

To: All Utility Permit Applicants  
From: Mark P. Kuhn, P.E., Jacksonville Assistant Maintenance Engineer  
Date: June 2, 2008  
Re: Utility Permit Application Guidelines

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**The Department has developed standards, guidelines, policies and recommended practices for utility placement within the Department's Right-of-Way. These standards are provided in the Utility Accommodation Manual. Prior to issuing a utility permit the Department will examine all the relevant material (presented hereafter) to insure consistency with the Department's standards and procedures.**

**In order for the Florida Department of Transportation (FDOT) to properly review your Permit Application Submittal, please verify that the following have been included in your package and/or drawings:**

## **Utility General Requirements (all permit applications)**

- Four Copies (2 original signatures) of permit application and plans.
- Permit plans include the following:
  - Beginning/end limits of project
  - Horizontal offset from a landmark to proposed installation
  - Right of way limits clearly defined.
  - Plan view reference location of utility line from edge of pavement (8' standard) and r/w line
  - Is proposed utility installation as close to the right-of-way line as practical?
  - Roadway section and milepost.
  - Installation method must be clearly shown in plans.
  - Material, function, type and size of proposed installation.
  - Identify location of all utility poles & above-ground facilities/appurtances (8 cu.ft. or more)
  - Cross-section view reference utility line depth (from ground/roadway surface) and include references to existing utilities in installation area.
  - List of all ROW users in installation area on permit and notify each one by copy of permit drawing whether they are involved or not.
  - Minimum vertical clearance above or below pavement shown.
  - Distances shown to major intersections, town, bridge or railroad crossing.
  - Significant features such as wetlands, vegetation or water bodies.
  - Site pictures to document work area 1 minimum, 6 max.
- Is permit site within the limits of a construction project in the Departments 5 yr. Work Program ?
- All new or replaced underground facilities within R/W shall be detectable.
- M.O.T. plan included (no reference accepted) 4 copies of plan, If deviation from a standard application, plan must be signed/sealed.
- Plans not prepared by utility company must be signed/sealed by professional engineer and include a letter from utility owner accepting maintenance responsibility of utility installation.
- Work within intersections require appropriate city/county approval letter.
- NPDES Permit Addendum must be included

- Utility must be "cased" under the following circumstances:
  - Instances where the failure of the carrier pipe would cause dramatic failure of the roadway to the extent public safety was jeopardized, as with MSE walls.
  - When D.E.P. requires to provide redundancy in the separation of water/sanitary/stormwater facilities.
  - Where loading is not standard and minimum cover cannot be guaranteed as in construction or in design clearance.
  - When it is desirable to remove the facilities and in such cases that the encasement acts as a conduit.
  - All crossings of Interstate.

## Additional Requirements: Jack and Bore

- Jack and bore greater than 8" requires geotech/subsurface investigation report on sub-surface soil conditions. The report must be signed and sealed by a professional engineer and contain the following:
  - Subsurface Soil Report: general classification of soils along bore path.
  - Water Table elevation
  - Location and size of existing Utilities or obstructions
  - Invert elevations of proposed bore.
  - Jacking and receiving pit dimensions and floor elevations
  - Profile drawing showing the roadway cross-section and sub-surface conditions such as location, cover, diameter type of material and carried product of all known existing utilities within the path of the proposed bore. All information must be clearly labeled.
  - Project identification and Testing Log:
    - Utility permit number and location of project
    - Name of person (with position), firm responsible for report.
    - Dates and times of observance and data collection.
    - Equipment used.
    - Comments/recommendations by engineer must be included in the report.
  - Dewatering plan and methods (if water table is within 2' of excavation depth).
    - Project background and dewatering requirements.
    - Plan and profile view location of all pumps, headers, well points, berms, discharge points and their relationship to the roadway, jacking pits and path of crossing.
    - Subsurface soil and ground water conditions (see above).
    - The hydraulic conductivity of the sub-soils present at site.
    - The nature, location and depths of all subsurface installations for the dewatering system.
    - The nature, location and sizes of all associated dewatering pumps.
    - The general route of discharge and all points of discharge.
    - The calculated groundwater extraction and discharge rates for the proposed system.
    - The Best Management Practices Erosion Control Plan to control turbidity and erosion at all discharge locations.
  - F.D.E.P Discharge Permit for non-contaminated site activity.
  - Water Management General Permit for short term construction if:
    - Withdrawal is over 300,000 gpd or exceeds 30 days duration.
    - Withdrawal water will be discharged to Outstanding Florida Waters, Class I or II water body..
- Jacking/receiving pits shall be no closer than 8' from roadway/shoulders edge or 4' from the back of curb. The pit dimensions shall be large enough to provide a safe, adequate working area with slopes no steeper than those allowed by OSHA and the Florida Safe Trench Act.

