

New York State Thruway Authority

General Design and Construction Requirements for Occupancies



Office of Real Property Management

TAP-421A (1/2010)

**SUBMIT PERMIT APPLICATIONS TO THE APPROPRIATE THRUWAY
AUTHORITY DIVISION PERMIT COORDINATOR**

<u>DIVISION</u>	<u>HIGHWAY SECTIONS</u>	<u>DIVISION MILEPOST LIMITS</u>
New York	New York (Main Line) - Garden State Parkway Connection - New England Section - I-287 Cross Westchester	0.00 - 76.50 G.S. 0.00 - G.S. 2.40 N.E. 0.17 - N.E. 15.01 C.W.E. 0.00 - C.W.E. 10.90
Albany	Albany (Main Line) - Berkshire Section	76.50 - 197.90 B. 0.00 - B. 24.28
Syracuse	Syracuse (Main Line)	197.90 - 350.60
Buffalo	Buffalo (Main Line) - Niagara Section	350.60 - 496.00 N. 0.00 - N. 21.50

TELEPHONE NUMBERS AND ADDRESSES

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NOTE: For the Cross Westchester Expressway (I-287), Occupancy Permits are issued by the New York State Department of Transportation and Work Permits are issued by the New York State Thruway Authority.

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I. INTRODUCTION

The General Design and Construction Requirements for Occupancies (TAP-421A) (General Requirements) provides the general construction requirements for any occupancy of Authority Property.

These General Requirements are to be used in conjunction with the guidelines governing the issuance of Permits as set forth in the Occupancy and Work Permit Accommodation Guidelines (TAP-401) and, if applicable, with the guidelines governing Utility occupancies as set forth in the Utility Occupancy Supplement (TAP-401U).

Copies of the most current General Requirements may be obtained from the Division Permit Coordinators or from the Real Property section of the Authority's website (www.nysthruway.gov/realproperty). Information pertaining to or interpretation of the contents of these General Requirements may be obtained by visiting, writing, faxing or telephoning the Authority locations listed on the inside front cover of these General Requirements.

The Authority reserves the right to make changes in, or additions to these General Requirements. Such changes and additions shall become part of any agreement, existing or new Permit and are to be complied with immediately.

In addition to these General Requirements (TAP-421A), there are four additional documents that provide detailed design and construction requirements specific to the type of occupancy:

- Design and Construction Requirements for Underground Crossing of Mainline Pavement and Shoulders (TAP-421B);
- Design and Construction Requirements for Aerial Communication and Power Line Installations (TAP-421UC);
- Design and Construction Requirements for Installations/Crossings on or Attached to Bridge Structures, Bridge Culverts, or Structural Retaining Walls (TAP-421D); and,
- Design and Construction Requirements for Unencased Gas Pipelines (TAP-421UE).

II. DEFINITIONS

When used in these TAP-421 documents (A – E), unless otherwise stated, the following words shall have the following meanings:

AASHTO – the American Association of State Highway and Transportation Officials, located at 444 North Capitol St. N.W., Suite 225, Washington, D.C., 20001. AASHTO continually undertakes studies relating to highway design, use and safety and develops nationally recognized standards relied upon by FHWA and by all state highway agencies. Utility Permittees are encouraged to avail themselves of information published by AASHTO as an aid in developing plans for work on Authority Property.

Aesthetic Quality – those desirable characteristics in the appearance of the highway and its environment, such as harmony between or blending of natural and manufactured objects in the environment, continuity of visual form without distracting interruptions, and simplicity of designs which are desirably functional in shape but without clutter.

Clear Roadside Policy – that policy employed by the Authority to provide a clear zone in order to increase safety, improve traffic operations, and enhance the aesthetic quality of the highway by designing, constructing and maintaining highway roadsides as wide, flat, and rounded as practical and as free as practical from natural or manufactured hazards such as trees, drainage structures, non-yielding sign supports, lighting supports, and utility facilities. It is the policy of the Authority to remove roadside obstacles which are likely to be associated with accident or injury to the Thruway user, or when such obstacles are essential, the Authority will provide for countermeasures to reduce such hazards. Countermeasures may include, but are not limited to, using breakaway features, using impact attenuation devices, or shielding.

