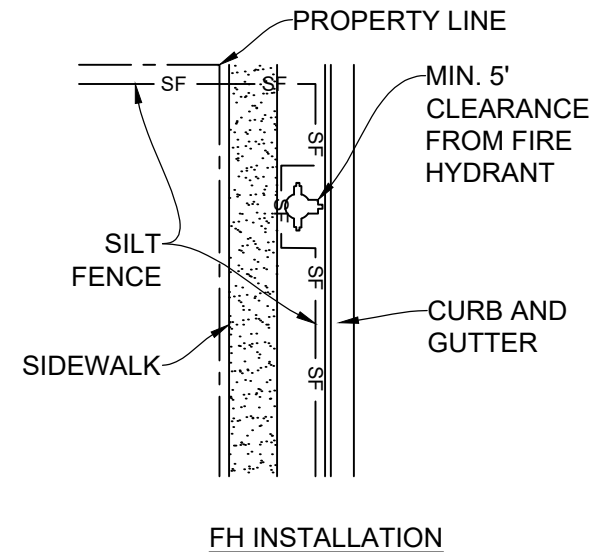
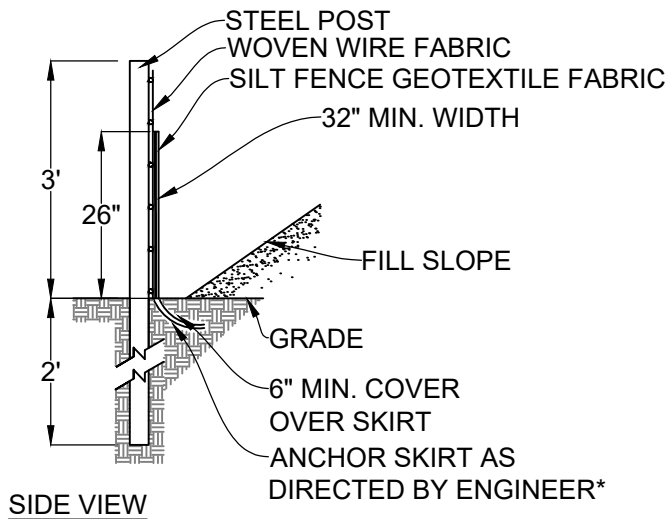


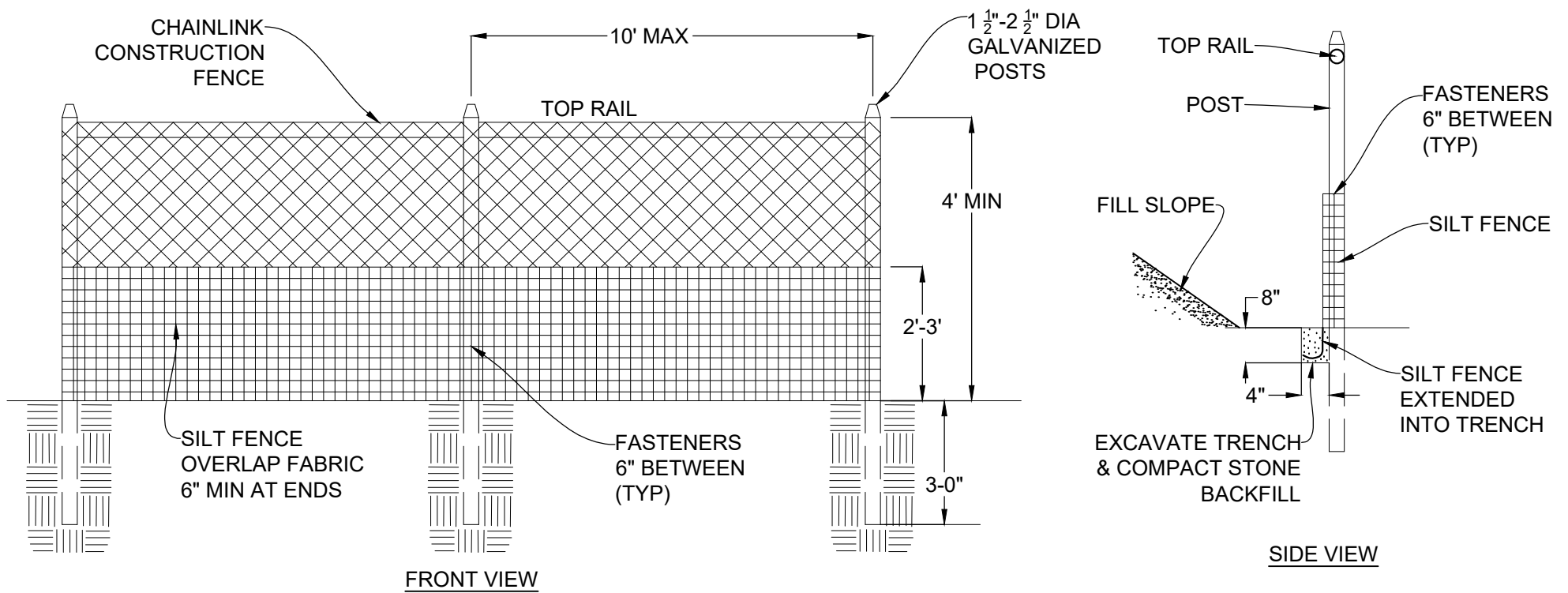
GENERAL NOTES:

1. USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED $\frac{1}{4}$ ACRE PER 100 LF OF FENCE AND NEVER IN AREAS OF CONCENTRATED FLOW.
2. END OF SILT FENCE NEEDS TO BE TURNED UPHILL.
3. WRAP THE SILT FENCE AROUND ALL EXISTING FIRE HYDRANTS SO THEY ARE FULLY VISIBLE FROM THE ROADWAY.
4. SILT FENCE SHOULD BE A MINIMUM OF 5 FEET FROM THE TOE OF SLOPE.
5. OVERLAP 12 INCHES WHEN SPLICING FABRIC.
6. ANCHORING OF TOE OF FENCE SHOULD BE REINFORCED WITH 12 INCHES OF NCDOT #5 OR #57 WASHED STONE WHEN FLOW WILL RUN PARALLEL TO TOE OF FENCE.

MAINTENANCE NOTES:

1. REMOVE SEDIMENT WHEN AT HALF HEIGHT OF SILT FENCE.
2. REPAIR OR REPLACE FENCE IMMEDIATELY WHEN TEARS, HOLES, SAGGING, COLLAPSE, OR OTHER DEFICIENCIES FOUND.
3. THE DESIGN LIFE OF A SYNTHETIC SILT FENCE IS APPROX. 6 MONTHS. DETERIORATED SILT FENCE MUST BE REPLACED.
4. SILT FENCE SHALL BE INSPECTED WEEKLY OR AFTER 1 INCH RAIN EVENT.
5. USE #57 WASHED STONE FOR REPAIR OF SILT FENCE FAILURES, AND FOR ANCHOR WHEN SILT FENCE IS PROTECTING CATCH BASIN.





GENERAL NOTES:

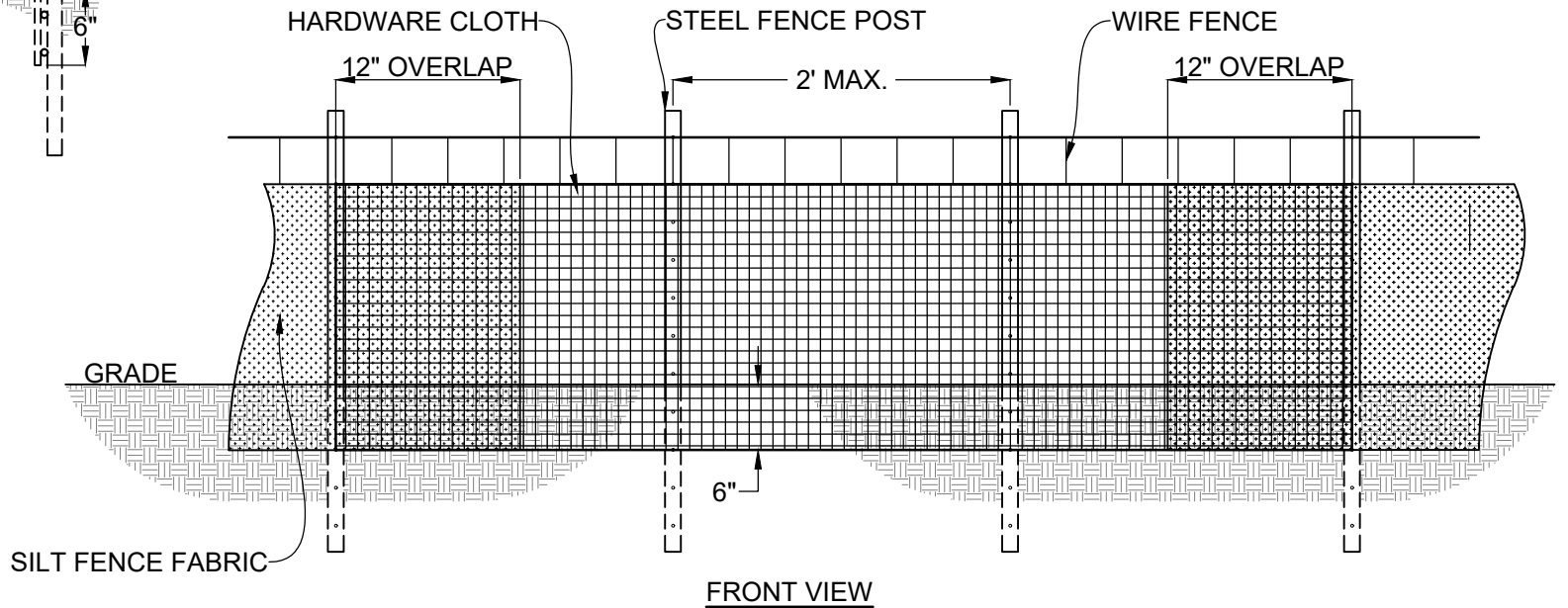
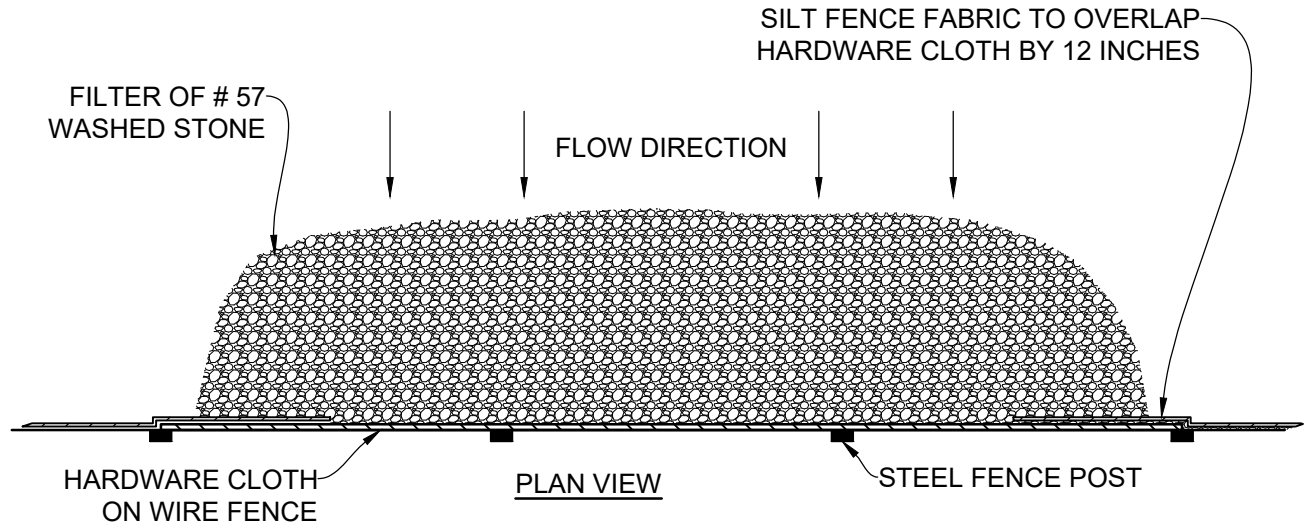
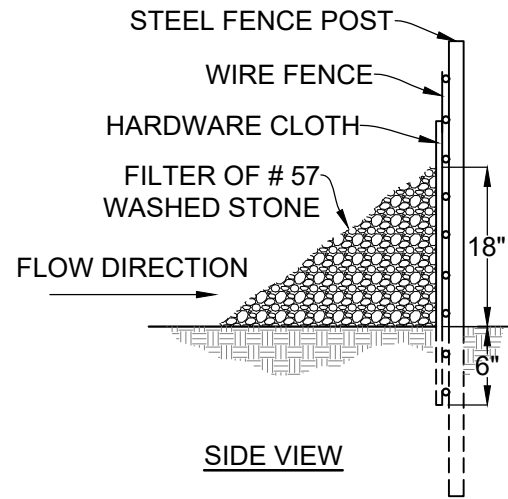
1. SUPER SILT FENCE TO BE USED WHEN STANDARD IS INADEQUATE, AS DIRECTED BY THE ENGINEER.
2. DO NOT USE IN AREAS OF CONCENTRATED FLOW.
3. END OF SILT FENCE NEEDS TO BE TURNED UPHILL.
4. WRAP THE SILT FENCE AROUND ALL EXISTING FIRE HYDRANTS WITH 5' OF CLEARANCE, SO THAT THEY ARE FULLY VISIBLE FROM THE ROADWAY.
5. SILT FENCE SHOULD BE A MINIMUM OF 5 FEET FROM THE TOE OF SLOPE.
6. OVERLAP 12 INCHES WHEN SPLICING FABRIC.
7. ANCHORING OF TOE OF FENCE IN TRENCH SHALL BE WITH COMPACTED NCDOT #5 OR #57 WASHED STONE.

MAINTENANCE NOTES:

1. REMOVE SEDIMENT WHEN AT HALF HEIGHT OF SILT FENCE.
2. REPAIR OR REPLACE FENCE IMMEDIATELY WHEN TEARS, HOLES, SAGGING, COLLAPSE, OR OTHER DEFICIENCIES FOUND.
3. THE DESIGN LIFE OF A SYNTHETIC SILT FENCE IS APPROX. 6 MONTHS. DETERIORATED SILT FENCE MUST BE REPLACED.
4. SILT FENCE SHALL BE INSPECTED WEEKLY OR AFTER 1 INCH RAIN EVENT.
5. USE #57 WASHED STONE FOR REPAIR OF SILT FENCE FAILURES, AND FOR ANCHOR WHEN SILT FENCE IS PROTECTING CATCH BASIN.

GENERAL NOTES:

1. APPLICABLE FOR DRAINAGE AREAS NO MORE THAN 1/4 ACRE.
2. USE AS A REPAIR OF SILT FENCE FAILURES.
3. BURY WIRE FENCE, HARDWARE CLOTH, AND SILT FENCE FABRIC 6 INCHES.



MAINTENANCE NOTES:

1. REMOVE SEDIMENT WHEN AT HALF HEIGHT OF STONE. REFRESH STONE THAT BECOMES CLOGGED WITH SEDIMENT/DEBRIS.
2. REPAIR OR REPLACE FENCE & HARDWARE CLOTH IMMEDIATELY WHEN DEFICIENCIES FOUND.

**TOWN OF APEX
STANDARDS**

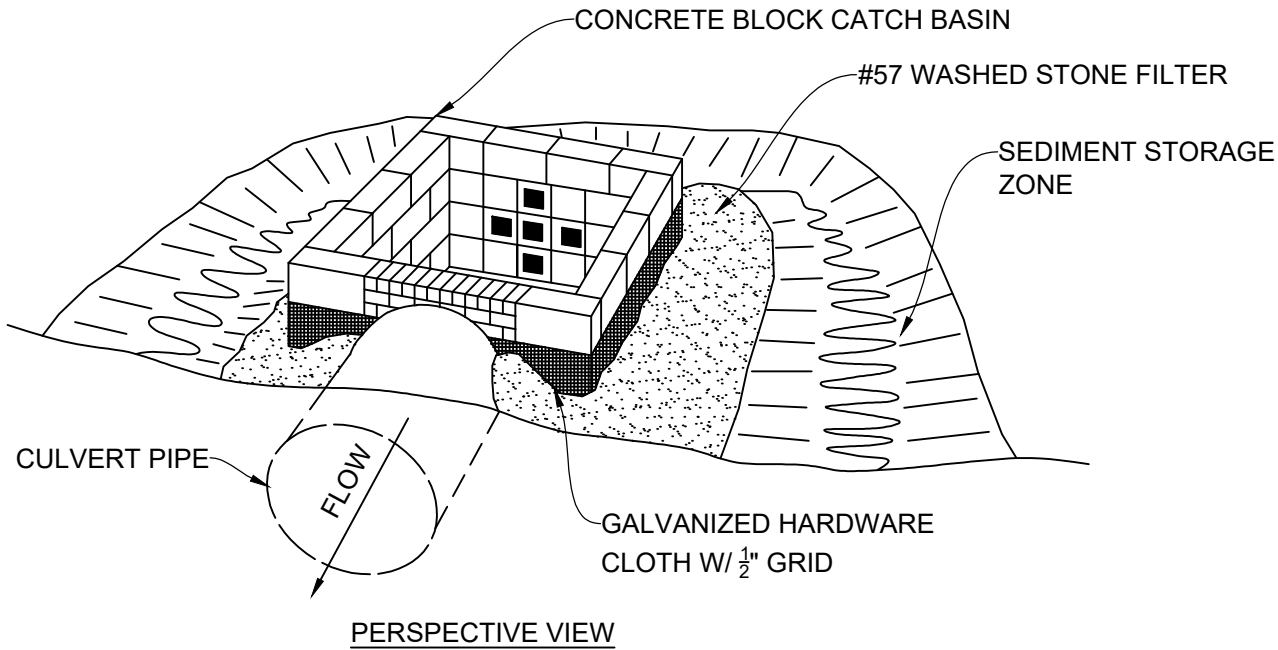
EFFECTIVE: JUNE 11, 2024

TEMPORARY SILT FENCE OUTLET

STD. NO.

400.02

SHEET 1 OF 1

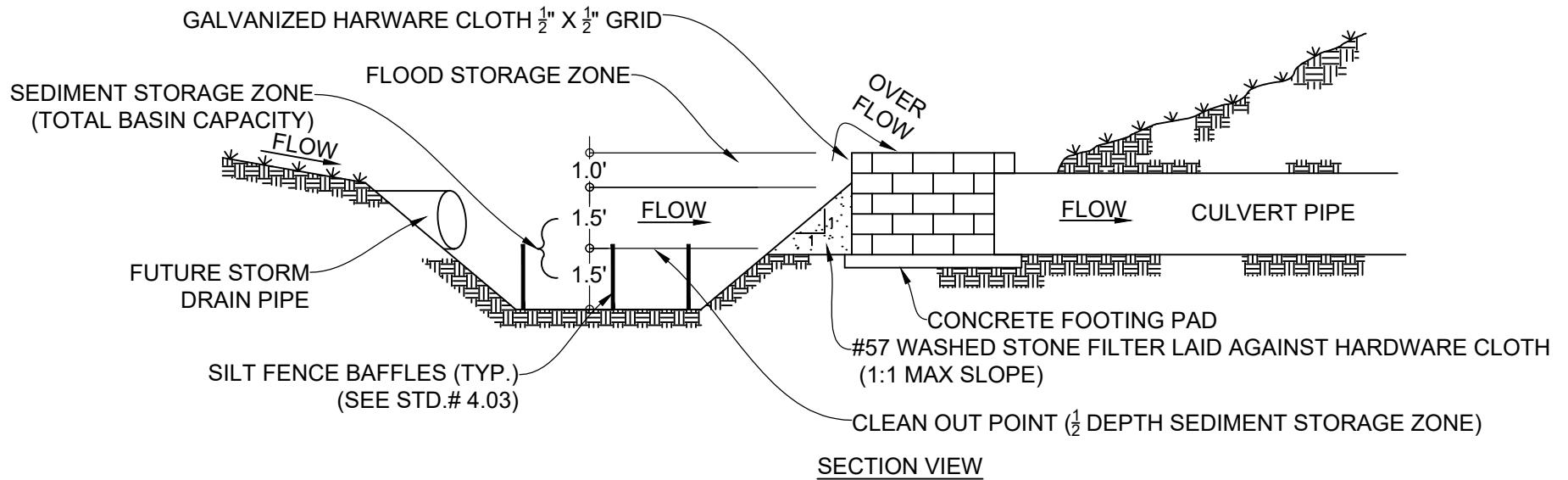


GENERAL NOTES:

1. AT THE END OF THE PROJECT, CATCH BASIN CAN BE RAISED AS NEEDED PLUGGING OPEN COURSE OF BLOCK WITH MORTAR.
2. RISER CAN BE BUILT AS A STANDARD CATCH BASIN/JUNCTION BOX (WITH WEEP HOLES) IN RECEIVING WALL AND BE UTILIZED AS SUCH WHEN PROJECT IS STABLE.
3. FOR DRAINAGE AREA >5 ACRES TREAT AS RISER STRUCTURE INCLUDING TRASH RACK, ELEVATIONS, AND ANTI-FLOATATION.

MAINTENANCE NOTES:

1. REMOVE SEDIMENT WHEN $\frac{1}{2}$ HEIGHT OF SEDIMENT STORAGE ZONE.
2. REPLACE STONE, HARDWARE, & BAFFLES AS NEEDED.



TOWN OF APEX
STANDARDS

EFFECTIVE: JUNE 11, 2024

CATCH BASIN RISER/FILTER

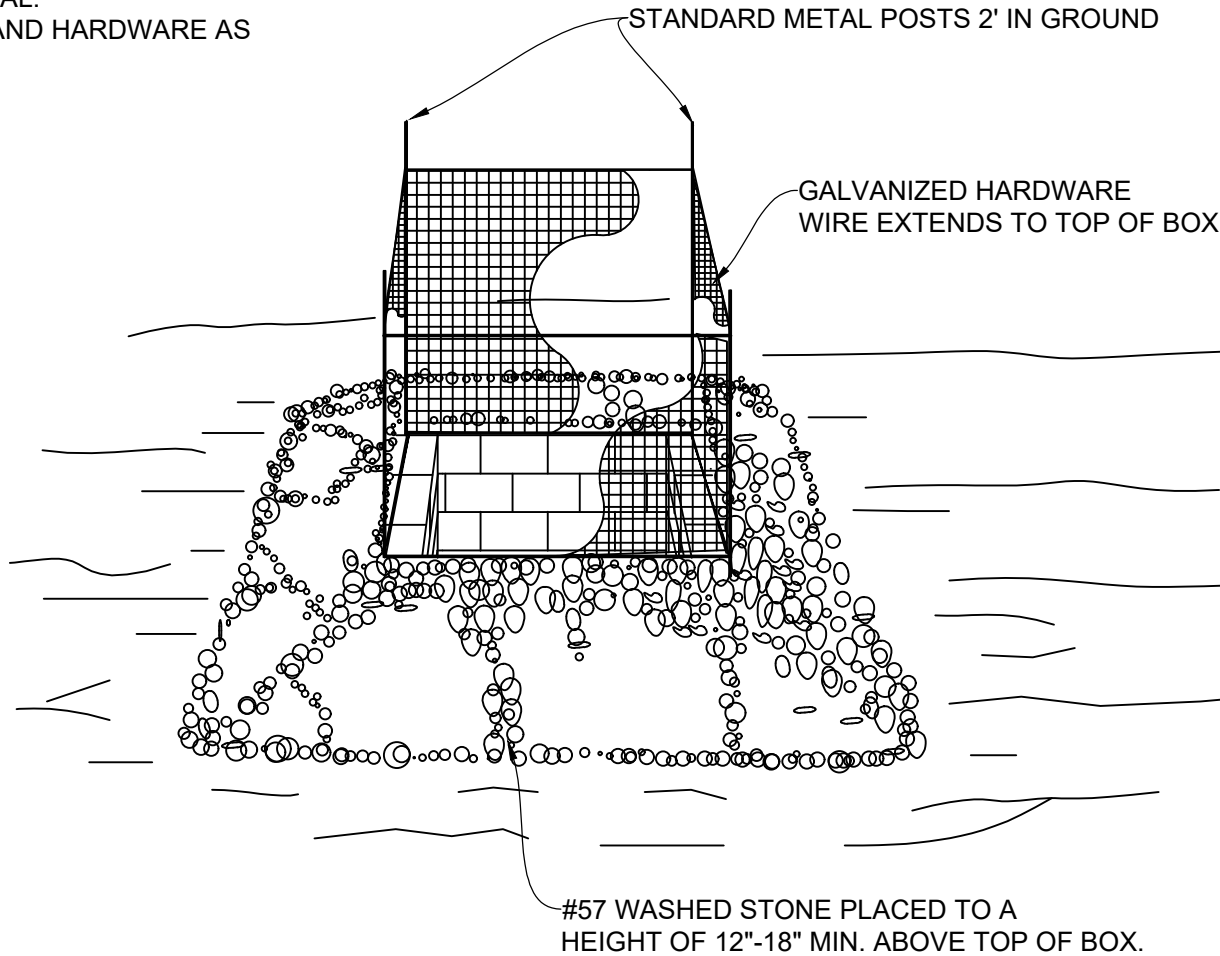
STD. NO.

400.03

SHEET 1 OF 1

MAINTENANCE NOTES:

1. REMOVE SEDIMENT WHEN AT $\frac{1}{2}$ HEIGHT OF STONE AND CLEAR HARDWARE OF DEBRIS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS, TAKING CARE NOT TO DAMAGE OR UNDERCUT HARDWARE DURING SEDIMENT REMOVAL.
2. REPLACE STONE AND HARDWARE AS NEEDED.



TOWN OF APEX
STANDARDS

EFFECTIVE: JUNE 11, 2024

CATCH BASIN & YARD INLET PROTECTION

STD. NO.

