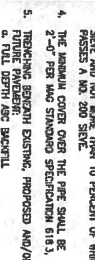
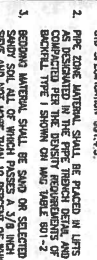


Copyright Reserved
 No part of this drawing may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of Stantec Consulting Services Inc.

Legend
 1. CONSTRUCTION JOINTS IN CONCRETE LINING SHALL BE CONSTRUCTED AS PER DETAIL 2 AT A MAXIMUM OF 10 FEET.
 2. FIBROUS REINFORCEMENT SHALL HAVE THE FOLLOWING CHARACTERISTICS:
 a. FIBROUS REINFORCEMENT SHALL BE 1 1/2" x 1 1/2" x 15' LONG.
 b. TENSILE STRENGTH SHALL BE 1200 LBS PER CUBIC YARD.
 c. FIBROUS REINFORCEMENT SHALL BE 1.5% FIBERS PER CUBIC YARD.
 3. THE ELASTOMERIC SEALANT SHALL BE SIMPLEX 20 OR EQUIVALENT.
 4. ALL CONCRETE FOR CONCRETE LINING SHALL BE CLASS A25 (20 MPa) PER CAN STD SPECIFICATION 223.
 5. BACKER ROD SHALL BE HEAVY WIRE BACKER ROD BY APPROVED MANUFACTURER. INSTALL BACKER ROD 4" JOINT PER MANUFACTURER'S INSTRUCTIONS.

Typical Notes
 1. IF CONCRETE DAMAGED TO ONE ZONE, BE CONCRETED BY WATER CONCRETE. SEE CAN STD SPECIFICATION 801.4.5.
 2. PIPE ZONE MATERIAL SHALL BE PLACED IN LITS AS DESIGNATED IN THE PIPE TRACING DETAIL AND BACKFILLED PER THE DESIGN REQUIREMENTS OF SPECIFICATION 801.4.5 AND 801.4.6.
 3. BENCH MARK SHALL BE 500 OR SELECTED HEIGHT ABOVE FINISH GRADE. THE BENCH MARK SHALL BE SET AND NOT MORE THAN 10 FEET FROM WHICH PASSES A 100.200 STAKE.
 4. THE BENCH MARK OVER THE PIPE SHALL BE 2'-0" PER CAN STANDARD SPECIFICATION 618.3.
 5. TRACING BENCH MARK EXISTING, PROPOSED AND/OR FUTURE, PROVIDER:
 a. TYPICAL PER CAN SPEC 801.4-TYPE 1
 b. TYPICAL PER CAN SPEC 801.4-TYPE 2
 6. TRACER WIRE SHALL BE 12 AWG SOLID, 100% COPPER. THE TRACER WIRE SHALL BE PLACED IN THE DIRECT BURIAL USE AND INSTALLED ON THE STRUCTURE. THE TRACER WIRE SHALL BE ON THE STRUCTURE. THE TRACER WIRE SHALL BE ON THE STRUCTURE. THE TRACER WIRE SHALL BE ON THE STRUCTURE.
 7. ALL RINGS SHALL BE REINFORCED FROM TO DETAIL.

Estimate Notes
 1. COMMON RIL AND BOLLER SHALL BE PLACED AND CONSTRUCTED AS PER DETAIL 2 PER CAN STD SPECIFICATIONS 211.2 AND 211.3.
 2. CONCRETE RIL AND BOLLER SHALL BE PLACED AND CONSTRUCTED TO CAN UNIFORM BOLLER PER CAN STD SPECIFICATIONS 211.2 AND 211.3.
 3. SEE NO GRADING NOTES ON DWG C 2 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.



PIPE COLLAR TABLE

PIPE DIAMETER	A	B	C	D	E
12" TO 54"	10"	35"	20"	4	#4
60" & LARGER	15"	48"	30"	5	#5

Tracer Wire Notes
 1. VALVE BOXES SHALL BE HEAVY DUTY APPROVED EQUAL.
 2. LD SHALL BE TYPE 'C' SURFACE DESIGN W/ IMPROVED DISTRICT.
 3. VALVE BOXES SHALL INCLUDE A 18"x18"x4" CONCRETE PAD.
 4. GROUND ROD SHALL BE ERCO, 2" DIA OR EQUIVALENT APPROVED EQUAL.
 5. ALL TRACER WIRE ACCESS VAULTS, WATERSHEDS SHALL BE SUPPLIED BY NON-STEEL MATERIALS. THE CONSTRUCTION DISTRICT SHALL INFERRED COST.

