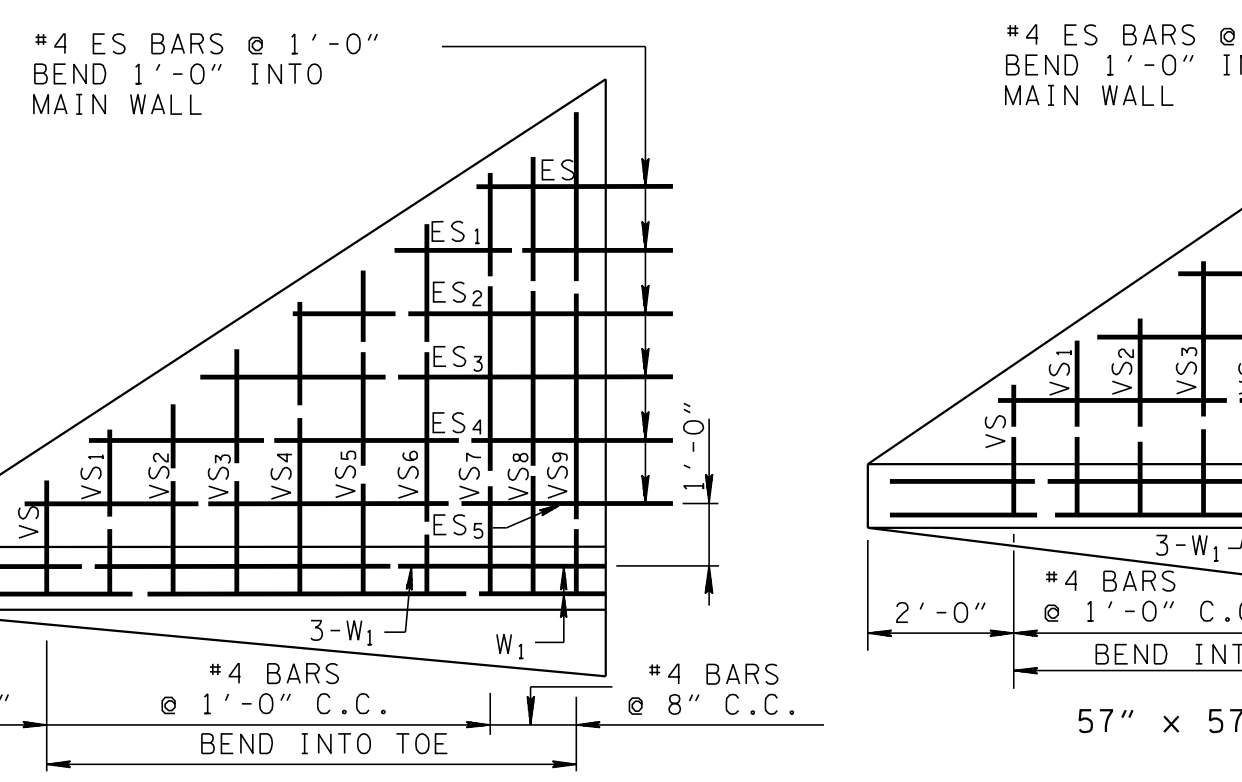
