

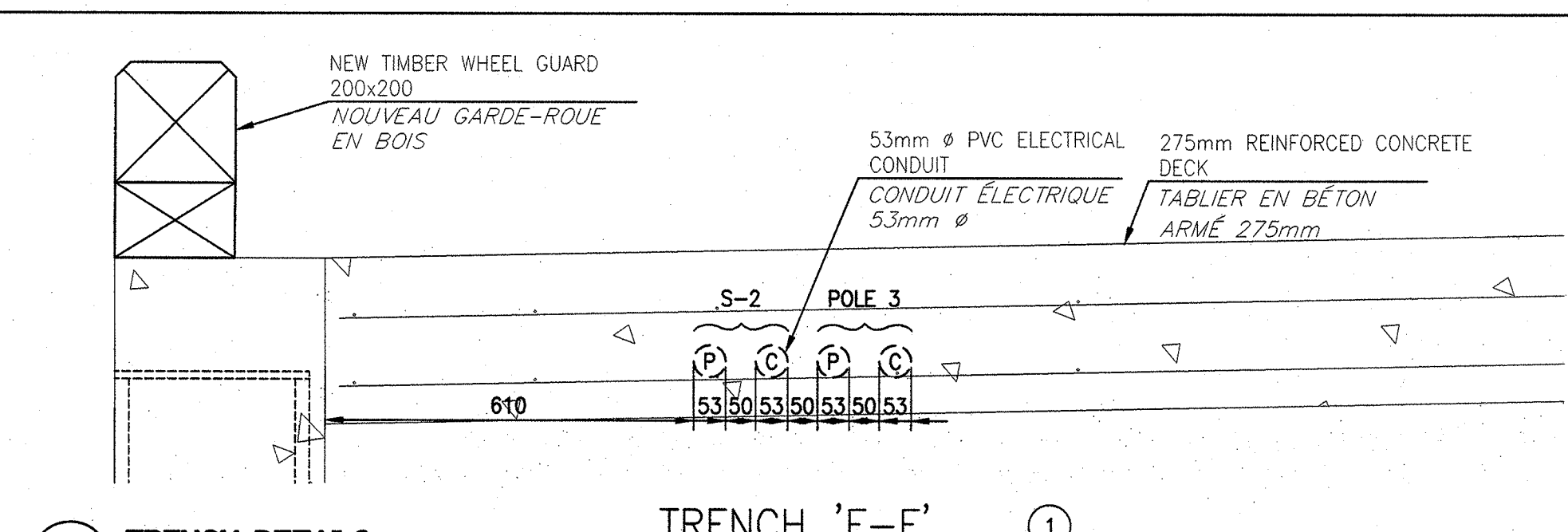
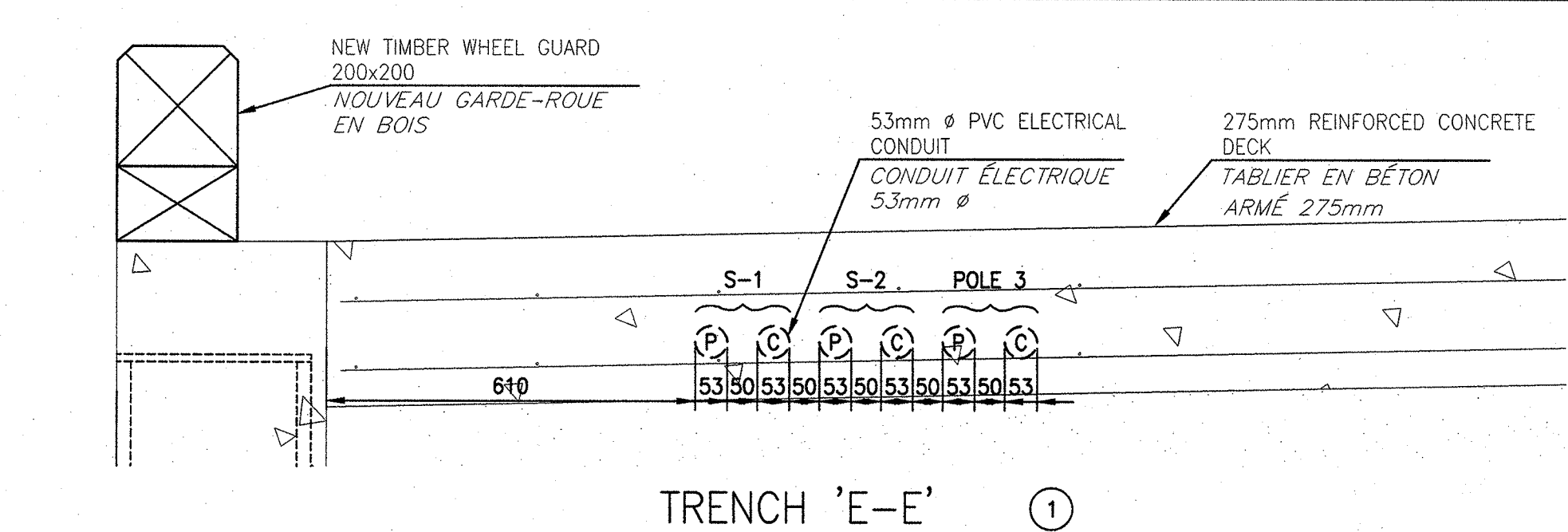
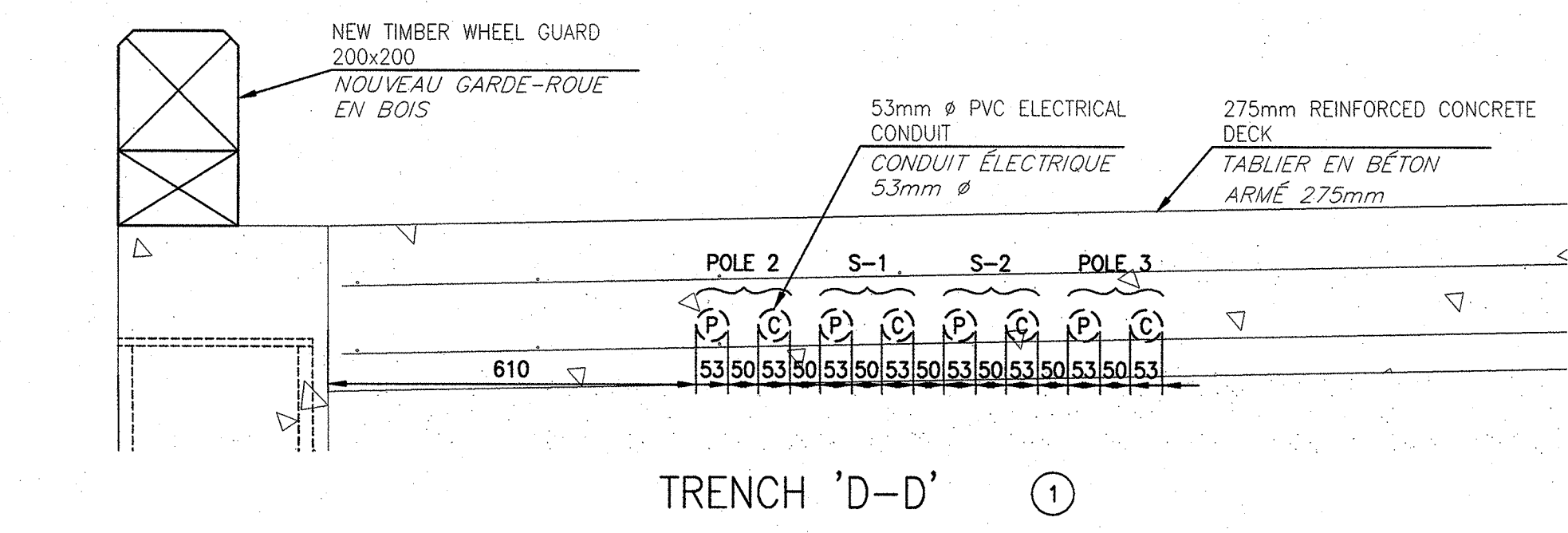
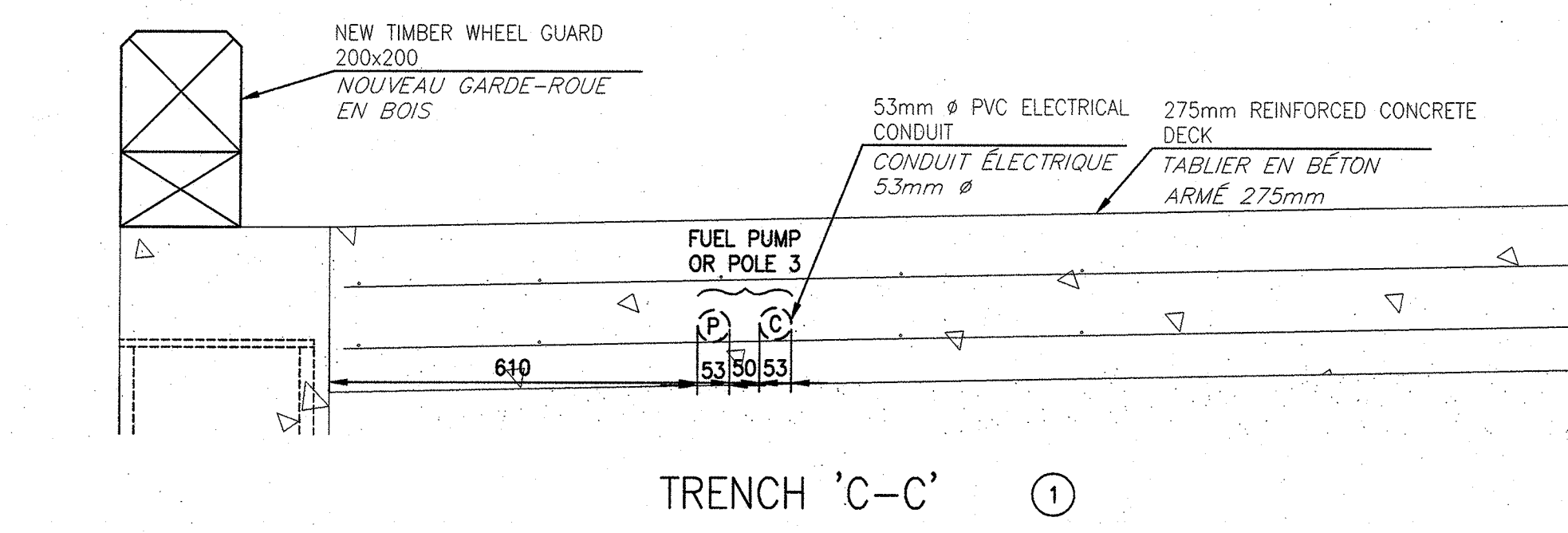
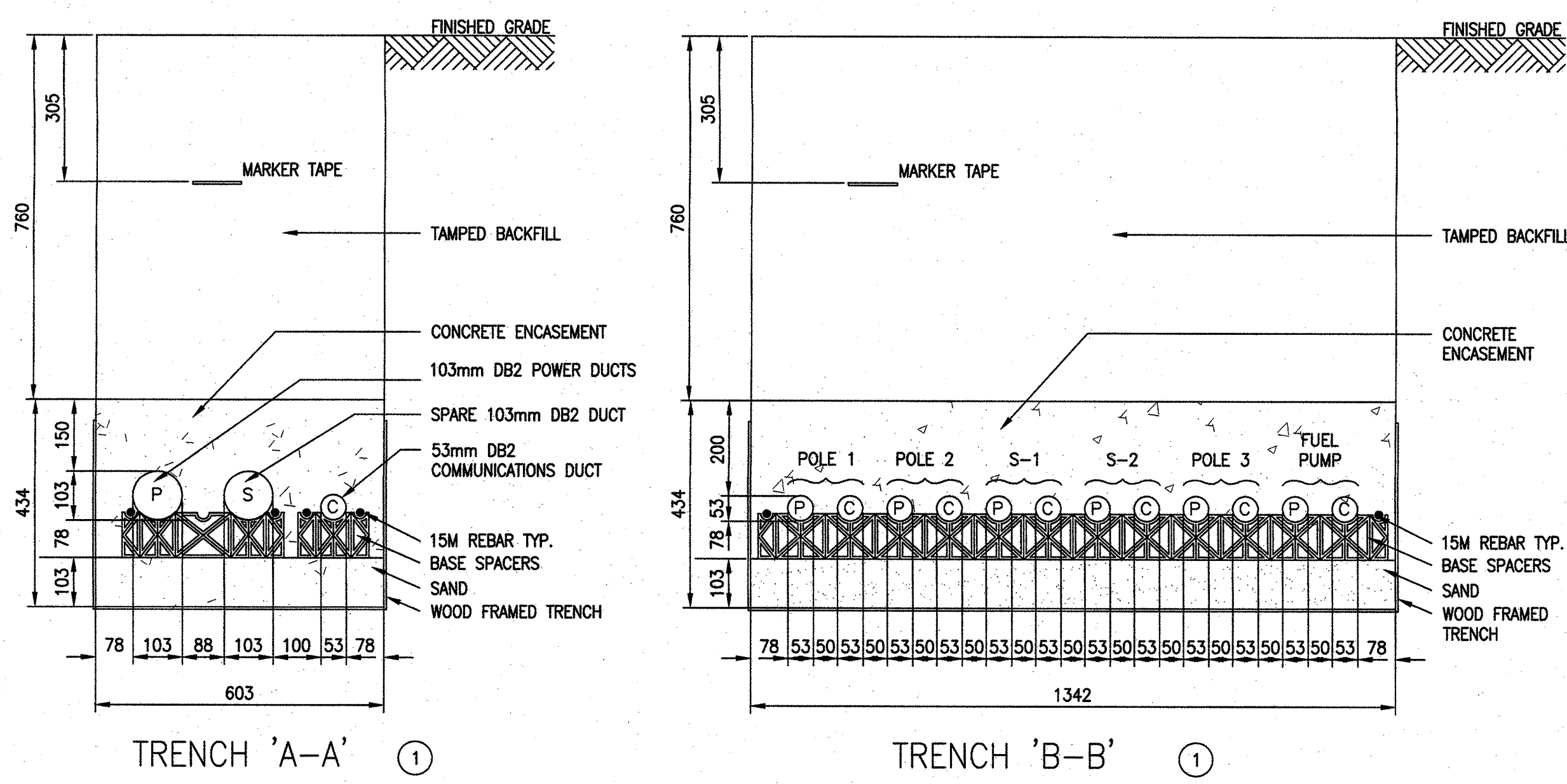
SERVICE CALCULATION (CEC RULE 78)	
#	DESCRIPTION
1	DETERMINE LOADS
1	1 - 15-15R RECEPTACLES
9	1 - 15-20R RECEPTACLES
4	6 - 50R WELDING RECEPTACLES
6	400W LIGHT FIXTURES
2	250W LIGHT FIXTURES
1	FUEL PUMP
1	HARBOUR AUTHORITY BLDG
2	LOAD PER DEVICE (W)
15A RECEPTACLE	= 12A*120V 1440
20A RECEPTACLE	= 16A*120V 1920
50A WELDING OUTLET	= 40A*240V 9600
50A BUYERS WINCH	= 40A*240V 9600
400W LIGHT FIXTURE	= 400*1.2 480
250W LIGHT FIXTURE	= 250*1.2 300
FUEL PUMP	= 12*240 2880
FUEL DISPENSER	= 12*120 1440
HARBOUR AUTHORITY BLDG	= 48A*240V 11520
3	FEEDER LOADS
4	HIGHEST RATED RECEPTACLES @100% (4*9600)
NEXT 4 HIGHEST RATED RECEPTACLES @65% (1*65*2880)+(3*65*1920W)	38400
NEXT 5 HIGHEST RATED RECEPTACLES @50% (5*0.5*1920)	5616
NEXT 16 HIGHEST RATED RECEPTACLES @25% (1*0.25*1920)+(2*0.25*1440)	2880
LIGHTING	1200
6*400W*1.2 + 2*250W*1.2	3480
HARBOUR AUTHORITY BLDG	11520
48A*240V	11520
TOTAL	63096
4	ADD 25% CAPACITY FOR FUTURE (63096/1.25)
	78870
5	DETERMINE SERVICE SIZE OF PANEL P (78870W/240V)*1.25
SERVICE PANEL P TO BE 400A FRED FROM POLE MOUNTED TRANSFORMER	410.8
MINIMUM CONDUCTOR SIZE (TABLE D14A)	3#500 MCM

