

**Request For Proposals**

**For**

**129 Plymouth Avenue N.**

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## **NORTH WASHINGTON INDUSTRIAL PARK**

Request for development proposals for 129 Plymouth Avenue N.

### **INTRODUCTION**

The City of Minneapolis (“City”) is seeking development proposals for a 33,105 square foot property located at 129 Plymouth Avenue N. The property is currently owned by MnDOT. An aerial photo of the site with approximate boundaries is attached to this Request For Proposals (RFP) as Exhibit A.

Land Cost: MnDOT has offered to convey the property to the City for \$293,000 if said conveyance can be completed by December 31, 2008. The City will acquire the property from MnDOT only if another qualified party is prepared to contemporaneously purchase the property from the City for \$293,000 plus an additional 10% (\$29,300) to cover the City’s costs related to (a) this RFP process and (b) the aforesaid property conveyances. The resulting sale price for any acquisition of the property from the City would be \$322,300.

Environmental Condition: The property in question is sometimes referred to as the former Shafer Metal Recycling site. MnDOT staff members have indicated that MnDOT initiated and completed an environmental cleanup of the site after the acquisition of the site by MnDOT and the relocation of the Shafer Metal Recycling business. Attached hereto as Exhibit C is information that has been provided by the MPCA regarding past environmental remediation activities at the site in question. Any acquisition of the property from the City would be “as is,” and any additional environmental cleanup that might be required (by the MPCA and/or by the nature of the proposed redevelopment of the site) would be entirely the responsibility of the purchaser.

Employment and Tax Base Goals: The site is within the North Washington Industrial Park (“NWIP”), which is a redevelopment project for which the City approved a redevelopment plan on August 31, 1973. The City wants the redevelopment to generate living wage (at least \$13.25 per hour) employment, especially for City residents. The City also wants to increase the tax base by maximizing building coverage in a manner consistent with applicable provisions of the zoning code and the comprehensive plan. Proposals demonstrating the highest number of living wage jobs (\$13.25 per hour or higher) will be most favorably received. In the past, successful projects in NWIP have generated at least one job for every 1,000 square feet of building.

Building Design: Although the property in question is not within the boundaries of the NWIP Jobs Park, for purposes of regional consistency proposals that are consistent with the design guidelines attached hereto as Exhibit D (the “NWIP Design Guidelines”) previously developed by and for the NWIP Jobs Park Committee will be most favorably received. The purpose of the guidelines is to give developers a clear indication of expectations and to maintain the integrity and quality of development in the vicinity.

Review Process: Proposals will be screened initially by City staff. Proposers that meet the requirements summarized above will be asked to meet with City staff to discuss their project and to provide draft drawings for the project (site lay out and draft quality building drawings) and to provide some assurance that they will be able to obtain financing. From this process a project will be selected that best meets the City's goals and objectives. The selected developer will then be required to provide documentation of financing and readiness to comply with City requirements described in this RFP and to negotiate a redevelopment contract.

### **SITE FACTS**

- The site size is 33,105 square feet or 0.76 acre.
- The parcel ID number is 1502924340104.
- The site is zoned I-1 and is located in the Downtown Parking Overlay District and the Industrial Living Overlay District
- The Minneapolis Plan for Sustainable Growth, currently in the adoption process, has identified the site for a future industrial use. Proposals should therefore not include residential housing.
- The property has been previously remediated by MnDOT and will be sold to the developer "as is."

### **ASKING PRICE**

The cost of acquiring the property from the City will be \$322,300 (see "Introduction—Land Cost," above).

### **DEVELOPMENT GOALS**

The primary redevelopment goals as articulated in the NWIP redevelopment plan are to create jobs and increase the tax base. It is anticipated that the successful proposal will create employment of at least one job for every thousand square feet of building and result in the construction of a building that is generally consistent with the NWIP Design Guidelines. Those responding to this RFP are urged to read it carefully and comply with the guidelines in order to insure full consideration.

### **PROPOSAL DEADLINE**

#### **Proposal Submission**

Proposers must submit copies of their proposals as follows: one unbound copy, five bound copies and one electronic version in Microsoft compatible or PDF format on diskette or CD. Proposals must be on standard 8 ½" by 11" paper. All supporting documentation must be on paper no larger than 11" by 17". Proposals and supporting documentation must be submitted in a sealed envelope labeled "129 Plymouth Avenue N. Development Proposal." Faxed proposals will not be accepted. Proposers may choose to provide additional sets if and when invited to do so for presentation purposes. Submissions will not be returned.

Proposals shall be delivered to the City on or before:  
**September 5, 2008**  
at or before 4:00 PM.

Deliver to:

**Kevin Carroll, Principal Project Coordinator**  
**City of Minneapolis**  
**Department of Community Planning & Economic Development**  
**105 Fifth Avenue South, Suite 200**  
**Minneapolis, MN 55401**

Proposals received after the deadline will not be accepted. It is neither CPED's responsibility nor its practice to acknowledge receipt of any proposal. It is the responder's responsibility to ensure that a proposal is received in a timely manner.

### **RFP INQUIRIES**

Prospective responders may direct questions in writing (only) to the Department Contact Person:

Kevin Carroll  
CPED  
105 5<sup>th</sup> Avenue South  
Minneapolis, MN 5401  
Email: Kevin.carroll@ci.minneapolis.mn.us  
Fax: 612-673-5113

All questions are due no later than 4:00 PM on August 27, 2008. Questions will be answered in writing and posted on the CPED website. ([www.ci.minneapolis.mn.us/cped](http://www.ci.minneapolis.mn.us/cped)). The Department Contact Person is the only individual who can be contacted about the project by proposers before the proposal deadline. Potential respondents are encouraged to periodically check the website for any new information concerning this RFP and for answers to questions posed by other respondents during the proposal preparation process. The Department Contact Person cannot vary the terms of the RFP.

### **PROPOSAL CONTENTS**

Proposals must include the following:

1. A **cover page** that includes the following information:
  - a. Developer's name and mailing address
  - b. Developer's current legal status: corporation, partnership, sole proprietor, etc.
  - c. Federal ID number or Social Security number
  - d. State ID number
  - e. Contact person's name, title, phone number, fax number and e-mail address
  - f. Signature of authorized corporate officer for each entity proposing as a partnership or team

2. A **description (narrative and drawings) of the proposed development** (e.g., size and location of the building and square footage of specific components, nature of improvements, number of parking spaces, anticipated materials and design style, circulation patterns, loading/service provisions, and elevations from Plymouth Ave. N. and from 2<sup>nd</sup> Street N.) to be built on the site. Information should be included about the anticipated business(es) to be located at the site.
3. An **identification of the entities** that will be involved, a description of the roles they will play (e.g., developer, architect, building owner, property manager, tenant, professional consultant) and a summary of the team's past experience in working together. If the entities have experience in developing similar projects, a description of that experience should be included (including location, type of development, proposer's role(s), cost of project, funding sources, status of project, and information about any continued financial or operating interest in each). Identify the principal person who will speak for the development team and any other key participants who will be involved in negotiating the project terms. Specify whether the development entity is or intends to form a corporation, a general or limited partnership, a joint venture or other type of business association to carry out the proposed development. The developer must also provide two years of financial statements, which may be submitted confidentially to CPED Deputy Director Chuck Lutz under separate cover. Design consultants on the team must be licensed in the State of Minnesota and contractors must be licensed to work in the City of Minneapolis; the submission must include a certification that identified team members meet these requirements.
4. A preliminary **capital pro forma** showing the sources and uses of funds (debt, equity and other) to acquire the property and construct the development (including any tenant improvements). Information as to the status of securing those funds should be included and inclusion of a conditional financing commitment is strongly encouraged. Proposals that do not request or require any type of public assistance will be most favorably received.
5. A **market study or other information** documenting the demand for the proposed space.
6. A **description of the public benefits** that will result from the development, e.g., the creation or retention of jobs (including the estimated number, type and wage levels), tax base enhancement, the provision of retail goods and services, etc. This should include an estimate of the taxable value upon completion and annual real estate taxes.
7. A **proposed timeframe** for the development, including identification of any conditions that must be met before the proposal can become a reality. The schedule should include the time needed to obtain financing, complete design

and secure permits and approvals, prepare the site, start and complete construction, and start and complete lease-up and/or sellout.

8. An executed “**Consent for Release of Response Data**” form (Exhibit B). Proposals that do not include an executed “Consent for Release of Response Data” form shall be considered incomplete, which will be grounds for rejection of the entire proposal.

9. Any **other information** that would help reviewers evaluate the proposal.

The contents of the proposal and any clarification(s) to the contents submitted by the successful proposer may become part of the contractual obligation and be incorporated by reference into the redevelopment contract between the selected developer and the City.

Developers responding to this RFP are not required to provide a Good Faith Deposit on the land with their proposals. However, the developer whose proposal is ultimately selected by the City Council must make a 10% deposit at the time of selection.

## **EVALUATION CRITERIA**

In reviewing proposals, the following criteria are among those that will be considered:

- The experience and the financial and organizational capacity of the developer in successfully planning and completing development projects of similar type and scale, on time and within budget.
- The extent to which the proposed development is consistent with the attached NWIP Design Guidelines.
- The extent to which the project can move forward on a timetable that will coordinate with the other development in the area.
- The market and financial feasibility of the project.
- The anticipated ability of the project to secure necessary funding.
- The public benefits that would be provided by the project, including living wage jobs and tax base enhancement.
- The proposer’s experience in working with neighborhood employment organizations.
- Overall quality of the submission.

The City may, in its sole discretion, expand or reduce the criteria upon which it bases its final decisions regarding selection of the developer for this parcel.

## **CITIZEN PARTICIPATION**

The City of Minneapolis has established a citizen participation process for development projects impacting neighborhoods and values advice/input from the public obtained through this process. The neighborhood group officially designated

to provide input on responses to this RFP is the North Loop Neighborhood Association. Under the Minnesota Government Data Practices Act, Minnesota Statutes Ch. 13, public disclosure of RFP response data prior to execution of a contract is restricted. Such restriction negates the ability of the public to effectively participate in the developer selection process. Therefore, the City requires each proposer to execute and submit a "Consent for Release of Response Data" form as attached to this RFP as Exhibit B.

### **REVIEW/SELECTION PROCESS**

City staff (economic development, planning, public works) and representatives of the North Loop Neighborhood Association will review proposals received by the due date. Some or all of the proposers may, at the City's discretion, be requested to present their proposals in person after the due date. It is anticipated that this review process will be completed during the weeks of September 8 and/or September 15, 2008.

City staff will then negotiate terms of the proposed transaction with the developer that best meets the evaluation criteria. This recommendation will be considered by the CPED Director and then forwarded to the City Council for a land sale public hearing and consideration of approval of the land sale and related terms.

**The City reserves the right to reject any or all proposals or parts of proposals, to negotiate modifications of proposals submitted, and to negotiate specific work elements with a proposer in order to create a project of lesser or greater magnitude than described in this RFP or in the proposer's response to the RFP.**

### **TIMING**

It is the City's desire that a redevelopment contract be executed with the selected proposer and that the property be purchased from MnDOT and then conveyed to the selected developer as much in advance of December 31, 2008 as possible. It is also the City's desire that construction of the project begin by April 1, 2009.

Following is the anticipated timeline:

September 5, 2008	Submission deadline for proposals
September 8-19, 2008	Review/evaluation of proposals by City staff
October, 2008	Staff recommendation to City Council Community Development Committee on selected developer
December 31, 2008	Deadline for City's acquisition of property from MnDOT and contemporaneous conveyance of property to selected developer

## CITY CONTRACTING REQUIREMENTS

The selected developer will be required to enter into a redevelopment contract with the City and comply with any applicable City requirements. These requirements vary depending upon the type of development and the source and amount of public investment, if any, and may include, without limitation, the payment of Prevailing Wages for construction, the preparation of Affirmative Action Plans, compliance with the Apprenticeship Policy, the Small and Underutilized Business Enterprise Program and the Business Subsidy Act/Living Wage Policy, and reporting requirements for those programs. Some of the standard requirements are further discussed below, but the following list is not exhaustive. Proposers unfamiliar with these standard requirements are urged to seek further information.

- 1. Equal opportunity (nondiscrimination and affirmative action).** The selected developer and contractor will be required to submit a written Affirmative Action Plan for the development project and to comply and cause its contractors to comply with applicable provisions of Chapters 139 and 141 (Title 7, Civil Rights), Minneapolis Code of Ordinances, nondiscrimination provisions contained in Chapter 181, Minnesota Statutes, and the Americans with Disabilities Act of 1990 (as amended). The selected developer will be required to agree not to discriminate against any employee or applicant for employment because of race, color, creed, religion, ancestry, national origin, sex, affectional preference, disability or other handicap, age (40 – 70), marital status, or status with regard to public assistance. The selected developer also will be required to take affirmative action to ensure that all employment practices are free of such discrimination. These employment practices include, but are not limited, to the following: hiring, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff, termination, rates of pay or other forms of compensation and selection for training, including apprenticeship. The developer will post in conspicuous places, available to employees and applicants for employment, notices to be provided by the City setting forth the provisions of this non-discrimination clause. The selected developer also will be required to, in all solicitations or advertisements for employees placed by or on behalf of the developer, state that it is an equal opportunity or affirmative action employer. CPED will require compliance in demolition, construction and marketing of development projects.
- 2. The Job Linkage Program** links economic development with employment. The purpose of the program is to insure increased employment opportunities for Minneapolis residents. All commercial/industrial development projects whose primary purpose is job creation or retention

are required to establish and report on certain workforce goals for five years.

3. Depending upon the level and purpose of public assistance that may be received, provisions of the Minnesota **Business Subsidy Act** and/or the City's **Living Wage Policy** may also apply to the project. Should these requirements apply, they will be incorporated into the development agreement.
4. In accordance with the City's **Prevailing Wage Policy**, the selected developer covenants and agrees that it will cause its general contractor to comply with the wage and hour standards issued by the United States Secretary of Labor pursuant to the Davis Bacon Act, 40 U.S.C. Sections 276a to 276a-5, as amended, and the Contract Work Hours and Safety Standards Act 40 U.S.C. Sections 327-333. The developer shall maintain appropriate payroll documentation for a 3-year period after completion of the project.
5. All development projects that receive any type of public financial assistance in excess of \$100,000 must establish goals for the utilization of **Small and Underutilized Businesses** in the development of the project.
6. The developer's contractor will be subject to the City's **Apprenticeship Training Policy** for development projects where public financial assistance is provided to the developer/owner.
7. **Soil Conditions:** The property will be sold "as is" and it will be the developer's responsibility to correct and pay for all costs associated with soil problems. Any environmental reports regarding the property within CPED's possession may be reviewed during normal business hours at the CPED Offices by making arrangements with the Department Contact Person. Any potential proposer that wishes to conduct its own environmental testing of the property must seek and obtain MnDOT's permission to do so and must comply with any related MnDOT conditions or requirements.
8. **Rezoning Responsibility:** It is the selected developer's responsibility to undertake and finance any rezoning, variance and use permits necessary for approval of proposed development.
9. **Utilities:** It is the selected developer's responsibility to identify the locations of and provide for the installation of electricity, gas, water, sewer service and other utilities servicing the site from the public mains to the individual units.
10. **Construction Standards:** Development must meet all Minneapolis City codes, and projects will be reviewed for energy efficiency.

11. **Hold Harmless:** The selected developer shall agree to defend, indemnify and hold the City harmless from any and all claims or lawsuits that may arise from the developer's activities under the provisions of the redevelopment contract, that are attributable to the acts or omissions, including breach of specific contractual duties of the developer or the developer's independent contractors, agents, employees or officers.

**EXHIBIT A**

**Aerial Photo**

|



**EXHIBIT B**  
**Form of Consent for Release of Response Data**

\_\_\_\_\_, 20\_\_

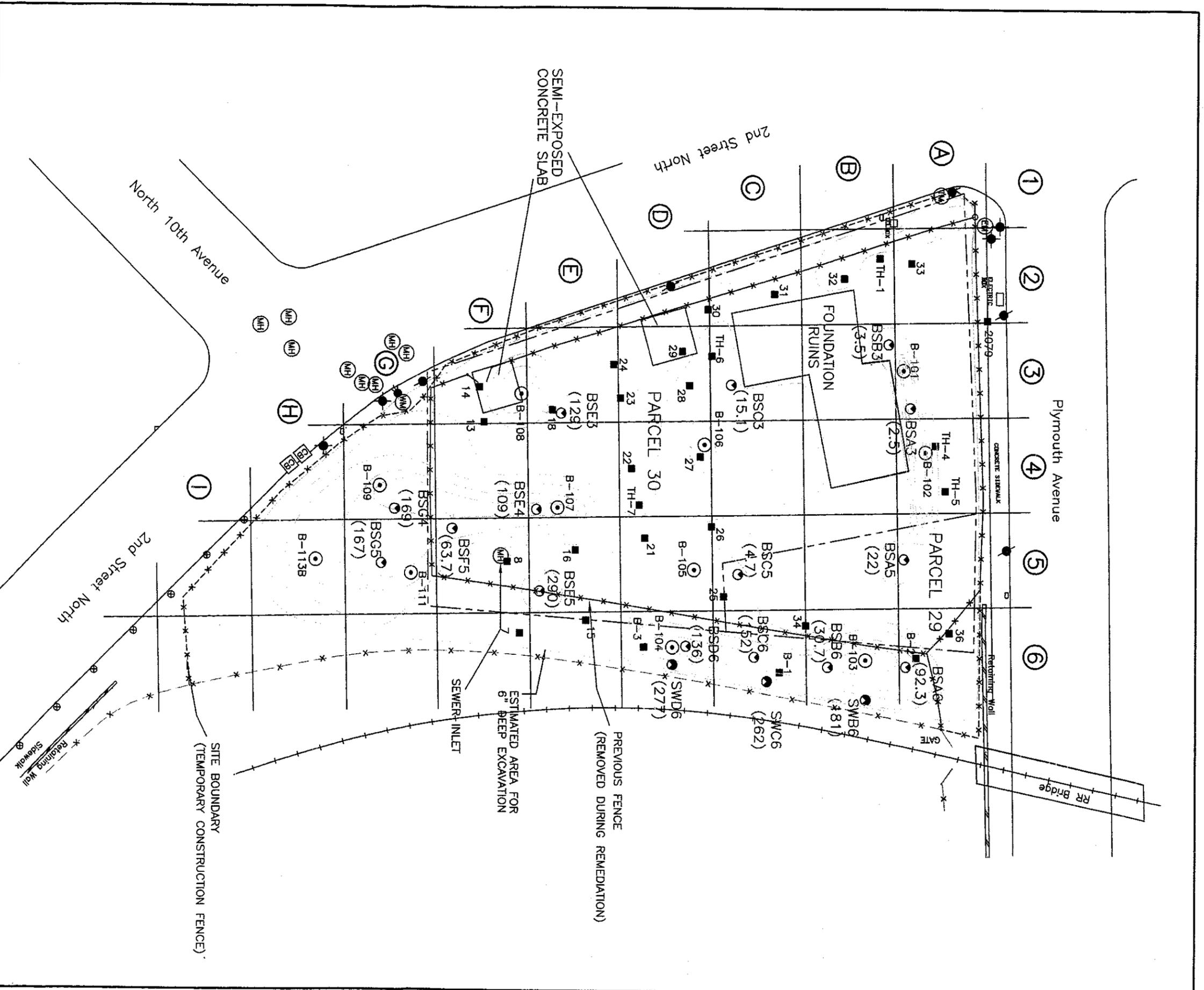
City of Minneapolis  
Department of Community Planning and Economic Development  
105 5<sup>th</sup> Avenue S.  
Minneapolis, MN 55401

Re: 129 Plymouth Ave. N. Request for Proposals

**Consent for Release of Response Data**

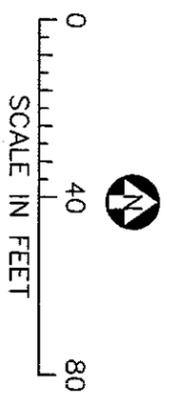
\_\_\_\_\_, on behalf of  
\_\_\_\_\_, hereby consents to the release of its development  
proposal in response to the 129 Plymouth Avenue N. *Request for Proposals* and waives  
any claims it may have under Minnesota Statutes Section 13.08 against the City of  
Minneapolis for making such information public. [The foregoing consent and waiver  
does not extend to financial statements submitted under separate confidential cover.](#)

\_\_\_\_\_  
\_\_\_\_\_



**LEGEND**

- Barr Engineering Co. Soil Boring (1995)
- Previous Soil Boring (By Others)
- Excavation Base Samples
- Excavation Sidewall Samples
- Excavation Contour (Depth in Feet)
- SAMPLE ANALYTICAL RESULTS
- Sample ID (4.7)
- Post-Excavation Total Lead Concentration (milligrams per kilogram)
- Water Manhole
- Catch Basin
- Hydrant
- Parking Meter
- Existing Railroad Tracks
- Traffic Sign
- Light Pole/Traffic Pole
- Power Pole
- Manhole
- Electric Manhole
- Traffic Manhole



Shafter Metal Recycling Site  
 Minneapolis, Minnesota

**FIGURE 3**  
**PREVIOUS SOIL BORING LOCATIONS**

**Tetra Tech EM Inc.**

S:\MINDOT\Shafter Metals\RAP Implementation Report\RAP\_IR\_F2.dwg



Minnesota Department of Transportation

Office of Environmental Services

395 John Ireland Boulevard, MS 620  
St Paul MN 55155-1899

Fax: 651/ 284-3754  
Phone: 651/ 284-3750

May 23, 2005

**RECEIVED**

**MAY 26 2005**

Mr. Nile Fellows, Project Manager  
Superfund and Emergency Response Section  
Minnesota Pollution Control Agency  
520 Lafayette Road  
St. Paul, Minnesota 55155

Subject: Shafer Metal Recycling Site, 129 Plymouth Ave. N.  
Response Action Plan Implementation Report

Dear Mr. Fellows:

Enclosed for your review and approval is a report titled: "Response Action Plan Implementation Report, Shafer Metal Recycling Site, Plymouth Avenue North and 2<sup>nd</sup> Street North, Minneapolis, Minnesota," dated May 12, 2005 (Implementation Report). The Implementation Report documents the cleanup of the Shafer Metal Recycling Site (Site) in accordance with the Minnesota Pollution Control Agency (MPCA)-approved Response Action Plan.

The remedial goal for soil lead cleanup at the Site was set at 500 mg/kg (pursuant to the Consent Order for the Site). The Implementation Report documents that cleanup of the Site exceeded that goal and met the Tier 1 Soil Reference Value (SRV) goal for lead of 400 mg/kg. The Minnesota Department of Transportation (Mn/DOT) suggests that because the Site meets the Tier 1 SRV standard for lead in soil, institutional controls (such as an Affidavit filed with the property deed) will not be required for the Site.

Mn/DOT requests that upon determination that the site cleanup has met the requirements of the Response Action Plan, the MPCA initiate delisting of the site from the Minnesota Permanent List of Priorities.

Please call me at (651) 284-3781 if you have any questions or would like additional information.

Sincerely,

A handwritten signature in cursive script that reads "Nancy Radle".

Nancy J. Radle, P.G.  
Environmental Analysis Unit  
Office of Environmental Services

cc: File

RECEIVED

MAY 26 2005

**RESPONSE ACTION PLAN IMPLEMENTATION REPORT**

**SHAFFER METAL RECYCLING SITE  
PLYMOUTH AVENUE NORTH AND 2<sup>ND</sup> STREET NORTH  
MINNEAPOLIS, MINNESOTA**

*Prepared for*



**Minnesota Department of Transportation**  
395 John Ireland Boulevard  
St. Paul, Minnesota 55155-1899

**MAY 12, 2005**

*Prepared by*



**Tetra Tech EM Inc.**  
2001 Killebrew Drive, Suite 141  
Bloomington, Minnesota 55425  
(612) 643-2220

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## EXECUTIVE SUMMARY

The 1¼-acre Shafer Metal Recycling Site in Minneapolis, Minnesota (the Site), was purchased by the Minnesota Department of Transportation (Mn/DOT) in 1969. From 1972 to 1981, Mn/DOT leased the property to the Shafer Metal Recycling Company, which conducted battery storage and recycling operations. Battery recycling activities ceased in 1982, and the Site has since remained vacant. The battery recycling activities at the Site resulted in lead contamination in shallow soils across a majority of the property. In 1984, the Site was placed on the Minnesota Permanent List of Priorities (PLP), the state Superfund list, due to the risks posed to human health and the environment by the contamination.

The Shafer Metal Recycling Company completed several environmental assessments on the property throughout the 1980's in order to characterize soil and groundwater impacts at the Site. Mn/DOT completed additional investigation in the 1990's, and in 1998, Mn/DOT's consultant, Barr Engineering Company (Barr), developed a Response Action Plan (RAP) to address soil contamination on the property with the goal of receiving a No Further Action (NFA) determination from the Minnesota Pollution Control Agency (MPCA) and removal of the Site from the State PLP.

RAP implementation activities commenced at the Site in August 2004. Excavation of impacted soil began the week of October 18, 2004. Impacted soil was excavated, treated with stabilization media, sampled, and transported off-site for disposal at a licensed Subtitle D landfill in Buffalo, Minnesota.

Following removal of impacted soil, cleanup verification samples were collected from pre-determined excavation base and sidewall locations and analyzed for total lead. Results of the cleanup verification sampling indicated that cleanup activities were successful in remediating lead-impacted soil to the established site cleanup criteria for the Site of 500 milligrams per

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kilogram. Following removal of impacted soil and upon receipt of satisfactory cleanup verification samples the Site was backfilled to previous grade.

Based on the results of the remediation activities completed at the Site, Tetra Tech recommends that the property be de-listed from the State PLP. Tetra Tech also recommends that the MPCA issue a No Further Action letter for soil at the Site.

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## SECTION 1 INTRODUCTION

### 1.1 PURPOSE

The purpose of this RAP Implementation Report is to present the results of remedial activities completed by Tetra Tech, on behalf of Mn/DOT, at the Shafer Metal Recycling Site, in Minneapolis, Minnesota. Activities detailed herein were completed in accordance with the MPCA-approved *Response Action Plan* dated June 1998 and *Response Action Plan Addendum* dated December 1998, and Mn/DOT's *Detailed Scope of Work and Deliverables* (Mn/DOT Contract No. 86475, Exhibit A).

### 1.2 SITE LOCATION AND SETTING

The Site is situated in a primarily industrial and commercial area immediately north of downtown Minneapolis, Minnesota. The Site is approximately 1¼ acres in size and is located in Sections 15 and 22 of Township 29 North, Range 24 West (Figure 1, Appendix A). The property is bordered to the north by Plymouth Avenue North, to the east by a railroad spur, and to the west and south by Second Street North. The street address of businesses formerly operating at the property was 129 Plymouth Avenue North.

Approximately two-thirds of the property is owned by Mn/DOT; the southern one-third and adjacent railroad corridor is owned by Cowles Media Company (owner of the Minneapolis Star Tribune Newspaper). The property has been vacant since the early 1980s, and prior to the remedial activities, was covered with grassy and woody vegetation with some structure remnants.

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According to previous reports, surficial fill materials consisting of silty sand and gravel with various amounts of debris are present at the site at thicknesses of up to 10 feet. Underlying the fill materials are river terrace sand deposits with occasional silt, clay, and gravel lenses. Groundwater beneath the Site occurs within the river terrace deposits at a depth of approximately 30 feet below ground surface (bgs) and flows south, southeast, or east towards the Mississippi River and/or Bassett Creek. The uppermost bedrock in the vicinity of the Site is the St. Peter Sandstone, which is present at depths of approximately 150 to 200 feet bgs.

### 1.3 SITE HISTORY

As discussed in the *Remedial Investigation/Focused Feasibility Study* (RI/FFS) report for the Site (September 1995), a truck terminal represented the first industrial use of the Site and operated from approximately 1948 until 1972. The truck terminal contained a warehouse/garage/office facility and a parking area. In 1969, Mn/DOT purchased the property to allow for a future highway construction project, which was postponed and subsequently cancelled. Mn/DOT continued to lease the property for truck terminal operations until 1972.

From 1972 to 1981, Mn/DOT leased the property to Union Scrap, which converted the site facility into a battery storage and recycling operation. Union Scrap operated several metal reclamation facilities in the area; the operation located at 129 Plymouth Avenue North was known as Shafer Metal Recycling.

The battery recycling operations at the Site are described in detail in the RI/FFS. Used vehicle batteries were accepted and stockpiled in and around boxes and trucks in the parking area located in the southern portion of the property. The batteries were processed in the raised central warehouse bay of the site building, the foundation of which remained at the Site until the remedial activities. Batteries were either cut or cracked to allow for reclamation of lead plates and casings. Liquids from cracked batteries were either allowed to run into the ground or to an

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aboveground tank, which eventually drained into a sanitary sewer. Occasionally, the liquids would flow onto the floor of the warehouse and, in some cases, into Plymouth Avenue storm sewer drains. During its operational duration, the battery recycling processes resulted in deterioration of sanitary sewer piping, a storm sewer catch basin, the Plymouth Avenue sidewalk, and the building floor.

Battery recycling activities at the Site ceased in 1982. The building was demolished and removed, except for two foundations which remained at the site. The building floors were scraped and limited soil removal and filling was conducted by Union Scrap. In 1984, the Minnesota Pollution Control Agency (MPCA) and Union Scrap entered into a Stipulation Agreement that required the extent of contamination to be determined. Union Scrap declared bankruptcy in 1985.

Environmental assessments were initiated at the site in 1980 by the Shafer Metal Recycling Company and continued throughout the decade. Additional Remedial Investigation (RI) activities were completed in the 1990's by Mn/DOT. Historical site assessment and RI analytical data delineated areas of soil impacted with heavy metals. Based on this data, lead was identified as the primary contaminant of concern. Total lead concentrations of up to 89,400 milligrams per kilogram (mg/kg) were detected in soil samples. Based on the soil sample results, the RI/FFS concluded that the lateral extent of elevated lead concentrations was limited by the presence of Plymouth Avenue, Second Street North, and the railroad embankment. These features, which were present prior to and during the operational duration of the battery recycling operations, apparently limited the lead-impacted runoff and confined the majority of the contamination to within the Site boundaries.

Elevated concentrations of cadmium were also detected in investigative samples collected throughout the Site, but occurred in areas exhibiting elevated lead impacts. Therefore, it was concluded that management of lead-impacted soils would also result in remediation of the less extensive areas of cadmium contamination.

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## 1.4 APPROVED REMEDIAL ACTION PLAN

The RI/FFS identified excavation of impacted soil, on-site soil stabilization, and off-site soil disposal at a non-hazardous waste landfill as the preferred alternative for quickly and effectively meeting the proposed soil cleanup criteria. A RAP detailing the remedial procedures and objectives was submitted to the MPCA in June 1998. Details contained in the RAP are summarized in the following sections.

### 1.4.1 SOIL CLEANUP CRITERIA

The MPCA approved a 500 mg/kg remedial goal for total lead at the Site in 1994. This value was based on previous battery recycling remedial projects and MPCA policy regarding acceptable lead concentrations in industrial site soils. Figure 2 illustrates the approximate horizontal and vertical extent of soil containing lead concentrations exceeding 500 mg/kg.

### 1.4.2 SOIL EXCAVATION AND STABILIZATION

During the RI/FFS site assessment activities, soil samples were collected at multiple depth intervals to assess the vertical distribution of lead impacts. Based on the results, the depth of contaminant impacts ranged from approximately 6 inches to 7 feet below ground surface (bgs) across the Site as shown on Figure 2. Calculations of the total soil volume exceeding the 500 mg/kg remedial goal indicated that approximately 3,600 cubic yards of soil would require excavation.

The MPCA-approved RAP for the site recommended conducting on-site soil treatment using a stabilization chemical to immobilize the leachable lead so the soil could be disposed of at a Subtitle D non-hazardous waste landfill. The treatment process was to involve mixing excavated lead-impacted soil with a stabilization agent such as Portland cement or a proprietary admixture.

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The stabilization agent weight ratio was to be pre-determined through bench scale testing on representative site soils.

Following stabilization of impacted soils, one composite sample of treated soil was to be collected for laboratory analysis of Toxicity Characteristic Leaching Procedure (TCLP) lead using EPA method SW846 1311/7420 for every 500 cubic yards of treated soil. Once it was confirmed that treated soil contained TCLP lead concentrations of less than 5 milligrams per liter (mg/L), the stabilized soil was to be loaded into trucks and transported to a Subtitle D landfill for disposal.

#### 1.4.3 CLEANUP VERIFICATION SAMPLING

A *Revised Excavation Approach* memorandum was submitted to the MPCA in December 1998 (referred to as the *RAP Addendum*). The memorandum proposed a reduced excavation confirmation sampling frequency due to the quantity (over 230 samples collected for total lead) and locations of investigative samples that had provided well-defined horizontal and vertical extents of soil containing lead concentrations higher than 500 mg/kg. The MPCA approved the *RAP Addendum* on December 23, 1998.

It was proposed that base verification samples be collected from specific locations within the excavation. Four samples would be collected from each of two deeper (up to 7 feet bgs) excavation areas, and six samples would be collected from shallower excavation areas. Each base verification sample would be collected by compositing four subsamples from locations surrounding the area to be characterized.

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The *RAP Addendum* specified that, due to the shallow depth of a majority of the excavation, sidewall confirmation samples would be collected only from the eastern wall of the deeper excavation in the northeast area of the Site. It was proposed that one sample be collected for every 45 linear feet of excavation sidewall in this area, resulting in a total of three samples.

If results of the cleanup verification sampling indicated that lead concentrations levels in excess of 500 mg/kg were still present, additional soil excavation was to be conducted and additional confirmation samples were to be collected.

#### 1.4.4 AIR MONITORING

The RAP specified that air monitoring be conducted during the remedial activities to ensure that the work did not cause unacceptable air quality for Site workers and the public near the Site. A dust monitoring performance standard for the RI/FFS was calculated based on the National Primary and Secondary Ambient Air Quality Standard (NAQS) for lead of 1.5 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ), which represents the mean annual concentration of airborne lead particulates that results in adverse risk to human health. The calculation assumed that the lead concentration in dust generated from soil excavation would equal the lead concentration in the soil itself. The average lead concentration in soil to be excavated (7,445 mg/kg) was multiplied by the 1.5  $\mu\text{g}/\text{m}^3$  annual standard to determine that real-time, site-specific dust concentrations lower than 0.2 milligrams per cubic meter ( $\text{mg}/\text{m}^3$ ) would result in exposures to lead particulates below the NAQS.

The RAP specified that hourly air monitoring at upwind and downwind locations would be conducted during the soil remediation activities. A real-time dust monitor would be used to verify that dust concentrations at the Site perimeter were below 0.2  $\text{mg}/\text{m}^3$ . If that standard could not be maintained, the work would be stopped and the MPCA would be contacted to discuss contingency plans.

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#### 1.4.5 GROUNDWATER MONITORING

Based on the lack of significant contaminant impacts in groundwater samples previously collected at the Site, and upon the proposed removal of lead-impacted soil, long-term groundwater monitoring was not recommended. The RAP did recommend that any monitoring wells remaining on the Site be sealed prior to RAP implementation.

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## SECTION 2 RAP IMPLEMENTATION

### 2.1 PRE-REMEDICATION SITE ACTIVITIES

Prior to the beginning of site work, both the Mn/DOT and Cowles Media Company portions of the Site were vacant with areas of thick vegetation. The following sections detail the activities undertaken to prepare the Site for the remedial activities. The activities completed during the pre-remediation phase of the project included tree removal and fence installation, foundation and concrete removal, installation of erosion control measures, preparation of a health and safety plan, site surveying, completion of a treatability study, and monitoring well abandonment.

#### 2.1.1 TREE REMOVAL/FENCE INSTALLATION

On October 10, 2004, the excavation contractor for the project, Glenn Rehbein Companies (Rehbein), began clearing the Site in preparation for the start of remedial activities. Rehbein and a subcontracted tree removal company utilized a "Hydro-Ax" vegetation-clearing machine and chain saws to cut down all trees and other vegetation. After clear-cutting the entire Site and moving all vegetative debris to a centralized location, a large tub grinder was utilized to grind the debris into a manageable form for off-site transport and disposal.

On October 20, 2004, Rehbein contracted Viking Fence, Inc. (Viking) to install a security fence at the Site. With the exception of the eastern boundary of the property (which already had an existing 8-foot high steel fence in place), Viking installed a 6-foot high chain link fence around the perimeter of the Site. Site access was restricted to one gate on Plymouth Avenue North and a second gate on 2<sup>nd</sup> Street North. The gates were controlled by Tetra Tech and Rehbein personnel during operating hours and locked during off-hours and weekends.

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## 2.1.2 FOUNDATION/CONCRETE REMOVAL

Prior to removal of lead-impacted soil, former building foundations and concrete pads required removal from the site. Rehbein utilized a trackhoe excavator equipped with a hydraulic hammer to break apart and remove the concrete. The material removed during the week of October 18<sup>th</sup>, 2004, included the foundation and pad of the former recycling building near the north end of the Site, and two concrete pads present along 2<sup>nd</sup> Street North (see Figure 2). Additional foundation walls located south and east of the recycling building were also removed. The concrete was thoroughly cleaned of contaminated soil on-site, and transported off-site for recycling. A total of 645 tons of concrete was removed from the Site.

## 2.1.3 EROSION CONTROL MEASURES

The City of Minneapolis Department of Environmental Inspections requires preparation of erosion control plans to manage the amount of soil, dust, and water that may potentially migrate from sites during construction activities. Tetra Tech prepared a Stormwater Pollution Prevention Plan for the Site and submitted it to the City of Minneapolis on August 25, 2004. The scope of the project also triggered the requirement to obtain a National Pollutant Discharge Elimination System (NPDES) Storm-water Permit for Construction Activity. An application for an NPDES permit was submitted to the MPCA on September 21, 2004.

The installation of the approved erosion control measures began the week of October 18, 2004, with the installation of silt fencing to keep impacted soil from migrating off site. The silt fencing conformed to MNDOT 3886 specifications, and was installed around the entire perimeter of the site.

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Other erosion control measures installed in accordance with the approved plan included a stormwater retention trench along 2<sup>nd</sup> Street North, gravel site entrances and exits to reduce soil collecting on truck tires, and a clean access road so that trucks entering and exiting the site never traveled on contaminated soil. A street sweeper was also available to remove soil that might be tracked onto the street by heavy equipment and/or truck traffic leaving the Site.

To minimize dust generation at the Site, Rehbein had available a tanker truck to wet the soil in work areas and roadways. Air monitoring equipment (Personal DataRAM<sup>®</sup> total particulate monitors) were placed upwind and downwind of the Site to analyze for total particulates in air. If threshold total particulate concentrations were observed at the monitoring locations, watering would occur, and the level of personal protective equipment required for Site workers would be re-evaluated.

#### 2.1.4 HEALTH AND SAFETY

In accordance with Occupational Safety and Health Administration (OSHA) regulations compiled in Title 29 of the *Code of Federal Regulations* (CFR), Part 1910.120, Tetra Tech prepared a site-specific Health and Safety Plan (HASP). The HASP outlined the potential health threats associated with the site operations as well as the proper personal protective equipment (PPE) required to minimize the risks to human health. This HASP was made available to all on-site personnel who had the potential to be exposed to hazardous on-site conditions, including Tetra Tech and subcontractor personnel participating in the soil excavation and removal activities, and all Site visitors, including regulatory agency representatives.

No entry was allowed onto the Site without documentation of OSHA 40-hour and subsequent 8-hour refresher training, and acknowledgement of the site health and safety procedures. Prior to the beginning of excavation activities, a decontamination tent was set up by Rehbein. This tent included hand wash and eyewash stations, disposal bins for used PPE, and storage of

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replacement personal protective equipment. Entry to and exit from the Site took place through the decontamination tent. Breaks were taken off-site typically in personal vehicles outside the hot zone. The "Hot Zone" was considered to be the area within the chain-link security fence surrounding the Site.

At the start of Site excavation operations on October 20, 2004, a level "C" PPE ensemble, which included protective clothing, gloves, and an air-purifying respirator (APR), was worn by all workers who had the potential to be exposed to health risks. Legend Technical Services, Inc. (Legend) was contracted to provide air monitoring support at the Site. The monitoring included installing one personal sampling pump in the cab of the trackhoe and a second pump on a Site laborer. Air monitoring results obtained from the first three consecutive days of excavation operations, presented below in Table 1, indicated lead in air and total dust concentrations well below OSHA exposure standards. A copy of the laboratory analytical report is provided in Appendix C. Based on the results of the air monitoring, PPE was downgraded to level "D" for the remainder of Site operations.

Tetra Tech also conducted hourly perimeter (upwind and downwind) air monitoring for total dust using a Personal DataRAM<sup>®</sup> particulate monitor and wind speed monitoring using an anemometer during all on-site activities that involved disturbance of contaminated soil. This monitoring was initiated during concrete removal activities on October 18, 2004. Tetra Tech continued air quality and wind speed monitoring for the duration of the project to ensure that dust levels remained in compliance with OSHA standards. A summary of total particulate and wind speed levels for the Site for the duration of soil disturbance activities is provided in Appendix B.

TABLE 1 - INITIAL AIR MONITORING RESULTS

Sample ID	Date	Air Volume (l)	Results	
			Total Particulates (mg/m <sup>3</sup> )	Total Lead (mg/m <sup>3</sup> )
Equipment Operator	10/20/2004	465	0.41	<0.0043
Field Technician	10/20/2004	460	0.28	<0.0043
Equipment Operator	10/21/2004	450	0.19	<0.0044
Field Technician	10/21/2004	450	0.32	<0.0044
Equipment Operator	10/22/2004	480	0.29	<0.0042
Field Technician	10/22/2004	480	<0.01	<0.0042
<i>OSHA Standards</i>	-	-	<i>15</i>	<i>0.05</i>

Concentrations reported in milligrams per cubic meter (mg/m<sup>3</sup>)  
 (l): Liter

#### 2.1.5 SITE SURVEY AND EXCAVATION GRID

Prior to the start of Site activities, Tetra Tech was provided with scaled Site drawings which depicted the proposed excavation contours based on the approved RAP. To track remediation progress, data, and results, the Site was divided into a 40-foot by 40-foot grid system (Figure 2).

Based on the extent and depth of lead impacts depicted in the approved RAP, "target" excavation depths were assigned to each grid. The target depths were used as guides for the equipment operator during excavation activities and to allow for an estimate of total soil to be removed from each grid at the Site.

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## 2.1.6 TREATABILITY STUDY

Rehbein conducted a bench-scale treatability study to determine the optimum stabilization agent mixture ratio and to accelerate the remedial operations. On August 12, 2004, Tetra Tech collected one composite soil sample from an interval of 0 to 1 foot bgs in the vicinity of boring B-102, which was advanced during RI/FFS activities at the Site. Based upon results reported in the RI/FFS, this was expected to represent a "worst case" sampling location for lead.

At the Rehbein office facility, a treatability study was performed to determine effective dosages of EnviroBlend® for treating the lead-impacted soil. EnviroBlend® is mixture of dry chemicals including Triple Super Phosphate (TSP) and magnesium oxide. The chemicals combine an anion with a metal cation to produce a relatively insoluble metal salt. A buffering agent adjusts and maintains the pH at the minimum solubility range for the metals of concern.

TCLP analysis was performed by Pace Analytical Services, Inc., an independent Minnesota certified laboratory, in accordance with EPA Methods 3010 and 6010. To establish a baseline for the study, one untreated sample was analyzed by TCLP to determine the amount of leachable lead. Results of this analysis indicated a leachable lead concentration of 322 milligrams per liter (mg/L), a concentration well in excess of the RCRA characteristic for toxicity of 5 mg/L.