If slopes are not used, the pit walls shall be shored, sheeted, braced or otherwise supported. All utility installations where any of the following are within the clear recovery zone (reference F.D.O.T. Standard Index 600 sheet 2): jacking pits, receiving pits, splice pits, tie-in pits; and are at a depth greater than the following require stabilization of the pit to protect the roadway. Please note that these are guidelines to protect the roadway and that OSHA Standards must be maintained at all times. A signed and sealed shoring plan must accompany the permit submittal.

(See table next page)

<b>Depths**</b>	<b>Stabilization</b>
0' to 3'	None
3' to 6'	Trench Box
6' and deeper	Sheet Piling*

\* If sheet piling is used when work is complete the sheet piling must be cut off 3' below the existing ground level and left in place.

\*\* Water table information/location must be determined for all excavations deeper than 3'. If it is found that the water table is within 2 feet of the excavation depth work cannot proceed until a signed and sealed engineering and dewatering report is received and approved by the Department of Transportation. Contact your Permit Processor for more details.

- When a boring or splice pit is to be within the clear recovery zone (reference F.D.O.T. Standard Index 600 sheet 2) steps shall be taken to mitigate the hazard within the work zone. The drop-off must be protected/shielded per F.D.O.T. Standard Index 600 sheet 6. This MOT plan must be signed and sealed by a Professional Engineer registered in the State of Florida.
- If boring pit is on private property the permittee must submit a letter from the property owner authorizing use of the property.
- Pits on Limited Access facilities shall be no closer to pavements edge than toe of front slope.
- Pit floor should be stabilized.(timber tracks, gravel, stone or poured slab).
- Casing details: Including length (must extend 8' minimum from EOP and/or 4' min. from Curb), thickness and material.

# Additional Requirements: Directional Bore

## (All Installations )

- Entry Angle Stated (preferably in degrees or slope percentage).
- Length and size of bore clearly shown on plans
- Location of drill rig shown on plans (referencing distance from edge of pavement).
- Location and dimensions of splice/receiving pit to include:
  - Depth: Is water table an issue? Shoring needed?
  - Distance from edge of pavement: is shoring needed?
    - Receiving/Splicing pits shall be no closer than 8' from roadway/shoulders edge or 4' from the back of curb.
    - The pit dimensions shall be large enough to provide a safe, adequate working area with slopes no steeper than those allowed by OSHA and the Florida Safe Trench Act.
    - If slopes are not used, the pit walls shall be shored, sheeted, braced or otherwise supported. All utility installations where any of the following are within the clear recovery zone (reference F.D.O.T. Standard Index 600 sheet 2): receiving pits, splice pits, tie-in pits; and are at a depth greater than the following require stabilization of the pit to protect the roadway. Please note that these are guidelines to protect the roadway and that OSHA Standards must be maintained at all times. A signed and sealed shoring plan must accompany the permit submittal.

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- Cross section showing:
  - Depth of bore
  - Parabolic path of bore to include entry/exit points, angle of departure and receiving angle.
  - Distance from entry/exit points to edge of pavement/back of the curb.
  - All exiting obstructions i.e utilities, drainage structures)
  - Distances/separation from above located obstructions
  - Water table depth (if oversized bore)
- Maximum reamer size must be specified in the plans.

Maximum Pilot or Back-Reamer Bit Diameter	
Nominal inside Pipe Diameter	Bit Diameter
2"	4"
3"	6"
4"	8"
6"	10"
8"	12"
10"	14"
12" and larger	Product outside diameter +6"

- If pit is on private property the Permittee must submit a letter from the property owner authorizing use of the property.
- Limited Access facilities shall be bored r/w line to r/w line.

# **Additional Requirements: Directional Bore**

(continued)

## **Oversized Bores (reamer larger than 6")**

- Utility depth must equal/exceed 10X the bore size when installed under D.O.T. Pavement...or
- On parallel runs is utility 3.5X bore size offset from edge of pavement...or
- Soil blow count is at least 30 blows per foot (based on standard penetration tests in area of installation). Must have soil report. The depth of soils information must extend to a depth of 10X the bore or 2' into strata with blow counts of 30+. Minimum exploration depth is 8' regardless of depth satisfactory blow count is achieved. Report must include:
  - Water table depth
  - Blow count information
  - Soil types
- Bore installation must maintain at least 3.5X the bore size clearance from vitrified clay sanitary and all gas lines.
- Is water table an issue? If yes see dewatering requirements on Jack and Bore Checklist.
- Existing sanitary sewer and storm sewer pipes must be videoed prior to and after boring operations in order to assess impact of construction.
- Contractor MUST trail drill stems during any and all back reaming operations.