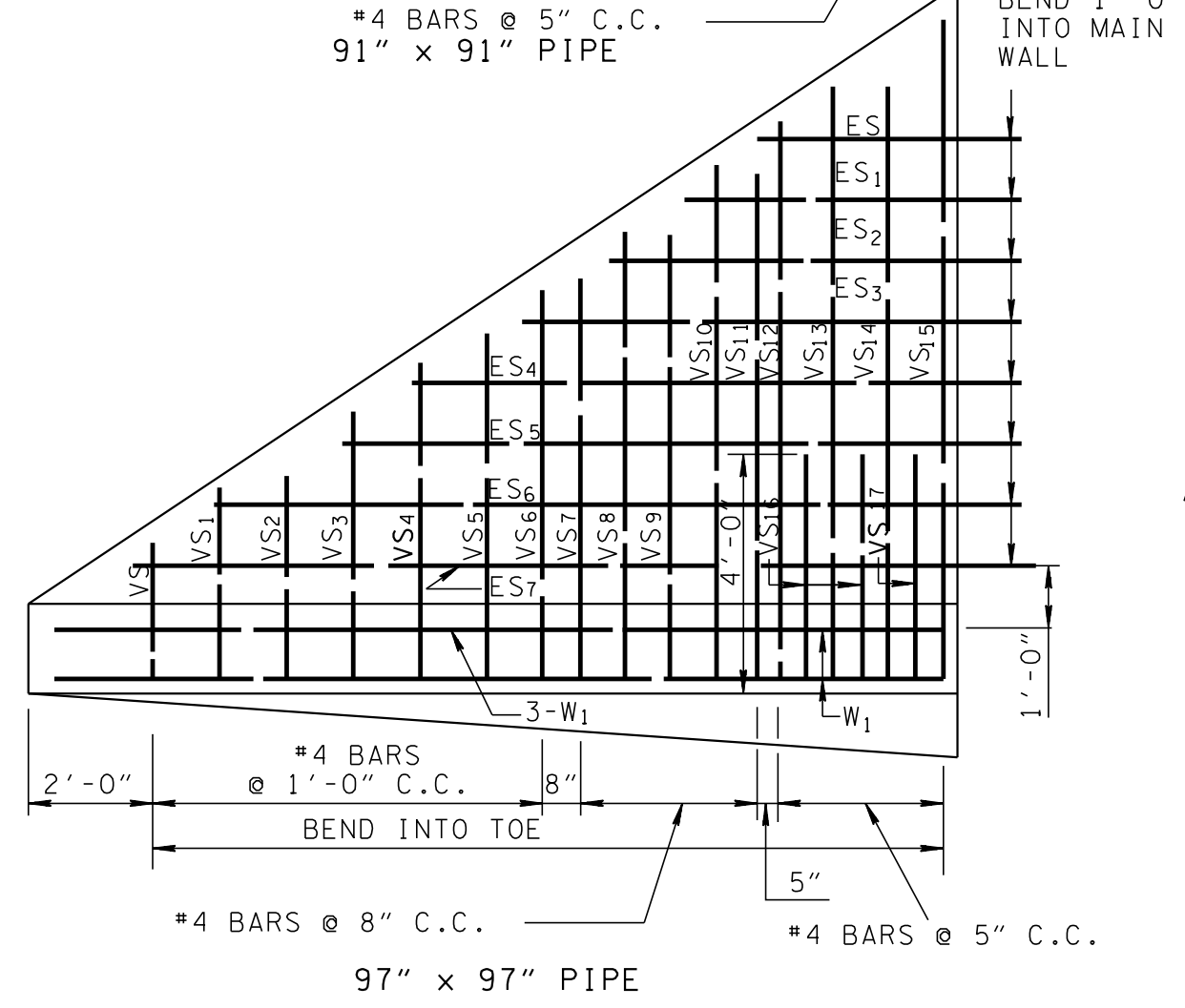
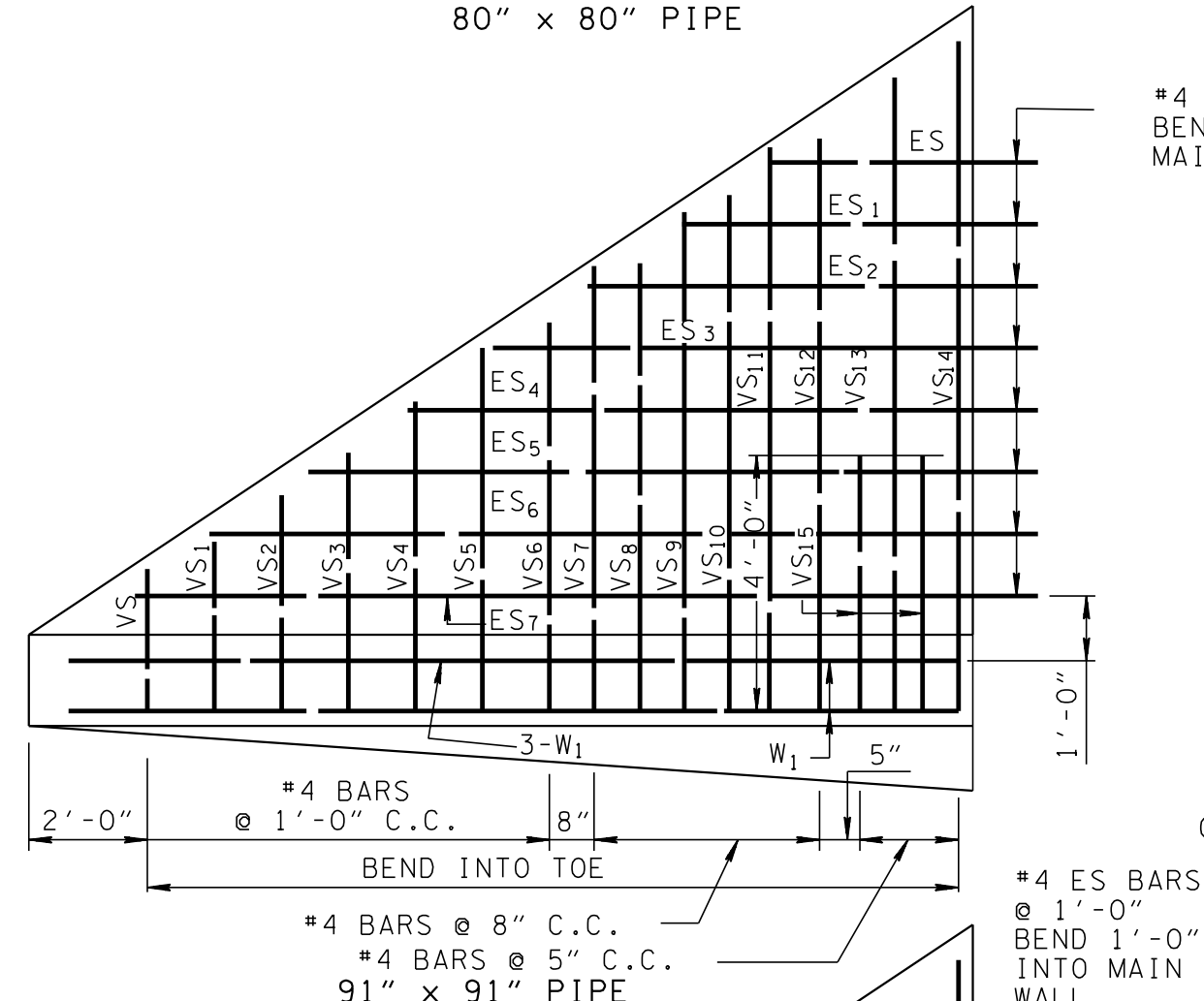