Carrier – the pipe that encloses a transmitted commodity.

Casing – the pipe through which the carrier pipe is placed.

Clear Zone – the area adjacent and parallel to a section of traveled way that shall be free of non-traversable hazards and fixed objects as determined by the Authority.

Nationally Recognized Standards – standards accepted by a consensus of those substantially concerned with their scope and provisions. References to nationally recognized standards are not references to any single publication, but to standards nationally adhered to by those in the industry.

Pavement – the driving lane; the traveled way.

Utility Facilities – the lines, facilities and systems for producing, transmitting, or distributing communications, signal, power, electricity, light, heat, gas, oil, crude products, liquid products, water, steam, wastes, storm water not connected with highway drainage, and other similar commodities, including fire and police signal systems, and street lighting systems, which directly or indirectly serve the public or any part thereof.

III. GENERAL CONSTRUCTION REQUIREMENTS

All work to be performed on Authority Property shall require a Work Permit. No construction or modification except that which is specifically authorized by the Work Permit may be made to Authority Property. As outlined in TAP-401, the work authorized by a Permit shall be performed in a professional manner to the satisfaction of the Authority. All work by or for a Permittee shall be done at no expense to the Authority. When the work specified by the Permit is completed, additional construction, modification or work of any kind, and/or reentry to Authority Property shall require a new Work Permit.

Should construction on Authority Property require digging or any type of excavation work, New York State law requires the Permittee to notify the Dig Safely New York program at 1-800-962-7962 so that buried facilities in the area of the proposed construction can be identified and marked. This notification must be at least two (2) full work days (not including the day of the call, weekends or holidays) but not more than ten (10) work days prior to the start of work. For more information on the Dig Safely New York program, go to www.digsafelynewyork.com.

The Permittee shall follow all Authority Rules and Regulations and provide suitable safeguards so as to reduce any dangerous conditions to an absolute minimum. All workers when on foot anywhere on Authority Property shall wear ANSI Z89.1 hardhats and ANSI 107 Performance Class 3 high-visibility safety apparel.

For all construction to be performed on Authority Property, Permittees shall adhere to the following general construction requirements:

A. STATEMENT OF REQUIREMENT

Permit applications shall be accompanied by detailed plans and maps indicating where and in what manner the work will be done. As outlined in TAP-401, if any structure is to be built, engineering design plans of the structure shall also accompany the Application. In most instances, as-built plans, hard copy and electronic, are also required upon completion of the work.

B. PRIOR INSPECTION

Prior to any construction, the Permittee must inspect the property referred to in the Permit application and have knowledge of its condition. Note that inspections not covered by the original Work Permit or annual Work Permit require a separate Work Permit.

C. ACCESS

Access to Authority Property where work is to be performed must be from property adjacent to Authority Property through rights secured by the Permittee from third parties. No access will be allowed by way of Authority Property

unless specifically authorized in writing by the Authority Division Director or designee.

D. ENVIRONMENTAL REQUIREMENTS

The Permittee shall submit to the Division Permit Coordinator an Erosion and Sediment Control Plan for approval prior to the commencement of work. If land disturbance is one (1) acre or greater in size, a Stormwater Pollution Prevention Plan (SWPPP) will need to be developed in accordance with New York State Department of Environmental Conservation's (NYSDEC) General Permit GP-0-08-001 (or current permit in force) and a Notice of Intent (NOI) filed.

The Permittee should obtain and forward to the Division Permit Coordinator copies of any and all required permits from the NYSDEC and the United States Army Corps of Engineers (ACOE) prior to construction. In the event permits are not required, the Permittee shall submit documentation to the Division Permit Coordinator justifying why permits are not required.

The Permittee is required to complete and submit a State Environmental Quality Review Act (SEQRA) Short Environmental Assessment Form (SEAF). The SEAF will be reviewed by the Division Permit Coordinator and a SEQRA determination of next steps will be made based upon known and/or potential environmental impacts associated with the project.

All surplus earth and all debris shall be removed from Authority Property. Spoiling shall comply with all local, state and federal regulations that apply to the area chosen for the spoil material.

Permit applications for construction of liquid or gas pipelines shall include an emergency response plan. The emergency response plan must, at a minimum, identify appropriate protective devices, and shall be subject to approval by the Authority Division Director or designee.

