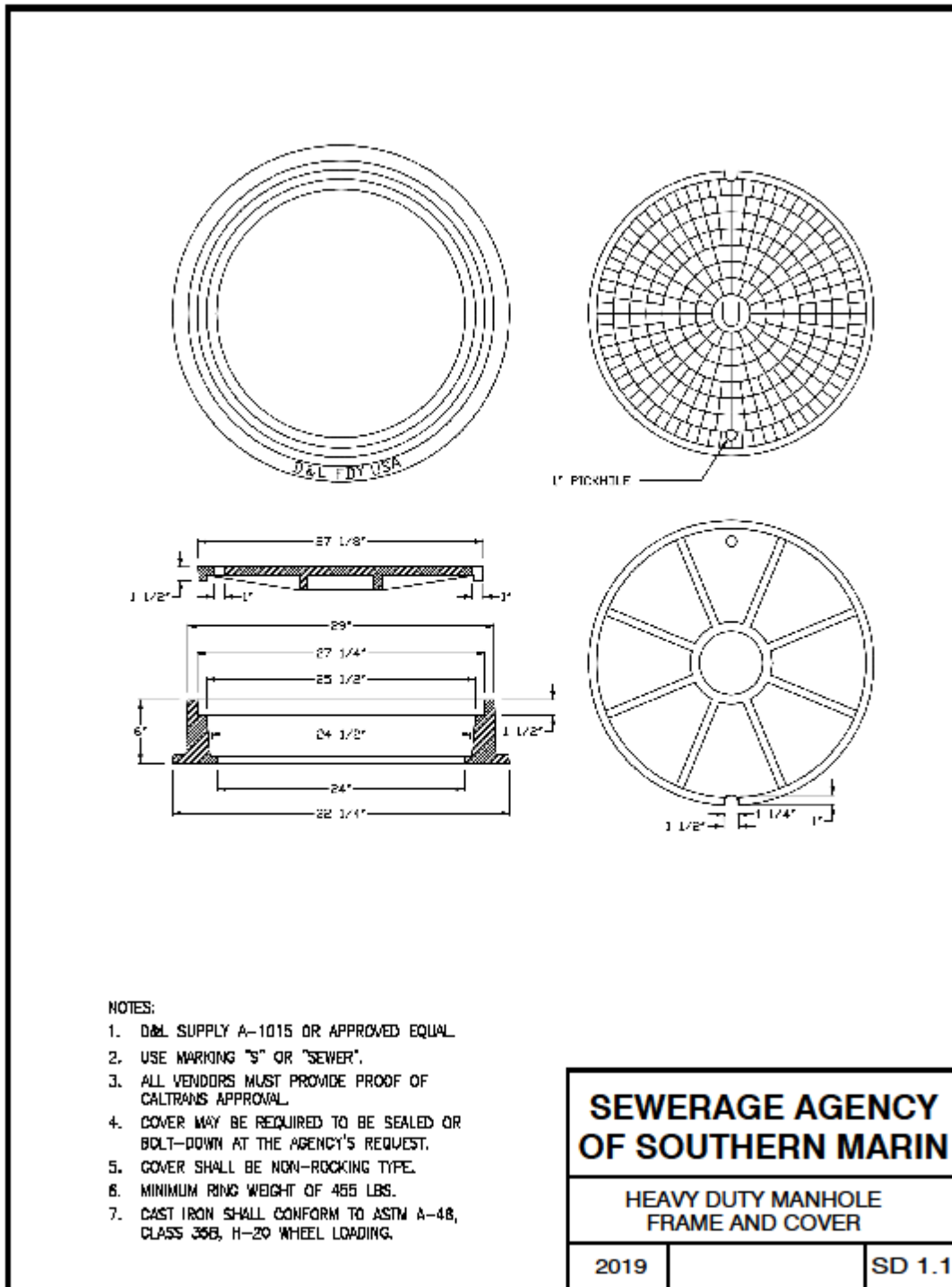


NOTES:

1. MANHOLE FRAME AND COVER SHALL BE AS MANUFACTURED BY PHOENIX IRON WORKS, OAKLAND, NO. P-1090 OR APPROVED EQUIVALENT.
2. FOR MANHOLES LOCATED IN SIDEWALK AREAS USE PHOENIX NO. P-1067 FRAME AND COVER OR APPROVED EQUIVALENT.
3. MINIMUM WEIGHT OF FRAME IS 138 LBS.
MINIMUM WEIGHT OF COVER IS 130 LBS.

SEWERAGE AGENCY OF SOUTHERN MARIN		
STANDARD MANHOLE FRAME AND COVER		
2019		SD 1.0



NOTES:

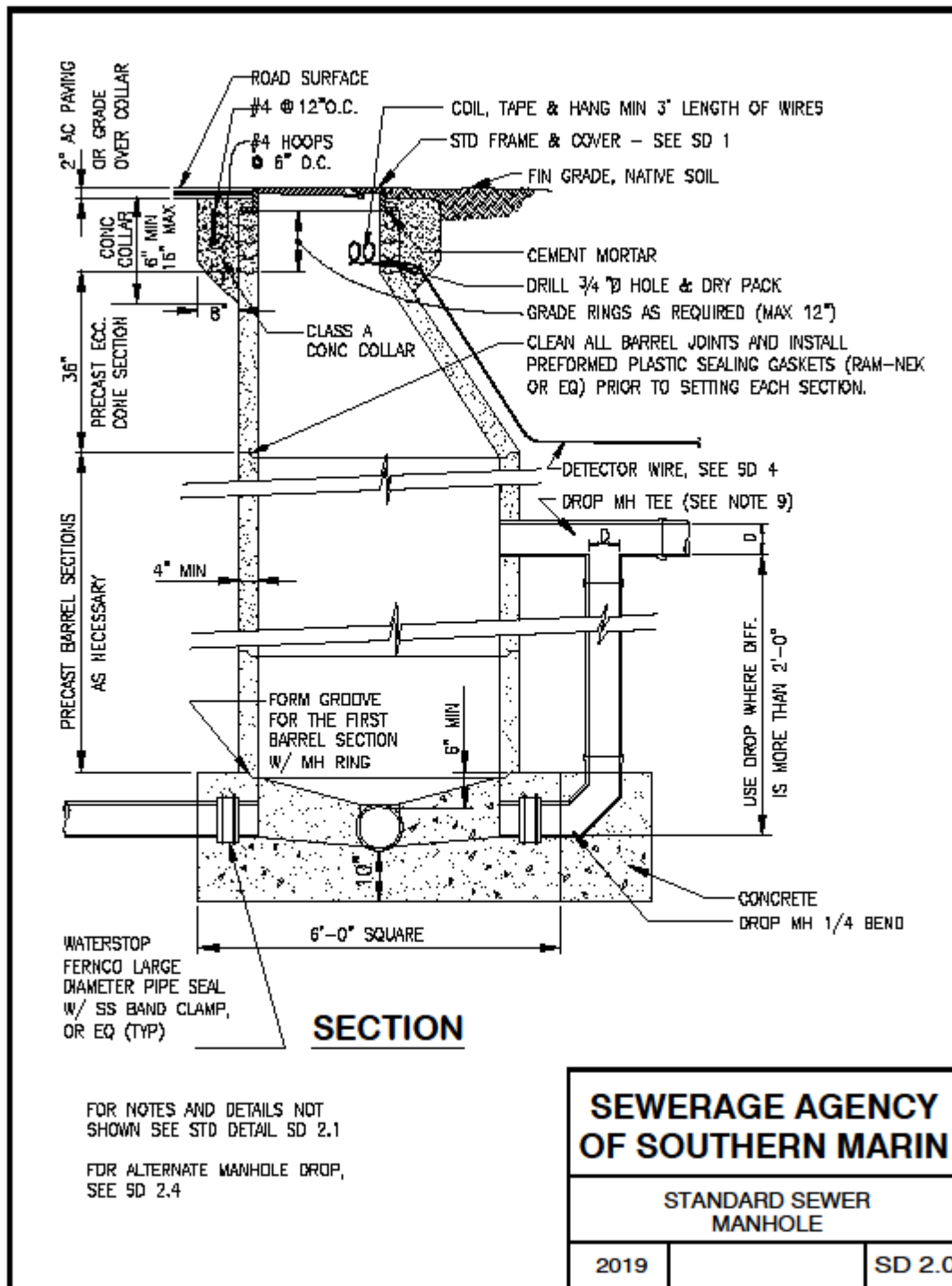
1. D&L SUPPLY A-1015 OR APPROVED EQUAL.
2. USE MARKING "S" OR "SEWER".
3. ALL VENDORS MUST PROVIDE PROOF OF CALTRANS APPROVAL.
4. COVER MAY BE REQUIRED TO BE SEALED OR BOLT-DOWN AT THE AGENCY'S REQUEST.
5. COVER SHALL BE NON-ROCKING TYPE.
6. MINIMUM RING WEIGHT OF 455 LBS.
7. CAST IRON SHALL CONFORM TO ASTM A-48, CLASS 35B, H-20 WHEEL LOADING.

**SEWERAGE AGENCY
OF SOUTHERN MARIN**

**HEAVY DUTY MANHOLE
FRAME AND COVER**

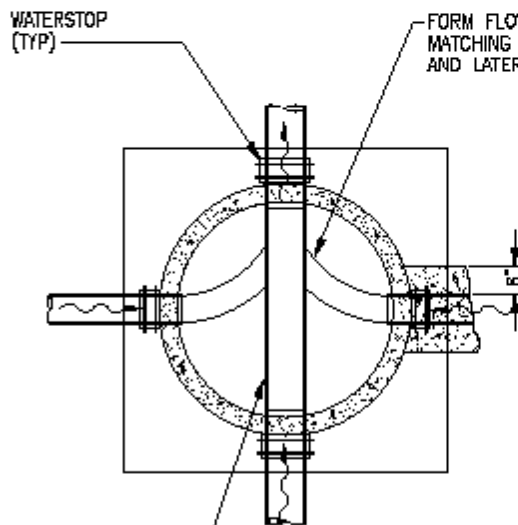
2019

SD 1.1



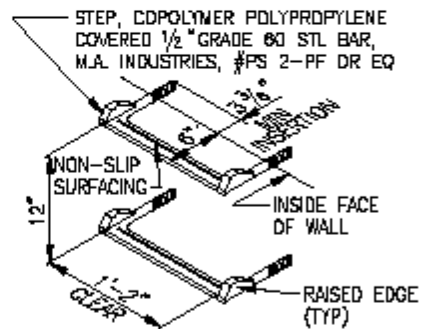
NOTES

1. MANHOLE BASE SHALL BE CLASS A (6-sack) CONCRETE AND SHALL BE POURED AGAINST CRUSHED ROCK BEDDING.
2. PRECAST CONCRETE CONE, BARREL AND GRADE RINGS SHALL CONFORM TO A.S.T.M. Spec C-478, EXCEPT THAT TYPE II Modified PORTLAND CEMENT SHALL BE USED.
3. STEPS SHALL BE POLYPROPYLENE REINFORCED WITH 1/2" GRADE 60 STEEL BAR AS DETAILED BELOW, #PS 2-PF AS MANUFACTURED BY M.A. INDUSTRIES OR EQ.
4. FRAME AND COVER MAY BE ADJUSTED TO GRADE LEVEL EITHER BEFORE OR AFTER PAVING, BUT FINAL GRADE SHALL CONFORM TO ADJACENT FINISH PAVEMENT GRADE WITHIN 1/8".
5. ECCENTRIC CONE SECTION SHALL BE POSITIONED AS DIRECTED BY THE AGENCY.
6. WHERE FRAME AND COVER IS SET AFTER PAVING, THE CONCRETE COLLAR SHALL BE BROUGHT TO FINISH GRADE AND THE EXPOSED CONCRETE SURFACE SHALL BE COLORED WITH LAMPBLACK.
7. RECESS IN MANHOLE BASE SHALL BE FORMED WITH AN APPROVED METAL FORMING RING TO RECEIVE PRECAST MANHOLE JOINT. PREFORMED PLASTIC SEAL GASKET SHALL BE INSTALLED BEFORE PLACING FIRST BARREL SECTION.
8. PRECAST MANHOLE BASES ARE NOT ALLOWED.
9. INTERNAL DROP CONNECTION MAY BE REQUESTED BY AGENCY.
10. MANHOLE STEPS ARE NOT ALLOWED UNLESS REQUESTED BY AGENCY.



