

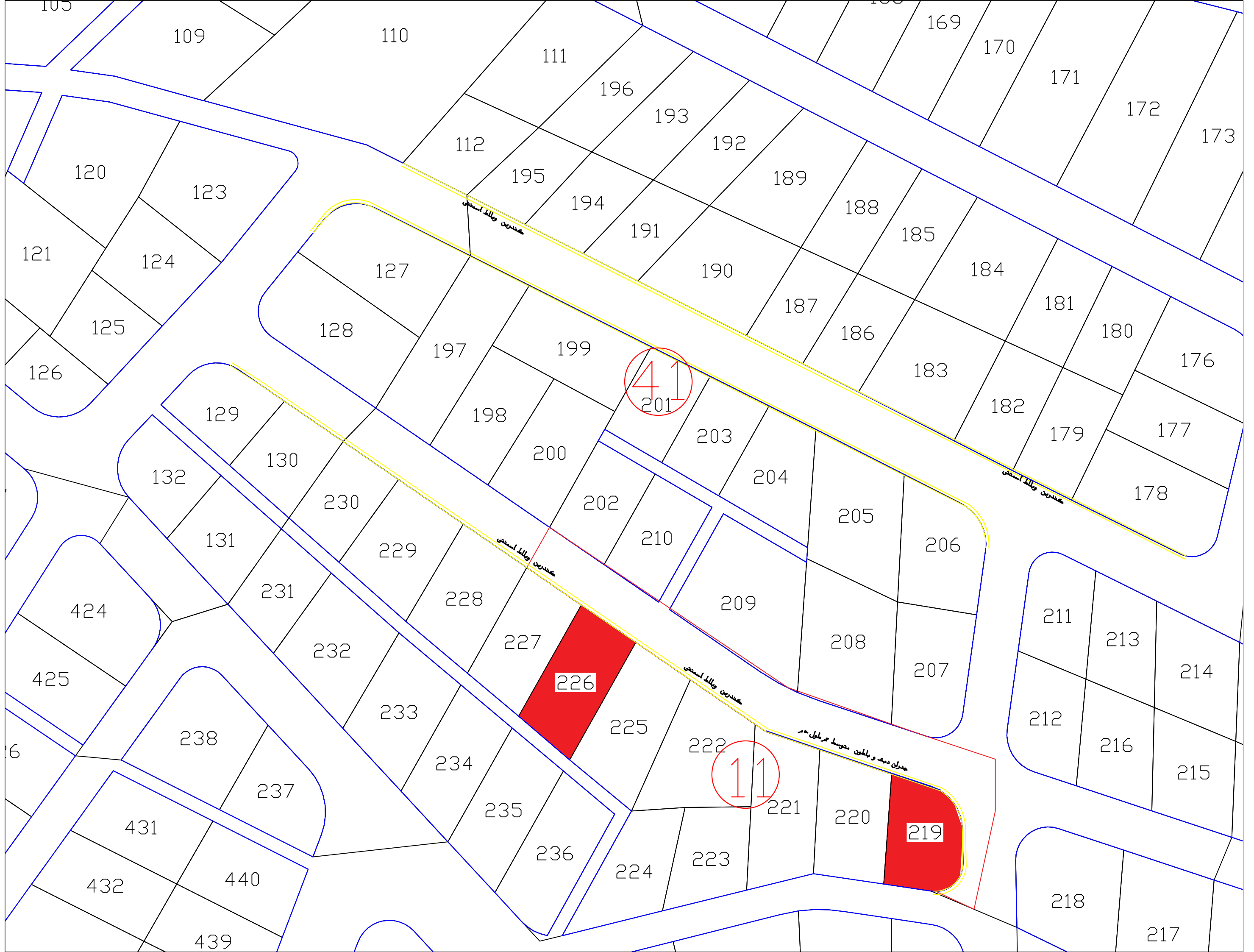


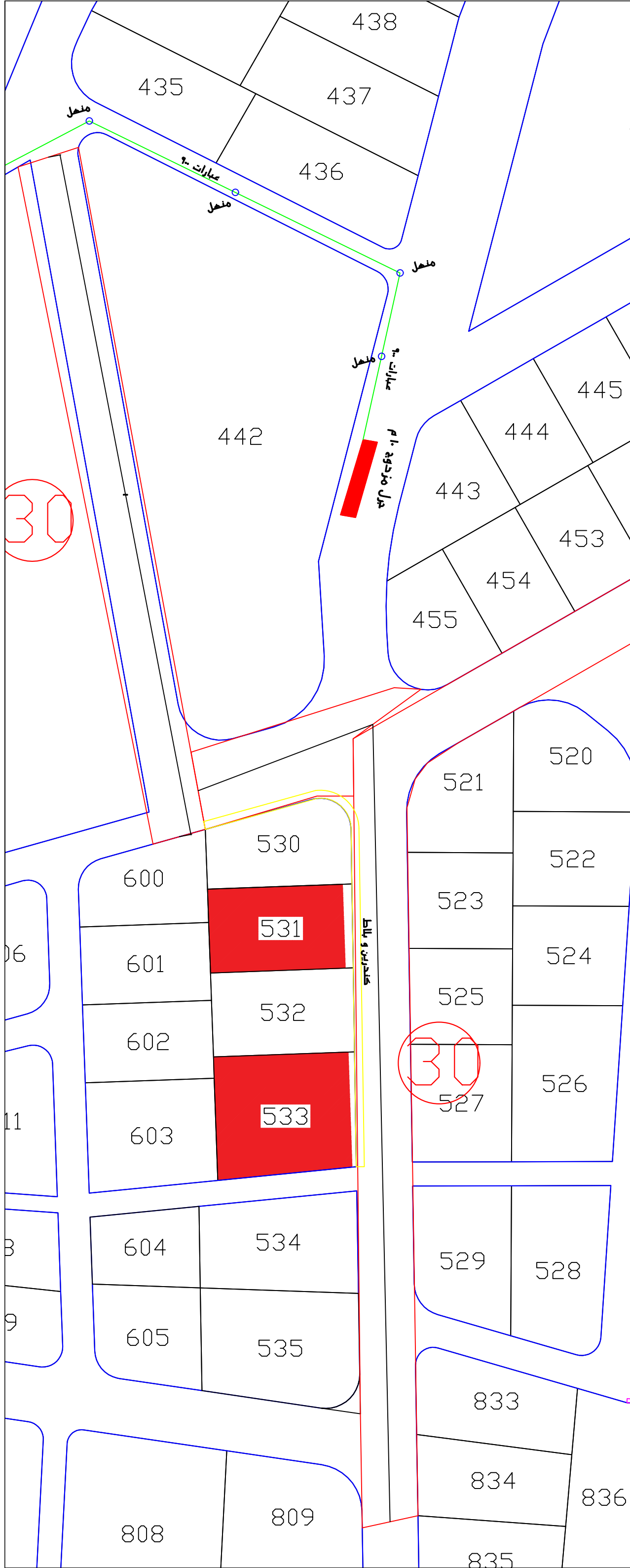
Petra Development & Tourism Region Authority