Subsequently, five 100-gram soil samples were treated with various dosages of EnviroBlend® and subjected to the TCLP test. The treatment goal was to achieve a TCLP concentration of 2.5 mg/L or less, as this concentration met the standard at the selected Subtitle-D landfill for use of the soil as alternate daily cover.

Table 2, below, which summarizes the results of the various ranges of treatment dosages, illustrates that a 2% dosage of EnviroBlend<sup>®</sup> successfully reduced the leachable lead to a concentration less than the hazardous waste limit and below the landfill acceptance criteria for use of the material as daily cover.

TABLE 2 - TREATABILITY STUDY RESULTS

Dosage	TCLP Lead (mg/L)	Comments
Untreated	322	Untreated Soil
1% EnviroBlend <sup>®</sup> 50/50	119	
2% EnviroBlend <sup>®</sup> 50/50	0.605	Recommended Dosage
2% EnviroBlend <sup>®</sup> 75/25	1.600	
3% EnviroBlend <sup>®</sup> 50/50	0.955	
3% EnviroBlend <sup>®</sup> 75/25	0.387	

mg/L: milligrams per liter

TCLP: Toxicity Characteristic Leaching Procedure

Note: Landfill acceptance criteria for TCLP lead was 2.5 mg/L.

### 2.1.7 SEALING OF MONITORING WELLS

On October 22, 2004, Thein Well Company mobilized to the Site to seal two monitoring wells located on the northern portion of the property. A third monitoring well referenced in historical data on file at Mn/DOT was reported to be located off-site to the north of the Site; however, this well could not be located during reconnaissance activities performed by Mn/DOT staff. The two identified wells were sealed in accordance with state law (Minnesota Statutes, section 103I.301).

During excavation activities on October 25, 2004, a 4-inch diameter pipe that appeared to be a water well or monitoring well was discovered near the northeast corner of grid H4 (see Figure 2). The pipe had a measured depth of approximately 20 feet bgs. With the approval of Mn/DOT, Thein Well Company was contacted, and this pipe was also sealed in accordance with state law on November 9, 2004. Copies of the well and boring sealing records are provided in Appendix D.

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## 2.2 SOIL EXCAVATION AND STABILIZATION ACTIVITIES

The extent and magnitude of lead-impacted soil at the Site was interpolated from data obtained during prior assessment activities. Based on these data, Rehbein and Tetra Tech staked out the excavation depth contours and the grid system prior to excavation activities which began the week of October 18, 2004. Excavation activities began at the extreme south end of the Site in grids H4, H5, and H6 as illustrated on Figure 2, and proceeded north and west. Depth contour stakes allowed the Tetra Tech field technician and Rehbein trackhoe operator to match excavation depths in the field with the proposed excavation contours presented in the MPCA-approved RAP.

As the soil was removed from each excavation area, it was loaded out with a front end loader and placed in a stockpile for treatment with the stabilization media. Stockpiles averaged approximately 325 cubic yards (cy<sup>3</sup>) each.

In most locations, visual observation of buried debris matched anticipated excavation depths very closely. Once it had been determined that the designated excavation depth had been reached, and no further visual indications of lead-impacted soil or battery-related debris were observed, cleanup verification soil samples were collected at predetermined locations within the grids based on the approved sampling plan. Results of the cleanup verification sampling are discussed in Section 2.3.

On October 26, 2004, the excavator uncovered what appeared to be a storm sewer inlet in grid F5. Mn/DOT was not able to provide any information regarding the inlet and it did not appear on site diagrams obtained by Tetra Tech. The City of Minneapolis Public Works Department was contacted and mobilized to the site to inspect the inlet. Tetra Tech was informed by the City inspector that the inlet was previously abandoned and had been bulkheaded approximately 50

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years earlier. With the approval of Mn/DOT and the City of Minneapolis, the sewer inlet was left in place following excavation of contaminated soil from grid F5.

As the lead-impacted soil was excavated, a front end loader placed it in a nearby stockpile. The appropriate dosage (approximately 2 percent by weight) of treatment chemical was measured by mass density calculations. The treatment media was applied to the soil surface and mixed homogeneously with the trackhoe. The treated soil was then sampled for TCLP lead and stored in an undisturbed area under reinforced plastic sheeting on site for approximately 5 days until post-treatment analytical results were received from the laboratory. If the analytical results indicated that the TCLP lead concentration still exceeded the landfill waste acceptance limit, the soil was re-treated and subsequently re-sampled prior to disposal.

Table 3, below, summarizes the stockpile post-treatment sampling results. Complete copies of the laboratory analytical reports are presented in Appendix C. A total of six stockpiles were treated and transported off-site for disposal. The stabilization media was successful on the first treatment of every stockpile with the exception of stockpile SP-2 which required re-treatment after initially failing the landfill acceptance criteria of 2.5 mg/L for TCLP.

TABLE 3 - STOCKPILE POST-TREATMENT ANALYTICAL RESULTS

Sample ID	TCLP Lead (mg/L)	Date Sample Submitted
SP-1	0.025	10/25/2004
SP-2	9.6	10/26/2004
SP-3	1.5	10/27/2004
SP-4	<0.015	10/27/2004
SP-2B	<0.015	11/1/2004
SP-5	0.026	11/8/2004
SP-6	<0.015	11/16/2004

TCLP: Toxicity Characteristic Leaching Procedure

mg/L: milligrams per liter

<: Concentration less than laboratory reporting limit

Note: Landfill acceptance criteria for TCLP lead was 2.5 mg/L

Sample ID SP-2B represents the resampling of stockpile SP-2

### 2.3 POST EXCAVATION CLEANUP SAMPLING

The cleanup confirmation sampling conducted by Tetra Tech followed the guidelines outlined in the RAP and RAP Addendum. When the proposed excavation depth had been reached in a cleanup confirmation location, a four-point composite sample was collected from within a 4-foot square area around the location. Sidewall cleanup confirmation samples collected at locations SWB6, SWC6 and SWD6 were collected by compositing soil collected from four evenly-spaced grab samples located along the vertical profile of the sidewall.

Samples were collected by a field technician wearing dedicated, disposable nitrile gloves. Equal volumes of the four excavation base or sidewall grab samples from each sampling location were composited together in a pre-labeled Ziploc bag. Following mixing of the composite, laboratory supplied sample jars were filled with composited soil and labeled. The resulting composite samples were then transferred into a laboratory supplied sample container along with appropriate chain-of-custody documentation which accompanied the samples from the time of collection until delivery to the laboratory.

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Each sample was identified using a two-component, alphanumeric system that identified the sample type and sample grid location. The sample type code consisted of one of the following two character designations:

- “BS” for Bottom Sample; or
- “SW” for Sidewall Sample

Following the sample-type code, each sample was further identified by the grid address in which the sample was collected. In the event the initial sample failed to achieve the site cleanup goal of 500 ppm total lead, additional excavation was completed. The second, deeper cleanup verification sample had the same sample identification as the first taken from this location; however, a “-B” modifier was added after the sample ID to indicate that it was the second sample from this location.

Examples of sample designations are listed below:

- BSG4 Bottom Sample collected in Grid G4
- BSC3-B Bottom Sample collected in Grid C3 (the second sample from this location)
- SWB6 Sidewall Sample Collected in Grid B6
- SWC6-B Sidewall Sample collected in Grid C6 (the second sample from this location)

Table 4, below, presents a summary of cleanup verification samples collected at the Site. Copies of the complete laboratory analytical reports are included in Appendix C. Figure 2 also illustrates the cleanup sample results displayed next to the corresponding sample location. As Table 4 indicates, soil remediation activities completed at the Site were successful in achieving the cleanup goal for total lead of 500 mg/kg established in the approved RAP.

TABLE 4 - CLEANUP VERIFICATION RESULTS

Sample ID	Depth in Feet Below Grade	Total Lead (mg/kg)	Date Submitted
BSG4	7	169	10/25/2004
BSG5	5	167	10/25/2004
BSE4	7	<b>1,480</b>	10/26/2004
BSE4-B	8	109	11/8/2004
BSE5	0.5	<b>2,340</b>	10/26/2004
BSE5-B	1.5	290	11/8/2004
BSF5	6	63.7	10/26/2004
BSE3	0.5	129	10/26/2004
BSA6	5	92.3	10/27/2004
BSB6	5	30.7	10/27/2004
BSC6	5	152	10/27/2004
BSD6	5	136	10/27/2004
SWB6	0.5 - 4	181	10/27/2004
SWC6	0.5 - 4	<b>903</b>	10/27/2004
SWC6-B	0.5 - 4	262	11/8/2004
SWD6	0.5 - 4	277	10/27/2004
BSB3	1	<b>13,300</b>	11/8/2004
BSB3-B	2	3.5	11/16/2004
BSC3	1.5	<b>4,320</b>	11/8/2004
BSC3-B	2.5	15.1	11/16/2004
BSA5	0.5	<b>5,370</b>	11/8/2004
BSA5-B	1.5	22	11/16/2004
BSC5	0.5	<b>7,850</b>	11/8/2004
BSC5-B	1.5	4.7	11/16/2004
BSA3	3	<b>2,310</b>	11/8/2004
BSA3-B	7	2.5	11/16/2004

mg/kg: milligrams per kilogram

BS: bottom sample

G4: site grid address

SW: sidewall sample

**BOLD:** Indicates an exceedance of the cleanup standard which required additional excavation.

-B: Re-sample at previous location

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## 2.4 SOIL DISPOSAL

Following excavation, impacted soil was stockpiled on site in approximately 325 yd<sup>3</sup> stockpiles and treated with a stabilization chemical (see Section 2.2.1). At the completion of the stabilization activities, the stockpiles were sampled for TCLP lead before being transported off site to the Subtitle D non-hazardous landfill operated by Onyx Waste Services, Inc. located in Buffalo, Minnesota. In accordance with the approved erosion control plan for the Site, stockpiles were covered with 10-mil plastic sheeting at all times when they were not being actively worked on.

The total volume of soil excavated from the Shafer Metals Site was 2,722.24, tons which equates to approximately 2,000 cubic yards.

## 2.5 POST-REMEDIAL ACTIVITIES

Upon completion of remedial activities at the site, Rehbein backfilled the site with clean granular fill to the pre-excavation elevation. Fill was obtained from a borrow pit located adjacent to the Onyx landfill in Buffalo, MN. The pit was being excavated to allow for future landfill expansion and consisted of native material. Tetra Tech collected three grab samples of the backfill material (CB-1, CB-2 and CB-3) for total lead analysis at Pace laboratories. The results of the analyses indicated total lead results of 67.3 mg/kg, 11.9 mg/kg and 12.2 mg/kg; all of the results were within naturally occurring levels for native material. A copy of the analytical report for the samples is included in Appendix C.

The site was graded with a 1% slope towards Plymouth Avenue North and 2<sup>nd</sup> Street North to allow for drainage. The site was hydro seeded with a Mn/DOT approved fast growing grass seed mixture, and silt fence was left in place to reduce erosion. Restoration activities were completed in the early winter; therefore the grass seed did not germinate. Rehbein and Tetra Tech will make a follow-up visit to the site in the spring of 2005 to ensure that it is adequately vegetated.

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### SECTION 3 DISCUSSION AND RECOMMENDATIONS

Results of RAP implementation activities at the Site have resulted in successful achievement of the Site cleanup goals with respect to total lead. Total lead concentrations in the cleanup verification samples were all below the 500 mg/kg concentration proposed in the approved RAP. The Site has been returned to previous grade with clean backfill, and the grass seed mixture applied in early winter 2004 should establish good ground cover in the spring of 2005.

Table 5 (see page 24) compares excavation depths achieved during RAP implementation activities with total lead concentrations and sample depths reported for borings advanced during previous environmental assessment activities completed by Shafer Metal Recycling and Mn/DOT at the Site. For 41 soil boring locations identified in the RI/FFS where samples with lead concentrations of 500 mg/kg or less were reported, excavation depths exceeded or were within 0.5 foot of the sample depths in the borings at 32 locations. None of the 9 remaining locations were reported to have total lead concentrations in excess of the MPCA's unrestricted land use SRV of 400 mg/kg. Figure 3 depicts the previous soil boring locations relative to excavation contours and cleanup verification sample locations for the RAP.

It should be noted that the sampling depth intervals at soil boring locations B-2 and B-3 (about 9 to 11 feet bgs) were significantly deeper than the excavation depths in these areas (5 feet bgs); however, cleanup verification samples (BSA6 and BSD6) collected in close proximity to B-2 and B-3 at 5 feet bgs were reported at 92.3 mg/kg and 136 mg/kg, respectively.

Based on the results of the remediation activities, Tetra Tech recommends that the Site be de-listed from the State of Minnesota PLP. Tetra Tech also recommends that the MPCA issue a No Further Action letter for soil at the Site.

TABLE 5 - EXCAVATION DEPTHS COMPARED TO PREVIOUS RI/FFS RESULTS

Previous RI/FFS Borings	Sample Depth (fbg)	Total Lead (mg/kg)	RAP Excavation Depth (fbg)
7	0 to 1	123	1
8	0 to 1	167	1
13	0 to 1	323	1
14	0 to 1	424	1
15	0 to 1	267	1
16	0 to 1	39	1
18	0 to 1	281	1
21	1 to 2	18	2
22	0 to 1	58	1
23	0 to 1	256	1
24	0 to 1	9	1
25	1 to 2	10.3	1.5
26	0 to 1	345	1
27	0 to 1	367	3
28	1 to 2	363	2
29	0 to 1	54	1
30	0 to 1	69	1
31	0 to 1	411	1
32	1 to 2	14	2
33	0 to 1	107	1
34	0-1'	298	1
36	0 to 1	45	1
B-1	4.5 to 6	25	5
B-2	9.5 to 11	23	5
B-3	9 to 11	13	5
B-101	5	5.8	7
B-102	2.5	24.3	6
B-103	7.5	<5.1	7.5
B-104	5	122	6
B-105	2.5	65.4	2.5
B-106	5	5.7	4
B-107	7.5	<5.1	8
B-108	2.5	<5.2	4

TABLE 5 (continued)  
EXCAVATION DEPTHS COMPARED TO PREVIOUS RI/FFS RESULTS

B-109	7'	30.7	7'
B-111	5'	<5.4	4'
B-113B	5'	12.2	4'
IH-1	0-2.5'	350	2.5'
IH-4	0-2.5'	42	2'
IH-5	0-2.5'	40	1'
IH-6	2.5-5'	15.4	2'
IH-7	0-2.5'	250	1'

mg/kg: milligrams per kilogram

fbg: feet below grade

< = less than

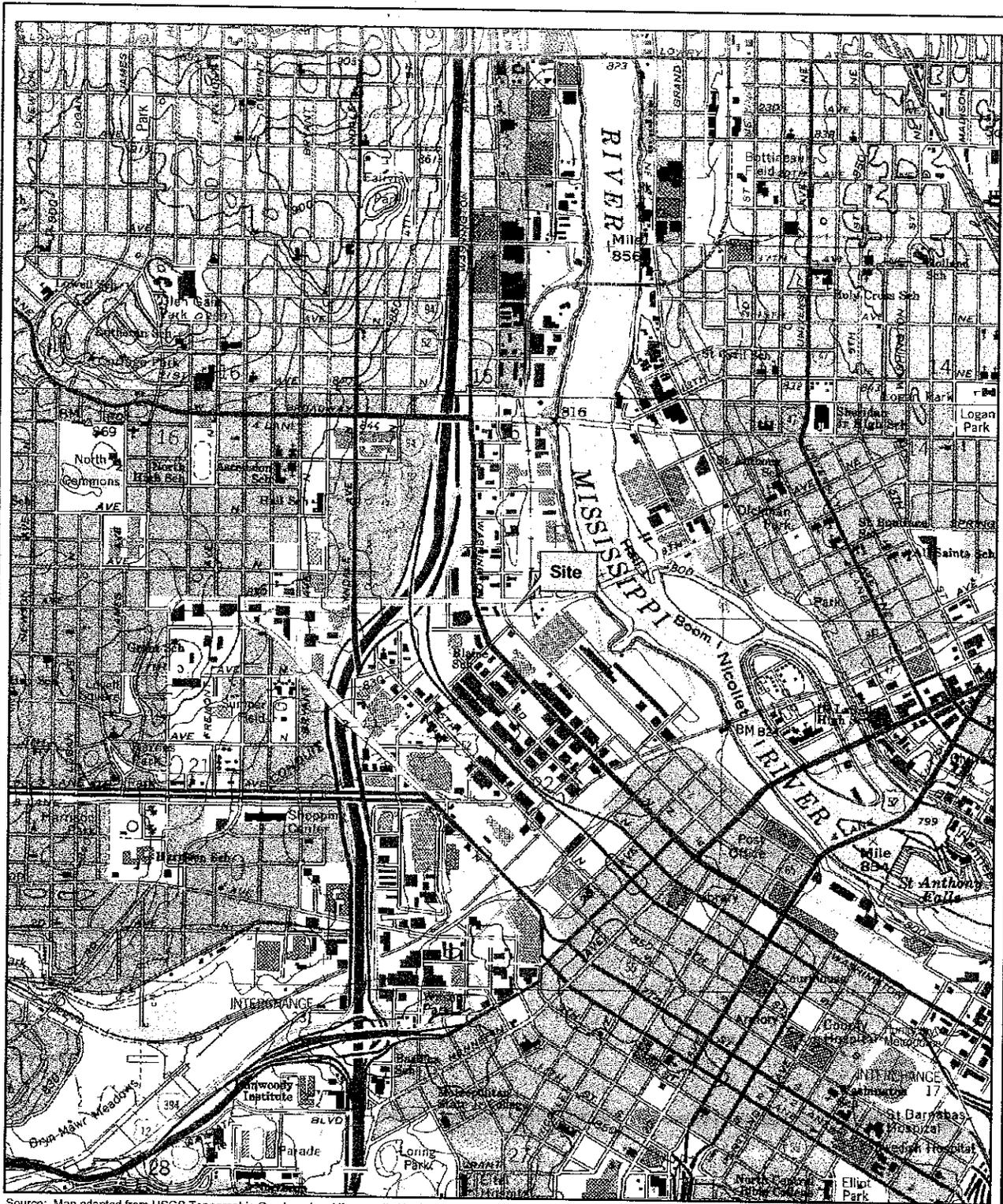
---

## SECTION 4 LIMITATIONS

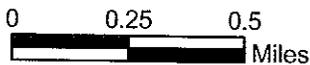
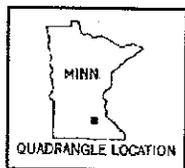
This document was compiled based partially on information supplied to Tetra Tech from outside sources and other information in the public domain. The conclusions and recommendations herein are based on the information Tetra Tech obtained in compiling this document and the results of sample collection and analysis. This information is on file at Tetra Tech's office in Bloomington, Minnesota. Tetra Tech makes no warranty as to the accuracy of statements made by others which may be contained in this document, nor are any other warranties or guarantees, expressed or implied, included or intended by this document except that it has been prepared in accordance with the current generally accepted practices and standards consistent with the level of care and skill exercised under similar circumstances by other professional consultants or firms performing the same or similar services. Because the facts forming the basis for this document are subject to professional interpretation, differing conclusions could be reached. Tetra Tech does not assume responsibility for the discovery and elimination of hazards that could possibly cause accidents, injuries, or damage. Compliance with submitted recommendations or suggestions does not assure elimination of hazards or the fulfillment of client's obligations under local, state, or federal laws or any modifications or changes to such laws.



**APPENDIX A**  
**FIGURES**



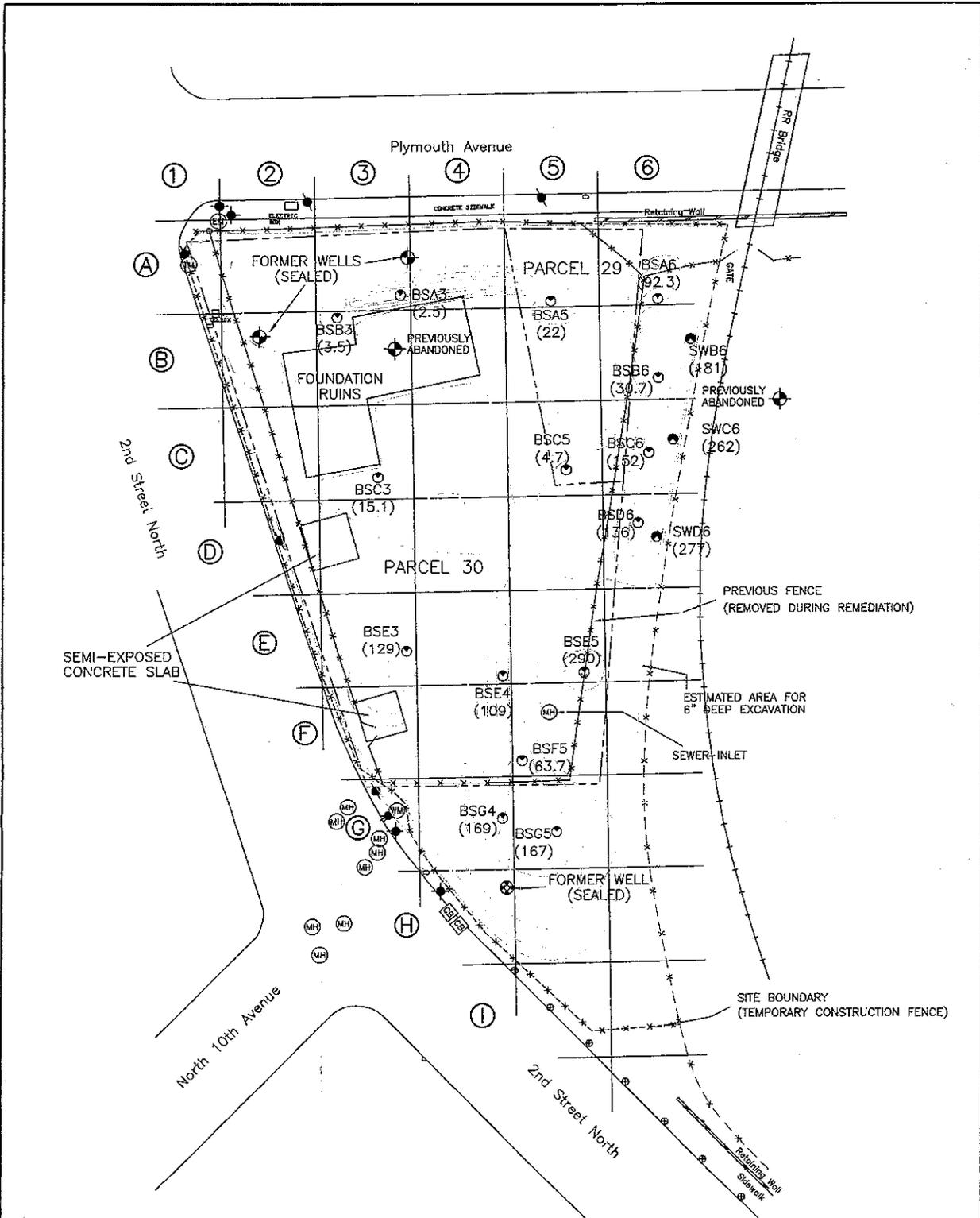
Source: Map adapted from USGS Topographic Quadrangles: Minneapolis North (1993) and Minneapolis South (1993).



Safer Metal Recycling  
Plymouth Avenue South and 2nd Street North  
Minneapolis, Minnesota

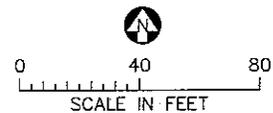
Figure 1  
Site Vicinity Map

 Tetra Tech EM Inc.



**LEGEND**

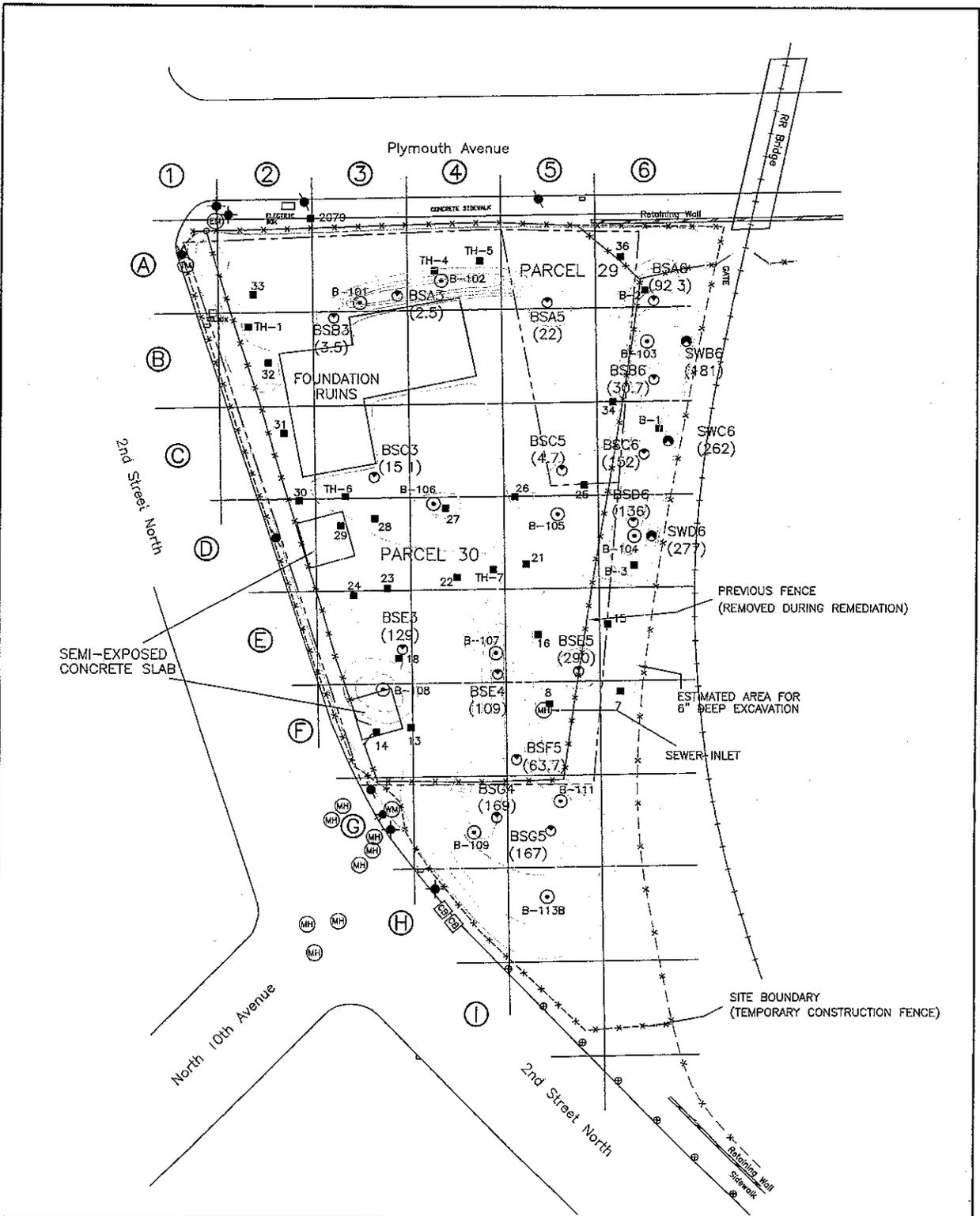
- |   |                            |
|---|----------------------------|
| ◆ Monitoring Wells (sealed)             | ⊖ Water Manhole            |
| ○ Excavation Base Samples               | ⊞ Catch Basin              |
| ● Excavation Sidewall Samples           | ⊙ Hydrant                  |
| ○ Excavation Contour<br>(Depth in Feet) | ⊙ Parking Meter            |
| ⊗ Potential Well (sealed)               | — Existing Railroad Tracks |
| SAMPLE ANALYTICAL RESULTS               |                            |
| Sample ID                               | ⊙ Traffic Sign             |
| BSC5                                    | ⊙ Light Pole/Traffic Pole  |
| (4.7)                                   | ⊙ Power Pole               |
| Post-Excavation                         | ⊙ Manhole                  |
| Total Lead Concentration                | ⊙ Electric Manhole         |
| (milligrams per kilogram)               | ⊙ Traffic Manhole          |



Shafer Metal Recycling Site  
Minneapolis, Minnesota

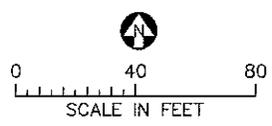
**FIGURE 2**  
**SITE LAYOUT**

**Tetra Tech EM Inc.**



**LEGEND**

- ⊙ Barr Engineering Co. Soil Boring (1995)
  - Previous Soil Boring or Hand Sample (By Others)
  - ⊖ Excavation Base Samples
  - ⊙ Excavation Sidewall Samples
  - Excavation Contour (Depth in Feet)
  - Existing Railroad Tracks
  - Traffic Sign
  - Light Pole/Traffic Pole
  - ⊙ Water Manhole
  - ⊙ Catch Basin
  - ⊙ Hydrant
  - ⊙ Parking Meter
  - ⊙ Power Pole
  - ⊙ Manhole
  - ⊙ Electric Manhole
  - ⊙ Traffic Manhole
- SAMPLE ANALYTICAL RESULTS**
- Sample ID: BSC5 (4,7)
- Post-Excavation Total Lead Concentration (milligrams per kilogram)



Shafer Metal Recycling Site  
Minneapolis, Minnesota

**FIGURE 3**  
**PREVIOUS SOIL BORING LOCATIONS**

**Tetra Tech EM Inc.**

SMINDOTShafer MetalsRAP Implementation ReportIRAP\_IR\_F2.dwg



**APPENDIX B**  
**TOTAL PARTICULATE AND WIND SPEED RESULTS**

**TOTAL PARTICULATE AND WIND SPEED MONITORING RESULTS**

<b>Date - Time</b>	<b>Upwind Particulate (mg/m<sup>3</sup>) <i>Real-Time</i></b>	<b>Upwind Particulate (mg/m<sup>3</sup>) <i>TWA</i></b>	<b>Downwind Particulate (mg/m<sup>3</sup>) <i>Real-Time</i></b>	<b>Downwind Particulate (mg/m<sup>3</sup>) <i>TWA</i></b>	<b>Wind Speed (mph)</b>
10/18/2004 - 14:00	0.000	0.000	0.000	0.000	NS
10/18/2004 - 15:05	0.000	0.000	0.006	0.067	NS
10/18/2004 - 15:35	0.000	0.000	0.000	0.042	NS
10/19/2004 - 11:25	0.004	0.004	0.002	0.002	NS
10/19/2004 - 12:35	0.025	0.018	0.025	0.024	NS
10/19/2004 - 13:40	0.011	0.017	0.025	0.024	NS
10/19/2004 - 14:40	0.017	0.017	0.026	0.025	NS
10/19/2004 - 15:40	0.017	0.017	0.100	0.035	NS
10/19/2004 - 16:45	0.017	0.018	0.080	0.046	NS
10/19/2004 - 17:20	0.023	0.018	0.037	0.047	NS
10/20/2004 - 07:50	0.000	0.000	0.004	0.004	0 - 5
10/20/2004 - 09:00	0.012	0.000	0.034	0.021	0 - 5
10/20/2004 - 10:05	0.000	0.000	0.033	0.025	0 - 5
10/20/2004 - 11:00	0.000	0.000	0.010	0.031	0 - 5
10/20/2004 - 12:00	0.000	0.000	0.012	0.027	0 - 5
10/20/2004 - 13:05	0.000	0.000	0.015	0.024	0 - 5
10/20/2004 - 14:00	0.000	0.000	0.016	0.024	0 - 5
10/20/2004 - 14:55	0.000	0.000	0.012	0.025	0 - 5
10/20/2004 - 16:05	0.000	0.000	0.000	0.023	0 - 5
10/20/2004 - 17:15	0.000	0.000	0.001	0.020	0 - 5

mg/m<sup>3</sup> = milligrams per cubic meter

TWA = Time Weighted Average

mph = miles per hour

IE = Instrument Error

NS = Not Sampled

MONITORING RESULTS - CONTINUED

<b>Date - Time</b>	<b>Upwind Particulate (mg/m<sup>3</sup>) <i>Real-Time</i></b>	<b>Upwind Particulate (mg/m<sup>3</sup>) <i>TWA</i></b>	<b>Downwind Particulate (mg/m<sup>3</sup>) <i>Real-Time</i></b>	<b>Downwind Particulate (mg/m<sup>3</sup>) <i>TWA</i></b>	<b>Wind Speed (mph)</b>
10/21/2004 - 07:55	0.000	0.000	0.000	0.000	0 - 5
10/21/2004 - 09:05	0.000	0.000	0.041	0.018	0 - 5
10/21/2004 - 10:00	0.000	0.000	0.011	0.019	0 - 5
10/21/2004 - 11:00	0.000	0.000	0.023	0.019	0 - 5
10/21/2004 - 11:55	0.000	0.000	0.019	0.019	0 - 5
10/21/2004 - 13:05	0.000	0.000	0.031	0.020	0 - 5
10/21/2004 - 14:10	0.000	0.000	0.033	0.022	0 - 5
10/21/2004 - 15:15	0.000	0.000	0.037	0.026	0 - 5
10/21/2004 - 16:15	0.000	0.000	0.012	0.027	5 - 10
10/22/2004 - 07:20	0.000	0.000	0.015	0.015	0 - 5
10/22/2004 - 08:20	0.089	0.045	0.093	0.047	0 - 5
10/22/2004 - 09:50	0.043	0.078	0.000	0.058	0 - 5
10/22/2004 - 10:55	0.034	0.064	0.027	0.043	0 - 5
10/22/2004 - 11:55	0.077	0.061	0.050	0.038	0 - 5
10/22/2004 - 13:10	0.061	0.064	0.004	0.038	0 - 5
10/22/2004 - 14:10	0.070	0.061	0.017	0.039	0 - 5
10/22/2004 - 15:20	0.035	0.057	0.073	0.031	0 - 5
10/22/2004 - 16:20	0.000	0.051	0.000	0.028	0 - 5
10/22/2004 - 17:00	0.000	0.040	0.000	0.003	0 - 5
10/25/2004 - 07:15	0.000	0.000	0.000	0.000	0 - 5
10/25/2004 - 08:30	0.000	0.000	0.000	0.000	0 - 5
10/25/2004 - 10:55	0.000	0.000	0.000	0.000	0 - 5
10/25/2004 - 16:00	0.000	0.000	0.000	0.000	0 - 5
10/25/2004 - 17:25	0.000	0.000	0.000	0.000	0 - 5

MONITORING RESULTS - CONTINUED

<b>Date - Time</b>	<b>Upwind Particulate (mg/m<sup>3</sup>) <i>Real-Time</i></b>	<b>Upwind Particulate (mg/m<sup>3</sup>) <i>TWA</i></b>	<b>Downwind Particulate (mg/m<sup>3</sup>) <i>Real-Time</i></b>	<b>Downwind Particulate (mg/m<sup>3</sup>) <i>TWA</i></b>	<b>Wind Speed (mph)</b>
10/26/2004 - 07:25	0.000	0.000	0.000	0.000	0 - 5
10/26/2004 - 08:30	0.000	0.000	0.000	0.010	0 - 5
10/26/2004 - 10:45	0.009	0.003	0.004	0.009	0 - 5
10/26/2004 - 13:15	0.000	0.002	0.001	0.006	0 - 5
10/26/2004 - 15:05	0.006	0.003	0.032	0.032	0 - 5
10/26/2004 - 16:20	0.000	0.001	0.020	0.037	0 - 5
10/26/2004 - 17:00	0.000	0.000	IE	IE	0 - 5
10/27/2004 - 07:10	0.000	0.000	0.001	0.000	0 - 5
10/27/2004 - 08:50	0.007	0.014	0.002	0.004	0 - 5
10/27/2004 - 10:20	0.069	0.033	0.001	0.003	0 - 5
10/27/2004 - 13:25	0.051	0.048	0.017	0.006	0 - 5
10/27/2004 - 14:40	0.111	0.058	0.021	0.008	0 - 5
10/27/2004 - 16:30	IE	IE	0.033	0.011	0 - 5
11/3/2004 - 07:10	0.000	0.000	0.000	0.000	0 - 5
11/3/2004 - 08:25	0.002	0.005	0.007	0.008	0 - 5
11/3/2004 - 09:15	0.000	0.005	0.004	0.008	0 - 5
11/3/2004 - 10:40	0.004	0.000	0.000	0.005	0 - 5
11/3/2004 - 13:00	0.000	0.000	0.001	0.002	0 - 5
11/3/2004 - 14:25	0.000	0.000	0.000	0.001	0 - 5
11/3/2004 - 15:20	IE	IE	0.000	0.000	0 - 5
11/3/2004 - 16:25	0.000	0.000	0.000	0.000	0 - 5
11/4/2004 - 07:00	0.000	0.000	0.000	0.000	5 - 10
11/4/2004 - 08:15	0.000	0.000	0.000	0.000	5 - 10
11/4/2004 - 09:15	0.000	0.000	0.000	0.000	5 - 10
11/4/2004 - 10:20	0.000	0.000	0.000	0.000	5 - 10
11/4/2004 - 11:25	0.000	0.000	0.030	0.002	10 - 15
11/4/2004 - 12:20	0.000	0.000	0.000	0.004	10 - 15
11/4/2004 - 13:10	0.000	0.000	0.000	0.005	10 - 15
11/4/2004 - 14:45	0.000	0.000	0.004	0.004	10 - 15
11/4/2004 - 16:10	0.000	0.000	0.000	0.002	10 - 15

MONITORING RESULTS - CONTINUED

<b>Date - Time</b>	<b>Upwind Particulate (mg/m<sup>3</sup>) <i>Real-Time</i></b>	<b>Upwind Particulate (mg/m<sup>3</sup>) <i>TWA</i></b>	<b>Downwind Particulate (mg/m<sup>3</sup>) <i>Real-Time</i></b>	<b>Downwind Particulate (mg/m<sup>3</sup>) <i>TWA</i></b>	<b>Wind Speed (mph)</b>
11/5/2004 - 07:10	0.000	0.000	0.000	0.000	5 - 10
11/5/2004 - 08:00	0.000	0.000	0.000	0.000	5 - 10
11/5/2004 - 09:45	0.000	0.000	0.000	0.000	5 - 10
11/5/2004 - 10:50	0.000	0.000	0.000	0.000	0 - 5
11/5/2004 - 11:45	0.000	0.000	0.000	0.000	0 - 5
11/5/2004 - 12:50	0.000	0.000	0.000	0.000	0 - 5
11/5/2004 - 13:45	0.000	0.000	0.000	0.000	0 - 5
11/5/2004 - 14:55	0.000	0.000	0.000	0.000	0 - 5
11/8/2004 - 07:25	0.000	0.000	0.000	0.000	0 - 5
11/8/2004 - 08:30	0.000	0.000	0.000	0.000	0 - 5
11/8/2004 - 09:25	0.009	0.004	0.000	0.001	0 - 5
11/8/2004 - 11:00	0.000	0.000	0.000	0.000	0 - 5
11/8/2004 - 16:20	0.000	0.000	0.000	0.000	0 - 5
11/16/2004 - 07:20	0.000	0.000	0.000	0.000	NS
11/16/2004 - 08:25	0.000	0.000	0.000	0.000	NS
11/16/2004 - 09:45	0.110	0.017	0.057	0.060	NS
11/16/2004 - 10:20	IE	IE	0.055	0.058	NS
11/16/2004 - 11:20	0.003	0.014	0.053	0.059	NS
11/16/2004 - 13:25	0.000	0.003	0.040	0.056	NS
11/16/2004 - 14:55	0.000	0.000	0.048	0.055	NS
11/16/2004 - 15:45	0.000	0.000	0.032	0.049	NS
11/16/2004 - 16:20	0.000	0.000	0.074	0.051	NS
11/24/2004 - 07:15	0.000	0.000	0.000	0.000	NS
11/24/2004 - 08:10	0.000	0.000	0.000	0.000	NS
11/24/2004 - 09:00	0.000	0.004	0.000	0.004	NS
11/24/2004 - 10:05	0.017	0.014	0.024	0.006	NS
11/24/2004 - 11:00	0.002	0.010	0.000	0.004	NS



**APPENDIX C**  
**LABORATORY ANALYTICAL REPORTS**

- Air Monitoring Laboratory Report
- Cleanup Verification and Stockpile Sample Laboratory Reports
- Backfill Sample Report

October 26, 2004

Mr. John Hink  
Glenn Rehbein Excavating  
8651 Naples St.  
Blaine, MN 55449

RE: Total Particulate/Lead Sampling & Analysis  
Plymouth Avenue and 2<sup>nd</sup> Street, Minneapolis Excavation Site  
LEGEND No. 0403452

## 1.0 INTRODUCTION

The following is the report containing the results of the total particulate and lead in air sampling and analysis performed on air samples collected by LEGEND TECHNICAL SERVICES, INC. (LEGEND) between the dates of October 20<sup>th</sup>, and October 22<sup>nd</sup>, 2004. The samples were collected and analyzed daily over the course of three days. The samples were collected by Industrial Hygienist Jeff Brown.

## 2.0 SAMPLING METHODOLOGIES

Personal air samples were collected on mixed cellulose ester (MCE) 37 millimeter cassettes using low flow personal sampling pumps. The air samples were collected from two different individuals over the span of the three days. The individuals monitored were Rehbein operators Bob Welsch and Mike Zinske, and Tetra Tech field surveyor Sean Flannery. Each sample was collected over the course of an entire work day.

## 3.0 ANALYTICAL METHODOLOGIES

### 3.1 Total Particulate Analysis

The filters were dried in a desiccator and analyzed gravimetrically in LEGEND's laboratory. The filters were analyzed according to the National Institute of Occupational Safety and Health (NIOSH) analytical method 0500.

### 3.2 Lead in Air Analysis

The samples were analyzed for lead according to EPA Method 6010B using inductive coupled plasma (ICP), and the NIOSH 7300 method.

## 4.0 **RESULTS**

The Occupational Safety and Health Administration (OSHA) regulated permissible exposure limits (PEL's) for lead in air and total particulate in air are 50 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ), and 15 milligrams per cubic meter ( $\text{mg}/\text{m}^3$ ). All collected air samples contained lead in air and total particulate in air quantities of less than the PEL's.

Please refer to the attached Table #1 for complete sample results and further information regarding the air samples.

## 5.0 **REMARKS**

The samples were consumed upon analysis.

If you should have any questions regarding this report, please contact us at 651/642-1150. Thank you and we look forward to working with you in the future.

Cordially,

LEGEND TECHNICAL SERVICES, INC.

