

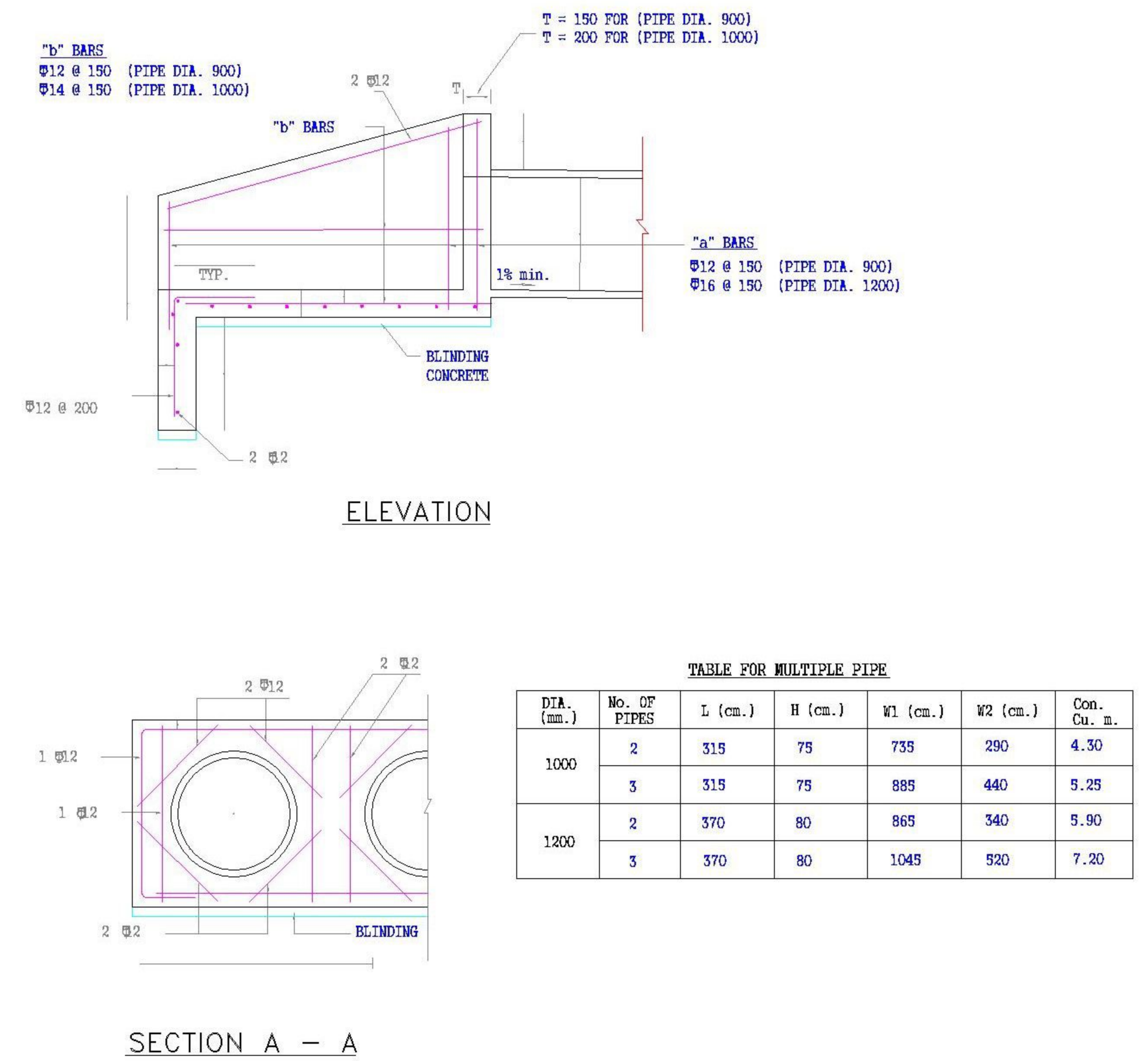