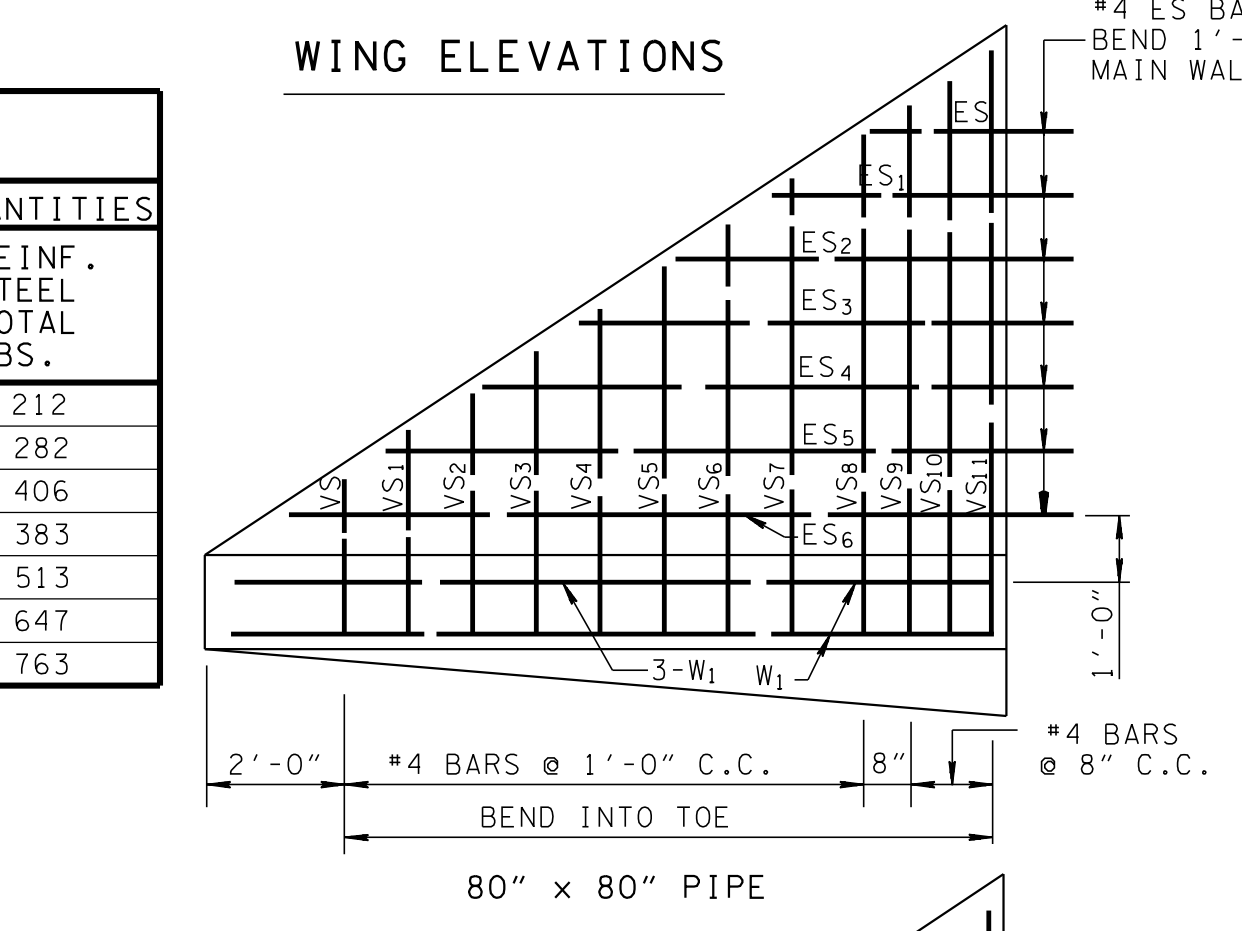


