

# DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK CITY OF PORTLAND

Please Read Application And Notes, If Any, Attached

## PERMIT

Permit Number: 051538

This is to certify that GREATER PORTLAND TR SIT DISTRICT/Swift Engine  
has permission to Create a CNG refueling Station Vehicle Natural Gas fueling system  
AT 91 ST JOHN ST City 068 B012001

**PERMIT ISSUED**  
NOV 14 2005  
CITY OF PORTLAND

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of Maine and of the ordinances of the City of Portland regulating the construction, maintenance and use of buildings and structures, and of the application on file in this department.

Apply to Public Works for street line and grade if nature of work requires such information.

Notification inspection must given and work in permit in progress before this building or part thereof leased or occupied. **FOR NOTICE IS REQUIRED.**

A certificate of occupancy must be procured by owner before this building or part thereof is occupied.

### OTHER REQUIRED APPROVALS

Fire Dept. Greg Carr 11-8-05  
Health Dept. \_\_\_\_\_  
Appeal Board \_\_\_\_\_  
Other \_\_\_\_\_

Department Name

*William Leung* 11/14/05  
Director - Building & Inspection Services

**PENALTY FOR REMOVING THIS CARD**

**City of Portland, Maine - Building or Use Permit Application**

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 05-1538	Issue Date: NOV 14 2005	CBL: 068 B012001
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Location of Construction: 91 ST JOHN ST	Owner Name: GREATER PORTLAND TRANSIT	Owner Address: 89 ST JOHN ST	Phone:
Business Name:	Contractor Name: Swift Engineering	Contractor Address: 331 Main Street Norway	Phone:
Lessee/Buyer's Name	Phone:	Permit Type: Additions - Commercial	Zone: Imb

Past Use: Commercial/ Greater Portland Transit Parking	Proposed Use: Greater Portland Transit Parking/ Create a CNG refueling Station/ Vehicular Natural Gas fueling System	Permit Fee: \$18,339.00	Cost of Work: \$2,027,000.00	CEO District: 2
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Proposed Project Description: Create a CNG refueling Station/ Vehicular Natural Gas fueling System	FIRE DEPT: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied with conditions Signature: <i>Greg Cass</i>	INSPECTION: Use Group: <i>J</i> Type: <i>25</i> 11/14/05 Signature: <i>Ally Kungert</i>
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Permit Taken By: Idobson	Date Applied For: 10/20/2005	<b>Zoning Approval</b>
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1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.  2. Building permits do not include plumbing, mechanical or electrical work.  If work is not started by the date of issuance, the permit is void.	Special Zone or Reviews <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan Major <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> <input checked="" type="checkbox"/> Denied Date: <i>11/9/05</i>	Zoning Appeal <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input checked="" type="checkbox"/> Denied Date:	Historic Preservation <input checked="" type="checkbox"/> Not in District or Landmark <input type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date:
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**CERTIFICATION**

I, the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I hereby authorize the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this City of Portland, Maine. If a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to the proposed work.

APPLICANT \_\_\_\_\_ ADDRESS \_\_\_\_\_ DATE \_\_\_\_\_ PHONE \_\_\_\_\_

PERSON IN CHARGE OF WORK, TITLE \_\_\_\_\_ DATE \_\_\_\_\_ PHONE \_\_\_\_\_

5 DEC 05 MEETS SET BACKS, MEETS PLANS  
Plan

3 JAN 06 INSPECTED ISLAND FORMS PRIOR TO POUR MET  
PLANS, OK TO CONTINUE.

9 JAN 06 - CHECK REBAR FOR ISLAND IN PARKING  
AREA RT SIDE. REBAR OK - OK TO POUR CONCRETE.

1/12/06 - REBAR insp. - OK TO POUR. TM <sup>A</sup> JMM



**City of Portland, Maine - Building or Use Permit**

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 05-1538	Date Applied For: 10/20/2005	CBL: 068 B012001
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Location of Construction: 91 ST JOHN ST	Owner Name: GREATER PORTLAND TRANSIT	Owner Address: 89 ST JOHN ST	Phone:
Business Name:	Contractor Name: Swift Engineering	Contractor Address: 331 Main Street Norway	Phone:
Lessee/Buyer's Name	Phone:	Permit Type: Additions - Commercial	

Proposed Use: Greater Portland Transit Parking/ Create a CNG refueling Station/ Vehicular Natural Gas fueling System	Proposed Project Description: Create a CNG refueling Station/ Vehicular Natural Gas fueling System
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Dept: Zoning      Status: Approved with Conditions      Reviewer: Marge Schmuckal      Approval Date: 11/09/2005

Note: 11/7/05- I don't have an approved, stamped site plan - asked planning for one - the dBA readings for the hour: **Ok to Issue:**   
of 10:00 pm to 7:00 am are 68 dBAs instead of the 55 dBAs maximum allowed - contacted Steve Kirby by e-mail

11/9/05 received a notarized statement saying that the compressor and operations will be shut down at 10:00

- 1) This use for the natural gas refueling station is being approved as an accessory use to the METRO busses. It is understood that a very small amount of private cars may also use this refueling station. Because this use can only be allowed as accessory, there may come a future time when the outside use grows beyond what was approved. At that time it will be necessary to contact the City to gain full, open use to any and all vehicles under a rezoning agreement.
- 2) Separate permits shall be required for any new signage.
- 3) This office has received a notarized statement that the compressor and fueling operations will be shut down at 10 pm nightly because of the noise requirements of the zoning ordinance. This office will aggressively enforce any violations of the ordinance.

Dept: Building      Status: Approved with Conditions      Reviewer: Mike Nugent      Approval Date: 11/14/2005

Note: **Ok to Issue:**

- 1) The statement of S/I must be signed by the owner of the project or authorized rep. Prior to commencement of construction.

Dept: Fire      Status: Approved      Reviewer: Cptn Greg Cass      Approval Date:

Note: **Ok to Issue:**

Dept: Engineering      Status: Open      Reviewer: Tony      Approval Date:

Note: PUBLIC WORKS ENGINEERING REVIEW..11/13/02      **Ok to Issue:**

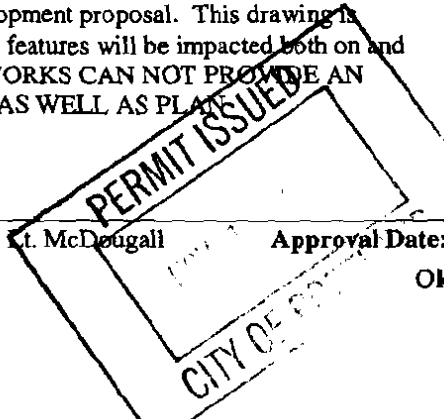
I have reviewed the plans and application dated 10/15/02 and offer the following comments:

1. Sheet 2 of 5, I assume is intended to be the "site plan" for this development proposal. This drawing is extremely deficient and gives not evidence as to what existing physical features will be impacted both on and off the site. THIS SUBMITTAL IS INCOMPLETE AND PUBLIC WORKS CAN NOT PROVIDE AN APPROPRIATE AND THOROUGH WITHOUT MORE WRITTEN AS WELL AS PLAN INFORMATION.

Dept: Fire      Status: Approved with Conditions      Reviewer: K.L. McDeugall      Approval Date: 10/30/2002

Note: **Ok to Issue:**

- 1) applicant shall meet the requirements of NFPA 52 standards
- 2) Application requires State Fire Marshal approval.



<b>Location of Construction:</b> 91 ST JOHN ST	<b>Owner Name:</b> GREATER PORTLAND TRANSIT	<b>Owner Address:</b> 89 ST JOHN ST	<b>Phone:</b>
<b>Business Name:</b>	<b>Contractor Name:</b> Swift Engineering	<b>Contractor Address:</b> 331 Main Street Norway	<b>Phone:</b>
<b>Lessee/Buyer's Name</b>	<b>Phone:</b>	<b>Permit Type:</b> Additions - Commercial	

**Dept:** Planning

**Status:** Approved

**Reviewer:** Jonathan Spence

**Approval Date:** 04/04/2003

**Note:**

**Ok to Issue:**

PERMIT ISSUED

## Statement of Special Inspections

Project: *CNG Fueling Station*  
 Location: *114 Valley St., Portland, ME*  
 Owner: *Greater Portland Transit District*

Design Professional in Responsible Charge: *Edward J. Cundy, P.E.*

This *Statement of Special Inspections* is submitted as a condition for permit issuance in accordance with the Special Inspection and Structural Testing requirements of the Building Code. It includes a schedule of Special Inspection services applicable to this project as well as the name of the Special Inspection Coordinator and the identity of other approved agencies to be retained for conducting these inspections and tests. This *Statement of Special Inspections* encompasses the following disciplines:

- Structural       Mechanical/Electrical/Plumbing  
 Architectural       Other: \_\_\_\_\_

The Special Inspection Coordinator shall keep records of all inspections and shall furnish inspection reports to the Building Official and the Registered Design Professional in Responsible Charge. Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Registered Design Professional in Responsible Charge. The Special Inspection program does not relieve the Contractor of his or her responsibilities.

Interim reports shall be submitted to the Building Official and the Registered Design Professional in Responsible Charge.

A *Final Report of Special Inspections* documenting completion of all required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted prior to issuance of a Certificate of Use and Occupancy.

Job site safety and means and methods of construction are solely the responsibility of the Contractor.

Interim Report Frequency: *Monthly*

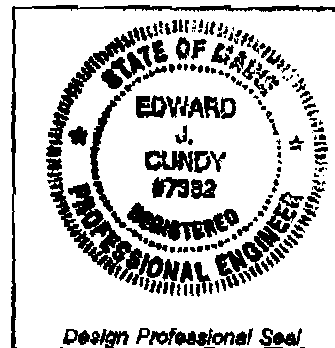
or  per attached schedule.

Prepared by:

*Edward J. Cundy, P.E.*  
 (Type or print name)

*Edward J. Cundy*  
 Signature

*10/19/05*  
 Date



Owner's Authorization:

Building Official's Acceptance:

*[Signature]*      *11/14/05*  
 Signature      Date

*[Signature]*      *11/14/05*  
 Signature      Date

## Schedule of Inspection and Testing Agencies

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Soils and Foundations  | <input type="checkbox"/> Spray Fire Resistant Material         |
| <input checked="" type="checkbox"/> Cast-in-Place Concrete | <input type="checkbox"/> Wood Construction                     |
| <input type="checkbox"/> Precast Concrete                  | <input type="checkbox"/> Exterior Insulation and Finish System |
| <input type="checkbox"/> Masonry                           | <input type="checkbox"/> Mechanical & Electrical Systems       |
| <input checked="" type="checkbox"/> Structural Steel       | <input type="checkbox"/> Architectural Systems                 |
| <input type="checkbox"/> Cold-Formed Steel Framing         | <input type="checkbox"/> Special Cases                         |

Special Inspection Agencies	Firm	Address, Telephone, e-mail
1. Special Inspection Coordinator	<i>Swift Engineering</i>	<i>331 Main St. Norway, ME 04268 207 743 5885 edcundy@swiftengineers.com</i>
2. Inspector		
3. Inspector		
4. Testing Agency	<i>Summit Geoengineering</i>	<i>640 Main St. Lewiston, ME 04240 207 795 6009</i>
5. Testing Agency	<i>Elite Inspection Services, Inc.</i>	<i>220 Industrial Way Unit 1 Portland, ME 04103 207 797 2284</i>
6. Other		

Note: The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.



## Quality Assurance Plan

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### Quality Assurance for Seismic Resistance

Seismic Design Category *C*  
Quality Assurance Plan Required (Y/N) *N*

Description of seismic force resisting system and designated seismic systems:

*Canopies: Cantilevered Column*

*Shed: Light-frame walls with sheet steel shear panels.*

### Quality Assurance for Wind Requirements

Basic Wind Speed (3 second gust) *100 mph*  
Wind Exposure Category *B*  
Quality Assurance Plan Required (Y/N) *N*

Description of wind force resisting system and designated wind resisting components:

*Canopies: Cantilevered Column*

*Shed: Light-frame walls with sheet steel shear panels.*

## **Qualifications of Inspectors and Testing Technicians**

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The qualifications of all personnel performing Special Inspection and testing activities are subject to the approval of the Building Official. The credentials of all Inspectors and testing technicians shall be provided if requested.

