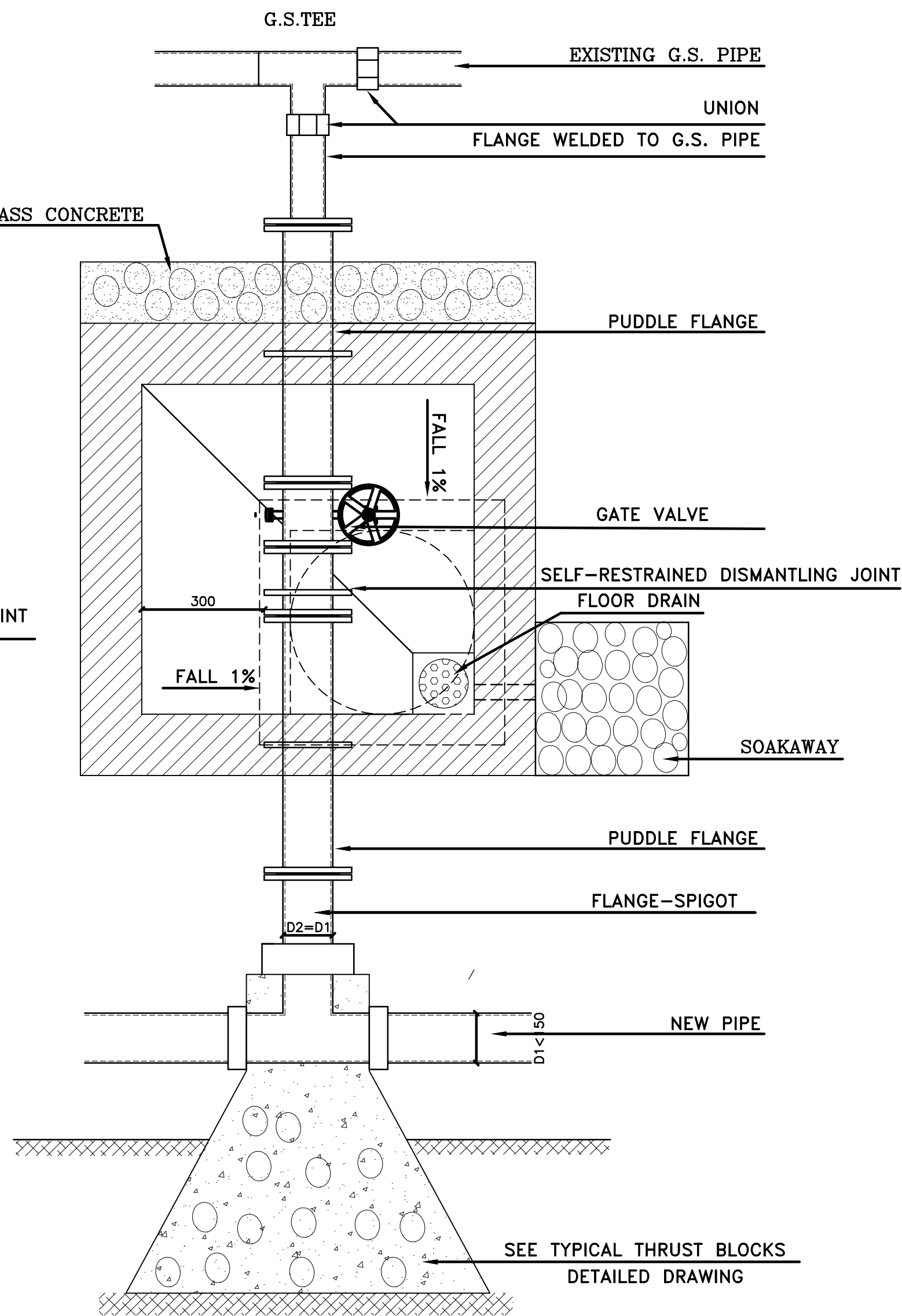
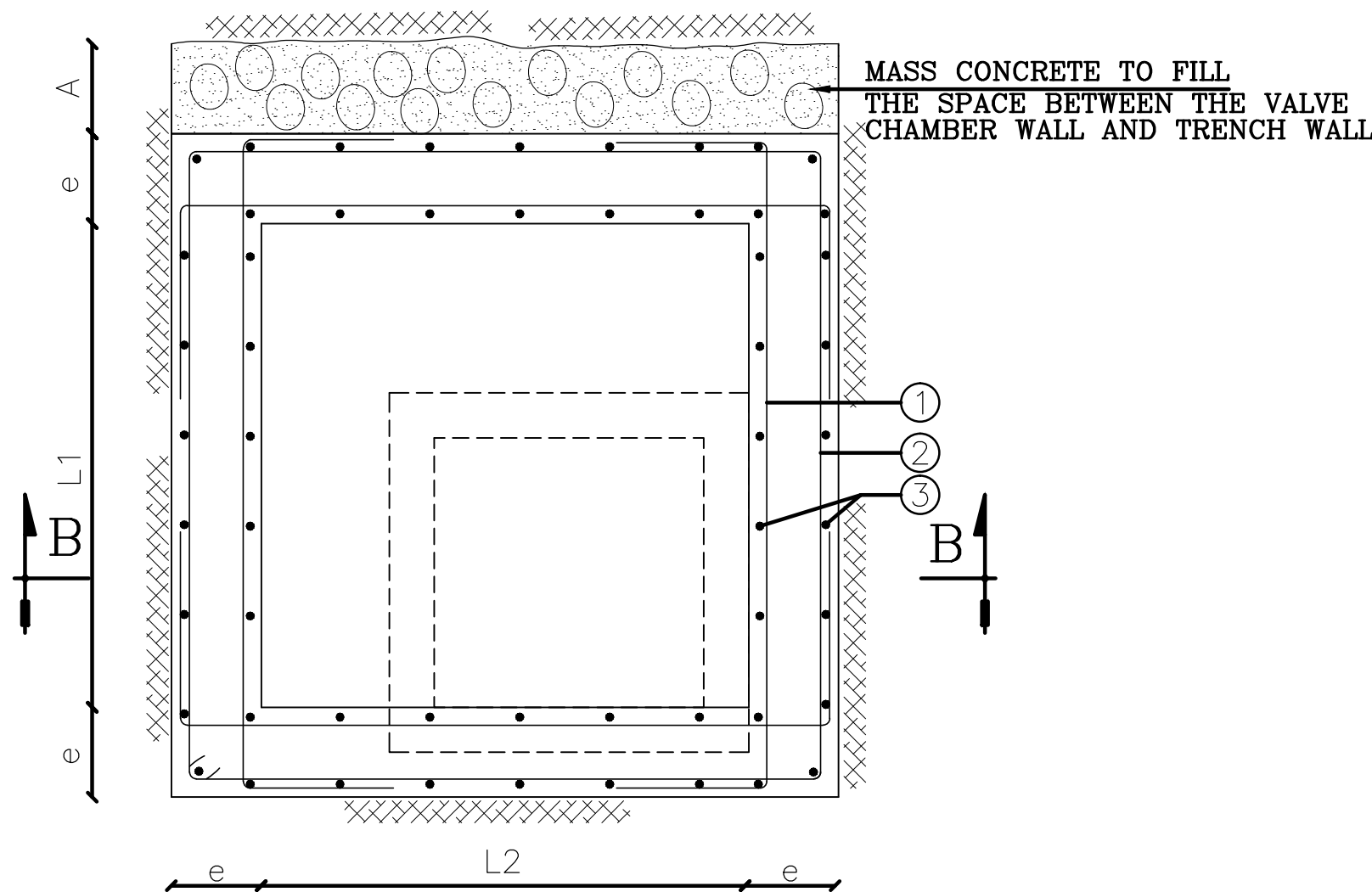