LAY PVC PIPE THRU MANHOLE WHERE POSSIBLE AND SAWCUT TO FORM SMOOTH CHANNELS STUB ALL PIPE 1" INTO MH (TYP)

PLAN AT MH BOTTOM



MANHOLE STEPS

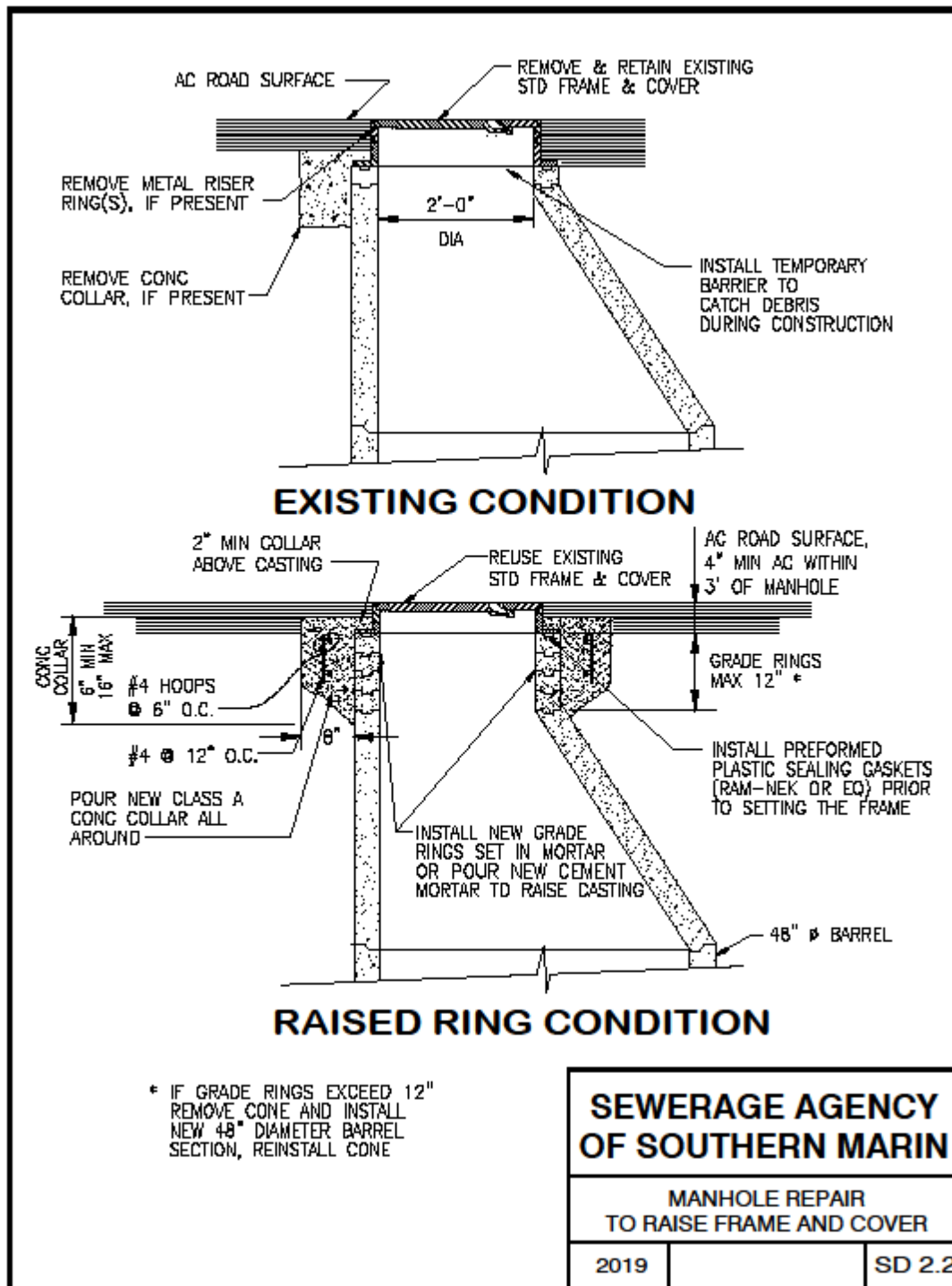
(SEE NOTE 10)