PANEL A - VOLTAGE DROP/WIRE SIZE CALCULATIONS									
RECEPT.	RATING	VOLTS	CIRCUIT	RATED CURRENT	DISTANCE METERS	VOLTAGE DROP	WIRE SIZE		
R1	20	120V	A-1	16A	50	<3%	2#6		
R2	20	120V	A-3	16A	50	<3%	2#6		
R3	20	120V	A-5	16A	75	<3%	2#4		
R4	20	120V	A-7	16A	75	<3%	2#4		
R5	20	120V	A-9	16A	98	<3%	2#4		
R6	20	120V	A-11	16A	98	<3%	2#4		
R7	20	120V	A-13	16A	110	<3%	2#4		
R8	20	120V	A-15	16A	110	<3%	2#4		
R9	20	120V	A-25	16A	1	<3%	2#10		
R10	15	120V	A-27	12A	2	<3%	2#10		
W1	50	240V	A-21.23	40A	1	<3%	3#6		
BW1	50	240V	A-8.10	40A	75	<3%	3#4		
BW2	50	240V	A-12.14	40A	80	<3%	3#4		
BW3	50	240V	A-16.18	40A	90	<3%	3#4		
LIGHTS POLE P1	15	120V	A-2.20	12A	60	<3%	5#6		
LIGHTS POLE P2	15	120V	A-4.22	12A	90	<3%	5#6		
LIGHTS POLE P3	15	120V	A-6	10A	132	<3%	3#4		
FUEL PUMP	20	240V	A-17.19	16A	60	<3%	3#8		
HARBOUR AUTHORITY	60	240V	A-39.41	48A	20	<3%	3#6		
HTH	15	120V	A-24	12A	1	<3%	2#10		
FUEL DISPENSER	15	120V	A-29	12A	60	<3%	2#8		