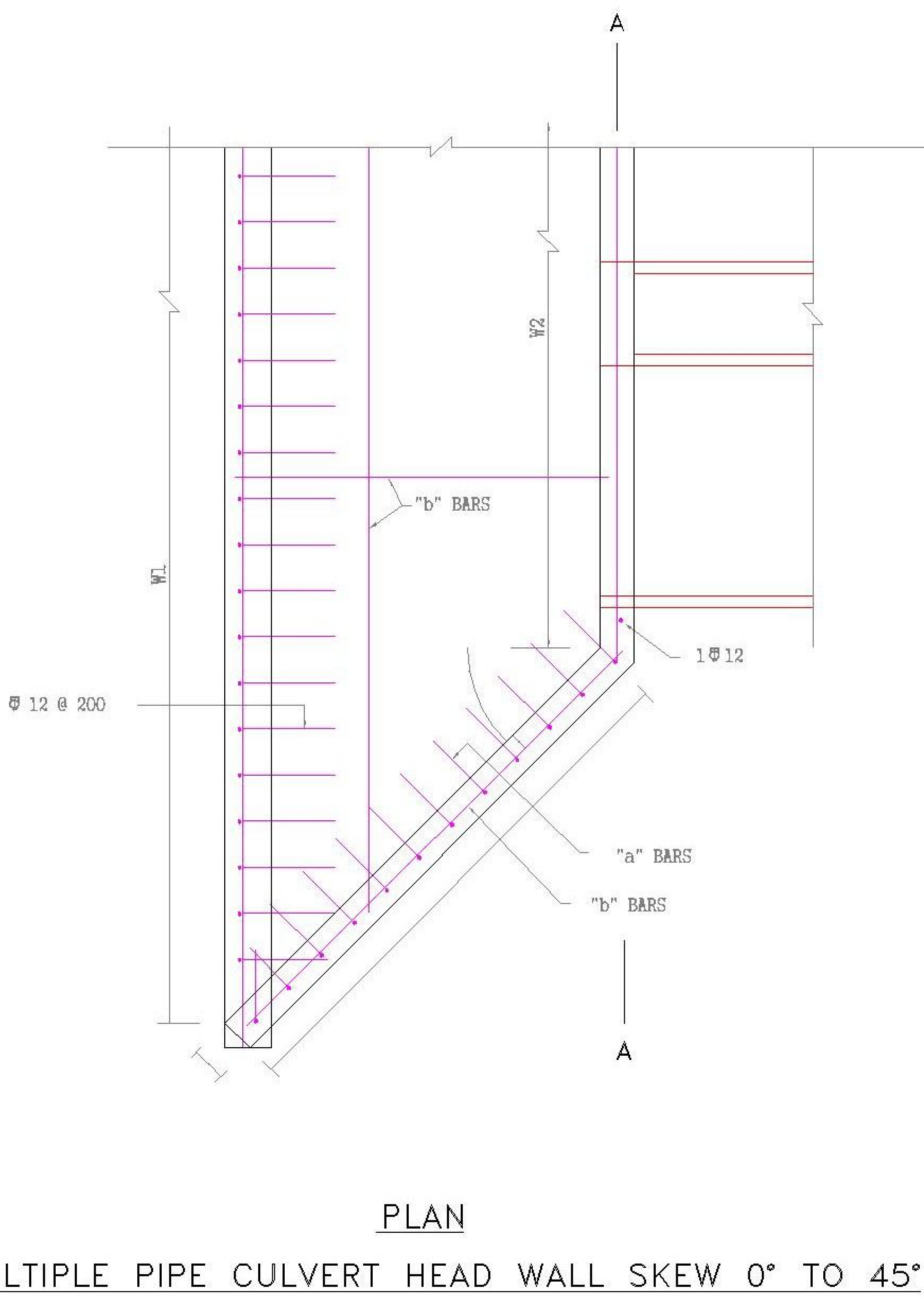
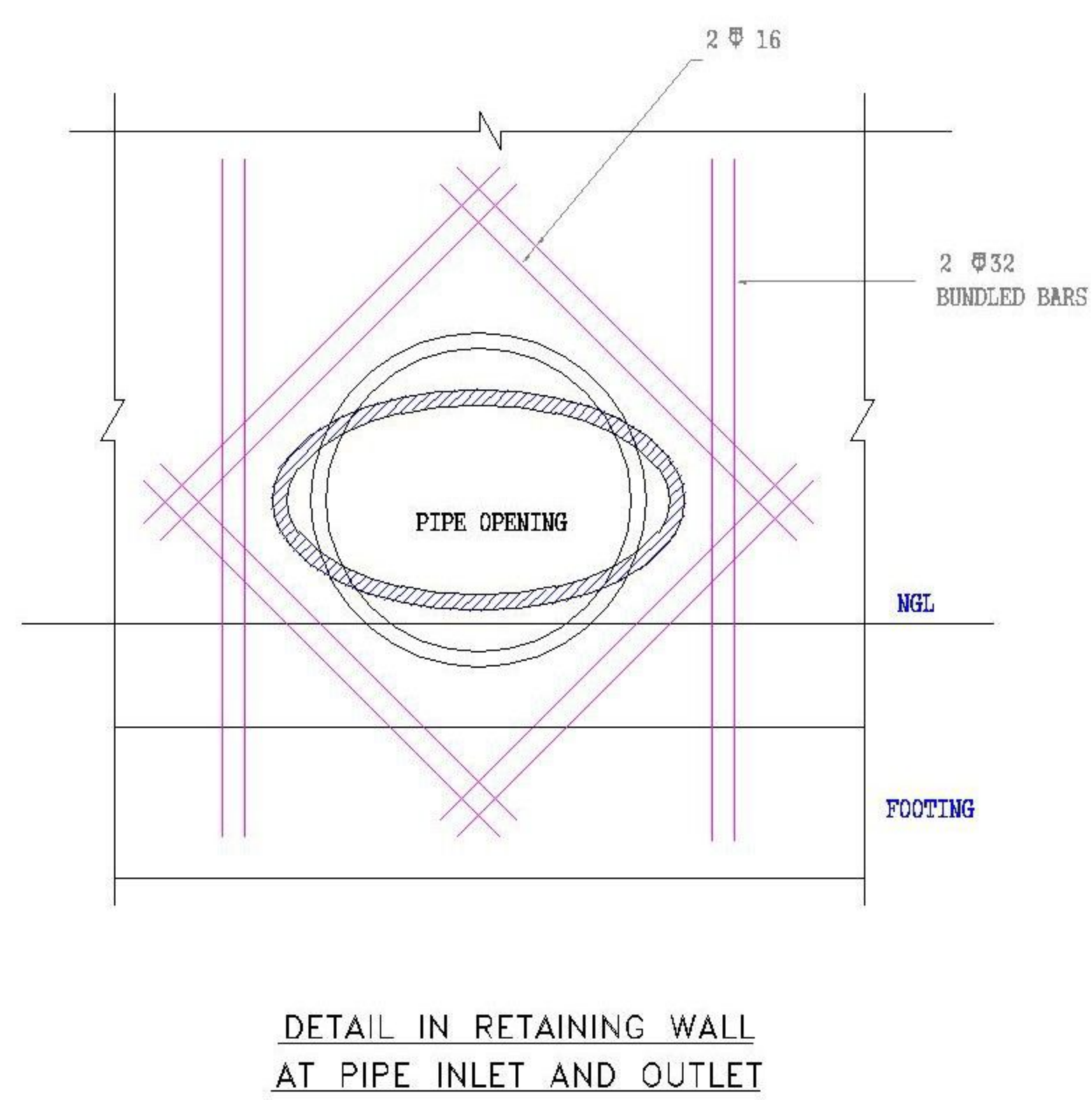
