

Drawing Index

| Name | Doc.No | Document Description |
|---------------------------------|-------------|--|
| 2000244.021.pdf | 2000244.021 | STANDARD PIPE BEDDING DETAIL FOR CONCRETE AND CERAMIC PIPE |

NOTES

1. DEFINITIONS

D - EXTERNAL PIPE DIAMETER

B - MAXIMUM TRENCH WIDTH ALLOWED AT TOP OF THE PIPE BARREL

G - DEPTH OF BEDDING BELOW BARREL OF PIPE. G = D/6 WITH MINIMUM THICKNESS OF 100mm, AND MAXIMUM THICKNESS OF 150mm, EXCEPT IN ROCK (SEE NOTE 9)

2. TRENCH WIDTH

MINIMUM TRENCH WIDTH SHALL BE NOT LESS THAN THAT REQUIRED FOR SATISFACTORY PLACING AND COMPACTION OF BEDDING, HAUNCHING AND BACKFILL. FOR TYPE H BEDDING AND FOR PIPES UP TO 1500mm DIAMETER THE BARREL OF THE PIPE SHALL BE NO CLOSER THAN 300mm TO THE TRENCH WALL OR TIMBER. FOR TYPE A OR C CONCRETE BEDDING, THE PIPES SHALL BE NO CLOSER THAN 150mm AND THE PIPE SOCKET NO CLOSER THAN 75mm TO THE TRENCH WALL OR TIMBER.

MAXIMUM TRENCH WIDTH SHALL GENERALLY BE (MINIMUM WIDTH + 200mm) UNLESS SPECIFIED OTHERWISE.

THE TRENCH WIDTH SHALL NOT EXCEED 4/3 B AT A HEIGHT OF B/2 ABOVE THE TOP OF THE PIPE BARREL. FOR OVERWIDTH TRENCH PENALTY, SEE SPECIFICATION FOR LAYING OF CONCRETE AND CERAMIC PIPES.

BEDDING MATERIALS

3. BEDDING AND HAUNCH ZONE MATERIALS SHALL BE GRAVEL OR CRUSHED STONE OR A BLEND OF THESE MATERIALS COMPLYING WITH THE FOLLOWING GRADING REQUIREMENTS WHEN SIEVED AS SPECIFIED IN NZA 3121.

| SEIVE SIZE mm | 19.0 | 2.36 | 0.6 | 0.3 | 0.015 | 0.075 |
|----------------------|------|--------|-------|-------|-------|-------|
| PERCENT MASS PASSING | 100 | 100-50 | 90-20 | 60-10 | 25-0 | 10-0 |

4. SIDE ZONE MATERIAL FOR TYPE HS1 AND HS2 BEDDING SHALL BE GRAVEL OR CRUSHED STONE OR A BLEND OF THESE MATERIALS COMPLYING WITH THE FOLLOWING GRADING REQUIREMENTS WHEN SIEVED AS SPECIFIED IN NZS 3121.

| SIEVE SIZE mm | 75 | 9.5 | 2.35 | 0.6 | 0.075 |
|----------------------|-----|--------|--------|-------|-------|
| PERCENT MASS PASSING | 100 | 100-50 | 100-30 | 50-15 | 25-0 |

5. FOR TYPE H AND TYPE A. SELECTED FILL FOR THE OVERLAY ZONE SHALL BE MATERIAL FREE FROM CLAY LUMPS AND STONES RETAINED ON A 75mm SCREEN WITH NO MORE THE 10% OF THE MATERIAL BY VOLUME BEING STONES RETAINED ON A 25mm SCREEN. THIS MATERIAL SHALL BE PLACED AND CONSOLIDATED IN LAYERS NOT EXCEEDING 150mm, TO A DEPTH OF 300mm ABOVE THE PIPE BARREL.