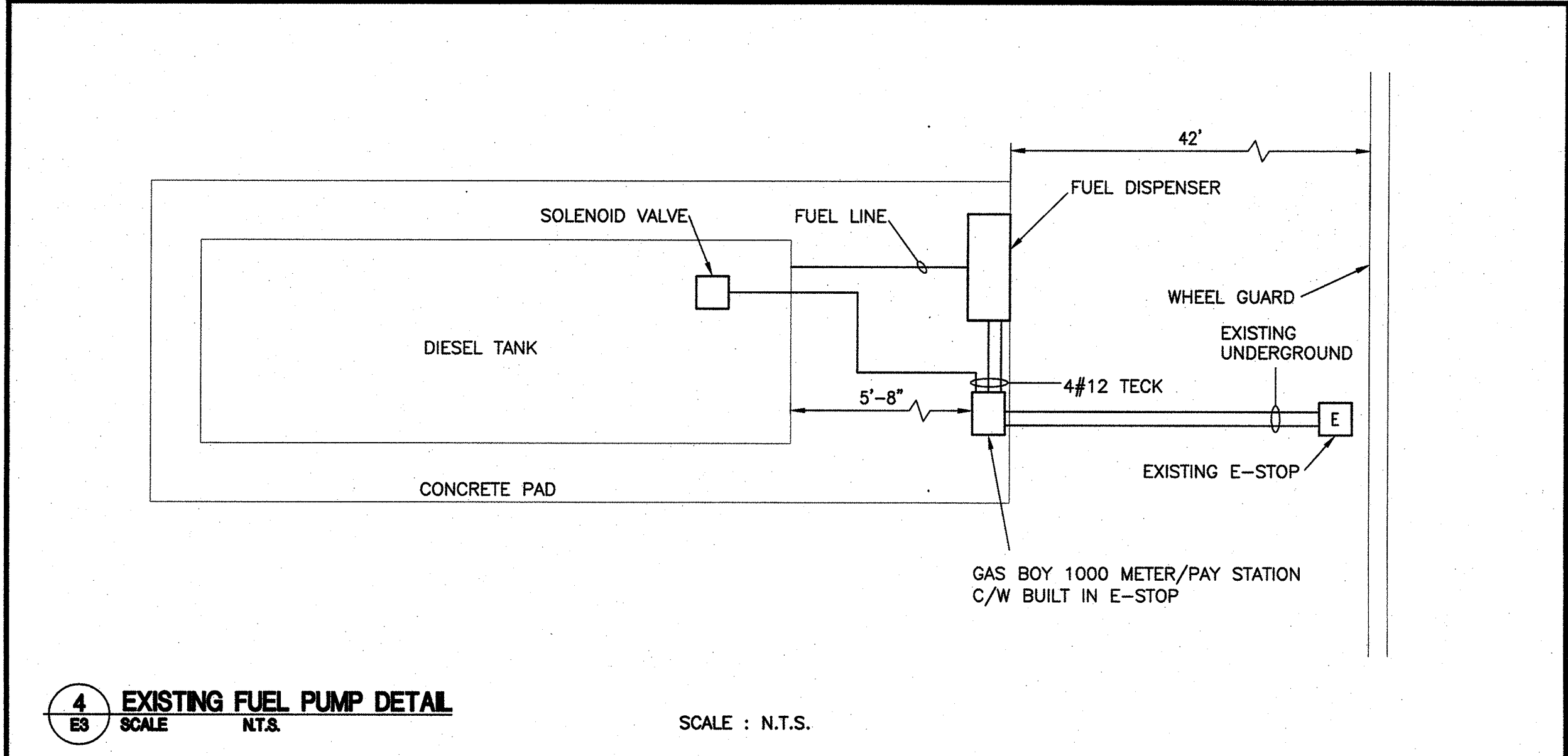
1 SERVICE & VOLTAGE DROP CALCULATIONS
SCALE: N.T.S.

