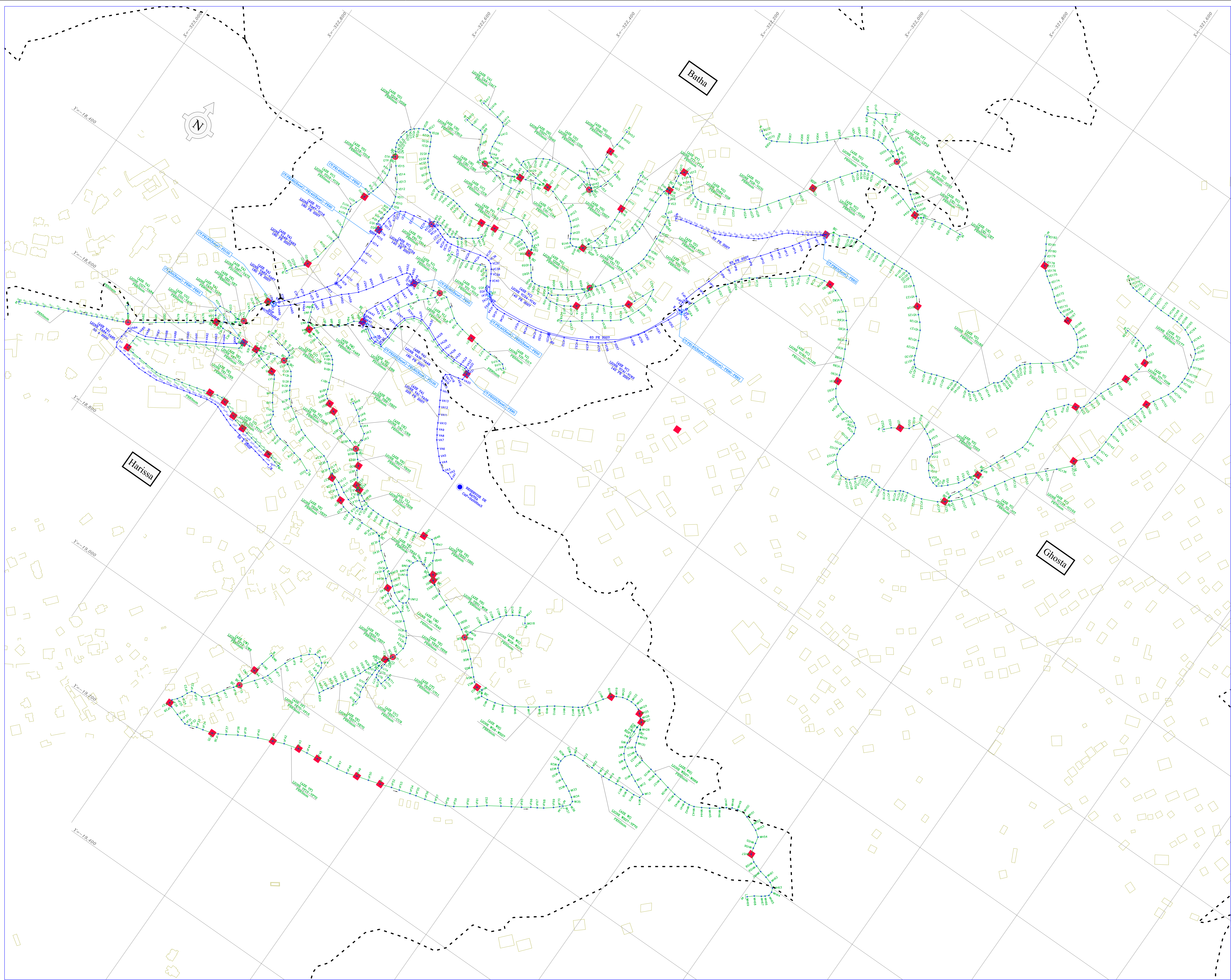




LEGENDE

: Ligne de distribution projetée

PE110mm

: Nature et diamètre de la conduite projetée

: Ligne de distribution déjà exécutée ou existante

PD200mm

: Nature et diamètre de la conduite déjà exécutée

: Sens de l'écoulement

: Robinet de vidange

: Purgeur d'air

: Borne d'incendie

: Robinet vanne d'arrêt

: Robinet vanne papillon

: Réducteur de pression

: Embout

: Tê

: Cône de réduction

: Massif de butée type

: Coude 1/8

: Connexion entre deux canalisations 200 et 75mm

: Regard de distribution : canalisation D=75mm à partir d'une canalisation principale D=250mm

: Collier de prise avec bouche à clé et vanne

NOTES

Toutes les dimensions sont en mètres sauf indications contraires.

Les diamètres des canalisations, des accessoires et des robinets vannes sont en mm sauf indications contraires.

Toutes les connexions aux habitations doivent être exécutées avec une pente positive de la ligne de distribution vers les habitations. Elles seront obligatoirement équipées d'une bouche à clé.

Pour la protection des canalisations par enrobage, se référer aux plans de détails.

En fonction des conditions locales, l'ingénieur pourra décider du type de connexion à effectuer.

Les diamètres des canalisations supérieurs ou égaux à 4" seront en fonte ductile FD classe K9.

Les diamètres des canalisations inférieurs à 4" seront nécessairement en polyéthylène PE haute densité PN16.

Pour les types de massifs de butée, se référer aux plans de détails.

Les pertes de charge ont été calculées en utilisant la formule de Colebrook avec une rugosité K = 0.4 mm.

Les massifs de butée des coudes planimétriques ont été dimensionnés avec la marge de pression indiquée ci-dessous :

* si PS < 10 ; PE = PS x 1.5

* si PS > 10 ; PE = PS + 5

avec PS : Pression Statique

PE : Pression d'Essai

La profondeur de la génératrice inférieure des conduites est fonction des diamètres des canalisations.

b	30/04/2013	DERNIÈRES MODIFICATIONS SUIVANT L'EBML
a	10/10/2012	MODIFICATIONS SUIVANT LES DIRECTIVES DE L'EBML
-	31/08/2012	PREMIÈRE DIFFUSION

