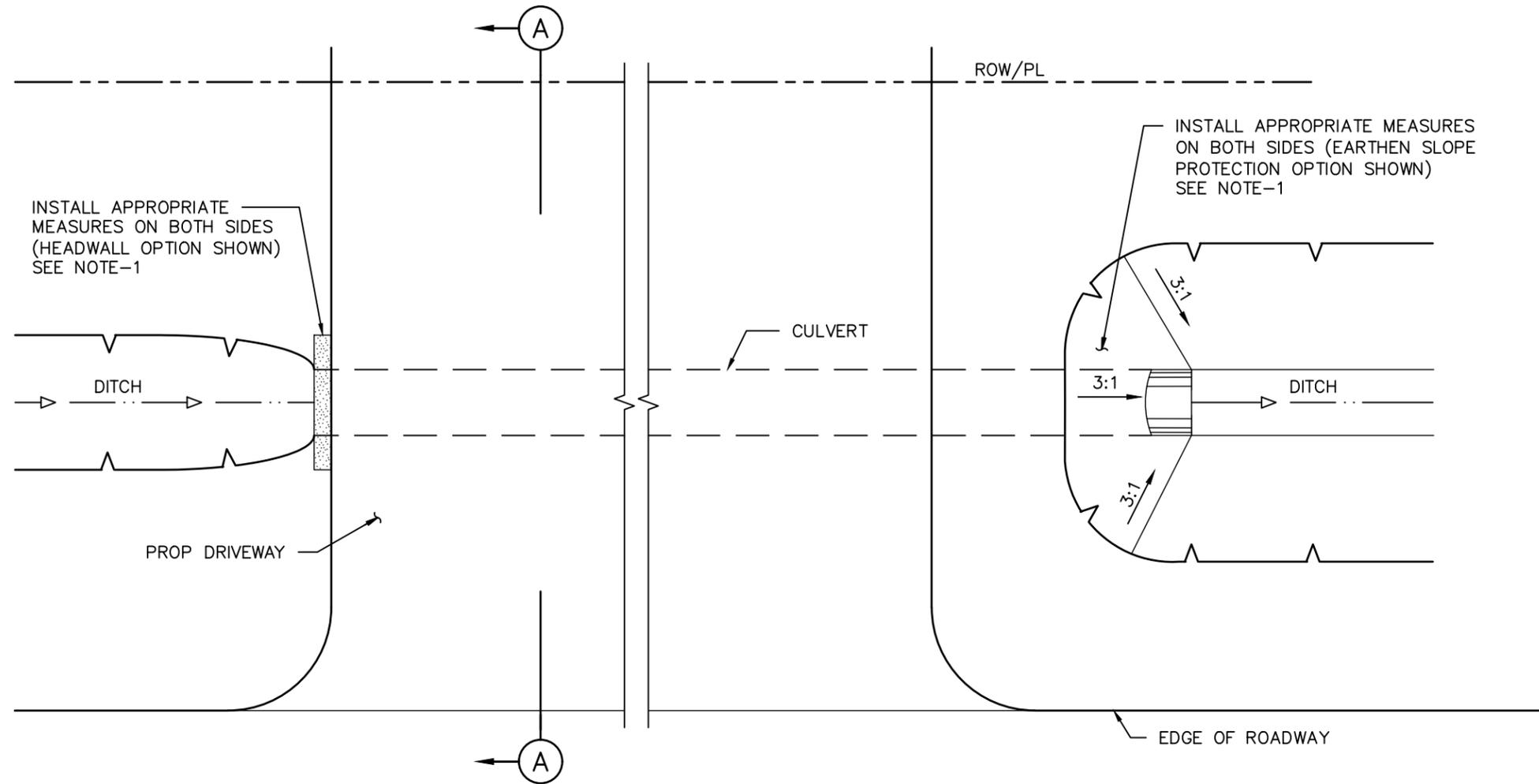
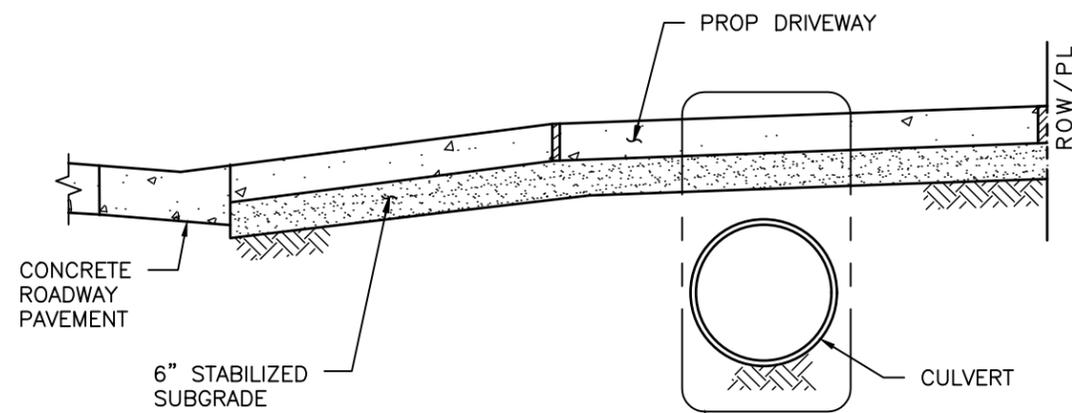


