SPECIFICATIONS, PROJECT MANAGEMENT AND INSPECTION

1. THE CONTRACTOR SHALL COMPLETE ALL CONSTRUCTION IN ACCORDANCE WITH THE CITY OF KINGSPORT ENGINEERING SPECIFICATIONS. THE PROJECT MANAGEMENT AND INSPECTION WILL BE DONE BY THE CITY OF KINGSPORT ENGINEERING DEPARTMENT.

WATER LINE CONSTRUCTION

1. LOCATION OF ALL UTILITIES AND UNDERGROUND STRUCTURES SHOWN ARE APPROXIMATE AND ARE NOT NECESSARILY ALL OF THE EXISTING UTILITIES AND UNDERGROUND STRUCTURES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT LOCATION AND EXISTENCE OF ALL UTILITIES AND UNDERGROUND STRUCTURES.

2. THE CONTRACTOR SHALL DIG AND LOCATE ALL UTILITIES AND STRUCTURES IN ADVANCE OF THE PIPE LAYING TO ALLOW FOR ADJUSTMENTS DUE TO CONFLICTS WITH UTILITIES AND UNDERGROUND STRUCTURES IN THE VERTICAL AND HORIZONTAL LOCATION OF THE PIPELINE.

3. THE CONTRACTOR SHALL CONTACT TENNESSEE ONE CALL 1-800-351-1111 AT LEAST THREE (3) WORKING DAYS PRIOR TO ANY EXCAVATION WORK. IT IS THE CONTRACTORS RESPONSIBILITY TO PAY FOR ANY DAMAGE TO AND FOR MAINTENANCE AND PROTECTION OF EXISTING UTILITIES AND STRUCTURES.

4. ALL EXISTING VALVES ON EXISTING WATERLINES SHOWN OR NOT SHOWN TO BE ABANDONED SHALL BE ABANDONED BY CLOSING VALVE AND REMOVING VALVE BOX. IF CONNECTION IS ON OPPOSITE SIDE CUT & PLUG AT MAIN. REMOVE ALL VALVE BOXES ON ABANDONED LINES.

5. TEMPORARY BLOW - OFF ASSEMBLIES AND AIR RELEASE VALVES FOR TESTING ARE THE CONTRACTORS RESPONSIBILITY AND ARE NOT SEPARATE PAY ITEMS.

6. ALL LONG SERVICES FOR CONNECTIONS UNDER ROADS CAN BE MOLED (PIG), HOWEVER NONE SHALL BE UNDER ANY CIRCUMSTANCE BE OPEN CUT. IF CONTRACTOR CHOSES TO MOLE AND IS UNABLE TO CROSS WITHOUT DAMAGING ROADWAY, THE CONTRACTOR SHALL USE DIRECTIONAL BORE FOR CROSSING AT NO ADDITIONAL COST TO THE CITY OF KINGSPORT.

7. ALL VALVES SHALL BE RESILENT WEDGE GATE VALVES.
8. ON ALL PVC INSTALLATION, 14 GAUGE WIRE SHALL BE INSTALLED WITH THE PIPE FOR TRACING PURPOSES.
9. ALL FIRE HYDRANTS SHALL BE SILVER COLORED.
10. TEMPORARY WATERLINE CONNECTIONS SHALL BE USED WHERE SHOWN ON THE PLANS, AND WHERE NECESSARY. TEMPORARY CONNECTIONS ARE NOT A PAY ITEM.

11. CONTRACTOR SHALL CONNECT ALL APPLICABLE SERVICES TO THE NEW WATERLINE(S).

12. ALL EXISTING & ABANDONED FIRE HYDRANTS SHALL BE REMOVED AND DISPOSED OF.

13. ALL EXISTING WATER METERS INSIDE FENCES TO BE RELOCATED OUTSIDE THE FENCES TO FACILITATE METER READING.

14. TEMPORARY FIRE HYDRANT CONNECTIONS FOR FLUSHING: LINE ITEM FOR THIS CONNECTION WILL INCLUDE INSTALLATION OF HYDRANT, TEE AND VALVE FOR CONNECTION. ALSO HYDRANT WILL BE REMOVED AFTER FLUSHING USAGE AND GATE VALVE TO BE CLOSED AND A 6" CAP INSTALLED WITH CONCRETE THRUST BLOCKING. VALVE WILL BE PAID UNDER ITEM FOR 6" GATE VALVES.

15. ALL DISINFECTION, FLUSHING, AND TESTING SHALL BE IN STRICT ACCORDANCE WITH ALL CITY AND TDEC RULES, REGULATIONS, STANDARDS, AND SPECIFICATIONS, AND STANDARD OPERATING PROCEDURES (DCSOPs).

16. A BLUE COATED #14 SOLID CONDUCTOR COPPER TRACER WIRE SHALL BE PLACED OVER ALL NON-METALLIC PIPING IN THE TRENCH TO PROVIDE A MEANS OF DETECTION. THE DETECTION DEVICE SHALL BE OF SUFFICIENT SIZE AND TYPE TO BE LOCATED BY ANY STANDARD METAL DETECTOR OR PIPE FINDER. CONNECTIONS, SUCH AS VALVES AND SERVICES, SHALL HAVE THE TRACER WIRE CONNECT TO THE MAIN LINE TRACER WIRE (STRIPPED INSULATION COPPER TO COPPER) AND FOLLOW THE LATERAL AND TERMINATE IN THE VALVE BOX FOR FUTURE LOCATING ABILITY. THE WARNING TAPE SHALL BE BURIED ONE FOOT ABOVE THE UTILITY PIPE, AND THE TRACER WIRE BELOW THE WARNING TAPE - CLOSER TO THE UTILITY PIPE. THE PURPOSE OF THE WARNING TAPE IS TO WARN OF THE UTILITY PIPE BELOW - BEFORE THE PIPE IS DAMAGED. THE COSTS FOR THE INSTALLATION OF THESE DETECTION MATERIALS SHALL BE INCLUDED IN THE UNIT PRICES FOR THE ASSOCIATED UTILITY PIPE. NO SEPARATE PAYMENT WILL BE MADE.

CONSTRUCTION WORK ZONES AND TRAFFIC CONTROL

1. CONSTRUCTION SIGNING AND TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES MILLENNIUM EDITION. THE CONTRACTOR THAT IS AWARDED BID SHALL DEVELOP AND SUBMIT A MAINTENANCE OF TRAFFIC PLAN TO THE PROJECT MANAGER ON THE DAY OF THE PRECONSTRUCITON MEETING. A COPY OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES CAN BE OBTAINED FROM THE PROJECT MANAGER PRIOR TO THE PRECONSTRUCTION MEETING.
2. THE CONTRACTOR SHALL NOT STORE EQUIPMENT OR MATERIALS ON PRIVATE PROPERTY WITHOUT WRITTEN APPROVAL.
3. ADVANCED WARNING SIGNS SHALL NOT BE DISPLAYED MORE THAN FOURTY-EIGHT (48) HOURS BEFORE PHYSICAL CONSTRUCTION BEGINS. SIGNS MAY BE ERECTED UP TO ONE WEEK BEFORE NEEDED, IF THE SIGN FACE IS FULLY COVERED.
4. IF THE CONTRACTOR MOVES OFF THE PROJECT, HE SHALL COVER OR REMOVE ALL UNNEEDED SIGNS AS DIRECTED BY THE PROJECT MANAGER. COSTS ASSOCIATED WITH THE REMOVAL, COVERING OR REINSTALLING SIGNS SHALL BE THE CONTRACTORS RESPONSIBILITY.
5. USE OF BARRICADES, PORTABLE BARRIER RAILS, VERTICAL PANELS AND DRUMS SHALL BE LIMITED TO THE IMMEDIATE AREAS OF CONSTRUCTION WHERE A HAZARD IS PRESENT.
6. ACCESS TO DRIVEWAYS AND SIDESTREETS SHALL BE MAINTAINED AT ALL TIMES.

DRIVEWAYS AND STREETS

1. CONTRACTOR SHALL ASSUME THAT STREETS ARE ASPHALT UNLESS OTHERWISE SHOWN ON THE PLANS. STREET CROSSINGS AND STREET TRENCHES CONSTRUCTED OF ASPHALT SHALL BE REPLACED WITH THE SPECIFIED DEPTH OF BINDER AND/OR TOPPING. THOSE AREAS OF CONCRETE STREET OR DRIVEWAYS SHALL BE REPAIRED WITH CONCRETE MATCHING EXISTING DEPTH AND WIDTH.
2. ALL UTILITY CUTS IN DRIVEWAYS AND STREETS SHALL BE SAW CUT AND BACKFILLED WITH MINERAL AGGREGATE BASE COMMONLY REFERRED TO AS PUG MILL. THE BACKFILLING SHALL BE IN LIFTS WITH SUFFICIENT COMPACTION TO PASS 83%% OF SOLID ROCK AS DETERMINED BY AASHTO-T85 (APPROXIMATELY 140 P.C.F.). MAKE TEMPORARY PAVEMENT RESTORATION WHEN IT IS NOT FEASIBLE TO IMMEDIATELY REPLACE PAVEMENT AFTER THE PLACEMENT AND COMPACTION OF BACKFILL. A TEMPORARY ASPHALT PATCH SHALL BE REQUIRED WITHIN 3 DAYS AFTER FINAL BACKFILL. AFTER SUCCESSFUL PRESSURE TESTING OF INSTALLED LINES CONTRACTOR SHALL INSTALL FINAL CONCRETE AND OR ASPHALT FLUSH WITH EXITING SURFACE. FOR EXISTING ASPHALT SURFACES THE CONTRACTOR IS TO INSTALL 4" OF ASPHALT BINDER FLUSH AND SMOOTH WITH THE EXISTING SURFACE. FOR CONCRETE SURFACES THE CONTRACTOR SHALL INSTALL CONCRETE EQUAL TO THE EXISTING DEPTH FLUSH WITH THE EXISTING SURFACE.
3. ANY DRIVEWAY OR STREET CROSSING THAT HAS SETTLEMENT OF CONCRETE AFTER INSTALLATION BY CONTRACTOR WILL BE REQUIRED TO HAVE CONCRETE REMOVED AND STONE COMPACTED AND NEW CONCRETE INSTALLED AT THE CONTRACTORS EXPENSE.
4. TO COMBAT DUST PROBLEMS, THE CONTRACTOR SHALL INTRODUCE EITHER 1.54 POUNDS OF CALCIUM CHLORIDE IN THE FLAKE FORM OR 1.32 POUNDS OF CALCIUM CHLORIDE IN THE PELLET FORM TO EACH SQUARE YARD OF ROADWAY WHERE ASPHALT HAS BEEN REMOVED. THE CALCIUM CHLORIDE WILL BE THOROUGHLY MIXED WITH THE FINAL 3" OF PUG MILL IN THE TRENCH PRIOR TO COMPACTION. THIS CAN BE SPREAD AS A SOLID OR LIQUID. IF IN THE EVENT THE TRENCH HAS NOT BEEN PATCHED IN 45 CALENDAR DAYS, THE ABOVE PROCESS MUST BE REPEATED. IN ADDITION TO THE CALCIUM CHLORIDE, THE ROADWAY SHALL BE WATERED TWICE DAILY.
5. ANY DAMAGE CAUSED TO ANY ROADWAY BY BLASTING OR OTHERWISE SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE. CONTRACTORS EXPENSE SHALL INCLUDE, BUT NOT BE LIMITED TO BACKFILL STONE, CONCRETE AND TOPPING.
6. OVERLAY OF 3/4" ASPHALT TOPPING ON ALL ROAD CROSSINGS, 5' EACH SIDE OF TRENCH.

SIDEWALKS

1. ALL SIDEWALK REPLACEMENT SHALL BE 4" THICK CONCRETE AND 2" LEVELING COURSE STONE INCLUDED IN PRICE OF SIDEWALK REPLACEMENT. SIDEWALK REPLACEMENT SHALL MATCH EXISTING WIDTH. SIDEWALK TRENCHING THROUGH DRIVEWAYS SHALL BE BACKFILLED WITH STONE AND COMPACTED. ALL TRENCHING UNDER SIDEWALKS SHALL BE COMPACTED.
2. SIDEWALK REPLACEMENT: WHEN EXISTING SIDEWALKS ARE ALTERED, ADA REQUIREMENTS MUST BE MET. ANY EXISTING SIDEWALK THAT TOUCHES THE ROADWAY AND IS ALTERED MUST BE REPLACED BY AN ADA COMPLIANT RAMP. DETAILS ARE INCLUDED IN THE CITY OF KINGSPORT CONSTRUCTION SPECIFICATIONS. ANY SUCH RAMPS WILL BE PAID AT THE SAME UNIT PRICE AS ALL OTHER SIDEWALKS.

CITY OF KINGSPORT SOP HIGHLIGHTS

1. 1" AIR RELEASE VALVES - TO BE A.R.I. S-050 ONE-WAY-OUT ONLY.
2. ANY METER BOX/VAULT 17"X30" OR LARGER IS TO BE TIER 15 RATED, AT MINIMUM, BUT AT ALL TIMES APPROPRIATELY RATED FOR ANTICIPATED TRAFFIC.
3. ALL METER/VALVE VAULTS ARE TO BE PRE-CAST, WITH A 30" DOOR, MINIMUM. OTHER ITEMS TO CONSIDER ARE, AGAIN, TIER RATING. NO 'MASONRY'(BLOCK/BRICK).
4. ALL PRESSURE REDUCING VALVES/FLOW-CONTROL VALVES/PRESSURE SUSTAINING VALVES ARE TO BE 'CLA-VAL'.
5. SEWER IS, I BELIEVE, WORKING ON A NEW 'TRANSFER FORM' THAT WILL REFLECT THE, NOW REQUIRED, CONTRACTOR CCTV TESTING.
6. WHERE PREFERRED, CONTRACTORS MAY NOW USE FORD 70-80/EQUAL LINE SETTERS (VERTICAL INLET - DUAL CHECK EQUIPPED) (3/4"-2").
7. RISERS (SEWER) LARGER THAN 32" MAY BE USED, EVEN ON MATERIAL AGREEMENTS, THOUGH WE WILL NOT ACCEPT THE LARGER ONES BACK INTO STOCK IF THEY ARE NOT USED.
8. REDUCED PRESSURE BACKFLOW ASSEMBLIES ARE THE ONLY ASSEMBLIES APPROVED FOR MAIN LINE TESTING.
9. NO PRESSURE TESTING AFTER THE BACTS HAVE BEEN COLLECTED.
10. ANYTIME A MAIN LINE IS TURNED OFF FOR 30 DAYS+, NEW LINE DISINFECTION/TESTING MUST BE PERFORMED IN ORDER TO PLACE THE LINE BACK INTO SERVICE.

MISCELLANEOUS

1. WHILE WORKING IN THE LIMITS OF EASEMENTS THE CONTRACTOR SHALL CLEAR ANY TREES INSIDE THE PERMANENT EASEMENTS AND PROTECT ALL TREES POSSIBLE INSIDE TEMPORARY CONSTRUCTION EASEMENTS. CONTRACTOR SHALL NOT HAVE EQUIPMENT OR MATERIALS OUTSIDE EASEMENT LIMITS.
2. THE CITY WILL NOT PURCHASE ANY UNUSED MATERIALS AT THE END OF THE JOB. THE RESTOCKING COST IS NOT A PAY ITEM.
3. THE CONTRACTOR SHALL NOTIFY THE PROJECT MANAGER IMMEDIATELY UPON CONFLICTING FIELD SITUATIONS RESULTING IN DELAYS.
4. NOTHING IN THE GENERAL NOTES OR SPECIAL PROVISIONS SHALL RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITIES TOWARD THE SAFETY AND CONVENIENCE OF THE GENERAL PUBLIC AND THE RESIDENTS ALONG THE PROPOSED CONSTRUCTION AREA.
5. THE CONTRACTOR SHALL BE REQUIRED TO RESET IN CONCRETE MAILBOXES AND SIGNS THAT HAVE BEEN REMOVED.
6. ALL EXISTING FENCES REQUIRED TO BE REMOVED DUE TO CONSTRUCTION ACTIVITIES SHALL BE RECONSTRUCTED AT R.O.W.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND FOLLOWING ANY AND ALL APPLICABLE PERMITS.
8. THE CONTRACTOR SHALL USE ONLY RUBBER TIRED OR RUBBER TRACK EXCAVATION EQUIPMENT ON THIS PROJECT.
9. SEEDING WITH MULCH SHALL BE PLACED IN ALL DISTURBED GRASSED AREAS AND IS NOT A PAY ITEM ON THIS PROJECT.
10. SOIL & EROSION CONTROL MEASURES SHALL BE UNDERTAKEN AS DEEMED NECESSARY BY THE PROJECT MANAGER AND ARE NOT A PAY ITEM
11. ANY PROPERTY PINS REMOVED BY CONTRACTOR SHALL BE SET AND REPLACED TO ORIGINAL POSITION BY REGISTERED LAND SURVEYOR.
12. VARIOUS METER SERVICE LOCATIONS HAVE EXISTING M LOGGERS (LEAK DETECTION DEVICES). THE CONTRACTOR SHALL REINSTALL / RECONNECT THESE DEVICES AT EXISTING LOCATIONS WHERE FOUND. NO SEPARATE PAYMENT SHALL BE MADE FOR THIS WORK.
13. CONTRACTOR SHALL FOLLOW ALL CITY OF KINGSPORT DISTRIBUTION & COLLECTION DIVISION STANDARD OPERATING PROCEDURES (DCSOPs).

DW 2020-0773

APPROVED FOR CONSTRUCTION

THE DOCUMENT BEARING THIS STAMP HAS BEEN RECEIVED AND REVIEWED BY THE

TENNESSEE DEPT. OF ENVIRONMENT & CONSERVATION

DIVISION OF WATER RESOURCES

AND IS HEREBY APPROVED FOR CONSTRUCTION BY THE COMMISSIONER

R. William Hench

July 21, 2020

THIS APPROVAL SHALL NOT BE CONSTRUED AS CREATING A PRESUMPTION OF CORRECT OPERATION OR AS WARRANTING BY THE COMMISSIONER THAT THE APPROVED FACILITIES WILL REACH THE DESIGNED GOALS.

APPROVAL EXPIRES 5 YEARS FROM ABOVE DATE

DRAWING TITLE		DRAWING NO.	REV.
GENERAL NOTES - WATER SYSTEM		A1.1	1

NOTES:

1. PRIVATE PROPERTY WILL NOT BE LEFT IN A DISTURBED MANNER FOR A PERIOD LONGER THAN 30 CALENDAR DAYS. THERE WILL BE A CHARGE OF $100.00 PER DAY PER OCCURANCE FOR DAMAGES.
2. ALL EXISTING UTILITY LOCATIONS ARE TO BE VERIFIED BY THE CONTRACTOR WITH THE APPROPRIATE AGENCY AND PROTECTED UNLESS OTHERWISE NOTED OR SHOWN ON THE PLANS.
3. ALL SURPLUS ITEMS (SUCH AS PUMP STATIONS) THAT ARE REMOVED/REPLACED AS A RESULT OF CONSTRUCTION ARE TO BE DELIVERED TO AND BECOME THE PROPERTY OF THE CITY OF KINGSPORT.
4. ALL SIGNING FOR TRAFFIC CONTROL SHALL BE DONE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES - LATEST EDITION.
5. ALL UTILITY CUTS IN A ROADWAY SHALL BE SAW CUT AND BACKFILLED WITH MINERAL AGGREGATE BASE COMMONLY REFERRED TO AS PUG MILL. THE BACKFILLING SHALL BE IN LIFTS WITH SUFFICIENT COMPACTION TO PASS 83% OF SOLID ROCK AS DETERMINED BY AASHTO-T85 (APPROXIMATELY 140 P.C.F.). IN A TIMELY MANNER, 4" OF ASPHALTIC BINDER SHALL BE PLACED IN THE TRENCH BRINGING THE TOP FLUSH WITH THE EXISTING PAVEMENT.
6. REPAIR OF WATERLINE BREAKS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
7. TO COMBAT DUST PROBLEMS, THE CONTRACTOR SHALL INTRODUCE EITHER 1.54 LBS. OF CALCIUM CHLORIDE IN THE FLAKE FORM OR 1.32 LBS. OF CALCIUM CHLORIDE IN THE PELLET FORM TO EACH SQUARE YARD OF ROADWAY WHERE THE ASPHALT HAS BEEN REMOVED. THE CALCIUM CHLORIDE WILL BE THROUGHLY MIXED WITH THE FINAL 3" OF PUG MILL IN THE TRENCH PRIOR TO COMPACTION. THIS CAN BE SPREAD AS A SOLID OR LIQUID. IF IN THE EVENT THE TRENCH HAS NOT BEEN PATCHED IN 45 CALENDAR DAYS, THE ABOVE PROCESS MUST BE REPEATED. IN ADDITION TO THE CALCIUM CHLORIDE, THE ROADWAY SHOULD BE WATERED TWICE DAILY.
8. UTILITY POLE RELOCATION TO BE DONE BY OTHERS UNLESS SPECIFIED OTHERWISE IN THE CONTRACT.
9. THE ENDS OF ALL LATERALS ARE TO BE MARKED WITH A 2"X2" CREOSOTE OR SALT TREATED STAKE EXTENDING 6" ABOVE THE GROUND AN A MINIMUM OF 4' IN LENGTH, WITH ALSO AN 18" #4 REBAR DRIVEN FLUSH WITH THE GROUND.
10. TYPICALLY, EASEMENT WIDTHS ARE 15' PERMANENT EASEMENTS LOCATED 7.5' EACH SIDE OF THE SEWER CENTERLINE WITH AN ADDITIONAL 10' TEMPORARY CONSTRUCTION EASEMENT LOCATED ADJACENT TO EACH SIDE OF THE PERMANENT EASEMENT. CONTRACTOR IS RESPONSIBLE FOR WORKING WITHIN THE CONSTRAINTS OF THESE EASEMENTS UNLESS SHOWN DIFFERENTLY ON PLANS.
11. DUCTILE IRON PIPE TO BE USED FOR FIRST 10' OF FORCE MAIN OUT OF DUPLEX PUMP STATIONS.
12. MAGNETIC MARKING WIRE IS TO BE USED ON ALL FORCE MAIN PIPE AND IS TO BE INCLUDED IN THE PRICE OF THE PIPE. (SEE NOTE #26)
13. ALL EXCESS ELECTRICAL WIRE IN PUMP STATIONS IS TO BE TRIMMED.
14. PRICE FOR RESIDENTIAL PUMP STATIONS ARE TO INCLUDE ALL NECESSARY ELECTRICAL CONNECTIONS.
15. NO PLUMBING IS TO BE PLACED SO THAT RESIDENTIAL PUMP STATIONS CANNOT BE REMOVED.
16. THE CITY WILL NO LONGER PURCHASE UNUSED MATERIALS AT THE END OF THE JOB, UNLESS IT IS THE RESULT OF A DEVIATION FROM THE PLAN. THE RESTOCKING COST IS NOT A PAY ITEM.
17. ALL CHECK VALVES 4" OR LARGER SHALL HAVE STAINLESS STEEL HINGE PINS.
18. STONE BACKFILL AROUND MANHOLES WILL BE PAID FOR AT 2.64 TONS PER VERTICAL FOOT OF DEPTH.
19. 6" LATERAL PIPE WILL BE PAID FOR BY LINEAL FEET MEASURED FROM THE CENTERLINE OF THE MAIN SEWER TO THE CENTERLINE OF THE CLEANOUT CAP. TEES, WYES, FITTINGS, RISER PIPE, AND CAPS AT THE END OF THE LATERAL PIPE WILL BE PAID AS ONE UNIT (CLEANOUT ASSEMBLY).
20. TRANSDUCERS WILL BE USED IN ALL PUMPING STATIONS INSTEAD OF FLOATS.
21. ANY DAMAGE TO ROADWAY CAUSED BY BLASTING WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
22. NO FLAT TOP MANHOLES ARE TO BE INSTALLED IN STREETS.
23. IN CONCRETE FORMING, EXPANSION PAPER IS TO BE USED AROUND ALL EXISTING STRUCTURES. THIS COST IS NOT A SEPARATE PAY ITEM, AND WILL BE INCLUDED IN THE COST OF THE CONCRETE.
24. ON SEWERLINES WITH STEEP SLOPES, A MECHANICAL JOINT BEND WILL BE REQUIRED TO CONNECT THE SEWER WITH THE MANHOLE. PAYMENT FOR THIS BEND WILL BE INCLUDED WITH THE MANHOLE, AND IS NOT A SEPARATE PAY ITEM.
25. IT IS THE CONTRACTORS RESPONSIBILITY TO CLEAR ALL TREES INSIDE THE PERMANENT EASEMENT AND TO PROTECT ALL TREES POSSIBLE INSIDE THE TEMPORARY CONSTRUCTION EASEMENT.
26. COATED 14 GAUGE WIRE IS TO BE INSTALLED WITH THE FORCE MAIN PIPE. THE CONTRACTOR SHALL TEST CONTINUITY OF THE 14 GAUGE WIRE. THIS WILL BE PAID FOR AS PART OF THE FORCE MAIN AND IS NOT A SEPARATE PAY ITEM.
27. ALL TRENCHES IN ROADWAY ARE TO BE PAVED WITHIN 3 DAYS.
28. PROVIDE EROSION CONTROL AS NECESSARY TO MEET REQUIREMENTS OF THE TENNESSEE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. THIS HANDBOOK IS AVAILABLE AT LOCAL T.D.E.C. OFFICE.
29. KEEP CLEARING AND GRUBBING TO NECESSARY MINIMUM FOR GRADING AND PIPELINE INSTALLATION.
30. STAGE CONSTRUCTION IN PHASES AS NECESSARY TO MINIMIZE CLEARED SURFACE AREA EXPOSURE TIME.
31. EROSION CONTROL MEASURES MUST BE IN PLACE AND FUNCTIONAL BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN. PROPERLY CONSTRUCT AND MAINTAIN THROUGHOUT CONSTRUCTION PERIOD. EROSION AND SEDIMENT CONTROL DEVICES SHOWN ON DRAWINGS ARE MINIMUM REQUIRED. PROVIDE ADDITIONAL EROSION CONTROL APPURTENANCES AS REQUIRED BY LOCAL, STATE, AND FEDERAL REGULATIONS.
32. CHECK EROSION CONTROL MEASURES WEEKLY. CHECK DAILY DURING PROLONGED RAINFALL. REPAIR OR REPLACE AS REQUIRED.
33. PRESERVE VEGETATIVE GROUND COVER UNLESS GRADE WORK IS TO BEGIN WITHIN 15 DAYS.
34. APPLY TEMPORARY SOIL STABILIZATION WITH APPROPRIATE ANNUAL VEGETATION ON AREAS REMAINING UNFINISHED MORE THAN 7 CALENDAR DAYS.
35. INSTALL STAKED AND ENTRENCHED SEDIMENTATION BARRIER ON CONTOUR, AT BASE OF ALL FILLS, CUTS AND STOCKPILES TO MINIMIZE SEDIMENT TRANSPORTATION. TURN ENDS OF SILT FENCING UP HILL TO POND SURFACE WATER. REPLACE OR REPAIR SILT FENCE AT END OF WORK DAY OR PRIOR TO RAIN EVENT.
36. DIVERT ALL SURFACE WATER AWAY FROM CONSTRUCTION USING DIVERSION DITCHES OR OTHER MEANS TO REDUCE EROSION POTENTIAL.
37. PLACE INITIAL EROSION CONTROL MEASURES TO MINIMIZE EROSION POTENTIAL AND TRANSPORT. INSTALL CHECK DAMS AS NECESSARY.
38. USE ONLY CLEAN, HARD ROCK CONTAINING NO SAND, DUST OR ORGANIC MATERIAL.
39. INSTALL AND MAINTAIN EROSION AND SEDIMENT CONTROL DEVICES IN ACCORDANCE WITH TENNESSEE EROSION CONTROL HANDBOOK, LATEST EDITION.
40. WATER AREAS SUBJECT TO DUST FORMATION TO RETARD DUST AND PREVENT WIND EROSION. INCLUDE COST FOR DUST CONTROL WITHIN BID PRICE FOR EROSION AND SEDIMENT CONTROL.
41. TOPSOIL, SEED, FERTILIZE, AND MULCH ALL NEWLY GRADED AREAS WITHIN 14 DAYS AFTER GRADING ENDS. INSTALL TDOT TYPE II EXCELSIOR EROSION CONTROL MATTING AFTER FINAL SEEDING ON SLOPES 3:1 OR GREATER.
42. DO NOT SEED DURING RAINFALL EVENTS OR WHEN HEAVY RAIN IS EXPECTED. DO NOT SEED DURING WINDY WEATHER OR WHEN GROUND SURFACE IS FROZEN, WET, OR OTHERWISE UNSUITABLE. DO NOT PERFORM PERMANENT SEEDING DURING DECEMBER AND JANUARY. TEMPORARY SEEDING MAY BE PERFORMED DURING WINTER MONTHS WITH EXPECTATIONS THAT ADDITIONAL SEEDING IS REQUIRED IN SPRING.
43. PLACE MINIMUM OF 4" OF TOPSOIL AND SEED ON ALL NEWLY GRADED EARTHEN AREAS. MACHINE TRACK AND HYDROSEED ALL AREAS. AT A MINIMUM, APPLY KENTUCKY 31 FESQUE AT A RATE OF 7 LBS. PER 1,000 S.F. AND ANNUAL RYE AT A RATE OF 3 LBS. PER 1,000 S.F.
44. PLACE A MINIMUM OF 2" OF AGGREGATE BASE COURSE TO STABILIZE ROADWAY SECTIONS.
45. ALL STORM SEWER STRUCTURES SHALL BE NPDES II COMPLIANT AND MARKED "DUMP NO WASTE! DRAINS TO WATERWAY".
46. SILT FENCING AND OTHER SEDIMENT AND EROSION CONTROL MEASURES SHALL BE PLACED WHERE NECESSARY AND AS REQUIRED BY THE PROJECT MANAGER TO CONTROL SEDIMENTS. THIS IS INCIDENTAL TO THE WORK AND IS NOT A PAY ITEM.
47. PRIOR TO SUBMITTING HIS BID, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONTACTING OWNERS OF ALL AFFECTED UTILITIES IN ORDER TO DETERMINE THE EXTENT TO WHICH UTILITY RELOCATIONS AND/OR ADJUSTMENTS WILL IMPACT THE SCHEDULE OF WORK FOR THE PROJECT. WHILE SOME WORK MAY BE REQUIRED "AROUND" UTILITY FACILITIES THAT WILL REMAIN IN PLACE, OTHER UTILITY FACILITIES MAY NEED TO BE ADJUSTED CONCURRENTLY WITH THE CONTRACTOR'S OPERATIONS. ADVANCE CLEAR CUTTING MAY BE REQUIRED BY THE ENGINEER AT ANY LOCATION WHERE CLEARING IS CALLED FOR IN THE SPECIFICATIONS AND CLEAR CUTTING IS NECESSARY FOR A UTILITY RELOCATION. ANY ADDITIONAL COST WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE CLEARING ITEM SPECIFIED IN THE PLANS.
48. MANHOLE, VALVE, & METER RISER RINGS SHALL BE MADE FROM A HIGH PERFORMANCE COPOLYMER POLYPROPYLENE AS MANUFACTURED BY TURNER COMPANY.
49. THE MINIMUM HEIGHT OF RISER RINGS SHALL BE 2" RINGS AND THEY SHALL NOT BE STACKED HIGHER THAN 10". THERE SHALL BE NO MORE THAN 2 RINGS PER MANHOLE.
50. SIDEWALK REPLACEMENT: WHEN EXISTING SIDEWALKS ARE ALTERED, ADA REQUIREMENTS SHALL BE MET. ANY EXISTING SIDEWALK THAT TOUCHES THE ROADWAY AND IS ALTERED SHALL BE REPLACED BY AN ADA COMPLIANT RAMP. DETAILS ARE INCLUDED IN THE CITY OF KINGSPORT CONSTRUCTION SPECIFICATIONS. ANY SUCH RAMPS WILL BE PAID AT THE SAME UNIT PRICE AS ALL OTHER SIDEWALKS.

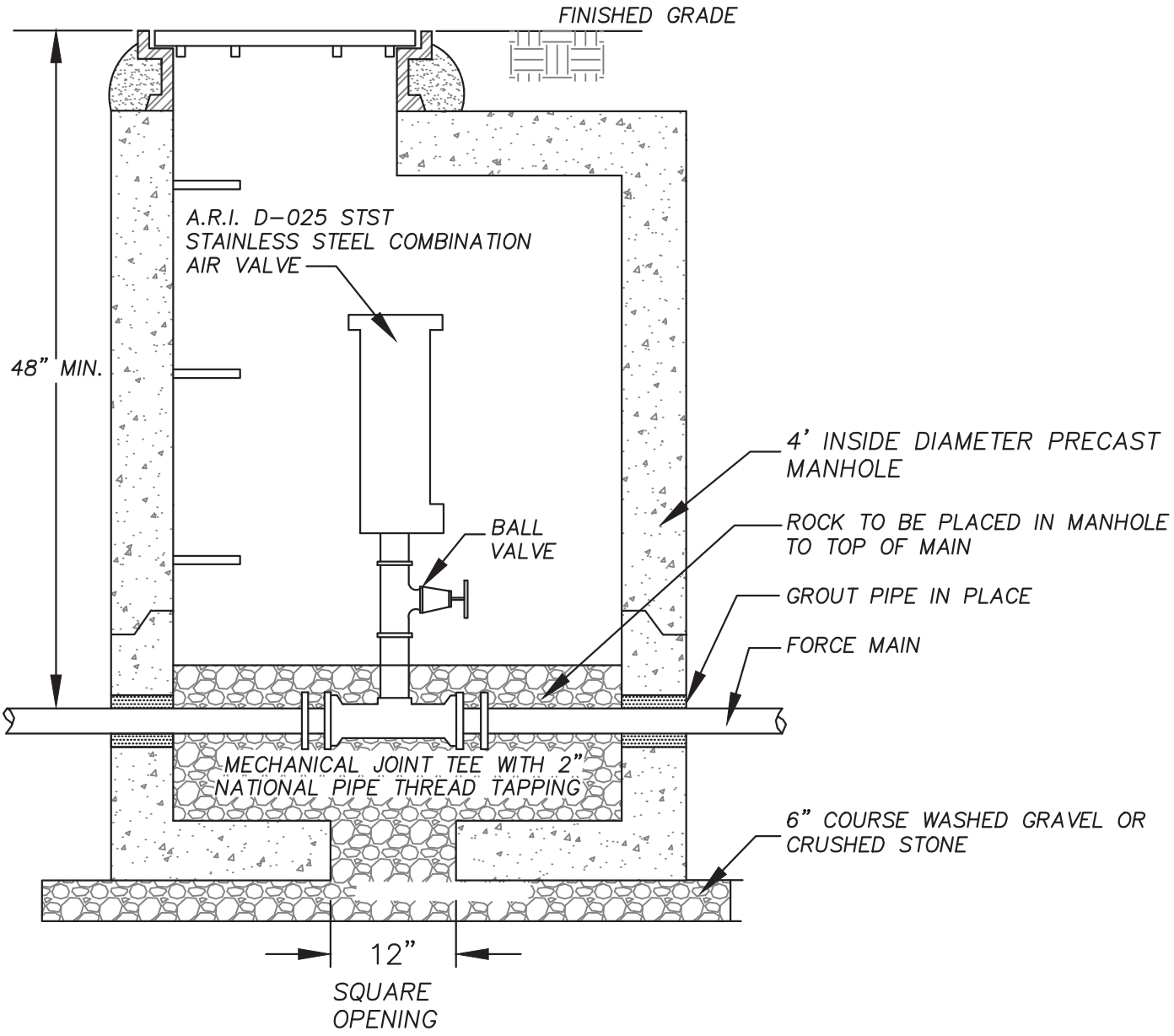
51. A GREEN COATED #14 SOLID CONDUCTOR COPPER TRACER WIRE SHALL BE PLACED OVER ALL NON-METALLIC PIPING IN THE TRENCH TO PROVIDE A MEANS OF DETECTION. THE DETECTION DEVICE SHALL BE OF SUFFICIENT SIZE AND TYPE TO BE LOCATED BY ANY STANDARD METAL DETECTOR OR PIPE FINDER. CONNECTIONS, SUCH AS SEWER LATERALS, SHALL HAVE THE TRACER WIRE CONNECT TO THE MAIN LINE TRACER WIRE (STRIPPED INSULATION COPPER TO COPPER) AND FOLLOW THE LATERAL AND TERMINATE IN THE CLEANOUT BOX FOR FUTURE LOCATING ABILITY. TERMINATION AT THE MANHOLES SHALL BE UNDER THE MANHOLE LID AND RUN BETWEEN THE MH CASTING AND CONE. THE WARNING TAPE SHALL BE BURIED ONE FOOT ABOVE THE UTILITY PIPE, AND THE TRACER WIRE BELOW THE WARNING TAPE - CLOSER TO THE UTILITY PIPE. THE PURPOSE OF THE WARNING TAPE IS TO WARN OF THE UTILITY PIPE BELOW BEFORE THE PIPE IS DAMAGED. THE COSTS FOR THE INSTALLATION OF THESE DETECTION MATERIALS SHALL BE INCLUDED IN THE UNIT PRICES FOR THE ASSOCIATED UTILITY PIPE. NO SEPARATE PAYMENT WILL BE MADE.

DRAWING TITLE		DRAWING NO.	REV.
GENERAL NOTES - SANITARY SEWER		A1.2	

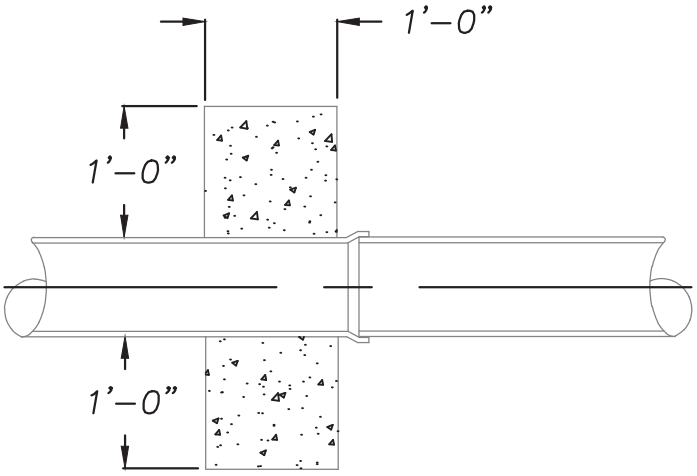
NOTES:

1. PRIVATE PROPERTY WILL NOT BE LEFT IN A DISTURBED MANNER FOR A PERIOD LONGER THAN 30 CALENDAR DAYS. THERE WILL BE A CHARGE OF $100.00 PER DAY PER OCCURANCE FOR DAMAGES.
2. ALL EXISTING UTILITY LOCATIONS ARE TO BE VERIFIED BY THE CONTRACTOR WITH THE APPROPRIATE AGENCY AND PROTECTED UNLESS OTHERWISE NOTED OR SHOWN ON THE PLANS.
3. ALL SURPLUS ITEMS (SUCH AS PUMP STATIONS) THAT ARE REMOVED/REPLACED AS A RESULT OF CONSTRUCTION ARE TO BE DELIVERED TO AND BECOME THE PROPERTY OF THE CITY OF KINGSPORT.
4. ALL SIGNING FOR TRAFFIC CONTROL SHALL BE DONE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES - LATEST EDITION.
5. ALL UTILITY CUTS IN A ROADWAY SHALL BE SAW CUT AND BACKFILLED WITH MINERAL AGGREGATE BASE COMMONLY REFERRED TO AS PUG MILL. THE BACKFILLING SHALL BE IN LIFTS WITH SUFFICIENT COMPACTION TO PASS 83% OF SOLID ROCK AS DETERMINED BY AASHTO-T85 (APPROXIMATELY 140 P.C.F.). IN A TIMELY MANNER, 4" OF ASPHALTIC BINDER SHALL BE PLACED IN THE TRENCH BRINGING THE TOP FLUSH WITH THE EXISTING PAVEMENT.
6. REPAIR OF WATERLINE BREAKS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
7. TO COMBAT DUST PROBLEMS, THE CONTRACTOR SHALL INTRODUCE EITHER 1.54 LBS. OF CALCIUM CHLORIDE IN THE FLAKE FORM OR 1.32 LBS. OF CALCIUM CHLORIDE IN THE PELLET FORM TO EACH SQUARE YARD OF ROADWAY WHERE THE ASPHALT HAS BEEN REMOVED. THE CALCIUM CHLORIDE WILL BE THROUGHLY MIXED WITH THE FINAL 3" OF PUG MILL IN THE TRENCH PRIOR TO COMPACTION. THIS CAN BE SPREAD AS A SOLID OR LIQUID. IF IN THE EVENT THE TRENCH HAS NOT BEEN PATCHED IN 45 CALENDAR DAYS, THE ABOVE PROCESS MUST BE REPEATED. IN ADDITION TO THE CALCIUM CHLORIDE, THE ROADWAY SHOULD BE WATERED TWICE DAILY.
8. UTILITY POLE RELOCATION TO BE DONE BY OTHERS UNLESS SPECIFIED OTHERWISE IN THE CONTRACT.
9. STONE BACKFILL AROUND MANHOLES WILL BE PAID FOR AT 2.64 TONS PER VERTICAL FOOT OF DEPTH.
10. ANY DAMAGE TO ROADWAY CAUSED BY BLASTING WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
11. NO FLAT TOP MANHOLES ARE TO BE INSTALLED IN STREETS.
12. IN CONCRETE FORMING, EXPANSION PAPER IS TO BE USED AROUND ALL EXISTING STRUCTURES. THIS COST IS NOT A SEPARATE PAY ITEM, AND WILL BE INCLUDED IN THE COST OF THE CONCRETE.
13. ON LINES WITH STEEP SLOPES, A MECHANICAL JOINT BEND WILL BE REQUIRED TO CONNECT THE SEWER WITH THE MANHOLE. PAYMENT FOR THIS BEND WILL BE INCLUDED WITH THE MANHOLE, AND IS NOT A SEPARATE PAY ITEM.
14. IT IS THE CONTRACTORS RESPONSIBILITY TO CLEAR ALL TREES INSIDE THE PERMANENT EASEMENT AND TO PROTECT ALL TREES POSSIBLE INSIDE THE TEMPORARY CONSTRUCTION EASEMENT.
15. ALL TRENCHES IN ROADWAY ARE TO BE PAVED WITHIN 3 DAYS.
16. PROVIDE EROSION CONTROL AS NECESSARY TO MEET REQUIREMENTS OF THE TENNESSEE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. THIS HANDBOOK IS AVAILABLE AT LOCAL T.D.E.C. OFFICE.
17. KEEP CLEARING AND GRUBBING TO NECESSARY MINIMUM FOR GRADING AND PIPELINE INSTALLATION.
18. STAGE CONSTRUCTION IN PHASES AS NECESSARY TO MINIMIZE CLEARED SURFACE AREA EXPOSURE TIME.
19. EROSION CONTROL MEASURES MUST BE IN PLACE AND FUNCTIONAL BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN. PROPERLY CONSTRUCT AND MAINTAIN THROUGHOUT CONSTRUCTION PERIOD. EROSION AND SEDIMENT CONTROL DEVICES SHOWN ON DRAWINGS ARE MINIMUM REQUIRED. PROVIDE ADDITIONAL EROSION CONTROL APPURTENANCES AS REQUIRED BY LOCAL, STATE, AND FEDERAL REGULATIONS.
20. CHECK EROSION CONTROL MEASURES WEEKLY. CHECK DAILY DURING PROLONGED RAINFALL. REPAIR OR REPLACE AS REQUIRED.
21. PRESERVE VEGETATIVE GROUND COVER UNLESS GRADE WORK IS TO BEGIN WITHIN 15 DAYS.
22. APPLY TEMPORARY SOIL STABILIZATION WITH APPROPRIATE ANNUAL VEGETATION ON AREAS REMAINING UNFINISHED MORE THAN 7 CALENDAR DAYS.
23. INSTALL STAKED AND ENTRENCHED SEDIMENTATION BARRIER ON CONTOUR, AT BASE OF ALL FILLS, CUTS AND STOCKPILES TO MINIMIZE SEDIMENT TRANSPORTATION. TURN ENDS OF SILT FENCING UP HILL TO POND SURFACE WATER. REPLACE OR REPAIR SILT FENCE AT END OF WORK DAY OR PRIOR TO RAIN EVENT.
24. DIVERT ALL SURFACE WATER AWAY FROM CONSTRUCTION USING DIVERSION DITCHES OR OTHER MEANS TO REDUCE EROSION POTENTIAL.
25. PLACE INITIAL EROSION CONTROL MEASURES TO MINIMIZE EROSION POTENTIAL AND TRANSPORT. INSTALL CHECK DAMS AS NECESSARY.
26. USE ONLY CLEAN, HARD ROCK CONTAINING NO SAND, DUST OR ORGANIC MATERIAL.
27. INSTALL AND MAINTAIN EROSION AND SEDIMENT CONTROL DEVICES IN ACCORDANCE WITH TENNESSEE EROSION CONTROL HANDBOOK, LATEST EDITION.
28. WATER AREAS SUBJECT TO DUST FORMATION TO RETARD DUST AND PREVENT WIND EROSION. INCLUDE COST FOR DUST CONTROL WITHIN BID PRICE FOR EROSION AND SEDIMENT CONTROL.
29. TOPSOIL, SEED, FERTILIZE, AND MULCH ALL NEWLY GRADED AREAS WITHIN 14 DAYS AFTER GRADING ENDS. INSTALL TDOT TYPE II EXCELSIOR EROSION CONTROL MATTING AFTER FINAL SEEDING ON SLOPES 3:1 OR GREATER.
30. DO NOT SEED DURING RAINFALL EVENTS OR WHEN HEAVY RAIN IS EXPECTED. DO NOT SEED DURING WINDY WEATHER OR WHEN GROUND SURFACE IS FROZEN, WET, OR OTHERWISE UNSUITABLE. DO NOT PERFORM PERMANENT SEEDING DURING DECEMBER AND JANUARY. TEMPORARY SEEDING MAY BE PERFORMED DURING WINTER MONTHS WITH EXPECTATIONS THAT ADDITIONAL SEEDING IS REQUIRED IN SPRING.
31. PLACE MINIMUM OF 4" OF TOPSOIL AND SEED ON ALL NEWLY GRADED EARTHEN AREAS. MACHINE TRACK AND HYDROSEED ALL AREAS. AT A MINIMUM, APPLY KENTUCKY 31 FESQUE AT A RATE OF 7 LBS. PER 1,000 S.F. AND ANNUAL RYE AT A RATE OF 3 LBS. PER 1,000 S.F.
32. PLACE A MINIMUM OF 2" OF AGGREGATE BASE COURSE TO STABILIZE ROADWAY SECTIONS.
33. ALL STORM SEWER STRUCTURES SHALL BE NPDES II COMPLIANT AND MARKED "DUMP NO WASTE! DRAINS TO WATERWAY".
34. SILT FENCING AND OTHER SEDIMENT AND EROSION CONTROL MEASURES SHALL BE PLACED WHERE NECESSARY AND AS REQUIRED BY THE PROJECT MANAGER TO CONTROL SEDIMENTS.
35. PRIOR TO SUBMITTING HIS BID, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONTACTING OWNERS OF ALL AFFECTED UTILITIES IN ORDER TO DETERMINE THE EXTENT TO WHICH UTILITY RELOCATIONS AND/OR ADJUSTMENTS WILL IMPACT THE SCHEDULE OF WORK FOR THE PROJECT. WHILE SOME WORK MAY BE REQUIRED "AROUND" UTILITY FACILITIES THAT WILL REMAIN IN PLACE, OTHER UTILITY FACILITIES MAY NEED TO BE ADJUSTED CONCURRENTLY WITH THE CONTRACTOR'S OPERATIONS. ADVANCE CLEAR CUTTING MAY BE REQUIRED BY THE ENGINEER AT ANY LOCATION WHERE CLEARING IS CALLED FOR IN THE SPECIFICATIONS AND CLEAR CUTTING IS NECESSARY FOR A UTILITY RELOCATION. ANY ADDITIONAL COST WILL BE INCLUDED IN THE UNIT PRICE BID FOR THE CLEARING ITEM SPECIFIED IN THE PLANS.
36. SIDEWALK REPLACEMENT: WHEN EXISTING SIDEWALKS ARE ALTERED, ADA REQUIREMENTS SHALL BE MET. ANY EXISTING SIDEWALK THAT TOUCHES THE ROADWAY AND IS ALTERED SHALL BE REPLACED BY AN ADA COMPLIANT RAMP. DETAILS ARE INCLUDED IN THE CITY OF KINGSPORT CONSTRUCTION SPECIFICATIONS. ANY SUCH RAMPS WILL BE PAID AT THE SAME UNIT PRICE AS ALL OTHER SIDEWALKS.
37. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR ALL APPLICABLE AGENCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
38. IF A CONFLICT EXISTS BETWEEN EXISTING AND PROPOSED UTILITIES AND/OR A DESIGN MODIFICATION IS REQUIRED, THE CONTRACTOR SHALL COORDINATE WITH THE CITY TO MODIFY THE DESIGN. DESIGN MODIFICATION(S) MUST BE APPROVED BY THE CITY PRIOR TO BEGINNING CONSTRUCTION.
39. THE CONTRACTOR SHALL HAVE, ONSITE AT ALL TIMES, ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB.
40. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE CITY, AND ALL UTILITY COMPANIES INVOLVED, TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING, IN ADVANCE, ALL PARTIES AFFECTED BY ANY DISRUPTION OF ANY UTILITY SERVICE AS WELL AS THE UTILITY COMPANIES.
41. THE CITY IS NOT RESPONSIBLE FOR THE MAINTENANCE OF STORM DRAINAGE FACILITIES LOCATED ON PRIVATE PROPERTY. MAINTENANCE OF ONSITE DRAINAGE FACILITIES SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER(S).
42. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE, AND AVAILABLE TO THE CITY'S INSPECTOR AT ALL TIMES.
43. PRIOR TO FINAL INSPECTION AND ACCEPTANCE BY THE CITY, CERTIFICATION OF THE DRAINAGE FACILITIES, BY A REGISTERED ENGINEER, MUST BE SUBMITTED TO AND APPROVED BY THE STORMWATER UTILITY.
44. AFTER ACCEPTANCE BY THE CITY, PUBLIC IMPROVEMENTS DEPICTED IN THESE PLANS SHALL BE GUARANTEED TO BE FREE FROM MATERIAL AND WORKMANSHIP DEFECTS FOR A MINIMUM PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE.