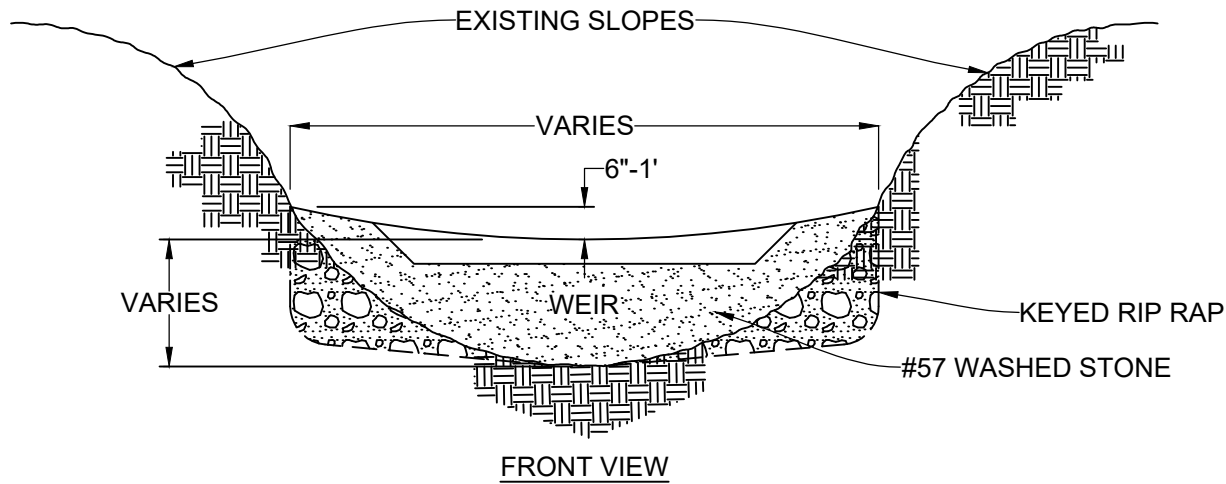
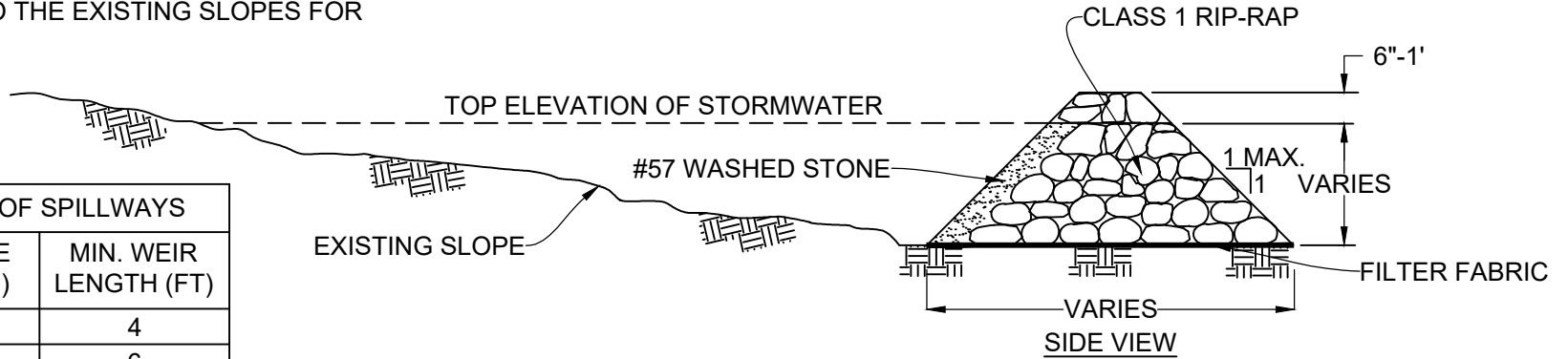
400.04

SHEET 1 OF 1

GENERAL NOTES:

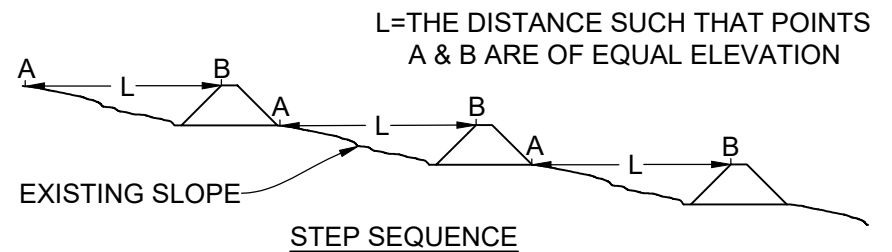
1. HEIGHT & WIDTH DETERMINED BY EXISTING TOPOGRAPHY AND SEDIMENT STORAGE REQUIRED.
2. KEY RIP RAP INTO THE EXISTING SLOPES FOR STABILIZATION.

DESIGN OF SPILLWAYS	
DRAINAGE AREA (AC)	MIN. WEIR LENGTH (FT)
1	4
2	6
3	8
4	10
5	12



MAINTENANCE NOTES:

1. REMOVE SEDIMENT WHEN AT $\frac{1}{2}$ HEIGHT OF STONE, AND CLEAR DEBRIS THAT COULD CLOG CHANNEL.
2. ADD OR REFRESH STONE AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.
3. CORRECT DEFICIENCIES IF EROSION OCCURS AROUND EDGES OF DAM.
4. IF SIGNIFICANT EROSION OCCURS BETWEEN DAMS, ADD ADDITIONAL DAMS AND ENSURE CHANNEL IS PROPERLY STABILIZED WITH MATTING/STABILIZATION.



**TOWN OF APEX
STANDARDS**

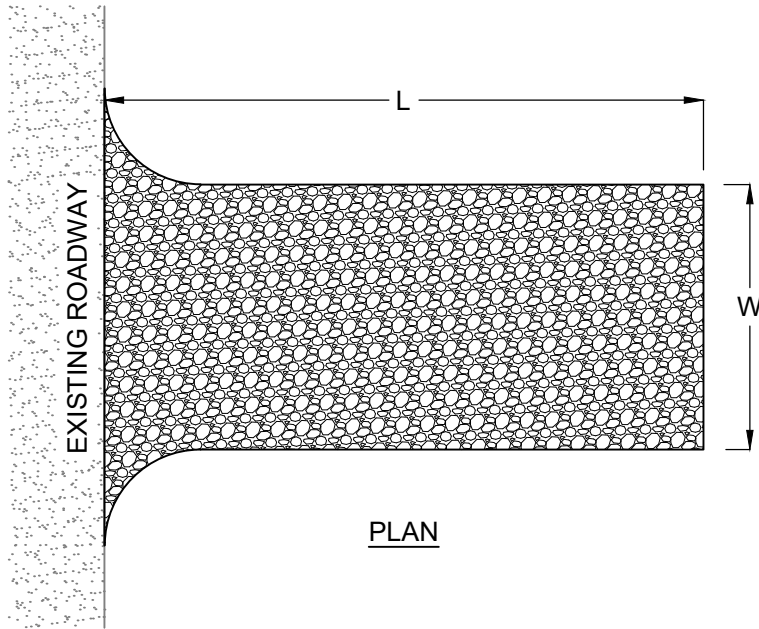
CHECK DAM

EFFECTIVE: JUNE 11, 2024

STD. NO.

400.05

SHEET 1 OF 1



PLAN

GENERAL NOTES:

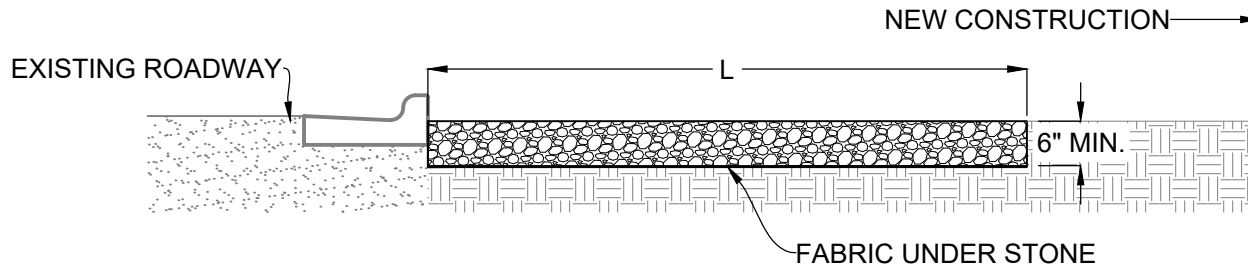
1. INSTALL SILT FENCE OR TREE PROTECTION FENCE TO ENSURE CONSTRUCTION ENTRANCE IS USED.
2. IF CONSTRUCTION ENTRANCE DOES NOT REMOVE MUD FROM TIRES EFFECTIVELY, THE TIRES OF THE VEHICLE MUST BE WASHED BEFORE ENTERING PUBLIC ROAD (SEE DETAIL 400.06 SHEET 2 OF 2).
3. IF A PROJECT CONTINUES TO DEPOSIT MUD AND DEBRIS ONTO THE PUBLIC ROAD, THE TOWN WILL CLEAN THE AREA AND INVOICE THE FINANCIALLY RESPONSIBLE PARTY.

MAINTENANCE NOTES:

1. CONSTRUCTION ENTRANCE SHALL BE MAINTAINED ROUTINELY TO AVOID SEDIMENT LEAVING PROJECT.
2. SEDIMENT ENTERING PAVED ROADWAYS FROM PROJECT SHALL BE REMOVED IMMEDIATELY.

ENTRANCE TYPE	L	W	STONE SIZE
GENERAL	50'	25'	2"-3"
RESIDENTIAL*	25'	12'	#57

* INDIVIDUAL SINGLE FAMILY



CROSS SECTION

TOWN OF APEX
STANDARDS

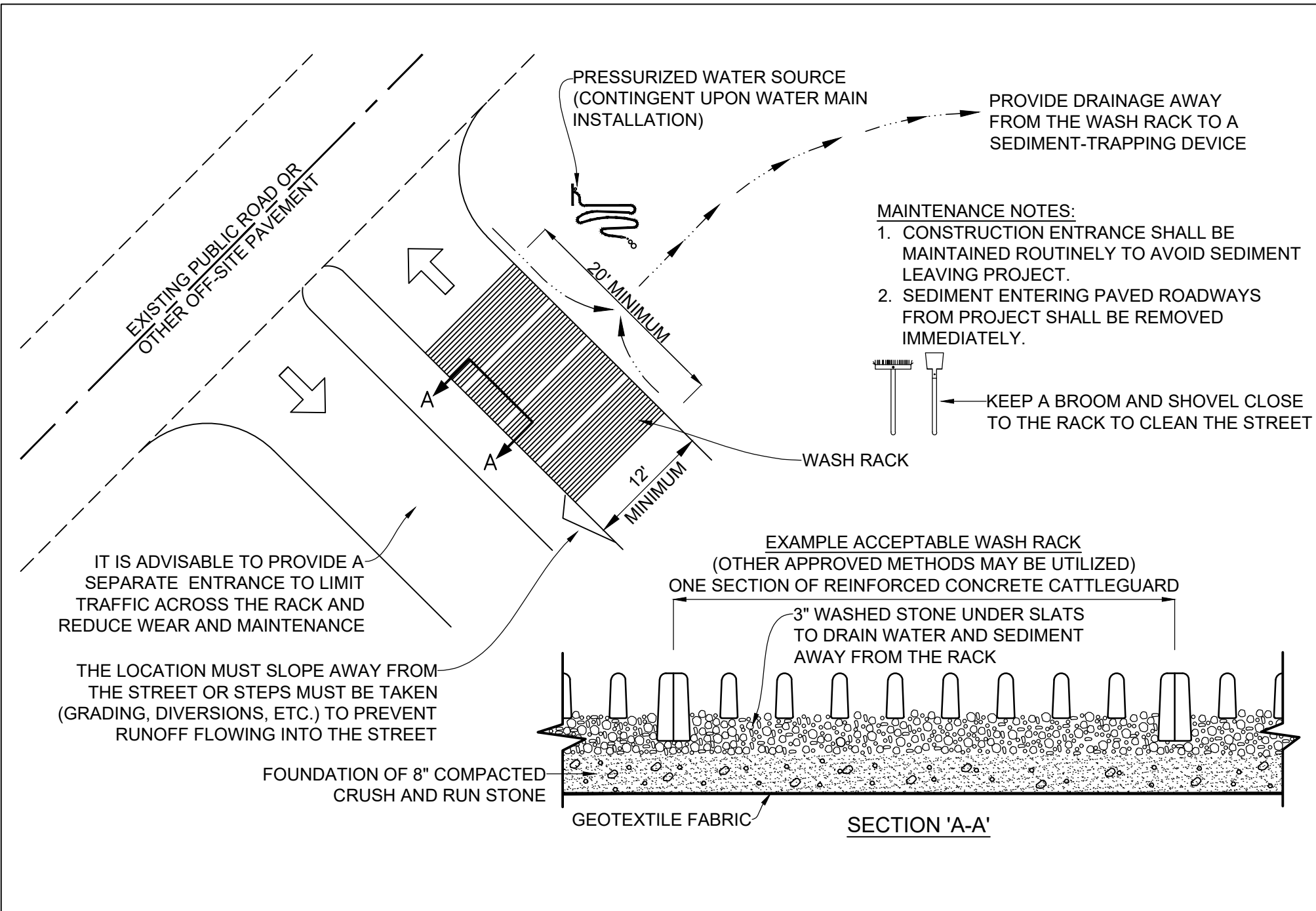
EFFECTIVE: JUNE 11, 2024

CONSTRUCTION ENTRANCE

STD. NO.

400.06

SHEET 1 OF 2



IT IS ADVISABLE TO PROVIDE A SEPARATE ENTRANCE TO LIMIT TRAFFIC ACROSS THE RACK AND REDUCE WEAR AND MAINTENANCE

THE LOCATION MUST SLOPE AWAY FROM THE STREET OR STEPS MUST BE TAKEN (GRADING, DIVERSIONS, ETC.) TO PREVENT RUNOFF FLOWING INTO THE STREET

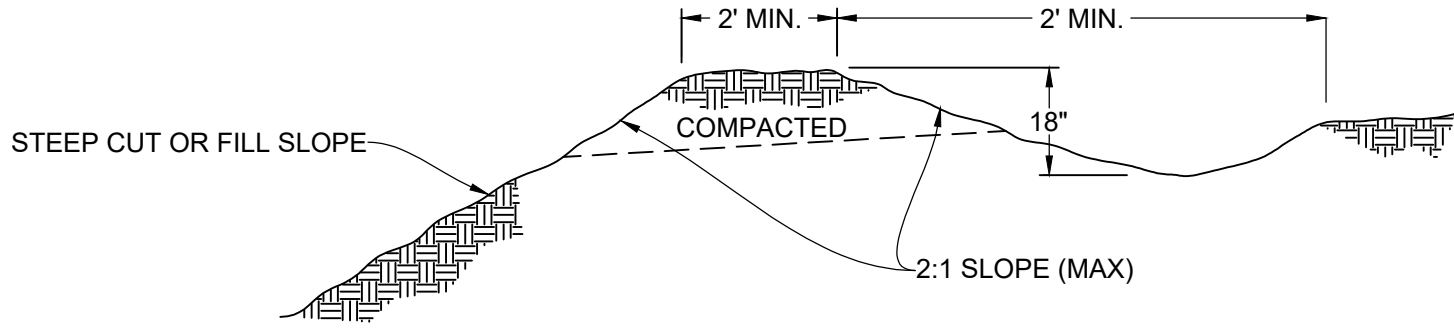
FOUNDATION OF 8" COMPACTED CRUSH AND RUN STONE

EXAMPLE ACCEPTABLE WASH RACK (OTHER APPROVED METHODS MAY BE UTILIZED)
 ONE SECTION OF REINFORCED CONCRETE CATTLEGUARD
 3" WASHED STONE UNDER SLATS TO DRAIN WATER AND SEDIMENT AWAY FROM THE RACK

SECTION 'A-A'

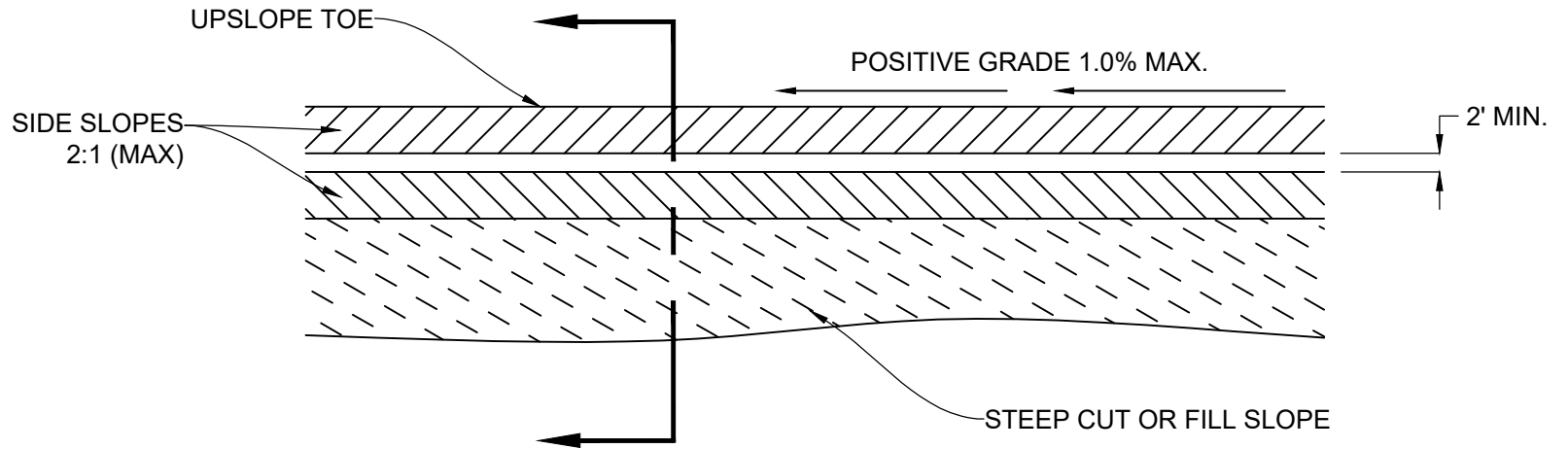
MAINTENANCE NOTES:

1. INSPECT DIVERSION DITCH WEEKLY AND AFTER RUNOFF-PRODUCING EVENTS FOR EROSION AND GRASS ESTABLISHMENT. REPAIR EROSION, REMOVE SEDIMENT, AND RESTABILIZE DITCH AS NEEDED TO MAINTAIN THE DESIGNED CARRYING CAPACITY.
2. CHECK DAMS, WATTLES, OR OTHER APPROVED MEASURE MUST BE INSTALLED WITHIN DITCH, AND MAINTAINED AS NEEDED.



CROSS SECTION

GENERAL NOTE: STABILIZE DIVERSION DITCH WITH TEMPORARY SEEDING AND EROSION CONTROL NETTING.



PLAN VIEW

**TOWN OF APEX
STANDARDS**

DIVERSION DITCH

EFFECTIVE: JUNE 11, 2024

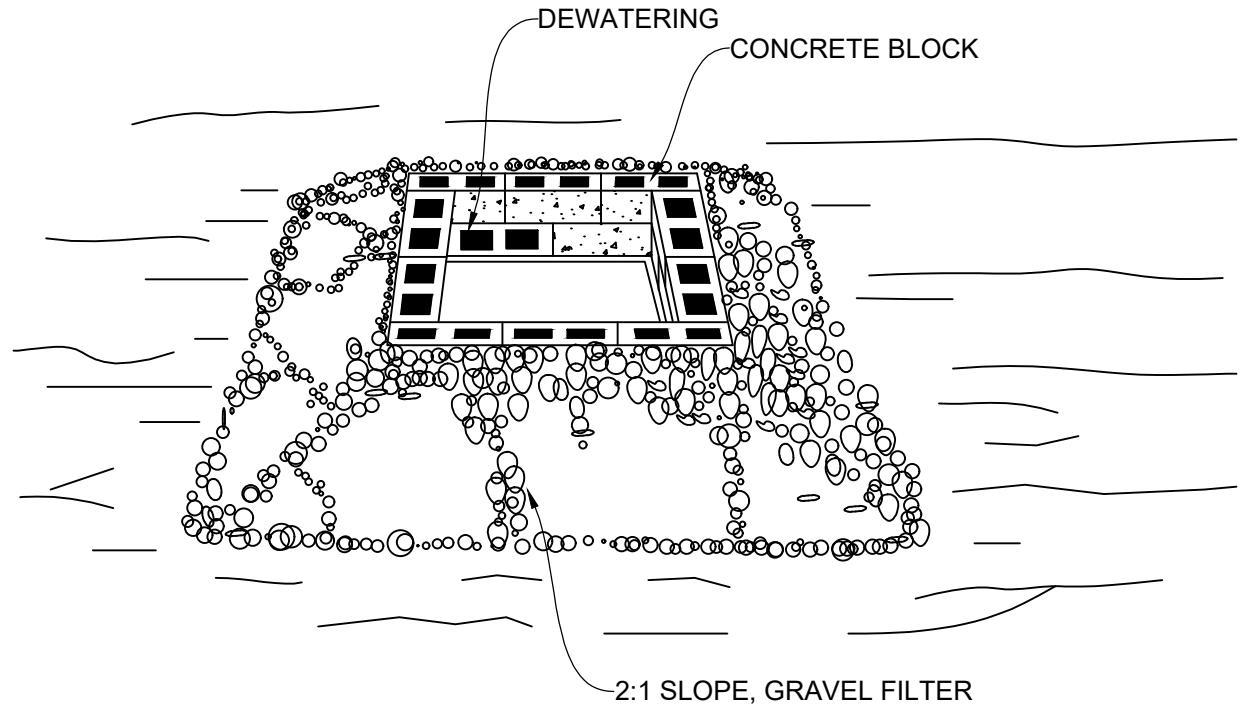
STD. NO.

400.07

SHEET 1 OF 1

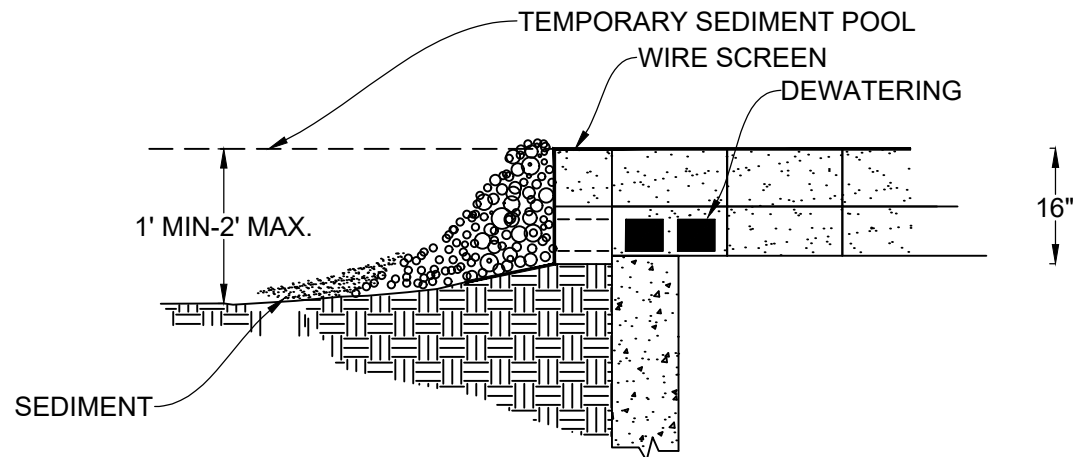
GENERAL NOTES:

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE IN THE BOTTOM ROW TO ALLOW POOL DRAINAGE. THE FOUNDATION SHOULD BE EXCAVATED AT LEAST 2" BELOW THE CREST OF THE STORM DRAIN. PLACE THE BOTTOM ROW OF BLOCKS AGAINST THE EDGE OF THE STORM DRAIN FOR LATERAL SUPPORT AND TO AVOID WASHOUTS WHEN OVERFLOW OCCURS. IF NEEDED, GIVE LATERAL SUPPORT TO SUBSEQUENT ROWS BY PLACING 2X4 WOOD STUDS THROUGH BLOCK OPENINGS.
2. CAREFULLY FIT HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH $\frac{1}{2}$ " OPENINGS OVER ALL BLOCK OPENINGS TO HOLD GRAVEL IN PLACE.
3. USE CLEAN GRAVEL, $\frac{3}{4}$ "- $\frac{1}{2}$ " IN DIAMETER, PLACED 2" BELOW THE TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER AND SMOOTH IT TO AN EVEN GRADE. NCDOT #57 WASHED STONE IS RECOMMENDED.



MAINTENANCE NOTES:

1. REMOVE SEDIMENT AS NEEDED TO PROVIDE ADEQUATE STORAGE VOLUME FOR SUBSEQUENT RAINS.
2. REFRESH OR REPLACE STONE AS NEEDED.



