

REVISION SCHEDULE

| REV. NO. | REV. DESCRIPTION | REV. DATE | DRAWN | CHECKED |
|----------|---------------------|------------|-------|---------|
| PL1 | ISSUED FOR PLANNING | 07/02/2019 | TGB | KOM |
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NOTES:

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ENGINEERS & ARCHITECTS DRAWINGS. DIMENSIONS ONLY (NOT SCALING) TO BE USED. WHERE A CONFLICT OF INFORMATION EXISTS OR IF IN ANY DOUBT - ASK.
- CONSULTANTS TO BE INFORMED IMMEDIATELY OF ANY DISCREPANCIES BEFORE WORK PROCEEDS.
- PIPE BEDDING

- GRANULAR BEDDING FOR PIPES TO BE EITHER:
 - FREE DRAINING COARSE SAND OR
 - 10mm NOMINAL SINGLE SIZED GRAVEL OR
 - 5mm TO 10mm GRADED GRAVEL
 GRAVELS IN (i) OR (ii) CAN BE EITHER ROUND OR ANGULAR BUT WITH GOOD SELF COMPACTING PROPERTIES.

B. GRANULAR SURROUND & COVER FOR PIPES TO BE AS FOLLOWS:

| TABLE 5/3 GRANULAR MATERIALS TO BS882 | | |
|---------------------------------------|----------------|-------------------------------------|
| NOMINAL PIPE DIA. (mm) | AGGREGATE TYPE | NOMINAL MAXIMUM AGGREGATE SIZE (mm) |
| NOT EXCEEDING 140 | SINGLE SIZED | 10 |
| | GRADED | - |
| EXCEEDING 140 BUT NOT EXCEEDING 400 | SINGLE SIZED | 10, 14 OR 20 |
| | GRADED | 20 TO 5 OR 14 TO 5 |
| EXCEEDING 400 | SINGLE SIZED | 10, 14, 20 OR 40 |
| | GRADED | 14 TO 5, 20 TO 5 OR 40 TO 5 |

C. BACKFILL

- BACKFILL UNDER FOOTPATH / CYCLEPATH / GRASS VERGE TO BE SELECTED BACKFILL TO NRA SPECIFICATION FOR ROADWORKS CLAUSE 601, TABLE 6/1 CLASS 2C MATERIAL. COMPACTED IN 300mm LAYERS.
- BACKFILL UNDER CARRIAGEWAYS TO BE SELECTED GRANULAR MATERIAL TO NRA SPECIFICATION FOR ROADWORKS CLAUSE 601, TABLE 6/1 CLASS 6F1 OR 6F2 MATERIAL. COMPACTED IN 300mm LAYERS.

D. WARNING MESH

ALL PIPEWORK SHALL HAVE A 400mm WIDE WATER WARNING MESH - PL YAGE HR 40D BLUE POLYETHYLENE WARNING MESH OR SIMILAR - WITH TRACER WIRE LAID DIRECTLY OVER CENTRELINE OF THE PIPELINE AND TIED TO VALVES AT A DEPT OF 350mm BELOW THE FINISHED GROUND SURFACE.

4. PIPE TESTING

A. PRESSURE TEST

ALL WATERMANS SHOULD BE HYDRAULICALLY TESTED AFTER LAYING, FOR A PERIOD OF 24 HOURS, AT A TEST PRESSURE OF 1.5 TIMES THE SPECIFIED CLASS PRESSURE (13.5 BAR.) THE PIPELINE SHOULD BE ADEQUATELY ANCHORED OR RESTRAINED, DURING THE TEST. A TEST PUMP, WITH STOPCOCK, WATER TANK AND PRESSURE GAUGE, IS CONNECTED TO THE WATERMAIN AND OPERATED UNTIL THE GAUGE SHOWS THE REQUIRED TEST PRESSURE. (IF IT IS CONSIDERED NECESSARY, THE CALIBRATION OF THE PRESSURE GAUGE SHOULD BE VALIDATED JUST PRIOR TO THE TEST.) THE AMOUNT OF WATER IN THE TANK IS NOTED AT THE BEGINNING OF THE TEST PERIOD. AN HOUR LATER, GAUGE PRESSURE IS INSPECTED AND IF IT HAS FALLEN, TEST PRESSURE IS RESTORED BY MEANS OF A PUMP. THIS PROCESS IS REPEATED AT HOURLY INTERVALS, DURING THE TEST PERIOD. THE TOTAL QUANTITY OF WATER PUMPED TO MAINTAIN THE PRESSURE DURING THE TEST IS TERMED THE 'APPARENT LEAKAGE'.

THE APPARENT LEAKAGE SHOULD NOT NORMALLY EXCEED 0.11 LITRES, PER MILLIMETER OF NOMINAL PIPE DIAMETER, PER KILOMETER OF LENGTH, PER 24 HOURS. A REPRESENTATIVE OF DROGHEDA BOROUGH COUNCIL TO BE PRESENT DURING TESTING.

B. CHLORINATION TEST

ALL MAINS SHALL BE SWABBED AND DISINFECTED BEFORE BEING PUT IN TO SUPPLY. THE PIPELINES SHALL BE DISINFECTED WITH WATER HAVING A MINIMUM CONCENTRATION OF 20mg/l OF FREE AVAILABLE CHLORINE.

THE CHLORINATED WATER SHALL BE LEFT IN THE MAIN FOR A PERIOD OF AT LEAST 24 HOURS. CHLORINE RESIDUAL ANALYSIS. GREAT CARE SHALL BE TAKEN WHEN OBTAINING SAMPLES FOR TESTING AND ONLY STERILE CONTAINERS SHALL BE USED. THIS SAMPLING SHALL BE CARRIED OUT IN THE PRESENCE OF A REPRESENTATIVE OF DROGHEDA BOROUGH COUNCIL. SAMPLES SHALL BE TESTED WITHIN 6 HOURS OF COLLECTION.

C. BACTERIOLOGICAL TEST

THE MAIN SHALL BE REFILLED AND A SAMPLE OF THE WATER SHALL BE TAKEN FOR BACTERIOLOGICAL ANALYSIS. GREAT CARE SHALL BE TAKEN WHEN OBTAINING SAMPLES FOR TESTING AND ONLY STERILE CONTAINERS SHALL BE USED. THIS SAMPLING SHALL BE CARRIED OUT IN THE PRESENCE OF A REPRESENTATIVE OF DROGHEDA BOROUGH COUNCIL. SAMPLES SHALL BE TESTED WITHIN 6 HOURS OF COLLECTION.