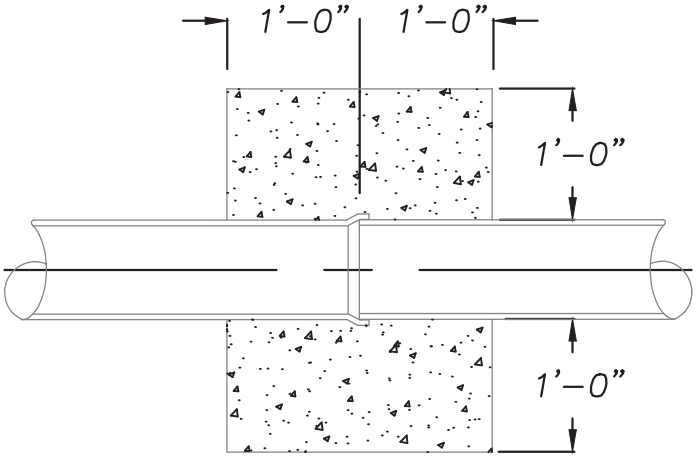
DRAWING TITLE		DRAWING NO.	REV.
GENERAL NOTES - STORM WATER		A1.3	1



DRAWING TITLE	SCALE	DRAWING NO.	REV.
DETAIL AIR RELEASE VALVE	N.T.S.	A2.1	2

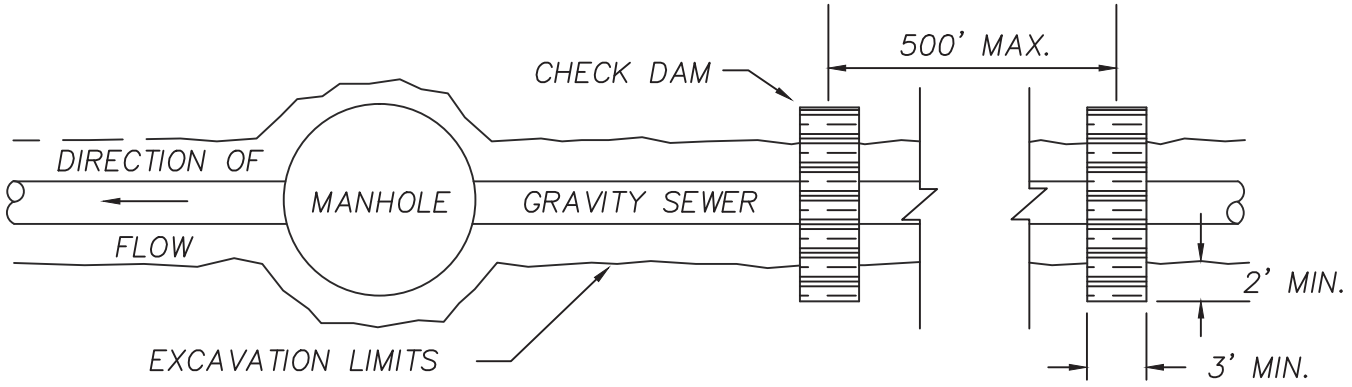


TYPICAL SECTION CONCRETE ANCHOR

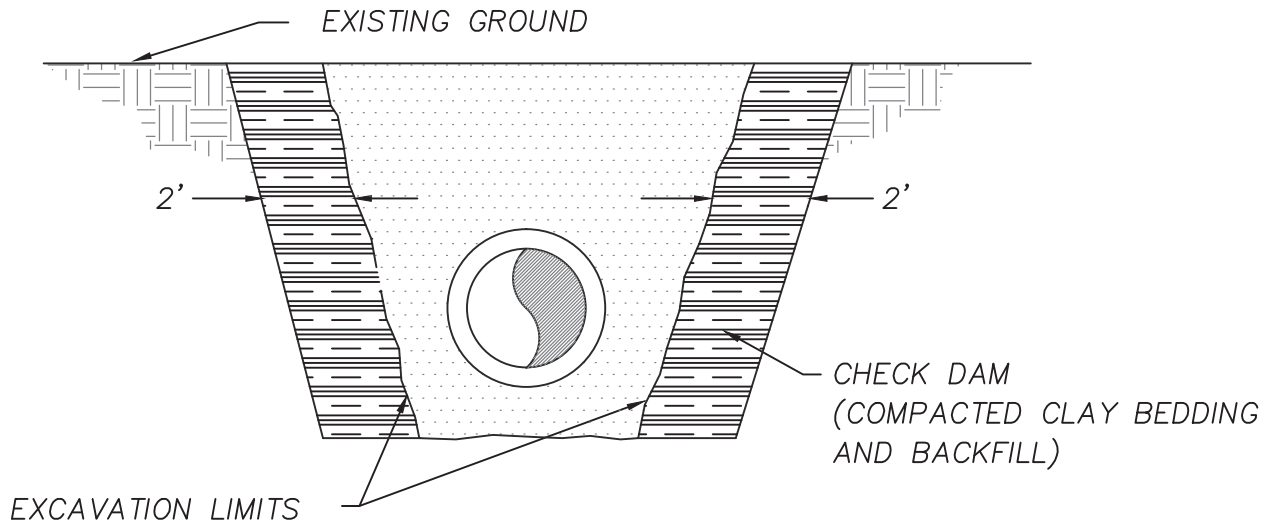


TYPICAL SECTION CONCRETE COLLAR

DRAWING TITLE	SCALE	DRAWING NO.	REV.
CONCRETE ANCHORS AND COLLARS	N.T.S.	A2.2	



PLAN VIEW

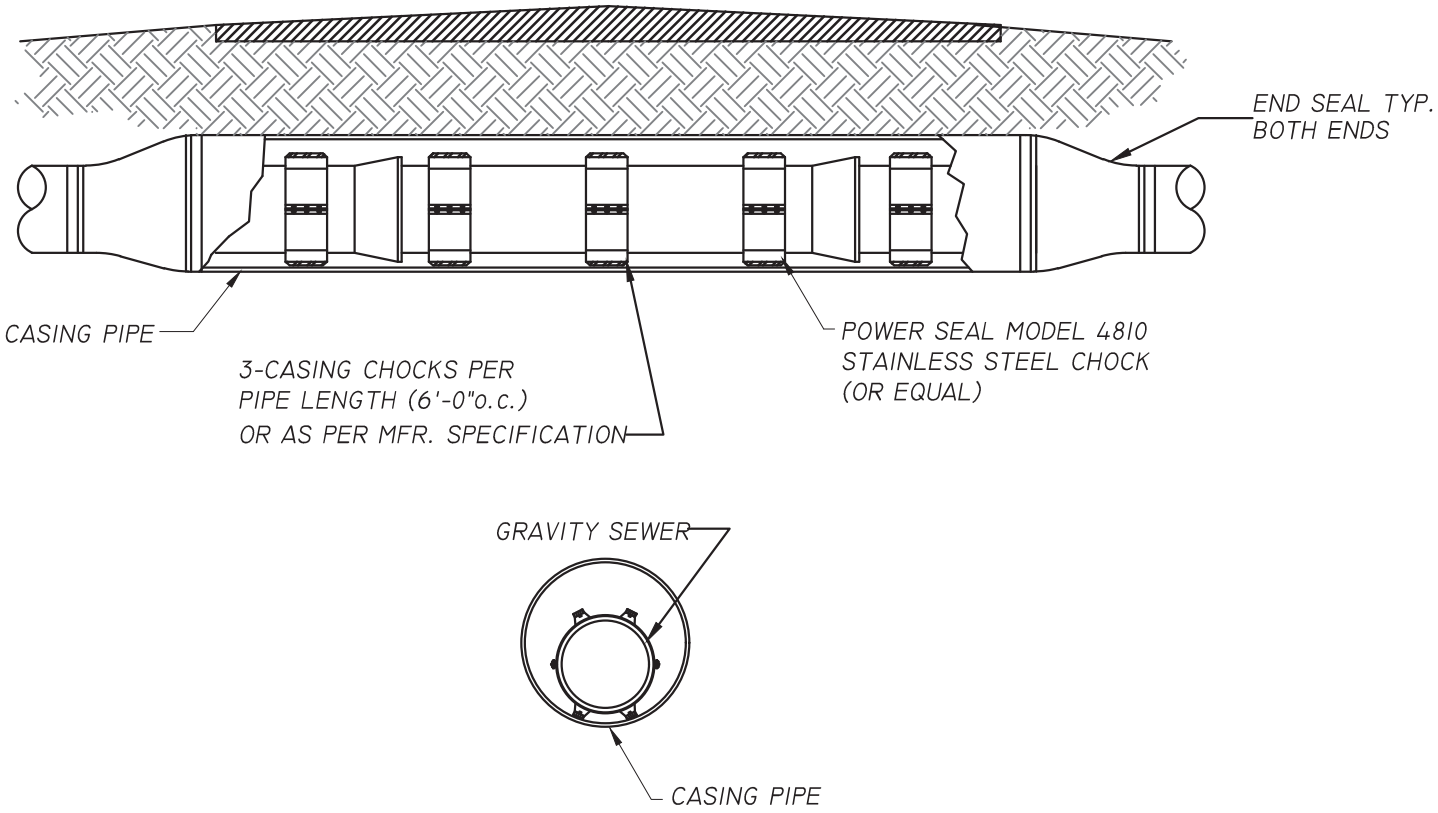


SECTION VIEW

CHECK DAMS

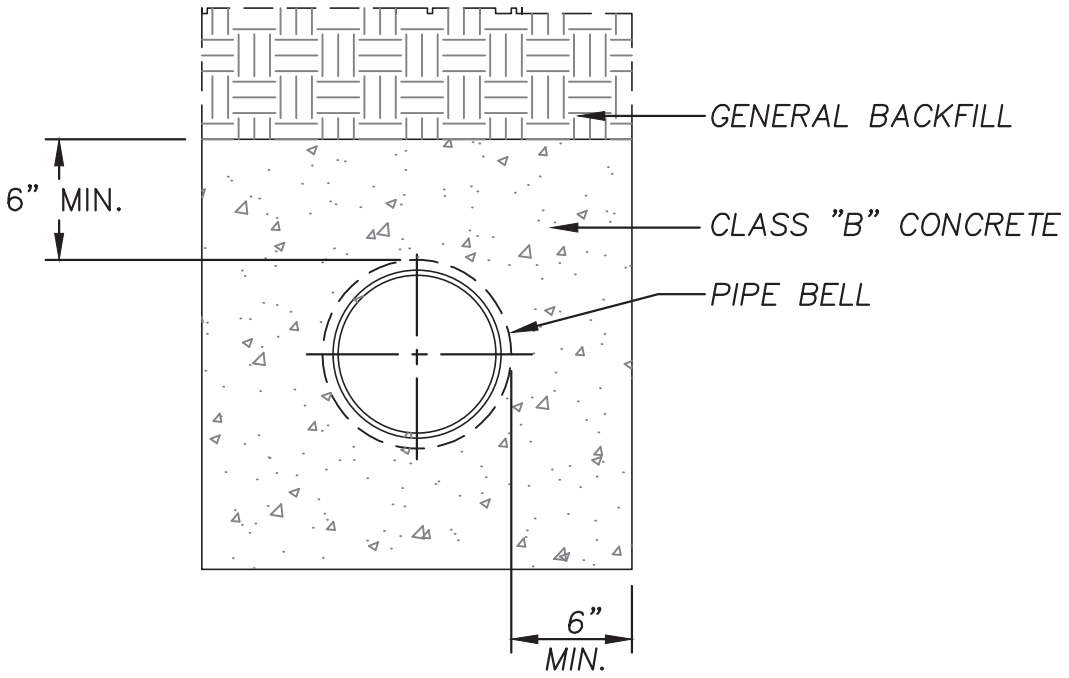
Check dams shall be installed in the bedding and backfill of all new or replaced sewer lines to limit the drainage area subject to the french drain effect of gravel bedding. Major rehabilitation projects should also include check dams in the design. Dams shall consist of compacted clay bedding and backfill at least 3 feet thick to the top of the trench and cut into the walls of the trench 2 feet. Alternatively, concrete may be used, keyed into the trench walls. Dams shall be placed no more than 500 feet apart. The preferred location is upstream of each manhole. All stream crossings shall include check dams on both sides of the crossing.

DRAWING TITLE	SCALE	DRAWING NO.	REV.
CHECK DAMS	N.T.S.	A2.3	

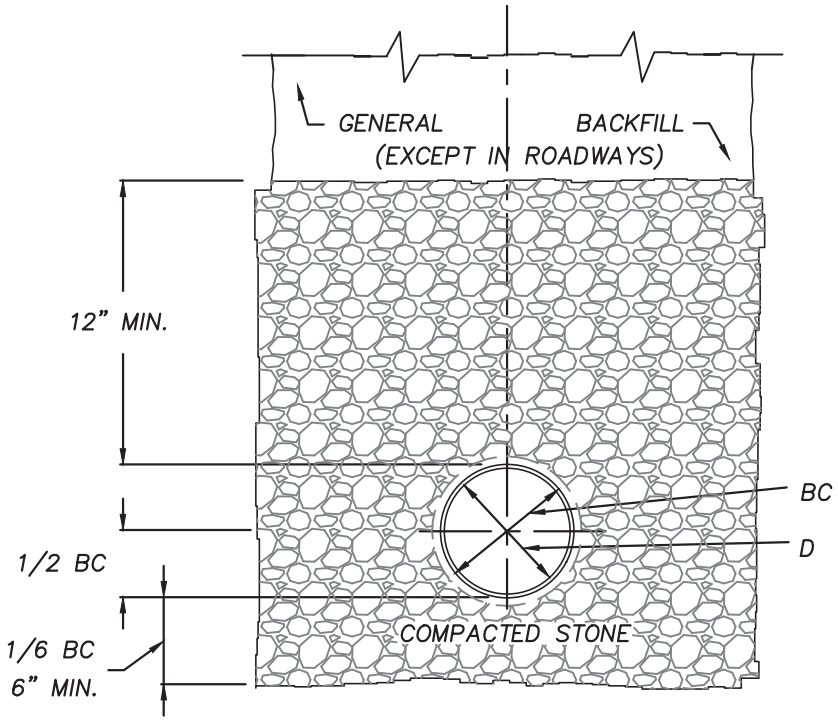


DRAWING TITLE	SCALE	DRAWING NO.	REV.
GRAVITY SEWER INSIDE STEEL CASING @ ROAD CROSSING	N.T.S.	A2.4	1

CRUSHED STONE SHALL BE
95–100% PASSING 1/2" SIEVE
95–100% RETAINED ON NO. 4 SIEVE

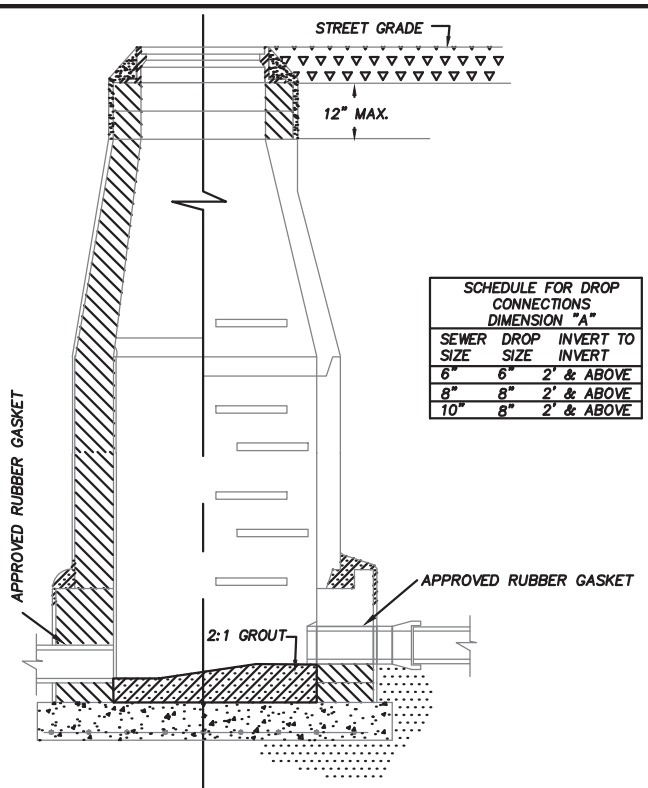


CONCRETE ENCASEMENT



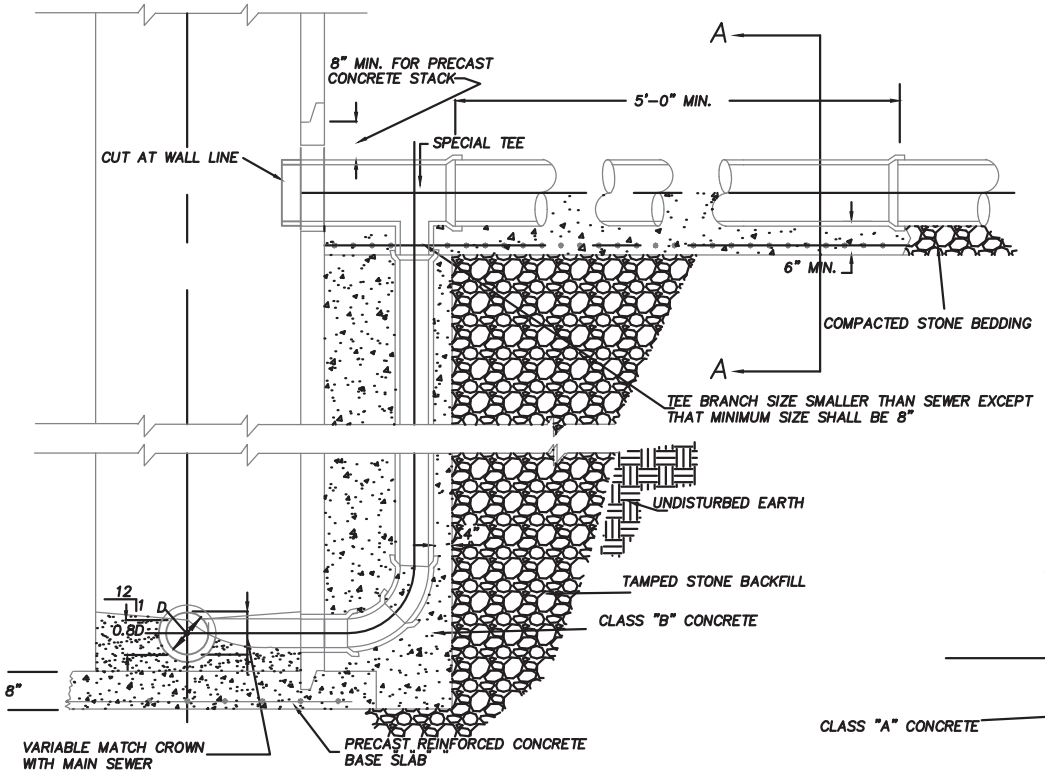
CLASS "A" BEDDING FOR PVC PIPE

DRAWING TITLE	SCALE	DRAWING NO.	REV.
PVC BEDDING; CONCRETE ENCASEMENT	N.T.S.	A2.5	1

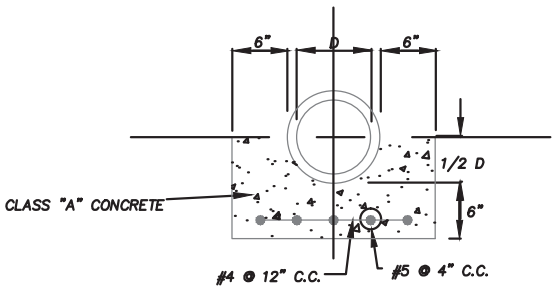


SCHEDULE FOR DROP CONNECTIONS DIMENSION "A"		
SEWER SIZE	DROP SIZE	INVERT TO INVERT
6"	6"	2' & ABOVE
8"	8"	2' & ABOVE
10"	8"	2' & ABOVE

FROM 0.5' TO 1.95'

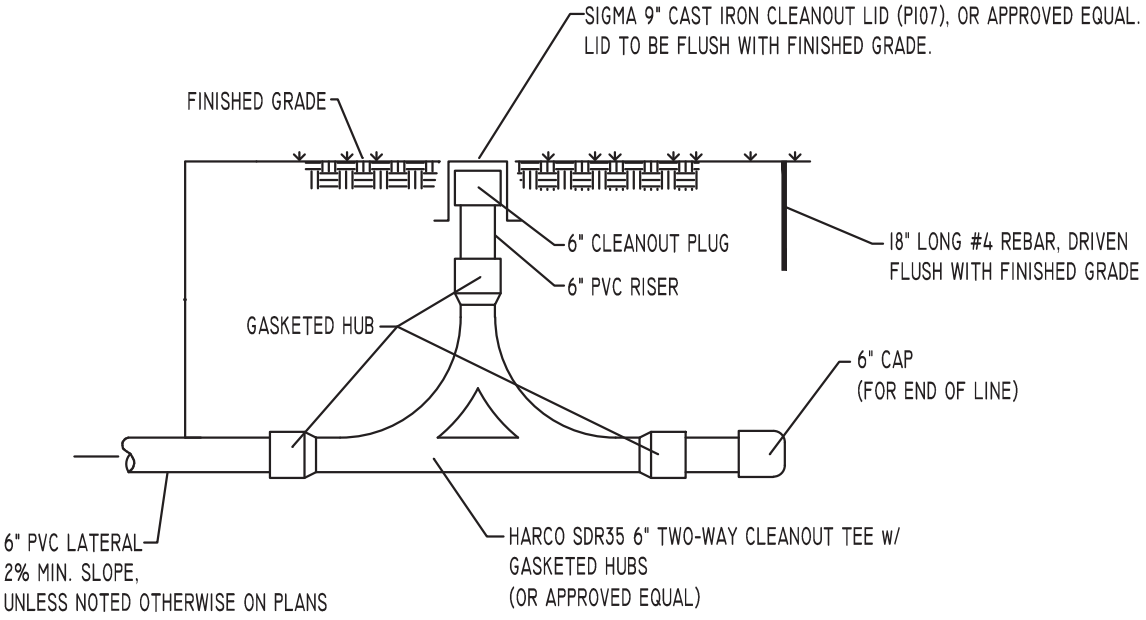


FROM 2' UP



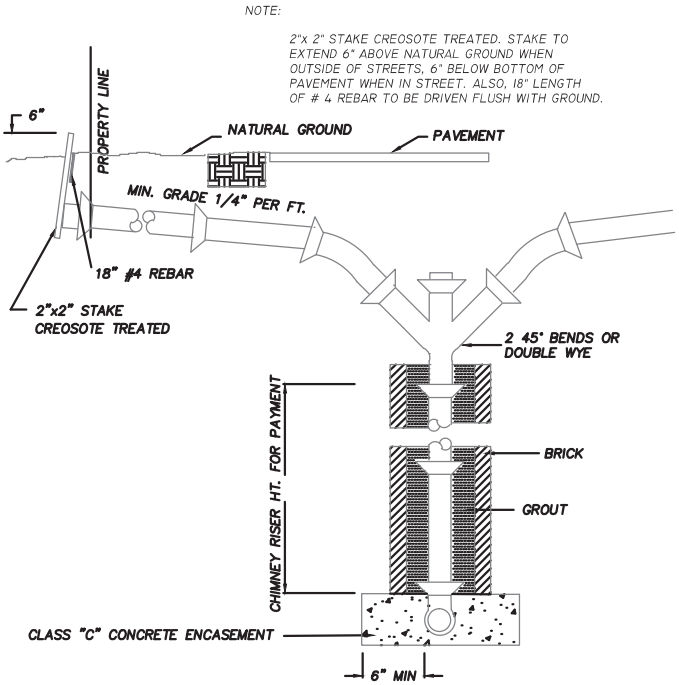
SECTION A-A

DRAWING TITLE	SCALE	DRAWING NO.	REV.
DROP MANHOLE CONNECTION: TYPICAL SECTIONS	N.T.S.	A2.6	



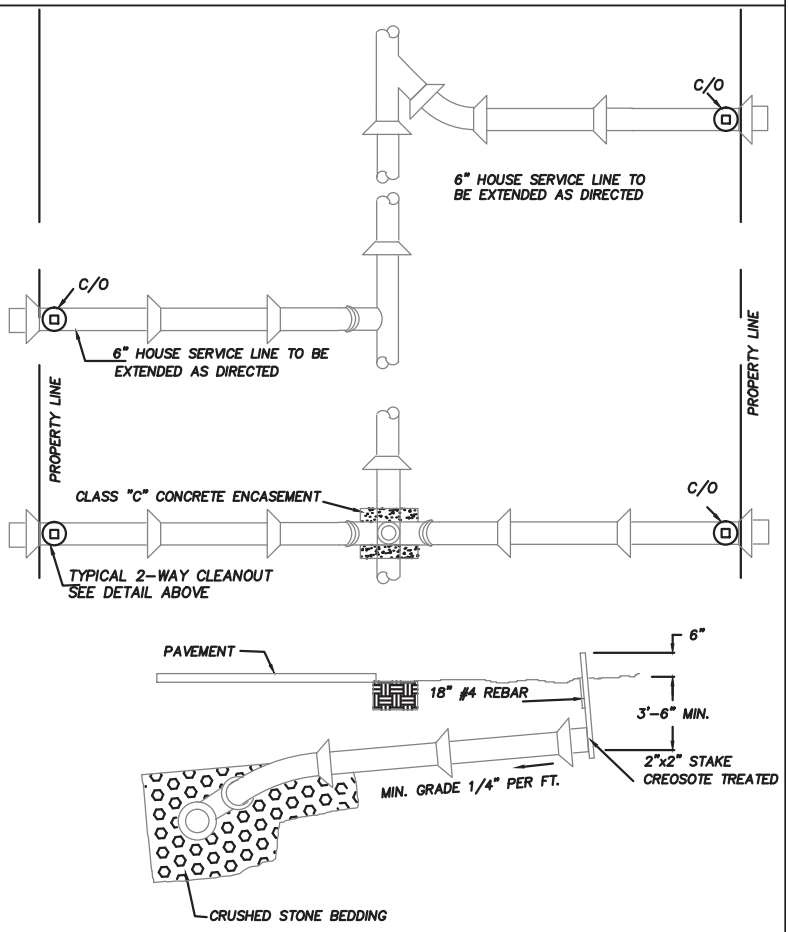
TWO-WAY CLEANOUT

Detail of Flush Cleanouts



HALF SECTION TEE BRANCH

NOTE: CLEANOUT NOT SHOWN, SEE DETAIL ABOVE

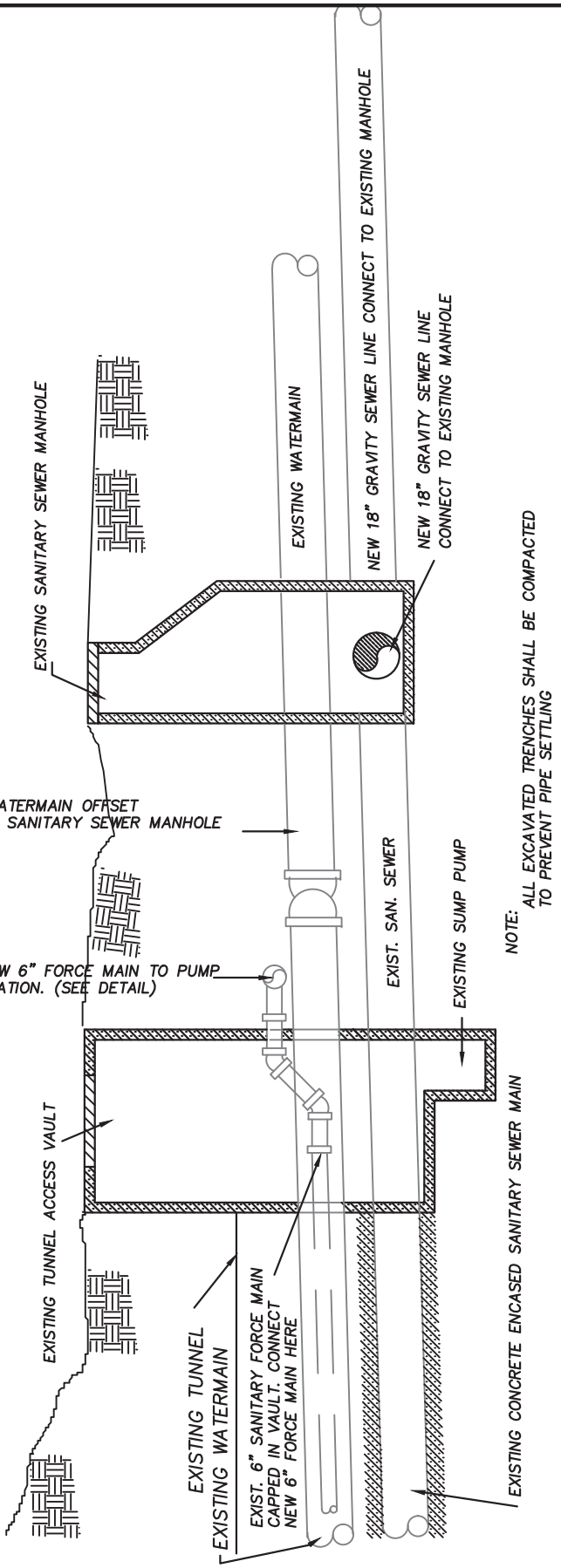


HALF SECTION WYE BRANCH

NOTE: CLEANOUT NOT SHOWN, SEE DETAIL ABOVE

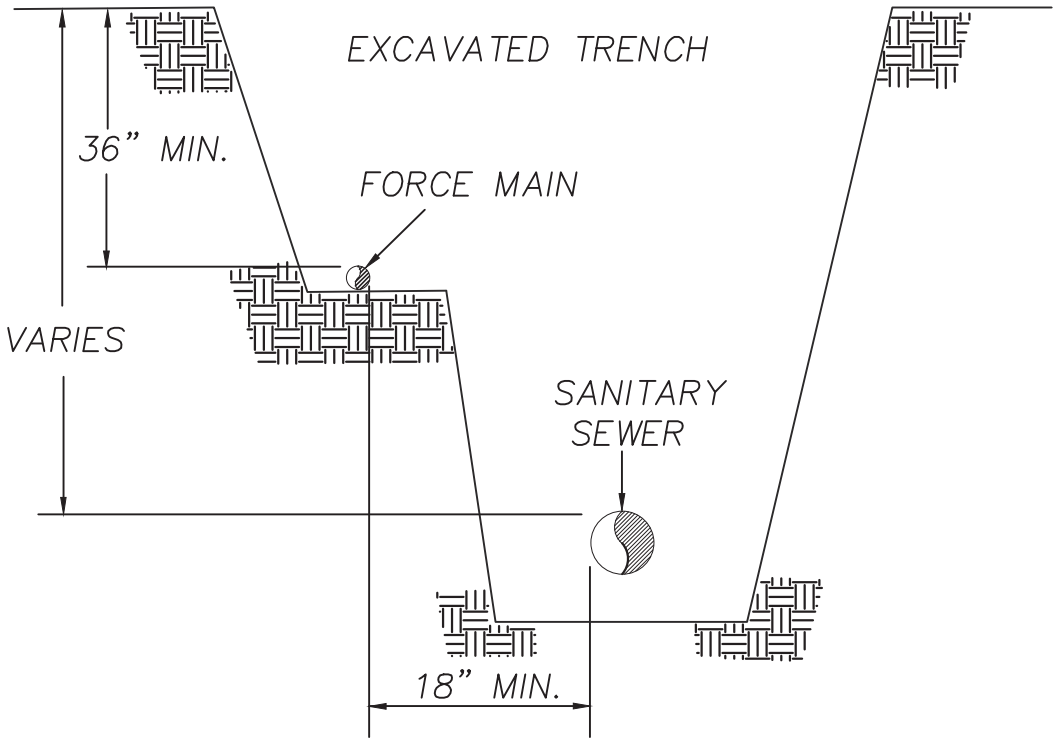
Typical Details of Sanitary House Service Line

DRAWING TITLE	SCALE	DRAWING NO.	REV.
Flush Cleanout / Service Line	*N.T.S.*	*A2.7*	*1*



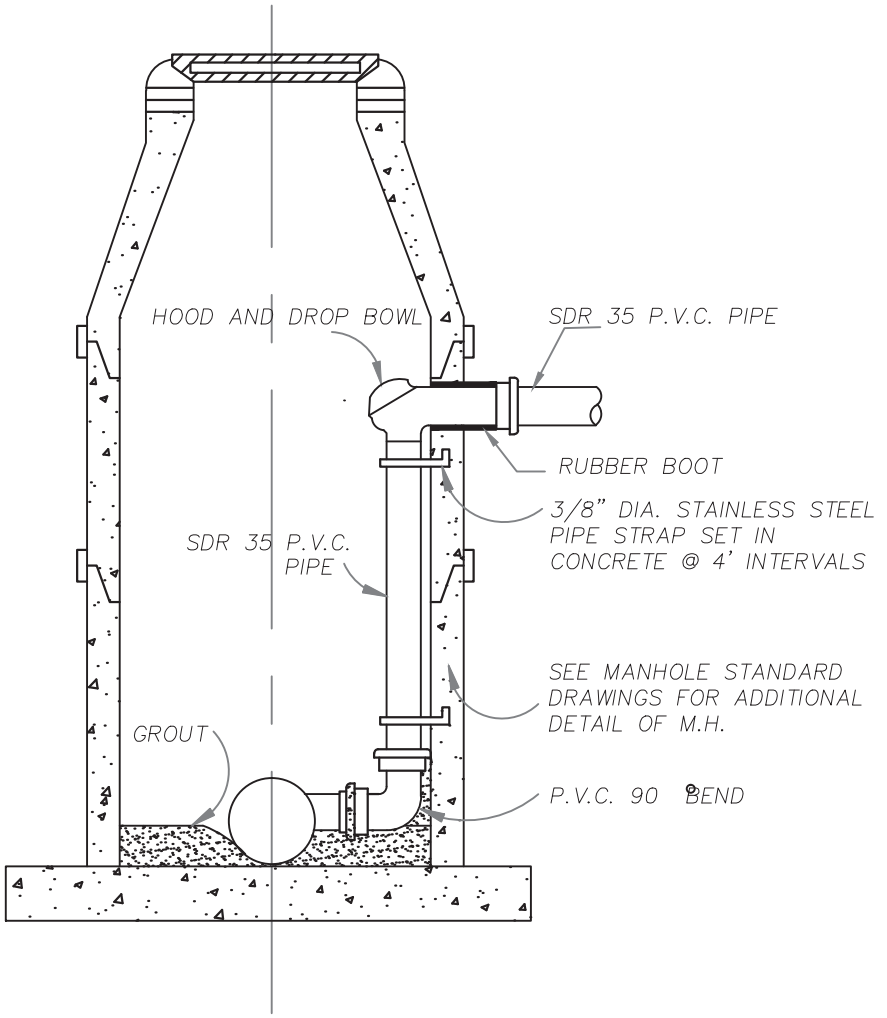
CONNECTION TO EXISTING FORCE MAIN LOCATED IN EXISTING TUNNEL ACCESS VAULT

DRAWING TITLE	SCALE	DRAWING NO.	REV.
TUNNEL ACCESS VAULT CONNECTION	N.T.S.	A2.8	

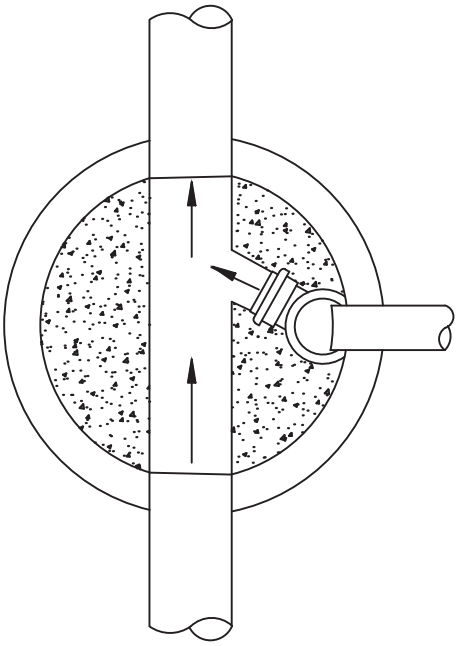


LOCATION OF FORCE MAIN AND GRAVITY SEWER IN EXCAVATED TRENCH

DRAWING TITLE	SCALE	DRAWING NO.	REV.
TRENCH DETAIL	N.T.S.	A2.9	



ELEVATION



PLAN

NOTE:

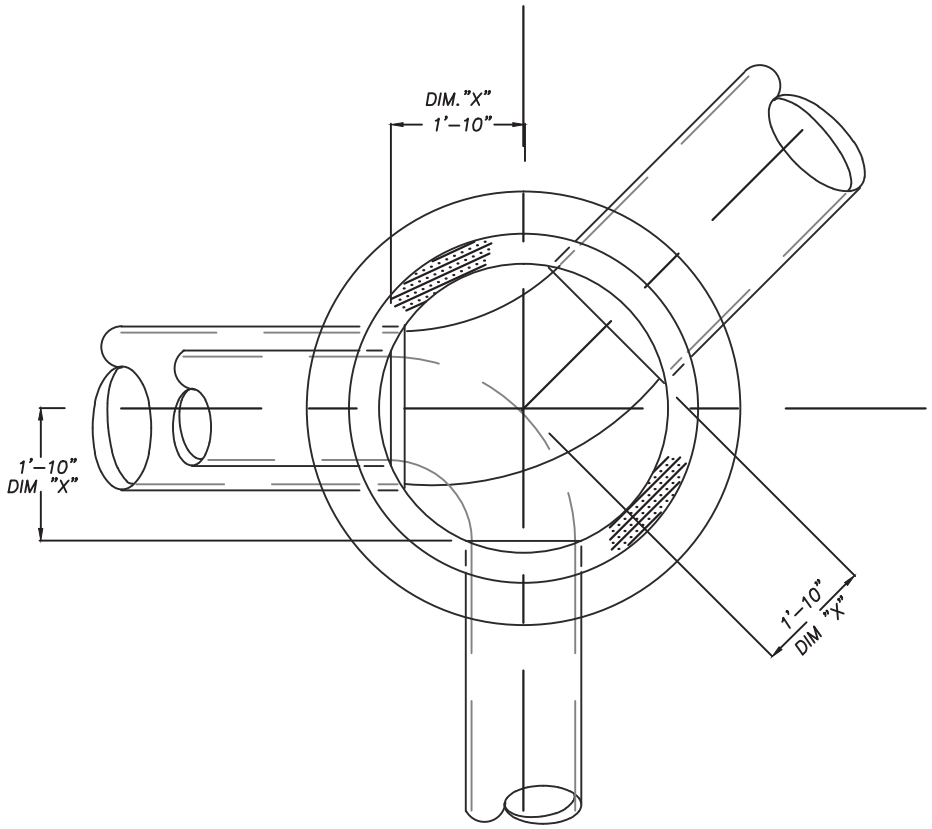
FLOW LINE OF SURCHARGE LINE NORMALLY PLACED AT TOP OF EXISTING WASTEWATER LINE UNLESS NOTED OTHERWISE ON PLANS.

HOOD & DROP BOWLS BY:
RELINER-DURAN INC. OR EQUAL
53 MT. ARCHER RD
LYME, CT 06371
800-508-6001
WWW.RELINER.COM

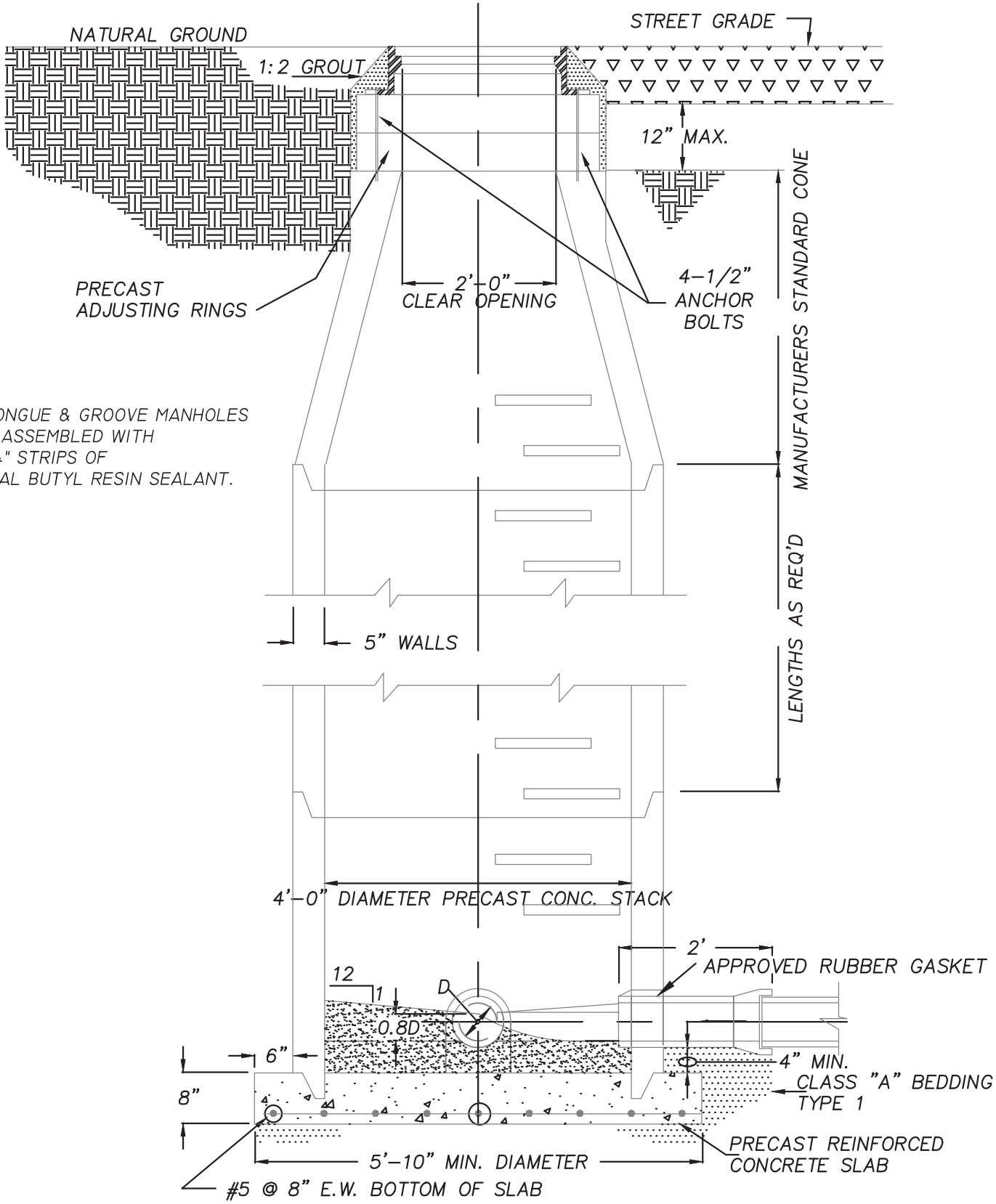
SANITARY SEWER MANHOLE INSIDE DROP CONNECTION

DRAWING TITLE	SCALE	DRAWING NO.	REV.
INSIDE DROP CONNECTION	N.T.S.	A2.10	

GOVERNING DIMENSIONS FOR CIRCULAR MANHOLES			
PIPE SIZE	DEFLECTION	MH DIAMETER	"X"
8" & 15"	0° – 90°	4'–0"	1'–10"

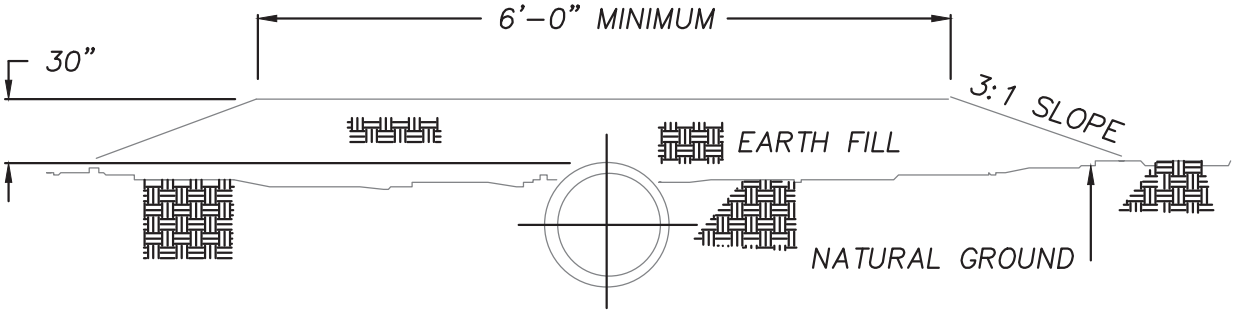


DRAWING TITLE	SCALE	DRAWING NO.	REV.
TYPICAL INVERT PLAN (ALL SIZES)	N.T.S.	A2.11	

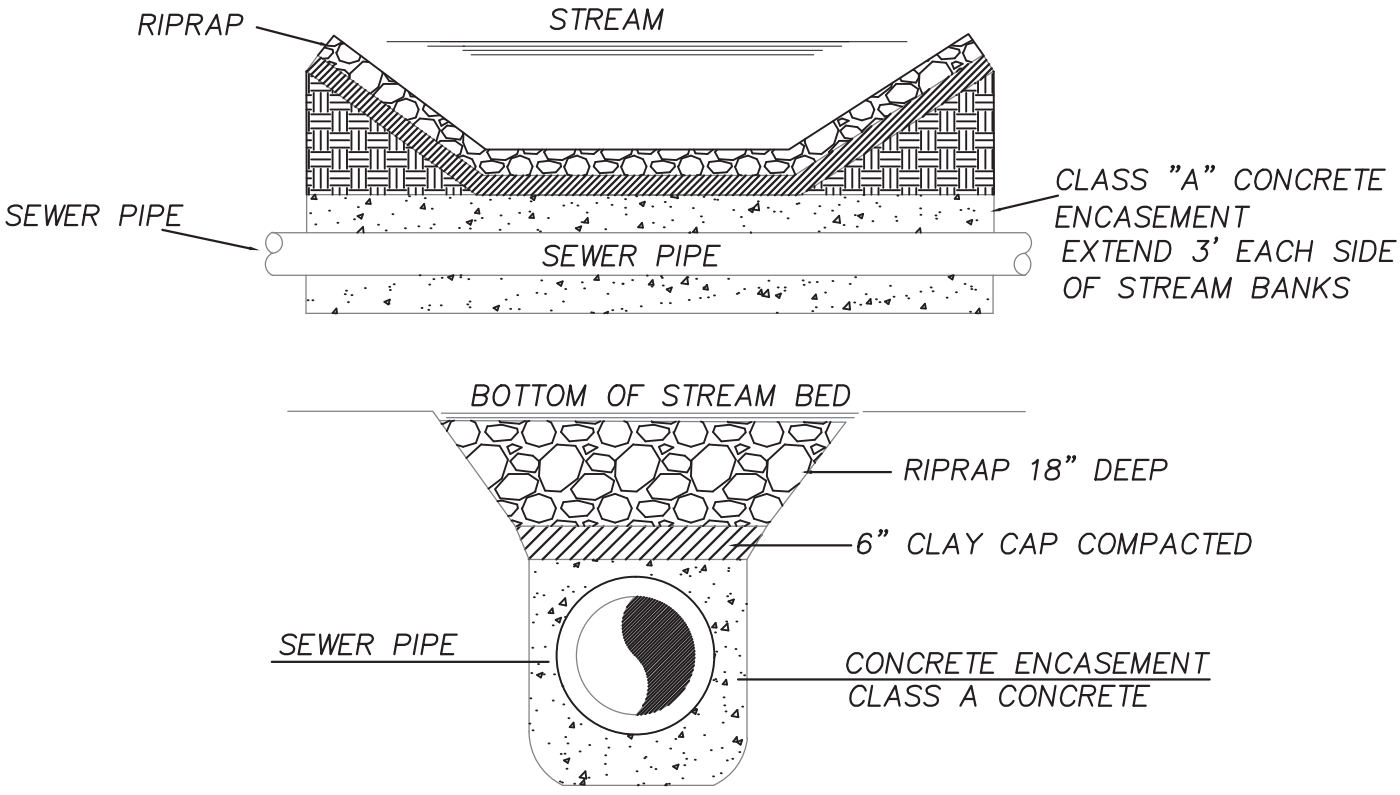


NOTE:
ALL TONGUE & GROOVE MANHOLES
TO BE ASSEMBLED WITH
2 - 3/4" STRIPS OF
CONSEAL BUTYL RESIN SEALANT.

