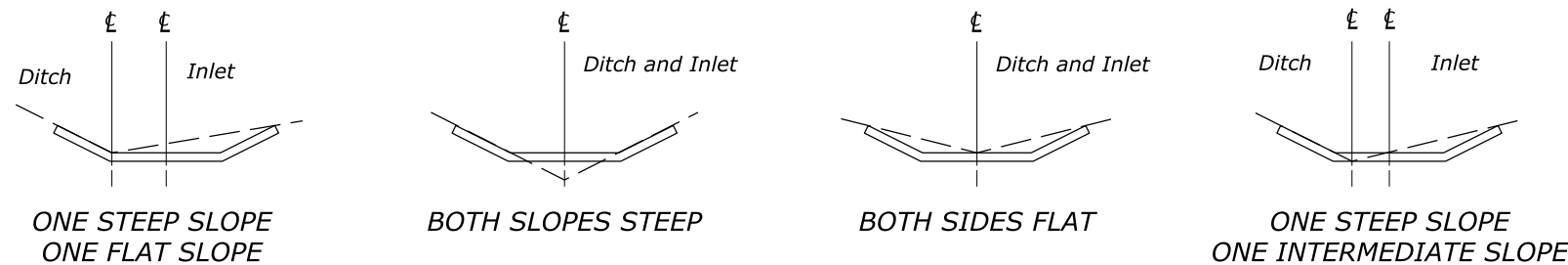
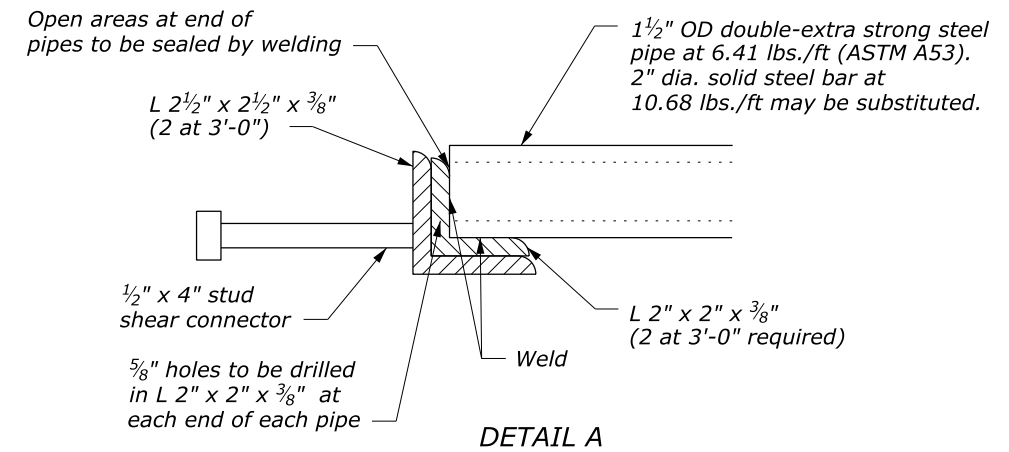
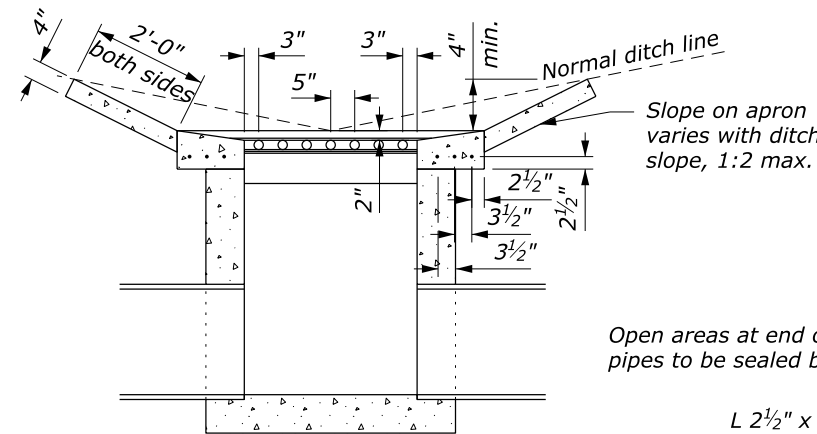
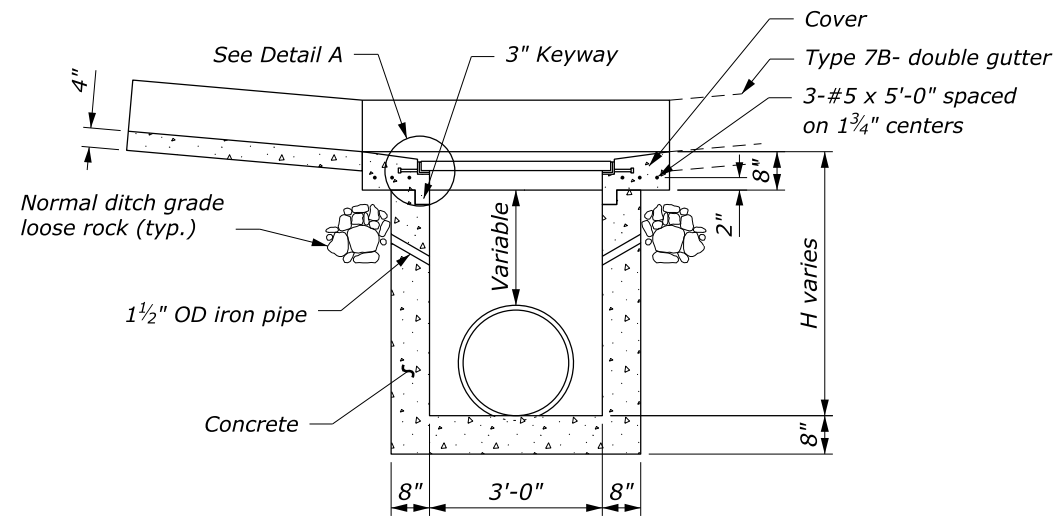