E. EXCAVATION/OBSTRUCTION

There shall be no excavation or obstruction closer than thirty feet (30') to any left or right edge of pavement, unless the excavation or obstruction is protected by an existing guide rail installation or by an installation of temporary concrete barrier which has been constructed to Authority standards (see Section IV. K. below) and as shown in the *Occupancy and Work Permit Specification Diagram: Temporary Concrete Barrier* available from the Division Permit Coordinator. Where existing guide rail installations are used, the excavation or obstruction shall not be placed within the design deflection distance of the type(s) of guide rail (or 8 feet, whichever is the greater) as specified by the Authority.

All excavations which have the potential to impact the support of the Thruway's pavement, embankment, structure or other facility shall be supported with a continuous sheeting system which does not allow adjacent earth movement. All

sheeting shall be installed in accordance with NYSDOT Standard Specifications Section 552. The systems shall be designed to resist earth pressure, hydrostatic pressure, and surcharges from traffic, construction equipment and/or adjacent structures. The system shall also be designed to have an adequate factor of safety against heave or piping. The system shall be internally braced, if necessary and designed by a NYS licensed Professional Engineer. The design of the system, including details of surface and ground water controls, shall be submitted to the Division Permit Coordinator for approval prior to final Permit approval and construction of the excavation. Trench boxes, or other methods of excavation support which allow adjacent earth movements, will not be permitted unless approved by the Division Permit Coordinator in consultation with the Authority's Geotechnical Engineer. Specifications shall be submitted for approval.

The determination of whether an excavation has the potential to impact the support of the pavement, embankment, structure or other facility shall be made by the Authority Division Director or designee.

Drop-off Delineation

Should work result in a drop-off, the delineation and channelization requirements described below shall be used.

A drop-off is an abrupt elevation difference (1 Vertical : 3 Horizontal or steeper) between two adjacent surfaces. Drop-offs commonly occur in work zones as the result of milling, overlays, pavement replacement, excavation, or shoulder reconstruction. A drop-off can occur (1) between or within travel lanes, (2) at the edge of the traveled way or within the shoulder, (3) at the outside edge of shoulder, or (4) beyond the edge of shoulder.

All pavement drop-offs within 10 feet of the traveled way that are not separated from traffic with temporary barrier should be returned to grade within 14 days of the work that produced the drop-off. If subbase material is used to return the surface to grade, it shall be placed, compacted and maintained in a condition suitable for use as a refuge for disabled vehicles and an escape area for emergency use. Except for short repair areas of less than 50 feet, opposite shoulders shall not both be brought to grade using subbase material; at least one shoulder shall be paved.

1. Drop-off Between or Within Travel Lanes

Where a drop-off between travel lanes, or within a travel lane, is ½ inch or greater, one lane adjacent to or containing the drop-off shall be closed so that traffic does not traverse this elevation change. For three- and four-lane sections, the closing of additional lanes may be necessary. The active travel lane(s) shall be channelized in accordance with the Lane Closure Plates. An exception to this is where milling and/or paving operations leave an exposed longitudinal drop-off between lanes of ½ inch to 1 inch, both lanes may

remain open. For these situations, consult the Headquarters Traffic Engineer for temporary traffic control requirements.

2. Drop-off at the Edge of the Traveled Way or Within the Shoulder

A drop-off at the edge of the traveled way or within the shoulder shall be treated as follows:

Figure 2.1 - Traffic Control For Drop-Off At The Edge Of The Traveled Way Or Within The Shoulder

Drop-Off Depth	Conditions	Delineation
≤.75 in.	Pavement edge marking or STARS installed	No additional delineation required
	Pavement edge marking and STARS not installed, see Note a.	Drums, vertical panels, or 36 in. tall cones at 132 ft. spacing offset 4 ft. from the edge of the traveled way
>.75 in. and ≤2 in.	Pavement edge marking installed	No additional delineation required
	Pavement edge marking not installed, see Note b.	Drums, vertical panels, or 36 in. tall cones at 132 ft. spacing placed at the edge of the traveled way
>2 in. and ≤18 in.		Delineate in accordance with Plate 33 – Drop Off Delineation
>18 in.	<50 ft. in length <u>and</u> less than 24 hour duration	Delineate in accordance with “no shoulder” detail on Plate 33
	≥50 ft. in length <u>or</u> longer than 24 hour duration	Temporary concrete barrier required

- Notes:
- a. Pavement edge stripes shall be placed prior to opening the adjacent lane to traffic unless STARS are in place or otherwise approved.
 - b. Pavement edge stripes shall be placed prior to opening the adjacent lane to traffic unless otherwise approved.