Rev.	Date	Description

REPUBLIQUE LIBANAISE
Eaux de Beyrouth et du Mont Liban



**BUREAU D'ETUDES HYDRAULIQUES
ET TECHNIQUES**

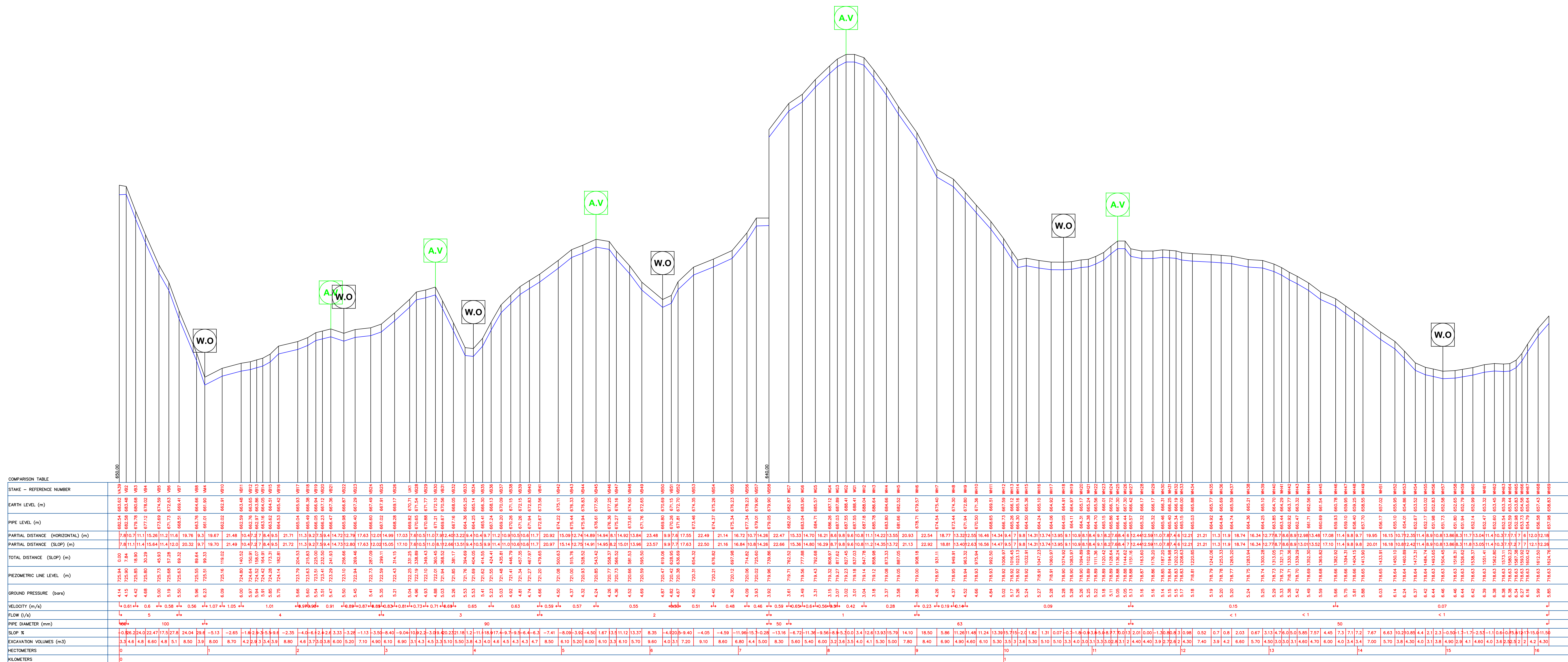
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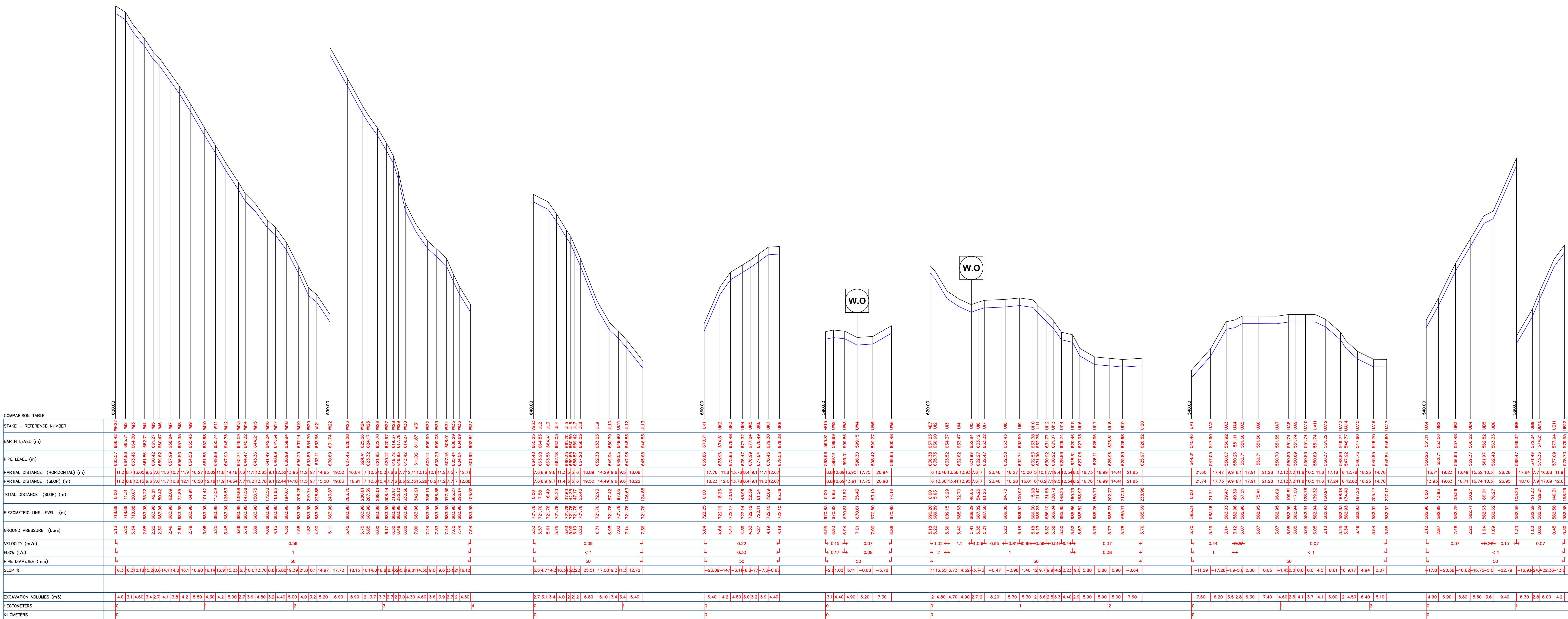
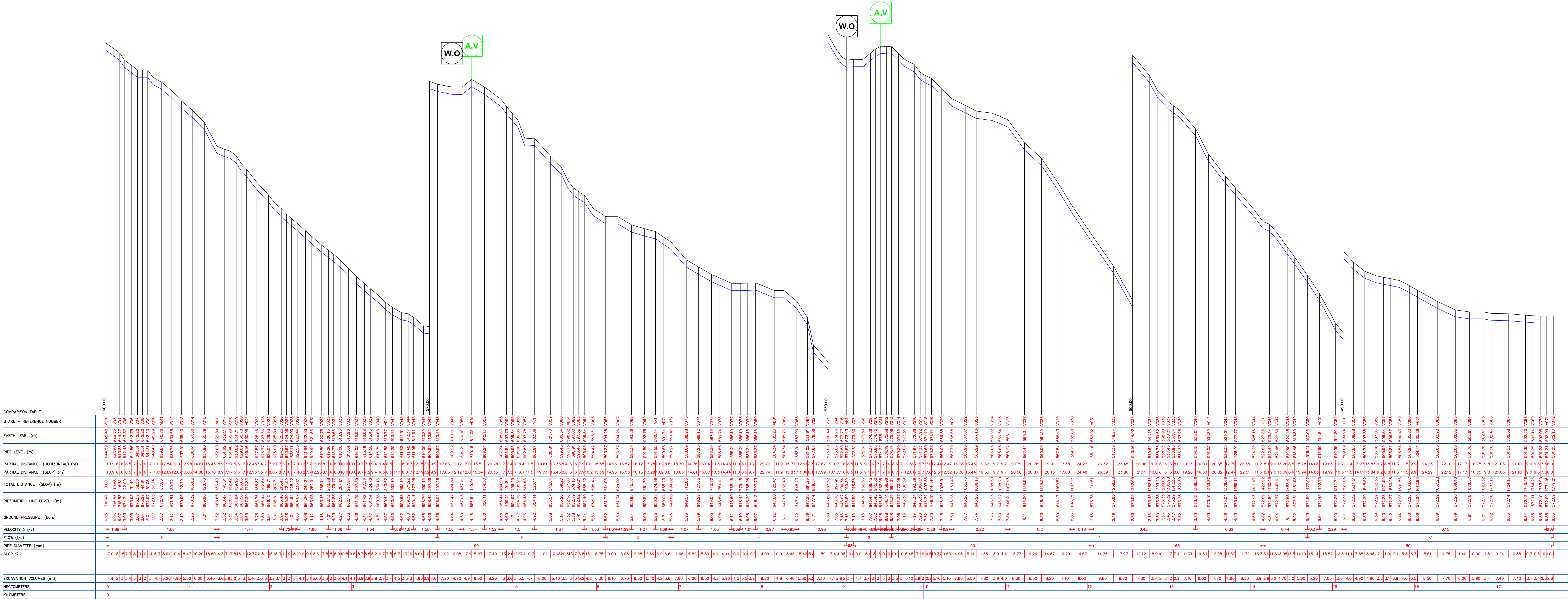
ALIMENTATION EN EAU POTABLE
DE LA REGION DU LITTORAL DE KESROUANE ET FTOUH
RESEAUX DE DISTRIBUTION DE SARBA - GHADIR - HARET SAHR - SAHEL
AALMA - DARAAOUN - HARISSA - BATHA - GHOSTA - MAARAB - BZOUIMMAR

Titre du plan:

RESEAU DE DISRIBUTION DE BATHA
PLAN TOPOGRAPHIQUE ET EQUIPEMENT DU RESEAU
VUE EN PLAN SUR PHOTO AERIENNE

Eludé par:	Vérifié par:	Approuvé par:	No. du plan:
B. FAHED	Z. MAKHOUL	G. ABDELNOUR	612
Date:	Echelle:	Format:	Révision:
30/04/2013	1/2000	A0	b





Lebanese Republic



Ministry of Energy and Water

Directorate of Water & Electrical Resources

BATHA WATER PROJECT

PROJECT: Construction of New Potable Water Network in BATHA Village-Caza Kesrouan

DWG TITLE: Longitudinal Sections - (2/5)

SCALE: Longitudinal Profile
Vertical : 1/200
Horizontal : 1/2000

REMARKS:

DATE: October 2017

Designed By: N.Z.

Drawn By: D.G.

Checked By: N.Z.

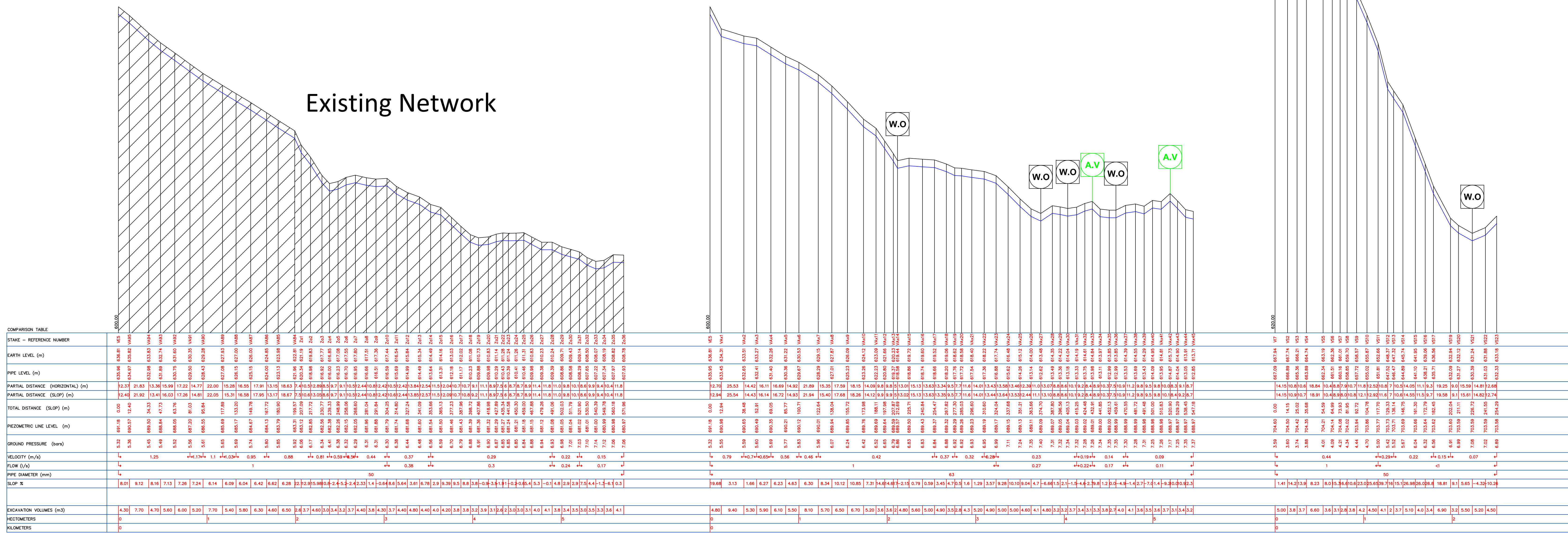
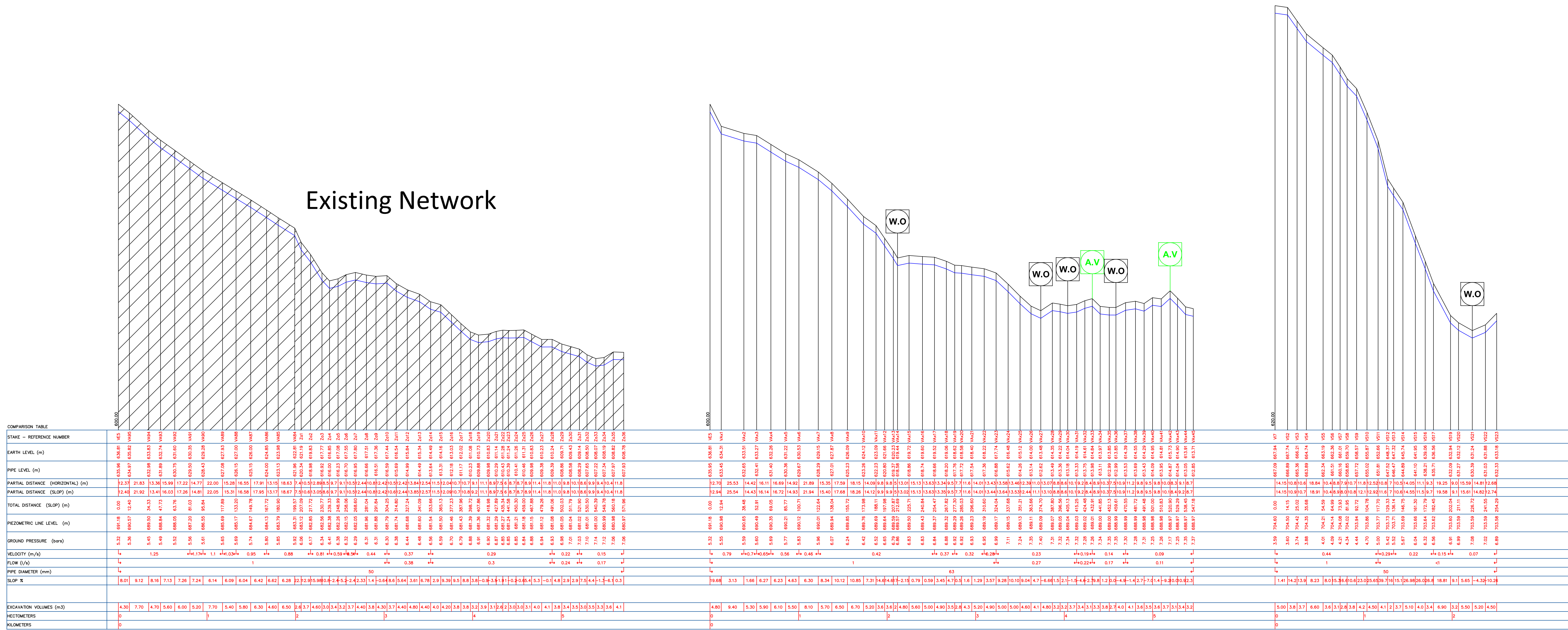
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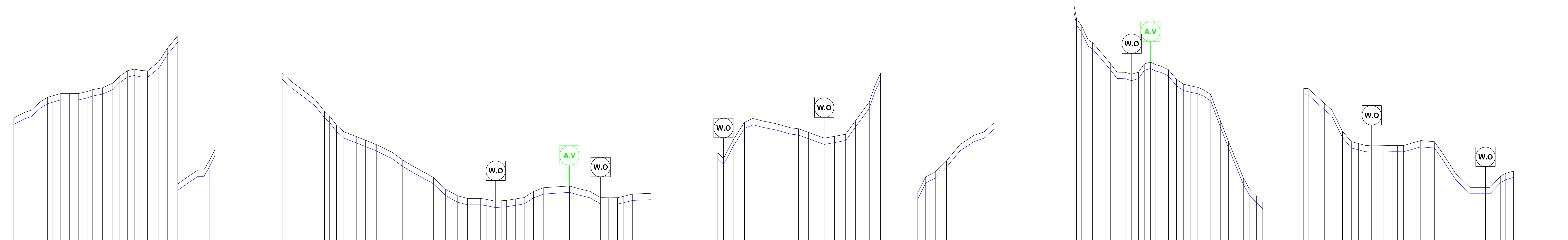
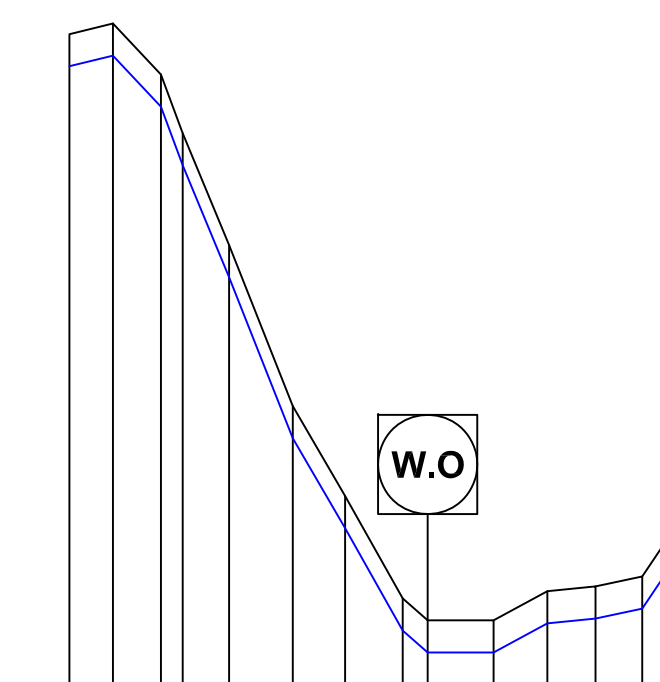
DWG N°:

