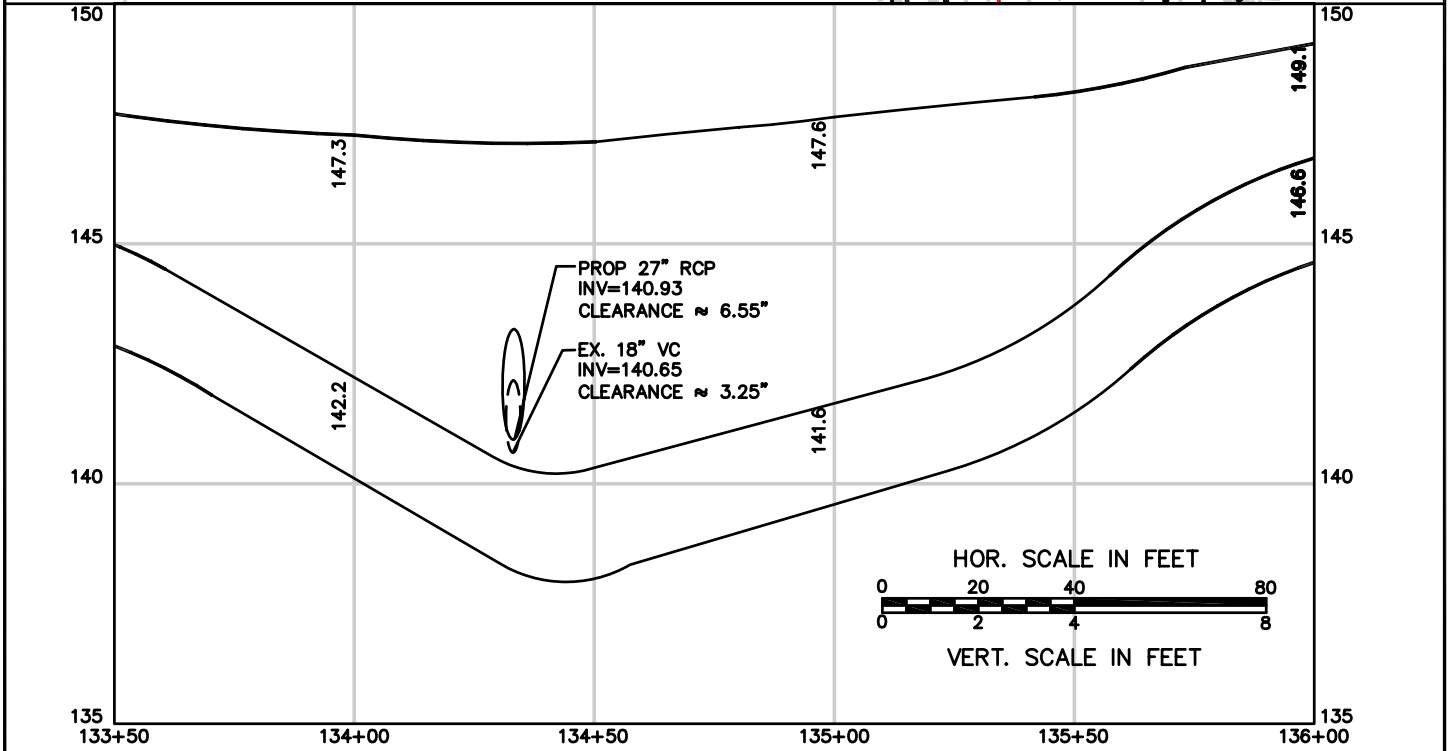
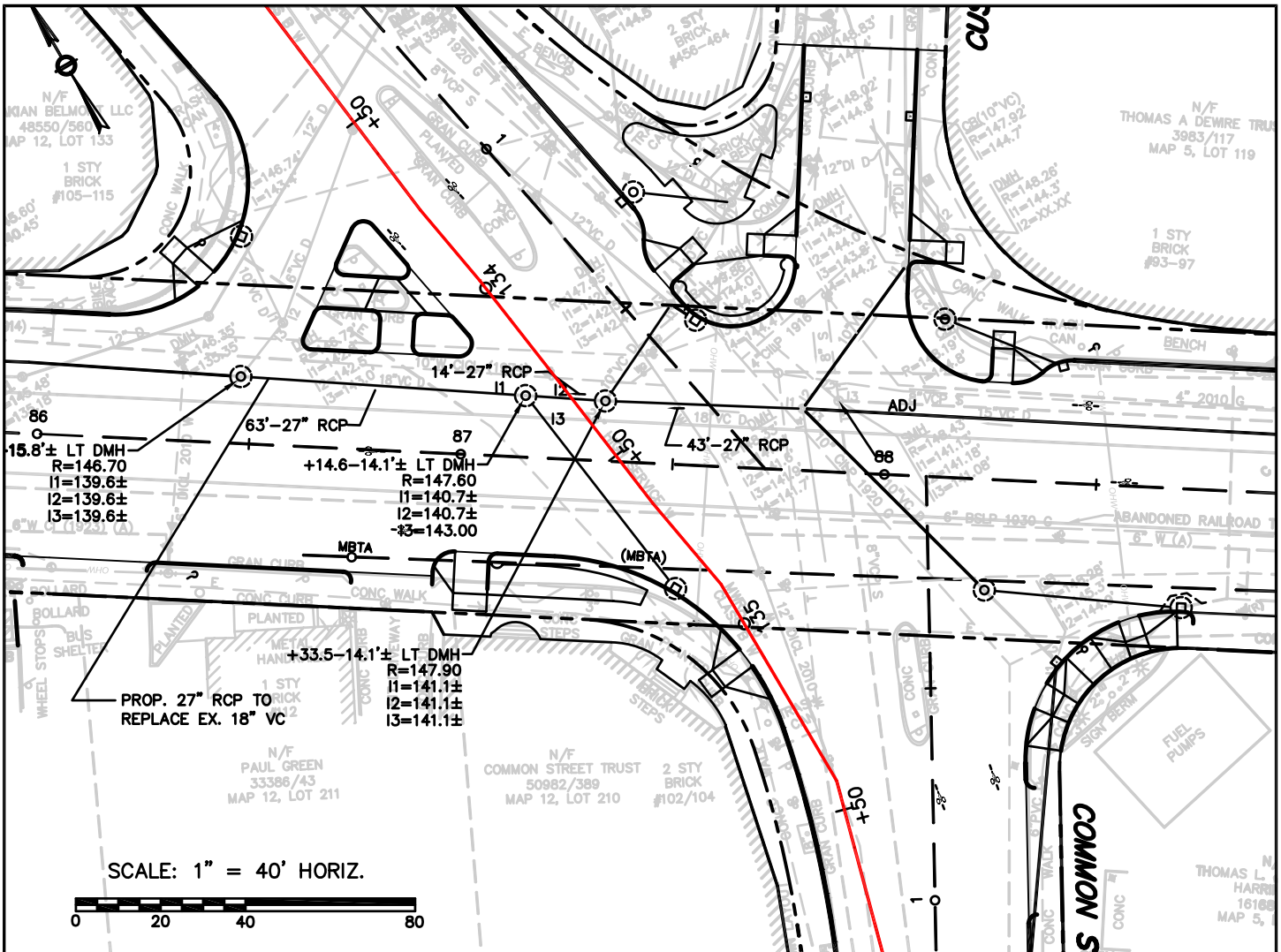