DRAWING TITLE	SCALE	DRAWING NO.	REV.
4' DIAMETER PRECAST CONCRETE MANHOLE	N.T.S.	A2.12	

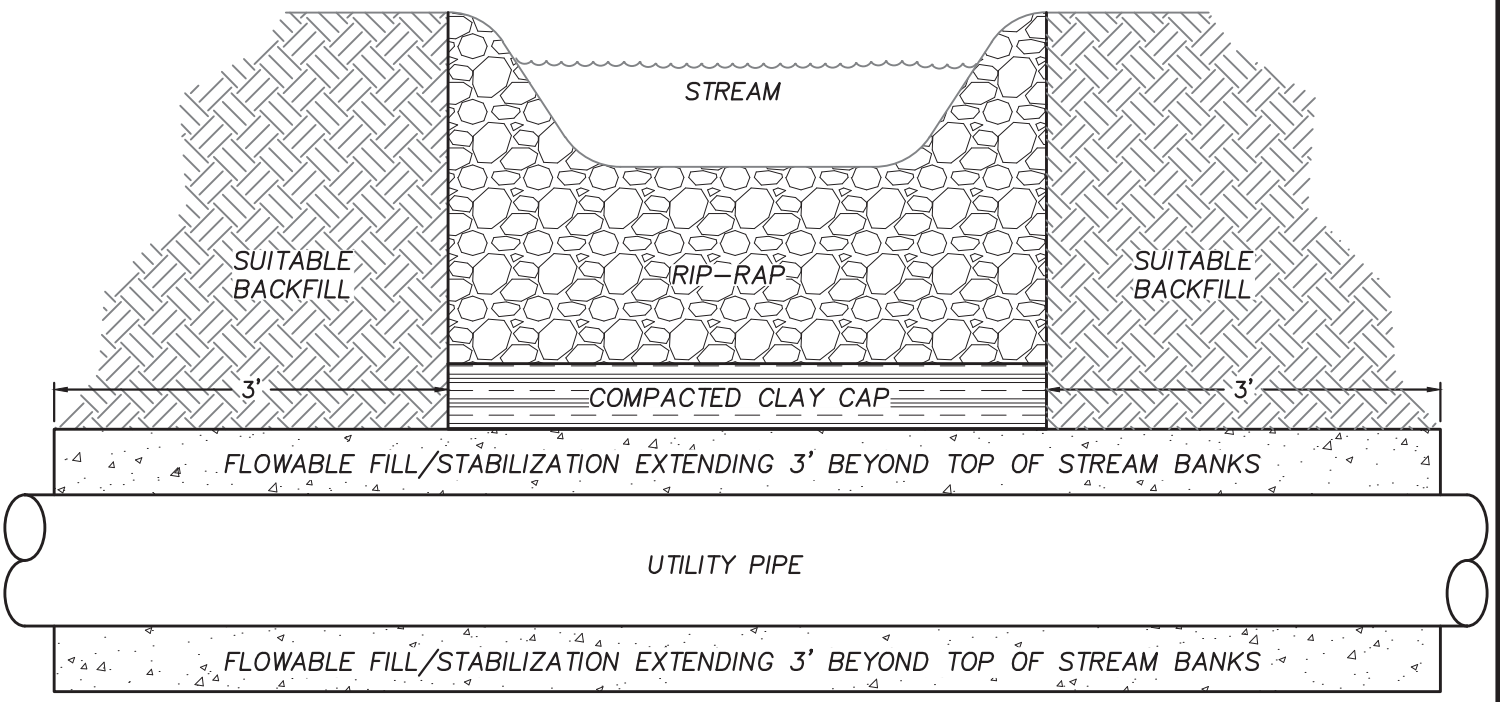


TYPICAL DETAIL EARTH FILL OVER SEWER PIPE



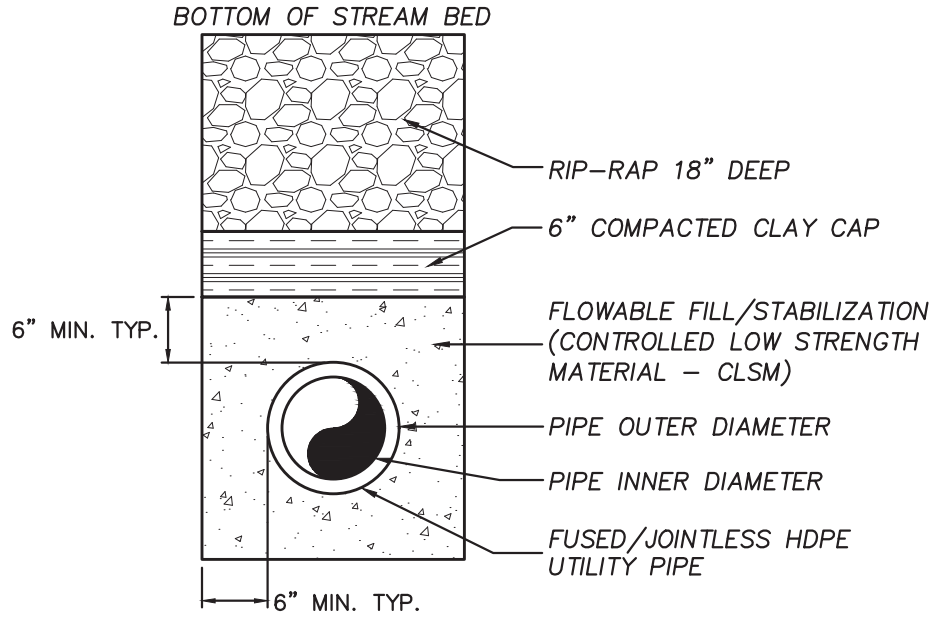
BACKFILL DETAIL FOR CREEK CROSSINGS

DRAWING TITLE	SCALE	DRAWING NO.	REV.
BACKFILL DETAILS OVER SEWER PIPE	N.T.S.	A2.13	



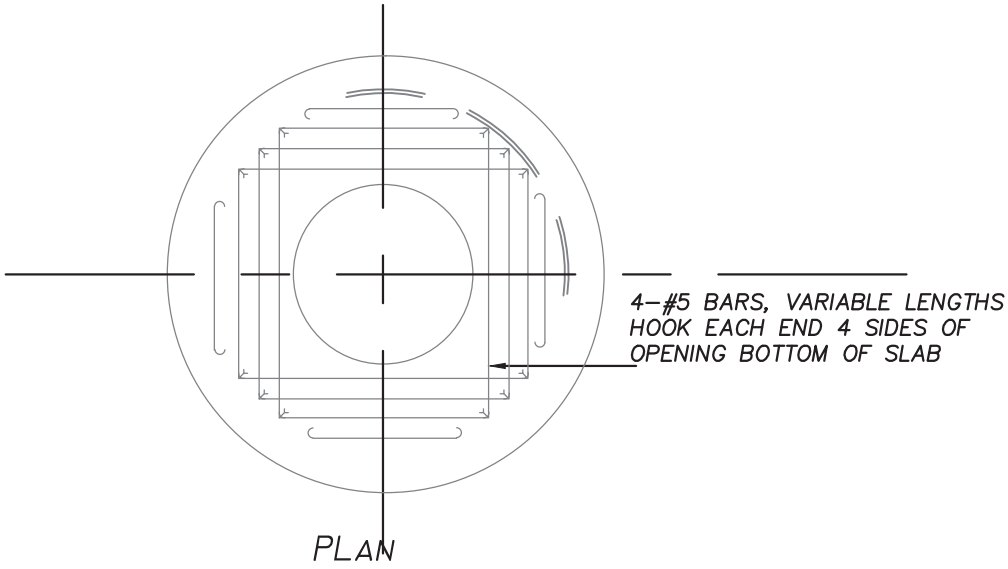
NOTES:

1. COMPRESSIVE STRENGTH OF CLSM SHALL BE 1,000PSI.
2. HDPE UTILITY PIPE SHALL BE PE4710, DIPS, SDR-17.
3. ALL REQUIREMENTS OF THE TDEC ARAP SHALL BE STRICTLY FOLLOWED.
4. NO BLASTING WILL BE PERMITTED IN THE EXCAVATION OF TRENCHES THAT PARALLEL OR LIE WITHIN 50 FEET OF A STREAM OR WETLAND, INCLUDING ALL STREAM CROSSINGS.

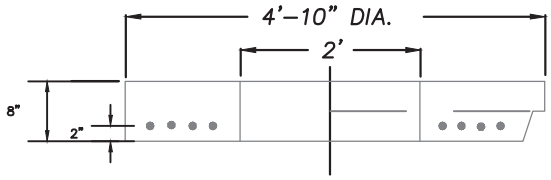


BACKFILL DETAIL FOR STREAM CROSSINGS

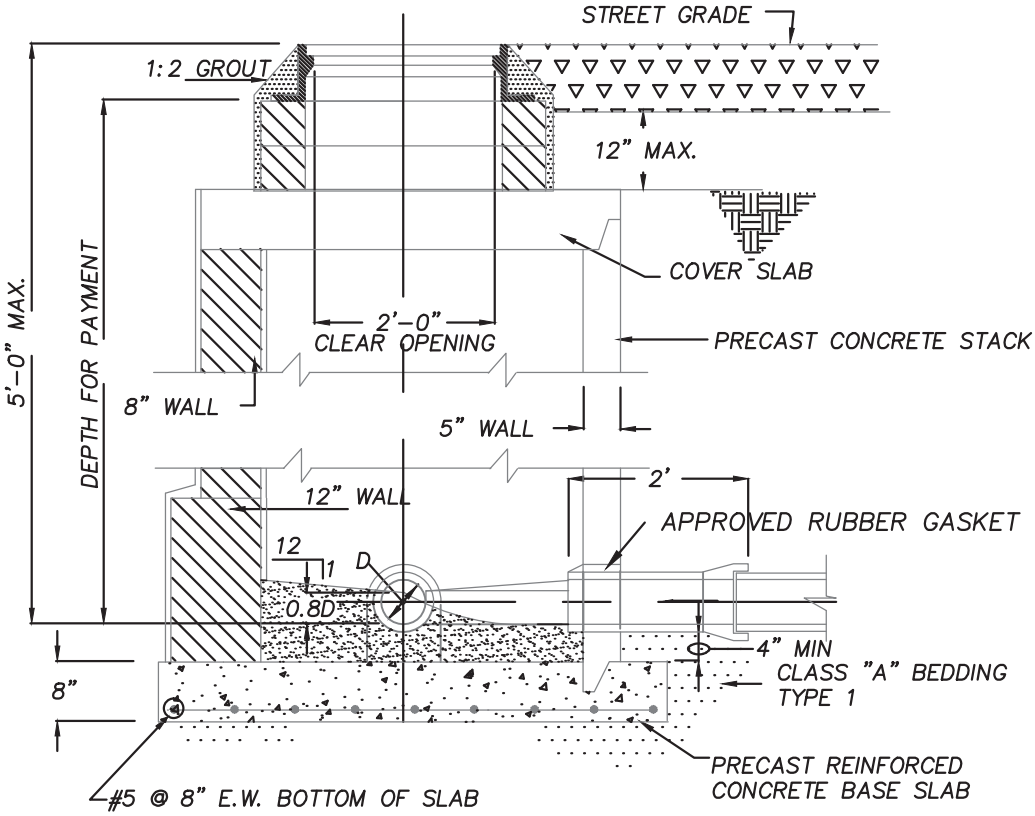
DRAWING TITLE	SCALE	DRAWING NO.	REV.
UTILITY LINE STREAM CROSSING DETAILS	N.T.S.	A2.13B	1



PLAN

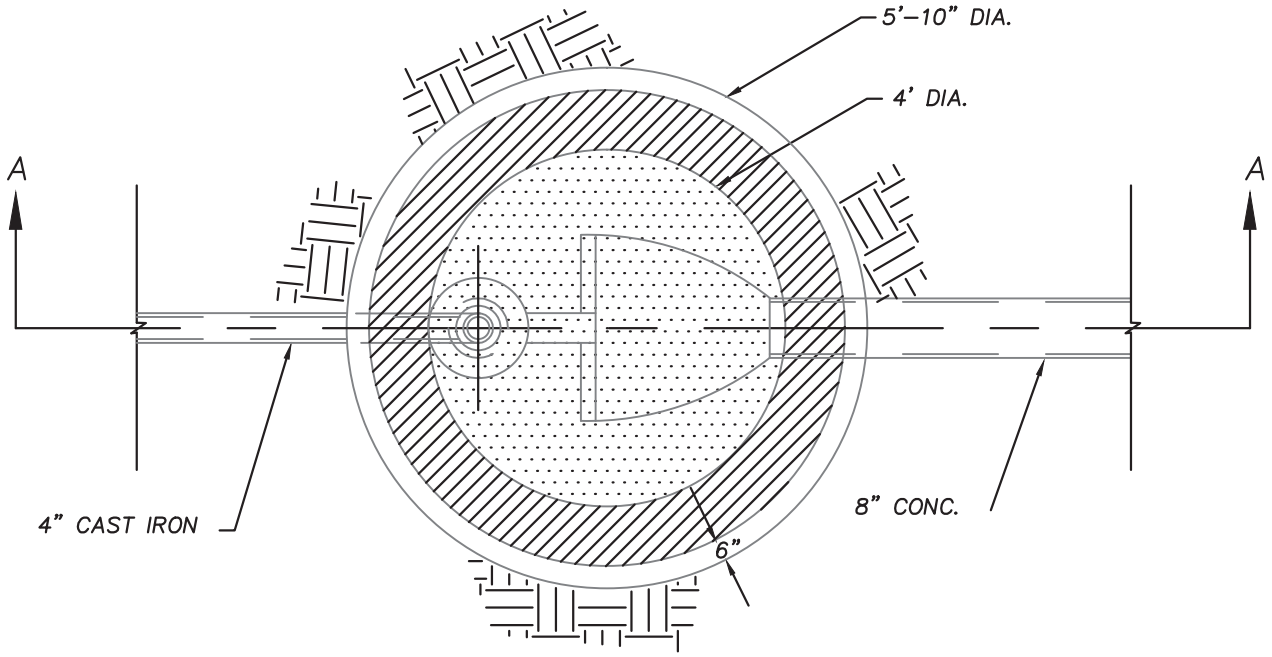


SECTION, 4' COVER SLAB

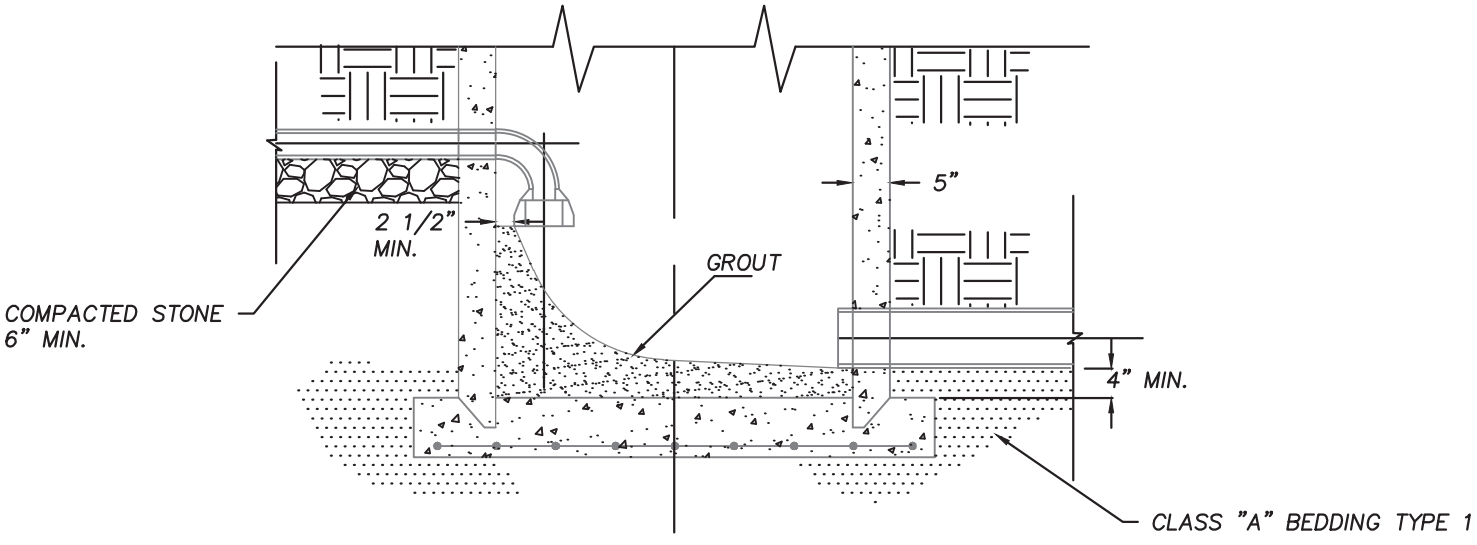


SECTION, USING PRECAST CONCRETE STACK

DRAWING TITLE	SCALE	DRAWING NO.	REV.
TYPICAL 4' SHALLOW MANHOLE	N.T.S.	A2.14	

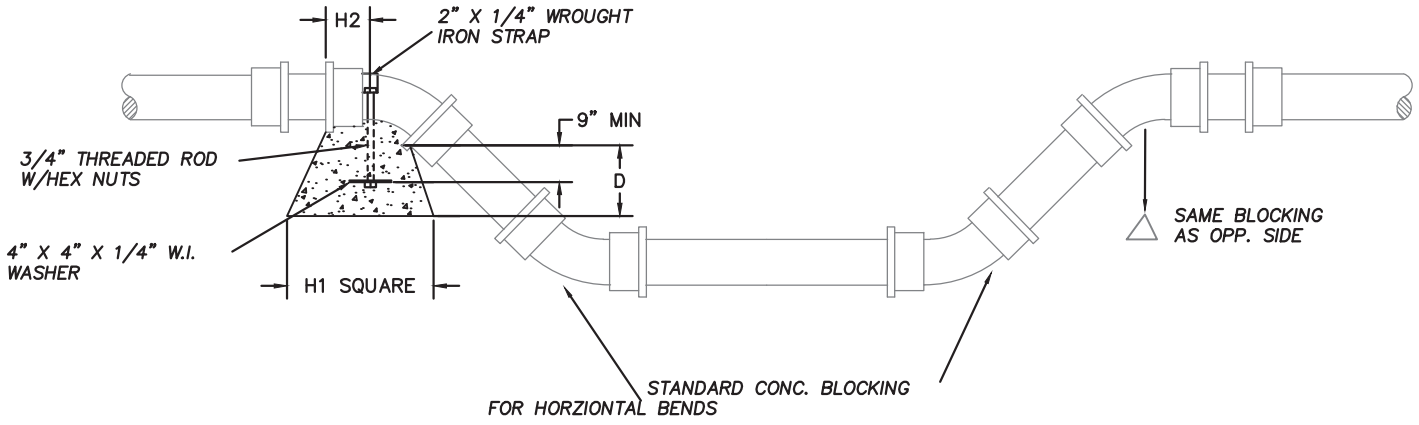


PLAN

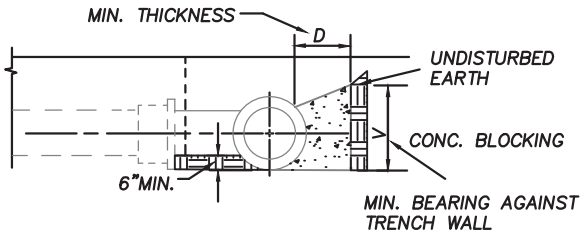


SECTION A:A

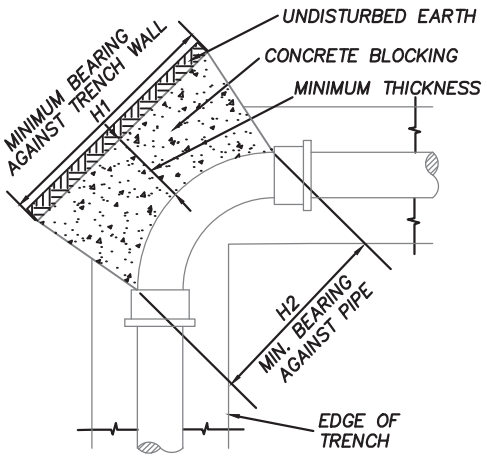
DRAWING TITLE	SCALE	DRAWING NO.	REV.
SANITARY SEWER MANHOLE FORCE MAIN CONNECTION	N.T.S.	A2.15	



VERTICAL BENDS



SECTION

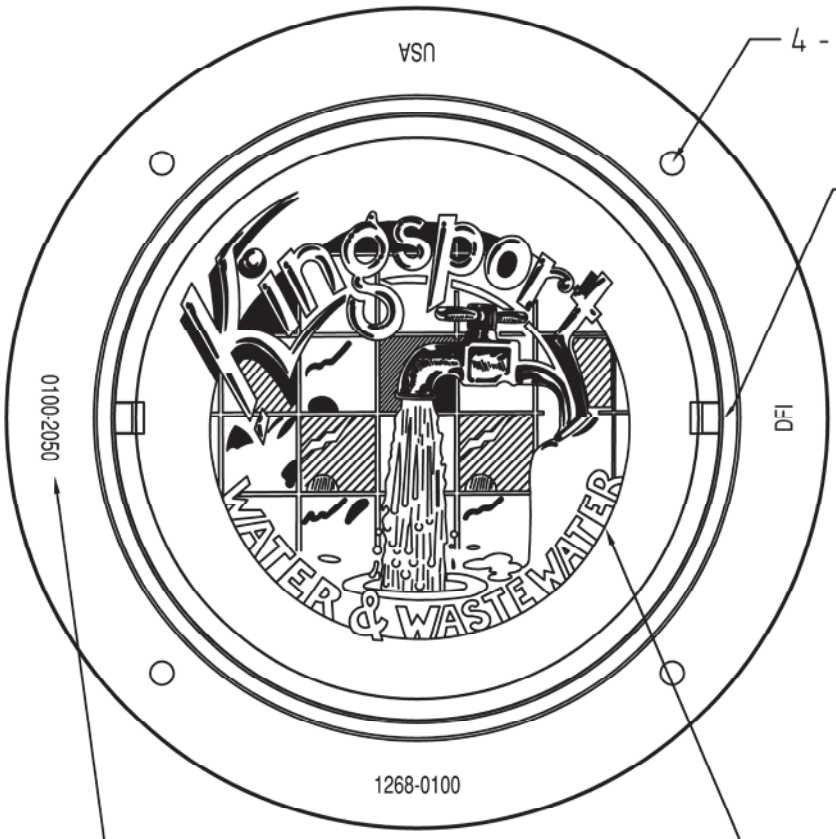


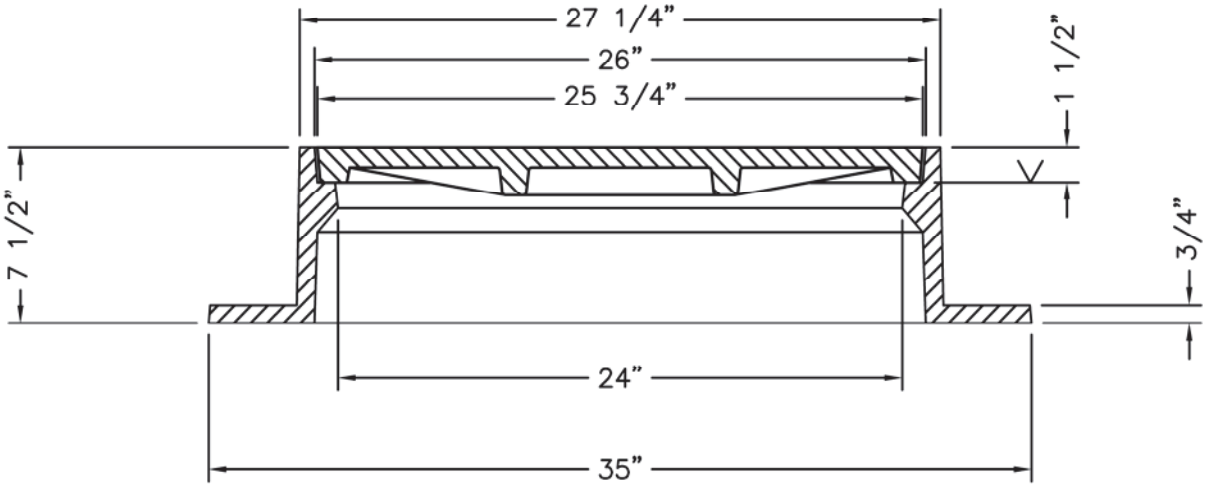
HORIZONTAL BENDS

TABLE OF DIMENSIONS FOR CONCRETE BLOCKING

SIZE	TEES, CROSSES & PLUGS					90° BENDS					45° BENDS					22 1/2° BENDS					11 1/4° BENDS					SIZE
PIPE	H1	H2	V	D	CU. FT.	H1	H2	V	D	CU. FT.	H1	H2	V	D	CU. FT.	H1	H2	V	D	CU. FT.	H1	H2	V	D	CU. FT.	PIPE
2"& 2 1/4"	18"	10"	12"	18"	1.90	18"	10"	12"	18"	1.90	18"	6"	12"	18"	1.50	18"	6"	12"	18"	1.50	18"	6"	12"	18"	1.50	2"& 2 1/4"
3"& 4"	24"	12"	12"	18"	2.25	24"	12"	12"	18"	2.25	18"	8"	12"	18"	1.60	18"	8"	12"	18"	1.60	18"	8"	12"	18"	1.60	3"& 4"
6"	24"	16"	18"	18"	3.50	30"	16"	18"	18"	4.05	24"	10"	16"	18"	3.20	24"	10"	16"	18"	3.20	24"	10"	16"	18"	3.20	6"
8"	36"	18"	18"	18"	5.05	39"	18"	24"	18"	7.30	30"	11"	18"	18"	3.95	24"	11"	18"	18"	3.45	24"	11"	16"	18"	3.40	8"
10"	48"	24"	18"	24"	7.15	54"	32"	24"	18"	10.25	24"	18"	21"	18"	4.60	24"	18"	21"	18"	4.60	24"	18"	21"	18"	4.60	10"
12"	54"	30"	24"	24"	13.4	54"	32"	36"	24"	18.15	42"	18"	24"	24"	9.60	24"	18"	24"	24"	6.60	24"	18"	21"	24"	6.10	12"
14"	60"	32"	30"	24"	17.9	60"	40"	42"	24"	25.0	44"	24"	30"	24"	13.2	30"	24"	24"	24"	9.2	27"	21"	24"	24"	7.90	14"
16"	66"	34"	36"	24"	22.5	69"	48"	48"	24"	29.0	48"	30"	36"	24"	17.0	36"	30"	27"	24"	11.8	27"	24"	27"	24"	9.10	16"
18"	72"	36"	40"	24"	30.0	72"	48"	60"	24"	38.0	48"	30"	42"	24"	21.0	42"	30"	30"	24"	15.0	30"	30"	36"	24"	13.0	18"
20"	84"	38"	42"	24"	36.0	84"	48"	66"	24"	48.0	54"	40"	46"	24"	27.0	48"	36"	36"	24"	19.0	42"	40"	36"	24"	18.0	20"
24"	108"	42"	48"	24"	45.0	108"	60"	72"	24"	68.0	60"	48"	56"	24"	41.0	54"	42"	42"	24"	25.0	48"	42"	42"	24"	23.0	24"
30"	132"	52"	60"	24"	70.0	132"	72"	92"	24"	104.0	72"	48"	76"	24"	58.0	60"	48"	48"	24"	32.0	54"	48"	54"	24"	32.0	30"
36"	162"	58"	72"	24"	100.0	162"	96"	108"	24"	150.0	84"	72"	84"	24"	85.0	66"	72"	60"	24"	50.0	60"	48"	60"	24"	40.0	36"

DRAWING TITLE	SCALE	DRAWING NO.	REV.
CONCRETE THRUST BLOCKING FOR FORCE MAIN LINES	N.T.S.	A2.16	





#1268-2115
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HEAVY DUTY, H20 LOAD RATED

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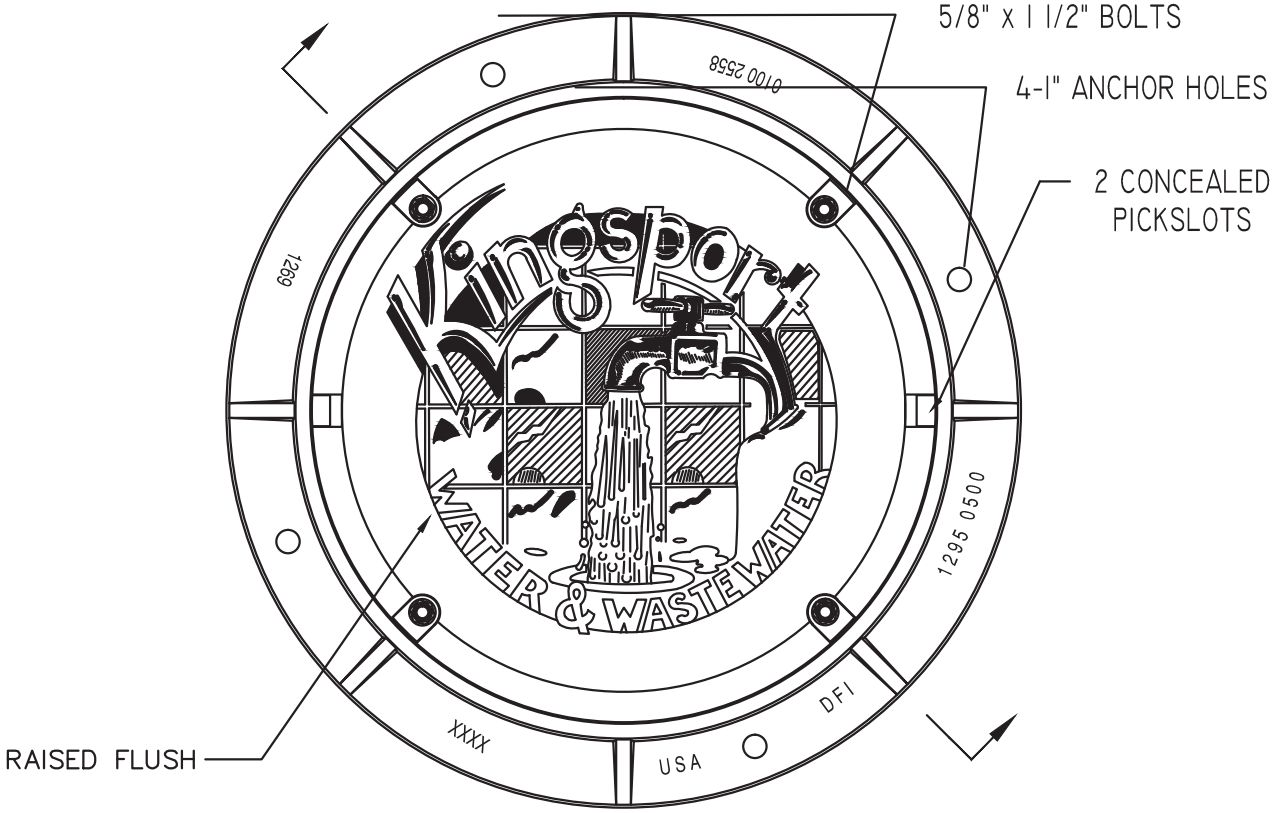
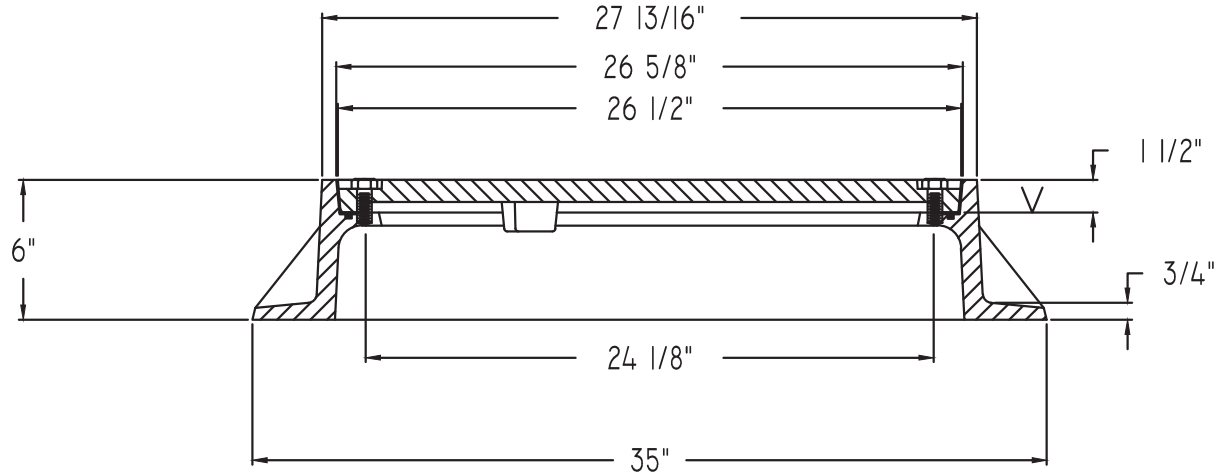
www.jbouchard.com email: foundry@jbouchard.com

#1268 FRAME & COVER

DRAWING TITLE	SCALE	DRAWING NO.	REV.
Typical Type "A" C.I. Manhole Frame & Cover	N.T.S.	A2.17	





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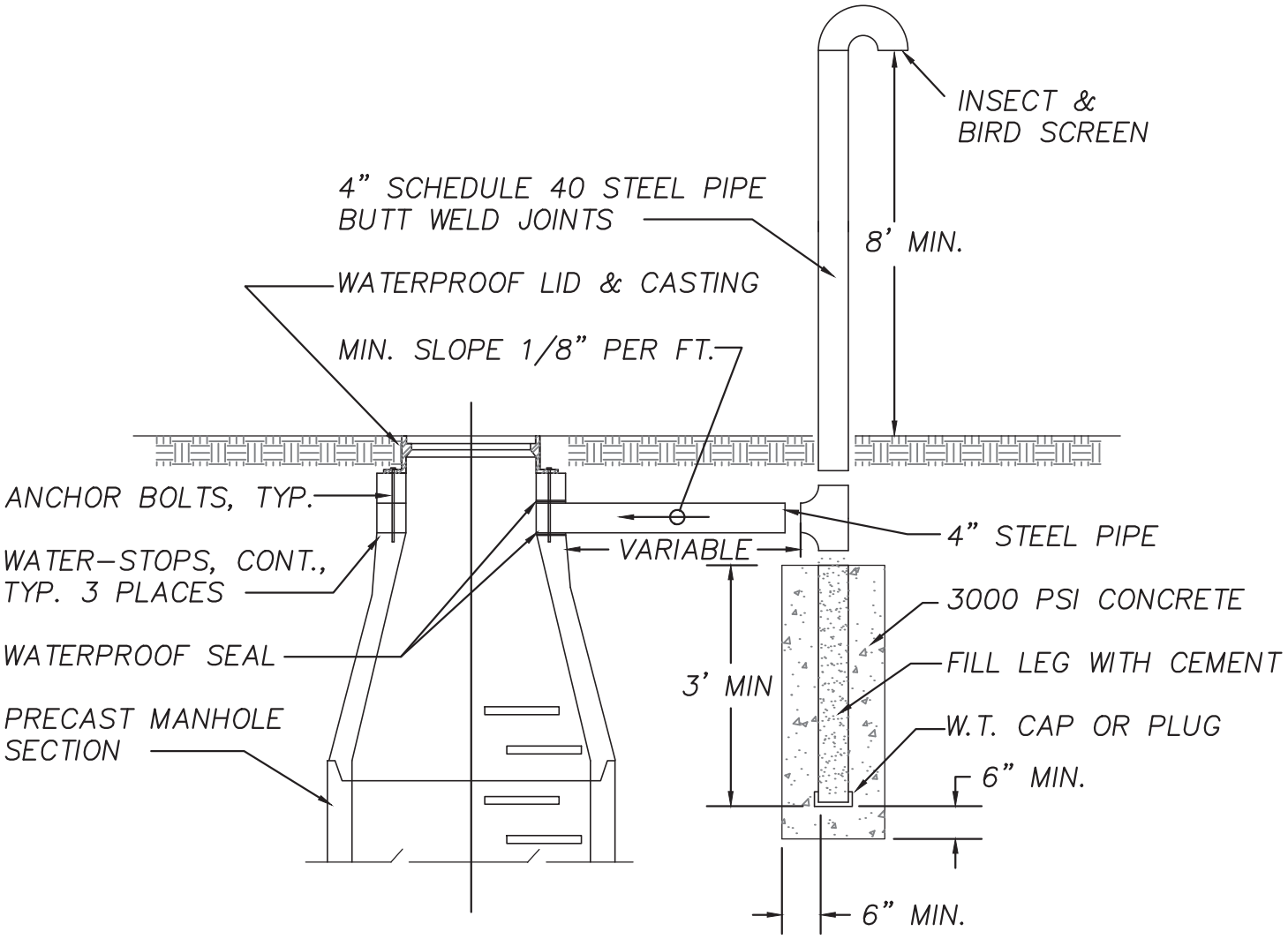
#1269 FRAME & COVER

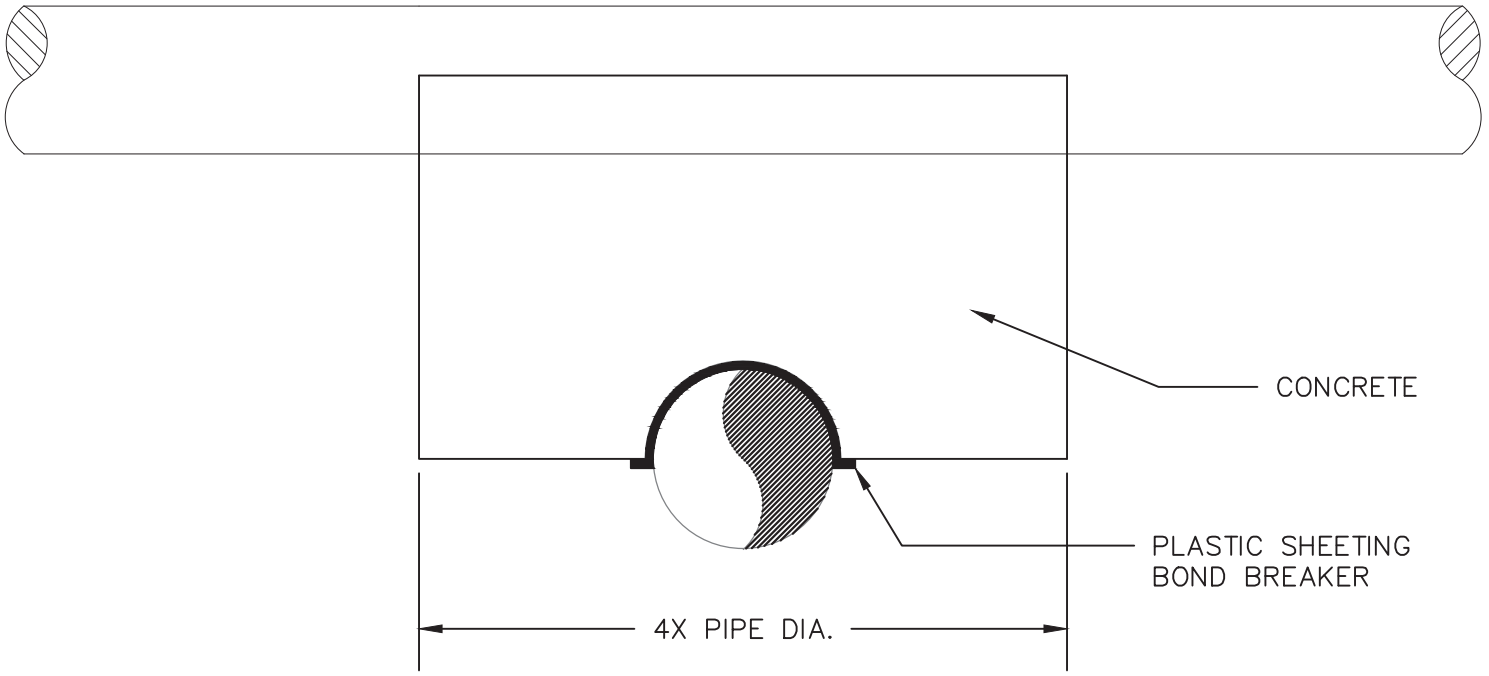
DRAWING TITLE	SCALE	DRAWING NO.	REV.
Typical Type "B" C.I. Manhole Frame & Cover	N.T.S.	A2.18	



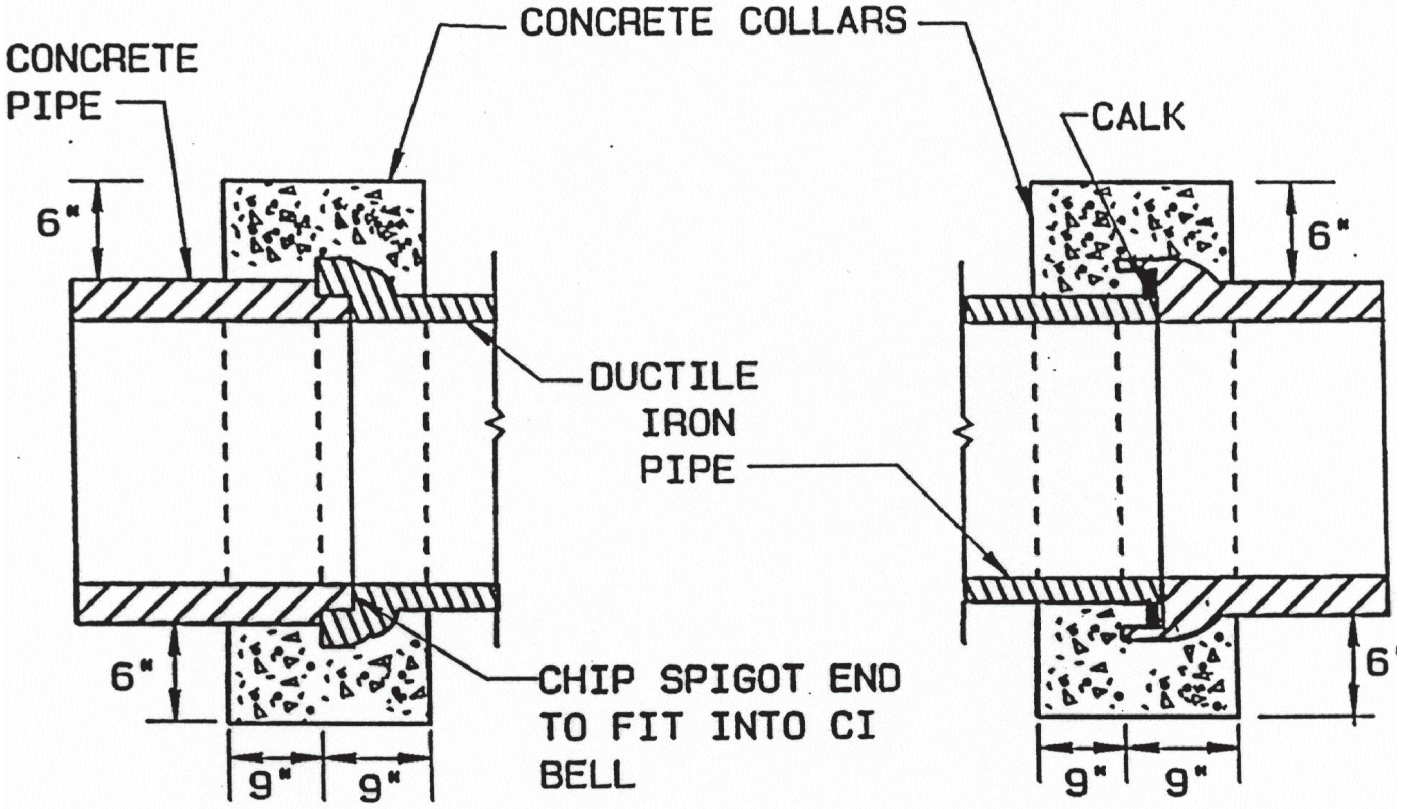
NOTES:

1. LOCATE 4" VENT PIPE OUT OF TRAVELWAYS IN BACK OF CURB OR SIDEWALK OR AS CALLED FOR ON PLANS. PIPE TO BE PAINTED WITH ONE COAT OF PRIMER AND TWO COATS OF DARK GREEN ENAMEL.
2. TOP OF VENT TO BE MIN OF 8' ABOVE GRADE OR HIGHER IF SHOWN ON PLANS.