Jeff Brown  
Industrial Hygienist

Brian Leigh  
Chemist

**LEGEND TECHNICAL SERVICES, INC.**

**TABLE #1**

**TOTAL PARTICULATE AND LEAD IN AIR SAMPLE RESULTS**

**LEGEND No. 0403452**

**PLYMOUTH AVENUE & 2<sup>ND</sup> STREET, MINNEAPOLIS EXCAVATION SITE**

SAMPLE No.	LABORATORY No.	SAMPLE DESCRIPTION	COLLECTION DATE	TIME ON	TIME OFF	AIR VOLUME (Liters)	TOTAL PARTICULATE (mg/m <sup>3</sup> )		LEAD (µg/m <sup>3</sup> )	
							RESULTS	PQL	RESULTS	RL
1	0403452-1	Field Blank MCE - 2667	10/20/04	-	-	-	-0.02 mg	0.01	<2.0	2.0
2	0403452-2	Field Blank MCE - 2679	10/20/04	-	-	-	0.03 mg	0.01	<2.0	2.0
3	0403452-3	Personal Operator, Bob Welsch MCE - 2692	10/20/04	8:11 am	3:56 pm	465	0.41	0.01	<4.3	4.3
4	0403452-4	Personal Surveyor, Sean Flannery MCE - 2699	10/20/04	8:15 am	3:55 pm	460	0.28	0.01	<4.3	4.3
5	0403452-5	Field Blank MCE - 2673	10/21/04	-	-	-	0.02 mg	0.01	<2.0	2.0
6	0403452-6	Field Blank MCE - 2681	10/21/04	-	-	-	0.01 mg	0.01	<2.0	2.0

< = less than  
 mg/M<sup>3</sup> = milligrams per cubic meter  
 ug/M<sup>3</sup> = micrograms per cubic meter  
 RL = lowest reportable limit  
 MCE = mixed cellulose ester filters

**LEGEND TECHNICAL SERVICES, INC.**

**TABLE #1**

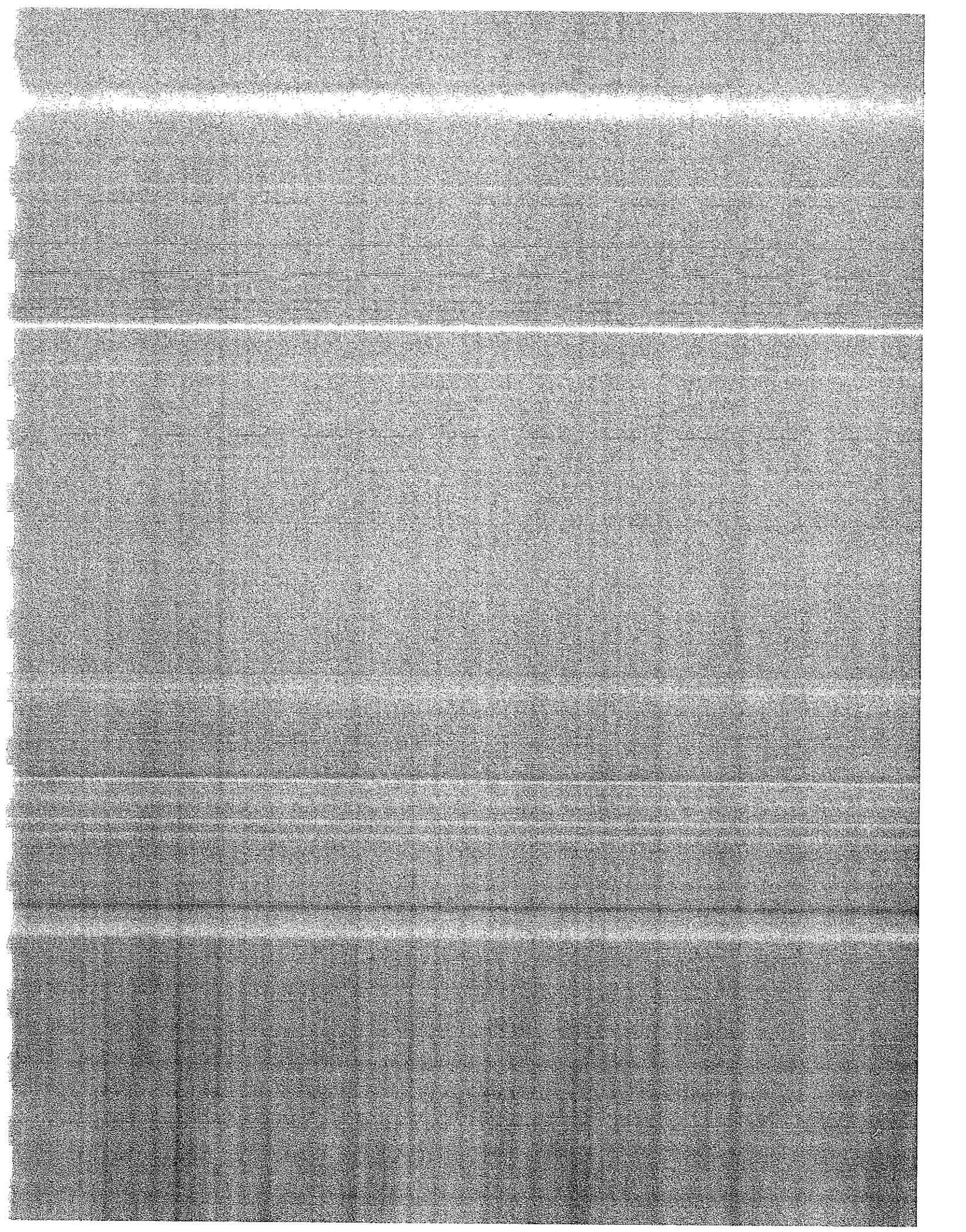
**TOTAL PARTICULATE AND LEAD IN AIR SAMPLE RESULTS**

**LEGEND No. 0403452**

**PLYMOUTH AVENUE & 2<sup>ND</sup> STREET, MINNEAPOLIS EXCAVATION SITE**

SAMPLE No.	LABORATORY No.	SAMPLE DESCRIPTION	COLLECTION DATE	TIME ON	TIME OFF	AIR VOLUME (liters)	TOTAL PARTICULATE (mg/m <sup>3</sup> )		LEAD (ug/m <sup>3</sup> )	
							RESULTS	RL	RESULTS	RL
7	0403452-7	Personal Operator, Bob Welsch MCE - 2685	10/21/04	7:50 am	3:20 pm	450	0.19	0.01	<4.4	4.4
8	0403452-8	Personal Surveyor, Sean Flannery MCE - 2686	10/21/04	7:55 am	3:25 pm	450	0.32	0.01	<4.4	4.4
9	0403452-9	Field Blank MCE - 2668	10/22/04	-	-	-	0.02 mg	0.01	<2.0	2.0
10	0403452-10	Field Blank MCE - 2672	10/22/04	-	-	-	0.06 mg	0.01	<2.0	2.0
11	0403452-11	Personal Operator, Bob Welsch MCE - 2680	10/22/04	7:47 am	3:47 pm	480	0.29	0.01	<4.2	4.2
12	0403452-12	Personal Surveyor, Sean Flannery MCE - 2687	10/22/04	7:50 am	3:50 pm	480	<0.01	0.01	<4.2	4.2

< = less than  
 mg/m<sup>3</sup> = milligrams per cubic meter  
 ug/m<sup>3</sup> = micrograms per cubic meter  
 RL = lowest reportable limit  
 MCE = mixed cellulose ester filters





Pace Analytical Services, Inc.  
1700 Elm Street Suite 200  
Minneapolis MN 55414  
Phone: (612)607-1700  
Fax: (612)607-6444

October 29, 2004

Mr. Sean Flannery  
Tetra Tech EMI Inc.  
2001 Killebrew Drive  
Suite 141  
Bloomington, MN 55425

RE: Project: 102113  
Project ID: Schafer Metals I4195 01

Dear Mr. Flannery:

Enclosed are the analytical results for sample(s) received by the laboratory on October 26, 2004. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Andrea Nord  
andrea.nord@pacelabs.com

Illinois Certification #: 200011  
Minnesota Certification #: 027-053-137  
Wisconsin Certification #: 9999407970

Enclosures

Page 1 of 10

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 102113  
Project ID: Schafer Metals I4195 01

Lab ID	Sample ID	Matrix	Date Collected	Date Received
102113001	SP2	Solid	10/26/04 15:45	10/26/04 17:45
102113002	BSF5	Solid	10/26/04 15:50	10/26/04 17:45
102113003	BSE3	Solid	10/26/04 15:50	10/26/04 17:45
102113004	BSE4	Solid	10/26/04 15:50	10/26/04 17:45
102113005	BSE5	Solid	10/26/04 15:50	10/26/04 17:45

### REPORT OF LABORATORY ANALYSIS

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**SAMPLE ANALYTE COUNT**

Project: 102113  
Project ID: Schafer Metals I4195 01

Lab ID	Sample ID	Method	Analytes Reported
102113001	SP2	% Moisture	1
		EPA 6010	1
102113002	BSF5	% Moisture	1
		EPA 6010	1
102113003	BSE3	% Moisture	1
		EPA 6010	1
102113004	BSE4	% Moisture	1
		EPA 6010	1
102113005	BSE5	% Moisture	1
		EPA 6010	1

**REPORT OF LABORATORY ANALYSIS**

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**ANALYTICAL RESULTS**

Project: 102113  
Project ID: Schafer Metals I4195 01  
Solid results are reported on a dry weight basis

<b>Lab ID:</b>	<b>102113001</b>	<b>Date Collected:</b>	10/26/04 15:45	<b>Matrix:</b>	Solid
<b>Sample ID:</b>	<b>SP2</b>	<b>Date Received:</b>	10/26/04 17:45		
Parameters	Results	Units	Report Limit	DF Prepared	By Analyzed By CAS No. Qual RegLmt
<b>Metals</b>					
6010 MET ICP, TCLP					Preparation Method: EPA 3010 Analytical Method: EPA 6010
Lead	9.6	mg/L	0.015	5	10/27/04 00:00 MJP 10/29/04 12:45 ERW 7439-92-1
Dry Weight					Analytical Method: % Moisture
Percent Moisture	7.3	%	0.10	1	10/27/04 00:00 UO1

<b>Lab ID:</b>	<b>102113002</b>	<b>Date Collected:</b>	10/26/04 15:50	<b>Matrix:</b>	Solid
<b>Sample ID:</b>	<b>BSF5</b>	<b>Date Received:</b>	10/26/04 17:45		
Parameters	Results	Units	Report Limit	DF Prepared	By Analyzed By CAS No. Qual RegLmt
<b>Metals</b>					
6010 MET ICP					Preparation Method: EPA 3050 Analytical Method: EPA 6010
Lead	63.7	mg/kg	0.26	1	10/27/04 00:00 LSB 10/27/04 20:20 ERW 7439-92-1
Dry Weight					Analytical Method: % Moisture
Percent Moisture	3.2	%	0.10	1	10/27/04 00:00 UO1

<b>Lab ID:</b>	<b>102113003</b>	<b>Date Collected:</b>	10/26/04 15:50	<b>Matrix:</b>	Solid
<b>Sample ID:</b>	<b>BSE3</b>	<b>Date Received:</b>	10/26/04 17:45		
Parameters	Results	Units	Report Limit	DF Prepared	By Analyzed By CAS No. Qual RegLmt
<b>Metals</b>					
6010 MET ICP					Preparation Method: EPA 3050 Analytical Method: EPA 6010
Lead	129	mg/kg	0.29	1	10/27/04 00:00 LSB 10/27/04 20:26 ERW 7439-92-1
Dry Weight					Analytical Method: % Moisture
Percent Moisture	6.5	%	0.10	1	10/27/04 00:00 UO1

Date: 10/29/2004

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**REPORT OF LABORATORY ANALYSIS**

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**ANALYTICAL RESULTS**

Project: 102113  
Project ID: Schafer Metals I4195.01  
Solid results are reported on a dry weight basis.

---

Lab ID: 102113004 Date Collected: 10/26/04 15:50 Matrix: Solid  
Sample ID: BSE4 Date Received: 10/26/04 17:45

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
<b>Metals</b>											
6010 MET ICP	Preparation Method: EPA 3050										
	Analytical Method: EPA 6010										
Lead	1480	mg/kg	14	5	10/27/04 00:00	LSB	10/28/04 11:23	ERW	7439-92-1		
Dry Weight	Analytical Method: % Moisture										
Percent Moisture	5.7	%	0.10	1			10/27/04 00:00	UO1			

---

Lab ID: 102113005 Date Collected: 10/26/04 15:50 Matrix: Solid  
Sample ID: BSE5 Date Received: 10/26/04 17:45

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
<b>Metals</b>											
6010 MET ICP	Preparation Method: EPA 3050										
	Analytical Method: EPA 6010										
Lead	2340	mg/kg	1.5	5	10/27/04 00:00	LSB	10/28/04 11:30	ERW	7439-92-1		
Dry Weight	Analytical Method: % Moisture										
Percent Moisture	7.9	%	0.10	1			10/27/04 00:00	UO1			

**REPORT OF LABORATORY ANALYSIS**

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## ANALYTICAL RESULTS QUALIFIERS

Project: 102113  
Project ID: Schafer Metals I4195 01

---

### PARAMETER QUALIFIERS

DF - Dilution Factor, if reported, represents the factor

ND - Not Detected at or above adjusted reporting limit. applied to the reported data due to changes in sample preparation, dilution of the sample aliquot or moisture content

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

MDL - Adjusted Method Detection Limit

S - Surrogate

## REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA**

Project: 102113  
Project ID: Schafer Metals I4195 01

QC Batch: MPRP/1245                      Analysis Method: EPA 6010  
QC Batch Method: EPA 3050                Analysis Description: 6010 MET  
Associated Lab Samples: 102113002    102113003    102113004    102113005

**METHOD BLANK: 13228**

Associated Lab Samples: 102113002    102113003    102113004    102113005

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Lead	mg/kg	ND	0.30	

**LABORATORY CONTROL SAMPLE: 13229**

Parameter	Units	Spike Conc	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	1	0.97	97	80-120	

**MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 13230                      13231**

Parameter	Units	102109003 Result	Spike Conc	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Lead	mg/kg	53.4	42.4	100	72.5	111	47	75-125	32	30	1

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**QUALITY CONTROL DATA**

Project: 102113  
Project ID: Schafer Metals I4195 01

QC Batch:	MPRP/1249	Analysis Method:	% Moisture			
QC Batch Method:	% Moisture	Analysis Description:	Dry Weight/Percent Moisture			
Associated Lab Samples:	101819007	101819008	101819009	101921001	101921002	101921003
	101921004	101921005	102113001	102113002	102113003	102113004
	102113005					

METHOD BLANK: 13518

Associated Lab Samples:	102113001	102113002	102113003	102113004	102113005
-------------------------	-----------	-----------	-----------	-----------	-----------

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Percent Moisture	%	ND	0.10	

SAMPLE DUPLICATE: 13519

Parameter	Units	101819007 Result	DUP Result	RPD	Max RPD Qualifiers
Percent Moisture	%	11.6	12.7	9	30

SAMPLE DUPLICATE: 13520

Parameter	Units	101921005 Result	DUP Result	RPD	Max RPD Qualifiers
Percent Moisture	%	5.9	6.0	2	30

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**QUALITY CONTROL DATA**

Project: 102113  
Project ID: Schafer Metals I4195 01

QC Batch: MPRP/1251                      Analysis Method: EPA 6010  
QC Batch Method: EPA 3010                Analysis Description: 6010 MET SPL  
Associated Lab Samples: 102113001

METHOD BLANK: 13567  
Associated Lab Samples: 102113001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Lead	mg/L	ND	0.015	

LABORATORY CONTROL SAMPLE: 13568

Parameter	Units	Spike Conc	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/L	1	0.98	98		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 13569                      13570

Parameter	Units	102109001 Result	Spike Conc	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	Max RPD	RPD	Qualifiers
Lead	mg/L	0	1	0.96	0.96	96	96	75-125	0.5	30	

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## QUALITY CONTROL DATA QUALIFIERS

Project: 102113  
Project ID: Schafer Metals I4195.01

---

### QUALITY CONTROL PARAMETER QUALIFIERS

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method

MDL - Adjusted Method Detection Limit, detection limit and below the adjusted reporting limit

S - Surrogate

### QUALITY CONTROL ANALYTE QUALIFIERS

[1] The matrix spike recoveries are unacceptable. Batch acceptance based on LCS recovery.

## REPORT OF LABORATORY ANALYSIS

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Required Client Information: **Section A**

Report To: **Section B**

Page: **of**

To Be Completed by Face Analytical and Client **Section C**

Company: **Tetra Tech**  
 Address: **2001 Killbuck Dr Ste 141**  
 Project Name: **Shafter**  
 Project #: **102113**  
 Invoice To: **Sean Flannery**  
 Requested Due Date: **10/30/04**  
 Turn Around Time (TAT) in calendar days: **3 days**

Client Information (Check quote/contract):  
 Requested Due Date: **10/30/04**  
 \*Turn around time less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.  
 Turn Around Time (TAT) in calendar days.

Quote Reference:  
 Project Manager:  
 Profile #:  
 Requested Analysis:

Section D Required Client Information:  
 Valid Matrix Codes: DRINKING WATER, GROUND WATER, SURFACE WATER, PASTEURIZED WATER, SOIL, WASTE, AIR, OTHER  
 CODE: DW, GW, SW, PW, SL, WIP, WPT, AT, OT  
 MATRIX CODE: **SIC**  
 SAMPLE TYPE: **G-GRAB C-COMP**  
 One character per box. (A-Z, 0-9, /, -)  
 Sample IDs MUST BE UNIQUE

ITEM #	SAMPLE ID	COLLECTED		SAMPLE TEMP AT COLLECTION		Remarks / Lab ID
		START DATE	START TIME	END DATE	END TIME	
1	BS 1					
2	BS 2					
3	BS E5					
4	BS E3					
5	BS E4					
6	BS E5					
7						
8						
9						
10						
11						
12						

SITE LOCATION:  NC  SC  GA  Other \_\_\_\_\_  
 REGULATORY AGENCY:  NPDES  GROUND WATER  RCRA  DRINKING WATER  Other \_\_\_\_\_  
 SAMPLE CONDITION:  Temp in °C  Received on Ice  Sealed Cooler  Samples Intact  
 SAMPLE NOTES:  Y/N

RELINQUISHED BY / AFFILIATION: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_  
 ACCEPTED BY / AFFILIATION: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_  
 SAMPLECTOR NAME AND SIGNATURE: **Sean Flannery**  
 DATE SIGNED: **10/26/04**



Pace Analytical Services, Inc.  
1700 Elm Street Suite 200  
Minneapolis, MN 55414  
Phone: (612)607-1700  
Fax: (612)607-6444

October 29, 2004

Mr. Scott Tracy  
Tetra Tech EMi  
2001 Killibrew Drive #141  
Bloomington, MN 55425

RE: Project: 102017  
Project ID: Schafer Metals-I4195.01

Dear Mr. Tracy:

Enclosed are the analytical results for sample(s) received by the laboratory on October 26, 2004. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Andrea Nord  
andrea.nord@pacelabs.com

Illinois Certification #: 200011  
Minnesota Certification #: 027-053-137  
Wisconsin Certification #: 9999407970

Enclosures

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### REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 102017  
Project ID: Schafer Metals-I4195.01

Lab ID	Sample ID	Matrix	Date Collected	Date Received
102017001	BSG4	Solid	10/25/04 18:25	10/26/04 08:45
102017002	BSG5	Solid	10/25/04 18:25	10/26/04 08:45
102017003	SP1	Solid	10/25/04 18:25	10/26/04 08:45

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### SAMPLE ANALYTE COUNT

Project: 102017  
Project ID: Schafer Metals-I4195 01

---

Lab ID	Sample ID	Method	Analytes Reported
102017001	BSG4	% Moisture	1
		EPA 6010	1
102017002	BSG5	% Moisture	1
		EPA 6010	1
102017003	SP1	EPA 6010	1

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS QUALIFIERS

Project: 102017  
Project ID: Schafer Metals-I4195 01

---

### PARAMETER QUALIFIERS

- DF - Dilution Factor, if reported represents the factor
- ND - Not Detected at or above adjusted reporting limit applied to the reported data due to changes in sample preparation, dilution of the sample aliquot or moisture content.
- J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
- MDL - Adjusted Method Detection Limit.
- S - Surrogate

### ANALYTE QUALIFIERS

- [1] Analyte is found in the associated method blank as well as in the sample (CLP B-Flag)

## REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.  
 1700 Elm Street Suite 200  
 Minneapolis MN 55414  
 Phone: (612)607-1700  
 Fax: (612)607-6444

**QUALITY CONTROL DATA**

Project: 102017  
 Project ID: Schafer Metals-I4195.01

QC Batch: MPRP/1235 Analysis Method: EPA 6010  
 QC Batch Method: EPA 3050 Analysis Description: 6010 MET  
 Associated Lab Samples: 102017001 102017002

METHOD BLANK: 12916

Associated Lab Samples: 102017001 102017002

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Lead	mg/kg	ND	0.0060	

LABORATORY CONTROL SAMPLE: 12917

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	1	0.94	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 12918 12919

Parameter	Units	102017001 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Lead	mg/kg	157	48.5	210	203	108	92	75-125	3	30	

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 Minneapolis MN 55414  
 Phone: (612)607-1700  
 Fax: (612)607-6444

**QUALITY CONTROL DATA**

Project: 102017  
 Project ID: Schafer Metals-I4195.01

QC Batch: MPRP/1237 Analysis Method: EPA 6010  
 QC Batch Method: EPA 3010 Analysis Description: 6010 MET SPLP  
 Associated Lab Samples: 102017003

METHOD BLANK: 12974  
 Associated Lab Samples: 102017003

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Lead	mg/L	0.018	0.015	

LABORATORY CONTROL SAMPLE: 12975

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/L	1	0.95	95		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 12976 12977

Parameter	Units	102012001 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Lead	mg/L	0.07	1	0.92	0.91	91	90	75-125	0.5	30	

Date: 10/29/2004

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**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL DATA**

Project: 102017  
Project ID: Schafer Metals-14195 01

QC Batch:	MPRP/1238	Analysis Method:	% Moisture
QC Batch Method:	% Moisture	Analysis Description:	Dry Weight/Percent Moisture
Associated Lab Samples:	101000006    101000007    101000008    101000009    101000010    101000011		
	101000012    102017001    102017002		

METHOD BLANK: 13137

Associated Lab Samples: 102017001    102017002

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Percent Moisture	%	ND	0	10

SAMPLE DUPLICATE: 13138

Parameter	Units	101000006 Result	DUP Result	RPD	Max RPD Qualifiers
Percent Moisture	%	8.8	8.7	2	30

SAMPLE DUPLICATE: 13139

Parameter	Units	102017002 Result	DUP Result	RPD	Max RPD Qualifiers
Percent Moisture	%	6.0	6.2	3	30

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1700 Elm Street Suite 200  
Minneapolis MN 55414  
Phone: (612)607-1700  
Fax: (612)607-6444

### QUALITY CONTROL DATA QUALIFIERS

Project: 102017  
Project ID: Schafer Metals-14195 01

---

#### QUALITY CONTROL PARAMETER QUALIFIERS

- Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values
- LCS(D) - Laboratory Control Sample (Duplicate)
- MS(D) - Matrix Spike (Duplicate)
- DUP - Sample Duplicate
- RPD - Relative Percent Difference
- ND - Not Detected at or above adjusted reporting limit
- J - Estimated concentration above the adjusted method
- MDL - Adjusted Method Detection Limit detection limit and below the adjusted reporting limit
- S - Surrogate

### REPORT OF LABORATORY ANALYSIS

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**Section A** Required Client Information:  
 Company: Tetra Tech  
 Address: 2001 Killebrew Dr, Ste 141, Bloomington, MN 55318  
 Phone: 612-643-2200, Fax: 612-643-2211

**Section B** Required Client Information:  
 Report To: Scott Tracy  
 Copy To: Sean Flannery  
 Invoice To: P.O.  
 Project Name: Shodor  
 Project Number: 1495.01

**Section C** To Be Completed by Pace Analytical and Client  
 Quote Reference: 806217  
 Project Manager:  
 Project #: 102017  
 Profile #:

Client Information (Check quote/contract):  
 Requested Due Date: 10/29/17  
 TAT: 3 days  
 \* Turn around times less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.  
 Turn Around Time (TAT) in calendar days.

**Section D** Required Client Information:

ITEM #	SAMPLE ID	Valid Matrix Codes	DATE COLLECTED	TIME COLLECTED	# Containers	Preservatives							Remarks / Lab ID	
						mm / dd / yy	hh: mm: ap	Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH		Na <sub>2</sub> O <sub>3</sub>
1	BDG4	WATER	10/29/17	18:25	1 X									102017001
2	BSG6	SOIL	10/29/17	18:25	1 X									102017002
3	SPI1	TISSUE	10/29/17	18:25	1 X									102017003
4														
5														
6														
7														
8														
9														
10														
11														
12														

**REGULATORY AGENCY**  
 NPDES  GROUND WATER  DRINKING WATER  
 Other  RCRA  Other

**SAMPLE CONDITION**  
 Temp in °C: 13  
 Received on Ice: Y/N  
 Sealed Cooler: Y/N  
 Samples Intact: Y/N

**RELINQUISHED BY / AFFILIATION**  
 Date: 10/29/17  
 Signature: [Signature]

**ACCEPTED BY / AFFILIATION**  
 Date: 10/29/17  
 Signature: [Signature]

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: Sean Flannery  
 SIGNATURE of SAMPLER: [Signature]  
 DATE Signed: 10/29/17



Pace Analytical Services, Inc  
1700 Elm Street Suite 200  
Minneapolis MN 55414  
Phone: (612)607-1700  
Fax: (612)607-6444

November 02, 2004

Mr. Scott Tracy  
Tetra Tech EMI  
2001 Killibrew Drive #141  
Bloomington, MN 55425

RE: Project: 102205  
Project ID: Schafer Metals-I04195.01

Dear Mr. Tracy:

Enclosed are the analytical results for sample(s) received by the laboratory on October 27, 2004. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Andrea Nord  
andrea.nord@pacelabs.com

Illinois Certification #: 200011  
Minnesota Certification #: 027-053-137  
Wisconsin Certification #: 9999407970

Enclosures

Page 1 of 11

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**SAMPLE SUMMARY**

Project: 102205  
Project ID: Schafer Metals-104195.01

Lab ID	Sample ID	Matrix	Date Collected	Date Received
102205001	BSA6	Solid	10/27/04 13:45	10/27/04 17:25
102205002	BSB6	Solid	10/27/04 13:45	10/27/04 17:25
102205003	BSC6	Solid	10/27/04 13:45	10/27/04 17:25
102205004	BSD6	Solid	10/27/04 13:45	10/27/04 17:25
102205005	SWB6	Solid	10/27/04 14:15	10/27/04 17:25
102205006	SWC6	Solid	10/27/04 14:15	10/27/04 17:25
102205007	SWD6	Solid	10/27/04 14:15	10/27/04 17:25
102205008	SP3	Solid	10/27/04 14:15	10/27/04 17:25
102205009	SP4	Solid	10/27/04 14:15	10/27/04 17:25

**REPORT OF LABORATORY ANALYSIS**

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### SAMPLE ANALYTE COUNT

Project: 102205  
Project ID: Schafer Metals-104195 01

Lab ID	Sample ID	Method	Analytes Reported
102205001	BSA6	% Moisture	1
		EPA 6010	1
102205002	BSB6	% Moisture	1
		EPA 6010	1
102205003	BSC6	% Moisture	1
		EPA 6010	1
102205004	BSD6	% Moisture	1
		EPA 6010	1
102205005	SWB6	% Moisture	1
		EPA 6010	1
102205006	SWC6	% Moisture	1
		EPA 6010	1
102205007	SWD6	% Moisture	1
		EPA 6010	1
102205008	SP3	EPA 6010	1
102205009	SP4	EPA 6010	1

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 Minneapolis MN 55414  
 Phone: (612)607-1700  
 Fax: (612)607-6444

**ANALYTICAL RESULTS**

Project: 102205  
 Project ID: Schafer Metals-I04195.01  
 Solid results are reported on a dry weight basis

Lab ID:	102205001	Date Collected:	10/27/04 13:45	Matrix:	Solid
Sample ID:	BSA6	Date Received:	10/27/04 17:25		

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
<b>Metals</b>											
6010 MET ICP	Preparation Method: EPA 3050										
	Analytical Method: EPA 6010										
Lead	92.3	mg/kg	0.31	1	10/28/04 00:00	MJP	10/29/04 15:54	ERW	7439-92-1		
Dry Weight	Analytical Method: % Moisture										
Percent Moisture	2.9	%	0.10	1			10/28/04 00:00	UO1			

Lab ID:	102205002	Date Collected:	10/27/04 13:45	Matrix:	Solid
Sample ID:	BSB6	Date Received:	10/27/04 17:25		

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
<b>Metals</b>											
6010 MET ICP	Preparation Method: EPA 3050										
	Analytical Method: EPA 6010										
Lead	30.7	mg/kg	0.31	1	10/28/04 00:00	MJP	10/29/04 16:13	ERW	7439-92-1		
Dry Weight	Analytical Method: % Moisture										
Percent Moisture	3.6	%	0.10	1			10/28/04 00:00	UO1			

Lab ID:	102205003	Date Collected:	10/27/04 13:45	Matrix:	Solid
Sample ID:	BSC6	Date Received:	10/27/04 17:25		

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
<b>Metals</b>											
6010 MET ICP	Preparation Method: EPA 3050										
	Analytical Method: EPA 6010										
Lead	152	mg/kg	0.29	1	10/28/04 00:00	MJP	10/29/04 16:38	ERW	7439-92-1		
Dry Weight	Analytical Method: % Moisture										
Percent Moisture	4.2	%	0.10	1			10/28/04 00:00	UO1			

Date: 11/02/2004

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**REPORT OF LABORATORY ANALYSIS**

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Pace Analytical Services, Inc.  
 1700 Elm Street Suite 200  
 Minneapolis MN 55414  
 Phone: (612)607-1700  
 Fax: (612)607-6444

**ANALYTICAL RESULTS**

Project: 102205  
 Project ID: Schafer Metals-I04195 01  
 Solid results are reported on a dry weight basis.

<b>Lab ID:</b>	102205004	<b>Date Collected:</b>	10/27/04 13:45	<b>Matrix:</b>	Solid
<b>Sample ID:</b>	BSD6	<b>Date Received:</b>	10/27/04 17:25		
<b>Parameters</b>	<b>Results</b>	<b>Units</b>	<b>Report Limit</b>	<b>DF Prepared</b>	<b>By Analyzed By CAS No. Qual RegLmt</b>
<b>Metals</b>					
6010 MET ICP					Preparation Method: EPA 3050
					Analytical Method: EPA 6010
Lead	136 mg/kg		0.31	1	10/28/04 00:00 MJP 10/29/04 16:44 ERW 7439-92-1
Dry Weight					Analytical Method: % Moisture
Percent Moisture	6.2 %		0.10	1	10/28/04 00:00 UO1

<b>Lab ID:</b>	102205005	<b>Date Collected:</b>	10/27/04 14:15	<b>Matrix:</b>	Solid
<b>Sample ID:</b>	SWB6	<b>Date Received:</b>	10/27/04 17:25		
<b>Parameters</b>	<b>Results</b>	<b>Units</b>	<b>Report Limit</b>	<b>DF Prepared</b>	<b>By Analyzed By CAS No. Qual RegLmt</b>
<b>Metals</b>					
6010 MET ICP					Preparation Method: EPA 3050
					Analytical Method: EPA 6010
Lead	181 mg/kg		0.23	1	10/28/04 00:00 MJP 10/29/04 16:51 ERW 7439-92-1
Dry Weight					Analytical Method: % Moisture
Percent Moisture	6.0 %		0.10	1	10/28/04 00:00 UO1

<b>Lab ID:</b>	102205006	<b>Date Collected:</b>	10/27/04 14:15	<b>Matrix:</b>	Solid
<b>Sample ID:</b>	SWC6	<b>Date Received:</b>	10/27/04 17:25		
<b>Parameters</b>	<b>Results</b>	<b>Units</b>	<b>Report Limit</b>	<b>DF Prepared</b>	<b>By Analyzed By CAS No. Qual RegLmt</b>
<b>Metals</b>					
6010 MET ICP					Preparation Method: EPA 3050
					Analytical Method: EPA 6010
Lead	903 mg/kg		0.31	1	10/28/04 00:00 MJP 10/29/04 16:57 ERW 7439-92-1
Dry Weight					Analytical Method: % Moisture
Percent Moisture	5.8 %		0.10	1	10/28/04 00:00 UO1

Date: 11/02/2004

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**REPORT OF LABORATORY ANALYSIS**

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 Minneapolis MN 55414  
 Phone: (612)607-1700  
 Fax: (612)607-6444

**ANALYTICAL RESULTS**

Project: 102205  
 Project ID: Schafer Metals-104195 01  
 Solid results are reported on a dry weight basis.

Lab ID: 102205007 Date Collected: 10/27/04 14:15 Matrix: Solid  
 Sample ID: SWD6 Date Received: 10/27/04 17:25

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	--------

**Metals**  
 6010 MET ICP Preparation Method: EPA 3050  
 Analytical Method: EPA 6010  
 Lead 277 mg/kg 0.24 1 10/28/04 00:00 MJP 10/29/04 17:03 ERW 7439-92-1  
 Dry Weight Analytical Method: % Moisture  
 Percent Moisture 2.4 % 0.10 1 10/28/04 00:00 UO1

Lab ID: 102205008 Date Collected: 10/27/04 14:15 Matrix: Solid  
 Sample ID: SP3 Date Received: 10/27/04 17:25

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	--------

**Metals**  
 6010 MET ICP, TCLP Preparation Method: EPA 3010  
 Analytical Method: EPA 6010  
 Lead 1.5 mg/L 0.015 5 10/29/04 00:00 MJP 10/29/04 19:40 ERW 7439-92-1

Lab ID: 102205009 Date Collected: 10/27/04 14:15 Matrix: Solid  
 Sample ID: SP4 Date Received: 10/27/04 17:25

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	--------

**Metals**  
 6010 MET ICP, TCLP Preparation Method: EPA 3010  
 Analytical Method: EPA 6010  
 Lead ND mg/L 0.015 5 10/29/04 00:00 MJP 10/29/04 19:47 ERW 7439-92-1

Date: 11/02/2004

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## ANALYTICAL RESULTS QUALIFIERS

Project: 102205

Project ID: Schafer Metals-I04195 01

---

### PARAMETER QUALIFIERS

DF - Dilution Factor, if reported represents the factor

ND - Not Detected at or above adjusted reporting limit applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

## REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA**

Project: 102205  
Project ID: Schafer Metals-104195 01

QC Batch:	MPPRP/1266	Analysis Method:	EPA 6010			
QC Batch Method:	EPA 3050	Analysis Description:	6010 MET			
Associated Lab Samples:	102205001	102205002	102205003	102205004	102205005	102205006
	102205007					

METHOD BLANK: 14223

Associated Lab Samples:	102205001	102205002	102205003	102205004	102205005	102205006
	102205007					

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Lead	mg/kg	0.0067	0.0060	

LABORATORY CONTROL SAMPLE: 14224

Parameter	Units	Spike Conc	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	1	1.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 14225 14226

Parameter	Units	102205001 Result	Spike Conc	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Lead	mg/kg	89.6	43.9	153	138	144	103	75-125	10	30	1

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**QUALITY CONTROL DATA**

Project: 102205  
Project ID: Schafer Metals-I04195 01

QC Batch:	MPRP/1273	Analysis Method:	% Moisture
QC Batch Method:	% Moisture	Analysis Description:	Dry Weight/Percent Moisture
Associated Lab Samples:	102049001    102049002	102205001    102205002	102205003    102205004
	102205005    102205006	102205007	

METHOD BLANK: 14460

Associated Lab Samples:	102205001    102205002	102205003    102205004	102205005    102205006
	102205007		

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Percent Moisture	%	ND	0.10	

SAMPLE DUPLICATE: 14461

Parameter	Units	102205001 Result	DUP Result	RPD	Max RPD Qualifiers
Percent Moisture	%	2.9	3.1	6	30

SAMPLE DUPLICATE: 14462

Parameter	Units	102049002 Result	DUP Result	RPD	Max RPD Qualifiers
Percent Moisture	%	31.8	32.5	2	30

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**QUALITY CONTROL DATA**

Project: 102205  
Project ID: Schafer Metals-I04195 01

QC Batch: MPRP/1278      Analysis Method: EPA 6010  
QC Batch Method: EPA 3010      Analysis Description: 6010 MET SPLP  
Associated Lab Samples: 102199001 102199002 102199003 102199004 102205008 102205009

METHOD BLANK: 14608

Associated Lab Samples: 102205008 102205009

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Lead	mg/L	ND	0.015	

LABORATORY CONTROL SAMPLE: 14609

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/L	1	0.98	98		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 14610 14611

Parameter	Units	102199001 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Lead	mg/L	0052	1	0.94	0.96	94	95	75-125	1	30	

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## QUALITY CONTROL DATA QUALIFIERS

Project: 102205  
Project ID: Schafer Metals-I04195.01

---

### QUALITY CONTROL PARAMETER QUALIFIERS

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method

MDL - Adjusted Method Detection Limit detection limit and below the adjusted reporting limit

S - Surrogate

### QUALITY CONTROL ANALYTE QUALIFIERS

[1] The matrix spike recoveries are unacceptable. Batch acceptance based on LCS recovery.

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Client Information (Check quote/contract):  
Requested Due Date: 11/2/04  
TAT: 3 days

Turn around time less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.  
Turn Around Time (TAT) in calendar days.

Section D  
Required Client Information:

SAMPLE ID

One character per box.  
(A-Z, 0-9, /, -)

Sample IDs MUST BE UNIQUE

ITEM #	MATRIX CODE	Valid Matrix Codes DRINKING WATER GROUND WATER SURFACE WATER WASTE WATER PRODUCT SOIL OIL WIPE AIR OTHER	MATRIX CODE	G-RAB C-COMP	COLLECTED		SAMPLER TEMP	AT COLLECTION	Preservatives						Remarks / Lab ID		
					START DATE	END DATE			TIME	TIME	Unpreserved	H2SO4	HNO3	HCl		NaOH	Na2S2O3
1	BSA6				10/28/04		13:45		X								102205001
2	BSB6																102205002
3	BSB6																102205003
4	BSB6																102205004
5	BSB6						14:15										102205005
6	SWD6																102205006
7	SWD6																102205007
8	SP3																102205008
9	SP4						16:00										102205009
10																	

SITE LOCATION:  NC  SC  GA  Other

REGULATORY AGENCY:  NPDES  GROUND WATER  DRINKING WATER  RCRA  Other

SAMPLE NOTES

Temp in °C: 12

Received on Ice:  Y  N

Sealed Cooler:  Y  N

Samples Intact:  Y  N

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[Signature]	10/28/04	13:45	M. Johnson	10/28/04	17:05

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Sean Flannery  
SIGNATURE of SAMPLER: [Signature]

DATE Signed: (MM/DD/YY)  
10/27/04

ORIGINAL

**Section A**  
 Required Client Information:  
 Company: Tetric Tech  
 Address: 3200 Killebrew Dr  
 Ste 111  
 Bloomington, MN 55425  
 Phone: 612-200-0500 Fax: 612-200-0520

**Section B**  
 Required Client Information:  
 Report To: Scott Tracy  
 Copy To: Sean Flannery  
 Invoice To: Stoiber  
 P.O. # 1419501  
 Project Name: Stoiber  
 Project Number: 1419501

**Section C**  
 To Be Completed by Pace Analytical and Client  
 Quote Reference: 866726  
 Project Manager:  
 Project #: 102205  
 Profile #:  
 Requested Analysis:

Client Information (Check quote/contract):  
 Requested Due Date: 11/26/04 TAT: 3 days  
 Turn around time less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.  
 Turn Around Time (TAT) in calendar days.