PANEL A									
POWER SUPPLY: 120/240V, 1PH, 3W					SURFACE MOUNTED IN S/S PANEL				
MAINB: 400A					NUMBER OF CCTS: 42 CCT				
DESCRIPTION	WATTAGE	W	W	W	DESCRIPTION	WATTAGE	W	W	W
RECEPTACLE R1	1200	1	20	1	15	960	1	20	1
RECEPTACLE R2	1200	1	20	1	15	960	1	20	1
RECEPTACLE R3	1200	1	20	1	15	960	1	20	1
RECEPTACLE R4	1200	1	20	1	15	960	1	20	1
RECEPTACLE R5	1200	1	20	1	15	960	1	20	1
RECEPTACLE R6	1200	1	20	1	15	960	1	20	1
RECEPTACLE R7	1200	1	20	1	15	960	1	20	1
RECEPTACLE R8	1200	1	20	1	15	960	1	20	1
FUEL PUMP	2880	1	20	1	15	960	1	20	1
MAINTENANCE WELDING OUTLET	4800	1	20	1	15	960	1	20	1
HTH	1200	1	20	1	15	960	1	20	1
MAINTENANCE RECEPTACLE R9	1200	1	20	1	15	960	1	20	1
MAINTENANCE RECEPTACLE R10	1200	1	20	1	15	960	1	20	1
FUEL DISPENSER	1440	1	20	1	15	960	1	20	1
HARBOUR AUTHORITY	11520	1	20	1	15	960	1	20	1
FRASE LOADS/FRASE:	23130	1	20	1	15	960	1	20	1
TOTAL LOAD:	39480	1	20	1	15	960	1	20	1
TOTAL FRASE LOADS	39480	1	20	1	15	960	1	20	1
+/- 5%	36210	1	20	1	15	960	1	20	1
CURRENT (A) @ 240V:	317	1	20	1	15	960	1	20	1

