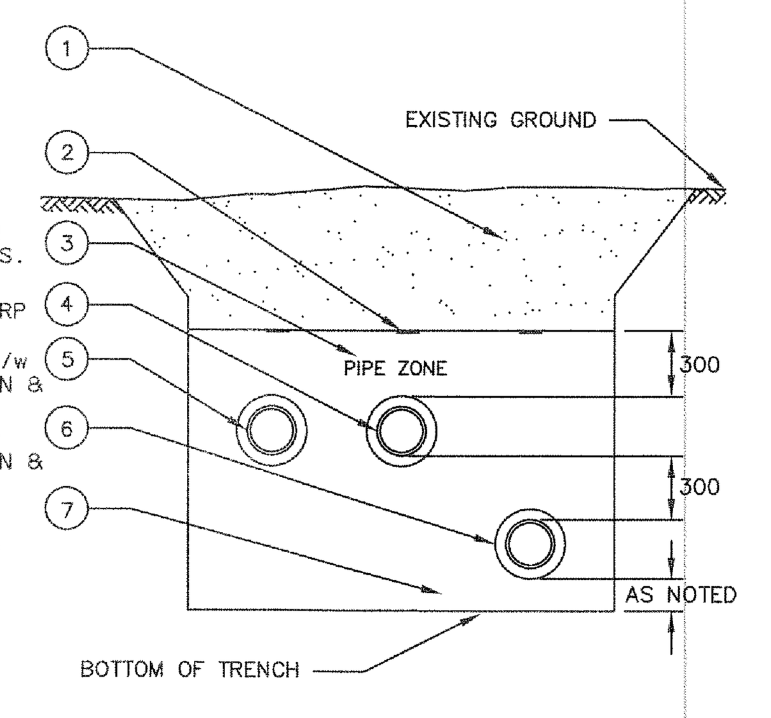
KEY TO NUMBERED PARTS:

1. SELECT NATIVE BACKFILL MATERIAL, OR ENGINEERED BACKFILL WHERE DIRECTED BY ENGINEER.
2. WARNING TAPE.
3. TYPE 5 FILL BACKFILL, COMPACTED TO 95% STANDARD PROCTOR DRY DENSITY AS PER ASTM D698-07e1, MINIMUM 300mm COVER OVER PIPES.
4. WATER MAIN - DR 13.5 HDPE PIPE c/w 75mm SHOP APPLIED POLYURETHANE INSULATION & FRP JACKET.
5. RECIRCULATION LINE - DR 13.5 HDPE PIPE c/w 75mm SHOP APPLIED POLYURETHANE INSULATION & FRP JACKET.
6. SANITARY SERVICE - DR 13.5 HDPE PIPE c/w 75mm SHOP APPLIED POLYURETHANE INSULATION & FRP JACKET.
7. TYPE 5 FILL BEDDING COMPACTED TO 95% STANDARD PROCTOR DRY DENSITY AS PER ASTM D698-07e1, 150mm (230mm IN ROCK).



NOTES:

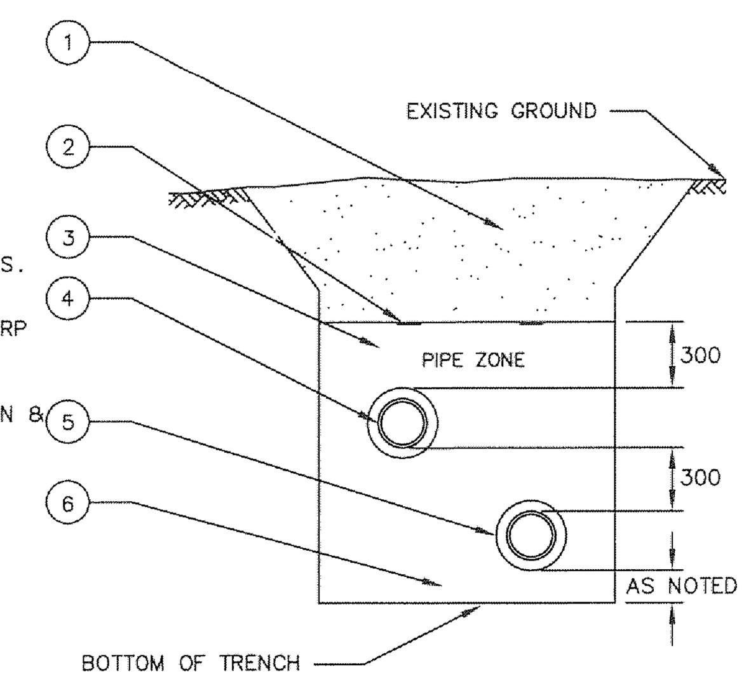
1. PIPES TO BE SPACED 230mm, OR GREATER, FROM FROM TRENCH WALL AND OTHER PIPES TO ALLOW COMPACTION.
2. TEST PITS TO BE DUG EVERY 15m TO A DEPTH OF 500mm BELOW PIPE INVERT TO CHECK FOR PRESENCE OF SILT. SUBEXCAVATE AS REQUIRED, TO A DEPTH OF 450mm BELOW PIPE INVERT AND BACKFILLED WITH TYPE 2 FILL COMPACTED TO 95% STANDARD PROCTOR DRY DENSITY AS PER ASTM D698-07e1.
3. SANITARY SEWER TO HAVE A MINIMUM 1.5m COVER. IF COVER IS LESS THAN 1.5m, THE THICKNESS OF THE TRENCH INSULATION TO BE INCREASED.