### **Key for Minimum Qualifications of Inspection Agents:**

When the Registered Design Professional in Responsible Charge deems it appropriate that the individual performing a stipulated test or inspection have a specific certification or license as indicated below, such designation shall appear below the *Agency Number* on the Schedule.

PE/SE	Structural Engineer – a licensed SE or PE specializing in the design of building structures
PE/GE	Geotechnical Engineer – a licensed PE specializing in soil mechanics and foundations
EIT	Engineer-In-Training – a graduate engineer who has passed the Fundamentals of Engineering examination

#### **American Concrete Institute (ACI) Certification**

ACI-CFTT	Concrete Field Testing Technician – Grade 1
ACI-CCI	Concrete Construction Inspector
ACI-LTT	Laboratory Testing Technician – Grade 1&2
ACI-STT	Strength Testing Technician

#### **American Welding Society (AWS) Certification**

AWS-CWI	Certified Welding Inspector
AWS/AISC-SSI	Certified Structural Steel Inspector

#### **American Society of Non-Destructive Testing (ASNT) Certification**

ASNT	Non-Destructive Testing Technician – Level II or III.
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#### **International Code Council (ICC) Certification**

ICC-SMSI	Structural Masonry Special Inspector
ICC-SWSI	Structural Steel and Welding Special Inspector
ICC-SFSI	Spray-Applied Fireproofing Special Inspector
ICC-PCSI	Prestressed Concrete Special Inspector
ICC-RCSI	Reinforced Concrete Special Inspector

#### **National Institute for Certification in Engineering Technologies (NICET)**

NICET-CT	Concrete Technician – Levels I, II, III & IV
NICET-ST	Soils Technician - Levels I, II, III & IV
NICET-GET	Geotechnical Engineering Technician - Levels I, II, III & IV

#### **Exterior Design Institute (EDI) Certification**

EDI-EIFS	EIFS Third Party Inspector
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**Other**

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# Soils and Foundations

Item	Agency # (Qualif.)	Scope
1. Shallow Foundations	#4 GE	<i>Inspect soils below footings for adequate bearing capacity and consistency with geotechnical report.</i>  <i>Inspect removal of unsuitable material and preparation of subgrade prior to placement of controlled fill</i>
2. Controlled Structural Fill	#4 GE	<i>Inspect placement, lift thickness and compaction of controlled fill (3/4-inch crushed stone).</i>

# Cast-in-Place Concrete

Item	Agency # (Qualif.)	Scope
1. Mix Design	#4 ACI-CCI ICC-RCSI	<i>Review concrete batch tickets and verify compliance with approved mix design. Verify that water added at the site does not exceed that allowed by the mix design.</i>
2. Reinforcement Installation	#4 ACI-CCI ICC-RCSI	<i>Inspect size, spacing, cover, positioning and grade of reinforcing steel. Verify that reinforcing bars are free of form oil or other deleterious materials. Inspect bar laps and mechanical splices. Verify that bars are adequately tied and supported on chairs or bolsters</i>
3. Anchor Rods	#4 ACI-CCI ICC-RCSI	<i>Inspect size, positioning and embedment of anchor rods. Inspect concrete placement and consolidation around anchors.</i>
4. Concrete Placement	ACI-CCI ICC-RCSI	<i>Inspect placement of concrete. Verify that concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.</i>
5. Sampling and Testing of Concrete	#4 ACI-CFTT ACI-STT	<i>Test concrete compressive strength (ASTM C31 &amp; C39), slump (ASTM C143), air-content (ASTM C231 or C173) and temperature (ASTM C1064).</i>
6. Curing and Protection	#4 ACI-CCI ICC-RCSI	<i>Inspect curing, cold weather protection and hot weather protection procedures.</i>

Item	Agency # (Qualif.)	Scope
1. Fabricator Certification/ Quality Control Procedures <input type="checkbox"/> Fabricator Exempt	#5 AWS/AISC- SSI ICC-SWSI	<i>Review shop fabrication and quality control procedures.</i>
2. Material Certification	#5 AWS/AISC- SSI ICC-SWSI	<i>Review certified mill test reports and identification markings on wide-flange shapes, high-strength bolts, nuts and welding electrodes</i>
3. Bolting	#5 AWS/AISC- SSI ICC-SWSI	<i>Inspect installation and tightening of high-strength bolts. Verify that splines have separated from tension control bolts. Verify proper tightening sequence. Continuous inspection of bolts in slip-critical connections.</i>
5. Welding	#5 AWS-CWI  ASNT	<i>Visually inspect all welds. Inspect pre-heat, post-heat and surface preparation between passes. Verify size and length of fillet welds.</i>
7. Structural Details	#1 PE	<i>Inspect steel frame for compliance with structural drawings, including bracing, member configuration and connection details.</i>
8. Metal Deck	#5 AWS-CWI	<i>Inspect welding and side-lap fastening of metal roof and floor deck.</i>

# Cold-Formed Steel Framing

Item	Agency # (Qualif.)	Scope
1. Member Sizes and Placement	#1 PE	<i>Check overall member sizes and placement</i>

# BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 to schedule your inspections as agreed upon

Permits expire in 6 months, if the project is not started or ceases for 6 months.

The Owner or their designee is required to notify the inspections office for the following inspections and provide adequate notice. Notice must be called in 48-72 hours in advance in order to schedule an inspection:

By initializing at each inspection time, you are agreeing that you understand the inspection procedure and additional fees from a "Stop Work Order" and "Stop Work Order Release" will be incurred if the procedure is not followed as stated below.

A Pre-construction Meeting will take place upon receipt of your building permit.

- Footing/Building Location Inspection: Prior to pouring concrete
- Re-Bar Schedule Inspection: Prior to pouring concrete
- NA Foundation Inspection: Prior to placing ANY backfill
- Framing/Rough Plumbing/Electrical: Prior to any insulating or drywalling
- Final/Certificate of Occupancy: Prior to any occupancy of the structure or use. NOTE: There is a \$75.00 fee per inspection at this point.

Certificate of Occupancy is not required for certain projects. Your inspector can advise you if your project requires a Certificate of Occupancy. All projects DO require a final inspection

If any of the inspections do not occur, the project cannot go on to the next phase, REGARDLESS OF THE NOTICE OR CIRCUMSTANCES.

NA **CERTIFICATE OF OCCUPANCIES MUST BE ISSUED AND PAID FOR, BEFORE THE SPACE MAY BE OCCUPIED**

[Signature]  
Signature of Applicant/Designee

Date

[Signature]  
Signature of Inspections Official

Date

CBL: 68-B-12

Building Permit #: 05-1538



# General Building Permit Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Location/Address of Construction: 91 St. John St. PORTLAND		
Total Square Footage of Proposed Structure CNG COMPRESSORS/STORAGE 99199ft	Square Footage of Lot 26,780 sq ft	
Tax Assessor's Chart, Block & Lot Chart#      Block#      Lot#	Owner: GREATER PORTLAND TRANSIT DISTRICT	Telephone: 207-774-0351
Lessee/Buyer's Name (If Applicable)  N/A	Applicant name, address & telephone: GREATER PORTLAND TRANSIT DISTRICT 114 VALLEY ST. PORTLAND ME 04103	Cost Of Work: \$2027000 Fee: \$18339.00 C of O Fee: \$
Current Specific use: <u>PARKING</u>	Proposed Specific use: <u>CNG REFUELING STATION</u>	
Project description: <u>LOCATION: OPERATION OF PACKAGED VEHICULAR NATURAL GAS FUELING SYSTEM</u>		
Contractor's name, address & telephone: <u>HANOVER CO. H:K METALLICAL SWIFT ENGINEERING; 331 MAIN ST NORWICH ME. 04268 (ED CUNNY)</u>		
Who should we contact when the permit is ready: <u>METAD, STEVE KIRBY</u>		
Mailing address: <u>Phone: 7748351</u>		

Please submit all of the information outlined in the Commercial Application Checklist. Failure to do so will result in the automatic denial of your permit.

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information visit us on-line at [www.portlandmaine.gov](http://www.portlandmaine.gov), stop by the Building Inspections office, room 315 City Hall or call 874-8703.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature of applicant:

Date: 10-19-05

This is not a permit; you may not commence ANY work until the permit is issued.





Voted one of  
"The 10 Most Improved  
Transit Systems" in  
North America  
- METRO Magazine,  
April 2001

October 20, 2005

Mr. Joseph Gray, Jr.  
Portland City Hall  
389 Congress Street  
Portland, Me 04101

Re: 91 St. John Street; Metro Natural Gas Fueling Station

Dear Joe:

As you are aware The Greater Portland Transit District is in the process of installing a compressed natural gas refueling station and will be upgrading its facilities for CNG code compliance. Greater Portland citizens will soon realize the benefits associated with running thirteen new buses on CNG. These buses will run more quietly and more cleanly and will replace our oldest buses. The Metro will also be refueling the new Portland CNG school buses which have or will arrive and as yet cannot be refueled until the January completion of the refueling station.

Many have been involved in this endeavor which began some time ago in the mid-nineties. These include our congressional delegates, dedicated personnel at GPCOG, helpful staff at Maine Department of Transportation and the Federal Transit Administration's Region One office, just to name a few of the participants.

Metro is subsidized by the cities of Portland and Westbrook. The above two projects involve costs of \$1,106,600 for the refueling station and \$920,400 for the infrastructure upgrades. We are requesting a waiver of fees associated with the permitting process which would equal approximately \$18,250 or  $\frac{3}{4}$  of 1% of the 2005 operating subsidy.

Please call if I can answer any questions. Your attention to this matter will be appreciated.

Sincerely,

Peter J. Cavanaugh  
Acting General Manager

CC: Jeffrey Monroe  
Michael Nugent

**GREATER PORTLAND TRANSIT DISTRICT**

114 Valley Street • Portland, Maine 04102 • TEL (207)774-0351 • FAX (207)774-6241

METRO@gpmetrobus.com



# METRO

Voted one of  
"The 10 Most Improved  
Transit Systems" in  
North America  
- METRO Magazine,  
April 2001

November 9, 2005

Marge Schmuckal, Zoning Administrator  
City Of Portland  
389 Congress Street  
Portland, ME 04101

RE: 91 St. John Street

Dear Marge:

This letter is to inform you that I will direct the staff of the Greater Portland Transit District to program the CNG compressor equipment to shut down at 10 pm nightly, until such time that certified sound readings are taken and a sound level map prepared and forwarded to your office to verify City Code compliance.

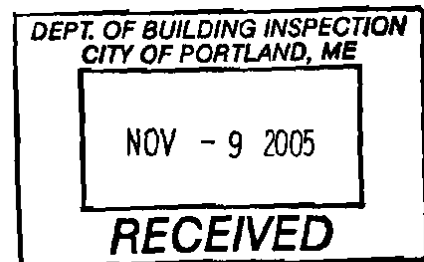
We have been instructed by the equipment manufacturer that this can be accomplished and will prevent any accidental operation after the agreed upon time.

Please call me should you have any questions or concerns.

Sincerely,

Peter J. Cavanaugh  
Acting General Manager

Before me 11/9/05



BRENDA A. COOK  
Notary Public, Maine  
My Commission Expires October 16, 2009

**From:** Marge Schmuckal  
**To:** Steve Kirby  
**Date:** 11/7/2005 4:07:56 PM  
**Subject:** Re: Just checking the status

Steve,  
I have reviewed this project and have two complications.

A. I have requested a stamped approved site plan from the planning division. They are supposed to give me a copy when they sign off on a project. I have not received that yet.

B. Your sound data shows that at the property line off Valley Street you will have a decibel reading of 68 dBA. Section 14-252 states that the noise levels shall not exceed:

55 dBA from 10:00 pm thru 7:00 am, and  
70 dBA from 7:00 am thru 10 pm.