DRAWING TITLE	SCALE	DRAWING NO.	REV.
DETAIL OF VENT FOR WATERTIGHT MANHOLE	N.T.S.	A2.19	2

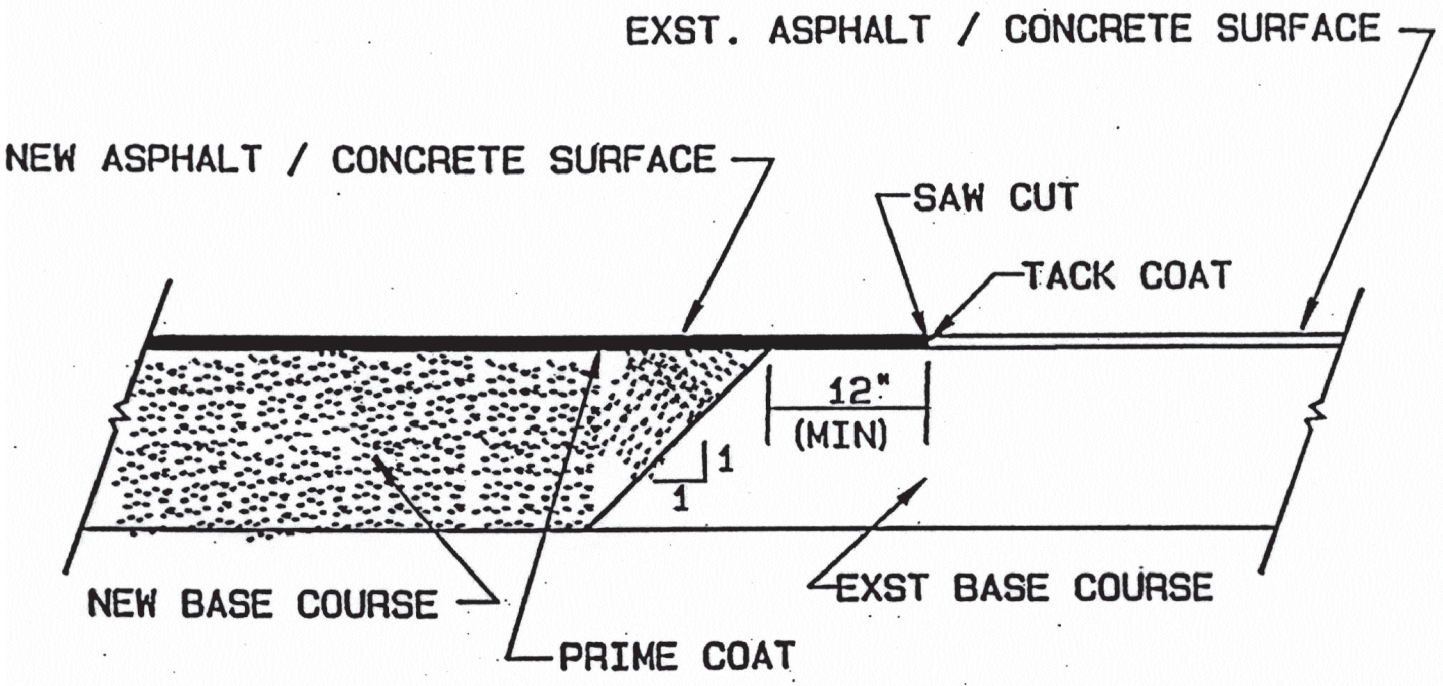


DRAWING TITLE	SCALE	DRAWING NO.	REV.
CROSSING PIPE CRADLE	N.T.S.	A3.1	

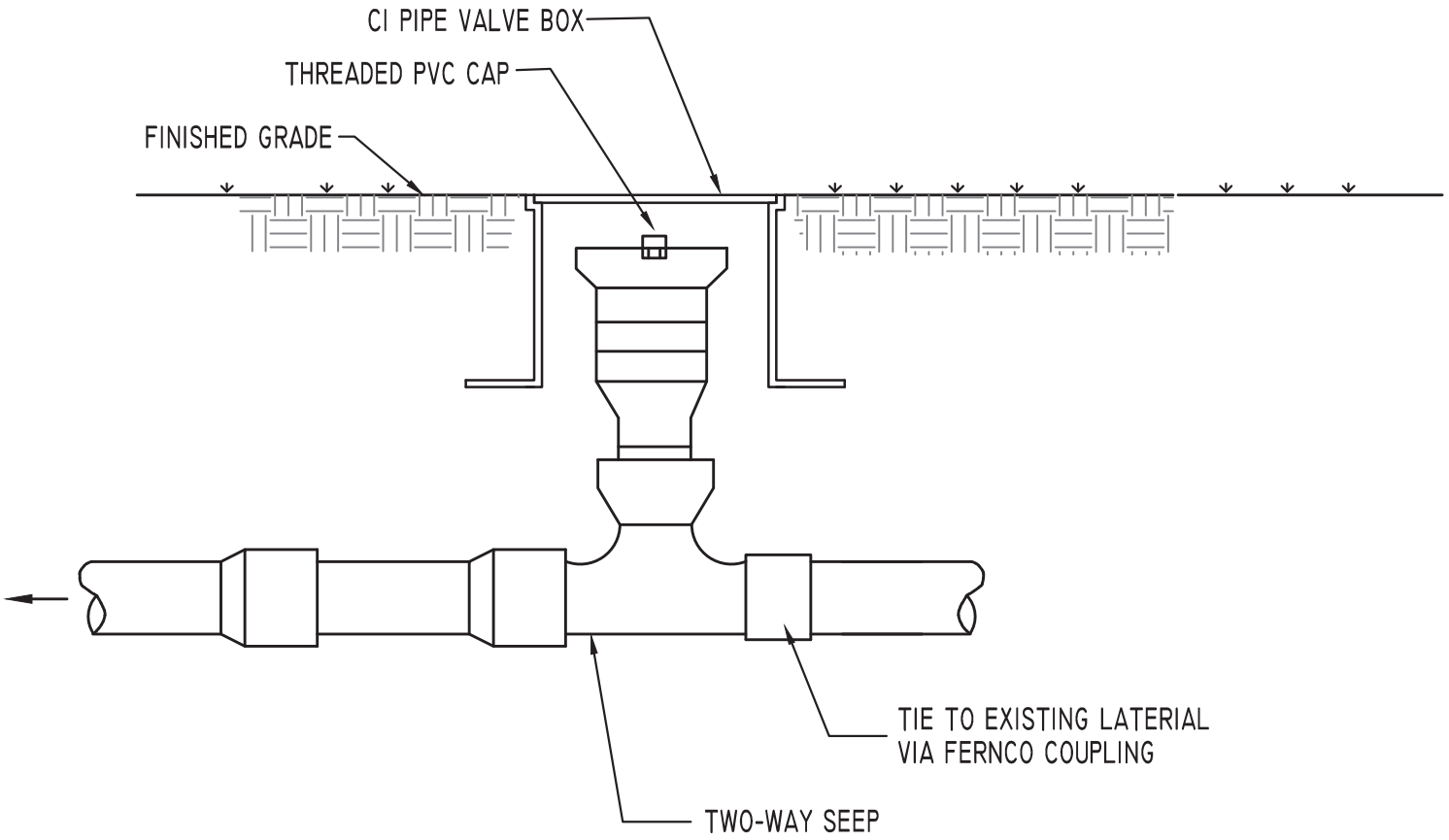


NOTE: A STANDARD MANUFACTURED ADAPTER FITTING MAY BE USED IN LIEU OF THE CONCRETE COLLAR; SUBMIT SHOP DRAWING FOR APPROVAL PRIOR TO USE

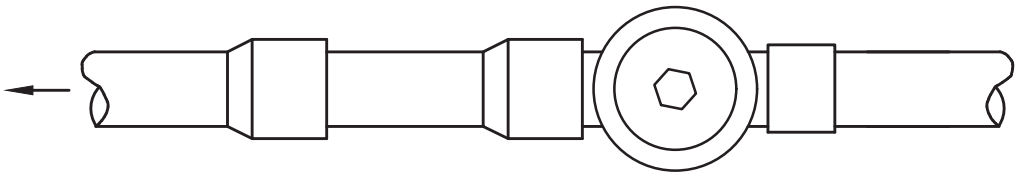
DRAWING TITLE	SCALE	DRAWING NO.	REV.
CONCRETE PIPE TO CAST IRON ADAPTER	N.T.S.	A3.2	



DRAWING TITLE	SCALE	DRAWING NO.	REV.
PAVEMENT TRANSITION DETAIL	N.T.S.	A3.3	



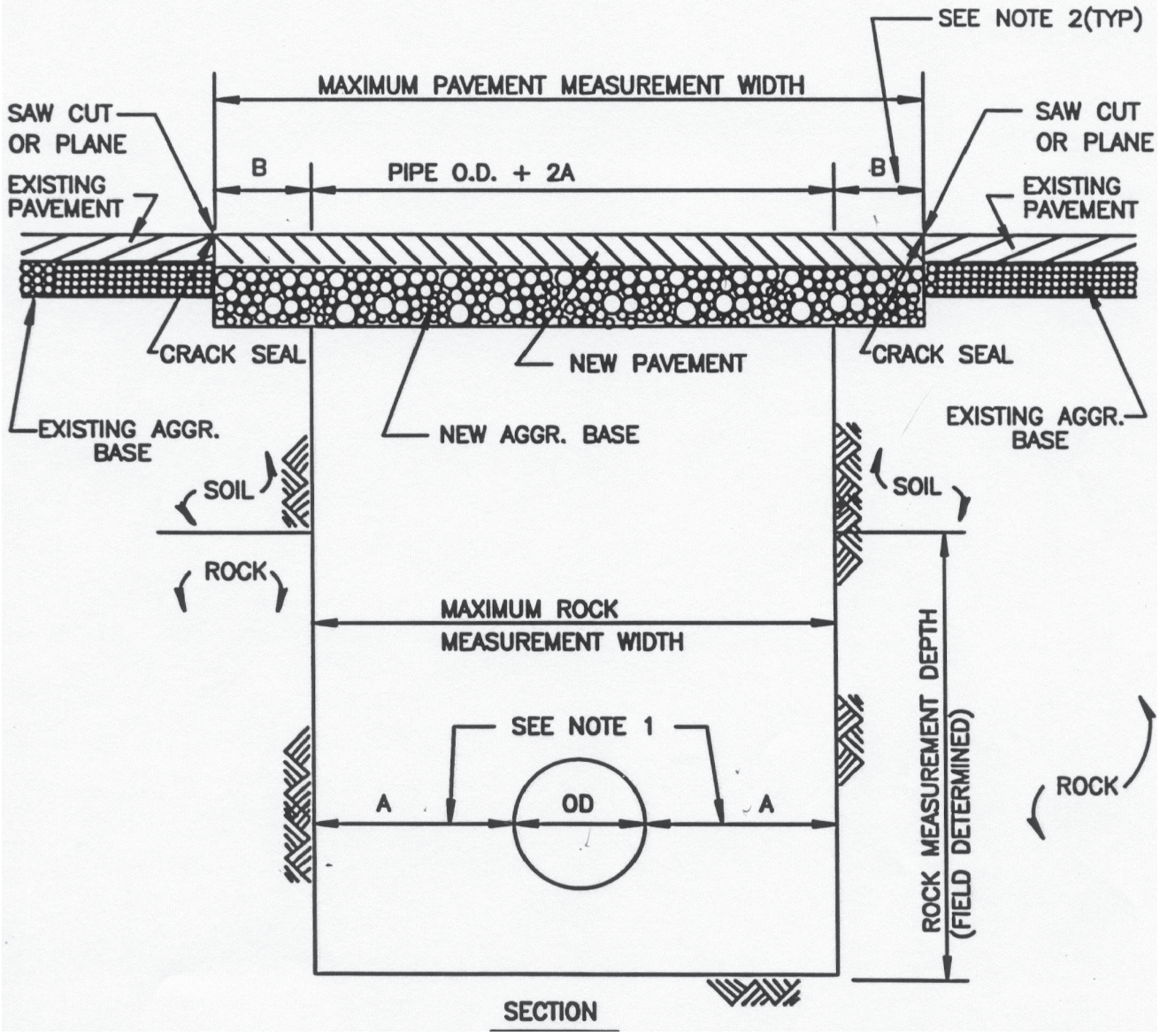
PIPE SIZE AND MATERIAL AS INDICATED
ON PLANS OR SPECIFIED



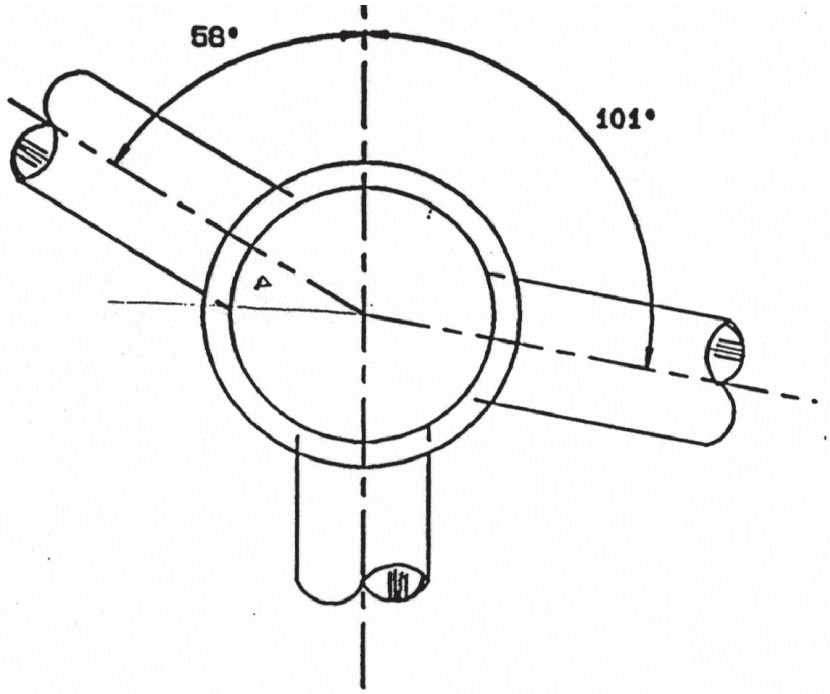
NOTE: TRANSITION FROM EXISTING 4" SERVICE LINE TO 6" SHALL BE MADE WITH ECCENTRIC REDUCER AND SHALL PROVIDE SMOOTH INVERT.

DRAWING TITLE	SCALE	DRAWING NO.	REV.
STANDARD CLEANOUT DETAIL	N.T.S.	A3.4	2

1. DIMENSION A SHALL BE 12" WHEN TRENCH IS 10 FEET OR LESS DEEP FROM INVERT OF PIPE, AND 18" WHEN THE TRENCH IS GREATER THAN 10' DEEP.
2. DIMENSION B SHALL BE 12" WHEN TRENCH IS 10 FEET OR LESS DEEP FROM INVERT OF PIPE, AND 24" WHEN THE TRENCH IS GREATER THAN 10 FEET DEEP.
3. SEE STANDARD TRENCH DETAIL FOR BACKFILL AND BEDDING REQUIREMENTS AND OTHER PERTINENT INFORMATION.
4. ROCK MEASURED FOR PAYMENT SHALL BE THAT ACTUALLY REMOVED, EXCEPT THE MEASURED WIDTH SHALL NOT EXCEED THE MAXIMUM WIDTH INDICATED BELOW.
5. PAVEMENT MEASURED FOR PAYMENT SHALL BE THAT ACTUALLY REPLACED, EXCEPT THE MEASURED WIDTH SHALL NOT EXCEED THE MAXIMUM WIDTH INDICATED BELOW.



DRAWING TITLE	SCALE	DRAWING NO.	REV.
ROCK & PAVEMENT MEASUREMENT	N.T.S.	A3.5	

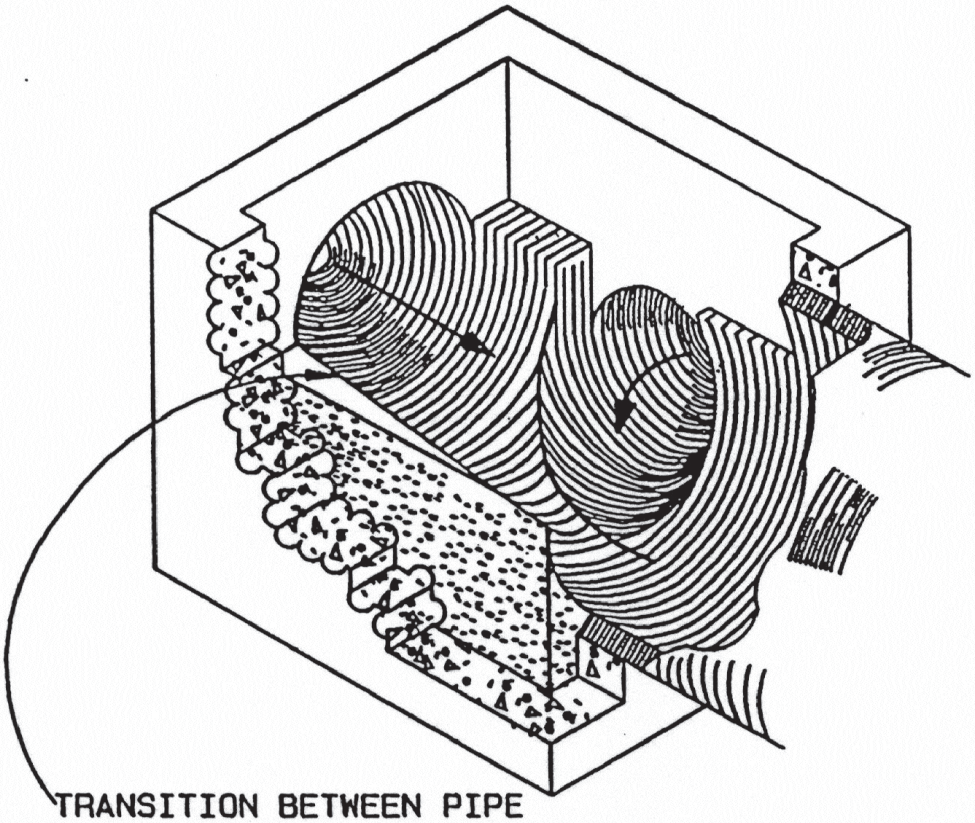


MANHOLE SIZING TABLE

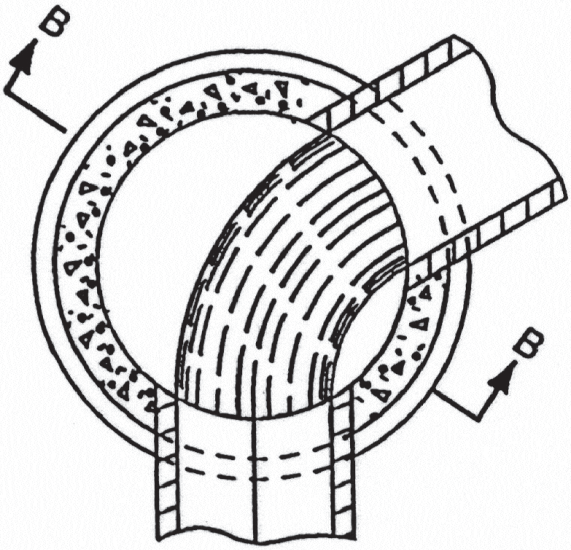
MAXIMUM Δ'S AT MANHOLE (DEGREES)

SEWER PIPE SIZE	SIZE OF MANHOLE				
	48"	60"	72"	84"	96"
21"	68°	92°	107°		
24"	58°	85°	101°		
27"	47°	77°	95°		
30"	35°	68°	89°	103°	
36"	USE NEXT SIZE	50°	75°	92°	103°
42"		USE NEXT SIZE	60°	80°	94°
48"			USE NEXT SIZE	67°	84°
54"				USE NEXT SIZE	72°

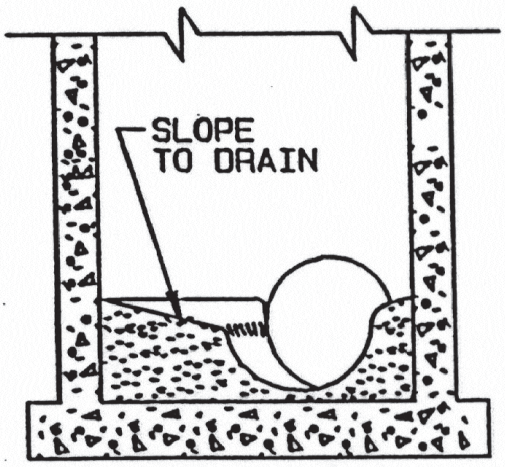
DRAWING TITLE	SCALE	DRAWING NO.	REV.
MANHOLE SIZING TABLE	N.T.S.	A3.6	



TRANSITION BETWEEN PIPE
DIAMETERS WHEN DIFFERENT
SIZES OF PIPE ARE ENCOUNTERED.



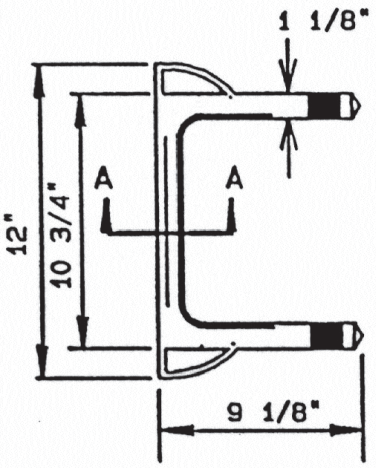
PLAN

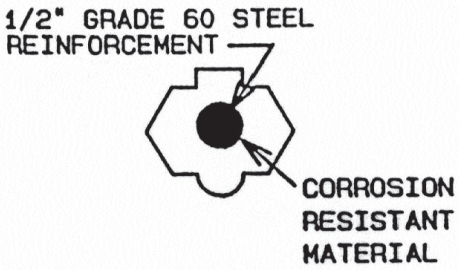


SECTION B-B

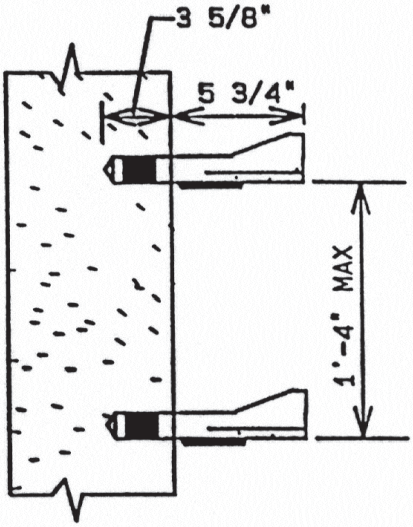
METHOD OF TREATMENT IN MANHOLES

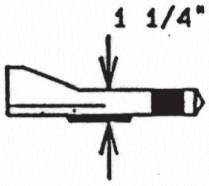
DRAWING TITLE	SCALE	DRAWING NO.	REV.
MANHOLE INVERT SHAPING	N.T.S.	A3.7	

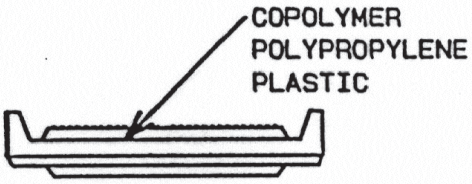




SECTION A-A







NOTES

STEPS WILL BE REQUIRED IN ALL STRUCTURES WITH A DEPTH OF 4'-0" OR GREATER UNLESS EITHERWISE NOTED ON THE PLANS.

ALL STEPS SHALL PROTRUDE 5" FROM INSIDE FACE OF STRUCTURE WALL.

MAXIMUM STEP SPACING TO BE 1'-4" C-C.

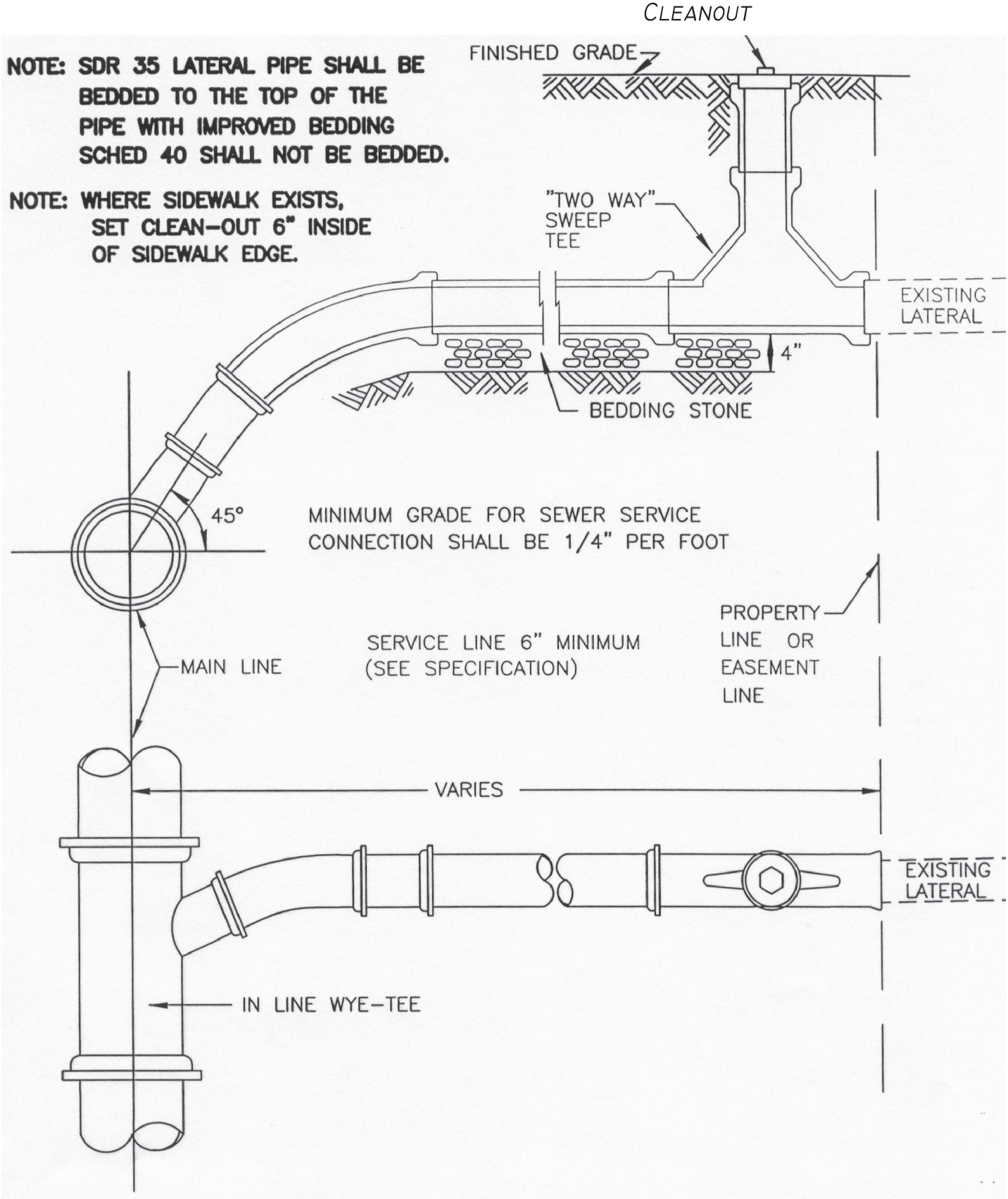
STEPS SHALL WITHSTAND A MINIMUM LOAD OF 300 POUNDS WHEN EXTENDED 5" FROM THE FACE OF THE SUPPORT.

STEPS ARE TO BE VERTICALLY ALIGNED AND UNIFORMILY SPACED FOR THE ENTIRE DEPTH OF ANY STRUCTURE.

IN PRECAST UNITS STEPS MAY BE CAST IN PLACE OR MORTARED INTO HOLES PROVIDED BY THE FABRICATOR.

STEPS OFFERING DIMENSIONS, CONFIGURATIONS, OR MATERIALS FROM THOSE SHOWN MAY ALSO BE USED PROVIDED THEY MEET THE MINIMUM REQUIRMENTS SHOWN HEREON AND THE CONTRACTOR HAS FURNISHED THE ENGINEER WITH DETAILS AND CERTIFIED TEST REPORTS OF THE PROPOSED SUBSTITUTE AND HAS RECIEVED WRITTEN APPROVAL FROM THE ENGINEER FOR THE USE OF SUCH STEPS.

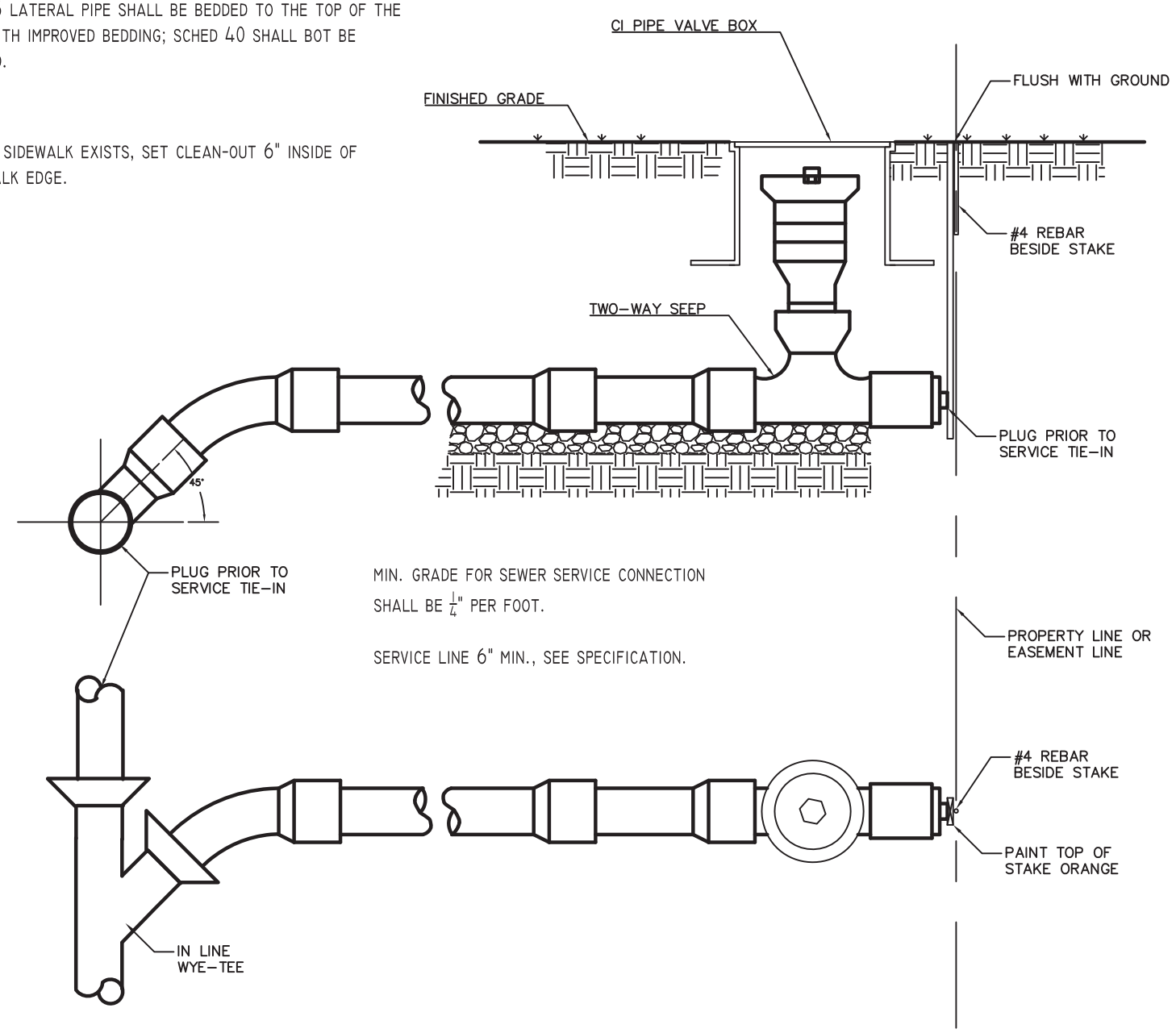
DRAWING TITLE	SCALE	DRAWING NO.	REV.
MANHOLE STEP	N.T.S.	A3.8	



DRAWING TITLE	SCALE	DRAWING NO.	REV.
SEWER LATERAL CONNECTIONS	N.T.S.	A3.9	

NOTE:
SDR 35 LATERAL PIPE SHALL BE BEDDED TO THE TOP OF THE PIPE WITH IMPROVED BEDDING; SCHED 40 SHALL BOT BE BEDDED.

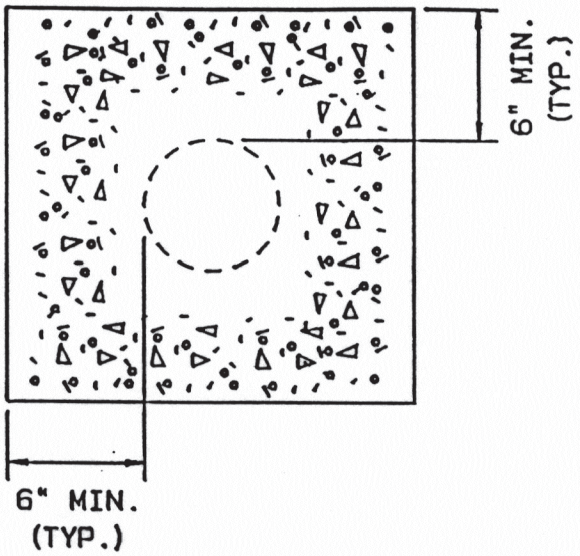
NOTE:
WHERE SIDEWALK EXISTS, SET CLEAN-OUT 6" INSIDE OF SIDEWALK EDGE.



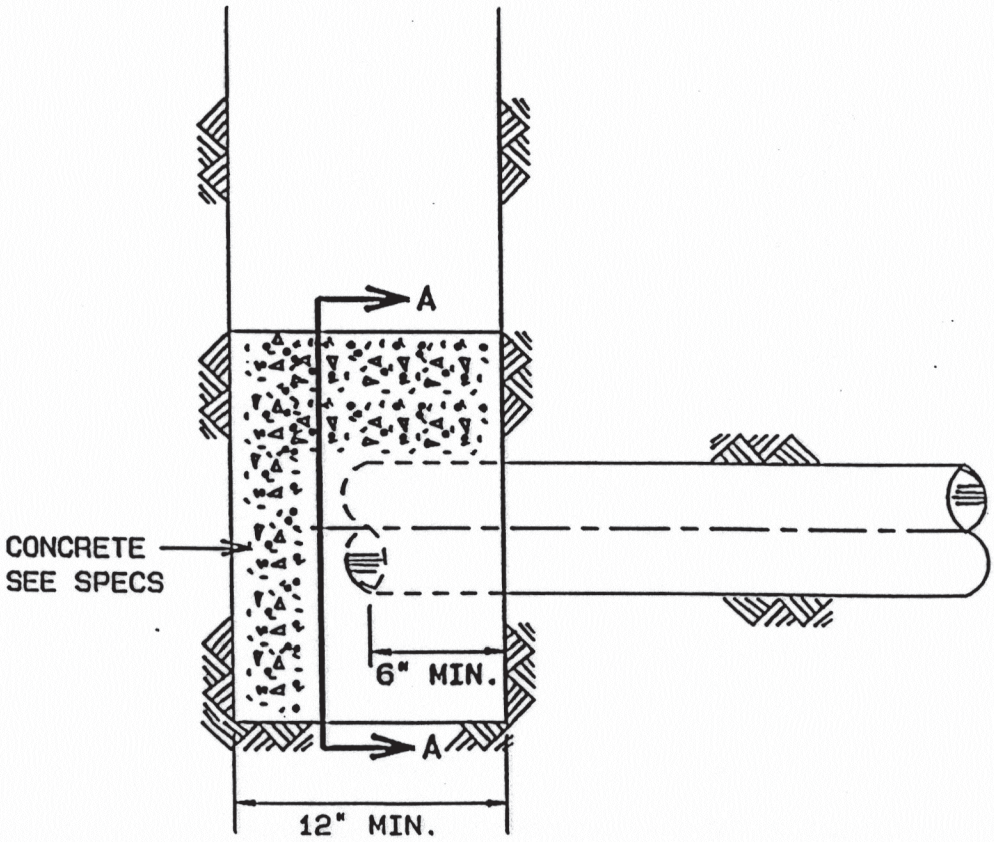
MIN. GRADE FOR SEWER SERVICE CONNECTION SHALL BE $\frac{1}{4}$" PER FOOT.

SERVICE LINE 6" MIN., SEE SPECIFICATION.

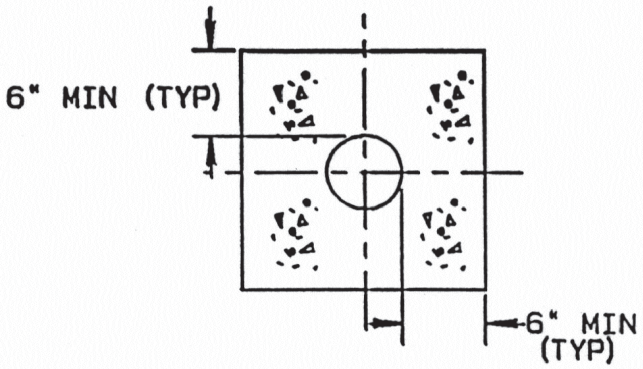
DRAWING TITLE	SCALE	DRAWING NO.	REV.
SEWER LATERAL CONNECTIONS - FUTURE	N.T.S.	A3.10	1



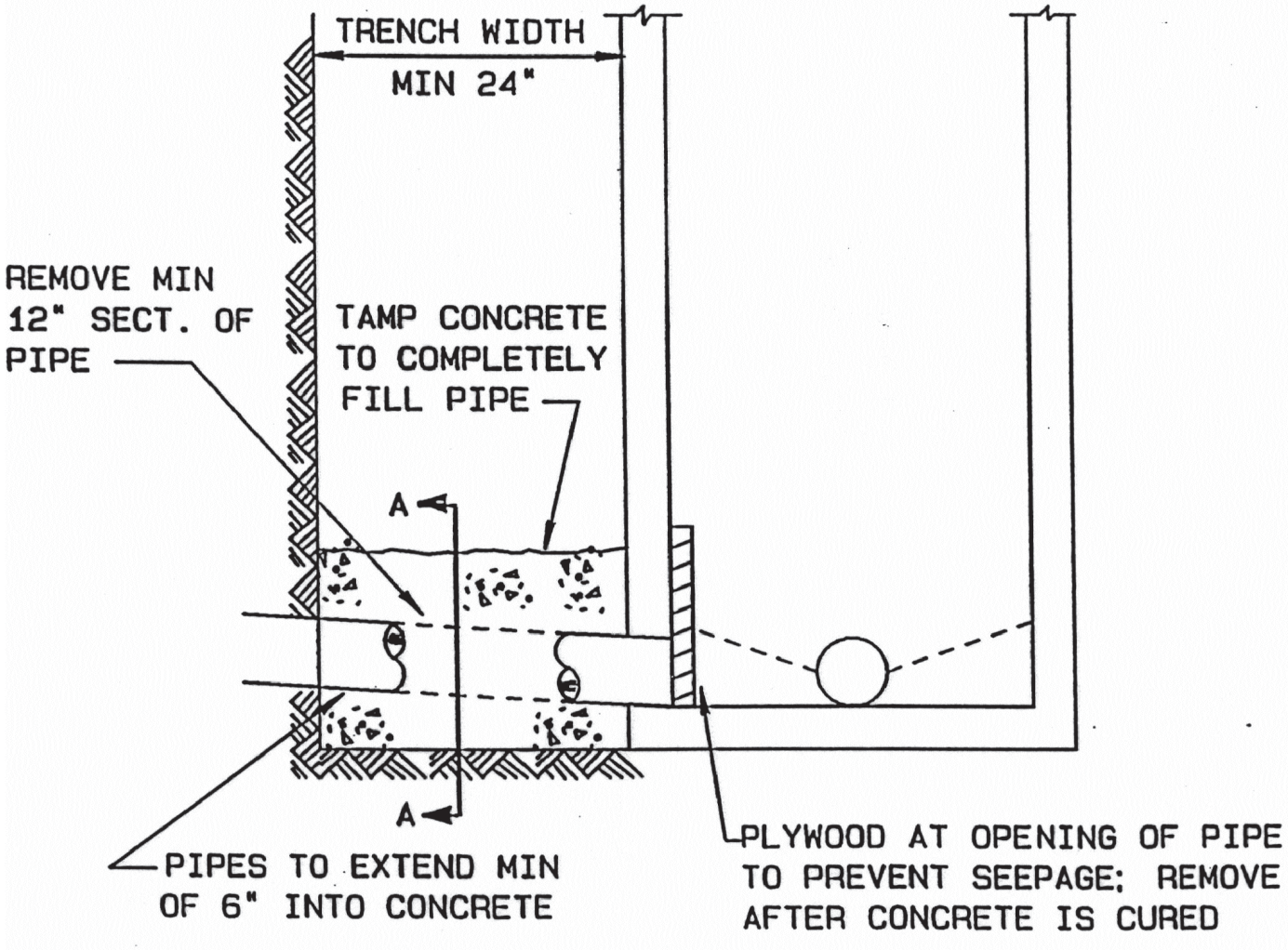
SECTION A-A



DRAWING TITLE	SCALE	DRAWING NO.	REV.
END PLUGGING ABANDONED SEWER LINE	N.T.S.	A3.11	

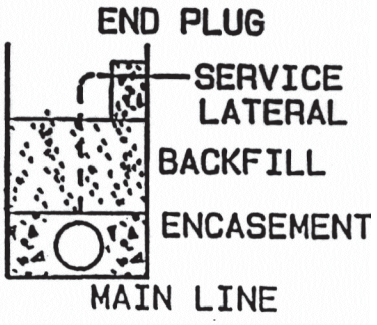


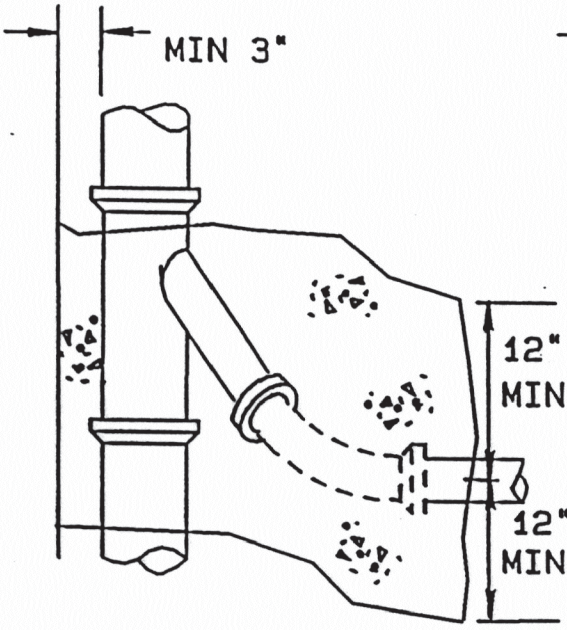
SECTION A-A

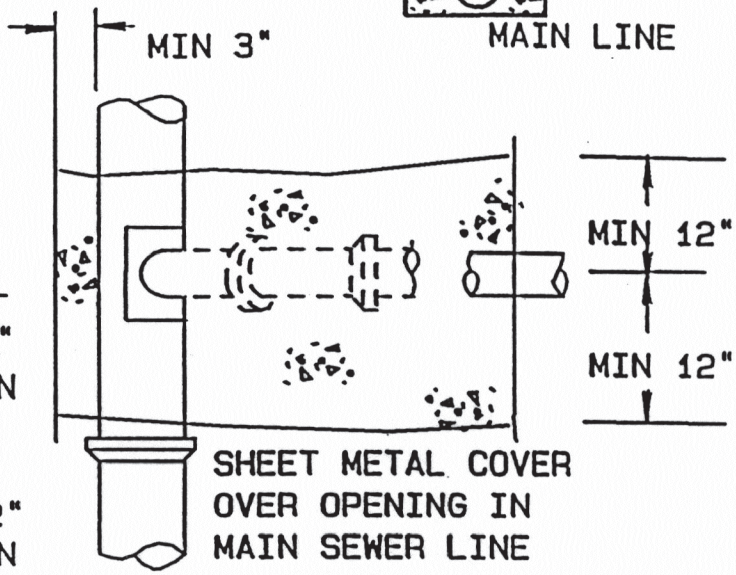


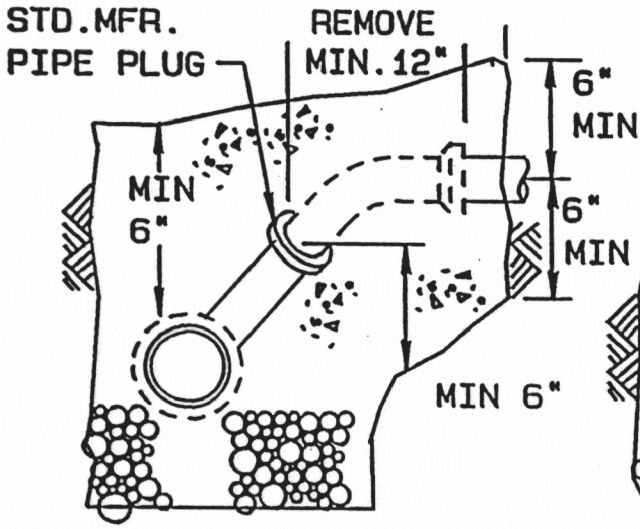
DRAWING TITLE	SCALE	DRAWING NO.	REV.
PLUGGING ABANDONED SEWER LINE AT MANHOLE	N.T.S.	A3.12	

NOTE: IF SERVICE LATERAL ENTERS MAIN SEWER W/ A STRAIGHT DROP OF 2' OR GREATER. ENCASE MAINLINE AS SHOWN IN THIS DETAIL & BACKFILL DITCH TO 6" BELOW INVERT OF SERVICE LATERAL & PLUG IN ACCORDANCE W/ END PLUG DETAIL.

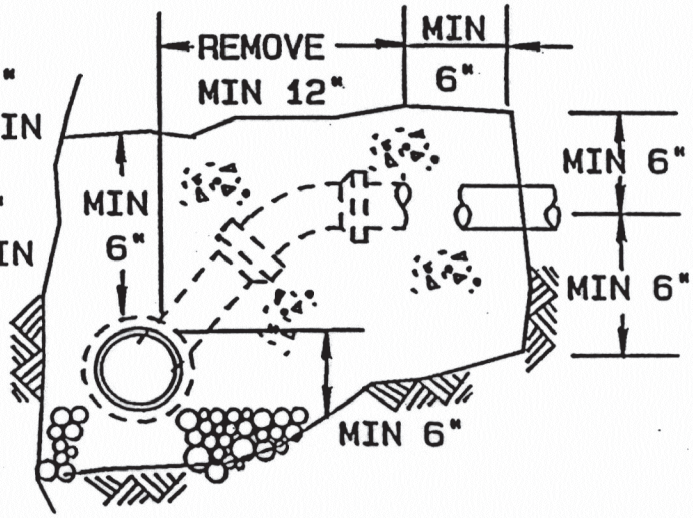








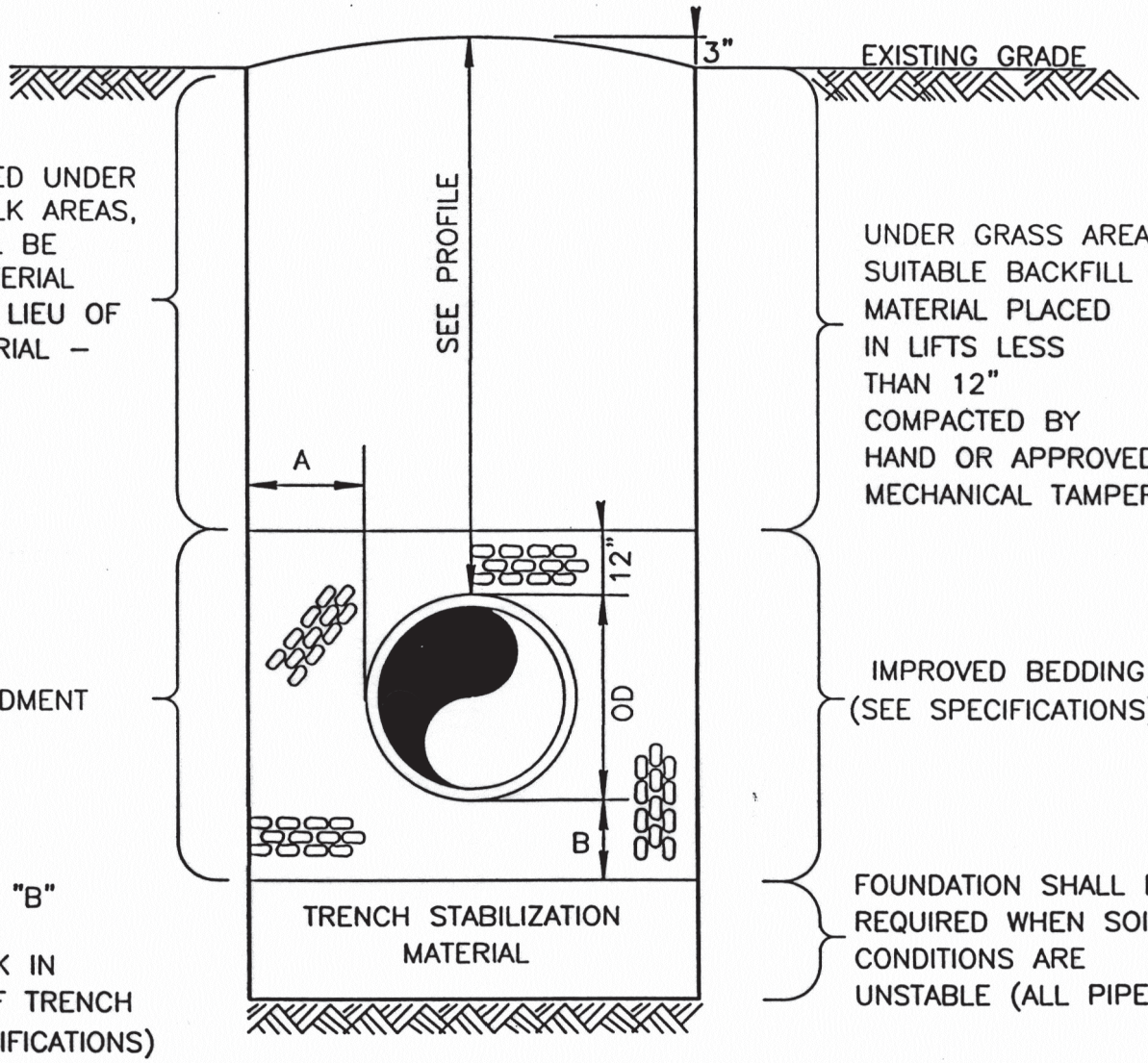
STANDARD TEE OR WYE SERVICE CONNECTION



FIELD ADAPTED SERVICE CONNECTION

DRAWING TITLE	SCALE	DRAWING NO.	REV.
PLUGGING ABANDONED SERVICE LATERAL AT MAIN LINE	N.T.S.	A3.13	

CONTAIN ROCK MATERIAL LARGER THAN 6" IN ANY DIMENSION



WHERE INDICATED UNDER PAVED AND WALK AREAS, BACKFILL SHALL BE AGGREGATE MATERIAL IN 8" LIFTS IN LIEU OF SUITABLE MATERIAL – SEE SPECS.