GRAVEL ROAD — REINSTATEMENT AT ROAD CROSSINGS: 100mm TYPE 5 FILL, 300mm TYPE 2 FILL

1 TYPICAL TRENCH DETAIL WATERMAIN, RECIRCULATION AND SANITARY

KEY TO NUMBERED PARTS:

1. SELECT NATIVE BACKFILL MATERIAL, OR ENGINEERED BACKFILL WHERE DIRECTED BY ENGINEER.
2. WARNING TAPE.
3. TYPE 5 FILL BACKFILL, COMPACTED TO 95% STANDARD PROCTOR DRY DENSITY AS PER ASTM D698-07e1, MINIMUM 300mm COVER OVER PIPES.
4. WATER MAIN - DR 13.5 HDPE PIPE c/w 75mm SHOP APPLIED POLYURETHANE INSULATION & FRP JACKET.
5. SANITARY SERVICE - DR 13.5 HDPE PIPE c/w 75mm SHOP APPLIED POLYURETHANE INSULATION & FRP JACKET.
6. TYPE 5 FILL BEDDING COMPACTED TO 95% STANDARD PROCTOR DRY DENSITY AS PER ASTM D698-07e1, 150mm (230mm IN ROCK).



NOTES:

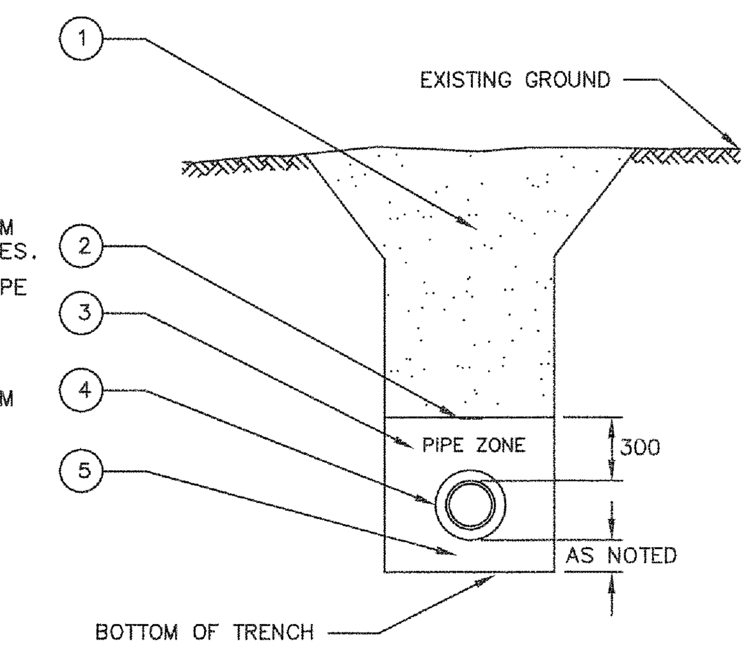
1. PIPES TO BE SPACED 230mm, OR GREATER, FROM FROM TRENCH WALL AND OTHER PIPES TO ALLOW COMPACTION.
2. TEST PITS TO BE DUG EVERY 15m TO A DEPTH OF 500mm BELOW PIPE INVERT TO CHECK FOR PRESENCE OF SILT. SUBEXCAVATE AS REQUIRED, TO A DEPTH OF 450mm BELOW PIPE INVERT AND BACKFILLED WITH TYPE 2 FILL COMPACTED TO 95% STANDARD PROCTOR DRY DENSITY AS PER ASTM D698-07e1.
3. SANITARY SEWER TO HAVE A MINIMUM 1.5m COVER. IF COVER IS LESS THAN 1.5m, THE THICKNESS OF THE TRENCH INSULATION TO BE INCREASED.

