

Residential Driveway Culvert Installation / Approach Paving Process

I certify that I have read and understand the following information

Printed Name	Company Name	Signature	Date
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Pipe Material & Size:

For culvert pipe size the property owner or contractor must prepare a site plan showing the address and street name including; a proposed location of culvert pipe, the drive approach in relationship to the street, the driveway, and pipe and end treatments, on the plan. Present plan to the City of Grand Prairie Municipal Complex Engineering Department at 300 W. Main St. Grand Prairie TX 75050. Staff will review the plan and provide the proper diameter of pipe and end treatments for the specified location. The city requires the use of reinforced concrete pipe (RCP) for all driveway culverts and precast end treatments.

Culvert Pipe & End Treatments Delivered:

It is the responsibility of the property owner or their contractor to acquire the proper diameter pipe and end treatments. Upon receipt of the (RCP) and end treatments the property owner and/or contractor shall inspect for damages. Damages may include any cracks, broken ends, exposed steel or other structural imperfections. Damaged pipe and end treatments should not be accepted. A sealing compound should be included upon delivery.

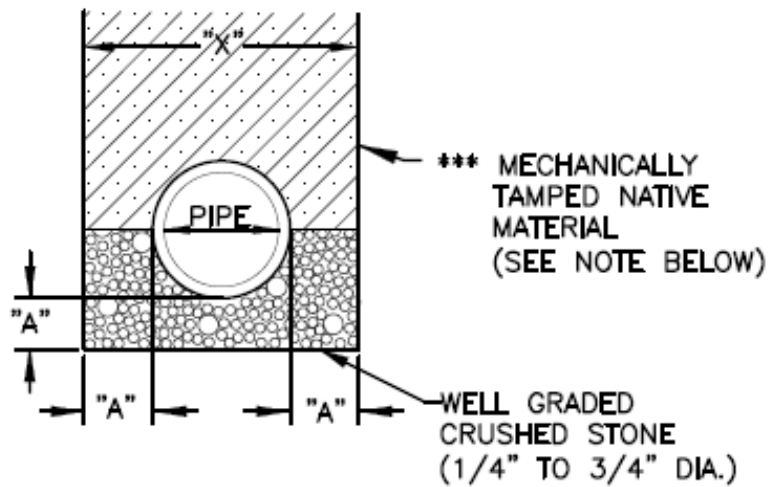
Culvert Pipe/End Treatments installation:

The bar ditch shall be graded or prepared in such a way to provide a positive drainage flow. Placement of the drive culvert shall reflect this same grade and not cause any restriction to the ditch and current drainage patterns. It is the responsibility of the property owner or their contractor to conduct elevation surveys to determine proper drainage flows which will not hold or pond water runoff after installation. The pipe and end treatments shall be joined together using pipe sealer, all connections shall be smooth and concrete grouted on the inside and outside of the pipe. The bedding material of the pipe will be consistent with the City of Grand Prairie's current Standard Details for Culvert Pipe Embedment. (Detail below- full details are available for download) Once the RCP and end treatments have been set, the City will inspect the installation and any deficiencies found shall be corrected prior to final backfill and compaction.

***NOTE: Inspections must be scheduled a minimum of 3 business days prior to the culvert installation. This will insure you receive an inspection and minimize delays.**

To schedule a culvert inspection contact David McKee at (972)237-8536.