When an underdrain is installed adjacent to the traveled way, the trench shall be brought to grade before the adjacent lane is open. The trench shall be maintained to provide a surface level with the traveled way and the adjoining shoulder.

3. Drop-off at the Outside Edge of Shoulder

Provided there is a uniform shoulder surface, with no drop-off in the area between the outside edge of a travel lane and the outside edge of shoulder, drop-offs occurring at the outside edge of shoulder shall be treated as follows:

Figure 3.1 - Traffic Control For Drop-Off At Outside Edge Of Shoulder

Drop-Off Depth	Pavement Edge Marking Or Stars Installed	Shoulder Width	
		<4 feet	≥4 feet
≤2 in.	N/A	a.	a.
>2 in. and ≤4 in.	Yes	a.	a.
	No	b.	b.
>4 in. and ≤18 in.	Yes	c.	b.
	No	c.	c.
>18 in.	N/A	Delineate in accordance with Drop-off > 18 in per “Traffic control for drop-off at the edge of the traveled way or within the shoulder.” See Figure 2.1	

- Notes
- a. No additional delineation required.
 - b. Outside edge of shoulder delineation shall be provided in accordance with the detail on Plate 33.
 - c. The shoulder shall be closed in accordance with the appropriate detail on Plate 33.

4. Drop-Off Beyond the Edge of Shoulder

Provided there is a uniform surface with no drop-off in the area between the outside edge of a travel lane and the outside edge of shoulder, drop-offs occurring beyond the edge of shoulder shall be treated as follows:

Figure 4.1 – Traffic Control For Drop-Off Beyond the Edge Of Shoulder

Drop-Off Depth	≤20 ft. from edge of traveled way	>20 ft. and <30 ft. from edge of traveled way
<4 in.	No additional delineation required	No additional delineation required
≥4 in. and <24 in.	Edge of shoulder delineation shall be provided in accordance with Thruway drawing “Thruway Traffic Plans for Miscellaneous Operations”	No additional delineation required
≥24 in.	Delineate in accordance with Drop-off >18 in. per “Traffic control for drop-off at the edge of the traveled way or within the shoulder.” See Figure 3.1	

Field conditions may require additional delineation not accounted for the preceding section.

In addition to excavation/obstruction regulations established by the Authority, the Permittee shall comply with all other excavation/obstruction rules and regulations established by the Occupational Safety and Health Administration (OSHA) or similar governing agencies.

F. BLASTING

Blasting is not permitted unless it is approved in writing in advance by the Chief Engineer or designee.

All blasting operations on Authority Property shall be performed in accordance with the New York State Department of Transportation (NYSDOT) Standard Specifications and NYSDOT Geotechnical Engineering Manual GEM-22.

In accordance with Section 107.05 of NYSDOT Standard Specifications and NYSDOT GEM-22, and with the additional time of at least four (4) weeks prior to the start of any rock excavations the Permittee's contractor shall submit to the Authority a written plan of the proposed blasting operations on Authority Property. This plan shall include at least all the information required by NYSDOT GEM-22, Procedure for blasting, under A. Submittal of Written Blast Plan, parts 1. Project Designations, 2. Safety and Health, 3. Methods and Procedures. The blast plan shall also include precautionary measures to protect Thruway traffic from falling rock during these operations. "Precautionary measures" shall include a clean up plan where the equipment and procedures are identified for removing fallen rock during the operation. When approved, the procedures set forth in the plan must be adhered to. Changes to the plan must be approved by the Authority prior to implementation.