REV. 5-27-01: SEPARATED OLD DRAWING D-PE-7 INTO NEW DRAWINGS D-PE-7 AND D-PE-7A.

TABLE OF DIMENSIONS & ESTIMATED QUANTITIES - (ONE WALL)													
OPENING		DIMENSIONS									ESTIMATED QUANTITIES		
PIPE SIZE	AREA SQ.FT.	WALL					FOOTING				CONCRETE TOTAL CU. YDS.	REINF. STEEL TOTAL LBS.	
		"L"	"L ₁ "	"H"	"TH"	"VO"	"a"	"b"	"c"	"d"			"e"
46"x46"	12.87	11'-6"	9'-2"	4'-10½"	6'-8"	4'-8½"	7"	9"	1'-2"	11½"	2'-6"	4.1	212
57"x57"	19.81	13'-8"	10'-3"	6'-0"	7'-10"	5'-10"	8½"	10"	1'-7½"	1'-0"	3'-2"	5.9	282
68"x68"	28.00	15'-8"	11'-6"	7'-4"	9'-2"	7'-2"	1'-0"	1'-0"	1'-10"	1'-0"	3'-10"	8.6	406
CATTLE PASS	—	13'-8"	9'-6"	7'-2"	9'-0"	7'-0"	1'-0"	1'-0"	1'-10"	1'-0"	3'-10"	8.0	383
80"x80"	38.90	17'-8"	12'-6"	8'-4"	10'-3"	8'-2"	1'-2"	1'-1½"	2'-2½"	1'-1"	4'-6"	11.1	513
91"x91"	50.40	19'-4"	13'-6"	9'-2½"	11'-3"	9'-0½"	1'-4"	1'-3"	2'-5"	1'-2½"	5'-0"	15.0	647
97"x97"	57.30	20'-7"	14'-1"	9'-10"	12'-0"	9'-8"	1'-6"	1'-4"	2'-8"	1'-4"	5'-6"	17.4	763