NOTE:

A = 6" FOR PIPE SIZES 18" THROUGH 42"
 A = 8" FOR PIPE SIZES 48" THROUGH 72"+

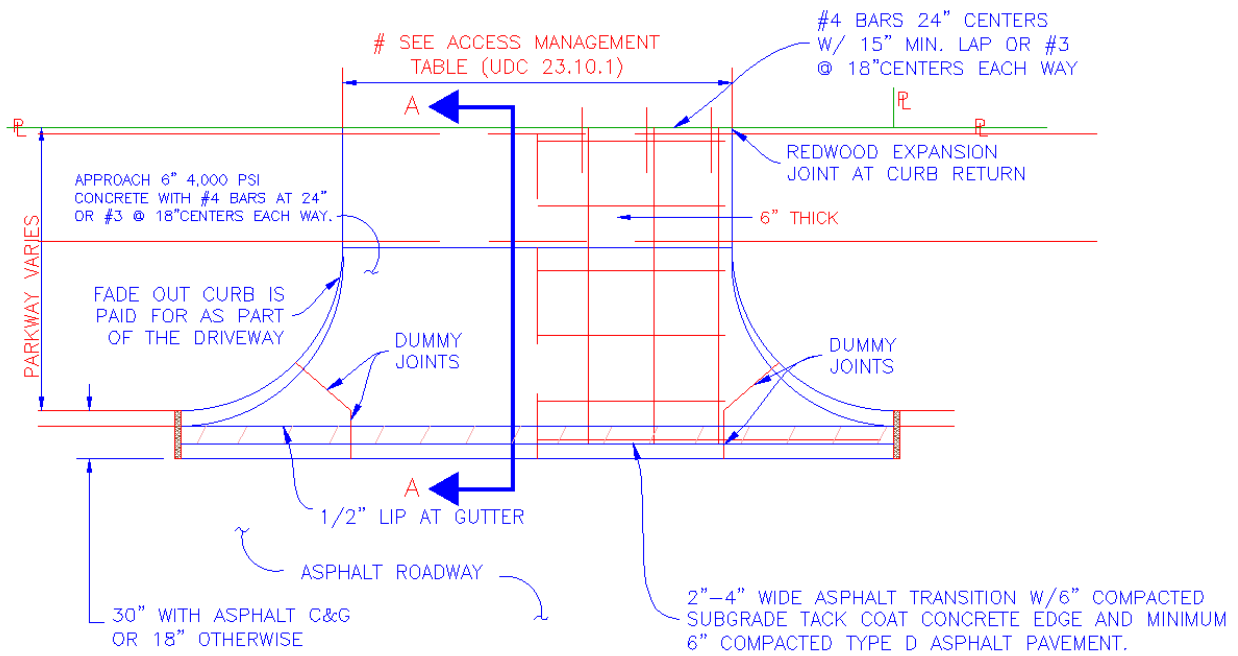
**TYPICAL STORM DRAIN PIPE
 EMBEDMENT AND BACKFILL**
 N.T.S.

Culvert Pipe/End Treatments Installation Cont.

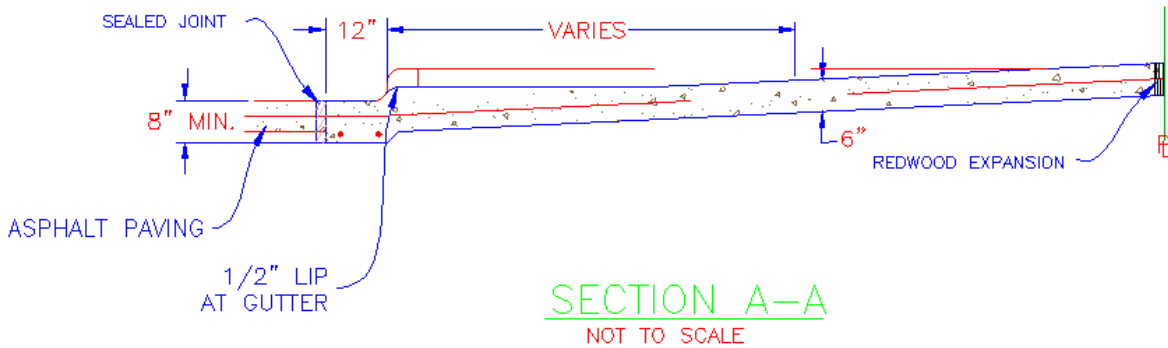
*** Note: Once the inspection process has been performed and the pipe assembly verified and accepted. Backfill shall be clean fill with a low plasticity index (PI) or select fill and shall be compacted to 95% of standard proctor density.