**NOTE:**

1. Type 7A has a single gutter when inlet is on a grade.
2. Type 7B has a double gutter when inlet is in a sag between two grades.
3. Warp ditch to tie smoothly into inlet gutter.
4. Ensure outside dimensions of grate are 3'-4" x 2'-11<sup>3</sup>/<sub>4</sub>".
5. Maximum depth (H) is 12'-8".
6. All reinforcing bars are #5 placed a minimum 1<sup>1</sup>/<sub>2</sub>-inch clear from face of concrete. In floors, place bars on 6-inch centers each way. In walls, place horizontal bars on 6-inch centers and vertical bars on 12-inch centers.
7. Galvanize grate after fabrication in accordance with AASHTO M 111.
8. Alternate methods of anchoring angle iron will be acceptable if approved.

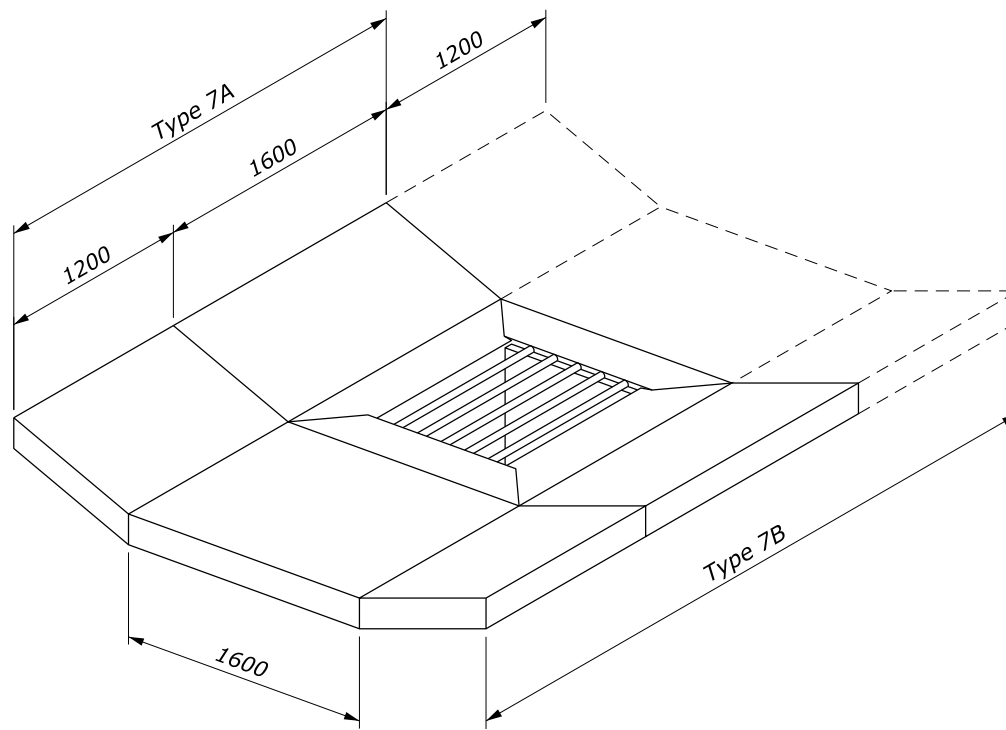
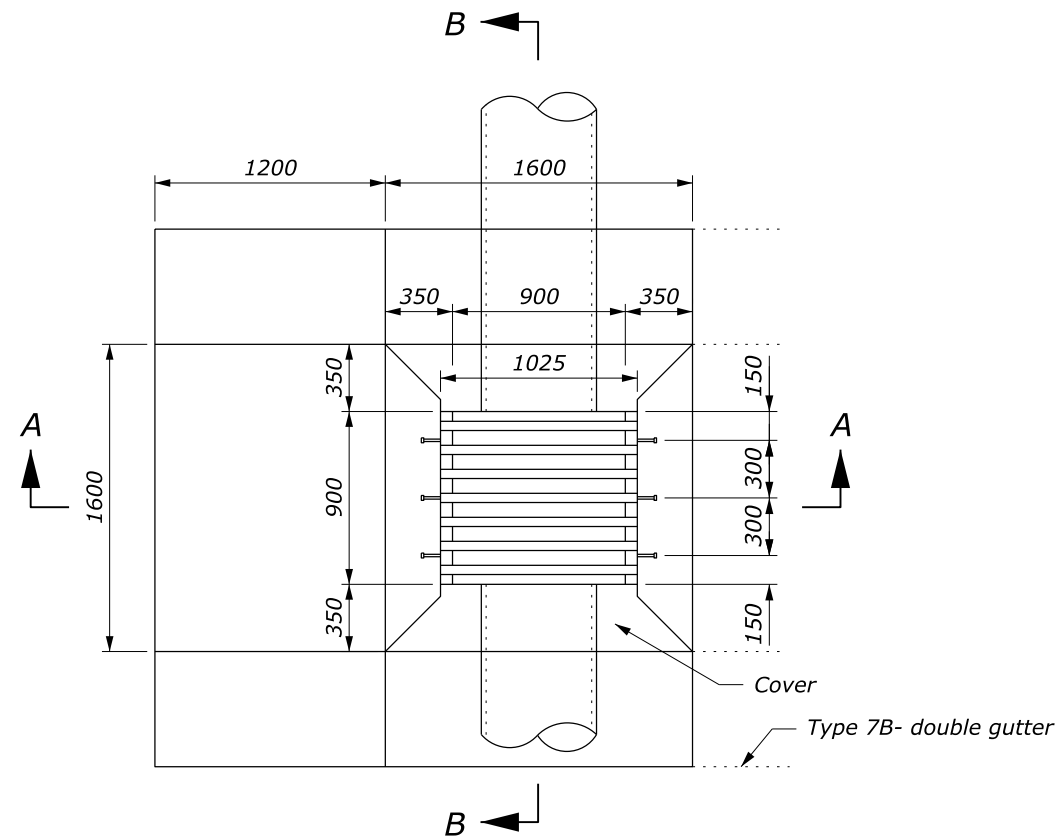
APPROXIMATE QUANTITIES						
Pipe size	12"	15"	18"	24"	30"	36"
Minimum Depth (H)	2'-0"	2'-3 <sup>1</sup> / <sub>4</sub> "	2'-6 <sup>1</sup> / <sub>2</sub> "	3'-1"	3'-7 <sup>1</sup> / <sub>2</sub> "	4'-2"
Inlet concrete for minimum depth, CUYD	0.947	1.045	1.143	1.339	1.535	1.731
Additional inlet concrete	0.362 cuyd for each additional foot of depth (H)					
Gutter concrete	Type 7A: 0.724 cuyd Type 7B: 1.185 cuyd					
Cover concrete (not included above)	0.413 cuyd					
Cover reinforcing steel	63 lb.					



