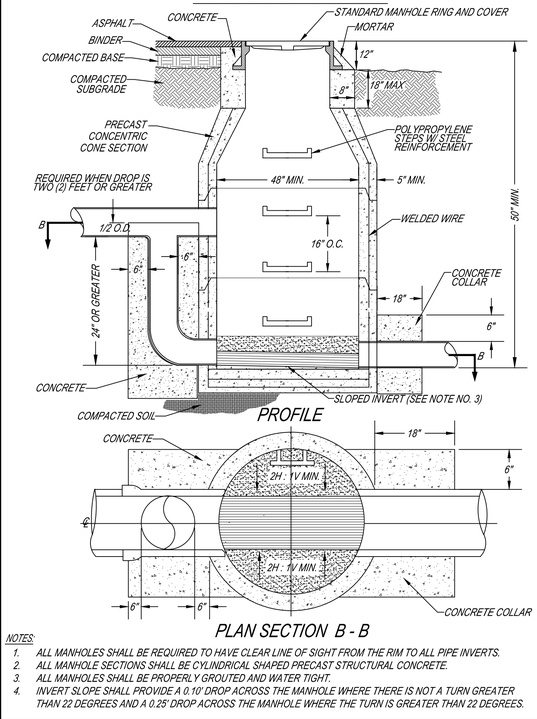
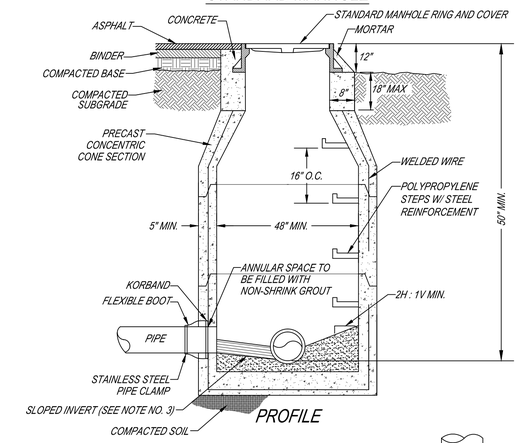
TYPICAL DROP MANHOLE

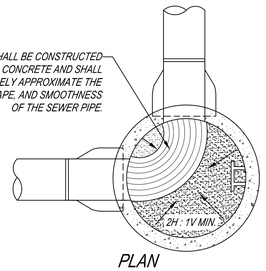


NOTES:

1. ALL MANHOLES SHALL BE REQUIRED TO HAVE CLEAR LINE OF SIGHT FROM THE RIM TO ALL PIPE INVERTS.
2. ALL MANHOLE SECTIONS SHALL BE CYLINDRICAL SHAPED PRECAST STRUCTURAL CONCRETE.
3. ALL MANHOLES SHALL BE PROPERLY GROUTED AND WATER TIGHT.
4. INVERT SLOPE SHALL PROVIDE A 0.10' DROP ACROSS THE MANHOLE WHERE THERE IS NOT A TURN GREATER THAN 22 DEGREES AND A 0.25' DROP ACROSS THE MANHOLE WHERE THE TURN IS GREATER THAN 22 DEGREES.

STANDARD MANHOLE

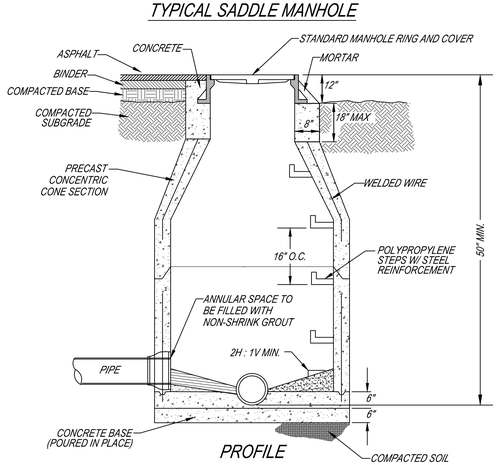


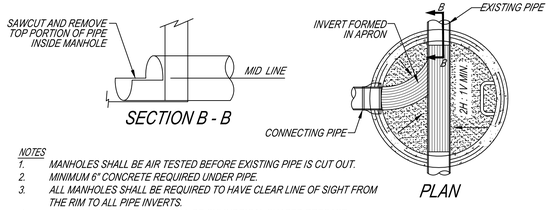


NOTES:

1. ALL MANHOLES SHALL BE REQUIRED TO HAVE CLEAR LINE OF SIGHT FROM THE RIM TO ALL PIPE INVERTS.
2. ALL MANHOLE SECTIONS SHALL BE CYLINDRICAL SHAPED PRECAST STRUCTURAL CONCRETE.
3. ALL MANHOLES SHALL BE PROPERLY GROUTED AND WATER TIGHT.
4. INVERT SLOPE SHALL PROVIDE A 0.10" DROP ACROSS THE MANHOLE WHERE THERE IS NOT A TURN GREATER THAN 22 DEGREES AND A 0.25" DROP ACROSS THE MANHOLE WHERE THE TURN IS GREATER THAN 22 DEGREES.