5. HYDRANTS

HYDRANTS SHALL BE MANUFACTURED IN ACCORDANCE WITH BS 750: 1984 TYPE 2 AND SHALL INCORPORATE A SCREW-DOWN VALVE, UNDERGROUND 'GUIDE IN HEAD' TYPE WITH BAYONET LUG OUTLETS AND FALSE SPINDLE CAP, ALL TO DROGHEDA BOROUGH COUNCILS APPROVAL. THE HYDRANT VALVE SHALL BE ANTI-CLOCKWISE OPENING.

6. SLUICE VALVES

SLUICE VALVES SHALL BE MANUFACTURED IN ACCORDANCE WITH BS 5163:1986. THEY SHALL BE DOUBLE FLANGED; DUCTILE IRON RESILIENT SEAL GATE VALVES, ALL TO DROGHEDA BOROUGH COUNCILS APPROVAL. SLUICE VALVES SHALL BE ANTI-CLOCKWISE CLOSING.

7. AIR VALVES

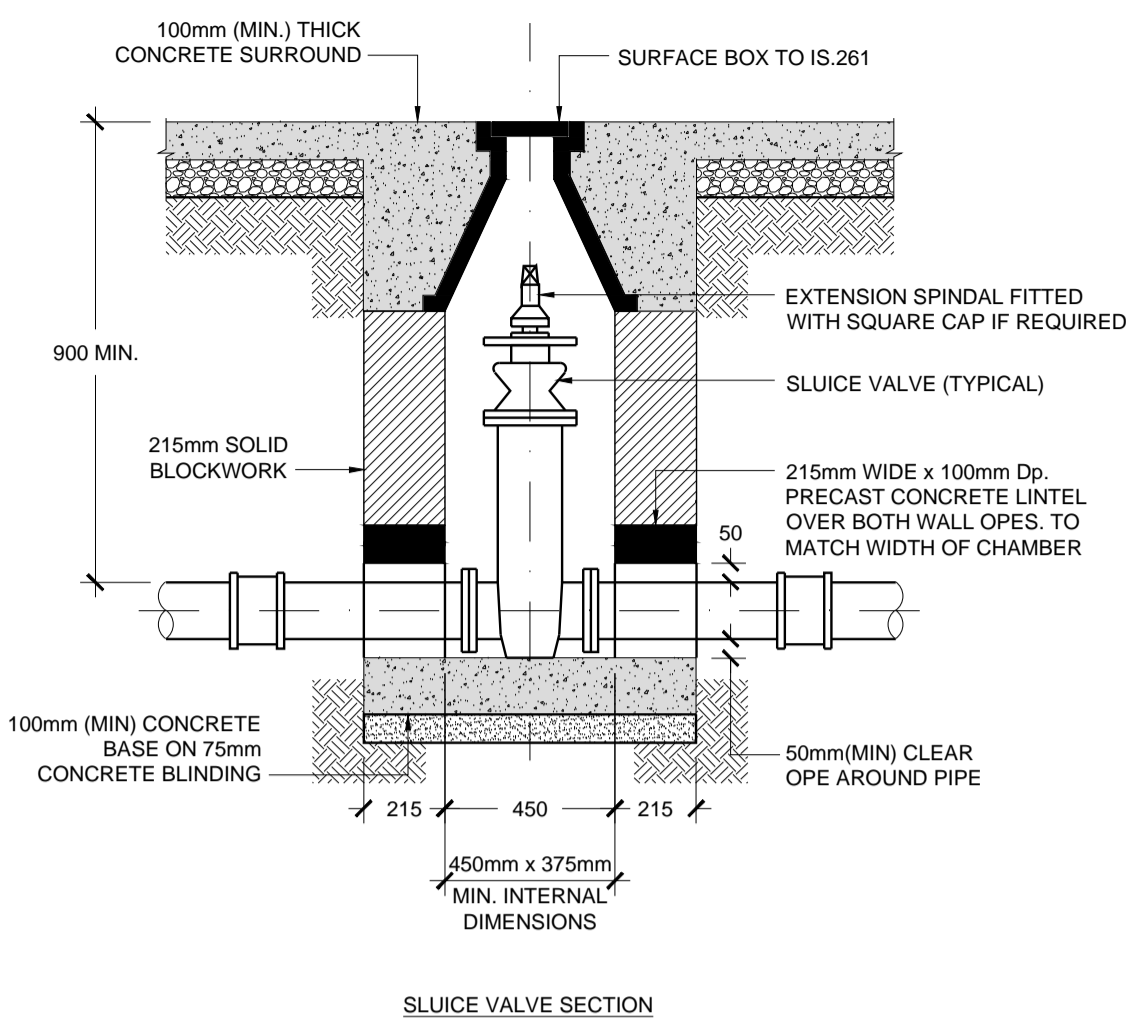
AIR VALVES TO BE MANUFACTURED IN ACCORDANCE WITH BS5159 AND TO BE TO DROGHEDA BOROUGH COUNCILS APPROVAL.

8. SURFACE COVERS

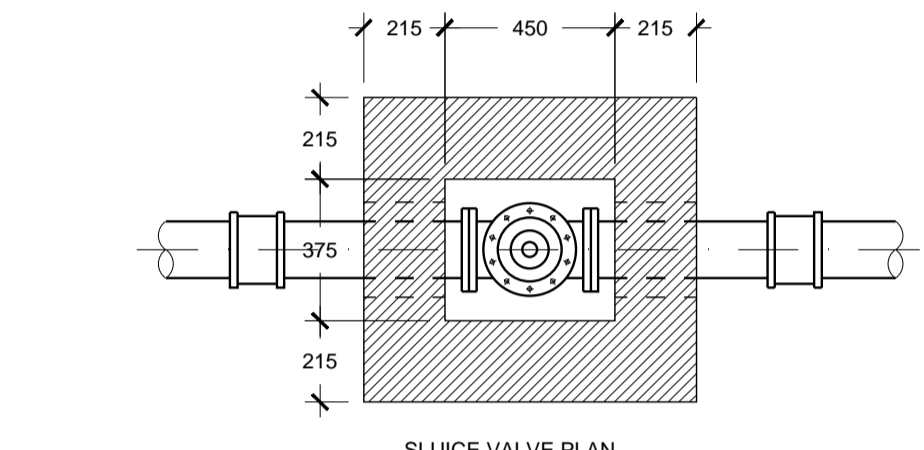
HYDRANT, SLUICE VALVE & AIR VALVE CHAMBERS SHOULD BE PROVIDED WITH CAST IRON SURFACE BOXES IN COMPLIANCE WITH THE REQUIREMENTS OF IS. 261. SURFACE BOXES FOR ROADWAYS AND AREAS ACCESSIBLE TO WHEEL TRAFFIC SHOULD BE SUBJECT TO THE APPROVAL OF DROGHEDA BOROUGH COUNCIL.