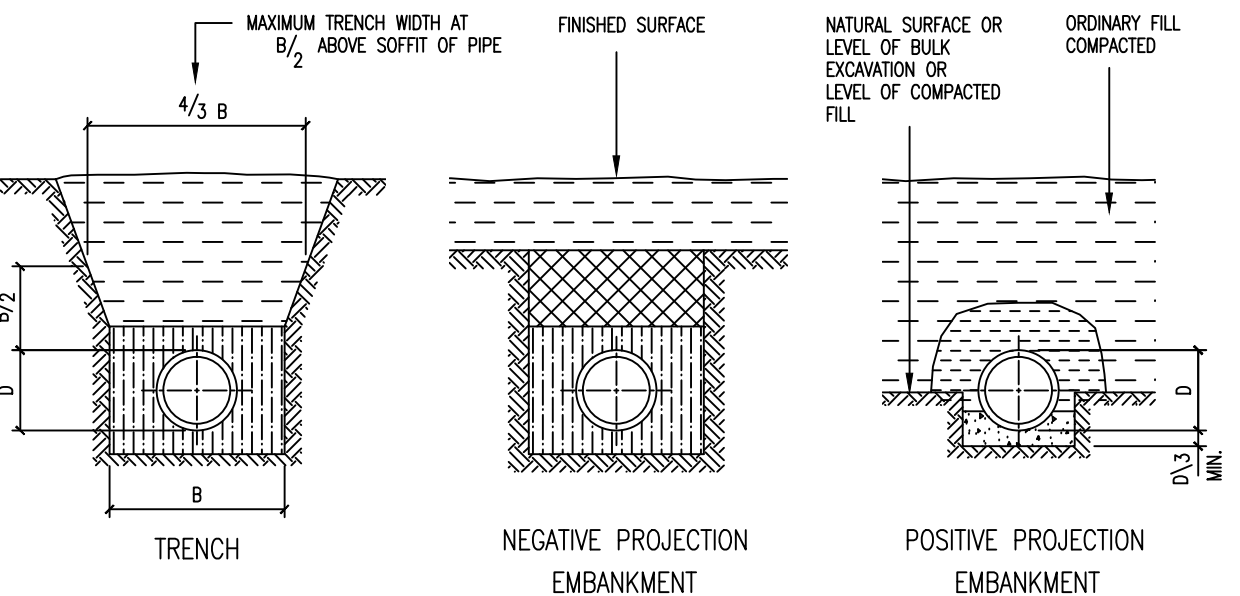
6. CONCRETE USED IN TYPE A OR TYPE C BEDDING SHALL HAVE A 28 DAY STRENGTH OF 17.5 MPa.

7. WHERE CONCRETE BEDDING IS USED WITH A FLEXIBLY JOINTED PIPE THE BEDDING SHALL BE INTERRUPTED AT EACH JOINT BY A SPACER OF 12mm THICK SOFTBOARD OR OTHER MATERIAL APPROVED BY THE ENGINEER.

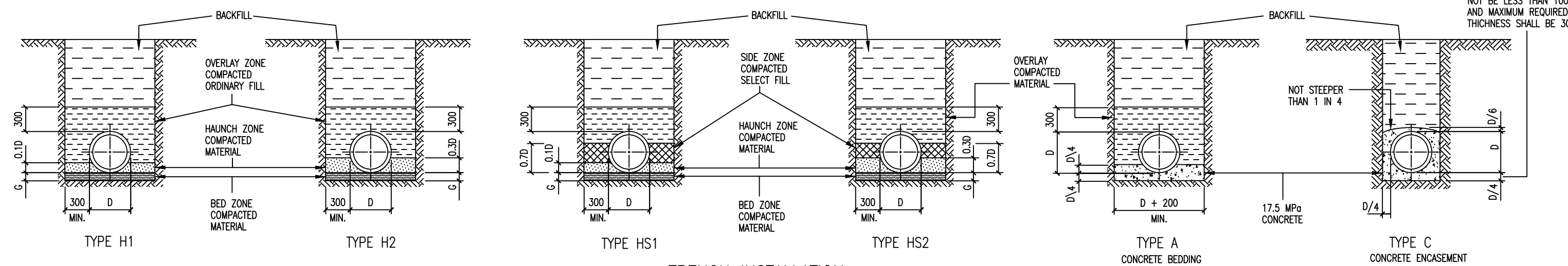
8. TYPE A IN ROCK EXCAVATION. THE CONCRETE CRADLE UNDER THE PIPE SHALL BE OF SUFFICIENT THICKNESS TO ALLOW ADEQUATE COMPACTION. IN NO CASE SHALL IT BE LESS THAN TWICE THE MAXIMUM AGGREGATE SIZE OR 50mm WHICHEVER IS GREATER.