سلطة اقليم البترا التنموي السياحي

Wadi Mousa Bqaah

2023





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جبل مزدوج ١٠ م

كاديس و لالط

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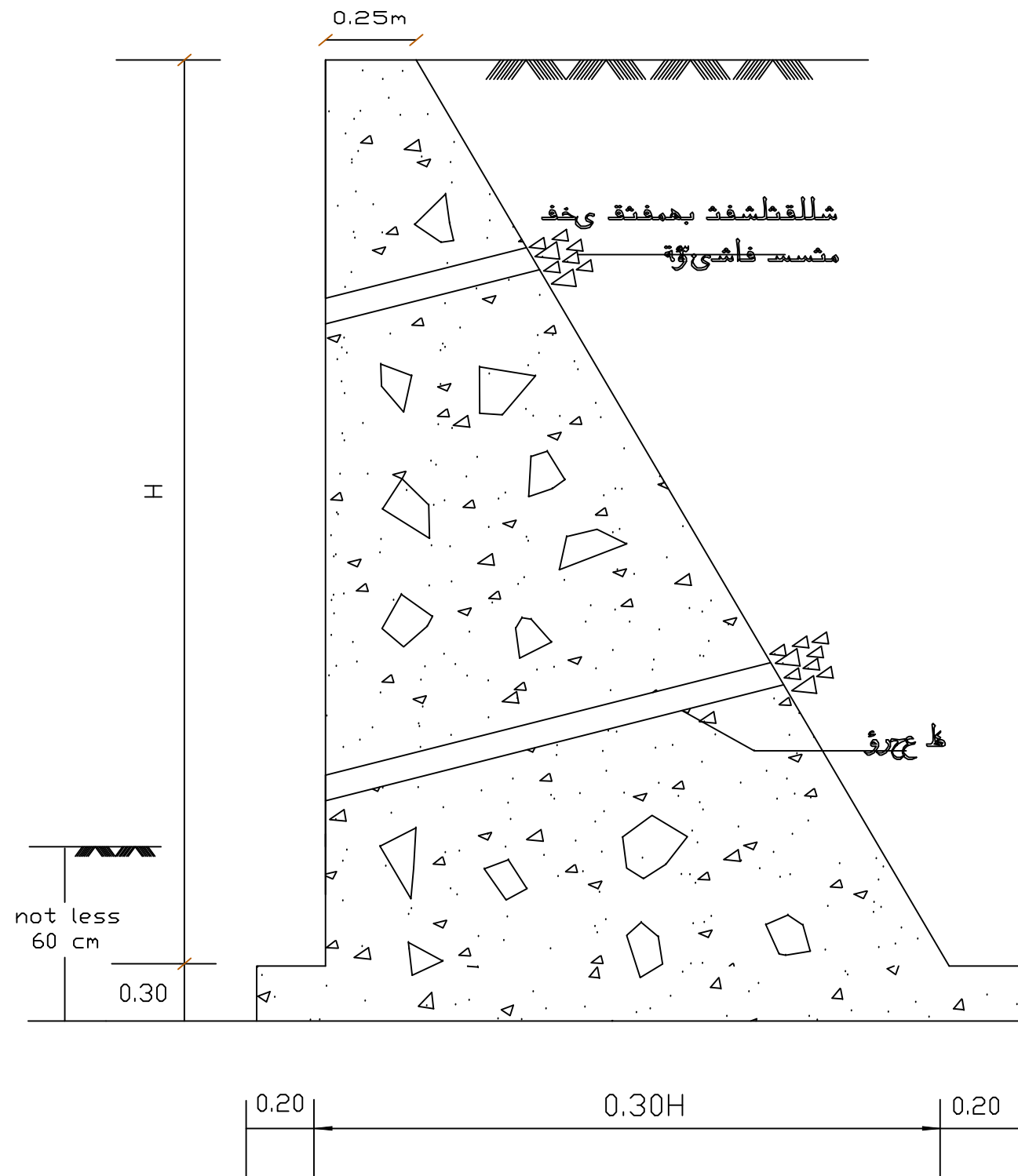
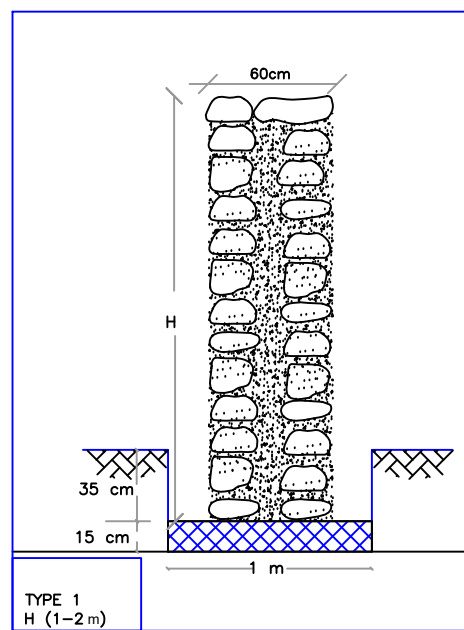
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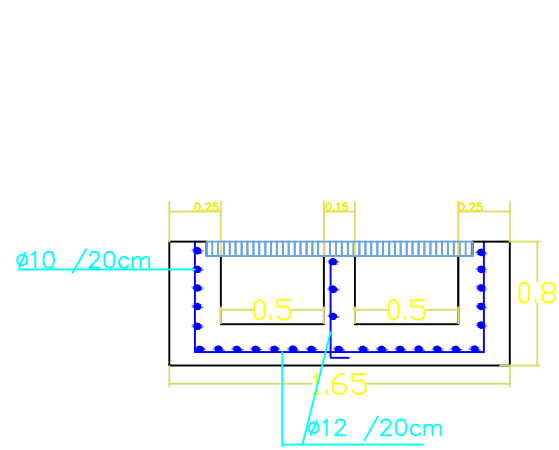
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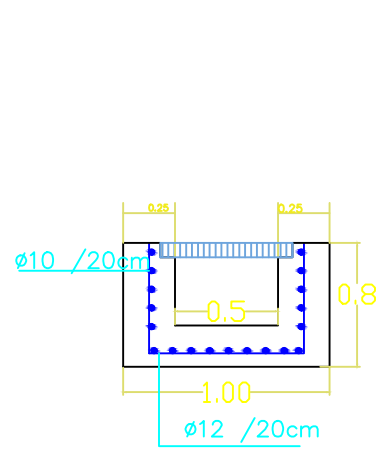