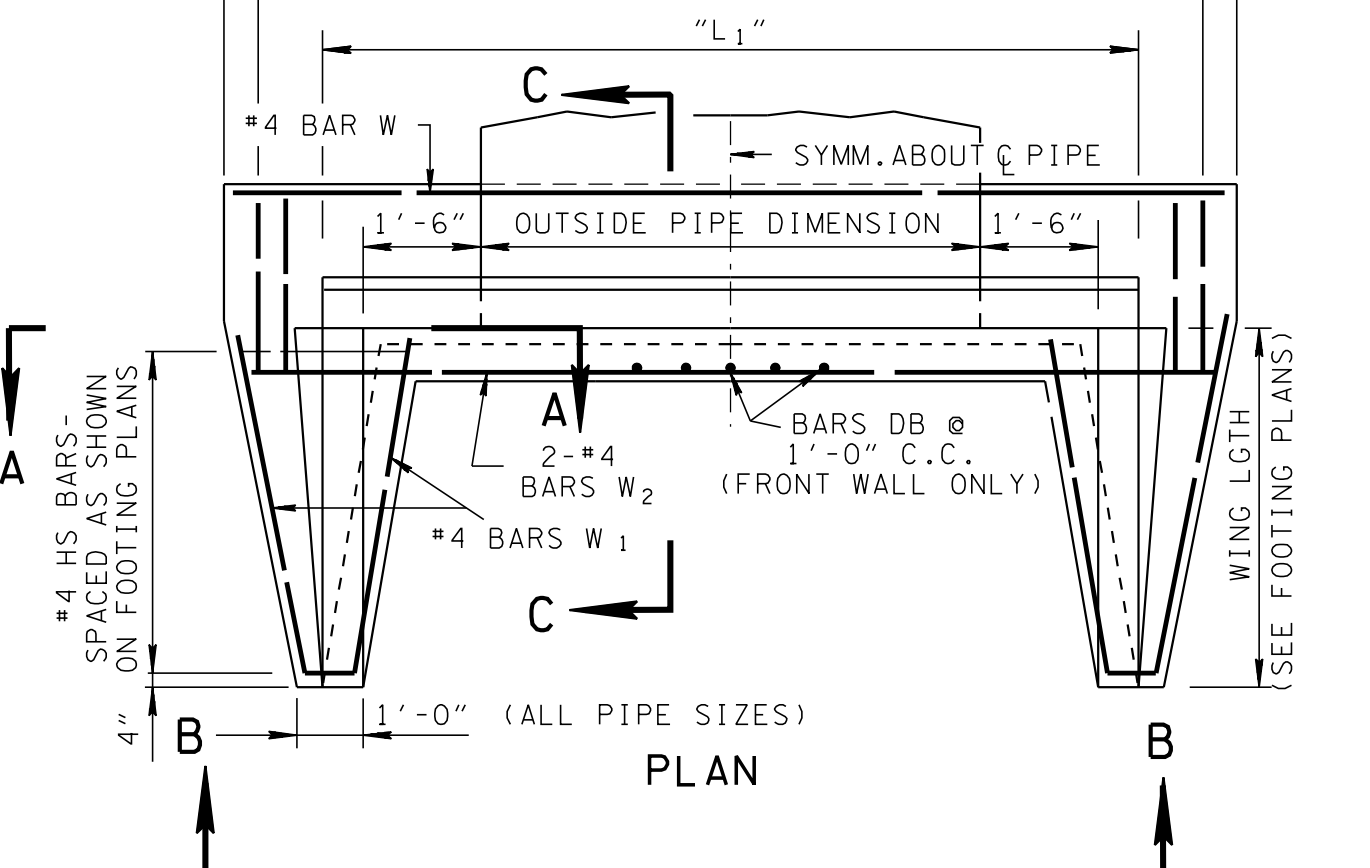
BILL OF STEEL (ONE WALL)													
BAR	SIZE	PIPE SIZE											
		46"x46"	57"x57"	68"x68"	CATTLE PASS	80"x80"	91"x91"	97"x97"					
		NO.	LGTH.	NO.	LGTH.	NO.	LGTH.	NO.	LGTH.	NO.	LGTH.	NO.	LGTH.
DB	#4	9	1'-6"	10	1'-6"	11	1'-6"	—	—	11	1'-6"	13	1'-6"
ES	#4	2	2'-0"	2	2'-3"	2	2'-9"	2	2'-9"	2	3'-0"	2	3'-9"
ES ₁	#4	2	3'-6"	2	3'-9"	2	4'-3"	2	4'-3"	2	4'-6"	2	5'-3"
ES ₂	#4	2	5'-0"	2	5'-3"	2	5'-9"	2	5'-9"	2	6'-0"	2	6'-9"
ES ₃	#4	2	6'-6"	2	6'-9"	2	7'-3"	2	7'-3"	2	7'-6"	2	8'-0"
ES ₄	#4	—	—	2	8'-3"	2	8'-9"	2	8'-9"	2	9'-0"	2	9'-6"
ES ₅	#4	—	—	—	—	2	10'-3"	2	10'-3"	2	10'-6"	2	11'-0"
ES ₆	#4	—	—	—	—	—	—	2	12'-0"	2	11'-9"	2	12'-6"
ES ₇	#4	—	—	—	—	—	—	—	—	2	13'-0"	2	14'-0"
HS	#4	2	6"	2	6"	2	6"	2	6"	2	6"	2	6"
HS ₁	#4	2	1'-0"	2	1'-0"	2	1'-0"	2	1'-0"	2	1'-0"	2	1'-0"
HS ₂	#4	4	1'-3"	4	1'-3"	2	1'-3"	2	1'-3"	2	1'-3"	2	1'-3"
HS ₃	#4	2	1'-6"	2	1'-6"	2	1'-6"	2	1'-6"	2	1'-6"	2	1'-6"
HS ₄	#4	2	1'-9"	2	1'-9"	2	1'-9"	2	1'-9"	2	1'-9"	2	1'-9"
HS ₅	#4	2	2'-0"	2	2'-0"	2	2'-0"	2	2'-0"	2	2'-0"	2	2'-0"
HS ₆	#4	—	—	2	2'-3"	2	2'-3"	2	2'-3"	2	2'-3"	2	2'-3"
HS ₇	#4	—	—	2	2'-6"	2	2'-6"	2	2'-6"	2	2'-6"	2	2'-6"
HS ₈	#4	—	—	—	—	2	2'-9"	2	2'-9"	2	2'-9"	2	2'-9"
HS ₉	#4	—	—	—	—	2	3'-0"	2	3'-0"	2	3'-0"	2	3'-0"
HS ₁₀	#4	—	—	—	—	4	3'-3"	4	3'-3"	2	3'-3"	2	3'-3"
HS ₁₁	#4	—	—	—	—	—	—	4	3'-6"	4	3'-6"	2	3'-6"
HS ₁₂	#4	—	—	—	—	—	—	2	3'-9"	2	3'-9"	2	3'-9"
HS ₁₃	#4	—	—	—	—	—	—	—	—	2	4'-0"	2	4'-0"
HS ₁₄	#4	—	—	—	—	—	—	—	—	4	4'-3"	2	4'-3"