GRAVEL ROAD — REINSTATEMENT AT ROAD CROSSINGS: 100mm TYPE 5 FILL, 300mm TYPE 2 FILL

2 TYPICAL TRENCH DETAIL WATERMAIN, AND SANITARY

KEY TO NUMBERED PARTS:

1. SELECT NATIVE BACKFILL MATERIAL, OR ENGINEERED BACKFILL WHERE DIRECTED BY ENGINEER.
2. WARNING TAPE.
3. TYPE 5 FILL BACKFILL, COMPACTED TO 95% STANDARD PROCTOR DRY DENSITY AS PER ASTM D698-07e1, MINIMUM 300mm COVER OVER PIPES.
4. WATER MAIN OR SANITARY SEWER DR 13.5 HDPE PIPE c/w 75mm SHOP APPLIED POLYURETHANE INSULATION & FRP JACKET.
5. TYPE 5 FILL BEDDING COMPACTED TO 95% STANDARD PROCTOR DRY DENSITY AS PER ASTM D698-07e1, 150mm (230mm IN ROCK).

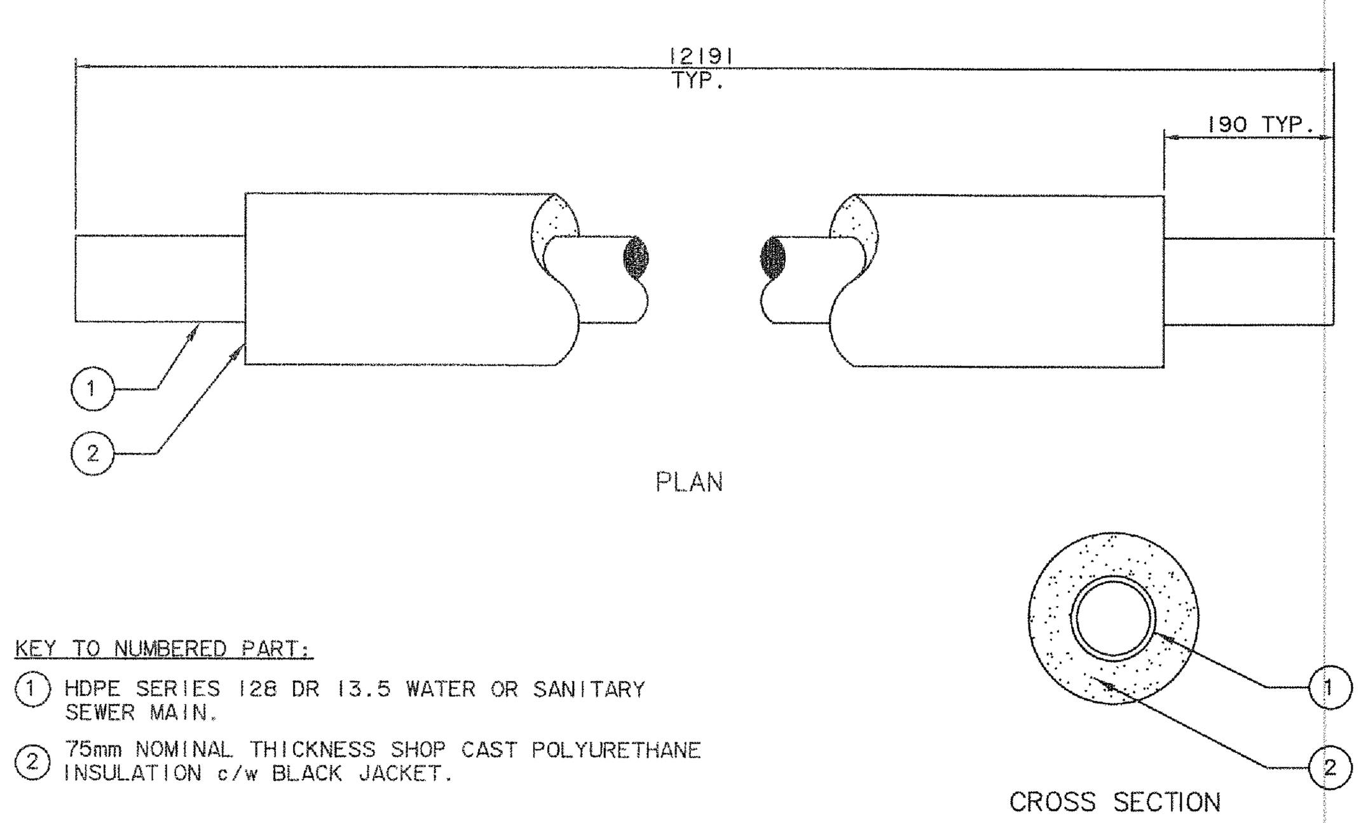


NOTES:

1. PIPES TO BE SPACED 230mm, OR GREATER, FROM FROM TRENCH WALL AND OTHER PIPES TO ALLOW COMPACTION.
2. TEST PITS TO BE DUG EVERY 15m TO A DEPTH OF 500mm BELOW PIPE INVERT TO CHECK FOR PRESENCE OF SILT. SUBEXCAVATE AS REQUIRED, TO A DEPTH OF 450mm BELOW PIPE INVERT AND BACKFILLED WITH TYPE 2 FILL COMPACTED TO 95% STANDARD PROCTOR DRY DENSITY AS PER ASTM D698-07e1.
3. SANITARY SEWER TO HAVE A MINIMUM 1.5m COVER. IF COVER IS LESS THAN 1.5m, THE THICKNESS OF THE TRENCH INSULATION TO BE INCREASED.

GRAVEL ROAD — REINSTATEMENT AT ROAD CROSSINGS: 100mm TYPE 5 FILL, 300mm TYPE 2 FILL

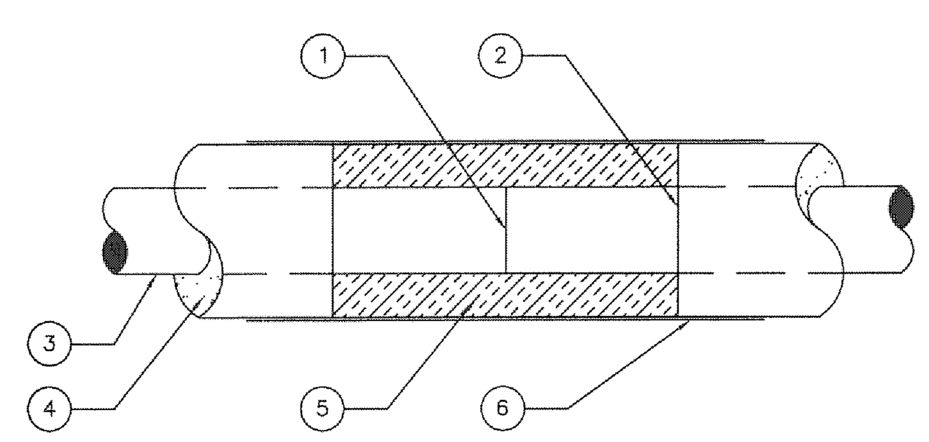
3 TYPICAL TRENCH DETAIL WATERMAIN OR SANITARY



KEY TO NUMBERED PART:

1. HDPE SERIES 128 DR 13.5 WATER OR SANITARY SEWER MAIN.
2. 75mm NOMINAL THICKNESS SHOP CAST POLYURETHANE INSULATION c/w BLACK JACKET.