Will this station be used past 10:00 pm? If so, you will need to show me revised measures to better dampen the decibel readings with a revised submittal showing what those measures resulted in. If Metro will not be using this station after 10:00 pm, I will want notarized statements that affirm that decision from Metro management. This site is just under an active neighborhood who resents any late noises. I want to assure that the ordinance is being met.

You can call me at 874-8695 to further discuss these matters.

Thank you,  
Marge

>>> "Steve Kirby" <skirby@gpmetrobus.com> 11/7/2005 10:49:33 AM >>>  
Good morning Marge:

Could you please let me know the status of our project listed as 91 St. John Street and if it has progressed to Capt. Cass for review? Some time today is fine.

Although I didn't know him personally I have spoken to Kevin Markee on occasion. How sad for his family and everyone at City Hall.

Thank you and regards,

Steve

CC: Mike Nugent

**From:** Marge Schmuckal  
**To:** Sarah Hopkins  
**Date:** 11/7/2005 3:57:12 PM  
**Subject:** Metro natural gas fuelling for busses

Sarah,  
I have a permit for this job on Valley Street & 91 St. John Street. I have not received a stamped approved site plan. Can I get a copy of that site plan?

I am seeing that there will be sound violations if this is run past 10:00 at night.

Thanks,  
Marge

**From:** Marge Schmuckal  
**To:** Steve Kirby  
**Date:** 11/7/2005 4:39:57 PM  
**Subject:** Re: Just checking the status

I will not be able to sign off just yet - However, I can pass this on to Cpt. Cass and Mike Nugent. It will not be signed off until the sound issues are satisfied. I am assuming that planning can get met the necessary paperwork. I found that all other zoning requirements are being met.

Marge

>>> "Steve Kirby" <skirby@gpmetrobus.com> 11/7/2005 4:30:04 PM >>>  
Hello Marge:

Thanks for getting back to me. I have forwarded to the engineers. I also left you a wordy voice mail. Sorry about that.

I'll be back to you probably in the morning.

Steve

--- Original Message ---

**From:** "Marge Schmuckal" <MES@portlandmaine.gov>  
**To:** <skirby@gpmetrobus.com>  
**Cc:** <min@ci.portland.me.us>  
**Sent:** Monday, November 07, 2005 4:07 PM  
**Subject:** Re: Just checking the status

Steve,

I have reviewed this project and have two complications.

A. I have requested a stamped approved site plan from the planning division. They are supposed to give me a copy when they sign off on a project. I have not received that yet.

B. Your sound data shows that at the property line off Valley Street you will have a decibel reading of 68 dBA. Section 14-252 states that the noise levels shall not exceed:

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You can call me at 874-8895 to further discuss these matters.

Thank you.

**From:** Marge Schmuckal  
**To:** Steve Kirby  
**Date:** 11/8/2005 12:09:06 PM  
**Subject:** Re: Query

Steve,

It really doesn't help the bottom line. Sound does funny things. Very often it can be louder up at the top of the W. Promenade. I will be very honest and tell you that several councilors and ex-councilors live up there and are very active in what noises and smells happen on St. John Street and Valley Street. I would like to avoid a problem before it happens. I don't want to get those phone calls. I am hoping that this makes sense to you.

Marge

>>> "Steve Kirby" <skirby@gpmetrobus.com> 11/8/2005 11:13:25 AM >>>

Good morning Marge:

I've been waiting to hear from our consultant in order to determine what we will be doing based on the options. During this time I have been in touch with Steve Linnell and Dick Nye, two folks involved in this project. We have noticed the following:

The ordinance Sec. 14-252 paragraph 3b. indicates the measurements are "as measured at or within the boundaries of any residential zone." I also called up the "zonesouth" file. It shows that between the Metro property line and the Western Prom there is a large section for recreational open space. Much of this space is now the dog park and the rest of it is the hillside leading up to the Western Prom area.

Next in looking at the sound level sheet, it shows that the noise will be at or about 55dba, at worst, on the opposite Valley Street side from us, after which it falls off to somewhere between 50 - 43 dbA only part way into the dog run. It would seem that the noise level would be hardly noticeable at the Western Prom which is zoned "residential" and of course buffered by the large expanse of ROS zoned property.

The Metro remains very conscious and considerate of the needs of our neighbors and especially the residential area on the hill. We certainly don't want to be bad neighbors.

Is this any help?

Thanks,



Voted one of  
"The 10 Most Improved  
Transit Systems" in  
North America  
- METRO Magazine,  
April 2001

October 20, 2005

Mr. Michael Nugent  
389 Congress Street, Room 315  
Portland, ME 04101

Re: 91 St. John Street; Metro Natural Gas Fueling Station

Dear Michael:

Thank you for your assistance in obtaining a permit for our CNG fueling system to be located on our site at 91 St. John Street.

Included in this package as per telecom on October 18, 2005, with Tom Aubee and myself is the following:

- 1) Commercial Building Permit Application,
- 2) Geotechnical Report,
- 3) Statement of Special Inspections,
- 4) Commercial Building Permit Application Checklist,
- 5) Complete Print Set.

Per our discussion, it was determined that we did not need an Accessibility Certificate. In conversation with Steve Dodge at the State Fire Marshall's office it was determined that a Construction Permit was not needed from that office because the construction is intended to be non-habitable.

Please call should you have any questions.

Sincerely,

Stephen R. Kirby  
Director of Finance

**GREATER PORTLAND TRANSIT DISTRICT**

114 Valley Street • Portland, Maine 04102 • TEL (207)774-0351 • FAX (207)774-6241

METRO@gpmetrobus.com



CITY OF PORTLAND  
BUILDING CODE CERTIFICATE  
389 Congress St., Room 315  
Portland, Maine 04101

TO: Inspector of Buildings City of Portland, Maine  
Department of Planning & Urban Development  
Division of Housing & Community Service

FROM: SWIFT ENGINEERING

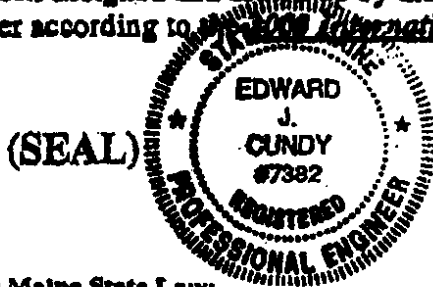
RE: Certificate of Design

DATE: 10/19/05

These plans and / or specifications covering construction work on:

GREATER PORTLAND TRANSPORTATION DISTRICT  
COMPRESSED NATURAL GAS FUELING FACILITY

Have been designed and drawn up by the undersigned, a Maine registered Architect / Engineer according to the 2000 International Building Code and local amendments.



Signature: Edward J. Cundy

Title: PRINCIPAL

Firm: SWIFT ENGINEERING

Address: 331 MAIN ST., NORWAY, ME 04268

As per Maine State Law:

\$50,000.00 or more in new construction, repair expansion, addition, or modification for Building or Structures, shall be prepared by a registered design Professional.



FROM DESIGNER: EDWARD J. CHADY  
 DATE: 10/10/05  
 Job Name: GRAND PORTLAND TRANSPORTATION DISTRICT / CNGS FUELING FACILITY  
 Address of Construction: \_\_\_\_\_

2003 International Building Code  
 Construction project was designed according to the building code criteria listed below:

Building Code and Year IBC 2003 Use Group Classification(s) U  
 Type of Construction STEEL FRAME

Will the Structure have a Fire suppression system in Accordance with Section 903.3.1 of the 2003 IRC \_\_\_\_\_  
 Is the Structure mixed use? NA if yes, separated or non separated (see Section 302.3) \_\_\_\_\_  
 Supervisory alarm system? \_\_\_\_\_ Geotechnical/Soils report required? (See Section 1802.2) YES PERMIT DEPENDENT # 7979

**STRUCTURAL DESIGN CALCULATIONS**  
 Submitted for all structural members (1001.1, 1001.1.1)  
**DESIGN LOADS ON CONSTRUCTION DOCUMENTS (1803)**  
 Uniformly distributed floor live loads (1002.1.1, 1807)  
 Floor Area Use: N/A  
 Loads Shown: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

N/A Live load reduction (1002.1.7, 1807.2, 1807.10)  
49 Roof live loads (1002.1.8, 1807.11)  
 Roof snow loads (1002.1.3, 1808)  
70 Ground snow load,  $P_g$  (1802.2)  
58.8 If  $P_g > 10$  psf, flat-roof snow load,  $P_f$  (1802.4)  
1 If  $P_g > 10$  psf, snow exposure factor,  $C_e$  (Table 1802.4.1)  
1 If  $P_g > 10$  psf, snow load importance factor,  $I_s$  (Table 1802.4)  
1.2 Roof thermal factor,  $C_t$  (Table 1802.4.2)  
N/A Sloped roof snowload,  $P_s$  (1802.4)

**Wind loads (1002.1.4, 1809)**  
1002.1.1 Design option utilized (1002.1.1, 1809.6)  
100 Basic wind speed (1002.3)  
1 Building category and wind importance factor,  $I_w$  (Table 1804.6, 1809.6)  
B Wind exposure category (1802.4)  
0.55 Internal pressure coefficient (1802.7)  
 Component and cladding pressures (1802.1.7, 1809.6.2.2)  
15.23 Main force wind pressures (1002.1.1, 1809.6.2.1)

C Seismic design category (1812.2)  
U Basic seismic-force-resisting system (Table 1817.2.2) **LIGHT-FRAME WALLS WITH SHEAR PANEL**  
U Response modification coefficient,  $R$ , and deflection amplification factor,  $C_d$  (Table 1817.4.2)  
ELF Analysis procedure (1816.2, 1817.5)  
2301 Design base shear (1817.4, 1817.5.1)

**Earthquake design data (1002.1.4, 1814 - 1823)**  
ELF Design option utilized (1814.1)  
I Seismic use group ("Category") (Table 1804.6, 1814.6)  
506 37.4  
50 15.47 Spectral response coefficients,  $S_{DS}$  &  $S_{D1}$  (1814.1)  
D Site class (1818.1.5)

Flood loads (1802.1.2, 1812)  
 Flood hazard area (1812.3)  
 Elevation of structure  
2005 Other loads **ROOF**  
 Concentrated loads (1807.4)  
 Partition loads (1807.6)  
 Impact loads (1807.8)  
 Misc. loads (Table 1807.8, 1807.8.1, 1807.7, 1807.12, 1807.13, 1810, 1811, 2404)



August 29, 2005  
Summit #7979

Steve Kirby  
The Greater Portland Transit District  
114 Valley Street  
Portland, Maine 04102

Reference: Geotechnical Report  
Transit Station, Portland, Maine

Dear Steve;

We have completed the geotechnical investigation for the construction of two new fuel islands and one compressor pad located at the Bus Station located between Valley Street and St. John Street in Portland. Our scope of services included preparing this letter summarizing our findings and geotechnical recommendations.

**Project and Site**

The new compressor pad will be located in the south eastern portion of the site, one of the new islands will be located in the eastern portion and the second island will be located in the south west portion of the site. We understand that the island will consist of a cantilever canopy with one column supported on a single spread footing. The proposed compressor pad will support two 30,000 pound compressors with skid dimensions of approximately 8.5 feet by 10 feet, six storage spheres that weigh 11,000 pounds each and one 7,000 pound dryer. The site currently consists of a Bus Storage Garage with paved areas adjacent to the building with access to St. John Street and Valley Street.

**Exploration and Subsurface Conditions**

The subsurface conditions at the site were explored with the drilling of 4 test borings. One boring was drilled beneath each proposed island and two were drilled beneath the proposed compressor pad. The borings were drilled to a depth of refusal ranging from 12.3 feet to 19.7 feet using 2-1/2" ID hollow stem augers. Continuous 24 inch long split spoon samples were taken (total of 5 samples per boring). Summit was not on site during the exploration. Logs of the borings were prepared by Northern Test Borings, Inc, the logs of the borings are attached at the end of this letter. The locations of the borings are approximately shown on the attached figure.

The soil at the site consists of approximately 4 inches of asphalt or approximately 6 inches of concrete over a sandy fill soil overlying a glacial till deposit. Standard penetration test numbers for the fill ranged from 18 to 38 blows per foot and averages about 27 bpf, indicating a compact to dense soil condition.