ITEM #	SAMPLE ID	Valid Matrix Codes	MATRIX	CODE	SAMPLER TYPE	DATE	START TIME	END TIME	SAMPLE TEMP	PRESERVATIVES							Remarks / Lab ID	
										Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol		Other
1	A	GROUNDWATER	DRINKING WATER	DW	G-RAB C-COMP	10/28/04	13:45			X								102205001
2	B	GROUNDWATER	DRINKING WATER	DW	G-RAB C-COMP													102205002
3	C	GROUNDWATER	DRINKING WATER	DW	G-RAB C-COMP													102205003
4	D	GROUNDWATER	DRINKING WATER	DW	G-RAB C-COMP													102205004
5	E	GROUNDWATER	DRINKING WATER	DW	G-RAB C-COMP													102205005
6	F	GROUNDWATER	DRINKING WATER	DW	G-RAB C-COMP		14:15											102205006
7	G	GROUNDWATER	DRINKING WATER	DW	G-RAB C-COMP													102205007
8	H	GROUNDWATER	DRINKING WATER	DW	G-RAB C-COMP													102205008
9	I	GROUNDWATER	DRINKING WATER	DW	G-RAB C-COMP													102205009
10	J	GROUNDWATER	DRINKING WATER	DW	G-RAB C-COMP		16:00											102205010

**Section D**  
 Required Client Information:  
 One character per box.  
 (A-Z, 0-9 / -)  
 Sample IDs MUST BE UNIQUE

**SITE LOCATION**  
 NC  SC  GA  Other

**REGULATORY AGENCY**  
 NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  Other

**SAMPLE NOTES**  
 Temp in °C: 12  
 Received on Ice: Y/N  
 Sealed Cooler: Y/N  
 Samples Intact: Y/N

**RELINQUISHED BY / AFFILIATION** DATE TIME  
[Signature] 10/28/04 10:28 AM

**ACCEPTED BY / AFFILIATION** DATE TIME  
[Signature] 10/28/04 10:28 AM

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: Sean Flannery  
 SIGNATURE of SAMPLER: [Signature]  
 DATE Signed: 10/28/04



Pace Analytical Services, Inc.  
1700 Elm Street Suite 200  
Minneapolis MN 55414  
Phone: (612)607-1700  
Fax: (612)607-6444

November 04, 2004

Mr. Scott Tracy  
Tetra Tech EMI  
2001 Killibrew Drive #141  
Bloomington, MN 55425

RE: Project: 102448  
Project ID: SHAFER I4195.01

Dear Mr. Tracy:

Enclosed are the analytical results for sample(s) received by the laboratory on November 01, 2004. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Andrea Nord  
andrea.nord@pacelabs.com

Illinois Certification #: 200011  
Minnesota Certification #: 027-053-137  
Wisconsin Certification #: 9999407970

Enclosures

Page 1 of 7

#### REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 102448  
Project ID: SHAFER 14195 01

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
102448001	SP-2B	Solid	11/01/04 07:40	11/01/04 08:15

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 102448  
Project ID: SHAFER I4195.01

---

Lab ID	Sample ID	Method	Analytes Reported
102448001	SP-2B	EPA 6010	1

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## ANALYTICAL RESULTS QUALIFIERS

Project: 102448  
Project ID: SHAFER I4195 01

---

### PARAMETER QUALIFIERS

- DF - Dilution Factor, if reported, represents the factor
- ND - Not Detected at or above adjusted reporting limit applied to the reported data due to changes in sample preparation, dilution of the sample aliquot or moisture content
- J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
- MDL - Adjusted Method Detection Limit.
- S - Surrogate

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**QUALITY CONTROL DATA**

Project: 102448  
 Project ID: SHAFER I4195 01

QC Batch: MPRP/1307 Analysis Method: EPA 6010  
 QC Batch Method: EPA 3010 Analysis Description: 6010 MET SPLP  
 Associated Lab Samples: 101949013 101949014 101949015 101949016 101949017 101949018  
 101949019 101949020 101949021 101949022 101949023 101949024  
 102109003 102109004 102352001 102406001 102406002 102448001

METHOD BLANK: 16372  
 Associated Lab Samples: 102448001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Lead	mg/L	ND	0.015	

LABORATORY CONTROL SAMPLE: 16373

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/L	1	10	104		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 16374 16375

Parameter	Units	102109003 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Lead	mg/L	02	1	10	10	100	100	75-125	0	30	

SAMPLE DUPLICATE: 16376

Parameter	Units	102109004 Result	DUP Result	RPD	Max RPD	Qualifiers
Lead	mg/L	130	0.026	4	30	

Date: 11/04/2004

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## QUALITY CONTROL DATA QUALIFIERS

Project: 102448

Project ID: SHAFER I4195 01

---

### QUALITY CONTROL PARAMETER QUALIFIERS

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method

MDL - Adjusted Method Detection Limit. detection limit and below the adjusted reporting limit

S - Surrogate

## REPORT OF LABORATORY ANALYSIS

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Fax: (612)607-6444

November 12, 2004

Mr. Sean Flannery  
Tetra Tech EMI Inc.  
2001 Killebrew Drive  
Suite 141  
Bloomington, MN 55425

RE: Project: 102861  
Project ID: Schafer Metals 14195.01

Dear Mr. Flannery:

Enclosed are the analytical results for sample(s) received by the laboratory on November 08, 2004. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me

Sincerely,

Andrea Nord  
andrea.nord@pacelabs.com

Illinois Certification #: 200011  
Minnesota Certification #: 027-053-137  
Wisconsin Certification #: 9999407970

Enclosures

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Minneapolis MN 55414  
Phone: (612)607-1700  
Fax: (612)607-6444

### SAMPLE SUMMARY

Project: 102861  
Project ID: Schafer Metals I4195 01

Lab ID	Sample ID	Matrix	Date Collected	Date Received
102861001	BSA3	Solid	11/08/04 15:40	11/08/04 17:00
102861002	BSB3	Solid	11/08/04 15:40	11/08/04 17:00
102861003	BSC3	Solid	11/08/04 15:40	11/08/04 17:00
102861004	BSA5	Solid	11/08/04 15:40	11/08/04 17:00
102861005	BSC5	Solid	11/08/04 15:40	11/08/04 17:00
102861006	BSE4-B	Solid	11/08/04 15:50	11/08/04 17:00
102861007	BSE5-B	Solid	11/08/04 15:50	11/08/04 17:00
102861008	SWC6-B	Solid	11/08/04 15:50	11/08/04 17:00
102861009	SP-5	Solid	11/08/04 16:00	11/08/04 17:00
102861010	CB-1	Solid	11/08/04 16:00	11/08/04 17:00
102861011	CB-2	Solid	11/08/04 16:00	11/08/04 17:00
102861012	CB-3	Solid	11/08/04 16:00	11/08/04 17:00

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 Phone: (612)607-1700  
 Fax: (612)607-6444

**SAMPLE ANALYTE COUNT**

Project: 102861  
 Project ID: Schafer Metals I4195 01

Lab ID	Sample ID	Method	Analytes Reported
102861001	BSA3	% Moisture	1
		EPA 6010	1
102861002	BSB3	% Moisture	1
		EPA 6010	1
102861003	BSC3	% Moisture	1
		EPA 6010	1
102861004	BSA5	% Moisture	1
		EPA 6010	1
102861005	BSC5	% Moisture	1
		EPA 6010	1
102861006	BSE4-B	% Moisture	1
		EPA 6010	1
102861007	BSE5-B	% Moisture	1
		EPA 6010	1
102861008	SWC6-B	% Moisture	1
		EPA 6010	1
102861009	SP-5	EPA 6010	1
102861010	CB-1	% Moisture	1
		EPA 6010	1
102861011	CB-2	% Moisture	1
		EPA 6010	1
102861012	CB-3	% Moisture	1
		EPA 6010	1

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 1700 Elm Street Suite 200  
 Minneapolis MN 55414  
 Phone: (612)607-1700  
 Fax: (612)607-6444

**ANALYTICAL RESULTS**

Project: 102861  
 Project ID: Schafer Metals I4195.01  
 Solid results are reported on a dry weight basis

Lab ID: 102861001 Date Collected: 11/08/04 15:40 Matrix: Solid  
 Sample ID: BSA3 Date Received: 11/08/04 17:00

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
<b>Metals</b>											
6010 MET ICP	Preparation Method: EPA 3050 Analytical Method: EPA 6010										
Lead	2310	mg/kg	13	5	11/11/04 00:00	LSB	11/12/04 12:09	ERW	7439-92-1		
Dry Weight	Analytical Method: % Moisture										
Percent Moisture	4.1	%	0.10	1			11/09/04 00:00	UO1			

Lab ID: 102861002 Date Collected: 11/08/04 15:40 Matrix: Solid  
 Sample ID: BSB3 Date Received: 11/08/04 17:00

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
<b>Metals</b>											
6010 MET ICP	Preparation Method: EPA 3050 Analytical Method: EPA 6010										
Lead	13300	mg/kg	4.6	20	11/11/04 00:00	LSB	11/12/04 12:16	ERW	7439-92-1		
Dry Weight	Analytical Method: % Moisture										
Percent Moisture	1.8	%	0.10	1			11/09/04 00:00	UO1			

Lab ID: 102861003 Date Collected: 11/08/04 15:40 Matrix: Solid  
 Sample ID: BSC3 Date Received: 11/08/04 17:00

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
<b>Metals</b>											
6010 MET ICP	Preparation Method: EPA 3050 Analytical Method: EPA 6010										
Lead	4320	mg/kg	2.4	10	11/11/04 00:00	LSB	11/12/04 12:29	ERW	7439-92-1		
Dry Weight	Analytical Method: % Moisture										
Percent Moisture	4.1	%	0.10	1			11/09/04 00:00	UO1			

Date: 11/12/2004

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**REPORT OF LABORATORY ANALYSIS**

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Pace Analytical Services Inc.  
 1700 Elm Street Suite 200  
 Minneapolis MN 55414  
 Phone: (612)607-1700  
 Fax: (612)607-6444

**ANALYTICAL RESULTS**

Project: 102861  
 Project ID: Schafer Metals I4195.01  
 Solid results are reported on a dry weight basis

<b>Lab ID:</b>	102861004	<b>Date Collected:</b>	11/08/04 15:40	<b>Matrix:</b>	Solid
<b>Sample ID:</b>	BSA5	<b>Date Received:</b>	11/08/04 17:00		
<b>Parameters</b>	<b>Results</b>	<b>Units</b>	<b>Report Limit</b>	<b>DF Prepared</b>	<b>By Analyzed By CAS No Qual RegLmt</b>
<b>Metals</b>					
6010 MET ICP					Preparation Method: EPA 3050 Analytical Method: EPA 6010
Lead	5370	mg/kg	2.3	10	11/11/04 00:00 LSB 11/12/04 12:36 ERW 7439-92-1
<b>Dry Weight</b>					
Percent Moisture	4.9	%	0.10	1	11/09/04 00:00 UO1

<b>Lab ID:</b>	102861005	<b>Date Collected:</b>	11/08/04 15:40	<b>Matrix:</b>	Solid
<b>Sample ID:</b>	BSC5	<b>Date Received:</b>	11/08/04 17:00		
<b>Parameters</b>	<b>Results</b>	<b>Units</b>	<b>Report Limit</b>	<b>DF Prepared</b>	<b>By Analyzed By CAS No Qual RegLmt</b>
<b>Metals</b>					
6010 MET ICP					Preparation Method: EPA 3050 Analytical Method: EPA 6010
Lead	7850	mg/kg	2.8	10	11/11/04 00:00 LSB 11/12/04 12:43 ERW 7439-92-1
<b>Dry Weight</b>					
Percent Moisture	7.7	%	0.10	1	11/09/04 00:00 UO1

<b>Lab ID:</b>	102861006	<b>Date Collected:</b>	11/08/04 15:50	<b>Matrix:</b>	Solid
<b>Sample ID:</b>	BSE4-B	<b>Date Received:</b>	11/08/04 17:00		
<b>Parameters</b>	<b>Results</b>	<b>Units</b>	<b>Report Limit</b>	<b>DF Prepared</b>	<b>By Analyzed By CAS No Qual RegLmt</b>
<b>Metals</b>					
6010 MET ICP					Preparation Method: EPA 3050 Analytical Method: EPA 6010
Lead	109	mg/kg	0.32	1	11/11/04 00:00 LSB 11/11/04 18:03 ERW 7439-92-1
<b>Dry Weight</b>					
Percent Moisture	12.2	%	0.10	1	11/09/04 00:00 UO1

Date: 11/12/2004

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**ANALYTICAL RESULTS**

Project: 102861  
 Project ID: Schafer Metals I4195 01  
 Solid results are reported on a dry weight basis.

<b>Lab ID:</b>	102861007	<b>Date Collected:</b>	11/08/04 15:50	<b>Matrix:</b>	Solid
<b>Sample ID:</b>	BSE5-B	<b>Date Received:</b>	11/08/04 17:00		
<b>Parameters</b>	<b>Results</b>	<b>Units</b>	<b>Report Limit</b>	<b>DF Prepared</b>	<b>By Analyzed By CAS No. Qual RegLmt</b>
<b>Metals</b>					
6010 MET ICP					Preparation Method: EPA 3050 Analytical Method: EPA 6010
Lead	290 mg/kg		0.26	1	11/11/04 00:00 LSB 11/11/04 18:10 ERW 7439-92-1
Dry Weight					Analytical Method: % Moisture
Percent Moisture	7.8 %		0.10	1	11/09/04 00:00 UO1

<b>Lab ID:</b>	102861008	<b>Date Collected:</b>	11/08/04 15:50	<b>Matrix:</b>	Solid
<b>Sample ID:</b>	SWC6-B	<b>Date Received:</b>	11/08/04 17:00		
<b>Parameters</b>	<b>Results</b>	<b>Units</b>	<b>Report Limit</b>	<b>DF Prepared</b>	<b>By Analyzed By CAS No. Qual RegLmt</b>
<b>Metals</b>					
6010 MET ICP					Preparation Method: EPA 3050 Analytical Method: EPA 6010
Lead	262 mg/kg		0.28	1	11/11/04 00:00 LSB 11/11/04 18:16 ERW 7439-92-1
Dry Weight					Analytical Method: % Moisture
Percent Moisture	9.2 %		0.10	1	11/09/04 00:00 UO1

<b>Lab ID:</b>	102861009	<b>Date Collected:</b>	11/08/04 16:00	<b>Matrix:</b>	Solid
<b>Sample ID:</b>	SP-5	<b>Date Received:</b>	11/08/04 17:00		
<b>Parameters</b>	<b>Results</b>	<b>Units</b>	<b>Report Limit</b>	<b>DF Prepared</b>	<b>By Analyzed By CAS No. Qual RegLmt</b>
<b>Metals</b>					
6010 MET ICP TCLP					Preparation Method: EPA 3010 Analytical Method: EPA 6010
Lead	0.026 mg/L		0.015	5	11/10/04 00:00 LSB 11/11/04 12:55 ERW 7439-92-1

Date: 11/12/2004

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**ANALYTICAL RESULTS**

Project: 102861  
 Project ID: Schafer Metals I4195 01  
 Solid results are reported on a dry weight basis

<b>Lab ID:</b>	102861010	<b>Date Collected:</b>	11/08/04 16:00	<b>Matrix:</b>	Solid
<b>Sample ID:</b>	CB-1	<b>Date Received:</b>	11/08/04 17:00		
<b>Parameters</b>	<b>Results</b>	<b>Units</b>	<b>Report Limit</b>	<b>DF Prepared</b>	<b>By Analyzed By CAS No Qual RegLmt</b>
<b>Metals</b>					
6010 MET ICP	Preparation Method: EPA 3050				
	Analytical Method: EPA 6010				
Lead	67.3	mg/kg	0.32	1	11/11/04 00:00 LSB 11/11/04 18:22 ERW 7439-92-1
Dry Weight	Analytical Method: % Moisture				
Percent Moisture	15.7	%	0.10	1	11/09/04 00:00 UO1

<b>Lab ID:</b>	102861011	<b>Date Collected:</b>	11/08/04 16:00	<b>Matrix:</b>	Solid
<b>Sample ID:</b>	CB-2	<b>Date Received:</b>	11/08/04 17:00		
<b>Parameters</b>	<b>Results</b>	<b>Units</b>	<b>Report Limit</b>	<b>DF Prepared</b>	<b>By Analyzed By CAS No Qual RegLmt</b>
<b>Metals</b>					
6010 MET ICP	Preparation Method: EPA 3050				
	Analytical Method: EPA 6010				
Lead	11.9	mg/kg	0.28	1	11/11/04 00:00 LSB 11/12/04 12:50 ERW 7439-92-1
Dry Weight	Analytical Method: % Moisture				
Percent Moisture	14.4	%	0.10	1	11/09/04 00:00 UO1

<b>Lab ID:</b>	102861012	<b>Date Collected:</b>	11/08/04 16:00	<b>Matrix:</b>	Solid
<b>Sample ID:</b>	CB-3	<b>Date Received:</b>	11/08/04 17:00		
<b>Parameters</b>	<b>Results</b>	<b>Units</b>	<b>Report Limit</b>	<b>DF Prepared</b>	<b>By Analyzed By CAS No Qual RegLmt</b>
<b>Metals</b>					
6010 MET ICP	Preparation Method: EPA 3050				
	Analytical Method: EPA 6010				
Lead	12.2	mg/kg	0.25	1	11/11/04 00:00 LSB 11/12/04 12:56 ERW 7439-92-1
Dry Weight	Analytical Method: % Moisture				
Percent Moisture	11.6	%	0.10	1	11/09/04 00:00 UO1

Date: 11/12/2004

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## ANALYTICAL RESULTS QUALIFIERS

Project: 102861  
Project ID: Schafer Metals I4195.01

---

### PARAMETER QUALIFIERS

- DF - Dilution Factor, if reported represents the factor
- ND - Not Detected at or above adjusted reporting limit applied to the reported data due to changes in sample preparation, dilution of the sample aliquot or moisture content
- J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
- MDL - Adjusted Method Detection Limit
- S - Surrogate

Date: 11/12/2004

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**QUALITY CONTROL DATA**

Project: 102861  
 Project ID: Schafer Metals I4195 01

QC Batch:	MPRP/1372		Analysis Method:	% Moisture		
QC Batch Method:	% Moisture		Analysis Description:	Dry Weight/Percent Moisture		
Associated Lab Samples:	102861001	102861002	102861003	102861004	102861005	102861006
	102861007	102861008	102861010	102861011	102861012	102868001
	102868002	102868003				

METHOD BLANK: 19638

Associated Lab Samples:	102861001	102861002	102861003	102861004	102861005	102861006
	102861007	102861008	102861010	102861011	102861012	

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Percent Moisture	%	ND	0.10	

SAMPLE DUPLICATE: 19703

Parameter	Units	102868003 Result	DUP Result	RPD	Max RPD Qualifiers
Percent Moisture	%	6.6	6.1	9	30

SAMPLE DUPLICATE: 19860

Parameter	Units	102861001 Result	DUP Result	RPD	Max RPD Qualifiers
Percent Moisture	%	4.1	4.4	7	30

Date: 11/12/2004

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**QUALITY CONTROL DATA**

Project: 102861  
Project ID: Schafer Metals I4195 01

QC Batch: MPRP/1387      Analysis Method: EPA 6010  
QC Batch Method: EPA 3010      Analysis Description: 6010 MET TCLP  
Associated Lab Samples: 102789002    102861009    102868001    102868002    102868003

METHOD BLANK: 20094

Associated Lab Samples: 102861009

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Lead	mg/L	ND	0.015	

LABORATORY CONTROL SAMPLE: 20095

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/L	1	1.0	102		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20096      20097

Parameter	Units	102789002 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Lead	mg/L	37.8	1	38.4	38.2	60	50	75-125	0.3	30.2	

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**QUALITY CONTROL DATA**

Project: 102861  
 Project ID: Schafer Metals I4195 01

QC Batch: MPRP/1398                      Analysis Method: EPA 6010  
 QC Batch Method: EPA 3050                Analysis Description: 6010 MET  
 Associated Lab Samples: 102861001    102861002    102861003    102861004    102861005    102861006  
    102861007    102861008    102861010    102861011    102861012

METHOD BLANK: 20503  
 Associated Lab Samples: 102861001    102861002    102861003    102861004    102861005    102861006  
    102861007    102861008    102861010    102861011    102861012

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Lead	mg/kg	ND	0.30	

LABORATORY CONTROL SAMPLE: 20504

Parameter	Units	Spike Conc	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	1	10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20505                      20506

Parameter	Units	102861001 Result	Spike Conc	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Lead	mg/kg	2210	38.8	1280	1130	-2400	-2800	75-125	13	30	2

SAMPLE DUPLICATE: 20507

Parameter	Units	102861002 Result	DUP Result	RPD	Max RPD	Qualifiers
Lead	mg/kg	13300	6220	71	30	1

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## QUALITY CONTROL DATA QUALIFIERS

Project: 102861  
Project ID: Schafer Metals I4195 01

---

### QUALITY CONTROL PARAMETER QUALIFIERS

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

ND - Not Detected at or above adjusted reporting limit

J - Estimated concentration above the adjusted method

MDL - Adjusted Method Detection Limit. detection limit and below the adjusted reporting limit.

S - Surrogate

### QUALITY CONTROL ANALYTE QUALIFIERS

- [1] RPD value was outside of acceptable limits
- [2] The matrix spike recoveries are unacceptable. Batch acceptance based on LCS recovery.

## REPORT OF LABORATORY ANALYSIS

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**Section A**  
Required Client Information:  
Company: Securix Technology Inc  
Address: 2015 S. 1st St  
City: Phoenix, AZ  
State: AZ  
Zip: 85004  
Phone: 602-998-2201  
Fax: 602-998-2201

**Section B**  
Required Client Information:  
Report To: Securix Technology Inc  
Copy To: Securix Technology Inc  
Invoice To: Securix Technology Inc  
P.O. #:  
Project Name: State  
Project Number: 14195.01

**Section C**  
To Be Completed by Pace Analytical and Client  
Quote Reference: 806106  
Project Manager:  
Project #: 102861  
Profile #:  
Requested Analysis:  
Client Information (Check quote/contract):  
Requested Dup Date: 3 Days  
\* Turn around times less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.  
Turn Around Time (TAT) in calendar days.

ITEM #	SAMPLE ID One character per box. (A-Z, 0-9 / -)	Valid Matrix Codes MATRIX CODE WATER SOIL OIL WIPE AIR TISSUE OTHER	MATRIX CODE	DATE COLLECTED mm / dd / yy	TIME COLLECTED hh: mm a/p	# Containers	Preservatives							Remarks / Lab ID			
							Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanol		Other		
1	C1-1		SL	11/21/04	10:00 a/p	1	X										
2	C1-2		SL	11/21/04	10:00 a/p	1	X										
3	C1-3		SL	11/21/04	10:00 a/p	1	X										
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

**REGULATORY AGENCY**  
 NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  Other

**SITE LOCATION**  
 NC  SC  GA  Other

**SAMPLE CONDITION**  
 Temp in °C: 4.8  
 Received on ice: Y/N  
 Sealed Cooler: Y/N  
 Samples Intact: Y/N

**RELINQUISHED BY / AFFILIATION** 11/21/04 Securix Technology Inc **DATE** 11/21/04 **TIME** 10:00

**ACCEPTED BY / AFFILIATION** 11/21/04 Securix Technology Inc **DATE** 11/21/04 **TIME** 10:00

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: John F. Smith  
 SIGNATURE of SAMPLER: [Signature]

**Additional Comments:**

DATE Signed: 11/21/04

**Section A**  
Required Client Information:  
Company: Peter Tech  
Address: 3000 Killebrew Dr  
City: Minneapolis  
State: MN  
Zip: 55425  
Phone: 612-338-6666  
Fax: 612-338-6666

**Section B**  
Required Client Information:  
Report To: charlene.gruber@hemis.com  
Copy To: Charlene.Gruber@hemis.com  
Invoice To: P.O.  
Project Name: Shaver  
Project Number: 149501

Page: of

To Be Completed by Pace Analytical and Client  
Quote Reference: **805700** Section C

Client Information (Check quote/contract):  
Requested Due Date: 11/11/04 TAT: 3 Days  
\* Turn around times less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.  
Turn Around Time (TAT) in calendar days.

Project Manager:  
Project #:  
Profile #:

**Section D** Required Client Information:  
Valid Matrix Codes ←  
MATRIX: WATER, SOIL, OIL, AIR, TISSUE, OTHER  
CODE: WT, SL, OL, WP, AR, TS, OT  
METHANOL, Na<sub>2</sub>S<sub>2</sub>O<sub>8</sub>, NaOH, HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, Unpreserved, # Containers, TIME COLLECTED, DATE COLLECTED, mm/dd/yy, hr:mm ap

ITEM #	SAMPLE ID	MATRIX CODE	DATE COLLECTED	TIME COLLECTED	# Containers	PRESERVATIVES							REMARKS / Lab ID				
						Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>8</sub>	Methanol		Other			
1	149501-01	SL	11/10/04	15:40	1	X											
2	149501-02	SL	11/10/04	15:50	1	X											
3	149501-03	SL	11/10/04	16:00	1	X											
4	149501-04	SL	11/10/04	16:00	1	X											
5	149501-05	SL	11/10/04	16:00	1	X											
6	149501-06	SL	11/10/04	16:00	1	X											
7	149501-07	SL	11/10/04	16:00	1	X											
8	149501-08	SL	11/10/04	16:00	1	X											
9	149501-09	SL	11/10/04	16:00	1	X											
10	149501-10	SL	11/10/04	16:00	1	X											
11	149501-11	SL	11/10/04	16:00	1	X											
12	149501-12	SL	11/10/04	16:00	1	X											

**REGULATORY AGENCY**  
 NC  SC  GA  NPDES  GROUND WATER  DRINKING WATER  
 Other  RCRA  Other

**SAMPLE NOTES**  
 Temp in °C: 4.3  
 Received on Ice: Y/N  
 Sealed Cooler: Y/N  
 Samples Intact: Y/N

**RELINQUISHED BY / AFFILIATION** [Signature] **DATE** 11/04/04 **TIME** 5:00 PM **ACCEPTED BY / AFFILIATION** [Signature] **DATE** 11/04/04 **TIME** 5:00 PM

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: Sean Foy  
 SIGNATURE of SAMPLER: [Signature]

**DATE SIGNED:** 11/15/04



Pace Analytical Services, Inc  
1700 Elm Street, Suite 200  
Minneapolis MN 55414  
Phone: (612)607-1700  
Fax: (612)607-6444

November 22, 2004

Mr. Sean Flannery  
Tetra Tech EMI Inc  
2001 Killebrew Drive  
Suite 141  
Bloomington, MN 55425

RE: Project: 103300  
Project ID: Schafer Metals I4195.0

Dear Mr. Flannery:

Enclosed are the analytical results for sample(s) received by the laboratory on November 16, 2004. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Andrea Nord  
andrea.nord@pacelabs.com

Illinois Certification #: 200011  
Minnesota Certification #: 027-053-137  
Wisconsin Certification #: 9999407970

Enclosures

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**SAMPLE SUMMARY**

Project: 103300  
Project ID: Schafer Metals I4195 0

Lab ID	Sample ID	Matrix	Date Collected	Date Received
103300001	BSB3-B	Solid	11/16/04 13:35	11/16/04 17:20
103300002	BSC3-B	Solid	11/16/04 14:20	11/16/04 17:20
103300003	BSA5-B	Solid	11/16/04 15:00	11/16/04 17:20
103300004	BSC5-B	Solid	11/16/04 15:35	11/16/04 17:20
103300005	BSA3-B	Solid	11/16/04 16:00	11/16/04 17:20
103300006	SP-6	Solid	11/16/04 16:05	11/16/04 17:20

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**SAMPLE ANALYTE COUNT**

Project: 103300  
Project ID: Schafer Metals I4195 0

Lab ID	Sample ID	Method	Analytes Reported
103300001	BSB3-B	% Moisture	1
		EPA 6010	1
103300002	BSC3-B	% Moisture	1
		EPA 6010	1
103300003	BSA5-B	% Moisture	1
		EPA 6010	1
103300004	BSC5-B	% Moisture	1
		EPA 6010	1
103300005	BSA3-B	% Moisture	1
		EPA 6010	1
103300006	SP-6	EPA 6010	1

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 Fax: (612)607-6444

**ANALYTICAL RESULTS**

Project: 103300  
 Project ID: Schafer Metals I4195 0  
 Solid results are reported on a dry weight basis.

Lab ID: 103300001 Date Collected: 11/16/04 13:35 Matrix: Solid  
 Sample ID: BSB3-B Date Received: 11/16/04 17:20

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No	Qual	RegLmt
<b>Metals</b>											
6010 MET ICP	Preparation Method: EPA 3050										
	Analytical Method: EPA 6010										
Lead	3.5	mg/kg	0.27	1	11/18/04 00:00	LSB	11/18/04 21:13	ERW	7439-92-1		
Dry Weight	Analytical Method: % Moisture										
Percent Moisture	2.1	%	0.10	1			11/17/04 00:00	UO1			

Lab ID: 103300002 Date Collected: 11/16/04 14:20 Matrix: Solid  
 Sample ID: BSC3-B Date Received: 11/16/04 17:20

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
<b>Metals</b>											
6010 MET ICP	Preparation Method: EPA 3050										
	Analytical Method: EPA 6010										
Lead	15.1	mg/kg	0.24	1	11/18/04 00:00	LSB	11/18/04 21:29	ERW	7439-92-1		
Dry Weight	Analytical Method: % Moisture										
Percent Moisture	2.1	%	0.10	1			11/17/04 00:00	UO1			

Lab ID: 103300003 Date Collected: 11/16/04 15:00 Matrix: Solid  
 Sample ID: BSA5-B Date Received: 11/16/04 17:20

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
<b>Metals</b>											
6010 MET ICP	Preparation Method: EPA 3050										
	Analytical Method: EPA 6010										
Lead	22.0	mg/kg	0.28	1	11/18/04 00:00	LSB	11/18/04 21:34	ERW	7439-92-1		
Dry Weight	Analytical Method: % Moisture										
Percent Moisture	6.1	%	0.10	1			11/17/04 00:00	UO1			

Date: 11/22/2004

Page 4 of 10

**REPORT OF LABORATORY ANALYSIS**

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Pace Analytical Services, Inc.  
 1700 Elm Street, Suite 200  
 Minneapolis MN 55414  
 Phone: (612)607-1700  
 Fax: (612)607-6444

**ANALYTICAL RESULTS**

Project: 103300  
 Project ID: Schafer Metals I4195 0  
 Solid results are reported on a dry weight basis

Lab ID: 103300004 Date Collected: 11/16/04 15:35 Matrix: Solid  
 Sample ID: BSC5-B Date Received: 11/16/04 17:20

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	--------

**Metals**

6010 MET ICP Preparation Method: EPA 3050  
 Analytical Method: EPA 6010  
 Lead 4.7 mg/kg 0.27 1 11/18/04 00:00 LSB 11/18/04 21:39 ERW 7439-92-1  
 Dry Weight Analytical Method: % Moisture  
 Percent Moisture 3.2 % 0.10 1 11/17/04 00:00 UO1

Lab ID: 103300005 Date Collected: 11/16/04 16:00 Matrix: Solid  
 Sample ID: BSA3-B Date Received: 11/16/04 17:20

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	--------

**Metals**

6010 MET ICP Preparation Method: EPA 3050  
 Analytical Method: EPA 6010  
 Lead 2.5 mg/kg 0.27 1 11/18/04 00:00 LSB 11/18/04 21:44 ERW 7439-92-1  
 Dry Weight Analytical Method: % Moisture  
 Percent Moisture 1.8 % 0.10 1 11/17/04 00:00 UO1

Lab ID: 103300006 Date Collected: 11/16/04 16:05 Matrix: Solid  
 Sample ID: SP-6 Date Received: 11/16/04 17:20

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	CAS No.	Qual	RegLmt
------------	---------	-------	--------------	----	----------	----	----------	----	---------	------	--------

**Metals**

6010 MET ICP, TCLP Preparation Method: EPA 3010  
 Analytical Method: EPA 6010  
 Lead ND mg/L 0.015 5 11/18/04 00:00 MJP 11/22/04 15:31 ERW 7439-92-1

Date: 11/22/2004

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## ANALYTICAL RESULTS QUALIFIERS

Project: 103300

Project ID: Schafer Metals I4195.0

---

### PARAMETER QUALIFIERS

DF - Dilution Factor, if reported, represents the factor

ND - Not Detected at or above adjusted reporting limit applied to the reported data due to changes in sample preparation dilution of the sample aliquot, or moisture content

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA**

Project: 103300  
Project ID: Schafer Metals I4195 0

QC Batch:	MPRP/1448	Analysis Method:	% Moisture
QC Batch Method:	% Moisture	Analysis Description:	Dry Weight/Percent Moisture
Associated Lab Samples:	103269001 103269002 103300001 103300002 103300003 103300004 103300005		

METHOD BLANK: 22773

Associated Lab Samples: 103300001 103300002 103300003 103300004 103300005

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Percent Moisture	%	ND	0.10	

SAMPLE DUPLICATE: 22774

Parameter	Units	103269001 Result	DUP Result	RPD	Max RPD Qualifiers
Percent Moisture	%	5.0	5.1	2	30

SAMPLE DUPLICATE: 22968

Parameter	Units	103300005 Result	DUP Result	RPD	Max RPD Qualifiers
Percent Moisture	%	1.8	1.6	15	30

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 1700 Elm Street Suite 200  
 Minneapolis MN 55414  
 Phone: (612)607-1700  
 Fax: (612)607-6444

**QUALITY CONTROL DATA**

Project: 103300  
 Project ID: Schafer Metals I4195 0

QC Batch: MPRP/1463 Analysis Method: EPA 6010  
 QC Batch Method: EPA 3050 Analysis Description: 6010 MET  
 Associated Lab Samples: 103300001 103300002 103300003 103300004 103300005

METHOD BLANK: 23637

Associated Lab Samples: 103300001 103300002 103300003 103300004 103300005

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Lead	mg/kg	ND	0.30	

LABORATORY CONTROL SAMPLE: 23638

Parameter	Units	Spike Conc	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	1	1.0	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 23639 23640

Parameter	Units	103300001 Result	Spike Conc	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Lead	mg/kg	3.4	45	48.6	53.2	100	109	75-125	9	30	

Date: 11/22/2004

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**QUALITY CONTROL DATA**

Project: 103300  
Project ID: Schafer Metals 14195 0

QC Batch: MPRP/1468      Analysis Method: EPA 6010  
QC Batch Method: EPA 3010      Analysis Description: 6010 MET TCLP  
Associated Lab Samples: 103300006

METHOD BLANK: 23942  
Associated Lab Samples: 103300006

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Lead	mg/L	ND	0.015	

LABORATORY CONTROL SAMPLE: 23943

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/L	1	1.0	100		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 23944      23945

Parameter	Units	103147001 Result	Spike Conc	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	Max RPD	RPD	Qualifiers
Lead	mg/L	0068	1	1.0	1.0	99	100		1		

**REPORT OF LABORATORY ANALYSIS**

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## QUALITY CONTROL DATA QUALIFIERS

Project: 103300  
Project ID: Schafer Metals I4195.0

---

### QUALITY CONTROL PARAMETER QUALIFIERS

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

ND - Not Detected at or above adjusted reporting limit

J - Estimated concentration above the adjusted method

MDL - Adjusted Method Detection Limit. detection limit and below the adjusted reporting limit.

S - Surrogate

## REPORT OF LABORATORY ANALYSIS

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**Section A**  
 Required Client Information:  
 Report To: Scott.Tracy@hem.com  
 Copy To: Sean Hannard  
 Invoice To: Sean Hannard  
 P.O.:

**Section B**  
 Required Client Information:  
 Project Name: Shifer  
 Project Number: 14950

**Section C**  
 To Be Completed by Pace Analytical and Client  
 Quote Reference: Section C  
 Project Manager:  
 Project #: 103300  
 Profile #:  
 Requested Analysis:  
 Client Information (Check quote/contract):  
 Requested Due Date: 11/19/04  
 TAT: 3 days  
 Turn around time less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.  
 Turn Around Time (TAT) in calendar days.

ITEM #	SAMPLE ID	Valid Matrix Codes	CODE	MATRIX CODE	SAMPLE TYPE	P-GRAB O-COMP	COLLECTED		SAMPLER TEMP	AT COLLECTION	PRESERVATIVES						Remarks / Lab ID
							DATE	TIME			START	END	DATE	TIME	DATE	TIME	
1	B5B3-B		DW				11/16/04	13:35									103300001
2	B5C3-B		GW				11/16/04	14:30									002
3	B5A5-B		SW				11/16/04	15:00									003
4	B5C5-B		WW				11/16/04	15:35									004
5	B5A3-B		P				11/16/04	16:00									005
6	B5A-W		SL				11/16/04	16:05									006

SITE LOCATION	REGULATORY AGENCY			RELINQUISHED BY / AFFILIATION		DATE		TIME	
	NC	SC	GA	NAME	ORGANIZATION	DATE	TIME	DATE	TIME
<input type="checkbox"/> NPDES <input type="checkbox"/> UST <input type="checkbox"/> Other	<input type="checkbox"/> GROUND WATER <input type="checkbox"/> RCRA	<input type="checkbox"/> DRINKING WATER <input type="checkbox"/> Other	[Signature] [Signature]	[Signature] [Signature]	11/16/04 11/16/04	12:00 17:20	17:20 17:20	11/16/04 11/16/04	17:20 17:20

**Section D**  
 Required Client Information:  
 Address: 200 Killebrew Dr, Suite 141, Bloomington, MN 55425  
 Phone: 612-320-0243  
 FAX: 612-320-0242

**SAMPLE CONDITION**  
 Temp in °C: 14.5  
 Received on Ice: Y(N)  
 Sealed Cooler: Y(N)  
 Samples Intact: Y(N)

**Additional Comments:**  
 ORIGINAL

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: Sean Hannard  
 SIGNATURE of SAMPLER: [Signature]  
 DATE Signed: (MM/DD/YY) 11/16/04



**APPENDIX D**  
**WELL AND BORING SEALING RECORDS**



WELL OR BORING LOCATION  
 County Name  
**HENNEPIN**

MINNESOTA DEPARTMENT OF HEALTH  
**WELL AND BORING SEALING RECORD**  
 Minnesota Statutes, Chapter 1031

Minnesota Well and Boring  
 Sealing No.  
 Minnesota Unique Well No.  
 or W-series No.  
(Leave blank if not known)

**H 230003**  
**UNKNOWN**

Township Name  
 Township No. **29N** Range No. **24W** Section No. **15** Fraction (am -> lg) **SE SE SW**

Date Sealed  
**10/22/04**

Date Well or Boring Constructed  
**UNKNOWN**

GPS LOCATION:  
 Latitude \_\_\_\_\_ degrees \_\_\_\_\_ minutes \_\_\_\_\_ seconds  
 Longitude \_\_\_\_\_ degrees \_\_\_\_\_ minutes \_\_\_\_\_ seconds

Depth Before Sealing **29'** ft. Original Depth **29'** ft.

STATIC WATER LEVEL  
 Measured  Estimated  
 \_\_\_\_\_ ft.  below  above land surface

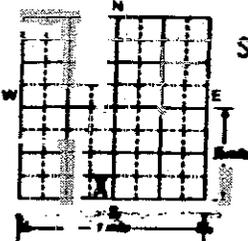
Numerical Street Address or Fire Number and City of Well or Boring Location  
**129 PLYMOUTH AVENUE N MINNEAPOLIS**

AQUIFER(S)  
 Single Aquifer  Multi-aquifer

WELL/BORING  
 Water Supply Well  Monit. Well  
 Env. Bore Hole  Other

Show exact location of well or boring in section grid with "X"

Sketch map of well or boring location, showing property lines, roads, and buildings.



SEE ATTACHED MAP

CASING TYPE(S)  
 Steel  Plastic  Tile  Other

WELLHEAD COMPLETION  
 Outside:  Well House  Pitless Adapter/Line  Well Pit  Buried  
 Inside:  Basement Offset  Buried

PROPERTY OWNER'S NAME/COMPANY NAME  
**MINNESOTA DEPT. OF TRANSPORTATION**

Property owner's mailing address if different than well location address indicated above  
**395 JOHN IRELAND AVE. ST PAUL MN 55155**

CASING(S)  
 Diameter \_\_\_\_\_ Depth \_\_\_\_\_ Set in oversize hole?  Yes  No Annular space initially grouted?  Yes  No  Unknown

WELL OWNER'S NAME/COMPANY NAME  
**SAME AS ABOVE**

Well owner's mailing address if different than property owner's address indicated above

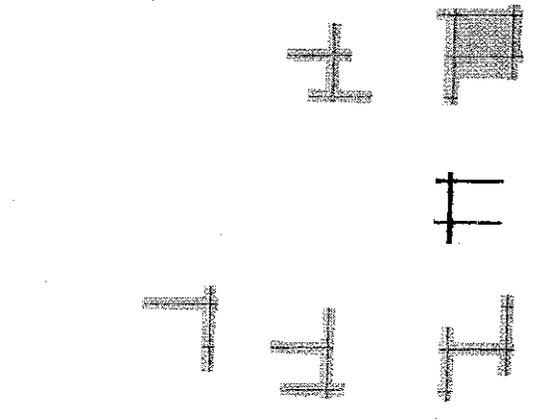
SCREEN/OPEN HOLE  
 Screen from **18** to **29** ft. Open Hole from \_\_\_\_\_ to \_\_\_\_\_ ft.

OBSTRUCTIONS  
 Rods/Drop Pipe  Check Valve(s)  Debris  Fill  No Obstruction  
 Type of Obstruction (Describe): \_\_\_\_\_

GEOLOGICAL MATERIAL	COLOR	HARDNESS OR FIRMNESS	FROM
UNKNOWN			

Obstructions removed?  Yes  No Describe \_\_\_\_\_

PUMP  
 Type \_\_\_\_\_  
 Removed  Not Present  Other \_\_\_\_\_



METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE:  
 No Annular Space Exists  Annular space grouted with tremie pipe  Casing Perforation/Removal  
 \_\_\_\_\_ in. from \_\_\_\_\_ to \_\_\_\_\_ ft.  Perforated  Removed  
 \_\_\_\_\_ in. from \_\_\_\_\_ to \_\_\_\_\_ ft.  Perforated  Removed  
 Type of perforator \_\_\_\_\_  
 Other \_\_\_\_\_

GROUTING MATERIAL(S) (One bag of cement = 94 lbs., one bag of bentonite = 50 lbs.)  
 Grouting Material **CEMENT** from **0** to **29** ft. \_\_\_\_\_ yards **11** bags  
 \_\_\_\_\_ from \_\_\_\_\_ to \_\_\_\_\_ ft. \_\_\_\_\_ yards \_\_\_\_\_ bags  
 \_\_\_\_\_ from \_\_\_\_\_ to \_\_\_\_\_ ft. \_\_\_\_\_ yards \_\_\_\_\_ bags

REMARKS, SOURCE OF DATA, DIFFICULTIES IN SEALING  
**MW#4**

OTHER WELLS AND BORINGS  
 Other unsealed and unused well or boring on property?  Yes  No How many? \_\_\_\_\_

LICENSED OR REGISTERED CONTRACTOR CERTIFICATION  
 This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

**THEIN WELL COMPANY**  
 Contractor's Name  
  
 Authorized Representative Signature

**34625**  
 License or Registration No.

**12/13/04**  
 Date

**MICHAEL THEIN**  
 Name of Person Sealing Well or Boring

maxim

**H 230003**

MINNESOTA DEPARTMENT OF HEALTH  
**WELL AND BORING SEALING RECORD**  
 Minnesota Statutes, Chapter 103I

Minnesota Well and Boring  
 Sealing No. \_\_\_\_\_  
 Minnesota Unique Well No.  
 or W-series No. \_\_\_\_\_  
(Leave blank if not known)

H 230024  
 UNKNOWN

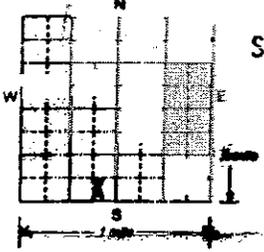
WELL OR BORING LOCATION  
 County Name  
**HENNEPIN**

Township Name **29N** Township No. **15** Section No. **15** Fraction (sm → lg) **SE, SE, SW** Date Sealed **11/9/04** Date Well or Boring Constructed **UNKNOWN**

GPS LOCATION: Latitude \_\_\_\_\_ degrees \_\_\_\_\_ minutes \_\_\_\_\_ seconds  
 Longitude \_\_\_\_\_ degrees \_\_\_\_\_ minutes \_\_\_\_\_ seconds  
 Depth Before Sealing \_\_\_\_\_ ft. Original Depth \_\_\_\_\_ ft.

Numerical Street Address or Fire Number and City of Well or Boring Location  
**129 PLYMOUTH AVENUE NORTH MPLS**  
 AQUIFER(S)  Single Aquifer  Multi-aquifer  
 WELL/BORING  Water Supply Well  Monit. Well  
 Env. Bore Hole  Other \_\_\_\_\_  
 STATIC WATER LEVEL  Measured  Estimated  
 \_\_\_\_\_ ft.  below  above land surface

Show exact location of well or boring in section grid with "X" Sketch map of well or boring location, showing property lines, roads, and buildings.



SEE ATTACHED MAP

CASING TYPE(S)  Steel  Plastic  Tile  Other \_\_\_\_\_

WELLHEAD COMPLETION  
 Outside:  Well House  Pitless Adapter/Unit  Well Pit  Buried  
 Inside:  Basement Offset  Buried

PROPERTY OWNER'S NAME/COMPANY NAME  
**MINNESOTA DEPT. OF TRANSPORTATION**  
 Property owner's mailing address if different than well location address indicated above  
**395 JOHN IRELAND BLVD  
 ST. PAUL MN 55155**  
 CASING(S)  
 Diameter \_\_\_\_\_ Depth \_\_\_\_\_ Set in oversized hole?  Yes  No Annular space initially grouted?  Yes  No  Unknown  
 \_\_\_\_\_ in. from \_\_\_\_\_ to \_\_\_\_\_ ft.  Yes  No  Yes  No  Unknown  
 \_\_\_\_\_ in. from \_\_\_\_\_ to \_\_\_\_\_ ft.  Yes  No  Yes  No  Unknown

WELL OWNER'S NAME/COMPANY NAME  
**SAME AS ABOVE**  
 Well owner's mailing address if different than property owner's address indicated above  
 SCREEN/OPEN HOLE  
 Screen from **10** to **20** ft. Open Hole from \_\_\_\_\_ to \_\_\_\_\_ ft.

OBSTRUCTIONS  
 Rods/Drop Pipe  Check Valve(s)  Debris  Fill  No Obstruction  
 Type of Obstructions (Describe) \_\_\_\_\_

Obstructions removed?  Yes  No Describe \_\_\_\_\_

PUMP  
 Type \_\_\_\_\_  
 Removed  Not Present  Other \_\_\_\_\_

METHOD USED TO SEAL ANNULAR SPACE BETWEEN 2 CASINGS, OR CASING AND BORE HOLE  
 No Annular Space Exists  Annular space grouted with tremie pipe  Casing Perforation/Flare-out  
 \_\_\_\_\_ in. from \_\_\_\_\_ to \_\_\_\_\_ ft.  Perforated  Flare-out  
 \_\_\_\_\_ in. from \_\_\_\_\_ to \_\_\_\_\_ ft.  Perforated  Flare-out  
 Type of perforator \_\_\_\_\_  
 Other \_\_\_\_\_

GROUTING MATERIAL(S) (One bag of cement = 94 lbs., one bag of bentonite = 50 lbs.)  
 Grouting Material **HEAT CEMENT** from **0** to **20** ft. **3** bags  
 \_\_\_\_\_ from \_\_\_\_\_ to \_\_\_\_\_ ft. \_\_\_\_\_ yards \_\_\_\_\_ bags  
 \_\_\_\_\_ from \_\_\_\_\_ to \_\_\_\_\_ ft. \_\_\_\_\_ yards \_\_\_\_\_ bags

OTHER WELLS AND BORINGS  
 Other unsealed and sealed well or boring on property?  Yes  No How many? \_\_\_\_\_

LICENSED OR REGISTERED CONTRACTOR CERTIFICATION  
 This well or boring was sealed in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

**THEIM WELL COMPANY**  
 Contractor Business Name  
*[Signature]*  
 Authorized Representative Signature  
**34625**  
 License or Registration No.  
**12/13/04**  
 Date

REMARKS, SOURCE OF DATA, DIFFICULTIES IN SEALING  
 maxin  
 IMPORTANT-FILE WITH PROPERTY PAPERS-WELL OWNER COPY H 230024  
**NORM FENSKE**  
 Name of Person Sealing Well or Boring

DEPARTMENT: POLLUTION CONTROL AGENCY

STATE OF MINNESOTA  
Office Memorandum

DATE: June 29, 2005

TO: Gary Krueger  
Principal State Planner  
Superfund Unit I  
Remediation Division

THRU: Doug Wetzstein  
Supervisor  
Superfund Unit I  
Remediation Division

FROM: Fred Campbell  
Hydrologist III  
Superfund Unit I  
Remediation Division

Nile Fellows  
PCS Project Leader  
Superfund Unit I  
Remediation Division

PHONE: (651) 296-7267

(651) 296-7299

SUBJECT: Recommendation for Removal of Shafer Metal Recycling Site from Permanent List of Priorities

The former Shafer Metal Recycling Site is located at 129 Plymouth Avenue North in Minneapolis, Minnesota. This triangular-shaped site is approximately 1.5 acres in size. It is bordered on the north by Plymouth Avenue North, on the southwest by 2<sup>nd</sup> Street North, and on the east by railroad tracks and the Minneapolis Star Tribune distribution facility. The site is about one mile northwest of downtown Minneapolis and ¼ of a mile from the Mississippi River. The Minnesota Department of Transportation (MNDOT), Cowles Media, and the city of Minneapolis own the site.