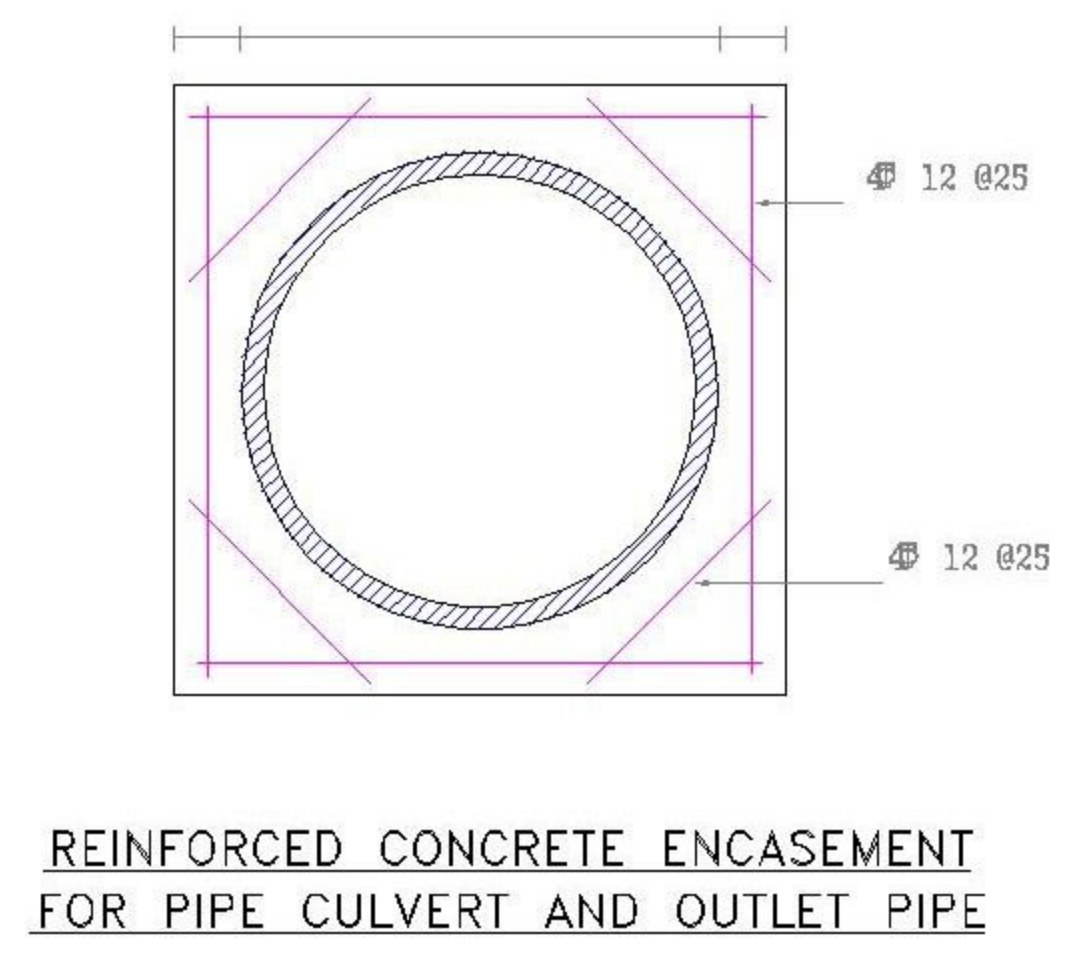