### **Foundation Recommendations**

The soil at the site is suitable to support the canopy loads on a conventional spread footing foundation. We recommend that an allowable bearing pressure of 4,000 psf be used for proportioning footings. We recommend that the footing subgrade soil be compacted to re-densify subgrade soil disturbed by excavation, prior to constructing the footings.

In order to provide frost protection, we recommend that the footings be constructed at a minimum depth of 4 feet below the finished slab grade. We also recommend that the foundation be backfilled with soil meeting the following gradation specification:

<b>FOUNDATION BACKFILL</b>	
<b>Sieve Size</b>	<b>Percent finer</b>
3 inch	100
No. 40	0 to 70
No. 200	0 to 5

The maximum particle size should be limited to 6 inches. The Foundation Backfill should be compacted to a minimum of 95 percent of its maximum dry density, determined in accordance with ASTM D1557.

Groundwater was observed in test borings B-1 through B-4 at depths of 5.2 feet, 6.9 feet, 7.3 feet, and 5.1 feet respectively. We do not expect that groundwater will rise above the bottom of the footings. Based on this and the nature of the structure, a perimeter underdrain is not necessary.

The soils at the site are categorized as site class D in accordance with the 2003 International Building Code.

Excavation into the existing sandy soil will be relatively easy. Excavations below 4 feet in the existing soil should be sloped no greater than 1H to 1V. This slope is based on the current OSHA Excavation Guidelines.

### **Closure**

Our recommendations are based on professional judgment and generally accepted principles of geotechnical engineering. Some changes in subsurface conditions from those presented in this report may occur. Should these conditions differ materially from those described in this report, Summit should be notified so that we can re-evaluate our recommendations.

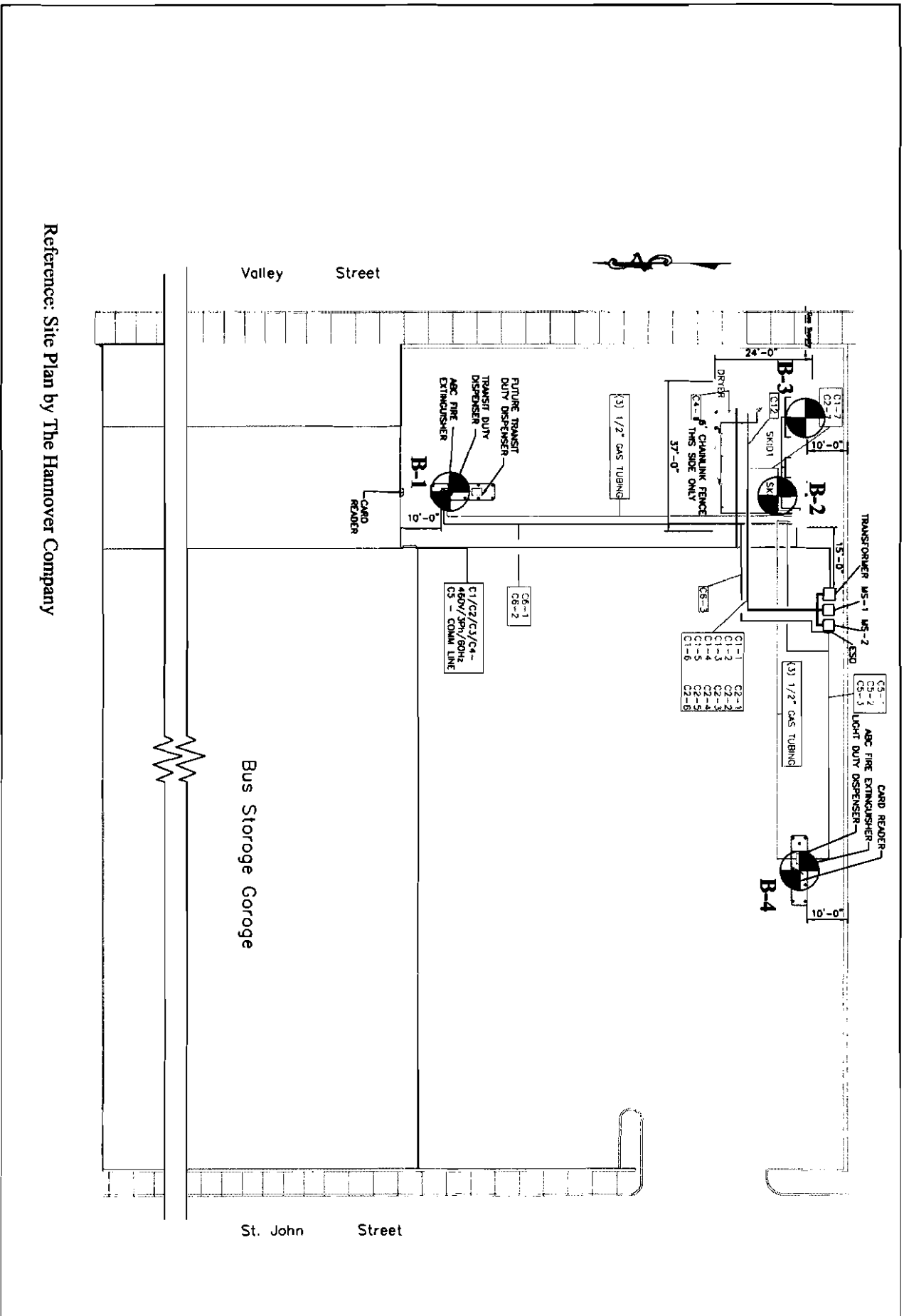
We appreciate the opportunity to serve you during this phase of your project. If there are any questions or additional information is required, please do not hesitate to call.

Sincerely yours,  
**Summit Geoengineering Services,**



William M. Peterlein, P.E.  
Principal Geotechnical Engineer





Reference: Site Plan by The Hanover Company

FIGURE: 1	DRAWN BY: ARH	TITLE: EXPLORATION LOCATION PLAN	DATE: 8/26/05		REVISION	DATE:
	JOB #: 7979	PROJECT: PORTLAND TRANSIT	SCALE: NTS			
		CLIENT: THE GREATER PORTLAND TRANSIT DISTRICT				











characterized by brief excursions of sound pressure, each with a duration of less than one (1) second.

- b. *Measurement:* Sound levels shall be measured with a sound level meter with a frequency weighting network manufactured according to standards prescribed by the American National Standards Institute (ANSI) or its successor body. Measurements shall be made at all major lot lines of the site, at a height of at least four (4) feet above the ground surface. In measuring sound levels under this section, sounds with a continuous duration of less than sixty (60) seconds shall be measured by the maximum reading on a sound level meter set to the A weighted scale and the fast meter response (L maxfast). Sounds with a continuous duration of sixty (60) seconds or more shall be measured on the basis of the energy average sound level over a period of sixty (60) seconds (LEQ<sub>1</sub>).
- c. *Maximum permissible sound levels:* The maximum permissible sound level of any continuous, regular or frequent source of sound produced by an activity shall be as follows:
- i. Seventy (70) dBA between the hours of 7:00 a.m. and 10:00 p.m.
  - ii. Fifty-five (55) dBA between the hours of 10:00 p.m. and 7:00 a.m., as measured at or within the boundaries of any residential zone.

In addition to the sound level standards established above, all uses located within this zone shall employ best practicable sound abatement techniques to prevent tonal sounds and impulse sounds or, if such tonal and impulse sounds cannot be prevented, to minimize the impact of such sounds in residential zones.

- d. *Exemptions:*

**CITY OF PORTLAND, MAINE  
DEVELOPMENT REVIEW APPLICATION  
PLANNING DEPARTMENT PROCESSING FORM**

**Insp Copy**

**2002-0232**

Application I. D. Number

**10/07/2002**

Application Date

**Metro Natural Gas Fueling Station**

Project Name/Description

**Greater Portland Transit**

Applicant

**114 Valley Street, Portland, ME 04102**

Applicant's Mailing Address

**114 - 114 Valley Street, Portland, Maine**

Address of Proposed Site

**068 B012001**

Assessor's Reference: Chart-Block-Lot

Consultant/Agent

**Applicant Ph: (207) 774-0351 Agent Fax:**

Applicant or Agent Daytime Telephone, Fax

Proposed Development (check all that apply):  New Building  Building Addition  Change Of Use  Residential  Office  Retail  
 Manufacturing  Warehouse/Distribution  Parking Lot  Other (specify) **Natural Gas Fueling Station**

Proposed Building square Feet or # of Units

Acreage of Site

**IM-B**

Zoning

**Check Review Required:**

- |  |   |  |  |
|--|---|--|--|
| <input checked="" type="checkbox"/> Site Plan<br>(major/minor) | <input type="checkbox"/> Subdivision<br># of lots _____ | <input type="checkbox"/> PAD Review            | <input type="checkbox"/> 14-403 Streets Review   |
| <input type="checkbox"/> Flood Hazard                          | <input type="checkbox"/> Shoreland                      | <input type="checkbox"/> Historic Preservation | <input type="checkbox"/> DEP Local Certification |
| <input type="checkbox"/> Zoning Conditional<br>Use (ZBA/PB)    | <input type="checkbox"/> Zoning Variance                |  | <input type="checkbox"/> Other _____             |

Fees Paid: Site Plan **\$400.00** Subdivision \_\_\_\_\_ Engineer Review \_\_\_\_\_ Date **10/26/2002**

**Insp Approval Status:**

Reviewer \_\_\_\_\_

- Approved  Approved w/Conditions  
See Attached  Denied

Approval Date \_\_\_\_\_ Approval Expiration \_\_\_\_\_ Extension to \_\_\_\_\_  Additional Sheets  
Attached

Condition Compliance \_\_\_\_\_ signature \_\_\_\_\_ date \_\_\_\_\_

Performance Guarantee  Required\*  Not Required

\* No building permit may be issued until a performance guarantee has been submitted as indicated below

Performance Guarantee Accepted \_\_\_\_\_ date \_\_\_\_\_ amount \_\_\_\_\_ expiration date \_\_\_\_\_

Inspection Fee Paid \_\_\_\_\_ date \_\_\_\_\_ amount \_\_\_\_\_

Building Permit Issue \_\_\_\_\_ date \_\_\_\_\_

Performance Guarantee Reduced \_\_\_\_\_ date \_\_\_\_\_ remaining balance \_\_\_\_\_ signature \_\_\_\_\_

Temporary Certificate of Occupancy \_\_\_\_\_ date \_\_\_\_\_  Conditions (See Attached) \_\_\_\_\_ expiration date \_\_\_\_\_

Final Inspection \_\_\_\_\_ date \_\_\_\_\_ signature \_\_\_\_\_

Certificate Of Occupancy \_\_\_\_\_ date \_\_\_\_\_

Performance Guarantee Released \_\_\_\_\_ date \_\_\_\_\_ signature \_\_\_\_\_

Defect Guarantee Submitted \_\_\_\_\_ submitted date \_\_\_\_\_ amount \_\_\_\_\_ expiration date \_\_\_\_\_

Defect Guarantee Released \_\_\_\_\_ date \_\_\_\_\_ signature \_\_\_\_\_

Applicant: METRO

Date: 11/4/05

Address: 114 Valley St / 91 St John St

C-B-L: 68-B-012

CHECK-LIST AGAINST ZONING ORDINANCE

Date - ~~EXIST~~

# 05-1538

Zone Location - IMb

Interior or corner lot -

Conditions →

Proposed Use/Work - use CAN only be Accessory at this time for Alternative energy - NATURAL GAS Fueling for buses

Sewage Disposal - City

Lot Street Frontage - 60' min - 60' + shown

Front Yard - None Req.

Rear Yard - None Req.