TYPE 3-C



TYPE 4-C



TYPICAL REINFORCEMENT OF VALVE CHAMBER

PIPE DIAMETER	LENGTH	WIDTH	HEIGHT	WALL & SLAB THICKNESS	UPPER SLAB THICKNESS	MASS CONCRETE THICKNESS	PIPE COVER
D	L1	L2	H	e	e'	A	HC
mm	mm	mm	mm	mm	mm	mm	mm
80-150	1100	1100	1500	200	250	200	800
200	1200	1200	1500	200	250	200	1000
250	1400	1400	1500	200	250	200	1000
300	1500	1500	2000	250	250	200	1000
350	1500	1500	2000	250	250	200	1000
400	1700	1700	2400	250	300	200	1100
450	1700	1700	2400	250	300	200	1100
500	2000	2000	2400	300	300	200	1200
600	2100	2100	2500	300	300	200	1200

PIPE DIAMETER	REINFORCEMENT						
D	1	2	3	4	5	6	7
mm	mm	mm	mm	mm	mm	mm	mm
80-150	T12 @200	T12 @200	T10 @200	T12 @200	T12 @200	T12 @200	T12 @200
200	T12 @200	T12 @200	T10 @200	T12 @200	T12 @200	T12 @200	T12 @200
250	T12 @200	T12 @200	T10 @200	T12 @200	T12 @200	T12 @200	T12 @200
300	T12 @200	T12 @200	T10 @200	T12 @200	T12 @200	T12 @200	T12 @200
350	T12 @200	T12 @200	T10 @200	T12 @200	T12 @200	T12 @200	T12 @200
400	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200
450	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200	T12 @200
500	T14 @200	T14 @200	T12 @200	T14 @200	T14 @200	T12 @200	T12 @200
600	T14 @200	T14 @200	T14 @200	T14 @200	T14 @200	T12 @200	T12 @200