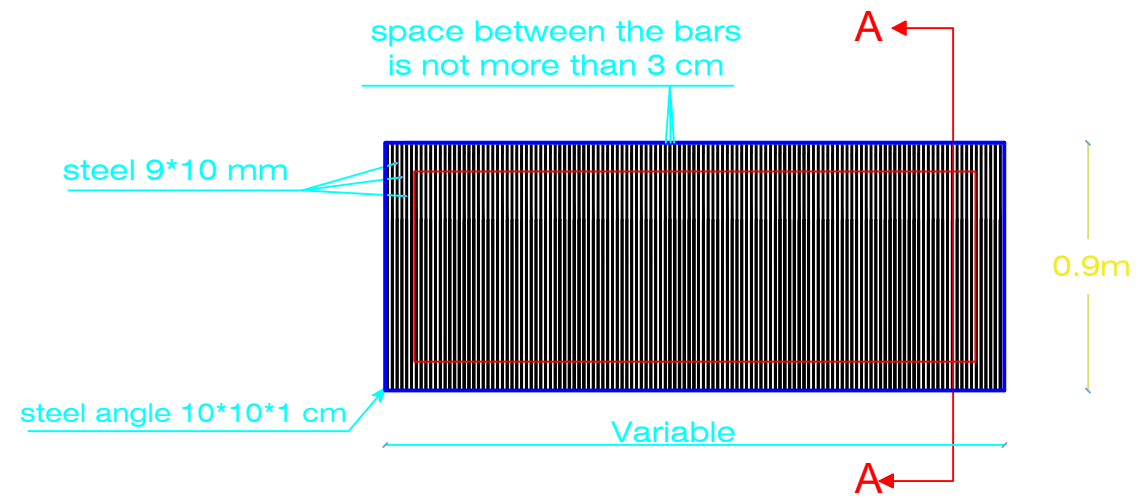
MASONRY RETAINING WALL - TYPICAL SEC.



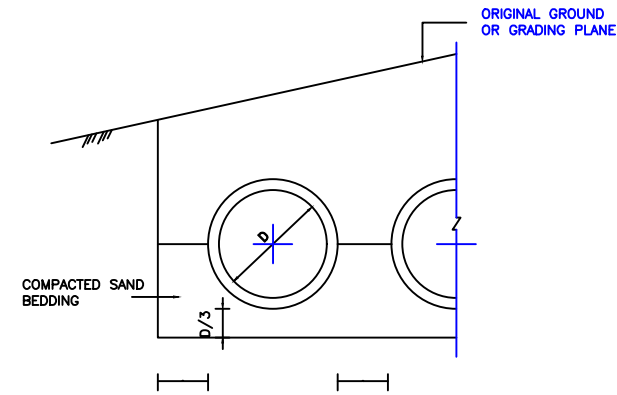
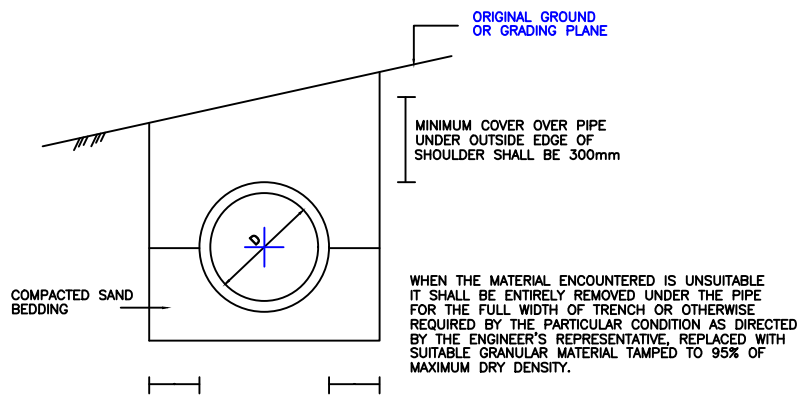
section B-B