Side Yard - None Required

Projections -

Width of Lot - N/A

Height - 75' MAX - 14' shown

Lot Area - 131,513 sq ft per assessors

Lot Coverage/ Impervious Surface - 100% Allowed

Area per Family - N/A

Off-street Parking - N/A

Loading Bays - N/A

Site Plan - minor # 2002-0232

Shoreland Zoning/ Stream Protection - N/A

Flood Plains - Panel 13 - Zone C

→ NOISE: 14-252- 55 dBA 10:00 pm → 7:00 Am  
68-65 dBA 70 dBA 7:00 Am → 10:00 pm



# METRO

Voted one of  
"The 10 Most Improved  
Transit Systems" in  
North America  
- METRO Magazine  
April 2001

October 15, 2002

City of Portland  
Economic Development Center  
389 Congress Street  
Portland, Maine 04101

right now  
considered an  
accessory

To Whom It May Concern:

Greater Portland METRO is planning to construct a Compressed Natural Gas (CNG) fueling facility at their headquarters. This facility would be utilized to fill clean burning natural gas fueled buses that are slated for acquisition. Over the coming five years, METRO expects to incorporate ~21 such buses into its fleet. The proposed natural gas fueling facility is designed to produce the natural gas equivalent of ~850 gallons gasoline daily. The vast majority of this would be consumed by METRO buses, however, the grant-based funding mechanism for this project requires that provision be made available for fueling non-METRO natural gas vehicles (NGV) operating locally. In reality, the expected number of non-NGV Greater Portland METRO is very small. In terms of gasoline equivalent gallons dispensed to non-METRO NGVs, we anticipate less than 50-75 gallons, in total, daily. A light-duty fuel dispenser with card-access, located at the property periphery (see site plan provided) would allow non-METRO NGVs access to fuel while limiting their penetration into the METRO grounds.

The project scope and project plans are attached. Please review and advise us relative to your approval/disapproval/requirement for further information.

Sincerely,

  
Mr. Peter R. Heffler  
General Manager

**GREATER PORTLAND TRANSIT DISTRICT**

114 Valley Street • Portland, Maine 04102 • TEL (207)774-0351 • FAX (207)774-6241

METRO@gpmetrobus.com



# METRO

Voted one of  
"The 10 Most Improved  
Transit Systems" in  
North America  
- METRO Magazine,  
April 2001

## Project Scope

Re: Greater Portland METRO CNG Station

### Compression System

A Bauer duplex compression system with a rated nominal output of 175 cubic feet of natural gas per minute (nominal) at a temperature of 70°F from an inlet pressure of 5 PSIG to an outlet pressure of 4,500 PSIG (5,000 PSIG max). The compressors are driven by an electric motor. The system shall be designed to be installed outdoors and to operate, unmanned, in temperatures of -10 to +110°F. This factory-assembled system shall be designed to Class 1, Division 2, and Group D specifications.

The standard scope of supply of each Bauer unit includes the following features.

- ❑ Modular design with compressor (within enclosure), vapor recovery system, a combination priority and sequential valve panel all factory mounted, pre-piped, and pre-wired and tested on a structural steel skid. Field installation shall require only the fixturing of the unit, the connection of electrical supply and control interface circuits, natural gas inlet piping, natural gas discharge piping to the storage and dispensing systems and commissioning.
- ❑ 460 VAC, 60 HZ, 3Ø motor.
- ❑ NEMA 7 motor control center (MCC) which includes a magnetic electric motor starter with overload protection and external manual reset, a programmable logic controller (PLC), control voltage transformer with fuse, MCC enclosure heater, UL Listed electrical panel, On/Off switch rated for hazardous locations, and Power On light rated for hazardous locations.
- ❑ Braided stainless steel gas inlet connector.
- ❑ Low-pressure drop inlet filter with replaceable element.
- ❑ Inlet pulsation cylinder with low point liquid manual drain.
- ❑ Solenoid operated inlet shutoff valve.
- ❑ Gauge panel complete with a gauge for each stage of compression, an hour meter, oil pressure gauge, gas inlet pressure gauge, compressor discharge pressure gauge, and related shutdown fault lamps (gauges shall be silicone liquid filled).
- ❑ Compressor low oil pressure safety shutdown with fault lamp.
- ❑ Compressor high temperature safety shutdown w/ panel mounted fault lamp.
- ❑ Low/High gas inlet pressure safety shutdown w/ panel mounted fault lamp.
- ❑ High motor temperature shutdown.
- ❑ Automatic shutdown settings:
  - Low suction pressure
  - High suction pressure
  - High motor temperature
  - High discharge pressure
  - High discharge temperature
  - Low oil pressure

**GREATER PORTLAND TRANSIT DISTRICT**

114 Valley Street • Portland, Maine 04102 • TEL (207)774-0351 • FAX (207)774-6241

METRO@gpmetrobus.com

- ❑ Pressure relief valves installed on all stages of compression. The discharge fittings of all relief valves shall be piped to a common discharge stack, which shall be protected from the entry of rain and debris. A pressure switch shall be installed within this manifold to sense the actuation of a relief valve.
- ❑ Final pressure switch for automatic start/stop control.
- ❑ Pressure maintaining valve and check valve on compressor discharge line.
- ❑ The compressor shall incorporate interstage separators and a final stage coalescing filter with automatic condensate removal and a closed loop blowdown system. The automatic condensate drain shall include condensate accumulator tank with vent and drain.
- ❑ Encapsulated crankcase w/ vent to intake.
- ❑ The compressor shall be air cooled with air cooled intercoolers and an aftercooler.
- ❑ A closed loop vapor recovery system to recycle gas that would otherwise be vented periodically to atmosphere during the operation of the compression system (includes 120 gallon ASME receiver, receiver pressure gauge, ASME code stamped relief valve, pressure reducing regulator, a pressure gauge on gas return line, receiver manual drain valve, inlet port for connection to dispenser vents). This system shall be delivered factory piped to the compressor.
- ❑ Microprocessor controlled temperature-compensated priority filling of a 3-bank storage system, compressor control with automatic lead/lag alternation for the control of up to 3 compressors, modem for automatic dial-out on compressor, station ESD or system fault.
- ❑ Cabinet enclosure with removable access panels with lockable, quick release latches.
- ❑ Emergency Stop push button, palm type, red in color, rated NEMA 7 mounted on compressor. An additional ESD operator shall be provided loose for field installation.
- ❑ Built-in full compliance to the latest editions of NFPA 70 (The National Electric Code-N.E.C.), and NFPA 52 (Standard for Compressed Natural Gas Vehicular Fuel Systems).
- ❑ Incandescent lighting package: Includes one (1) incandescent light mounted inside of the compressor enclosure and one (1) skid mounted incandescent light. Each light will be equipped with an off/on switch. Additionally a photocell shall be factory installed on the skid for control of the exterior light.

#### CNG TRANSIT DUTY FAST-FILL DISPENSER

One (1) Tulsa Gas Technologies, Inc. model number TGT-K322-1-DH100 single channel transit duty fast-fill dispenser with Micro Motion Flow Metering, card reader compatibility, and LCD displays. The dispensing equipment shall be configured to facilitate the return of that volume of gas, which is typically vented at the conclusion of the fill cycle, to the compressor vapor recovery system via a common vent line. The dispenser, in conjunction with the temperature compensated priority/sequential controls, shall provide accurate, temperature compensated, fills of 3,600 PSIG.

Features of the CNG dispenser include:

- ❑ Volume displays in gallon equivalents, with 1 GEG = 5.660 pounds natural gas. The dispenser shall clearly indicate this weight/volume relationship.
- ❑ All stainless steel outer housing.
- ❑ 12' electrically conductive twin hose with Sherex CT5000 transit fueling connector, "Red Jacket" hose retractors, and safety breakaway coupling for both supply and vent line hoses.
- ❑ Micro Motion Mass Flow Meters (DH100).
- ❑ Capable of communicating electronically with point-of-sale system.
- ❑ Fail-safe valve design incorporating automatic ESD operated valves.
- ❑ Integral safety relief valves.
- ❑ Manual shutoff valves.

### CNG LIGHT DUTY FAST-FILL DISPENSER

One (1) Tulsa Gas Technologies, Inc. model number TGT-K62-2-DH38 duplex channel fast-fill dispenser with Micro Motion Flow Metering, card reader compatibility, and LCD displays. The dispensing equipment, which we offer, will be configured to facilitate the return of that volume of gas, which is typically vented at the conclusion of the fill cycle, to the compressor vapor recovery system via a common vent line. The dispenser, in conjunction with the priority/sequential panel, shall provide accurate, temperature compensated, fills of 3,000 or 3,600 PSIG. The dispenser shall be electronically interlocked with a fuel access system, which shall serve to limit access to the dispenser.

Features of the CNG dispenser include:

- ❑ Volume displays in gallon equivalents, with 1 GEG = 5.660 pounds natural gas. The dispenser shall clearly indicate this weight/volume relationship.
- ❑ All stainless steel outer housing.
- ❑ 12' electrically conductive twin hoses with Parker NGV1 fueling connectors, "Red Jacket" hose retractors, and safety breakaway coupling for both supply and vent line hoses.
- ❑ Micro Motion Mass Flow Meters rated at 5000 PSIG @ 50 lbs./minute, 1000 SCFM.
- ❑ Capable of communicating electronically with point-of-sale systems.
- ❑ Fail-safe valve design incorporating automatic ESD operated valves.
- ❑ Integral safety relief valves.
- ❑ Manual shutoff valves.

### FUEL MANAGEMENT SYSTEM

Gas Boy Model CFN-2 ( To include network and site modems, Gilbarco current loop driver, reader terminal/pedestal/receipt printer, network charge for Cash Flow Network "CFN", CFN-2 controller, auto-polling/invoicing software, system operation training, ISO number application, and 100 code cards). Customer to provide WIN95+ PC for site management. Please note that a card reader shall be provided in close proximity to each dispenser (Heavy Duty & Light Duty).

### UNINTERRUPTIBLE POWER SUPPLY

All control, communications, and dispensing/fuel access system circuits shall be routed through and protected by a suitable UPS (Toshiba or approved equivalent). The UPS shall be provided with sufficient battery capacity to insure a minimum of 30 minutes operation in the event of a power failure or related power anomaly. The UPS is not intended to supply compressor drive power, but only control power to allow vehicles to withdraw fuel contained in storage and retain remote diagnostics capability.

### ASME STORAGE VESSELS

One (1) 3 vessel ASME approved (ASME Code, Section VIII, Division I) storage cascade assembly. The assembly shall have a design pressure of 5,500 PSIG, a working pressure of 4,500 PSIG, and a rated total storage capacity of ~30,000 SCF natural gas @ 4,500 PSIG. This package shall include mounting brackets which shall fixture the vessels "three high and one wide", 3 "lockable" inlet valves, 3 "lockable" condensation drain valves, 3 "lockable" output valves (e.g. relief valve isolation valves), and 3 spring loaded safety relief valves with outlets that shall be piped (at the same IPS size as the relief valve outlets) upward approximately 10' above grade level. The vent piping shall be arranged and securely bracketed so as to prevent any unnecessary movement or torque induced rotation in the event of discharge. Furthermore, the vent manifold shall be fabricated of stainless steel materials (Note: Type 304 S.S. this tubing only) and shall incorporate a self-draining "drip leg".



## SCOPE OF INSTALLATION

- ❑ All applicable installation codes and standards shall be adhered to in the execution of this work.
- ❑ Provision of temporary traffic and pedestrian barriers during construction phase.
- ❑ Excavation of one compressor/storage/meter-regulator set pad and all trenching.
- ❑ Construction of all required concrete pads.
- ❑ Equipment support pads shall be constructed to meet all applicable codes and standards. Concrete slabs are to be brushed finished. Two (2) copper equipment ground elements (1/2") shall be placed within the compression / storage slab and bonded to the rewire mesh. The slabs shall be set with a surface pitch of 1/16" per foot.
- ❑ Installation of bollards for equipment protection. 6" Schedule 80 pipe is to be used for all bollards protecting fueling facility equipment.
- ❑ Placement of bedding sand and clean back-fill material in all trenches.
- ❑ Provision and placement of all electrical conduit and gas piping within trenches and slab forms.
- ❑ Supply and installation of a 480 VAC circuit breaker panel, transformer, subpanel, disconnects, and all interconnections with system controls and components. Electrical grounding grids shall also be supplied within this scope of work.
- ❑ Supply and installation of 1/2" diameter x 0.083" wall, Type 316 SS tubing (dispenser supply) and 3/8" diameter x 0.065" wall, Type 316 SS tubing (vent lines) with connectors. Connectors are to be Swagelok or approved equal.
- ❑ All stainless steel tubing embedded in the earth shall be protected by a continuous PVC sleeve.
- ❑ Provision and installation of all compressor gas supply piping (from the outlet of the meter/regulator set). This piping shall be primed and painted to satisfy project specifications upon installation.
- ❑ Freight, rigging, and fixturing of all equipment.
- ❑ Equipment interconnection (electrical, mechanical, and piping requirements) of meter-regulator set, compressor, priority system, cascades, dispenser, etc.
- ❑ Painting of bollards, etc., and touch-up of equipment.
- ❑ Signage to meet NFPA 52 requirements.
- ❑ Testing of all systems per project specifications.
- ❑ Coordination of all interim and final inspections with jurisdictional bodies.
- ❑ Start-up and commissioning.