TYPICAL SADDLE MANHOLE

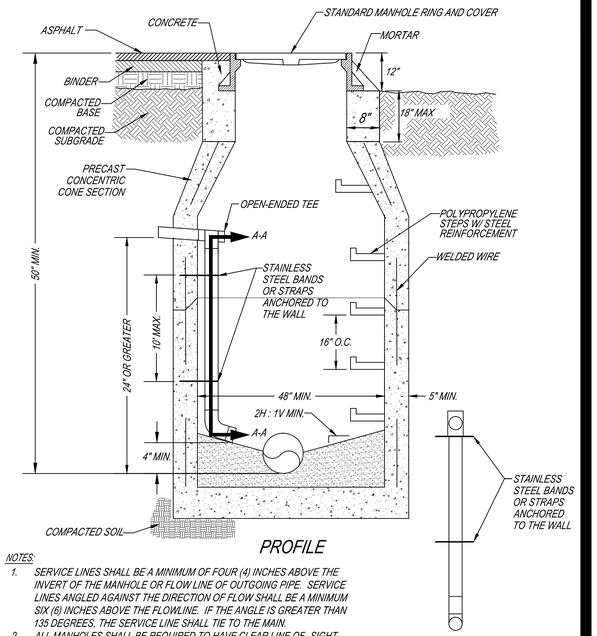




NOTES

1. MANHOLES SHALL BE AIR TESTED BEFORE EXISTING PIPE IS CUT OUT.
2. MINIMUM 6" CONCRETE REQUIRED UNDER PIPE.
3. ALL MANHOLES SHALL BE REQUIRED TO HAVE CLEAR LINE OF SIGHT FROM THE RIM TO ALL PIPE INVERTS.
4. ALL MANHOLE SECTIONS SHALL BE CYLINDRICAL SHAPED PRECAST STRUCTURAL CONCRETE.
5. ALL MANHOLES SHALL BE PROPERLY GROUTED AND WATER TIGHT.

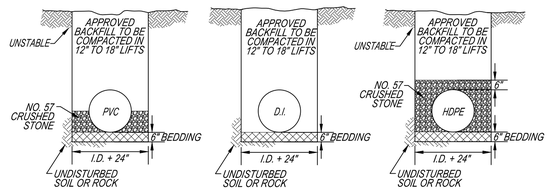
TYPICAL 4" OR 6" DROP SERVICE LINE



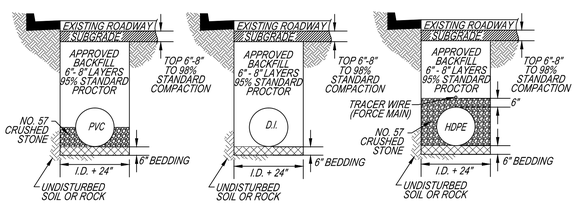
NOTES:

1. SERVICE LINES SHALL BE A MINIMUM OF FOUR (4) INCHES ABOVE THE INVERT OF THE MANHOLE OR FLOW LINE OF OUTGOING PIPE. SERVICE LINES ANGLED AGAINST THE DIRECTION OF FLOW SHALL BE A MINIMUM SIX (6) INCHES ABOVE THE FLOWLINE. IF THE ANGLE IS GREATER THAN 135 DEGREES, THE SERVICE LINE SHALL TIE TO THE MAIN.
2. ALL MANHOLES SHALL BE REQUIRED TO HAVE CLEAR LINE OF SIGHT FROM THE RIM TO ALL PIPE INVERTS IN THE MANHOLE.
3. ALL MANHOLE SECTIONS SHALL BE CYLINDRICAL SHAPED PRECAST STRUCTURAL CONCRETE.
4. ALL MANHOLES SHALL BE PROPERLY GROUTED AND WATER TIGHT.

BEDDING REQUIREMENTS FOR TRENCHES



NON-STREET TRENCH

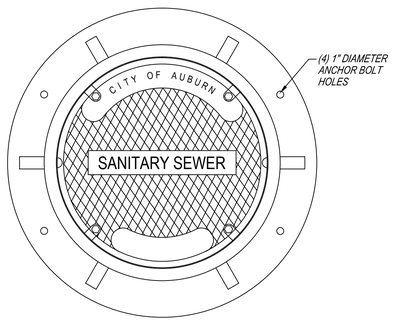


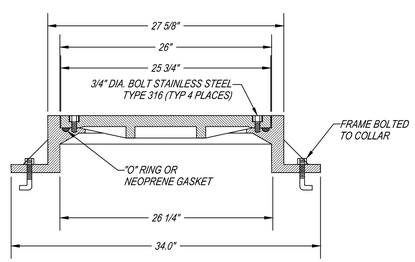
STREET TRENCH

NOTES:

1. BEDDING MATERIALS FOR PVC AND HDPE PIPE SHALL BE 1/4" TO 1 1/2" GRADED CRUSHED STONE SUCH AS: 56,57,6,67,68,7,OR 78, STONE PER ALDOT STANDARD SPECS. SAND OR GRAVEL MAY BE USED AS BEDDING MATERIAL FOR D.I. PIPE.
2. WIDTH VARIES BASED ON WALL STABILITY. STABLE WALLS WIDTH AS NEEDED TO JOIN PIPE AND COMPACT HAUNCHING AND INITIAL BACKFILL. UNSTABLE WALLS: WIDTH TO BE A MINIMUM OF FIVE TIMES PIPE DIAMETER.
3. FLOWABLE FILL CAN BE USED AS BACKFILL, BUT MUST HAVE PRIOR APPROVAL AND MUST BE ALLOWED TO SETUP FOR 24 HOURS PRIOR TO TOPPING.
4. APPROVED BACKFILL MATERIAL INCLUDES 825 B, FLOWABLE FILL AND APPROVED DIRT. ALTERNATIVE MATERIAL MUST BE APPROVED BY PROJECT MANAGER PRIOR TO USE.

TYPICAL WATERTIGHT MANHOLE COVER

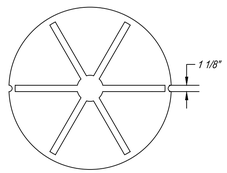


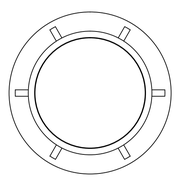


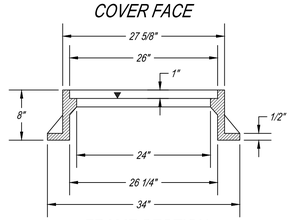
NOTES:

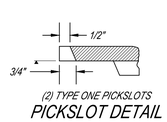
1. REQUIRED FOR ALL MANHOLES WHERE THE RIM ELEVATION IS LESS THAN ONE (1) VERTICAL FOOT ABOVE THE 100 YEAR FLOODPLAIN ELEVATION.
2. CAST IRON FRAME AND COVER IN ROADWAY AND TRAFFIC SHALL BE INSTALLED FLUSH WITH FINISHED GRADE OF THE PAVEMENT IN FLAT OR STEEP GRADES.
3. THE FRAME AND COVER SHALL WEIGH APPROXIMATELY 370 POUNDS IN TRAFFIC AND NON TRAFFIC APPLICATIONS.
4. THE DIAMETER OF THE COVER FOR ALL SANITARY SEWER MANHOLES SHALL BE 25 3/4".
5. ALL COVERS SHALL BE MARKED "SANITARY SEWER" BY THE MANUFACTURER.
6. APPROVED DRAWINGS ARE FROM US FOUNDRY (USF-152-BV-BWT CITY OF AUBURN).

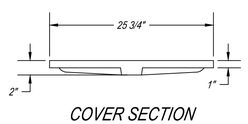
STANDARD MANHOLE RING & COVER









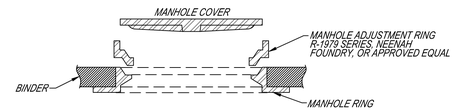


NOTES:

1. CAST IRON FRAME AND COVER IN ROADWAY AND TRAFFIC SHALL BE INSTALLED FLUSH WITH FINISHED GRADE OF THE PAVEMENT IN FLAT OR STEEP GRADES.
2. THE FRAME AND COVER SHALL WEIGH APPROXIMATELY 370 POUNDS IN TRAFFIC AND NON TRAFFIC APPLICATIONS.
3. THE DIAMETER OF THE COVER FOR ALL SANITARY SEWER MANHOLES SHALL BE 25 3/4".
4. ALL COVERS SHALL BE MARKED "SANITARY SEWER" BY THE MANUFACTURER.
5. APPROVED DRAWINGS ARE FROM US FOUNDRY (USF-152-BV CITY OF AUBURN) OR SIGMA CORPORATION (RMH-2565) .

▼ MACHINED BEARING SURFACE

MANHOLE ADJUSTMENT RISER



NOTES:

1. ONE PIECE CONSTRUCTION, NO WELDS. COATED TO PREVENT RUST.
2. MULTIPLE RISERS ARE NOT ALLOWED.
3. ALL MANHOLES IN PAVEMENT MUST BE FLUSH WITH THE BINDER LAYER. THE MANHOLE ADJUSTMENT RISER SHALL BE USED UPON PLACEMENT OF WEARING SURFACE.