Further, at least two (2) weeks prior to the start of any rock excavation, the Permittee's Contractor shall, through the Division Permit Coordinator, notify the Chief Engineer of the intent to start work and the Chief Engineer or designee shall schedule a pre-blasting meeting. A pre-blast meeting relative to the method, manner and procedure of blasting operations shall be held with the Engineer-in-Charge, the Contractor, the Blaster, an Authority Engineering Geologist and appropriate Authority and Troop T personnel. Any other agencies, emergency personnel or utilities with facilities or operations that may be affected by the blasting operation should attend this meeting prior to the commencement of drilling and blasting.

Additionally, Permittee's Contractor must notify all gas distributors with facilities located in the work area at least 72 hours prior to conducting any blasting.

G. TRENCHES

During non-working hours and when an excavation/trench is more than thirty feet (30') beyond the left or right edge of pavement, the Permittee shall delineate the excavation/trench by placing orange-colored plastic barrels, ten feet (10') on center, on the side of the excavation/trench that faces oncoming traffic.

Trenches shall be backfilled within two (2) days of the time of opening and in accordance with standards set forth by the Occupational Safety and Health Administration (OSHA), unless written approval to the contrary is received from the Authority Division Director or designee. Temporary fencing, approved by the

Division Director or designee, shall be required to deny access to any site unless the site is considered non-hazardous by the Division Director or designee.

H. RESTORATION

Permittee shall leave the work site in a clean condition, properly graded to conform to the surrounding terrain, and seeded and mulched, in accordance with direction from the Authority Division Director or designee.

In the event the restoration requirement is not complied with, all costs incurred by the Authority to restore the work site to its original condition, acceptable to the Authority Division Director or designee, will be charged to the Permittee and may be cause for immediate revocation of the Permit.

I. MAINTENANCE AND PROTECTION OF TRAFFIC

As outlined in TAP-401, the Permittee shall implement a temporary traffic control plan approved by the Authority to ensure the safe movement of traffic in and around the work site and the safety of the Permittee's workforce.

1. Interference to Traffic

There shall be no interference to Thruway traffic, pavement or shoulders except under conditions specified by the Division Traffic Supervisor.

Permittee shall keep the roadway free of foreign objects such as mud, rocks, timber and other items. Spillage of materials from any vehicle utilized in the Permittee's work must be removed immediately.

2. Stopping of Traffic

Thruway traffic shall never be stopped by the Permittee except in an emergency situation. If traffic must be stopped to facilitate the project, the Permittee shall make the necessary arrangements with the Division Traffic Supervisor at least forty-eight (48) hours in advance of the proposed stoppage.

All costs incurred by the Authority in stopping traffic shall be reimbursed by the Permittee. In some cases, surety deposits and/or performance bonds may be required by the Authority prior to start-up of the proposed project. The Division Permit Coordinator is responsible for determining and coordinating reimbursement for lane closures or traffic stoppages.

3. Traffic Control

If the Thruway pavement or shoulder must be occupied, the Division Traffic Supervisor shall specify whether a mobile traffic pattern or stationary lane closure is to be used. Surety deposits and/or performance bonds will be required prior to start-up of the project if Authority personnel are required at

any time for traffic control purposes. Additional information about surety deposits and/or performance bonds is specified in TAP-401.

The Permittee shall furnish all necessary signs, sign supports, VMS boards, cones, impact attenuator equipped trucks and other traffic control and protection devices for either a mobile traffic pattern or a stationary lane closure.

The Permittee shall furnish all necessary vehicles and flaggers for the traffic control pattern employed, as directed by the Division Traffic Supervisor. Flaggers are not permitted on the Thruway Mainline. However, they may be used on ramps (except high-speed freeway-to-freeway connection ramps), in toll plazas (except highway-speed E-ZPass lanes), and on local highways.

4. Lane Closure

A lane closure will only be permitted during the hours specified by the Division Traffic Supervisor. In the event of a lane closure and upon termination of a lane closure, the Permittee shall immediately notify the Senior Radio Dispatcher on duty in the Thruway Statewide Operation Center (TSOC) at Authority Headquarters by calling (518) 433-4924 or 1-800-842-2233.

5. Parking/Obstructions

There shall be no vehicles parked on Authority Property at any time, except as authorized and specified by the Division Traffic Supervisor.

All self-propelled vehicles and equipment used on the pavement, whether for performing work, transporting other equipment, or establishing temporary traffic control, shall be equipped with rotating amber beacons that are visible from all directions.

