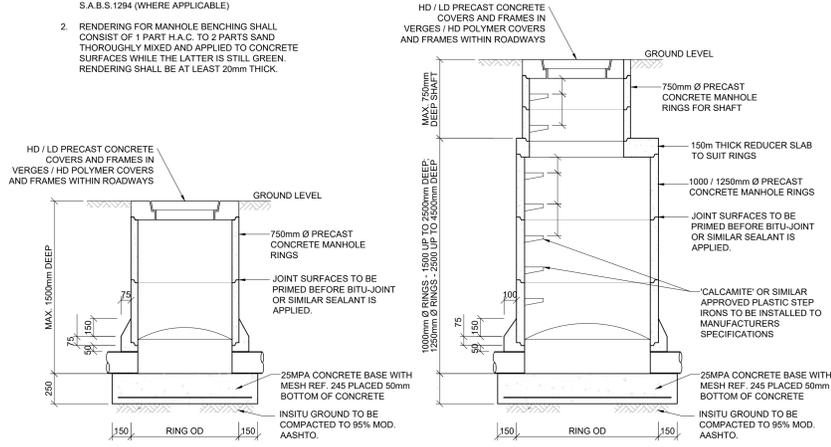


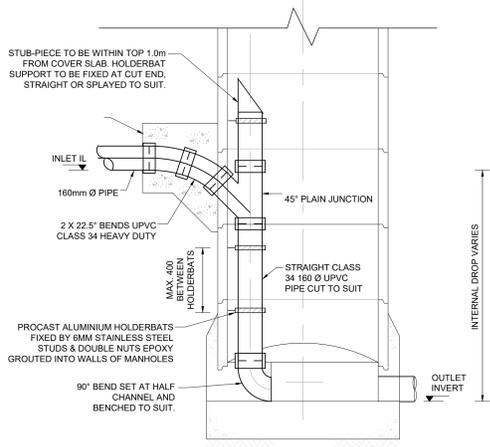
**NOTES:**

- ALL PRECAST CONCRETE MANHOLE COMPONENTS TO COMPLY WITH THE REQUIREMENTS OF S.A.B.S.1294 (WHERE APPLICABLE)
- RENDERING FOR MANHOLE BENCHING SHALL CONSIST OF 1 PART H.A.C. TO 2 PARTS SAND THOROUGHLY MIXED AND APPLIED TO CONCRETE SURFACES WHILE THE LATTER IS STILL GREEN. RENDERING SHALL BE AT LEAST 20mm THICK.

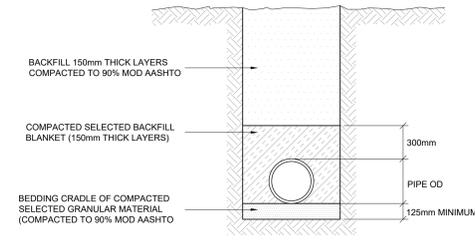


**SEWER MANHOLE TYPICAL TYPE A**  
(0.0m to 1.5m DEEP)  
N.T.S

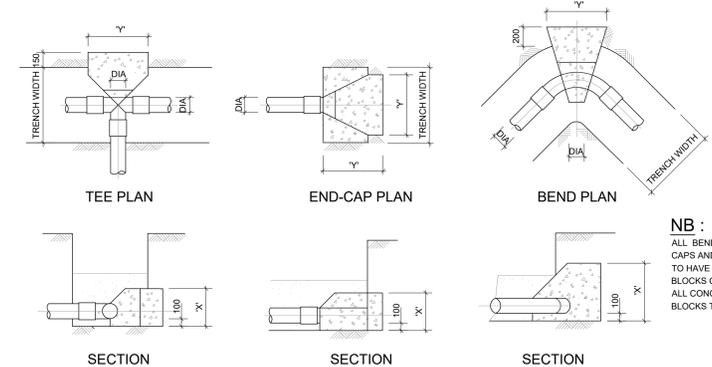
**SEWER MANHOLE TYPICAL TYPE B**  
(1.5m to 4.5m DEEP)  
N.T.S