**TYPICAL GUTTER PLACEMENT**

NO SCALE

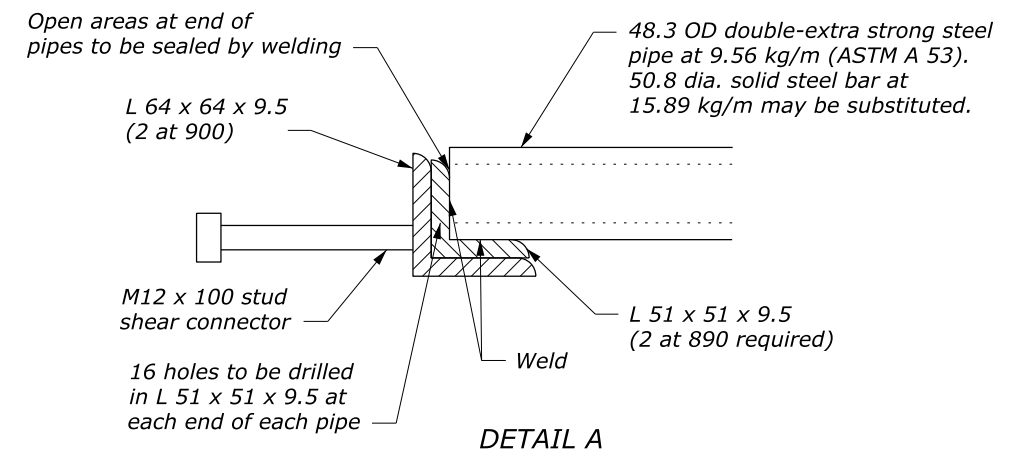
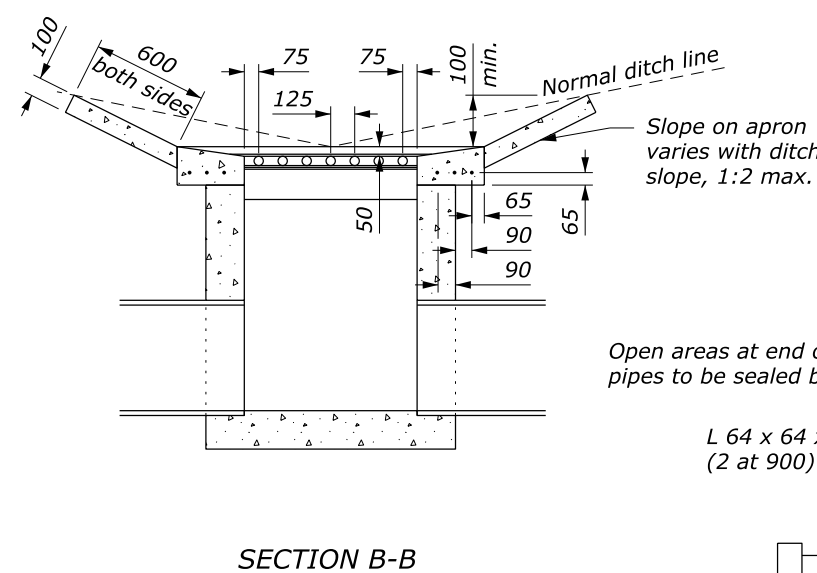
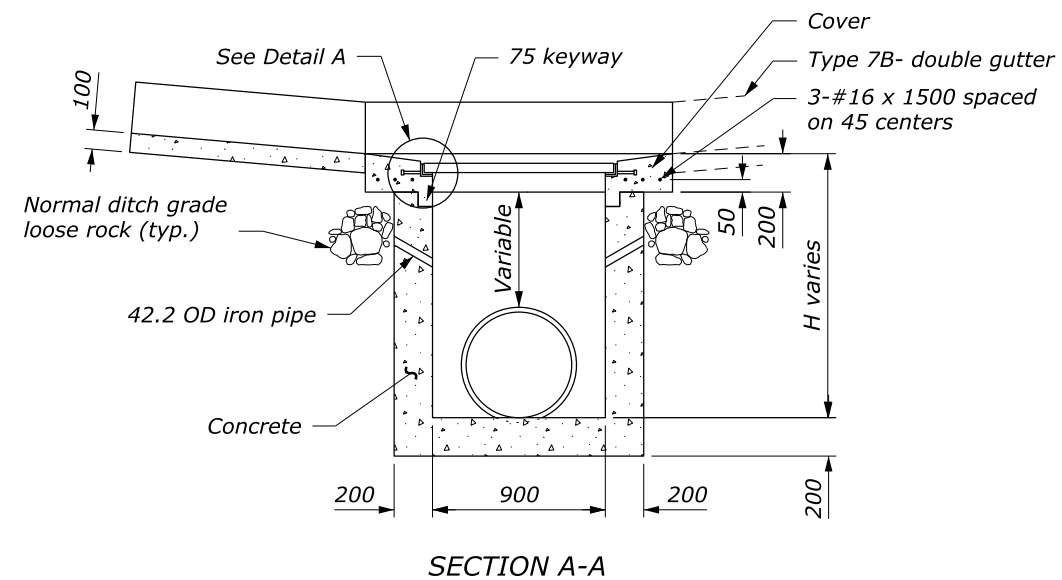
U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	FLH STANDARD 604-8
<b>INLET TYPE 7A AND 7B FOR 12" TO 36" CULVERT</b>	SPECIFICATION FP-24, FP-14 APPROVED FOR USE 1/2024