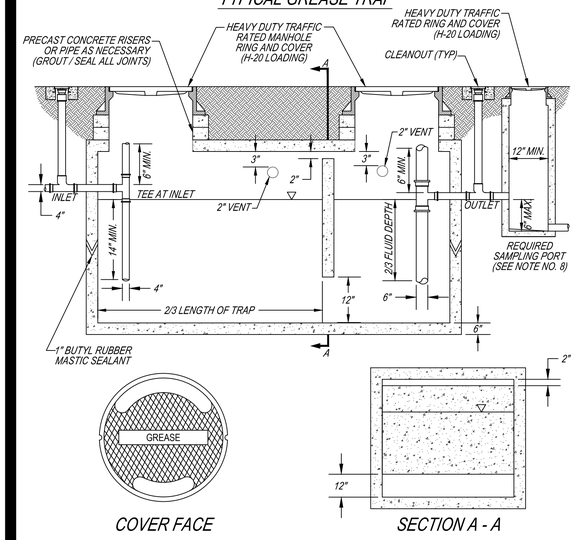
STANDARD DETAILS: SANITARY SEWER - SHEET 1 OF 3

PROJECT TITLE:

City of Auburn

DEPARTMENT:	WRM	REVISIONS:	GM-04/30/04
SCALE:	N.T.S.		BS-10-25-07
DRAWN BY:	BS		DCM 2010
REVIEWED BY:	JC		JC-10-2011
APPROVED BY:	EC		
IMPLEMENTED:	02/2003		

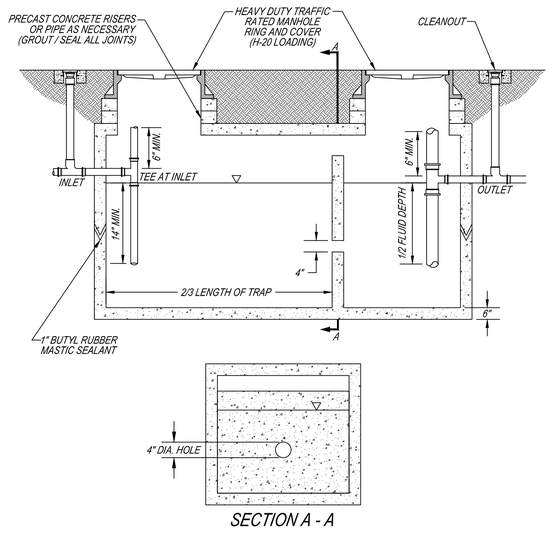
TYPICAL GREASE TRAP



NOTES:

1. MANHOLE, RING AND COVERS SHALL NOT BE COVERED, OR OBSCURED BY LANDSCAPING, PAVEMENT, ETC.
2. INLET AND OUTLET PIPES SHALL BE SCHEDULE 40 PVC, AND SHALL NOT BE COVERED OR CAPPED.
3. INLET PIPE MUST BE A MINIMUM OF 4" IN DIAMETER. VERTICAL PIPE ON OUTLET SIDE MUST BE A MINIMUM OF 6" IN DIAMETER.
4. TRAPS SHALL NOT BE LOCATED IN AN ENTRANCE, EXIT, DRIVE-THRU, OR UNDER A MENU BOARD.
5. SIZE TO BE PER STANDARD SIZING WORKSHEET (MIN. 500 GALLONS).
6. 2" DIAMETER VENTS TO BE CONNECTED TO BUILDING VENT SYSTEM (WHERE REQUIRED BY THE PLUMBING PLANS).
7. GREASE TRAPS SHALL MEET STATE OF ALABAMA HEALTH REGULATIONS SECTION 420-3-1-23: 420-3-1-24: 420-3-1-25
8. A DOWNSTREAM SAMPLING PORT OR MANHOLE WILL BE REQUIRED. NO OTHER CONNECTIONS ARE ALLOWED BETWEEN GREASE TRAP AND SAMPLING MANHOLE.
9. RESTROOM AND NON GREASE LADEN WASTE SHALL NOT PASS THROUGH THE GREASE TRAP.

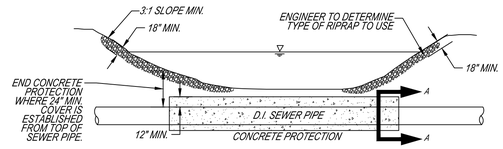
TYPICAL OIL/GRIT SEPARATOR

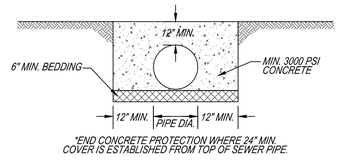


NOTES:

1. MANHOLE RING AND COVERS SHALL NOT BE COVERED, OR OBSCURED BY LANDSCAPING, PAVEMENT, ETC.
2. INLET AND OUTLET PIPES SHALL BE SCHEDULE 40 PVC, AND SHALL NOT BE COVERED OR CAPPED.
3. INLET PIPE MUST BE A MINIMUM OF 4" DIAMETER. VERTICAL PIPE ON OUTLET SIDE MUST BE A MINIMUM OF 6" IN DIAMETER.
4. SEPARATOR SHALL NOT BE LOCATED IN AN ENTRANCE, EXIT, DRIVE-THRU, OR UNDER A MENU BOARD.
5. MINIMUM SIZE: 1000 GALLONS.