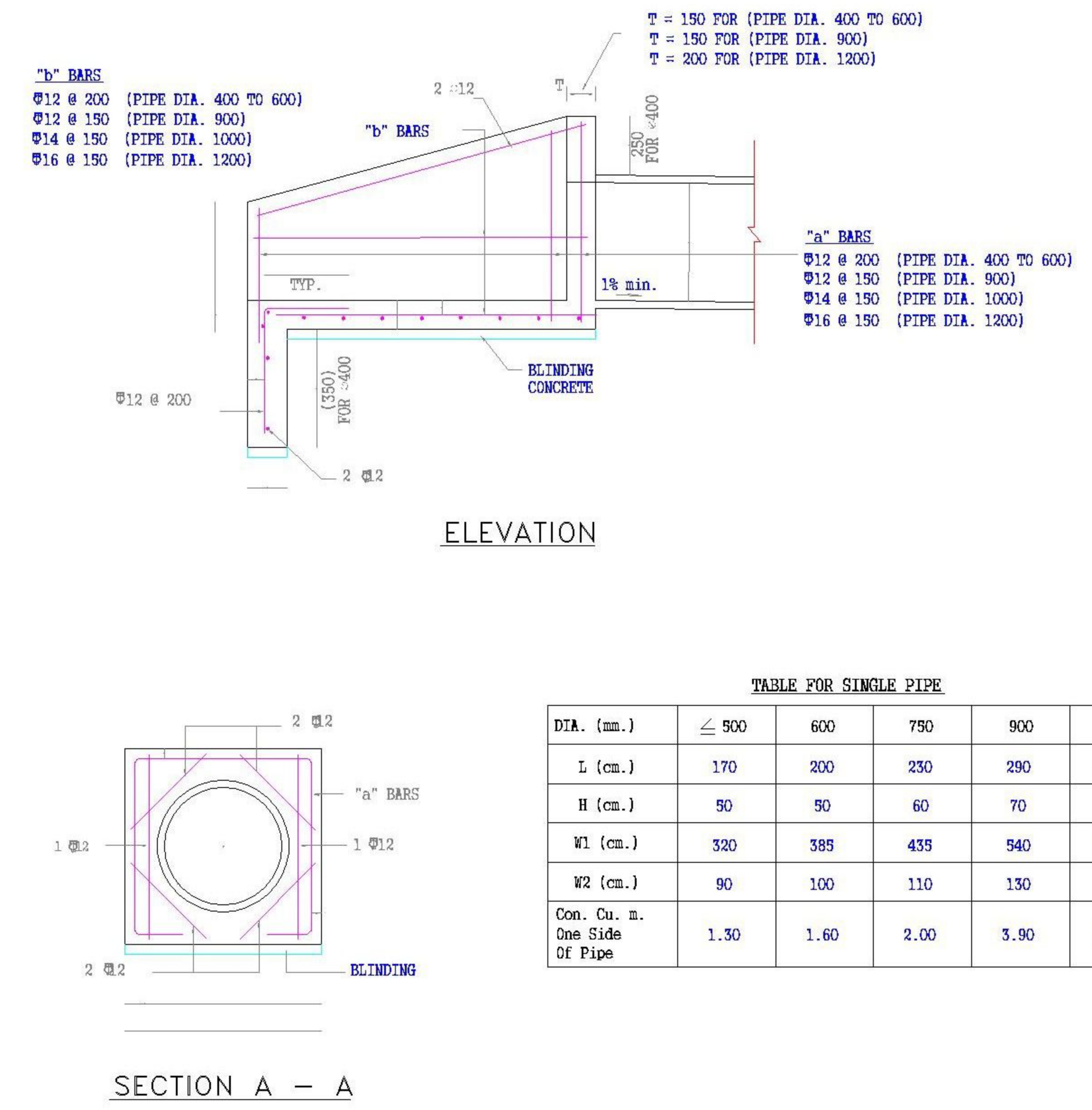
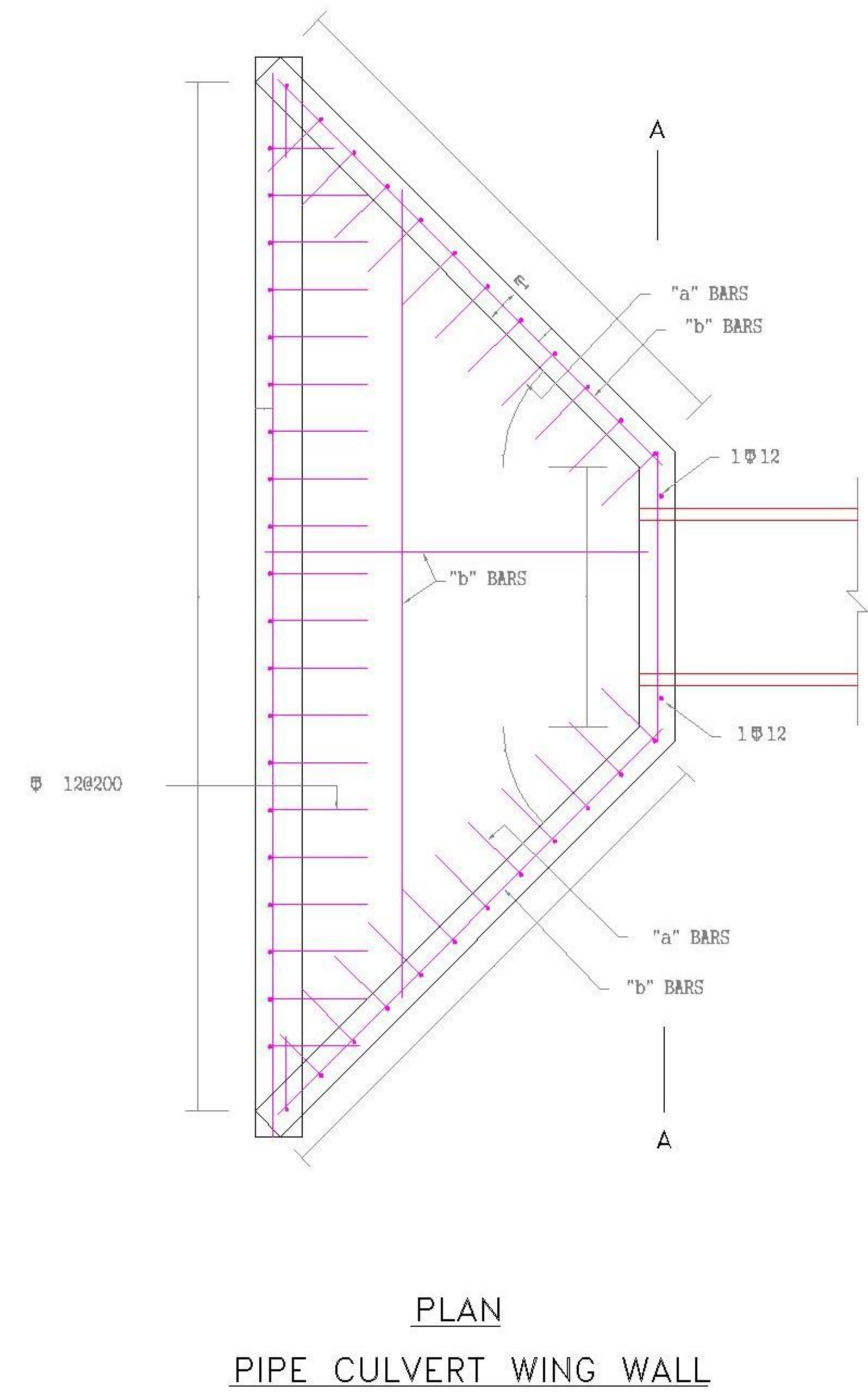