UNDER GRASS AREAS SUITABLE BACKFILL MATERIAL PLACED IN LIFTS LESS THAN 12" COMPACTED BY HAND OR APPROVED MECHANICAL TAMPER

EMBEDMENT

IMPROVED BEDDING (SEE SPECIFICATIONS)

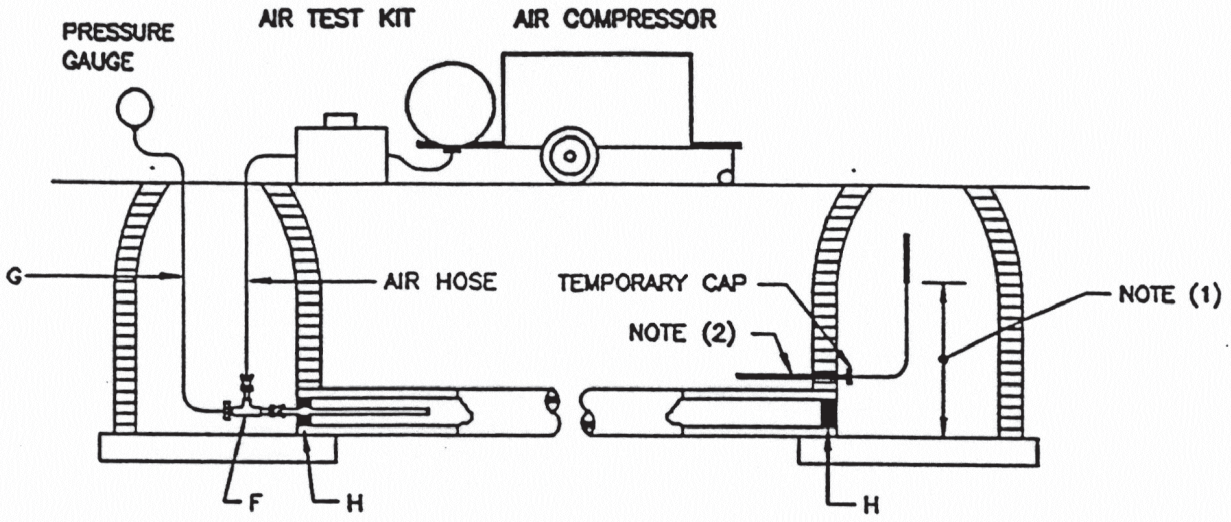
DIMENSION "B"
4" TYPICAL
6" IF ROCK IN BOTTOM OF TRENCH
(SEE SPECIFICATIONS)

FOUNDATION SHALL BE REQUIRED WHEN SOIL CONDITIONS ARE UNSTABLE (ALL PIPE)

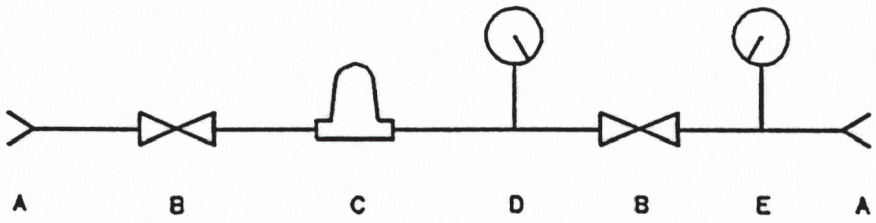
·THE MAXIMUM TRENCH WIDTH (OD + 2A) SHALL BE MEASURED FROM THE PIPE INVERT TO ONE FOOT ABOVE THE TOP OF PIPE.

DIMENSION "A" SHALL BE 12" WHEN TRENCH IS 10 FEET OR LESS DEEP FROM INVERT OF PIPE, AND 18" WHEN THE TRENCH IS GREATER THAN 10 FEET DEEP.

DRAWING TITLE	SCALE	DRAWING NO.	REV.
TRENCH DETAIL FOR GRAVITY PIPES	*N.T.S.*	*A3.14*	



TEST SECTION



AIR TEST KIT EQUIPMENT

EQUIPMENT SCHEDULE

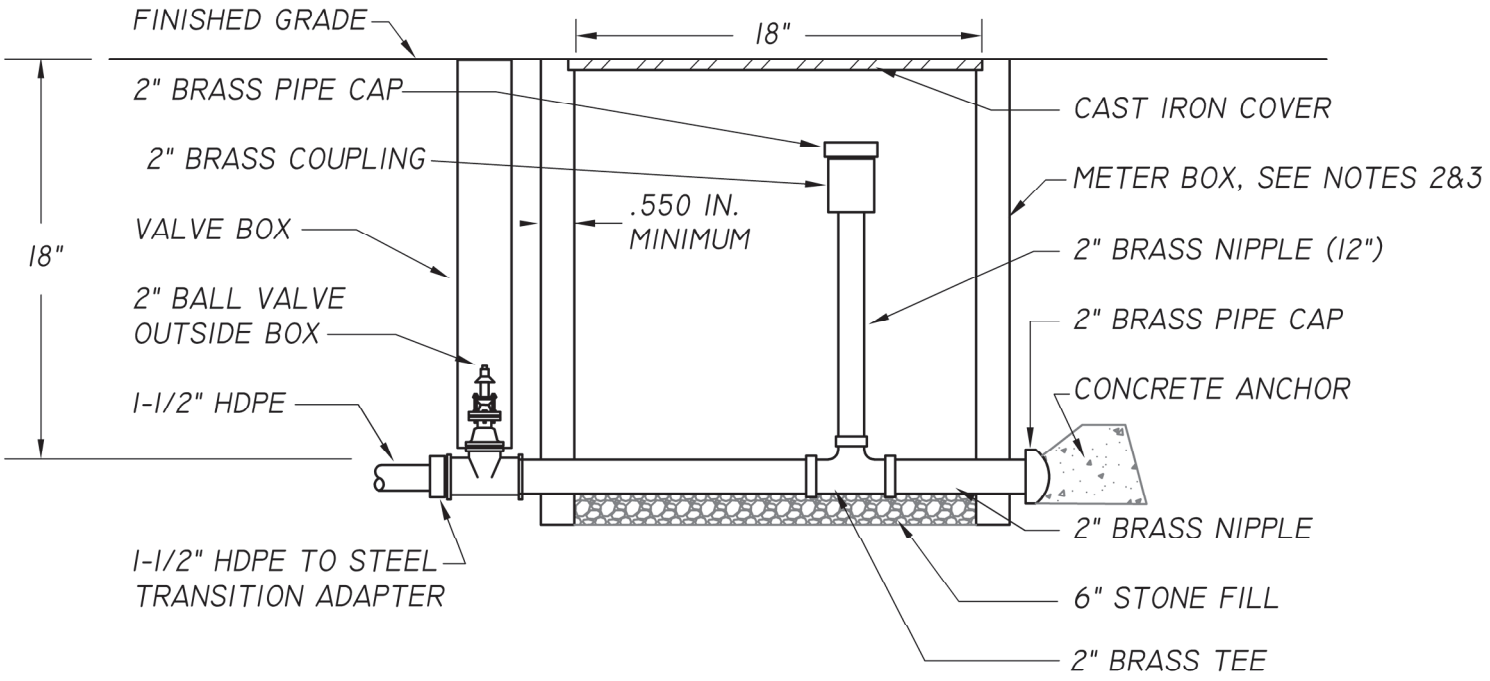
- A QUICK COUPLING
- B AIR VALVE
- C INPUT AIR PRESSURE REGULATOR
- D INPUT PRESSURE GAUGE
- E PRESSURE SENSOR GAUGE
- F AIR FEED & PRESSURE SENSOR ASSEMBLY
- G PRESSURE SENSOR AIR HOSE
- H STANDARD PLUMBERS PLUGS

NOTES:

(1) CLEAR PLASTIC TUBING– HEIGHT MEASURED FROM PIPE INVERT

(2) 1/2" CAPPED PIPE – 10" LONG INSTALLED WHEN MANHOLE IS INSTALLED

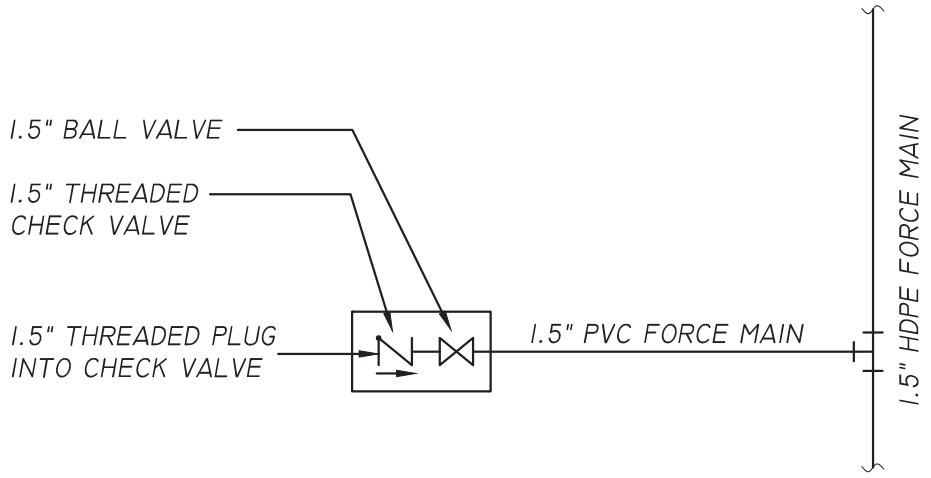
DRAWING TITLE	SCALE	DRAWING NO.	REV.
AIR TEST SKETCH	N.T.S.	A3.15	



NOTES:

1. ALL PIPING FROM PVC ADAPTER TO BE BRASS PIPE.
2. FOR NON-TRAFFIC APPLICATION, USE MIDSTATE, CARSON, OR EQUIVALENT PLASTIC BOX.
3. FOR TRAFFIC APPLICATION, USE ARMORCAST AASHTO H20-44, OR EQUIVALENT.

DRAWING TITLE	SCALE	DRAWING NO.	REV.
FORCE MAIN TERMINATION CLEANOUT	N.T.S.	A3.16	1

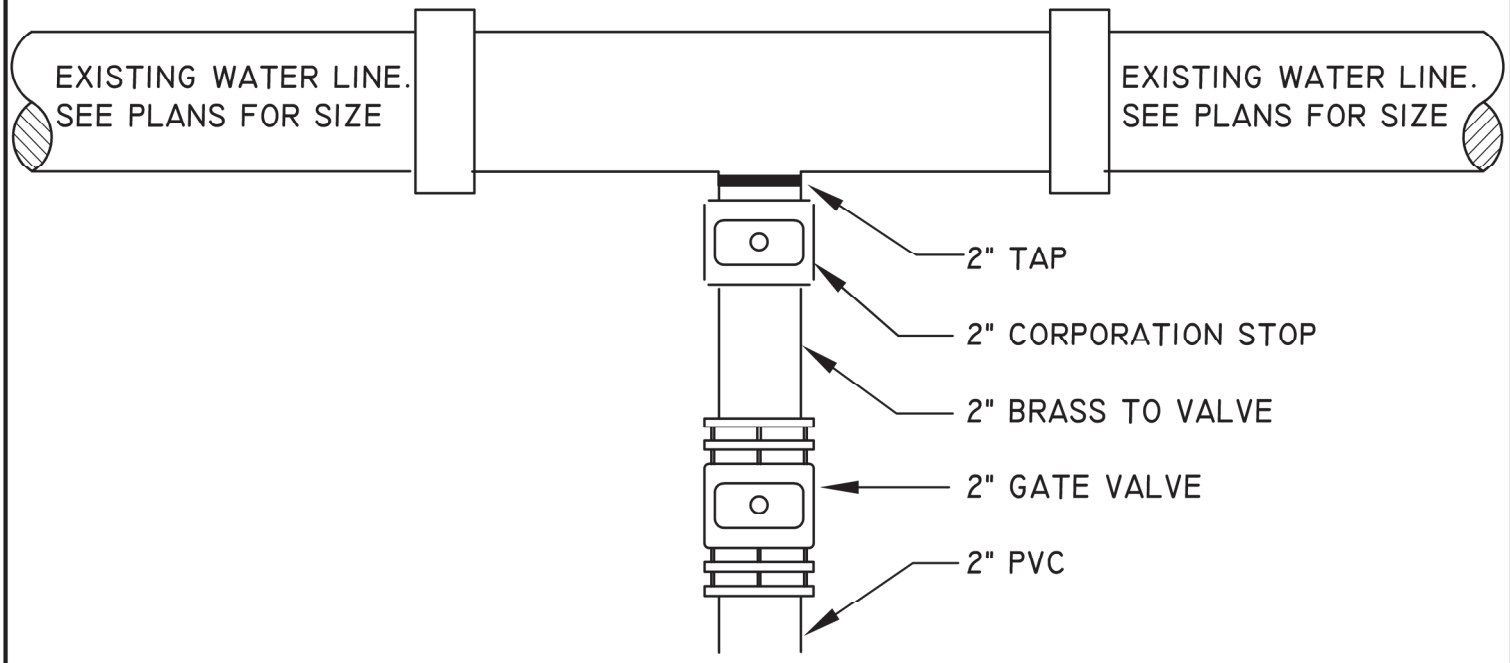


NOTE:
UPON PROPERTY OWNER'S REQUEST, THE CITY OF KINGSPORT WILL CONNECT AN E/ONE RESIDENTIAL GRINDER LIFT STATION AND APPURTENANCES TO THE FORCE MAIN SEWER VALVE BOX AND ADJOINING LOW PRESSURE SYSTEM FORCE MAIN. THIS INSTALLATION IS NOT INCLUDED IN THIS CONTRACT.

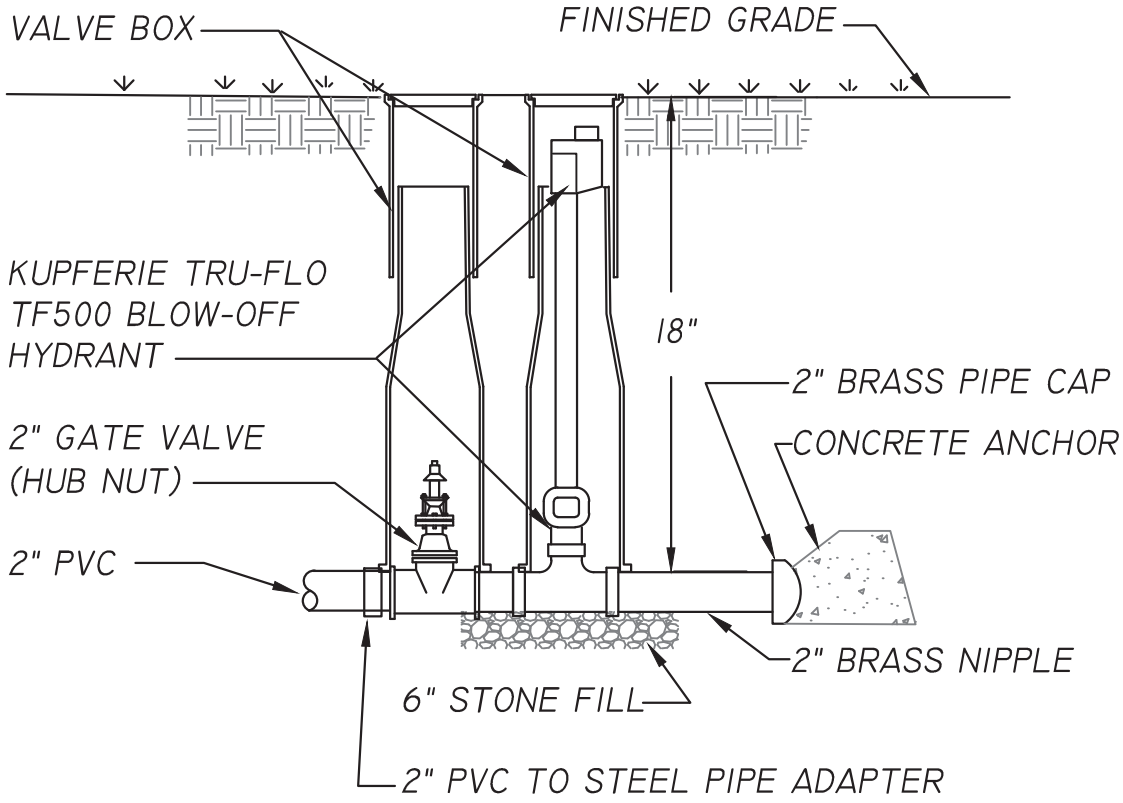
DRAWING TITLE	SCALE	DRAWING NO.	REV.
RESIDENTIAL FORCE MAIN SEWER VALVE BOX	N.T.S.	A3.17	-

SADDLE MODELS

PIPE	MODEL
PVC	MUELER STYLE 508
DUCTILE IRON	SMITH-BLAIR 313 DOUBLE BALE SADDLE
CAST IRON	SAME AS DUCTILE
ASBESTOS CEMENT	SAME AS DUCTILE

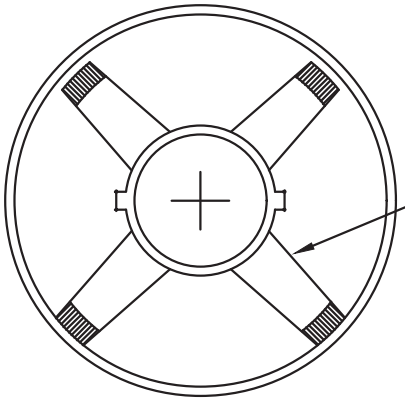


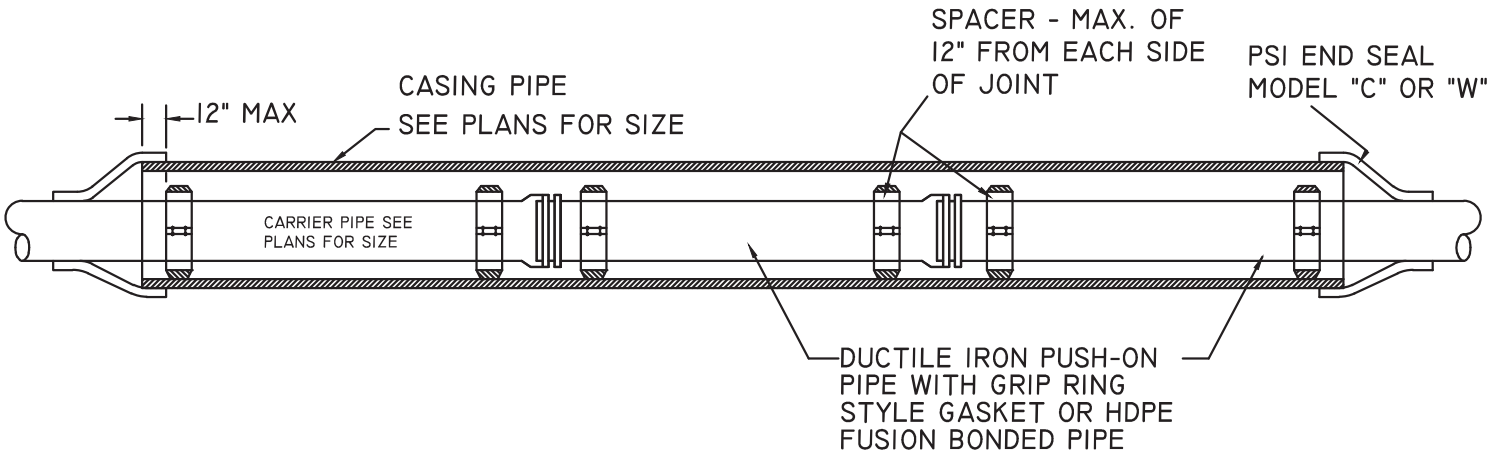
DRAWING TITLE	SCALE	DRAWING NO.	REV.
TYPICAL 2" WET TAP	N.T.S.	A4.1	1



NOTE: ALL PIPING FROM PVC ADAPTER TO BE BRASS PIPE.

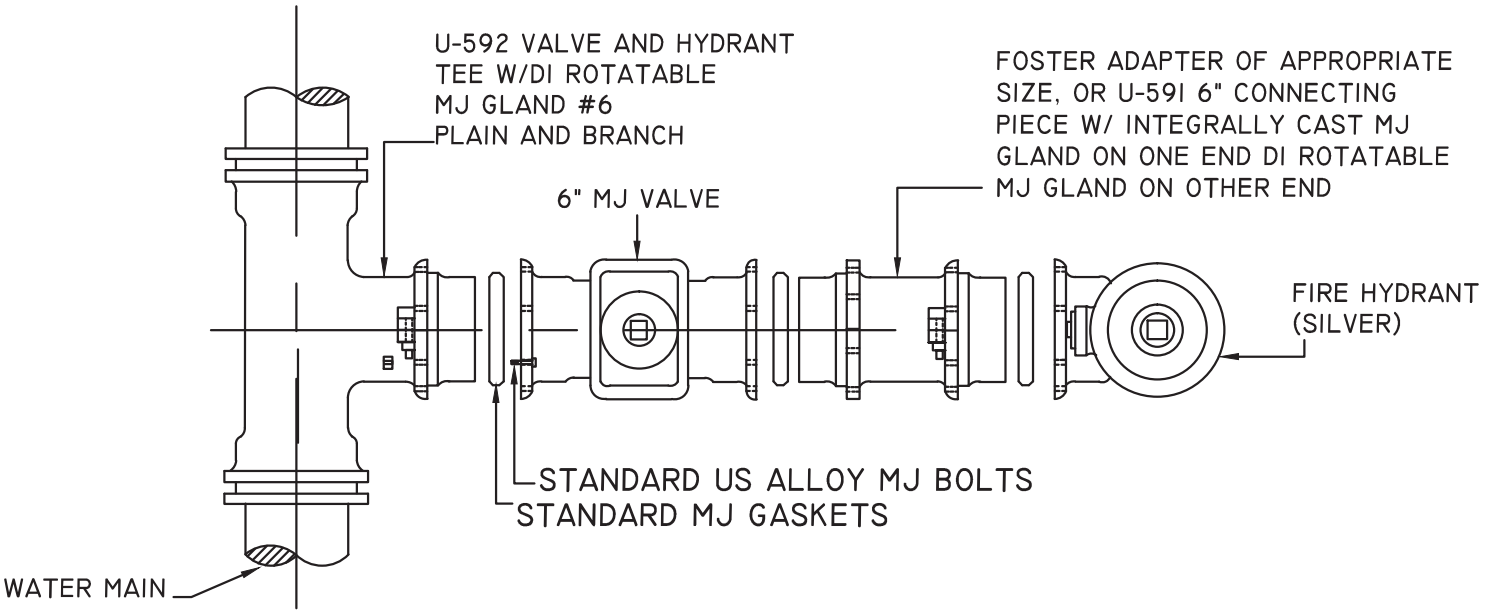
DRAWING TITLE	SCALE	DRAWING NO.	REV.
BLOWOFF AT DEAD END WATER MAINS	N.T.S.	A4.2	3





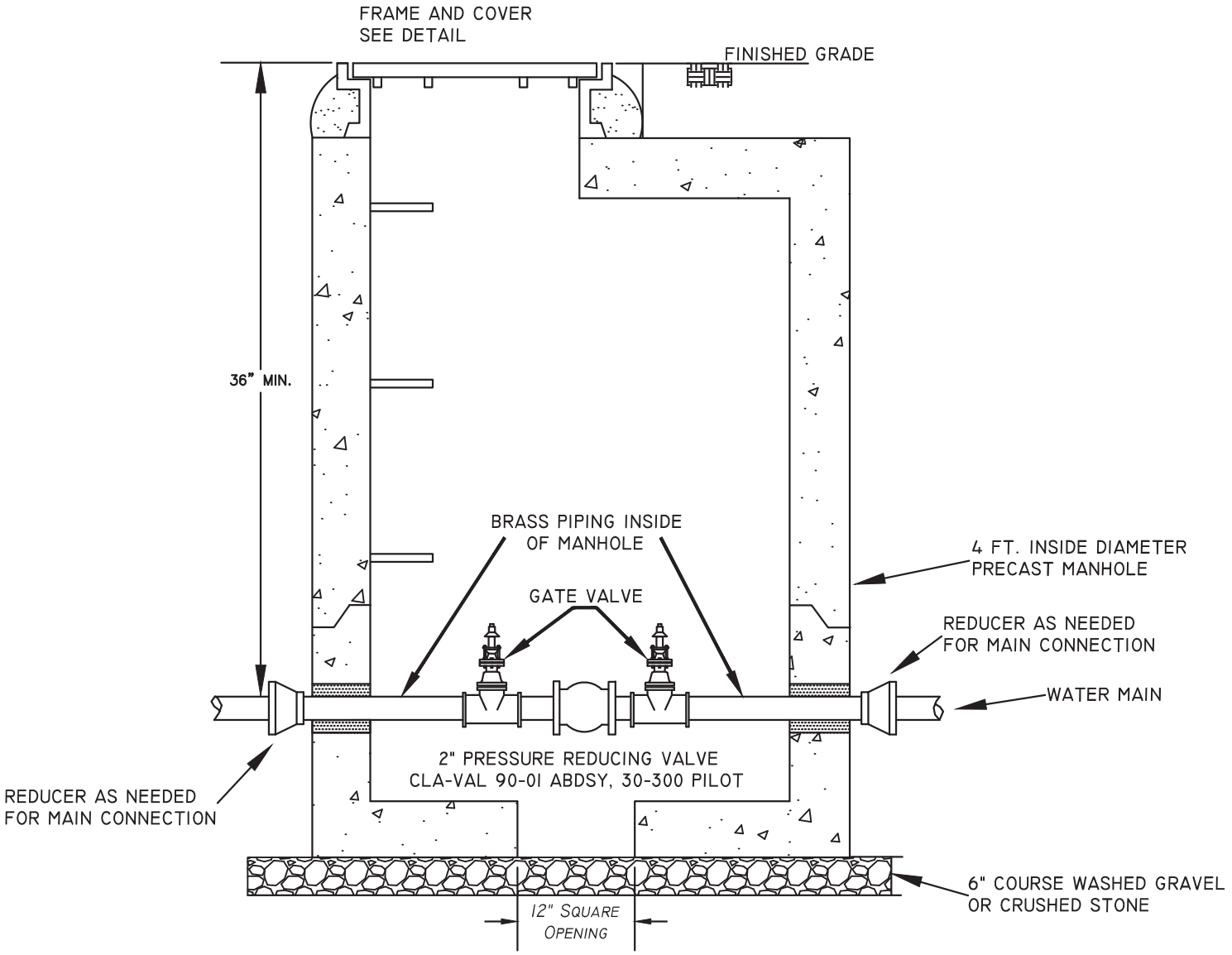
TYPICAL CASING SPACER INSTALLATION

DRAWING TITLE	SCALE	DRAWING NO.	REV.
CASING SPACER FOR CENTERED/RESTRAINED WATERLINE	N.T.S.	A4.3	1

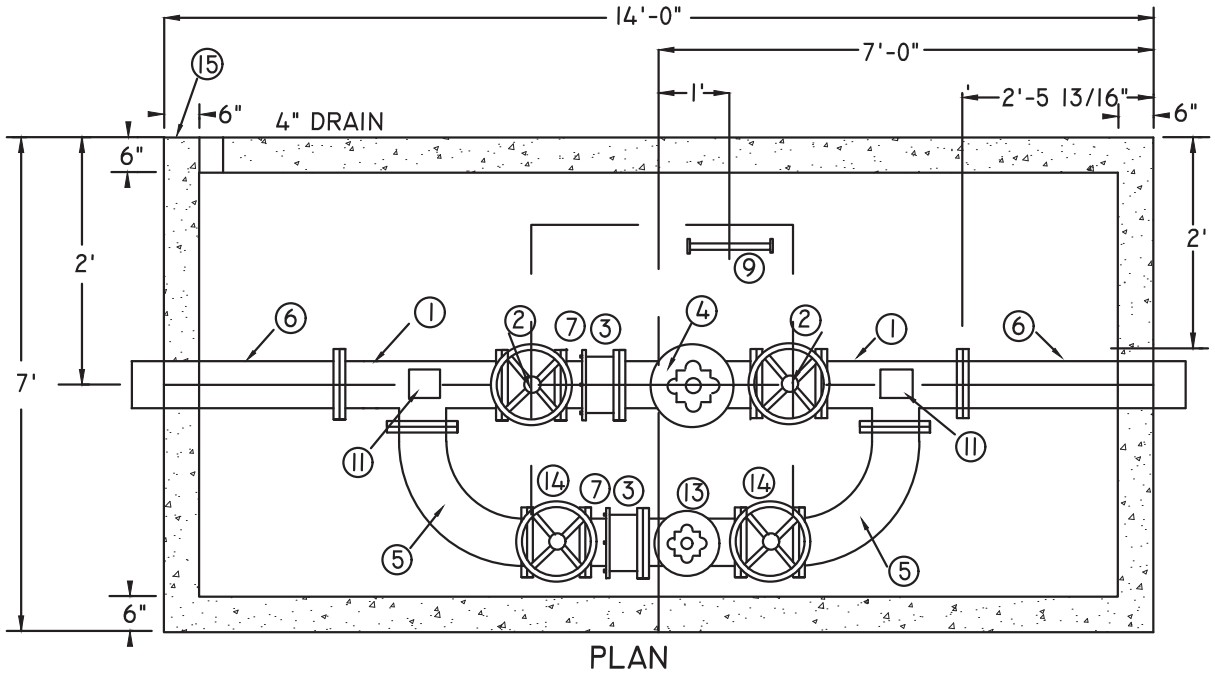


NOTE: ALL NUMBERS EQUAL TO U.S. PIPE & FOUNDRY COMPANY

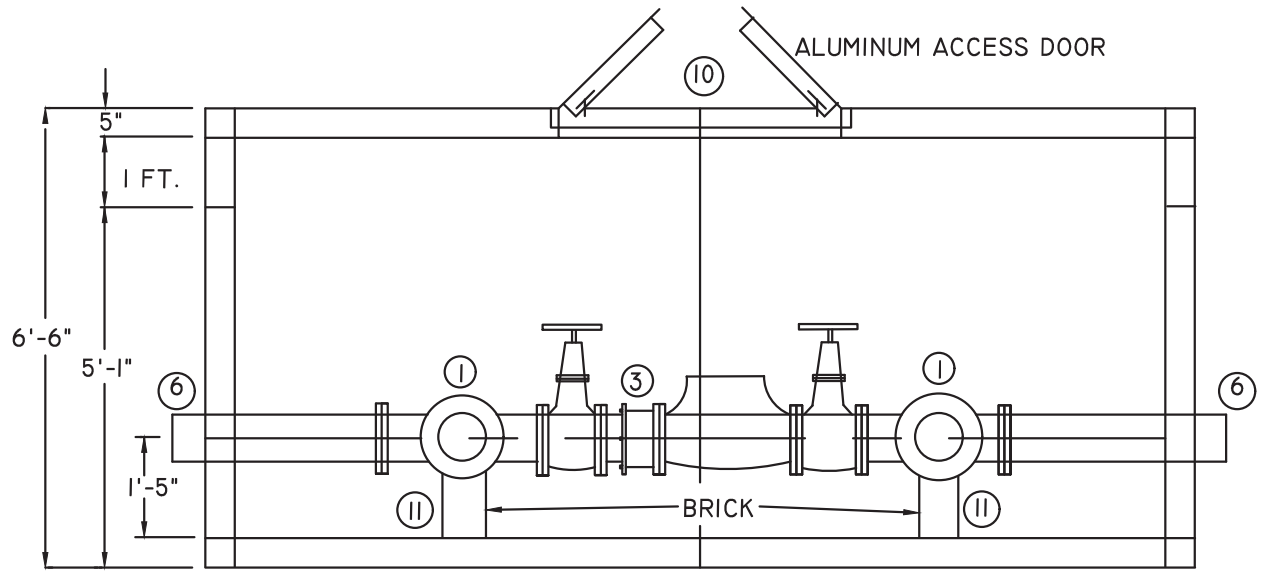
DRAWING TITLE	SCALE	DRAWING NO.	REV.
FIRE HYDRANT DETAIL	*N.T.S.*	*A4.4*	*1*



DRAWING TITLE	SCALE	DRAWING NO.	REV.
PRESSURE REDUCING VALVE & VAULT, 2"	N.T.S.	A4.5	1



PLAN



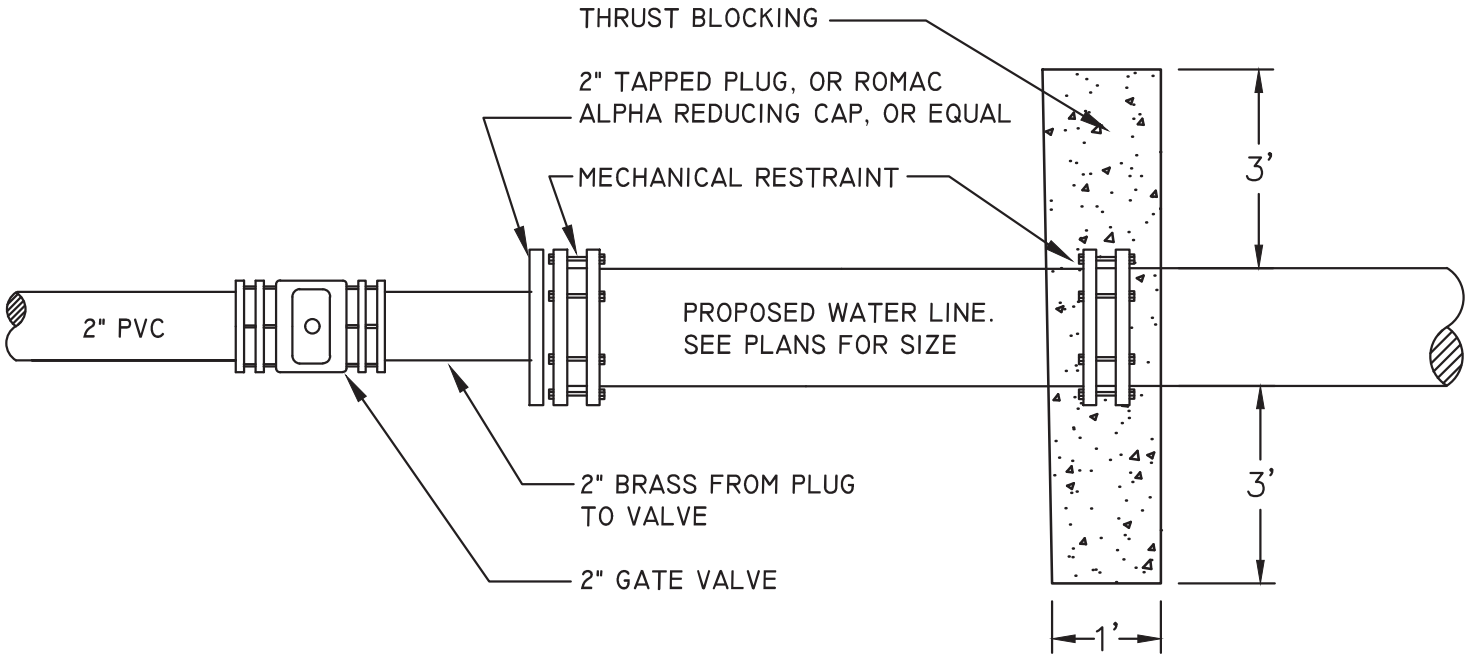
SECTION

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION
1	2	TEE ____" X ____" X ____"
2	2	____ GATE VALVE
3	1	FLANGED ADAPTOR
4	1	PRESSURE REDUCING VALVE, CLA-VAL 90-01 ABDSY, 30-300 PILOT
5	2	90° LONG BEND RADIUS ELBOW ____" D.I. FLANGED
6	2	PIPE ____" D.I. X 1" - 0" L.G. F/P
7	1	PIPE ____" D.I. X 1" - 0" LG. F/P
8	1	PIPE ____" D.I. X 3" - 2 7/8 LG. F/F
9	1	ALUMINUM LADDER
10	1	48" X 48" ENT. HATCH
11	4	CONCRETE SUPPORT
12		GASKET & BOLT SET
13	1	PRESSURE REDUCING VALVE, CLA-VAL 90-01 ABDSY, 30-300 PILOT
14	2	____" GATE VALVE
15	1	4" DRAIN WITH SCREEN

CUBAS STAKKABOX ULTIMA CONNECT WITH AX-5 COMPOSITE FRAME AND COVER. RATED H-20+ ALSO PERMITTED. INSTALLATION TO CONFORM TO MANUFACTURER'S RECCOMMENDATIONS.

DRAWING TITLE	SCALE	DRAWING NO.	REV.
PRESSURE REDUCING VALVE & VAULT, 3" AND LARGER	N.T.S.	A4.6	2



DRAWING TITLE	SCALE	DRAWING NO.	REV.
TYPICAL REDUCTION, 6" & LARGER TO 2" WATER LINE	N.T.S.	A4.7	2

DRAWING TITLE

RESTRAINED JOINT DETAILS

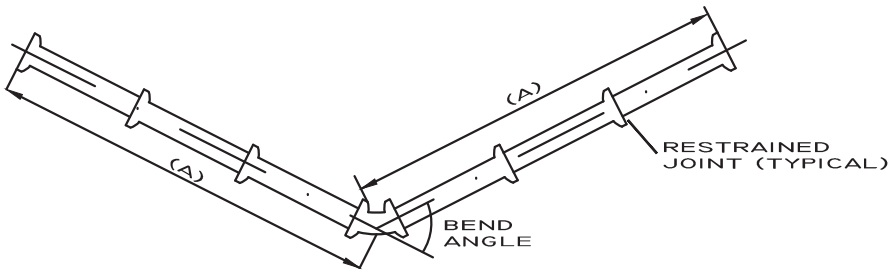
TABLE OF LENGTHS REQUIRING JOINT RESTRAINT FOR DUCTILE IRON PIPE

NOMINAL PIPE DIAMETER (INCHES)	PRESSURE CLASS	(A) HORIZONTAL BENDS AND VERTICAL-UP BENDS AS FUNCTION OF BEND ANGLE				(B) VERTICAL-DOWN BENDS AS FUNCTION OF BEND ANGLE				('C) HORIZONTAL TEE BASED ON BRANCH SIZE	(D) DEAD ENDS	(E) REDUCERS		
		11.25	22.5	45	90	11.25	22.5	45	90			LARER PIPE SIZE, IN	SMALLER PIPE SIZE, IN	RESTRAINED LENGTH, FT
		RESTRAINED LENGTH, FT	RESTRAINED LENGTH, FT	RESTRAINED LENGTH, FT	RESTRAINED LENGTH, FT	RESTRAINED LENGTH, FT	RESTRAINED LENGTH, FT	RESTRAINED LENGTH, FT	RESTRAINED LENGTH, FT	RESTRAINED LENGTH, FT	RESTRAINED LENGTH, FT			
4	350	N/A	N/A	18	36	N/A	N/A	18	54	36	36	4	3	N/A
6	350	N/A	N/A	18	54	N/A	18	36	72	36	36	6	4	36
8	350	N/A	18	36	72	N/A	18	36	108	54	54	8	6	36
10	350	N/A	18	36	90	N/A	18	54	126	72	72	10	8	36
12	350	N/A	18	36	108	18	36	54	144	72	72	12	10	36
16	250	N/A	36	54	144	18	36	72	198	90	90	16	12	54
20	250	18	36	72	180	18	54	108	234	126	126	20	18	18
24	200	18	36	72	198	36	54	126	288	144	144	24	20	54

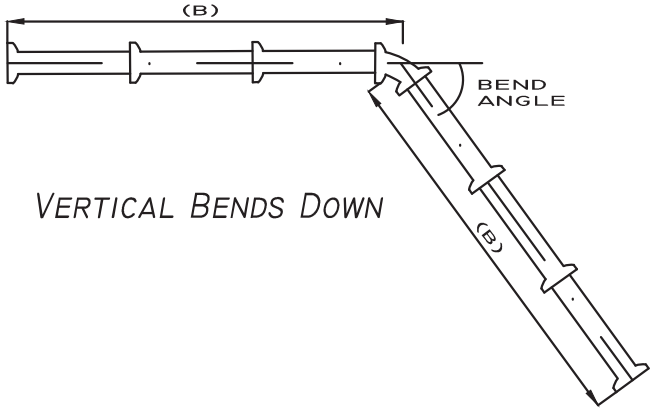
BASED ON "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE", 4TH EDITION, 1997, DIPRA

NOTES:

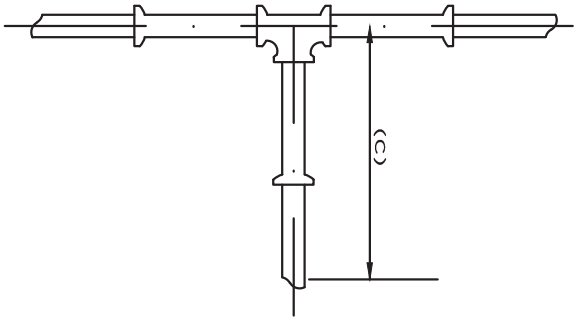
1. ALL PIPE JOINTS THAT FALL WITHIN THE RESTRAINED LENGTHS SHOWN FOR THE VARIOUS CONFIGURATIONS SHALL BE RESTRAINED JOINTS. JOINT RESTRAINING GASKETS ARE PREFERRED. MECHANICAL JOINTS SHALL HAVE MEGALUGS.
2. IF ANOTHER BEND, TEE, OR REDUCER FALLS WITHIN THE RESTRAINED LENGTH, THE TABLE VALUES MUST BE ADJUSTED. ADJUSTED IN-LINE REDUCERS. MAY ALSO REQUIRE ADDITIONAL JOINT. IF THE CONTRACT DRAWINGS HAVE NO SPECIFIC INSTRUCTIONS, CONSULT THE PROJECT MANAGER.



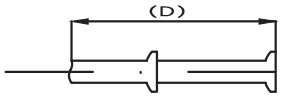
HORIZONTAL BENDS & VERTICAL BENDS UP



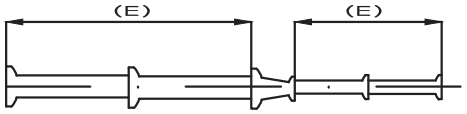
VERTICAL BENDS DOWN



HORIZONTAL TEES



DEAD ENDS

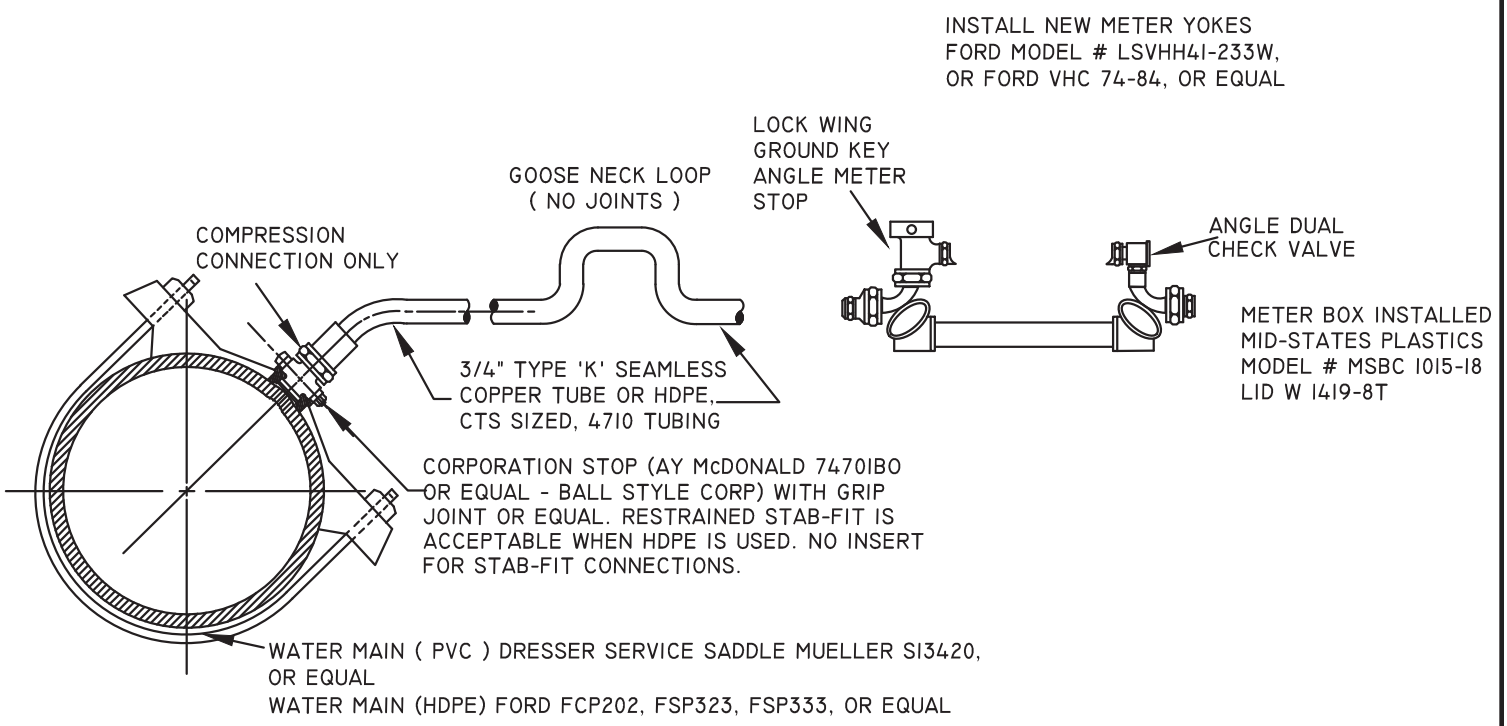


REDUCERS

SCALE: N.T.S.