# **APPENDIX**

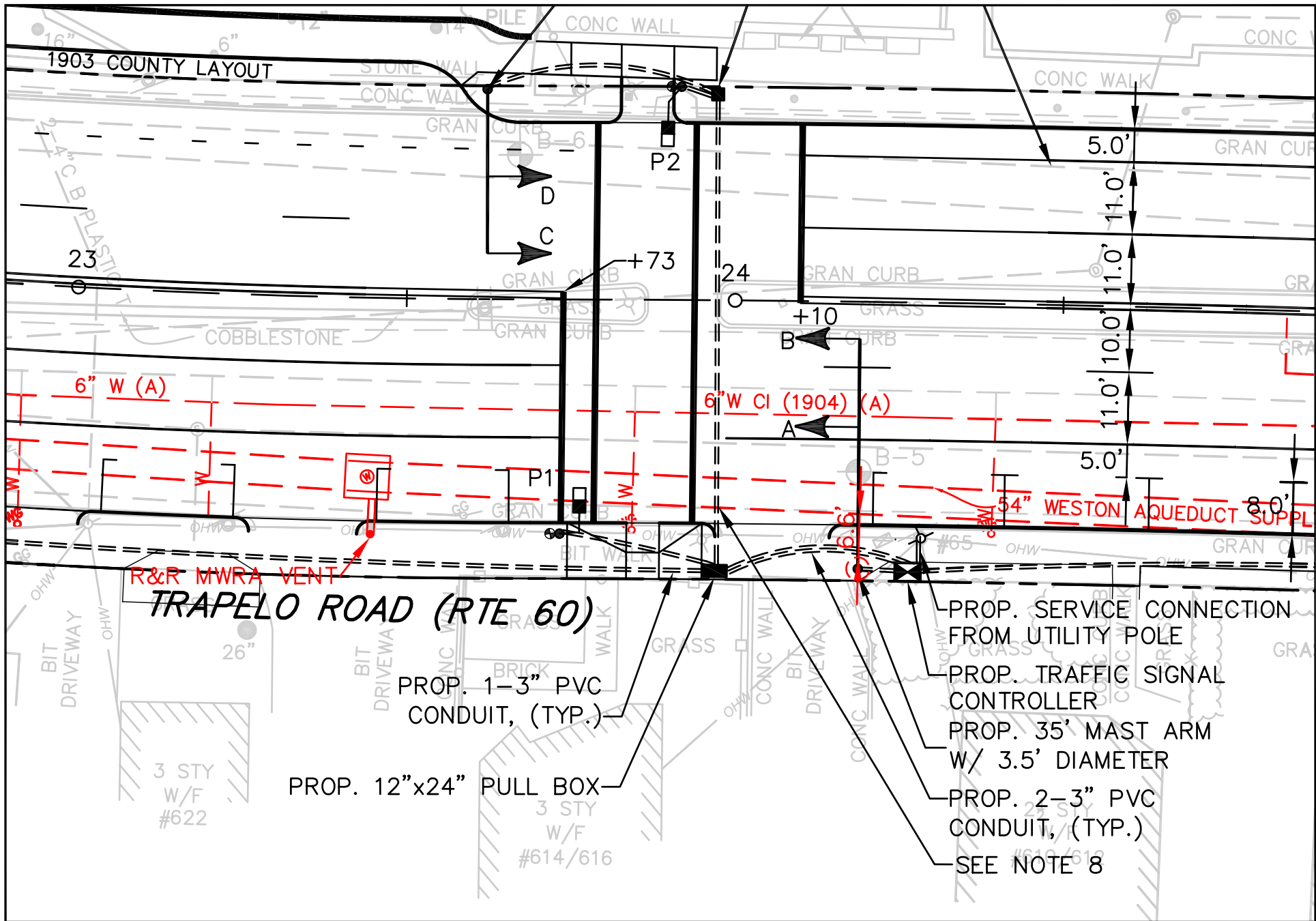
## **ITEMS**

1. MWRA FIGURES
2. 12 X 24 PULL BOX DETAIL
3. GALVANIZED CURB COVER DETAIL
4. MBTA TRANSIT LICENSE
5. P-22H TUBULAR STEEL POLES

# **MWRA FIGURES**



MWRA Water Main - Plan and Profile  
 Trapelo Road & Belmont Street  
 Belmont & Watertown, Massachusetts



**TRAPELO ROAD (RTE 60)**

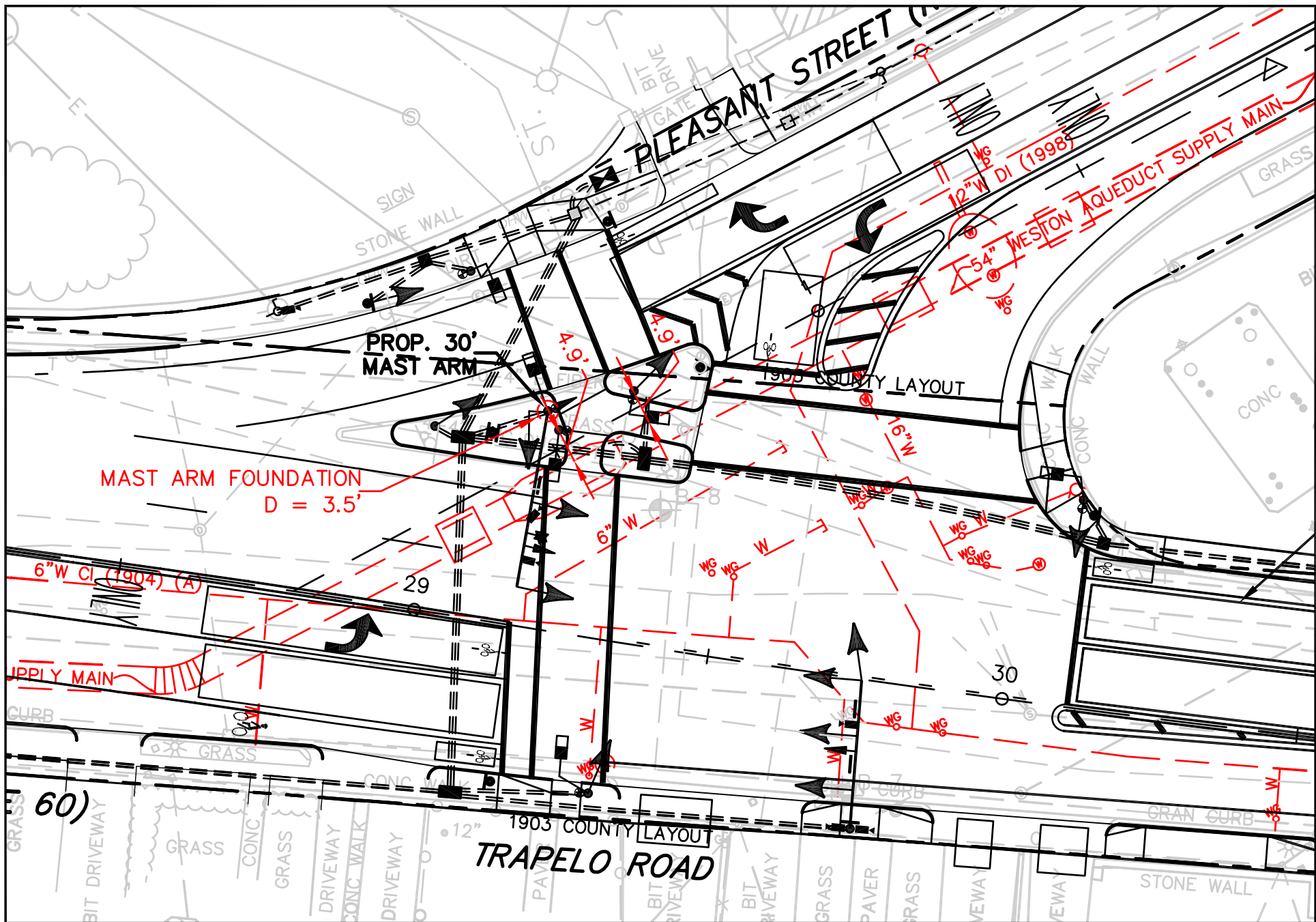
- PROP. 1-3" PVC CONDUIT, (TYP.)
- PROP. 12"x24" PULL BOX

- PROP. SERVICE CONNECTION FROM UTILITY POLE
- PROP. TRAFFIC SIGNAL CONTROLLER
- PROP. 35' MAST ARM W/ 3.5' DIAMETER
- PROP. 2-3" PVC CONDUIT, (TYP.)
- SEE NOTE 8

MWRA Water Main  
 Trapelo Road & Belmont Street  
 Belmont, Massachusetts

Not to Scale





MWRA Water Main  
 Trapelo Road & Belmont Street  
 Belmont, Massachusetts

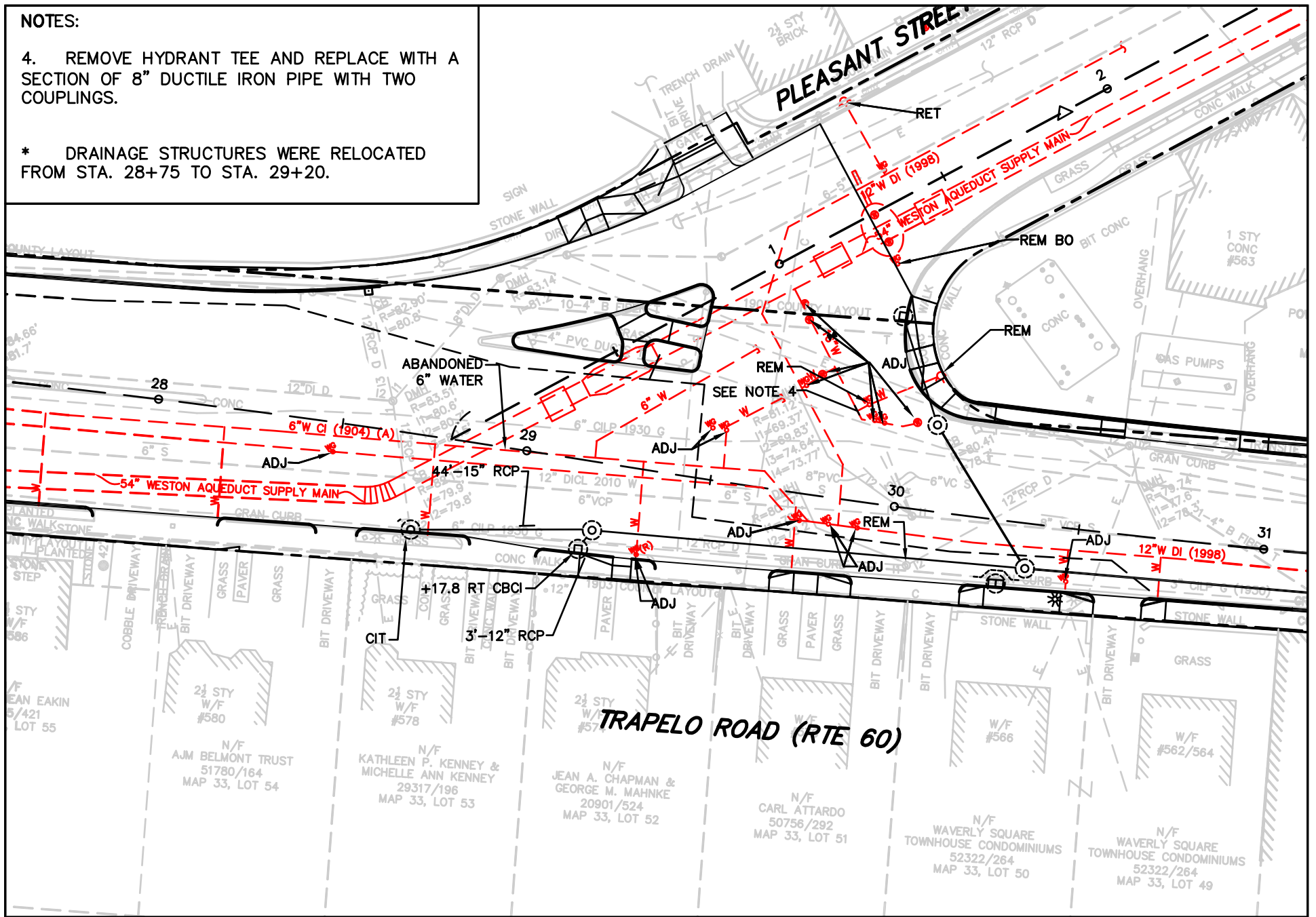
Not to Scale



**NOTES:**

4. REMOVE HYDRANT TEE AND REPLACE WITH A SECTION OF 8" DUCTILE IRON PIPE WITH TWO COUPLINGS.

\* DRAINAGE STRUCTURES WERE RELOCATED FROM STA. 28+75 TO STA. 29+20.