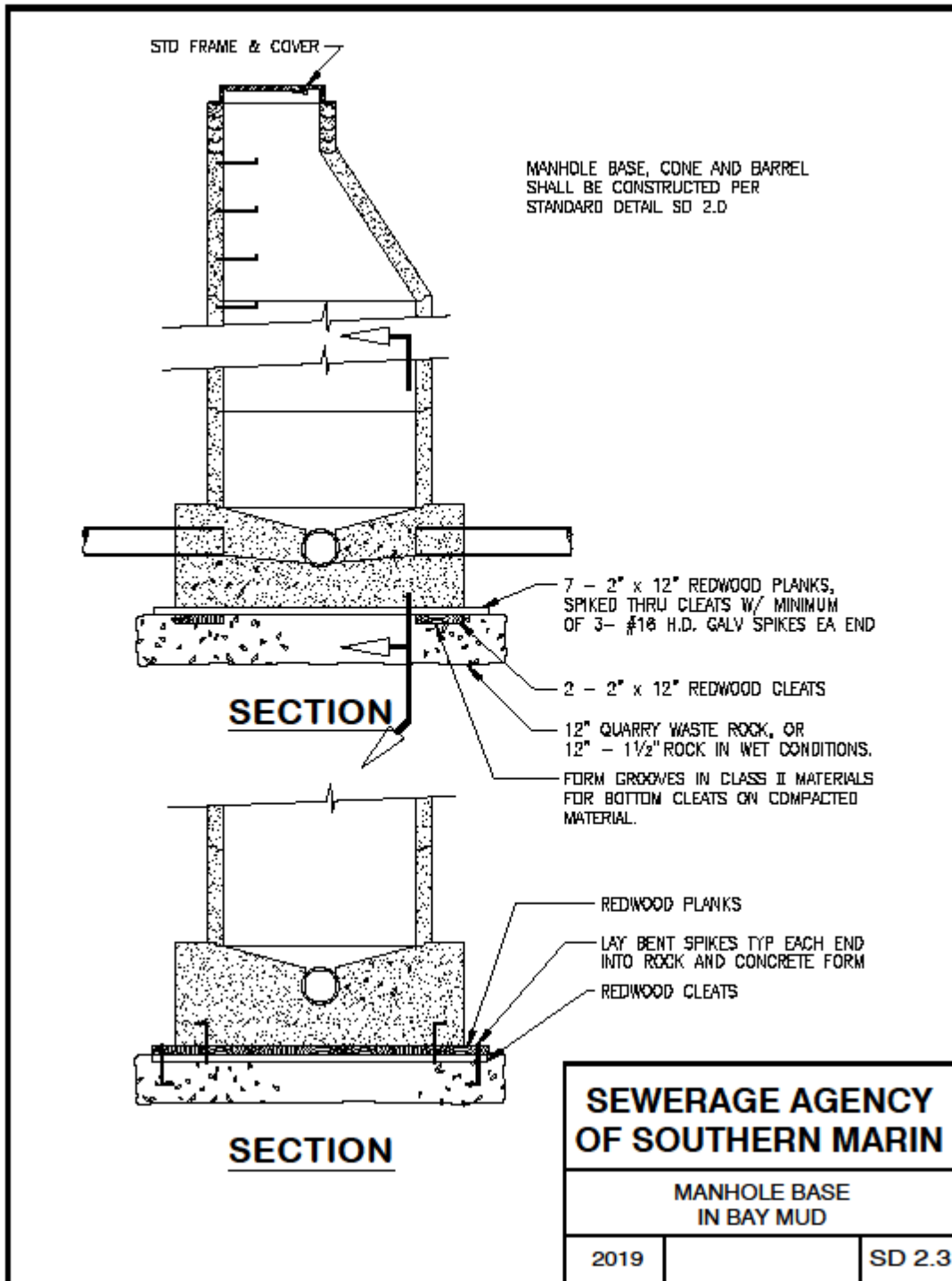
**SEWERAGE AGENCY
OF SOUTHERN MARIN**

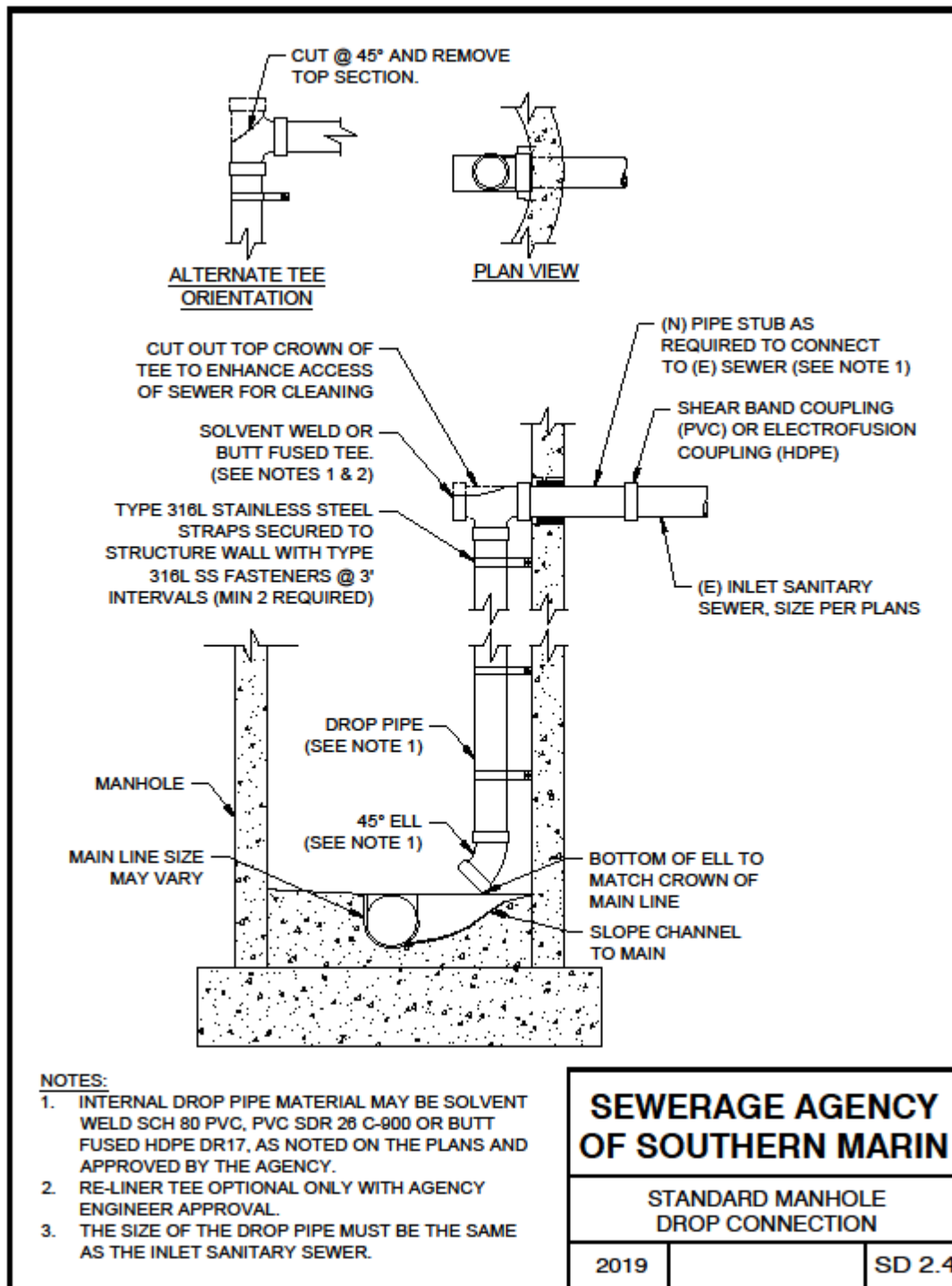
STANDARD SEWER
MANHOLE

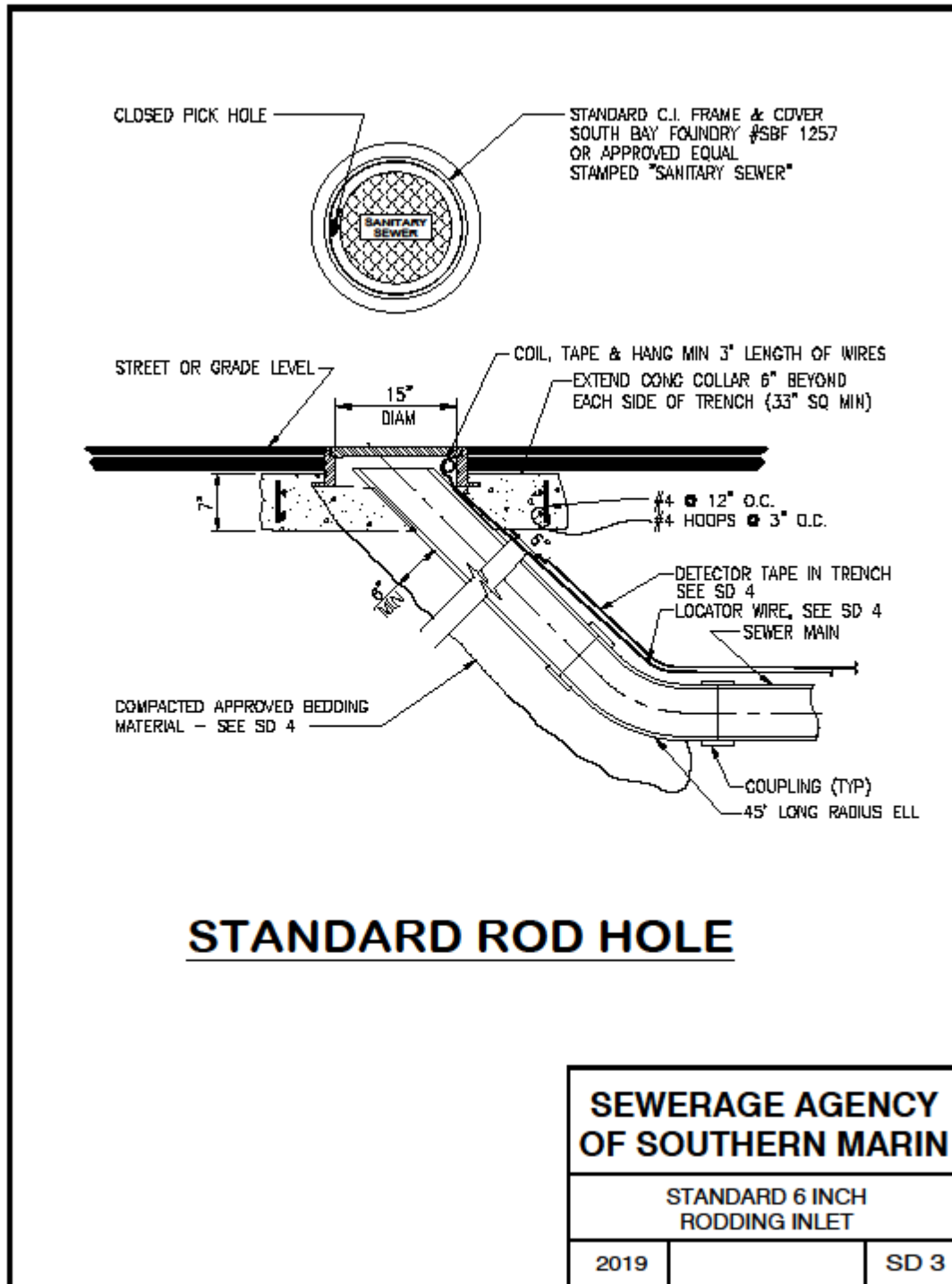
2019

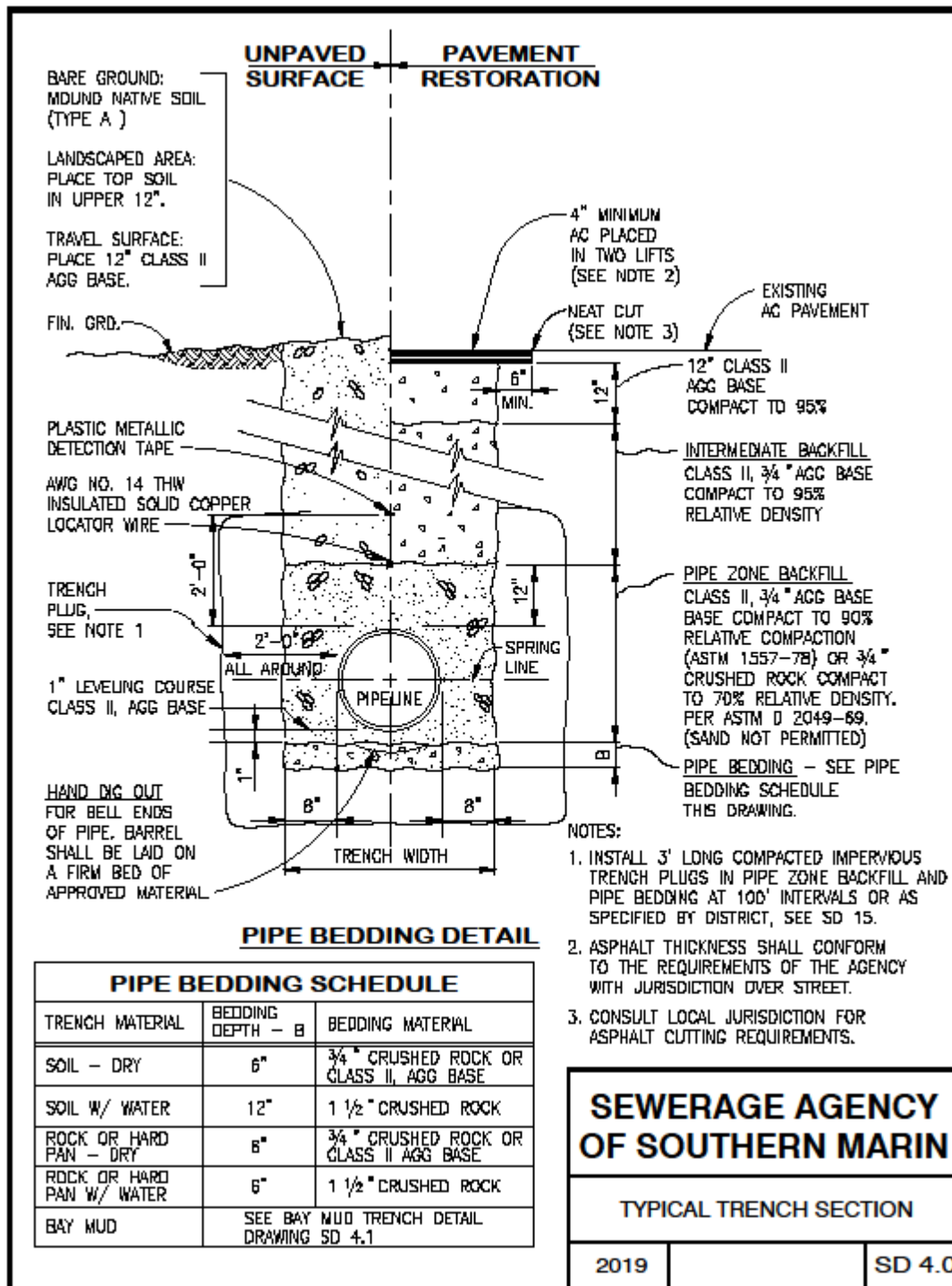
SD 2.1

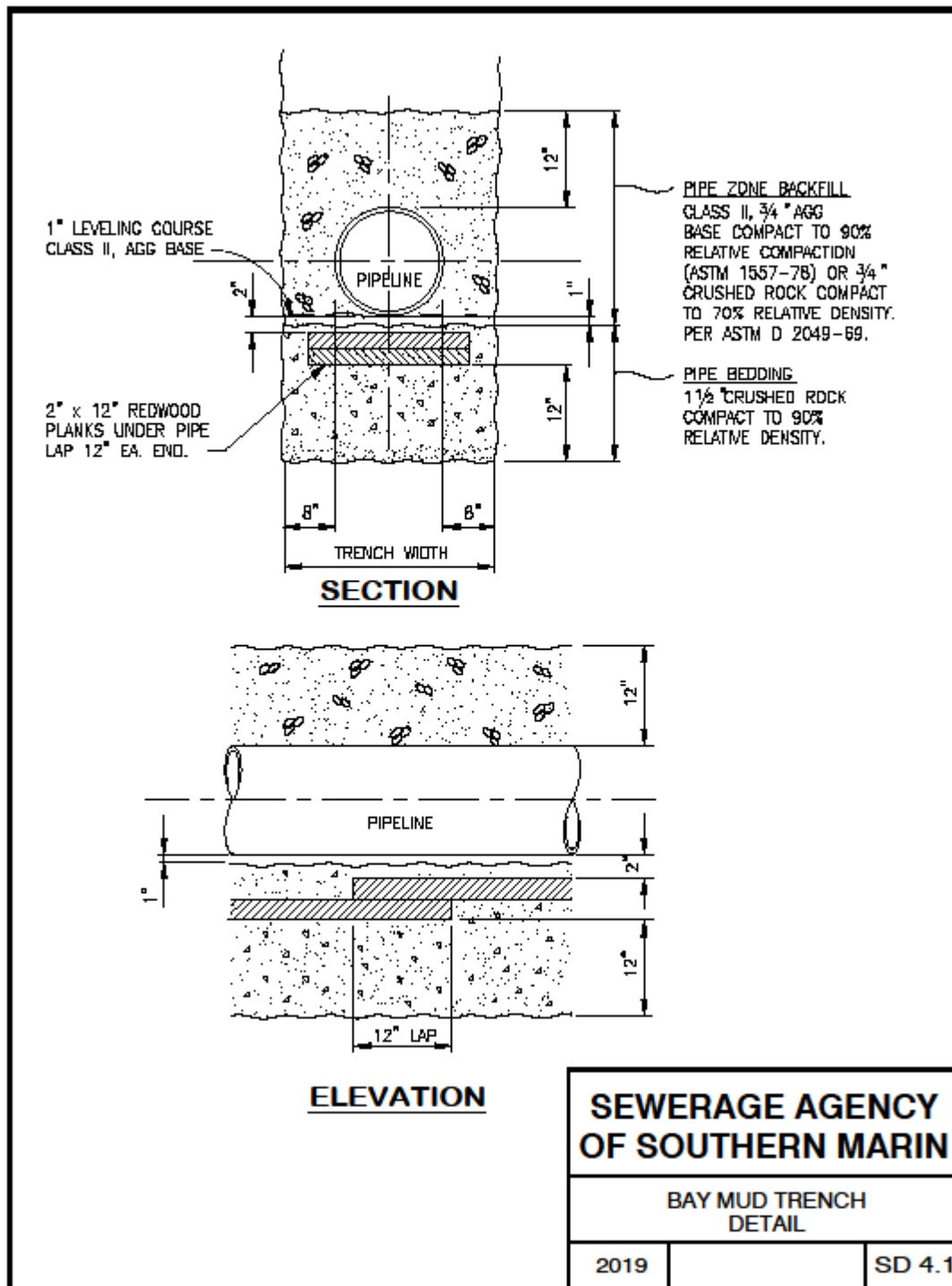


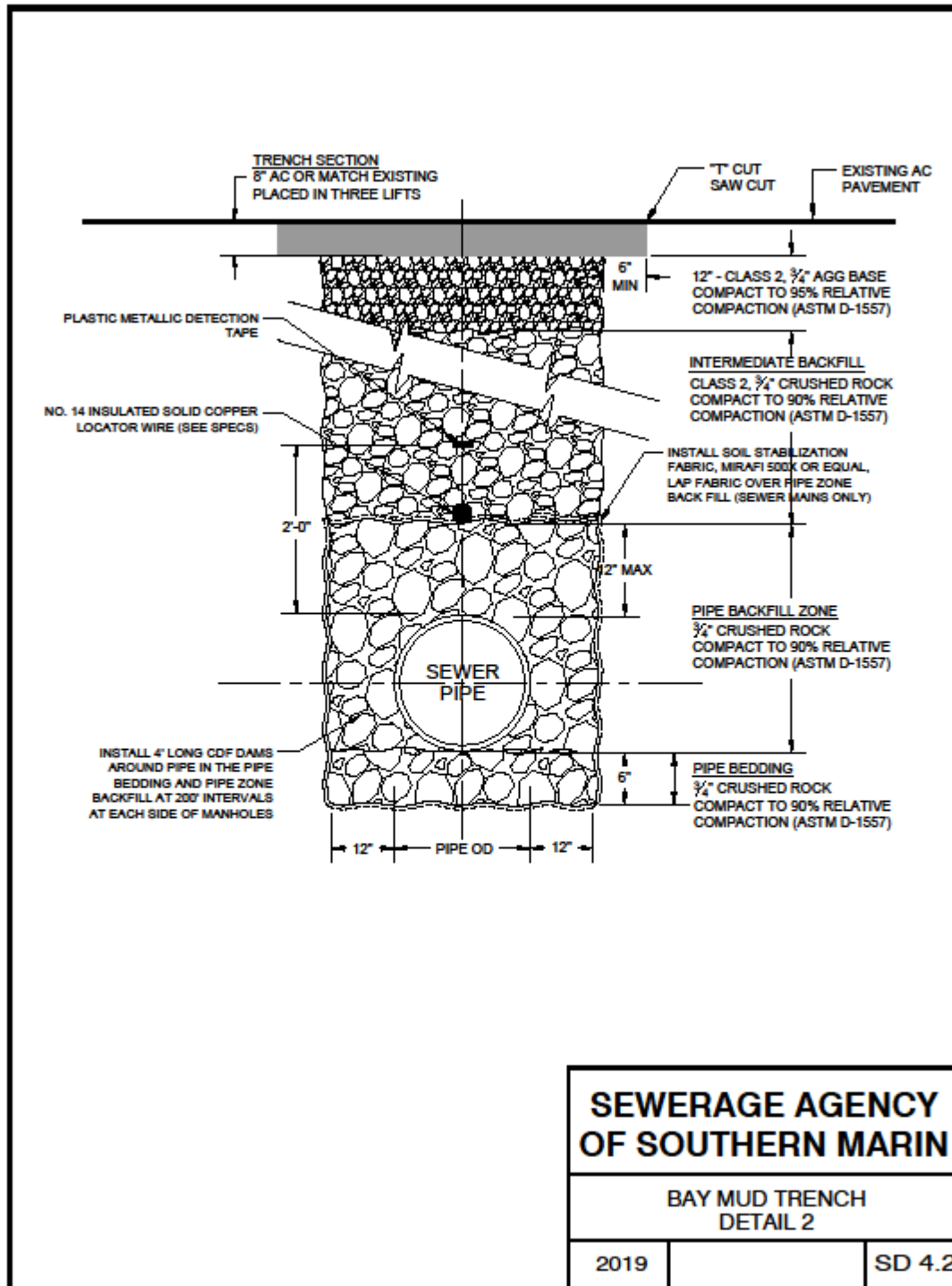


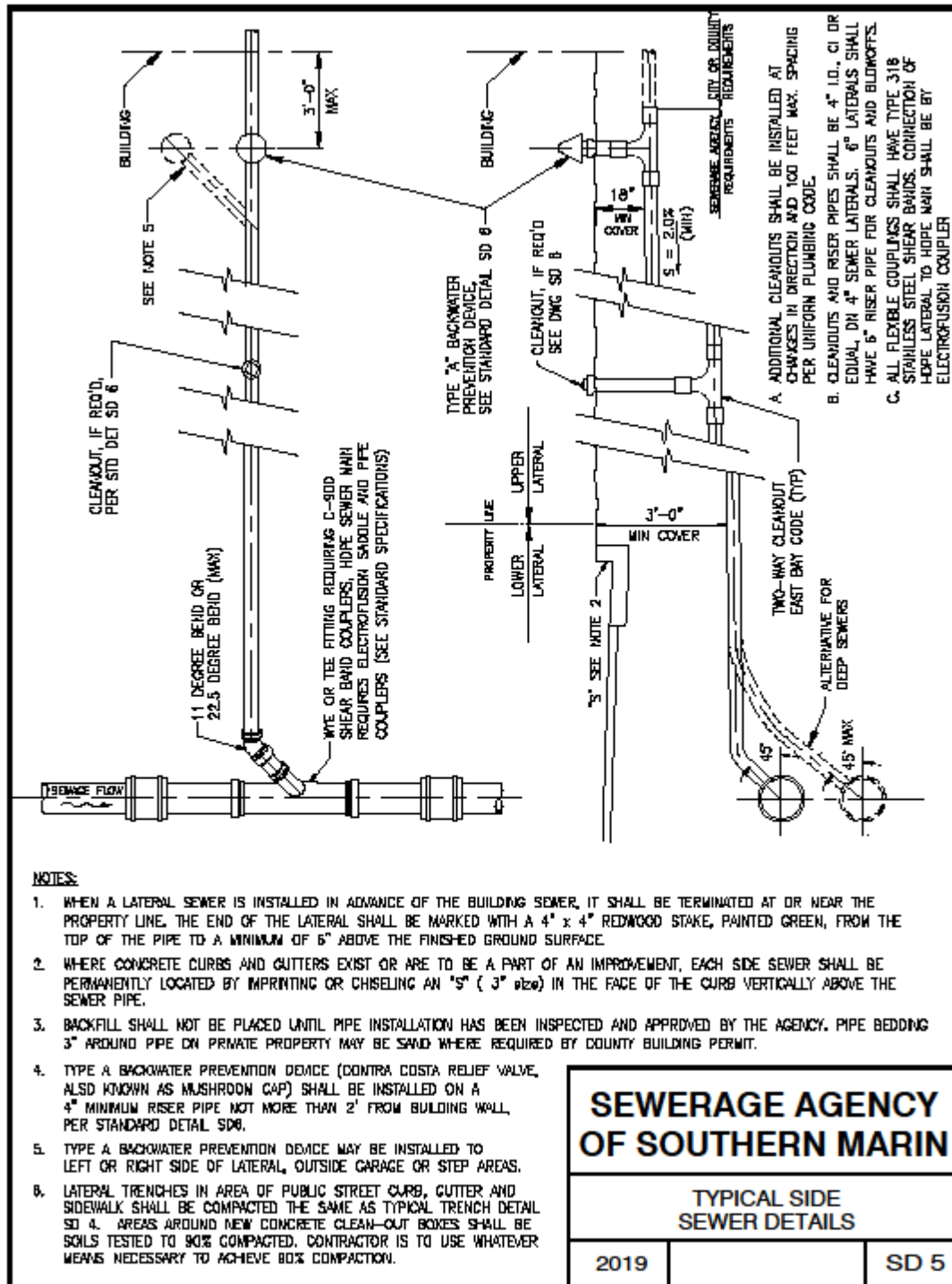


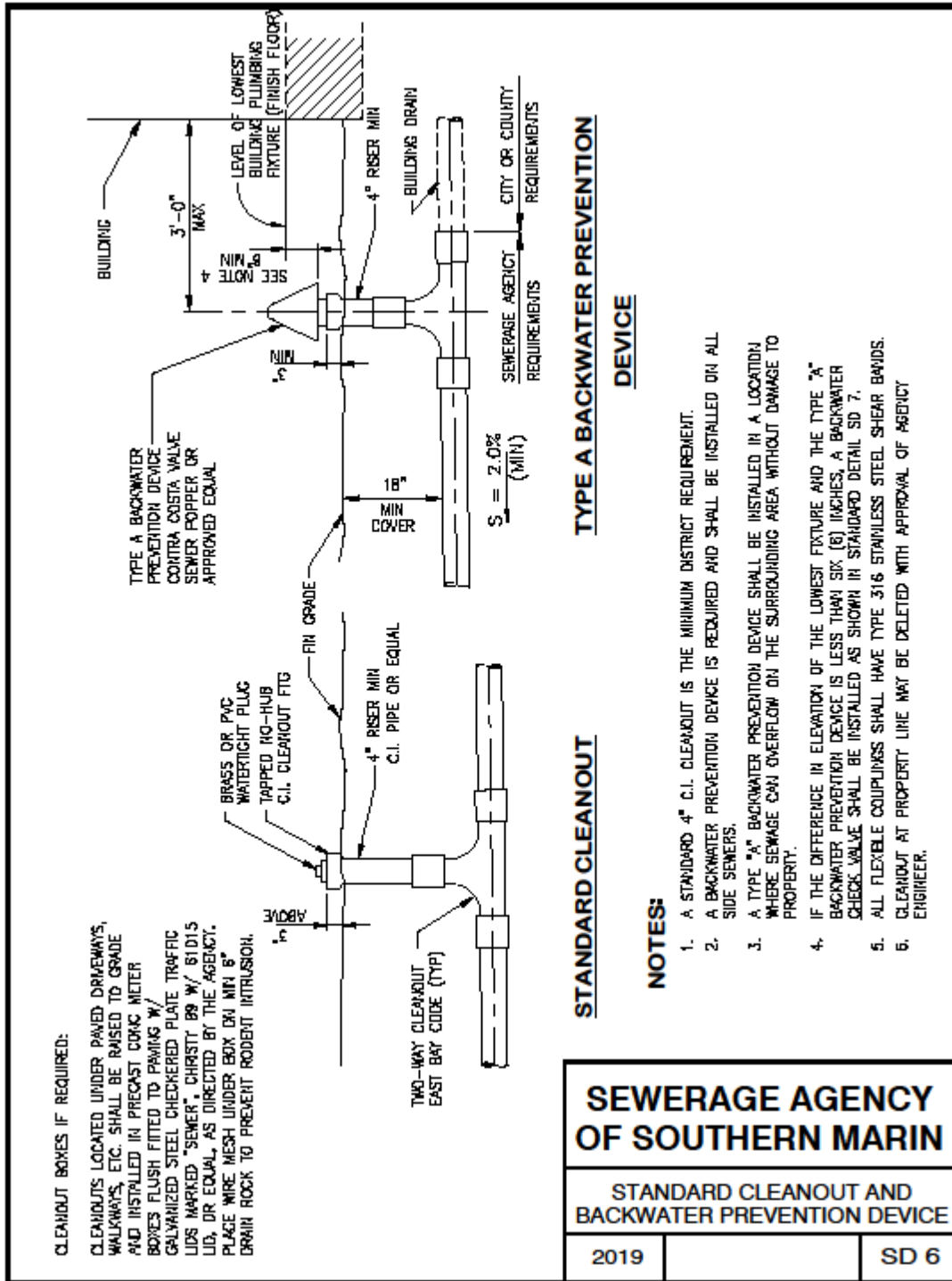












CLEANOUT BOXES IF REQUIRED:
 CLEANOUTS LOCATED UNDER PAVED DRIVEWAYS, WALKWAYS, ETC. SHALL BE RAISED TO GRADE AND INSTALLED IN PRECAST CONCRETE BOXES FLUSH FITTED TO PAVING W/ GALVANIZED STEEL CHECKERED PLATE TRAFFIC LIDS MARKED "SEWER", CHRISTI 89 W/ 61D1S LID, OR EQUAL, AS DIRECTED BY THE AGENCY. PLACE WIRE MESH UNDER BOX ON MIN 8" DRAIN ROCK TO PREVENT RODENT INTRUSION.