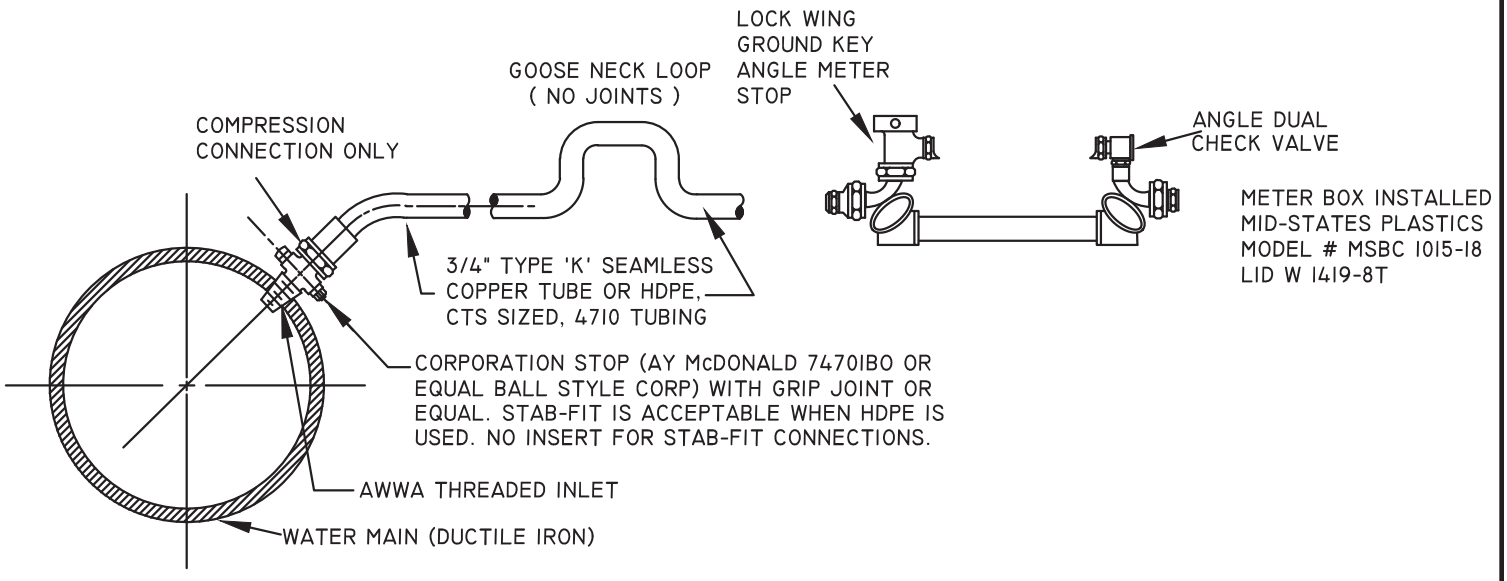
DRAWING NO.: A4.8

REV.: 1



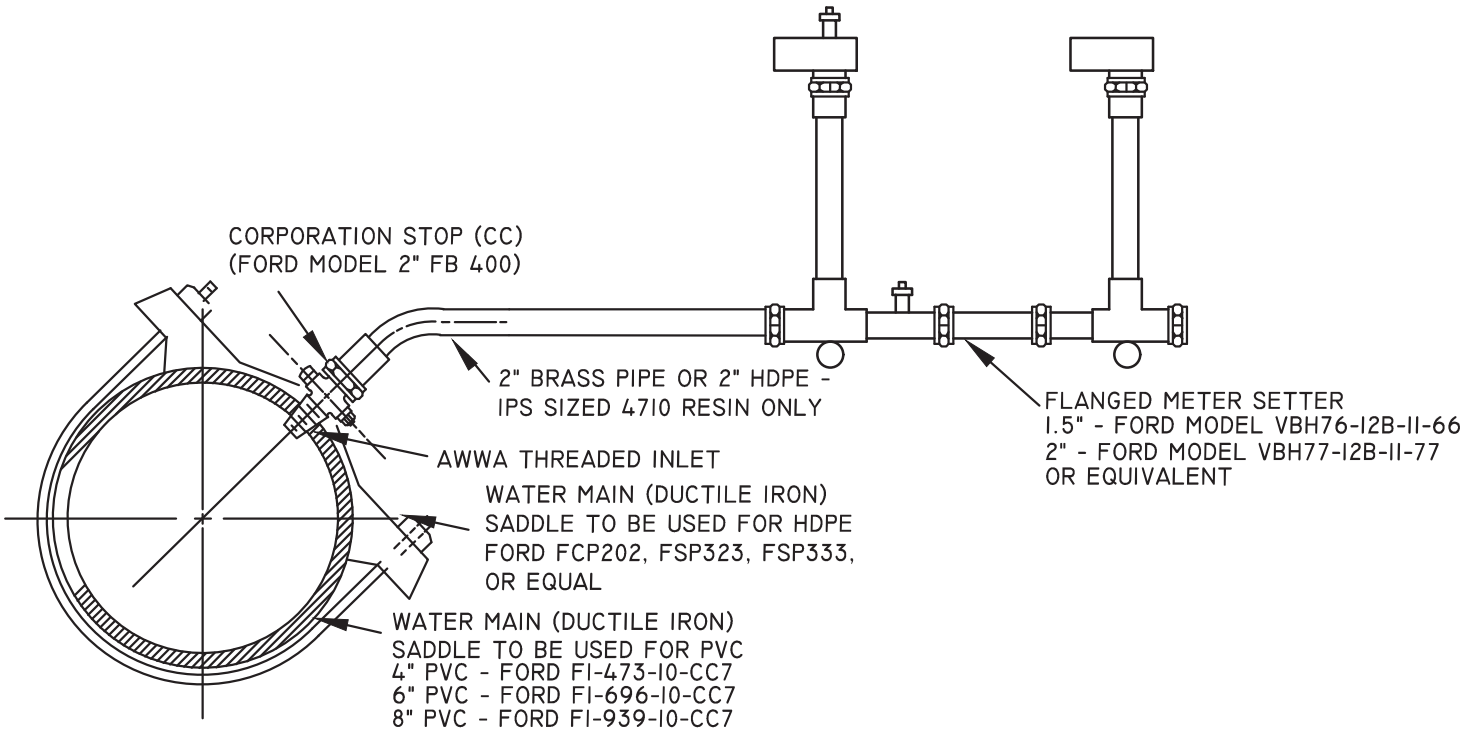
NOTE: ON WATERLINES, ALL CURB STOPS AND METER BOXES TO BE FORD OR EQUAL. PIPE SIZES TO BE SHOWN ON PLANS

PVC Water Main

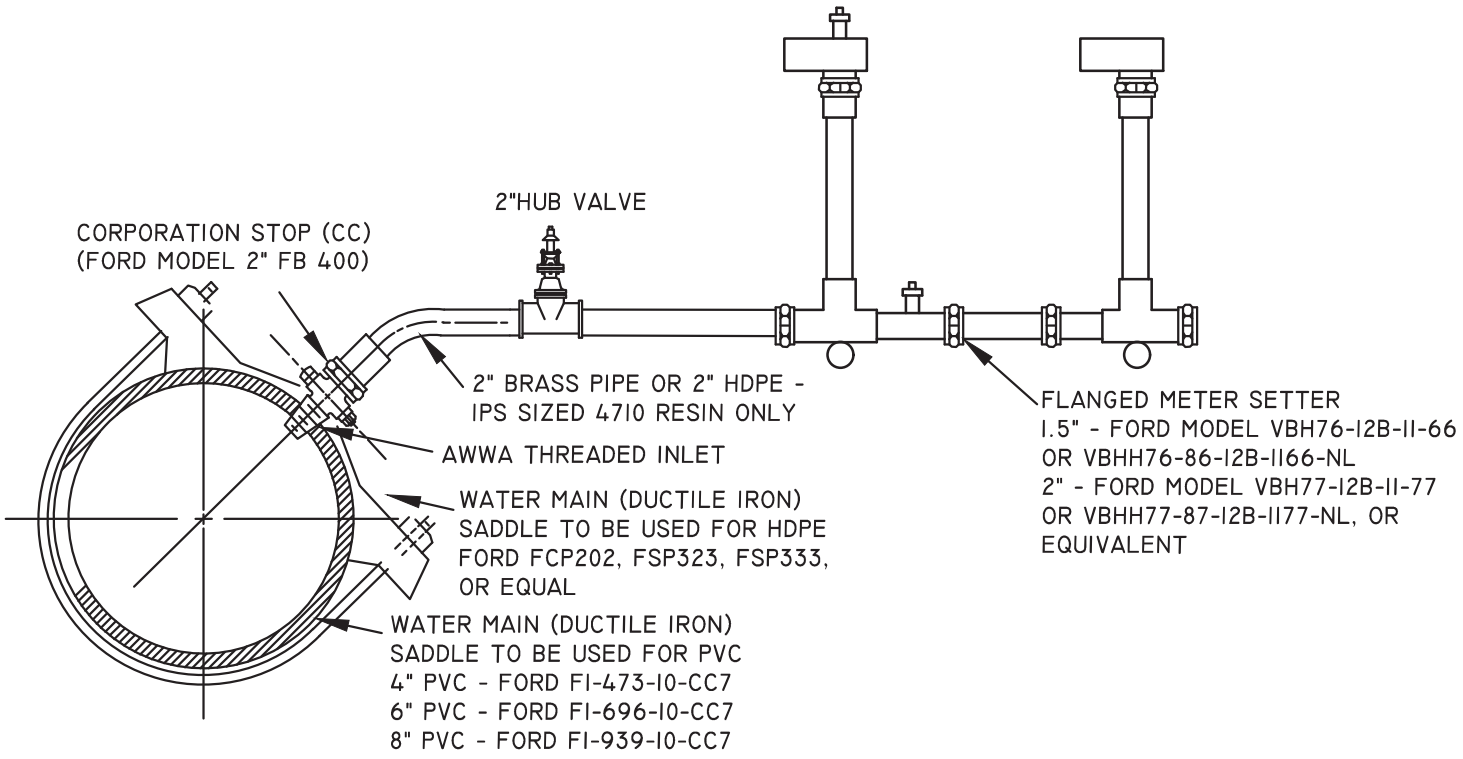


Ductile Iron Water Main

DRAWING TITLE	SCALE	DRAWING NO.	REV.
Service Lines	*N.T.S.*	*A4.9*	*2*

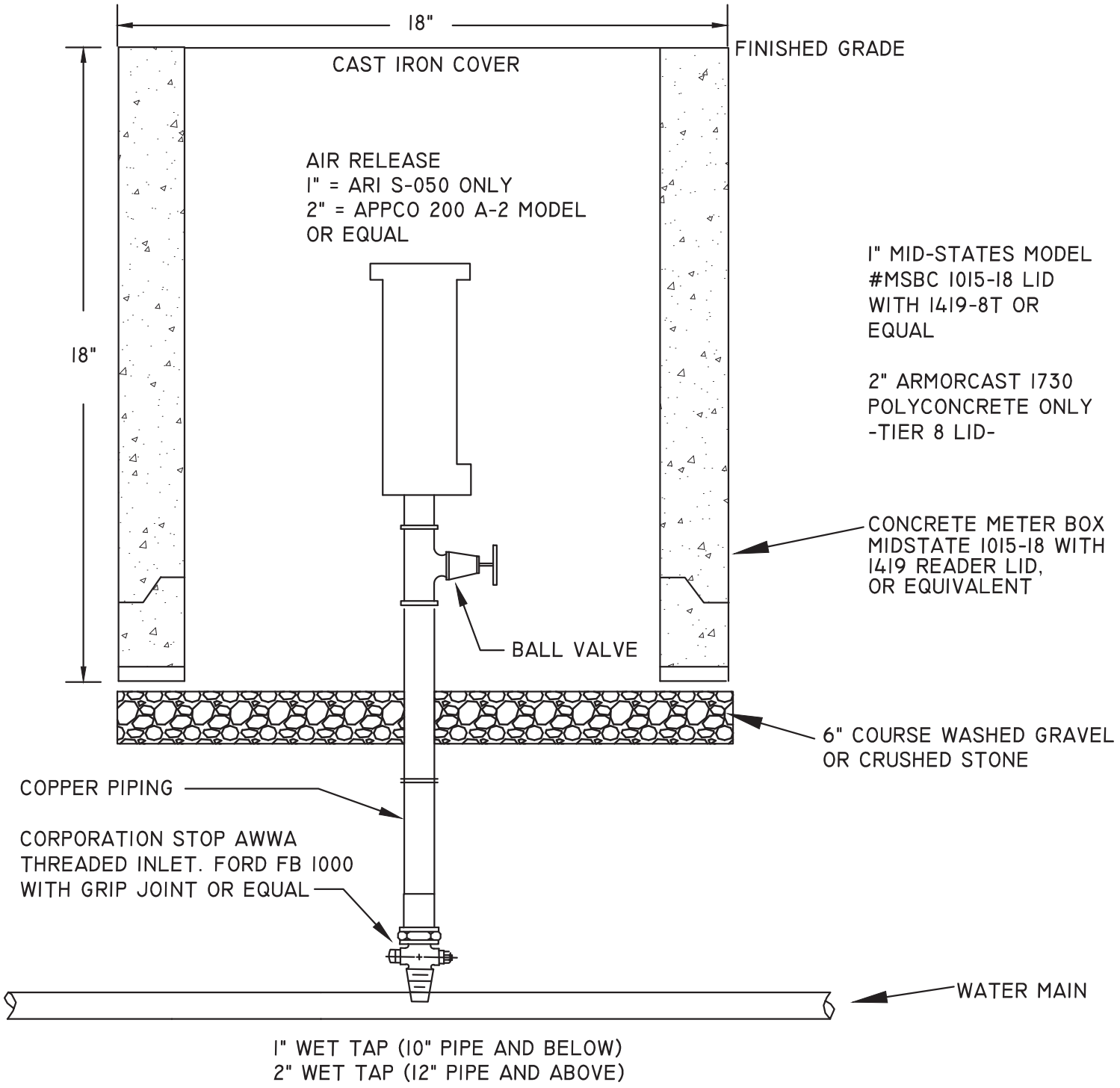


SHORT SIDE METER CONNECT

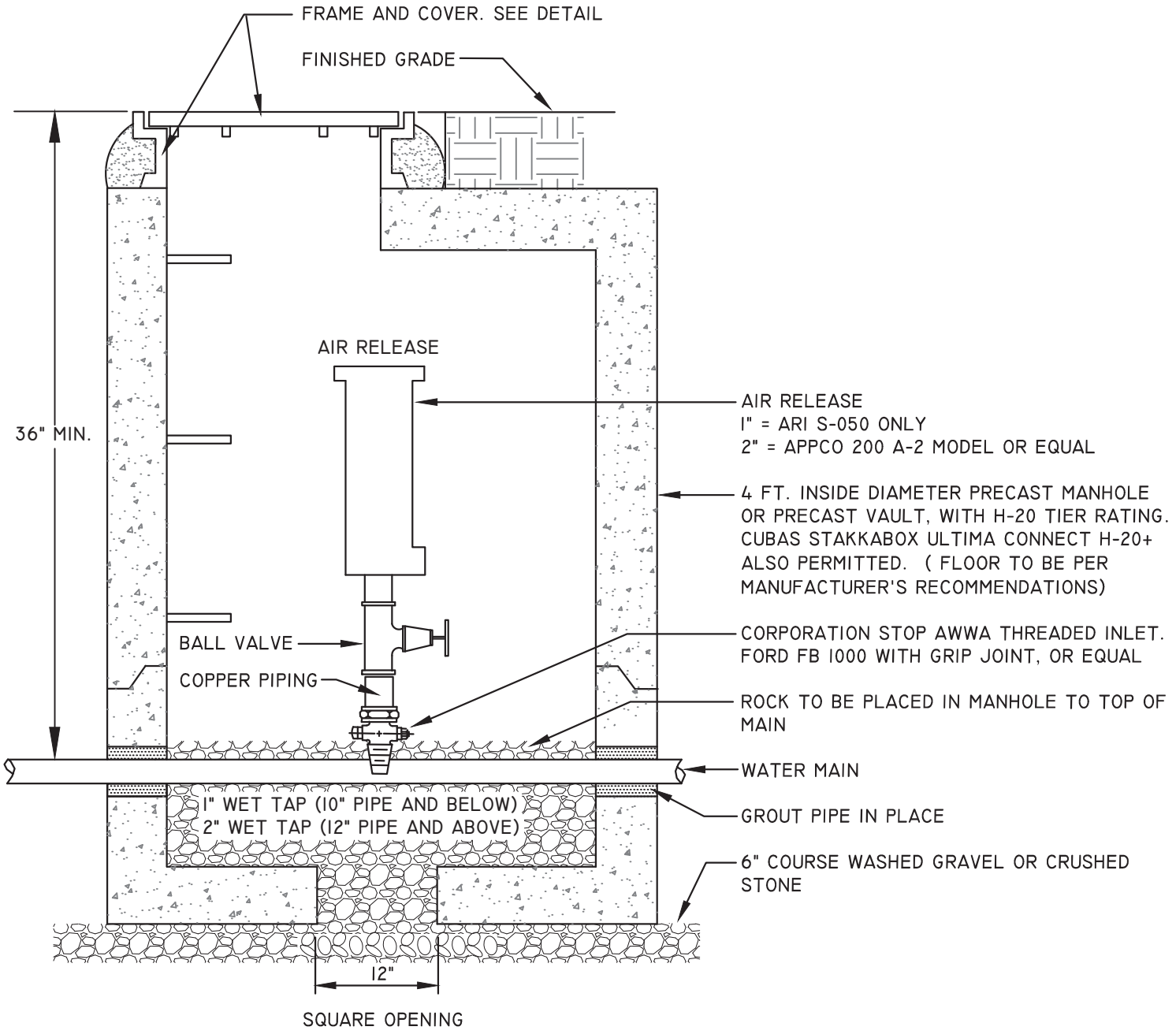


LONG SIDE METER CONNECT

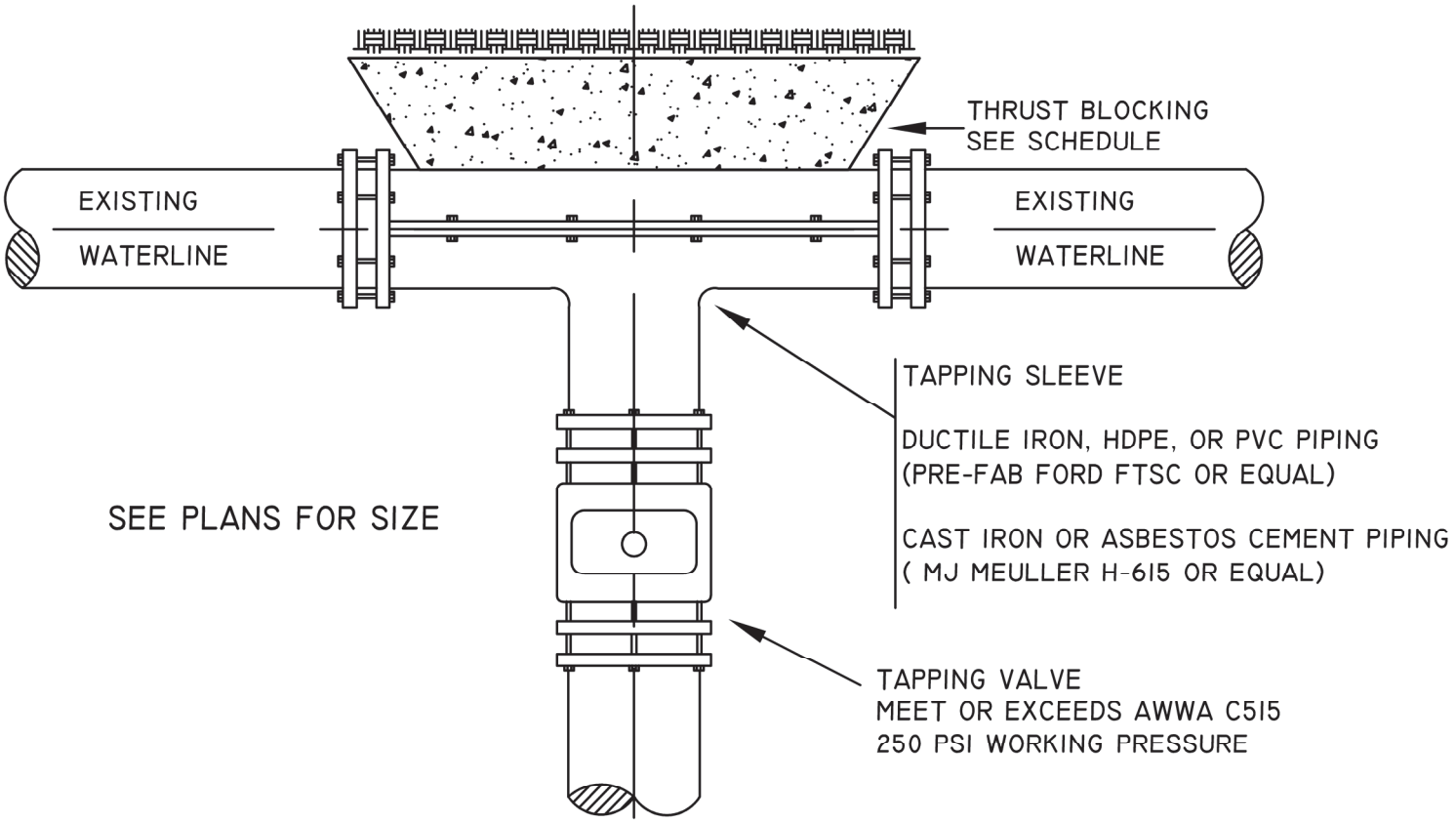
DRAWING TITLE	SCALE	DRAWING NO.	REV.
SERVICE LINES, 2" METERS	N.T.S.	A4.10	3



DRAWING TITLE	SCALE	DRAWING NO.	REV.
AIR RELEASE VALVE & VAULT IN SOIL	*N.T.S.*	*A4.11*	*3*

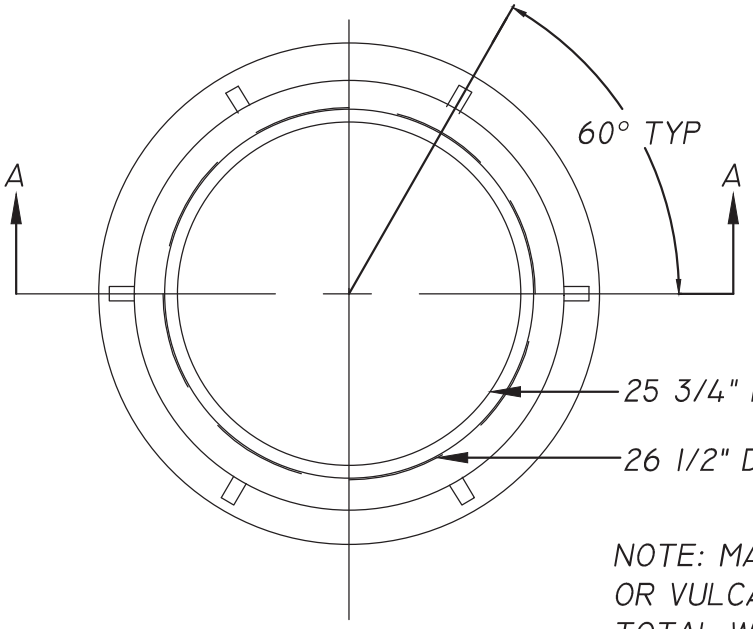


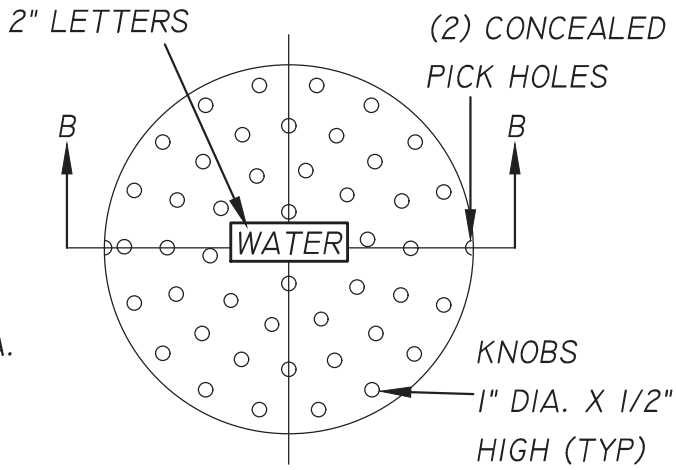
DRAWING TITLE	SCALE	DRAWING NO.	REV.
AIR RELEASE VALVE & VAULT IN STREET	N.T.S.	A4.12	4



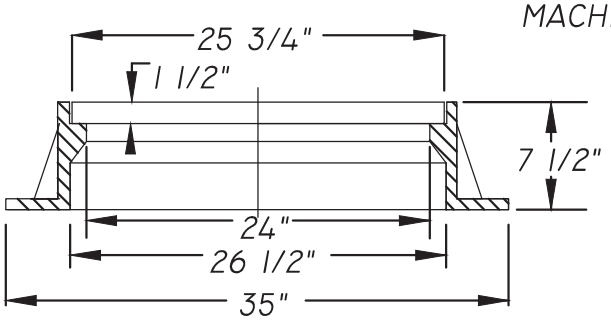
DRAWING TITLE	SCALE	DRAWING NO.	REV.
TYPICAL TAPPING VALVE AND SLEEVE	*N.T.S.*	*A4.13*	*1*

NOTE:
WHEN CUBAS STAKKABOX IS USED, CUBAS AX-S COMPOSITE FRAME AND COVER MEETING ALL REQUIRED TIER RATINGS IS TO BE USED.

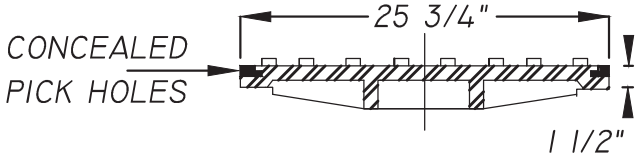




NOTE: MANHOLE FRAMES & LIDS TO BE NEEHAN R-1643 OR VULCAN V-1312-61
TOTAL WT. 375 LBS. - FRAMES & COVERS SHALL BE MACHINED TO FIT.



SECTION A:A



SECTION B:B

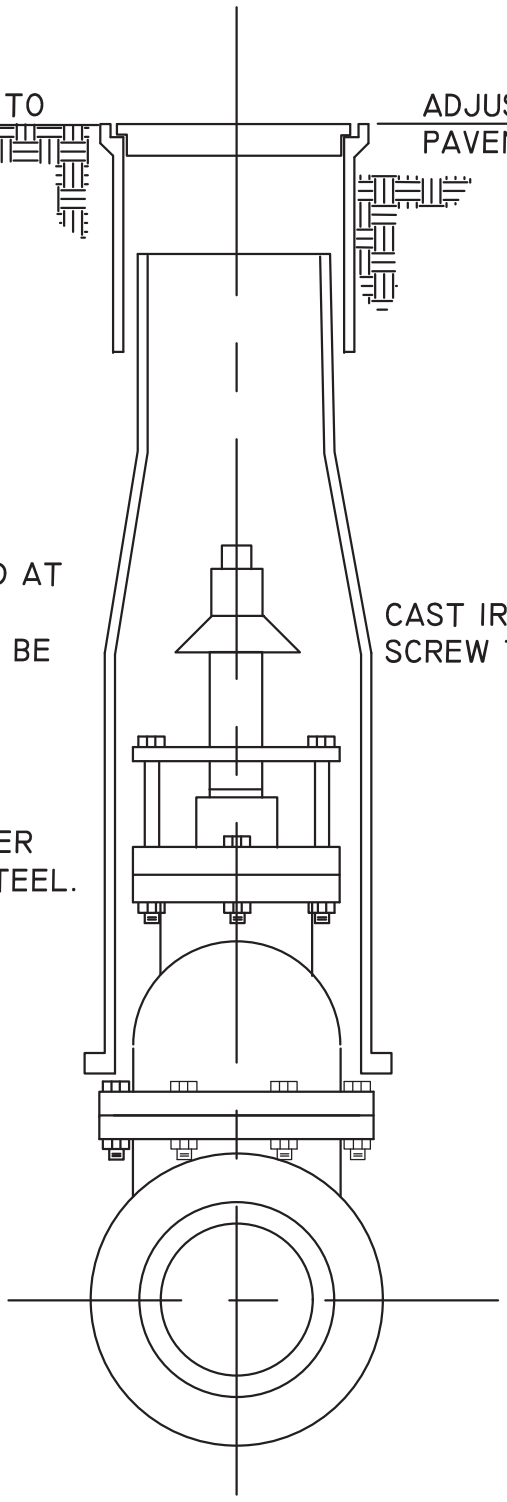
Typical Air Release Vault in Street
Pressure Reducing Vault

DRAWING TITLE	SCALE	DRAWING NO.	REV.
Type 'A' CI Manhole Frame & Cover	N.T.S.	A4.14	1

NOTE: VALVE LID TO BE LABELED AS WATER

BRING FINAL EARTH FILL GRADE TO THE TOP OF VALVE BOX

ADJUST VALVE BOX TOP TO FINAL PAVEMENT GRADE



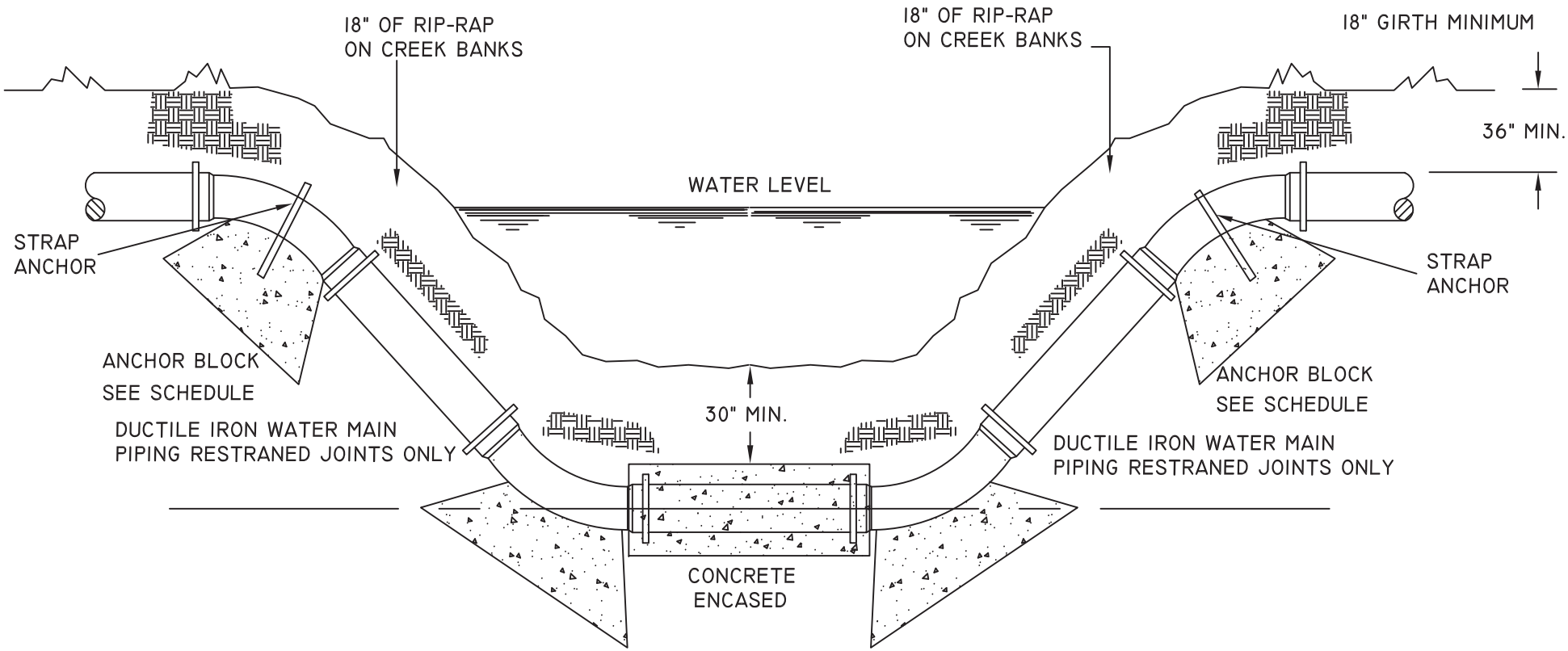
NOTE:
SHOULD HUB NUT BE INSTALLED AT A DEPTH GREATER THAN 6', A VALVE EXTENSION STEM SHALL BE INSTALLED TO ELEVATE THE OPERATING POSITION TO NO GREATER THAN 12". EXTENSION SHALL BE NON-TELESCOPIC IN DESIGN, AND CRAFTED OF EITHER DUCTILE IRON OR STAINLESS STEEL.

CAST IRON, TWO PIECE SCREW TYPE VALVE BOX

DRAWING TITLE	SCALE	DRAWING NO.	REV.
TYPICAL VALVE BOX SETTING	*N.T.S.*	*A4.15*	*1*

DRAWING TITLE

TYPICAL CREEK CROSSING, WATER MAIN



NOTES:

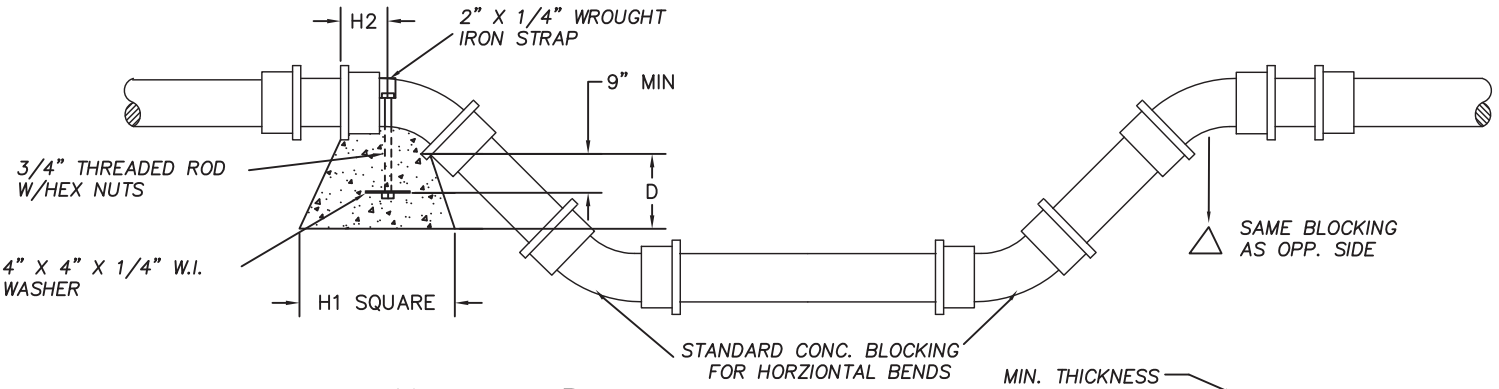
1. BLOCK AND PAD SIZES INDICATED IN SCHEDULE ARE FOR SOILS WITH A MIN. BEARING CAPACITY OF 2500 P.S.F. REMOVE SOILS WHICH ARE OF LESSER STRENGTH.
2. FOR DETAILS COVERING CONDITION NOT SHOWN SUBMIT TO PROJECT MANAGER FOR APPROVAL.
3. ALL JOINTS TO BE RESTRAINED WITH MEGA-LUG OR EQUAL.
4. ALL PUSH-ON JOINTS WITHIN 12' OF A BEND SHALL BE INSTALLED WITH GRIP-RING STYLE GASKETS PER MANUFACTURER RECOMMENDATIONS.

SCALE: N.T.S.

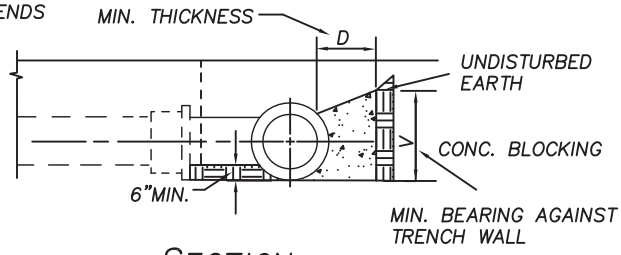
DRAWING NO.: A4.16

REV.: 1

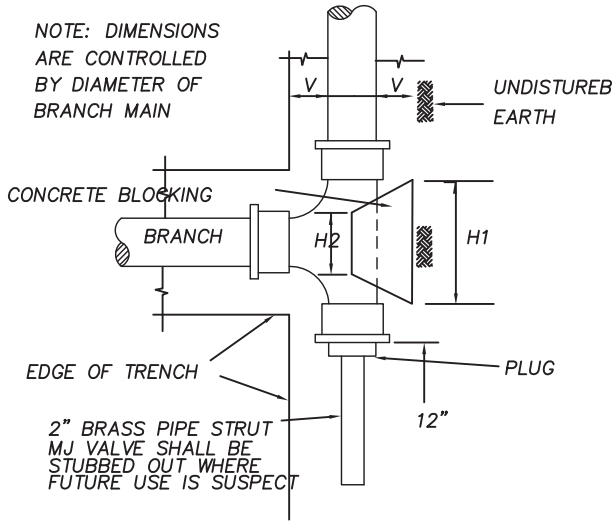
1. ALL JOINTS SHALL BE RESTRAINED WITH MEGA-LUG OR EQUAL.
2. ALL PUSH-ON JOINTS WITHIN 12' OF A BEND SHALL BE RESTRAINED WITH GRIP-RING STYLE GASKET AS RECOMMENDED BY PIPE MANUFACTURER.



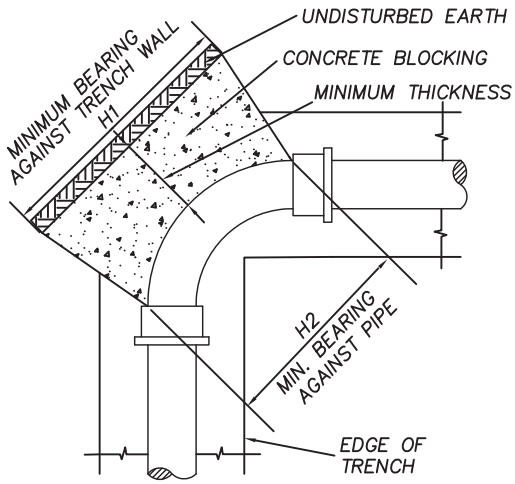
VERTICAL BENDS



SECTION



TEES, CROSSES AND PLUGS

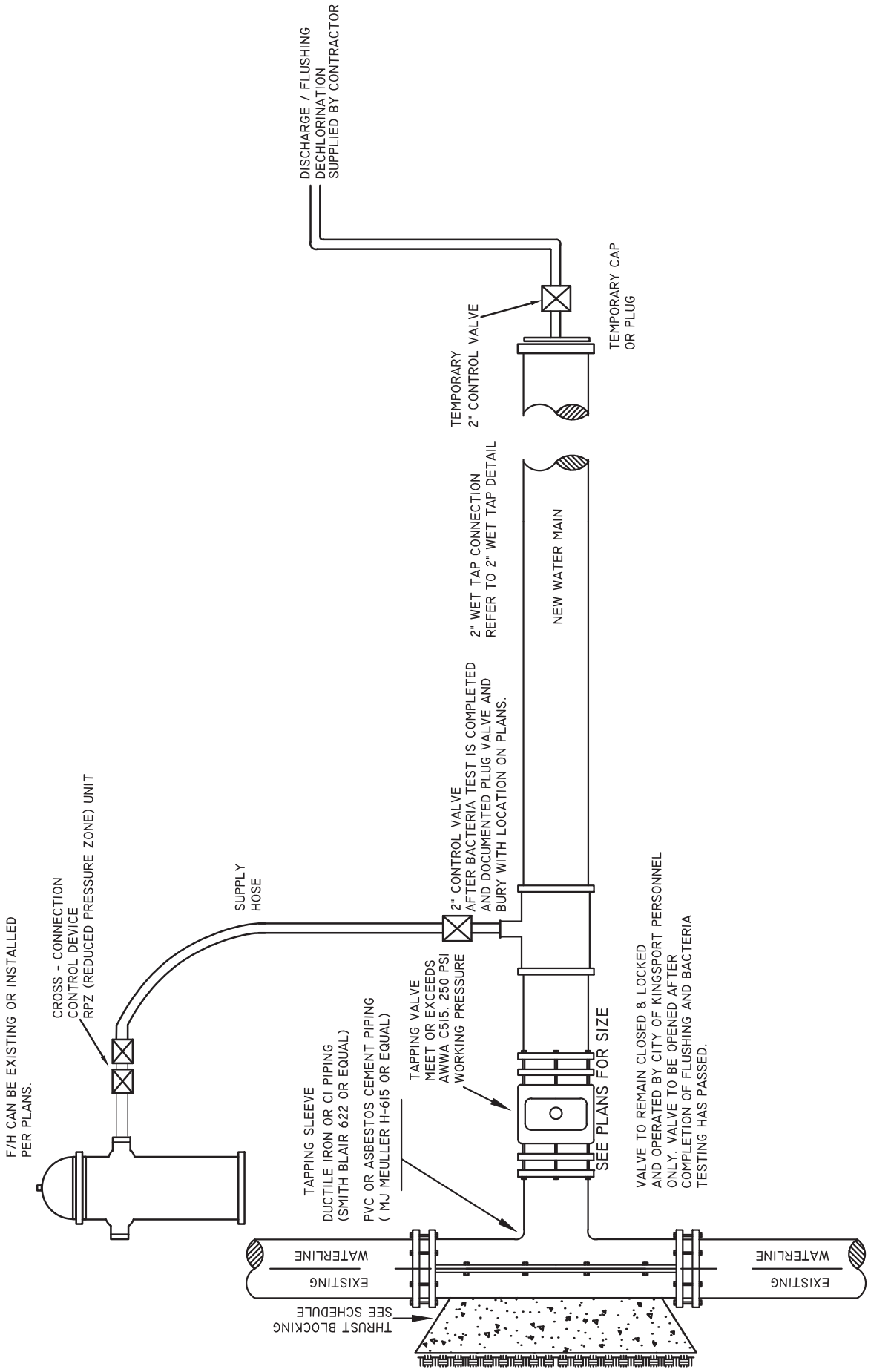


HORIZONTAL BENDS

TABLE OF DIMENSIONS FOR CONCRETE BLOCKING

SIZE	TEES, CROSSES & PLUGS					90° BENDS					45° BENDS					22 1/2° BENDS					11 1/4° BENDS					SIZE
PIPE	HI	H2	V	D	CU. FT.	HI	H2	V	D	CU. FT.	HI	H2	V	D	CU. FT.	HI	H2	V	D	CU. FT.	HI	H2	V	D	CU. FT.	PIPE
2"& 2 1/4"	18"	10"	12"	18"	1.90	18"	10"	12"	18"	1.90	18"	6"	12"	18"	1.50	18"	6"	12"	18"	1.50	18"	6"	12"	18"	1.50	2"& 2 1/4"
3"& 4"	24"	12"	12"	18"	2.25	24"	12"	12"	18"	2.25	18"	8"	12"	18"	1.60	18"	8"	12"	18"	1.60	18"	8"	12"	18"	1.60	3"& 4"
6"	24"	16"	18"	18"	3.50	30"	16"	18"	18"	4.05	24"	10"	16"	18"	3.20	24"	10"	16"	18"	3.20	24"	10"	16"	18"	3.20	6"
8"	36"	18"	18"	18"	5.05	39"	18"	24"	18"	7.30	30"	11"	18"	18"	3.95	24"	11"	18"	18"	3.45	24"	11"	16"	18"	3.40	8"
10"	48"	24"	18"	24"	7.15	54"	32"	24"	18"	10.25	24"	18"	21"	18"	4.60	24"	18"	21"	18"	4.60	24"	18"	21"	18"	4.60	10"
12"	54"	30"	24"	24"	13.4	54"	32"	36"	24"	18.15	42"	18"	24"	24"	9.60	24"	18"	24"	24"	6.60	24"	18"	21"	24"	6.10	12"
14"	60"	32"	30"	24"	17.9	60"	40"	42"	24"	25.0	44"	24"	30"	24"	13.2	30"	24"	24"	24"	9.2	27"	21"	24"	24"	7.90	14"
16"	66"	34"	36"	24"	22.5	69"	48"	48"	24"	29.0	48"	30"	36"	24"	17.0	36"	30"	27"	24"	11.8	27"	24"	27"	24"	9.10	16"
18"	72"	36"	40"	24"	30.0	72"	48"	60"	24"	38.0	48"	30"	42"	24"	21.0	42"	30"	30"	24"	15.0	30"	30"	36"	24"	13.0	18"
20"	84"	38"	42"	24"	36.0	84"	48"	66"	24"	48.0	54"	40"	46"	24"	27.0	48"	36"	36"	24"	19.0	42"	40"	36"	24"	18.0	20"
24"	108"	42"	48"	24"	45.0	108"	60"	72"	24"	68.0	60"	48"	56"	24"	41.0	54"	42"	42"	24"	25.0	48"	42"	42"	24"	23.0	24"
30"	132"	52"	60"	24"	70.0	132"	72"	92"	24"	104.0	72"	48"	76"	24"	58.0	60"	48"	48"	24"	32.0	54"	48"	54"	24"	32.0	30"
36"	162"	58"	72"	24"	100.0	162"	96"	108"	24"	150.0	84"	72"	84"	24"	85.0	66"	72"	60"	24"	50.0	60"	48"	60"	24"	40.0	36"

DRAWING TITLE	SCALE	DRAWING NO.	REV.
CONCRETE THRUST BLOCKING FOR WATER LINES	N.T.S.	A4.17	1



DRAWING TITLE	SCALE	DRAWING NO.	REV.
TEMP. TESTING & FLUSHING CONN. TO FIRE HYDRANT	N.T.S.	A4.18	1

DRAWING TITLE

TEMP. TESTING & FLUSHING CONN. TO EXIST. WATERLINE

SCALE

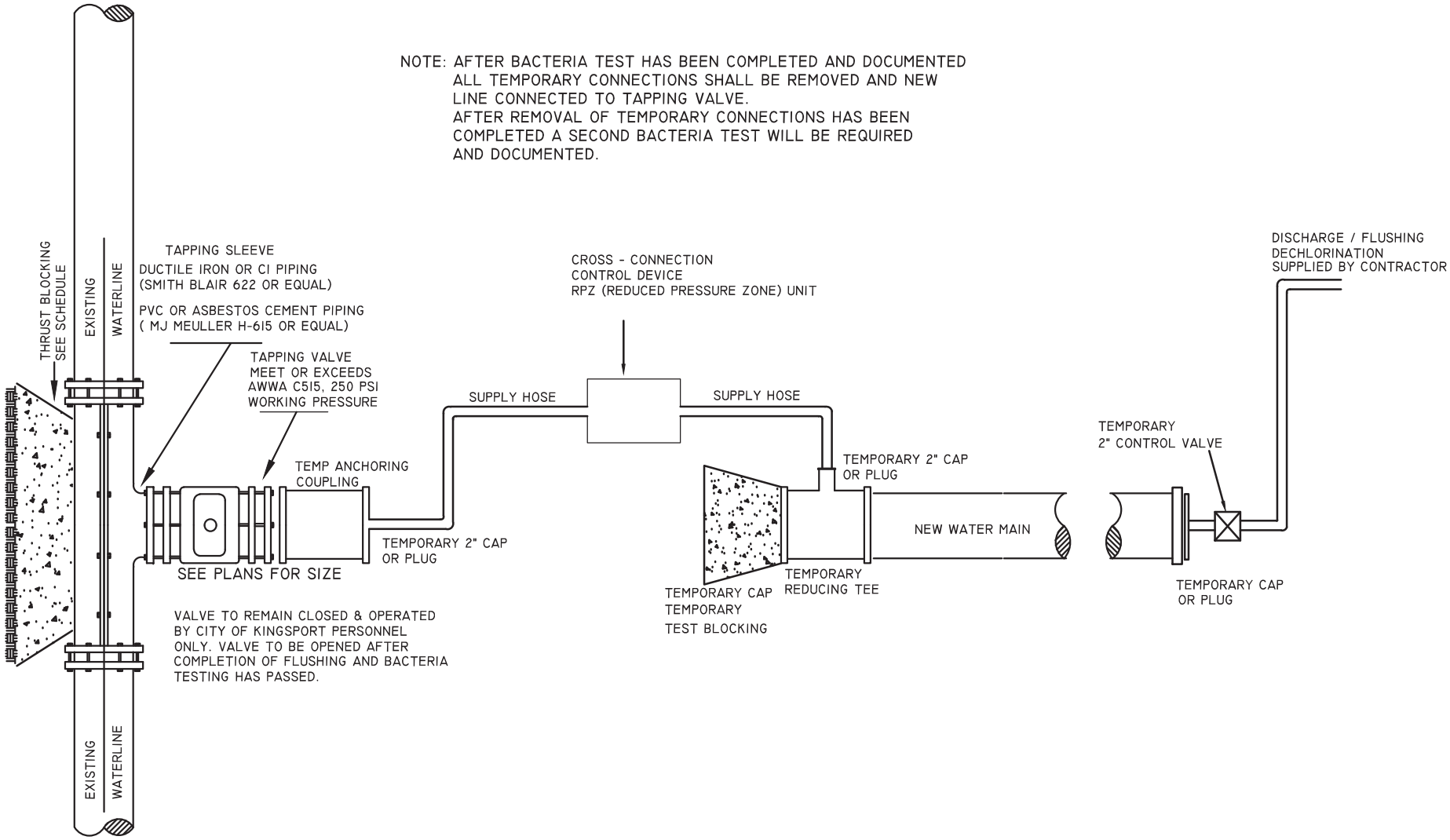
N. T. S.