MWRA Water Main  
Trapele Road & Belmont Street  
Belmont, Massachusetts

Not to Scale





**MASSACHUSETTS WATER RESOURCES AUTHORITY  
APPLICATION FOR 8(m) PERMIT**

---

**What is this application and why is it necessary?**

This application, when completed and submitted, requests the MWRA to issue an 8(m) Permit. Section 8(m) of chapter 372 of the Acts of 1984 enables the Authority to issue permits to other entities to build, construct, excavate, or cross within an easement or other property interest held by the Authority.

**How to complete and submit this application?**

Please print legibly in black or dark blue ink or type all responses. Answer all questions: if a question does not apply to your project, write "Not Applicable" or "N/A". Include all necessary documents. Keep a copy of the completed application for your records.

Send a \$100.00 non-refundable check for the administrative processing fee, the original and five (5) copies of the completed application and any other required documents to either:

**Massachusetts Water Resources Authority  
Wastewater 8(m) Permitting Unit  
2 Griffin Way  
Chelsea, MA 02150  
Attn: Kevin McKenna**

Or

**Massachusetts Water Resources Authority  
Waterworks 8(m) Permitting Unit  
2 Griffin Way  
Chelsea, MA 02150  
Attn: Ralph A. Francesconi**

**Permit Process:**

- MWRA staff will review the application to determine if your request can be approved. If MWRA cannot issue the requested permit, you will receive a letter explaining the reasons for denying the request.
- If the permit application is approved, MWRA staff will send you three original 8(m) Permits for your signature. Additionally, a completed 8(m) Permit Assessment Fee Form noting any additional charges beyond the administrative processing fee (if required) will be sent.
- Upon receipt of all signed originals and payment for any additional fees, MWRA will execute the document.
- MWRA will mail the executed documents with a Notice to Proceed.

**Questions and answers:**

For answers to questions about this application and MWRA 8(m) Permits, contact MWRA's Wastewater 8(m) Permitting Unit at (617) 305-5956 or MWRA's Waterworks 8(m) Permitting Unit at (617) 305-5827.

**MASSACHUSETTS WATER RESOURCES AUTHORITY**  
**APPLICATION FOR 8(m) PERMIT**

1. **Applicant**

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Telephone (include area code): \_\_\_\_\_

Fax (include area code): \_\_\_\_\_

2. **Person to contact about this application (if other than the applicant):**

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Telephone (include area code): \_\_\_\_\_

Fax (include area code): \_\_\_\_\_

3. **Location of the proposed work:**

Street Address: \_\_\_\_\_

City/Town: \_\_\_\_\_

MWRA sewer line or waterline, section, nearest manhole: \_\_\_\_\_

Deed Book and Page or Land Court Certificate (if known): \_\_\_\_\_

4. **Brief description of work to be performed:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Approximate Start Date: \_\_\_\_\_ Estimated Completion Date: \_\_\_\_\_



5. **Permits other than MWRA 8(m) Permit that need to be obtained before work can commence:**

---

---

---

Please attach available plans and specifications of work to be performed and any other information that would be helpful in reviewing this application.

6. **Applicant Certification:**

I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Applicant's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Print the name of the person whose signature is above: \_\_\_\_\_

Corporate Title (if any): \_\_\_\_\_

## EXHIBIT A

### CONDITIONS:

1. Permittee's use of the land shall at no time interfere with the Authority's activities or operations on the land. The Authority has the right to review and approve all of the Permittee's work including such plans and specifications as the MWRA deems necessary. Any proposed future development must have the prior written approval of the MWRA, which approval not to be unreasonably withheld.
2. The Permittee and its successors and assigns shall indemnify and hold harmless the Authority and its successors and assigns from all damages and/or claims arising from the acts or omissions of the Permittee on the Premises or of anyone acting by or through the Permittee. The Permittee's obligations under this paragraph shall include reimbursement to the Authority for damage to the Authority's property.
3. The granting of this permit shall in no way interfere with the rights of the Authority to exercise its existing rights in or over the permitted land.
4. Permittee acknowledges that the Authority may enter upon the location at any time in order to carry out the inspection, maintenance, repair, and replacement of its property.
5. The Authority may revoke this permit at any time. The sale or disposition of the Permittee's land terminates this permit.
6. Permittee will give the Authority at least 72 hours notice before commencing the operations as pursuant herein.
7. This permit may not be assigned, conferred or transferred.
8. No blasting, drilling or other activity that could in any way affect the integrity of the Authority's property or use of the Premises shall be permitted without express prior written approval of the Authority.
9. The Permittee shall remove, at its own expense, within six months any or all conduits and appurtenances within the Authority's easement if and at the MWRA's discretion such removal is necessary for the operation, maintenance or replacement of its infrastructure.

## EXHIBIT A

### ADDITIONAL CONDITIONS:

1. Permittee or its designee to provide at least **72-hour** prior notice to the MWRA's Inspection Department, by calling (617) 305-5829 and for **mark-outs and inspection services must call (617) 590-4622**, located at 2 Griffin Way, Chelsea, MA 02150.
2. A minimum vertical clearance of 18 inches shall be maintained between the Authority's water mains and other utility crossings.
3. A minimum of three-(3) feet horizontal clearance is required between adjacent utilities and the side (spring line) of any MWRA main.
4. Crossings of MWRA water mains shall be located a minimum horizontal distance of at least four (4) feet from any joints of the Authority's mains.
5. Proposed pipe/utility crossings of the Authority's water mains shall cross at a 90-degree angle to minimize interference.
6. Distances over four (4) feet of the Authority's mains which are to be undermined, then the method and type of support shall be submitted and stamped by a Professional Engineer (P.E.) licensed in Massachusetts for prior approval by the Authority.
7. Distances under four (4) feet of the Authority's mains which are to be undermined, the on-site MWRA inspector shall review and approved the proposed support of the main. Under no circumstances shall the Authority's main be left in an unsupported, undermined position overnight.
8. During construction, appropriate sheeting measures must be taken to protect the integrity of the Authority's water mains. The sheeting design must be approved by the Authority prior to the start of the construction. The design shall be stamped by a Professional Engineer, licensed in Massachusetts.
9. Replacement (shutdown) of the MWRA's mains shall be coordinated with the Authority. Four-(4) weeks-advanced notice in writing is required for shutdowns.
10. The Permittee or its designee shall contact the Authority three (3) weeks in advance when an MWRA water main valve must be operated. **Only MWRA Personnel Will Operate MWRA Valves.** The Permittee or its designee shall not operate any MWRA valves.
11. Suitable compaction methods shall be employed in restoring the beds of the MWRA's mains.

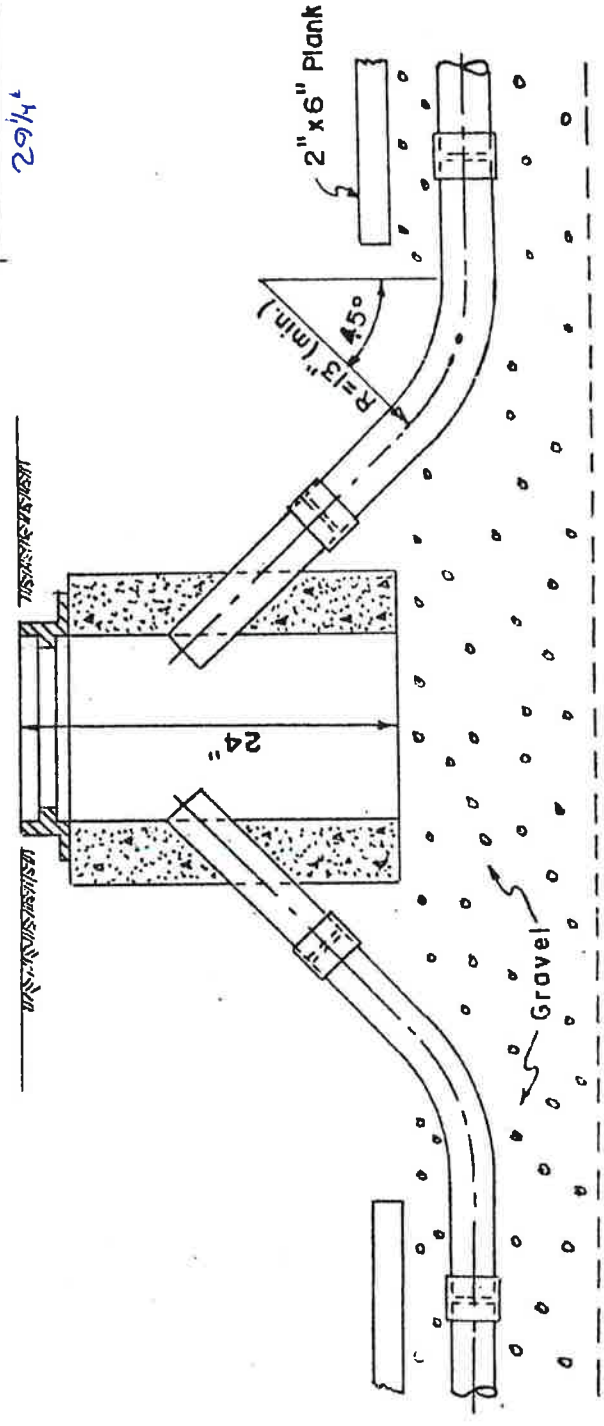
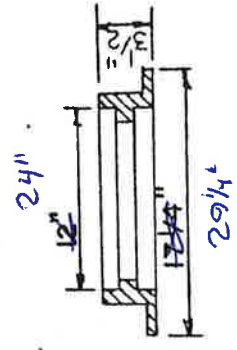
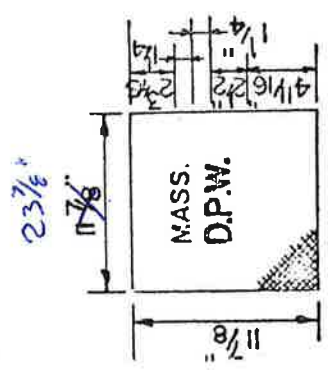
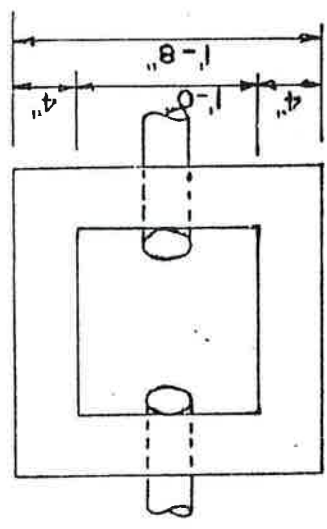
ADDITIONAL CONDITIONS (Cont'd)