Dwg: 2/6

REVISION: DATE:

20171007_UNICEF_MoEW_Batha Network Profile Drawings_V 0 1



[illegible][illegible]

COMPARISON TABLE		2500
STATE	REFERENCE NUMBER	
EARTH LEVEL (m)		105.64 156.49
PIPE LEVEL (m)		105.64 156.49
PAI. DIST. (m)		105.64 156.49
PARTIAL DISTANCE (HORIZONTAL) (m)		119.32 176.76 216.81 16.88 134.55 142.27 17.45 1419.92 2702.36 48
PARTIAL DISTANCE (SLOPE) (m)		119.32 176.76 216.81 16.88 134.55 142.27 17.45 1419.92 2702.36 48
TOTAL DISTANCE (SLOPE) (m)		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
PIEZOMETRIC LINE LEVEL (m)		105.64 156.49
GROUND PRESSURE (bars)		3.11 3.11 3.11 3.11 3.11 3.11 3.11 3.11 3.11 3.11
VELOCITY (m/s)		0.29 0.29 0.29 0.29 0.29 0.29 0.29 0.29 0.29 0.29
FLOW (l/s)		0.29 0.29 0.29 0.29 0.29 0.29 0.29 0.29 0.29 0.29
PIPE DIAMETER (mm)		50
SLOPE %		-2.48 -0.82 -0.82 -0.82 -0.82 -0.82 -0.82 -0.82 -0.82 -0.82
EXHAUSTION VOLUMES (m ³)		4.0 4.0 2.40 4.0 1.0 4.90 2.40 2.0 6.0 5.0 4.50 4.50 1.5
INFLATERS		30 30 30 30 30 30 30 30 30 30

Existing Network

PARAMETER TABLE		STATION - REFERENCE NUMBER		EARTH LEVEL (m)		PIPE LEVEL (m)		PARTIAL DISTANCE (HORIZONTAL) (m)		PARTIAL DISTANCE (SLOPED) (m)		TOTAL DISTANCE (SLOPED) (m)		HYDRAULIC RADIUS LEVEL (m)		GROUND PRESSURE (Bar)		VELOCITY (m/s)		FLOW (m³/s)		PIPE DIAMETER (mm)		SLOPE %		ELEVATION VOLUMES (m³)		HECTOMETERS		KILOMETERS			
STATION	REFERENCE NUMBER	STATION	REFERENCE NUMBER	STATION	REFERENCE NUMBER	STATION	REFERENCE NUMBER	STATION	REFERENCE NUMBER	STATION	REFERENCE NUMBER	STATION	REFERENCE NUMBER	STATION	REFERENCE NUMBER	STATION	REFERENCE NUMBER	STATION	REFERENCE NUMBER	STATION	REFERENCE NUMBER	STATION	REFERENCE NUMBER	STATION	REFERENCE NUMBER	STATION	REFERENCE NUMBER	STATION	REFERENCE NUMBER	STATION	REFERENCE NUMBER		
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COMPARISON TABLE		25										26									
STAKE - REFERENCE NUMBER		1					2					3					4				
EARTH LEVEL (m)		1					2					3					4				
PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
PARALLEL DISTANCE (HORIZONTAL) (m)		7	13.460	16.461	14.683	11.7	9.692	11.4	13.519	10.103	10.162	21.19	4.3	13.578	19.18	20.214	16.42	20.95	12.22	16.60	15.42
TOTAL DISTANCE (SLOP) (m)		7	13.522	16.604	14.826	11.812	9.762	11.5	13.612	10.214	10.273	21.34	4.5	13.722	19.36	20.388	16.58	21.10	12.38	16.76	15.58
TOTAL DISTANCE (SLOP) (m)		7	13.522	16.604	14.826	11.812	9.762	11.5	13.612	10.214	10.273	21.34	4.5	13.722	19.36	20.388	16.58	21.10	12.38	16.76	15.58
PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
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PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
PIPER LINE (m)		1	2	3	4	5	1	2	3	4	5	1	2								



COMPARISON TABLE		STATION - REFERENCE NUMBER	
EARTH LEVEL (m)	21.52	21.52	21.52
PWPC LEVEL (m)	21.52	21.52	21.52
PARALLEL DISTANCE (HORIZONTAL) (m)	47.78	47.78	47.78
PARALLEL DISTANCE (SLOP) (m)	47.78	47.78	47.78
TOTAL DISTANCE (SLOP) (m)	47.78	47.78	47.78
GROUNDLINE LINE LEVEL (m)	21.52	21.52	21.52
PERCENT GRADE (SLOP) (%)	0.00	0.00	0.00
VELOCITY (m/s)	0.97	0.97	0.97
FLOW (L/s)	0.97	0.97	0.97
PWPC DIAMETER (mm)	43	43	43
SLOP %	0.00	0.00	0.00
STATIONING NUMBERS (m)	0.00	0.00	0.00
HECTOMETERS	0.00	0.00	0.00
KILOMETERS	0.00	0.00	0.00