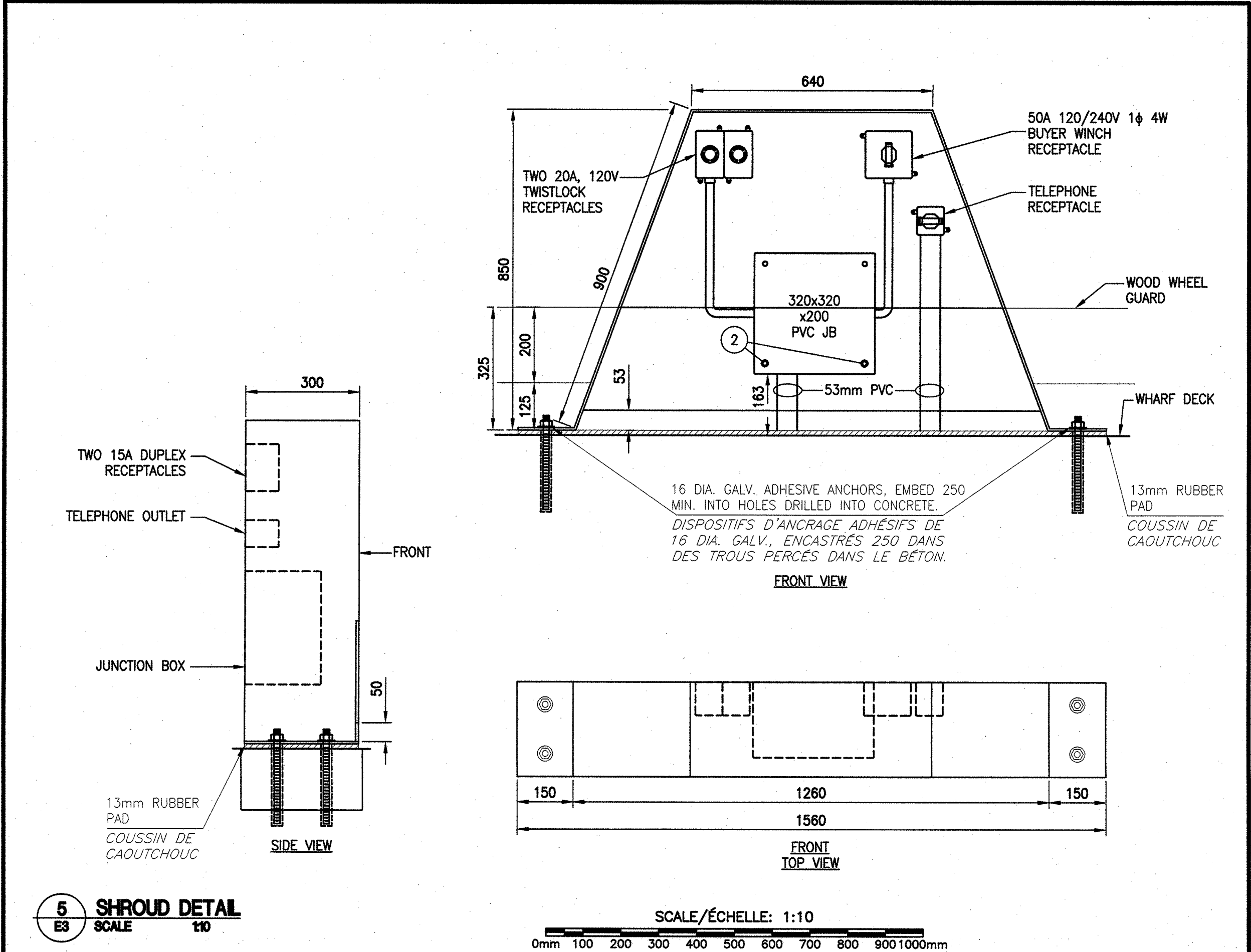
2 PANEL SCHEDULES
SCALE: N.T.S.