Tracer Wire Notes
 1. NO SUBSTITUTIONS AND/OR CHANGES SHALL BE MADE WITHOUT OWNER'S ENGINEER'S APPROVAL.
 2. CONCRETE PIPE COLLAR IS REQUIRED TO JOIN TWO MATERIALS OR TYPES OF PIPE COLLAR IN ADJACENT OR CONJUGATE.
 3. PIPE ENDS SHALL BE TRIMMED SUCH THAT THE 5' ± OF CONCRETE REMAINS FROM THE END AND IS ALLOWED TO CURE PRIOR TO CONCRETE.
 4. REINFORCEMENT SHALL BE 12 AWG SOLID, 100% COPPER. THE TRACER WIRE SHALL BE PLACED IN THE DIRECT BURIAL USE AND INSTALLED ON THE STRUCTURE. THE TRACER WIRE SHALL BE ON THE STRUCTURE. THE TRACER WIRE SHALL BE ON THE STRUCTURE.
 5. CONCRETE COLLAR SHALL BE REINFORCED SUFFICIENT FROM TO DETAIL PER CAN STD SPECIFICATION 223 AND STD SPECIFICATION 211.2 AND 211.3.
 6. CONCRETE SHALL BE CLASS A4 (40 MPa) PER CAN STD SPECIFICATION 223 AND STD SPECIFICATION 211.2 AND 211.3.
 7. REINFORCING STEEL SHALL BE 40% AISI CANC 300.
 8. ALL RINGS SHALL BE REINFORCED FROM TO DETAIL.



PIPE COLLAR DETAIL
 1. NO SUBSTITUTIONS AND/OR CHANGES SHALL BE MADE WITHOUT OWNER'S ENGINEER'S APPROVAL.
 2. CONCRETE PIPE COLLAR IS REQUIRED TO JOIN TWO MATERIALS OR TYPES OF PIPE COLLAR IN ADJACENT OR CONJUGATE.
 3. PIPE ENDS SHALL BE TRIMMED SUCH THAT THE 5' ± OF CONCRETE REMAINS FROM THE END AND IS ALLOWED TO CURE PRIOR TO CONCRETE.
 4. REINFORCEMENT SHALL BE 12 AWG SOLID, 100% COPPER. THE TRACER WIRE SHALL BE PLACED IN THE DIRECT BURIAL USE AND INSTALLED ON THE STRUCTURE. THE TRACER WIRE SHALL BE ON THE STRUCTURE. THE TRACER WIRE SHALL BE ON THE STRUCTURE.
 5. CONCRETE COLLAR SHALL BE REINFORCED SUFFICIENT FROM TO DETAIL PER CAN STD SPECIFICATION 223 AND STD SPECIFICATION 211.2 AND 211.3.
 6. CONCRETE SHALL BE CLASS A4 (40 MPa) PER CAN STD SPECIFICATION 223 AND STD SPECIFICATION 211.2 AND 211.3.
 7. REINFORCING STEEL SHALL BE 40% AISI CANC 300.
 8. ALL RINGS SHALL BE REINFORCED FROM TO DETAIL.

Section - Pipe Collar Detail
 1. NO SUBSTITUTIONS AND/OR CHANGES SHALL BE MADE WITHOUT OWNER'S ENGINEER'S APPROVAL.
 2. CONCRETE PIPE COLLAR IS REQUIRED TO JOIN TWO MATERIALS OR TYPES OF PIPE COLLAR IN ADJACENT OR CONJUGATE.
 3. PIPE ENDS SHALL BE TRIMMED SUCH THAT THE 5' ± OF CONCRETE REMAINS FROM THE END AND IS ALLOWED TO CURE PRIOR TO CONCRETE.
 4. REINFORCEMENT SHALL BE 12 AWG SOLID, 100% COPPER. THE TRACER WIRE SHALL BE PLACED IN THE DIRECT BURIAL USE AND INSTALLED ON THE STRUCTURE. THE TRACER WIRE SHALL BE ON THE STRUCTURE. THE TRACER WIRE SHALL BE ON THE STRUCTURE.
 5. CONCRETE COLLAR SHALL BE REINFORCED SUFFICIENT FROM TO DETAIL PER CAN STD SPECIFICATION 223 AND STD SPECIFICATION 211.2 AND 211.3.
 6. CONCRETE SHALL BE CLASS A4 (40 MPa) PER CAN STD SPECIFICATION 223 AND STD SPECIFICATION 211.2 AND 211.3.
 7. REINFORCING STEEL SHALL BE 40% AISI CANC 300.
 8. ALL RINGS SHALL BE REINFORCED FROM TO DETAIL.