NOTES:

- REINFORCED CONCRETE:
NORMAL PORTLAND CEMENT, GRADE C45.
DOSING 350 Kg/m³
- BLINDING AND MASS CONCRETE:
NORMAL PORTLAND CEMENT, GRADE C45.
DOSING 250 kg/m³.
- REINFORCEMENT:
DEFORMED HIGH STRENGTH STEEL BARS: SYMBOL T YIELD STRESS:
F_y=400 MPa. MILD STEEL BARS : SYMBOL Ø YIELD STRESS:
F_y=215 MPa.
- STRESSES:
SEVERE CONTROL.
CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS: f_c =25 MPa.
CONCRETE TENSILE STRENGTH AT 28 DAYS: f_t =2.1 MPa.
- CONCRETE COVER:
CLEARANCE BETWEEN THE EXTERNAL GENERATRIX OF BARS AND THE FACINGS SHALL BE 30 mm
- OVERLAPPING:
LAPS SHALL NOT BE LESS THAN FIFTY TIMES THE BAR DIAMETER. WHERE SPICE BARS ARE USED, THEIR LENGTH SHALL NOT BE LESS THAN 2x50Ø. (Ø= NOMINAL DIAMETER OF BAR). LAPS SHALL BE STAGGERED FROM ONE HOOP TO THE OTHER AND/OR ONE BAR TO THE OTHER IN ORDER TO REDUCE THE NUMBER OF LAPS IN THE SAME SECTION. STIRRUPS Ø8 SHALL BE USED ON EACH LAP.
- BENDING:
Ø > 12mm MECHANICAL.
Ø ≤ 12mm MANUAL (POSSIBLY).
STRAIGHTENING OF BENDED BARS IS NOT ALLOWED.
- FORMWORK:
ALL EXECUTED CONCRETE SHALL BE FAIR FACE CONCRETE (METALLIC OR PLYWOOD FORMWORK).
- WATERPROOFING:
BITUMEN LAYER ON EXTERNAL SURFACES OF VALVE CHAMBER WALLS EXCEPT WHERE THERE IS MASS CONCRETE
- REMARKS:
* HOLES MADE BY THE TIE-RODS SHALL BE FILLED WITH A NON SHRINK GROUT BY MEANS OF SPECIAL INJECTION METHODS.
* ALL DIMENSIONS ARE IN MILLIMETERS.
* SCALING FROM THESE DRAWINGS IS NOT ALLOWED.
* SOIL FRICTION ANGLE SHALL BE 25°
* GROUND/ MANHOLE FRICTION COEFFICIENT SHALL BE 2/3 tg Ø
* THE PASSIVE EARTH PRESSURE SHALL BE TAKEN INTO ACCOUNT FOR MANHOLE STABILITY BY FILLING THE VOID BETWEEN THE MANHOLE AND THE TRENCH WALL WITH MASS CONCRETE OF A MINIMUM THICKNESS "200".
- SOAKAWAY
TO BE USED ONLY IF THE INSTALLATION OF AN ADEQUATE GRAVITY DRAIN PIPE TO A FREE OUTLET IS DETERMINED BY THE SUPERVISOR NOT TO BE POSSIBLE.
- WASHOUT CHAMBER DIMENSIONS :
IN THE CASES WHERE THE WASHOUT CHAMBER IS TO HOUSE, AT THE SAME TIME, THE WASHOUT GATE VALVE AND THE MAIN PIPE, THE CHAMBER DIMENSIONS MAY VARY FROM THOSE INDICATED ON THIS DRAWING. CONSEQUETLY, THE EXACT DIMENSIONS ARE TO BE TAKEN FROM THE RELEVANT SPECIFICATIONS AND/OR DRAWINGS IN THE TENDER DOCUMENTS OR AS DIRECTED BY THE SUPERVISOR.
- * T.P. =TEST PRESSURE
- * WASHOUT CHAMBER TYPE II SHALL BE USED NORMALLY,IF DETERMINED BY THE SUPERVISOR NOT TO BE APPLICABLE , TYPE I WILL BE USED.

UNITED NATIONS DEVELOPMENT PROGRAMME
LEBANON

NORTH LEBANON WATER SUPPLY
CONSTRUCTION OF WADI KHALED 2 WATER SUPPLY SYSTEM

TYPICAL CONNECTIONS OF NEW PIPES TO EXISTING GALVANIZED STEEL PIPES
LAYOUT & DETAILS(2/2)

SCALE : -	DATE : SEPTEMBER 2014	DRAWING N° : WS-WK-254-A.dwg
	N° : W.S.W.K.2.5.4	REV. A