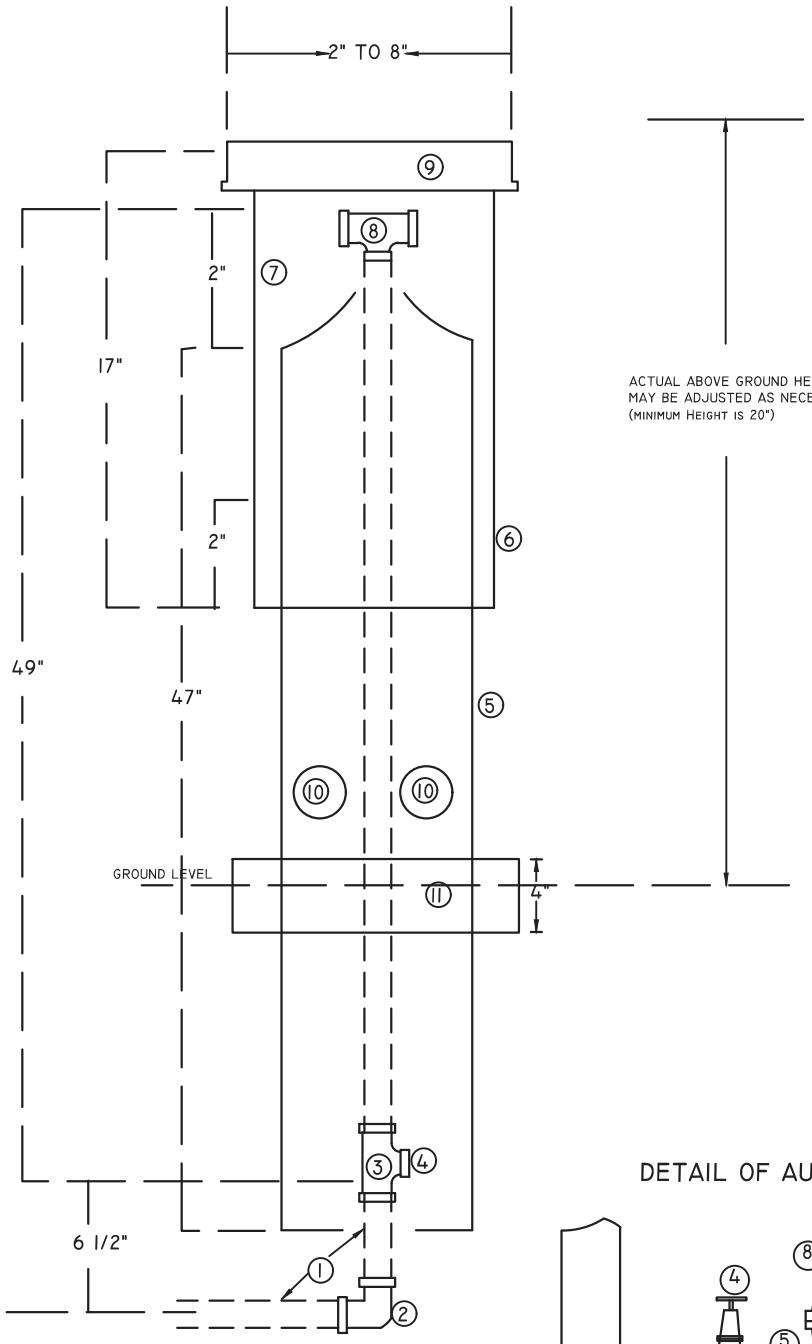
DRAWING NO.

A4.19

REV.

1



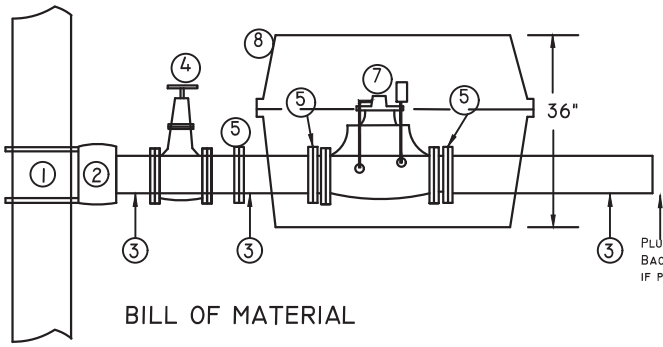


DISCHARGE DETAIL - 1

BILL OF MATERIAL

ITEM	DESCRIPTION
1 –	2" BRASS (SIZE APPROPRIATELY)
2 –	2" BRASS 90°
3 –	2" BRASS TEE
4 –	3/4" IRRIGATION AUTO - DRAIN
5 –	6" PVC SDR 35
6 –	1/4" X 2 1/2" HEX CAP BOLT GR5
7 –	8" PVC SDR 35
8 –	2" BRASS TEE
9 –	8" PVC CAP
10–	1" WATER DISPLACEMENT PORTS (X5)
11 –	4" CONCRETE PAD - 2 SQ. FT.

DETAIL OF AUTOMATIC FLUSHING ASSEMBLY

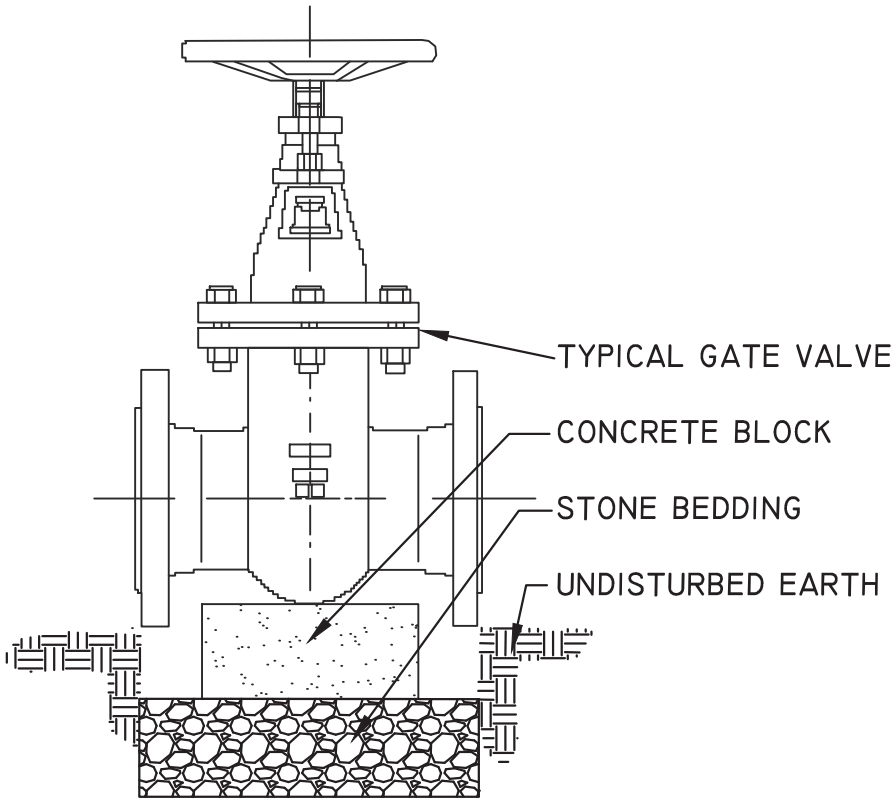


PLUMB TO ATMOSPHERE. (SEE DISCHARGE DETAIL). BACKFLOW CONTROL METHODS (9) TO BE FOLLOWED IF PLUMBING TO DITCH LINE IS PREFERRED.

BILL OF MATERIAL

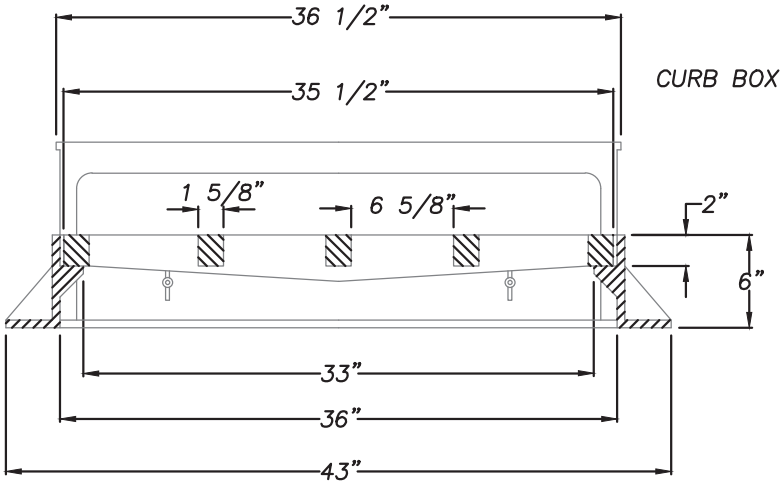
ITEM	DESCRIPTION
1 –	SMITH - BLAIR 313 SERIES 2" SERVICE SADDLE (APP. SIZED, CTS)
2 –	FORD FB - 400 7TA 2" CORPORATION STOP CTS
3 –	2" BRASS, IPT
4 –	2" RESILIENT WEDGE GATE VALVE - M & H - KS - FW
5 –	3" FLANGE - 2" TAP 150 LB CLASS
6 –	2" BALL - VALVE, 150 WSP, 300WOG, FIPT, DOMESTIC
7 –	DIG 710A-200 BATTERY OPERATED CONTROLLER WITH 2" NPT VALVE
8 –	CARSON 1730 - 18-5, METER BOX (X2)
9 –	2" WILKINS 350 DCV ONLY - PLUMBED UPSTREAM OF DIG 710A-200 BATTERY OPERATED CONTROLLER WITH 2" NPT VALVE

DRAWING TITLE	SCALE	DRAWING NO.	REV.
AUTOMATIC FLUSHING DEVICE	*N.T.S.*	*A4.20*	*1*

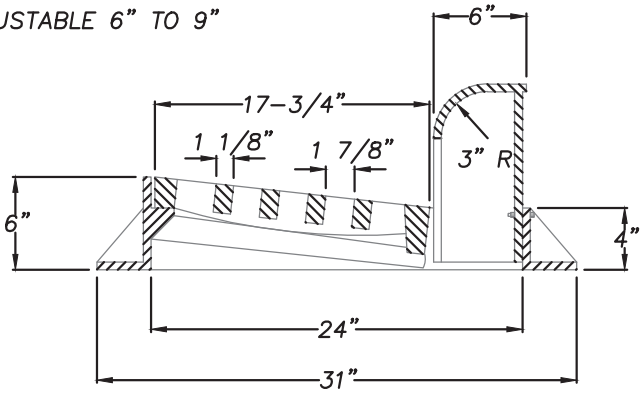


ALL GATE VALVES SHALL BE SUPPORTED WITH A SOLID CONCRETE BLOCK ON A 6" BED OF #57 STONE.

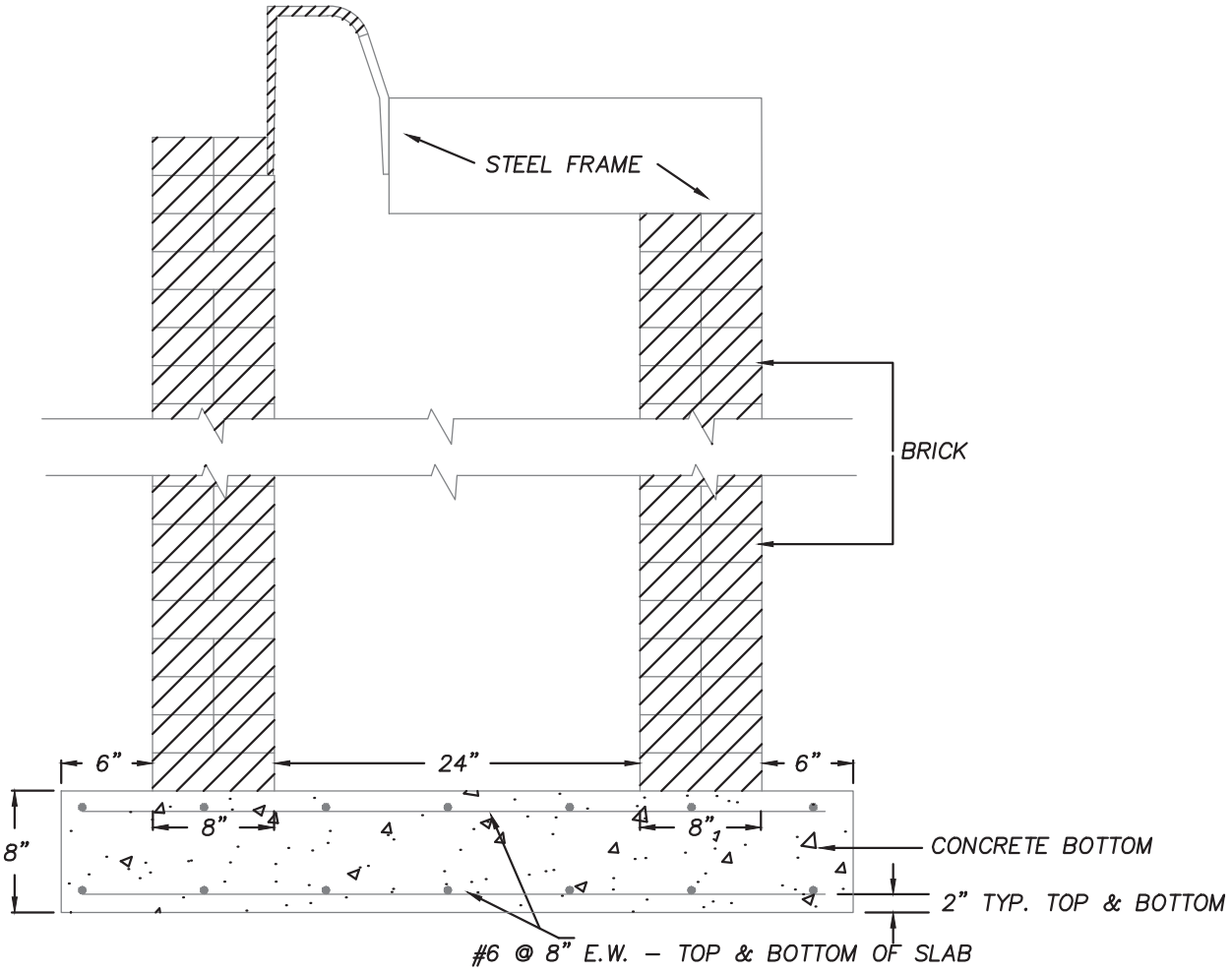
DRAWING TITLE	SCALE	DRAWING NO.	REV.
TYPICAL GATE VALVE BEDDING	*N.T.S.*	*A4.21*	



CURB BOX ADJUSTABLE 6" TO 9"

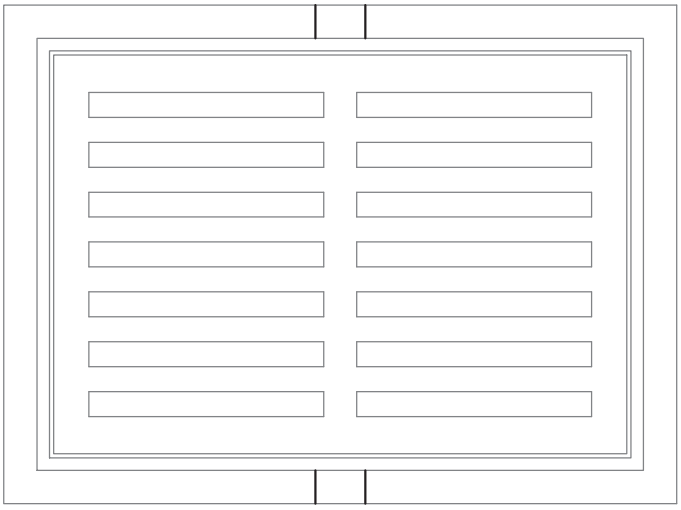


ALL STORM SEWER STRUCTURES ARE TO BE NPDES II COMPLIANT AND MARKED "DUMP NO WASTE! DRAINS TO WATERWAY".



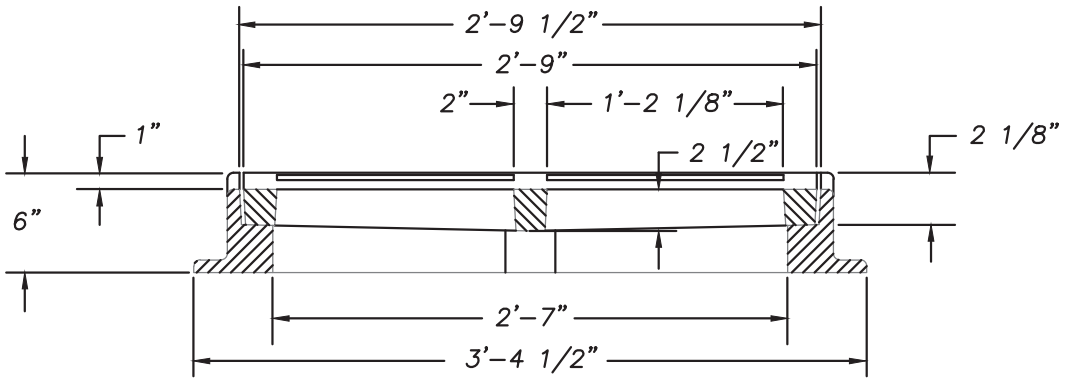
NEENAH R-3290 OR EQUAL
J.R. HOE & SONS HOE-525 OR EQUAL

DRAWING TITLE	SCALE	DRAWING NO.	REV.
CURB TYPE CATCH BASIN FRAME & GRATE	N.T.S.	A5.1	

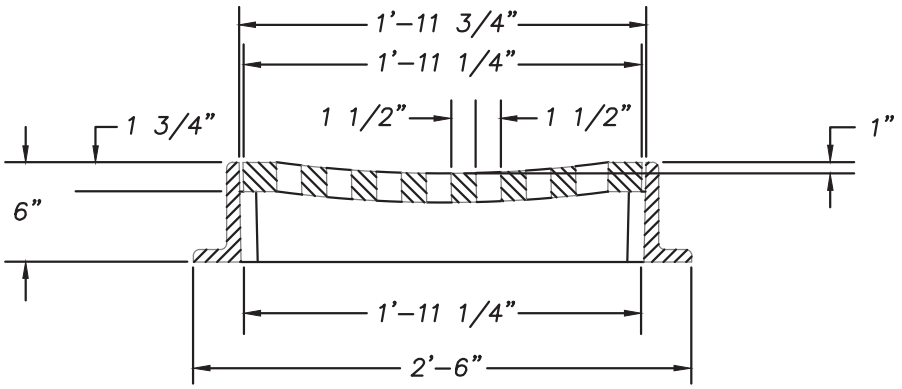


PLAN

ALL STORM SEWER STRUCTURES ARE TO BE NPDES II COMPLIANT AND MARKED "DUMP NO WASTE! DRAINS TO WATERWAY".



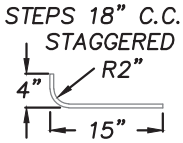
LONG SECTION



CROSS SECTION

J.R. HOE & SONS HOE-449 OR EQUAL

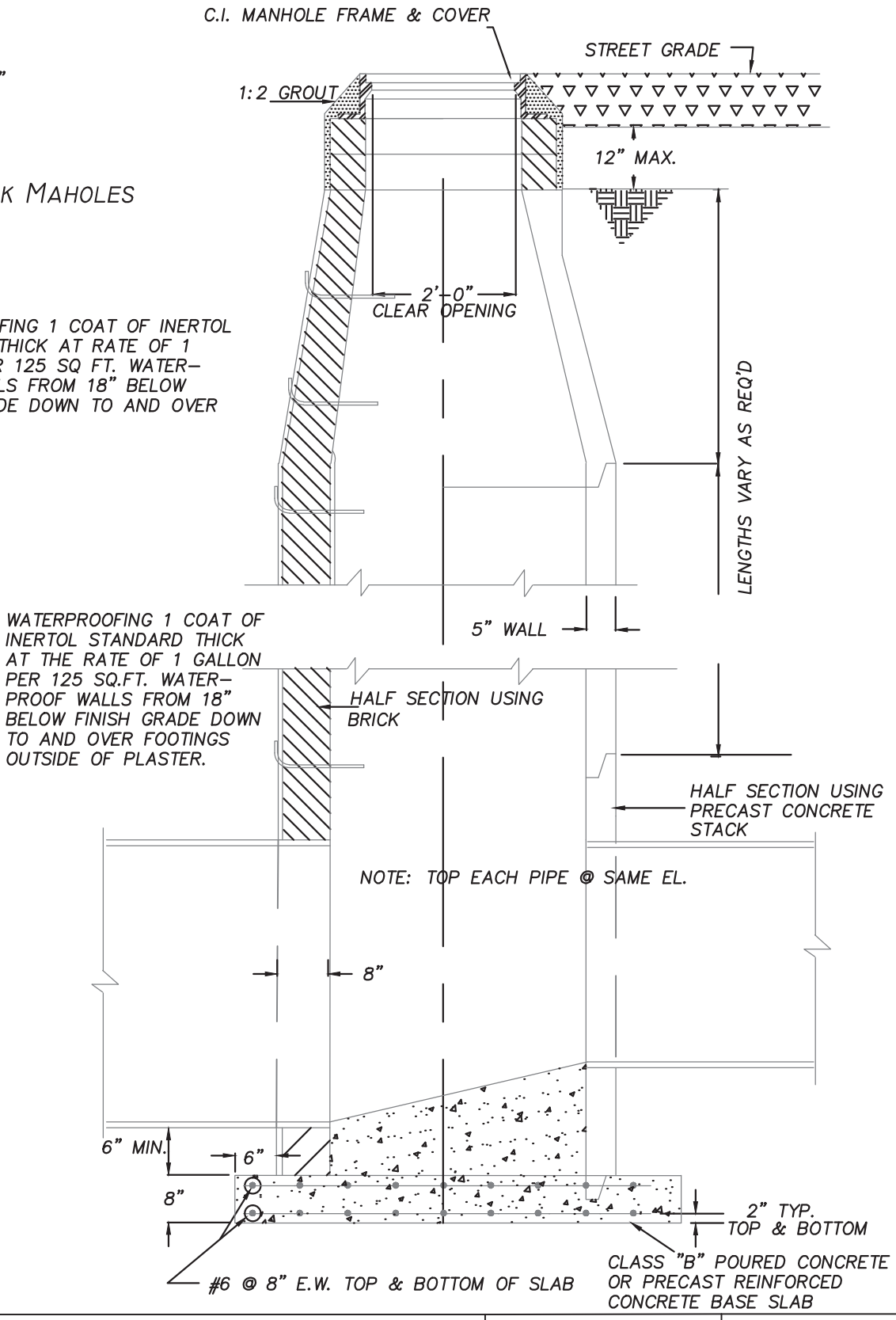
DRAWING TITLE	SCALE	DRAWING NO.	REV.
FLAT TYPE CATCH BASIN FRAME & GRATE	N.T.S.	A5.2	



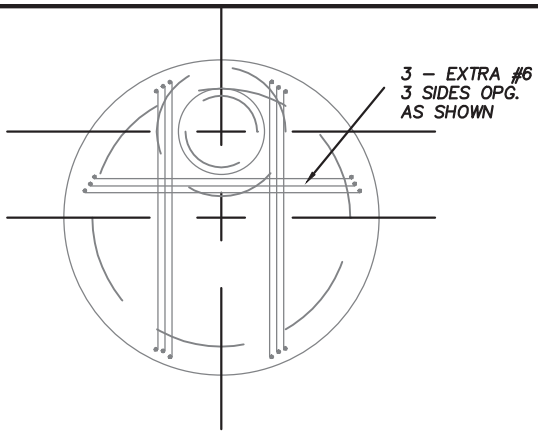
DETAILS
STEPS FOR BRICK MAHOLES

NOTE:
TOP OF MANHOLE FRAME TO EXTEND AT LEAST 10" BUT NO MORE THAN 12" ABOVE NATURAL GROUND EXCEPT WHERE LOCATED IN STREETS OR WHERE SHOWN OTHERWISE ON THE PLANS

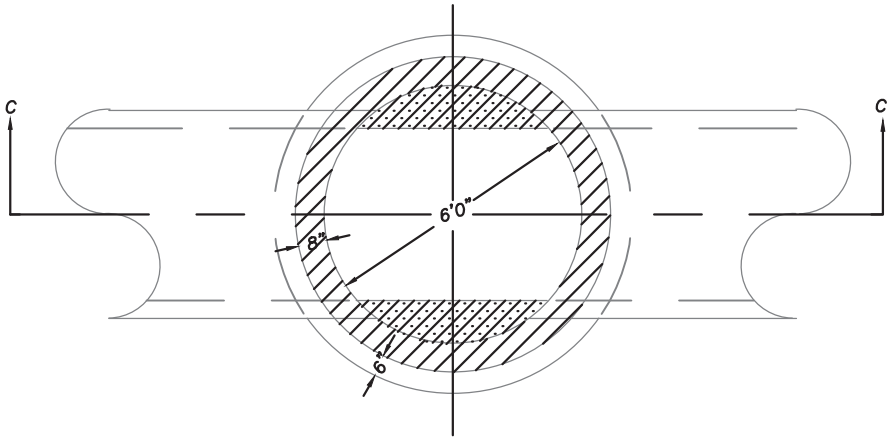
NOTE:
WATERPROOFING 1 COAT OF INERTOL STANDARD THICK AT RATE OF 1 GALLON PER 125 SQ FT. WATER–PROOF WALLS FROM 18" BELOW FINISH GRADE DOWN TO AND OVER FOOTINGS



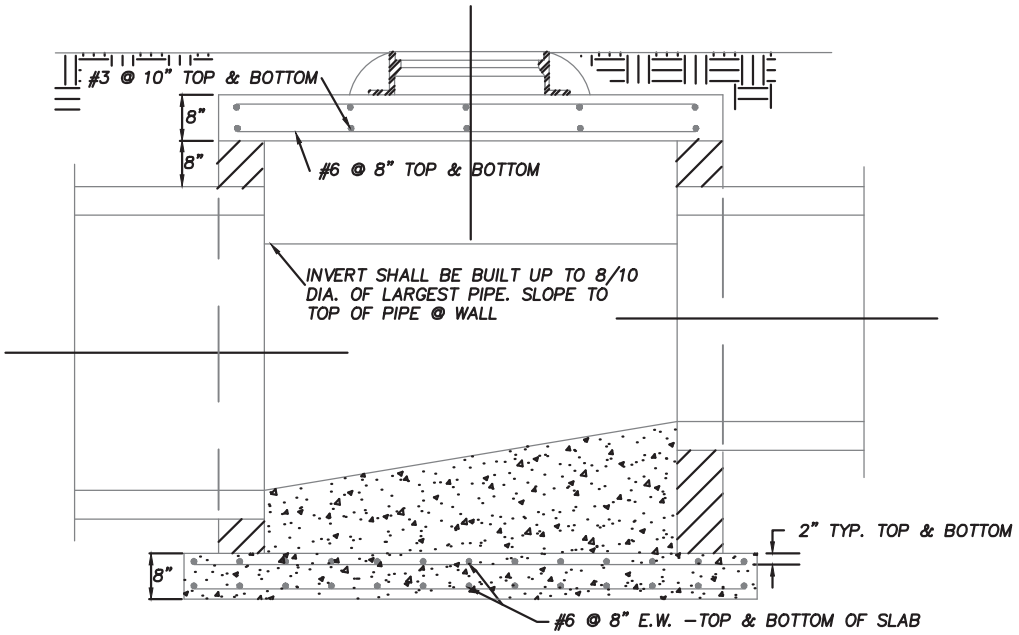
DRAWING TITLE	SCALE	DRAWING NO.	REV.
STORM SEWER MAHOLE, 4', 5', OR 6' DIAMETER	N.T.S.	A5.3	



MANHOLE TOP

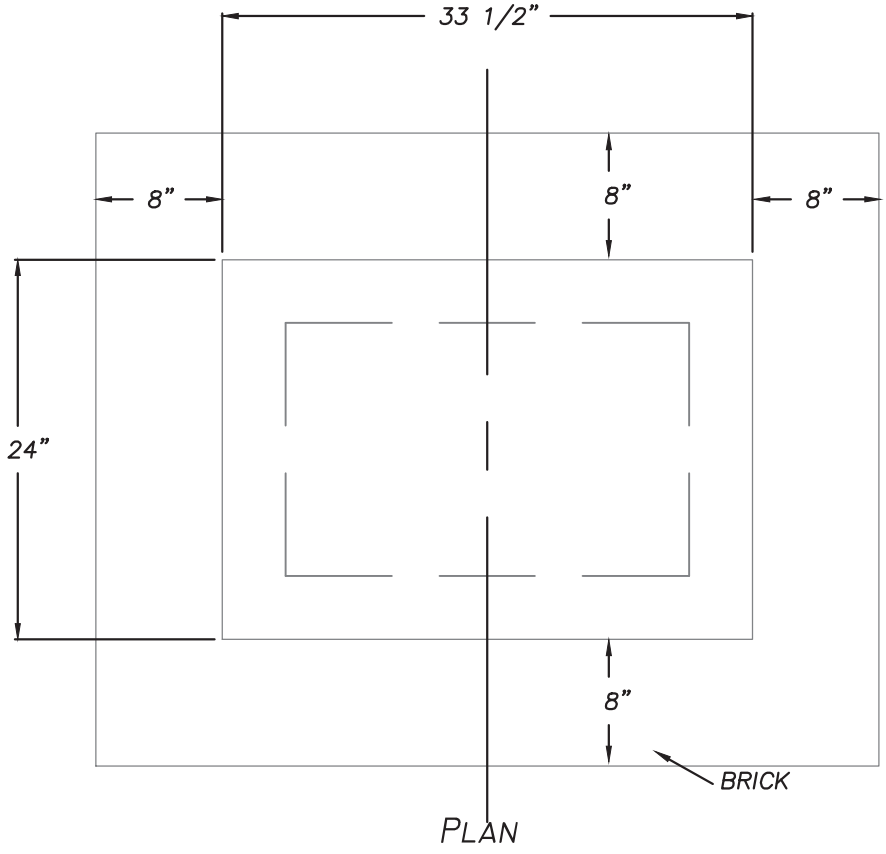


PLAN

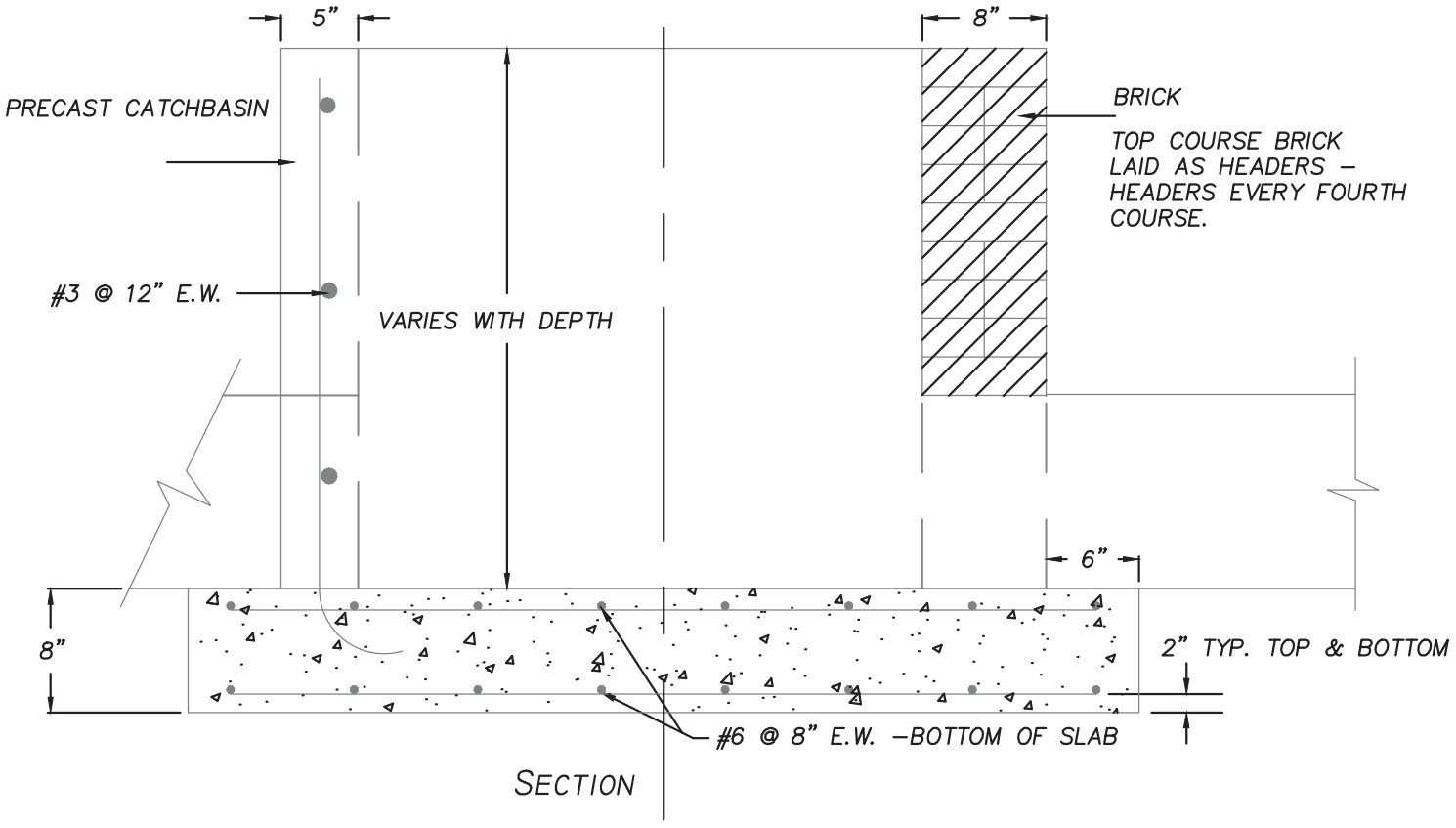


SECTION C-C

DRAWING TITLE	SCALE	DRAWING NO.	REV.
SHALLOW STORM SEWER MANHOLE	N.T.S.	A5.4	



PLAN

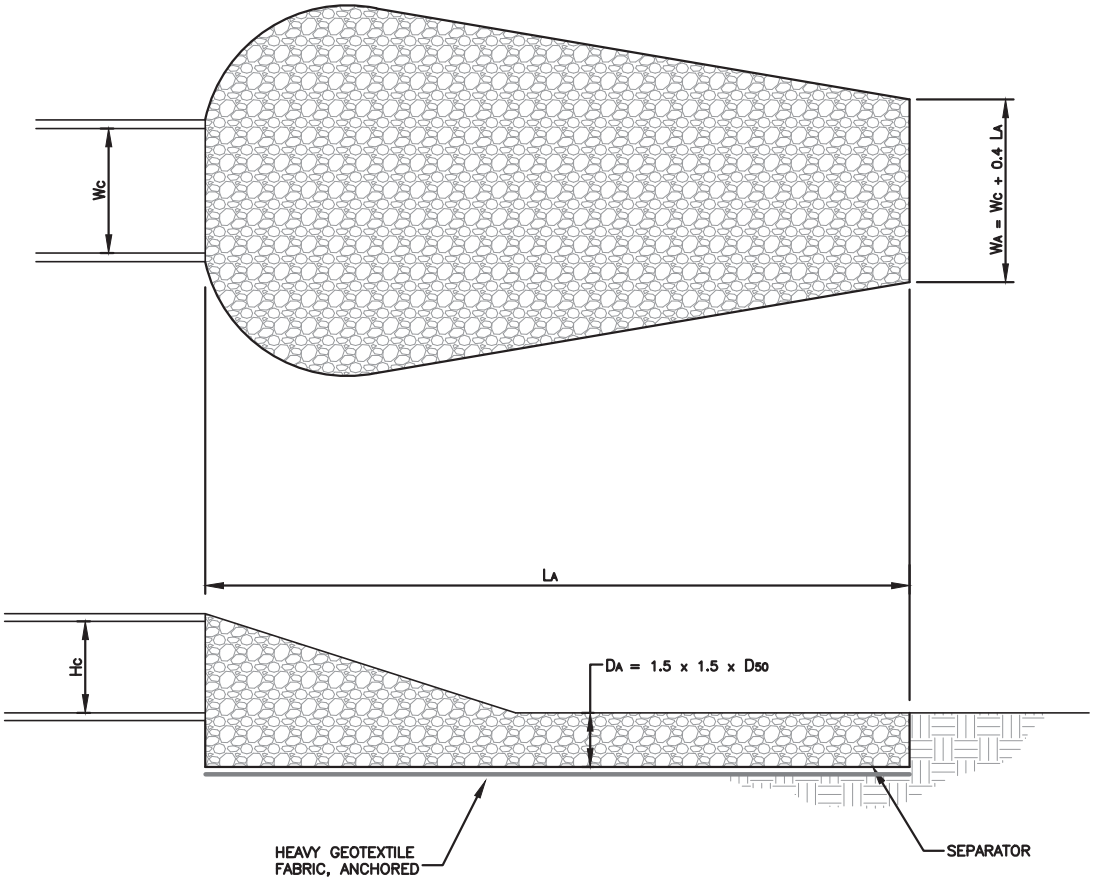


SECTION

NOTE: WHERE PRECAST CATCHBASINS ARE SUPPLIED, MANUFACTURERS RECOMMENDATIONS SHALL BE FOLLOWED

DRAWING TITLE	SCALE	DRAWING NO.	REV.
STORM SEWER CATCH BASIN	N.T.S.	A5.5	

H_C = HEIGHT OF CULVERT
W_C = WIDTH OF CULVERT
L_A = LENGTH OF RIP-RAP APRON
W_A = WIDTH OF RIP-RAP APRON AT END
D_{50} = MEDIAN RIP-RAP SIZE
D_{MAX} = MAXIMUM SIZE OF RIP-RAP = 1.5 D_{50}
D_A = DEPTH OF RIP-RAP APRON = 1.5 D_{MAX}
SEPARATOR = GEOTEXTILE UNDERLAYMENT OR GRAVEL FILTER BLANKET



TAILWATER > 0.5 Hc AND ASSUMING FULL CULVERT FLOW (HIGH TAILWATER CONDITIONS)

DRAWING TITLE	SCALE	DRAWING NO.	REV.
STORM WATER OUTLET PROTECTION	N.T.S.	A5.6	-

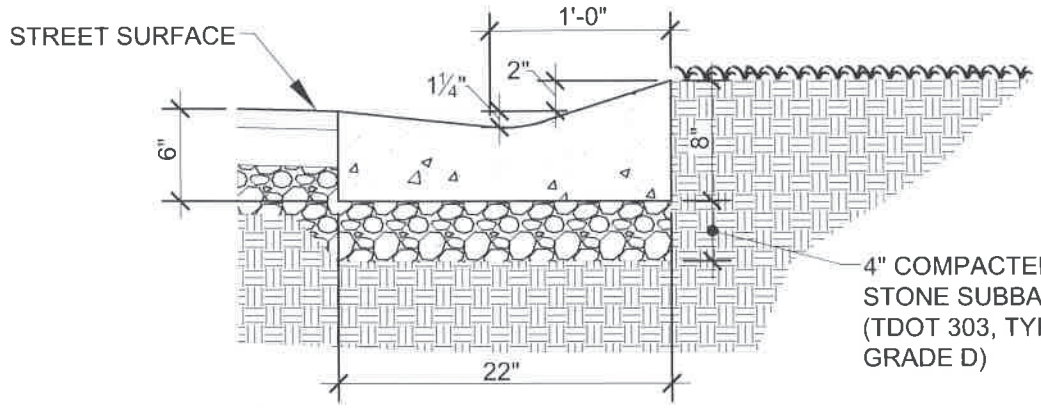
6" COMBINED CURB AND GUTTER (6-30)

1. ALL NON-MOUNTABLE OR ROLLED CURB AND GUTTER TO BE 6" CONCRETE COMBINED CURB AND GUTTER TYPE 6-30.
2. PLEASE SEE TDOT STANDARD DRAWING RP-VC-10, LATEST REVISION FOR 6" CONCRETE COMBINED CURB AND GUTTER DETAILS.
3. CURB AND GUTTER AND SIDEWALK JOINTS SHALL ALIGN.

DETACHED CURB

1. PLEASE SEE TDOT STANDARD DRAWING RP-VC-10, LATEST REVISION FOR 6" CONCRETE DETACHED (NON-MOUNTABLE) CURB DETAILS.
2. CURB AND SIDEWALK JOINTS SHALL ALIGN.

DRAWING TITLE	SCALE	DRAWING NO.	REV.
CURB DETAILS - CURB AND GUTTER AND DETACHED	N.T.S.	A6.1	

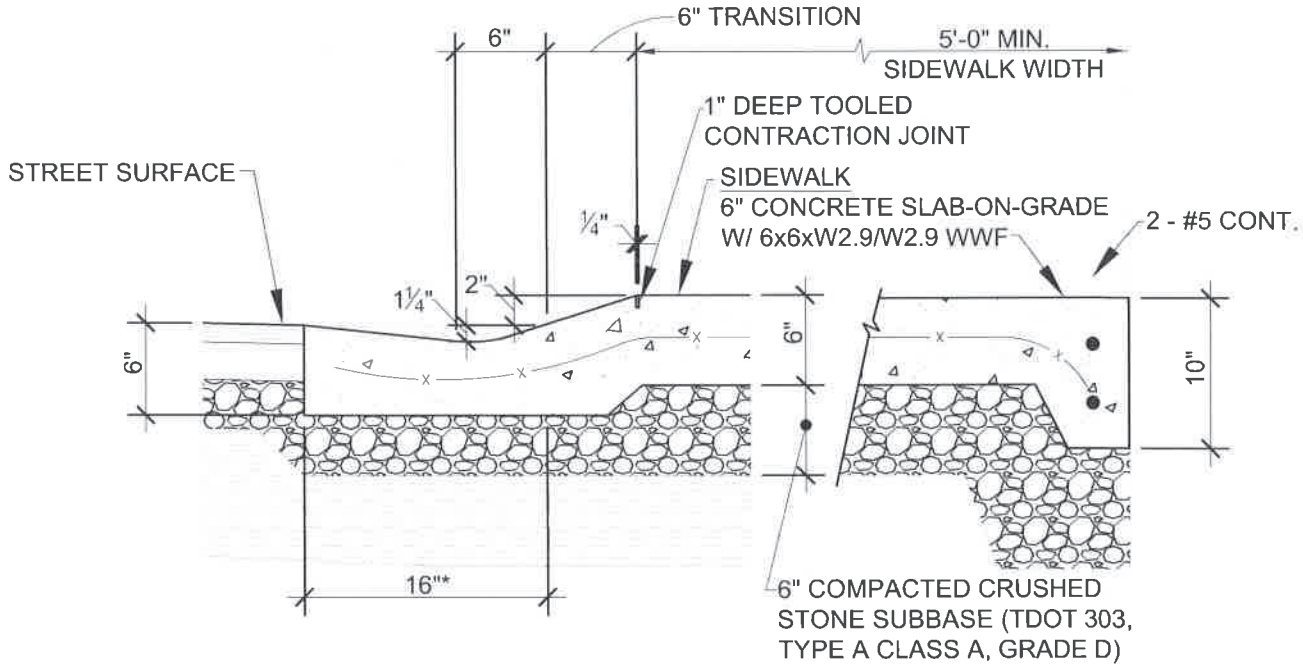


ROLLED CURB AND GUTTER (KINGSPORT CURB)

N.T.S.

NOTES:

1. CONCRETE f'c = 4,000 PSI., AIR ENTRAINED.
2. CONCAVE GUTTER INLET FRAME AND GRATE TO BE NEENAH FOUNDRY R-33-93-A OR APPROVED EQUAL.



ROLLED CURB AND GUTTER W/ SIDEWALK (KINGSPORT CURB)

N.T.S.

NOTES:

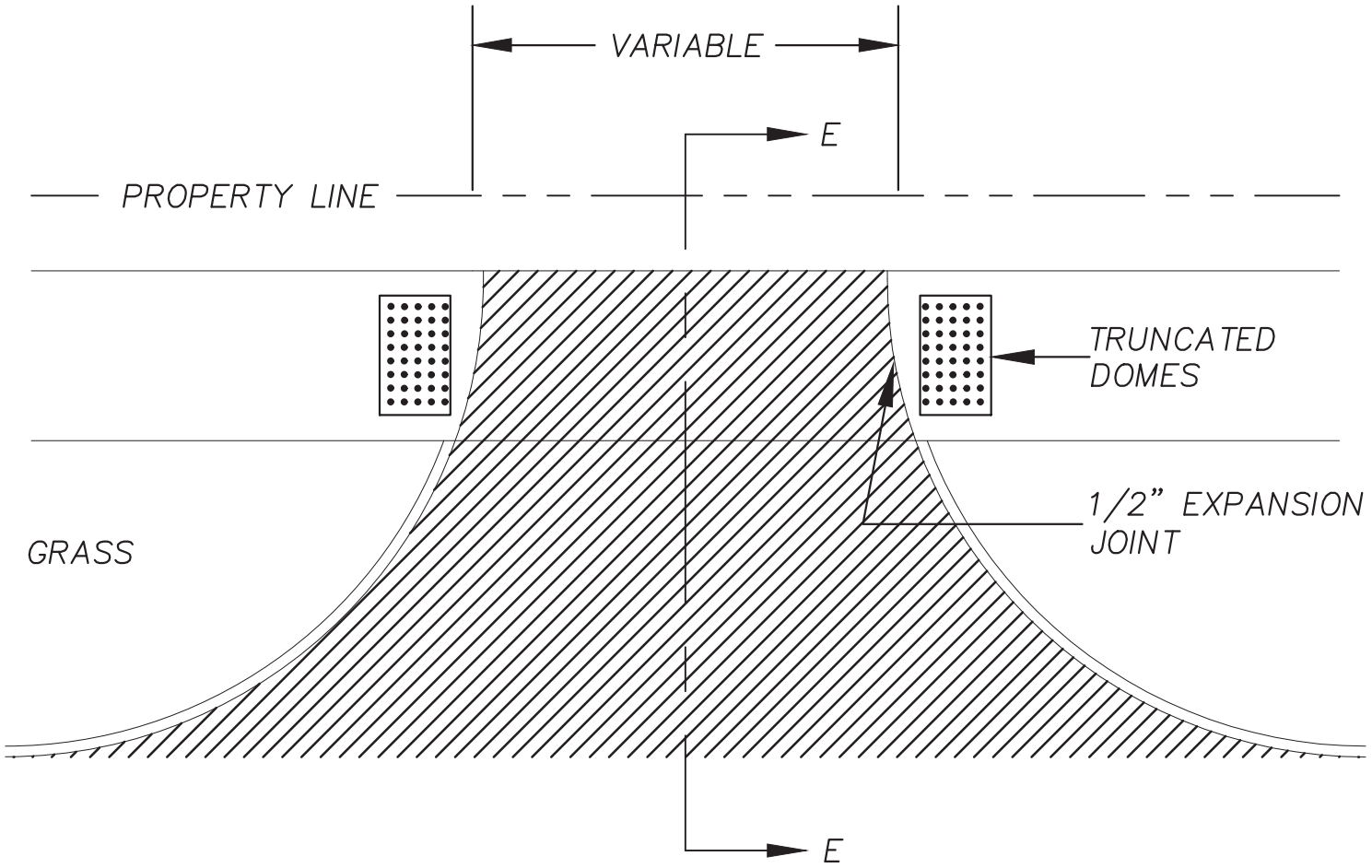
1. CONCRETE f'c = 4,000 PSI., AIR ENTRAINED.
2. CONCAVE GUTTER INLET FRAME AND GRATE TO BE NEENAH FOUNDRY R-33-93-A OR APPROVED EQUAL.
3. CURB AND GUTTER AND SIDEWALK JOINTS SHALL ALIGN.

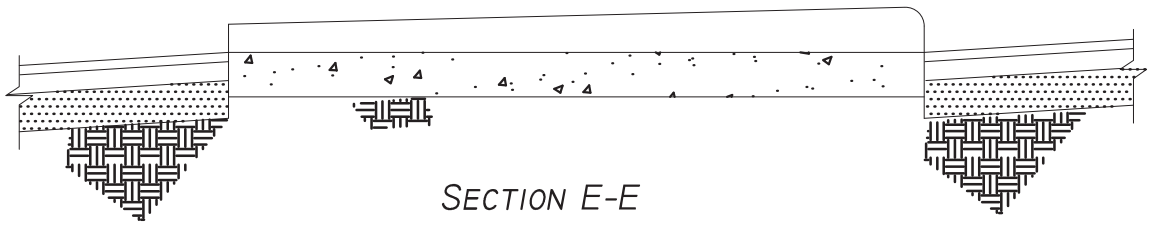
SLOPING CURB

(MOUNTABLE)

1. PLEASE SEE TDOT STANDARD DRAWING RP-SC-1, LATEST REVISION FOR 6" SLOPING CONCRETE COMBINED CURB AND GUTTER DETAILS.
2. CURB AND GUTTER AND SIDEWALK JOINTS SHALL ALIGN.