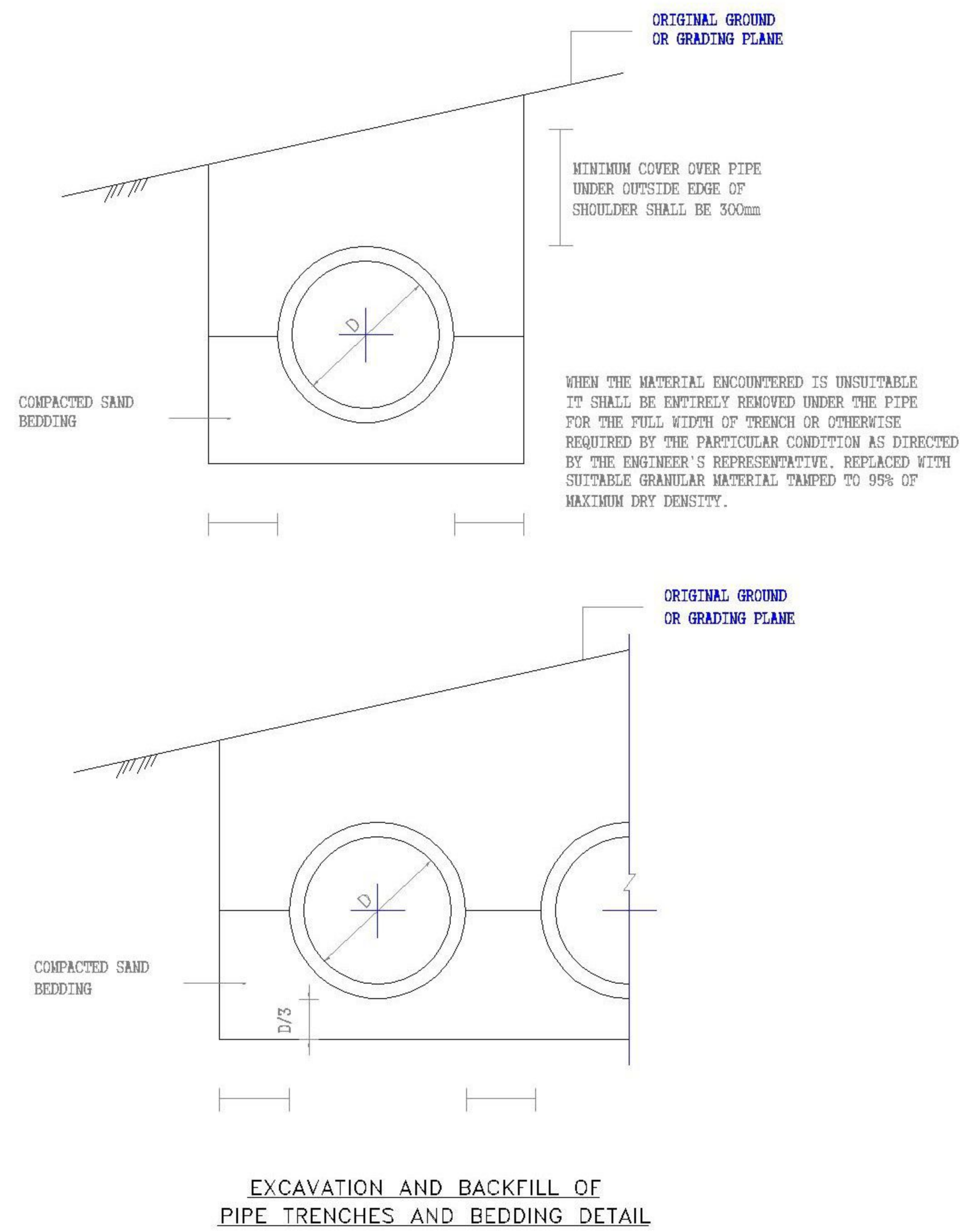
Petra