Approach Forming to Asphalt Street:

* The approach to the driveway is considered a public Right of Way feature, due to that fact certain forming and paving criteria and standards that shall be met to during this process. (See detail below)

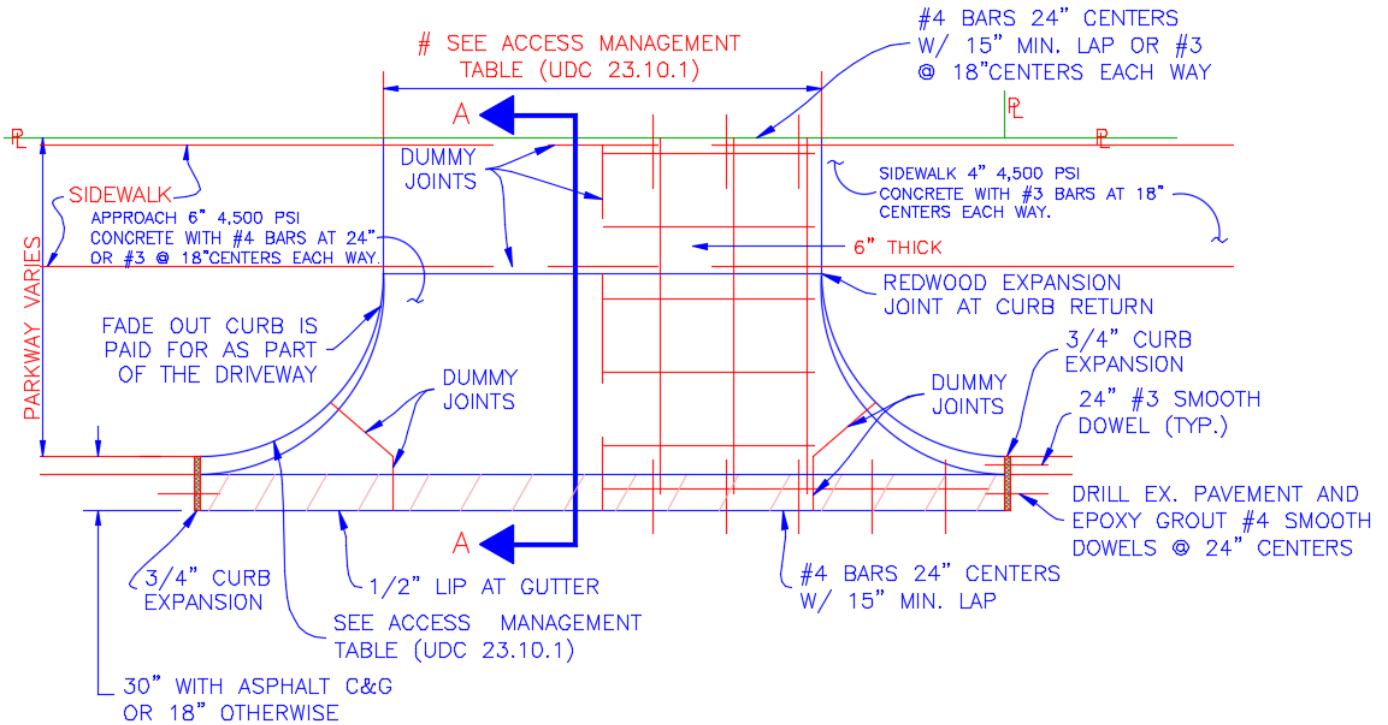


ASPHALT ROADWAY TO RESIDENTIAL DRIVEWAY DETAIL



Approach Forming to Concrete Street:

Considerations to rebar sizing and spacing can be accommodated to reflect #3 rebar on 18 in. centers for the approach as a minimum. Concrete thickness however will be poured per the City of Grand Prairie Standard details and as viewed in section A-A in the detail below. Concrete thickness shall match existing street with a minimum of 6 inches for the approached and tapering back towards sidewalk not to exceed a 2% slope.