9. HYDRANT AND VALVE INDICATOR PLATES

THE LOCATION OF HYDRANTS, AIR VALVES AND SLUICE VALVES SHOULD BE SHOWN BY INDICATOR PLATES POSITIONED TO THE APPROVAL OF THE LOCAL AUTHORITY. HYDRANT PLATES SHOULD COMPLY WITH THE REQUIREMENTS OF BS3251. THEY SHOULD SHOW THE DIAMETER OF THE WATERMAIN IN MILLIMETERS ON THE UPPER PART OF THE PLATE AND THE DISTANCE OF THE MARKER FROM THE HYDRANT ON THE LOWER PART OF THE PLATE. ALL CHARACTERS SHOULD BE BLACK AND THE REMAINDER OF THE FRONT FACE SHOULD CONFORM TO COLOUR REFERENCE No. 309 (CANARY YELLOW) OF BS 381C. SLUICE VALVE, SCOUR VALVE AND AIR VALVE PLATES SHOULD BE CAST IRON MEASURING 200 x 200mm. THEY SHOULD HAVE THE LETTERS SV, SOV OR AV AS APPROPRIATE, CAST IN RELIEF. THE PLATES SHOULD HAVE A BACKGROUND IN BLACK BITUMASTIC PAINT WITH THE LETTERS IN WHITE ENAMEL. INDICATOR PLATES MAY BE FIXED TO SOLID BOUNDARY WALLS. WHERE MARKER POSTS ARE USED THEY SHOULD BE CONSTRUCTED AS SHOWN ON THE DRAWING.