MNDOT acquired interest in this property in 1969 because of the anticipated construction of Interstate 335. This proposed interstate freeway project was cancelled and MNDOT leased the facility to Union Scrap Iron and Metal Company (Union Scrap). Union Scrap converted the building into a battery recycling operation. The operation was known as Shafer Metal Recycling.

Typically, batteries were brought to the site, stockpiled, and cracked or split open to remove the lead plates. The lead plates were shipped off site. Acid from the batteries drained onto the floor of the building or onto the ground outside depending upon where cracking or splitting of the plates took place. Liquid from the cracking operation inside the building was channeled into an aboveground concrete tank that led to the sanitary sewer floor drain. There was no attempt made to collect liquids spilled onto the ground outside the building.

Battery recycling activities ended in 1982. The MPCA and Union Scrap entered into a stipulation agreement in 1983 that required the company to define the extent of soil and ground-water contamination at the site. In 1984 the Site was placed on the Minnesota Permanent List of Priorities.

Union Scrap filed for bankruptcy in 1985. This meant that MNDOT became the lead Responsible Party for the site. In August 1986, MNDOT began investigating the site by sampling soil and installing monitoring wells. Locations for soil sampling and monitoring wells were based on discussions with MPCA staff, previous investigations, and aerial photographs.

In March 1991, the MPCA issued a Request for Response Action (RFRA) to MNDOT. The purpose of the RFRA was to formally request that MNDOT conduct a Remedial Investigation/Feasibility Study (RI/FS) and complete the necessary response actions at the site.

A plan for the removal of contaminated soil from the site was tentatively approved in August 1998. In August 2001, the MPCA and a Trust (group of potentially responsible parties including MNDOT) signed a Consent Order agreeing to implement a remedy at the site. Data show that the impacts to ground water have been minimal. Thus, the soil removal will suffice as both a soil and a ground water remedy.

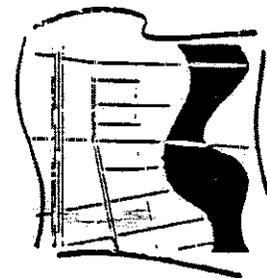
On October 10, 2004 clearing and grubbing of the site began. Excavation of the Site began the week of October 18, 2004. Lead contaminated soils were stabilized with EnviroBlend to meet TCLP criteria for offsite disposal. The total volume of soil excavated from the Site was 2,722 tons which equates to approximately 2,000 cubic yards. Removal of soils was completed by December 10, 2004. The soil cleanup meets MPCA Residential cleanup criteria.

MPCA staff recommends that the Site be removed from the State Permanent List of Priorities (PLP) because all necessary response actions have been completed. In addition, the Site no longer poses a threat to human health or the environment. Upon delisting the site from the PLP the terms of the Consent Order will have been met and the Consent Order will be closed.

# **NORTHSIDE JOBS PARK DESIGN GUIDELINES and DEVELOPMENT FRAMEWORK**

**A DEVELOPMENT OF THE MCDA IN  
COOPERATION WITH THE NORTH  
WASHINGTON STEERING COMMITTEE**

**Approved by the Minneapolis  
City Council March 28, 1997**



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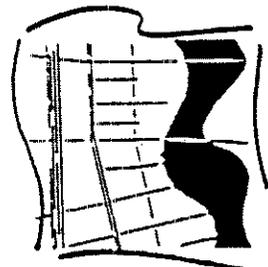
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**CHAPTER SIX**

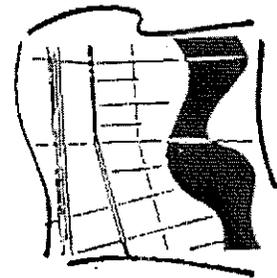
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**NORTHSIDE JOBS PARK**  
**Design Guidelines and Development Framework**

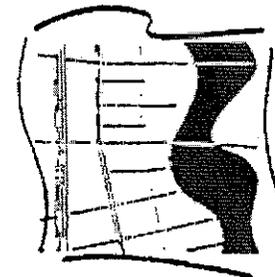
**URBAN DESIGN CONTEXT**



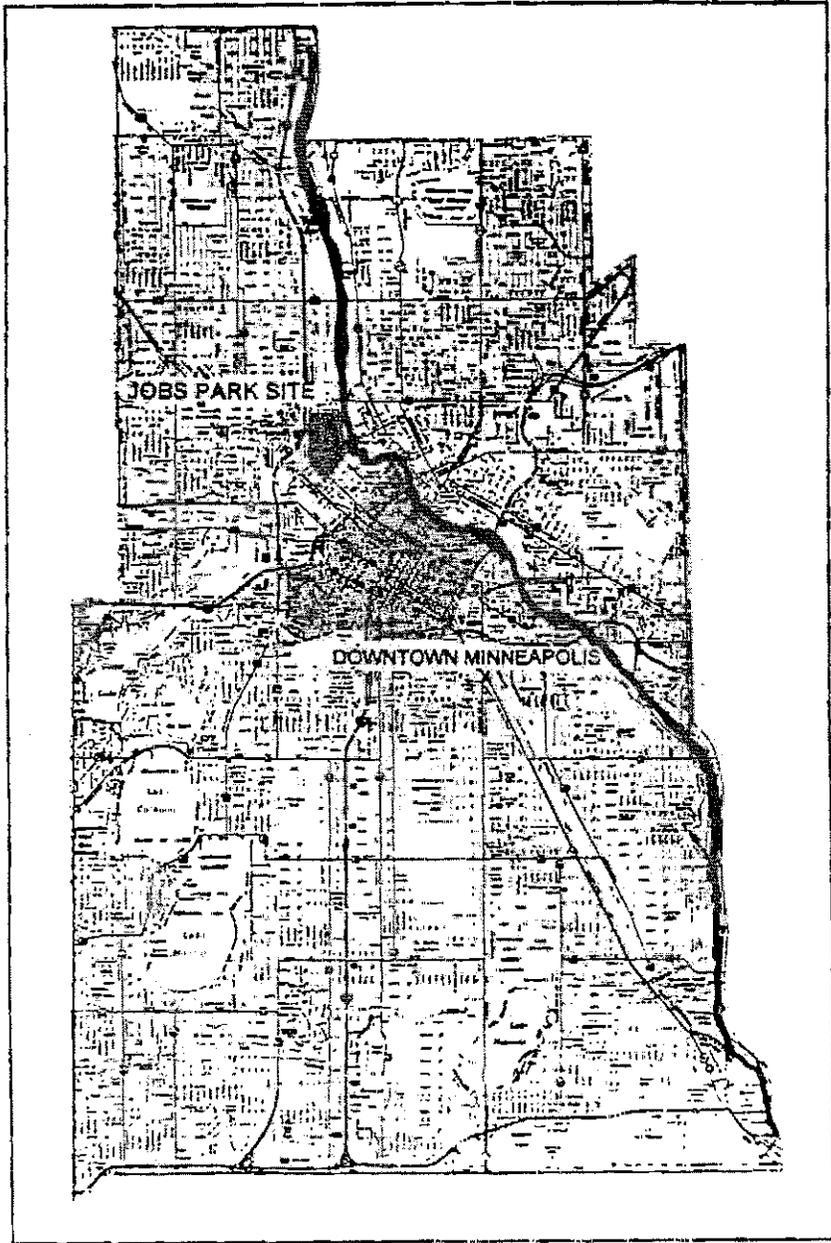
## URBAN CONTEXT INTRODUCTION

The maps on the following pages illustrate traffic, land use and amenity issues as they relate to the Jobs Park area. The area is well defined on its East and West boundaries. I-94 creates a hard edge of dense high speed traffic whereas the Mississippi river edge creates a soft edge with a meandering shore and park setting. The Southern boundary is the curve in Washington Avenue and 2<sup>nd</sup> Street North and the transition to the densely developed historic North Loop Warehouse and Industrial District. The Northern boundary of the area is not defined by any particular physical indicator.

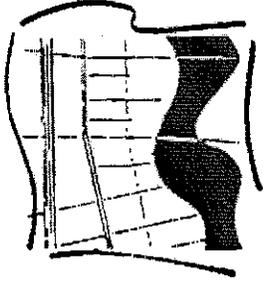
The area is generally flat with the exception of the River's edge. Aside from a small portion of Plymouth Avenue and the Mississippi River Parkway along West River Road the area has minimal landscaping or street tree planting.



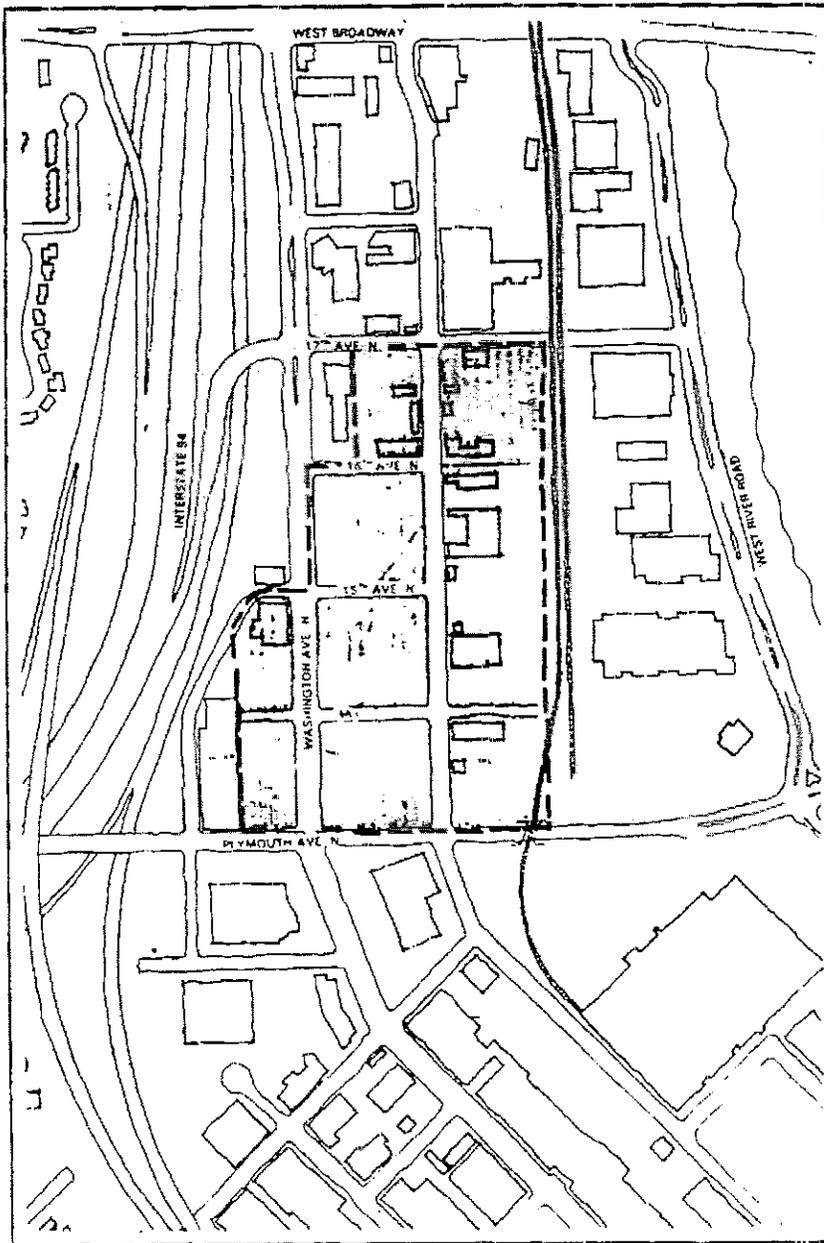
**NORTHSIDE JOBS PARK**  
Design Guidelines and Development Framework



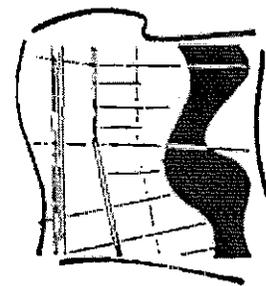
The Northside Jobs Park is located just North of downtown Minneapolis along Washington Avenue North

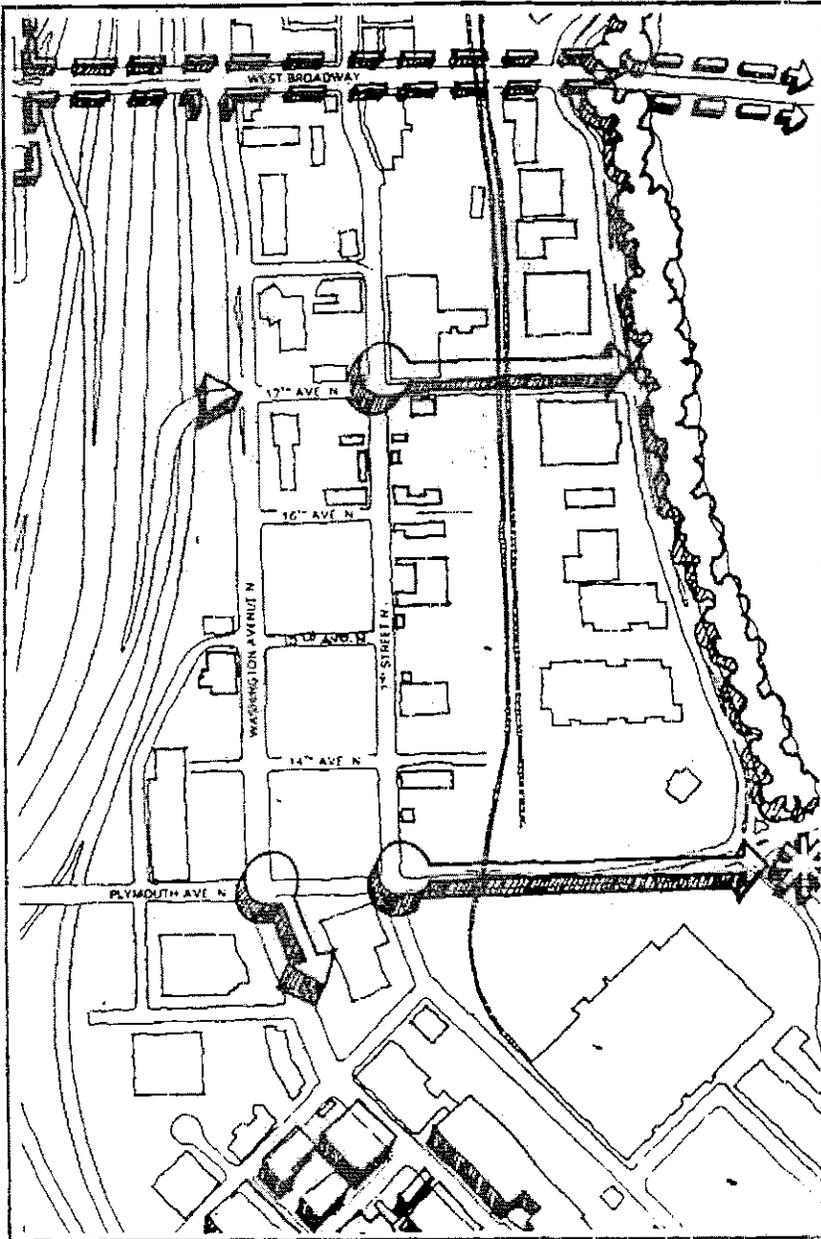


NORTHSIDE JOBS PARK  
Design Guidelines and Development Framework



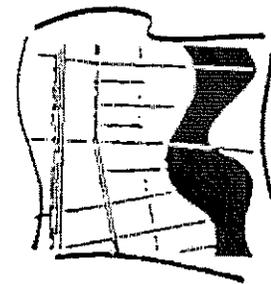
The boundaries of the site are Plymouth Avenue on the South and 17<sup>th</sup> Avenue on the North. The Western boundary is one half block West of Washington Ave North. The Eastern boundary is the Railroad Line directly East of 2<sup>nd</sup> Street North.

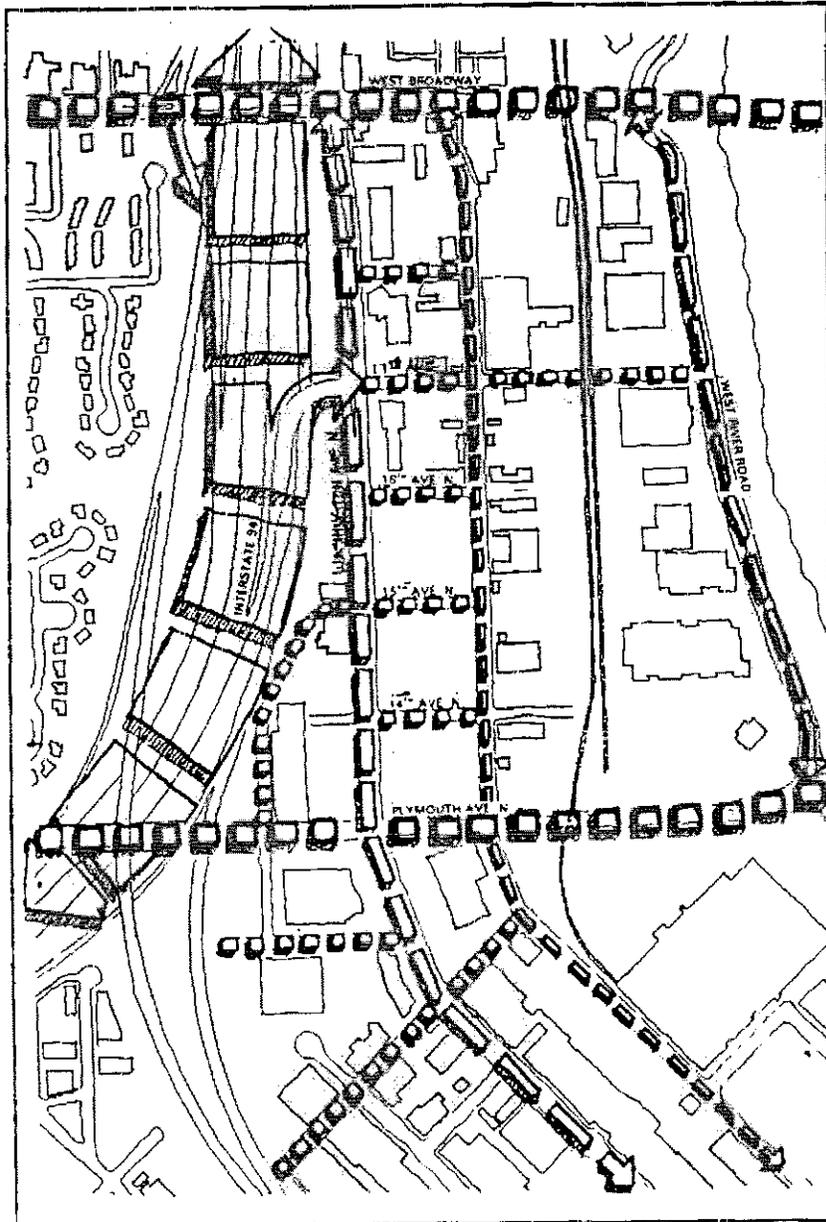




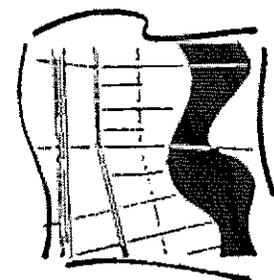
Site Amenities include:

- Views to the Mississippi River looking East along both Plymouth Avenue and 17<sup>th</sup> Avenue
- Access from I-94
- Views of the downtown skyline from the intersection of Plymouth Ave and Washington Avenue
- Proximity to the North Minneapolis neighborhoods Broadway commercial district and to N E Minneapolis across the river
- Proximity to the Historic Warehouse District South on Washington



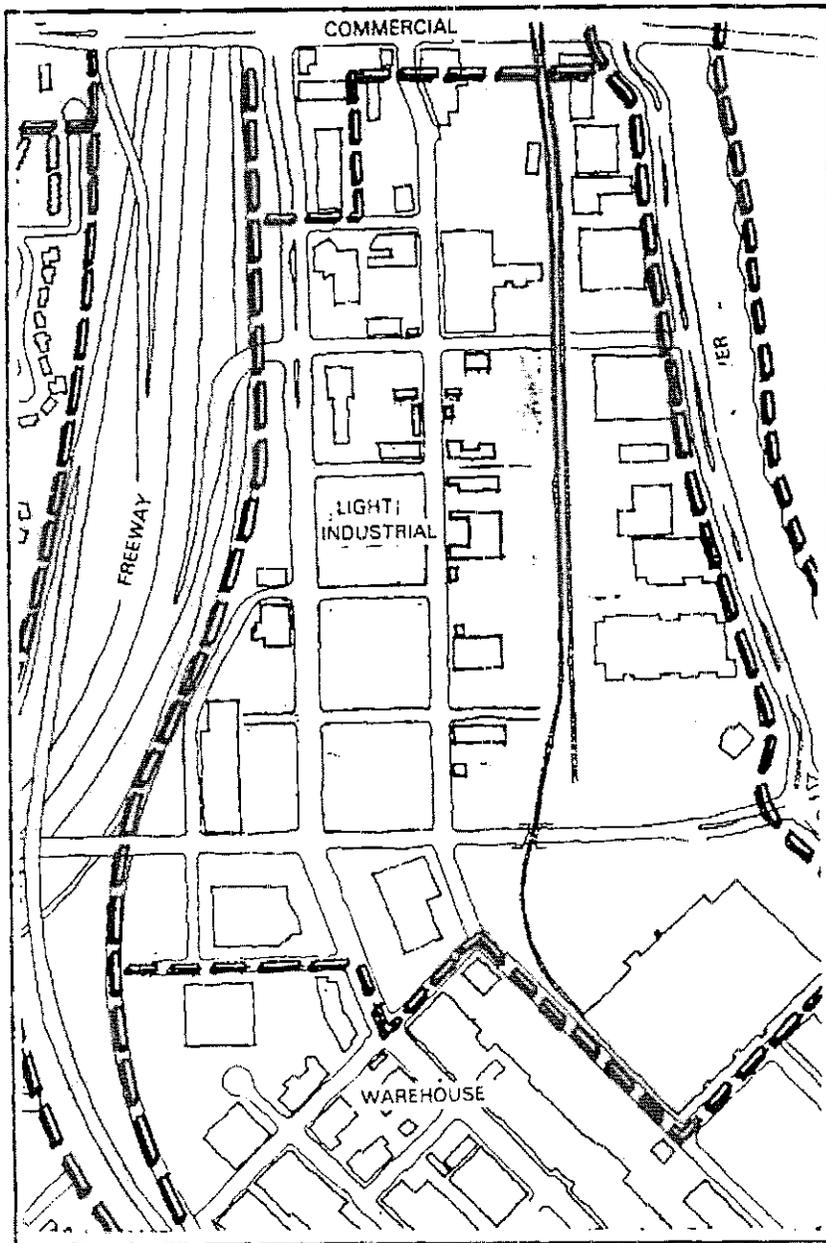


- Circulation in and around the site is dominated by North/South travel:
- I-94 runs parallel to Washington Avenue just West of the site.
  - West River Road and the Mississippi River are East of the site
  - Washington Ave and 2<sup>nd</sup> Street North run North/South through the site
  - Plymouth Ave. N connects the site with the N Minneapolis Community to the West
  - Broadway accommodates commuters from the Northwest suburbs into the city center
  - 17<sup>th</sup> Ave. N collects traffic from I-94 and offers access to the site N E Minneapolis and the North Minneapolis neighborhoods.



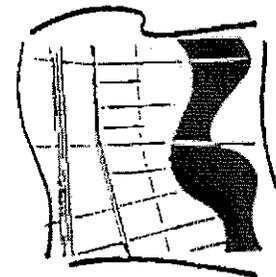
**CIRCULATION**

NORTHSIDE JOBS PARK  
Design Guidelines and Development Framework

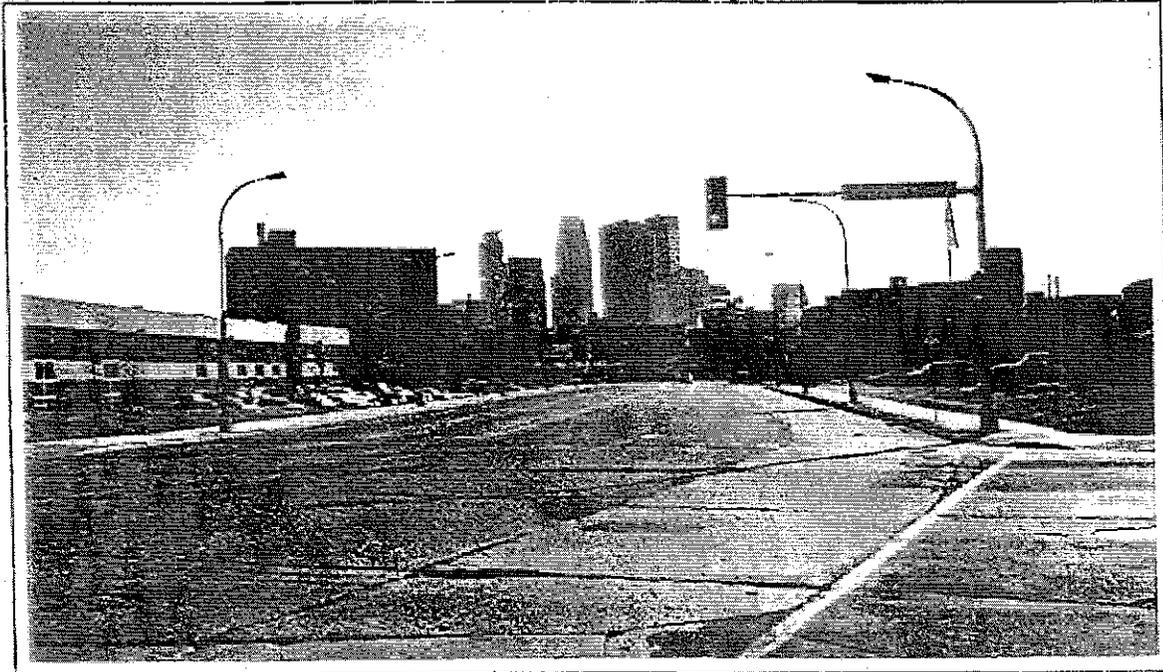


Land use context consists of the following:

- Historic warehouse district with commercial/retail uses to the South
- Mississippi River and the parkway to the East
- Commercial development along Broadway to the Northwest
- Freeway directly to the West
- Residential neighborhoods over the freeway to the West and beyond the River to the East
- Much of the site itself is currently unused or in a Light Industrial use

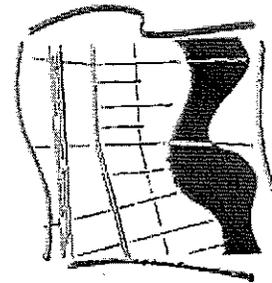
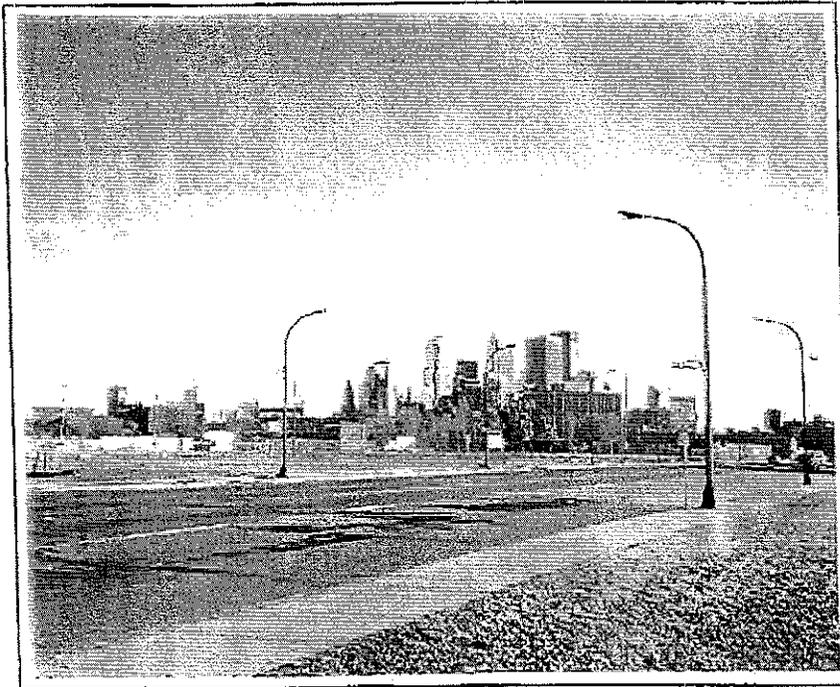


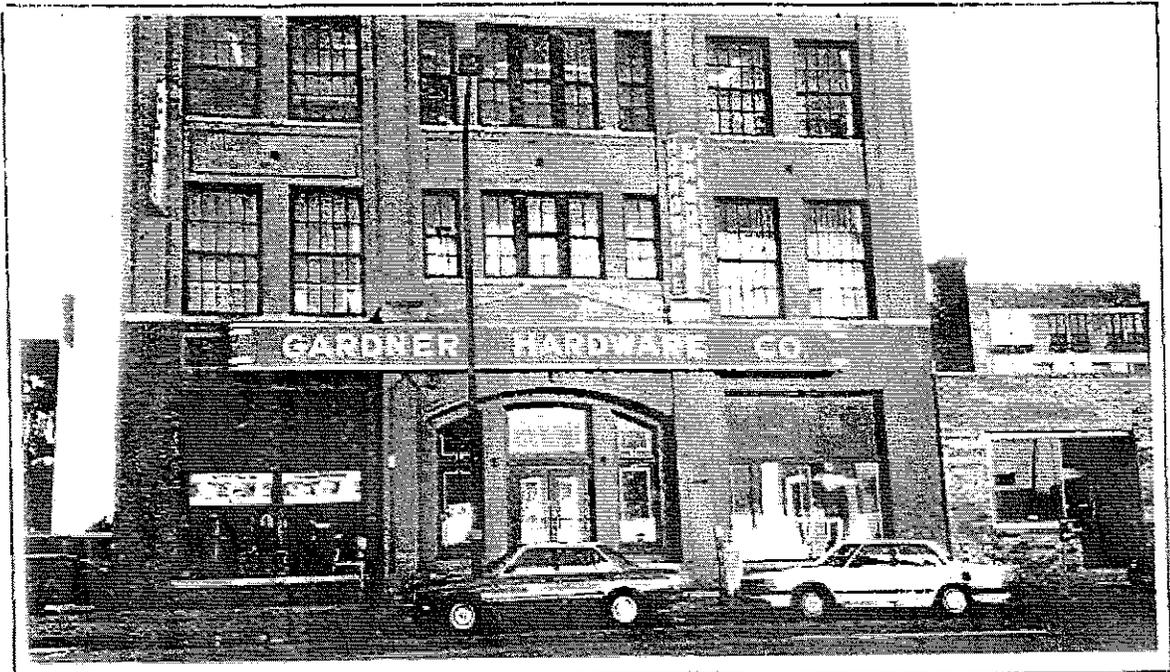
NORTHSIDE JOBS PARK  
Design Guidelines and Development Framework



View of the downtown skyline from Plymouth Avenue and Washington Avenue North.

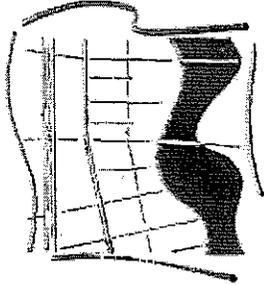
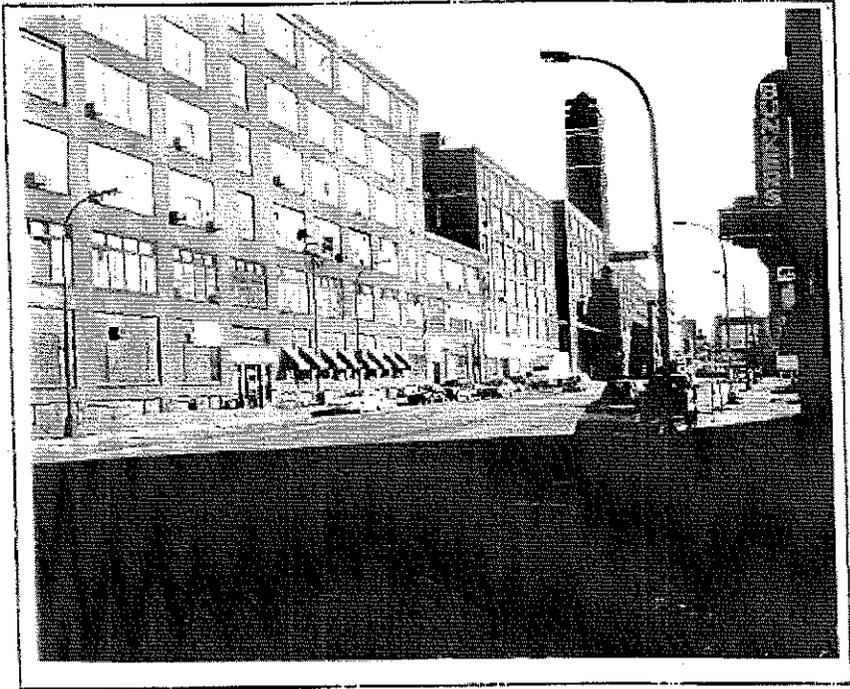
View of the project area along Washington Avenue with the Minneapolis skyline in the background





Typical warehouse district signage, architectural character, building location and entry character

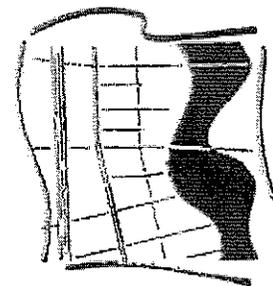
Warehouse district image, parking on street buildings set to the property line and entry on the street





Mississippi River trail and parkland to the East. Pastoral, recreational in character.

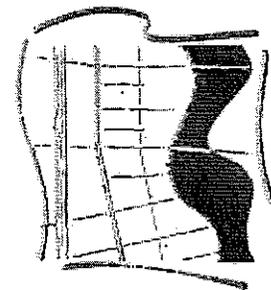
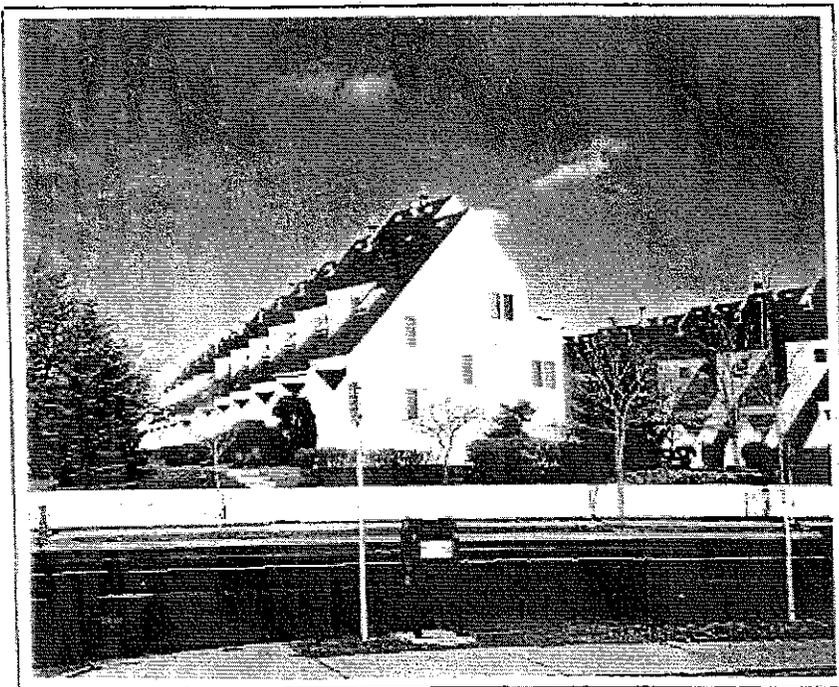
Light industrial building to the North, building rhythm, surface articulation and building setback



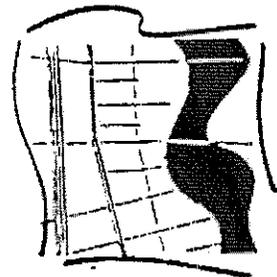


West Broadway retail and commercial.

Residential areas West of the site along Plymouth Avenue



URBAN DESIGN OBJECTIVES

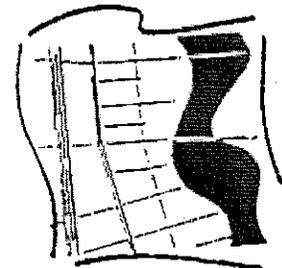


## INTRODUCTION

The MCDA, through the establishment of design criteria, seeks to provide a vision for an improved urban fabric that is sensitive to the physical, cultural, and economic indicators of the North Minneapolis area. The establishment of a neighborhood review process will provide a means for this design vision to be realized over time by a variety of public and private organizations.

### URBAN DESIGN OBJECTIVES:

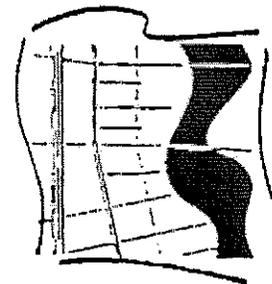
1. Develop a distinctive neighborhood image consistent with the architectural character still found in the area through control of various design elements, including:
  - appropriate building materials
  - height, scale, and rhythm of buildings
  - relationship of the building to the street
  - location and design of off street parking
  - size, style, and location of commercial signage
  - landscaping on private property to define street edges
  - furnishings street lighting, planting and other elements within the public right of way
2. Enhance the importance of Washington Avenue as the neighborhood Main Street by:
  - using landscaping to define edges where buildings are not planned
  - requiring that building entries occur on or near Washington Ave
  - encouraging a continuous block structure along Washington Ave frontage
  - encouraging support retail/commercial development
  - unifying the street through special street tree planting, sidewalks, and other public streetscape elements
3. Emphasize outdoor places for people by:
  - providing pedestrian connections to the Mississippi River corridor
  - implementing standards for safe and convenient access to buildings
  - recommending outdoor gathering spaces for employee and/or public use
  - establishing appropriate standards for pedestrian area lighting

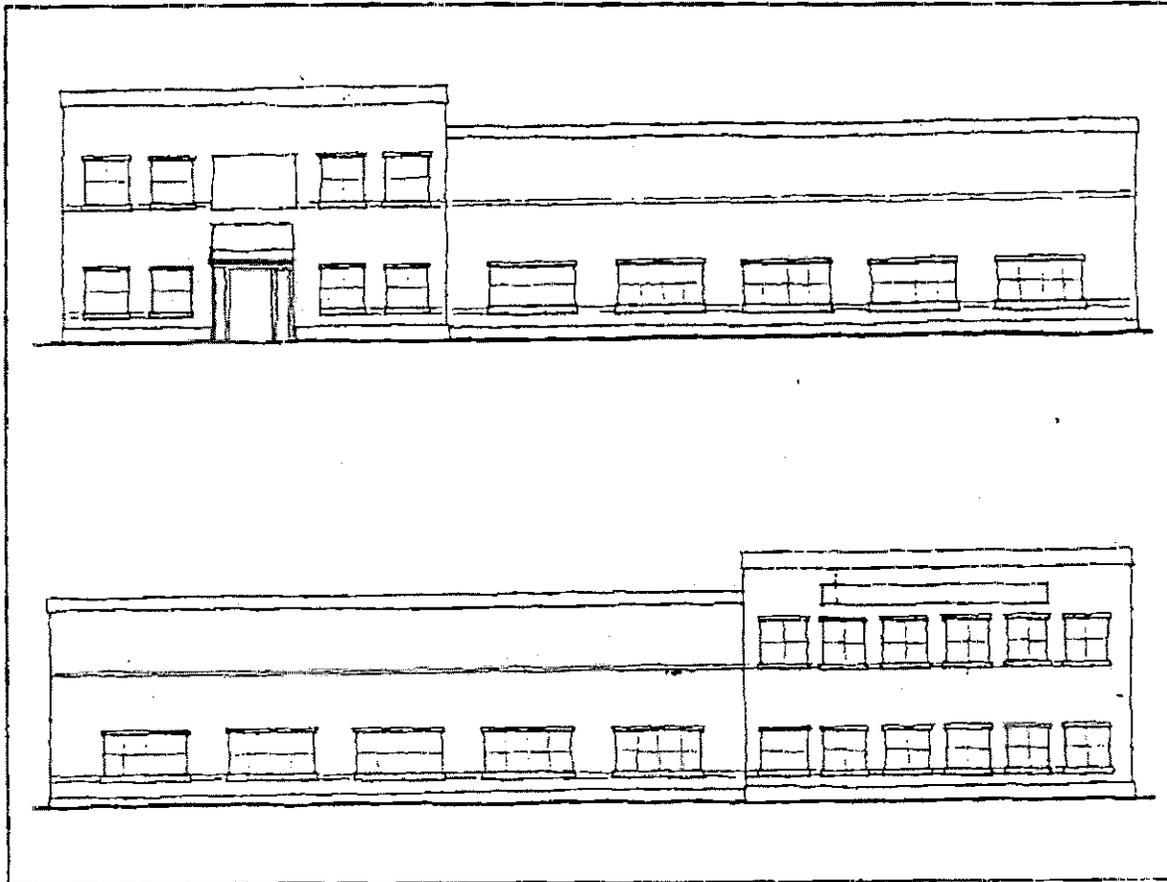


## **OBJECTIVE ONE**

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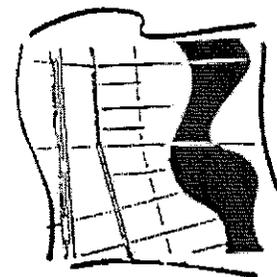
Develop a distinctive neighborhood image, consistent with the architectural character still found in the area, through the introduction of a variety of design elements.