12. For test pit excavations or unearthing of the Authority's water main the Permittee must excavate the last 2-feet, before the top of pipe, by hand or use a vacuum boring method.
13. **The contractor will be responsible to protect and correct any damage(s) to the Authority's property or pipeline at no cost to the MWRA.**
14. As-built drawings shall be furnished to the Authority upon the completion of permitted work. A Professional Massachusetts Registered Land Surveyor shall stamp as-built drawings.
15. The Permittee shall indemnify and hold harmless the Authority and its successors and assigns from any and all damages and/or claims for damage to the Permittee's conduits, facilities and/or property as a result of the Authority's operation, maintenance, repair, and/or replacement of Authority property, or as a result of the failure of an Authority water pipe.

# **12 x 24 PULL BOX DETAIL**

12 in. X 12 in. PULL BOX  
24

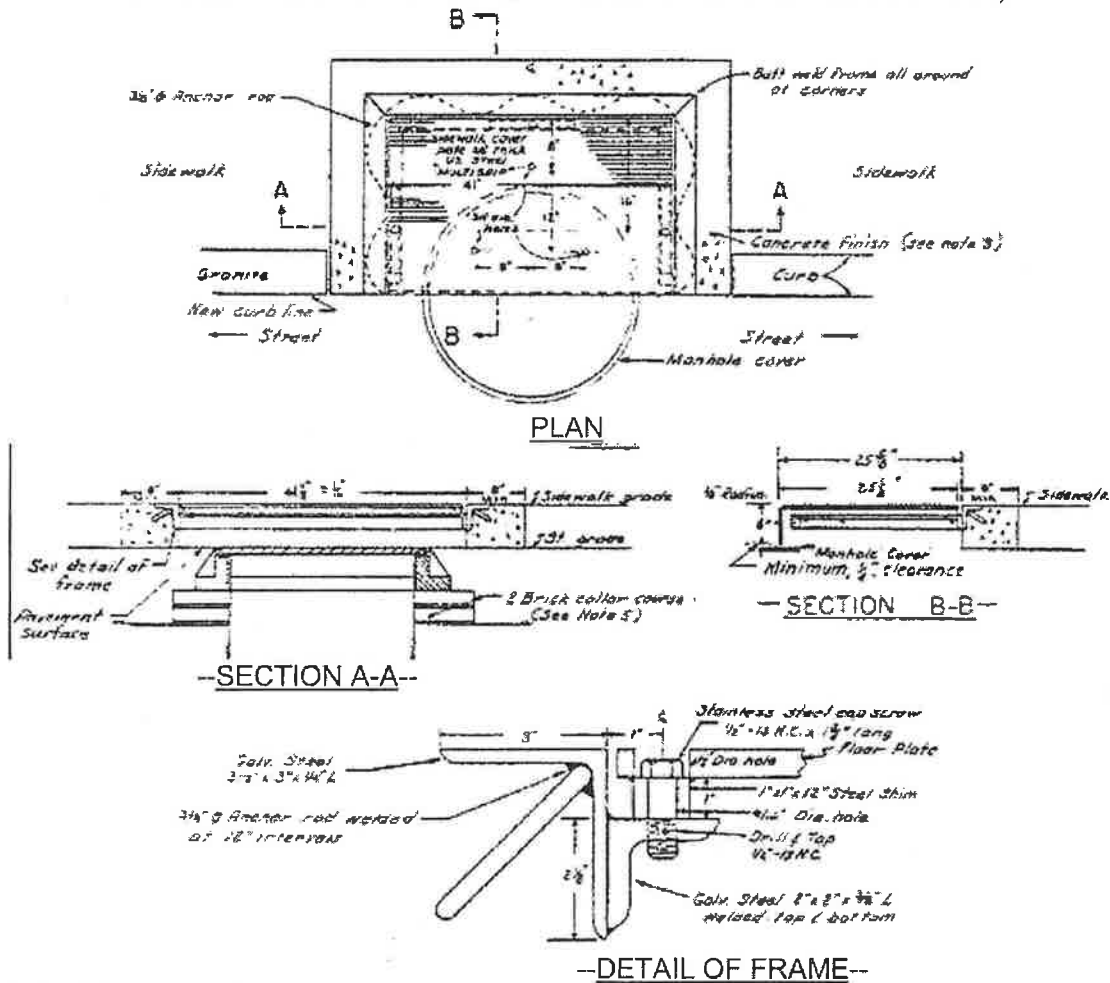
CONSTRUCTION: Either  
Brick or Concrete:



# **GALVANIZED CURB COVER DETAIL**



**DETAIL OF MANHOLE OPENING LOCATED IN CURB  
(TO BE USED ONLY TO AVOID REBUILDING OF EXISTING  
MANHOLE WHEN STREET IS EITHER WIDENED OR NARROWED)**



**NOTES:**

1. Plate section to be galvanized after drilling and welding.
2. Use plate section as a template to spot locations for bolt holes in angles.
3. Fabricate frame from steel L's after welding, remove slag & mill scale and galvanize.
4. If necessary, grade of manhole frame may be adjusted by changing the number of courses in the brick collar or by use of an extension ring set with epoxy resin.

**---BILL OF MATERIAL---**

**CONCRETE** - 1.3 Cubic yards min.

**STEEL**

- 1- 3"x3-1/2"x1/4" L - 8 ft. long
- 1- 2"x2"x3/8" L - 8'-6" long
- 1- 3/8"φ Bar - 10 ft. long anchor rod
- 3- 1/2" - 13 N.C. x 1-3/4" long, stainless steel cap screws
- 3- 1"x1"x12" steel shims galvanized
- 1- 41"x30-1/2" floor plate 3/8" thick. U.S. steel "MULTIGRIP" galvanized

# **MBTA TRANSIT LICENSE**

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

**LICENSE FOR ENTRY MBTA**

**TRANSIT PROPERTIES**

1. **The License**

The Massachusetts Bay Transportation Authority, a body politic and corporate and a political subdivision of the Commonwealth of Massachusetts, established and existing pursuant to Chapter 161A of the Massachusetts General Laws, with a usual place of business at 10 Park Plaza, Boston, Massachusetts (hereinafter referred to as "MBTA"), hereby grants to \_\_\_\_\_, Massachusetts, its employees, consultants and contractors (hereinafter referred to as "LICENSEE"), the right and privilege to enter upon Property of the MBTA located at the \_\_\_\_\_, Massachusetts, as shown on Exhibit A, attached hereto and incorporated herein, (hereinafter referred to as the "Premises") for the purposes described in the Scope of Activity below. Such activity may be conducted only during the Term.

2. **General Conditions**

Among the terms and conditions of this License are included the following General Conditions:

2.1 Date:

2.2 LICENSEE:

2.3 Term: From to

2.4 License Fee: \$ \_\_\_\_\_ for the stated Term of the License

2.5 Administrative Fee: \$ 1,000.00

2.6 Premises: The area located in \_\_\_\_\_, Boston, Massachusetts, as more fully shown in Exhibit A attached hereto.

2.7 Scope of License: LICENSEE shall \_\_\_\_\_ No investigations of any kind may be performed on MBTA owned land. LICENSEE shall have the right to permit its employees, contractors and agents to use the Premises as permitted hereunder and acting by and through the LICENSEE, subject to all of the terms and conditions of this License.

2.8 Notices: **MBTA:**  
Real Estate Department  
Massachusetts Bay Transportation Authority  
10 Park Plaza, Room 5750  
Boston, Massachusetts 02116  
Attn: Assistant General Manager for Development

and

DESIGNATED REPRESENTATIVE:  
Transit Realty Associates, LLC  
77 Franklin Street, 9<sup>th</sup> floor  
Boston, Massachusetts 02110  
Attn: Executive Director

and

\_\_\_\_ Operations Department  
Massachusetts Bay Transportation Authority  
45 High Street  
Boston, Massachusetts 02110  
Attn: Director

**LICENSEE:**

**3. Consideration**

The rights contained in this License are granted for good and valuable consideration, the sufficiency of which is hereby acknowledged.