3 TRENCH DETAILS
SCALE: N.T.S.



4 EXISTING FUEL PUMP DETAIL
SCALE: N.T.S.

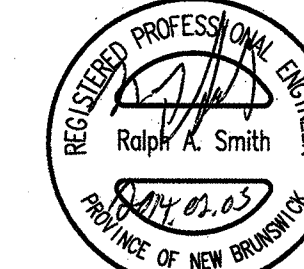


5 SHROUD DETAIL
SCALE: N.T.S.

NOTES

- ALL CONDUITS TO BE TIED TO TOP OF BOTTOM MATT OF REBAR OF PLASTIC CHAIRS WITH PLASTIC ZIP TIES.
- PROVIDE 25mm HOLES IN PLATE TO ACCESS JUNCTION BOX SCREWS.
- SEE SPECIFICATION SECTION 01 00 50 FOR WORK PREVIOUSLY COMPLETED.

NOTES



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revisions	description	date

project

ELECTRICAL REPAIRS
STRUCTURE 402
PIGEON HILL, NB
COMITÉ DE GLOUCESTER COUNTY

drawing

ELECTRICAL SERVICE, TRENCHING, SHROUD LAYOUTS & DETAILS

designed RALPH SMITH, P.ENG
date 2014.02.05
drawn GERALD FANJOY
date 2014.02.05
approved RALPH SMITH, P.ENG
date 2014.02.05
Tender
PWSC Project Manager
project number
R.067938.001
drawing no.
E3 of/de E3