## CITY OF PORTLAND

### To Applicants for Development in Portland:

The City of Portland has instituted the following fees to recover the costs of reviewing development proposals under the Site Plan and Subdivision ordinances: application fee, engineering fee, and inspection fee. Performance and defect guarantees are also required by ordinance to cover all site work proposed.

The Application Fee covers general planning and administrative processing costs, and is paid at the time of application for review.

Prior to issuance of a building permit, an Engineering Review Fee will be assessed. This fee is assessed by the Planning Office engineer for review of on-site improvements of a civil engineering nature, such as stormwater management as well as the engineering analysis of related improvements within the public right-of-way, such as public streets and utility connections, as assessed by the Department of Public Works. The Engineering Review fee must be paid before a building permit can be issued. The Planning Office will mail an invoice for this fee, usually within a week of approval of a project.

A Performance Guarantee letter of credit or escrow account will be required following approval of development plans. This guarantee covers all required improvements within the public right-of-way, plus certain site improvements such as landscaping, paving, and civil engineering. The Planning Office will provide a work sheet for figuring the amount of the performance guarantee, as well as model language for the guarantee instrument.

An Inspection Fee must also be submitted to cover inspections to ensure that sites are developed in accordance with the approved plan and adhere to required erosion and sedimentation controls. The inspection fee is 2.0% of the performance guarantee amount, or as assessed by the planning or public works engineer. Minimum inspection fees are \$100 for single and two family homes, and \$300 for all other development, unless no site improvements are proposed. At least four site visits are typical, at the outset of construction when the site is "opened", before pouring foundation, at time of paving, and at completion prior to issuance of a Certificate of Occupancy. Public Works inspects streets and utilities, including pipe-laying and connections. (The contractor must work with inspectors to coordinate timely inspections, and should provide adequate notice before inspections, especially in the case of final inspection.) No building permit will be issued until the performance guarantee, engineering fee and inspection fee are received.

Upon completion of a development project, the performance guarantee is released, and a Defect Guarantee in the amount of 10% of the performance guarantee must be provided. The Defect Guarantee will be released after a year, including a full winter season, elapses. Other reimbursements to the City include actual or apportioned costs for advertising and mailed notices.

These costs are a necessary part of the City of Portland land development review program. We strive to make the review process as fair, efficient, and economical as possible for all concerned. Please contact me or the planner assigned to your project for further information and guidance about how to navigate smoothly through this process. We are always interested in feedback as to the quality and responsiveness of the development review services we provide.

**CITY OF PORTLAND, MAINE  
SITE PLAN CHECKLIST**

114 Valley St., Portland, Me. 04102  
Project Name, Address of Project

I.d. Number

Submitted ( ) & Date	Item	Required Information	Section 14-525 (b,c)
	(1)	Standard boundary survey (stamped by a registered surveyor, at a scale of not less than 1 inch to 100 feet and including:	1
	(2)	Name and address of applicant and name of proposed development	a
	(3)	Scale and north points	b
	(4)	Boundaries of the site	c
	(5)	Total land area of site	d
	(6)	Topography - existing and proposed (2 feet intervals or less)	e
	(7)	Plans based on the boundary survey including:	2
	(8)	Existing soil conditions	a
	(9)	Location of water courses, marshes, rock outcroppings and wooded areas	b
	(10)	Location, ground floor area and grade elevations of building and other structures existing and proposed, elevation drawings of exterior facades, and materials to be used	c
	(11)	Approximate location of buildings or other structures on parcels abutting the site	d
	(12)	Location of on-site waste receptacles	e
<u>SEE DWG 2 OFS</u>	(13)	Public utilities	e
<u>NO CHANGE</u>	(14)	Water and sewer mains	e
<u>NO CHANGE</u>	(15)	Culverts, drains, existing and proposed, showing size and directions of flows	e
<u>NO CHANGE</u>	(16)	Location and dimensions, and ownership of easements, public or private rights-of-way, both existing and proposed	f
<u>NO CHANGE</u>	(17)	Location and dimensions of on-site pedestrian and vehicular accessways	g
<u>SEE DWG 2 OFS</u>	(18)	Parking areas	g
	(19)	Loading facilities	g
<u>SEE DWG 2 OFS</u>	(20)	Design of ingress and egress of vehicles to and from the site onto public streets	g
	(21)	Curb and sidewalks	g
<u>NO CHANGE</u>	(22)	Landscape plan showing:	h
<u>NO CHANGE</u>	(23)	Location of existing proposed vegetation	h
<u>NO CHANGE</u>	(24)	Type of vegetation	h
<u>NO CHANGE</u>	(25)	Quantity of plantings	h
<u>NO CHANGE</u>	(26)	Size of proposed landscaping	h
<u>NO CHANGE</u>	(27)	Existing areas to be preserved	h
<u>NO CHANGE</u>	(28)	Preservation measures to be employed	h
<u>NO CHANGE</u>	(29)	Details of planting and preservation specifications	h
<u>SEE DWG 3 OFS</u>	(30)	Location and dimensions of all fencing and screening	i
	(31)	Location and intensity of outdoor lighting system	j
<u>SEE DWG 2 OFS</u>	(32)	Location of fire hydrants, existing and proposed	k
<u>SEE SCOPE OF WORK</u>	(33)	Written statement	c
<u>SEE SCOPE OF WORK</u>	(34)	Description of proposed uses to be located on site	l
<u>N/A</u>	(35)	Quantity and type of residential, if any	1
	(36)	Total land area of the site	b2
<u>SEE DWG 3, 4 OFS</u>	(37)	Total floor area and ground coverage of each proposed building and structure	b2
	(38)	General summary of existing and proposed easements or other burdens	c3
<u>N/A</u>	(39)	Method of handling solid waste disposal	4



# All Purpose Building Permit Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Location/Address of Construction: <u>114 Valley St., Portland, Me</u>		
Total Square Footage of Proposed Structure <u>499 Ft<sup>2</sup></u>	Square Footage of Lot <u>131513</u>	
Tax Assessor's Chart, Block & Lot Chart# <u>68</u> Block# <u>B</u> Lot# <u>12</u>	Owner: <u>Queen Portland Transit</u>	Telephone: <u>207-774-0357</u>
Lessee/Buyer's Name (if Applicable) <u>N/A</u>	Applicant name, address & telephone: <u>207-774-0357</u> <u>114 Valley St.</u> <u>Portland, Me.</u>	Cost Of Work: <u>\$100,000 For ON-SITE CONSTR.</u> Fee: \$
Current use: <u>TRANSIT BUS FACILITY - STORAGE, MAINTENANCE, &amp; REFUELING</u>		
If the location is currently vacant, what was prior use: <u>N/A</u>		
Approximately how long has it been vacant: <u>N/A</u>		
Proposed use: <u>ADD NATURAL GAS FUELING CAPABILITY</u>		
Project description: <u>SEE SCOPE OF SUPPLY</u>		
Contractor's name, address & telephone:		
Who should we contact when the permit is ready: <u>Peter Harper</u>		
Mailing address:		
We will contact you by phone when the permit is ready. You must come in and pick up the permit and review the requirements before starting any work, with a Plan Reviewer. A stop work order will be issued and a \$100.00 fee if any work starts before the permit is picked up. PHONE: <u>207-7740357</u>		

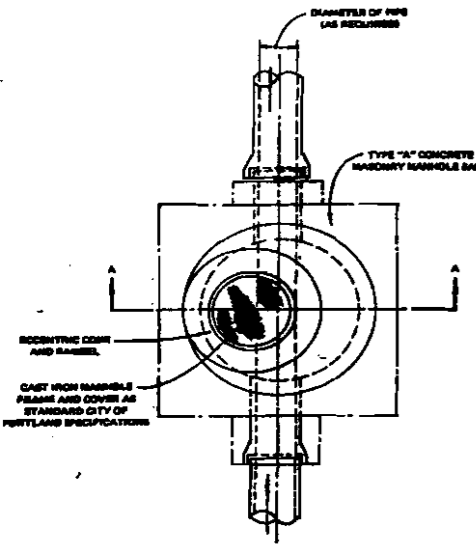
IF THE REQUIRED INFORMATION IS NOT INCLUDED IN THE SUBMISSIONS THE PERMIT WILL BE AUTOMATICALLY DENIED AT THE DISCRETION OF THE BUILDING/PLANNING DEPARTMENT, WE MAY REQUIRE ADDITIONAL INFORMATION IN ORDER TO APPROVE THIS PERMIT.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

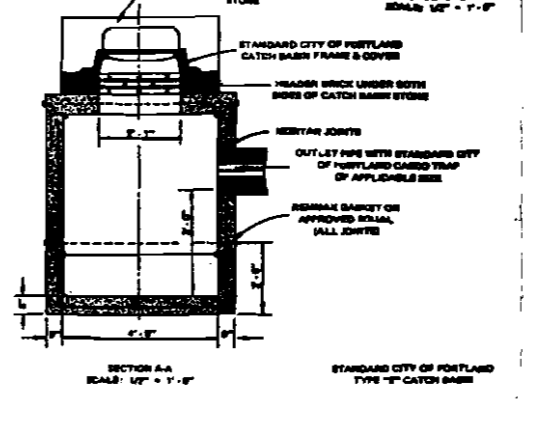
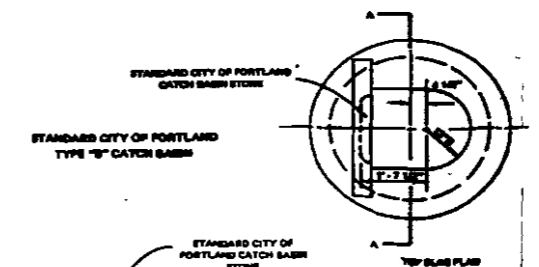
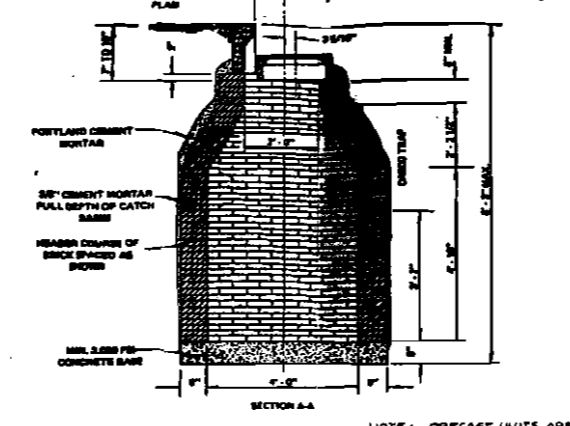
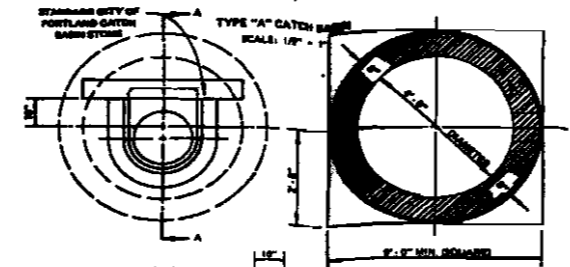
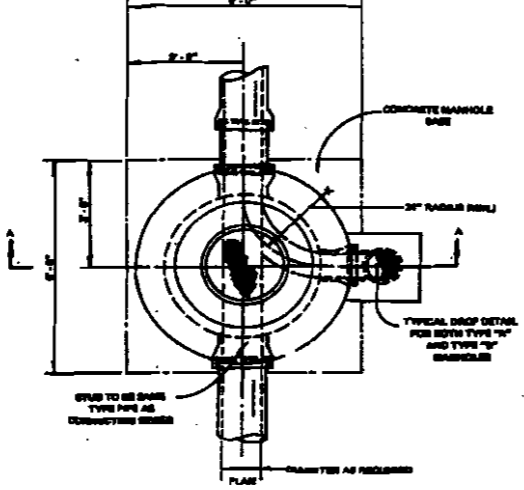
Signature of applicant: <u>Peter Harper</u>	Date: <u>10/7/02</u>
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This is NOT a permit, you may not commence ANY work until the permit is issued. If you are in a Historic District you may be subject to additional permitting and fees with the Planning Department on the 4<sup>th</sup> floor of City Hall