TOWN OF APEX
STANDARDS

EFFECTIVE: JUNE 11, 2024

BLOCK & GRAVEL DROP INLET PROTECTION

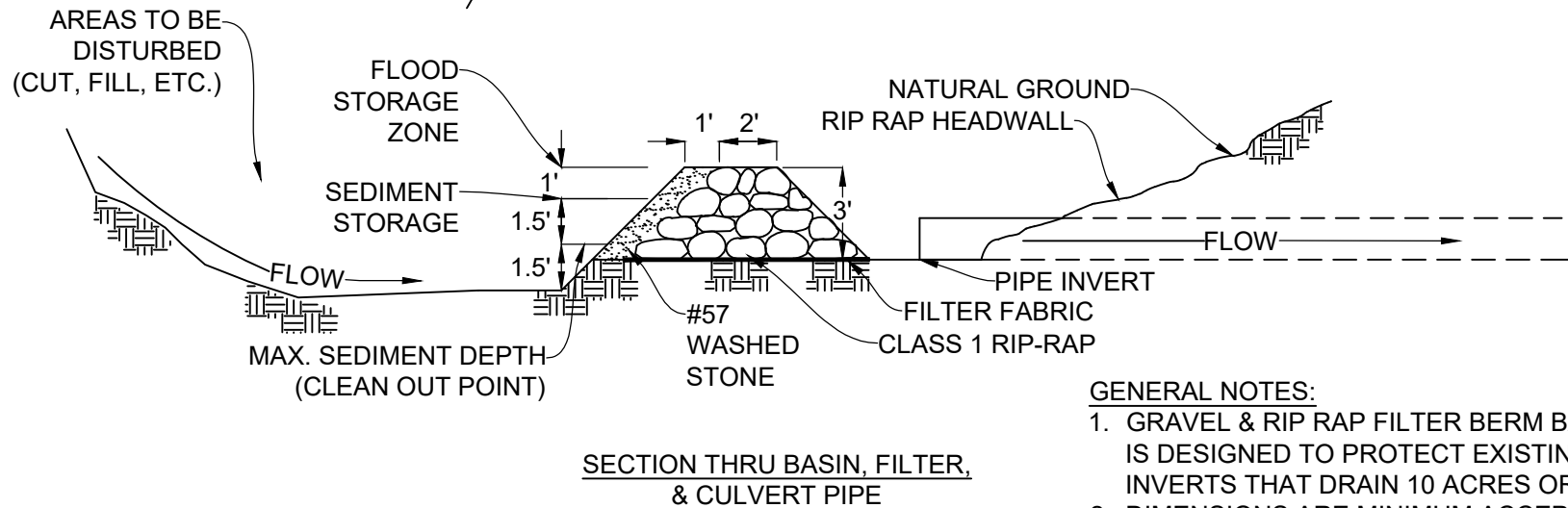
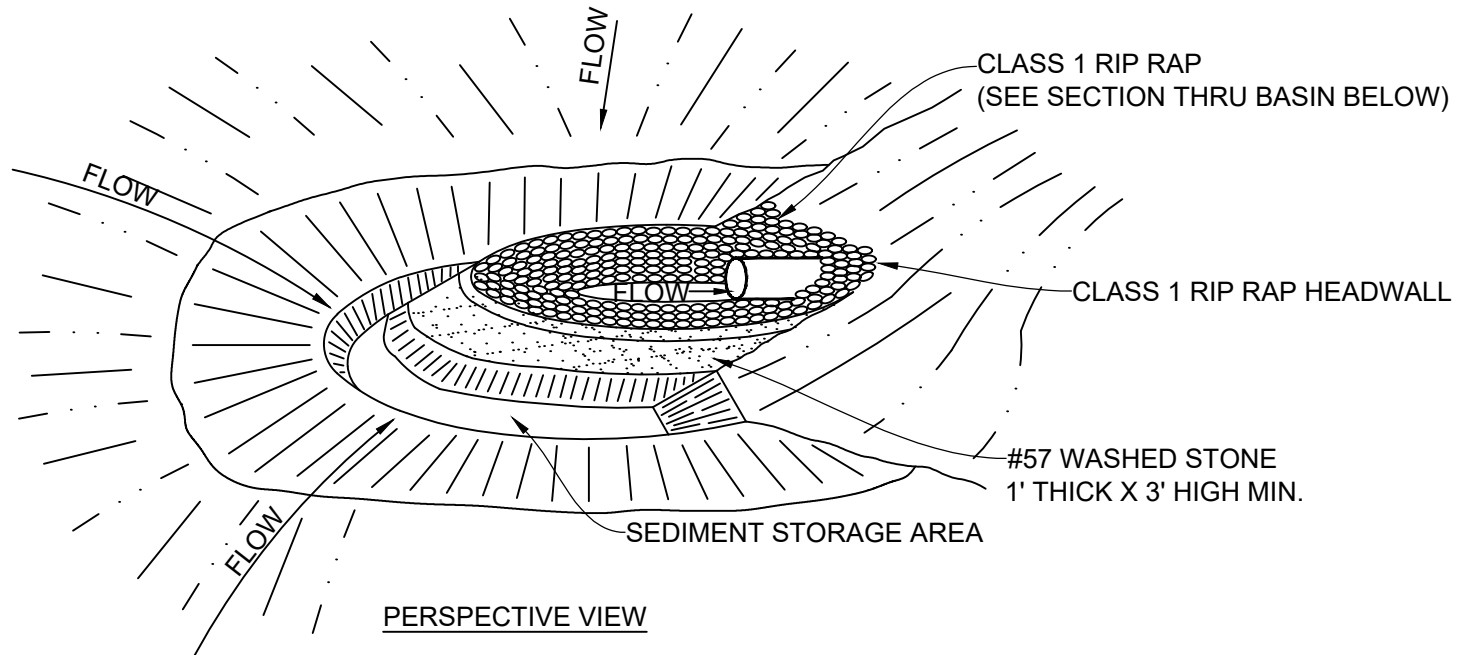
STD. NO.

400.08

SHEET 1 OF 1

MAINTENANCE NOTES:

1. REMOVE SEDIMENT AND RESTORE STORAGE AREA WHEN SEDIMENT HAS ACCUMULATED TO $\frac{1}{2}$ DESIGN DEPTH OF TRAP.
2. REPLACE STONE AS NEEDED TO RESTORE TO INITIAL INSTALLATION CONDITIONS WHEN STONE BECOMES CLOGGED OR DISLODGED.



GENERAL NOTES:

1. GRAVEL & RIP RAP FILTER BERM BASIN DETAIL IS DESIGNED TO PROTECT EXISTING PIPE INVERTS THAT DRAIN 10 ACRES OR LESS.
2. DIMENSIONS ARE MINIMUM ACCEPTABLE UNLESS OTHERWISE NOTED.

TOWN OF APEX
STANDARDS

EFFECTIVE: JUNE 11, 2024

GRAVEL & RIP RAP HORSESHOE INLET BASIN
FOR EXISTING PIPE INVERTS

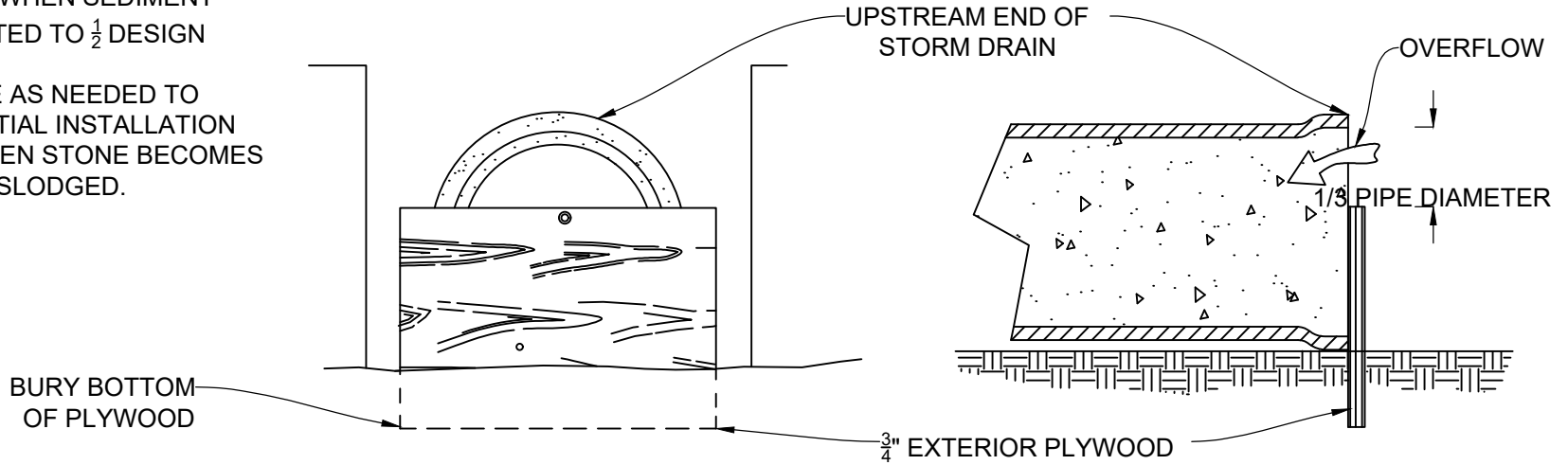
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400.09

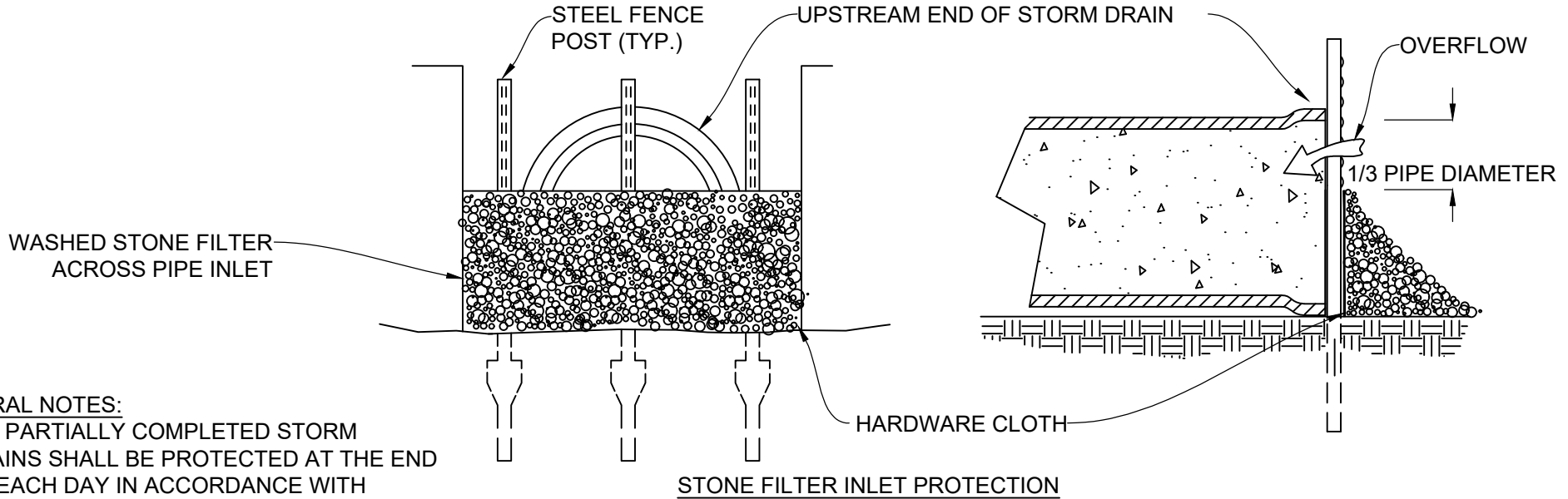
SHEET 1 OF 1

MAINTENANCE NOTES:

1. REMOVE SEDIMENT AND RESTORE STORAGE AREA WHEN SEDIMENT HAS ACCUMULATED TO $\frac{1}{2}$ DESIGN DEPTH OF TRAP.
2. REPLACE STONE AS NEEDED TO RESTORE TO INITIAL INSTALLATION CONDITIONS WHEN STONE BECOMES CLOGGED OR DISLODGED.



PLYWOOD INLET PROTECTION



GENERAL NOTES:

1. ALL PARTIALLY COMPLETED STORM DRAINS SHALL BE PROTECTED AT THE END OF EACH DAY IN ACCORDANCE WITH THESE DETAILS.

TOWN OF APEX
STANDARDS

EFFECTIVE: JUNE 11, 2024

PIPE INLET PROTECTION (PLYWOOD & STONE)

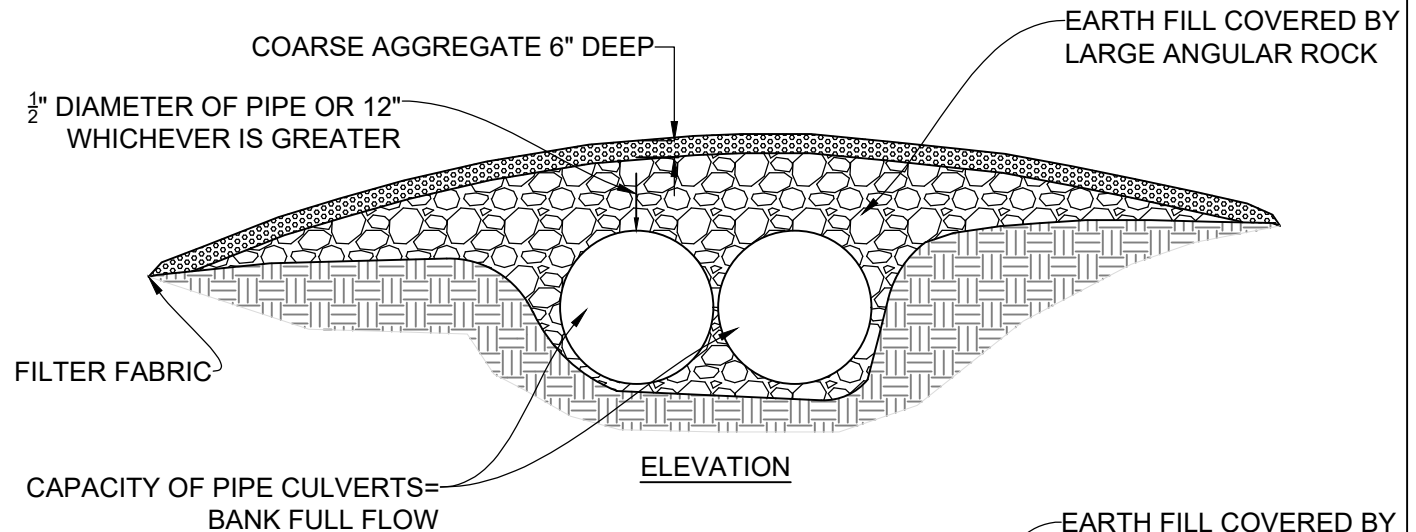
STD. NO.

400.10

SHEET 1 OF 1

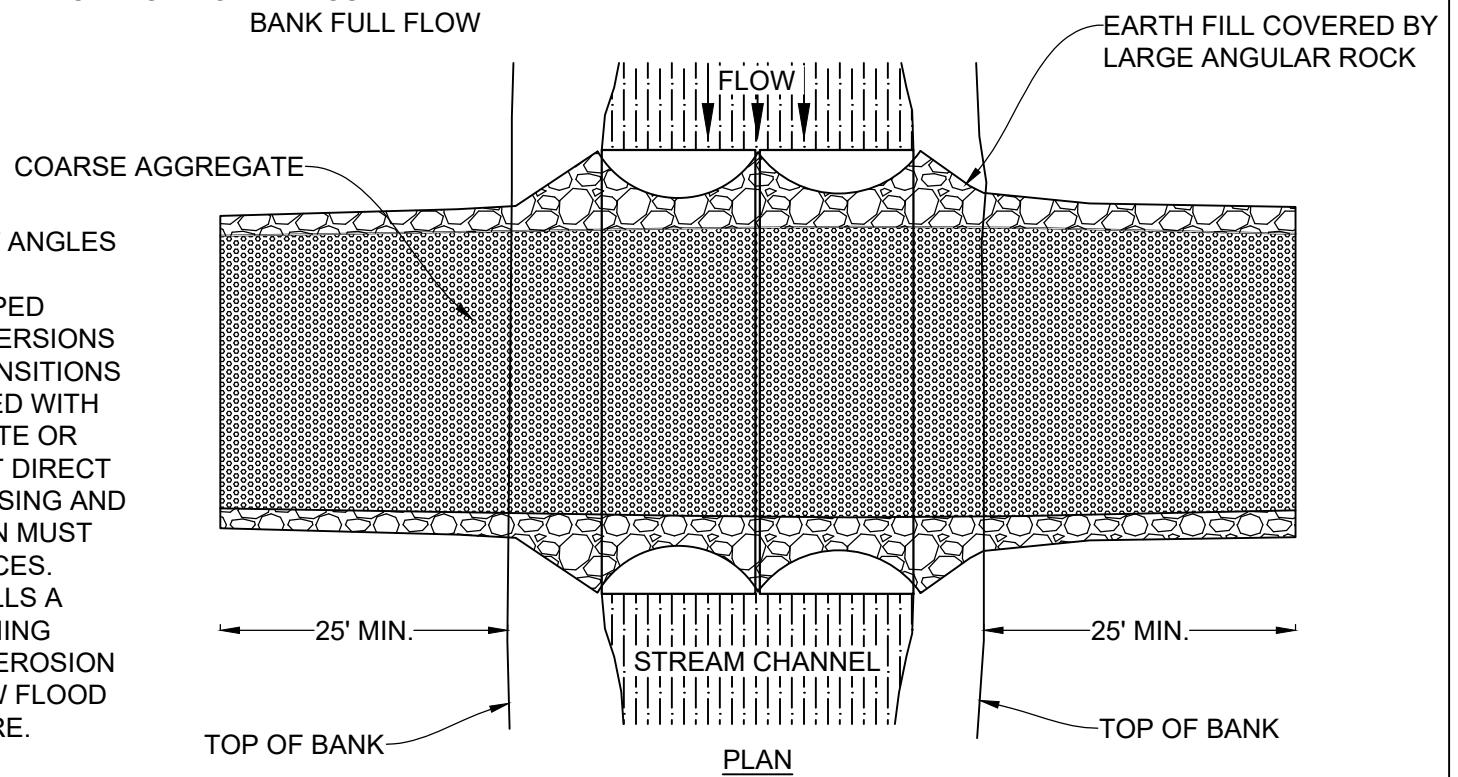
MAINTENANCE NOTES:

1. INSPECT TEMPORARY STREAM CROSSINGS WEEKLY AND AFTER RUNOFF-PRODUCING RAIN EVENTS TO CHECK FOR BLOCKAGE IN CHANNEL, EROSION OF ABUTMENTS, CHANNEL SCOUR, RIPRAP DISPLACEMENT, OR PIPING. REPAIR DEFICIENCIES IMMEDIATELY.
2. REPLACE OR REFRESH COARSE AGGREGATE AS NEEDED TO RESTORE TO INITIAL INSTALLATION CONDITIONS WHEN STONE BECOMES CLOGGED OR DISLODGED.



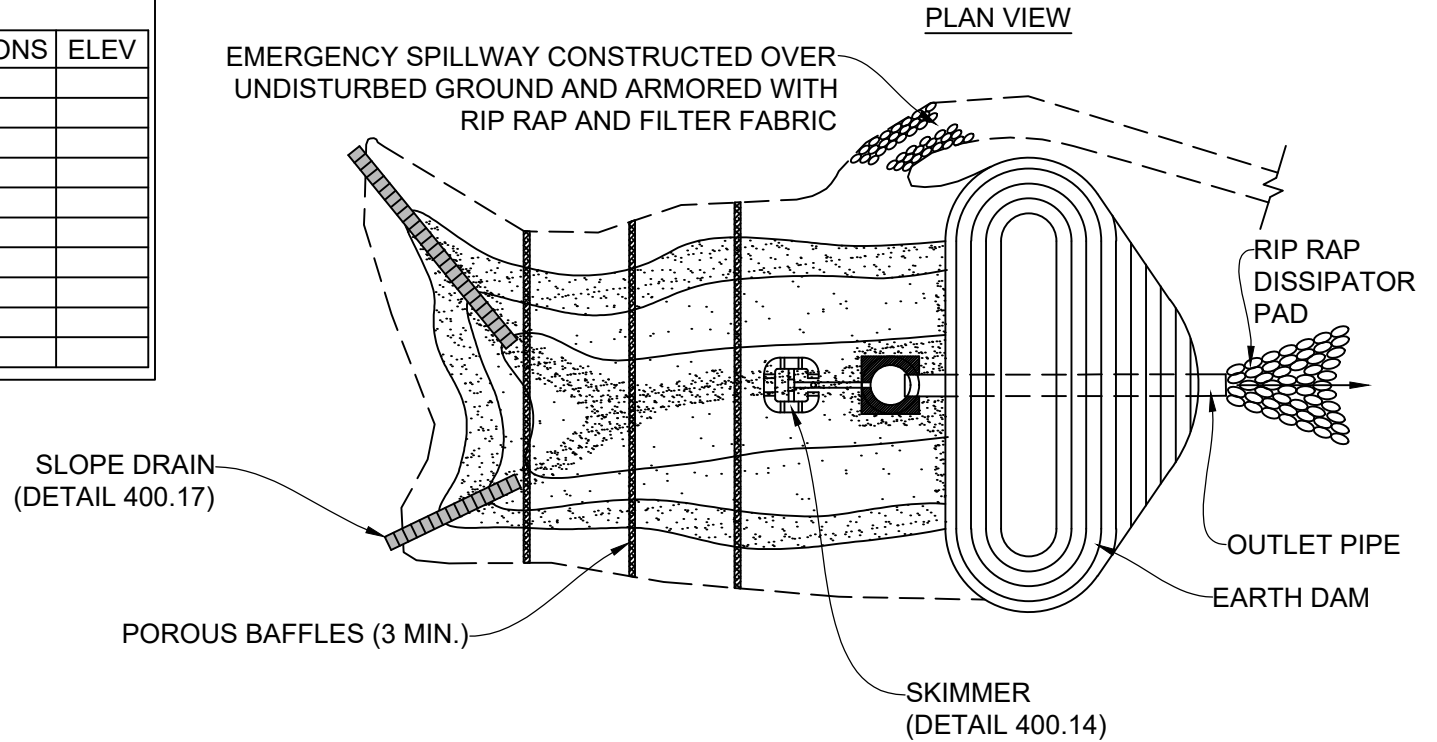
INSTALLATION NOTES:

1. KEEP STREAM CROSSINGS AT RIGHT ANGLES TO STREAMFLOW.
2. FOR STREAM CROSSINGS WITH SLOPED APPROACH AREAS, CONSTRUCT DIVERSIONS AT CROSSING/APPROACH AREA TRANSITIONS WITH 18" HIGH EARTH BERM COVERED WITH FILTER FABRIC & COARSE AGGREGATE OR STABILIZED DITCH/SWALE TO DIVERT DIRECT RUNOFF AWAY FROM STREAM CROSSING AND TO A STABILIZED OUTLET. DIVERSION MUST SPAN WIDTH OF CROSSING ENTRANCES.
3. RAISE ABUTMENTS AND CULVERT FILLS A MINIMUM OF 1 FT ABOVE THE ADJOINING APPROACH SECTIONS TO PREVENT EROSION FROM SURFACE RUNOFF AND ALLOW FLOOD FLOWS TO PASS AROUND STRUCTURE.



DESIGN INFORMATION TO BE PROVIDED BY THE ENGINEER ON THE CONSTRUCTION DRAWINGS

	DIMENSIONS	ELEV
EMERGENCY SPILLWAY		
TOP OF DAM WIDTH		
ANTI-SEEP COLLAR		
RIP RAP DISSIPATOR PAD		
TOP OF RISER		
OUTLET PIPE INVERT IN		
OUTLET PIPE INVERT OUT		
ANTI-FLOATATION DEVICE		
SKIMMER SIZE		
ORIFICE SIZE		



GENERAL NOTES:

1. SEDIMENT STORAGE: 3,600 CF/DISTURBED ACRE
2. SURFACE AREA : 435 SF/CFS FOR THE Q25
3. INSTALL SEDIMENT CLEANOUT ELEVATION STAKES.
4. BAFFLES SHALL INCLUDE 700 G/SM COIR EROSION BLANKET. WOOD POSTS ARE NOT ACCEPTABLE.
5. FLOW ENTERING THE BASIN MUST BE DIRECTED TO AVOID EROSION ALONG THE SLOPE AND SCOUR IN THE BASIN. APPROPRIATELY SIZED SLOPE DRAINS, PER STD. DETAIL 400.17, ARE RECOMMENDED.
6. THE PERMANENT SCM RISER STRUCTURE AND OUTLET PIPE WITH ANTI-SEEP COLLAR MUST BE INSTALLED DURING THE INITIAL SEDIMENT BASIN CONSTRUCTION. TEMPORARILY MODIFY PERMANENT RISER STRUCTURE AS NEEDED TO ATTAIN DESIGN SEDIMENT VOLUME AND DEPTH.
7. EARTH DAM SHALL BE STABILIZED WITH VEGETATION ACCORDING TO TOWN SPECIFICATIONS.

TOWN OF APEX
STANDARDS

EFFECTIVE: JUNE 11, 2024

RISER BARREL SEDIMENT BASIN

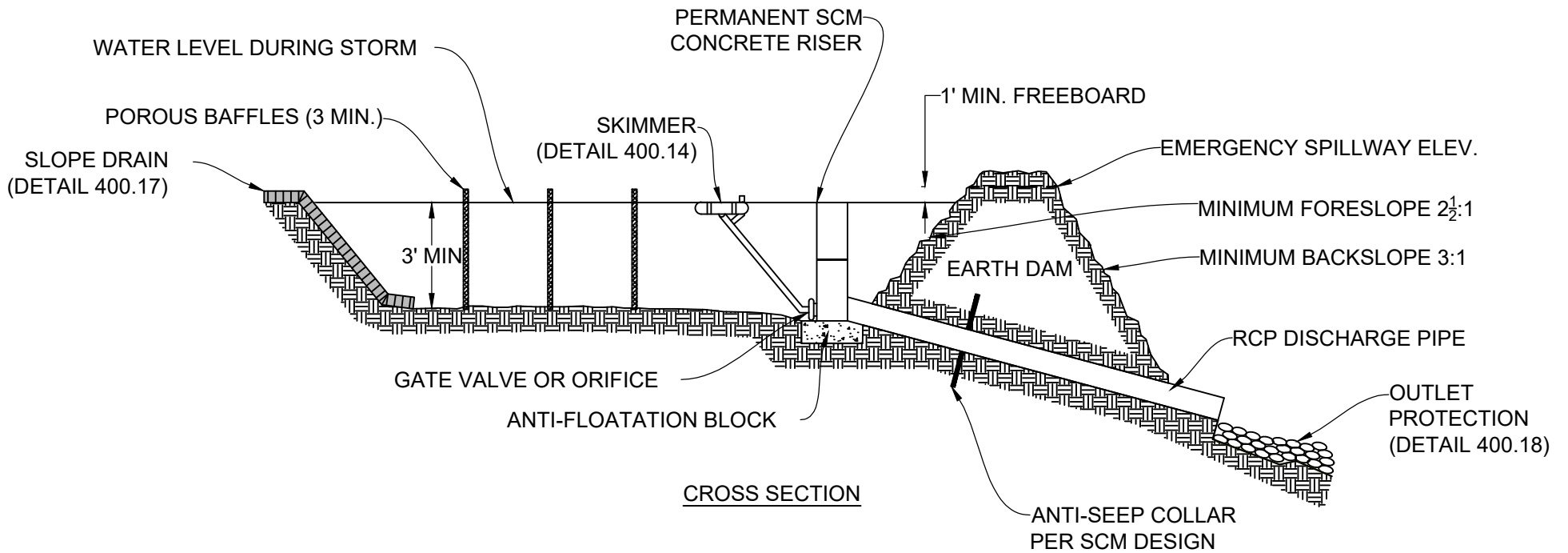
STD. NO.