Petra Development & Tourism Region Authority

Petra Development & Tourism Region Authority

Main Road Petra

2020

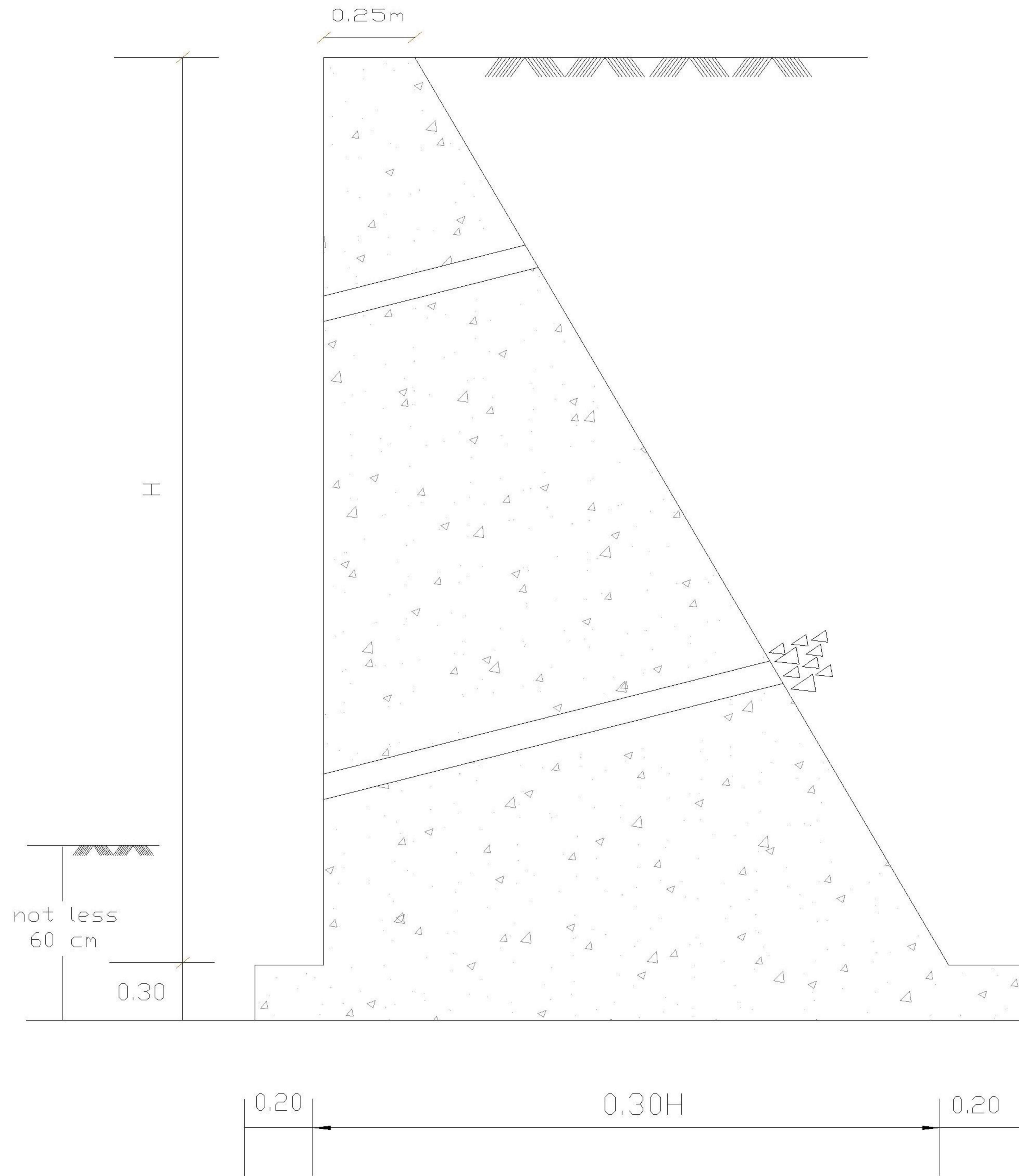


Petra
Petra Development & Tourism Region Authority

Main Trail Petra

DRAWING TITLE:
PIPE CULVERT
PLAN, SECTION & DETAILS

SCALE:	Dimension: mm.	DRAWING NO.
	IN (m)	



MASONRY RETAINING WALL - TYPICAL SEC.

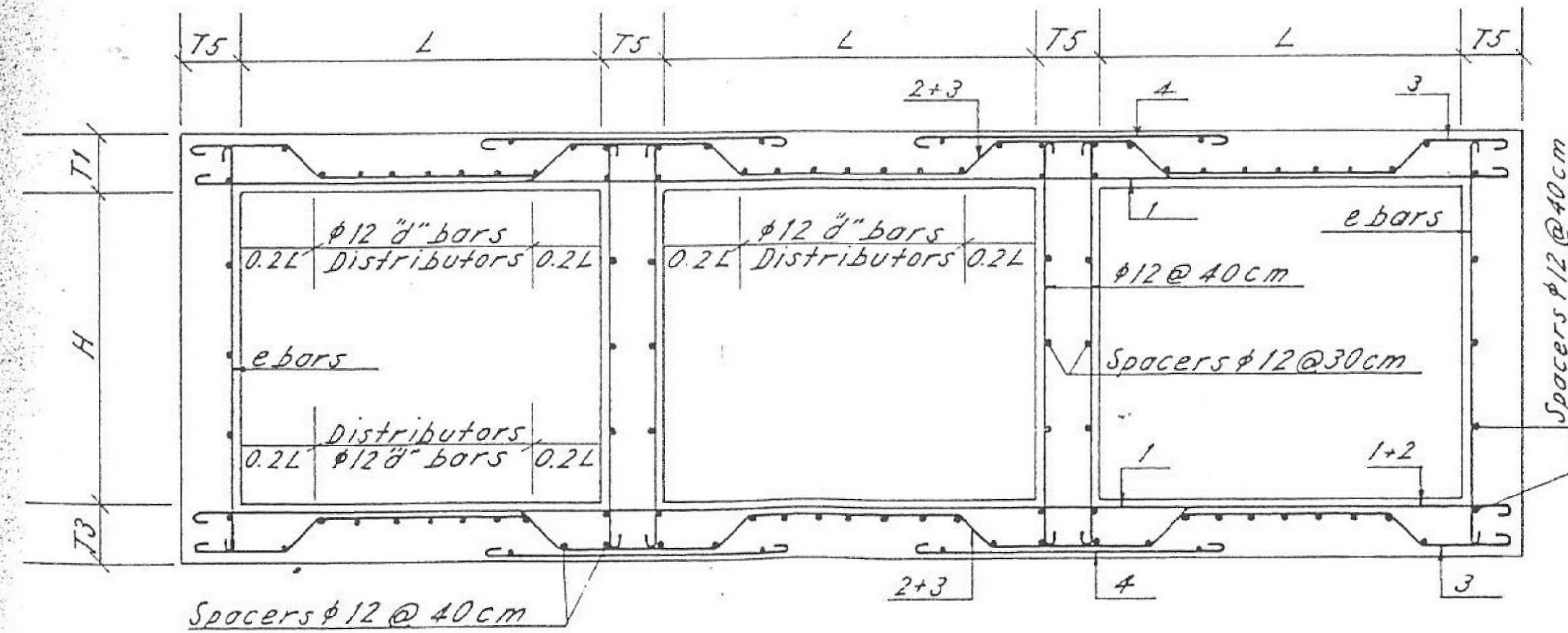


Main Trail Petra		
<small>DRAWING TITLE:</small> Retaining Wall / Typical Section		
<small>SCALE:</small>	<small>Dimension in:</small>	<small>DRAWING NO.:</small>
	IN (m)	