**4. Terms and Conditions of License**

This License is subject to the following terms and conditions:

**4.1 Scope of Activity**

(a) Scope of Activity

The Scope of Activity is the Scope of License (Section 2.7) as modified by the terms of this License and Exhibit B attached hereto and incorporated herein. The LICENSEE shall minimize the disruption to and alteration of the Premises and, as soon as possible after each entry onto the Premises, shall return the Premises to the condition existing immediately prior to the initiation of the Scope of Activity and entry hereunder.

Except in case of emergency, LICENSEE shall provide at least seven (7) days' prior written notice of its desire to enter the Premises to the MBTA's \_\_\_\_ Department at the address noted above for access. The MBTA may have an observer present at all times when LICENSEE is present on the Premises. See Exhibit B for required notice from LICENSEE when LICENSEE needs access because of an emergency. LICENSEE shall do all work in accordance with the Plan described in Exhibit B.

(b) Utilities

LICENSEE acknowledges that there may be surface and subsurface utilities on and adjacent to the Premises and agrees to exercise extreme caution in performance of the Scope of Activity. LICENSEE shall comply with Massachusetts General Laws, Chapter 82, Section 40 (said statute also known as the "Dig Safe" law) and the regulations promulgated pursuant thereto including but not limited to the Code of Massachusetts Regulations, more particularly, 220 CMR 99.00 et seq. [LICENSEE is

required to give prior written notification of any planned installation of the herein permitted utility to all pre-existing utility licensees of the MBTA if said planned installation will involve digging to within a three foot cylindrical area surrounding the center line of the existing utility conduit. To the extent the MBTA, or parties acting in behalf of either, locate and mark utilities in the rights of way and appurtenant thereto, LICENSEE shall be responsible for payment to such parties for such services which may include, but not be limited to, locating and marking utilities, facilities and appurtenances thereto serving the line(s) or used in connection with services or operations of the MBTA. Any damage to any utilities on or near the Premises caused by LICENSEE shall be the sole responsibility of LICENSEE. If LICENSEE does not immediately repair any utilities it has damaged, the MBTA, without being under any obligation to do so and without waiving the LICENSEE's obligation hereunder, may repair any utilities damaged by the LICENSEE immediately and without notice in case of emergency. In the event the MBTA exercises such right, the LICENSEE shall pay to the MBTA immediately upon demand all of the MBTA's cost of performing such repairs plus a fee equal to twenty-five percent of the MBTA's cost of performing such repairs to reimburse the MBTA for its administrative costs.

(c) Subordination to MBTA's Operating Requirements

The work permitted hereby shall be subordinate to the requirements of the MBTA in maintaining and operating a transportation system and may be stopped or delayed, at any time, in response to each requirement. MBTA shall not be responsible for any damages incurred by LICENSEE as a result of any such work stoppage, delay or required relocation.

(d) Environmental Cooperation

If for any reason LICENSEE is not responsible for Hazardous Materials, defined below, on the Premises then LICENSEE agrees to cooperate with the MBTA in the determination of the party liable for the remediation of the Premises under applicable Federal and/or state law. Such cooperation may include the temporary adjustment of the rights granted to LICENSEE hereunder. The MBTA shall not be responsible for any damages incurred by the LICENSEE as a result of such temporary adjustment. "Hazardous Materials" shall mean "oil" or "hazardous materials", as those terms are defined in Massachusetts General Laws Chapter 21E ("Chapter 21E") and the regulations promulgated pursuant thereto, the Massachusetts Contingency Plan, 310 CMR 40.0000 et seq. (the "MCP").

(e) Remediation Obligation of the LICENSEE

Whenever by law or the terms of this License, LICENSEE is responsible for remediation of Hazardous Materials on MBTA property, LICENSEE, upon written demand of the MBTA, shall conduct, at LICENSEE's sole cost and expense (or, at the MBTA's election, reimburse the MBTA for the cost and expense incurred by the MBTA in connection with the MBTA's conduct of), all response actions required by Chapter 21E and the MCP with respect to the Hazardous Materials (including the hiring of a Licensed Site Professional). Any such response action, if performed by LICENSEE, shall be performed in accordance with Chapter 21E, the MCP, any other applicable statutes and regulations, and in accordance with plans and specifications approved by the MBTA, shall be completed in a timely manner

to the reasonable satisfaction of the MBTA, and shall allow the MBTA to use the Premises, and/or MBTA owned adjacent or contiguous property, for its present use and for any future transportation use. LICENSEE shall also be responsible for the reasonable costs incurred by the MBTA in hiring consultants (including a Licensed Site Professional) to review, supervise and inspect any plans, specifications, proposed method of work, installation, operation and results.

(f) Notice of Project Completion and Record Drawings

Upon completion of its work, LICENSEE shall provide written notice (“Notice of Project Completion”) to the MBTA Subway Department of the date of project completion. . The Notice of Project Completion shall be delivered to:

MBTA \_\_\_\_\_ Department  
45 High Street  
Boston, Massachusetts 02111  
Attn: Director

**4.2 Indemnification and Release of MBTA**

(a) LICENSEE shall indemnify, defend (at the option of the MBTA) and save the MBTA harmless from and against any and all liabilities, losses, damages, costs, expenses (including reasonable attorneys' expenses and fees), causes of action, suits, claims, demands or judgments of any nature whatsoever including, without limitation, those related to Hazardous Materials that may be imposed upon, incurred by, or asserted against the MBTA by reason of any of the following occurrences:

- (1) the activities of the LICENSEE hereunder or the exercise by the LICENSEE of any rights or privileges hereby granted; or
- (2) the presence, discovery or revealing of any pre-existing Hazardous Materials on the Premises (or other property of the MBTA adjacent to the Premises) (i) which discovery is a result of the LICENSEE'S activities hereunder; (ii) where said Hazardous Materials are present because of LICENSEE'S previous occupancies of the Premises, whether those occupancies were unauthorized or permitted pursuant to prior agreements between the parties; or (iii) where those pre-existing Hazardous Materials migrated from land now or previously owned, leased, occupied or operated by the LICENSEE or for which the LICENSEE is a potentially responsible party as defined under Chapter 21E; or
- (3) the placement or accidental release of any Hazardous Materials onto the Premises (or other property of the MBTA adjacent to the Premises) by LICENSEE or its employees, agents, contractors or consultants or by the employees, agents, or consultants of LICENSEE's contractors or subcontractors
- (4) any use, condition or occupation of the Premises or any part thereof by LICENSEE; or

- (5) any failure of LICENSEE to perform or comply with any of the terms hereof, or of any contracts, agreements or restrictions, statutes, laws, ordinances or regulations affecting the activities or any part thereof.

In subsection (2) above, LICENSEE'S previous occupancies of the premises includes occupancies by the predecessors in interest of LICENSEE.

- (b) LICENSEE has inspected the Premises and decided that the Premises are suitable for the uses LICENSEE contemplates. LICENSEE assumes all the risk of entry on to the Premises.
- (c) LICENSEE hereby releases the MBTA from any responsibility for LICENSEE's losses or damages related to the condition of the Premises, and LICENSEE covenants and agrees that it will not assert or bring, nor cause any third-party to assert or bring, any claim, demand, lawsuit or cause of action (whether by way of original claim, cross claim, counterclaim, contribution claim, indemnification claim, third-party claim or any other claim) (hereinafter "Claims") against the MBTA, including, without limitation, claims for response actions, response costs, assessments, containment, removal and remedial costs, governmental oversight charges, including any overhead or response action costs incurred or assessed by DEP, fines or penalties, permit and annual compliance fees, reasonable attorney and expert fees, natural resource damages, property damages, including diminution in property value claims, and personal injury damages and damages related to a person's death relating to, or arising from, the condition of the Premises.

LICENSEE shall obtain a written release of liability similar to the one in this Section 4.2(c) in favor of the MBTA from each of LICENSEE'S consultants and contractors before they enter onto the Premises.

- (d) In clarification of the above release and covenants of defense and indemnification, and not in limitation of them, LICENSEE shall indemnify, defend (at the option of the MBTA) and save the MBTA harmless from and against any and all liabilities, losses, damages, costs, expenses (including reasonable attorneys' expenses and fees), causes of action, suits, claims, demands or judgments related to the injury, illness or death of any employee of LICENSEE or of an employee of LICENSEE'S contractors or consultants; except if the "Claim" arose because of the MBTA's grossly negligent or willful misconduct. It shall not be grossly negligent to allow access to the Premises that are in substantially the condition they were in when LICENSEE inspected the Premises before accepting this License.
- (e) LICENSEE shall be notified, in writing, by the MBTA of the assertion of any claim against it that LICENSEE has agreed to indemnify above (the "Indemnified Claim").
  - (1) If the MBTA decides to itself conduct the defense of an Indemnified Claim against it or to conduct any other response itself, LICENSEE shall



reimburse the MBTA for all costs and expenses (including, without limitation, reasonable attorneys' fees and expenses) incurred by the MBTA in connection with the MBTA's defense of the Indemnified Claim against it and/or the conduct of all response actions, including, without limitation, those required by Chapter 21E and the MCP. The settlement or compromise of any Indemnified Claim shall not include the admission of guilt (or comparable plea), wrongdoing or negligence or the permitting or imposition of civil or criminal penalties or indictments, or the entering of consent decrees or orders of any kind by the MBTA on behalf of the LICENSEE or any other action that would materially prejudice the rights of the LICENSEE without the LICENSEE'S express written approval. The LICENSEE shall cooperate with the MBTA in the defense of any Indemnified Claim.

(2) If the MBTA decides to have LICENSEE defend the Indemnified Claim or handle the response action, the MBTA shall notify LICENSEE of that decision in writing and the LICENSEE shall bear the entire cost thereof and shall have sole control of the defense of any Indemnified Claim and all negotiations for its settlement or compromise provided that the MBTA is fully indemnified by the LICENSEE and provided further that the settlement or compromise shall not include the admission of guilt (or comparable plea), wrongdoing or negligence or the permitting or imposition of civil or criminal penalties or indictments, or the entering of consent decrees or orders of any kind by the LICENSEE on behalf of the MBTA or any other action that would materially prejudice the rights of the MBTA without the MBTA's express written approval. The MBTA shall cooperate with the LICENSEE in the defense of any Indemnified Claim.