BATHA WATER PROJECT

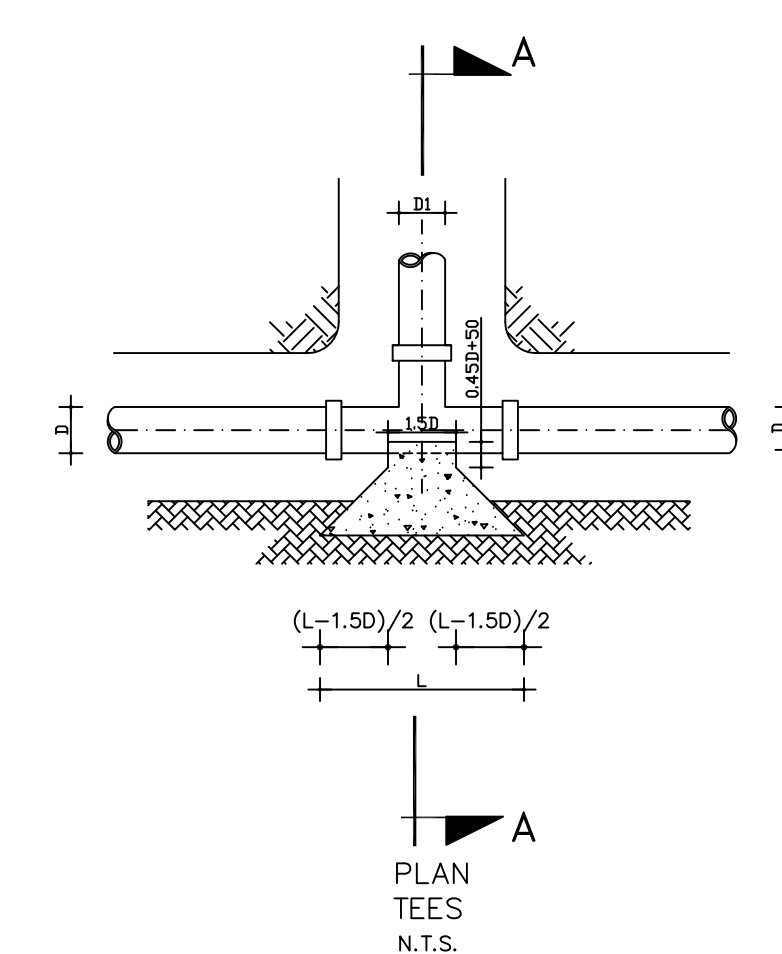
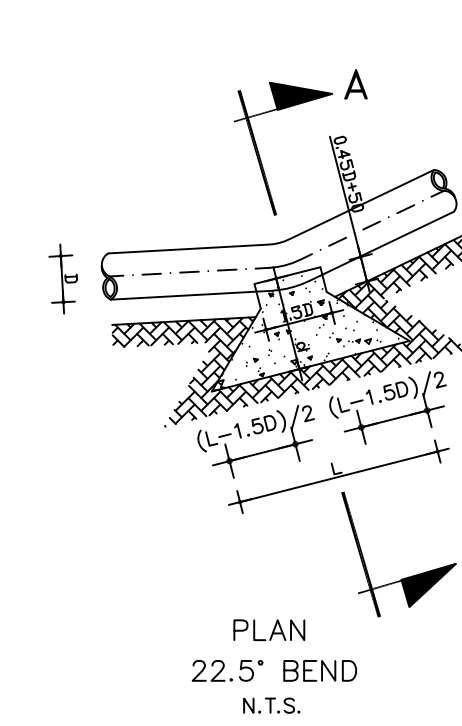
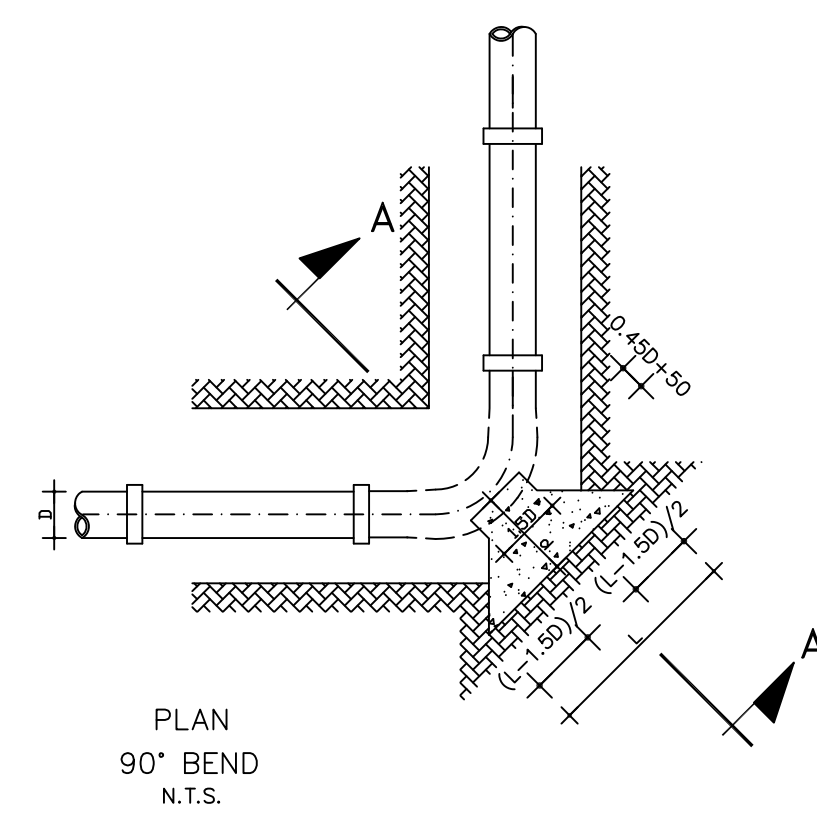
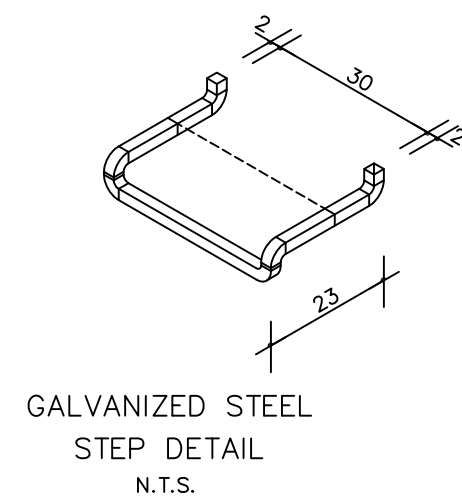
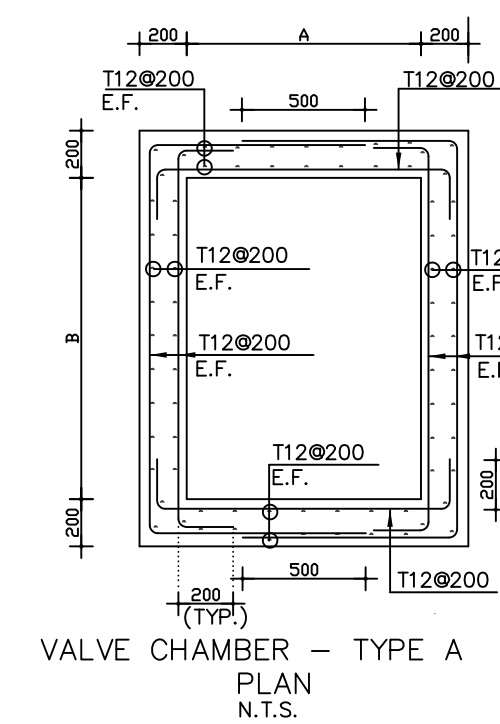
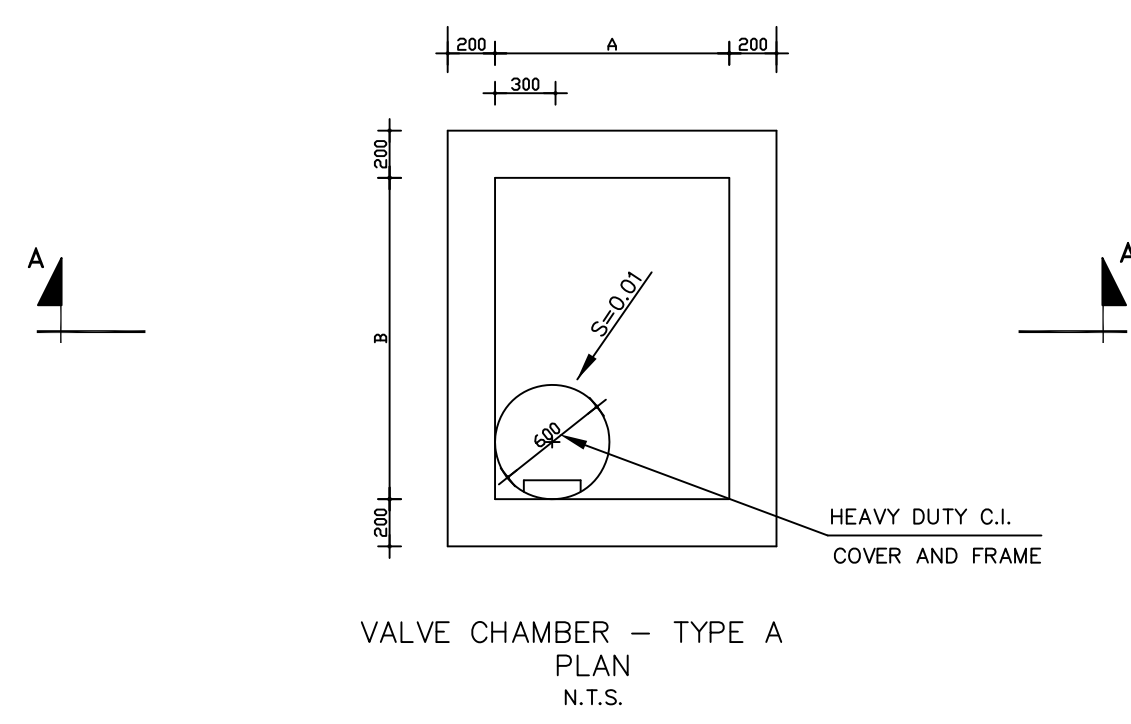
PROJECT: Construction of New Potable Water Network in BATHA Village-Caza Kesrouan		DATE: October 2017
DWG TITLE: Longitudinal Sections - (5/5)		Designed by: N.Z. Drawn by: D.G.
SCALE: Longitudinal Profile Vertical : 1/200 Horizontal : 1/2000		Checked by: N.Z. Approved by: N.C.