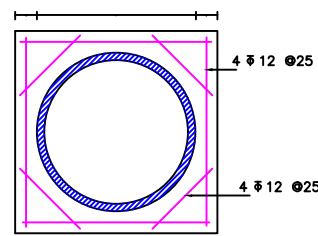
section A-A



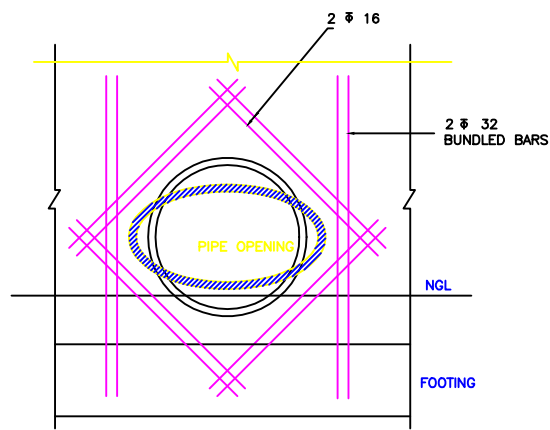
Grills Details



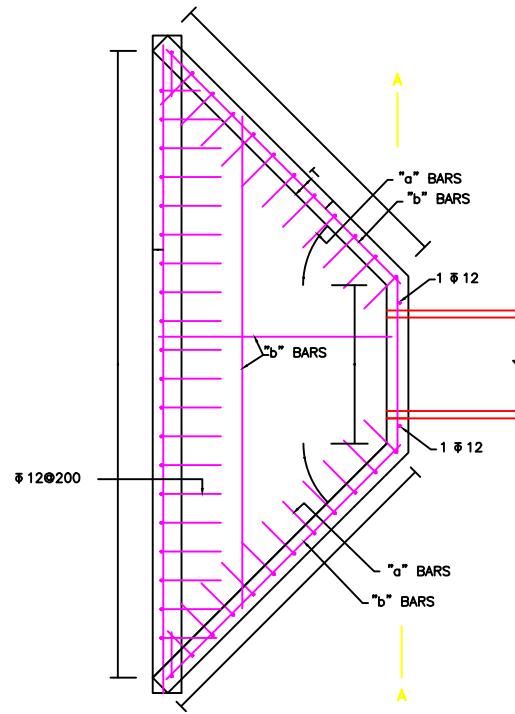
EXCAVATION AND BACKFILL OF PIPE TRENCHES AND BEDDING DETAIL



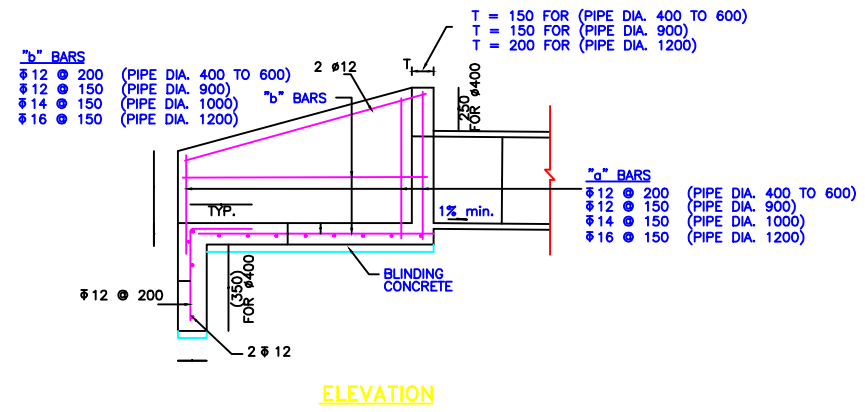
REINFORCED CONCRETE ENCASMENT FOR PIPE CULVERT AND OUTLET PIPE



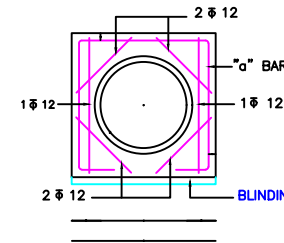
DETAIL IN RETAINING WALL AT PIPE INLET AND OUTLET



PLAN PIPE CULVERT WING WALL



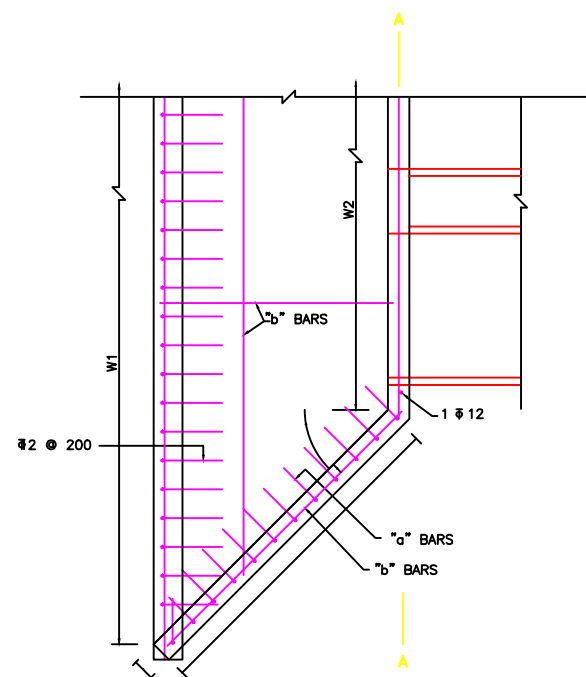
ELEVATION



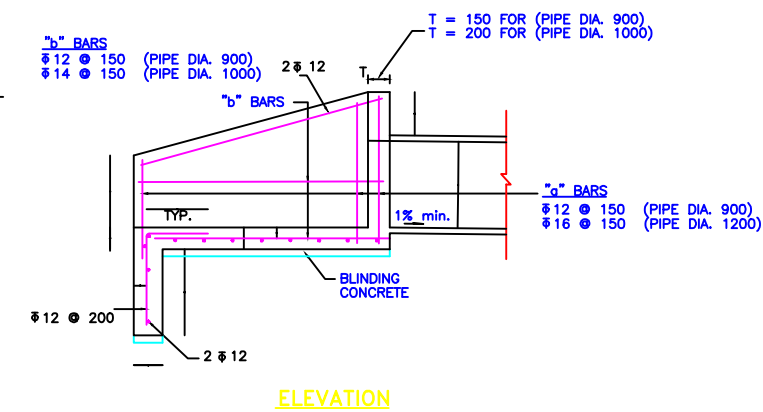
SECTION A - A

TABLE FOR SINGLE PIPE

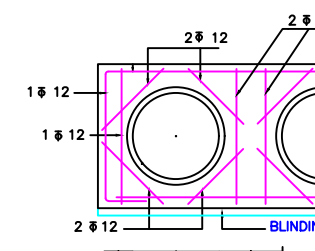
DIA. (mm.)	≤ 500	600	750	900	1000
L (cm.)	170	200	230	290	315
H (cm.)	50	50	60	70	75
W1 (cm.)	320	385	435	540	585
W2 (cm.)	90	100	110	130	140
Con. Cu. m. One Side Of Pipe	1.30	1.60	2.00	3.90	4.15



PLAN MULTIPLE PIPE CULVERT HEAD WALL SKEW 0° TO 45°



ELEVATION

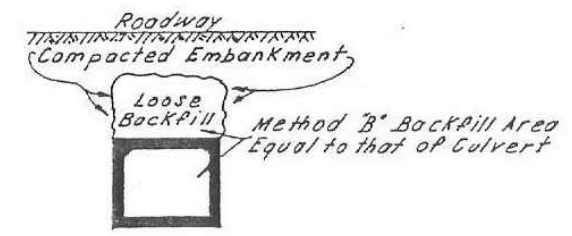
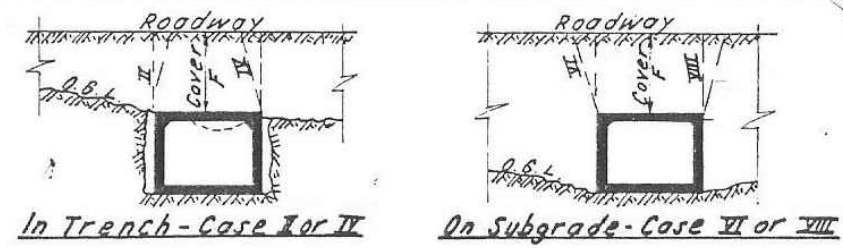