CONCRETE ROADWAY TO RESIDENTIAL DRIVEWAY DETAIL

Approach Forming & Paving:

An inspection will be scheduled to view the forms and rebar size and spacing. Once this has been accepted through the inspection process the building inspection protocol will begin. Any and all inspections made from this point on will be scheduled with building inspections.

P.C. CONCRETE STANDARD RESIDENTIAL, COMMERCIAL & INDUSTRIAL STREETS

GENERAL:

- (A) ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE CITY OF GRAND PRAIRIE.
- (B) ALSO REFER TO N.C.T.C.O.G. ITEM 303 SPECIFICATIONS
- (C) CONTRACTOR SHALL CONTACT TRANSPORTATION DEPARTMENT FOR THE REMOVAL OF CITY SIGNS IN RIGHT-OF-WAY.

FORMS:

PLEASE REFER TO N.C.T.C.O.G. ITEM 303.4.4

REINFORCEMENT BARS:

ONLY STEEL RODS SHALL BE USED. PLEASE REFER TO ITEM 303.2.9 OF THE N.C.T.C.O.G. SPECIFICATIONS.

REINFORCEMENT BAR CHAIRS:

THE CONTRACTOR SHALL INSTALL SUPPORTING CHAIRS FOR REINFORCING STEEL ON A ONE SQUARE YARD SPACING IN ALL CONCRETE PAVEMENTS. THE CHAIRS ARE TO BE PLASTIC AND INSTALLED AS PER ITEM 303.2.11 OF THE N.C.T.C.O.G. SPECIFICATIONS.

CONCRETE:

- (A) PORTLAND CEMENT SHALL BE AS PER N.C.T.C.O.G. ITEM 303.2.2
- (B) UP-TO 20% (BY WEIGHT) OF THE CEMENT CONTENT MAY BE REPLACED WITH TYPE C FLY ASH. FLY ASH REPLACEMENT SHALL BE 1.25 POUNDS PER 1.0 POUND OF CEMENT REDUCTION. ALSO REFER TO N.C.T.C.O.G. ITEM 303.2.4
- (C) AGGREGATES SHALL BE AS PER N.C.T.C.O.G. ITEM 303.2.1. RIVER ROCK OR BLENDED AGGREGATES SHALL NOT BE ALLOWED.
- (D) CONCRETE FOR ALL PAVING AND CURBS WITHIN THE RIGHT-OF-WAY SHALL HAVE A MINIMUM 5 1/2 SACK/CUBIC YARD OF CEMENT CONTENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI WHEN TESTED AT THE AGE OF 28 DAYS. HAND PLACED CONCRETE SHALL HAVE A MINIMUM 6 1/2 SACK/CUBIC YARD OF CEMENT CONTENT AND MINIMUM COMPRESSIVE STRENGTH OF 4500 PSI.
- (E) MANUFACTURED SAND SHALL NOT EXCEED 20% OF THE TOTAL SAND CONTENT IN THE CONCRETE MIX DESIGN.
- (F) PAVEMENT CURBS SHALL BE POURED MONOLITHICALLY. PLEASE REFER TO N.C.T.C.O.G. ITEM. 303.5.2.4.
- (G) ALL MATERIAL INCORPORATED IN THE CONSTRUCTION SHALL BE NEW.
- (H) HOT-MIX ASPHALT CONCRETE PAVEMENT:
 - 1. SPECIFICATION SHALL FOLLOW SECTION 302 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION N.C.T.C.O.G. AND CONFORM TO THE TXDOT STANDARD FOR HOT-MIX ASPHALTIC CONCRETE.
 - 2. COMPACT CONTROL
 - (a) IN-PLACE COMPACTION CONTROL IS REQUIRED FOR ALL MIXTURES.
 - (b) ASPHALTIC CONCRETE SHOULD BE PLACED AND COMPACTED TO CONTAIN NOT MORE THAN 9% (NINE PERCENT) NOR LESS THAN 5% (FIVE PERCENT) AIR VOID UNLESS OTHERWISE INDICATED.
 - 3. PRIME COAT WILL FOLLOW N.C.T.C.O.G. SPECIFICATION 302.7 AND 302.9.6.1.
 - 4. TACK COAT WILL FOLLOW N.C.T.C.O.G. SPECIFICATION 302.9.6.2.
 - 5. HMAC MIX DESIGNS SHALL FOLLOW N.C.T.C.O.G. SPECIFICATIONS 302.9.3. AND THE GRADING TABLES INCLUDED IN THIS SECTION. THESE MIXTURES WILL BE IN ACCORDANCE WITH TXDOT TEST METHOD TEX-204-F, DESIGN OF BITUMINOUS MIXTURES.