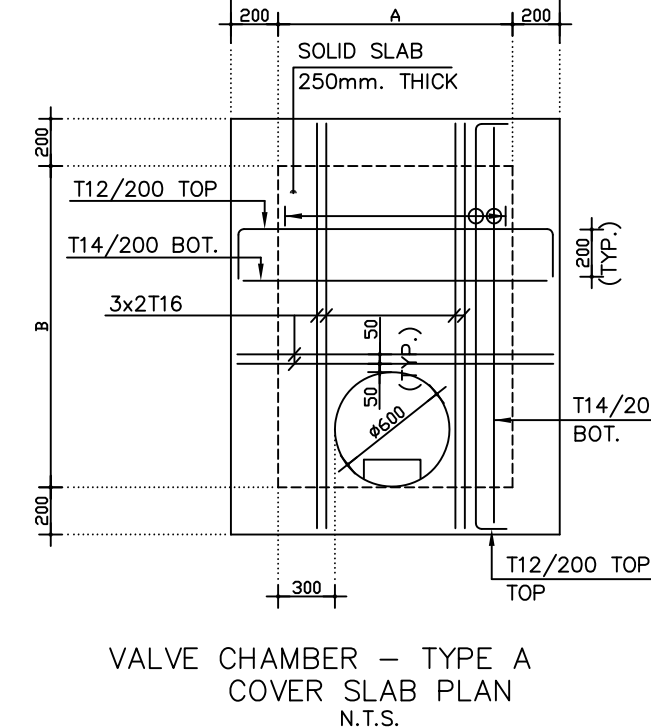
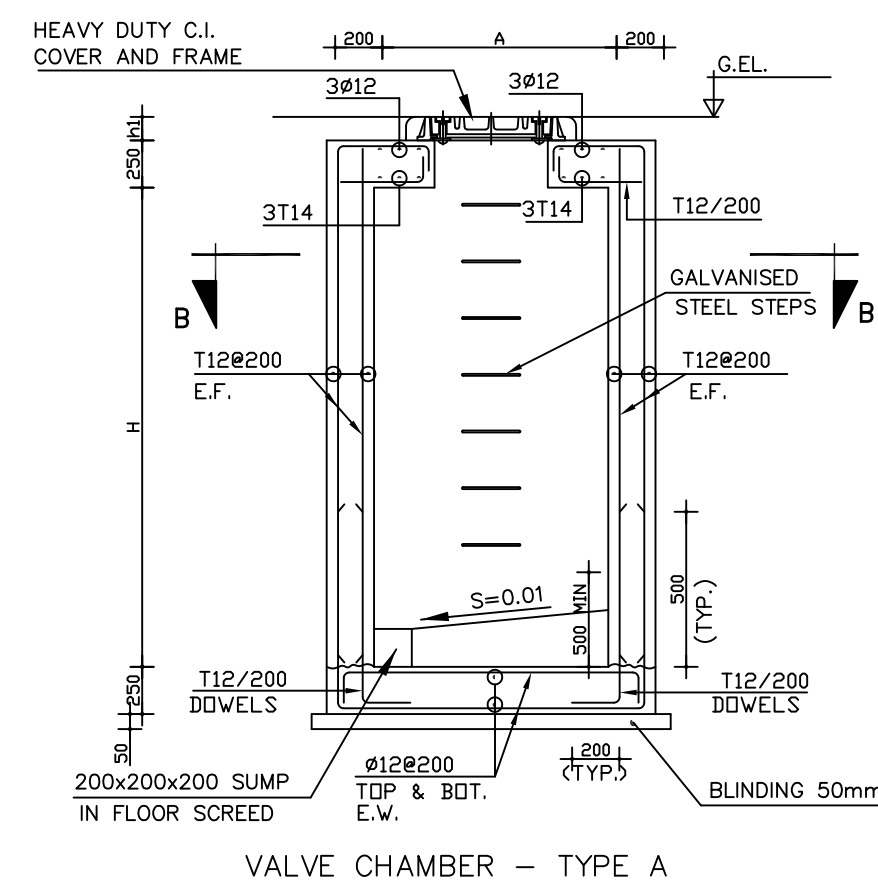
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Dwg: 5/6

REVISION:	DATE:

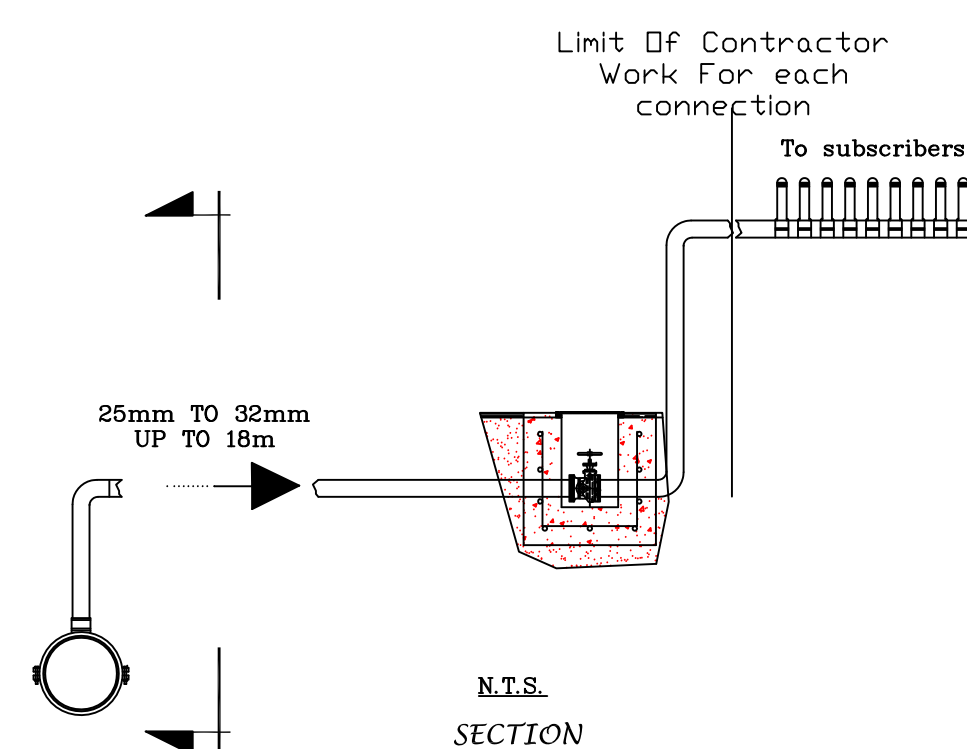
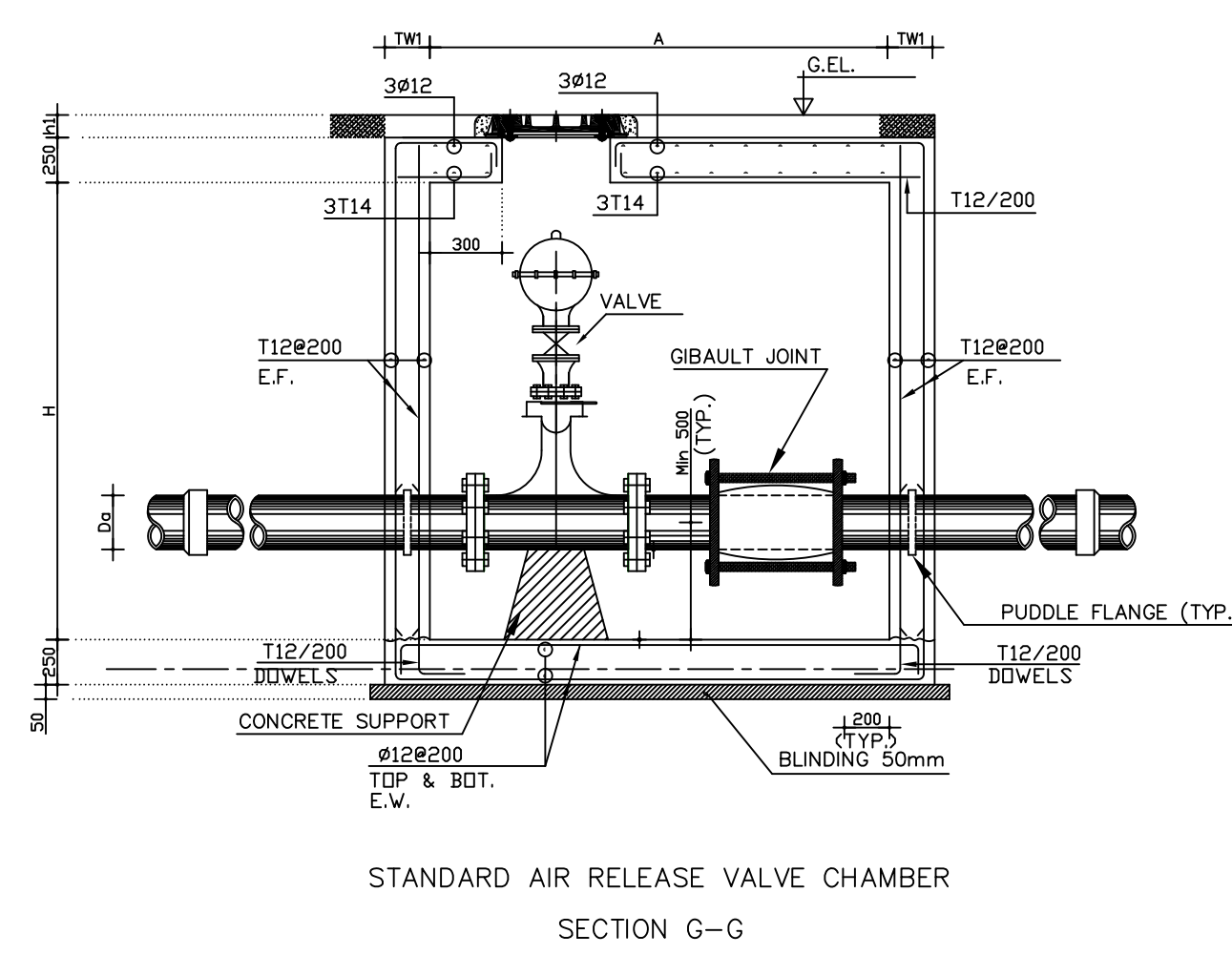
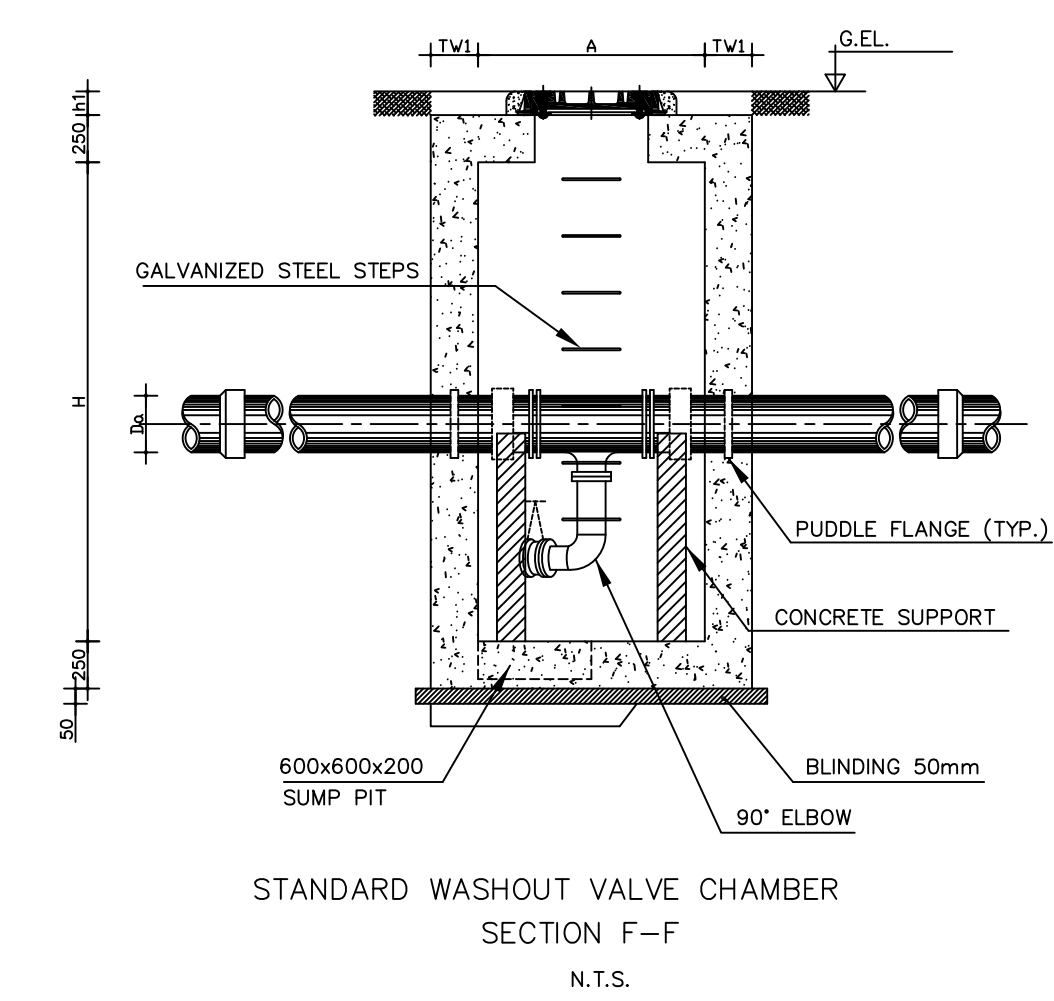
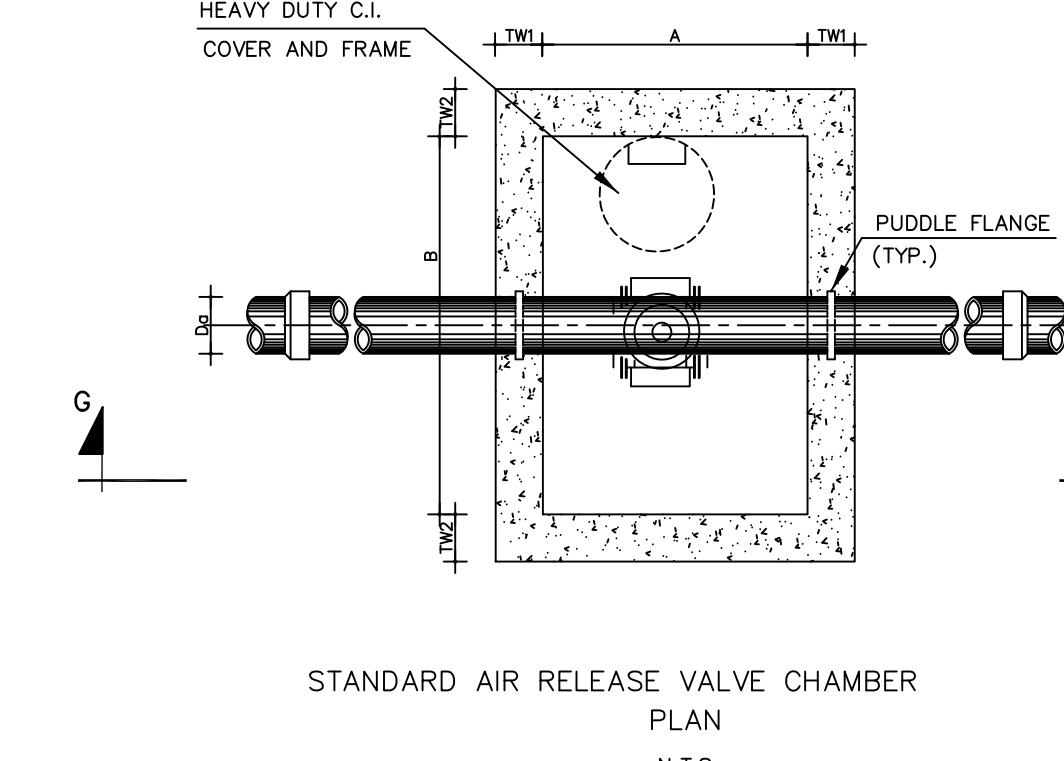
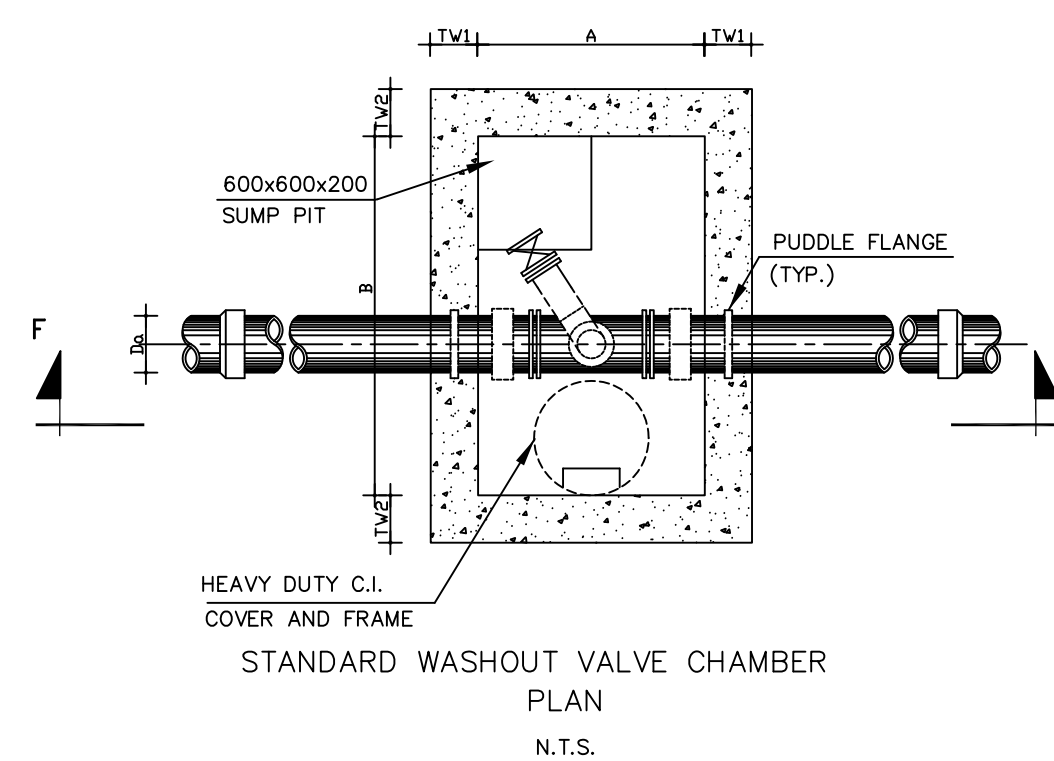
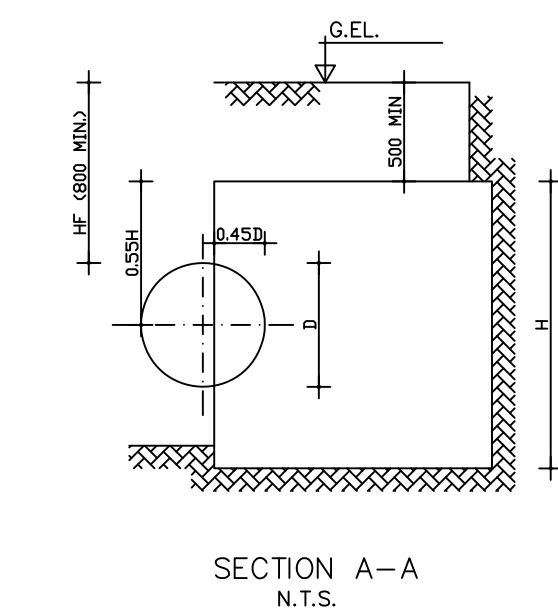
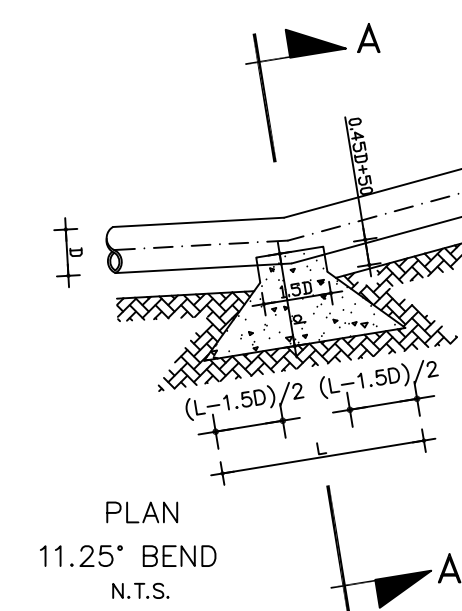
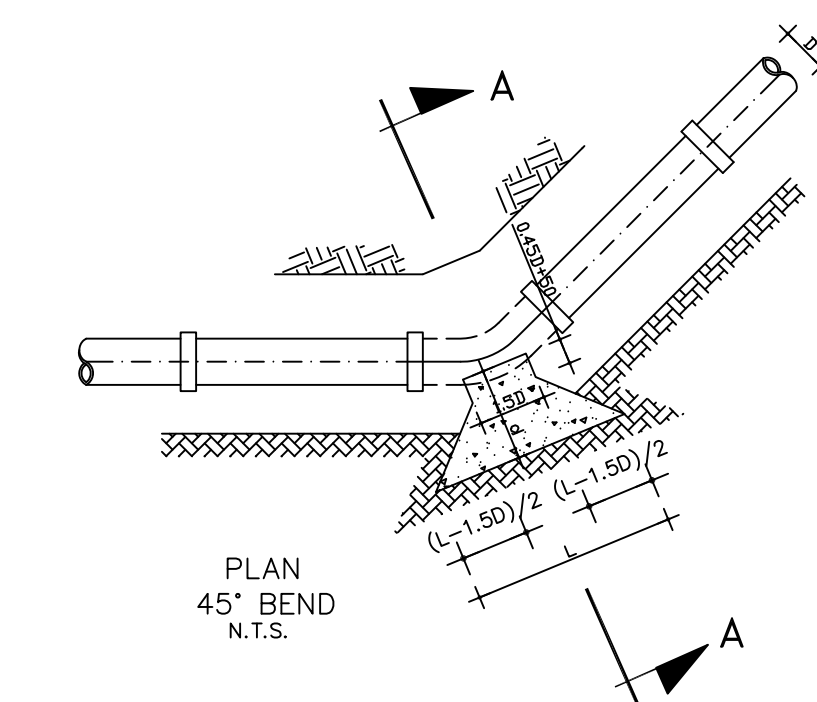


FOR BENDS 250 mm	H	L	d	v m/s
11.25 °	800	950	400	0.184
22.50 °	800	1150	500	0.343
45 °	800	1400	600	0.606
90 °	800	1850	700	0.970
FOR TEES	800	1500	600	0.648