400.12

SHEET 1 OF 2

MAINTENANCE NOTES:

1. INSPECT SEDIMENT BASINS AND EMPTY SKIMMER OF ALL DEBRIS AFTER EACH PERIOD OF RUNOFF-PRODUCING RAINFALL. REMOVE SEDIMENT AND RESTORE BASIN TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE BASIN. PLACE THE SEDIMENT THAT HAS BEEN REMOVED IN A DESIGNATED DISPOSAL AREA. REPAIR AND/OR REPLACE BAFFLES.
2. CHECK THE STRUCTURE FOR DAMAGE FROM EROSION OR PIPING. PERIODICALLY CHECK THE DEPTH OF THE SPILLWAY TO ENSURE IT IS A MINIMUM OF 1.0 FOOT BELOW THE LOW POINT OF THE EMBANKMENT. IMMEDIATELY FILL ANY SETTLEMENT OF THE EMBANKMENT TO SLIGHTLY ABOVE DESIGN GRADE. ANY RIP RAP DISPLACED FROM THE SPILLWAY MUST BE REPLACED IMMEDIATELY.
3. FILTER BAG REQUIRED WHEN DEWATERING BASIN PER STD. DETAIL 400.22.



TOWN OF APEX
STANDARDS

EFFECTIVE: JUNE 11, 2024

RISER BARREL SEDIMENT BASIN

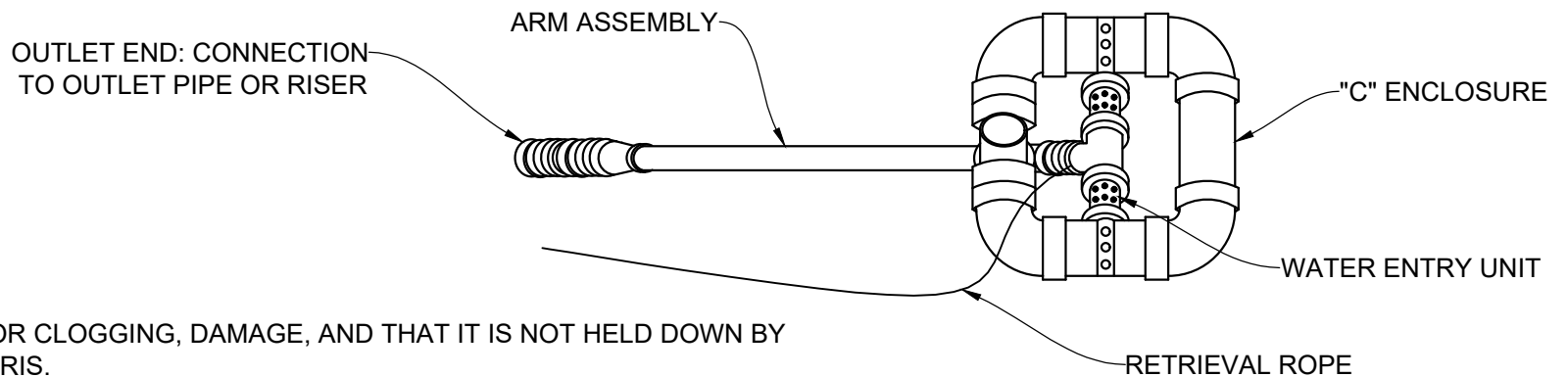
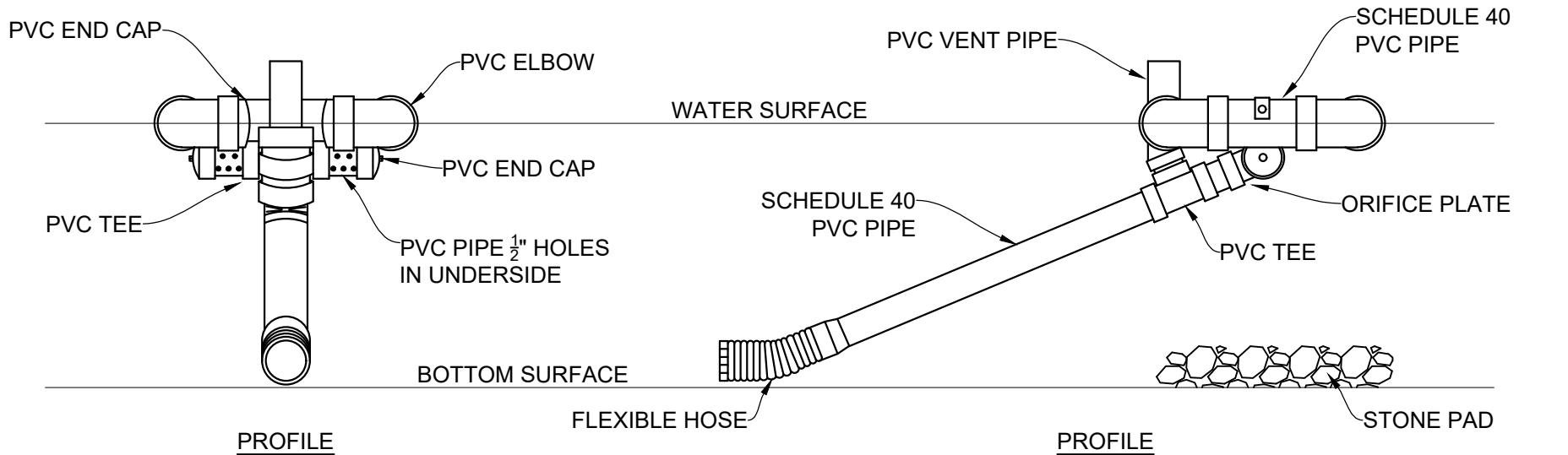
STD. NO.

400.12

SHEET 2 OF 2

GENERAL NOTES:

1. SKIMMER SHOULD BE PLACED ON 4'X4' STONE PAD OF RIPRAP TO PREVENT STICKING.
2. ENSURE SKIMMER IS NOT INSTALLED UPSIDE DOWN.
3. ATTACH RETRIEVAL ROPE TO SKIMMER TO HELP MAINTAIN.
4. SKIMMER SHOULD RISE TO LEVEL OF WEIR HEIGHT IN TEMPORARY BASIN OR TO RISER INLET.
5. SKIMMER SHALL BE A DEVICE THAT DEWATERS FROM THE SURFACE OVER 2-5 DAYS.



MAINTENANCE NOTES:

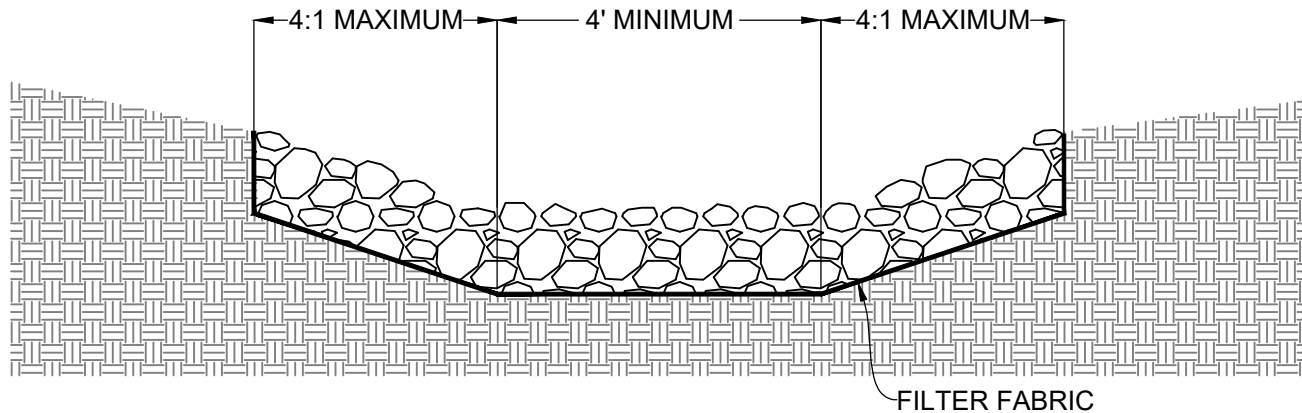
1. INSPECT SKIMMER FOR CLOGGING, DAMAGE, AND THAT IT IS NOT HELD DOWN BY VEGETATION OR DEBRIS.
2. IF DEBRIS HAS CLOGGED SKIMMER, TUGGING ON RETRIEVAL ROPE WILL HELP DISLodge. IF THIS DOES NOT WORK, DISASSEMBLE ORIFICE & REMOVE OBSTRUCTIONS. SKIMMER ARM & BARREL MAY NEED TO BE PLUMBED OR FLUSHED.

GENERAL NOTES:

1. TO BE USED WHERE EXCESSIVE STORMWATER VELOCITIES PROHIBIT VEGETATIVE LININGS AND WHEREVER STORMWATER OUTFALLS OVERLAP SEWER EASEMENTS.
2. STONE SIZE, TRENCH DEPTH, AND OVERALL WIDTH PER DESIGN.
3. FILTER FABRIC MUST BE INSTALLED BETWEEN RIPRAP AND SOIL FOUNDATION.
4. RIP RAP SHALL EMBEDDED IN THE CHANNEL CUT, NOT SIMPLY PLACED ON TOP OF EXISTING GROUND.

MAINTENANCE NOTES:

1. INSPECT RIP RAP CHANNEL WEEKLY AND AFTER RUNOFF-PRODUCING EVENTS TO SEE IF ANY EROSION AROUND OR BELOW THE RIP RAP HAS OCCURRED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.
2. IF EROSION IS EVIDENT PAST END OF RIPRAP CHANNEL DUE TO RUNOFF DISCHARGING FROM CHANNEL, INCREASE DIMENSIONS OF RIP RAP PAD PROVIDED SPACE IS AVAILABLE WITH THE APPROVED LIMITS OF DISTURBANCE.
3. MAINTAIN ALL VEGETATION ADJACENT TO CHANNEL IN A HEALTHY, VIGOROUS CONDITION TO PROTECT CHANNEL FROM EROSION AND SCOUR DURING OUT-OF-BANK FLOW.

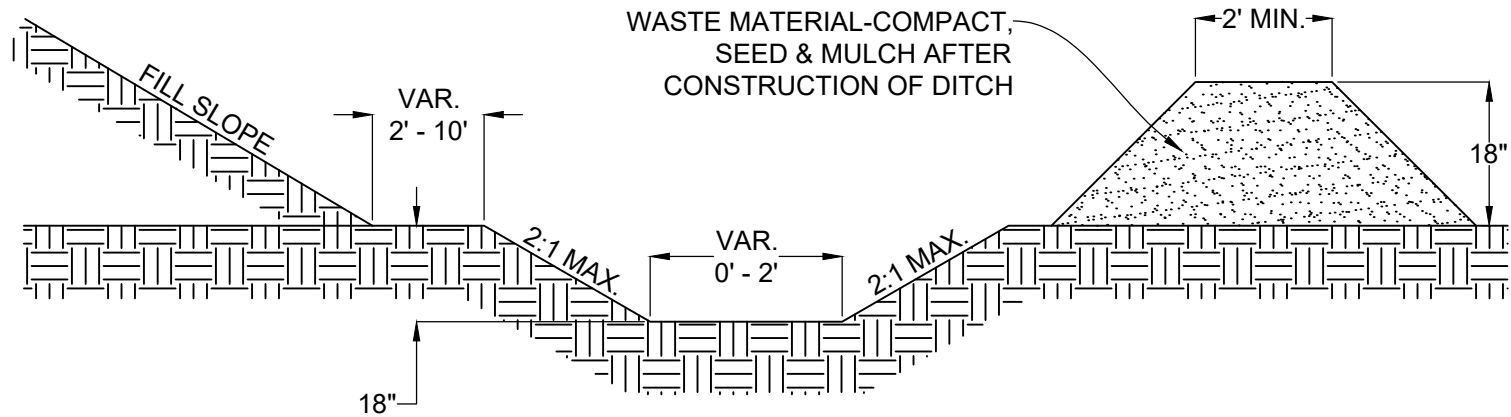


GENERAL NOTES:

1. TEMPORARY SILT DITCH TO BE USED WHERE TOE OF FILL SLOPES EXCEEDS 3 FEET IN VERTICAL HEIGHT AND ALONG STREAMS TO INTERCEPT FLOW AND/OR DIVERT TO A CONTROLLED OUTLET.

MAINTENANCE NOTES:

1. INSPECT DITCH WEEKLY AND AFTER RUNOFF-PRODUCING EVENTS.
2. SILT SHALL BE REMOVED WHEN SILT DITCH IS ONE-HALF FULL.
3. DITCH SHALL BE RECONSTRUCTED WHEN DAMAGED BY EQUIPMENT OR COVERED BY FILL.



CROSS SECTIONAL VIEW

TOWN OF APEX
STANDARDS

EFFECTIVE: JUNE 11, 2024

TEMPORARY SILT DITCH

STD. NO.

400.16

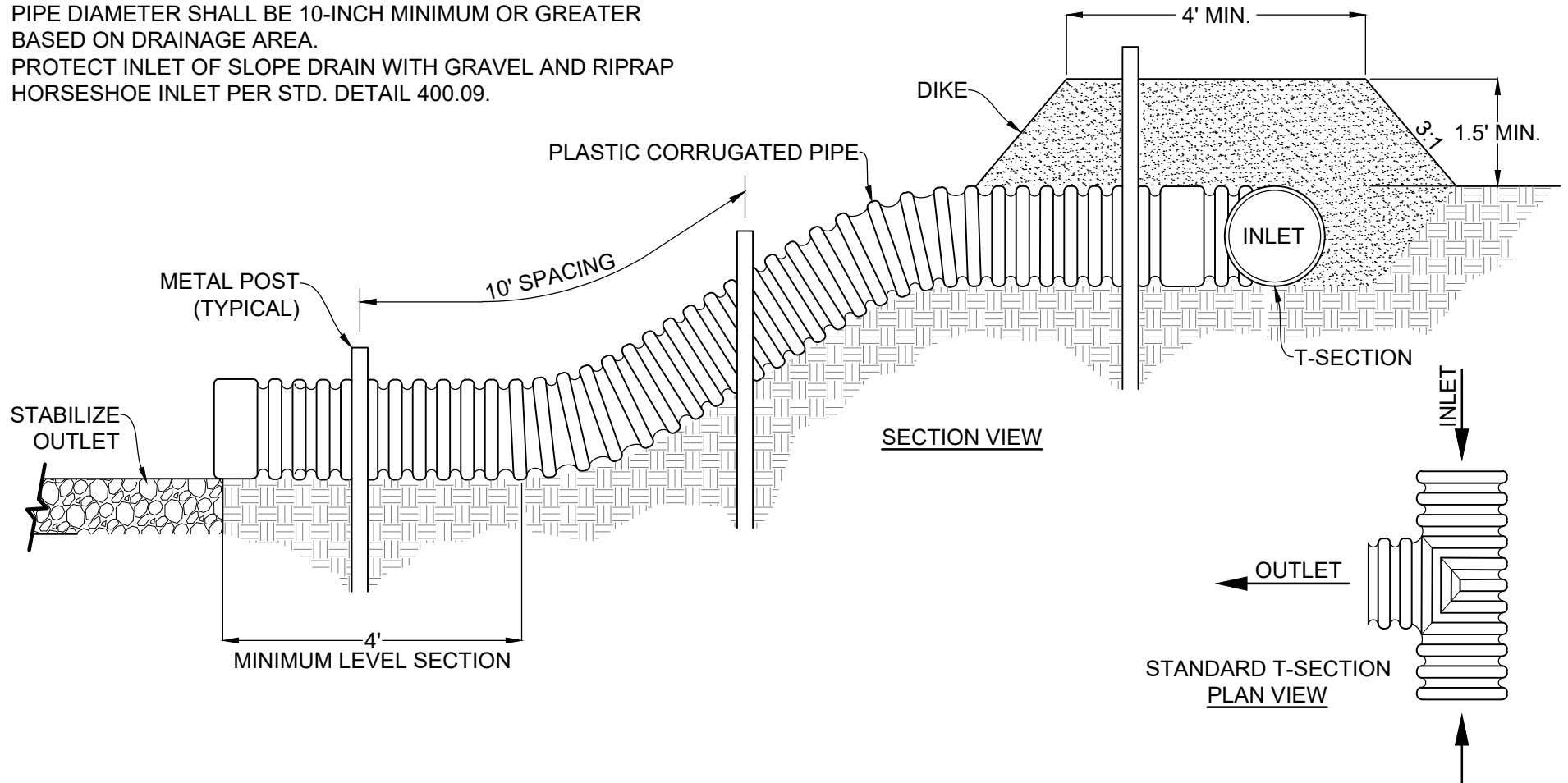
SHEET 1 OF 1

GENERAL NOTES:

1. CONSTRUCT AN EARTHEN DIVERSION WITH A DIKE RIDGE TO DIRECT SURFACE RUNOFF INTO THE TEMPORARY SLOPE DRAIN.
2. MAKE THE HEIGHT OF THE RIDGE OVER THE DRAIN CONDUIT A MINIMUM OF 1.5 FEET AND AT LEAST 6 INCHES HIGHER THAN THE ADJOINING RIDGE ON EITHER SIDE.
3. THE LOWEST POINT OF THE DIVERSION RIDGE SHOULD BE A MINIMUM OF 1 FOOT ABOVE THE TOP OF THE DRAIN TO ALLOW THE DESIGN FLOW TO FREELY ENTER THE PIPE.
4. PROTECT THE OUTLET OF THE SLOPE DRAIN FROM EROSION.
5. PIPE DIAMETER SHALL BE 10-INCH MINIMUM OR GREATER BASED ON DRAINAGE AREA.
6. PROTECT INLET OF SLOPE DRAIN WITH GRAVEL AND RIPRAP HORSESHOE INLET PER STD. DETAIL 400.09.

MAINTENANCE NOTES:

1. INSPECT DITCH WEEKLY AND AFTER RUNOFF-PRODUCING EVENTS.
2. REMOVE SEDIMENT FROM INLET PROTECTION OF SLOPE DRAIN WHEN SEDIMENT IS HALF HEIGHT OF PROTECTION.
3. MAINTAIN OUTLET PROTECTION THROUGHOUT CONSTRUCTION AND REPAIR EROSION ALONG SLOPE DRAIN.



TOWN OF APEX
STANDARDS

EFFECTIVE: JUNE 11, 2024

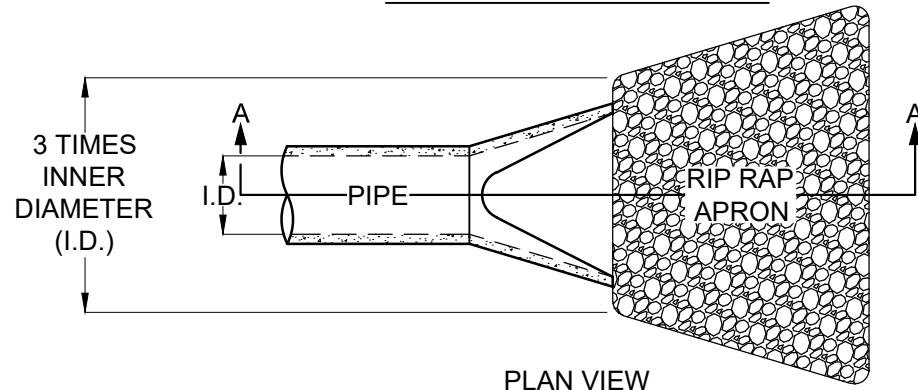
TEMPORARY SLOPE DRAIN

STD. NO.

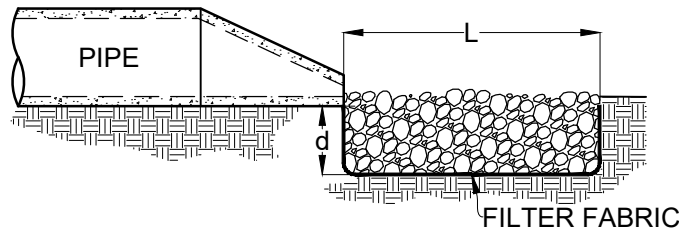
400.17

SHEET 1 OF 1

PIPE OUTLET TO FLAT AREA
NO WELL-DEFINED CHANNEL

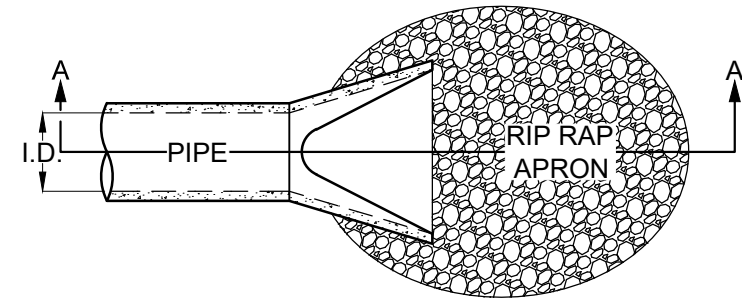


PLAN VIEW

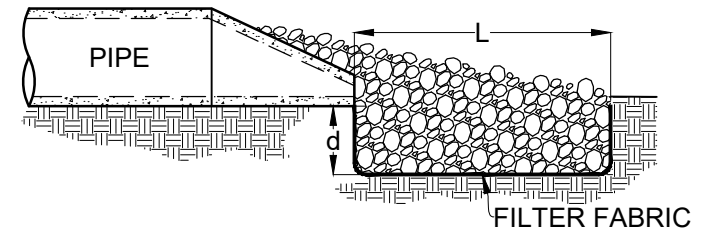


SECTION 'A-A'

PIPE OUTLET TO WELL-DEFINED CHANNEL



PLAN VIEW



SECTION 'A-A'

GENERAL NOTES:

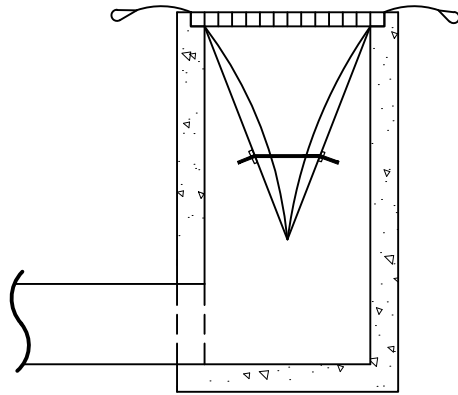
1. L = THE LENGTH OF THE RIPRAP APRON
2. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 12 INCHES
3. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIP RAP AND SOIL FOUNDATION.
4. IN A WELL-DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO 6 INCHES ABOVE THE MAXIMUM TAILWATER DEPTH OR THE TOP OF THE BANK, WHICHEVER IS LESS.

MAINTENANCE NOTES:

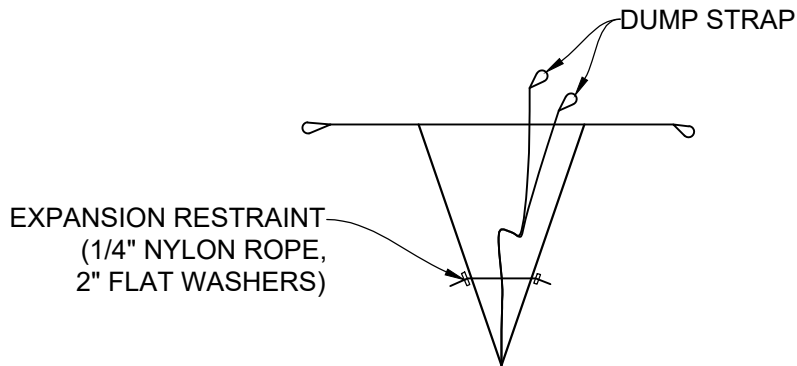
1. INSPECT OUTLET WEEKLY AND AFTER RUNOFF-PRODUCING EVENTS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS OCCURRED, OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

MAINTENANCE NOTES:

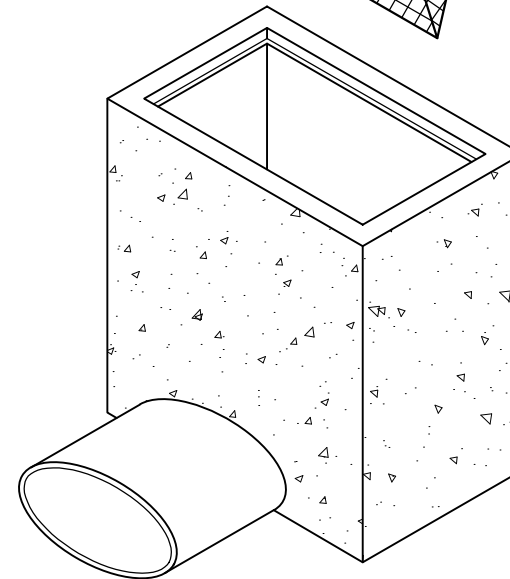
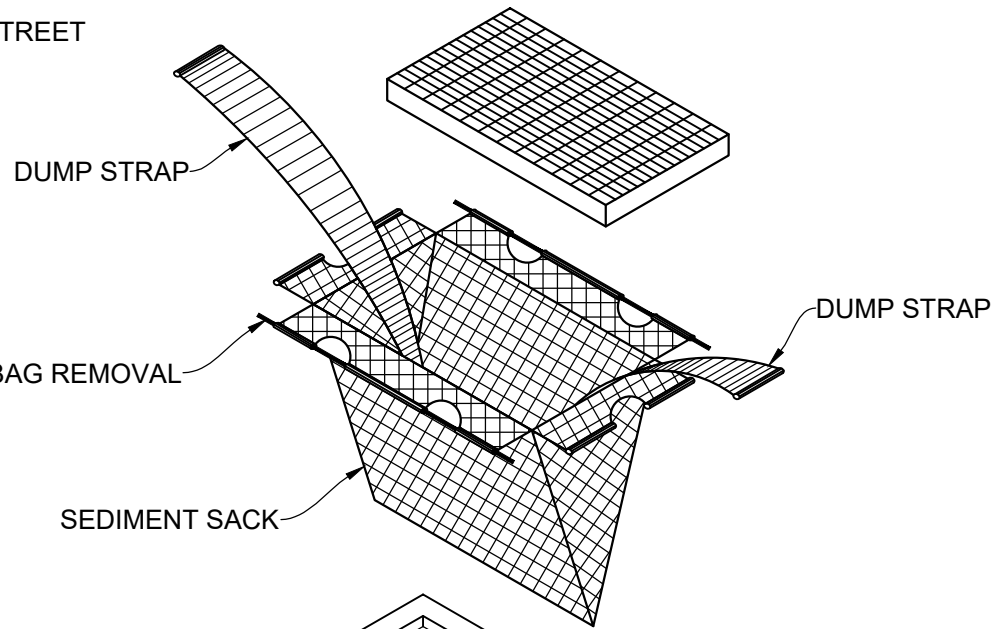
1. INSPECT OUTLET WEEKLY AND AFTER RUNOFF-PRODUCING EVENTS.
2. REMOVE SEDIMENT FROM SACK WHEN HALF FULL
3. REPLACE SACK IF TEARS OR HOLES OCCUR.
4. PERFORM SEDIMENT/DEBRIS REMOVAL FROM CURB AND STREET AFTER RAIN EVENTS.