TYPICAL STREAM CROSSING





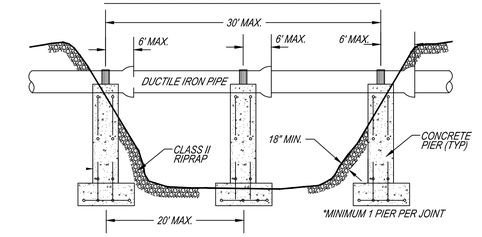
*END CONCRETE PROTECTION WHERE 24" MIN. COVER IS ESTABLISHED FROM TOP OF SEWER PIPE.

DETAIL SECTION A - A

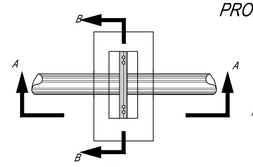
NOTES:

1. ALL CREEK CROSSINGS SHALL BE DUCTILE IRON, PRESSURE CLASS 350 PIPE.
2. PIPE SHALL HAVE LOCKING GASKETS OR RESTRAINED JOINTS WHERE LOCATED INSIDE STREAM BANKS.
3. END CONCRETE PROTECTION WHERE 24" MINIMUM COVER IS ESTABLISHED FROM THE TOP OF THE SEWER PIPE.

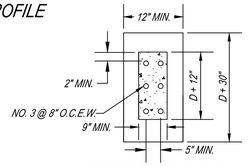
TYPICAL AERIAL STREAM CROSSING



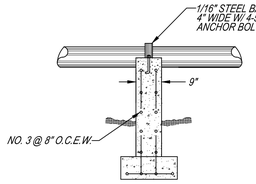
PROFILE



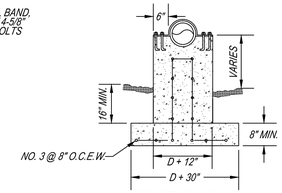
PLAN



SECTIONAL PLAN



SECTION A - A



SECTION B - B

NOTES:

1. ALL CREEK CROSSINGS SHALL BE DUCTILE IRON, PRESSURE CLASS 350 PIPE.
2. FOUNDATION AND OR FOOTINGS FOR PIERS SHALL BE PLACED A MINIMUM OF TWO (2) FEET BELOW STREAM BED OR ANCHORED TO SOLID ROCK AND SHALL BE CERTIFIED BY A GEOTECHNICAL ENGINEER.
3. PIPE SHALL HAVE LOCKING GASKETS OR RESTRAINED JOINTS.

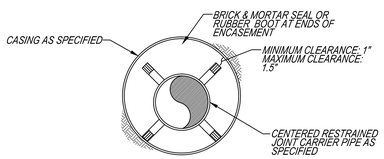
TYPICAL BORE ENCASEMENT

CARRIER PIPE		SPACER	STEEL ENCASEMENT	
NOMINAL PIPE DIAMETER	STANDARD PIPE BELL O.D.*	CASING SPACER BAND WIDTH	MINIMUM CASING THICKNESS	MINIMUM CASING DIAMETER**
4	6.40	8	0.25	14
6	8.60	8	0.25	16
8	11.16	8	0.25	18
10	13.25	8	0.25	20
12	15.22	8	0.25	22
14	17.73	12	0.25	24
16	19.86	12	0.3125	26
18	22.16	12	0.3125	30
20	24.28	12	0.3125	32
24	28.50	12	0.3125	36
30	34.95	12	0.5	42
36	41.37	12	0.5	48

ALL SIZES INDICATED ARE IN INCHES

*PIPE BELL OUTSIDE DIAMETER BASED ON PRESSURE CLASS 350 DUCTILE IRON PIPE.

**CASING DIAMETERS BASED ON BEING A MINIMUM OF 6 INCHES GREATER THAN THE OUTER DIAMETER OF THE JOINT BELL, TO THE NEAREST EVEN SIZE.

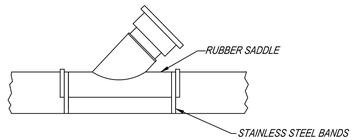


CASING SECTION

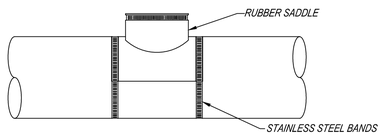
NOTES

1. ALL SPACER BANDS SHALL BE MADE FROM T-304 STAINLESS STEEL OF A MINIMUM 14 GAUGE THICKNESS.
2. ALL SPACERS SHALL HAVE A SYNTHETIC RUBBER OR PVC LINER TO INSULATE THE PIPELINE FROM THE SPACER.
3. ALL SPACERS SHALL HAVE 1.5" WIDE GLASS REINFORCED PLASTIC OR UHMW POLYMER RUNNERS TO INSULATE THE SPACER.
4. SPACERS TO BE MANUFACTURED BY CASCADE WATERWORKS MFG. CO. (PSI) PIPELINE SEAL AND INSULATOR, INC. OR EQUAL.
5. 6" THRU 12" DIAMETER PIPELINE SHALL USE 8" WIDE BANDS: GREATER THAN 12" DIAMETER PIPELINES SHALL USE 12" WIDE BANDS.
6. CENTERED RESTRAINED CASING SPACERS SHALL BE SPACED AT A MAXIMUM OF TEN FEET APART WITH A MINIMUM OF TWO SPACERS PER JOINT OF PIPE.