SECTION A - A

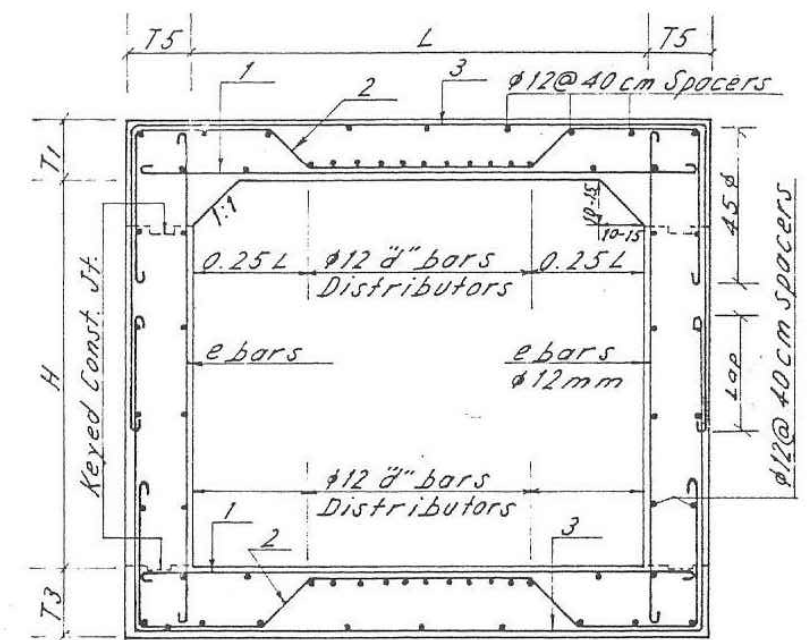
TABLE FOR MULTIPLE PIPE

DIA. (mm.)	No. OF PIPES	L (cm.)	H (cm.)	W1 (cm.)	W2 (cm.)	Con. Cu. m.
1000	2	315	75	735	290	4.30
	3	315	75	885	440	5.25
1200	2	370	80	865	340	5.90
	3	370	80	1045	520	7.20

Culvert		Thicknesses			List of Reinforcing Steel												Quantities		Max. Cover					
Clear Span	Height	Top Slab	Bot. Slab	Side Walls	1			2			3			"d" bars		"e" bars		Spacers	Concrete	Steel	Cover II or VIII	Cover IV	Cover VI	Area
					φ	Spacing	Length	φ	Spacing	Length	φ	Spacing	Length	No	No	mm	cm							
m	m	cm	cm	cm	mm	cm	m	mm	cm	m	mm	cm	m	mm	cm	No	No	mm	cm	No	m	m	m	m ²
L	H	T1	T3	T5																F	F	F	A	
Single Box Culverts																								
2.45	2.15	30	30	27	18	20	3.32	18	20	4.18	18	20	6.25	8	8	12	30	38	3.00	342	8.50	13.50	5.80	5.25
		32	35	30	22	25	3.85	22	25	5.00	22	25	6.25	8	8	12	30	38	3.34	390	9.75	18.00	6.40	
2.45	2.45	23	20	20	18	20	3.22	18	20	4.45	18	20	6.20	8	7	12	40	42	2.20	275	3.40	3.40	2.80	6.00
		23	25	20	18	20	3.22	18	20	4.45	18	20	6.20	8	6	12	40	42	2.35	275	4.90	5.50	3.70	
		28	27	23	18	20	3.28	18	20	4.50	18	20	6.30	7	7	12	40	42	2.70	276	6.10	7.30	4.60	
		27	28	25	18	25	3.28	18	25	4.70	18	25	6.45	8	8	12	30	42	2.85	320	7.00	9.15	4.90	
3.00	1.50	30	30	27	18	20	3.32	18	20	4.18	18	20	6.25	8	8	12	30	42	3.15	354	8.50	13.50	5.80	4.50
		32	35	30	22	25	3.85	22	25	5.00	22	25	6.75	8	8	12	30	42	3.50	402	9.75	18.00	6.40	
3.00	1.80	25	23	23	18	25	3.85	18	25	5.35	18	25	6.10	10	9	12	40	38	2.42	301	2.40	2.40	2.10	5.40
		26	26	25	18	25	3.88	18	25	5.37	18	25	6.15	11	9	12	40	38	2.80	327	3.10	3.10	2.40	
		27	27	28	18	25	3.90	18	25	5.40	18	25	6.17	11	9	12	40	38	2.67	329	3.70	3.70	3.10	
		28	30	28	18	25	3.90	18	25	5.42	18	25	6.20	11	9	12	30	38	2.81	330	4.60	4.90	3.70	
3.00	2.15	25	23	23	18	25	3.85	18	25	5.35	18	25	6.70	10	9	12	40	40	2.52	311	2.40	2.40	2.10	6.45
		26	26	25	18	25	3.88	18	25	5.37	18	25	6.45	11	9	12	40	40	2.75	338	3.10	3.10	2.40	
		27	27	28	18	25	3.90	18	25	5.40	18	25	6.47	11	9	12	40	40	2.84	341	3.70	3.70	3.10	
		28	30	28	18	25	3.90	18	25	5.42	18	25	6.50	11	9	12	30	40	2.98	344	4.60	4.90	3.70	
3.00	2.45	25	23	23	18	25	3.85	18	25	5.35	18	25	6.70	10	9	12	40	40	2.68	318	2.10	2.10	1.80	7.35
		26	26	25	18	25	3.88	18	25	5.37	18	25	6.75	11	9	12	40	40	2.93	345	3.10	3.10	2.40	
		27	27	28	18	25	3.90	18	25	5.40	18	25	6.75	11	9	12	40	40	3.01	348	3.70	3.70	3.10	
		30	30	28	22	35	4.20	22	35	5.60	22	35	6.85	10	10	12	30	40	3.22	375	4.60	4.90	3.70	
3.00	2.75	32	32	28	22	30	4.25	22	30	6.72	22	30	6.95	10	10	12	30	40	3.47	405	5.50	6.10	4.30	8.25
		25	23	23	18	25	3.85	18	25	5.35	18	25	7.00	10	9	12	40	44	2.80	327	2.10	2.10	1.80	
		26	26	25	18	25	3.88	18	25	5.35	18	25	7.05	11	9	12	40	44	3.05	358	2.10	3.10	2.40	
		27	27	28	18	25	3.90	18	25	5.40	18	25	7.05	11	9	12	40	44	3.20	359	3.70	3.70	3.10	
3.00	3.00	30	30	28	22	35	4.20	22	35	5.60	22	35	7.15	10	10	12	30	44	3.37	387	4.60	4.90	3.70	9.00
		32	32	28	22	30	4.25	22	30	5.70	22	30	7.25	10	10	12	30	44	3.85	417	5.50	6.10	4.30	
		35	37	32	22	25	4.33	22	25	5.80	22	25	7.40	12	12	12	30	44	4.20	498	7.60	9.75	5.50	
		25	23	23	18	25	3.85	18	25	5.35	18	25	7.30	10	9	12	40	48	2.95	339	2.10	2.10	1.80	
3.65	1.80	26	26	25	18	25	3.88	18	25	5.35	18	25	7.35	11	9	12	40	48	3.25	368	3.10	3.10	2.40	8.53
		27	27	26	18	25	3.90	18	25	5.40	18	25	7.35	11	9	12	40	48	3.33	368	3.70	3.70	3.10	
		30	30	28	22	35	4.20	22	35	5.65	22	35	7.45	10	10	12	30	48	3.55	399	4.60	4.90	3.70	
		32	32	28	22	30	4.25	22	30	5.70	22	30	7.55	10	10	12	30	48	3.85	429	5.50	6.10	4.30	
3.65	2.15	35	37	32	22	25	4.33	22	25	5.80	22	25	7.70	12	11	12	30	48	4.37	507	7.60	9.75	5.50	7.85
		25	25	25	18	25	4.47	18	25	5.95	18	25	7.15	12	11	12	40	48	3.07	350	2.10	2.10	1.80	
		30	28	26	18	25	4.52	18	25	6.05	18	25	7.25	12	11	12	40	48	3.25	382	2.70	2.70	2.40	
		30	30	28	22	30	4.85	22	30	6.35	22	30	7.35	12	12	12	40	48	3.65	439	3.70	3.70	3.10	
3.65	2.15	35	32	30	22	30	4.90	22	30	6.40	22	30	7.45	13	13	12	40	48	3.95	478	4.60	4.90	4.00	7.85
		27	25	25	18	25	4.47	18	25	5.95	18	25	7.45	12	11	12	40	48	3.25	357	2.10	2.10	1.80	
		30	28	26	18	25	4.52	18	25	6.05	18	25	7.55	12	11	12	40	48	3.55	388	2.70	2.70	2.40	
		32	30	28	22	30	4.85	22	30	6.35	22	30	7.65	12	12	12	40	48	3.85	426	3.70	3.70	3.10	
3.65	2.15	35	32	30	22	30	4.90	22	30	6.40	22	30	7.80	13	13	12	40	48	4.15	487	4.60	4.90	4.00	7.85