**TYPICAL 90° INTERNAL SEWER DROP CONNECTION DETAIL**  
N.T.S



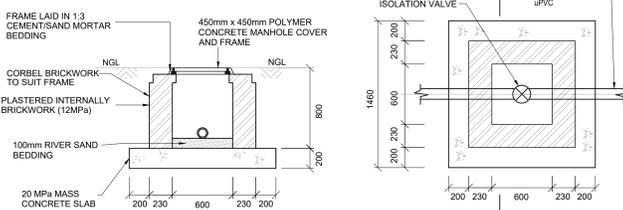
**TYPICAL PIPE BEDDING DETAIL**  
N.T.S



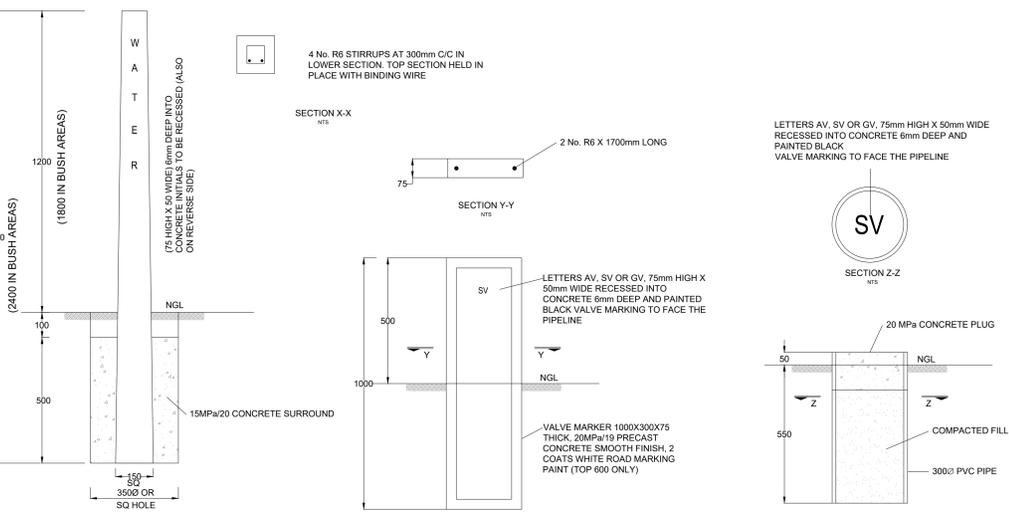
**NB:**  
ALL BENDS / TIES / END CAPS AND VALVES TO HAVE A THRUST BLOCKS CONSTRUCTED. ALL CONCRETE TO THRUST BLOCKS TO BE 20 Mpa

**TYPICAL THRUST BLOCK DETAILS**  
N.T.S

THRUST BLOCK SIZES (in mm) IN NORMAL EARTH FOR HEADS OF 120m												
PIPE SIZE	END CAP		TEE (BRANCH)		90° BEND		45° BEND		22.5° BEND		112.5° BEND	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
50-75	300x200	300x200	300x200	350x300	300x250	300x200	300x200	300x200	300x200	300x200	300x200	300x200
100	300x400	300x400	300x400	400x500	350x300	300x200	300x200	300x200	300x200	300x200	300x200	300x200