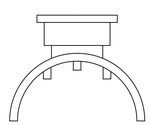
TYPICAL SERVICE CONNECTIONS



RUBBER WYE SADDLE



RUBBER TEE SADDLE



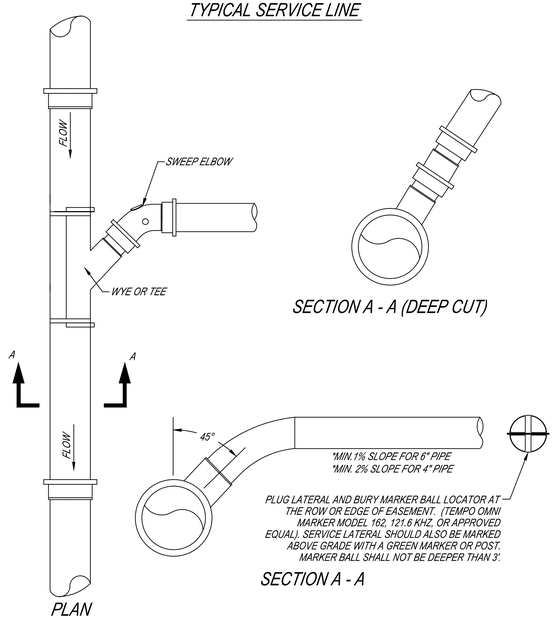
PVC TEE SADDLE

PVC SADDLE FOR USE WITH MAINS 3034 OR SCH. 40 - STAINLESS STEEL BANDS

NOTE:

1. ALL CONNECTIONS SHALL BE MADE WITH AN APPROVED TYPE SADDLE FITTING. THE SADDLE SHALL BE PLACED OVER A CAREFULLY CUT OPENING IN THE UPPER QUADRANT OF THE SEWER MAIN AND ATTACHED TO THE MAIN USING STAINLESS STEEL BANDS. UNDER NO CIRCUMSTANCES SHALL ANY LATERAL CONNECTION BE ALLOWED TO PROTRUDE INTO THE SEWER MAIN.

TYPICAL SERVICE LINE

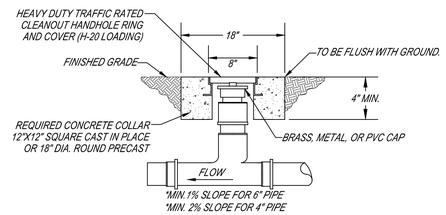


PLAN

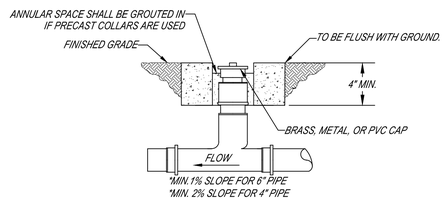
SECTION A - A (DEEP CUT)

SECTION A - A

TYPICAL CLEANOUT



CLEANOUT IN PAVED AREAS



CLEANOUT IN NON-PAVED AREAS

NOTE:

1. CLEANOUTS ARE REQUIRED AT THE EDGE OF ALL EASEMENTS AND RIGHT OF WAYS, UNLESS APPROVED OTHERWISE.

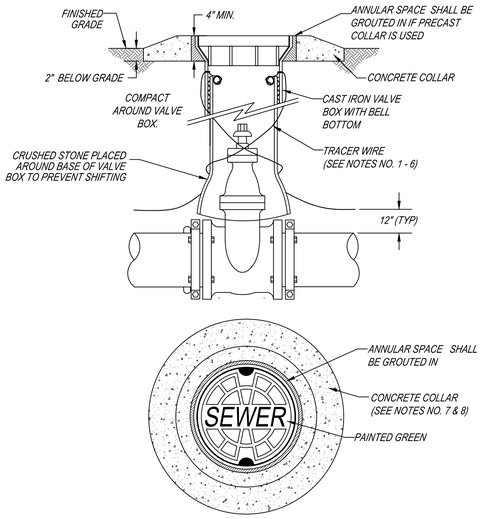
PROJECT TITLE:

STANDARD DETAILS: SANITARY SEWER - SHEET 2 OF 3

City of Auburn

DEPARTMENT:	WRM	REVISIONS:	GM-04/3/04
SCALE:	N.T.S.		BS-10-25-07
DRAWN BY:	BS		DCM 2010
REVIEWED BY:	JC		JC-10-2011
APPROVED BY:	EC		
IMPLEMENTED:	02/2003		

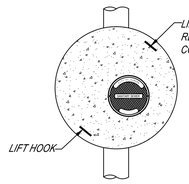
TYPICAL VALVE BOX INSTALLATION



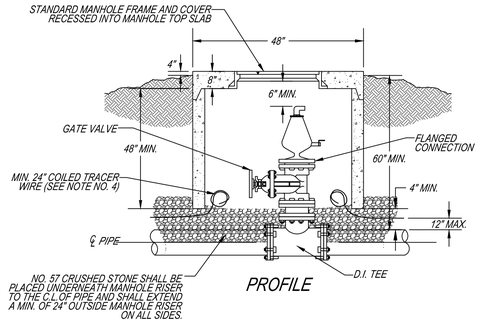
NOTES:

1. TRACER WIRE SHALL BE BROUGHT TO GRADE AT A MINIMUM OF EVERY 500 FEET IN A VALVE BOX.
2. TRACER WIRE SHALL BE WRAPPED AROUND THE VALVE BOX TO PREVENT MOVEMENT.
3. A 3/16" DIAMETER HOLE SHALL BE LOCATED IN THE VALVE BOX NO MORE THAN 6 INCHES BELOW GRADE FOR THE TRACER WIRE TO PULL THROUGH.
4. THE TRACER WIRE SHALL BE KNOTTED INSIDE THE VALVE BOX TO PREVENT SLIPPING BACK THROUGH THE HOLE.
5. A MINIMUM OF 12 INCHES OF EXCESS WIRE SHALL BE COILED AND LEFT IN THE VALVE BOX.
6. TRACER WIRE SHALL BE NO. 14 A.W.G. COPPER CLAD STEEL W/ POLYETHYLENE INSULATION.
7. CONCRETE COLLAR MAY BE CAST-IN-PLACE OR PRECAST AND MAY BE ROUND OR SQUARE IN SHAPE.
8. CONCRETE COLLAR SHALL BE A MIN. 4" THICK.

COMBINATION AIR RELEASE & AIR/VACUUM VALVE



PLAN

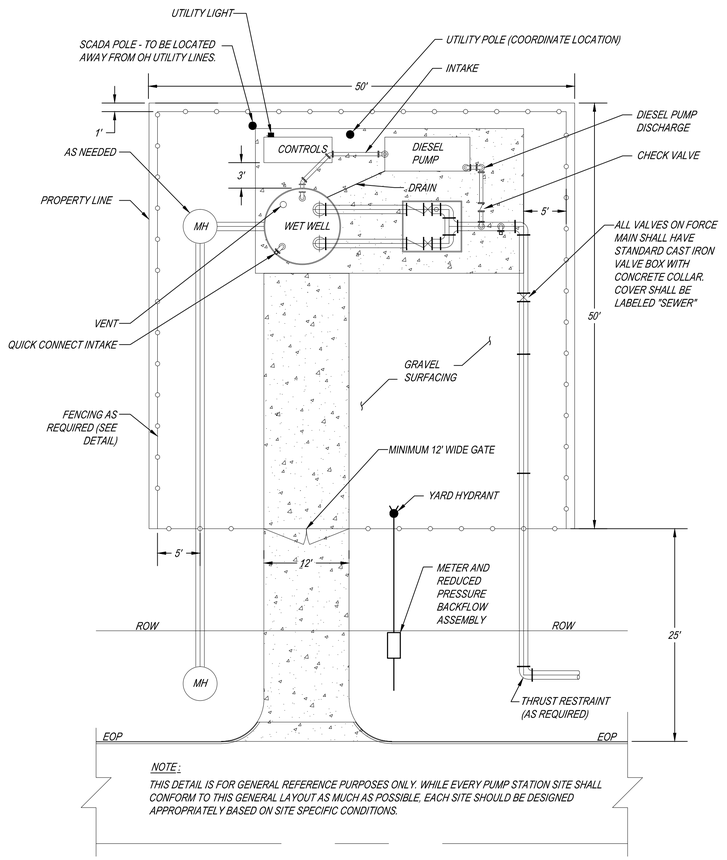


PROFILE

NOTES:

1. AIR RELEASE VALVES SHALL BE MANUFACTURED BY ARI OR APPROVED EQUAL.
2. VALVE BODY SHALL BE STAINLESS STEEL.
3. AIR RELEASE VALVES SHALL BE INSTALLED ON A LEVEL SECTION OF PIPE, EQUIDISTANT BETWEEN JOINTS.
4. TRACER WIRE SHALL BE NO. 14 A.W.G. COPPER CLAD STEEL W/ POLYETHYLENE INSULATION.