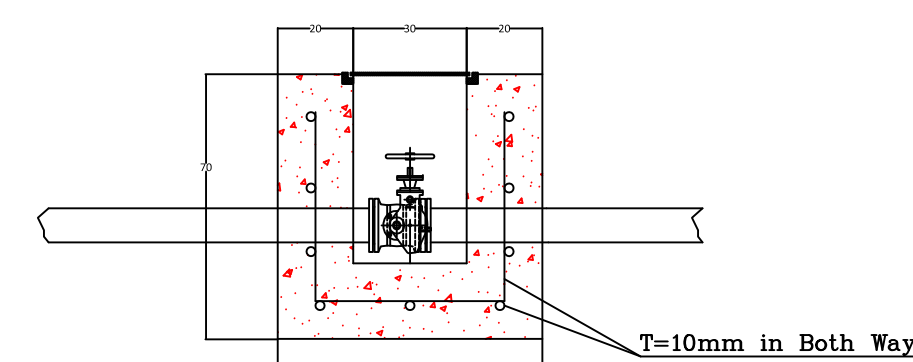
TYPE	DIMENSION A	DIMENSION B	Wall Thick mm	DIMENSION C	DIMENSION D
Type A	1000	1200	200	1500	2500
Type B	1200	1800	200	1500	2500
Type C	2000	2500	250	1500	2500

TABLE 1- VALVE CHAMBER DIMENSIONS

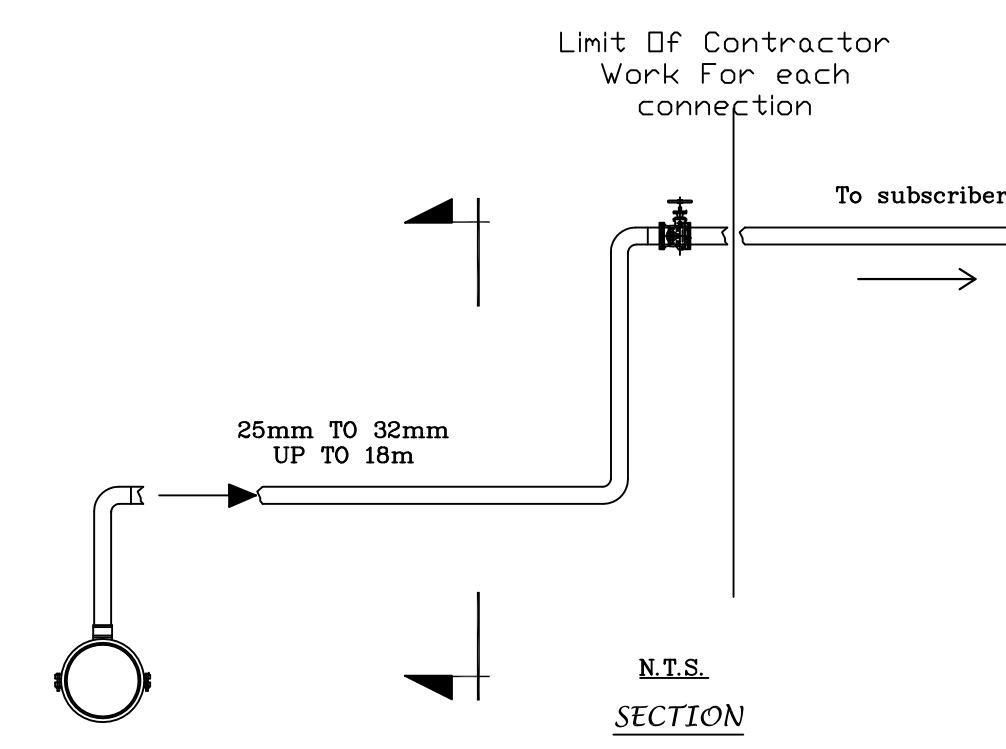


New Multiples House Connection
For HDPE Pipes
With Service Box (Bouche a Cle)

TYPE N2

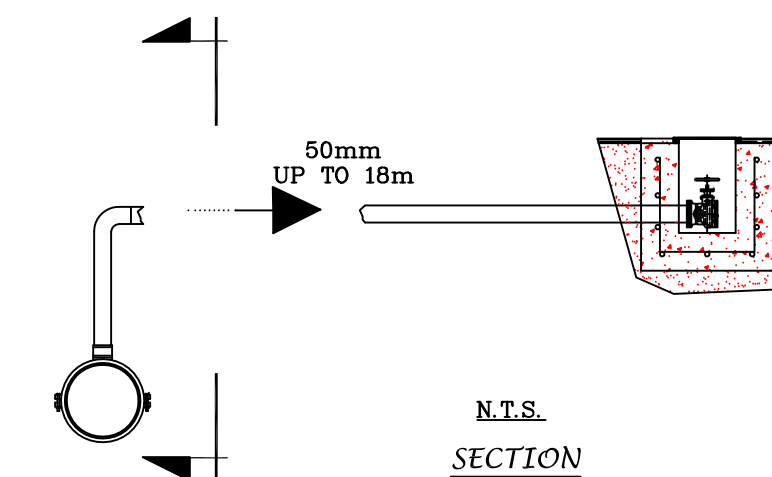


Service Box Details (Bouche a Cle)



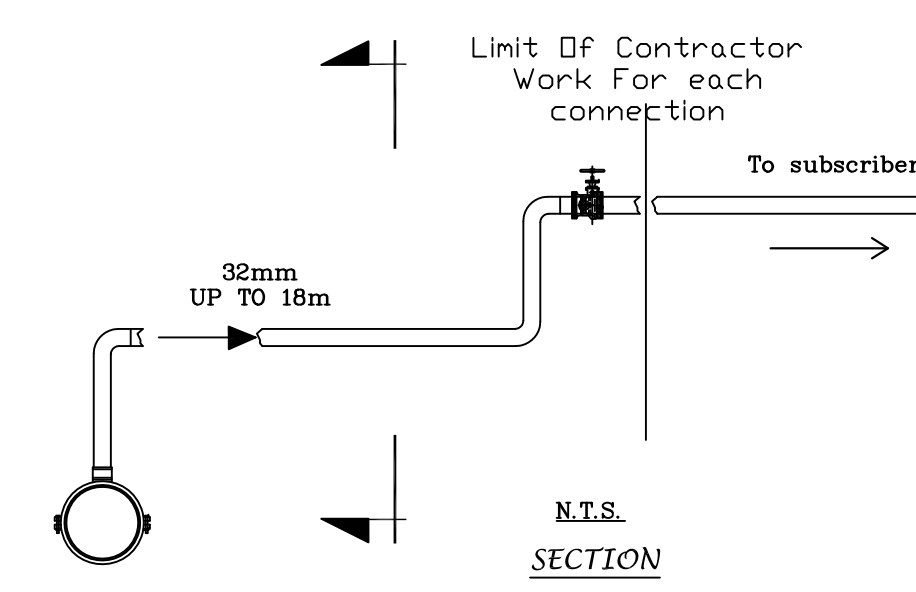
New Single house connection
For HDPE Pipes

TYPE N3



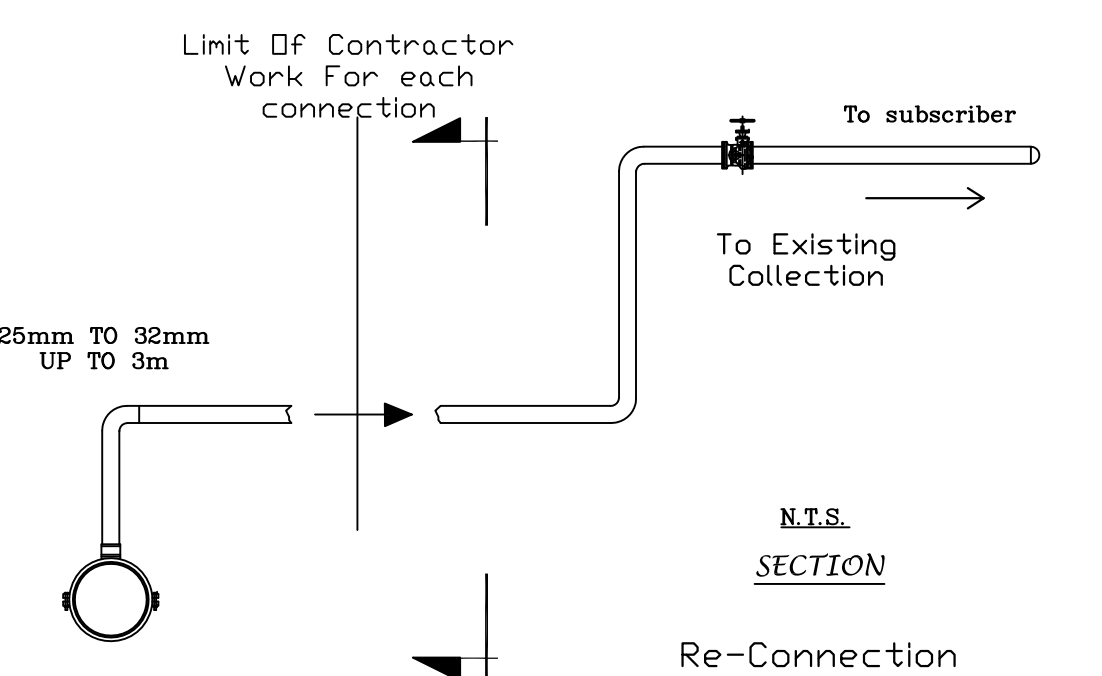
Service Box (Bouche a Cle)
For Future Connection (DI Pipes)