Under Loose Backfill Case IV or VIII

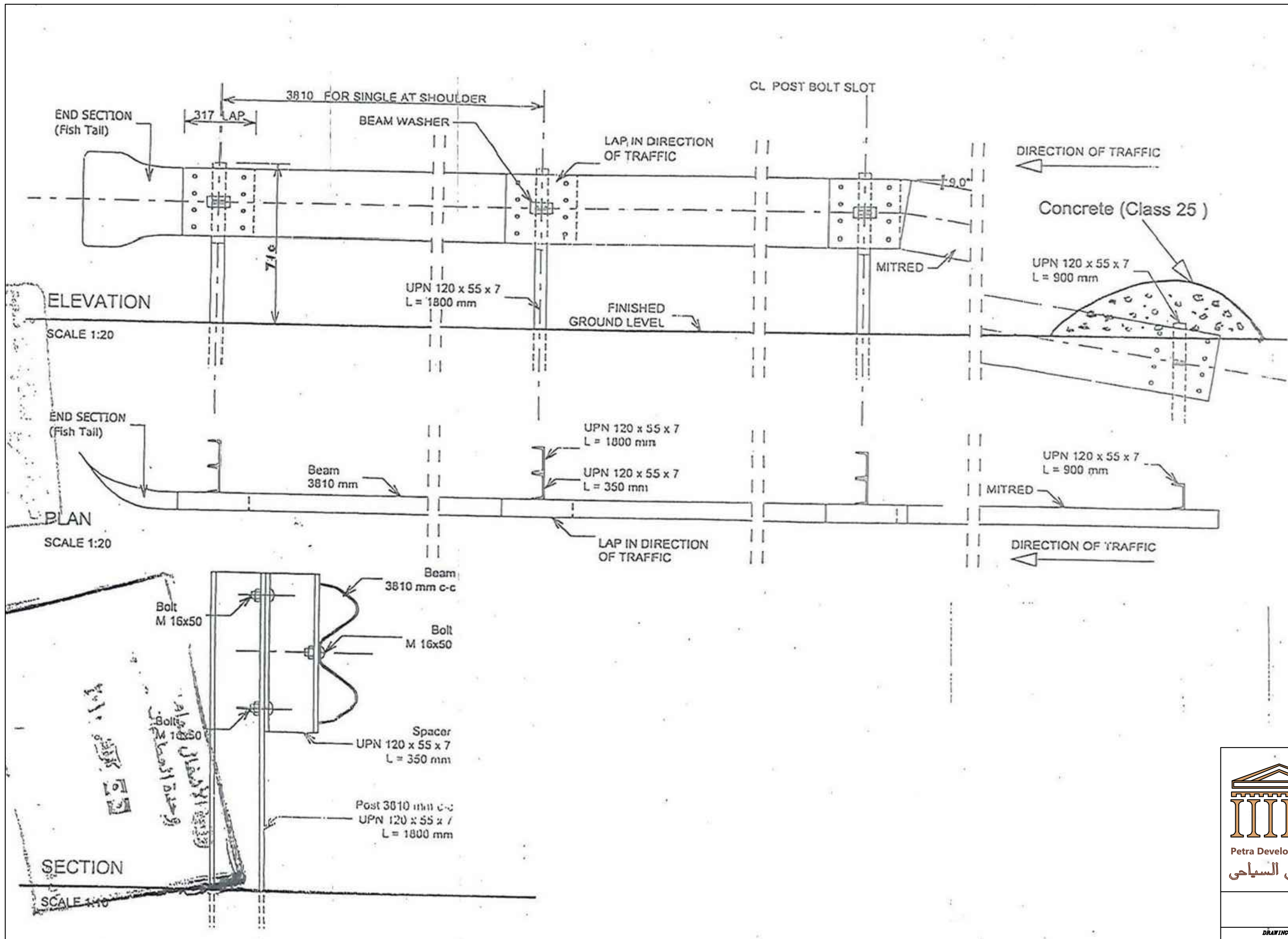


Typical Section

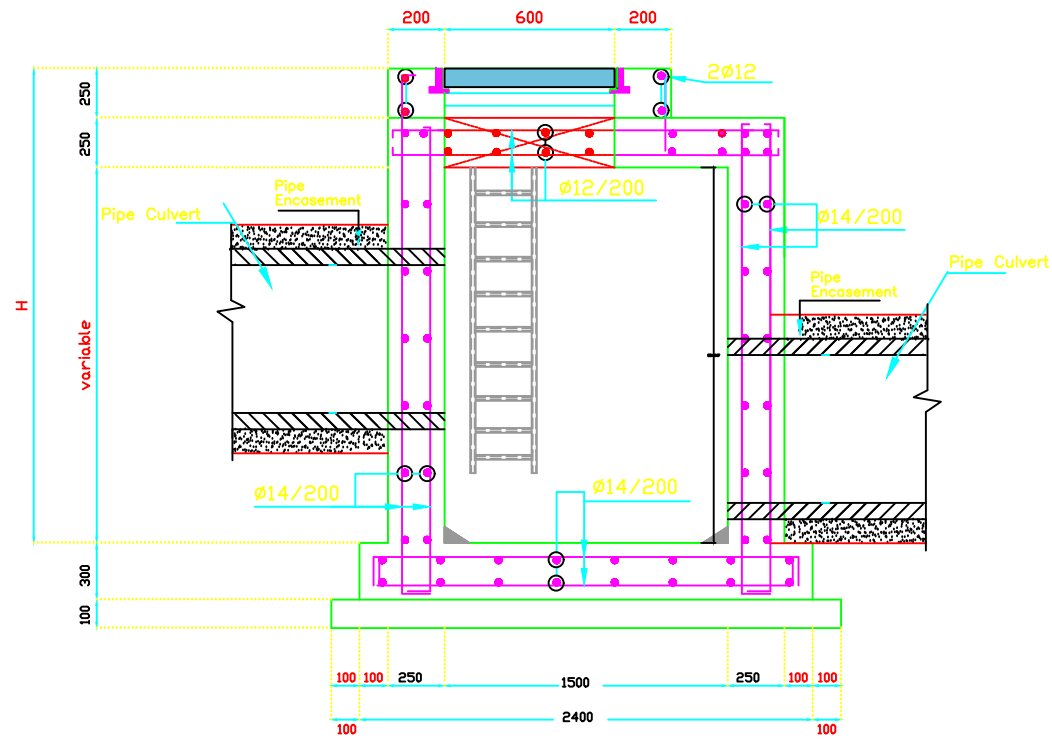
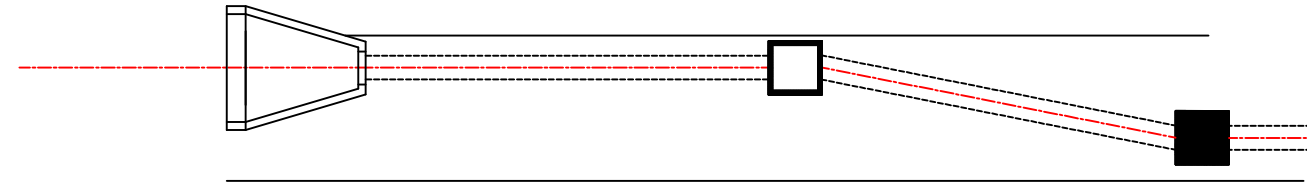
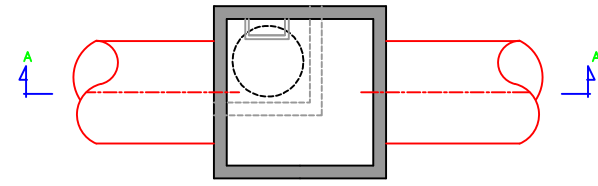
MINISTRY OF PUBLIC WORKS	
BRIDGE SECTION	
BOX CULVERTS	
ONE OPENING	
SHEET No. 10	1-1-1972