## **Multiple Bores**

- Minimum Bore Separation is 10' in Department of Transportation R/W.
- Bores sequence must be such that the first bore is successfully completed and pulled back prior to initiating work on the second crossing.

## **Maintenance of Traffic**

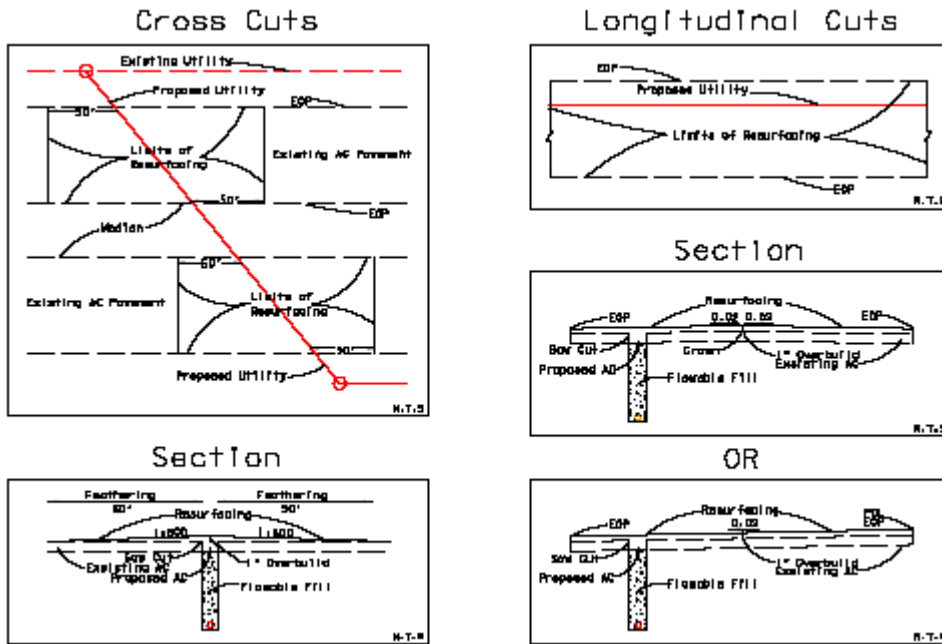
- When a boring or splice pit is to be within the clear recovery zone (reference F.D.O.T. Standard Index 600 sheet 2) steps shall be taken to mitigate the hazard within the work zone. The drop-off must be protected/shielded per F.D.O.T. Standard Index 600 sheet 6. This MOT plan must be signed and sealed by a Professional Engineer registered in the State of Florida.

## Additional Requirements: Overhead

- Plans clearly show the following:
  - Total distance from right of way to right of way
  - Existing aerial utilities, existing pole line and poles
  - Show any/all proposed new poles and/or appurtances
  - Length of individual segments and total length of project.
  - Voltages (electrical only)
  - Placement is as close as possible to right-of-way limits.
  - Placement is outside the path of all underground facilities
- Horizontal Clearance for Light Poles:
  - Rural: 20' from travel lane, 14' from auxiliary lane
  - Urban: 4' to back of curb
  - Sidewalk: Min. unobstructed sidewalk width 32"
- Min. Height Requirements:
  - 18' over roadways (non limited access)
  - 16' on runs parallel to roadway.
  - 24' limited access roadways. L/A crossings should be minimized between interchanges. (5.3.4).
- Maintenance of Traffic Plan.
- In cases where more than 1 UAO proposes an aerial installation on the same side of the roadway, a joint-use arrangement must be pursued by the utility agencies.
- Only single pole lines are permitted on each side of roadway.
- Highmast Lighting: Outside clear zone unless shielded

# Additional Requirements: Open-Cut

- Permittee shall provide written documentation that justifies and explains the need for an open-cut of the Department's roadway. All other options must be shown to be infeasible.
- Include location of proposed utility, dimensions and depth of open-cut.
- Backfill of open-cut shall be per Standard Index 307; Flowable Fill Option (only).
- Pavement design must be submitted with permit; include type and thickness.
- A minimum of 50' on each side of the open-cut will be resurfaced with a compatible friction course mix (in some instances milling will be required prior to resurfacing). See below for typical overlay limits.
- Striping and symbols will be noted on plans and specified for replacement within the overlay area (all striping will be specified as thermoplastic).
- Permittee shall warranty all work for a period of two years.



- An open cut that is proposed within 12 months of the letting of a Department Programmed Resurfacing Project can limit the restoration to the limits of the trench itself; provided a detail is included showing the asphalt being properly "keyed" in.
- Restoration of small utility repairs, subject to the Departments Engineering review, can be limited to the extent of the trench (see previous requirement).