STANDARD CLEANOUT

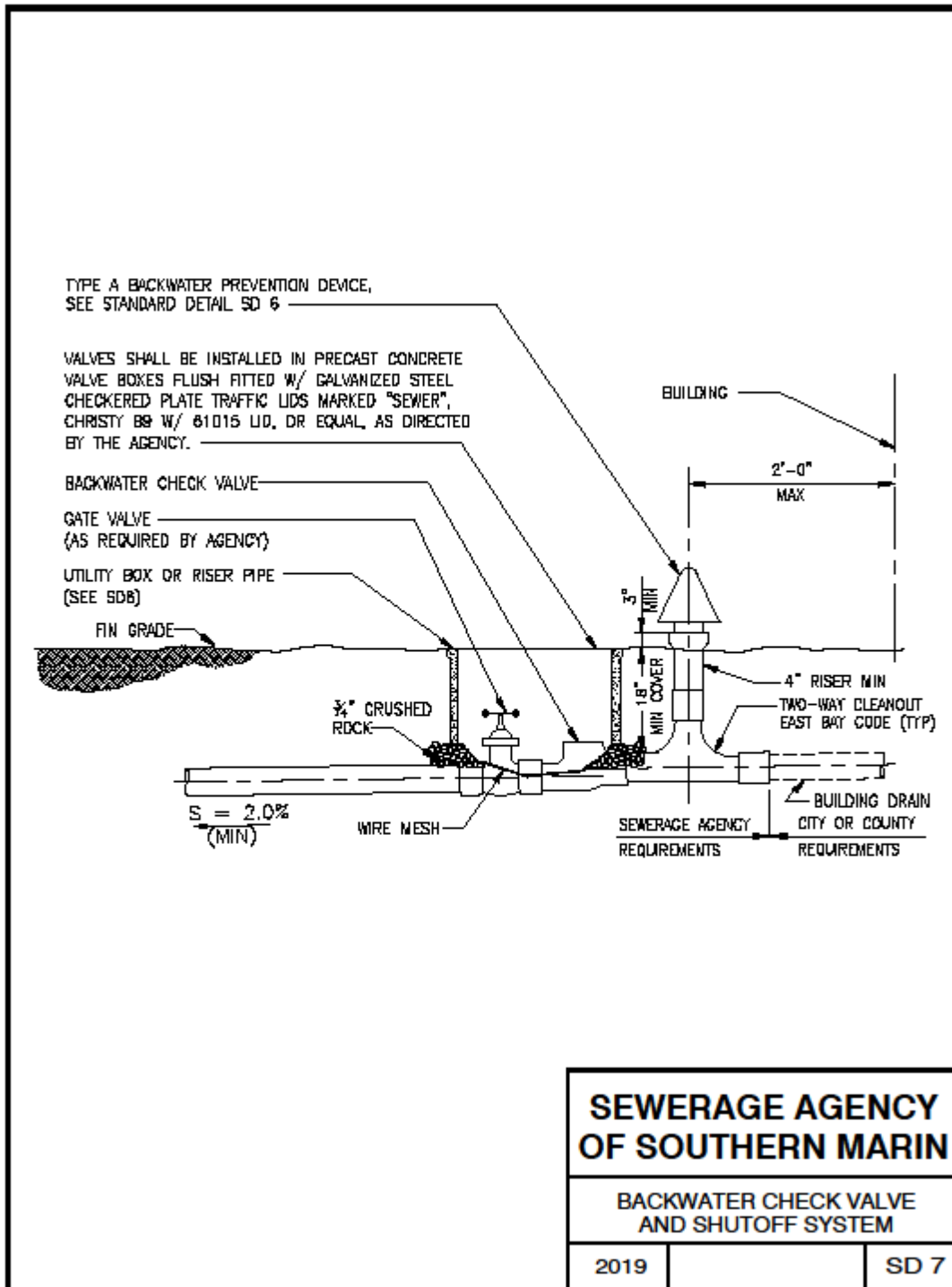
TYPE A BACKWATER PREVENTION DEVICE

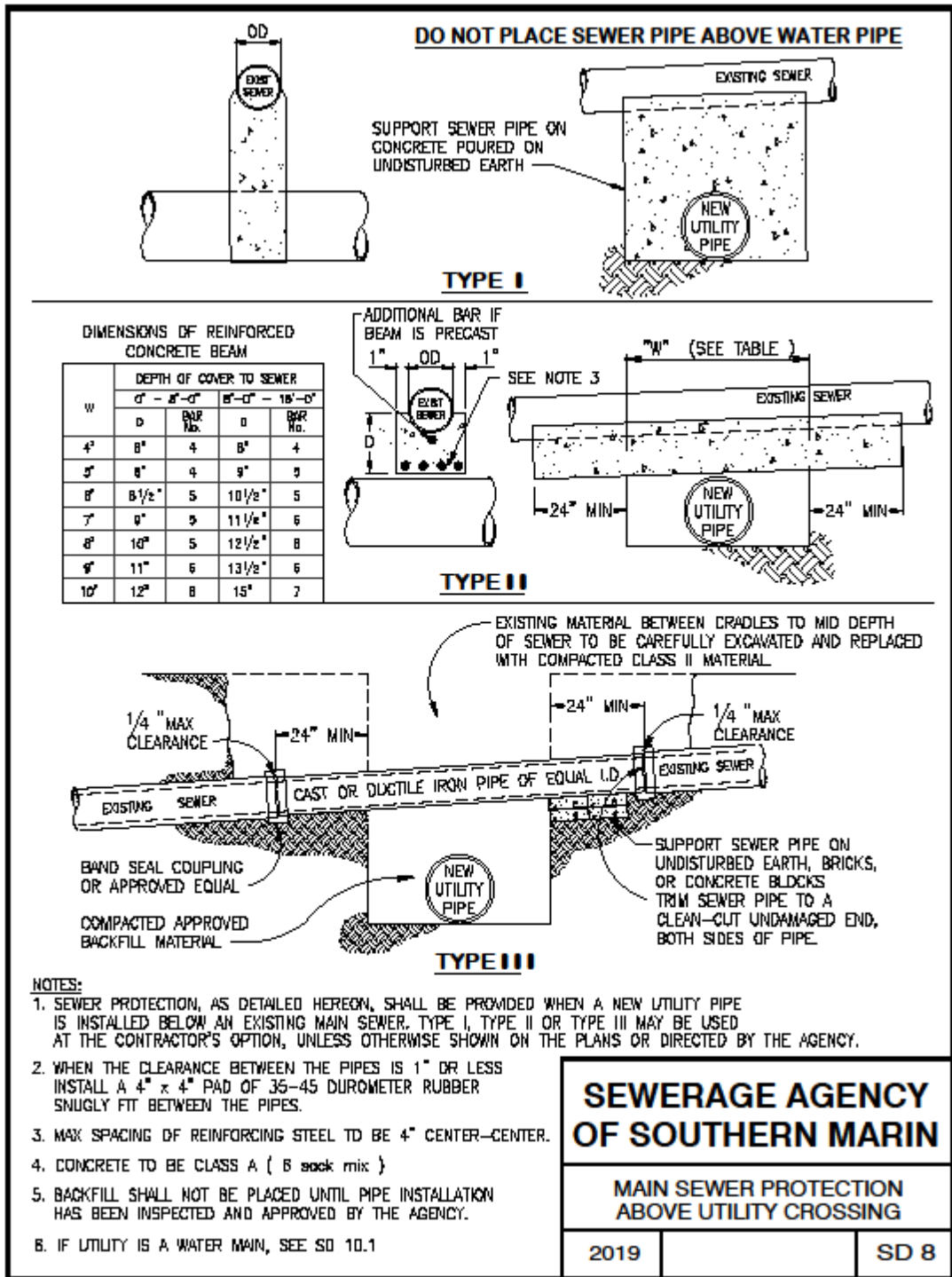
DEVICE

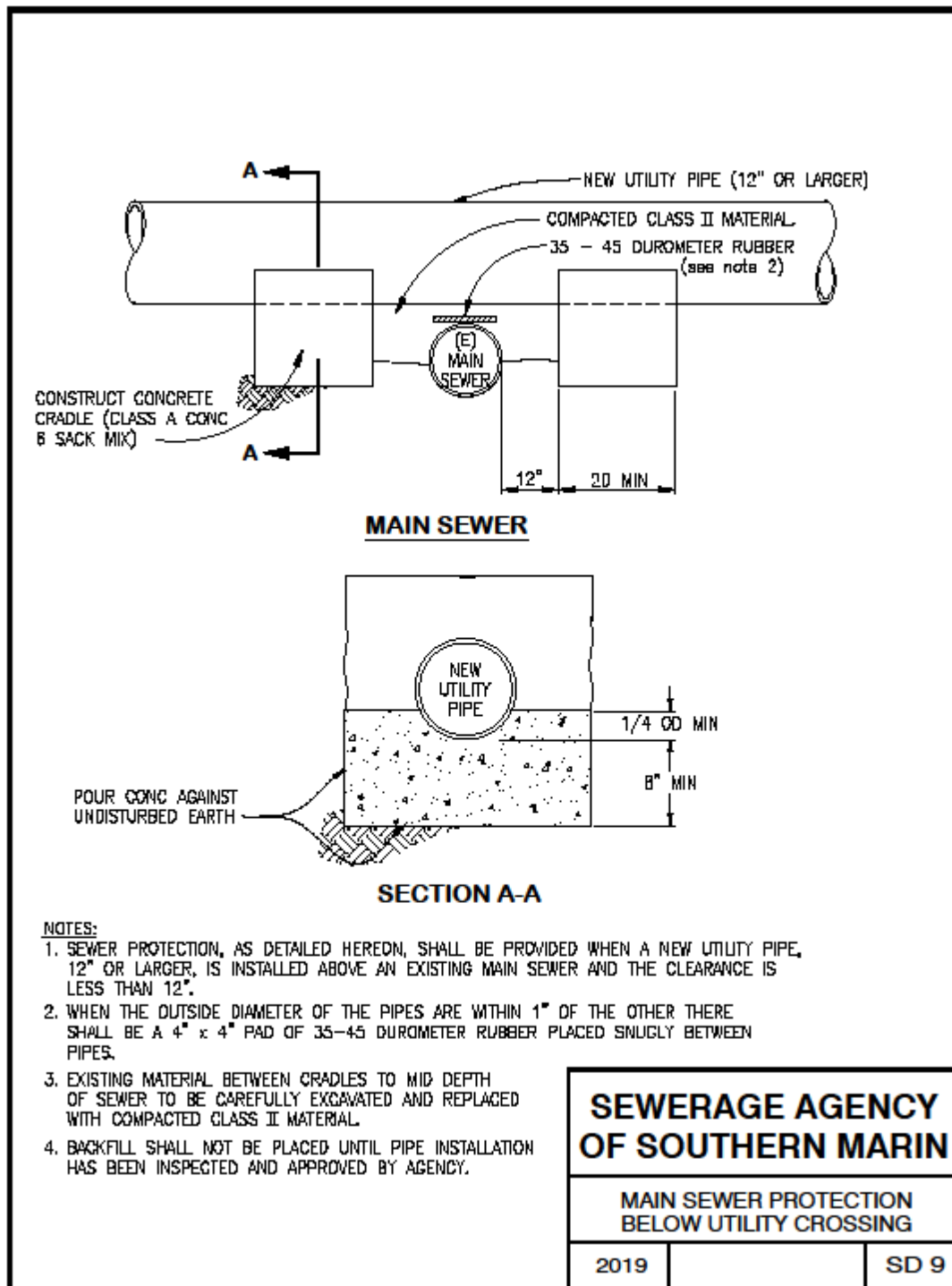
NOTES:

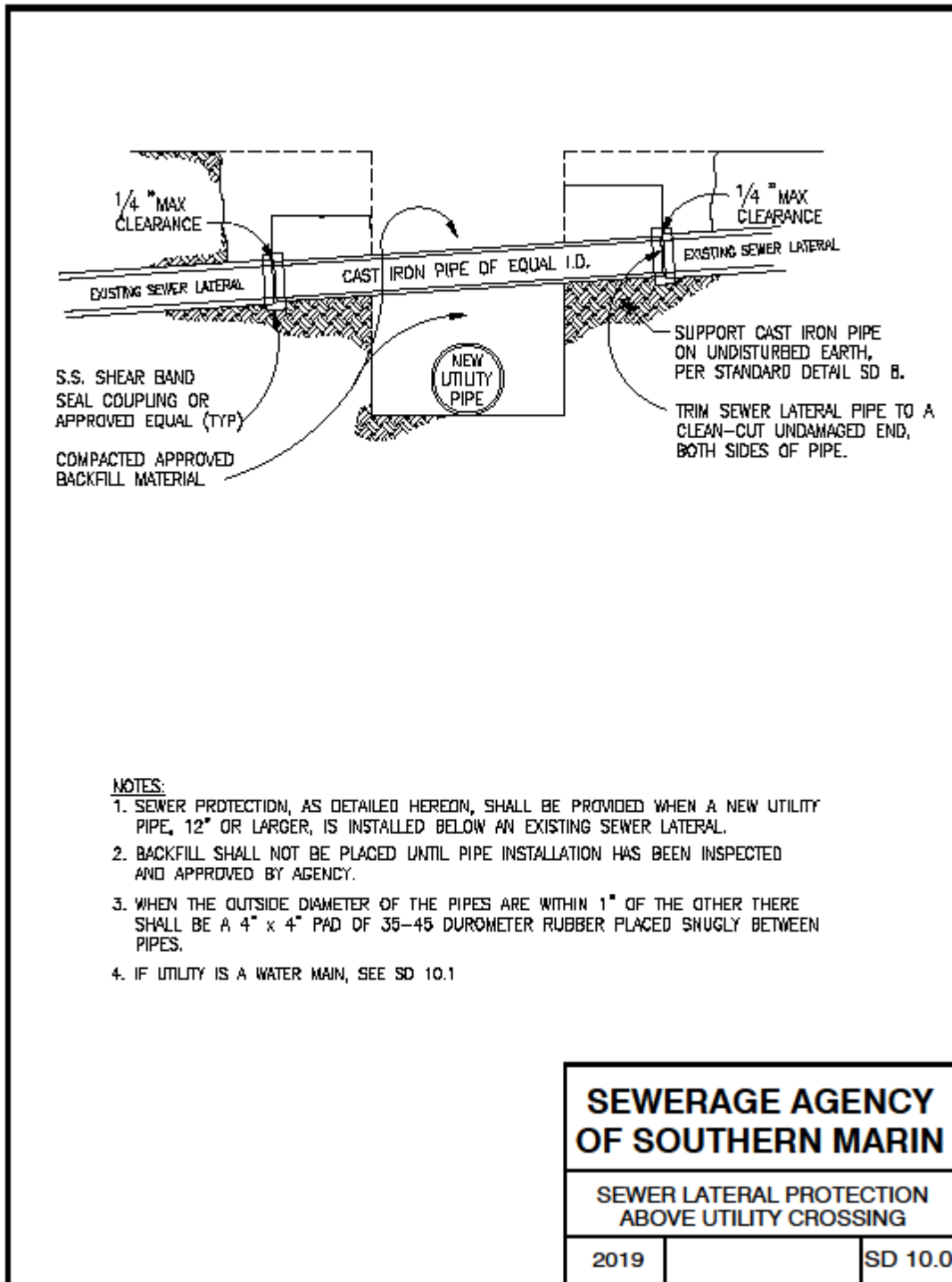
1. A STANDARD 4" C.I. CLEANOUT IS THE MINIMUM DISTRICT REQUIREMENT.
2. A BACKWATER PREVENTION DEVICE IS REQUIRED AND SHALL BE INSTALLED ON ALL SIDE SEWERS.
3. A TYPE "A" BACKWATER PREVENTION DEVICE SHALL BE INSTALLED IN A LOCATION WHERE SEWAGE CAN OVERFLOW ON THE SURROUNDING AREA WITHOUT DAMAGE TO PROPERTY.
4. IF THE DIFFERENCE IN ELEVATION OF THE LOWEST FIXTURE AND THE TYPE "A" BACKWATER PREVENTION DEVICE IS LESS THAN SIX (6) INCHES, A BACKWATER CHECK VALVE SHALL BE INSTALLED AS SHOWN IN STANDARD DETAIL SD 7.
5. ALL FLEXIBLE COUPLINGS SHALL HAVE TYPE 316 STAINLESS STEEL SHEAR BOWDS.
6. CLEANOUT AT PROPERTY LINE MAY BE DELETED WITH APPROVAL OF AGENCY ENGINEER.