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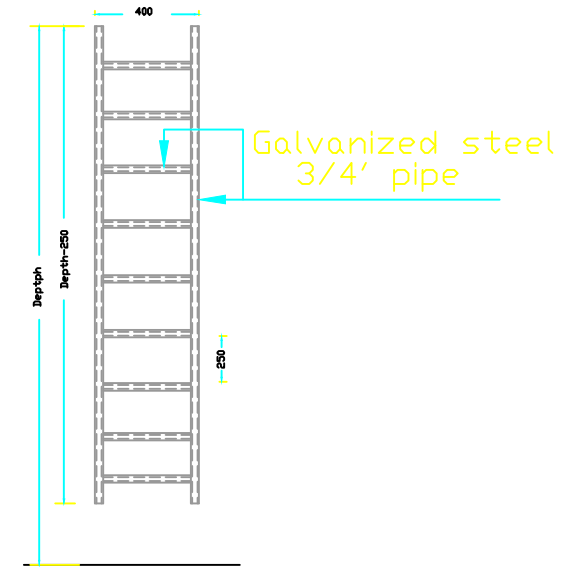
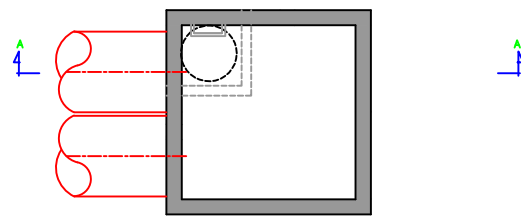
Wadi Mousa	
DRAWING TITLE	
box culvert / Typical Section	
SCALE	DRAWING NO.
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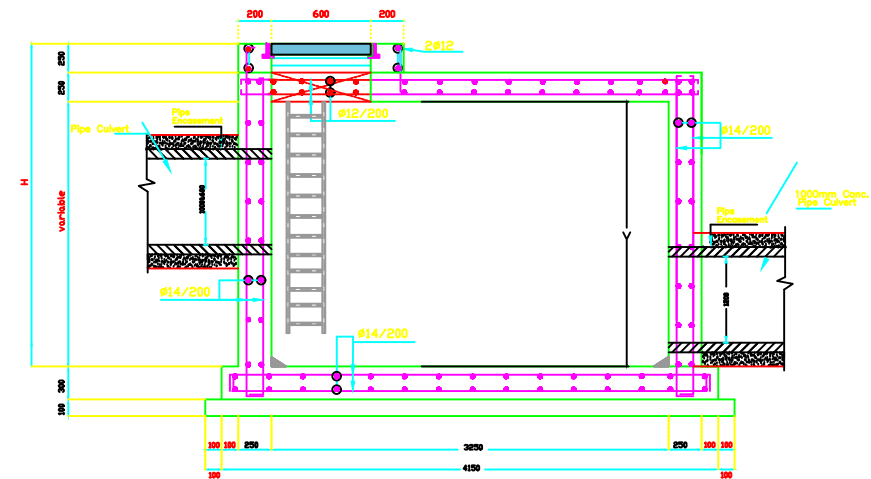
Wadi Mousa	
DRAWING TITLE: Guardrail Details	
SCALE	DRAWING NO.
IN (m)	