CURING:

- (A) PLEASE REFER TO ITEM 303.5.8 AND 303.2.12.1.1 OF THE N.C.T.C.O.G. SPECIFICATIONS.

TOLERANCE:

PLEASE REFER TO ITEM 303.5.6.1.1 OF THE N.C.T.C.O.G. SPECIFICATIONS.

JOINTS:

- (A) CONSTRUCTION JOINTS SHALL BE USED IN ALL BLOCK-OUTS FOR DRIVEWAYS, INLETS, ETC.

TESTING:

- 3.) MATERIAL: ALL MATERIAL INCORPORATED IN THE CONSTRUCTION SHALL BE NEW.

CULVERTS:

- (A) ONLY REINFORCED CONCRETE PIPE(RCP) OR REINFORCED BOX(RCB) IS APPROVED FOR USE, UNLESS APPROVED OTHERWISE BY THE DIRECTOR OF PUBLIC WORKS.
- (B) FOR PIPES, EMBEDMENT SHALL BE PER THE STREET BACKFILL & REPAIR DETAIL ON THIS SHEET. FOR BOX CULVERTS, EMBEDMENT SHALL BE PER THE BOX CULVERT EMBEDMENT DETAIL ON THIS SHEET.
- (C) THE CONTRACTOR SHALL SEAL ALL JOINTS ON CLOSED CONDUITS WITH OMNI-FLEX JOINT SEALS, OR EQUAL; UNLESS APPROVED BY THE DIRECTOR OF PUBLIC WORKS.
- (D) DRIVEWAY CULVERTS SHALL BE 18 INCH DIAMETER RCP OR LARGER AND SHALL HAVE 4 TO 1 SLOPED PRECAST CONCRETE END SECTIONS OR APPROVED EQUAL.
- (E) STORM DRAIN PIPES AND CULVERTS WITH SLOPES EXCEEDING 10% SHALL BE BACKFILLED WITH FLOWABLE FILL MATERIAL BETWEEN SPRING LINE AND 6" (INCHES) ABOVE THE STORM DRAIN PIPE. MANUFACTURED SAND SHALL NOT EXCEED 20% OF THE TOTAL SAND CONTENT IN THE CONCRETE MIX DESIGN.
- (F) ALL TYPE "A" AND TYPE "B" HEADWALLS SHALL BE CONSTRUCTED AS PER TXDOT STANDARD DETAILS AND SPECIFICATIONS.

FITTINGS, COLLARS AND CONNECTIONS:

- 3.) THE CONTRACTOR SHALL USE ONLY PRE-FABRICATED FITTINGS ON NEW CONSTRUCTION PROJECTS. FIELD CONNECTIONS SHALL BE MADE ONLY TO EXISTING PIPE WITH CITY APPROVAL. THE CONNECTION SHALL BE A SMOOTH CONNECTION AND CONCRETE WRAPPED ON THE OUTSIDE AND INSIDE.