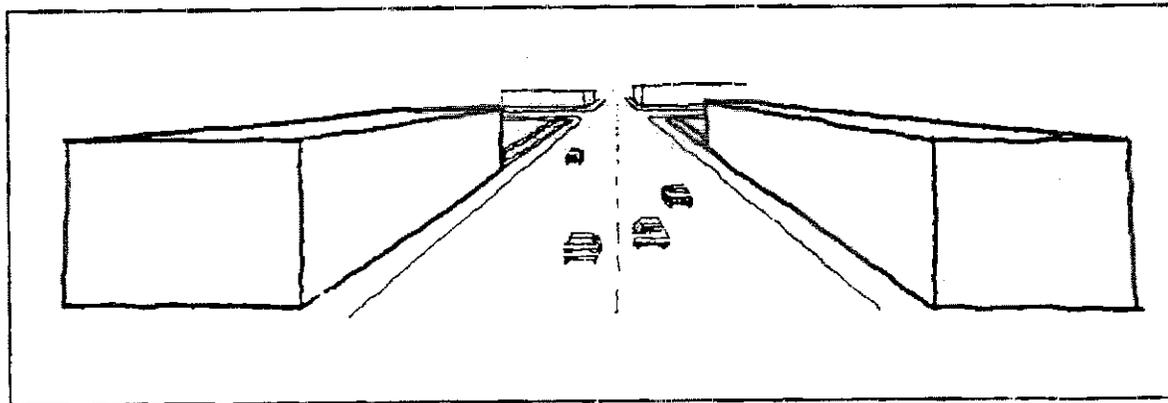
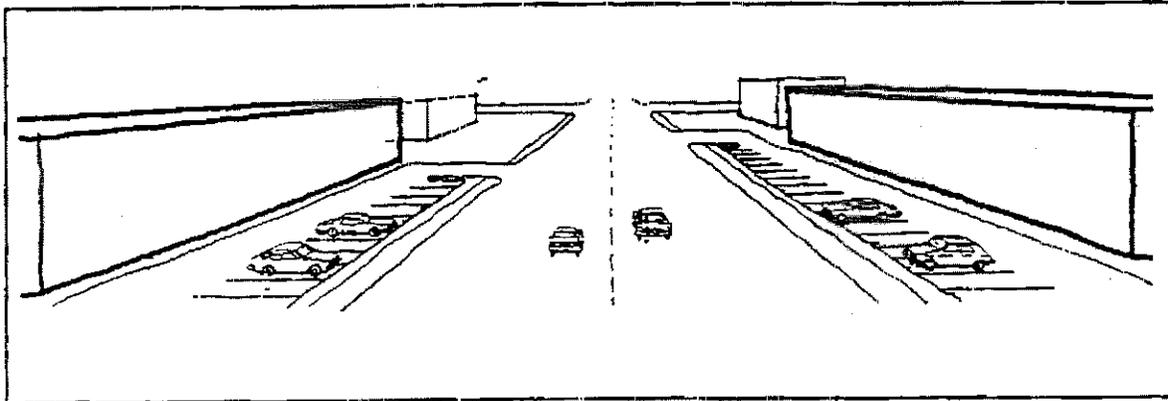




Careful attention should be given to building height, scale, rhythm and materials in an effort to compliment and to be sensitive to surrounding architectural styles. This will create a unified architectural character within the Northside Jobs Park.

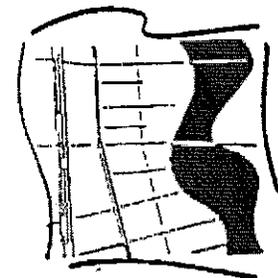
- Building entry / office mass should be more pronounced and visually separate from the main manufacturing / production mass
- A cornice of textured concrete block, brick masonry, or precast concrete should be incorporated on portions of the building architecture
- Windows should provide texture and rhythm and may be detailed with sills, headers, and mullions.
- Front doors should elicit a sense of scale. Provide an entry canopy or delineation of steel, canvas or fabric above the main entry
- Architectural finishes may be comprised of one or more complimentary, appropriate building materials. A building base of concrete block, brick masonry or precast concrete is preferred

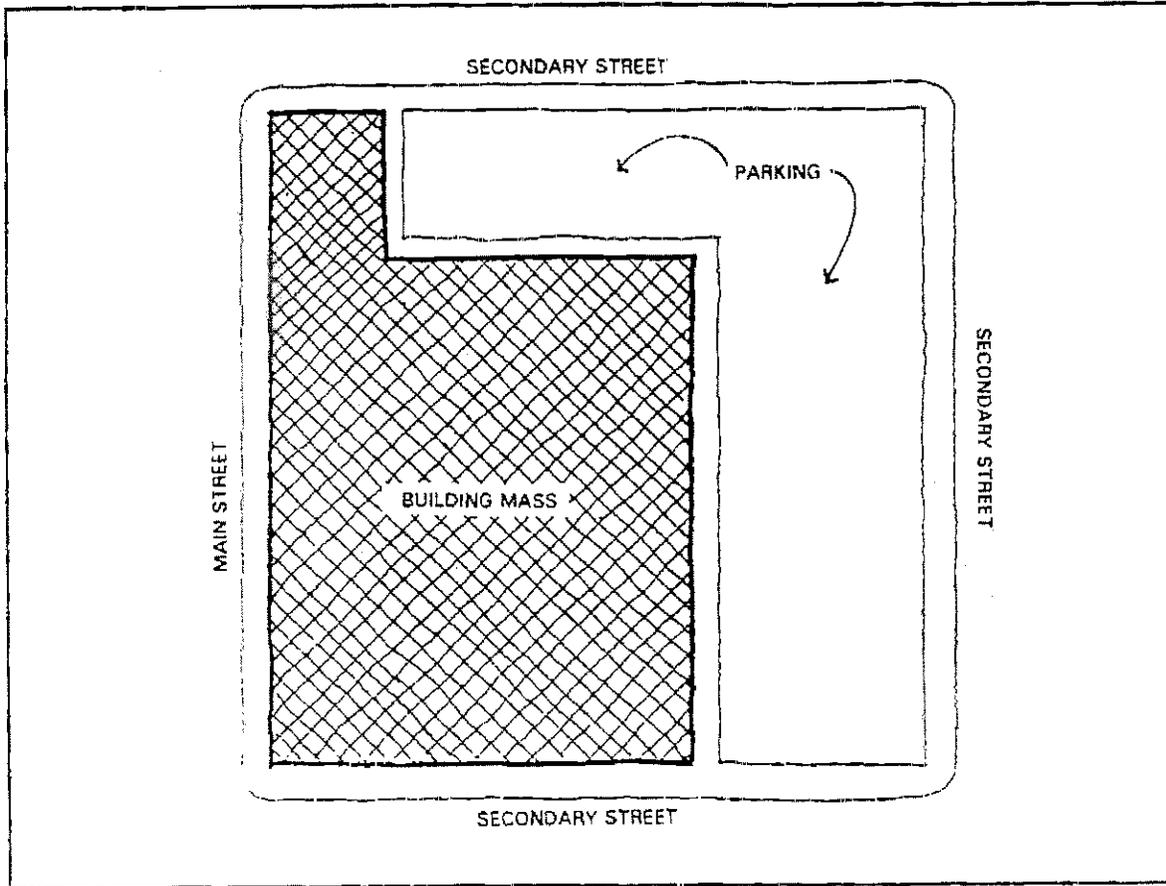




**Top:** An undesirable building to street relationship separates the street from the building with off-street parking. This creates a street without a sense of scale or enclosure. Pedestrian and vehicular traffic appear to be without a clear sense of direction or place.

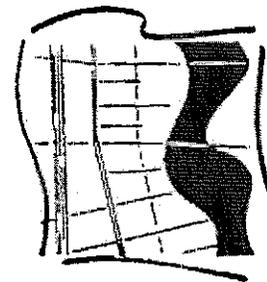
**Bottom:** A desirable building to street relationship is illustrated by bringing the building out to the property line. This creates a sense of scale and enclosure. The street takes on a more urban scale and has greater edge definition. This makes it more identifiable as a place which is in keeping with the warehouse character of the surrounding area. It is the intent of these guidelines to create an identity more closely aligned with the Warehouse District along Washington Avenue to the South.

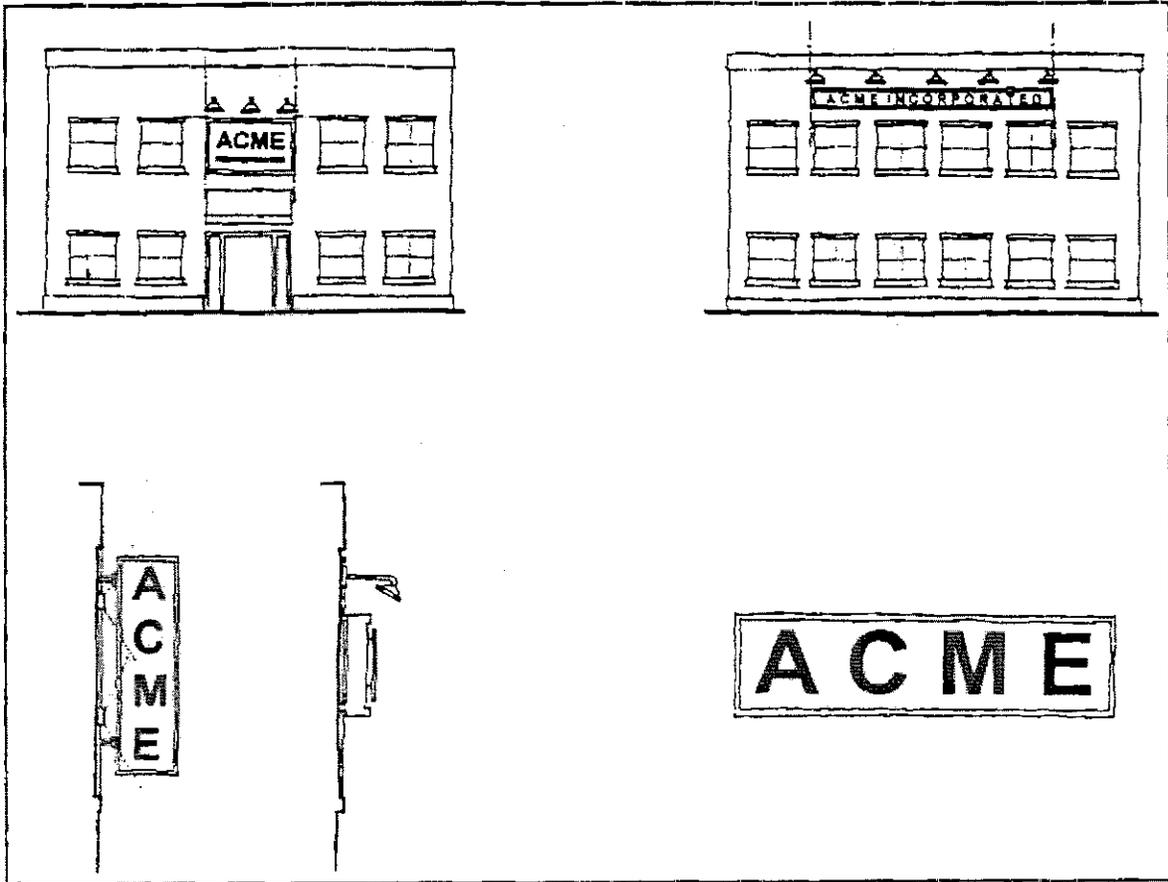




Location and design of off-street parking should reflect the urban nature of this site(s).

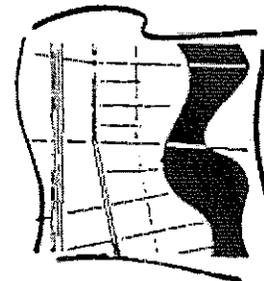
- Parking on the backside of the building allows for the building to front the "main street" of a particular site
- A portion of the parking may be brought around the side of the facility to accommodate the main entry to the building
- Parking "on street" reflects the context in which Jobs Park is located.

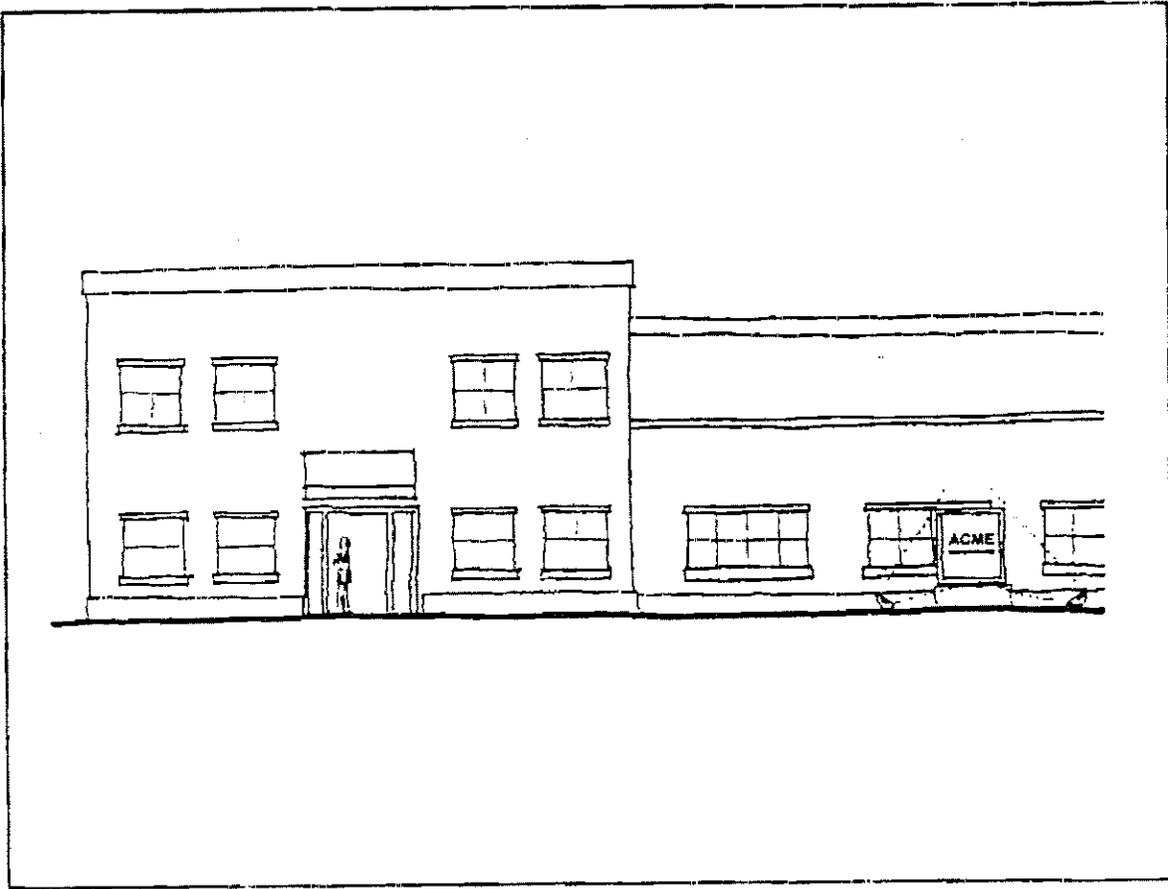




Building mounted signs should be in keeping with the "historic" character of the Warehouse District:

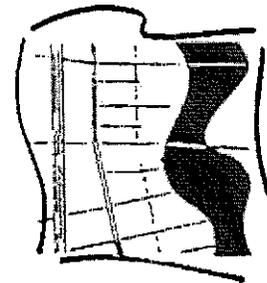
- Building signs should be located at or near the main entry to the building whenever possible
- Sign design should carry through textures, lines and rhythms articulated by architectural detailing
- Signs should not be internally lighted but should be downlit or uplit, in keeping with traditional style sign lighting
- Signs should be constructed of a steel, aluminum or wood frame / background. Lettering should be set against a contrasting background and might be steel, aluminum, or wood

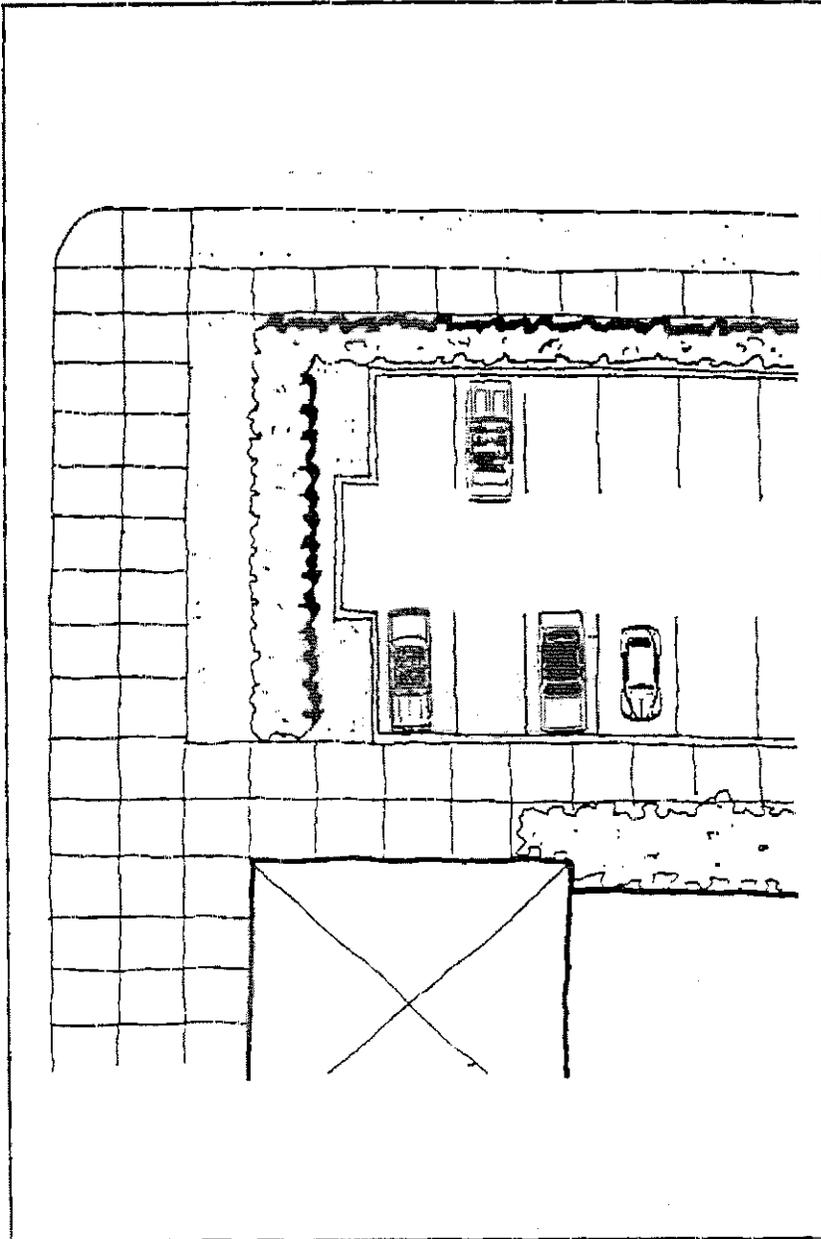




Freestanding signs can be used when structure identification is desired separate from the building.

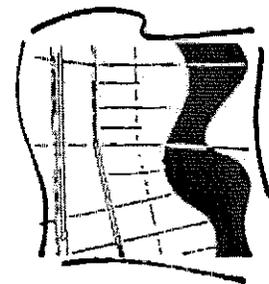
- Signs should be located near or adjacent to the main building entry and visible from parking whenever possible
- The size of freestanding signs should be in scale to that of a module on the building (i.e. door, window etc...)
- Signs should have a base and a frame that uses materials and colors complimentary to the building
- Signs should be ground-lit and not back-lit.





Architectural and Landscape Architectural elements should be used to define edges where buildings are not present. These elements should reinforce the street edge and provide a screen for parking. The following design elements are appropriate:

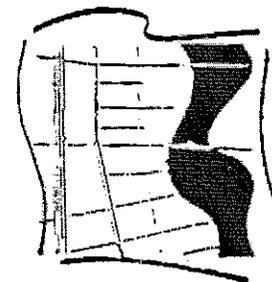
- A wall should be constructed of same or similar materials as the building. This is the preferred screening option on Washington Avenue and may be employed in conjunction with landscaping
- Fence with planting may be used to contain parking and to provide definition.
- Dense hedge planting alone may be used in certain circumstances

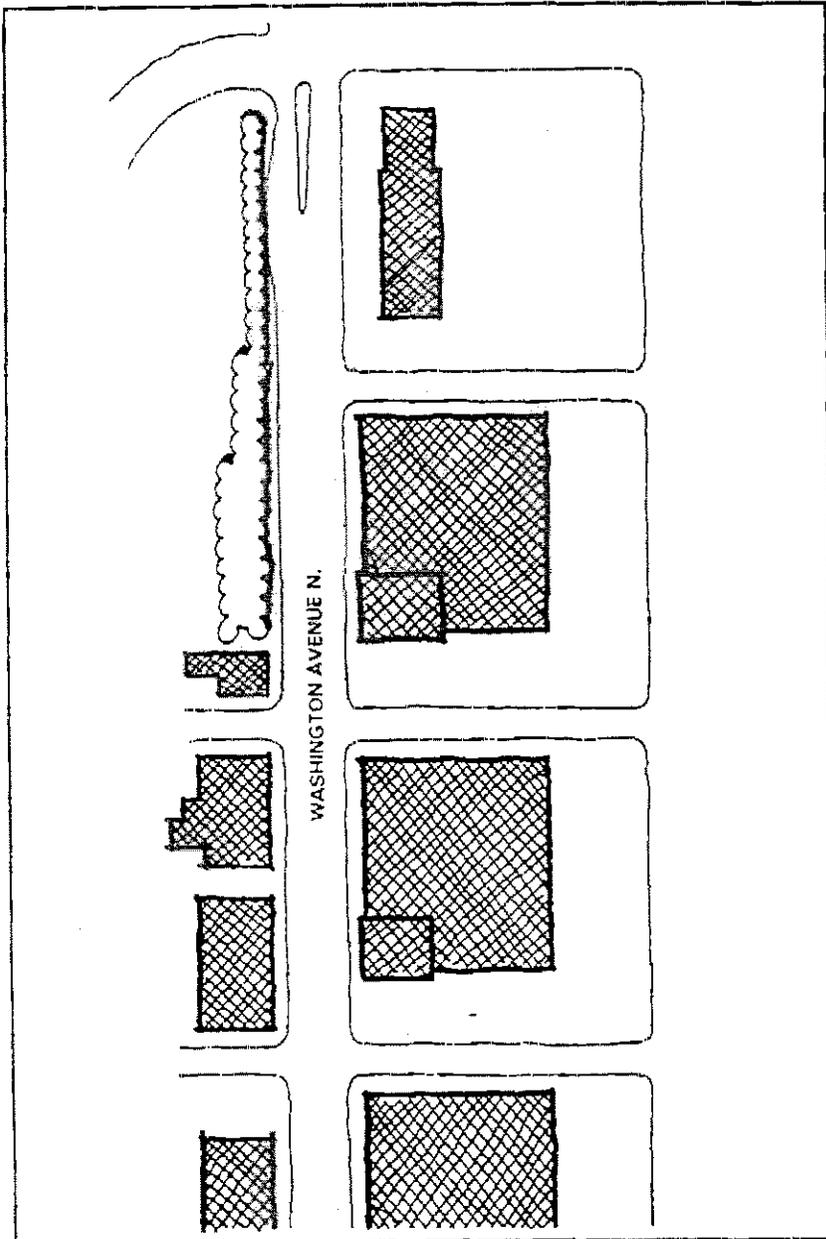


**OBJECTIVE TWO**

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Enhance the importance of Washington Avenue as the neighborhood main street.

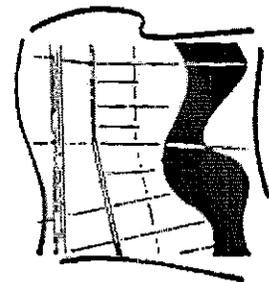


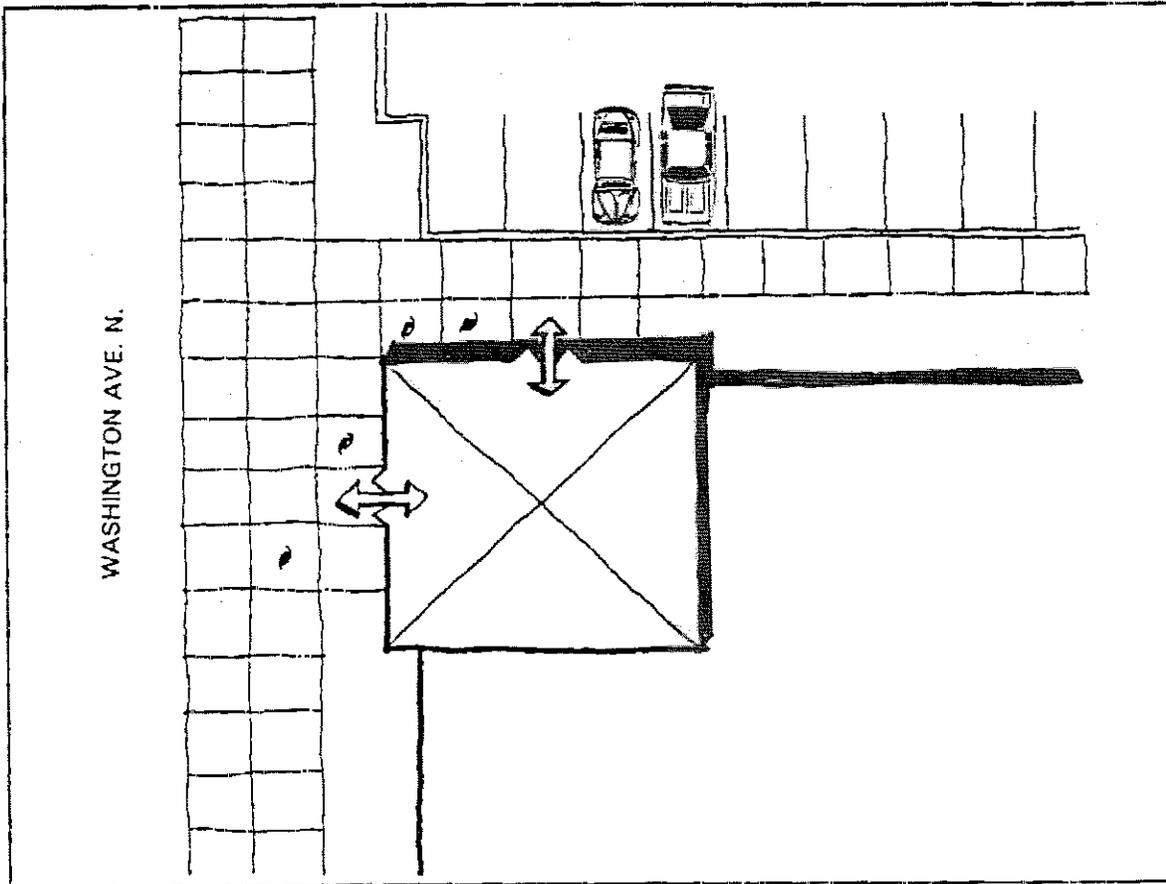


A dense evergreen planting should be installed to suggest an edge condition along the west side of Washington Avenue where no building definition is possible

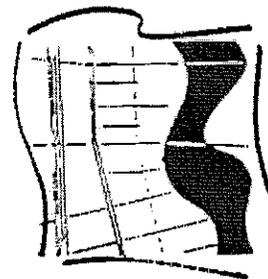
Street trees along Washington Avenue between building and the street will reinforce the image and character proposed by the city

A Secondary Street tree system running East/West will define the pedestrian nature of connection to the Parkway and other open spaces

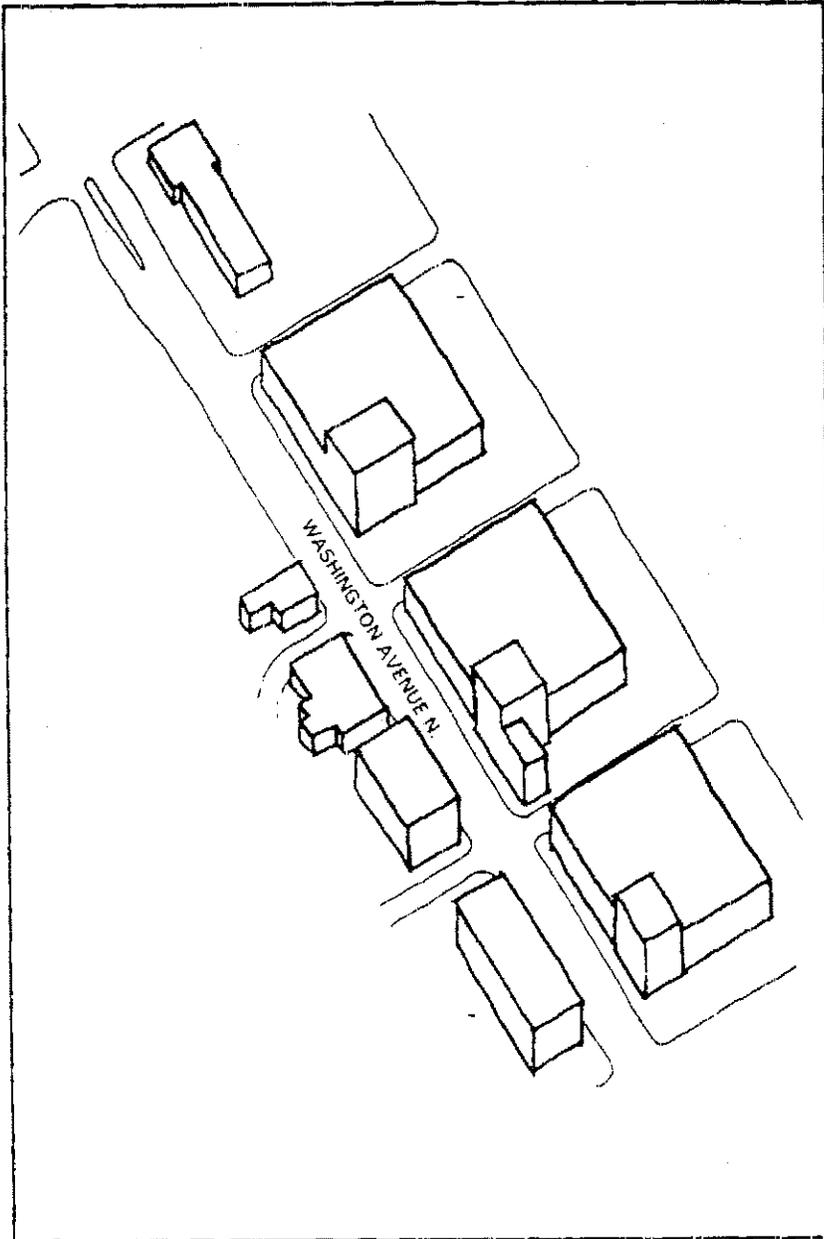




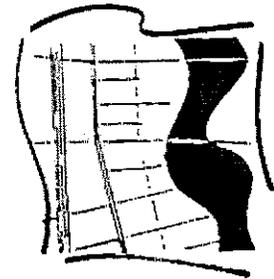
Primary building entries should occur on or close to Washington Avenue in order to reinforce pedestrian activities along the street edge, thus further enhancing street identities and sense of place.



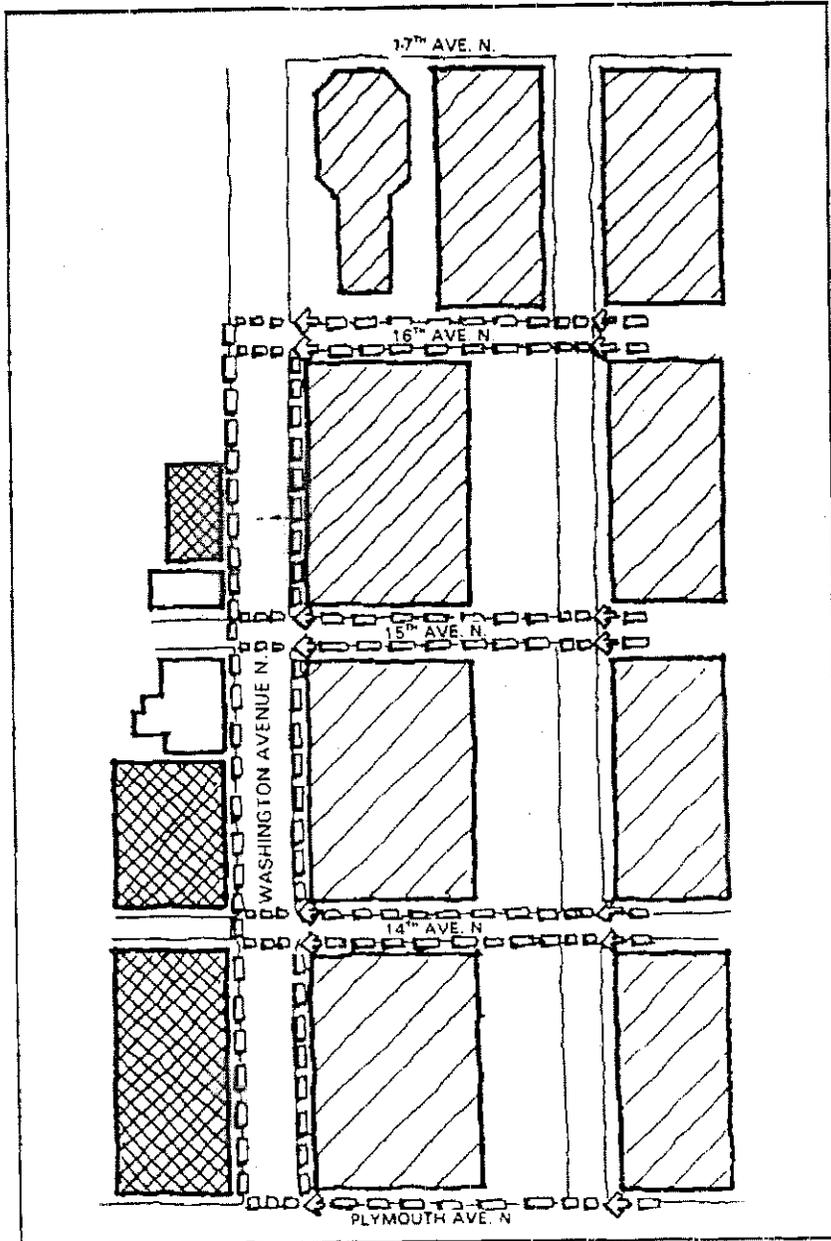
NORTHSIDE JOBS PARK  
Design Guidelines and Development Framework



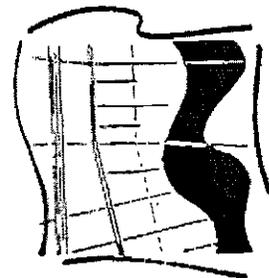
A concept in which buildings which are moved up to the property lines is encouraged to provide a continuity between blocks. This contributes to the neighborhood context and helps to define Washington Avenue as the main street leading in and out of Minneapolis from the North Side.

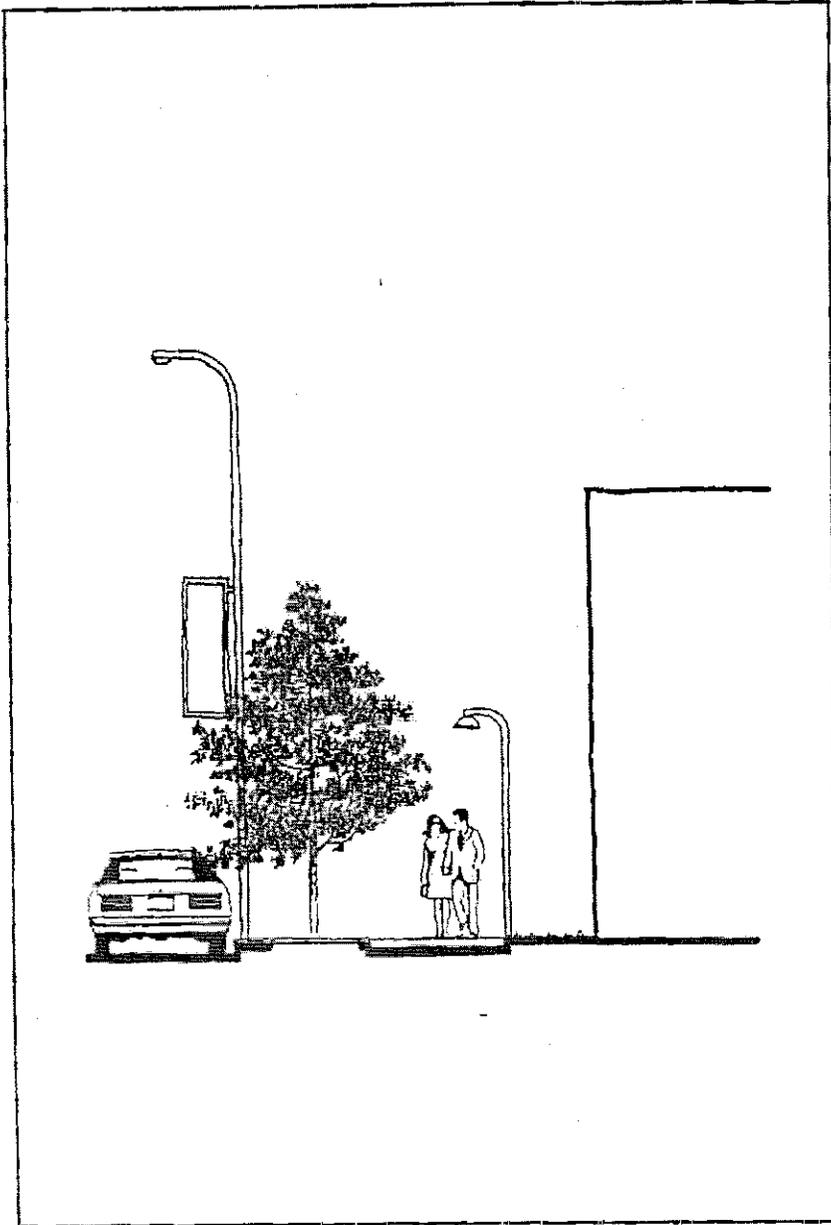


NORTHSIDE JOBS PARK  
Design Guidelines and Development Framework



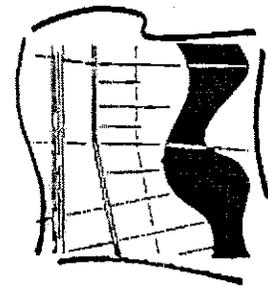
Additional supporting commercial uses are encouraged along the west side of Washington Avenue North. A mixed use approach provides more diversity in the neighborhood and will potentially draw employees to the services which in turn creates a more lively streetscape along Washington Avenue.





A strong public streetscape can help to unify and create an identity along Washington Avenue. Various design elements might include:

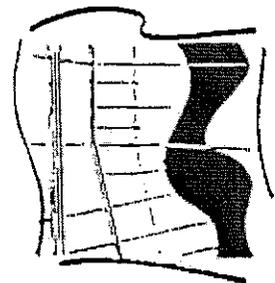
- A graphic Jobs Park identification sign attached to light poles within the park
- Street trees of a consistent spacing and species planted in the sidewalk with ornamental tree grates and/or in a boulevard setting
- Pedestrian lights located to provide safety, scale and a pedestrian amenity
- A sidewalk of a consistent width, texture and pattern



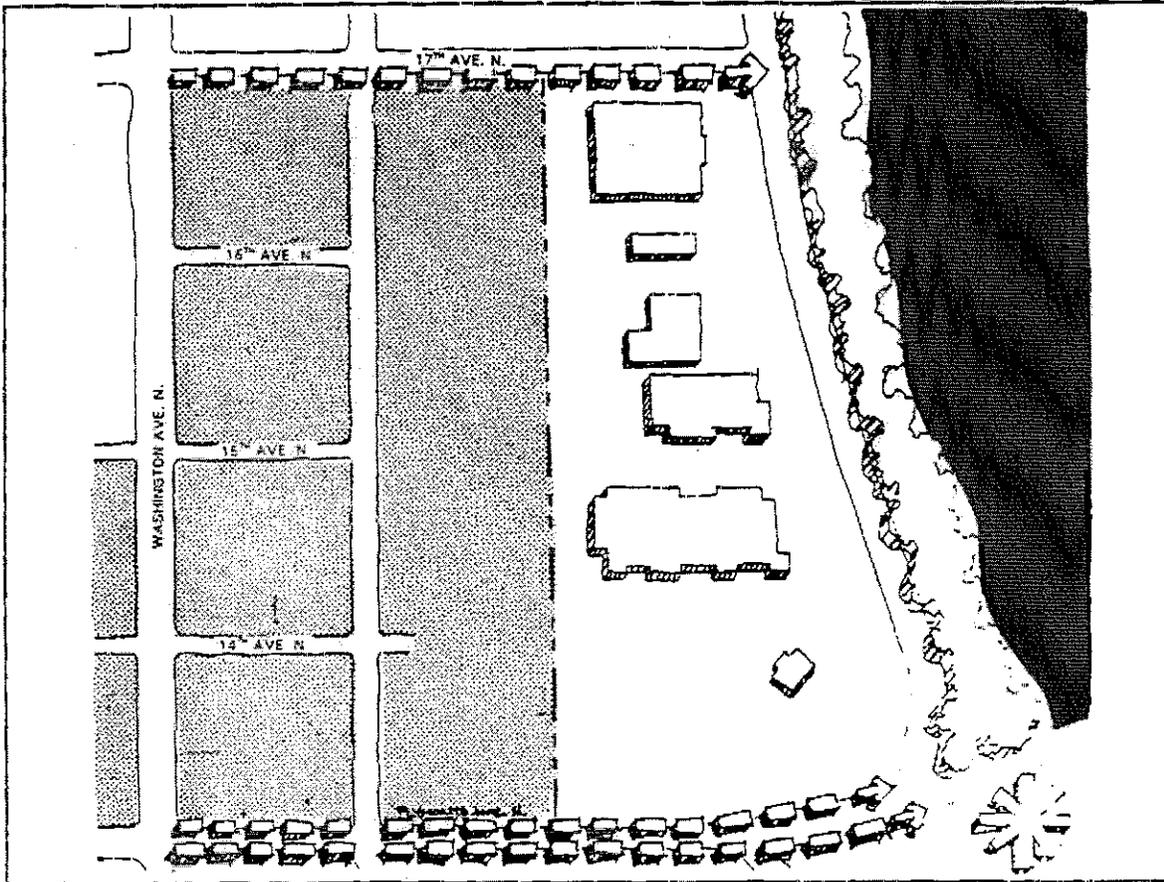
**OBJECTIVE THREE**

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Emphasize outdoor places for people.