(f) If any response action due to the presence of Hazardous Material or the threat of release of Hazardous Waste onto the Premises (or other property of the MBTA which abuts the Premises), is performed by LICENSEE, the response action shall be performed in accordance Section 4.1 (e).

For purposes of this Section 4, the MBTA shall include the MBTA and its directors, officers, employees, agents, successors and assigns.

The provisions of Sections 4.1 and 4.2 shall survive the termination or expiration of this License.

#### **4.3 Insurance**

Prior to entry hereunder, LICENSEE and its consultants and contractors shall provide the MBTA with a certificate or certificates of insurance and shall, during the term hereof, renew and replace any expired certificate, evidencing the insurance of the activities permitted hereunder, and LICENSEE's covenant of indemnification hereinabove, with companies that are reasonably acceptable to the MBTA, as stated below, in which LICENSEE and others hereinafter specified are either additional insureds as their interests may appear or named insureds and which provide minimum liability coverage as follows:

- (a) Commercial General Liability Insurance  
Insuring the LICENSEE, the MBTA, the Premises and all activities allowed hereunder as well as LICENSEE's indemnification obligations contained in Section 4 with minimum liability coverage for personal injury, bodily injury and property damage with limits not less than One Million Dollars (\$1,000,000.00) per occurrence and Three Million Dollars (\$3,000,000.00) in aggregate. Umbrella liability coverage with limits of not less than Five Million Dollars (\$5,000,000.00) covering all work performed must also be provided. Such insurance shall be written on an occurrence basis (as opposed to a claims made basis). These policies shall name the MBTA as an additional insured.
- (b) Worker's Compensation Insurance  
Insuring all persons employed by LICENSEE in connection with any work done on or about the Premises with respect to which claims for death or bodily injury could be asserted against the MBTA or the Premises with limits of liability of not less than those required by Massachusetts General Laws, Chapter 152, as amended. The policy shall contain a clause waiving the right of subrogation in favor of the MBTA. Each of LICENSEE's subcontractors and consultants shall have similar policies covering their employees.
- (c) Automobile Liability Insurance  
Automobile liability insurance with limits of not less than One Million Dollars (\$1,000,000.00) covering all owned, non-owned, hired, rented or leased vehicles of LICENSEE and its consultants and contractors that are used in the activities permitted hereunder.
- (d) Insurance During Construction and Installation

The required insurance coverages hereinbefore specified shall be placed with insurance companies licensed by the Massachusetts Division of Insurance to do business in the Commonwealth of Massachusetts and having a Best's rating of B+ or better, shall be taken out before the License is commenced and be kept in full force and effect throughout the term of this License, shall be primary to and non-contributory to any insurance or self-insurance maintained by the MBTA, and shall require that the MBTA be given at least 30 days advance written notice in the event of any cancellation or materially adverse change in coverage. All such required insurance shall be written on an occurrence basis form, as opposed to a claim made basis form. The MBTA shall be named as an additional insured under the Commercial General Liability, Automobile Liability, Umbrella Insurance Policies. The Workers' Compensation and Employers' Liability Insurance Policies shall include a waiver of subrogation in favor of the MBTA which clause precludes these insurers from being able to make any subrogation claims against the MBTA. All such insurance as is required of the LICENSEE shall be provided by or on behalf of all subcontractors to cover their operations performed. The LICENSEE shall be held responsible for any modifications, deviations or omissions in the compliance with these requirements by its subcontractors. At the inception date of the License and throughout the term of the License, the MBTA shall be provided with certificates of insurance evidencing that such insurance policies are in place and provide coverage as required.

ALL CERTIFICATES OF INSURANCE PERTAINING TO THIS REQUEST (AS WELL AS RENEWAL CERTIFICATES) SHOULD DESCRIBE THE SITE THAT IS COVERED.

**4.4 Compliance with Laws**

LICENSEE shall comply with, and shall cause all work performed to comply with all Federal, state, county, municipal and other governmental statutes, laws, rules, orders, regulations and ordinances.

LICENSEE shall also be responsible for obtaining any and all Federal, state, and/or local permits and/or approvals necessary to carry out the activities permitted hereunder.

**4.5 Non-Exclusive Use**

The MBTA makes no representations or warranty, express or implied, that the LICENSEE shall have sole or exclusive use of the Premises under this License. In the event other agreements, licenses or easements have been or are granted, the LICENSEE shall be responsible for coordinating its work and activities with that of other licensees and parties in interest. The MBTA shall not be liable for delays, obstructions, or like occurrences affecting the LICENSEE, arising out of the work of the MBTA or other licensees or parties in interest.

LICENSEE'S rights herein are granted subject to easements and rights of record and existing leases and licenses.

**4.6 No Warranty**

LICENSEE accepts the Premises "As Is" and the MBTA makes no warranty, express or implied, as to the condition of the Premises.

**4.7 Termination**

At the termination of this License for Entry, LICENSEE agrees to restore the Premises to the condition it was in at the commencement of the term hereof (except for any installation explicitly permitted to remain herein), and to remove all of LICENSEE'S personal property and debris from the Premises. Should LICENSEE not perform such restoration at the end of the Term, the MBTA may perform any and all necessary restoration at the sole expense of the LICENSEE. Any personal property not so removed shall, at the option of the MBTA, either become the property of the MBTA or be removed by the MBTA and disposed of without any liability in the MBTA for such removal and disposition, all at the sole expense of LICENSEE.

**4.8 Assignment**

LICENSEE shall not, without the prior written consent of the MBTA, transfer or assign this License or any part hereof. Such consent may be withheld in the sole discretion of the MBTA.

**5. Notices**

All notices, demands, requests, consents, approvals and other instruments required or permitted to be given pursuant to the terms hereof (hereinafter "Notice"), shall be in writing and shall be deemed to have been properly given when delivered by a nationally recognized overnight mail service to the correct addressee described in Section 2.8., or when delivered by Facsimile Machine (FAX). Notice shall be deemed received when actually received or when the proffered Notice has

been refused by the Addressee, or, when delivered by FAX, when the sender has received a "Successful Transmission" Notice. The signature of an employee, servant or agent of the Addressee shall be determinative on the issue of actual receipt.

LICENSEE and the MBTA shall, at any time and from time to time, have the right to specify as their proper addresses for purposes of this License any other address or addresses giving fifteen (15) days' written notice thereof to the other party.

**6. Results**

If this License explicitly allows LICENSEE to conduct certain investigations on MBTA owned land, then if asked to do so by the MBTA in writing, the LICENSEE agrees to provide to the MBTA, at no cost, a copy of the results of such investigations (including data and analysis) and all other work conducted under this License in both hard copy form and in a digital format specified by the MBTA regardless of whether the report was prepared by LICENSEE, its agent, consultant or contractor, or prepared on behalf of the LICENSEE. All results and reports shall be provided to the MBTA within ten (10) days of receipt by LICENSEE of such written request. LICENSEE agrees to consult with the MBTA prior to contacting any governmental entity, regarding any information, results of analysis or reports regarding the Premises. LICENSEE shall give the MBTA a copy of any reports or notifications, including but not limited to release notifications, prior to submitting the same to any governmental entity.

**7. Default and Termination**

(a) Termination for Non-Payment

In the event that LICENSEE shall neglect or fail to pay the License Fee, Administrative Fee or any other sum herein specified to be paid upon the due date hereunder, LICENSEE shall be in default and the MBTA shall have the right at any time thereafter to terminate this License by giving LICENSEE two (2) weeks written notice of the MBTA's decision to terminate for non-payment ("Termination Notice"). LICENSEE shall not be entitled to cure any such default by tendering payment after the expiration of the two (2) week grace period which starts upon LICENSEE's, or LICENSEE's servants, agents or employee's, receipt of (or refusal to accept) the MBTA's Termination Notice. Any amount due hereunder that is not paid when due shall bear interest at the rate of six percent (6%) above the prime rate then being charged by Bank of America.

(b) Default of Terms and Conditions

LICENSEE shall also be in default if LICENSEE:

- (1) fails to perform or observe any of the other covenants or agreements contained in this instrument and on its part to be performed or observed, or
- (2) makes any assignment for the benefit of creditors or files petition for relief under bankruptcy law, or
- (3) has a bankruptcy petition filed against it that is not dismissed within sixty (60) days, or
- (4) has its estate taken by process of law, proceeding in bankruptcy or insolvency or otherwise,

and if such defaults continue after two (2) weeks' written notice given by the MBTA to LICENSEE to cure, the MBTA may terminate this License by written notice to LICENSEE and/or deny access to the Premises and expel LICENSEE and those claiming through or under LICENSEE and remove LICENSEE'S effects from the Premises without prejudice to any remedies which might otherwise be available for such breach of covenant, and, upon entry as aforesaid, the rights of LICENSEE created by this License shall terminate. Notwithstanding the preceding, if LICENSEE begins to cure a default as soon as possible within said two week period and thereafter continues to pursue a cure with all due diligence, then the MBTA shall not terminate this License until and unless LICENSEE ceases to pursue a cure with all due diligence and has not in fact cured said default. LICENSEE agrees to pay any expense including reasonable attorneys' fees incurred by the MBTA in enforcing any of LICENSEE'S obligations hereunder.

Notwithstanding the preceding, if the default is one that threatens the safety of the public or the ability of the MBTA to operate its transit system, then it shall be considered an Emergency Default and if LICENSEE does not effect an immediate cure, the MBTA may terminate the License upon reasonable notice and use self help at the expense of LICENSEE and LICENSEE shall be responsible for such expenses as well as for a twenty five percent (25%) administrative fee above the expenses.