HS ₁₅	#4	—	—	—	—	—	—	—	—	—	—	4	4'-6"
HS ₁₆	#4	—	—	—	—	—	—	—	—	—	—	2	4'-9"
TS	#4	3	8'-9"	3	9'-9"	3	11'-0"	3	9'-0"	3	12'-0"	3	13'-6"
TS ₁	#4	10	1'-9"	12	1'-9"	14	1'-9"	14	1'-9"	16	1'-9"	18	1'-9"
VS	#4	2	2'-0"	2	2'-3"	2	2'-3"	2	2'-3"	2	2'-3"	2	2'-9"
VS ₁	#4	2	2'-9"	2	3'-0"	2	3'-0"	2	3'-0"	2	3'-3"	2	3'-6"
VS ₂	#4	2	3'-6"	2	3'-9"	2	3'-9"	2	3'-9"	2	4'-0"	2	4'-3"
VS ₃	#4	2	4'-0"	2	4'-6"	2	4'-6"	2	4'-6"	2	4'-9"	2	5'-0"
VS ₄	#4	2	4'-9"	2	5'-3"	2	5'-3"	2	5'-3"	2	5'-6"	2	5'-9"
VS ₅	#4	2	5'-6"	2	5'-9"	2	6'-0"	2	6'-0"	2	6'-3"	2	6'-6"
VS ₆	#4	—	—	2	6'-6"	2	6'-9"	2	6'-9"	2	7'-0"	2	7'-6"
VS ₇	#4	—	—	—	—	2	7'-6"	2	7'-6"	2	8'-0"	2	8'-0"
VS ₈	#4	—	—	—	—	2	8'-0"	2	8'-0"	2	8'-9"	2	8'-6"
VS ₉	#4	—	—	—	—	2	8'-6"	2	8'-6"	2	9'-3"	2	9'-3"
VS ₁₀	#4	—	—	—	—	—	—	2	9'-9"	2	9'-3"	2	9'-9"
VS ₁₁	#4	—	—	—	—	—	—	2	10'-3"	2	9'-9"	2	10'-0"
VS ₁₂	#4	—	—	—	—	—	—	—	—	2	10'-3"	2	10'-6"
VS ₁₃	#4	—	—	—	—	—	—	—	—	2	11'-0"	2	11'-3"
VS ₁₄	#4	—	—	—	—	—	—	—	—	2	11'-6"	2	11'-9"
VS ₁₅	#4	—	—	—	—	—	—	—	—	4	5'-9"	2	12'-6"
VS ₁₆	#4	—	—	—	—	—	—	—	—	—	—	4	5'-9"
VS ₁₇	#4	—	—	—	—	—	—	—	—	—	—	2	6'-0"
FS	#4	12	2'-0"	16	2'-9"	21	3'-4"	18	3'-4"	26	4'-0"	33	4'-6"
LS	#4	6	6'-9"	6	8'-3"	8	10'-0"	8	9'-9"	8	11'-3"	6	12'-9"
LS ₁	#4	—	—	—	—	—	—	—	—	—	—	4	5'-9"
LS	#5	—	—	—	—	—	—	—	—	—	—	6	13'-9"
W	#4	2	11'-0"	2	13'-0"	2	15'-0"	2	13'-0"	2	17'-0"	2	20'-0"
W ₁	#4	8	7'-0"	8	8'-6"	8	10'-6"	8	10'-6"	8	12'-0"	8	13'-6"
W ₂	#4	2	10'-6"	2	12'-6"	2	14'-6"	2	12'-6"	2	16'-6"	2	14'-0"