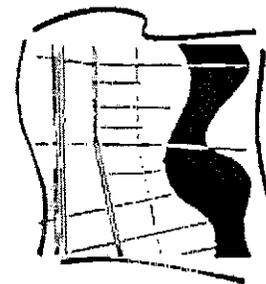


NORTHSIDE JOBS PARK  
Design Guidelines and Development Framework

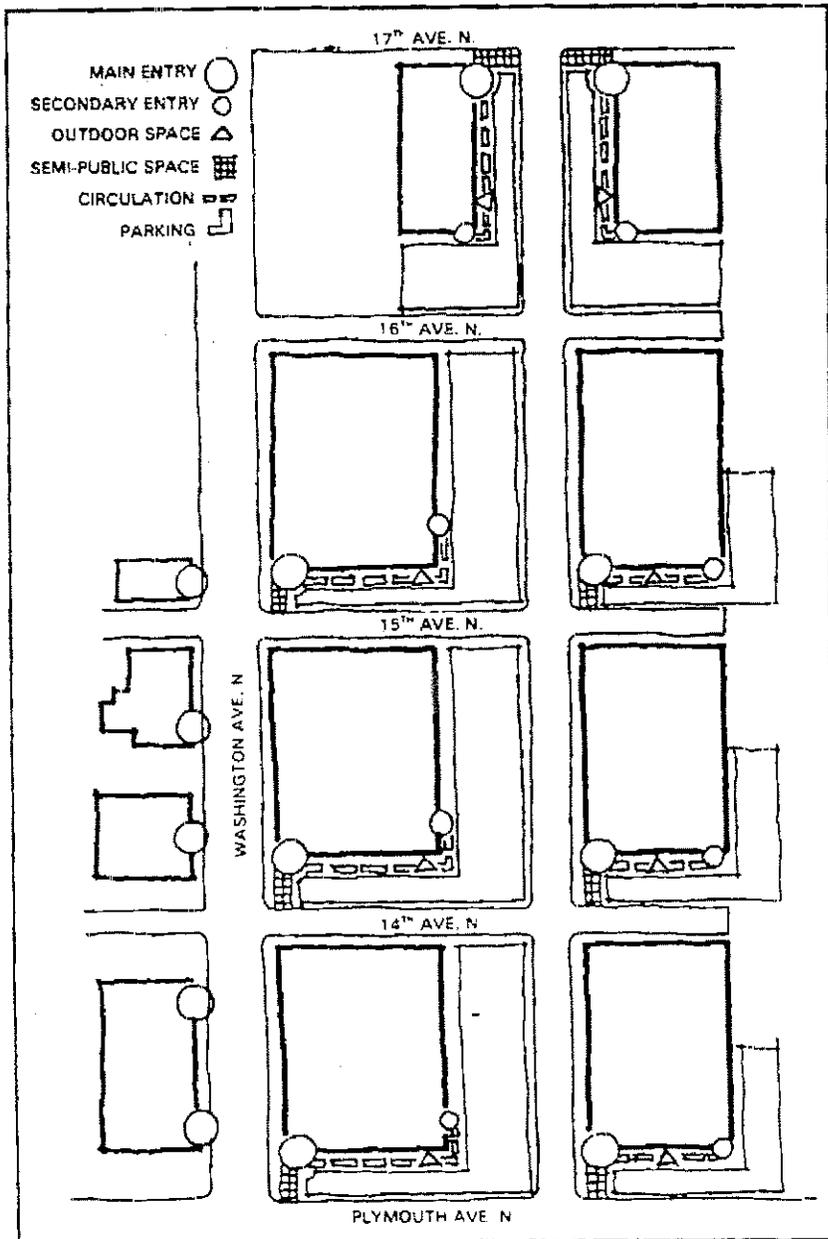


The Jobs Park will be enhanced through inclusion of connections to the Mississippi River at both Plymouth Avenue and 17<sup>th</sup> Avenue. This will be accomplished through encouragement of:

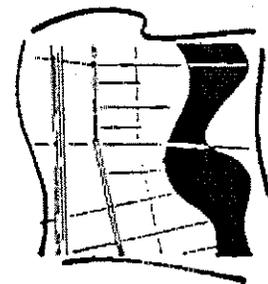
- Marked bike trails within city right of way
- Street trees and boulevard plantings of significant size and appropriate character.
- Clear paths of travel for pedestrians separated from roads and bikeways.
- A landscaped median within Plymouth Avenue extending to the Mississippi River



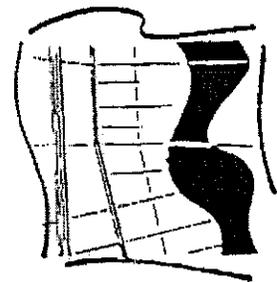
NORTHSIDE JOBS PARK  
Design Guidelines and Development Framework



Outdoor areas within individual sites should be organized to provide employees with safe, convenient and pleasing places. Primary entries should be linked conveniently with any secondary entries, and both should be located in close proximity to parking. Entries and outdoor eating areas should be located with southern exposure and convenient connections to entries and pedestrian access ways.



**PRIVATE DEVELOPMENT REFERENCE**



This chapter contains detailed instructions relating to private development within the project area (areas not within the street R O W)

The instructions are derived from the goals objectives and urban design principals that were described in Chapter 2. These instructions are the primary means by which the project area goals and objectives will be realized

This chapter will be of particular value to the private developer by providing a concise statement of the site planning and architectural design criteria in effect within the project area. It also provides an outline of the governing codes of other agencies which have jurisdiction over work in the project area

Section headings within the Private Development Framework include:

**APPLICABLE CODES-**

describing key governing codes

**SETBACKS-**

describing setback dimensions for all streets and requirements for landscaping within setbacks

**BUILDING DESIGN CRITERIA-**

detailing controls on building materials massing and design of elevations

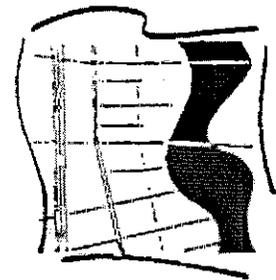
**SITE DESIGN CRITERIA-**

detailing controls on site and building plan design.

**ALLOWABLE PLANT LIST and TYPICAL PLANT INSTALLATION-**

describing minimum standards for plant selection and installation

Refer to Chapter 4 Project Review Requirements for submittal and review schedule



**APPLICABLE PLANNING/BUILDING CODES**

The following list of codes is intended to serve as a starting point for developers and planners who are preparing site plans within the Jobs Park. This list is not all inclusive. It will be the developer's responsibility to conform to all codes applicable to his/her particular building use and site requirements.

**ARTICLE II M1 LIGHT INDUSTRIAL MANUFACTURING DISTRICT**

- 542 440 District division
- 542 441 Conditions governing permitted uses
- 542 442 Permitted uses
- 542 443 Conditional uses
- 542 444 Vibration
- 542 445 Explosive and flammable materials
- 542 446 Glare and heat
- 542 447 Lot area requirements
- 542 448 Yard requirements
- 542 449 Regulations along business and residence districts
- 542 450 Floor area ratio
- 542 451 Signs
- 542 452 Off-street parking
- 542 453 Off-street loading

**AMERICAN DISABILITY ACT REGULATIONS**

**1994 UNIFORM BUILDING CODE AS ADOPTED BY THE STATE  
BUILDING CODE ON MARCH 20,1995**

**IMPORTANT RESOURCE PHONE NUMBERS:**

- City of Minneapolis Inspections 673-5800
- Minneapolis Community Development Agency 673-5095
- Minneapolis Public Works 673-2352
- Minneapolis Planning Department 673-2597
- Minneapolis Fire Administrative Offices 673-2890
- Damon Farber Associates 332-7522
- Minneapolis Zoning Department 673-5836
- Minneapolis Police Department 673-2853
- MNTAP 627-4646

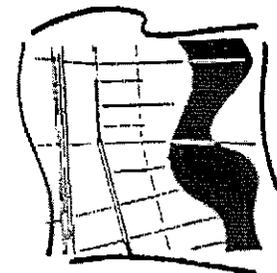


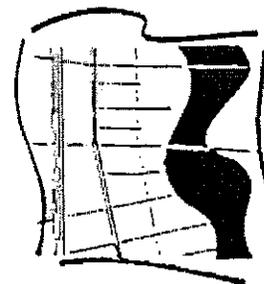
CHART 2

PUBLIC R.O.W. DIMENSIONS			PREFERRED SETBACK DIMENSIONS	
Street	Street Centerline to Curb	Curb to Property Line	Property Line to Building	Property Line to Parking
Washington Avenue	38 ft	13'-6"	6 ft.	10 ft
Plymouth Avenue	21 ft *	12 ft	6 ft	6 ft
2nd Street N	27 ft	14'-2" ft	8 ft.	6 ft West / 12 ft East
14th Avenue N	16 ft	17 ft	8 ft	12 ft.
15th Avenue N	16 ft	17 ft	8 ft.	12 ft
16th Avenue N	16 ft.	17 ft	8 ft	12 ft
17th Avenue N	22 ft.	11 ft.	8 ft.	12 ft.

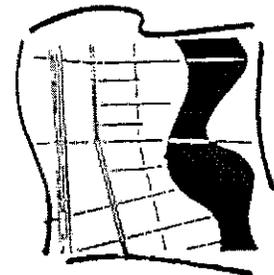
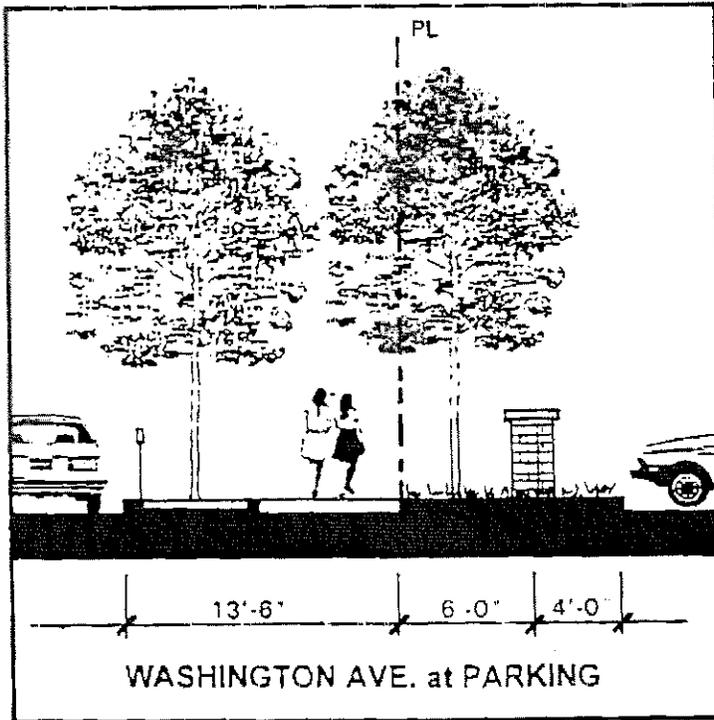
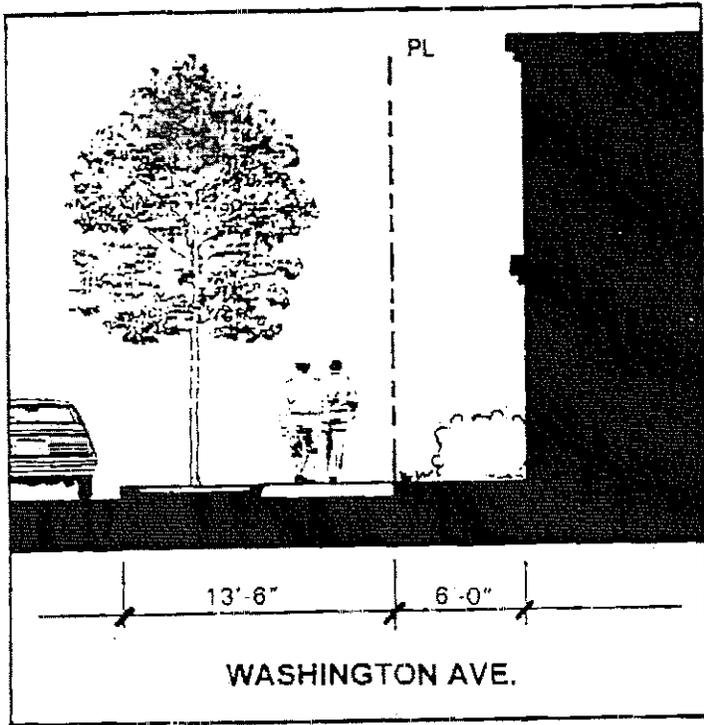
\*Reflects current street width. MCDA proposes that centerline to curb dimension be widened to 35 feet to accommodate Plymouth Greenway proposal per chapter five. Such a change would require relocation of the current property line

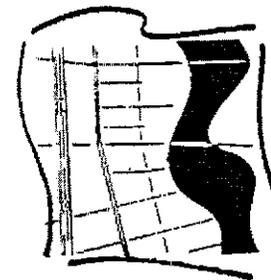
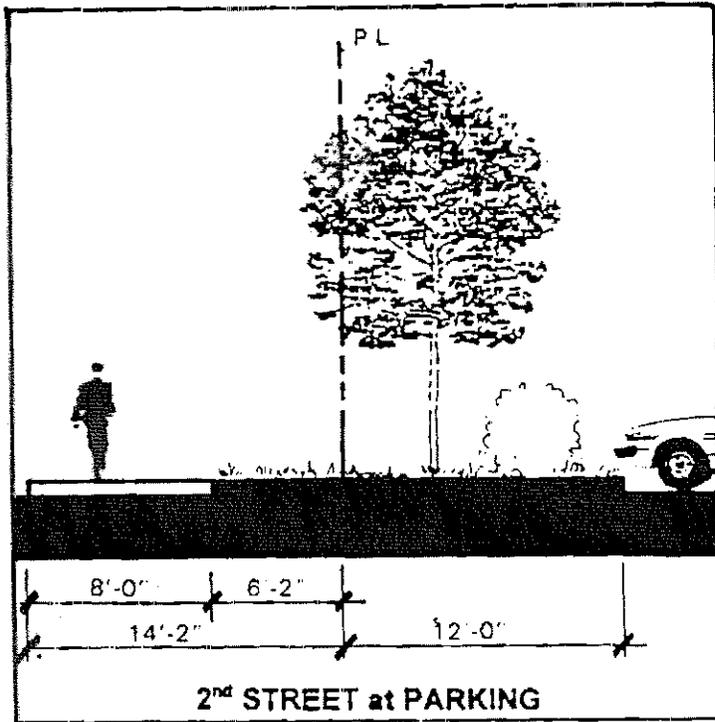
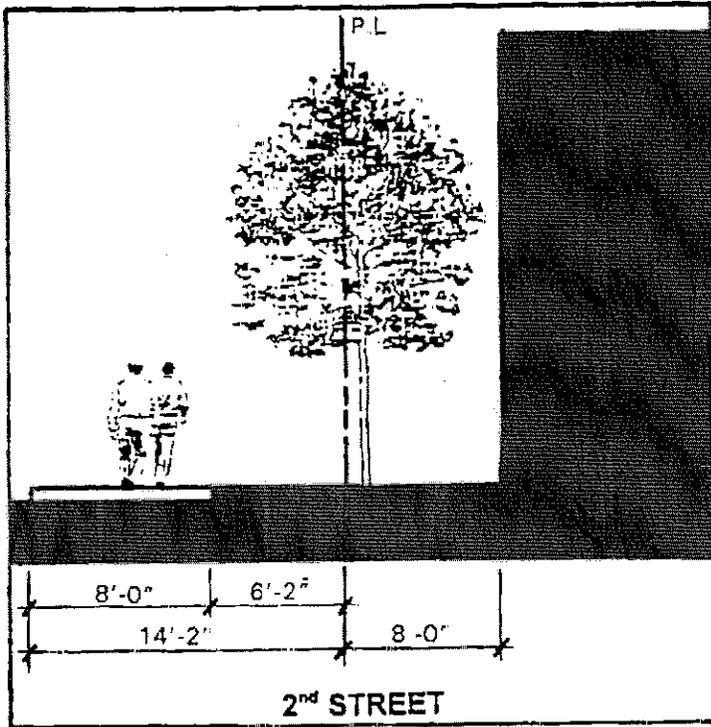
CHART 3

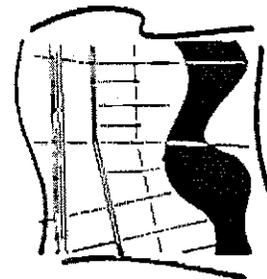
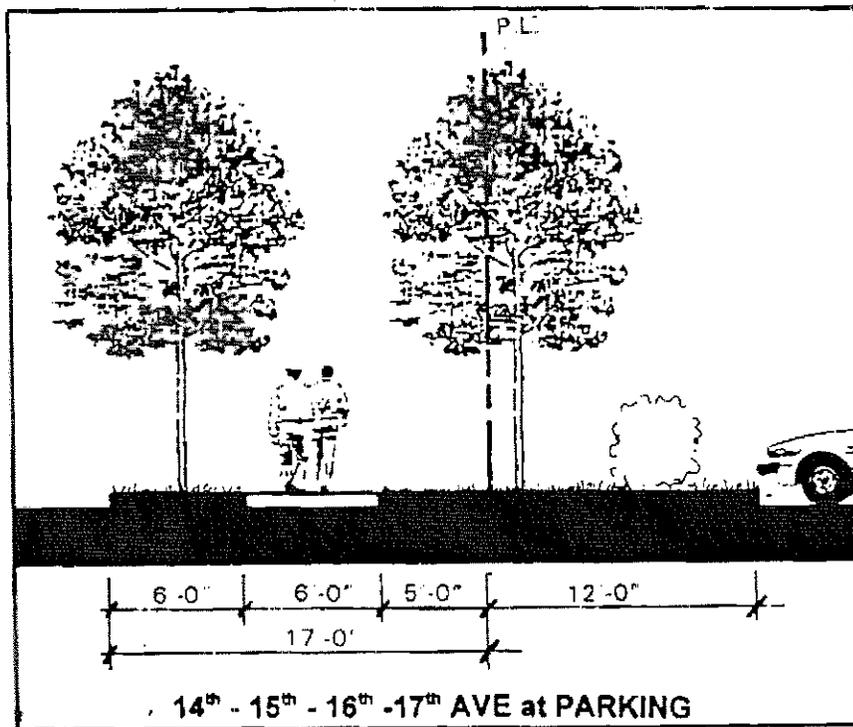
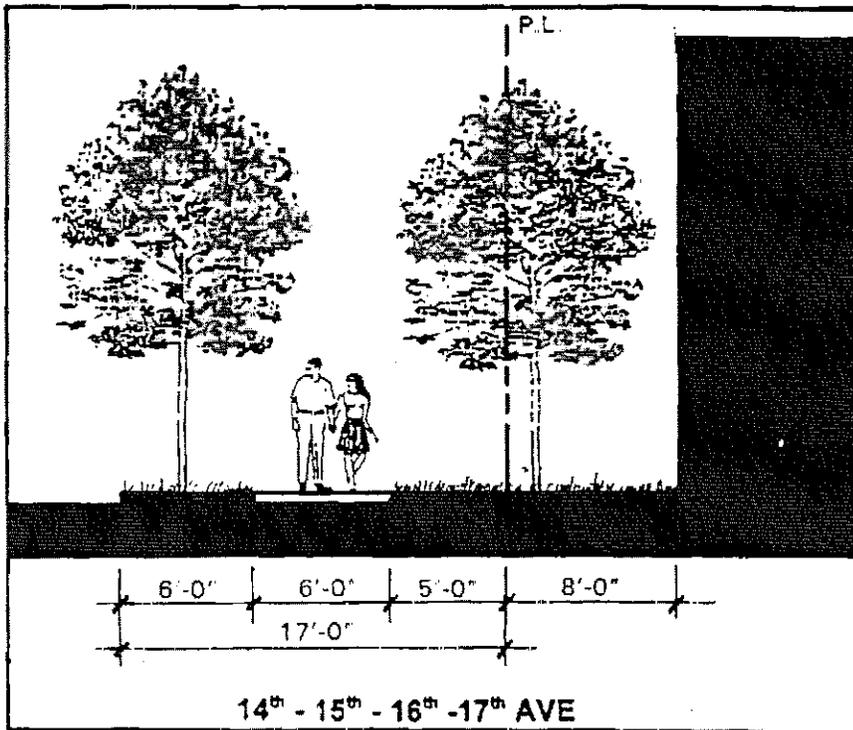
PREFERRED TREATMENT OF PRIVATE SETBACKS					
Street	Building	Lawn / Groundcover	Wall Screen	Hedge Screen	Regular Tree Planting
Washington Avenue	Preferred 80%	Allowed	Preferred	Not Preferred	Not Preferred
Plymouth Avenue	Not Preferred	Preferred	Not Preferred	Preferred	30 ft O C
2nd Street N	Preferred 80%	Allowed	Preferred	@PARKING	30 ft O C
14th Avenue N	Not Preferred	Preferred	Allowed	@PARKING	30 ft O C
15th Avenue N	Not Preferred	Preferred	Allowed	@PARKING	30 ft O C
16th Avenue N	Not Preferred	Preferred	Allowed	@PARKING	30 ft O C
17th Avenue N	Not Preferred	Preferred	Allowed	@PARKING	30 ft O C

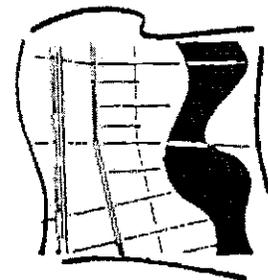
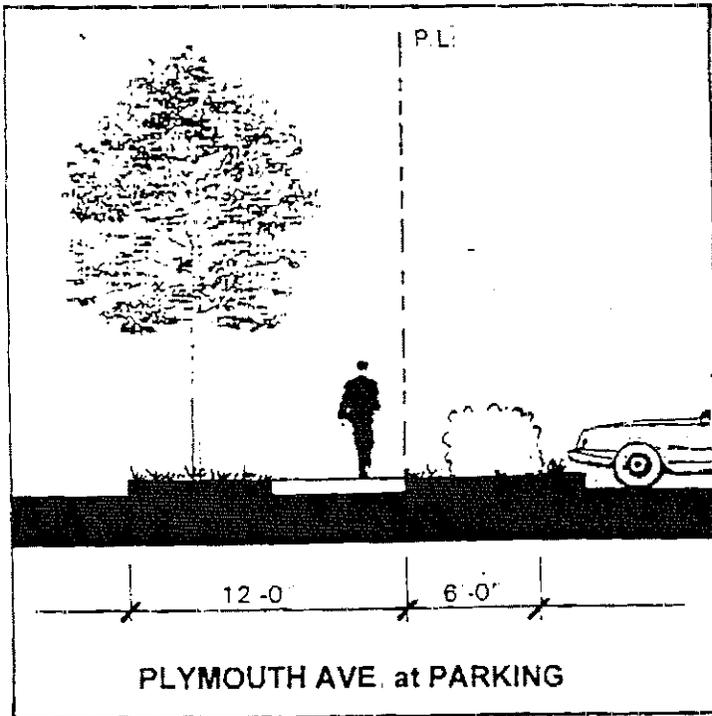
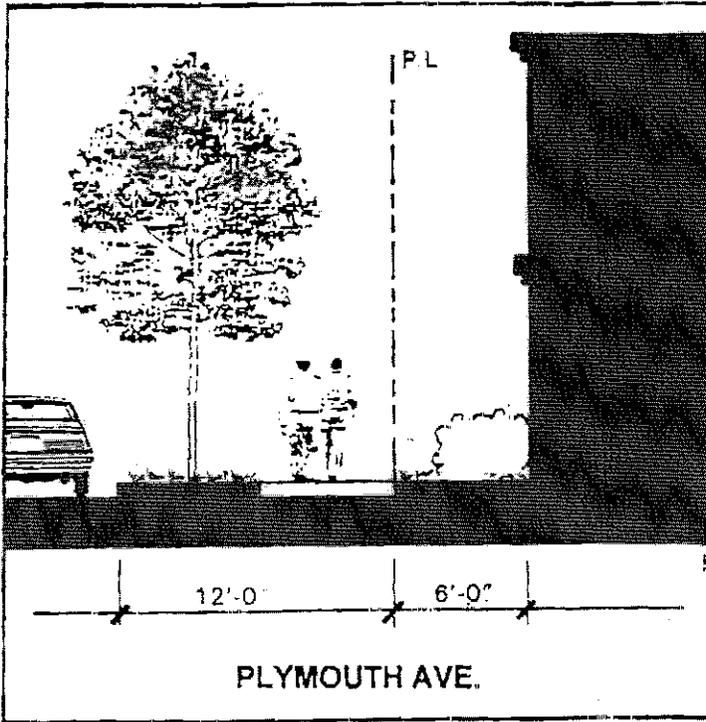


NORTHSIDE JOBS PARK  
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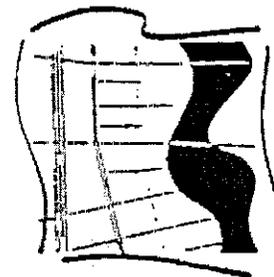






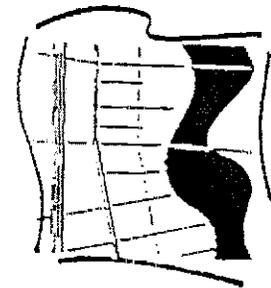
## BUILDING DESIGN CRITERIA

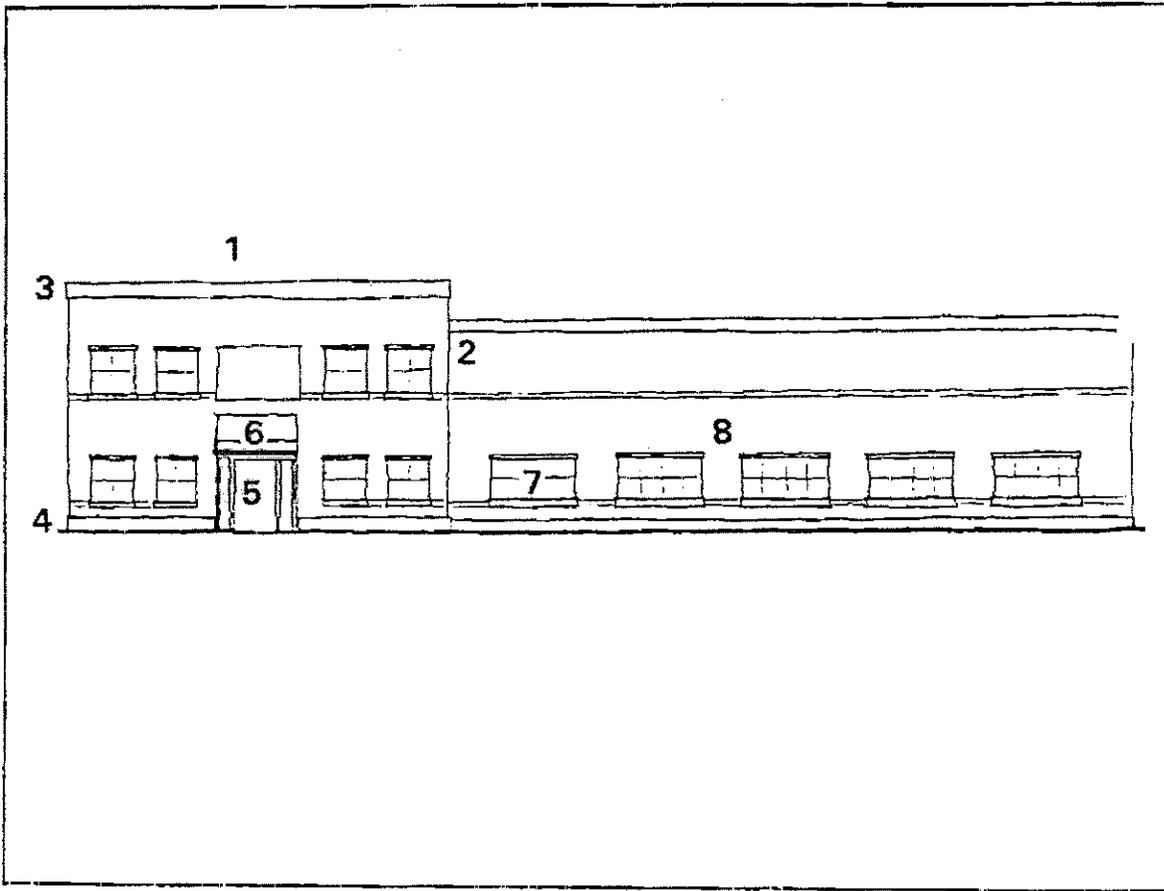
1. Industrial facilities should have a distinct and identifiable office/commercial component of the same height or taller than the industrial component. A horizontal projection of the office component out from the industrial component is preferred.
2. The office/commercial component should have its main entry on Washington Avenue (where applicable) and be located in the Southwest quadrant of the project
3. For development that is not industrial, follow the guidelines for the office/commercial component described herein
4. At least 80% of the Washington Ave. frontage should be building
5. If the site does not include Washington Avenue, then at least 80% of the 2<sup>nd</sup> Street North frontage should be building
6. The primary building entry should be approachable from the public or private side
7. The building should have a cornice of contrasting material, color and/or finish to the building. Minimum 18" high to 4' high maximum.
8. The building should have a base of contrasting material, color and or finish to the building. Minimum 18" high to 4' high maximum.
9. The office component should have square or vertical rectangular windows, with dividing mullions, in a regular pattern on all floors. A pronounced header, sill or arch is preferred. The height should be no greater than 2 times width
10. The main entry at the office component should be grand in scale and include an awning like overhang element
11. The industrial component should have windows with dividing mullions complementary in style to the office component. A pronounced header, sill or arch is preferred. If windows are not feasible, the industrial facade should be broken up in a regular rhythm by a column or other facade delineation which complements the treatment of the office component
12. If awnings are used over windows, they should match the shape of the windows and they should all be of the same size and style
13. Building colors should be predominantly warm earth tones as approved by the MCDA



## BUILDING MATERIALS

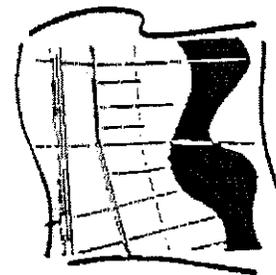
1. The office component wall should have the appearance of a modular material set horizontally, no greater in size than 2 feet high by 3 feet wide. Masonry brick, stone, textured concrete block, and textured precast concrete are preferred. Painted walls, untextured concrete block and tilt-up precast concrete are not preferred.
2. It is preferred that the industrial building component match the office component in use of materials. If this is not feasible, a change of material may occur. If there is a material change, there should be a harmonious appearance to the overall building elevation. A step in or out at the point of change is preferred. Elements such as color, texture or reveal lines should be carried over from the office component to the industrial component. The material change should not occur too close to the end of the facade.
3. Windows should be clear or tinted, not reflective.
4. Modular glass and tile materials are acceptable as accent trim, but should not be a main building material.
5. Awning may be cloth, metal or plastic.
6. Window sills and headers may match building wall or base material. Wood, metal are also acceptable.





**PROTOTYPICAL BUILDING ELEVATION**

- 1 Office/Commercial
- 2 Industrial
- 3 Continuous cornice
- 4 Continuous base
- 5 Grand scale entry
- 6 Awning element
- 7 Divided windows
- 8 Modular wall material



### SHIPPING AND RECEIVING

1. The project should not have more than 8 truck docks or shipping/receiving bays.
2. Truck docks should not face Washington Ave. nor be located within 150 feet of Washington Ave. property line.
3. Screen truck docks with planting as described under LANDSCAPING
4. Stacking or storage of trucks, trailers, freight containers or other material should occur only on appropriately designed and designated paved areas. Storage areas should not exceed 20,000 square feet in size

### PARKING

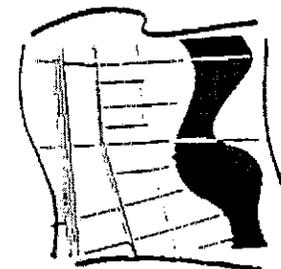
1. Provide a 6" high concrete curb around all parking areas.
2. Provide landscape islands at the ends of all parking rows. Islands should be at least as large as one parking stall.
3. Provide minimum parking of one stall for every 300 square feet of office space; one stall for every 200 square feet of commercial space; one stall for every 1000 square feet of industrial space up to 20,000 and one stall for every 2000 square feet of industrial space exceeding 20,000.

### SERVICE YARD

1. Locate service yards against building and adjacent to truck docks, and at least 50 feet from property line
2. Screen all sides of service yard with a solid 8 foot high architectural screen, materials to match building, or a dense evergreen planting

### PEDESTRIAN AREAS

1. Provide a continuous concrete sidewalk, 5' wide (excluding any parking overhang at curb) between parking lot and building.
2. Provide paved area plus apparatus for locking 15 bicycles, in a location convenient to the building entry.
3. Provide a paved seating area accessible to the building entry, parking and public sidewalk with fixed seating for 25 people. provide trash receptacles
4. Provide a six foot minimum concrete sidewalk from public sidewalk to all building entries.

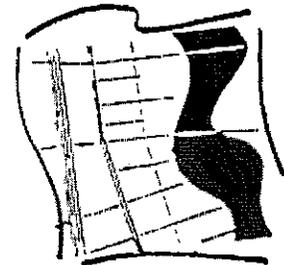


## LANDSCAPING

1. See pages 3-19 and 3-20 for recommended species of plant material, sizes, and standards for installation
2. Provide landscape maintenance specs for review and approval prior to occupancy.
3. All landscaping should be provided with automatic irrigation except areas designated as 'Undeveloped.'
4. Landscaped areas should be either sodded lawn or woody plants at 3' - 0" o. c. spacing, maximum
5. All non-sodded areas to receive a 4" deep layer of hardwood or rock mulch
6. Non-woody flower plantings may be used in limited quantities as accent plantings
7. Planting islands within parking lots should have at least one tree
8. Trees should be provided within designated setback areas at 30' o. c. , except on Washington Ave. Staggered spacing may be used if it improves the appearance of the project and meets the 30' spacing requirement on average
9. Additional planting to provide shade in pedestrian areas and to otherwise enhance the image of the development is encouraged

## UNDEVELOPED AREAS

1. Undeveloped areas are areas between the building and setback line which is not being developed
2. Undeveloped areas should be located so that future expansion or development opportunities within the area are considered
3. Areas designated as 'Undeveloped' should be graded and seeded with native grass/wildflower mix

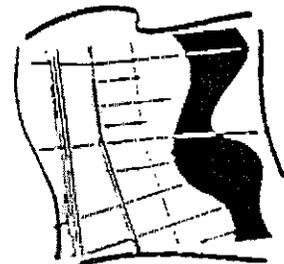


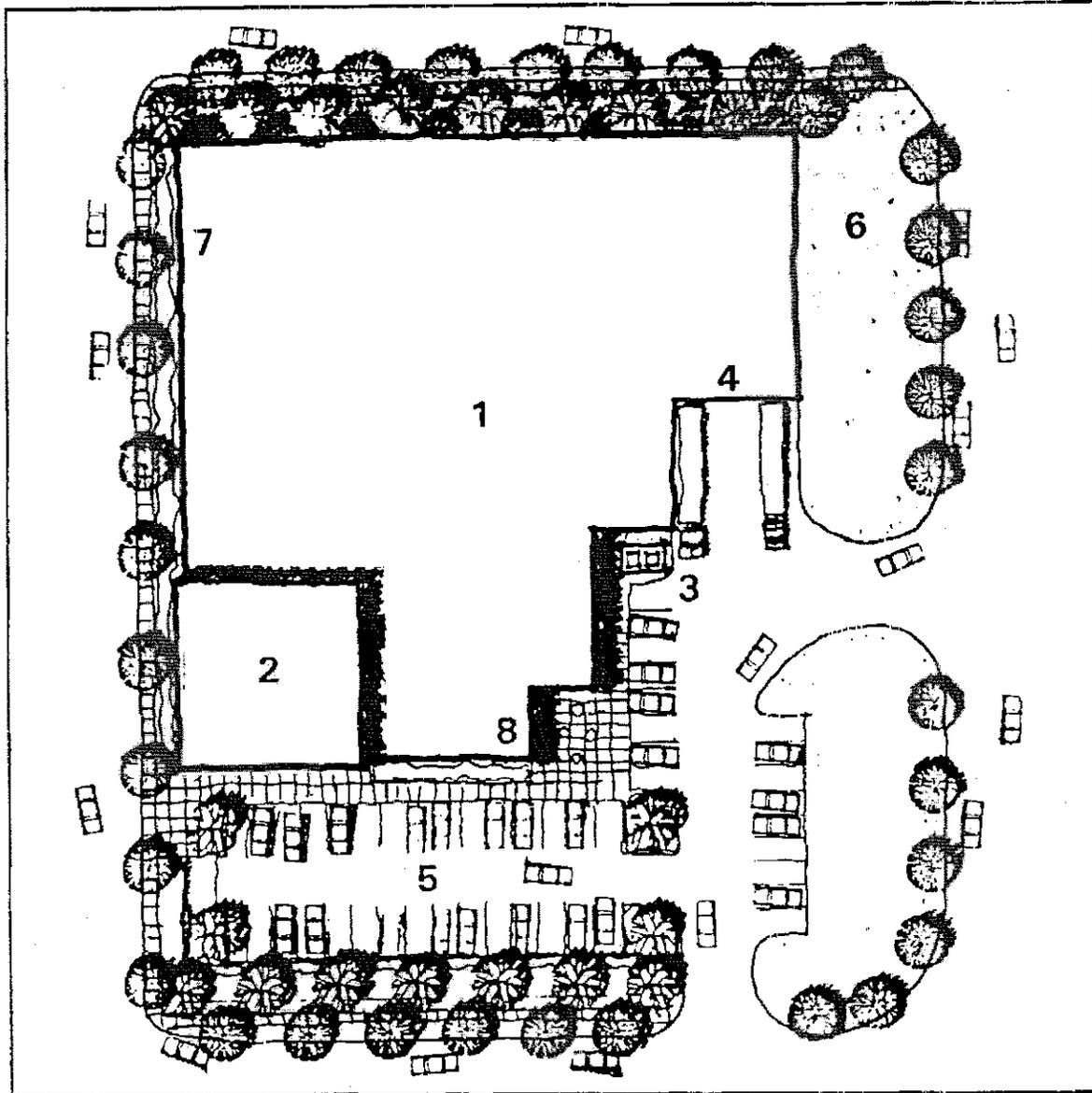
### BUILDING MOUNTED SIGNS

1. Signs mounted against building should read horizontally and not exceed 3' wide x 60' long
2. Signs mounted perpendicular to building should read vertically and not exceed 30" wide x 10' long
3. Sign letters and symbols should be on opaque background material in rectangular or other regular geometric shape
4. Letters and symbols should be constructed of metal or wood material, painted
5. Sign background should be constructed of metal, wood or heavy-duty plastic material
6. Signs mounted against building above the main entry may be increased in width to align top and bottom with second story windows on same building elevation. Total sign area should not exceed 180 square feet.
7. Signs should be lit from above by building-mounted shielded fixtures. Perpendicular mounted signs should be lit from the side by shielded fixtures. Back lit signs are not preferred
8. No lit sign should be within 8 feet of the ground.
9. Sign style and color shall be approved by the MCDA with building color palette review
10. Only signs identifying building tenants will be allowed
11. Animated and 3D signs are not preferred. Neon, if used, is preferred to be mounted behind building windows.
12. Sign attachment should be of a type that is repairable with minimal damage to the building facade, should the sign be changed or removed.
13. In addition to the above criteria, signs shall conform to the Minneapolis Planning Code

### FREE STANDING SIGNS

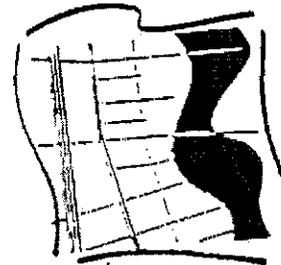
1. Sign materials and color are the same as described for building mounted signs. Materials which match building are also acceptable.
2. Signs should include a base similar in material to the building base
3. Free standing signs should not be located within fifty feet of Washington Avenue unless integrated into screen wall separating sidewalk from parking lot
4. Overall height and width should not exceed 8 feet including base
5. Signs, if lit, should be uplit from ground mounted lights designed for that purpose, not back lit

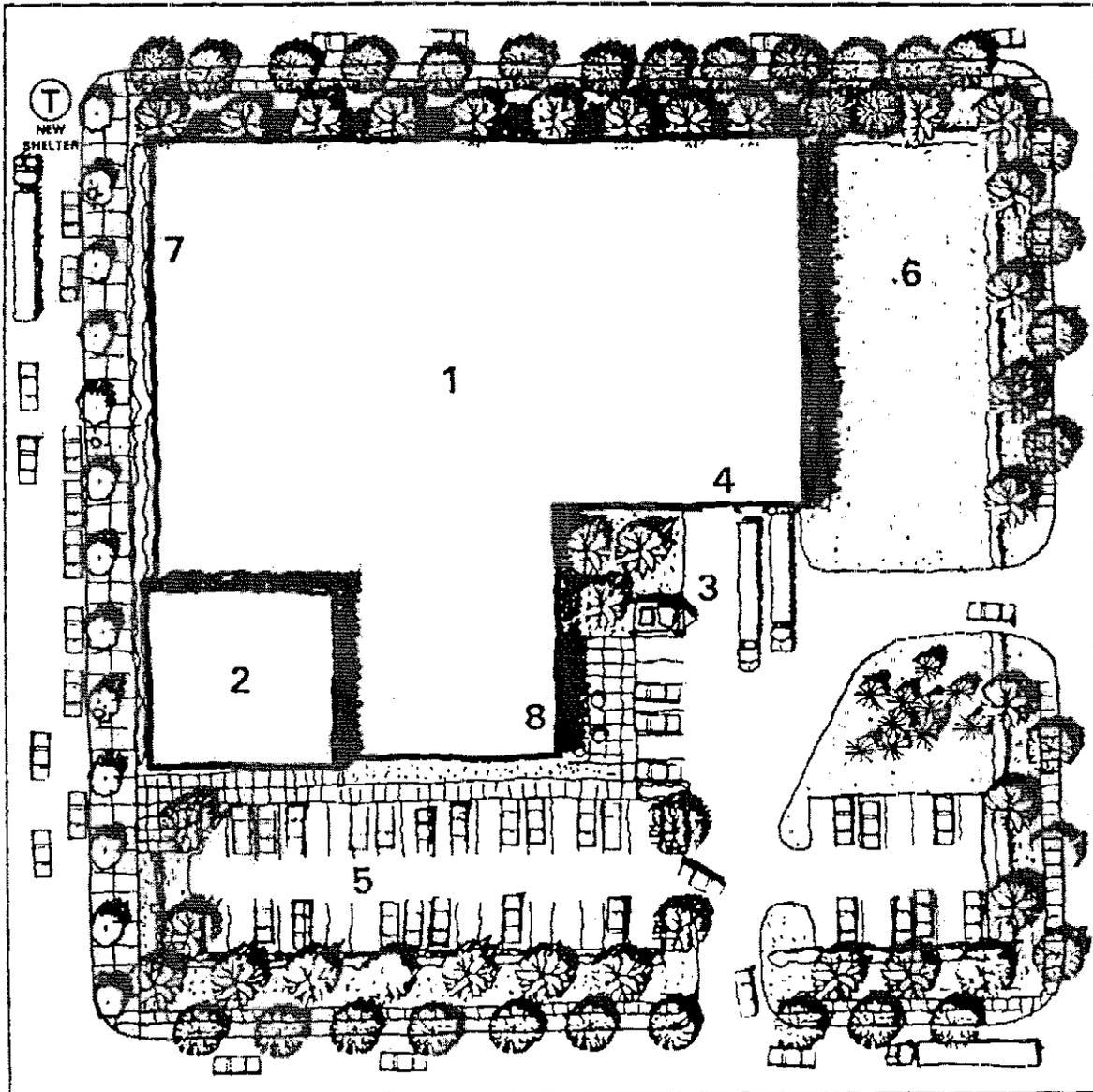




**PROTOTYPICAL 40,000 SQUARE FOOT DEVELOPMENT**

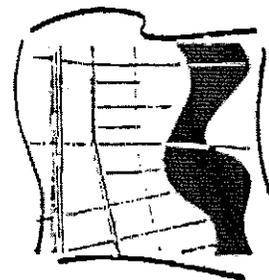
1. 34,000 square feet industrial space
2. Approximately 6,000 square feet office space
3. Service yard - screened
4. Truck dock - 2 bays
5. Parking - 47 cars
6. Undeveloped area - for future expansion
7. Setbacks - vary
8. Plaza area