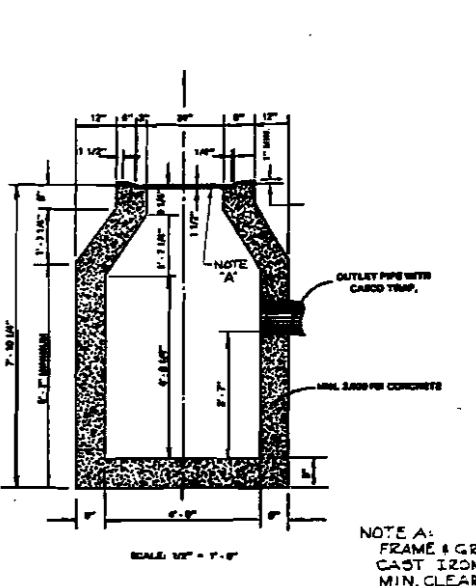
**TYPE "A" MANHOLE**  
SCALE: 1/2" = 1'-0"



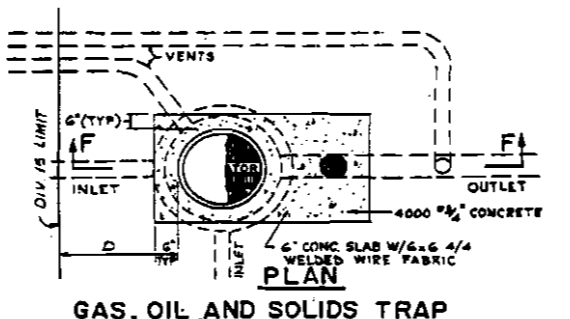
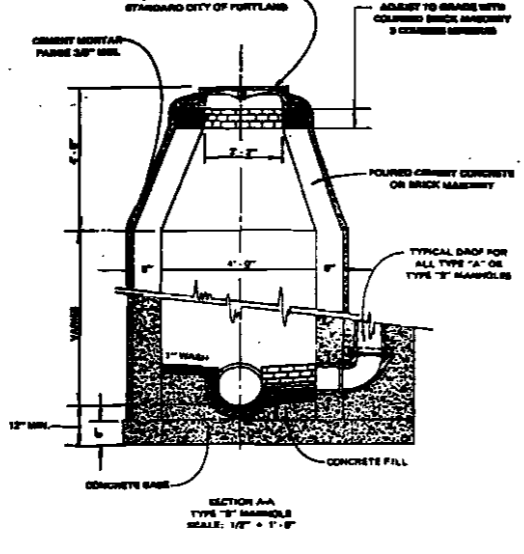
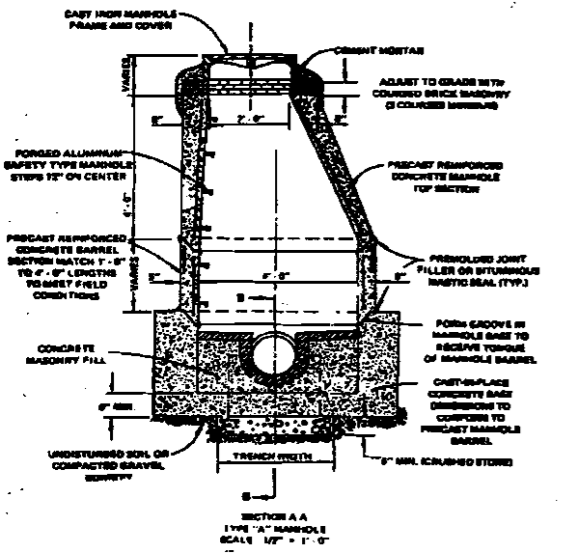
**TYPE "B" MANHOLE**  
SCALE: 1/2" = 1'-0"



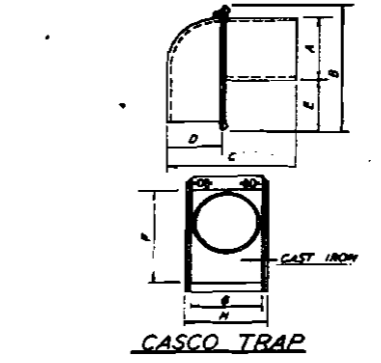
**TYPE "C" CATCH BASIN**  
SCALE: 1/2" = 1'-0"



NOTE A:  
FRAME & GRATE HEAVY DUTY  
CAST IRON, 24" DIA.  
MIN. CLEAR.

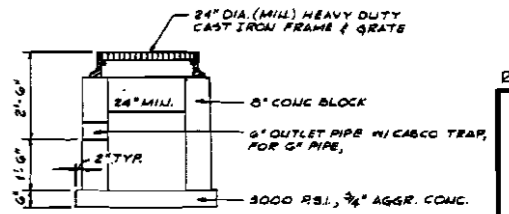


**GAS, OIL AND SOLIDS TRAP**

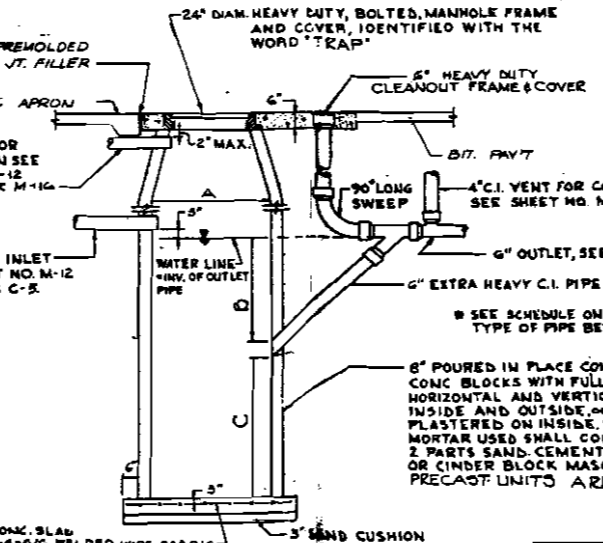
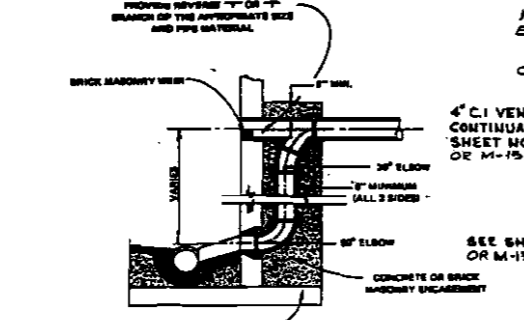
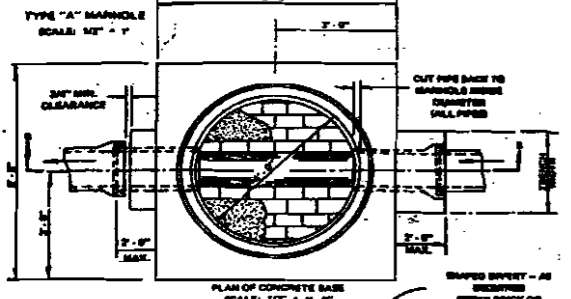


**CASCO TRAP**

SIZE	A	B	C	D	E	F	G	H
8 IN.	7 1/2	15	15 3/8	5 1/2	5 3/8	13 3/4	8 3/4	9 3/8
10 IN.	9 1/2	18	18 1/4	6	4 1/2	14 1/8	11 1/2	12 3/8
12 IN.	11 1/2	17	22	8	3 1/2	17	12 1/2	13 3/8



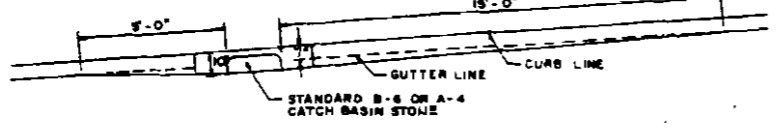
**TYPE "F" CATCH BASIN**



**SECTION F-F**

STE. NO.	A	B	C	D
351	4'-0"	3'-0"	3'-6"	None
352	4'-0"	3'-0"	2'-6"	"

Note: 1. Extend to a point 5' Outside building.



**TYPICAL PAVEMENT GRADING ON SLOPE FOR CATCH BASIN & INLETS**  
NOT TO SCALE

NOTE: NOT APPLICABLE TO C.B. #29 THROUGH #26.

RE-USED MARCH 11  
BODDY TEAR ASSOCIATES  
ARCHITECTURE + PLANNING  
DELEW, CATHEN & COMPANY  
ENGINEERS AND PLANNERS  
CHISHOLM WASHINGTON  
ASSOCIATES - ARCHITECTS

**METAC**

Greater Portland  
Transit District

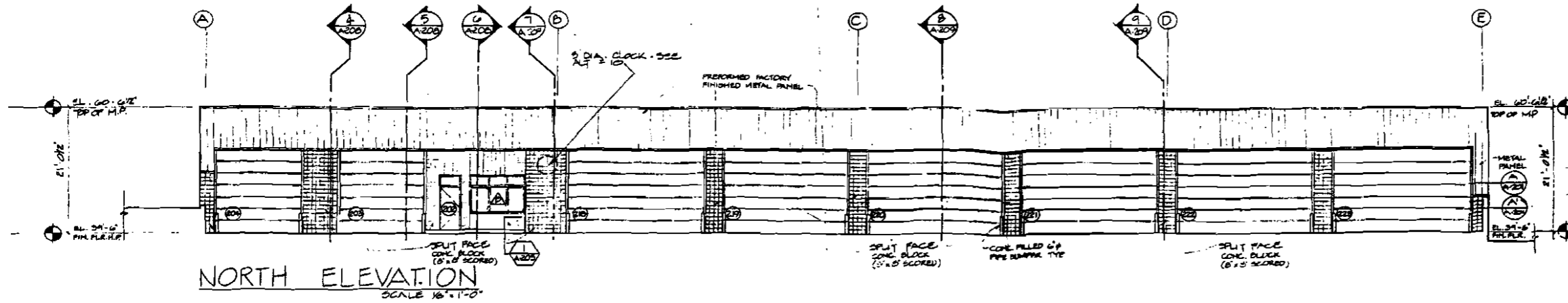
Date: 3/7/53  
Scale: 1/2" = 1'-0"  
Project No: 412  
Drawn By: [Signature]  
Checked By: [Signature]

drainage  
util. det.