INSTALLATION DETAIL



BAG DETAIL



TOWN OF APEX
STANDARDS

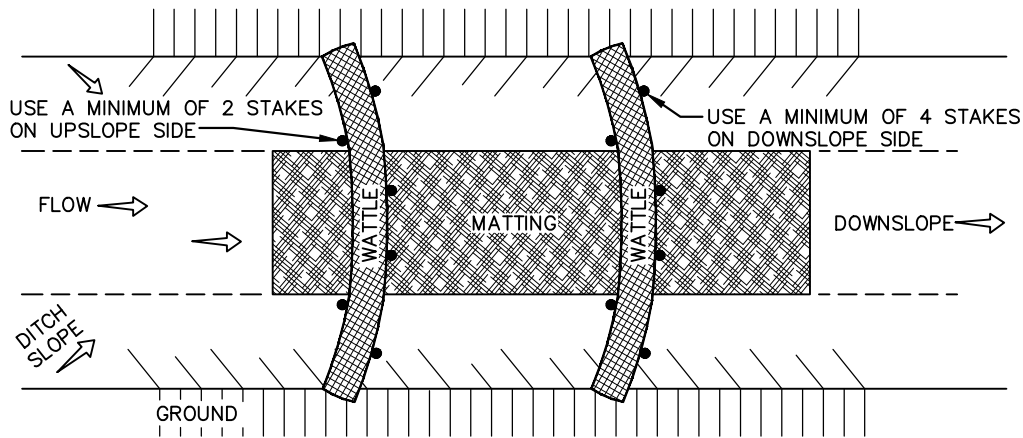
EFFECTIVE: JUNE 11, 2024

INLET SEDIMENT CONTROL DEVICE

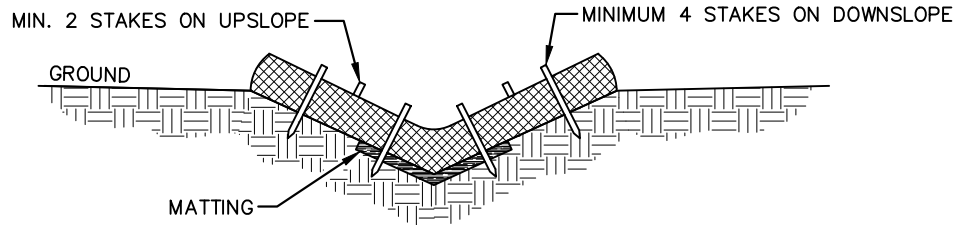
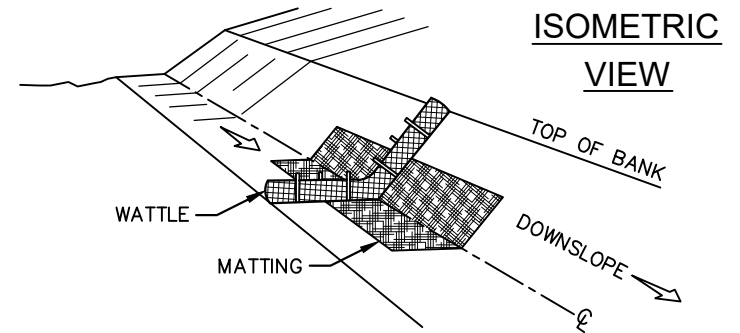
STD. NO.

400.19

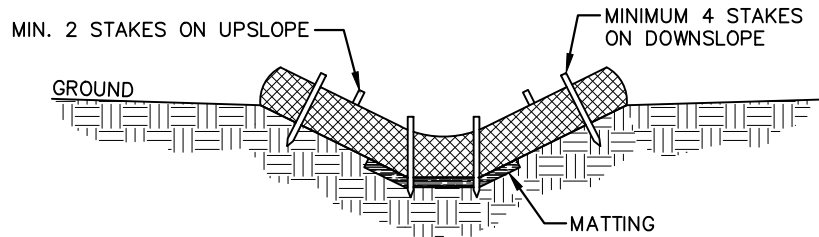
SHEET 1 OF 1



PLAN VIEW



V-DITCH SECTION VIEW



TRAPEZOIDAL DITCH SECTION VIEW

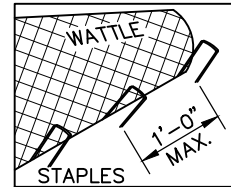
GENERAL NOTES:

1. USE A MINIMUM 12-INCH DIAMETER EXCELSIOR WATTLE.
2. USE 24-INCH LONG WOODEN STAKES WITH A 2"x2" NOMINAL CROSS SECTION.
3. INSTALL WATTLE(S) TO A HEIGHT ON SLOPE SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR SLOPES, OR AS DIRECTED.
4. INSTALL A MINIMUM OF TWO UPSLOPE STAKES AND FOUR DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND AT BOTTOM.
5. PROVIDE STAPLES MADE OF 0.125-INCH DIAMETER STEEL WIRE FORMED INTO A U-SHAPE NOT LESS THAN 12 INCHES IN LENGTH.
6. INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
7. AFTER INSTALLATION OF STAPLES, CHINK ANY GAPS BETWEEN WATTLE AND GROUND WITH MATTING.

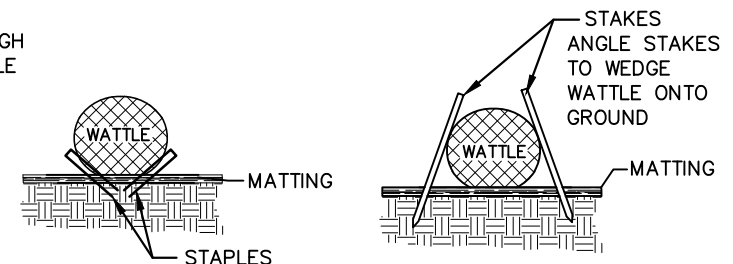
MAINTENANCE NOTES:

1. REMOVE SEDIMENT WHEN AT HALF HEIGHT OF WATTLE.
2. CORRECT DEFICIENCIES IF EROSION OCCURS AROUND EDGES OF WATTLE.
3. REPAIR OR REPLACE WATTLES AS NEEDED.

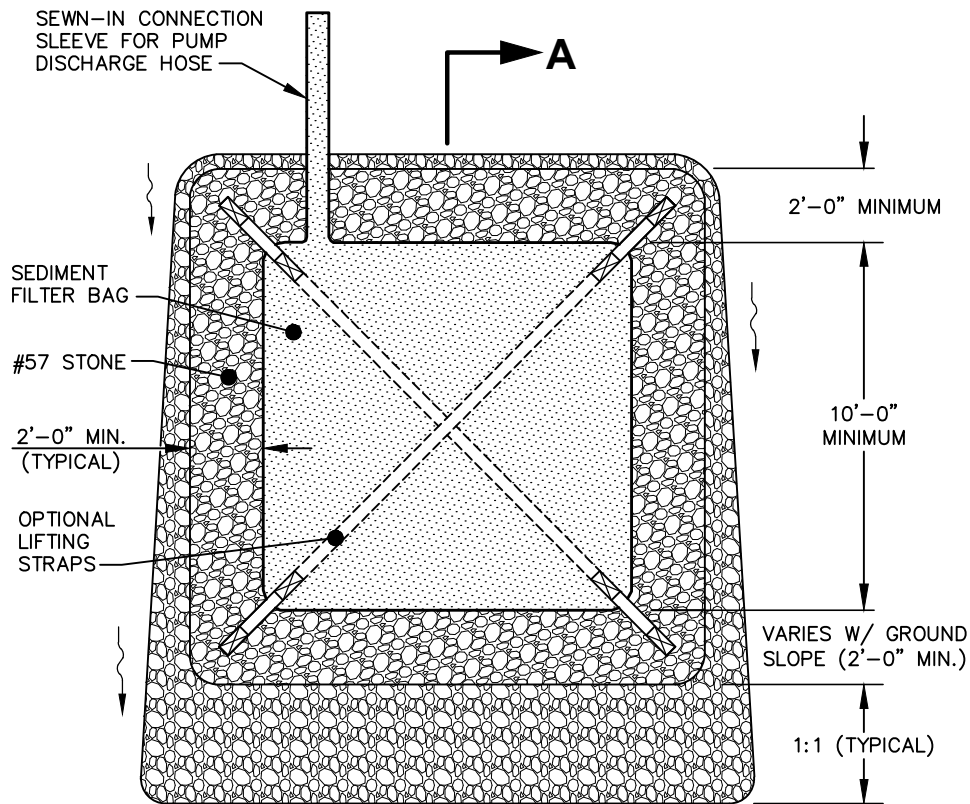
WEAVE STAPLES THROUGH MESH CASING OF WATTLE



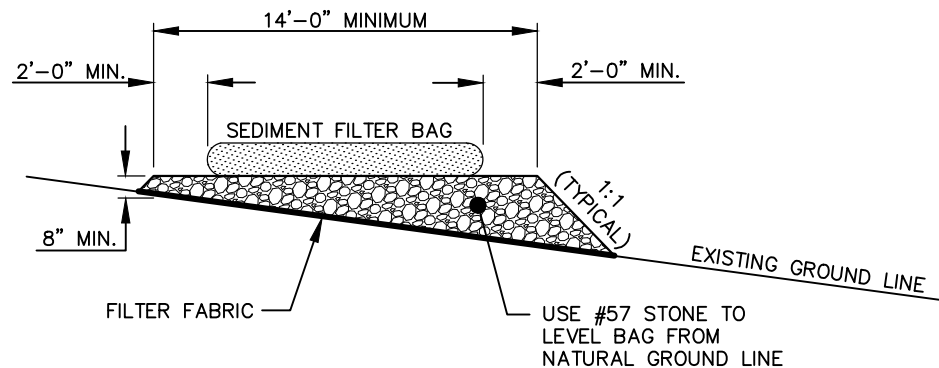
STAPLE INSTALLMENT SECTIONS



STAKE INSTALLMENT CROSS SECTION



PLAN VIEW



SECTION A-A

GENERAL NOTES:

1. CONTRACTOR SHALL EXERCISE CAUTION NOT TO BURST OR DAMAGE THE SEDIMENT FILTER BAG WHEN PUMPING.
2. THE LENGTH AND WIDTH OF THE TEMPORARY SEDIMENT BAG SHOWN ON THIS DRAWING MAY VARY PER VENDOR SPECIFICATIONS. THE MINIMUM "FOOTPRINT" OF THE BAG SHALL BE 10 x 15 FEET.
3. SEDIMENT FILTER BAGS SHALL BE EQUIPPED WITH A SEWN-IN SLEEVE OF SUFFICIENT SIZE TO ACCEPT A MINIMUM 4-INCH DIAMETER PUMP DISCHARGE HOSE. THE DISCHARGE HOSE SHOULD BE EXTENDED INTO THIS SLEEVE A MINIMUM OF 6 INCHES AND BE TIGHTLY SECURED WITH A HOSE CLAMP OR OTHER SUITABLE MEANS TO PREVENT LEAKAGE. HOSE CONNECTION THROUGH A SLIT IN THE BAG WILL NOT BE ACCEPTABLE.
4. THE PUMP DISCHARGE HOSE CONNECTION SLEEVE SHALL BE SECURELY TIED OFF DURING DISPOSAL OF THE SEDIMENT FILTER BAG IN ORDER TO PREVENT LEAKAGE OF COLLECTED SEDIMENTS.
5. SEDIMENT FILTER BAG MUST BE LOCATED INSIDE THE APPROVED LIMITS OF DISTURBANCE.

MAINTENANCE NOTES:

1. SEDIMENT FILTER BAG SHALL BE MAINTAINED AND REPLACED WHEN ONE HALF FULL OF SEDIMENT OR IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
2. INSPECT FILTER BAG AND GRAVEL PAD DAILY.

TOWN OF APEX
STANDARDS

EFFECTIVE: JUNE 11, 2024

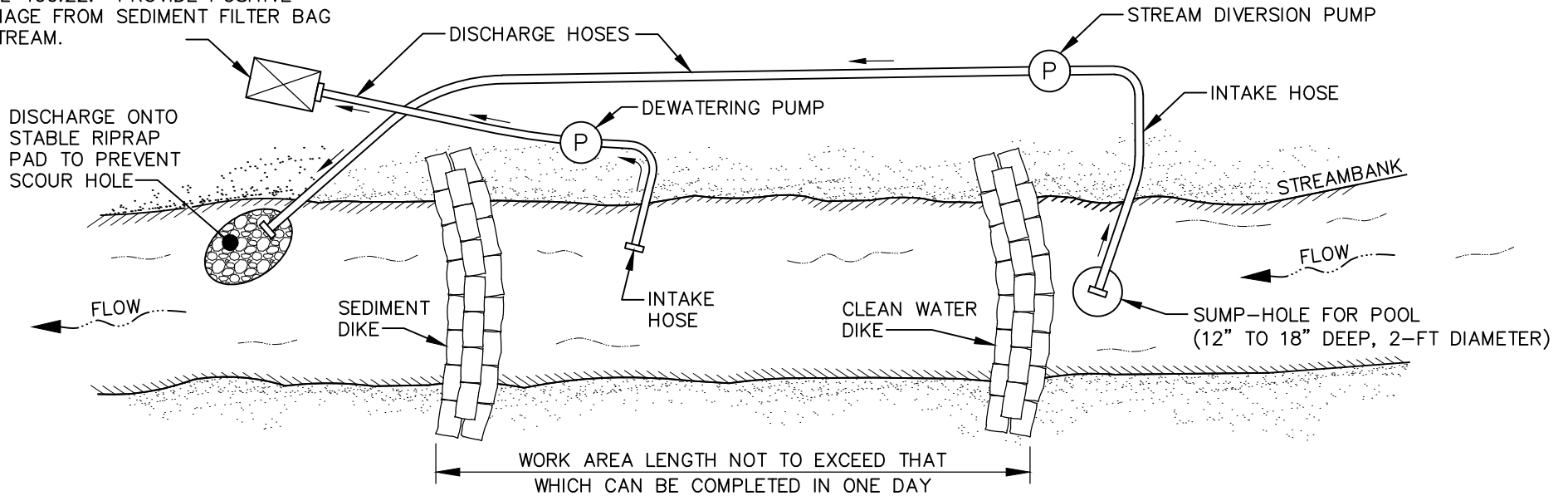
FILTER BAG WITH GRAVEL PAD

STD. NO.

400.22

SHEET 1 OF 1

APPROVED SEDIMENT FILTER BAG STD. DETAIL 400.22. PROVIDE POSITIVE DRAINAGE FROM SEDIMENT FILTER BAG TO STREAM.



MAINTENANCE NOTES:

1. INITIAL SETUP OF BYPASS PUMPING SHOULD BE PERFORMED WHEN 3-4 DAYS OF DRY WEATHER IS FORECASTED.
2. INSPECT STREAM DIVERSION DAILY. CORRECT ANY DEFICIENCIES IMMEDIATELY.
3. AREAS ADJACENT TO WORK AREA SHOULD BE STABILIZED.

TEMPORARY PUMP AROUND SEQUENCE

1. SET UP PUMP WITH SUCTION AND DISCHARGE HOSE.
2. INSTALL UP-STREAM SANDBAG DAM.
3. INSTALL DOWN-STREAM SANDBAG DAM.
4. THE PUMP MUST RUN CONTINUOUSLY WHILE WORKING IN THE STREAM.
5. STREAM BANKS MUST BE STABILIZED AT THE END OF EACH DAY.

GENERAL NOTES:

1. DIKES SHALL BE SITUATED AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE WORK AREA, AND STREAM FLOW SHALL BE PUMPED AROUND THE WORK AREA. THE PUMP SHOULD DISCHARGE ONTO A STABLE VELOCITY DISSIPATER CONSTRUCTED OF RIPRAP OR SANDBAGS.
2. WATER FROM THE WORK AREA SHALL BE PUMPED TO A SEDIMENT FILTERING MEASURE SUCH AS A SEDIMENT BAG OR OTHER APPROVED DEVICE. THE MEASURE SHALL BE LOCATED SUCH THAT THE WATER DRAINS BACK INTO THE CHANNEL BELOW THE DOWNSTREAM SANDBAG DIKE WITHOUT CAUSING EROSION BETWEEN THE SEDIMENT FILTER BAG AND THE STREAM BANK.

TOWN OF APEX
STANDARDS

EFFECTIVE: JUNE 11, 2024

TEMPORARY PUMP AROUND

STD. NO.

400.23

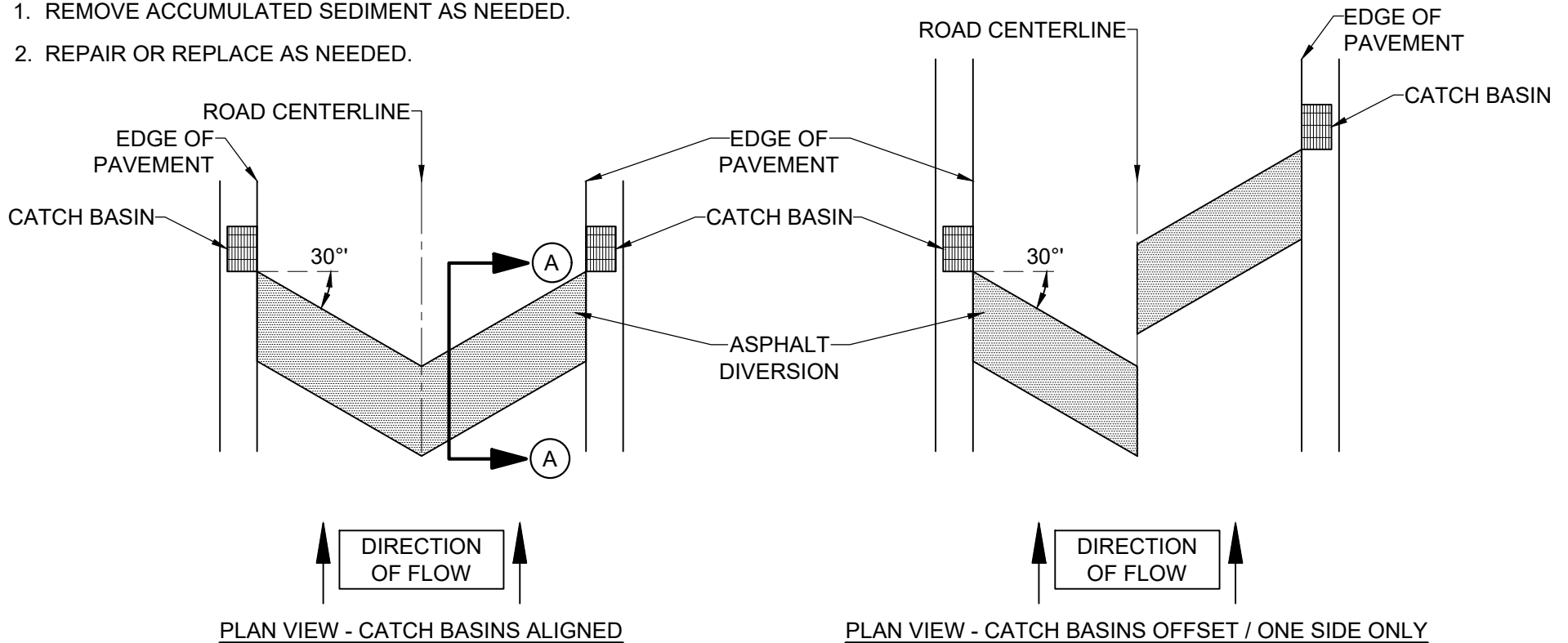
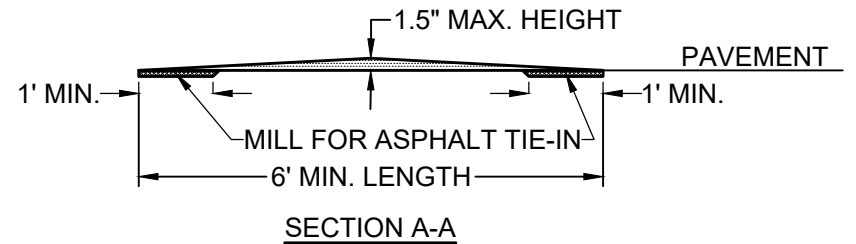
SHEET 1 OF 1

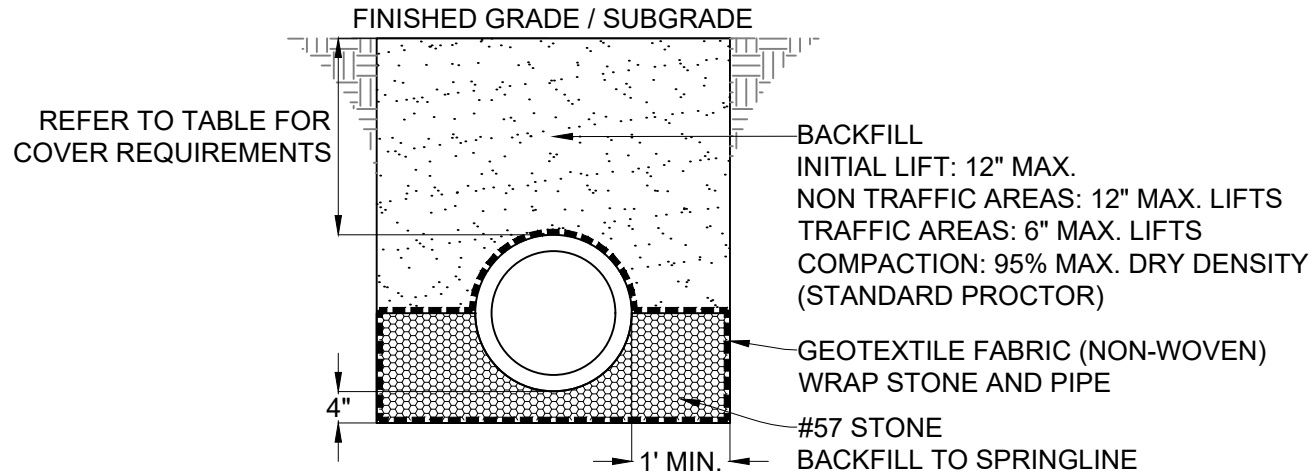
GENERAL NOTES:

1. TEMPORARY ASPHALT DIVERSIONS SHALL BE INSTALLED IMMEDIATELY FOLLOWING INITIAL ASPHALT SURFACE LIFT IN LOCATIONS AS DIRECTED BY THE TOWN IN ORDER TO ACHIEVE POSITIVE DRAINAGE INTO STORM SYSTEM.
2. EXISTING ROADWAY SHALL BE CLEARED FREE OF ALL LOOSE DEBRIS; AREA TO BE PAVED SHALL BE COATED WITH TACK PRIOR TO PAVING OPERATIONS. COLD PATCH ASPHALT SHALL NOT BE USED.
3. DIVERSIONS SHALL BE REMOVED PRIOR TO PLACEMENT OF FINAL ASPHALT SURFACE LIFT.

MAINTENANCE NOTES:

1. REMOVE ACCUMULATED SEDIMENT AS NEEDED.
2. REPAIR OR REPLACE AS NEEDED.





<i>RCP</i>		
CLASS	MIN (ft)	MAX (ft)
III	2	20
IV	1	30

NOTES:

1. EXCAVATE TO 4 INCHES BELOW THE PROPOSED PIPE ELEVATION.
2. PROVIDE 4 INCHES STONE BEDDING AND STONE BACKFILL TO SPRINGLINE.
3. WHERE BELL AND SPIGOT PIPE IS USED, PROVIDE RECESSES TO RECEIVE PIPE BELL.
4. UNDERCUT UNSUITABLE MATERIAL AS DIRECTED BY THE ENGINEER AND BACKFILL WITH STONE OR OTHER APPROVED MATERIAL.
5. BACKFILL MATERIAL SHALL BE APPROVED SUITABLE MATERIAL.
6. WHERE NECESSARY, TEMPORARILY DIVERT SURFACE WATER TO MAINTAIN A DRY CONDITION IN THE PIPE FOUNDATION. DIRECT THIS TEMPORARY FLOW INTO SUITABLE EROSION CONTROL DEVICES.