## **Additional Requirements: Attachments to Structures**

General - Generally if any of the following conditions in the bullets listed in below are created by the attachment to a structure, the attachment will not be approved:

- An obvious hazard to the public.
- The integrity of the structure will be affected.
- Inspection and maintenance operations will be unreasonably hindered.
- Aesthetics of structures, that are located in aesthetically sensitive environments, will be adversely affected.

Details of utility attachments including loads, attachment positions, detail dimensions, material type, plans, specifications, and corrosion certification will be submitted by a Professional Structural Engineer, registered in the State of Florida, to the District Structures Design Engineer. These plans and specifications shall be signed and sealed by the engineer, and the information shall be suitable for inclusion in the Florida Bridge Management Inventory System (BMIS) file. Development of construction plans for the accommodation of utilities onto structures to be constructed shall be the responsibility of the Permittee.

Permits for attachments to existing structures shall be reviewed and recommended for approval or denial by the District Structures and Facilities Engineer, and approved by the District Maintenance Engineer or designee. Comments from the District Structures and Facilities Engineer must be coordinated into the design process. The Permittee shall coordinate the plans development process with the District Maintenance Engineer or designee.

Responsibility - The UAO is totally responsible for the design, safety, inspection, and maintenance of its facilities and supporting hardware attached to **FDOT** bridge structures. If the **FDOT** determines that the utility may be accommodated, the Permittee's engineer has the responsibility to determine that the structure will support the utility in addition to other loads, in a safe manner and will not significantly reduce the live load capacity of the bridge. The **FDOT** is the final authority in all disputes that may develop. The UAO is advised to review the Five Year Work Program to determine if an existing bridge will be replaced, rehabilitated, or widened.

Criteria - Where attachments are permitted, the following criteria must be met as conditions of issuing the permit:

- Designs for utility attachments shall be in compliance with all applicable federal, state and local regulations, rules, and codes.
- No construction or maintenance will be accomplished upon a structure without written approval from the District Maintenance Engineer or designee. In emergencies, repairs may proceed after

verbal approval from the District Maintenance Engineer or designee.

- Utilities attached to bridge structures shall maintain a vertical clearance at least equal to that of the structure.
- Attachments onto bridge structures, whose locations are environmentally classified as extremely aggressive, shall have all the metallic portions of the attachment hardware (hangers, bolts, etc.) fabricated from 316 stainless steel or other equal material as determined by the State Corrosion Engineer. A determination as to whether or not a bridge structure is located in an extremely aggressive area can be obtained from the District Materials Engineer.
- Utility cables or conductors shall be encased in conduit so that maintenance can be accomplished from the ends of the structure. Conduits for utilities to be installed on bridges located in extremely aggressive areas shall be fabricated from non-metallic materials or other equal materials as determined by the State Corrosion Engineer.
- All electrical cables two (2) kv and above shall be shielded cable with a concentric neutral grounded at both ends of the bridge.
- Metallic pipes or conduits shall be electrically insulated from the structure by redundant insulators. Metallic pipes or conduits shall be supported by insulating pipe rollers or specifically designed sliding or elastomeric bearings. Insulating pipe rollers (rollers constructed from dielectric material) shall be used, unless the loads will permanently strain the roller material beyond the elastic limit.
- All utilities shall be isolated and insulated from the structure to ensure that corrosion cells do not develop because of the attachment of the utility.
- Utility attachments should be designed to pass through the back wall of the abutment, when practical. Pipe may be routed around the abutment when the abutment back wall design prohibits pass through due to dimensional constraints, thickness, material composition, or reinforcement. The Permittee will consult with the District Maintenance Engineer or designee and the District Structures and Facilities Engineer concerning the **FDOT's** requirements at each site.
- All pressure lines shall have shut-off systems so that the pipe segment at the bridge can be isolated.
- All lines carrying hazardous material (flammable, toxic, or corrosive) shall be designed to be in compliance with the **U.S. Department of Transportation Pipeline Safety Standards, 49 CFR, Part 192 or Part 195**, as applicable, for a class four location. Only steel pipe with welded or flange joints and conforming to API Standards shall be used.

Accommodation of pipes transmitting hazardous materials with line pressures in excess of two hundred fifty (250) psi gage pressure should be reviewed in light of the added safety concerns.

Location - Utilities should be located beneath the cantilever portion of the bridge structure deck overhang. Under no circumstances should any Utility be allowed to attach onto the bridge girders. Locating the utility under the deck overhang is the best location because it minimizes interference with bridge inspection and future girder maintenance.

Materials - All materials and methods to be used for utility conduit, pipe coatings, and concrete repairs shall be approved by the **FDOT's** State Materials Office and in accordance with the site specific requirements of the structure as determined by the District Structures Design Engineer.