In the event this License is terminated pursuant to this Paragraph 7, the MBTA shall retain the License Fee as partial damages, without prejudice to its right to claim additional damages as a result of the breach.

**8. Holding Over**

If LICENSEE desires to continue the work defined in the Scope of Activity after the termination of this License, the resulting License shall be on a month-to-month basis and may be terminated by either party at any time by providing the other party with thirty (30) days prior written notice of termination. During the extended term, a monthly fee equal to three (3) times the equivalent monthly License Fee (calculated based on the length of the original term and the original License Fee established hereunder) shall be paid monthly in advance by LICENSEE to the MBTA. During such extended term, LICENSEE shall be bound by all applicable provisions of this License.

**9. Work in Harmony**

LICENSEE agrees that in any work performed in or about the Premises, it will employ only labor which can work in harmony with all elements of labor being employed by the MBTA.

**10. Promotional Material**

LICENSEE shall not, without the prior written approval of the MBTA, refer to the MBTA in any promotional matter or material, including, but not limited to advertising, letterheads, bills, invoices and brochures.

**11. Nondiscrimination**

With respect to its exercise of all rights and privileges herein granted, LICENSEE shall undertake affirmative action as required by Federal and state laws, rules and regulations pertinent to Civil Rights and Equal Opportunity unless otherwise exempted therefrom. LICENSEE agrees that it shall comply with any and all required affirmative action plans submitted pursuant to the directives of

any Federal agency and in accordance with applicable Federal Law and applicable state laws, rules and regulations.

LICENSEE shall not discriminate against any person, employee or applicant for employment because of race, color, creed, national origin, age, sex, sexual orientation, disability or Vietnam era veteran status in its activities at the Premises, including without limitation, the hiring and discharging of employees, the provision or use of services and the selection of suppliers, contractors, or subcontractors.

Consistent with the law, LICENSEE shall use reasonable efforts to contact, encourage and utilize minority and female business enterprises in the procurement of materials and service under this License.

**12. Taxes**

LICENSEE shall be solely responsible for the payment of any taxes, levies, betterments or assessments, fees or charges, whether in existence on the date hereof or becoming applicable during the Term, which may be assessed against LICENSEE or the MBTA which are directly attributable to LICENSEE'S installations in, or use of, the Premises, or any personal property or fixtures of LICENSEE located thereon (collectively referred to as "Taxes"). LICENSEE shall pay all Taxes directly to the taxing authority before delinquency and before any fine, interest, or penalty shall become due or be imposed by operation of law for their nonpayment. Such payments shall constitute an additional License Fee hereunder.

LICENSEE may contest, in good faith for its own account and at its own expense, the validity or amount of any Taxes, provided LICENSEE shall indemnify the MBTA against any resulting loss, cost and expense. LICENSEE shall not permit a lien or encumbrance on the Premises by reason of failure to pay any Taxes.

**13. No Third Party Beneficiaries**

This License shall not be construed to create any third party beneficiary rights in favor of any other parties or any right or privilege for the benefit of any other parties.

**14. Entire Agreement**

This License contains the entire agreement of the parties hereto with respect to the subject matter hereof, and no representations, inducements, promises, or agreements, oral or otherwise, between the parties hereto with respect to the subject matter hereof not embodied herein shall be of any force or effect.

**15. Governing Law**

This License shall be construed and interpreted under and pursuant to the laws of the Commonwealth of Massachusetts, and the Massachusetts and Federal conflict of laws provisions shall not be applied if the result is that other than Massachusetts law shall govern.

**16. Successors and Assigns**

The provisions of this License shall be binding on and inure to the benefit of the parties hereto and their respective successors and assigns.

**17. Limitation On Damages**

The MBTA shall not be liable to LICENSEE for any loss of business or any indirect, incidental, special, consequential or exemplary damages or lost profits unless specified herein.

- 18. No Waiver** No failure by Licensor to insist upon strict performance of any term, covenant or condition hereof, or to exercise any right or remedy consequent upon a breach thereof shall constitute a waiver of any such breach or of any such term, covenant or condition. The acceptance by Licensor of any amount less than the full amount due to Licensor hereunder shall not be deemed a waiver by Licensor of its right to collect the full amount due. Licensor may deposit checks or drafts that state "final payment", "payment in full" or the like without being deemed to have waived its right to receive all amounts due hereunder. Any waiver by Licensor of any term, covenant or condition hereof shall not be effective unless such waiver is in writing.

IN WITNESS WHEREOF, the parties hereto have caused this License to be executed this \_\_\_\_\_ day of \_\_\_\_\_.

**MASSACHUSETTS BAY  
TRANSPORTATION AUTHORITY**

**LICENSEE:**

By: \_\_\_\_\_

By: \_\_\_\_\_

Mark E. Boyle

Printed Name: \_\_\_\_\_

Assistant General Manager for Development

Title: \_\_\_\_\_



**EXHIBIT A**  
**PLAN OF PROPERTY**

## EXHIBIT B

### SCOPE OF ACTIVITY

Subject to the terms and conditions in this License, the LICENSEE, its agents, employees, contractors, subcontractors, and/or representatives are hereby granted a license to enter upon the Premises for the sole purpose of installing \_\_\_\_\_ on the Premises.

LICENSEE shall install one new particle separator and fittings in a safe manner and immediately notify the MBTA if any problem occurs which may result in a safety hazard. If any unsafe situation should occur, LICENSEE will correct the situation by eliminating any safety hazard immediately or, if the situation cannot be reasonably cured immediately, then in such longer time as is reasonably required, and in all such unsafe situations, MBTA Bus Operations Safety Procedures shall be followed.

LICENSEE shall submit a plan and detailed specifications (including the materials to be used and the proposed methods of performing the work), or any part thereof (the "Plan") to the MBTA. LICENSEE shall not enter the Premises until the Plan has been approved by the MBTA. Such approval may be withheld in the MBTA's sole discretion. The Scope of Activity for said construction, installation, maintenance, operation and/or replacement will be more fully defined in the approved Plan, which approved Plan will automatically be incorporated herein by reference and made part of this License. The LICENSEE shall also provide the MBTA with a detailed schedule of times when LICENSEE, its employees, contractors, subcontractors, or agents would like to be on the Premises to undertake the Scope of Activity (the "Access Plan"). The MBTA shall have full power to make a final determination of when LICENSEE may be on the Premises as it is necessary to coordinate the work of all those desiring or having the right to access the Premises.

Unless entry is made pursuant to an Access Plan approved by the MBTA, LICENSEE agrees to give, each time it desires entry, at least seven (7) days' prior written notification to the MBTA (except in cases of emergency when notice shall be given to the MBTA as quickly as possible) of its need to access the Premises for all work to be performed under this License by contacting Jim Monahan, bus Operations at 617-222- 4741. LICENSEE understands that the more notice given to the MBTA the more likely it will be that LICENSEE can gain access at the times requested. **LICENSEE shall present evidence of the required insurance coverage before each entry. In the case of an emergency, LICENSEE shall as soon as possible contact the MBTA Control Center at 617-222-5278.**

No activities permitted herein may be performed by LICENSEE except as approved in writing by the MBTA; and no method of testing, installation or construction shall be used by LICENSEE except with prior written approvals or written approvals received in the field from the MBTA's representatives at the time the work is performed.

If at any time during the work of installation or connection, the MBTA should, in its sole and absolute discretion, deem flagmen, watchmen, communications/signaling personnel, electric traction personnel, inspectors assigned to construction crews, and/or other measures, including but not limited to train re-routing, desirable or necessary to protect its operations, its property or its employees or other persons on or near the Premises, the MBTA shall upon notice to LICENSEE (where such notice is feasible) have the right to place such personnel, including personnel of the MBTA's agents or to take such measures, at the sole cost and expense of LICENSEE. Such cost and expense shall include the current wages and fringe benefits due and owing to such personnel in and for the performance of such measures. LICENSEE hereby covenants and agrees to bear the full cost and expense thereof and to reimburse the

MBTA within thirty (30) days of receiving an itemized, written invoice for such reimbursement. The MBTA's failure to furnish such personnel or take such measures shall not relieve LICENSEE of any obligation or liability it might otherwise have assumed, and shall not give rise to any liability to LICENSEE on the part of the MBTA. Upon being notified that the personnel or measures referred to in the first sentence of this Paragraph have been deemed desirable or necessary by the MBTA, LICENSEE shall not commence or continue construction or repair measures, as the case may be, unless and until such personnel or measures are in place.

If LICENSEE shall deem any requirement for flagging or the like by the MBTA or one of their agents for supervision of the activity hereunder as unreasonable, LICENSEE shall nevertheless pay for such flagging and the like, but may take exception in writing thereto as an unreasonable requirement in each instance. The parties agree to review such exceptions at the times of billings for such services and attempt to adjust them as the MBTA may deem appropriate. This reimbursement is in addition to the License Fee and Administrative Fee required hereunder.

LICENSEE shall comply with applicable "MBTA Special Instructions" dated April 2003. To the extent that there is an irreconcilable conflict between the aforementioned requirements and this License, the terms and conditions contained in the "MBTA Special Instructions" shall control unless the requirements in this License are stricter.