TYPE S



New Single House Connection
From Ductile Iron Pipes

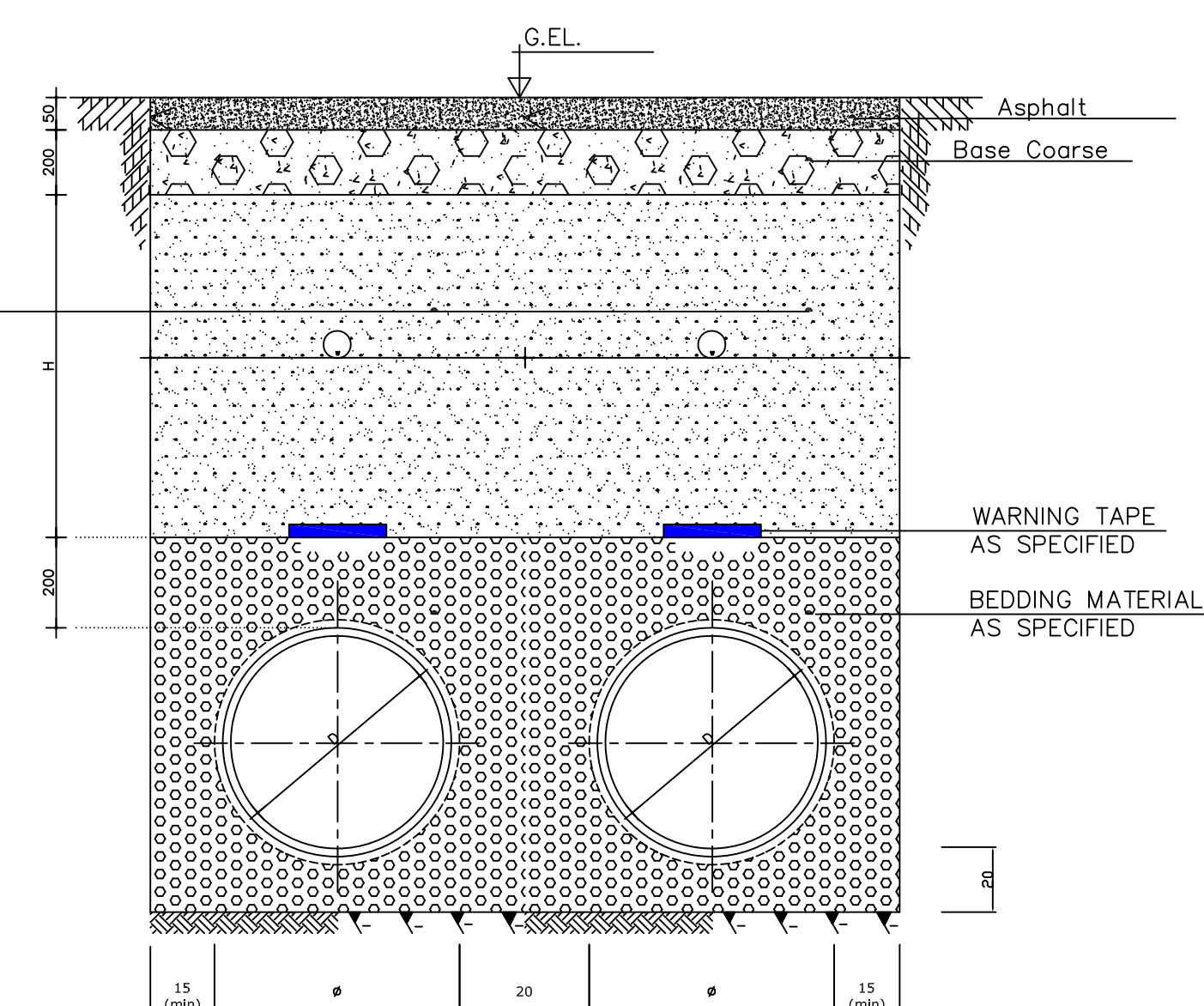
TYPE N1



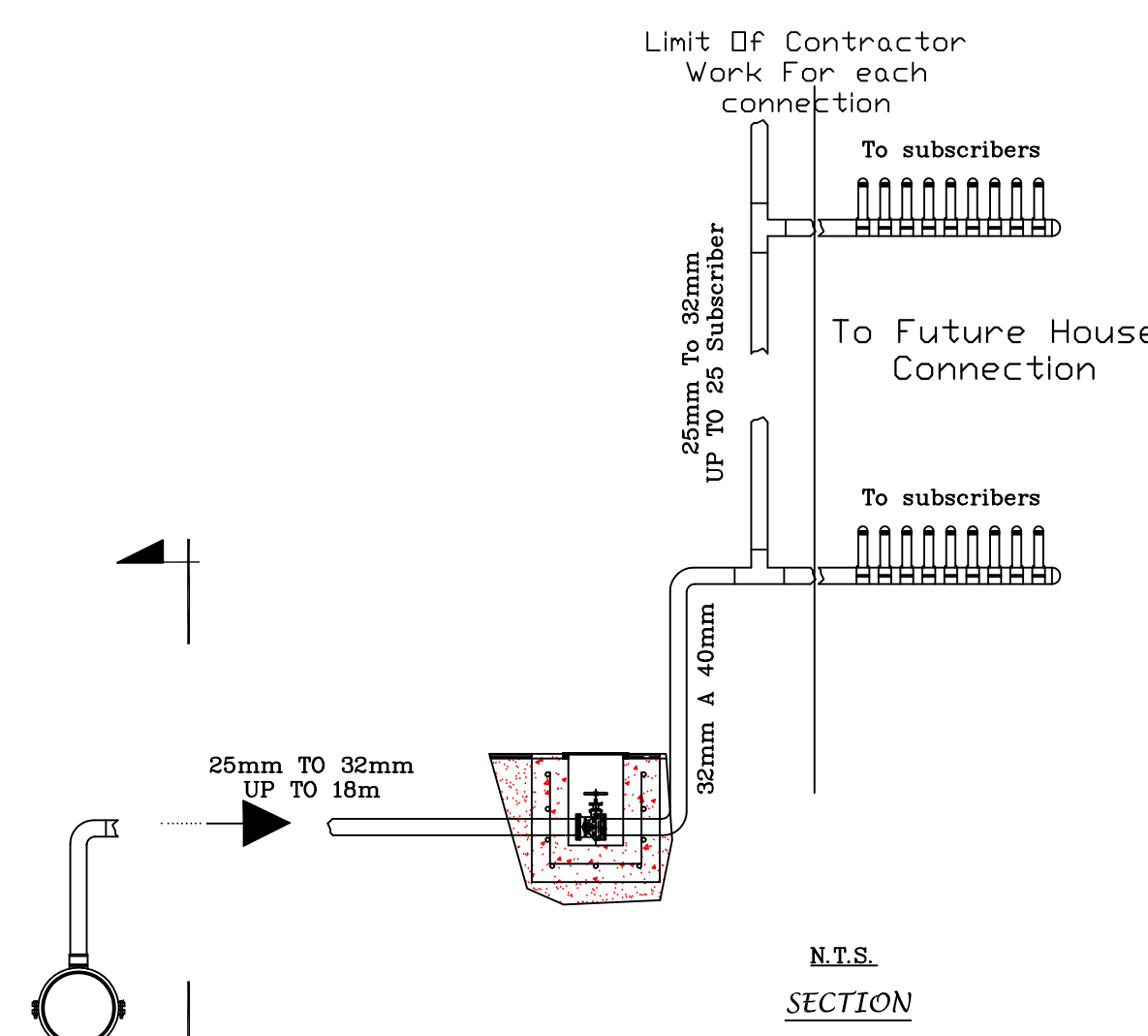
TYPE R1

PIPE DIAMETER (mm)	MIN. TRENCH W (mm)	MIN. TRENCH H (mm)	TOTAL MIN. HEIGHT ABOVE PIPE (mm)
50	500	200	650
63 - 110	550	350	800
125 - 300	D + D + 450	400	850

BACKFILLING MATERIAL
(SELECTED FILL, FINE CRUSHED ROCKS OR ORDINARY FILL)

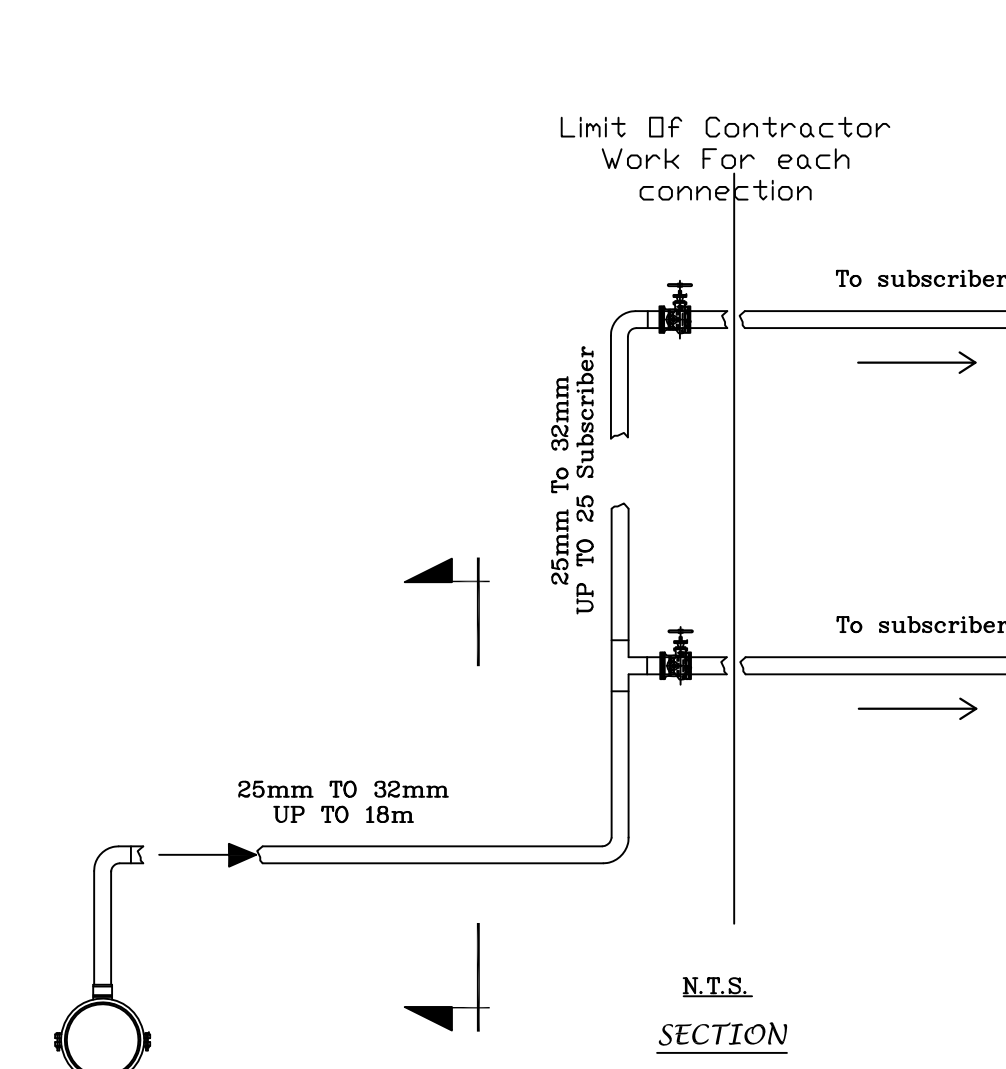


Typical Trench
N.T.S.



New Multiples House Connection
For HDPE Pipes With Service Box (Bouche a Cle)
(In Road In Congested Residential Area)

TYPE N3-E1



New Single house connection
For HDPE Pipes (In Road Shoulder)

TYPE N2-E1

Lebanese Republic



Ministry of Energy and Water
Directorate of Water & Electrical Resources

BATHA WATER PROJECT

PROJECT: Construction of New Potable Water Network
in BATHA Village-Cata Kesrouan

DWG TITLE:
Standard Details

SCALE:
N.T.S.

REMARKS:
DRAWING SIZE A0

DATE:

October 2017

Designed By:

D.G.

Drawn By:

D.G.

Checked By:

F.H.

Approved By:

N.C.

DWG N°:

Dwg: 6/6

REVISION: DATE:



20171007_UNICEF_MoEW_Batha Network Profile Drawings_V 0 0 1