Pipe Diameter (in)	<i>PP</i>		<i>CSP</i>		<i>CAAP</i>	
	MIN (in)	MAX (ft)	MIN (in)	MAX (ft)	MIN (in)	MAX (ft)
15	12	28	12	158	12	98
18	12	28	12	131	12	81
21			12	113	12	69
24	12	26	12	98	12	60
30	12	26	12	79	12	57
36	12	20	12	65	12	47
42	12	20	12	55	12	40
48	12	20	12	48	12	35
54			12	56	15	31
60	24	20	12	50	15	28

TOWN OF APEX
STANDARDS

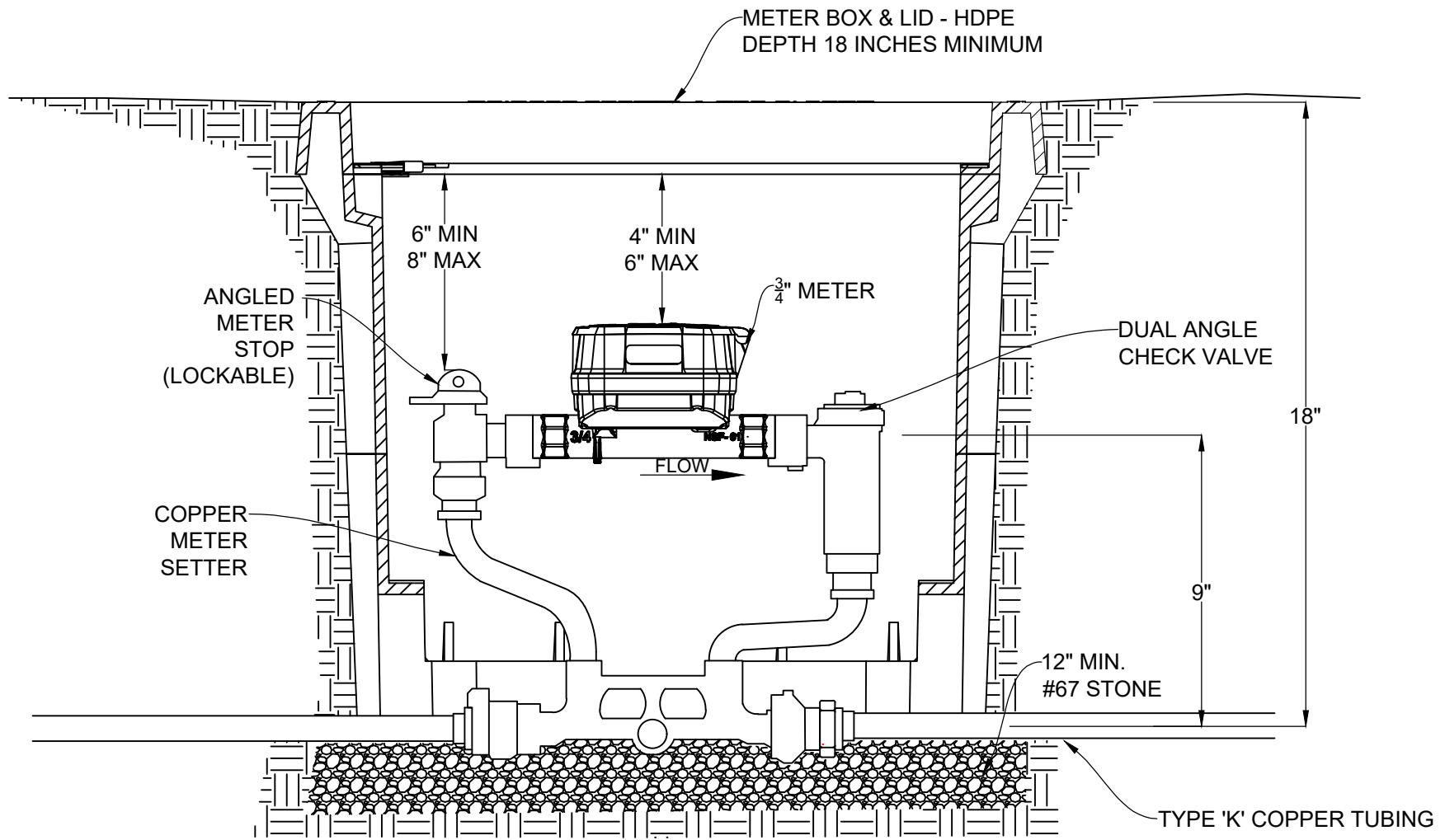
EFFECTIVE: JUNE 11, 2024

STORM DRAIN PIPE BEDDING & BACKFILLING

STD. NO.

500.09

SHEET 1 OF 1



3/4" WATER SERVICE

NOTES:

1. SEE APPROVED MATERIAL LIST; SECTION 600.
2. METER BOX LID SHALL HAVE A 4-1/8 INCH DIAMETER RECESSED HOLE FOR TRANSMITTER.

TOWN OF APEX
STANDARDS

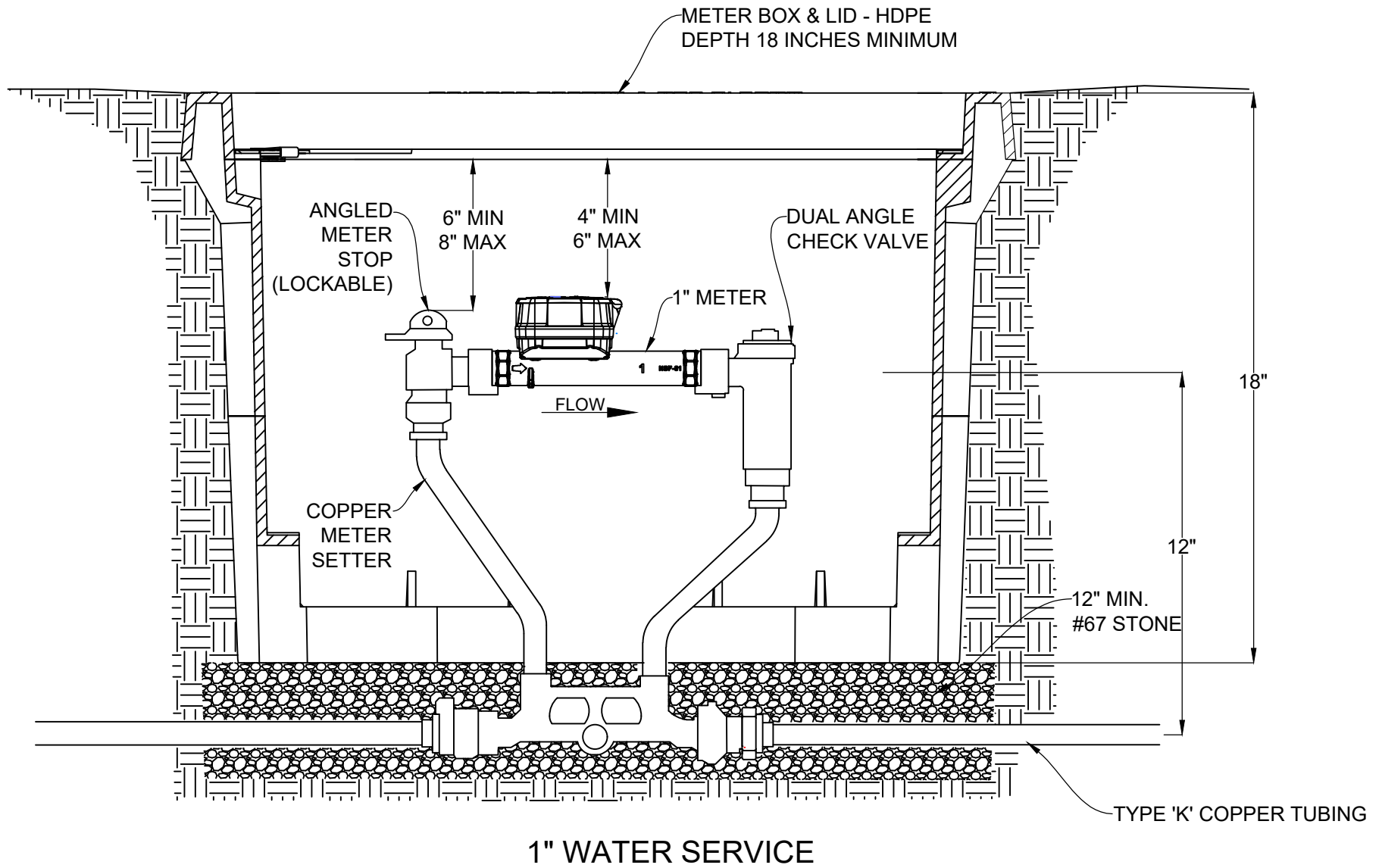
EFFECTIVE: JUNE 11, 2024

3/4" & 1" WATER SERVICE & METER BOX

STD. NO.

600.01

SHEET 1 OF 3



NOTES:

- 1. SEE APPROVED MATERIAL LIST; SECTION 600.
- 2. METER BOX LID SHALL HAVE A 4-1/8 INCH DIAMETER RECESSED HOLE FOR TRANSMITTER

TOWN OF APEX
STANDARDS

EFFECTIVE: JUNE 11, 2024

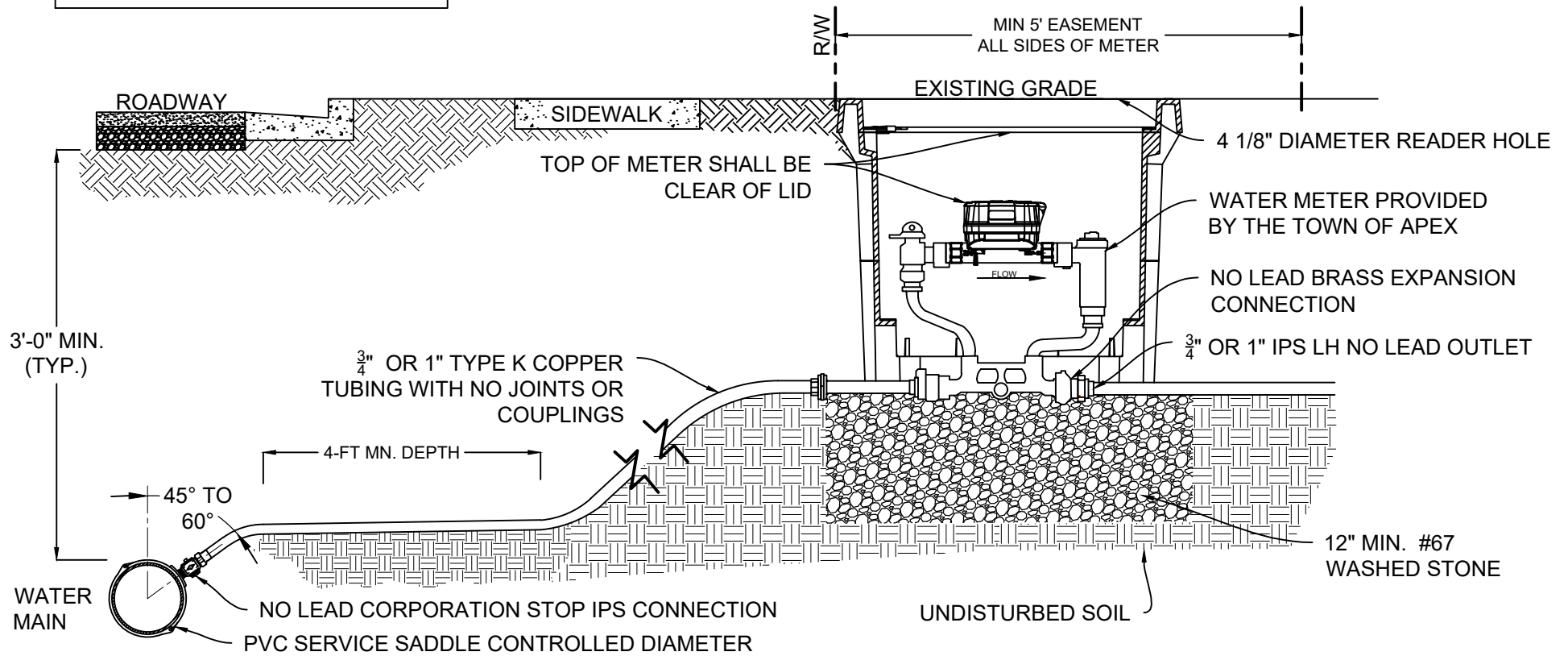
3/4" & 1" WATER SERVICE & METER BOX

STD. NO.

600.01

SHEET 2 OF 3

TOWN MAINTENANCE ENDS AT R/W.



NOTES:

1. WATER METER SHALL NOT BE LOCATED IN AREAS SUBJECT TO VEHICULAR TRAFFIC.
2. ALL SERVICE LINES, VALVES AND FITTINGS SHALL COMPLY WITH AWWA C800.
3. THE INTERIOR AND EXTERIOR OF THE BOX AND LID SHALL BE COLORED BLACK.
4. ALL RELOCATIONS OF EXISTING OR PERMITTED INFRASTRUCTURE INCLUDING SERVICE PIPING AND METER BOXES SHALL BE PERMITTED AND INSPECTED IN CONFORMANCE WITH TOWN POLICIES AND PROCEDURES.
5. BOX AND LID SHALL BE HDPE.
6. COPPER TUBING SHALL BE LEAD FREE, TYPE K SOFT COPPER TUBING CONFORMING TO ASTM STANDARD B58.
7. MARKING TAPE SHALL BE INSTALLED FOR ALL SERVICE CONNECTIONS FROM THE MAIN LINE TO THE METER FOR ALL NEW CONSTRUCTION OR RETROFIT INSTALLATIONS USING OPEN TRENCH METHODS.
8. METER BOX LID SHALL HAVE A 4-1/8 INCH DIAMETER RECESSED HOLE FOR TRANSMITTER.
9. SEE APPROVED MATERIAL LIST; SECTION 600.

NO WATER SERVICES ARE PERMITTED ON HYDRANT LEGS, WITHIN 3' OF PIPE BELL, OR WITHIN 20' OF DEAD END.

TOWN OF APEX
STANDARDS

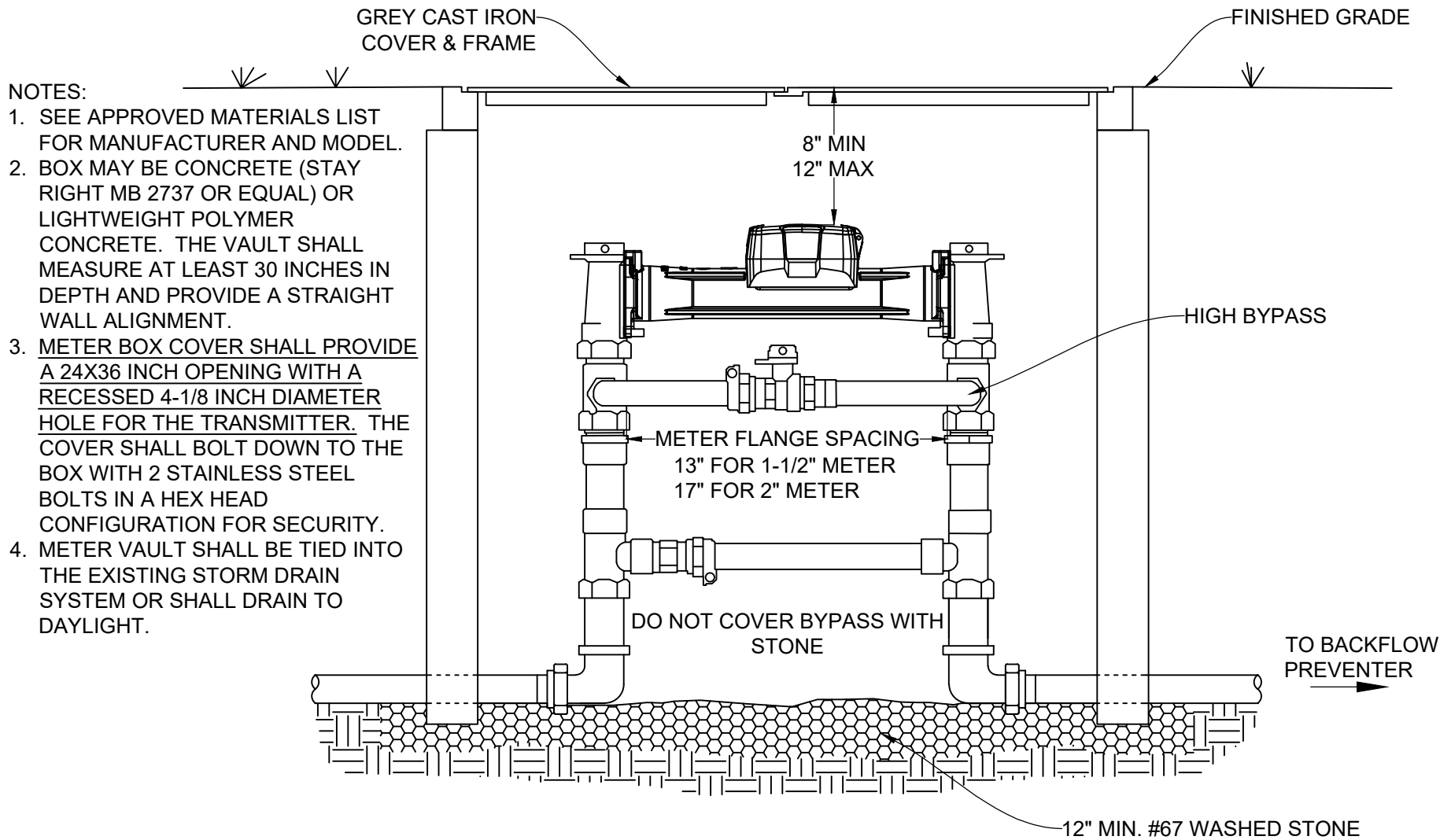
EFFECTIVE: JUNE 11, 2024

3/4" & 1" WATER SERVICE & METER BOX

STD. NO.

600.01

SHEET 3 OF 3



TOWN OF APEX
STANDARDS

EFFECTIVE: JUNE 11, 2024

1-1/2" & 2" METER INSTALLATION & VAULT

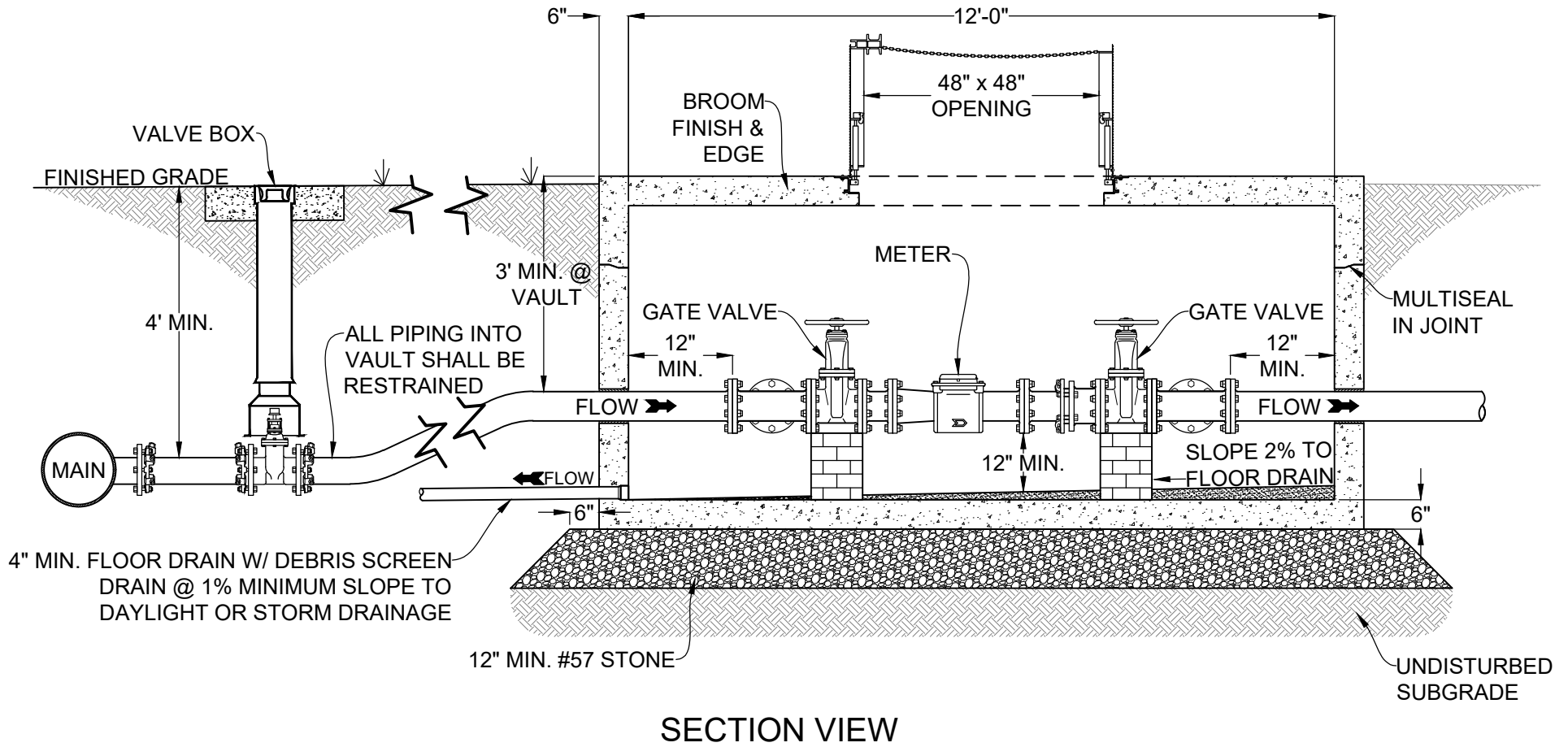
STD. NO.

600.02

SHEET 1 OF 1

NOTES:

1. INSTALLATIONS LARGER THAN 3" SHALL REQUIRE A SPECIAL DETAIL AND PRIOR APPROVAL FROM THE WATER RESOURCES DEPARTMENT.
2. ALL PIPE SHALL BE DUCTILE IRON. A BYPASS LINE MUST BE INCLUDED.
3. THERE SHALL BE A MINIMUM 5' EASEMENT AROUND ALL SIDES OF THE WATER METER VAULT.
4. CONTACT WATER RESOURCES OPERATIONS FOR COST OF METERS 3" AND GREATER AND THE OPENING REQUIRED FOR INSTALLATION OF METER.
5. VAULT PIPE INLET AND OUTLET SHALL BE SEALED AROUND PIPE WITH CONCRETE OR WITH BRICK AND MORTAR.
6. METER VAULT TOP SHALL HAVE A 4-1/8" DIAMETER RECESSED HOLE FOR TRANSMITTER.



**TOWN OF APEX
STANDARDS**

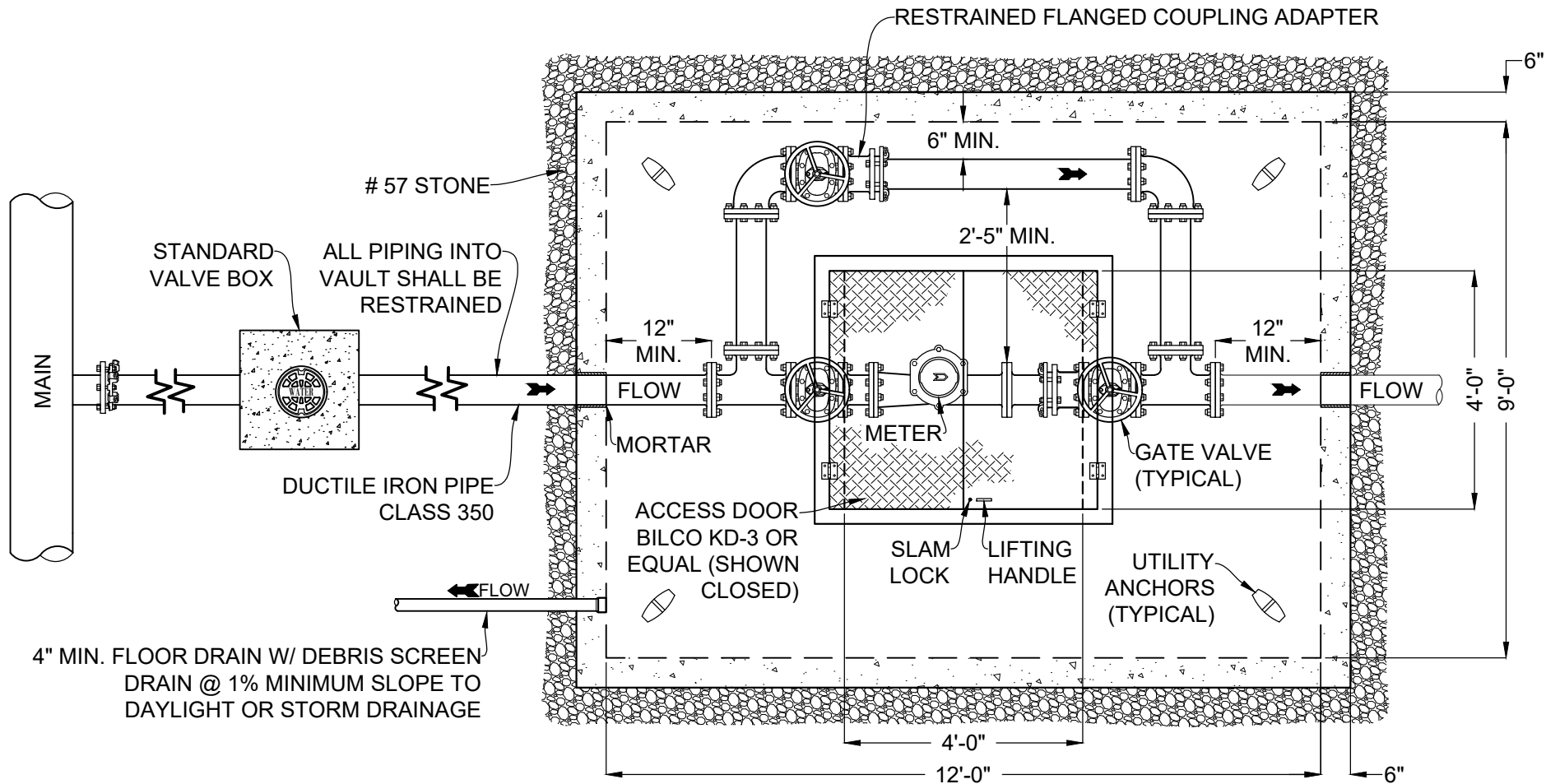
EFFECTIVE: JUNE 11, 2024

3" & LARGER METER INSTALLATION & VAULT

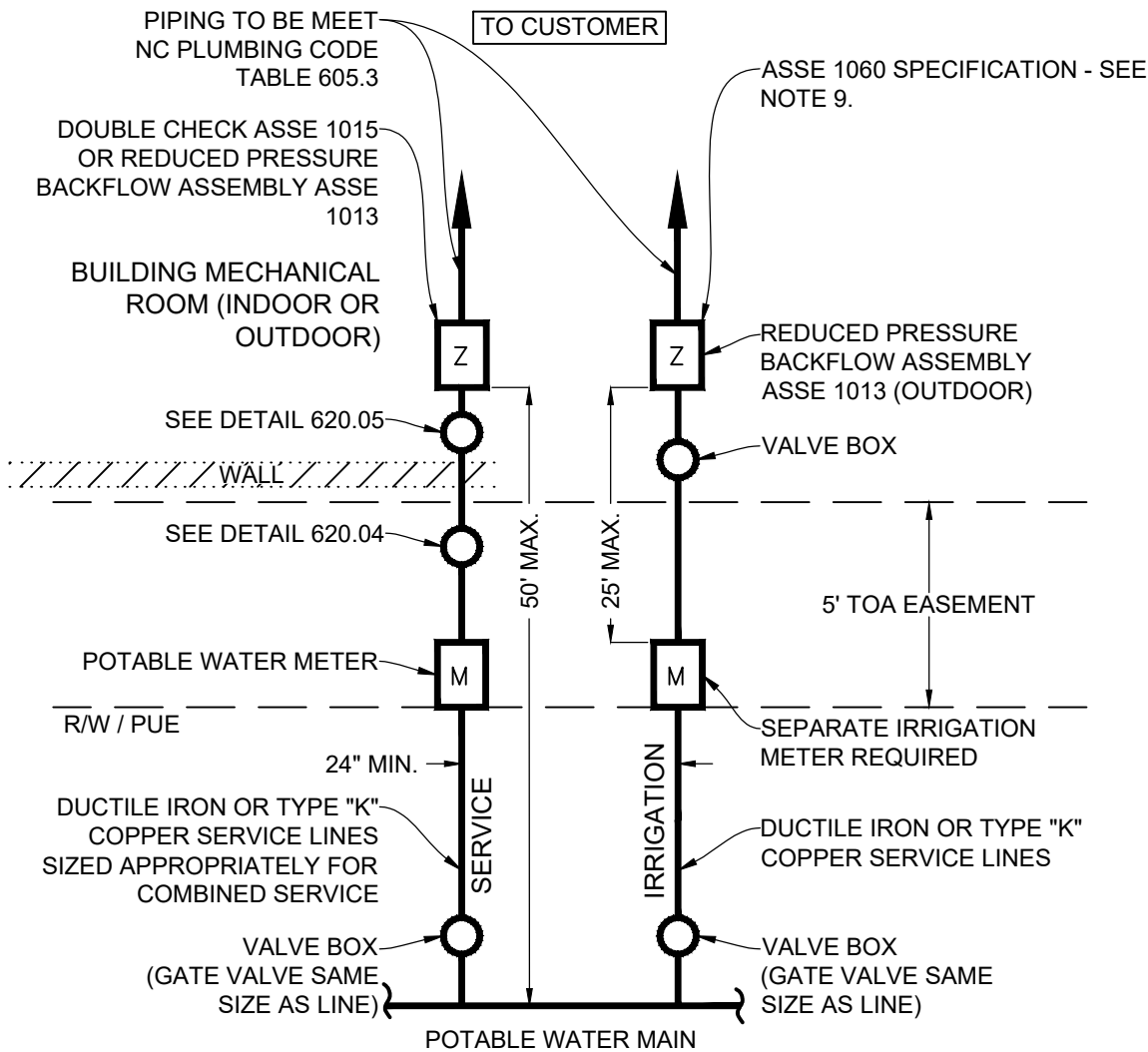
STD. NO.