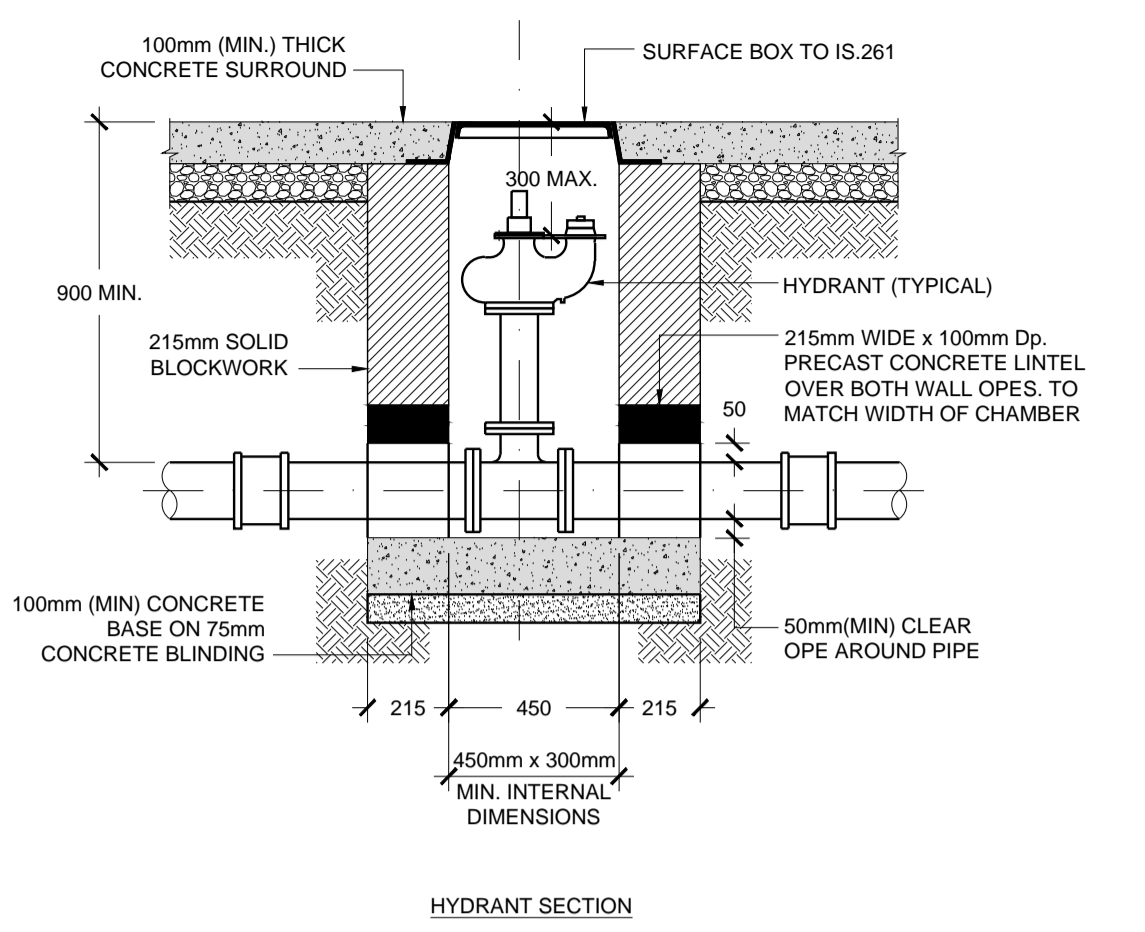


SLUICE VALVE SECTION

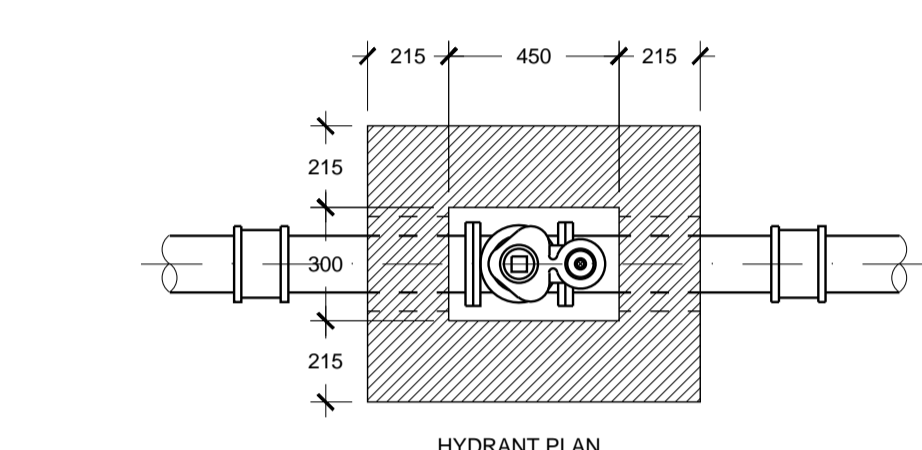


SLUICE VALVE PLAN

SLUICE VALVE CHAMBER DETAILS SCALE 1:20

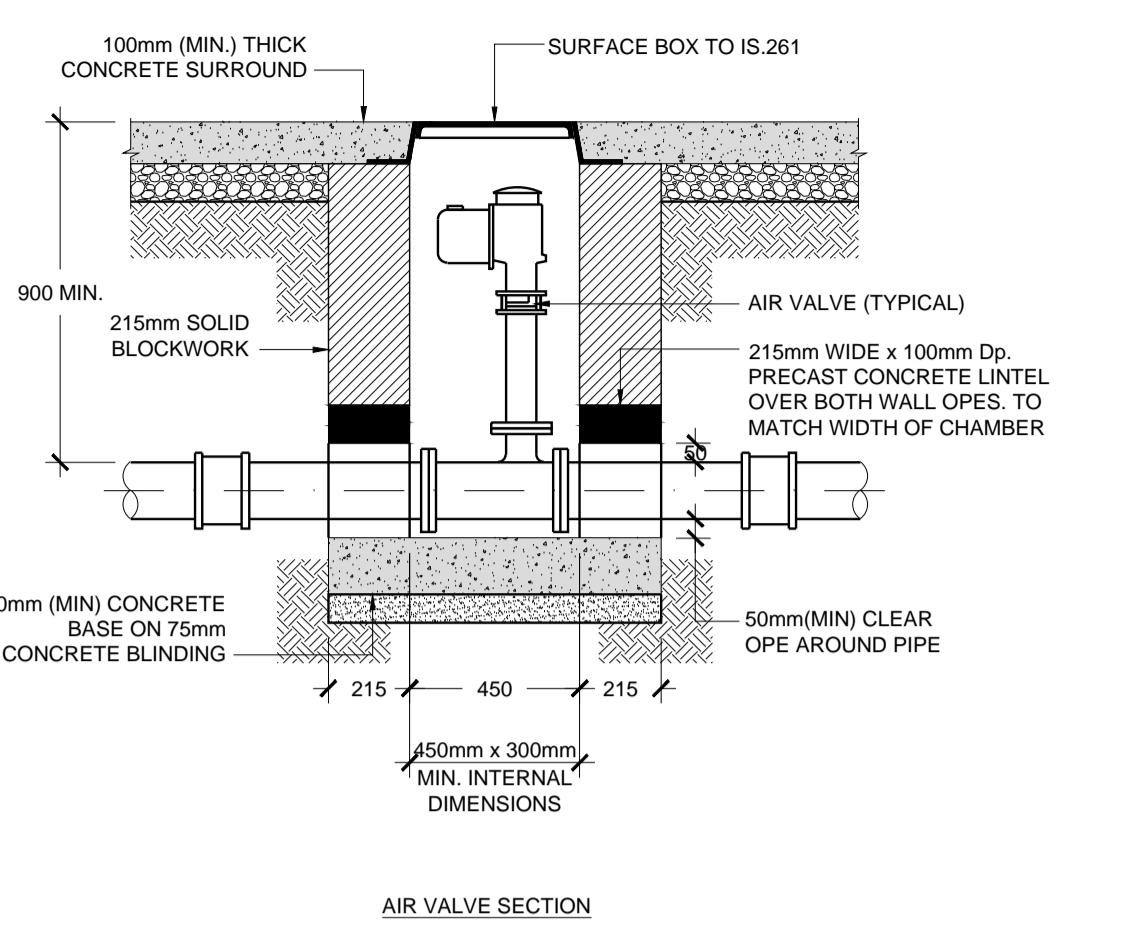


HYDRANT SECTION