SECTION A-A
SCALE 1/20



THE INSIDE STEEL STAIR DETAIL



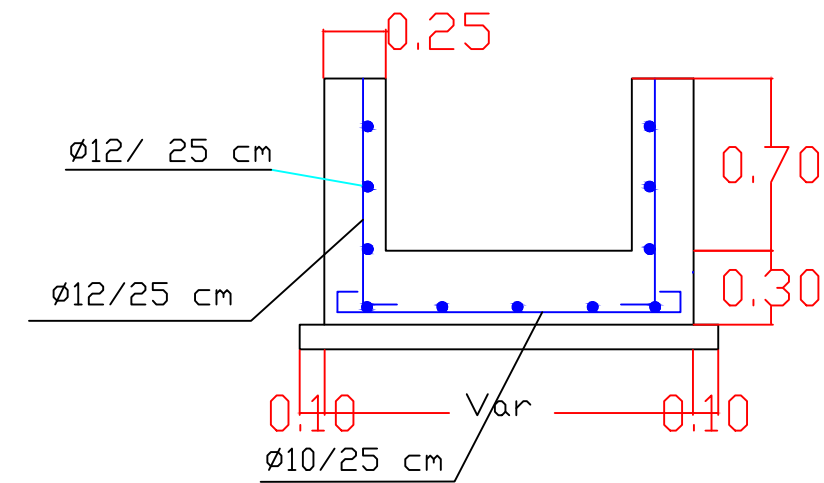
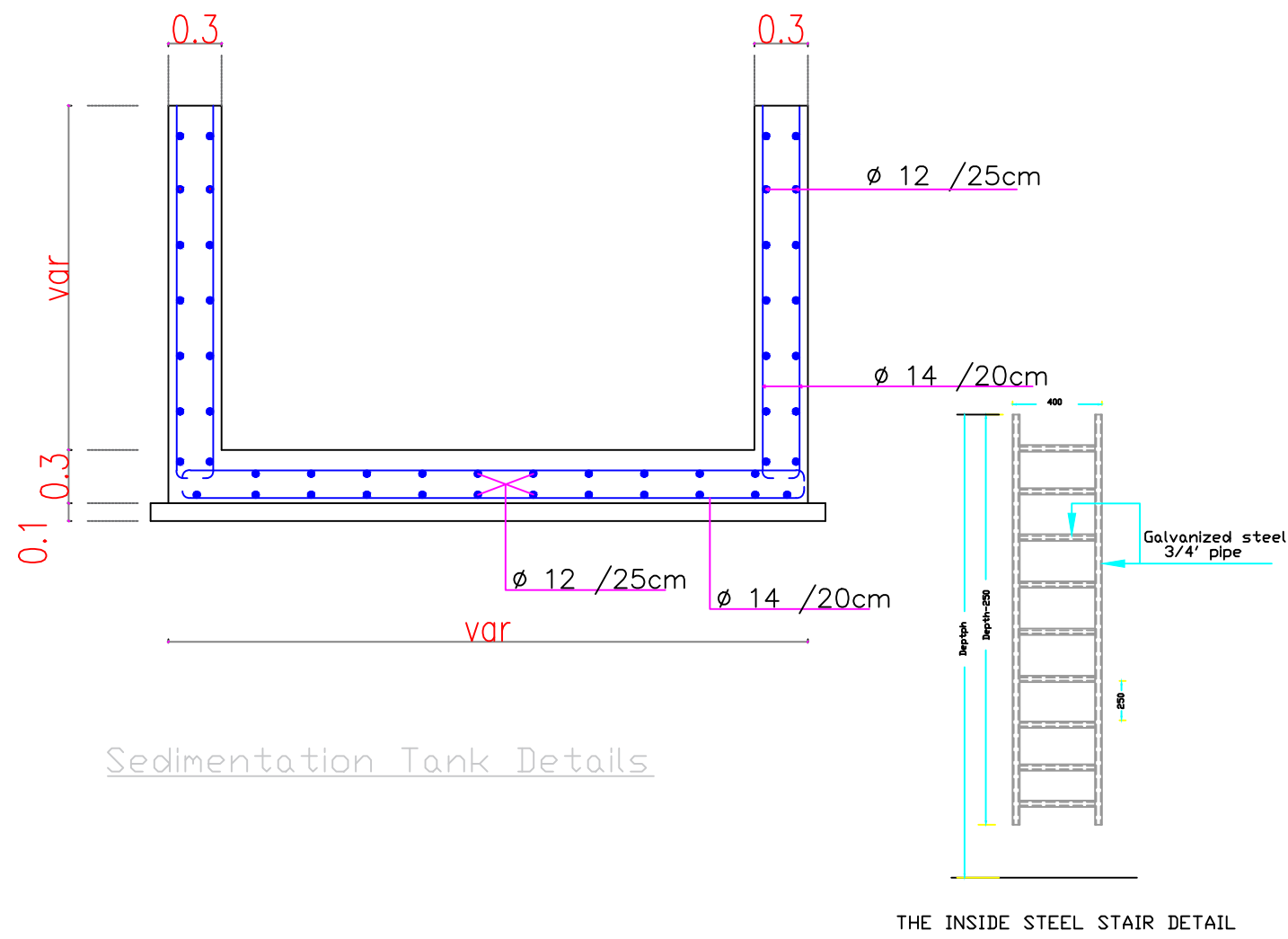
SECTION A-A
(FOR 1500 PIPE MANHOLES)

iiiiPetra
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سلطة اقليم البترا للتنمية السياحي

Wadi Mousa

DRAWING TITLE:
PIPE MANHOLE

DATE	REVISION NO.	DRAWING NO.
	1	



NO.	REVISIONS	DATE	BY	CHKD	APPROVED