**SECTION A-A**  
**ISOLATION VALVE CHAMBER DETAIL**  
N.T.S



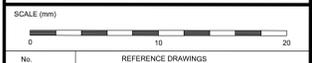
**PLAN: TYPICAL MARKER BEACON (PRECAST CONCRETE)**

**PLAN: TYPICAL VALVE MARKER (PRECAST CONCRETE)**

**PLAN: TYPICAL GROUND LEVEL MARKER**

**NOTES:**

- ALL SETTING OUT TO BE UNDERTAKEN BY A REGISTERED PROFESSIONAL LAND SURVEYOR.
  - PROVE ALL SERVICES PRIOR TO CONSTRUCTION.
  - ALL WORK AREAS TO BE REINSTATED (PREMK, CONCRETE, ETC.)
  - MUNICIPALITY TO EXECUTE ALL CONNECTIONS INTO MUNICIPAL LINES.
  - ALL LEVELS AND DIMENSIONS TO BE VERIFIED ON SITE.
  - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE STRUCTURAL ENGINEERING AND ARCHITECTURAL DRAWINGS.
  - ALL WORK IS TO BE EXECUTED IN ACCORDANCE WITH SANS 1200.
  - CONTRACTOR TO PROVIDE AN AS-BUILT SURVEY OF ALL WORKS CONSTRUCTED UPON COMPLETION OF THE PROJECT.
  - ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE RELEVANT SABS 1200 SPECIFICATIONS.
  - THE CONTRACTOR MUST GIVE THE ENGINEER 48 HOURS WRITTEN NOTICE OF INSPECTIONS PRIOR TO COVERING UP ANY WORKS.
  - THE CONTRACTOR MUST ARRANGE FOR CONTROL TESTING AT FREQUENCIES SPECIFIED IN THE RELEVANT SABS 1200 SPECIFICATIONS. COSTS FOR CONTROL TESTING WILL BE FOR THE CONTRACTOR'S ACCOUNT.
  - ONCE THE WORKS ARE SET OUT THE CONTRACTOR MUST CALL THE ENGINEER FOR INSPECTION PRIOR TO COMMENCING WITH CONSTRUCTION.
  - SHOULD THE CONTRACTOR DISCOVER ANY DISCREPANCIES IN THE DRAWINGS, THESE DISCREPANCIES MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY. NO ASSUMPTIONS MUST BE MADE.
  - SHOULD THE CONTRACTOR WISH TO USE ANY MATERIALS OTHER THAN THOSE SPECIFIED, HE MUST OBTAIN WRITTEN APPROVAL FROM THE ENGINEER TO DO SO.
  - ANY DESIGN CHANGES DURING CONSTRUCTION MUST BE ISSUED UNDER SITE INSTRUCTION, AFTER APPROVAL BY THE PRINCIPAL AGENT.
  - ALL BRICKS USED TO CONSTRUCT SEWER AND STORMWATER MANHOLES MUST BE NF3 LOAD BEARING BRICKS CONFORMING TO SABS 1200 LD.
  - ALL EXISTING SERVICES TO BE PROVED PRIOR TO WORK COMMENCING. ANY EXISTING SERVICE THAT IS DAMAGED BY THE CONTRACTOR AND IS SHOWN ON THE CONSTRUCTION DRAWINGS OR INDICATED TO THE CONTRACTOR ON SITE BY THE ENGINEER, MUST BE REPAIRED BY THE CONTRACTOR AT HIS OWN COST.
- B. EARTHWORKS:**
- 150mm TOPSOIL TO BE STRIPPED AND STOCKPILED AS INSTRUCTED.
  - UNSATURATED MATERIAL TO BE SPOILT AS INDICATED BY THE ENGINEER.
  - IN SITU MATERIAL TO BE COMPACTED TO 93% MOD. AASHTO DENSITY.
  - FILL TO BE COMPACTED IN MAX. 200mm THICKNESS TO 93% MOD. AASHTO DENSITY.
  - ALL BATTERS TO BE TOPSOILED WITH MATERIAL FROM STOCKPILE.
- C. STORMWATER**
- ALL STORMWATER PIPES ARE:  
250mm NOMINAL DIAMETER - CLASS 3HD UPVC  
375mm / 450mm NOMINAL DIAMETER - CLASS 1000 CONCRETE
  - ALL STORMWATER CONCRETE PIPES TO COMPLY WITH SANS 877 STANDARDS.
  - ALL JOINTS TO BE 'SPIGOT AND SOCKET' TYPE.
  - ALL STORMWATER PIPES TO BE LAID ON CLASS B BEDDING.
- D. SEWER**
- ALL SEWER PIPES ARE 160mm NOMINAL DIAMETER CLASS 34 HEAVY DUTY UPVC PIPES.
  - ALL SEWER PIPES TO BE LAID ON CLASS B BEDDING.
  - ALL SEWER PIPES TO COMPLY WITH SANS 1601 STANDARDS.
  - ALL SEWER PIPES IN PARKING AREAS/ROAD CROSSING TO BE CONCRETE ENCASED 150mm ALL ROUND WITH 25MPa CONCRETE AT 28 DAYS STRENGTH.
- E. WATER RETICULATION**
- BULK WATER MAIN - 75mm Ø HDPE PE100 PN 12.5
  - BEDDING TO SUIT FLEXIBLE PIPES
  - PIPES TO BE INSTALLED WITH ALL COUPLINGS AND TO BE TESTED AND DISINFECTED.
  - INSTALLATION TO COMPLY WITH SABS 1200.
  - THRUST BLOCKS TO BE 20MPa CONCRETE AT 28 DAYS STRENGTH.
  - CONTRACTOR TO ENSURE THAT ALL INDIVIDUAL DOMESTIC SUPPLY WATER MAINS ARE CONNECTED TO THE POTABLE WATER RETICULATION AND NOT THE FIRE RETICULATION.
  - PRECAST MARKERS TO BE INSTALLED TO INDICATE TO THE RELEVANT UNDERGROUND SERVICES (WATER LINES, VALVES, FIRE LINES ETC.).
  - MINIMUM COVER TO BURIED PIPES SHALL BE 800mm, EXCEPT AT ROAD CROSSINGS WHERE THE COVER SHALL BE INCREASED TO 1000mm.



No.	REFERENCE DRAWINGS
907	BULK SEWER LONG SECTIONS
904	BULK WATER RETICULATION LAYOUT
903	BULK SEWER RETICULATION LAYOUT
902	BULK SERVICES LAYOUT

REV	DESCRIPTION	BY	DATE
P1	ISSUED FOR COMMENTS	A.M	2024.09.20

Professional person Registration



**SOUTH AFRICAN POLICE SERVICES**

PROJECT  
**MSINSINI POLICE STATION**

DETAILS  
**SEWER AND WATER TYPICAL DETAILS**



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SABS (S.O.S.) CESA

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DRAWN	A.M	AS SHOWN	
APPROVED	S.S	PL	DATE 2024.09.20

TENDER No.  
DRAWING No. **589/MSI/905** REV **P1**

**PRELIMINARY**