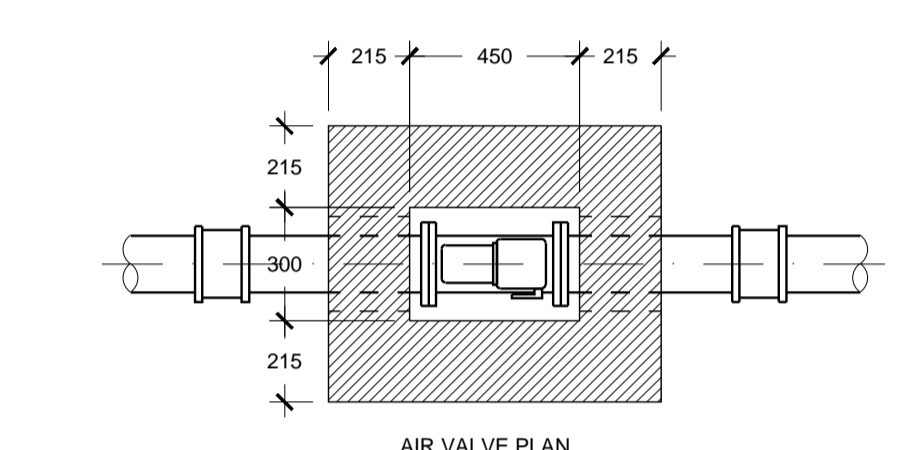


HYDRANT PLAN

HYDRANT CHAMBER DETAILS SCALE 1:20

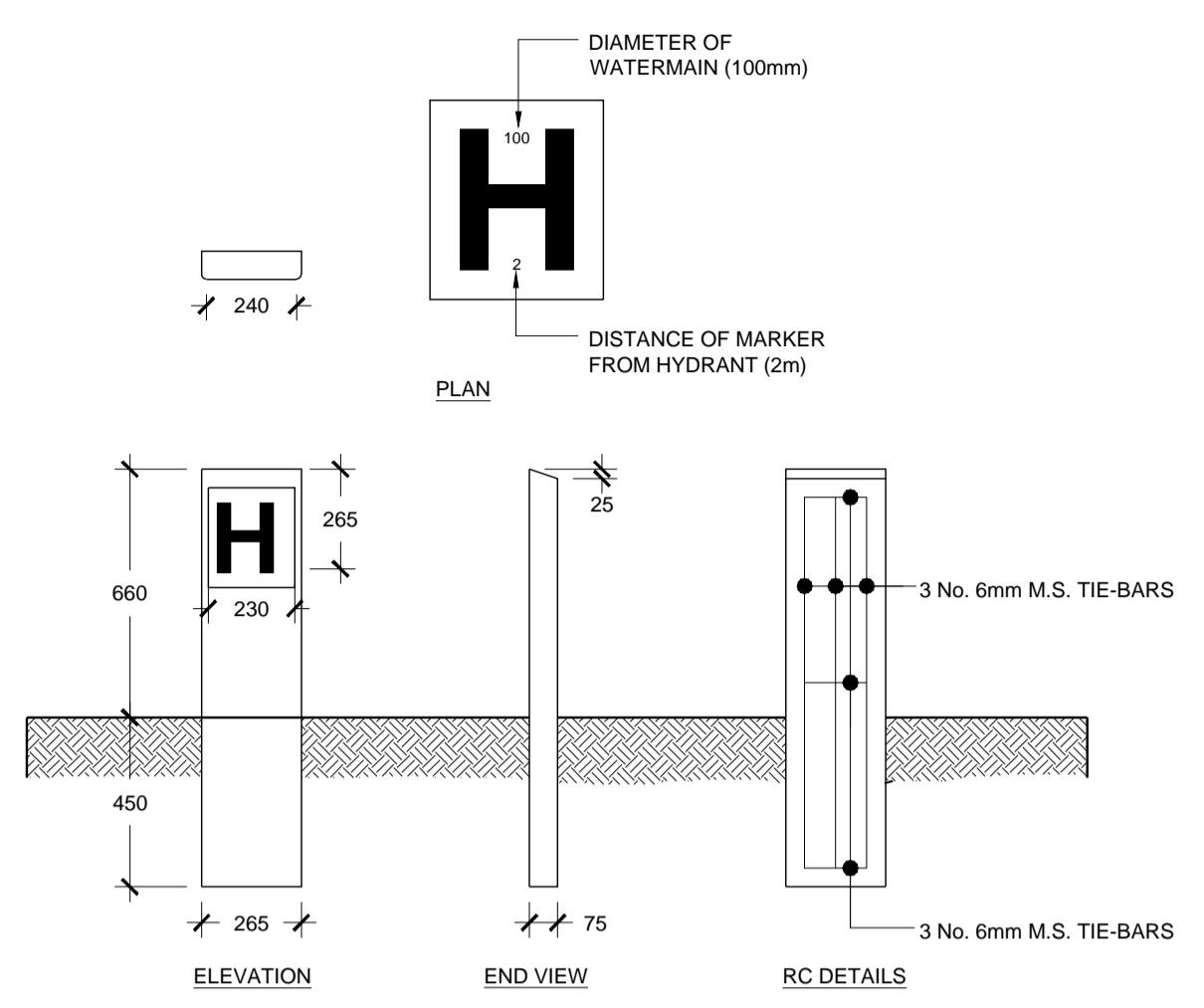


AIR VALVE SECTION

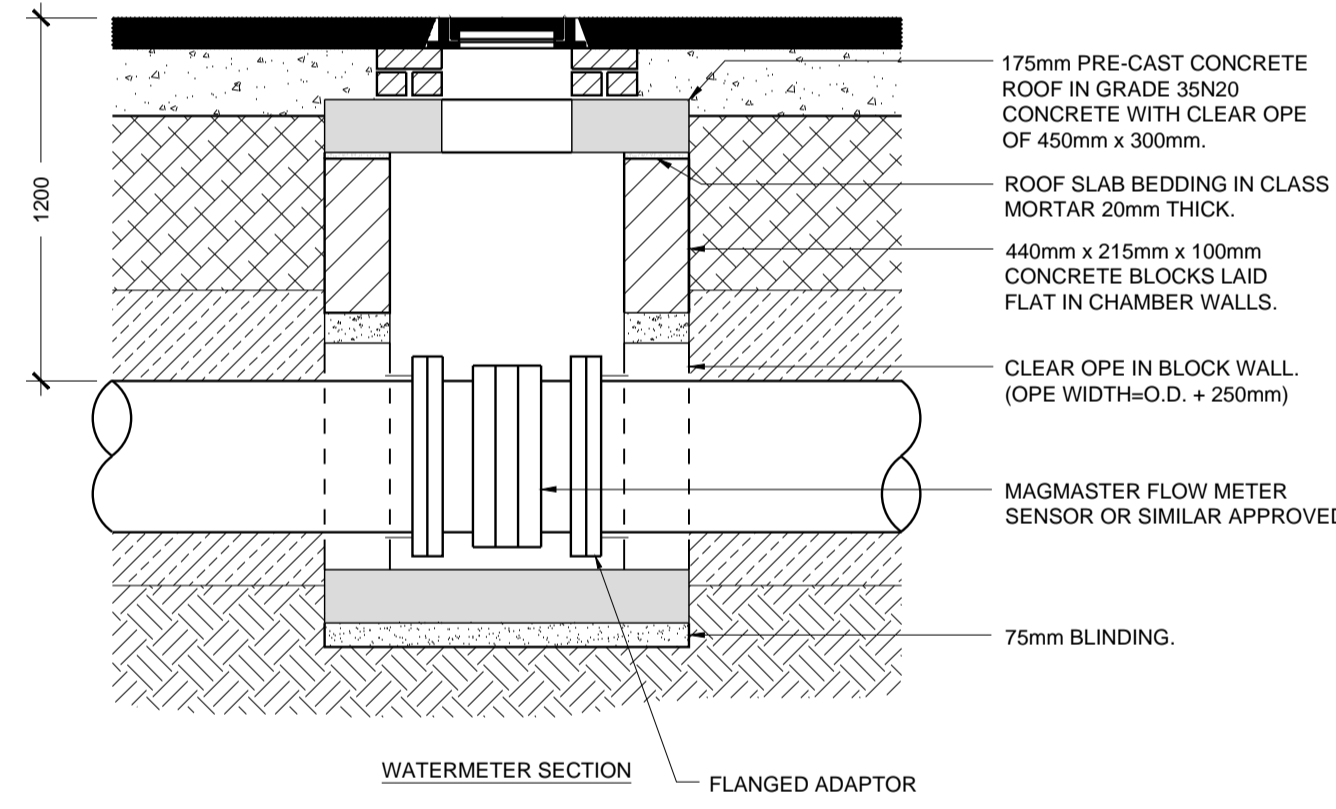


AIR VALVE PLAN