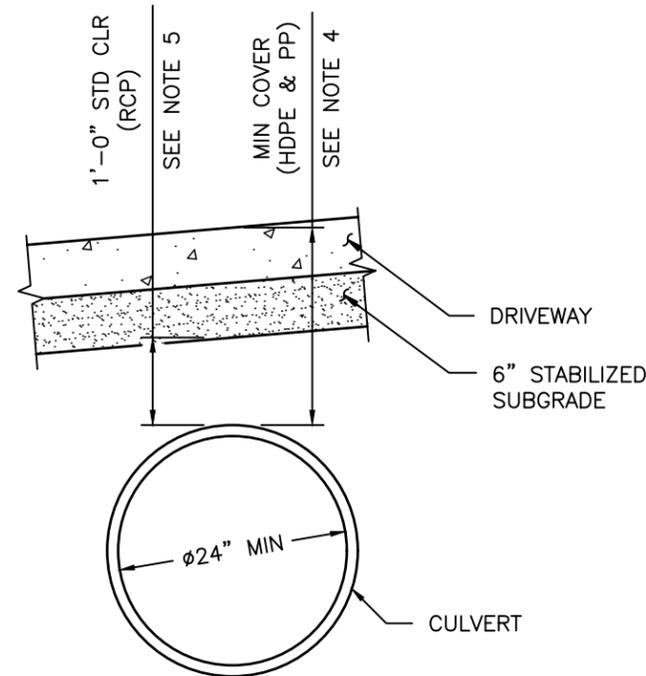
DISCLAIMER: THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE, ACCEPTS RESPONSIBILITY FOR THEIR APPLICABILITY, ADEQUACY AND SAFETY. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.



**PLAN VIEW**  
 STANDARD OPEN DITCH DRIVEWAY



**SECTION A-A**  
 STANDARD PIPE CULVERT CLEARANCE



**DETAIL A-5**  
 CULVERT CLEARANCE

**NOTES:**

1. PIPE CULVERTS SHALL CONFORM TO CHAPTER 9 DESIGN REQUIREMENTS OF THE INFRASTRUCTURE DESIGN MANUAL AND MATERIAL REQUIREMENTS OF STANDARD CONSTRUCTION SPECIFICATION SECTION 02631.
  - 1.1. INSTALL APPROPRIATE MEASURES (E.G., HEADWALLS, SAFETY END TREATMENTS, RIPRAP, SLOPED PAVING, EARTHEN SLOPE PROTECTION, ETC.) AT BOTH SIDES OF INLET AND OUTLET OF A CULVERT AS REQUIRED.
  - 1.2. CURBED OR FLUSH HEADWALL OR SAFETY END TREATMENT SHALL BE PROVIDED FOR COMMERCIAL DRIVEWAY CULVERTS.
  - 1.3. RIP RAP, SLOPED PAVING AND EARTHEN SLOPE PROTECTION ARE ONLY ALLOWED FOR SINGLE FAMILY RESIDENTIAL DRIVEWAY CULVERTS LOCATED ALONG LOCAL STREETS.
  - 1.4. WHERE EARTHEN SLOPE PROTECTION IS SPECIFIED, FACTORS SUCH AS EROSION CONTROL, SOIL AND PIPE STRENGTH TO CARRY ERRANT VEHICLE LOADS SHALL BE DESIGN CONSIDERATIONS.
  - 1.5. WHERE EARTHEN SLOPES ARE SPECIFIED, THE SLOPE SHALL NOT BE STEEPER THAN 3H:1V. THE PIPE END SHALL EXTEND 2 FT MINIMUM BEYOND THE EDGE OF DRIVEWAY PAVEMENT ON EACH SIDE OF THE DRIVEWAY CULVERT.
2. CULVERT SIZE WILL BE APPROVED BY CITY ENGINEER WITH 24" DIAMETER MINIMUM.
3. DRIVEWAY MATERIAL WITHIN THE RIGHT OF WAY SHALL BE CONCRETE OR ASPHALT.
4. FOR MIN COVER REQUIREMENTS FOR THERMOPLASTIC PIPES (HDPE & PP) REFER TO COH STD DETAIL 02317-10G.
5. FOR RCP WHERE STANDARD 1'-0" CLEARANCE IS NOT FEASIBLE, MINIMUM CLEARANCE OF 6" IS ALLOWED WHEN APPROVED BY THE OFFICE OF THE CITY ENGINEER (OCE).
6. DITCH FLOW LINE DIRECTION DEPICTED IS SHOWN AS AN EXAMPLE AND MAY NOT MATCH SITE SPECIFIC CONDITIONS. REFER TO CONTRACT DRAWINGS FOR FLOW LINE DIRECTION AND ELEVATIONS.

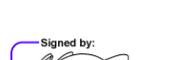
**CITY OF HOUSTON**  
 HOUSTON PUBLIC WORKS STANDARD

**DRIVEWAYS WITH CULVERTS ON OPEN DITCH TYPE STREETS**

(SCALE: NOT TO SCALE)

APPROVED BY:

Signed by:   
 1BE6B22072F84DC...  
**CITY ENGINEER**  
 DocuSigned by:  
  
 50E461B07C28417...  
**CITY TRAFFIC ENGINEER**

Signed by:   
 BE463E0DF454EB...  
**DIRECTOR OF HPW**