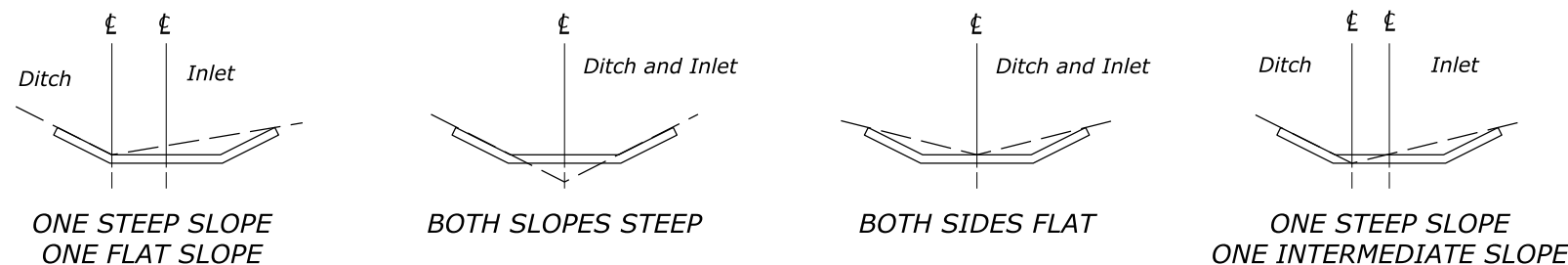
**NOTE:**

1. Type 7A has a single gutter when inlet is on a grade.
2. Type 7B has a double gutter when inlet is in a sag between two grades.
3. Warp ditch to tie smoothly into inlet gutter.
4. Ensure outside dimensions of grate are 1000 x 890 mm.
5. Maximum depth (H) is 3800 mm.
6. All reinforcing bars are #16 placed a minimum 40 mm clear from face of concrete. In floors, place bars on 150 mm centers each way. In walls, place horizontal bars on 150 mm centers and vertical bars on 300 mm centers.
7. Galvanize grate after fabrication in accordance with AASHTO M 111.
8. Alternate methods of anchoring angle iron will be acceptable if approved.

APPROXIMATE QUANTITIES						
Pipe size	300	375	450	600	750	900
Minimum Depth (H)	600	690	775	940	1100	1270
Inlet concrete for minimum depth, m <sup>3</sup>	0.690	0.769	0.844	0.989	1.130	1.280
Additional inlet concrete	0.264 m <sup>3</sup> for each additional 300 mm of depth (H)					
Gutter concrete	Type 7A: 0.528 m <sup>3</sup> Type 7B: 0.864 m <sup>3</sup>					
Cover concrete (not included above)	0.301 m <sup>3</sup>					
Cover reinforcing steel	28.5 kg					



This drawing contains **Metric** units of measure. Dimensions without units are millimeters.



**TYPICAL GUTTER PLACEMENT**

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION, FHWA OFFICE OF FEDERAL LANDS HIGHWAY	FLH STANDARD M604-8
<b>INLET TYPE 7A AND 7B FOR 300 TO 900 CULVERT</b>	SPECIFICATION FP-24/FP-14
	APPROVED FOR USE 1/2024