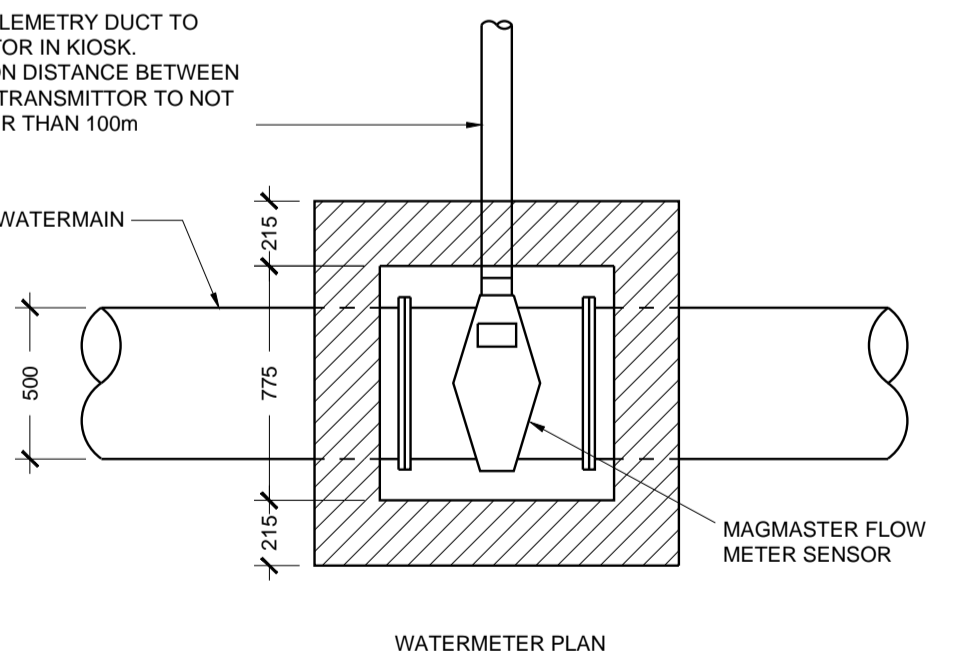
AIR VALVE CHAMBER DETAILS SCALE 1:20



HYDRANT INDICATOR PLATES SCALE 1:20

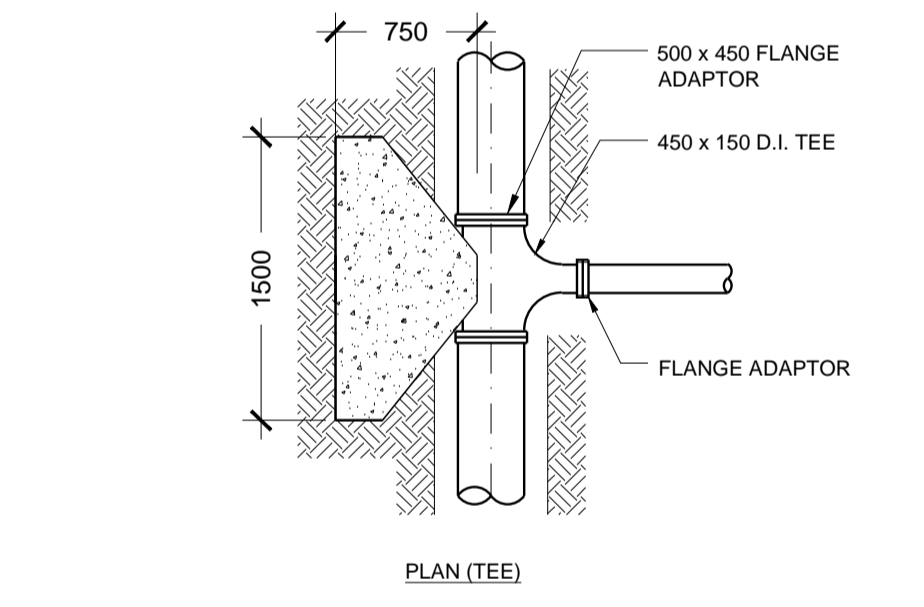


WATERMETER SECTION

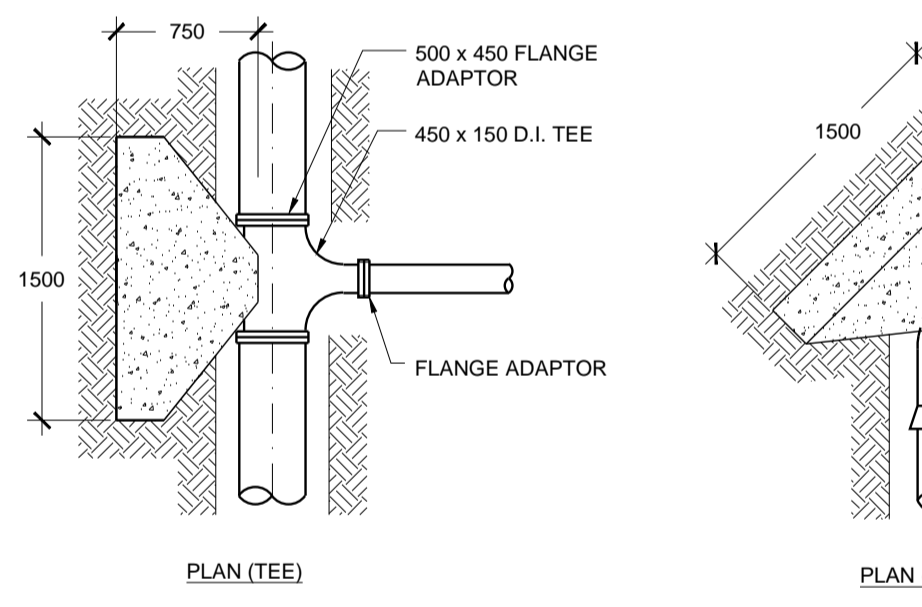


WATERMETER PLAN

