EXCAVATION DETAILS

EX-1  DUCTILE IRON, PE WATERMAIN, PRESSURE SEWER, & FORCEMAIN BEDDING
EX-2  ALL STEEL & 6” AND LARGER PE GAS MAIN BEDDING
EX-3  PVC AND CORRUGATED POLYETHYLENE SEWER PIPE BEDDING
EX-4  CONCRETE STORM SEWER BEDDING
NOTES:
1. Excess excavation material shall be disposed of off project R.O.W. (incidental).
2. Pay width for rock excavation shall be based on outside diameter of pipe plus 24".
3. A minimum of 1 cubic yard of structure excavation, Class R, will be paid for every 10' of pipe where rock removal is required.
4. Trench stabilization bedding material may be used in areas as determined by the engineer.
5. Encasement zone material shall be compacted to 95% of maximum standard Proctor density.
6. Backfill shall be select grading material found on-site when deemed suitable by the engineer or as otherwise defined in the project special provisions. When on-site material is not suitable and when backfill material is not specified, imported material meeting Mn/Dot 3149.2.D.1 granular backfill shall be provided. Use of native on-site material is incidental.
7. Compact backfill materials to 100% of maximum standard Proctor density for the upper 3' below the subgrade, and to 95% of maximum standard Proctor density below the upper 3'.
FOR PAYMENT OF IMPORTED BACKFILL, MEASUREMENT WILL BE MADE BASED ON THE ACTUAL WIDTH OF THE TRENCH UP TO A MAXIMUM OF 6 FEET. NO COMPENSATION WILL BE MADE FOR IMPORTED BACKFILL BEYOND THE MAXIMUM WIDTH LIMIT.

O.D. + 24” = PAY WIDTH FOR ROCK EXC. & ROCK TRENCH BACKFILL

NOTES:
1. EXCESS EXCAVATION MATERIAL SHALL BE DISPOSED OF OFF PROJECT R.O.W. (INCIDENTAL)
2. PAY WIDTH FOR ROCK EXCAVATION SHALL BE BASED ON OUTSIDE DIAMETER OF PIPE PLUS 24”.
3. A MINIMUM OF 1 CUBIC YARD OF STRUCTURE EXCAVATION, CLASS R, WILL BE PAID FOR EVERY 10’ OF PIPE WHERE ROCK REMOVAL IS REQUIRED.
4. TRENCH STABILIZATION BEDDING MATERIAL MAY BE USED IN AREAS AS DETERMINED BY THE ENGINEER.
5. ENCAKEMENT ZONE MATERIAL SHALL BE COMPACTED TO 95% OF MAXIMUM STANDARD PROCTOR DENSITY.
6. BACKFILL SHALL BE SELECT GRADING MATERIAL FOUND ON-SITE WHEN DEEMED SUITABLE BY THE ENGINEER OR AS OTHERWISE DEFINED IN THE PROJECT SPECIAL PROVISIONS. WHEN ON-SITE MATERIAL IS NOT SUITABLE AND WHEN BACKFILL MATERIAL IS NOT SPECIFIED, IMPORTED MATERIAL MEETING MN/DOT 3149.2.D.1 GRANULAR BACKFILL SHALL BE PROVIDED. USE OF NATIVE ON-SITE MATERIAL IS INCIDENTAL.
7. COMPACT BACKFILL MATERIALS TO 100% OF MAXIMUM STANDARD PROCTOR DENSITY FOR THE UPPER 3' BELOW THE SUBGRADE, AND TO 95% OF MAXIMUM STANDARD PROCTOR DENSITY BELOW THE UPPER 3’.

ALL STEEL & 4” AND LARGER PE GAS MAIN BEDDING

REVISED/APPROVED 04/05/2019
CITY OF DULUTH STANDARD DETAIL
DEPT. OF PUBLIC WORKS AND UTILITIES

NO SCALE
For payment of imported backfill, measurement will be made based on a typical trench width of 8 feet. No compensation will be made for imported backfill beyond the typical width limit.

Notes:
1. Excess excavation material shall be disposed of off project R.O.W. (incidental).
2. Pay width for rock excavation shall be based on outside diameter of pipe plus 24".
3. A minimum of 1 cubic yard of structure excavation, class R, will be paid for every 10' of pipe where rock removal is required.
4. Trench stabilization bedding material may be used in areas as determined by the engineer.
5. Encasement zone material shall be compacted to 95% of maximum standard proctor density.
6. Backfill shall be select grading material found on-site when deemed suitable by the engineer or as otherwise defined in the project special provisions. When on-site material is not suitable and when backfill material is not specified, imported material meeting Mn/DOT 3149.2.D.1 granular backfill shall be provided. Use of native on-site material is incidental.
7. Compact backfill materials to 100% of maximum standard proctor density for the upper 3' below the subgrade, and to 95% of maximum standard proctor density below the upper 3'.
FOR PAYMENT OF IMPORTED BACKFILL, MEASUREMENT WILL BE MADE BASED ON A TYPICAL TRENCH WIDTH OF 8 FEET. NO COMPENSATION WILL BE MADE FOR IMPORTED BACKFILL BEYOND THE TYPICAL WIDTH LIMIT.

NOTES:
1. EXCESS EXCAVATION MATERIAL SHALL BE DISPOSED OF OFF PROJECT R.O.W. (INCIDENTAL)
2. PAY WIDTH FOR ROCK EXCAVATION SHALL BE BASED ON OUTSIDE DIAMETER OF PIPE PLUS 24”.
3. A MINIMUM OF 1 CUBIC YARD OF STRUCTURE EXCAVATION, CLASS R, WILL BE PAID FOR EVERY 10’ OF PIPE WHERE ROCK REMOVAL IS REQUIRED.
4. TRENCH STABILIZATION BEDDING MATERIAL MAY BE USED IN AREAS AS DETERMINED BY THE ENGINEER.
5. ENCASSEMENT ZONE MATERIAL SHALL BE COMPACTED TO 95% OF MAXIMUM STANDARD PROCTOR DENSITY.
6. BACKFILL SHALL BE SELECT GRADE MATERIAL FOUND ON-SITE WHEN DEEMED SUITABLE BY THE ENGINEER OR AS OTHERWISE DEFINED IN THE PROJECT SPECIAL PROVISIONS. WHEN ON-SITE MATERIAL IS NOT SUITABLE AND WHEN BACKFILL MATERIAL IS NOT SPECIFIED, IMPORTED MATERIAL MEETING MN/DOT 3149.20.1 GRANULAR BACKFILL SHALL BE PROVIDED. USE OF NATIVE ON-SITE MATERIAL IS INCIDENTAL.
7. COMPACT BACKFILL MATERIALS TO 100% OF MAXIMUM STANDARD PROCTOR DENSITY FOR THE UPPER 3’ BELOW THE SUBGRADE, AND TO 95% OF MAXIMUM STANDARD PROCTOR DENSITY BELOW THE UPPER 3’.

CONCRETE STORM SEWER BEDDING

REVISED/APPROVED 04/05/2019
CITY OF DULUTH STANDARD DETAIL
DEPT. OF PUBLIC WORKS AND UTILITIES
NO SCALE