600.03

SHEET 1 OF 2



PLAN VIEW



COMMERCIAL

NOTE:

1. DOUBLE CHECK ASSE 1015 OR REDUCED PRESSURE BACKFLOW ASSEMBLY ASSE 1013 SHALL MEET CURRENT TOWN OF APEX CROSS CONNECTION ORDINANCE AND USC CODE.
2. INLET PIPE TO WATER METER SHALL BE SAME SIZE AS OUTLET PIPE BEHIND BACKFLOW PREVENTER.
3. THERE SHALL BE NO TAPS, BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS OR OTHER WATER-USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS REQUIRED BACKFLOW PREVENTER.
4. EACH BACKFLOW PREVENTER CONNECTED TO TOWN OF APEX WATER SUPPLY (CONTAINMENT) SHALL BE TESTED BY AN APPROVED TESTER BEFORE PLACING THE WATER SYSTEM IN SERVICE AND SHALL BE TESTED ANNUALLY OR AS REQUESTED BY THE TOWN OF APEX.
5. IRRIGATION BACKFLOW PREVENTERS SHALL BE INSTALLED OUTSIDE.
6. AUTOMATICALLY CONTROLLED IRRIGATION SYSTEMS ARE REQUIRED TO INSTALL A RAIN SENSOR SET TO $\frac{1}{4}$ INCH OR LESS PER TOWN OF APEX ORDINANCE.
7. ENCLOSURE SHALL HAVE THE FOLLOWING INFORMATION MARKED:
 - A. NAME OF MANUFACTURER OR TRADE MARK
 - B. MODEL NUMBER
 - C. DATE CODE OR SERIAL NUMBER
 - D. CLASS DESIGNATION AND LOWEST TEMPERATURE RANGE
 - E. ASSE STANDARD #1060
 - F. PHYSICAL ADDRESS
 - G. MARKINGS SHALL BE 6 MM ($\frac{1}{4}$ ") SIZE LETTER HEIGHT AND CAST, ETCHED, STAMPED OR ENGRAVED ON THE ENCLOSURE, OR ON A CORROSION RESISTANT PLATE SECURELY ATTACHED TO THE ENCLOSURE.
 - H. 2" SIZE NUMBERS TO BE PLACED ON THE BACK OF THE COVER FOR EACH BACKFLOW LOCATION (COMMERCIAL ONLY).
8. ALL BACKFLOW PREVENTERS SHALL BE "LEAD FREE".
9. ASSE 1060 CLASS 1 OR 2 INSULATED ENCLOSURE IS REQUIRED FOR IRRIGATION SYSTEMS THAT DO NOT HAVE THREADED UNIONS TO ALLOW FOR REMOVAL FOR THE WINTER SEASON. SHUT OFF VALVES (SOV) ARE REQUIRED AND MUST NOT BE SUBJECT TO FREEZING.

SCALE: N.T.S.

TOWN OF APEX
STANDARDS

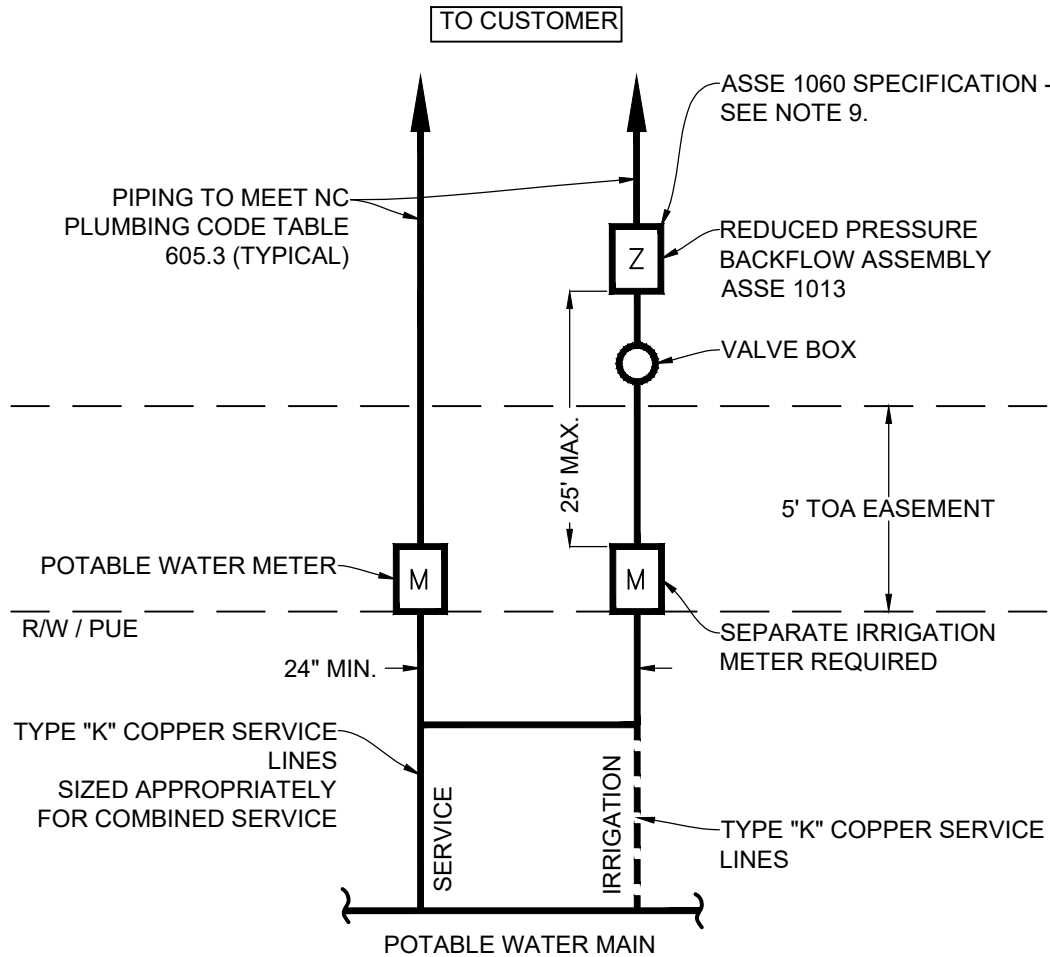
EFFECTIVE: JUNE 11, 2024

TYPICAL SERVICE & IRRIGATION CONNECTIONS

STD. NO.

620.01

SHEET 1 OF 2



RESIDENTIAL

NOTE:

1. REDUCED PRESSURE BACKFLOW ASSEMBLY ASSE 1013 SHALL MEET CURRENT TOWN OF APEX CROSS CONNECTION ORDINANCE AND USC CODE.
2. INLET PIPE TO WATER METER SHALL BE SAME SIZE AS OUTLET PIPE BEHIND BACKFLOW PREVENTER.
3. THERE SHALL BE NO TAPS, BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS OR OTHER WATER-USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS REQUIRED BACKFLOW PREVENTER.
4. EACH BACKFLOW PREVENTER CONNECTED TO TOWN OF APEX WATER SUPPLY (CONTAINMENT) SHALL BE TESTED BY AN APPROVED TESTER BEFORE PLACING THE WATER SYSTEM IN SERVICE AND SHALL BE TESTED ANNUALLY OR AS REQUESTED BY THE TOWN OF APEX.
5. IRRIGATION BACKFLOW PREVENTERS SHALL BE INSTALLED OUTSIDE.
6. AUTOMATICALLY CONTROLLED IRRIGATION SYSTEMS ARE REQUIRED TO INSTALL A RAIN SENSOR SET TO $\frac{1}{4}$ INCH OR LESS PER TOWN OF APEX ORDINANCE.
7. ENCLOSURE SHALL HAVE THE FOLLOWING INFORMATION MARKED:
 - A. NAME OF MANUFACTURER OR TRADE MARK
 - B. MODEL NUMBER
 - C. DATE CODE OR SERIAL NUMBER
 - D. CLASS DESIGNATION AND LOWEST TEMPERATURE RANGE
 - E. ASSE STANDARD #1060
 - F. MARKINGS SHALL BE 6 MM ($\frac{1}{4}$ ") SIZE LETTER HEIGHT AND CAST, ETCHED, STAMPED OR ENGRAVED ON THE ENCLOSURE, OR ON A CORROSION RESISTANT PLATE SECURELY ATTACHED TO THE ENCLOSURE.
 - G. 2" SIZE NUMBERS TO BE PLACED ON THE BACK OF THE COVER FOR EACH BACKFLOW LOCATION (COMMERCIAL ONLY).
8. ALL BACKFLOW PREVENTERS SHALL BE "LEAD FREE".
9. ASSE 1060 CLASS 1 OR 2 INSULATED ENCLOSURE IS REQUIRED FOR IRRIGATION SYSTEMS THAT DO NOT HAVE THREADED UNIONS TO ALLOW REMOVAL DURING THE WINTER SEASON. SHUT OFF VALVES (SOV) ARE REQUIRED AND CANNOT BE SUBJECT TO FREEZING.
10. BACKFLOW PREVENTERS SHALL NOT BE INSTALLED BEHIND FENCES, UNDER FOUNDATIONS, DECKS OR INSIDE DWELLINGS.
11. BACKFLOW PREVENTERS SHALL NOT BE INSTALLED 10' PAST THE FRONT FACADE OF THE DWELLING.

SCALE: N.T.S.

TOWN OF APEX
STANDARDS

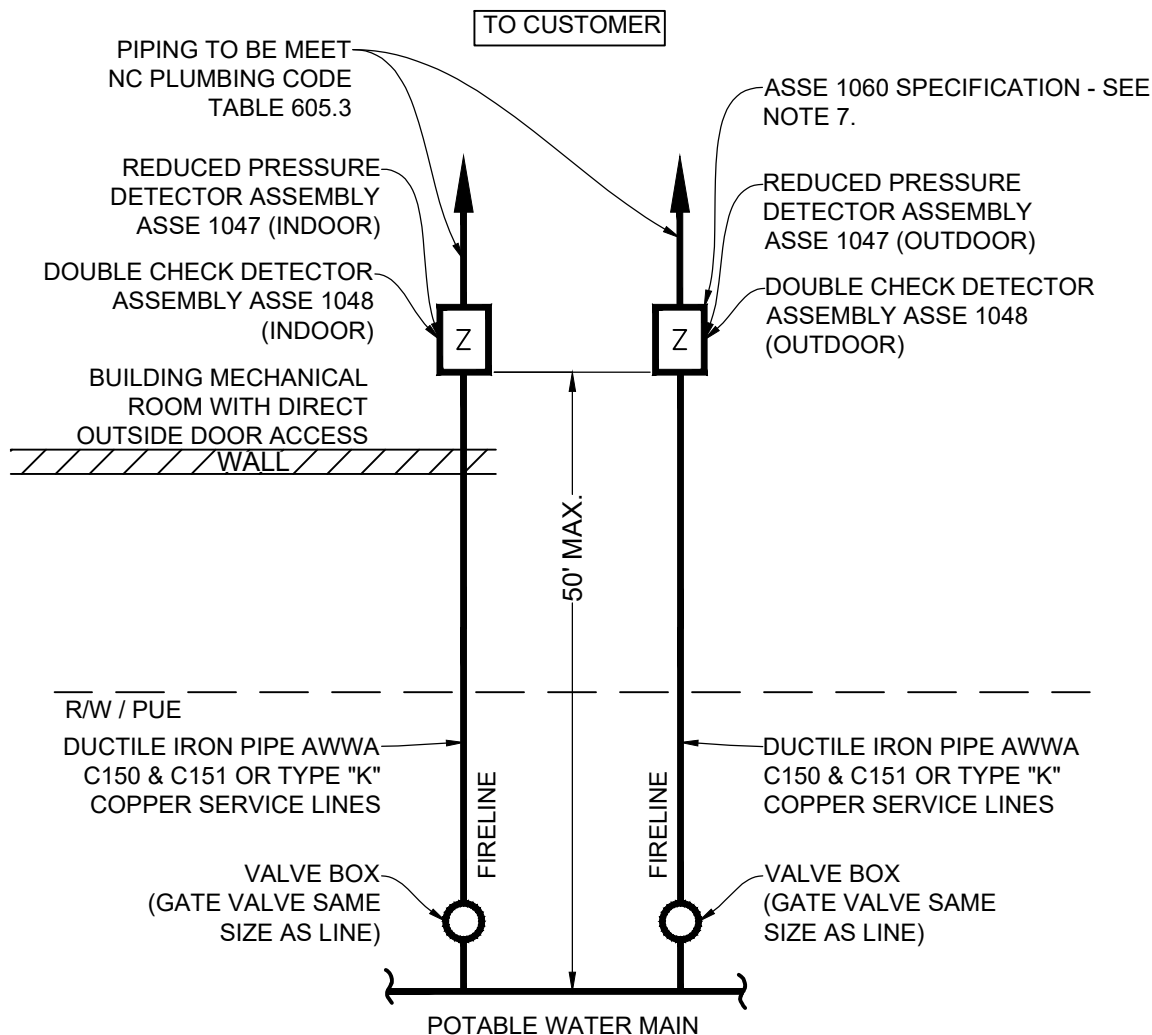
EFFECTIVE: JUNE 11, 2024

TYPICAL SERVICE & IRRIGATION CONNECTIONS

STD. NO.

620.01

SHEET 2 OF 2



NOTE:

1. REDUCED PRESSURE DETECTOR ASSEMBLY ASSE 1047 SHALL MEET CURRENT TOWN OF APEX CROSS CONNECTION ORDINANCE AND USC CODE.
2. INLET PIPE TO WATER METER SHALL BE SAME SIZE AS OUTLET PIPE BEHIND BACKFLOW PREVENTER.
3. THERE SHALL BE NO TAPS, BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS OR OTHER WATER-USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS REQUIRED BACKFLOW PREVENTER.
4. EACH BACKFLOW PREVENTER CONNECTED TO TOWN OF APEX WATER SUPPLY (CONTAINMENT) SHALL BE TESTED BY AN APPROVED TESTER BEFORE PLACING THE WATER SYSTEM IN SERVICE AND SHALL BE TESTED ANNUALLY OR AS REQUESTED BY THE TOWN OF APEX.
5. ENCLOSURE SHALL HAVE THE FOLLOWING INFORMATION MARKED:
 - A. NAME OF MANUFACTURER OR TRADE MARK
 - B. MODEL NUMBER
 - C. DATE CODE OR SERIAL NUMBER
 - D. CLASS DESIGNATION AND LOWEST TEMPERATURE RANGE
 - E. ASSE STANDARD #1060
 - F. PHYSICAL ADDRESS
 - G. MARKINGS SHALL BE 6 MM (1/4") SIZE LETTER HEIGHT AND CAST, ETCHED, STAMPED OR ENGRAVED ON THE ENCLOSURE, OR ON A CORROSION RESISTANT PLATE SECURELY ATTACHED TO THE ENCLOSURE.
 - H. 2" SIZE NUMBERS TO BE PLACED ON THE BACK OF THE COVER FOR EACH BACKFLOW LOCATION (COMMERCIAL ONLY).
6. ALL BACKFLOW PREVENTERS SHALL BE "LEAD FREE".
7. ASSE 1060 CLASS 1 OR 2 ENCLOSURE WITH PERMANENT, HARD PIPED ELECTRICAL SERVICE, AND A THERMOSTATICALLY CONTROLLED HEATER OR HEAT TRACE.

SCALE: N.T.S.

TOWN OF APEX
STANDARDS

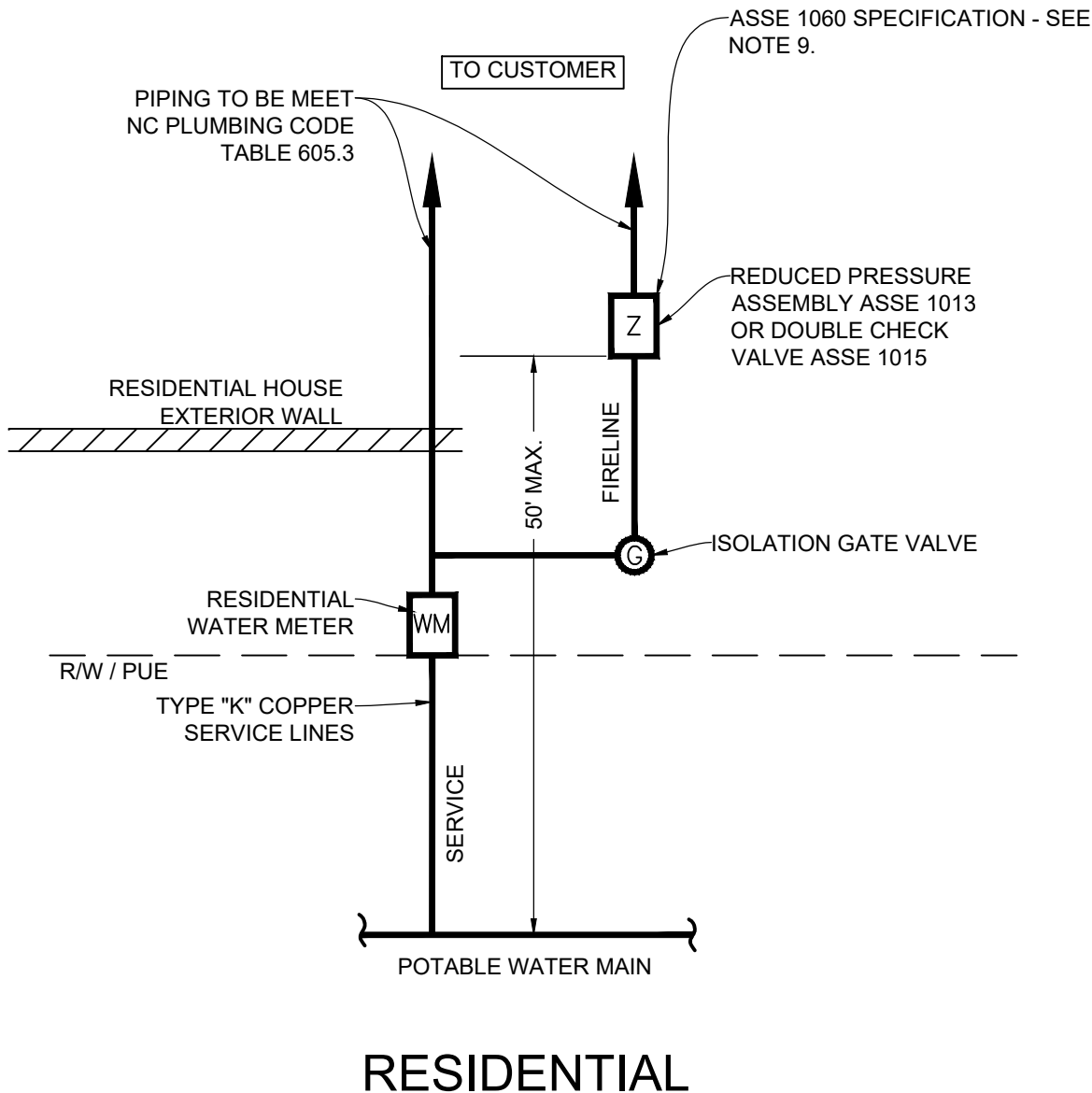
EFFECTIVE: JUNE 11, 2024

TYPICAL FIRE CONNECTIONS

STD. NO.

620.02

SHEET 1 OF 2



NOTE:

1. REDUCED PRESSURE ASSEMBLY ASSE 1013 OR DOUBLE CHECK VALVE ASSE 1015 SHALL MEET CURRENT TOWN OF APEX CROSS CONNECTION ORDINANCE AND USC CODE.
2. INLET PIPE TO WATER METER SHALL BE SAME SIZE AS OUTLET PIPE BEHIND BACKFLOW PREVENTER.
3. THERE SHALL BE NO TAPS, BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS OR OTHER WATER-USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS REQUIRED BACKFLOW PREVENTER.
4. EACH BACKFLOW PREVENTER CONNECTED TO TOWN OF APEX WATER SUPPLY (CONTAINMENT) SHALL BE TESTED BY AN APPROVED TESTER BEFORE PLACING THE WATER SYSTEM IN SERVICE AND SHALL BE TESTED ANNUALLY OR AS REQUESTED BY THE TOWN OF APEX.
5. ENCLOSURE SHALL HAVE THE FOLLOWING INFORMATION MARKED:
 - A. NAME OF MANUFACTURER OR TRADE MARK
 - B. MODEL NUMBER
 - C. DATE CODE OR SERIAL NUMBER
 - D. CLASS DESIGNATION AND LOWEST TEMPERATURE RANGE
 - E. ASSE STANDARD #1060
 - F. PHYSICAL ADDRESS
 - G. MARKINGS SHALL BE 6 MM (1/4") SIZE LETTER HEIGHT AND CAST, ETCHED, STAMPED OR ENGRAVED ON THE ENCLOSURE, OR ON A CORROSION RESISTANT PLATE SECURELY ATTACHED TO THE ENCLOSURE.
6. ALL BACKFLOW PREVENTERS SHALL BE "LEAD FREE".
7. INTERIOR INSTALLATIONS ARE NOT PERMITTED IN WALLS, FLOORS, OR CEILINGS / ATTICS.
8. EXTERIOR INSTALLATIONS ARE NOT PERMITTED IN CRAWL SPACES / FOUNDATIONS OR BENEATH PERMANENT STRUCTURES.
9. ASSE 1060 CLASS 1 OR 2 ENCLOSURE WITH PERMANENT, HARD PIPED ELECTRICAL SERVICE, AND A THERMOSTATICALLY CONTROLLED HEATER OR HEAT TRACE.

SCALE: N.T.S.

TOWN OF APEX
STANDARDS

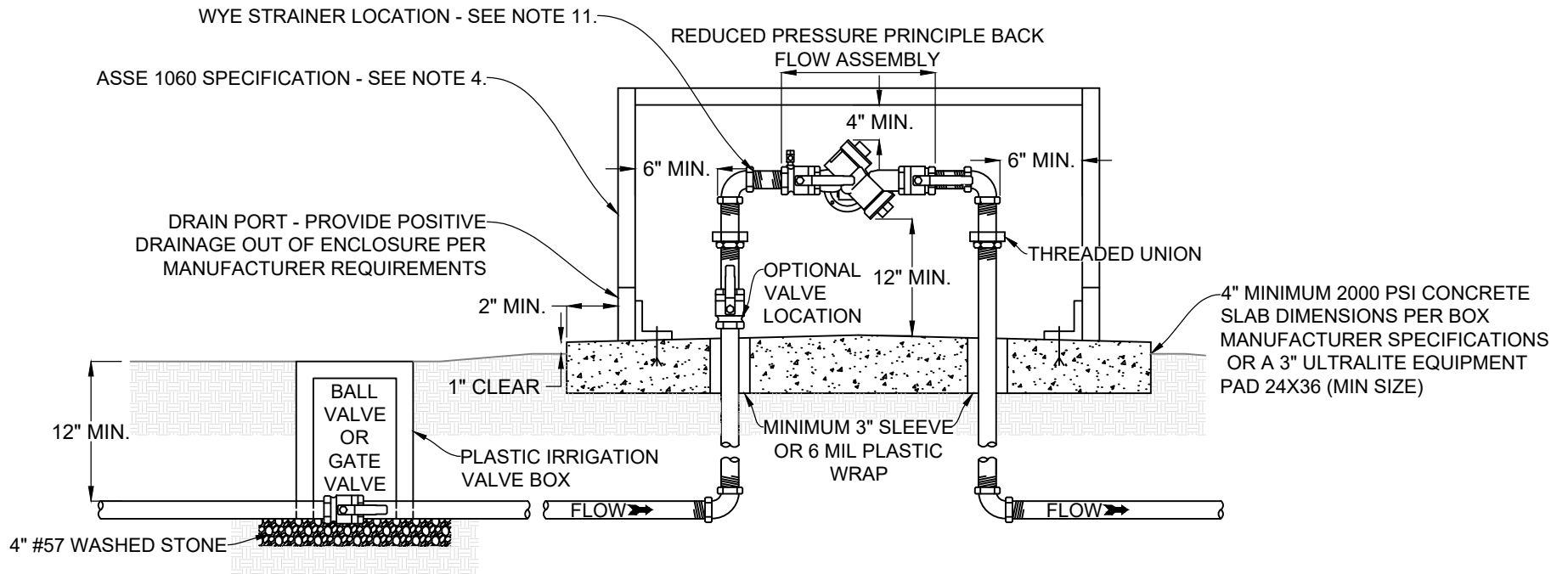
EFFECTIVE: JUNE 11, 2024

TYPICAL FIRE CONNECTIONS

STD. NO.