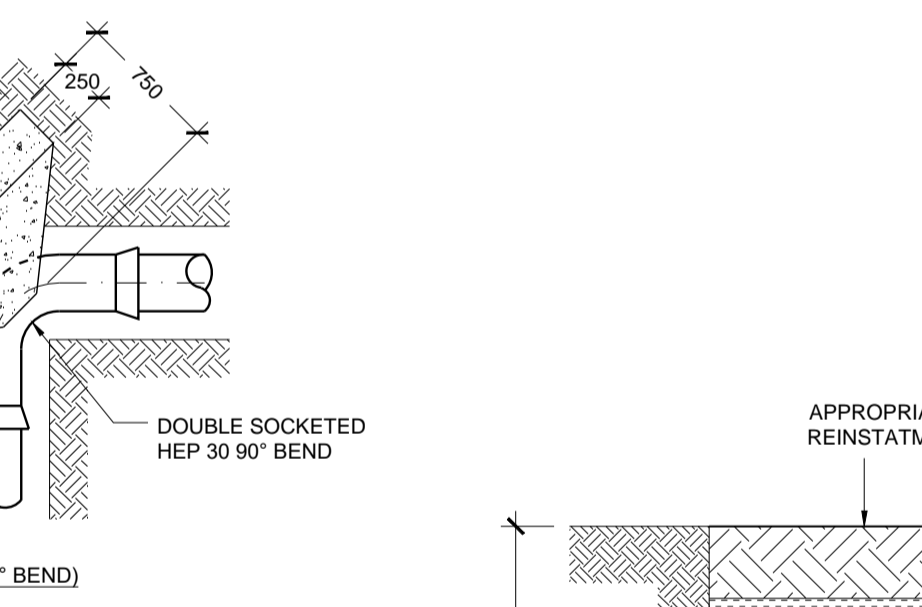
BULK WATERMETER SCALE 1:25



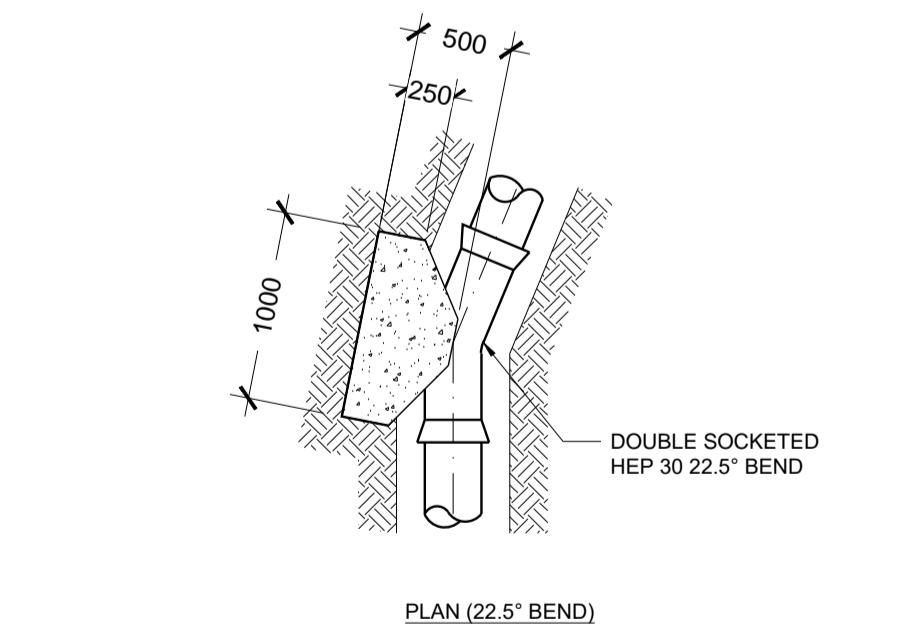
PLAN (TEE)



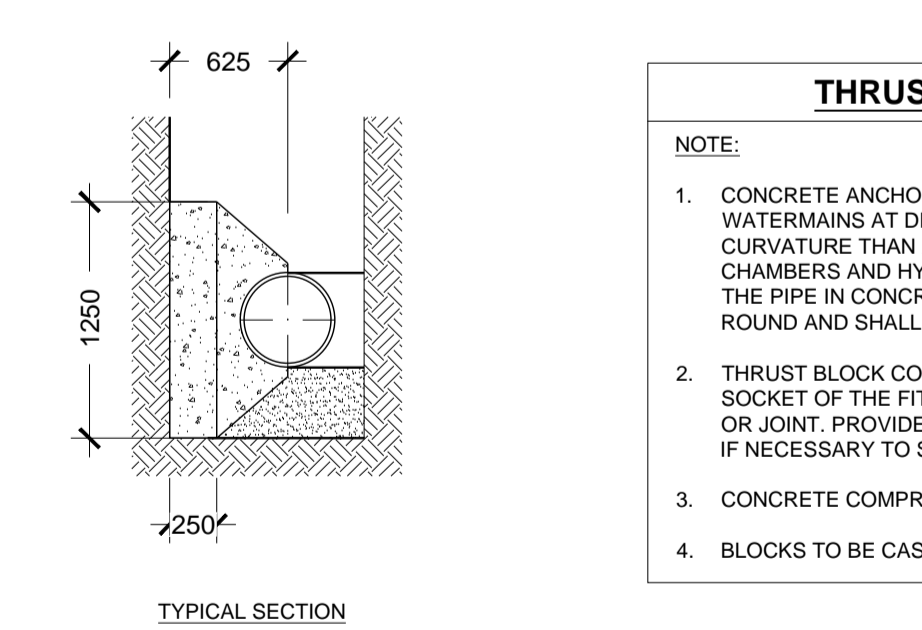
PLAN (TEE)



PLAN (90° BEND)



PLAN (22.5° BEND)