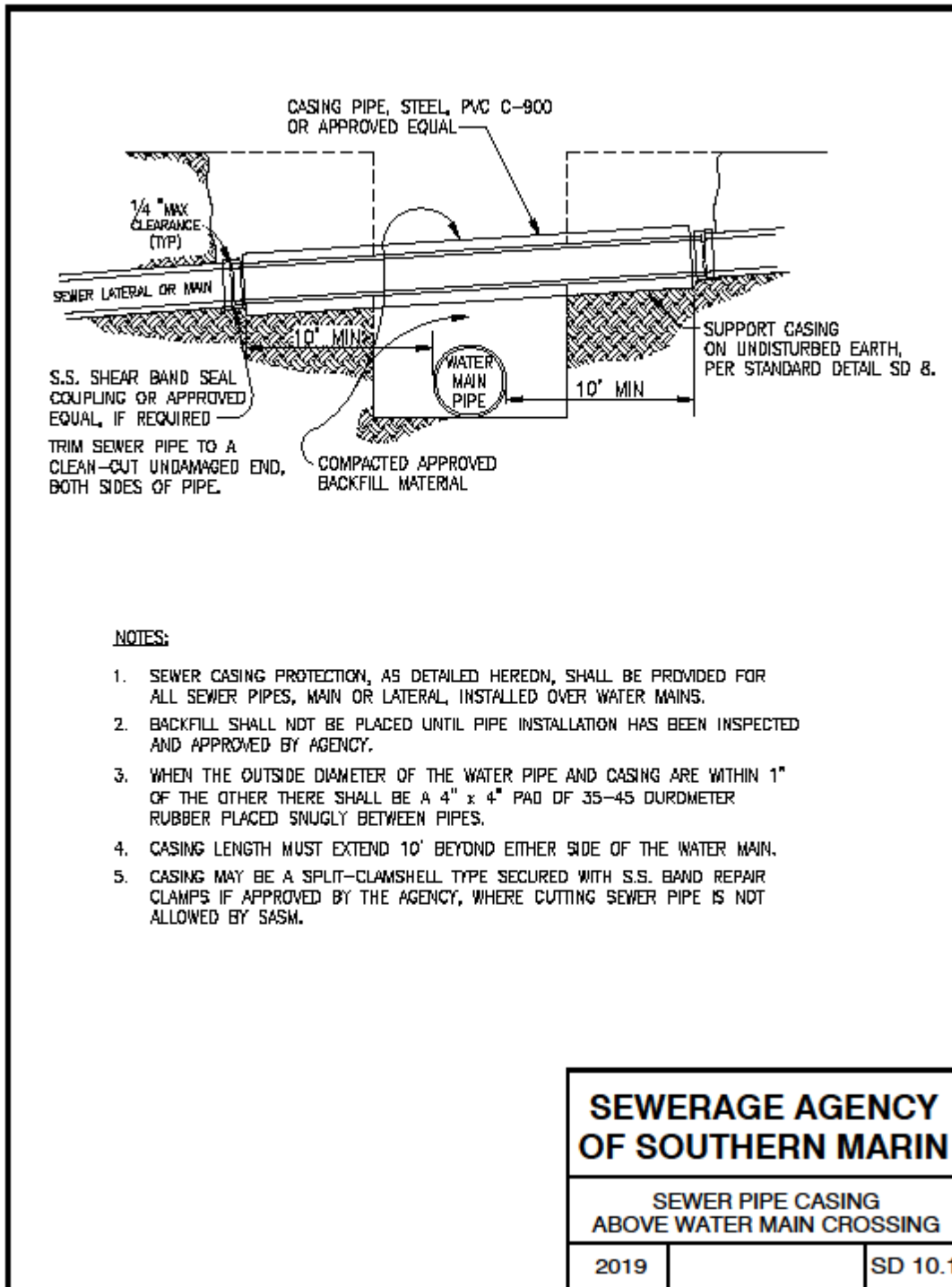
SEWERAGE AGENCY OF SOUTHERN MARIN		
STANDARD CLEANOUT AND BACKWATER PREVENTION DEVICE		
2019		SD 6

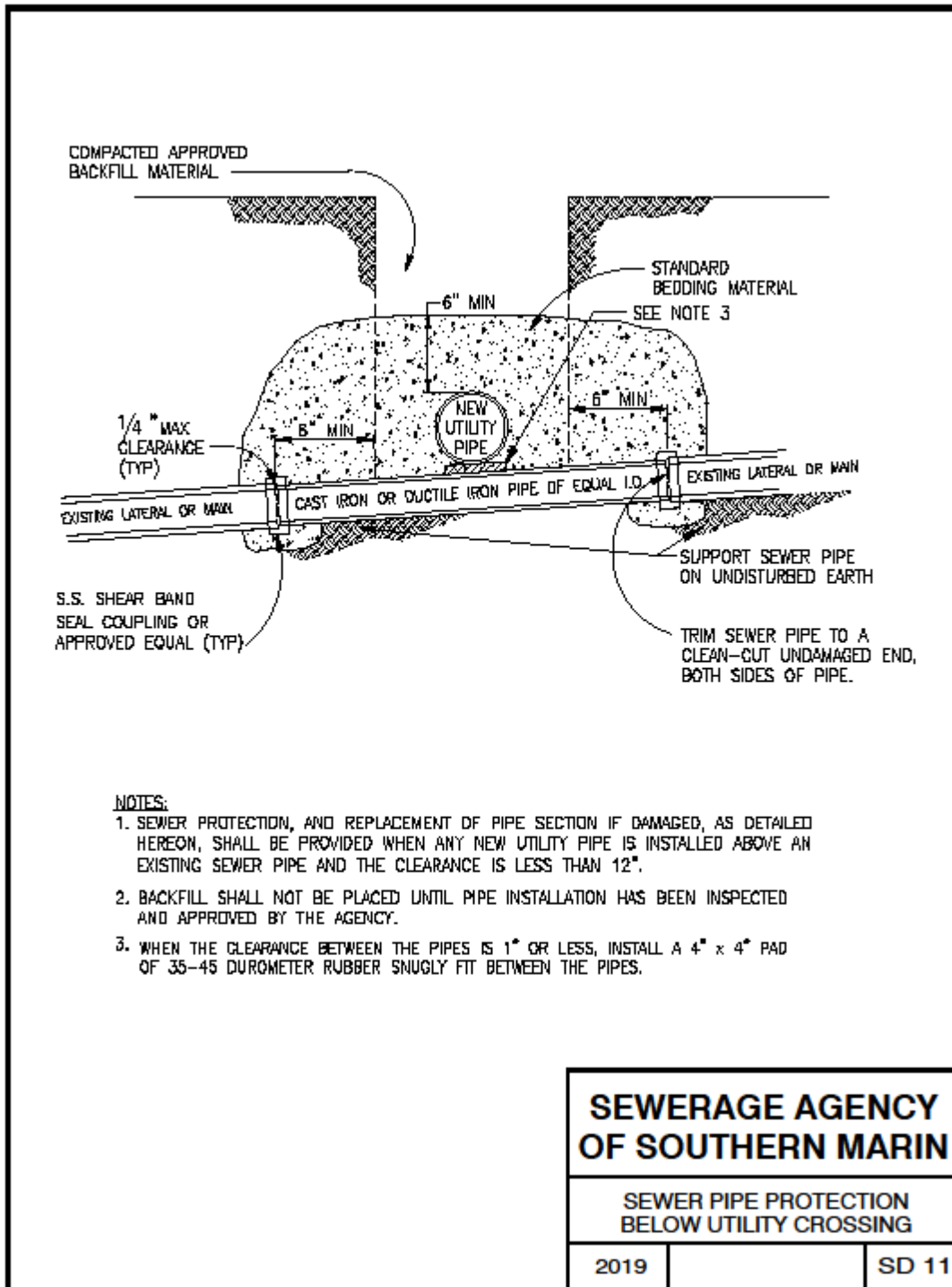


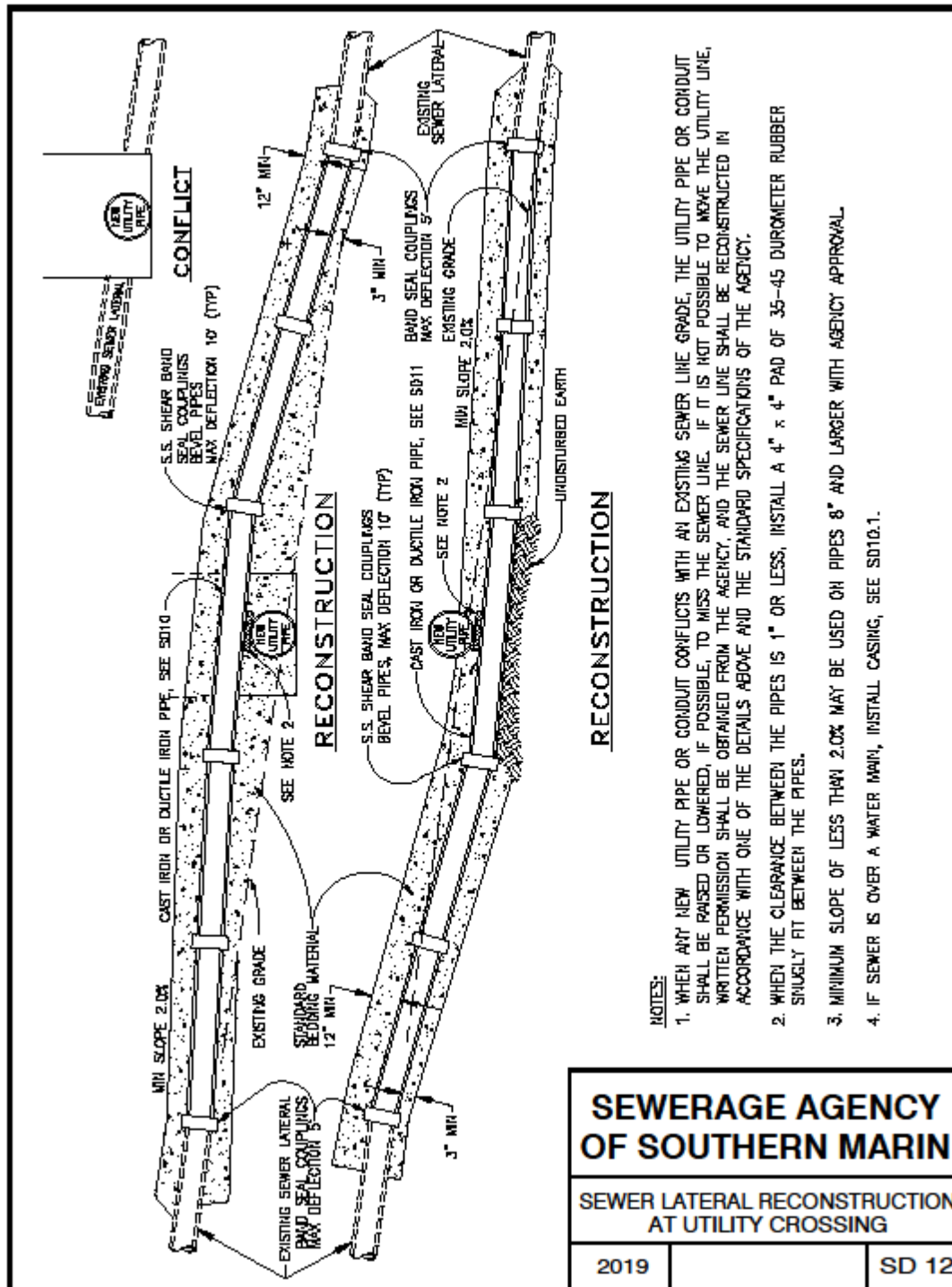












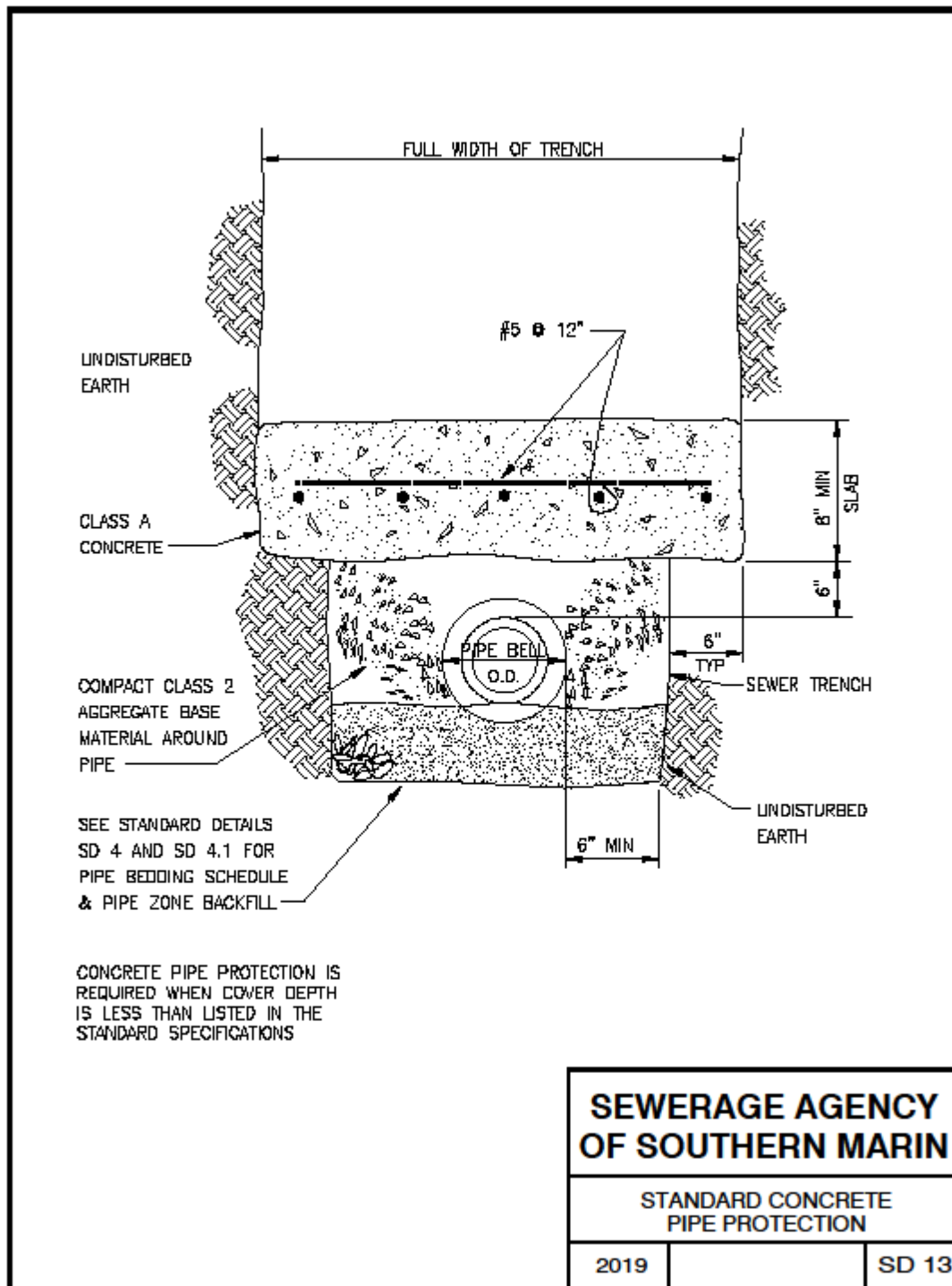
RECONSTRUCTION

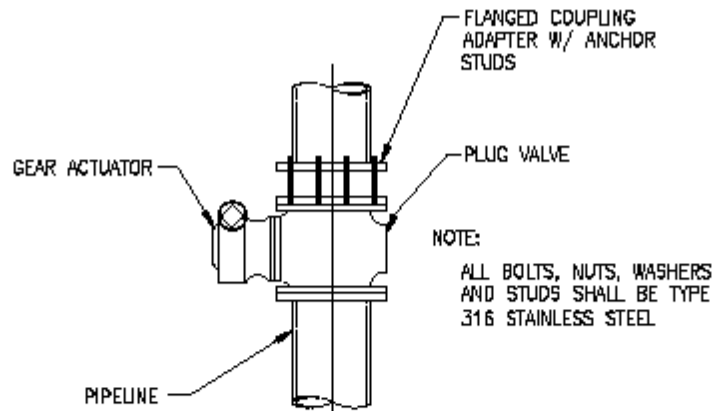
SEWERAGE AGENCY OF SOUTHERN MARIN

SEWER LATERAL RECONSTRUCTION AT UTILITY CROSSING

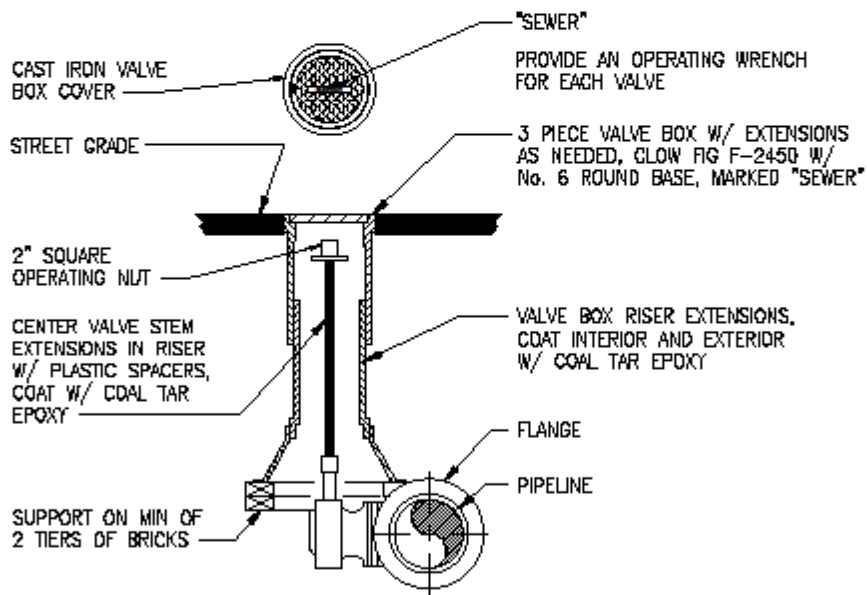
2019 SD 12

- NOTES:**
1. WHEN ANY NEW UTILITY PIPE OR CONDUIT CONFLICTS WITH AN EXISTING SEWER LINE GRADE, THE UTILITY PIPE OR CONDUIT SHALL BE RAISED OR LOWERED, IF POSSIBLE, TO MISS THE SEWER LINE. IF IT IS NOT POSSIBLE TO MOVE THE UTILITY LINE, WRITTEN PERMISSION SHALL BE OBTAINED FROM THE AGENCY, AND THE SEWER LINE SHALL BE RECONSTRUCTED IN ACCORDANCE WITH ONE OF THE DETAILS ABOVE AND THE STANDARD SPECIFICATIONS OF THE AGENCY.
 2. WHEN THE CLEARANCE BETWEEN THE PIPES IS 1" OR LESS, INSTALL A 4" x 4" PAD OF 35-45 DUROMETER RUBBER SLUGGILY FIT BETWEEN THE PIPES.
 3. MINIMUM SLOPE OF LESS THAN 2.0% MAY BE USED ON PIPES 8" AND LARGER WITH AGENCY APPROVAL.
 4. IF SEWER IS OVER A WATER MAIN, INSTALL CASING, SEE SD10.1.





PLAN VIEW



SECTION

NOTE:
 ALL BURIED VALVES, GEAR ACTUATORS, FLEX COUPLINGS AND HARNESSES SHALL BE COATED AND WRAPPED PER SPECIFICATIONS.

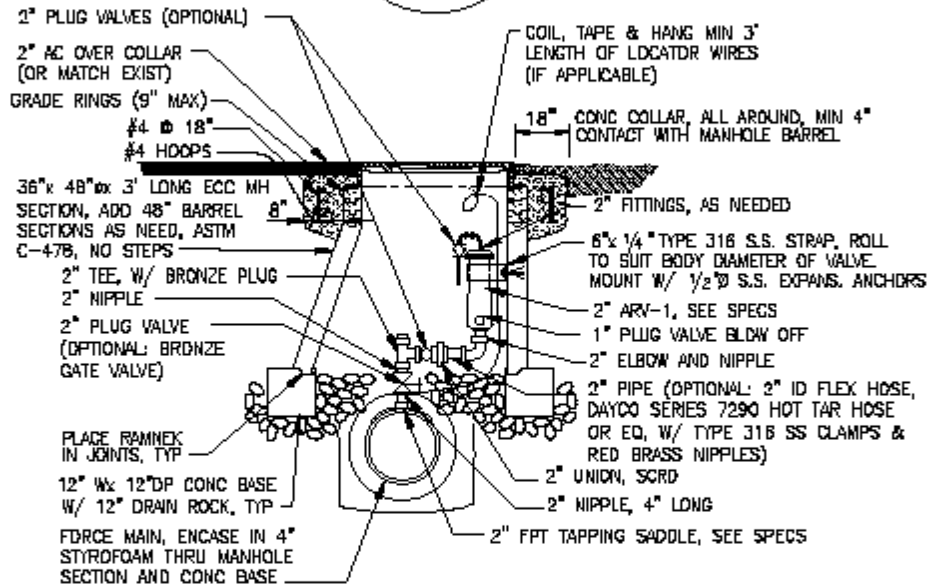
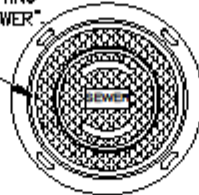
**SEWERAGE AGENCY
 OF SOUTHERN MARIN**

FORCE MAIN VALVE

2019

SD 14.0

H2O RATED DOUBLE ACCESS COVER SET SHALL HAVE A 23 $\frac{3}{4}$ " MIN DIA. COVER SET IN 36"Ø HEAVY DUTY MH RING AND COVER, NO PRYHOLES, EJ ASSEMBLY PRODUCT NO. 00222607, OR APPROVED EQUAL, WITH FOUR BOLTDOWNS AND TWO CLOSED PICKBARS FOR USE WITH LIFTING CHAIN SLING ASSEMBLY, MARKED "SEWER" UNIT WEIGHT 640LBS MIN.



NOTES:

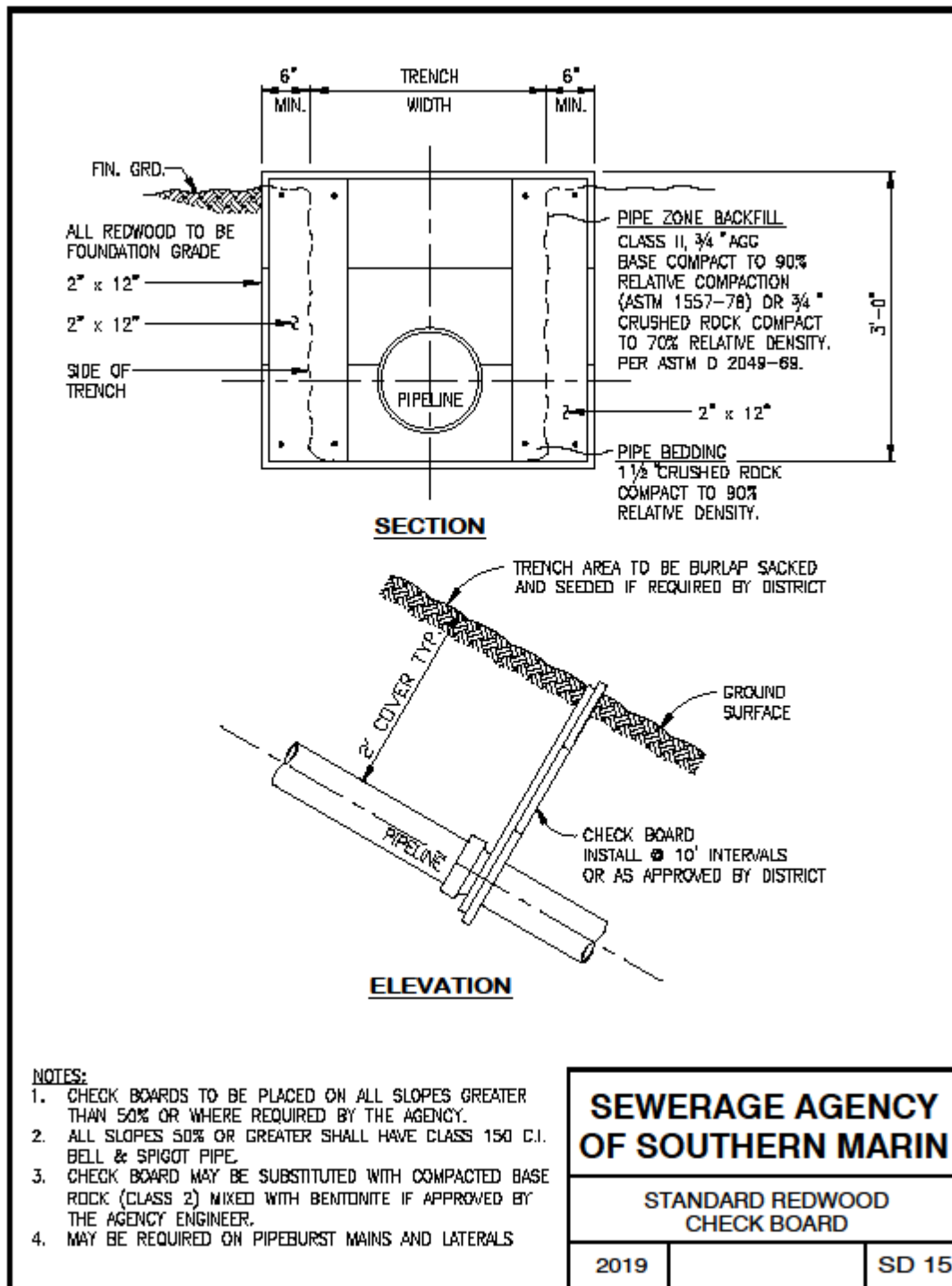
1. ALL PIPES, FITTINGS, NIPPLES, VALVES SHALL BE TYPE 316L STAINLESS STEEL, BRASS OR BRONZE PARTS MAY BE SUBSTITUTED W/ AGENCY APPROVAL.
2. CONTRACTOR TO VERIFY ALL DIMENSIONS IN FIELD.
3. 3" AND 4" AIR VALVES ARE USED IN SOME LOCATIONS.

**SEWERAGE AGENCY
OF SOUTHERN MARIN**

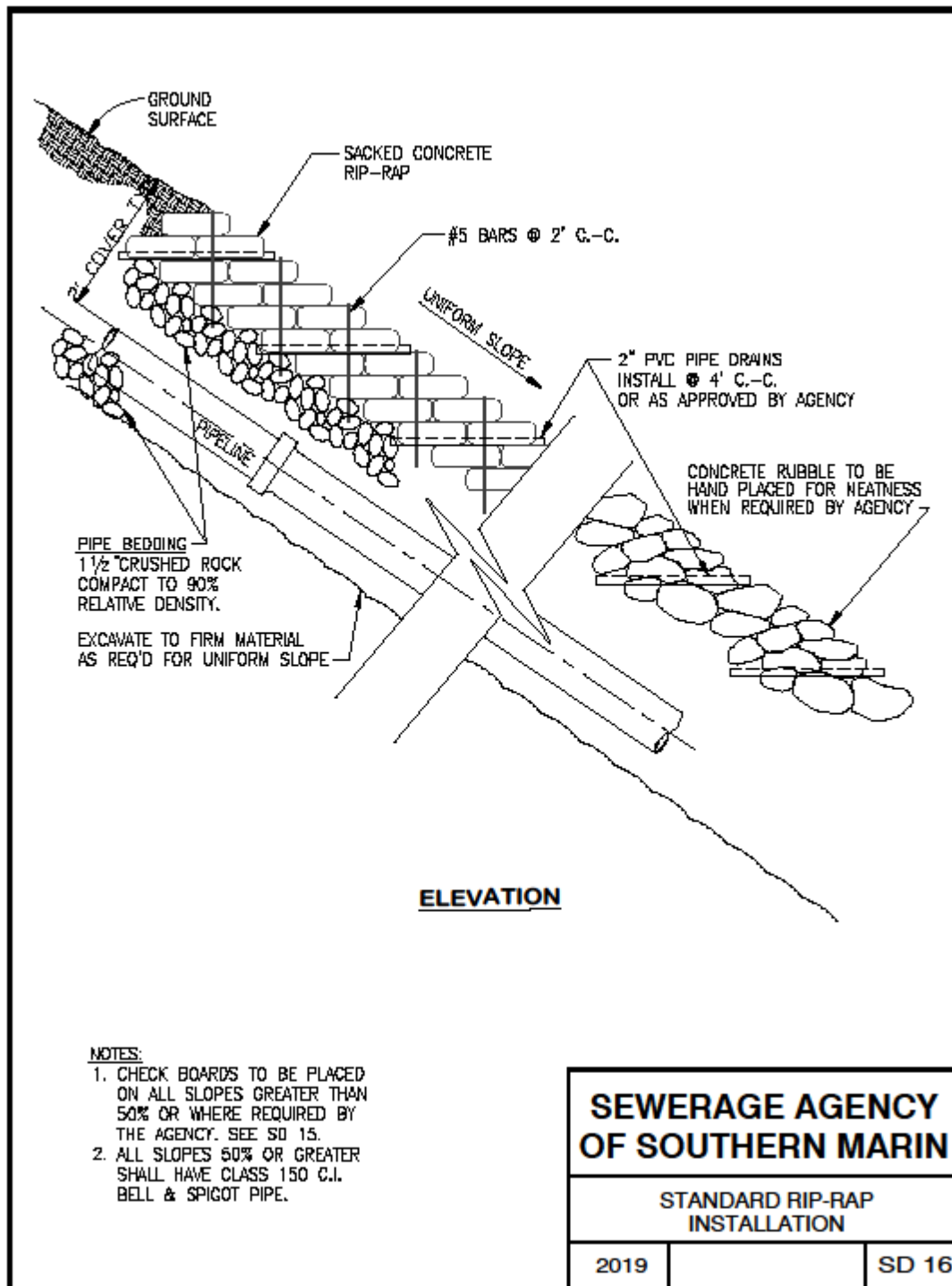
AIR RELEASE VALVE

2019

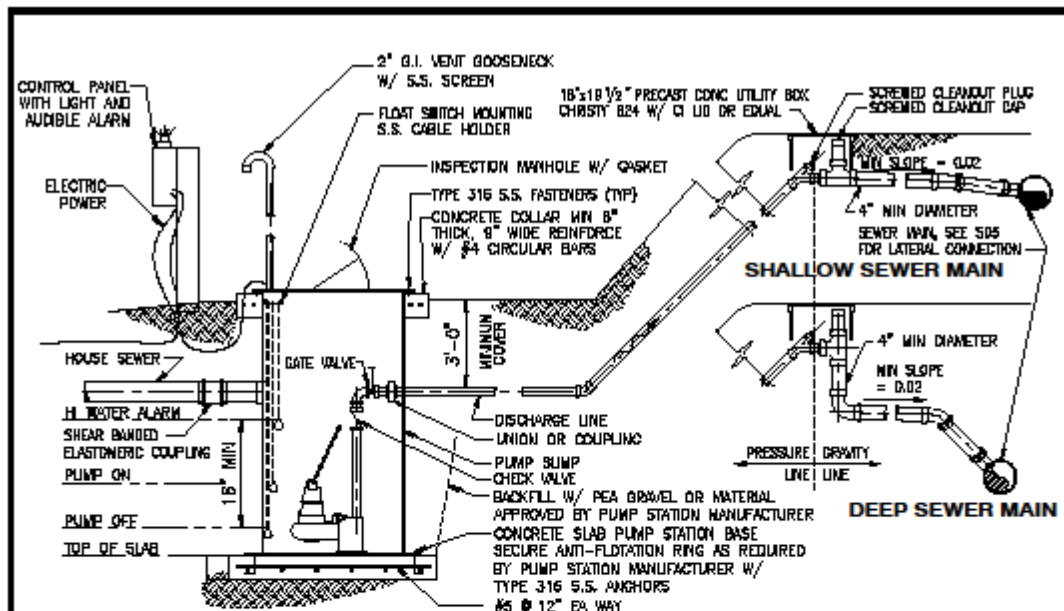
SD 14.1



PART E – STANDARD DRAWINGS



PART E – STANDARD DRAWINGS



GENERAL NOTES:

THE MINIMUM REQUIREMENTS FOR A RESIDENTIAL SEWAGE PUMPING SYSTEM CONNECTING A SINGLE RESIDENCE OR EQUIVALENT TO THE DISTRICT'S SYSTEM ARE SPECIFIED BELOW. THE DISTRICT ACCEPTS NO RESPONSIBILITY FOR THE DESIGN, OPERATION OR MAINTENANCE OF SUCH PRIVATELY OWNED AND OPERATED SYSTEMS. ALL WORK SHALL COMPLY WITH THE UNIFORM PLUMBING AND BUILDING CODES.

MANUFACTURERS:
ALL EQUIPMENT AND ACCESSORIES SHALL BE INDUSTRY STANDARD MANUFACTURED ITEMS AND THOSE COMING IN DIRECT CONTACT WITH SEWAGE SHALL BE SPECIFICALLY MANUFACTURED FOR SEWAGE USE.

PUMPS:
PUMPS SHALL BE SUBMERSIBLE SOLIDS HANDLING OR GRINDER TYPE SEWAGE PUMPS. PUMP MOTORS FOR RESIDENTIAL SERVICE SHALL BE EXPLOSION PROOF OR MEET CLASS 1, DIVISION 2 REQUIREMENTS PER NEC. ALL COMMERCIAL INSTALLATIONS SHALL CONSIST OF DUPLEX EXPLOSION PROOF PUMPS EACH RATED FOR TOTAL LOADING. ALL PUMP MOTORS SHALL BE UL LISTED.

PUMP SUMP:
THE PUMP SUMP SHALL BE CONSTRUCTED OUT OF NON-CORROSIVE MATERIAL OF SUITABLE STRENGTH TO WITHSTAND HYDRAULIC AND EARTH LOADS. THE PUMP SUMP SHALL BE A MINIMUM 36" DEEP WITH A MINIMUM CAPACITY OF 200 GALLONS AND SHALL BE PROVIDED WITH A FOUR (4) INCH MINIMUM INLET. IN ANY CASE THE INLET I.D. SHALL BE EQUAL TO OR GREATER THAN THE BUILDING PLUMBING STUB. THE TOP OF THE PUMP SUMP SHALL BE SECURELY ANCHORED TO THE PUMP SUMP BY BOLTS, AND ALL JOINTS BETWEEN THE COMPONENT PARTS SHALL BE SEALED WITH A WATERPROOF MASTIC.

ELECTRIC POWER SERVICE:
THE POWER REQUIREMENTS SHALL BE AS RECOMMENDED BY PACIFIC GAS AND ELECTRIC COMPANY.

ELECTRICAL WORK AND CONTROLS:
ALL ELECTRICAL WIRING AND INSTALLED CABLING, CONDUIT AND CONTROLS SHALL MEET NEC CLASS 1, DIVISION 2 REQUIREMENTS AND CONFORM TO THE REQUIREMENTS OF THE CITY OR COUNTY. THE ELECTRICAL CONTROLS SHALL PROVIDE ADEQUATE PROTECTION FOR MOTOR AND EQUIPMENT. THE ELECTRICAL CONTROL PANEL SHALL MEET NEC AND UL STANDARDS FOR SAFETY. OUTDOOR PANELS SHALL BE WEATHER TIGHT NEMA 4X. INDOOR PANELS SHALL BE NEMA 1.

FLOAT SWITCH ASSEMBLY AND HIGH-WATER ALARM:
A VISIBLE RED LIGHT AND AUDIBLE HIGH WATER ALARM SHALL BE PROVIDED. THE HIGH WATER ALARM SHALL BE ACTIVATED BY A DEDICATED FLOAT AND SHALL HAVE BATTERY BACKUP. ALL FLOAT SWITCHES SHALL HAVE GAS-TIGHT MOUNTINGS.

VENT FOR PUMP SUMP:
WHERE SYSTEM IS LOCATED WITHIN THE DWELLING, A VENT TWO (2) INCHES OR LARGER SHALL BE PROVIDED. WHERE SYSTEM IS LOCATED OUTSIDE THE DWELLING, A TWO (2) INCH OR LARGER VENT SHALL BE EXTENDED TO A POINT TEN (10) FEET ABOVE THE PUMP SUMP COVER.

DISCHARGE LINE:
THE PRESSURE PORTION OF THE DISCHARGE LINE SHALL INCLUDE A CHECK VALVE, GATE VALVE AND FLEXIBLE COUPLINGS AND SHALL BE A MINIMUM 1/2" DIAMETER LARGER THAN THE PUMP DISCHARGE. ALL PIPE, VALVES AND COUPLINGS SHALL CONFORM TO THE STANDARD SPECIFICATIONS. THE GRAVITY PORTION OF THE DISCHARGE LINE SHALL BE FOUR (4) INCH MINIMUM DIAMETER PIPE, SHALL MEET THE AGENCY REQUIREMENT FOR SIDE SEWERS AND SHALL PROVIDE A MINIMUM TWELVE (12) INCH VERTICAL DROP AT THE JUNCTION WITH THE PRESSURE LINE.

SEWERAGE AGENCY OF SOUTHERN MARIN		
RESIDENTIAL SEWERAGE PUMPING SYSTEM		
2019		SD 17