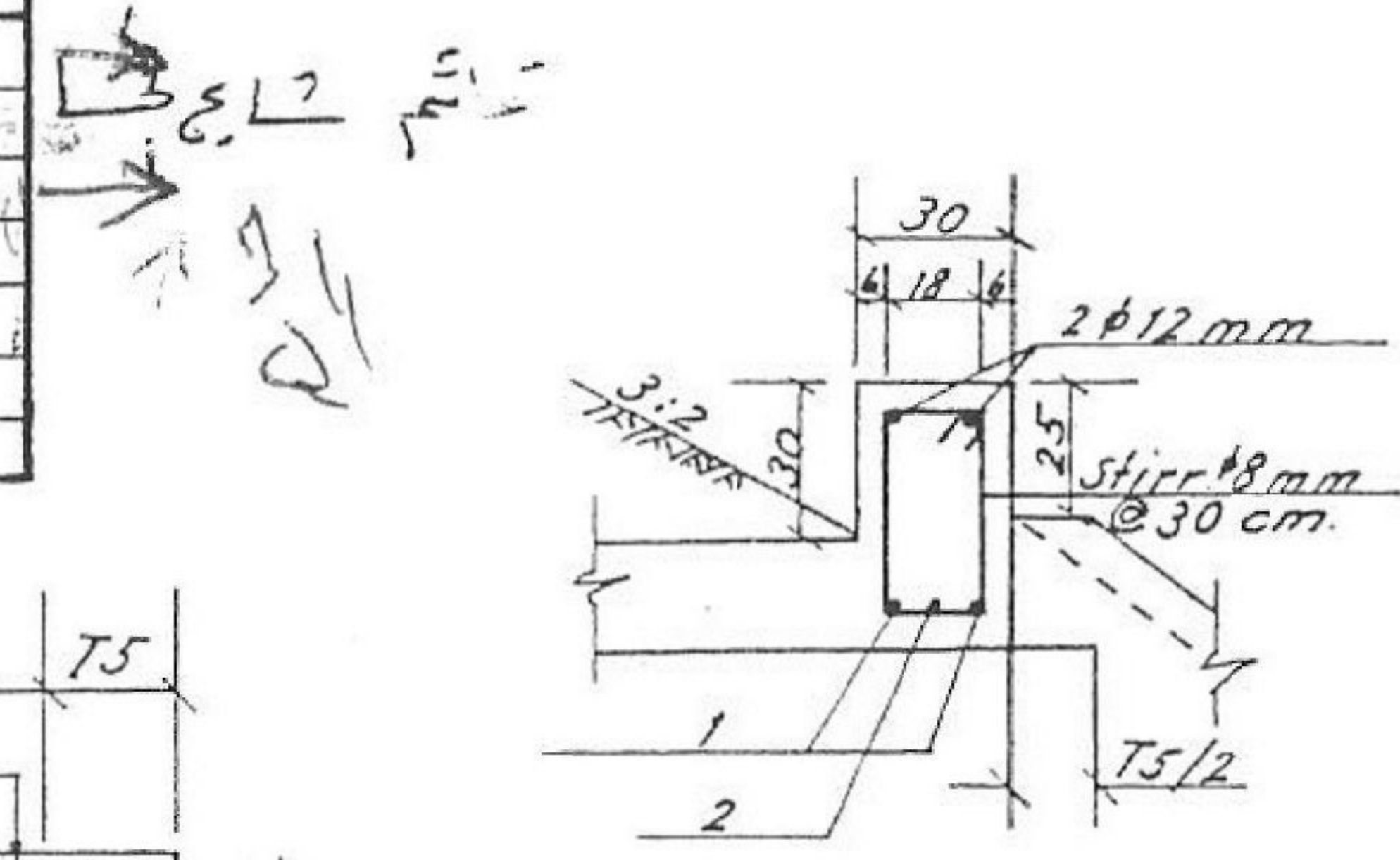
Culvert		Thicknesses			List of Reinforcing Steel												Quantities						
Clear Span	Height	Top Slab	Bottom Slab	Side Walls	1			2			3			4			"d" bars		Spacers	Concrete	Steel		
					φ	Spacing	Length	φ	Spacing	Length	φ	Spacing	Length	φ	Spacing	Length	Top Slab	Bottom Slab				φ	Spacing
M.	H	T1	T3	T5	mm	cm	m	mm	cm	m	mm	cm	m	mm	cm	m	mm	cm	mm	cm	№	m ³ /m	Kg/m
0.3 - 1.5 m Fill																							
1.0	1.0	22	23	18	12	20	3.75	12	40	3.95	12	40	4.05	12	20	0.85	12	12	12	25	42	2.394	150
	1.3	22	23	18	12	20	3.75	12	40	3.95	12	40	4.05	12	20	0.85	12	12	12	20	48	2.754	171
1.5	1.0	23	25	18	12	15	5.25	12	30	5.50	12	30	5.60	12	15	1.10	18	18	12	25	42	3.225	208
	1.5	23	25	18	12	15	5.25	12	30	5.50	12	30	5.60	12	15	1.10	18	18	12	20	48	3.585	228
	2.0	23	25	20	12	15	5.35	12	30	5.50	12	30	5.70	12	15	1.10	18	18	14	20	54	4.144	258
2.0	1.0	26	28	18	16	25	8.80	16	50	7.10	16	50	7.25	16	25	1.40	21	21	12	25	48	4.348	290
	1.5	26	28	18	16	25	8.80	16	50	7.10	16	50	7.25	16	25	1.40	21	21	14	25	54	4.708	313
	2.0	26	28	18	16	25	8.80	16	50	7.10	16	50	7.25	16	25	1.40	21	21	14	20	60	5.068	348
	2.5	26	28	20	18	25	8.90	16	50	7.20	18	50	7.35	18	25	1.45	21	21	16	20	72	5.672	402
2.5	1.0	30	32	20	16	20	8.40	16	40	8.75	18	40	8.90	16	20	1.70	24	24	12	25	48	5.948	393
	1.5	30	32	20	16	20	8.40	16	40	8.75	18	40	8.90	16	20	1.70	24	24	12	20	54	6.348	415
	2.0	30	32	20	16	20	8.40	16	40	8.75	18	40	8.90	16	20	1.70	24	24	14	25	60	6.748	441
	2.5	30	32	20	16	20	8.40	16	40	8.75	18	40	8.90	16	20	1.70	24	24	16	20	72	7.148	503
3.0	3.0	30	32	25	18	20	8.65	16	40	8.95	16	40	9.10	18	20	1.70	24	24	16	15	78	8.270	569
	1.0	33	35	25	18	25	10.15	18	50	10.55	18	50	10.75	18	25	2.0	27	27	12	25	72	7.800	522
	1.5	33	35	25	18	25	10.15	18	50	10.55	18	50	10.75	18	25	2.0	27	27	12	20	78	8.300	544
	2.0	33	35	25	18	25	10.15	18	50	10.55	18	50	10.75	18	25	2.0	27	27	14	25	84	8.800	568
	2.5	33	35	25	18	25	10.15	18	50	10.55	18	50	10.75	18	25	2.0	27	27	16	20	98	9.300	633
3.0	33	35	25	18	25	10.15	18	50	10.55	18	50	10.75	18	25	2.0	27	27	16	15	102	9.800	693	