TYPICAL SECTION

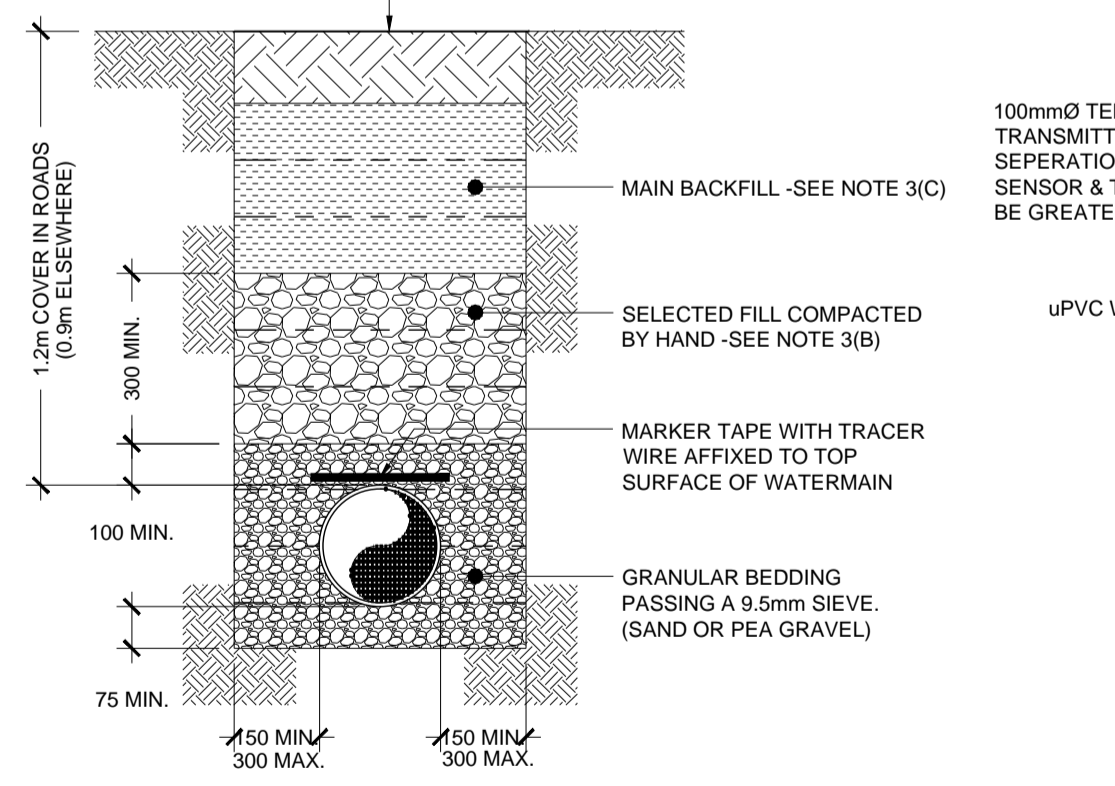
THRUST BLOCK DETAILS SCALE 1:40

THRUST BLOCK DETAILS

NOTE:

- CONCRETE ANCHOR BLOCKS SHALL BE PROVIDED ON WATERMANS AT DEAD ENDS, TEES, BENDS OF GREATER CURVATURE THAN 22 1/2° AND AT BOTH SIDES OF SLUICE VALVE CHAMBERS AND HYDRANTS. ANCHOR BLOCKS SHALL ENCASE THE PIPE IN CONCRETE TO A MINIMUM THICKNESS OF 150mm ALL ROUND AND SHALL BE A MINIMUM LENGTH OF 600mm.
- THRUST BLOCK CONCRETE SHALL BE PLACED BEHIND THE SOCKET OF THE FITTING AND NOT ALLOWED AGAINST THE PIPE OR JOINT. PROVIDE 1200g VISQUEEN WRAP AROUND PIPE & JOINT IF NECESSARY TO SEPERATE THEM FROM THE THRUST BLOCK.
- CONCRETE COMPRESSIVE STRENGTH SHALL BE 20N AT 28 DAYS
- BLOCKS TO BE CAST AGAINST UNDISTURBED EARTH

| PIPE DIAMETER (mm) | ANCHOR BLOCK DIMENSIONS IN METRES FOR GROUND BEARING PRESSURE 100N/m² | | | | |
|--------------------|---|-----|-----|-----|-----|
| | A | B | C | D | E |
| 150 | 1.2 | 0.6 | 0.9 | 0.6 | 1.0 |
| 200 | 1.6 | 0.6 | 1.2 | 1.2 | 1.4 |



WATERMAIN TRENCH DETAIL SCALE 1:20

NOTE: FOR WATERMANS UNDER ROADS & IN CAR PARKS USE CL 804 COMPACTED BACKFILL ONLY

Drawing Stage: **PLANNING**

Project Details:

| | |
|---------------|--------------------------|
| Site Address: | COOLOCK DRIVE, DUBLIN 17 |
| Client: | PLATINUM LAND LTD. |
| Architect: | PLUS ARCHITECTURE |
| M&E Designer: | |
| Contractor: | |

Notes

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| 1. ALL ENGINEERS DRAWINGS TO BE READ IN CONJUNCTION WITH RELEVANT DRAWINGS AND SPECIFICATIONS. | 6. ALL LEVELS ARE STRUCTURAL UNLESS NOTED OTHERWISE. |
| 2. ALL SETTING OUT TO ARCHITECTS DRAWINGS. | 7. |
| 3. DO NOT SCALE FROM ENGINEERS DRAWINGS. | |
| 4. ANY DISCREPANCIES BETWEEN DRAWINGS, SKETCHES, VERBAL INSTRUCTIONS AND SITE CONDITIONS TO BE REFERRED TO THE DESIGN TEAM BEFORE WORK COMMENCES. | |

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|----------------|-----------------------------------|-------------|------|--------------|-----------|-----------------|------------|
| Drawn by: | JPC | Checked by: | KO'M | Approved by: | JFC | Date: | 07/02/2019 |
| Project Name: | CHIVERS SITE | | | Scale: | A.S. @ A1 | Project Number: | 1753 |
| Drawing Title: | STANDARD DRAINAGE DETAILS SHEET 4 | | | Project: | CHV | Originator: | CORA |

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| Level: | ZZ | Type: | DR | Discipline: | C | Drawing No: | 014 | Stage: | - | Revision: | PL1 |
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