Trucks may also be equipped with flashing amber warning lights placed laterally at the outer edges of the vehicle's body, 4 to 8 feet above the pavement and facing the rear of the vehicle.

All vehicles and equipment shall have functioning 4-way flashers (hazard lights) and directional signals.

During work hours, construction materials and/or equipment may occupy a shoulder, but this occupancy is only permitted when the adjacent lane is closed. Shoulder occupancy may be allowed without the adjacent lane closure if authorized in writing by the Division Traffic Supervisor. During non-work hours, no construction materials and/or equipment shall be left on the shoulders or pavement nor shall any construction equipment and/or materials be placed in any manner that will obstruct Authority signs. When equipment and/or materials are not being used, the equipment and/or materials shall be

stored at least thirty (30) feet from the edge of pavement or in a protected area. When stored behind a guide rail, there shall not be any encroachment within the design deflection distance of the type(s) of guide rail, as specified by the Authority.

6. U-Turns

There shall be no U-turns on the Thruway system without written authorization (U-TURN AUTHORIZATION LETTER (TA-68160)) from the Division Traffic Supervisor. This written authorization should be obtained by the Permittee at least forty-eight (48) hours in advance of any proposed U-turns. The authorization will indicate when, where and how U-turns may be made.

J. NOTICE OF JOB SCHEDULE AND FINAL INSPECTION

The Division Director or designee shall be notified at least twenty-four (24) hours prior to the start of work and/or resumption of work after a temporary delay or shut down of work. Permittee must also notify other occupants with facilities in the Work Area prior to starting any work. Permission must be obtained before doing work affecting another occupant's facilities. Further, Permittee must notify, through the Division Permit Coordinator, the Authority's Fiber Optic Coordinator at (518) 436-3143 at least 24 hours prior to commencing work.

Upon completion of the work, the Division Director or designee shall be given prompt written notice in order that the site may be inspected to determine if its condition is satisfactory to the Authority.

K. TEMPORARY CONCRETE BARRIER PROTECTION AT ROADSIDE HAZARDS

As required by this General Requirements document or as directed by the Division Traffic Supervisor, temporary concrete barrier (TCB) protection may be required where work is to be performed, to provide both the Permittee and Thruway traffic with a safe environment. The following provides detailed information and general notes regarding the placement of TCB:

1. The offset from the edge of pavement (traveled way) to the First Full Height Barrier Section (FFHBS) is a function of the flare rate. A 1:20 flare rate (as shown in the *Occupancy and Work Permit Specification Diagram: Temporary Concrete Barrier*) is generally required. However, steep grades beyond the shoulder may require that a flare rate flatter than 1:20 be constructed to facilitate the placement of the TCB on an acceptable grade. Flare rates flatter than 1:20 (i.e., 1:21 or more) shall be considered on a case by case basis, with final approval required by the Division Director or designee, prior to the construction and placement of the TCB.

A minimum twelve foot (12') offset from the edge of pavement to the FFHBS connected to the tapered section is required.

A twenty foot (20') tapered end section must be placed upstream of the FFHBS unless the FFHBS can be buried into an adjacent backslope without violating the 1:10 or flatter grade criteria. Should neither embedment nor the twelve foot (12') offset of the FFHBS be attainable, a properly designed and approved impact attenuator system must be provided at a location immediately upstream of the FFHBS.

If a 1:10 or flatter slope does not exist into the median, it is preferred that the barrier be placed to provide the maximum offset from the edge of pavement, usually 10 feet. An approved attenuator shall be used to terminate the barrier run.

Impact attenuation systems at locations immediately upstream of the FFHBS may also be warranted at the discretion of the Authority Division Director or designee, and placed in any area where a sharp curve, short sight distance, high volume weave, merge or other traffic conflict situations increases the possibility of vehicles departing the pavement.