# **P-22H TUBULAR STEEL POLES**

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

SPECIFICATION P-22

Revision: H

Tubular Steel Poles

Date: October 2003

-----  
Thomas F. O'Hara, Jr.  
Power Division Engineer

-----  
Frederick M. Rooney, Jr.  
Superintendent of  
Transmission and Distribution

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY SUBWAY OPERATIONS POWER DIVISION	SPECIFICATION P- 22 Rev H	ISSUE A	PAGE 1 of 7
File: T:\T&D\COMMON\SPECS\P-22-RevH.doc			

## **SPECIFICATION P-22: Tubular Steel Poles**

### **1. GENERAL**

- 1.1 These specifications outline the criteria for fabrication of sectional tubular steel poles for electric line construction. Poles shall conform to the specifications of the American Transit Engineering Association (A.T.E.A.) except as described herein.
- 1.2 The required loads for permanent set and maximum deflection are based on the unsleeved pole fixed for six feet (6') from its butt-end and subjected as a cantilever to the load in Table No.1 applied eighteen inches (18") from the top of the pole at right angles to its longitudinal axis. Required characteristics are based on a maximum fibre stress of fifty thousand pounds (50,000 lbs.) per square inch minus ten percent (10%) for manufacturing variations.
- 1.3 Maximum deflection of pole for deflection load shall be as specified in Table No.1. It shall not be less than three percent (3%) of the height above the ground line of the applied load eighteen inches (18") from the top of the pole. Deflections shall be determined by the method outlined in Table No.2.
- 1.4 All poles shall be made of three (3) pipe sections connected and attached to form an assembled pole as described herein. They shall be of the embedded type unless specifically ordered as anchor base poles.

### **2. MATERIALS**

- 2.1 Material used for pole construction shall be seamless steel pipe (of Steel type Fe510) conforming to ASTM Grade B A53 or equivalent with a minimum tensile strength of 50,000 PSI at yield.
- 2.2 Pipe shall be straight and true without camber. The surface shall be smooth without defects, scale or corrosion of any kind.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY SUBWAY OPERATIONS POWER DIVISION	SPECIFICATION P- 22 Rev H	ISSUE A	PAGE 2 of 7
File: T:\T&D\COMMON\SPECS\P-22-RevH.doc			

### 3. FABRICATION

- 3.1 Each pole shall be made of three (3) pipe sections, namely: "Butt", "Middle", and "Top". Each section shall be inserted into the adjoining section via method utilizing inductive heating, rotation under flame and submerged (powder) welding.
- 3.2 The sections shall be inserted into the adjoining section a minimum of 7.87 inches (200mm).
- 3.3 The larger diameter of any two pipe sections shall have three (3) tapered steel wedges submerged (powder) welded inside it at a distance of 7.87 inches (200mm) from the end of the pipe and shall be spaced equally one hundred and twenty (120) degrees apart. The wedges shall be 100mm in length and be positioned in such a way that the smaller diameter pipe when pressed inside the wedges of the larger diameter pipe forms a permanent connection.
- 3.4 The larger diameter pipe shall have the end of it (to which the smaller diameter pipe is inserted) inductively-heated (not to exceed the yield temperature of the steel), then rolled and formed so that the opening of the end matches the outside diameter of the smaller pipe. The resulting connection shall then be circumferentially welded under submerged (powder) welding process. The welding bead shall be substantial with no spaces or gaps so that a permanent connection is formed and water can be properly shed.

### 4. GROUND SLEEVES

- 4.1 Each pole shall have attached to it a steel ground sleeve twenty-four inches (24") long of not less than three-eighths inch (3/8") nominal thickness. It shall be fillet-welded top and bottom around the circumference to prevent water from getting inside the sleeve. It shall be located on the pole a distance from the butt-end as specified in Table No.1

### 5. ANCHOR POLES

- 5.1 Anchor poles will conform in all aspects to Table No.1 except that the length of the pole will be the overall length minus the ground line distance from the pole bottom. For example: a No.4 anchor pole will have an overall length of twenty-six feet (26'). Ground sleeves will not be included.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY SUBWAY OPERATIONS POWER DIVISION	SPECIFICATION P-22 Rev H	ISSUE A	PAGE 3 of 7
File: T:\T&D\COMMON\SPECS\P-22-RevH.doc			



- 5.2 Attached by welding to the bottom of the pole will be a base plate. It shall be made from steel the same strength as the pole. Strength calculation of the base plate and anchor bolts shall be performed by the supplier of the poles. General dimensions of the base plate are given in illustration No.1.
- 5.2 Anchor poles with base plates are to be supplied with properly sized anchor bolts.
- 5.4 This specification is intended for the supply of embedded poles. All proposals shall be based on this premise unless the request for proposal specifically states a need for anchor poles.

**6. TOLERANCES**

- 6.1 For outside pipe diameters of less than eight inches (8”), tolerances shall be  $\pm$  1%. For outside pipe diameters of eight inches (8”) or greater, tolerances shall be  $\pm$  1.5%.
- 6.1 Wall thickness tolerance shall be  $\pm$  12%.
- 6.2 Length of one of one part of the pole tolerance shall be one inch (1”). Overall length of the pole tolerance shall be six-tenths inch (6/10”).
- 6.3 Camber tolerance shall not exceed two hundred and thirty-nine hundredths inch (0.0239”) per twelve inches (12”).

**7. POLE CAP**

- 7.1 Each pole shall be supplied with a properly sized cap, which shall be placed over the exposed top-end of the installed pole. It shall be made of galvanized steel and have three (3) standard sized 3/16” allen-head stainless steel set screws. These shall bear against the side of the pole to hold the cap firmly in place.

<p style="text-align: center;">MASSACHUSETTS BAY TRANSPORTATION AUTHORITY SUBWAY OPERATIONS POWER DIVISION</p>	<p style="text-align: center;">SPECIFICATION P- 22 Rev H</p>	<p style="text-align: center;">ISSUE A</p>	<p style="text-align: center;">PAGE 4 of 7</p>
<p>File: T:\T&amp;D\COMMON\SPECS\P-22-RevH.doc</p>			

## 8. NAMEPLATE

- 8.1 Each pole shall be supplied with a nameplate attached to the butt section of the pole at a distance of six feet (6') above the ground line. The nameplate shall be engraved or cast and contain the following information:
- Manufacturer's Name
  - MBTA Pole Designation Number
  - Date Manufactured
  - Section Modulus of Butt Section (inches cubed)
  - Strength of Steel (PSI)
- 8.2 Illustration No.2 indicates the typical nameplate with data. Tag shall be one quarter inch (0.25") thick Grade 304 Stainless Steel welded to the pole-butt all around the edges of the tag.
- 8.3 Lettering on tag shall be of sufficient depth if engraved or height if cast that the finish of the pole shall not obscure the lettering.

## 9. FINISH

- 9.1 After pole fabrication, surface of pole shall be thoroughly cleaned of all rust, and surface imperfections according to Steel Structure Painting Council Specification SSPC-SP-1 on both inside and outside of pole.
- 9.2 The cleaned pole shall be coated inside and outside with a two (2) part epoxy based primer applied by shot blasting method to a minimum dry film thickness of two and one-half (2.5) mils. The primer shall not be applied below a temperature of sixty (60) degrees Fahrenheit for air, pole or coating material. The humidity of air where coating is to be applied shall not exceed seventy percent (70%). The dew point shall not be within five (5) degrees of air temperature. Color of primer coat shall be light gray.

## 10. ACCEPTANCE

- 10.1 The following tests shall be conducted by the manufacturer on five percent (5%) of the poles in any lot and a certified copy of the results shall be forwarded with invoices. The definition of "lot" is to signify the number of poles of any one size or design on each order.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY SUBWAY OPERATIONS POWER DIVISION	SPECIFICATION P- 22 Rev H	ISSUE A	PAGE 5 of 7
File: T:\T&D\COMMON\SPECS\P-22-RevH.doc			

- 10.2 Each sectional pole shall be dropped "butt"-downward three (3) times in succession from a height of six feet (6') upon a solid wooden block that is six

inches (6") thick, supported on a rigid base, that weighs at least five (5) times the weight of the pole, without showing any signs of telescoping or loosening of the joints.

- 10.3 Each test pole shall be rigidly supported at six feet (6') from its "butt"-end and subjected as a cantilever to the load for permanent set as shown in Table No.1. The resulting pole shall not show a permanent set exceeding ten percent (10%) of its temporary deflection under this load.
- 10.4 "Tests" may be waived with written approval from MBTA, but if so, a written guarantee from bidder shall be provided stating that the poles they plan to furnish meet the MBTA Requirements as described herein.
- 10.5 At the discretion of the MBTA Factory Field Testing may be required. If such testing is required, all incurred costs must be covered by the pole manufacturer.

## 11. SUBMITTALS

- 11.1 The manufacturer shall submit, prior to fabrication, complete characteristics of the poles that they intend to supply. Characteristics are to be based on the unsleeved pole fixed for six feet (6') from its "butt"-end and tested as a cantilever with the load applied as shown in Table No.1.

Complete stress analysis and deflection calculations with shop drawings shall be submitted for approval prior to fabrication of poles. Calculations shall be based on formulas shown on Table No.2

## 12. PAYMENT

- 12.1 **Shipping:**  
Poles shall be delivered to the location and according to the conditions and schedules as stated on the purchase order and shall be delivered free from defect and injury from testing, handling, and/or shipping. Any pole considered defective or damaged shall be rejected and returned to the manufacturer for replacement. This shall be done at the manufacturer's expense.

- 12.2 **Payment:**  
Payment shall be as set forth in the request for proposal.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY SUBWAY OPERATIONS POWER DIVISION	SPECIFICATION P- 22 Rev H	ISSUE A	PAGE 6 of 7
File: T:\T&D\COMMON\SPECS\P-22-RevH.doc			

## 13. COST OF TESTS

- 13.1 The price of conducting all factory and field tests and checkouts shall be deemed to be included in the contract price. The expenses relating to travel, lodging and boarding for witnessing tests will also be borne by the Manufacturer at no expense to the Authority. In the event that re-testing is required, all costs incurred will also be the responsibility of the Manufacturer.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY SUBWAY OPERATIONS POWER DIVISION	SPECIFICATION P- 22 Rev H	ISSUE A	PAGE 7 of 7
File: T:\T&D\COMMON\SPECS\P-22-RevH.doc			