DRAWING TITLE	SCALE	DRAWING NO.	REV.
CURB DETAILS - ROLLED AND SLOPING (MOUNTABLE)	N.T.S.	A6.2	

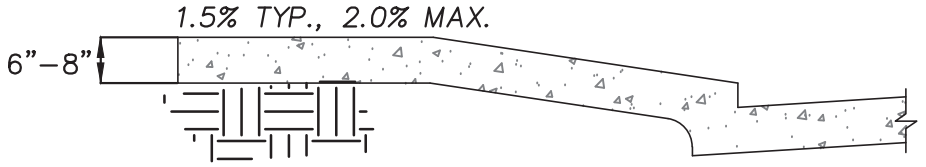




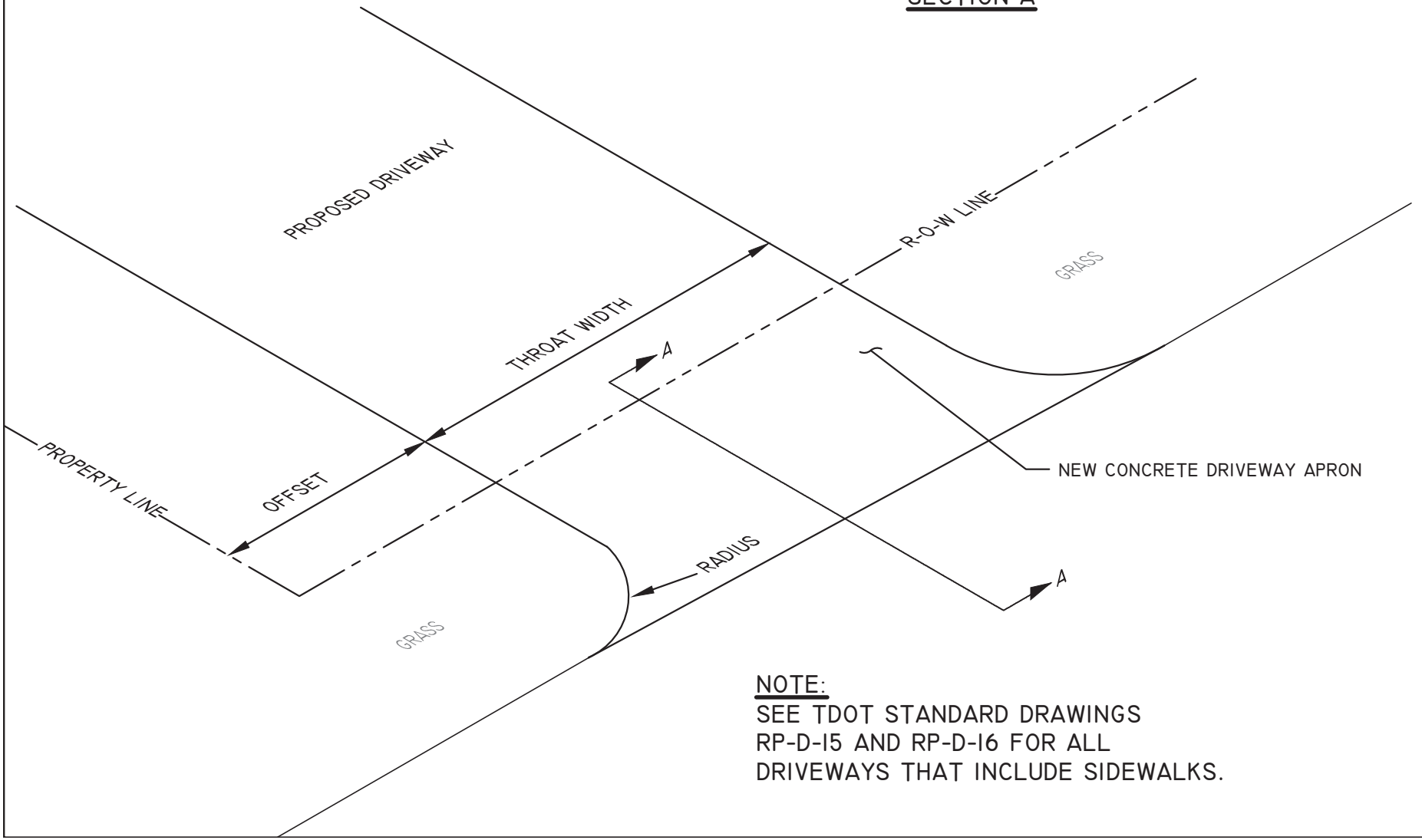
SECTION E-E

DRAWING TITLE	SCALE	DRAWING NO.	REV.
DROP HEADER AT ALLEY ENTRANCE	N.T.S.	A6.3	1

DIMENSION KEY		
	SINGLE FAMILY RESIDENCE	COMMERCIAL & MULTI-FAMILY
WIDTH	10'-24'	24'-40'
OFFSET	5' MIN.	15' MIN.
RADIUS	5'-15'	15'-40'



SECTION A



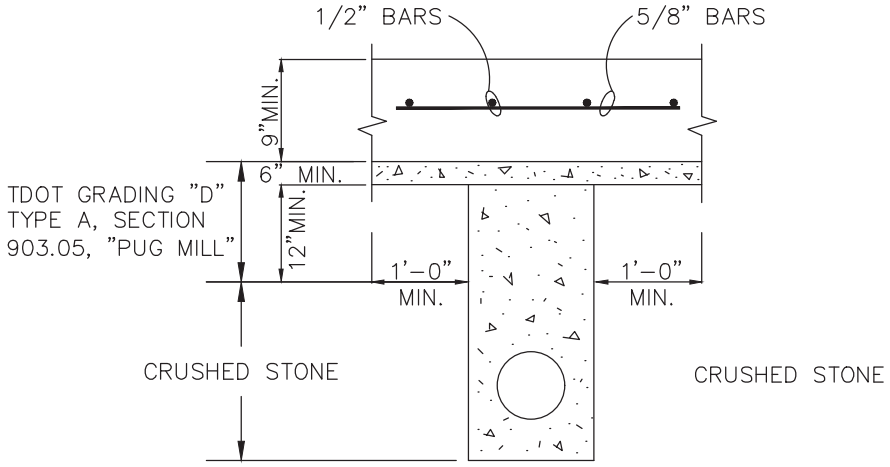
NOTE:
SEE TDOT STANDARD DRAWINGS RP-D-15 AND RP-D-16 FOR ALL DRIVEWAYS THAT INCLUDE SIDEWALKS.

REV. -

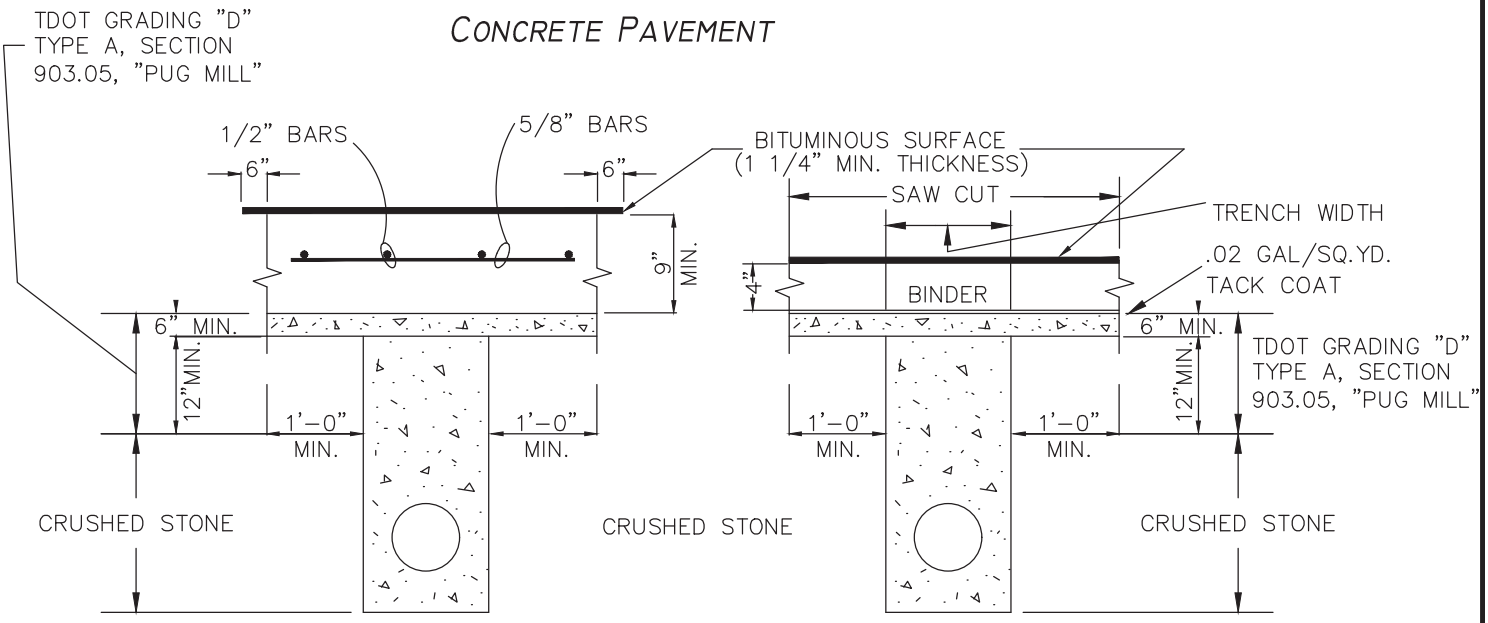
DRAWING NO. A6.4

SCALE N.T.S.

DRAWING TITLE TYPICAL ENTRANCE APRON



CONCRETE PAVEMENT

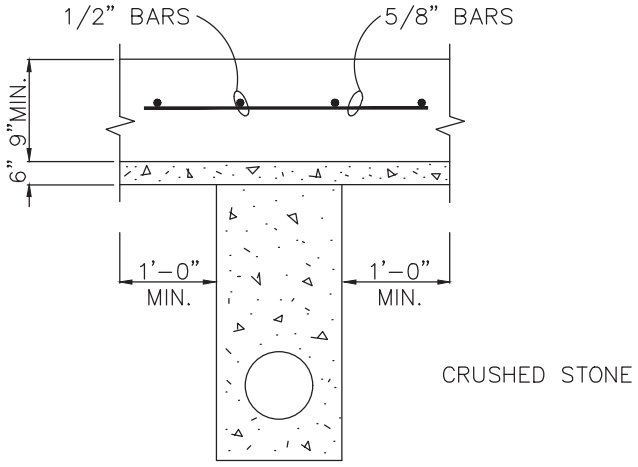


BITUMINOUS SURFACE CONCRETE BASE

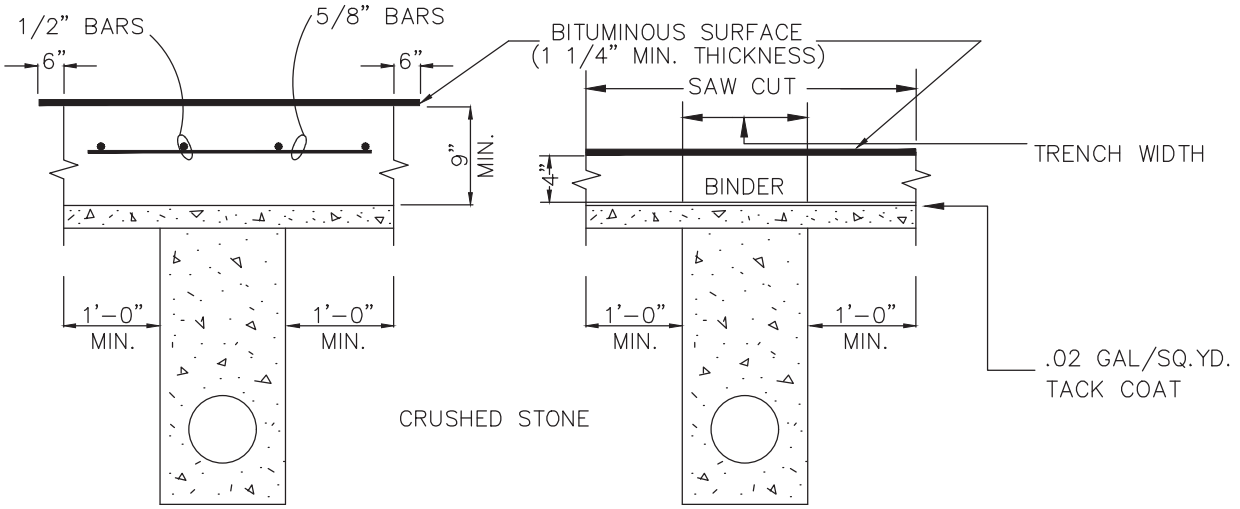
BITUMINOUS PAVEMENT

1. ONE-HALF OF THE TRAVELED PORTION OF THE PAVEMENT SHALL REMAIN OPEN TO TRAFFIC AT ALL TIMES.
2. EXISTING PAVEMENTS, BASES, CURBS AND GUTTERS AND SIDEWALKS SHALL BE CUT AND BROUGHT TO A NEAT LINE BY MECHANICALLY SAWING OR BY USE OF AN AIR HAMMER. EXPANSION JOINTS REMOVED SHALL BE REPLACED.
3. ALL UTILITY CUTS IN A ROADWAY SHALL BE SAW CUT AND BACKFILLED WITH MINERAL AGGREGATE BASE COMMONLY REFERRED TO AS PUG MILL FOR THE UPPER 18" MINIMUM. THE BACKFILLING SHALL BE IN LIFTS WITH SUFFICIENT COMPACTION TO PASS 83% OF SOLID ROCK AS DETERMINED BY ASSHTO-T85 (APPROXIMATELY 140 P.C.F.)
4. MATERIALS AND WORKMANSHIP SHALL COMPLY WITH "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ISSUED BY TDOT. ALL WORK IS SUBJECT TO INSPECTION AND APPROVAL BY THE CITY OF KINGSPORT ENGINEERING DEPT.
5. TRENCHES UNDER ROADWAYS SHALL BE BACKFILLED TO THE BASE OF THE PAVEMENT OR A MINIMUM OF 4" BELOW FINISHED GRADE, WHICHEVER IS GREATER, WITH PUG MILL FOR THE UPPER 18" MINIMUM AND CRUSHED STONE FOR THE REMAINDER OF TRENCH DEPTH AND PIPE BEDDING. PAVEMENT SHALL BE REMOVED FOR A MINIMUM OF ONE-FOOT ON EACH SIDE OF THE TRENCH. THE DEPTH OF THE PATCH SHALL BE THE DEPTH OF THE EXISTING PAVEMENT OR 4 INCHES, WHICHEVER IS GREATER. THE PATCH SHALL BE FINISHED SO AS NOT TO LEAVE A BUMP OR DIP IN THE FINISH GRADE. PAVEMENT SHALL BE REPLACED IN KIND AS SHOWN OR AS DIRECTED BY THE CITY OF KINGSPORT ENGINEERING DEPT.

DRAWING TITLE	SCALE	DRAWING NO.	REV.
OPEN CUT TRENCHING, BACKFILLING, & REPLACEMENT	N.T.S.	A6.5-ROW	



CONCRETE PAVEMENT



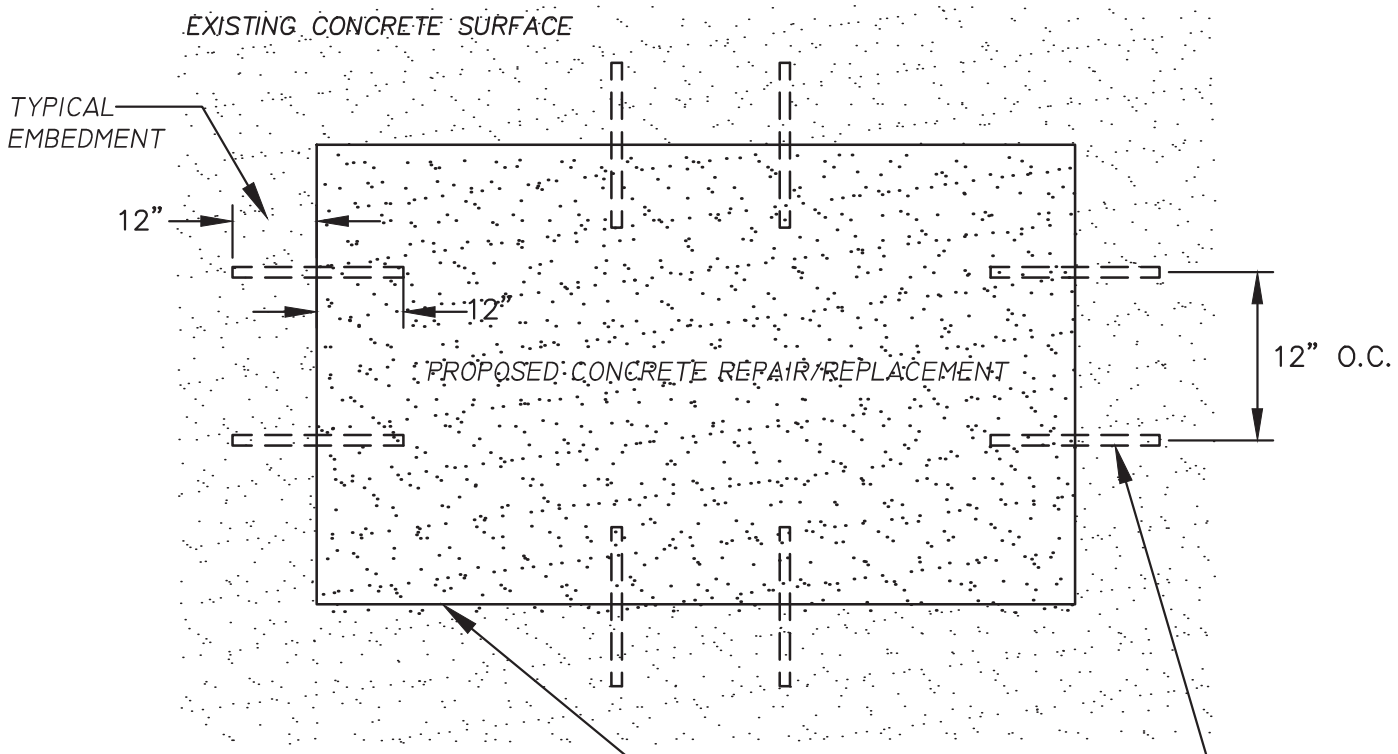
BITUMINOUS SURFACE CONCRETE BASE

BITUMINOUS PAVEMENT

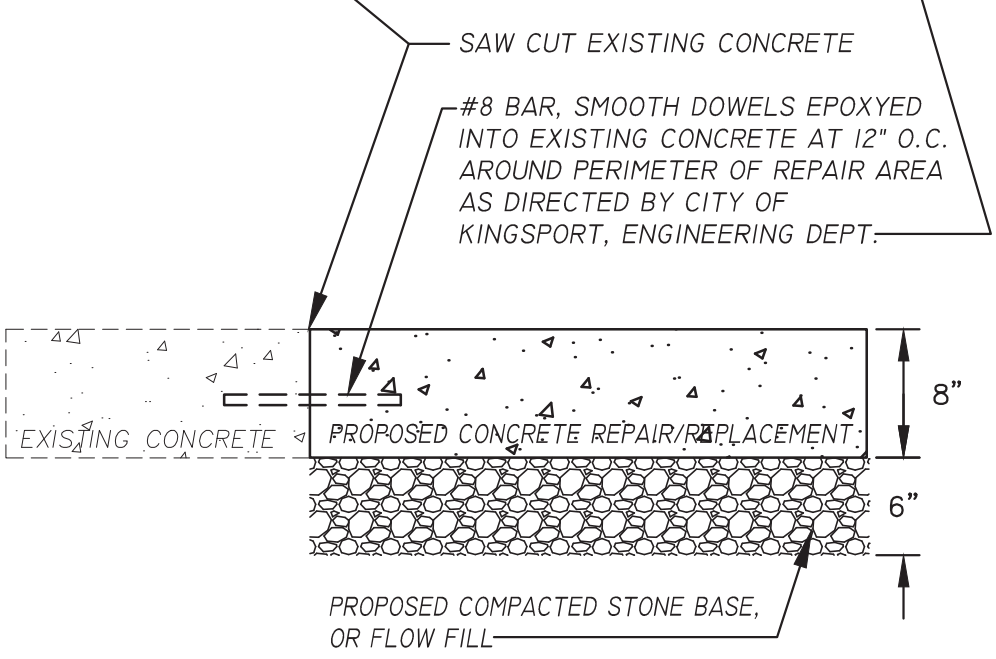
1. ONE-HALF OF THE TRAVELED PORTION OF THE PAVEMENT SHALL REMAIN OPEN TO TRAFFIC AT ALL TIMES.
2. EXISTING PAVEMENTS, BASES, CURBS AND GUTTERS AND SIDEWALKS SHALL BE CUT AND BROUGHT TO A NEAT LINE BY MECHANICALLY SAWING OR BY USE OF AN AIR HAMMER. EXPANSION JOINTS REMOVED SHALL BE REPLACED.
3. ALL UTILITY CUTS IN A ROADWAY SHALL BE SAW CUT AND BACKFILLED WITH MINERAL AGGREGATE BASE COMMONLY REFERRED TO AS PUG MILL. THE BACKFILLING SHALL BE IN LIFTS WITH SUFFICIENT COMPACTION TO PASS 83% OF SOLID ROCK AS DETERMINED BY ASSHTO-T85 (APPROXIMATELY 140 P.C.F.)
4. MATERIALS AND WORKMANSHIP SHALL COMPLY WITH "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ISSUED BY TDOT. ALL WORK IS SUBJECT TO INSPECTION AND APPROVAL BY THE CITY OF KINGSPORT ENGINEERING DEPT.
5. TRENCHES UNDER ROADWAYS SHALL BE BACKFILLED TO THE BASE OF THE PAVEMENT OR A MINIMUM OF 4" BELOW FINISHED GRADE, WHICHEVER IS GREATER, WITH CRUSHED STONE. PAVEMENT SHALL BE REMOVED FOR A MINIMUM OF ONE-FOOT ON EACH SIDE OF THE TRENCH. THE DEPTH OF THE PATCH SHALL BE THE DEPTH OF THE EXISTING PAVEMENT OR 4 INCHES, WHICHEVER IS GREATER. THE PATCH SHALL BE FINISHED SO AS NOT TO LEAVE A BUMP OR DIP IN THE FINISH GRADE. PAVEMENT SHALL BE REPLACED IN KIND AS SHOWN OR AS DIRECTED BY THE CITY OF KINGSPORT ENGINEERING DEPT.

DRAWING TITLE	SCALE	DRAWING NO.	REV.
OPEN CUT TRENCHING, BACKFILLING, & REPLACEMENT	N.T.S.	A6.5	

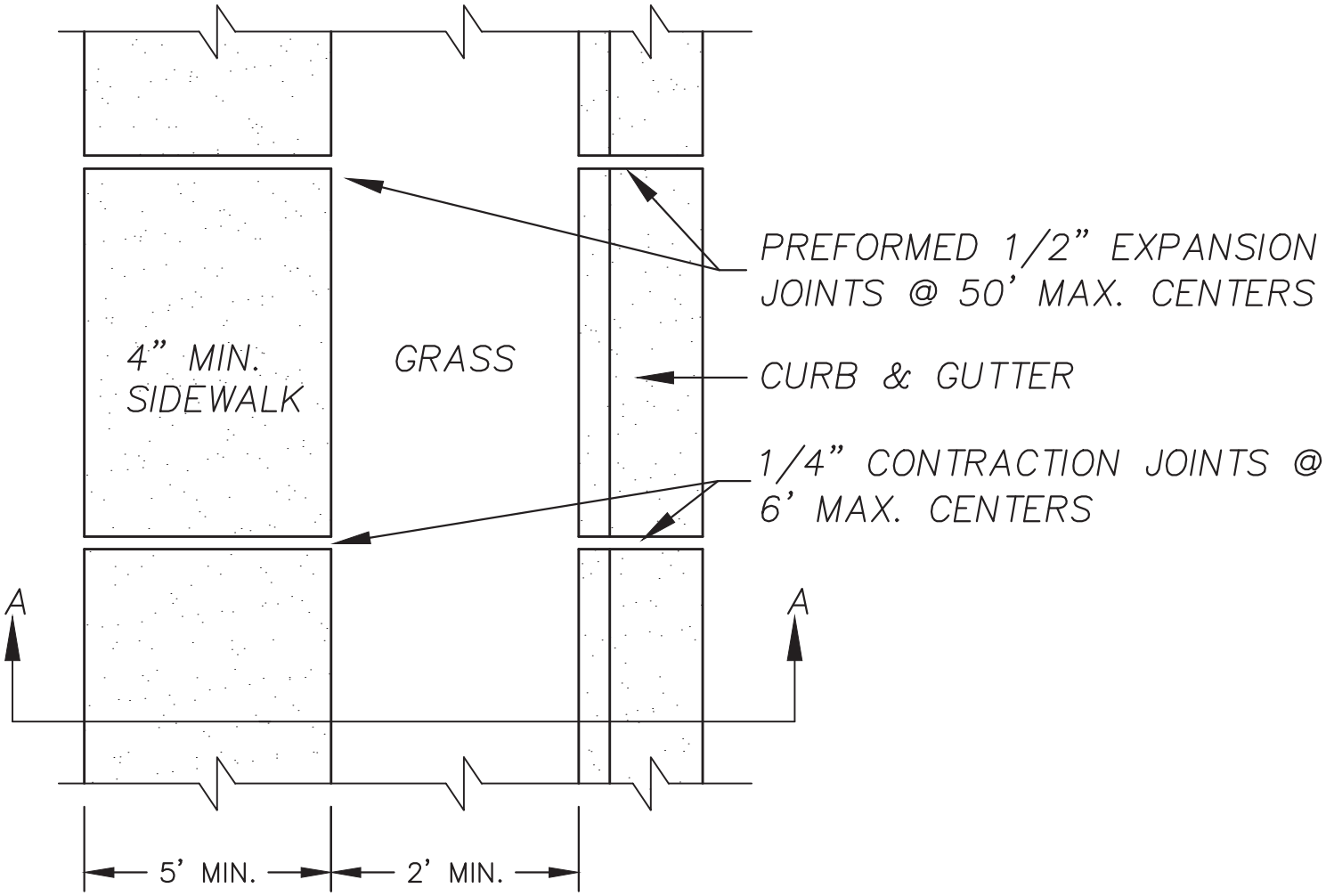
PLAN



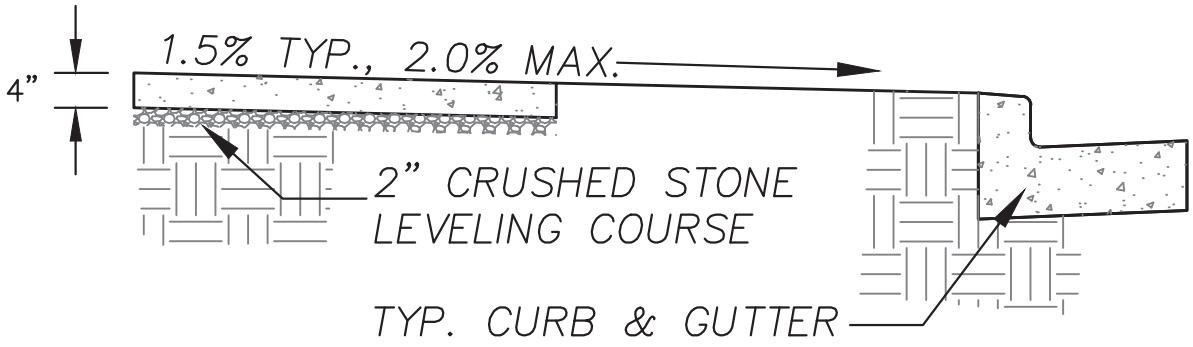
SECTION



DRAWING TITLE	SCALE	DRAWING NO.	REV.
TYPICAL CONCRETE STREET REPAIR/REPLACEMENT	N.T.S.	A6.6	1

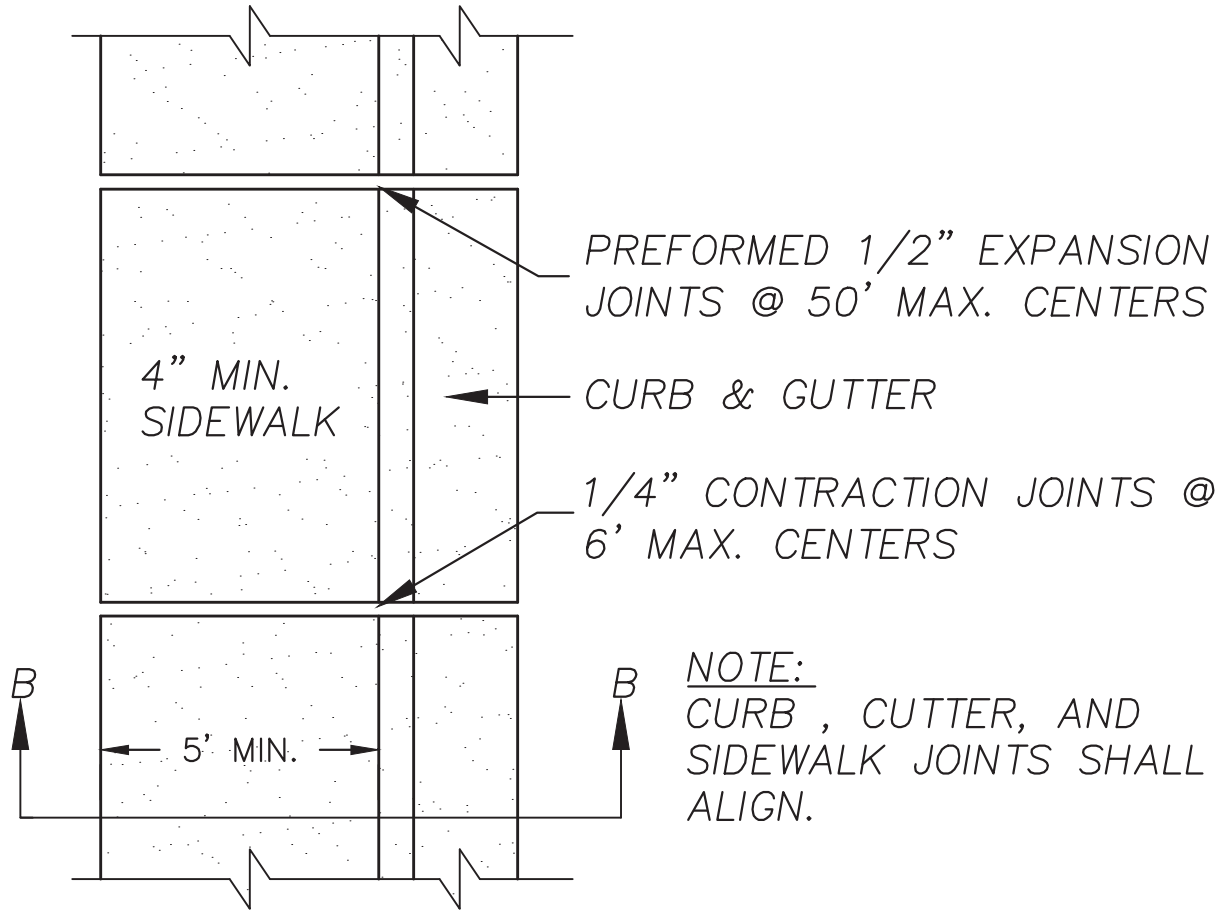


PLAN

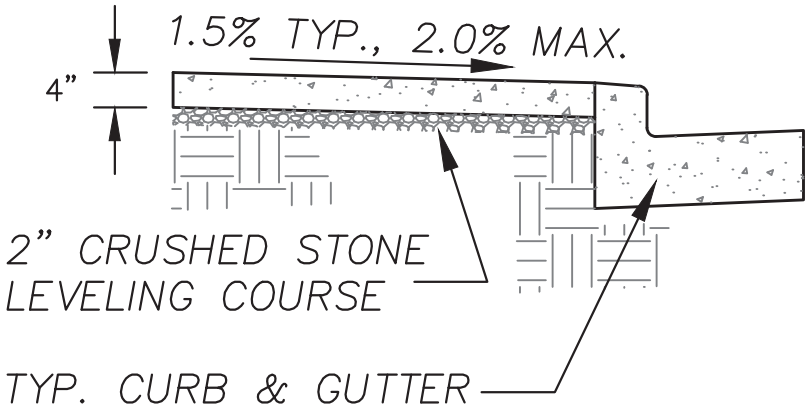


SECTION A-A

DRAWING TITLE	SCALE	DRAWING NO.	REV.
TYPICAL SIDEWALK PLAN 'A'	N.T.S.	A7.1	2



PLAN



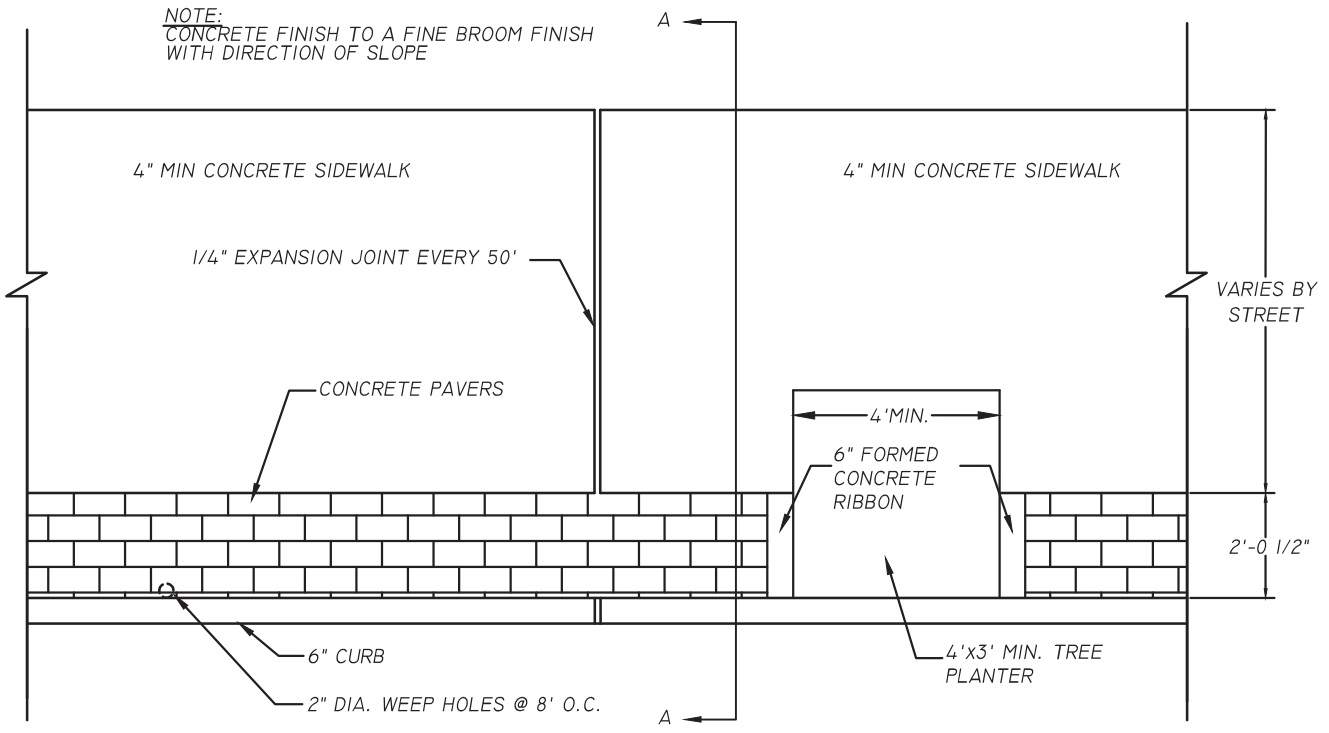
SECTION B-B

DRAWING TITLE	SCALE	DRAWING NO.	REV.
TYPICAL SIDEWALK PLAN 'B'	N.T.S.	A7.2	2

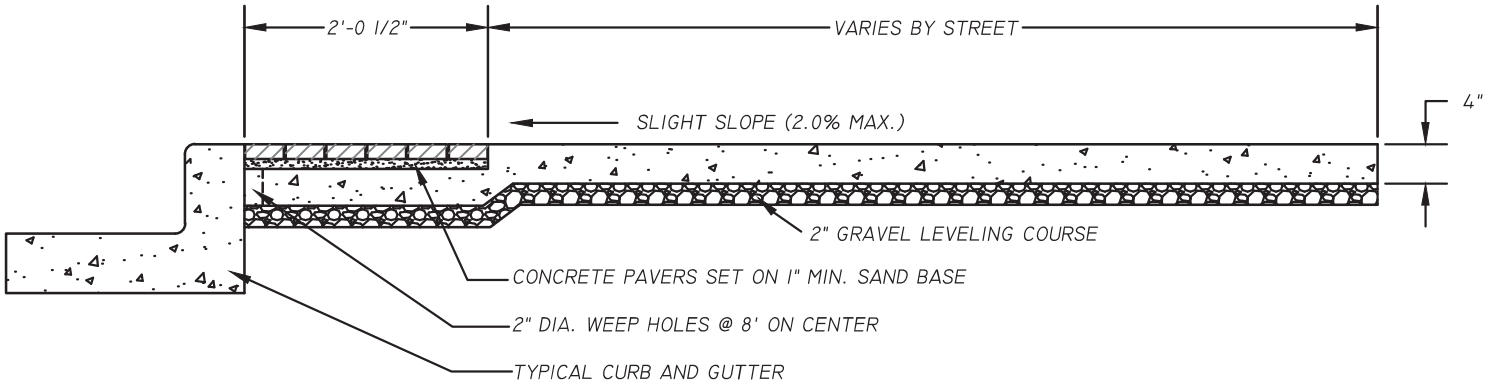
PLEASE SEE TDOT STANDARD MULTIMODAL DRAWINGS MM-CR-1 THROUGH MM-CR-9, LATEST REVISION FOR ADA COMPLIANT DETAILS. SEE LINK BELOW:

HTTPS://WWW.TN.GOV/TDOT/ROADWAY-DESIGN/STANDARD-DRAWINGS-LIBRARY/STANDARD-ROADWAY-DRAWINGS/MULTIMODAL.HTML

DRAWING TITLE	SCALE	DRAWING NO.	REV.
ADA Compliant Ramp	*N.T.S.*	*A7.3*	*3*



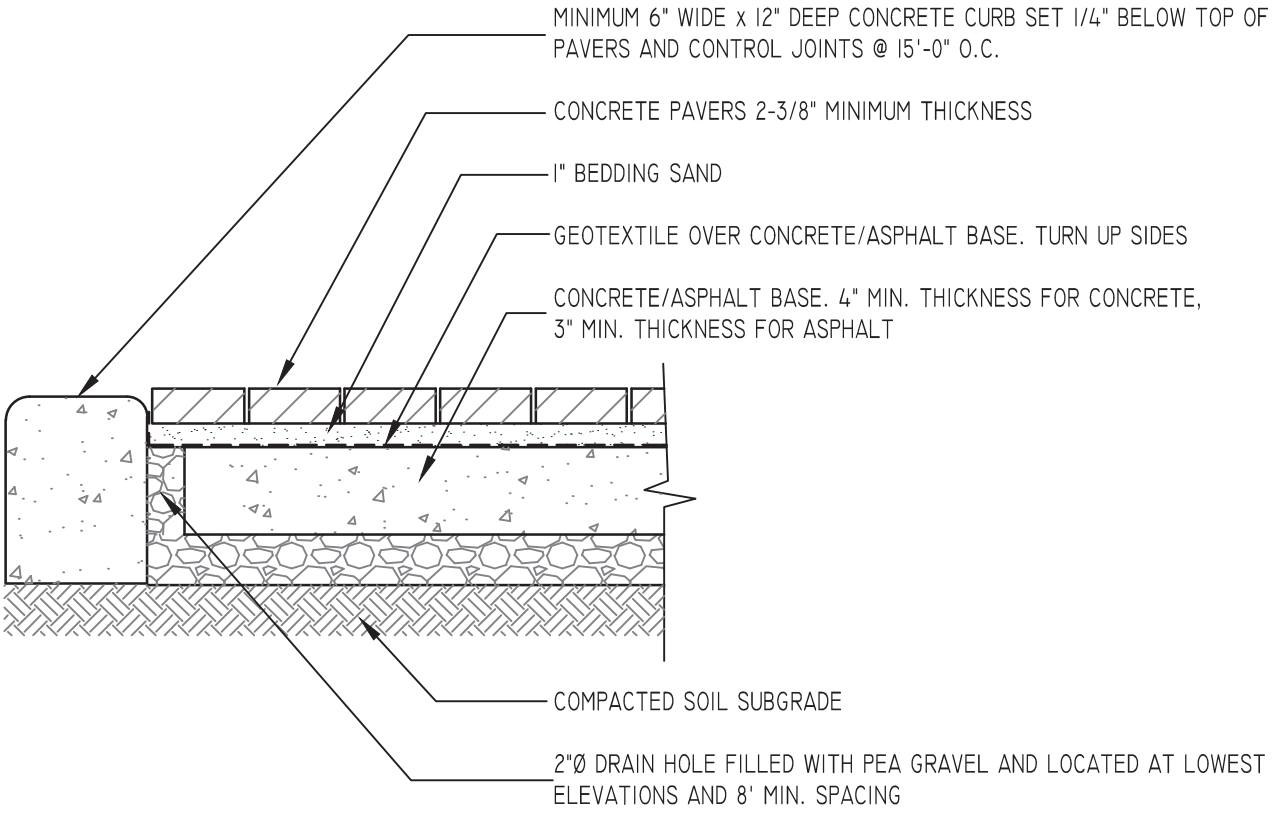
PLAN



SECTION A-A

NOTES:
1. PAVERS SHALL BE BELGARD COMMERCIAL PAVERS, HOLLAND STONE, GUILFORO BLEND. SEE SPECIFICATIONS FOR MORE INFORMATION.
2. CURB & GUTTER AND SIDEWALK JOINTS SHALL ALIGN.
3. SEE STANDARD DETAIL A7.5 FOR CONCRETE PAVERS.

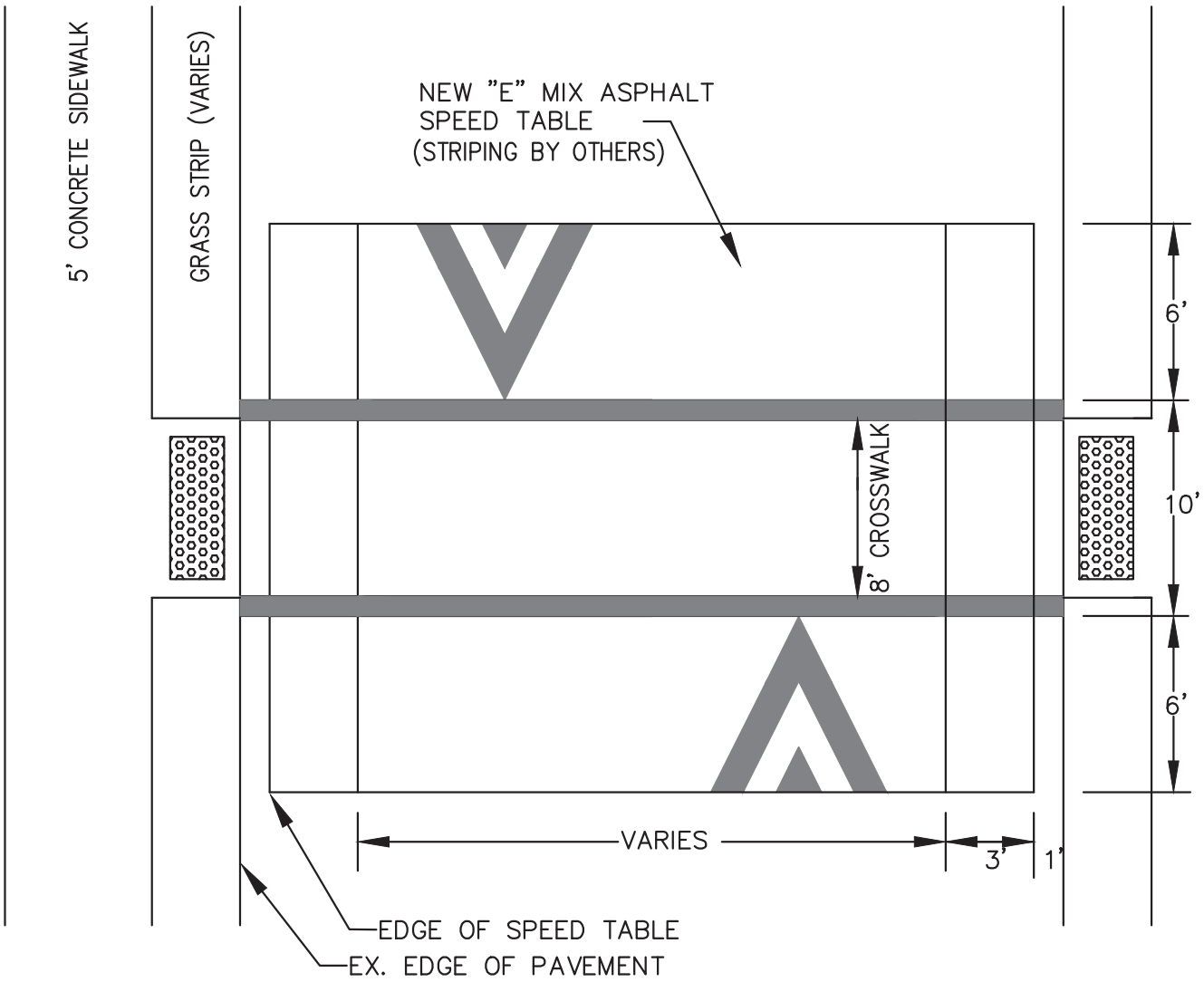
DRAWING TITLE	SCALE	DRAWING NO.	REV.
SIDEWALK PLAN WITH CONCRETE PAVERS	N.T.S.	A7.4	4



NOTES:

1. *PAVERS SHALL BE BELGARD COMMERCIAL PAVERS, HOLLAND STONE, GUILFORO BLEND. SEE SPECIFICATIONS FOR MORE INFORMATION.*
2. *THICKNESS OF BASE WILL VARY WITH SUBGRADE CONDITIONS AND CLIMATE. COLDER CLIMATES MAY REQUIRE THICKER BASES.*
3. *CONSULT ICPI TECH SPEC 2 FOR GUIDELINES ON SPECIFICATIONS FOR BASE MATERIALS, SUBGRADE SOIL, AND BASE COMPACTION.*

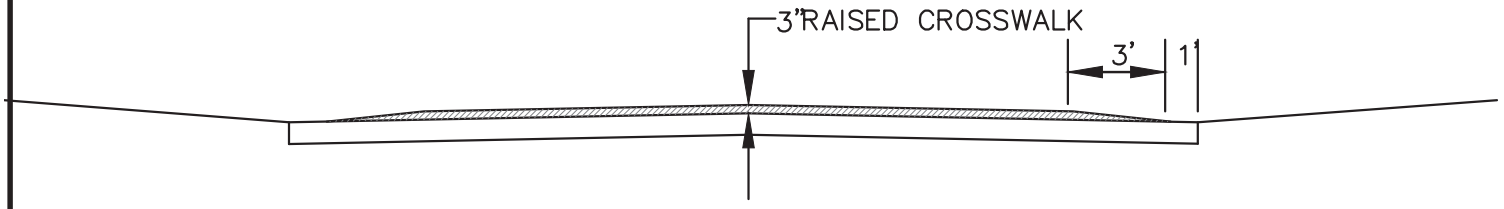
DRAWING TITLE	SCALE	DRAWING NO.	REV.
CONCRETE PAVERS DETAIL	*N.T.S.*	*A7.5*	*3*



NOTES:

1. CROSSWALK AND PEDESTRIAN ACCOMMODATIONS ONLY IN AREAS WITH SIDEWALK AND AS DIRECTED BY ENGINEER.

2. CONTRACTOR SHALL CONDUCT NECESSARY MILLING AND SITE PREPARATION TO RECESS SPEED TABLE 1-1/2" INTO EXISTING STREET SURFACE.



DRAWING TITLE	SCALE	DRAWING NO.	REV.
TYPICAL SPEED TABLE	N.T.S.	A7.6	-

KINGSPORT
TENNESSEE

The City is spending

$projectcost

for this project

PROJECT TYPE

Construction Schedule:
month/year
through
month/year

Please call **229-9475** for further information

TO BE CONSTRUCTED OUT OF 4'x8' SHEET OF PLYWOOD
EXACT LETTERING TO BE DETERMINED AFTER CONTRACT IS LET

DRAWING TITLE	SCALE	DRAWING NO.	REV.
TYPICAL PROJECT SIGN DETAIL	N.T.S.	A8.0	