



60" O.D. RELINE CORLIX PIPE

VT RT 58, 2.2 MILES WEST OF VT RT 14 IRASBURG, VT

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THE UNDERSIGNED HEREBY APPROVES THE ATTACHED (4) PAGES.

CUSTOMER

DATE

SPECIFICATION FOR CORRUGATED ALUMINUM PIPE - ALUMINUM:

SCOPE:
THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE CORRUGATED ALUMINUM PIPE (CAP) DETAILED IN THE PROJECT PLANS.

MATERIALS:
THE ALUMINUM COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M 197 OR ASTM B 744.

PIPE:
THE CAP SHALL BE MANUFACTURED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF AASHTO M-196 OR ASTM A 745. THE PIPE SIZES, GAUGES AND CORRUGATIONS SHALL BE AS SHOWN ON THE PROJECT PLANS.

ALL FABRICATION OF THE PRODUCT SHALL OCCUR WITHIN THE UNITED STATES.

HANDLING & ASSEMBLY:
SHALL BE IN ACCORDANCE WITH NCSPA'S (NATIONAL CORRUGATED STEEL PIPE ASSOCIATION) RECOMMENDATIONS.

INSTALLATION:
SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II OR ASTM A 788 AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS, THE CONTRACTOR MUST BRING THEM TO THE ATTENTION OF THE PROJECT ENGINEER.

IT IS ALWAYS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

CONSTRUCTION LOADS:
CONSTRUCTION LOADS MAY BE HIGHER THAN FINAL LOADS. FOLLOW THE MANUFACTURERS OR NCSPA'S GUIDELINES.

SUGGESTED GROUT MIX DESIGN AND PLACEMENT REQUIREMENTS:

DESCRIPTION:
THIS WORK SHALL CONSIST OF THE IN-PLACE GROUTING OF CORRUGATED METAL PIPE INSERTS WITHIN EXISTING CULVERT PIPES AS SHOWN ON THE PLANS.

THE REQUIREMENTS OF THE WORK ARE SUCH THAT THE ENTIRE PORTION OF THE CELLS WHICH SURROUND THE CULVERT PIPE INSERTS SHALL BE COMPLETELY FILLED WITH GROUT FOR THE FULL LENGTHS OF THE CULVERT PIPE INSERTS.

MATERIALS:
MATERIALS USED FOR GROUT MANUFACTURE SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING SPECIFICATIONS:

MATERIAL
PORTLAND CEMENT, TYPE 2
FLYASH
GROUT SAND
WATER

GROUT MIX DESIGN:
THIS SHALL BE PROPORTIONED BY WEIGHT IN ACCORDANCE WITH THE FOLLOWING ONE (1) CUBIC YARD MIX:

THE GROUT SHALL BE A NON-SHRINK GROUT
CEMENT 479 LBS.
FLYASH 774 LBS.
GROUT SAND 1,949 LBS.

SLUMPS SHALL BE BETWEEN 6.5" AND 8.0".

THE CONTRACTOR MAY PROPOSE AN ALTERNATE TO THE MIX DESIGN SPECIFIED ABOVE FOR APPROVAL.

GROUTING EQUIPMENT SHALL BE CAPABLE OF PLACING GROUT AT ALL LOCATIONS REQUIRED BY THE PLANS. ALL EQUIPMENT SHALL BE APPROVED BY THE ENGINEER AT LEAST FIVE (5) WORKING DAYS PRIOR TO ITS INTENDED USE. A WORKING DEMONSTRATION OF THE PUMPING EQUIPMENT'S CAPABILITY WILL BE REQUIRED AS PART OF THE APPROVAL PROCEDURE.

ALL GROUTING SHALL BE BATCHED FROM AN APPROVED AUTOMATED BATCH PLANT.

MINIMUM REQUIRED COMPRESSIVE STRENGTH PER PROJECT PLANS.

CONSTRUCTION DETAILS:
THE CONTRACTOR MAY PLACE THE GROUT IN ACCORDANCE WITH THE SCHEME SHOWN ON THE PLANS OR MAY SUBMIT AN ALTERNATE SCHEME TO THE ENGINEER FOR APPROVAL.

GROUT SHALL BE TRANSFERRED FROM THE POINT OF MIXING TO THE POINTS OF DEPOSITION ONLY BY APPROVED EQUIPMENT. THE GROUT SHALL BE PUMPED IN SUCH A MANNER THAT:

1. THE GROUT DOES NOT DILUTE OR SEPARATE
2. THE PIPE INSERT DOES NOT MOVE
3. THE ABUTTING ENDS OF THE PIPE ARE NOT DEFORMED
4. ALL VOIDS BETWEEN THE LINER PIPE AND EXISTING CULVERT ARE COMPLETELY FILLED
5. THE GROUT DIFFERENTIAL LEVEL BETWEEN SIDES OF THE PIPE DOES NOT EXCEED 8"
6. THE GROUT PRESSURE CAN BE VARIED TO EFFECTIVELY MOVE THE GROUT AGAINST A HEAD PRESSURE OF NO MORE THAN 5 LBS. PER SQUARE INCH.

IF IT BECOMES NECESSARY TO CHANGE THE RATE OF PUMPING, THE PRESSURE WILL BE INCREASED AT A RATE NOT TO EXCEED ONE PSI PER MINUTE UP TO THE EQUIPMENT RATE.

AGITATION SHALL BE CONTINUOUS AND SHALL BE CONTINUED DURING SHUT-DOWNS. IF A SHUT-DOWN EQUALS OR EXCEEDS FIFTEEN (15) MINUTES, THE GROUT SHALL BE RECIRCULATED THROUGH THE PUMP AND DELIVERY LINES. IF REQUIRED BY THE ENGINEER, THE DELIVERY LINES SHALL BE FLUSHED CLEAN OF GROUT WITH CLEAN WATER. IF, IN THE OPINION OF THE ENGINEER, THE GROUT HAS BEGUN TO SET IN THE AGITATOR, PUMP, OR LINES, IT SHALL NOT BE PLACED REGARDLESS OF THE REASON.

CONTRACTOR SHOULD "SOUND" STRUCTURE TO BE ABLE TO OBSERVE GROUT PLACEMENT AND MOVEMENT.

NOTES:

- 1) FIELD CAULKING OF PIPE JOINTS MAY BE REQUIRED TO PROVIDE ADEQUATE GROUT SEAL.
- 2) FLOTATION CONTROL IS CRITICAL AND THE RESPONSIBILITY OF THE INSTALLER. THE INFORMATION IS SUBMITTED AS A GUIDELINE ONLY. CONTECH IS NOT RESPONSIBLE FOR THE USE AND INTERPRETATION OF THIS INFORMATION.
- 3) PIPE MUST BE CONTINUOUSLY MONITORED DURING GROUT OPERATION TO OBSERVE/CONTROL ANY PIPE OR PIPE WALL MOVEMENT.
- 4) BLOCKING LAYOUT AND DESIGN BY CONTRACTOR.
- 5) THE RELINE PIPE IS MADE FROM 60" O.D., 10GA, ALUMINUM 3"X1" PIPE.
- 6) COUPLINGS WILL BE 5-C ALT2 EXTERNAL BAND.
- 7) TO ACHIEVE A GROUT UNIT WEIGHT OF LESS THAN 110 PCF, A FOAMING AGENT OR OTHER MODIFICATION OF THE MIX DESIGN WILL BE REQUIRED. THE MIX PROVIDED IS FOR REFERENCE PURPOSES ONLY.