C

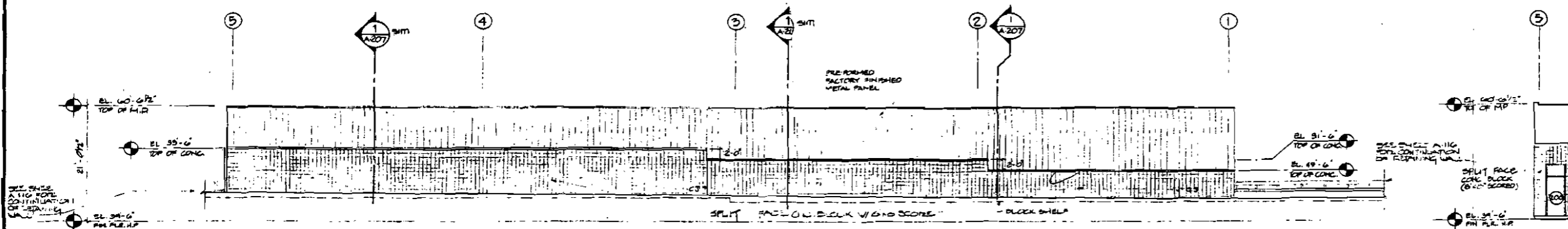






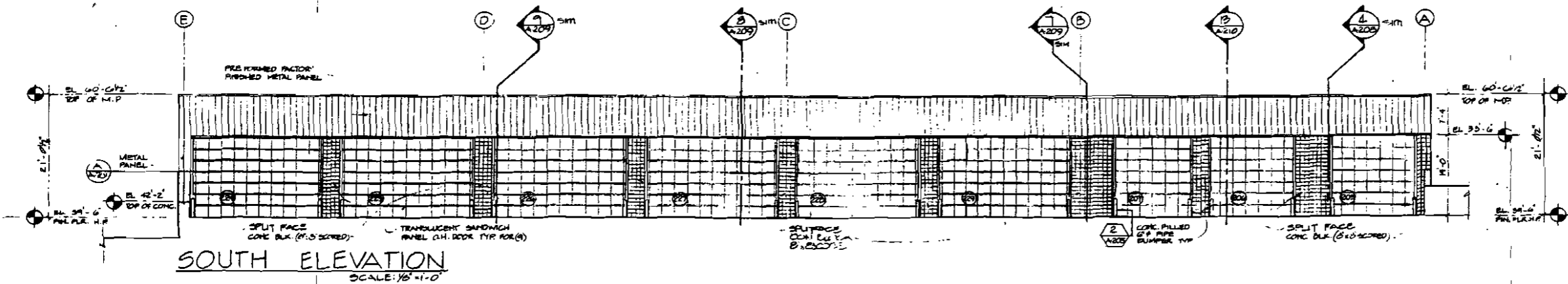
NORTH ELEVATION  
SCALE: 1/8" = 1'-0"

PARTIAL N.E. ELEV - STORAGE GARAGE  
SCALE: 1/8" = 1'-0"

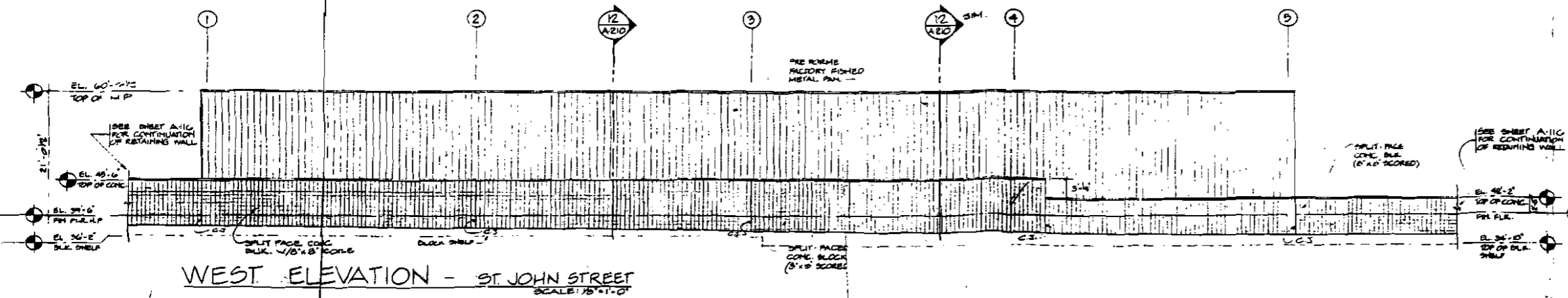


EAST ELEVATION - VALLEY STREET  
SCALE: 1/8" = 1'-0"

PARTIAL SE. ELEV - STORAGE GARAGE  
SCALE: 1/8" = 1'-0"



SOUTH ELEVATION  
SCALE: 1/8" = 1'-0"



WEST ELEVATION - ST. JOHN STREET  
SCALE: 1/8" = 1'-0"

RE-ISSUED MARCH 11, 1983

SCOTT TEAS ASSOCIATES  
ARCHITECTURE + PLANNING  
DELEW, CATHER & COMPANY  
ENGINEERS AND PLANNERS  
CHISHOLM WASHINGTON  
ASSOCIATES - ARCHITECTS



**METRO**

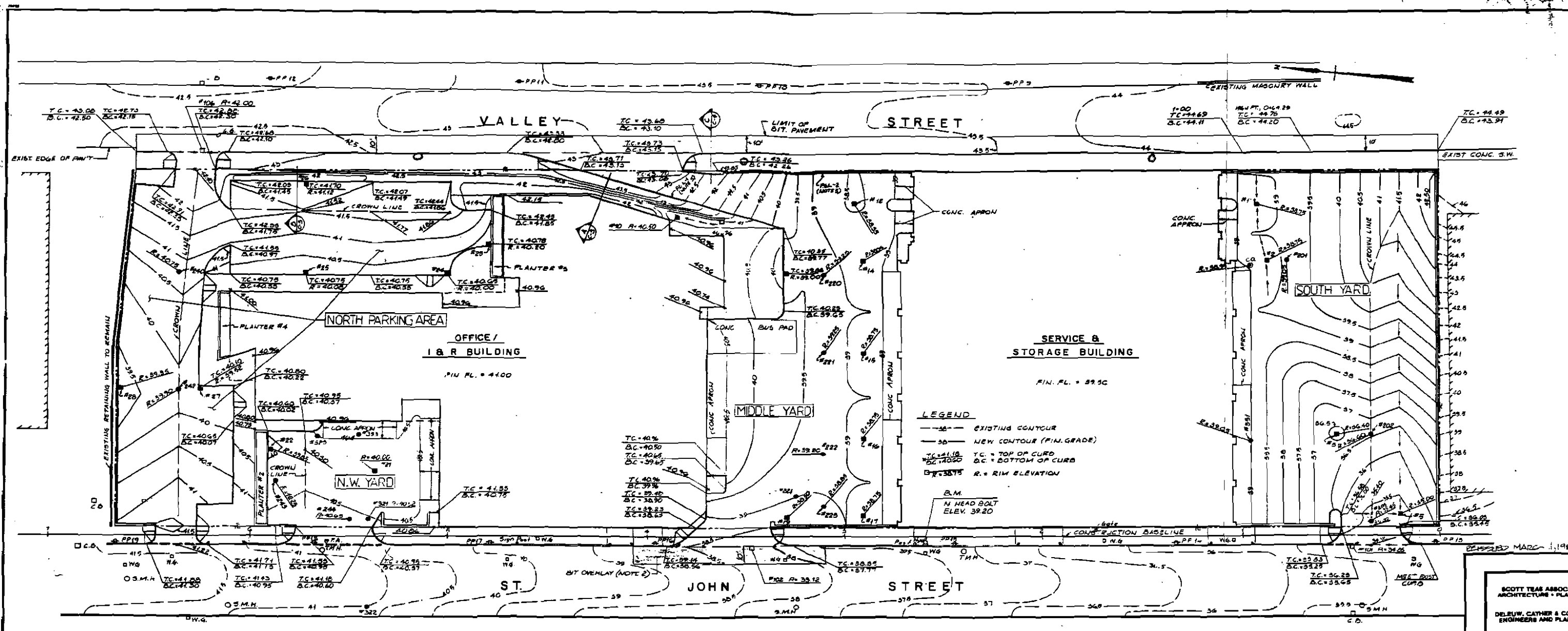
Greater Portland  
Transit District  
11 John Street, Portland, Maine

Date: OCTOBER 4, 1982  
Scale: 1/8" = 1'-0"  
Project No: ME-08-0004  
Drawn by: MKW  
Checked by: D.E.D.

serv. bay/stor. gar.

elevations

A-205

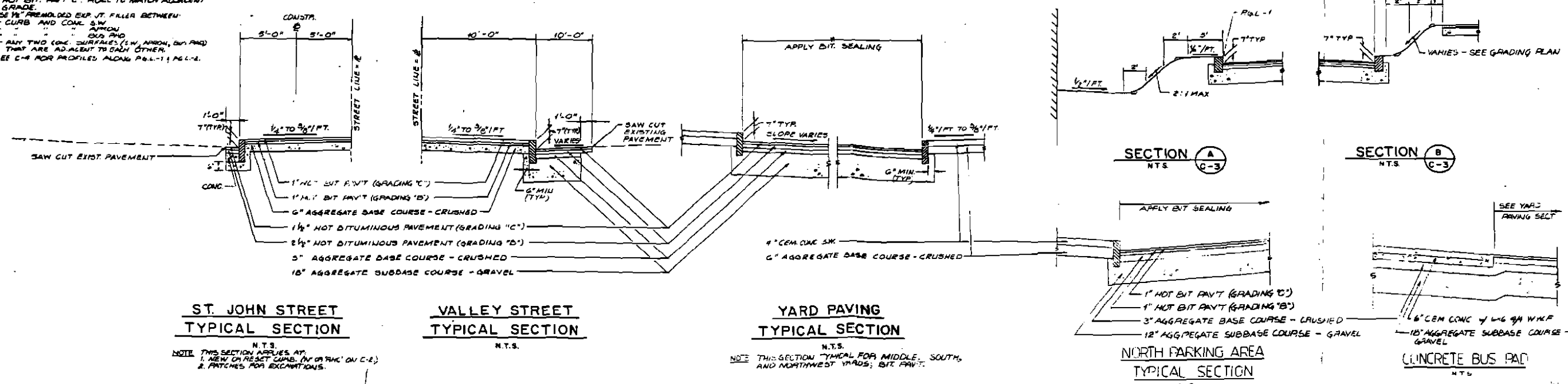


**LEGEND**

- EXISTING CONTOUR
- NEW CONTOUR (FIN. GRADE)
- TC = TOP OF CURB
- BC = BOTTOM OF CURB
- R = RIM ELEVATION

- NOTES**
- SEE C-2 FOR CURB ALIGNMENT.
  - BIT OVERLAY SHALL BE HOT BIT PAVT (BANDING 'C').
  - MATCHING UTILITY TRENCHES IN STREET:
    - USE VALLEY ST. SECTION.
    - MIN. 60 DAYS AFTER 1" PATCH, APPLY MIN. 1" HOT BIT PAVT 'C'. ROLL TO MATCH ADJACENT GRADE.
  - USE 1/2" PREMOULDED EXP. JT. FALLS BETWEEN CURB AND CONC. SW.
    - CONC. APRON
    - CONC. PAD
    - ANY TWO CONC. CURB/FALLS (L.W. APRON, BUS PAD) THAT ARE ADJACENT TO EACH OTHER.
  - SEE C-4 FOR PROFILES ALONG P&L-1 & P&L-2.

**PLAN**  
SCALE: 1" = 20'



**ST. JOHN STREET TYPICAL SECTION**  
N.T.S.  
NOTE: THIS SECTION APPLIES AT 1. NEW OR RESET CURB, IN OR ON C-2; 2. PATCHES FOR EXCAVATIONS.

**VALLEY STREET TYPICAL SECTION**  
N.T.S.

**YARD PAVING TYPICAL SECTION**  
N.T.S.  
NOTE: THIS SECTION TYPICAL FOR MIDDLE, SOUTH, AND NORTHWEST YARDS; BIT PAVT.

**NORTH PARKING AREA TYPICAL SECTION**  
N.T.S.

**CONCRETE BUS PAD**  
N.T.S.

SCOTT TEAS ASSOCIATES  
ARCHITECTURE & PLANNING  
DELEW, CATHY & COMPANY  
ENGINEERS AND PLANNERS  
CHISHOLM WASHINGTON  
ASSOCIATES - ARCHITECTS

**METRC**  
Greater Portland  
Transit District  
11. Jane Street Portland, Maine  
Date: 3/7/85  
Scale: As Noted  
Project No.: ME-03-000-  
Drawn By: E.J.H.  
Checked By: J.P.S.

grading  
plan & sections  
C.R.