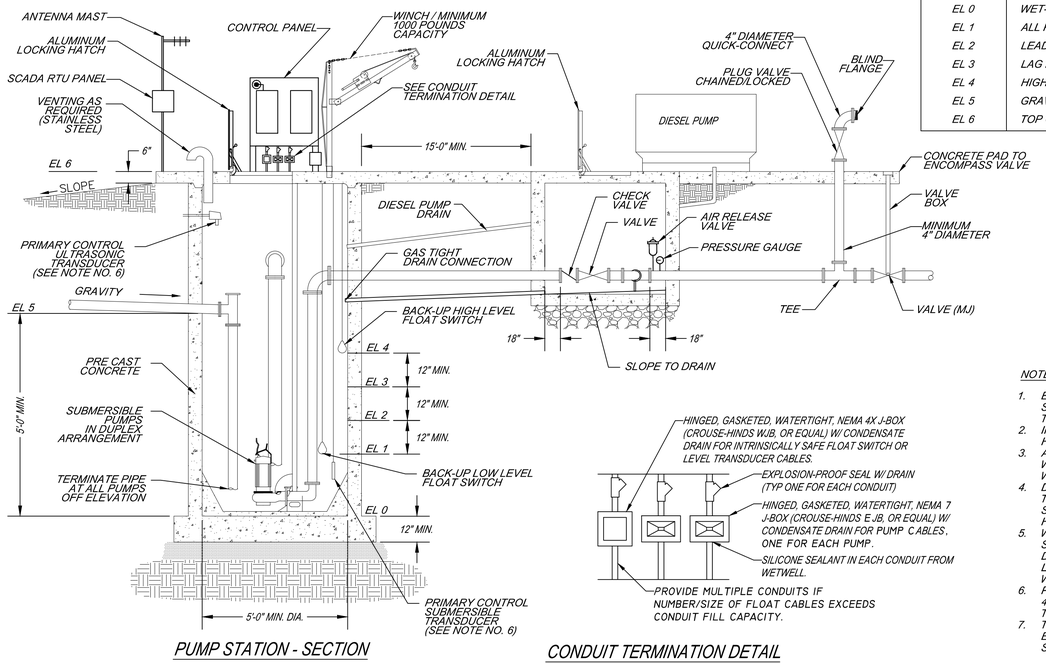
GENERAL PUMP STATION SITE PLAN



NOTE:

THIS DETAIL IS FOR GENERAL REFERENCE PURPOSES ONLY. WHILE EVERY PUMP STATION SITE SHALL CONFORM TO THIS GENERAL LAYOUT AS MUCH AS POSSIBLE, EACH SITE SHOULD BE DESIGNED APPROPRIATELY BASED ON SITE SPECIFIC CONDITIONS.

GENERAL PUMP STATION SITE SECTION



PUMP STATION - SECTION

ELEVATION	DESCRIPTION	VALUE	NOTES
EL 0	WET-WELL INVERT		
EL 1	ALL PUMPS OFF		
EL 2	LEAD PUMP ON		
EL 3	LAG PUMP ON		
EL 4	HIGH LEVEL ALARM		
EL 5	GRAVITY INVERT		
EL 6	TOP OF WET-WELL		

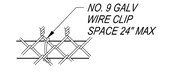
NOTES:

1. ELEVATION OF THE TOP OF THE PUMP STATION SHALL BE A MINIMUM 2'-0" ABOVE THE 100 YEAR FLOOD ELEVATION.
2. INTERIOR OF WET WELL TO BE LINED WITH HDPE, PVC, OR APPROVED EPOXY LINING.
3. ALL PIPING ON SITE TO BE DUCTILE IRON WITH EPOXY LINING SUITABLE FOR WASTEWATER SERVICE.
4. DIESEL PUMP SHALL BE SIZED TO HANDLE THE PEAK HOURLY DISCHARGE OF THE STATION AND SHALL HAVE A MINIMUM 24 HOUR FUEL CAPACITY.
5. WET WELL SIZE TO BE BASED ON SPECIFIC DESIGN CRITERIA. MINIMUM 5'-0" DIAMETER AND 5'-0" DEPTH FROM THE LOWEST INCOMING PIPE INVERT TO THE WET WELL BOTTOM.
6. PRIMARY LEVEL CONTROL SHALL UTILIZE A 4-20mA SUBMERSIBLE OR ULTRASONIC TRANSDUCER, AS APPROVED.
7. THIS IS A GENERAL SCHEMATIC DRAWING. EACH STATION SHALL HAVE A DETAILED SITE SPECIFIC DESIGN.

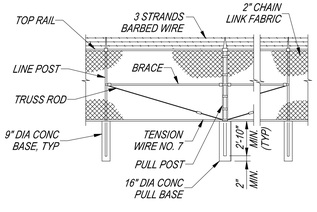
CONDUIT TERMINATION DETAIL

LINE POST CONNECTION

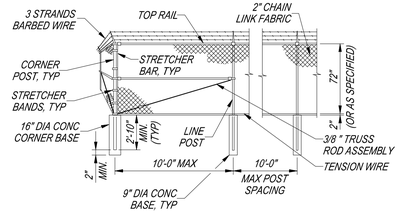
TOP RAIL CONNECTION



TYPICAL PULL POST



TYPICAL CORNER POST



FENCE NOTES:

1. BRACE AND TRUSS ROD REQUIRED AT GATES AND SIDE OF ALL CORNER POSTS.
2. FABRIC ATTACHED TO OUTSIDE OF POSTS.

STANDARD DETAILS: SANITARY SEWER - SHEET 3 OF 3

PROJECT TITLE:

City of Auburn

DEPARTMENT:	WRM	REVISIONS:	DCM 2010
SCALE:	N.T.S.		JC-10-2011
DRAWN BY:	BS		
REVIEWED BY:	JC		
APPROVED BY:	EC		
IMPLEMENTED:	12/2007		