WING ELEVATIONS

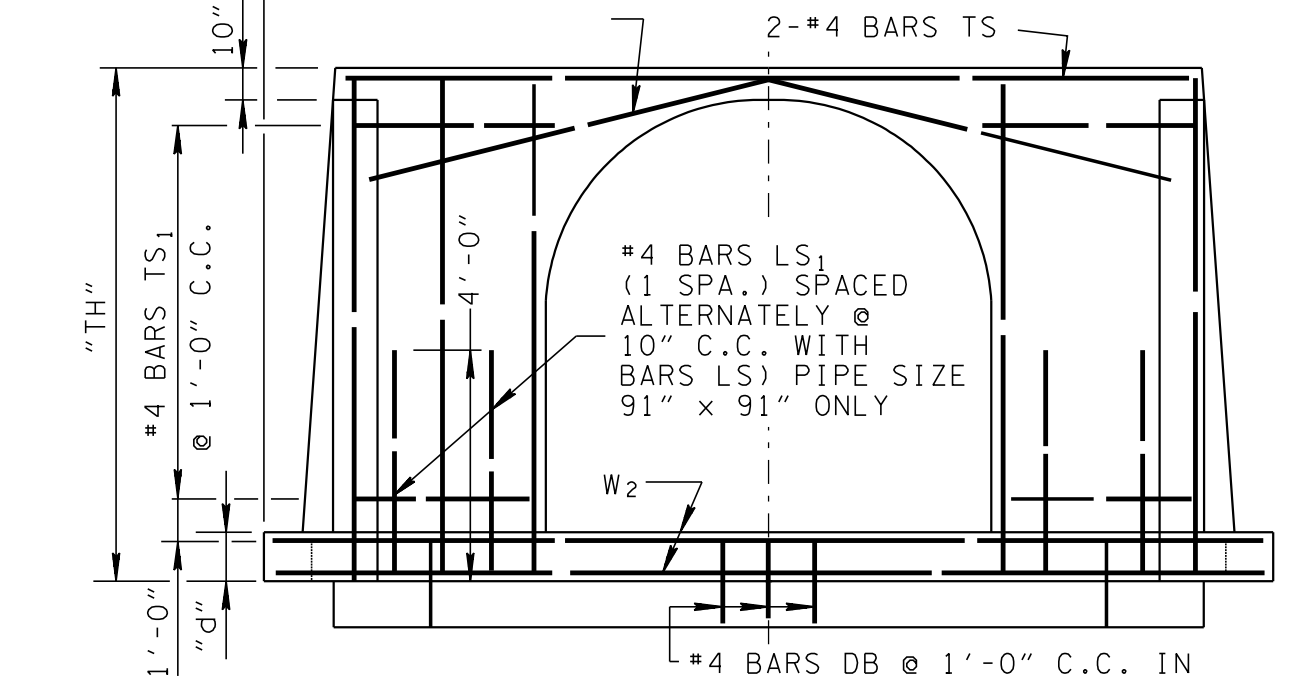


FOOTING PLANS

PIPE SIZE	FOOTING PLAN
46"x46"	3" #4 BARS FS @ 12" C.C. - 11 SPA.
57"x57"	7" #4 BARS FS @ 10" C.C. - 15 SPA.
68"x68"	4" #4 BARS FS @ 9" C.C. - 20 SPA.
CATTLE PASS	5½" #4 BARS FS @ 9" C.C. - 17 SPA.
80"x80"	6" #4 BARS FS @ 8" C.C. - 25 SPA.
91"x91"	4" #4 BARS FS @ 7" C.C. - 32 SPA.
97"x97"	3½" #4 BARS FS @ 6" C.C. - 40 SPA.

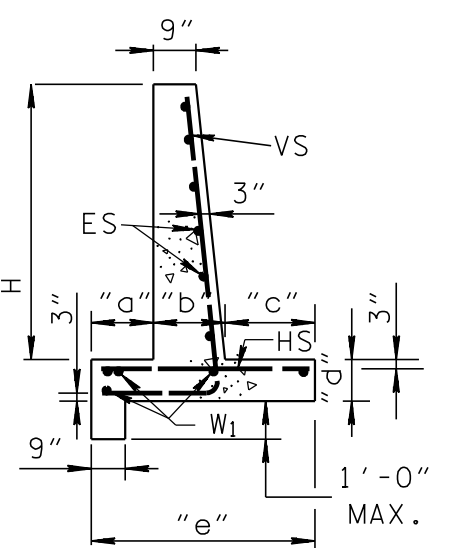


PIPE SIZE	FOOTING PLAN
46"x46"	2½" 2 SPA. @ 11" C.C. #4 BARS LS 2 SPA. @ 11"
57"x57"	3½" 2 SPA. @ 10" C.C. #4 BARS LS 2 SPA. @ 10"
68"x68"	3" 3 SPA. @ 7" C.C. #4 BARS LS 3 SPA. @ 7"
CATTLE PASS	3" 3 SPA. @ 7" C.C. #4 BARS LS 3 SPA. @ 7"
80"x80"	4½" 3 SPA. @ 6" C.C. #4 BARS LS 3 SPA. @ 6"
91"x91"	3½" 2 SPA. @ 10" C.C. #4 BARS LS 2 SPA. @ 10"
97"x97"	3½" 2 SPA. @ 10" C.C. #5 BARS LS 2 SPA. @ 10"