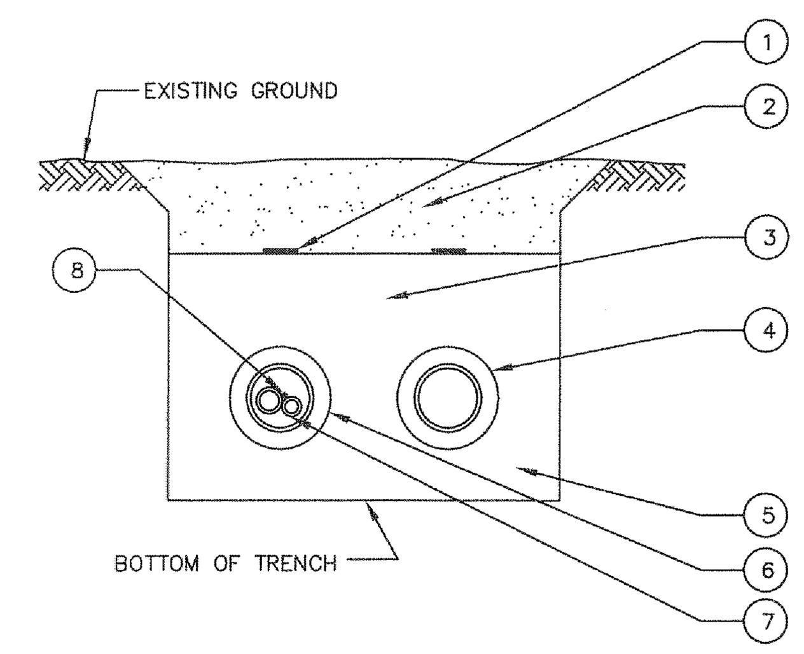
4 TYPICAL SANITARY SERVICE SEWER OR WATERMAIN



KEY TO NUMBERED PART:

1. FIELD BUTT FUSION JOINT MADE BY A QUALIFIED AND LICENSED TECHNICAN.
2. FIELD COAT ALL EXPOSED POLYURETHANE WITH MASTIC.
3. HDPE SERIES DR 11 WATER OR SANITARY SEWER MAIN.
4. 50mm NOMINAL THICKNESS SHOP CAST POLYURETHANE INSULATION c/w BLACK JACKET.
5. POLYURETHEAN HALF SHELLS CUT TO FIT AND COATED WITH MASTIC.
6. MASTIC LINED HEAT SHRINK TAPE - 100mm OVERLAP ON SHELLS AND PIPE JACKET.

5 TYPICAL JOINT INSULATION DETAIL



KEY TO NUMBERED PARTS:

1. WARNING TAPE.
2. SELECT NATIVE BACKFILL MATERIAL, OR ENGINEERED BACKFILL WHERE DIRECTED BY ENGINEER.
3. TYPE 5 FILL BACKFILL, COMPACTED TO 95% STANDARD PROCTOR, MINIMUM 300mm COVER OVER SERVICE PIPES.
4. 100mm OR 150mm DIA SANITARY SERVICE - DR 13.5 HDPE PIPE c/w 75mm APPLIED POLYURETHANE INSULATION & FRP JACKET.
5. TYPE 5 FILL BEDDING COMPACTED TO 95% STANDARD PROCTOR, 150mm (230mm IN ROCK) DEEP.
6. 100mm OR 150mm DIA CARRIER PIPE - DR 13.5 HDPE PIPE c/w 75mm APPLIED POLYURETHANE INSULATION & FRP JACKET.
7. SUPPLY AND RECIRCULATION WATER SERVICE, COILED DR11 HDPE PIPE INSIDE CARRIER PIPE.
8. HEAT TRACE.

NOTES:

1. PIPES TO BE SPACED AT 230mm, OR GREATER, FROM TRENCH WALL AND OTHER PIPES TO ALLOW COMPACTION.
2. TEST PITS TO BE DUG EVERY 15m TO A DEPTH OF 500mm BELOW PIPE INVERT TO CHECK FOR PRESENCE OF SILT. SUBEXCAVATE TO A DEPTH OF 450mm BELOW PIPE INVERT AND BACKFILLED WITH TYPE 2 FILL COMPACTED TO 90% STANDARD PROCTOR DRY DENSITY AS PER ASTM D698-07e1.
3. SERVICE PIPES TO HAVE A MINIMUM OF 600mm OF COVER TO TOP OF INSULATION.

6 TYPICAL SERVICE TRENCH DETAIL

No.	Issue	Date
01	ISSUED FOR TENDER	2013-MAR-25
02	REISSUED FOR TENDER	2013-OCT-25

Nunavut

No.	Revision	Ckd. By	Date
00	100% REVIEW	SLB	2013-MAR-04

PERMIT OF PRACTICE
EXP SERVICES INC.
Signature
Date Oct 25/13
PERMIT NUMBER: P483
NT/NU Association of Professional Engineers and Geoscientists

ISSUED FOR TENDER

REGISTERED PROFESSIONAL ENGINEER
A.R.ABOZARAD
LICENSEE
OCT 25, 2013
NWT / NU

Const. North

Drawn By: I. CRAWFORD
Dwg. Standards Ckd. By:
Designed By: A. ZARAD
Date Printed
Dwg. Design Ckd. By: S. BURDEN

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Project Title

NEW UTILIDOR DESIGN RESOLUTE BAY, NU

Dwg. Title

STANDARD UTILITY DETAILS

Project No. OTT-00206333-A0

Dwg. No. C-329

Rev. No. 02

Scale: NOT TO SCALE