620.02

SHEET 2 OF 2



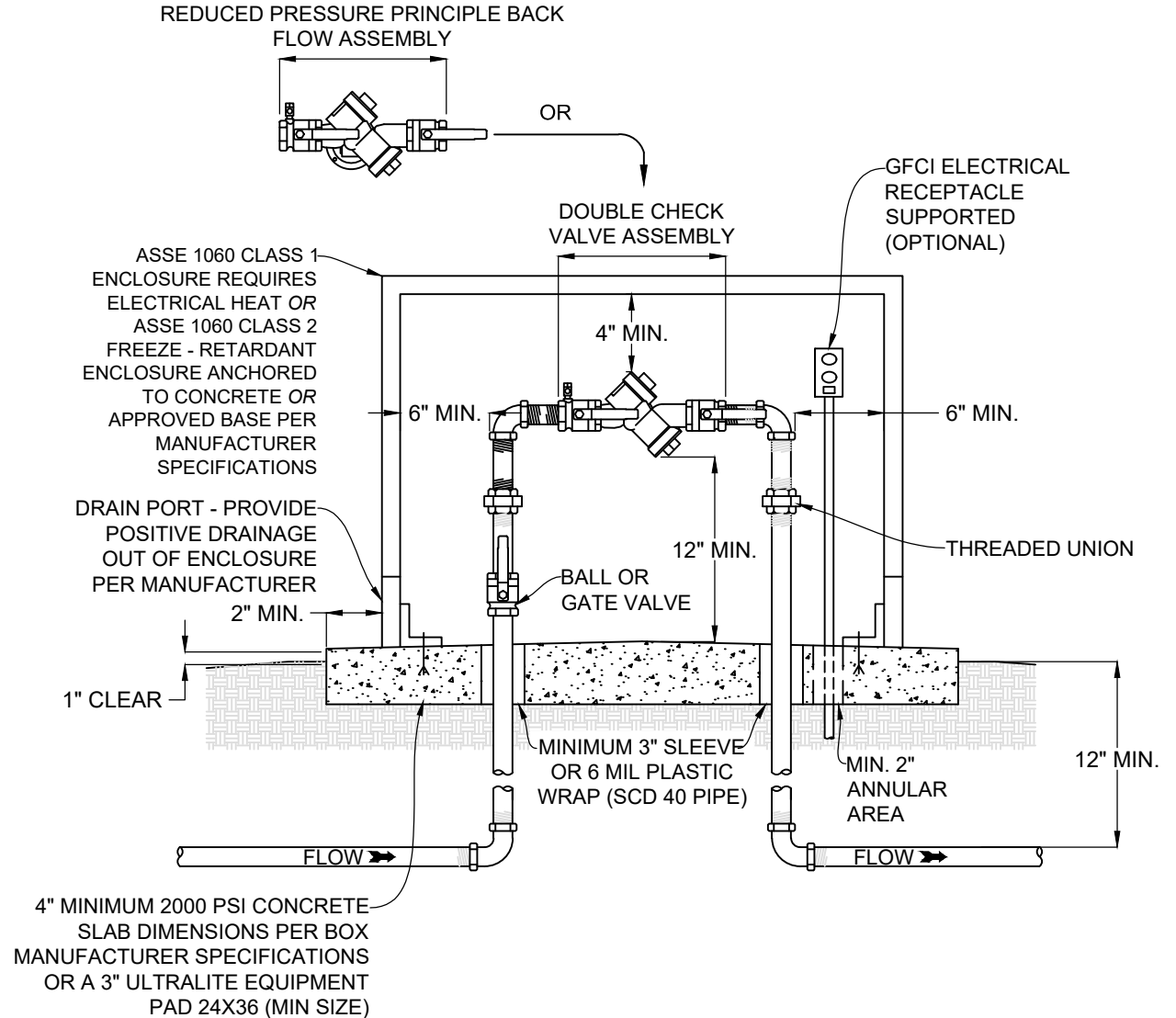
NOTES:

1. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1013 & AWWA C511.
2. BACKFLOW ASSEMBLY SHALL BE CENTERED ON CONCRETE OR APPROVED BASE PER MANUFACTURER SPECIFICATION.
3. ASSE 1060 CLASS 1 OR 2 INSULATED ENCLOSURE IS REQUIRED FOR IRRIGATIONS SYSTEMS THAT DO NOT HAVE THREADED UNIONS TO ALLOW FOR REMOVAL DURING THE WINTER SEASON. SHUTOFF VALVES ARE REQUIRED AND CANNOT BE SUBJECT TO FREEZING.
4. PIPE MATERIAL SHALL MEET CURRENT NC PLUMBING CODE SPECIFICATION TABLE 605.3.
5. INSTALLATION SHALL BE IN COMPLIANCE WITH ALL APPLICABLE TOWN ORDINANCES AND SPECIFICATIONS, USC FCCCHR CODE AND THE NC PLUMBING CODE.
6. INSTALLATIONS ARE NOT ALLOWED IN TOWN RIGHT-OF-WAYS, TOWN EASEMENTS, UNDER STRUCTURES OR WITHIN FOUNDATIONS. INSTALLATIONS MUST BE WITHIN 25' OF WATER METER BUT NOT TO EXCEED 10' PAST THE FRONT CORNER OF THE PERMANENT STRUCTURE.
7. PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE AND OPERATION OF BACKFLOW PREVENTION ASSEMBLY AND COMPLIANCE WITH REPORTING AND TESTING REQUIREMENTS.
8. ALL BACKFLOW PREVENTERS SHALL MEET CURRENT UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS-CONNECTION AND HYDRAULIC RESEARCH REQUIREMENTS.
9. ALL BACKFLOWS SHALL BE "LEAD FREE".
10. A WYE STRAINER SHALL BE INSTALLED IMMEDIATELY UPSTREAM OF THE BACKFLOW PREVENTER'S #1 SHUTOFF VALVE AND THE UPSTREAM DISCONNECT UNION.
11. BACKFLOW PREVENTER INSTALLATION SHALL MEET DETAIL 620.01 (1 OF 2) OR (2 OF 2).

<p>TOWN OF APEX STANDARDS</p>	<p>3/4" - 2" RESIDENTIAL & COMMERCIAL IRRIGATION BACKFLOW ASSEMBLY (OUTDOOR ONLY)</p>	<p>STD. NO. 620.03</p>
<p>EFFECTIVE: JUNE 11, 2024</p>		<p>SHEET 1 OF 1</p>

NOTES:

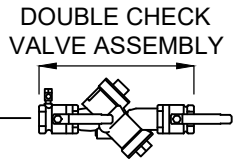
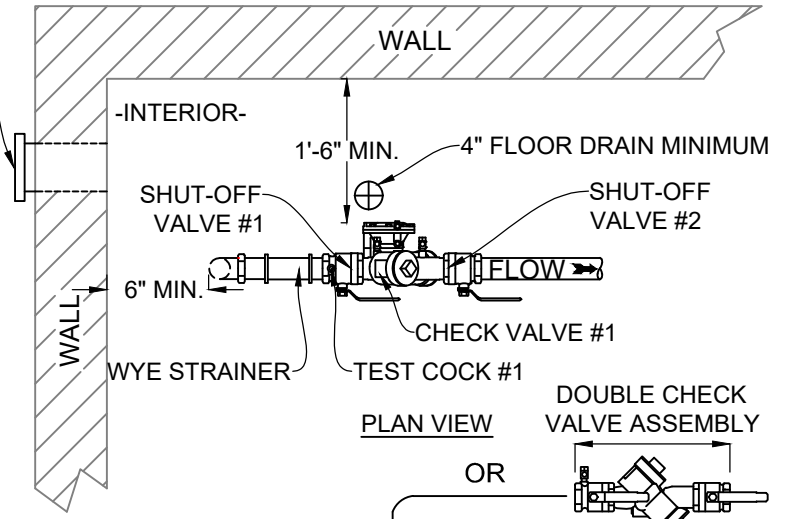
1. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1013 & AWWA C511.
2. DOUBLE CHECK BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1015 & AWWA C510.
3. BACKFLOW PREVENTION ASSEMBLY SHALL BE CENTERED ON CONCRETE OR APPROVED BASE PER MANUFACTURER SPECIFICATION.
4. ASSE 1060 CLASS 2 FREEZE-RETARDANT ENCLOSURE - ELECTRICAL HEAT NOT REQUIRED.
5. 120V GFCI ELECTRICAL RECEPTACLE REQUIRED TO BE INSTALLED IN ACCORDANCE WITH THE NC ELECTRICAL CODE FOR OUTDOOR OPERATION WITH ASSE 1060 CLASS 1 ENCLOSURE.
6. PIPE MATERIAL SHALL MEET CURRENT NC PLUMBING CODE TABLE 605.3.
7. INSTALLATION SHALL BE IN COMPLIANCE WITH ALL APPLICABLE TOWN ORDINANCES AND SPECIFICATIONS, USC FCCCHR CODE AND THE NC PLUMBING CODE.
8. PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE AND OPERATION OF BACKFLOW ASSEMBLY AND COMPLIANCE WITH REPORTING AND TESTING REQUIREMENTS.
9. ALL BACKFLOW PREVENTERS SHALL MEET CURRENT UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS-CONNECTION AND HYDRAULIC RESEARCH REQUIREMENTS.
10. ALL BACKFLOWS SHALL BE "LEAD FREE".
11. A WYE STRAINER SHALL BE INSTALLED ON THE IMMEDIATE UPSTREAM OF THE BACKFLOW PREVENTER'S #1 SHUTOFF VALVE AND THE UPSTREAM DISCONNECT UNION.
12. BACKFLOW PREVENTER'S SHALL MEET DETAIL 620.01 (1 OF 2).
13. BACKFLOW PREVENTER'S SHALL NOT BE IN INSTALLED IN TOWN R/W OR TOWN EASEMENT.



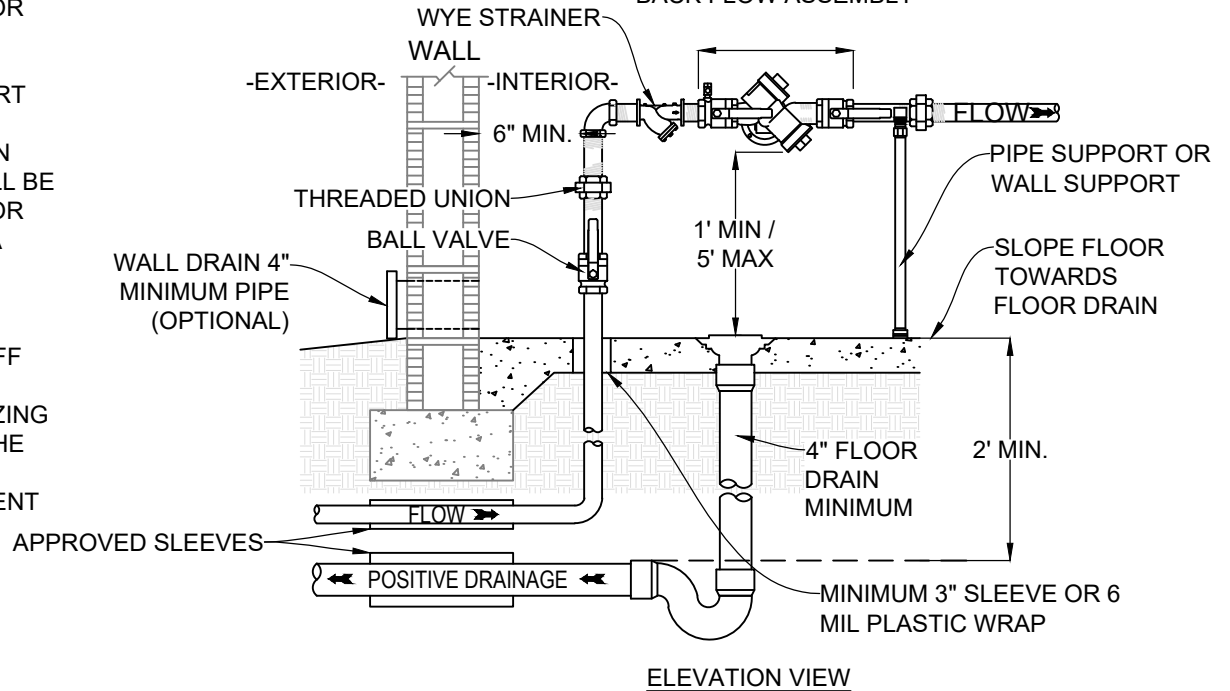
NOTES:

1. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1013 & AWWA C511.
2. DOUBLE CHECK BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1015 & AWWA C510.
3. BACKFLOW PREVENTION ASSEMBLY SHALL MAINTAIN MINIMUM CLEARANCES FROM WALLS AND FLOOR AS SPECIFIED.
4. ALL BACKFLOW PREVENTERS SHALL BE LOCATED IN A LOWEST FLOOR ROOM (1HR FIRE RATED) WITH AN EXTERIOR DOOR WITH DIRECT ACCESS FROM THE OUTSIDE.
5. PIPE MATERIAL SHALL MEET CURRENT NC PLUMBING CODE TABLE 605.3 (OUTSIDE) AND TABLE 605.4 (INSIDE).
6. INSTALLATION SHALL BE IN COMPLIANCE WITH ALL APPLICABLE TOWN ORDINANCES AND SPECIFICATIONS, USFCCHR CODE AND THE NC PLUMBING CODE.
7. PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE AND OPERATION OF BACKFLOW ASSEMBLY AND COMPLIANCE WITH REPORTING AND TESTING REQUIREMENTS.
9. ALL BACKFLOW PREVENTERS SHALL MEET CURRENT UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS-CONNECTION AND HYDRAULIC RESEARCH REQUIREMENTS.
10. ALL DRAINS SHALL BE DESIGNED TO HANDLE A FULL PORT DISCHARGE FROM THE ASSEMBLY. AN APPROVED, PRE-FABRICATED, APPROPRIATELY SIZED AIR GAP DRAIN MUST BE USED AND ALL RELIEF PORT DRAIN LINES SHALL BE PIPED TO DIRECT FLOW TOWARD INDIRECT WASTE FLOOR DRAIN, FULL SIZE TO THEIR POINT OF TERMINATION AT A SLOPE CONFORMING WITH NC PLUMBING CODE 704.1.
11. ALL BACKFLOW PREVENTERS SHALL BE "LEAD FREE".
12. A WYE STRAINER SHALL BE INSTALLED IMMEDIATELY UPSTREAM OF THE BACKFLOW PREVENTER'S #1 SHUTOFF VALVE AND THE UPSTREAM DISCONNECT UNION.
13. AN ISOLATION SHUT-OFF VALVE NOT SUBJECT TO FREEZING SHALL BE REQUIRED TO BE INSTALLED UPSTREAM OF THE BACKFLOW PREVENTER.
14. ALL BACKFLOW INSTALLATIONS SHALL MEET THE CURRENT DETAIL 620.01, 1 OF 2.

WALL DRAIN
4" MINIMUM PVC SCH. 40
PIPE (OPTIONAL)



REDUCED PRESSURE PRINCIPLE
BACK FLOW ASSEMBLY

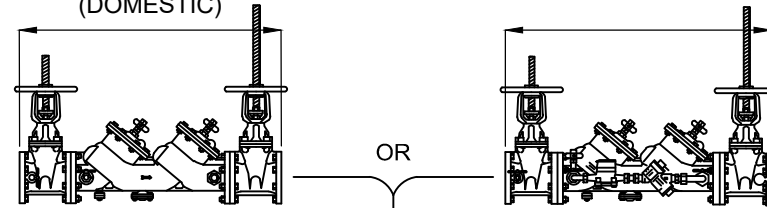


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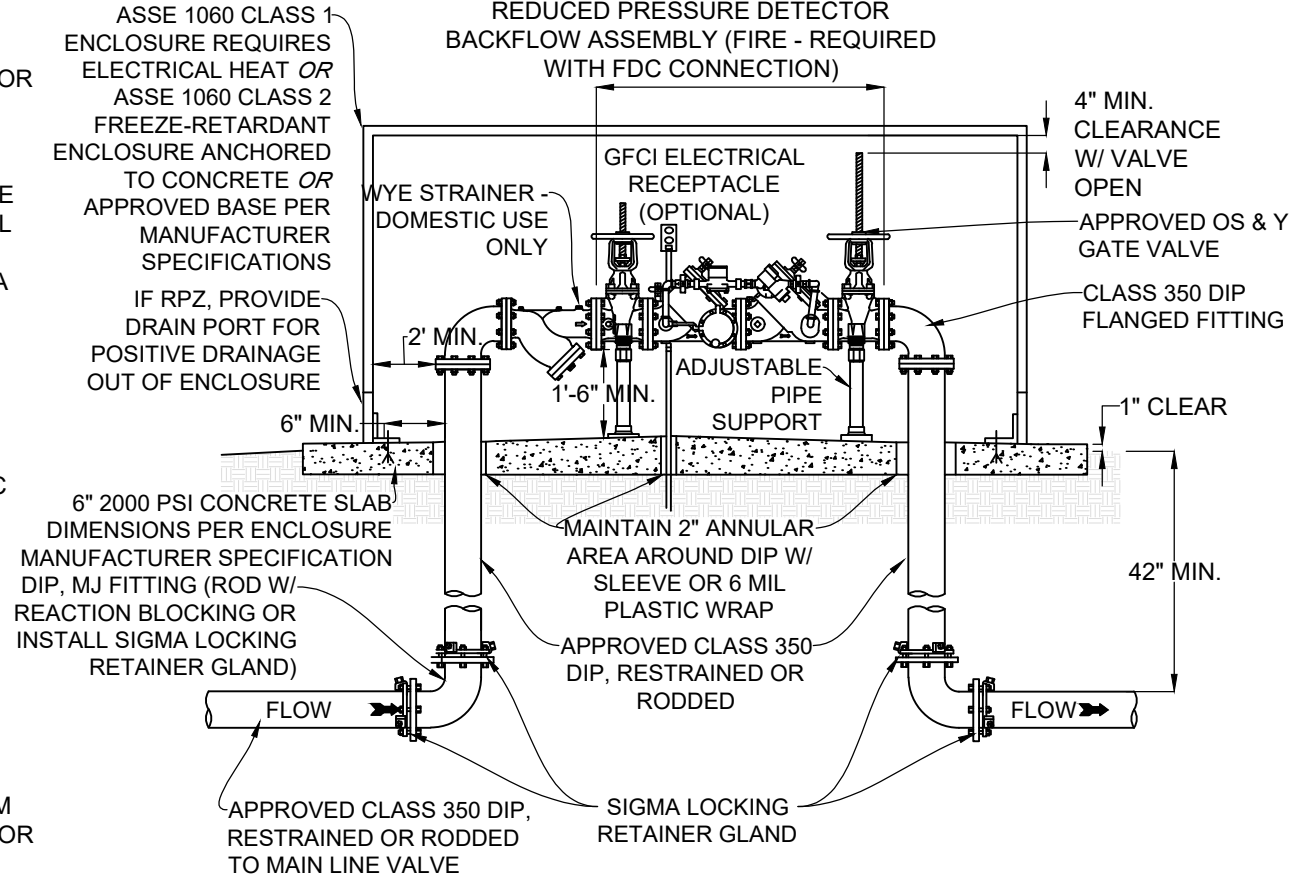
1. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1013 & AWWA C511.
2. REDUCED PRESSURE DETECTOR BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1047. UNIT SHALL BE USED FOR ALL FIRE PREVENTION SYSTEMS WITH FDC, CHEMICAL, PROCESSED OR BOOSTERED.
3. DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1015 & AWWA C510.
4. DOUBLE CHECK DETECTOR BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1048.
5. BACKFLOW ASSEMBLY SHALL BE CENTERED ON CONCRETE PAD AND CENTERED WITHIN ENCLOSURE OR BASED ON MANUFACTURER SPECIFICATION.
6. ASSE 1060 CLASS 1 OR 2 FREEZE-RETARDANT ENCLOSURE REQUIRED.
7. STANDARD 120V GFCI ELECTRICAL RECEPTACLE TO BE INSTALLED IN ACCORDANCE WITH THE NC ELECTRICAL CODE IF AN ASSE 1060 CLASS 1 BOX IS INSTALLED ON DOMESTIC SERVICE. ELECTRICAL RECEPTACLE AND A CONTROL HEATER OR HEAT TRACER REQUIRED.
8. PIPE MATERIAL SHALL BE CLASS 350 DIP AWWA C150 AND C151 APPROVED BY THE TOWN.
9. INSTALLATION SHALL BE IN COMPLIANCE WITH ALL APPLICABLE TOWN ORDINANCES, SPECIFICATIONS, UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS - CONNECTION CONTROL AND HYDRAULIC RESEARCH AND THE NC PLUMBING CODE.
10. PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE AND OPERATION OF BACKFLOW PREVENTION ASSEMBLY AND COMPLIANCE WITH REPORTING AND TESTING REQUIREMENTS.
11. ALL BACKFLOW PREVENTERS SHALL BE "LEAD FREE".
12. ALL BACKFLOW INSTALLATIONS SHALL MEET DETAIL 620.01, 1 OF 2.
13. A WYE STRAINER SHALL BE INSTALLED ON THE IMMEDIATE UPSTREAM OF THE BACKFLOW PREVENTER'S #1 SHUTOFF VALVE AND THE UPSTREAM DISCONNECT UNION. THE WYE STRAINER SHALL BE FOR DOMESTIC SERVICE CONNECTIONS ONLY.
14. AN ISOLATION GATE VALVE SHALL BE INSTALLED ON THE TOWN OF APEX PUBLIC WATERLINE FOR BACKFLOW ISOLATION PURPOSES.

DOUBLE CHECK VALVE ASSEMBLY
AND
REDUCE PRESSURE ASSEMBLY
(DOMESTIC)

DOUBLE CHECK DETECTOR
BACKFLOW ASSEMBLY (FIRE) - (NOT
PERMITTED WITH FDC CONNECTION)



REDUCED PRESSURE DETECTOR
BACKFLOW ASSEMBLY (FIRE - REQUIRED
WITH FDC CONNECTION)



ELEVATION VIEW

TOWN OF APEX
STANDARDS

EFFECTIVE: JUNE 11, 2024

≥3" COMMERCIAL OUTDOOR BACKFLOW ASSEMBLY

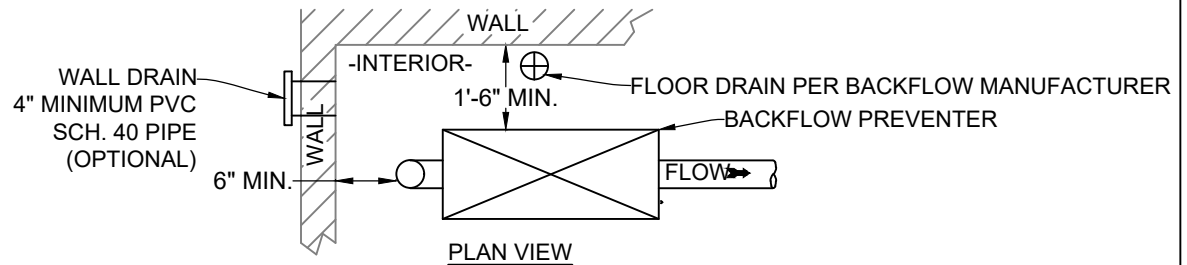
STD. NO.

620.06

SHEET 1 OF 1

NOTES:

1. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1013 & AWWA C511.
2. REDUCED PRESSURE DETECTOR ASSEMBLY SHALL COMPLY WITH ASSE 1047. UNIT SHALL BE USED FOR ALL FIRE PREVENTION SYSTEMS.
3. DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY SHALL COMPLY WITH ASSE 1015 & AWWA C510.
4. DOUBLE CHECK DETECTOR BACKFLOW PREVENTION VALVE ASSEMBLY SHALL COMPLY WITH ASSE 1048.
5. BACKFLOW PREVENTERS CANNOT BE LOCATED INSIDE WALLS, CABINETS OR FOUNDATIONS.
6. ALL BACKFLOW PREVENTERS SHALL BE LOCATED IN A LOWEST FLOOR ROOM (2HR FIRE RATED) WITH AN EXTERIOR DOOR WITH DIRECT ACCESS FROM THE OUTSIDE.
7. PIPE MATERIAL SHALL BE CLASS 350 DIP AWWA C150 AND C151 APPROVED BY THE TOWN. PIPE MATERIAL BEHIND THE BACKFLOW PREVENTER SHALL MEET NC PLUMBING CODE TABLE 605.4
8. PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE AND OPERATION OF BACKFLOW ASSEMBLY AND COMPLIANCE WITH REPORTING AND TESTING REQUIREMENTS.
9. ALL BACKFLOW PREVENTERS SHALL MEET CURRENT UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS-CONNECTION AND HYDRAULIC RESEARCH REQUIREMENTS.
10. ALL DRAINS SHALL BE DESIGNED TO HANDLE A FULL PORT DISCHARGE FROM THE ASSEMBLY. AN APPROVED, PRE-FABRICATED APPROPRIATELY SIZED AIR GAP DRAIN MUST BE USED AND ALL RELIEF PORT DRAIN LINES SHALL BE PIPED TO DIRECT FLOW TOWARD INDIRECT WASTE FLOOR DRAINS.
11. ALL BACKFLOWS SHALL BE "LEAD FREE".
12. A WYE STRAINER SHALL BE INSTALLED IMMEDIATELY UPSTREAM OF THE BACKFLOW PREVENTER'S #1 SHUTOFF VALVE AND THE UPSTREAM DISCONNECT UNION. THE WYE STRAINER SHALL BE FOR DOMESTIC SERVICE CONNECTIONS ONLY.
13. AN ISOLATION GATE VALVE SHALL BE INSTALLED ON THE TOWN OF APEX PUBLIC WATERLINE FOR BACKFLOW ISOLATION PURPOSES.



OR

DOUBLE CHECK DETECTOR BACKFLOW ASSEMBLY (NOT PERMITTED WITH FDC CONNECTION)

OR

REDUCED PRESSURE DETECTOR BACKFLOW ASSEMBLY (FIRE - REQUIRED WITH FDC CONNECTION)

DOUBLE CHECK VALVE ASSEMBLY OR REDUCED PRESSURE ASSEMBLY (DOMESTIC)