9. TYPE C AND TYPE H IN ROCK EXCAVATION. DIMENSION G SHALL BE 200mm MINIMUM. WHEN THE TRENCH DEPTH OR FILL DEPTH TO THE PIPE CROWN EXCEEDS 5m, G SHALL BE INCREASED BY 40mm FOR EACH EXTRA METRE OF DEPTH.

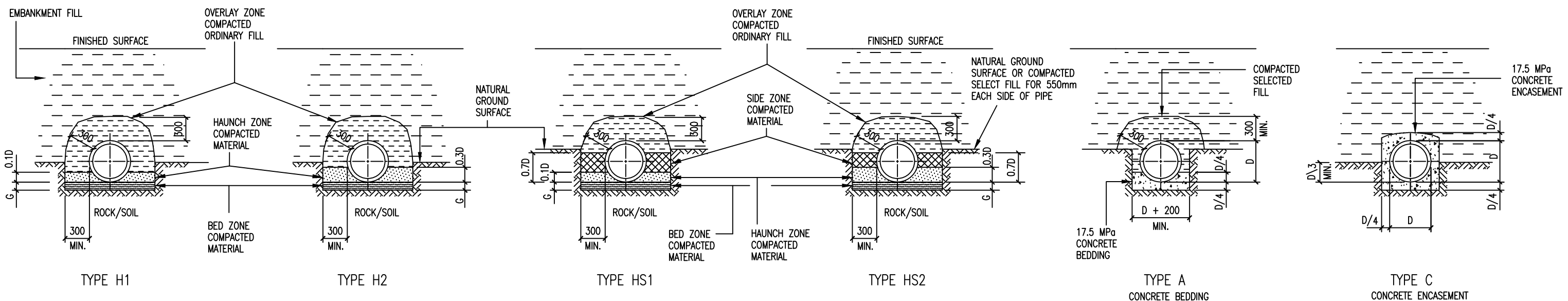
NOTE
CONCRETE THICKNESS SHALL NOT BE LESS THAN 100mm AND MAXIMUM REQUIRED THICKNESS SHALL BE 300mm



PIPE INSTALLATION CONDITION



TRENCH INSTALLATION



EMBANKMENT INSTALLATION

| | | |
|----------------|-------|-----------|
| DESIGNED | B.M. | 02-06 |
| DES. CHECKED | | |
| DRAWN | I.M. | 02-06 |
| DWG. CHECKED | A.B. | 4-06 |
| PROJECT LEADER | | |
| A.D. APPROVED | | |
| ISSUE | DATE | AMENDMENT |
| BY | APPD. | BY |
| DATE | | DATE |

C. HARBOUR OPERATIONS
T. MUNRO ASSET MANAGEMENT

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STANDARD PIPE BEDDING
DETAILS
CONCRETE AND CERAMIC PIPES

| | |
|----------------------|---------------|
| CAD FILE 2000244.021 | DATE 06-04-06 |
| ORIGINAL SCALE A1 | CONTRACT No. |
| NTS | - |
| DRAWING No. 2000244 | ISSUE .021 |
| | - |