2. A Hazard (as shown in the *Specification Diagram*) shall be considered as any temporary or permanent feature (e.g., sheet piling, boring pit, construction equipment or materials, headwall, trench, substandard ditch section, etc.), or any portion thereof, that encroaches upon the thirty foot (30') clear zone, measured from the edge of pavement. TCB protection similar to that described above may also be required for hazardous features that exist outside the thirty foot (30') clear zone. Such protection shall be required at the discretion of the Authority Division Director or designee.
3. See New York State Department of Transportation Standard Sheet 619-01 for TCB installation/construction details. No hazardous feature shall exist within two feet (2') of the back face of the TCB unless the criteria of the "Joints and Anchorage Treatments Table" on Standard Sheet 619-01 are adhered to.
4. The foregoing detail/criteria in Section K. shall be utilized only when the TCB will be located more than six and one-half feet (6.5') beyond the currently delineated edge of pavement. The Authority's Bureau of Highway Design shall be contacted for additional criteria when the TCB encroaches upon or is within six and one-half feet (6.5') of the pavement.

IV. DESIGN REQUIREMENTS FOR INSTALLATIONS

A. MINIMUM REQUIREMENTS

Installations over, under, along and on Authority Property shall conform to the requirements of the American Association of State Highway and Transportation Officials (AASHTO), the American Railway Engineering Association (AREA) and the New York State Building Code. In addition, installations over, under, along and on Authority Property shall meet the following requirements, except where amended by the Authority to meet more stringent requirements:

1. Electric Power and Communication Facilities shall conform with the currently applicable National Electrical Safety Code (NESC).
2. Water Lines shall conform with the currently applicable specifications of the American Water Works Association.
3. Pressure Pipelines shall conform with the currently applicable sections of the American National Standards Institute (ANSI) Standard Code for Pressure Piping and applicable industry codes, including:
 - a. Power Piping, ANSI B31.1.0.
 - b. Petroleum Refinery Piping, ANSI B31.3.
 - c. Liquid Petroleum Transportation Piping Systems, ANSI, B31.4.
 - d. Gas Transmission and Distribution Piping Systems, ANSI B31.8.
4. Liquid Petroleum Pipelines shall conform with the currently applicable recommended practice of the American Petroleum Institute (API) for pipeline crossings under railroads and highways.
5. Gas Pipelines shall conform with the rules set forth in Public Service Commission (PSC) codes, Part 255.
6. Fiber Optic Cable shall conform with the standards established by the Authority for traverse and longitudinal occupancies of Fiber Optic facilities.
7. Other Installations shall conform with rules and regulations set forth by applicable governing agencies, as determined by the Authority.
8. All Installations shall conform with all applicable regulatory codes, including, but not limited to, those set forth by the Public Service Commission (PSC), the New York State Department of Environmental Conservation (DEC), the Occupational Safety and Health Administration (OSHA) or similar governing agencies.

9. Installations/Crossings on Bridges and Miscellaneous Structures shall conform to the applicable requirements listed in 1 thru 8 of this Section V. A. and the requirements listed in the Design and Construction Requirements for Installations/Crossings on or Attached to Bridge Structures, Bridge Culverts or Structural Retaining Walls (TAP-421D).

10. All installations shall conform to the Authority's clear roadside policy.

B. MATERIALS

All installations on, over or under Authority Property shall be of durable materials designed for long service life expectancy, so as to require as little routine servicing and maintenance as possible.

C. EXPANSION OF FACILITIES

For new installations or adjustments to existing facilities, provision shall be made for the known or planned expansion of them. The expansion plans shall be developed so as to minimize hazards and interference with traffic when additional overhead or underground lines are installed at some future date.

V. LAND SURVEYS

1. Survey Control Points

- a. Only wooden stakes and markers shall be used for survey control points and driven flush with the ground so as not to interfere with mowing operations.
- b. No survey control points will be permitted within thirty feet (30') of the edge of a traffic lane.
- c. If ties to the edge of a traffic lane or other survey work is required within thirty feet (30') of the edge of a traffic lane, written authorization shall be obtained and the Authority Division Traffic Supervisor shall be notified at least twenty four (24) hours in advance of the survey.

2. Traffic Control

If land surveys require that traffic supervision and/or traffic control be performed by Troop T and/or Authority employees, the Permittee shall be required to submit a surety deposit or to post a performance bond for all anticipated costs to provide the necessary traffic supervision and/or traffic control. Additional information about surety deposits and/or performance bonds is specified in TAP-401. Additional information about traffic control is specified in Section IV. I. 3. of this document.