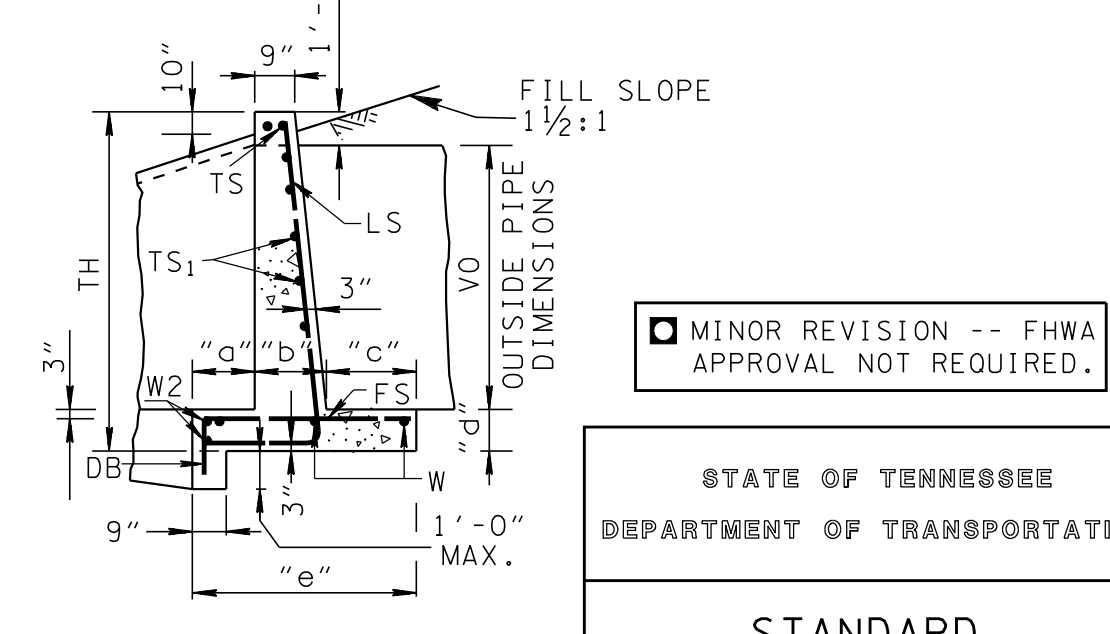


ELEVATION B-B
NOTE: FOR CATTLE PASS OMIT CUT-OFF WALL

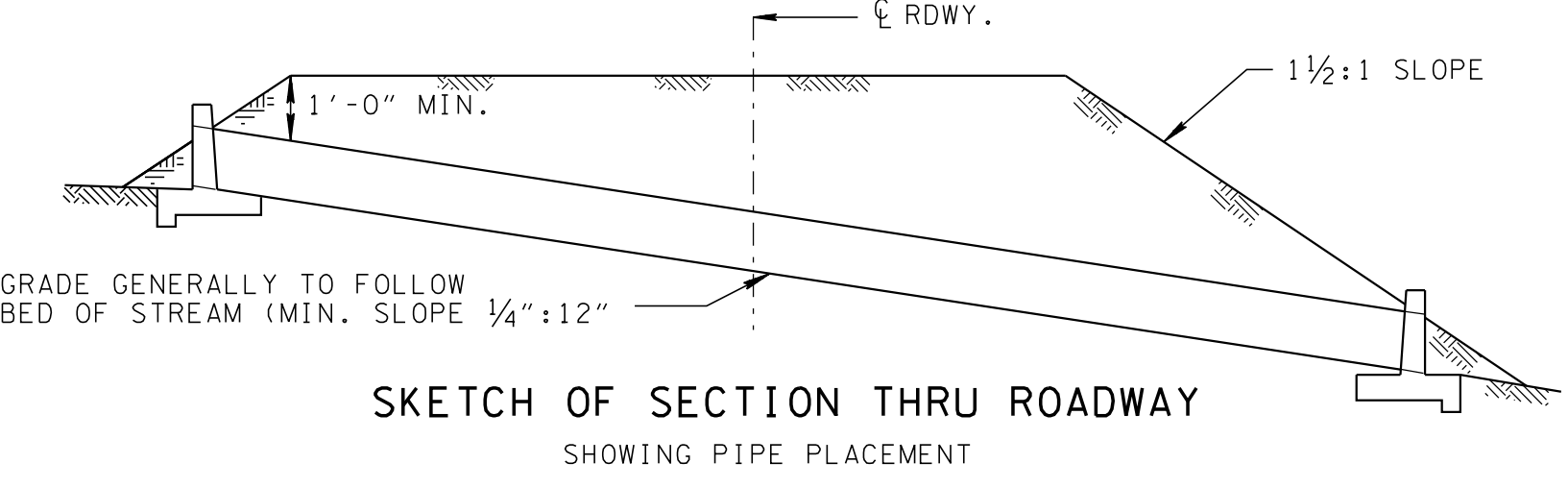
FOR 90° SKEW
SEE SHEET D-PE-7



SECTION A-A



SECTION C-C



SKETCH OF SECTION THRU ROADWAY
SHOWING PIPE PLACEMENT

MINOR REVISION -- FHWA
APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD
WINGWALLS
FLATBASE
CONCRETE PIPES