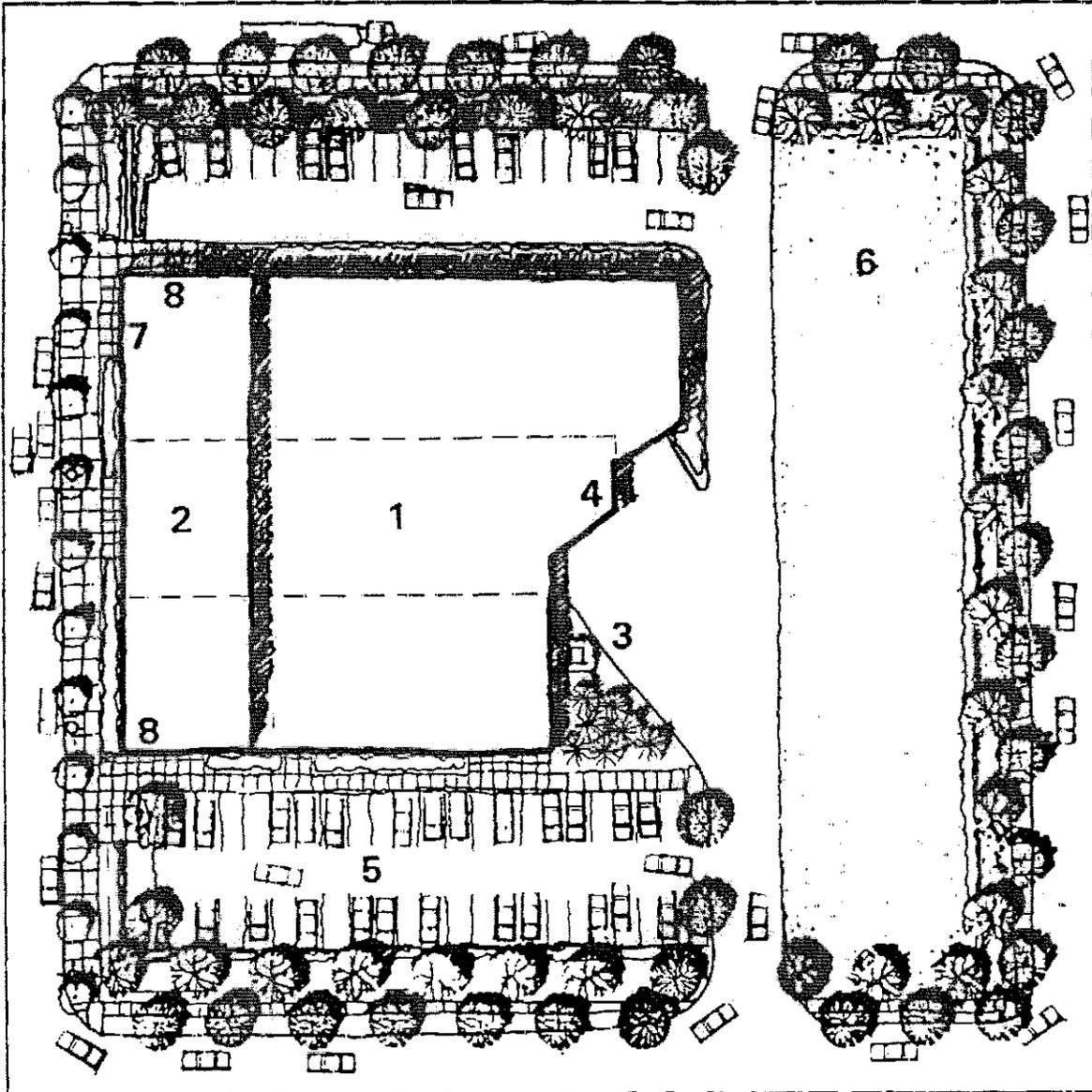


PROTOTYPICAL 50,000 SQUARE FOOT DEVELOPMENT

- 1 44,000 square feet industrial space
- 2 Approximately 6,000 square feet office space
- 3 Service yard - screened
- 4 Truck dock - 3 bays
- 5 Parking - 52 cars
- 6 Undeveloped - for future expansion
- 7 Setbacks - vary
- 8 Plaza area

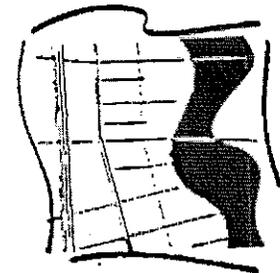


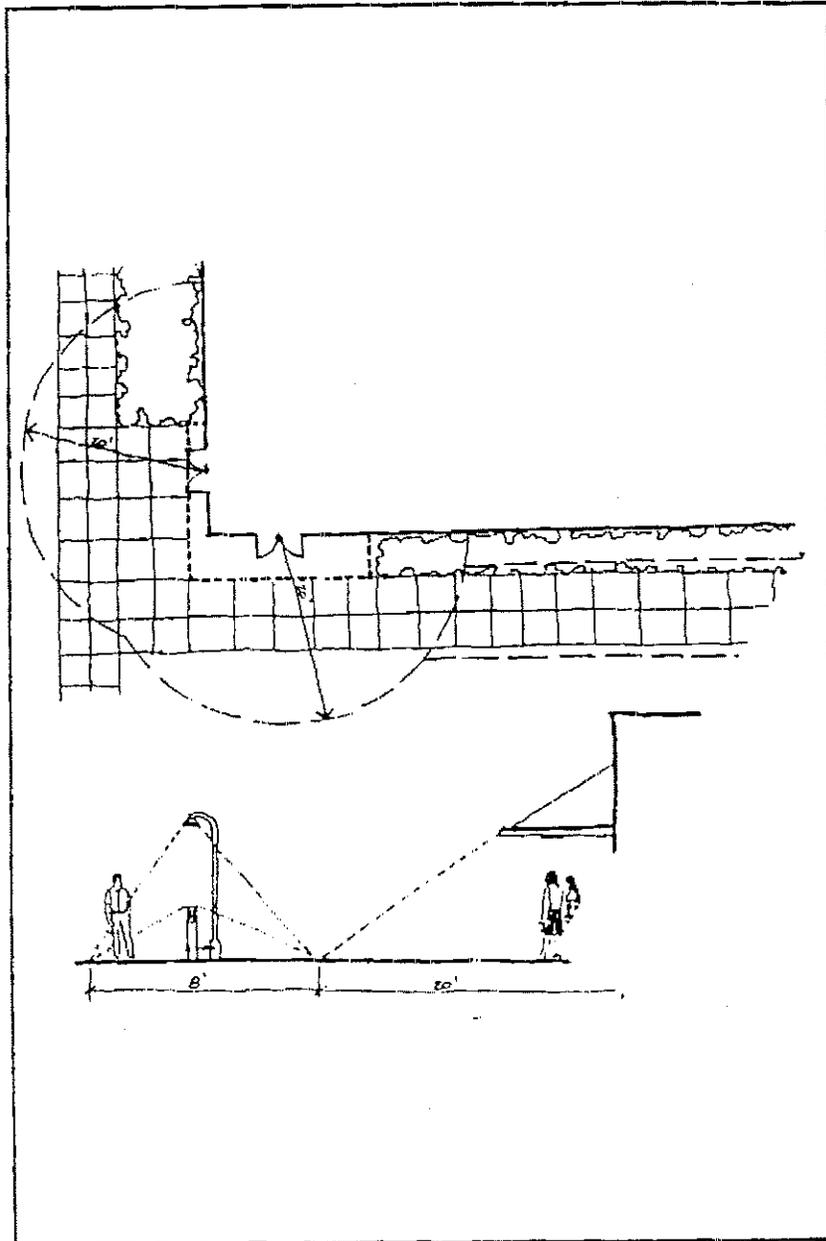
NORTHSIDE JOBS PARK  
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PROTOTYPICAL MULTI-TENANT DEVELOPMENT - 40,000 SQUARE FEET

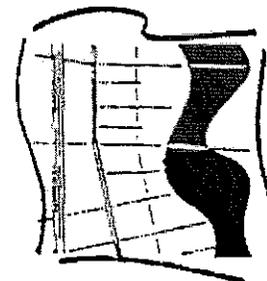
- 1 32,000 square feet industrial space
- 2 Approximately 9,000 square feet office space
- 3 Service yard - screened
- 4 Truck dock - 2 bays
- 5 Parking - 55 cars
- 6 Undeveloped area - for future expansion
- 7 Setbacks - vary
- 8 Plaza areas





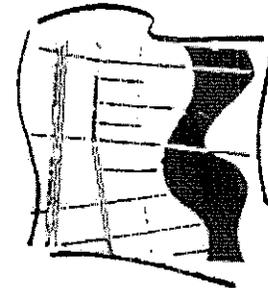
#### SITE LIGHTING

Lighting should provide adequate foot-candles for safety and security as well as design sensitivity in outdoor spaces. Pedestrian ways should provide an 8 ft. wide path with a minimum 2 F.C. light level. Preferred light fixtures are pedestrian scale or light bollards. Building entries should provide an area 20 ft. in radius from the door that has minimum 5 F.C. light level. Building lighting should be a wall mounted downlight or a flush mounted canopy light. For safety reasons no obstructions over 36 inches should be allowed in this area.

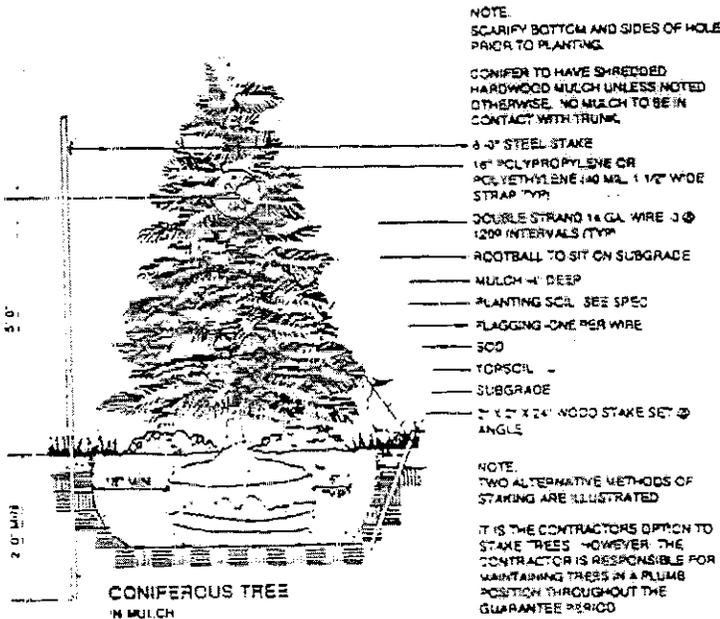
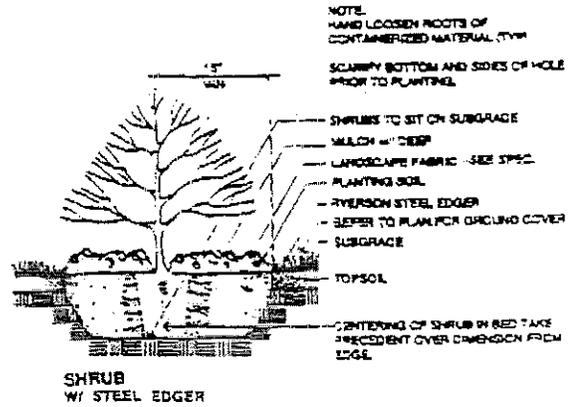
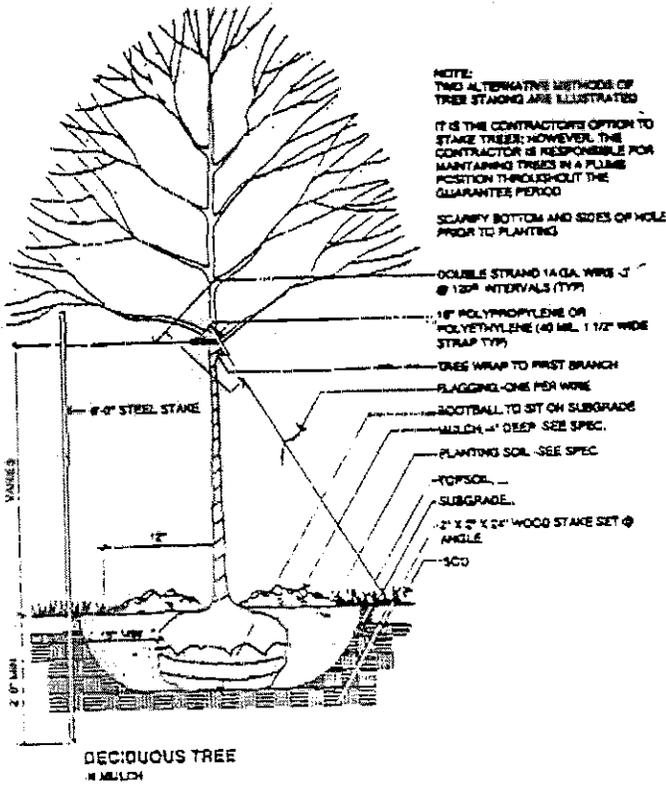


**PLANT VOCABULARY**

- 14, 15, 16, 17<sup>th</sup> and Plymouth Ave.
  - Green Ash
  - American Linden
  - Honeylocust
  
- 2<sup>nd</sup> Street - Street Trees
  - Sugar Maple
  - White Ash
  - Red Maple
  - North Pine Oak
  
- Evergreen Screen Trees
  - Black Hills Spruce
  - Colorado Green Spruce
  - Austrian Pine
  - American Arbor Vitae Pyramidal
  
- Parking Lot Hedge Material
  - 14, 15, 16, 17<sup>th</sup> and Plymouth
    - Dwarf Korean Lilac
    - Hedge Cotoneaster
    - Dwarf Winged Euonymous
    - Globe Arborvitae
  - Washington Avenue and 2<sup>nd</sup> St
    - Alpine Currant
    - Cheyenne Privet
  
- Foundation Shrubs
  - Taunton Yew
  - Mint Julep Juniper
  - Red Twig Dogwood
  - Dwarf Bush Honeysuckle
  - Spirea
  
- Large Screening Shrubs
  - Common Lilac
  - Arrowood Viburnum
  - Techney Arborvitae
  - Tall Hedge Buckthorn
  
- Parking Island Trees
  - Green Ash
  - Hackberry
  - Kentucky Coffee Tree
  
- Parking Island Shrubs
  - Spirea Spruce
  - Mint Julep Juniper
  - Dwarf Bush Honeysuckle
  - Weigelia Spruce

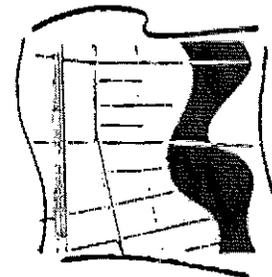


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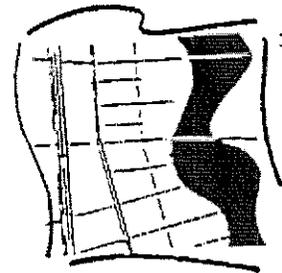


**MATERIAL STANDARDS**

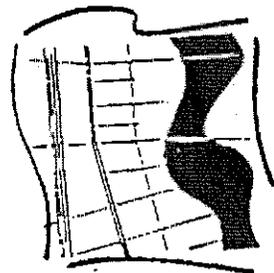
- Deciduous trees should be 2 5/8" Caliper minimum
- Ornamental trees should be 1 5/8" Caliper minimum
- Coniferous tree should be a minimum of 6' in ht
- Deciduous shrubs should be a minimum of 24" in ht
- Coniferous shrubs should be a minimum of 24" in spread
- Material should conform to standards set forth by the American Nurseryman Association.



## REVIEW REQUIREMENTS



**STREETSCAPE IMPROVEMENT REFERENCE**



## OVERVIEW

As was stated earlier in the urban design objectives the concept behind any development within the jobs park should begin to reflect a more traditional urban approach. This includes R. O. W. improvements. Boulevards, sidewalk locations, street tree plantings, transit stops and on-street parking should reflect a character that respects the street as a primary orienting element. In the following guidelines for R. O. W. Development, boulevards are created for better growth conditions for street trees. Street tree spacing varies to create a sense of hierarchy along different roadway types, and on-street parking is maintained to add a sense of scale to the street and buffer moving traffic from pedestrians on the sidewalk. R. O. W. width reflects the needs of building and parking setbacks to create urban scale.

## FRAMEWORK SPECIFICS

### Washington Avenue

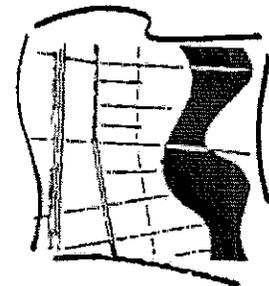
- 13'-6" sidewalks with street trees set in 6 foot square tree grates 40' O C, species to be coordinated by the city, one species should be used along whole street
- The R. O. W. should remain at 13'-6" behind the curb line
- On-street parking should remain on both sides of Washington Avenue

### Plymouth Avenue

- A total of 70' of roadway should be installed to consist of a 12' median at the center of the road, 4-12' lanes of traffic, and a 5' wide bike lane on each side directly adjacent to the curb.
- A 6' boulevard should be installed behind the curb on either side of the road to accommodate street trees
- A 6" sidewalk should be installed directly behind the boulevard.
- The boulevards and median should be planted with trees 25' O C in sod. Species to be determined by the city
- The R. O. W. should remain at 12' behind the curb line
- No street parking will be located on Plymouth.

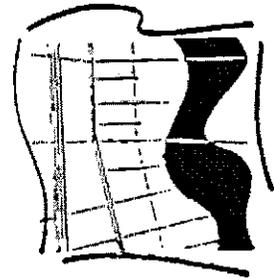
### 2<sup>nd</sup> Street North

- An 8' concrete sidewalk should be installed directly behind the curb
- Street tree planting should be incorporated at 40'-0" O C in 4 foot square tree grates
- The R. O. W. should remain at 14.2' behind the curb line
- On-street parking should remain along 2<sup>nd</sup> Street North.

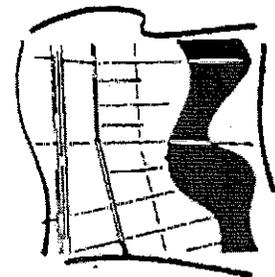
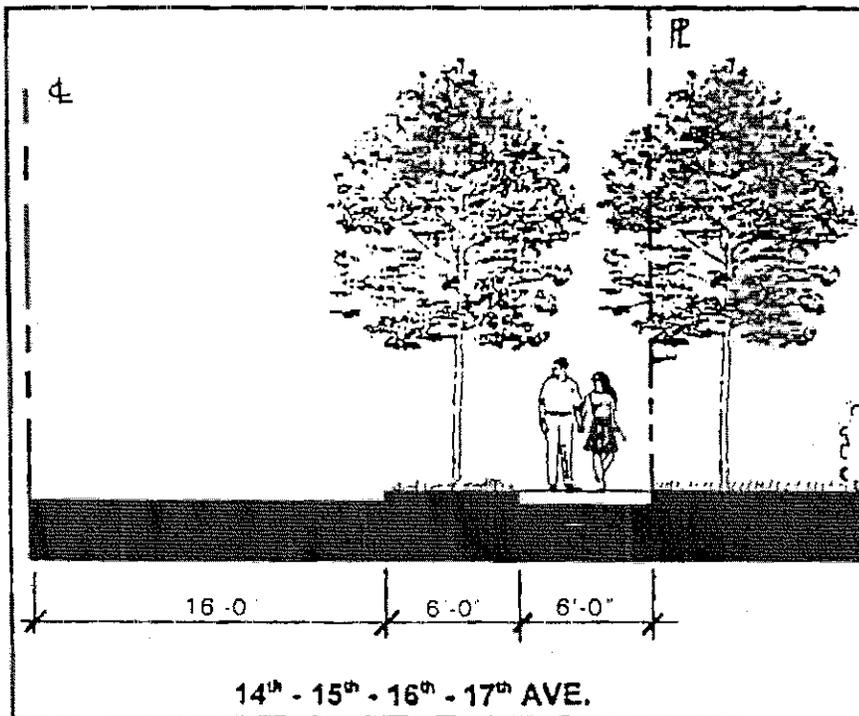
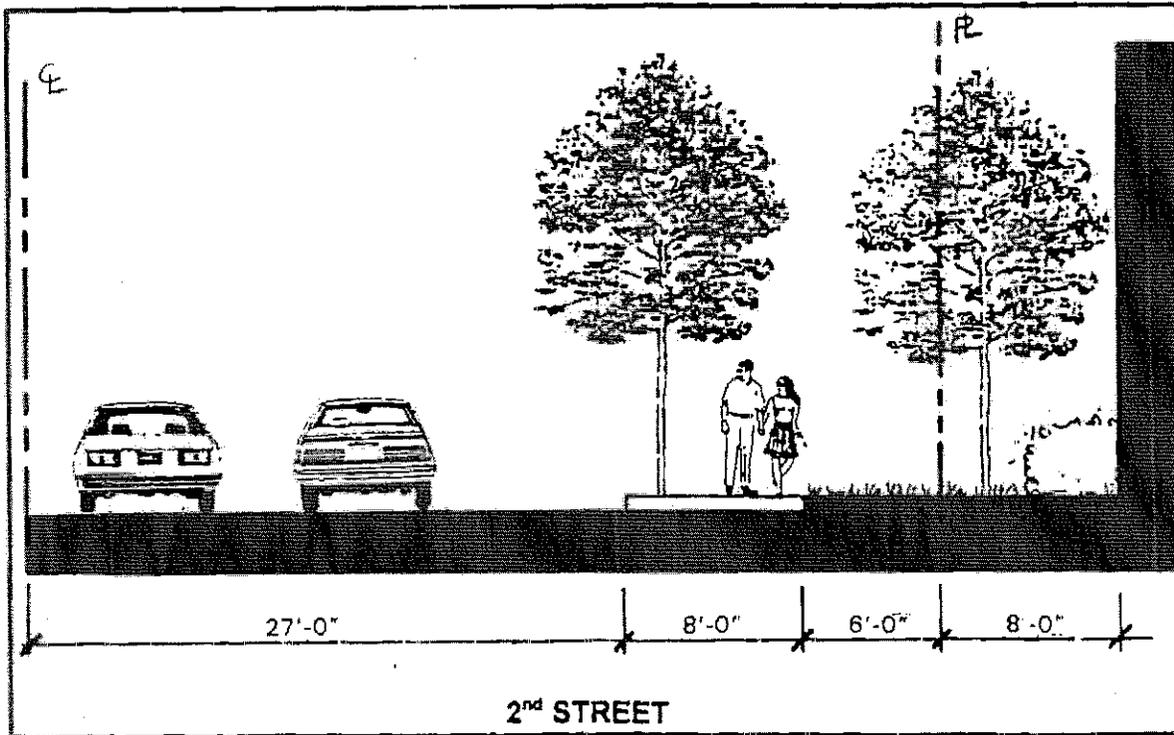


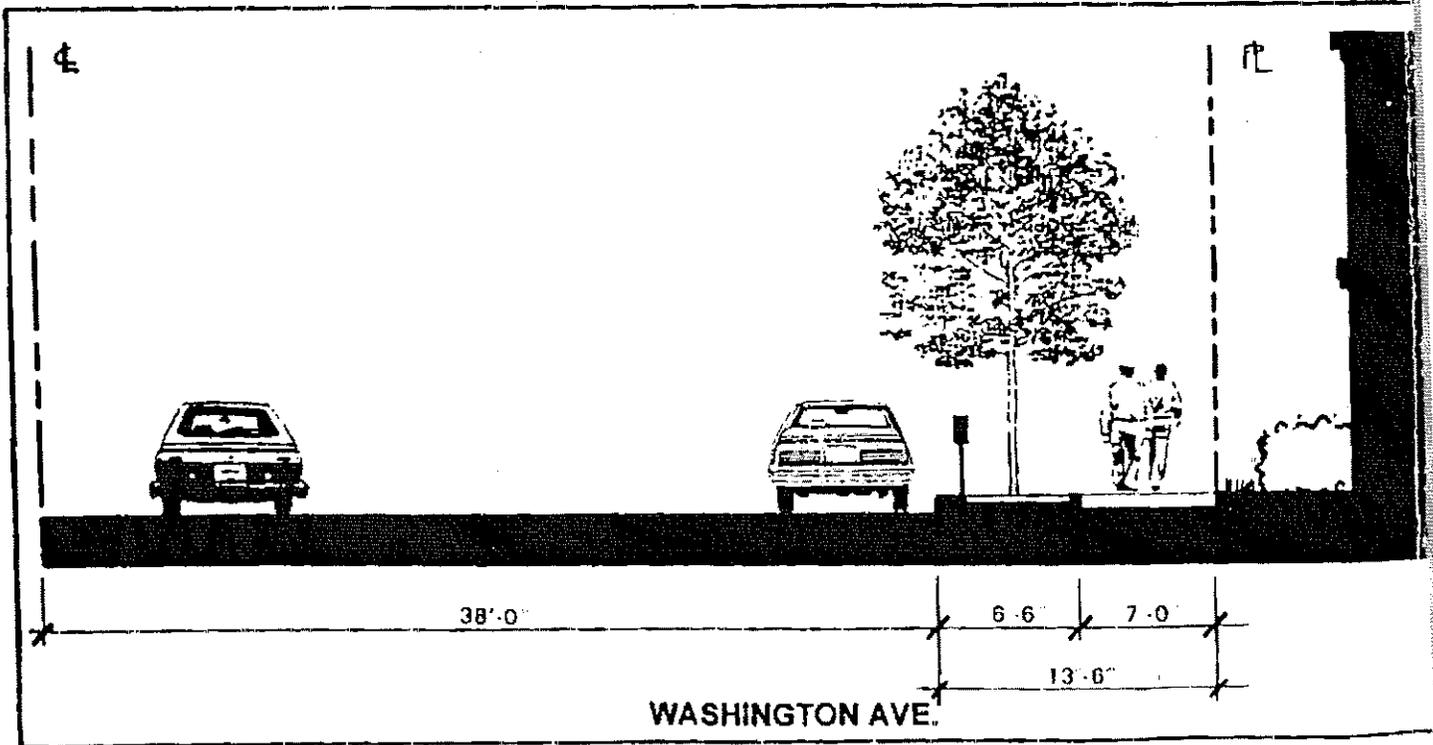
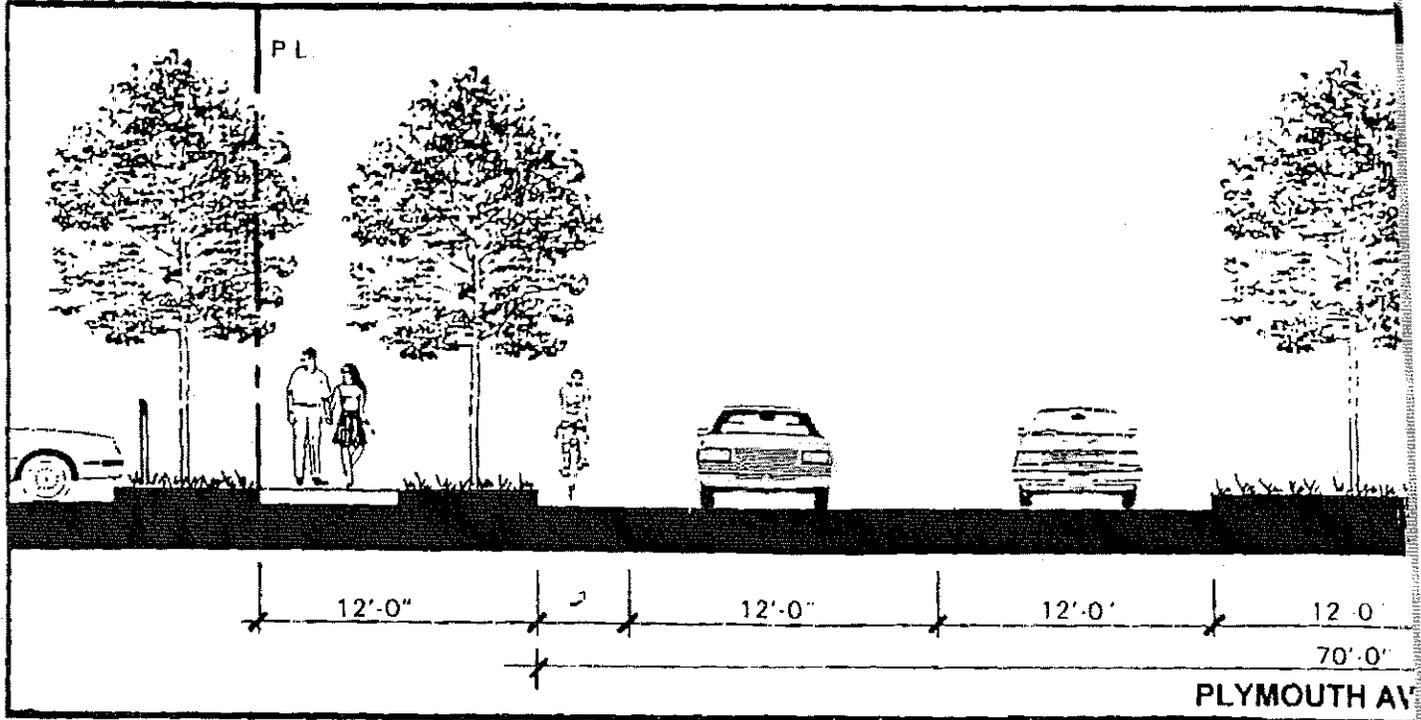
14, 15, 16, 17<sup>th</sup>

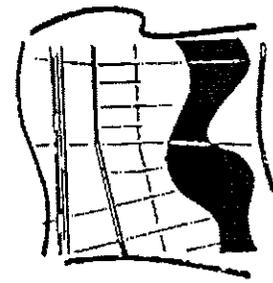
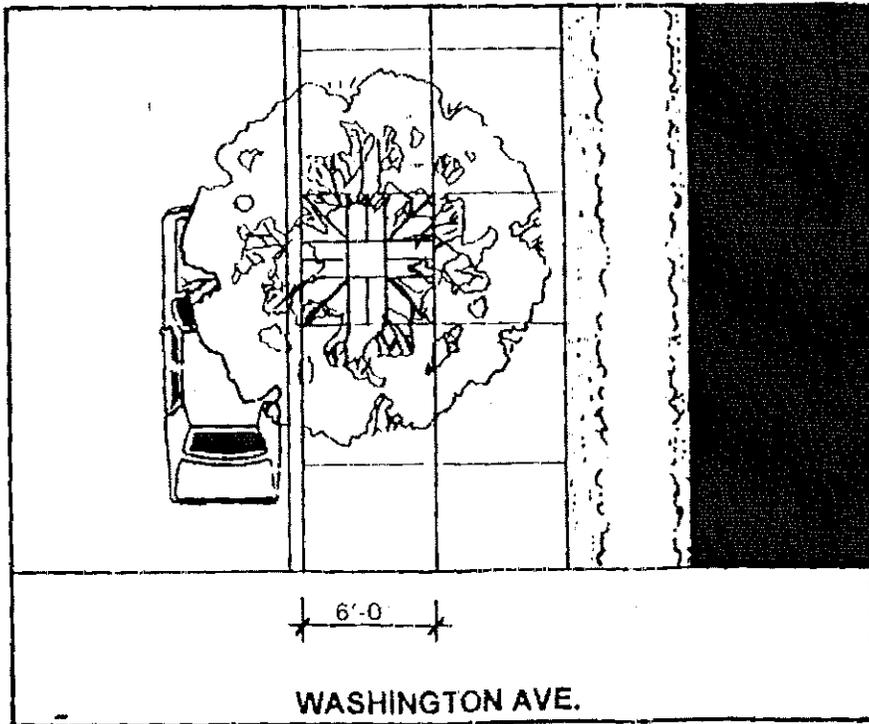
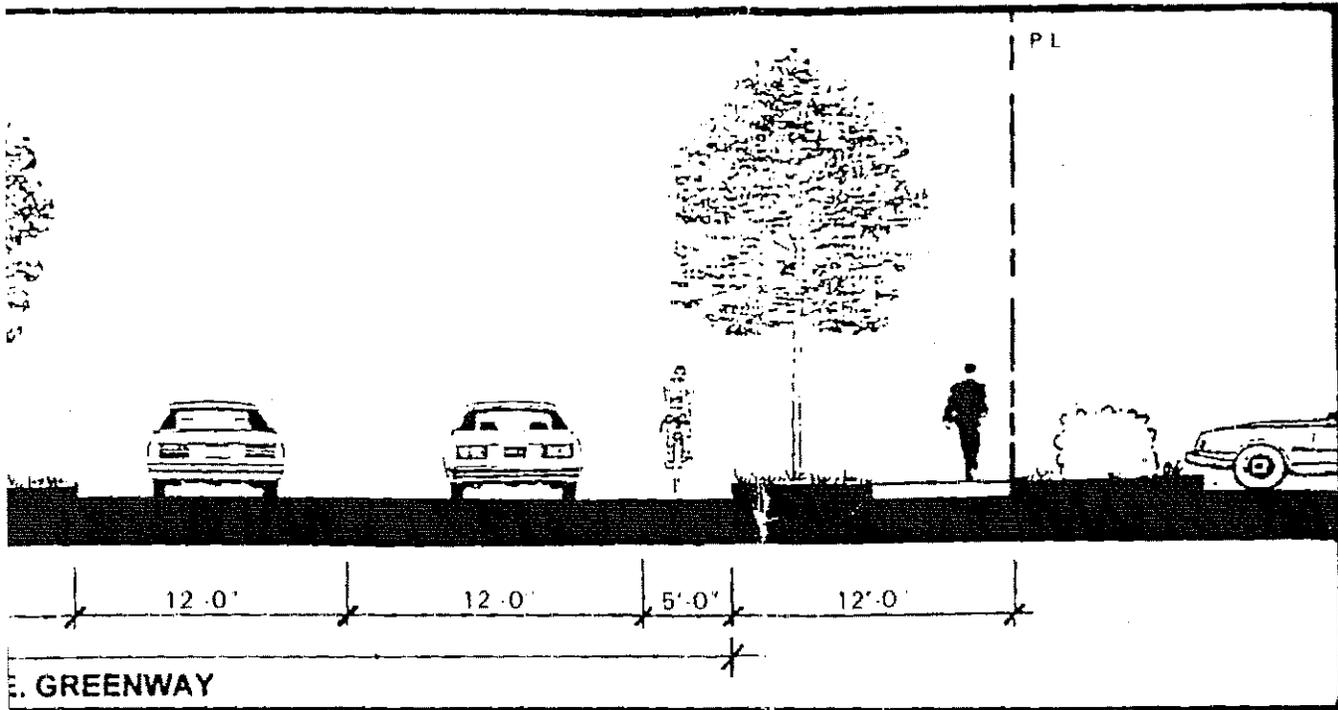
- A 6' boulevard should be located to provide adequate area for street tree growth.
- A 6' concrete sidewalk should be located directly behind the boulevard.
- Street trees should be planted at 30'-0" O C Species to be determine by the city No more than one species on each boulevard.
- Sod all boulevard areas
- On- street parking should remain.
- The R. O. W. should remain at 17' behind the curb line (11' at 17<sup>th</sup> Ave.)



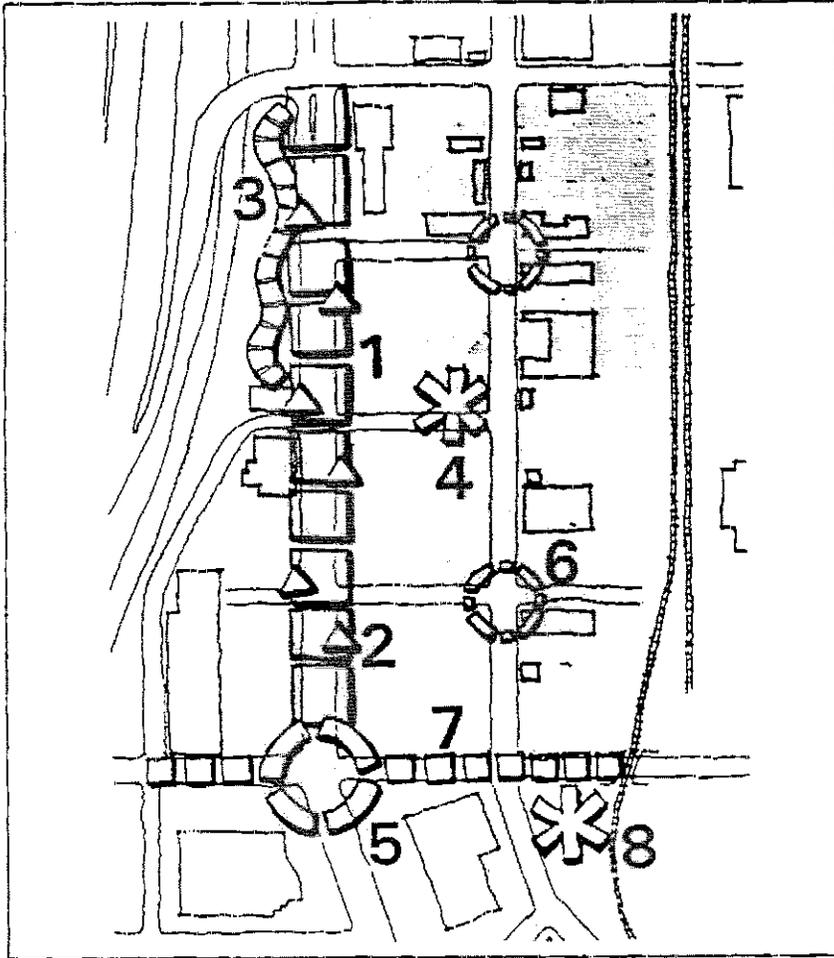
NORTHSIDE JOBS PARK  
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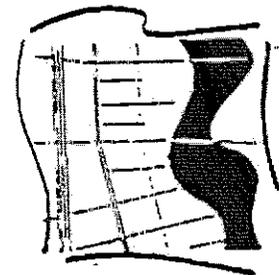


**SECTIONS**

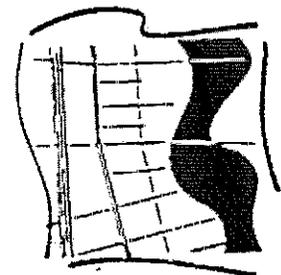


Numerous opportunities exist within the area for development of public art projects; both permanent and temporary. The area's urban industrial character would provide an interesting inspiration and backdrop for the often industrial quality of large scale public art. The following art sites have potential to complement and enhance the urban design image that is envisioned for the Northside Jobs Park:

1. On new street improvements proposed for Washington Avenue.
2. On new bus shelters along Washington Avenue
3. In MnDot-owned green space between I-94 and Washington Avenue.
4. As a component of the proposed park at 2<sup>nd</sup> St. and 15<sup>th</sup> Ave.
5. At project area gateway on Washington Ave and Plymouth Ave
6. At project area gateways on 2<sup>nd</sup> Ave at 14<sup>th</sup> and 16<sup>th</sup> Sts.
7. Within proposed Plymouth Avenue Greenway
8. As a component of the proposed park at 2<sup>nd</sup> St. south of Plymouth Avenue.
9. At various temporary locations on undeveloped land owned by the MCDA



## EMPLOYMENT AND REAL ESTATE GOALS



**M E M O R A N D U M**

**MCDA**

Minneapolis Community Development Agency  
152 An Avenue South, Suite 200  
Minneapolis, Minnesota 55407-1524

The North Washington Jobs Park Steering Committee established the following guidelines to evaluate development proposals and land purchase offers. These guidelines should be considered as development goals. Proposers should prepare a profile which addresses the following points regarding their company and project:

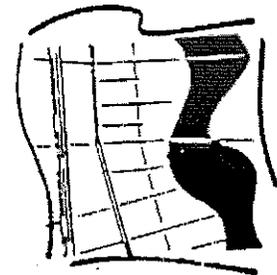
**EMPLOYMENT IMPACTS:**

1. Total number of full time jobs retained in Minneapolis and the number of these retained jobs held by Minneapolis residents. The committee will consider quantity and quality of jobs retained.
2. Wages of retained and created jobs. Minimum starting wage levels consistent with the City of Minneapolis METP contract based on State of Minnesota wage index. Employment should be full time, provide opportunities of training and advancement, and include benefit packages.
3. Number, wage levels and types of full time jobs to be created over the next five years. The committee examines the realism of job creation projections and the company's commitment to make these positions available to Minneapolis residents. The committee considers in its review the commitment to providing training opportunities to employees.
4. Employment of at least one full time equivalent job per 1 000 square feet of building space. Higher ratios will receive priority consideration.

**REAL ESTATE IMPACTS:**

5. The value of the new construction and the developer's ability to perform.
6. Consistency with area zoning and design guidelines.
7. Total square footage of new building construction should cover at least 40 percent of the real estate.
8. Amount of new real estate taxes to be generated.
9. The amount offered for the real estate.
10. Local economic impacts of the project, eg. use of local vendors and suppliers. If a relocation, the proposed reuse of the existing facility.

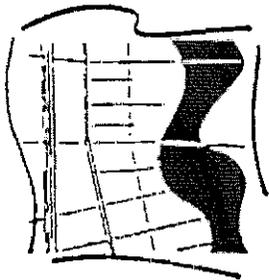
The North Washington Steering Committee reviews proposals once each month. Meetings are normally held on the third Tuesday of each month at 7:30 AM. Presentations should address the above guidelines. Call Patrick Conroy, MCDA, with questions or comments at 673-5193.



**NORTHSIDE JOBS PARK**  
Design Guidelines and Development Framework

	Site	Site	Bldg/Land	Jobs	Jobs	Number	Wage	Real Estate	Land	Wnte	Total
Company Name	Address	Sq Ft	Investment	Retained	Created	Mpls Residents	Scale	Tax Increase	Value	\$/ft	Wnte Down

2008/08/20 10:00 AM

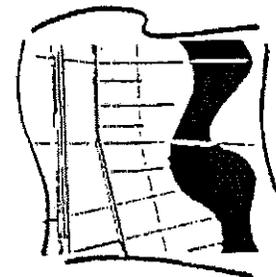


Each company/employer purchasing or leasing space in the City supported Jobs Park area must complete a Job Linkage Employment Plan with the Minneapolis Employment and Training Program

\_\_\_\_\_ Inc expects to retain its current workforce of \_\_\_ employees and to expand its workforce by \_\_\_ employees over five years, starting with the execution of the redevelopment contract with the MCDA Details concerning the positions in the current workforce and projected positions in the expansion of the workforce are indicated on the attached form Measurement of the maintenance and expansion of the workforce will be made on the anniversary of the redevelopment contract against the following levels

YEAR	EMPLOYMENT NUMBERS
Year 1	
Year 2	
Year 3	
Year 5	
Year 5	

This measurement will be accomplished by accessing employer/employee records of the Minnesota Department of Economic Security for the month immediately following the anniversary dates or receiving a report from the employer A hiring form will be completed and submitted to the Minneapolis Employment and Training Program (METP) for each employee hired during the life of this agreement Information on the hiring form will be used to track the residency of \_\_\_\_\_ Inc employees To facilitate the hiring of Minneapolis residents \_\_\_\_\_ Inc is encouraged to work with the Minneapolis Urban League in regard to all recruitment and hiring \_\_\_\_\_ Inc agrees to list job openings on the Minneapolis JOB LINK system



**Job Linkage Agreement  
Five Year Plan  
(Company name and address)**

	JOBS RETAINED				JOBS PROJECTED				Total
	Living Wage		Non-Living Wage		Living Wage		Non-Living Wage		
	Mpls	Non-Mpls	Mpls	Non-Mpls	Mpls	Non-Mpls	Mpls	Non-Mpls	
Base Year									
Year 1									
Year 2									
Year 3									
Year 4									
Year 5									
<b>Total</b>									

\_\_\_\_\_ agrees to work with the Minneapolis Community Development Agency ("MCDA") to help achieve the job retention and job creation goals listed above. "Living Wage" refers to jobs that pay at least \$9.57 an hour; "Non-Living Wage" are those that pay less than \$9.57 an hour. Year 1 begins when the company occupies the facility.

\_\_\_\_\_ agrees to report on its hiring to the MCDA on an annual basis for a period of five years (starting six months after the start of Year 1) and to work with a workforce development organization listed below to recruit, hire and train new employees.

\_\_\_\_\_ further agrees to authorize the MCDA to verify company employment levels at this location with the Minnesota Department of Economic Security.

Signed by \_\_\_\_\_

Date: \_\_\_\_\_

Designated workforce development organization

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

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

Contact: \_\_\_\_\_

Phone: \_\_\_\_\_

- Living Wage is defined on an annual basis as 110% of the federal poverty standard for a family of four.