General Notes

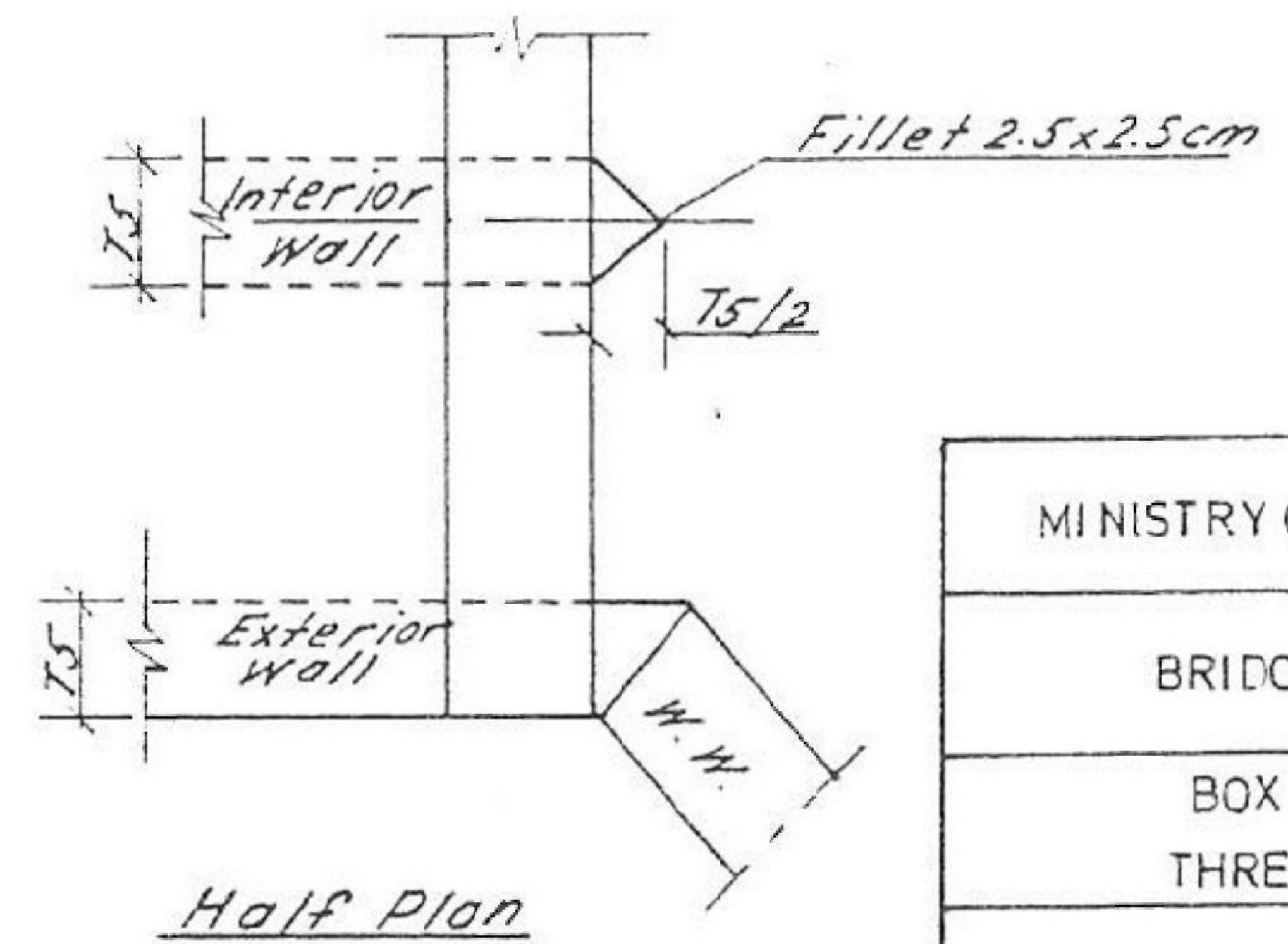
- Number of "d" bars indicated in the Reinforcing list are for the distributors shown on the typical section only
- Number of spacers bars φ12mm indicated in the reinforcing list are for the rest of the longitudinal bars shown on the typical section.
- Distributors "d" bars.
Cover 0' to span length top slab = $\frac{100}{L}$ = max. 50% (L in feet)
Cover 0' to span length bott. slab = $\frac{50}{L}$ = min. 25%
Cover exceeding span length top & bott. = min. 25%
- Special Coverage, where culverts are constructed adjacent to salt water, thicknesses of concrete shall be increased to provide 5cm coverage between steel & exposed surfaces. Where scour is anticipated, thickness of bottom slab shall be increased to provide 5cm coverage between steel and exposed surface.
- Min. concrete cover 2.5cm.
- Expansion Joints. None in invert slab. In walls and top slab of culverts at 15m ± ctrs. and additional joints as directed by the engineer at locations of change in foundation material.
- Quantities are for estimating only.



Typical Section



Detail D



Half Plan

MINISTRY OF PUBLIC WORKS	
BRIDGE SECTION	
BOX CULVERTS THREE OPENING	
SHEET No. 5	



Main Trail Petra	
DRAWING TITLE: Box Culverts	
SCALE: 1:100	DRAWING NO:



