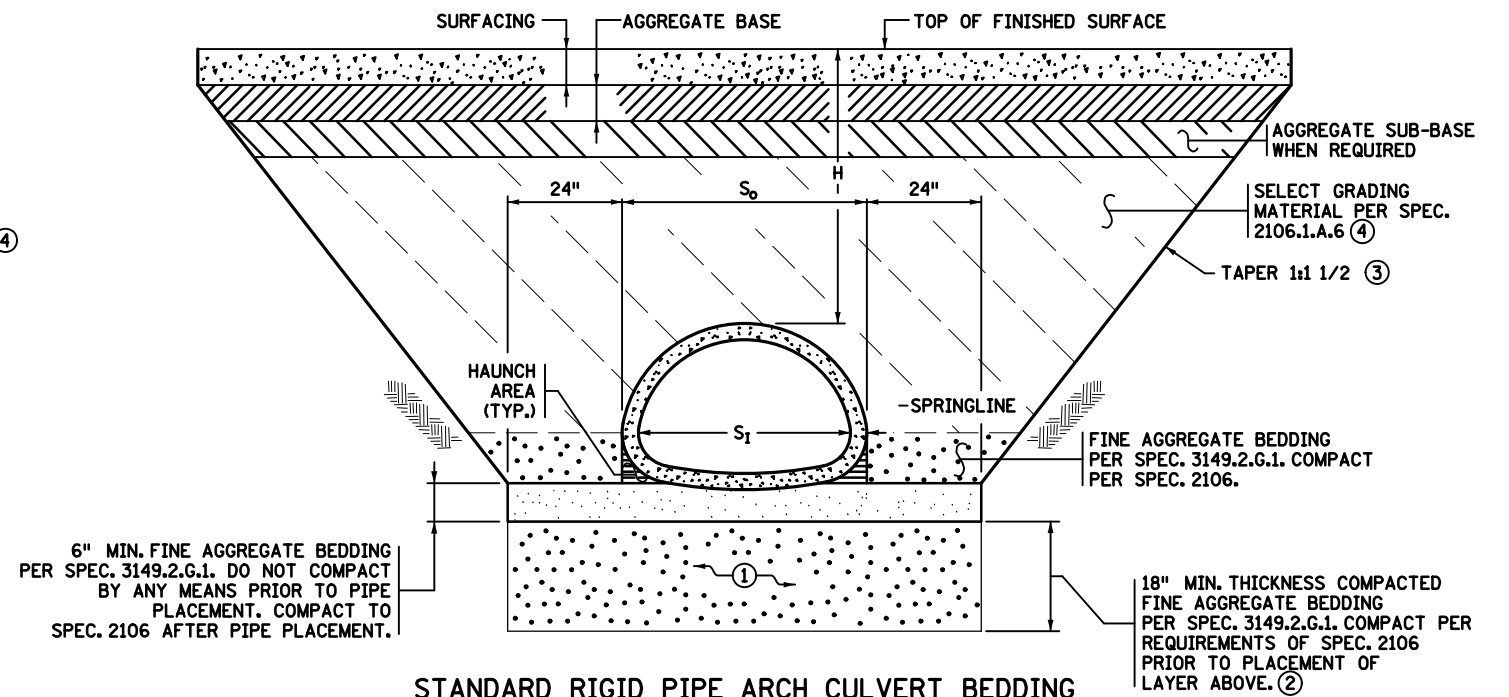


**STANDARD RIGID CULVERT PIPE BEDDING**



**STANDARD RIGID PIPE ARCH CULVERT BEDDING**

**-LEGEND-**

- D<sub>1</sub> = INSIDE DIAMETER OF ROUND PIPE (INCHES).
- D<sub>0</sub> = OUTSIDE DIAMETER OF ROUND PIPE (INCHES).
- S<sub>1</sub> = INSIDE SPAN OF PIPE-ARCH (INCHES).
- S<sub>0</sub> = OUTSIDE SPAN OF PIPE-ARCH (INCHES).
- H = FILL COVER HEIGHT OVER PIPE (FEET).
- = UNDISTURBED SOIL
- = COMPACTED BEDDING
- = LOOSE BEDDING, COMPACTED AFTER PIPE PLACEMENT

**NOTES**

- STANDARD BEDDING FOR RIGID PIPE CULVERTS WITHOUT TREATMENTS.
- RIGID PIPE INCLUDES CONCRETE.
- ENTRANCE CULVERTS (FIELD AND DRIVEWAY CULVERTS) DO NOT NEED BEDDING UNLESS SPECIFIED IN THE PLANS OR SPECIAL PROVISIONS.
- UNLESS OTHERWISE NOTED IN THE PLAN, BEDDING QUANTITIES ARE COMPUTED FOR THE FULL LENGTH OF THE PIPE AND APRON, AND WILL NOT BE ADJUSTED FOR CHANGES TO MEET OSHA REQUIREMENTS.
- WHEN RIPRAP IS REQUIRED AT THE APRON END, SEE STANDARD PLATE OR PLAN FOR RIPRAP INSTALLATION AND QUANTITIES. FOR APRONS WITHOUT RIPRAP PLACE 6" MIN. FINE AGGREGATE BEDDING UNDER APRONS. USE A TRENCH WIDTH EQUAL TO THE PIPE TRENCH WIDTH.
- CONTRACT PAY ITEM FOR FINE AGGREGATE BEDDING INCLUDES THE COST OF EXCAVATION, PLACEMENT AND COMPACTION.
- EXCAVATION AND BACKFILL WITH SELECT GRADING MATERIAL ARE NOT TABULATED SEPARATELY BUT ARE INCLUDED IN THE CONTRACT UNIT PRICE OF THE RELEVANT CULVERT PAY ITEM.
- EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.
- ALL SLOPES SHOWN AS (V) : (H).
- PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER OR SPAN.
- PROTECT ALL PIPE DURING CONSTRUCTION PER SPEC. 2501.
- PLACE MULTIPLE PIPE CULVERTS WITH A CLEARANCE OF 24 INCHES OR GREATER BETWEEN STRINGS OF PIPE.
- ① IF APPROVED BY THE ENGINEER, IN WET CONDITIONS THE CONTRACTOR MAY SUBSTITUTE 18" OF COARSE FILTER AGGREGATE PER SPEC. 3149.2.H COMPACTED TO THE QUALITY COMPACTION REQUIREMENTS OF SPEC. 2106. WRAP WITH GEOTEXTILE FABRIC TYPE IV PER SPEC. 3733. SEAM ALL FABRIC SIDES AND ENDS PER SPEC. TABLE 3733-1 INCLUDING FOOTNOTE (e) OR OVERLAP A MINIMUM OF 3 FT., ALL AT NO ADDITIONAL COST.
- ② FOR INSTALLATIONS ON INTACT BEDROCK, OMIT THIS LAYER.
- ③ OVER-EXCAVATION BENEATH TAPERS IS NOT PERMITTED UNLESS REQUIRED BY OSHA. (TYP.)
- ④ MAXIMUM EMBANKMENT PARTICLE SIZE WITHIN 2 FT. OF RIGID PIPE IS 3".

**CONSTRUCTION SEQUENCE**

1. PLACE AND COMPACT 18" OF FINE AGGREGATE BEDDING TO THE REQUIREMENTS OF SPEC. 2106.
2. LOOSELY PLACE 6" OF FINE AGGREGATE BEDDING MATERIAL (SPEC. 3149.2.G.1) TO GRADE. DO NOT COMPACT PRIOR TO PIPE PLACEMENT.
3. FOR PIPES WITH BELL, REMOVE MATERIAL IN BELL AREA PRIOR TO PLACEMENT.
4. FURNISH AND INSTALL PIPE TO GRADE.
5. AFTER PLACEMENT OF THE PIPE, PLACE ADDITIONAL BEDDING AND COMPACT THE FULL LENGTH ON BOTH SIDES OF THE PIPE UNDERNEATH THE HAUNCH AREA BY FIRST SHOVEL SLICING (MANUALLY SHOVEL THE BLADE END OF A SHOVEL AT AN ANGLE DOWN THE ENTIRE LENGTH OF THE PIPE IN THE HAUNCH AREA) THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK, OR SIMILAR).
6. COMPACT THE REMAINING MATERIAL OUTSIDE THE HAUNCH AREA TO THE REQUIREMENTS OF SPEC. 2106 ENSURING THAT THE ENTIRE LENGTH OF PIPE IS SUPPORTED UNIFORMLY BY BEDDING.
7. PLACE AND COMPACT BACKFILL EVENLY AND SIMULTANEOUSLY IN 6" LIFTS ON EACH SIDE OF THE PIPE UP TO THE SPRINGLINE WHEN COMPACTED.
8. COMPLETE REMAINING BACKFILL.

LEAD EXPERT OFFICE	KEVIN WESTERN STATE BRIDGE ENGINEER	STANDARD CULVERT BEDDING FOR RIGID PIPE (WITHOUT TREATMENTS)	APPROVED: 01-18-2019	 THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN	1 OF 1
			REVISED:		5-297.441	
		STANDARD PLAN			STATE PROJ. NO.	SHEET NO.
					TRUNK HWY.	TOTAL SHEETS